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Streaming

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INTERNATIONAL 05-06 2013

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ELDTEC

Jefferson Cruz Only Sells Dishes in Brazil...For Now...

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- ISDB-T
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- HD DVB-T+CONAX
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- Media playback: MP3,WMA,FLAC,JPG, JPEG,MPG,MPEG,VOB,AVI,TS,TRP,M2T, M2TS, MP4, MKV, MOV, DIVX *
- Up to 5000 channels

HD IP Set Top Box IV210

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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 mediaplayer
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TELE-audiovision International
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since 1981

Alexander Wiese
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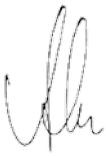
HQ in Munich, Germany

Dear Readers,

We are thrilled to be able to introduce more and more receivers here in TELE-audiovision that can receive all of the digital transmission methods. This covers not only satellite transponders but also terrestrial broadcasts and, just as important, the digital offerings available through the Internet. Only when a receiver can actually receive all of these methods, and when possible cable broadcasts as well, will it meet the expectations and requirements of the end users. They don't want to have to worry about how these TV pictures make it into their living room. The receiver should be able to take care of it all and receive everything.

But there's another reason why it's important for a receiver to be able to receive everything. More and more TVs are being integrated with built-in tuners although they are typically limited to one reception mode, for example, terrestrial reception or satellite reception. This opens up the opportunity for receiver manufacturers to build receivers that can do more than what TV manufacturers are offering. Receiver manufacturers can react much more quickly to new trends and produce appropriate receivers. A new TV will more than likely be purchased far less often than a receiver with all the latest features because it would be easier for end users to afford.

The future looks good for receiver manufacturers: with new features and functions always being added, and above all with the ability to receive all the different digital modes, end users will always be inclined to acquire the latest and greatest receivers.



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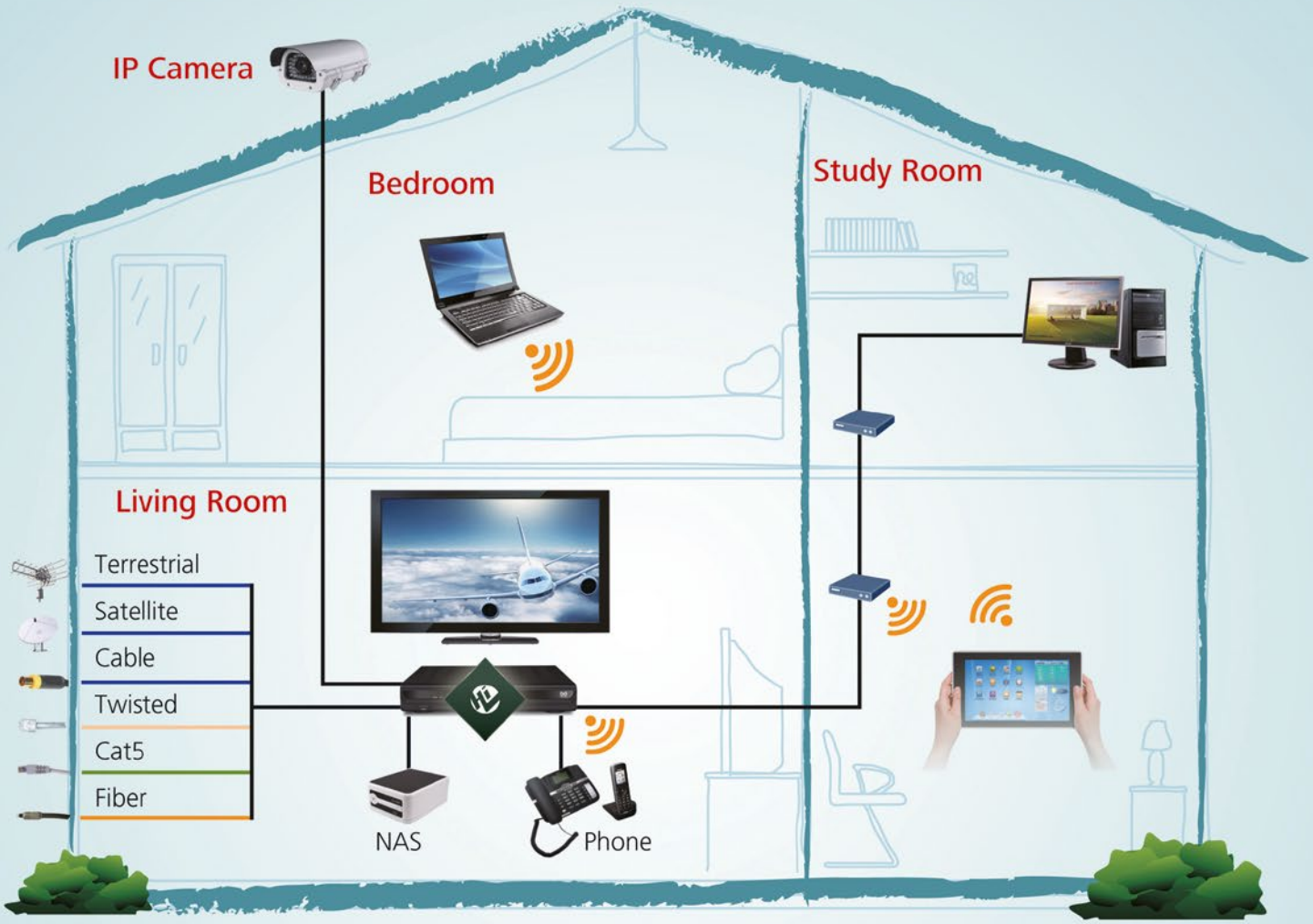
Hisilicon

Home network SoCs and Solutions



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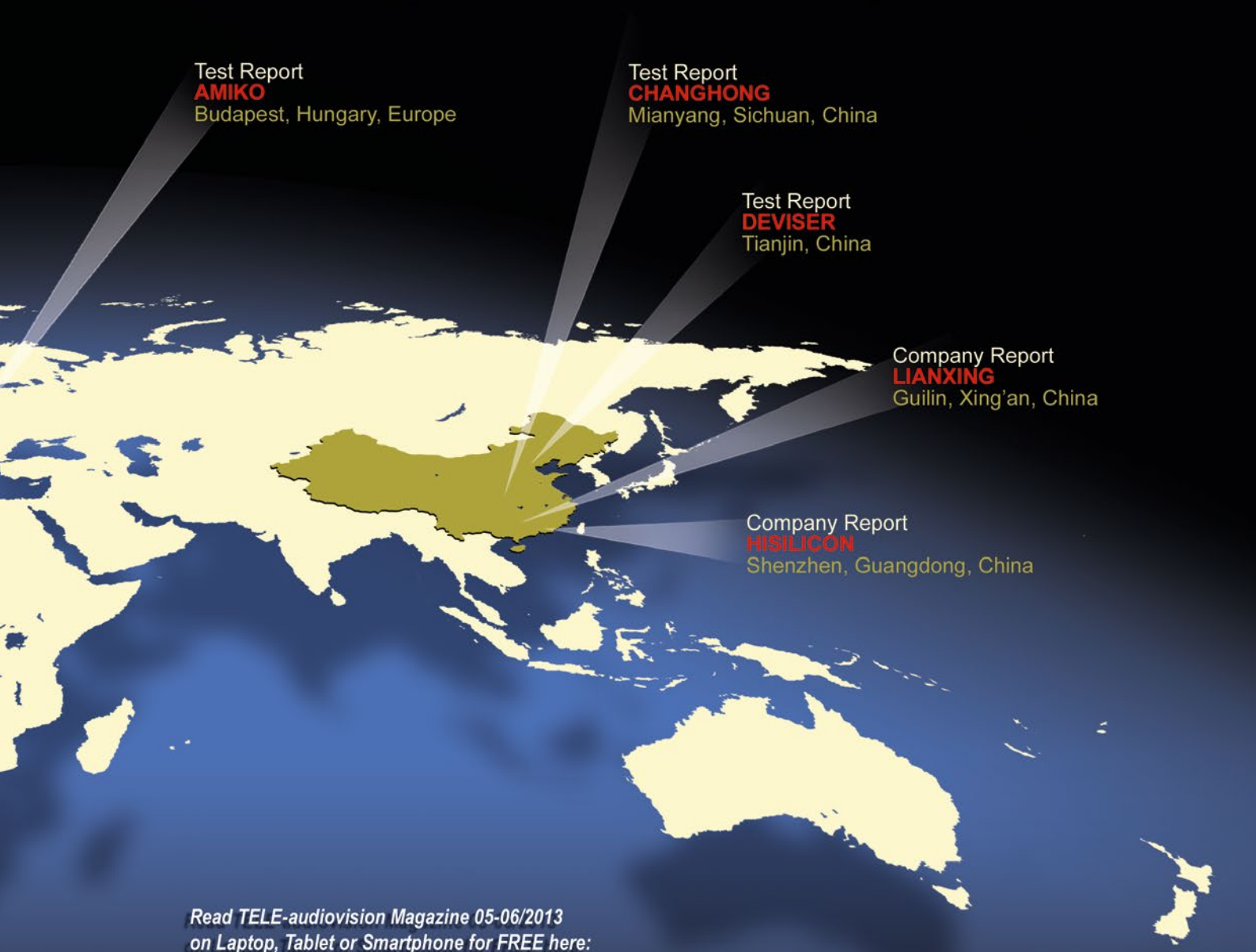

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***Company Reports** are written by TELE-audiovision's editorial staff on location*
***Test Reports** are written by TELE-audiovision's engineering staff located at different strategic reception points around the world*

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HSM1

Specifiction:

System: Basic on Android 4.0 ICS
OSD: 3D Graphical User Interface(Support OpenGL ES2.0)
DVBS/DVBS2 Demodulator
Mpeg2,Mpeg4(H.264) decoder ,fully DVBS&DVBS2 compliant
Storage 8000 TV and Radio programs
Video codec: H.264(MPEG4-AVC, VC-1), MPEG2, DviX3/4/5/6,Xvid
Audio codec: MP3, AAC, OGG, MPEG, MPEG Audio, Dolby AC-3
Container : MP4, AVI, MKV, FLV, MPEG TS
DLNA 1.5 compliant
Networking-WIFI AP,Ethernet

Feature:

Multi-Screen shifting (DLNA and AIRPLAY Alike)
OTT (Over the top)
Android Market
Web Browser
Twitter, Facebook,YouTube...
Motion sensing games
Powerful Media
OTA(over the air)
2.4G wireless interface
Support 3D and 3D convert 2D function

HS1J

- Video decode: MPEG2 SD, MPEG2 HD, H.264/AVC SD, H.264/AVC HD,MP4
- Interface: Single CIplus, SCART,dual USB2.0,LNB ,HDMI,RCA, Digital Audio, Ethernet
- Video Resolution: 480i/p, 576i/p, 720i/p, 1080i/p
- Function : Manual/Auto search, Edit Channel, EPG, Subtitle,TXT, PVR , RSS, Weather Forecast ,Youtube ,Game,32 FAV group, Media player;
- Language:English, French, German, Italian, Spanish, Portuguese, Russian, Turkish, Arabic, Polish etc

HS1C

- Pluggable tuner,support S2+S2/S2+T2/S2+C tuner
- Video decode:MPEG2 HD/SD H.264/AVC HD/SD
  Output interface:Single CI plus,,dual USB2.0, HDMI,SPDIF,YPbPr/SCART
  Features:
- youtube,google map,picasa,Weather Forecast, RSS,Fastscan search,PVR
- Support WIFI

HTAB

- Video decode :MPEG2 SD, MPEG2 HD, H.264/AVC SD, H.264/AVC HD
- Output Interface : HDMI ,SPDIF, USB,SCART
- Video Resolution : Full HD 1080P, 1080i
- DVB Function : Manual search, Edit Channel, EPG, Subtitle, TXT, PVR,Meadia player

HTJ4

SD MPEG-2/HD H.264 & fully DVB-T compliant,

- Output Interface: HDMI,Scart ,SPDIF
- Video Resolution : Full HD 1080P,
- Function : Manual search, Edit Channel, EPG,
- Subtitle, TXT, PVR
  Wifi(option):RSS Reader, Weather Forecast ,maps,
- Picasa,Google ,Youtube ,Youporn,Vimeo,etc

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AMIKO HD8840

- *receives all DVB signals, via satellite as well as terrestrial or cable*
- *automatically adjusts to the monitor's specifications*
- *comes with a CI slot and CA module*
- *suitable even for DXer, thanks to a relay output, automatic DiSEqC detection and blindscan function*
- *can be adjusted for longer than usual LNB cable length*

A Chameleon when it Comes to PVR Receivers

No matter how you receive digital TV, the Amiko HD 8840 can be the perfect match for your needs. How? It is a HD PVR receiver with two freely usable tuner slots. For this test Amiko provided us with not only one but two DVB-T/T2/C and DVB-S/S2 tuners, which allowed us to set up and evaluate the new HD 8840 based on a number of different configurations.

The receiver comes in a sleek all-black design and sports a perfectly readable VFD display on its front panel so that users are not only informed about the currently selected channel or the local time, but can also gather additional information about active recordings, for instance.

A total of seven buttons are located on the front panel as well and this way you are able to use the Amiko box without the remote control, if need be. A Conax card reader, a CI slot for any standard CA module and a USB 2.0 interface are all hidden behind a flap on the right side of the front panel.

Turning the Amiko HD 8840 around to have a closer look at the back panel, the two tuner slots will strike you right away. The tuners themselves come with a loop-through output and Amiko has also thought of an HDMI output, an optical and a digital audio output, as well as three RCA jacks for stereo audio and CVBS video. The range of connection options is completed by an additional USB 2.0 socket, an RJ45 network interface, an RS232 connection and – DXers, take note! – a switchable 0/12V output.

All this should meet virtually all requirements, and when we also discovered a mechanical power switch we almost felt like we had arrived in receiver heaven…

The remote control that is shipped with this receiver creates a pleasing first impression which seems to go a long way: Not only does it sit nicely in your hand, it also boasts clearly labelled buttons. The manual is in a league of its own too, with its excellent structure and easy to comprehend instructions and explanations.

Before you actually use the Amiko HD 8840 for the first time, it makes sense to take a moment and think about what you want or can receive in the first place. The two tuner slots can then be equipped accordingly, something that is truly child's play: All you need to do is loosen three screws on the receiver case to access the tuner modules, which in turn are attached with a single screw. Installing or exchanging tuners turned out to be plug & play at its best in our test, so even those of you who are all thumbs will experience no problems in that regard.

Like the rest of the Amiko receiver range the HD 8840 does not come with an installation assistant. Yet, this is by no means a bad thing, since the main menu impresses with its very user-friendly layout and provides all setup and configuration options right where you'd expect them. To be on the safe side, we recommend looking at the HDMI video output resolution first and selecting the mode that is perfect for your hardware. We did like the fact that this Amiko receiver offers an Auto mode (which adjusts the resolution to the currently received event) and a Native by TV option (which automatically chooses the optimum resolution your TV panel can handle). Alternatively, you can try to max out on quality and go for 1080p Full HD.

As far as the receiving end of the HD 8840 is concerned, the corresponding menu changes according to the tuners that are used in the available slots. In other words: If you use two DVB-S/S2 tuners you will not be offered any options for terrestrial or cable TV, while using a combination

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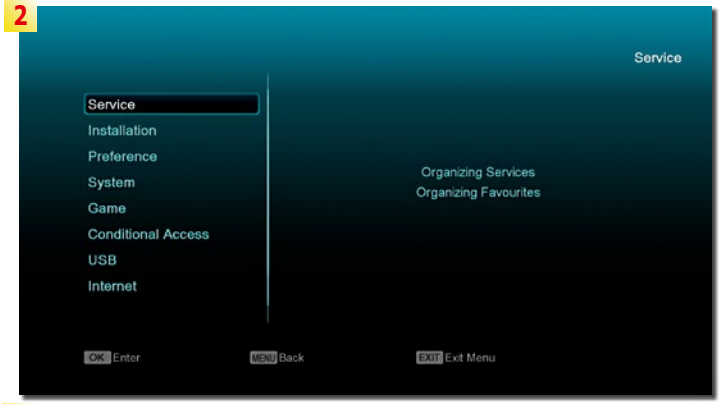

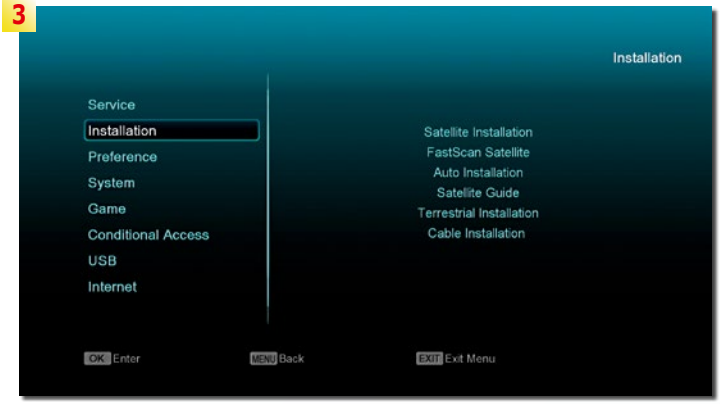

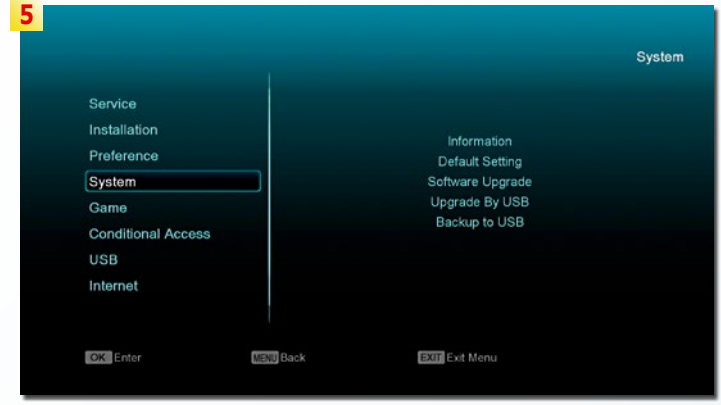

of DVB-T/T2/C and DVB-S/S2 tuners the receiver will not ask you to select tuner 1 or 2 for a satellite signal search – all DVB-T/T2/C settings will of course be available, on the other hand. In case you're wondering, we should emphasise once again that the terrestrial tuner cannot only deal with DVB-T and DVB-T2, but also with DVB-C signals.

Using the Amiko HD 8840 in satellite mode it comes with a pre-stored satellite list comprising a total of 28 entries. Even though we can confirm that these are reasonably up-to-date, the list is restricted to satellite positions covering Europe and we wouldn't mind if Amiko had made it a bit more extensive. But let's not sing the blues about that, since adding new satellite entries manually is a rather straightforward affair and thanks to the receiver's blind scan capabilities you don't even need to key in transponder data by hand.

For the sake of completeness we can state that the HD 8840 supports all DiSEqC protocols from 1.0 through to 1.3. The available 0/12V output doubles the number of satellite positions that can be addressed so that in theory this Amiko receiver can deal with up to 32 LNBs simultaneously, which is quite a treat.

Apart from the automatic channel search and a manual transponder search mode you may opt for the integrated blind scan function in order to breathe some life into your channel list. We tried it out on HOTBIRD 13° East and arrived at 1549 TV channels and 373 radio stations after less than six minutes. C band reception turned out to be equally trouble-free with the HD 8840 and with the help of manual LOF entry you can easily set up the box to deal with out-of-the-ordinary LOF values as well.

We appreciated the fact that the HD 8840 allows you to increase the supply voltage by 0.5V, which is helpful in case of long coax cable lengths. The Auto DiSEqC function is another plus: The receiver automatically detects which satellite is linked to the tuner via which DiSEqC port. The rather limited default satellite list is a major drawback here, since Auto DiSEqC will only detect positions that are showing on this list.

One of the signature features of the Amiko HD 8840 is called FastScan. As the name implies, it can be used to quickly scan all transponders of a total of eight pre-stored European pay TV providers broadcasting via satellite. We tried it out with Dutch provider CanalDigitaal and were impressed by the result: All entries of that pay TV operator appeared in next to no time, without having to individually scan a range of different transponders.

In DVB-T/T2 mode the range of settings and options is considerably smaller, but that's the nature of digital terrestrial television and no fault of the Amiko receiver. You may select your region, transmit +5V power via the inner wire of the attached coax cable in order to provide supply voltage to an external antenna amplifier, call up a frequency editor or activate

1. The HD 8840 can put out the HDMI video signal with a resolution of up to 1080p

2. Both the channel list and the favourites lists can be freely customised

3. Installation menu – the menu items vary according to the used tuners so that only relevant options are shown

4. User settings

5. System settings

6. The built-in video games turn boring commercial breaks into action-packed time

7. The HD 8840 comes with an integrated Conax card reader as well as a CI slot

8. An external USB storage medium turns this receiver into a fully-fledged PVR

9. Internet access? No problem thanks to the network interface of the HD 8840

10. Language options

11. PIN-based parental locks can be set for individual channels or for the receiver at large

12. Setting the clock

13. Many specific settings of the HD 8840 can be individually customised by the user

14. OSD settings

15. Two different standby modes are available for the Amiko HD 8840

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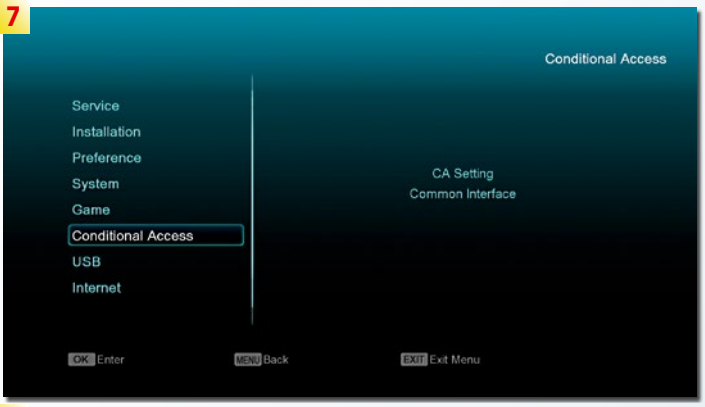

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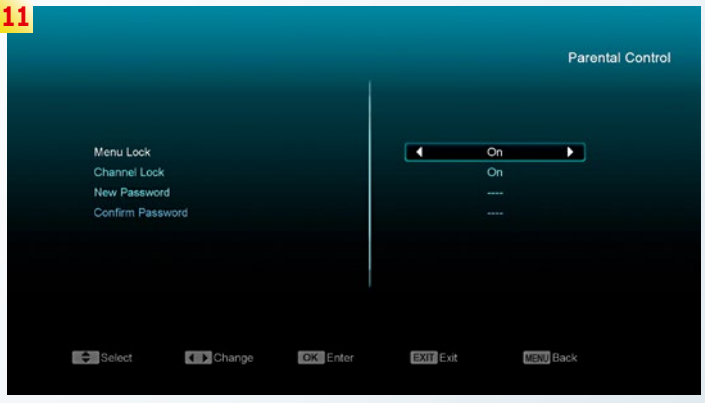

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16. Satellite settings

17. Transponder editor

18. Auto DiSEqC

19. The pre-stored satellite list is up-to-date, but not very extensive

20. Using FastScan it is possible to find and save all channels of a pay TV provider with a single touch of a button

21. DVB-T/T2 settings

22. DVB-T/T2 blind scan search

23. Software updates can be loaded via satellite, RS232 interface, USB or the Internet. Seen here: Software update via satellite or RS232 interface

24. Software update via USB

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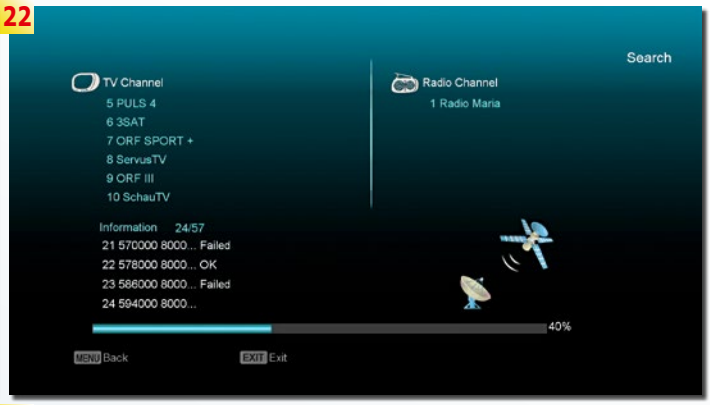

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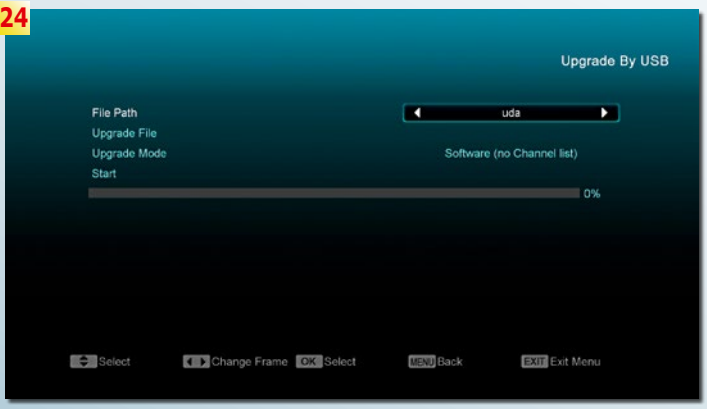

Hybrid OTT BOX+DVB-S2/T2/C

- 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, Flickretc 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

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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)

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a blind scan. In a matter of approximately four minutes the blind scan will find all available DVB-T and DVB-T2 channels, while the frequency editor allows you to focus on a particular frequency in the UHF or VHF bands.

In DVB-C mode too, you have to decide whether you prefer to enter frequencies manually or let the blind scan do that job. The following modulations are supported by the Amiko HD 8840: QAM8, QAM16, QAM32, QAM64, QAM128 and QAM256. This means no matter what DVB-C signal is fed, the receiver should happily accept it without further ado. Since we never take the manufacturer's word for anything we threw a range of different DVB-C signals at the box only to find out that each and any of them was processed flawlessly.

Once all settings of the Amiko HD 8840 are customised and tailored to the reception equipment's requirements it is finally time for some action. Amiko has always pleased us with an easy-to-use and intelligent user interface, and thankfully the HD 8840 is no exception.

A look at the info bar reveals information on the currently received TV or radio event, while the channel list let's you get the most out of your available offering: Channels can be restricted to individual satellites, providers, encryption systems, reception modes or initial letters.

Being a PVR receiver, it is possible with the HD 8840 to mark events for recording right in the EPG. But that was by no means the only aspect we liked about this receiver's PVR features: It is possible to record two channels (and by that we also means two HD channels) simultaneously, while a third channel can be watched live.

Channels that are not available due to active recordings

25. With the help of a very useful back-up function users can save all individual settings as well as the entire channel list onto an external storage medium

26. Overview of existing recordings

27. Network settings – DHCP is of course available for automatically connecting the receiver to a router or DSL/ cable modem

28. Weather forecast

29. RSS feed reader

30. The YouTube und YouPorn streaming services are available in the main menu

31. Google Maps with the Amiko HD 8840: map view, satellite view, terrain and hybrid are available… just like on your PC!

32. Google Maps search

33. Using the OSD keyboard you can easily look for a specific channel

34. The channel list can also be restricted based on encryption system used

35. Language options

36. Satellite and reception selection

37. OSD Teletext

38. The channel list can be edited and managed using a range of options

39. 32 favourites lists make sure your preferred channels are always at your fingertips

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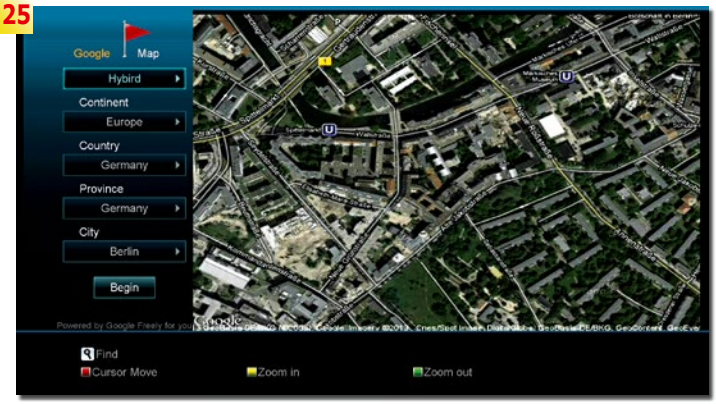

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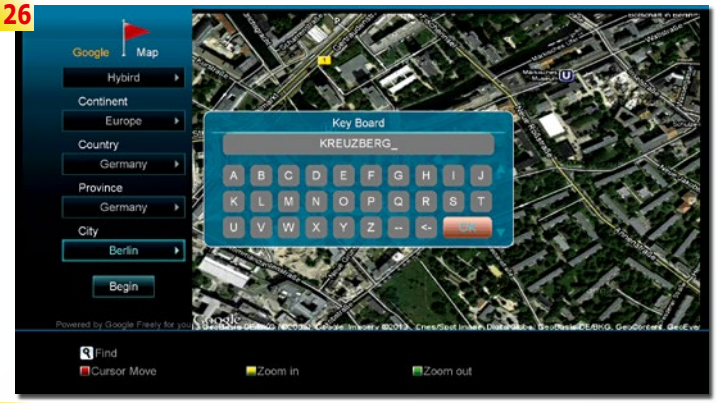

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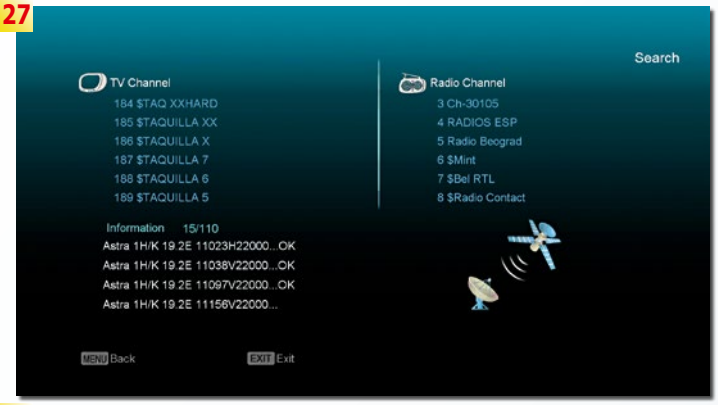

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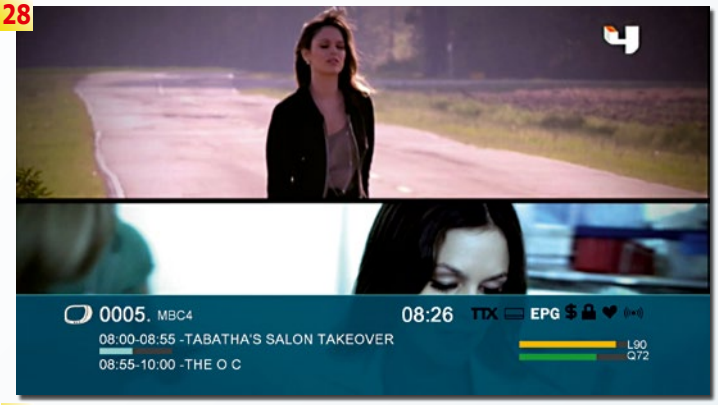

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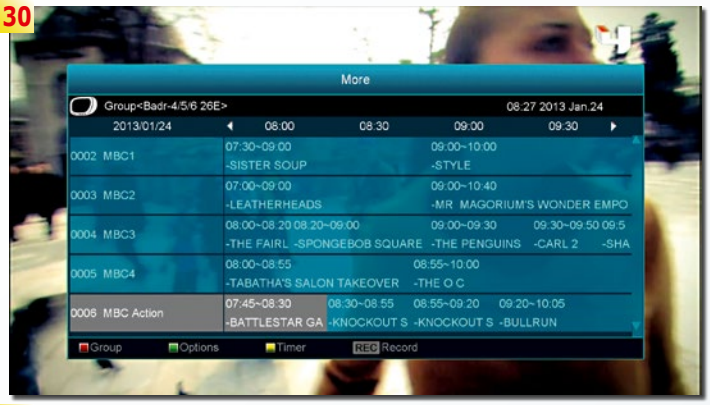

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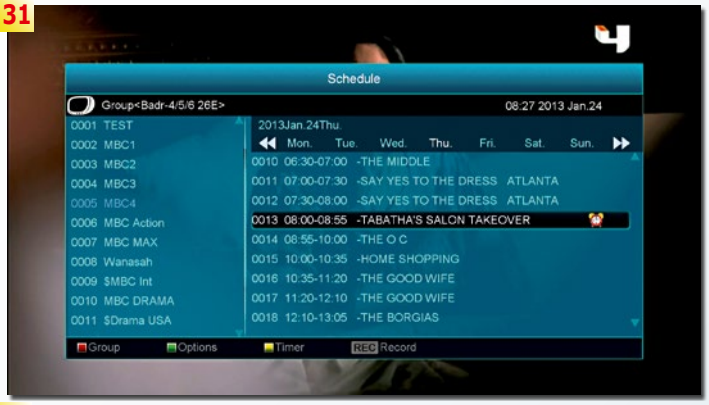

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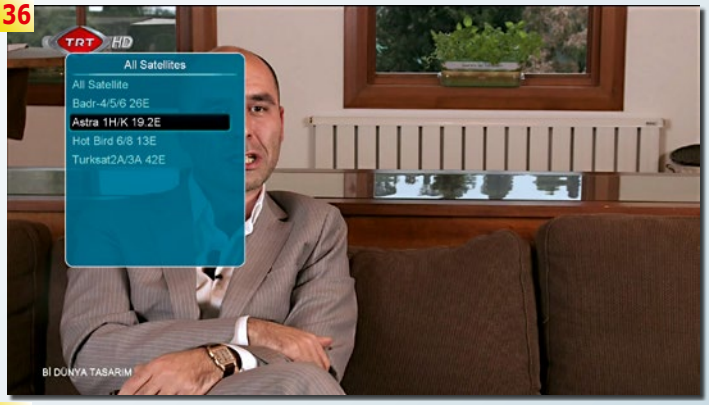

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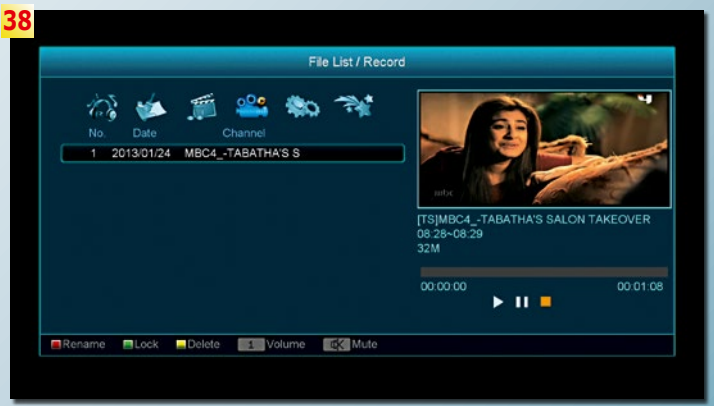

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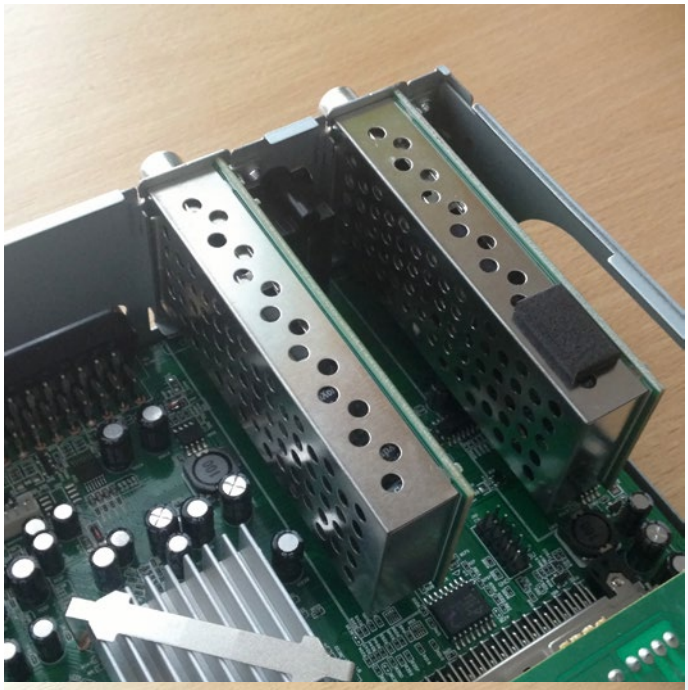
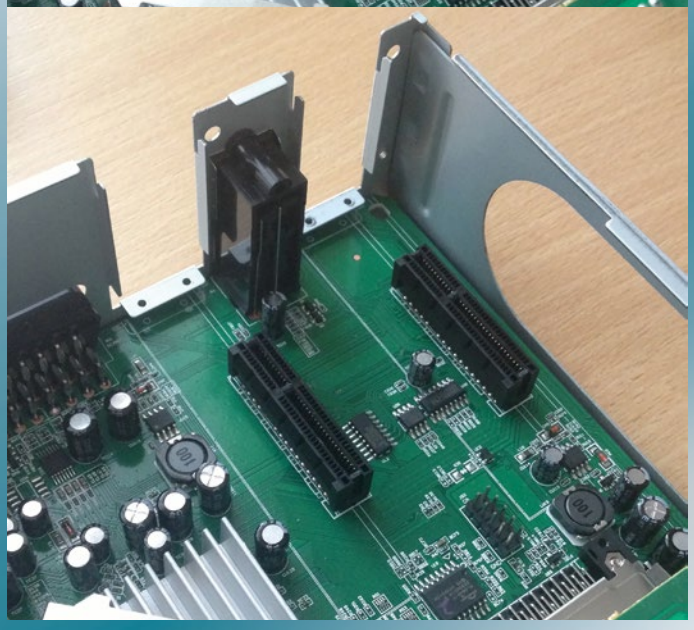




and – consequently – busy tuners are greyed out in the channel list so that you can see at a single glance which channel selection will be successful and which won't. While this may sound like an obvious feature we have to say that it is not as common as we would like it to be.

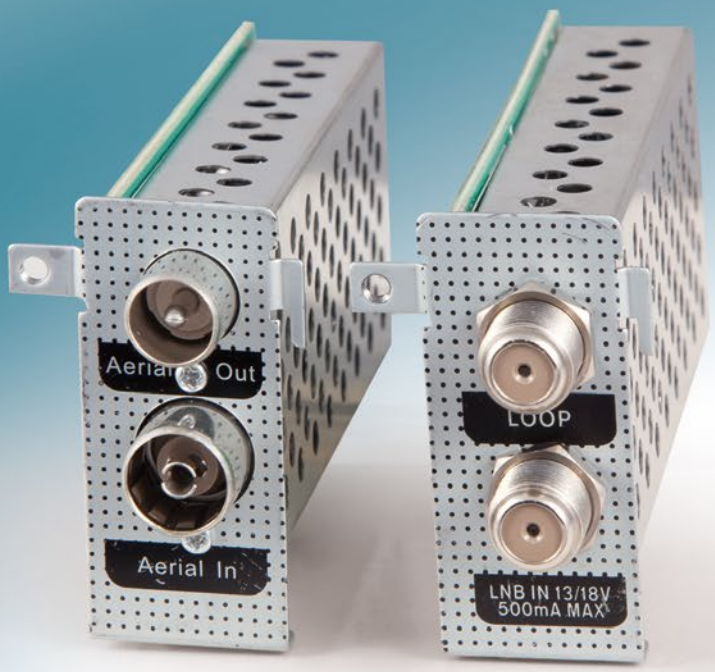
The one thing that does not meet with our approval is the limited timer memory that only allows a maximum of eight entries. A modern PVR receiver with twin tuner capacity requires more than that!

In everyday use the HD 8840 impresses with a huge range of practical features and functions, all of which are neatly implemented too. You get OSD teletext, dedicated buttons on the remote control for changing the output resolution or selecting a soundtrack, and so on.

All commands sent from the remote are received swiftly and executed without any noticeable lag, even when two HD recordings are taking place in the background. The powerful 400 MHz processor that is the heart and soul of this receiver deserves the credit for this, together with a 64 MB flash memory and 1 GB of DDR SDRAM which provides sufficient buffer memory.

But even with all those

Looking at the two tuners of the Amiko HD 8840. Tuners for DVB-S/S2 and DVB-T/T2/C are available, which can by used in any combination.



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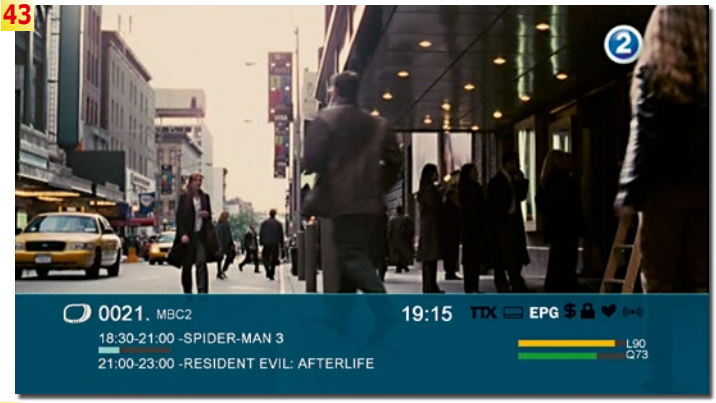

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40. Channels that cannot be watched during an active recording due to a busy tuner are greyed out

41. Image viewer

42. MP4 videos in HD quality are presented flawlessly by the HD 8840

43. Info bar with information on the current and next events

44. Extended EPG information

45. EPG view 1

46. EPG view 2

47. EPG view 3

48. In case two DVB-S/S2 tuners are installed, the receiver will hide all DVB-C and DVB-T/T2 options

49. In case two DVB-S/S2 tuners are installed, you will be asked to select a tuner for the channel search

50. Depending on the reception setup tuner 2 can either be fed with a separate LNB signal or the loop-though signal output from tuner 1

51. In case two DVB-T/T2/C tuners are installed, the receiver will hide all DVB-S/S2 options

52. In case two DVB-T/T2/C tuners are installed, the DVB-T/DVB-C search menu will also offer tuner 1 and tuner 2 for selection

53. DVB-C frequency selection: The HD 8840 supports the QAM8, QAM16, QAM32, QAM64, QAM128 and QAM 256 modulations

54. Our DVB-C test frequency was detected and locked flawlessly

55. The HD 8840 creates separate lists for DVB-S/S2, DVB-T/T2 and DVB-C channels so that all is kept nice and tidy

56. DVB-C reception with the HD 8840

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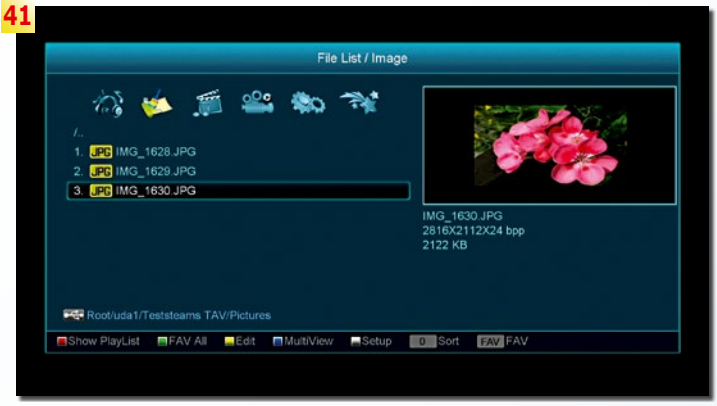

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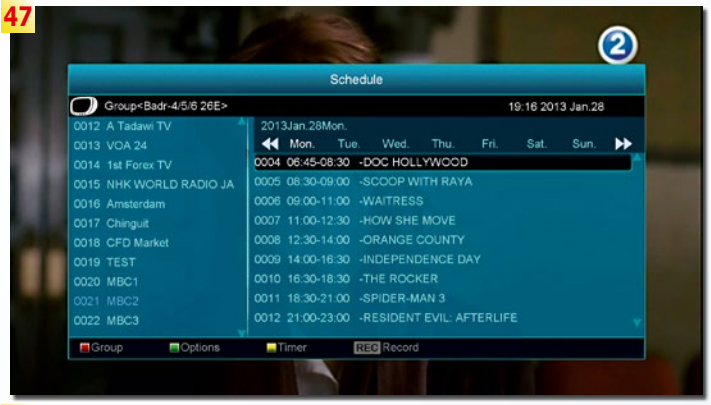

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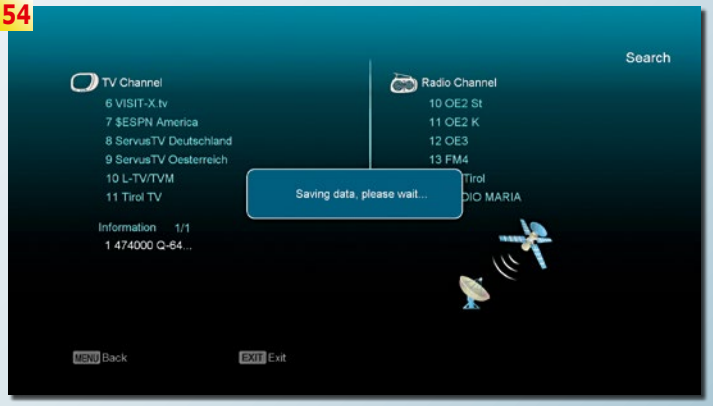

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flashy specifications, what use would a modern PVR receiver be without features such as network access, video player, MP3 jukebox or image viewer? In case you're starting to get worried now, we can easily put your mind to rest: The Amiko HD 8840 can provide the perfect soundtrack to any party thanks to MP3 playback (other audio file types, however, are not supported), and it will happily accept a whole bunch of popular video formats so that chances are the videos you have downloaded from the Internet will be supported by this receiver. We tried out a number of files and can confirm that the following types can be processed flawlessly: AVI, MPEG, MP4, TS, Flash, WMV, DivX and VOB.

Thanks to its integrated network interface the HD 8840 can easily access web-based content, and Amiko has even thrown in dedicated clients for the YouTube and YouPorn video streaming providers. We checked out both and could not detect any fault.

If you prefer a wireless home and want to do away with network cables altogether, you can also choose to connect your Amiko HD 8840 to a WiFi network. All you need for that is a USB WiFi adapter with Ralink RT5370 chipset. You should note, though, that this is optional equipment and does not come together with the receiver itself.

Among the network-based features we enjoyed the most is a weather forecast service and an RSS news feed, both of which are seamlessly integrated in the Amiko HD 8840's software. Even Google Earth can be accessed, but in most cases the distance between TV panel and viewer will be too large to thoroughly exploit that function.

In our presentation of all benefits of this receiver we should also mention an extremely low power consumption of less than 0.5 W in standby mode – something that will only gain in importance with the steadily rising cost of energy. Booting from this deep standby mode takes several seconds, on the other hand, so if you're of the impatient kind you might want to go for the so-called Fake Standby mode which will activate the box without any delay. Power consumption in this case, however, is almost the same in standby and during active use. As always, you can't have your cake and eat it too.

Speaking of impatience, the Amiko HD 8840 comes with three built-in video games that will help you kill time during those boring commercial breaks. Or you may take a quick look at the main menu and have the receiver check the Internet for a software update. With Amiko always striving to improve their products chances are you might be lucky!

EXPERT OPINION

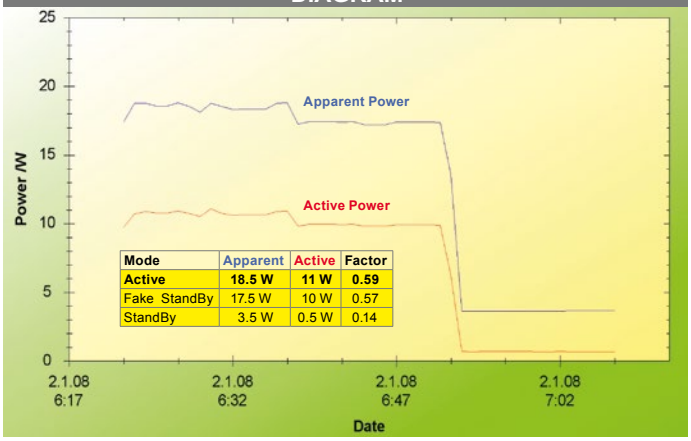
+ The Amiko HD 8840 is a sleek HD PVR receiver that is filled to the brim with useful features and functions. Thanks to its two freely usable tuner slots users can opt for the DVB mode(s) they require most. The user interface of the HD 8840 is extremely user-friendly and thought-through, meaning even beginners will get the knack of it in next to no time. The tuners boast a low threshold and in our test were perfectly able to receive and process weak signals as well. With its 1080p video output option this new Amiko receiver is definitely fit for the future.

– We noticed that only eight timer events could be stored in the timer memory, which simply isn't enough. The pre-stored satellite list could also use some more entries.

MORE ABOUT THIS COMPANY

www.TELE-audiovision.com/11/07/amiko

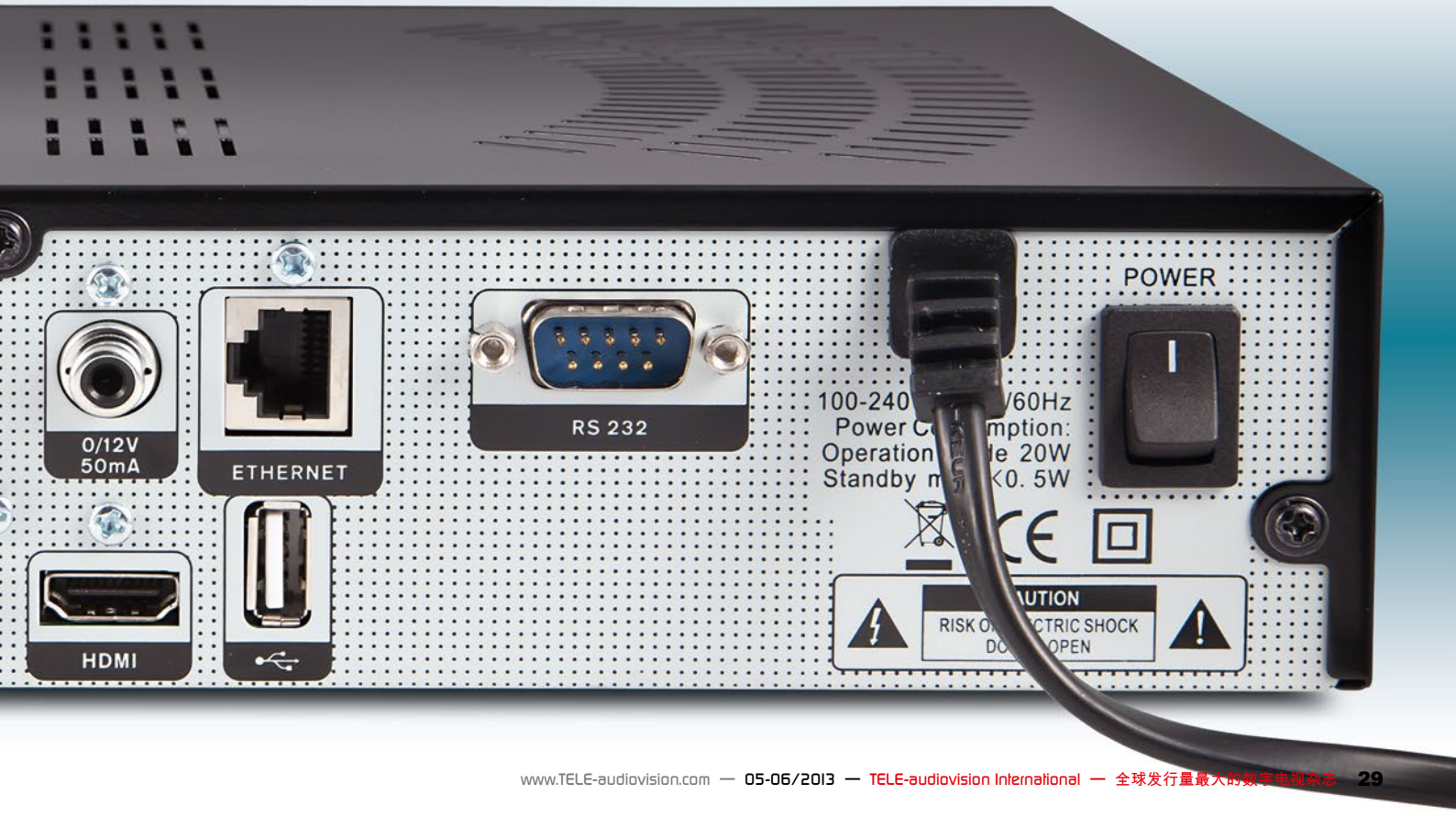
ENERGY DIAGRAM



Active use during the first 15 minutes, followed by 15 minutes of Fake Standby and 15 minutes of standard (deep) standby.

TECHNICAL DATA

Manufacturer	Karmacom Kft., Ganz Ábrahám street 5, Nagytarcsa 2142, Hungary
Contact	info@amikostb.com
Internet	www.amikostb.com
Model	HD 8840
Function	DVB-S / DVB-S2 & DVB-T / DVB-T2 / DVB-C Combo PVR Receiver with two user defineable Tunerslots
Input frequency DVB-S / DVB-S2	950 - 2150 MHz
Input frequency DVB-T / DVB-T2	VHF (170 - 230 MHz), UHF (470 - 860 MHz)
Input frequency DVB-C	47 - 862 MHz
Modulation DVB-T / DVB-T2	QPSK, QAM16, QAM64
Modulation DVB-C	QAM8, QAM16, QAM32, QAM64, QAM128, QAM256
Input symbol rate DVB-S / DVB-S2	2 - 45 Ms/s
Input symbol rate DVB-C	1.5 - 7 Ms/s
DiSEqC	1.0, 1.1, 1.2, 1.3
HDMI	yes
Digital Audio out	yes (optical and coaxial)
USB 2.0	yes (2x)
CI Slot	yes
Card Reader	yes (Conax)
Stereo Audio, CVBS	yes (3x RCA)
Ethernet	yes
RS232	yes
0/12V	yes
EPG	yes
HDTV	yes
PVR	yes
WebTV	no
OSD languages	English, German, Greek, Italian, Russian, Spanish, Ukrainian, Rumanian, Hungarian, Croatian, Bulgarian, Czech, Slovenian, Slovakian, Serbian, Hebrew, Portuguese, Dutch, Polish
Dimensions	30 x 22 x 6.3 cm
Weight	2 kg
Power Supply	100 - 240V AC 50/60 Hz



tVLINK HD
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completing the picture

Global Invacom tvLINK HD

- ***transmits genuine HDTV signals via coax cables***
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Operating modes of the tvLINK HD

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The tvLINK HD system from Global Invacom consists of a transmission and a reception unit, each of which measures 135x135x30 mm (or 40mm if we take into consideration a small bulge right in the centre above the RF sockets) and comes in a stylish all-black design.

