

TELE

1101

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in all major
languages

satellite

B 9318 E

GLOBAL DIGITAL TV MAGAZINE

12-01/2011



Company Report **SATSHOP 24**

Daniela Knott has a big heart for satellite enthusiasts and DXer specialists



Company Report **TEVII**

Matthias Liu reveals his amazing new market expansion plans



Company Report **NETUP**

Abylay Ospan and **Evgeniy Makeev** create brand new markets in IPTV

City Report

Shanghai's Dishes

The Crazy Big City with its Crazy Big Dishes

TELE-satellite

30
Years
Writing for the
Digital TV
Business
World



Test Report

AB IPBox 9900HD Media Powerhouse

IPTV • Fiber Optics • Broadband

CHANGHONG

Professional in STB

What Satellite Receiver DO YOU WANT



✓ **HD** ✓ **DVB-S2**

✓ **PVR** ✓ **CAS**

✓ **H.264/MPEG4**

✓ **open tv**



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

www.TELE-satellite.com

Dear Readers,

Common wisdom seems to suggest that HDTV belongs to pay TV, meaning we are supposed to pay for high-definition content while SDTV remains available free-to-air. A look around countries with HD channels already up and running appears to lend support to this assumption. Yet, if we take a closer look at some countries the question arises whether all that glitter is actually gold, or in other words: Do we really get HD just because a channel uses the HD label?

Not at all! In some countries any digital transmission is branded HD, so that SD stands for analog and HD stands for digital – and that's that. The term 'High Definition' itself is subject to very liberal interpretation and in many cases is determined by a network's marketing department rather than by globally established technical specifications. Some time in the future HD will probably become a universal extension to any channel name. Does that mean that one day we will receive HDTV channels only? And who will have the final say over what is HD and what isn't?



Most of the currently available HD channels simply broadcast their fair by upscaling their regular offerings. But what's the point of that when even your average HDTV set-top box is able to upscale virtually any source material to HD resolution? As viewers, we couldn't care less about whether the picture we see on our screen is upscaled by the provider or by our receiver. And if we follow that line of reasoning we could even go as far as to state that everybody with a HDTV receiver at home watches all channels in high definition. At least we are made to believe this.

How, then, can we find out if a so-called HDTV broadcast is native HD at all? Simple answer: We can't! The only way of knowing for sure is to watch out very closely for certain picture characteristics, which is a pretty hopeless job for average Joe. By the way, does anybody remember the Hi-Fi humbug with regard to FM radio some decades ago? Even the most cheapo portable radio came with a prominently placed Hi-Fi logo, although the sound it produced was far from it. Right now we experience a déjà-vu when it comes to HDTV. Before long, every TV channel, every receiver and every TV panel will brag about being HD. Irrespective of what really is showing.

It's the brave new world of HDTV, and we all better get used to it.

Alexander Wiese
Editor-in-Chief TELE-satellite



Technomate

Linux High-Definition



**Linux
Inside**



**TM-800 HD
running Enigma**

- ✓ Open Source Linux Satellite HD running Enigma
- ✓ Supports internal 2.5" HDD
- ✓ 2x USB 2.0 Ports: PVR function, MP3 & JPEG Playback & Software Transfer
- ✓ Record 1 Channel & watch another at the same time
- ✓ Optional WiFi module
- Unlimited Channels • 1080p, 1080i, 720p, 576p & 576i • MPEG-2, MPEG-4 & H.264
- Timeshift • Built-in Upscaler to Improve Standard Picture Quality
- Ethernet • RF Modulator • 1 Smart Card Reader & more!

Linux Open Source Running Enigma

TM-500 / TM-600

- ✓ Open Source Linux running Enigma
- ✓ Unlimited Channel Memory
- ✓ Ethernet Communication Port
- ✓ 2x Scart Outputs
- ✓ RF Modulator
- ✓ Smart Card Reader
- ✓ Super Sensitive Tuner
- ✓ Internal Power Supply

TM-600 Extras

- ✓ 3x USB 2.0 PVR (Front, Internal & Rear)
- ✓ Record/Playback Scrambled & Free-To-Air (FTA) Channels by USB
- ✓ USB 2.0 for Software Download & MP3 Playback
- ✓ Component Output (YPbPr)



TM-500



TM-600

TM-7100 HD TRIPLE TUNER PVR 2x Satellite HD Tuners & 1x Terrestrial Tuner



- ✓ Supports up to 1TB S-ATA 3.5" & 2.5" HDD
- ✓ Easily remove HDD via HDD Bay on side of TM-7100 HD
- ✓ 2x USB 2.0 Ports: PVR function, MP3 & JPEG Playback & Software Transfer
- ✓ Record:
 - 1 Channel from each Tuner & Playback a Recorded File at the same time
 - 3 HD Satellite Channels at the same time (2 have to be on same TP)
- ✓ 2x Smart Card Readers & 2x Common Interface (CI)
- ✓ Ethernet Communication Port, RF Modulator, Blind Search & more!

Technomate

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8A Nicou Pattichi Street, 3071, Limassol, Cyprus
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FULAN

Fulan Electronics Ltd

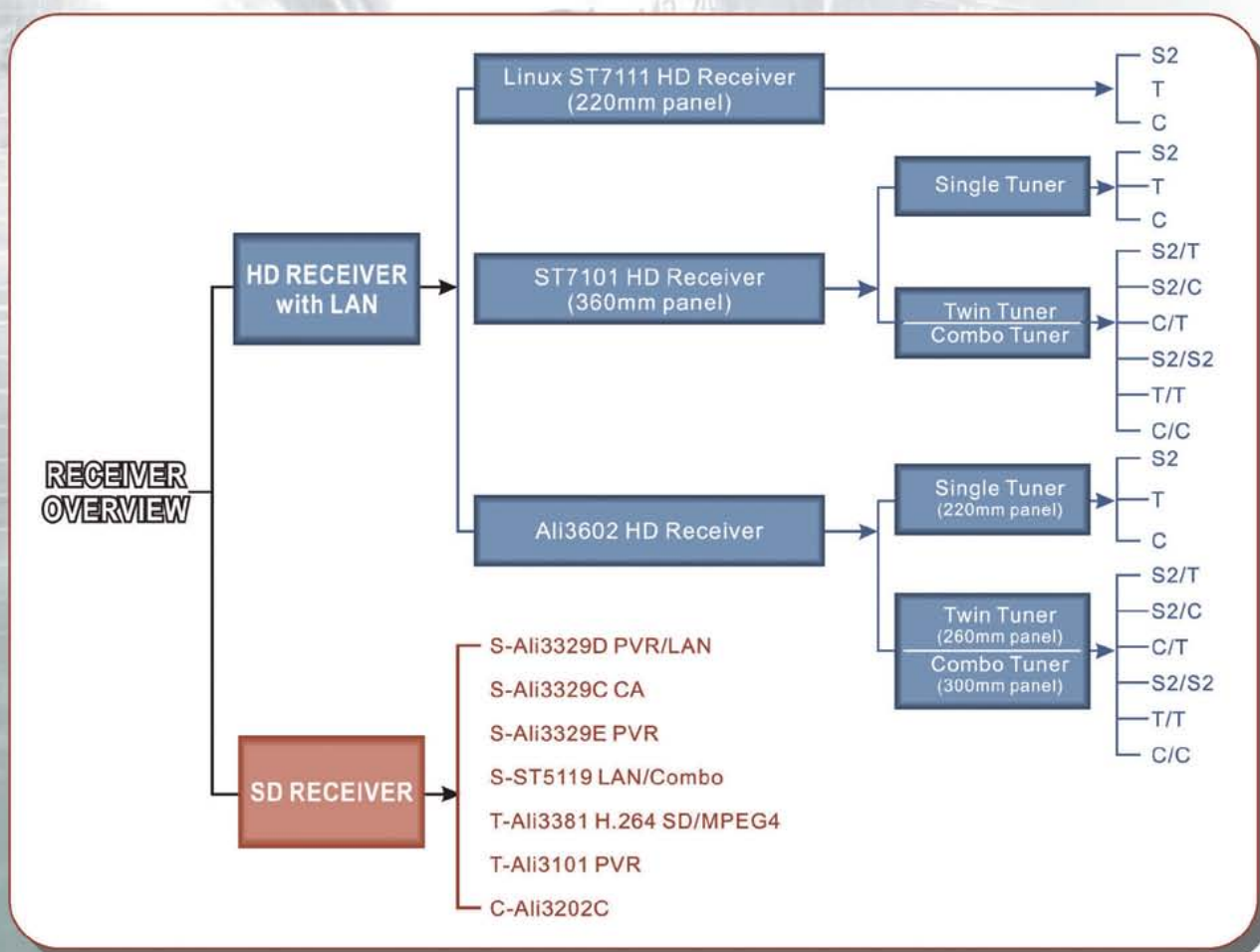
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TOP DIGITAL HD BOX DESIGNER FROM CHINA



Linux
HD Box

ONE BOX ONE DREAM-LINUX BOX



www.fulansoft.com

Address: 3/F, A1 Block, Cyber-Tech Zone, Gaoxin AVE. 7.S, Hi-Tech
Industrial Park, Nanshan Dist., Shenzhen, China.



AB IPBOX 9900HD
HDTV Satellite &
Multimedia Receiver 10



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OUTSTANDING STB HARDWARE MANUFACTURER FROM CHINA



HT12 DVB-T HD PVR

- SD MPEG-2/HD H.264 & fully DVB-T compliant
- 4000 channels TV and Radio programmable
- Support multi-language OSD
- PVR, Timeshift



HTS11 DVBS2+T HD Combo

- Fully DVB-S2/DVB-T compliant
- 4000 channels TV and Radio programmable
- Support multi-language OSD
- PVR Timeshift.



HS14 DVBS2 HD Twin Tuner

- Fully DVB-S2 compliant
- 4000 channels TV and Radio programmable
- Plug-in two S2 tuner
- Fully support to 7 days Electronic program Guide
- 1 x CI, CA optional with Conax Embedded
- PVR, Timeshift,



S1L DVB-S SD CA+PVR+LAN

- MPEG-2 digital @ fully DVB-S Compliant
- 4000 channels TV and Radio programmable
- Fully support to 7 days electronic program guide
- 10/100 Mbps Ethernet
- Software upgrade by USB, OTA, RS232 and LAN
- PVR, Timeshift



S1M DVB-S Sticker CA+PVR

- MPEG-2 digital @ fully DVB-S compliant
- 4000 channels TV and Radio programmable
- On Screen Display with multi-language
- PVR, Timeshift, CA optional with Conax embedded



S1N DVB-S SD FTA+PVR

- MPEG-2 digital & fully DVB-S compliant
- 4000 channels TV and Radio programmable
- Fully support to 7 days Electronic Program Guide (EPG)
- Disecq 1.0, 1.1, 1.2 and USALS, Unicable
- PVR, Timeshift, CA optional with Conax Embedded



WE ARE DISTRIBUTOR OF

TOPFIELD

STRONG
DIGITAL TV

VANTAGE

JAEGER HUMAX

SELSAT

SMW
SWEDISH MICROWAVE AB

INVACOM
Innovation in Communications

MICROELECTRONICS TECHNOLOGY INC.

ALPS CIBERTINI

ALLVISION

Inverto
digital-labs

SPAUN

Stab

TOPFIELD Topfield Media Solution

SRP-2100



Features available at launch

- Fully compliant with DVB-S2.
- High profile level 4.1 H.264/AVC streams @ 30fps
- High or main profile level 3.1 H.264/AVC streams @ 60fps
- HD MPEG2 4:2:0 streams @ 30fps
- SD MPEG2 4:2:0 streams @ 60fps
- Supports DiSEqC 1.0, 1.1, 1.2 and USALS protocols for dish control.

- PVR** Playing recorded programmes up to 64 times speed at maximum
- GAME** Featuring a double-player game "Battle Tank"
- UCC** Playing media contents of YouTube
- DivX** Supporting video files of DivX 3.11, 4.1 and 5.x

TOPFIELD

SRP-2410



- Is fully compliant with DVB-S and DVB-S2.
- Supports DiSEqC 1.0, 1.1, 1.2 and USALS.
- Two common interface slots for conditional access modules.
- Can store up to 7,000 TV services and 3,000 radio services.
- Presents Electronic Program Guide (EPGs).
- Supports time-shift up to 5 hours at maximum.
- Records two services at the same time while displaying another service.
- Can record directly to an external hard drive (through USB/eSATA ports).
- Plays back recorded programmes at up to 64 times speed at maximum.
- Plays back video files in DivX, MPG, MP4, VOB, MKV and FLV format.
- Displays image files in JPEG format
- Provides a network game named Battle Tank.
- Provides various ways for firmware update (OTA, USB, LAN).
- Makes it easier to transfer files from/to the receiver by means of an embedded web/FTP server.



New measurements on stock

Combolook Color HD



- Spectrum-analyzer 2-900MHz and 950-2150MHz.
- Presents full range and expanded spectrum.
- Very high accuracy, CATV +/-1dB, SAT-TV +/- 1.5dB at 20°C.
- Super bright 5" 16:9 TFT-LCD color display.
- DVB/S S/2-receiver 920-2150MHz.
- Automatic Satellite identification.
- DVB-S (Free to Air) and SAT-analog TV-picture.
- Readout of NIT - gives SAT ID and TV/Radio-channel info.

HDTV Receiver Selection

TOPFIELD

CBP-2001CI+



HDTV DVB-C Receiver

- HDTV PVR ready to external storage devices via USB port
- Output to 576i, 576 p, 720 p, 1080i with Upscaling SD content
- Playback of DivX, DivX HD, MKV-and VOB video files *
- Display subtitles (* .srt) media files
- Playback of MP3 files and display JPG image files
- Timeshiftpuffer with a length of up to 5 hours
- Fast forward and rewind with up to 64 x speed
- Numeric display
- 2 CI + shafts modules for pay TV
- Storage of 7000 tv and 3000 radio programs
- Firmware upgrade over USB4

TOPFIELD

SBP-2001CI+



HDTV DVB-S Receiver

- HDTV PVR ready to external storage devices via USB port
- Output to 576i, 576 p, 720 p, 1080i with Upscaling SD content
- Playback of DivX, DivX HD, MKV-and VOB video files *
- Display subtitles (* .srt) media files
- Playback of MP3 files and display JPG image files
- Timeshiftpuffer with a length of up to 5 hours
- Fast forward and rewind with up to 64 x speed
- Numeric display
- 2 CI + shafts modules for pay TV
- Storage of 10.000 tv and radio programs
- Firmware upgrade over USB4

JAEGER

HDCI 2010



HDTV - DVB-S Receiver

- 1 x Common interface slot
- HDTV & SDTV
- Video-resolution 1080i, 720p, 576p
- USB 2.0 host for playback of external hard drive or USB flash drive
- Easy find software (works only in conjunction with easy find LNB)
- 5000 Programs presets
- HDMI out with HDCP



STRONG

SRT 6205 - PVR Ready



USB recording capability

- Digital Satellite Receiver
- UHF Modulator to connect the receiver to TV
- 2 Common Interface slots
- USB port

SRT 7100



HDTV Receiver, USB PVR Ready

- HDTV (1080i) receiver for all digital FTA TV and Radio programmes via satellite*
- With IR extender for freedom of placement
- USB port for recording of TV and radio programmes, playing MP3 music and viewing JPG images

JAEGER

HD+2011



HDTV - DVB-S Receiver

- USB 2.0 host for playback of external hard drive or USB flash drive
- 1 x Common interface slot



- PVRready. Direct recording via USB on external storage media possible
- HDTV & SDTV
- 1 x smart card reader
- EPG (7 days in advance)
- Video-resolution 1080p, 1080i, 720p, 576p
- optical signal to the align the antenna
- 5000 Program presets
- Multilingual screen menu
- HDMI out with HDCP
- Radio reception with background display
- Standby power consumption < 1 Watt

Dishes

CIBERTINI TRIAX PRODELIN



Big dishes directly from our warehouse!

- 40 cm - White
- 70 cm - White, Black, Red
- 90 cm - White, Black, Red
- 100 cm - White, Black, Red
- 120 cm - White
- 130 cm - White, Black
- 160 cm
- 180 cm
- 240 cm
- 300 cm
- 370 cm

Balcony mounting parts



25 cm distance - Steel

50 cm distance - Steel

- 120 cm length - Ø 6 cm
- ALSO AVAILABLE:
- Balcony stand 100 cm Aluminium
- Balcony stand 100 cm Steel
- Balcony stand "Holland"
- Balcony holder L-form 25 cm
- Balcony holder L-form 50 cm



HD+ and CI+

New HD+ and CI+ Products available



NEW



TOPFIELD

TF 6200 VI



Digital Satellite Receiver with VIACCESS embedded

- Fully DVB-S compliant
- VIACCESS CAS embedded
- 5000 service TV & Radio programmable
- Multilingual audio/menu text supported
- Service list/Favorite service list editing
- 256 color On-Screen Display (OSD)
- Electronic Program Guide (EPG) supported

HDTV Receiver Selection

VANTAGE

VT-1 Full HD PVR



DVB-S Twin FULL HDTV Receiver

- Two DVB-S2 tuner
- 4:3, 16:9, HDTV 720p, HDTV 1080p
- Video MPEG ISO 2/4, MPEG-4 HD / H.264
- 2x USB
- HDMI
- 2 CI and 2 Smart card Reader
- Time shift supported

TOPFIELD

TF 7750 HDPVR



HDTV-DVB-S Receiver, Twin Tuner

- Twin tuner for two simultaneous HD recordings
- Receive DVB-S/DVB-S2 standard
- Front USB to connect of an external storage medium
- Time shift supported
- Output in 576i, 576 p, 720 p, 1080i
- 2 Common interface

Multifocus Dish



Professional multisatellite system



- Suitable for M-ML dishes
ø 85/100/115cm
- Mount with Skew adjustment of the dish for a perfect alignment of the received satellites
- Multi-feed-holder designed for an easy pointing

An innovative system to receive the signal from various satellites at the same time, using one fixed mount, high gain, offset dish. When there is a big difference between longitude of the receiving dish and that of the transmitting satellite, the pointing of the dish leads to

another "disalignment" between the antenna axis and the Clarke belt. This system, by the rotation of the parallel dish, allows axis realignment, assuring a stronger signal.



Optical fibre LNB



Innovation in Communications

Fibre LNB / Fibre Flange LNB



with optical fiber connection

The Fibre Optic LNB can feed the whole Ku-band to up to 32 end-points.

Full LNB range INVACOM available as:

SNH-031, TWH-031, QTH-031, QDH-031, SNF-031, TWF-031, QTF-031 and QDF-031

AVAILABLE ACCESSORIES:

Optical 2, 4 or 8 way MDU can imitate a twin, quad or quattro LNB, and you can have up to 32 MDUs from one Fibre Optic LNB

1x2, 1x4 or 1x8 optical fibre coupler

Optical cable from 1,0 meter up to 200 meters

LNBs

- MTI
- BEST
- INVACOM
- ALPS
- INVERTO
- MAXIMUM
- TITANIUM, etc.
- Single Universal
- Twin Universal
- Quattro Universal
- Quad Universal
- Octo LNB
- Monoblock Single Universal
- Monoblock Twin Universal
- Monoblock Quad
- C Band
- Circular
- and many more



Inverto



- Red Extend - 40mm, 0,3dB
- Black Premium - 40mm, 0,2dB
- Black Ultra - 40mm, 0,2dB
- Black Multiconnect - 23mm, 0,2dB

All available as:

- Single Universal
- Twin Universal
- Quattro Universal
- Quad Universal

Full LNB range INVERTO available from stock

Parts

Multifeederholder for 2, 3, or 4 LNB



Wallmounts

- 15 cm distance – Aluminium
- 25 cm distance – Aluminium
- 35 cm distance – Aluminium
- 45 cm distance – Aluminium
- 55 cm distance – Aluminium
- 35 cm distance – Steel
- 45 cm distance – Steel
- 50 cm distance – Steel
- 70 cm distance – Steel



- F-Connector – 7 mm
- F-Connector – 7 mm waterresistant
- F-Connector – 4 mm and more

Remotesystems

- AV-Linker – Videosender for remote control
- Remote Blaster
- Zipline 2 and more



- Koaxialcable
- High Quality coax cable
- Minicable Coax
- Mini-Twincable Coax
- > 100 dB / > 110 dB



Motors

Aktuatoren/ Actuators

- Mini Actuators – 6", 8", 10", 12"
- Regular Actuators – 12", 18", 24"
- Heavy Actuators – 24", 36"



H-H Mounts

- SG 99 / SG 99 II – up to 1,00 m
- SG 107 – up to 1,10 m
- SG 2500 A DiSeqC 1.2 – up to 1,00 m
- Stab HH100 DiSeqC 1.2 – up to 1,00 m
- Stab HH120 DiSeqC 1.2 – up to 1,20 m

Multiswitches/ DiSeqC-Switches

- SPAUN
- DTRON
- JAEGER
- JOHANSSON
- MAXIMUM
- BEST

From 2 in/1 out up to 17 in/36 out



Full range

Flat-Dishes

SELF SAT

- Works on all Ku-band Satellites
- Cross polarization improved
- Ideal for High Definition reception

SELF SAT Flat-Dishes available as:

H30D / H30D2 / H30D4

STRONG

Slimsat SA 61

- Satellite antenna with integrated Single LNB
- Simple: Installation within a few minutes

NEW

Unicable solution

Inverto digital-labs

NEW

IDLP-USS200-CU010-8PP

This cascadeable Unicable switch is the smallest form factor Unicable switch enabling the reception of 2 satellites and installations with up to 8 satellite receivers over a single cable. In addition to its eight User Bands Unicable output, the multiswitch also features two legacy outputs, a terrestrial antenna input and is powered by an external power supply



AB IPBox 9900HD

A Media Powerhouse



In an earlier TELE-satellite issue (08-09/2010) we reported on AB IPBox, a new receiver manufacturer from Slovakia. Now we have our hands on their flagship model, the AB IPBox 9900HD Plus. This twin-tuner model comes with two DVB-S2 tuners. A 9900HD model is also available which is identical except that it has a choice of second tuner from a second DVB-S, DVB-C (cable) or DVB-T (terrestrial). All the IPBox receivers in this range run Enigma2 HD – a version of the open source Linux operating system. So this is effectively a specialist satellite-receiving computer in a satellite receiver-sized box. The amount of functions and options available are amazing, and the promise of additional add-ons and plug-ins make it really exciting for those who like to customise and enhance their experience.



Our test model was in a white metal case which makes a change from the usual black or silver. The front panel is decorated with a stylish floral design that certainly makes it stand out from the crowd. I think they could be chrysanthemums, but don't quote me on that one. An equally good-looking black version is also available.

The front panel contains the buttons needed for basic operation below the display. The display is very bright indeed, enough to give a blue/green glow in an otherwise dark room. After watching TV in a dark room with the receiver below the TV, one of the first things I would start searching for would be an application to dim the display. It can become distracting. Another alternative, although not quite so graceful, is to do what I did and stand a DVD case in front of the display!

Under the front cover are two cams, two Conax card slots and a USB port. There is a further USB port on the back which is better suited for the tidy connection of an external hard drive and accompanying this is also the option to connect an external SATA drive. Each of the two tuner inputs has a corresponding loopthrough output. There is just about every possible audio and video connector: Two Scarts, composite and component video, HDMI, S/PDIF and there's a UHF modulator to pump the picture out over good old TV antenna cables. Also present is a 0/12V output, not seen very often in modern times but very welcome for those who still make use of it.

As the receiver is running a more powerful operating system than usual, switching on and getting a picture on screen takes a little longer. The boot-up process takes around two minutes to complete. The first boot includes a clever video tuning wizard

TELE-satellite World

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Available online starting from 3 December 2010

to assist in finding the best brightness and contrast settings, and this can be found in the setup menu if it is needed again in the future.

Satellite setup can be as simple or complicated as you need. The "simple" settings should be enough for most people and contain all the options from using single LNBs through to DiSEqC switches, positioners and USALS. "Advanced" mode adds many more options not usually seen, which could be a great help to those with a complicated collection of dishes and switches. If even this is not enough, a separate "Satellite Equipment Setup" menu exists with even more options. Entering this menu it is preceded by the message "please do not change any values unless you know what you are doing!" and that is certainly advice that should be listened to.

Searching channels is not the fastest. A scan of ASTRA 1 takes around eight minutes. New channels found after a scan can be found in a separate section of the channel list, which is a nice idea.

The channel list is a little different than usual, and some initial head-scratching on my part disappeared after I'd taken a little time to understand how it all works and how best to make use of it. Channels can be grouped by satellite, provider, or favourites group.

The favourites function is more advanced than most other receivers. Inside the favourites list, groups of channels can be added to what the receiver refers to as a "bouquet". Not to be confused with the usual usage in satellite terms for a group of channels on a transponder, this could be a group of channels under a user-editable name, like





The almost hidden Grid EPG |



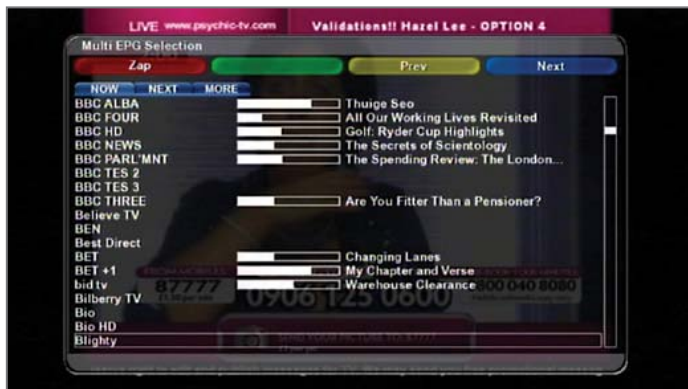
Programme info bar |



Programme list |



Plugins menu |



Multi EPG |



Satellite setup |



Media player |



Scan options |



Timer entries |



Satellite equipment setup |

8dtek™

Xtra-S T



SIZE: 129mmx101mmx35mm

Minisat-plus S2/NIT/DSS



SIZE: 107mmx85mmx26mm

Minisat-basic S2/NIT



SIZE: 107mmx85mmx26mm

Unicable Ready



Installation Meter & Full Measurement Device for DVB-S & DVB-T
 Input Frequency : 950~2150 MHz [DVB-S] & 46~868MHz [DVB-T]
 Input Impedance : 75 Ω, Input Level -65~-25dBm
 BER, S/N (MER), FEC Measurement, [DVB-S]
 BER, S/N (MER), CON, GUA, MOD Measurement [DVB-T]
 Auto Search, Blind Search, NIT Search, Manual Search [DVB-S]
 TP Scan, Auto Full Frequency Scan [DVB-T]
 DiSEqC1.0/1.1/1.2, USALS Supported [DVB-S]
 13V/18V, 22K [DVB-S] & 5V/12V/18V/24V output support [DVB-T]
 Real Time & Multi Analyzing Spectrum for both DVB-S & DVB-T
 Dish Antenna Angle Calculator [DVB-S]
 Multi-Language OSD: English, German, French, Spanish, Italian, Swedish, Russian, Arabic, etc.
 Global Satellite List [DVB-S], Global UHF & VHF Frequency List Selection [DVB-T]
 LED & Audio Indication for Signal Lock
 Satellite Name & Degree Auto Detect & Display [DVB-S]
 Multi-Channel (8) Simultaneous Measurement [DVB-T]
 Satellite List Editable by Editor via PC
 3.5 Inch High Definition TFT LCD Screen
 RCA AV-IN Function for STB, Camera, etc
 RCA AV-OUT for External Display, TV, etc.
 Accessories : RCU, Compass, Car Charger, Adaptor, Water-Proof Bag, Shock-Proof Rubber Shield

COMBO-JET



SAT-JET



SIZE: 129mmx101mmx35mm

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Milestone DTV Device Creator

More on This Manufacturer

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AB IPBOX

Satellite Receiver Manufacturer, Slovakia



www.abipbox.com

COMPANY REPORT Receiver Manufacturer AB IPBox, Slovakia

AB IPBox

New Manufacturer in Central Europe

AB IPBox was only established in January 2010, which might make you think it's a relatively young company. However, it's a highly competitive market. On the contrary, AB IPBox counts on the experience and technical know-how of its owners and employees. We wanted to find out more about this new player and visited the company in the small town of Topoľčany. After all, it doesn't happen every day that a new start-up enters the receiver playground.

We were greeted by Ľuboš Hlaváč, the owner and managing director of AB IPBox. He is a Slovakian, who used to work for a well-known receiver manufacturer in the Czech Republic. He is now the owner and managing director of AB IPBox. He is a Slovakian, who used to work for a well-known receiver manufacturer in the Czech Republic. He is now the owner and managing director of AB IPBox.

AB IPBox is a new manufacturer in the satellite receiver market. It was established in January 2010. The company is located in Topoľčany, Slovakia. The company is a small start-up, but it has a strong background in the satellite receiver market. The company is a small start-up, but it has a strong background in the satellite receiver market.

www.TELE-satellite.com/TELE-satellite-1009/eng/abipbox.pdf

music, sports, etc. From the list of providers in the channel list, we could add all the channels from one of them and this will then appear as another "bouquet" of favourites. Once your brain has tuned into how all this works, it's a beautifully flexible way of doing things. Another clever extra is the addition of the current programme listed alongside the channel name in the list.

was until I found a shortcut on the remote that gave me just what I was asking for. Whilst the shortcut of pressing blue then 2 was said by the manual to give me access to internet radio, instead a grid style EPG appeared! Perfect, although now I want my missing internet radio too!

From the EPG, events can be added to the timer. To add a recording it's a simple matter of pressing green-green and it's done. Further options are available if needed – instead of recording, the receiver can be told to just to zap to the programme and not record it. An extra addition for our energy-conscious age is an option to go to one of the two power-saving modes, standby or deep standby, after the event has completed.

Recordings can be accessed from the recordings list accessed from the dedicated "files" button, or the media player. The latter will also play media files in a number of formats including Xvid, DivX and MP3. Still pictures can also

I found the inbuilt EPG to be a little less of a revelation at first. Two modes are immediately available, the first giving information on just the current programme, with the arrow keys allowing movement to future broadcasts a page at a time. The multi EPG page list all channels – filtered by "bouquet" if required – with the current programmes shown. Again, the arrow keys scroll the list into the future.

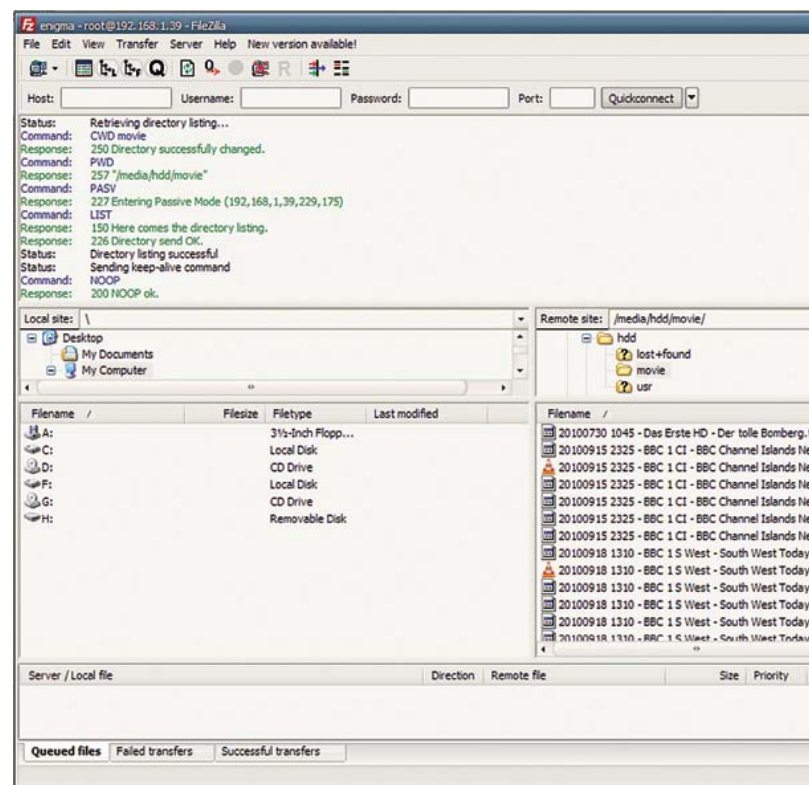
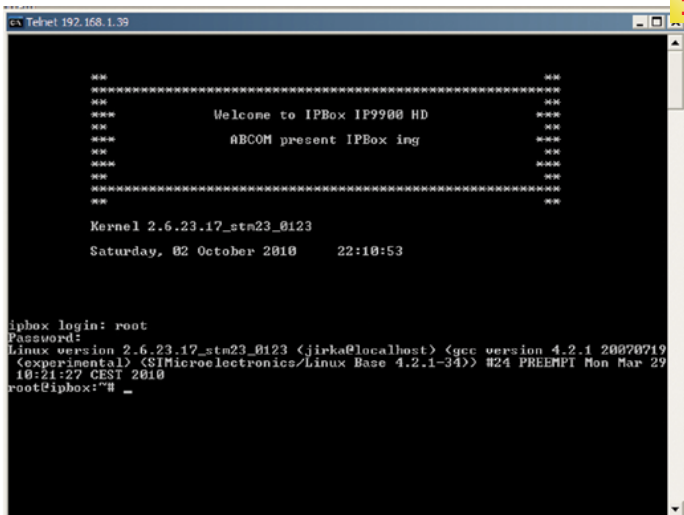
I missed having the traditional grid style display, especially when having to plan recordings around the limitations of tuner capacity. This



Recording playback |



Network setup |

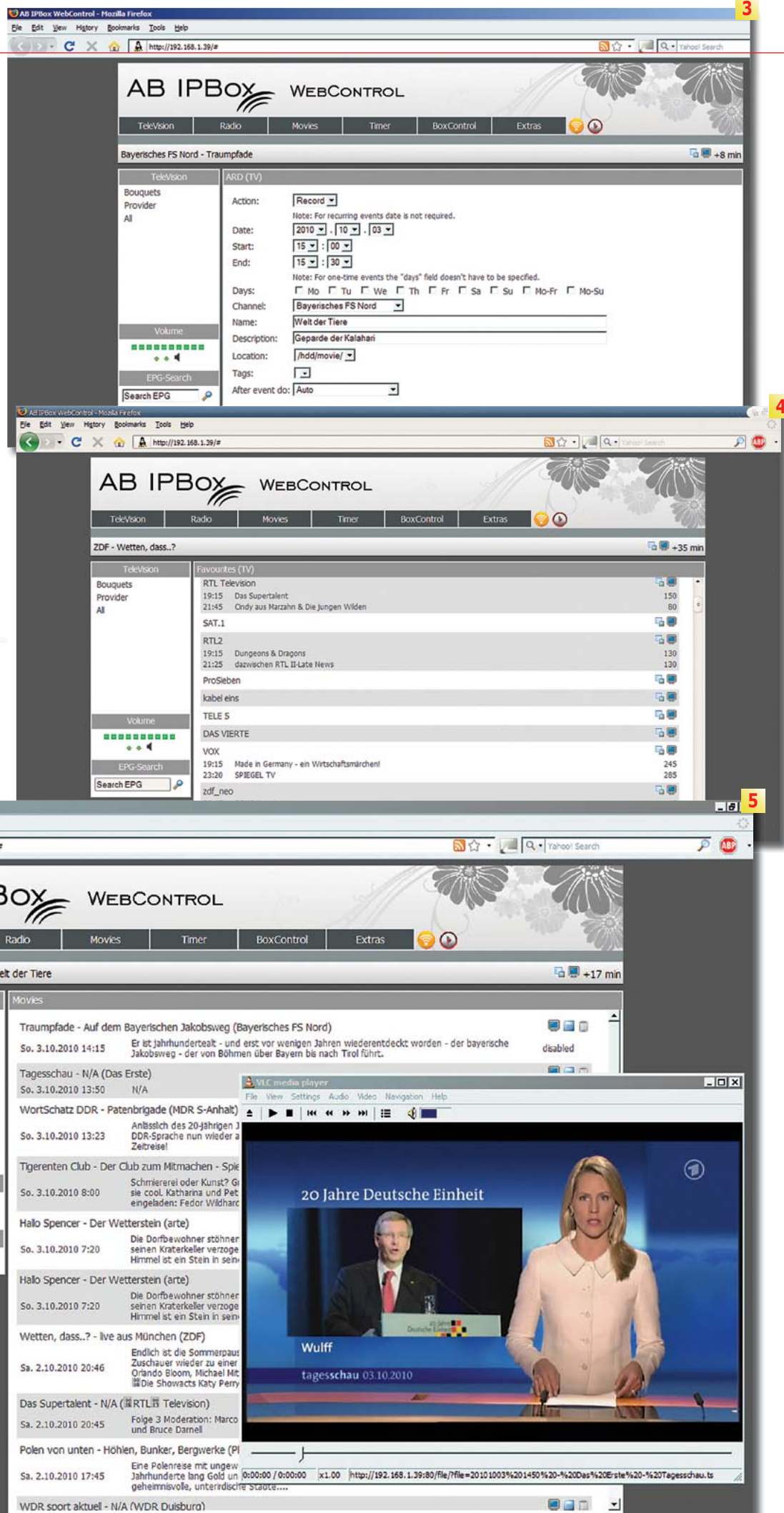


be viewed. The media player feels a little difficult to use, but the remote's Help key comes in handy here when a reminder of what to press on the remote is needed.

One big "thank you" should go to the IPBox for remembering something that should really be a standard, but is overlooked on so many PVRs – the text from the EPG's programme description is saved along with the recording.

The menus sometime slow down somewhat when recordings are in progress, a little graphic of cogs turning in the corner of the screen appears to show the machine

1. Telnet
2. An FTP connection to the box using Filezilla
3. Web interface timer settings
4. Web interface
5. Replaying a recording in VLC player via the web interface



is busy. Patience is sometimes required when waiting for this to disappear, but at least when this has happened my patience was the only thing that was damaged and my recordings were perfectly intact.

Picture quality from the receiver is excellent, even some sample Xvid files from my archive looked better than usual when upscaled onto an HD display.

External drives and memory sticks can be used, and playing media from these works just as well as the internal drive. Copying files between internal and external devices defeated me however. I just couldn't find a way to do it. So a file manager plug-in or something similar would also be on my essential add-ons list.

This apparently missing function did however hurry

me on to hooking the IPBox up to my computer network through the Ethernet port. Setting this up is just the same as adding a computer – if you use DHCP, an address and settings can be discovered automatically. If manual settings are needed, they are all here and I am proud to say that my receiver was communicating with the outside world at the first attempt, something I cannot always claim to have happened with my collection of computers.

Not mentioned in the manual, it is possible to use both Telnet and FTP to communicate with the receiver. Thankfully a quick search of the internet found me the default username and password, otherwise my experiments would have quickly been swapped for a long guessing game. By the way, they are username: root, password: ipbox. Using FTP, I was able to get the record-

ings transferred onto a computer. They are in standard .ts format, meaning that they can be manipulated and edited using standard MPEG software, plenty of freeware is available to do this.

It would have been nice to have the easy function to copy the files to an external device, but by using the network it means that if archival is required, it can all be done without any disks, memory sticks, video tapes or any other media. Transfer them over the network, edit and encode them as required, and even send them back onto the machine in Xvid format to watch them again! It works very well.

With the receiver hooked up to the outside world, it is possible to add and upgrade the machine's software. The easiest way is via the machine's plug-ins menu. This connects to a server at www.enigma.satupdate.net where plug-ins and settings are available. I was a little disappointed that very little software was available there at the time of this review, hopefully more will become available in the

future. There was however, one gem there to be added – the web interface.

Installed from the server in little time, the web interface adds another level of communication from the outside world. Surfing to the receiver's IP address from a web browser brings an interface matching the receiver's design. Here, the channel list and EPG can be viewed, and recordings added. With a little port forwarding in your router, this could then be accessed from anywhere on the internet. So the next time you are at work or on holiday and you forgot to record something, no problem – just get to the internet and do it all from there! The programme details here even provide a link to the Internet Movie Database (www.imdb.com) for each programme.

Recordings can be downloaded from here, in .ts format – even easier than my FTP method – and live TV and recordings can even be streamed to a media player. I had success with recorded material but none with live broadcasts, whether this is a





SPOTLIGHT ON: UNI-BOX 9060 CRCI HD PVR optional for DVB-S, DVB-T, DVB-C
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bug at my end or the receiver's was hard to tell.

As if all this is not already enough, a window with a virtual remote control can be used to access all functions of the receiver. After each keypress, a screenshot of the on-screen display (without any TV picture) is refreshed on the screen. This means you can have full control over the receiver, from anywhere you can get an internet connection. Security has been thought of too, both SSL and password protection can be turned on if required.

All this functionality and options are amazing. Just look at the options in the setup menu screenshots to get an idea of what is available to tweak and change the IPBox to suit your own preferences. Most exciting of course is the open source nature of Linux and the promise it brings of third-party add-ons and enhanced software. And this is where the IPBox will succeed or fail. The manual does a fairly good job of summing up all the regular satellite receiver functions, and tells you how to upgrade and add

software, but the mysteries and complexities of Linux are left untouched. The receiver will appeal to those out there who want to get the most from it by fully exploiting the power of the operating system. So what will be needed to make the receiver the success it deserves to be is availability of additional software and the guidance of how to install and use it. The software repository accessed by the receiver is close to empty, and at the time of writing there appears to be very little information specific to the IPBox on the internet on independent sites. But these are early days of course, the box has just appeared on market.

Other receivers already use the Enigma2 software and applications and some software for these is already available on the internet. Perhaps some of this can be used or modified for use with the IPBox. In fact, for other receivers using a Linux system, whole modified operating systems are available with extra features added. One example I found while researching even answered a criticism of European satellite broadcast-

ing I have been making for many years – the unavailability of a seven-day EPG for the BBC and other channels on ASTRA 2 outside Sky and Freesat's own receivers by adding just this functionality. As a BBC viewer I'd love this to be usable by the IPBox. I'd be worried though about trying to install something like this that wasn't specific to this receiver or operating system version. Perhaps what we need is a "dummies guide" for how to get the most from an Enigma2-based IPBox ... perhaps I should get learning some more, and start writing it!

The IPBox's manual, and support website point the user to independent websites and forums to find software and support. So let's hope these sites will soon appear for those who would like to experiment and improve their receiver. With such power available, all it needs is a good level of support and software availability to enable its users to use it to its full potential. The IPBox will be a true challenger to the Linux based receivers already on the market.

This is a powerful receiver with smart menus to match its smart looks, an unbeatable set of functions and great picture quality. The setup options are the most comprehensive you could wish for. The clever favourites system along with the three EPG modes (perhaps the most useful one being hidden behind a separate shortcut menu) make this a machine that will satisfy both power users and casual viewers. Getting to know it requires the climbing of a slightly steeper learning curve than that found with other receivers, but it is well worth the effort.

Perhaps the most telling conclusion is whether after testing the receiver for a week or two, getting used to what it can and can't do, would I want to have one of my own? I can honestly say that I'd love to have one.



Expert Opinion

+

Linux operating system opens the box to endless add-ons.

Sophisticated channel memory.

Remote access via the Internet.

EPG is recorded with PVR.

Three EPG levels.

-

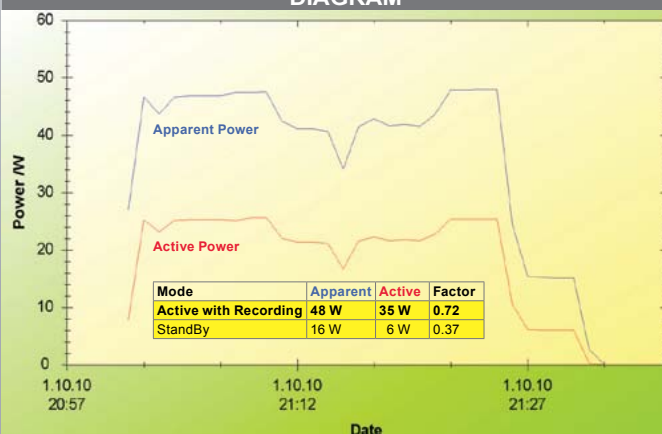
Takes long to boot up.

Display dim should be added.



Andy Middleton
TELE-satellite
Test Center
UK

ENERGY DIAGRAM



TECHNICAL DATA

Distributor	AB IPBox s.r.o., M. Razusa 4795/34, 955 01 Topoľčany, Slovak Republic
Tel.	+421 38 5362 667
Website	www.abipbox.com
Model	9900HD
Function	Twin DVB-S2 Multimedia Receiver
SCPC compatible	Yes
USALS	Yes
DiSEqC	1.0/1.1/1.2/1.3
Scart connectors	2
Symbol rates	DVB-S QPSK – up to 45000 DVB-S2 QPSK – up to 36000 DVB-S2 8PSK – up to 30000
MPEG2 modes	MPEG-2, MPEG-4, H.264
Audio outputs	2 (left & right)
Video outputs	Composite, Component, HDMI
Resolutions	720x576 (PAL). 720x480 (NTSC) 1080i, 720p, 480i, 480p
UHF output	Yes
0/12 volt output	Yes
Digital audio output	S/PDIF
EPG	Yes
C/Ku-band compatible	Yes
Power supply	100-240V AC
Common interface	2 PCMCIA
Card slots	2



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WDE-4220 MPEG-2/4 ENCODER

WDM-4140 MULTIPLEXER

WDQ-3204 QAM MODULATOR

WDE-H2220 HD ENCODER

WDT-1204 TS RECEIVER

4 OUTPUT RETURN OPTICAL RECEIVER

WR8602JDS ROOM OPTICAL RECEIVER

OPTICAL SWITCH

WR8602RJL ROOM OPTICAL RECEIVER

1550nm INTERNAL MODULATION OPTICAL TRANSMITTER

1550nm EXTERNAL MODULATION OPTICAL TRANSMITTER

1310nm EXTERNAL MODULATION OPTICAL TRANSMITTER

ERBIUM DOPED FIBER AMPLIFIER



CATV OPTICAL FIBER COMMUNICATION SYSTEM PLATFORM WOS-3000

AZBox Premium HD for South America

Satellite reception, Internet, terrestrial TV: The AZBox brand promises to cover all, and to find out if the company lives up to its promises we were sent a receiver to our southern test centre in Chile. AZBox provided us with the Premium HD receiver so that we had a chance to test the box with real signals sent in the ISDB-T transmission standard used in South America for digital terrestrial TV. In Chile, the Viña-del-Mar/Valparaíso and Santiago de Chile regions are currently served with ISDB-T, and we tested the receiver in both reception areas.

