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© TELE-satellite - Minimum System Requirements: Pentium III
- 128 MB RAM - 16 bit Colordepth - 800x600 Screen
Compatible to Win 95, 98, ME, 2000, NT4, XP

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Program Your SatcoDX
Compatible Receiver



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For Private and Personal Use Only
ISSN 1861-5384
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Address:

TELE-satellite Magazine
PO Box 1234
85766 Munich-Ufg
GERMANY/EUROPA UNION

Editor-in-Chief:

Alexander Wiese
alex@TELE-satellite.com

Published in 20 Languages by:

TELE-satellite Medien GmbH
Aschheimer Weg 19
85774 Unterföhring
GERMANY/EUROPA UNION

Design/Production

Nemeti Barna Attila

Advertising

www.TELE-satellite.com/ads/

Printed by:

Litografia Rosés
08850 Gavà
SPAIN/EUROPA UNION

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ISSN 1435-7003

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Online Update of News
1 2 3 4 5 6 7 8 9 10

Position Code and Satellite	Type	Ch	Freq[Hz]	Px	Channel Name	Coverage	I
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.760	V	Telfuturo (left audio)	PAN01RLW	
3150 PANAMSAT 1R (315.0E - 45.0W)	R-DIG	4	3.760	V	Radio Futuro (right audio)	PAN01RLW	
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.764	V	Canal 5 El Lider	PAN01RLW	
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.764	V	Telecadena 7 y 4	PAN01RLW	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.781	V	Teletcentro	PAN01RLW	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.786	V	Feeds	PAN01RLW	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	5E	3.825	H	Deus e Amor	PAN01REA	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	7E	3.869	H	Gamavision	PAN01RLW	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	R-DIG-C	7E	3.869	H	Radio Sonorama	PAN01RLW	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	9E	3.882	H	Feeds	PAN01REA	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	18	4.040	V	CTC-Mundo	PAN01RLW	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	18	4.071	V	UCV TV	PAN01RLW	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	19	4.096	H	TNP - Television Nacional	PAN01RLW	MPG2
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	19	4.096	H	Education A Distancia	PAN01RLW	MPG2
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3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	4.106	V	WLIH-TV	PAN01RLW	MPG2
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3150 PANAMSAT 1R (315.0E - 45.0W)							MPG2
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12-01 2009

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Antenas Parabólicas Para o Mar Alto
Antenas de Alta Qualidade da SeaTel's
Fabricado nos E.U.A.

Reportagem Empresarial
Um Homem Com Uma Visão
O Mundo da Multimídia na NanoXX

Relatório de Recepção
A TV dos Estados Unidos na Europa
Recebendo Sinais por Satélite da América em Tenerife

Português

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Relatório de Ensaio
Jiuzhou DTS6600
HDTV PVR Para Toda a Família

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Обзор компаний
Спутниковые антенны для морских пролетов
Высококачественные антенны от «SeaTel». Сделано в США

Отчёты о приёме
Американское ТВ в Европе
Приём сигналов из Америки со спутника на испанском острове Тенерифе

Обзор компаний
Дальновидный прогноз
Мир Мультимедиа от «NanoXX»

Русский

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Персональный видео рекордер телевизионной высокой четкости для всей семьи

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Företagsrapport
En man med en vision
Den multimediala världen hos NanoXX

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Mottagning av amerikanska satellitsignaler på Teneriffa

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SATELLITE & GENİŞBANT

Şirket Raporu
Açık Deniz Uydu Antenleri
Son Teknoloji SeaTel
Made in USA Antenler

Sinyal Raporu
Avrupa'da ABD Televizyonu
Tenerife de Amerikan Uydu Yayınları

Şirket Raporu
Vizyon Sahibi Bir Adam
NanoXX'da Multimedya Dünyası

Türkçe

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Jiuzhou DTS6600
Aile Boyu HDTV PVR uydu alıcısı

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Technomate

The New!

TM-5000 Super Series

with USB PVR for Recording



Introducing the New TM-5000 USB Super Series...

- ✓ 10,000 Channel Memory
- ✓ Component Output (YPbPr)
- ✓ Super Sensitive Tuner
- ✓ Very Fast Blind Search
- ✓ Based on 2008 What Satellite Magazine's Best Enthusiast Receiver

USB Features:

- ✓ Record/Playback Scrambled & Free-To-Air (FTA) Channels by USB 2.0
- ✓ Pause Live TV by Timeshift via USB 2.0
- ✓ Forward/Rewind Recordings
- ✓ USB 2.0 for Software Download/Upload, MP3 & JPEG Playback
- ✓ Rear Mounted USB 2.0 ✓ Silver or Black

Based on the HIGHEST Rated Satellite Receiver...ever! (92%)

The TM-5200 D USB reviewed by What Satellite Magazine (Jan 2008)

TM-5200 D USB
super

Free-To-Air Satellite Receiver

TM-5300 D+ USB
super

with Built-in Smart Card Reader

TM-5400 CI+ USB
super

with Card Reader + Common Interface

TM-5600 CI USB
super

with Common Interface

High-Definition

Satellite & Terrestrial Receiver

TM-6900 HD COMBO Super



- ✓ Based on the Award Winning TM-6900 HD COMBO
- ✓ 2x USB 2.0 Ports (Front + Rear)
- ✓ Very Fast & Detailed Hardware Blind Search
- ✓ RF Modulator
- ✓ eSATA
- ✓ Ethernet Communication Port

- 10,000 Channels
- Record Scrambled & FTA Channels by USB
- Timeshift
- MP3 & JPEG Playback & Data/Software Transfer by USB 2.0
- 1080i, 720p, 576p & 576i
- MPEG-2, MPEG-4 & H.264
- Built-in Upscaler to Improve Standard Picture Quality
- 1 Smart Card Reader & 2 Common Interface (CI)
- VFD Display
- Silver or Black

GETTING ON WELL

OPENSAT 



XT9500HD - High Definition Digital Satellite Receiver

VFD Display • 2 Common Interface • 1 Smart Card Reader • DVB-S/DVB-S2 • EPG • HDMI Digital Video & Audio Output • 1080i, 720p, 576i, 576p, 480i, 480p • USB 2.0 on the front panel for software upgrade

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Dear Readers



When it comes to free satellite reception for each citizen, China has long been the last uncharted territory. But even there, things are going to change this year. Individual satellite reception will become possible with the introduction of China DTH, which also means satellite reception technology will tap into a huge consumer market. However, China has decided to launch its own new digital standard: ABS-S. You can read more about its technical aspects in this issue's feature story.

So this means the variety of digital standards is still on the rise. I remember very well the heated discussions we at TELE-satellite had many years ago, when digital satellite TV in MPEG-2 appeared on the horizon. Many of us feared that in future there would only be a single variety of receivers, because either they were digital, or not. Boy, were we wrong! If you look at the diversity of digital technology it by far surpasses everything we could ever dream of in the analog age.

At the same it has turned out that different standards can be integrated into a single product. For example, we justifiably expect that our shiny HDTV receivers with DVB-S2 can just as easily handle regular DVB-S transmissions. So it probably won't be too long until the new Chinese ABS-S standard will be integrated in DVB-S/S2 receivers as well. Just be prepared that the packaging of receivers will be decorated with even more logos, trademarks and labels than today.

The biggest advantage of ABS-S is that it's a very recent development, which means it works more efficiently than

DVB-S. That's the luxury of being patient and waiting. Technology progresses all the time and in most cases a new standard also means a step ahead. At any rate, it will be interesting to observe if and how ABS-S will gain a foothold in markets outside China. To some extent, this will depend on the licensing policy for ABS-S, but mainly it will be defined by Chinese manufacturers being able to further reduce costs now that they have the huge Chinese market right in front of their doorsteps. ABS-S might turn out to be a head-on competitor to DVB-S2, which also comes with the promise of reduced costs thanks to its lower bandwidth requirements.

The launch of China DTH at the same time opens the Chinese market for all other satellite companies – even though most players are already located in China anyway. What's for sure is that the satellite industry will gain additional impetus, which in itself is good news amidst the current economic downturn. It all goes to show that there is always room for expansion – you only have to offer the right product at the right time for the right market.

**Yours,
Alexander Wiese**

P.S.: My favourite radio channel this month is Peppermint FM, a new station from Germany on Astra 19.2° East (12.633 H) with great non-stop music variety, no news and only the occasional bit of self promotion with the station's slogan 'Keep it fresh and young.'

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HD2.0

MPEG-4 HD Satellite PVR Ready STB
with USB Host (DVB-S)



Tuner Loop-Through Output(Full band) Compliant with Cable Ready Specification
(for Cable STB only)

Dolby Digital Down-Mix Output Support (*Optional)

Conax CAS v7 Embedded Chipset Pairing

Cable HD Ready Support (for Cable STB only)

MPEG-2 / MPEG-4 Part 10 AVC HD/H.264 compliant

Software Upgrade via USB 2.0

YPbPr, CVBS, HDMI, SCART Video Output Support

Various Video Aspect Ratio with 4:3, Letter Box, Full Screen and 16:9 Support

Various Video Display Format with PAL 576i/576p/720p/1080i 50 Support

Easy and Fast Auto Programming, Intuitive User Interface

Multi Language Support(Customer Option)

HD2.0 Slim



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TECHNOLOGY
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TOPFIELD **NEW** Topfield Media Solution



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 at 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

Experience the future of digital receiver

- Stores up to 7,000 TV services and 3,000 radio services.
- Displays picture-in-picture with two HD services.
- Supports time-shift up to 5 hours at maximum.
- Records two services simultaneously while displaying another service.
- Able to record directly to both an external hard drive and a built-in hard drive (USB/eSATA).
- Playing recorded programmes at up to 64 times speed at maximum.
- Enables you to sort out any undesirable parts such as commercials during the programme.
- Supporting video files of DivX 3.11, 4.1 and 5.x.
- Displays JPEG image files.
- Featuring a double-player game "BATTLE TANK".
- Plays media contents of YouTube.
- Firmware updates available: over-the-air, with a USB memory stick, and from the Topfield's firmware server via Internet.