The two 5.5V power units that are part of the overall package will work in all corners of the globe thanks to three mains adapters, and they accept any input voltage between 100 and 240 V with either 50 or 60 Hz. This goes to show that the global in Global Invacom is much more than advertising speech!

The transmitting end of the system features a total of two HDMI sockets on its back panel, one each for signal input and signal output. Added to that is the socket for attaching the external DC power pack as well as an USB interface on one side.

USB for HDMI transmission? Not quite, but it comes very handy to conveniently update the device's firmware with the help of an external USB storage medium.

The two female RF sockets are used to establish a connection between the transmission and the reception unit with a standard coax cable. The socket labelled 'Link' on each unit is required to connect the cable that leads to the other unit. The second socket is labelled 'RF' and can be used to transmit an RF signal using the very same cable. And then there is the socket for the external IR transmitter, whose diode should be placed near the digital TV receiver.

The tvLINK HD reception unit is more or less identical to the transmission unit, apart from the fact that it only comes with a single HDMI socket for signal output. Once again, its external IR receiver should be posi-

AMIKO

MINI HD

Full HD Compact Digital Satellite Receiver & Media Player with Card Reader & Ethernet Connection

OTT CONTENT

2x HI-SPEED USB

STICK ON TV

BLIND SCAN

MAIN FEATURES

- **One card reader** slot (Conax Embedded)
- Compact design
- Satellite Blind-Scan function
- Internal & **External Infra-Red RCU Sensors**
- Easily mountable on TV or wall (sticker included in the package)
- **Two High Speed USB 2.0 connections**
- **Media Playback** (MKV, AVI, MPG, MP3, MP4, JPG and more...)
- Ethernet Connection & **USB WiFi** support (Ralink RT5370 chip)
- **YouTube videos**, Google Maps*
- **RSS Reader** & **Weather Forecast** functions*
- **TimeShift** - Stop Live TV! (USB Storage device required)
- Program and Channel information transfer from receiver to receiver using the USB backup function
- Multi Satellite - DiSEqC 1.0 / 1.1 / **1.2** & **USALS**
- **Full HD (1080p) Output via HDMI**
- Easy software upgrades through USB or Network
- External 12V DC power supply
- Low power consumption in Stand-By mode

YouTube VIDEOS

RSS READER

weather forecast

2 years warranty

MULTIMEDIA PLAYBACK**

AVI MKV MPG MP3 MP4 TS

audio and video codecs are subjects to availability**

Size DOES Matter!

WiFi

DC 12V

Full HD 1080

S2 SATELLITE

Ethernet or WiFi connection required *

tioned in a way that allows pointing the remote control towards it without having to dislocate your arm.

Thanks to a very useful LED on each of the two units it is easy to check the operating mode of the tvLINK HD at any time. If the LED flashes there is no connection or the transmission unit does not receive any AV signal. If it lights up permanently an AV signal is being transmitted and is ready for use at the reception unit.

Shortly after we had installed the tvLINK HD system and turned on power the two units began to establish a connection via roughly 25 meters of coax cable, and after only a few moments the blue LEDs indicated that all went according to plan. When we then provided the signal of our satellite receiver to the HDMI input of the transmission unit it was sent immediately to the reception unit and from there it was passed on to the LCD panel in our editorial office.

Since we never take our job lightly, even the first task we threw at the tvLINK HD was one of the toughest: We wanted nothing less then flawless transmission of a 1080p Full HD signal – and that's what we got! Not for a single second did the system appear to be struggling, and obviously this means all available resolutions such as 1080p 60Hz, 1080p 50 Hz, 1080p 24 Hz, 1080i 60 Hz, 1080i 50 Hz, 720p 60 Hz, 720p 50 Hz, 576p 50 Hz, 480p 60 Hz and 480i 60 Hz will work in the blink of eye. We know there will be readers out there looking for a drawback and many will like to know what happens to HDCP (read: copy-protected) content. We can put your mind at ease: The tvLINK HD will happily support HDCP.

We looked long and hard at the output signal provided by the reception unit and were unable to notice any difference at all between the original video and the video transmitted via the tvLINK HD system.

In order for all this to work as brilliantly as it does, a considerable amount of processing power is required in the transmitting unit for compressing the original format into H.264/MPEG4-AVC, resulting in a minor time lag.

In everyday use, however, this is irrelevant and the digital receiver will also react to remote commands with hardly noticeable delay.

On the other hand, those of you using the system in connection with your games consoles will find that the controller in your hands might not react as swiftly as you are used to.

Speaking of remote controls and controllers: The IR transmitter and IR receiver of the tvLINK HD system use the frequency range between 34 kHz and 38 kHz which guarantees compatibility with virtually all standard remote controls. We have a number of different remotes lying around in our test lab, and no matter which one we tried they all worked perfectly in combination with the tvLINK HD.

In contrast to HDMI signal transmissions via WiFi maximum range is not such a major issue with the tvLINK HD system. We used almost 100 meters of coax cable with reasonable quality in our office and did not experience any interference or dropouts. Signal switches with two outputs also worked beautifully.

One feature we cannot praise highly enough is the USB socket that is built into both the transmission and the reception units. It allows users to load new firmware right at the devices to make sure added features and improved functions are made available as conveniently

WS-6936

SATLINK
Digital Satellite Meter

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 bandwith：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

SATLINK

SATLINK TECHNOLOGY CO., LIMITED
Add: Jiangnan High-Tech, Licheng District, QuanZhou, Fujian, China
Tel: +86-595-28106302 Fax: +86-595-28106253
E-mail: dp02@baotong.cc
Website: http://www.sat-link.com.cn www.hktdc.com/em/fjbaotong

and as quickly as possible. At the time of our product test revised firmware was not yet available, so we were not able to give it a try ourselves.

A final word regarding software updates: Global Invacom has integrated a safety net into its tvLINK HD system, which can be activated at any time. Basically, it consists of an automatic reset function which loads the default software version that was factory-installed.

So no matter which new firmware you try out via the USB port, a reset will always bring you right back to the original firmware. And in case an update goes wrong for whatever reason an inoperative tvLINK HD system can always be brought back to live at the touch of a button.

All things considered, we were impressed with the tvLINK HD from Global Invacom. With its excellent video quality even in 1080p and thanks to easy installation you need not be afraid of TV signal distribution to several rooms any longer.

Using existing coax cables dating from the analog age reactivates aged infrastructure for state-of-the-art high-definition television. In addition, regular UHF and VHF signals can be distributed alongside the tvLINK HD signal so that not only shiny HD channels are available, but all analog and digital terrestrial signals as well.

EXPERT
OPINION

+ No-worries and fully automatic installation. Existing coax cables can be used and all signals in the VHF and UHF bands are carried alongside the tvLINK HD signal. Excellent video quality, flawless forwarding of IR signals from the remote control and firmware updates right via the USB port all add up to create a truly spotless impression.

– None

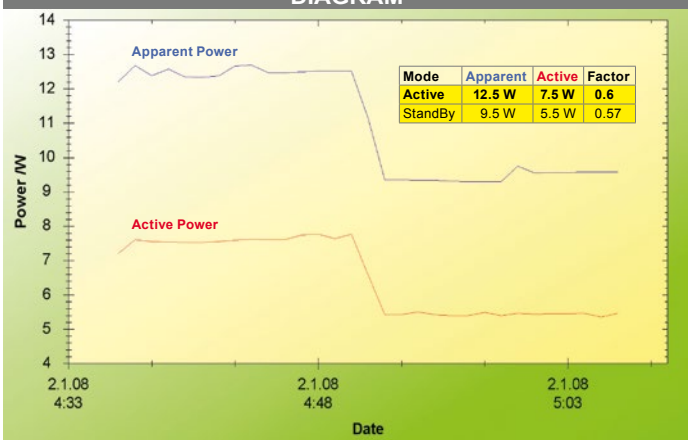
TECHNICAL
DATA

Manufacturer	Global Invacom Ltd., Winterdale Manor Southminster Road, Althorne, Essex CM3 6BX, United Kingdom
Email	sales@globalinvacom.com
Internet	www.globalinvacom.com
Model	tvLINK HD
Function	HDMI Transmitter & Receiver via coaxial cable
HD Video Protocol	HDMI 1.3
HD Video Encryption Protocol	HDCP 1.2
Power Supply	5.5V
Dimensions	135 x 145 x 30 mm (max. 40 mm)
Operating Temperature	+5°C to +40°C
Operating Humidity	15% to 85% RH
Supported HD Resolutions	1080p 60/50/24 Hz, 1080i 60/50 Hz, 720p 60/50 Hz, 576p 50 Hz, 480p 60 Hz, 480i 60 Hz
Supported Audio Formats	Stereo PCM
Compression Format	Video: H.264/MPEG4-AVC Audio: MPEG2

MORE ABOUT THIS COMPANY
www.TELE-audiovision.com/10/09/globalinvacom

GlobalInvacom Expands Product Palette

ENERGY
DIAGRAM



Energy: 15 minutes of active use, followed by 15 minutes in standby mode

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E-Mail:sales@rogetech.com

Changhong Smartcenter

- ***Integrates DVB-C with Multimedia content***
- ***Many, many Apps can be loaded thanks to the Android operating system***
- ***Integration in your local network***
- ***Hard drive for recording multimedia content can be installed***
- ***Quick reaction to remote control commands***

DVB-C Receiver, Media Player and Android Apps – All in One Box!

At 28 x 19 x 5 cm the Changhong Smartcenter isn't all that small, but it takes the place of a digital receiver as well as a Media Player and, thanks to the incorporation of Google's Android operating system, Apps can be run directly through the Smartcenter. The Smartcenter, weighing in at only 900gm, sports only one single status LED on the front panel. But when you look at the rear panel, your pulse rate will increase.

In addition to an "F" type signal input and the associated signal output, there's a network connection that provides the link to the Internet and/or a local network. Video signals are sent to a TV or projection system in HD quality from the HDMI output while the S/PDIF output in connection with a Dolby Digital system provides high-quality audio.

The manufacturer also supplied three RCA jacks for composite video and stereo audio outputs and, much to our satisfaction, there were another set of three RCA jacks for inputting a composite video/stereo audio signal. Thanks to two USB 2.0 ports, external storage devices can be connected to the Smartcenter.

Changhong added a third USB port as well as an SD card reader on the right side of the box. Right next to that is a CI slot that can handle all the standard modules. If a WiFi network is available, the Smartcenter can also link to that thereby creating a wireless network connection.

Power to the Smartcenter is supplied by an external

1. Changhong Smartcenter Logo
2. Changhong Smartcenter's Main Menu

Intelsat / GVF Type Approved

Ka-Band Antenna System

VSAT Antenna System

DTH Antenna System

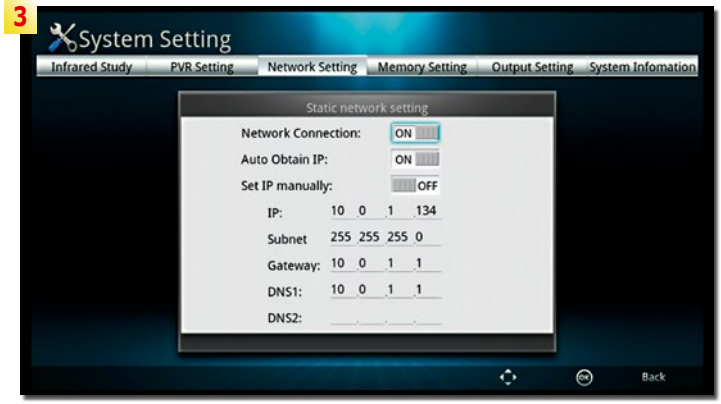
http://www.azureshine.com.tw

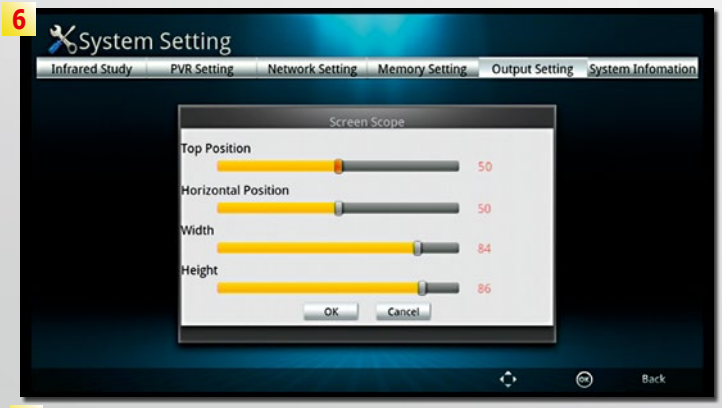
AZURE✦SHINE

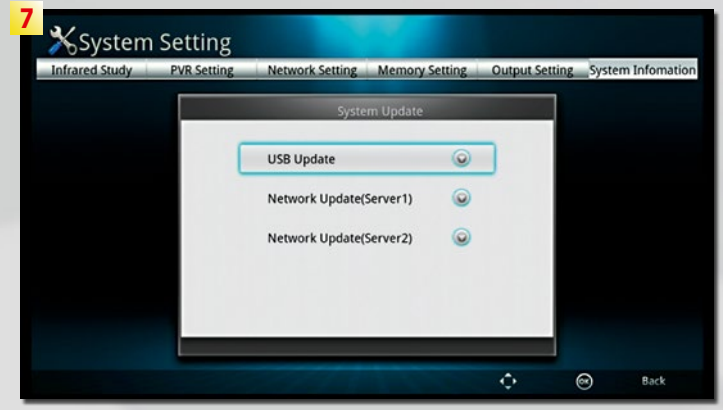
AZURE SHINE INTERNATIONAL INC.

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

compliant RoHS







12V power supply; this allows the box to be used anywhere in the world.

It gets even more exciting when you have a look at the underside of the Smartcenter; behind an easy to open flap you'll find an integrated S-ATA port. Here you can insert a 2.5" S-ATA hard drive so that the Smartcenter can have direct access to an internal hard drive.

The included remote control left us with a very positive impression. Its comfortable rubber buttons are easy to use and, just like the entire Changhong Smartcenter, reflects high-quality workmanship.

The Changhong Smartcenter does not utilize an Installation Assistant; the user ends up in the Main Menu when the box is turned on for the first time. From here you have access to all of the box's functions.

The Main Menu is divided into a number of sub menus: Media Player, Internet Browser, App Store, IP Camera, Digital TV, Video Input, File Management, App Management as well as System Settings.

A look at the system settings reveals all the different access capabilities for the user. The video signal is made available in 720p format and this setting can't be changed.

The Changhong Smartcenter comes with 1.75GB of free flash memory for the installation of Apps and for storage of clipboard data. The Smartcenter's software can be updated via the Internet or through a USB storage device.

3. Network Settings
4. There's plenty of freely accessible Flash memory
5. Video output settings
6. Picture position settings
7. The Smartcenter's software can be updated via the network or from a USB storage device
8. Changhong Smartcenter's media player
9. Perfect playback of audio data in various formats
10. Video playback
11. DiVx test video
12. Flash test video
13. HD test video
14. MOV test video
15. MP4 HD test video
16. TS test video
17. The practical thumbnail view of pictures makes it easy to find what you're looking for

Media Player

For video and audio, the integrated media player supports nearly all of the formats that we put to the test. For audio files it can play back AAC, MP3 and WMA but was unfortunately unable to handle MP4. For video files the formats AVCHD, AVI, DivX, Flash, MOV, MP4, MPEG, TS and WMV can all be displayed and it didn't matter if it was SD or HD quality.

We especially liked that the Channghong Smartcenter could start a video playback without any noticeable delay; here in particular with HD videos it can be seen that the free 1.6 GB RAM was well worth the investment.

To top things off, the media center also comes with a picture viewer. Thanks to the thumbnail function, you can get an overview of all the available content before actually presenting them in full-screen mode.

Internet Browser

The Internet Browser integrated into the Smartcenter is adorned with the well-known Microsoft Internet Explorer symbol but in reality it originates from Google; it's a scaled down version of Chrome specially designed for use in the Smartcenter.

Thanks to the practical bookmark function and the speedy display of web pag-

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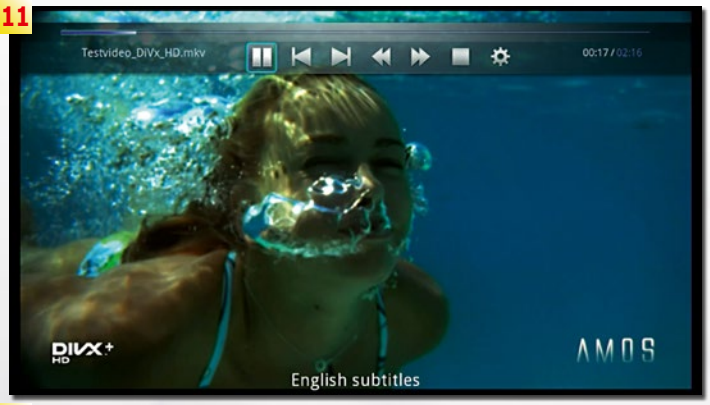

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es, surfing with the Changhong Smartcenter is actually enjoyable even though there's a lack of Flash support.

Because of the Android system operating in the background, there are still quite a few possibilities regarding the Internet, such as the full support of Google accounts that would let the user not only access their personal data but also lets them view emails, calendars, contacts, even bookmarks directly through the box.

We're looking forward to the day when Changhong integrates these features into their Smartcenter; it would make it that much more interesting for customers.

File Management

File Management lets the user access all the files in the local flash memory, on the internal hard drive, on USB storage devices, SD cards as well as any files available via a network connection. Thanks to the Windows Network support, music, videos and pictures can be easily accessed from a PC and made available for the Changhong Smartcenter.

If you have a Linux PC, you'll be happy with the integrated NFS function since you can also enjoy file sharing with it.

In our tests we were able to set up a network connection with our Windows 7 PC as well as with a small Linux netbook.

IP Camera

Behind this Main Menu selection you'll find the ability to display the signal of a security camera directly on the Changhong Smartcenter. You merely have to enter in the IP address of the camera and just like that you'll have access to the camera's images.

We found this to be a very practical function; we were able to view the parking space in front of our building from a desk chair in the office. The applications of this function are essentially limitless; you can use it to watch over a sleeping child in another room, check out your backyard or even keep an eye on the inside of your weekend cabin via an Internet connection.

Video Input

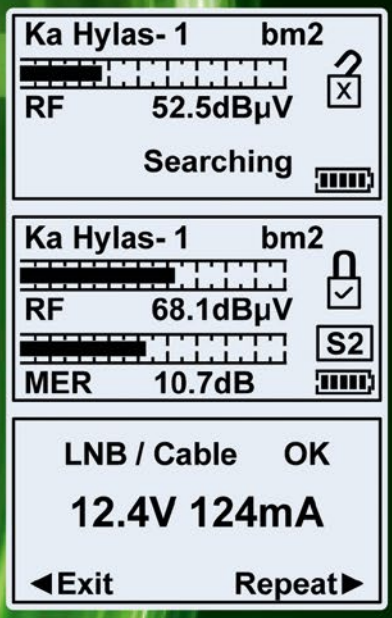
Analog TV signals via CVBS are fading more and more into history thanks

HORIZON

For a reliable solution!

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.

Introducing the new HD-S2A!

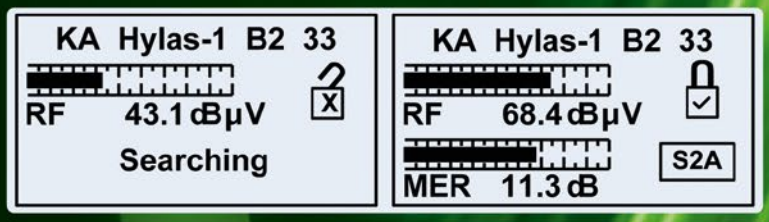


The HD-S2 satellite meter features all the functions you will need to perform DVB-S and DVB-S2 satellite installations.

The HD-S2A developed for Avanti Broadband features tone functions for Hughes Ka-Band ODU polarisation selection.

The cost effective Nano S2A

The Nano-S2A satellite meter is the ideal cost effective solution for Hylas-1 and Hylas-2 VSAT installations. The Nano-S2A features tone generation for Hughes ODU polarisation control along with a lock state indicator that supports DVB-S2 advanced modulation schemes. The signal level and quality indicators make this the easiest meter to use ever. One button does it all. The Nano-S2A can be receiver or battery powered.



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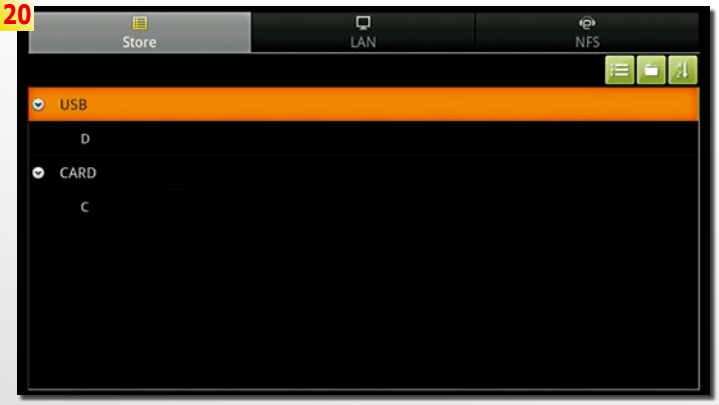

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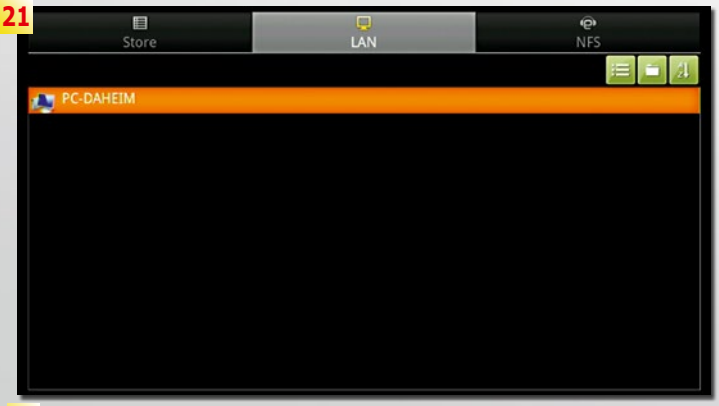

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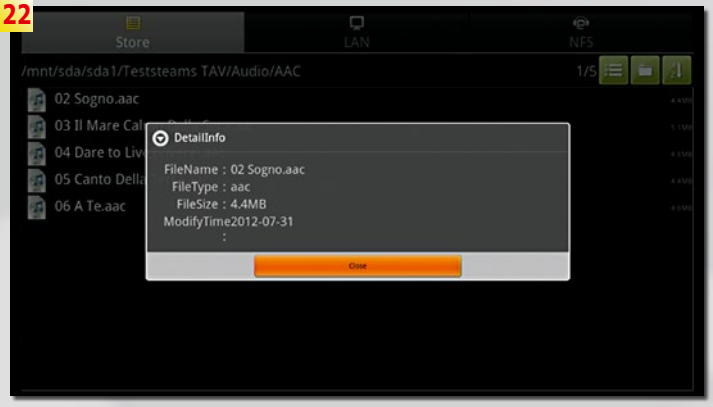

to the HD boom. But this didn't stop Changhong from incorporating an input for these kinds of signals in their Smartcenter so that they can be displayed. This lets you connect older devices (such as a VHS video recorder, etc.) and even a non-network capable security camera.

The recording and subsequent digitalization of analog signals is unfortunately not possible.

App Store & App Management

It doesn't matter if it's calendars, online radio, media sources, games or videos, the possibilities with the integrated Google App Store are essentially limitless and allow the user to find the right App for nearly any application. Since the box does not provide complete access to the Google Play Store, not all of the Android Apps are available.

On the other hand, the App Management section has shown itself to be quite practical. It can be used to administer all of the installed Apps, uninstall Apps as well as add them to the Quick Start Guide.

This feature can be accessed directly from the Main Menu with the push of one button.

The Apps downloaded from the store can be distributed individually by the user on multiple screens, so they can be easily retrieved and summarized by areas or importance. Using the left or right buttons to quickly switch between the different views is possible.

Digital TV

Last but certainly not least, we'd like to tell you about one of the primary functions of the Changhong Smartcenter: digital TV reception. And here we're talking about a fully-featured DVB-C receiver.

After accessing this function for the first time, a channel scan is immediately called for. For the scan you can choose between Automatic, Manual and All Frequencies. With an automatic scan the box recognizes all of the reception parameters on its own after entering in the desired frequency. With a manual scan the parameters can be individually entered.

The entire scan was completed in just about six minutes and correctly identified all of the active frequencies in our local cable network.

All in all, the box's digital TV reception proved to be what you'd expect from a typical receiver; channel switching times of around one second were good.

We liked the operation of the digital receiver; the EPG that is integrated directly in the channel list is quite practical and lets you get an overview of the current and

18. The integrated web browser is perfect for surfing the Internet

19. Favorites overview

20. Access to USB storage devices and the internal Flash memory

21. Access to network hard drives

22. AAC audio data is processed without any problems

23. Changhong Smartcenter's App store

24. The calendar App can be loaded onto the Smartcenter with the push of just one button

25. Download of an App via the Internet

26. Screensaver

27. Even games are available in the App store

28. A total of 18 Apps can be accessed via the two App Quick Start pages

29. Overview of all the installed Apps

30. The box takes you to the channel scan page after starting digital TV reception for the first time

31. Main Menu for digital TV reception

32. Settings capabilities for digital TV reception

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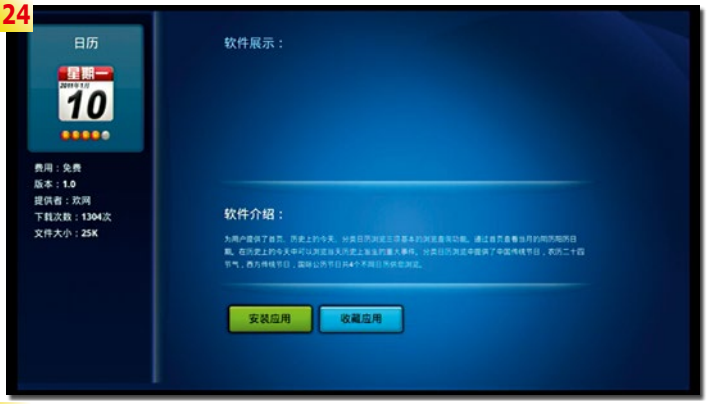

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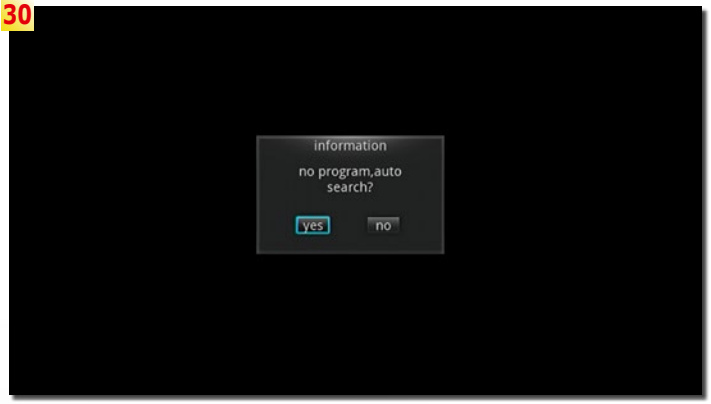

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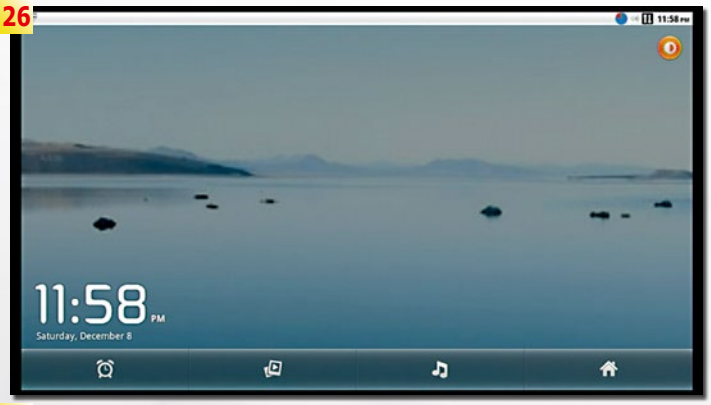

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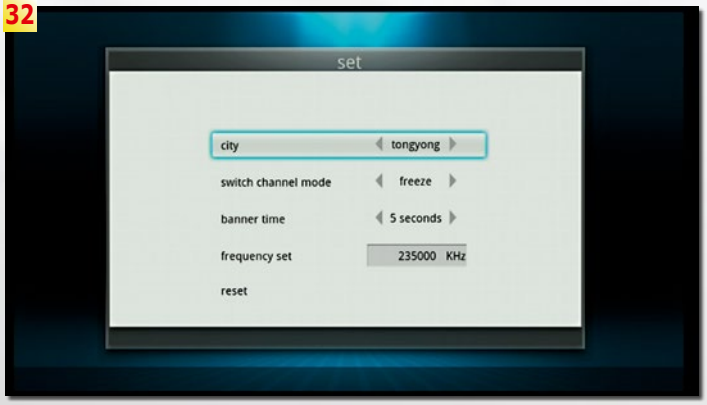

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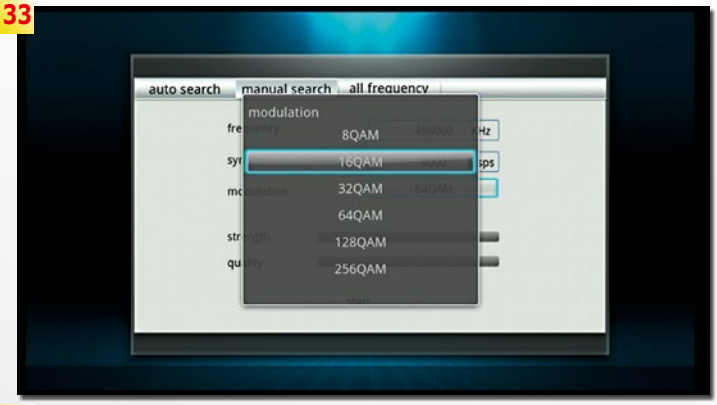
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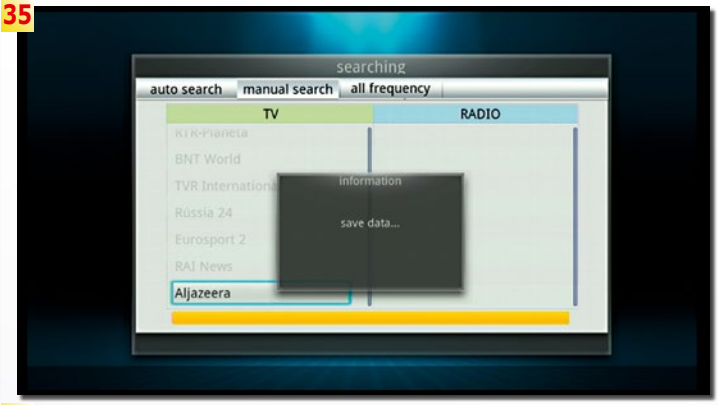
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RAI News
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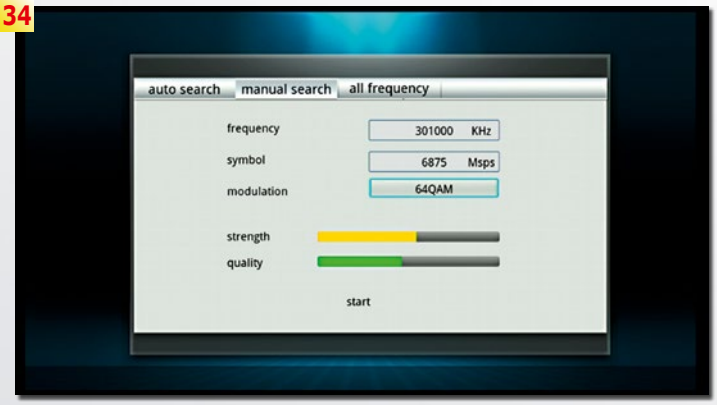
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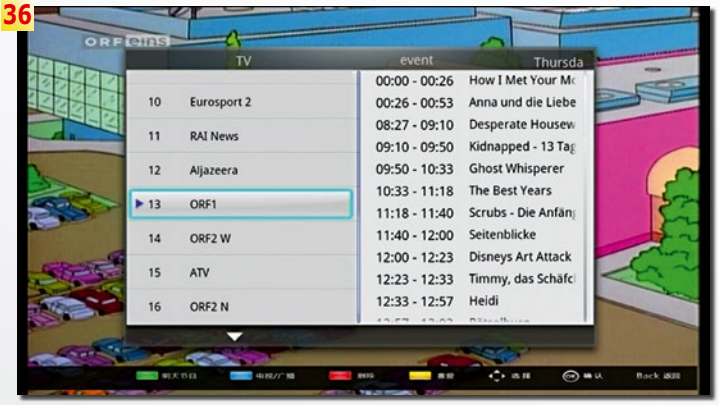
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10 Eurosport 2
11 RAI News
12 Aljazeera
13 ORF1
14 ORF2 W
15 ATV
16 ORF2 N
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00:26 - 00:53 Anna und die Liebe
08:27 - 09:10 Desperate Housew
09:10 - 09:50 Kidnapped - 13 Tag
09:50 - 10:33 Ghost Whisperer
10:33 - 11:18 The Best Years
11:18 - 11:40 Scrubs - Die Anfän
11:40 - 12:00 Seitenblicke
12:00 - 12:23 Disneys Art Attack
12:23 - 12:33 Timmy, das Schäfc
12:33 - 12:57 Heidi

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RB78A
主页
确定
返回
菜单
信息
本地
百科
游戏
电视
视频
音乐
光纤接口
遥控输出
信号输出
音频输出
视频输入
HDMI

upcoming programs before you even change the channel. As is the case with almost every other digital receiver, the colored function buttons on the remote control can be used to work with the channel list.

Thanks to the support of all the current DVB-C QAM modulations (8, 16, 32, 64, 128, 256 QAM), the Smartcenter can be used anywhere and therefore should be able to handle any cable signal. The same is true for the receivable frequency range that covers 107 to 858 MHz.

And let's not forget the available CI interface that allows encrypted content to be displayed as long as the user has a valid Smartcard.

Putting it All Together

The Changhong Smartcenter is an excellent combination of digital receiver, media player and platform for Android Apps. The box's workmanship is outstanding and the software did not have any problems during our tests.

Since our test unit was a preproduction sample, we did come across an error here and there with the translation of the OSD as well as a few software glitches but we did not rate this very strongly at all. We thoroughly enjoyed putting the Changhong Smartcenter to the test and we wish nothing but success for this innovative product.

We can't wait to see updated and improved software from the manufacturer in the coming weeks and months!

33. The Changhong Smartcenter supports all of the current QAM modulations

34. Manual channel scan

35. All of the channels on our local cable network were recognized and processed without any problems

36. The EPG display right next to the channel list is innovative and very practical

Expert Opinion

Thomas Haring
TELE-audiovision Test Center Austria

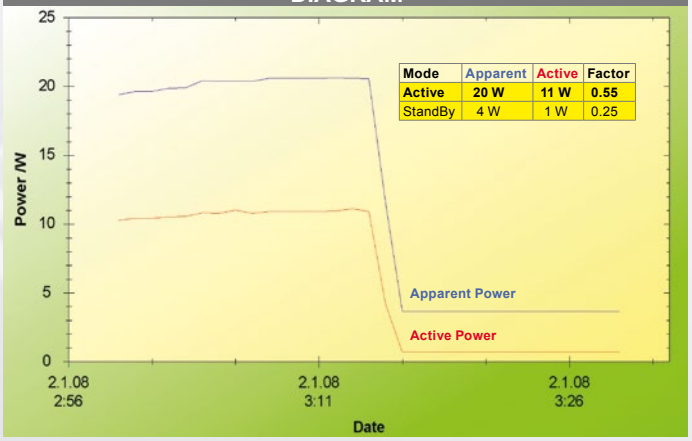
+ **The integration of digital TV, media player and Android Apps is innovative and surely won't become obsolete anytime soon. The attention to detail by Changhong can be seen at many different points. All of the features that we tested functioned correctly even if a little bit of fine-tuning is necessary. The media player shines with its support of so many different formats as well as its quick reaction to remote control commands. Thanks to the video input function even analog CVBS signals can be displayed. The DVB-C receiver tops it all off and serves to provide smooth digital TV reception.**

– **Since this is a preproduction model, there were several spots in the OSD that were not quite correctly translated and some fine tuning of the software is also necessary.**

TECHNICAL DATA

Manufacturer	Changhong, 35 Mianxing Road, High-Tech Park, Mianyang, Sichuan, China
Contact	kevin.zhao@changhong.com xsb.yongjichang@changhong.com
Internet	www.changhong.com
Model	Smartcenter iho
Function	DVB-C Receiver, Mediaplayer, Android Apps
Input frequency	107 MHz - 858 MHz
EPG	yes
Supported standards	DVB-C
OS system	Google Android
Video resolution	720p
RS232	no
Ethernet	yes
WiFi	yes
USB 2.0	yes
CVBS / Stereo Input	yes
CI Slot	yes
SD Cardreader	yes
Internal HDD	yes (S-ATA)
Available Flash Memory	1.7 GB
Dimensions	28 x 19 x 5 cm
Weight	0.9 kg

ENERGY DIAGRAM



The first 15 minutes active operation with video playback, digital TV reception, etc. The second 15 minutes Standby.

Deviser S30 Satellite Meter

- *comes fully equipped with all an installer needs*
- *can be programmed via PC*
- *very fast response time for easy dish adjustment*
- *big surprise is a very useful spectrum*
- *includes DiSEqC command option*

DEVISER

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Very Useful Tool For a Professional Installer or Amateur

It is difficult to spot differences between S30 and its older brother S20 we presented some time ago. Except for the model number, only the name has changed from Satellite Finder to Satellite Meter. However, when we started using it, it became obvious that the changes are not only cosmetic.

The look and feel of S30 is practically the same as its predecessor's – what is a good thing because nothing has been lost in its ease of use and sharp learning curve the first user experiences. S30 has a very clear 128x64 backlit LCD and seven buttons. There are three connectors for the antenna cable, USB cable and a power supply unit. Speaking of which, in the set we get not only a plug type power supply working from 100 through 240 V 50/60Hz but also a car charger. The plastic enclosure is protected with a blue rubber envelope but that is not all concerning ergonomics. Additionally, the happy owner of a S30 gets a vanity case attachable to a belt and a strip to hang the meter on a neck.

If there is an USB connector, one should expect an USB cable and some PC soft-

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DEVISER S30
Highly accurate handheld meter optimized for the satellite dish installer
www.TELE-audiovision.com/13/05/deviser

1. Main Menu (the first page) - consists of: Find, Measure, Spectrum and Angle

2. Main Menu (the second page) - consists of: Setup and DiSEq

3. Find function - shows signal strength and quality along with the top values registered during antenna setup; there is also a beep generated with pitch changing in accordance with signal quality

4. Measure function - transponder parameter measurement results are displayed here

5. Spectrum function - the full bandwidth is shown; you can also zoom to 320, 160 or 80 MHz with the up/down arrow buttons

6. Angle function - displays the calculated azimuth and elevation angles for the entered geographical coordinates of the dish and the satellite position

7. Setup submenu - consists of 4 items: Version, Configure, Sat Settings and Battery

8. Version - as you can see, we tested a very early product with serial number 000085

9. Configure submenu - consists of five items: Backlight, Timer, Beep, Units and Contrast (the fifth one is visible after four presses of the right arrow button)

10. Satellite List - pops up right after entering Sat Settings; you are supposed to select a satellite in order to view its specific settings and transponders

11. Transponder Settings - the first page of two

12. Transponder Settings - the second page of two

13. Battery - indicates how much charge is still left in the internal battery

14. Configure submenu (the first page) - allows you to set backlight (on/off), inactivity timer (5, 15, 30 minutes or always on), beep (on/off) and units of power channel measurement (dbuV, dBmV or dBm)

15. Configure submenu (the second page) - allows you to set contrast of the display

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☐	☐	☑	T-TERRESTRIAL
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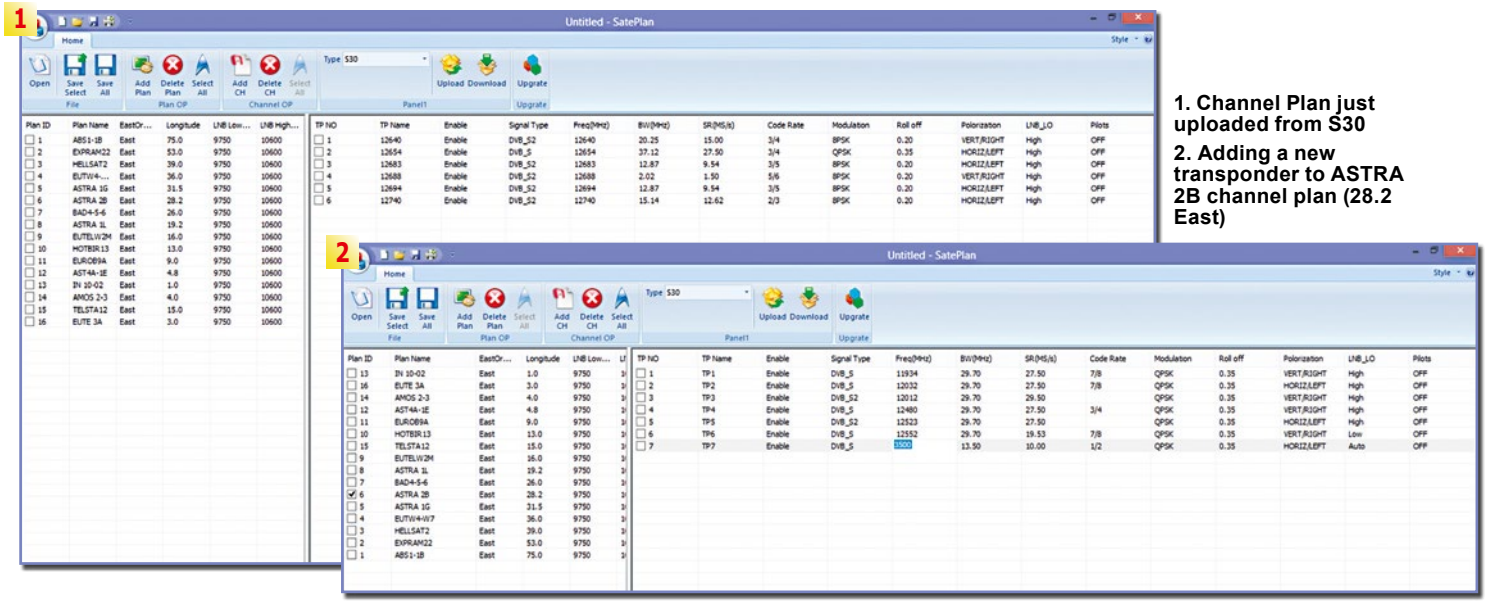

1. Channel Plan just uploaded from S30

2. Adding a new transponder to ASTRA 2B channel plan (28.2 East)

ware, right? Right! You get all of them in the set. The software is provided on a small CD-ROM. Deviser also provides an Operation Manual in hard copy. The manual is very easy to follow and its electronic version is additionally available on the CD-ROM. The final items in the set are two female-to-female F connectors. You screw in one of them to the S30. The other one is a spare you can use when the first one if torn off due to frequent usage.

The small keyboard is self explanatory. You have 4 arrow buttons and a power/enter button in the middle. Below them, there are two buttons for entering the menu and leaving it. If you need to change settings, you simply highlight it and the use up/down buttons to change a digit. Some non-numerical settings, like satellite names, can be edited on a PC and later downloaded to S30 thanks to the SatePlan Editor software for Windows.

When you power up the S30 for the first time you'll truly enjoy its display. It is very easy to read thanks to the backlit. The meter starts with its signal finding window in which you can directly select the desired satellite and its transponder. Except for the signal strength and quality bars, the Deviser S30 shows the maximum values registered so it is very easy to see that we had turned our dish a little bit too much and signal started to drop. If this is more practical for you, you can even not pay too much attention to the readout but listen to the beep the S30 generates. The higher the pitch, the better the antenna alignment. We want to praise Deviser for the very fast response. It reacts immediately for even the smallest movement of a dish.

Our S30 test sample had 16 popular European satellites per-programmed. If the transponder selection for a given satellite does not suit your needs, you enter the Main Menu (button MENU) and navigate to Setup - Satellite Settings where you can adjust all parameters of any transponder associated with the satellite. It is normal that not all satellite beams cover the whole continent, so even if you live in Europe and you bought the S30 here, it can happen that some of the pre-programmed transponders are not receivable in your region. Editing parameters is easy as everything else in S30.

If you put a little more effort and install the SatePlan software on your PC (Windows OS), the edition will be even easier. Additionally, you will be able to add new satellites, new transponders, enable some of them or disable others. The editor software is much more convenient than the one we remember from S20. It is here were we noticed the important differences between the new S30 and its predeccesor S20. Very important: the S30 can measure DVB-S2 transponders, something what its older brother S20 could not do.

In this class of meters, the spectrum view is often just a gadget of little use. But not with the S30. Once you display a spectrum view, you can set a marker on a transponder "mountain", press the Enter button and the S30 will automatically recognize all its parameters (frequency, SR, DVB type, FEC) and display its measurement results. It was really a very nice surprise for us to discover this. In this way you do not even have to care about checking satellite charts. This is another new feature in S30.

We were also pleased to find the DiSEqC 1.0 and 1.1 submenu. Using it, you can send a command to switch to a given signal source. We tested it with a DiSEqC 1.1 switch in our test antenna setup and everything was working as expected. Thanks to this function, you can not only verify that the antenna is aligned correctly but also that the whole distribution system is OK.

After checking the functions and features, the time came to compare the Deviser S30 to another meter and see if its measurement results are really credible. We selected a very good and very expensive signal analyzer as our reference. Tables below show the results for two satellites: ASTRA on 28.2° East and EUROBIRD on

ASTRA on 28.2 East					S30		Reference Meter	
Transponder	Frequency	Pol.	Type	Symbol Rate	Power [dBuV]	MER [dB]	Power [dBuV]	MER [dB]
1	11934	V	DVB-S	27500	73.6	10.3	71.8	9.4
2	12032	H	DVB-S	27500	69.2	8.5	69	7.5
3	12012	V	DVB-S2	27500	70.1	10.7	70.2	9.9
4	12480	V	DVB-S	27500	66.1	10.1	69.6	10.4
5	12523	H	DVB-S	27500	64.5	8.4	65.1	7.3
6	12607	H	DVB-S	27500	70.1	9.5	68.5	8.5

EUROBIRD on 7 East					S30		Reference Meter	
Transponder	Frequency	Pol.	Type	Symbol Rate	Power [dBuV]	MER [dB]	Power [dBuV]	MER [dB]
1	11727	V	DVB-S	27500	67.3	9.6	67.2	8.6
2	11900	H	DVB-S2	27500	69.5	9.3	67.9	8.2
3	11919	V	DVB-S	27500	66.5	8.6	64.8	7.6
4	11996	V	DVB-S	27500	64.5	9.2	63.1	8.1
5	12130	H	DVB-S	27500	68.6	10.4	66.1	9.4
6	12322	H	DVB-S	27500	67.1	10.3	65.6	9.4

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7° East. The S30 was a little bit too positive in its measurements. It showed about 1 dB more in both: channel power and MER. Such small difference is in fact a good result. So far, we never found two meters showing exactly the same values. Usually, the difference was even greater than that between the S30 and our reference. So, we confirm that the Deviser S30 results are credible.

Because the test results were so good, we could not resist to check if the S30 could match our expensive analyzer with a very, very weak signal of low symbol rate. We selected the EUROBIRD transponder 11389 H SR=3642. Our reference meter measured the power as 62.2 dBµV and the MER as 3.8 dB. Practically it was a reception at threshold. The Deviser S30 was able to measure the power (56.3 dBuV) but could not to lock to the signal and measure its MER. It is not a shame for this class of a meter. We would be extremely surprised if it could match our reference.

If you are thinking about buying a satellite meter, you should ask yourself: shall I really be forced to measure such weak signals? Usually, there are much stronger transponders receivable next to weak ones - like in the case of EUROBIRD. And you can perfectly align the dish using rather the strong transponders than the weak ones.

To sum it up, we can truly recommend Deviser S30 to all but extremely demanding professionals dealing with complex problems in satellite reception. The S30 is fast in responding, very easy to use, and easy to reprogram. Not only the meter itself but also its PC software is more matured than for the older S20. Its workmanship leaves nothing to be desired.

EXPERT OPINION

+
- **Ease of use**
- **Fast response**
- **Accurate measurements**
- **Good workmanship**
- **Many useful accessories**

−
- **No DiSEqC 1.2 and USALS for motorized systems**

TECHNICAL DATA

Manufacturer	Deviser Electronics Instrument Co., Ltd.
Fax	+86-22-27645002
E-mail	overseasbiz@deviser.com.cn
Web page	www.devisertek.com
Model	S30
Function	Satellite Antenna Meter
Input Frequency	950~2150 MHz
Input Signal Level	30~110 dBµV
Symbol Rate	1~45 Ms/sec
LCD	128 x 64 pixels
LNB max current	400 mA
Power Supply	12 V DC 1.2 A
Operating Time	2.5 hours when fully charged
Charging Time	3 hours

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

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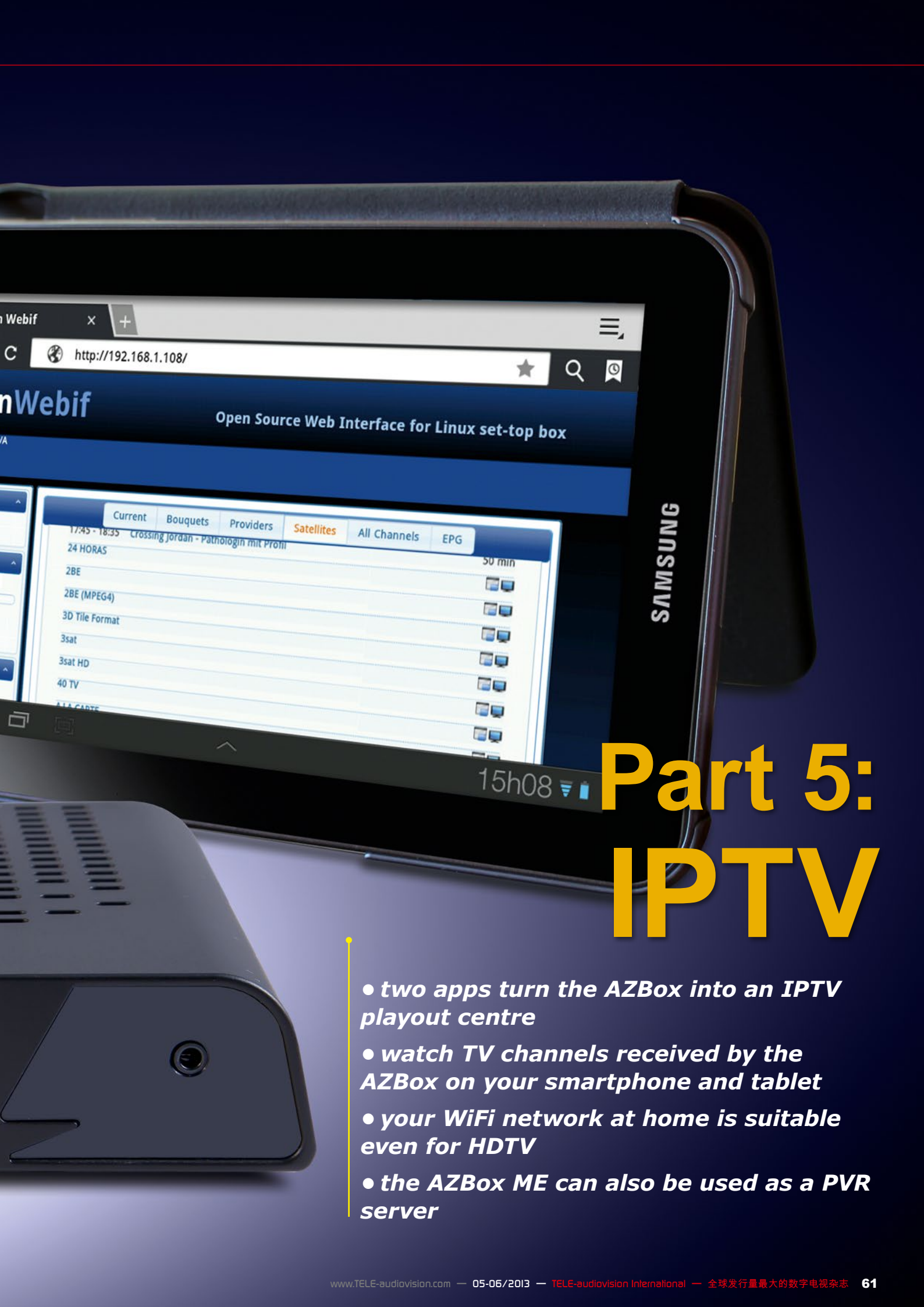
Revealing the Secrets of the AZBox ME Super Box



Part 5: IPTV

- *two apps turn the AZBox into an IPTV playout centre*
- *watch TV channels received by the AZBox on your smartphone and tablet*
- *your WiFi network at home is suitable even for HDTV*
- *the AZBox ME can also be used as a PVR server*

IPTV with the AZBox ME and the MiniMe? No problem!

