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satellite**

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Test Report

DEVISER

Jason Wu Targets the Rapidly Expanding Optic Market with a New Meter



Test Report

PANODIC

Alan Yu Markets a Very Easy-to-use Miniature Satellite Receiver with Blindscan



Test Report

HORIZON

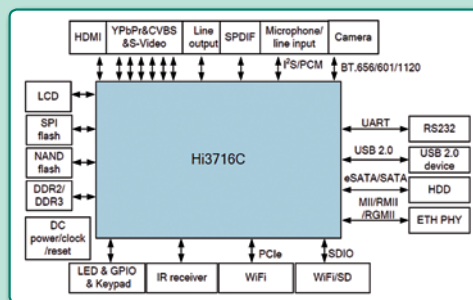
Paul Pickering Hits the Jackpot with the World's First Affordable Handheld DVB-T2 Meter



Company Report

ANTIFERENCE

Trevor Paintain Leads an 75 Year Old Company Successfully into the Digital TV Era



Test Report

HISILICON

Presenting the Very Latest Development in Chipsets for Digital Receivers

Test Report

DEKTEC

Build a Network with this Professional Satellite Receiver



Test Report

JIUZHOU

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HDS-275SCI

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- Media playback: MP3, JPEG, AVI (Divx), MKV
- Up to 5000 channels
- HD output: 576i/720P/1080P
- 15 Days EPG (need program support)
- EUP

- | | | | | |
|------------|------------------|----------------|----------------|-----------------|
| • DVB-T/T2 | • DVB-C | • ISDB-T | • DVB-S2+DVB-T | • HD DVB-T IP |
| • DVB-S/S2 | • HD DVB-T+CONAX | • ISDB-T+DVB-T | • IP VOD BOX | • Mobile Device |



DVB-S FTA SDS-552ANP

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- Up to 5000 channels



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- Video decode: Full HD H.264, MPEG-1/2/4, DivX, WMV9, XviD, RMVB, FLV, MJPEG
- Audio decode: MP3, WAV, WMA, AAC-LC/HC, OGG Vorbis, RA, Dolby D
- Display resolution: 1080P
- WiFi 802.11(b/g/n): USB WiFi dongle, built-in USB WIFI module (Optional), SSID auto search, WEP/WPA encryption
- IP allocation: Static IP /DHCP/PPPOE



Android IP Set Top Box IV3010

- Android operate system media player
- Video Decoding: H.264(1080p/i HP@L4.1), MPEG1/2/4*1080p/i
- Video Output: NTSC, PAL, 720p, 1080p/i, HDMI/YPbPr/CVBS
- Audio Decoding: MP1/2/3, WMA, WAV, OGG, AAC, etc



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**TELE-satellite
International**
The World's Largest
Digital TV Trade Magazine

since 1981

Alexander Wiese
Publisher

alex@TELE-satellite.com
HQ in Munich, Germany

Dear Readers,

I'm extremely excited that in this issue we are introducing one of the first Android-based receivers. And if you read this issue of TELE-satellite a little closer, you'll discover another article that also has to do with Android, to be more exact, it's about a chipset that was developed for Android receivers. This suggests that more Android-based receivers will soon become available.

What makes Android so special? We are in no way disappointed with Linux-based receivers and we've already introduced numerous Linux devices and will continue to do so. The Linux-based system is perfect for receivers that are optimized for TV reception. That is a Linux receiver's strong point but at the same time it's also a weak spot: the demands of receiver continue to rise. Receivers are becoming true media centers and this ends up highlighting the weaknesses of Linux receivers more and more.

The operating systems in Linux receivers run on chips with a single kernel and quite often with a clock frequency of 300 MHz. Higher frequencies are hard to find. Android receivers, that use a chip based on the ARM architecture, are able to use multiple kernels and have a clock frequency of more than 1 GHz. In other words, Android receivers are much faster and more powerful.

This enormous increase in capacity is not needed to watch TV. But it comes into play when, for example, the PVR function in HD is used. Another example would be a receiver's web browser. Under Linux it would only have a limited use; sufficient memory and Flash

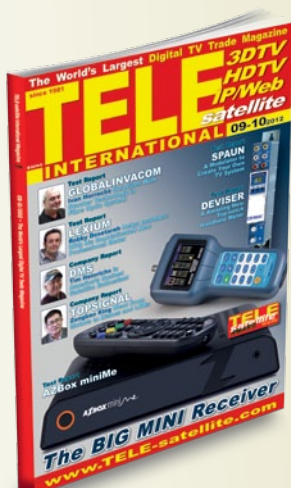
are missing. And yet another point that speaks for Android and that many users don't even know about: the color depth with Linux receivers is extremely limited (not the TV picture but rather the color selection in the menus). Currently this turns out to be the knockout punch if you want to use the receiver, for example, to play games. There are no such limitations with Android; even 3D games are possible. In this way the Android receiver can become the gaming center at home.

Android is used in many SmartPhones and tablets; there are seemingly an unlimited number of Apps and there are drivers for almost everything. This means that a receiver with Android is instantly understood by everyone and that every familiar App on a SmartPhone or Tablet can also be used on an Android receiver. Even the swipe function can be integrated in an Android receiver, for example, via an appropriate remote control or you simply use a SmartPhone with a remote control App.

The advantages of Android are not with TV reception but rather with all of the additional functions that are expected in today's modern receivers. In the end, Android is the new Linux.

Alexander Wiese

Editor-in-Chief TELE-satellite International



**TELE
satellite**

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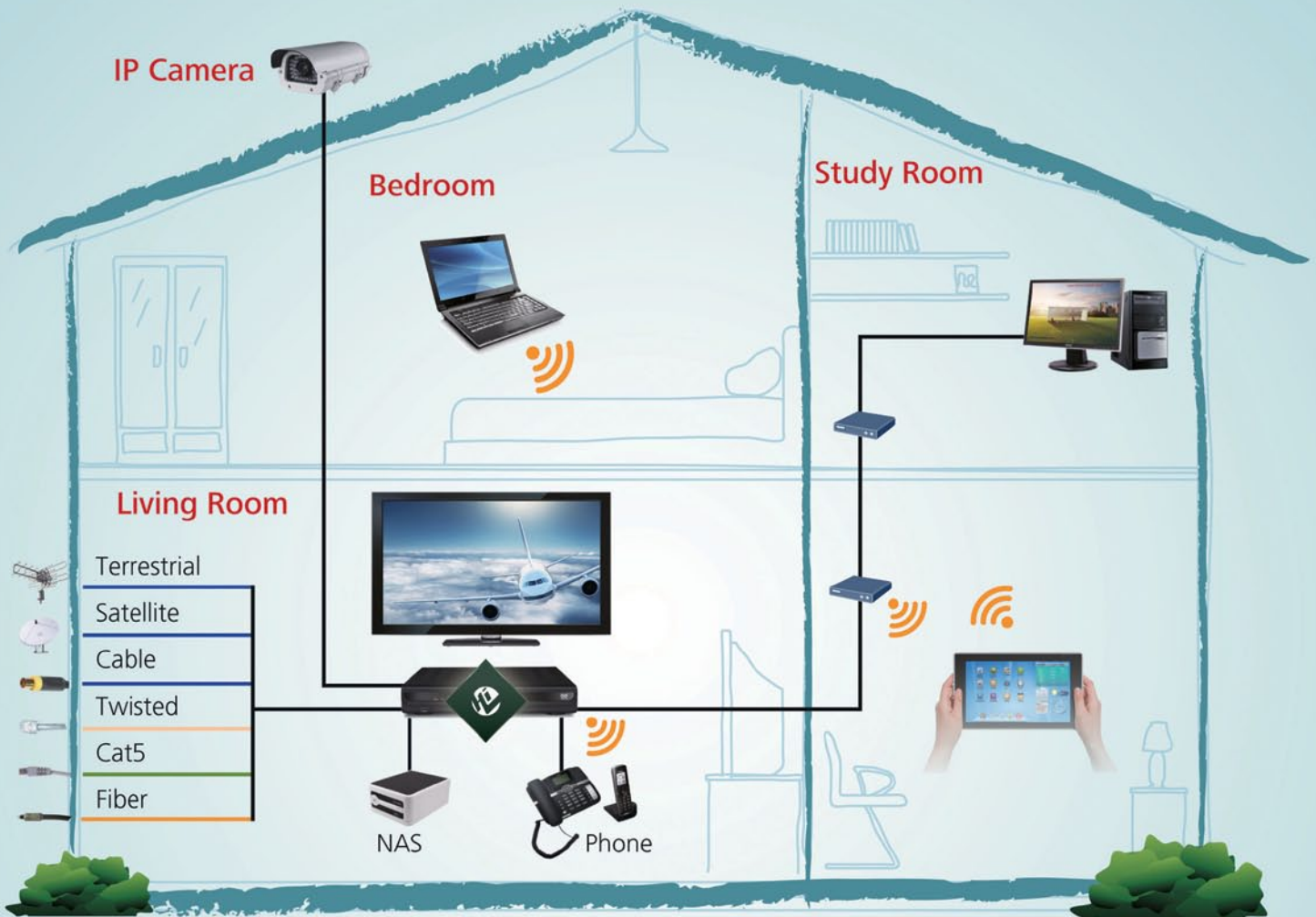
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TELE-satellite was established in 1981 and today is the oldest, largest and most-read digital tv trade magazine in the world. TELE-satellite is seen by more than 350,000 digital tv professionals around the world and is available both in printed form and online.

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Hisilicon STB SoC Key Features

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DEKTEC
Hilversum, Netherlands, Europe

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Burnaby, BC, Canada

DXer Report
Jack Moran
San Diego, California, USA

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DXer Report
Natalino
Jundiaí, Brazil, South America

Test Report
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Bragança Paulista, Brazil, South America

11-12/2012

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**All Reports in TELE-satellite are
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from Around the World!

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Test Report
JIUZHOU
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Company Reports are written by TELE-satellite's editorial staff on location
Test Reports are written by TELE-satellite's engineering staff located at
different strategic reception points around the world



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CHANGHONG

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- Multi-screen interaction
- Content sharing with Pad, phone, STB
- Multi-media player
- 3D somatic games
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- IP camera
- Smart remote control
- Changhong APP store



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- DVB-C/T/S/C2/T2/S2, ISDB-T, IPTV
- Conax/Nagra/Irdeto/NDS
- MHEG-5/OpenTV/NDS Core/MHP
- Android/OS21/Linux/μ_iTron
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Company Profile

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MHEG-5



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NDS Core



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MPEG4, 1080P, Conax CAS,
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HS17 HD DVB-S/S2

MPEG4, 1080p, Conax CAS,
LAN, PVR/Timeshift



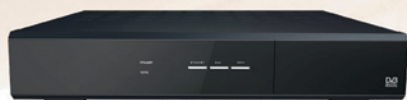
HS1C HD DVB-S/S2

2Tuners: S2+S2/S2+T/S2+T2/S2+C
(4 options) MPEG4, 1080p, CI, Conax CAS,
LAN, 2*USB, PVR & Timeshift



HTA5 HD DVB-T

MPEG4, 1080p, PVR/Timeshift,
Mediaplayer



HS15 HD DVB-S/S2

CI+, Conax CAS, LAN, MP4
1080p, PVR, Timeshift



HTJ2 HD DVB-T

MP4, 1080p, Conax CAS,
PVR/Timeshift, Mediaplayer



HTP1 HD DVB-T/T2

T/T2, MP4, 1080p PVR/Timeshift,
Powerful Mediaplayer



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JIUZHOU DTP2100
Cutting-edge receiver thanks to Android operating system

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Jiuzhou DTP2100



 **JIUZHOU**

- *perfect integration of TV, Internet and apps*
- *PVR function included*
- *suitable for in-car and camping use thanks to 12V power unit*
- *complete with numerous helpful features such as pre-set timer entries for recordings*
- *built-in MP3 jukebox with brilliant ease-of-use*
- *Adaptive Streaming (Smooth Streaming and HLS)*
- *Playready Digital Rights Management*



Android DVB-T Box

Google's Extremely Capable Android Operating System Enters the World of Digital TV Reception

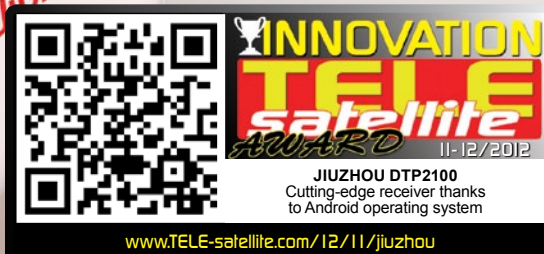


Android by Google is everywhere. Looking for a smartphone, tablet or media player? Chances are your device is run by Android.

The small green robot that is the Android logo adorns an ever increasing range of electronic equipment these days, and it's easy to see why: First and foremost, Android is a sophisticated and reliable operating system, which comes with its own Google Play platform. We're talking about a clearly structured marketplace here that offers millions of apps for download in order to add features and functions to the Android OS.

At TELE-satellite we've been expecting Android to enter the market for satellite, cable and terrestrial receivers sooner or later, and now the time has come: The first Android-based DVB-T receiver by Jiuzhou has arrived at our test center.

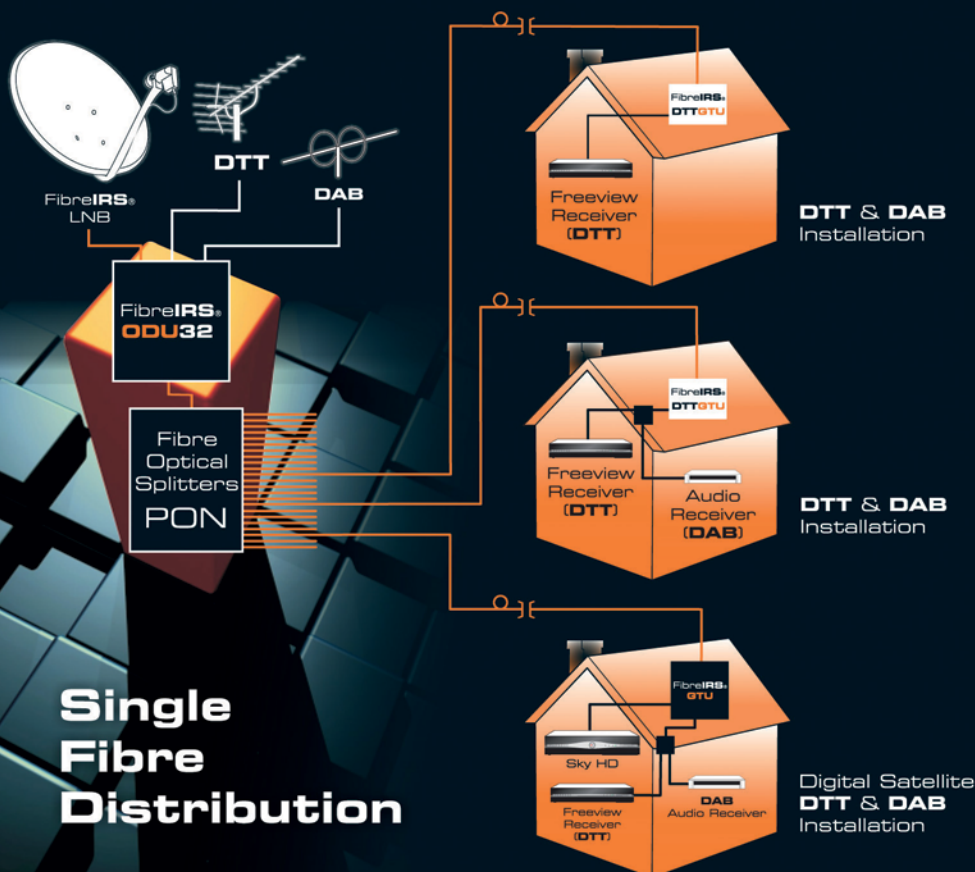
This new receiver is designed to impress – both inside and outside. As soon as you open the packaging you'll discover a device that does not only rely on its smart appearance. With its white colour the DVB-T receiver seems to suggest: 'Hey, you might think I'm just another set-top box, but in actual fact I'm a lifestyle





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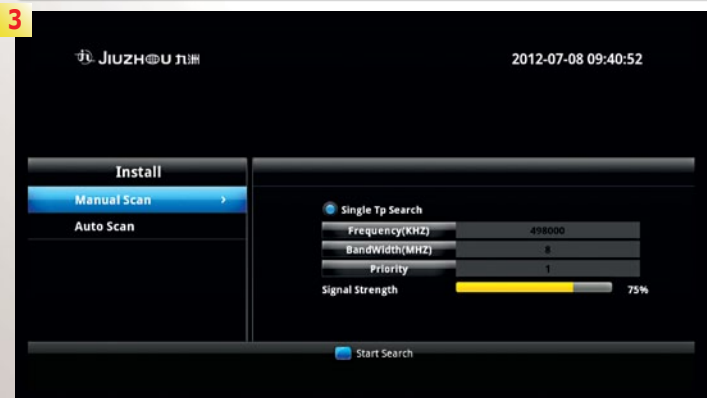
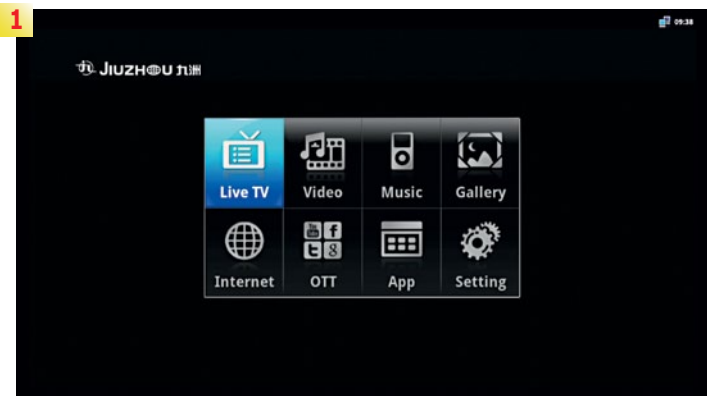


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*Compared with existing Fibre Systems

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product, much like your smartphone or tablet'. You could call it technology with an attitude.

Still, looks can be deceiving and a truly successful product must also shine from within. All the more reason for us to have a closer look at the technology used and to put the Jiuzhou DTP2100 to a demanding test.

Following our own tradition, we start with the front panel: A total of four LEDs indicate the current operating mode (Lock, Net, Run, Standby) so that users are never left in the dark as to what their box is up to.

The Jiuzhou DTP2100 comes with a fairly large IR field right on the front, which makes sure all commands sent from the remote control are executed swiftly and reliably. In keeping with the general design, however, this area is neatly integrated and does not reduce the overall appeal of the receiver at all.

The rear panel does not fail to impress us either,

1. Main menu of the Jiuzhou DTP2100.
2. Main DVB-T menu.
3. Manual channel search.
4. Automatic channel search.
5. Channels that should be deleted are only marked for deletion at first. The user has to reconfirm once again before deletion actually takes place.
6. You need to press OK once again for the marked channels to be finally deleted.
7. Display settings.
8. Creating timer entries reminds us of smartphone configuration. It is, however, set up in a very user-friendly way.
9. PVR features such as timeshift viewing become available as soon as an external storage medium is attached to the receiver.
10. Electronic program guide of the DTP2100.
11. Events can be marked for recording directly in the EPG.
12. A total of eight favourites lists are available, all of which can be renamed as required.
13. One of the eight favourites lists.
14. The built-in teletext decoder works flawlessly.
15. HD channels via DVB-T are processed without even the slightest problem.

and offers all connection options we would have expected from a latest generation DVB-T receiver. To be precise, you will find an RF input socket for hooking up the DVB-T antenna, an HDMI output, an S/PDIF digital audio output, two USB interfaces for external storage media, a mini-SD card reader, an RJ45 network socket, phone jacks for CVBS video and stereo audio as well as a socket for connecting the external 12V power supply unit.

The last item, in particular, is a welcome feature for DVB-T receivers, since it is only with 12V power supply that they can be used in cars or caravans as well.

The remote control that is shipped with the receiver leaves us with a good first impression, thanks to its smart key layout. Labelling, on the other hand, is a different story. We would have appreciated more comprehensive and clearer labelling of certain keys for DVB-T use, as we will explain in more detail later. Altogether, the build quality and level of workmanship of the Jiuzhou DTP2100 are quite impressive.

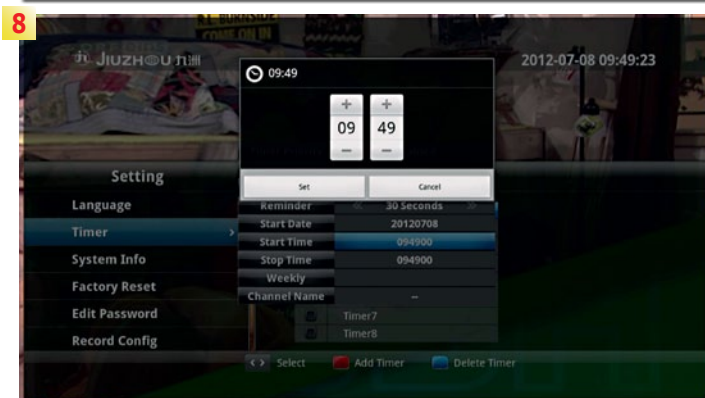
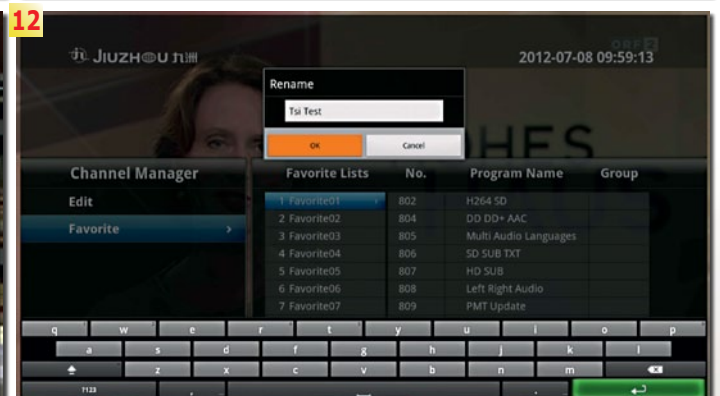
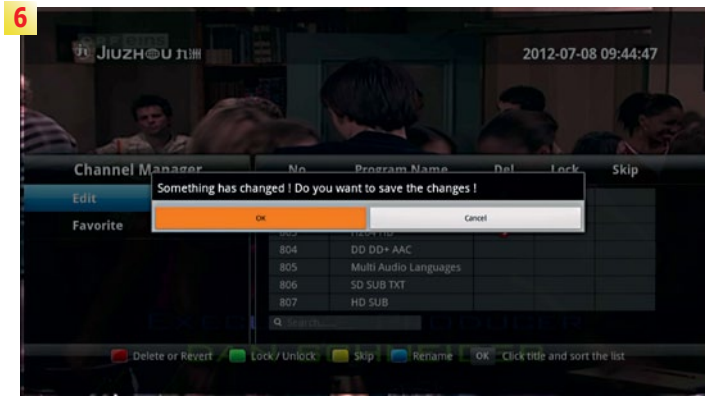
When you turn on the receiver for the first time you're not greeted by an installation wizard for a change. Instead, the main menu of the DTP2100 appears on screen.

Another thing that is peculiar is that the new Jiuzhou Android receiver is split into two different areas. One is LiveTV, which deals with DVB-T reception, and the other area takes care of all Android-based features and functions of the receiver.

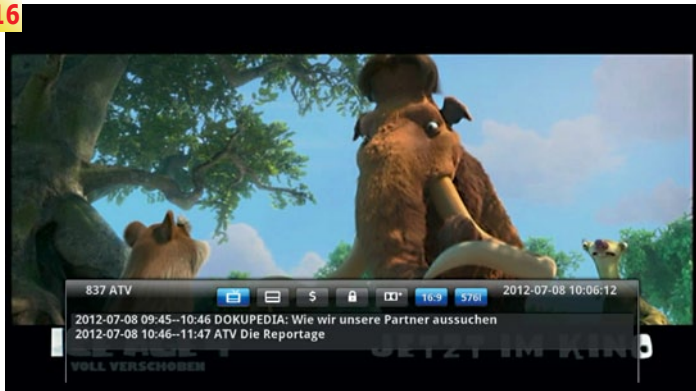
In line with this setup, our test report will also first deal with DVB-T reception, followed by an in-depth look at all Android features.

Selecting LiveTV in the main menu brings you right to the previously watched channel or shows an empty channel list in case no channel search has been performed yet.

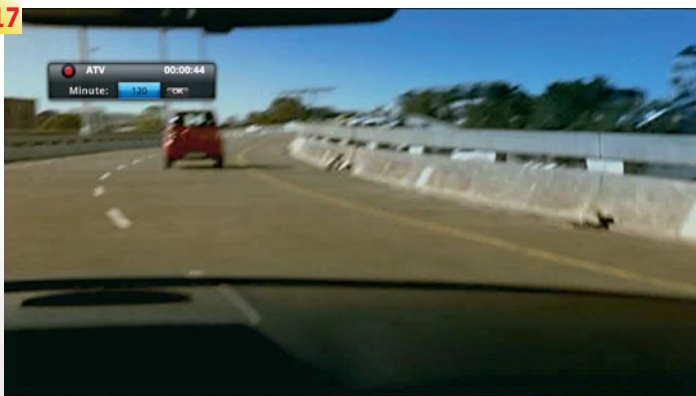
If you want to call up all



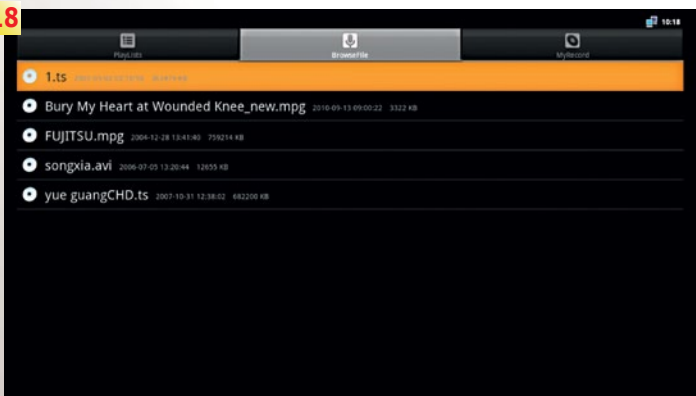
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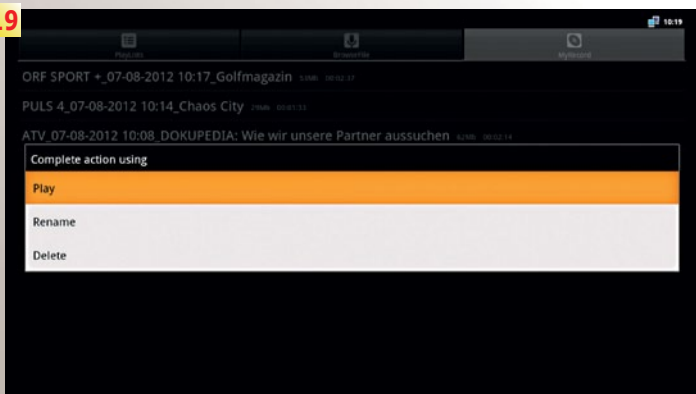
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functions for setting up, managing and using the DVB-T receiver all you need to do is press the Menu button on the remote control.

Obviously, we started with a channel search, which can be performed either manually or automatically. We did like the fact that – even with an automatic search – you don't need to scan all frequencies (the entire VHF/UHF bands are pre-set by default) but can select or de-select individual bands as you see fit.

Speed is of the essence when it comes to a channel search, and we have to say the DTP2100 is not really a Formula 1 champion. It took some nine minutes to search the entire VHF/UHF ranges based on the pre-defined frequency chart. While this does not make the Jiu Zhou box a top achiever, we should point out that it detected all active frequencies correctly.

It's true that the number of DVB-T channels available in a given market pales in comparison with DVB-S reception, but it's nonetheless helpful to have a number of channel editing functions at hand in order to customise the receiver according to your personal preferences.

With the Jiu Zhou DTP2100 it is possible to delete, move, PIN-lock or rename entries, as well as to mark certain channels for skipping. Whenever you want to delete channels a corresponding symbol is added to those channels, with the

actual deletion process only taking place when you're done and want to leave the channel edit menu.

You need to confirm your selection before channels are finally deleted, so that you can never remove entries unintentionally. We believe that's a great idea and one that could (or shall we say: should) find copycats among other manufacturers as well. In addition, a total of eight favourites lists are available, all of which can be individually named and edited.

In the Settings menu you can adjust parameters for OSD language (with English, Korean and Chinese to choose from), screen aspect (4:3 or 16:9) and presentation of 4:3 content on a 16:9 panel (letterbox, pan & scan).

It is here that the eight timer slots can be edited, or new timer entries can be created manually.

As expected, the Guide menu item calls up the integrated electronic program guide, which sports a convenient layout and shows six program events at a time. Using the cross-shaped arrow keys on the remote control you can easily navigate within the EPG and a timeline bar helps you select a specific day for EPG information.

Like most PVR receivers the Jiu Zhou DTP2100 allows creating a timer entry by simply selecting the desired event in the EPG. What's more, repeat timer events can easily be set up as well.

In everyday use the Jiu Zhou DTP2100 is a pleasant companion. As usual a touch of the OK button calls up the channel list, which sports an easy to use design.

The only thing we felt was annoying is the fact that the channel list remains on screen even after a new channel has been selected. In addition, the receiver does not insert an info bar every time a new channel appears on screen, so users are left without informa-

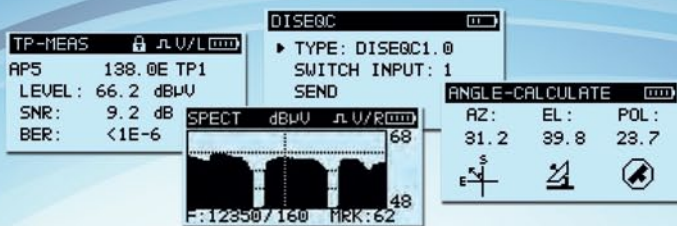
16. The titles of the current and next event are shown in the info bar.

17. By default, each recording is set for a duration of 120 minutes, which can either be confirmed or adjusted after recording has started.

18. The receiver is capable of processing a wide range of different video formats.

19. A single touch of a button on the remote control is all it takes to delete, rename or play back recordings.

20. A timeline on the bottom of the screen facilitates navigation during playback.



S20/S30 ✓ Satellite Finder

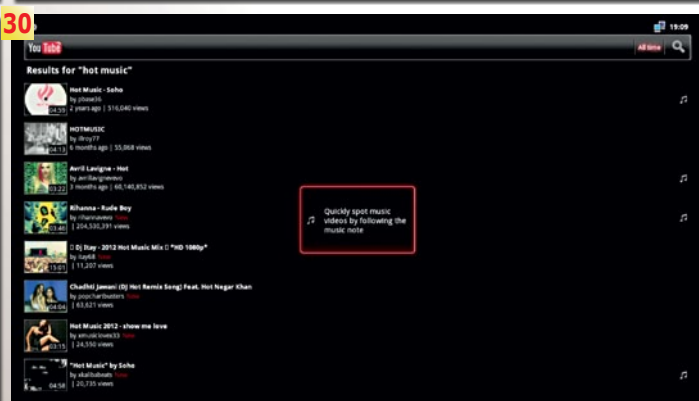
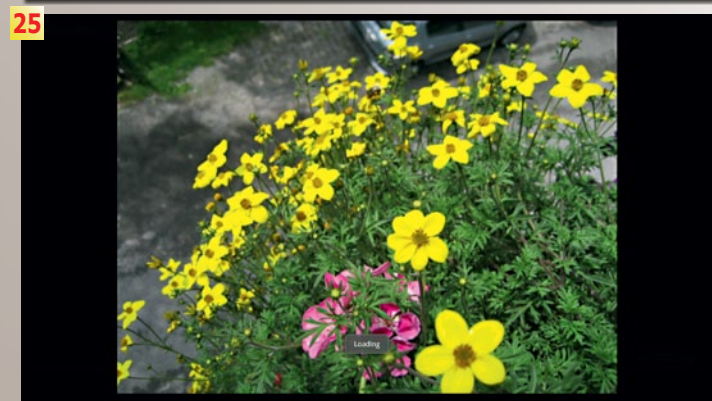
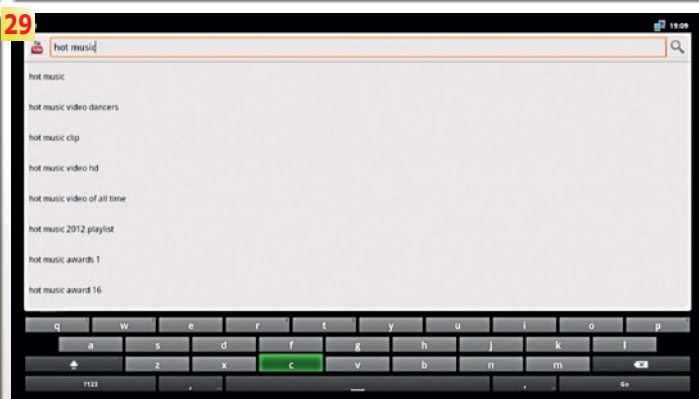
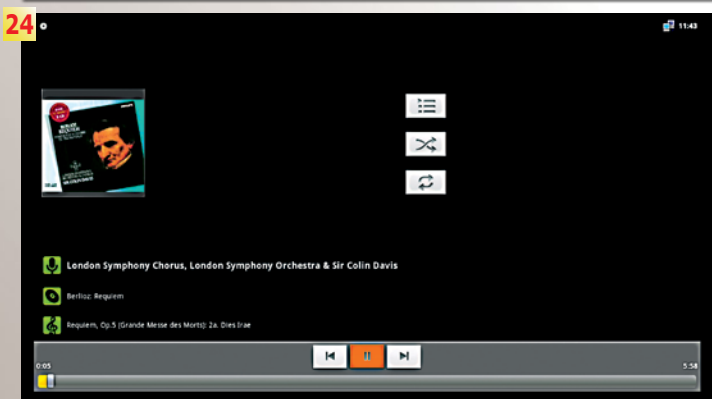
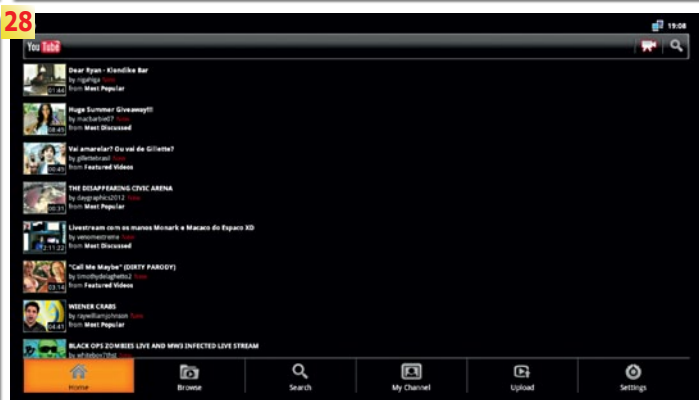
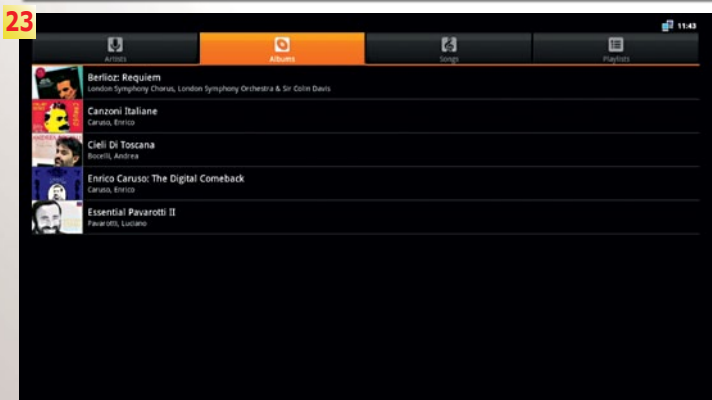
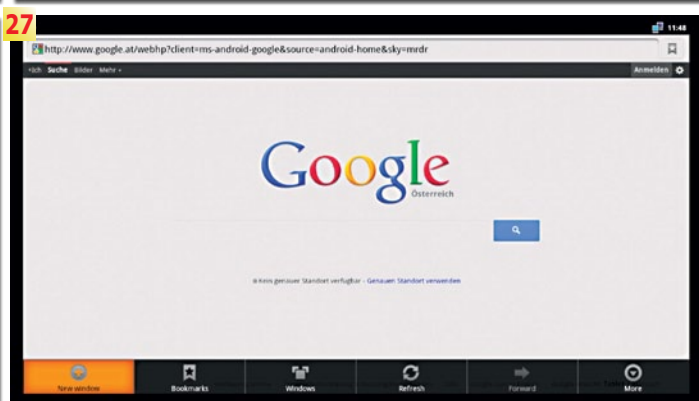
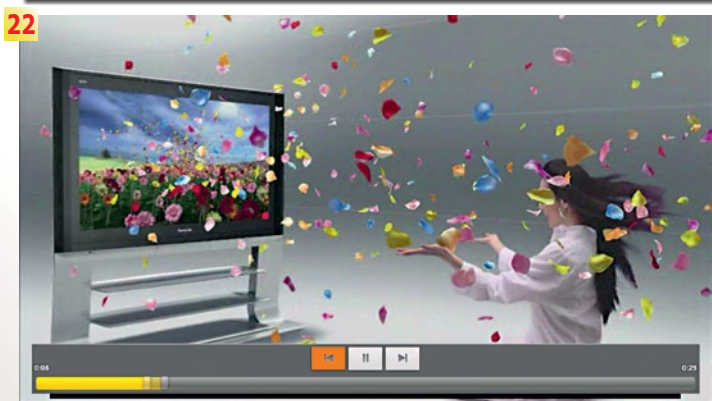
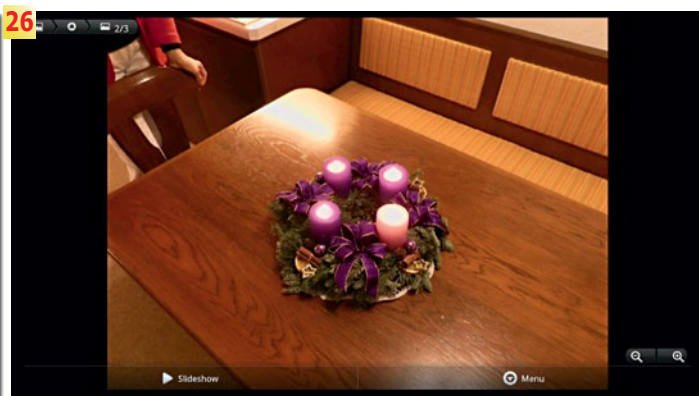
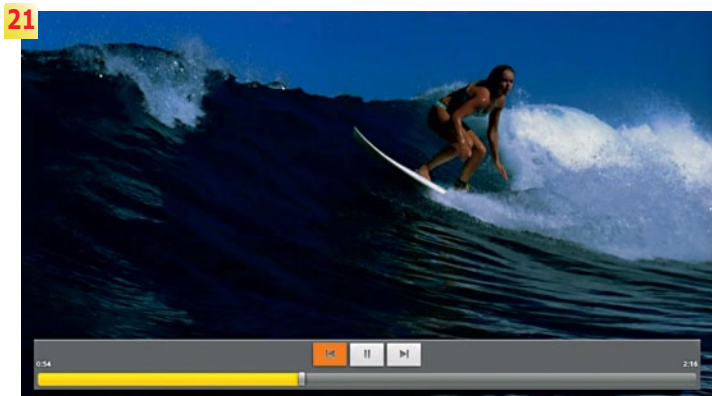
- S20 supports DVB-S
- S30 supports DVB-S2
- C, Ku, Ka or L band
- SNR and BER
- Spectrum function
- Support DiSEqC 1.0/1.1
- Signal level and quality display together
- 128×64 matrix LCD with back-lighted
- Large lithium battery capacity, over 4 hours working time
- Software upgrade and parameter set via USB interface



S7000 ✓ TV Analyzer

- All standards in one: QAM(J.83A/B/C), 8VSB, DVB-T/H/T2, DVB-S/S2
- Digital/Analog TV and Satellite TV analysis
- MPEG2 Transport stream analyzer and monitoring via TS-ASI input & RF input
- Fast spectrum analysis with 5~2150 MHz frequency span
- DSP Technology to support different Video decoding: MPEG-2, MPEG-4 and H.264 for 1080i, 720p and 576i, support PAL/NTSC/SECAM color system
- Support SD&HD Video format
- CI module (Common Interface) for encrypted channels
- TS-ASI input and output
- TS record and TS replay
- IPTV analysis option
- GPS option
- HDMI, LAN and USB interface
- Easy to use
- High resolution 7" TFT LCD with bright display for indoors and outdoors use
- W245×H194×L105, light weight
- Working time >4 hours (battery)





tion on the current and next event.

When looking at the remote control, there is no dedicated button for EPG or calling up the info bar, and this is where our previous criticism regarding the remote control comes into play again.

As a matter of fact, both an electronic program guide and an info bar are of course implemented in the software, there just aren't the corresponding keys on the remote. You have to know (and remember) that you need to press the red or yellow function key to access these features. The same is true for teletext, which is activated with the green function key.

For reasons of simplicity, Jiuzhou has opted not to label the remote control for the DVB-T mode, since the keys assume different roles in Android mode.

As far as language selection and subtitles are concerned, Jiuzhou walks along a more conventional path: A key labelled Track will take care of these adjustments.

Since no dedicated button for the favourites lists is available, the manufacturer has found a very neat way of implementing this function. With the channel list opened on screen you only need to press the yellow function key to call up all available favourites lists. You then simply select your desired list(s) in order to make them available in the standard channel list layout. Using the Left/Right keys on the remote then brings you right to your favourites.

Obviously, the DTP2100 can easily be turned into a fully-fledged PVR receiver simply by attaching an external USB storage medium. It is possible to watch a second channel while one channel is being recorded, provided both channels are transmitted on the same frequency.

Two simultaneous recordings, however, are not possible. The built-in timeshift

feature allows to pause live TV at any given moment and to continue from that precise point at a later stage. We would also have liked the option to play back previously recorded events directly in DVB-T mode. The way this receiver is designed you have to switch to Android mode before you can do that.

The tuner used by Jiuzhou for its Android receiver is compatible with DVB-T and is capable of processing HDTV using H.264/MPEG-4. Since such DVB-T HDTV signals are not available at our test location we had to make use of a clever trick in order to check out this function: We took a DVB-T2 frequency with a few HD channels and re-modulated those into a DVB-T signal that was then

fed to the DTP2100.

Putting aside the missing labelling on the remote control, the entire DVB-T

21. HD videos? No problem for the DTP2100.

22. Videos downloaded from the Internet can also be played back without a glitch.

23. One of the high points of the DTP2100 is the MP3 jukebox, which even shows album covers.

24. MP3 playback.

25. The DTP2100 image viewer at work.

26. This picture was never saved on our test receiver, but was loaded from Google Picasa.

27. Thanks to its fully-fledged web browser the receiver becomes a neat everyday tool.

28. Access to YouTube videos.

29. You can search for videos directly on the receiver.

30. Music videos receive a special icon, making it easy for them stand out from the crowd.

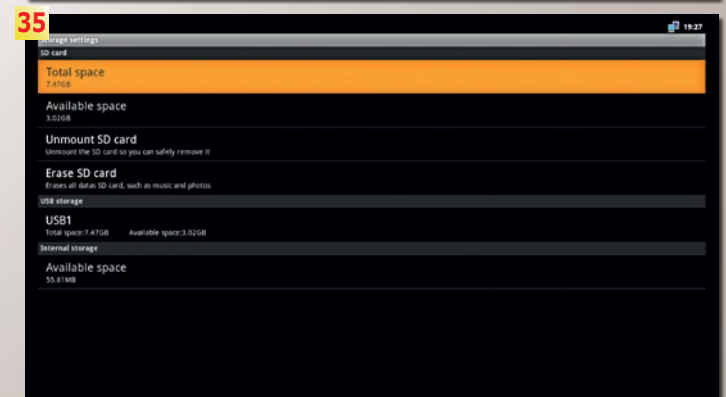
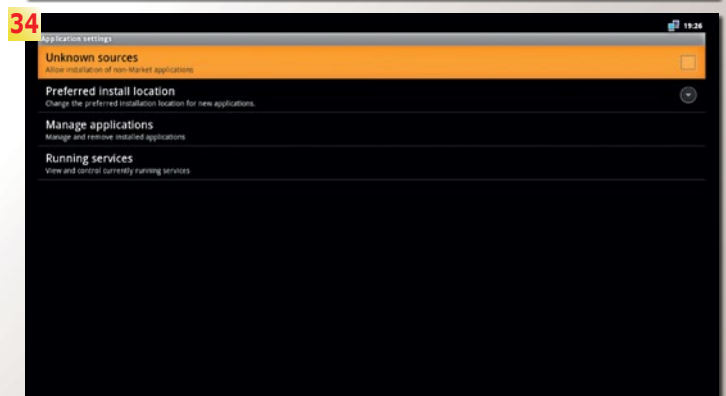
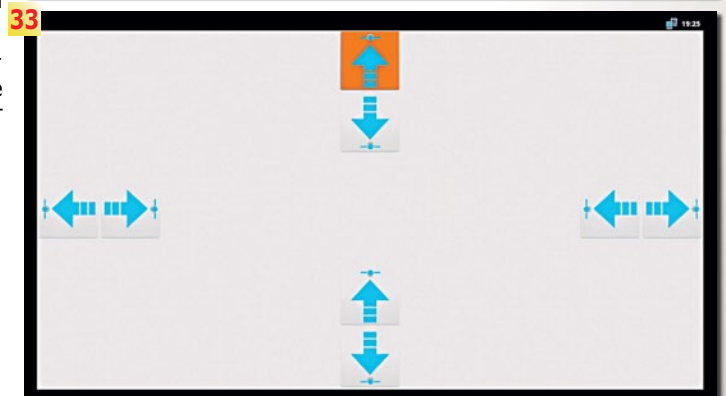
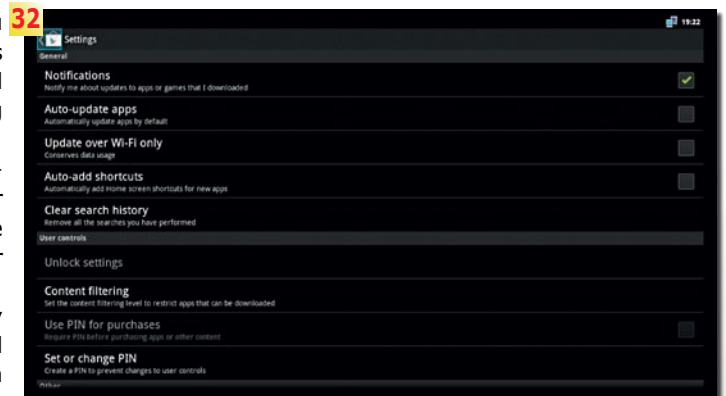
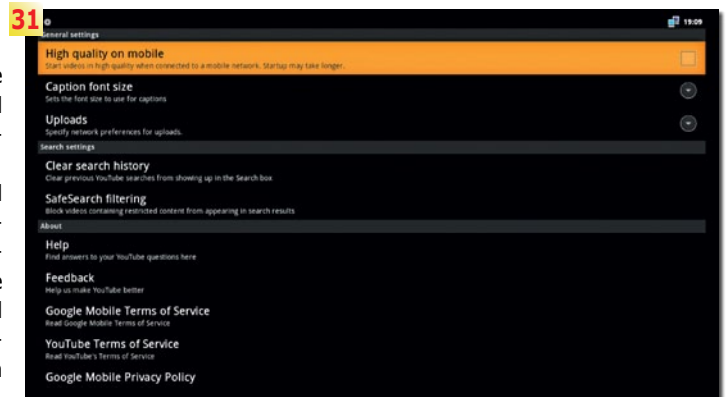
31. The YouTube app comes with comprehensive configuration options.

32. Thank to the Android operating system the receiver can be freely customised.

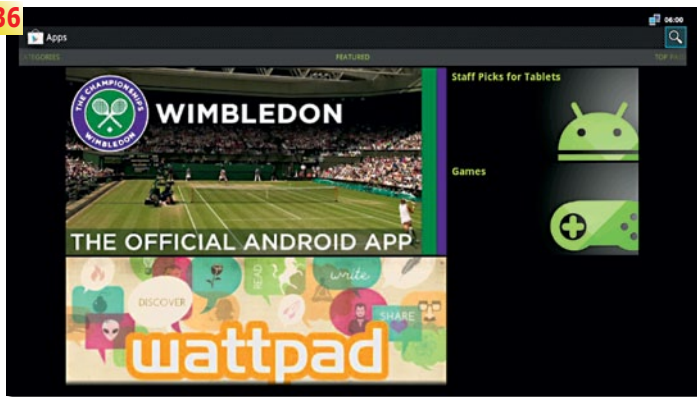
33. If the image shown has a different aspect ratio than the TV panel, this can be rectified thanks to a dedicated menu item.

34. Apps can easily be updated, moved or deleted.

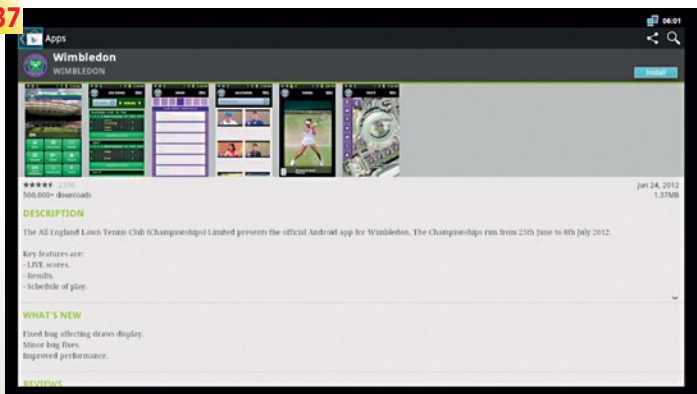
35. The receiver can be used for all sorts of external storage media, no matter whether it's a USB HDD, USB stick or memory card.



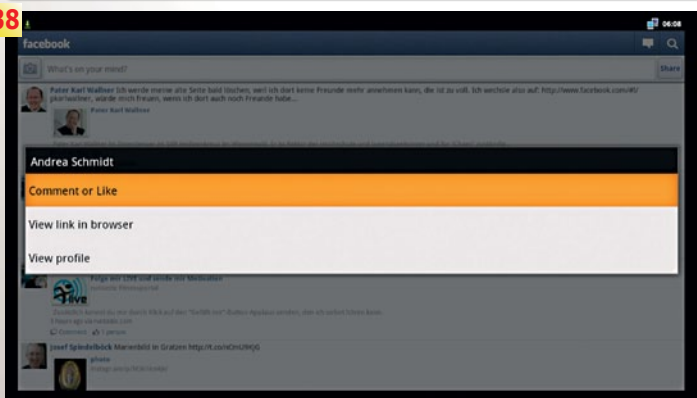
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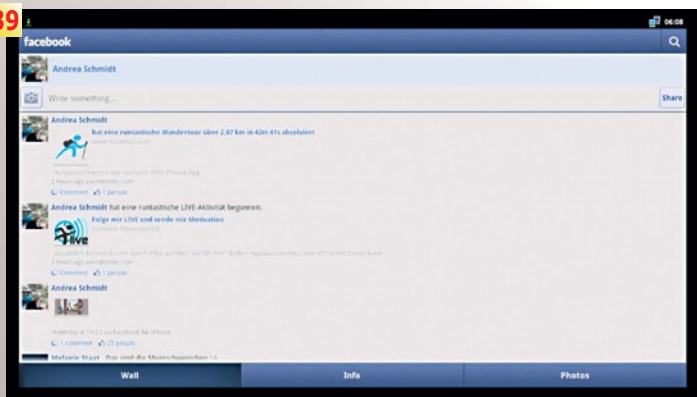
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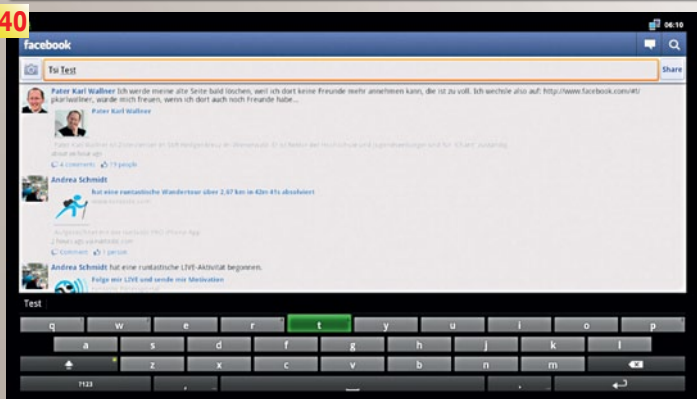
38



39



40



part of the receiver created a very positive impression on us. This was also helped by fast switching times of around one second, which will please channel surfers no end.

The only downer is that we could not find an option to activate a +5V power supply on the antenna input. This way owners of an active DVB-T antenna will have to keep using an external power supply.

Now that we have dealt with the LiveTV entry of the main menu, there are seven more entries to dive into, all of which deal with Android-based features and functions.

The receiver is shipped with Android 2.3.4 'Gingerbread'. Most of these features focus on multimedia use, which is packed into menu entries named Video, Music and Gallery.

As we have mentioned just above, it is not possible to play back existing recordings in DVB-T mode. To make up for that, users can select Video in the DTP2100 main menu to access a clearly arranged list of all recordings. In addition to those recordings the receiver is capable of playing back a multitude of other video formats as well, ranging from MPEG and TS all the way to DivX, which even worked flawlessly in 1080i HD during our test.

The only thing it rejected was flash video – no matter how hard we tried the DTP2100 refused to play it.

During playback it is possible to fast forward or rewind with 2, 4, 8, 16 or 32

fold speed, which hugely facilitates navigation within a video.

The Music menu entry contains the MP3 jukebox of the DTP2100 and all we can say is: WOW! This feature is impressive proof of the amount of time and effort Android developers have invested to come up with a solution that almost bursts with attention to detail.

Audio files available on external storage media (USB or SD card) can be sorted according to artist, album, title or playlist. During that process the receiver takes into account ID3 tags and even reads out album covers, if those are integrated in the audio file.

Thanks to the optical S/PDIF or HDMI output music is transmitted loss-free to your HiFi system and the two USB ports plus SD card reader make sure you'll never run out of memory capacity for your music collection.

Using a flat-screen TV to show photos of your last holiday to family and friends has become the way to go in recent years. Long gone are the days of slides and pictures printed on paper, so it's only natural that the Jiuzhou DTP2100 also offers a presentation function. And it goes without saying this also works with image files on external storage media.

Yet, there's even more. Much more. Just picture this: You're at your friends' place and the conversation starts to revolve around the trip to the mountains you did last month. Too bad you left at home the USB memory stick with all photos on it.

No problem with the DTP2100. If you – like millions of users worldwide – have also stored your photos in the cloud (Google Picasa, for example) the DTP2100 is able to access these photo albums via the Internet and present a slideshow on the TV.

It works as if the photos were stored locally. All you need to do is enter your login data and you're ready to go.

36. Games, tools or any other apps – Google Play has millions of apps ready for download.

37. Before you purchase and download an app you can call up a detailed description complete with screenshots.

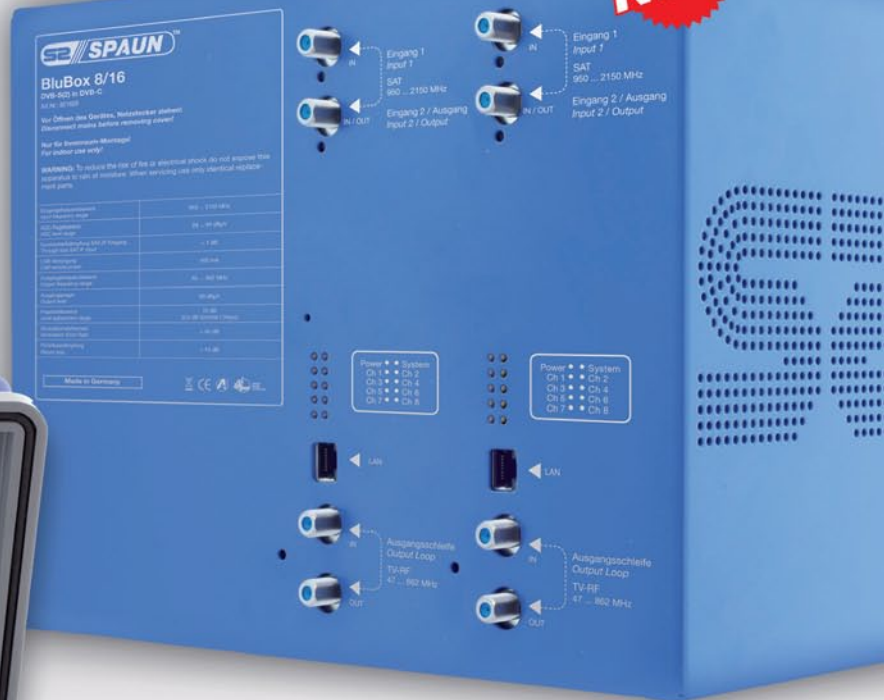
38. The Facebook app allows you to make full use of this social network right on your receiver.

39. Facebook timeline and profile.

40. One touch of a button on the remote and you're all set to post a message or comment.

Compact Headend 8 / 16 x DVB-S(2) into QAM BluBox 8 and BluBox 16

- 8 / 16 x DVB-S(2) (QPSK/8PSK) into DVB-C (QAM)
- For the reception of 60/120 TV programs SD/HD and 30/60 Radio programs
- Compact dimensions and high energy efficiency
- LNB control with 14/18 V + 22 kHz or DiSEqC
- Configuration via LAN/IP
- Complete processing of the transport streams possible
- All 8 / 16 output channels can be placed individually in the spectrum
- Two individual input ports



SAT-HD-ANALYZER

SPAROS SAT HD

- High quality and bright display (4.3 inch)
- MPEG4-display and measuring
- SCR single cable switching commands according to EN 50494
- DiSEqC control
- Spectrum analysis
- Robust, impact-resistant housing
- Splash-resistant keypad



Optical Transmitter

SOTx 1310607 NF

- Frequency range of 47 ... 2200 MHz
- Laser output power: +6 dBm
- Quattro- and QUAD-LNB support

Optical Receiver

SORx 1310607 NF and SORx 1310607/1 NF

- 4-way / 1-way receiver in a compact housing
- Remote powerable through one coaxial output

Naturally, we were only too eager to try that out and can confirm that cloud access works smoothly and flawlessly.

These days the Internet has become our constant companion, no matter whether it's the PC at home, laptop computer, tablet or smartphone on the go. We've become used to being online all of the time, every step of the way.

Following from this, it's only logical for Jiuzhou to add Internet functionality to its DTP2100 by implementing a fully-fledged web browser. It supports Javascript, loads web pages quickly and provides a range of practical features such as multi-window browsing.

It only takes a few commands from the remote control to switch between windows and you can even choose to save web content onto an external storage medium.

Websites you call up regularly can be moved to a favourites list and can then be called up with the touch of a button. Previously visited sites can be looked up again using the history function which logs all visited pages.

Apart from their brilliant implementation, all the features and functions we discussed so far are great to have, but can be found with other DVB-T receivers as well. It's the Android operating system that well and truly sets this product apart from its competitors.

Thanks to Android the DTP2100 has access to virtually all apps available on the Google Play marketplace, no matter if they come from multinational software giants or independent developers.

You select an app that seems right for you and download it to the receiver – that's all there is to it. Millions of apps are available that way, and while many of them have to be purchased there is also a substantial free offering.

Google Play can either be accessed directly from the receiver, or you may browse the marketplace on your PC at <http://play.google.com>.

As soon as you have found an app in the Google Play Store you simply press a button on the receiver's remote control for the download to begin. Installation is automatic so that you'll be

able to work with your new app in a matter of minutes.

Jiuzhou ships its Android receiver with a number of popular apps pre-installed, such as YouTube or Facebook, for example. So even by default you're all set for moving around in social networks. If you also want to use Twitter, Foursquare and similar services you'll find all of them in Google Play.

Some apps bring to the fore a minor drawback of the DTP2100 – as far as Android is concerned the receiver is regarded as a tablet, which means all apps downloaded from Google Play act tablet-like as well. This means some commands require screen gestures (swipes, pressing a certain area on the screen, etc.) which cannot be performed with the remote control of the DTP2100. The same is true for apps requiring a GPS signal.

Even though, we should not put all the blame on Jiuzhou. It seems that Google and many app developers were taken by surprise by the many different uses for the Android operating system. They are now addressing these issues and will surely adjust some of their

apps for receiver use. The pre-installed Facebook and YouTube apps, however, are not affected at all by this problem. Both access the respective online services quickly and reliably, and it was above all the YouTube app that truly impressed us.

Users can access their user account (if available) after providing their login data. It is possible to search and sort specific content, and if you want to upload your videos the app even provides that option as well.

The Facebook app is a similar treat that provides an extremely pleasing user experience. Not only does it allow you to follow your friends' timeline, but you can also use the message and chat features that you know from your PC or mobile device.

If you need to update your own status or would like to add photos or videos – just go ahead, the Facebook app supports all these functions flawlessly.

As far as apps are concerned, we discovered another handy tool for keeping on top of what might in time become a rather huge pile of different apps: With the OTT (On The Top) entry in the main menu you can identify apps you use most frequently and then have quick access to them without having to browse through all your other apps.

Before we come to our fi-



nal verdict we should like to give you a brief overview of the numerous configuration options that are available with this Android-based DVB-T receiver. On the one hand these deal with Internet and network access, and on the other hand we're talking about basic settings for language, screen resolution and app management.

While we did find the WLAN option in the network menu of the Jiuzhou DTP2100 we were unable to activate wireless Internet access during our test. When we looked at the hardware components inside the casing we could not detect a corresponding chipset or antenna either, which meant our test receiver had to go online via cable to our network.

As far as resolution is concerned the DTP2100 offers 576i and SECAM in standard definition, as well as 720p and 1080i in high definition. Unfortunately, 1080p is not available. The configuration options are complemented by language selection and date and time settings.

It is here in particular that it becomes evident how truly global Android has become, since you will find correct entries for almost all corners of the world.

Once apps have been installed on the receiver the operating system can be set to download updates as soon as they are available.

In addition, installed apps that are not required any longer can easily be deleted with a few commands sent from the remote control.

Obviously, users can factory-reset the receiver in case something goes wrong or if they want to have a fresh start with their box.

Even more helpful is the possibility to save all settings onto an external storage medium, which is something we genuinely appreciate. This way it only takes a couple of seconds to restore the entire system if worse comes to worst.

In a nutshell, we can conclude that combining a digital receiver with the Google Android operating system was a smart move by Jiuzhou. It seems to us that this is the way to go towards the future, and even for the manufacturer this decision comes with many advantages: Jiuzhou can focus on its core competence (DVB-T reception in this case), while Android covers all extra demands by users.

The Jiuzhou DTP2100 was the first Android receiver we ever tested, and we can only congratulate Jiuzhou on such a successful implementation of a groundbreaking idea.

Granted, there are some software tweaks that need to be looked at, but those are peanuts and can easily be rectified with one of the upcoming software updates.

Expert Opinion

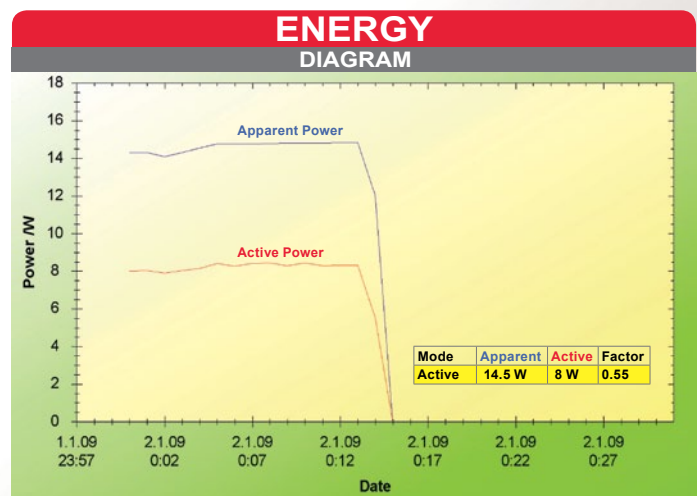
The Jiuzhou DTP2100 is a combination of rock-solid DVB-T receiver and endless possibilities offered by the Android operating system. Apart from flawless DVB-T reception, this product therefore shines with numerous multimedia features and allows installation and use of almost all apps available from the Googly Play marketplace. The build quality of the DTP2100 is excellent and its design will add an elegant touch to any TV rack. Thanks to 12V power supply this Android receiver is perfectly suited for mobile use as well, or any other place without a mains socket.

The labelling of keys on the remote control could be improved. No power supply for active antennas directly from the antenna socket.



Thomas Haring
TELE-satellite
Test Center
Austria

TECHNICAL DATA	
Manufacturer	Sichuan Jiuzhou Electric Group Co., Ltd. 6F, Jiuzhou Electric Building, Southern No. 12 Road Hi-Tech Industrial Park, Nanshan District, Shenzhen Guangdong 518057, China
Tel.	+86-755-26947128
Email	sales8@d-telemedia.com
Model	DTP2100
Function	DVB-T & Android STB
Input frequency DVB-T	177.5 - 226.5 MHz and 474 - 858 MHz
DVB-T2 compatible	no
HDTV support	yes (up to 1080i in MPEG-4 AVC/ H.264)
Input terminal	RF-type
HDMI	yes
CVBS, Stereo Audio	yes
S-Video	no
SD Card Reader	yes
Ethernet	yes
USB 2.0	yes (2x)
RS232	no
PVR Function	yes
Android Version	2.3.4 „Gingerbread“
Power supply	12V, 1.5A



15 minutes of active use with TV, Internet, recording, playback, etc., followed by 15 minutes in standby mode.

MORE ABOUT THIS COMPANY

www.TELE-satellite.com/11/03/jiuzhou



Horizon HD-T2

- *Comfortable channel scan that recognizes every usable broadcaster*
- *Capable of localizing 4G interference*
- *Measurement export function makes possible measurement protocols*
- *Long-life batteries*
- *Additional "Star" rating feature makes this instrument suitable for non-professionals*



HORIZON



One of the First DVB-T2 Signal Analyzers

The transmission of high-resolution channels (HDTV) using the classic terrestrial distribution method in DVB-T is only possible on a limited basis. Thanks to the sub-optimal bandwidth usage only a few HD channels can be broadcast on those few frequencies.

It's for this reason that DVB-T's successor DVB-T2 is gaining popularity in many countries: this standard guarantees not only the highest possible error correction and thereby a very small likelihood of interference in the transmitted signal, but also very efficient bandwidth usage allowing providers to achieve much higher data transmission rates on a single frequency.

It only makes sense then

that signal analyzer manufacturers have to keep pace with these developments and upgrade their products to the latest technology.

Horizon has once again taken charge and is one of the first companies in the world to market a DVB-T2 compatible signal analyzer.

Horizon has stayed true to form in terms of the appearance of this new signal analyzer; it resembles all of the other analyzers that have been made over the years.

It consists of a plastic housing 17 x 16.5 x 6 cm in size with a 5 x 2.5 cm LCD display (128 x 64 pixels) on the front side. Alongside the display are five buttons to operate the analyzer and an "F" jack on the front serves

as the DVB-T/T2 signal input (naturally the analyzer is also backwards compatible to DVB-T).

Power to the analyzer is supplied by two connections, one is a normal AC connection on the back of the analyzer that is rated for 100-240VAC, and the other is a 12VDC jack on the right side of the housing which can be used with the included cigarette lighter adapter. In this way you can use any power outlet with the HD-T2 as well as the power outlet in your car.

And while we're on the subject of power sources, obviously, power doesn't need to be connected while the analyzer is in use; it has an internal Li-Ion battery rated at 2.4 Ah that reliably powers the analyzer anywhere you need it.

The rechargeable battery is located on the underside of the unit and is easy to access behind a flap. This makes it simple to swap out the battery if needed or to completely remove the bat-

tery in case of longer periods of inactivity.

Thanks to this intelligent construction and the two charging methods, Horizon can virtually guarantee that the user won't wake up to a dead battery or run into any surprises while on the job.

And last but not least, there's also a USB interface for connection to a PC.

The analyzer needs about 2-3 hours for it to be completely charged. Before using it for the first time, Horizon recommends charging the HD-T2 at least for this time, perhaps one or two hours more if possible. This makes sure that the as-yet-unused battery can provide its full capacity.

At only 1200 grams (2.6 Lbs), the new Horizon signal analyzer is comfortably light and is delivered from the manufacturer in a black synthetic carrying case that can be fitted with a carrying strap also included in the package.

This allows the user to



ALIEN²

NEW

FULL HD HYBRID SET-TOP BOX WITH DUAL LINUX OS



AVAILABLE VERSIONS:



DIGITAL SET-TOP BOX

- ▶ Available in Triple Tuner Versions with Terrestrial+Cable Hybrid Tuner
- ▶ Two Conax Embedded Card Readers
- ▶ Spark and E2 OS simultaneously stored on the same receiver with easy switching
- ▶ HbbTV - Interactive Television
- ▶ WebTV - Watch Internet Streaming TV on your Television
- ▶ Multimedia Playback (MKV, AVI, MPG, FLV, MOV, WMV and much more...)
- ▶ File Sharing via Local Network
- ▶ Wired and Wireless Network Connection Support
- ▶ USB 3G Internet Modem Compatible

AND MORE!

- ▶ Spark Portal - Bringing Popular Internet Applications to your Television's Screen
- ▶ Watch and Download your Favourite YouTube Videos
- ▶ SHOUTcast - Access Hundreds of Thousands Web Radios
- ▶ Opera Web Browser (with Flash Lite)
- ▶ USB Wireless Keyboard & Mouse Support
- ▶ Online Subtitle Downloads
- ▶ Multi-Language Spark Online User's Manual and F.A.Q. videos
- ▶ Expandable Possibilities with Plug-In support
- ▶ Continuous Software Development and easy-to use Online Upgrades



SPARK PORTAL



- 1 **Shutdown** 0
Brightness 14
Contrast 20
Clicking off
▼For more
- 2 RF units dBµV
Squelch 39 dBµV
Attenuator Auto
►Sleep 10 mins
↕For more
- 3 **HD-T2**
Version 1.0.1 © 2012
Battery: 99%
Oesterreich
- 4 **Choose transmitter**
Full scan
►Short scan
Slope test
↕For more
- 5 Kahlenberg
►Reichenau-Raxalpe
Litschau
Horn-Eichberg
◀Exit ↕For more
- 6 Burgenland
Kaernten
►Niederoesterreich
Oberoesterreich
◀Exit ↕For more
- 7 786 MHz Ka. 60
S 51 dBµV
Q 100%
DVB-T2 Signal
- 8 786 MHz Ka. 60
M 23 dB
B 1.3e-4
DVB-T2 Error rate
- 9 786 MHz Ka. 60
***** Pass
0 errors/mbits
DVB-T2 Analysis
- 10 786 MHz Ka. 60
No offset SISO
QAM-16 16k G.I. 1/8
Network 0 Cell 0
DVB-T2 Transmission
- 11 786 MHz Ka. 60
QAM-64(R)
Code rate 3/4
DVB-T2 Active PLP
- 12 786 MHz Ka. 60

Ka. 60
- 13 786 MHz Ka. 60

Ka. 58 Ka. 60 Ka. 62
- 14 786 MHz Ka. 60

785.5 786 786.5
- 15
Ka. 60
786 MHz
DVB-T2
Active PLP
QAM-64R
- 16 **Spectrum (wide)**
Spectrum (narrow)
Constellation
►Log channel
◀Exit ▲For more
- 17 786 MHz Ka. 65
M 15 dB
B 5.6e-3
DVB-T2 Error rate
- 18 Oesterreich Ka. 65

DVB-T2 Manual scan
- 19 Oesterreich Ka. 24
498 MHz
Log 0008-02
DVB-T Log all
- 20 **Favourites**
List regions
List transmitters
◀Exit ▼For more
- 21 **Spectrum (channel)**
Spectrum (wide)
Spectrum (narrow)
Constellation
◀Exit ↕For more
- 22 Kahlenberg

MuxA MuxB
- 23 MuxA +0 dB
MuxB -7 dB
◀Exit ↕Ref = 60 dBµV
- 24 **Manual scan**
Attenuator Auto
►Antenna amp 5V
Spectrum analyser
↕For more

have both hands free while using the analyzer. Thanks to the synthetic carrying case, the HD-T2 is nicely protected from rain, sprinklers and dirt.