When we picked up the parcel from our local post office we were impressed with the stylish design of the packaging, which consists of black paperboard with silver lettering specifying the technical details of the set-top box: The receiver we were sent came with a DVB-S2 tuner and a second tuner for ISDB-T. Here in the capital





■ View of Santiago de Chile. On the left the tv center of national broadcaster TVN

the configuration menu which let us choose between TUNER A DVB-S and TUNER B ISDB-T. Naturally, we selected ISDB-T which immediately offered an automatic or manual search mode.

If you go for manual, it is possible to enter channel and frequency individually. With SEG SELECT you can select any value between 1SEG and 13SEG. We decided to give the AUTO search a go and set SEG to ALL to achieve

Santiago de Chile TVN-Mega-Chilevision Canal 13 broadcasts both analog and digital signals, and UCV is transmitted in an SDTV and an HDTV version in Viña del Mar and Valparaiso. In addition, this channel is also available via mobile phone networks.

With the integrated ISDB-T tuner it is possible to find ISDB-T channels either with AUTO or MANUAL search mode, and of course we could not wait to find out how the receiver handled the channels. Using the elegant remote control we entered

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Available online starting from 3 December 2010

as many results as possible. Once all parameters are set you need to confirm them by pressing the OK button and that leads to another pop-up window, which we closed with EXIT in order to start the scan. After that, we went to the HORIZONTAL TV menu to watch digital terrestrial TV

for the very first time. To be honest, the video quality of what we saw on screen was truly breathtaking.

To make sure we received a usable signal at all we had hooked up the AZBox receiver to an external UHF antenna, as the digital trans-



Quiz show on TVN HD |



Screenshot of a broadcast from national channel TVN HD |

More on This Manufacturer

Read TELE-satellite's Company Report:

AZBOX

Satellite Receiver Manufacturer, Portugal



www.azbox.com



www.TELE-satellite.com/TELE-satellite-1001/eng/azbox.pdf

missions in our region are for test purposes only and come with limited signal strength.

watch Internet content such as YouTube, for example.

A second look at the Premium HD receiver reveals another feature: An E-Sata hard disk can be connected internally to achieve PVR functionality for both SD and HD resolutions. We obviously made use of this option and did not detect any flaw. The maximum recording capacity is two hours. In addition, it is possible with this box to also

One word of caution: When we plugged in the receiver for the first time ISDB-T reception was not working. As it turned out, the terrestrial tuner had become loose during transport and needed to be put in place again firmly. We have not encountered any problems ever since.

Broadcast centre of TVN in Santiago de Chile



- Digital Satellite Receiver
- Digital Terrestrial Receiver
- Digital Cable Receiver
- HD/SD COMBO Receiver



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- Multi-media Function (Playback TS, MKV, AVI, DivX, XviD, VOB, RMVB, RM etc.)
- Linux OS Embedded with Powerful compatibility
- Recording & Playback with External Storage Devices(e-SATA / USB2.0 / HDD)
- Support HDMI output (up to 1080i)
- USB Hub
- USB WiFi
- Support Youtube
- VFTP Download
- BT Download



- Support SMB
- Ethernet Embedded
- Conax CAS7.0 Embedded
- Common Interface Plus (CI+)
- Plug-in tuner design
- Low-power Consumption

- Fully DVB-S/DVB-T/MPEG -2 Compliant
- Recording&Playback with External Storage Devices(USB2.0 / HDD)
- Time-shift function
- DiSEqC1.0/1.1/1.2/1.3(USALS) and 22KHz switching
- Conax CAS7.0 Embedded
- 2 Common Interface(CI)
- Ethernet Embedded (Optional)
- Support MP3, JPG image and photo display.(Optional)
- 5000 channels memory space

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- 7 Days Electronic Program Guide(EPG)
- Parental Lock function
- Teletext and close caption output through OSD and VBI.
- RF Modulator for TV standard(PAL B/G, PAL D/K, PAL I,NTSC M)
- Automatic PAL/NTSC/SECAM conversion



Talk show on UCTV HD Canal 13



Main search menu



Broadcast centre of UC Canal 13 Chilevision

With the Premium HD receiver AZBox introduces a high-end box for South America. Have a look at the TELE-satellite world map further back to find out which regions in South America use the ISDB-T standard for digital terrestrial TV. As you can see, most countries have opted for ISDB-T and some countries, such as Brazil for example, are already well on their way to becoming digital. Other countries, such as Chile, are currently in a testing stage. What all regions have in common is that the AZBox Premium HD as tested by us is the ideal satellite receiver with its DVB-S2 and ISDB-T tuners, which allows reception of all channels – no matter how they are transmitted.



Expert Opinion

+
Fully automatic search for all available channels
Many additional features
Reception of content through all modern transmission modes

-
Built-in tuners may become loose during transport



Juan Carlos Duarte
TELE-satellite
Test Center
Chile



Results of channel search in Viña del Mar |



Results of channel search in Santiago de Chile |



Channel menu options |

TECHNICAL DATA

Manufacturer	Opensast, Edificio OPENST, Lagoa, C.P. 4950-283 Mazedo, MNC, Portugal
Fax	+351-251-652-966
E-mail	info@azbox.com
Website	www.AZBox.com
Model	AZBox Premium HD
Function	Digital HDTV Receiver with DVB-S2 and ISDB-T Tuners with various Multimedia & Internet Features
System Memory	DDR 128 MB
Video Memory	DDR 128 MB
ISDB-T Connector	F with loop
DVB-S2 Connector	F with loop
Channel Memory	15000
Symbolrates	2-45 Ms/sec
SCPC compatible	yes
DiSEqC	1.0/1.1/1.2/1.3
HDMI Output	yes
Audio/Video Output	Video (YCbCr), Audio (L/R)
Component Video Output	yes
S/PDIF Output	yes
RJ45	yes
UHF Modulator	yes
0/12 V Output	yes
Digital Auto Output	no
C/Ku Band compatible	yes
PVR Function	yes
USB 2.0 Connector	yes
Ethernet	yes
E-SATA	yes (inside)
Dimensions	340/243/66 mm
Weight	2.65 kg (without hdd)
Power	12/24 V





Absolute Premiere right now



Watching on www.abipbox.com

Jiuzhou DTP8300 Receiver for Internet Television



At first sight the DTP8300 from Jiuzhou looks just like your average set-top box for satellite, cable or terrestrial reception. It only measures 230x160x39 mm, which makes it a neat little addition to the living room cabinet. The box comes in stylish black and sports two LEDs on the front panel to indicate the current operating mode. The manufacturer has chosen to do without an LCD or segment display, but has instead opted for an on/off switch in the left corner and a USB 2.0 interface in the right corner.

If you turn around the receiver and look at the connection options on the back panel it becomes perfectly clear that this is a set-top box that does not receive signals from satellite, cable or terrestrial antenna.

All we find is an RJ45 Ethernet port when it comes to signal input. In addition,

there is of course the usual range of sockets for HDMI out, three RCA jacks for YUV, three more RCA jacks for stereo audio and CVBS, an optical S/PDIF output, S-video socket and a second USB interface. There is even the added benefit of a mechanical power switch, which is a valuable feature in this time and age.



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Available online starting from **3 December 2010**

The remote control that comes with the receiver makes a great first impression, has all keys within easy reach, offers just the feedback required, and is clearly labelled.

If we have to think of something worth improving it's the IR receiver in the set-top box, which requires users to point the remote to a very small area on the box – otherwise you'll have to press the desired key several times before your command is actually received at the other end.

We'll focus on the peculiarities and features of the DTP8300 in a moment – but first it's worth looking at the decisive differences between TV reception via antenna, cable or satellite and IPTV.

If a receiver uses digital satellite, cable or antenna signals, the receiver's hardware has to take care of all aspects of signal processing. This does not only involve reception, conversion, decryption (if required) and finally output of signals received with the DVB data stream, but also channel management, processing of EPG data and creating OSD messages for user interaction.

By contrast, an IPTV receiver is a different story altogether. Put simply, it is a kind of web browser being able to put out audio and video. It doesn't have to do a channel search, it has no (or only a very basic) OSD system and there is no need to manage, process, save, and organise channels.

Its main task is to display on the TV content which is delivered as pre-packaged data. All technology required for receiving and processing channels, for creating the OSD and for managing content is located at the provider end of the IPTV system.

There, so-called middleware (put simply again, a kind of web server) takes care of setting up channels lists using provider-specific design elements, of providing video-on-demand (VOD) con-

tent and of creating the IPTV receiver's complete user interface.

When turned on, the IPTV receiver connects to the middleware via the Ethernet port and displays content received from the middleware.

By the way, the middleware is also responsible for establishing a connection to the DVB-IP gateway for TV reception. Providers store the IP addresses and ports of individual channels within



the IPTV network in the middleware.

If a user now selects a specific channel on the channel list that is created and provided by the middleware, the IPTV receiver obtains the exact IP address and port of the selected channel and starts displaying the corresponding video stream.

Now the second major difference between satellite and IPTV reception becomes evident. If you receive your channels directly via satellite this means that all content is available at the receiving end (hence the term broadcasting), while IPTV reception means that only the content (channel) that was specifically requested is available at any one time.

Of course all available content is sitting at the provider, waiting to be requested, but still data only starts to flow once the user calls up specific content. Each customer is served individually, so to speak, which is also why – apart from standard radio and TV channels – video-on-demand, time shift or PVR can be offered by the provider without the customer having to purchase new hardware.

Metaphorically speaking, broadcast reception via satellite, cable or terrestrial transmission is like a giant wave of content extending to all receivers at the same time, while an IPTV network targets each subscriber separately, providing only specifically requested content in a customised way.

Not only is each IPTV customer served individually, each IPTV network is also characterised by an individual set-up, depending on the provider's requirements.

In theory, an IPTV provider can freely select the IP addresses he wants to use

for his network, as well as the multicasts used for TV and radio distribution and the ports.

This means in turn that set-top boxes for end users need to be just as flexible in order to fit into existing IPTV networks. To this end – and to this end only – the DTP8300 is equipped with a dedicated setup menu which can be called up with a small button on the remote control. By default it is PIN-protected and we suggest that end users in general keep their fingers off all of these settings.

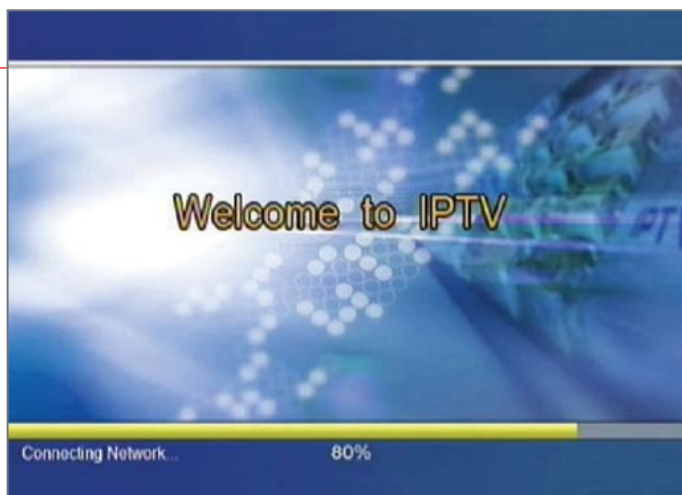
The menu is divided into six items, with Basic Settings and Extended Settings being of most interest. In Basic Settings you need to tell your box how it should connect to your IPTV provider's network.

The receiver can either request an IP address from the DHCP server or you can assign a static IP address to your box. If you subscribe to an IPTV provider that uses DSL for distributing their content you may also set up a connection to the IPTV network via PPPoE.

Once additional network parameters such as gateway and DNS server are set or received from the DHCP server the IPTV receiver also needs to know the exact address of the middleware.

For our test purposes we chose to use the default middleware provided by Jiuzhou, which we had installed in our test centre on a standard Windows PC using Microsoft IIS.

While configuring the network connection of the set-top box it came as an unexpected but very nice surprise that not only a connection via Ethernet was possible, but also via WLAN. If you prefer to go wireless



The DTP8300 starts up with its own boot screen |



Main menu as generated by the Jiuzhou middleware |



In our test setup the channel list contains five entries |



MBC Action on NILESAT 7° West via IPTV |

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available to the provider it is possible to offer tailor-made customer service if need be.

Complementing the configuration options of the Settings menu there is system overview, a self-test feature and an option to restore factory settings.

Using a web browser or USB memory stick it is also possible to upgrade the receiver's operating system – a dedicated menu item is available to facilitate that procedure.

Once all settings are selected the box needs to be rebooted so that it connects to the middleware over the network and displays the main menu generated by the provider's middleware.

Using its own middleware Jiuzhou impressively demonstrates some of the features an IPTV provider is able to implement with its in-house middleware and in combination with the DTP8300.

As you can see in the screenshots the main menu is divided into four major areas: The top bar corresponds to the colour-coded function keys on the remote and thus is perfectly suited for direct access to live TV, video-on-demand or timeshift viewing.

The left area holds features that are used a little less frequently, such as games or additional VOD content.

In the window to the right of that section the live video of the currently selected channel is inserted, while in the bottom section of the screen there is room for banners advertising new VOD content or other provider-based information for subscribers.

In our test scenario we hooked up Jiuzhou's own middleware with the DVB-IP gateway we had installed in our test lab and then entered

all you need is an RT73 compatible WLAN USB adapter to plug into one of the USB ports – once it is detected by the system it can easily be configured directly in the box.

Now that all settings are completed the IPTV receiver saves all data and re-boots in order to establish a direct connection to the middleware.

While average users should be all set now we of course could not do without having a look at the Extended Settings in order to adjust them for our test setup.

Currently the only menu languages available are English and Chinese, but this refers only to the Main Menu and a couple of OSD inserts of the receiver. During day-to-day use the IPTV provider's middleware generates all OSD items anyway and can be designed according to the provider's specifications.

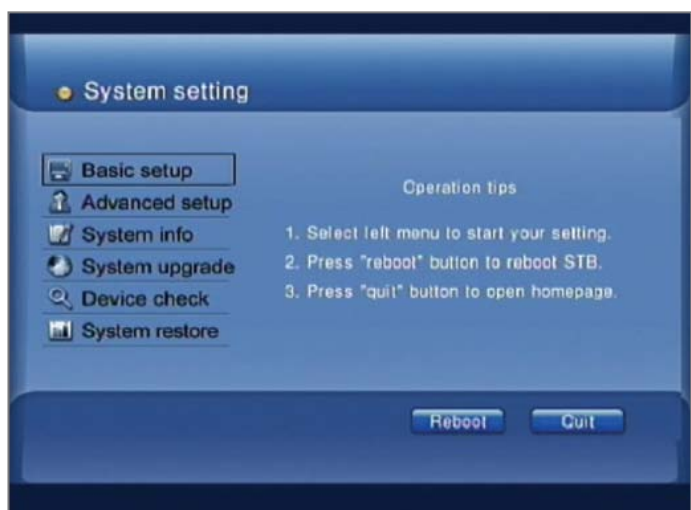
In Video Settings users can select the format of the signal output to the TV, with 480i, 480p, 576i, 576p, 720p and 1080i being available in 4:3 and 16:9 aspect ratios, as well as PAL, NTSC or SECAM.

Finally, the Extended Settings menu can be used to change the PIN code that restricts access to the Settings menu and to activate a log protocol that is sent to an FTP server. This way providers can permanently check whether any error messages have been created by the IPTV receiver or any problems have occurred.

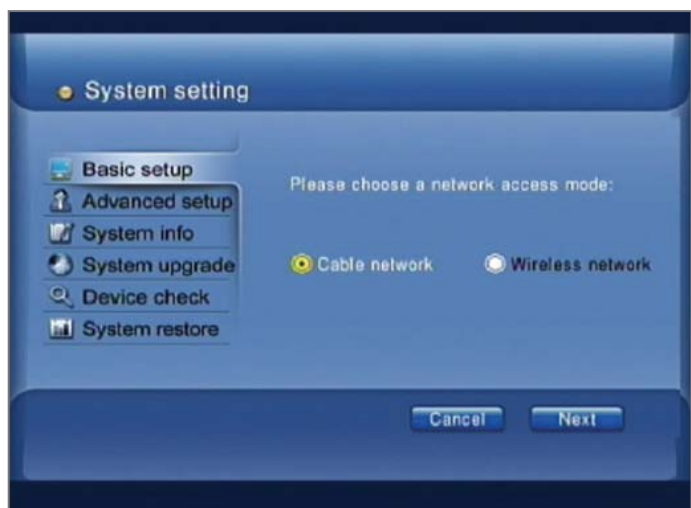
Thanks to these data being



Watching an IPTV channel – the info bar on the bottom of the screen also displays EPG information if provided by the middleware. |



Settings menu of the DTP8300 |



Access to the network is via cable or WLAN |



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PCIe DVB-S2 Quad Tuner card (TBS 6984)

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Windows 7 Media Center, DVBDream, DVBViewer, DVBlogic, ProgDVB, AltDVB, Skynet, TSreader supported.
3. Linux driver for all kernels; MythTV, VDR, XBMC supported.



DVB-S2

PCIe DVB-S2 TV Tuner card (TBS 6921)

1. DVB-S2/S Transponders Receiving.
2. Transponders blind scan.
3. Low profile size.



PCIe DVB-S2 TV Tuner card (TBS 6925)

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PCIe DVB-S2 Dual Tuner card (TBS 6981)

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3. Low profile size.



USB DVB-S2 CI BOX (TBS 5981)

1. DVB-S2/S Transponders Receiving.
2. CI supported.
3. USB 2.0 interface.



DVB-C

USB DVB-C stick

1. DVB-C Frequencies Receiving.
2. 16, 32, 64, 128 and 256 QAM supported.
3. USB 2.0 interface.



USB DVB-C CI BOX

1. DVB-C Frequencies Receiving.
2. 16, 32, 64, 128 and 256 QAM supported.
3. CI supported.
4. USB 2.0 interface.



DVB-T2

PCIe DVB-T2/T/C TV Tuner card

1. Receiving system: DVB-T2/DVB-T/DVB-C.
2. Low profile size.



the corresponding multicast addresses as required. This left us with one of our feed channels – the MBC transponder from NILESAT 7° West – being available on the IPTV box in next to no time at all.

We were rather impressed with the zapping speed of this neat little box, which took just under one second to switch between individual streams of the TV channels requested.

Whenever a new channels is called up the DTP8300 displays EPG information of the selected event, if this feature is provided by the middleware.

How certain additional keys on the remote control are used and which features they access largely depends on the provider's middleware again. If timeshift viewing is available, then it can be controlled just like with any other receiver and there's no need to get used to a new user concept.

IPTV compatible added features such as news, weather updates or current offers for subscribers can be assigned to different function keys on the remote. There is even an option to change from number to character input so that you can use the numeric keypad for texting – just like you would with your mobile phone.

As far as technical compatibility is concerned, the Jiuzhou DTP8300 supports

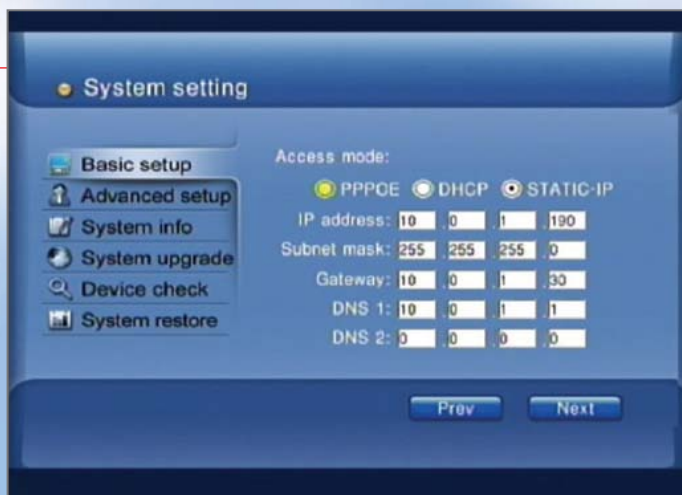
MPEG-4/H264 as well as Windows Media 9 video. The built-in browser handles HTML 4.0, Javascript 1.5 and Java Virtual Machine.

Data delivered from the middleware is displayed with a 32bit True Colour User Interface. The audio decoder is capable of processing WMA-9, MPEG Layer 1, 2 and 3 (MP3), AAC LC, AAC LC+ SBR Level 2 as well as AAC+ Level 2. Sampling rates of 22500, 44100 and 48000Hz are supported and the receiver has a built-in 128 MB flash memory, 192 MB SDRAM and an 8K EEPROM.

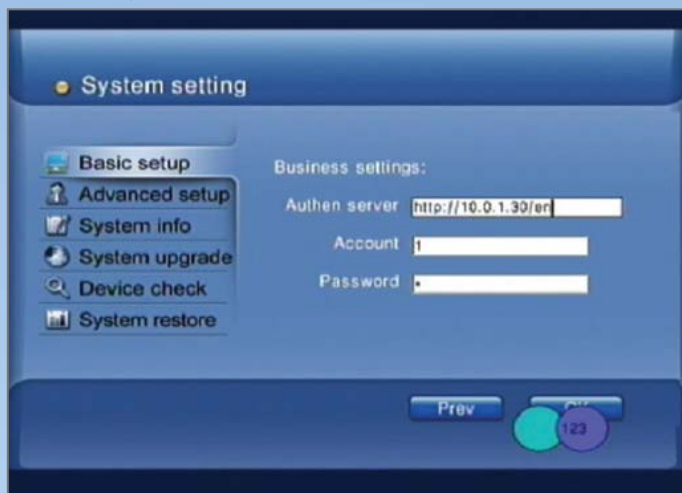
In a word, we were impressed with the Jiuzhou DTP8300 during our test.

In the IPTV market it's usually not up to the end user to pick a set-top box, which is why the DTP8300 will mainly be chosen by IPTV providers. They would end up with a box that is able to implement all middleware features and therefore is a perfect tool for offering programming to subscribers.

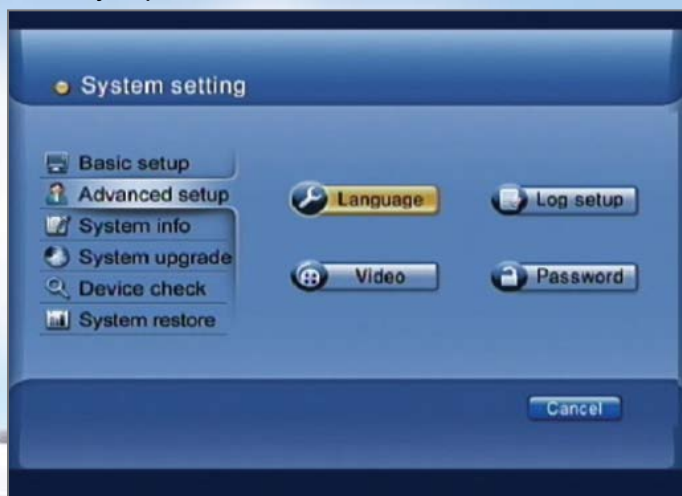
Even end users looking to stay independent from provider-supplied hardware will like the Jiuzhou DTP8300 as it offers all necessary functions, is easy to use, and doesn't take much space in the living room cabinet.



IP settings |

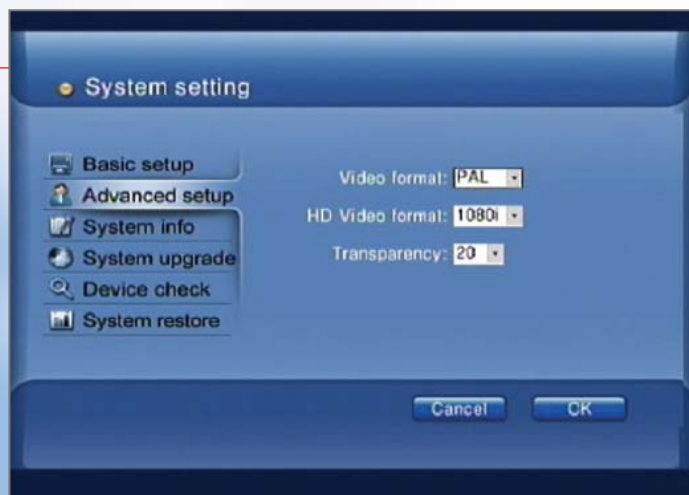


Always required: the middleware address |



Extended settings |

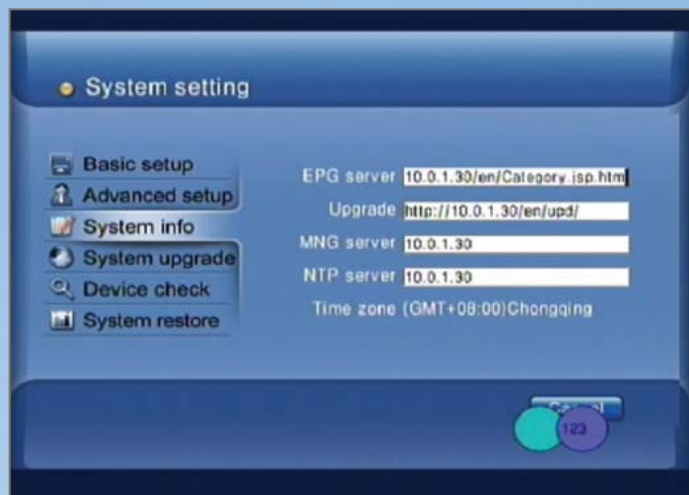




Video output in various formats |



Updating the operating software of the DTP8300 via server of USB stick |



EPG, clock and update settings |



DTP8300 system information |

Expert Opinion

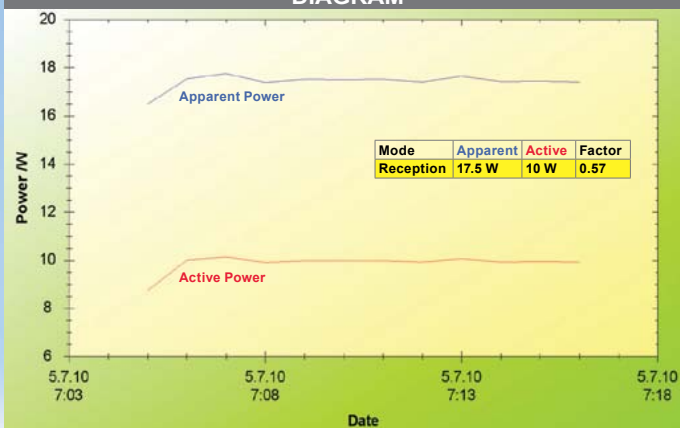


Thomas Haring
TELE-satellite
Test Center
Austria

Small IPTV receiver that is perfectly suited for use in the living room. Excellent video quality, quick execution of commands sent from the remote control and good build quality are the key characteristics of this set-top box.

The IR receiver of the box could be a little more forgiving

ENERGY DIAGRAM



TECHNICAL DATA

Manufacturer	Sichuan Jiuzhou Electric Group Co., Ltd. #16 Yuejin Road, Mianyang 621000, Sichuan, China
Fax	+86-816-2468903/2469241
E-Mail	overseas@jiuzhou.com.cn
Model	DTP8300
Function	IPTV Set-Top-Box
Stream Protocol	UDP
Menu Standards	HTML4, Javascript 1.5, Java Virtual Machine
HDMI connector	yes
Scart connector	no
Audio/Video output	3 x RCA
YUV output	3 x RCA
S-Video output	yes
Digital audio output	yes (optical)
Ethernet	yes
WLAN	yes (via USB stick)
USB connector	yes
Input Voltage	9V
Dimensions	230x160x39mm



Jaeger HD+ 2011

The German Receiver with a Plus



To regular readers of TELE-satellite the company Doebis from Mündersbach in Germany might ring a bell. It is a wholesale dealer offering an extensive product range combined with excellent customer service, and it is a business that readily endorses cutting-edge technology for the benefit its customers. Now Doebis has taken another leap and is launching its own line of receivers, with the first offspring jumping right in the middle of a market niche that has recently appeared in the German market. There, commercial networks have teamed up to use the new HD+ standard which allows reception of the HD versions of these commercial stations next to all other free-to-air DVB-S and DVB-S2 channels. Doebis distributes the new set-top box under the trade name Jaeger.



Channels using the HD+ standard are currently only of interest to a German-speaking audience, as HD+ smartcards to unlock these channels are only available in Germany at this stage. The Jaeger HD+ 2010 therefore exclusively has the German market in mind for time being. HD+ channels are broadcast via ASTRA 19.2° East.

We will deal with every nook and cranny of the new receiver in a moment, but let us first find out what this talk about HD+ really is all about: In a global perspective, Germany had long been a dark spot on the HDTV map. While most of Asia, North America, Australia and also a number

of European countries had introduced high-definition television some time ago, Germany seemed to be perfectly content with its SDTV offering for a very long time. Apart from pay TV provider Sky and an unsuccessful attempt at HDTV by some commercial channels not much happened with regard to HD content.

Is there a particular reason for this development, or should we rather say: lack of development? For decades, German viewers have been blessed with a large number of free-to-air commercial channels, which offered all sorts of content next to the large public broadcasting networks, which can also be

received free-to-air. Viewers have come to expect and demand high-quality programming, including all the latest blockbuster movies, TV dramas and sitcoms, plus elaborate homemade content free of charge. Or almost free of charge, if you consider the licence fee that every Germany household with a TV set has to pay. Various and – sometimes – lengthy advertising breaks on commercial stations are the trade-in, which Germans had and have to accept in return for channel and content variety.

For all the reasons stated above pay TV was off to a very bad start in Germany and is still struggling to become

financially viable. Just think about it: Would you be willing to pay for subscription TV if the sheer number of channels coming in at no cost satisfies almost all of your viewing requirements?

Up until the invention of the PVR (personal video recorder), both broadcasters and viewers seemed content with this arrangement, and commercial stations were able to provide decent programming thanks to a steady flow of advertising revenue.

All this began to slowly erode due to time-shift viewing and hard-disk recording, with the added benefit of skipping commercial breaks. What



JAEGER



pushed the viewing pleasure of millions to new heights was becoming a major concern for commercial broadcasters – at least if one follows their line of reasoning. After all, not many would watch ads if these can be skipped with the touch of a button, would they?

A few months ago the major public broadcasting networks in Germany finally launched HDTV versions of their main channels and therefore placed the ball in their commercial competitors' court to lift their game as well.

With their reliance on advertising money, however, commercial providers used a completely different approach which was supposed to restrict ad skipping right from the start. Satellite operator SES readily jumped on board and developed a dedicated transmission concept with the name HD+ platform.

The first step in the new HD+ standard was to offer the new HD channels with encryption only, which is the only way of controlling who can watch what. SES ASTRA selected Nagravision 3 as the encryption system of choice. The next step that followed went even further: HD+ allows content providers to not only define which encrypted events can be watched and recorded, but also how, when and for how long such content is available. The new HD+ standard provides broadcasters with the option of restricting time-shift viewing for certain content, or to block this feature at large. This means that viewers are still able to record content and watch it at a later stage, but it is not possible to fast forward through commercial breaks. Broadcasters are also in a position to add a 'use by' date to content, so to speak. Such recorded content cannot be played back once that date has passed.

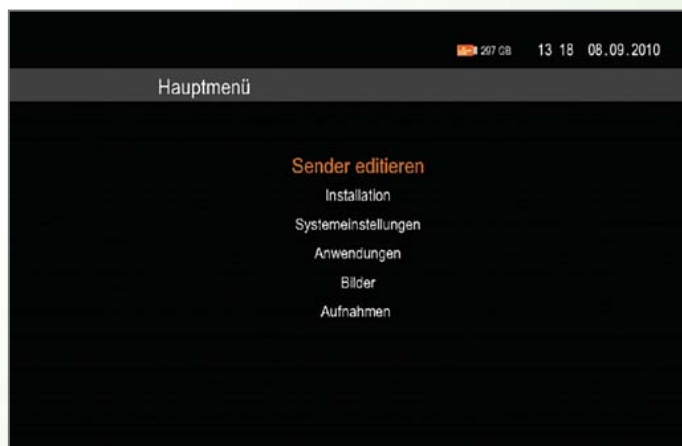
To make sure all of these

wishes by broadcasters are actually fulfilled, PVRs that are compatible with HD+ always record content with encryption in place. This way it is not possible to simply copy files from the internal or external HDD and watch them on a PC or save them onto a DVD, for example.

If you do want to receive the HD variants of Germany's major commercial networks you therefore need a receiver that is compatible with HD+ and which features either a built-in smartcard reader or a CI with HD+ functionality – plus a valid HD+ smartcard, of course. All receivers and CI modules available so far have not been compatible with the HD+ standard or at least required a software update from the manufacturer to add that feature with all its integrated control mechanisms. Only if all HD+ specifications and restrictions are met is it possible to watch HD+ content.

We received the Jaeger H+ 2011 receiver complete with an activated HD+ smartcard so that we could easily receive the HD channels of Germany's largest commercial channels. To be precise, we were able to mostly receive upscaled versions of their standard definition offerings, which is what they currently provide. The six networks Sat.1, ProSieben, Vox, Kabel2, RTL and Sport1 can be received in high definition free of charge for one year. After the first year access can be renewed for another year by paying a fee which currently amounts to EUR 50.

But let's come back to our receiver test report now. The black housing of the Jaeger HD+ 2011 is very stylish in appearance and will smoothly blend into most living room settings. The front panel sports a multi-digit segment display, with three buttons to the left for controlling the receiver's main functions



Main menu of the Jaeger HD+ 2011 |



Various options for channel list editing |



Easy-to-use channel list of the HD+ 2011 |



Channel list entries 0 to 99 can be freely arranged |

FROM A DIFFERENT PERSPECTIVE

OPENSAT 



OPENSAT 9700/9900 HDPVR

- 1xSmartcard reader • 2xCI slot • Fully compliant with MPEG-4 HD/H.264 (DVB-S/SVB-S2)
- Video resolution 576i,p/720p/1080i • Various video output (HDMI/YPbPr/Scart/CVBS)
- Multimedia functions (MP3/JPG/DivX play support) • VFD display
- PVR ready through USB 2.0 interface • RJ-45 Ethernet interface (9900HDPVR model)
- Blind Scan/Fast Scan/Unicable support • Background recording&playback while recording function



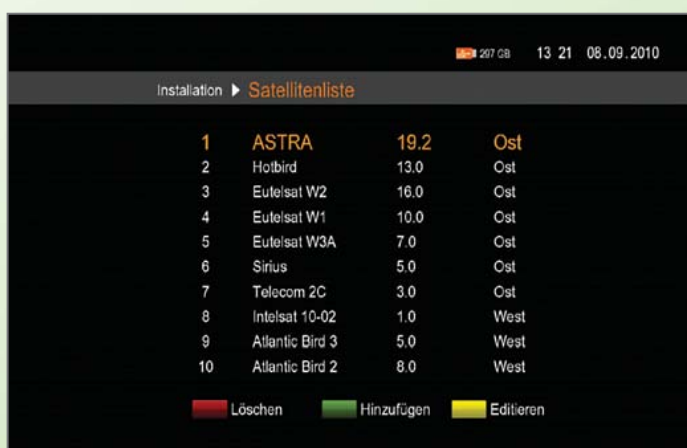
Channel list editing |



Options for automatic channel search |



Manual channel search |



Pre-stored satellite list |

without a remote control. To the right of the central display a HD+ smartcard can be inserted into the built-in card reader. There are no additional CI slots available.

The back panel of the receiver is very well equipped with all connection options you're ever likely to require. It sports the standard satellite IF input with looped-through output, HDMI, optical audio out as well as a USB 2.0 interface.

The remote control that comes with the box deserves special praise, as it sits conveniently in your hand and comes with easy to find buttons. The operating manual is of a similarly high standard, is very comprehensive and comes with helpful illustrations. We are confident the manual will answer all the questions you may have with regard to operating the Jaeger HD+ 2011. We hugely appreciated the fact that a whole chapter of the manual is dedicated to mounting and installing the antenna. This way new users do not only learn how their new receiver works, but also receive some valuable tips and hints for perfectly setting up their antenna.

When the receiver is turned on for the first time it immediately switches to update mode and checks the following:

- (a) Do signals from ASTRA 19.2° East come in through the satellite IF input socket?
- (b) Is a software update available?
- (c) Is the pre-stored channel list still up-to-date for German viewers?

In case new software or an updated channel list are available these are downloaded over the air automatically to bring the receiver up to date. This way, viewers in Germany can rest assured their receiver will always keep up with any changes or improvements and that all pre-stored

channels can actually be shown on screen.

We should elaborate a little on this new receiver's channel list: Contrary to what we are used to from regular receivers, the HD+ platform of provider SES ASTRA brings viewers the added benefit of looking for new channels every time the receiver is turned on. To this end, HD+ has come up with its own channel list setup that looks like this:

TV channels 100 to 2,000 and radio channels 100 to 500 are reserved for the automatic ASTRA 19.2° East HD+ channel list for Germany, while channels 1 through 99 can be set according to customer preferences.

By default, Doebis ships the Jaeger HD+ 2011 with pre-set channels from 1 to 57 which include all German free-to-air channels as well as – obviously – all HDTV channels currently available from ASTRA at 19.2° East (see chart). The channel list begins with ARD HD and ZDF HD (the two major nationwide public broadcasting channels in Germany), followed by the six HD+ channels and the remaining German channels. In addition, international channels such as Sky News, CNN and CNBC are also found on the default channel list. If required, the list can be rearranged and edited according to personal preferences, and since channels 1 through 99 are the customer's domain they will never be overwritten if an automatic channel update takes place.

It's a different story for the pre-set channels beginning with 100. They are arranged in the following fashion and cannot be moved, deleted or otherwise rearranged, as they are part of the HD+ channel list:

100-130: ARD (public broadcaster) and regional public channels.



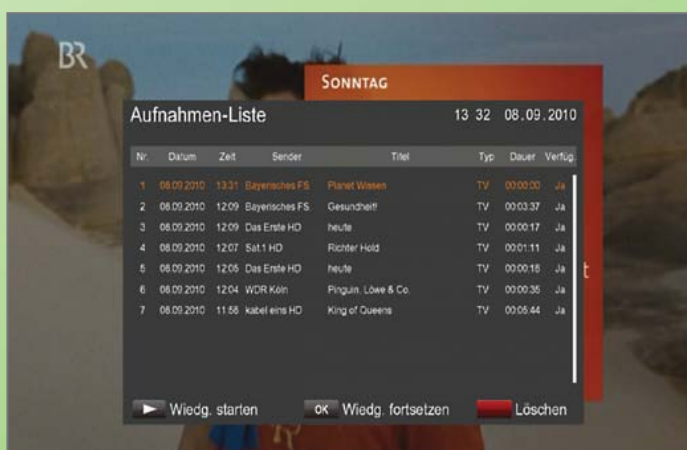
Timer entries can be created manually or via the EPG |



Audio and video settings |



Formatting an external HDD connected to the USB 2.0 interface |



Overview of all available recordings |

150-153: Public broadcasters 3sat, KiKa, Phoenix and arte

200-203: ZDF (public broadcaster) and its three sub-channels

300-315: RTL Group channels (RTL, VOX, n-tv, etc.)

400-411: Sat1/Pro7 Group channels incl. Kabel1 and N24

500-589: All Sky (pay TV) channels

700-702: Nickelodeon, MTV, Viva

730-809: All remaining German free-to-air channels transmitted via ASTRA 19.2° East, including all still-image channels transmitted via ASTRA 19.2° East at 12,633H

900-919: Channels of Austrian public broadcaster ORF

930-978: Foreign-language free-to-air channels on ASTRA 19.2° East (such as TVP Polonia, CCTV F, TVP Info, Russia Today, Arirang TV, CNN, Al-Jazeera, Andalu-cia TV, Cubavision, TV 5, and so on)

1000-1091: All HDTV channels transmitted via ASTRA 19.2° East (free-to-air and encrypted), currently 24 channels (ARD HD, ZDF HD, HD+, Sky HD, Anixe HD, ORF HD)

1200-1206: ARD, ZDF, RTL, VOX, Sat.1, Pro7, Kabel1 (SDTV versions)

1400-1417: Arena

1500-1577: All still-image channels transmitted via ASTRA 19.2° East at 12,246V

If you switch over to radio, the HD+ channel list that is pre-defined and cannot be changed looks like this:

100-160: All German public radio stations

200-214: All German commercial radio stations (Antenne Bayern, Rock Antenne, Deluxe Lounge, Deluxe Radio, Domradio, ERF Radio, Klassik Radio, sunshine live, Teddy, Hope Channel Radio, egoFM, JAM FM)

300-307: All Sky radio stations (German Charts, Rock Anthems, Love Songs, 60/70s, 80/90s, R&B/Hip Hop, Country)

600-612: All radio channel of Austrian public broadcaster

ORF (OE1, all regional versions of OE2, OE3, FM4)

Every time a new German language channel is launched on ASTRA 19.2° East it will be added to the HD+ channel list by provider SES Astra and will be available with the following automatic channel list update. The Jaeger HD+ 2011 will display it accordingly, and since the list is segmented according to provider categories it will fit in perfectly. If so desired by a user, any channel in the pre-set list can be copied into the user list from 1 to 99. Talk about a smart solution!

Incidentally, the channel list features more than meets the eye at first sight. Many channels are not specifically included in the list, but are still available if you know how to find them. If you use the search mode to find all channels starting with 'Kabel 1', for example, the results will also show 'Kabel 1 Austria' on channel 414, which can then be selected and watched. The same is true for 'Sat.1 Austria', 'RTL Austria', and so on. If you think this is somewhat unusual then the answer lies in the HD+ concept: As soon as HD+ will also be offered on the Austrian market the receivers sold there will be pre-programmed to show the Austrian versions of those channels, rather than the Germany versions.

The Jaeger HD+ 2011 offers a dedicated menu for channel management, which shows all available entries from 1 to 99 in the right screen section and the complete channel list on the left section. Thanks to this convenient layout channels can easily be added from the overall list to the customised list. In addition, a total of ten favourites lists can be filled to your heart's content and add much to the overall enjoyment this receiver provides.

All channel entries above 2,000 (TV) and 500 (radio)



An up-to-date channel list is downloaded over the air from ASTRA 19.2° East. LCN stands for Logical Channel Numbers |



Presentation of photos on the TV panel |



Clearly arranged info bar |



EPG mode for a single channel |

can also be customised and are not restricted by the HD+ standard.

The box is able to perform all the search functions we expect from a DVB-S/S2 receiver. It comes with a factory-installed list of all transponders of the 28 most frequently received European satellites. It goes without saying that this list can be edited manually and that new transponders can be added as required.

We did, on the other hand, somewhat regret that the Jaeger HD+ 2011 only offers tone burst and DiSEqC 1.0 for up to four satellites, and DiSEqC 1.2 for motorised antennas. Unfortunately, the hugely convenient USALS protocol and DiSEqC 1.1 for up to 16 satellites are not available. On a positive note, we appreciated the fact that the LOF can be determined individually for each satellite entry based on a number of pre-set options or with manual setting. This makes the Jaeger box perfectly suitable for C band reception as well.

Thanks to manual transponder search it is possible to look for signals on a specified frequency only and to edit the pre-set transponder list. Any new frequencies can be added without much ado and a touch of a button is all it takes to delete any discontinued transponder entries.

If you prefer an automatic search – as most will do – the Jaeger HD+ 2011 can be set for network search mode or restricted to free-to-air channels only. This is particularly useful as all encrypted channels will find their way into the automatic HD+ channel list anyway and there are no other decryption options (such as an additional CI slot) available anyway.

If so desired, an automatic search can be defined to cover TV, radio, or both.

In our test the Jaeger HD+ 2011 took more than 25 minutes for a full scan across all HOTBIRD 13° East bands, which is not exactly an Olympic achievement. Then again, most users will only ever use the HD+ channel list which is kept up-to-date and very accurate anyway.

Like all other receivers we test the Jaeger box, too, had to prove its worth with regard to very weak signals. We used BADR at 26° East for that benchmark test and found that the integrated DVB-S/S2 tuner did a remarkably good job. The same was true for signals with a very low symbol rate (like the ones from TURKSAT 42° East at our location), which were processed flawlessly as well. It only took a moment before the 11,742 V frequency was locked in with a symbol rate of only 2,965 ks/s.