Vitor Martins Augusto

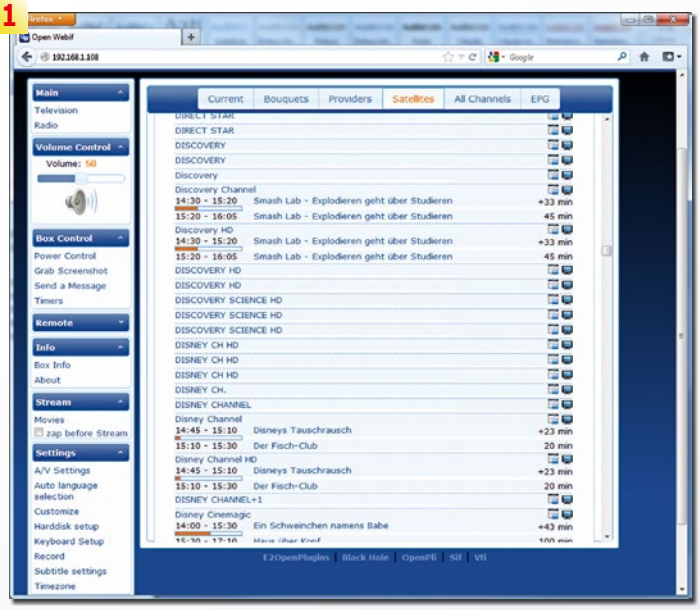
Did you know? With an AZBox ME or MiniMe plus a current Android-based smartphone or tablet you're all set for watching TV throughout your home as far as your WiFi network extends. Find out how in this article.

It's no surprise to most that Linux receivers such as the AZBox ME or MiniMe can be accessed right from the PC via a web browser. We already demonstrated how to do this in TELE-audiovision test reports on the AZBox receiver. What you might not have tried yet is to select a channel right through the web browser and have it streamed back to the browser window. All you need to do is key in the receiver's IP address in the Firefox address line. This particular browser software is best suited for Internet streaming, since we keep experiencing problems with VLC as a plug-in of Explorer and Chrome. Once Firefox has established a connection with the receiver you're greeted by a smart user interface allowing access to practically all receiver functions. For instance, you can navigate up and down all favourites lists or even the entire channel list, and you can call up EPG information for each of the listed channels. There is also a small TV icon and this will initiate the streaming process. You only have to make sure to click on the desired channel name before activating the stream.

Depending on the installed browser add-on, PC configuration and Linux firmware implemented in the receiver the stream is either presented right within the browser window, or external software – usually VLC – is launched.

If all is set up correctly this works like a charm and the video quality is simply brilliant. After all, the stream is passed on exactly as it is received and with most PCs boasting hardware-supported MPEG-2/4 decompression the signal is frequently optimised by applying anti-aliasing and video enhancing filters. You can expect the final result to at least match that on your LCD panel, and in many cases it is even slightly better.

While this alone is a really neat treat, you rightly might ask yourself how often you'd actually prefer watching TV on your PC or laptop computer rather than in front of your flat-screen TV. Wouldn't it be great to watch TV on your smartphone or tablet instead? These devices are small and lightweight enough for convenient use, plus they



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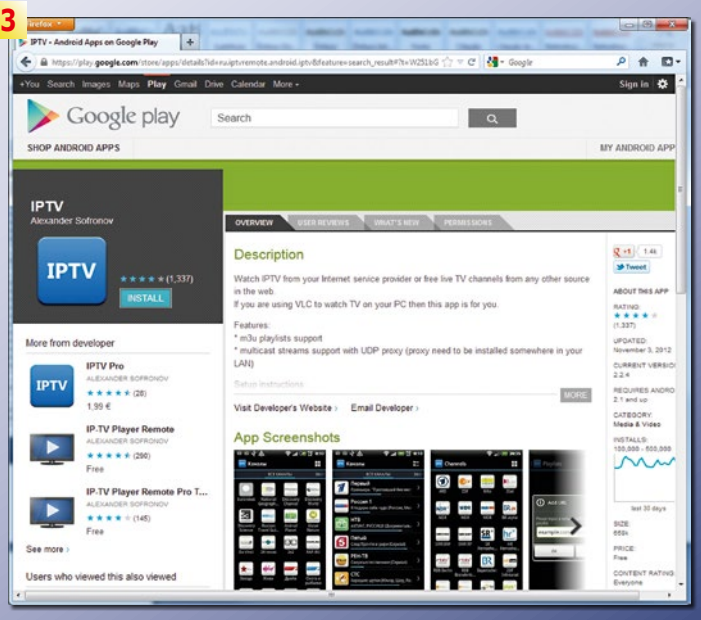

3

1. To open the web interface („Webif") of your AZBox Me or MiniMe, you only need to input the IP address of the box. We recommend Firefox. Notice that depending on the installed firmware, you may see a slightly different web interface.

2. MX Player is the best media player for Android. We confirm that it really "plays everything". The good news: you can use it for free if you don't mind a small ad on the screen, while you select the desired video (no ads during play, of course).

3. To be able to receive IPTV you need the app called… IPTV. Again, you can choose between the free version with ads or the Pro version, which does not show any ads. Besides using it to watch streamed TV channels from you AZBox Me or MiniMe, you can use it to watch IPTV from Internet or your Internet Service Provider. It is a true IPTV client.

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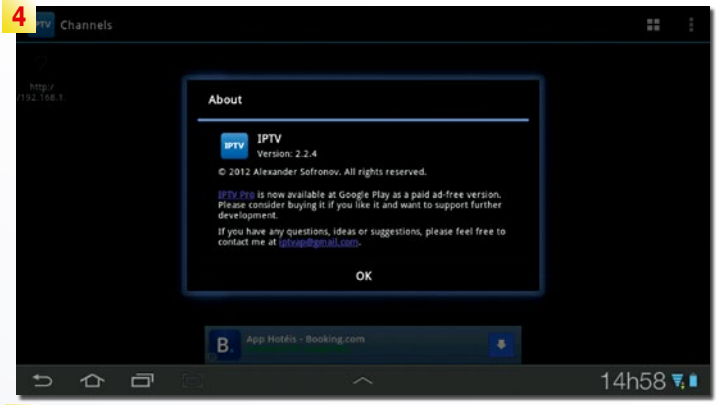

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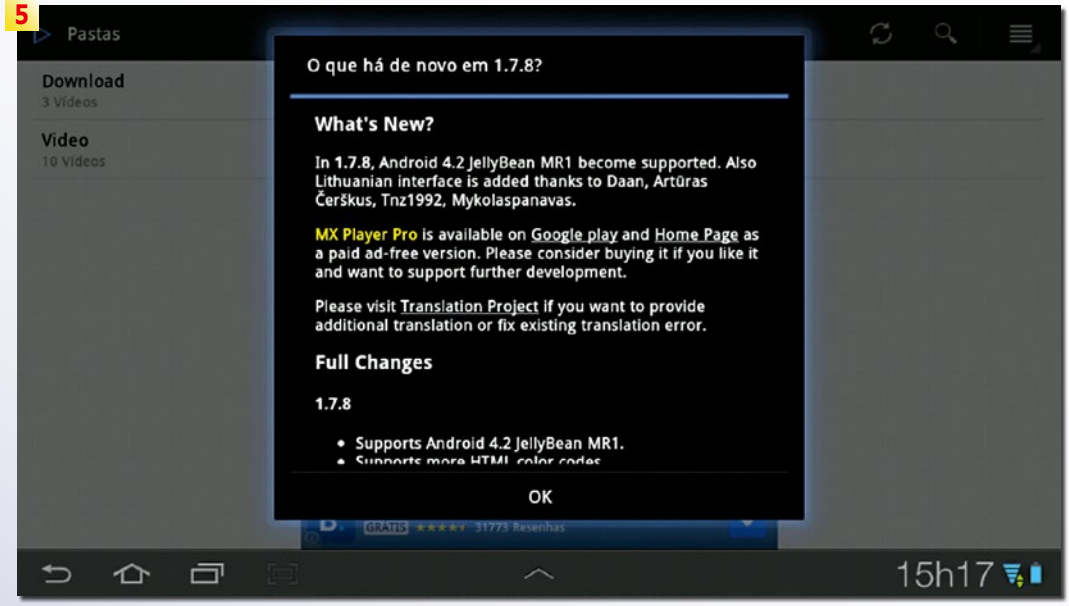

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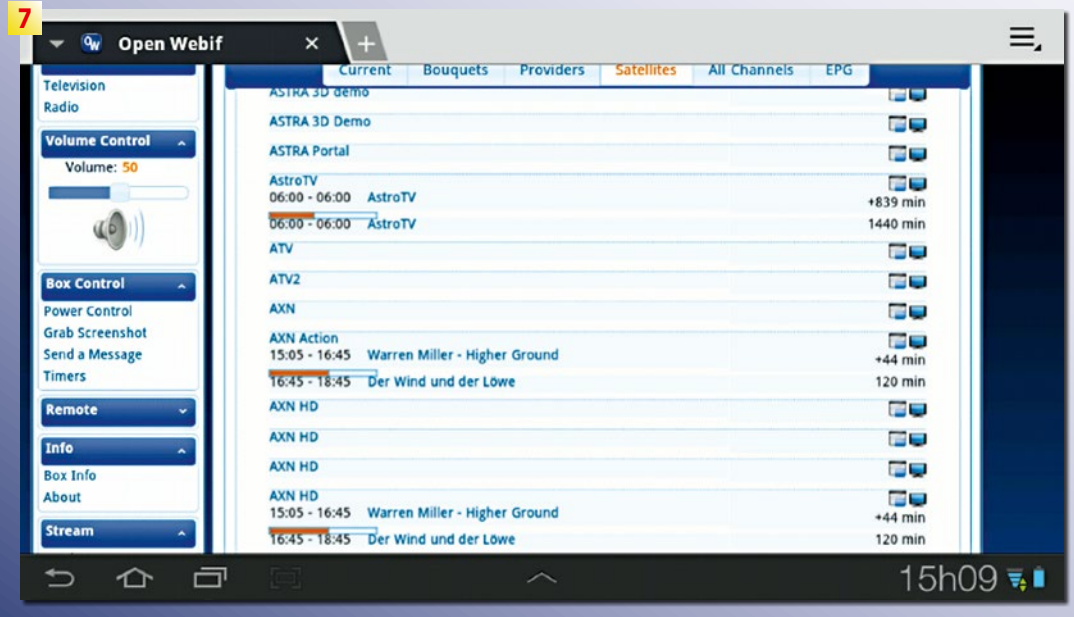


7

can easily be carried along to all rooms in your home. Lying in bed, sitting on the terrace, preparing dinner in the kitchen? No excuse for missing a single minute of your favourite show any longer.

Yes, that would be great indeed. Unfortunately, however, our attempts to stream a channel from the AZBox ME or MiniMe to the pre-installed browser of the smartphone or tablet failed utterly. Playlists with streaming data are all but ignored under Android, since the software does not support IPTV and does not come with all required Codecs. Is there anything that can be done about it?

It turns out there is! We took some time to experiment and found a solution that doesn't cost a single penny, since all apps that are required can by downloaded for free from Google Market. Our solution was tested with a Samsung Galaxy Note smartphone and a Samsung Galaxy Tab 7 Plus tablet. Both devices were running on factory-installed firmware and were not jail-broken or re-routed in any way. We would even go as far as to state that any Android-based device should be OK with our solution, as long as it boasts a fast processor and (preferably hardware-supported) video decoding. Currently, you should have no difficulty finding a range of properly equipped tablets for less than EUR 100, featuring an ARM9 processor clocked at 1 to 1.2 GHz. Any of them should be fine for our project.

You start out by getting the MX Player, which is a free media player for Android. With its integrated Codecs the MX Player can handle almost all video files, both with and without hardware support – contrary to the pre-installed video player. Another bonus is multi-core-decoding, which uses both CPU cores (if available) for decoding video data.

Like most apps, the MX Player is available as a free version with inserted ads and an ad-free professional version. As far as our project is concerned, we could not care less about ads, since the MX

4. The IPTV app for Android. The free version shows ads on the bottom of the screen, but all you have to do is touch the entry with the question mark and the URL with the IP address of your receiver.

5. What's new with this release of MX Player for Android? Among other things it even supports the brand new Android 4.2 JellyBean.

6. To receive TV channels from your AZBox, just open the Android browser and type in the receivers IP address. In our case it is 192.168.1.108. After a few seconds you will be greeted with the OpenWebif homepage, where you can access almost all functions of the receiver.

7. Channels can be listed in the exact same way as if you were sitting in front of your TV with the remote in your hand. Actually, using a tablet is more comfortable.

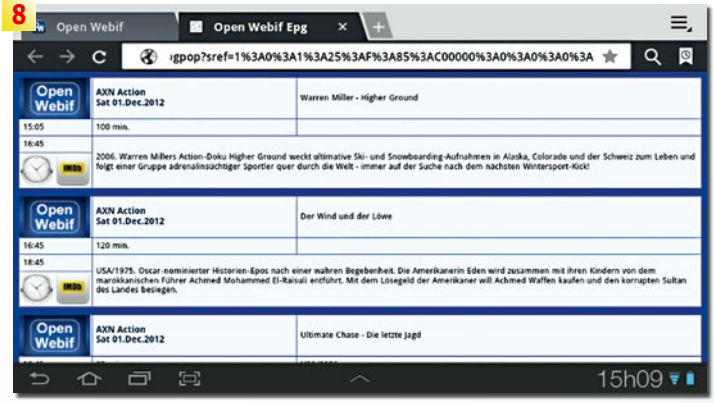
Player is only used for remotely controlling playback and therefore ads are never visible.

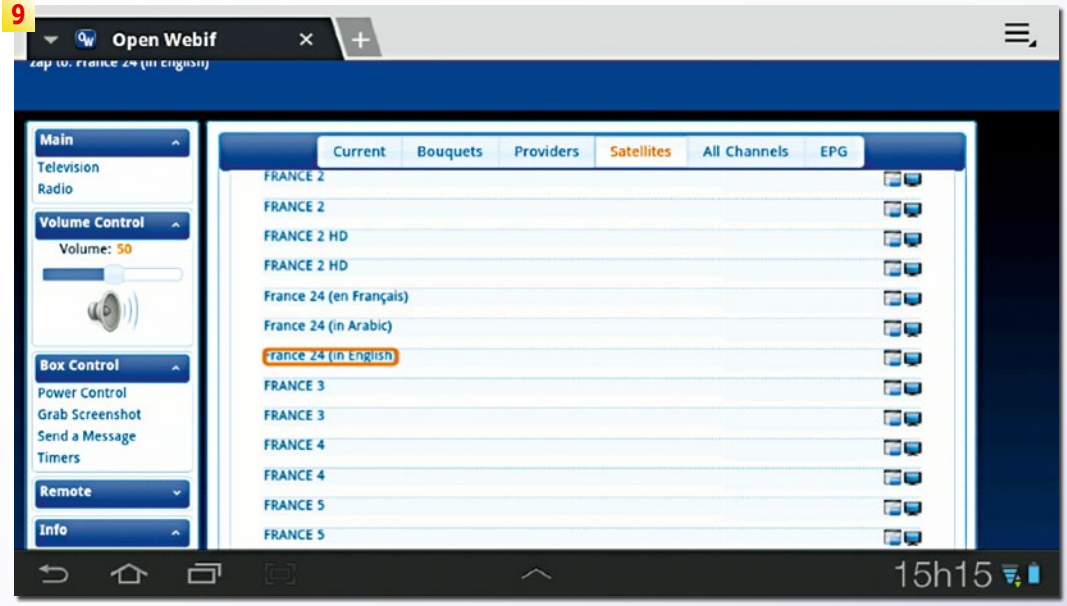
Now if you want to play back a stream on your smartphone or tablet there is one more piece of required software, which takes care of actually receiving the stream. Streaming content must be transmitted via WiFi and freed of its RTP/UDP encapsulation. Only the naked MPEG stream is then passed on to the MX Player. Obviously, Google Market has such an app in store, and it even has a name that could hardly be more fitting (and which almost makes you feel a bit stupid if you finally fall over it after a long and hard search): IPTV! This is an app that does precisely what it is named for – playing back IPTV content of an Internet service provider or any TV channel that is available on the Internet.

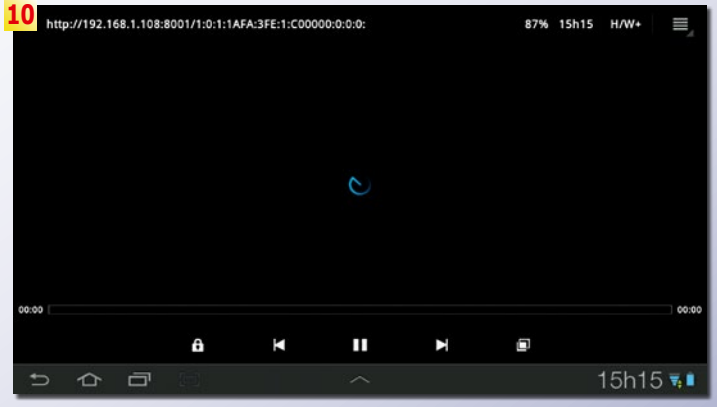
Here too, there are two version available, one with and one without ads. Once again the free version with ads does the trick for us since we do not launch IPTV by hand (Android takes care of that as soon as the playlist is loaded in the browser). All you have to do is tap on the link that appears in IPTV in order to start playback through the MX Player.

Once both apps are installed we can proceed with entering the IP address of the AZBox ME or MiniMe in the browser address line. The exact same user-interface as on the PC will load and we can select a channel. Tapping on the TV icon loads the corresponding playlist and when you do this for the first time Android will ask you which app you would like to use in conjunction with the playlist. Select IPTV now and don't forget to tick the box so that Androids saves this preference and will automatically open IPTV for streaming the next time.

Due to lacking Codecs, however, IPTV is unable to directly play back this stream, so that we have to tell IPTV which player to use instead. In the configuration menu you choose the MX Player (please note: even though our tablet comes with a number of different player apps







8. Naturally, you get access to the full EPG. For the desired channel, just touch the small icon to the left of the TV icon.

9. To zap, touch the name of the channel. On the top of the website, you will see the current channel and program (if the EPG is available for the selected channel). Touch the TV symbol to start streaming.

10. IPTV will open and you need to touch the question mark. MX Player will open and start buffering the stream.

11. And after a total of about 3-5 seconds, depending on the stream, you will be able to watch TV. Your smart phone or tablet will behave just like a regular TV set.

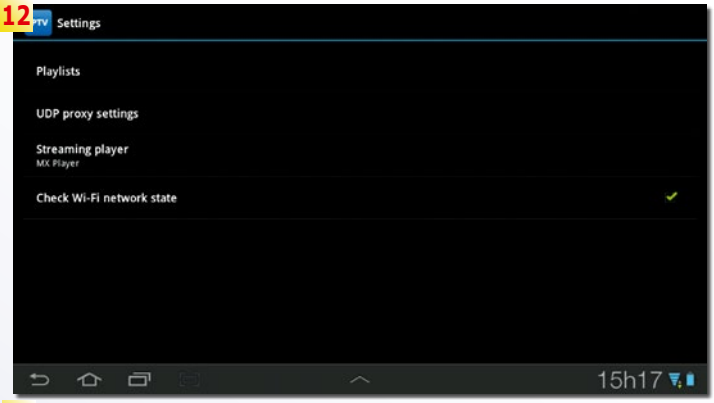
including VLC, we could only ever play back the stream with the MX Player). From now on you can simply tap on any TV icon on the screen. IPTV will then launch automatically with a link to the receiver's IP address. Tap on this link and the stream will open fully automatically in the MX Player after a few seconds of data buffering.

A word of caution: In case the video freezes at times or does not play back smoothly the hardware decoder might be to blame in case it cannot properly handle MPEG streams. If this happens you might want to turn off hardware decoding in the MX Player and try software decoding. Even though you might expect quite the contrary, you should then be able to enjoy smooth and high-quality video performance. How come? The MX Player comes with very good Codecs on the software side and many current smartphones and tablets feature processors that are clocked at 1 GHz or above, so that the processing power of those devices is astonishing. In our tests we were even able to play back HD streams flawlessly.

Another surprising observation we made during the test was that we never experienced any dropouts, even though our smartphone or tablet was only connected via WiFi to our local network. This is one of the benefits of UNICAST (see our feature series on 'Television from the Internet' for more details on IPTV, multicast, unicast, etc.): As the stream is only passed on to a single receiver valuable bandwidth is used extremely economically. The AZBox ME/MiniMe in turn also only streams out a single channel, which means a reasonably modern WiFi setup should provide enough bandwidth.

Still, all that glitters is not gold: The AZBox is only able to stream to one device at a time and the channel that is streamed is the same that is also sent to the TV panel. In addition, the receiver will automatically activate the time-shift buffer. All things considered, however, it could still make sense to set up a dedicated AZBox for each member of the family. An ever better solution could be to use an AZBox ME acting as a central PVR server and feeding into individual AZBox MiniMe clients for each family member. This way each individual can decide for themselves whether they want to watch the selected channel on the TV, smartphone or tablet. Funnily enough, we were caught more than once choosing our tablet over the TV. What's more, these days TV panels grow larger and larger and if you want to go for a smaller size TV a better option might even be to get an AZBox MiniMe plus an Android tablet instead of a small LCD panel. So times they are a changing, and IPTV will gain momentum – at least for private use at home.

12



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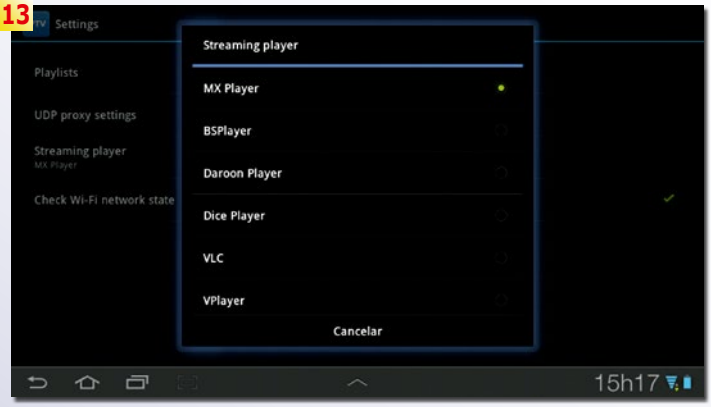

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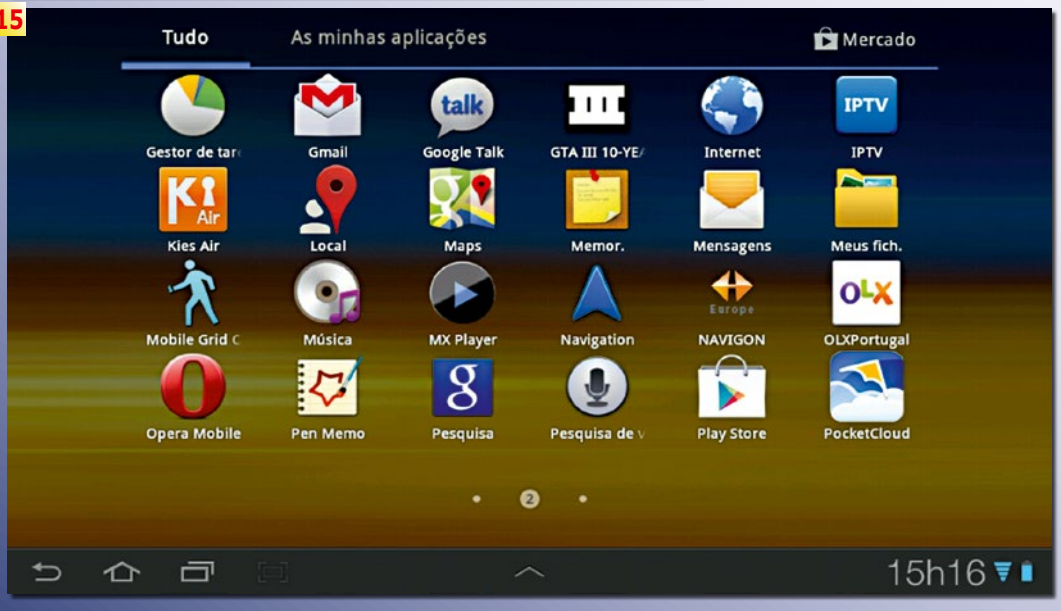
12. If MX Player is not started automatically by the IPTV app, then you need to configure the correct streaming player within the IPTV app. Go to settings and touch the "Streaming player" option.

13. From the list select "MX Player". Naturally you can try out the other installed players. Anyway, we had the best results with MX Player.

14. To zap, just touch the back symbol or press the back button, depending on your Android device. Notice that the Android menu bar appears due to the screen shot functionality used by us to grab the pictures. In normal TV play, the image fills the whole screen. If you touch the screen, you will see MX Player's menu.

15. Of course you can access both MX Player and IPTV as any other app from the Android user interface. They are fully autonomous apps – we just did not use them like that for this application.

15



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Revealing the Secrets of the AZBox ME Super Box

Part 1: Blindscan

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Part 5: IPTV

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NETGEAR NeoTV TV200

NETGEAR

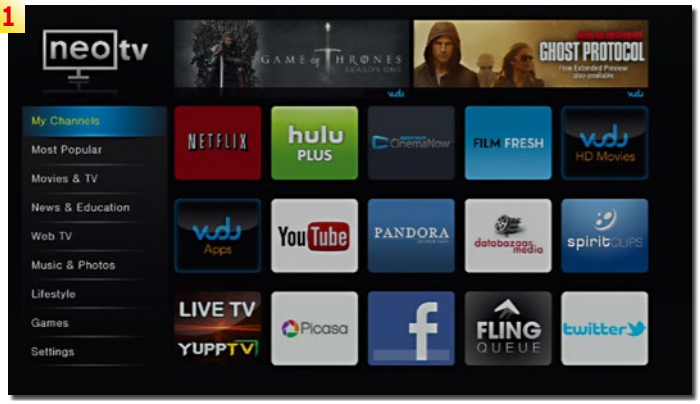
- ***Brings streaming services to your TV screen***
- ***Comfortable software update***
- ***Simple connection to WLAN network***
- ***A geographic lockout blocks the use of many interesting services to users outside of the USA***
- ***No single solution to log on to various Apps***

Music, HD Videos, YouTube, Facebook, Netflix, and More

Just like with many other streaming players, the NeoTV box also comes in an elegant, shiny black plastic housing. The relatively flat remote control unfortunately doesn't sit all too comfortably in your hands. This is due in large part to the sharp edges that run along the side of the remote control. On the other hand, though, the buttons have a nice tactile feedback and a smooth surface. To keep its weight as low as possible and still maintain its flat construction, Netgear decided to forego the use of AAA batteries and instead use two CR2032 button batteries.

When turning on the box for the first time, a four-step installation assistant helps the user set up his new NeoTV box. Afterwards the box performs an automatic scan for new software.

It's nice that the manufacturer incorporated an automatic update into the initial installation, otherwise there might be some users that would simply start using their new NeoTV box with outdated software.



1. NeoTV's Main Menu

Netgear has completely integrated an Apps concept into the NeoTV; all of its functions are available in the form of these mini programs. If you want to use the NeoTV to access current Hollywood blockbuster movies and exciting TV series and you happen to live outside of the USA, you will unfortunately be disappointed. The necessary services that would be used for this (Netflix, Hulu Plus, Cinema Now, Film Fresh, etc.) are available but come with a geographical lockout that advises users outside of the USA in a friendly but pointed manner that this content is not available to them.

This leaves just a few programming packages with

NETGEAR

AMIKO

SHD-8360

Full HD Digital Satellite Receiver & Media Player
with Conax Embedded Card Reader, CI Slot & Ethernet Connection

MAIN FEATURES

- **One card reader** slot (Conax Embedded)
- **One Common Interface** slot (for additional CA Systems)
- Alphanumeric VFD display
- Satellite Blind-Scan function
- **Two High Speed USB 2.0 connections**
- **Media Playback** (MKV, AVI, MPG, MP3, MP4, JPG and more...)
- Ethernet Connection & **USB WiFi** support (Ralink RT5370 chip)
- **YouTube videos**, Google Maps*
- **RSS Reader** & **Weather Forecast** functions*
- **TimeShift** - Stop Live TV! (USB Storage device required)
- Multi Satellite - DiSEqC 1.0 / 1.1 / **1.2** & **USALS**
- **Unicable LNB** support
- Full HD (1080p) Output via HDMI
- Optical & Coaxial S/PDIF output for Dolby Digital Bit-Stream / PCM output
- RGB & CVBS video / audio output through SCART & RCA
- Easy software upgrades through USB or Network
- Program and Channel information transfer from receiver to receiver using the USB backup function
- Low power consumption in Stand-By mode

* Internet connection required through Ethernet or USB Wi-Fi dongle

ecology
low power consumption in stand-by

матрёшка MATROSKA MKV

OTT CONTENT

MULTIMEDIA PLAYBACK** AVI MKV MPG MP3 MP4 TS

audio and video codecs are subjects to availability**

ETHERNET S2 SATELLITE Full HD 1080 2 years warranty

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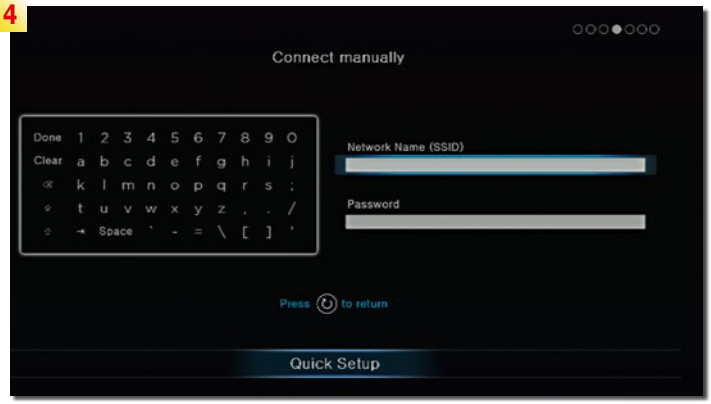

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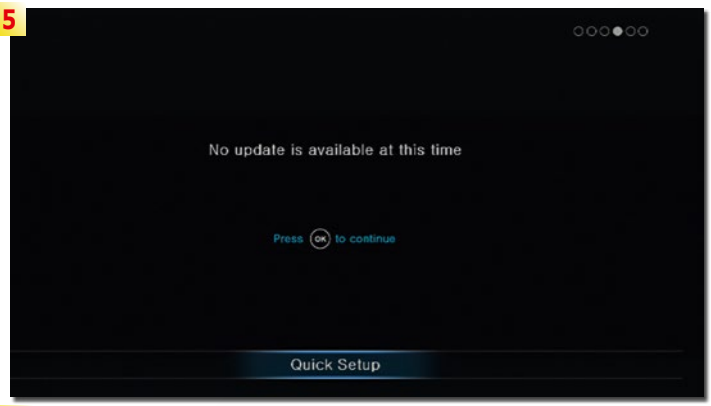

6

2. Selecting the automatic standby time

3. The NeoTV box can connect to the Internet either via WiFi or with a cable

4. Manual SSID entry

5. The NeoTV Box's software is up to date. An Internet update is not necessary

6. To register the NeoTV box, the user can manually enter the Internet page into his browser or he can scan the QR code on the TV with a Smartphone or Tablet.

7. System Settings

8. General Settings

9. Audio & Video Settings

10. Unfortunately, we often saw this blended in window with many services that offered movies, TV series, etc.

11. Searching for YouTube content

12. SpiritClips Network

13. YUPPTV offers Indian channels via the Internet

14. You have to pay for a subscription in order to use this service

15. Access to Google Picasa web albums

16. Twitter is also integrated into the NeoTV box

17. OSD entry takes getting used to and was not really convincing to us in our tests

18. Tweets could be sent effortlessly via the NeoTV box

19. TVMIA offers Spanish-language TV channels via the Internet

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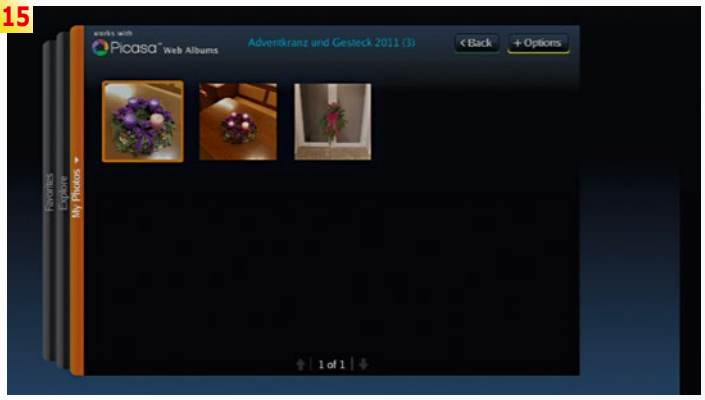

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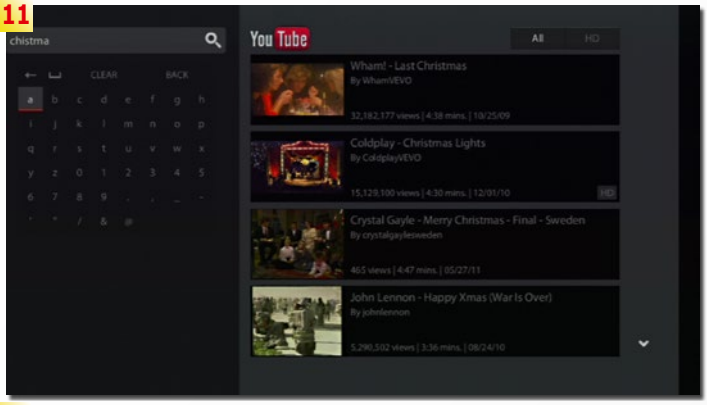

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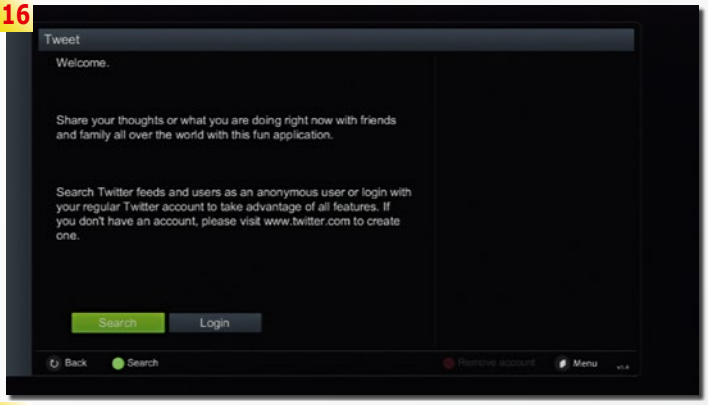

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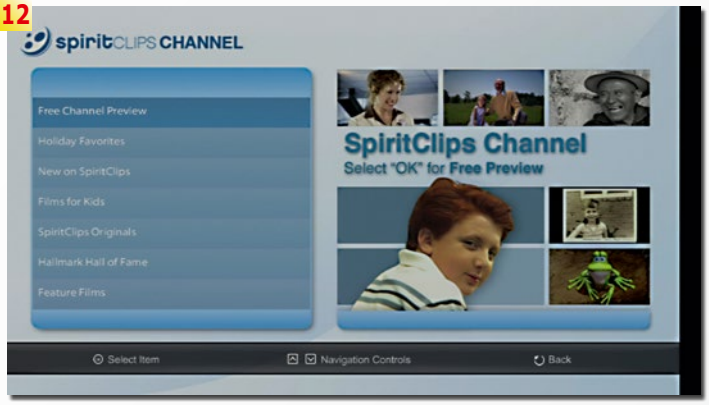

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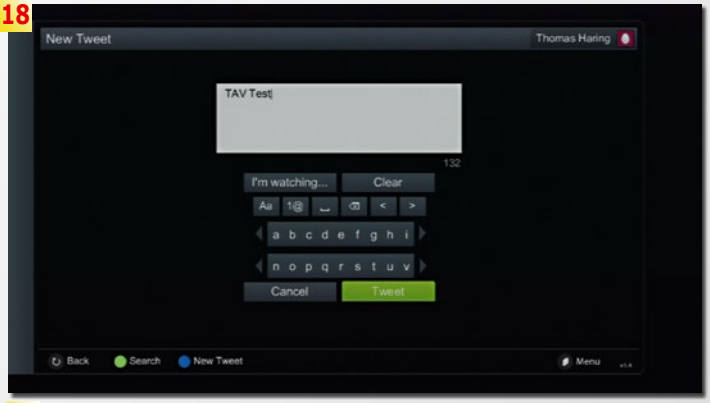

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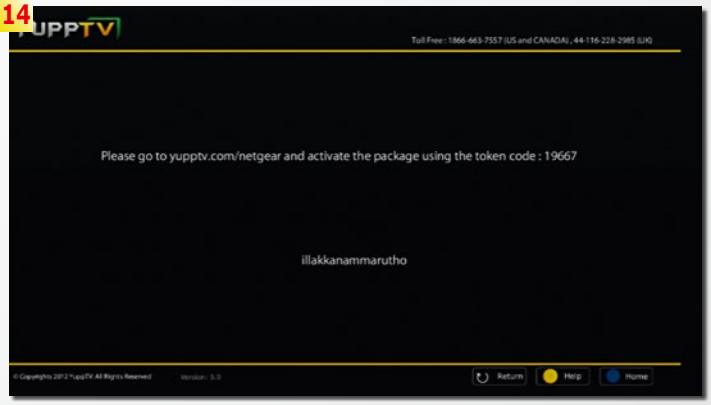

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20

20. WKNTV will definitely be popular with Korean NeoTV owners

21. Various CNN content is available to the user

22. Revision3 offers high-quality video content of all different kinds

23. The picture quality with Revision3 is exceptional

24. Access to older news broadcasts from Germany's ZDF

25. What's new in MLB? NeoTV has the answer!

26. A round of Black Jack on the NeoTV box to pass the time

27. The games available for download are well-designed

28. Status update via Facebook

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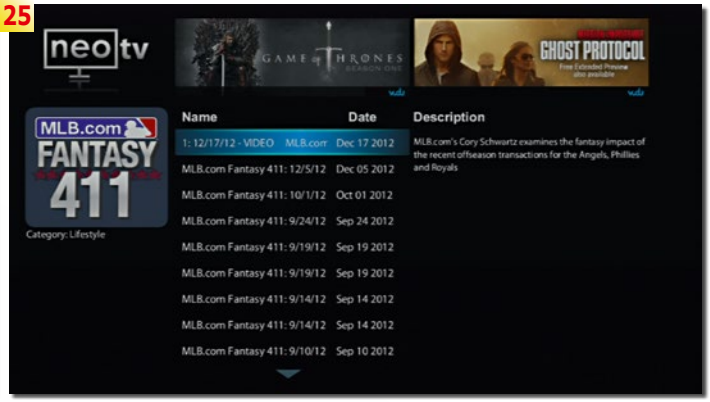

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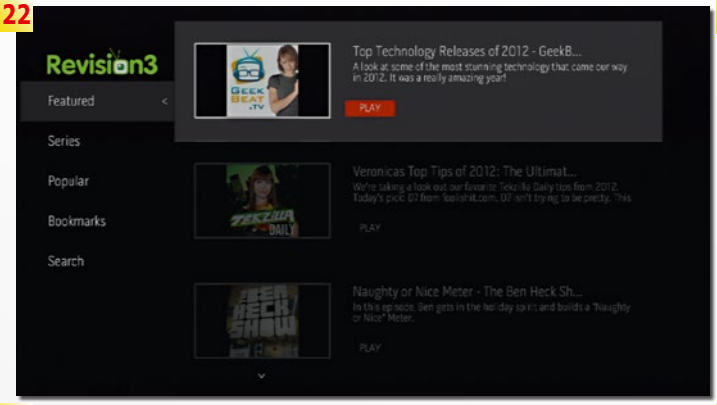

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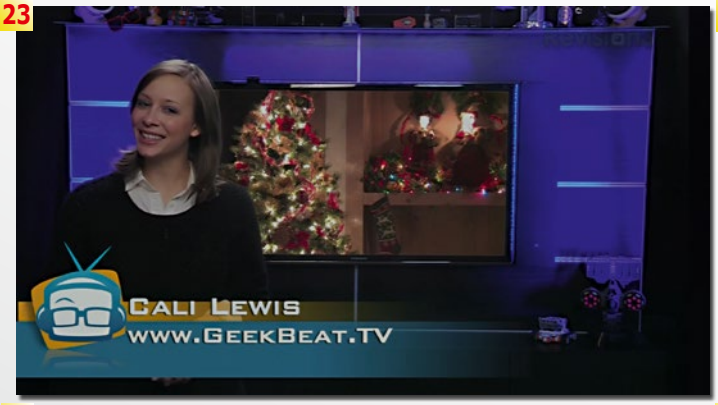

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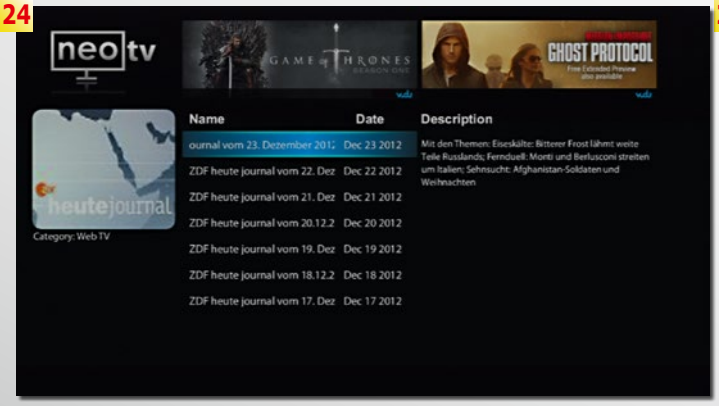

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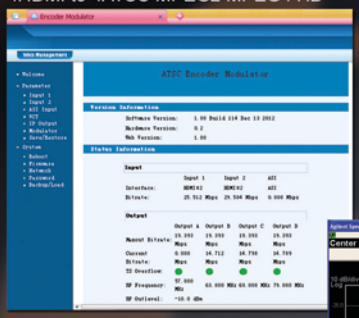
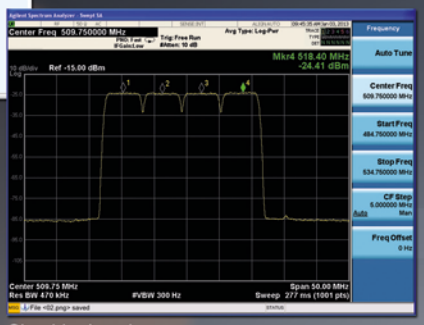
WEB NMS Interface
4HDMI to 4ATSC MPEG2 MPEG4 HD



Input Channels



Shoulder Level

Wall Mount

MPEG2/MPEG4 HD Encoder Modulator

- Turn MPEG2/MPEG4 HD Video signals into a real digital RF
- 4*HDMI input; 1*HDMI or 2*HDMI optional

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- 1080P/1080I/720P Full HD resolution
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- MPEG-1 Layer II, (MPEG-2 AAC, MPEG-4 AAC available) audio encoding
- 1*DVB-C/ATSC/ISDB/DVB-T, 2*DVB-C/ATSC/ISDB/DVB-T, 4*DVB-C/ATSC quality RF out optional
- ASI in/out with remux; MPTS or 4*SPTS IP out
- RF mixed in/RF mixed out
- Frequency range: 30~960MHz
- Programmable video/audio/PCR PID
- Programmable channel name and logical channel number insertion
- Excellent modulation quality MER≥42dB
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Rack

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http://www.dsdvb.com/english ▪ E-mail: sunyu@dsdvb.com

Indian, Korean and Spanish TV channels that the user can access but still has to pay for. It looks a little better when it comes to news programs; here you'll find content from CNN, CNBC, Fox News, the White House, ZDF or the Deutsche Welle. Keep in mind: this is not live TV. You have access to a variety of video clips and prerecorded content from those providers.

Controlling all the Apps was enjoyable thanks to the uniform layout. it was actually fun to access all the content.

Thanks to the powerful processor and the sufficiently large cache memory, videos were quickly and instantly played back. And it's with Revision3, a service that provides high quality video content, where the perfect picture output via HDMI with 1080p resolution makes it all worth it.

In today's day and age social networks have become a part of our daily lives. We found it interesting that Netgear obviously did not provide a uniform method, for example, for OSD entries. Each App has its own way of doing it. With Facebook and Twitter the individual letters have to be selected from a vertical column - a painstaking affair if you use longer passwords. Google Picasa on the other hand utilizes a standard OSD keyboard that displays every available character.

The Apps themselves matched our expectations and are a real alternative to Smartphones and Tablets.

We missed the ability to playback local content via a Network connection, USB storage device or SD card. Additionally, the number of available Apps is rather poor; the manufacturer tries to disguise this with a clever design and by overstating the number of available Apps.

The really exciting top content is unfortunately only available to users in the USA; the rest of the world is left with a mixed assortment of video clips and media content from various providers as well as a few Web TV providers.

EXPERT
OPINION

+ Visually appealing streaming player with perfect picture output in 1080p full HD. A variety of video services as well as social networks can be viewed directly on your TV.

– A portion of the Apps are geographically locked out. Local media content cannot be played back. All in all, only a few Apps are available.

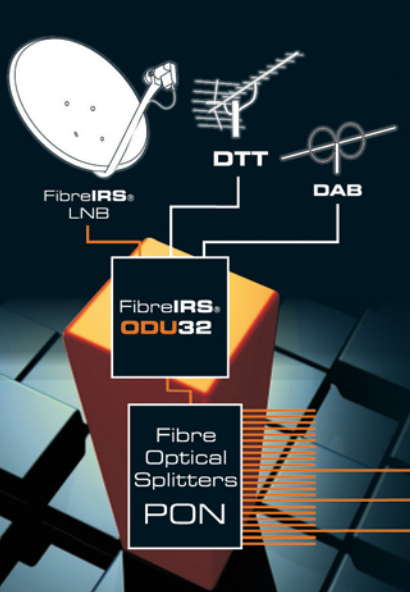
ENERGY
DIAGRAM

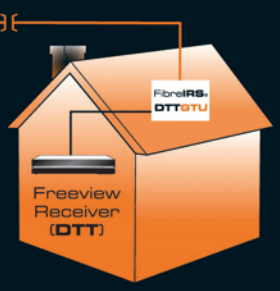
Energy: The first 15 minutes: active operation. The second 15 minutes: standby

FibreIRS®

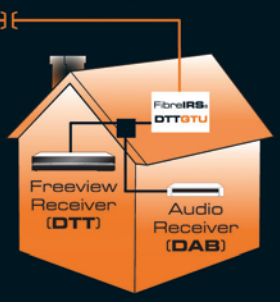
The **New** Generation
Fibre Integrated Reception System

The only cost effective solution for distributing
Satellite IF, DTT and DAB over a Single Fibre Optic Network.

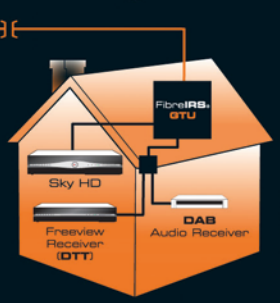




DTT & DAB Installation



DTT & DAB Installation



Digital Satellite **DTT & DAB** Installation

- Compatible with all digital satellite STBs
- Compatible with all DTT/Freeview™ STBs
- Compatible with all DAB Tuners
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Website	www.amikostb.com
Function	DVB S / DVB S2 & DVB T / DVB T2 / DVB C Comboo PVR Receiver with two user defineable Tunerslots
DVB S2/LAN	• / •
Channel Memory	unlimited
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •

TELE audiovision AWARD 05-06/2013

Amiko HD8840
At long last: A receiver that can handle all types of DVB and even comes with full PVR functionality

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/13/05/amiko

Read TELE-audiovision Test Report

Manufacturer	Changhong
Website	www.changhong.com
Function	DVB C Receiver, Mediaplayer, Android Apps
DVB S2/LAN	— / •
PVR	•
S-Video/HDMI	— / •
Scart/Digital Audio	— / •

TELE audiovision AWARD 05-06/2013

Changhong Smartcenter
Very successful hybrid receiver for digital TV

TELE-audiovision International Magazine

Business Voucher

www.TELE-audiovision.com/13/05/changhong

Read TELE-audiovision Test Report

Manufacturer	Panodic
Website	www.panodic.com
Function	DVB T / DVB T2 Receiver
DVB T2/LAN	• / —
PVR	•
S-Video/HDMI	— / •
Scart/Digital Audio	• / —

TELE audiovision AWARD 03-04/2013

Panodic HDT-275C
Great receiver for the new HDTV era in digital terrestrial TV in future-proof DVB-T2

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Read TELE-audiovision Test Report

Manufacturer	Tsinghwa
Function	DTMB Receiver
LAN	—
PVR	•
S-Video/HDMI	— / •
Scart/Digital Audio	— / •

TELE audiovision AWARD 03-04/2013

Tsinghwa GT-278
Rock-solid receiver with excellent speed reaction time

TELE-audiovision International Magazine

Business Voucher

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Highlights

www.spaun.com Quality made in Germany

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

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Email: contact@spaun.com · www.spaun.com

Manufacturer	Skyworth
Website	www.skyworthdigital.com
Function	DVB T / DVB T2 HDTV Receiver
DVB T2/LAN	• / —
PVR	•
S-Video/HDMI	— / •
Scart/Digital Audio	— / —

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Expert Opinion

www.TELE-audiovision.com/13/01/skyworth

Read TELE-audiovision Test Report

TELE audiovision AWARD 01-02/2013

Skyworth HTA6
A rock-solid receiver for HDTV over the terrestrial antenna

Energy Efficiency Rating eco friendly 0.45 power factor tested by TELE-audiovision

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

TELE-audiovision International Magazine

Business Voucher

www.TELE-audiovision.com/12/11/jiuzhou

Read TELE-audiovision Test Report

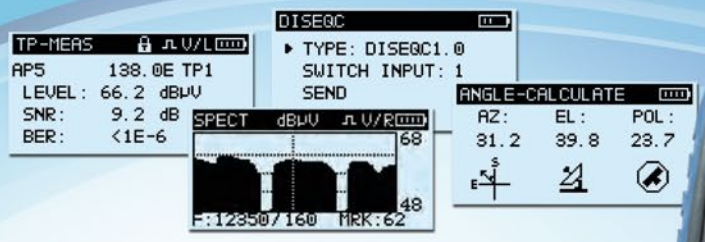
INNOVATION TELE audiovision AWARD 11-12/2012

Jiuzhou DTP2100
Cutting-edge receiver thanks to Android operating system

Energy Efficiency Rating eco friendly 0.55 power factor tested by TELE-audiovision

DEVISER

www.devisertek.com



S30✓ Satellite Meter

- Supports DVB-S/S2
- C, Ku, Ka or L band
- MER and BER
- Spectrum function
- Supports 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

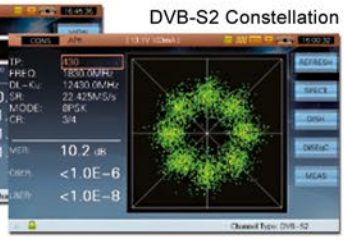
QAM Constellation

Spectrum

TR101 290 Three level Monitoring

- 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 >5 hours (battery)

DVB-T Signal


DVB-S2 Constellation

Deviser Electronics Instrument Co., Ltd
No 8, Haitai Chuangxin 3 Road, Hi-Tech Industrial Development Area, Tianjin 300384, China
Tel: +86-22-27682088, 27645003, ext 803 ▪ Fax: +86-22-27645002
Http://www.devisertek.com ▪ E-mail: overseasbiz@deviser.com.cn

DEVISER

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	• / —

TELE audiovision AWARD 11-12/2012

Panodic HDS275
Best designed mini-receiver for the best HD reception

TELE-audiovision International Magazine

Business Voucher

www.TELE-audiovision.com/12/11/panodic

Read TELE-audiovision Test Report

Energy Efficiency Rating eco friendly 0.58 power factor tested by TELE-audiovision

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 audiovision AWARD 09-10/2012

AZBox mini ME
Excellent mini-receiver with Network features - ideal for a home network

TELE-audiovision International Magazine

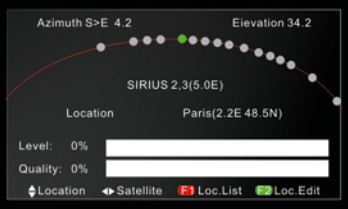
Expert Opinion

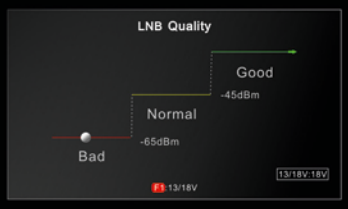
www.TELE-audiovision.com/12/09/azbox-mini-me

Read TELE-audiovision Test Report

Energy Efficiency Rating eco friendly 0.57 power factor tested by TELE-audiovision

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

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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	• / •

INNOVATION TELE audiovision AWARD 06-07-08/2012

Amiko Alien 2
Unbeatable combination of features and function – for excellent viewing pleasure!

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/07/amiko

Read TELE-audiovision Test Report

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

TELE audiovision AWARD 06-07-08/2012

Panodic HDT-127A DVB-T
Well-equipped DVB-T Mini-Receiver

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/07/panodic

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ACTIVE SATELLITE DATA

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- LBER TEST
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- 22KHZ TEST
- VOLTAGE TEST
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- USALS
- ASD

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- FULL EDIT BY HAND

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DVB-S/C	DIGIPRO SC COMBO
DVB-C	DIGIPRO C MAX
DVB-S 1GB	EXCEL-TV MK4 NIT

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ALL PRODUCTS ARE AVAILABLE FROM YOUR LOCAL DISTRIBUTOR IN YOUR OWN LANGUAGE !