A Quick Start Guide leaflet as well as a detailed user manual describe in detail all of the new HD-T2's func-

tions. All in all, the shipping package and its workmanship left us with a very positive impression. Horizon has once again shown their dedication to quality.

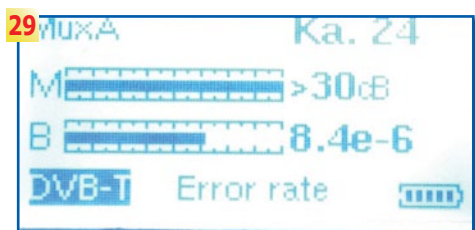
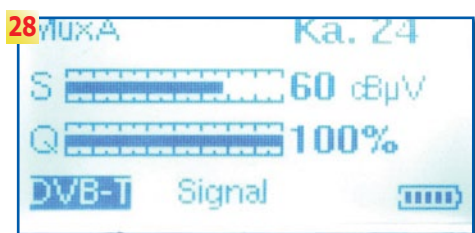
After powering it up, the background lighting for the perfectly readable display comes on that works great whether you're in a dark at-

tic or on the roof in bright sunshine.

The HD-T2 operates with a total of three labeled buttons (ON, OFF and OK) and two unlabeled buttons whereby four of them make up a cross and the OFF button does more than meets the eye. Holding down the OFF button with the analyzer turned

off brings up the configuration display. This method helps to prevent unknowing or accidental changes to the settings.

A multitude of settings capabilities are available in the configuration menu. It all starts with the brightness and contrast of the display,



1. HD-T2 Basic Settings

2. The Sleep Timer can help to prevent accidental discharging of the battery; the HD-T2 accepts incoming signals for measurement starting at 39 dBuV

3. The HD-T2's battery is fully charged, the frequency plan for the test location Austria has been loaded

4. HD-T2 Main Menu

5. Selection of available transmitter locations by means of frequency lists supplied by Horizon

6. You either select the broadcasting location directly from the entire list or you limit it to your own region

7. Measurement of a DVB-T2 signal (UHF channel 60)

8. MER and BER of a DVB-T2 signal

9. 5 stars signify an absolutely perfect signal

10. Technical details of a DVB-T2 signal; note the SISO label for Single Input / Single Output

11. The Physical Layer Pipe concept is being used on the currently

measured frequency as identified by the HD-T2 with the PLP label on the display

12. Spectrum display for UHF channel 60

13. Spectrum display for UHF channel 60 and also the adjacent channels

14. Detailed display of UHF channel 60

15. The constellation diagram shows a tight symmetrical example, the recipe for an interference-free signal

16. The Log Channel function stores the reception values of the currently selected frequency

17. One of our artificially generated DVB-T2 signals with a significantly attenuated signal level and also with errors introduced – the values displayed on the HD-T2 are correspondingly poor

18. In manual scan mode bars indicate improved orientation for the active frequency

19. The Log All function searches the entire frequency range and stores all of the reception parameters of any active frequency that is found

20. The Favorites function allows quick access to the most recently selected broadcasting location

21. Three spectrum modes as well as the constellation diagram are available

22. The Slope Test function displays both of the active DVB-T2 frequencies next to each other in bar graph form

23. The Slope Test function displays the signal levels of the two active DVB-T2 frequencies next to each other, the user can instantly see the difference in the signal levels

24. The HD-T2 can supply power to external antenna amplifiers with +5V or +12V

25. An artificial DVB-T2 signal generated by us is measured with perfect signal levels

26. Technical details of the artificial DVB-T2 signal we generated

27. Artificially induced errors in our signal did not bother the HD-T2 at all

28. Comparison measurement of UHF channel 24 with the HD-T2

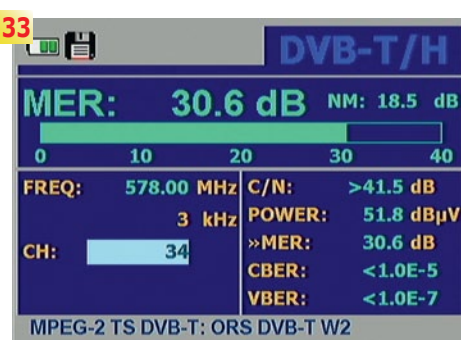
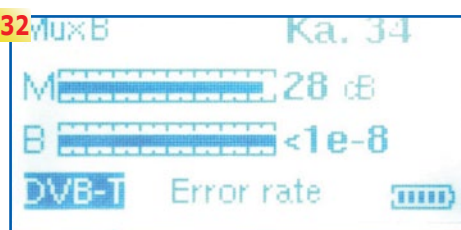
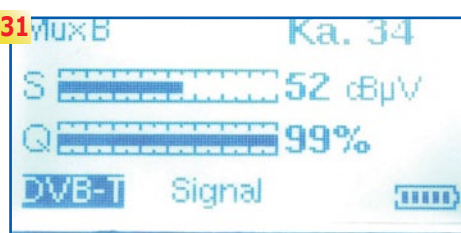
29. MER and BER of UHF channel 24 with the HD-T2

30. Comparison measurement of UHF channel 24 with a professional analyzer

31. Comparison measurement of UHF channel 34 with the HD-T2

32. MER and BER of UHF channel 34 with the HD-T2

33. Comparison measurement of UHF channel 34 with a professional analyzer



an audible confirmation tone with the push of every button and the selection of the desired signal level units (dBμV, dBmV, dBm) and goes all the way to setting a level at which the analyzer defines a signal as acceptable and attenuation settings that can be set to 10, 20 or 30 dB.

Ideally, the analyzer should be left in the factory-set Auto mode in which the HD-T2 automatically sets the optimal value. An integrated sleep timer that is settable between 1 and 30 minutes and can be activated if needed so as to prevent accidental draining of the battery if, for example, you should forget to turn off the analyzer

during a lunch break.

In order to make the HD-T2 attractive to as many users as possible, Horizon made the OSD display available in 12 different languages.

Once we set up all of the settings exactly the way we wanted to, we could hardly wait to start using the HD-T2. In no time at all we had the analyzer connected to our VHF/UHF antenna on the roof of our test center and with excited fingers we pressed and held the "ON" button until the HD-T2 came to life.

Unlike signal reception via satellite, the DVB-T/T2 frequencies for a given programme are completely different for each regional transmitter (exceptions to



this are countries with a single frequency network – SFN) so that the same broadcaster, for example, in southern Austria transmits on a different frequency, say, in eastern Austria.

But Horizon was fully aware of this anomaly with DVB-T/T2 reception and provides prefabricated frequency plans for various regions of the world. These frequency plans, for example, for Ireland, Italy, Great Britain, The Czech Republic, Poland, Denmark, Germany, Australia, South Africa, Austria, etc., are available from Horizon's website www.horizonhge.com and are easily loaded onto the analyzer through its USB port.

We'll explain more about this later, but for now suffice it to say that these lists can be transferred from a PC to the HD-T2.

Through the first menu selection "Choose Transmitter", the user has access to precisely this frequency data from which either the desired region is first selected and then the local broadcasting location or the DVB-



T/T2 broadcasting location is selected directly from the entire list. For Great Britain, users can even choose their reception region by entering in their local postal code; it's a feature that is not yet available for other regions of the world.

You might be asking yourself right now why all of this work to select a desired broadcasting region is even necessary. The answer is actually quite simple: it saves you a lot of time and effort! In addition to a complete frequency scan and a manual frequency scan, the HD-T2 also has the ability, thanks to the preprogrammed frequency data, to perform a quick scan in which only the

active frequencies in a region are actually read and processed.

Because of this, an installer won't need to have a frequency table with him during an antenna installation and can instead rely on the information stored in his signal analyzer.

A complete frequency scan starts at the lower end of the VHF band and ends at the upper end of the UHF band. In manual frequency scan mode the user simply needs to select the desired transmission mode (Analog, DVB-T or DVB-T2) and then the desired frequency. A spectrum overview makes the selection easier and identifies with a bar graph

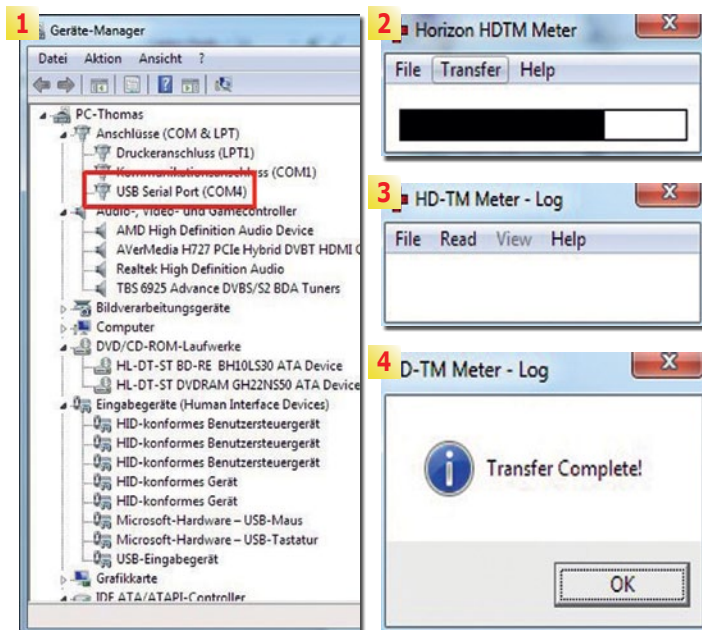
which frequencies at what signal level in the VHF and UHF bands are actually active and for which it would make sense to run a scan.

In complete and quick scan modes, the analyzer stops automatically at every active frequency, emits a short confirmation tone and begins to analyze the frequencies just identified as active.

Shortly thereafter, the name of the broadcaster appears on the screen (assuming of course if a matching frequency plan was previously uploaded into the analyzer) and shows at the bottom of the display whether the signal is analog, DVB-T or DVB-T2.

With the help of the "ON" button the user can now page through the various measurement results which includes the signal level, signal quality, the MER (Modulation Error rate), the BER (Bit Error Rate) as well as some basic signal information such as the name of the Mux, the modulation in use, symbolrate and FEC.

For those less experienced users, Horizon included a five-star signal rating feature where one star represents the weakest signal and five stars the strongest signal. All of these measurement results are, of course,



1. The HD-T2 is recognized by Windows via the USB serial port; the necessary drivers are automatically installed
2. New frequency tables are always made available in .exe format. The user simply has to start the program and then click on "Transfer". In just a few seconds the files on the PC are transferred to the analyzer
3. The HD-T2 Log Reader works very simply: just connect the analyzer to the PC, start the Log Reader and then click on "Read"
4. The data was successfully transferred
5. The Logger data stored in the analyzer is displayed on a PC in an organized manner and can easily be exported

5 g Entries

Seq Num	Frequency	Channel	Spec	Mux	Status	Quality	dBuV Vid. Pwr	dBuV Aud. Pwr	Mode	PLP Mode	dBuV Dig. Pwr	MER/CN	BER
0001-01	498000000	Ka. 24	DVB-T	MuxA	PASS	***			QAM16		61.55	> 30.0	2.90E-007
0001-02	578000000	Ka. 34	DVB-T	MuxB	PASS	***			QAM16		52.55	29.5	3.00E-008
0002-01	498000000	Ka. 24	DVB-T	MuxA	PASS	***			QAM16		61.45	> 30.0	4.60E-007
0002-02	578000000	Ka. 34	DVB-T	MuxB	PASS	***			QAM16		52.55	29.5	2.00E-008
0003-01	498000000	Ka. 24	DVB-T		PASS	***			QAM16		61.45	> 30.0	5.80E-007
0003-02	578000000	Ka. 34	DVB-T		PASS	***			QAM16		52.55	> 30.0	2.00E-008
0003-03	786000000	Ka. 60	DVB-T2		PASS	***			QAM16	QAM64	49.5	22.6	4.65E-004
0003-04	826000000	Ka. 65	DVB-T2		POOR	**			BPSK	QAM64	44.95	16.1	4.12E-003
0004-00	498000000	Ka. 24	DVB-T	MuxA	PASS	***			QAM16		60.85	> 30.0	3.20E-007
0005-00	578000000	Ka. 34	DVB-T	MuxB	PASS	***			QAM16		52.35	> 30.0	1.00E-008
0006-00	786000000	Ka. 60	DVB-T2		PASS	***			QAM16	QAM64	50.35	23.4	2.38E-004
0007-01	498000000	Ka. 24	DVB-T	MuxA	PASS	***			QAM16		60.45	> 30.0	1.00E-008
0007-02	578000000	Ka. 34	DVB-T	MuxB	PASS	***			QAM16		53.45	> 30.0	1.00E-008
0008-01	505000000	VHF 2	PAL-B				40.65	36.95				5.1	
0008-02	498000000	Ka. 24	DVB-T		PASS	***			QAM16		60.35	> 30.0	3.00E-008

Export (.csv) Close Show dBuV



available for the manual, automatic and quick scans.

We also found the Favorites function very practical. It lets the user store more popular broadcasters

in a dedicated list allowing the user to access them more quickly. This greatly simplifies the work of an installer.

Also worth mentioning is

the fact that the HD-T2 in DVB-T2 mode can also read the service parameters of a frequency so that, for example, Single Input / Single Output is identified with the label SISO, Multi Input / Single Output is labeled with MISO and if the Physical Layer Pipe concept is being used, the label PLP appears.

The IQ Swap function, that is data streams with exchanged vectors, is also quite new. If this function is activated in the HD-T2, the

scan will take a little longer.

By the way, IQ Swap is used in only very few regions.

In Spectrum Mode, the HD-T2 can provide an overview of the selected frequencies; Horizon has integrated a total of three display modes: Spectrum Channel, Spectrum Wide and Spectrum Narrow.

In Spectrum Channel mode the currently selected channel is presented in

ANDROID PLUS LINUX

DUAL SYSTEM IP STB



S1-44HD

Android+Linux Dual OS IP STB

- Fully compliant with DVB-S and DVB-S2 (MPEG 2/ MPEG 4 / H.264)
- Common Interface available and Smart card slot for embedded Conax CAS
- LINUX for digital TV reception and ANDROID for IPTV, DUAL OS/DUAL Boot
- Up to three USB 2.0 available for media playing, software update and PVR
- Built-in WIFI modem and support external WIFI adaptor and 3G adaptor
- Auto-Timeshift supported with external hard drive disc
- Real PIP function supported (2 HD channels or 4 SD channels playing at the same time)
- File system supported: FAT, FAT32, NTFS, Ext2, Ext3
- Divx Plus @ supported
- DLNA supported

LED TV | 3D TV Google TV



Digital Combo Signal Meter

- DVB-S2, DVB-T2/T and DVB-C signal meter in one
- High performance spectrum analyzer to display the signal strength of all transponders
- Pre-/ Post-BER and MER indicator, C/N in the dB and signal level in dB/μV
- Constellation analyzer
- Screenshot Function (Capturing): screens with data can be in BMP format on a USB-stick
- Super ECO system management for power saving, auto-standby function supported
- Multi-lingual OSD menu supported
- Weight: 480 grams
- Dimensions: (W*H*D) 105*170*45 mm

relatively full-screen mode in the center of the display and Spectrum Wide displays a large segment of the entire spectrum.

Spectrum Narrow shows a small segment of the spectrum around the desired frequency. The spectrum display is refreshed at a fast enough rate so that it can easily be used during the alignment of an antenna. It includes the FM and DAB bands as well as the VHF and UHF bands.

The HD-T2's constellation diagram display turns out to be especially useful when trying to track down the source of interference signals such as those that might be generated by 4G data connections. You can recognize at a single glance whether the form of the displayed signal is regular and tight or if it's a disturbed, irregular signal display as the result of external interference. The pictures in this test report show a clean and well received signal in the constellation diagram.

We also like the fact that the HD-T2 can also power external antenna amplifiers with +5V or +12V; a feature that all too many other

manufacturers forget to include but that always seems to create an unnecessary and avoidable problem for installers.

The Logger function is an absolute highlight of this analyzer especially for those professional users that have to submit a report of their work. It can optionally provide the signal measurement values of all the active frequencies and then performs an automatic scan across the entire VHF/UHF band for analog, DVB-T and DVB-T2 signals or lets the user manually select a frequency whose signal parameters then end up in the HD-T2's memory.

With the help of special Windows software (HD-T2 Log Reader), this information can be transferred to a PC where it can be saved, exported or printed out.

And if, for example, the installation involves distributing the signal to multiple users, the installer can check the signal levels at all the endpoints (such as at wall outlets) and present an Excel table as proof of his excellent work.

Professional installers will

definitely appreciate the Slope Test function in the HD-T2 when it comes to the installation of more complicated systems with multiple users and lengthy cable runs.

If the signal varies due to multiple amplifiers and splitters or if there are longer cable runs with less than adequately shielded cable, this could lead to a sloping signal level within the frequency range to be carried. That is, higher frequency signals could be more attenuated and lower frequency signals could be less attenuated ultimately leading to reception problems in the higher frequency ranges.

With the help of the Slope Test function, this type of problem can instantly be recognized. The analyzer utilizes the frequency plan selected in "Choose Transmitter" and displays the signal level values of all the frequencies in the plan next to each other. The HD-T2 calculates the signal level difference between the currently selected frequency and all the other active frequencies. This lets the user see at a single glance the extent of the signal level difference.

The pictures in this test report show an acceptable difference is signal level of just a few dBμV.

Thanks to the USB interface on the side of the HD-T2, the user can easily link the analyzer to a PC so that new frequency lists and updated firmware can be uploaded.

This interface can also be used to transfer stored Logger data back to a PC for further processing. The necessary drivers to establish this link are available directly from Microsoft for all Windows versions and integrated into the operating system. All that's needed is to connect the analyzer to a free USB port on the PC and to allow Windows to automatically find the necessary drivers.

If for some reason the drivers are not installed automatically, they can also be loaded manually from the Internet via Horizon's website www.horizonhge.com as can the HD-T2 Reader software and any new firmware. This is especially important since Horizon is constantly at work further developing their products and regularly releases new versions to

Sequence	Frequency	Channel	Specification	Multiplex	Status	Quality	Video Power dB	Video Power dBμV	Audio Power dBm	Audio Power dBμV	Mode	PLP Mode	Digital Power	Digital Power	MER/CN	BER
0001-01	498000000	Ka. 24	DVB-T	MuxA	PASS	*****					QAM16		-47.2	61.55	>30.0	2.90E-007
0001-02	578000000	Ka. 34	DVB-T	MuxB	PASS	*****					QAM16		-56.2	52.55	29.5	3.00E-008
0002-01	498000000	Ka. 24	DVB-T	MuxA	PASS	*****					QAM16		-47.3	61.45	>30.0	4.60E-007
0002-02	578000000	Ka. 34	DVB-T	MuxB	PASS	*****					QAM16		-56.2	52.55	29.5	2.00E-008
0003-01	498000000	Ka. 24	DVB-T		PASS	*****					QAM16		-47.3	61.45	>30.0	5.80E-007
0003-02	578000000	Ka. 34	DVB-T		PASS	*****					QAM16		-56.2	52.55	>30.0	2.00E-008
0003-03	786000000	Ka. 60	DVB-T2		PASS	*****					QAM16	QAM64	-59.7	49.5	22.6	4.65E-004
0003-04	826000000	Ka. 65	DVB-T2		POOR	**					BPSK	QAM64	-63.8	44.95	16.1	4.12E-003
0004-00	498000000	Ka. 24	DVB-T	MuxA	PASS	*****					QAM16		-47.9	60.85	>30.0	3.20E-007
0005-00	578000000	Ka. 34	DVB-T	MuxB	PASS	*****					QAM16		-56.4	52.35	>30.0	1.00E-008
0006-00	786000000	Ka. 60	DVB-T2		PASS	*****					QAM16	QAM64	-58.4	50.35	23.4	2.38E-004
0007-01	498000000	Ka. 24	DVB-T	MuxA	PASS	*****					QAM16		-48.3	60.45	>30.0	1.00E-008
0007-02	578000000	Ka. 34	DVB-T	MuxB	PASS	*****					QAM16		-55.3	53.45	>30.0	1.00E-008
0008-01	505000000	VHF 2	PAL-B				-68.1	40.65	-71.8	36.95					5.1	
0008-02	498000000	Ka. 24	DVB-T		PASS	*****					QAM16		-48.4	60.35	>30.0	3.00E-008

■ An Excel table with the Logger data from our HD-T2 test analyzer

Expert Opinion



Thomas Haring
TELE-satellite
Test Center
Austria

Reacts very quickly to signal changes, processes DVB-T, DVB-T2 and analog signals. Its ease of use, low weight and practical carrying case makes it a joy each time to use the HD-T2. Thanks to the constellation diagrams, interference signals can easily be identified; with the help of the complete scan and the spectrum display even frequencies that were up until then unknown could be identified, read and processed. The Logger function makes possible the creation of a complete measurement protocol while the Slope test helps in the identification of sloping signal levels.

None

take care of any bugs as well as add new features.

In our tests, the HD-T2 was recognized without any problems by our Windows 7 test PC and after only a few seconds was linked to our PC. Horizon makes new frequency tables and firmware available in .exe format so that the user merely has to start the .exe file and then click on the "Transfer" button – it really doesn't get any easier than this.

We set up a total of three test scenarios for the HD-T2: the first was an adjustment of a UHF antenna, the second was the measurement of DVB-T and DVB-T2 signals that we generated using a modulator and thereby were able to induce corresponding error bits, the third was comparison measurements of analog and DVB-T signals using an analyzer from another manufacturer.

Adjusting a UHF antenna with the HD-T2 was a simple as it could be; thanks to the preprogrammed frequency lists we were able to find the right broadcaster for our location in just a very short time and with the help of the very sensitive signal parameter measurement the antenna was set to its optimal position in no time at all.

We were then able to identify all the DVB-T and DVB-T2 signals; even a weak DVB-T2 test signal from the Austrian ORF, that up until then we didn't know about, came into view.

Thanks to the sensitive input of the tuner, even small changes to the antenna position were instantly registered on the HD-T2 making it very easy to optimally position the antenna.

Next we modulated a DVB-T2 signal with a total of four

HD channels on a UHF carrier frequency and fed this to the HD-T2. Even as we intentionally deteriorated the signal, it did not affect the new Horizon analyzer; it continued to show the correct and appropriate measurements – even the star ratings given by the HD-T2 became less and less until finally only one star remained.

Last but not least, we were especially curious how the HD-T2 would compare to another professional signal analyzer. Since this other analyzer could only process DVB-T signals, we could not perform this comparison test with DVB-T2 signals.

As you can see with the pictures accompanying this test report, the measured signal levels are virtually identical. This speaks highly of the quality of the Horizon-built tuner and complements the exceptional impression that we received from this analyzer.

Even the transferring of the Logger data stored in the analyzer functioned without any problems. It was really fun using the HD-T2, especially the exporting of data in CVS format, and thus to MS Excel, is an extremely practical feature.

In conclusion we want to congratulate Horizon on another superb product that bolsters the reputation of the company. The HD-T2 has all the functions that a professional installer would expect, is exceptionally easy to use and at only 1200 grams (2.6 Lbs) is very lightweight.

Thanks to the powerful battery the HD-T2 can be used uninterrupted for up to six hours along with its external power sources.

In our tests the HD-T2 proved itself many times over.

TECHNICAL DATA

Manufacturer	Horizon Global Electronics Ltd, First Floor Office Allen House, Edinburgh Way, Harlow, Essex CM20 2HJ, United Kingdom
Tel.	+44-1279-417005
Email	sales@horizonhge.com
Model	HD-T2
Function	Digital Meter for Analogue, DVB-T and DVB-T2 Signals
Input frequency	48 - 862 MHz
DVB-T2 compatible	yes
Modulations	QPSK, 16-QAM, 64-QAM, 256-QAM
Carriers	DVB-T: 2k/8k DVB-T2: 1k, 2k, 4k, 8k, 8k+Ext, 16k, 16k+Ext, 32k, 32k+Ext
Guard Intervals	DVB-T: 1/4, 1/8, 1/16, 1/32 DVB-T2: 1/4, 19/256, 1/8, 19/128, 1/16, 1/32, 1/128
Code Rates	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-T2: 1/2, 3/5, 2/3, 3/4, 5/6
Bandwidth	5, 6, 7 and 8 MHz
PLP Mode	SISO / MISO
PLP Constellation Rotation	Automatic and indicated with (R)
Display	128 x 64 Pixel
OSD Languages	English, French, German, Italian, Spanish, Dutch, Polish, Swedish, Danish, Norwegian, Croatian, Finnish
RF-Input	F-Type (75 Ohm impedance)
USB Port	yes
Power supply	100-240V AC, 12V DC
Battery	2.4 Ah Li-Ion

MORE ABOUT THIS COMPANY

www.TELE-satellite.com/TELE-satellite-1111/eng/horizon.pdf

Happy Birthday HORIZON!

Company Report
Horizon Global Electronics Ltd, Great Britain

- Manufactured 125,000 analyzers in their first 10 years
- Expanding into the High End Range
- Provided the right products for the worldwide cable TV market with their DVB-C signal analyzers
- CEM expansion with strong distribution partners
- High technical know-how through the nearby university

Panodinic HDS275



- *Small receiver with small remote control*
- *Optimized menu guidance with very few settings*
- *Works with BlindScan*
- *Easy channel list administration*
- *Ability to turn on the receiver to a specific channel*



PANODIC
Digital World, Simple Life

A Small but Nice HDTV Receiver

With its slim dimensions of only 27 x 16 x 4.7 cm, the Panodic HDS275 will easily fit into any TV environment; thanks to its plain black cabinet it blends in nicely with the background.

The front panel shines in its simplicity and, in addition to a segmented display that shows the current time or the currently selected channel number, it sports six buttons that can be used to control the receiver without the remote control. A status LED that switches between green and red indicates to the user the current operational status of the receiver (red = standby, green = on).

Hidden behind a flap is a CI slot for use with PayTV services; it can accept all the standard CI modules (for example, Irdeto, Viaccess, Conax, etc.).

Unlike most other modern receivers, the HDS275 comes with a Scart connector for use on older TVs. Of course, all the other connections you'd expect to find are all there: HDMI, YUV and CVBS outputs are all available. The audio output is available on a coaxial digital audio output as well as on two analog RCA outputs.

Since the HDS275 is a DVB-S/S2 receiver, there's also the typical IF tuner input along with its associated looped-through output as well as a USB 2.0 interface

that can be used to turn the receiver into a PVR if it's connected to an external USB storage device.

The remote control included by the manufacturer, just like the receiver, is very small and the pressure points for the buttons are clearly marked. The arrangement of the individual functions at first glance might seem a little unorganized, but you should get used to it after a short time.

The Panodic HDS275 is not only small on the outside, it's also 'small' on the inside. The installation assistant that appears the first time the receiver is turned on only offers three choices: time, language and channel scan.

Because of this the installation is completed very quickly. The first two options take no time at all. As is typical, the HDS275 can also automatically set the internal clock directly from the incoming satellite signal.

For the language selection option, the Panodic offers a representative cross-section of all the more important European languages.

It gets more exciting in the Channel Scan menu. Panodic included a preprogrammed list of 24 satellites and corresponding transponders. Unfortunately, this list is not all that up to date. However, we did like the wide variety of settings capabilities to match

the receiver with your antenna. The HDS275 supports the DiSEqC 1.0 and 1.1 protocols and can therefore be used on antennas with up to 16 LNBs.

Thanks to the individually settable LOF, the receiver is compatible with C-band and Ku-band antennas as well as any other type of reception system. Panodic even thought about those users with SCR single-cable solutions and offers the necessary parameters for that kind of setup.

The manufacturer was very successful in the implementation of the channel scan's graphical presentation; it is available in transponder, single satellite, multi-satellite and blind scan modes.

The regular scan of HOT-BIRD at 13° east found 1498 TV channels and 394 radio channels in a reasonable eight minutes. A BlindScan of the same satellite resulted in 1466 TV channels and 390 radio channels in 12 minutes; it needed a little more time and found fewer channels

than the regular scan using preprogrammed transponders.

The main menu of the HDS275 is divided into six categories (Installation, Channel, Preference, Setting, AV and Game) and is very nicely arranged.

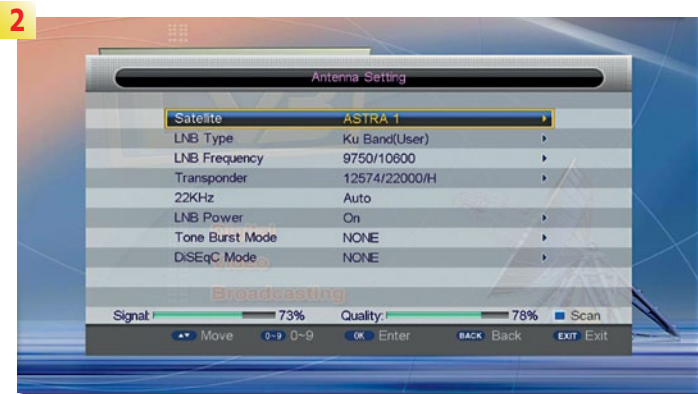
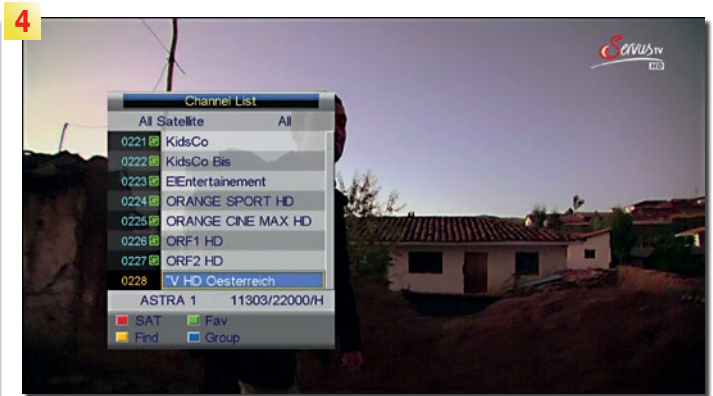
The Installation section takes you to the reception settings and the search for new channels. Compared to the initial installation assistant, it also provides the ability to drive DiSEqC 1.2 and 1.3 motorized antennas.

From here the user can also modify and expand the preprogrammed satellite and transponder lists as they see fit. It's a feature that we were happy to play around with.

The Channel section is totally dedicated to editing the channel list. With nearly 2000 channel entries added by our test scan of the HOTBIRD satellite, it's a feature you really can't do without. With the help of the colored function buttons on the remote control, individual channels



PANODIC
Digital World, Simple Life

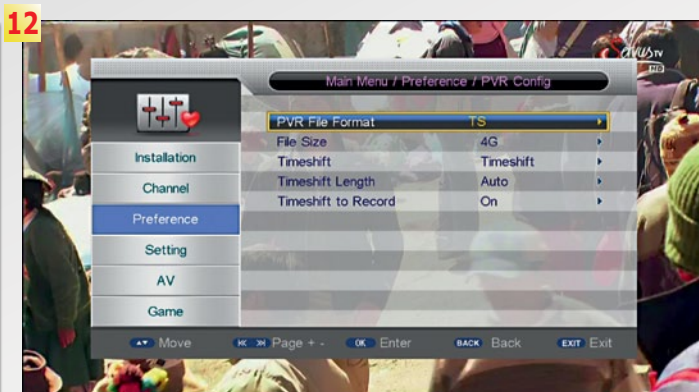


can be deleted, moved and renamed as well as sorted alphabetically, by FTA/CAS or CAS/FTA. This makes it very easy for the user to organize the nearly 4000 possible entries in the channel list.

Panodic also kept in mind that kids might be in the household; individual channels can be locked out with a PIN code to keep those curious eyes from seeing something they shouldn't.

1. Panodic HDS275's initial settings
2. Antenna settings
3. Channel scan on HOTBIRD
4. Channel list
5. The Info bar shows the content of the current program but not the next program
6. Main Menu





- Satellite and transponder data can easily be edited
- Even the DiSEqC 1.2 and 1.3 protocols are supported allowing the control of motorized antennas
- The user can match the channel list to his personal tastes in the Channel Manager
- The Boot on Channel Option lets the receiver always start with a predefined channel
- Language settings
- PVR settings
- In addition to a video resolution of 720p, resolutions up to 1080p are possible
- Five integrated video games pass the time during commercial breaks
- Integrated Teletext decoder

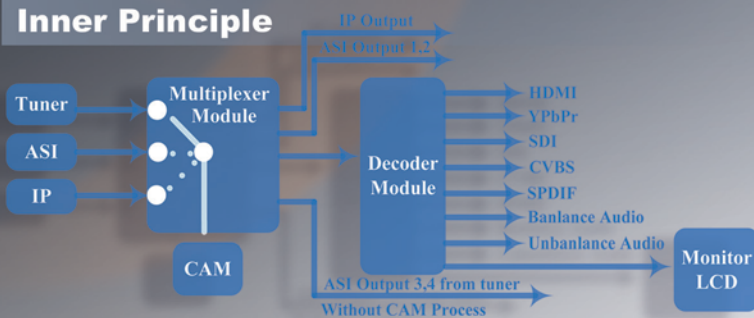


NDS3975 DVB-S2 HD IRD

New design IRD with video monitor LCD equipped on the front panel



Inner Principle



Key Features

- Various tuner available
- MPEG-2 & MPEG-4 decoding
- Re-multiplexer embedded
- Supports Tuner, IP, ASI Input at the same time
- Supports IP, ASI, Decoding output at the same time
- Supports CAM card insert (CI/CI+)
- Supports Front Panel and NMS Operation
- Support 10xSPTS output

NDS3402-C DVB-S2 Modulator

High performance modulator developed according to DVB-S2 (EN302307) standard



Key Features

- Backwards-compatible with DVB-S (EN300421) modulating standard
- Two ASI inputs supporting hot backup
- Supporting local and remote control
- Output level attenuation
- 10MHz outer reference clock input
- Output frequency range: 950~2150MHz
- Coupling output: 24V/4A DC optional
- Coupling output: 10MHz reference clock optional

www.dsdvb.com



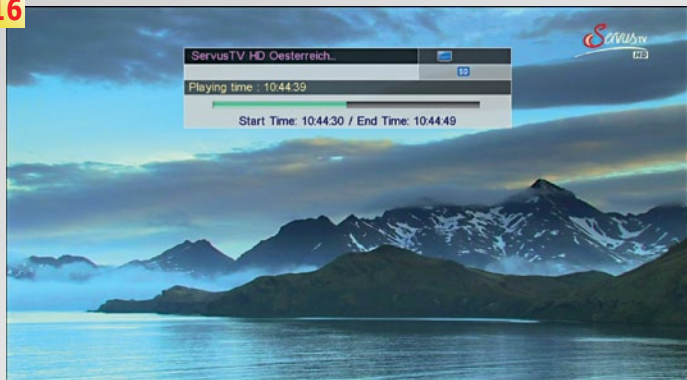
Dexin Digital Technology (Chengdu) Co.,Ltd

No. 10 and No. 12 Wuxing Fourth Road, Wuhou District, Chengdu 610041, Sichuan, China

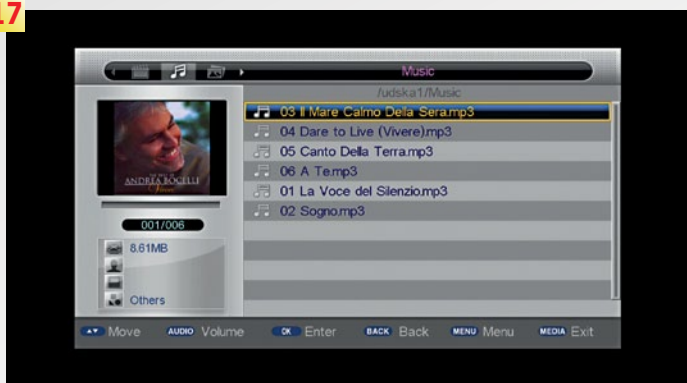
Tel: +86-28-85558928, +86-28-85550524, +86-13882088846 ■ Fax: +86-28-85585255

<http://www.dsdvb.com/english> ■ E-mail: sunyu@dsdvb.com

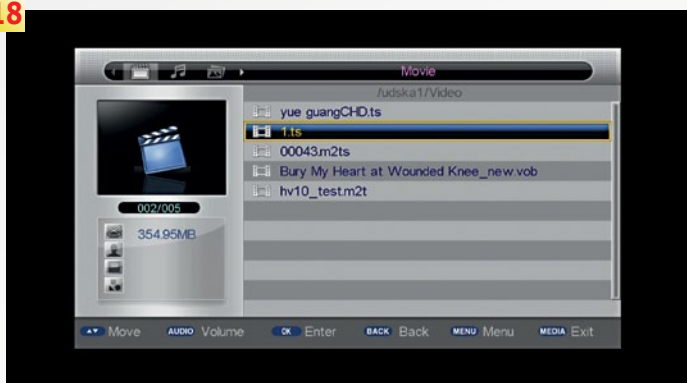
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There are also eight freely loadable Favorites lists that round out our overall positive impression of the channel list editing capabilities of the HDS275. In this way, every family member can set up their own Favorites list with their favorite channels.

In addition to typical settings such as OSD language and time, the Basic settings menu also comes with some interesting extras.

One of those is the 'Option Boot on Channel' setting that lets you program the receiver to go to a specifically defined channel every time the receiver is turned on and not just the channel that was last viewed. Not only that, you can also select the maximum size of any recorded data (1,2,3,4 GB or Unlimited). It lets you elegantly bypass that problem of maximum 4GB file sizes in FAT32 formatted storage devices.

As far as PVRs go, the HDS275 shines; in addition to standard PVR functions, the Panodic can also automatically add an already started recording to the Timeshift cache memory. The size of the Timeshift can also be adjusted by the user.

Before closing the main menu and watching TV, the user should take one more look in the Settings menu. Since the receiver supports resolutions via HDMI in 480p, 480i, 576p, 576i, 720p, 1080i and 1080p modes, it is capable of providing full HD signals to modern TVs.

All of these settings capabilities are further enhanced

by an Auto-standby function that can be automatically activated after a user-settable one, two or three hours and by the individual adjustment of contrast, brightness, saturation and color tone of the displayed video signal. After our extensive excursion inside the new HDS275's menu structure, it was finally time to have a closer look at this receiver's everyday operation.

A push of the OK button on the remote control displays, just like with almost any other receiver, the channel list. The channel list with the HDS275 is presented in a nicely organized fashion and can be limited to only FTA or CAS channels.

We also liked the running ticker used for lengthy channel names. In this way you can see the entire name of a channel instead of just the first set of characters that happen to fit. Channel surfing is a pleasure with the HDS275; less than one second is needed to switch between channels. With the picture and audio quality there was also nothing to complain about but we really didn't expect any less from Panodic.

Thanks to the receiver's 128 MB main memory and its 4 MB Flash memory, the receiver reacts very quickly to commands from the remote control. After switching to a new channel, an Info bar appears momentarily at the bottom of the screen providing data on the current program but not the next program.

Aside from that, the Info bar also shows other typical data such as the current time and the encryption method used. To get an overview of the currently available programs, a simple push of the EPG button on the remote control is needed to display all the programming information from the provider. The display of the EPG can be

16. HD channels can easily be recorded

17. The MP3 player can also process and display cover art

18. The integrated media player supports all the common formats

19. The media player can also play back full HD videos without any problems

20. The channel list can be limited to individual satellite entries

Professional satellite dish & LNB manufacturer



Marine Antenna



Mobile Antenna



KU 60



KU 60



KU 75



KU 75



KU 90



TQU11



TTU11



TSU11



T8U11



TQU13



TSU13



TQB11



TSB11

Ningbo Senfu Machinery & Electric Manufacturing Co. Ltd.

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Fax: +86 574 82815263

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www.topsignalsat.com

either a grid showing seven channels or it can be limited to the complete EPG display of a single channel. Naturally, timer entries can be programmed directly from the EPG. This helps to guarantee that you won't miss that blockbuster movie or that next installation of your favorite TV series.

A total of only ten timer entries can be filled; it would be nice if the manufacturer could improve this number to 20 entries or perhaps even more.

As soon as an external storage device is connected via the USB 2.0 port, the receiver can begin recording SD as well as HD channels. During a recording, the channel list is reduced to the number of available channels and since the receiver only has one tuner, it would be those channels that are on the same transponder. While it's not possible to record two channels at the same time, it will quite happily record one channel and let you watch

another channel live. It will also let you watch a prerecorded program while recording another program.

Overall we thoroughly enjoyed the PVR features. But there's more. As you would expect with any namebrand receiver, the Panodic box uses the attached storage device to not only record and play back TV and radio programs, it also serves as the storage device for the MP3 jukebox, the picture viewer and the media player.

All of these functions were conceived by Panodic with great detail. The MP3 player, for example, can automatically recognize integrated cover art for a song and then display it. The media player supports the DivX (AVI), VOB, MPEG and TS formats and can also process full HD content effortlessly.

As is standard during our tests, the HDS275's tuner, a Sharp S7HZ7306A, also had to undergo strenuous tests such as with narrowband SCPC signals like those on

TURKSAT at 42° east as well as relatively weak signals like those on BADR at 26° east that flirt with the threshold level of the receiver. In both cases the HDS275 was able to handle the requested tasks and left us with a very favorable impression. SCPC reception was interference free starting at 2.0 Ms/sec. and signals with a C/N of 5 dB could be displayed without any large dropouts.

The HDS275 is further supplemented by an integrated teletext decoder (that also functioned correctly in our tests) as well as five video games (Box Man, Tetris, Hit

Rat, Go Bang, Sudoku) to help pass the time during those long commercial breaks. Since the manufacturer is constantly at work improving the HDS275's software, any updates that become available can be uploaded into the receiver either via the external storage device or directly via satellite.

All in all, we had a lot of fun putting the Panodic HDS275 through the ringer. It is another excellent example of a successful concept that in this case involves not only the miniaturization of the receiver and remote control, but also its menu operation.

Expert Opinion

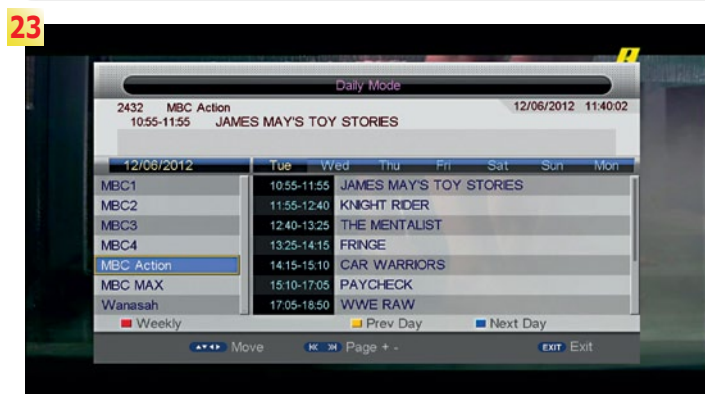
Living room compatible receiver with all the necessary everyday features. Stable and sophisticated software that functions without any problems.

The Info bar should show the EPG data from the current and upcoming program.



Thomas Haring
TELE-satellite
Test Center
Austria

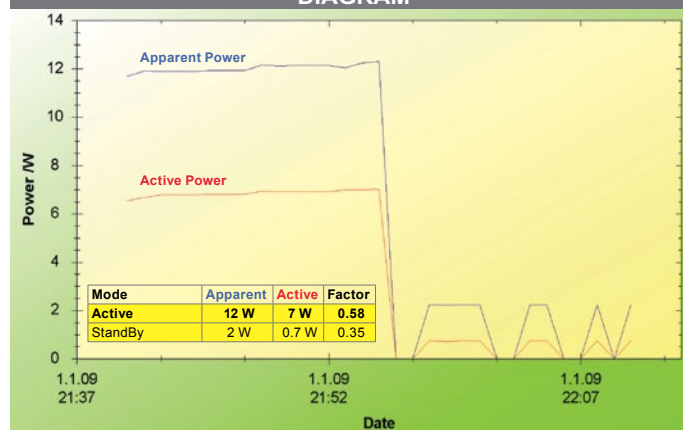




TECHNICAL DATA

Manufacturer	Panodic, 12/F Grentech Building, Keji C Road 3rd, Nanshan, Shenzhen 518057, China
Contact	www.panodic.com/Contact.aspx
Internet	www.panodic.com
Model	HDS275
Function	DVB-S / DVB-S2 Receiver
Input frequency	950-2150 MHz
Supported standards	DVB-S, DVB-S2, QPSK, 8PSK
SCPC	yes (> 2 Ms/s)
EPG	yes
Video resolution	480p, 480i, 576p, 576i, 720p, 1080i, 1080p
RS232	no
Ethernet	no
USB 2.0	yes
HDTV	yes
MPEG4/H.264	yes
Supported OSD languages	English, French, German, Spanish, Italian, Greek, Portuguese, Russian, Dutch, Czech, Swedish, Turk

ENERGY DIAGRAM



The first 15 minutes in active operation with channel switching, PVR recording and playback; the second 15 minutes in standby mode.

MORE ABOUT THIS COMPANY

www.TELE-satellite.com/12/03/panodic



21. One of the multiple audio tracks can be selected

22. EPG overview of a total of seven channels

23. The complete programming guide of a channel



Satlink WS-6936

-
- *suitable for measuring DVB-S and DVB-T signals*
 - *integrated blind scan for satellite signals as special treat*
 - *can be used as receiver as well, if required*
 - *suitable for alignment of motor-controlled antennas*
 - *very precise presentation of measuring results*



The 'One-Stop' Meter

When it comes to launching signal meters, most manufacturers have always opted for one of the following two marketing strategies: Either the meter is particularly small and easy to carry along, with only a limited range of features in exchange, or it is fully-fledged with a corresponding size and weight. Baotong engineers have embarked on a path towards a third category: small and packed with features. The Satlink WS-6936 is the outcome of all their efforts, and we have taken a closer look at how it performs with everyday jobs.

The meter measures 12.5 x 20.5 x 4.5 cm and only weighs 0.66 kg, yet it is so much more than only a

meter. Baotong has even packed a fully-featured DVB-S/DVB-T combo receiver into such a small device.

Thanks to its size and ergonomic shape the Satlink WS-6936 sits nicely in your hand, with a foldout pedestal assisting use and readability on flat surfaces.

The meter is wrapped with a bright yellow protective rubber shell which – in combination with the included water-repellent carrying bag – keeps out dust, dirt and moisture and protects the device from damage during regular use. The carrying bag comes with a convenient strap.

In addition to bag and strap, the meter is shipped with the obligatory power unit for charging the built-

in battery of the WS-6936, a charger for in-car use, as well as an AV cable for connecting the device to an external monitor.

Look at the new Satlink WS-6936 for the very first and the feature that will strike you most is a 4.3-inch

monitor, which forms the centrepiece of the meter. As our test revealed, the manufacturer did not only go for sheer size, but chose a truly excellent LCD panel too. It can even be read in direct sunlight, and in a dark attic it genuinely shines. On



TELE
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11-12/2012

Satlink WS-6936
Very easy to use signal meter which also serves as receiver.

www.TELE-satellite.com/12/11/satlink

Intelsat / GVF Type Approved

Ka-Band Antenna System

VSAT Antenna System

DTH Antenna System



<http://www.azureshine.com.tw>



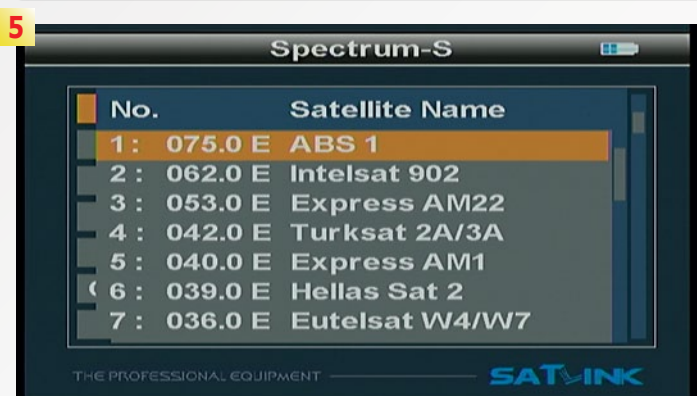
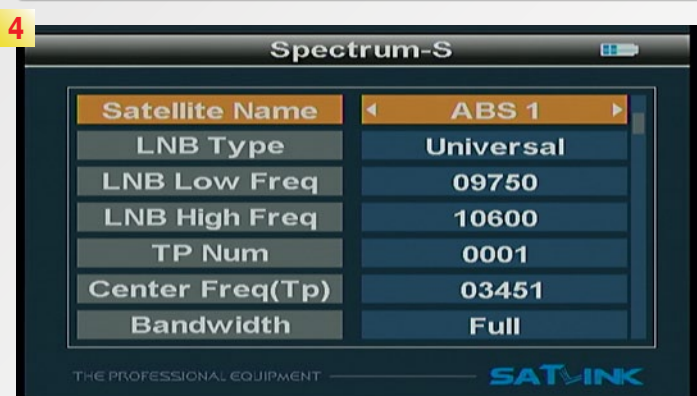
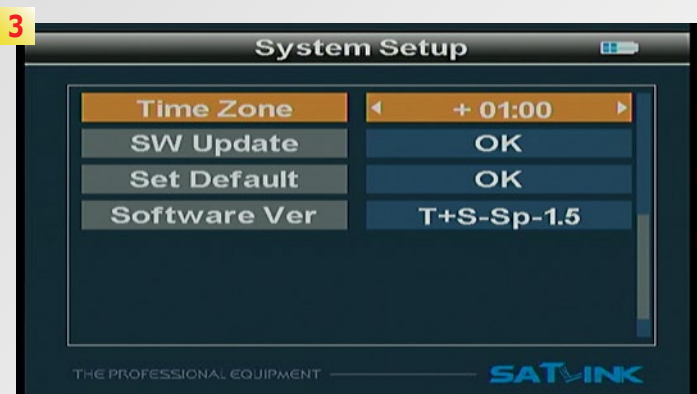
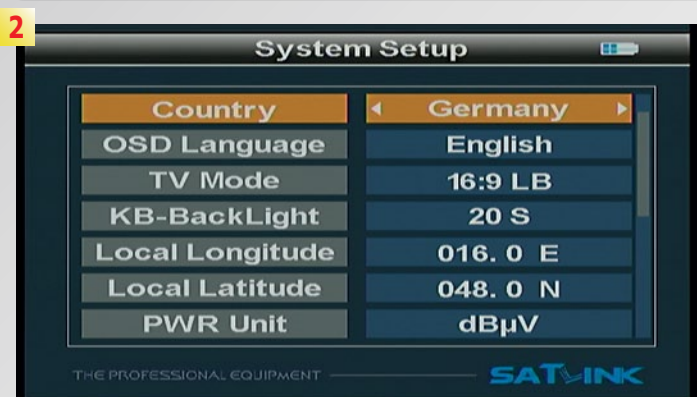
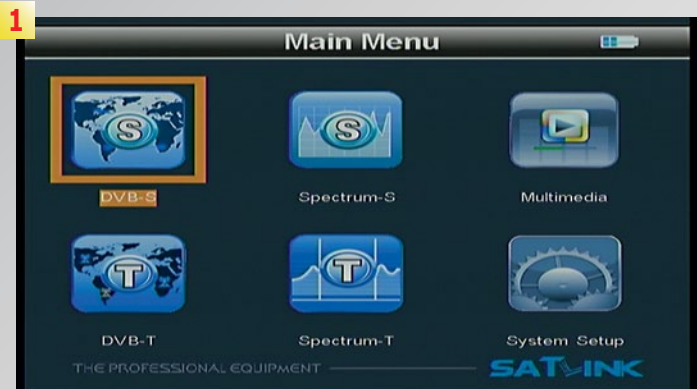
AZURE SHINE INTERNATIONAL INC.

No.1000, Gwang Fu Road, Pa Teh City, Taoyuan, 33455, Taiwan R. O. C.

E-mail: azure.shine@azureshine.com.tw

TEL : 886 3-3611393 / FAX : 886 3-3615877





the topside of the casing Baotong has positioned the signal inputs for DVB-S (F-socket) and DVB-T (RF socket), while the left side features two connectors for video output and video input.

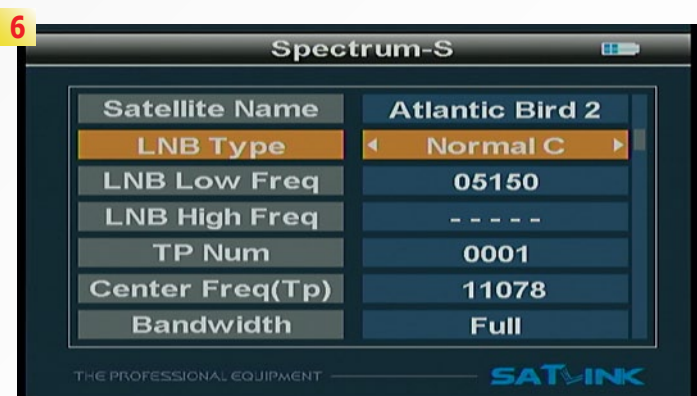
Wait a second – a meter with a signal input? You bet. Not only can the WS-6936 provide the video signal of the currently received channel to an external monitor, it can also act as a monitor for an external receiver or signal source!

On the bottom side you can find the socket for the external power supply unit as well as a USB port for updating the meter's software and for uploading new satellite and transponder data. We did like the fact that the manufacturer has even thought of a mechanical power switch,

which is placed on the lower left side of the signal meter. It is required for turning on and off the device – what a welcome change from all the keys and buttons which are so common these days in combination with software-controlled switching.

A total of five LEDs are located below the display and indicate operating mode, 22 kHz signal, control voltage (13/18V), signal lock and battery charging. This way all important parameters of the meter are available to users at a single glance.

Apart from the keypad and cross-shaped navigation buttons there are four unlabelled function keys for controlling the WS-6936. As usual, these function keys can assume different roles depending on the operating mode. The current func-





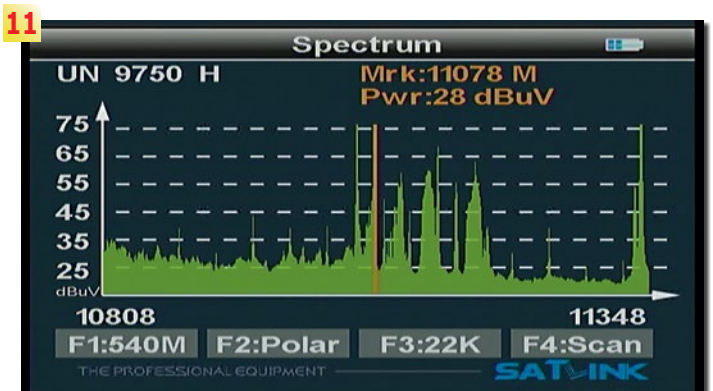
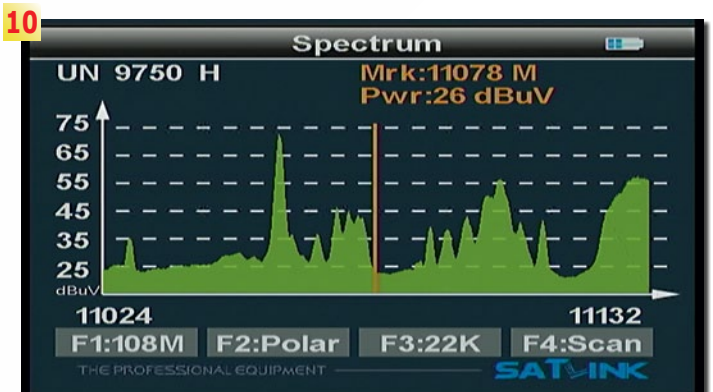
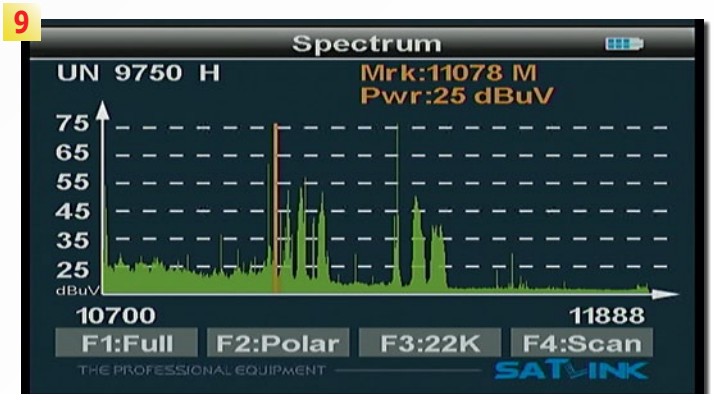
tions are indicated in the on-screen display.

Baotong has equipped the WS-6936 with a built-in 3000 mAh Li-Ion battery pack, which is capable of powering the meter for up to five hours per cycle, after a charging time of six hours when connected to

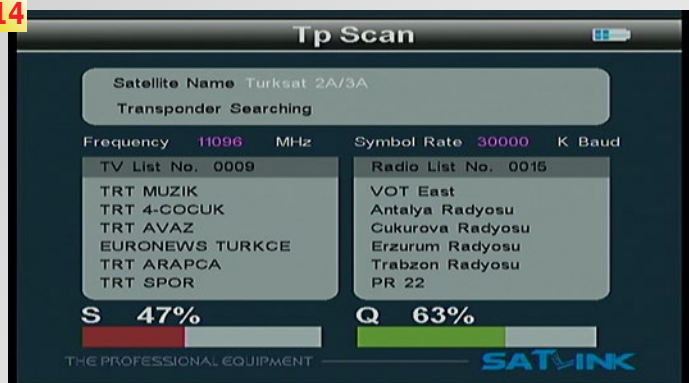
the mains.

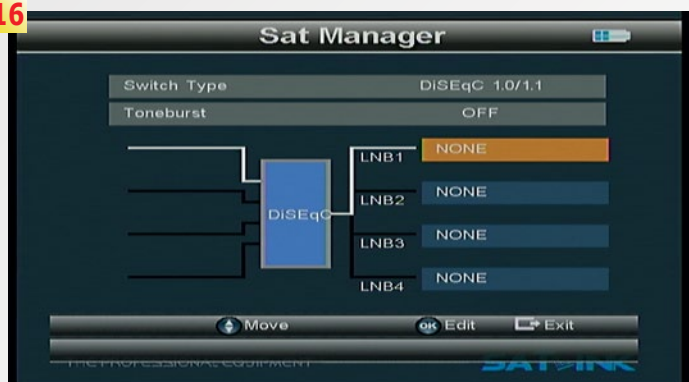
The amount of attention to detail that the manufacturer has put into this device is shown in many ways, and we would like to highlight one by way of example: Antenna installers frequently work in darkish under-roof environments, and it's mostly in

1. Main menu of the Satlink WS-6936
2. System settings
3. System settings
4. All parameters of the selected satellite can be adjusted, if required, before the spectrum display is activated
5. Comprehensive, pre-stored satellite list
6. A number of LOF values (for the Ku and C bands, for example) are already pre-set for selection
7. SCR unicable solutions are supported as well
8. Complete display of the spectrum
9. Spectrum display (complete)
10. 108 MHz excerpt of the spectrum around the 11078 MHz frequency
11. 540 MHz excerpt of the spectrum around the 11078 MHz frequency
12. Apart from signal level and signal quality bars, the meter also gives out the desired satellite's azimuth and elevation values as well as numerical values for BER, signal level and C/N (MER)



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such a situation that something is dropped accidentally. How to find it again without sufficient lighting? With the WS-6936, of course! Simply press the F1 button for three seconds and as if by magic an LED flashlight that is built into the rear panel comes on. What a smart solution!

The meter is shipped with a PDF manual on CD. In addition to the manual, this CD also includes three sets of pre-programmed satellite, transponder and frequency data for Europe, America and Asia. Our test meter came with all data for Europe already pre-installed, so we did not need to do all the initial programming and were ready to rumble in next to no time.

Under the bonnet, this meter is driven by a 32-bit processor clocked at 133 MHz, which is perfectly capable of swiftly performing all required jobs. When looking at its core design concept, the WS-6936 resembles a combo receiver and it comes as no surprise that users are first greeted by a main menu that is made up of six items.

Two entries each deal with DVB-S and DVB-T, namely with signal reception/measurement and spectrum dis-

play. The multimedia and system settings entries complement these four items. As you surely will have guessed, we were eager to look at all configurations options in more detail.

A total of nine OSD languages are available to make sure user and WS-6936 are on equal terms. The received TV signal can be shown on the integrated monitor either in 16:9 or 4:3 format, and the coordinates of the current location can be keyed in – something that is of high importance for everyday use as a meter, since it is only with this information available to the device that it can assist in correctly aligning the antenna to any available satellite position.

The duration of the keypad backlighting can be set individually, even though we recommend setting this as short as possible to economise on battery usage. Even without backlighting the keys can be read easily, so there is no practical need for being wasteful.

To round off the settings options, it is possible to select which way the signal level should be presented (dBµV, dBm, dBmV) and to define the local time zone. In addition, it is here that

13. Full-screen numerical presentation of signal level and signal quality

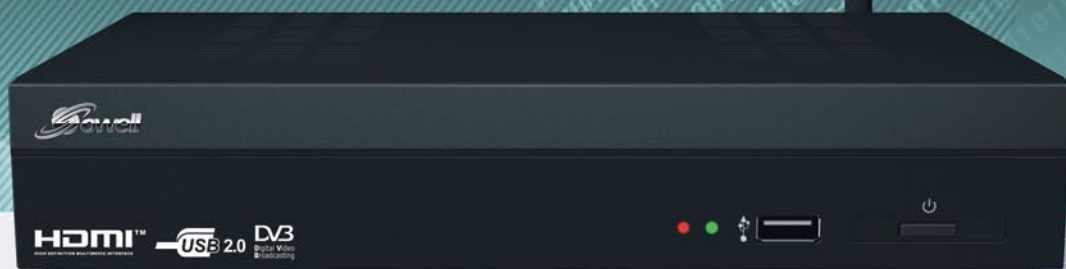
14. Transponder search on TURKSAT 42° East

15. Thanks to the TP manager all transponder data stored in the meter can easily be edited

16. DiSEqC protocols toneburst, 1.0 and 1.1 for static antennas are supported

17. DiSEqC 1.2 and 1.3 are also implemented by the manufacturer for motorised antennas

Hybrid OTT BOX+DVB-S2/T2/C



- IPTV
- Movie Online
- Web Browser (Optional)
- USB Mouse, Keyboard
- Fully MPEG-2 / MPEG-4 (H.264 / VC-1) and DVB-S/DVB-S2 Compliant
- Network Application (Youtube, Podcast, Yahoo, Picasa, Flickr etc.)
- Multi-media Player (TS, MKV, AVI, VOB etc.,)
- DLNA
- WiFi
- Recording & Playback with External Storage Devices(e-SATA / USB2.0 / HDD)
- Firmware Upgrade (USB / Online / OTA)
- VOD
- Conax CAS7.0 (Optional)
- 2 USB

HD DVB-S2



- Fully MPEG-2/MPEG-4(H.264/VC-1) and DVB-S/DVB-S2 Compliant
- Multi-media Function (Playback TS, MKV, AVI, VOB etc.)
- Record & Playback with External Storage Devices (USB Stick/HDD)
- Support HDMI output (up to 1080i)
- Conax CAS7.0 Embedded (Optional)
- One Common Interface(CI) (Optional)
- Ethernet
- Support OTA (Optional)
- WiFi (Optional)
- 2 USB

HD DVB-T



- Fully DVB-T/MPEG-2/MPEG-4/H.264 Compliant
- PVR Recording (Viewing one channel and Recording another channel Simultaneously)
- Multi-media Function (Playback TS, MKV, AVI, VOB etc.)
- Record TV and playback with External Storage Devices (USB stick/HDD)
- Advanced Time-shift function
- Format Resolution: 1080i, 720p, 576p
- OTA (Optional)

CABSAT

2013
BROADCAST & CABLE

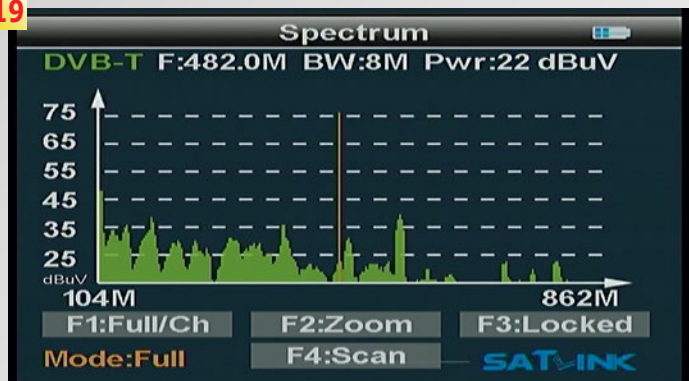
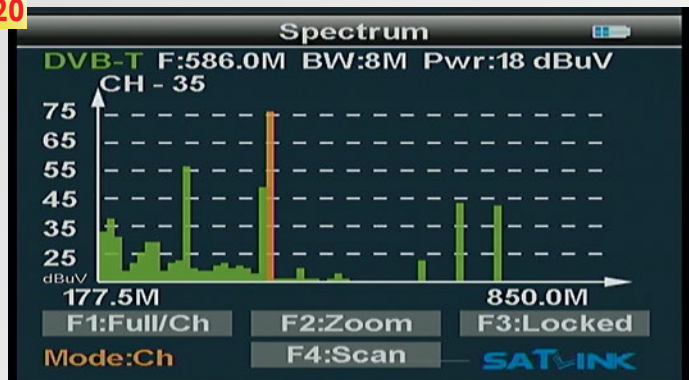
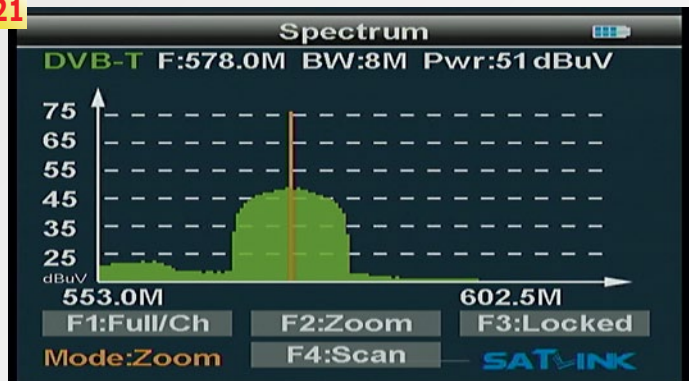
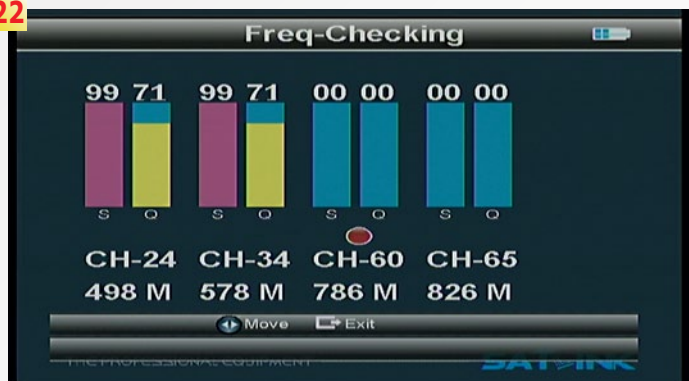
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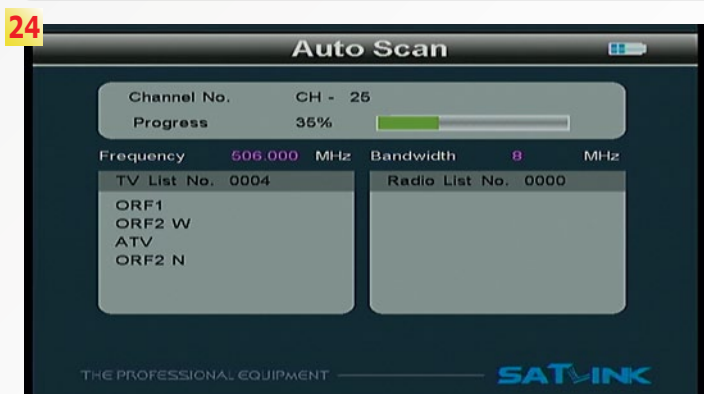
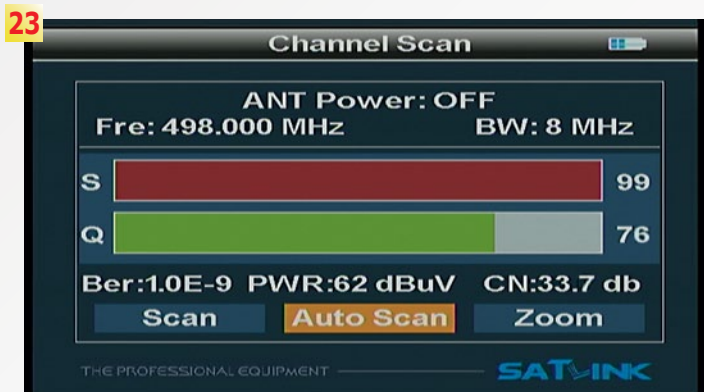
International
CES
2013

CANTEC

You can meet us at the above shows in 2013.

18

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22




new channel lists and updated firmware can be loaded onto the device with a single touch of a button, and users can decide to save all internal data onto an external storage medium.

As soon as you call up the spectrum display in DVB-S mode the meter immediately displays all pre-stored satellite entries, which in our case comprised 26 of the most popular orbital positions between 75° East and 30° West. The LOF of the used LNB can either be selected from a list of standard values or can be entered manually – hats off to that convenient option.

Users of SCR unicable solutions will be very pleased to find out that the manufacturer does not leave them in the dark either by offering all required parameters for selection. The new Baotong meter comes with all control adjustment options, such as DiSEqC 1.0, 1.1, 1.2, 1.3 and toneburst.

The pros among our readership will surely have concluded from DiSEqC 1.2 and 1.3 that the meter must definitely be compatible with DiSEqC motors, and of course they are absolutely right. The WS-6936 is a perfect match for motorised antennas and will control all movements as required.

Thanks to the manufacturer pre-installed transponder database the meter allows selecting a specific frequency even before the spectrum is displayed. In such a case the frequency is called up directly and locked. Users can select any

bandwidth between 108 and 540 MHz or may opt for full spectrum display instead.

The same is true for the polarisation and the 22 kHz signal, which can be set or changed with a single touch of a button. Thanks to the function keys below the screen users can adjust bandwidth, polarisation and frequency band settings on the fly, without having to make a detour via the settings menu.

Once the required frequency is marked with the help of the arrow keys – with Up/Down changing the y-axis of the display and therefore the signal level scale – a press on the F4 function key initiates a signal search.

We noticed during our test that the spectrum display reacts very swiftly to any signal changes. This is particularly important for an initial rough antenna alignment, and we cannot praise such immediate feedback highly enough.

If you need access to all adjustment options for satellite reception/signal measuring the DVB-S entry in the main menu will open that door for you. Here you can edit satellite and transponder lists, start signal scans and rename, change, add or delete individual satellite and transponder entries. The sky's the limit, and we mean it.

Using the Quick Search function you are able to perform a manual channel search on a pre-defined frequency. It goes without saying that all adjustment

18. Voltage of up to 24V can be provided to external signal amplifiers

19. DVB-T spectrum display with frequency selection

20. DVB-T spectrum display with channel selection

21. Active DVB-T frequency in enlarged presentation

22. DVB-T frequency check for detecting signal tilt by checking the signal levels of several frequencies

23. DVB-T measurement mode – here again, signal level and signal quality are indicated as bars, and numerical values are given for BER, signal level and C/N (MER)

24. DVB-T channel search

25. The image viewer reproduces the directory structure of our USB memory stick

26. Image viewer

27. Overview of all image files available in the directory

options available in the spectrum mode (LOF, frequency, DiSEqC, etc.) are available here as well.

Once the selected frequency is keyed in manually or selected from the pre-programmed list a window pops up with two bars that visualise signal level and signal quality. In addition, the meter provides the signal level, the C/N ratio and the Bit Error Rate (BER) as numerical values.

Now we realise why the WS-6936 wanted to know the coordinates of the location right at the start in the initial settings menu. The meter shows the correct azimuth and elevation values of the antenna for reception of the desired satellite. An

acoustic aid is also provided, which is a high-pitched signal beeping in increasingly short intervals, the better the signal quality becomes (with a permanent signal indicating optimum antenna alignment). This allows antenna alignment even without a direct line of sight.

Once the antenna is positioned in a way that the signal bars show sufficient values (both of which can also be zoomed into a full-screen mode, complete with numerical values), users can start a scan on the currently selected transponder or on the entire satellite.

We tested the full satellite scan with Hotbird at 13° East and had to wait some

15 minutes for its completion. Thanks to blind scan, however, all active transponder were found and we ended up with a total of 1891 TV channels and 567 radio stations. In case you wonder why a signal meter comes with an integrated channel search at all we should like to draw your attention to the second operating mode of the WS-6936, namely that of a combo receiver with all features and functions you would expect for DVB-S/T reception.