Features will be available by firmware updates

- Enables you to record the video from an external device such as a digital camera.
- Enables you to chat with other users via Internet.
- Enables you to enjoy the double-player game with other users via Internet.
- Enables you to transfer media files between the PVR and your computer with embedded web & FTP servers.
- Supports MediaHighway EPG
- Supports Sony tvtv EPG



TOPFIELD **NEW** TF 5050CI HDMI



- Fully DVB-S compliant
- 2 Common Interface
- 5000 TV & radio services programmable
- 256 colors On-Screen Display (OSD)
- Service & Favorite service list editable
- Electronic Program Guide (EPG) supported
- Exciting games embedded
- Firmware upgrade by Over-The-Air
- HDMI output



TOPFIELD **NEW** TF 6500T HDMI



DVB-T Receiver

- HDMI outputport, 576p, 720p, 1080i
- Fully DVB-T compliant
- 2000 service TV & Radio programmable

TF 6000 FE

Digital Satellite Receiver

- MPEG-2 Digital and fully DVB compliant
- DiSEqC 1.0, 1.1, 1.2 and USALS (DiSEqC 1.3)
- 5000 services (TV and Radio) programmable

Measuring Instruments

emitor MEGALOOK

MEGALOOK helps professional users to do exact adjustments and maintenance of satellite dishes and of cable TV and terrestrial networks.



- Input frequency: 2-900 MHz and 920-2150 MHz
- 4.5" B/W Monitor for PAL/NTSC
- Lots of memory positions for spectrum pictures
- RS232 for PC-connection
- Built in, rechargeable battery.
- Only 7.5kg complete with carrying case

- ALSO AVAILABLE:**
- Combolook
 - Digital Satlook NIT
 - Satlook Micro +
 - Satlook Mark IV

emitor DIGISAT PRO ACCU

Measuring instrument for dish-properties. Check two LNBs at the same time. With DiSEqC tester.



ALSO AVAILABLE:

- Digisat
- Digisat+
- Digisat Pro
- Digisat Multi

DIGIAIR dB



The meter to use for easy Digital terrestrial installations. Very sensitive, easy to maximize weak and strong signals.

- Frequency range of 47-862 Mhz
- Shows the signal strength in dBμV
- Shows the complete spectrum in one picture
- Presents one channel readout with high resolution or six channels simultaneously

Satlook Micro G2 **NEW**



- Measure on two LNB's at the same time
- Spectrum-analyzer with zoom function
- Super bright 3" LCD display
- Digital BER, QPSK and S/N-ratio
- Readout NIT -gives Satellite ID and TV/Radio-channel info
- DiSEqC according to level 1.0, 1.1 and 1.2

ALSO AVAILABLE:

Upgrade-KIT for Satlook Micro **NEW**

You need a PC with internet-access in order to be able to upgrade Your old Micro with the new G2 version.

Satlook Micro G2 upgrade contains:

- CD with software
- New G2 carrying-case
- Owners manual

HUMAX F3 FOX CI



Digital Satellite Receiver with CI Slot

- Scrambled channel receivable with DVB CI.
- MPEG-II Digital & Fully DVB Compliant.
- Max. 4000 channels receivable.
- Channel list mode
- 4 Favorite channel groups
- DiSEqC version 1.0, 1.2 USALS compliant

NETWORK streaming client

EMANVISION EV-8000S



- Linux Operating System
- Ethernet Card 100 Mbit
- USB 1.1 Host Controller
- IBM Power PC ("STB04500/Pallas")
- Recording 2 channels simultaneously while playback another from HDD and many more features

PCMCIA-Modules

- CONAX
- IRDETO
- VIACCESS
- ASTON / SECA
- CRYPTOWORKS
- CRYPTOWORKS (Arena)
- PREMIERE



- ALPHACRYPT Light
- ALPHACRYPT Classic
- ALPHACRYPT TC
- VIACCESS MPEG 2+4
- CONAX MPEG 2+4

Satlook NIT Color **NEW**



- DVB satellite-receiver 920-2150MHz
- Spectrum-analyzer with expanded spectrum
- 5" 16:9 LCD color display
- DVB-S (Free to Air) and Analog TV-picture
- Digital BER, QPSK and S/N-ratio
- DiSEqC according to level 1.0, 1.1 and 1.2
- KU- and C-band (normal/inverted video)

Türkçe konuşan personele sahibiz !

Мы говорим и даём консультации на русском языке!



HDTV Receiver Selection

HUMAX

iCORD



Twin HDTV PVR Receiver

- Recording 4 channels
- Time shifted recording for 2 hours
- Integrated 250 or 500 GB HDD
- 1080i, 720p, 576p, 576i video resolution
- AV File transfer by USB 2.0 port
- 2 Common Interfaces
- HDMI output

TOPFIELD

TF-7700 HD PVR



HDTV Digital Satellite Receiver with Personal Video Recorder

- Fully DVB-S / DVB-S2 (H.264) HD compliant
- With 2 tuners
- Time shift supported
- USB memory supported

TOPFIELD

TF-7700 HSCI / TF-7700 HCCI



HDTV for satellite and cable reception

- Supports MPEG-2, MPEG-4, H.264 and fully DVB compliant
- 2 Common Interfaces
- USB 2.0 supported for fast PC interface
- VFD Display for service information

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 2100 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

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

MAXIMUM

V-Series



AVAILABLE AS:

- V-1 Single
- V-11 Single + DiSEqC
- V-2 Twin
- V-40 Quattro
- V-4 Quad
- V-8 Octo
- V-21 Single Monoblock
- V-22 Twin Monoblock
- V-24 Quad Monoblock

Full LNB range MAXIMUM available from stock

Multiswitches / DiSEqC - Switches

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

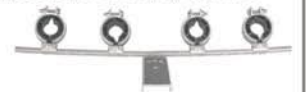


From 2 in/1 out up to 17 in/36 out

sa SPAUN Full Range

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
- Zapline 2 and more



Koaxialcable

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



invacom QDH 031



AVAILABLE AS:

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

Full LNB range INVACOM available from stock

MICROELECTRONICS TECHNOLOGY INC.

High-Line-Series



AVAILABLE AS:

- MTI AP 8 T2NRC Single
- MTI AP 82 XT2N Twin
- MTI AK54 XT2N Quad

- 40 mm
- 0,2 dB

Full LNB range MTI available from stock

Inverto digital-labs

NEW

IDLP UST110-CUO10-8PP

Unicable-Standard one cable solution. Cascadable multiswitch for up to 16 users.

UNICABLE TECHNOLOGY



Dishes

CIBERTINI TRIAX emme esse

- 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 – White

Big Dishes directly from our warehouse!

- SDI 1,50 m
- SDI 1,80 m
- Irte 2,00 m
- Irte 2,40 m

GIRTE

Flat-Dishes

NEW

SELSAT H 10 D



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

MAXIMUM Flat-1



- Receives alle programs broadcasted by european satellites
- 2 LNB (twin) output for 2 set-top-boxes plugged
- 60/70 cm equivalency

Multifocus Dish

MAXIMUM

E-85 Multifocus 48° Dish



- Ellipse shaped dish
- LNB holder for 5 LNBs, 48°
- Turnable mounting bracket for optimized reception
- Steel with polyester coating

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

Maintenance for your satellite installations

Heinz Koppitz

New receivers are always impressive with their promises of user-friendliness, ample editing options or blind scan. HDMI and more aspect settings may improve video output while a USB interface speeds up software updates and may even allow storing video streams on external media. Still, a perfectly running system does not require a new set-top box every other year. After all, most satellites are increasing their transmission power with every new generation of orbital birds and this means that even a slightly outdated system will work perfectly in most conditions. What is much more important is regular maintenance and exchanging faulty components so that viewing pleasure is guaranteed even in bad weather.



Exchanging the LNB

Many reception systems were set up back in the analog age, some even at a time when only the lower band of the Ku band was being used. Do you already have a universal LNB? If not, you should rush to the store and get one right away – you'll be surprised how many additional transponders you'll be able to receive all of a sudden.

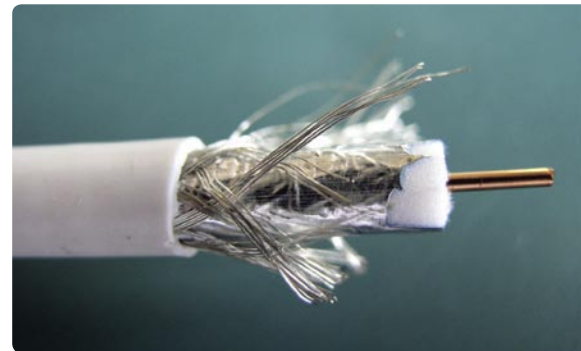
LNBs are subjected to the elements and their performance suffers if moisture cannot be kept outside. But even if your old LNB is still fine it's well worth getting a modern universal LNB with a low noise figure (0.3 dB), which will improve the threshold of your system in any case.



Single screening cable ■

Exchanging the coax cables

Old cables can be cracked, squeezed or otherwise damaged, which in most cases leads to problems that are hard to identify. There was a time when most coax cables came with only single screening, which is not enough to effectively block out interference from other signal sources. If that is the case we recommend replacing all cables and making sure new cables provide double screening – which comes as standard these days.



Double screening cable ■

Aligning the satellite antenna

Due to wind and corrosion your antenna may not be in perfect position after a few years. This is why you should look at the exact antenna alignment once a year. When doing this, the reception bar provided by the receiver when searching for signals or – depending on the receiver model – also in the info bar can be helpful for this job, even though this is of little use when the dish is on the rooftop and the receiver down in the living room. You might want to use a small satellite finder instead, which is attached to the antenna cable right at the LNB output and indicates the signal strength.

SatFinder ■





Difference from your competitors



Colorful Mesh Dish as you need

- Antenna Dish size : 4.5', 5.0', 5.5', 6.0', 7.0', 7.5', 10' ➔ As you need
- Made from Aluminum material, ➔ Anti-Rusted
- Polyester Powder Colour Coating, ➔ Longer time for Outdoor Using
- Selectable in Black, Red, Pink, Orange, Yellow, Violet, Blue, Silver
- Available for Fixed mount type and Movable mount type
- Special Discount prices for Big Volume and our dealers
- Quality Assurance by Thai Export Promotion Department (Thailand Brand)



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Integrated LNB CKU Band
with DiSEqC Switch
LNB CKU-01 Model

ABS-S: a competition for DVB-S/S2?