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	— / —

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/05/panodic

Read TELE-audiovision 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-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/03/azbox-me

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CHINA

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China Manufacturer Database*: 1500 Manufacturers in mainland China complete with address in Chinese and contact details of Production Manager

*regularely updated

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Tsinghwa
GT-278

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The Best DTMB Receiver for High Definition

- Very fast switching
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这些是获得最高奖的产品

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/13/05/deviser

Read TELE-audiovision 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

TELE audiovision AWARD 05-06/2013

DEVISER S30
Highly accurate handheld meter optimized for the satellite dish installer

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/13/03/horizon

Read TELE-audiovision Test Report

Manufacturer	Horizon Global Electronics
Website	www.horizonhge.com
Function	Digital Satellite Meter for DVB S and DVB S2 Signals
Frequency Range	950 ~ 2150 MHz
Video Output	—
Built-in Monitor	LCD display

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/13/01/kws

Read TELE-audiovision Test Report

Manufacturer	KWS-Electronic
Website	www.kws-electronic.de
Function	Handheld Signal Analyzer with Spectrum for DVB S, DVB S2
Frequency Range	910 ~ 2150 MHz
Video Output	yes
Built-in Monitor	5,7" Color-TFT, VGA Resolution

TELE audiovision AWARD 01-02/2013

KWS VAROS 109
Extremely high-quality meter for everyday use by satellite installers

KWS ELECTRONIC

TELE-audiovision International Magazine

Expert Opinion

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

Read TELE-audiovision Test Report

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 audiovision AWARD 11-12/2012

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

SATLINK

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http://www.cosmosat-digital.com.ar

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/11/horizon

Read TELE-audiovision Test Report

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 audiovision AWARD 11-12/2012

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

HORIZON

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/11/deviser

Read TELE-audiovision Test Report

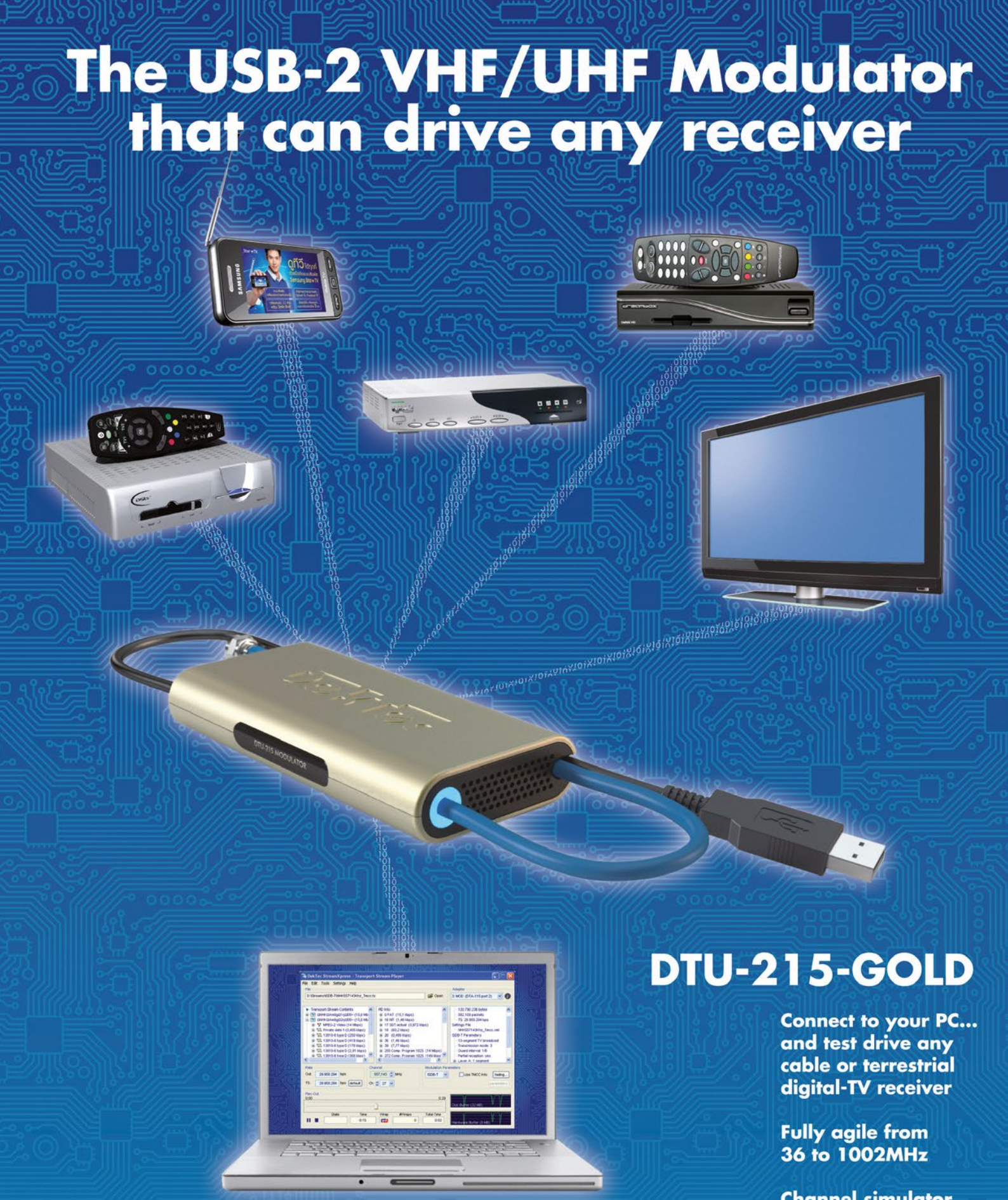
Manufacturer	Tianjin Deviser Electronics Instrument
Website	www.devisertek.com
Function	Optical Power Meter
Frequency Range	-43 dBm ~ +25 dBm
Video Output	—
Built-in Monitor	LCD display

TELE audiovision AWARD 11-12/2012

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

DEVISER

The USB-2 VHF/UHF Modulator that can drive any receiver



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Connect to your PC... and test drive any cable or terrestrial digital-TV receiver

Fully agile from 36 to 1002MHz

Channel simulator included

DekTec's USB modulator DTU-215-GOLD is an option-packed compact modulator that can cope with any cable or terrestrial modulation standard used throughout the world, including DVB-T2, DVB-C2 and ISDB-T. The modulator comes with streamer software that can run on a PC or laptop. The RF output of the modulator can be connected directly to the antenna input of a digital-TV receiver. As it is powered from the USB-2 bus, no external power adapter is required. This modulator is the ideal tool for demonstrations, research and development and to test drive setup boxes and decoders. For more information visit our website where you also will find our local resellers worldwide.

DekTec
www.dektec.com

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/09/deviser

Read TELE-audiovision 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 audiovision 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!

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/05/spaun

Read TELE-audiovision 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 audiovision AWARD 04-05/2012

SPAROS SAT HD
Very useful meter for setting up critical satellite systems

SmartWi wireless Multi Room Solution

Master Box

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.

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TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/03/satcatcher

Read TELE-audiovision 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 audiovision AWARD 02-03/2012

Satcatcher Digipro C Max
More than a cable meter: includes everything a professional installer needs

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/01/horizon

Read TELE-audiovision 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 audiovision AWARD 12-01/2012

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

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DTMB

DVB-C

DVB-S

DVB-S2

DVB-T

DVB-T2

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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

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CHINA

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AWARD WINNING 21ST CENTURY IPTV/WebTV RECEIVERS OF

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Manufacturer	Netgear
Website	www.netgear.com
Function	Streaming Player
WIFI/LAN	• / •
Internal Storage	no
HDTV	yes (up to 1080p)
CVBS/HDMI	— / •
USB/SD Card	— / —

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/13/05/netgear

Read TELE-audiovision Test Report

NETGEAR

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	— / •

INNOVATION TELE audiovision AWARD 02-03/2012

AZBox ME

Today's absolute best Linux Receiver

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/13/05/azbox-me

Read TELE-audiovision Test Report

Energy Efficiency Rating eco friendly 0.51 Power factor tested by TELE-audiovision

Manufacturer	Roku
Website	www.roku.com
Function	Streaming Player
WIFI/LAN	• / —
Internal Storage	no
HDTV	yes (up to 1080p)
CVBS/HDMI	• / •
USB/SD Card	— / •

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/13/03/roku

Read TELE-audiovision Test Report

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-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/11/lookee

Read TELE-audiovision Test Report

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	— / •

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	• / •

Manufacturer	Logitech
Website	www.logitech.com
Function	IPTV Receiver

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/12/03/googletv

Read TELE-audiovision Test Report

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 audiovision AWARD 12-01/2011

JIUZHOU DTP8300
IPTV Receiver Equipped with Top-Notch Technology

TELE-audiovision International Magazine

Expert Opinion

www.TELE-audiovision.com/11/01/jiuzhou

Read TELE-audiovision Test Report

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SES Satellites

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- ***real reception can be checked with the help of augmented reality***
- ***live Internet access allows for constantly updated data***
- ***integrated footprints for reliable prediction of reception***

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The Entire SES Satellite Fleet at Your Fingertips on the iPad

SES is a leading global satellite operator with a fleet of more than 50 geo-stationary satellites positioned at 36,000 km above the earth's surface. With its new iPad app (requiring iOS 6.0 or higher) SES now offers valuable guidance to both viewers and content providers in what is becoming an increasingly confusing satellite jungle.

Every time the app is launched, users are welcomed by a globe with a three-dimensional look, which can be freely rotated via the iPad touchscreen in order to show available SES satellites for any given region. Each satellite entry comes complete with technical data and footprints for all of its beams. Not only can you read all required information right where you need it on the screen, the graphics designers have done an excellent job as well. Easy to interpret EIRP circles indicate the antenna size that is required for reliable reception of the target satellite at the selected location. All local SES offices and teleports can also be shown, which makes for an added bonus that is certainly very well received by content providers using this app.

With its more than 50 satellites currently in orbit SES is able to reach almost 100% of the world's population, even though some positions are more popular and widely known than others. The most popular direct-to-home (DTH) satellites operated by SES and received by millions of viewers can be called up in a separate overview that – like the rest of the app – is extremely pleasing to the eye.

If we had to identify a single highlight of the new SES Satellites app it would be the so-called Satellite Live View mode, which makes use of the iPad's augmented reality capabilities. All you need to do is point your iPad towards the sky and slowly move it in all four directions until you discover the right angle at which to hold the tablet. Depending on which direction (East or West) you now move the iPad, the SES Satellites app superimposes all available SES satellite positions on the camera's live view. Regular readers of TELE-audiovision might be familiar with such a feature, as the DishPointer app introduced in the past works in a very similar fashion. Needless to say the fun factor of this feature is hard to beat, even though its core job consists of helping users find out whether buildings or large trees are in the way of perfect satellite reception. This alone makes this app a worthwhile tool. In addition, Satellite Live View can assist in roughly aligning a satellite antenna – something that should please professionals and amateurs in equal measure.

We did appreciate the fact that the SES Satellites app does not come with a static set of data but rather keeps all parameters and details up to date thanks to its connection to the Internet. In case users are still left with an open question, the app provides contact information for getting in touch with SES directly.

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1

2

1. Download the SES Satellites app from the Apple iTunes Store:
https://itunes.apple.com/at/app/ses-satellites/id548293952?mt=8

2. The app keeps all data up to date by accessing SES servers via its Internet connection.

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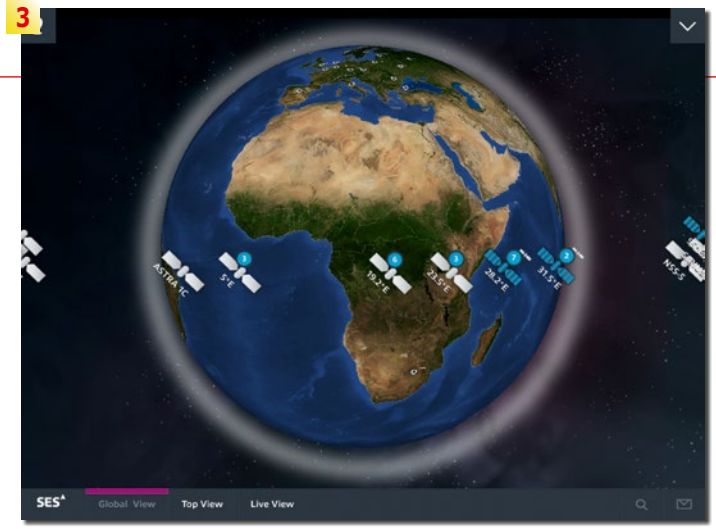

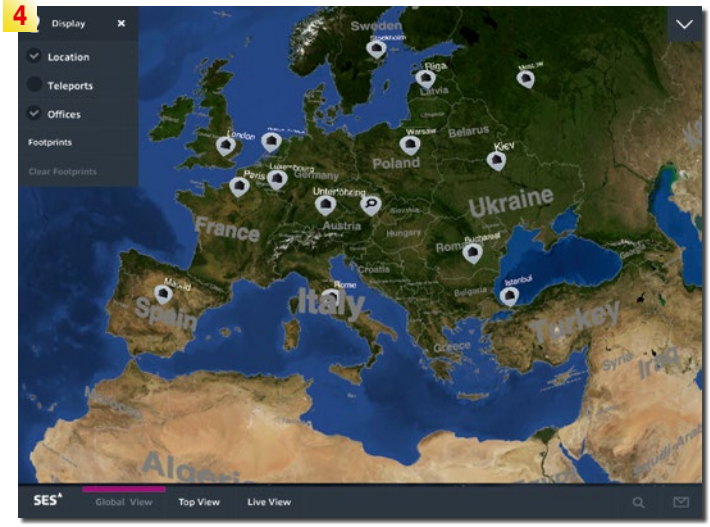

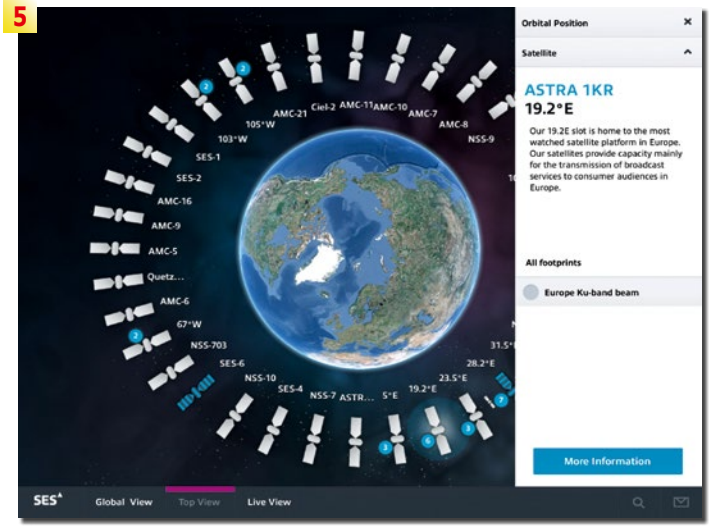

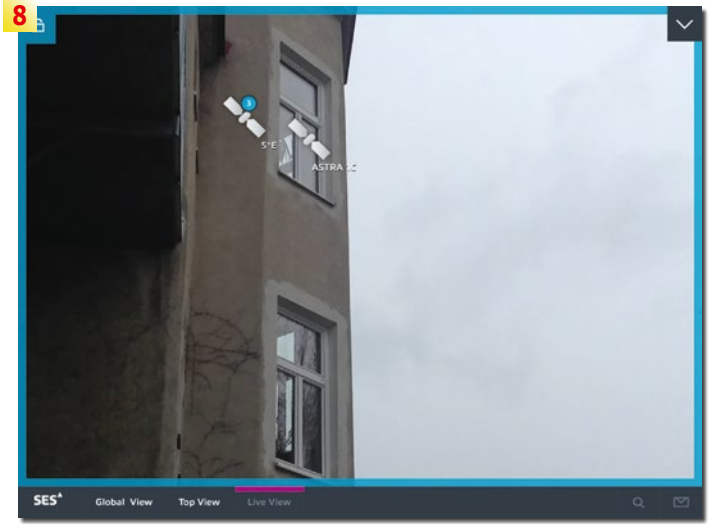

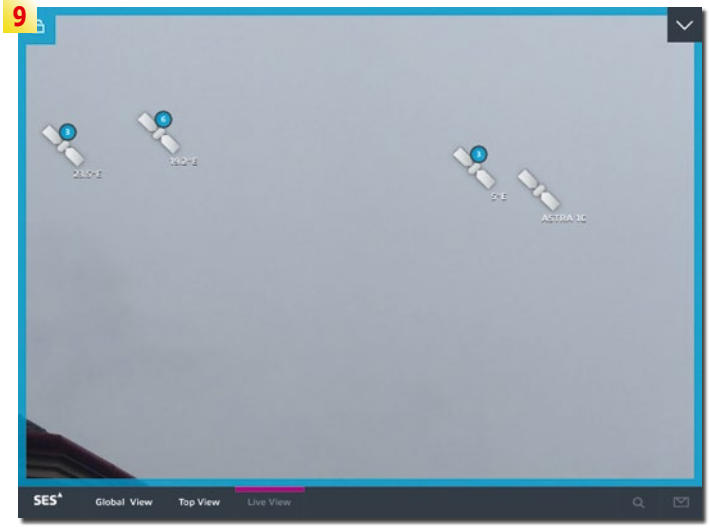

3. 3D globe with SES satellites above the equator.

4. Local SES offices and teleports in Europe. Left: Individual elements can be shown or hidden on the map.

5. List of most popular SES satellites. Each satellite comes with technical details, if required.

6. The visual presentation of footprints including EIRP can be used to quickly determine the required antenna size for reliable reception.

7. The SES Satellites app superimposes the correct positions of SES satellites on the iPad camera's live view. If you move the iPad the display adjusts accordingly.

8. Thinking of setting up an antenna for reception of the SES satellite at 5° East right here? Think again, as the building obstructs a direct line of sight between satellite and antenna.

9. Here the SES Satellites app creates a beautiful presentation of the Clarke Belt, with SES satellites lined up like pearls on a string.

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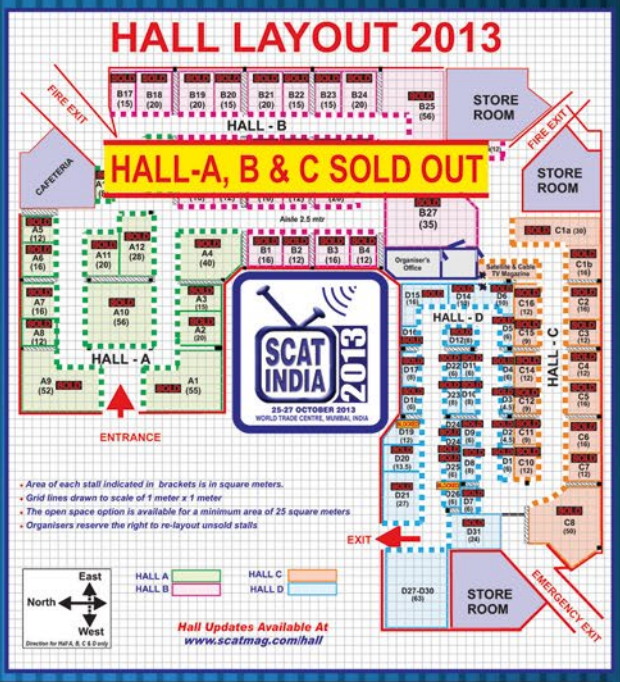
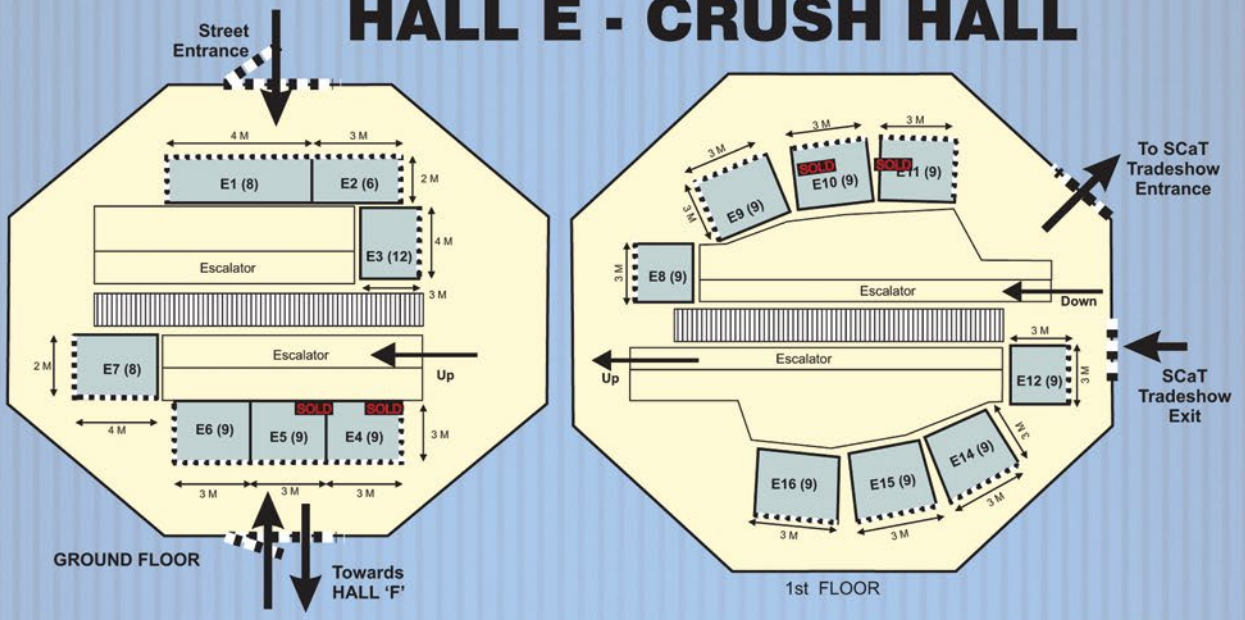


HALL E - CRUSH HALL



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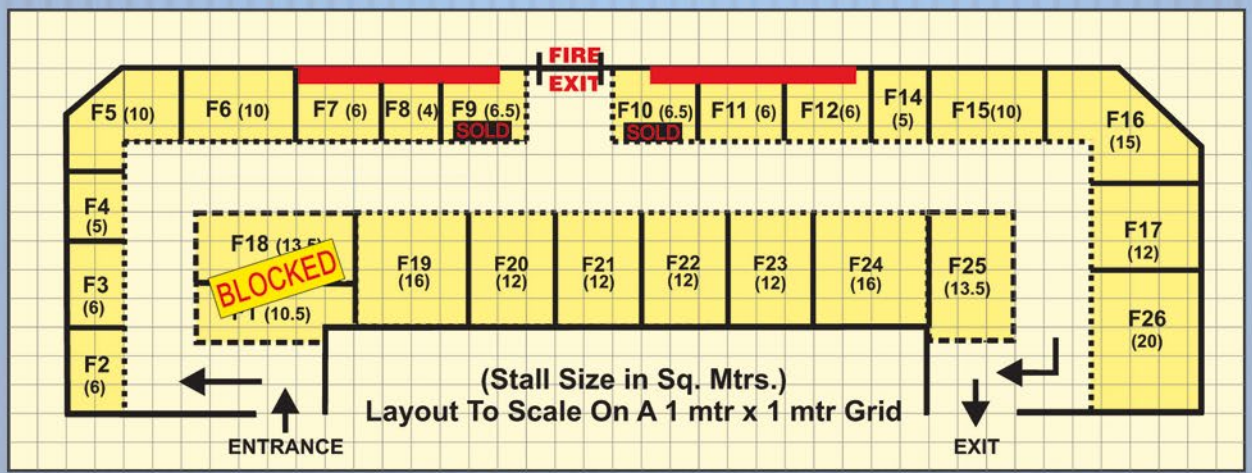

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Box Info
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zap before Stream
Settings
A/V Settings
Customize
Harddisk setup
Current
Bouquets
Providers
Satellites
All Channels
Favourites (TV)
Das Erste HD
15:30 - 16:00 Ratgeber: Auto - Reise - Verkehr +4 min
16:00 - 16:30 W wie Wissen 30 min
ZDF HD
14:20 - 16:00 Power Of Love - Triumph der Liebe +4 min
16:00 - 16:10 heute 10 min
RTL HD
15:45 - 16:35 Undercover Boss +39 min
16:35 - 16:45 RTL Bibelclip 10 min
http://192.168.1.4:8001/1:0:19:283D:3FB:1:C00000:0:0:0: - VLC media player
Media Playback Áudio Vídeo Ferramentas Ver Ajuda
HD
00:00
00:00

Vitor Martins Augusto

It's actually quite normal to use Coax cable to distribute digital TV signals to a TV; it doesn't matter if it's a satellite signal from an LNB, a terrestrial signal or a cable signal. This method of distribution has one disadvantage: a coax cable must be routed to each and every TV and for each TV a matching receiver for digital signals is needed.

An alternative to this is IPTV. It has been available for quite some time now but up until now it has only rarely been used in a private setting.

With IPTV, digital signals are distributed via a computer network. Data is sent in small packets whereby the various network adapters are connected to a switch. The purpose of this switch is to route the data packets from a broadcaster to the attached TVs. A switch handles this task in an intelligent way; it routes the data packet to only one TV. To that end, all of the attached TVs have to link to the switch.

Although most of the switches used in the private setting come with only 4 to 16 inputs, more than one switch can be connected in series. In this way up to 254 receivers can be provided for (actually, the identification numbers 0 – 255 are available although they are usually reserved for special uses). The group of up to 254 receivers forms a subnet. If a broadcaster's data packet in one subnet is to be routed to a TV in another subnet, then a router would be needed. A router handles the communications between different subnets. Private users, for example, use a router to access the Internet so that the computer in the home network (that itself forms a subnet)

1

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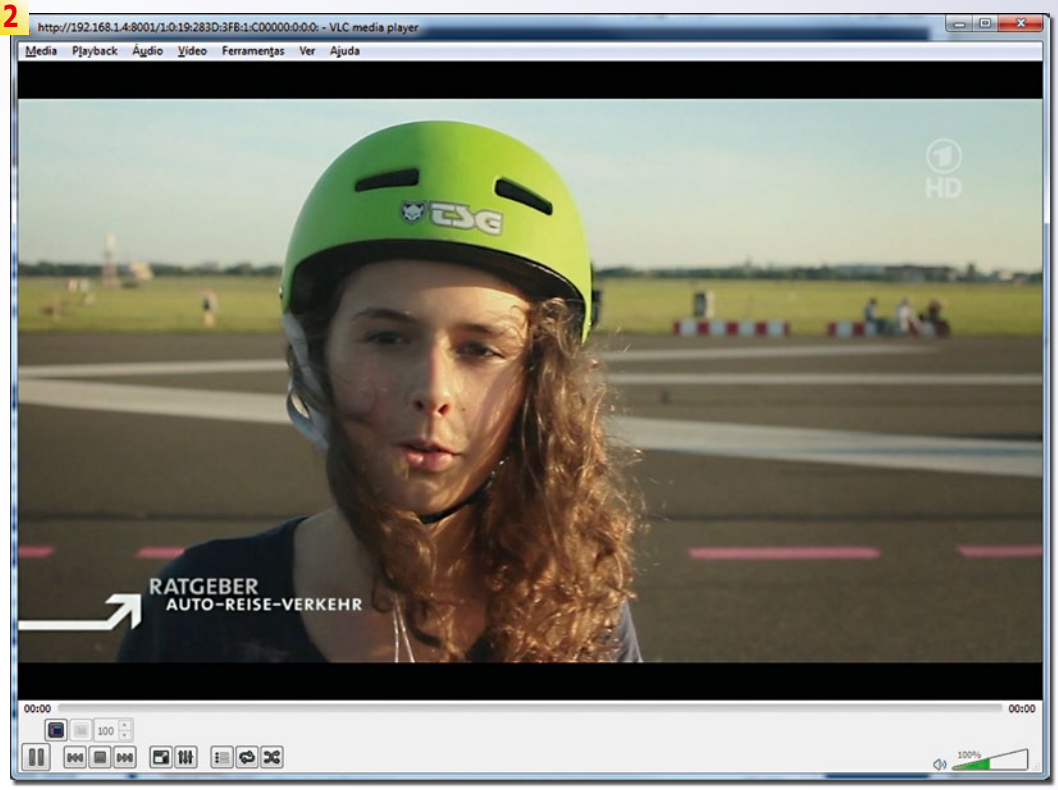

1. Open the IP address of your Linux receiver in the Firefox browser. Depending on the installed firmware, a receiver's web frontend should open in which you can, among other things, have a look at the EPG of various channels. In most cases you'll see a small TV symbol on the right side. Click on it.

2. Either VLC will open directly or you'll be given a file to download. Open the file in VLC so that the desired channel will be streamed in its original picture quality to your PC. That's how simple IPTV can be even with this huge limitation: only one can receive the stream on their TV.

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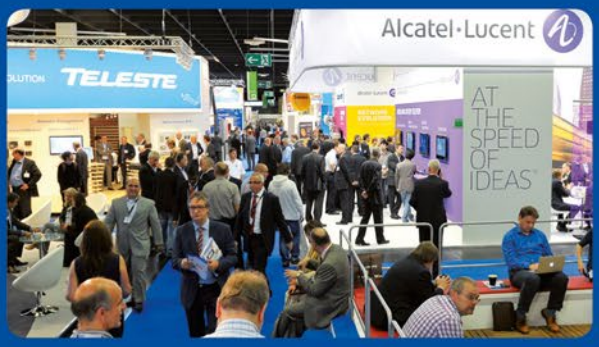

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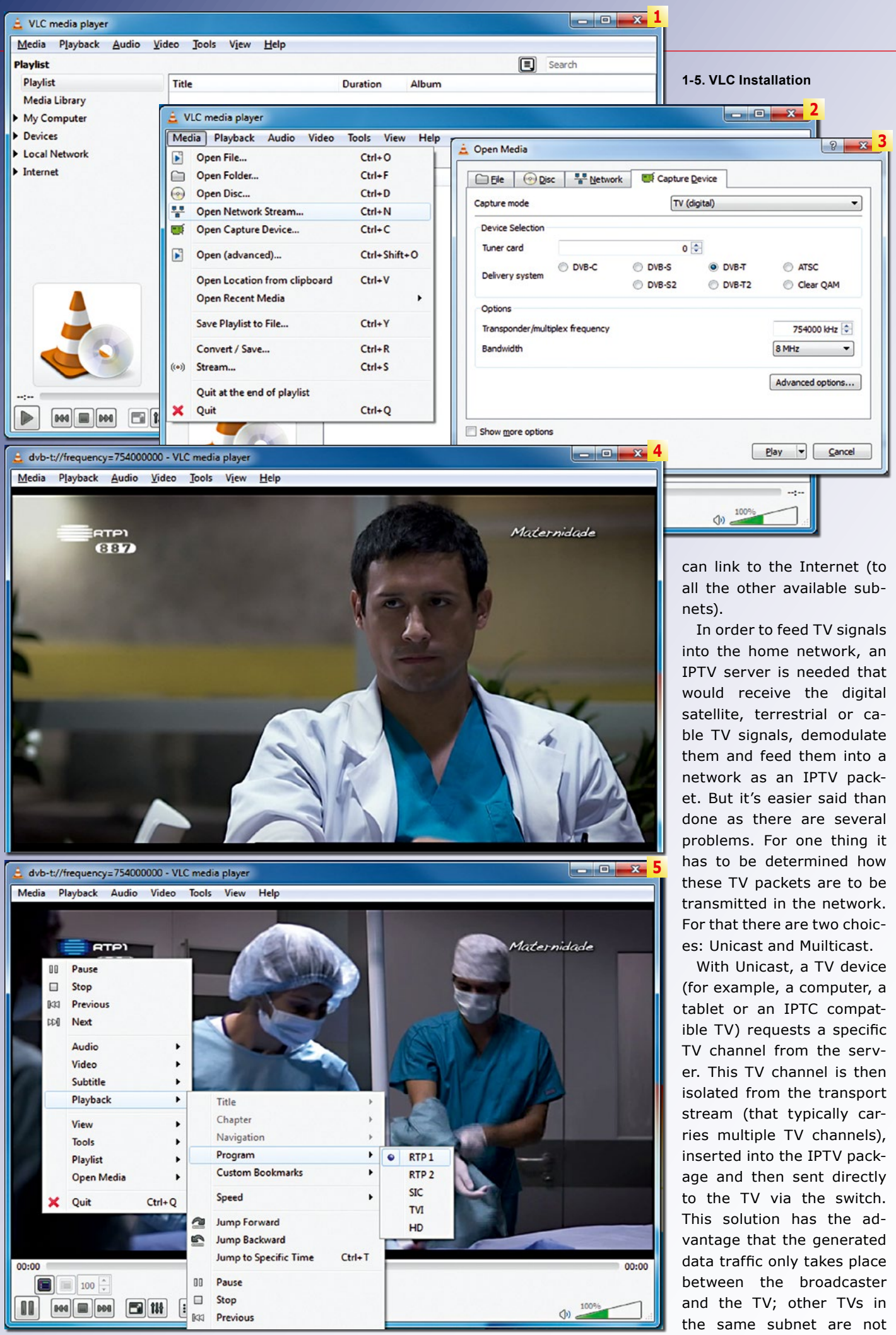


1-5. VLC Installation

can link to the Internet (to all the other available subnets).

In order to feed TV signals into the home network, an IPTV server is needed that would receive the digital satellite, terrestrial or cable TV signals, demodulate them and feed them into a network as an IPTV packet. But it's easier said than done as there are several problems. For one thing it has to be determined how these TV packets are to be transmitted in the network. For that there are two choices: Unicast and Muilticast.

With Unicast, a TV device (for example, a computer, a tablet or an IPTC compatible TV) requests a specific TV channel from the server. This TV channel is then isolated from the transport stream (that typically carries multiple TV channels), inserted into the IPTV package and then sent directly to the TV via the switch. This solution has the advantage that the generated data traffic only takes place between the broadcaster and the TV; other TVs in the same subnet are not

Entering the World of IPTV

If you're interested in checking out the world of IPTV, you won't need any special hardware – a digital USB receiver and a VLC (Video LAN Client) is enough for initial experiments.

This great program can not only play back almost any multimedia format, it can also, among other things, stream multimedia data into the network as well as receive and display a network stream.

It's actually very simple to do and can be tested using just one computer. The idea behind this is that the built-in network card can also be accessed via the IP address 127.0.0.1. This IP address represents the so-called Local Host and means that you can test the client directly on the same server. For example, you can test a web server on the same PC if you enter in "localhost" or 127.0.0.1 in the browser's address line. The PC never has to be connected to the network.

First VLC must be installed. This multimedia talent can be downloaded free of charge from its official website (www.videolan.org). If you already have an older VLC version installed, it would be a good idea to upgrade to the current version for security reasons.

In order to stream TV, you would, of course, need a corresponding receiver on your PC. VLC can be used with a variety of BDA compatible tuners; in our case we are using a DVB-T receiver.

The first hurdle is to get VLC into reception mode. For starters, though, you might first want to try receiving a transponder with VLC without streaming. For this you select "Media" in the menu and then "Open Capture Device". Under "Capture Mode" you should select "TV (digital)" and for the "Delivery System" you should chose the correct tuner, in our case it's DVB-T.

Now the reception parameters can be entered into the Options. For our setup the frequency of 754MHz must be entered in VLC in KHz – 754000KHz! This little detail has already caused problems for many. The bandwidth in our case is 8MHz. The "Play" button starts the TV playback. If everything worked, then there's nothing stopping us from streaming. If it didn't work, simply double-check your entries; sometimes an extra "0" found its way into the settings or some other small error has popped up.

Tip: to switch between the different transponder channels, you can click on the right mouse button and then under "Playback – Program" you should find the channels.

If you now select "Stream…" under the "Media" menu heading, you can reconfigure the TV receiver, only this time instead of clicking on "Play" you can click on "Stream". The reception parameters in this second go-around should now be correctly filled in so that you can click directly on "Stream". An Assistant will now guide you through three steps.

In the first step the reception parameters are shown all together in a row. These can be used in configuration files or as start parameters and are very helpful for more advanced applications.

In the second step the receiver is specified. With Unicast the stream is sent to only one receiver. First the protocol is selected – for the first attempts use the RTP/TS protocol; it is supported by the most clients. Configure the IP address with 127.0.0.1. The port can be set to 5004. Deactivate the Transcoding option. This would unnecessarily load down the PC and, aside from that, we want to maintain the best possible picture quality.

In the third and last step the option "Stream all elementary streams" should be selected so that the entire stream from the tuner can be inserted into the network. This would make even videotext available on the TV.

Clicking on the "Stream" button starts the process. At this point though, nothing exciting will happen as yet. The VLC won't show the stream locally and nothing can be seen in the window; only the "Play" button is replaced with a "Pause" button. Now open up a second VLC window and select the entry "Open Network Stream…" in the "Media" menu. A new window will open in which you must enter in exactly this address: rtp://127.0.0.1:5004. After confirming the entry, a window will instantly open for each channel and the resulting chaos resembles what you might see in a TV studio. All of the channels are shown simultaneously with video and audio in separate windows.

What happened? The second VLC window accessed the transport stream from the first VLC window via the local host address on port 5004 with the help of the RTP protocol. It routed the stream correctly to the second VLC window and showed each channel in its own window.

If you now were to use a second computer that would be linked to the first PC via the network, then you could pass the transport stream from one computer to the other via that network. For this to work you'd need to enter in the IP address of the second computer into the first computer instead of the Local Host IP address mentioned above. With the second computer you would enter the IP address of the first computer – once again this would be instead of the Local Host IP address. And that's it!

The IP address of the computers can be read in the Windows Network Assistant or through the command "ipconfig-all" entered into a DOS shell that can be accessed by typing in "cmd" in the Windows Start Menu.

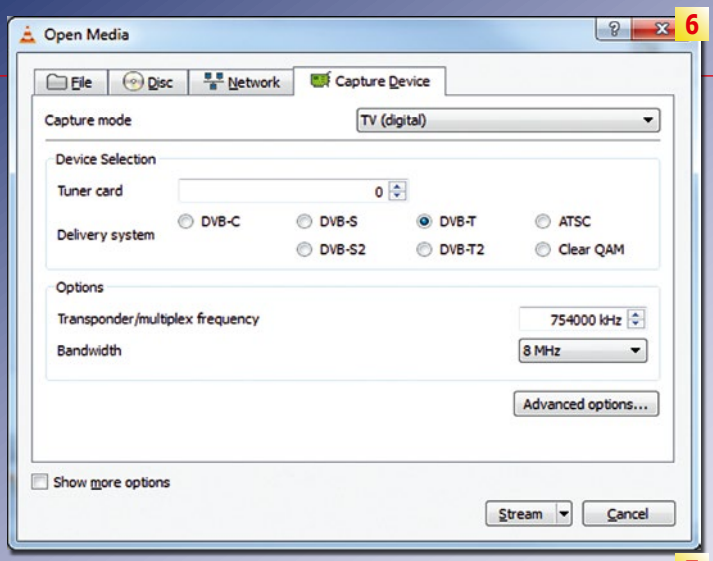
Last but not least, a few tips:

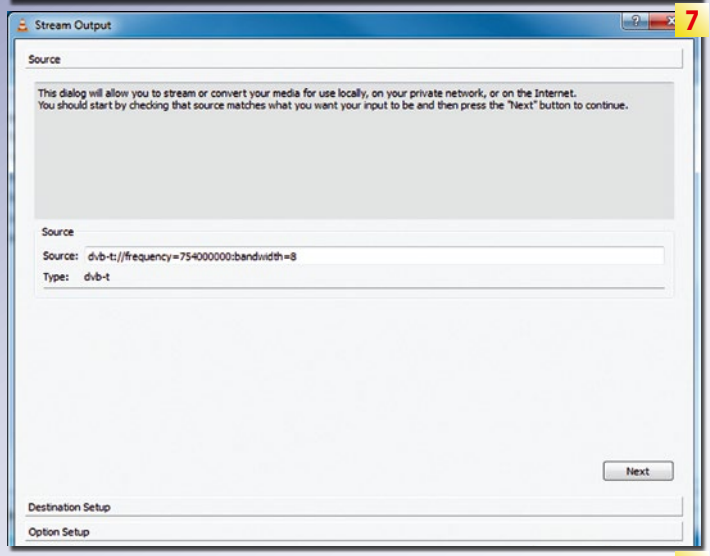
1) Don't try right away to stream over the Internet. For that purpose the stream needs to be transcoded in order to significantly reduce the bandwidth.

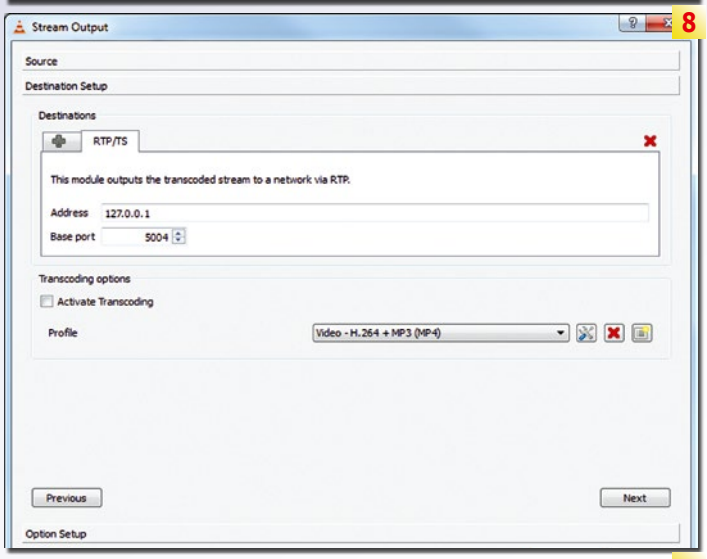
2) Streaming in your own network can load it down quite heavily; find out first if other users need the network.

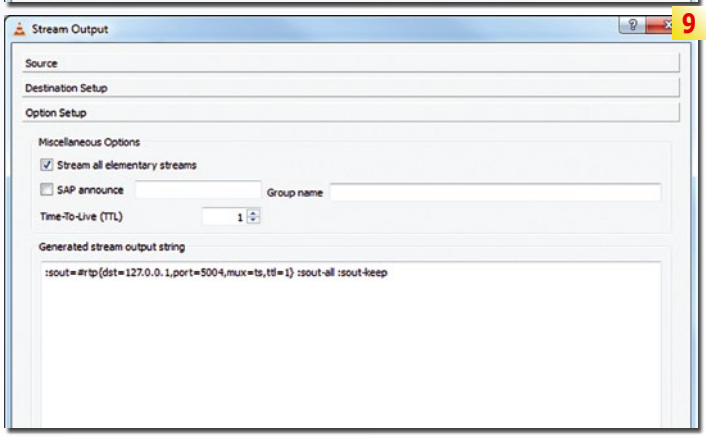
3) The Internet offers quite a few tips and tricks regarding streaming. The VLC forum is especially occupied with this subject.

Have fun with your first streaming experiments!









6-9. VLC Installation

involved and which means they can be used in the network with full bandwidth.

But Unicast has one problem: what happens when two, thee or even more users request the same TV channel? The server has to then route the channel individually to the various TVs which will in turn put a load on the network's bandwidth. It could happen that the network connection between the server and the switch could easily be overloaded by the vast amount of data such that the video output at the TV might become intermittent or stop altogether.

In cases like this Multicast would be much more elegant. With Multicast the data packets are sent in parallel to all of the connected TVs and if you want to, you can receive the data stream, and if you don't want to, you simply don't access the data stream. The server only needs to send the data packet through the switch one time. The switch in turn routes the data packet to not just one TV, but all of the connected network adapters.

But even this technique has its drawbacks; just like that all of the network connections have to deal with a heavy amount of data traffic. When two non-participating computers want to exchange data between themselves, a portion of the network bandwidth is no longer available. Even though these two computers are not being used to watch TV, the line will still be occupied with IPTV data.

Additionally, with Multicast it's typical for routers that are not specifically configured to not pass on these data packets. If you allow the router to configure itself at home, Multicast streaming over the public Internet usually doesn't work because the routers from nearly every Internet provider can't pass on these packets. That's why streaming via the Internet for private users only works with Unicast. But wait! That fact that it does work is proven by all of the IPTV providers that can be found in the Internet: they are definitely using Multicast to route TV channels to an IPTV receiver; they have special access to the Internet.

Putting it all together, we can say this: for private IPTV applications Unicast is in most cases the correct solution; if you want to serve multiple users with IPTV, such as in hotels or apartment blocks, then Multicast is the way to go.

If you want to take part in IPTV at home, you really don't need all that much: a Linux receiver or a PC with an integrated reception card would be the server and a normal computer or laptop would be the TV device. In most cases, Linux receivers already have a web front-end installed in the firmware.

If you call up the IP address of the Linux receiver in the computer's browser, you can choose a channel and watch it on the PC. To do this you click on the small TV symbol to load an m3u stream file. This is then opened for example with VLC and just like that you can watch a live stream on your PC.

This functions quite well although with a Linux receiver it is always one user that can watch a specific channel. Through Unicast streaming, only one user

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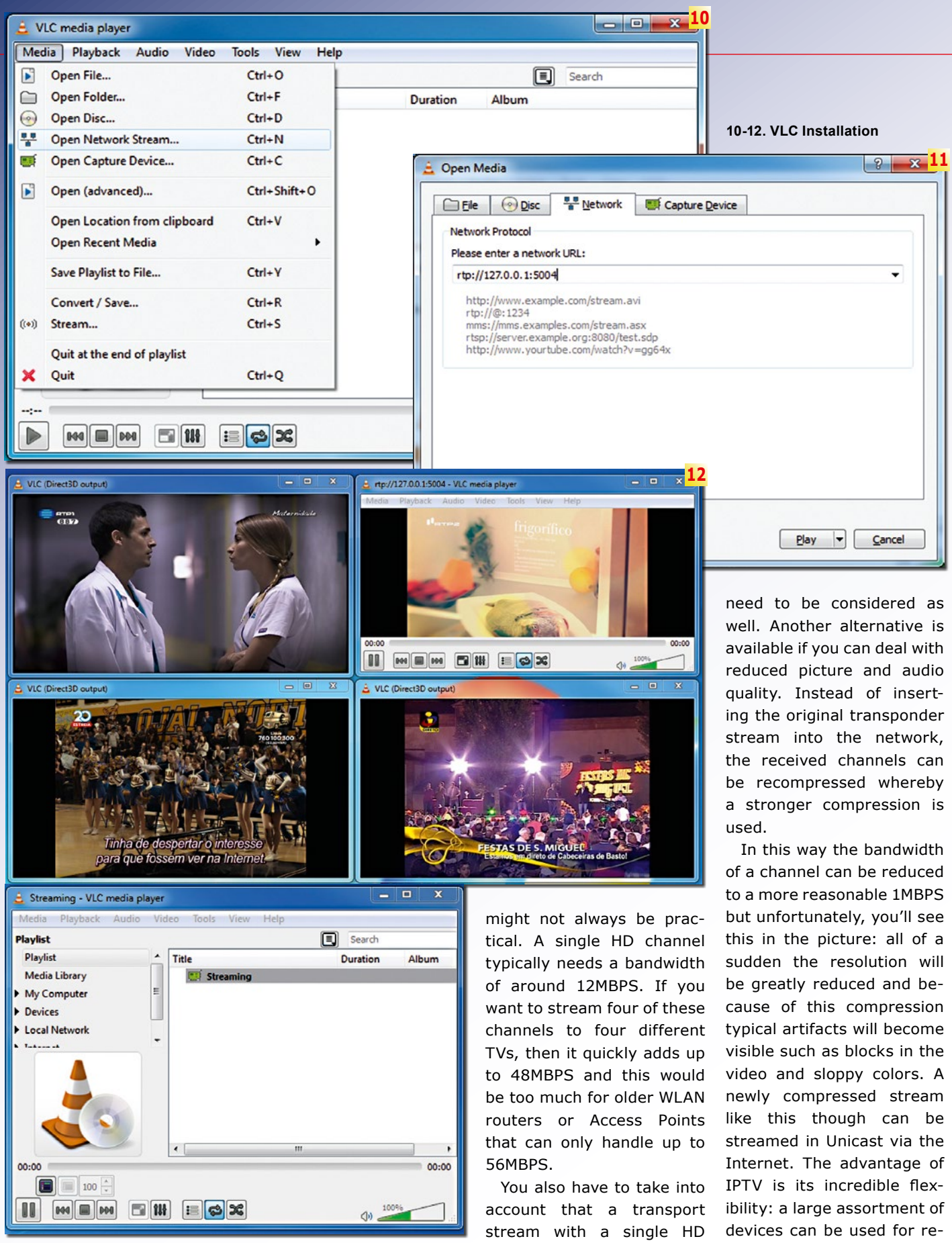

10-12. VLC Installation

is served; a single tuner couldn't even process channels from different transponders at the same time anyway.

The solution is multiple tuner server boxes so that, for example, the four levels of a satellite position can be received independently from each other and so that the parallel streaming of different transponders becomes possible. But even here there's a little calculation that shows that this might not always be practical. A single HD channel typically needs a bandwidth of around 12MBPS. If you want to stream four of these channels to four different TVs, then it quickly adds up to 48MBPS and this would be too much for older WLAN routers or Access Points that can only handle up to 56MBPS.

You also have to take into account that a transport stream with a single HD channel and an audio track needs about 12MBPS, but when it's converted into an IPTV packet, this rate actually bloats somewhat and then there's all the entire headers that are required for all the data packets that need to be considered as well. Another alternative is available if you can deal with reduced picture and audio quality. Instead of inserting the original transponder stream into the network, the received channels can be recompressed whereby a stronger compression is used.

In this way the bandwidth of a channel can be reduced to a more reasonable 1MBPS but unfortunately, you'll see this in the picture: all of a sudden the resolution will be greatly reduced and because of this compression typical artifacts will become visible such as blocks in the video and sloppy colors. A newly compressed stream like this though can be streamed in Unicast via the Internet. The advantage of IPTV is its incredible flexibility: a large assortment of devices can be used for reception such as computers, laptops, game consoles, tablets, Smartphones and, of course, IPTV compatibles TVs. And let's not forget how WLAN solves the problem regarding the otherwise needed cabling.

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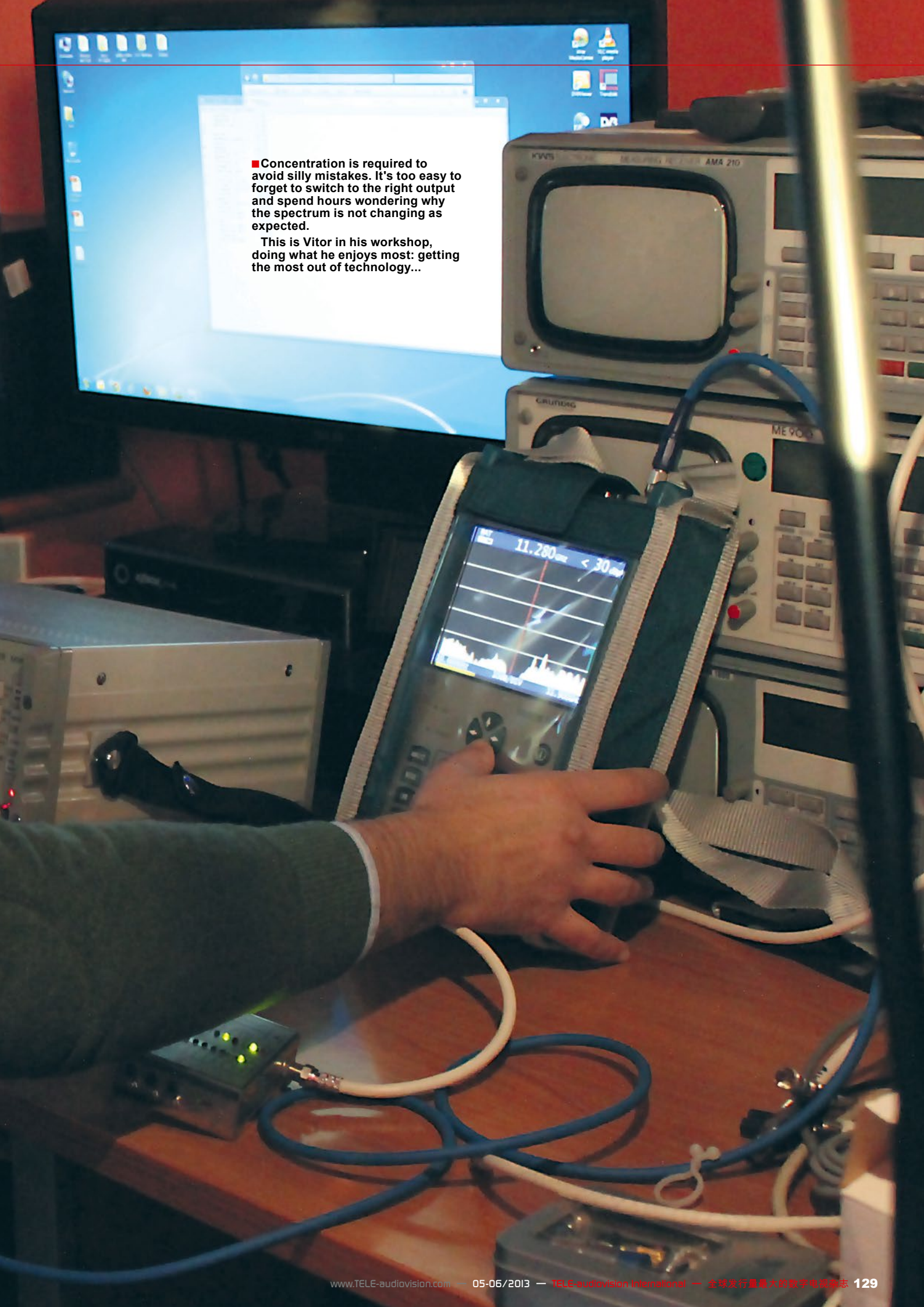
New in the Ka-Band

- *How to receive the Ka-band in Europe*
- *Using the US American SL3 LNBs in Europe*
- *DiSEqC commands to control the Downconverter*
- *This is not for your normal TV viewer*



■ Concentration is required to avoid silly mistakes. It's too easy to forget to switch to the right output and spend hours wondering why the spectrum is not changing as expected.

This is Vitor in his workshop, doing what he enjoys most: getting the most out of technology...

■ The „White Ka“ LNB by Inverto is a consumer LNB for Ireland, that fits regular satellite dishes without any modification. It is actually a TwinLNB.

Ka-Band Satellite Reception in Europe

Vitor Martins Augusto

TELE-audiovision has always been reporting on the latest developments in the Ka-band. We did this, for example, in the 08-09/2007, 10-11/2009 and 08-09/2011 issues. And now, once again, it's time for an update. We want to take a closer look at the situation in Europe.

Here are a few of the basics regarding the Ka-band to refresh your memory. The spectrum for satellite TV reception we are interested in is broken down into the following bands (table 1).

Note that Ku stands for „K-under“, that is, UNDER the K-band, and Ka stands for „K-above“, that is, ABOVE the K-band.

The first big hurdle in the Ka-band is its enormous frequency range. While a standard universal LNB can receive practically the entire Ku frequency range, several different LNBs would have to be used for the K/Ka-band since each LNB typically covers only about 500 MHz. The LNBs that are used for the Ka-band are not consumer LNBs that are manufactured and marketed in the millions; instead, they are professional LNBs with correspondingly higher prices.

For satellite DXers and TVRO fans who have limited budgets, there is a way to sneak into the Ka-band world. There are precisely two inexpensive ways to do it:

1) The Irish TV provider Saorsat offers an FTA package in the Ka-band and you can get the necessary consumer LNB that operates in the 19.7 to 20.2 GHz range from an LNB manufacturer via the Internet at a cost of around 40 Euros.