Simply press the OK button or the F1 function key for the channel list to open, and every time you select a new channel an info bar shows information on the new channel. The overall channel list can be restricted to a certain channel, or the technical parameters of an entry can be called up with the help of function keys. If you're looking for editing functions you have become used to from DVB-S/T receivers you will find them in the WS-6936 as well – channels can be deleted, moved or renamed at the touch of a button. The F3 function key takes care of language selection, while F4 calls up the

EPG data of a channel for up to seven days in advance.

If you make use of the AV output of this handy little meter you can easily turn it into an excellent receiver on your next camping trip, for example. Thanks to this one-stop solution you can use the device for correctly aligning your antenna at first, and for SD TV reception later.

The range of functions in DVB-T mode is identical to DVB-S mode, with the exception of pre-stored frequencies, which obviously are different. We did appreciate that the manufacturer has thought of power supply for an external signal amplifier – 5V, 12V or 24V can be selected to accommodate virtually all solutions.

Thanks to specifying the country in which the meter is being used the frequency list is adjusted to reflect the local situation. Like for DVB-S, the Quick Search function is available for DVB-T as well, and the same is true for spectrum display. It reacts just as swiftly to signal changes as in DVB-S mode and therefore provided great help in correctly aligning a UHF antenna for test purposes. The cross-shaped navigation buttons can be used in spectrum mode to either select a specific frequency or particular chan-



28. The MP3 player reproduces the directory structure of our USB memory stick

29. Using the function keys the entries on the channel list can be restricted to specific satellites or DVB-T channels

30. Selecting an audio track

31. EPG presentation for up to seven days in advance

32. Comprehensive channel information, including signal level and signal quality

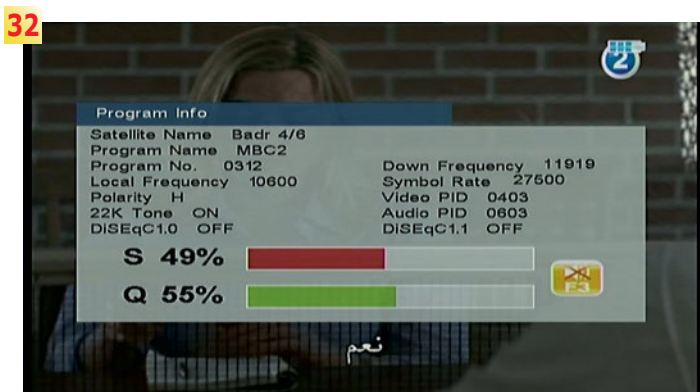
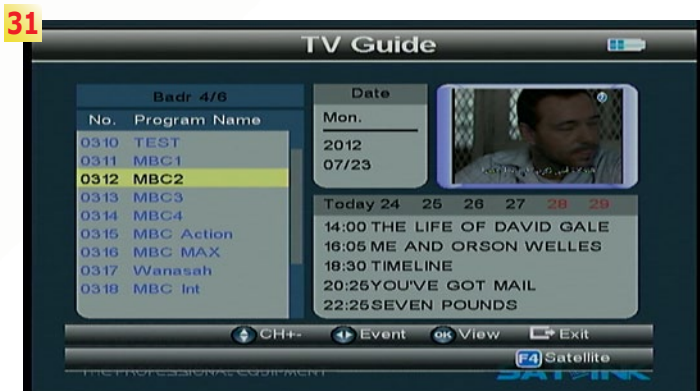
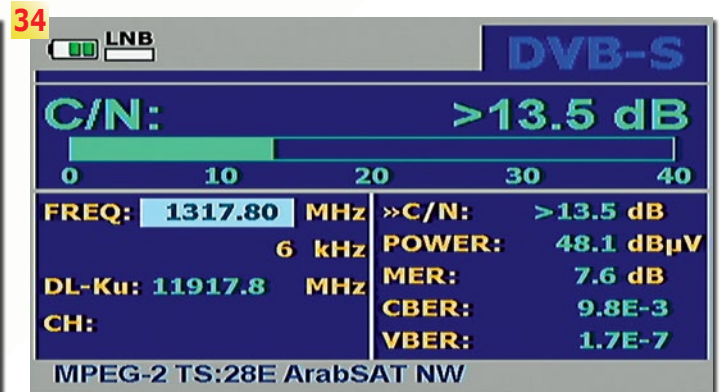
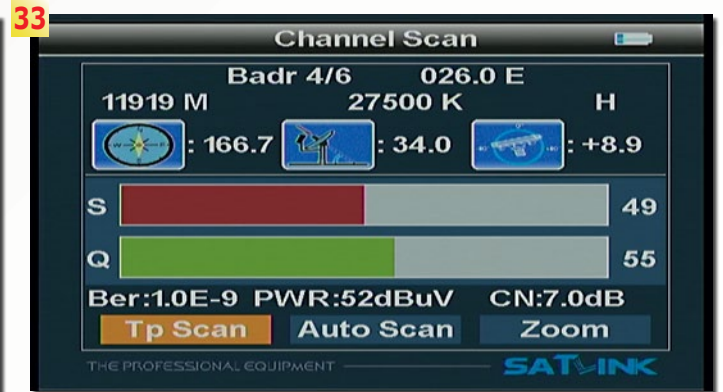
33. Signal measurement on BADR 26° East (11919H)

34. Signal measurement on BADR 26° East (11919H) with professional reference meter

35. Signal measurement on TURKSAT 42° East (11096H)

36. Signal measurement on TURKSAT 42° East (11096H) with professional reference meter

37. Selecting a new satellite or transponder list



nel, something we found extremely helpful in our test. The meter performed flawlessly when prompted to read a user-defined frequency or even the entire reception range, if required. All channels that are found are saved onto the channel

list fully automatically.

In order to make sure a signal tilt caused by amplifiers, distributors or long cables etc. does not distort a measurement result the WS-6936 offers the option to select several frequencies at once and creating a

side-by-side presentation of their parameters (signal level and signal quality). On a single screen it is possible to show up to five channels at the same time. Using the arrows keys it is possible to switch between screens. This way a signal tilt can be

recognised reliably and then eliminated.

As always, we created a number of scenarios for our practical test, starting with aligning a 90cm antenna towards TURKSAT 42° East, then setting up a DiSEqC motorised dish and finally aligning a UHF antenna for optimum DVB-T reception.

We began with entering the coordinates of our location and selecting TURKSAT as our target satellite. Thanks to the spectrum display and the azimuth and elevation values provided by the WS-6936 it was child's play to correctly position our antenna. The ultimate fine-tuning was achieved with the help of the signal level and signal quality bars, so that our first job was completed in next to no time.

In most cases, the alignment of a motorised antenna requires a meter plus a satellite receiver with DiSEqC 1.2 and 1.3 compatibility. This has changed with the arrival of the WS-6936: Thanks to a wise decision by Baotong both functions are packed into a single product. This takes the scare out of installing motorised antennas and in our test we only took a little over half an hour to arrive at a perfectly aligned motorised antenna for reception of all positions between 75° East and 30° West, at least as far as the measurement results indicated by the WS-6936 are concerned.

But then again, are those results 100% trustworthy or does the manufacturer give out glossed over results? We performed the same test with a much more expensive professional meter and as you can see in the screenshots, we arrived at almost the same values. So the WS-6936 actually did a brilliant job.

Please note, however, that while the WS-6936 does say that one of the signal quality values indicates C/N, this value is ac-



NEW

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- ▶ Programmable channel name and logical channel number insertion
- ▶ User friendly setup and control,
Remote management through Telnet





tually the Modulation Error Rate (MER) and therefore must not be compared with the C/N value presented by our reference meter. Finally, we tried to align a UHF antenna for DVB-T reception and once again our verdict is that you can hardly accomplish such a task more easily and quickly than with the WS-6936.

Now that the WS-6936 has proven its worth in the realm of signal measuring, we were particularly curious as to how it would perform in the TV reception field. To that end, we used an RCA cable to connect the meter with the TV panel at first.

The device does not come with a remote control, but if you use a cable with sufficient length you can easily do without. The size of the meter is so small it can almost be mistaken for a remote control anyway.

The WS-6936 can be used to conveniently access all required functions and if you use the power supply unit of the car charging unit that is shipped with the me-

ter you're all set for hours of viewing pleasure.

Up until some years ago, MP3 playback and image viewing had been the domains of stationary PCs. These days, however, you'd be hard pressed to find a receiver without those functions, and the WS-6936 is no exception. Obviously, the manufacturer Baotong wanted to be right up there with the best and treated its meter-cum-receiver combination to an image viewer and an MP3 jukebox.

Here too, the integrated AV output comes very handy for presenting photos on a flat-screen TV or for playing back audio on the HiFi system. Content can be fed to the WS-6936 via the USB port that is located on the bottom of the device. Any storage medium will do, no matter whether it's a USB memory stick or an external USB harddisk.

There's another extra special treat this new Satlink meter has in store for its users: It comes with a TV input that can be used

to display video from an external source on the meter's screen. Surveillance camera anybody? Hook it up to the video input and add another function to this neat device. Thanks very much, Baotong!

The firmware of the Satlink WS-6936 can easily be updated via an external USB storage medium. Simply download the latest firmware version from the Internet, save it onto the storage medium and attach the storage medium to the meter. The same is true for the factory pre-installed satellite, transponder and frequency lists which can also be updated from the Internet or copied from the CD that is shipped with the meter, and then transferred to the device via a USB storage medium. This way each user has access to satellite data referring to his specific location. In addition, DVB-T frequency lists are also tai-

lored to the region in which the meter-receiver combo is used.

Everybody in our test center thoroughly enjoyed working with the Baotong Satlink WS-6936. It's a smart combination of precision meter and fully-fledged DVB-S and DVB-T combo receiver. Thanks to the integrated multimedia features it is also possible to show images and play back MP3 audio.

The measurement functions of the WS-6936 are sophisticated and very precise. The tuner used by the manufacturer reacts swiftly to any signal changes and thanks to an intuitive and user-friendly OSD interface it is possible to use the meter without having to study the manual for hours. All this makes the WS-6936 a genuinely worthwhile alternative to many of its much more expensive peers.

Expert Opinion

DVB-S/DVB-T combo receiver and signal meter as one-stop solution. Low-threshold and highly precise tuner. LCD display with excellent readability. High overall build quality. Easy to use, hence a perfect tool also for beginners, even though it also features all functions required by professionals.



Thomas Haring
TELE-satellite
Test Center
Austria

HDTV channels cannot be watched.

TECHNICAL DATA

Manufacturer	Fujian Baotong Science&Technology Co.,Ltd
Tel.	86-595-28106302
Email	dp02@baotong.cc
Model	Satlink WS-6936
Function	Digital Meter & Receiver for DVB-S and DVB-T Signals
Input frequency	47 - 862 MHz & 950-2150 MHz
DVB-S / DVB-T compatible	no
Modulations	QPSK, 16-QAM, 64-QAM
Symbol rates DVB-S	2-45 Ms/s
DiSEqC	yes (Toneburst, 1.0, 1.1, 1.2, 1.3)
Bandwidth DVB-T	5, 6, 7 and 8 MHz
Display	4.3 inch
OSD Languages	English, French, German, Portugese, Spanish, Italian, Czech, Greek
Signal-Input	F-Type & IEC
USB Port	yes
Power supply	100-220V AC, 12V DC
Dimensions	12.5 x 20.5 x 4.5 cm
Weight	0.66 kg
Battery	3000 mAH Li-Ion



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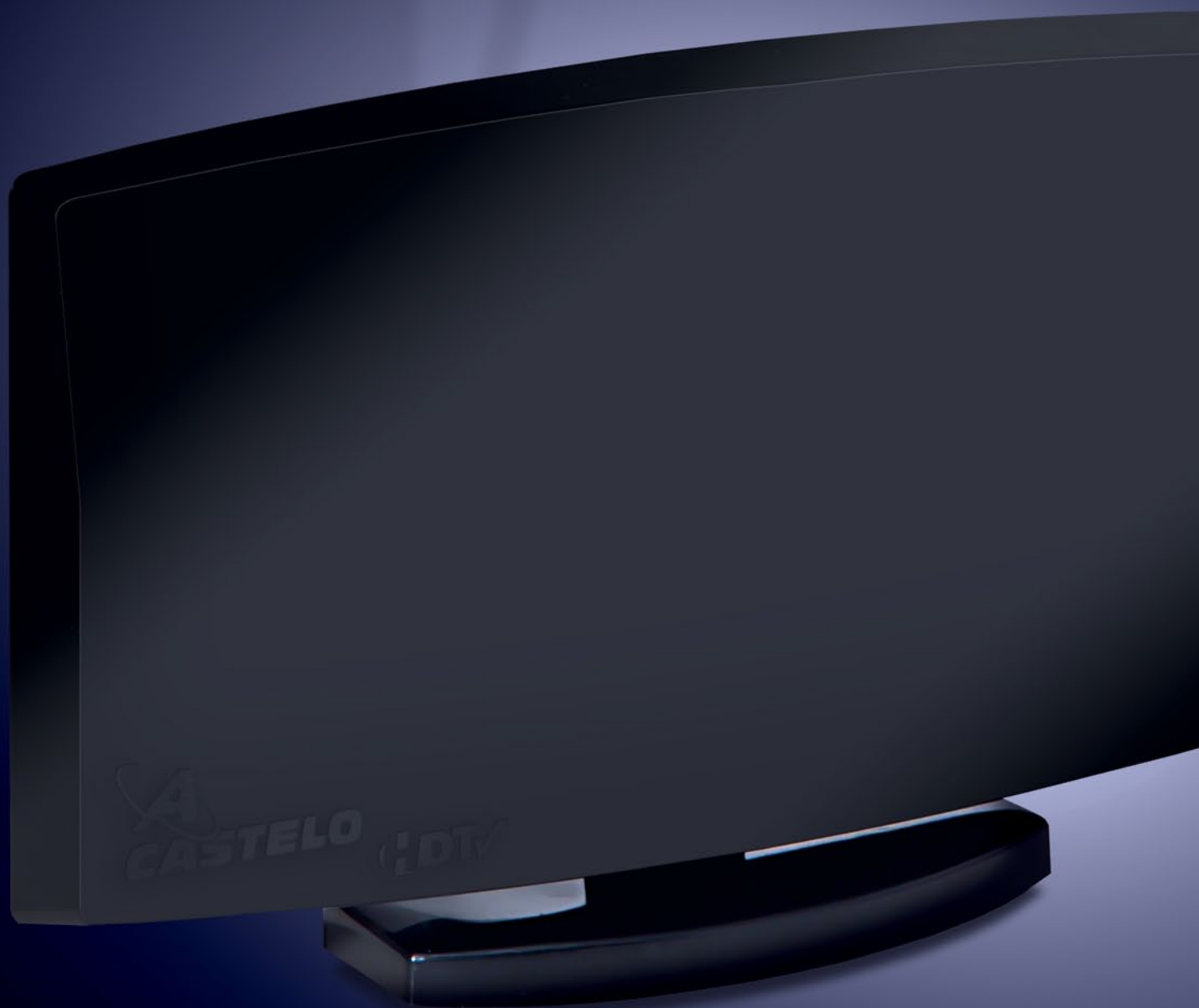
Zip: 314300

Tel: 0086-573-86193966

Fax: 0086-573-86161828

E-Mail: sales@rogetech.com

AntenasCastelo M-1038





Indoor / Outdoor Antenna

-
- *can be mounted indoors and outdoors*
 - *flexible mounting for horizontal or vertical signals*
 - *excellent design*
 - *good workmanship*

Terrestrial Antenna In an Elegant Enclosure



TELE-satellite focuses usually on satellite dishes rather than terrestrial antennas. However, as the digital switch-over takes place almost everywhere in the world, a new interest in terrestrial reception arises. And it often entails a need for a new terrestrial antenna. If your old antenna is in good condition and the new digital channels are transmitted with high enough power from the same direction as the analog ones were, your system should be fine for new technology. But if not, you will need to re-configure your reception system and a new terrestrial antenna may well be a part of this job.

AntenasCastelo (www.antenascastelo.com.br) is a manufacturer in Brazil with more than 40 years of experience. They have introduced a remarkable little antenna, which can be used both indoors as outdoors. The M-1038 surprises with its small size: 23 x 14 cm (9 x 5.5"). Its black plastic enclosure matches the shape and proportions of a modern flat screen TV-set. Upon a closer look, it turns out it can be installed both horizontally as well as vertically. So, if in your particular location the vertical position yields better results, M-1038 can be assembled in the vertical configuration. If so, it will correspond not to a modern TV screen but to a loudspeaker of a home cinema system. If you think of keeping this antenna outdoors rather than indoors – no problem. There is a special holder attached in the kit allowing you to mount the M-1038 on a pole of 25 - 34 mm diameter (1 through 1-3/8 inches). Our big compliments for the mechanical design as well as esthetics to the designers of this product.

The M-1038 is a passive device, meaning it does not have any amplifier built in. As every TV fan knows, small passive antennae can not achieve the performance of full size systems, like multi-element yagi antennas installed on a roof of a building. So, we were hesitating in what way we should test the M-1038. It would not be fair to compare it with a full size outdoor antenna. Finally, we decided to take as our reference the simplest form of an improvised antenna – a metal rod. After all, many people use such a solution if TV signals are strong in their location: Just a segment of wire connected to the inner wire of the coaxial cable hooked up to your TV-set's antenna input at its other end.

Our improvised rod antenna was 170

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1



1. The small AntenasCastelo M-1038 mounted outside on a mast.

2. The antenna can be mounted horizontally (see picture) as well as vertically

mm (6.7") long because we wanted to keep it comparable with the size of M-1038. At our test center location in Western Poland you need to have a rather good antenna to receive terrestrial signals. So, to begin with we decided to use a terrestrial signal analyzer to measure how strong the signal is at the output of the M-1038 and at the output of our reference rod antenna. In this way, we achieved an objective evaluation of the M-1038 performance.

And what was the performance? We started in the center of the terrestrial band – an analog channel on 417.25 MHz (channel S21). As you can see on the frequency spectrum scans,

2



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Winners of the Queen's Award for international Trade 2007, Horizon Global Electronics is a UK Company established in 2001 specialising in the design and manufacture of hand held test equipment for the digital satellite and TV sector. Our strength lies in being able to find innovative solutions to leading technology issues.

HORIZON DOES IT AGAIN WITH THE ALL NEW HD-T2!

Horizon's newest product, the HD-T2, combines a collection of impressive qualities to create the world's first stand alone DVB-T2 installer's meter.



- This meter will have the familiar look and feel of the Horizon range with simplicity being the key characteristic. It's easy to use layout feels comfortable from start to finish, giving a broad range of accessibility to all. As with all Horizon meters the end user has the ability to set the menu for a novice, right up to advanced precision with data that can be logged and download into an excel spreadsheet.
- The HD-T2 utilizes an all new hardware and firmware platform with features not found on a meter of this calibre before and at 1.2 kg it won't break your back or bank balance!
- Horizon has strived to build a cost effective solution for installers that offers real time readings on analogue, digital and now high definition digital DVB-T2. In addition the ability to read DAB/FM signals with full spectrum mode and rotating constellation along with all the tools the installer will need as the new DVB-T2 system becomes live, leads to create a product that offers a broad range of technological features.

BBCB Ch.21
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the AntenasCastelo M-1038 gave 3 decibels more than the rod antenna (50.1 dB μ V vs. 46.9 dB μ V). That's quite something. After switching the analyzer to measurement mode, the difference even increased (50.0 dB μ V vs. 46.6 dB μ V). For your reference, our roof antenna produces over 62 dB μ V on that channel. Also the signal-to-noise ration looked significantly better for M-1038: 34.5 dB vs. 30.9 dB. Although, we did not plan it initially, we connected M-1038 to our TV-set. The picture was noisy but readable.

Then we got bolder. we tried to go live and catch the real digital channels which in our location transmit on 634 MHz and 666 MHz. But the signal from both antennas was too weak to measure it with our signal analyzer. But then we realized: the AntenasCastelo M-1038 can be mounted outside! We rushed up to our balcony and mounted the M-1038 outdoors on a small mast. The improvement was noticeable at once. The signal on 634 MHz rose to 51.6 dB μ V with MER equal to 26 dB. The second signal, on 666 MHz, was some-

what weaker and it rose to 42.9 dB μ V with MER equal to 16.2 dB. How would this result on a tv screen? We decided to connect the antenna to our DVB-T receiver. The multiplex transmitted on 634 MHz was receivable but from time to time our receiver notified us that there is a too weak signal. The other multiplex on 666 MHz was below the reception threshold of our receiver.

We compare those results with the simple rod antenna. As could be expected, for both transponders, the M-1038 was better. It pro-

vided stronger output by 3 decibels for 634 MHz and even by 5.5 decibels for 666 MHz. Naturally, MER was also better: by about 1 dB and 2 dB respectively. Using a single rod antenna we would see none of the two DVB-T signals while the M-1038 was good enough to catch at least one of them.

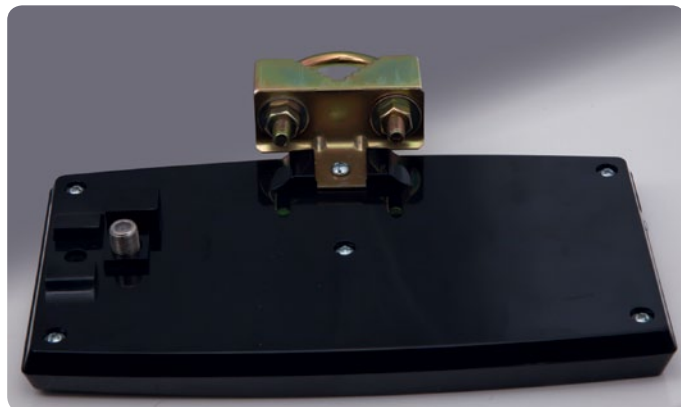
To sum it up: the M-1038 like every other small antenna can not replace a full size external antenna. However, if you live relatively close to the transmitter, especially on a high floor, such small antenna could do the job. It is very easy to install and everybody can do that. If only possible though, try to mount it outdoors as this improves its performance significantly.

The AntenasCastelo M-1038 proved to be visibly better than that of a simple improvised rod antenna in the center of the terrestrial band. However, being very simple in design, the M-1038 could not beat the rod antenna for every frequency. Performance of such simple designs depend on the ratio of RF wave length-to-antenna length. So it is obvious that for some frequencies, 170 millimeters of rod antenna could perform better than M-1038.



But what is also obvious, you can put the M-1038 anywhere in your room and it will not harm your esthetic feelings, while our improvised rod antenna will not look great. The M-1038 has yet another advantage over a rod antenna. It has a tel-

escopic antenna for FM radio (88-108 MHz) inside. So, you can use it for double purpose: TV and radio reception. All you have to do is to pull it out and position for the best radio reception. We tried, and had no problem at all with FM radio reception.



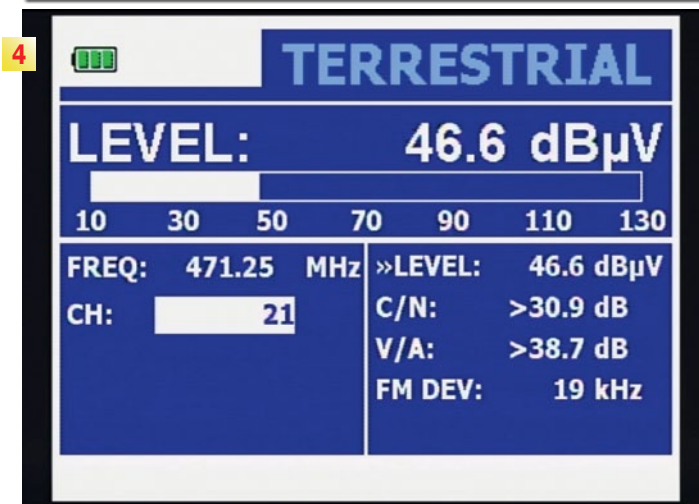
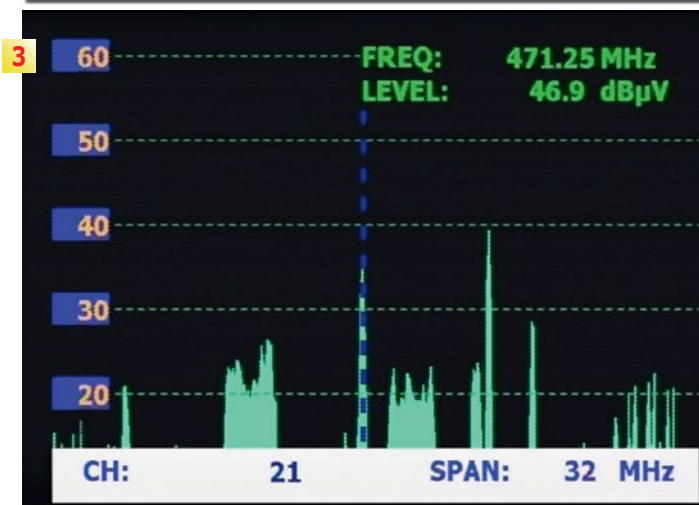
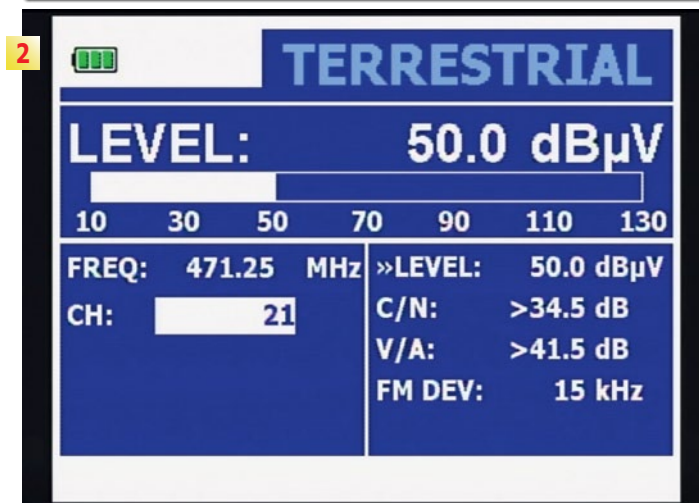
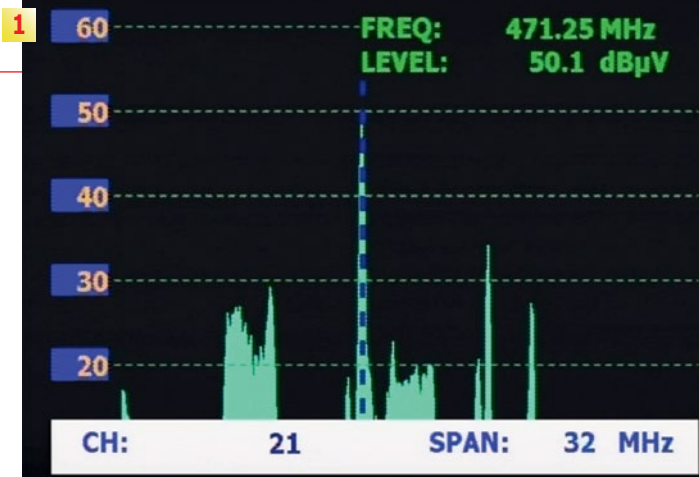
TECHNICAL DATA

Manufacturer	ANTENASCASTELO, Alameda 15 de Dezembro, 1487 - Penha - Bragança Paulista - SP - CEP: 12910-691 Brazil
Web	www.antenascastelo.com.br
Phone	55 (11) 0800-773-3601 / 4035.3601
Model	M-1038
Function	Terrestrial TV & FM Radio Antenna
Application	Indoor or outdoor
UHF channels	14 through 69 (60 – 806 MHz)
VHF channels	2 through 13 (54 - 216 MHz)
FM Frequency Range	88 - 108 MHz
Impedance	75 Ω
Dimensions	23 x 14 x 5.5 cm (9 x 5.5 x 2.2")
Weight	450 g

Expert Opinion

Exceptional design
can be used both indoors as outdoors
Various positioning options: horizontal, vertical, on a stand, on a pole.
Good performance in the center of terrestrial band

no option for an active amplifier



1. M-1038 output signal.
2. M-1038 output signal measurement results

3. Rod antenna output signal.
4. Rod antenna output signal measurement results.

DEVISER AE 120 Optical Power Meter

-
- *so simple to use*
 - *gives very accurate readings*
 - *comes with adapters for all popular connector types*
 - *shows levels in very small steps*
 - *if needed, it can be calibrated*



DEVISER





■ TELE-satellite Test Editor Jacek Pawlowski checking the AES120 Optical Meter by Deviser. A DVB-T signal is converted into an optical signal and the results measured with the AES120



tuned to. It could not be simpler!

The AE120 has selectable wavelengths. As you could expect, there are the common 1310 nm, 1490 nm and 1550 nm bands. But not only. One can order additional, user defined wavelengths.

Our test unit had four additional bands: 850 nm, 980 nm, 1300 nm and 1610 nm – so seven in total. The λ button is used to cycle through different wavelengths. On power up, the smallest one is selected (850 nm in our case). You should switch to

the correct wavelength in order to get the correct result.

You can easily guess the function of the other buttons. The dBm/W button is used to cycle the units of the measured power. The REF button is used to store the current measurement

result as the reference level to which you will be able to compare the next measurement – most likely – in the other nodes of the network. To store the reference level you press and hold a button for a longer while. Another short press – and you are back in the normal mode when you measure the present value.

Having stored a result as the reference, you can press the dB button to express the current measurement with respect to the stored value in decibels. For example, if you had measured in one node a value of +3.66 dBm and stored it as a reference and then moved to another node of the network and measured -3.38 dBm, pressing the REF button would show you -7.04 dB. The meaning of this would be that at the second node the signal was 7.04 dB weaker than in our reference point. In this way, we can conveniently check if the optical splitters located between the two nodes do not introduce too much attenuation.

The function of the two remaining button is self-explanatory: one turns on and off the back-light of the display and the other is just the power on/off switch. As you can see, once you get familiar with this meter, you will never forget how to use it – it is so straightforward and logical.

In order to test the AE120 meter, we used an optical transmitter converting a DVB-T signal into an optical one. We compared the meter to another similar tool dedicated for the installers. (graph 1.)

As you can see in the attached graph, the results of both meters were quite similar. However, when we attenuated the signal, AE120 was still able to measure it (-19.97 dBm) while its com-

SATLINK

Digital Satellite Meter

WS-6936

DVB-T&S COMBO METER WITH SPECTRUM



DVB-S Spectrum:

In satellite signal C band and KU band range ,
show the energy distribution of the received signal,
show Cursor location and signal strength downlink frequency,
Signal was locked.

Show spectrum bandwidth: 1200MHz; 540 MHz; 108 MHz

DVB-T Spectrum:

In the 104MHz-862MHz frequency range or stored state table,
Shows the energy distribution of the received signal (Frequency,
bandwidth, signal strength)Signal was locked, can be displayed
Ber, S / N and other indicators.

So don't wait, Call us for a sample!

For the first time in an Economical digital meter, you are now able to view the actual channel on the screen of the meter. Now you can quickly and accurately align the satellite and you can instantly check the stable of the channel right on the screen of the meter. Transponders, Frequency, Symbol Rate, Polarity, and other settings can be modified by the user.



WS-6909
DVB-T&S COMBO METER



WS-6918P
DVB-S2 Satellite Finder Meter



WS-6932
HD Satellite Finder Meter

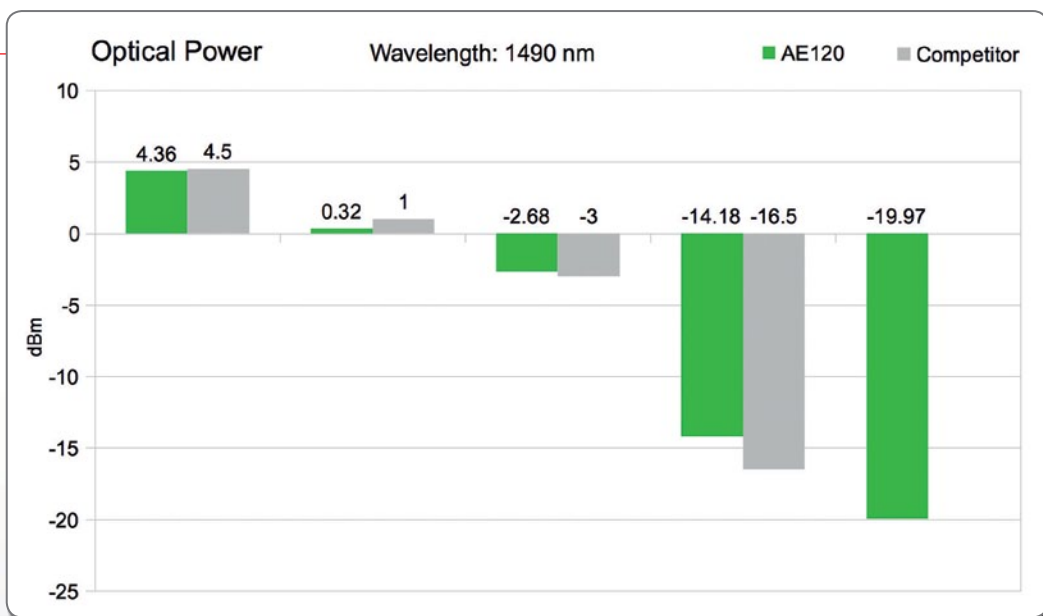
**FUJIAN BAOTONG SCIENCE & TECHNOLOGY CO.,LTD**

Add:jiangnan High-Tech.licheng District.QuanZhou.Fujian.China

Tel:86-595-28106252 Fax:86-595-28106253

E-mail:dp02@baotong.cc

Website:http://www.sat-link.com.cn www.hktcd.com/em/fjbaotong



petitor displayed just "LOW" message.

That's because the AE120 has an impressive dynamic range of 68 dB. It can measure optical power from -43 dBm through to +25 dBm.

Moreover, the Deviser AE120 was able to measure power with 0.01 dBm resolution while its competitor was not able to discriminate changes smaller than 0.5 dBm.

The AE120 measurement uncertainty is merely ± 0.17 dB ($\pm 3\%$) which is an impressive figure. Deviser made it possible to re-calibrate the meter if the user has access to laboratory grade equipment. It is possible to switch the meter to the calibration mode and enter the correction if needed. The range of the possible correction is from -1 dB to +1 dB. It is described in the manual how to do that. Also this operation is quite simple to perform.

To sum it up: the AE120 is extremely simple to use but at the same time very accurate and stable. It is a perfect companion for every installer who deals with today's modern fiber optic networks.

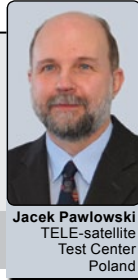


DEVISER

Expert Opinion

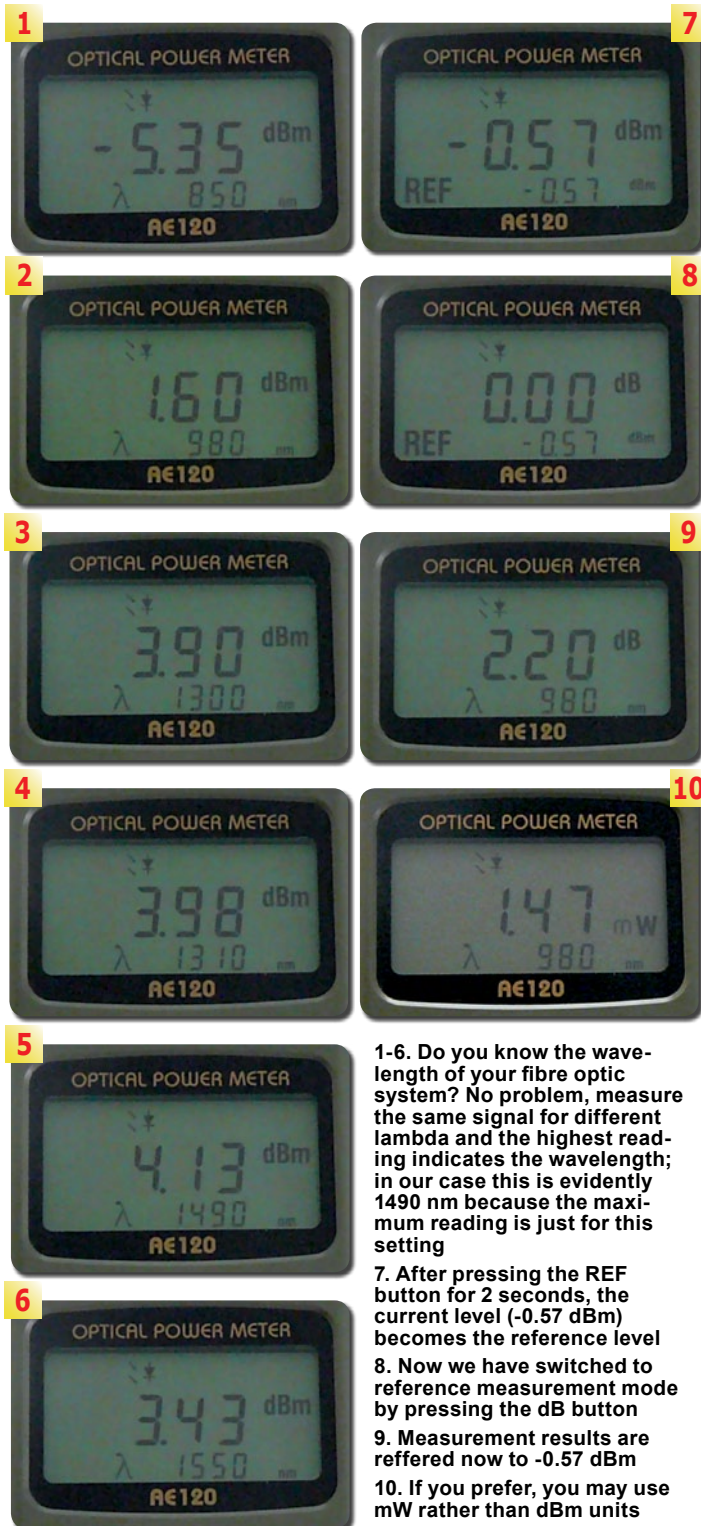
Very handy: small and lightweight
Extremely simple to operate
Switchable wavelengths
Available reference level measurement mode
Wide dynamic range and high accuracy
All popular fiber cable connectors supported

The display back-light is rather weak



Jacek Pawlowski
TELE-satellite
Test Center
Poland

Measurements with the DEVISER AE 120 Optical Power Meter



1-6. Do you know the wavelength of your fibre optic system? No problem, measure the same signal for different lambda and the highest reading indicates the wavelength; in our case this is evidently 1490 nm because the maximum reading is just for this setting

7. After pressing the REF button for 2 seconds, the current level (-0.57 dBm) becomes the reference level
8. Now we have switched to reference measurement mode by pressing the dB button
9. Measurement results are referred now to -0.57 dBm
10. If you prefer, you may use mW rather than dBm units

TECHNICAL DATA

Manufacturer	Tianjin Deviser Electronics Instrument Co., Ltd.
Fax	+86-22-27645002
E-mail	overseasbiz@deviser.com.cn
Web page	www.devisertek.com
Model	AE120
Function	Optical Power Meter
Basic Accuracy	±0.17 dB (±3%)
Input Range	-43 dBm ~ +25 dBm
Resolution	0.01 dBm, mW
Calibrated Wavelengths	1310 nm, 1490 nm, 1550 nm plus user defined
Connectors	FC/SC/ST
Ambient Temperature/Humidity	-10 ~ +60 °C / < 80%
Operation Time (backlight off)	50 hours with two AA batteries
Dimensions	119 x 70 x 29 mm
Weight	200 g without batteries

MORE ABOUT THIS COMPANY

www.TELE-satellite.com/TELE-satellite-1107/eng/deviser.pdf





DekTec

DTE-3137

-
- *Capable of inserting all the satellite transponders into a network*
 - *Suitable for Unicast as well as Multicast streaming*
 - *The complete data stream can be recorded*
 - *Very flexible adaptation thanks to the C++ Library*
 - *Complete control of the receiver via the network*

DVB-S/S2 Satellite Receiver for Network Applications

We already introduced the DTU-215 from DekTec to you in the 12-01/2012 issue of TELE-satellite. It is a terrestrial modulator that can take an available transponder stream and process it in a variety of different ways (for example, DVB-T or ISDB-T) and then modulate it on any desired VHF/UHF frequency. But the question is how do you obtain the complete transponder stream from a satellite transponder so that it can be processed, for example, with the DTU-215?

This exact question is answered by the new DekTec professional network satellite receiver DTE-3137. The DekTec DTE-3137 is a unique



■ The DekTec DTU-215 test report from the 12-01/2012 issue of TELE-satellite

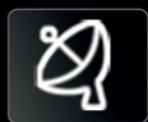


DVB-S/S2 receiver that comes with a number of special features while at the same time certain other features that might be standard and required for an end user were left out from this piece of

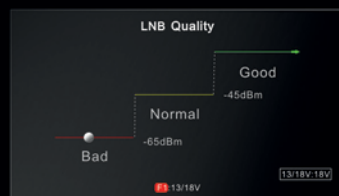
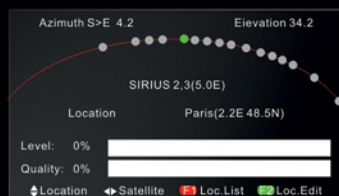
professional equipment. This satellite receiver is not meant for the private end user; it is dedicated to the professional users.

Thanks to its slim size (13.5 x 13.5 x 3.5 cm) and its very functional construction, the DTE-3137 can be installed in any standard





DVB S2



Installation Meter & Full Measurement for DVB-S2

Real-Time and Multi-Analyzing Spectrum

Constellation Chart

LNB Test MDU & Unicable

BER, S/N(MER),FEC Measurement

Auto Search,Blind Search,NIT Search,Manual Search

Satellite Name & Degree Auto Detective & Display

Auto DiSEqC1.0/DiSEqC1.1/DiSEqC1.2,USALS

Local satellites list showing automatically

Easy upgrading by Ethernet & USB & RS232 Port

Satellite List Editable by Editor via PC

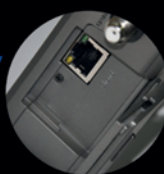
Li-ion Battery(2350mAH), last 6 hours, Fast Charge(2 to 3 hours)

Accessories: Adaptor,Car Charger,upgrading cable,AV cable,

Water-Proof Bag,Compass,User Manual

Size:162x100x42(mm) Weight: 0.45kg

Tiny But Mighty



Size:162mmx100mmx42mm

Xtra-S

Minisat-plus S2/NIT DSS

Minisat-basic S2/NIT



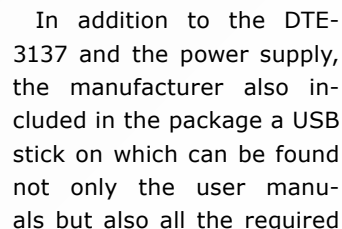
Worldwide Dealers Are Welcome, And Your Sales Territory Will Be Well-Cared

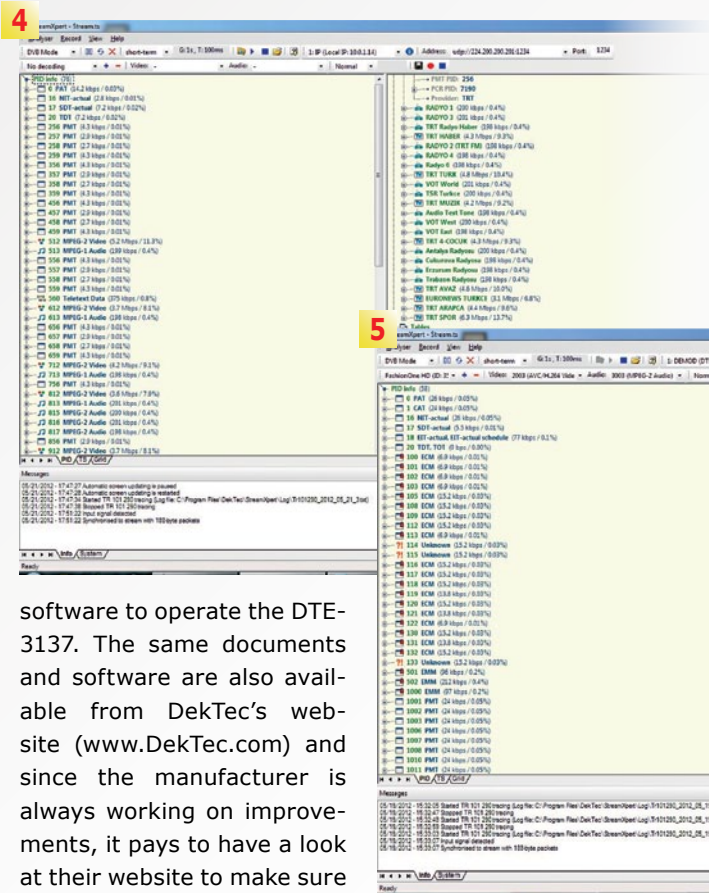
Milestone DTV Device Creator



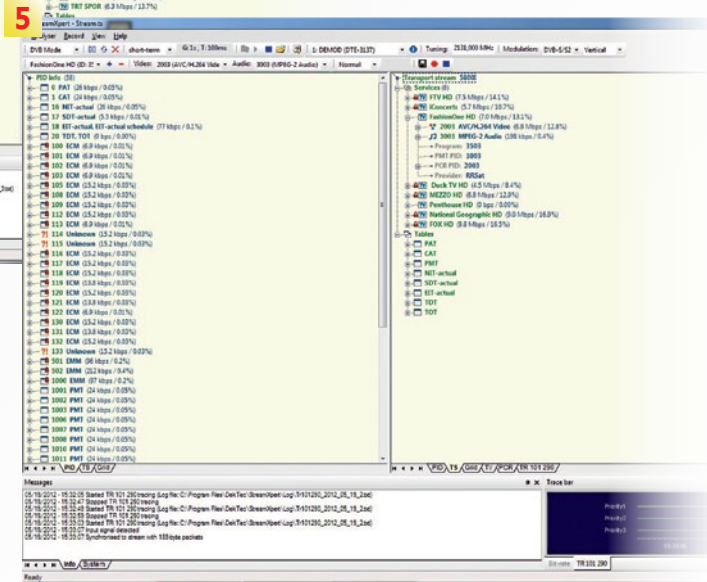
On the front panel you'll find the satellite IF input as

The manufacturer states that the DTE-3137 uses a maximum power of 17 watts and, as is typical with professional equipment, there's no standby mode. The hard-





1. StreamXpert in DTAPl Modus
2. Display of a transport stream that was received via Multicast in UDP format
3. Live playback of an HD stream
4. All stream parameters such as NIT are displayed
5. The data rate of every TV and radio channel is displayed
6. TRT transponder on TURKSAT 42° east



IP address that it identified from the DHCP server of our LAN. Since there is no remote control, the only way to communicate with and control the DTE-3137 so that it can be loaded with the desired settings and parameters is via the network.

So we entered the DTE-3137's IP address into our PC's web browser and before we could blink the start page of the integrated web server appeared on our monitor.



the most current version of software is being used.

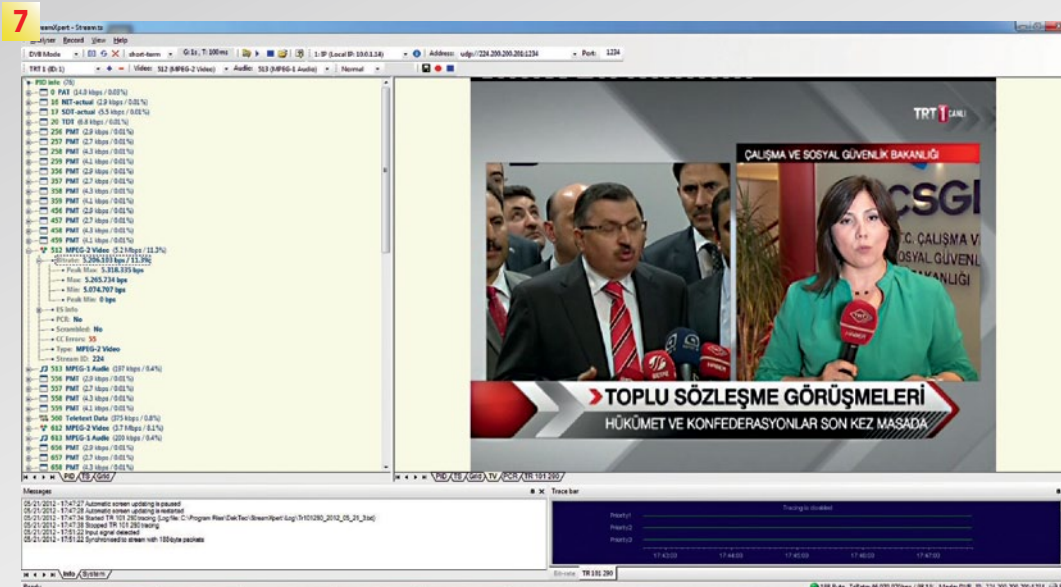
As the DTE-3137 is first unpacked, you get the feeling that it'll all be self-explanatory. The available connections are all perfectly labeled so you should have no trouble figuring out which

cable goes to what connection. It took us no time at all to connect the DTE-3137 to our test center's Gigabit Network, to attach a signal cable to the satellite IF input and to connect the included power supply. The LCD immediately comes to life and starts providing status in-

formation. No need to worry about the 'No Signal' message; the DTE-3137 has not yet been told what frequency it should receive.

The take care of this, the user should look at the lowest part of the LCD where the DTE-3137 displays the

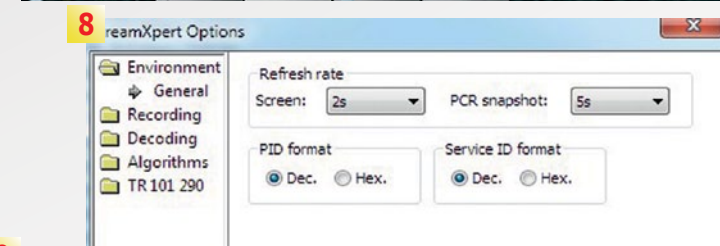
Fortunately, DekTec decided to do without all forms of scripts, flash animation and other bells and whistles so that you can access the control functions from truly any web browser on every possible operating system, from a SmartPhone, to a Windows PC, to a MAC up to and in-



own tool called the DekTec StreamXpert on the PC. This tool can be downloaded from DekTec's website. In this mode the web interface only serves as a status control; you cannot go through any settings here.

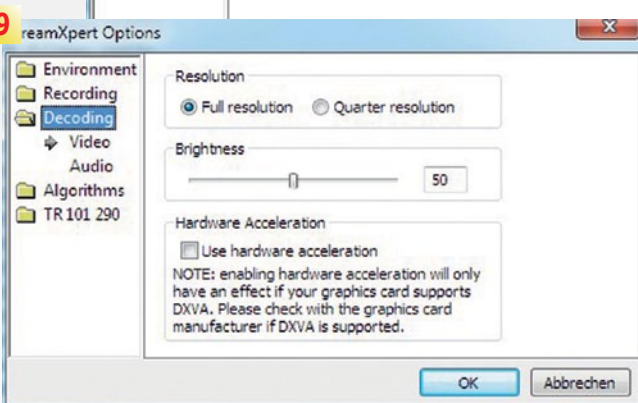
Since the DTE-3137 is a professional piece of equipment, the StreamXpert software would be sufficient for most users although there are many applications that cannot be covered or cannot satisfy the requirements of the customers. For this reason a complete C++ library was made available to customers so that they could program their own DTE-3137 control software exactly the way they want it. What a great idea!

The second mode is named SMPTE and opens for the user the full control and settings capabilities of the DTE-3137 via the integrated web server and the SNMP interface. With the Simple Network Management Protocol it involves one of the



cluding Linux systems.

The DTE-3137's web interface is very nicely organized; experienced users will instantly spot the Application Switcher. It makes it possible to control the DTE-3137 two different ways. In DTAPI mode the receiver is fully controlled by its

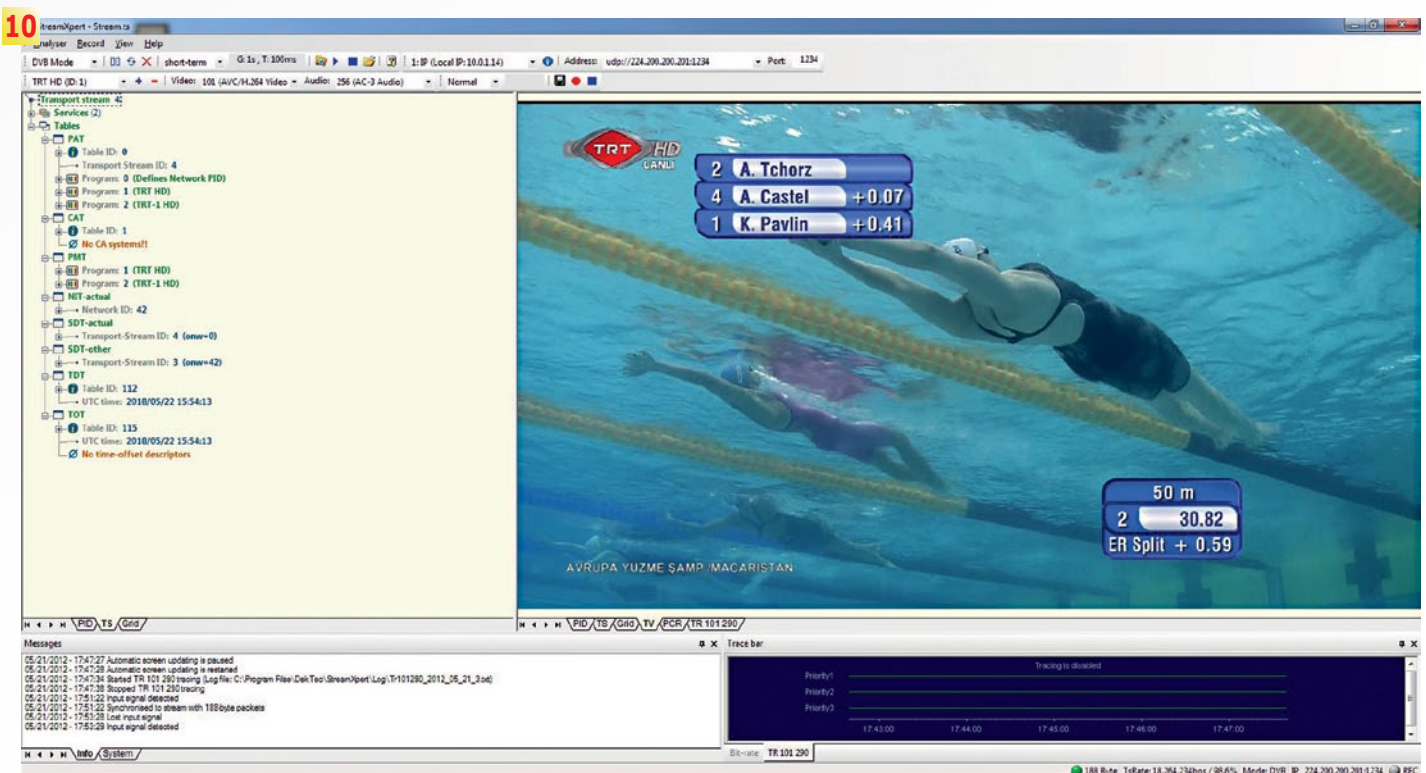


7. Even the minimum and maximum bandwidth used by a broadcaster can be shown

8. StreamXpert can display PID values in decimal or hexadecimal format

9. The displayed video image can be adjusted for resolution and brightness

10. PAT, CAT and PMT of the TRT HD transponders on TURKSAT 42° east



SmartWi wireless Multi Room Solution



New SmartWi ready for Operators

Please let us introduce the new SmartWi. The market leader in wireless multi-room solutions now comes with a range of improved technical features, and we are frankly very proud of the new design. Coming from Denmark it is almost like the fairy tale 'The Ugly Duckling' that turned into a beautiful swan.

The improved qualities make SmartWi the obvious choice of Multiroom Solution for Operators. It is very flexible and may be adopted to the specific preferences of an Operator in terms of technology, design or commercial setup. The final result is increased customer loyalty and a stronger future market presence for the Operator.

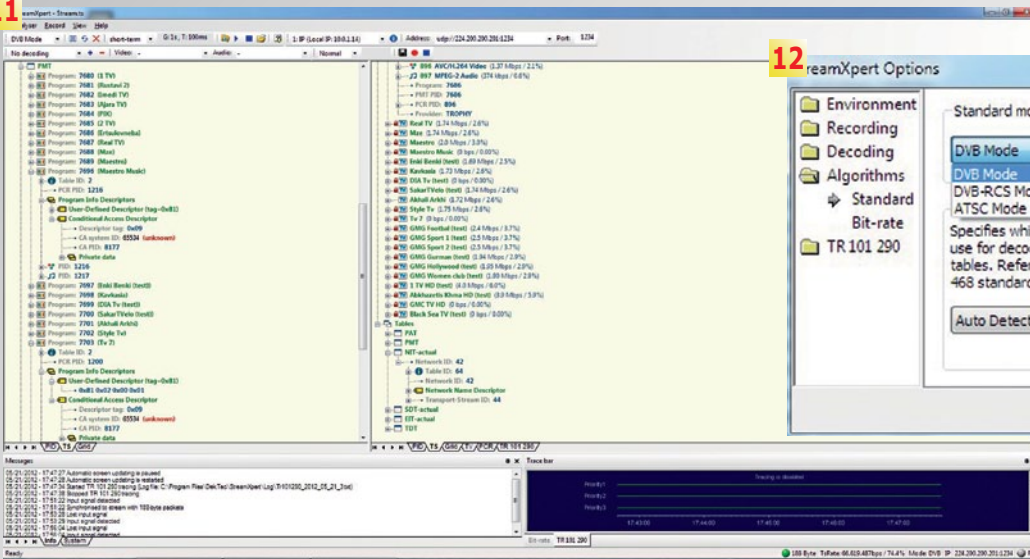
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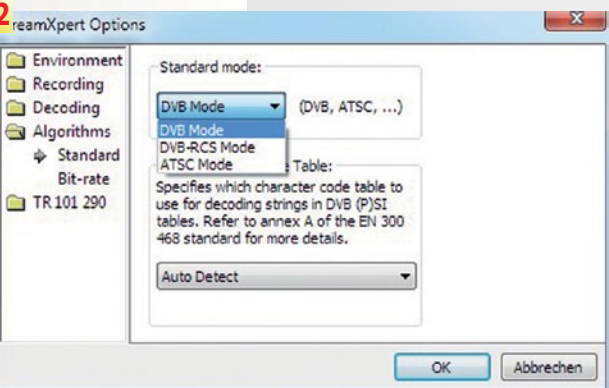


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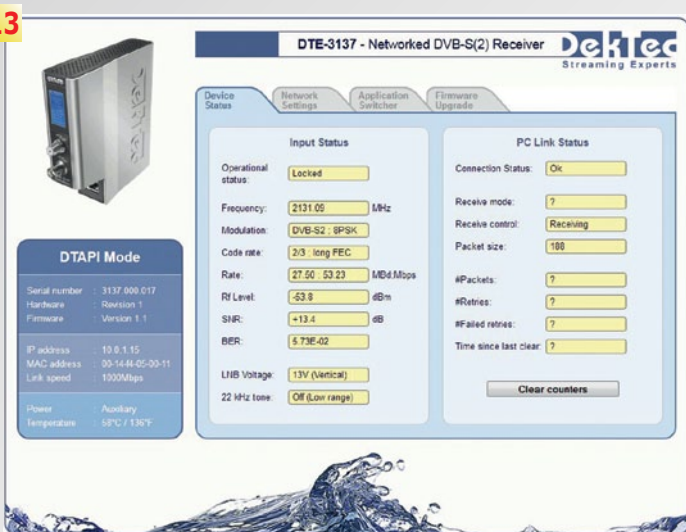
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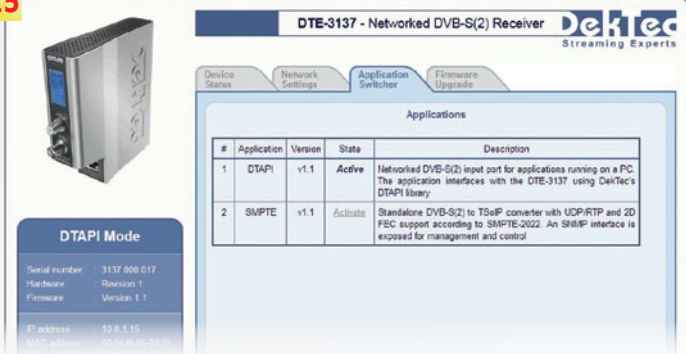
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14



15



IETF (Internet Engineering Taskforce) developed network protocols that can be used to monitor and remotely control network devices from a central location via LAN. Since the SNMP doesn't define its own values - those that it could get from the attached devices - it is universally applicable and through so-called Management Information Bases (MIB) it can be individually matched to the control/monitoring devices. This database, that in the form of an MIB file must be made available by the manufacturer, contains all the necessary parameters that an SNMP client would need for successful communication with the network device.

Naturally, DekTec has this database available for its users via download so that every desired SNMP client can be used to control the DTE-3137. We opted to download and use the free iReasoning MIB browser that, as we expected, was able to work perfectly together with the DTE-3137 thanks to the MIB data made available by DekTec.

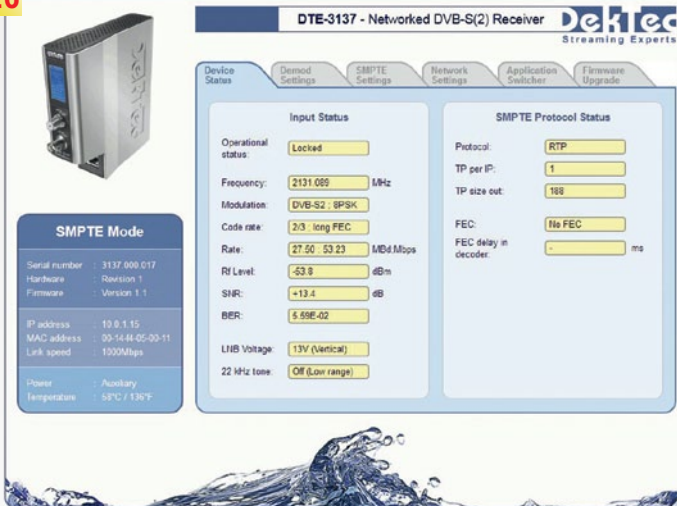
Since developing our own control software using the DTAPI C++ library provided by DekTec would have been

an extremely complex undertaking, we decided for the purposes of this test report to use the StreamXpert tool from DekTec. This tool is available on the USB stick that accompanies the DTE-3137.

When StreamXpert is started, it automatically recognizes (in DTAPI mode) the DTE-3137 receiver in the local network and instantly creates a link between the two. According to DekTec, the PC hardware requirements for the StreamXpert tool are as follows: Windows XP, Windows 2003, Vista or Windows 7 operating system with a minimum of a Pentium 4 processor (1.7 GHz) for decoding SD transport streams or an Intel Core 2 or Intel Core i7 for decoding HD transport streams.

The main window of StreamXpert is divided into three sections. The two larger sections in the middle of the screen provide information on the currently received transport stream and the corresponding PID structure while the bar at the bottom provides valuable status information to the user. StreamXpert is so clearly and intuitively programmed that there's almost no need to reference the user manual included on the USB stick. If you have just a little bit of understanding of what

16



18



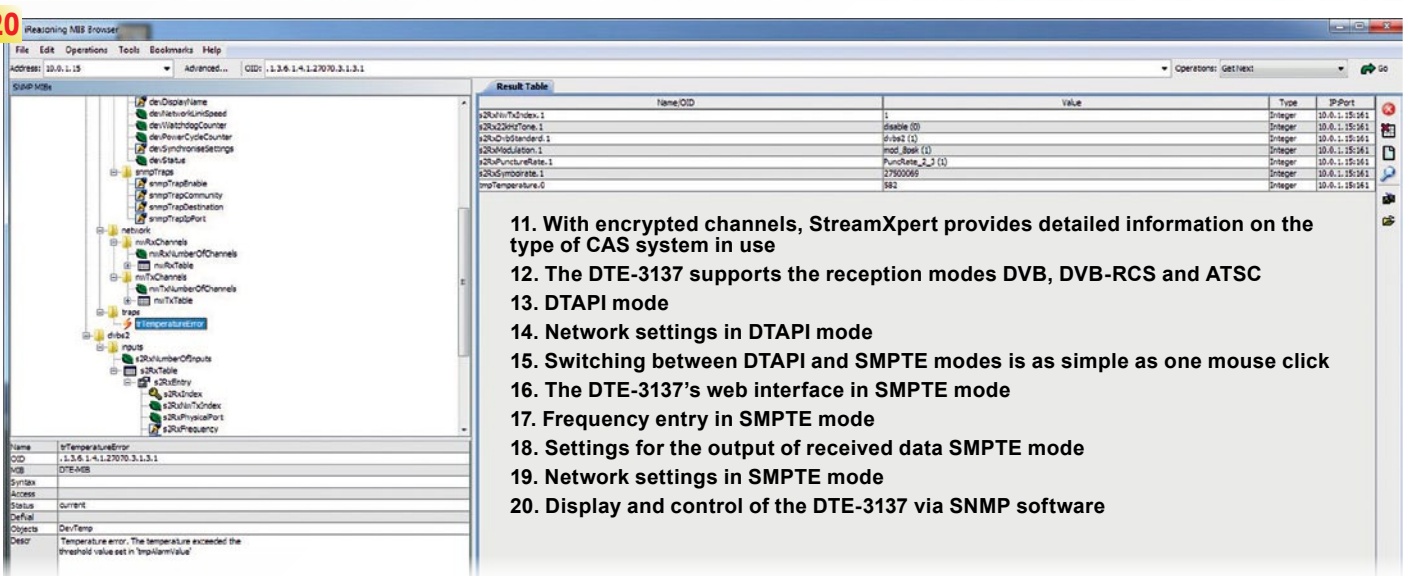
17



19



20



11. With encrypted channels, StreamXpert provides detailed information on the type of CAS system in use
12. The DTE-3137 supports the reception modes DVB, DVB-RCS and ATSC
13. DTAPI mode
14. Network settings in DTAPI mode
15. Switching between DTAPI and SMPTE modes is as simple as one mouse click
16. The DTE-3137's web interface in SMPTE mode
17. Frequency entry in SMPTE mode
18. Settings for the output of received data SMPTE mode
19. Network settings in SMPTE mode
20. Display and control of the DTE-3137 via SNMP software

this tool can do, namely the analysis, display and recording of transponder streams that can be received with a compatible receiver, such as the DTE-3137, the use of this tool will be nothing less than self-explanatory.

In the tool's upper-most symbol bar, StreamXpert

shows the reception hardware found in the local network. Right next to that are two entry fields for frequency and modulation parameters. And, as is typical with professional equipment, the IF frequency of the desired satellite transponder has to be entered, in other words, the LOF must first be subtracted

from the satellite transponder frequency. For example, if the DTE-3137 is to receive the frequency 12150 MHz and you're using a universal Ku-band LNB, you would enter the IF frequency of 1550 MHz (12150 MHz – LOF of 10600 MHz). What might be standard and typical for a professional might at first

be a little irritating for a beginner but it ends up saving the manufacturer a lot of extra work if they were to take into account all the different types of LNBs that are in use today. Along those lines, it also makes sense that the 22 kHz signal is not automatically turned on or off based on the frequency that

is entered, instead the user has to enter this in manually as well while selecting the required polarization voltage of the LNB.

Additional reception parameters such as modulation type, symbolrate or FEC are not necessary; after pressing the enter button, the DTE-3137 automatically analyzes the entered frequency and recognizes all the necessary parameters on its own. A green dot in the StreamXpert's status bar indicates that the DTE-3137 was correctly able to read and process the selected frequency.

Next, all the usable information from the incoming transponder stream is then instantly displayed in the two main windows including a complete PID overview as well as the content of all the information tables such as PAT, CAT, PMT or NIT. As useful as all of this informa-

tion can be, sometimes you might just want to know what channels are being received by the DTE-3137 at that moment. No problem, with just a few mouse clicks the StreamXpert software shows all of the available TV and radio channels on the currently received transponders. These channels can also be viewed live. It makes no difference if it's an SD or HD channel; keep in mind though that encrypted content cannot be decoded due to the lack of a CI slot.

Underneath the frequency and modulation entry fields are the control buttons for recording the current transponder stream. With just a few mouse clicks, the software can record the entire transponder stream onto the hard drive of the PC. Thanks to the Gigabit Ethernet connection the recording function worked perfectly even on HD content with large

amounts of data without putting much of a load on the processor.

Additionally, the StreamXpert software allows other basic settings such as displaying PIDs in decimal or hexadecimal format, the use of the hardware acceleration of a DVXA compatible graphics card for the live display of DTE-3137 received channels on a PC, the selection of the reception mode to be used (DVB, DVB-RSC or the American ATSC) and the creation of a complete log file in XML format.

Changes to the displayed transponder stream cannot be done with the StreamXpert software; it can only be used to completely and precisely record the data stream on a PC as it was received as well as display all the internal values to the user.

Through the web interface the operational mode of the DTE-3137 can be switched to SMPTE with just one mouse click and after a quick hardware restart, numerous additional menu points appear in the receiver's web interface. The user now has the capability to modify a variety of reception parameters via the web interface and also how the user can have control over the data output via the network connection. The tuner control, apart from its graphical representation, corresponds exactly to the depicted operation via StreamXpert. Via its own status page the user will receive all of the necessary and interesting parameters (such as modulation type, symbolrate, FEC, BER or SNR) of the currently selected transponder. The status indicator 'Locked' tells the user that the DTE-3137

is in operation and processing received data.

For the output via network, there are two different modes available: Unicast and Multicast transmission. The difference between the two modes simply has to do with the number of receivers. While Unicast is meant for one single receiver, Multicast streams can be received and processed by a group of receivers. All of the required IP parameters can be entered directly in the DTE-3137's web interface; this also functioned without any problems in our tests. Transmissions can take place in RTP mode as well as UDP mode making the DTE-3137 a truly universal device.

To monitor and control the DTE-3137 in SMPTE mode, not only can the integrated web server come into use, but also any SNMP client. As we mentioned at the beginning of this report, DekTec provides the required MIB files for this purpose. As before, we created a connection to the DTE-3137 via the iReasoning MIB browser that allowed us to read and display a multitude of usable information. The possibilities range from hardware status information (such as internal temperature) to tuner parameters that have a direct influence on reception. Thanks to the easy-to-understand MIB browser, the user can select any value from the numerous possibilities that would be interesting to him and display them in an organized table format.

The Unicast or Multicast transponder stream data can also be received and recorded by the StreamXpert software. It automatically adapts itself to the DTE-3137



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in SMPTE mode and changes the entry fields for frequency and modulation mode in the entry possibilities for IP address and port of the received data stream.

Naturally, the data can also be used in other applications and programs that can work in Unicast or Multicast mode. Using the web interface, the transmission mode can be set to RTP (Real Time Transport Protocol) or UDP (User Datagram Protocol) and the parameters TP per IP and TP size can also be set.

As part of our tests, we attempted to receive the data stream sent by the DTE-3137 using the very popular VLC Player (www.videolan.org) on a Mac and a Windows PC; as expected, it functioned without any problems.

Regardless of which mode was selected, the complete transport stream is always available on the DTE-3137's DVB-ASI output so that, for example, it can be passed on loss-free to a Re-Multiplexer or other professional DVB data stream processing equipment.

The LCD display on the DTE-3137 continuously shows information on the status of the currently received transponder (signal level, SR, SNR and BER); it allows a technician to monitor the signal reception directly on the hardware.

A special section in the DTE-3137's web server makes it possible to update the firmware to the latest version once it has been downloaded from the manufacturer's web site. In addition, critical DTE-3137 status information is continuously available via the web in-

terface such as the current hardware revision, the currently installed firmware, the current IP address or the connection speed of the network. By the way, if the network doesn't have a DHCP server with automatic IP address recognition, it can, of course, be entered manually.

For our tests we put the DTE-3137 through several days of continuous operation and during that time recorded an enormous amount of data via satellite (several terabytes). And just as we expected, the DTE-3137 worked perfectly without any errors or crashes. At the same time, the transponder streams were consistently transmitted to our PC without any interference. Even a simulated power failure did not disturb the DTE-3137; as soon as power was restored, it went right back into service without any interaction by the user.

The DTE-3137 is a very reliable DVB-S/S2 receiver that was explicitly designed for professional applications. It takes the received data and passes it on via a network or DVB-ASI output.