All entries of the individual channel list (2,000 and above for TV, 500 and above for radio) can be deleted, moved or marked for skipping as required. Entries on the HD+ list, on the other hand, can only be marked for skipping without any other editing options. Optional PIN protection is available for all channels if you feel some channels are not appropriate for children or minors living in your household. Altogether the channel list consists of 5,000 entries, and even if we reduce that number by the channels that are pre-defined through HD+ that will still leave you with 2,700 entries to fill.

In Systems Settings – which is the third major menu item next to Channel Search and Channel List Editing – users can customise their newly acquired box according to personal preferences. Even though the new Jaeger HD+ 2011 is specifically targeted to the German market the OSD languages to choose from are German, English, French, Spanish, Italian, Turkish, Russian, Polish and

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Dutch. At the same you may also define your preferred audio track languages in case a channel broadcasts more than one. When you want to tell the receiver which time zone you are in you need not know your local difference to GMT but rather select your zone from a list of well-known European cities.

Continuing with audio/video settings, the receiver can be told which signal resolution your TV panel prefers so that you always get the best quality on screen. We should emphasise the fact that the Jaeger HD+ 2011 already supports 1080p, which means it is fit for the future of satellite television even today. Obviously 1080i, 720p, 576p, 576i as well 480p and 480i can be chosen as well. The receiver automatically detects the colour standard of a received channel and adjusts the output signal accordingly.

No matter whether you have a 4:3 or 16:9 TV set, the box will deal it with it, and you may define the way 16:9 broadcasts are displayed on a 4:3 set.

Thanks to the integrated scart euroconnector RGB and CVBS are available for analog signal output and a separate menu item let's you add or

edit up to 50 timer entries.

Once all basic parameters are set pressing the Exit button will bring you to the first receivable channel on the list. Every time a new channel is selected the Jaeger HD+ 2011 inserts an info bar on the bottom of the screen which includes date, time and information on the current and next event, if this information is provided. There are icons indicating encryption and the availability of subtitles, audio tracks as well as teletext.

Press the OK button and the clearly arranged channel list will pop up, with ten channel entries per page. Using the green and yellow function keys you may select individual satellite entries, while the Text button opens up a search mask which you can use find that particular channel you're looking for. The Favourite button accesses up to ten favourites lists which you can arrange in any fashion you like.

The Jaeger HD+ 2011 zapping speed is approximately one second for free-to-air SDTV channels. Switching to HDTV or encrypted channels takes slightly longer. We were truly impressed with the video performance of this receiver,



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even though most material on HD+ channels currently is upscaled SD content. Every time native HD is broadcasts your eyes are virtually glued to the screen – watching TV has never been more brilliant!

If you're interested in finding out more about the event you're watching or even want to check what's on TV later at night or the next day the EPG button will become your best friend. Press it once for extended information about the currently showing event and press it again to see a preview of the selected channel for up to seven days. If you press the EPG button yet again a preview schedule of five channels at a time appears on screen. In next to no time can you then find out what your favourite channels will show in primetime, or when the next episode of that crime drama is on.

No matter which EPG mode you're in, if you come across an event that's not to miss you can easily create a timer entry by simply pressing the blue button. This is a particularly smart feature considering that an external HDD can be hooked up to the Jaeger HD+ 2011 thanks to the USB 2.0 interface. If you make use of that option you're not only able to record content, but also use the timeshift viewing feature – at least for free-to-air channels. So next

time your mother-in-law calls simply press Pause and pick up the phone – that way you'll both be happy and you can continue watching whenever you feel like. As mentioned before, this feature is not available for channels on the HD+ platform.

By and large, all PVR features of the new Jaeger receiver are cleverly implemented and easy to use. The box boasts a single tuner only, which is why it is not possible to watch a channel from a different transponder while a recording takes place. If the recording is made from an encrypted HD+ channel it is not possible to watch a different channel at all, just as is it not possible to make two recordings at the same time. A previously stored event, however, can be played back at any time during recording.

The Movie button on the remote control – or the corresponding menu item in the on-screen display – brings you to the content of the external HDD. Here again, the display sports a clever layout, is more or less self-explanatory and also provides details such as recording date, length and originating channel for each recording. There is even an integrated picture viewer for presenting photos of your journey around the world or any other event in your life. You and your guests



Model: S1-33HD

- .MPEG2/MPEG 4 / H.264
- .Linux Operation System
- .2 Common Interface Plus (CI+) & Conditional Access
- .TWIN TUNER
- .LAN (web browser, YouTube, Internet Radio, VFTP, SMB)
- .CEC (Consumer Electronic Control)
- .USB PVR/USB Update/ USB Wifi/ Keyboard Connection (4*USB Available)
- .Timeshift supported
- .Unicable supported
- .Multi-media (mkv, avi, mov, flv, mp4, jpg...)
- .10/13 digits VFD and LCD Display Optional
- .Extension to ISDB-T, DVB-T, DVB-C HD, and Combo Optional
- .CE & RoHS, LPC, EuP, FCC, Reach Compliant



Satellite Meter/Terrestrial Meter



LCD TV | Digital TV with DVB-S/T/ S2/ISDB-T Build-in/Removable



Display Size
● 26"
● 32"
● 42"



Some PVR functions are not available for HD+ channels |



Audio track selection |

will definitely enjoy a larger-than-life presentation on your TV panel.

Simply copy the pictures onto a USB storage medium, plug it in on the receiver's back panel and you're ready to rumble. Images can easily

be rotated with the touch of a button so that both portrait and landscape formats come out as best they can.

If you connect an external HDD to the Jaeger HD+ 2011 for the first time or want to completely erase one you

may make use of the formatting feature which can be accessed through a dedicated menu item.

You may also have the receiver manually check for new software or channel lists, even though this is done every time you power up the box anyway. The current channel list can be saved onto any external USB storage medium for back-up purposes and to provide a safety net in case you inadvertently delete a channel or make a mess out of your list.

If video games is what you're after then prepare yourself for a minor disappointment – there are none. You may, however, use the built-in teletext decoder to read the news during commercial breaks, for example, which is much more worthwhile anyway.

The teletext display only covers about half the screen so you can always keep an eye on the current channel in order not to miss a thing. Finally, there was another nice surprise waiting for us: Power consumption of the Jaeger HD+ 2011 in standby is extremely low. The manufacturer specifies 1 W, and our own measurement yielded an even lower 0.8 W! We like

that because in what's good for the environment is just as good for your wallet.

In conclusion we can say that the Jaeger HD+ 2011 fulfilled all our expectations. We're talking about a HDTV satellite receiver the whole family will like, that will fit into any lounge room surroundings, and that offers all the features an average family will ever want. With its 1080p HDMI output it is well ahead of many competitors and ready for the future of high-definition satellite television.

The box is characterised by smart user-interaction and will be understood by the technically challenged as well. HD+ compatibility allows reception of the HDTV variants of Germany's major commercial networks and the built-in PVR functions work flawlessly. It has to be said, however, that users might require some time before they will get used to all HD+ restrictions. In our test, for example, we were not able to skip commercial breaks on HD+ channels – but then again, that is precisely why HD+ was developed in the first place. Nonetheless, the overall impression of the Jaeger HD+2011 is unreservedly positive.

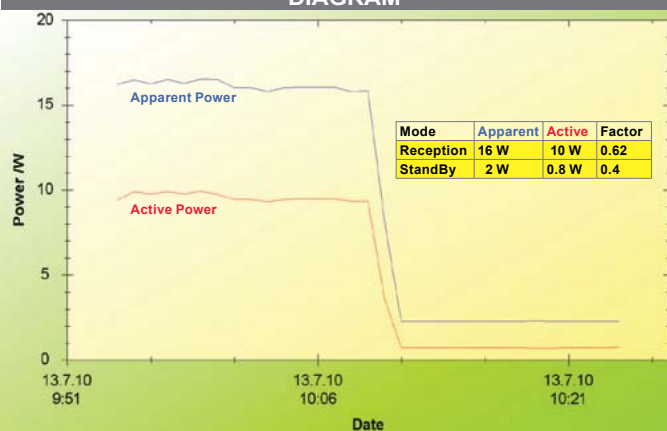
JAEGER



HDTV channels on ASTRA 19.2° East which can be received with the Jaeger HD+ 2011

Channel Name	Frequency [GHz]	Polarisation	Modulation	Symbol Rate
Free TV				
Servus TV HD	11.303	Horizontal	DVB-S2/8PSK	22.000
Das Erste HD	11.362	Horizontal	DVB-S2/8PSK	22.000
ZDF HD	11.362	Horizontal	DVB-S2/8PSK	22.000
ARTE HD	11.362	Horizontal	DVB-S2/8PSK	22.000
Eins Festival HD Promo	12.422	Horizontal	DVB-S/QPSK	27.500
Anixe HD/ HD+ Promo	10.832	Horizontal	DVB-S2/8PSK	22.000
Pay TV [Germany only]				
RTL HD	10.832	Horizontal	DVB-S2/8PSK	22.000
VOX HD	10.832	Horizontal	DVB-S2/8PSK	22.000
SPORT1 HD	10.832	Horizontal	DVB-S2/8PSK	22.000
Sat.1 HD	11.464	Horizontal	DVB-S2/8PSK	22.000
ProSieben HD	11.464	Horizontal	DVB-S2/8PSK	22.000
kabel eins HD	11.464	Horizontal	DVB-S2/8PSK	22.000

ENERGY DIAGRAM



Initial 15 minutes: Receiver boots, followed by active use with channel switching, recording, playing back, etc.
Following 15 minutes: Standby

Expert Opinion

+

Perfectly fit for the future of satellite television thanks to 1080p
Reception of channels on the German HD+ platform with integrated card reader
Well-conceived menu structure and easy to use
Elaborate PVR functions
Very low power consumption in standby



Thomas Haring
TELE-satellite
Test Center
Austria

-

Two simultaneous recordings are not possible
No DiSEqC 1.1 and 1.3 (USALS)

TECHNICAL DATA

Manufacturer	Jaeger / Doeblis GmbH, Dr.-Günter-Henle-Straße 4, 56271 Mündersbach, Germany
Fax	+49 (0) 2680/9879-19
E-Mail	info@doebis.de
Model	Jaeger HD+ 2011
Function	Digital HDTV DVB-S / DVB-S2 Receiver with Smart Card reader for HD+
Channel Memory	5000
Symbolrate	1-35 Ms/sec.
SCPC Compatible	yes
DiSEqC	1.0 / 1.2
USALS	no
HDMI Output	yes
Scart Connector	yes
Component Video Output	no
S-Video Output	no
UHF Modulator	no
0/12 Volt Connector	yes
Digital Audio Output	yes
EPG	yes
C/Ku-Band compatible	yes
PVR-Function	yes
USB 2.0 Connector	yes
Ethernet	no
E-SATA	no
Dimensions	280x170x45mm
Weight	0.9 kg
Power supply	220-240V, 50/60 Hz

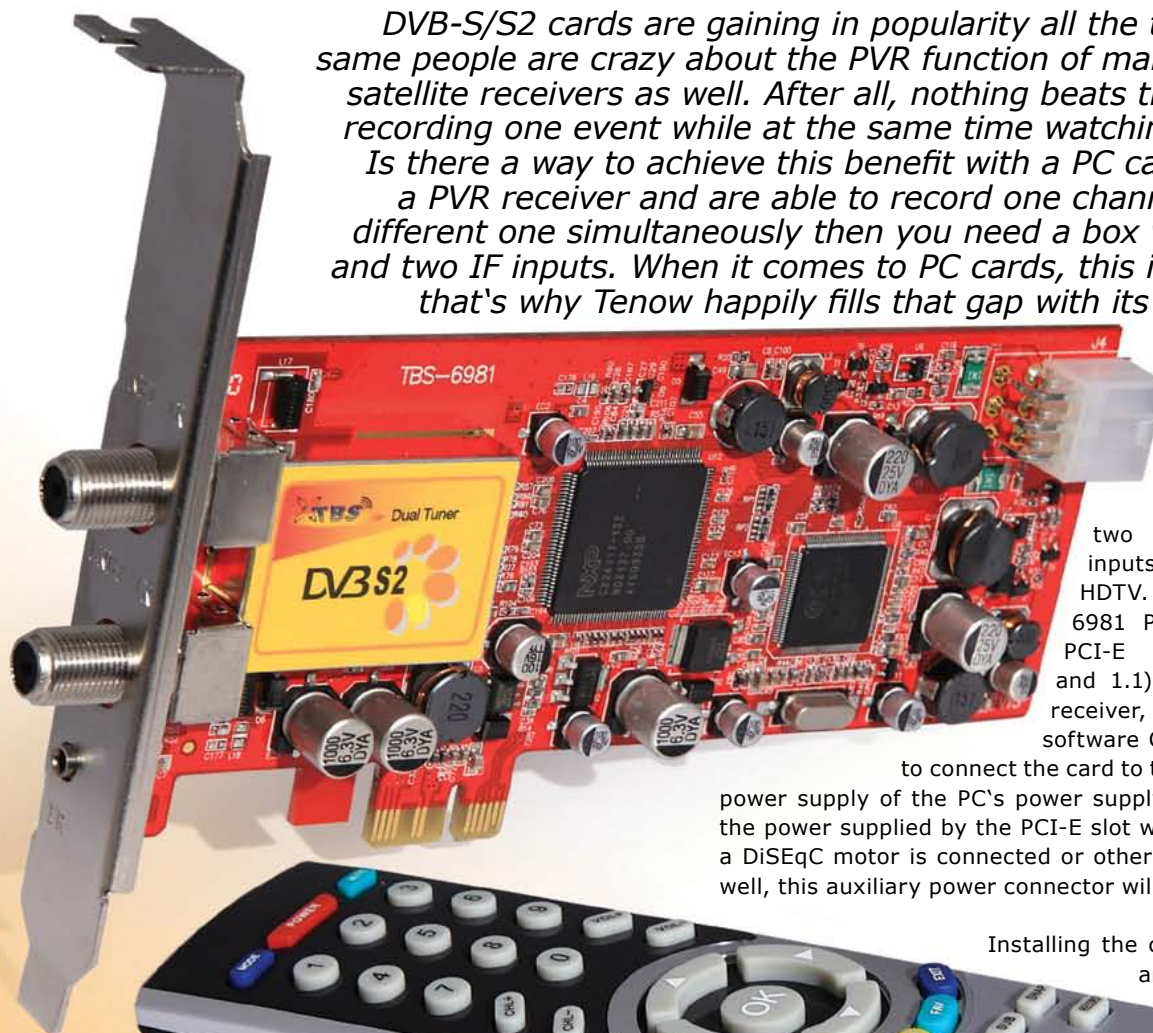




Tenow TBS 6981 DVB-S/S2 Dual Tuner PC Card With Twin Tuner Function

DVB-S/S2 cards are gaining in popularity all the time, but at the same people are crazy about the PVR function of many conventional satellite receivers as well. After all, nothing beats the possibility of recording one event while at the same time watching another one.

Is there a way to achieve this benefit with a PC card? If you have a PVR receiver and are able to record one channel and watch a different one simultaneously then you need a box with two tuners and two IF inputs. When it comes to PC cards, this is very rare and that's why Tenow happily fills that gap with its new TBS 6981.



The Tenow PCI-E is DVB-S and DVB-S2 compatible and hence features two DVB-S/S2 satellite inputs for both SDTV and HDTV. Apart from the TBS 6981 PC card (suitable for PCI-E slots version 1.0a and 1.1) you get an infrared receiver, a remote control, a software CD and a power cable to connect the card to the corresponding IDE power supply of the PC's power supply unit. In most cases the power supplied by the PCI-E slot will be sufficient, but if a DiSEqC motor is connected or other cards draw power as well, this auxiliary power connector will come in quite handy.

Installing the card does not require an engineering degree

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Available online starting from 3 December 2010

and thanks to its compact size it will even fit into devices with restricted space. Once the two tuner inputs are connected to the signal input cables all you need to do is connect the IR receiver to the socket next to the IF inputs to get started.

The remote control that comes with the card sits nicely in your hand and allows controlling the TBS 6981 without having

to get up from your lounge room sofa. The manual is available on the mini CD in PDF format.

Tenow lists the following specifications for DVB-S reception: Intel Pentium III 1 GHz with 256MB RAM and a graphics cards with 16MB RAM. If you're after DVB-S2 signals you need to make sure to provide at least an Intel Pentium IV 3 GHz processor with 1GB RAM and a graphics card with a minimum of 64 MB RAM. Tenow made the card compatible to the Windows XP, Windows Vista, Windows 7 and even Linux operating systems - the latter even for the latest Linux kernel.

Now that we had installed the card in our test PC and connected all required cables we proceeded with driver installation. Shortly after the CD is inserted an autostart wizard opens up on screen with all available options. A single mouse click is all it takes to start driver installation and a short while later Windows displays a message stating that new hardware was detected and is ready for use.

For all the Linux enthusiasts out there: Tenow even provided Linux drivers and made the card fully compatible to the latest Linux kernel.

On the software front Tenow supplies its own TBSViewer presentation application, but also offers the DVB Dream software on the CD as an alternative. We should not fail to mention at this stage that the card worked flawlessly with the hugely popular ProgDVB application as well and the manufacturer provides all necessary configuration files on the included CD. Windows Media Center (as included with Windows 7, for example) is supported, too.

It's basically up to the end user which software is paired to the Tenow card, and this is one of the major benefits of PC card solutions as opposed to set-top boxes, which – in most cases – can only be used with a single manufacturer-supplied firmware. For the purpose of this test report, however, we decided to stick to the software shipped by Tenow. In our case the TBSViewer came with a pre-stored channel list of ASTRA 19.2° East, HOTBIRD 13° East, ASTRA3 23.5° East and ASTRA2 28.2° East which meant we were ready to party right away.

The OSD can be displayed in the following languages: English, German, French, Czech, Hungarian, Italian,

Polish, Portuguese, Russian, Finnish and Ukrainian. A list of 176 European, Asian and American satellite positions complete with their transponder data is available, even though this information is not completely up-to-date.

All LOF parameters can be set manually, so that the PC card will work with all available LNBs. If your reception system includes a DiSEqC 1.0 switch for reception of up to four satellite you will be happy to find out that the Tenow card will nicely deal with this setup.

Surprisingly, the Tenow TBS 6981 even works smoothly with the SCR single cable solution, which is supported. The 22 kHz signal to switch between the upper and lower frequency band and the supply voltage for the LNB (13V for vertical/left circular signals and 18V for horizontal/right circular signals) work as expected and required.

Tenow offers three search modes: Automatic search looks for all transponders on the pre-stored list, manual search can be used to scan a single transponder which will then be locked.

We were impressed with the search speed of the TBS 6981, which only took three and a half minutes to scan 1.734 TV and radio channels on HOT-BIRD at 13° East. Every search can be restricted to free-to-air channels only, which is particularly helpful as the PC card does not come with a CI slot for pay TV reception.

You might wonder now what the third search mode is, since we have only mentioned automatic and manual so far. It's a kind of blind scan mode and requires a start and end frequency plus the preferred scanning step parameter as well as all symbol rates that should be used. For our test we tried out this feature for the complete frequency range of the HOTBIRD satellites at 13° East with steps of 5 MHz and for symbol rates of 27.5 and 22 Ms/s.

It turned out that this search mode really detected all active transponders in the pre-defined frequency range, but it also seemed to be an endless procedure and after one hour we were only halfway through our frequency range so that we decided to cancel the search. By that time close to 2,000 TV and radio channels had been detected and stored in the memory.

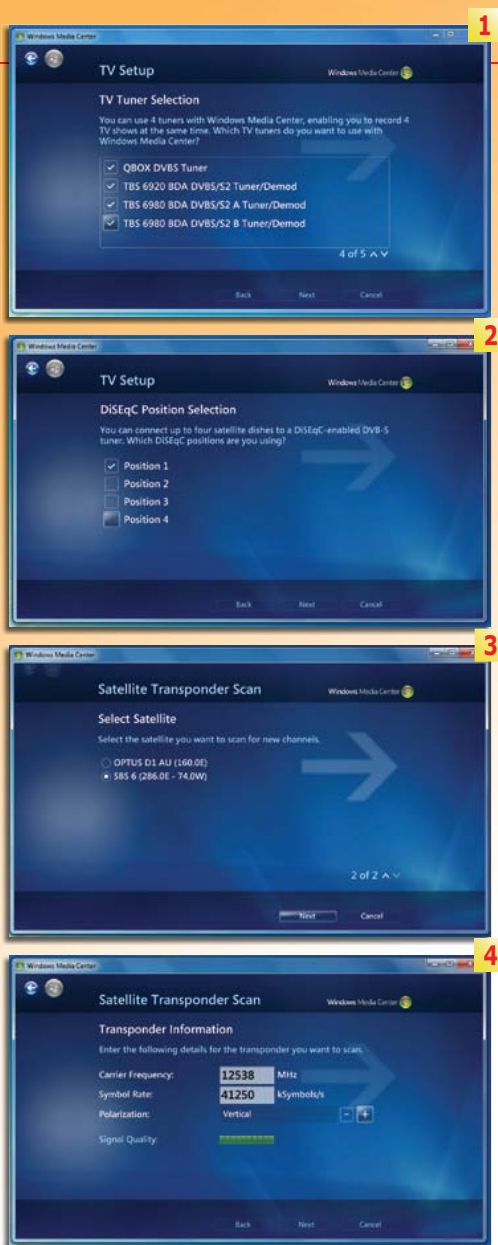
We recommend using this feature for checking smaller frequency ranges only



1. Right after inserting the CD its content is presented in a pleasing design
2. Clearly arranged channel list of the TBSViewer
3. Favourites list for finding your preferred channels with a single mouse click
4. All functions can be called up by right-clicking your mouse

(in order to look for feeds, for example), as it is a great way of keeping your channel list completely up-to-date.

When we checked out EBU feeds on EUTELSAT W3A a 7° East we were able to detect all active feeds in about a minute's time. We should also give special praise to the software's update feature which keeps the channel list up-to-date and adds newly found channels without messing up the existing list. You may



1. Windows Media Center detects and support the PC card
2. DISeqC 1.0 is available
3. Automatic satellite search in Windows Media Center
4. Manual search Windows Media Center

even create a dedicated section which saves all new channels according to the date on which they were detected. This helps tremendously when you look for a channel that was added to your overall list only recently. Once the channel list is filled to the brim with all offerings from the sky you can leave the settings menu with another single mouse click to change to the TBSViewer which shows the first available channel.

The software can be activated automatically by moving the cursor to the upper right corner of the window. A tree structure lists all channels according to satellites and providers, so that your desired channels can be found in next to no time at all. Alternatively, you can always use the search field to look for your favourite station. A favourites list can be opened by clicking on a small button next to the search window and

there you can save all those channels you watch on a regular basis.

We hugely appreciated the way Tenow has implemented audio selection. As soon as you select a channel from the list all available audio tracks are shown right beneath the channel entry. You don't have to go to a dedicated menu to switch between audio tracks but have all the information right in front of your eyes.

It seems the Tenow software developers had user-friendliness in mind when implementing this feature, and if you want to watch a movie in its original language every once in a while you'll be very thankful for that.

Channel editing and sorting can also be done right in the selection window which means all options are available right when and where you need them. You may filter channels according to certain characteristics (AC3 audio, for example) or according to provider, satellite or category. If you want to add even more clarity to your overall channel list you may hide all encrypted channels with a single mouse click.

Every time you switch to a new channels the software automatically inserts a cleverly-designed OSD bar with information on the current and next event, if provided by the channel. Switching times are fast, considering we're talking about a PC card solution here. A little over a second is all it takes for a new channel to be available on screen with synced video and audio.

The extended EPG is one more feature deserving special mention. Timer entries can be selected right in the EPG mode so that users have at their disposal an electronic TV guide in which events can be selected for recording without any detour.

What differentiates the TBS 6981 from most PC card competitors is its second tuner, and once you are aware of all its benefits you would not want to do without any more. It allows recording a channel while at the same watching another channel live. It is even possible to perform a search on tuner 2 while watching live TV on tuner 1.

With the integrated picture-in-picture feature it is easy to watch a second channel in a smaller window during a commercial break on your main channel, for example. No risk of missing a second of your favourite show anymore,

and no more twiddling your thumbs when you wait for the break to finally be over. Teletext is available as well and it is implemented flawlessly with all features you'd expect.

Still, all those nice and useful features would be plainly worthless without capable tuners in the first place, which are at the heart of any receiver or PC card. No need to worry about the TBS 6981, though, whose tuners effortlessly pulled in any DVB-S and DVB-S2 signal we threw at them. Weak signals close to the tuners' threshold – like the ones from BADR at 26° East at our location – posed no problems and did not cause any software freezes, even when the integrated Viterbi error correction had to work overtime for a prolonged period of time.

The SCPC test was passed with flying colours as well and the tuners managed to flawlessly lock and process signals from our test transponder on TURKSAT 42° East with a symbol rate of only 2.2 Ms/s.

In our test center we intentionally used a somewhat outdated Pentium IV processor for this report. After all, not all our readers will be equipped with the latest state-of-the-art computer. Even though our machine was on the lower end of the manufacturer's specifications we were still able to watch HDTV from a DVB-S2 signal while at the same time performing other office tasks on the PC. Obviously both the processor and the graphics card had to give their best, but they still had extra capacity for reasonably working with the machine. All video was always presented interference-free, no matter whether it was HD or SD.

If you prefer to use the remote control that comes with the package for software control rather than your keyboard and mouse you'll be pleased to learn that it works perfectly with the PC card. What's more, when we connected a 40-inch flat screen TV to the PC via DVI the presentation mode of the TBSViewer delivered excellent video quality on a par with conventional set-top boxes.

If required, the TBSViewer features a complex range of detailed setting options. To give just one example, different codecs can be selected for video playback, depending on the file format. This makes sure the TBSViewer is able to handle various video formats such as MPEG-2, H.264, DivX or XviD, among others.

It is even possible to process feeds that are transmitted in the MPEG 4:2:2 studio format after you have downloaded the Elecard codec which is available free of charge from www.elecard.com. This feature will probably put the Tenow card right in the top spot of any DXer's and feedhunter's pick list.

In the settings sections you can of course customise all the basic functions of the card to meet your individual requirement, like defining a lead and lag time for timer recordings, split recordings into files with identical size, and defining one of the two tuners as standard tuner. When using the TBSViewer you will find out it is capable of processing a whole range of different formats, including MPEG, DivX, Video CD, AFS, WMV, WMA, OGG and OGM. This allows you to watch almost all video content, not just transport streams from satellites.

A time bar which is located on the bottom section of the video screen allows jumping to any sequence during playback of a recorded event, or indicates the progress of a live event. All satellite recordings are saved in the universally and generally used transport stream format so that they can easily be edited and saved on DVD, for instance.

Apart from its in-house presentation software Tenow also supplies the DVB Dream software on CD, which is similar in features to the TBSViewer. In addition, the CD comes with configuration files for the popular ProgDVB application, making the TBS 6981 PC card a perfect match for that software as well.

We truly loved that the new TBS card

works with the Windows Media Center as well, a software suite that comes with Windows 7, for example. User preferring this well designed and fully integrated software are free to go for it, since our test proved this combination to be absolutely worry-free. That's how plug&play is supposed to work! In the end, it's up to the user to choose their preferred software. The main point is that the manufacturer presents us with various options, which is always welcome.

There's one more plus of the TBS 6981 dual tuner card which should not go unnoticed: One tuner can be set apart for Internet-via-satellite, while the second tuner takes care of TV and radio reception from satellites.

Readers using Internet-via-satellite will be aware of the constant struggle of deciding between Internet and TV, and finally the TBS 6981 makes this a thing of the past. The manufacturer provides specific software for Internet access which acts as a virtual network adapter in Windows and accesses the world wide web via satellite once all required parameters (frequency, polarisation, symbol rate, account data, etc.) are entered correctly. Naturally, we tried that out as well and can state that we found nothing to complain about.

Even when recording in the background the system was totally unimpressed, just as it was possible to watch a HDTV channel while surfing on the Internet via satellite at the same time.

- 1. Extended EPG with events for several days
- 2. Various codecs to choose from
- 3. Internet via satellite

Expert Opinion

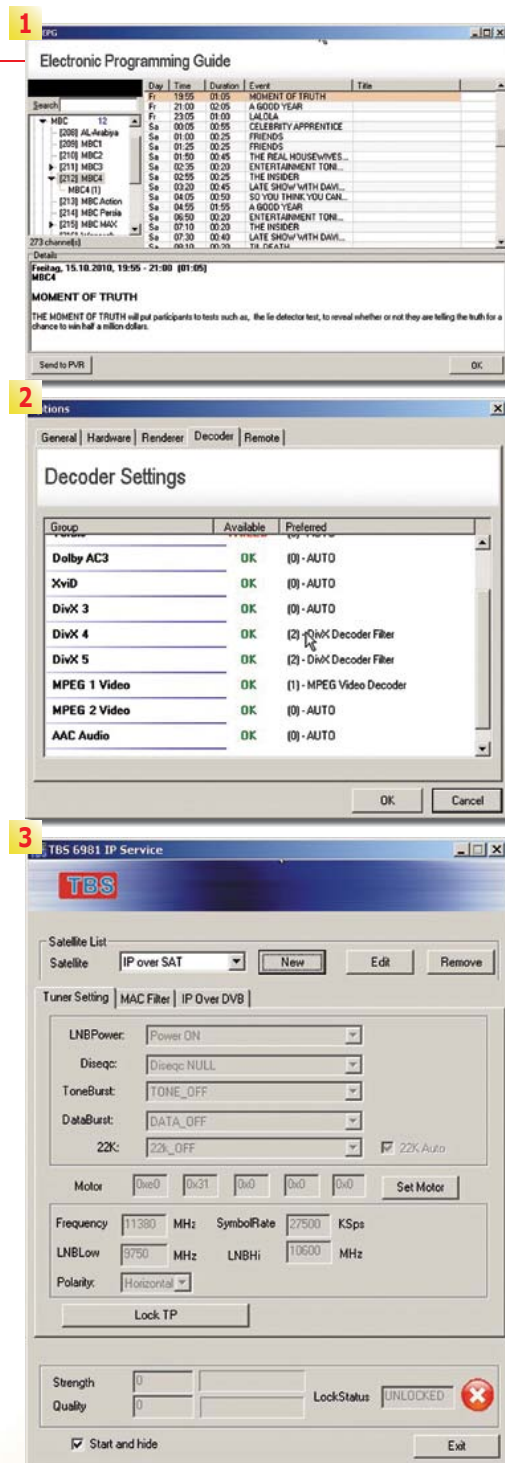
+

The Tenow TBS 6981 DVB-S/S2 Dual is an extremely versatile PC card thanks to its second tuner. It allows simultaneous recording and watching of two different channels, or TV reception and Internet-via satellite at the same time. The provided software, which is not only usable with Windows but also with Linux, comes with a wide range of features and left us with a very stable and sophisticated impression. Thanks to its BDA compatibility the card can be used in combination with alternative viewing applications such as DVB Dream, Prog DVB or Windows Media Center. The Tenow TBS 6981 comes with a remote control for accessing all functions of the card from your living room sofa and delivers a top-quality signal for your LCD or plasma panel. You will not notice a difference to conventional set-top boxes.

No audio output, no CI slot for pay TV reception.



Thomas Haring
TELE-satellite
Test Center
Austria



TECHNICAL DATA

Manufacturer	Tenow International Ltd, Unit C-8A, Shennan Garden Building, High-Tech Park, Shenzhen, CHINA
Tel	+86-755-26501345 or 26501201
Email	sales@tbsdtv.com
Website	www.tbsdtv.com
Online Shop	www.buydvtb.net
Model	6981 DVB-S / DVB-S2 Dual Tuner
Function	PCI-E card for SDTV and HDTV with two separate tuners and PVR, compatible with Windows and Linux operating systems
Channel memory	unlimited
Satellites	176
Symbol rates	1-45 Ms/sec. (QPSK), 10-31 Ms/sec 8PSK
SCPC compatible	yes (tested > 2.2 MS/s)
DiSEqC	1.0, 1.1, 1.2
SCR	yes
EPG	yes
C/Ku-Band compatible	yes
Audio output	no

SVEC 1.2 m VSAT Dish

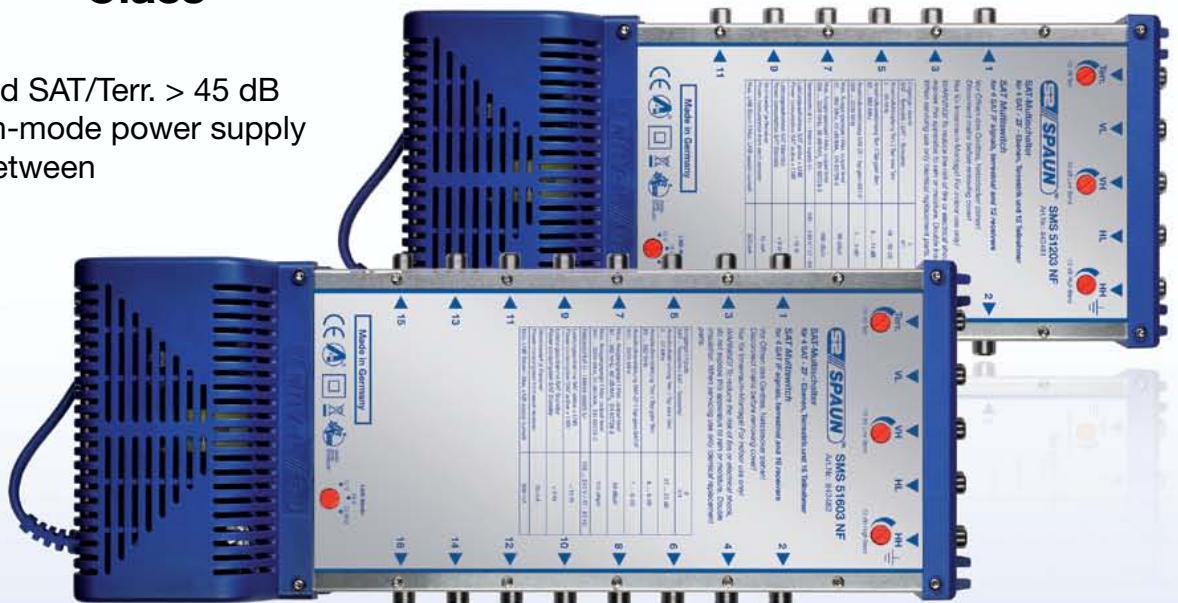
Internet via Satellite - It's Easier Than You Think



Once you are accustomed to the Internet, you can hardly think of not having access to it for a longer period. However, there are still locations, even in most developed countries where there is no telephone line available. Are the GSM operators the only possibility then? Not exactly - we can think of two-way satellite connection instead. Receiving IP data via satellite is not that different from receiving A/V transport stream. Bits are bits and bytes are bytes.

The new *premium* -Class

- Excellent selection:
Terr./SAT > 40 dB and SAT/Terr. > 45 dB
- Energy saving switch-mode power supply
- High output levels between
102 and 108 dBμV



Optical Transmitter

- Frequency range of 47 ... 2200 MHz
- Laser output power: +6 dBm

Optical Receiver

- 4-way / 1-way in a compact housing
- Remote power through one coax output possible



SPAROS 611 CA HD

- HD-Display (MPEG4 H.264)
- Integrated Multidecryption CA-Module
- Return path measurement
- Constellationdiagram for all
DVB standards



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Available online starting from 3 December 2010



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SVEC

Professional Dish Manufacturer, China



www.svec.com.cn



www.TELE-satellite.com/TELE-satellite-1003/eng/svec.pdf

Except for having a DOCSIS modem, an LNB, a BUC (Block Up-Converter) and a subscription from a service provider, you need to have

a suitable dish. Such a dish should be much stronger than the one dedicated for reception only. That's because the LNB/BUC unit is big and

heavy. BUC consumes about 30 W of electric power and must be equipped with a big and heavy heat sink.

But do not forget that from the professional perspective, "very small aperture" means smaller than 3 meters.

Installation

Moreover, the dish must guarantee the proper geometry and stability of alignment because if not, it will be transmitting interfering signal to the neighboring satellites. No wonder that such dishes are bigger and more solid than the ones satellite enthusiasts are familiar with. Those dishes are often called VSAT dishes. VSAT stands for Very Small Aperture Terminal and means a two-way satellite ground station. This may sound rather funny as the dishes are bigger than the regular 60 or 90 cm reception antennas.

The parcels containing the components of the SVEC dish were big and heavy. No wonder, everything is made of steel. After unpacking and examining the components, we concluded with satisfaction that the assembly should be quite easy. And indeed, it was. Even without any assembly instructions, it was not difficult to figure out what should be connected with what. Everything fitted very well, except from one small detail. We could not figure out how to fit the two BUC/LNB side supports. After a while, we realized that the brackets attached to the dish edges that were supposed to be connected with the LNB supports are mounted upside down. When we re-assembled them in the correct way, eve-

	Standard 1 m dish	SVEC 1.2 dish
Channel Power	73.6 dBμV	74.2 dBμV
C/N	13.3 dB	13.5 dB
MER	12.4 dB	12.8 dB
Link Margin	5.2 dB	5.6 dB
CBER	9×10^{-5}	5×10^{-5}

■ Table 1. Comparison of SVEC dish with the regular dish used for the service in Poland. EUROIRD 3 on 33° E, 12522V, 27500, 5/6.



rything was OK and no further problems popped up.

Due to the size and weight of the hardware, you need a helping hand in some operations – for example when mounting the reflector on the pole. Speaking of the pole, it has a very practical three-leg base. Even if the surface is not quite flat and horizontal, you are able to adjust every leg independently and ensure that the pole is perfectly upright.

We loved the azimuth adjustment mechanism. It is really a dream when compared with the regular reception dishes. You set the antenna roughly in the proper direction and then you rotate the lever what makes the dish turn East or West. In this way, you can adjust the azimuth with absolute precision.

Elevation adjustment is more classical – a long thick

screw with two fixing nuts. We can assure you that this adjustment is also very precise and you can tip-toe the elevation as well as the azimuth.

LNB/BUC holder with a feedhorn and waveguides accepts standard reception and transmission units. It separates the polarizations - in our case vertical polarization was used for the reception and horizontal for transmitting the signal. It also allows you to adjust the tilt of a BUC/LNB set. We needed to set 10° tilt and it was no problem.

After installing BUC and LNB, we turned the antenna roughly in the direction of EUROIRD 3 on 33° E which was the satellite our Internet provider was using for their service. After connecting a satellite signal analyzer to the LNB output, we immediately saw a signal in

the spectrum view. We ran satellite identification function and, to our surprise, it was EUROIRD 3. Then we checked the parameters of the transponder and it so happened that our spectrum view was exactly centered on the right transponder. Unbelievable! The only thing left was fine-tuning of azimuth, elevation and tilt.

When everything starts much better than you expected, better be cautious. Murphy Law is waiting to hit you even more severely. And indeed, our DOCSIS modem could not lock to the service. The receiving LED indicator was blinking, the transmitting LED indicator was blinking and we could not connect to the Internet. After double checking everything we phoned the operator. After a while they called back with the message they could not lock to the signal either. They said that evidently some-

thing was wrong with the uplink and they would investigate the problem abroad. After half an hour or so, they called back again saying that their modem had locked. Quick check revealed that our modem had locked too. Finally, we had access to the Internet via satellite.

Performance

We checked what the download and upload speeds were and we got: 2849 kb/s and 160 kb/s. The figures were in line with the connection specification we had from our provider. A small delay before the start of the download was noticeable but this is normal in satellite communication. After all, the satellite is 36000 km up there and some data buffering must also take place when error correction schemes are used.

But how to assess the quality of the connection? We decided to compare the incoming



signal when received with SVEC 1.2 m dish and when received with the regular 1 m dish you get when you subscribe to this service at our location in Poland.

As you can see in the table, SVEC dish delivered stronger signal of better quality. It is especially visible in the Channel Bit Error Rate. It was almost twice as good as

the reference. For the readers not familiar with the term: the lower the CBER, the fewer erroneous bits that need to be corrected by the modem.

Also the link margin increased from 5.2 dB to 5.6 dB and you should know that 5 dB is already considered as very good. We can be sure that with the SVEC dish our Internet connection will be almost completely insensitive to whether conditions.

We had no possibility to measure the transmitted signal but the performance of the SVEC model must be better than the reference in

the same ratio. That's physics. We can say so because both LNB and BUC use the same feedhorn located in the same position with respect to the reflector.

Our test revealed that SVEC 1.2 m antenna is very good (if not too good) for the casual Internet access in Poland. In the other regions of the world where the signal is not that strong, using 1.2 m dish instead of 1 m can make a difference. Our measurements proved that the gain of the dish is big. It means that its geometry leaves nothing to be desired. The SVEC 1.2m dish is a perfect choice for using it with VSAT.



Expert Opinion

+

Very solid, excellent azimuth adjustment mechanism, very good adjustable three-leg pole base.

-

It might be too heavy for some applications.



TECHNICAL DATA

Manufacturer	Sichuan Video Electronic Co., Ltd.
Web page	www.svec.com.cn
Email	svec@china.com
Fax	+86-028-87838898
Model	VS-1.2KU
Description	VSAT Dish for Ku-Band
Dish Size	120 cm (49 Inch)
Frequency Range	Receiving: 10.95 – 12.75 GHz Transmitting: 13.75 – 14.50 GHz
Mid Band Gain	Receiving: 41.5 dBi Transmitting: 43.1 dBi
VSWR	Receiving: 1.5 : 1 Transmitting: 1.3 : 1
Cross Polarization	-20 dB off axis, -30 dB on axis
Sidelobe Envelope	2° < 0 < 20° : 29 -25 log 0 dBi 20° < 0 < 26.3° : -3.5 dBi 26.3° < 0 < 48° : 32 -25 log 0 dBi 48° < 0 : -10° dBi on average
Noise Temperature	<55K at 20° elevation
Dish type	Prime Focus and Offset Feed
Waveguide Flange	WR75
Reflector Material	2.0mm Aluminium Plate
Mount Type	Elevation over Azimuth
Mast Size	3.5 Inch outer diameter
Azimuth/Elevation Adjustment	Azimuth: 0° - 360° Elevation: 5° - 90°
Weight	27 kg (60 lb)
Wind Load	Operational: 80 km/h (50 mph/h) Maximum: 200 km/h /125 mp/h)

HORIZON

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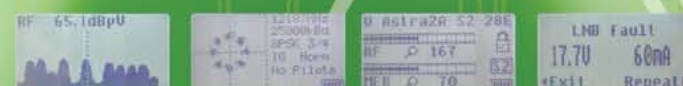
Combo



DVB-Terrestrial



DVB-Satellite



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SPAUN SOTx1310607 NF & SORx1310607 NF

Straightforward Solution for Optical Fibers in Satellite Signal Distribution



The attenuation of signal switches and coaxial cables themselves in large satellite TV distribution systems is a factor every installer must take into account. Less experienced readers might think that one can compensate for that by inserting extra amplifiers in the signal paths. But it helps only to some extent; we can maintain reasonable signal level but can not prevent signal quality degradation.



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■ Building Blocks of Hybrid Fiber-Coaxial Distribution System

The only way to keep the C/N ratio really high is to use low-loss switches and transmission lines. But the best solution that is available today is the usage of optical fiber cables. They can have as low an attenuation as 0.2 dB per kilometer and extremely low error rates (10⁻¹⁰) even at the highest bit rates.

Of course, everybody knows that this is not electrical current but a light beam that travels along the optical fiber cable. So, we need to convert the electrical signal into a modulated laser light beam. This can be done either directly in the LNB – see other such test reports elsewhere in TELE-satellite – or with the help of an external converter. In the latter case, we simply use a regular Quattro or Quad LNB and then convert its four outputs to light. SPAUN, the well known German manufacturer, has sent us their latest product designed for this purpose – SOTx131607 NF. They call it optical transmitter.