Jacek Pawlowski

When we were reading a press release about the launch of ZhongXing-9 (ChinaSat-9), it looked like something quite routine. It was nothing out of ordinary that China had another DTH satellite in service. It was the coding and modulation this satellite was supposed to use that surprised us. It was neither DVB-S nor DVB-S2. It was something brand new: ABS-S (Advanced Broadcast System-Satellite).

We all know that the standardization is a very useful practice. However, it happens really rarely that one thing is accepted all over the world. For example analog TV had always a few standards in different regions of the world (PAL, NTCS, SECAM, D2-MAC). Digital TV is no exception. Of course, our readers are very familiar with DVB-S and DVB-S2 standards but these are not the only ones in use. There is also the DSS (DirectTV) in

North and South Americas and ISDB-S in Japan. They are similar to DVB but not identical. A receiver capable of receiving one standard is useless for the other. And now, China decided to establish the forth standard: ABS-S.

Why create yet another standard? One obvious reason is evading the expensive license fees. For example, every receiver manufacturer has to pay a royalty to MPEG organization for every unit sold. Taking into account the population of China, the amount of money involved is huge. We are speaking of 400 million households! China administration started a program called "Every Village" aimed at making digital satellite TV available to a large percentage of country population. This means that a receivers must be really cheap.

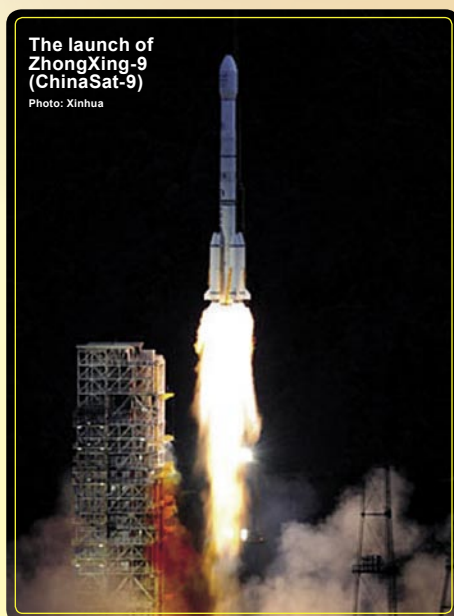
It all started back in June 2002 when the Chinese AVS standard has been published. AVS stands for Audio Video coding Standard. AVS compared to MPEG has some advantages. It has twice or three times the coding efficiency of the traditional MPEG-2 - so it is closer to H.264 (popularly called MPEG-4). However, the complexity of algorithms is lower than that of H.264. Thanks to that AVS requires less memory and occupies lower bandwidth. While H.264 is the video encoding standard only, the AVS deals with video, audio and media right management altogether. So it is a complete industry system for coding the source data.

ABS-S goes one step further. Similarly to DVB-S2 which is based on H.264 and MPEG-2, the ABS-S is based on AVS standard. ABS-S has bandwidth efficiency similar to that of DVB-S2 (ca. 30% more data can be sent compared with DVB-S in the same transmission channel). DVB-S2 efficiency is already close to the theoretical limit (Shannon limit) and apparently so is ABS-S. At the same time ABS-S is regarded as simpler from the technical point of view. This gives a better chance that a higher number of IC manufacturers can master this technology in relatively short time. DVB-S2 and H.264 are rather complex and not too many IC manufacturers offer compatible chips.

For example, ABS-S does not use BCH code, it can seamlessly combine fixed-rate modulation (CCM), variable bit-rate modulation (VCM) and adaptive coding modulation (ACM). It uses forward error coding where it is difficult to implement LDPC (low density parity check) and depending on application one can use different rate in 4 modulation modes: QPSK, 8PSK, 16APSK, 32APSK. There are more differences between ABS-S and DVB-S2 but they are all understandable only for the high-tech professionals.

At the moment, we do not have a credible independent assessment of the new standard. Will it be really almost as good as DVB-S2 while being cheaper and simpler to use and as Chinese sources claim? When we have such opportunity, we will perform such a test for you.

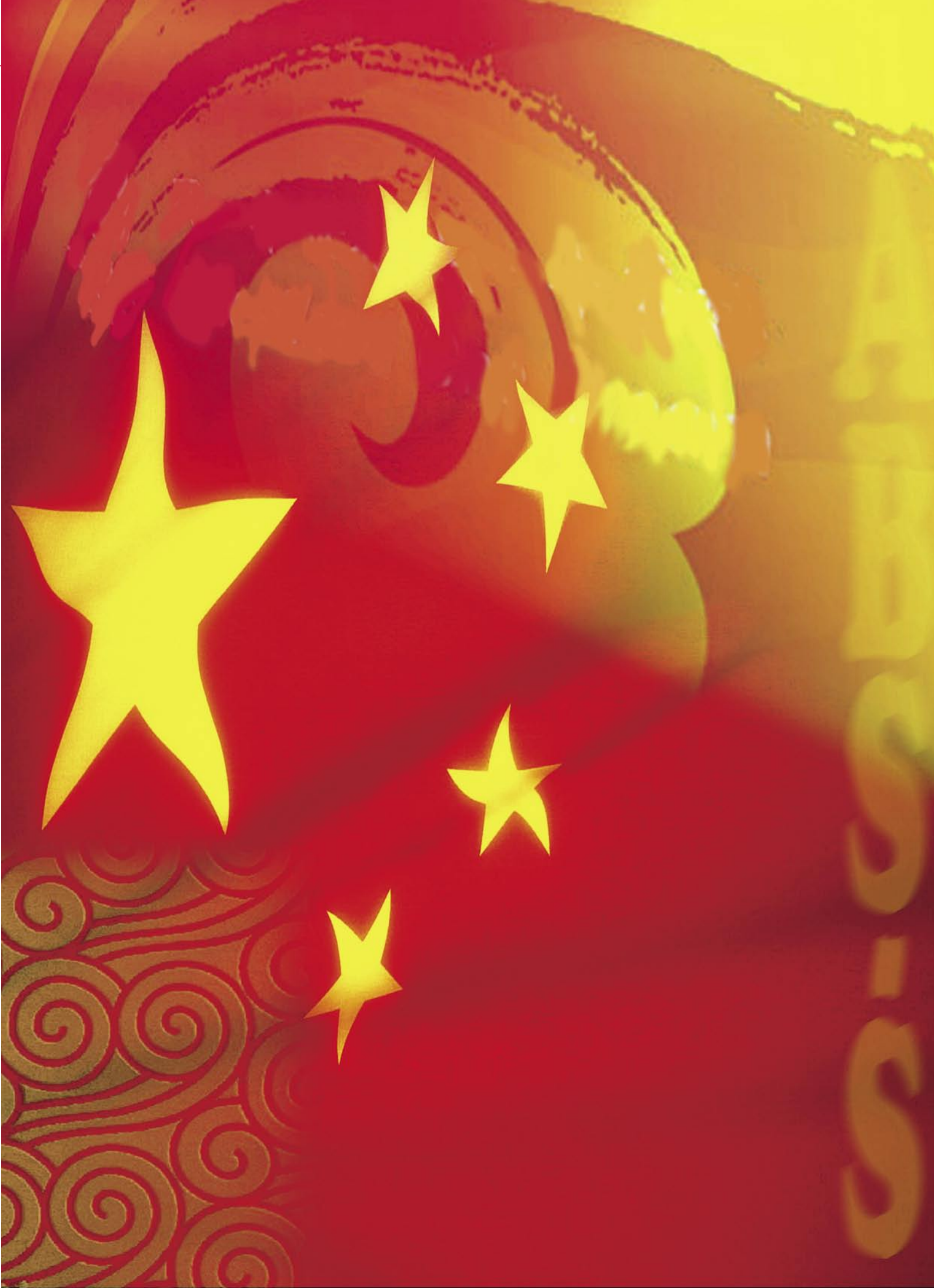
It can be interesting to watch what the world IC maker will do. Will they ignore the new standard and let the Chinese manufacturers monopolize the China market, or they will fight to offer their own implementation of ABS-S/AVS compatible chips? Will it be possible to create a universal chip suitable for both standards: DVB-S2 and ABS-S?



The launch of ZhongXing-9 (ChinaSat-9)
Photo: Xinhua



ZX 9 (Chinasat 9)
Photo: Thales Alenia Space



Dizipia DS4H-9160

Bigger and Better

It might not have the most catchy name, but the DS4H-9160 from Korean manufacturer Dizipia makes an imposing statement with its size and looks. The sleek black metal-cased receiver is bigger than most at 43cm wide, 28cm deep and 6cm high and the sturdy metal case means it's quite heavy too. The shiny front panel contains a nice and clear channel information display.

The remote is also larger than usual, measuring 24x5cm. This can be programmed to operate a TV in addition to the receiver, and this was quick and easy to set up for my TV from the codes in the back of the manual. For once I had no need to be trawling the internet for additional codes to make this work! The remote is clearly laid out, and

the keys have a definite click when they are pressed, but at the same time don't need too much pressure to make the connection as many of these type do. Complementing the assuring click of each button, the STB or TV button lights up when a button is pressed.

The front panel's other notable feature is an unusual

grid of little red lights. At first glance they look like they are just indicators, but they are in fact little buttons, and through these most of the receiver's most important functions can be controlled. The front panel is rounded off with two CI slots and a USB port under the right-hand flap.

At the back we have just

about all the connection options we could need. The antenna input for each of the two tuners has a corresponding loop-through output, and the first tuner can be looped into the second if only one antenna feed is available. A little loop-through cable is included in the box to do just this. HDMI and S/PDIF are available for digital video and audio along with the more traditional two Scarts, component and composite video and RCA stereo audio. There's another USB connector here as well as RS232 and even an Ethernet port, although there is no information in the manual to explain how this is used.

Set-up

Connecting the receiver is made easy by some helpful clear diagrams in the manual. Each of the connectors is pictured and the options for each explained. One important point that can cause confusion is made clear: if only one antenna is used in conjunc-



tion with the loop-through cable, switching channels while recording is limited to the channels on the same transponder only. The two LNB inputs can also be set to different satellites, so two independent fixed dishes are also an option, this too would limit what can be watched and recorded at the same time.

The first time we switch on, we go straight to the installation wizard where the local time, time zone and preferred languages are. There are limited language options here – for the on-screen menus

and messages just English, German and Russian are available. Strangely, the list of languages for audio and subtitle defaults are different. The choice here is between English, German or French.