Thanks to the two control modes it has universal applications. For example, it can completely record a DVB-S/S2 transponder stream, it can pass on a DVB-S/S2 transponder stream to other devices, it can pass a stream on via a network or through the DVB-ASI output to, for example, feed it into a DVB-C cable network or to modify and re-multiplex the transponder stream.

The manufacturer-provided C++ library available for download also allows the individual integration of all

available hardware features in the personal control environment of the user.

The built-in tuner is very sensitive and demonstrated in our tests that it could easily handle weak and narrow-band satellite signals. The automatic recognition of all the necessary reception parameters functioned consistently without any difficulties.

Multiple reception tests on, for example, TURKSAT at 42° east, BADR at 26° east or NILESAT at 7° west clearly verified this to be true.

Thanks to the StreamXpert software as well as the wide-ranging settings and monitoring functions via web interface or SNMP software, the user can fully control the DTE-3137 from remote locations.

Expert Opinion



Thomas Haring
TELE-satellite
Test Center
Austria

Professional equipment with unsurpassable features. Trouble-free operation of all features, very easy control and configuration via SNMP or web interface. Thanks to the downloadable C++ library, the user can integrate all of the functions individually in his software. The output of the received data stream is carried over the network either directly to the StreamXpert software or via Unicast/Multicast in RTP or UDB.

None

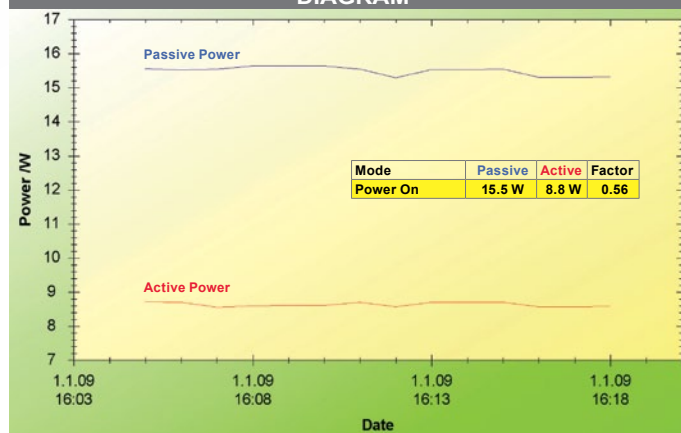
TECHNICAL

DATA

Manufacturer	DekTec Digital Video B.V., Godelindeweg 4, 1217 HR Hilversum, The Netherlands
Email sales	info@dektec.com
Internet	www.dektec.com
Model	DTE-3137
Function	Networked DVB-S / DVB-S2 Receiver
Frequency range	950 - 2150 MHz
Transmission Standards	DVB, DVB-RSC, ATSC
Modulations	QPSK, 8-PSK, 16-APSK and 32-APSK
Symbol rate	2-40 Ms/s
Connectors	Sat-ZF IN, DVB-ASI, RJ-45
Power consumption	max. 17W
Dimensions	13.5 x 13.5 x 3.5 mm

ENERGY

DIAGRAM



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Lookee TV-Box

- *very comfortable to use*
- *can be connected to a HD monitor for high resolution viewing*
- *doubles as alarm clock when in standby*
- *ideal for anyone living away from their home country*
- *Universal Plug and Play enabled*





The All-Inclusive Internet Talent

The Lookeetv box measures a mere 125 x 55.9 x 257.5 mm in size and its front panel is dominated by a high-resolution 7" TFT display in 16:9 format. To the left and right of the display are speakers rated at 2 watts.

The rear panel at first glance doesn't seem all too impressive; there's just an arrow ring button as well as three buttons to operate the TV box without a remote control.

It's only when you open up a small flap on the rear panel that the box reveals all of its various connections. These consist of an HDMI output, an RJ45 network jack, a mini USB port (also serves as the power input), a headphone jack, an SD card reader,

CVBS video and stereo audio outputs and last but not least a jack to connect the included FM antenna with the Lookeetv box. The on/off button can be found on the top of the box and is therefore very easy to reach.

The remote control included by the manufacturer completely fulfills all of the requirements that would be placed on it and also in terms of its workmanship, ergonomics and the labeling of the buttons.

A detailed manual guides the user step-by-step through all of the functions of the box; the box also comes with a very logical and easy to understand OSD such that most users could easily get by without the user manual.

In addition to the remote control and the power sup-

ply, the manufacturer also includes in the package a CVBS/stereo audio cable and a mini-USB cable to link the box with a PC. All in all, the overall workmanship of all the hardware left us with a very good impression.

In order to be able to use all of the Lookeetv box's functions, the first step would be to create a link with your router or high-speed modem so that the box can operate with an Internet connection. To that end, all you need to do is take a look at the 18 different choices in the main menu whose entries are arranged in a similar fashion to

the Apps on a SmartPhone.

Selecting "Settings" lets the user choose a desired language (the box supports English, German, French, simple and traditional Chinese as well as Hebrew) and access the home network connection settings.

We liked the fact that in addition to the RJ45 interface, the manufacturer also included a WiFi receiver so that wireless connections can be set up. All of the necessary functions, such as, WEP or WPA2 encryption are available while the SSID of the desired WLAN can be entered manually or the box



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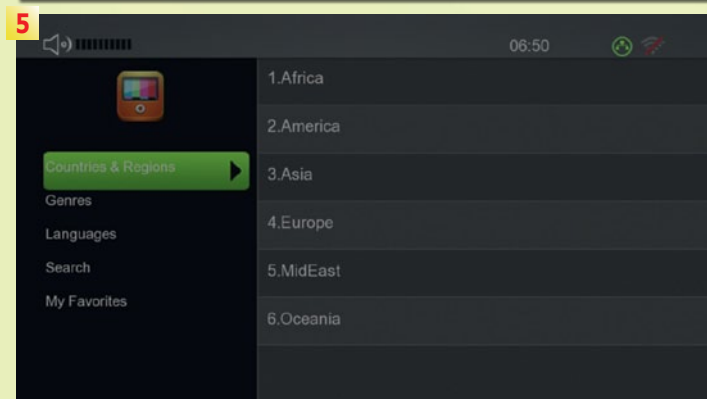
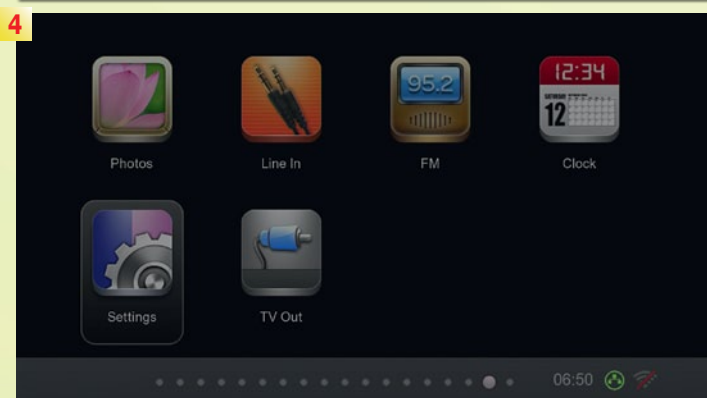
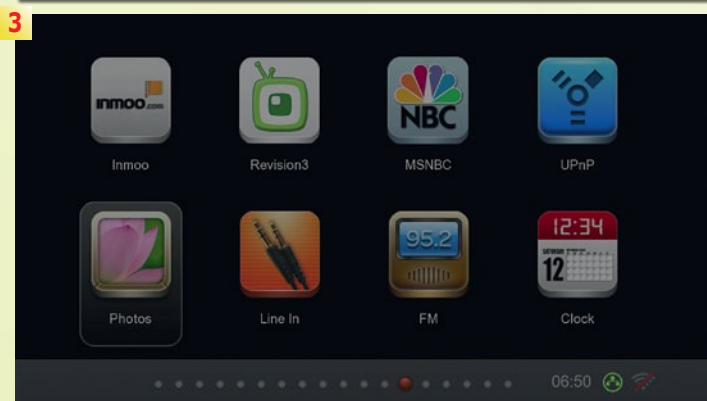
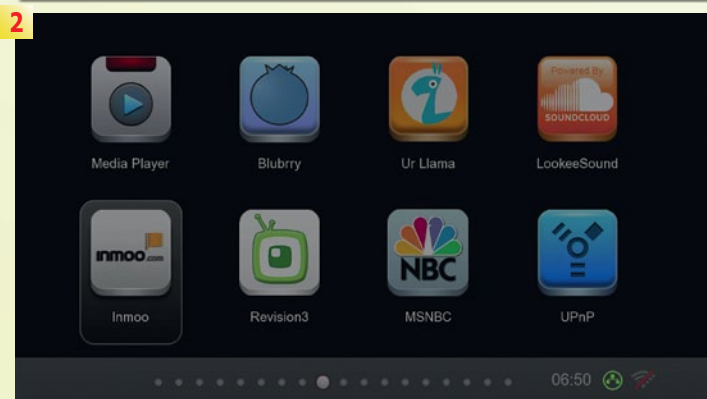
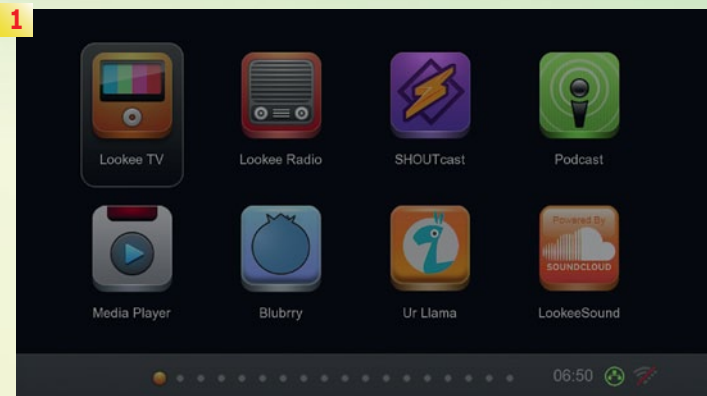
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can search for it automatically.

The acquisition of the required IP data via DHCP is for the most part standard today and is of course also supported by the LookeTV box. Nevertheless, these parameters can be entered manually if needed. Even a connection set up with a DSL or cable provider via PPPoE is supported.

The LookeTV box comes with an integrated screen saver that converts the TFT display into a radio alarm clock with a large time and date display. The alarm time can also be set in the Settings menu where you'll find two alarm timers available.

The necessary time signal can be received by the box via the Internet; the user then simply needs to enter in the time difference for his location. If the Internet is not available or if the user for some reason wants to enter in the time and date manually, this capability is also available.

1, 2, 3, 4. Looke TV-Box Main Menu

5. The LookeTV App sorts the channels by country/region, genre and language

6. You can even search by keywords

7. Results of a search for "travel"

8. Before playback begins, the box stores a portion of the video signal in its buffer memory to cover any momentary connection dropouts

9. Playback of a TV channel from Iraq

10. 4:3 channels can be expanded into 16:9 format

11. It's recommended to play back a channel in its original resolution especially if the picture quality isn't optimal

12. Radio channels are also sorted by country/region, genre and language

13. A total of 39 genres are available to choose from

14. Nepal FM 91.8 on the LookeTV Box via Internet stream

15. The channel selection with Shoutcast is nearly unlimited

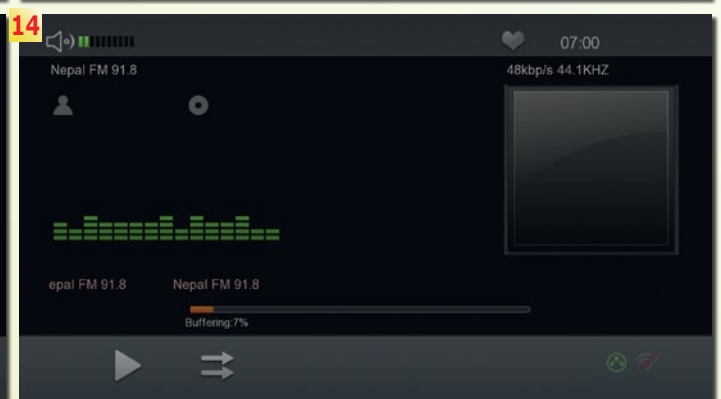
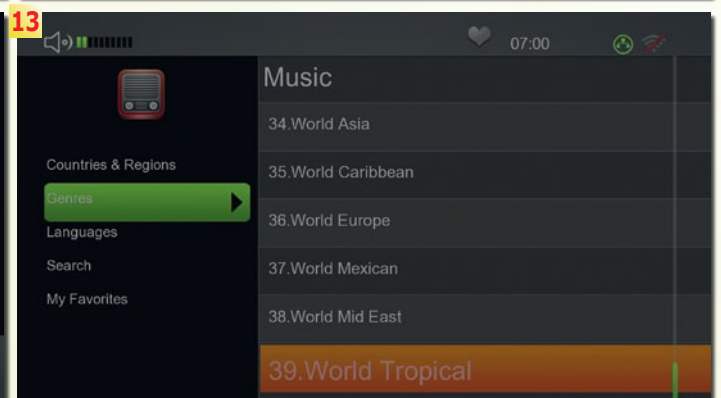
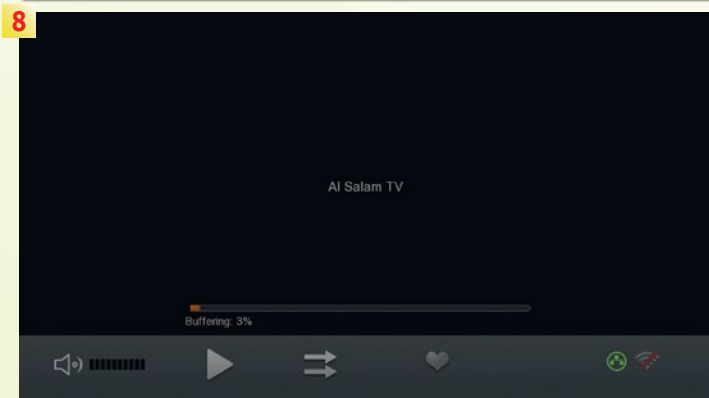
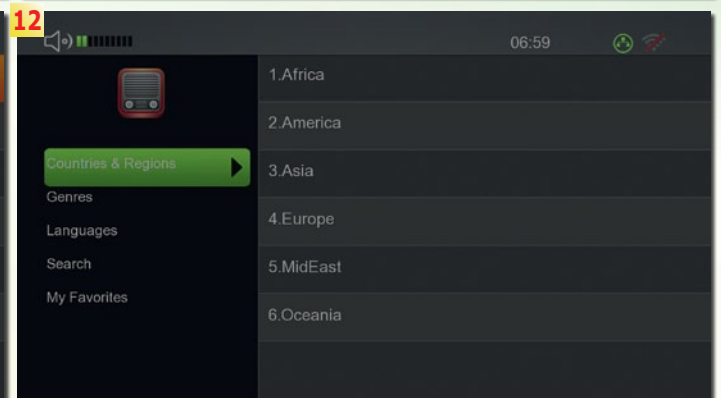
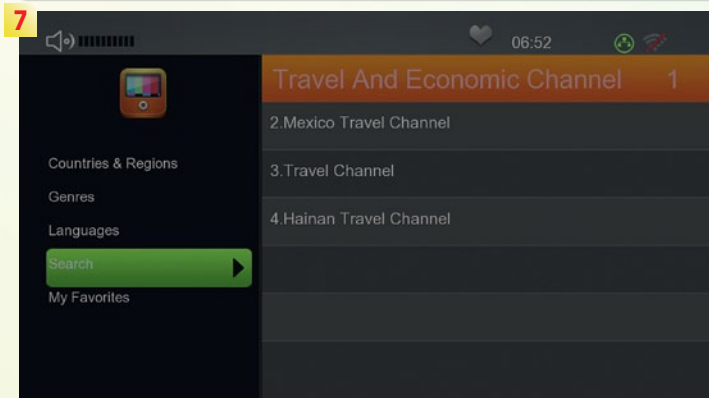
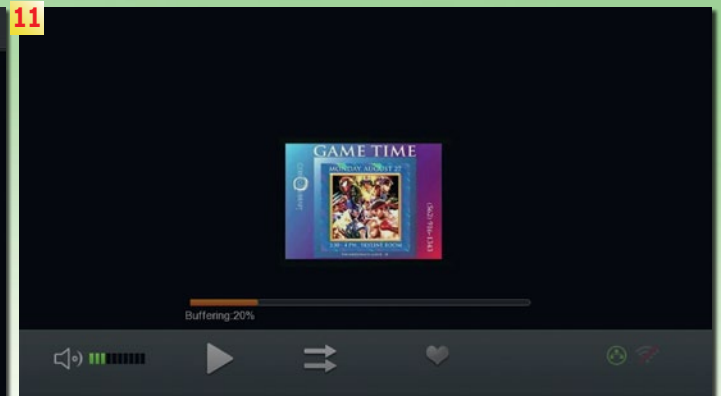
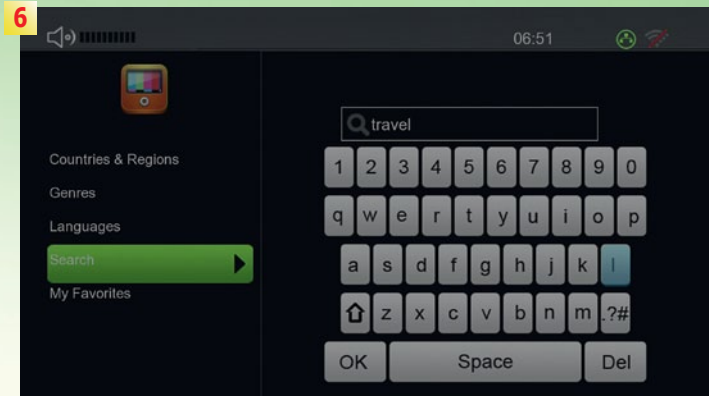
The various settings are further enhanced by an Auto Power Off function that will turn off the box after a pre-set time span. There's also the ability to update the LookeTV box's firmware or return the box to its default settings via the Internet or via a local storage device.

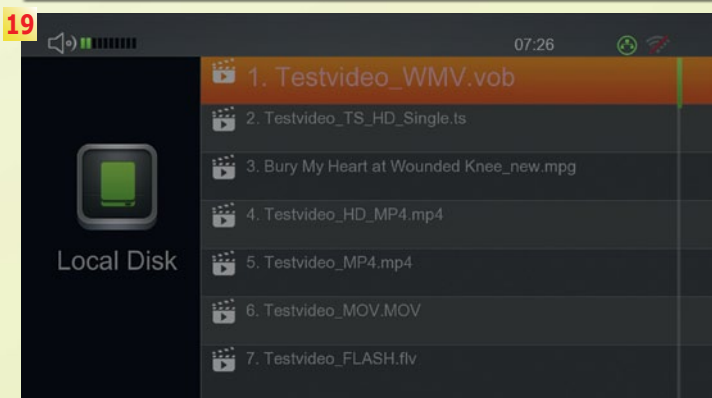
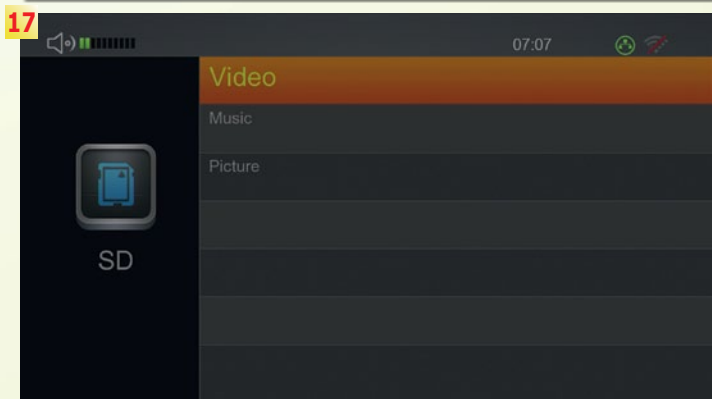
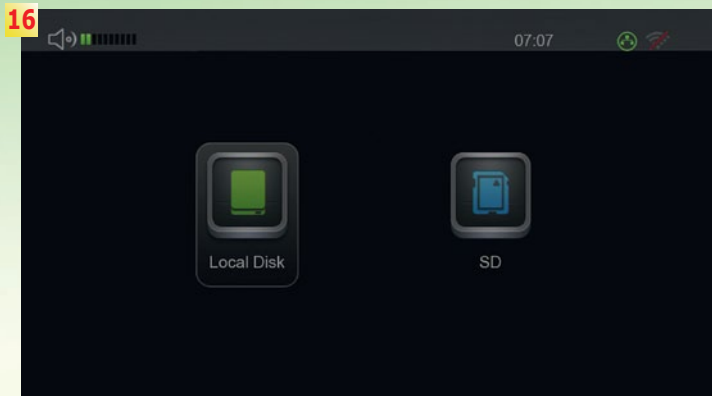
Next to all of these settings parameters, the menu selection "TV Out" instantly caught our eyes. Here the user can decide if the signal from the box should be displayed on the small integrated TFT monitor or if it should be routed to the two outputs (CVBS and HDMI) on the rear panel. Unfortunately, it's not possible to have both at the same time.

In our tests we were able to connect the box to a 42" LED monitor via the HDMI port as well as via the CVBS jacks and thus be able to enjoy the signal on a large display. While the display via CVBS was not quite optimal, the HDMI display in 720p HD was especially pleasing to the eye. Even the small 7" TFT monitor was bolstered by brilliant colors, high contrast and interference-free image construction.

Now let's take a closer look at the individual functions and Apps in the LookeTV box: Looke TV and Looke Radio. These two programs are the central components of the LookeTV box and even have their own dedicated access buttons on the remote control.

Both of them contain prepared lists from the manufacturer with all Internet-based freely receivable TV and radio stations from every possible region of the world. These lists can be sorted by country and region as well as by genre and language for a better overview of what's available. Add to that a search function as





well as the ability to place favorite channels in their own list.

While looking through the lists we could hardly contain ourselves; the regional overview included entries from Africa, Asia, America, Europe, Oceania and the Near East. Each of these regions is then sub-divided into individual countries.

All of the TV and radio broadcasters in the lists could easily be accessed. This speaks for the care that LookeeTV put into these lists; obviously, the company doesn't provide all of these services directly, rather, they simply collect all of the content distributed by the broadcasters and place them all in one large database.

Once a channel has been chosen, the box creates a connection via the Internet with the appropriate server from the provider and begins to show the content.

This process, depending on the Internet connection speed and on the selected channel, can take as long as ten seconds although on average the user will see the first picture much sooner than that.

During playback there are numerous options available for the user, for example, how the received picture should be displayed. Many broadcasters still transmit in 4:3 format and some of the content is even transmitted in poor quality. The user has the choice of watching it all in its original size, in a zoomed-in version with the

correct aspect ratio or in full-screen mode with stretched 4:3 broadcasts.

During playback, the currently running channel can be paused at any time although a time shift function is not available.

We were also surprised at the number of available radio stations. Regardless if it is Radio Maria Tanzania, The Voice of Russia or Maitri 99.4 FM from Nepal, the selection was essentially unlimited.

The video and audio quality of each channel depends, as suggested earlier, entirely on the individual provider. All-in-all though, we only found a few TV channels and almost no radio channels where the picture and audio quality would be something to complain about.

Thanks to the really enormous selection of channels, the LookeeTV box would be ideal for anyone living away from their home country who is searching for TV and radio channels from home.

The free Internet streaming service Shoutcast from Nullsoft is a familiar name to most radio fans and so it only made sense that the LookeeTV box was also fitted with the Shoutcast App. It provides hundreds of radio streams from all over the world sorted into a total of 36 main categories. It doesn't matter if you're looking for modern country music, oldies, classical music, techno, pop or other music styles, you'll be able to find what you're looking for.

On top of that there are also the hundreds of radio stations that don't have a specific music format but offer rather a mixed format.

Our tests of the Shoutcast App showed that it functioned without any problems. We especially liked that if a particular channel only played back audio, you

16. Videos, music and pictures stored internally or on an SD card can be made available

17. Videos, music and pictures from an SD card

18. Playback of WMV videos

19. An overview of our test videos in their various formats

20. MP4 HD playback

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MODEL :BK5-01**

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Features:

1. Dual Polarity Switchable
2. Super low Noise
3. Digital Ready
4. High Gain Output
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MODEL :BC-103B**

C-BAND

Features:

1. Dual Polarity Switchable
2. Super low Noise
3. Digital Ready
4. High Gain Output
5. Easy Installation
6. Waterproof



**KU-BAND SINGLE
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**DiSeqC 8x1
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**DiSeqC 4x1
MODEL: BDS-46**



**DiSeqC 4x1
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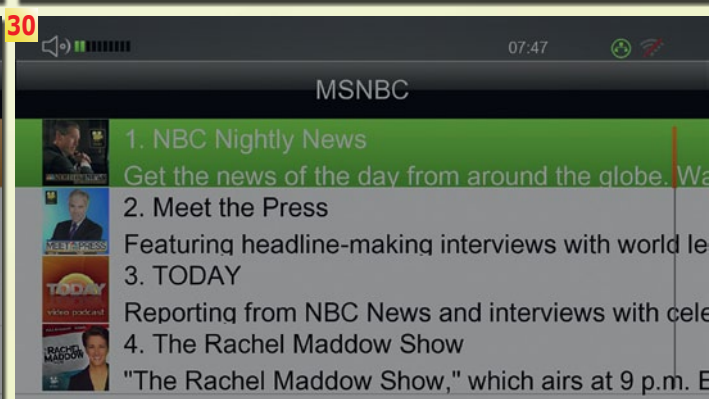
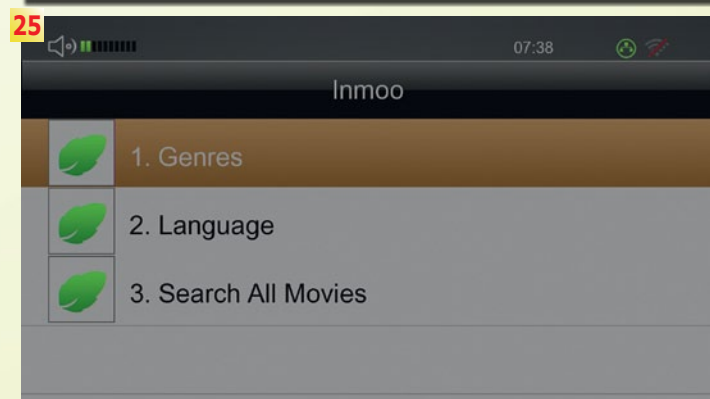
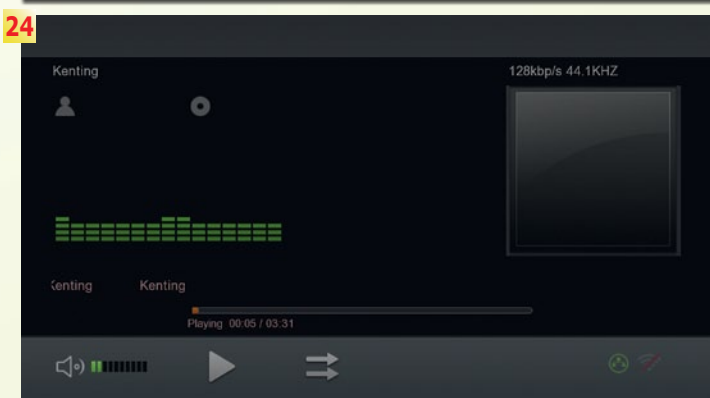
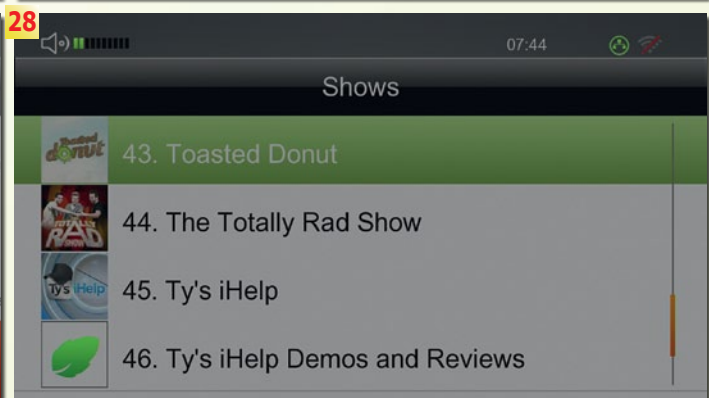
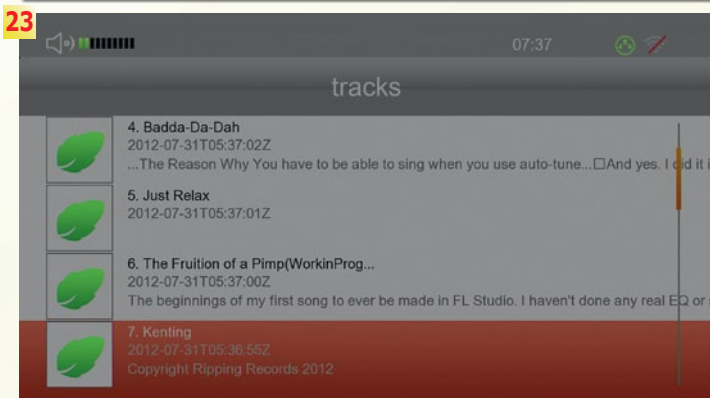
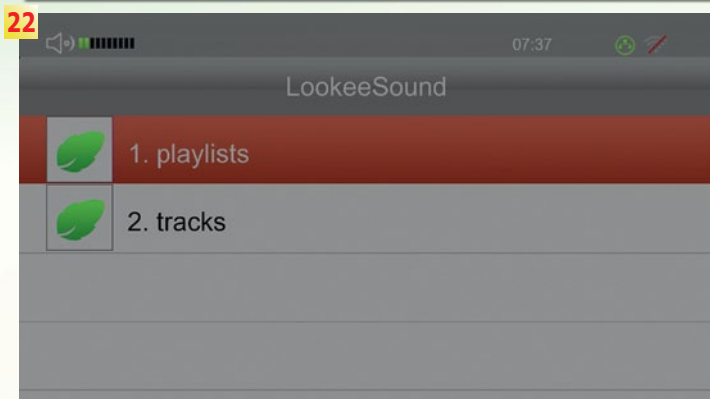
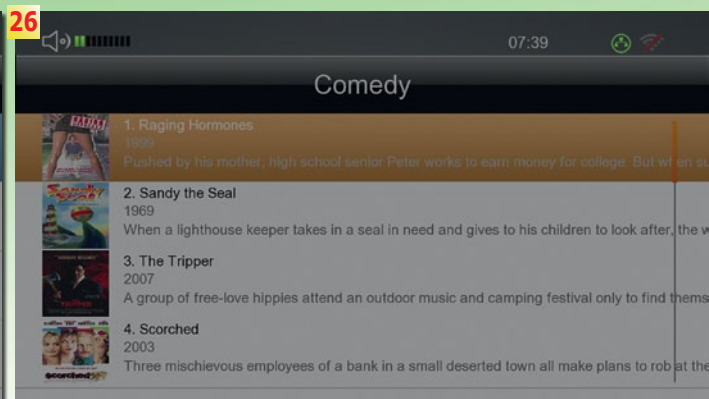
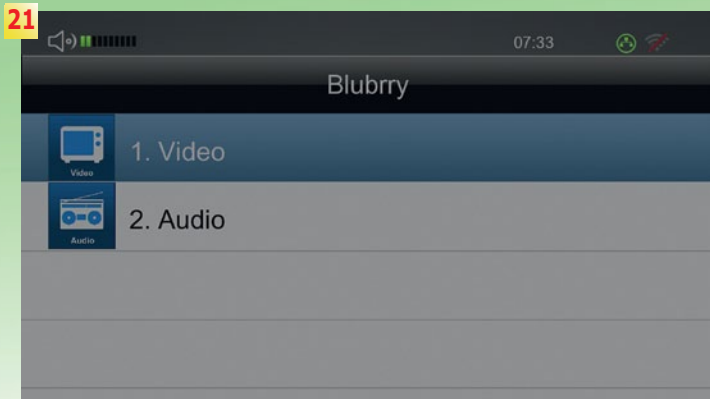
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could exit the respective App without any interruption in the audio playback. After pressing the OK button, the user can go back to the main menu and start up other services on the box while the music continues to play in the background.

Podcasts have become a trend in the Internet and it's not only large companies, authorities, governments and celebrities that use this luxury to make public information in the form of pictures with audio or just audio all by itself, more and more private users are taking advantage of this service and creating their own themed podcasts. It could be the latest pasta recipe or it could be something even more serious such as current reports of the political situation in countries where the local media doesn't always tell it like it is.

In all, the LookeeTV box's podcast function offers access to hundreds of freely available podcasts that are sorted into 43 different categories. And if you're having a hard time choosing, you can simply call up the list of most popular providers with names like BBC.

The LookeeTV box comes with an integrated 1.14 GB storage device. Audio, video and picture files can be transferred to the box via the USB port. Note that the PC in this case will be providing the power to the LookeeTV box and that because of this two USB ports will be occupied. The necessary cable for this is included with the LookeeTV box.

We tested this feature with WMV, MPEG, MP4, HD-MP4, MOV, Flash and AVI videos – all of the content could be played back without any problems. The box also had no difficulties with WMA, MP3, MP4 and AAC audio

data.

If you have a stereo system, you can enjoy the audio output from the box through the stereo system thanks to the stereo audio outputs. In other cases the little speakers on the LookeeTV box have to take over; we were actually quite surprised at the audio quality in our tests.

In addition to the internal memory, the manufacturer thought of yet another two ways to supply the LookeeTV box with content. One way would be the SD card reader on the rear panel that in our tests allowed content on an 8 GB SD card to be played back.

The other method is the UPnP function. With Universal Plug and Play (UPnP) it involves an overlapping standard of devices that can be used to further distribute video and audio content as well as pictures via the Internet.

Since this function is already integrated into the Windows Media Player, users with a Windows PC can make their entire media collection

21. Blubrry access

22. Lookee Sound

23. Lookee Sound title display

24. Playback of a song via Lookee Sound

25. Hundreds of freely available titles are available through the Inmoo video service

26. A portion of the Inmoo titles in the Comedy category

27. Inmoo also comes with a search function

28. Programs with the most diverse subjects are available in HD quality

29. Revision 3 on the LookeeTV box

30. MSNBC

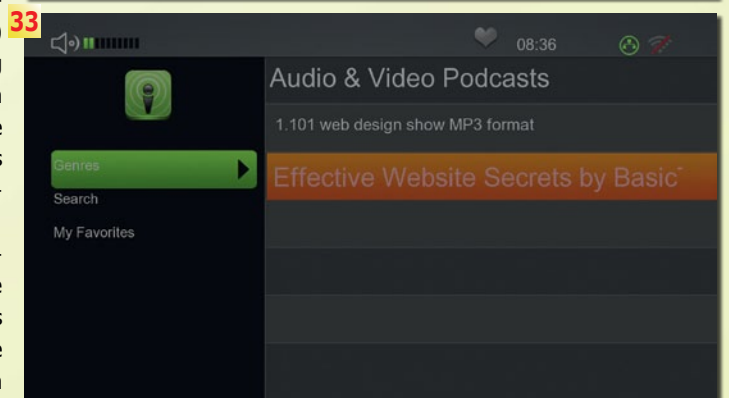
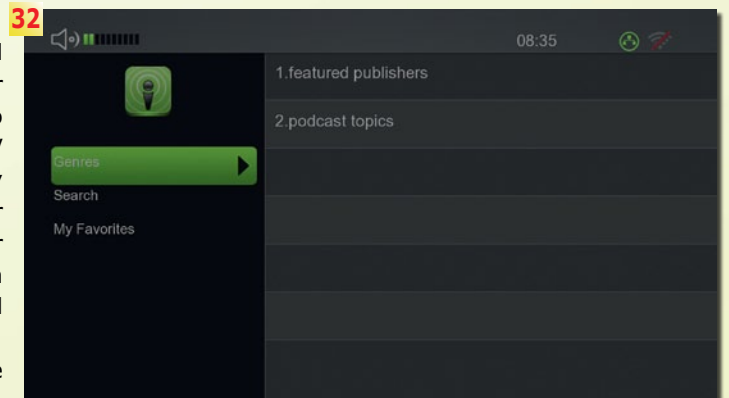
31. NBC Nightly News via the LookeeTV box

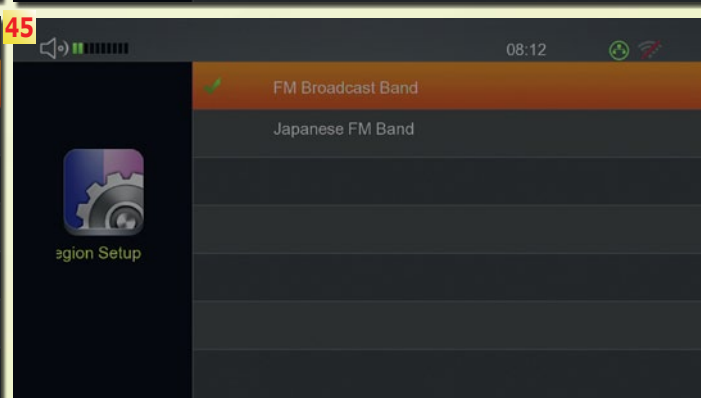
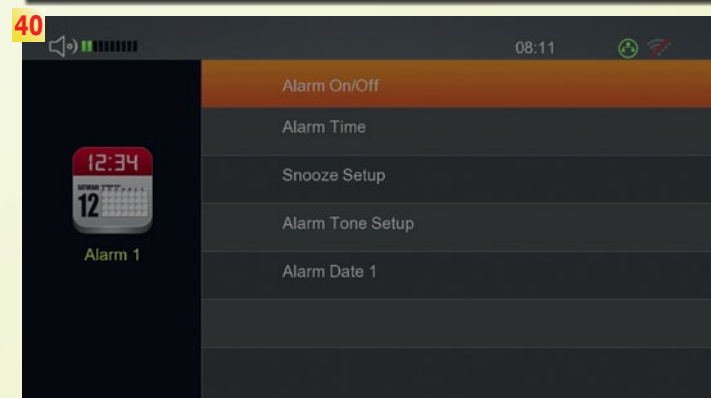
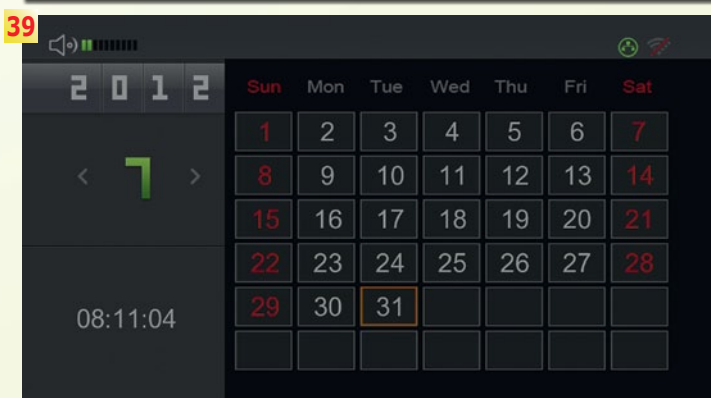
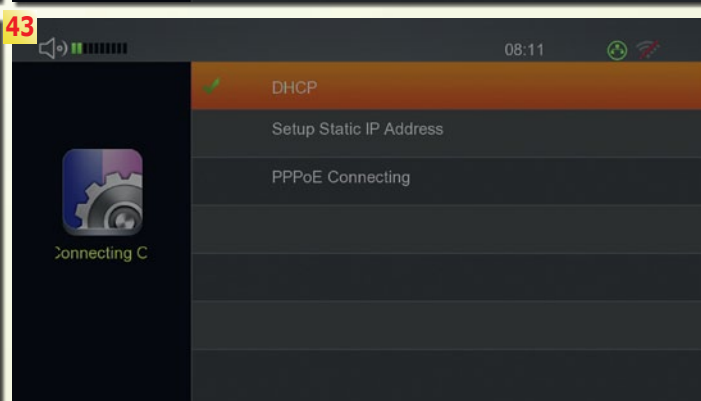
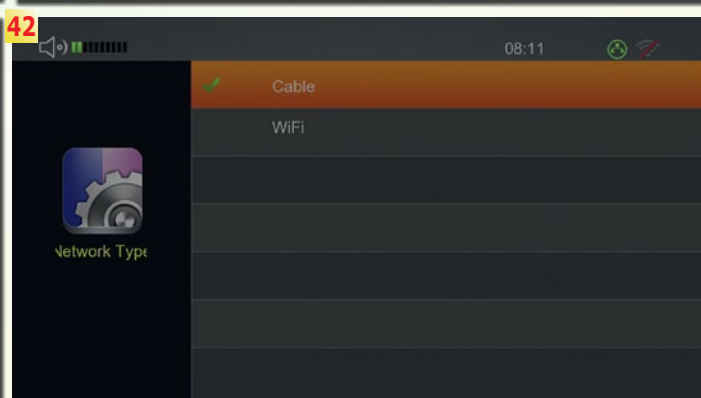
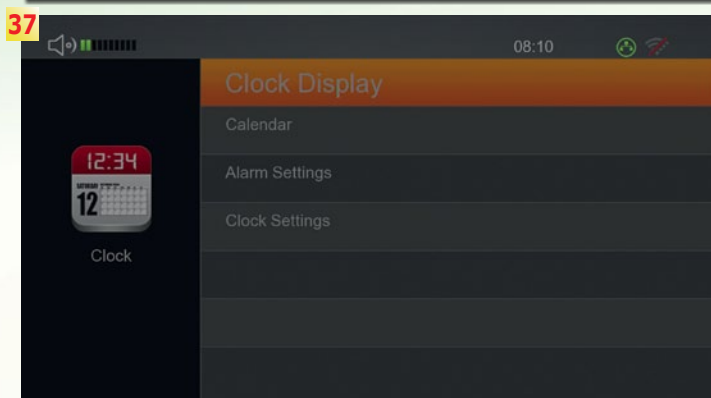
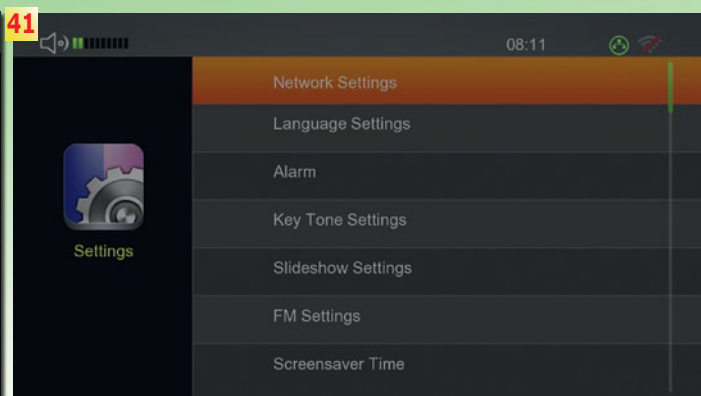
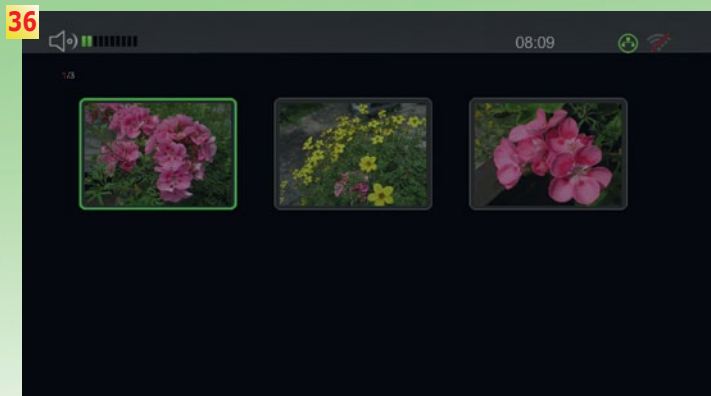
32. The Podcast App

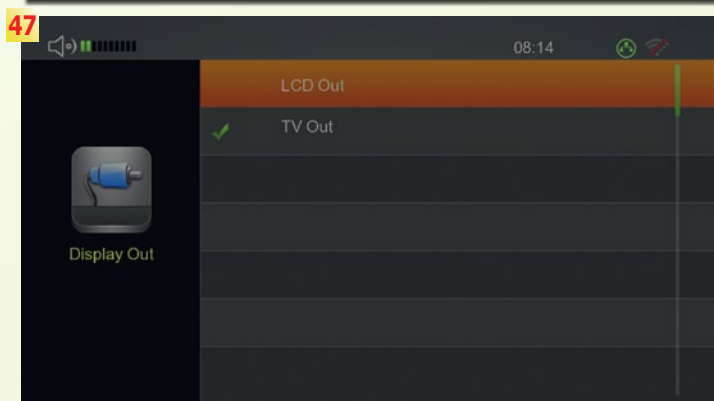
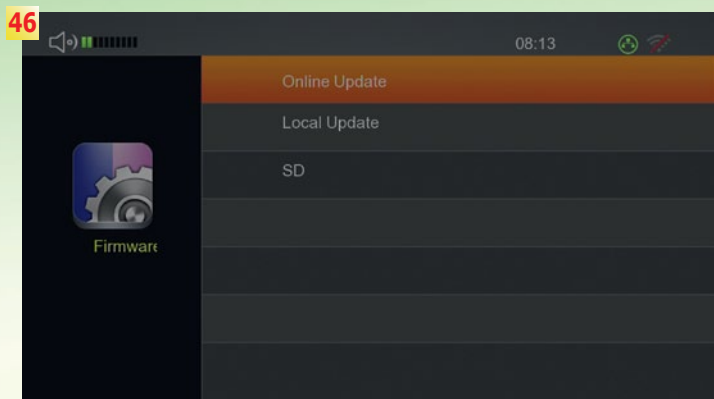
33. Podcasts all about Web design

34. Without any configuration the LookeeTV box instantly recognizes any available UPnP servers

35. Video playback via UPnP. The picture quality is as good as the original







36. The integrated picture viewer shows an organized summary of all the available pictures

37. Settings for the calendar and time

38. The screen saver on the LookeTV box resembles an alarm clock

39. Calendar display

40. Two alarm timers can be set up individually

41. Settings

42. The LookeTV box can set up a network connection via cable or WiFi

43. DHCP, static addresses as well as PPPoE are supported

44. Multiple OSD languages are available for the user

45. The FM radio range can be switched between 87.5-108 and 76-90 MHz

46. The LookeTV box's firmware can be updated via Internet or local storage device

47. The video signal is displayed either on the integrated TFT monitor or is made available at the CVBS or HDMI outputs

available to the LookeTV box with just a few mouse clicks.

This worked perfectly in our tests with a Windows 7 PC. By coincidence we even had a DVB-S receiver set up in our test center that also worked with the UPnP function; to our surprise, the LookeTV box instantly recognized it and was therefore

able to access all of the recordings that were stored on the DVB-S receiver.

The quality of the content received via the network was exceptional and could easily be mistaken for the original. Thanks to Plug & Play, all of this functioned correctly without any complicated settings or preparations.

The Blubrry App is a social network with thousands of podcasts with the most diverse of subjects. Subdivided in the main Audio and Video categories is content available to the user from the most unique subject areas in 18 different categories such as vacations, health, politics or art.

The Looke Sound App gives users access to the SoundCloud service. This platform was founded in 2007 by two Berlin artists and since then has been operating with the goal to provide free music to as many people as possible. Anyone can take part in SoundCloud and not only as a listener but also as a musician, interpreter or composer.

Individual works can very easily be uploaded to the Internet through the platform's website and are then available to every user.

LookeTV box owners also have access to Looke Sound's extensive archive and can search for music from well-known or just up-and-coming artists. In our tests we found a really good title and we can only hope that this artist finds his way into the limelight.

Another App: Inmoo. Imagine that you're an up-and-coming filmmaker and you want to reach as many viewers as possible without a large marketing machine to back you up and with limited finances. What if you had a platform like Inmoo that would allow you to do just that?

This platform would be ideal even for movie lovers that are looking for something out of the ordinary and would also like to enjoy movies other than those from Hollywood.

So what did the manufacturer of the LookeTV box do? What else but integrate the Inmoo App into their box! Divided into genre and languages, it provides access to thousands of freely available movies on the Inmoo platform. Thanks to the integrated search function, you can look for very specific content.

A total of 18 Genres from Cartoons and Thrillers up to Action, Comedy and many more are at the user's fingertips. The movie selection seems to be endless. This App turns out to be one of the highlights of the LookeTV box due in large part to its outstanding picture quality.

If you place high value on exceptional picture quality, the Revision 3 App is right

for you. This Internet service founded in California in 2005 works with its content and the quality of their offerings almost on the same level as an established TV station, it's just that the producers of the content are typically private people or at the least not so commercially oriented as larger studios.

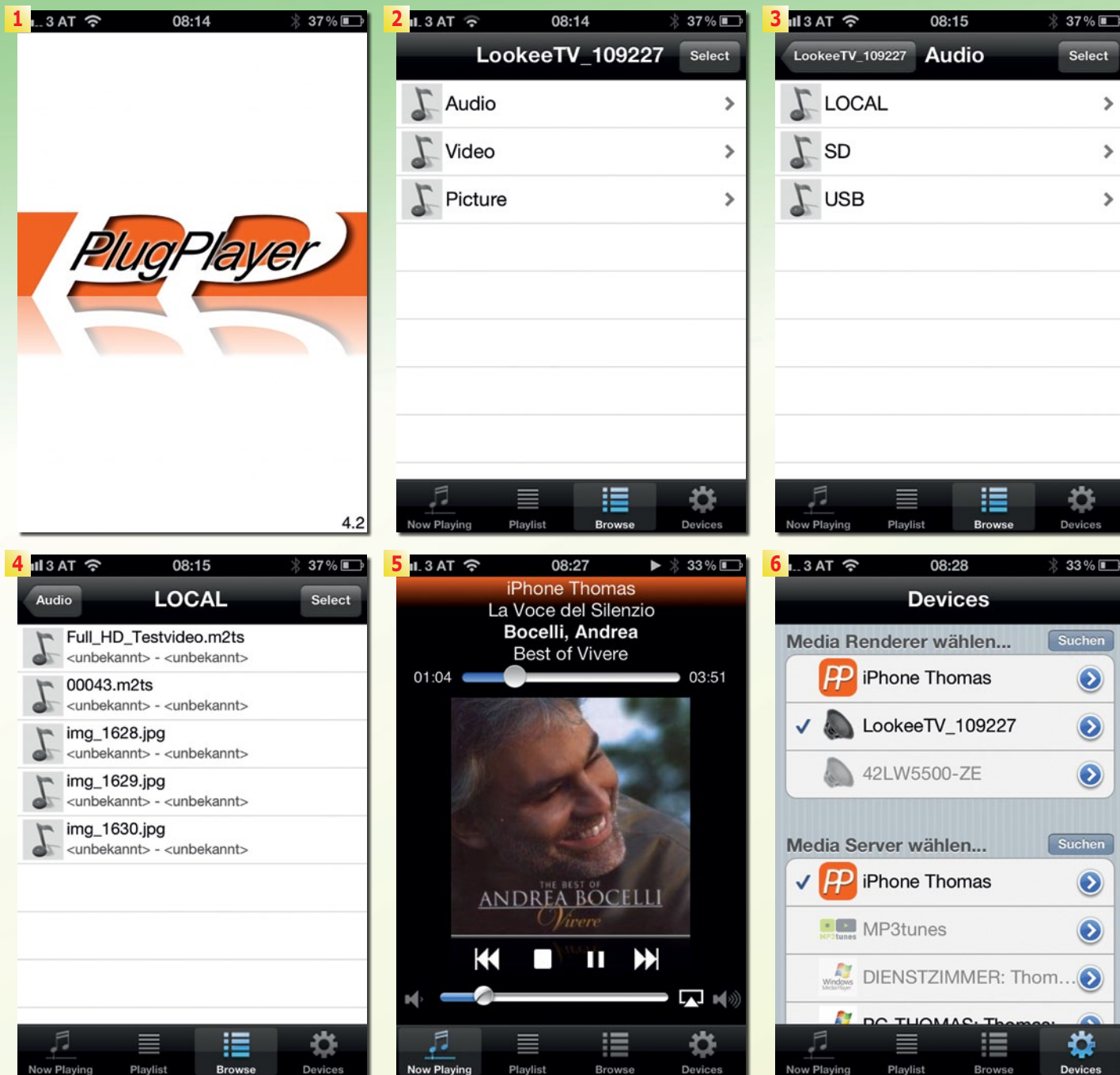
Thanks to the many different subject areas and shows with such obscure titles like "Toasted Donut", this provider quickly reached cult status. Those that have a LookeTV box but no PC can now also enjoy these kinds of titles directly on their TV.

During the course of our tests, we had a lot of fun surfing through all of the different shows; the perfect HD picture quality made it all that much more enjoyable.

In addition to the current content, there's also an extensive archive of Revision 3 carried content. So, if you happen to miss an episode of the mostly weekly programs, don't worry, all of the content is archived and is available to be accessed for quite some time.

In the old days, you got your morning news from the radio; today it's the up-to-date news broadcasts via Internet from those large news networks like MSNBC. For all those who want to stay informed on what's going on in the world, the LookeTV box has a dedicated App for access to MSNBC content. There you'll find not only up-to-date MSNBC news broadcasts, but also popular shows like NBC Today and Meet the Press.

Unfortunately, we weren't all too happy with the picture quality of the programs, if MSNBC wanted to there would be great potential for improvement here. Thanks to the small 7" TFT monitor



1. The iPhone App PlugPlayer can control the LookeeTV box via a network and transfer content to it
2. Without any kind of configuration, the LookeeTV box is instantly recognized
3. Access to the media on the box
4. It doesn't matter if it's videos, pictures or music, you have complete access to the box via PlugPlayer
5. Content can be played back directly on an iPhone
6. Content can also be sent from the iPhone to the LookeeTV box

on the LookeeTV box, this low quality wasn't all that noticeable on such a small screen, however, trying to watch MSNBC on a 42" monitor was no fun at all.

Actual printed photographs are no longer the norm today. It should come as no surprise that the LookeeTV box comes with a pic-

ture viewer that can display any pictures stored on an SD card or in the internal memory on the integrated TFT monitor or on an external TV.

The images can be shown full-screen if desired. While viewing pictures, they can be zoomed in on, zoomed out from, rotated or shown in slide show format. Thanks to

the UPnP interface, the user can even show pictures that are stored on a PC through the LookeeTV box on a TV. This all worked perfectly in our tests.

The FM antenna jack located alongside the other connections on the LookeeTV box can also be used as an input for external audio sources such as from an MP3 player, discman, etc., the audio would then be played back through the internal speaker in the box.

The FM reception mode tops it all off; it lets you receive local over-the-air FM

radio stations. Once the antenna is connected, an automatic scan can be performed after which all of the available FM radio stations within range will be shown in a list. Unwanted stations can quickly be deleted leaving only the desired ones in the list.

It's a nice little extra feature since not all of these stations might be receivable via the Internet. Despite the small size of the included antenna, it had no trouble in our tests providing interference-free reception of our local FM radio stations.

THE LASER DISH SYSTEM 1000

激光卫星接收天线系统 1000



The Laser Dish System allows mounting satellite dish far away from where the satellite receiver is located. Ideal for difficult reception areas, e.g. when a dish installation is not allowed in vicinity to receiver or when obstacles hinder satellite reception. The Laser Dish System is based on the fibre optic system invented by GlobalInvacom and allows the connection of up to 4 satellite receivers. 激光卫星接收天线系统支持卫星接收机和卫星接收天线之间的远距离传输。假想有一些接收比较困难的地方，例如：当卫星接收天线不允许安装在邻近卫星接收机的地方或者有障碍物阻挡卫星接收。激光卫星接收天线系统基于GlobalInvacom公司发明的光纤系统，他允许连接多达4个卫星接收机。

The Laser Dish System 1000:

- Fibre Optic LNB, Type Universal, Ku-band, Offset, 40mm
- Power Supply for LNB
- 2 x 500m Fibre Optic Cable, ready to connect
- Converter Type Quad for 4 Satellite Receiver or Multiswitch

Guaranteed 100% Signal Quality
thanks to GlobalInvacom
Fibre Optic technology
GlobalInvacom的光纤
技术使信号质量保证100%



powered by
GlobalInvacom



IMPROVED VERSION
NEW
NOW 1000 METER

1000 METER 1000米

Distance from Dish to Receiver

从卫星接收天线到卫星接收机的距离

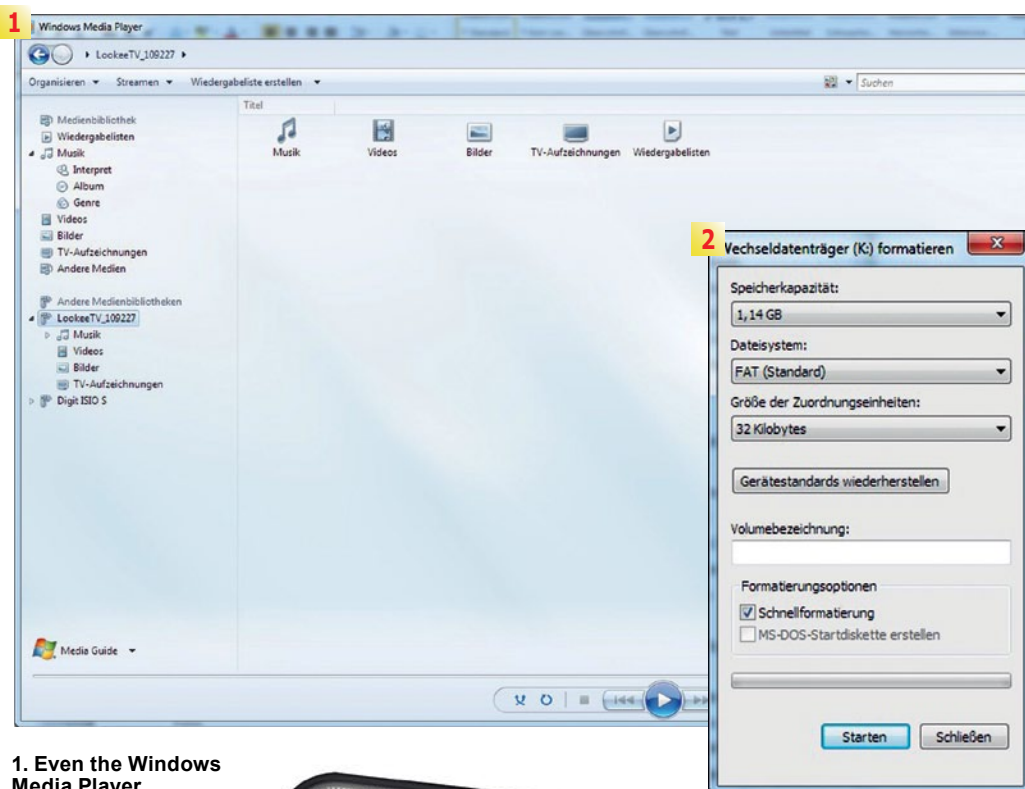
ALuoSat
29D, Block B, Nanhai Building, Dongmen Centre Road,
Luohu District, Shenzhen 518001, CHINA

Tel.: +86-755-82175354
Email: sales@ALuo-Sat.com
Website: www.ALuo-Sat.com

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Advanced Technology Division

ALuoSat
深圳市罗湖区东门中
路南海中心B座29D, 518001

电话: +86-755-82175354
邮箱: sales@ALuo-Sat.com
网址: www.ALuo-Sat.com



1. Even the Windows Media Player instantly recognizes the LookeeTV box and displays its content

2. The internal memory of the box can be filled via PC and in that way can also be formatted and/or deleted

The manufacturer even thought of including an integrated calendar that can also display the time directly on the display. In this way the user can always have the current time or the calendar in view; it's a nice alternative to those desk calendars that are still in use today.

A total of two alarm settings are available that can be individually activated and are useful in waking you up at the right time in the morning and helping you avoid missing that important appointment during the day.

The alarm itself is actually quite pleasing to the ear; it can be set to play your favorite radio station via the Internet or FM or a favorite song stored in memory. If you prefer the classic meth-



od, a normal alarm tone can also be used.

The LookeeTV box still has yet another especially practical feature. We saved the best for last! The box not only has the capability to access video and audio files via UPnP from external sources, this content can also be actively sent to the box via

Asia-Pacific's Largest Broadcasting Show



CHINA CONTENT BROADCASTING NETWORK 2013

March 2013 China International Exhibition Center · Beijing
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E-mail: wangyanhua@ccbn.cn hewei@ccbn.cn wuhongchuang@gmail.com



■ The display on the box is enhanced by brilliant colors and high contrast



UPnP! The manufacturer has developed corresponding Apps to do this for Android SmartPhones (LookePlayer) and also for iPhones/iPads (PlugPlayer).

After starting one of these Apps, the LookeTV box is instantly and automatically recognized as long as both devices are connected to the same network.

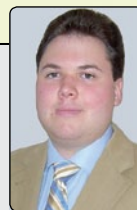
Now you can control the LookeTV box remotely via your SmartPhone and also, for example, activate, pause or stop the playback of audio and video files or even stream audio and video files directly to the box.

What could be easier than sitting on your couch and playing back your favorite music or an exciting movie via your SmartPhone to the LookeTV box and then further on to your TV?

In our tests this functioned perfectly and we had a lot of fun playing around with this. Up to five devices can be linked in this way.

Overall we thoroughly enjoyed putting the LookeTV box to the test but there's still one problem that needs to be solved: every one of our editors wanted to take the box home and "test" it themselves.

Expert Opinion



Thomas Haring
TELE-satellite
Test Center
Austria

The box's software functioned reliably; throughout all of our tests we couldn't find any problems or other errors.

Thanks to the exceptional TFT monitor on the box and the ability to play back TV content on an external TV monitor via the HDMI output, HD programs were a real pleasure to watch.

With the help of various buttons on the remote control (for example, switching between the TFT display and video out or the recalling of titles) the LookeTV box is very easy and comfortable to use.

The FM radio only works when the HDMI output is deactivated
No YouTube

UrLlama App not activated

TECHNICAL DATA

Manufacturer	LookeTV Inc., #277 - 5489 Byrne Road, Burnaby, BC, Canada, V5J 3J1
Phone / Fax	Tel: 1-604-438 6680, Fax: 1-604-326 5832
Email	inquiry@lookeetv.com
Internet	www.lookeetv.com
Model	Looke TV-Box
Function	Multimedia Player for various content via local media or Internet
RJ45	yes
WiFi	yes
HDMI	yes
HDTV	yes (up to 720p)
CVBS	yes
Stereo Audio out	yes
USB Port	yes
Internal Storage	1.14 GB
SD Card Reader	yes
Display	7" TFT 16:9
Headphones	yes
FM Radio	yes
Line In	yes
Internet services	Looke TV, Looke Radio, Shoutcast, Podcast, Blubrry, Ur Llama, Looke Sound, Inmoo, Revision 3, MSNBC
UPnP	yes

ENERGY DIAGRAM



The first 7 minutes active operation although without any content playback; the next 8 minutes with video and audio playback, the last 15 minutes in standby with current time display

The Wonderful World of Spark

Part 5: HbbTV

- *Links the TV channel with additional content that can be accessed via the Internet*
- *Spark software allows the full-screen presentation of HbbTV videos*
- *HbbTV offers a far more detailed EPG, of course, if made available by the provider*
- *Excellent integration of HbbTV in the Spark software*



Spark

ALIEN²

HYBRID RECEIVER & MEDIA PLAYER



Powered By
SPARK

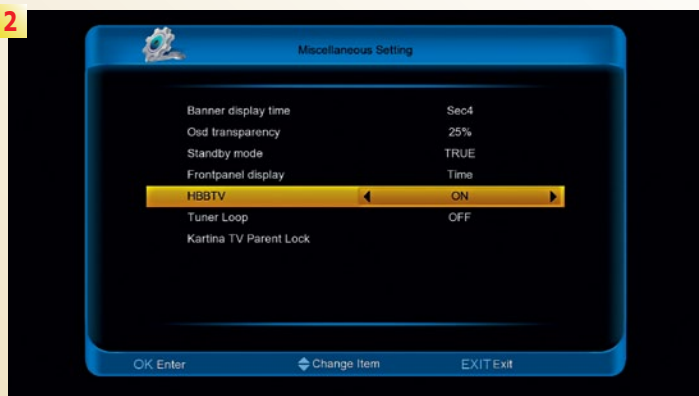
TV and Internet Combined in HbbTV

Thomas Haring



restrial antenna as well as the Internet. Contrary to the three classic reception methods, the Internet is always return-channel capable which in turn opens up for the user the ability to request specific content from the programming provider directly via the receiver and also to receive corresponding feedback from them as well.

For the engineers at receiver manufacturer Fulan it was essentially an obligation for them, considering the advantages of HbbTV, to make these interactive services available to users of their Spark software. As it turns out, Fulan was one of the first companies to integrate this new technology in their software. The HbbTV function in the Spark software can easily be activated or deactivated through its own menu entry.



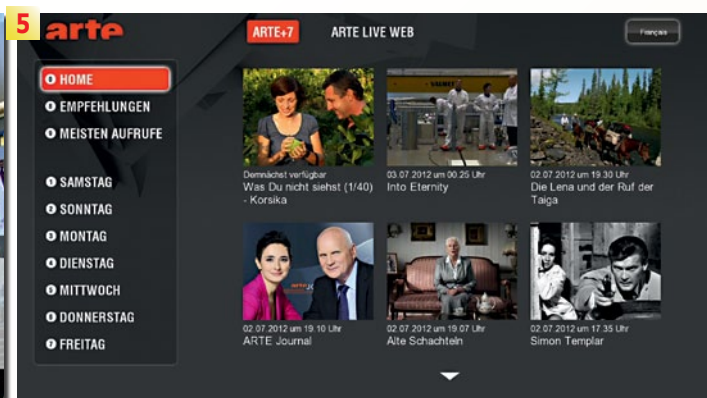
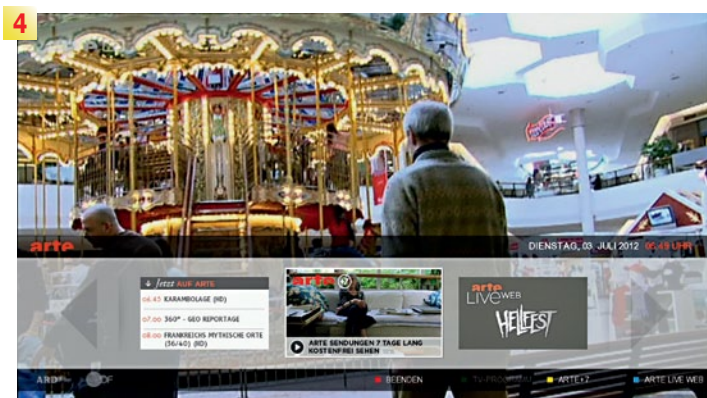
In 2010 several European programming providers, software companies and the SES-Astra satellite operator came together and developed the HbbTV (Hybrid Broadcast Broadband TV) standard. To put it in simpler terms, it makes possible the linking of content that can be received via satellite, cable and ter-

If a programming provider makes HbbTV available, the Spark software identifies this with its own symbol in the Info bar and after the Info bar disappears from the screen, a freely-selectable graphical display also lets the user know about any HbbTV offerings from a broadcaster. A simple push of the red function button is all that's needed to activate HbbTV in a Spark software equipped receiver.

Keep in mind though that the presentation, appearance and content of HbbTV is determined completely by the programming provider. The Spark software merely provides, similar to a web browser, the platform needed to display HbbTV content.

For our tests we searched for a number of channels





with HbbTV content. In doing this we discovered that German channels in Europe are a step ahead of all the others when it comes to HbbTV. In Germany, in addition to the two public broadcasting channels ARD and ZDF, there are quite a few other privately owned channels that offer HbbTV; this is not the case in other countries. Exceptions to this are the public channels in France and Holland that also offer HbbTV.

There's quite a bit of HbbTV testing going on in other countries so it's safe to say that this Spark software feature will eventually become available in many other European countries.

The technical capabilities

1. A dedicated symbol in the Info bar of a channel identifies to the user the existence of HbbTV content (6th symbol from the left with the four colorful points and the label "HbbTV")

2. The HbbTV function can be turned on or off through the Spark software's main menu

3. A symbol in the lower right corner of the screen signifies that HbbTV content is ready to be accessed

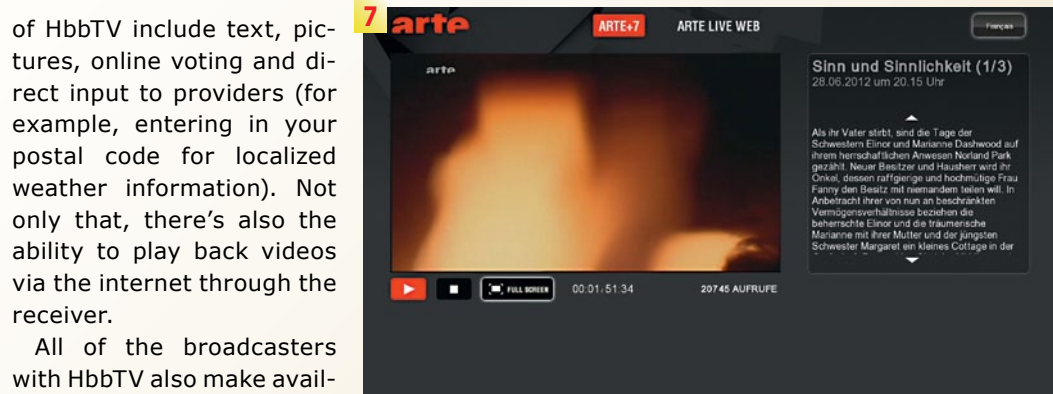
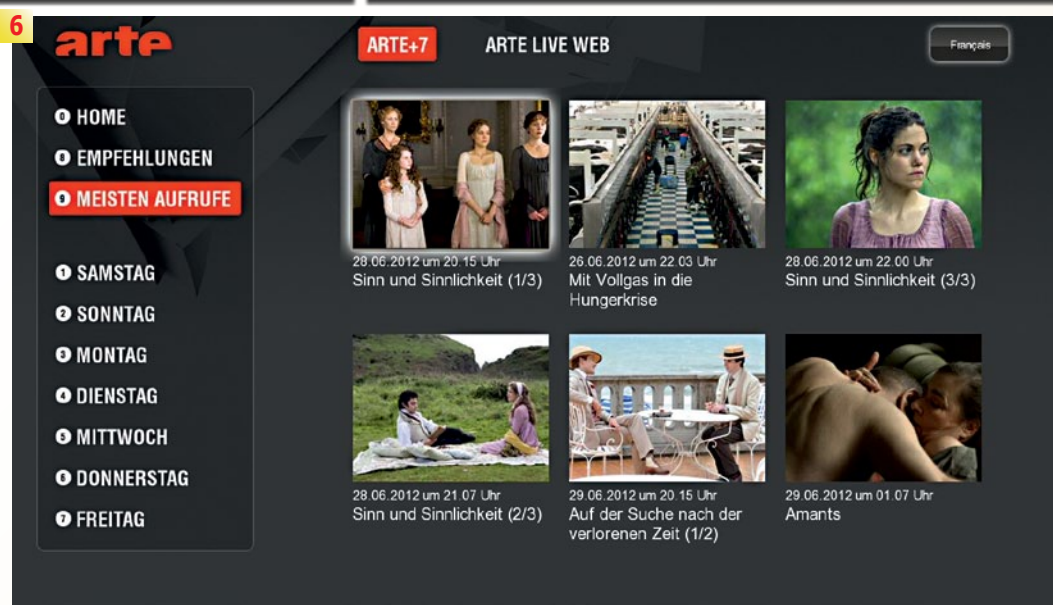
4. HbbTV content from the German/French channel ARTE

5. Through HbbTV the user has access to the entire media content of a channel

6. The content can be sorted by editor's recommendation or by popularity

7. Through HbbTV providers can make available detailed programming descriptions including trailers

8. ARTE's Media Library





able an expanded EPG that provides detailed information, pictures, etc. In our tests the Spark software was able to display all of the previously mentioned content from the providers without any problems; even the playback of videos presented no problems.

We especially liked the excellent picture quality and, above all, the ability to play back these videos in full-screen mode.

Thanks to the wide assortment of content made

HbbTV in France

1. The French channel France 2 also offers HbbTV content
2. HbbTV is also perfect for up-to-date news reports
3. Weather information for a specific region – with HbbTV no problem at all
4. A detailed weather report can be accessed through HbbTV at any time
5. HbbTV videos through Spark can also be played back in full-screen mode
6. With the help of Online Voting, the user can communicate directly with the broadcaster

Inter BEE

International Broadcast Equipment Exhibition

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Inter BEE is recognized by industry professionals as Japan's largest broadcasting equipment exhibition.