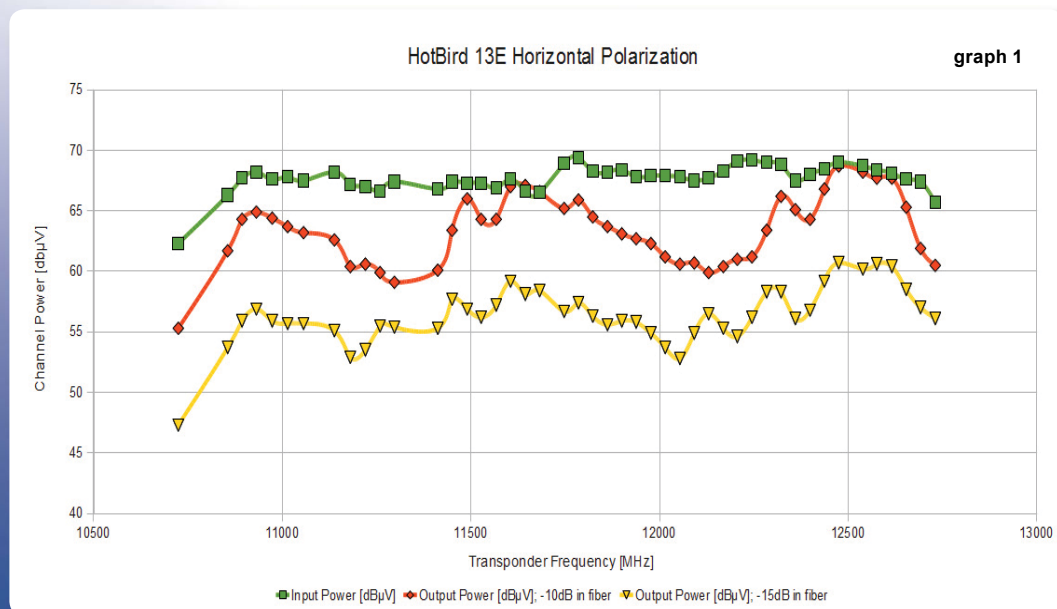
At the other end of the optical fiber we need to do the reverse operation – demodulation back to an electrical signal. SPAUN called the unit doing this function an optical receiver and assigned to it the model number: SORx1310607 NF. Fine, but do not extra modulation and demodulation spoil C/N of the signal? This would ruin all the benefits introduced by low-loss optical fiber cables. This is exactly what we wanted to

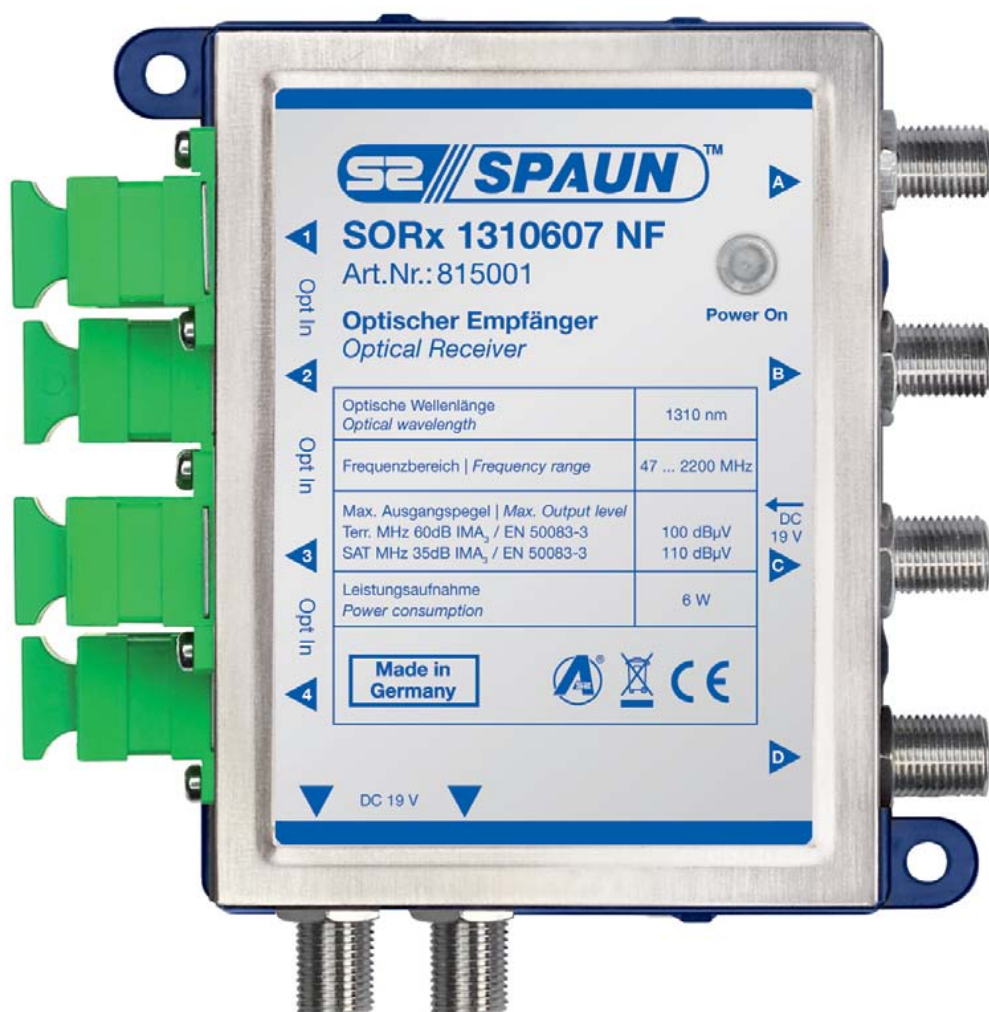
find out with our measurements. But before the test itself, we took a closer look at the units. As with all SPAUN products, their workmanship is perfect. Also the labels put on the top cover in German and English leave no doubt what should be connected where.



The SOTx 1310607 NF has one RF input to which we can link up either the IF satellite signal alone or the IF satellite plus terrestrial signal, assuming that we combined them together earlier (e.g. with the help of a diplexer). This is possible because the input is designed for the frequency

range from 47 through 2200 MHz, which covers both the terrestrial and the satellite frequency range. A nice feature is the independent adjustment of the satellite signal levels and the terrestrial signal level in the input: SPAUN has built into its unit two 0-12 dB attenuators.





Optical transmitters cannot get power supply via an optical fiber cable. We need to connect an external 19 V DC power supply. SPAUN adds a suitable one to every SOTx 1310607 NF. Electric power is needed not only for the unit but also to supply the LNB connected to it. With

the help of a switch mounted on the transmitter cover, we select the proper voltage and presence of 22 kHz signal. Thanks to that, we can use either a Quattro LNB (then, we simply set 12 V in all four signal paths) or a Quad LNB (then, we need to set each path differently: 12V, 18V,

12V/22kHz, 18V/22kHz). If we have a signal source not requiring DC power, we can switch it off completely.

The SOTx 1310607 NF has two F type plugs connected in parallel for power supply. Thanks to that we can connect one power supply unit

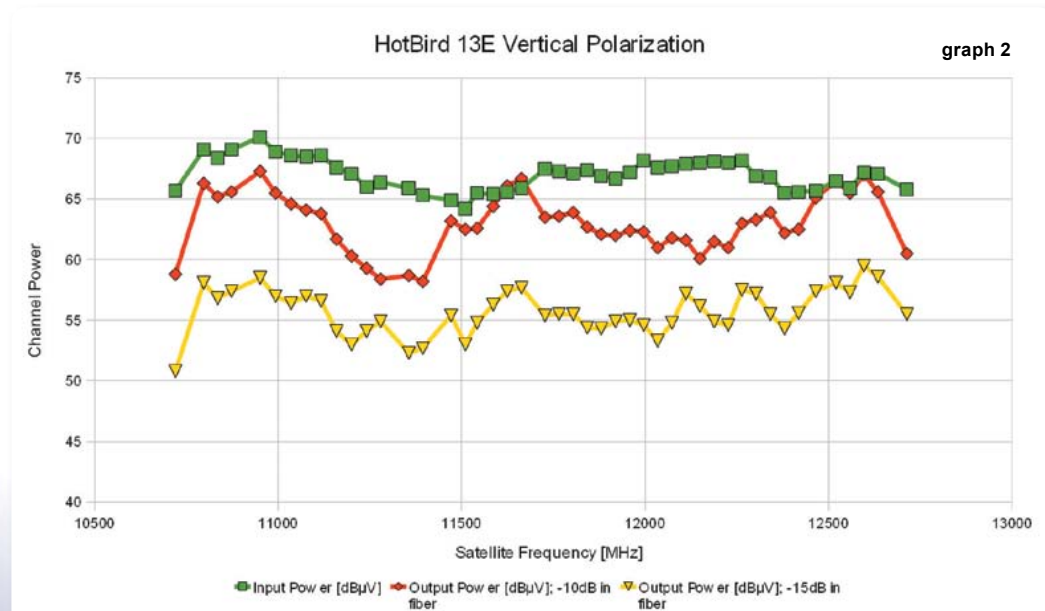
to the first transmitter and connect the second transmitter with a piece of coaxial cable. In this way, we do not need separate power supply units for every transmitter. SPAUN's PSU sold in a set is strong enough to power up to four transmitters assuming no power for an LNB is needed. If we need to power a LNB, which will usually be the case, the number is reduced to three transmitters. Nevertheless, it is a simplification of the whole installation.

The optical transmitter also has a LED indicator which except for signaling the connection of power can also inform us about a short circuit in the LNB input. It simply starts blinking. That's very intuitive.

Another electrical output is the test signal described as -20 dB. This is simply the input attenuated by 20 dB which is the light modulator input. We can use it to check if the RF signal is really present on the transmitter input and what is its level.

The optical output SC/APC is protected with a black cover which has to be removed before an optical fiber is connected. By the way, connecting optical inputs and outputs is a dream for a satellite installer. Press gently until you feel a click and that's it. What a nice difference after F connectors!

To send "down" four signals from a Quattro LNB we need to use four SOTx 1310607 NF transmitters. Fortunately, it was possible to miniaturize the receiver much more than the transmitter. The SORx 1310607 NF is a quad receiver: it has four optical inputs and four electrical RF outputs. In contrast to the transmitter, the receiver is shipped without a power supply, because it is supposed to get its power from the central distribution unit or multiswitch, like





SPAUN™

SORx 1310607/1 NF

Art.Nr.: 814999

Optischer Empfänger
Optical Receiver

Power On

Opt In

Optische Wellenlänge Optical wavelength	1310 nm
Frequenzbereich Frequency range	47 ... 2200 MHz
Max. Ausgangspegel Max. Output level	
Terr. MHz 60dB IMA ₃ / EN 50083-3	100 dBµV
SAT MHz 35dB IMA ₃ / EN 50083-3	110 dBµV
Leistungsaufnahme Power consumption	6 W

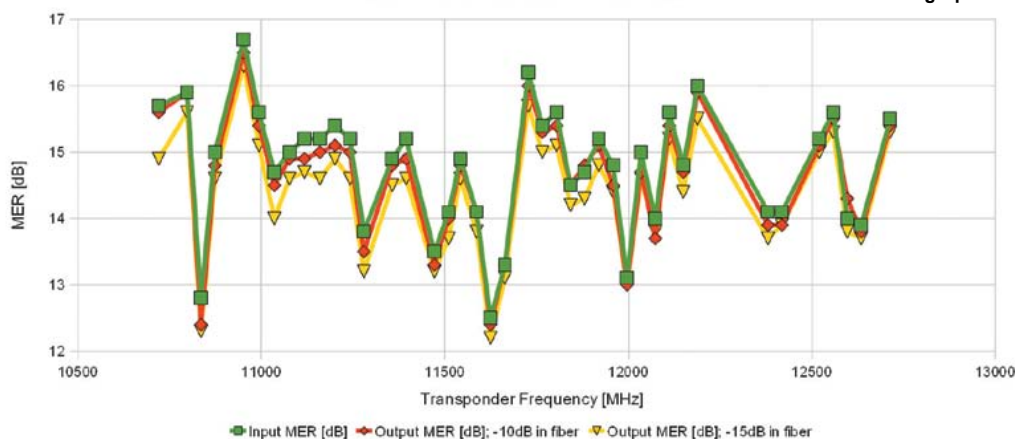
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DC 19 V

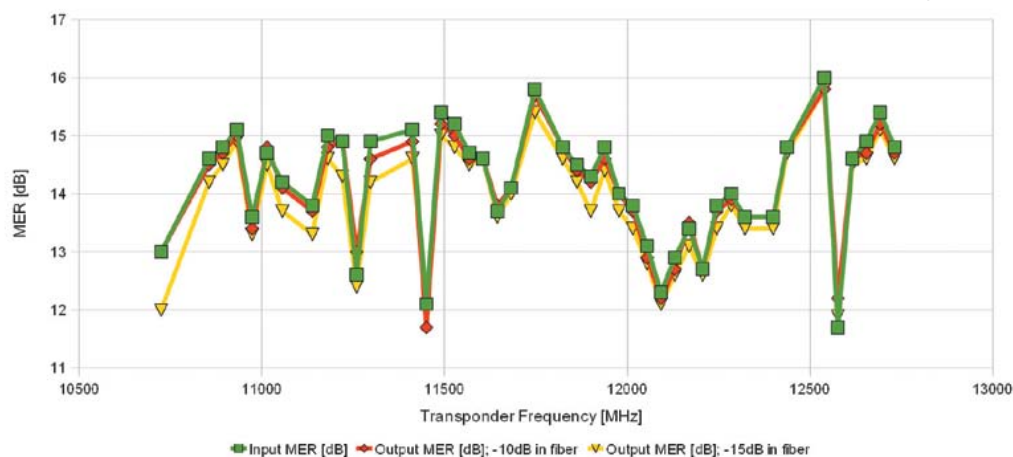
HotBird 13E Vertical Polarization

graph 3



HotBird 13E Horizontal Polarization

graph 4



any regular LNB. A coaxial plug called "C" at the optical receiver acts as connector to power; here the user is supposed to connect the coaxial cable from a central unit or multiswitch.

In our case we did it differently: as the optical receiver needs exactly the same DC voltage as the transmitter, we took one power supply units from the transmitter sets. The units are very versatile: not only do they offer a wide supply voltage range (100...240V AC / 47...63 Hz) but SPAUN also delivers a number of exchangeable pin adapters so you can use it anywhere in the world.

The DC supply can be connected to any of the two F connectors. As in the transmitter, they are connected in parallel. So if the DC power is needed for a similar device in the neighborhood, we will use rather a coaxial cable than another power supply unit. An LED indicator shows if the unit is powered.

The transmitter and the receiver can be mounted on the wall with only 2 screws. They should not be exposed to the open air but rather used indoors. However, their operating temperature is pretty wide: -20°C through +50°C. The brochure attached to every unit is printed in English and German and provides all necessary information along with exemplary application circuits.

Measurements

After getting familiar with the units, time had come to put all the blocks together and see what kind of performance they offer. SPAUN recommends to supply the optical fiber distribution system with really strong signals: 80-83 dBµV for the satellite IF and 85 for terrestrial. The maximum value is 95 dBµV.

Steffen Kuck, SPAUN's Technical Manager, explained



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STANDBY-POWER CONSUMPTION < 1 WATT

PVR Ready - Direct recording via USB
on external storage media possible!

FULL HD!

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USB 2.0 SLOT



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High Definition
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1 x SMARTCARD-READER



FEATURES:

- USB 2.0 host for playback of external hard drive or USB flash drive
- 1 x Common interface slot
- PVR Ready. Direct recording via USB on external storage media possible
- HDTV & SDTV
- 1 x smart card reader
- EPG (7 days in advance)
- Video-resolution 1080p, 1080i, 720p, 576p
- optical signal to align the antenna
- 5000 Program presets
- Multilingual screen menu
- HDMI out with HDCP
- Radio reception with background display
- Standby power consumption < 1 Watt

JAEGER HDCI 2010



Ready for



ENVIRONMENTALLY FRIENDLY
STANDBY-POWER CONSUMPTION < 1 WATT

USB 2.0 host for playback of external
hard drive or USB flash drive!

1080i, 720 P

USB 2.0 HOST



For external HDD
or USB-Stick

HDMI



High Definition
Multimedia Connection

1 x COMMON INTERFACE



FEATURES:

- 1 x Common interface slot
- HDTV & SDTV
- Video-resolution 1080i, 720p, 576p
- USB 2.0 host for playback of external hard drive or USB flash drive
- Easy find software (works only in conjunction with easy find LNB)
- 5000 Program presets
- HDMI out with HDCP





■ **Steffen Kuck**
is SPAUN's
Technical
Manager for the
optical system

to us: "Our optical system is designed for maximum performance and as such requires a strong input signal."

We supplied our test unit with a real life signal from HotBird satellite. We connected the transmitters with the receiver with short optical fiber cables. So, to simulate optical splitters (or very, very long cables), we inserted a 10 dB optical attenuator and later even a 15 dB attenuator. As you can see in the graphs (graph 1., graph 2.), the receiver output was only

5 dB or 10 dB lower than the system input depending on the attenuator we used.

But what about signal quality? This can be assessed by Modulation Error Ratio in the input and in the output. We noticed very small deterioration of signal quality. (graph 3., graph 4.) It is almost nothing. Should we have 10 or 15 dB attenuation in a long coax cable, the signal could be already on the edge of the reception threshold.

But what about the analog terrestrial signals? For the

strongest carrier (equal to SPAUN recommendation) everything stayed perfect (48 vs. 47 dB). SPAUN's optical system really just transports the input signal as it is received.

Applications

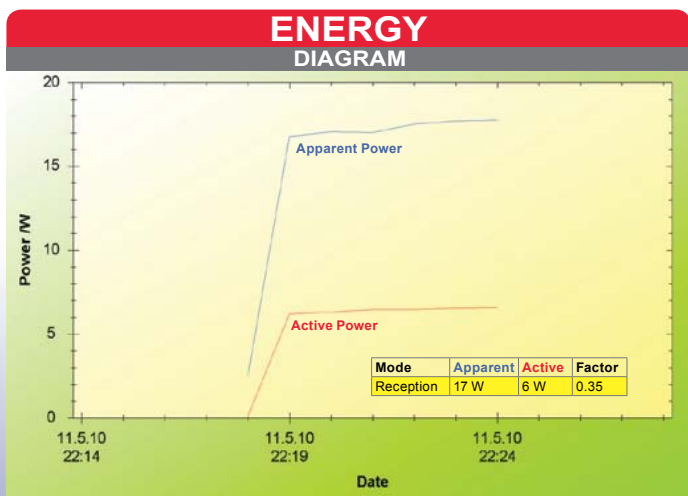
These new optical units from SPAUN open a brand new era in large TV distribution networks. Every optical signal on the transmitter output can be split to 32 optical fibers and thus create enormous backbones for the network.

For example, on every floor of a large apartment block we can have an optical receiver with four electrical outputs which in turn can be fed to the conventional multiswitch and distributed further to

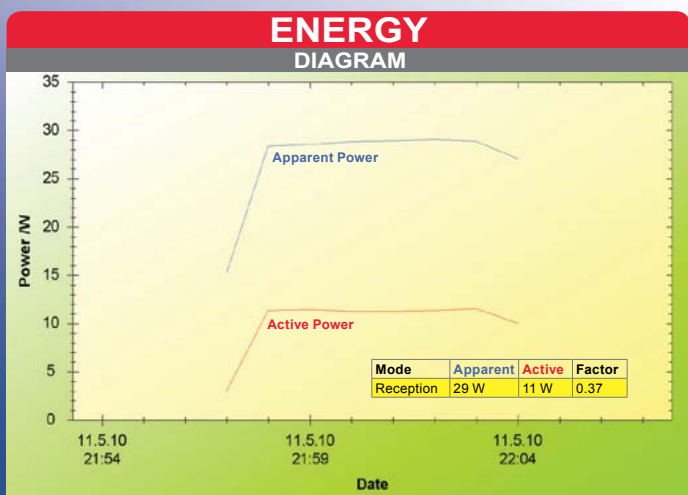
several hundreds of satellite receivers! The number of subscribers which can be reached with this new technology is really impressive.

At the same time, one must remember that optical fibers do not allow DiSEqC signals to pass. To multiply a number of satellites available to the end user, one must multiply the number of optical fibers (8 for 2 satellites, 12 for 3 satellites and so on) as well as transmitters and receivers.

SPAUN's new optical transmitter system not only makes installation easier but also secures that each end-user will have a strong and perfect signal available at his socket, even at the most remote corner of a big network.



Power consumption of SORx 1310607 NF Optical Receiver meets the specification (6W).



Power consumption of SOTx 1310607 NF Optical Transmitter is about 11 W but only 6 W is consumed by the transmitter itself. The rest is used to supply the connected LNB.

Expert Opinion

+

- Very good workmanship
- DC power "sharing" among the units
- Excellent performance for DVB-S signals even if below the recommended signal level (80-83 dBμV)
- Very good performance for analog TV signals for the recommended high input levels (85 dBμV)
- Possibility to create really large distribution networks
- Possibility to send signal over a long distance

-
none



Jacek Pawlowski
TELE-satellite
Test Center
Poland

TECHNICAL

DATA

Manufacturer	SPAUN Electronic, Singen, Germany
Fax	+49 (0) 7731 – 8673-17
E-mail	info@spaun.de
Model	SOTx 1310607 NF & SORx 1310607 NF
Function	Optical Transmitter & Optical Receiver
Frequency range	47 ... 2200 MHz
Optical wavelength	1310 nm
Power consumption	6 W (plus LNB power for transmitter)
Maximum supply current of the connected LNB	400 mA
Transmitter output power (optical)	6 dBm
Transmitter maximum RF input	95 dBμV
Receiver maximum RF output level	100 dBμV (Terr.), 110 dBμV (SAT)
Receiver input range (optical)	0 ... -12 dBm
RF and DC voltage connector typ	F
Optical connector type	SC/APC
Operating temperature	-20 C° ... 50 C°

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✓ DVB-T HD MPEG2/4 Receiver

✓ DVB-S2 H. 264 SD Receiver

✓ DVB-S2 HD MPEG2/4 Receiver

✓ DVB-C HD MPEG2/4 Receiver

✓ DVB-C SD MPEG2 Receiver



INFOSAT

C/Ku band Combifeed with Integrated DiSEqC Switch

Thomas Haring

The C band is popular in many areas of the world, mainly in areas with heavy downpours or high humidity, since under these conditions the C band offers more advantages, being less sensible to rain compared to signals in the Ku band. But even in areas dominated by Ku band signals, as for example in Europe, there are still plenty of C band programmes to get. But erecting a second dish just for C band is often too much of trouble.

Right into this gap comes the C/Ku band LNB on offer by INFOSAT from Thailand. You no longer need two dishes, but you use your existing dish and just replace your current Ku band LNB against INFOSAT's combifeed C/Ku

band LNB. Of course you would better own a bigger dish, since C band signals usually are less strong than signals in Ku band. In most location, a dish with 120-cm would be sufficient to get in some interesting channels

transmitted via satellites in C band.

We gave it a test run at our editorial offices in the center of Europe. INFO-

SAT's C/Ku band feed delivered from Thailand was designed primarily for use on prime focus antennas; although with a little modification ingenuity, it can be fitted on an offset antenna. For our first test we opted to use a 120-cm antenna already installed on the roof of our testing facility. Such

a 120-cm antenna already gives you access to thousands of channels from around the world in the Ku band. But as numerous as the Ku band availability really is, long-distance reception is typically achieved only with C band and thanks to this new Combifeed, it is quite easy to retrofit your current system for C band reception.

Since offset antennas are not normally designed to handle C band feeds, a cable clip, available from any electrical installer, was used to secure the Combifeed to the dish. It's not exactly a professional solution, but it is very effective and inexpensive. The installation required some dexterity but after several attempts and some fine tuning adjustments, the feed was in the correct position.

The entire assembly including antenna motor was previously aligned using a standard 40mm Ku band LNB; the less

■ The C/Ku band Combifeed mounted in a prime focus dish



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sensitive C band should therefore be no problem. With great expectations, we turned the antenna to the especially strong EXPRESS AM1 band satellite at 40° east.

According to INFOSAT, the Combifeed has a Ku band reception range of 10.7 to 12.75 GHz using LOF (local oscillator frequency) values of 9.75 and 10.6 GHz as well as a C band range of 3.4 to 4.2 GHz with an LOF of 5.150 GHz. The specifications also claim a gain of 65dB with a noise figure of 0.3 dB.

Our first tests were aimed at the C band so we quickly set up the correct LOF and then had a look at our spectrum analyzer. It indicated a strong signal located at 3675R. We quickly started a channel scan and found numerous Russian channels with plenty of signal strength. Further on, South American channels with relatively high signal strength could be found on NSS 806 at 40.5° west. A number of MCPC and SCPC transponders were receivable in sufficient quality. Especially strong were some Columbian channels on 4021L and RCN TV on 4016R; unfortunately, this channel was encrypted. Even a package of programs from Venezuela on 3880R could be received but without any bad weather reserves. A few other transponders were also receivable.

■ The C/Ku band Combifeed mounted in a offset dish

We were less successful when we tried NSS7 at 22° west where we could only receive 3644R without any problems. On Atlantic Bird 3 at 5° west we were able to easily view 4154L but all the other transponders hovered around the threshold level of the receiver. Even though the signal analyzer identified a number of clearly recognizable peaks on the display, they were still not strong enough for actual reception.

Things looked a little better on INTELSAT 907 at 27.5° west where we could receive three transponders (3715R with just some radio channels, 3831R with feeds from RTP/Portugal and 4048R). On INTELSAT 903 at 34.5° west only one transponder was receivable.

For all the other C band satellite receivable at our location our dish was

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simply too small. The normally strong EXPRESS AM44 satellite at 11° west could not be received with our 120cm antenna; the signals that we saw on the spectrum analyzer were too weak.

The next step involved taking a closer look towards the east. We stumbled across a few surprises: the (unfortunately encrypted) AFN package on INTELSAT 906 at 64.2° east on 4094L was identified by our receiver, Bangla Vision could be seen on APSTAR 2R at 76.5° east on 4049H and the Express AM1 at 40° east delivered a number of Russian channels with plenty of bad weather reserve.

Up until now we were quite pleased with the results we had gotten; now it was time to take a look at Ku band reception.

The strong DTH positions such as ASTRA at 19.2° east, HOTBIRD at 13° east, ASTRA2 at 28.2° east or ASTRA 3A at 23.5° east could all be received without any problems. We should mention at this point that the INFOSAT C/Ku band Combifeed is configured for reception of circularly polarized signals. With that said, the circularly polarized signals on EUTELSAT W4 at 36° east could be received in surprisingly good quality.



■ Included in the package: the C/Ku band Combifeed by INFOSAT in one housing with feed and jumper cable for the built-in DiSEqC switch.

More on This Manufacturer

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Dish Manufacturer, Thailand

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If you remove the dielectric in the feed, then standard Ku band H/V signals could be received effortlessly. The reasons for the diminished performance of the Combifeed in the Ku band are fairly obvious. On the one hand, the included feed was not designed for use on offset antennas so you really can't blame the manufacturer for this shortfall.

On the other hand, the homemade feed holder makes it rather difficult to perfectly align the LNB in the focal point of the antenna. And let's not forget that the C band is much more forgiving compared to the Ku band in terms of antenna alignment.

Overall we can say that it definitely pays to replace your current LNB with the INFOSAT C/Ku band Combifeed. Don't expect miracles with signal quality in the Ku band, but for the reception of the strong C and Ku band positions, the Combifeed would be the perfect choice. At the same time, it gives you a peek at the wonderful world of C band even with a small antenna without having to eliminate the Ku band.



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IPTV RECEIVERS OF 21ST CENTURY



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)



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Manufacturer	NetUP
Website	www.netup.tv
Function	IPTV Gateway for DVB Signals
Stream Protocol	UDP
Menu Standards	NetUP Middleware
WLAN	—



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NETUP

Manufacturer	AZBox
Website	www.azbox.com
Function	HDTV DVB-S2 and IPTV receiver with various Multimedia&Internet Features
Stream Protocol	UDP
Menu Standards	html
WLAN	—



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Website	www.abipbox.com
Function	Twin DVB-S2 Multimedia Receiver
DVB-S2/LAN	• / •
Channel Memory	10000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



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Manufacturer	Jaeger / Doebis
Website	www.doebis.de
Function	Digital HDTV DVB-S2 Receiver with Smart Card reader for HD+
DVB-S2/LAN	• / —
Channel Memory	5000
DiSEqC	1.0 / 1.2
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



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Manufacturer	AZBox
Website	www.azbox.com
Function	Digital HDTV Receiver with DVB-S2 and ISDB-T Tuners and various Multimedia & Internet Features
DVB-S2/LAN	• / •
Channel Memory	15000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
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Website	www.opensat.info
Function	Digital HD Receiver with PVR via USB
DVB-S2/LAN	• / •
Channel Memory	8000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •



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OPENSAT





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



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Manufacturer	Technomate
Website	www.technomate.com
Function	Triple Tuner HDTV Receiver
DVB-S2/LAN	• / •
Channel Memory	10000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
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Manufacturer	AZBox
Website	www.azbox.com
Function	HDTV DVB-S2 receiver with various Multimedia & Internet Features
DVB-S2/LAN	• / •
Channel Memory	15000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
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Manufacturer	Skyworth
Website	www.skyworthdigital.com
Function	Miniature SCART Receiver with PVR Function
DVB-S2/LAN	— / —
Channel Memory	4000
DiSEqC	1.0 / 1.2 / 1.3
S-Video/HDMI	— / —
Scart/Digital Audio	• / —

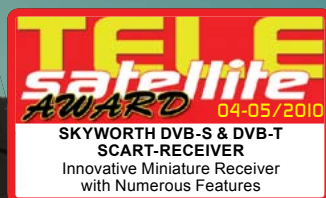


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Polish	Polski	www.TELE-satellite.com/TELE-satellite-1005/pol/skyworth.pdf
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Russian	Русский	www.TELE-satellite.com/TELE-satellite-1005/rus/skyworth.pdf
Turkish	Türkçe	www.TELE-satellite.com/TELE-satellite-1005/tur/skyworth.pdf





Manufacturer	AB-COM
Website	www.abipbox.com
Function	Digital Linux-based HDTV PVR Receiver
DV/S2/LAN	• / •
Channel Memory	10000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / •
Scart/Digital Audio	• / •

TELE-satellite
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Manufacturer	AB-COM
Website	www.abipbox.com
Function	Digital Linux-based HDTV PVR Receiver for DVBS, DVBS2, DVBC and DVBT
DV/S2/LAN	• / •
Channel Memory	10000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
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Young, Yet With Extensive Know-how: NetUP from Moscow

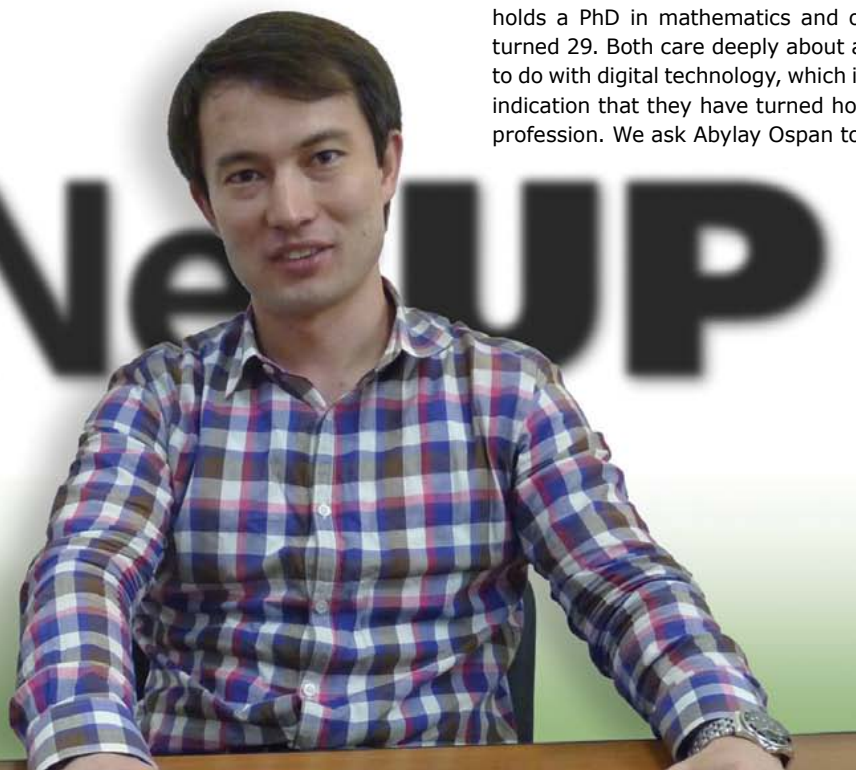
Alexander Wiese

Isn't 'young' and 'know-how' a contradiction in terms? In many cases it is, but if we're talking about know-how in the making, the two terms go together very nicely. 'Young' in such a case is an asset, as it means there's no obligation to depend on past developments. So where can we find a perfect example for 'young' meets 'know-how'? If we're talking about digital technology Russia springs to mind. And if we support our assumption with the fact that Moscow State University is ranked right among all the top-notch universities in the world when it comes to digital technology teaching and research, then Russia seems to be spot on!

Actually, it's a triple hit: NetUP, a company founded as recently as 2001, has its administrative office in the vicinity of Moscow State University. The closest metro Station is 'University' and the two founders of NetUP are – naturally! – former students of that university. Actually, it's not only the two founders who are Moscow State University graduates, but almost all other employees as well. It's clear for all to see that NetUP pools together collective digital technology know-how, while everybody working at NetUP is still very young.

Let's start with Abylay Ospan, who is one of the company's founders and acts as Director: "I'm 30 years old," he says smilingly. His founding partner is Evgeniy Makeev who holds a PhD in mathematics and only just turned 29. Both care deeply about anything to do with digital technology, which is a clear indication that they have turned hobby into profession. We ask Abylay Ospan to give us

■ NetUP co-founder and Director Abylay Ospan showing the company's latest developments: PCIe cards for 2 x DVB-S2, 2 x DVB-T or C, 2 x ASI. All cards come with two CI slots.

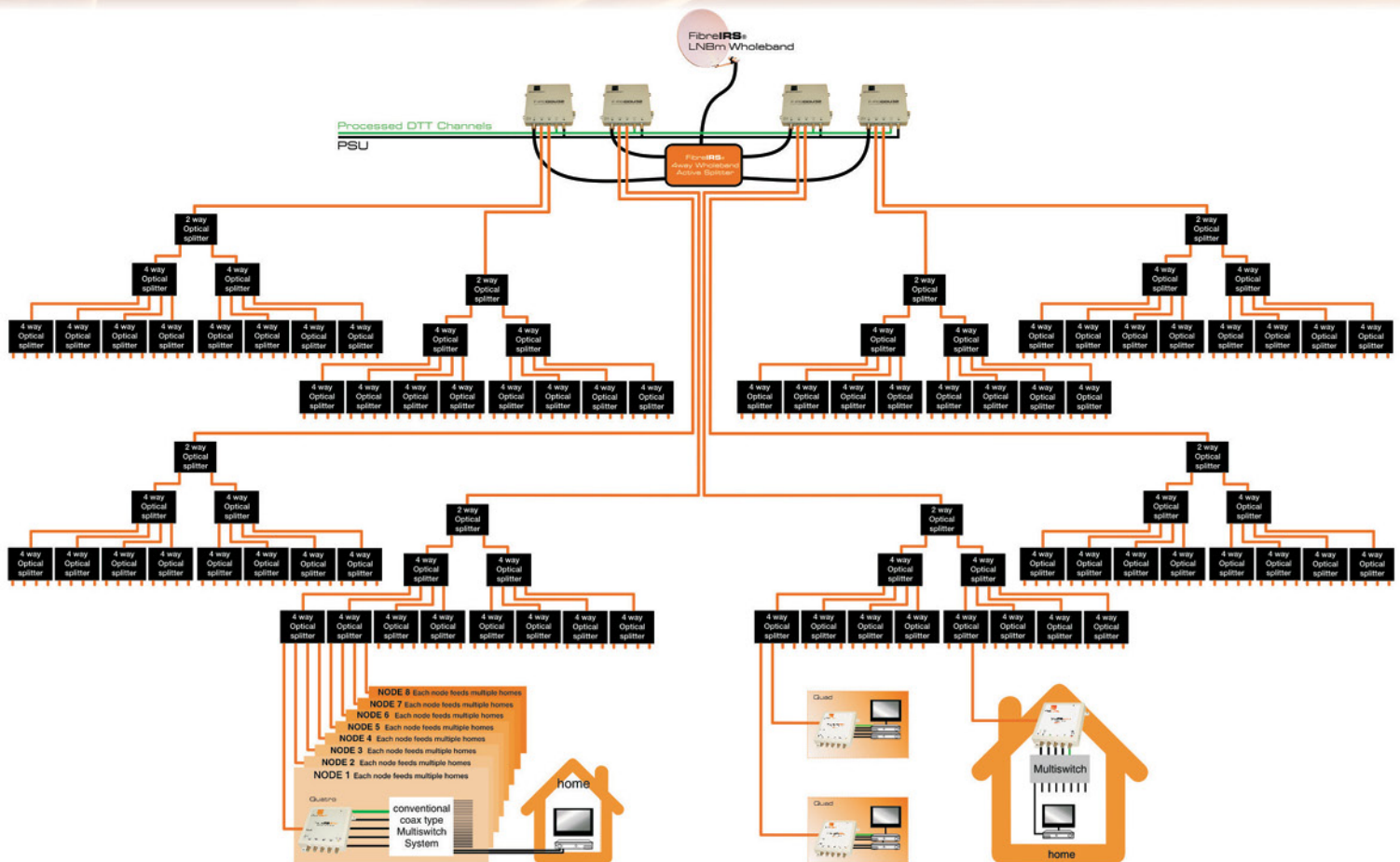


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www.netup.tv

Company Details

Engineers in Research & Development | Total Number of Employees
 0.....25.....50
 Average Turnover (Previous, This, Next Year Estimates)
 0.....5.....10 Mio US\$

Production Certificates
 ISO, RoHS, PCI SIG, IEEE, DVB
 Production Categories
 OEM, ODM
 Main Products
 Professional PC Cards for DVB-S/S2, DVB-T/MPEG-4, DVB-C, ASI, IPTV Gateway/Streamer, IPTV Middleware, IPTV Conditional Access Systems, IPTV Billing Systems, Video on Demand

TELE-satellite World

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a brief run-down of the events leading to the establishment of NetUP. "When we still were students we were working on billing software for Internet service providers."

He was still in his final semester at university when Abylay Ospan teamed up with his colleague Evgeniy Makeev to set up their own business, which offered exactly that billing software to potential customers. The point in time could not have been better. While in their first year of operation sales never exceeded five-digit USD figures, from year two onwards turnover increased consistently. It was the time when ISPs sprung up all over the CIS countries, and most of them turned to NetUP for software solutions. "More than 2,000 ISPs currently rely on our billing software, with 90% of them being located in CIS countries," NetUP Sales Manager Konstantin Emelyanov proudly states. "Small and medium-sized providers in particular like our software solution, which is ideal for a client base of up to 50,000." Even the company name is derived from that strategy: Network Up – a company that takes care of network expansion.

NetUP has added another business segment to its portfolio in the meantime, which fits in smoothly with the original software business for ISPs: NetUP is now also developing software and hardware for IPTV. "IPTV has already gained a 70% share of our turnover," NetUP Director Abylay Ospan reveals and adds "annual sales are high in the one-figure million USD this year." As a matter of fact, it has become difficult to differentiate between software for ISPs and IPTV, as many Internet service providers have become IPTV providers as well. "For those providers we offer middleware, video-on-demand servers and streaming servers," Abylay Ospan explains.

It's not only since the DVB-IP Gateway 4x test report that readers of TELE-satellite might be familiar with NetUP. This device allows setting up your own IPTV network in next to no time (TELE-satellite 10-11/2010). Even before that TELE-satellite reported on a world first launched by NetUP: A DVB-S2 card with two inputs (TELE-satellite 02-03/2010).

Of course we wanted to learn more about that product line, and

Abylay Ospan has the details. "We develop everything in-house. Both software and hardware (circuit board layout) have been designed by our very own engineers."

Andrew Budkin is the head of Software Development and knows precisely the amount of effort put into such a project. "For the DVB-S2 card two of our engineers worked together for half a year until the



■ Evgeniy Makeev is co-founder of NetUP and holds a PhD in mathematics.



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hardware was ready for production. An additional two software engineers wrote the drivers required for the Linux-based software." NetUP even played a major role in finding the right manufacturer for card production. "A facility some 100km from Moscow is in charge of manufacturing our PC cards."

The cards are used in professional setups only, which means production numbers are on the lower side when compared to mass consumer good. "We only produce some 1,000 cards per annum," Abylay Ospan tells us. This has made us curious and we're eager to find out what else is in NetUP's pipeline. "Right now at the end of 2010 we're launching a PCIe card for DVB-T and DVB-C." Just as the DVB-S2 card this card, too, has two inputs and tuners. "We're also working on a card with two ASI inputs."

PCIe cards from NetUP are not targeted

to the private end user market. They are used in professional streaming equipment, like NetUP's DVB to IP gateway 4x and IPTV Combine 4x. The latter (IPTV Combine 4x) is a special product for the hospitality market. This is an all-in-one IPTV solution that includes IPTV Middleware, billing, DVB to IP gateway and VoD server (see test report in TELE-satellite 10-11/2010). Such IPTV systems are a favorite in hotels and hospitals, because each room can be accessed individually but the cable infrastructure can be laid out as a bus system.

"One of our largest customer groups are hotels which generally favour two-way systems. This means that hotel guest are not only able to enjoy TV and Internet access in their rooms, but that hotel management is also able to send personal and customised messages to guests in their rooms," Abylay Ospan lays down the reasons behind such infrastructure.

There is another feature which shows that PCIe cards from NetUP are designed for the professional high-end market: "We are now beginning to ship our cards based on the ALTERA chipset." What makes this so special? Well, the hardware is identical for each customer and only the software on the PCIe card defines its scope of application. "In the third quarter of 2011 we will also base our 2 x DVB-S2 card – which was presented in TELE-satellite – on the ALTERA chipset," NetUP Sales Manager Konstantin Emelyanov adds.

Speaking of products already introduced in TELE-satellite: The NetUP DVB-IP Gateway 4x can be ordered with an H.264 encoder/transcoder as of Q3 2011. Things get even more exciting towards the end of 2011 when "we will offer the DVB-IP Gateway 4x with unicast." This will make the device – which hitherto is only available as a multicast model – even more user-friendly and will also allow laymen to distribute their TV channels via the Internet.

Head of Software Development, Andrew Budkin, has another piece of interesting news in store. "It makes economic sense for some providers of Internet-via-satellite only to use the base band which saves valuable bandwidth." This is why NetUP has decided to develop PC cards with precisely that strategy in mind. "Large utilities might be extremely interested in that technology," adds Abylay Ospan and has the following example: "Gazprom uses this one-way technology for its local networks."



1

1. Always there for customers: Sales Manager Konstantin Emelyanov.

2. This is where NetUP runs its business on the ground floor. Two satellite dishes on the roof send down the signals required for developing innovative satellite cards.



2



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- Support IRDETO, CONAX CA Chipset-pairing
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HD DVB-S/S2 H.264 CA

- Fully DVB-S and DVB-S2 compliant
- MPEG2/4, H.264 HD/SD decoding (MP@HL/ML)
- CAS support such as Irdeto, Conax...
- Usb PVR ready, timeshifting, Live channel Pause
- Low power consumption



SD DVB-S 2tuner USB PVR

- Two DVB-S Tuner
- Record current channel and another channel while watching current channel
- Support Timeshift function & PIP function
- Multi-language OSD supported
- Electronic program guide (EPG)



HD DVB-C H.264 CA

- MPEG2/4, H.264 HD/SD decoding (MP@HL/ML) supported
- CAS support such as Irdeto, Conax, NovelSuperTV, Sumavision
- HDMI with HDCP digital video output
- Dynamic Hi-Fi Stereo Sound System
- Digital album or slide show through USB2.0



SD DVB-T H.264 CA USB

- Fully DVB-T/MPEG-2/MPEG4 H.264 Compliant System
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- Subtitle, teletext function supported
- USB: PVR, photo viewing, mp3 file playing



SD DVB-S/S2 H.264 CA

- Fully DVB-S and DVB-S2 compliant
- MPEG2/4, H.264 decoding (MP@HL/ML)
- CAS support such as Irdeto, Conax...
- Electronic Program Guide(EPG)
- USB: PVR, photo viewing, mp3 file playing



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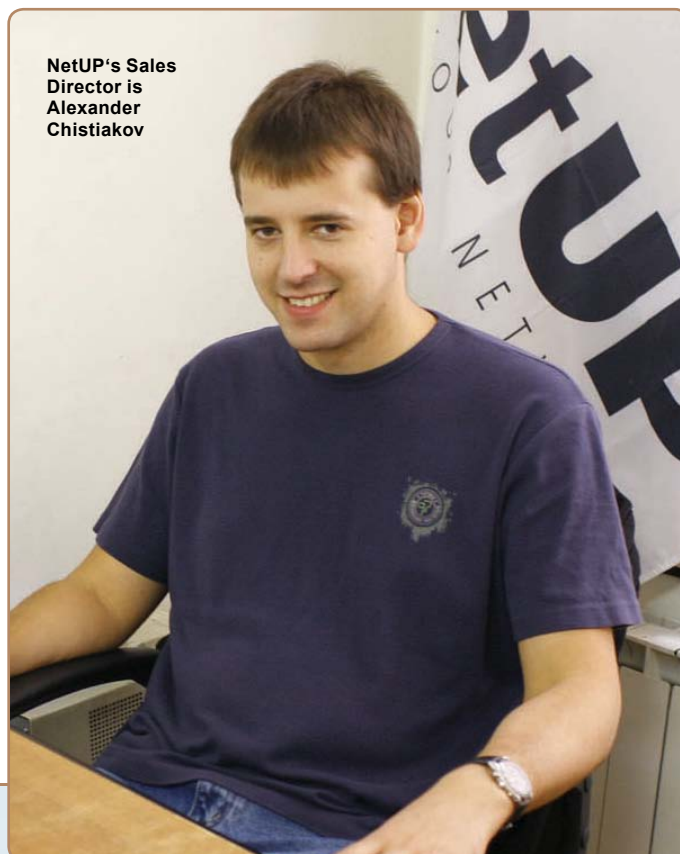
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NetUP is just the specialist for designing the right products complete with corresponding software for niche applications like that.

So far we have heard all those great success stories about innovative products, but who are the people doing all the hard work behind? Having a look around the NetUP premises sheds some light on this question. A total of ten engineers and programmers work in Development, another ten are engineers and programmers in Technical Support for solving problems that professional customers might experience, and another ten employees are in charge of Management and Administration.