Then it's off to the channel search screen where our chosen satellites are set up and searched for the first time. Motorised DiSEqC dishes and USALS are supported. It's a simple job of

telling the receiver it's location by latitude and longitude so that it can calculate the positions of the satellites you wish to receive.

The list of satellites pre-programmed into the receiver is very impressive – there are around 170 of them! I'd challenge you to find one that's not already there, but in case there is or a new satellite appears

in the sky in the future, satellites can be edited, added and removed as needed. The transponder frequencies for the satellites appear to be nicely up-to-date too.

Scanning for channels themselves is nice and fast with a full scan over ASTRA 2 taking just eight minutes. Once the channels are in memory, a good selection of functions are present to allow further editing and sorting.

The full channel list is



DiZiPiA

TELE-satellite World www.TELE-satellite.com/...

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Turkish	Türkçe	www.TELE-satellite.com/TELE-satellite-0903/tur/dizipia.pdf

Available online starting from 30 January 2009

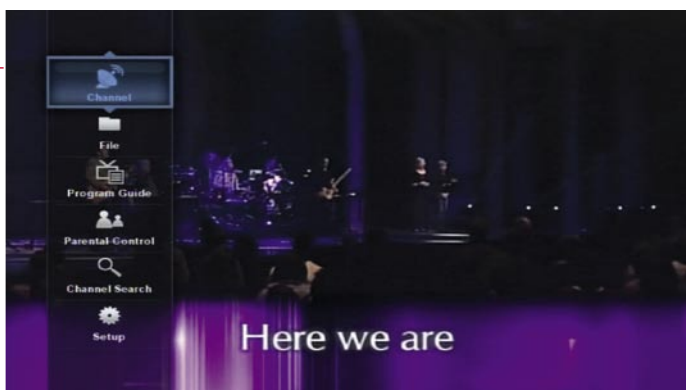


DIZIPIA DS4H-9160

A competent receiver with lots of connection options and powerful capabilities



DS4H-9160
HIGH DEFINITION DIGITAL SATELLITE RECORDER
TWIN HDMI TUNER | DOLBY DIGITAL | USB 2.0



Main menu



Channel info

accessed by simply hitting the "OK" key when watching TV. This list can be quickly sorted into alphabetical order, by scrambled/FTA status, or left in its original state of sorting by channel number. A nice touch is the "zoom" function, where the channel list can be switched between filling the whole screen or just a part of the left-hand side, so that the TV picture can be seen at the same time.

All of the editing and organisation functions are accessed from here too which is easier than having to go to a dedicated editing menu. Channels can be moved up and down the list as required. As many favourites lists can be set up as required, and adding to and editing them is easy to do.

For those with children, two options exist for parental control – the traditional password approach or the ability to completely hide certain channels until the password is entered. In addition to this, you can limit the viewable channels to a single favourites list or set an amount of time before the receiver switches itself off – to stop the kids sitting in front of the TV all day!

A final option exists to limit the allowed programmes by their age rating, although this depends completely on the broadcaster transmitting the correct age classification information.

Hard drive functions

As HD broadcasts use a lot of data and high speed data transfer is essential, an SATA interface is used in the

receiver instead of the traditional IDE. Our test model was unfortunately supplied without an drive installed internally, so this at least gave me an excuse to fully test connecting a hard drive to the USB ports.

I was not very confident, but even a fairly old USB drive connected to the rear USB port proved me wrong by working almost faultlessly, including recording HD channels. There were however a few times where the picture became a little jerky as you'd expect. But even watching an HD channel and recording another onto the USB drive was possible, if not 100% perfect.

External drives use a standard FAT32 file system, so backup and retrieval to a computer is simple and straightforward. The file manager on the receiver will be easy to navigate for anyone used to using computers, with the familiar structure of files and folders and even the ".." to go back to the parent directory.

An automatic delete func-

tion can be used to delete the oldest recordings when space runs out. With this kind of system, the unwanted loss of an important recording is always a worry. Thankfully there is a helpful option to protect individual recordings so that they are not deleted accidentally or by the auto-delete function. Parental control of recordings is also supplied via password protection.

Timeshifting is also available for live TV. A simple press of the pause button is all that is needed, after this the usual rewind and fast-forward controls become available. A welcome extra function divides the recorded programme into segments like chapters of a DVD, making navigation much easier than having to wind through a long timeshifted programme. The standard amount of programme that is temporarily recorded defaults to 30 minutes, but this can be changed in the settings up to a maximum of two hours.

A source of disappointment might be the lack of any editing functions. It's always



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helpful to have even some basic edit controls to take out commercials in a recording and it's a pity there is no provision to do anything like this. As a sports fan, I also missed a slow-motion playback option which I often use.

Everyday use

Navigating around satellites, channels and the receiver's menus is fairly easy, although perhaps not quite as intuitive as some other receivers we've seen. For example, even after quite a lot of time using the receiver I am confused by there being a "back" button that doesn't actually move the menus back to the last level! The "menu" key doesn't do this either as I might have expected. Instead the "exit" button does this, at least sometimes – at other times it does what it says and exits the menu system completely.

Picture quality is a big issue for HD receivers and thankfully the HD quality out from the Dizipia lives up to expectations. Standard definition pictures are also upscaled when viewing in a HD resolution and this too adds a little extra quality to the picture when compared with RGB Scart.

There's a very helpful dedicated button on the remote

to quickly switch resolution. Added to this is an idea taken from the world of computers. After the resolution is changed, a box appears on screen for you to confirm that you can see the picture. The default is "no", so if you end up with an unwatchable image, just press the OK button and it reverts to the previous resolution. Both progressive and interlaced modes are available, ranging from 480 to 1080 scan lines.

Widescreen broadcasts are commonplace these days and it's good to see that all options here are catered for. For viewing widescreen broadcasts on a 4:3 screen, letterbox and pan/scan modes are available. In reverse, a 4:3 broadcast on a 16:9 screen can be untouched with black bars at the sides, or zoomed as required. There's even a special button on the remote for this too, to switch between 16:9 and 4:3 mode.

I had difficulty making the EPG work, most likely because it requires an internal hard drive to store its data on. Assuming it will work properly in a production model, it contains all the usual functions we'd need and expect. Programmes in the future can be set to record, or just to be watched. Like the channel list, the blue button can be



TV setup menu |



EPG |

used to zoom the EPG display between the full screen or just a part of it. Programmes set to be recorded can have a parental control put on them at reservation time. Traditional timer-mode recording is also available.

Everyday channel-surfing is fast, and thanks to the good widescreen implementation, mostly painless. Once sorted into the desired order, or into favourites lists, navigating around the channels is easy. The "back" key finally finds a use here, a quick press takes us back to the last channel viewed. Inbuilt Teletext is available, and dedicated buttons on the remote give

access to subtitles and additional audio tracks.

There's a novel feature for users of pay-TV systems. As usual, if a scrambled programme is recorded, a valid card is needed to be used to watch the recording at a later date. However, there's a special "descrambling" function. At a preset time of your choosing, for example while you are asleep, the receiver will get to work on the recorded file and remove the encryption. A valid viewing card is still needed to descramble the pictures of course.

As there are two USB ports, it's easy to have one con-



nected to a hard drive as I had to, plus still access other USB devices from the other. MP3 audio files can be played, and pictures look great on a large HD screen.

Overall

This is a competent receiver with lots of connection options and powerful capabilities. After using it for a while however, it does start to feel like it's a sports car with a speed limiter in the engine, that the

software inside isn't as fully developed as it could be. Navigating the menus sometimes feels a little tiring as they do not feel as intuitive as those on some of the other PVRs available.

On the plus side however, good picture performance, ease of picture size and shape adjustment with dedicated buttons and CI slots, for an everyday PVR it should do the job just fine.

Expert Opinion

+

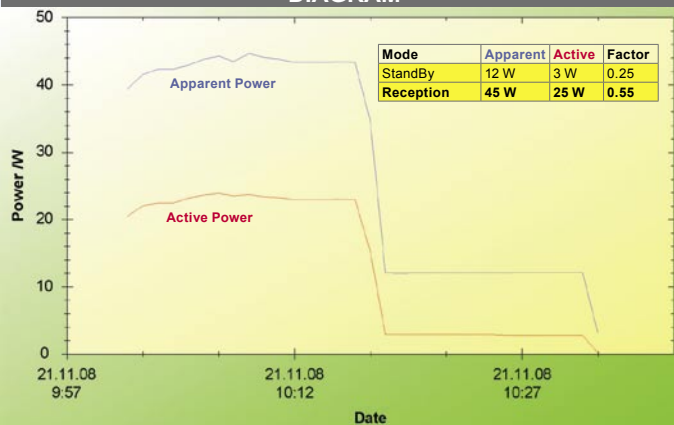
Twin tuners with a comprehensive range of dish and connection options, descrambling control, full support of widescreen and HD resolutions
 SW upgrade and recording to PC via Ethernet
 2 channels recording and 1 recorded file playback
 Immediate Timeshifting
 32-bit true-color OSD
 User-friendly operational menu
 Linux Operating System
 1080p video resolution support



Andy Middleton
 TELE-satellite
 Test Center
 UK

-
 Not the most intuitive of menu systems
 No editing of recordings

ENERGY DIAGRAM



Recorded files list |



Recorded file playback |

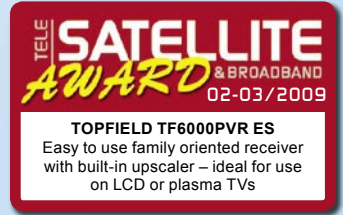
TECHNIC DATA

Manufacturer	Dizipia, Inc., 2nd Floor, Shinhan Bldg., 147-9 Garak-dong, Songpa-Gu, Seoul 138160, Korea
Tel	+82 (0)2 21 52 32 00
Fax	+82 (0)2 407 34 05
www	www.dizipia.com
email	info@dizipia.com
Model	DS4H-9160
Type	HDTV-Receiver with Scaler
Satellites	170+
SCPC compatible	Yes
USALS	Yes
DiSEqC	1.0/1.2/1.3
Scart connectors	2
Symbol rates	DVB-S: 1000-45000
DVB-S2	20000-30000 (QPSK)
DVB-S2	10000-30000 (8PSK)
Audio outputs	2 (left & right)
Video outputs	Composite, Component, HDMI
UHF output	No
0/12 volt output	No
Digital audio output	S/PDIF
EPG	Yes
C/Ku-band compatible	Yes
Power supply	100-250V AC, 50/60Hz



Topfield TF6000PVR ES

Beauty Inside and Out



High definition TV has started its triumphant victory parade. But if you take a look at the statistics from www.SatcoDX.com, you'll see the disappointing reality: HOTBIRD, for example, at 13° east has a grand total of 29 HDTV channels compared to the 1355 SDTV channels in PAL. There are many reasons for this but it is mostly financial in nature; bandwidth costs money and if a provider is already offering service in SDTV, they would only offer HDTV as an added feature. For the end-user this means that despite having a modern flat screen TV, he will still be watching SDTV channels and should it be a large TV, the picture quality might not be so nice.