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- An excellent opportunity to witness firsthand the burgeoning businesses related to the complete transition to digital broadcasting that took place in Japan ahead of other Asian countries.
- A venue where technical engineers, sales staff, and industry experts will be waiting at exhibitor booths to welcome participants.
- An excellent opportunity to gain knowledge and acquire the latest information at symposiums featuring invited guest speakers who are actively involved in the industry.

Exhibition Categories



Professional Audio Equipment Zone:

- High-end products such as consoles, mixers, audio equipment for facilities, etc. that are designed to satisfy professional needs.
- Efficient workflow systems from recording to mastering.

Professional Lighting Equipment Zone:

- Energy saving and super-luminosity LED spotlights.
- Stage-lighting equipment such as lasers and mobile lights that work together with a variety of audio and video configurations.

Video and Broadcast Equipment Zone:

- File-based workflow systems that facilitate comprehensive media management.
- HD-, 4K-, and 2K-related products as well as the latest in non-linear systems.
- Power-source equipment, batteries, measuring equipment, and converters that increase broadcasting equipment performance.
- Cranes, steadycams and other special/peripheral products that enhance the operation of broadcasting equipment.

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- 3D technology and content for filming, editing, relaying, and screening.
- IPTVs, mobile TVs, H.264 encoders, decoding-related technologies, FPU products, etc.

Visitor Registration

- Online Member Registration ⇒ <http://www.inter-bee.com>
- ※ Sign up first as an online member to enable visitor pre-registration that starts at the end of September 2012.

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Inter BEE 2011 Results

- Number of exhibitors: **800**
- Number of overseas exhibitors: **466**
- Number of visitors: **30,752**



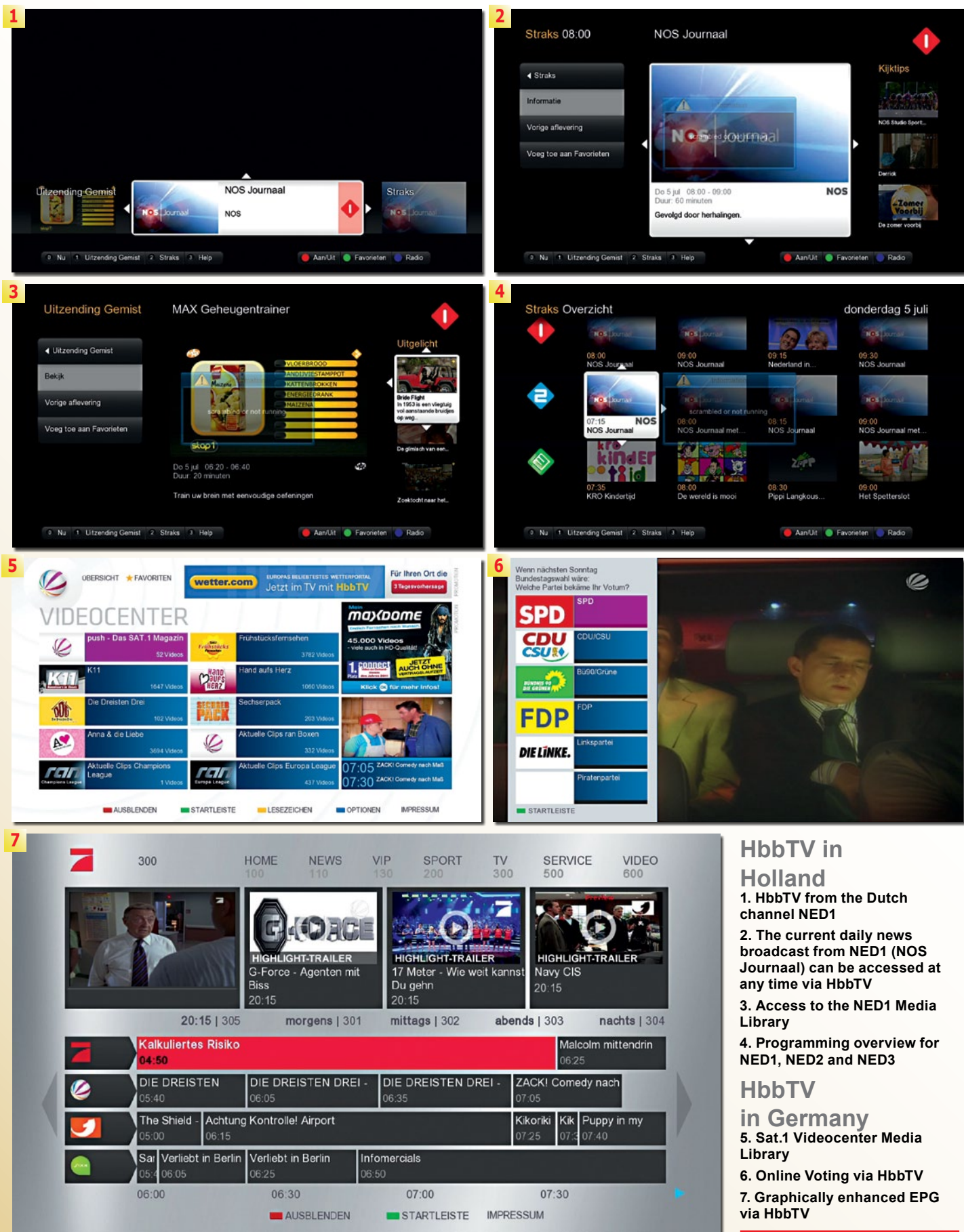
Organizer: **JEITA** Japan Electronics and Information Technology Industries Association

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HbbTV in Holland

1. HbbTV from the Dutch channel NED1
2. The current daily news broadcast from NED1 (NOS Journaal) can be accessed at any time via HbbTV
3. Access to the NED1 Media Library
4. Programming overview for NED1, NED2 and NED3

HbbTV in Germany

5. Sat.1 Videocenter Media Library
6. Online Voting via HbbTV
7. Graphically enhanced EPG via HbbTV

available by these providers, the user can easily access the last episode of his favorite TV series, watch an exciting documentary or catch up on the latest news

without having to be bound to the providers broadcasting schedule.

Setting up the individual HbbTV content with the

Spark software functioned in our tests very quickly and our remote control commands were promptly reacted to so that HbbTV would actually be a lot of

fun.

Overall we can say that Fulan perfectly integrated HbbTV into its Spark software.

From creation to consumption, across multiple platforms and countless nationalities, NAB Show® is home to the solutions that transcend traditional broadcasting and embrace content delivery to new screens in new ways.

SAVE THE DATE

2013

CONFERENCES April 6–11 EXHIBITS April 8–11
Las Vegas Convention Center, Las Vegas, Nevada USA



www.nabshow.com

The Wonderful World of Spark

Part 1: YouTube

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www.TELE-satellite.com/12/03/spark

FEATURE 卫星家庭多媒体系统工程应用 | Spark Receiver Software |



The Wonderful World of Spark

Part 1: YouTube

- Perfect receiver software integration
- Excellent filter function, for example, just HD videos
- Multiple built-in virtual keyboards
- Sophisticated search function
- Easy Saving of video clips

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Part 2: KartinaTV

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Part 2: KartinaTV

- seamless integration of IPTV in satellite receiver
- compatible with HDTV and 3D TV
- automatic PVR integration for IPTV
- user-friendly on-screen menus
- perfectly matched to content provider

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Part 3: Spark Apps

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FEATURE 提供家庭网络路由工程应用案例 | Spark Receiver Software |

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Part 3: Spark Apps

- Direct access to additional media services
- Own Wikipedia App
- Integrated Twitter service
- Interesting highlight: direct access to delivery services
- Complete Internet access via a browser

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Part 4: Web-TV

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Part 4: Web-TV

- Large selection of freely receivable channels
- Web-TV offers SD, HD and 3D channels
- Simple manual editing of the channel list in Spark
- Spark software shows all of the technical parameters of the Web-TV channel

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Part 5: HbbTV

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www.TELE-satellite.com/12/11/spark

FEATURE 提供家庭网络路由工程应用案例 | Spark Receiver Software |

The Wonderful World of Spark

Part 5: HbbTV

- Links the TV channel with additional content that can be accessed via the Internet
- Spark software allows the full-screen presentation of HbbTV videos
- HbbTV offers a far more detailed EPG, of course, if made available by the provider
- Excellent integration of HbbTV in the Spark software

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DIGITAL RECEIVERS OF 21ST CENTURY

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Manufacturer	Jiuzhou
Website	www.jiuzhou.com.cn
Function	DVB-T & Android STB
DVB-S2/LAN	— / •
PVR	•
S-Video/HDMI	— / •
Scart/Digital Audio	— / •



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Direct Contact to Sales Manager

JIUZHOU



Manufacturer	Panodic
Website	www.panodic.com
Function	DVB-S / DVB-S2 Receiver
DVB-S2/LAN	• / —
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / —



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PANODIC



Manufacturer	AZBox
Website	www.azbox.com
Function	HDTV DVB-S2/S2 Miniature HDTV Linux Receiver with Multimedia Features
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / 1.3 / USALS
S-Video/HDMI	— / •
Scart/Digital Audio	— / •



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www.TELE-satellite.com/12/09/azbox-mini-me
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Manufacturer	Amiko
Website	www.amikostb.com
Function	DVB-S2 / DVB-T & DVB-C Triple Tuner PVR Receiver
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



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Manufacturer	Panodic
Website	www.panodic.com
Function	Small DVB-T HD PVR Receiver
DVB-S2/LAN	— / —
DiSEqC	—
S-Video/HDMI	— / •
Scart/Digital Audio	• / —



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PANODIC



Manufacturer	Skyworth
Website	www.skyworthdigital.com
Function	Very small DVB-T PVR Receiver with HDMI
DVB-S2/LAN	— / —
DiSEqC	—
S-Video/HDMI	— / •
Scart/Digital Audio	— / —



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SKYWORTH



Manufacturer	Amiko
Website	www.amikostb.com
Function	DVB-S / DVB-S2 & DVB-T Combo Receiver with PVR
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



AMIKO STHD-8820 CICXE PVR
Perfect Box to Receive all Available
HDTV Programmes



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AMIKO



Manufacturer	Skyworth
Website	www.skyworthdigital.com
Function	Very small DVB-S2 PVR Receiver with HDMI
DVB-S2/LAN	• / •
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	— / —



Skyworth HS-18 DVB-S2
Sophisticated, fully-featured miniature
receiver



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SKYWORTH



Manufacturer	Panodic
Website	www.panodic.com
Function	DVB-T Mini Receiver with HDMI and PVR
DVB-S2/LAN	— / —
DiSEqC	—
S-Video/HDMI	— / •
Scart/Digital Audio	— / —



PANODIC



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Manufacturer	AZBox
Website	www.azbox.com
Function	HDTV DVB-S2/DVB-S2 Linux Receiver with Multimedia Features and large Flash-memory for 3 Boot Images
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / USALS
S-Video/HDMI	— / •
Scart/Digital Audio	— / •



AZBOX



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www.TELE-satellite.com/12/03/azbox-me
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Manufacturer	Jiuzhou
Website	www.jiuzhou.com.cn
Function	DVB-S2, DVB-T PVR Digital Receiver
DVB-S2/LAN	• / •
Channel Memory	4000
PVR	•
S-Video/HDMI	• / •
Scart/Digital Audio	• / •



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JIUZHOU



Manufacturer	Skyworth
Website	www.skyworth.com.hk
Function	ISDB-T Receiver with PVR function
DVB-S2/LAN	— / —
Channel Memory	1000
PVR	•
S-Video/HDMI	— / •
Scart/Digital Audio	— / —



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SKYWORTH



Manufacturer	Jiuzhou
Website	www.jiuzhou.com.cn
Function	DVB-S2/DVB-S2T PVR Digital Receiver
DVB-S2/LAN	• / •
Channel Memory	4000
PVR	•
S-Video/HDMI	• / •
Scart/Digital Audio	— / •



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JIUZHOU



Manufacturer	Amiko
Website	www.amikostb.com
Function	Digital HDTV DVB-S2 including dual boot
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



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AMIKO



Manufacturer	Fulan
Website	www.fulansoft.com
Function	Digital HDTV Receiver with Dual-Boot and Spark online-platform
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	— / •



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FULAN ST7111
Excellent designed operating software with built-in customer service



FULAN



Manufacturer	AZBox
Website	www.azbox.com
Function	Digital HDTV Receiver with DVB-S2 and DVB-T Tuners and various Multimedia & Internet Features
DVB-S2/LAN	• / •
Channel Memory	15000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



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AZBOX



Manufacturer	Jiuzhou
Website	www.jiuzhou.com.cn
Function	Digital PVR DVB-T Receiver
DVB-T/LAN	— / —
Channel Memory	1000
PVR	•
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



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JIUZHOU



Manufacturer	AZBox
Website	www.azbox.com
Function	HDTV DVB-S2 receiver with various Multimedia & Internet Features
DVB-S2/LAN	• / •
Channel Memory	15000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



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ANALYZERS OF
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Manufacturer	Fujian Baotong
Website	www.sat-link.com.cn
Function	Digital Meter & Receiver for DVB-S and DVB-T Signals
Frequency Range	47 ~ 862 MHz & 950 ~ 2150 MHz
Video Output	yes
Built-in Monitor	4.3 inch display



TELE
satellite
AWARD 11-12/2012

Satlink WS-6936
Very easy to use signal meter
which also serves as receiver.

SATLINK



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/11/horizon
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Manufacturer	Horizon Global Electronics
Website	www.horizonhge.com
Function	Digital Meter for Analogue, DVB-T and DVB-T2 Signals
Frequency Range	48 ~ 862 MHz
Video Output	—
Built-in Monitor	LCD display



TELE
satellite
AWARD 11-12/2012

HORIZON HD-T2
One of the world's first DVB-T2 signal
analyzers with exceptional data

HORIZON



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/11/deviser
Read TELE-satellite Test Report

Manufacturer	Tianjin Deviser Electronics Instrument
Website	www.devisertek.com
Function	Optical Power Meter
Frequency Range	-43 dBm ~ +25 dBm
Video Output	—
Built-in Monitor	LCD display



TELE
satellite
AWARD 11-12/2012

DEVISER AE 120
Optical Power Meter
Extremely simple to use but
at same time very accurate

DEVISER



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/09/deviser
Read TELE-satellite Test Report

Manufacturer	Tianjin Deviser Electronics Instrument
Website	www.devisertek.com
Function	Professional Meter for DVB-T, DVB-C and CATV (analog TV)
Frequency Range	5 ~ 1000 MHz
Video Output	—
Built-in Monitor	320 × 240 TFT display



TELE
satellite
AWARD 09-10/2012

DEVISER DS2400T
This is by far the best handheld measuring
instrument for DVB-T, DVB-C and
CATV I have come across. Deviser has
done an excellent job!

DEVISER



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/05/spaun
Read TELE-satellite Test Report

Manufacturer	SPAUN Electronic
Website	www.spaun.com
Function	DVB-S/DVB-S2 and DSS Signal Analyzer
Frequency Range	950-2150 MHz
Video Output	—
Built-in Monitor	4.3" TFT LCD display (16:9)



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/03/satcatcher
Read TELE-satellite Test Report

Manufacturer	SatCatcher
Website	www.satcatcher.com
Function	Digital and analog cable TV meter
Frequency Range	46~862 MHz (for digital TV) and 46~870 MHz (for analog TV)
Video Output	—
Built-in Monitor	120 x 64 3.5" LCD color display





TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/01/horizon
Read TELE-satellite Test Report

Manufacturer	Horizon Global Electronics
Website	www.horizonhge.com
Function	Satellite and terrestrial antenna meter
Frequency Range	45~861 MHz (terrestrial) and 950~2150 MHz (satellite)
Video Output	—
Built-in Monitor	LCD display



TELE
satellite
AWARD 12-01/2012

Horizon HD-STM
Perfect choice for an installer who values
a practical instrument.

HORIZON



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/01/deviser
Read TELE-satellite Test Report

Manufacturer	Tianjin Deviser Electronics Instrument
Website	www.devisertek.com
Function	Satellite Antenna Meter
Frequency Range	950~2150 MHz
Video Output	—
Built-in Monitor	LCD display



Deviser S20 Satellite Meter
Ideally suited to fastly install dishes





TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/11/09/8dtek
Read TELE-satellite Test Report

Manufacturer	8dtek Technology
Website	www.8dtek.com
Function	Satellite Meter for Antenna Alignment
Frequency Range	L-Band (950-2150 MHz), DVB-S/S2 and analog signal
Video Output	A/V (composite + mono)
Built-in Monitor	Color graphic 16:9 LCD



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/11/07/8dtek
Read TELE-satellite Test Report

Manufacturer	8dtek Technology
Website	www.8dtek.com
Function	Satellite Meter for Antenna Alignment
Frequency Range	L-Band (950-2150 MHz), DVB-S/S2 and analog signal
Video Output	Composite
Built-in Monitor	Color graphic LCD





TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/11/07/satcatcher

Read TELE-satellite Test Report

Manufacturer	SatCatcher
Website	www.satcatcher.com
Function	Signal meter for digital signals in DVB-S, DVB-T and DAB. Analogue signals in FM radio.
Frequency Range	46-870 MHz
Video Output	Composite
Built-in Monitor	120 x 64 3.5" LCD color display

**TELE
satellite
AWARD** 06-07/2011

SATCATCHER DIGIPRO ST COMBO
Combo Signal Analyzer with Huge
Memory for Satellite and Terrestrial
Channels



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/10/11/horizon

Read TELE-satellite Test Report

Manufacturer	Horizon Global Electronics
Website	www.horizonhge.com
Function	Antenna Alignment Meter
Frequency Range	950-2150 MHz
Video Output	—
Built-in Monitor	LCD display



**TELE
satellite
AWARD** 10-11/2010

HORIZON HD-S2
Extremely easy to use with an amazing
list of features for the pros



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/10/09/spaun
Read TELE-satellite Test Report

Manufacturer	SPAUN Electronic
Website	www.spaun.com
Function	TV Signal Analyzer with WiFi Receiver
Frequency Range	45~865 MHz (terrestrial) and 950~2150 MHz (satellite)
Video Output	RCA Composite
Built-in Monitor	7 inch 16:9 color LCD display



SPAROS 609 WIFI OPTION
Converts the signal analyzer to a
universally usable tool



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/10/09/horizon
Read TELE-satellite Test Report

Manufacturer	Horizon Global Electronics
Website	www.horizonhge.com
Function	Digital and analog terrestrial TV meter with spectrum analyzer and USB data output
Frequency Range	49~861 MHz
Video Output	—
Built-in Monitor	LCD display



HORIZON HD-TM USB PLUS
Small, economic and fast
terrestrial signal meter





TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/10/07/satcatcher
Read TELE-satellite Test Report

Manufacturer	SatCatcher
Website	www.satcatcher.com
Function	Signal Meter for DVB-T, analogue TV, digital DAB radio, analogue FM radio
Frequency Range	46-870 MHz
Video Output	—
Built-in Monitor	120 x 64 3.5" LCD color display

TELE
satellite
AWARD 06-07/2010

SATCATCHER DIGIPRO T MAX
Easy to use signal meter that doesn't stop at DVB-T. Everything you want from a signal meter



SATCATCHER



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/10/01/horizon
Read TELE-satellite Test Report

Manufacturer	Horizon Global Electronics
Website	www.horizonhge.com
Function	Handheld Satellite Meter for fast and easy Dish Alignment
Frequency Range	950-2150 MHz
Video Output	—
Built-in Monitor	128x64 Pixel LCD

TELE
satellite
AWARD 12-01/2010

HORIZON NANOSAT
Ideal for the speedy alignment of satellite antennas



NANOSAT



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/10/01/optiscan
Read TELE-satellite Test Report

Manufacturer	Global Invacom
Website	www.globalinvacom.com
Function	Signal Analyzer with an Optical Input
Frequency Range	950(160)~2150 MHz
Optical Range	+10 to -25 dBm
Video Output	—
Built-in Monitor	Eight-digit LCD display



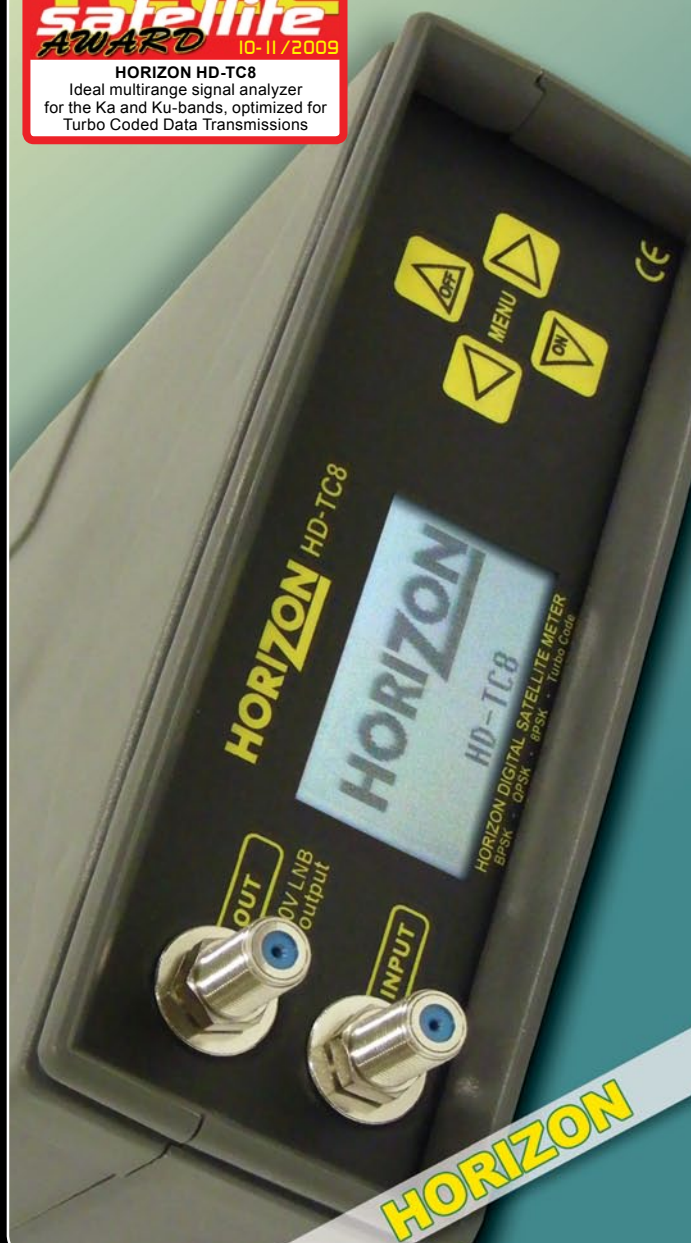
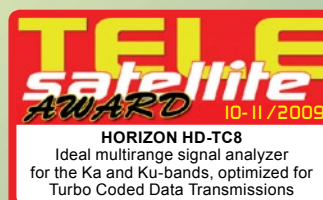
OPTISCAN



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/09/11/horizon
Read TELE-satellite Test Report

Manufacturer	Horizon Global Electronics
Website	www.horizonhge.com
Function	Satellite Meter optimized for Ka-Band
Frequency Range	950~2150 MHz
Video Output	—
Built-in Monitor	LCD display



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for testing STB and headends

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DTMB

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ATSC	Fully Packed (USA)
ATSC	Channel Name Missing (USA)
ATSC	Identical Channel Names (USA)
ATSC	Mechanical Channel Names (USA)
DTMB	with HDTV (China)
DTMB	with false video descriptor (China)
DTMB	with MHEG (Hongkong)
DVB-C	in NagraVision 3 (Portugal)
DVB-S	with 3D (ASTRA)
DVB-S	with MPEG2 and H.264 mix (PALAPA)
DVB-S	in MIS (ATLTANIC BIRD)
DVB-S2	with HDTV (HOTBIRD)
DVB-S2	with MPEG 4:2:2 (EUROBIRD)
DVB-S2	with 3D (TURKSAT)
DVB-S2	with HDTV (AMAZONAS)
DVB-S2	with 3D (THOR)
DVB-S2	with 1Seg mobile TV (AMC 6)
DVB-T	with radio (Netherlands)
DVB-T	with MHEG (UK)
DVB-T	as retransmission off satellite (Qatar)
DVB-T2	with HDTV (Germany, UK)
ISDB-T	with 1Seg mobile TV and HD (Brazil)

and many more according to standard

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Fax: +49-89-92185023
Email: luo.shigang@ALuoSat.de
Website: www.ALuoSat.de



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*regularly updated

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Export Digital TV Products from China

AWARD WINNING

21 IPTV/WebTV
RECEIVERS OF
ST CENTURY

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Manufacturer	LookeeTV
Website	www.lookeeTV.com
Function	Multimedia Player for local media and Internet
WiFi/LAN	• / •
Internal Storage	yes, 1.14 GB
HDTV	yes (up to 720p)
CVBS/HDMI	• / •
USB/SD Card	• / •



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/11/lookee
Read TELE-satellite Test Report



LOOKEE TV



Manufacturer	AZBOX
Website	www.azbox.com
Function	HDTV DVB-S DVB-S2 Miniature HDTV Linux Receiver with Multimedia Features
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / 1.3 / USALS
S-Video/HDMI	— / •
Scart/Digital Audio	— / •



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/09/azbox-mini-me
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AZBOX



Manufacturer	Amiko
Website	www.amikostb.com
Function	DVB-S2 / DVB-T & DVB-C Triple Tuner PVR Receiver
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/07/amiko
Read TELE-satellite Test Report



Manufacturer	AZBox
Website	www.azbox.com
Function	HDTV DVB-S DVB-S2 Linux Receiver with Multimedia Features and large Flash- memory for 3 Boot Images
DVB-S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / USALS
S-Video/HDMI	— / •
Scart/Digital Audio	— / •



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/03/azbox-me
Read TELE-satellite Test Report



Manufacturer	Logitech
Website	www.logitech.com
Function	IPTV Receiver



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/03/googletv
Read TELE-satellite Test Report



LOGITECH

Manufacturer	Amiko
Website	www.amikostb.com
Function	DVB-S / DVB-S2 & DVB-T Combo Receiver with PVR
IPTV	KartinaTV



TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/12/05/amiko
Read TELE-satellite Test Report



AMIKO STHD-8820 CICXE PVR
Perfect Box to Receive all Available HDTV Programmes



AMIKO

Manufacturer	Amino
Website	www.aminocom.com
Function	IPTV Set-top-Box
Stream Protocol	UDP
Menu Standards	NetUP Middleware
WLAN	—

TELE-satellite Magazine Expert Opinion

www.TELE-satellite.com/11/03/amino
Read TELE-satellite Test Report

AMINO

Manufacturer	Jiuzhou
Website	www.jiuzhou.com.cn
Function	IPTV Set-Top-Box
Stream Protocol	UDP
Menu Standards	HTML4, Javascript 1.5, Java Virtual Machine
WLAN	• (via USB stick)

TELE satellite AWARD
12-01/2011
JIUZHOU DTP8300
IPTV Receiver Equipped
with Top-Notch Technology

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JIUZHOU

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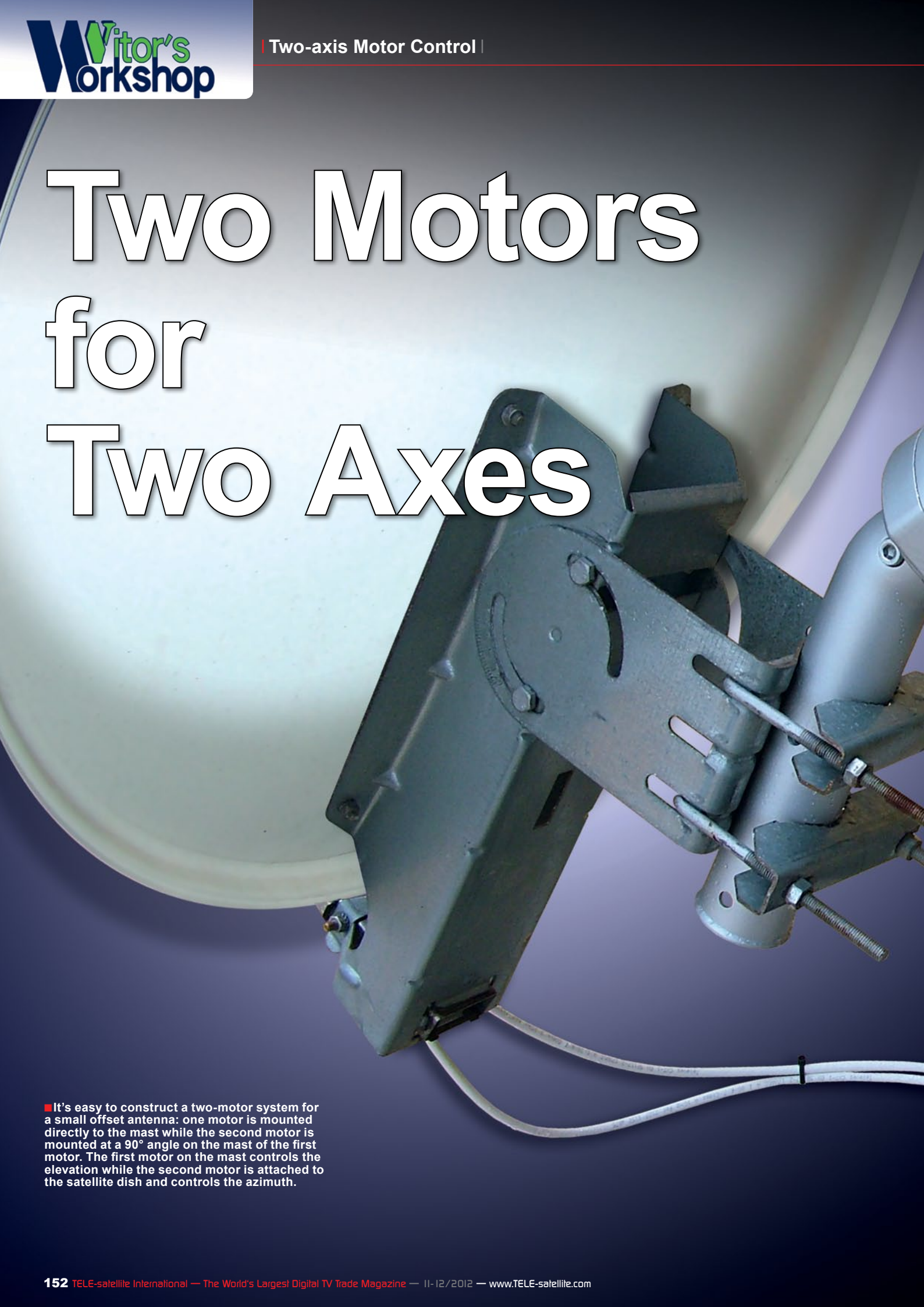
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Two Motors for Two Axes



■ It's easy to construct a two-motor system for a small offset antenna: one motor is mounted directly to the mast while the second motor is mounted at a 90° angle on the mast of the first motor. The first motor on the mast controls the elevation while the second motor is attached to the satellite dish and controls the azimuth.

- *Independent control of azimuth and elevation*
- *Simplifies the installation of motorized systems*
- *Safe from accidental movement, for example, from a storm*
- *Makes possible the perfect reception of inclined satellites*
- *Very simple to make*





■ The twin LNB on the dish has one output going to Motor 1 and the second output going to Motor 2. The satellite receiver is connected via a DiSEqC 2/1 switch.

Dual Motor Antenna Control for Small Dishes

Vitor Martins Augusto

A fixed satellite antenna can only receive one satellite, no matter what you do. If more satellites are to be received, the antenna has to be turned and this is typically done with actuator motors or horizon-to-horizon motors. Both of these systems track an imaginary arc across the sky where all the satellites can be found. Setting up one of these systems is time consuming and comes with a lot of trial and error.

Even when the antenna is correctly aligned and is then able to align itself with all the receivable satellites, this joy often doesn't last too long. The biggest enemy is wind; it can easily knock the antenna out of alignment. It doesn't take much, and before you know it, the antenna is no longer aligned with the satellite arc.

Then, of course, the satellites them-

selves might not be exactly where they're supposed to be, either because they aren't positioned correctly in space or because they're old and can't maintain their correct position anymore.

Professional satellite operators and satellite DXers, those that are very hard core hobbyists, use dual axis motors with which the antennac can be moved not only in the azimuth direction (left/right), but also in the elevation direction (up/down). This makes it possible to align the antenna perfectly on any satellite.

For this workshop we came up with something rather special and unique: is it possible to mimic a professional two-axis motorized antenna system using a pair of standard DiSEqC motors?

These motors can be found in any satellite shop and they work very well

with many different satellite receivers that support the DiSEqC 1.2 protocol. The Technical Data portion of a TELE-satellite receiver test report always identifies if a receiver supports the DiSEqC 1.2 protocol.

Next we'd like to refresh your memory on the operating principles of a DiSEqC motor, that is, a motor with a single axis. In general, these motors are very easy to install. First you'd need the longitude and latitude of your location. You can easily find this information by entering the name of the closest city into Google along with the words longitude and latitude.

The first result will usually give you what you need. Here in the city of Porto in northern Portugal, "Porto Longitude Latitude" was entered into Google with the following results: 41.1N latitude and 8.6W longitude.

The only thing missing was the declination (the inclination of the motor to vertical). Some motor manufacturers such as Moteck include an elevation table in the package from which the inclination can be read off based on the latitude.

Moteck makes it even easier for the user: on the website www.gaaps.com.

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■ Motor 2 is adjusted so that the 0° position mimics the mounting of Motor 2 on a vertical mast.

tw all of the necessary data is available. You simply enter in the longitude and latitude of the antenna's location along with the position of the desired satellite.

Again, here in Porto, the azimuth an-

gle of the motor is -31, that is, 31 degrees to the east. With the help of the button on the underside of the motor, the antenna is manually moved to this position. A single push of the button moves the antenna to the east while a

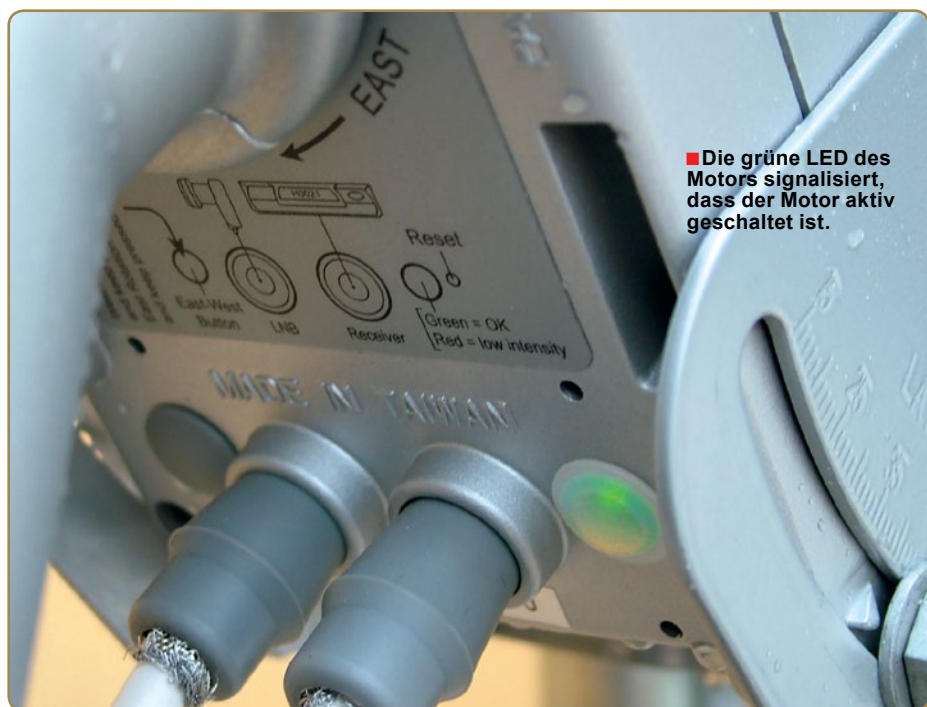
quick double-push of the button moves the antenna to the west.

At this point the motor is correctly aligned and the antenna itself is now adjusted just like a normal fixed antenna. So, the entire motor/antenna assembly is turned left and right while the elevation of the antenna is adjusted up and down until ASTRA 19.2 east comes into focus.

It's easier, of course, to adjust the antenna using a signal analyzer especially when it can deliver real-time measurements. Theoretically, the adjustment work on the antenna is now finished; now the receiver needs to be configured for motorized reception.

In reality, though, the situation is quite different: if the antenna is moved to the extreme eastern and western satellites, it won't take long to notice that the motor and antenna actually don't follow the satellites in a perfect arc.

The antenna most likely needs to be fine-tuned up or down for these outer satellites. Regardless of whether the necessary adjustment on both the



■ Die grüne LED des Motors signalisiert, dass der Motor aktiv geschaltet ist.

eastern and western ends is in the same direction or in opposite directions, it can be determined what needs to be adjusted.

Sometimes the entire motor and antenna assembly needs to be turned to the left or the right, in other cases the elevation of the motor has to be corrected. Since the entire satellite arc must be checked out with each adjustment to see if reception for all the satellite positions got better or worse, this process can take quite a bit of time.

And when the antenna and motor are finally adjusted perfectly such that every satellite position has the best possible signal reception, it is almost guaranteed that this process will have to be repeated after the first storm.

Some time ago I came up with an idea to solve this problem; finally I acted on this idea. What would happen if two motors were used instead of one? The two motors would be offset by 90 degrees so that the second motor would drive the first motor along with the attached antenna up and down. A fine-tuning adjustment of the antenna would no longer be necessary; the antenna assembly could simply be adjusted up or down for each satellite position.

And this is exactly what I implement-

ed for this workshop. First I obtained two Moteck SG2100A motors. These motors have come to be known as excellent motors: they are inexpensive, high-quality and have a long-life. This motor has been driving my main antenna for five years now and there has never been a problem.

My first problem was that I might need to purchase extra adapters or have some custom made for me to mount the two motors to each other. I tested it out on the drawing table and wouldn't you know it: it is essentially possible, as can be seen in the pictures, to mount one motor at a 90 degree angle to the other without the need of any extra accessories! From a mechanical point of view, there was no longer anything in the way of this experiment.

For this experiment I used my test antenna – a 60 cm offset dish – that is normally mounted on a moveable stand. The SG2100A can move dishes as large as 120 cm in diameter. In this case, however, I don't recommend using a low-cost antenna made out of steel; they are simply too heavy. It would be far better to use a name-brand antenna made out of aluminum.

The two motors were mounted on the stand's mast and then the antenna was

mounted to Motor 1. Motor 1 handled the east/west movement of the antenna while Motor 2 handled the up/down movement of the assembly.

The electrical switching also had to be figured out but it quickly became clear that only one DiSEqC 2/1 switch and a twin LNB would be needed and, of course, the necessary LNB cables.

The DiSEqC 2/1 switch is to be used to switch between Motor 1 and Motor 2. A twin LNB needs to be used so that you can still receive a satellite signal independent of the DiSEqC setup. The two outputs of the LNB are connected to the inputs of the two motors. And as far as the LNBs go, it would certainly make sense to use high-quality twin LNBs for this project.

Pay close attention to the power usage since the tuner will be loaded down with the switches, motors and twin LNB. The reception capabilities of the LNB should also be sufficient. In this test it was interesting to discover that the two LNB outputs provided different levels of signal quality. With that in mind, the 'better' output should be connected to Motor 1. The result is a connection diagram as shown in Figure 2.

Out of sheer curiosity I connected a signal analyzer to the completed as-

1

GAAPS
(Global Automatic Antenna Positioning System)

GAAPS is also called Goto X Calculator, which can calculate the exact angle to your aimed satellite according to your location (longitude and latitude). It is very useful installation and trouble shooting.

p.s. Goto X function is a standard DiSEqC 1.2 command, which could drive the DiSEqC Motor to any wanted angle.

Your Longitude: W

Your Latitude: N

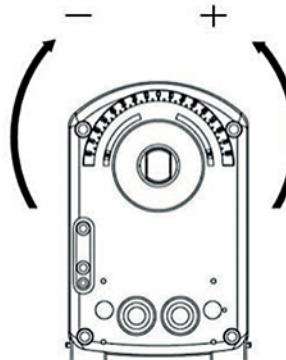
Longitude of the aimed satellite: E

Motor Tube Angle:

Azimuth angle on motor:

note: "+" or "-" indicates different direction as below.

Antenna Bracket Elevation:



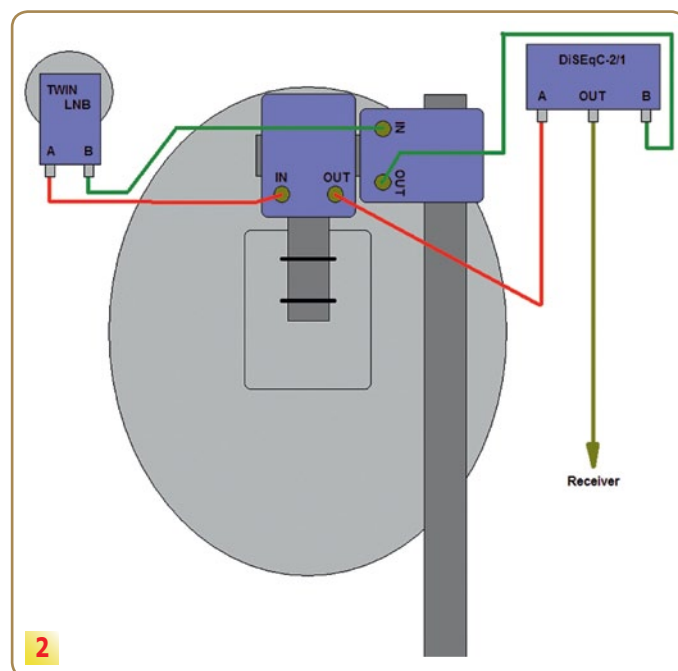
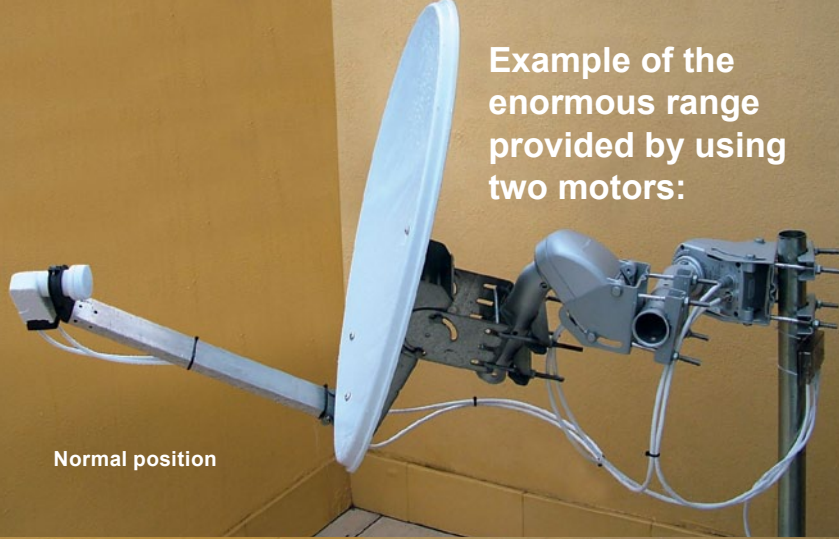


Figure 1: Motor manufacturer Moteck offers an easy to use calculator on their website www.gaaps.com.tw. It provides the declination angle for motor alignment based on the entry of your latitude and longitude as well as the orbital position of the desired satellite.

Figure 2: Schematic diagram of the two-motor system. One of the LNB outputs goes to Motor 1 while the second output goes to Motor 2. The DiSEqC 2/1 switch is used to switch between the two motors.

Example of the enormous range provided by using two motors:



Normal position



Maximum elevation
(higher was possible,
but it was of no use)



Back down



Minimum elevation
(even lower was
possible)

sembly and used it to control not only the DiSEqC 2/1 switch, but also the two motors.

Before I even started the previously mentioned rough alignment based on the Moteck user manual, I was able to receive several different satellites just by moving the two motors! Of course, it doesn't make much sense to leave the antenna setup in this state since for each satellite you'd then have to move both motors. But it was clear that this idea would work.

So the first step was to roughly align the system without a fine adjustment of the antenna and Motor 1. The goal is to remain independent of a fine-tuning adjustment so that it won't be necessary to climb on the roof after a storm. Additionally, each satellite should be ideally setup for both motors so that maximum reception is possible. Motor 2 was configured in such a way that the 0 degree position represents what it would be like if Motor 1 had been mounted directly on a vertical mast.

Now it was time to generate a procedure for a receiver to control both motors. A method had to be found where the receiver would first switch to DiSEqC A and drive Motor 1 to the desired satellite after which it would switch to DiSEqC B and move Motor 2 to the stored position of the same satellite.

Since something like this would hardly be possible without some programming in the Linux firmware or the actual design of a plug-in, I had to come up with something simpler. My reference receiver, the AZBox ME, offers more possibilities than normal satellite receivers thanks to the Linux operating system.

After several attempts, I came up with the following operation: a dummy channel (Motor 1) switches to DiSEqC A while a second dummy channel (Motor 2) switches to DiSEqC B. Since two identical motors are being used, the same satellite table is used for both of them so that Motor 1 stores the east/west position and Motor 2 stores the elevation.

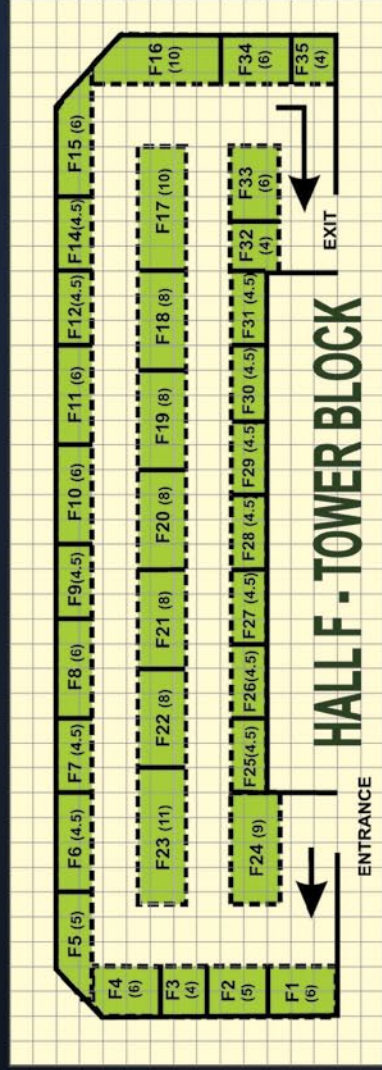
The actual operation would work like this: if, for example, you want to switch from one channel on ASTRA 19.2E to another channel on HISPASAT 30W, you first select dummy channel 1 and then the desired channel on HISPASAT. The antenna will then turn to the west. Now if you also want to set the elevation position of the antenna, you

The 21st

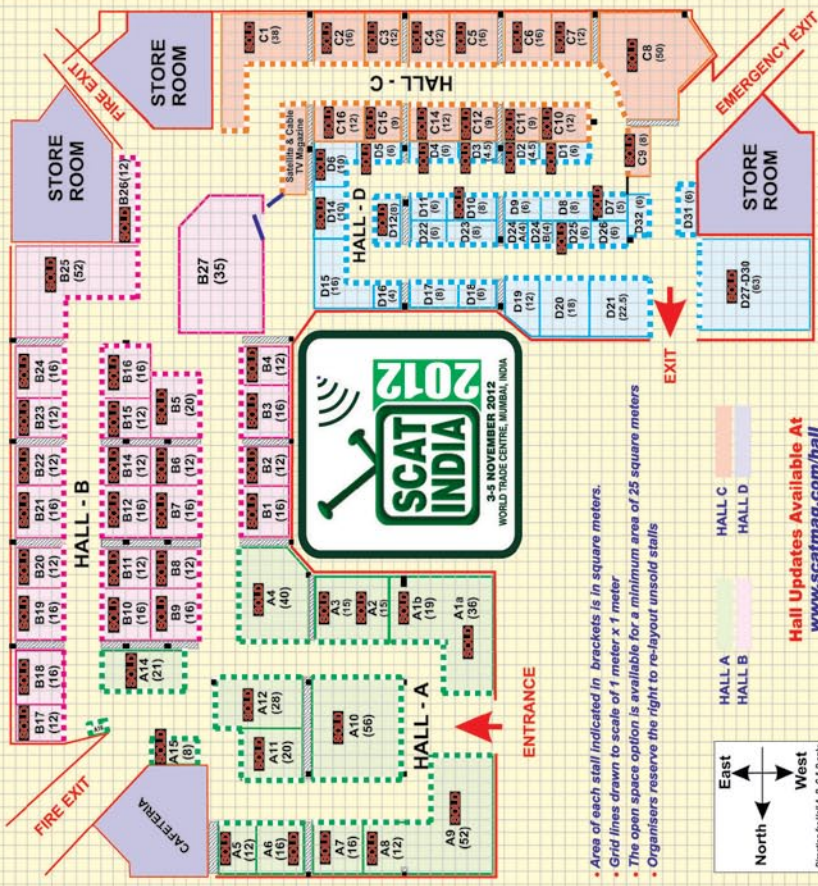


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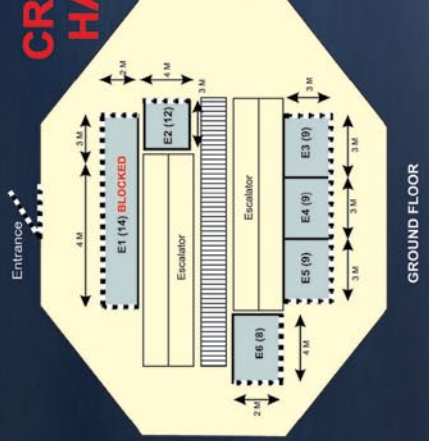
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We Have Opened Hall F In The Adjacent Tower Block**



HALL LAYOUT 2012



CRUSH HALL



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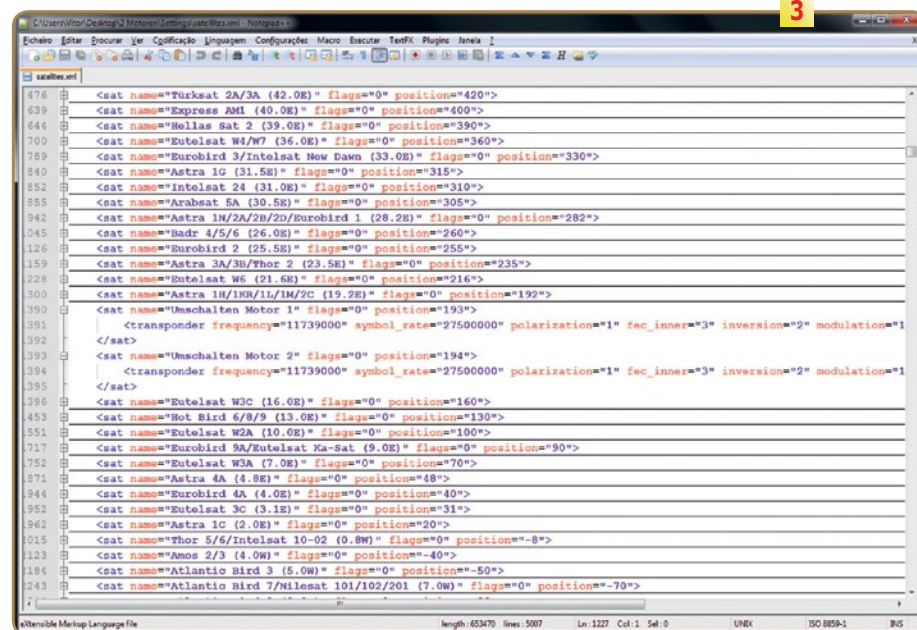
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select dummy channel 2 and press the 'back' button to go back to the desired channel. The antenna will then move to the correct elevation position already stored in Motor 2's memory. When necessary, the elevation position can be easily adjusted using the remote control. All you have to do is access the Motor Configuration menu and use the fine-tuning tool to bring the signal level to its highest value.

To make sure this all functions the way it should, a few tricks are needed. The two dummy channels used for DiSEqC 2/1 switching must correlate with two different satellites in the receiver's satellite list. Since the motors should be able to drive to every satellite, two new dummy satellites have to be added to the list.

For this purpose I loaded the 'satellites.xml' file from the receiver via FTP. A standard FTP program like the freeware Filezilla took care of that; you simply have to configure the new connection by entering the IP address of the AZBox ME in the host field. The user name is 'root' and a password is not needed. Note: if the receiver is connected to the Internet, you actually should use a password for the 'root' account. You can connect with Telnet in the receiver and use the Unix command 'passwd'. You will then need to enter a password twice.

The 'satellites.xml' file can be found in the \etc\tuxbox folder. This file has to be opened on a PC with an editor and for this purpose the freeware Notepad++ is recommended. It recognizes the XML structure of the file and pro-



vides it in the corresponding format.

There are two new satellites that need to be added with the names 'Motor 1' and 'Motor 2'. I also copied the lines defining ASTRA 19.2E twice, renamed them and deleted all but one of the transponders. The reason for this is that eventually a scan will be performed on this one transponder.

In order for the AZBox ME to accept this modified satellite position, the position has to be altered since the receiver can only accept one position at a time. That's why I changed the entry 'position=192' to 'position=193' and 'position=194' so that in the future I'll know that these are copies of the ASTRA 19.2E satellite. Figure 3 shows these modifications.

This file now has to be copied back to

\etc\tuxbox using Filezilla. In order for these modifications to be accepted, the receiver has to be restarted. Actually, it would be enough to restart the user interface, which would be somewhat faster.

Now it's time to go to the tuner configuration, that is actually set up for DiSEqC 1.2 reception on LNB 1, and switch the two dummy satellites to LNB 2 and LNB 3. LNB 2 is configured in such a way that it switches to DiSEqC AA (without any DiSEqC 1.2 control) and LNB 3 to DiSEqC AB. Now a scan can be started for both of these satellites whereby the antenna, in my case, has to be aligned to ASTRA 19.2E.

The scan should only take place on one transponder since we only need one channel for each. It should preferably be an FTA channel in SD resolution because this would result in faster channel switching times. See Figure 4.

When this scan is successful, the Settings list must still be edited. With the help of your favorite settings editor for Linux receivers, it's time to use the last trick: All of the channels that were found for both dummy satellites need to be deleted except for one for each 'satellite'.

The remaining two channels are then renamed to 'Motor 1' and 'Motor 2' and

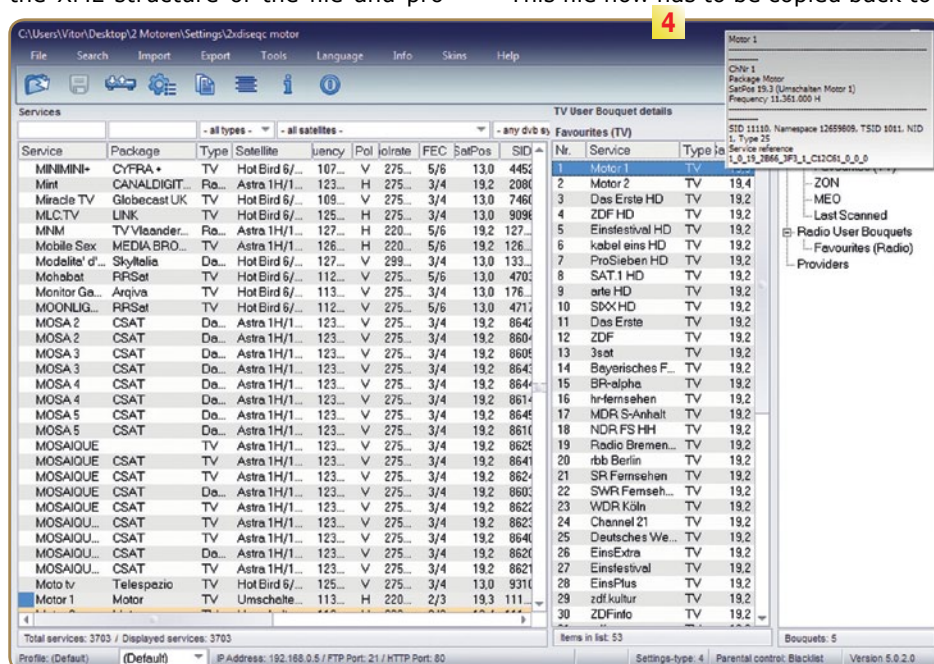


Figure 3: In order to control both motors, the original satellite list is duplicated twice. In this case the satellite list 192 (ASTRA 19.2E) was resaved twice as satellite list 193 and again as 194.

Figure 4: To trick Linux, two new satellites were generated through a channel scan.

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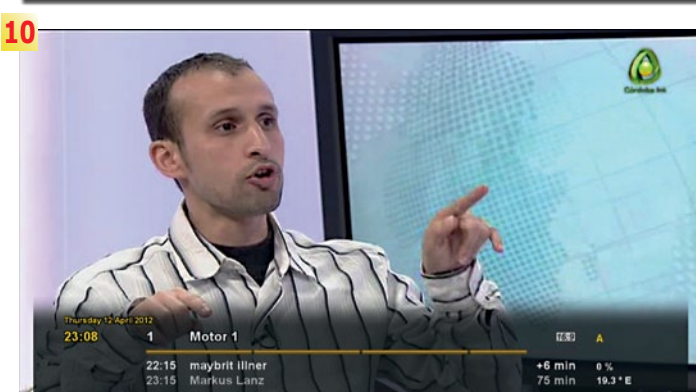
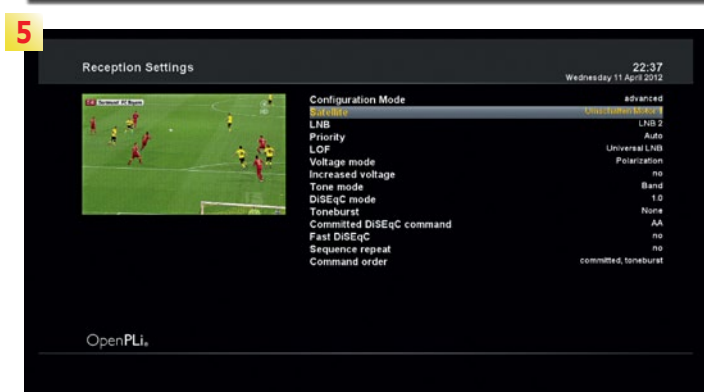
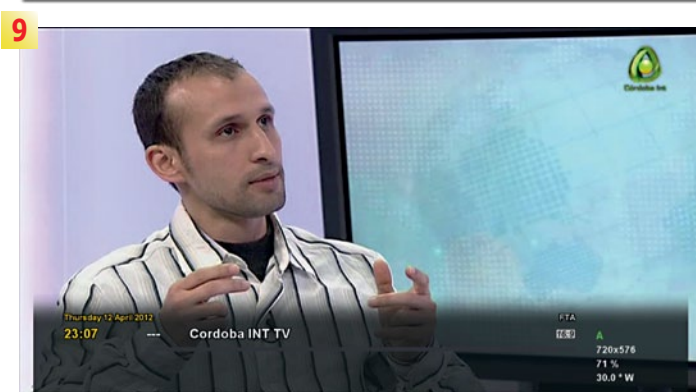
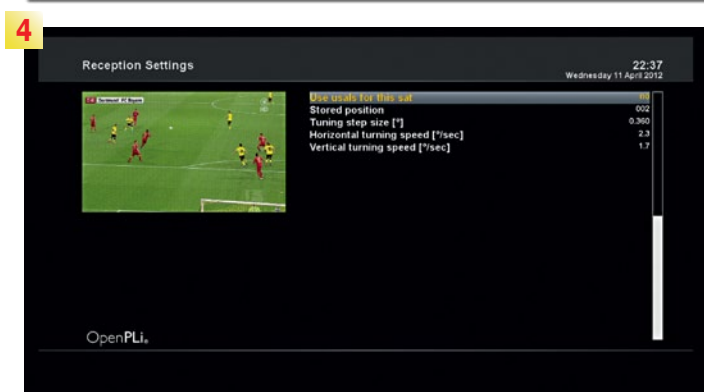
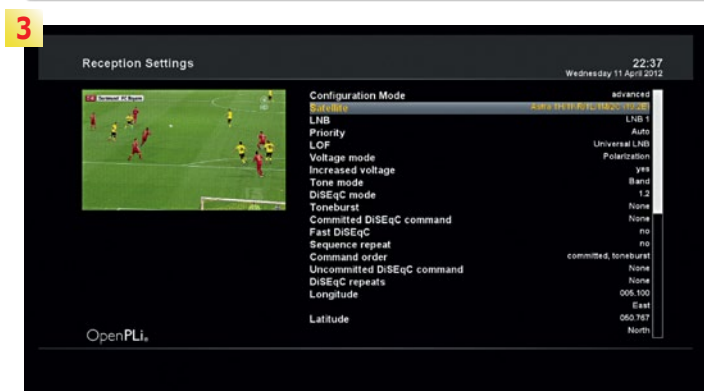
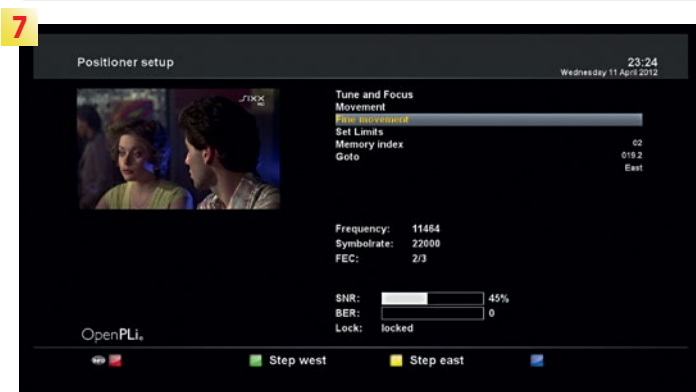
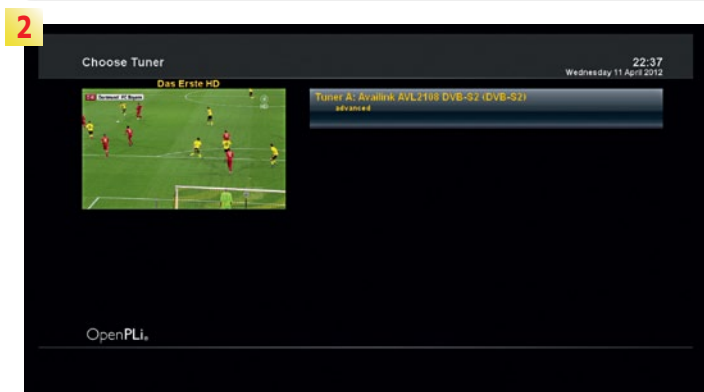
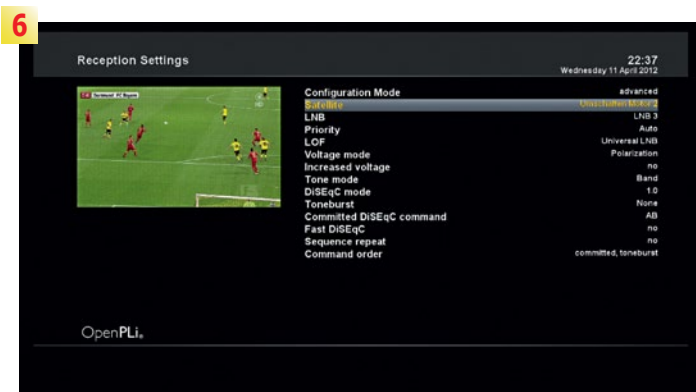
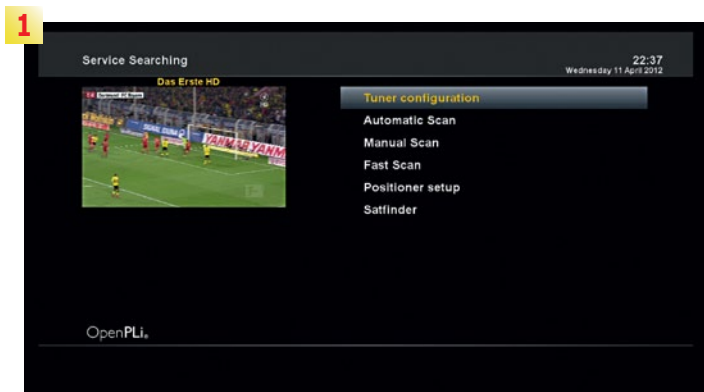


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- 1) The tuner configuration is accessed in the AZBox ME menu
- 2) The AZBox uses an Availink AVL2108 tuner that is quite sensitive and is therefore good for weaker signal situations.
- 3) LNB 1 is configured in DiSEqC 1.2 mode for all satellite positions.
- 4) Since the SG2100A doesn't support USALS, this option is turned off. This function isn't even appropriate for our project since we will be using the stored tables of both motors. The best thing would be to create a table that contains the stored motor position for every satellite. The menu would be called here 'Stored Position'.
- 5) Next we will program LNB 2 for the dummy satellite 'Switching Motor 1' that won't be configured with DiSEqC 1.2 but rather with the Committed DiSEqC Command 'AA'.
- 6) For the dummy satellite 'Switching Motor 2' we are using LNB 3 with the Committed DiSEqC Command 'AB'.
- 7) In the 'Positioner Setup Menu' we can now manually fine-tune the elevation of the antenna as long as Motor 2 is active. Using our satellite table we know what motor storage position the respective satellites must be stored to.
- 8) Switching to channel 2: here Motor 2 was just activated!
- 9) From HISPASAT 30.0W we turn our antenna back...
- 10) Where we first switch to channel 1...
- 11) And then select a channel on ASTRA 19.2E...
- 12) After a few seconds, the antenna is now pointing to this satellite and a TV picture appears.
- 13) Now we switch to channel 2...
- 14) Motor 2 is activated...
- 15) And through the correction in elevation the signal level jumps from 17% to 46%!
- 16) If, for example, you switch back to HISPASAT, the elevation changes since Motor 2 is still active. The picture shows how the signal level dropped to 39%.

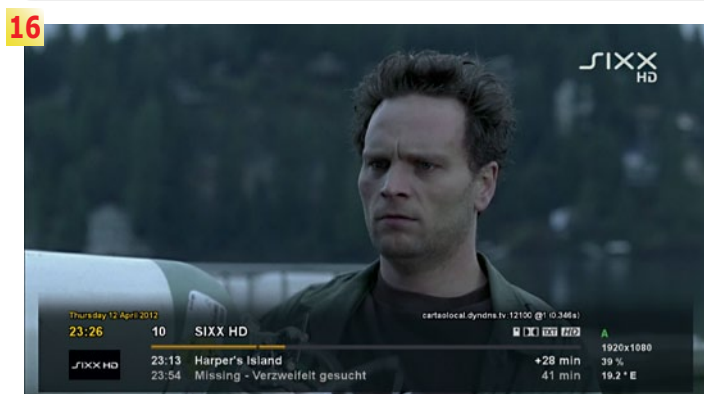
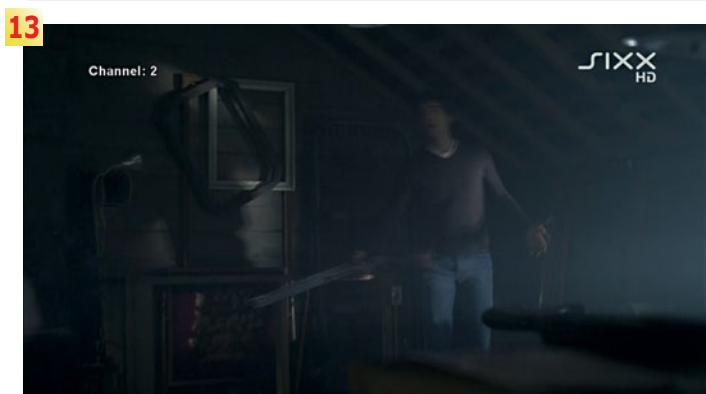
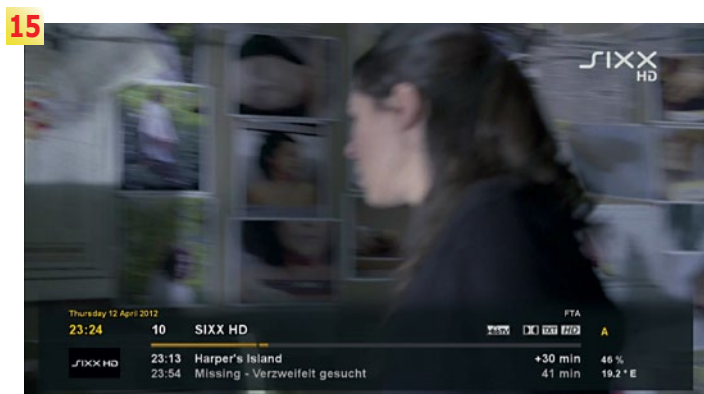
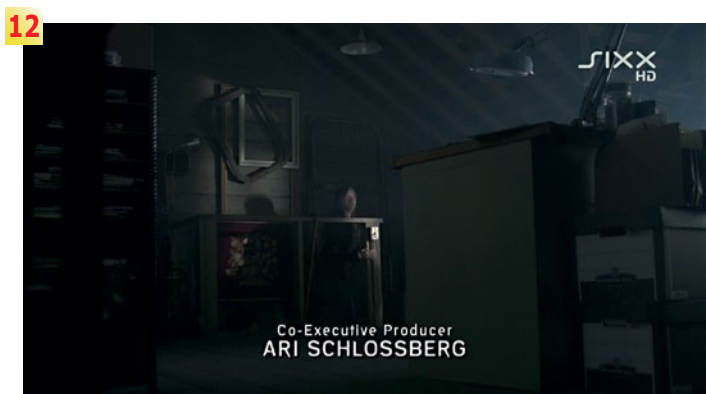
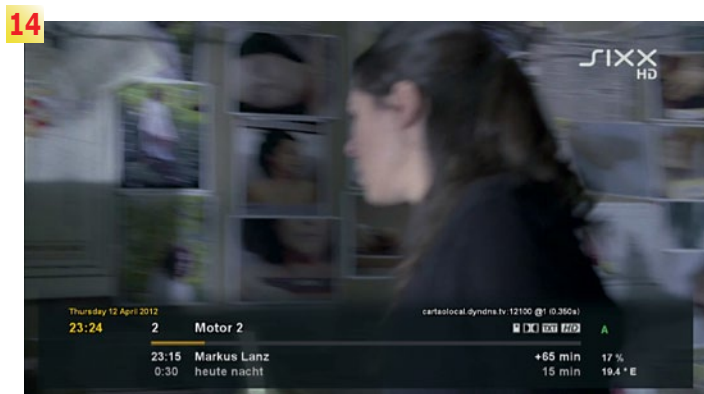
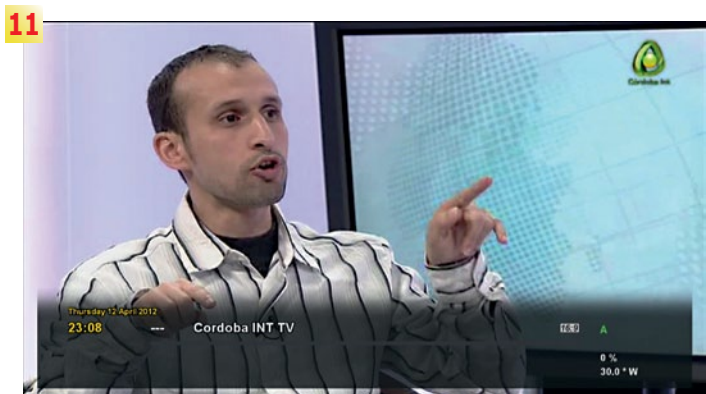
then moved into one of the Favorites lists. Here they would need to occupy position 1 and 2 in the list. Why?

Linux receivers have a peculiarity that we can take advantage of: the channels in the Favorites lists are numbered like this! In other words, the first channel in the Favorites list is channel 1 while the second is channel 2. This makes it very easy to switch between the two motors; you simply select channel 1 or 2 on the remote control.

The arrow button on the remote control will take you to the previous channel so in the end you always need only two button pushes to switch between the two motors.

This entire process is only necessary because the original receiver software doesn't include the capability to drive two motors. But in this way, it actually can be done!

Through the rough alignment based



on the Moteck manual I can, to some extent, receive almost every desired satellite. At the very least I'll see a reception indicator. The signal for stable reception isn't always good enough. That's why it pays to have a second motor. All I have to do is press the '2' button once and then the arrow button. Now I can fine-tune Motor 2 up or down in the receiver's motor menu until I have a good signal. Now save the current position and it's all done!

As you can see in the pictures, it's quite obvious how I was able to improve the reception of HISPASAT 30.0W without having to get up from my easy chair. It doesn't get easier than this!