2) The American TV provider DirecTV carries some of their programming on two satellites in the Ka-band. For this there are several LNBs that are marketed under the label SL3. Used versions of these LNBs can be purchased in the USA quite inexpensively.

Keep in mind though that if you have them shipped to Europe, the customs

C Band	4 GHz bis 8 GHz
X Band	8 GHz bis 12 GHz
Ku Band	12 GHz bis 18 GHz
K Band	18 GHz bis 26.5 GHz
Ka Band	26.5 GHz bis 40 GHz

duty charges could be significantly high. Note that along with the SL3 you would also need a B-band converter (often labeled BBC). The DirecTV SL3 LNB would cost about US$30 and the B-band converter would run about US$10. Don't forget to factor in the shipping costs and the customs duties.

For this report I experimented with both LNBs with the following results:

The LNB for the Irish TV provider is very easy to work with since it fits nicely in a standard universal LNB mount. Simply replace the existing universal LNB with this one and just like that you're working in the Ka-band although it'll only be in the 19.7 to 20.2 GHz range.

If you install this LNB in an existing motorized antenna system, you'll quickly get a feel for what's out there in the Ka-band. You can drive the antenna to every known satellite position and use a signal analyzer to see if there are any active Ka-band transponders.

To make a long story short, from my location here in Portugal with this „White Ka" LNB I could only identify one transponder at 13.0E and eight transponders at 9.0E. The transponders on EUTELSAT 9.0E belong to the TooWay Internet service. The single transponder on HOTBIRD at 13.0E is also used for satellite-based Internet service. To confirm this I connected an older satellite modem and, sure enough, I was able to achieve a lock on that corresponding frequency.

But that was it! With this LNB and an 80cm antenna there were no other transponders that could be found from 39.0E to 30.0W.

Why couldn't I receive the Irish TV provider Saorsat? They broadcast seven RTÉ channels in DVB-S2 that happen to be unencrypted. The answer is quite simple: EUTELSAT 9.0E utilizes spot beams. With these extremely small footprints, this package can be beamed with great precision to Ireland; even along the British coast, with a few exceptions, nothing can be received anymore.

These spot beams provide the following advantages for a satellite provider:

- Transponders can be broadcast to very clearly defined regions and that basically eliminates the need for encryption like that taking place in Austria for example.

- The transponder frequencies can be used much more efficiently since the same frequency can be reused in other spot beams. TooWay essentially uses the same frequency across all of Europe but depending on your location, different transponders would be used. This technique would allow the use of significantly higher bandwidths than could be used before.

And, with that, the test of this Ka-band LNB came to an end. Since TooWay does not use QPSK or 8PSK modulation, I couldn't do anything with these transponders.

Next was the SL3 LNB from DirecTV. This LNB is actually made up of three LNBs all built into one metallic form as a multifeed LNB. This multifeed LNB also has a built-in multiswitch that feeds the three satellite signals to four independent outputs. As is typical with multifeeds, these LNBs are mounted in such a way that the three satellites (99.0W, 101.0W and 103.0W) can all be received at the same time.

This created problems with DXers, especially with motorized antennas, since the two Ka LNBs are positioned in such a way that a two degree correction is needed. With DiSEqC motors like the SG2100 you can expect four impulses per degree.

The table at top puts it all together for the SL3 LNB (table 2).

The LNBs polarization is left or right

	99.0W (Ka-Band)	101.0W (Ku-Band)	103.0W (Ka-Band)
Input	Low: 18.3-18.8 GHz High: 19.7-20.2 GHz	12.2-12.7 GHz	Low: 18.3-18.8 GHz High: 19.7-20.2 GHz
Output	Low: 250-750MHz High: 1660-2150MHz	950-1450MHz	Low: 250-750MHz High: 1660-2150MHz

Ka-band LNB mounted at a rotary 60cm consumer dish

circular and is switched with a 13/18V control voltage. The output signal from the central Ku-band LNB is in the 950 - 1450 MHz range while the outputs from the two outer Ka-band LNBs (depending on the 0/22 kHz signal) is 250 MHz - 750 MHz and 1660 MHz - 2150MHz.

Since satellite receivers can't receive the 250 - 750 MHz frequency band, a B-band converter (BBC) needs to be installed between the receiver and the SL3 the upconverts the 250 - 750 MHz range back up to the 1160 - 2150 MHz range.

The BBC is waiting for a 22 kHz control signal. But this is not the same continuous 22 kHz tone that is used with universal LNBs to switch between the low and high bands. This wouldn't make any sense since this 22 kHz tone is already being used to switch between the left and right LNBs. Because of this the BBC is switched on using a non-standard „E20300" DiSEqC command and off using a non-standard „E20200" command. The second Byte of a correct DiSEqC command usually specifies the receiver. The values considered here are 00 (all connected receivers) or 10 (each LNB, matrix or SMATV). That's why the Ka low band of both outside LNBs in the SL3 cannot be received with a standard receiver.

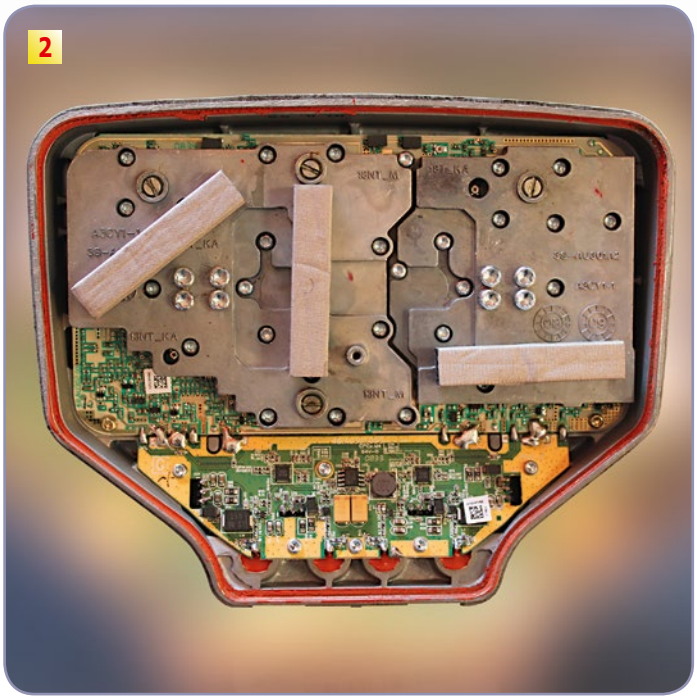
There are two ways around this: either the BBC is modified or you use a programmable DiSEqC generator/monitor. This is something you can find, for example, in the Kathrein MSK 33 signal analyzer. This somewhat older signal analyzer doesn't just simply support DiSEqC 1.0/1.2/2.0, it also expects that the user will enter in RAW DiSEqC sequences manually. What appears to be complicated and not very user-friendly, is actually an absolute top feature. Aside from that, the DiSEqC monitor can also be used to log DiSEqC commands.

At this point we'd like to make a suggestion to today's signal analyzer manufacturers: a DiSEqC monitor to display and set DiSEqC control commands is a very important feature to

1. The DirecTV SL3 LNB is a complex and heavy LNB. It is actually a multi feed combination of three separate LNBs, connected through an internal multi switch to provide the output signal on four individual connectors. It is no surprise that the LNB weighs 650 grams, making it too heavy for the motor to rotate properly.

2. This is how the inside of the SL3 LNB looks like. One can clearly recognize the three different LNBs and the multi switch PCB.

3. The feedhorn is actually composed of three feed horns.



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have when testing complex and/or exotic DiSEqC installations. Unfortunately, though, modern devices don't include this feature anymore. Some homemade solutions to build your own DiSEqC test equipment can be found on the Internet but it's not always easy to find the necessary components in electronics stores.

For this reason I first used my Kathrein MSK 33 to activate the Ka low band on the SL3 and once again scanned every satellite position.

And once again there were difficulties. It didn't take long to realize that the SL3 uses much more power than a standard universal LNB. And then there's its much heftier weight of 650g. Because of this the motor could not properly turn the way it's supposed to.

The solution here was to manually disconnect the cable from the motor to the LNB. A better solution would be to use a DiSEqC switch and, just before moving the antenna, switch to an unoccupied DiSEqC 1.0 position thereby interrupting the power going to the SL3. You could also attach a counterweight to the antenna.

At the same time, it's not exactly that easy to drive a motor with the Kathrein MKS 33 since DiSEqC 1.2 commands are not directly supported. To put together a DiSEqC string every time I want to move the antenna is just too complicated for me. That's why I used a different signal analyzer to move the antenna, the KWS VAROS 109, that I tested in the 01-02/2013 issue of TELE-audiovision. This analyzer sports a very fast spectrum that greatly simplifies finding satellites and transponders especially since you can drive the motor to the east and west at the same time.

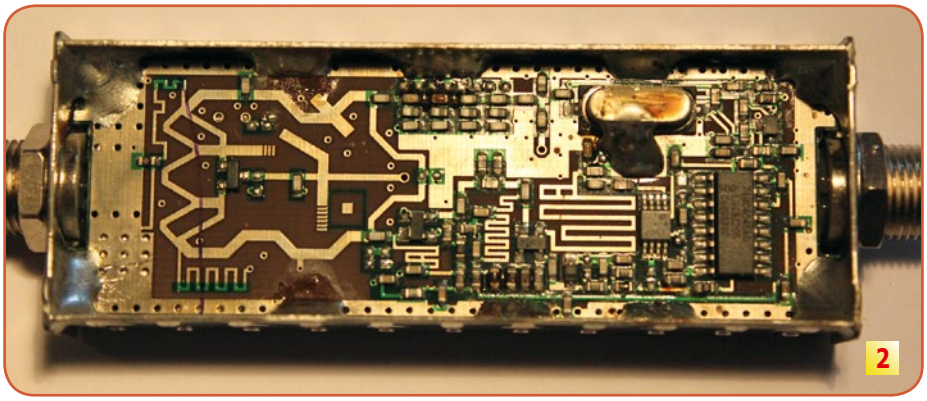
And to be able to analyze the Ka low band with the KWS VAROS 109, I used the TP204 DiSEqC monitor from Spaun. It's installed in between the receiver and the LNB and comes with an extra output for an analyzer. I used the Kathrein MKS 33 as the receiver in order to be able to generate the necessary DiSEqC control commands and for analysis I used the KWS VAROS 109.

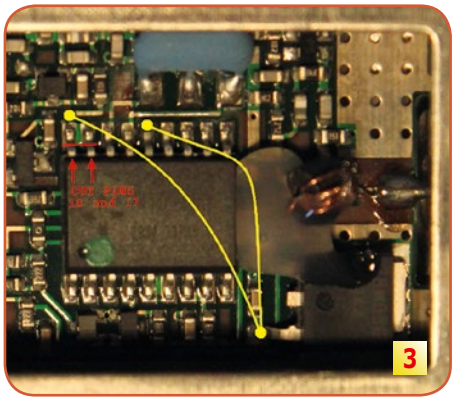
As a side effect I was able to verify with the TP204 that DiSEqC commands were actually sent.

Since it's still rather uncomfortable to use two different signal analyzers, I searched the Internet for instructions on how to modify the BBC and found what I was looking for. This BBC has created quite a bit of interest with radio amateurs. An inexpensive frequency converter that can convert 250 - 750 MHz to the needed 1660 - 2150 MHz range can be found for a mere US$10. What a steal!

There are two different modifications that would place the BBC in continuous operation. Keep in mind that the radio amateur is not interested in passing through the LNB supply voltage and thus deactivates this as a first step. Obviously, when working with LNBs, you don't want to do this; you don't want to interrupt the power supply to the LNB.

Of the two different methods, we suggest the easier of the two for the connection of the SL3. Here two pins on the IC would have to be disconnected (with luck you can simply unsolder them and then bend them up) and two wires would have to be soldered. The two wires would jump out the on/off switching and force the converter into continuous operation.





1. The B-Band Converter (BBC). It is used to convert frequencies from 250 MHz – 750 MHz up to 1660 MHz – 2150 MHz. This is a good example on how prices drop, when mass production occurs, this BBC is now the cheapest available converter of its type. The BBC is to be attached on the HF connector of the satellite receiver.

2. Fortunately it is fairly easy to open the B-Band Converter (BBC). Just slide a sharp tool on the side and open it carefully. There are two brackets holding the plastic together and you don't even need to remove the sticker on the other side.

3. The modification is fairly simple. Just cut pins 17 and 18 of the main IC or try to melt the solder and lift the pins. Then solder two wires according to the picture to permanently activate the Ka/Low-Band.

But then, just as I was ready to do this modification, I found out about a new Windows program: Easy Blindscan Pro (EBS). This program uses the same STREAMREADER.DLL as the beloved CrazyScan and its functionality is similar to CrazyScan. In addition to the comfortable, user-friendly interface, this software can also send RAW DiSEqC commands.

The DiSEqC implementation in this software is exemplary in that complex command sequences are also supported so that unusual systems, like my two SG2100A motorized antennas (see TELE-audiovision 11-12/2012) can be handled automatically without any tricks. For this reason I haven't yet modified my BBC so that I could continue to switch between the SL3's Ka low band and Ka high band.

And the result of all of this work? On all of the satellites that I can receive from my location in Europe there was

nothing to be found in the 18.3 to 18.8 GHz band. It's not exactly a positive result.

But that doesn't mean it will always be like that; the Ka-band will certainly continue to be expanded on.

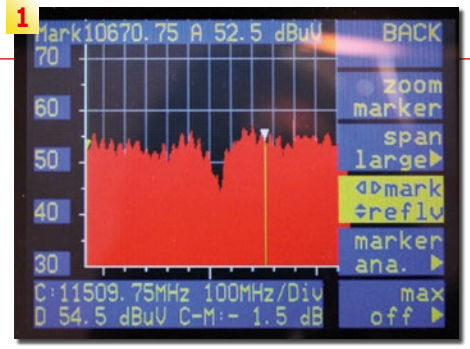
The transmissions in the Ka-band typically are not modulated in DVB-S/S2. Because of the intolerance to rain, an IP-based transmission in this frequency range is preferred, in which packets containing errors can be requested again.

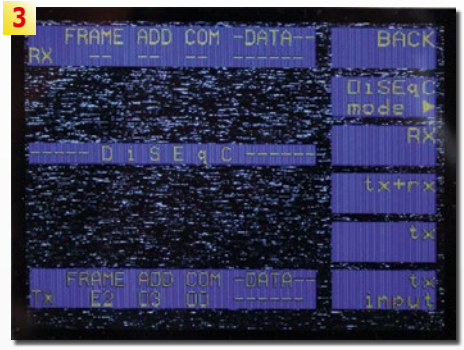
The Ka-band is immense and it's especially in the higher frequencies where you'll find a lot of communication signals. The average person, though, doesn't know about this since it's not advertised anywhere. This range is used, for example, in military applications. But it's precisely these kinds of communications that are exciting to the DXer! Who wouldn't want to listen in to these professional communications?

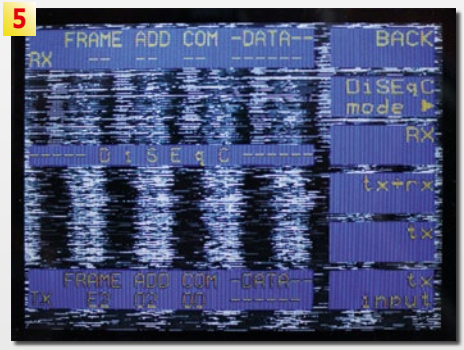
The main problem, though, is the difficulty in finding a matching LNB and feedhorn for the different frequency ranges in the Ka-band. And even if they would be available, you'd still have a

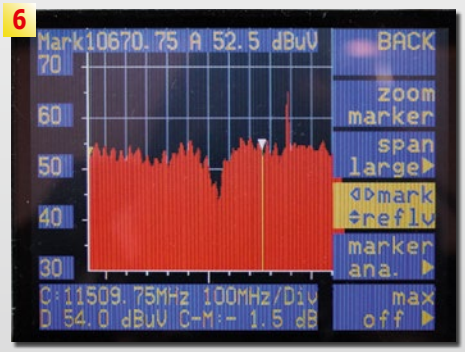
4. The SL3 is custom-made for DirecTV and is to be used with DirecTV satellite dishes. The LNB does not fit to regular feed holders, so I had to improvise a little. Using two screws I attached a metallic plate to the LNB which then was glued with tape to the dish. This is only a temporary solution, but worked well and was easy to do. This is really a big and heavy LNB.

5. Yes, ir worked just fine! The DirecTV SL3 LNB mounted a European regular dish. But it was too heavy for the motor, which coul dnot handle the additional weight.









1. The Kathrein MSK 33 shows the Ku-Band from 950 MHz to 1450 MHz and the Ka/High-Band from 1650 MHz to 2150 MHz. The BBC is not active.

2. Using the DisEqC-Monitor of the MSK 33 one can enter the RAW DiSEqC command “E20300” to activate the BBC.

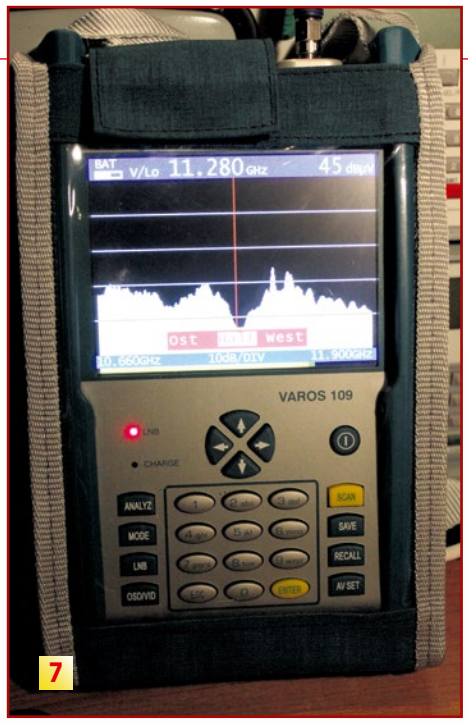
3. The TX key sends the command.

4. On the spectrum the Ku-Band from 950 MHz to 1450 MHz remains the same, but the frequency range from 1650 MHz to 2150 MHz now shows the Ka/Low-Band of the SL3 LNB.

5. Using the DiSEqC-Monitor the RAW DiSEqC command “E20200” is issued to switch the BBC off.

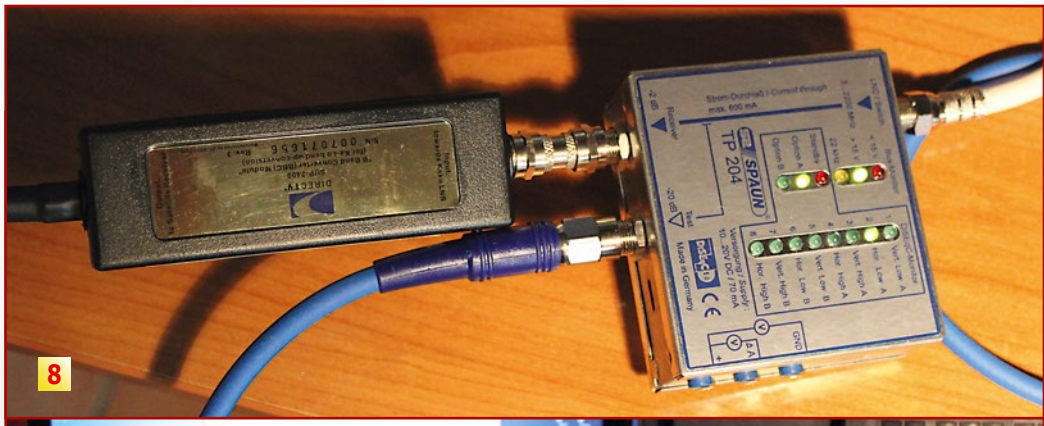
6. As expected, the Ku-Band is shown with the Ka/High-Band again.

7. The KWS VAROS 109 provided excellent aid in handling the motorized dish and rendering a real-time spectrum. Because both Ka-Band LNBs of the SL3 are 2 degrees away from the centre focus I could not just position the dish with the GOTOn command. I had to manually sweep the antenna. This is an easy task for this meter, as it can flawlessly operate the motor using DiSEqC-1.2 while simultaneously rendering the real time spectrum.



8. Using the Spaun TP204 DiSEqC monitor to verify if the MSK 33 is sending the DiSEqC commands and to use the analyzer output connector with the KWS VAROS 109.

9. Teamwork of the satellite meters: the Kathrein MSK 33 does the switching while the KWS VAROS 109 renders the real time spectrum in search of any Ka-Band transponders.



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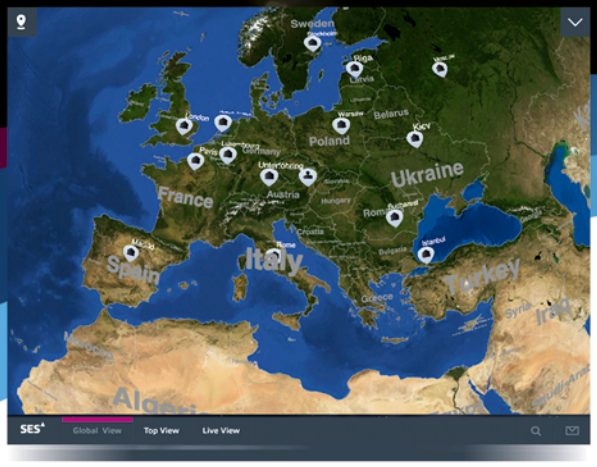

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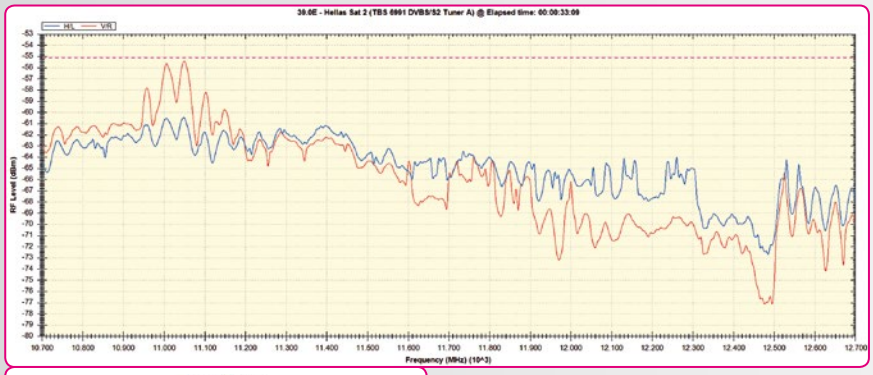
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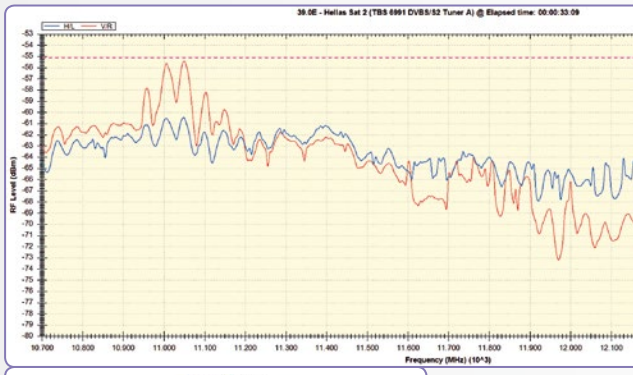
Frequency (MHz) (10^3)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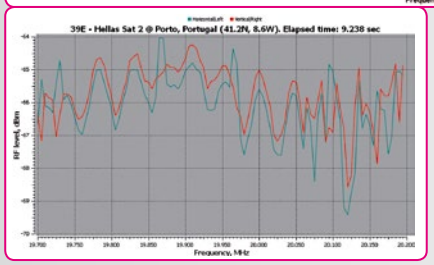
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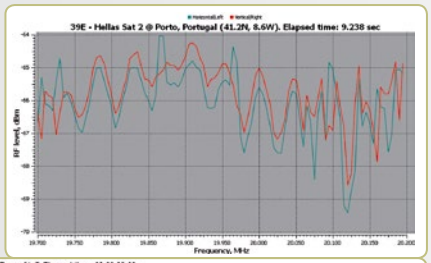
RF level, dBm
Frequency, MHz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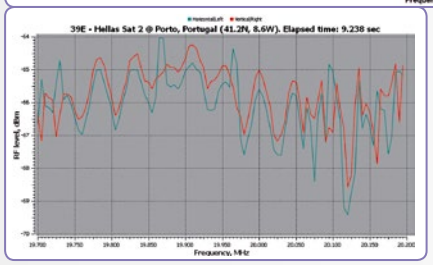
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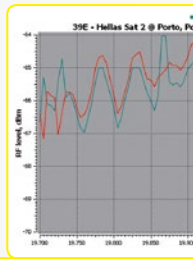
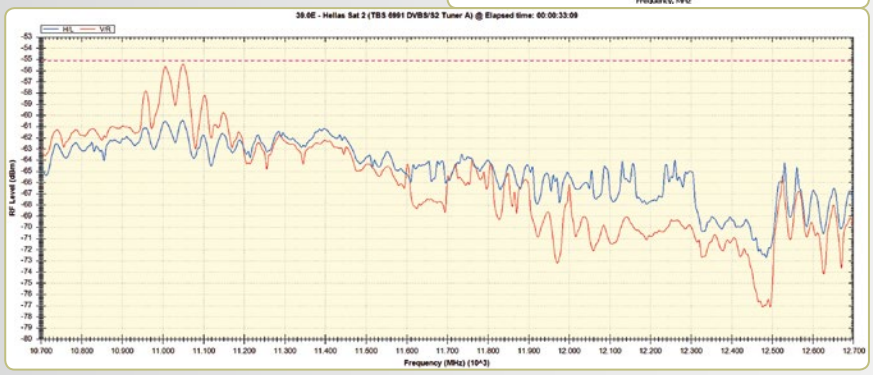

39E - Hellas Sat 2 @ Porto,
RF level, dBm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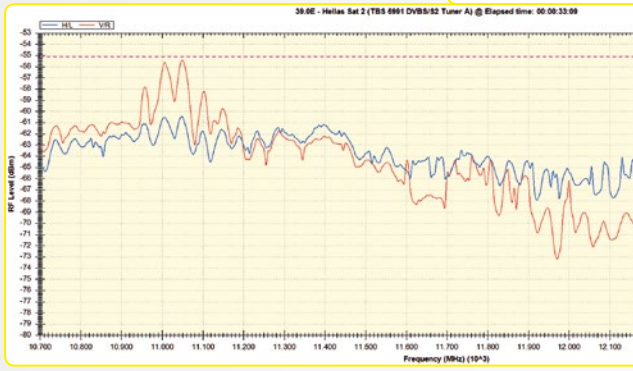
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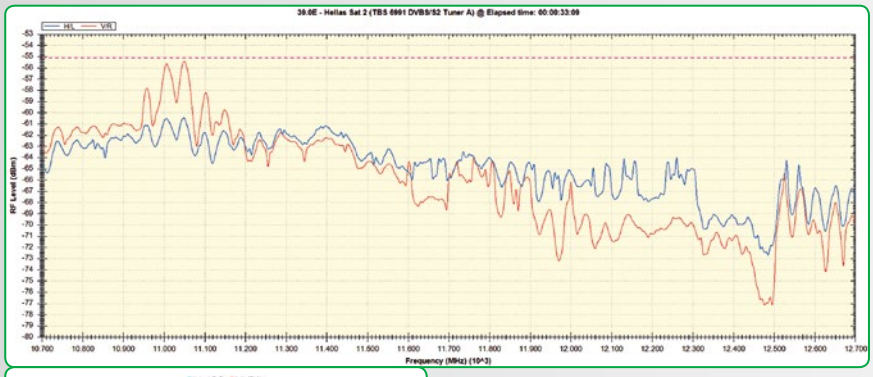
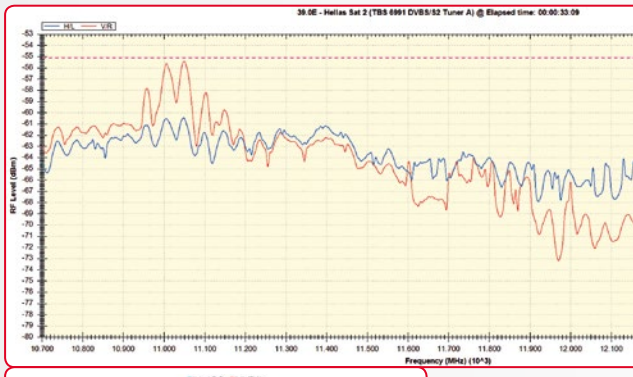
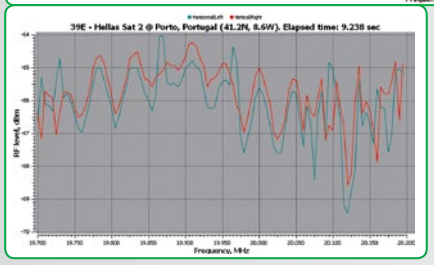
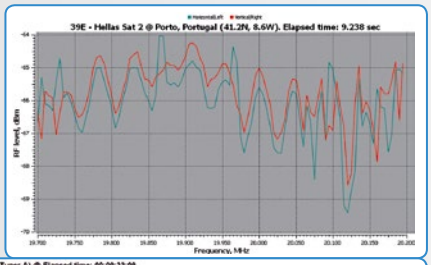
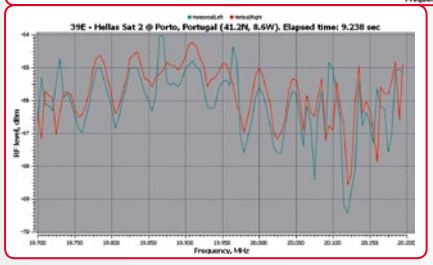
Frequency (MHz) (10^3)

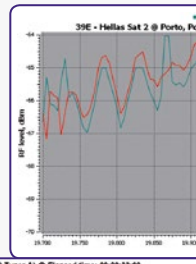

39.0E - Hellas Sat 2 (TBS 6901 DVBS/S2 Tuner A) @ Elapsed time: 00:00:33:09
H/L V/R
RF Level (dBm)
Frequency (MHz) (10^3)

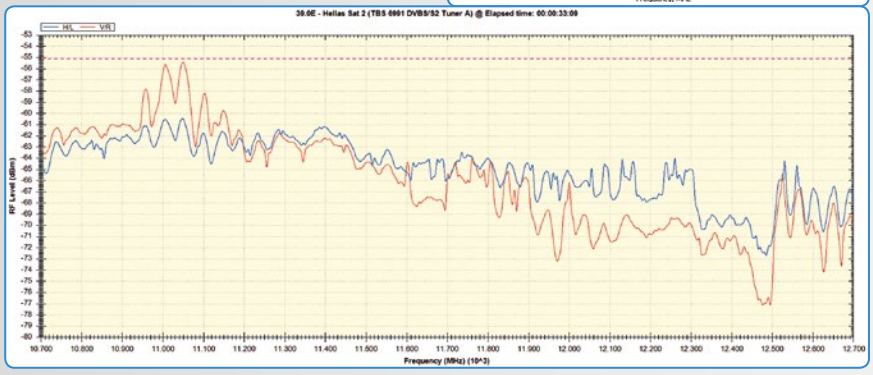

39.0E - Hellas Sat 2 (TBS 6901 DVBS/S2 Tuner A) @ Elapsed time: 00:00:33:09
H/L V/R
RF Level (dBm)
Frequency (MHz) (10^3)

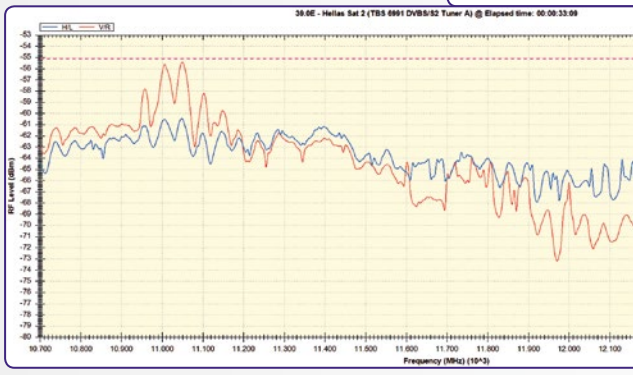

39E - Hellas Sat 2 @ Porto, Portugal (41.2N, 8.6W). Elapsed time: 9.238 sec
RF level, dBm
Frequency, MHz

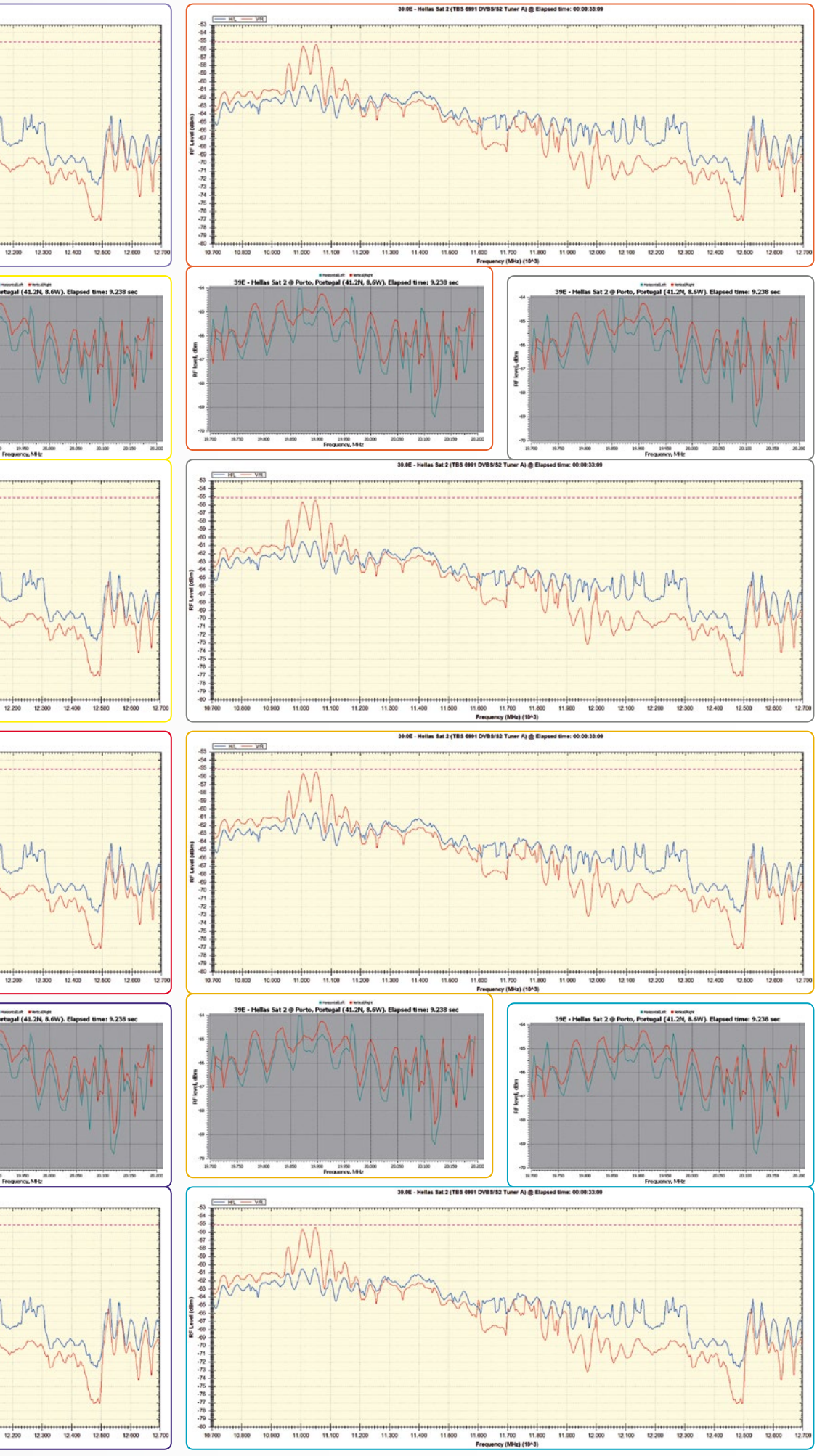

39E - Hellas Sat 2 @ Porto, Portugal (41.2N, 8.6W). Elapsed time: 9.238 sec
RF level, dBm
Frequency, MHz


39E - Hellas Sat 2 @ Porto, Portugal (41.2N, 8.6W). Elapsed time: 9.238 sec
RF level, dBm
Frequency, MHz


39E - Hellas Sat 2 @ Porto,
RF level, dBm


39.0E - Hellas Sat 2 (TBS 6901 DVBS/S2 Tuner A) @ Elapsed time: 00:00:33:09
H/L V/R
RF Level (dBm)
Frequency (MHz) (10^3)


39.0E - Hellas Sat 2 (TBS 6901 DVBS/S2 Tuner A) @ Elapsed time: 00:00:33:09
H/L V/R
RF Level (dBm)
Frequency (MHz) (10^3)



hard time doing anything with them since the modulations in use cannot be received with a normal tuner. And then let's not even talk about the encryption that would be in use.

So what then? All that work for nothing? Well, no, not really.

For one thing this discovery excursion into these new frequency territories is interesting; you can also learn a lot from this. Nevertheless, right now only those truly dedicated DXers would have fun in the Ka-band.

Outside of the USA and Ireland, where you'd regularly find TV broadcasts in the Ka-band, there's really nothing to receive for the normal viewer.

This technology is also not really suitable for DX reception (long-distance reception) because of the spot beams that are used.

Yet there exist entirely new possibilities: feeds can be sent very inexpensively to broadcasting centers as an IP packet and this is exactly what is already being marketed by the company NewSpotter in Italy. Small cars such as the Smart are fitted with self-aligning antennas and transmit news feeds via EUTELSAT 9.0E back to their headquarters or for events in outlying areas they can offer satellite Internet access over WiFi.

So, there is actually something going on in the Ka-band!

Comparison Ku (10.7-12.7GHz) vs Ka (19.7-20.2GHz)

Each pair shows the respective satellite in the Ku-Band (10.7 GHz – 12.7 GHz) and in the Ka-Band (19.7 GHz to 20.2 GHz). Notice that a valid signal requires an RF level above approximately -59 dBm. EUTELSAT 9A at 9.0E contains 4 transponders in the Ka-Band, which belong to the TooWay satellite based internet service. Using the KWS VAROS 109 it was possible to see a Ka-Band transponder on HOTBIRD at 13.0E. Using an old satellite modem could get some feedback, but since I had no valid subscription I could not further test it.

Example 09.0E with SL3 - Ka (18.3-18.8GHz) vs Ka (19.7-20.2GHz)

1. EBS Pro showing the RF scan of the Ka/High-Band.

2. Using the valuable possibility of sending RAW DiSEqC commands, the "E20300" sequence is sent to the BBC.

3. After a new RF scan, one can see the Ka/Low-Band of the SL3. No modification to the BBC was required.

Links

http://www.m0dts.co.uk/datv_converter.htm2

Digital Amateur TV website with instructions on modifying a B-band converter (BBC) to permanently activate the conversion from 250 - 750 MHz to 1660 - 2150 MHz.

http://www.satelliteguys.us/threads/282172-SL-3-LNB-KA-Band-FTA-receiver-in-europe

Topic in the Satellite Guys Forum to use the SL3 LNB in Europe.

http://www.newspotter.it

NewSpotter – Distributes and leases, among other things, small cars with a Ka-band satellite link.

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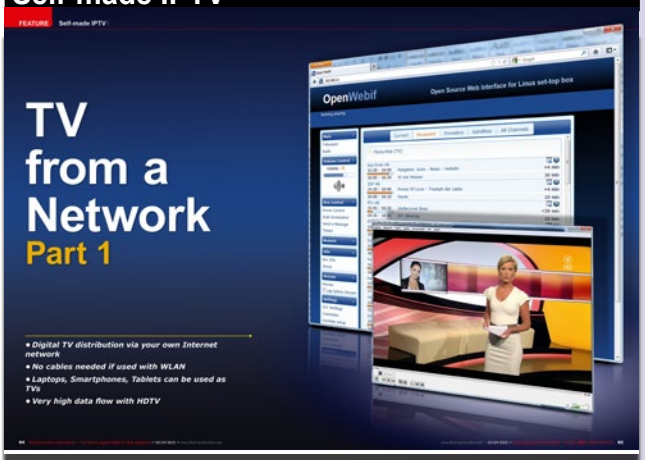
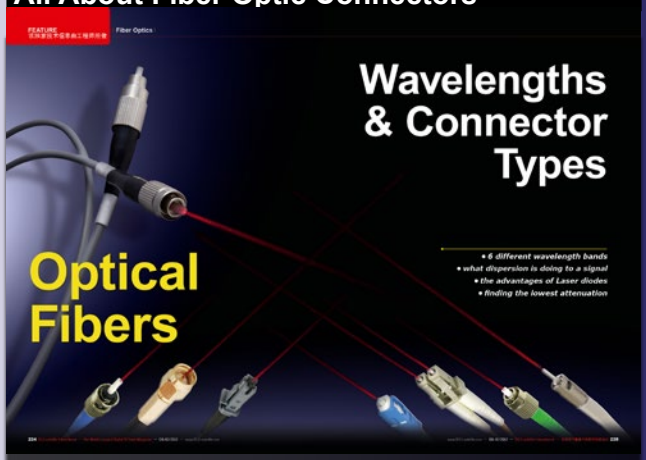


www.TELE-audiovision.com/TELE-audiovision-1305/eng/feature-satip1.pdf

All About Fiber Optic Connectors



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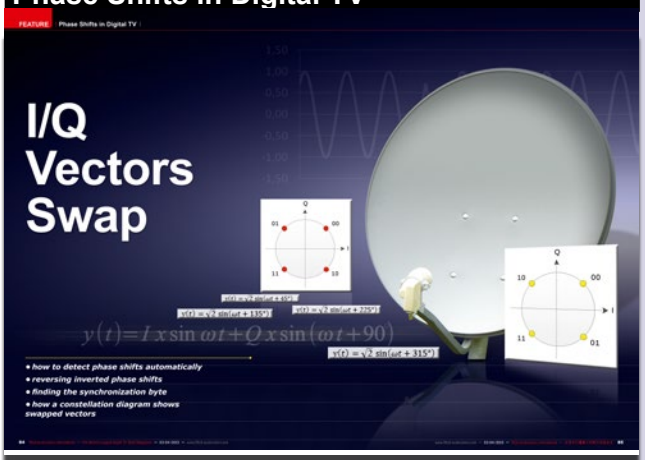
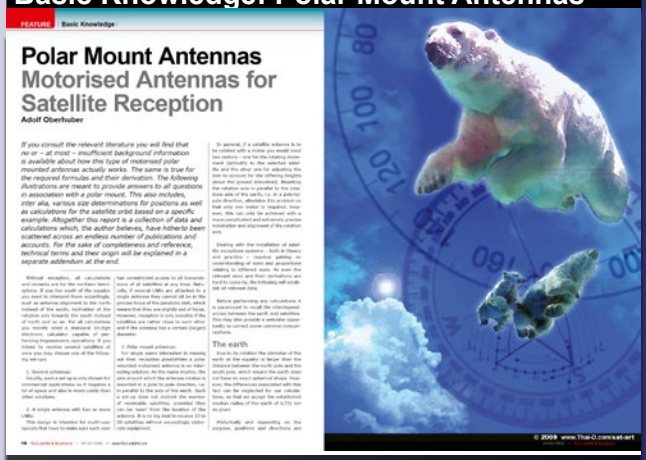
Phase Shifts in Digital TV



www.TELE-audiovision.com/TELE-audiovision-1303/eng/feature-iqswap.pdf

Basic Knowledge: Polar Mount Antennas



www.TELE-audiovision.com/TELE-satellite-1207/eng/polarmount.pdf

Digital Terrestrial TV - 2nd Level

www.TELE-audiovision.com/TELE-audiovision-1301/eng/feature-atsc2.pdf

DVB-S2: Hide the SD inside the HD

www.TELE-audiovision.com/TELE-satellite-1207/eng/feature-h8psk.pdf

The Secret Special Transmission Modes

www.TELE-audiovision.com/TELE-satellite-1209/eng/feature-transmission.pdf

How a tuner for VCM operates

www.TELE-audiovision.com/TELE-satellite-1205/eng/dvb-S2-vcm.pdf

DVB-S2 MIS Reception with VCM/ACM

www.TELE-audiovision.com/TELE-satellite-1201/eng/tenow-TBS6925.pdf

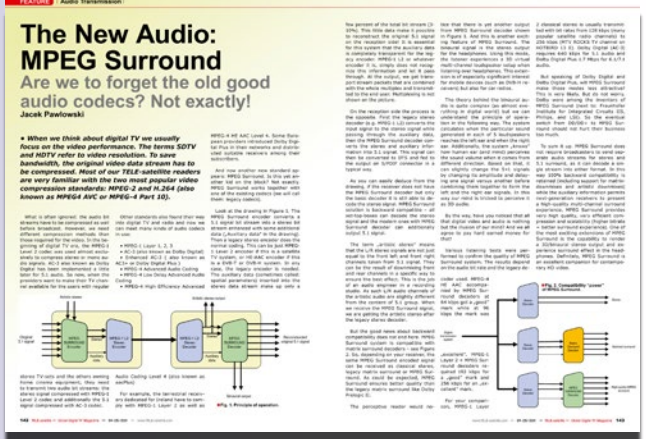
CI+ and HD+Encryption

www.TELE-audiovision.com/TELE-satellite-1107/eng/CI+HD+.pdf

Automatic Creation of 3D

www.TELE-audiovision.com/TELE-satellite-1109/eng/2d3dconversion.pdf

How MPEG Surround Works

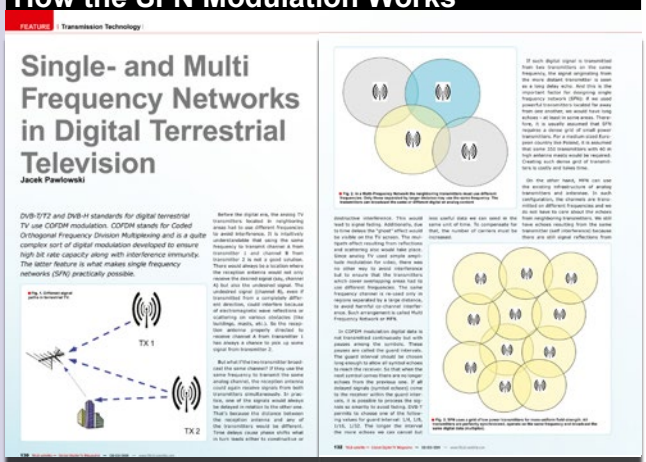


www.TELE-audiovision.com/TELE-satellite-1105/eng/mpeg-surround.pdf

How a Silicon Tuner Works

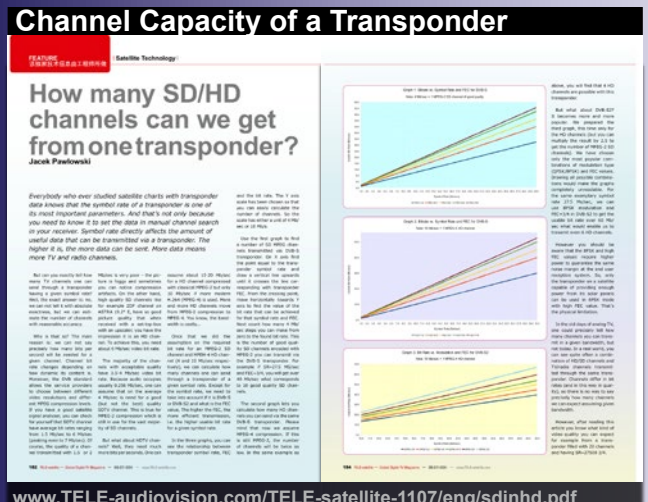
www.TELE-audiovision.com/TELE-satellite-1107/eng/silicontuner.pdf

How the SFN Modulation Works



www.TELE-audiovision.com/TELE-satellite-1103/eng/sfn.pdf

Channel Capacity of a Transponder



www.TELE-audiovision.com/TELE-satellite-1107/eng/sdinhd.pdf

How HbbTV Works

www.TELE-audiovision.com/TELE-satellite-1101/eng/hbbtv.pdf

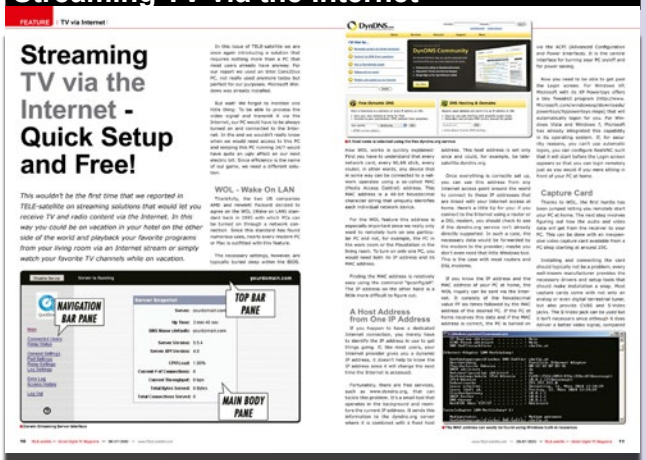
How DVB-C2 Works

www.TELE-audiovision.com/TELE-satellite-1009/eng/dvb-c2.pdf

How Decoding Works

www.TELE-audiovision.com/TELE-satellite-0909/eng/decoding.pdf

Streaming TV via the Internet



www.TELE-audiovision.com/TELE-satellite-1007/eng/streaming.pdf

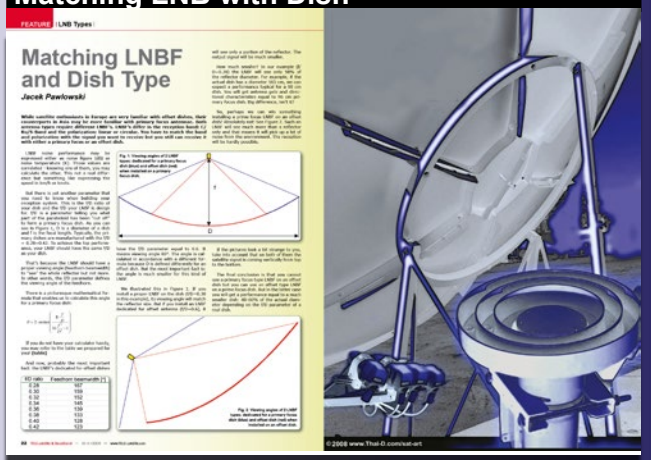
How ABS-S Works

www.TELE-audiovision.com/TELE-satellite-0903/eng/abs-s.pdf

Testing Horizon to Horizon Actuator

www.TELE-audiovision.com/TELE-satellite-1005/eng/h-h-actuator.pdf

Matching LNB with Dish

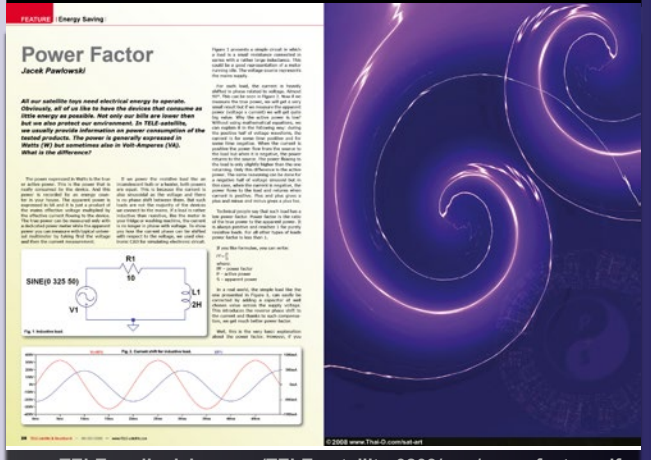


www.TELE-audiovision.com/TELE-satellite-0811/eng/lnb+dish.pdf

How SCR Works

www.TELE-audiovision.com/TELE-satellite-0911/eng/scr.pdf

How to Calculate the Power Factor



www.TELE-audiovision.com/TELE-satellite-0809/eng/powerfactor.pdf

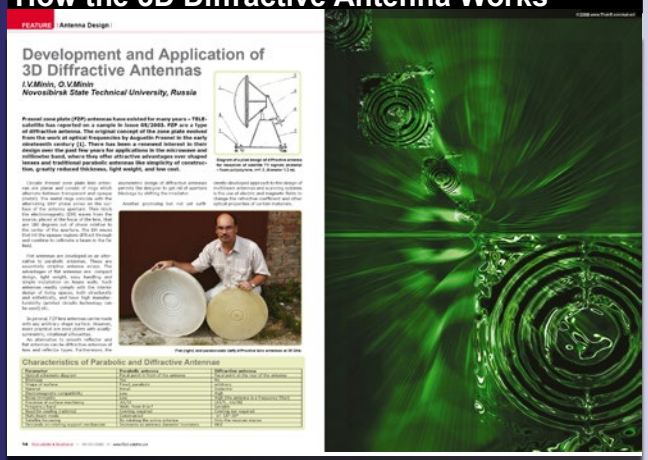
How to Solve Problems with DiSEqC

www.TELE-audiovision.com/TELE-satellite-0807/eng/diseqc.pdf

How the Network Connection Works

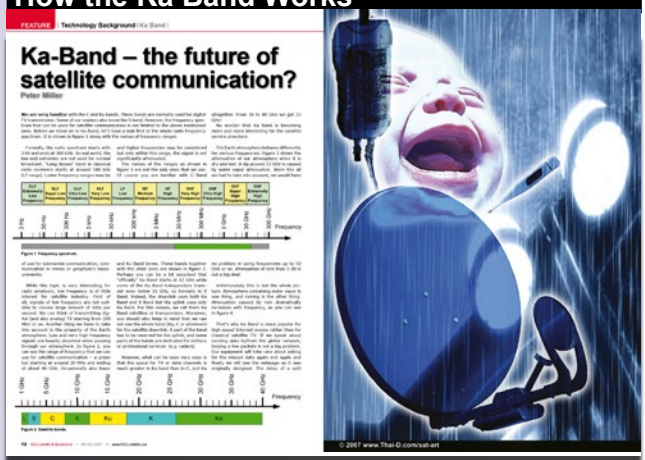
www.TELE-audiovision.com/TELE-satellite-0711/eng/networkconnections.pdf