Sales Manager Konstantin Emelyanov gives us some idea of where company representatives can be met face to face: "Each year we actively participate at the IBC (Amsterdam), CSTB (Moscow) and IPTV World Forum (London)."

If you're looking for a young company with extensive know-how, you've come to the right place at NetUP. The company has the cutting edge when it comes to the latest IPTV technology and is filled to the brim with technical knowledge which NetUP employees acquired from Moscow State University. All this provides enormous impetus for conquering the brand new world of IPTV!



NetUP's Sales Director is Alexander Chistiakov



In charge of Software Development: Andrew Budkin heads the software team.

Technical customer service is a given at NetUP: One third of the workforce looks after customers and makes sure NetUP products and their software are used appropriately. Alexey Butkeev (left) heads Technical Support, Eugene Druzhinin (right) is one of his team members.





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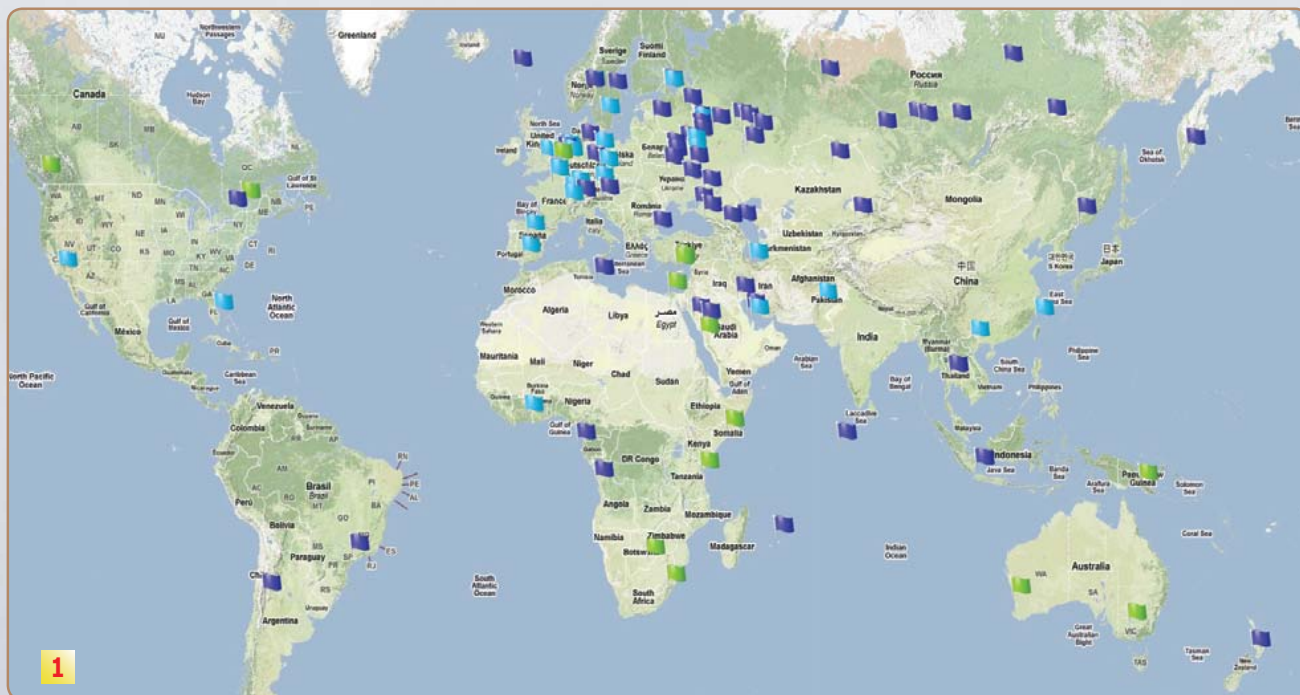
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THE GLOBAL STAGE FOR INNOVATION





1. The world map shows all global installation sites of NetUP products: Pale blue flags indicate installations of the Dual DVB-S2 CI PCIe card, dark blue flags show IPTV installations and green flags are placed wherever a UTM5 system is installed.

2. The figure up on the dome all but vanishes in the autumn mist: This grand building houses Moscow State University. For many years it was the tallest building in Moscow and almost all NetUP employees have studied there.



NetUP installations for commercial customers

Customer	Country	Deployment type	Configuration
Maldiviana	Maldives	Dive yacht	IPTV Middleware + VoD + DVB to IP gateway
Faroe Telecom	Faroe Islands	Telco	IPTV Combine
Nevron d.o.o.	Slovenia	Sytem integrator, for a telco	DVB-IP gateway
Amino Communications	United Kingdom	IP STB manufacturer, IP STB test lab	2 x IPTV Combine
Sunlink	Russia	Housing estate	IPTV Complex: DVB-IP gateways, VOD servers, Middleware, CAS, Billing system
Telio AG	Germany	Sytem integrator	DVB-IP gateway
Netline	Russia	Telco	Middleware, DVB-IP gateway, CAS
Perfect Technology	Saudi Arabia	Sytem integrator	IPTV Combine + DVB-IP gateway for a hotel IPTV solution
HPM Innomedia	Thailand	System integrator, for a telco	IPTV Combine 4x
VTE s.r.l.	Italy	System Integrator	IPTV Combine 4x
Cygate AB	Sweden	System Integrator	Middleware + CAS
Zyxel	Norway	IP STB manufacturer, IP STB test lab	DVB-IP gateway 4x
Vortec	Argentina	A telco	IPTV Combine 4x + DVB-IP gateway 4x
I-Tel solutions	Thailand	A system integrator	IPTV Combine 4x
Security Systems	Kuwait	A system integrator	IPTV Combine 4x
Bait Ashmaes	Libya	A system integrator	IPTV Combine 4x
Protel	Turkey	A system integrator for hotels	IPTV Combine 4x
NueTel Communications	Bahrain	A system integrator	IPTV Combine 4x + DVB to IP gateway 4x
Utelisys Communications	The Netherlands	An Internet TV provider	Dual DVB-S2-CI
Mobiclip	France	A mobile IPTV solution provider	Dual DVB-S2-CI
Centum Solutions	Spain	An engineering company	Dual DVB-S2-CI
FreeBox S.A.S.	France	An ISP	Dual DVB-S2-CI
Schlumberger	Gabon	An oilfield services company	DVB to IP gateway 4x

■ Selection of international customers using NetUP products.

Tevii Tapping Into New Markets

Tevii – while being young of age – has already worked up a solid reputation for its PC cards and USB boxes and is now in the progress of launching a new range for new markets. Matthias Liu is the founder of Tevii and the company's top-scoring sales director. He reveals some future plans in a meeting we had with him in Munich, one of a number of global destinations he recently visited.



■ Matthias Liu – founder, president and sales director of Tevii

To start with, Matthias Liu gives us a brief account of where he comes from: "Up until 2006 I was employed as sales manager for a major company in the satellite industry. When this company was taken over by another player I took the decision to become self-employed." Some of his former colleagues were equally impressed with his envisaged business strategy and so they decided to jump on board as well. "Tevii started with a total workforce of only eight people," Matthias recalls on his walk down memory lane. "It's never easy to start from

scratch and the first item on our to-do list was the development of our own products. It was only in the following year, 2007, that we were able to generate a modest turnover." In case you're curious about the exact figure: it was 250,000 US\$ in 2007. Tevii has come a long way since and expects sales reaching 2.2 million US\$ in 2010 and even 3 million US\$ the year after. Talk about rock-solid business! Obviously, staff numbers have also increased so that "today we have 28 employees, a whopping 18 of which are engineers in Research and Development."

Matthias Liu can truly be proud of what he has been able to achieve in such a short period of time. But what exactly is Tevii all about?

"We have always focused on PC cards for satellite reception. And for laptop users our range includes USB boxes as well," Matthias Liu explains. Incidentally, Matthias himself has no engineering background, but a dependable gut feeling for what the market needs. "For each product we sit down and evaluate whether expected sales will justify – and ultimately pay for – development costs," he explains. It comes as now surprise, then, that the R&D department is the core element of the Tevii business model. Actual production is outsourced to third-party manufacturers in Taiwan as well in Shenzhen in mainland China. "The trick is to come up with the right product at the right time," Matthias Liu states and illustrates this credo with an example: "Right now there is so much talk about DVB-T2, for example, even though this is a technology that will only start to penetrate markets in about two years. By the time that happens our own DVB-T2 products will also be ready for take-off." There's no point in being the first, it is a waste of valuable resources that can only be brought to fruition if

used wisely. Deciding on the right time is the key to economic success.

A closer look at the Tevii product range lends additional support to that theory. When the company was established in 2007 it offered two products: the S400 DVB-S PC card and the S600 USB box for use with laptop computers. "Both products came with a tuner sourced from Sharp, which was replaced with a NIM tuner from Serit at the beginning of 2008." Since then the product designations have changed to S420 and S630. When the DVB-S era slowly came to an end and DVB-S2 was just around the corner Tevii launched successor models S464 as PC card and S660 as USB box for laptop use at the end of 2008. And – wouldn't you know it – the Tevii S470 was introduced in 2009 just when the whole world was turning to PCIe (PCI Express) slots as a replacement for older PC slots. At the end of 2010 new demand was met with the launch of a PC card with dual tuner – the model name is S480 and it sports two DVB-S2 tuners.

If you have read all the lines of this report so far, you can probably guess what comes next. DVB-T has picked up considerably the world over, which called for a USB box with one

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www.tevii.com

Company Details

Engineers in Research & Development | Total Number of Employees
0.....25.....50

Average Turnover (Previous, This, Next Year Estimates)
0.....2.5.....5 Mio US\$

Production Certificates
RoHS

Production Categories
OEM, ODM

Main Products
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tuner for DVB-S2 reception and a second tuner for DVB-T. Still, Matthias Liu has left the best for last: "We are currently also offering a quad tuner card for DVB-T MPEG-4 reception!" This particular product was developed for an Australian provider. "The quad tuner card is a huge seller in regions with a large DVB-T offering." Once again, Tevii has waited for the right moment. Up until very recently DVB-T had not been fully rolled out in many countries, and the regions with more than four DVB-T frequencies had been few and scattered.

So what's next in Tevii's pipeline? We can't wait to hear from Matthias Liu what his gut feeling is telling him. "At the beginning of 2011 we will launch our first fully-fledged conventional receiver!" It will be called B600 and will sport a DVB-S2 tuner, Linux operating system, PVR functionality, USB and Ethernet interfaces and – of course – HDMI, even though two scart euroconnectors will guarantee compatibility with older TV sets as well. CI and CA slots will round off the package. What made Tevii expand from the PC card segment to the receiver market? "It's actually quite simple," Matthias Liu replies. "PC cards are products for a niche market and now that we have achieved a rock-solid reputation in that niche market it's time to launch our brand in the receiver market as well."

This does not mean, however, that the PC card and USB box range is being neglected.



■ Matthias Liu uses his laptop computer to show us the brand new B600 receiver which will be launched shortly



■ Not yet available: The first Tevii receiver for entering a new market segment. Specimen of the B600, a DVB-S2 HDTV receiver based on Linux



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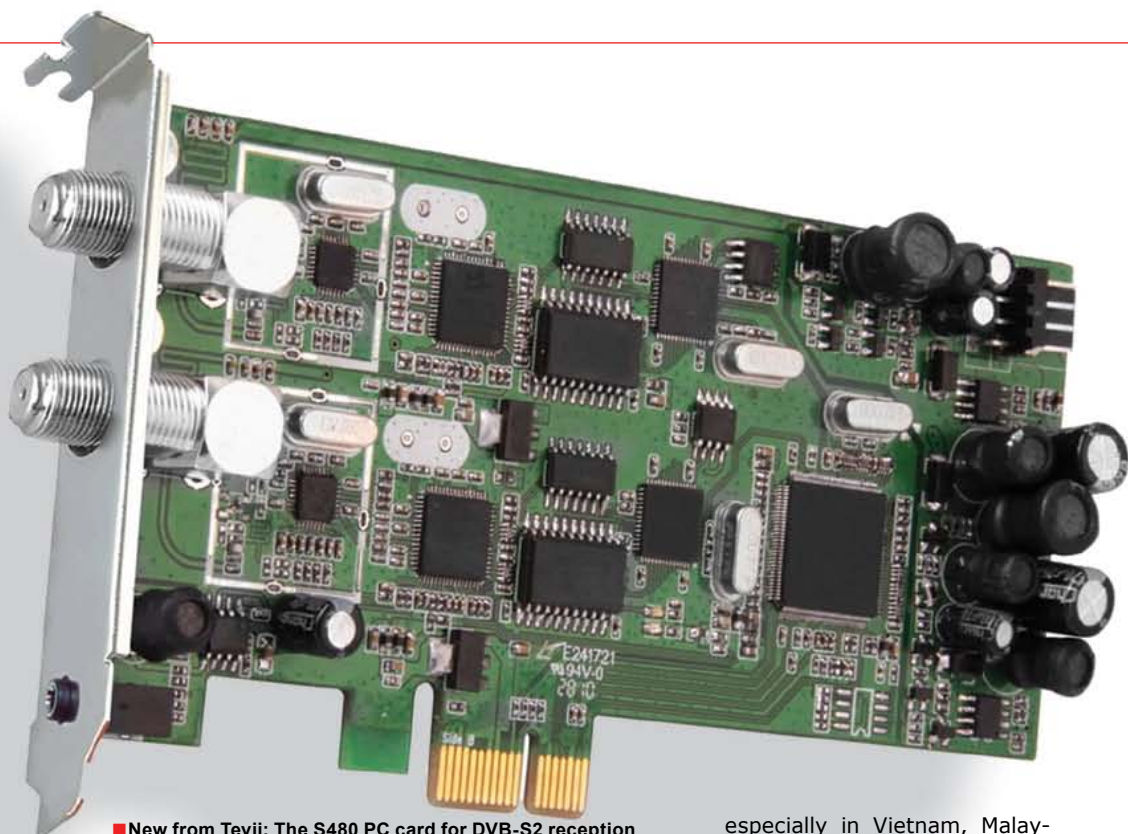
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"In the first quarter of 2011 we will introduce a CI extension for our USB boxes, which will be followed in the second quarter by the same extension for our PCIe cards." Looking even further ahead, Matthias Liu believes that 2012 will be a good year to launch yet another new product line: "We will then offer USB boxes for DVB-C cable reception." Tevii's clear focus on DVB is an indication for Europe being the company's most important market. Matthias Liu has all the numbers:

"We generate 40% of our sales in Western Europe, with another 40% in Eastern Europe, including Russia. The remaining 20% come from the Middle East and Egypt." There's a reason for Matthias

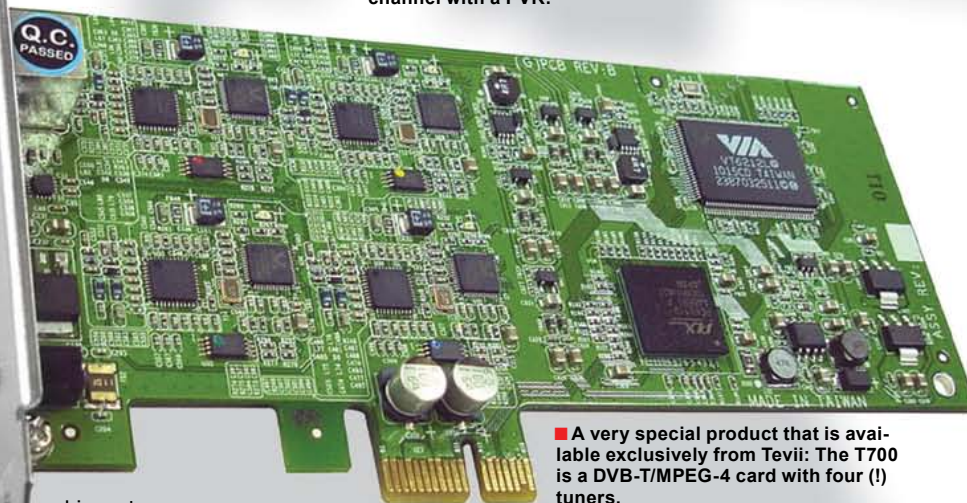
Liu to specifically mention Russia and Egypt, as Tevii ranks among the top-selling providers of PC cards and USB boxes in both countries. Yet, knowing Matthias Liu we can expect that he is hungry for more. "We're looking at ways to increase our sales in Asia,



■ New from Tevii: The S480 PC card for DVB-S2 reception with two tuners. It can be used to watch one HDTV channel on screen while at the same time recording a second HDTV channel with a PVR.

especially in Vietnam, Malaysia, Singapore and Indonesia." And then there's one more important region in which Tevii is not yet present. "You're right, South America is still a kind of black spot on our map. But we're in the progress of developing products for the South American market as well," Matthias Liu reveals another of his long-term strategic expansion plans.

To finish off, we want to find out what made Matthias Liu decide on the brand name Tevii. "That's simple," he answers with a smile. "All our products have to do with TV one way or the other, and the way TV is pronounced in



■ A very special product that is available exclusively from Tevii: The T700 is a DVB-T/MPEG-4 card with four (!) tuners.



■ In the pipeline at Tevii: A combi receiver for DVB-S2 and DVB-T/MPEG-4.





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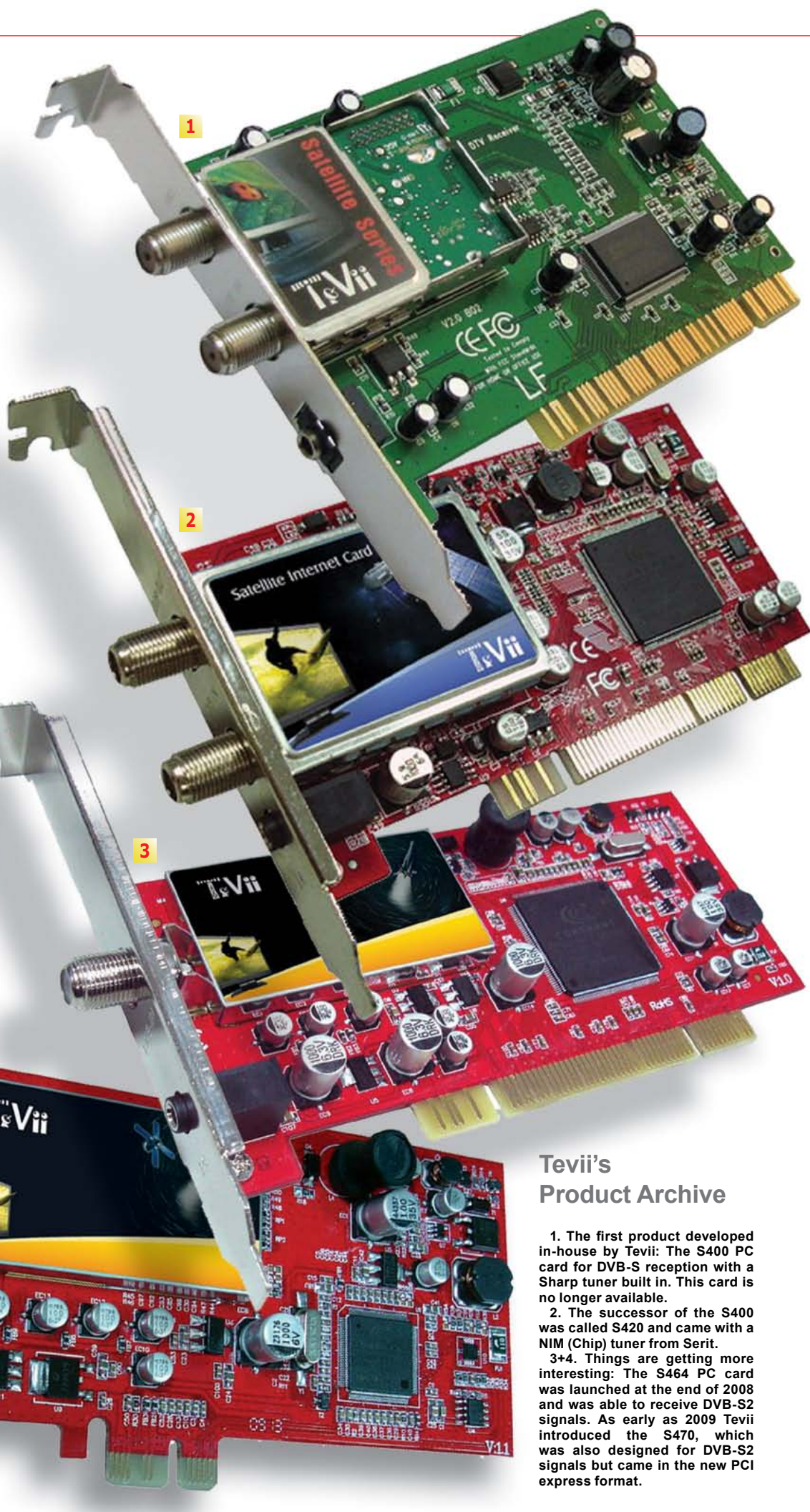
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|---|---|



Beijing Topreal Technologies Co.,Ltd is a professional designer and manufacturer of digital TV head-end system. We have developed products with our own brand, which cover from DVB-S receiver, encoder(MPEG-4 HD/SD encoder, MPEG-2 SD encoder), multiplexer, scrambler, modulator to Set-top-box. We also offer value-add products like subtitle insertion system, EPG, STB advertisement service system, browser, channel tracing table. All the products fully comply with DVB standard.

English it can easily be written as Tevii." The same concept is also used for the company logo, with an eye replacing the dot on each i, and the T being stylised as a transmission tower. Finally, the e becomes a satellite antenna and the logo a metaphor for what the brand is all about. Clever marketing, with a twist...

Matthias Liu has used his intuition and listened to his gut feeling for turning his young business into an innovative company in the course of only a few years. One of the key elements in his success strategy is the consistent focus on technical developments rather than manufacturing, which can easily be outsourced and thus is no core skill. Let others do the manufacturing – Tevii is rather concentrating on coming up with the right products at the right time. And that in itself means mastering the trickiest part.



Tevii's Product Archive

1. The first product developed in-house by Tevii: The S400 PC card for DVB-S reception with a Sharp tuner built in. This card is no longer available.

2. The successor of the S400 was called S420 and came with a NIM (Chip) tuner from Serit.

3+4. Things are getting more interesting: The S464 PC card was launched at the end of 2008 and was able to receive DVB-S2 signals. As early as 2009 Tevii introduced the S470, which was also designed for DVB-S2 signals but came in the new PCI express format.

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SATSHOP24

Satellite Shop, Germany



Two Satellite DIY enthusiasts

Have you ever built a satellite receiver yourself? Not many have, but Rainer Schulz from the small town of Trossen in the south of Germany is one of the very few who achieved just that in 2008. And he didn't stop there, he even built a 3.5m antenna to go with it. It's no surprise that he chose to become self-employed and founded a small satellite dispatching business which today is run by his daughter Denise Kretz.

Rainer Schulz's company is based in a pretty little town of Trossen in the south of Germany. He is a 45-year-old man who has been working in the satellite industry for over 10 years. He is a self-proclaimed 'DIY enthusiast' and has built a 3.5m antenna to go with his satellite receiver. He is also a member of the 'Satellite Shop' community and has helped many other enthusiasts with their projects.

His daughter Denise Kretz is also a satellite enthusiast and has built a 3.5m antenna to go with her satellite receiver. She is also a member of the 'Satellite Shop' community and has helped many other enthusiasts with their projects.

www.TELE-satellite.com/TELE-satellite-1101/eng/satshop24.pdf

SATBEAMS

Software Programming, Belgium



www.satbeams.com



Satbeams
A Website for Professionals

Alexander Derghin has set some lofty goals for himself. He is the founder and operator of the satbeams.com website, the main purpose of which is to reach the professionals. That is a rather ambitious goal as he wanted to find out from him personally how he intends to reach it. We met up with him in Brussels, Belgium, the city he calls home.

First, an ambition to have been successful in the satellite industry. He is a 35-year-old man who has been working in the satellite industry for over 10 years. He is a self-proclaimed 'DIY enthusiast' and has built a 3.5m antenna to go with his satellite receiver. He is also a member of the 'Satellite Shop' community and has helped many other enthusiasts with their projects.

His daughter Denise Kretz is also a satellite enthusiast and has built a 3.5m antenna to go with her satellite receiver. She is also a member of the 'Satellite Shop' community and has helped many other enthusiasts with their projects.

www.TELE-satellite.com/TELE-satellite-1011/eng/satbeams.pdf

SMARTINNOVATIONS

Satellite Distributor, Netherlands



The AZBox Champions from Holland

It really helps to not only have a good product but to also have a very ambitious sales team. A perfect example of this is the company Smart Innovations in the Netherlands. The three owners of the company are very much involved with its operation and have helped make the AZBox receivers one of the top-selling brands not only in The Netherlands but also in Belgium and Luxembourg. For these three countries, Smart Innovations has taken over distribution of the AZBox.

The AZBox receivers are a perfect example of a good product. They are easy to use, reliable, and have a long life span. They are also very affordable, which makes them a popular choice for many customers.

Smart Innovations is a company that is very much involved with its operation. The three owners are very much involved with its operation and have helped make the AZBox receivers one of the top-selling brands not only in The Netherlands but also in Belgium and Luxembourg. For these three countries, Smart Innovations has taken over distribution of the AZBox.

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GLOBALINVACOM

Fibre Optic Products, UK



www.globalinvacom.com



GlobalInvacom Expands Product Palette

The British company GlobalInvacom has expanded its product palette to include a range of fibre optic products. This includes a range of fibre optic cables, connectors, and other products. The company is a leading provider of fibre optic products in the UK and has a long history of providing high-quality products to its customers.

GlobalInvacom is a company that is very much involved with its operation. The three owners are very much involved with its operation and have helped make the AZBox receivers one of the top-selling brands not only in The Netherlands but also in Belgium and Luxembourg. For these three countries, Smart Innovations has taken over distribution of the AZBox.

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Satellite Shop, Netherlands

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www.TELE-satellite.com/TELE-satellite-1005/eng/eeshop.pdf

Software Programming, UK

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Satellite Shop, Netherlands

CAMARDO REPORTS **Satellite Shop in The Netherlands**

Worldwide Satellite in Northern Holland

The Dutch are known for their love of RVs and especially motor homes. In the 1970s, when satellite navigation was still a novelty, a Dutchman named Jan van der Wal decided to start a business selling satellite navigation equipment in the Netherlands. He started the business in 1978 in a small town in Northern Holland, in Bunnik, near Utrecht. The business was called "Satellite Shop".

Jan van der Wal was a hobbyist and a collector of satellite navigation equipment. He had a collection of various satellite navigation equipment, including Garmin, Magellan, and others. He started the business to share his knowledge and passion with others who were interested in satellite navigation.

At first, the business was a small shop in a converted garage. It was called "Satellite Shop". The shop was open from 10:00 to 18:00. The shop was a success. It was a success because of the quality of the equipment and the service. The shop was a success because of the passion of Jan van der Wal.

Jan van der Wal was a hobbyist and a collector of satellite navigation equipment. He had a collection of various satellite navigation equipment, including Garmin, Magellan, and others. He started the business to share his knowledge and passion with others who were interested in satellite navigation.



The building has a satellite dish on the roof. The motorhome is white with a black stripe. The building is a two-story building with a grey facade. The motorhome is parked on a paved area. The building is a two-story building with a grey facade. The motorhome is parked on a paved area.



The shop is filled with various satellite navigation equipment. There are several large satellite dishes on display. There are also many smaller satellite navigation equipment, including Garmin, Magellan, and others. The shop is a success. It is a success because of the quality of the equipment and the service. The shop is a success because of the passion of Jan van der Wal.

Jan van der Wal was a hobbyist and a collector of satellite navigation equipment. He had a collection of various satellite navigation equipment, including Garmin, Magellan, and others. He started the business to share his knowledge and passion with others who were interested in satellite navigation.



The man is standing behind a counter. He is wearing a white shirt and a dark vest. He is surrounded by various satellite navigation equipment. The shop is a success. It is a success because of the quality of the equipment and the service. The shop is a success because of the passion of Jan van der Wal.

Jan van der Wal was a hobbyist and a collector of satellite navigation equipment. He had a collection of various satellite navigation equipment, including Garmin, Magellan, and others. He started the business to share his knowledge and passion with others who were interested in satellite navigation.

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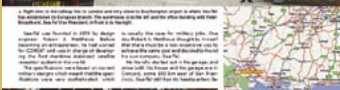
COMPANY REPORT

Martina 2.0-ixi Clash Manufacturer's



Sea-Tel
Alexander Woss

Interviewed and photographed here because of its location in the heart of the city, the building is a prime example of the company's commitment to its customers. The building is a red brick structure with a large white satellite dish mounted on the roof. A sign on the building reads 'Sea-Tel'.



A map of the city of London, showing the location of the Sea-Tel building in the center of the city.



A man in a white shirt and tie standing next to a large white satellite dish mounted on a stand.



A large white satellite dish mounted on a stand, with a sign on the stand that reads 'Sea-Tel'.



A close-up view of the Sea-Tel satellite dish, showing the intricate mechanical components and the large white parabolic reflector.

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Distributor, Netherlands

COMPANY REPORT | Distributor The Netherlands

Clark Electronics 70 Years Old and Full of Ideas

Clark Electronics is a medium-sized company with its activities in The Netherlands but with a global reach. The company has a long history of innovation and is now a leading provider of electronic components and services.

Clark's success is due to its focus on innovation and its commitment to its customers. The company has a long history of innovation and is now a leading provider of electronic components and services. Clark's success is due to its focus on innovation and its commitment to its customers.

In 2002, Clark Electronics was the leading provider of electronic components and services in the Netherlands. The company has a long history of innovation and is now a leading provider of electronic components and services.

Clark Electronics is a medium-sized company with its activities in The Netherlands but with a global reach. The company has a long history of innovation and is now a leading provider of electronic components and services.

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The big glass door is the entrance of Clark Electronics. The company has a long history of innovation and is now a leading provider of electronic components and services.

The big glass door is the entrance of Clark Electronics. The company has a long history of innovation and is now a leading provider of electronic components and services.

A man in a white shirt is standing next to a large satellite dish. The company has a long history of innovation and is now a leading provider of electronic components and services.

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Clark

A man in a white shirt is standing next to a large satellite dish. The company has a long history of innovation and is now a leading provider of electronic components and services.

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Manufacturer of Measuring Instruments, UK

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COMPANY REPORT

Manufacture of Measuring Instruments - HORIZON

A Royal Warrant given to Horizon for the Queen's services to the Royal Society.

The Queen and Horizon

What do you have to do to be a Royal Warrant holder? It's not easy. You have to be a member of the Royal Society, which is the highest authority in the United Kingdom. You have to be a member of the Royal Society, which is the highest authority in the United Kingdom. You have to be a member of the Royal Society, which is the highest authority in the United Kingdom.

It is an honour to be a member of the Royal Society, which is the highest authority in the United Kingdom. It is an honour to be a member of the Royal Society, which is the highest authority in the United Kingdom. It is an honour to be a member of the Royal Society, which is the highest authority in the United Kingdom.

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Horizon has been awarded the Queen's Award for Technological Achievement for its work in the development of the Horizon system. The award is given to companies that have made significant contributions to the UK economy through innovation and technological achievement.

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A Horizon site extension in addition to the main building in Milton Keynes. The extension is a new building for the company's research and development.

A view of the control room at the Horizon system. The control room is a large room with multiple computer monitors and a large screen displaying the system's output.

A view of the control room at the Horizon system. The control room is a large room with multiple computer monitors and a large screen displaying the system's output.

www.TELE-satellite.com/TELE-satellite-0801/eng/horizon.pdf
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DOEBIS

Satellite Wholesaler, Germany



www.doebis.de

COMPANY REPORT Satellite Wholesaler DOEBIS, Germany

DOEBIS is Expanding

Exactly three years ago TELE-satellite published a report on DOEBIS, a satellite wholesaler in Germany. We thought it was a good time to ask DOEBIS how they withstood the air-around crisis. We received a rather surprising answer: "We're expanding!" says Rainer Wörner, Operations Manager at DOEBIS. The company used the economic crisis that took hold in 2008 and instead of scaling back they opted for a counter strategy: they used the opportunity to invest and primarily expanded their sales force.

DOEBIS

www TELE-satellite.com/TELE-satellite-1011/eng/doebis.pdf

SMARTWI

Wireless Card Reader Producer, Denmark



www.smartwi.net

COMPANY REPORT Wireless Card Reader Producer SmartWi

SmartWi to Conquer Provider Market

Readers of this magazine have been familiar with wireless card reader manufacturer SmartWi for years. In TELE-satellite issue 06-07/2007 we published the first report on this Danish company which has come up with a ground plan for their transmitting data from a pay TV provider's subscription card to a second card in the same household. If it's a sudden your viewing pleasure can be extended from the living room all the way to the bedroom, then or any other room at your place. Pay TV whenever you like – and a smart idea for their deserves a proper name too: smart Wi, or SmartWi as short.

smartwi

www TELE-satellite.com/TELE-satellite-1011/eng/smartwi.pdf
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SPAUN POWER

Power Supply Manufacturer, Germany



www.spaun.com

COMPANY REPORT Power Supply Unit Manufacturer

Power Supply Units Made by SPAUN – guaranteed!

Every multi-switch and every amplifier comes with one, and of course every receiver has one, too: a power supply unit which is required to connect the device to the mains. It has become such an everyday component of virtually any electronic device that we have stopped thinking about how it actually works. SPAUN, on the other hand, has given it a great deal of thought and has arrived at a remarkable conclusion. Rainer Späun is the managing director of SPAUN, one of the most renowned quality manufacturers of multi-switches and other accessories for satellite signal distribution. He tells us what it's all about.

SPAUN

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GOLDEN MEDIA

Manufacturer and Distributor, Germany



www.cynextra.com

COMPANY REPORT Manufacturer and Distributor Golden Media, Germany

New On The Market: Golden Media

made with the European Union or other international production country, and as the "Golden Media" can be produced in Europe for the customers right from the start. "Golden Media" is a company that is looking for a good time to start.

GOLDEN Media

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MEDIA BROADCAST

Broadcasting Services, Germany

STATION REPORT | Earth Station Usingen, Germany

Satellite Reception with a 19 Metre Dish

30 Years of Satellite Reception and Uplink in Usingen near Frankfurt

In an age of ever decreasing antenna sizes and only very few satellite dishes using large dishes it's a welcome change to explore really huge antennas. These can only be found in professional settings, of course, and in particular where TV channels are beamed up to a satellite or satellite earth stations. One of Europe's top 5 stations is located close to the small town of Usingen, not far from Frankfurt in Germany.

TELE-satellite World www.tele-satellite.com

www.TELE-satellite.com/TELE-satellite-1009/eng/mediabroadcast.pdf

SPAUN

High Quality Accessory Manufacturer, Germany



www.spaun.com

COMPANY REPORT | High Quality Accessory Manufacturer

Spaun at 40 years

Moving into the new decade with many new products

Alexander Wies

Well, actually, this time we're 40 years old. The company Spaun doesn't celebrate its 40th anniversary until 2010. But looking back at 40 years and a whole century, it's amazing how much has happened. In 1970, the company was founded in a small town near Frankfurt. At that time, the company was a small family business. Today, it's a large company with many products and a global presence. The company has grown significantly over the years, and it's proud to be a leader in the industry. The company has many products, including satellite dishes, antennas, and accessories. The company is always looking for new ways to improve its products and services. The company is always looking for new ways to improve its products and services. The company is always looking for new ways to improve its products and services.

TELE-satellite World www.tele-satellite.com

www.TELE-satellite.com/TELE-satellite-0811/eng/spaun.pdf

SMART

Receiver Manufacturer, Germany

COMPANY REPORT | Receiver Manufacturer Smart

Being 'SMART' in Germany's Black Forest

When you hold this issue of TELE-satellite in your hands, the company Smart Electronics will only have been in existence for less than a year. It's relatively new, but it's a very young company, but it's a very young company, but it's a very young company. The company has many products, including satellite dishes, antennas, and accessories. The company is always looking for new ways to improve its products and services. The company is always looking for new ways to improve its products and services. The company is always looking for new ways to improve its products and services.

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www.TELE-satellite.com/TELE-satellite-0901/eng/smart.pdf

GT SAT

LNB Distributor, Luxembourg

COMPANY REPORT | LNB Distributor GT-SAT

GT-SAT

The company GT-SAT is a Luxembourg-based company. The company has many products, including satellite dishes, antennas, and accessories. The company is always looking for new ways to improve its products and services. The company is always looking for new ways to improve its products and services. The company is always looking for new ways to improve its products and services.

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www.TELE-satellite.com/TELE-satellite-0805/eng/gtsat.pdf

NANOXX

Wholesaler and Receiver Manufacturer, Germany

COMPANY REPORT | Wholesaler and Receiver Manufacturer Nanoxx

Two X's Mark the Spot in Frankfurt

NANOXX

The trademark of the receiver manufacturer's Nanoxx product are the two X's. These two X's also appear in the Nanoxx company name. The founder and President of Nanoxx and chose the name Nanoxx for his line of receivers. It's actually a clever name as the two large X's truly stand out.

TELE-satellite World www.tele-satellite.com

www.TELE-satellite.com/TELE-satellite-0901/eng/nanoxx.pdf

TECHNISAT

TV Manufacturer, Germany

COMPANY REPORT | Technisat Telefunken AG

TV Made in Germany

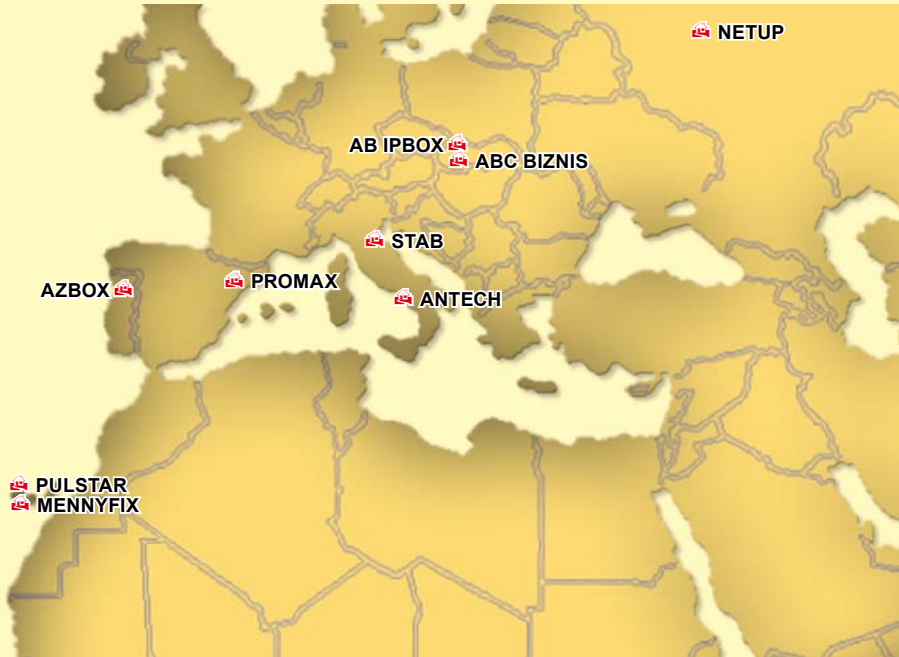
Alexander Wies

There are only a few TV manufacturers left in Germany. One of them is Technisat. The company has many products, including satellite dishes, antennas, and accessories. The company is always looking for new ways to improve its products and services. The company is always looking for new ways to improve its products and services. The company is always looking for new ways to improve its products and services.

TELE-satellite World www.tele-satellite.com

www.TELE-satellite.com/TELE-satellite-0709/eng/technisat.pdf

BEST DIGITAL TV COMPANIES in S/E EUROPE



NETUP

IPTV Software and Hardware Producer, Russia



www.netup.tv

Company Details

Engineers in Research & Development | Total Number of Employees

0 25 50

Average Turnover (Previous, This, Next Year Estimates)

0 5 10 Mio US\$

Production Certificates

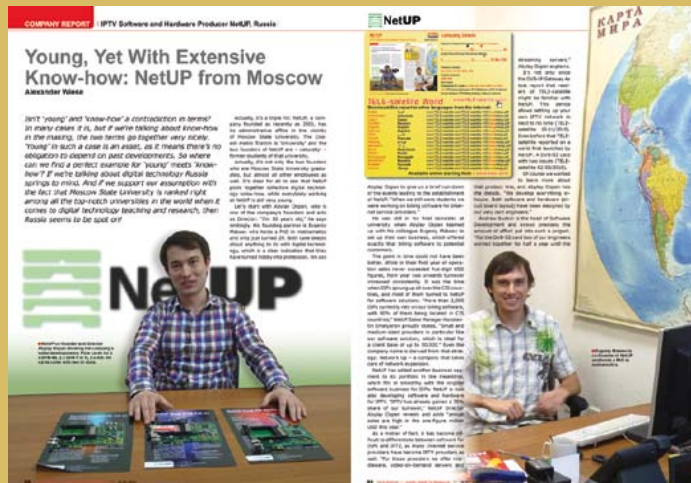
ISO, RoHS, PCI SIG, IEEE, DVB

Production Categories

OEM, ODM

Main Products

Professional PC Cards for DVB-S/S2, DVB-T/MPEG-4, DVB-C, ASI, IPTV Gateway/Streamer, IPTV Middleware, IPTV Conditional Access Systems, IPTV Billing Systems, Video on Demand



www.TELE-satellite.com/TELE-satellite-1101/eng/netup.pdf

AB IPBOX

Satellite Receiver Manufacturer, Slovakia



www.abipbox.com



www.TELE-satellite.com/TELE-satellite-1009/eng/abipbox.pdf

AZBOX

Satellite Receiver Manufacturer, Portugal



www.azbox.com



www.TELE-satellite.com/TELE-satellite-1001/eng/azbox.pdf

Satellite Installer, Spain



Satellite Shop, Spain



Accessory Manufacturer, Spain



Uplink Technology, Italy



Satellite Receiver Manufacturer, Slovakia



Antenna Motor Manufacturer, Italy



BEST DIGITAL TV COMPANIES in MIDDLE EAST

YAHYA

ATLANTA
COMINTOUCH
ECHOLINK

ATLANTA

Satellite Wholesaler, UAE

SmartWi Distributor ATLANTA in Dubai

This report was written because of SmartWi, the Card Sharing Media that lets you watch every channel in every room in your house using just one PayTV card.

SmartWi in Denmark distributes their products all over the world and this includes The Middle East. SmartWi's ever increasing sales figures in this region are due in large part to the non-stop efforts of local distributor ATLANTA, headquartered in Sharjah in the United Arab Emirates.

With SmartWi being an on-line pay television service, ATLANTA has been able to establish a strong presence in the region. ATLANTA's sales are on-line, but the service is available in all the major cities in the region. ATLANTA's sales are on-line, but the service is available in all the major cities in the region. ATLANTA's sales are on-line, but the service is available in all the major cities in the region.




www.TELE-satellite.com/TELE-satellite-1007/eng/atlanta.pdf

ECHOLINK

Satellite Wholesaler, UAE

TRIMAX Distributor ECHOLINK in Dubai

One of the largest satellite wholesalers in the Middle East, ECHOLINK has been serving the region for over 10 years. ECHOLINK's sales are on-line, but the service is available in all the major cities in the region. ECHOLINK's sales are on-line, but the service is available in all the major cities in the region.

With ECHOLINK being an on-line pay television service, ECHOLINK has been able to establish a strong presence in the region. ECHOLINK's sales are on-line, but the service is available in all the major cities in the region. ECHOLINK's sales are on-line, but the service is available in all the major cities in the region.




www.TELE-satellite.com/TELE-satellite-1007/eng/echolink.pdf

COMINTOUCH

Satellite Wholesaler, UAE

SPAUN at COMINTOUCH in Dubai

This report was written because of SPAUN, the Card Sharing Media that lets you watch every channel in every room in your house using just one PayTV card.

SPAUN in Denmark distributes their products all over the world and this includes The Middle East. SPAUN's ever increasing sales figures in this region are due in large part to the non-stop efforts of local distributor COMINTOUCH, headquartered in Sharjah in the United Arab Emirates.