When everything is correctly set up, you can switch between satellites very quickly: '1', select a channel, '2' and then back with the arrow button. You have to get a feel for it; you have to allow enough time for Motor 1 to drive to the desired satellite position before

you switch to Motor 2. The DiSEqC switch only provides power to the currently active motor. The switch setup is actually necessary since the receiver couldn't provide enough power to drive both motors at the same time anyway.

Some final thoughts: I'm amazed myself at the capabilities of this construction. No more fumbling around on the roof; I can now receive all of the satellites for this size of antenna guaranteed without having to go to the antenna. I can even receive those older satellites that have begun to drift and thus require an elevation adjustment on the antenna. Maybe this workshop will give some manufacturers an idea: develop a two-motor combo system for the two-axis control of a satellite antenna? Or design a satellite receiver that can control two motors at the same time?

Here are a few more construction tips: it would help to have a signal analyzer handy, preferably with DiSEqC

signal analyzer overview in every issue of TELE-satellite would certainly help in finding the right meter.

One thing for sure: you should at first have a direct view of the antenna while working. It is somewhat remarkable what you can do with two motors. It's a good idea to avoid any collisions by setting motor limits; improper use can lead to damage. Not only that, make sure that the LNB cables and especially the 'F' connectors are in good shape; a minimum of five LNB cables are used and if only one of them is faulty, a severe failure chain of events could occur. I should know; I speak from experience here.

The final tip: it's best to work on the antenna in the evenings. The Moteck motors have an LED that shows the status of the motor. In this setup it would be easy to identify which motor was currently active. It's a great help in finding out if the two dummy channels used for motor control are functioning correctly. Now it's your turn to have fun with this project!

17



1.2 support and also a real-time spectrum. The

17) After we surfed back to channel 1 and used the arrow button to go back to a HISPASAT channel, the antenna then turns to HISPASAT. This time the elevation position stored in Motor 2 was driven to first, only after that did it switch to Motor 1.

18) But we want to improve the reception a little bit more. To do this we switched back to Motor 2 ('2' button).

19) With the arrow button back to GOD TV Europe.

20) And after we adjusted the elevation position in the 'Positioner Menu'...

21) ...we were able to achieve a signal level of 70% on this channel.

18



20



19



21



The USB-2 VHF/UHF Modulator that can drive any receiver



DTU-215-GOLD

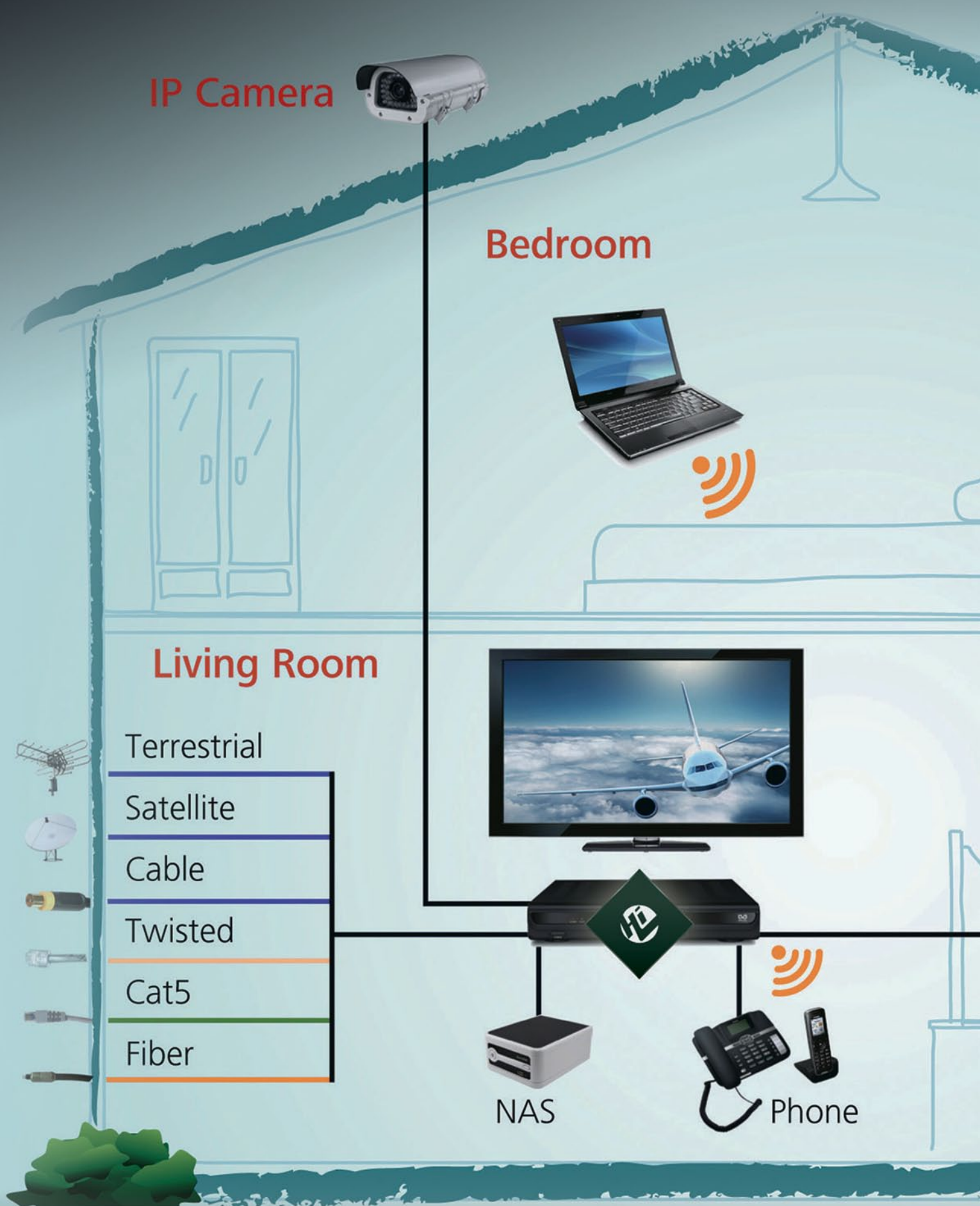
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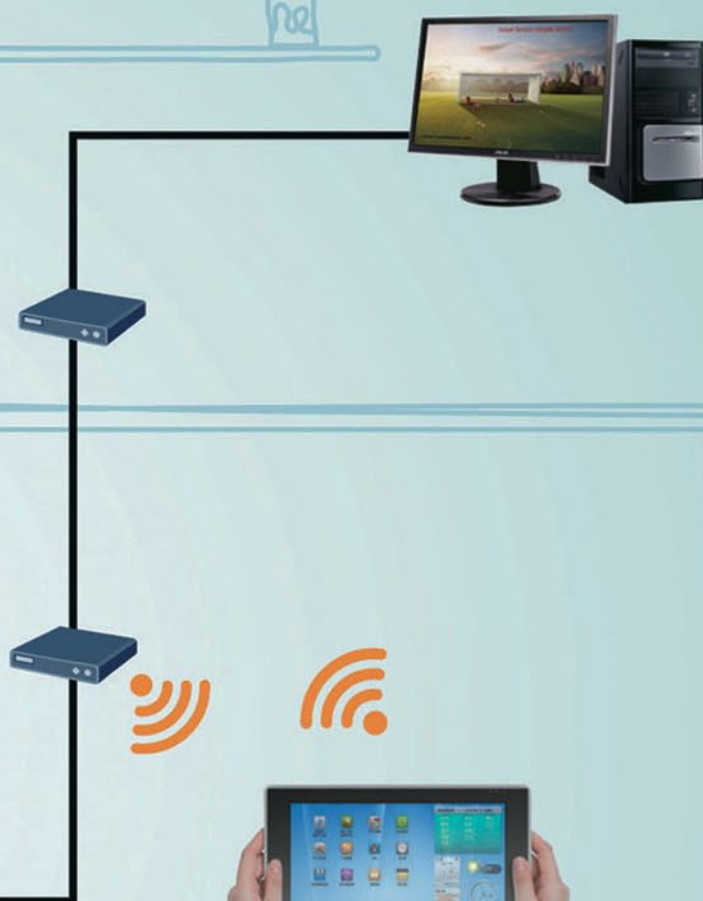
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■ The endless possibilities of the HI3716C.

A New Do-it-all Chip for Digital Receivers

Modern receivers are based primarily on a single chip, the SoC, that combines all of the important functions. With the HI3716C, HISILICON is starting a market offensive. We took a closer look at the technical specifications of these new chips so that we could get a better idea of what kind of functions future receivers would have with these chips.

A digital receiver, regardless if it's a receiver for satellite reception, for terrestrial reception, to connect to a cable network or if it's a media player with Internet access, is comprised in essence of an SoC ("System on Chip"). It consists of a microprocessor that combines all of the critical components (such as CPU, graphics, de-multiplexer, controller, memory interface, audio chip, etc.).

Receiver manufacturers then need to incorporate RAM, flash memory as well as

a tuner, network chip, front-end processor (for the remote control and TV screen), etc., around the SoC in order to build a complete receiver.

Typically the SoC chip manufacturer will provide a corresponding development environment with OEM firmware and a hardware reference design so that receiver manufacturers can test a simplified version of the end-product.

HISILICON, a company of the Huawei Group, is an old familiar name in the semicon-

ductor industry for telecommunications and consumer electronics and with its chips in China one of the leaders in the DVB-C and IPTV markets. Beyond all that, most of our readers will recognize the Huawei company name from the world of mobile phones.

To further expand their market position, Huawei has recently introduced their latest SoC. And this one has what it takes: finally there's an SoC for receivers that are based on the ARM architecture, specifically on the ARM A9 processor. This means that not only does Linux run directly on the chip but also Android 4.x. This SoC also has a 3D graphics portion built into it with which current 3D games would function.

Yet the HI3716 can do even more in that it also has inter-

faces for DVB tuners, hard drives and networks. Receivers that will be based on the HI3716C chip should be very exciting; you'll be able to play 3D games on an Android satellite receiver with enough power. The capabilities of this SoC chip are, according to the manufacturer, amazing:

Open Architecture

- Support from Linux and Android operating systems
- Open-Source
- High performance 3D graphics component with support from OpenGL for games and flash acceleration

Communication

- Video Telephony
- Voice Over Internet Protocol (VoIP)

■ Reference designs already exist, here in form of a high-end Linux HD STB.





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- Connection of peripheral devices via SATA/eSATA interfaces
- Support of FAT32 or NTFS file systems – compatible with PC formatted hard drives
- Recording of encrypted and unencrypted streams
- Timer for recording of channels via the Electronic Program Guide (EPG)
- Display of a transponder with time Shift while the channel of another transponder is being recorded (twin tuner)

Logos, Information and Advertisement

- Static images can be displayed immediately after turn-on, such as the manufacturer logo
- Playback of local videos and streams from the Internet immediately after turn-on
- Support of interactive services and advertisements, for example, during an EPG channel change

Games

- Console games and on-line games
- Plays back background music and sound effects
- Powerful floating-point coprocessor and 3D GPU to improve the game experience

Home Digital Entertainment

- Playback of locally stored music as well as Internet mu-

sic

- MP3 playback with text
- Playback of pictures in various formats with hardware supported JPEG and PNG decoding
- Hardware supported special effects, for example, for page changes (animated turning of pages, scrolling, etc.)
- Playback of MJPEG chips from mobile phones, digital cameras or Personal Media Players (PMP)
- Playback of multimedia files in all their various formats

Power Consumption

- Total power usage in Standby less than 1 W
- Typical power usage in operation less than 9 W
- Automatic standby at preset times

3D TV

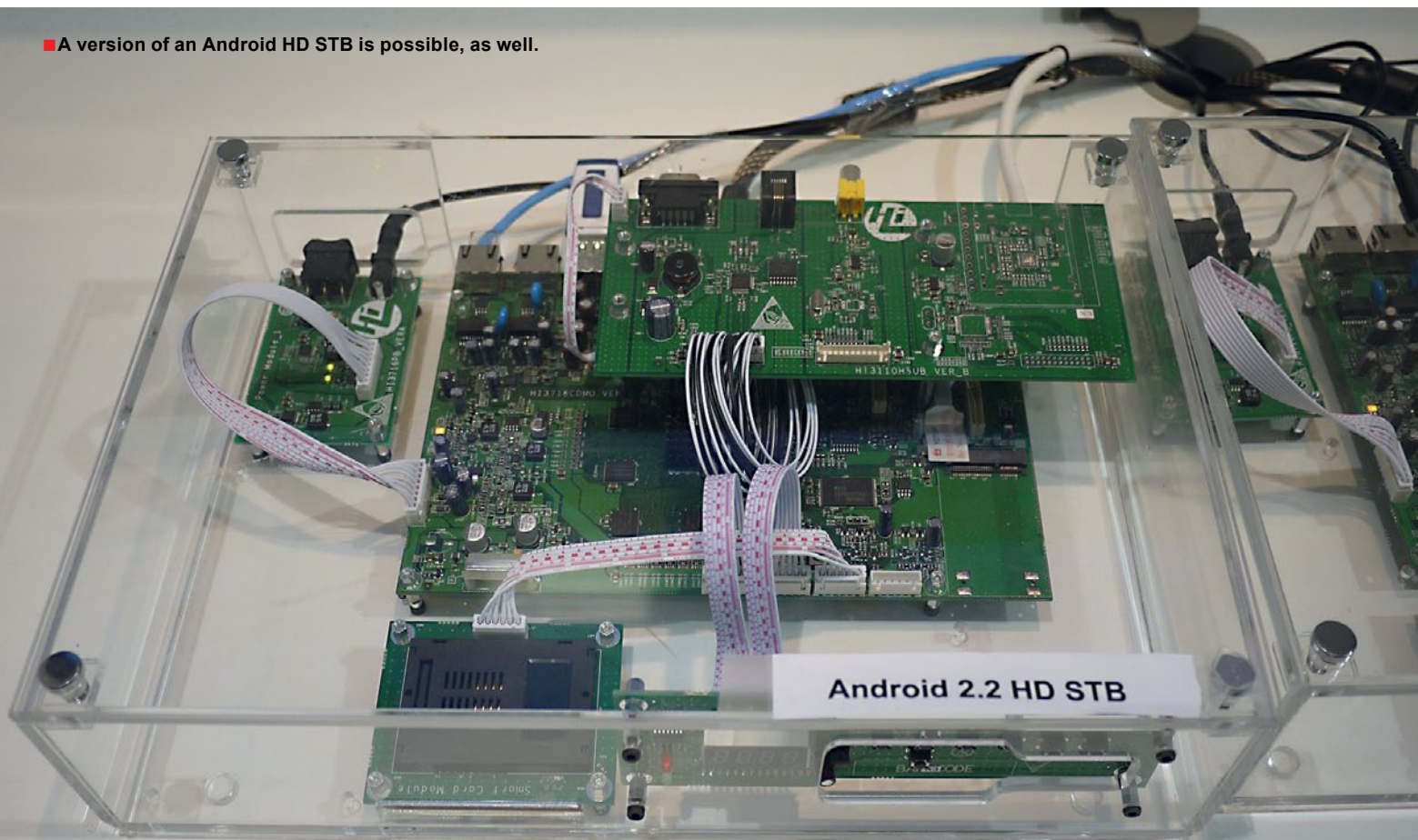
- Playback of side-by-side 3D videos

Multi Image Preview

- Dynamic previews from multiple sources (local mosaic)
- Supports advertising spots in multi-image mosaic
- Automatic volume compensation between different channels

With all of these new capabilities, it's easy to see the exceptional potential of the new receiver generation: this together with modern flat-screen TVs will become the place to go for many different multimedia formats. And this could be live digital TV, IPTV or totally new functions such as the display of video streams from security cameras, video telephony or the display of pictures that were taken by mobile telephone cameras. In this way the HI3716C chip becomes the multimedia headquarters in your own home and makes possible easy access to the

■ A version of an Android HD STB is possible, as well.



Internet.

A note for end users: if possible, thought should be given to setting up the home with a proper network infrastructure. Cabling is definitely preferred so that in the future HDTV can be streamed to every room in the house. If necessary, WLAN can be used as can the existing power lines in the house. With this kind of infrastructure new receivers based on the new modern SoC's like the HI3716C make sense since now all services would be fully integrated throughout the house. It wouldn't matter, for example, if that movie were stored on a PC or in the set top box; it can be played back on a tablet, on a laptop or on a TV monitor. Welcome to the multimedia age of network technology!

In order to provide all of these functions, the HI3716C has to be a highly integrated SoC. The central component is the ARM Cortex A9 processor that operates at 1 GHz,

corresponding to 2500 MPIS (Million Operations per Second). This involves operations with floating-point values.

The problem with receivers already on the market with the Android operating system is that the important components, for example, to connect tuners are missing. It therefore becomes difficult for those available boxes with ARM processors to establish themselves as real set top boxes.

The HI3716C changes everything. In the SoC are additional hardware kernels for DES/3DES/AES-encryption, DEMUXERS for the connection of DVB-S/C/T tuners, JPEG/PNG- and H264/MPEG2/MPEG4/AVS/VC-1/Real/H.263-Decoders, etc. Additionally the SoC is already set up for the connection of USB2.0, SATA/eSATA/DDR2 and DD3/Flash/Wifi Modules/card readers/Smartcard readers, remote control, HDMI, etc. So, this

is not about an SoC that was developed for mobile telephones or tablets, rather it's one that was designed specifically for receivers.

With the right Android Apps, the perfect receiver and multimedia player can be implemented. Thanks to the speedy Cortex A9 and the 3D GPU with OpenGL ES 2.0 support, the receiver can also serve as a game console.

Some manufacturers have already tried to implement such a receiver through other methods. Instead of integrating a receiver with an ARM processor and a second SoC for the receiver functions, which would have, of course, doubled production costs, they tried to port Android onto other processor families. The MIPSANDROID project is unfortunately an example of how fast problems could arise. The porting could not be completed because the SoC manufacturer did not make the necessary specifications available for the Open

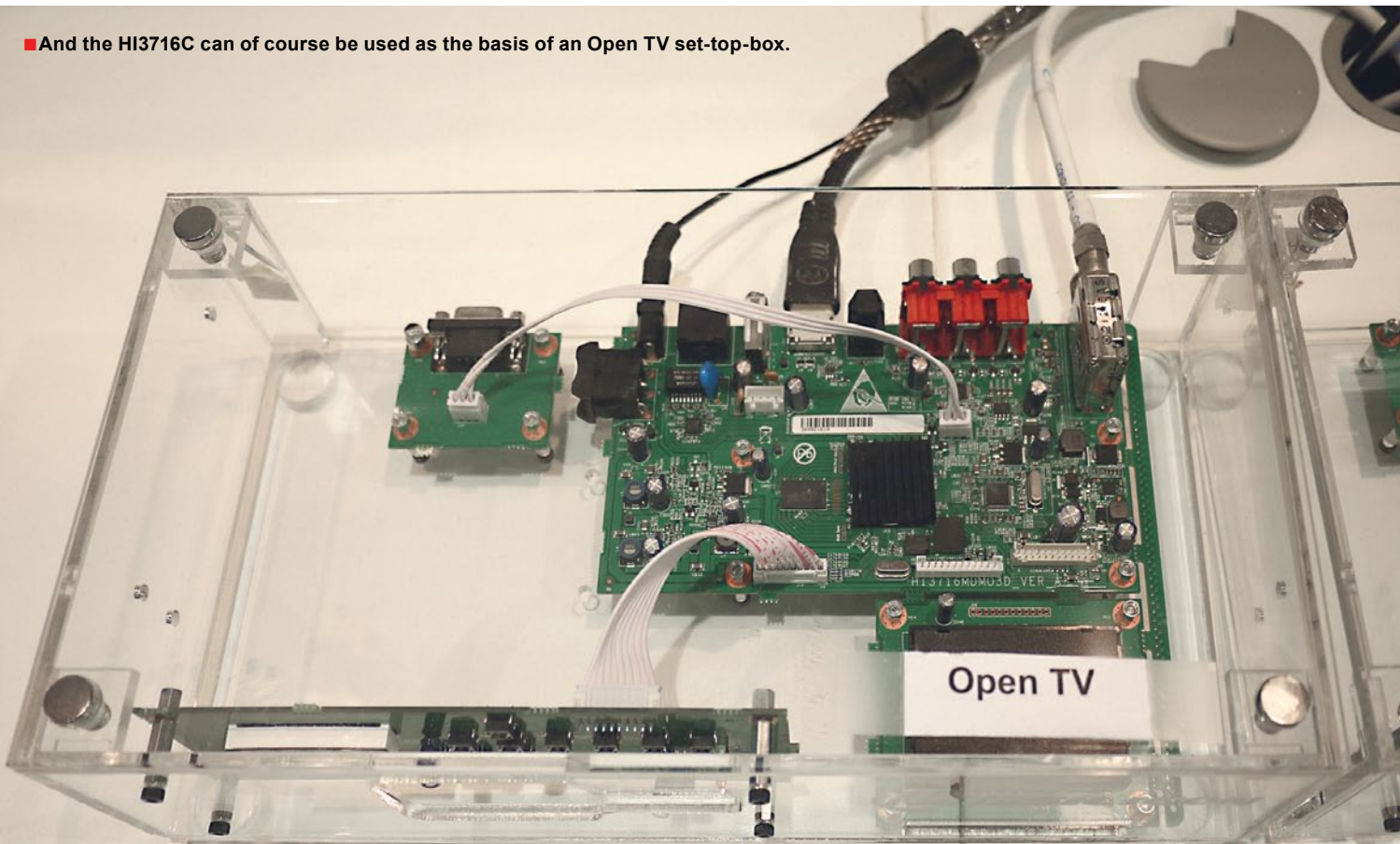
Source driver development.

Even if this approach were successful, there was another grave problem: the Apps would not have been binary compatible with the Apps for ARM processors which would have prevented access to stores such as the Google Store. This would have greatly reduced the usefulness of the Android system.

The new chip from HIO-SILICON stands out in that it gives you a true Android feeling while at the same time guaranteeing typical receiver and multimedia functions.

The Apps developer, thanks to the Linux-based Android and the Open Source nature of the HI3716C, that can be used to design receiver and multimedia programs, is just fascinating. Just recently, for example, the XBMC (Xbox Multimedia Center) porting for Android devices has started and the first beta versions can already be installed. We tried it out and can confirm this is a fully featured trans-

■ And the HI3716C can of course be used as the basis of an Open TV set-top-box.



1



2



3



formation that simply blows all other media players away.

But on paper technical specifications are always good. How does it look with production units? The first prototypes from HISILICON were introduced at the CCBN trade show in Beijing and resulted in a lively crowd of visitors. Not only was there just one complete Android 4.0 receiver to stare in wonder at, there were three different models: an HD receiver based on Android 2.2 with SmartCard reader and USB ports, an OpenTV set top box with integrated tuner and last but not least, the star of the show, a high-end Linux HD receiver. The latter model had so many connections that we couldn't see straight anymore. On the rear panel were four USB 2.0 ports, two network jacks, eSATA, twin tuner, HDMI and component outputs, as well as composite video, L+R audio and SPDIF (optical and coaxial) outputs. The prototypes could simultaneously playback video from the tuner and Internet video; on top of that parallel Apps and widgets were blended in. It was wonderful!

The operations interface can be custom designed by the manufacturer so that instead of a normal Android GUI, a GUI designed for the receiver can be displayed. This makes this SoC also quite interesting for IPTV boxes or even for hotel receivers. It would allow additional services to be implemented simply and cost-effectively.

The trend is clear: a chip like the HI3716C will completely change the look in many living rooms. Where today you'd

1. Many people visited the HISILICON both during the CCBN 2012, fascinated with prototypes using the HI3716C.

2. Full media player support, with access to network shares, UPnP servers, etc.

3. The highlight: a set-top-box running Android 4.0. Note the screen on the right playing a 3D video!



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2



find receivers, media players and game consoles next to or under the TV, it won't be long before just one single receiver is all that would be needed. An interesting market is hotels that in the future would be able to offer more than just PayTV. Desirable would be real Android based devices with access to hotel information, Internet and a multitude of media formats. This could all be implemented cost-effectively with the HI3716C. IPTV receivers with the HI3716C would greatly increase the range of services offered by providers and at the same time blend in information and advertising spots that would help finance the entire package.

So now we sit and wait for the first receivers to come out that are fitted with the HI3716C chip from HISILICON!

1. 4. Simple GUI for all multimedia activities? Can be done...
2. ...while the DVB-S2 tuner keeps playing!
3. All you could ever dream of: Internet, multimedia, games console, receiver – all in one single device.

3



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DOUBLE LNB HOLDER



DISEQC 2/1 SWITCH



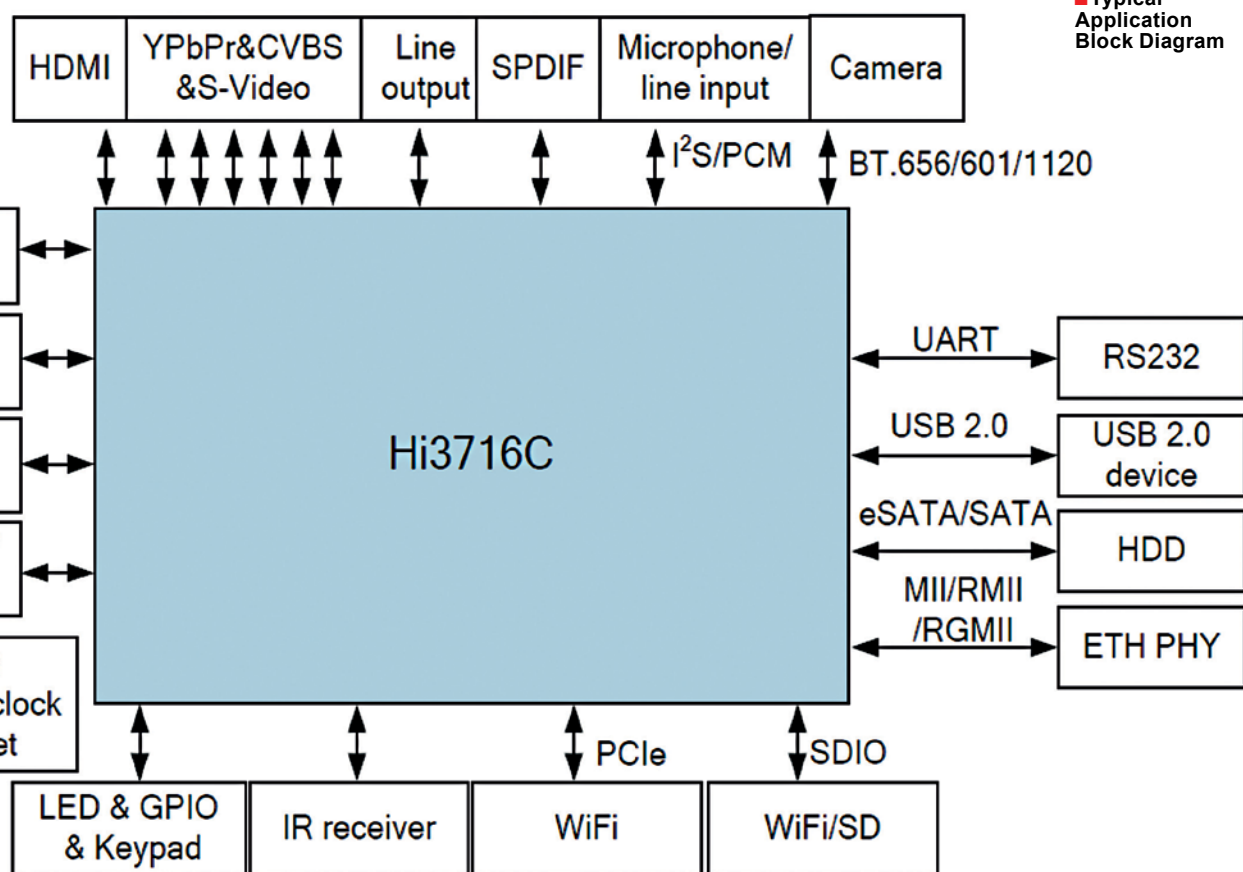
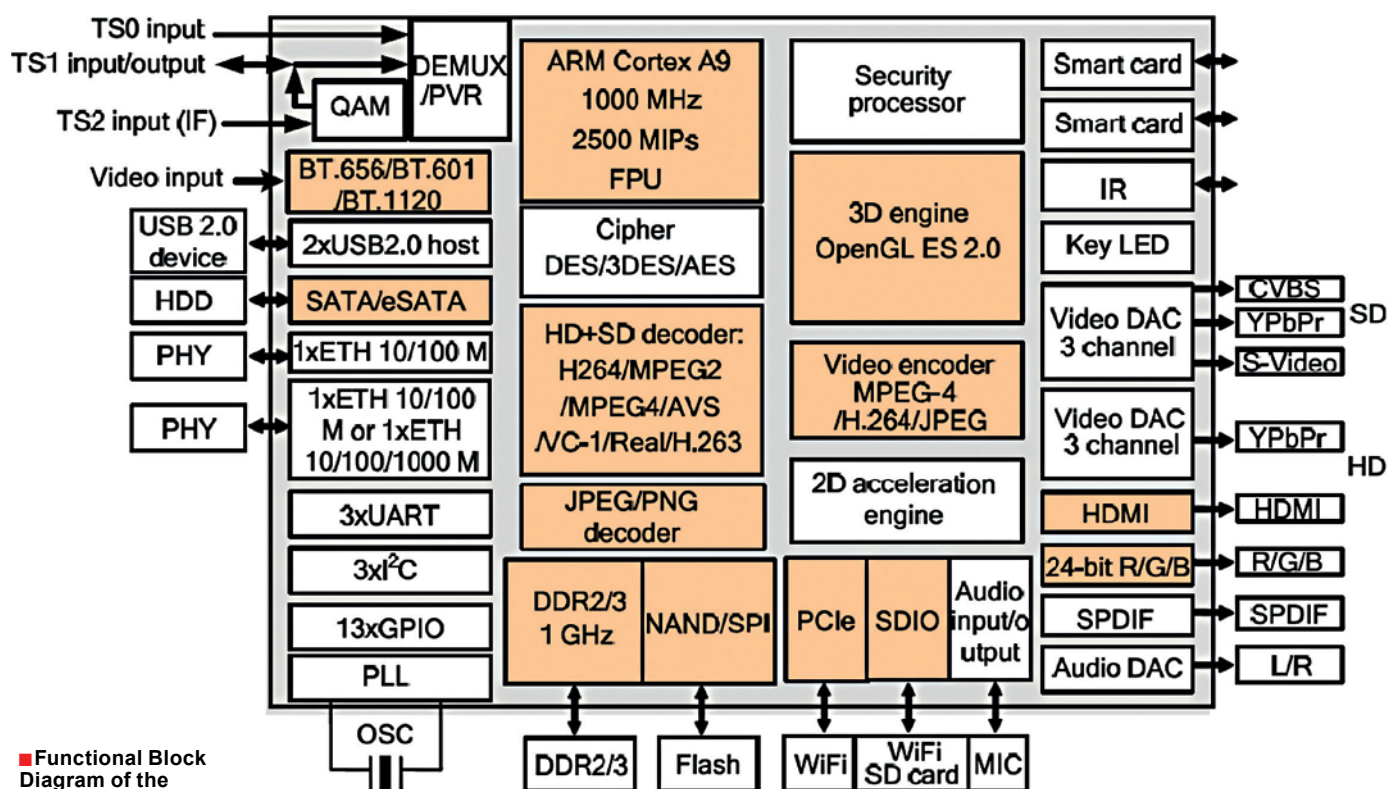
TELEMANN 1600
DIGITAL SATELLITE METER



THB-SAT RG-6U COAX CABLE
ROLL 100m OR 300m



F-CONNECTOR (100 pcs.)



Expert Opinion

SoC with ARM Cortex A9 and possibility to integrate digital tuners

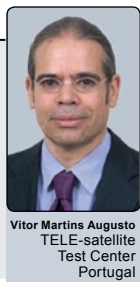
Open Source

Android 4.x support

All current interfaces and connections possible

Low power consumption

The IP address can not be changed using NMS



Vitor Martins Augusto
TELE-satellite
Test Center
Portugal

TECHNICAL DATA

CPU

High-performance core solo ARM Cortex A9 processor
Mechanism of providing dual-core services, processing capability of 2500 MIPs
Built-in I-cache, D-cache, and L2 cache
Hardware JAVA acceleration
Floating-point coprocessor

Memory Control Interface

Double-data rate 2 (DDR2)/DDR3 interface
Maximum memory of 1 GB
32-bit memory width

Serial peripheral interface (SPI) flash
NAND flash

Video Decoding

H264 MP, HP@ level 4.1
MPEG1
MPEG2 MP@HL
MPEG4 SP@ levels 0–3 and ASP@ levels 0–5
MPEG4 short header format (H.263 baseline)
Divx4–6
AVS baseline@ level 6.0
H.263
RealVideo8/9/10
VC-1 AP
Decoding capabilities of 1080p (30 fps) and 576i (25 fps) or 480i (30 fps)
Video post-processing such as denoising and deblocking Picture Decoding
Full high-definition JPEG decoding, a maximum of 64 megapixels
PNG decoding, a maximum of 64 megapixels
Audio/Video Encoding
H.264/MPEG-4 video encoding, a maximum of 720x576@25 fps
JPEG encoding
Variable bit rate (VBR) and constant bit rate (CBR) modes for video encoding
1-channel audio encoding
Echo cancellation

Audio Decoding

MPEG L1/L2 decoding
Dolby digital and Dolby digital plus decoding
AC3 transparent transmission
Down mixing
Resampling

2-channel sound mixing

Intelligent volume control

TS Demultiplexing/PVR

3-channel transport stream (TS) inputs including 1-channel intermediate frequency (IF) input
One built-in quadrature amplitude modulation (QAM) module
1-channel QAM loopback output
A maximum of 96 packet ID (PID) filters
Full-service personal video recorder (PVR)
Recording of scrambled and non-scrambled streams
Advanced encryption standard (AES), data encryption standard (DES), or triple data encryption standard (3DES) data encryption
Content protection for universal serial bus (USB) devices

Content protection for serial advanced technology attachment (SATA) or external serial advanced technology attachment (eSATA) hard disks

Security Processing

Advanced security features
One-time programmable (OTP) and chip ID Graphics Processing
Enhanced full-hardware 2D graphics acceleration engine
Full-hardware anti-aliasing and anti-flicker
Full-hardware 3D graphics processing unit (GPU) acceleration engine
Standard OpenGL ES 2.0/1.1/1.0 OpenVG 1.1 interfaces

Display Processing

2-layer on-screen display (OSD)
16-bit or 32-bit color depth
Two background layers and two video layers
1920-pixel width for each layer
Image enhancement

Audio/Video Interface

Output norm of PAL, NTSC, or SECAM and force standard conversion
Aspect ratio of 4:3 or 16:9, force aspect ratio conversion, and scaling
1080p 50(60)/1080i/720p/576p/576i/480p/480i outputs
Receiving of standard-definition and high-definition signals
Simultaneous output of high-definition and standard-definition signals from the same source or different sources
xvYCC (IEC 61966-2-4) standard for color gamut

Digital video interface

High-definition multimedia interface 1.4 (HDMI 1.4) with high-bandwidth digital content protection 1.2 (HDCP 1.2)
One BT.656/601 or BT.1120 video input (VI) interface
One 24-bit red-green-blue (RGB) output interface

Analog video interface

One composite video broadcast signal (CVBS) interface
One YPrPb interface
One S-Video interface
Six built-in video digital-to-analog converters (DACs)
Configurable output interface
Macrovision and vertical blanking interval (VBI)

Audio interface

Left-audio and right-audio channels (RCA output interface with low impedance and imbalance)
Sony/Philips digital interface (SPDIF)
One built-in audio DAC
One digital audio input/audio output (AI/AO) interface (pulse code modulation (PCM) with multiple time slots)

Peripheral Interface

One eSATA/SATA interface (with integrated physical layer (PHY)), supporting 1.5 Gbit/s or 3.0 Gbit/s rate
One peripheral component interconnect express (PCIe) interface (with integrated PHY)
Two USB 2.0 host ports (with integrated PHY)
One 8-bit secure digital input/output (SDIO) interface
Two 10/100 Mbit/s adaptive Ethernet ports supporting the 2-layer or 3-layer switch function or one 10/100 Mbit/s or 10/100/1000 Mbit/s adaptive Ethernet port
Three universal asynchronous receiver transmitter (UART) interfaces
Two smart card interfaces, supporting T0, T1, and T14 protocols
One infrared (IR) receiver processor and two input interfaces
One light emitting diode (LED) and keypad control interface
Three inter-integrated circuit (I2C) interfaces
13 groups of general-purpose input/output (GPIO) interfaces

Others

Fast startup
Downloading and running of boot programs through the serial port
Passive standby and low-power consumption
Entire standby power less than 1 W
Typical entire power less than 9 W in operating mode
756-pin plastic ball grid array (PBGA) package with 31 mm x 31 mm dimensions and 0.8 mm pitch

Take Advantage

A young woman with long, wavy red hair and blue eyes is smiling at the camera. She is wearing a red, short-sleeved top with ruffled shoulders. She is holding a black tablet computer with both hands. The tablet screen displays a white rectangular box containing text.

**Read TELE-satellite's Technical
Feature Stories to Know All About
the Digital Developments and
New Technical Breakthroughs
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FREE on Your
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Channel Capacity of a Transponder

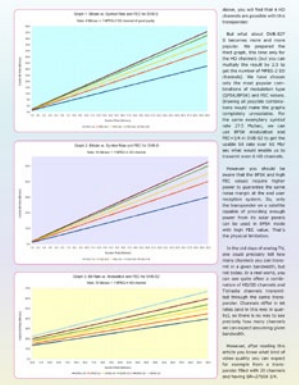
FEATURE | Satellite Technology

How many SD/HD channels can we get from one transponder?

Jack Pawlowski

Everybody who ever studied satellite charts with transponder data knows that the symbol size of a transponder is one of its most important parameters. And it's not only because you need to know it to get the data in a particular channel, but in your program. Symbol size directly affects the amount of useful data that can be transmitted via a transponder. The higher it is, the more data can be sent. Now data means more TV and radio channels.

But in our monthly feature, we don't just look at the numbers. We also look at the reasons behind them. In a given transponder, there is a certain amount of data that can be sent. This is determined by the symbol size. The higher the symbol size, the more data can be sent. This is because a higher symbol size allows for a higher data rate. In a given transponder, there is a certain amount of data that can be sent. This is determined by the symbol size. The higher the symbol size, the more data can be sent. This is because a higher symbol size allows for a higher data rate.



How HbbTV Works

FEATURE | TV Transmission Standard

HbbTV Hybrid broadcast broadband TV Get organized for the inevitable

This will be a surprise for TV-satellite readers. A new standardization initiative has been started to integrate the digital TV world with the Internet. The basic idea is quite clear: make it as seamless as possible for the user. TV-satellite authors often mentioned the obvious truth: the average user is rarely interested through what transmission medium data is coming to their TV sets or monitors. Is it via satellite, via cable or via the air? Or perhaps via Ethernet cable rather than the coaxial one used in CCTV and modems via optical fibers?

This is a logical solution to today's market. Changing industry mindsets, changing user expectations, changing the way we consume media, changing the way we communicate, all these factors are pushing us towards a new standard. The HbbTV standard is a logical solution to today's market. Changing industry mindsets, changing user expectations, changing the way we consume media, changing the way we communicate, all these factors are pushing us towards a new standard.



www.TELE-satellite.com/TELE-satellite-1107/eng/sdinhd.pdf

CI+ and HD+Encryption

FEATURE | HDTV Copyright Management

CI+ and HD+Encryption

- prevents unauthorized distribution of HDTV content
- gives TV providers full control over content
- selects many popular features – such as time-shift viewing and PVR functions – for customers

HDTV Encryption

by ASTRA

www.TELE-satellite.com/TELE-satellite-1107/eng/CI+HD+.pdf

How MPEG Surround Works

FEATURE | Audio Transmission

The New Audio: MPEG Surround Are we to forget the old good audio codecs? Not exactly!

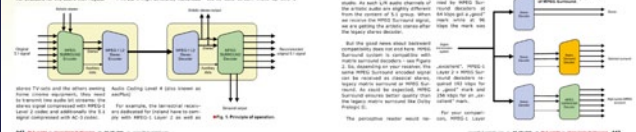
Jack Pawlowski

When we think about digital TV we usually focus on the video performance. The terms SDTV and HDTV refer to video resolution. To save bandwidth, the original video data stream has to be compressed. Most of our TV-satellite readers are very familiar with the most popular video compression standards MPEG-2 and H.264 (also known as MPEG-4 AVC or MPEG-4 Part 10).

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www.TELE-satellite.com/TELE-satellite-1105/eng/mpeg-surround.pdf

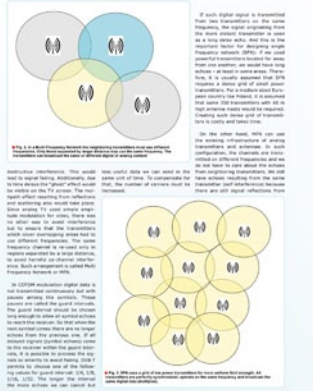
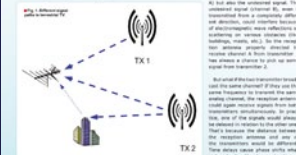
How the SFN Modulation Works

FEATURE | Transmission Technology

Single- and Multi-Frequency Networks in Digital Terrestrial Television

Jack Pawlowski

DVB-T2 and DVB-H standards for digital terrestrial TV use COFDM modulation. COFDM stands for Coded Orthogonal Frequency Division Multiplexing and is a quite complex set of digital modulation developed to ensure high bit rate capacity along with interference immunity. The latter feature is what makes single frequency networks (SFN) practically possible.



www.TELE-satellite.com/TELE-satellite-1103/eng/sfn.pdf

www.TELE-satellite.com/TELE-satellite-1101/eng/hbbtv.pdf

How DVB-C2 Works

FEATURE | DVB in the field

Ultimate Spectral Efficiency DVB-C2 is around the corner

Jack Pawlowski

The old DVB-C standard has been in use since 1994. The time for a second generation standard came in 2005. When European cable operators expressed their big concerns about the limited bandwidth they have for the distribution of their services. The major goal was the more efficient use of the available bandwidth in cable networks. The DVB-C2 standard was developed by experts from 20 different companies and countries from various countries. Kabel Deutschland, one of Europe's major cable operators, provided the chairmanship for this effort. The standard was finalized last year and supplements the DVB-S2 and DVB-T2 standards developed earlier.

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www.TELE-satellite.com/TELE-satellite-1009/eng/dvb-c2.pdf

Streaming TV via the Internet

FEATURE | TV via Internet

Streaming TV via the Internet - Quick Setup and Free!

This wouldn't be the first time that we reported in TELE-satellite an streaming solution that would let you receive TV and radio content via the Internet. In this way you could be on vacation in your hotel on the other side of the world and playback your favorite programs from your living room via an Internet stream or simply watch your favorite TV channels while on vacation.



The image shows the streaming TV setup process. It includes a navigation bar with links to various sections, a main body pane with text and images, and a sidebar with additional information. The image shows the streaming TV setup process. It includes a navigation bar with links to various sections, a main body pane with text and images, and a sidebar with additional information.

www.TELE-satellite.com/TELE-satellite-1007/eng/streaming.pdf

Testing Horizon to Horizon Actuator

FEATURE | Horizon-to-Horizon Antenna Actuators

How Can You Test H-H Antenna Actuators?

Heinz Koppitz



The image shows a Horizon-to-Horizon Antenna Actuator. It is a mechanical device used for testing. The image shows a Horizon-to-Horizon Antenna Actuator. It is a mechanical device used for testing.

www.TELE-satellite.com/TELE-satellite-1005/eng/h-h-actuator.pdf

How SCR Works

FEATURE: SCR LNB

Thanks to SCR: One single cable for up to eight receivers

Thomas Haring

SCR is short for Satellite Channel Receiver and is a specification defined in the EN 50494 standard, which applies worldwide and which is the result of joint forces between several companies under the guidance of SES Astra. So what's in it for you?

The standard defines a common interface between the LNB and the receiver. This means that the LNB can be connected to the receiver via a single cable. This is a significant improvement over the current situation where each receiver needs its own cable. The standard also defines the power supply and the control signals. This means that the LNB can be connected to the receiver via a single cable. This is a significant improvement over the current situation where each receiver needs its own cable.

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www.TELE-satellite.com/TELE-satellite-0911/eng/scr.pdf

How Decoding Works

FEATURE: Pay TV

Decoding of Encrypted Content

Thomas Haring

The currently used DVB standard provides for encrypted channels to be decoded according to the following procedure: A subscriber receives a smart card. This smart card is equipped with a key that is required to decode encrypted channels and/or programs. The relevant key is sent to the card via satellite. As each card features a unique serial number card providers are in a position to activate or deactivate each individual smart card as necessary. In order to decode the encrypted transport stream transmitted by the satellite a code is required which is generated every few seconds. This code is calculated directly by the CI module or - in case a proprietary receiver with built-in card reader is used - by the internal chipset of the box, using a number of different parameters which include - among others - the key that is stored on the smart card.



CI+ Common Interface Plus

The standard defines a common interface between the LNB and the receiver. This means that the LNB can be connected to the receiver via a single cable. This is a significant improvement over the current situation where each receiver needs its own cable. The standard also defines the power supply and the control signals. This means that the LNB can be connected to the receiver via a single cable. This is a significant improvement over the current situation where each receiver needs its own cable.

Parameter	Value
Serial Number	12345678901234567890
Key	12345678901234567890
Control Signal	12345678901234567890

Everyday use

The standard defines a common interface between the LNB and the receiver. This means that the LNB can be connected to the receiver via a single cable. This is a significant improvement over the current situation where each receiver needs its own cable. The standard also defines the power supply and the control signals. This means that the LNB can be connected to the receiver via a single cable. This is a significant improvement over the current situation where each receiver needs its own cable.

www.TELE-satellite.com/TELE-satellite-0909/eng/decoding.pdf

How ABS-S Works

FEATURE: New Digital Standard

ABS-S: a competition for DVB-S/S2?

Jack Pawlowski

When we were reading a press release about the launch of Zhongxing 9 (Changfeng 9), it seemed like something quite routine. It was nothing but ordinary that China had another DVB satellite in service. It was the coding and modulation the satellite was expected to use that surprised us. It was neither DVB-S nor DVB-S2. It was something brand new: ABS-S (Advanced Broadcast System-Satellite).

We all know that the introduction of a new digital standard is a very complex process. It involves a lot of technical and financial resources. The standard must be compatible with existing equipment and must be able to handle a wide range of services. The standard must also be able to handle a wide range of services. The standard must also be able to handle a wide range of services.

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www.TELE-satellite.com/TELE-satellite-0903/eng/abs-s.pdf

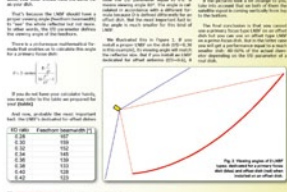
Matching LNB with Dish

FEATURE: LNB Types

Matching LNB and Dish Type

Jack Pawlowski

When selecting an LNB for your dish, it is important to consider the dish's size and shape. The LNB must be able to handle the dish's gain and must be able to handle the dish's feedhorn. The LNB must also be able to handle the dish's feedhorn. The LNB must also be able to handle the dish's feedhorn.



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www.TELE-satellite.com/TELE-satellite-0811/eng/lnb+dish.pdf

How to Calculate the Power Factor

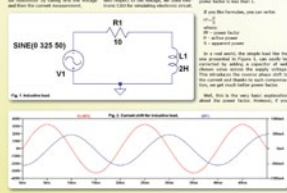
FEATURE: Energy Saving

Power Factor

Jack Pawlowski

All our satellite power need electrical energy to operate. Obviously, all of us like to have the device that consumes as little energy as possible. And only our bills are lower than that we can protect our environment. In TELE-satellite we usually provide information on power consumption of the tested products. The power is generally expressed in Watts (W) but sometimes also in Volt-Amperes (VA). What is the difference?

The power consumption of a device is the product of the voltage and the current. The power consumption of a device is the product of the voltage and the current. The power consumption of a device is the product of the voltage and the current. The power consumption of a device is the product of the voltage and the current.



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www.TELE-satellite.com/TELE-satellite-0809/eng/powerfactor.pdf

How to Solve Problems with DiSEqC

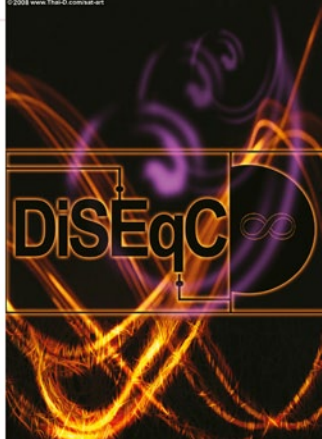
FEATURE: DiSEqC

Why DiSEqC Isn't Always Reliable

Heinz Koppitz

The DiSEqC control system, developed jointly by EUTELSAT and Philips, that uses the existing control cable in a two-wire system, is a significant improvement over the current situation where each receiver needs its own cable. The standard also defines the power supply and the control signals. This means that the LNB can be connected to the receiver via a single cable. This is a significant improvement over the current situation where each receiver needs its own cable.

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www.TELE-satellite.com/TELE-satellite-0807/eng/diseqc.pdf

How the 3D Diffractive Antenna Works

FEATURE: Antenna Design

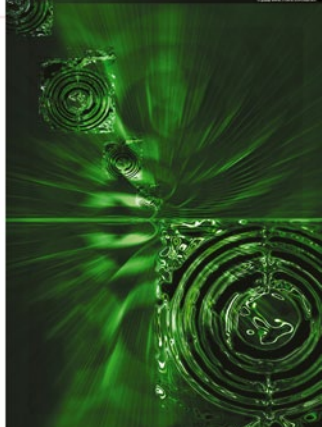
Development and Application of 3D Diffractive Antennas

V.V. Kiselev, O.V. Kiseleva

Parabolic antennas (PPA) have been used for many years. They are a type of antenna that uses a parabolic shape to focus the signal. They are a type of antenna that uses a parabolic shape to focus the signal. They are a type of antenna that uses a parabolic shape to focus the signal.



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www.TELE-satellite.com/TELE-satellite-0805/eng/3ddiffractive.pdf

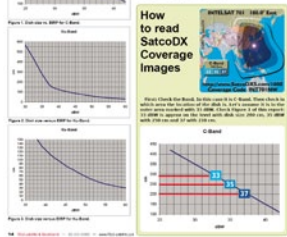
Relation between Dish Size and EIRP

FEATURE: Dish Sizes

Dish Size versus EIRP

Jack Pawlowski

The relationship between dish size and EIRP is a complex one. It involves a lot of technical and financial resources. The standard must be compatible with existing equipment and must be able to handle a wide range of services. The standard must also be able to handle a wide range of services. The standard must also be able to handle a wide range of services.



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RESELLERS WANTED



■ Antiference's administration building in the Fradley Distribution Park in Lichfield near Birmingham, UK. There's also a logistics center in Lichfield.

75 Years of TV Antennas from Antiference

- *Manufacturing TV antennas since 1937*
- *Provides all the components needed for TV reception*
- *Expanding into HDMI distribution, as well as wireless solutions*
- *Expanding distribution network to the European market*
- *Offers their own products as OEM and private label*

Over 70 Years of TV Antenna Experience

Everything has a beginning; even TV reception, that for us today is a part of life, had a starting point. For England that was in 1936 when the first regular TV transmissions began. Broadcasting took place on VHF channel 1 (50 MHz) and a system with 405 lines was used. Today SD uses 720 lines and HD 1080 lines.

These first TV broadcasts were transmitted from Alexandra Palace in London (The site is still in operation today and is now used for DVB-T2 and DAB+). At the time, it was an absolute sensation and raised the curiosity levels of two electronics technicians: Norman Best and M. S. Beebe. They recognized the unbelievable potential of this new technology and thereby found their market niche that they never changed after they founded their company in 1937. They named the company Antiference, and this name was based on the main problem that existed back then: the interference that was created

■ Trevor Paintain is Antiference's Managing Director. He is seen here holding the current 84-page product catalog in his right hand filled with all of their TV reception and TV distribution products. In his left hand he's holding one of Antiference's success stories: the Tribeam UHF antenna.



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TECSYS

Receptores DVB-S e DVB-S2

TELE

Tipos fixos e anúncios	Resp.	Views	Atualizado
1. INFO SAT BSD Autor: VALDECIR ADORNO DA SILVA (Pág.: 1, 11, 12, 13)	247	12894	21/10/2011, 14:19
2. Medidor de sinal DSM pra apontamento de antenas Autor: Marcos Bernardini (Benni) (Pág.: 1, 2, 3)	46	1306	21/10/2011, 12:53
3. KIT ORCA Autor: VALDECIR ADORNO DA SILVA (Pág.: 1, 35, 36, 37)	739	67012	07/10/2011, 21:50
4. Receptor Telesat F11 e F12 HD (tópico único) Autor: Enzo Morais (Pág.: 1, 2, 3, 4)	77	2063	20/10/2011, 11:10
5. Canais terrestres Autor: Enzo Morais (Pág.: 1, 2, 3, 4)	83	3866	12/10/2011, 18:39





■ Arnold Boeijen is Antiference's European Export Manager and the first contact for dealers that want to distribute Antiference's products in Europe. He can be directly reached by e-mail at Arnold@antiference.co.uk

by those antennas that were not perfectly matched to the frequency. The antennas from Antiference were the solution to that problem; they reduced interference.

In 1938 their young company became a limited liability company in the London Company Register and the two young owners hired their first employees. Back then TV antennas were considered real high-tech products and the number of customers they had was very small. It all really began to take off in the 1950's when TVs became affordable and the demand for antennas skyrocketed. The company, that up until then had its headquarters in central London, moved to the outskirts of the city and manufactured TV antennas with nearly 250 employees. That initial boom slowly faded but then in 1964 BBC started their second channel in the UHF band. That meant a renewed demand, this time for UHF antennas.

The company went through a series of ups and downs in the demand for antennas so they began to diversify. This went so far that even a curtain

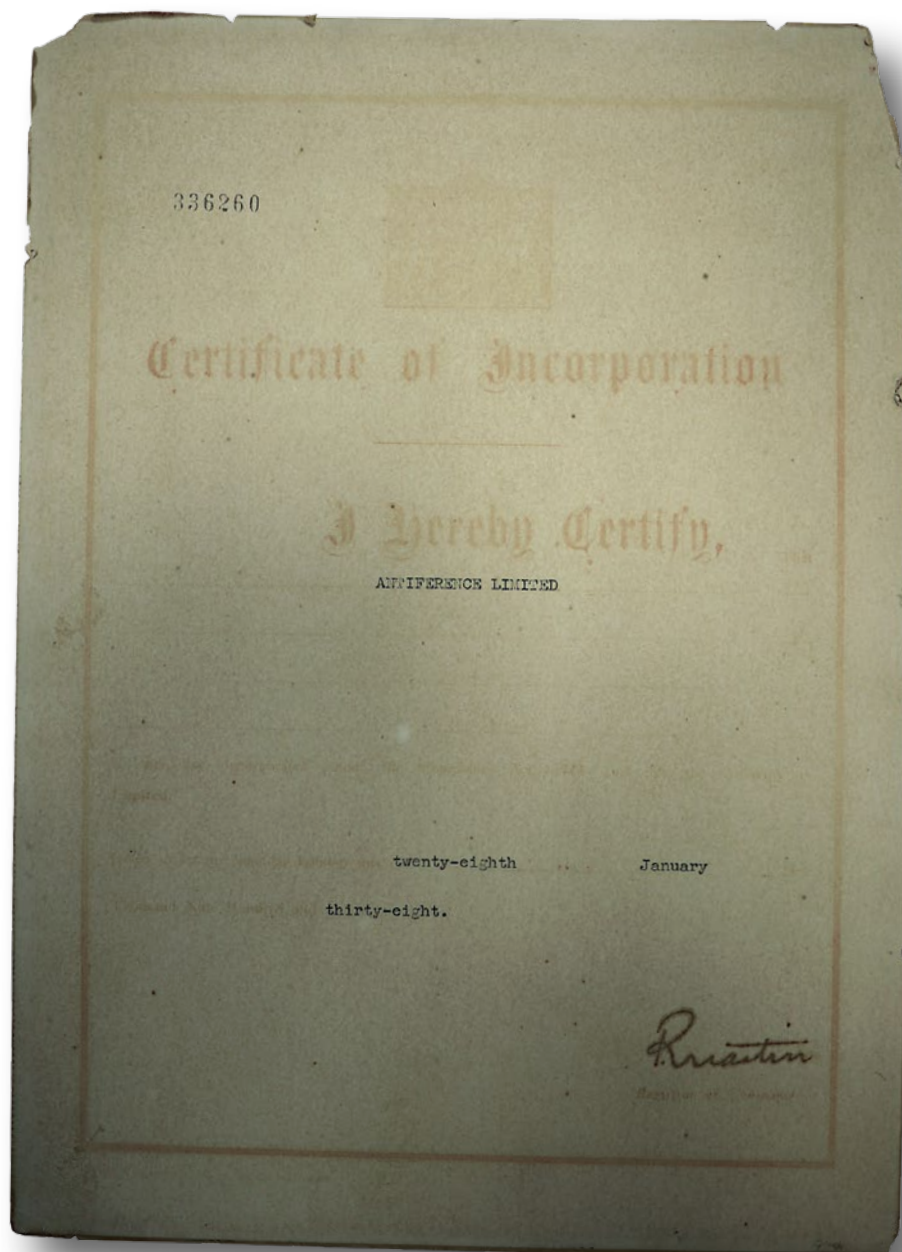
■ Many of Antiference's success products are on display in their showroom including HDMI components, TV amplifiers as well as cable head ends.

rod manufacturing company was acquired. This company was located in Lichfield, a half hour train ride north of Birmingham in England's Midland. In 1998 the entire company moved to this location and it can still be found there today. Antiference's Managing Director is Trevor Paintain; he's been with Antiference for 15 years now. He tells us who the current owners of Antiference are: "Since May of 2011 Antiference has been owned by Mr. and Mrs. Bialecki from Australia."

How did someone from Australia end up buying a British company? It turns out that this was a very logical development. "In the 1990's Kaz Bialecki started a company in Australia that installed

antenna systems." Not long after that he expanded his activities to include an antenna installation wholesale business. "Today his company Bitek operates five branch offices all across Australia." In 2007 Kaz Bialecki started his own manufacturing: "In Guangzhou, China, 150 employees produce antennas and accessories, that is, things like LCD holders, antenna mounts, antenna outlets and other installation material."

Now the connection is beginning to make sense. Bitek is one of the largest antenna distributors in Australia and an antenna manufacturer in China while Antiference is one of the largest antenna manufacturers and distributors in Great Britain. For Kaz Bialecki



■ Two electronics technicians founded the company in 1937; it was officially entered into the London Company Register on 28th January 1938.



■ The directional elements in an X formation of a UHF antenna were developed by Antiference. This principle has been in use by Antiference since 1949. The antenna in the picture can receive the entire UHF band (channels 21 to 60) with a 14.5 dB gain.

it was a logical move to acquire Antiference: now the combined company could become more active in the market: "Our focus is high quality products at an inexpensive price and that holds true even for orders from smaller distributors", confirms Trevor Paintain on the company's philosophy. "Through our 75 years of experience in antenna manufacturing and through Bitek's production experience, the advantages of both companies have become very important." Because of this the market for Antiference has grown enormously. "We are now actively expanding." The main goal for Antiference is the European market.

And it is there on this continent that Arnold Boeijen has his office. He is Antiference's European Export Manager and he reveals to us another interesting piece of information: "All of our products can be ordered by national distributors as OEM or private label." Since Antiference has only just started building up a European distribution network, there are still quite a few blank spots on the map of Europe. "We have already received a number of inquiries from national distributors interested in selling our products in their country", we learn from Arnold Boeijen, "but thus far we've only made just a few definite

decisions." Interested dealers still have a chance to distribute Antiference's products, "and that even under their own company name no less!"

Now it's time to take a closer look at all the products Antiference has to offer. As it turns out, TV antennas only make up a part of Antiference's sales. "Our signal distribution product group makes up about 30% of our sales", says Managing Director Trevor Paintain, "TV antennas is also at 30%, accessories make up 15% with mechanical components and coaxial cable each taking up 10%." The remaining 5% is covered by a new product line from Antiference: cable head ends. The TELE-satellite test center is already preparing to test an Antiference cable head end.

"Our R&D Team is also currently working on the subject of HDMI", reveals Trevor Paintain about an entirely new product line that is just getting started. "We have everything that you'd need today for HDMI distribution."

A highlight is a wireless system for HDMI that we will also be introducing in a test report here in TELE-satellite very shortly. "A very interesting segment is antenna outlet boxes." Here Antiference can offer a large variety of an-

tenna outlet boxes ranging from those with two satellite jacks and a TV connection all the way up to all-inclusive boxes with every possible combination as well as HDMI and other connections. "These days, modern installations demand a variety of different connections and our outlets are set up for every possible variation."

And yet Antiference even has new things to offer with TV antennas. "We're developing antennas with built-in LTE filters", we learn from Trevor Paintain. At the moment there aren't too many LTE broadcasters out there as yet but this will soon change and then the demand for LTE filters, devices that can filter out the signals of LTE broadcasters for TV reception, will drastically increase.

Antiference over the past 75 years has remained true to one thing for sure: TV reception. The technology over all of these years has consistently changed but Antiference has always been there offering the matching products for these changes. Through the merger with the Australian distribution company and the manufacturer in China, Antiference has everything it needs to remain very successful in the TV reception/component market.



Compact Headend 8/16 x DVB-S(2) into QAM BluBox 8 and BluBox 16

- 8 / 16 x DVB-S(2) (QPSK/8PSK) into DVB-C (QAM)
- For the reception of 60/120 TV programs SD/HD and 30/60 Radio programs
- Compact dimensions and high energy efficiency
- LNB control with 14/18 V + 22 kHz or DiSEqC
- Configuration via LAN/IP
- Complete processing of the transport streams possible
- All 8 / 16 output channels can be placed individually in the spectrum
- Two individual input ports



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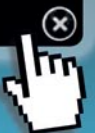


Ft@TV
El foro de la TV libre

Welcome to FT @ TV Forum, the forum free Argentine TV. In this forum we discuss FTA only. We do not support any brand of receivers. If the receiver only opens five channels at 61° W, it is normal because they are the only ones that are FTA on the satellite Amazonas.



Hi guest, if you read this, it means you are not registered. Click here to Register, so you can enjoy all the features of our forum. Once registered we invite you to walk through our Presentations section to let you know in our community. A greeting from the staff of Ft @ TV ...



■ Ivor Southam is Antiference's Supply Chain Manager. He's in charge of purchasing materials.



1



■ Kerry Cunningham is responsible for administration. She gets all the bills.



2



3



1. Antiference's new product line consists of HDMI components. Available are matrixes, distributors, converters and amplifiers.

2. Brand new: no more HDMI distribution via cable: now it's wireless HDMI distribution. A test report by TELE-satellite on this system is in the works.

3. The selection of antenna outlet boxes is enormous. Here we see only two differently equipped examples. All the different variations that you might find in a home are covered here.

■ Behind this unremarkable wall of a small Villa can be found online shop USATel's headquarters in Sao Paulo, Brazil. Administration can be found in the right side of the building; the warehouse can be seen in the background.

USATel in Sao Paulo



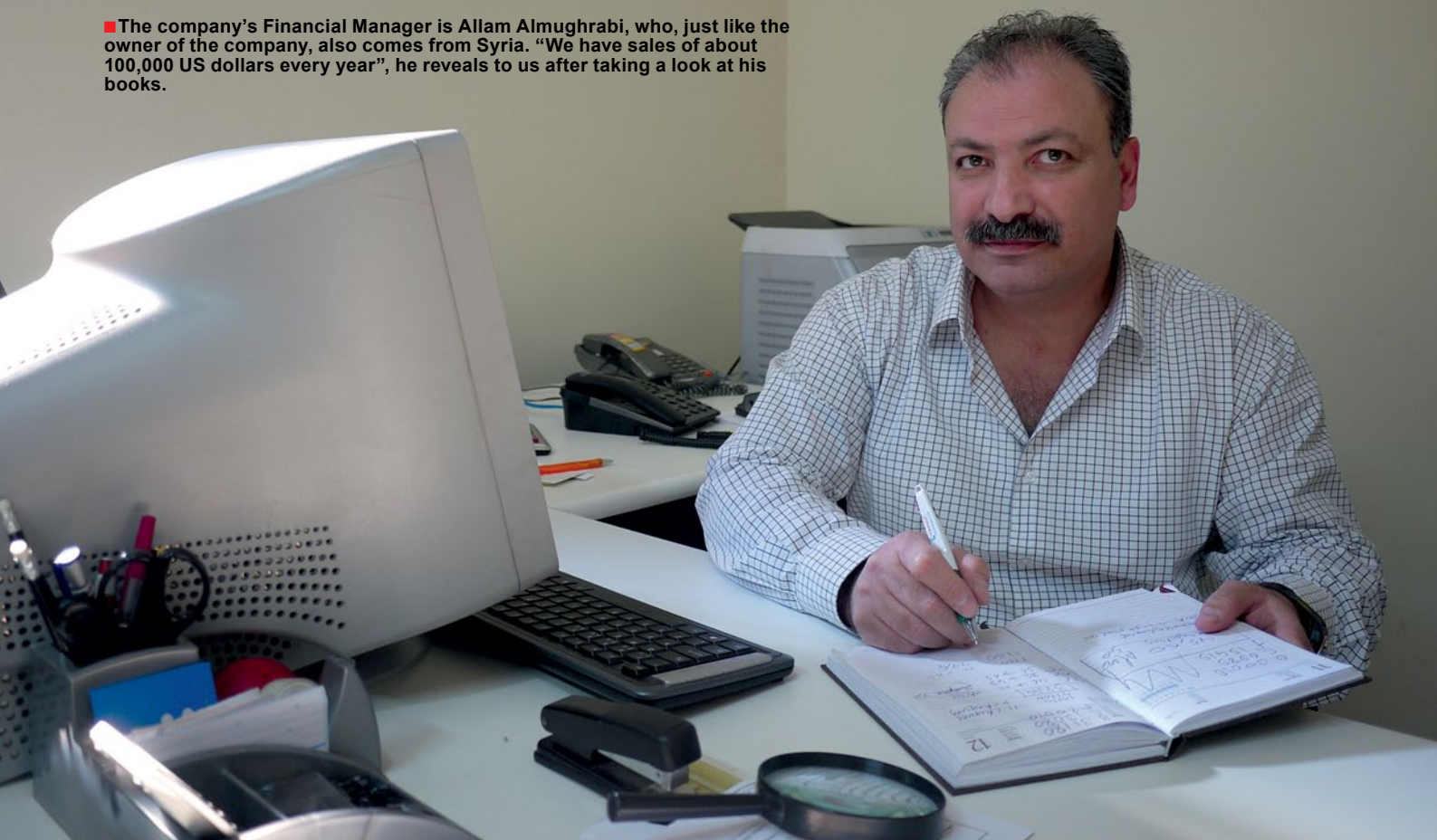
- ***Imports all of its products from China***
- ***Optimized assortment for digital TV needs in Brazil***
- ***Sells and ships almost exclusively to end users***
- ***Expanding into new business segments such as WLAN and IPTV***

Brazilians Come Here to Buy Their Digital TV Products Online

■ Jose Manuel Pereira is USATel's Manager. The workshop can be seen in the background



■ The company's Financial Manager is Allam Almughrabi, who, just like the owner of the company, also comes from Syria. "We have sales of about 100,000 US dollars every year", he reveals to us after taking a look at his books.



■ The spirit of the company is secretary and receptionist Letica Lacender



Even though "USA" appears prominently in the company's name, the online shop USATel really doesn't have much in common with that large country in North America. Instead they are a large online shop in Brazil. The satellite fan can find anything and everything needed here and it gives us a good reason to take a closer look at this company.

South of Sao Paulo in the suburb of Villa Nair somewhere on one of the many hills in this region you'll find USATel's headquarters and warehouse. There's no company sign but there are a number of dishes on the roof and in the courtyard that suggest there's something interesting for digital TV enthusiasts going on inside.

The company is made up of four employees; Manager Jose Manuel Pereira tells us more: "My financial partner and I founded the company back in 2000." Before that Jose Manuel Pereira, whose family originally came from Portugal, lived for many years in Paraguay in Ciudad del Este and ran a clothing company. When he moved to Sao Paulo, he got together with businessman Cshaooky Annahas. He's responsible for the finances and Jose Manuel Pereira takes care of the business end of things. The business idea

was digital TV which was just getting started back then.

"My business partner and owner of the company Cshaooky Annahas comes from Syria. Twice a year he travels to China and takes care of buying the products." USATel is an importer; they import the receivers, LNBs and dishes. "We get many of the satellite dishes from China", Jose Manuel Pereira tells us. Especially popular are the 1.5-meter antennas for reception of C2 at 70W and B4 at 74W. "Demand for 60cm dishes for reception of HISPASAT at 30W and INTELSAT 11 at 45W is strongly increasing", he adds. Sky uses the INTELSAT 11 satellite for PayTV services.

While USATel sells about 5000 C-band dishes and roughly 10,000 Ku-band antennas a year, sales of the matching receivers are considerably less. "We offer a DVB-S receiver under our own brand name USATel; we sell about 1000 of these a year." But he sees a brand new business in IPTV: "We are just getting started offering IPTV receivers; this should be a big market for us."

USATel is an Internet online shop that sells to end users. All orders are shipped to customers; USATel does not have walk-in stores. They also have a business segment geared towards

professional customers. "We also sell WLAN reception stations."

The Internet is widely distributed wirelessly in the 5.8 GHz band throughout Brazil. Customers therefore don't have to wait for their house to be cabled; instead they just install a small antenna on their house. Even large 1.8-meter diameter antennas that are used for reception over longer distances are available from USATel. "They permit reception at distances of even 70km", says Jose Manuel Pereira and then continues, "We sell about 2000 WLAN reception stations via the Internet every year."

The small company USATel has decided to focus on just a few products but they are products that won't become obsolete any time soon. This approach keeps them ahead of the pack when it comes to technological development in their own country Brazil.

1. An interesting business segment for USATel is WLAN reception antennas that they offer in various sizes. In the background is a cabinet with receivers that carry their own USATel brand name.
2. Osmar Gomes is USATel's Warehouse Manager. He can be seen here preparing a shipment for a customer. 1.8-meter dishes are hanging on the wall and are used to receive Internet signals in the 5.8 GHz range.





2

WORLD

of Digital TV Companies

A Listings of all Company Reports published by TELE-satellite International Magazine in recent years.
 Note: some companies may be out of business due to the fast changes in digital tv trade. We suggest to

Manufacturers (including Software and Information Providers)

	<i>Company</i>	<i>Country</i>	<i>City</i>	<i>Main Personalities</i>
	ABC BIZNIS	Slovakia	Topolcany	Veronika Resetkova
	ABCOM	Slovakia	Topolcany	Juraj Masaryk
	ABCOM	Slovakia	Topolcany	Juraj Masaryk
	ALUOSAT	China	Shenzhen	Luo Shigang
	AMIKO	Hungary	Budapest	József Zsimán, Zsolt Harangi
	ANTIFERENCE	UK	Lichfield	Trevor Paintain
	ABIPBOX	Slovakia	Topolcany	Juraj Masaryk
	APPLIED INSTR.	USA	Indianapolis	Tom Haywood, Scott Haywood
	ARION	Korea	Seoul	Jason Lee
	ARION	Korea	Seoul	Sam Chang
	AZURESHINE	Taiwan	Taoyuan	Allen Shen
	BOIINGSAT	China	Zhuhai	Haowen Chiang, Jason Chiang
	BOMARE	Algeria	Algiers	Ali Boumediene
	BOXSAM	China	Jinhua	Xiaofeng Huang, Jeffrey Zhao
	BSD	Brazil	Jundiai	Marcos Bernardini (Benni)
	BYS	Algeria	Oran	Slimane Ait Yala
	CHANGHONG	China	Mianyang	Richard Cheng Li
	DMS	USA	Atlanta	Tim Heinrichs
	DEVISER	China	Tianjin	Zhong Changgan, Jason Wu
	DISHPOINTER	UK	London	Alan
	DVBCN	China	Shanghai	Anna Xie
	FORTECSTAR	Canada	Toronto	David McGrath
	GLOBALINVACOMUK		Althorne	Ivan Horrocks
	GLOBALSAT	China	Zhuhai	Mike Miao, Alvin Sun, Josie Yang
	GOLDENMEDIA	Germany	Rudersberg	Rose Chakir

D LIST

Companies Reviews

to cooperate with those companies marked „recommended“ in last column of list.