How the 3D Diffractive Antenna Works



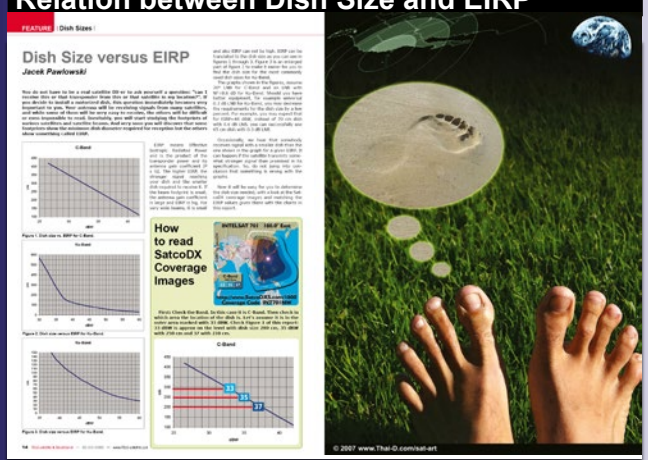
www.TELE-audiovision.com/TELE-satellite-0805/eng/3ddiffractive.pdf

How the Ka Band Works



www.TELE-audiovision.com/TELE-satellite-0709/eng/kaband.pdf

Relation between Dish Size and EIRP



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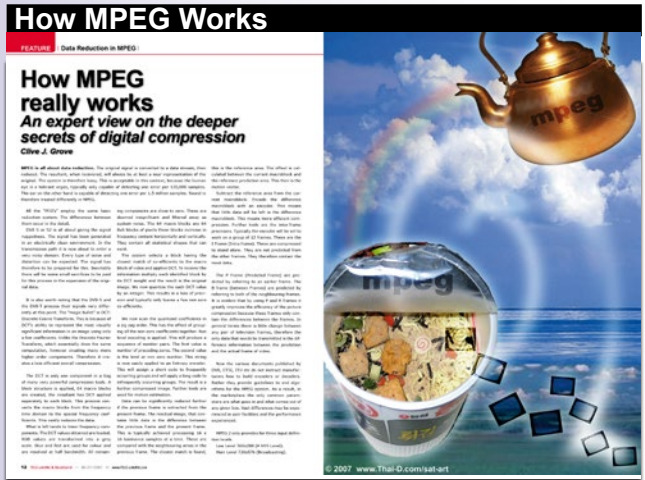
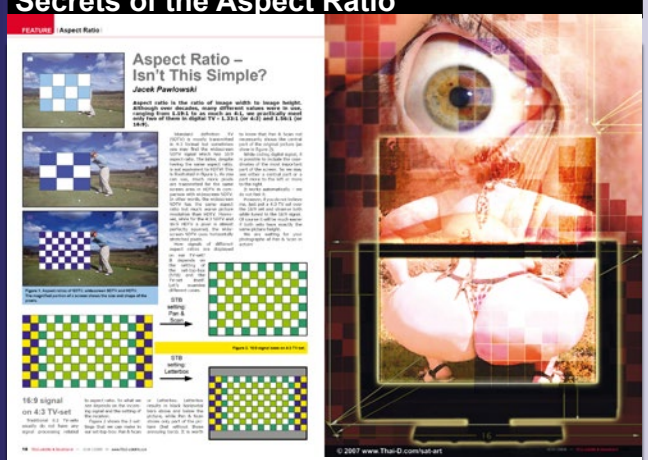
How MPEG Works



www.TELE-audiovision.com/TELE-satellite-0707/eng/mpeg.pdf

Secrets of the Aspect Ratio



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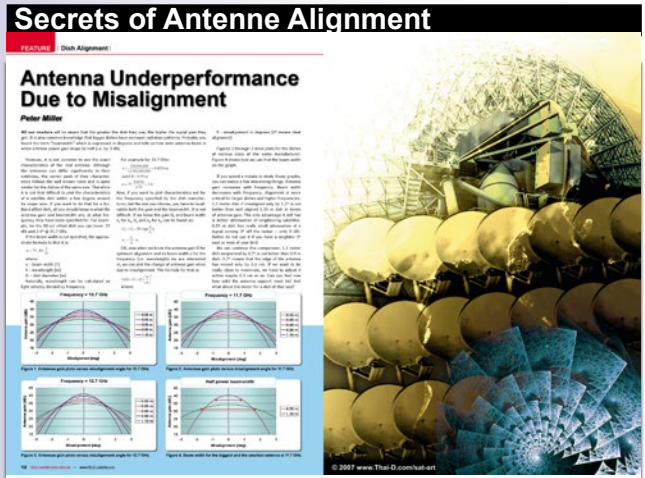
Secrets of Antenne Alignment



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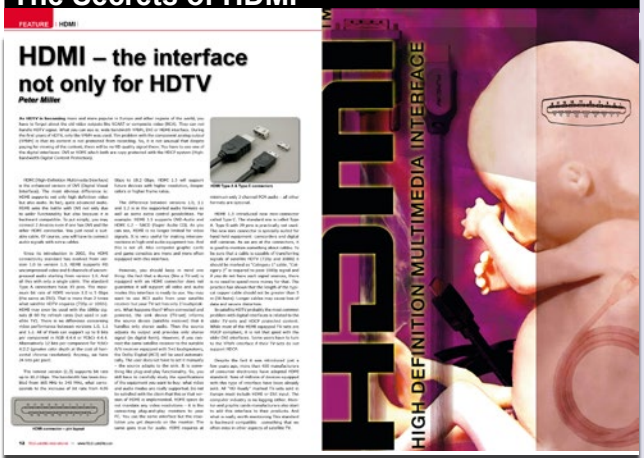
The Secrets of HDMI



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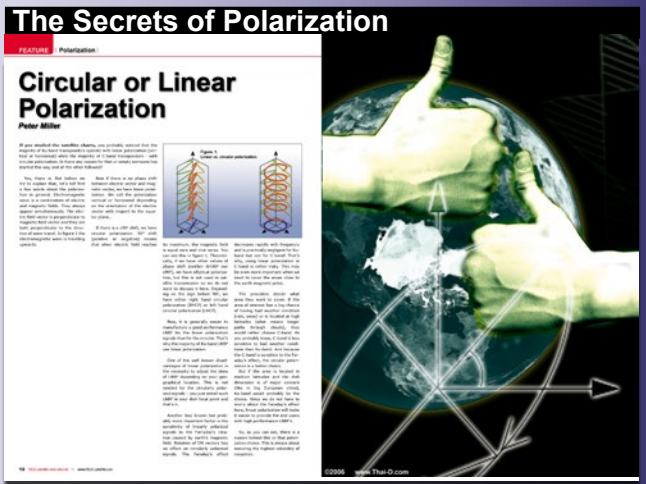
The Secrets of Polarization



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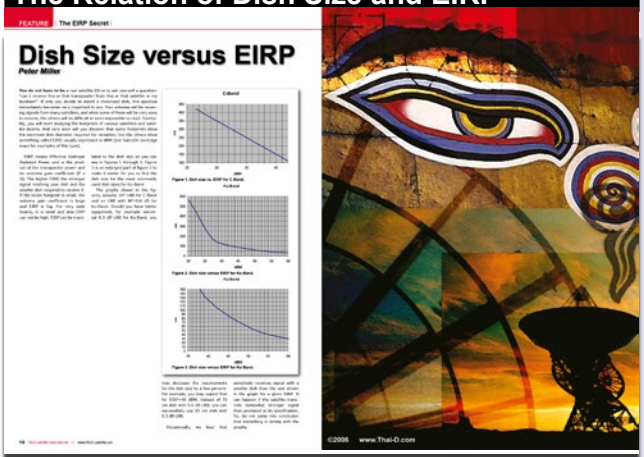
The Relation of Dish Size and EIRP



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The Secrets of Intermodulation

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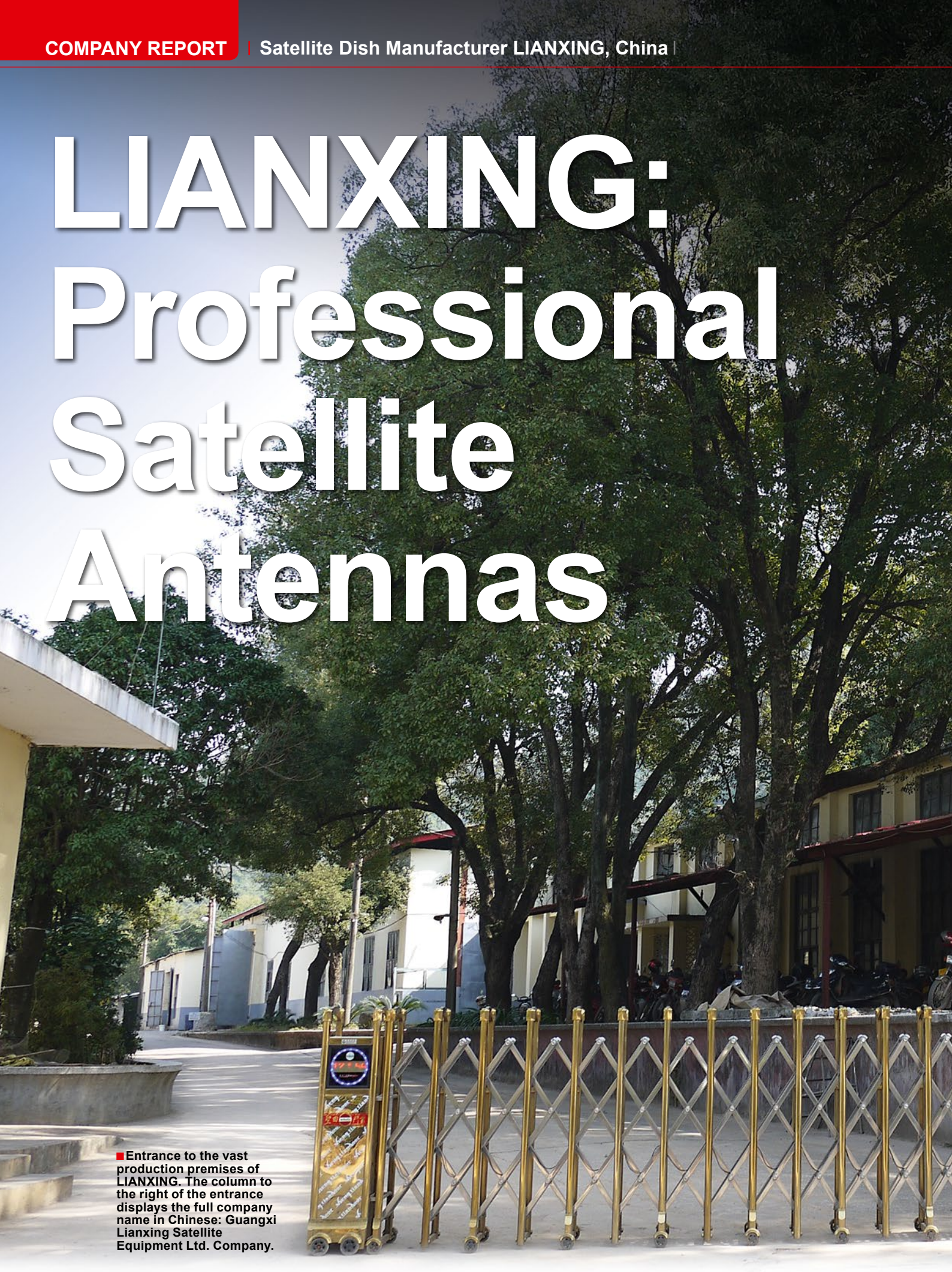
LIANXING: Professional Satellite Antennas



Entrance to the vast production premises of LIANXING. The column to the right of the entrance displays the full company name in Chinese: Guangxi Lianxing Satellite Equipment Ltd. Company.

- *using only top-quality materials*
- *individually checking each single component*
- *offering antennas for the C and Ku bands*
- *very successful on the Japanese market*

Quality Production of Satellite Dishes

Satellite dish manufacturer LIANXING has two owners, and both are fully aware of the fact that only top quality will guarantee lasting success. Not only do they use top-grade materials, they also direct their attention to immaculate workmanship for every antenna they manufacture. A total of ten buildings are located in the beautiful Xing'an county in Guilin city.

Lio Wen Fei and Wen Lang Yuan are the founders of the company, and still have a shareholding of 50% each. What started in 1993 with a workforce of 50 employees has grown continuously and today comprises a staff of 170. "We started out with producing C band dishes

■ The two co-owners of satellite dish manufacturer LIANXING: production manager Wen Liang Yuan (left) and sales manager Liao Wen Fei (right).

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only, with diameters of 140, 150 and 180 cm," Liao Wen Fen walks down memory lane. In 2003, Ku band antennas were added and in that same year the company moved to larger premises in Guixing, where it is still located today. "The first Ku band antenna was a 60 cm model."

In the meantime, LIANXING has expanded its Ku band antenna range to also include 35, 45 and 75 cm dishes. "But we can produce any other size as well," adds co-founder Wen Lang Yuan, who is in charge of antenna production. Which model is the top-selling dish? We're surprised to find out "it's the 45 cm antenna, which we export to Japan in huge numbers." Incidentally, almost 70% of overall exports are destined for Japan, and "20% of our dishes go to Indonesia, above all the 180 cm variant for the C band." The remaining 10% are spread all over the world, since LIANXING does not sell any products in the local Chinese market.

What differentiates LIANXING antennas from the rest and why are they so popular in Japan of all places? Production manager and co-owner Wen Lang Yuan has the answers: "We only use the best available materials and manually work on every single component until it feels 100% right. For instance, we source powder paint for powder-coating from Aczonbel and as dish material we used thicker-than-average strength." Wen Lang Yuan refers to 0.8 mm aluminium bands used to produce some of the Ku band antennas.

Five huge metal sheet presses can be found on the manufacturing floor. They are used to press and shape all required dish sizes for the Ku band as well as the segments for C band antennas. The dishes and segments are then thoroughly cleaned in a total of eight basins and prepared for spray-painting. 20 stamp machines are available for treating smaller components and the total production capacity has reached some four million antennas per year. "Our dishes are of such high quality that we have decided to drive our expansion even further," Liao Wen Fei explains with reference to the company's long-standing success in Japan, a market that only accepts top quality. "We do, however, offer the same quality in other markets as well, while at the same time keeping our prices at very competitive levels," sales manager Liao Wen Fei states and extends an invitation to all interested distributors and retailers to add LIANXING products to their portfolio.

1

1, 2: One of LIANXING's top-selling products.

3, 4: Fastening clamps of a LIANXING dish.

LIAN XING
2

3

4

1. View towards the LIANXING production buildings from a nearby hill. In the background you can see the distinctive hills that add so much charm to the Guilin area.
2. The production buildings are spread out on both sides of this road.
3. Rolls of metal are warehoused here. These are used at a later stage to press and stamp dishes and antenna segments.
4. Finished segments for a 180 cm C band dish.
5. Glimpse of the dispatch warehouse with completely packaged segments for 180 cm dishes.
6. View of the warehouse.
7. Smaller components are prepared at this section.
8. Ready, steady, go: component packaging.

LIAN XING
广西联星卫视设备有限责任公司
5

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LIAN XING
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7

1. Assistant sales manager Faustina showing to us an antenna at a preliminary stage: Pressing is already completed.

2. The antenna is stamped from the press mould. Sales manager and co-owner Liao Wen Fei showing the result in front of one of the eight giant presses.

3. Preparation for the paint job: The aluminium or steel material of the finished antenna is cleaned in a total of eight basins.

4. Stamped antennas are attached to the conveyor belt.

5. The antennas gradually disappear into the paint chamber, where workers spray the coloured powder onto the dishes.

6. View of the paint containers that are sourced from Aczonbel. “We only use top-grade powder from that paint manufacturer.”

7. Recycling plant: This is where paint fumes are extracted and collected. “We do not re-use this recycled paint, but only work with original paint,” production manager Wen Liang Yuan emphasises. “This is the only way we can guarantee consistently high quality of our antennas.”

8. After approximately eight minutes the finished antennas are taken from the 50 m conveyor belt. At a visual checkpoint all flawless units are put into a transport container, while faulty antennas are removed from the line.

Antenna Production at LIANXING

8

1. Mounting components of the antennas are produced in this section.

2. One stage prior to stamping the mounting components: Parts are stamped from a larger piece of metal.

3. Precision control right before stamping: A worker uses a measurement device to make sure machine and metal are precisely aligned.

4. Stamping a mounting component.

5. Shaping the component.

6. Production of mounting components. A worker screws holes into the brackets.

7. Built to last: Components are galvanised here.

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1. Bending the LNB brackets.
2. LNB bracket after galvanisation.
3. A rod is shaped into a ring and later cut into individual standing rings.
4. Welding the standing rings.
5. Screwing in the thread of the clamp.
6. Preparing the dish holders.

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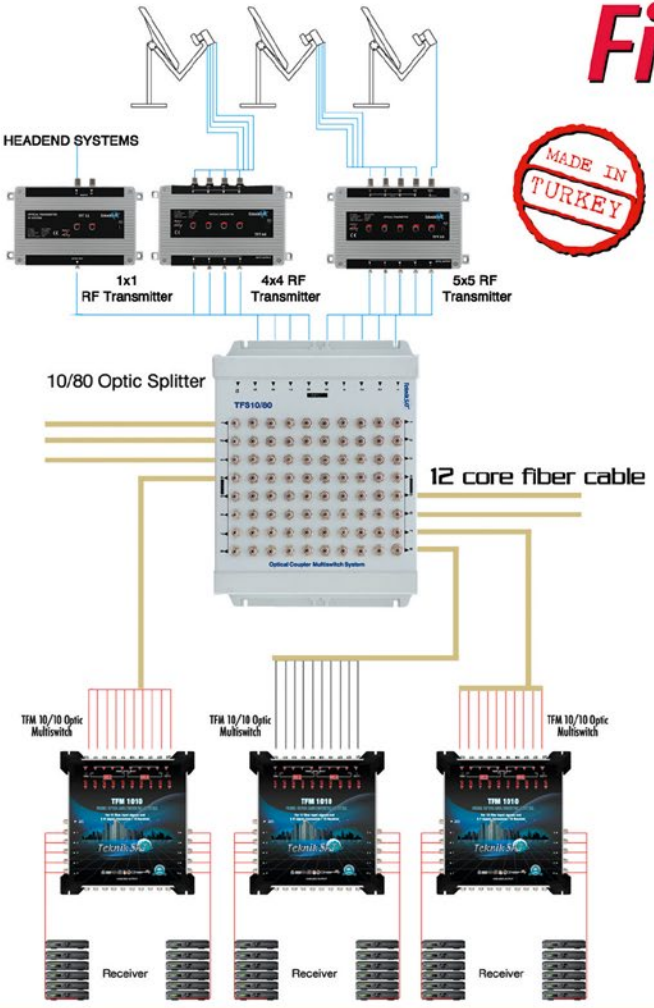

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1

1. A member of the sales team presents a selection of differently sized LIANXING dishes.

2. The most important employees for dish production: Yang Limin (left) and Xie Yiping (right) can be seen here preparing a standing mould.

3. View of the mould storage. The member of staff visible in the background is cleaning the moulds.

2

3

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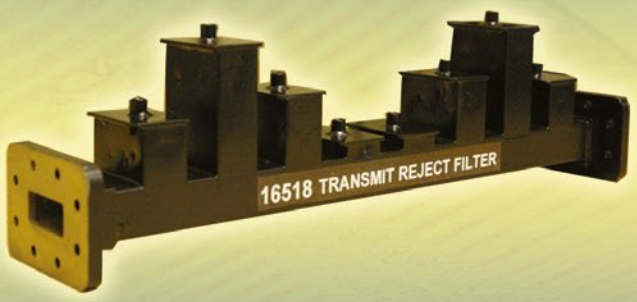

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Quality Assurance at LIANXING

1. Each individual LNB holder is checked for precision. A small hammer is used by an employee until the holder is exactly aligned to the measuring bar and vertically clicks into place in the lower notch.

2. Checking the bend radius of the LNB holder.

3. The mounting parts are re-worked manually until they meet all specifications.

4. Each individual mounting clamp is thoroughly checked and re-worked, if necessary.

5. A female worker assembling the screws of the mounting system.

6. Checking the wall holder. A wooden hammer is used to manually correct any imperfections.

7. These gauges are used to check the correct angle of the wall holder.

8. Quality assurance: No component goes unchecked.

6

7

8

A look at ELDTEC's production facility in Aruja, in Brazil's Sao Paulo province.

ELDTEC For Brazil Only

- *Large market coverage within Brazil*
- *OEM production for other brand names*
- *Concentration on just a few product series*
- *Also offers antennas for 2.4 and 5.8 GHz (WiFi)*

C-Band Dishes, UHF Antennas and Coax Cables for the Domestic Market

With a production of over 80,000 satellite dishes a year, this company is one of the larger antenna manufacturers. But if you live outside of Brazil, you've probably never heard of this company; ELDTEC ships exclusively to the domestic Brazilian market. We wanted to know why ELDTEC doesn't export any of their products and decided to visit them in the city of Aruja, about 40km from Sao Paulo.

So we hopped on bus route 166 that goes from the Metro Station Arménia (Linie 1) and travels directly to Aruja. ELDTEC's 5000 Sq-m fabrication facility can be found in the industrial park. Our company contact is Eliseu Dias from Technical Support. He is himself a satellite enthusiast and has six dishes erected at his home. He explains, "140 employees work here and produce 6,000km (about 3,700 miles) of coaxial cable every month." In addition to mesh dishes for the C-band, UHF antennas are also produced that are not only sold under their own name but are also sold for private labels as OEM products.

"ELDTEC was founded in 1992 by Senhor Laerth with just a few employees", explains Eliseu Dias about the company's history. The first products were mesh dishes; in 2002 smaller steel dishes for the Ku-band were added and

■ Seriously protected: Entrance to ELDTEC's production facility.

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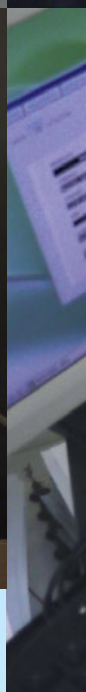
■ **ELDTEC erected a parade of satellite antennas in an open area. All of these dishes are in use and pointed to different satellites. The dishes are tested on a long-term basis.**

in 2003 the company began producing coaxial cable. "In 2004 the company moved to its current location in Aruja."

How are things looking in sales? This was a question for Sales Manager Jefferson Cruz who runs a team of seven regional sales managers. We wanted to know why ELDTEC does not export any of their products: "We can't match the prices of our competitors", he admits openly, "We often pay more for the materials than our competitors charge for the complete product." Even though their production operation is exceptionally organized, the company can't reach the price levels of the world market. "We would love to export", says Jefferson Cruz, "but aside from the prices there are still other hurdles relating to product shipments across the border."

But who knows, maybe ELDTEC will find a way to compete with the prices on the world market and jump over those exporting hurdles. Then ELDTEC will also become known outside of Brazil.



1. A look inside the production area. Satellite antennas, terrestrial antennas and coaxial cable are manufactured here. The employees have 44-hour work weeks and lunch is provided for them at no cost.

2. Eliseu Dias is in charge of Technical Support and answers customer's questions.

3. ELDTEC's engineers use various receivers to test the reliability of their dishes.

4. ELDTEC engineers have a variety of signal analyzers at their disposal.

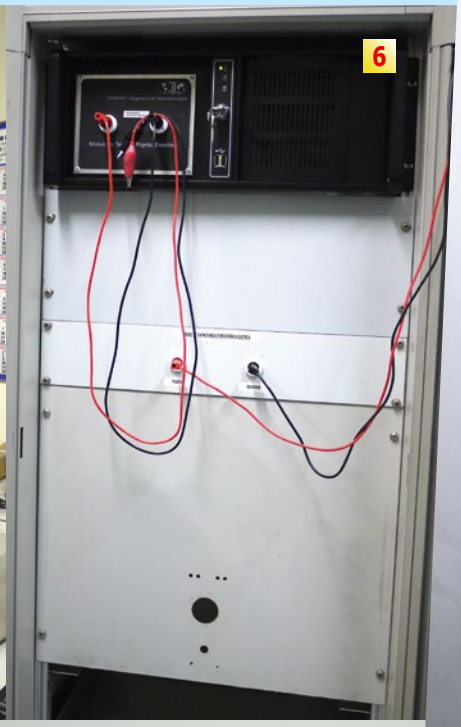
5. Using this special machine, Leandro from the Quality Team tests the stretching strength of the coaxial cable

6. Surge protection is tested here.

7. At this measurement station the coaxial cable's technical data is measured.

8. This is what a measurement run for a coax cable looks like.

5



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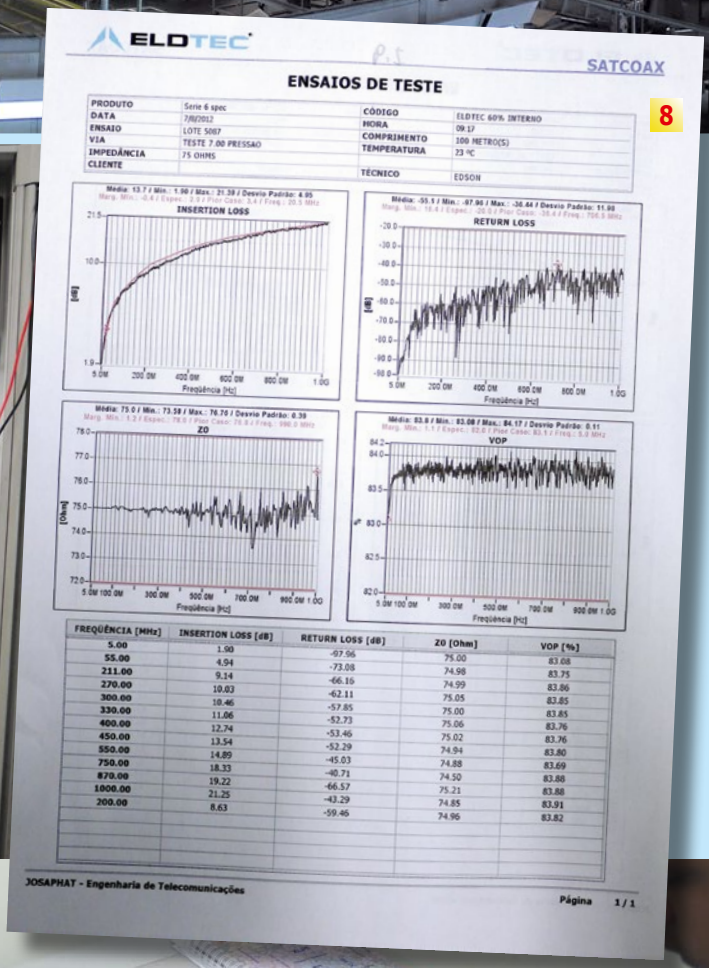

ELDTEC

SATCOAX

ENSAIOS DE TESTE

8

PRODUTO	Serie 6 spec	CÓDIGO	ELDTEC 60% INTERNO
DATA	7/8/2012	HORA	09:17
ENSAIO	LOTE 5087	COMPRIMENTO	100 METRO(S)
VIA	TESTE 7.00 PRESSAO	TEMPERATURA	23 ºC
IMPEDÂNCIA	75 OHMS		
CLIENTE		TÉCNICO	EDSON

INSERTION LOSS

RETURN LOSS

ZO

VOP

FREQÜÊNCIA [MHz]	INSERTION LOSS [dB]	RETURN LOSS [dB]	ZO [Ohm]	VOP [%]
5.00	1.90	-07.96	75.00	83.68
55.00	4.94	-73.08	74.98	83.75
211.00	9.14	-66.16	74.99	83.86
270.00	10.03	-62.11	75.05	83.85
300.00	10.46	-57.85	75.00	83.85
330.00	11.06	-52.73	75.06	83.76
400.00	12.74	-53.46	75.02	83.76
450.00	13.54	-52.29	74.94	83.80
550.00	14.89	-45.03	74.88	83.69
750.00	18.33	-40.71	74.50	83.88
870.00	19.22	-66.57	75.21	83.88
1000.00	21.25	-43.29	74.85	83.91
200.00	8.63	-59.46	74.96	83.82

JOSAPHAT - Engenharia de Telecomunicações

Página 1 / 1

7

1

1. Jefferson Cruz runs the Sales Team. He would love to be able to export ELDTEC's products.

2. The Sales Team. Orders for dishes, cable and antennas from Brazil's wholesalers find their way here.

2

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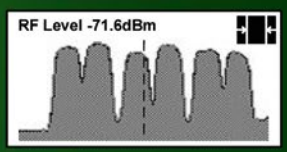

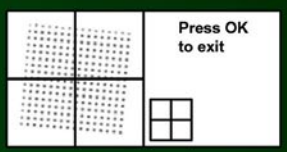

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2

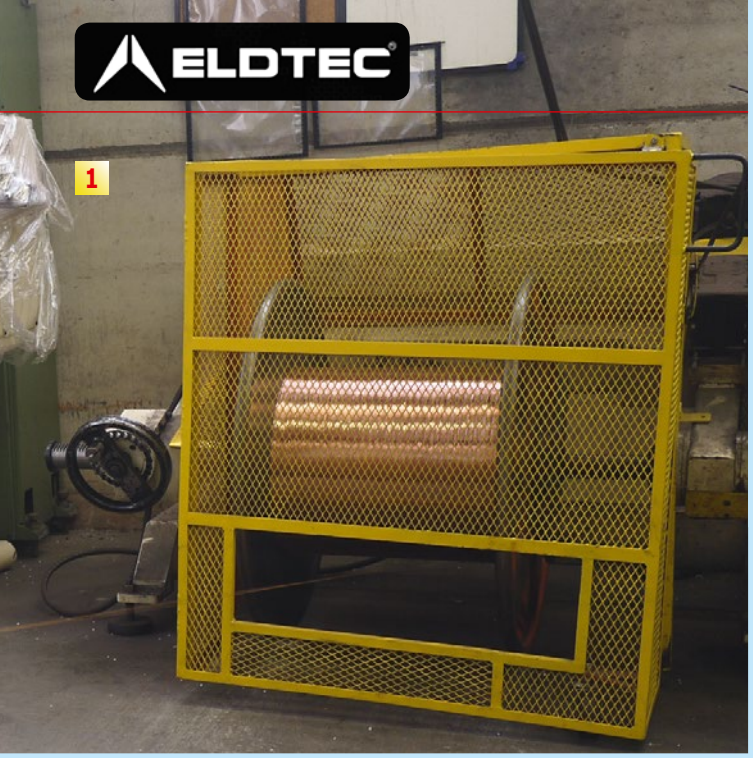
1. A look at a portion of the production facility. Just completed coaxial cable bundles can be seen in the foreground.

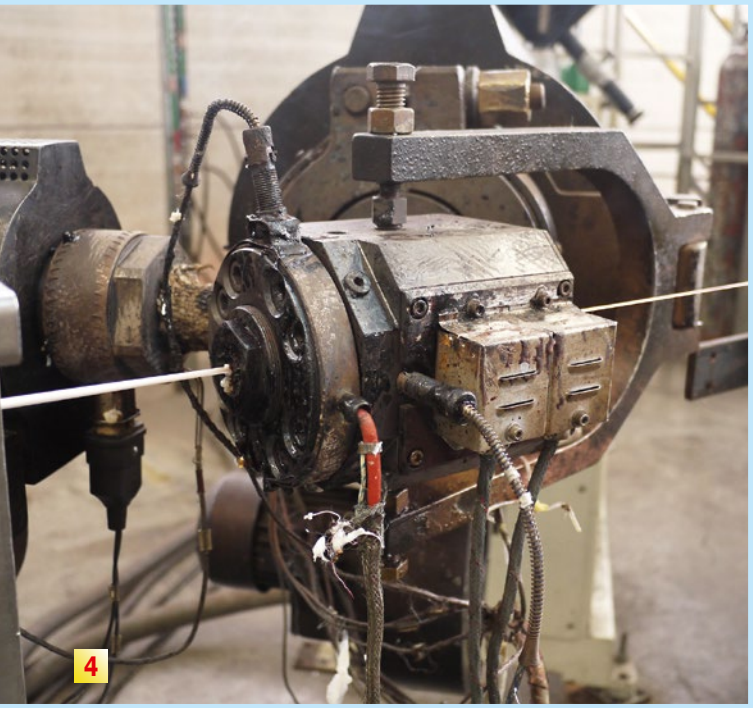
2. Components for the terrestrial log periodic UHF antennas are prepared here.

3. A palette of terrestrial antennas ready to be picked up.

4. Eight machines punch out the mesh panels. The rolls consist of 0.55mm thick sheet metal that is fed into the punch machines.

5. The mesh material comes out at the other end which will then be cut into the proper panel sizes.





Coaxial Cable Production

1. A drum containing nearly 700kg (1,500 Lbs) of copper wire in the protective cage.

2. The copper wire is fed at a speed of roughly 13 meters/second (43 feet/second). The first stop is this machine which stretches the wire so that any possible production failures can be eliminated.

3. The cable production control box. The speed is shown in the upper left at 12 m/s (about 40 feet/sec).

4-5. The first step takes place here: making the internal dielectric spacer. The plastic granules are heated and coated around the wire passing through the machine. This process heats the wire to about 220°C (430°F). The wire first has to be cooled before anything else can be done.

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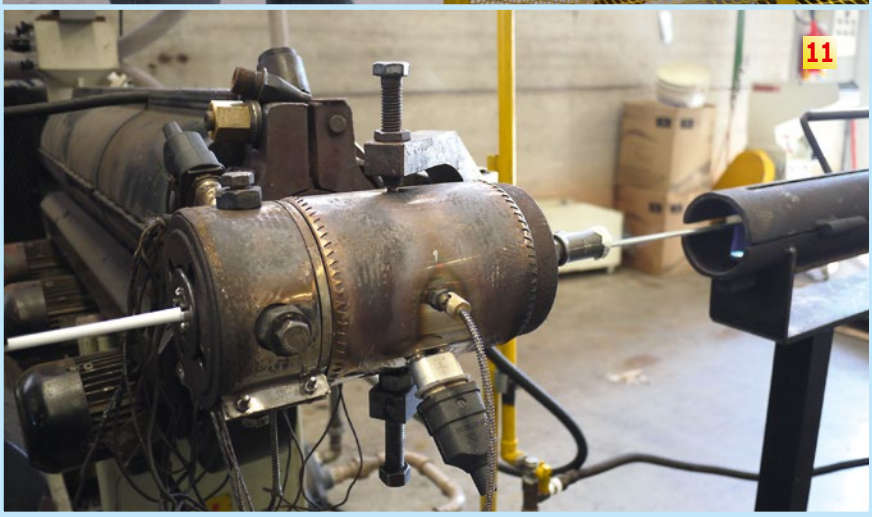

11

12

6. The wire is passed through a 46m (150-foot) long water-filled pipe with 13 cooling stations such that by the end the cable is cooled to 50°C (120°F).

7. A look inside one of the cooling stations. Just like the pipe, it is also filled with water. The wire runs through here and gets cooled in the process.

8.Technician Anderson Lopez is in charge of Cable Production. He says, “Here at the end the wire has reached room temperature so that now it can be wound up. 5km (about 3 miles) of wire can fit on one roll.”

9. The coax cable is now only half finished. The shielding is missing. This machine takes care of that: 16 rotating spindles (8 above and 8 below) create the outside braid. Technician Anderson Lopez explains, “It involves aluminum wire with a diameter of 0.6mm.”

10. This is how the raw coaxial cable comes out of the machine.

11. Now the last step: The outer protective sheath is added to the raw coaxial cable. This process is similar to the application of the inner dielectric: The raw coaxial cable passes through this machine at a rate of 50 to 120 meters/minute, or 164 to 390 feet/minute (depending on cable type), is heated to 200°C (about 390°F) and is then coated in a plastic protective jacket.

12. The completed cable is once again run through a water bath to cool it off but this time it’s only 20m (65 feet) long.

13

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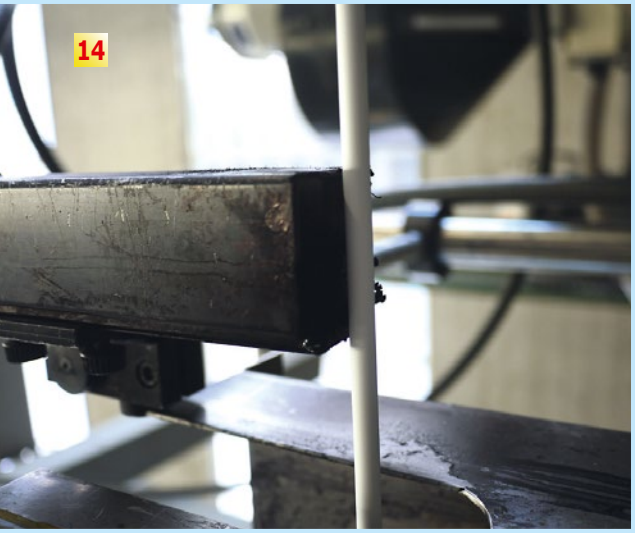

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16

13. The last step: the completed coaxial cable is rolled into 50 or 100m (165 or 330 foot) bundles using this machine.

14. Wait! There's something missing! The cable still has to be labeled. This takes place right after the application of the protective jacket while it's still hot. This stamp imprints the cable type onto the protective cover.

15. This is the keyboard used to enter the cable type.

16. He is responsible for all of ELDTEC's production operations: Production Manager Jose Dos Santos.

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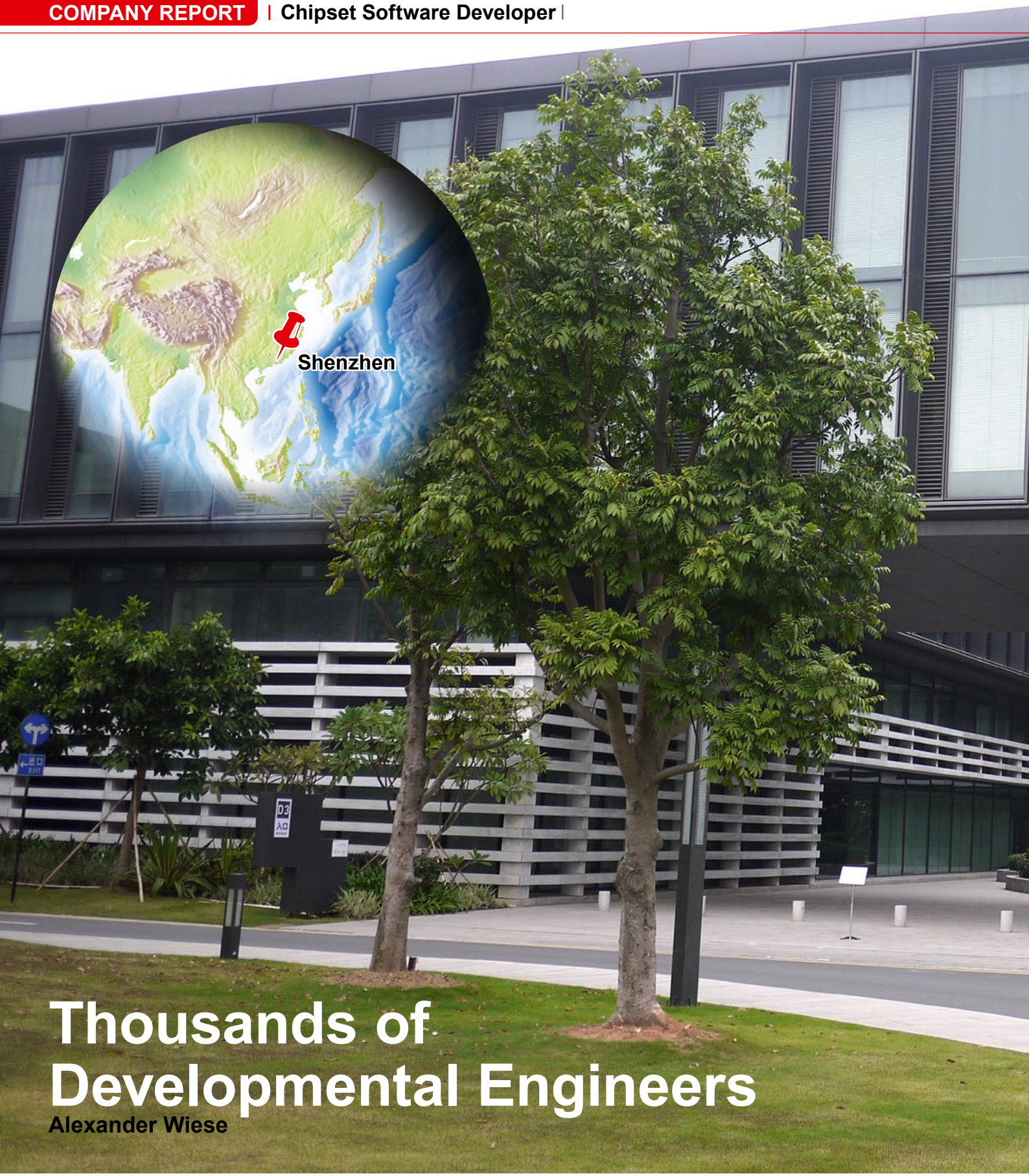


Thousands of Developmental Engineers

Alexander Wiese

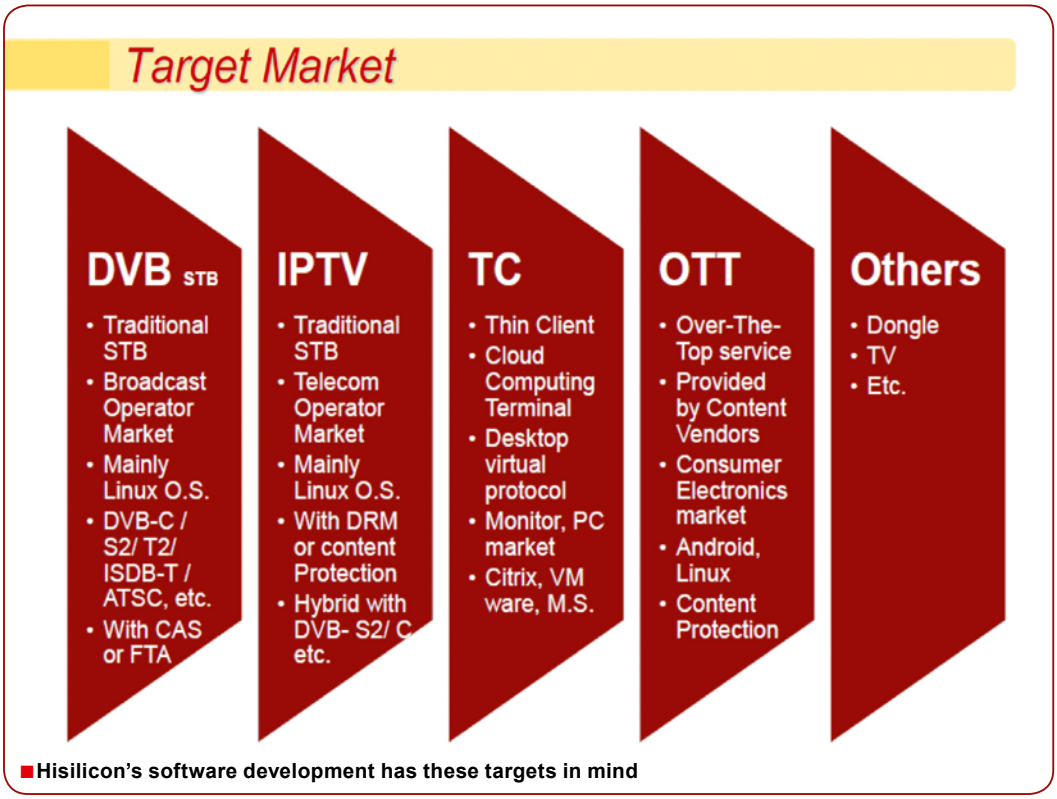
One of the most critical departments in any technology company would be their Research and Development (R&D) group. Less innovative firms have just a few of these R&D engineers while those more strongly innovative companies have a large R&D department. But what if nearly an entire company were made up of R&D engineers? And what if there were thousands of them?

This is precisely the case with Hisilicon. Almost 4000 employees work there and 90% of them are in R&D. The few remaining employees are in sales, marketing and administration. Sure enough, Hisilicon is a spin-off of the gigantic company Huawei. This enormous worldwide telecommunications giant was founded in 1991 and today has more than 100,000 employees. In 2004 the R&D department was spun-off under the name Hisilicon. Hisilicon's

Hisilicon can be found in building D3. Thousands of R&D engineers work here on chipsets and solutions for digital receivers.

headquarters can be found in Bantian in the Longgang district north of Shenzhen. About 30,000 Huawei employees can be found in a large campus-like location along with the R&D employees from Hisilicon.

But not all of their employees are here. Additional Hisilicon branch offices can be found in other Chinese cities like Beijing, Shanghai and Chengdu as well as, for example, in Taipei and, wouldn't you know it, there are also Hisilicon employees in USA's Silicon Valley. All of these engineers are working on software solutions. Since Huawei is more than anything a telecommunications company, 70% of Hisilicon's engineers work on solutions for the telecommunications market. But what we here at TELE-audiovision are especially interested in is digital media. About 10% of Hisilicon's R&D employees work in this



■ **Hisilicon's software development has these targets in mind**

area. They develop chipsets and solutions for DVB receivers.

Hisilicon is the leading provider of chipsets for the local Chinese DVB-C cable market. Recently, Hisilicon also began working on numerous solutions for the market outside of China. This covers primarily chipsets for DVB-S/S2 as well as DVB-T/T2. Hisilicon's chipsets can be found in the receivers of many well-known manufacturers. Nearly all of the large manufacturers in China are Hisilicon customers. And just with these chipsets alone Hisilicon can achieve sales of more than USD$ 100 million a year.

For the future Hisilicon will be relying more on the integration with other products. These innovations would include, for example, the integration of Smartphones and solutions where TV reception on different monitors would be possible – under the term known as Multi-screen Solution: the currently running TV program could be routed from a TV monitor to a tablet/PC and from there to a Smartphone, etc.

Hisilicon has the experts at hand that can significantly change the future of TV receivers. With thousands of R&D engineers, this company can solve all of the new challenges that face them with an endless amount of brain power.

Main Features	Hi3716M/MV300	Hi3716H	Hi3716C
CPU	600MHz, 1500DMIPS	800MHz, 2000DMIPS	1000MHz, 2500DMIPS
3D GPU	NO	OpenGL ES2.0 & OpenVG1.1	OpenGL ES2.0 & OpenVG1.1
FPU	YES	YES	YES
DDR2/DDR3	DDR2/DDR3, 800MHz	DDR2/DDR3, 800MHz	DDR2/DDR3, 1000MHz
SPI / NAND Flash	YES	YES	YES
Video Decoding	MPEG1 MPEG2/H.264/AVS/MPEG4 /VC-1/Real/ VP6/VP8	MPEG1 MPEG2/H.264/AVS/MPEG4	MPEG1 MPEG2/H.264/AVS/MPEG4/VC-1/Real
Audio Decoding	MPEG1/2/3、AAC、HEAAC AC3、AC3 Down-Mix、DRA VOIP audio decoding, 2-channnel sound mixing	MPEG1/2/3、AAC、HEAAC AC3、AC3 Down-Mix、DRA VOIP audio decoding, 2-channnel sound mixing	MPEG1/2/3、AAC、HEAAC AC3、AC3 Down-Mix、DRA VOIP audio decoding, 2-channnel sound mixing
JAVA acceleration	YES	YES	YES
Picture Decoding	JPEG 6400Megapixels PNG 6400Megapixels	JPEG 6400Megapixels PNG 6400Megapixels	JPEG 6400Megapixels PNG 6400Megapixels
Encoder (Video Phone)	H.264/MPEG4 SVGA(800*600@25fps)	H.264/MPEG4 SVGA(800*600@25fps)	H.264/MPEG4 SVGA(800*600@25fps)
Video Input	NO	BT.656/BT.601	BT.656/BT.601/BT.1120
VOIP	YES	YES	YES
Phone Interface	USB/Bluetooth/MIC	RJ11/Bluetooth/MIC	RJ11/Bluetooth/MIC
Network ports	2xMAC(route)	2xMAC(route)	2xMAC (route, x2 FE or x1 FE+ X1 GE)
USB	2xUSB 2.0 HOST with PHY	2xUSB 2.0 HOST with PHY	2xUSB 2.0 HOST with PHY
SATA2 /eSATA	NO	YES	YES
QAM	x1	x1	x1
PVR	YES	YES	YES
Video Output	HDMI 1.4a	HDMI 1.4a	HDMI 1.4a, 24bit RGB
IR	x2	x2	x2
SmartCard	x2	x2	x2
PCI-e / SDIO	NO	NO	x1 PCI-e, x1 SDIO
OS	Linux/Android	Linux/Android	Linux/Android

■ **HiSilicon HD decoder main features**

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New from HISILICON

Vitor Martins Augusto

■ **In Ausgabe 11-12/2012 haben wir schon von HISILICONs HI3716C berichtet.**

www.TELE-audiovision.com/12/11/hisilicon

In the 11-12/2012 issue we reported on HISILICON's HI1376C. Now this SoC manufacturer has introduced additional versions to the market that would be incorporated in future receivers. We took a closer look at their specifications.

„SoC" stands for „System on Chip". It's a chip that consists of not only the processor but also incorporates numerous other functions. Unlike a standard computer, with an SoC you don't need separate chips for audio and video interfaces, even USB and SD cards are linked directly to the SoC. This saves on costs and simplifies development. Receiver manufacturers can specifically implement the planned functions of their new receiver based on the matching SoC. HISILICON also offers reference layouts of the circuit boards so that the customer (receiver manufacturers) merely needs to add a tuner, front display and a remote control. Added to that, of course, is firmware development and a housing and just like that you have a finished receiver.

The advantage of this is that a manufacturer is able to develop a model that is truly their own - the firmware is matched to the manufacturers tastes and the operation of the receiver is based on the manufacturers ideas. Another advantage is the significantly reduced production costs.

Many small providers will buy finished products on which they add their logo and any extra accessories in the packaging. Today's customers are quick to realize that these kinds of receivers are mass produced and through which the actual value of the brand name gets lost. The customer buys the cheapest of the OEM models and often installs the firmware from a competitor if it turns out to be better or nicer looking.

Because of this it absolutely makes since for receiver manufacturers to consider investing in a design based on SoCs like those from HISILICON; they would end up with their „own" product.

HISILICON offers among others these three SOCs that each have different functions and, thanks to reference designs and development environments, greatly minimize the development work of the manufacturer. Not only that, these SoCs introduced here are also interesting because they are explicitly laid out for Linux and even the Android operating system. This simplifies the development and adaptation of software.

So, when components are selected (tuner, RAM, Flash memory, inputs/outputs, etc.) and software is matched to it, a unique product is created that can't be copied by competitors. This allows the manufacturer to support the product for long periods of time which ultimately benefits the brand name.

The current Hi3716 SoC generation is available in three versions and are laid out for different receiver types.

Hi3716C – Smart TV Hybrid STB

We already talked about this chip in the 11-12/2012 issue. The highlight is that its ARM9 kernel makes it possible to use the Android operating system that is so popular with SmartPhones and Tablets. This opens up never-before imagined possibilities on your TV. Operation is made extremely easy through its modern interface. Add to that are applications such as IPTV, web browser, video telephony, etc. And it's especially those providers of Triple Play (TV, Internet and telephone) who should take a much closer look at this wonderful SoC. With it ideal receivers can be developed with which these combined triple play features could actually be used. Especially interesting: the chip incorporates three network interfaces: two RJ-45 jacks with 10/100 MBPS serve to provide connections to a standard home network while a third RJ-45 jack with 1000 MBPS provides a perfect connection for IPTV.

Hi3716H – Advanced HD

This SoC is for the development of Linux receivers with a „Personal Video Recorder" (PVR) that for one would be used for the reception of digital TV (such as DVB-S/S2, DVB-C/C2, DVB-T/T2, etc., depending on tuner) and, thanks to the ARM9 kernel, it would also have enough processing power as today's Linux receivers offering unimaginable features. Whoever installs this SoC wants to develop a receiver that is also compatible with video telephony - as you can see in the block diagram there's an additional interface - and social media applications can also be anticipated just like other Internet content.

This SoC is topped off with a SATA interface that allows the connection of internal or external hard drives. This is basically a complete computer with ARM9 architecture and we're already sitting on pins and needles waiting for the first premium receiver to appear based on this SoC!

Hi 3716M V300

If you as a receiver manufacturer want to be able to offer an inexpensive PVR compatible Linux receiver with an ARM9 processor then you should take a look at the Hi 3716M V300. It offers

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functions similar to the Hi 3716H, but it's missing the connections for a video camera, microphone and eSATA/SATA hard drives. In practice, this SoC is meant for receivers that can do without video telephony and can work with USB attached storage devices. This permits very small housings and low power consumption.

Conclusion

With these three SoCs, HISILICON offers the proper solution for three different scenarios:

1) IPTV- Hi 3716C: A receiver for a modern Internet connection with Triple Play. Ideal for the reception of IPTV but also suitable as a game console, video telephone and Internet box.

2) Luxury Multimedia Linux Receiver – Hi 3716H: A top-notch PVR receiver with which you can not only receive TV, it can also be used for multimedia and games.

3) Linux Receiver – Hi 3716M V300: Compared to the first two, it sounds much more simplified, but even a „normal" Linux receiver has its pluses and in this case it's undoubtedly an especially powerful receiver that can not only display TV, but thanks to its ARM9 architecture it is also able to handle applications and games.

Thanks to these three versions, receiver manufacturers can offer different models that guarantee compatibility with each other: Apps that were developed for one receiver would also run on the other models.

There's no question: in the future ARM-based processor kernels for receivers will dominate the market. This architecture is already widely used today in countless SmartPhones and Tablets. There's an incredibly large development community that is ultimately responsible for the success of the ARM CPUs; the next logical step would be for them to be included in receivers.