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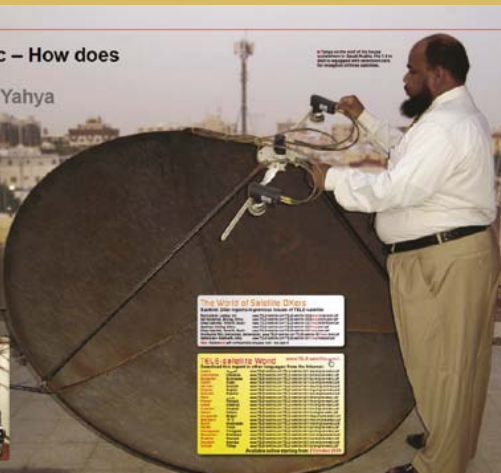

www.TELE-satellite.com/TELE-satellite-1007/eng/comintouch.pdf

YAHYA

Software Programming, KSA

Enigma in Arabic – How does it work? Paying a visit to Yahya in Saudi Arabia

When you switch on a receiver for the very first time you are usually asked which language you prefer. English, German or French are obvious choices. But what about Arabic? From a technical point of view, switching one language into another is no big deal. But what most languages are written from left to right, while Arabic is written from right to left. This is where the problems begin. We set off to meet Yahya and he shows how these problems can be solved. He lives somewhere in Saudi Arabia and would rather not have his last name published because what he does is considered a grey zone by some, even though it's not against the law.



www.TELE-satellite.com/TELE-satellite-0911/eng/yahya.pdf



SQUARE PLAN

Satellite Dealer, South Africa



www.TELE-satellite.com/TELE-satellite-0811/eng/squareplan.pdf

CNBC

Satellite Channel, South Africa



www.TELE-satellite.com/TELE-satellite-0709/eng/cnbc.pdf

SAMMEG

Satellite Wholesaler, South Africa



www.TELE-satellite.com/TELE-satellite-0801/eng/sammeg.pdf

TELEMEDIA

Satellite Uplink, South Africa



www.TELE-satellite.com/TELE-satellite-0709/eng/telemedia.pdf

BEST DIGITAL TV COMPANIES in ASIA

YONGSAN NASA CNS
TOPFIELD ARION
SEKISAT

INFOSAT
FASHION TV

CISS

SUBUR SEMESTA

CISS

Satellite Wholesaler, Singapore

COMPANY REPORT Satellite Wholesaler in Singapore



CISS, Singapore

It is possible to sell over 25 satellite dishes a year and still be a market leader. This is Singapore. This is the first place where you can get a satellite dish at a price that is competitive with the rest of the world. This is the first place where you can get a satellite dish at a price that is competitive with the rest of the world. This is the first place where you can get a satellite dish at a price that is competitive with the rest of the world.

For a greater challenge in their work, CISS has decided to expand its operations to other parts of the world. This is the first place where you can get a satellite dish at a price that is competitive with the rest of the world. This is the first place where you can get a satellite dish at a price that is competitive with the rest of the world. This is the first place where you can get a satellite dish at a price that is competitive with the rest of the world.

CISS is a leading satellite wholesaler in Singapore. It has a wide range of products and services to offer its customers. CISS is committed to providing the best quality products and services at the most competitive prices. CISS is a member of the Singapore Satellite Industry Association (SSIA) and is a leading member of the industry.

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www.TELE-satellite.com/TELE-satellite-1007/eng/singapore.pdf

TOPFIELD

High-End Receiver Manufacturer, Korea

COMPANY REPORT High-End Receiver Manufacturer, Korea



Premium Brand Topfield
Alexander Weiss

Topfield has been an established player in the high-end satellite receiver market for many years. The new TMS super box will further strengthen Topfield's foothold in the top-quality market. TELE-satellite wanted to learn more about the company's future strategy and spoke with Dong Hoon Suk of the Topfield marketing team.

Topfield has been an established player in the high-end satellite receiver market for many years. The new TMS super box will further strengthen Topfield's foothold in the top-quality market. TELE-satellite wanted to learn more about the company's future strategy and spoke with Dong Hoon Suk of the Topfield marketing team.

www.TELE-satellite.com/TELE-satellite-0905/eng/topfield.pdf
www.TELE-satellite.com/TELE-satellite-0801/eng/topfield.pdf

INFOSAT

Dish Manufacturer, Thailand

www.infosats.com

COMPANY REPORT Dish Manufacturer INFOSAT, Thailand



Innovation Out of Thailand

From a long-standing product such as a C-band antenna still has room for improvements. A few months ago, INFOSAT in Thailand introduced a J.S. water impervious antenna to the market. The result was immediate success. The driving force behind this new product is King Tangsomwong, founder and owner of the company. INFOSAT is not new to the world of TELE-satellite, having previously reported in Arion and the new issue in TELE-satellite issues 02-03/2007 and 02-03/2008.

INFOSAT is a leading dish manufacturer in Thailand. It has a wide range of products and services to offer its customers. INFOSAT is committed to providing the best quality products and services at the most competitive prices. INFOSAT is a member of the Thailand Satellite Industry Association (TSIA) and is a leading member of the industry.

www.TELE-satellite.com/TELE-satellite-0907/eng/infosat.pdf
www.TELE-satellite.com/TELE-satellite-0803/eng/infosat.pdf
www.TELE-satellite.com/TELE-satellite-0705/eng/infosat.pdf

ARION

High Quality Receiver Manufacturer, Korea

COMPANY REPORT High Quality Receiver Manufacturer, Korea



Arion on its way

More than a year ago TELE-satellite published a report highlighting the success of South Korean manufacturer of high-quality receivers Arion with headquarters in Arirang, one of the southern suburbs of Seoul. This time we wanted to find out how Arion has managed to last through the rough seas of last year and which expansion plans are on the road map for 2008.

Arion is a leading receiver manufacturer in Korea. It has a wide range of products and services to offer its customers. Arion is committed to providing the best quality products and services at the most competitive prices. Arion is a member of the Korea Satellite Industry Association (KSIA) and is a leading member of the industry.

www.TELE-satellite.com/TELE-satellite-0903/eng/arion.pdf
www.TELE-satellite.com/TELE-satellite-0801/eng/arion.pdf
www.TELE-satellite.com/TELE-satellite-0701/eng/arion.pdf

OPERATOR MARKET Qualified

Classification for Best Digital TV Companies



Attributes of Qualified Company:

- High Production Volume ■ Quality Controlled
- Customized Product Case ■ Customized Product Software
- Aftersale Service

NASA CNS

Satellite Wholesaler, Korea



www.TELE-satellite.com/TELE-satellite-0805/eng/nasacns.pdf

FASHION TV

Satellite Channel, Thailand



www.TELE-satellite.com/TELE-satellite-0811/eng/fashiontv.pdf

SUBUR SEMESTA

Dish Manufacturer, Indonesia



www.TELE-satellite.com/TELE-satellite-0805/eng/subursemesta.pdf

YONGSAN

Satellite Shop, Korea



www.TELE-satellite.com/TELE-satellite-0807/eng/koreasatshop.pdf

SEKISAT

Satellite Wholesaler, Korea



www.TELE-satellite.com/TELE-satellite-0801/eng/sekisat.pdf

BEST DIGITAL TV COMPANIES in CHINA

 SHALOM **CHANGHONG**

MOTICK

AZURESHINE

TEVII

PC Card & Receiver Manufacturer. Taiwan



www.tevij.com

Company Details

Engineers in Research & Development | Total Number of Employees

A horizontal number line with a yellow background. It has major tick marks at 0, 25, and 50, labeled in red. A black arrow points to the midpoint between 0 and 25 (12.5). A red arrow points to the midpoint between 25 and 50 (37.5).

Average Turnover (Previous, This, Next Year Estimates)

0.....2.5.....5 Mio US\$

Production Certificates

RoHS

Production Categories

OEM, ODM

Main Products

PC Cards for DVB-S/S2 and DVB-T/MPEG-4. Boxes for DVB-S/S2.

DVB-T/MPEG-4. PC Sticks for DVB-S/S2

www.TELE-satellite.com/TELE-satellite-1101/eng/tevji.pdf

BOXSAM

Receiver Manufacturer: China



www.bxsm.com

YINHE

High Volume Receiver Manufacturer. China



www.vinhe.com

Receivers
made by

BOXSAM can easily be considered an up-start company as it was founded only in 2002 with a seed capital of 15 million USD. Starting out with CATV products BOXSAM expanded its business to cover satellite receivers and some other interesting products as well in 2004. We paid a visit to this company to learn about their way of doing business.



Jeffrey Shaw is vice president of the city of Zhengzhou in the eastern Chinese province of Henan, with a population of around one million. It is considered a semi-city by Chinese standards.

Jeffrey Shaw is vice president of Shanghai and Taiwan-based engineering firm, the Spector Manual, which focuses more on eastern procedures and network operators. He talks us into this talk in 2004 - the first year of renewable production - very, very little, but we are growing. By 2010 that figure has increased to 100,000 tons of renewable energy, and he also has target savings as the cities reduce "dusts" Jeffrey Shaw.

The production facilities can be seen anywhere near the headquarters, so

smaller areas where manufacturing processes have been improved, says the answer: "Our manufacturing process is broken 6 km away." It is important to understand that the broken areas are on the same plant, and that workers' nonstop response to the problem is not the answer. Manufacturing has little time gap. Change is in the process of setting up a new plant, and it is not possible to have 100 percent success, which should be kept in the mind of HR. It will have to be a mix of participation and ownership.

Finally, a caution: Do not appear to be in the production building when you are talking to the employees. Do not tell them that you are not there.

Organized for the Future
Receiver Manufacturer YINHE
Presents Their Factory
Alexander Wiese

The enormous 353,000-square-meter production site is located in the city of Shanghai in the Jiangsu province, about 100 km north of Shanghai in Jiangsu China. Here, in addition to the boundary-spanning design building, you'll also find multiple fair number buildings.

and Africa, 10 million units the remaining product groups produce more of 30 million," says Ibrahim Tayi, the head. In 2003 we are increasing our sales in Latin America in cooperation with the remaining product groups being to sell 30 million."

There are three other product groups that are one of the targeted 60. "In our subsidiaries, we also produce suitable

and even up to the Middle East, 10% up to Europe including the CIS countries and Southeast Asia, another 10% go to Australia, 10% to Africa and 10% to South America."

It would seem to be no surprise that TAPAC operates offices in critical regions namely in Dubai since 2002 and in Istanbul since 2003. "In our plan, we plan to open two additional offices



Chinese high volume manufacturer YINHE is one of the top five producers in China. Although this company is well known within China, it is only here readers that recognize the name YINHE outside of its country since abroad it is only known by its other name, the YINHE designed boxes (Original Cards) are marketed by other companies, primarily dealers and programming operators, under their own brand name YINHE. Therefore a just the manufacturer (china) (DCC) and for the same being it will stay that way. There are no plans for YINHE to open their export market with their own brand name. What does a look inside one of these high volume manufacturing plants? TELE-satellite wanted to find out.

[illegible]

www.TELE-satellite.com/TELE-satellite-1009/eng/boxsam.pdf

www.TELE-satellite.com/TELE-satellite-1007/eng/vinhe.pdf

SVEC

Professional Dish Manufacturer, China



www.svec.com.cn

COMPANY REPORT | Professional Dish Manufacturer SVEC, China

SVEC Dishes from Chengdu/Sichuan

Alexander Weiss

The Sichuan province is well known outside of China for its spicy cuisine. A natural Szechuan is the "hot pot": in one pot with two separate sections is very spicy soup and a mild soup are heated up into which chopsticks are used to dunk in different types of food for a few minutes. This could be the same concept of meat or vegetables. Along with that you have sweetened spring Lo Kait Fungies to eat the spiciness of the hot pot. The company SVEC in Sichuan's capital city of Chengdu, a city with eight million inhabitants in southwestern China, has its own spicy menu. SVEC is looking for new challenges adding to their production of satellite dishes, they want to play a much bigger role in the world market with high quality products.

At the beginning of the 1990s, SVEC was the first SVEC dish manufacturer in China. At the beginning of the 1990s, SVEC was the first SVEC dish manufacturer in China. At the beginning of the 1990s, SVEC was the first SVEC dish manufacturer in China.

www.TELE-satellite.com/TELE-satellite-1003/eng/svec.pdf

SHALOM

Satellite Installer, China

COMPANY REPORT | Satellite Installer, Beijing, China

Shalom Beijing

Alexander Weiss

Shalom Hahy, that's not really his name, but that's about what it sounds like in Chinese. He finds his name to be very suitable and at the same time very appropriate. Shalom is a satellite installer in Beijing, in a country where private satellite reception is still officially illegal, or risky at the very best. Of course, this makes it all the more interesting for us so we wanted to get a closer look at his business. We met up with him in one of Beijing's more popular sports bars - The Den.

Shalom Hahy is a satellite installer in Beijing, in a country where private satellite reception is still officially illegal, or risky at the very best. Of course, this makes it all the more interesting for us so we wanted to get a closer look at his business. We met up with him in one of Beijing's more popular sports bars - The Den.

www.TELE-satellite.com/TELE-satellite-0911/eng/shalom.pdf

SKYWORTH

Receiver Manufacturer, China



www.skyworthdigital.com

COMPANY REPORT | Receiver Manufacturer Skyworth, China

Quality Control at Skyworth

Alexander Weiss

One of the largest receiver manufacturers in the world is Skyworth. Skyworth Group Co. Ltd. is one of the leading manufacturers of TV sets in China. The company started its satellite receiver research as early as 1997 and in 2003 a subsidiary was established under the name of Shenzhen Skyworth Digital Technology Co. Ltd. These 13 years of experience in satellite technology made the company more and more professional and now Skyworth claims to be the leading DVB and HDTV manufacturer in China.

www.TELE-satellite.com/TELE-satellite-1003/eng/skyworth.pdf

AZURESHINE

Professional Dish Manufacturer, Taiwan



www.azureshine.com.tw

COMPANY REPORT | Satellite Dish Manufacturer Azure Shine

Dishes in Focus

Alexander Weiss

The company has been producing dishes for over 10 years. The company has been producing dishes for over 10 years. The company has been producing dishes for over 10 years.

www.TELE-satellite.com/TELE-satellite-0707/eng/azureshine.pdf

CHANGHONG

Receiver and TV Manufacturer, China



www.changhong.com

COMPANY REPORT | Receiver and TV Manufacturer CHANGHONG, China

Large-scale Quality and Innovation Made by CHANGHONG

Alexander Weiss

CHANGHONG is one of the largest manufacturers of receivers with headquarters in Nanjing in the southern province of Jiangsu, China, some 130 km from the province capital of Chengdu. Not only do millions of satellite and terrestrial receivers leave the production premises every year, but also an equal number of flat screen TVs, so that the company ranks among the most important digital corporations in the world.

www.TELE-satellite.com/TELE-satellite-1003/eng/changhong.pdf

MOTECK

Antenna Motor Manufacturer, Taiwan



www.motek.com

COMPANY REPORT | Antenna Motor Manufacturer MOTECK

MOTECK's Motor Professionals

Alexander Weiss

MOTECK's motor professionals are experts in the field of satellite motor technology. They have been working in this field for over 10 years. They have been working in this field for over 10 years.

www.TELE-satellite.com/TELE-satellite-0707/eng/motek.pdf

BEST DIGITAL TV COMPANIES in S CHINA

ALUOSAT 卫星
LAOGE 卫星
SMIT 卫星
JIUZHOU 卫星
KAIFA 卫星
INTELLITECH 卫星

JIUZHOU

Receiver Manufacturer, China



www.jiuzhou.com.cn

COMPANY REPORT DTT at Jiuzhou, China

Terrestrial Receivers at Jiuzhou

Our readers are very familiar with Jiuzhou - have a look at TELE-satellite issue 02-03/2007. In 2008 Jiuzhou celebrated their 50th birthday and moved into their new Jiuzhou Electric Building One. TELE-satellite issue 02-03/2008. In September 2009, when the Shenzhen Metro Line 1 was extended, Jiuzhou became close to a Metro station. It's a five minute walk to the station which has a nice and fitting name: "Tuchang".

TELE-satellite World www.tele-satellite.com

www.TELE-satellite.com/TELE-satellite-1003/eng/jiuzhou.pdf
www.TELE-satellite.com/TELE-satellite-0903/eng/jiuzhou.pdf
www.TELE-satellite.com/TELE-satellite-0803/eng/jiuzhou.pdf
www.TELE-satellite.com/TELE-satellite-0703/eng/jiuzhou.pdf

ALUOSAT

Satellite Consultant, China



www.aluosat.com

COMPANY REPORT Satellite Consultant, China

Aluo-sat Knows Everybody!

Let me name the company that has been active in the satellite field in China for many years, but also because he is a high-profile figure in many other satellite areas as well. Since China is entering the DTT age in 2009, now is a good time for visiting Luo Shi Gang in his office in Shenzhen.

TELE-satellite World www.tele-satellite.com

www.TELE-satellite.com/TELE-satellite-0905/eng/aluosat.pdf

KAIFA

Satellite Receiver Manufacturer, China

COMPANY REPORT Satellite Receiver Manufacturer Kaifu, China

The Birth of a New Receiver Manufacturer Kaifu in China Starts Production

For the time this issue of TELE-satellite will be published, Kaifu will have been manufacturing satellite receivers for just a few weeks. When we paid them a visit, they were just finishing the installation of their assembly line and an initial test run was soon to follow. Who exactly is Kaifu and what makes this company think they're ready to step onto the market as a satellite receiver manufacturer?

TELE-satellite World www.tele-satellite.com

www.TELE-satellite.com/TELE-satellite-1003/eng/kaifu.pdf

LAOGE

Satellite Installer, China

COMPANY REPORT Satellite Installer, China

Shenzhen Satellites

As of now private satellite reception is still illegal in China, but in actual fact you can already find a landscape of only you look hard enough. Satellite installers advertising their services in English and setting up systems for foreigners, for example, don't have much to fear from the authorities.

TELE-satellite World www.tele-satellite.com

www.TELE-satellite.com/TELE-satellite-0903/eng/laoge.pdf

MULTISWITCH NETWORKS

WINNING SOLUTIONS FOR SAT TV DISTRIBUTION



www.teletek.com.tr

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Phone: +90 212 295 9700 Fax: +90 212 295 4243 E-mail: export@teletek.com.tr

Made in **Turkey**

INTELLITECH

Satellite Shop, Hongkong

COUNTRY REPORT Hongkong

Satellite Shopping in HongKong

It's not a real surprise that satellite shopping is not a new thing in HongKong. In fact, it's been going on for a long time. The city is a major hub for satellite shopping, with many companies and individuals involved in the business. The market is highly competitive, and the products are of high quality. The city is also a major center for satellite shopping, with many companies and individuals involved in the business. The market is highly competitive, and the products are of high quality.

www.TELE-satellite.com/TELE-satellite-0809/eng/intellitech.pdf

SMIT

CAM Manufacturer, China

COMPANY REPORT CAM Producer SMT

SMIT - CAMs for the World

SMIT is a leading manufacturer of satellite cameras and related equipment. The company has a long history of providing high-quality products and services to customers around the world. The company's products are used in a wide range of applications, including satellite television, video surveillance, and scientific research. The company is committed to innovation and excellence in its products and services.

www.TELE-satellite.com/TELE-satellite-0703/eng/smit.pdf



BEST DIGITAL TV COMPANIES in AMERICA

GLOBAL SATELLITE

Satellite Dealer, USA

COMPANY REPORT Satellite Dealer, Fort Lauderdale, USA

Satellite Reception on a Ship

Where actually would you buy a satellite antenna for a ship? Well, naturally, you'd go to the coast. And if you're looking for a satellite antenna for reception of TV and radio, you should go where the expensive yachts are since almost every one of them has a satellite TV system installed on it. A good place would be Fort Lauderdale in Florida in southeastern USA. Many yachts can be found anchored here or stop here on their way to the Caribbean. And this is where you'll find Global Satellite.

Right in the middle of the busy and scenic Florida coastline, Global Satellite is a small business. However, it is one of the most successful in the world. It is a family business, founded by the late Mr. John J. Seaton, who was a pioneer in the satellite TV industry. His son, Mr. John J. Seaton Jr., is now the owner and president of the company. Mr. Seaton Jr. has a long history in the industry, having worked for several major satellite TV providers before starting Global Satellite. He has a deep understanding of the market and the needs of his customers. Global Satellite is a one-stop shop for all your satellite TV needs. We offer a wide range of services, including installation, maintenance, and repair. We also offer a variety of satellite TV packages to suit your needs. Whether you're a casual viewer or a serious collector, we have something for you. Our experienced technicians are trained to handle all types of satellite TV systems. We can help you choose the right system for your needs and budget. We can also help you troubleshoot any problems you may be having. So, if you're looking for a reliable satellite TV provider, Global Satellite is the place to go. We're committed to providing the best service possible to our customers. We're proud to be a part of the Global Satellite family.

Global Satellite is a family business, founded by the late Mr. John J. Seaton, who was a pioneer in the satellite TV industry. His son, Mr. John J. Seaton Jr., is now the owner and president of the company. Mr. Seaton Jr. has a long history in the industry, having worked for several major satellite TV providers before starting Global Satellite. He has a deep understanding of the market and the needs of his customers. Global Satellite is a one-stop shop for all your satellite TV needs. We offer a wide range of services, including installation, maintenance, and repair. We also offer a variety of satellite TV packages to suit your needs. Whether you're a casual viewer or a serious collector, we have something for you. Our experienced technicians are trained to handle all types of satellite TV systems. We can help you choose the right system for your needs and budget. We can also help you troubleshoot any problems you may be having. So, if you're looking for a reliable satellite TV provider, Global Satellite is the place to go. We're committed to providing the best service possible to our customers. We're proud to be a part of the Global Satellite family.

www.TELE-satellite.com/TELE-satellite-1007/eng/globalsatellite.pdf

COWMIX

Satellite Dealer, USA

COMPANY REPORT Satellite Dealer COWMIX in Arizona, USA

JT is COWMIX

Satellite reception has been limited with pay-TV for many years in the USA. But this has slowly been changing: free-to-air (FTA) reception is becoming more and more popular. The USA is a land of immigrants and since many providers from around the world send their programming to the USA for free, it makes sense that so many want to be able to watch TV in their mother-tongue or perhaps even their grandmother-tongue. Why should you pay a monthly fee to watch English-language programming when you can watch channels in their original language for free?

Mr. John T. O'Connell is the owner and president of COWMIX. He has a long history in the industry, having worked for several major satellite TV providers before starting COWMIX. He has a deep understanding of the market and the needs of his customers. COWMIX is a one-stop shop for all your satellite TV needs. We offer a wide range of services, including installation, maintenance, and repair. We also offer a variety of satellite TV packages to suit your needs. Whether you're a casual viewer or a serious collector, we have something for you. Our experienced technicians are trained to handle all types of satellite TV systems. We can help you choose the right system for your needs and budget. We can also help you troubleshoot any problems you may be having. So, if you're looking for a reliable satellite TV provider, COWMIX is the place to go. We're committed to providing the best service possible to our customers. We're proud to be a part of the COWMIX family.

www.TELE-satellite.com/TELE-satellite-1003/eng/cowmix.pdf

QUALITY SATELLITE

Satellite Dealer, USA

COMPANY REPORT Satellite Dealer Quality Satellites, San Diego, California

The Southwestern-most Satellite Dealer in the USA

Are you located in the extreme southwestern corner of the USA? If you take one more step and you fall into the Pacific ocean? Well, if you happen to be there and have the need for a satellite dish, TELE-satellite can recommend one for you: QUALITY SATELLITES in San Diego. Located not far from the Mexican border, they have been offering a large selection of FTA receivers since 2007.

Quality Satellites is a family business, founded by the late Mr. John J. Seaton, who was a pioneer in the satellite TV industry. His son, Mr. John J. Seaton Jr., is now the owner and president of the company. Mr. Seaton Jr. has a long history in the industry, having worked for several major satellite TV providers before starting Quality Satellites. He has a deep understanding of the market and the needs of his customers. Quality Satellites is a one-stop shop for all your satellite TV needs. We offer a wide range of services, including installation, maintenance, and repair. We also offer a variety of satellite TV packages to suit your needs. Whether you're a casual viewer or a serious collector, we have something for you. Our experienced technicians are trained to handle all types of satellite TV systems. We can help you choose the right system for your needs and budget. We can also help you troubleshoot any problems you may be having. So, if you're looking for a reliable satellite TV provider, Quality Satellites is the place to go. We're committed to providing the best service possible to our customers. We're proud to be a part of the Quality Satellites family.

www.TELE-satellite.com/TELE-satellite-1005/eng/qualitysatellite.pdf

SEATEL

Maritime 3-Axis Dish Manufacturer, USA

www.cobham.com

COMPANY REPORT Maritime 3-Axis Dish Manufacturer

SeaTel's Five-Satellite Antenna

Alexander Wies

Self-adjusting satellite antennas are typically used on ships; they automatically adjust the position of the antenna according to the movement of the ship so that the antenna is always properly pointed to the desired satellite. The principle here is on "five-satellite". But what if you want to receive five satellites at the same time? SeaTel's answer is: Yes, you can. SeaTel's Five-Satellite Antenna is a unique design that allows you to receive five satellites at the same time. This is a major breakthrough in the industry. It allows you to receive a much wider range of channels than ever before. It also allows you to receive channels in multiple languages. So, if you're looking for a reliable satellite TV provider, SeaTel is the place to go. We're committed to providing the best service possible to our customers. We're proud to be a part of the SeaTel family.

www.TELE-satellite.com/TELE-satellite-0911/eng/seatel.pdf
www.TELE-satellite.com/TELE-satellite-0901/eng/seatel.pdf

WORLDWIDE SATELLITES

Satellite Wholesaler, Canada

COMPANY REPORT | North American Satellite Wholesaler

Worldwide Satellites in Toronto

Satellite business in a franchise system. This is the concept that Nick Adams from Worldwide Satellites in Toronto, Canada follows. Satellite business based on a franchise system? What exactly does this mean? We wanted to know so we reached out to Mr. Adams. This city is right next to Toronto and is also the home of Toronto's Pearson International Airport.

Mr. Adams is the owner of Worldwide Satellites, a franchise system that has been operating since 1998. He is currently the President of the company and is responsible for the overall management of the business. He has a background in sales and marketing and has been successful in building a strong franchise system.

Worldwide Satellites is a franchise system that provides satellite services to its franchisees. The franchisees are responsible for the day-to-day operations of the business, while Mr. Adams provides the support and guidance. The franchise system has been successful in building a strong reputation in the market and has a large number of franchisees across North America.

Mr. Adams is currently looking for franchisees who are interested in the satellite business. He is looking for individuals who are motivated, hardworking, and have a strong sales and marketing background. He is also looking for individuals who are willing to invest in the business and are looking for long-term growth.

Worldwide Satellites is a franchise system that provides satellite services to its franchisees. The franchisees are responsible for the day-to-day operations of the business, while Mr. Adams provides the support and guidance. The franchise system has been successful in building a strong reputation in the market and has a large number of franchisees across North America.

Mr. Adams is currently looking for franchisees who are interested in the satellite business. He is looking for individuals who are motivated, hardworking, and have a strong sales and marketing background. He is also looking for individuals who are willing to invest in the business and are looking for long-term growth.

www.TELE-satellite.com/TELE-satellite-0905/eng/worldwidesatellites.pdf

SADOUN

Satellite Dealer, USA

COMPANY REPORT | Satellite Dealer Sadoun

Into the Satellite Future at High Speed

The 20th anniversary of Sadoun's business is a testament to the company's success in the satellite industry. Sadoun has been a leader in the industry for over two decades, providing high-quality satellite services to its customers. The company has a strong reputation in the market and has a large number of customers across the USA.

Sadoun is currently looking for franchisees who are interested in the satellite business. He is looking for individuals who are motivated, hardworking, and have a strong sales and marketing background. He is also looking for individuals who are willing to invest in the business and are looking for long-term growth.

Sadoun is a franchise system that provides satellite services to its franchisees. The franchisees are responsible for the day-to-day operations of the business, while Sadoun provides the support and guidance. The franchise system has been successful in building a strong reputation in the market and has a large number of franchisees across the USA.

Sadoun is currently looking for franchisees who are interested in the satellite business. He is looking for individuals who are motivated, hardworking, and have a strong sales and marketing background. He is also looking for individuals who are willing to invest in the business and are looking for long-term growth.

www.TELE-satellite.com/TELE-satellite-0707/eng/sadoun.pdf

SONICVIEW

Satellite Receiver Manufacturer, USA

COMPANY REPORT | Satellite Receiver Manufacturer

Millionaire in 4 Years – Maybe Even 3! SonicView, USA

SonicView is a satellite receiver manufacturer that has been operating since 1998. The company has a strong reputation in the market and has a large number of customers across the USA. SonicView is currently looking for franchisees who are interested in the satellite business.

SonicView is a franchise system that provides satellite services to its franchisees. The franchisees are responsible for the day-to-day operations of the business, while SonicView provides the support and guidance. The franchise system has been successful in building a strong reputation in the market and has a large number of franchisees across the USA.

SonicView is currently looking for franchisees who are interested in the satellite business. He is looking for individuals who are motivated, hardworking, and have a strong sales and marketing background. He is also looking for individuals who are willing to invest in the business and are looking for long-term growth.

www.TELE-satellite.com/TELE-satellite-0903/eng/sonicview.pdf

SATMAN

Satellite Dealer, Canada

COMPANY REPORT | Canada

Satellite Business in Winnipeg, Manitoba

Satman is a satellite dealer that has been operating since 1998. The company has a strong reputation in the market and has a large number of customers across Canada. Satman is currently looking for franchisees who are interested in the satellite business.

Satman is a franchise system that provides satellite services to its franchisees. The franchisees are responsible for the day-to-day operations of the business, while Satman provides the support and guidance. The franchise system has been successful in building a strong reputation in the market and has a large number of franchisees across Canada.

Satman is currently looking for franchisees who are interested in the satellite business. He is looking for individuals who are motivated, hardworking, and have a strong sales and marketing background. He is also looking for individuals who are willing to invest in the business and are looking for long-term growth.

www.TELE-satellite.com/TELE-satellite-0705/eng/satman.pdf

MFC

Satellite Filter Manufacturer, USA

TELE Recommended **OM** Qualified
www.microwavefilter.com

COMPANY REPORT | Satellite Filter Manufacturer, USA

Microwave Filter Company High Quality Specialized Filters Made in USA

Microwave Filter Company is a satellite filter manufacturer that has been operating since 1998. The company has a strong reputation in the market and has a large number of customers across the USA. Microwave Filter Company is currently looking for franchisees who are interested in the satellite business.

Microwave Filter Company is a franchise system that provides satellite services to its franchisees. The franchisees are responsible for the day-to-day operations of the business, while Microwave Filter Company provides the support and guidance. The franchise system has been successful in building a strong reputation in the market and has a large number of franchisees across the USA.

Microwave Filter Company is currently looking for franchisees who are interested in the satellite business. He is looking for individuals who are motivated, hardworking, and have a strong sales and marketing background. He is also looking for individuals who are willing to invest in the business and are looking for long-term growth.

www.TELE-satellite.com/TELE-satellite-0903/eng/mfc.pdf

FORTECSTAR

Receiver Manufacturer, Canada

COMPANY REPORT | Receiver Manufacturer Fortec Communications America

From Dealer to Producer Alexander Wiebe

Fortecstar is a receiver manufacturer that has been operating since 1998. The company has a strong reputation in the market and has a large number of customers across Canada. Fortecstar is currently looking for franchisees who are interested in the satellite business.

Fortecstar is a franchise system that provides satellite services to its franchisees. The franchisees are responsible for the day-to-day operations of the business, while Fortecstar provides the support and guidance. The franchise system has been successful in building a strong reputation in the market and has a large number of franchisees across Canada.

Fortecstar is currently looking for franchisees who are interested in the satellite business. He is looking for individuals who are motivated, hardworking, and have a strong sales and marketing background. He is also looking for individuals who are willing to invest in the business and are looking for long-term growth.

www.TELE-satellite.com/TELE-satellite-0705/eng/fortecstar.pdf



Hybrid broadcast broadband TV Get organized for the inevitable

This will not be a surprise for TELE-satellite readers. A new standardization initiative has been started to integrate the digital TV world with the Internet. The basic idea is quite clear: make it as seamless as possible for the end user. TELE-satellite editors often mentioned the obvious truth: the average end user is rarely interested through what transmission medium data is coming to their TV-sets or monitors. Is it via satellite, via cable or via the air? Or perhaps via Ethernet cable rather than the coaxial one used in CATV? And maybe via optical fibers?

This is a typical situation in today's rapidly changing industry: most advanced manufacturers demonstrate that new functionalities are possible from the technology and economical point of view and suddenly everybody realizes that if we do not have a good new standard, a number of solutions not compatible with one another will pop up soon. This will trigger a big confusion among the end users, operators and manufacturers. It is in everybody's interest to create a common solution.

Exactly this happened in the receiver boxes industry. Our readers certainly remember the test reports describing the receivers capable not only to process satellite TV signal but also enabling the user to surf the Internet.

On August 29 2009, a consortium of leading European companies of broadcasters, research institutes, satellite

terminal devices at user's site are TV-sets and receiver boxes that optionally have web connection. Please note: not the PC's!

With a HbbTV product, the user still has only one remote control and one screen and the operation is as easy as with a regular TV-set and a receiver box. The user enjoys the combined wealth of broadcast and broadband: new services from entertainment providers, online providers and CE manufacturers. Examples are: catch-up TV, video on demand, interactive advertising, personalization, voting, betting, photo sharing or social networking. Enhanced EPG and teletext are also included.

Hybrid in the HbbTV name means using on one side the medium typical for today's digital TV broadcast and on the other side the World Wide Web. Specification is independent from the broadcast transmission medium: DVB-T, DVB-S and DVB-C. IP connection is recommended but not required. Of course, the functionality will be limited if one has no connection to the Internet.

And now one paragraph for the professionals. The HbbTV specification is based on elements of existing standards and web technologies: OIPF (Open IPTV Forum), CEA, DVB and W3C. Except for the standard web technologies (HTML,



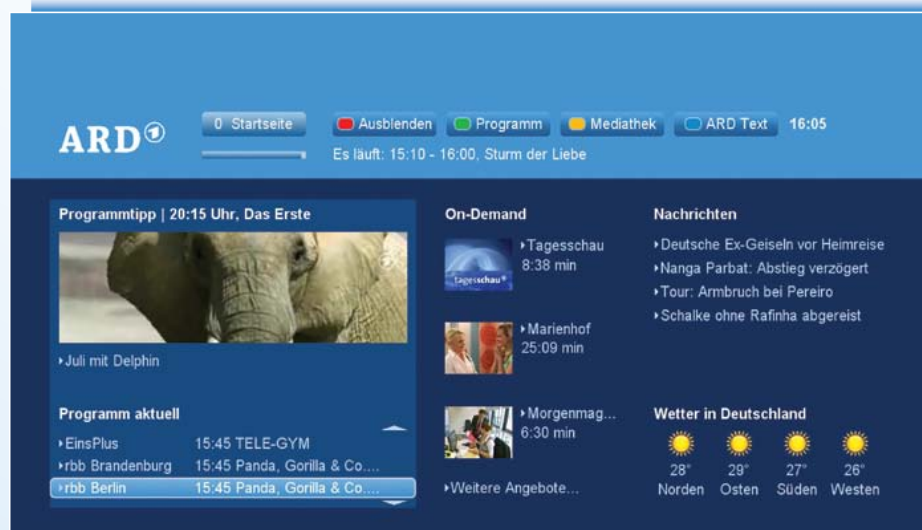
operators and media and software providers has been established with a goal to prepare a harmonized broadcast and broadband specification for delivery of news and entertainment to the end user. The solution is based on existing standards and web technologies and the ter-

CSS, JS, DOM), HbbTV provides: video control API's, access to channel list, broadcast service selection, streaming video playback (HTTP & RTSP), access to now/next program events, support for DSM-CC object carousel or HTTP, load files or applications using either proto-



col, monitor object carousel for changes, DSM-CC stream events, security model – trusted & untrusted applications, same origin policy, application signaling & life-cycle model, capability exchange, basic PVR scheduling (optional) and media download (optional).

Even if you are not a dedicated receiver designer, you can probably easily recog-

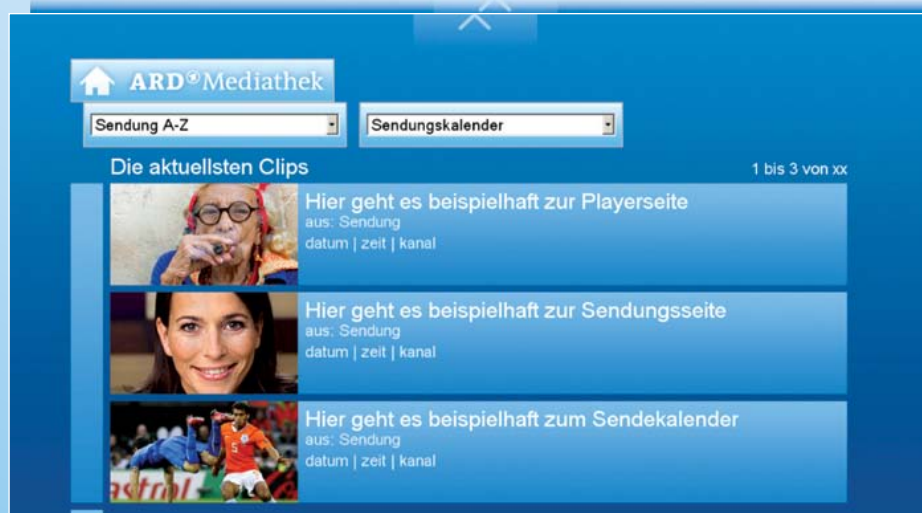


developed previously that deliver similar functionality. These are: MHEG (Multimedia and Hypermedia Expert Group) – popular in the United Kingdom – and MHP (Multimedia Home Platform), an open programming standard developed by DVB and especially popular in Italy.

It is expected that HbbTV will be inter-operational with them while ensuring significant enhancement to the viewing experience. It is also expected that the first two countries in which HbbTV will become popular will be Germany and France.

nize the terms related to digital TV specifications and to the Internet. DSM-CC is about downloading data through the digital TV channel while HTTP refers to the same process but through the Internet connection. HTTP and RTSP are the streaming video formats used to deliver movies via the Internet while in DVB we have a transport stream (TS). Java scripts are used in both worlds. Quite often the OSD you can see on the screen is coded with Java.

HbbTV has some “competitors” – other solutions for interactive TV services



HbbTV exemplary implementations were shown at IFA and IBC in 2009. To have an idea about the “new look” that HbbTV makes possible see the pictures taken at IFA on ARD stand. German operator ARD has demonstrated 14 different applications using HbbTV.

The HbbTV specification has been submitted to ETSI by the end of November 2009 under reference ETSI TS 102 796 “Hybrid Broadcast Broadband TV (HBBTV)”. You can find more info on the official web page: <http://hbbtv.org/>.



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iPhone, iPad and iPod Apps for Antenna Alignment, or: How your smartphone turns into a great tool for DXers and installers

Thomas Haring

Smartphones are currently turning our mobile world upside down and have conquered large segments of the consumer market. They allow us to not only stay in touch through conventional phone calls but also to check our mail, hook up to the Internet, stay up to date on social networking platforms like Twitter and Facebook, listen to music, shoot photos and help us with all sorts of everyday tasks. Yet, smartphones can also be used in the professional realm – to help with the installation of satellite antennas, for example.

If we look at all the shiny smartphones on offer these days there is one particular kind that seems to ride a gigantic wave of success: Of course we're talking about the Apple iPhone which – in combination with the iTunes store – offers a wealth of additional applications (so-called apps) to pimp it up.

TELE-satellite has looked at a range of apps that might be handy with regard to satellite reception.

DishPointer Compass and DishPointer Maps

Some issues ago we introduced apps from DishPointer (TELE-satellite issues 02-03/2008 and 12-01/2010) and obviously they are featured in this overview as well.

Both apps specifically deal with satellite antenna installation and alignment and

they start out with determining the current location with the help of the iPhone's built-in GPS receiver.

Next, you enter the satellite position you'd like to receive and the app then calculates azimuth, elevation and skew parameters. In theory, these values are all you ever need to correctly set up your dish, and most antennas feature a small scale to help you find the correct position.

But if you don't have a compass at our disposal there's one answer you still need to find, even though the azimuth angle is known: In which horizontal direction do you need to move the antenna?

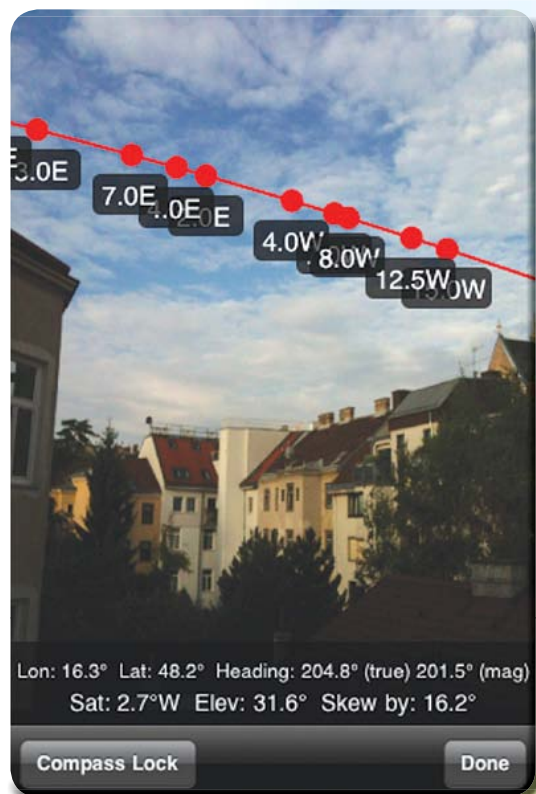
The DishPointer Maps app provides the answer by looking up data from Google Maps. On the phone's display you see your location and its surroundings in map view, satellite view or hybrid view combining both, with an arrow clearly indicating which way your satellite antenna should

point. Comparing certain striking points on Google Maps with their real-world counterparts quickly lets you achieve a rough alignment of your antenna.

Another aspect that needs to be addressed – preferably BEFORE starting with the actual installation job – is evaluating the local environment. DishPointer Compass comes into play now as it finds out whether or not a desired satellite position can be received at the actual location and which reception range a motorised antenna is able to cover. Perhaps there are trees, buildings or other obstructions in the way of perfect reception?

After all, it's of no use to do all the tricky work and mount an antenna only to find out afterwards that the signals you're looking for don't reach the LNB.

With DishPointer Compass it's easy to avoid such disappointment. It lets you know which satellites can be received at



■ DishPointer Compass superimposes the Clarke Belt on the camera to create augmented reality

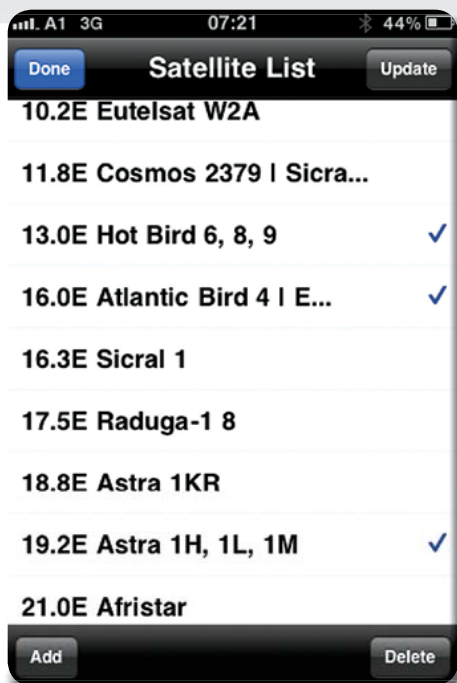




1

the current location and where the best mounting place is. The app comes with an extremely comprehensive list of virtually all satellite positions between 180° East and 177° West. With the pro version (listed on the iTunes store as DishPointer Compass) this list can even be edited so that new positions can be added. The less expensive version without editing option is called DishPointer Augmented Reality.

- 1. Simply touch the display to start augmented reality
2. Extensive satellite list of DishPointer Compass
3. Arrows indicate which way the antenna has to be moved



2

Users start with selecting all those satellites that might be of interest to them. If a satellite is not featured on the pre-stored list it can easily be added manually (pro version only). A touch of the 'Camera - AR View' now activates the built-in camera and the iPhone itself needs to be pointed towards the sky.

As if by magic the smartphone's display does not only show the actual camera view but also – depending on the way you hold and point the phone – the Clarke Belt as well as all currently visible satellite positions. This way it is child's play, on one hand, to figure out which satellite is where and, on the other hand, to see at first glance whether or not there is an unrestricted line of sight between your current location and the satellite.

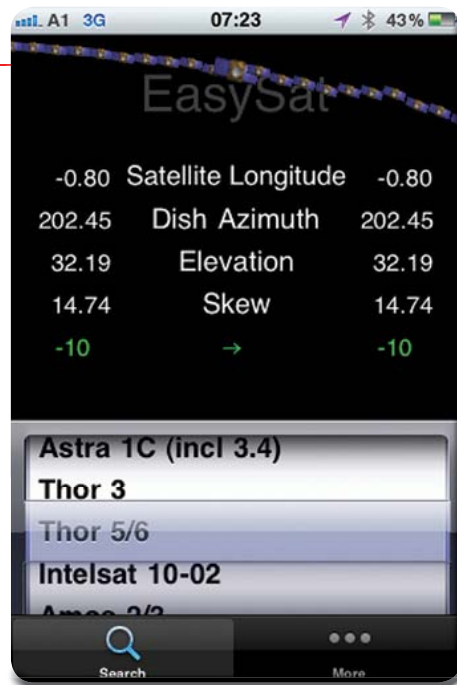


3

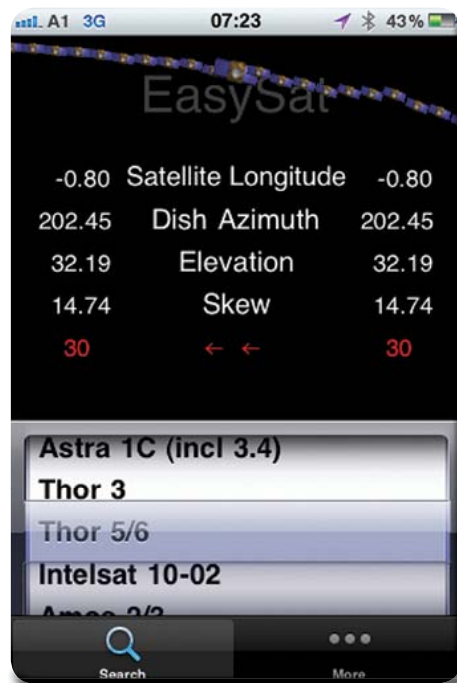
Such combination of actual view and additional information that is inserted by the device is called augmented reality and this new technology is tremendously helpful when it comes to visualise information that would be difficult to obtain otherwise. In the twinkling of an eye you can look at the complete range of a motorised antenna and before you even carry the antenna up to the roof you can check which satellites will be received and which won't.