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recommended

www.TELE-satellite.com/TELE-satellite-1009/eng/goldenmedia.pdf

recommended

	Company	Country	City	Main Personalities
	GOOSAT	China	Zhuhai	Mike Miao, Alvin Sun, Josie Yang
	HORIZON	UK	Harlow	John McLoone, Robert Sydee
	HORIZON	UK	Harlow	Paul Pickering
	HORIZON	UK	Harlow	Paul Pickering, John McLoone
	HUBER+SUHNER	Switzerland	Herisau	Patrick Zaina, Othmar Fuchs
	INFOSAT	Thailand	Bangkok	Jiraporn Tangpiroontham
	INFOSAT	Thailand	Bangkok	Niran Tangpiroontham
	INFOSAT	Thailand	Bangkok	Niran Tangpiroontham
	INPA	Turkey	Istanbul	Ugur and Nurullah Kaki
	INVACOM	UK	Stevenage	Ivan Horrocks
	IPOINT	Hungary	Budapest	Andor Pasztor, Zoltan Korcsok
	JIUZHOU	China	Shenzhen	Huang Wei, Linda Lee
	JIUZHOU	China	Shenzhen	York Xie
	JIUZHOU	China	Shenzhen	Huang Wei
	JIUZHOU	China	Shenzhen	Zhang Enyong
	JIUZHOU	China	Shenzhen	Huang Wei
	JIUZHOU	China	Shenzhen	Jimmy Zhang
	KAIFA	China	Shenzhen	Jackie Yan
	MFC	USA	Syracuse	Carl Fahrenkrug, Sandy Nelepovitz
	MOTECK	Taiwan	Taipei	Gary Wu, Gerald Ku
	MTI	Taiwan	Taipei	Eugene Wu
	NETUP	Russia	Moscow	Abaylay Ospan, Evgeniy Makeev, Konstantin Emelyanov
	PANODIC MICO	China	Shenzhen	You Zhen Yu, Alan Yu
	PREVAIL	China	Hangzhou	Xu Quanhai, Neco-xu
	PROMAX	Spain	Barcelona	José-Maria Clotet
	SATBEAMS	Belgium	Brussels	Alexander Derjugin
	SATELLITEGUYS	USA	Hartford	Scott Greczkowski
	SATSOUNDS	Belgium	Brussels	Stefaan Cornelis
	SEATEL	UK	Southampton	PeterBroadhurst
	SEATEL	USA	Concord	Lorna Brady Glover
	SKYWORTH	China	Shenzhen	Jack Jiang
	SMART	Germany	St. Georgen	Peter Loble, Christoph Hoefler
	SMARTWI	Denmark	Krusa	Kurt Olesen
	SMARTWI	Denmark	Krusa	Kurt Olesen
	SMIT	China	Shenzhen	Xueliang Huang
	SONICVIEW	USA	Oceanside	Steve Falvey
	SOWELL	China	Shenzhen	Eagle Chain
	SOWELL	China	Shenzhen	Eagle Chain
	SPAUN	Germany	Singen	Kevin Spaun
	SPAUN POWER	Germany	Singen	Kevin Spaun

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www.TELE-satellite.com/TELE-satellite-0903/eng/sonicview.pdf	
www.TELE-satellite.com/TELE-satellite-1103/eng/sowell.pdf	recommended
www.TELE-satellite.com/TELE-satellite-1205/eng/sowell-iptv.pdf	recommended
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www.TELE-satellite.com/TELE-satellite-1011/eng/spaun.pdf	recommended

<i>Company</i>	<i>Country</i>	<i>City</i>	<i>Main Personalities</i>
STAB	Italy	Ferrara	Giorgio Bergamini
SUBURSEMESTA	Indonesia	Jakarta	Liong Ten Fook
SVEC	China	Chengdu	Wang Duo, Becky, Belinda
SVEC	China	Chengdu	Wang Duo, Becky, Belinda
 TENOW	China	Shenzhen	Richard Zhang, Bob Liu, Eric Deng, James Liu
TEVII	Taiwan	Taipei	Matthias Liu
TOPFIELD	Korea	Seoul	Dong Hoon Suk
TOPSIGNAL	China	Ninghai	Zongbao King, Chaofeng Ge, James You
TRIMAX	China	Shenzhen	Jerry Chu
TRIMAX	China	Shenzhen	Jerry Chu
 TSREADER	USA	Annapolis	Rod Hewitt
VIEWTECH	USA	Oceanside	Jung Kwak, Rob Rhine
WADT	Brazil	Sao Paulo	Joao Alfredo Wadt Miranda
WS INTERNAT.	USA	Pacoima	Robby Dosetareh
YINHE	China	Zhangjiagang	Jianbiao Zhu

Distributors / Wholesalers / Dealers

ATLANTA	UAE	Dubai	Sanjeev Jain
CISS	Singapore	Singapore	Lim ee Cheong
CLARK	Netherlands	Rotterdam	John Kamp
COMINTOUCH	UAE	Dubai	Mohan Kumar
COWMIX	USA	Phoenix	Jeremy Tieman
DOEBIS	Germany	Mundersbach	Rainer Werking
DOEBIS	Germany	Mundersbach	Rainer Werking
DVBSHOP	Germany	Munich	Axel Hundt
ECHOLINK	UAE	Dubai	Ali Abbas
EESHOP	Netherlands	Amsterdam	Antonio Gor-gievski
GLOBALSATELLITE	USA	Ft Lauderdale	Martin Fierstone
GTSAT	Luxembourg	Luxembourg	Guil Mediouni
HYPEX	UK	London	Shyv Sood, Neal
INTELLITECH	HongKong	HongKong	Chris Lee
MAX COMMUNIC.	Germany	Hamburg	Dirk Wittenborg, Thomas Guhlich
MENNYFIX	Spain	Teneriffe	Manfred Weller
MIR ANTENN	Russia	Moscow	Rinat Gubeydullin
NANOXX	Germany	Frankfurt	Marcel Hofbauer
NASA CNS	Korea	Seoul	Shin Hui Tae
OMEGA-SAT	Brazil	Sao Paulo	Carlos Augusto de Quadros
ORSAT	China	Chengdu	Li Xiaorong
P-SAT	Hungary	Budapest	Tibor Posta
QUALITY SATELLITE	USA	San Diego	Sean Falvey
RICK'S SATELLITE	USA	Kansas City	Rick Caylor
SADOUN	USA	Columbus	Jamal Sadoun
SAMMEG	South Africa	Johannesburg	Joel Dorfan
SATELLITE-AV	USA	Sacramento	Brian Gohl
SATMAN	Canada	Winnipeg	Jerry Fisher
SATSHOP24	Germany	Trobitz	Rainer Schulze, Berndt Rosenberger
SEKISAT	Korea	Seoul	Oh Hwan Jung
SMARTINNOVATIONS	Netherlands	Amsterdam	Herbert Verheijden
SORTEC	Slovakia	Bratislava	Ladislav Šmárik, Pavol Macko
SQUARE PLAN	South Africa	Johannesburg	Bernard Ruberg
TURBOSAT	UK	Sittingbourne	Tomas Lo, Chris Ward
TVSAT REAL	Russia	Moscow	Sergey Kazimirovich
USATEL	Brazil	Sao Paulo	Jose Manuel Pereira, Allam Almughrabi
WORLDWIDE SATEL.	Netherlands	Purmerend	Dennis and Rob van Leeuwen
WORLDWIDE SATEL.	Canada	Toronto	Nick Aquino

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www.TELE-satellite.com/TELE-satellite-1207/eng/antenaomega.pdf

www.TELE-satellite.com/TELE-satellite-1005/eng/orsat.pdf

www.TELE-satellite.com/TELE-satellite-1201/eng/p-sat.pdf

www.TELE-satellite.com/TELE-satellite-1005/eng/qualitysatellite.pdf

www.TELE-satellite.com/TELE-satellite-1205/eng/ricks-satellite-azbox.pdf

www.TELE-satellite.com/TELE-satellite-0707/eng/sadoun.pdf

www.TELE-satellite.com/TELE-satellite-0801/eng/sammeg.pdf

www.TELE-satellite.com/TELE-satellite-1201/eng/satelliteav.pdf

www.TELE-satellite.com/TELE-satellite-0705/eng/canada.pdf

www.TELE-satellite.com/TELE-satellite-1101/eng/ponny.pdf

www.TELE-satellite.com/TELE-satellite-0801/eng/sekisat.pdf

www.TELE-satellite.com/TELE-satellite-1011/eng/smartinnovations.pdf

www.TELE-satellite.com/TELE-satellite-1203/eng/sortec.pdf

www.TELE-satellite.com/TELE-satellite-0811/eng/squareplan.pdf

www.TELE-satellite.com/TELE-satellite-1203/eng/turbosat-icecrypt.pdf

www.TELE-satellite.com/TELE-satellite-1107/eng/tvsatreal.pdf

www.TELE-satellite.com/TELE-satellite-1211/eng/usatel.pdf

www.TELE-satellite.com/TELE-satellite-0903/eng/worldwidesatellite.pdf

www.TELE-satellite.com/TELE-satellite-0905/eng/worldwidesatellites.pdf

OUR FAVORITE BEST DIGITAL TV COMPANIES OF THE WORLD





Aluo-Sat China

www.aluo-sat.com

Consulting
Distribution

Turnover
US\$ 1-5mio

Employees
5-10



Read Full Report

COMPANY REPORT | Satellite Consultant, China

Aluo-sat Knows Everybody!

Somebody active in the satellite field in China can hardly get around meeting Luo Shi Gang sooner or later. Not only because he's been distributing TELE-satellite in China for many years, but also because he is a high-profile figure in many other satellite areas as well. Since China is entering the DTH age in 2009 now is a good time for visiting Luo Shi Gang in his office in Shenzhen.

Luo has earned his company's reputation for a simple reason: In the Chinese stand-alone market, he is often referred to as the 'first name' of a person. So Luo became a star.

Originally, Luo came from Sichuan in China's southwest. He studied electrical engineering and got his first job at a company producing electronic components for the Chinese military in Lanzhou City in the northwest. Among other things, his first employer also manufactured satellite equipment.

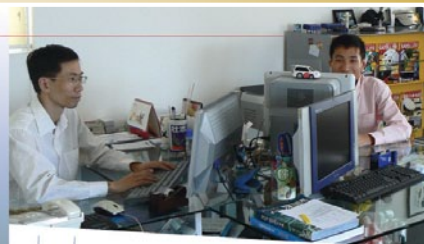
Luo experienced genuine satellite reception for the first time when he received signals from DTHs at Shenzhen, which transmitted on the local

range at 12.4 MHz from Russia at the time. From that moment on he was hooked to satellite reception. He soon started to write articles for the weekly 'Electronic Messenger' which at that time was the only available publication on the topic of satellite technology. The number of contributions kept rising all the time and his work also involved meeting more and more satellite insiders. Finally, in 1993 he set up his own business: 'Together with his wife, Luo founded Aluo sat in Shenzhen in 1993.' Apart from his job as technical journalist, he also started to work as a consultant.

Today, he employs a staff of seven. 'My wife is in charge of accounting, three engineers take care of technical requirements, one employee runs a satellite shop in Hong Kong and another person is looking after sales and distribution.'

And not too long ago, Luo started to distribute products from select quality manufacturers such as Changfeng for digital terrestrial TV (DTH), the channels of which are broadcast from Hong Kong but can be received perfectly in Shenzhen as well.

'The service and sales go well as well.'



www.TELE-satellite.com/09/05/aluosat



Antiference UK

www.antiference.co.uk/

Manufacturer of TV
Antennas and Accessories

Turnover
US\$ 10-25mio

Employees
100-250



Read Full Report

COMPANY REPORT | Antenna and HDMI Manufacturer, UK

75 Years of TV Antennas from Antiference

- Manufacturing TV antennas since 1937
- Provides all the components needed for TV reception
- Expanding into HDMI distribution, as well as wireless solutions
- Expanding distribution network to the European market
- Offers their own products as OEM and private label

www.TELE-satellite.com/12/11/antiference



Applied Instr. USA

www.appliedin.com

Manufacturer of Signal
Analyzer and Noise Generator

Turnover
US\$ 10-25mio

Employees
25-50



Read Full Report

COMPANY REPORT | Signal Analyzer Manufacturer Applied Instruments, USA

25 Years Applied Instruments

- The power of this company is its robust signal analyzers
- Company plans worldwide expansion with its internationally compatible analyzers
- Special signal analyzers for receiver manufacturers
- Special attention to ergonomic operation
- Technical customer service an important highlight of the company

www.TELE-satellite.com/11/11/applied



Deviser China

www.devisertek.com

**Manufacturer of Signal
Analyzers and Broadcast
Measurement Instruments**

Turnover
US\$ 25-30mio

Employees
250-500



Read Full Report

COMPANY REPORT Signal Analyzer Manufacturer DEVISER, China

DEVISER

New on the Scene: DEVISER

- Starting off with two satellite signal analyzers
- Over 20 years experience as a signal analyzer manufacturer
- Fabrication soon to be in a new building
- Their own R&D Team with highly qualified engineers
- Operates with all of the corresponding quality standards

DEVISER's Founder and President, Mr. Zhang, is shown in the company's new building.

www.TELE-satellite.com/11/07/deviser



Dishpointer UK

www.dishpointer.com

**Information Website
and Software Programming**

Turnover
US\$ 0.5-1mio

Employees
5-10



Read Full Report

SATELLITE SOFTWARE | Dish Alignment

DishPointer.com

Dishpointer

Line of the most critical questions that come up before the user of a satellite dish is to properly align the dish. The answer to this question can be found in the software. The software is a simple to use, yet powerful, program that will help you align your dish. The software is available for Windows and Mac OS. The software is a simple to use, yet powerful, program that will help you align your dish. The software is available for Windows and Mac OS.

Let's take for example a satellite dealer in China who wants to align his customers' dish. He has the coordinates for the satellite. He enters the coordinates into the software. The software will then calculate the alignment. The software will then show the user the alignment. The user can then align the dish. The software is a simple to use, yet powerful, program that will help you align your dish. The software is available for Windows and Mac OS.

Another customer operates a dish and wants to know the alignment. He enters the coordinates into the software. The software will then calculate the alignment. The software will then show the user the alignment. The user can then align the dish. The software is a simple to use, yet powerful, program that will help you align your dish. The software is available for Windows and Mac OS.

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www.TELE-satellite.com/08/03/dishpointer



DVBCN China

www.dvbcn.com

**Digital TV Forum Website
and Software Programming**

Turnover
US\$ 1-2.5mio

Employees
10-25



Read Full Report

COMPANY REPORT Digital TV Website DVBCN, China

DVBCN

Largest Digital TV Website in China: DVBCN.com

- Known by every digital TV company in China
- Provides all information regarding digital TV
- Expanding in the areas of recruitment and software development
- Focusing in future technologies such as IPTV and PTV
- Working on international expansion

The office building is shown in the background.

www.TELE-satellite.com/12/07/dvbcn



GlobalInvacom UK

www.globalinvacom.com

Manufacturer of Fibre Optic Products

Turnover
US\$ 5-10mio

Employees
50-100



Read Full Report

GlobalInvacom Expands Product Palette



The British company GlobalInvacom invented the optical LNB. TELE-satellite reported on this futuristic invention back in its 04-05/2008 and 08-09/2009 issues.

In the meantime, GlobalInvacom has expanded its optical LNB product palette. TELE-satellite, in the 04-05/2010 issue, introduced the newest version, a PFA optical LNB, (until then optical LNBs were only available for offset antennas) and an expansion of the terrestrial optical LNB system in which the transmission of both satellite and terrestrial signals on two optical frequency ranges are carried on one optical cable.

But progress hasn't come to a stop at GlobalInvacom. Since the TELE-satellite 08-09/2010 issue, there have been more additions and expansion of the optical LNB system. Now, the LNBs are also available in a single housing, a feature that makes them easier to install and use.

This cable can be used, for example, to link two locations together where the first location with the satellite antenna is outdoors on top of a house and the second location might be down in a cellar. The cable is designed to be buried underground between the two locations and is completely invisible. It is specifically designed to be buried for long stretches underground.

GlobalInvacom's Technical Support Richard Biddle says: "We have a lot of experience in the field of fibre optic technology and we are now expanding into the world of optical LNBs."



Not only is the cable especially resistant to chemicals that might be found in the ground, it covers GlobalInvacom's entire product range. It is also very easy to use. If underground work is not performed at a later time where the cable was buried.

"We updated our system with built-in 'split' options from 100m to 1000m, available in 2, 3, 4 and 8 output versions. The modular design needs to connect the 'splitter' cables" says Richard Biddle. The older splitter versions were fixed with fixed connector cables. This new version provides greater flexibility for installers by making it easier to match cable lengths to each specific application.

GlobalInvacom also came up with a new idea with its distribution technology. "We started four (G2/G3) components on top of each other and bundled them together in a single housing," explains Richard Biddle. "This prevents individual optical cables which further expands the capabilities of our system."

The variation is best suited where the distribution is not done centrally, that is from one connection to the next one, but rather from one central location out to all different locations, in a case like this you'll need as many identical signal sources as well as optical connections as needed.

To top it all off, the LNBs are now available in a single housing. This is the product of expanding its distribution network, "up until now we were mostly active in Europe and the Middle East," he explains. "But now we are working on expanding into Asia."

GlobalInvacom already has a distribution network in place in Asia.



GlobalInvacom is constantly expanding its product variations so that it is always better positioned to upgrade even more sophisticated installations.

In this way the super-modern optical LNB system from GlobalInvacom can always find new customers and users.



www.TELE-satellite.com/10/09/globalinvacom



Golden Media Germany

www.cynextra.com

Manufacturer of Digital TV Receiver

Turnover
US\$ 1-5mio

Employees
10-25



Read Full Report

Company Report | Manufacturer and Distributor Golden Media, Germany

New On The Market: Golden Media



Golden Media's headquarters in Rudersberg near Stuttgart, Germany. 10 employees work here in a 500 Sqm building. The General Manager Ralf Schaefer lives in a house just below the office.

Shortly after you open this issue of TELE-satellite, a young company will be celebrating its first birthday, namely Golden Media, based in Rudersberg near Stuttgart in Germany. It was only first founded in September 2009 and has had surprising growth since then. We wanted to find out the secret to their quick success.

In one of the many small towns that surround Stuttgart, that have many small but very hard working businesses, you will find three satellite dishes in front of an administrative building that tells everyone driving by that this is the home of a satellite company. This company is Golden Media.

Just the appearance of the building itself tells the company name but the "gold" remains also of the old Golden in The Middle East. Actually, this association is exactly right: Golden Media developed a simple, elegant

a manufacturer and distributor can manage to have success even in times where prices are becoming more and more important.

We better to explain this company concept than the General Manager Ralf Schaefer. He explains to us: "We are selling very closely with a manufacturer that produces their products in the Tanger Free Zone in Morocco."

This location all by itself doesn't quite explain Golden Media's success, one however: "Morocco has a special advantage."

In addition to satellite, terrestrial and cable receivers, Golden Media also provides accessories such as cable, satellite dishes and LNBs. As far as LNBs go, Golden Media is very much devoted. "We have been working with the Chinese company, 'Weather highlight' in our town LNB for several years now," according to Ralf Schaefer, "we've already sold 250,000 LNBs in our first six months."

Golden Media also notes that, "the selling of MPEG4 models such as dual-tuner receivers is still in progress because receiver or later MPEG4 will also find its way into the market and customers want receivers that won't become obsolete when the time comes."

Knowledgeable readers will recognize



more with the European Union in which manufactured products coming out of the Tanger Free Zone can be shipped to Europe for very low customs tariffs. One adds, "Shipping times from Morocco to Germany are just three days!"

Golden Media has discovered a very interesting niche, a production location near Europe but with other costs from outside of Europe. Ralf Schaefer has some other reasons for this business strategy. "We operate here not only with very short transport distances but we also have the flexibility to modify contracts with very short notice. This wouldn't be possible if we had to ship by sea, a method that could take several months." And there's more another reason: "We can monitor quality with our own engineers on site since travel time between Germany and Morocco is minimal."

This business concept is interesting and the success they've had since the founding of the company, proves the strategy was correct. With just 10 employees Golden Media managed sales of nearly 500,000 receivers in just their first year.

We wanted more details about this and so we spoke to Ralf Schaefer, the company's Technical Manager and Marketing Manager. The reports are equipped. He explained to us what types of receivers they had in stock six months: "80% of all of our receiver sales were MPEG4 models and 20% were SD models. The remaining 20% were terrestrial boxes at which 10% were MPEG2 models and 10% were MPEG4 models."

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Knowledgeable readers will recognize

www.TELE-satellite.com/10/09/goldenmedia



GOOSAT China

www.goosat.com

High Quantity Manufacturer

Turnover
US\$ 100-150mio

Employees
500-1000



Read Full Report

Company Report | Receiver and TV Manufacturer GOOSAT, China

GOOSAT's New Super-Modern Production Facility



- Producing to the highest technical standards
- 200 R&D employees
- 3D development
- Manufacturing capacity of several million receivers per year
- Expansion into TV production

www.TELE-satellite.com/12/07/goosat



Horizon UK

www.horizonhge.com

**Manufacturer
of Signal Meters**

Turnover
US\$ 2-5mio

Employees
10-50



Read Full Report

COMPANY REPORT Messgerätehersteller HORIZON, Großbritannien

Happy Birthday HORIZON!

Allen House

- stellte in den ersten 10 Jahren 125.000 Messgeräte her
- expandiert in den High-End Bereich
- bietet mit einem DVB-C Messgerät das passende Produkt für den weltweiten Kabelmarkt
- Ausbau der Kooperation im OEM-Bereich mit starken Distributionspartnern
- hohes fachliches Knowhow durch die nahe Universität

www.TELE-satellite.com/11/11/horizon



Jiuzhou China

www.jiuzhou.com.cn

**Manufacturer of STB,
IPTV, LNB, Fibre Optics**

Turnover
US\$250-500mio

Employees
1000-2500



Read Full Report

COMPANY REPORT IPTV Box Manufacturer Jiuzhou, China

Jiuzhou greatly expands into IPTV Box Production

- IPTV box production may reach 1 million units in 2011
- Jiuzhou starts HbbTV boxes for Europe
- Big retailers about to launch into IPTV box sales
- Jiuzhou to attend all major exhibitions in 2011, 10 in all

www.TELE-satellite.com/11/03/jiuzhou



MFC USA

www.microwavefilter.com

**HF Filter
Manufacturer**

Turnover
US\$2.5-5mio

Employees
50-100



Read Full Report

COMPANY REPORT Satellite Filter Manufacturer, USA

Microwave Filter Company High Quality Specialized Filters Made in USA

Satellite systems receive not only the TV, radio and data channels that you actually want, but also unwanted signals that may cause interference. How do you get rid of these interfering signals? MFC, a manufacturing pioneer of satellite filters based in the USA, produces a variety of filters that eliminate such interference.

“The company was founded in 1987 here in California,” explains Sandy Rosenberg, MFC’s Senior Marketing Associate and is now senior vice president and chief of operations, the heart and soul of the company, having been with MFC for 20 years now. The rapidly growing satellite filter manufacturer, “Mike Rosenberg, the founder of MFC, actually started the business in a garage, providing filters for amateur radio use. In 1979, we moved to our current location. At that time, we were only testing a portion of the facility, while sharing it with other companies. In 1983, as business continued to grow, we were able to purchase the entire 100,000 square foot facility.”

Since Rosenberg, Director of Sales, who has been with MFC for almost 20 years, further explains, “Despite the economic downturns and technological shifts that have occurred in the defense industry over the years, MFC’s business remains solid – a large part due to the fact that we offer a wide variety of products. Our 1st and 2nd stage IF filters are used in a wide variety of applications, from defense to commercial, agricultural, and even in the automotive industry.”

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www.TELE-satellite.com/09/03/mfc



**Panodic
China**
www.panodic.com

**STB
Manufacturer**

Turnover
US\$ 100-150mio

Employees
1500-2000



Read Full Report

COMPANY REPORT Receiver Manufacturer Panodic, China

One of the Top Five: Panodic

- Multiple quality control points before, during and after production
- Concentrating on digital TV products
- Cooperating with many license providers
- Continuous product palette expansion

www.TELE-satellite.com/12/03/panodic



**Satbeams
Belgium**
www.satbeams.com

**Satellite Information
Website and Software
Programming**

Turnover
US\$ 0.5-1mio

Employees
2-5



Read Full Report

SOFTWARE REPORT Satellite Footprints | SATBEAMS

Satbeams Die Website für Profinitutzer

Holte Ziele hat sich Alexander Derjagin gesetzt. Er ist Gründer und Betreiber der Website satbeams.com und will damit vor allem die professionellen Nutzer erreichen. Das ist ein ambitioniertes Ziel und deswegen wollten wir von ihm persönlich wissen, wie er dieses Ziel erreichen will. In Brüssel, wo er zuhause ist, treffen wir Alexander Derjagin.

Zunächst wollen wir wissen, wie es überhaupt zum Thema Satellitenprogrammierung gekommen ist. Er erzählt uns, dass er ursprünglich als Website-Entwickler für eine IT-Firma in der Schweiz arbeitete. Als er sah, dass viele Leute nach Informationen über Satelliten suchten, entschied er sich, eine Website zu erstellen, die diese Informationen in einer leicht verständlichen Weise bereitstellt. Heute ist satbeams.com eine der größten Websites für Satelliteninformationen weltweit.

Die Website von satbeams.com ist eine der größten Websites für Satelliteninformationen weltweit. Sie bietet eine Vielzahl von Informationen über Satelliten, darunter Fußprints, Frequenzen und andere technische Details. Die Website ist in mehreren Sprachen verfügbar und wird von einer Community von Experten und Enthusiasten unterstützt.

Alexander Derjagin hat sich viel vorgenommen. Er hat eine Website erstellt, die eine große Menge an Informationen über Satelliten in einer leicht verständlichen Weise bereitstellt. Er hat auch eine Community von Experten und Enthusiasten aufgebaut, die die Website unterstützen und weiterentwickeln. Das ist ein beeindruckendes Projekt, das viel Arbeit und Engagement erfordert.

www.TELE-satellite.com/10/11/satbeams



**SatGuys
USA**
www.satelliteguys.com

**Satellite Information
Website and Forum**

Turnover
US\$ 0.5-1mio

Employees
5-10



Read Full Report

COMPANY REPORT Satellite Forum Operator Scott's SatelliteGuys, USA

Scott's SatelliteGuys

- Provides assistance with technical satellite reception questions
- Founded by Scott as a non-profit forum
- All advertising income is reinvested in better technology
- New is the use of the forums through customer service employees of digital TV companies

www.TELE-satellite.com/12/05/satguys



Skyworth China

www.skyworth.com

High Quantity
STB Manufacturer

Turnover
US\$ 200-300mio

Employees
2000-3000



Read Full Report

COMPANY REPORT | Receiver Manufacturer SKYWORTH, China

SKYWORTH is Expanding

One of the larger receiver manufacturers in China is SKYWORTH. They've consistently been in expansion mode and have managed to make a phenomenal entrance into the South American marketplace in 2010: a large contract with the government of Argentina involving 400,000 receivers for the terrestrial ISDB-T standard resulted in SKYWORTH's intense production activity. "All these receivers have already been shipped," we learn from Jack Jiang, Sales Director of SKYWORTH's receiver division. The company's official name is Shenzhen SKYWORTH Digital Technology Co., Ltd.

www.TELE-satellite.com/11/03/skyworth



SmartWi Denmark

www.smartwi.net

Manufacturer
of Wireless Card Reader

Turnover
US\$ 1-2mio

Employees
5-10



Read Full Report

COMPANY REPORT | Wireless Card Reader Producer SmartWi

SmartWi to Conquer Provider Market

Readers of this magazine have been familiar with wireless card reader manufacturer SmartWi for years. In TELE-satellite issue 06-07/2007 we published the first report on this Danish company which has come up with a glorious idea: How about transmitting data from a pay TV provider's subscription card to a second card in the same household? All of a sudden your viewing pleasure can be extended from the living room all the way to the bedroom, den or any other room at your place. Pay TV wherever you like - and a smart idea like that deserves a proper name too: smart Wi, or SmartWi in short.

But SmartWi has an extremely confident outlook on the future, and it's a matter of "when" the publication date of this issue of TELE-satellite and at the IBC exhibition we will launch the second generation SmartWi. Kurt Olsen explains and proudly shows us the new SmartWi model. "It works the same way as the first generation," he continues. "Customers are simply plug the pay TV card into the unit and are then able to watch pay TV on a second TV using an additional card which is connected to the main device via radio signals."

The new SmartWi has made a quantum leap, which can be clearly seen even from the outside. Kurt Olsen's unit has shed its responsibility for technology and stage within the business and has concentrated the system back to the device. While the first generation consisted of computer, card, the new SmartWi consists of a single unit that almost looks like for generating it with price, rather than being it more natural the cabinet. It's a sleek unit and will easily fit into the hole of the room as well - no short expect it definitely appeal to another technical gadget.

It goes without saying that units are not doubling in this case. Just listen to Jens Christensen, all the innovations that have taken place inside. "The main thing is the faster processor and the new program memory, which has doubled in capacity from the previous version." This makes the second generation SmartWi considerably faster and much more responsive, but there is more.

"The built-in antenna is now arranged in a way that lets it run all the way along the top edge of the device, which makes for decidedly better transmission location when compared to the older version," Jens explains.

Another highly interesting feature is the second card slot on the box. "The new SmartWi has all the features required for using two SmartWi's at the same time," according to Jens Christensen. That are currently shipped are not activated for dual card use, but a software update will unlock that feature shortly.

SmartWi products of the first generation were mostly sold to end customer, and Kurt Olsen is determined to enter uncharted territory in this area too. The second generation SmartWi is clearly

www.TELE-satellite.com/10/11/smartwi



Sowell China

www.sowell-tech.com

Digital TV STB Manufacturer

Turnover
US\$ 50-100mio

Employees
50-100



Read Full Report

COMPANY REPORT | Receiver Manufacturer Sowell, China

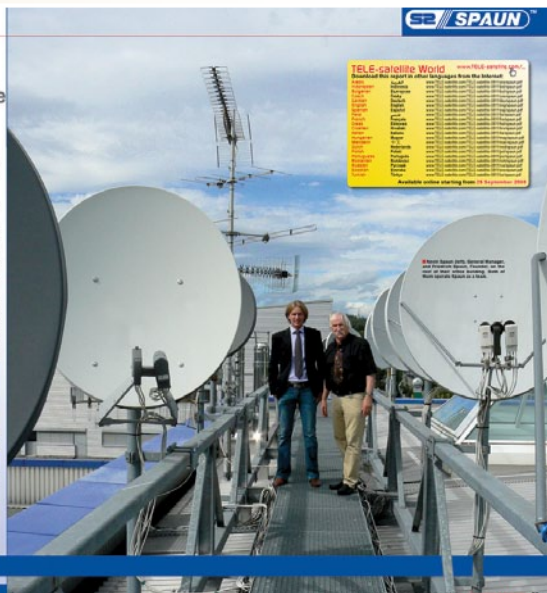
IPTV is Future

- Already operating the first IPTV project
- 3D planned for the future
- Integration of TV reception with IPTV
- 60% of all Sowell receivers are already HD

www.TELE-satellite.com/12/05/sowell



SPAUN™



Karel Spoun, managing director of SPS/SPS Credit



Every multi-switch and every amplifier comes with one, and of course every receiver has one, too: a power supply unit which is required to connect the device to the mains. It has become such an everyday component of virtually any electronic device that we have stopped thinking about how it actually works. SPAUN, on the other hand, has given it a great deal of thought and has arrived at a remarkable conclusion. Kevin Spaun is the managing director of SPAUN, one of the most renowned quality manufacturers of multi-switches and other accessories for satellite signal distribution. He tells us what it's all about.



In the south-easternmost corner of Germany, right on Lake Constance, lies the small town of Singen. It is here that SWIN has been headquartered for more than 40 years. All the experience gained in decades of technology development has always been put into making great products even better. Today, the brand name SWIN is by no means for high-quality and innovative products in the subfield business and beyond. This has led to SWIN starting to offer a 5-year complete warranty on all its products.

In the course of all these years, SMIK founder Friedrich Lipgen and his son, Knut, who has meanwhile taken over management of the company, noticed one thing: *"Although a device was sent to us to be repaired, the user was not usually too far from the cause of the problem,"* Knut Lipgen reveals. *"And the reason was, this device was true for almost all electronic devices."*

Electronic capacitors in these devices are usually liable for failure. *"On the market there are a number of different electronic capacitors with dif-*

In addition to quality and reliability, a premium manufacturer also has to look at energy efficiency, and so SPAINA finally realized that its specifications for third-party power supply unit manufacturers had become so complex and demanding that it started making sense to look at in-house production of these components. "Independent manufacturers always have to strike a balance between component cost and component quality in order to offer a competitive pricing arrangement. If we, on the other hand,

Once this decision had been made everything went very fast. SHIMPO POWER GmbH was founded as a new company and a new production hall was set up as well. "We invested some 2.5 million EUR," Kashi-Ispan explains while showing us around the new production facilities. The new company has been up and running

214 TELE-satellite International — The World's Largest Digital TV Trade Magazine — 11-12/2012 — www.TELE-satellite.com



Tenow China

www.tenower.com

PC Card
Manufacturer

Turnover
US\$ 2-5mio

Employees
10-25



Read Full Report

COMPANY REPORT | PC Card Manufacturer Tenow, China |

Innovative PC Cards from China

One company that is fully concentrated on the development of their products is the young firm Tenow from Shenzhen, China. PC cards are manufactured although the actual production process is outsourced allowing Tenow to focus their efforts on Development and Marketing. Also interesting to note about Tenow: the company is run by four partners and all four of them work together as a team to further expand their young company. Tenow is in the process of setting up a new office in Shenzhen's large High-Tech Park. When we paid them a visit, we went to their old office located directly next to the Shen Da Metro Station on route 1.

Two of the founders, James Liu, in charge of Marketing, and Bill Liu, responsible for Software Development, met each other while studying at Weber University. The two close partners, both of whom previously worked at a PC card manufacturer, are Richard Zhang, in charge of Hardware Development, and Eric Cheng, who is also involved with Software Development. All four of them founded the new company in 2005 using a starting capital of 500,000 RMB (approximately 75,000 Euros).

Tenow then continued as a commercial enterprise. DVD-T was just starting to become popular and they distributed DVD-T decoder chips to local manufacturers in Shenzhen.

Then, as a design house, Tenow developed complete solutions for manufacturers. One success story involved DVD-T USB sticks. Tenow developed the

www.TELE-satellite.com/11/03/tenow



TSReader USA

www.coolstf.com

Analyzer Software
and Programming

Turnover
US\$ 0.5-1mio

Employees
1-5



Read Full Report

COMPANY REPORT | Software Programmer Rod Hewitt, USA |

The Man Behind TSReader: Rod Hewitt

- Wrote one of the most successful stream reader programs
- Developed a technical solution to archive TV channels for "Internet Archive"
- Working on IPTV application programs
- Planning on a program for OCR recognition of BBC's EPG data

www.TELE-satellite.com/12/07/tsreader



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COMPANY REPORT | Wholesaler and Manufacturer, USA |

World Satellite International, USA

- Successful Young Company with Ambition
- Manufacturer of Satellite Components
- Plan for Worldwide Expansion with Satellite Signal Analyzers
- Inexpensive Products Thanks to Efficient Production and Distribution

www.TELE-satellite.com/11/09/wsinternational

Inside ESPN



- *One of the first USA TV channels to transmit via satellite*
- *Has a direct presence or partnerships in many countries*
- *Transmits in HD and 3D as well as on the radio and via the Internet*
- *Largest offering of sports programming*



■ An enormous dish that is no longer in use marks the entrance to ESPN's studio complex.

■ ESPN's satellite dishes in
Bristol, Connecticut
[photo: Scott Greczkowski]



The Largest Sports Network in the World



In the world of sports there is one TV channel that is known around the world: ESPN. The ESPN abbreviation came into existence with the founding of the TV channel back in 1978 and stands for "Entertainment and Sports

Programming Network". But since 1984 it has only been known as ESPN.

Up to and including live transmissions, ESPN produces all of its programming from their studios in Bristol, Connecticut in northeastern USA. Af-

ter the terrorist attacks in 2001, ESPN greatly increased their security and as a result no longer allow any visitors to their studios. But there are exceptions such as for relatives of ESPN employees. We were able to take part in one of



these internal studio tours.

Two factors came together when ESPN came into being. The first was the newly founded cable networks, such as the one started by cable operator 'United Cable' in Connecticut. The new technology back then allowed for the first

time numerous channels to be carried and just like with cable operators elsewhere, 'United Cable' also offered public access channels. These are channels that are made available to citizens and enthusiasts to transmit their own programs for free. BTW: When he was

younger, Scott Greczkowski, founder of the "SatelliteGuys.com" forum, was a studio technician for the 'United Cable's public access channel.

The second factor that spurred ESPN were two sports enthusiasts, Ed Eagan and Bill Rasmussen. They used the op-



1. Scott Greczkowski from SatelliteGuys.com in the ESPN News sports anchor's spot. In his youth Scott witnessed the early beginnings of ESPN

2. Bristol is proud to be the home of ESPN

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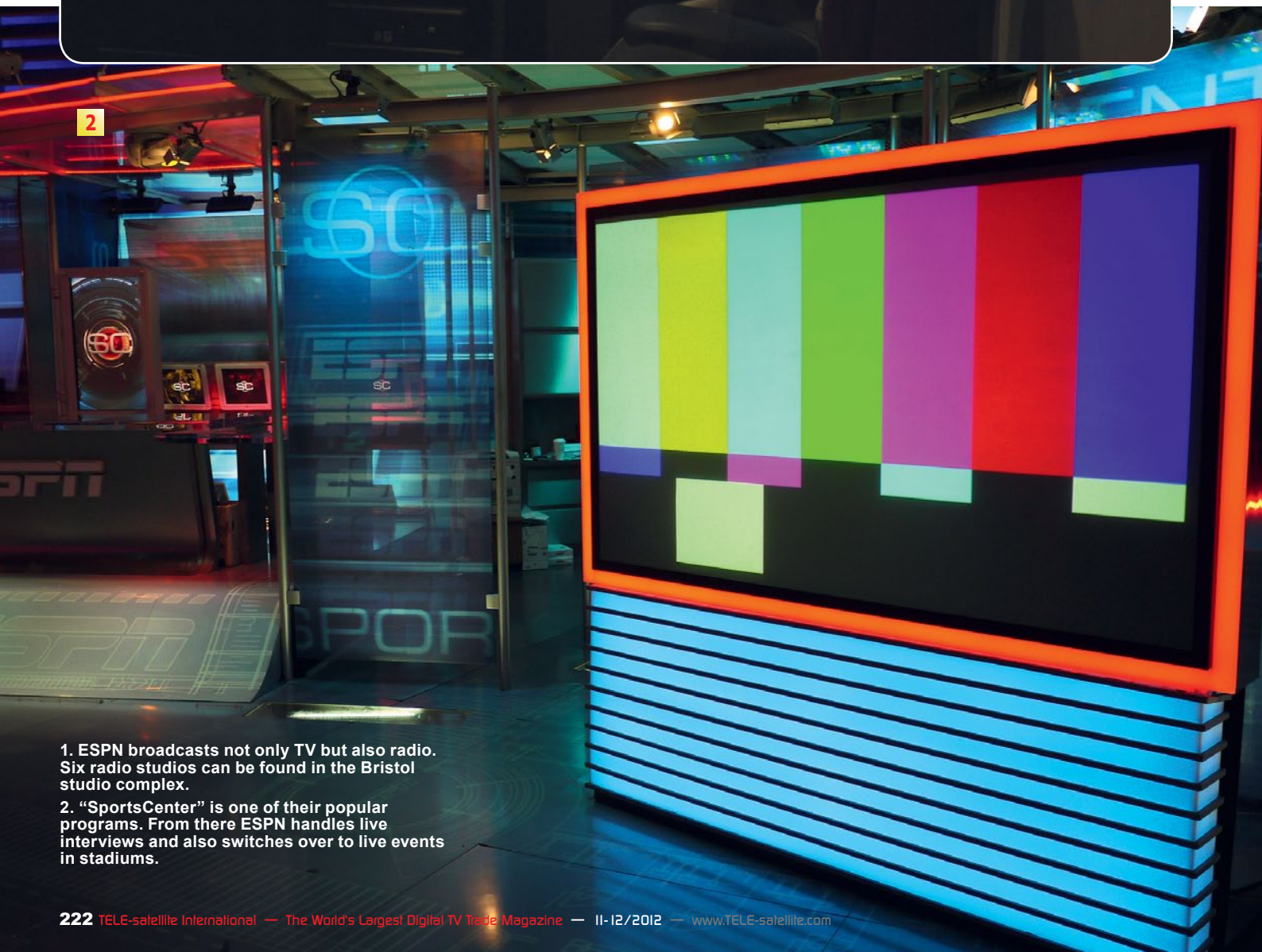
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NEW



1. ESPN broadcasts not only TV but also radio. Six radio studios can be found in the Bristol studio complex.
2. "SportsCenter" is one of their popular programs. From there ESPN handles live interviews and also switches over to live events in stadiums.



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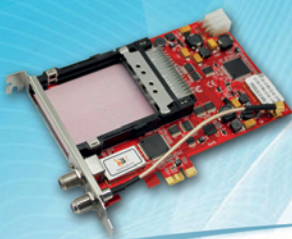


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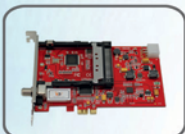
DVB-T2/T Dual Tuner PCIe Card (TBS 6280)

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3. Low Profile Size.



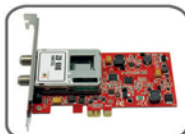
DVB-T2/T/C TV Tuner CI USB Box (TBS 5880)

1. DVB-T2/T/C SD or HD TV Receiving.
2. Time Shifting to Pause Live TV.
3. Common Interface Support.



TBS 6928

DVB-S2/S TV Tuner
PCIe CI Card



TBS 6925

DVB-S2/S Professional
TV Tuner PCIe Card



TBS 6618

DVB-C TV Tuner
PCIe CI Card



TBS 5680

DVB-C TV Tuner
USB CI BOX



TBS 5280

DVB-T2/T Dual Tuner
USB TV Box



TBS 5980

DVB-S2/S TV Tuner
USB CI Box



■ A look at one of ESPN's studios



portunity to broadcast sporting events in Connecticut over the 'United Cable's public access channel.

They were so in to the whole idea that they consistently needed more air time. And right at the same time the first satellites began to appear in the sky. This gave both of them the idea to broadcast to all of America via satellite instead of just to cable subscribers in Connecticut.

It all came to fruition in 1979: with the help of investors they founded ESPN and leased a satellite transponder. And, of course, at the same time a studio had to be set up. They chose Bristol, Connecticut. There they found the ideal location in a valley where they could erect the uplink antenna and a studio complex.

Today there are nine TV studios there, two combo studios for radio and TV

■ Technicians are highly focused in the Master Control Room

as well as six radio studios. The company, which was acquired by Disney in 1996, today has 5000 employees and broadcasts not only to the USA but to many countries around the world either via direct partnerships (ESPN International) or through affiliated stations. Since 2003 ESPN has been available in HD with 3D broadcasts available since 2010, albeit just live transmissions.

For sports fans, ESPN offers a large assortment of programming and the website espn.go.com provides access to an enormous sports archive. ESPN has had the world of sports firmly in its grasp for more than 30 years.



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■ All of the studio cables come together in the Network Center.

HDTV with IPTV Provider PPTV

- *Offers more than 100 TV channels as well as hundreds of thousands of programming hours for download*
- *Can only be received domestically in China*
- *Large IPTV provider with more than 100 million users*
- *Expansion into the OTT market for TVs and receivers*
- *HDTV is an area of growth and makes PayTV possible*



■ In the Zhangjiang Microelectronics Port, an office complex directly at the Zhangjiang High-Tech Park station of the #2 Metro line, you'll find PPTV's headquarters. 500 people work here; in the branch office in Beijing are another 300 employees and at their third location in Guangzhou are yet another 100 employees.

张江微电子港

ZHANGJIANG MICRO-ELECTRONICS PORT

690
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China's Largest IPTV Provider is Expanding with HDTV

With more than 100 million unique users per month, the Chinese IPTV provider PPTV - from what we know - is the largest IPTV provider in the world. With the expansion into HDTV (High Definition TV), PPTV's programming packages are also becoming interesting for receiver manufacturers. We met up with PPTV's Vice President and General Manager of the Multiple Terminal Business Unit, Steven Shan, at the company's headquarters in Shanghai to find out more about what they are planning.

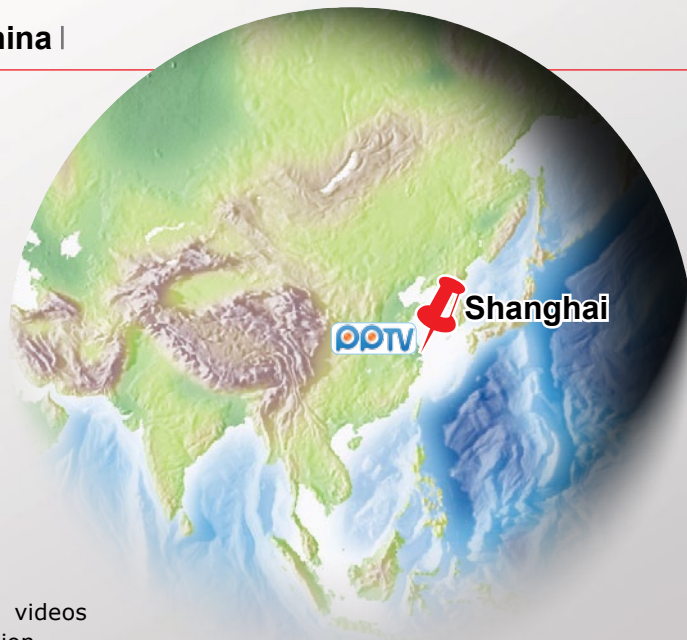
PPTV was founded in 2004 by Bill Yao. Bill Yao was born in 1980 and that made him only 24 years old when he started PPTV! His idea was to take all of the new satellite channels from the Chinese provinces and make them available for everyone via the Internet, in other words, stream them. The idea caught on and in 2006 Bill Yao expanded PPTV's offering to include video-on-demand and since then PPTV has climbed its way to the top of the Internet TV and video ladder with ease. For Chinese speaking viewers inside of China, PPTV (www.pptv.com) is the first website to go to when it comes to TV and video via the Internet.

The reason that PPTV is concentrating on the domestic Chinese market has to do with the company's business strategy: "PPTV is free"; explains Steven Shan, "it is financed through advertisements that appear before the start of a video and through banner ads as well as other ad methods such as pop ups." PPTV's ad customers have no interest in making their ads available to viewers outside of China or paying for it. On top of that there are copyright issues. "Since we concentrate on domestic ads, we don't have to worry about - with just a few exceptions - the rights involved with showing TV channels or videos outside of China." The IP address of every viewer is checked (Geo location); if the IP address lies outside

of China, PPTV only shows videos cleared for foreign transmission.

How can you see PPTV's TV channels and videos? "We have a solution for every situation", declares Steven Shan. "PC and laptop viewers simply need to go to our website to view the channels directly. Or you can download our own PPTV software." It's available in all the different formats: for Windows and Mac operating systems plus there are special versions for the iPhone and iPad as well as the corresponding Android versions for Smartphones and tablets. For each "terminal" PPTV provides the matching user interface; this explains the term Multiple Terminal Business Unit that Steven Shan runs and that is responsible for the matching of the

■ **Bill Yao is Founder and President of the IPTV provider PPTV**



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software for each type of interface.

And now it gets exciting. Depending on whether the picture is displayed on an iPhone, a laptop or a big-screen TV, different data transfer rates are required. "Our software automatically adjusts itself to the user's display", we learn from Steven Shan, "We deliver nine different speeds." Steven Shan lists them for us:

- **50 kB** is the streaming speed for simple mobile telephones known by PPTV as Feature Phones. The picture quality is sufficient for the small display screens used by mobile phones
- **150 kB** is for simple Smartphones with larger displays
- **300 kB** is for real Smartphones
- **500 kB** is used if the viewer is watching PPTV channels on his laptop or PC
- **800 kB** is used for iPhone or iPad users

- **1.4 MB** is used for TVs with normal sized TV screens
- **2.3 MB** is used for big-screen TVs
- **4 MB** for HDTV
- **8 MB** for big-screen HDTVs

The last four categories are the most interesting for us since these involve OTT. "These high data transfer rates are only used if the PPTV software is already integrated into the TV." In 2009 PPTV began developing this OTT technology and in 2010 the first TVs began appearing on the Chinese market integrated with PPTV's OTT function. In 2011 there were already 2.5 million of these OTT compatible TVs on the market; for 2012 PPTV is expecting this number to increase to 6-7 million. "The entire market in China accounts for roughly 40 million TV sets each year, 10% of them will be OTT compatible."

When it comes to HDTV, PPTV's business model looks a little bit different

compared to its SD video offerings. "With these high data transmission rates, we've entered into cooperation with Internet service providers", explains Steven Shan to us. "For this reason with HDTV we are switching to a PayTV model." PPTV is making HDTV available as a PayTV service. "Most ISPs can still handle data speeds from 1.4 to 2.3 MB. Faster speeds require a fiber-optic connection."

PPTV founder Bill Yao has found an interesting strategy here: you start with free services, offer more and more value to the services until you reach a point where the customers are willing to pay for the services. It's a strategy that many Internet startups have used. The Japanese investment firm Softbank has recognized the potential with PPTV; in 2011 Softbank acquired a 35%

1. Vincent Tao has been CEO of PPTV since 2009. Before that he worked at Microsoft.

2. Steven Shan is Vice President and General Manager of PPTV's Multiple Terminal Business Unit. He's showing the PPTV application on an iPad; there's also a matching version for the iPhone.



DishPointer AR

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References



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■ PPTV's receptionist in Shanghai

stake in PPTV. Softbank is also involved with two other top Chinese Internet firms: the sales platform Alibaba and the social network service renren. By the way, the Chinese government also owns a stake in PPTV.

PPTV has a huge investment in all of this: "We operate around 5000 servers at more than 200 locations all over China." This guarantees that every user in China can obtain the best possible bandwidth for downloading TV channels and VoD services.

PPTV has very impressively shown how an Internet startup managed to climb to the top of the ladder in a new market segment in just a few years. It's a segment that, with the steady increase in high speed Internet connections, is an important addition to the programming offered via satellite or terrestrially. PPTV shows that the integration of Internet services (OTT) is an important task for manufacturers of TVs and receivers.



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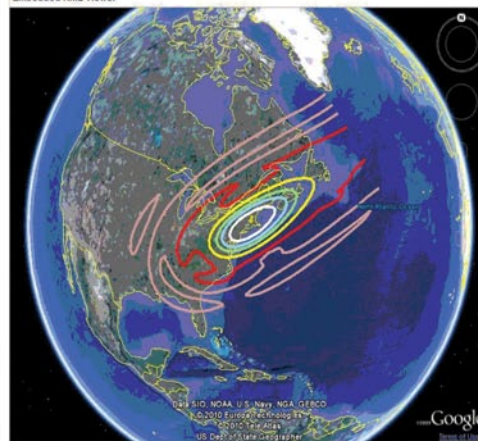
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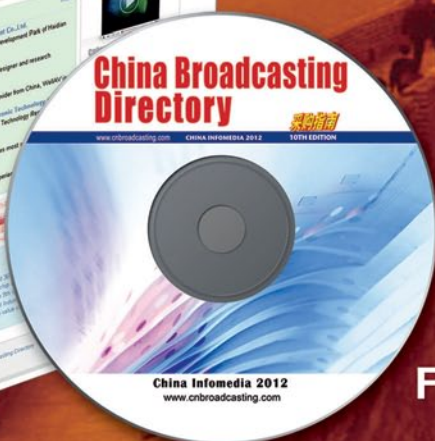
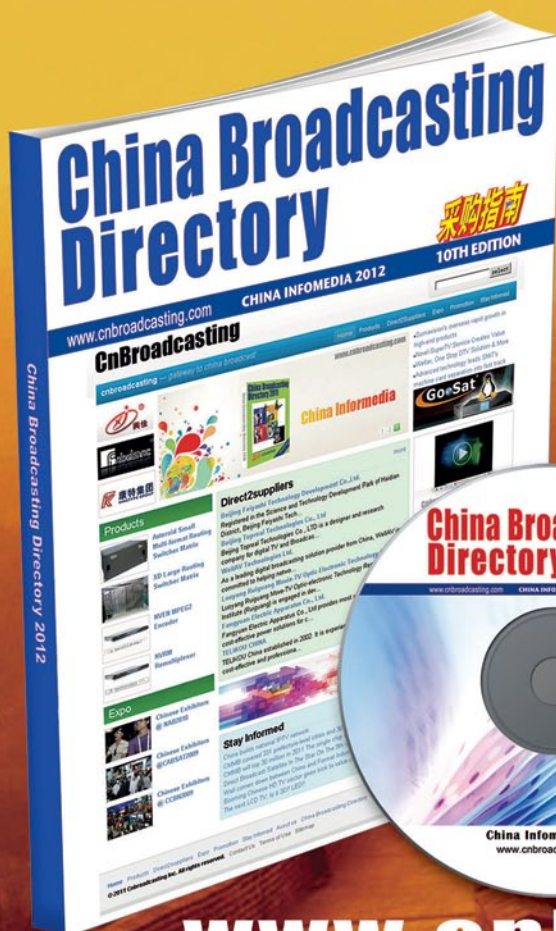


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1. A look into the Marketing department. The posters on the walls and ceiling remind the workers to always be strong and to work towards PPTV's success.

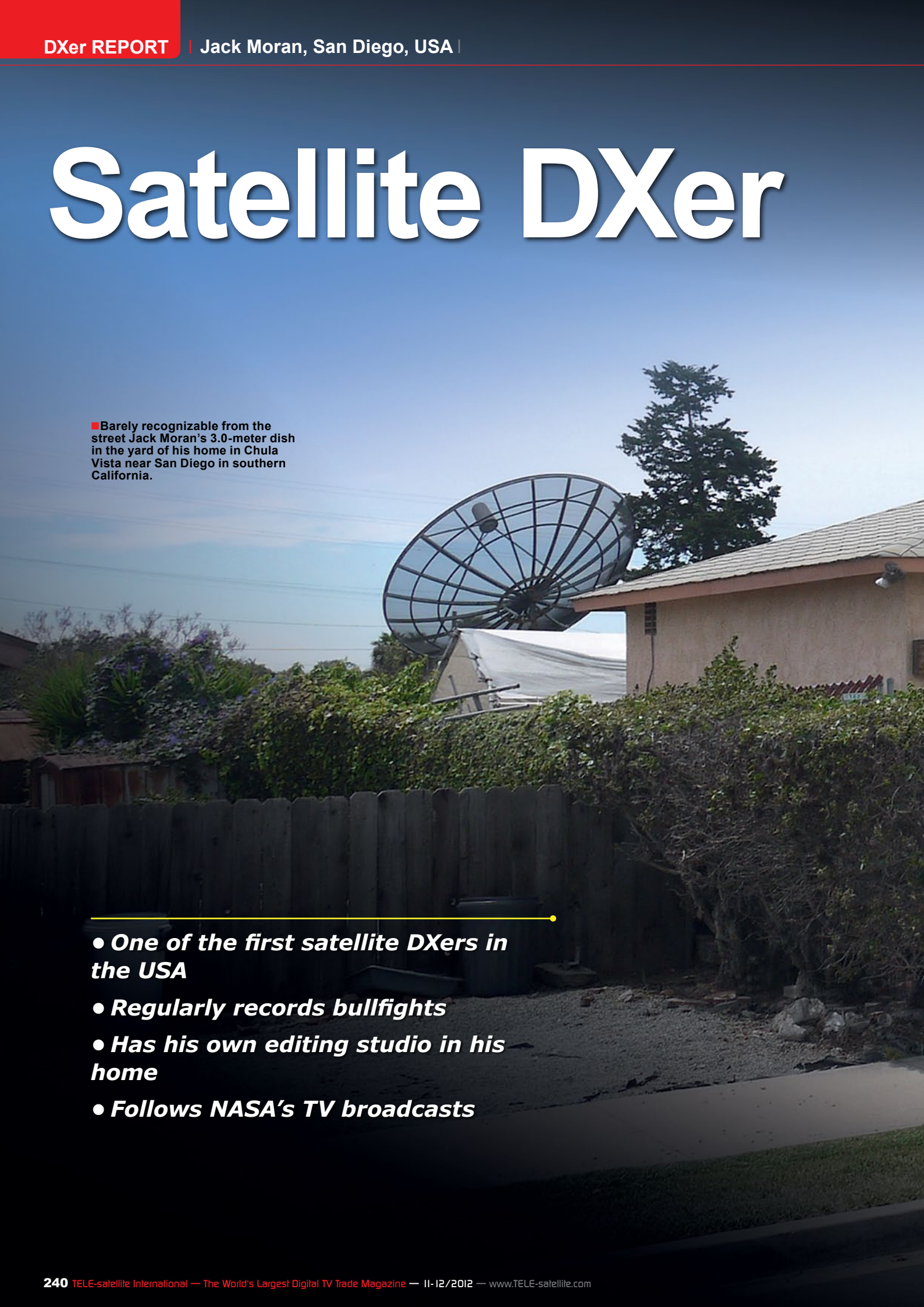
2. An example of TV reception on a laptop using the PPTV software. More than 100 channels from China are streamed by PPTV. They can only be received if the users IP address is located inside China.

3. Crystal Xu is PR supervisor and is standing in front of the "P" from PPTV



Satellite DXer

■ Barely recognizable from the street Jack Moran's 3.0-meter dish in the yard of his home in Chula Vista near San Diego in southern California.

- 
- ***One of the first satellite DXers in the USA***
 - ***Regularly records bullfights***
 - ***Has his own editing studio in his home***
 - ***Follows NASA's TV broadcasts***

for 35 Years





■ Jack Moran's 3.0-meter antenna. The mast makes up part of a chicken coup; the chickens feel quite comfortable under the dish.

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1. Jack Moran rarely performs anymore tests. He has, just for that purpose, erected a mast in such a way that he can easily check out new dishes and LNBS.

2. Jack shows us the dish farm on his roof. "At the moment only one of those dishes is connected and functioning." Jack collected 11 Ku-band antennas.



There weren't that many satellite DXers back in 1978: TV via satellite was still in its infancy towards the end of the 70's. But for Jack Moran it was nothing out of the ordinary; he has always worked in broadcasting.

We met up with Jack Moran in his home in Chula Vista, California, located near San Diego in the southwestern corner of the USA right next to the Mexican border. Jack Moran, who



Chula Vista,
San Diego

recently retired, sat down with us and told us how he became a satellite DXer.

"I was interested in broadcasting technology way back when I was a boy", remembers Jack, "Later on as a soldier it became part of my job." Jack worked in nearly every aspect of the broadcasting world, from transmission technician to cameraman. He still sits behind the camera today covering a very special segment: he regularly

2



1

films bullfights in Tijuana, Mexico right on the other side of the border. "The season goes from May to September every year and then on every Sunday there are bullfights that I fully record with my camera." Today he does this work only for fun but a few years ago he and his wife were actually able to make some money from this by selling DVDs of these bullfights. "2007 was our best year; we managed to sell 1500 DVDs."

The Internet, though, has brought this business to a standstill – not many people buy DVDs these days anymore. "I am fascinated with bullfighting; in fact, I stood in the arena as a Tore-ro myself back in my younger days", beams Jack as he shows us a picture from the old days.

His fascination with bullfighting is the reason why he converted his home into a real studio. He collected countless pieces of equipment and connected them all together so that he could electronically edit the videos and store them on a server in his home. "I have five fixed IPs."

The Internet also managed to reduce his enthusiasm for satellite reception. "Today I rarely do any DXing anymore", admits Jack as he gestures to all the dishes still mounted on his roof. "Only one of them is still connected and working." He's still interested in NASA's satellite broadcast that he regularly receives from AMC-18C (105W).

Jack admits that his fascination with satellite reception has faded. "These days my wife, who is originally from Korea, watches her Korean TV channels via the Internet", laments Jack regarding this development. Jack saved many of the satellite magazines from the old days. "Here I have many years worth of TELE-satellite that I regularly bought", explains Jack as he points to the thick stack of TELE-satellite magazines. Today, though, he can read the magazine online.



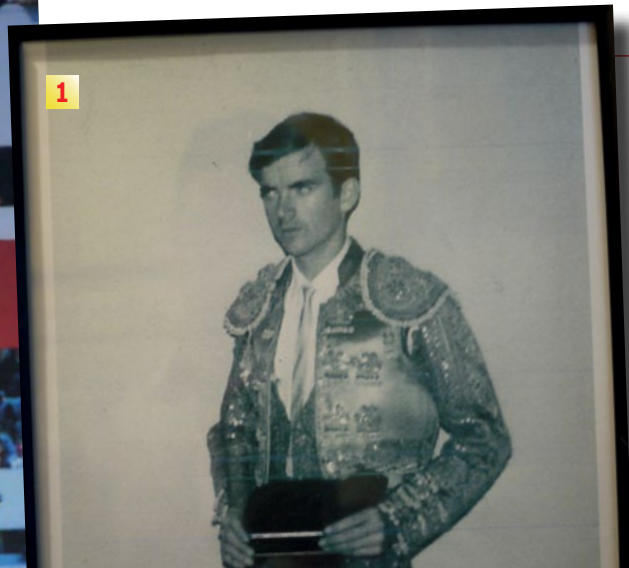
2

1. A look at the rack Jack set up in his studio.

2. Still sitting in his living room TV cabinet: one of the first GENERAL INSTRUMENTS satellite receivers that Jack used back in 1978. Underneath are the two receivers that he uses today: a DVB-S2 receiver and a box to receive the Mexican PayTV package. He uses that to keep track of Mexican bullfighting broadcasts.



■ It's not everyday
you'd find such an
assortment of studio
technology in a private
home.



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Company Report: 10 Years Spent High Quality Access Manufacturer

DX'er Report: Reception Experiment Exploring Ka Band In the 20 GHz Range

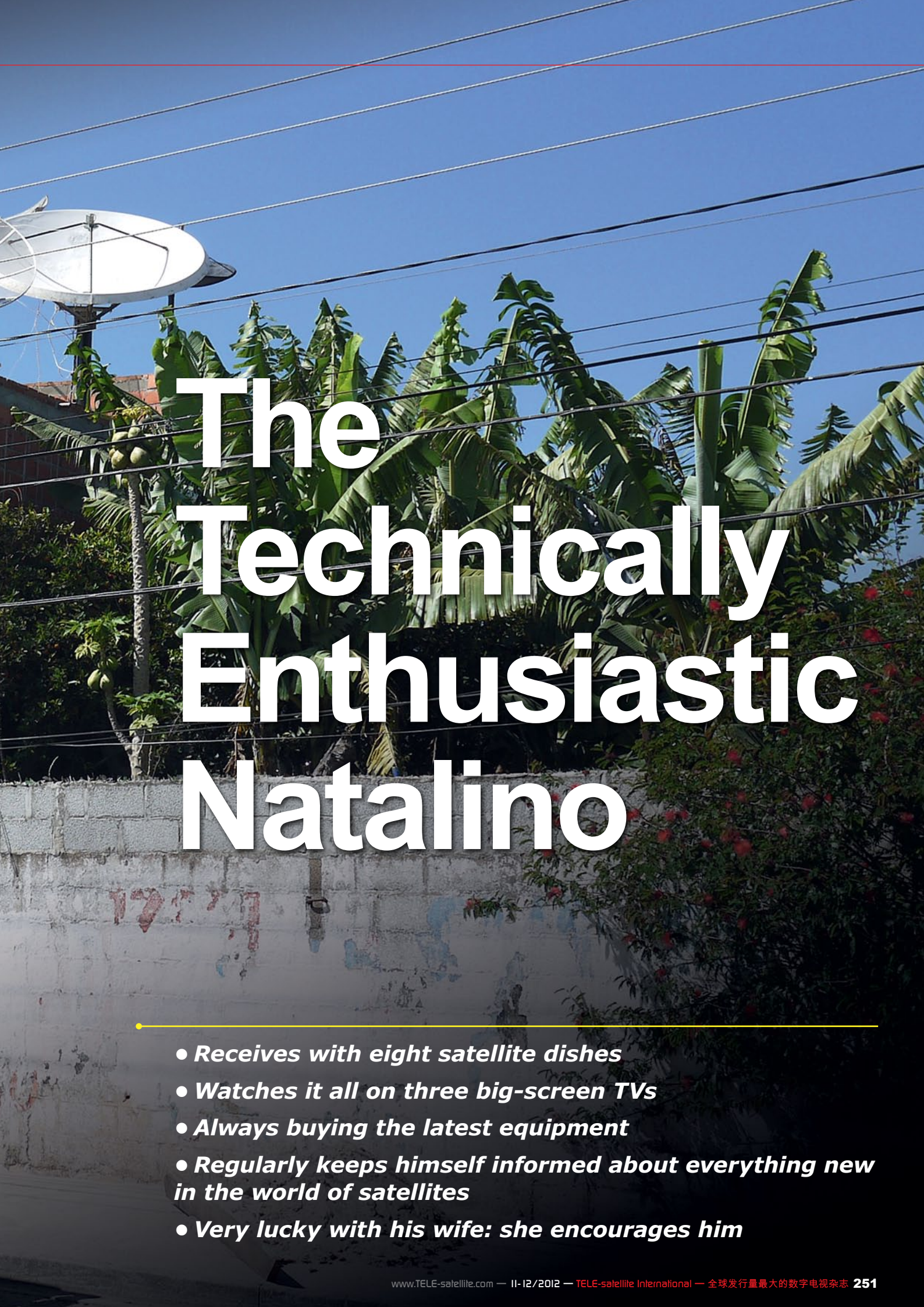
248 TELE-satellite International — The World's Largest Digital TV Trade Magazine

1. Who is that? That's right, it's Jack Moran in his younger days when he himself was a Torero.
2. A cover from one of Jack's DVDs on which he recorded bullfights in its entirety from neighboring Tijuana and then sold to others. Unfortunately, this business model doesn't work anymore.
3. Jack saved old TELE-satellite issues in stacks
4. Jack also set up a small camera museum in which rare camera models can be seen.
5. A picture from the old days: Jack's wife is busy cementing in the mast that today carries the 3.0-meter dish.
6. Luo Shigang from Aluosat in China visiting Jack Moran.



■ You can already tell from the street that a satellite DXer lives here.





The Technically Enthusiastic Natalino

-
- *Receives with eight satellite dishes*
 - *Watches it all on three big-screen TVs*
 - *Always buying the latest equipment*
 - *Regularly keeps himself informed about everything new in the world of satellites*
 - *Very lucky with his wife: she encourages him*

When a Wife Also Enjoys Her Husband's Hobby...

■ Natalino on his terrace in front of his 3.0-meter dish with actuator. Since his house is located relatively high on a hill in Jundiaí, his antenna can range all the way from 116W (SATMEX 5) to 1W (INTELSAT 10).



Transponder Streams

for testing STB and headends

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DVB-S2

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ATSC	with HDTV (USA)
ATSC	with 1 Single Channel (USA)
ATSC	with 2 Audio PIDs for 1 Video (USA)
ATSC	with High Null Packets (USA)
ATSC	with Wrong TS ID (USA)
ATSC	Fully Packed (USA)
ATSC	Channel Name Missing (USA)
ATSC	Identical Channel Names (USA)
ATSC	Mechanical Channel Names (USA)
DTMB	with HDTV (China)
DTMB	with false video descriptor (China)
DTMB	with MHEG (Hongkong)
DVB-C	in NagraVision 3 (Portugal)
DVB-S	with 3D (ASTRA)
DVB-S	with MPEG2 and H.264 mix (PALAPA)
DVB-S	in MIS (ATLTANIC BIRD)
DVB-S2	with HDTV (HOTBIRD)
DVB-S2	with MPEG 4:2:2 (EUROBIRD)
DVB-S2	with 3D (TURKSAT)
DVB-S2	with HDTV (AMAZONAS)
DVB-S2	with 3D (THOR)
DVB-S2	with 1Seg mobile TV (AMC 6)
DVB-T	with radio (Netherlands)
DVB-T	with MHEG (UK)
DVB-T	as retransmission off satellite (Qatar)
DVB-T2	with HDTV (Germany, UK)
ISDB-T	with 1Seg mobile TV and HD (Brazil)

and many more according to standard

www.transponderstream.com



■ He fitted his 3.0-meter antenna with a C/Ku-band Combi feed.



■ Close-up view of the mast: because of its elevated position, Natalino had to secure the mast with guy wires.

Natalino is very lucky: his wife has nothing against his hobby and enjoys watching all those TV channels on their three flat big-screen TVs (one in the bedroom, one in the living room and another in the work room). These channels come from eight fixed satellite antennas, five on the roof, one on the terrace and two mounted on the wall.

As it turns out, he started his hobby relatively late. He explains to us that he only erected his first antenna in 2005: "That was a 1.5-meter mesh antenna that I had pointed to BRASILSAT B4."

Back then Natalino didn't really know anything about technology or satellite reception. He never learned a real trade but in the meantime has been successfully running his own little company with five employees that distributes in his home city of Jundiá Prospect. A good portion of the income he receives from this goes right into his hobby. "So far I've probably given out at least 50,000 Real (about 20,000 Euros) for all of my reception equipment", he admits.

His second large acquisition was a 1.8-meter dish with a motor in 2006.

CHINA



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President

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85774 Munich-Ufg, GERMANY

Tel: +49-151-40405196

Fax: +49-89-92185023

Email: luo.shigang@ALuoSat.de

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■ Natalino has five dishes mounted on the roof. To the far left is a 1.8-meter dish with a motor that he is readjusting with a signal analyzer. To the right is a 2.85-meter antenna that is fixed on NSS 806.

"Since I really didn't know anything about satellite reception, I had to re-search it all and teach it to myself."

A great help to him was Marcus Benini's Internet forum at www.portalbsd.com.br. Here you'll find Brazilian satellite DXers exchanging information. "I visit the forum every day to see what's new."

Satellite receivers are scattered all over his house. Since Natalino is now right in the middle of renovating and extending his home, he doesn't have much room to organize his equipment. "I'm planning to set up a dedicated room just for my equipment." But since

he's always out there buying something new, it's hard to believe that he'll ever be able to keep his enormous collection organized. But that's really not all that important; he enjoys every new piece of equipment that he buys.

Natalino is definitely not one of those enthusiasts that wants to be able to receive as much as possible but then doesn't have the time to sit down and actually watch these channels. He and his wife often sit down in front of their 55" LED monitor or later in the evening in the bedroom in front of their 52" Sony Bravia HD monitor. Some of the channels he enjoys watching: CCTV,

DW, AlJazeera, Bandeirantes TV in HD, TV Columbia and Canal Uno out of Columbia, Russia Today and the Brazilian channels TV Nazare and Ulbra TV.

We noticed that there are speakers in every room of the house. Natalino explains, "I enjoy listening to good audio." By that though he doesn't mean radio stations but rather a TV channel's audio.

Natalino should be very happy that his wife also enjoys his hobby. That means that he can continue to spend more money on new TV equipment. For satellite product manufacturers, Natalino is the perfect type of customer!



■ On the other side of the roof Natalino installed a 2.6-meter dish with a motor that is currently pointed to BRASILSAT B4. To the right is a 1.8-meter antenna that is also pointed to B4. A fifth dish on his roof at 1.5-meters is also pointed to B4.

■ You can see his five roof-mounted satellite dishes from his neighbor's property.





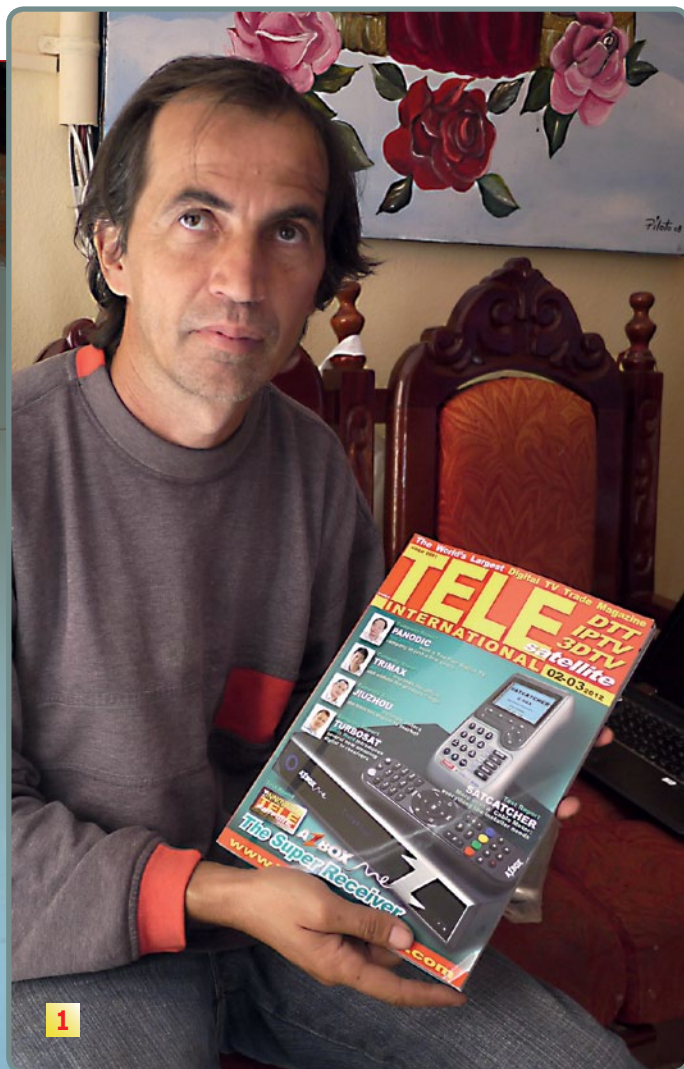


1. Natalino in his bedroom that he has filled with technology.

2. Natalino's living room. He is discussing the details of a newly acquired satellite receiver with Marcus Benni from the Brazilian satellite forum BSD.