This problem was recognized by the South Korean manufacturer Topfield. They came up with a very clever solution with their new TF6000PVR ES. It is very similar to the TF6000PVRE except for one decisive feature: the upscaler.

The upscaler takes the incoming signal and increases its resolution by interpolating the missing pixels such that there no longer is any raster, something that would be unavoidable with a simple increase in resolution. We wanted to put this receiver through a thorough test to see how good this feature really worked.

When we opened the box we noticed that the TF6000PVR ES was not quite as wide as we were expecting. While the pre-



decessor model TF6000PVR came in a rack-compatible 43cm width, the TF6000PVR ES was only 38cm wide. But this smaller size did not take away any of its elegance.

In the center of the front panel is a very easy to read alphanumeric VFD display; next to it are three buttons for receiver control should the remote control be absent. The four buttons for volume control and channel switching were placed in the form of a silver-colored circle. This together with the blue-glowing Standby button looks quite impressive.

Behind a flap on the right side can be found two CI slots for PayTV reception. They can accept all of the typical modules such as Irdeto, Viaccess, Seca, Conax, Nagravision or Cryptoworks and work together without any problems. As we've come to expect, the rear panel of the TF6000PVR ES shines with a variety of connection possibilities. In addition to the satellite IF input and looped-through output of the two tuners, you will also find an HDMI output, two Scart connectors, three RCA jacks with video and stereo audio outputs, an S-Video output, an optical digital audio output, a USB 2.0 jack and last but not least an Ethernet interface. Though not used all too much anymore these days, an RS-232 interface is nonethe-

less also available for connection to a PC.

The included remote control sits very nicely in your hand and is properly labeled with all the buttons within easy reach. And, similar to the receiver itself, we also liked the craftsmanship of the remote control. The user manual, as expected from Topfield, is very clearly written, sufficiently illustrated where needed and answers any questions that could pop up while using the receiver quickly and in an uncomplicated manner.

Everyday Use

After turning on the receiver for the first time, the new Topfield box begins by displaying the Main menu and thereby requires the user to set up the

TELE-satellite World [www.TELE-satellite.com/...](http://www.TELE-satellite.com/)

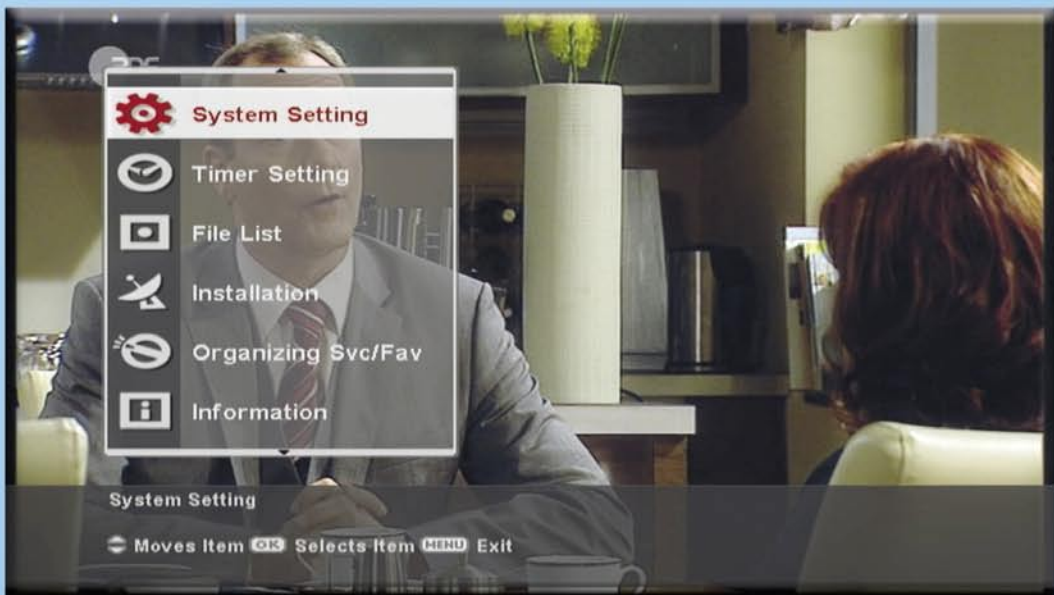
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Available online starting from **30 January 2009**

box to his specific needs, such as matching it to his antenna system, before using it for the first time. There is no installation assistant but in reality it really isn't needed since the menu structure of the Topfield is very logically laid out such that even a beginner should easily be able to find his way around.

The first order of business would be to set up the OSD language in the system settings. The TF6000PVR ES comes with quite a selection to choose from: German, English, French, Spanish, Arabic, Greek, Turkish, Danish, Swedish, Norwegian, Dutch, Polish, Persian, Finnish, Czech and Bulgarian. Once the language



The TF6000PVR ES's nicely arranged main menu



has been selected, the user can move on to the individual menu entries.

Just like every other satellite receiver, the TF6000PVR ES can also set the time automatically via satellite. Unlike most of the competitor models, Topfield provides a number of different setting possibilities. For example, the source of the time adjustment can be limited to encrypted channels or even individual transponders. Unfortunately, this feature is necessary considering that many providers other than the main DTH positions don't necessarily include the correct time with their transmissions thus confronting the receiver with incorrect time information. Even standard time and daylight savings time can be activated or deactivated with the push of one button; you no longer have to worry about the offset from GMT. Of course, the time and date can also be set manually. The TF6000PVR ES operates with a real-time clock – it keeps the correct time even after a power outage and, unlike other receivers, will still automatically start timer recordings after a power outage.

Thanks to the integrated

upscaler, the TF6000PVR ES is ideally suited for use with modern flat-screen TV's. The box comes with an integrated HDMI output with which the receiver can upconvert the video signal to 576p, 720p or 1080i. To make it even easier, the user can make these adjustments using a dedicated button directly on the remote control without having to first muddle through several menu pages.

If you still want to connect the new Topfield box to your TV with the Scart outputs, you have RGB, CVBS, S-Video or YUV at your disposal. The picture display can be set to 4:3 as well as 16:9. Additional display modes are available for 4:3 content viewed on a 16:9 TV. PAL and NTSC are supported as is the automatic switching between the two so that US TV reception in Europe and vice versa is not a problem at all. Thanks to the integrated upscaler, it is also possible to adjust the size of the picture +/- 20% so that the image can be perfectly matched to whatever TV is in use.

Once all of the settings have been taken care of, the receiver can then be made compatible with the exist-

ing antenna system. The two tuners can be supplied with separate satellite signals – this would be the ideal application – or they can share the same input cable. The second variation comes with significant restrictions on one tuner when recording a program on the other tuner. These restrictions would not exist if two independent satellite signals were used.

The new Topfield comes with a preprogrammed list of 156 European, Asian and American satellites. The more popular positions in the list are quite up-to-date although an overhaul of the inactive positions would not be a bad idea.

We especially appreciated the numerous settings possibilities that naturally could be set up for each individual satellite. There are a number of preprogrammed local oscillator frequency (LOF) values to choose from but if necessary manual LOF entry is also available. This lets you use non-standard LNBs with this receiver. All of the available DiSEqC protocols are integrated so that multiple satellite positions can be received. DiSEqC 1.0 allows reception of up to four satellites, 1.1

can be used on multi-focus antennas with up to 16 LNBs and then there's 1.2 and 1.3 (USALS) for the control of motorized antennas.

Once these parameters have been set, the next step would be to fill up the receiver's memory capacity of 5000 channels (TV 3500, Radio 1500). This task can be handled not only with a manual scan but, of course, with an automatic scan as well with the help of the preprogrammed transponder data. There's also an expanded scan with manual PID entry. Just as with the other scans, a network scan can also be limited to free-to-air-only channels or encrypted channels.

The receiver's channel scan speed was also quite impressive: just about four minutes was needed to scan our 100+ transponder test satellite. Don't forget though that the TF6000PVR ES is not an HDTV receiver and therefore cannot receive any DVB-S2 and/or MPEG4/H2.64 signals. The receiver does however take standard SDTV signals and upscales them so that a much better quality picture can be viewed on a modern LCD or plasma TV.



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After scanning one of the larger DTH satellite platforms, it is highly likely that the channel list will be filled with hundreds of channels that the user might not even be interested in because, for example, they are encrypted and are thus not receivable. For reasons like this it is all too important to be able to edit the channel list and set it up the way you want. For years Topfield has been showing the world how this is done and it is no different with the TF6000PVR ES. Channels within the channel list can be easily deleted, renamed, moved or locked out with a PIN code so the kids can't nose around and land on channels not meant for them. The list can be sorted automatically a number of different ways and the more popular channels can be moved to any number of different Favorites lists so that they can be easily found with the push of a button on the remote control.

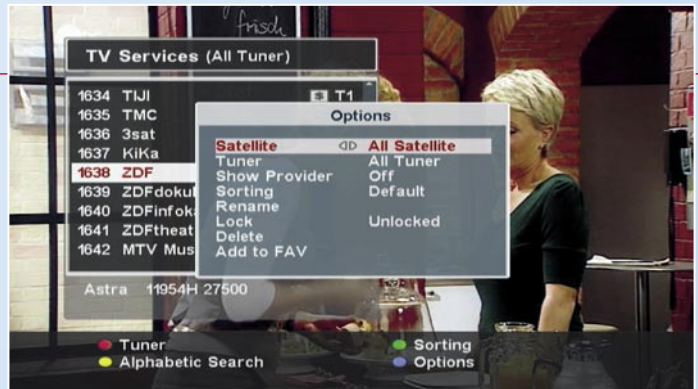
Once all settings have been taken care of and a scan is completed, the user can exit the main menu and the receiver will then switch to the first receivable channel in the list. With the appearance of the first channel, an Info bar also appears momentarily that provides information on the particular channel and its technical parameters and features (DD-audio, subtitles, teletext, encryption, etc.) plus information on the actual program currently running - assuming, of course, that this data is available from the pro-

vider in the first place. This same Info bar also appears when switching between channels.