It's apps like these that can turn a regu-

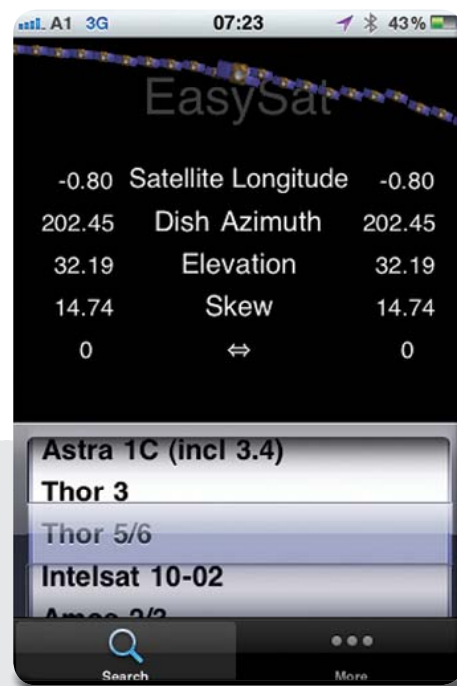
4. Green arrows in the lower area mean ■ the antenna has to be moved another 10° to the West in order to receive signals from THOR at 1° West
5. Red arrows mean the antenna has to be moved another 30° to the East in order to receive signals from THOR at 1° West
6. Calculation of azimuth, elevation and skew with the help of EasySat



4



5



6

lar smartphone into an indispensable tool for professional and amateur installers. Here at TELE-satellite we've been using both DishPointer apps for some time now and can unreservedly say that you'd be hard pressed to find a more reliable way of determining the reception situation at any given location. No more unnecessary work and no more wasted time and money.

Price:

DishPointer Maps - **5,99€ (7,99 US\$)**

DishPointer Augmented Reality - **7,99€ (9,99 US\$)**

DishPointer Compass - **15,99€ (19,99 US\$)**

Rating: very good

EasySat

EasySat comes with a database of 173 satellites complete with their full names and orbital positions. Thanks to the built-in positioning system of the iPhone this app calculates azimuth, elevation and skew of any desired satellite with regard to the current location. There is also a virtual Clarke Belt for you to select the desired satellites, or you may choose to pick your preferred orbital position from a pre-stored list.

For those of you with an iPhone 3GS or iPhone 4 with integrated compass there even is a convenient graphic display showing satellite installers the way to the correct azimuth value. Red and green arrows pop up until you point the phone accurately in the direction of the required satellite. If you now point the antenna in the same direction as well you have already achieved a rough alignment. We tried it out in a real-world scenario and were very pleased with the results.

Price:

EasySat - **3,99€ (4,99 US\$)**

Rating: good

Satellite Sliderule Pro & Satellite Augmented Reality

This app comes in two versions: One is for the iPhone 3G without compass (Satellite Sliderule Pro), and the other is for the iPhone 3GS and iPhone 4 with compass (Satellite Augmented Reality).

Both versions show a world map with geographic borders of all countries and superimpose grid-like rulers for determining azimuth and elevation values. Depending on the satellite that is to be

received the grid is moved along the map like a slider and the app shows which satellite is to be found at the current position of the grid. You then need to find your own location on the map and read the values that are indicated with circles.

In our test we were not really impressed by that approach since the world map appears rather small on the iPhone's display. This makes it difficult to accurately determine your actual location, which in turn may lead to significant deviations from correct parameters.

The augmented reality version of this app uses the integrated camera of the iPhone and superimposes the Clarke Belt with the corresponding satellite positions. As with the DishPointer Compass app you need to point the iPhone towards the sky and move it until the Clarke Belt appears on the display.

Unfortunately this feature, too, is inferior to the DishPointer app: While the Satellite Augmented Reality app features a comprehensive list of pre-stored satellites – all of which can be selected or unselected for displaying – we didn't appreciate the fact the Clarke Belt itself is not shown as a continuous

7. The Satellite Sliderule app creates a grid that you can slide across a world map

8. Circles indicate the azimuth and elevation values

9. The Satellite Augmented Reality app shows the positions of previously selected satellites on the display. Unfortunately, the Clarke Belt itself is missing.

line. Instead, satellites seem to float freely which is confusing at times. In addition, there are seven virtual buttons in the upper section of the display for limiting satellites by alphabet. In our opinion this feature serves no useful purpose and wastes valuable display space – after all, the iPhone's display is on the smaller side for satellite installation anyway.

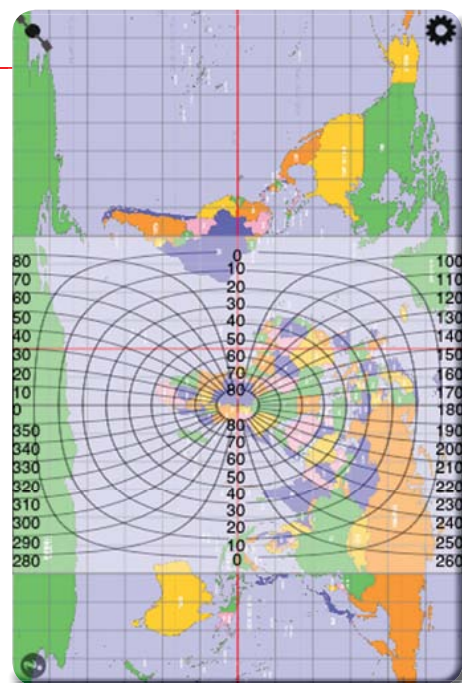
To be fair, this app is less expensive than most competing products with € 1.59 (US\$ 1.99) for the simpler version and € 3.99 (US\$ 4.99) for the augmented reality version. On the other hand, due to limited usability we still cannot wholeheartedly recommend this solution.

Price:

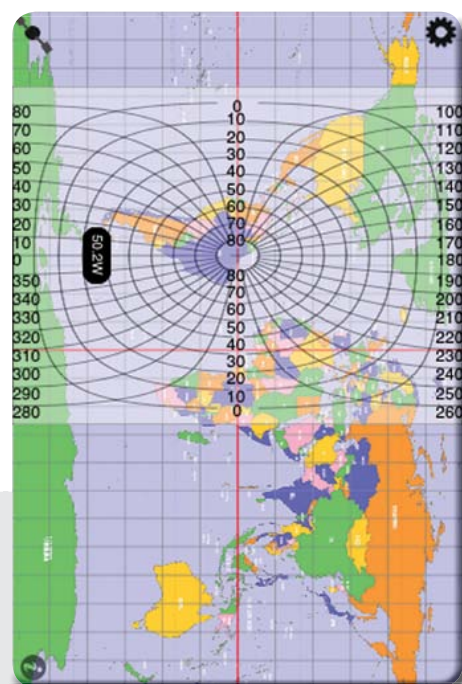
Satellite Sliderule - **1,59€ (1,99 US\$)**

Satellite Augmented Reality - **3,99€ (4,99 US\$)**

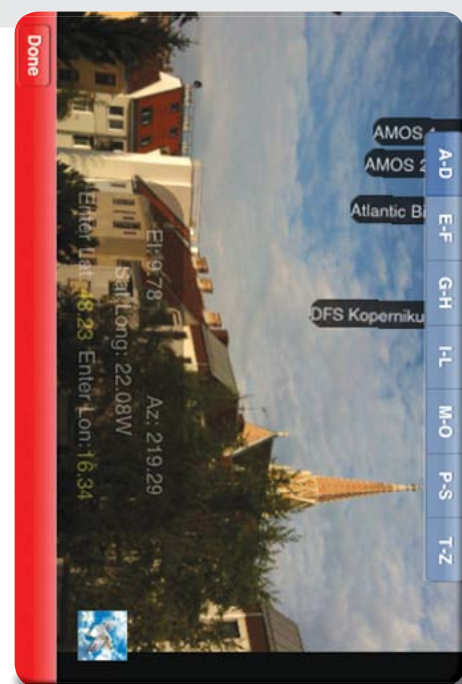
Rating: sufficient



7



8



9



1



2



3

iSat

iSat is completely free of charge and is particularly useful for all those who want a quick calculation of azimuth and elevation values for a particular satellite. Using the iPhone's integrated positioning function this app determines the current location and, once the desired satellite has been selected, calculates and displays the corresponding reception parameters. The pre-stored satellite list dates back

■ 1. Automatic determination of the current location with iSat. Alternatively, a list of pre-set locations is available from which you select your place manually.

2. Calculation of azimuth, elevation and skew using iSat

to 2007 and hence is not fully up-to-date. However, all calculated results are displayed clearly and in an easy-to-use way. There are no additional functions available, but that's fine considering you don't have to pay a single penny to get it. Owners of the iPhone 3GS and iPhone 4 can use the compass app provided by Apple for aligning their antenna according to the azimuth parameters. Since the iSat app accurately does the maths it is indeed possible to correctly align your antenna with this tool.

Price:
iSat - free
Rating: good

Satellite Finder

This app also benefits from the integrated positioning feature of the iPhone

4. Calculation of azimuth, elevation and skew using iSat Finder

5. Chart with correlations between dBW and antenna diameter

to determine the current position. It then proceeds with calculating the azimuth, elevation and skew values for the selected satellite. The pre-stored satellite list that comes with the Satellite Finder app is comprehensive, up-to-date and easy-to-use with all data presented in a clear and concise fashion. We liked the fact that each satellite is directly linked to a transponder list so that transponder data are available via Safari for each satellite, if required. All this, however, cannot make up for the fairly high price of this app, which stands at € 8.99 (US\$ 10.99) and is definitely too high from a cost/benefit perspective. Competing apps such as iSat offer more

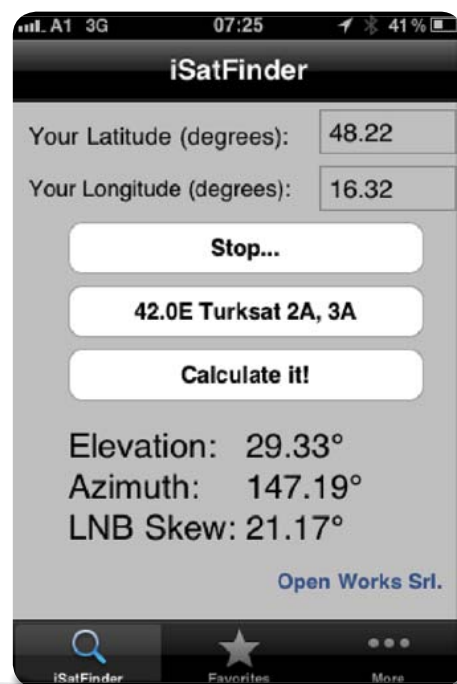
■ 3. Calculation of azimuth, elevation and skew using Satellite Finder

or less the same features free of charge and other apps with a similar price offer a broader range of features.

Price:
Satellite Finder - 8,99€ (10,99 US\$)
Rating: insufficient

iSatFinder

With iSat Finder it is possible to either enter the current location manually based on geographic coordinates or to have the integrated positioning system of the iPhone determine where you're at. You can choose your desired satellite from a very comprehensive database of virtually all satellites between 180° East and 178° West and after pressing 'Calculate it' the



4



5

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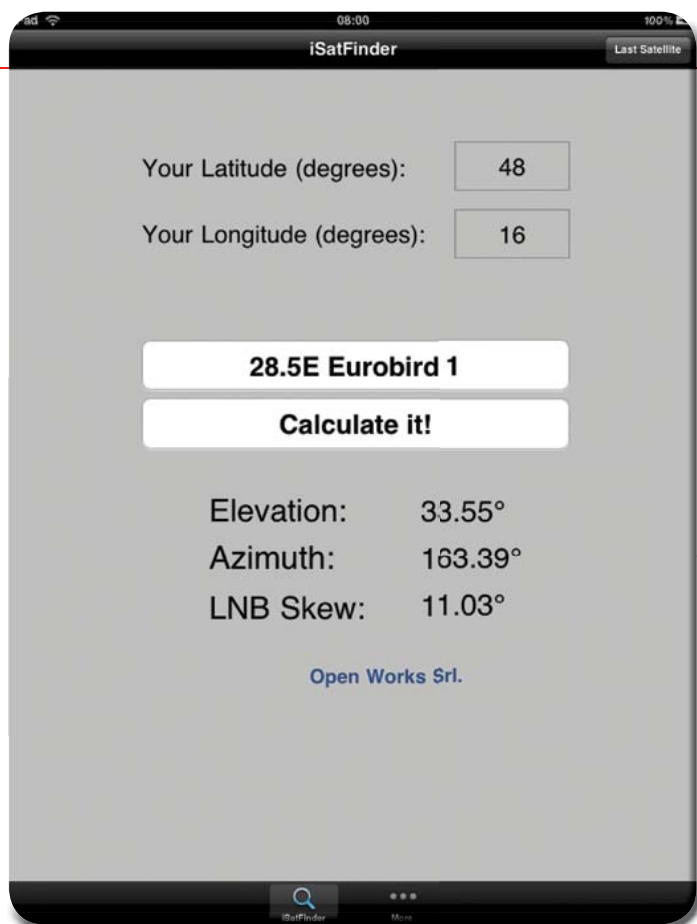
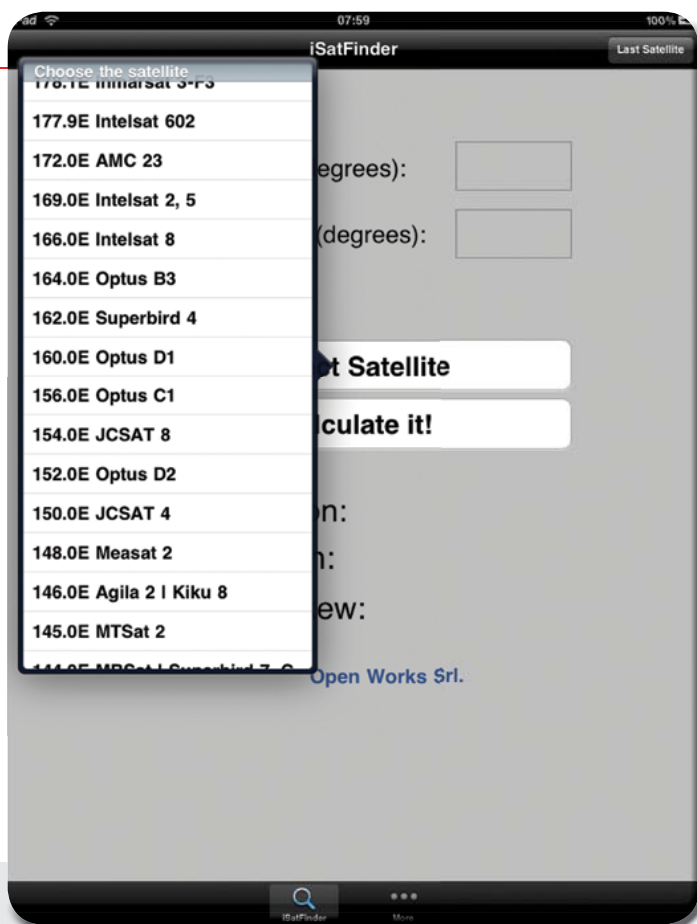
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ТЕЛЕКАНАЛ ЭКСПЕРТ



1. Satellite list of iSatFinder for the iPad

2. iSatFinder for the iPad

app shows azimuth, elevation and skew values in a breeze. All calculated values are clearly presented and easy to read.

Satellites you need more frequently can be stored in a favourites list. We particularly liked the chart linking antenna diameter and satellite transmission power in dbW to find out how large a dish or how strong a signal needs to be for reception. Another point deserving special praise is the fact that the iSat Finder is also available for the Apple iPad in native resolution. The iSat Finder will set you back € 1.59 (US\$ 1.99), which is a fair price considering what you can get out of this app. Features such as augmented reality and map view are – unfortunately – not available.

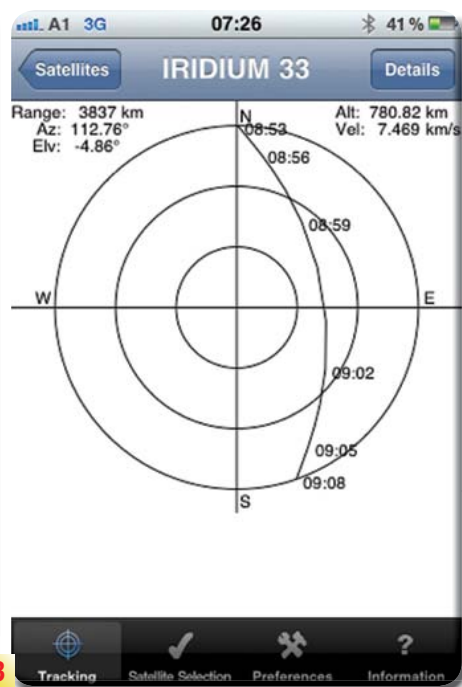
Price:
iSat Finder - **1,59€ (1,99 US\$)**
Rating: good

Satellite Tracker & Satellite Tracker Plus

Both apps (no charge for the basic version and € 1.59/US\$ 1.99 for the plus version) are mainly targeted to fans of ham radio and weather satellites, which are birds that – unlike broadcast satellites – are not geostationary. They circle the earth and in order to receive signals from them you need to know when exactly they pass over your region. The app



accesses the Internet to download up-to-date and very comprehensive information for several satellites (ham radio, GPS, Galileo, weather satellites, Iridium, Orbcomm, various research satellites, Geodetic, Globalstar and even the ISS, among others) and calculates the current and upcoming availability of these satellites. In order to do so this, the app, too, uses the iPhone's integrated positioning function. It is possible to enter reception frequencies for each satellite so that all parameters are available when a satellite passes over your place. The plus version also provides the actual footprint for



3. Selected satellites are shown in the Satellite Tracker app, complete with their upcoming availability at the current location

4. Flight track of IRIDIUM33 satellite

each satellite on a world map. With this additional feature it is possible to find out immediately where a specific satellite currently passes by and which places it covers with its signals. A whole range of setting and display options is available as well with the plus version.

Price:
Satellite Tracker - **free**
Satellite Tracker Plus - **1,59€ (1,99 US\$)**
Rating: very good

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two options available when you go about the antenna alignment: You can either switch to map view which comes with arrows (similar to DishPointer Maps) and superimposes the available satellite positions, or you activate the augmented reality mode which uses the iPhone camera to create a combination of camera view and Clarke Belt – complete with available satellites.

We tried both options and both delivered flawless results which matched those of the

1. Various settings that are available with Satellite Tracker

2. The plus version uses a map to indicate the actual footprint of a selected satellite



DishLoc

The DishLoc app sports a clever design and easy-to-use interface. It comes with an extensive database of all direct-to-home satellites, determines the current location by using the iPhone's integrated GPS receiver and adjusts the list of satellites accordingly. We genuinely liked that approach because it just wouldn't make sense for a German user to be shown satellite positions such as ECHOSTAR 14 at 119° West, for example. Unless you decide to dig a hole through the earth you'll never have a chance of receiving signals from that position in Germany.

As a next step, one or more satellites can be selected for detailed analysis. As soon as the current location is set either manually or determined via GPS all satellite entries come with correct azimuth, elevation and skew values. We found this to be a very convenient feature. There are

DishPointer apps. The app also inserts a reticle in addition to the Clarke Belt, which makes it even easier to find the perfect antenna alignment. There are a number of optional settings and all iPhone models are supported. The app even works with the iPod touch, even though there might be some restrictions due to different hardware used by Apple. To sum up, the DishLoc leaves nothing to be desired.

Price: DishLoc - 10,99€ (13,99 US\$)
Rating: very good

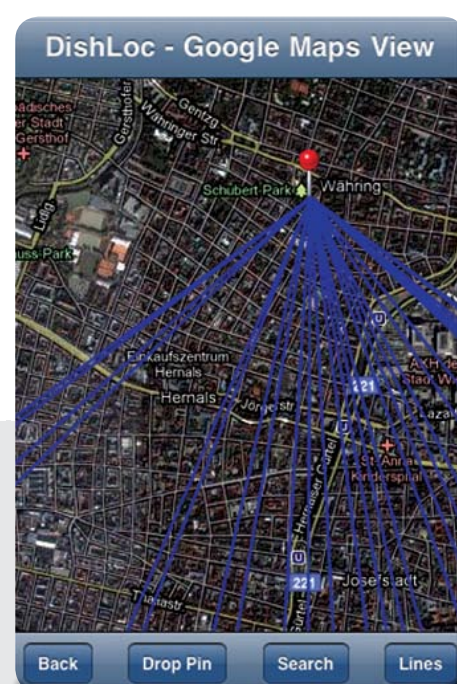
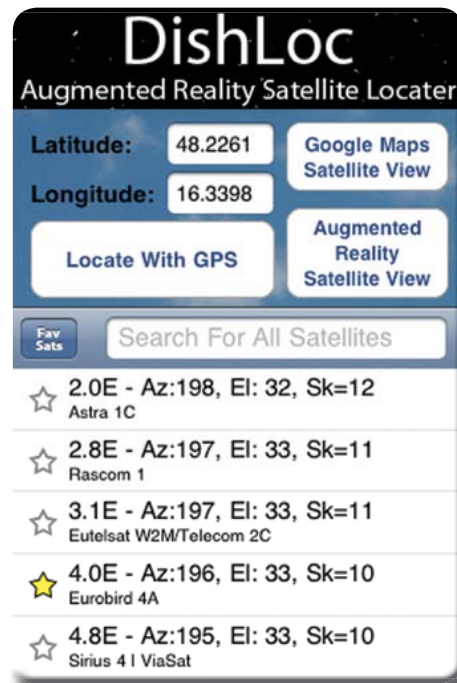
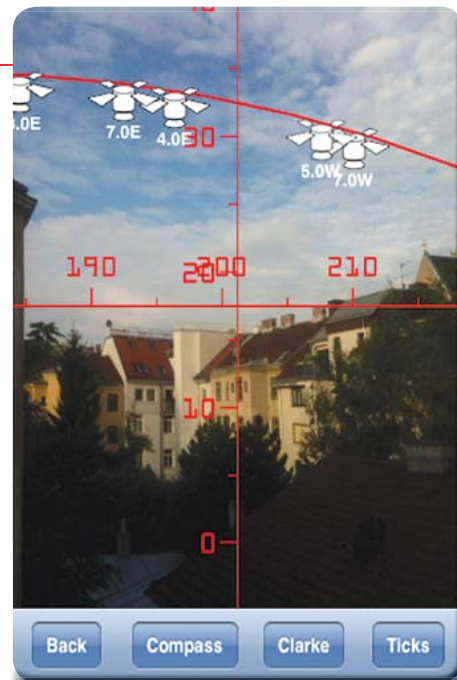
Conclusion

As you have seen, quite a number of apps deal with satellite antenna installation and alignment. Obviously, this overview can only provide a snapshot of what is available at a given point in time, as the number of apps increases almost by the day. Resourceful software developers are probably working on even better solutions this very moment and – as always – beauty is in the eye of the beholder. While particular features may be an absolute must for some, others will go out of their way to avoid them. We have tried to establish factual criteria for rating all apps in this overview, but we would still urge our readers to try out and see for themselves which app they like best. For a rough orientation have a close look at the screenshots provided or the information available on the iTunes store.

3. Augmented reality view of DishLoc

4. DishLoc only shows those satellites that can actually be received at the current location

5. The blue lines in the DishLoc app indicate the antenna's position for receiving signals of a particular satellite. For illustration purposes we selected several satellites on this screenshot.



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Two Satellite DIY enthusiasts

Have you ever built a satellite receiver yourself? Not many have, but Rainer Schulz from the small town of Tröbitz an der Lausitz in the East of Germany is one of the very few who achieved just that in 1988. And he didn't stop there: He even built a 1.5m antenna to go with it. It's no surprise then that he chose to become self-employed and founded a small satellite dispatching business which today is run by his daughter Daniela Knott.



Tröbitz (Cottbus)

■ There's no doubt: A house with such huge antenna in the front yard must be occupied by DXers. In case you're wondering – the antenna can be rotated and therefore receives signals from 31 satellites in an arc from 83° East to 58° West.



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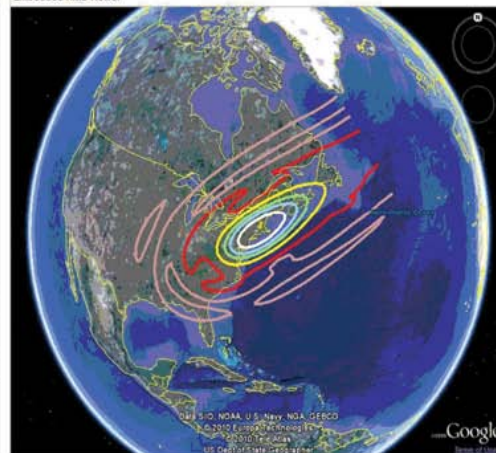
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Rainer Schulz's company is based in a pretty family home that looks just like many others in the Lausitz area. A huge 3.66m satellite antenna that is surrounded by several smaller dishes reveals what's going on inside. In an annex next to the garage visitors find a small showroom with receivers that might be interesting for DXers, above all. These boxes are equipped with low-threshold tuners and a reliable blind scan mode, both of which are key features of DX receivers. "This box, for instance, comes with an extremely accurate signal quality indicator," Rainer Schulz explains and points to a receiver providing immediate feedback with regard to changing signal quality. "19% means there is stable video, 18% means some artefacts will occur and 17% means reception is not possible anymore." Such attention to detail is additional proof of Rainer Schulz's DX credentials.

It all started in 1988 when he was manager of the measurement and control systems department at a large manufacturer of agricultural machinery in Eastern Germany. At the time the Berlin Wall was still in place and there was no way you could get your hands on satellite receivers, LNBs or antennas in what was the German Democratic Republic. Yet, Rainer Schultz was in a privileged position: "I also used to work in customer service for my employer, which meant I was allowed to

E-Commerce
Schulz & Knott GbR

■ A multi-band antenna right out on top of the showroom: The Ku band LNB in the centre is surrounded by a C band LNB for linear polarisation and a second C band LNB for circular polarisation. The whole system is motor-powered for automatic alignment.

■ Meet the boss: Daniela Knott acts as managing director and is seen here in the showroom next to a display cabinet filled with a huge range of multi-switches. "70% of our customers are regular users, while 30% are genuine satellite DXers. Some 80% of sales are achieved in Germany, with another 10% going to Austria and 5% each to Denmark and the Netherlands," she says.



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■ How it all began: Rainer Schulz's first self-made receiver dating back to 1988. He sourced individual components such as the tuner and a chipset from West Germany, but all the rest is 'proudly made in the GDR'.



■ Rainer Schulz even built his own meter. Here he shows the original device from 1988.

undertake business trips to West Germany." There he obtained a tuner, an LNB as well as a wiring diagram and smuggled everything back to East Germany. He used the workshop of his employer to build his first self-made receiver with the components and information collected in the West. "I even went so far as to build an antenna as well," he walks down memory lane. "I made a parabolic mould using concrete in my backyard, laid it out with epoxide resin and glass-fibre sheet and in the end had a perfectly usable 1.5m dish." Up to this day Rainer Schulz is proud of his early achievements and even digs up the receiver he made back then from the basement. And as if that wasn't enough, there is even a signal meter around that he also built himself back then.

Obviously, his technical knowledge didn't go unnoticed and so it came about that he built a total of ten receivers himself. "They were sold on for tons of money," as CATV head-ends, in particular, were interested in satellite receivers and paid up to 6.000 marks per unit. After the Berlin Wall had come down all this was to change dramatically. Truckloads of satellite equipment were sent from West Germany, but also farming equipment from the West all of a sudden was available alongside homegrown products. The transition from centrally planned socialist economy to free market was felt first-hand by Rainer Schulz, as sales of his employer's company slumped and he was laid off.

What he did then was turn his tumbling blocks into stepping stones. "It was the second of July 1990 when my first company 'Antennen- & Satanlagenbau Rainer Schulz' opened for business." In 2000 sat-



■ Berndt Rosenberger has been a satellite DXer for just as long. Here he considers his options of how to convert a mast mounting system to make it fit to an actuator. A dish manufacturer has asked Rainer and Berndt to find a solution for that.



■ Another invention: Thanks to a small motor the Ku band LNB can be skewed. On the second picture you can see the component before installation, and the third picture shows the control unit.



E-Com
Schulz & K



■ This is controlling the LNB, this time for the C band: the motor (red) turns the LNB. Next picture shows the control unit.



■ C band reception with only a small antenna? No problem, if you know how and where to mount the LNB. One antenna manufacturer has equipped a 1.2m dish with alternative rods that allows to arrange both the Ku band LNB in the focal point and the C band LNB outside the focal point using a rail system. Even the DiSeqC switch fits in. "At our location this system allows reception of three C band satellites at 40° East, 5° West and 30.5° East," explains Berndt Rosenberger.



■ A look inside the AVCOM LNB: Only the cross-shaped element in the background is rotated. Depending on the 45° turn either linear or circular signals can be received.

shop24 was established as a second string to Rainer Schulze's bow and in 2004 the registered name was changed to 'E-Commerce Schulz & Knott GbR (satshop24.de)'.

Berndt Rosenberger used to work for 'Antennen- & Satellitenanlagenbau R. Schulz' from 1990 until his retirement. Before that his career had been similar to that of Rainer Schulz. He, too, built his first satellite antenna himself, even though he sourced his first satellite receiver from friends of a friend's friend – as was the case with so many things in former East Germany. "What I did invent – so to speak – was a rather peculiar way of setting up polar mount antennas," Berndt Rosenberger remembers. "We waited for a pitch-black night and then used a tube which we aligned exactly towards the polar star. This meant we had a precise northern alignment and this is how we then erected the antenna mast."

With Berndt and Rainer in the background the business embarked on a route of steady success. The first few years were immensely successful. "We were able to sell some 500 fully-fledged systems per annum, and we also installed most of them

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■ Another innovation of the two satellite experts: The original LNB rail of this multi-LNB antenna did not have enough space to squeeze in another LNB for reception of HISPASAT at 30° West. But then again, who says you can't extend the rail? Right, but you have to take into account that an extended rail needs a modified shape. As you can see on the picture what they did was use a piece of empty pipe as dummy LNB and attached the HISPASAT LNB in an upward bend. "While you can't receive every single transponder, most of them are still available," Berndt Rosenberger says.

ourselves," they remember the initial days of their cooperation. Starting in 1994 business slowed down and they shifted their focus on cable systems in turn. In 2003 they began experimenting with the C band and installed a 1.2m antenna with two LNBs: One for linear signals and the other for circular signals.

Two years later the huge 3.66m antenna – purchased from satellite wholesaler DOEBIS – followed suit. With this new equipment they were able to experiment some more and aim for reception under extreme conditions as well. Of course this also allowed them to gain additional expertise. "For C band reception we constructed a special skewing mechanism: Depending on the reception sample either circular or linear polarisation was received. This way a dielectric was not required any longer."

For Ku band reception they have some innovations in store as well when it comes to extreme reception conditions: "If you use a polar mount antenna this is of particular importance, as polarisations are not always set at a precise 90° angle," Berndt Rosenberger explains the reason behind.

Using the best LNBs, the most suitable receivers and their own inventions for LNB skewing they managed to receive signals from satellites that are far out of footprint at their location.

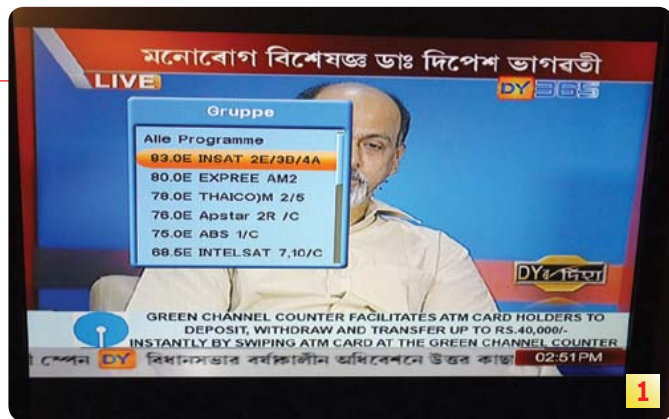
In the meantime, they had worked up a solid reputation in the DXing scene and they still organise a DXer meeting every year. "Last year a total of 300 DXers from all over Germany took part," Rainer Schulz – who is also known as Ponny on the Internet – remembers. "Some participants even travelled from Austria, the Netherlands, Poland, the Czech Republic or Hungary to be at our get-together," he adds. Anyone interested in attending next time should mark 11 June 2011 on their calendar. It will be a brilliant chance to have a chat with a top-notch DX professional.

Rainer Schulz and Bernd Rosenberger are no longer involved in the day-to-day management of their business. "I retired in 2009 and my son Carsten Schulz took over receiver and antenna construction as well as my share in the company." Rainer Schulz's daughter Daniela Knott is the managing director and reveals some inside information. "We only sell to end

customers, with our top-selling product being the T90 multi-LNB antenna." Almost 90% of sales are generated with this product alone. "Some 5% of sales are with the 1.2m antenna," Daniela Knott adds. Connecting rod motors required for rotating antenna systems also sell well.

This product list alone is proof enough for the fact that special requirements are at the heart of the company's business. After all, large dishes as well as multi-LNB antennas are only required by satellite enthusiasts looking for more than just your standard fare. For them the company also offers a wide range of accessories such as multi-switches required for simultaneous reception of more than one satellite position.

Rainer Schulz and Berndt Rosenberger have chosen the right path and turned their hobby into their profession. They are rewarded not only with a flourishing business, but also with a reputation of being profound DXers willing to help and assist anybody who cares to ask. With their annual DXer meetings they spread their knowledge in the satellite community, which makes them a valuable asset.



Extreme reception in the Lausitz region in the east of Germany

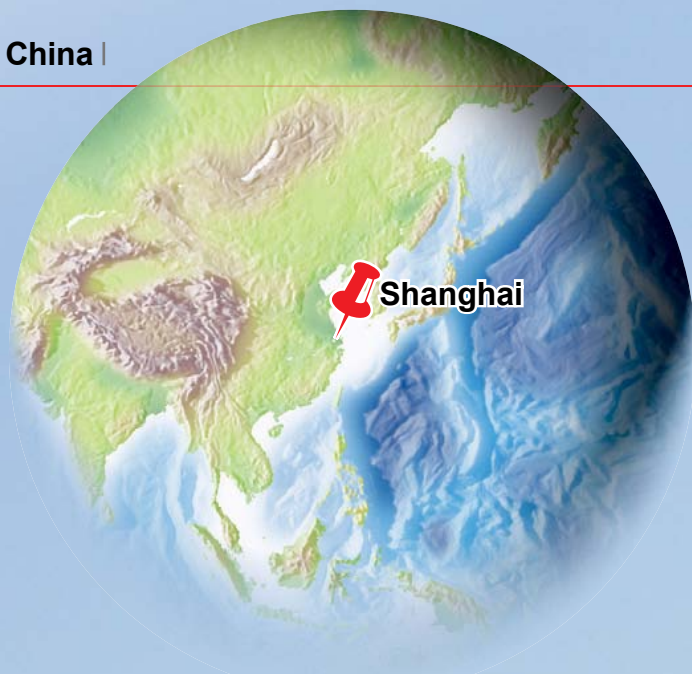
With the right equipment – read: huge antenna, excellent LNB, extremely low-threshold tuner in the receiver, perfect alignment of the LNB to the focal point – it's possible to receive channels that are no where near the official footprint of a satellite.

1. Reception of INSAT at 83° East with the 3.66m antenna on the C band.
2. Reception of North Korean channel KCTV on THAICOM at 78.5° East, also with the 3.66m antenna.
3. Common wisdom says this channel cannot be received, but here it is: RSACOM at 2.8° East focuses on Africa, but is available even in eastern Germany with a 3.66m dish.
4. The HD channel of Japanese broadcaster NHK via INTELSAT 9C at 58° West.
5. In order to receive INTELSAT 9C the 3.66m antenna has to be aligned exactly to that position. The extremely low elevation of just 2.7° is most striking. This means the antenna is at an almost upright position and hardly points above the horizon. As layers close to the earth's surface cause more attenuation this makes for very tricky reception, apart from a myriad of physical obstacles like trees which obstruct a clear view to the satellite.

Satellite Dishes in Shanghai

Shanghai is a city with a population of 20 million people and if you decide to take a walk one day and look around you'll find satellite dishes ranging in size from the newest 35cm DTH antennas to all the way up to extremely large 20-meter monstrosities. But let's not forget that officially satellite dishes are prohibited in China. Hong Bo, born and raised in Shanghai and also an enthusiastic HDTV satellite fan, took us on a small tour of Shanghai's world of satellite antennas.

■ Xinzhuang Satellite Station's two 20-meter monster dishes in Shanghai, China.



Hong Bo, who uses the nickname Homeboy in the Internet, first took us southwest about 20 km from downtown Shanghai. The immense satellite antennas of Shanghai's Xinzhuang satellite station are located right next to the RT market shopping center. "Former US President Richard Nixon brought those two 20-meter dishes with him in 1972", explained Hong Bo who then confirmed that these two antennas are used by the Chinese military.

But a number of smaller dish antennas are located alongside the two large

dishes. "These are used to uplink Shanghai's local TV channels to CHINASAT 6 at 115° east", explains Hong Bo.

Using Shanghai's elevated roadways that at many intersections tend to be stacked on top of each other, we continued our tour with a stop at one of China's most modern and sophisticated walled-in residential areas: Mandarin City in western Shanghai.

Wang Yinchung is the technician in charge of the TV system and, not surprisingly, is also a satellite DXer. In his case he man-

NetUP Dual DVB-T/C-CI

Professional high-density terrestrial & cable TV reception card



Overview

The NetUP Dual DVB-T/C-CI is a professional PCI-e card for reception and decoding of terrestrial & cable TV. The card is intended for high-density appliances such as DVB-IP gateways, home theaters, etc. In contrast to usual DVB reception cards NetUP's Dual DVB-T/C-CI provides a unique versatility – it can be used to receive terrestrial and cable TV, analog & digital. Moreover, two DVB tuners and two Common Interface (CI) slots occupy only one PCI-e slot. This allows saving space on installation and using the card in confined environments. For example, a standard 1U rack-mount server with two PCI-e slots can receive and fully decode 4 transponders/multiplexes, such as NetUP's IPTV Combine 4x or DVB-IP gateway 4x.

Features

- two DVB-T/DVB-C inputs – simultaneous reception of two DVB-T or DVB-C transponders/multiplexes or two analog TV channels
- two CI slots – independent descrambling of two transponders/multiplexes
- support of any professional CA modules (e.g., PowerCAM Pro, Aston Pro Solutions, SMIT, etc.)
- PCE-e x1 – drivers for Linux OS

Components Used

- Conexant CX23885
- STM STV0367 low-power and ultra-compact combo DVB-T/C single-chip receiver
- Xceive XC5000 silicon TV tuner
- Altera FPGA for Common Interface



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aged to turn his hobby into his profession!

Wang Yinchung explains to us, "This residential complex is made up of about 50 apartment buildings and houses roughly 1500 families." Many of them are from Japan and Korea and naturally they want to be able to see TV from home. Wang Yinchung erected a collection of satellite antennas on top of one of the apartment buildings and installed all of the distribution components in

the elevator control room. Using original receivers from Japan and Korea (provider: Skylife), he takes all of the desired channels and routes them into the cable system of the apartment complex.

This, of course, begs the question, what can an individual person do if they want to install a satellite system?

Our satellite guide Hong Bo referred us to Hang Hao. He is one of those

satellite installers that theoretically doesn't exist yet is responsible for the endless number of satellite dishes that are installed on balconies and walls for renters and apartment occupants.

But how do these people know who to contact if they want a dish installed? You won't find an ad for an installer in any magazine or newspaper or even in the Internet. "That all happens by word of mouth", explains Hang Hao, "A sat-

isfied customer will tell his friend and that person will tell another, and so on."

We asked Hang Hao how he managed to get into this business: "I installed my own first dish back in 2000. Back then it was a 60cm antenna for APSTAR 2A reception at 76.5° east."

In the meantime, Hang Hao has become a full time installer. "I install about 100 systems every month, that is, dish, LNB, receiver and mounting assembly."

■ The uplink dishes for Shanghai's local TV channels can be seen from the shopping mall's parking lot.



■ Mandarin City's Entrance gate



He tells us that 90% of his customers opt for 60cm antennas while the remaining 10% choose 100 cm dishes. "AGILA is the favorite for my mostly foreign customers since mostly English-language channels can be found there", says Hang Hao.

If there aren't any shops around where you can get satellite products, how does Hang Hao get his hands on the materials he needs? He tells us that he buys them directly from the manufacturers that are for the most part in Shenzhen in China's south. But this only works for those who buy in large quantities like Hang Hao.

There's another source when smaller quantities are involved: "That would be the Electronic Market on Qinyang Road right by

the Baoshan Metro station of lines 3 and 4", adds our satellite guide Hong Bo.

So naturally our next stop takes us to this market. Here in a maze of streets and shops where you'll find numerous visitors walking among an uncounted number of shops, it didn't take long for us to find one that was selling satellite dishes. In this case it was the small 35cm antennas for receiving the Chinese DTH satellites. We also found different receiver brands in another shop. Seek and yee shall find what you're looking for in Shanghai; you can either have your system installed by a professional like Hang Hao or you can choose to install it yourself. You just have to find all the necessary hardware in Shanghai's Electronic Market.



■ TV Technician Wang Yinchung set up the receivers and cable modulators in the elevator control room. He keeps an eye on reception quality with the test TVs.

■ TV technician Wang Yinchung on the roof of one of the apartment buildings in Mandarin City. The large 3.2-meter dish that Wang Yinchung is standing next to receives the Japanese channels on BSAT at 110° east. To the right is a 1.8-meter dish for the reception of Skylife on KOREASAT 3. To the left is a 1.8-meter offset antenna pointed at ASIASEAT at 105° east. Two smaller 1.5-meter offset antennas are used for reception of KOREASAT 5 at 113° east and for the vertical polarization of KOREASAT 3 at 116° east. A one-meter antenna is pointed to AGILA 2 at 146° east and a 1.5-meter prime focus dish all the way to the left is aligned to INTELSAT 8 at 166° west where channels like BBC World and NHK World can be found.

■ Wang Yinchung has quite a view of the Mandarin City apartment complex from the roof of one of the buildings where all the satellite antennas are installed. The complex even comes with its own swimming pool!





■ Who gets to count all the satellite dishes mounted on the walls? A few of them were installed by Hang Hao.



■ Our Shanghai satellite guide Hong Bo seen here in the middle of the bustling Electronic Market. A shop selling satellite dishes can be seen in the background. "The people that come here are those that can't spend a lot of money or simply don't want to", says Hong Bo, "those who can afford it will have their satellite system installed professionally by someone like Hang Hao."



■ At the Electronic Market in Shanghai: a complete satellite system that includes a small 35cm dish, an LNB, receiver and cable costs about 150 RMB here or about 15 Euros.

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■ The employees in this shop are just about to connect a satellite dish to demonstrate it to a customer. Naturally, shops that sell satellite dishes can be found on the side of streets from which satellites can also be located from inside the shop.

DVB-T

MPEG-2

Algeria
Albania
Australia
Austria
Belgium
Croatia**
Denmark**
Finland**
France
French Guyana
Germany*
Greece*
Indonesia
Ireland
Italy**
Luxembourg
Morocco
Namibia
Netherlands
Sweden*/**
Switzerland
Tunisia
UK**

* some
DVB-T MPEG-4

** some DVB-T2

* some
DVB-T MPEG-2

** some DVB-T2

DVB-T

MPEG-4

Azerbaijan
Belarus*
Bulgaria
Burundi
Central African Republic
Colombia
Czech**
Estonia**
Ghana
Guinea
Hungary**
Iceland
India
Iran
Israel
Kenya
Latvia
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DMB-TH

China



Edited by
Branislav Pekic

EUROPE

GERMANY

ASTRA AND DVB BACK 3D TV STANDARDS

DVB has set technical standards for the first generation of 3D TV broadcasts. The DVB 3D-TV standard will apply to set-top boxes and TVs with built-in tuners so that broadcasters can transmit 3D channels reliably. It's part of a new set of DVB logos designed to help consumers identify the right products for new services, including DVB-T2 and DVB-IPTV. Backed by major European broadcasters and satellite operator SES-Astra, DVB-3D defines frame compatible 3D broadcasts.

BELGIUM

MOBISTAR LAUNCHES HYBRID PACKAGE VIA ASTRA

Mobistar has launched a new Mobistar TV offer that includes digital and HDTV channels received from the Astra satellites. The satellite TV offer, including Flemish national channels and a wide range of European free-to-air channels, is integrated into a fully-hybrid DSL/DTH solution, combining telephone and internet with TV and also including interactive services such as catch-up TV, VOD and PVR.