1. Naturally, Natalino also enjoys reading TELE-satellite where he learns all about new satellite receivers and dishes.

2. Natalino even has a 4.0-meter antenna but he had to take it down because of the current renovations going on in his house. He's storing the dish's segments here and can't wait to reinstall this antenna.





MOST FAMOUS Satellite and TVRO Enthusiasts **WORLDWIDE**



Natalino

Natalino, Jundiaí, Brazil

Brazil



www.TELE-satellite.com/TELE-satellite-1211/eng/natalino.pdf

DX-Ralf

Ralf Sunke, Emlichheim, Germany

Germany



www.TELE-satellite.com/TELE-satellite-1207/eng/dx-ralf.pdf

Oscar

Oscar Campos, Santiago, Chile

Chile



www.TELE-satellite.com/TELE-satellite-1209/eng/oscar.pdf

SatGuy

Scott Greczkowski, Newington, CT, USA

USA



www.TELE-satellite.com/TELE-satellite-1205/eng/satelliteguys.us.pdf

Big Ronaldo

Ronaldo Zovaro, Louveira, Brazil

Brazil



www.TELE-satellite.com/TELE-satellite-1207/eng/bigronaldo.pdf

Györgi

Györgi (George), Budapest

Hungary



www.TELE-satellite.com/TELE-satellite-1203/eng/dxerbudapest.pdf

Benni Brazil

Marcos Eduardo Bernardini, Jundiaí (SP)



Benni's BSD

- Operates Brazil's largest digital TV website
- Engaged in the further education of digital TV technology
- Planning his own IPTV channel all about digital technology
- Living his dream with his own worldwide radio station

www.TELE-satellite.com/TELE-satellite-1201/eng/bsd.pdf

DXer Iran

Daryoush, Mehdi, Saeed, Davood, Milad



Dishes in Zanjan

www.TELE-satellite.com/TELE-satellite-1107/eng/dishes-in-iran.pdf

DX Bozoth Hungary

Laszlo Toth, Püspökladány



From TV-DXer to Sat-DXer

- Erected large dishes on two towers
- All dishes were purchased used
- Installation work performed on his own or with friends
- Produced all mechanical pieces by himself

www.TELE-satellite.com/TELE-satellite-1111/eng/dx-bozoth.pdf

Jang Lee Korea

Jang Lee, Gangwon



The Shovel DXer

Farmer Jang Lee lives in the Gangwon province in northeastern South Korea. As is typical for any farmer, he most often uses shovels of all different shapes and sizes. But since he's also a satellite enthusiast, he uses these shovels not only for his daily farming work but also as satellite dishes. This is something we just had to take a closer look at.

www.TELE-satellite.com/TELE-satellite-1105/eng/korea.pdf

Ken Wong Hongkong

Ken Wong, Hongkong



www.TELE-satellite.com/TELE-satellite-1111/eng/dxerhongkong.pdf

Keito, Takao Japan

Keito Takahashi and Takao Kameda, Tokyo



Satellite TV in Tokyo Aio

Japan's most prominent satellite enthusiasts are Keito Takahashi and Takao Kameda, both of whom live in Tokyo. We paid a visit to them and found out about their tricks of the trade.

www.TELE-satellite.com/TELE-satellite-1103/eng/japan-dxer.pdf

Ponny

Rainer Schulz and Berndt Rosenberger, Tröbitz



www.TELE-satellite.com/TELE-satellite-1101/eng/ponny.pdf

Siddharth

Siddharth Gautam, New Delhi



www.TELE-satellite.com/TELE-satellite-1007/eng/india.pdf

Pepsi

Pepsi, Mengyang, Sichuan, China



www.TELE-satellite.com/TELE-satellite-1011/eng/pepsi.pdf

Astra Fan

Cahit Nuri Or, Adapazari



www.TELE-satellite.com/TELE-satellite-1005/eng/astratuturkey.pdf

Jiri

Jiri Vanek, Jablonec nad Nisou



www.TELE-satellite.com/TELE-satellite-1009/eng/jiri.pdf

Satheesan

Satheesan Puzhakkara, Thiruvananthapuram



www.TELE-satellite.com/TELE-satellite-1003/eng/indiadxer.pdf

Hakan Turkey

Hakan Kasli, Antalya



www.TELE-satellite.com/TELE-satellite-1001/eng/dxerinturkey.pdf

Stone China

ShiToy, Beijing



www.TELE-satellite.com/TELE-satellite-0909/eng/beijingdxer.pdf

Yahya Saudi Arabia

Yahya, Saudi Arabia



www.TELE-satellite.com/TELE-satellite-0911/eng/yahya.pdf

Roy UK

Roy Carman, London



www.TELE-satellite.com/TELE-satellite-0909/eng/londondxer.pdf

Vincent Indonesia

Vincent, Jakarta



www.TELE-satellite.com/TELE-satellite-0909/eng/indonesia.pdf

Applesat China

Applesat, Beijing



www.TELE-satellite.com/TELE-satellite-0907/eng/applesat.pdf

Aluosat

Luo Shigang, Shenzhen



www.TELE-satellite.com/TELE-satellite-0905/eng/aluosat.pdf

China

Feedhunter

Rini de Weijze, Amsterdam



www.TELE-satellite.com/TELE-satellite-0811/eng/feedhunter-rini.pdf

Netherlands

Pharmacist

Pieter Redelinghuys, Klerksdorp



www.TELE-satellite.com/TELE-satellite-0901/eng/pharmacist.pdf

Ron

Ron Ebersson, Amsterdam

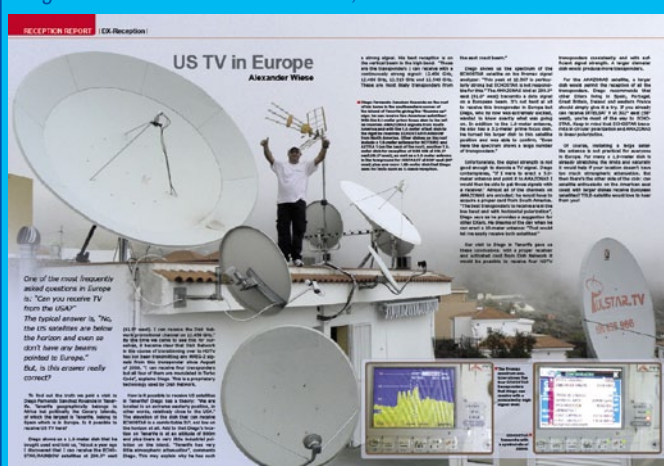


www.TELE-satellite.com/TELE-satellite-0811/eng/ka-band.pdf

Netherlands

Diego

Diego Fernando Sanchez Rosende, Tenerife



www.TELE-satellite.com/TELE-satellite-0901/eng/dxer.pdf

Spain

Juan Carlos

Juan Carlos Miranda Duarte, Santiago



www.TELE-satellite.com/TELE-satellite-0807/eng/chile.pdf

Chile

Tony Canada

Tony Di Rienzo, Toronto

SATELLITE DX | Portrait |

Tony Di Rienzo



Tony moved his equipment cabinet away from the wall to show us his cabling. He saw connected up to six receivers on his antennas. A ADTV receiver functions as a central power supply for the LNBs and also acts as the positioner for the antenna motor. All additional receivers are connected as slaves via a splitter or DVB-EQ switch.



Tony Di Rienzo in his backyard standing next to his 2-meter dish. In front of him is one of his 120cm antennas with 8dB motor.

Tony Di Rienzo should be a familiar name with TELE-satellite readers. In the 03/2006 issue, TELE-satellite reported on his C-band reception experiments using a small dish. That report created quite a stir on the satellite scene. We wanted to know what Tony was up to so

www.TELE-satellite.com/TELE-satellite-0711/eng/tony.pdf

Leo Belgium

Leo Stouten, Leuven

SATELLITE DX | Portrait |

Leo Stouten

A satellite fixer in the heart of Europe! In the city of Leuven, home to Europe's oldest university (dating back to the 13th century), which happens to be near Brussels, the "capital" of the European Union, Leo Stouten has his antenna farm erected on a small row of attached houses. He has been retired for quite some time yet at 74 he is at the prime of life. Only recently did he acquire a DVB radio (Digital Radio Mondiale) because he wanted to hear what it sounded like listening to AM digital radio signals.

But his true love has always been satellite reception. He began with him back in 1987 with a 1.2-meter offset dish and Niles's first analog receiver. He has since stuck with the Niles name and is today using the Niles Mediamaster, although for blind scanning he opted for a receiver from Forteclear. 1996 was the year of the motorized antenna for him: a 1.2-meter Gregorian antenna, an antenna with a second reflector for the LNB. This kind of dish gives the same performance as a standard 1.5-meter antenna. Leo is very proud to say, "I can now receive almost at 2° west, just not with that much bad weather reserve." His motorized setup makes it possible for him to receive all the Ku-band stations from 70° west to 60° west.



Leo Stouten on his roof next to his 1.2-meter motorized Gregorian antenna.

"I did have some big problems with the motor at first," explains Leo. "This is the fifth motor I've had to install." Fortunately, this last motor has been working perfectly for several years now. Leo is extremely satisfied with his antenna system, the signals from which he observes on his 10-9 TV. "The LNB has a noise figure of 0.2 dB," admits Leo. "I couldn't

ask for a better system." Leo, who worked for many years for Philips in their computer department, is very active in Belgium's satellite scene and is well-known by many in the satellite industry. He regularly visits the satellite trade shows ANGA in Cologne and SIC in Amsterdam. You might bump into him there some day!

www.TELE-satellite.com/TELE-satellite-0705/eng/leostouten.pdf

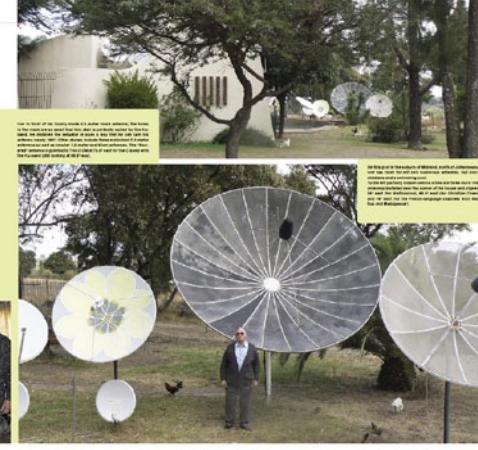
Grandfather South Africa

Ivor Cartmell, Johannesburg

ENTREPRENEUR REPORT | South Africa |

"Satellite Grandfather"

From Grandfather to son, the satellite scene in South Africa is a family affair. Ivor Cartmell, a retired engineer, has been a pioneer in the field of satellite reception for over 20 years. He has built a reputation as a "satellite grandfather" for his expertise and willingness to help others in the hobby.



www.TELE-satellite.com/TELE-satellite-0711/eng/grandfather.pdf

BSh Belgium

Aimé Holvoet, Brussels

SATELLITE DX | Portrait |

Belgian Satellite Hoppers

A bunch of Belgian satellite DXers have found a wonderful name for their club: Belgian Satellite Hoppers. This association was founded in 1999 and since then its membership base has increased to almost 100 very active persons.

One of the most enthusiastic among them is Aimé Holvoet, who started his career in 1991 with a 1.2 m dish. In 1994 he added an antenna with a 3.1 m diameter and in 1996 he installed the object of all his pride: a professional 4m parabolic antenna. He has anchored in his garden with a concrete block of three cubic meters and a 1.7 m x 1.1 m dish antenna complete with a



Aimé's antenna is on a high you can hardly fit the 1.8 m dish (above) and Aimé head (below) on one picture. On the left side in the background you can see another 1.8 m

www.TELE-satellite.com/TELE-satellite-0705/eng/bsh.pdf

Ingo South Africa

Ingo Salomon, Stilfontein

CORE REPORT | Satellite Reception in South Africa |

Ingo Wants to Know!

Alexander Wiese

1500 satellite members at each other after Ingo Salomon's "Satellite Reception in South Africa" report. The report was a comprehensive guide to the hobby in South Africa, covering everything from equipment to reception techniques.



www.TELE-satellite.com/TELE-satellite-0709/eng/ingo.pdf

Thomas Austria

Thomas Haring, Vienna

SATELLITE RECEPTION | C-Band in Europe |

C-Band Reception in Europe With a 120cm Antenna

Thomas Haring



It is the best time of the year for C-band reception in Europe. The weather is perfect, and the signals are strong. Thomas Haring, a C-band enthusiast, has been successful in receiving many channels using a 120cm antenna. He shares his experience and tips for successful reception in this article.

www.TELE-satellite.com/TELE-satellite-0609/eng/c-band.pdf

DVB-T

V: MPEG-2

A: MPEG-1 Level 2

Algeria
Albania
Australia
Austria
Belgium
Croatia**
Denmark**
Finland**
France*
French Guyana
Germany*
Greece*
Indonesia
Italy**
Luxembourg
Morocco
Namibia
Netherlands
Qatar
Sweden*/**
Switzerland
Tunisia

* some
V: H.264

** some DVB-T2

* some
DVB-T MPEG-2

** some DVB-T2

DVB-T

V: H.264

A: MPEG-4 AAC

Azerbaijan
Belarus*
Bulgaria
Burundi
Central African Republic
Colombia
Czech**
Estonia**
Ghana
Guinea
Hungary**
Iceland
Ireland
India
Iran
Israel
Latvia
Lithuania
Macedonia
Malaysia
Mauritius
New Zealand
Nigeria
Norway
Panama
Poland
Portugal
Romania
Rwanda
Slovakia
Slovenia**
Spain**
Tanzania
Uganda
Ukraine*
Vietnam
Zambia

ISDB-TB

V: H.264

A: MPEG-4 AAC

Argentina
Belize
Bolivia
Brazil
Costa Rica
Chile
Ecuador
Paraguay
Peru
Philippines
Uruguay
Venezuela

ISDB

V: MPEG-2

A: MPEG-2 AAC

Japan

DVB-T2

V: H.264

A: MPEG-4 AAC

Kenya
Russia
Serbia
South Africa
Sri Lanka
Uganda
UK

ATSC

V: MPEG-2

A: AC-3

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DTMB

V: H.264

A: MPEG-4 AAC

China*

HongKong

* some

V: MPEG2

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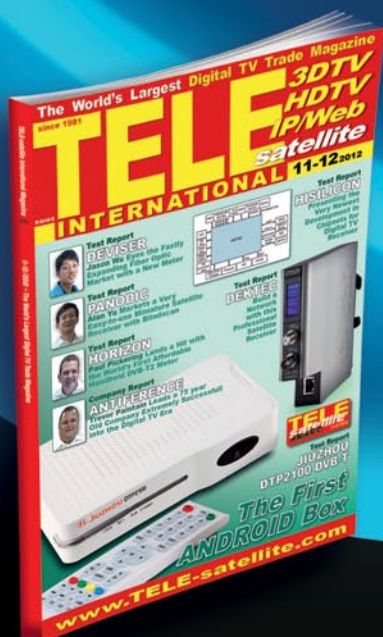
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Satellitenfernsehen



30 Years Ago

Satellite TV in Europe

One of the regular programmes at the time in Europe is the english language channel "Satellite Television PLC", transmitted via the OTS satellite. This channel is only available via satellite.

Further regular programmes can be seen via the French Symphonie satellite with the 1st French TV channel. Another regular programme is the 1st Sowjet channel via the GORIZONT satellite.

To receive these channels legally a reception permit is required. In West Germany this can be obtained (or more probably not) at the DBP, in Witzerland at the PTT, in Austria at the Post and in East Germany at the DP. The application has to include similar informations in any case: name of the space orbit station, reception frequencies, which signals are to be received, reason of reception, type and make of reception equipment and finally the approval of the entity responsible for the satellite.

SATELLITEN-TV IN EUROPA

Wie schaut es derzeit aus, was kommt alles herein und wie stellt man es an, etwas zu empfangen: die momentane Situation des Satelliten-Empfangs erläutern wir im folgenden Beitrag.

Wie in TAV schon mehrfach berichtet, ist zur Zeit als regelmäßiges TV-Programm in Westeuropa das englischsprachige Programm der "Satellite Television PLC" über den Satelliten OTS zu empfangen. Dieses Programm wird ausschließlich über Satellit ausgestrahlt.

Weitere regelmäßige Programme können vom Satelliten Symphonie mit dem 1. Französischen TV-Programm sowie von den russischen Satelliten der Gorizont-Serie, die das 1. Sowjet-TV-Programm ausstrahlen, empfangen werden.

Legal empfangen darf man diese Sendungen nur, wenn von der jeweiligen Fernmeldeverwaltung (in der BRD die DBP, in der Schweiz die PTT, in Österreich die Post und in der DDR die DP) die Empfangsgenehmigung erteilt wurde, die man auf schriftlichen Antrag erhalten kann - oder, was wahrscheinlicher ist, auch nicht.

Dieser Antrag muß überall ähnliche Angaben enthalten: in der Bundesrepublik sind es (nach Angaben der Oberpostdirektion München) die folgenden Fragen, die beantwortet werden müssen:

- * Name der Weltraumfunkstelle
- * Empfangsfrequenz
- * Welche Signale sollen empfangen und ggfs decodiert werden
- * Zweck der Aufnahme
- * Herstellerfirma und Typenbezeichnung der Empfangsfunkanlage sowie Art der Antenne
- * Schriftliche Zustimmung der Fernmeldeverwaltung bzw des für den Satelliten verantwortlichen Betreibers, daß die Signale empfangen und ggfs decodiert werden dürfen.

Bevor man den Antrag ausfüllen kann, müssen also erst einmal einige Voraussetzungen geleistet werden. Als wichtigstes ist die Genehmigung des Satellitenbetreibers zu nennen. Als Privat-

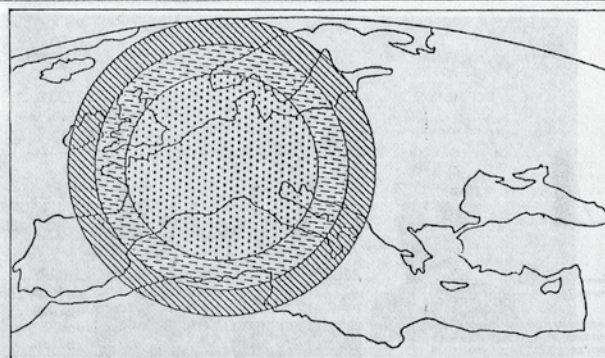
person wird man da Schwierigkeiten haben.

Ein weiteres Handicap ist die Decodierung: die englischen Satellitenprogramme von OTS z.B. werden verschlüsselt nach dem ORION genannten System ausgestrahlt. Den Decoder dazu stellt die amerikanische Firma Oak in Kalifornien her. Zwar ist auch ohne Decoder das Programm zu empfangen und zu sehen, aber unter erheblichen Qualitätseinbußen: die Bildschirmzeilen "reißen" ständig aus, da die richtigen Synchronisierungsimpulse fehlen. Übrigens ist die Codierung variabel, d.h. sie kann bei Bedarf geändert werden sollte es sich herausstellen, daß Unbefugte den Code geknackt haben und sozusagen ohne Erlaubnis das Satelliten-Programm anschauen, kann die Codierung geändert werden. Bei den offiziell genehmigt betriebenen Decodern wird dann einfach ein Adreß-Modul ausgetauscht.

Ein weiteres Problem ist die Empfangsanlage: man ist hier noch weitgehend auf sich selbst angewiesen, es sei denn man kann sich fertige Anlagen leisten. Die billigste und derzeit bekannte komplett ausgestattete Satelliten-Empfangsstation für den Bereich 11,7 bis 12,5 GHz wird von der schweizer Firma CATEC AG für ca DM 12.000,- angeboten. Sie besteht aus einem 1,8m Parabolspiegel und einem Down-Converter mit Ausgang im Bereich 950 bis 1450 MHz. Der Original-Hersteller ist die amerikanische Satcom.

Für den 4GHz-Bereich, z.B. von den russischen Gorizont-Satelliten, bietet u.a. die englische SOUTH-WEST-ARIAL eine Anlage an. Der Preis bewegt sich hier bei etwa DM 8000,- einschli 1,8m Spiegel und Down-Converter auf UHF-Frequenzen.

Wem das alles noch zu teuer ist,



Empfangsmöglichkeiten des englischen Satellitenprogramms von OTS: im inneren Kreis genügt ein 2,5m Spiegel, im mittleren ein 3m-Spiegel und im äußeren Kreis ist für einen befriedigenden Empfang ein 4m-Parabol-Spiegel notwendig. Zeichnung CATEC AG

der muß zur Selbsthilfe greifen. Ein englischer Satelliten-Fanatiker benutzt z.B. das umgedrehte Dach eines VW-Käfers vom Schrottplatz als Parabolspiegel! Weniger improvisierte Parabolantennen und die dazugehörige Elektronik wird von Funkamateuren benutzt. Eine Reihe von Bauanleitungen veröffentlichten z.B. die Zeitschriften "TV-Amateur" und "UKW-Berichte". Letztere bietet auch Baupläne dafür an, die aber meist für die den Amateurfunkern zugewiesenen Satellitenfrequenzen ausgelegt sind.

Na, immer noch nicht enttäuscht? Dann geben wir Ihnen im folgenden die Adressen der genannten Firmen und Organisationen:

Das englische Satelliten-TV-Programm ist über diese Adresse zu erreichen: Satellite Television PLC * Craven House * 25/32 Marshall Street * London W1 * Großbritannien

Der ORION-Decoder ist von: Oak Communications Incorporated * 16935 West Bernardo Drive * San Diego * CA 92129 * USA

Der schweizer Anbieter ist: CATEC AG *

Holzburgerstraße 22 * 6012 Luzern * Schweiz

Der Original-Hersteller ist unter dieser Adresse zu erreichen: SATCOM, Inc. * 1756 Junction Avenue * San José * CA 95122 * USA

4GHz-Empfangsanlagen z.B. über: South West Aerial Systems * 10 Old Boundary Road * Shaftesbury * North Dorset * SP7 8ND * Großbritannien

Und die Informationen aus dem Amateurfunkbereich über:

TV-Amateur * AGAF-Service * Siegmund Krause * Wieserweg 20 * D-5982 Neuenrade

"UKW-Berichte" * Verlag UKW-Berichte * Jahnstraße 14 * D-05233 Riesa-Storf

Viel Erfolg beim Zusammenbau einer Sat-TV-Anlage! Damit Sie wissen, was dann auf sie zukommt, auf den nächsten beiden Seiten das Schema des bislang ersten TV-Satellitenprogramms. Die Station nennt sich übrigens auch "Super Station Europe".

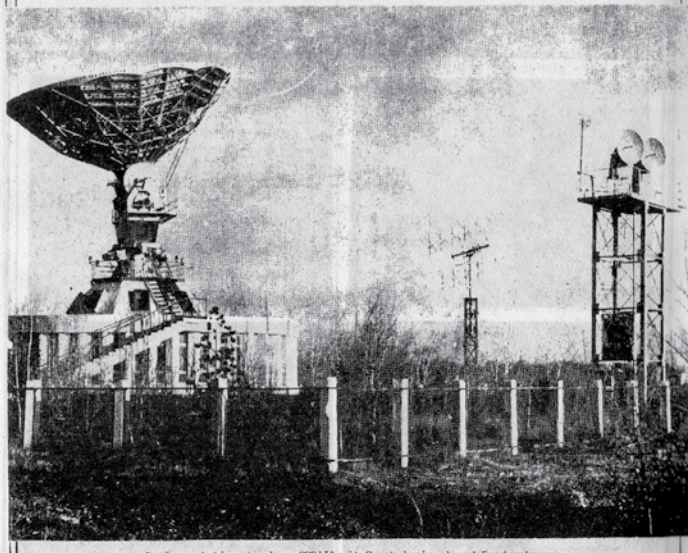
Alt

DAS SOWJETISCHE SATELLITEN TV-SYSTEM

Ein derart großflächiges Land wie die Sowjetunion mußte aus Kostengründen schon wesentlich früher als die relativ kleinen europäischen Länder Möglichkeiten finden, die Fernsehversorgung der Bevölkerung sicherzustellen. Zubringersysteme über Satellit sind hier der einzig gangbare Weg. Wie dies in der Sowjetunion funktioniert, schildert der folgende Beitrag, dem ein Bericht sowjetischer Autoren im OIRT-Bulletin (Heft 4/82) sowie Informationen aus RADIO (UdSSR, Heft April 82) zugrunde liegen. Die in TAV-7, S.71 gemachten Angaben werden damit aktualisiert und ergänzt.

Nicht nur die simple Größe des Landes stellt die Versorgung der Bevölkerung mit Fernsehprogrammen vor große Probleme, wesentlich gravierender ist die geringe Bevölkerungsdichte in weiten Teilen der Sowjetunion, die eine ökonomisch vertretbare Vertei-

lung von erdgebundenen Sendern oder Umsetzern nicht erlaubt. Eine Bevölkerungsdichte von weniger als 1 Person pro km², wie in Sibirien, in den nördlichen Landesteilen und im fernen Osten der Sowjetunion, schließt dies aus.



Empfangsstation des Typs ORBITA mit Parabolspiegel und Sendenantennen.

16

TELE-audiovision 11 1982



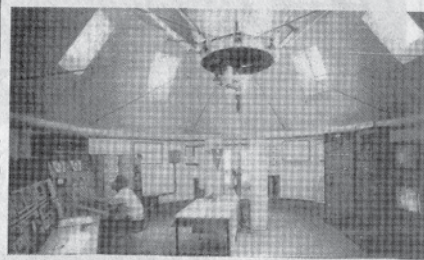
Die ORBITA-Empfangsstation bei Frunze, im Süden Kasachistans

ORBITA

So begann man schon 1967 mit dem Aufbau eines Satelliten-Netzes, das den Namen ORBITA erhielt. Es bestand aus dem Satelliten Molnya-1, der die Programme ausstrahlte, und Erde-Empfangsstationen des Typs ORBITA, die im 1GHz-Bereich ausgestrahlte Programme empfängt und für die

Fernsehzuschauer wieder ausstrahlt. Der Aufwand in den ORBITA-Stationen war noch sehr hoch (siehe Fotos), aber dennoch geringer als mit erdgebundenen Richtfunkstrecken. Ab 1974 wurden die ORBITA-Stationen nach und nach auf das 4GHz-Band umgestellt und konnten damit die Satelliten Molnya-2, Raduga und Gorizont empfangen und wieder ausstrahlen.

Blick in einen ORBITA-Kontrollraum. Die äußere Gewaltigkeit der Station (Foto oben) läßt sich die Größe des Kontrollraums im rechten Foto deutlich auf eine Gehölzgröße von ca 2,5m, der Spiegel wird einen Durchmesser von etwa 4 bis 5m besitzen. Auf dem Kontrollraumfoto sind rechts, schwach erkennbar, zwei TV-Geräte zu sehen.



TELE-audiovision 11 1982

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EKRAN

Die hohen Kosten der ORBITA-Stationen gaben den Anstoß, daß 1976 mit dem EKRAN genannten System begonnen wurde. Benutzt wurde diesmal als Sendefrequenz vom Satelliten her der Bereich um 714 MHz (702 bis 726 MHz = UHF-Kanäle 50 bis 52), was sowohl je einen gewichtigen Vor- wie Nachteil brachte: wegen des auch im terrestrischen Sendernetz benutzten Frequenzbereichs durfte der Satellit nur noch bestimmte Landesteile bestrahlen (Im Ergebnis wurden etwa 40% der Landesfläche versorgt), um nicht Interferenzen mit erdgebundenen Sendern zu erzeugen.

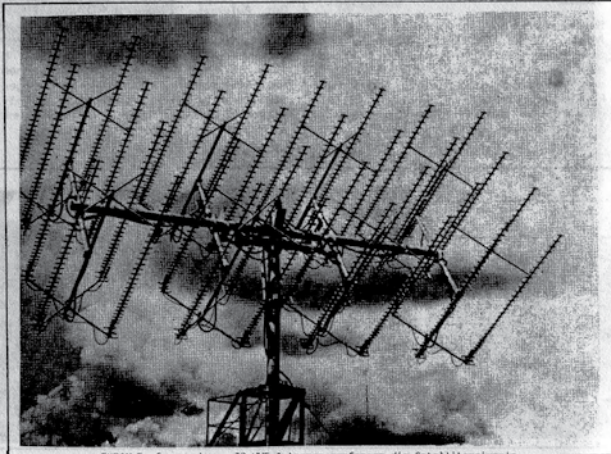
Zum anderen aber war gerade die Benutzung des Bereichs um 714 MHz von Vorteil, da zum Empfang keine speziellen Antennen und Geräte notwendig waren; mit relativ bescheidenem Aufwand (verglichen mit den ORBITA-Stationen) konnten so auch bevölkerungs-

ärmer Gebiete kostengünstig versorgt werden. Für größere Versorgungsgebiete werden Empfangs-Antennenstände mit 32 UHF-Kanal-Antennen eingesetzt, für kleinere Gebiete, in denen es auf zeitlich konstante Qualität nicht so darauf ankommt, genügt die einfachere Anordnung mit einer Gruppe von 4 UHF-Antennen. Die Empfangsqualität ist gleich, lediglich Schundeleinbrüche werden durch die größere Reserve bei der 32er Anordnung leichter ausgeglichen.

Die Satelliten für EKRAN (Typ Gorizont) wurden übrigens bei guten Bedingungen schon in Finnland von TV-Oxern problemlos empfangen.

MOSKVA

Als Ergänzung zu ORBITA und EKRAN wurde 1979 begonnen, ein flächendeckendes Satellitensystem aufzubauen: MOSKVA benutzt ebenfalls - über Satelliten der Gorizont-Serie - den schon



EKRAN-Empfangsanlage, 32 UHF-Antennen empfangen die Satellitensignale

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Technische Daten sowjetischer Satelliten-TV-Systeme

	ORBITA	EKRAN	MOSKVA
Benutzter Frequenzbereich	4 GHz	0,7 GHz	4 GHz
Antennen-Sendeleistung des Satelliten	8 W	200 W	40 W
Antennengewinn des Satellitensenders	22 dB	33 dB	30 dB
Antennengewinn der Empfangsantennen auf der Erde	52 dB	28 dB (32er)	37 dB
		21 dB (4er)	

Die Modulation erfolgt bei allen in FM, der Signal-Rauschabstand am Empfängeranfang ist im Bildkanal bei allen drei Systemen besser als 53 dB, im Tonkanal besser 57 dB.

In Betrieb sind 2,2, etwa 100 Empfangsstationen des Typs ORBITA, etwa 1500 des Typs EKRAN und etwa 30 des Typs MOSKVA.

für ORBITA benutzten Frequenzbereich von 4GHz, aber mit höherer Satelliten-Sendeleistung. Zum Empfang sind jetzt nur noch Parabolspiegel mit 2,5m Durchmesser notwendig. Auch entfällt die aufwendige Signalaufbereitung und die Empfangsstationen sind wesentlich kostengünstiger. Als einzigstes, ist das MOSKVA-System schon für zwei Tonkanäle, sprich Stereo bzw. Zweiton-Fernsehen, ausgelegt.

Die drei genannten Satelliten-Systeme machen es heute schon möglich, Fernsehprogramme in allen Teilen der Sowjetunion zu empfangen. Die Zeitunterschiede (s. TAV-7, S.71) erzwingen eine insgesamt fünfmalige Ausstrahlung des gleichen Programms, damit es überall zur gleichen Lokalzeit empfangen werden kann. Dies bedeutet, daß mit einem einzigen Programm schon 5 Satellitenkanäle belegt sind. Eine Wende soll aber auch in der Sowjetunion das künftige Satellitenfernsehen im Bereich um 12GHz bringen: eine wesentlich größere

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№ 4 АПРЕЛЬ 1982

Die Fotos zu diesem Beitrag entnahmen wir "Radio + Television" (2), der technischen Zeitschrift der OIRT, und RADIO (2), der sowjetischen Funkzeitschrift. Oben ein Auszug aus RADIO - die Zeitschrift ist im Westen so gut wie nicht erhältlich.

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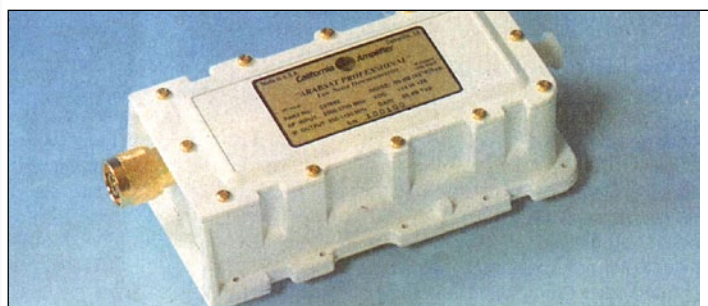


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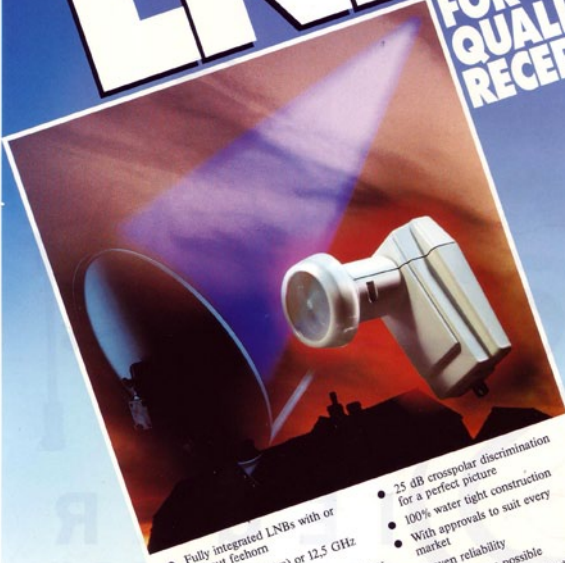
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MAGNAPhone MX 2020 P der ELNA im Gebrauchstest. TELE-satellit-Redakteur Rainer Bärmann telefonierte und telextete aus der Steppe wie auch aus dem Watt. Das Satellitentelefon ist binnen 5 min. ausgepackt und am Satelliten angeschlossen.

Das Telefon in der Wüste, 1991 durch CNN-Reporter Peter Arnett salonfähig geworden, eröffnet die Kommunikation über alle Grenzen hinweg. Mehrere Satelliten der INMARSAT-Organisation, die über den Weltmeeren stehen, schaffen mehrfach überlappende Ausleuchtzonen zur Vermittlung der Gespräche im Selbstwähldienst und Volduplexverkehr. Kein Staatsoberhaupt reist heutzutage ohne Satellitentelefon im Gepäck, abhörsicher und unabhängig von der lokalen, gegebenenfalls unzulänglichen Telefonkapazität.

Das MAGNAPhone MX 2020 P wird von der ELNA Elektro-Navigation und Industrie GmbH aus Rellingen vertrieben und ist in seiner tragbaren Ausführung und seinen Features das Luxusmodell der vier angebotenen Versionen. Alle vier Modelle sind etwa 23 kg schwer und unterscheiden sich hinsichtlich der Antenne - teilbar oder "Regenschirm" - und Zusatzfunktionen zur TELEX- und Datenübertragung und dem eingebauten Drucker. Mit den Typen A, B, C und D wird gleich gut in ankommender wie abgehender Richtung telefoniert. In jedem Teil der Erde außerhalb der Pole sind mindestens zwei INMARSAT-Flugkörper im Sichtkontakt, die der Nutzer anrufen kann.

Das MAGNAPhone MX 2020 P Typ D erreicht diesen entweder in einem weichen Stoffkoffer oder im Hartschalenkoffer, in beiden Fällen wohl das leichteste Satellitentelefon der Welt. Der weiche Transportkoffer wirkt wegen der Stoßdämpfung für das wertvolle Telefon leichter als er tatsächlich ist, so daß sich schon um der Sitzgelegenheit willen der Hartschalenkoffer lohnt.

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Starlight 6800: The Complete Monitoring Station

Owners of larger antennas with actuators for C-band and Ku-band reception usually have a difficult time finding a receiver that has everything that they need: a positioner, connections for a mechanical polarizer, CI slots for PayTV reception and for good audio and video quality an AC-3 and S-VHS output. Even for our test department it wasn't that easy to find such a receiver. EUROSAT decided to help by sending us the Manhattan Starlight 6800. On the front panel of the silver-gray cabinet are eight buttons that permit not only the normal operation of the receiver but also its programming. The 6800 comes with two CI

slots that accept a variety of different CA modules. It also comes with embedded IRDETO with an appropriate card slot. Up to 5000 channels can be stored with the current channel shown on the four-digit display.

But it's the rear panel of this receiver that will excite the DX'er. In addition to the two Scart connectors and jacks for the looped-through IF, there are also four RCA jacks for video, analog stereo audio, programmable 0/12 volts and digital audio (S/PDIF). Six quick-clamps link this receiver to an actuator (36V/5A max) and a mechanical polarizer (such as a Corotor for C-band and Ku-band).



HDSM 2: DVB Antenna Measurement Unit

The alignment of an antenna on a satellite that has analog signals usually does not require the use of any kind of measurement equipment. And for private users it goes something like this: the picture's coming, the picture's there, there's no snow and done! Digital signals make life a little more difficult for the installer. He could of course drag the customer's receiver and TV up onto the roof with him and use the on-screen signal strength and quality bar graphs to properly align the dish. But the customer might not be too thrilled with this idea. The English company HORIZON GLOBAL ELECTRONICS, Ltd., with its alignment and

installation meter HDSM 2, has designed an inexpensive alternative for the installer. The unit is about the size of a thick paperback book and it comes complete with a leather pouch and a shoulder strap to help protect it from damp weather. It also comes with a charger for 100-240 VAC plus a car charger for 13VDC and an RS-232 cable so that satellite data can be downloaded from the Internet. All of the control buttons as well as the LNB connections (looped-through) are found on the front panel. The display shows the selected satellites, the polarization, the signal strength and quality, the C/N value and the correct Bit Error Rate.

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What's behind out-of-footprint reception?

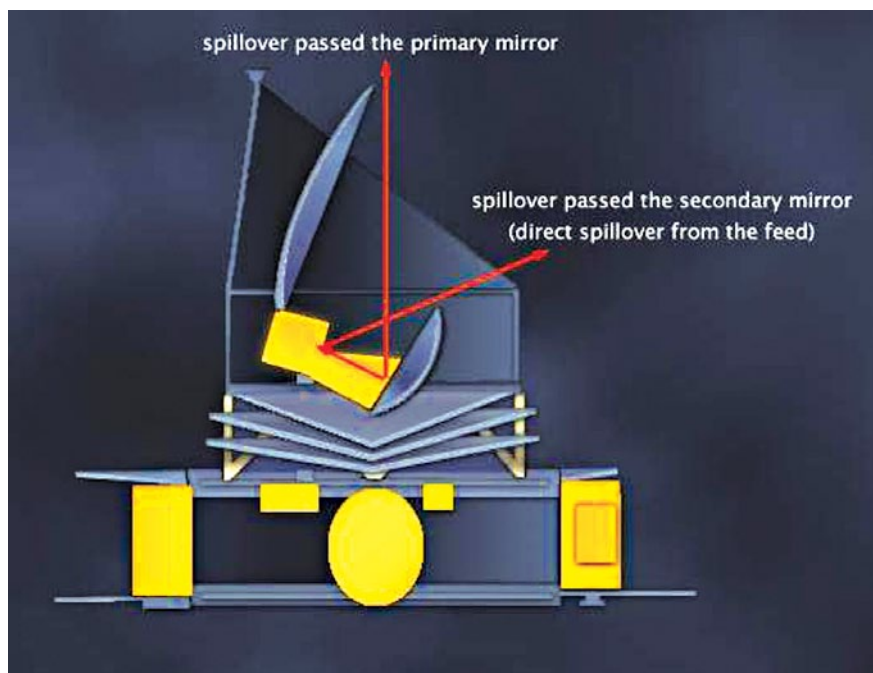


Figure 1

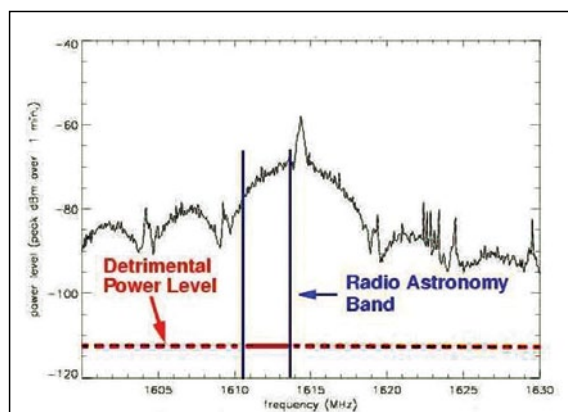


Figure 2



Figure 4



Figure 3



Figure 5

Discussions regarding „out-of-footprint“ reception are almost as old as satellite transmission itself. However, there has never been a reasonable explanation for the fact that ASTRA can be received in some parts of South America or that TELE-satellite reader K. Schumacher in southern Brazil can receive the analog signals of ASTRA and EUTEL-SAT almost noise free with his self-assembled 8 m antenna. The digital signals, on the other hand, seem to be unreachable with his equipment. TELE-satellite International contributor Vladimir T. Lemos is an engineer for spaceship antennas in Washington, D.C. and has addressed this question.

Out-of-footprint reception is due in part to the overspill of electromagnetic energy radiated from the satellite antenna onto a region beyond that of the intended service area. On a day with a clear sky, there is higher overspill because more power reaches the ground antenna. Since most satellites are designed to provide, under bad weather conditions, a minimum power flux density at the edge of the coverage area, there is excess power available for reception when the weather is good.

The electromagnetic energy is also spread outside the service area when there is spillover from the feed in a dual reflector antenna system. In a single reflector antenna, the feed spillover is directed towards outer space. Note the distinction between overspill and feed spillover. Figure 1 shows feed spillover in the PLANK satellite dual reflector antenna system: in a Gregorian configuration, the feed points towards the small secondary antenna and the large primary 1.5 meter reflector is directed towards the Earth.

Overspill suggests that large ground paraboloidal antennas could receive weaker signals because they would provide higher gain at communication satellite frequencies. However, even a large antenna would not guarantee you could get unintended satellite service in your backyard. Overspill accounts in part for the out-of-footprint reception reports, but mostly for the cases where the ground antenna is located near the boundaries of a coverage area. Someone in central Africa with an oversized Ku-band antenna could pick up signals from EUTELSAT Atlantic Bird 2 European coverage area. If there is too much overspill, the signals of adjacent service areas with the same frequency and sense of polarization interfere with other. At lower frequencies, the problem is worse because the radio waves are spread over a broader area. Figure 2 shows spillover interference in radio astronomy band: overspill from a wireless service operating in an adjacent service area adds noise to the system.

In order to provide service over an irregular geographical region that is

enclosed by a contour line, modern communication satellites use shaped reflector antennas. Figure 3 shows the coverage area of JSAT-110 outlined with a 57dBW EIRP contour line at the edge of coverage, corresponding to a power flux density of -105.1 dBW/m^2 .

Given that a simple paraboloidal reflector antenna would focus the electromagnetic energy on a regular (circular or elliptical) region on the surface of the Earth, the idea behind a shaped reflector antenna is that by deforming the reflector surface it is possible to adjust the antenna pattern to fit the desired service area. This is similar to illuminating a distorted mirror to produce a distorted reflection. All EUTELSAT HotBird satellites use a 2.3-meter dual gridded shaped reflector antenna system. Figure 4 shows a dual gridded shaped reflector antenna: perpendicular laser-etched embedded grids on the Kevlar surface allow for the use of two reflectors, one behind the other. Depending on the polarization, either the front or back reflector can be used for transmission or reception.

However, even the most carefully constructed surface is not perfect: the electromagnetic energy that is incident on the reflector is subject to diffraction, which happens primarily at the edges of the reflector. The diffracted waves may interact with the focused waves or even diverge away from the intended coverage area. As the diffracted waves travel away from the reflector antenna, they interfere with each other producing arbitrary regions on Earth where the electromagnetic energy is stronger and others where signal is unusable. This phenomenon can be understood if you imagine radio waves turning away from their path as the electromagnetic energy from the feed hits the edge of the reflector. Figure 5 shows a diffracted photograph image: spreading of light as they pass through the camera aperture. Although diffraction decreases at higher frequencies, it can account for out-of-footprint reception of analogue Ku-band signals. Digital signals are more difficult to receive



8m dish in Brazil to receive ASTRA from Europe

because modulation schemes based on amplitude and phase encoding are very sensitive to increases in the bit-error-rate resulting from depolarization of electromagnetic energy. It is very difficult to predict where a combination of overspill and diffraction of electromagnetic energy could allow for out-of-footprint reception. That would depend on the area of the intended coverage region, orbital location of the satellite and the characteristics of the satellite antennas, including the shape of the reflector.

Readers may wish to program their satellite receivers and scan for unintended programming in their area.

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Home Theater System

PS-42 P2S

HT-DL100

DSR 9400 FTA

Digital satellite receivers deliver first class video yet some of this quality is lost when viewed with a standard TV. The same can be said for a digital audio output. It wants nothing more than to be limited with a Dolby Surround system that has a digital audio input (optical or electrical). Why shouldn't you simply set up a Dolby Digital Movie Theater in your home? Samsung has put together a package for us to test that would do the job perfectly.

Plasma Display PS-42 P2S

At 32 Kg (70 Lbs) you might need a little help lifting the plasma display onto a stand or installing it on the included wall mount. But this is what you get with a 107 cm (42") picture in 16:9 format.

On the back of the display, two different video sources can be connected via the Scart Jack, the RCA jacks or the S-VHS connector. In our tests these sources were of course a digital satellite receiver (Samsung DSR-9400 FTA) and the video output of the Home Theater HT-DL100. But a PC also has its place on this plasma monitor (D-sub 15). A better display for the Internet or for Flight Simulator you could hardly find. Two additional audio inputs for analog stereo are also provided. The two speakers that hang on either side of the display are connected to the built-in amplifier (2 x 7 Watts) via a set of quick clamps. Fortunately, you don't have to be too concerned about this limited power output since the audio can also be routed to the Dolby Surround system from which also comes DVD, CD and radio tuner audio. Once you have worked through all the different on-screen menus, then, with a resolution of 852x480 and a contrast ratio of 700:1, it will really feel like a movie theater.



INTELSAT 10-02 - Europe, Middle East, North India ◀ 359.2 East (000.8 West)
C-Band: INTELSAT 10-02 - Europe, Africa, South East Asia ◀ 359.2 East (000.8 West)
THOR 5, 6 - Europe ◀ 359.2 East (000.8 West)
AMOS 2, 3 - Europe, Middle East ◀ 356.0 East (004.0 West)
EUTELSAT 5 WEST A - Europe ◀ 355.0 East (005.0 West)
C-Band: EUTELSAT 5 WEST A - Europe ◀ 355.0 East (005.0 West)
NILESAT 101, 102, 201, EUTELSAT 7 WEST A - Middle East ◀ 353.0 East (007.0 West)
EUTELSAT 8 WEST A - Europe, America, Middle East ◀ 352.0 East (008.0 West)
EXPRESS AM44 - Middle East ◀ 349.0 East (011.0 West)

C-Band: EXPRESS AM44 - Europe, North Africa, Middle East ◀ 349.0 East (011.0 West)
EUTELSAT 12 WEST A - Europe, Africa ◀ 347.5 East (012.5 West)
TELSTAR 12 - Europe, South Africa, Am. ◀ 345.0 East (015.0 West)
INTELSAT 901 - Europe, Middle East ◀ 342.0 East (018.0 West)
NSS 7 - Europe, Africa ◀ 340.0 East (020.0 West)

C-Band: NSS 7 - Africa ◀ 340.0 East (020.0 West)

SES 4 - Europe, Middle East ◀ 338.0 East (022.0 West)

C-Band: SES 4 - America ◀ 338.0 East (022.0 West)

INTELSAT 905 - Europe ◀ 335.5 East (024.5 West)

C-Band: INTELSAT 905 - Europe, Africa, America ◀ 335.5 East (024.5 West)

INTELSAT 907 - Europe ◀ 332.5 East (027.5 West)

C-Band: INTELSAT 907 - Europe, Africa, America ◀ 332.5 East (027.5 West)

HISPASAT 1C, 1D, 1E - Europe, America ◀ 330.0 East (030.0 West)

INTELSAT 25 - Africa ◀ 328.5 East (031.5 West)

C-Band: INTELSAT 25 - Europe, Africa ◀ 328.5 East (031.5 West)

INTELSAT 903 - Europe ◀ 325.5 East (034.5 West)

C-Band: INTELSAT 903 - Europe ◀ 325.5 East (034.5 West)

TELSTAR 11N - Europe, Africa ◀ 322.5 East (037.5 West)

C-Band: NSS 10 - Europe, Africa, America ◀ 322.5 East (037.5 West)

NSS 806 - Europe ◀ 319.5 East (040.5 West)

C-Band: NSS 806 - America, Europe ◀ 319.5 East (040.5 West)

INTELSAT 11 - Brazil ◀ 317.0 East (043.0 West)

C-Band: INTELSAT 11 - Brazil ◀ 317.0 East (043.0 West)

INTELSAT 14 - Europe, North Africa, South America ◀ 315.0 East (045.0 West)

C-Band: INTELSAT 14 - America ◀ 315.0 East (045.0 West)

INTELSAT 1R - America ◀ 315.0 East (050.0 West)

INTELSAT 707 - America ◀ 307.0 East (053.0 West)

C-Band: INTELSAT 707 - America, Africa ◀ 307.0 East (053.0 West)

Galaxy 11 - Brazil ◀ 304.5 East (055.5 West)

C-Band: INTELSAT 805 - America ◀ 304.5 East (055.5 West)

INTELSAT 9 - Mexico, Brazil, Europe ◀ 302.0 East (058.0 West)

C-Band: INTELSAT 9 - America ◀ 302.0 East (058.0 West)

C-Band: INTELSAT 16 - America ◀ 302.0 East (058.0 West)

AMAZONAS 1 - Brazil, South America ◀ 299.0 East (061.0 West)

C-Band: AMAZONAS 1 - America ◀ 299.0 East (061.0 West)

AMAZONAS 2 - North America ◀ 299.0 East (061.0 West)

ECHOSTAR 12.15 - Conus ◀ 298.5 East (061.5 West)

TELSTAR 14R - Brazil, Mercosul ◀ 297.0 East (063.0 West)

STARONE C1 - Brazil ◀ 295.0 East (065.0 West)

C-Band: STARONE C1 - South America ◀ 295.0 East (065.0 West)

STARONE C2 - Brazil ◀ 290.0 East (070.0 West)

C-Band: STARONE C2 - South America ◀ 290.0 East (070.0 West)

AMC 6 - North America ◀ 288.0 East (072.0 West)

C-Band: AMC 6 - North America ◀ 288.0 East (072.0 West)

NIMIQ 5 - Conus ◀ 287.5 East (072.5 West)

C-Band: BRASILSAT B3 - Brazil ◀ 285.0 East (075.0 West)

ECHOSTAR 8, 1 - America, Mexico ◀ 283.0 East (077.0 West)

SIMON BOLIVAR - South America ◀ 282.0 East (078.0 West)

C-Band: SIMON BOLIVAR - South America ◀ 282.0 East (078.0 West)

NIMIQ 4 - Canada ◀ 278.0 East (082.0 West)

AMC 9 - North America ◀ 277.0 East (083.0 West)

C-Band: BRASILSAT B4 - Brazil ◀ 276.0 East (084.0 West)

AMC 16 - North America ◀ 275.0 East (085.0 West)

SES 2 - North America ◀ 273.0 East (087.0 West)

C-Band: SES 2 - North America ◀ 273.0 East (087.0 West)

GALAXY 28 - America ◀ 271.0 East (089.0 West)

C-Band: GALAXY 28 - America ◀ 271.0 East (089.0 West)

NIMIQ 1 - Canada ◀ 269.0 East (091.0 West)

C-Band: GALAXY 17 - North America ◀ 269.0 East (091.0 West)

GALAXY 25 - North America ◀ 266.9 East (093.1 West)

C-Band: GALAXY 3C - North America ◀ 265.0 East (095.0 West)

GALAXY 19 - North America ◀ 263.0 East (097.0 West)

C-Band: GALAXY 19 - North America ◀ 263.0 East (097.0 West)

GALAXY 16 - North America ◀ 261.0 East (099.0 West)

C-Band: GALAXY 16 - North America ◀ 261.0 East (099.0 West)

DIRECTV 4S, 8 - America ◀ 259.0 East (101.0 West)

SES 1 - North America ◀ 259.0 East (101.0 West)

C-Band: SES 1 - North America ◀ 259.0 East (101.0 West)

AMC 1 - North America ◀ 257.0 East (103.0 West)

C-Band: AMC 1 - North America ◀ 257.0 East (103.0 West)

AMC 15 - North America ◀ 255.0 East (105.0 West)

C-Band: AMC 18 - North America ◀ 255.0 East (105.0 West)

ANIK F1R - North America ◀ 252.7 East (107.3 West)

C-Band: ANIK F1R - North America ◀ 252.7 East (107.3 West)

C-Band: ANIK F1 - South America ◀ 252.7 East (107.3 West)

ECHOSTAR 10, 11 - America ◀ 250.0 East (110.0 West)

DIRECTV 5 - America ◀ 250.0 East (110.0 West)

ANIK F2 - North America ◀ 248.9 East (111.1 West)

C-Band: ANIK F2 - North America ◀ 248.9 East (111.1 West)

SATMEX 6 - America ◀ 247.0 East (113.0 West)

C-Band: SATMEX 6 - America ◀ 247.0 East (113.0 West)

SATMEX 5 - America ◀ 243.2 East (116.8 West)

C-Band: SATMEX 5 - America ◀ 243.2 East (116.8 West)

ANIK F3 - Conus ◀ 241.0 East (119.0 West)

C-Band: ANIK F3 - America ◀ 241.0 East (119.0 West)

ECHOSTAR 14 - Conus ◀ 241.0 East (119.0 West)

DIRECTV 7S - Conus ◀ 241.0 East (119.0 West)

ECHOSTAR 9, GALAXY 23 - North America ◀ 239.0 East (121.0 West)

C-Band: ECHOSTAR 9, GALAXY 23 - North America ◀ 239.0 East (121.0 West)

GALAXY 18 - North America ◀ 237.0 East (123.0 West)

C-Band: GALAXY 18 - North America ◀ 237.0 East (123.0 West)

C-Band: GALAXY 14 - North America ◀ 235.0 East (125.0 West)

AMC 21 - North America ◀ 235.0 East (125.0 West)

GALAXY 13, HORIZONS 1 - North America ◀ 233.0 East (127.0 West)

C-Band: GALAXY 13, HORIZONS 1 - North America ◀ 233.0 East (127.0 West)

CIEL 2 - America ◀ 231.0 East (129.0 West)

C-Band: AMC 11 - North America ◀ 229.0 East (131.0 West)

C-Band: GALAXY 15 - North America ◀ 227.0 East (133.0 West)

C-Band: AMC 10 - North America ◀ 225.0 East (135.0 West)

C-Band: AMC 7 - North America ◀ 223.0 East (137.0 West)

C-Band: AMC 8 - North America ◀ 221.0 East (139.0 West)

Satellites of the World



- 003.0 East ▶ C-Band: RASCOM QAF 1R - Africa
- 003.0 East ▶ RASCOM QAF 1R - Africa
- 003.0 East ▶ EUTELSAT 3C - Europe
- 003.0 East ▶ C-Band: EUTELSAT 3A - EUROPE
- 004.8 East ▶ ASTRA 4A - Europe
- 007.0 East ▶ EUTELSAT 7A - Europe, Africa
- 009.0 East ▶ EUTELSAT 9A - Europe
- 009.0 East ▶ EUTELSAT KA-SAT 9A - Ireland
- 010.0 East ▶ EUTELSAT 10A - Europe
- 010.0 East ▶ C-Band: EUTELSAT 10A - Global
- 013.0 East ▶ EUTELSAT HOTBIRD 13A,13B,13C - Europe, Middle East
- 016.0 East ▶ EUTELSAT 16A - Europe, Africa
- 017.0 East ▶ Amos 5 - North Africa, Middle East
- 017.0 East ▶ C-Band: Amos 5 - Africa, Middle East
- 019.2 East ▶ ASTRA 1H,1KR,1L,1M,2C - Europe
- 020.0 East ▶ C-Band: ARABSAT 5C - Africa, Middle East
- 021.6 East ▶ EUTELSAT 21A - Europe, Asia, West Africa
- 023.5 East ▶ ASTRA 3B, THOR 2, ASTRA 1D - Europe
- 025.5 East ▶ EUTELSAT 25A - Europe, Asia
- 026.0 East ▶ BADR 4,5,6 - North Africa, Middle East
- 028.2 East ▶ EUTELSAT 28A, ASTRA 1N,2A,2B - Europe
- 030.5 East ▶ ARABSAT 5A - Middle East
- 030.5 East ▶ C-Band: ARABSAT 5A - Asia, Middle East
- 031.5 East ▶ ASTRA 1G - Europe
- 033.0 East ▶ EUTELSAT 33A - Europe
- 033.0 East ▶ INELSAT NEWDAWN - Africa
- 034.0 East ▶ ARABSAT 2B - Middle East
- 036.0 East ▶ EUTELSAT 36A,36B - Europe, South Africa, Asia, Russia
- 038.0 East ▶ PAKSAT 1R - Pakistan, North India
- 038.0 East ▶ C-Band: PAKSAT 1R - Pakistan, India, Middle East, Africa
- 039.0 East ▶ HELLAS SAT 2 - Europe, Middle East, Asia
- 042.0 East ▶ TURKSAT 2A,3A - Europe, Russia
- 045.0 East ▶ INTELSAT 12 - India, South Africa, Middle East, Europe
- 049.0 East ▶ C-Band: YAMAL 202 - Global
- 052.5 East ▶ YAHSAT 1A - Europe, Middle East, Africa
- 053.0 East ▶ EXPRESS AM22 - Europe, Middle East, North India
- 055.0 East ▶ GSAT-8,ASTRA 1F - Russia
- 056.0 East ▶ BONUM 1 - East Russia
- 057.0 East ▶ NSS 12 - Europe, Russia, Africa, India
- 057.0 East ▶ C-Band: NSS 12 - Europe, Russia, Africa, India, Global
- 060.0 East ▶ INTELSAT 904 - Europe
- 060.0 East ▶ C-Band: INTELSAT 904 - Europe, Africa, Global
- 062.0 East ▶ INTELSAT 902 - Europe, Middle East
- 062.0 East ▶ C-Band: INTELSAT 902 - Europe, China, Australia, South Africa, Global
- 063.0 East ▶ INTELSAT 20 - Europe
- 064.2 East ▶ INTELSAT 906 - India, Nepal
- 064.2 East ▶ C-Band: INTELSAT 906 - Europe, Africa, South India, Global
- 066.0 East ▶ INTELSAT 17 - Europe,Russia
- 068.5 East ▶ INTELSAT 7 - South Africa
- 068.5 East ▶ INTELSAT 10 - Africa, Europe, Middle East
- 068.5 East ▶ C-Band: INTELSAT 10 - Global
- 070.5 East ▶ EUTELSAT 70A - Europe,Middle East, India
- 074.0 East ▶ INSAT 4CR - India
- 074.0 East ▶ C-Band: INSAT 3C - India
- 075.0 East ▶ ABS-1 - Europe, Asia, Middle East
- 075.0 East ▶ C-Band: ABS-1 - Global
- 076.5 East ▶ APSTAR 7 - China
- 076.5 East ▶ C-Band: APSTAR 7 - Global
- 078.5 East ▶ THAICOM 5 - Thailand
- 078.5 East ▶ C-Band: THAICOM 5 - India,China,Thailand, Global
- 080.0 East ▶ EXPRESS MD1 - Russia, North India
- 083.0 East ▶ INSAT 4A - India
- 083.0 East ▶ C-Band: INSAT 4A - India, Middle East
- 085.0 East ▶ INTELSAT 15 - Middle East
- 085.0 East ▶ HORIZONS 2 - Russia
- 086.5 East ▶ KAZSAT 2 - Russia
- 087.5 East ▶ C-Band: CHINASAT 5A - China, India, Middle East
- 088.0 East ▶ ST 2 - India, Malaysia
- 088.0 East ▶ C-Band: ST 2 - India, Thailand
- 090.0 East ▶ YAMAL 201 - Russia, North India
- 090.0 East ▶ C-Band: YAMAL 201 - Russia, North India
- 091.5 East ▶ MEASAT 3 - Malaysia, South Asia
- 091.5 East ▶ C-Band: MEASAT 3 -Global, Thailand, Australia, East Asia
- 091.5 East ▶ MEASAT 3A - Malaysia, South Asia
- 091.5 East ▶ C-Band: MEASAT 3A -Global
- 092.2 East ▶ CHINASAT 9 - China
- 093.5 East ▶ INSAT 3A,4B - India
- 093.5 East ▶ C-Band: INSAT 3A,4B - India, Middle East
- 095.0 East ▶ NSS 6 - India, Middle East, South Africa, North East Asia, Australia
- 096.5 East ▶ C-Band: EXPRESS AM 33 - Asia, Russia,China
- 100.5 East ▶ ASIASEAT 5 - East Asia, India, Middle East, Thailand
- 100.5 East ▶ C-Band: ASIASEAT 5 - Global
- 103.0 East ▶ C-Band: EXPRESS A2 - Russia, China
- 105.5 East ▶ ASIASEAT 3S - East Asia, South Asia, Australia
- 105.5 East ▶ C-Band: ASIASEAT 3S - Global
- 108.2 East ▶ NSS 11 - South Asia, North East Asia, China
- 108.2 East ▶ C-Band: TELKOM 1 - Indonesia
- 108.2 East ▶ SES 7 - South Asia, Australia
- 110.0 East ▶ BSAT 3A,2C,3C N-SAT 110,JCSAT 110R - Japan
- 110.5 East ▶ C-Band: CHINASAT 10 - China, Asia Pacific
- 113.0 East ▶ KOREASAT 5 - South Korea, North East Asia
- 113.0 East ▶ C-Band: PALAPA D - Asia, Australia
- 115.5 East ▶ C-Band: CHINASAT 6B - Global
- 116.0 East ▶ ABS 7 - South Korea
- 116.0 East ▶ KOREASAT 6 - South Korea
- 118.0 East ▶ C-Band: TELKOM 2 - Global
- 122.0 East ▶ ASIASEAT 4 - East Asia, Australia
- 122.0 East ▶ C-Band: ASIASEAT 4 - Global
- 124.0 East ▶ JCSAT 4A - Japan
- 125.0 East ▶ C-Band: CHINASAT 6A - China
- 128.0 East ▶ JCSAT 3A - Japan
- 128.0 East ▶ C-Band: JCSAT 3A - Asia
- 132.0 East ▶ VINASAT 1 - Vietnam
- 132.0 East ▶ C-Band:VINASAT 1 - Asia, Australia
- 132.0 East ▶ JCSAT 5A - Japan
- 134.0 East ▶ APSTAR 6 - China
- 134.0 East ▶ C-Band: APSTAR 6 - Asia, Australia
- 138.0 East ▶ TELSTAR 18 - India, China
- 138.0 East ▶ C-Band: TELSTAR 18 - Asia, Australia
- 140.0 East ▶ EXPRESS AM3 - Russia, China
- 140.0 East ▶ C-Band: EXPRESS AM3 - Russia, China
- 144.0 East ▶ SUPERBIRD C2 - Japan
- 150.0 East ▶ JCSAT 1B - Asia
- 152.0 East ▶ OPTUS D2 - Australia, Newzealand
- 154.0 East ▶ JCSAT 2A - Japan
- 154.0 East ▶ C-Band: JCSAT 2A - Asia&Oceania&Hawaii
- 156.0 East ▶ OPTUS C1,D3 - Australia, Newzealand
- 160.0 East ▶ OPTUS D1 - Australia, Newzealand
- 162.0 East ▶ SUPERBIRD B2 - Japan
- 164.0 East ▶ OPTUS B3 - Asia
- 166.0 East ▶ INTELSAT 8 - Australia, Newzealand, North East Asia
- 166.0 East ▶ C-Band: INTELSAT 8,19 - Australia
- 169.0 East ▶ C-Band: INTELSAT 5 - Pacific
- 172.0 East ▶ GE 23 - South Pacific, South East Pacific
- 172.0 East ▶ C-Band: GE 23 - Pacific
- 180.0 East ▶ INTELSAT 18 - Australia, Pacific
- 180.0 East ▶ C-Band: INTELSAT 18 - Pacific

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Weltweit größte Digital TV
Fachzeitschrift

FRA
www.TÉLÉ-satellite.com



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MAG
www.TELE-satellite-hu.com



A Világ legnagyobb digitális
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POR
www.TELE-satélite.com



Maior Revista do Mundo Sobre
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ENG
www.TELE-satellite.com



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HEB
www.TELE-satellite.co.il



המגזין הגדול בעולם הסטוריה
דיגיטלית

MAN
www.国际卫星电视.cn



有关数字电视行业的世界上发行
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ROM
www.TELE-satelit.ro



Cea mai mare revista din lume cu
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ESP
www.TELE-satélite.es



La Revista Más Grande Del Mundo
Sobre el Comercio de TV Digital

HRV
www.TELE-satelit.eu



Najveći svjetski stručni časopis
o digitalnoj TV

NED
www.TELE-satelliet.com



Het Grootste Vakblad ter
Wereld over Digitale TV

RUS
www.ТЕЛЕ-сателлайт.com



Крупнейший в мире журнал о
бизнесе цифрового ТВ

FAR
www.TELE-satellite.ir



بزرگترین مجله در جهان در
مورد تجارت تلویزیون های دیجیتال

ITA
www.TELE-satellite-italia.com



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Sul Commercio TV Digitale

POL
www.TELE-satelita.pl



Największy na świecie magazyn
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TUR
www.TELE-satellite-tr.com



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Turkey	9581
Romania	8645
Algeria	8566
France	8144
Hungary	6056
Poland	5722
India	5552
Belgium	5370
Russia	5310
Morocco	4941
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Portugal	4416
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Israel	2234
Norway	2198
Argentina	2072
Australia	2061
Chile	1965
Serbia	1917
United Arab Emirates	1683
South Africa	1656
Ireland	1504
Denmark	1448
Thailand	1331
Venezuela	1270
Mexico	1149
Finland	1088
Philippines	1034
Colombia	998
Sri Lanka	966
Nigeria	891
Lithuania	872
Lebanon	861
Bosnia and Herzegovina	858
Jordan	848
Syria	838
South Korea	781
Yemen	746
Sudan	738
Libya	723
Macedonia	715
Kenya	605
Japan	603
Peru	592
Cyprus	589
Kuwait	560
Puerto Rico	512
Hong Kong	507
Qatar	486
Albania	475
Panama	475
Moldova	466
Latvia	464
Oman	448
Taiwan	445
Uruguay	445
Ecuador	427
New Zealand	427
Slovenia	398
Senegal	398
Paraguay	389
Luxembourg	381
Georgia	323
Mauritius	320
Ghana	318
Vietnam	307
Estonia	296
Bolivia	293
Bahrain	286
Côte d'Ivoire	280
Belarus	274
Aruba	254
Singapore	248
Bangladesh	232
Dominican Republic	224
Iceland	184
Cameroon	181
Kazakhstan	179
Barbados	178
Uganda	178

Top 106 to 180 Countries < 175 Readers

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Myanmar	158
Montenegro	154
Malta	150
Palestinian Territories	139
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Botswana	117
Brunei	115
Armenia	114
Zimbabwe	107
Costa Rica	106
Niger	106
Tanzania	106
Maldives	102
Malawi	101
Namibia	99
Suriname	96
Afghanistan	94
Azerbaijan	94
Mauritania	94
Madagascar	91
Zambia	85
Martinique	75
Haiti	72
Uzbekistan	70
Gambia	67
Guatemala	66
French Polynesia	66
Angola	61
New Caledonia	61
Congo	59
Honduras	59
Rwanda	58
Burkina Faso	54
French Guiana	51
Nepal	51
Guadeloupe	48
Kyrgyzstan	48
Seychelles	48
Réunion	46
Jamaica	45
Mozambique	45
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Guyana	43
Cambodia	40
Benin	38
Comoros	38
Tajikistan	37
Gabon	34
Togo	32
Bermuda	29
Greenland	29
Monaco	27
El Salvador	27
Cape Verde	26
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Somalia	22
Burundi	21
Turkmenistan	19
Laos	16
Macau	16
Bahamas	14
Fiji	14
Papua New Guinea	14
Belize	13
Nicaragua	13
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#	1211	1301	1303	1305
Editorial Deadline	31 August 2012	2 November 2012	28 December 2012	1 March 2013
Advertisement Deadline 广告截止日期	7 September 2012	9 November 2012	4 January 2013	8 March 2013
Hardcopies	19 October 2012	21 December 2012	15 February 2013	19 April 2013
Online	2 November 2012	4 January 2013	1 March 2013	3 May 2013

Digital TV Exhibitions



3 - 5 November 2012

SCaT India 2012

South Asia's Largest Tradeshow of the Indian Cable & Satellite Television Industry
World Trade Centre, Cuffe Parade, Mumbai, India
www.scatmag.com/scatindia/



7 - 9 February 2013

CSTB 2013

Key professional media event covering all the cutting-edge formats and trends of TV and telecommunication: digital cable, satellite, free-to-air TV; IPTV; OTT TV; HDTV and 3DTV; mobile TV; TV content; multi-service networks; satellite communications, etc.
IEC "Crocus Expo", Pavilion 1 Moscow, Russia
www.cstb.ru

broadcasting technology and equipment expo in the Asia-Pacific region

Beijing International Exhibition Center, Beijing, China

Opening Hours:

21 - 22 March: 9:00am - 5:00pm

23 March: 9:00am - 4:30pm

www.ccbn.tv

13 - 16 April 2013

HKTDC Spring

Hongkong, China



8 - 11 April 2013

NAB Show 2013

Essential destination for broader-casting® professionals who share a passion for bringing content to life on any platform

Las Vegas Convention Center, USA

Opening Hours:

8 - 10 April: 9:00am - 6:00pm

11 April: 9:00am - 2:00pm

www.nabshow.com

4 - 6 June 2013

ANGA 2013

Cologne, Germany

18 - 21 June 2013

CommunicAsia 2013

CommunicAsia2013 will feature a comprehensive range of the latest products, technologies and solutions, and offer an enhanced platform for business networking and partnership opportunities.

Basement 2, Levels 1, 4 & 5 Marina Bay Sands, Singapore

Opening Hours:

18 - 20 June: 10:30am - 6:00pm

21 June: 10:30am - 4:00pm

www.communicasia.com

6 - 9 August 2013

ABTA 2013

São Paulo, Brasil



8 - 11 January 2013

2013 International CES

Manufacturers, developers and suppliers of consumer technology hardware, content, technology delivery systems and related products and services

Las Vegas Convention Center, Las Vegas Nevada, USA

Opening Hours:

8 January: 10:00am - 6:00pm

9 - 10 Jan.: 9:00am - 6:00pm

11 January: 9:00am - 4:00pm

www.cesweb.org

16 - 18 January 2013

Convergence India 2013

New Delhi, India

26 -28 February 2013

AndinaLink 2013

Cartagena de India, Colombia



19 - 21 March 2013

CABSAT 2013

Premier Broadcast & Satellite Platform in the ME & North Africa
Dubai International Convention and Exhibition Centre, Dubai, UAE

Opening Hours:

19 - 20 March: 10:00am - 6:00pm

21 March: 10:00am - 5:00pm

www.cabsat.com

19 - 21 March 2013

IPTV Forum

London, UK

21 - 23 March 2013

CCBN 2013

China Content Broadcasting Network Exhibition - largest

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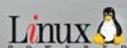
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