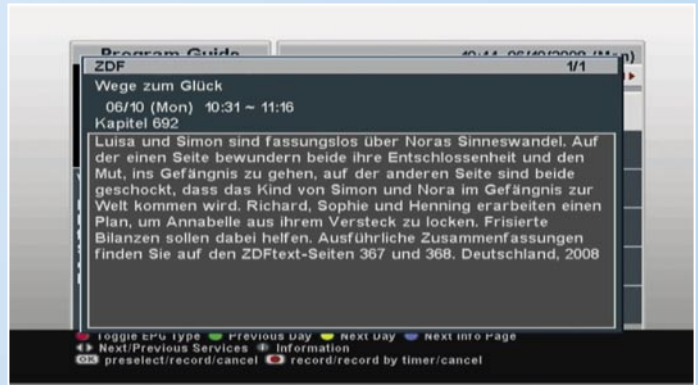
A push of the Info button displays expanded information for the currently running program. The Guide button displays a preview of upcoming programs including detailed programming information for up to a week in advance. Again, this all assumes that the provider makes this data available. There are also two display modes that the user can choose from. Especially practical is the ability to program timer recording entries directly from the EPG. All it takes is the push of one button to mark a program for recording.

Topfield's detailed channel list can be accessed simply by pushing the OK button. There are numerous sorting and search modes that let you easily find the channel you want. If necessary, the user can choose which tuner to receive the selected channel or the choice can be left to the receiver. The latter option might be a better choice if a recording is currently active. The switching time between channels is quite good and even if the two channels are not on the same transponder, the switching time is still reasonable at about one second.

The tuners used by Topfield have an excellent input sensitivity and don't have any problems with weaker signals such as those on ASTRA2D 28.2°



Channel list with multiple settings capabilities |



Expanded EPG Information |



Info bar |

east or NILESAT 7° west. We were also happy with the receiver's SCPC capability; it locked on signals starting at 1.0 Ms/sec and displayed an interference-free picture. We haven't seen too many receivers in our test lab that could master the difficult RSP chan-

nel on EUTELSAT SEASAT 36° east with a symbolrate of only 1.0 Ms/sec.

There are still a number of other additional features that perfectly complete the overall picture of the TF6000PVR ES. Included in this list, of course,



would be the numerous programmable timer entries that are available (weekly, daily, weekday or weekend-only recording capabilities are available), the incredible ease-of-use of this receiver, the nicely functioning teletext decoder as well as the numerous practical extras that also are available.

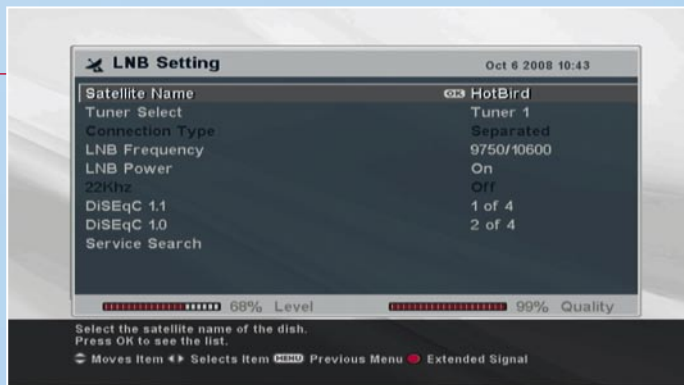
The PVR function is undoubtedly at the top of the list. The receiver can record two channels at the same time on the integrated hard drive and play them both back without any degradation in quality. Thanks to the time shift function, it is also possible to pause a currently running program should there be an interruption such as a ringing telephone. The program can be resumed from where it was left off after the interruption has passed. The bookmark function is also a very practical feature. A specific spot can be marked during a recording with the push of a button so that this point in the recording can easily be found at a later time.

The USB 2.0 and network interfaces on the rear panel provide a link to a Windows PC. Recordings can be transferred to a PC through these two interfaces and from there, for example, can be burned to a DVD. Naturally, data can be transferred in the other direction as well making it just as easy to turn the TF6000PVR ES into an MP3 jukebox by copying MP3 files to the receiver.

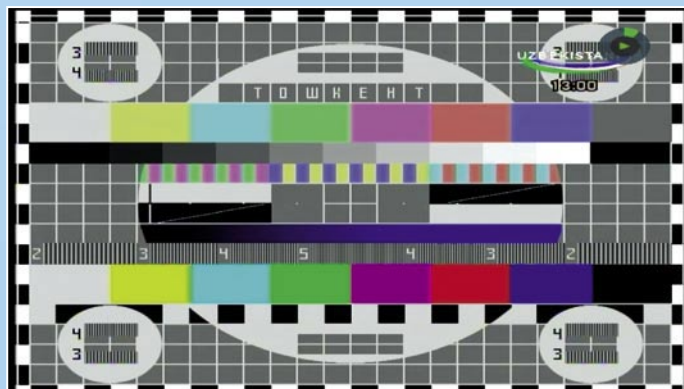
A web and FTP server is available via the network interface with which recordings on the hard drive can be managed. Even timer recordings can be set up directly on a PC. Unfortunately, the data transfer speed via the network interface is a mere 1MB/sec. This could result in lengthier download times for longer recordings. The configuration of the network connection can be handled from the DSL modem or router that is being used since the TF6000PVR ES supports the DHCP protocol.

The receiver's picture-in-picture function is also quite practical. It lets you, for example, switch to a second channel or a previously recorded program while the main channel is in a commercial break. The main channel would then be visible in a small window. At the end of the commercial break, a single push of a button is all that is needed to switch the receiver back to the main channel.

One of the reasons Topfield receivers have been so successful is the freely available TAP interface that allows users to upload home-made expansion software to the receiver. The TF6000PVR ES is no different. Thanks to its hardware similarity to the TF6000PVRE, almost all of the available TAPs should also work in the new TF6000PVR ES. We tested a popular EPG TAP, 3PG, and found that it functioned perfectly in the receiver and compliments the



LNB Settings



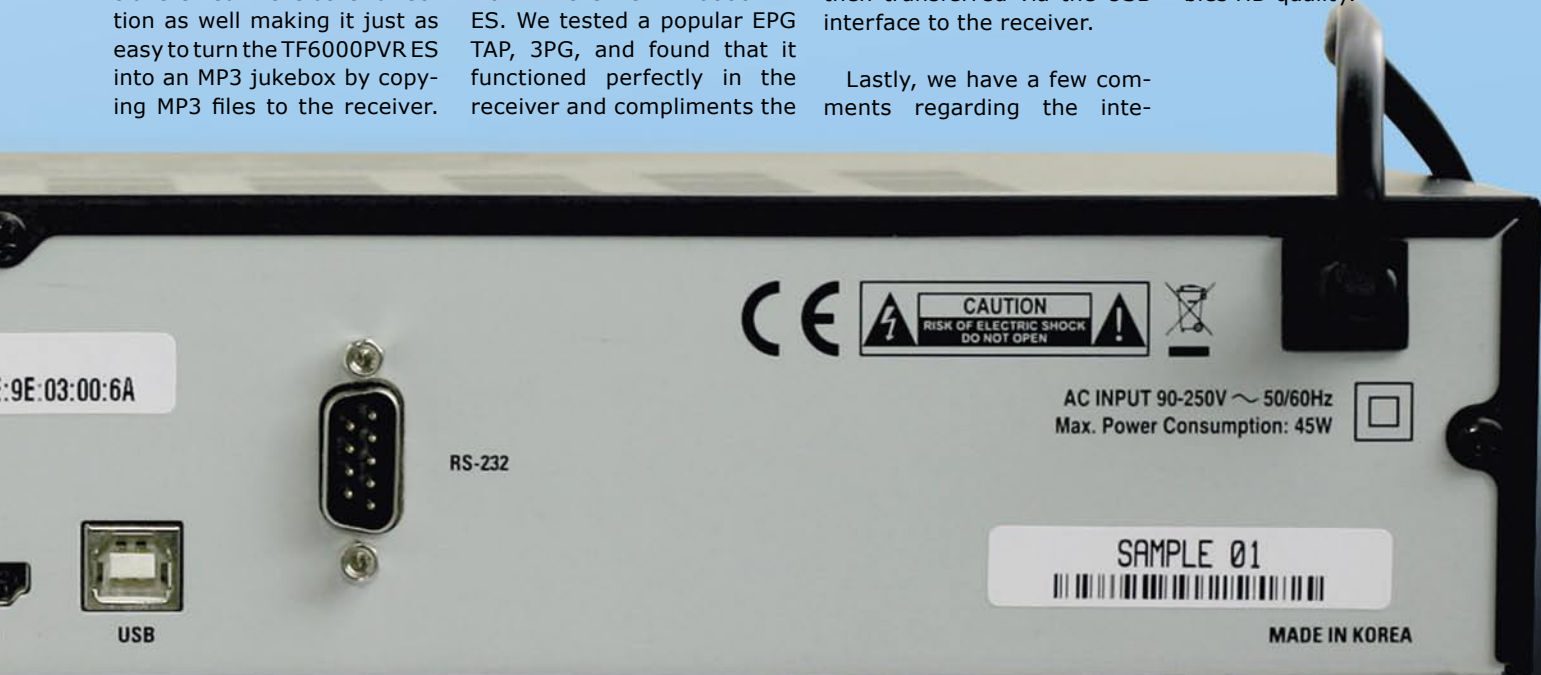
Weaker signal reception such as on EXPRESS AM1 40° east

already excellent Topfield EPG with a number of added features such as the automatic collection of EPG data at a specific time so that this data is always available and perfectly sorted for the user.

Topfield is constantly at work improving their receivers and therefore offers a number of ways to upload a software upgrade. It can be handled via satellite, via the Internet through the network interface or the necessary file can be downloaded from the Topfield website to a PC and then transferred via the USB interface to the receiver.