COMPARISON TABLE

	Hi3716C	Hi3716H	Hi3716M V300
CPU			
ARM Cortex A9	•	•	•
Dual Core	•	•	
Hardware Java Acceleration	•	•	•
DDR2/DDR3 Interface	•	•	•
Memory			
Maximum Memory	1GB	1GB	512MB
Memory width	32 bit	32 bit	16 bit
SPI & NAND Flash	•	•	•
Operating System			
Android	•		
Linux	•	•	•
Video Decoding			
H264	•	•	•
MPEG1	•	•	•
MPEG2	•	•	•
MPEG4	•	•	•
Divx 4-6	•	•	•
AVS baseline Level 6.0	•	•	•
VC-1	•	•	•
Video Post-Processing (denoising and deblocking)	•	•	•
Picture Decoding			
JPEG (up to 64 megapixel)	•	•	•
PNG (up to 64 megapixel)	•	•	•
Audio/Video Encoding			
H.264/MPEG-4 encoding (max. 800x600@25 fps)	•	•	•
JPEG encoding	•	•	•
VBR and CBR for video encoding	•	•	•
1 channel audio encoding	•	•	•
Echo cancellation	•	•	•
Audio Decoding			
MPEG L1/L2	•	•	•
Dolby Digital decoding	•	•	•
Dolby Digital Plus decoding	•	•	•
Dolby Digital Plus transcoding	•	•	•
Dolby Digital transparent transmission	•	•	•
DTS/DTSH core decoding	•	•	•
DTS transparent transmission	•	•	•
DRA decoding	•	•	•
Down mixing	•	•	•
Resampling	•	•	•
2-channel sound mixing	•	•	•
Intelligent volume control	•	•	•
TS Multiplexing			
3-channel TS inputs including 1 channel IF input	•	•	•
Maximum of 96 PID filters	•	•	•
Full service PVR	•	•	
Recording of scrambled and non-scrambled streams	•	•	•
AES, DES or 3DES data encryption	•	•	•
Content protection of USB devices	•	•	•
Content protection of SATA or eSATA hard disks	•	•	
QAM Demodulator			
Digital tuner interface		•	•
Built-in QAM module supporting ITU J83-A/B/C	•	•	•
1-channel QAM loopback output	•	•	•
Graphics Processing			
Full hardware 2D acceleration engine	•	•	•
Full hardware anti-aliasing and anti-flicker	•	•	•
Full hardware 3D acceleration engine	•	•	
OpenGL ES 2.0/1.1/1.0	•	•	
OpenGS 1.1	•	•	
Audio/Video Interface			
Analog output: PAL, NTSC or SECAM	•	•	•
Aspect ratio: 4:3 or 16:9	•	•	•
Aspect ratio conversion and scaling	•	•	•
Digital output: 1080p, 1080i, 720p, 576p, 576i, 480p, 480i	•	•	•
Reception of SD and HD signals	•	•	
Simultaneous output of SD and HD signals	•	•	•
xvYCC (IEC 61966-2-4) Standard	•	•	•
Digital video Interface: HDMI 1.4 with HDCP 1.2	•	•	•
One BT.656/601 or BT.1120 VI Interface	•	•	
Analog Video interface: CVBS, YPrPb, S-Video	•	•	•
Macrovision and VBI	•	•	
Audio interface: RCA, SPDIF	•	•	•
Periferal Interface			
One eSATA/SATA interface (1.5Gbit/s or 3.0Gbit/s)	•	•	
One PCIe interface	•		
Two USB 2.0 host ports	•	•	•
One 8-bit SDIO interface	•	•	
Two 10/100 Mbit/s Ethernet ports	•	•	•
One 10/100/1000 Mbit/s Ethernet port	•		
Three UART interfaces	•	•	
Two smartcard interfaces supporting T0, T1 and T14 protocols	•	•	
One IR-receiver processor and two interfaces	•	•	•
One LED and keypad control interface	•	•	•
Three I^2C interfaces	•	•	•
GPIO interfaces	13	13	10
Others			
Fast start-up	•	•	•
Downloading and running boot programs through the RS232 port	•	•	•
Standby power	< 1W	< 1W	< 1W
Typical operating power	< 9W	< 8W	< 7W
Package	PBGA	PBGA	QFP & PBGA

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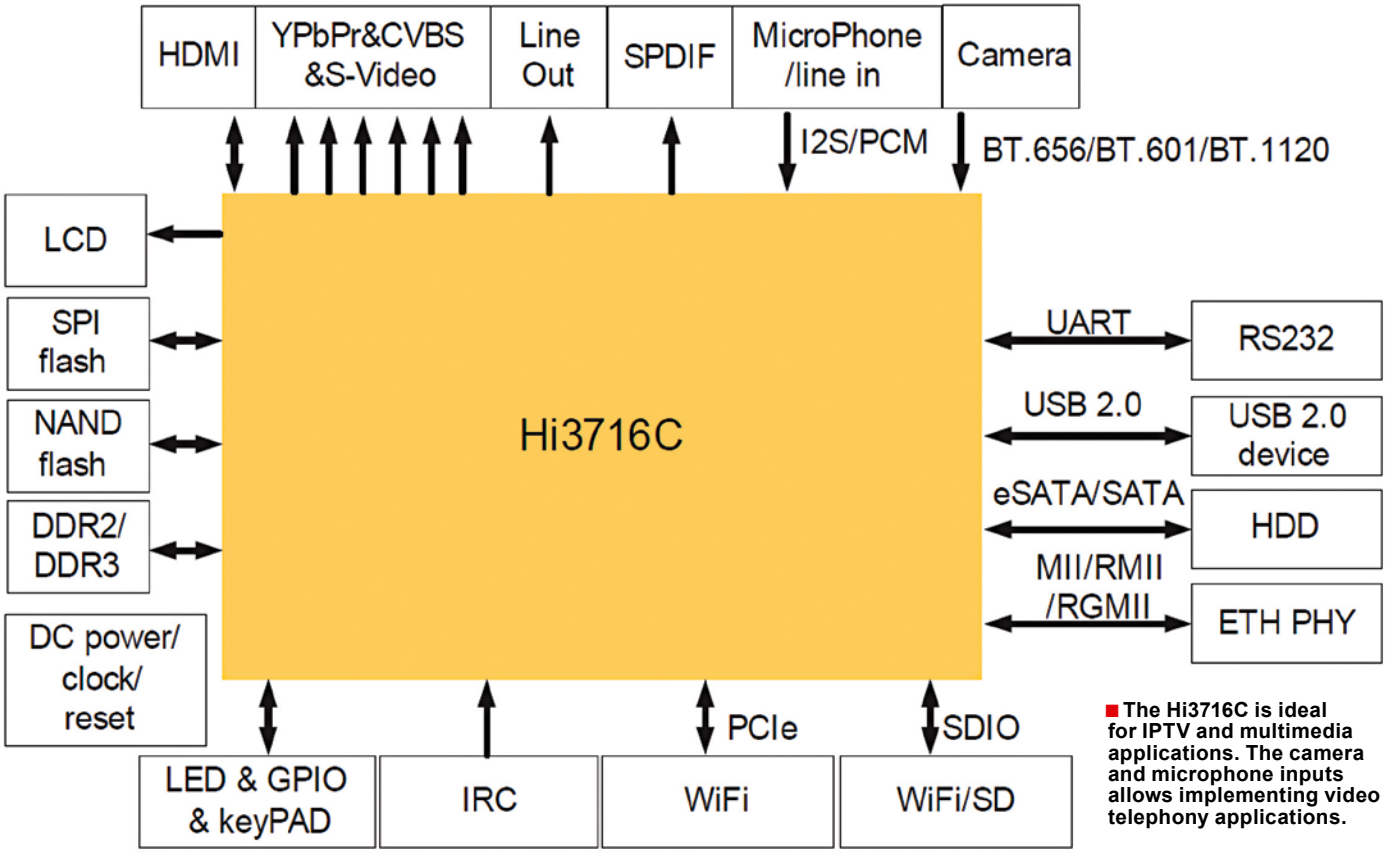
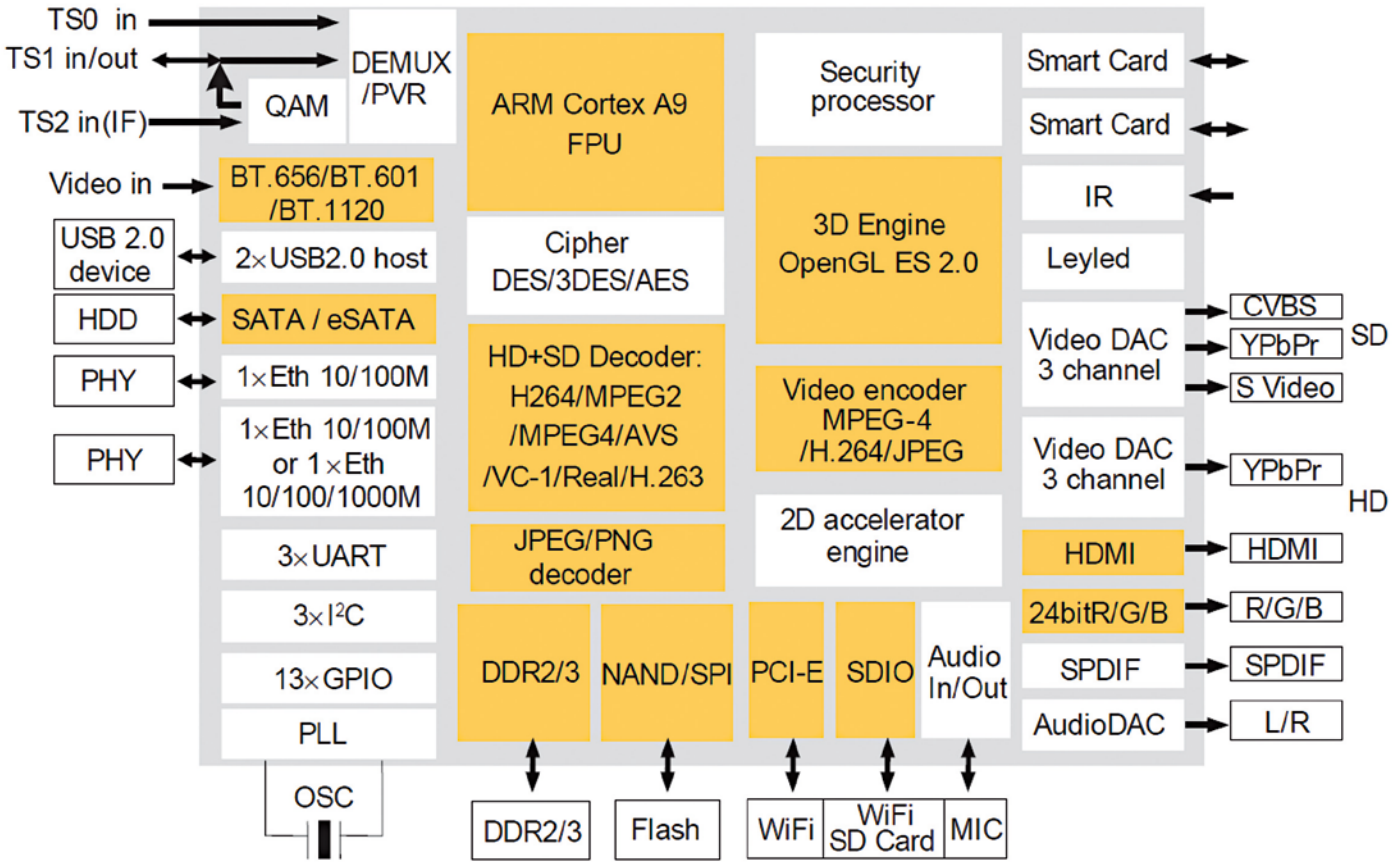
Hi3716C Application Block Diagram

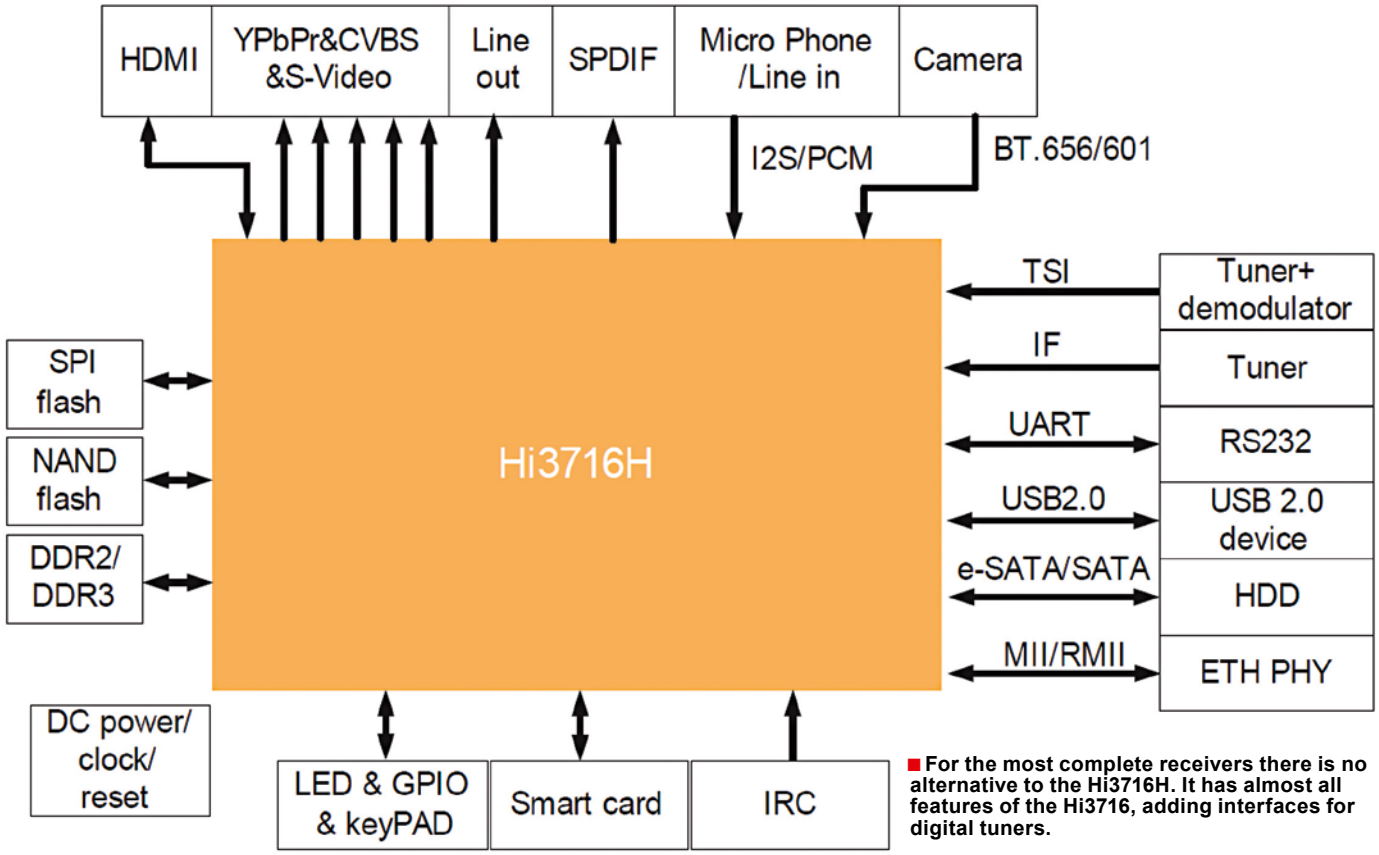


The Hi3716C is ideal for IPTV and multimedia applications. The camera and microphone inputs allows implementing video telephony applications.

Hi3716C Functional Block Diagram

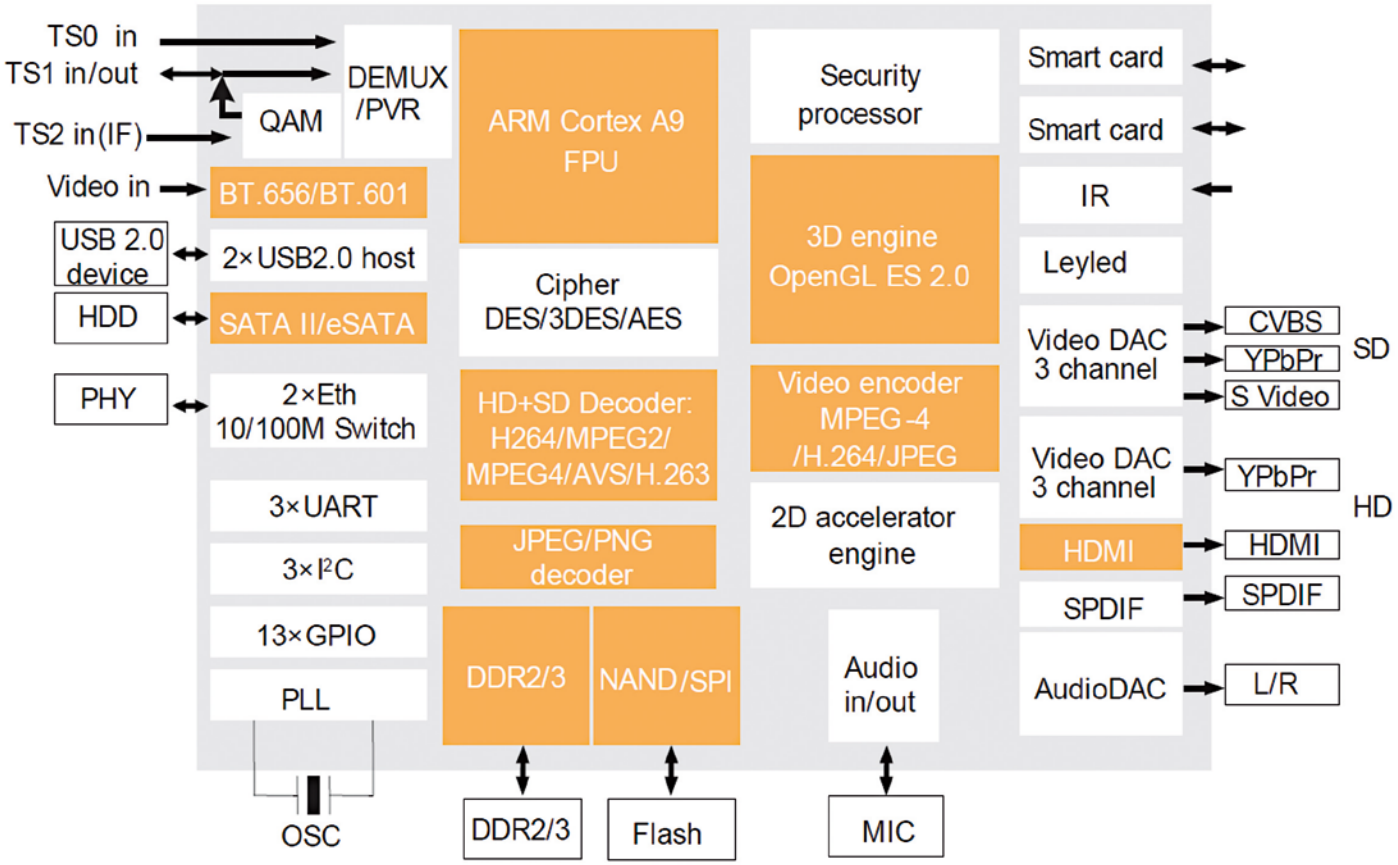


Hi3716H Application Block Diagram

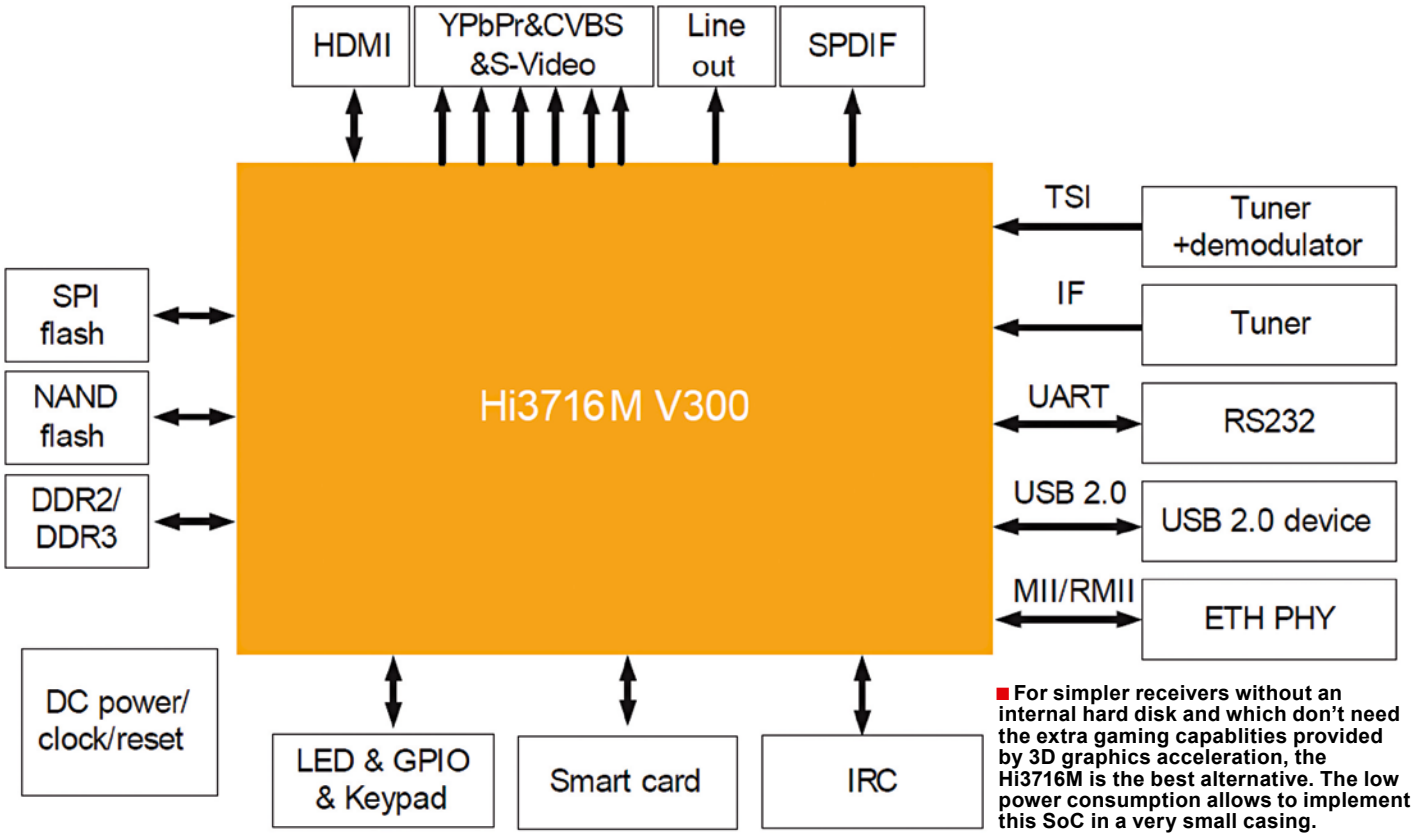


■ **For the most complete receivers there is no alternative to the Hi3716H. It has almost all features of the Hi3716, adding interfaces for digital tuners.**

Hi3716H Functional Block Diagram

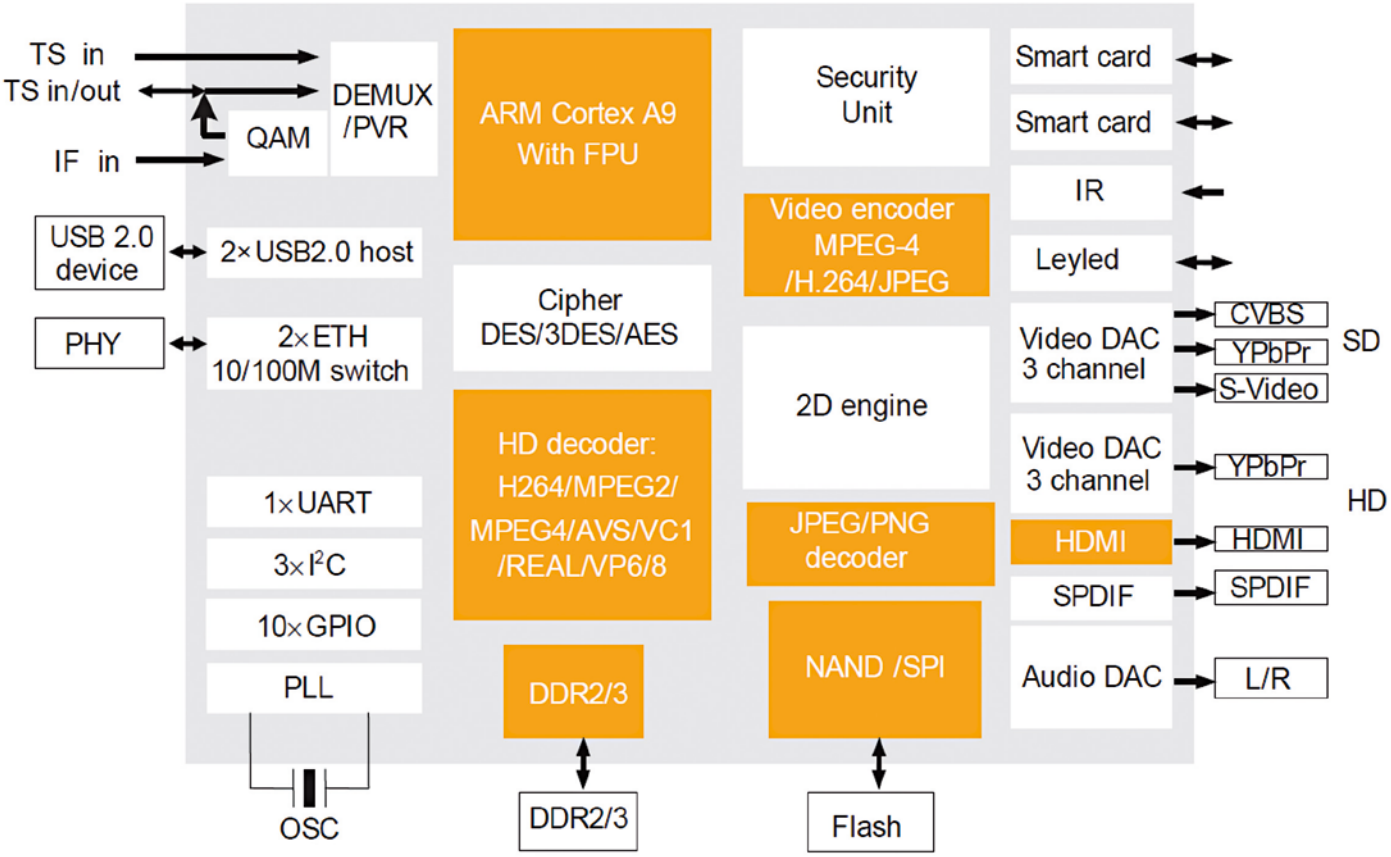


Hi3716M Application Block Diagram



■ **For simpler receivers without an internal hard disk and which don't need the extra gaming capablities provided by 3D graphics acceleration, the Hi3716M is the best alternative. The low power consumption allows to implement this SoC in a very small casing.**

Hi3716M Functional Block Diagram



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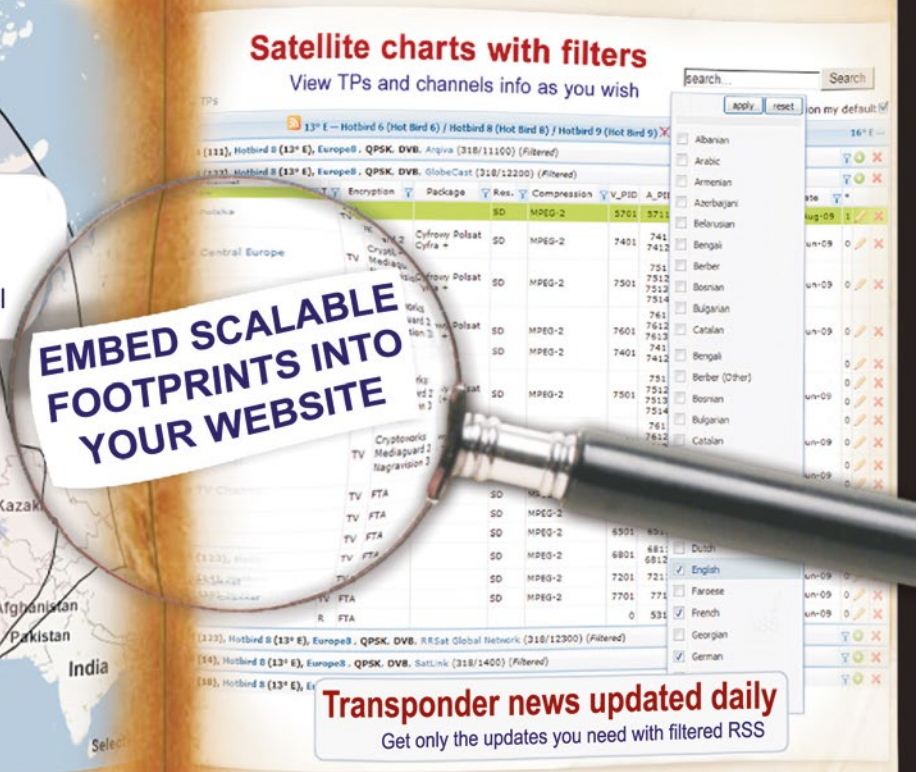

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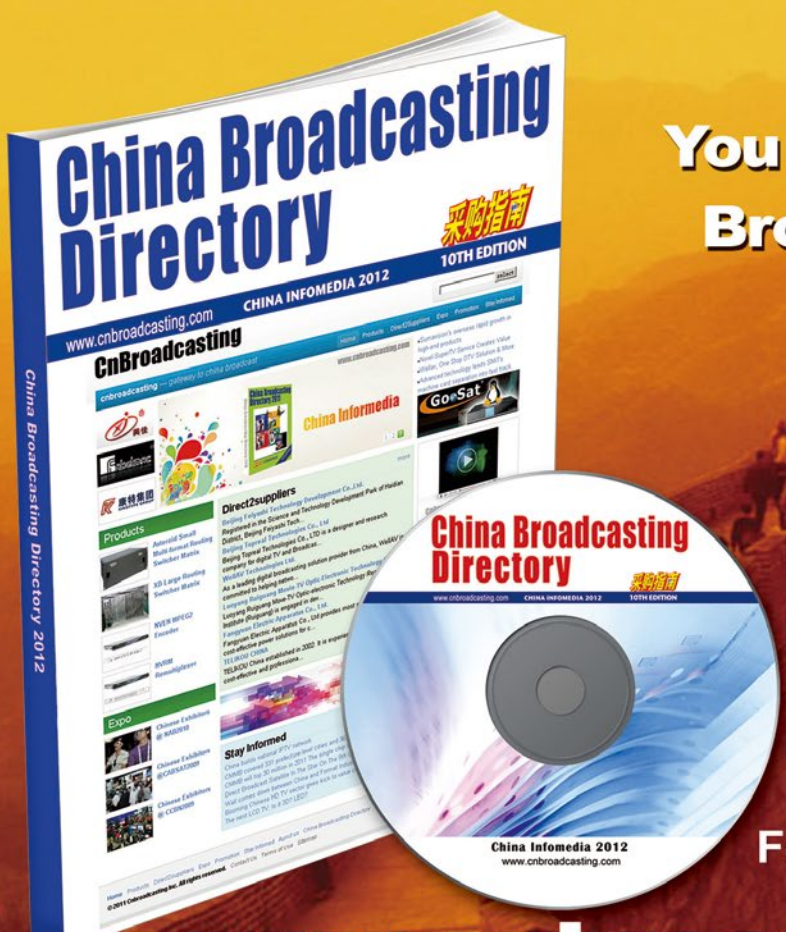

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	Company	Country	City	Main Personalities
TELE audiovision Recommended	**HORIZON**	**UK**	**Harlow**	**John McLoone, Robert Sydee**
TELE audiovision Recommended	**HORIZON**	**UK**	**Harlow**	**Paul Pickering**
TELE audiovision Recommended	**HORIZON**	**UK**	**Harlow**	**Paul Pickering, John McLoone**
TELE audiovision Recommended	**HORIZON**	**UK**	**Harlow**	**Paul Pickering**
	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
TELE audiovision Recommended	**INVACOM**	**UK**	**Stevenage**	**Ivan Horrocks**
	IPOINT	Hungary	Budapest	Andor Pasztor, Zoltan Korcsok
TELE audiovision Recommended	**JIUZHOU**	**China**	**Shenzhen**	**Huang Wei, Linda Lee**
TELE audiovision Recommended	**JIUZHOU**	**China**	**Shenzhen**	**York Xie**
TELE audiovision Recommended	**JIUZHOU**	**China**	**Shenzhen**	**Huang Wei**
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TELE audiovision Recommended	**JIUZHOU**	**China**	**Shenzhen**	**Huang Wei**
TELE audiovision Recommended	**JIUZHOU**	**China**	**Shenzhen**	**Jimmy Zhang**
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	KAIFA	China	Shenzhen	Jackie Yan
TELE audiovision Recommended	**LIANXING**	**China**	**Guilin**	**Liang Yuan, Liao Wen**
TELE audiovision Recommended	**MFC**	**USA**	**Syracuse**	**Carl Fahrenkrug, Sandy Nelepovitz**
	MOTECK	Taiwan	Taipei	Gary Wu, Gerald Ku
	MTI	Taiwan	Taipei	Eugene Wu
	NETUP	Russia	Moscow	Abylay Ospan, Evgeniy Makeev, Konstantin Emelyanov
TELE audiovision Recommended	**PANODIC MICO**	**China**	**Shenzhen**	**You Zhen Yu, Alan Yu**
	PREVAIL	China	Hangzhou	Xu Quanhai, Necy-xu
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TELE audiovision Recommended	**SAT-LINK**	**China**	**Quanzhou**	**QingZhang Lin**
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TELE audiovision Recommended	**SATSON**	**Belgium**	**Brussels**	**Stefaan Cornelis, Didier Debey**
	SEATEL	UK	Southampton	PeterBroadhurst
	SEATEL	USA	Concord	Lorna Brady Glover
TELE audiovision Recommended	**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
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TELE audiovision Recommended	**SOWELL**	**China**	**Shenzhen**	**Eagle Chain**
TELE audiovision Recommended	**SPAUN**	**Germany**	**Singen**	**Kevin Spaun**
TELE audiovision Recommended	**SPAUN POWER**	**Germany**	**Singen**	**Kevin Spaun**

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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
TECSYS	Brasil	Sao Paulo	Jorge Alberto Ganuza, Jose Marcos Freire Martins, Adilson d
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

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SEKISAT	Korea	Seoul	Oh Hwan Jung
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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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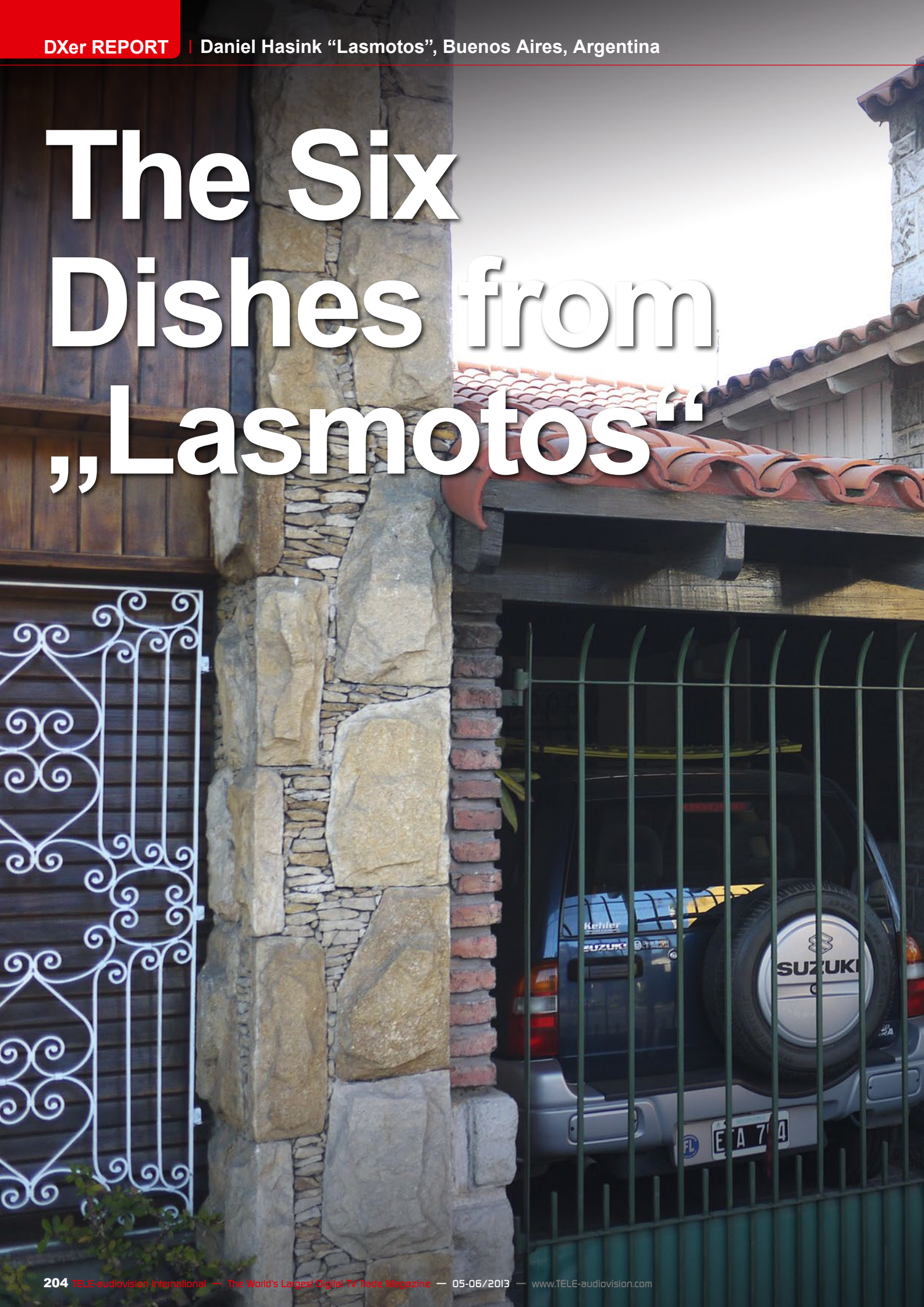
The Six Dishes from „Lasmotos“



■ Daniel Hasink lives here. You can't see his satellite dishes from the street.

- ***Saw his first satellite with his naked eyes when he was eight years old***
- ***Can receive every reachable satellite in the C-band and Ku-band***
- ***Uses the AZBox as his main receiver***
- ***Fascinated by all the different cultures brought to him by satellite channels from around the world***

Software Specialist, Radio Amateur and Satellite DXer Daniel Hasink

Daniel Hasink has been fascinated by radio technology since he was a kid. Today he lives south of Buenos Aires in a quiet suburb. And this is where he told us over a pot of coffee how he became so interested in radio technology and how today he has six satellite dishes in operation. But first we wanted to know what his nickname "Lasmotos" is all about.

"Moto is the shortened version of the Spanish Motocicleta, or motorcycle. When I was younger I enjoyed riding motorcycles and had several of them. I even run a website where I publish operational manuals. Since then I've been visiting satellite forums, such as ftatv.com, using my nickname 'Lasmotos."

Then Daniel Hasink "Lasmotos" began explaining to us how it all started. "My family comes from a farming region in the extremely southern part of the Rio Negro Province. We lived in Buenos Aires but during summer vacations we always stayed for two months at my grandfather's and uncle's farms."

Back then there was no TV let alone electricity on the farm, "My grandfather would use a car battery so that we could listen to the radio in the evening." And this was the start of little Daniel's fascination with radio technology.

His passion for satellite technology has its roots from those days: "Since no one had electricity for lights, we often sat out on the patio and looked up at the stars in the sky." His grandfather explained to him all of the different

■ Daniel Hasink "Lasmotos" next to his foldable 60cm antenna that he enjoys taking with him on trips.

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■ **“Lasmotos’” antenna parade. He mounted them all on the roof of his home’s extension so that they can “see” above his neighbor’s house.**

constellations and how that all of the stars appear to be standing still. "But one of the stars is moving", little Daniel called out one night. His grandfather explained that this was a satellite. "I was only eight years old then and those first satellites flew in low earth orbits at altitudes of only a few hundred kilometers." Such a transition across the horizon took from 8 to 15 minutes and it was visible to the naked eye because of the sunlight reflecting off of the satellite. "My first satellite experience was seeing a small illuminated dot moving slowly across the sky."

He had another experience in 1975 when he was serving in the Argentinean Air Force. "One day the American military was demonstrating a communications satellite. I was there and watched how the soldiers set up an uplink station." But it took another 25 years before "Lasmotos" could finally receive his own satellite channels. That was the year 2000 when he acquired his first 1.2-meter dish.

Today Daniel Hasink is fully equipped: he has a total of six dishes mounted on the roof of his house. He lists them for us: "The big 1.8-meter antenna with the C-band feed is fixed on NSS 806 at 40W. The smaller 1.1-meter dish is also for the C-band and is aligned with INTELSAT 9 at 58W."

For the Ku-band, Daniel uses a 90cm dish with a motor. "I use that antenna to receive the AMC6, GALAXY 28, AMAZONAS, INTELSAT 11, TELSTAR 12, HISPASAT and VENESAT 1 satellites."

That last satellite, says "Lasmotos", "has an especially strong beam that is aimed towards Uruguay and broadcasts a channel from Uruguay." Two additional 60cm antennas on the terrace are fixed on TELSTAR 12 and HISPASAT. "And this 60cm dish on the terrace is foldable; I take it with me whenever we travel on vacation to the Atlantic coast."

"Lasmotos" is particularly fascinated with channels from other countries. "You can learn so much from foreign TV, for example, from the many different regional channels from Spain with all of the different cultures." Daniel is even fascinated by the channels from the various Argentinean provinces; in this way he can keep tabs on what's going on there, something you don't often hear about in the capital city. "But I really like the HD channel from NHK; it's a channel of exceptional technical qual-

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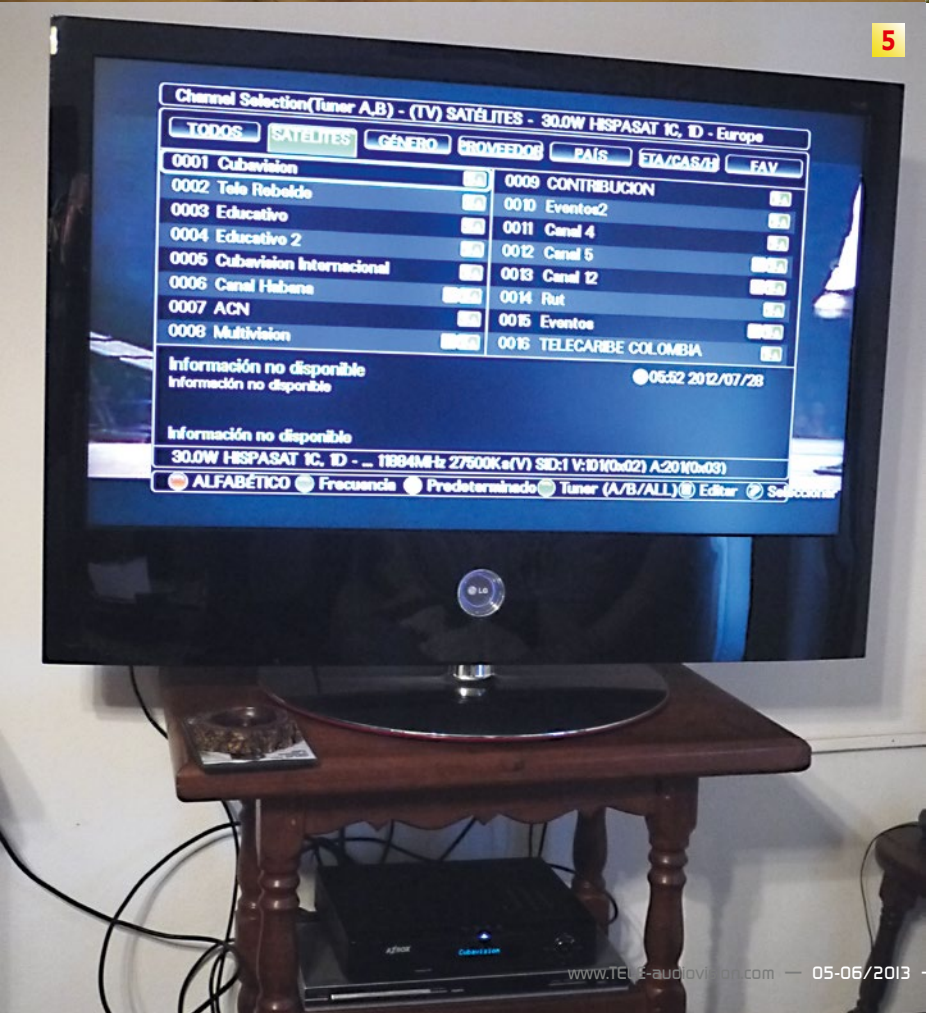


ity." Daniel comments that he can also receive a few other channels that say they are HD, "but it's a lie. They don't transmit in high resolution at all." It's an experience that he has in common with many other HDTV viewers: quite a few broadcasters carry the "HD" in their channel name but often only transmit in SD or artificially upscale their channels to HD.

In his living room he has a large plasma TV connected to an AZBox. "All of my antennas are connected there so that I can surf to my hearts content." Since Daniel is also connected to the local cable network and even has an ISDB-T antenna on his roof, he can proudly say, "I can watch some channels in triple play - via satellite, via cable and terrestrially!"

Daniel Hasink "Lasmotos" is set up perfectly for all of the different reception methods.

1. Because the neighbor's house limits the view, he had to install the antenna for the Argentine DTH package on the outermost edge.

2. Daniel Hasink "Lasmotos" in his shack. Here he keeps track of the satellite channels on a monitor and reads the Spanish version of TELE-satellite on his laptop.

3-4. "Lasmotos" is also an active radio amateur in the 2m band.

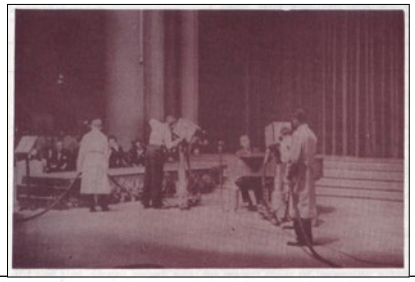
5. "Lasmotos" connected the AZBox to the large plasma TV in his living room.

30 Years Ago

TV Station Paris 1943

First TV transmissions started in Germany in 1938 in Berlin. When Germany started World War II the managers at "Fernsehsender Berlin" (TV Station Berlin) were faced with having to close down their brandnew station for not being relevant to war efforts. They needed a reason to stay out of war and came up with the suggestion to relocate the tv station to Paris to entertain the wounded in hospitals there. Smartly, they argued that a high power tv station would disturbe enemy airplanes, which of course was nonsense but convinced the powers at the time.

As luck had it, the French had just installed a tv transmitter of their own in the Eiffel tower to start their own transmissions with 180 lines. The Germans took over and first had to convert the transmitter to their 441 line system. Finally in 1942 a regular tv schedule in German language was started, which lasted up till summer 1944. TV was aired in the morning from 10 to 12, and in the evening from 8:30 to midnight. In the remaining time the station turned off their video broadcast and became a radio only station.



FERNSEHSENDER PARIS

Deutsche Sommerzeit

PROGRAMM FÜR DIE SENDUNGEN
DER 27. PROGRAMMWOCHE VOM 2. – 8. JULI 1944

Programmänderungen vorbehalten

Sonntag, 2. Juli

TONSENDER
12.00 Gute Mädchen.
12.30 Nachrichten.
12.40 Das Deutsche Volkskonzert.
14.00 Nachrichten und Wehrmachtsbericht.
14.15 Musikalische Kurzweil.

BILDSENDER
15.00 Aus dem Zeltgenossenhaus.
• 15.25 Direktübertragung aus dem Studio 1:
"Gleis nach dem Meer".
Fernsehfilmsendung:
15.55 WOCHENSCHAU
16.10 "Der abgeblitzte Kunde".
16.15 "Papas Fehltritt".

TONSENDER
17.00 Nachrichten.
17.30 Wie sich Soldaten ablenken.
18.00 Unterhaltsame Musik deutscher Meister.
19.00 Der Zeitspiegel zum Sonntag.
20.00 Nachrichten.
20.15 Unterhaltungsmusik.

BILDSENDER
20.30 Aus dem Zeltgenossenhaus.
• 20.55 Direktübertragung aus dem Studio 1:
"Die Geschichte".
Fernsehfilmsendung:
21.25 WOCHENSCHAU
21.40 "Hochstapler".

TONSENDER
22.00 Nachrichten.
22.15 Unterhaltsame Weisen.
23.00 Musik zur Mitternacht.
24.00 Nachrichten.

Montag, 3. Juli

BILDSENDER
10.00 Fernsehfilmsendung:
10.00 WOCHENSCHAU
10.15 "Die Nase auf Abwegen".
11.53 "Zirkus Wallenda".
11.57 "Das Frühstücksei".

TONSENDER
12.08 Musik zur Werkpause.
(Ausn. 13.10) Nachrichten und Tagebuch.
14.00 Nachrichten und Wehrmachtsbericht.
14.15 Ungarische Kurzweil.
15.00 Schöne Stimmen und bekannte Instrumentalisten (Carl Maria von Weber).
16.00 Nachmittagskonzert.
17.00 Nachrichten.
17.15 Was und wie sie singt man beim Sport.
18.30 Der Zeitspiegel.
19.00 Vortrag.
19.15 Feuilleton.
19.30 Zeichenmusik.
19.45 Vortrag.
20.00 Nachrichten.
20.15 Für jeden etwas.

BILDSENDER
20.30 Aus dem Zeltgenossenhaus.
• 20.45 Direktübertragung aus dem Studio 1:
"Franzosen spielen für Deutsche".
21.15 Fernsehfilmsendung:
21.30 WOCHENSCHAU
21.44 "Kameradschaft auf Seehunde".
"Sozialismus Deutsch".

TONSENDER
22.00 Nachrichten.
22.15 Klingende Reigen.
23.00 Musik zur Mitternacht.
24.00 Nachrichten.

Dienstag, 4. Juli

TONSENDER
12.00 Musik zur Werkpause.
(Ausn. 12.10) Nachrichten und Tagebuch.
14.00 Nachrichten und Wehrmachtsbericht.
14.15 Allerlei von vorn bis drei.

BILDSENDER
• 15.00 Direktübertragung aus dem Studio 1:
"Fabrik" (mit Publikum).
Fernsehfilmsendung:
16.15 "Wie 10 Schimpanse das Landgericht narrt".
Bastelstunde:
16.35 "Schnelltips für Photographen".
16.45 Aus dem Zeltgenossenhaus.

TONSENDER
17.00 Nachrichten.
17.15 Kurzweil zur Nachmittag.
18.30 Der Zeitspiegel.
19.00 Vortrag.
19.15 Feuilleton.
19.30 Zeichenmusik.
19.45 Vortrag.
20.00 Nachrichten.
20.15 Nachklänge in Dur und Moll.

BILDSENDER
20.30 Aus dem Zeltgenossenhaus.
Bastelstunde:
– 20.45 "Bonn".
Fernsehfilmsendung:
21.15 WOCHENSCHAU
21.30 "Winter in Deutschland".
21.45 "Vom Affen zur Ente".

TONSENDER
22.00 Nachrichten.
22.15 Musik zur Mitternacht.
24.00 Nachrichten.

Mittwoch, 5. Juli

BILDSENDER
10.00 Fernsehfilmsendung:
10.15 WOCHENSCHAU
11.54 "Leichte Muse".
"Abfallobst aus Würzburg".

TONSENDER
12.05 Musik zur Werkpause.
(Ausn. 13.10) Nachrichten und Tagebuch.
14.00 Nachrichten und Wehrmachtsbericht.
14.15 Musik nach Tisch.
15.00 Kurzweil.
15.30 Schlemmerstunde.
16.00 Am Deutschen Operntheater.
17.00 Nachrichten.
17.15 Melodien in Dur und Moll.
18.30 Der Zeitspiegel.
19.00 Vortrag.
19.15 Feuilleton.
19.30 Zeichenmusik.
19.45 Vortrag.
20.00 Nachrichten.
20.15 Sind der Liebe (ff): Musik voll Musik voll Von stolzen, spröden schönen und lieblichen Mädchen besungen:

BILDSENDER
20.30 Aus dem Zeltgenossenhaus.
• Direktübertragung aus dem Studio 1:
20.55 "Ich bin Agnes" (ff).
21.25 "Ja mir Agnes" (ff).

TONSENDER
22.00 Nachrichten.
22.15 Heiße Rhythmen.
23.00 Musik zur Mitternacht.
24.00 Nachrichten.

Donnerstag, 6. Juli

BILDSENDER
10.00 Fernsehfilmsendung:
10.15 WOCHENSCHAU
11.49 "Himmel, ich schau die Schau".
"Am Stammtisch deutscher Vorgangenheit".

TONSENDER
12.03 Musik zur Werkpause.
(Ausn. 12.10) Nachrichten und Tagebuch.
14.00 Allerlei von vorn bis drei.
15.00 Nachmittagskonzert.
16.00 Musikalische Kurzweil.
17.00 Nachrichten.
17.15 Musik zur Unterhaltung.
18.00 Die schönen Lieder der Abendstund'.
Deutsche Jugend singt.
18.30 Der Zeitspiegel.
19.00 Vortrag.
19.15 Feuilleton.
19.30 Zeichenmusik.
19.45 Vortrag.
20.00 Nachrichten.
20.15 Operettenmelodien "Wie es Euch gefällt".

BILDSENDER
20.30 Aus dem Zeltgenossenhaus.
• 21.00 Direktübertragung aus dem Studio 1:
"Franzosen spielen für Deutsche".
Fernsehfilmsendung:
21.30 WOCHENSCHAU
21.45 "Tierleben auf dem Bauernhof".

TONSENDER
22.00 Nachrichten.
22.15 Musik zur Mitternacht.
24.00 Nachrichten.

Freitag, 7. Juli

TONSENDER
12.00 Musik zur Werkpause.
(Ausn. 12.10) Nachrichten und Tagebuch.
12.30 Nachrichten und Wehrmachtsbericht.
14.00 Musikalische Kurzweil.
14.15

BILDSENDER
• 15.00 Direktübertragung aus dem Studio 1:
"Fabrik" (mit Publikum).
Fernsehfilmsendung:
16.15 WOCHENSCHAU
16.30 "Der Jockey".
16.45 Aus dem Zeltgenossenhaus.

TONSENDER
17.00 Nachrichten.
17.15 Ja, wenn die Musik stark wär'.
18.30 Der Zeitspiegel.
19.00 Vortrag.
19.15 Feuilleton.
19.30 Zeichenmusik.
19.45 Volkstümliche Vorlesung.
20.00 Nachrichten.
20.15 Bunte Musik zum Abend.