GERMANY

SKY DEUTSCHLAND LAUNCHES 3D TV CHANNEL

Sky Deutschland launched its first 3-D channel in October. The current strategy is to target high-end users, the early adapters willing to pay a premium for HD and 3-D. The new 3-D offering will initially only be available via satellite and for subscribers who receive Sky via the regional Kabel BW network. But the service will be available free to all Sky HD subscribers -- in Germany and Austria -- by the end of the year.

ZDF SAYS 3D TOO COMPLEX AND COSTLY

ZDF has echoed the BBC's caution about 3D TV, saying it's too costly and complex. According to Markus Schachter, general director of ZDF, the production is up to 60 per cent more expensive, for the transmission additional channels or transponders are necessary and as long as special glasses are required it will be hard for 3D to establish itself as part of a day-by-day media.

DEUTSCHE TELEKOM OFFERS 3D TV

Deutsche Telekom has launched a 3D TV offering as part of its VOD platform. The new service is available immediately to subscribers of Deutsche Telekom's IPTV Entertain package. Customers can call up a variety of content via Videoload, the platform's online video store, which offers round-the-clock access to 3D movie highlights from the likes of Warner Bros. and Sony Pictures Television. Also available will be Discovery Channel programming, erotic content and past sporting events.

GREECE

NOVA CHOOSES PACE HD PLATFORM

Pace has been selected as the HD PVR delivery partner for Nova. Its HD satellite platform will support the launch of Nova's first nationwide HDTV

service, providing NovaBox HD, an HD Zapper and a dual channel HD PVR. The launch represents the first step in Nova's transition to HDTV.

IRELAND

SETANTA IRELAND TO LAUNCH HD CHANNEL IN JANUARY

Setanta Ireland plans to be the first Irish channel to broadcast in HD when it launches a service next January. The HD channel will initially be available to customers on UPC's cable TV platform with a service for satellite subscribers to be launched later. Setanta will be the only Irish broadcaster to have all 48 games at the 2011 Rugby World Cup in HD, but will also provide HD coverage of the Premier League, the FA Cup, the Champions League and the Europa League.

ITALY

MEDIASET LAUNCHES 3D MOVIES

Mediaset launched a 3D movie service in October, offering first view movies such as "Harry Potter and the Deathly Hallows", "Despicable Me", "Legend of the Guardians" as well as recent movies like "The Hole", "Final Destination", "Call of the Wild" and "Clash of the Titans". To enjoy the service, customers need special glasses, a 3D TV set and a Premium On Demand HD decoder.

POLAND

PORTUGAL

SPORT TV LAUNCHES HD CHANNEL WITH PREMIER LEAGUE

SportTV has launched the Sport TV Liga Inglesa, a channel exclusively dedicated to the English Premier League. Besides the 380 games that make up the competition, the broadcasts also include more than 400 abstracts of classic challenges of this competition, studio programs, two daily newscasts, spaces for fans and a total of 50 hours per week of live transmissions.

RUSSIA

RUSSIA GETS FIRST 3D TV CHANNEL

Russia's first 3-D TV channel was launched in October by NTV Plus in cooperation with Panasonic. During the first year, the investment in the channel is to be just above USD 3 million. The new channel is to originally focus on sports, particularly on football, from reruns of FIFA 2010 matches to live broadcasts of national championships and Champion League games. Gradually, movies and entertainment programs are to be added.

SCANDINAVIA

BOXER OPTS FOR SOFTATHOME

Boxer TV Access has selected the SoftAtHome Operating Platform to power its next generation TV offering including HDTV over DVB-T2 in combination with On Demand services over Internet. The two companies will collaborate to bring to market a next generation terrestrial offering and to enable the development of innovative features for Nordic subscribers. SoftAtHome provides an open, ubiquitous and carrier class software platform that enables Service Providers to create innovative and convergent applications for the Digital Home.

UNITED KINGDOM

ITV TO LAUNCH HD VERSION OF CHANNELS BSKYB

ITV has confirmed that it will move back into pay TV - with HD versions of its three digital networks, ITV2, 3 and 4 all being made available on BSkyB this fall and winter.

HDTV OWNERS TWICE AS LIKELY TO BUY 3DTV SET

Owners of HDTV sets are more than twice as likely to buy a 3D TV within the next year as those without an HD set, according to a survey of 700 U.K. consumers from Strategy Analytics. However, just 13 percent of HDTV owners said they were "somewhat likely" or "very likely" to buy a 3DTV set in the coming twelve months.

ARQIVA SELECTS THOMSON BROADCAST FOR DVB-TV ROLLOUT

Arqiva has selected Thomson Broadcast for the high-power sites of its new DVB-T2 network for terrestrial HD services. Thomson Broadcast is deploying, from 2010 to 2012, 16 high-power DCX Paragon MSDC-IOT transmitters with an output power up to 20 kW. The first on-air installation is set for later this year. As a long-time supplier to Arqiva, Thomson Broadcast is also upgrading the four already installed DVB-T DCX Paragon transmitters with new high-performance DVB-T2 Sirius excitors.

VIRGIN LAUNCHES 3D VOD SERVICE

Virgin Media has become the first UK TV company to offer a digital 3D service for domestic customers. The cable company launched its 3D Movies On Demand service, which allows all customers with a 3D-ready set-top box - around 1.2 million households - to access a range of movies and some TV programs. The service is being provided by FilmFlex, the IPTV joint venture between Sony and Disney.

SKY LAUNCHES EUROPE'S FIRST 3D TV CHANNEL

Europe's first dedicated 3D television channel has launched in the UK. Sky 3D broadcasts for 14 hours every day and shows a selection of programmes including Premier League football, and films. A monthly subscription fee is GBP 61 with the cost of an average 3D television around £2,000. Subscribers who pay for the top Sky World HD package will be able to get the service free.

TRAVEL CHANNEL TO LAUNCH IN HD THIS YEAR

A HD variant of the Travel Channel could be launched in the UK in the near future. However, viewers in other parts of Europe will have the opportunity to watch Travel Channel HD before UK viewers, as the service is set to launch in the Czech Republic on November 15, via the Astra 23.5°E satellite.

BSKYB TO LAUNCH SKY ATLANTIC

BSkyB is to launch a new subscription channel, Sky Atlantic, which will be home to US imports including Mad Men, Boardwalk Empire and Treme. The new high definition service will launch early next year. Sky Atlantic will be available to subscribers as part of Sky's Variety Pack of channels, which costs £19 a month. Sky Atlantic will have

CHINA

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the UK TV premieres of HBO shows including Martin Scorsese's critically lauded prohibition era drama Boardwalk Empire and The Wire co-creator David Simon's new show, Treme.

NORTH AMERICA

UNITED STATES

DISH NETWORK ADDS AMC HD

Dish Network has launched the HD version of cable network AMC. The channel features hit series Mad Men, as well as programmes such as Rubicon and Breaking Bad. It is free to America's Top 200 and DishLatino Dos HD subscribers.

3D TV ACCOUNTS FOR 2.5% OF TV SALES

3-D TV so far has a small slice of the overall market, accounting for about 2.5 percent of new TV sales in the United States in the last quarter, according to a survey by the market researcher iSuppli. According to the research, 83 percent of survey respondents who bought 3-D TVs were professed early adopters — people who like to own the latest technology — and half of them had annual household incomes of USD 100,000 or more. A survey by Frank N. Magid Associates shows that a quarter of consumers plan to buy a 3-D-enabled set in the next 12 months.

FUNIMATION GOES HD

FUNimation Channel has launched a HD feed broadcast in true HD along with new branding across its HD and SD platforms in conjunction

with an exclusive, expanded programming line-up of the most popular anime titles available.

TIME WARNER LAUNCHES HDTV SERVICE FOR HOTELS

New York - Hotels throughout Upstate New York and New England now have a more cost-effective way to deliver their guests HDTV programming, thanks to the launch of a new product from Time Warner Cable Business Class (TWCBC). The company is now offering HD Video for Hospitality, a dedicated service that enables hotels to offer in-room HD without having to purchase, install and maintain separate equipment within the hotel. HD Video for Hospitality offers customers a dedicated feed of 60 HD channels over Time Warner Cable's high-speed, fibre-optic network.

LATIN AMERICA

BRAZIL

BRAZIL REACHES 581,000 HDTV SUBSCRIBERS

At the end of July, Brazil had 581,000 subscribers to pay-TV HD channels, representing 7 percent of the total 8.4 million pay-TV base. In 2008, when the service was launched in the country, this percentage was only 0.3%. Meanwhile, two leading operators, Net and TVA, have launched new HD channels. Net has added ESPN HD, TLC HD, Megapix HD, TNT HD, Space HD, VH1 HD, NatGeo Wild HD and Max HD, while TVA is providing NatGeo Wild HD.

ASIA & PACIFIC

INDIA

DISCOVERY TO LAUNCH 3D CHANNEL IN INDIA

Discovery Networks Asia Pacific (DNAP) is set to launch five new pay-TV networks in India, including Discovery 3D and Investigation Discovery. According to local reports, the broadcaster has applied for a licence to launch five more channels in the country: Discovery Kids, Military Channel, Discovery Home And Health, as well as ID and the aforementioned 3D network, early next year.

COMMONWEALTH GAMES IN HD

The Commonwealth Games (CWG) are likely to spur the growth of HDTV in India, as Doordarshan (DD) brought the event in high quality digital format with cameras on land, in water and from helicopters. A new channel - DD HD - broadcast the event in HD format.

INDONESIA

FIRST MEDIA BRINGS HDTV TO INDONESIA

First Media has become the first local pay-TV provider to offer HD programming. After a trial run for 500 subscribers in August, the company decided to permanently include two HD channels, HBO and ESPN, in its cable package. The new service requires the use of an HD-compatible TV set and a set-top box, rented to subscribers for an extra Rp 100,000 (\$11) a month. The

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company's goal is to have 1,000 of its subscribers pick up the HD service by the end of the year and have 5,000 subscribers for the new offering within the first quarter of next year.

JAPAN

SKY PERFECTV LAUNCHES FIRST 3D CHANNEL

SKY Perfect JSAT launched channel Sukachan 3D169, Japan's first dedicated 3D channel, whose line-up to date has included pop concerts, World Cup soccer matches and baseball games featuring the immensely popular Yomiuri Giants. Sukachan's programming is viewable with special glasses on 3D-ready televisions. Yet sales for those systems have been anything but spectacular. Business newspaper Nikkei reported earlier this month that Sony's Bravia 40-inch and Panasonic's Viera 50-inch models, which retail for between 30% and 50% more than comparable 2D systems, have seen a 20% drop in prices since their debuts in the spring.

MALAYSIA

AXN BEYOND HD LAUNCHES IN MALAYSIA

AXN channel's sci-fi and mystery spin-off AXN Beyond has launched in Malaysia on HD platform Astro B.yond. This move completes the network's footprint in Southeast Asia, following previous carriage deals inked in Singapore, Indonesia, the Philippines and Thailand. Astro B.yond already carries AXN HD, ESPN HD, National Geographic Channel HD, History HD, FX HD and HBO HD, plus Chinese channels Astro Zhi Zun HD and Astro Supersport HD.

TECHNICOLOR SUPPLIES HD BOXES TO ASTRO

Already an established supplier of MPEG-2 and MPEG-4 set-top boxes for standard definition broadcasting, Technicolor will now supply HD MPEG-4 STBs with local recording capability to support Astro's move to offer more technology-adapting services and products to its close to 3 million and growing customer base. The innovative HD enabled STB to be supplied by Technicolor includes the ability to record to an external disk or disks.

AUSTRALIA & OCEANIA

AUSTRALIA

ABC AND ERICSSON BRING HDTV TO AUSTRALIA

Under-served regional Australians are set to receive digital free-to-air TV via satellite under a five-year deal between Ericsson and ABC. The Federal Government has invested some AUS 160 million into satellite services that will provide free-to-air TV to 247,000 blacked-out households. Satellite TV will be delivered using Ericsson's latest video compression technology, which the vendor claims will help the ABC expand the reach of its HD and SD digital TV programming.

FOXTEL ADDS 3D, HD CHANNELS

Foxtel has launched a series of new channels in November, including four in HD and one 3D-only channel. They include Speed and Speed HD, three MTV channels including MTV Hits and concert channels MTVN Live and MTVN Live

HD. The company also introduced documentary channels BBC Knowledge HD and Nat Geo Wild HD to its line-up. These additions have taken its total number of HD channels to 20. Foxtel 3D will carry sports from ESPN and Fox Sports, plus movies and documentaries.

WORLD

TOSHIBA TO LAUNCH FIRST 3D TV WITHOUT GLASSES

Toshiba plans to market the world's first 3D television that does not need special glasses later this year, according to a report in the Yomiuri Shimbun. Toshiba will unveil three models of the television, which will cost several thousand dollars, before Christmas. The company has developed a new system that emits a number of rays of light with various angles from the screen so that viewers can see stereoscopic images without glasses, the daily said.

BBC, NHK TEST SUPER HI-VISION TV

The BBC has sent a Super Hi-Vision TV broadcast of a band gig to Japanese public broadcaster NHK in a successful transmission test of the experimental digital video format. The Super Hi-Vision TV signal has a higher resolution than the current generation of HD plasma displays. Super Hi-Vision TV can generate a 7680 by 4320 pixel signal, which no TV can show yet. The highest resolution that current HD displays can show, 1920 by 1080 pixels, is only one quarter of the resolution of Super Hi-Vision. The BBC is planning to use the technology in capturing the 2012 Olympics in London and showing the video on test screens. NHK plans to broadcast in Super Hi-Vision by 2020.



Edited by
Branislav Pekic

EUROPE

BOSNIA AND HERZEGOVINA

BH TELECOM WITH 7,000 USERS OF IPTV SERVICE

Four months after launch, BH Telecom has managed to sign up 7,000 users for its IPTV service, Moja TV. The triple-play platform unifies the broadband internet, TV and telephony services and includes numerous foreign and local TV channels, including the Discovery Channel, Animal Planet, FOX Life, FOX Crime, TV1000, Discovery Travel and Living.

CROATIA

T-COM INTRODUCES NEW MAXTV PACKAGES

T-Com's MAXtv has introduced two new pay-TV packages: "Basic Extra" and "Sports". The sports package includes 11 sports channels such as Arena 1, Arena 2, Sport Klub, ESPN America, ESPN Classic, Golf Channel, Extreme, Fishing & Hunting, Yacht & Sail and Motors TV.

The "Basic Extra" substitutes the "Basic" package and includes 12 new TV channels.

FINLAND

MAXISAT OPTS FOR DREAMPARK MIDDLEWARE SOLUTION

Maxisat has opted for the front-end middleware solution from Dreampark, based on the Dreamgallery Next Generation TV experience. Maxisat is the first operator in Finland offering TV and OTT services using a scalable vector graphics (SVG) client allowing for HD user interfaces. The front-end solution includes a TV portal and the Dreamgallery portal generator, a WYSIWYG editor used for administrating the TV portal.

FRANCE

ORANGE SELECTS DTS TECHNOLOGY FOR IPTV SERVICE

Orange has signed an agreement with DTS to enhance the consumer experience by adding the most compelling and immersive audio experience possible, as HD and 3D have done on the video side, on its IPTV service.

FREE TO ADD FOUR 3DTV CHANNELS TO IPTV SERVICE

Free, which counts 3.55 million subscribers to its IPTV Freebox service, said it plans to launch four 3D channels and two VOD channels across its ADSL and FTTH network. Two channels, NRJ12 3D and Wildearth 3D will be included in the basic package with Brava 3D and Penthouse 3D being offered as premium content later in 2011. The VOD services, FHV and Marc Dorcel, should launch by the end of this year. Freebox currently provides more than 400 channels, including 170 in its basic package and 28 HD channels.

THE NETHERLANDS

KPN EXTENDS SERVICES CONTRACT WITH NOKIA SIEMENS

KPN is broadening and extending its iTV services contract with Nokia Siemens Networks to bring new TV viewing experiences to its customers. Nokia Siemens Networks is providing KPN with a complete next-generation iTV solution that will enable it to offer high-quality TV service with advanced capabilities, including HDTV, VOD, and "timeshift" TV viewing (pausing, recording or rewinding of live TV programs).

DishPointer AR

See where to point your dish, live on the iPhone screen!

The revolutionary DishPointer Augmented Reality app is now available on the app store. Just point your iPhone anywhere towards the sky and see all the satellites lined up on the live video screen.

See the Video

See DishPointer AR in action on YouTube!

DishPointer is the world's No.1 satellite dish pointing site, offering custom built tools for mobile devices or websites to businesses. For more information, visit www.dishpointer.com.

This app uses the iPhones GPS, motion sensor and compass to calculate all the satellite positions and overlays them on the camera. At a glance you will see where to point the dish and any obstacles blocking the line of sight.



References



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PORTUGAL

VODAFONE PORTUGAL ADDS 6 CHANNELS TO IPTV SERVICE

Vodafone Portugal has expanded its TV service, "Casa TV", with nine new channels: TVI24 (information); KidsCo (kids), Economic TV HD and SD TV (economic news), Yes Italia (travel), JimJam (children), The Food Network (cuisine) and Brava HDTV (music), all included in the basic Pack TV. Also, the Sport TV English League (football) has been included in the Pack Sport TV HD at no additional cost.

RUSSIA

VIMPELCOM SIGNS VOD DEAL WITH WARNER BROS

VimpelCom has signed a long-term agreement with Warner Brothers Digital Distribution under which the latter's content will be added to the VOD library of its IPTV service Beeline TV. The content deal includes recent movies such as "Clash of the Titans" and "Valentine's Day", with rental costing RUB 75 (US\$ 2.45), and older films such as "The Matrix", "Lord of the Rings", "Harry Potter" and "Charlie and the Chocolate Factory".

VOLGA TELECOM TO INCREASE FTTH CAPACITY IN SAMARA

VolgaTelecom has announced plans to expand its FTTB network in the Samara region to 100,000 broadband ports by the end of the year. The operator has already deployed 65,000 access ports in Samara, Tolyatti, Syzran, Novokuybyshevsk and other locations. VolgaTelecom has also confirmed that it has started testing its IPTV services in the region.

TURKEY

TTNET AND MOTOROLA LAUNCH NEW IPTV STB

Motorola has started the first commercial deployment of its VIP1002E/F Series IPTV set-top with TTNNet in Turkey. The VIP1002E/F will offer TTNNet's customers next-generation services such as pausing live TV, a feature normally found on higher specification digital video recorder (DVR) set-tops.

UNITED KINGDOM

PROJECT CANVAS TO LAUNCH YOUVIEW IN 2011

YouView TV, formerly Project Canvas, is a joint-venture between the BBC, ITV, Channel 4, BT, TalkTalk, Arqiva and Channel 5. It will launch subscription-free set-top boxes in 2011, giving customers catch-up programming from the previous seven days, plus on-demand services and interactive functions. The boxes will include a PVR so viewers can pause and record series. The YouView partners hope it will create an open standard platform for UK online services like the BBC iPlayer and 4 on-Demand.

BBC CLAIMS IPTV COULD PUSH UP BROADBAND PRICES

Broadband prices in the UK could be driven up if IPTV catches on, according to the director general of the BBC, Mark Thompson. He admitted that the prevalence of IPTV may result in consumers paying more for their broadband. However, Thompson insisted there may be some advantages to any price hikes, as they could encourage internet service providers such as Sky and Virgin Media to invest more in the UK's broadband networks. This would enable the infrastructure to cope better with the high bandwidth and speed requirements of IPTV services.

NORTH AMERICA

CANADA

BELL LAUNCHES IPTV SERVICE

Bell Canada has officially launched its new IPTV service Fibe TV, offering premium content (including HD titles), interactive features and whole home PVR capabilities. The new service is initially being made available in select neighbourhoods in Toronto and Montréal, delivered over the fibre-based network and powered by the Microsoft Mediaroom middleware platform. Fibe TV is expected to be available to 5 million Canadian households by the end of 2015. At launch, the service offers over 100 HD channels, as well as more than 70 international channels and over 20 thematic packages.

MTS TV SERVICE ENABLES WATCHING OF MULTIPLE CHANNELS

MTS TV has added two new services which allow Ultimate TV subscribers the ability to watch multiple channels simultaneously. Ultimate Picks lets TV viewers watch up to six channels from a predetermined number of popular channels while My Picks allows customers to customize up to five of their own picks. MTS expects My Picks to be especially attractive to football fans, which will be able to track of six NFL Sunday Ticket games at once (the five games selected plus the one you're watching) without having to flip back and forth through channels.

UNITED STATES

INTERNET BASED HDTV SERVICE LAUNCHED

FilmOn.com Founder and Chairman, Alki David, has launched its Virtual Cable Website, which is going to offer the U.S. consumers a revolutionary way to watch HDTV on the PC or mobile device.

The service includes over 30 premium free to air television channels and premium international Satellite channels, including CBS, ABC, NBC, KCAL, FOX, KTLA, Russia Today, BBC News, RAI Sports, Dubai Sports, TVE Spain, Scuzz, Flaunt and many more. Packages also include premium FilmOn movie channels and FilmOn pay-per-view.

U-VERSE CUSTOMERS GET 4 SIMULTANEOUS HD STREAMS

AT&T has started rolling out a new enhancement to its U-verse IPTV service that lets customers watch up to four HD shows at one time and also gives most U-verse TV customers the ability to record three HD shows and one SD show at the same time with their Total Home DVR—a feature not offered by other TV providers. The provider said the product is rolling out on a market-by-market basis to new and existing customers over the next several months.

LATIN AMERICA

BRAZIL

TELEFONICA INTRODUCES ONVIDEO SERVICE

Telefonica Brasil has launched its VOD service, OnVideo, enabling users to watch movies, TV series and documentaries, as well as other content such as YouTube, weather, news and horoscopes. To access these resources, customers must purchase a converter and connect it to the TV. More than 2,000 videos are available thanks to

a partnership with Saraiva, which has its own virtual video store, for a period of 24 or 48 hours.

CHILE

TELEFONICA CHILE TO INVEST USD 2 billion in FTTH

Telefónica Chile has revealed that it plans to invest US\$ 2.5 billion over the next four years in rolling out a nationwide FTTH network which will cover over 700,000 homes. The first phase of the project will take place in the Biobío region with the connection of more than 50,000 homes, including the region's main cities such as Talcahuano, Los Ángeles, Chillán and the regional capital, of Concepción. Preparations are also at an advanced stage for the delivery of IPTV.

ASIA & PACIFIC

IPTV AND 3D TV TO BOOST PAY-TV OPERATIONS

As per the 2010 Asia-Pacific pay-TV operators survey, Asia's pay-TV industry players believe that new technologies like the IPTV and 3D TV provide the greatest untapped opportunity. The 2010 Asia-Pacific pay-TV operators survey is jointly produced by Global Intelligence Alliance (GIA) along with ContentAsia. Some 35 pay-TV operators and platforms across 14 countries in the Asia Pacific region were polled for the survey. They said that more than 50% of Asian pay TV operators have now started offering HD. The operators also mentioned that industry players are

also looking towards new technologies like VOD, 3D TV, IPTV and new platforms for increasing the subscriber growth and generating greater revenues.

CHINA

NEULION ACQUIRES TRANSVIDEO

NeuLion has closed the previously announced acquisition of all of the issued and outstanding shares of TransVideo International, in exchange for 22,000,802 common shares of the China's largest IPTV technology providers and a manufacturer of set top boxes. The former TransVideo shareholders currently own approximately 14% of the Company. TransVideo has numerous customer relationships with clients CCTV, various provincial governments in China and the Chinese Ministry of Sports.

UTSTARCOM WINS SICHUAN CONTRACT

UTStarcom was awarded the contract for Sichuan Radio and TV's Integrated IPTV Broadcasting Control Platform Project through a rigorous competitive bidding process. Initiated by Sichuan Radio and TV in early August of 2010, the project is China's first network integration project for pilot cities. UTStarcom will provide it with a package solution which includes software and infrastructure development and content delivery network (CDN) support.

KUWAIT

OCCAM NETWORKS PROVIDES IPTV FOR KUWAIT RESORT

Occam Networks is supplying multi-service access platform (MSAP) solutions based on pure packet technologies, as part of a major



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refurbishment of a prestigious resort in Kuwait. Khiran Resort, located 120km from Kuwait City, will deploy Occam's GPON solution for a phased renovation of the resort's chalets.

MALAYSIA

TELEKOM MALAYSIA SELECTS PIXEL POWER FOR IPTV ROLLOUT

Telekom Malaysia has selected branding and master control technology from Pixel Power for its rollout of IPTV services over the country's new High Speed Broadband (HSBB) network, which commenced last March. Pixel Power is reported to have been contracted to supply three BrandMasters, which combine master control and graphics technology, and four LogoVision devices, which are dedicated to branding and playout. The technology is being installed in a new play out centre in Cyberjaya, south of Kuala Lumpur.

ASTRO LAUNCHES IPTV TRIALS

Astro is trialling an IPTV service in the township of Mont Kiara, using Time dotCom's fibre-based high-speed network, according to "TheStar". The company has reportedly been trialling IPTV since July with around 100 users, and is believed to be hoping to counter the launch by Telekom Malaysia of its own IPTV service earlier this year, delivered over the country's new High Speed Broadband Network. Trial users are able to watch all of Astro's programmes in HD quality.

QATAR

QTEL PROVIDES FREE HD CHANNELS ON IPTV

Qtel is running a pilot project under which it will make HD channels available for free on its IPTV service Mozaic TV+ at Lagoon Plaza Towers in

West Bay Doha. The HD channels will be delivered over the fibre-based network and the first to be offered will be Al Kass Sports HD, Luxe HD, Dream HD, and Dubai Sports HD. These will be joined shortly afterwards by a range of additional HD channels, including AD Sports 3 HD to AD Sports 8 HD available with the AD Sports Barclays Premier League subscription. The new HD channels will be available for free until the end of 2010.

SINGAPORE

SINGAPORE RECOMMENDS OPEN IPTV STANDARDS

Singapore's Project NIMS (Next Generation Interactive Multimedia, Applications and Services) have recommended that the open IPTV standards developed by the DVB consortium be used for the fulfilment of its common featured set-top box functional requirements. The recommendation is attributed to the DVB IPTV standards' support of automatic connection to and configuration of a set-top box connected to an IP network for necessary service discovery and selection, as well as their ability to provide secure content protection and a middleware environment for the provision of a rich interactive service.

UNITED ARAB EMIRATES

DU TV TO OFFER MBC ON DEMAND

du has signed an agreement with MBC, under which a selection of the broadcaster's content will be added to the on-demand library of the operator's IPTV services du TV and du TV+. The agreement was facilitated by On Demand Group, which was contracted by du to fully manage its VOD offering, with hundreds of hours of content covered by the agreement.

AUSTRALIA & OCEANIA

AUSTRALIA

FOXTEL LAUNCHES IPTV SERVICE

Foxtel has announced its first IPTV service via the iQ2, which enables customers to download TV and movies through the box's Ethernet connection. The new service supplements the existing Foxtel iQ2 On Demand service and now offers hundreds of extra movies and up to a thousand TV shows. TV shows are available for AU\$2.95 each downloaded movies are now available in a separate Movie Library On Demand for AU\$3.95 each.

TELSTRA TRIALS WIDEVINE IPTV TECHNOLOGY

Telstra recently started trialling Widevine's IPTV technology which when fully implemented will allow Telstra to deliver Full HD moves and 3D content as part of their BigPond Movie offering. The Widevine technology allows consumers to access live, HD entertainment over the Internet. The premium broadcast content can be viewed over both IPTV enabled TV's PC's and Tablets and mobile devices.

ADAM INTERNET OFFERS FETCHTV

Adam Internet has become the ISP to offer the IPTV service FetchTV to its subscribers. The ISP has initiated trials with selected customers, who will be able to receive on-demand movies and TV shows, as well as linear subscription channels and all available free-to-air channels, with the service costing less than AUD 30 (US\$ 29) per month. Adam Internet has become the third Australian ISP to partner with FetchTV, following in the steps of iiNet and Internode.



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)
THOR 3 - Europe ◀ 356.0 East (004.0 West)

ATLANTIC BIRD 3 - Africa, Europe, Middle America ◀ 355.0 East (005.0 West)
NILESAT 101, 102, ATLANTIC BIRD 4A - Middle East ◀ 353.0 East (007.0 West)
C-Band: TELECOM 2D - Europe ◀ 352.0 East (008.0 West)

ATLANTIC BIRD 2 - 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)
ATLANTIC BIRD 1 - Europe, America ◀ 347.5 East (012.5 West)
C-Band: EXPRESS A4 - Europe ◀ 346.0 East (014.0 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)
C-Band: NSS 5 - Africa ◀ 340.0 East (020.0 West)

NSS 7 - Europe, Middle East, Africa, America ◀ 338.0 East (022.0 West)
C-Band: NSS 7 - Europe, Africa, 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 - Europe, America ◀ 330.0 East (030.0 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)

C-Band: INTELSAT 1R - America ◀ 315.0 East (045.0 West)
INTELSAT 707 - America ◀ 307.0 East (053.0 West)

C-Band: INTELSAT 707 - America, Africa ◀ 307.0 East (053.0 West)
C-Band: INTELSAT 805 - America ◀ 304.5 East (055.5 West)

INTELSAT 9 - Mexico, Brazil, Europe ◀ 302.0 East (058.0 West)
C-Band: INTELSAT 9 - America ◀ 302.0 East (058.0 West)

C-Band: INTELSAT 16 - America ◀ 302.0 East (058.0 West)
AMAZONAS 1 - Brazil, South America ◀ 299.0 East (061.0 West)

C-Band: AMAZONAS 1 - America ◀ 299.0 East (061.0 West)
AMAZONAS 2 - North America ◀ 299.0 East (061.0 West)

ECHOSTAR 12, 15 - Conus ◀ 298.5 East (061.5 West)
TELSTAR 14 - 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)

DIRECTV 1R, NIMIQ 5 - Conus ◀ 287.5 East (072.5 West)
HORIZONS 2 - North America ◀ 286.0 East (074.0 West)

C-Band: BRASISAT B3 - Brazil ◀ 285.0 East (075.0 West)
ECHOSTAR 4, 8 - 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)

AMC 2, 5 - North America ◀ 281.0 East (079.0 West)
NIMIQ 4 - Canada ◀ 278.0 East (082.0 West)

AMC 9 - North America ◀ 277.0 East (083.0 West)
C-Band: BRASISAT B4 - Brazil ◀ 276.0 East (084.0 West)

AMC 16 - North America ◀ 275.0 East (085.0 West)
AMC 3 - North America ◀ 273.0 East (087.0 West)

C-Band: AMC 3 - North America ◀ 273.0 East (087.0 West)
GALAXY 28 - America ◀ 271.0 East (089.0 West)

C-Band: GALAXY 28 - America ◀ 271.0 East (089.0 West)
NIMIQ 1 - Canada ◀ 269.0 East (091.0 West)

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 ◀ 243.2 East (116.8 West)
ANIK F3 - Conus ◀ 241.0 East (119.0 West)

C-Band: ANIK F3 - America ◀ 241.0 East (119.0 West)
ECHOSTAR 14 - Conus ◀ 241.0 East (119.0 West)

DIRECTV 7S - Conus ◀ 241.0 East (119.0 West)
ECHOSTAR 9, GALAXY 23 - North America ◀ 239.0 East (121.0 West)

C-Band: ECHOSTAR 9, GALAXY 23 - North America ◀ 239.0 East (121.0 West)
GALAXY 18 - North America ◀ 237.0 East (123.0 West)

C-Band: GALAXY 18 - North America ◀ 237.0 East (123.0 West)
C-Band: GALAXY 14 - North America ◀ 235.0 East (125.0 West)

AMC 21 - North America ◀ 235.0 East (125.0 West)
GALAXY 13, HORIZONS 1 - North America ◀ 233.0 East (127.0 West)

C-Band: GALAXY 13, HORIZONS 1 - North America ◀ 233.0 East (127.0 West)
CIEL 2 - America ◀ 231.0 East (129.0 West)

C-Band: AMC 11 - North America ◀ 229.0 East (131.0 West)
C-Band: GALAXY 12 - North America ◀ 227.0 East (133.0 West)

C-Band: AMC 10 - North America ◀ 225.0 East (135.0 West)
C-Band: AMC 7 - North America ◀ 223.0 East (137.0 West)

C-Band: AMC 8 - North America ◀ 221.0 East (139.0 West)

Satellites of the World



- 002.0 East ▶ ASTRA 1C - Europe
- 002.8 East ▶ C-Band: Rascom QAF 1 - Africa
- 004.0 East ▶ EUROBIRD 4A - Europe, Asia
- 004.8 East ▶ ASTRA 4A, 1E - Europe
- 007.0 East ▶ EUTELSAT W3A - Europe, Africa
- 009.0 East ▶ EUROBIRD 9A - Europe
- 010.0 East ▶ EUTELSAT W2A - Europe
- 010.0 East ▶ C-Band: EUTELSAT W2A - Global
- 013.0 East ▶ HOTBIRD 6,8,9 - Europe, Middle East
- 015.8 East ▶ EUTELSAT W2M - Europe, Madagascar
- 015.8 East ▶ EUROBIRD 16 - Europe, Madagascar
- 015.8 East ▶ EUTELSAT SESAT 1 - Europe
- 017.0 East ▶ Amos 5I - North Africa, Middle East
- 017.0 East ▶ C-Band: Amos 5I - Africa, Middle East
- 019.2 East ▶ ASTRA 1H,1KR,1L,1M - Europe
- 020.0 East ▶ C-Band: ARABSAT 2B - Africa, Middle East
- 021.6 East ▶ EUTELSAT W6 - Europe, Asia, West Africa
- 023.5 East ▶ ASTRA 3A,3B - Europe
- 025.5 East ▶ EUROBIRD 2 - Europe, Asia
- 026.0 East ▶ BADR 4,5,6 - North Africa, Middle East
- 028.2 East ▶ EUROBIRD 1 - Europe
- 028.2 East ▶ ASTRA 2B - Europe, Nigeria
- 028.2 East ▶ ASTRA 2A,2D - Europe
- 030.5 East ▶ ARABSAT 5A - Middle East
- 030.5 East ▶ C-Band: ARABSAT 5A - Asia, Middle East
- 031.0 East ▶ TURKSAT 1C - Europe, Asia
- 031.5 East ▶ ASTRA 1G - Europe
- 033.0 East ▶ EUROBIRD 3 - Europe
- 033.0 East ▶ INTEL SAT 802 - Africa
- 033.0 East ▶ C-Band: INTEL SAT 802 - Europe
- 036.0 East ▶ EUTELSAT W7 - Europe, South Africa, Asia, Russia
- 036.0 East ▶ EUTELSAT W4 - Russia, Nigeria, Africa
- 038.0 East ▶ PAKSAT 1 - Pakistan, North India
- 038.0 East ▶ C-Band: PAKSAT 1 - Pakistan, India, Middle East, Africa
- 039.0 East ▶ HELLAS SAT 2 - Europe, Middle East, Asia
- 040.0 East ▶ EXPRESS AM1 - Europe, Russia
- 040.0 East ▶ C-Band: EXPRESS AM1 - Europe, Russia
- 042.0 East ▶ TURKSAT 2A - Europe, Russia
- 042.0 East ▶ TURKSAT 3A - Europe, Russia, North India
- 045.0 East ▶ INTEL SAT 12 - India, South Africa, Middle East, Europe
- 049.0 East ▶ C-Band: YAMAL 202 - Global
- 053.0 East ▶ EXPRESS AM22 - Europe, Middle East, North India
- 055.0 East ▶ C-Band: INSAT 3E - India
- 056.0 East ▶ BONUM 1 - East Russia
- 057.0 East ▶ NSS 12 - Europe, Russia, Africa, India
- 057.0 East ▶ C-Band: NSS 12 - Europe, Russia, Africa, India, Global
- 060.0 East ▶ INTEL SAT 904 - Europe
- 060.0 East ▶ C-Band: INTEL SAT 904 - Europe, Africa, Global
- 062.0 East ▶ INTEL SAT 902 - Europe, Middle East
- 062.0 East ▶ C-Band: INTEL SAT 902 - Europe, China, Australia, South Africa, Global
- 064.2 East ▶ INTEL SAT 906 - India, Nepal
- 064.2 East ▶ C-Band: INTEL SAT 906 - Europe, Africa, South India, Global
- 066.0 East ▶ INTEL SAT 702 - Europe, Russia
- 068.5 East ▶ INTEL SAT 7 - South Africa
- 068.5 East ▶ INTEL SAT 10 - Africa, Europe, Middle East
- 068.5 East ▶ C-Band: INTEL SAT 10 - Global
- 070.5 East ▶ EUTELSAT W5 - Europe, Middle East, India
- 074.0 East ▶ EDUSAT, INSAT 4CR - India
- 074.0 East ▶ C-Band: INSAT 3C - India
- 075.0 East ▶ ABS-1 - Europe, Asia, Middle East
- 075.0 East ▶ C-Band: ABS-1 - Global
- 075.0 East ▶ EUTELSAT W75 - Middle East, North India, China
- 076.5 East ▶ APSTAR 2R - North East Asia
- 076.5 East ▶ C-Band: APSTAR 2R - Global
- 078.5 East ▶ THAICOM 5 - Thailand
- 078.5 East ▶ C-Band: THAICOM 5 - India, China, Thailand, Global
- 080.0 East ▶ C-Band: EXPRESS MD1 - Russia, North India
- 083.0 East ▶ INSAT 4A - India
- 083.0 East ▶ C-Band: INSAT 4A - India, Middle East
- 083.0 East ▶ INSAT 3B - India
- 083.0 East ▶ C-Band: INSAT 2E - Asia, Middle East, Europe
- 085.2 East ▶ INTEL SAT 15 - Middle East
- 087.5 East ▶ C-Band: CHINASAT 5A - China, India, Middle East
- 088.0 East ▶ ST 1 - India, Malaysia
- 088.0 East ▶ C-Band: ST 1 - India, Thailand
- 090.0 East ▶ YAMAL 201 - Russia, North India
- 090.0 East ▶ C-Band: YAMAL 201 - Russia, North India
- 091.5 East ▶ MEASAT 3 - Malaysia, South Asia
- 091.5 East ▶ C-Band: MEASAT 3 - Global, Thailand, Australia, East Asia
- 091.5 East ▶ C-Band: MEASAT 3A - Global
- 092.2 East ▶ CHINASAT 9 - China
- 093.5 East ▶ INSAT 3A,4B - India
- 093.5 East ▶ C-Band: INSAT 3A,4B - India, Middle East
- 095.0 East ▶ NSS 6 - India, Middle East, South Africa, North East & East Asia, Australia
- 096.5 East ▶ C-Band: EXPRESS AM 33 - Asia, Russia, China
- 100.5 East ▶ ASIASEAT 5 - East Asia, India, Middle East, Thailand
- 100.5 East ▶ C-Band: ASIASEAT 5 - Global
- 103.0 East ▶ C-Band: EXPRESS A2 - Russia, China
- 105.5 East ▶ ASIASEAT 3S - East Asia, South Asia, Australia
- 105.5 East ▶ C-Band: ASIASEAT 3S - Global
- 108.0 East ▶ NSS 11 - South Asia, North East Asia, China
- 108.0 East ▶ C-Band: TELKOM 1 - Indonesia
- 110.0 East ▶ BSAT 2A,3A, N-SAT 110 - Japan
- 110.5 East ▶ C-Band: CHINASAT 5B - China, Asia Pacific
- 113.0 East ▶ KOREASAT 5 - South Korea, North East Asia
- 113.0 East ▶ C-Band: PALAPA D - Asia, Australia
- 115.5 East ▶ C-Band: CHINASAT 6B - Global
- 116.0 East ▶ ABS 7 - South Korea
- 122.0 East ▶ ASIASEAT 4 - East Asia, Australia
- 122.0 East ▶ C-Band: ASIASEAT 4 - Global
- 124.0 East ▶ JCSAT 4A - Japan
- 125.0 East ▶ C-Band: CHINASAT 5C - China
- 128.0 East ▶ JCSAT 3A - Japan
- 128.0 East ▶ C-Band: JCSAT 3A - Asia
- 132.0 East ▶ VINASAT 1 - Vietnam
- 132.0 East ▶ C-Band: VINASAT 1 - Asia, Australia
- 132.0 East ▶ JCSAT 5A - Japan
- 134.0 East ▶ APSTAR 6 - China
- 134.0 East ▶ C-Band: APSTAR 6 - Asia, Australia
- 138.0 East ▶ TELSTAR 18 - India, China
- 138.0 East ▶ C-Band: TELSTAR 18 - Asia, Australia
- 140.0 East ▶ EXPRESS AM3 - Russia, China
- 140.0 East ▶ C-Band: EXPRESS AM3 - Russia, China
- 144.0 East ▶ SUPERBIRD C2 - Japan
- 146.0 East ▶ ABS 5 - Myanmar
- 146.0 East ▶ C-Band: ABS 5 - India, China
- 150.0 East ▶ JCSAT 1B - Asia
- 152.0 East ▶ OPTUS D2 - Australia, New Zealand
- 154.0 East ▶ JCSAT 2A - Japan
- 154.0 East ▶ C-Band: JCSAT 2A - Asia & Oceania & Hawaii
- 156.0 East ▶ OPTUS C1,D3 - Australia, New Zealand
- 160.0 East ▶ OPTUS D1 - Australia, New Zealand
- 162.0 East ▶ SUPERBIRD B2 - Japan
- 166.0 East ▶ INTEL SAT 8 - Australia, New Zealand, North East Asia
- 166.0 East ▶ C-Band: INTEL SAT 8 - Pacific
- 169.0 East ▶ C-Band: INTEL SAT 5 - Pacific
- 172.0 East ▶ GE 23 - South Pacific, South East Pacific
- 172.0 East ▶ C-Band: GE 23 - Pacific
- 180.0 East ▶ INTEL SAT 701 - Australia, Pacific
- 180.0 East ▶ C-Band: INTEL SAT 701 - Pacific

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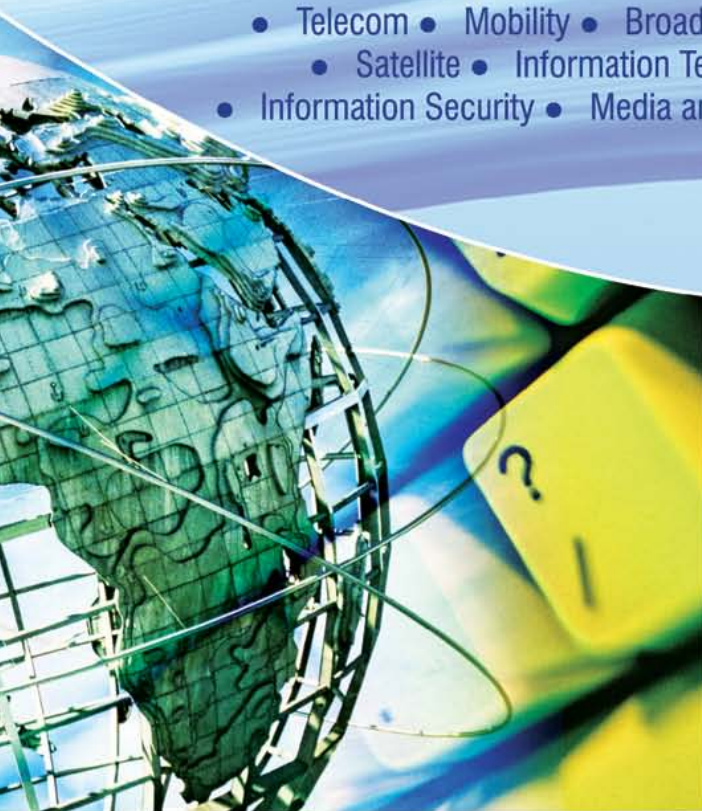
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TELE-satellite Deadlines & Exhibitions

Number	Issue	Deadline	Hardcopies	Available Online
1103	02-03/2011	3 December 2010	14 January 2011	28 January 2011
<i>TELE-satellite Magazine will be present at these exhibitions:</i> 8 - 10 February 2011 CABSAT Middle East North Africa MENA 2011 The Leading International Digital Media Event for Middle East, Africa & South Asia Sheikh Saeed Halls, Dubai International Convention and Exhibition Centre, Dubai, UAE www.cabsat.com 				
23 - 25 March 2011 CCBN 2011 Asia-Pacific's Largest Broadcasting Show China International Exhibition Center, Beijing, China www.ccbn.tv 				
1105	04-05/2011	4 February 2011	18 March 2011	1 April 2011
<i>TELE-satellite Magazine will be present at this exhibition:</i> 3 - 5 May 2011 ANGA Cable 2011 Trade Fair for Cable, Broadband and Satellite Exhibitions & Congress Center, Cologne, Germany www.angacable.com 				
1107	06-07/2011	1 April 2011	20 May 2011	3 June 2011
<i>TELE-satellite Magazine will be present at these exhibitions:</i> 21 - 24 June 2011 CommunicAsia 2011 22nd International Communications and Information Technology Exhibition & Conference Marina Bay Sands, Singapore www.communicasia.com 				
August 2011 Broadcast & Cable 2011 International Fair of Technology in Equipment and Services for Television Engineering, Broadcasting and Telecommunications Immigrantes Exhibition Center, São Paulo, Brazil www.broadcastcable.com.br 				

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