Lastly, we have a few comments regarding the inte-

grated upscaler. We want to make it clear that it cannot take a weak signal, one with a low data rate, and turn it into a super sharp HD picture. That would be asking too much. But it can improve the picture such that what you see on an LCD or plasma TV would be similar in quality to what you would get on a standard 80cm picture tube TV. Other channels that already transmit in SD with a higher data rate can be processed by the Topfield upscaler and provide a visibly improved picture that the end user would say closely resembles HD quality.



Expert Opinion

+

The TF6000PVR ES is an easy-to-use, family-friendly digital receiver. Thanks to the integrated upscaler, it is ideally suited for use on LCD or plasma TVs and provides visibly improved picture quality. The PVR functions are quite practical and once you use it for the first time, you'll never want to be without it.



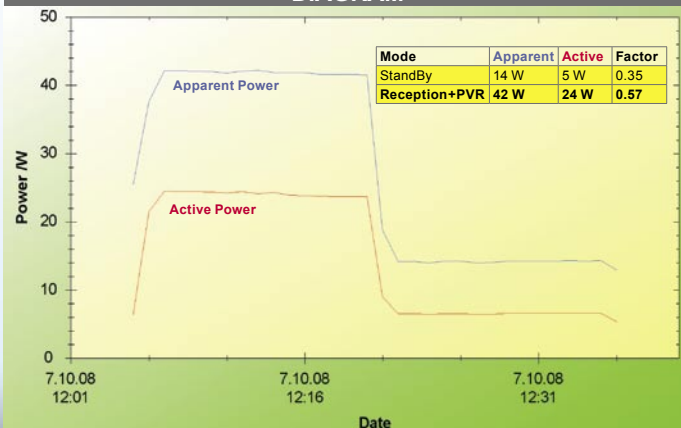
Thomas Haring
TELE-satellite
Test Center
Austria

The available channel memory of only 5000 is somewhat small. A main power switch on the back panel would also have been nice.

TECHNIC DATA

Manufacturer	Topfield, Seongnam/Korea
Fax	+82-31-7082607
E-Mail	inquiry@topfield.co.kr
Model	TF6000PVR ES
Function	Digital SDTV DVB-S receiver with built in upscaler
Channel Memory	5000
Symbolrate	1-45 Ms/sec.
SCPC Compatible	yes (> 1000 Ms/s)
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
USALS	yes
HDMI Output	yes
Scart Connector	2
Audio/Video Outputs	3 x RCA
Component Video Output	yes, via Scart
S-Video Output	yes
UHF Modulator	no
0/12 Volt Connector	no
Digital Audio Output	yes
EPG	yes
C/Ku-Band compatible	yes
PVR-Function	yes
USB 2.0 Connector	yes
Ethernet	yes
Power supply	90-250 VAC, 50/60 Hz
Dimensions	38/26.5/6cm
Weight	3.4kg

ENERGY DIAGRAM



First 15 Minutes: active operation with channel switching, recording, playback, etc. Next 15 Minutes: Standby



3PG TAP for expansion of the EPG |



Select the HDMI Output Resolution.
◀ Moves Item ▶ Selects Item [MENU] Previous Menu

Audio/Video Settings |



◀ Moves Item [OK] Selects Item [MENU] Previous Menu

DHCP support for easy network set up |



Renames, Rearranges, Locks, Skips, Deletes specific services.
◀ Moves to another function. [OK] Moves to Service List
[MENU] Previous Menu [OK] Moves to Service List

Channel list editor |



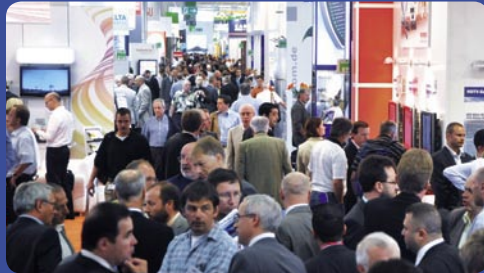
• Toggle EPG Type • Previous Day • Next Day • Next Info Page
◀ Next/Previous Services • Information
[OK] preselect/record/cancel [OK] record/record by timer/cancel

Standard EPG



ANGA Cable

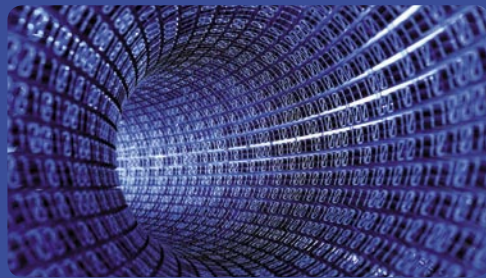
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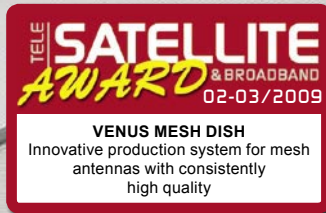
4-Segment Antenna System by Venus

Indonesian manufacturer PT Subur Semesta (mainly known by its brand name Venus) has developed an innovative mesh antenna system that is perfectly suitable for C band reception and can be set up quite easily thanks to its clever design.

What makes this antenna different is the idea to divide the twelve panels of the dish into just four segments. So what you get are four antenna quarters, each of which consists of three pre-fabricated panels. Naturally, this speeds up assembly no end.

The product comes with an assembly guide which allowed us to have the

■ The new mesh dish AL7210 (the diameter is seven feet, hence this designation) by PT Subur Semesta is manufactured according to an innovative production system and consists of only four quarter segments.



■ The four segments of the PT Subur Semesta mesh antenna



VENUS
DIGITAL PARABOLA
AL7210

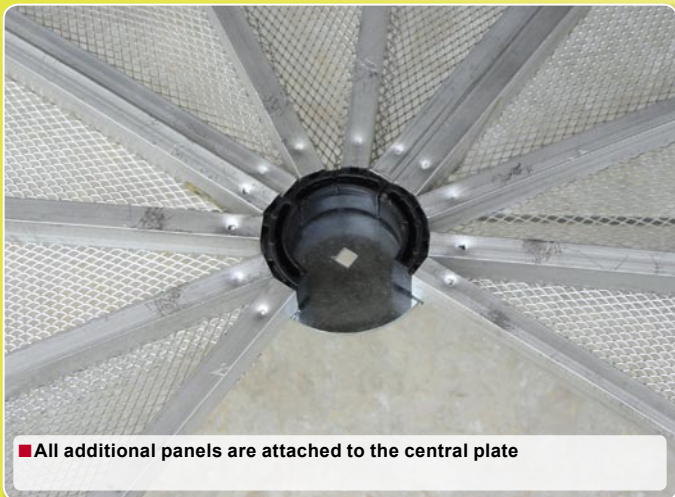
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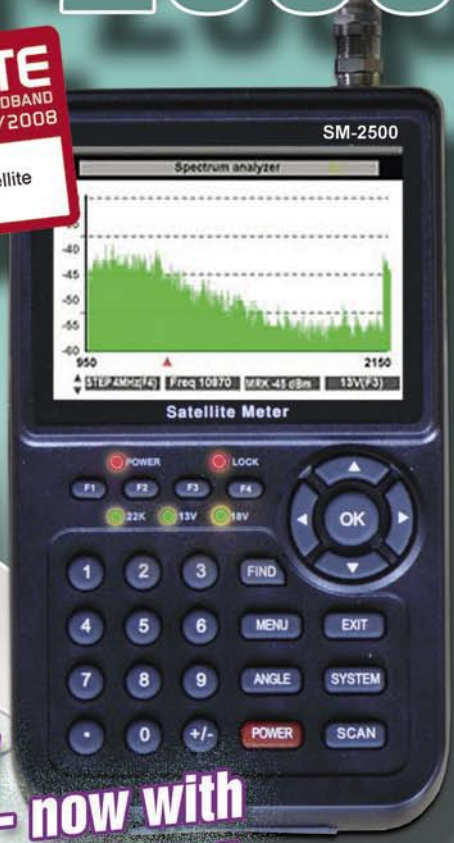
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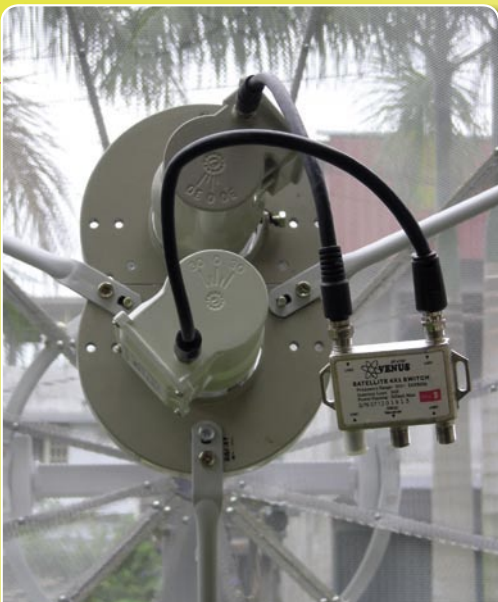
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**We have multiswitches
in all sizes.**



■ The 2-in-1 LNB feed mount is assembled with a dual switch



■ PT Subur Semesta's patented water-level works wonders when aligning the antenna.

antenna set up and running in no more than 30 minutes. And that even included taking all pictures for this report!

The individual components

boast very high quality: they are fully galvanized so that the new Venus antenna is not only quick to set up, but will also offers years of reliable operation. We tested the 2.1

metre (7 feet) antenna which will mainly be sold in Indonesia. Due to the country's proximity to the equator very high elevation angles are required and this is why the antenna is mounted on the mast end. With an elevation angle near of 90° required in the region any other mounting design would not work anyway.

PT Subur Semesta's mesh antenna is manufactured almost fully automatically, with only 15 percent of the total process requiring manual work. This makes sure the quality stays consistent and the individual panels have an exact parabolic shape. When compared to a solid antenna this dish turns out to be on equal footing. By the way, the new mesh antenna comes with almost the same holding brackets and feed rails as PT Subur Semesta's solid dishes.

The 7-foot size was chosen by PT Subur Semesta for a reason: In some regions of Indonesia a 6-foot antenna just won't do it, while nine feet are a little too much for

most of the country. As it turns out seven feet are the perfect size for Indonesia. We have been advised by PT Subur Semesta, however, that this is only the beginning. The company wants to get a foothold in their home market first, before starting to offer other sizes of this antenna line for international markets as well.