BILDSENDER
20.30 Aus dem Zeltgenossenhaus.
• 20.45 Direktübertragung aus dem Studio 1:
"L'Arme diffuse" (ff).
Fernsehfilmsendung:
21.15 WOCHENSCHAU
21.30 "Besuch im Kasino".

TONSENDER
22.00 Nachrichten.
22.15 Musik zur Mitternacht.
24.00 Nachrichten.

Samstag, 8. Juli

BILDSENDER
10.00 Fernsehfilmsendung:
10.15 WOCHENSCHAU
11.52 "Wunder der Kugel".

TONSENDER
12.04 Musik zur Werkpause.
(Ausn. 12.10) Nachrichten und Tagebuch.
12.30 Nachrichten und Wehrmachtsbericht.
14.00 Allerlei von vorn bis drei.
14.15 Gute Laune.
15.00 Nachmittagskonzert.
16.00 Nachrichten.
17.00 Bunte Feierabend, eine Unterhaltungsmusik.
17.15 Die Wiener Unterhaltungs- und Tanzkapelle spielt.
18.30 Der Zeitspiegel.
19.00 Vortrag.
19.15 Feuilleton.
19.30 Zeichenmusik.
19.45 Es spielt Hans Fährich.
20.00 Nachrichten.
20.15 Farbenspiel der Klänge.

BILDSENDER
20.30 Aus dem Zeltgenossenhaus.
• 20.55 Direktübertragung aus dem Studio 1:
"Frauenmagnet 51".

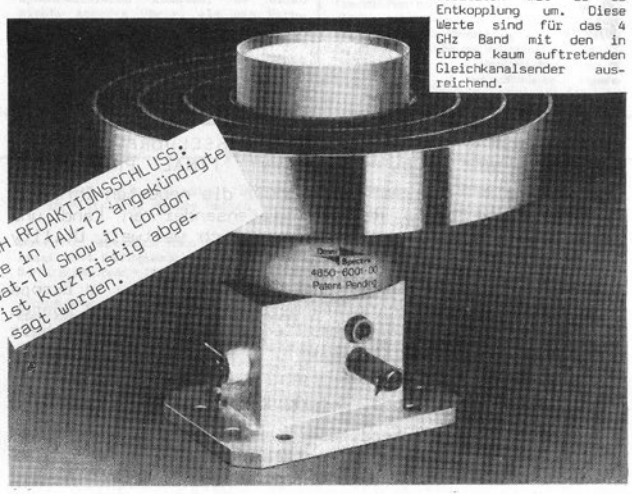
TONSENDER
22.00 Nachrichten.
22.15 Zum Wochenausklang.
24.00 Nachrichten.

SAT TV aktuell

Die Konverter-Technologie, die es ermöglicht, ein im Gigahertz-Bereich empfangenes Fernsehbild normgerecht auf den Bildschirm zu bringen, nimmt immer mehr Form an. So bietet die Firma LNR Communications einen nur ca 4cm hohen Konverter an, der die Satellitenkanäle im 4 und 6 GHz-Band per Mikroprozessor Tastatur anwählen läßt, frei wählbare Tonnormen besitzt und zusätzlich Datenempfang ermöglicht. Das 4 GHz Band ist allerdings in Deutschland, Österreich und der Schweiz für den TV-Direkt-Empfang nicht vorgesehen.

Das spanische Fernsehen RTVE ist jetzt auch ohne den Umweg per Überreichweitenempfang in der Bundesrepublik zu sehen. Mit entsprechendem Aufwand können das 1. und 2. spanische Programm vom Satelliten Major Path 2 empfangen werden. RTVE benutzt den Satelliten als Zubringer zu den kanarischen Inseln. Gesendet wird auf 4 GHz mit einer Ton-ZF von 6,65 MHz.

In ihrer Mai-Ausgabe 1983 stellte die englische Satellitenfachzeitschrift "Satellite TV News" den ersten Polarisations-Umschalter kommerzieller Fertigung für den 4 GHz Bereich vor. Ferngesteuert schaltet der Umschalter die Signalpolaritäten mit 20 dB Entkopplung um. Diese Werte sind für das 4 GHz Band mit den in Europa kaum auftretenden Gleichkanalsender ausreichend.



NACH REDAKTIONSSCHLUSS: Die in TAV-12 angekündigte Sat-TV Show in London ist kurzfristig abgesagt worden.

Literatur Tips aus England

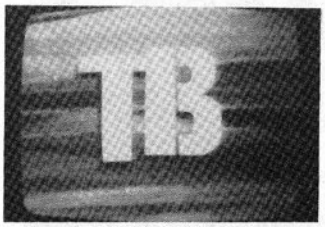
Sehr ausführlich über Satelliten-TV berichtet die englische Zeitschrift "Satellite TV News", die monatlich bei HRC-Editorial * 41/47 Derby Road * Heanor * Derbyshire * GB - DE7 7QH * erscheint. Jede Ausgabe liefert ausführlich Informationen, Bauanleitungen und Marktspiegel über die weltweite Satelliten Szene. Der Bezugspreis beträgt 25 Englische Pfund pro Jahr für 12 Ausgaben.

Ein Handbuch zum Satelliten-Empfang, für europäische Verhältnisse geschrieben, nennt sich "Tomorrows Television Today", stammt von Michael Stone und ist für 10,50 Englische Pfund erhältlich bei Tom.Telev.Today * 47 Filton Avenue * Horfield * Bristol * GB - BS7 0AQ *

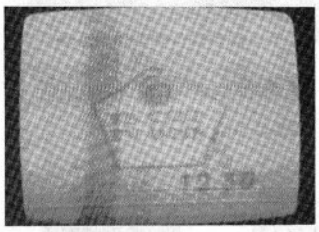
"STTI's International Satellite TV Reception Guidebook" von Stephen Birkill, ein umfassender Führer mit Tabellen, Zeichnungen und Bildern über Empfangssysteme und Bauteile. Zu beziehen für 34 Englische Pfund über Satellite TV Antena Systems Ltd. * 4 Clarence Street * Staines * Middlessex * England *

"IBA Technical Review" ist die technische Informationszeitschrift der gleichnamigen englischen Rundfunkgesellschaft. Die Zeitschrift zeigt den Entwicklungsstand der Sendertechnik auch im Satellitensektor wissenschaftlich qualifiziert auf. Erhältlich bei IBA * Crawley Court * Winchester * Hants * GB - SO21 2QA * Preis 1,25 Engl.Pfund pro Ausgabe.

"Space Objects Digest, Military Space Digest, Space Operations Review and Space Systems Digest" sind Veröffentlichungen rund um den Satelliten mit Daten, Fakten, Frequenzen und Aktivitäten. Erhältlich über Geoffrey Falworthy * 12 Barn Croft * Penwortham * Preston * GB - PR1 0SX * Preis: 25 Pennies je Ausgabe.



6. TSS-Relais Fertőd (Foto: F.Kocsis)



7. TSS-Relais Budapest (Foto: F.Kocsis)

* Ferenc macht uns darauf aufmerksam, daß im Kabelnetz von Székesfehérvár (s.TAV-12) jetzt sogar 9 TV-Programme angeboten werden: Aus Ungarn MTV-1 und 2, aus der Tschechoslowakei CST-1 und 2, aus Österreich ORF-1 und 2, aus Jugoslawien TV Zagreb 1 u.2, und schließlich TSS-1 aus der UdSSR. Das TSS - Programm ist eine Übernahme vom lokalen TSS-Relais in Székesfehérvár.

* Ferenc weist auch darauf hin, daß der Sender Szentes, den wir in TAV-12 erwähnten im Zusammenhang mit einer falschen Auflistung im WRTH und in der EBU-Liste unter "Bulgarien", in der Tat seit etlichen Jahren im Kanal R-10 arbeitet, und nicht mehr auf R-11, also nicht mehr auf dem Kanal, unter dem der Sender fälschlicherweise in diesen Listen unter "Bulgarien" eingetragen ist. Das WRTH hat diese Eintragung inzwischen auch verbessert.

* Karl Novovesky aus Obersiebenbrunn in Österreich hat uns die neueste Senderliste von MTV zugesandt. Danach wurde auf dem Hotel Intercontinental in Budapest ein TV-Umsetzer eröffnet. Er hat eine Nennleistung (nicht ERP) von 80 bzw. 40W und sendet auf R-10 (MTV-1) und R-27 (MTV-2). Der Kanal R-10 dürfte jetzt allerdings mit TSS-1 auf R-11 kollidieren, möglicherweise hat einer der beiden Sender inzwischen die Frequenz gewechselt.

Zum Schluß noch eine Bitte. Ich bin im Moment bei den Vorbereitungen für eine Ländervorstellung von Rumänien und suche dafür noch Fotomaterial. Sollte jemand von unseren Lesern mir solche Fotos zur Verfügung stellen können, so wäre ich sehr dankbar. Was ich suche, sind allerdings keine Testbilder, sondern Fotos von Programmen des rumänischen Fernsehens. Also z.B. von Nachrichtensendungen, Ansagern, Untertiteln, Slogans usw. Die Fotos sollten eine gute Qualität haben, also möglichst ohne Verzerrungen sein. Alle Bilder werden selbstverständlich wieder an die Einsender zurückgesandt.

FLASH *Seit dem 7.Februar 1983 sendet der jugoslawische Sender Radio Novi Sad täglich von 0510 bis 0005 Uhr ein Vollprogramm in ungarischer Sprache. Die Sender sind Novi Sad 90.5 MHz (50 kW) und Subotica 92.5 MHz (10 kW).

(F.Kocsis/BT)

Zum Foto auf der nächsten Seite

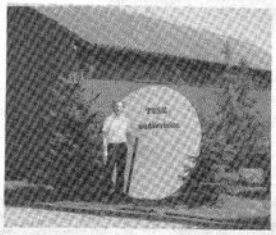
Kaum wagte sich der erste Sonnenstrahl in diesem Jahr heraus (das war heuer am 17.April) ging schon die Antennenzeit los. Bis dahin blieb kaum Zeit, zwischen Regenschauern den TAV-Parabolspiegel aufzustellen. Endlich spielte das Wetter mit und die Spiegelhalterung konnte windfest gemacht, der Hohlleiter eingekürzt und der Spiegel selbst korrisionsgeschützt werden.

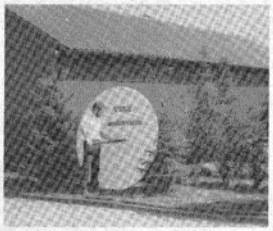
Noch ist sich TAV Satelliten Redakteur Rainer Bärmann noch im unklaren, ob die Empfangsspannung im Brennpunkt des Spiegels mit einem Hohlleiter hinter den Spiegel geführt werden soll oder ob gleich im Brennpunkt ein Down-Konverter für leichter transportable Frequenzen sorgen soll.

Mit einem Hohlleiter, mit dem auf den Fotos herumexperimentiert wird, ist der Vorteil mehr Platz für die Elektronik außerhalb der Spiegelfläche. Auch ein besserer Witterungsschutz ist mit einer Hohlleitertechnik realisierbar. Nicht so sehr Wind und Regen sind ausschlaggebend sondern die Sonne. Ihre Strahlen werden genauso wie die HF-Strahlen gebündelt und es entstehen im 'Brenn'-Punkt entsprechend hohe Temperaturen.

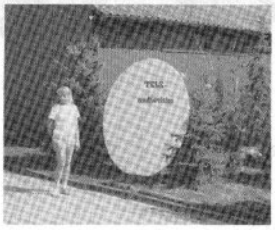
Da von der sowjetischen Fernmeldeverwaltung immer noch keine Empfangsgenehmigung vorliegt, kann in Ruhe weiter experimentiert werden.

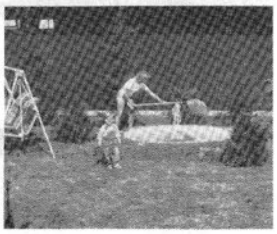
Fotos: RB





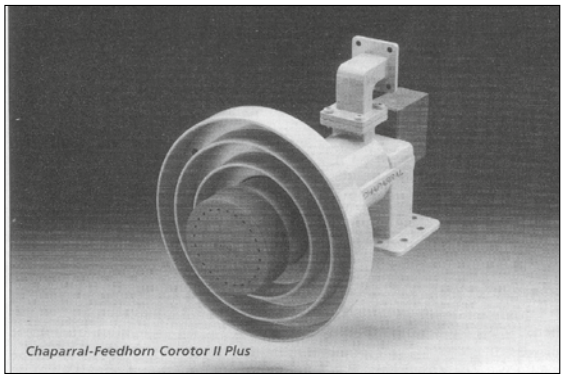
Fotos oben: Rainer Bärmann paßt einen für zirkular polarisierte Wellen geeigneten Hohlleiter in den TAV-Parabolspiegel ein.
Fotos unten: Hoppla, eine holde Weiblichkeit naht. Mit sicherem Instinkt für eine praxisnähere Verwendung wird der Spiegel kurzfristig als Springbrunnen zweckentfremdet.



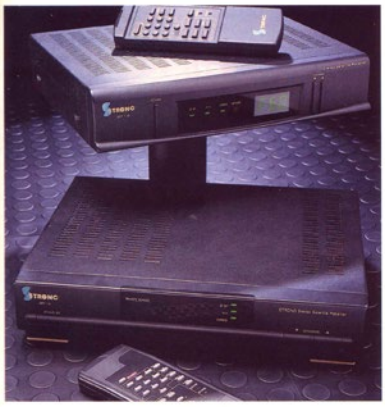


20 Years Ago

Chaparral introduced two new feedhorns. The Corotor Plus II (picture) receives the C band in liner and circular, and the Ku band in linear polarization.


Chaparral-Feedhorn Corotor II Plus

STRONG



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STRONG verfuegt ueber ein umfangreiches und vielfaeltiges Programm von Satelliten-Empfaengern, die Spitzenqualitaet und den letzten technologischen Stand vereinen und den hohen Anspruchen der heutigen Satelliten-Industrie gerecht werden.

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J-17 STEREO AUDIO
LED Anzeige
Frequenzbereich 950-2050 MHz
Testbildgenerator
ZZF-Nummer : G 647 500 C

SRT115
99 Programmplaetze
1 x ZF-Eingang
2 x Scart
J-17 STEREO AUDIO
On Screen Anzeige
VCR Timer 4-fach
Bevorzugter Kanalindex
Frequenzbereich 950-2050 MHz
Testbildgenerator
LNB Aus/An Schalter
ZZF-Nummer : G 647 501 D

SRT118
Wie SRT 115
mit zusaetzlichen Features:
2 x ZF-Eingaenge
3 x Scart
Zusatzfunktion fuer East/West Controller

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ASTRA Information Nr. 5

BIS ZU FÜNF SATELLITEN AUS EINER ANTENNE

NEUE FTE-MULTIFEEDANTENNEN

Um das volle Programmangebot aus fünf europäischen Fernsehsatelliten gleichzeitig zu erhalten - etwa bei Hotels, Kabelnetzen und Gemeinschaftsanlagen für verschiedene Sprachgruppen -, bedarf es gewöhnlich fünf getrennter Antennen. Der Platzbedarf für diesen "Wald", die Montage- und Betriebskosten sind nicht zu unterschätzen. FTE Maximal Mayer nahm sich des Problems an und konstruierte zwei Multifeedantennen für unterschiedlichen Bedarf.
Bei der Angebotsabgabe können die FTE-Händler nun erheblich kostengünstiger kalkulieren als bei den traditionellen Mehrfach-Antennen. Warum griff man nicht schon viel eher auf diese seit den 80er Jahren durch SIMULSAT-Großantennen aus den USA bekannte "schielende" Empfangstechnik zurück ?

Kleine Multifeed-Lehre
Die Feeds einer Multifeedantenne sitzen wie die Hühner auf der Stange, so daß eines im korrekten Brennpunkt arbeitet und der Rest von der Seite in die Quasi-Brennpunkte der Nachbarsatelliten "hineinschielt". Der korrekte Brennpunkt ist in der Regel sauber und kreisrund geformt, die Signale werden dort ohne Laufzeitunterschiede gebündelt, und die Antenne wird mit symmetrischen Nebenzipfeln im Richtdiagramm gemessen. Anders sieht es dagegen in den schielenden Brennpunkten aus.
Durch die schräge Spiegelung treffen z.B. die Wellen der linken Reflektorhälfte zeitlich später am Feed ein als die der rechten. Die gebündelten Wellen sind also nicht alle in Phase, was jedoch ohnehin beim Offset-Spiegel nicht der Fall ist. Die Grenze des schielenden Empfanges ist dann erreicht, wenn sich das Signal so ungünstig bündelt, daß es vom Feed nicht mehr verwertet werden kann und dieses zuviel Seitenrauschen aufnimmt. Der Gewinn einer Antenne nimmt mit größer werdender Entfernung des Feeds vom korrekten Brennpunkt ab, was bei Multifeedantennen durch größeren Durchmesser als üblich ausgeglichen werden kann. Bei 6° "Schielung" ist mit einer Dämpfung der Eingangssignale von 4-6 dB gegenüber dem korrekten Brennpunkt zu rechnen, d.h. eine 120-cm-Antenne empfängt die ASTRAs wie eine 75-cm-Antenne mit den bekannten Auswirkungen auf Schlechtwetterreserve, C/N-Wert usw. Die Erfahrung zeigt, daß bei gleichen

120-cm-Multifeedantenne von FTE maximal Mayer mit vier bestückten LNB-Plätzen für den Parallelempfang von bis zu fünf Satelliten

NEUE FTE-MULTIFEEDANTENNEN

Pegeln die Programme der seitlichen LNBs im schlechten Wetter zuerst ausfallen.
Bei sauberem Aufbau der Multifeed-Konstruktion können die qualitativen Nachteile heute jedoch als unwesentlich eingestuft werden, so daß der geldwerte Vorteil überwiegt.

FTE OS 850/MF1
Die kleinere der FTE-Multifeedantennen gehört zur 80-cm-Klasse, ist fast kreisrund und in den Farben beige, ziegelrot oder schiefergrau erhältlich. Ein starker, verzinkter Mount für Rohre bis 76mm macht die Offset-Vollmetallantenne stabil bei Windbelastungen. Der Azimutwinkel wird durch Drehen im Mastrohr gefunden, die Einstellung der Elevation durch eine recht große Skala bis 60° unterstützt.
Zwei Plätze für LNBs sind auf der Feedhalterschiene reserviert, alternative Bohrungen können den Empfang von ASTRA (19,2° Ost)/EUTELSAT II-F1 (13° Ost) oder ASTRA/EUTELSAT II-F2 (10° Ost) realisieren. In beiden Fällen sitzt das Eutelsat-LNB jeweils im korrekten Brennpunkt, während sich das ASTRA-LNB mit einer der beiden schielenden Positionen begnügen muß.
Feste Bohrungen auf der Schiene ersparen die Ausrichtung der LNBs; die Montageanleitungen sind klar und verständlich abgefaßt. Der Einsatzbereich der FTE OS 850/MF1 ist an Mitteleuropa gebunden, je nach Plazierung der LNBs auf der Schiene innerhalb der 48-dBW-Zonen der ASTRAs und der 52-dBW-Zonen der EUTELSATs. Die Zweifeedantenne läßt sich mit den gesetzten Bohrungen dank des relativ großen Öffnungswinkels von etwa 2,3° auch für andere im 3°-, 6°- oder 9°-Abstand parkenden Satelliten einsetzen.
Die LNBs können in der Halterung zur Feinjustierung der Polarisationsebene um 360° gedreht werden und sind mit einem Ausgang 13/17 Volt oder zwei Ausgängen H und V verfügbar. Für die Wetterschutzhaube erhält FTE ein großes Lob, sie ist leider nicht selbstverständlich. Elektrische Messungen wurden an der OS 850/MF1 nicht vorgenommen, die mechanische Prüfung ergab Stabilität am Mount, und auch die Zweifeedschiene kam dank viereckiger Feedstange im Wind nicht in Schwingungen.

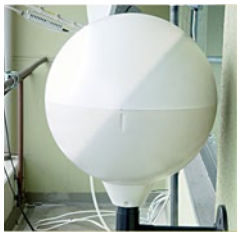
Mount der 120-cm-Antenne für 76-mm-Rohre

FTE OS 120/MF3
Bis zu fünf benachbarte Satelliten können gleichzeitig mit der FTE 120-cm-Multifeedantenne empfangen werden;

CD Inside!
The World's Largest Sat Magazine
TELE-satellite Reveals: Tehran's High-Power Satellite Transmitters
TELE SATELLITE INTERNATIONAL
Worldwide Satellite Charts
SATELLITE CHANNELS
FULL Version
STOP!
Initial Test:
Low-Threshold
Digital Receiver
NEW!
The First Portable
Digital Receivers
This Car is Protected by a Satellite Anti-theft System!
Never Before Seen: A Dish That Resembles a Truck Tyre

10 Years Ago

TEST REPORT
DIGIGLOBE



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SFT-703E Plus (Free-To-Air) / SCI-703E Plus (Common Interface)
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Be Leader with Digital Cosat(DSR)
Free To Air / Common Interface
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- Forerunner of Digital Receiver.
- Differentiated features with competitive price.
- World first memo function with event timer
- Powerful PC software for channels editing and Data transfer
(PC to set, set to set, set to PC)
- Fantastic installation wizard
- Perfect commercial breaks (Games,Calculator,Calender,Biorhythm)
- Programmable sleep & wake up timer function
- Subtitle & Teletext supported by OSD & VBI insertion
- Perfect quality control by 20 years manufacturing know-how
The newest & smartest receiver
JSR-3000 Series
APST
Asia Pacific Space Telecom Co., Ltd.
AP Bldg,#449-4 Bangbae-2Dong,Seocho-Ku,Seoul,Korea
Tel : 82-2-580-2988 Fax: 82-2-3486-5324
E-mail : michael@cosat.co.kr www.cosat.co.kr

CyberTenna

S64 for Eight Satellites

Wind and Snow? No Problem!

It was about a year ago when we first introduced this satellite antenna that was based on the lens principle. Since then the design has been perfected and it was decided that this antenna concept needed to be looked at more closely once again. The idea of receiving multiple satellites with a fixed antenna is becoming more and more popular. And in many cases it's for reasons of necessity. The prevailing reason is the private use on a balcony or a terrace. The noise from a motorized antenna could wake the neighbors and may even make them angry. Another reason would be Internet via satellite access. While one LNB could be used exclusively for Internet access, the remaining seven LNB's could be used independently for satellite TV and radio reception. In apartment houses with multinational tenants an antenna like this would be able to serve the needs of each group and it could be done much more inexpensively than using multiple single antennas.

But what about using two multifeed dishes each with three LNB's? Such a set up would allow you to receive six satellites. The problem here is that two LNB's would be missing (if the need is there) but more importantly the LNB's sitting in the offset position of the antenna would have to deal with less amplification from the antenna's reflector. Outside of that, this kind of antenna would have difficulty dealing with 2° of separation between adjacent satellites and many multifeed antennas would even have trouble with the more standard 3° separation (e.g. 19°, 16°, 13°, 10°, 7° and so on). In our tests we were able to achieve a 2° offset using Digistar SF-1 LNB's.

TeleWide, the manufacturer of this antenna, has its headquarters in Sweden. In this part of the world you always need to keep in mind that snow accumulation on an antenna is a constant problem. With prime focus antennas, winter snow has a tendency to collect on the reflector making it essentially unusable. With offset dishes it is the lower half of the reflector that is affected by the white stuff. For these reasons and also for the reasons mentioned above, TeleWide developed the CyberTenna S64. It was designed for use in the 10.7 to 12.75 GHz range. The most prominent feature of this antenna is the lens assembly with a shape that looks much like a car tire. Up to eight LNB's sit behind the lens at a distance of about 85cm (33.5 inches). Signal amplification actually takes place optically. The LNB's are aimed at the middle of the 16cm (6.3 inch) wide hole in the lens assembly. The incoming satellite signals are bundled together and amplified by the antenna and then delivered to the LNB's. The gain at 11.7 GHz is about 36 dBi and this is similar to a high quality 65cm (25.5 inch) antenna. Normally an antenna this size has a beamwidth of approximately 3° and this would lead to interference between individual satellites spaced 3° apart. The CyberTenna has no interference problems from neighboring satellites. Only with 24 dBi is a beamwidth of 3° first reached.

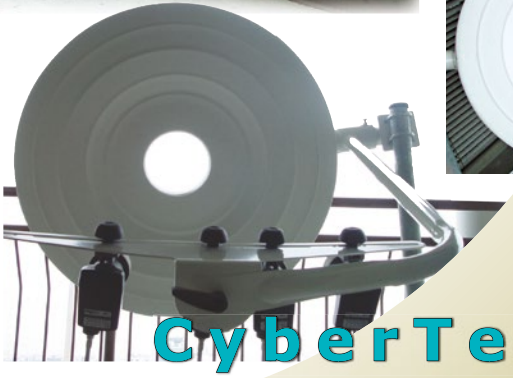
Everyday Use

Set up of this antenna is simple. The logical layout and the well-written user manual allow assembly in just a couple of minutes. Tools are not necessary since all the screws come with an easy grip that allows them to be easily tightened. The LNB's are fastened using an easy yet very stable clamp fitting. With the help of included graphics, the individual LNB holders are mounted to a rail in the proper position so that the desired satellites can be received. This actually works quite well although a scale imprinted on the rail would make the job even easier. Since the signals from up to eight LNB's need to arrive at the receiver in a single cable, it is also necessary to use a multiswitch to link everything together. The focal point of 85cm (33.5 inches) is automatically obtained during the antenna's assembly but small fine-tuning adjustments would be necessary and are possible. The entire antenna is attached to a mast via a mount on the side of the antenna's ring. On the same side the feed arm running back to the LNB rail is mounted. We were not too happy with this solution a year ago since all the weight of the antenna (9 kg, 19.8 LBS) was on one side of the mast. In the meantime though, the mount was greatly improved making the entire antenna assembly much more stable. The alignment of the antenna is very easy. The LNB for the southernmost satellite is mounted in the center of the rail. For Munich this was HOTBIRD at 13° east. Munich lies at 12.7° east. The difference of 0.3° is insignificant. The final step is the elevation adjustment. Once this is done, satellite reception can begin. If the other seven (or less) LNB's are installed in the proper location, reception of all the other desired satellites is now possible. In our tests two LNB's required minor adjustments. An included template with all the regional DTH satellites greatly helps with the alignment.

All new DTH satellites deliver very strong signals and as such present no problems for the CyberTenna S64. In our tests we were able to receive the following satellites: ASTRA 1 and 2, EUTELSAT W1/2/3 and HOTBIRD. All desired satellites should be within an azimuth range of 26°. With extremely strong signals this range could be expanded. The CyberTenna's 90° elevation adjustment allows it to by installed anywhere on the globe: from northern Scandinavia, to the Equator to South Africa.

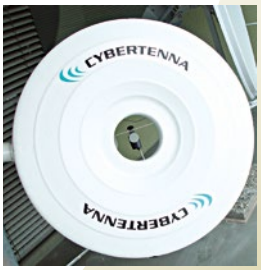
Conclusion

At a price of about $535 (535 Euros), this antenna isn't exactly cheap. The cost of the LNB's must also be considered. But what you get for your money is solid Swedish quality. The CyberTenna S64 is mostly unaffected by wind and it really has no surface where snow can accumulate. Mounted on a balcony it would be very hard to recognize this as a satellite antenna. Its amplification is more than sufficient for most DTH satellites. Its mechanical construction is excellent and its rust proofing guarantees a long, healthy life.



TELE-satellite INFO-BOX

Manufacturer:
TeleWide AB, Skellefteå/Sweden
Fax:
+46-91017348
E-Mail:
info@telewide.se
Model:
CyberTenna S64
Function:
Fixed digital lens antenna for 8 Satellites
Azimuth Range:
26° and more
Material:
Technical EPS
Gain:
36 dBi/11.7 GHz
Frequency Range:
10.7-12.75 GHz
Cross Polarization at +/- 3°:
>34 dB
Cross Polarization at +/- 0°:
>22 dB
Diameter:
80 cm
Elevation:
0-90°
F/D Ratio:
1
Separation Angle:
from 2°
Weight:
9 kg
Global Approval:
yes



TELE-satellite GLOBALLY COMPATIBLE

CyberTenna

HiTOP

Si-dTV & Ti-dTV

The First Portable Receiver for DVB-S and DVB-T

The desire for mobile satellite reception is as old as the DTH era itself. There have always been small portable TV's for analog terrestrial reception whose characteristics included only what was absolutely necessary. The move towards mobility was somewhat faster with computers. The bulky PC's found in the home soon found themselves next to small colleagues – the Laptop – that today are a normal tool for wireless Internet access.

The idea to make one Notebook for terrestrial digital TV/radio reception (DVB-T) and another for digital satellite reception naturally did not come from Europe or North America. No, this idea came from Taiwan. Both receivers - the HiTOP Si-dTV (DVB-S) and the Ti-dTV (DVB-S) – weigh a mere 2Kg (4.4 LBS) and are about the same size as an A4 sheet of paper (8.3 x 11.7 inches). From the outside both receivers look like one another. Both of them come with a multitude of accessories: external power supply, 3.5 hour rechargeable battery, 12 volt car power adapter, stereo headphones, carrying case and all necessary video cables. Just like with a notebook computer, the upper half of the 35mm thick receiver opens up to reveal a 7" LC video screen in 16:9 format. Underneath the video screen are two speakers for stereo audio. The remote control is located in the lower half of the assembly. With the remote placed in its holder, the receiver can be controlled directly on the unit. With it removed from its holder, additional control buttons on the receiver are revealed. This guarantees that even if the batteries run out in the remote control, the receiver can still be used. Despite this receiver being so flat, it is still very nicely equipped on the rear panel. The antenna signal is looped through in both the DVB-T and DVB-S versions. Video and analog stereo audio outputs are available via a pair of miniature jacks. The matching cable is provided. This means that both of these boxes, besides being excellent portable units, would also be perfect for use at home. There's also a set of video and audio inputs for use with external peripherals such as a VCR, DVD player or video camera. The serial interface allows new software to be uploaded and with the satellite version this interface also allows current transponder data to be uploaded. The included headphones are plugged into the side of the HiTOP. Both receivers are also fitted with slots for two PayTV CA modules.

Ti-dTV

As with all other receivers, the first step is to set it up the way you like. The available menu languages for the Ti-dTV are German, Russian, Chinese and English. Additional languages will become available in future software updates. Just like with a satellite receiver, an automatic channel scan would need to be run. And if you are a beginner and don't know exactly what DVB-T parameters are in use where you are, the Ti-dTV makes things easy for you by asking you where you live. This menu lists every country that is either testing or regularly using DVB-T. A channel scan can be set to either "Fast" or "Detailed". In "Fast" mode the receiver only scans preset, country-specific channels while in "Detailed" mode the entire band is scanned. If the data for a regional channel is known, it can be manually activated. After a channel scan, the Edit menu helps to organize all of the new channels that were found. Popular programs can be moved to a Favorites list and can quickly be recalled with the simple push of a button. An Electronic Program Guide (EPG) takes the place of the typical printed TV programming guide. The Ti-dTV also comes equipped with a teletext decoder allowing these services to be displayed even on a monitor. The basic version of the Ti-dTV can store up to 400 channels. This should be enough for terrestrial TV reception but if more channels are needed, there's also a receiver version with 1500 channels or more.

The type of antenna used with the terrestrial digital model is not so critical especially when it is used within close range of the local station. This receiver was tested in a region where DVB-T was still in the testing stages. A small modified "Rubber Duck" antenna mounted to a car provided adequate mobile reception results.

Si-dTV

The satellite version of the HiTOP does come with an antenna problem. But even here there are alternatives. The Digiglobe antenna featured in this issue would be an ideal solution. The excellent input sensitivity of this portable receiver would also make it a perfect choice for use with those small camping satellite antennas. The installation of a portable satellite receiver should be especially simple.

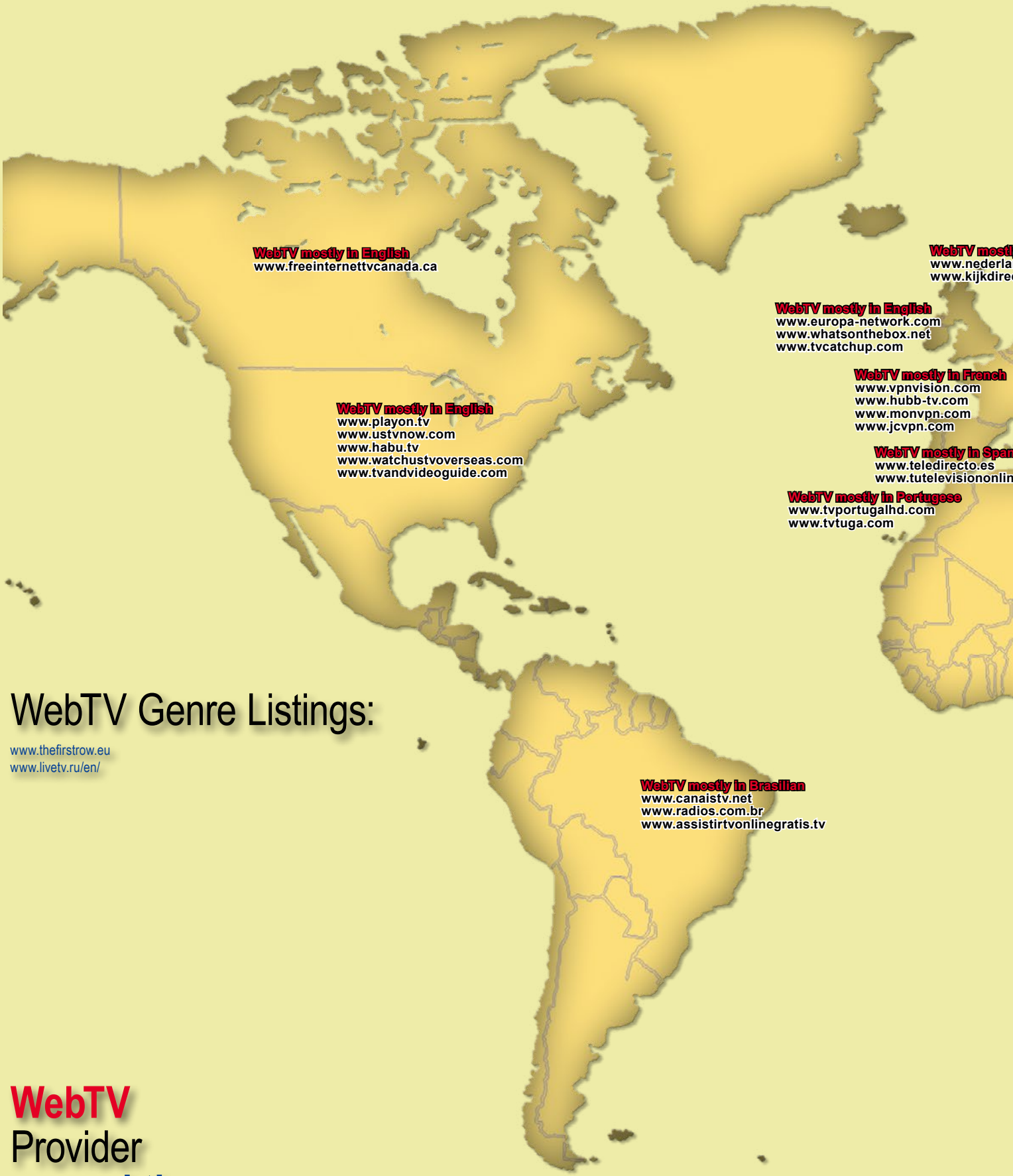
HiTOP didn't miss the boat here either. Communicating with the receiver can be accomplished in English, Spanish, French, German, Italian and Russian. After activating the desired satellites in C and Ku-band and after matching the local oscillator frequency (LOF) with the LNB, the signal strength and quality are displayed. These virtual "gauges" react very fast to antenna movements and make finding the desired satellites extremely easy.

The channel scan can be refined to look for ALL or FTA channels and can complete a scan of an 80-transponder satellite in just about five minutes. SCPC signals starting at 2 Ms/sec were no problem for this box but it would require using a larger antenna. Even in the satellite model the basic version comes with only 400 channels. This is not nearly enough especially if this box is also to be used with your antenna at home. If you decide to buy this receiver you should without a doubt opt for the version with 1500 channels. The Si-dTV also has an Edit function, a Favorites list, a teletext decoder and an Electronic Program Guide.

Conclusion

The Si-dTV version for digital satellite reception is a wonderful toy! But also well thought out. A highly sensitive tuner even works well with smaller antennas. Its installation and normal use are quite easy.

The terrestrial version will quickly find its buyers. Wherever DVB-T is already in use, this version does not need to rely on large antennas and can be used up to 3.5 hours without the need to find a power outlet. Both receivers come with an outstanding picture quality although the audio quality is somewhat limited by the size of the built-in speakers. The overall quality of both models deserves high praise.



WebTV Genre Listings:

www.thefirstrow.eu
www.livetv.ru/en/

WebTV Provider around the WORLD

WebTV Channel Listings:

www.surfmusic.de/surftv.htm
www.glotzdirekt.de
www.wwitv.com
www.delicast.com
www.onlinetvi.com
www.free-internet-tv.cz
www.lookfortv.com
www.beelinetv.com
www.findinternettv.com
www.tvweb360.tv

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www.tvnewsradio.com
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www.playtv.fr
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www.tvporinternet.tv
www.timstream.com
www.viewmy.tv
www.livestation.com
www.freeetv.com
www.watchfomny.com
www.tv-tube.tv
www.tv4web.net
www.findinternettv.com

DVB-T2
V: H.264
A: MPEG-4 AAC

Angola
Austria
Belgium
Botswana
Bulgaria
Colombia
Croatia
Denmark
Finland
Ghana
Indonesia
Kazakhstan
Kenya
Kyrgystan
Madagascar
Malaysia
Mongolia
Mozambique
Myanmar
Namibia
Nigeria
Romania
Russia
Serbia
Singapore
Slovakia
South Africa
Sri Lanka
Swaziland
Tanzania
Thailand
Turkey
Uganda
UK
Uzbekistan
Vietnam
Zambia
Zimbabwe

DVB-T
V: H.264
A: MPEG-4 AAC

Azerbaijan
Belarus
Burundi
Central Africa
Czech
Estonia
Guinea
Hungary
Iceland
Ireland
India
Iran
Israel
Latvia
Lithuania
Macedonia
Mauritius
New Zealand
Norway
Panama
Poland
Portugal
Rwanda
Slovenia
Spain
Uganda
Ukraine

ATSC
V: MPEG-2
A: AC-3

Canada
Dominican R.
Guatemala
Honduras
Mexico
South Korea
USA

DVB-T
V: MPEG-2
A: MPEG-1 Level 2

Algeria
Albania
Australia
France
French Guyana
Germany
Greece
Italy
Luxembourg
Morocco
Netherlands
Qatar
Sweden
Switzerland
Tunisia

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

DTMB
V: H.264
A: MPEG-4 AAC

China*
HongKong

* some
V: MPEG2

Digital Terrestrial Television of the World

Dominant System per Country

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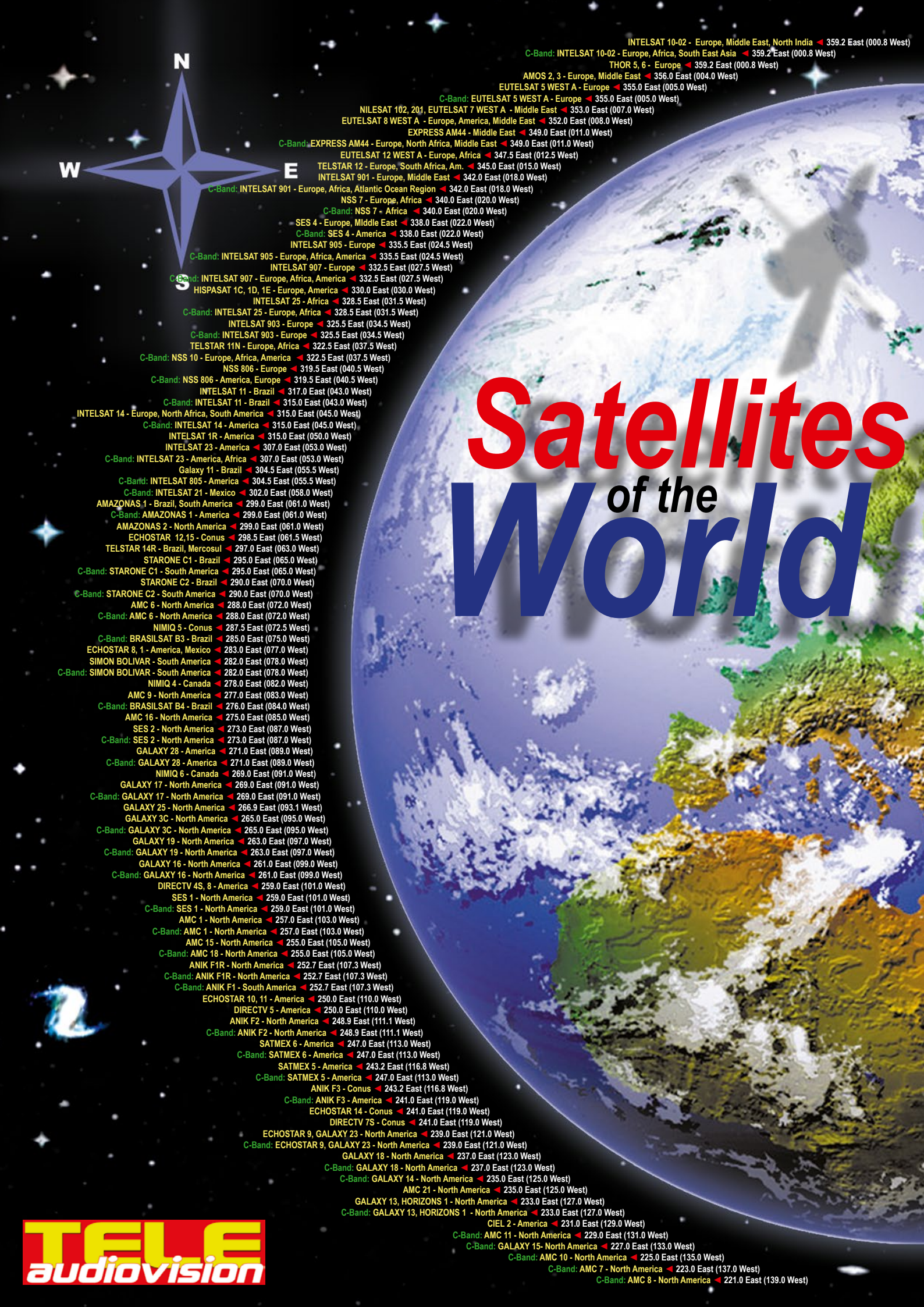

INTELSAT 10-02 - Europe, Middle East, North India ◄ 359.2 East (000.8 West)
C-Band: INTELSAT 10-02 - Europe, Africa, South East Asia ◄ 359.2 East (000.8 West)
THOR 5, 6 - Europe ◄ 359.2 East (000.8 West)
AMOS 2, 3 - Europe, Middle East ◄ 356.0 East (004.0 West)
EUTELSAT 5 WEST A - Europe ◄ 355.0 East (005.0 West)
C-Band: EUTELSAT 5 WEST A - Europe ◄ 355.0 East (005.0 West)
NILESAT 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)
C-Band: INTELSAT 901 - Europe, Africa, Atlantic Ocean Region ◄ 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 ◄ 315.0 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 23 - America ◄ 307.0 East (053.0 West)
C-Band: INTELSAT 23 - 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)
C-Band: INTELSAT 21 - Mexico ◄ 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 6 - Canada ◄ 269.0 East (091.0 West)
GALAXY 17 - North America ◄ 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)
GALAXY 3C - North America ◄ 265.0 East (095.0 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 ◄ 247.0 East (113.0 West)
ANIK F3 - Conus ◄ 243.2 East (116.8 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)

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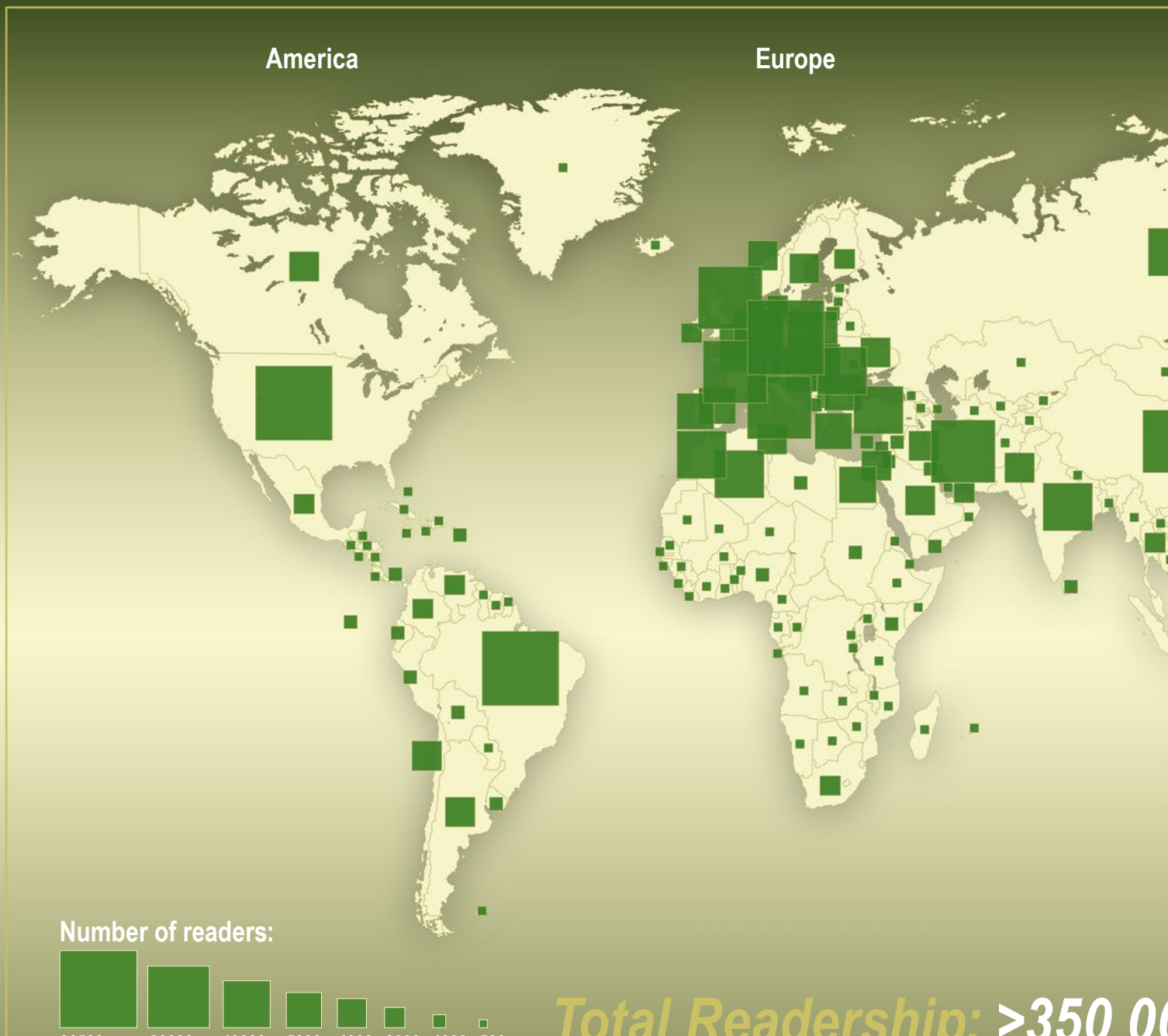

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Top 25 Countries > 4200 Readers

COUNTRY	Readers #
Brazil	30183
Germany	27479
USA	22609
	20000
Italy	13885
UK	12718
Iran	12489
China	11347
France	10528
Indonesia	10504
	10000
Netherlands	9730
Turkey	9613
Algeria	8837
Romania	8252
Belgium	5680
Hungary	5594
Russia	5535
Morocco	5529
Poland	5444
India	5063
	5000
Spain	4921
Portugal	4783
Egypt	4478
Czech Republic	4315
Greece	4302
Bulgaria	4230
	4200

Top 25 to 105 Countries > 170 - 4200 Readers

COUNTRY	Readers #
Canada	3986
Saudi Arabia	3631
Ukraine	3506
Slovakia	3381
Switzerland	2980
Chile	2964
Argentina	2937
Pakistan	2832
Tunisia	2828
Austria	2753
Croatia	2722
Malaysia	2406
Sweden	2382
Iraq	2308
Israel	2105
Australia	2055
Norway	2054
	2000
Serbia	1922
Venezuela	1885
UAE	1586
Ireland	1585
South Africa	1556
Denmark	1395
Colombia	1375
Thailand	1314
Mexico	1277
Finland	1075
Philippines	1058
	1000
Sri Lanka	996
Jordan	879
Nigeria	879
Lithuania	844
Slovenia	842
Libya	825
Lebanon	822
Yemen	792
South Korea	782
Peru	779
Bosnia and Herzegovina	769
Syria	754
Macedonia	736
Sudan	688
Japan	630
Kenya	592
Ecuador	572
Uruguay	570
Panama	561
Kuwait	551
Puerto Rico	549
Cyprus	545
Albania	539
Bolivia	527
	500
Qatar	497
Taiwan	492
Latvia	491
Hong Kong	472
Paraguay	466
Moldova	447
Luxembourg	440
Oman	435
New Zealand	414
Senegal	392
Georgia	343
Mauritius	334
Vietnam	315
Côte d'Ivoire	308
Belarus	300
Estonia	299
Bahrain	296
Ghana	283
Singapore	253
Kazakhstan	223
Dominican Republic	214
Aruba	205
Bangladesh	201
Iceland	199
Ethiopia	194
Uganda	187
Cameroon	184
Malta	173
	170

Top 106 to 180 Countries < 170 Readers

COUNTRY	Readers #
Barbados	152
Palestinian Territories	150
Montenegro	147
Myanmar	145
Trinidad and Tobago	136
Costa Rica	131
Afghanistan	127
Netherlands Antilles	127
Mali	127
Zimbabwe	124
Tanzania	122
Azerbaijan	115
Brunei	108
Maldives	108
Suriname	107
Malawi	105
Armenia	104
Botswana	102
	100
Mauritania	99
Niger	95
New Caledonia	92
Namibia	89
Madagascar	82
Zambia	79
Rwanda	71
Guatemala	68
French Polynesia	67
Angola	66
Uzbekistan	66
Haiti	64
Burkina Faso	61
Martinique	61
Kyrgyzstan	60
Honduras	58
Gambia	54
Guyana	54
Jamaica	53
Congo	52
	50
Benin	48
Djibouti	47
French Guiana	47
Réunion	47
Mozambique	46
Guadeloupe	44
Cambodia	44
Nepal	43
Cape Verde	41
Seychelles	40
Tajikistan	39
Comoros	35
Macau	35
Togo	35
El Salvador	33
Nicaragua	32
Gabon	30
Greenland	29
Palau	29
Monaco	28
Bermuda	26
Dominica	25
Mongolia	23
Turkmenistan	23
Cuba	21
Bahamas	20
Burundi	17
Fiji	16
Somalia	16
Laos	15
Timor-Leste	15
Belize	14
Congo	12
Guernsey	12
Isle of Man	10
Jersey	10
	10

Readers' Breakdown

Manufacturers	4%
Distributors	8%
Wholesaler	18%
Dealers	27%
Installers	12%
Satellite Provider	2%
Cable Provider	8%
IPTV Provider	5%
Program Provider	6%
Governmental	2%
Institutional	2%
Private Enthusiasts	6%

Source:
Google Analytics
as of 11-12/2012

TELE-audiovision Deadlines

Issue	**TELE-audiovision 05-06/2013**	**TELE-audiovision 07-08/2013**	**TELE-audiovision 09-10/2013**	**TELE-audiovision 11-12/2013**
#	1305	1307	1309	1311
Editorial Deadline	1 March 2013	3 May 2013	28 June 2013	30 August 2013
Advertisement Deadline 广告截止日期	**8 March 2013**	**10 May 2013**	**5 July 2013**	**6 September**
Hardcopies	19 April 2013	21 June 2013	16 August 2013	18 October 2013
Online	3 May 2013	5 July 2013	30 August 2013	1 November 2013

Digital TV Exhibitions

8 - 11 April 2013
NAB Show 2013
For broader-casting® professionals
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
Where Broadcast Meets Content
Cologne Fair Grounds
Deutz-Mülheimer Strasse
50679 Cologne, Germany
Opening Hours:
4 - 5 June: 9:00am - 6:00pm
6 June: 9:00am - 4:00pm
www.angacom.de

18 - 21 June 2013
CommunicAsia 2013
BroadcastAsia 2013
A comprehensive range of the latest products, technologies and solutions.
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

2 - 3 July 2013
VSAT Latin America
São Paulo, Brasil
latinamerica.vsatevent.com

6 - 9 August 2013
ABTA 2013
São Paulo, Brasil

6 - 11 September 2013
IFA 2013
Berlin, Germany

13 - 17 September 2013
IBC 2013
RAI Convention Centre, Amsterdam
The Netherlands
For professionals engaged in the creation, management and delivery of entertainment and news content
Opening Hours:
13 September: 10:30am - 6:00pm
14 - 16 Sept.: 9:30am - 6:00pm
17 September: 10:30am - 4:00pm
www.ibc.org

18 - 20 September 2013
VSAT 2013
Grand Hotel Krasnapolsky,
Amsterdam, The Netherlands
www.vsatevent.com

13 - 16 October 2013
HKTDC Autumn
Hongkong, China

24 - 27 October 2013
CeBIT Bilisim Eurasia
Istanbul, Turkey

25 - 27 October 2013
SCaT India 2013
South Asia's Largest Tradeshow of the Indian Cable & Satellite Television Industry
World Trade Centre, Cuffe Parade,
Mumbai, India
www.scatmag.com/scatindia/

13 - 15 November 2013
InterBEE
Tokyo, Japan

3 - 4 December 2013
Satellite Mobility 2013
London, UK
mobility.vsatevent.com

7 - 10 January 2014
2014 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:
7 January: 10:00am - 6:00pm
8 - 9 Jan.: 9:00am - 6:00pm
10 January: 9:00am - 4:00pm
www.cesweb.org

21 - 23 January 2014
Convergence India 2014
New Delhi, India

February 2014
CSTB 2014
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

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