Like with all packages from PT Subur Semesta this antenna also comes with the patented Venus water-level. Thanks to its integrated magnets it can simply be attached to a horizontal or vertical position of the mounting brackets and the scale will show the current angle. This takes out the horror of fine-tuning the antenna position.

We used a 2-in-1 LNB mount for our reception test. This mount, or even a 4-in-1 mount for four C band LNBS is also available from PT Subur Semesta. These LNB mounts are ideal for Indonesian conditions since they allow receiving signals from several positions with a single antenna. The available options are: PALAPA C2 (113.0E) and TELKOM 1 (108.0E), or ASIASAT 3S (105.5E) and ASIASAT 2 (100.5E), or all four of them at the same time.

After only a few minutes of aligning we were able to receive satellite TV with the new antenna. PT Subur Semesta's new mesh antenna system is an innovative solution for the production of antenna panels with consistently high quality. All this is complemented by quick assembly and easy transportation.



■ All is finished – now reception needs to be measured.



■ Great – the metre shows perfect reception.

Expert Opinion

+

PT Subur Semesta's new Venus mesh antenna system shines thanks to its top quality. Assembly is easy thanks to its clever design. The dish comes complete with all required components so that you can watch satellite TV right after setting up the dish.



Vincent Withjun
TELE-satellite
Test Center
Indonesia

-
The antenna is not Ku band compatible

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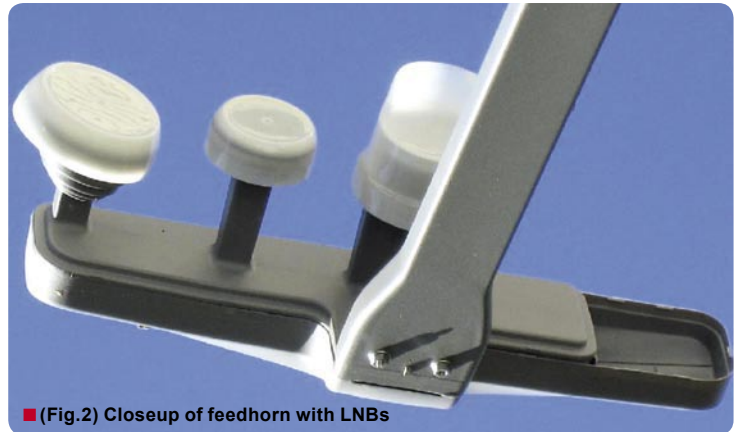
One of the biggest names in the industry when it comes to multiswitches would undoubtedly have to be SPAUN. The company was founded back in October of 1969 and began by manufacturing OEM terrestrial antenna products. In 1991 they began distributing products under their own name and shortly after that introduced the first multiswitch with an integrated power supply. Since then they have continuously added to their product line such that today their product range consists of more than 300 products.

Recently, SPAUN ventured into a new arena by beginning to offer amplifier and multiswitch products for use exclusively with the DirecTV satellite PayTV system in the USA. DirecTV itself came into existence back in 1990 and launched their satellite TV

service in June of 1994. The idea of watching TV via satellite instead of through a cable TV service provider became so popular that in just a little over a year, they reached one million subscribers.

Just ten years later in 2005 they had 15 million subscribers! In 2007 DirecTV began offering 70 HD channels and today that number has risen to over 130 HD channels. When you talk to most people about DirecTV, they think of DirecTV as merely a provider of TV services to individual end users such as

larger apartment buildings. Here the commercial end users want to provide independent satellite TV signals to each hotel room or apartment with all of this being accomplished using a single



■ (Fig.2) Closeup of feedhorn with LNBS

those in private homes. But the truth is DirecTV also provides service to commercial end users such as hotels and

satellite antenna. Obviously, a standard DirecTV satellite system can't handle this all by itself. That's where SPAUN comes in.

SPAUN has developed an array of products exclusively for the DirecTV SlimLine dish antenna system (Fig.1) that allows the incoming satellite signals from five different satellites to be distributed to multiple receivers using only the one satellite dish.

The SlimLine LNB (Fig.2) comes with four independent outputs that when used normally allow the end user to connect up to four satellite receivers. But when used



■ (Fig.1) The DirecTV dish setup we used for this test

service in June of 1994. The idea of watching TV via satellite instead of through a cable TV service provider became so popular that in just a little over a year, they reached one million subscribers.

Just ten years later in 2005 they had 15 million subscribers!



with the SPAUN components, 16 and more receivers can be connected. If you take a close look at the SlimLine LNB, you might say to yourself: "I only see three LNB's". And, yes, that's exactly what it looks like from the outside. On the inside however, much more is going on.

The LNB on the right is actually three LNB's in one that together with the other

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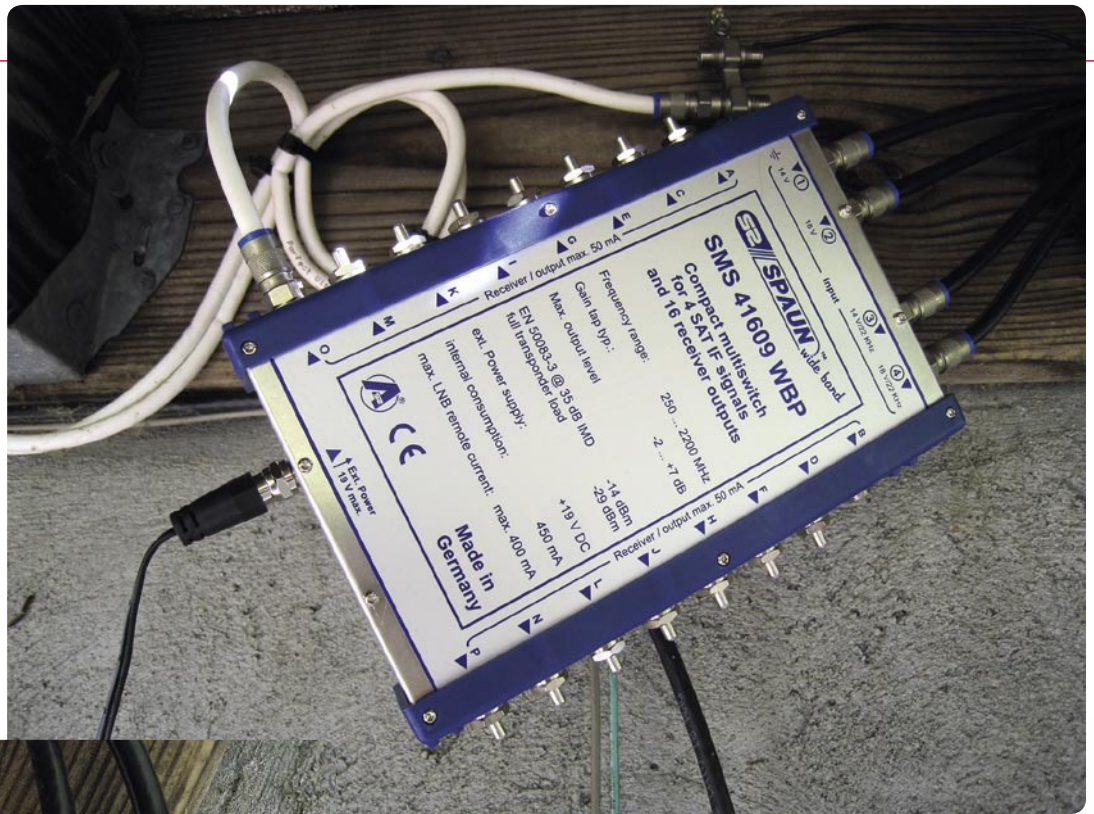
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two add up to five. Then you might be asking yourself how it can be possible to switch between five different satellites and at the same time give all the connected receivers access to these satellites independent of each other.

The answer again lies in the SlimLine LNB. A typical LNB converts the incoming satellite signals to the 950 to 2150 MHz range and sends these signals via the coax cable to the receiver.

The SlimLine LNB does this and more. A portion of the incoming satellite signals are



■ (Fig.4) We removed the 4 black colored coax cables from grounding block and connected them to the SPAUN SMS 41609 WBP. Now we could connect up to 16 receivers.



■ (Fig.3) SPAUN SMS 41609 WBP switch

converted to the 250 to 750 MHz range. Through a variety of switching functions within the LNB, the 250 to 750 MHz range and the 950 to 2150 MHz range are both made available at each of the four outputs on the SlimLine LNB. The receiver chooses which band and polarization it wants simply by switching between 14 or 18 volts and also whether or not to include a 22 KHz signal along with the proper voltage.

We found the idea of using SPAUN switches in this application very intriguing so we decided to take a closer look at how all of this works. SPAUN was kind enough to provide us with a number of their components so that we could put them to the test.

The number of receivers that need to be serviced will dictate what SPAUN components will be used and how many of them will be needed.

The most basic set up will provide outputs for as many as 16 receivers. For example, the four LNB outputs can be connected directly to a SPAUN SMS 41609 WBP switch (Fig.3) without the need for any amplifier components.

This switch already comes with the 16 outputs needed for 16 different receivers. Just plug the included power supply into a wall outlet, connect the other end into the proper jack on the switch and it's ready to go (Fig.4). All of the receivers connected to this switch can indepen-

dently access all of the satellite signals from the DirecTV antenna as if each receiver were connected to its own antenna.

How does this work? The concept is actually quite simple. The receiver has the ability to send four different control signals (14V, 18V, 14V + 22 KHz and 18V + 22 KHz) via the coax cable to the LNB so that the proper band/polarization is selected. But when the SPAUN components are used in between the receiver and the SlimLine LNB, the sequence of events unfolds with a slight difference. The receiver still sends out the proper control signal depending on the band/polarization it wants to receive but, instead of this finding its way to the receiver, it ends up sent to a SPAUN multiswitch. As far as the receiver is concerned, it thinks it's connected to an LNB.

The SPAUN SMS 41609 WBP multiswitch comes with four satellite signal inputs. Each of these inputs sends its own unique control signal to the SlimLine LNB:

- Input 1 – 14V
- Input 2 – 18V
- Input 3 – 14V + 22 KHz
- Input 4 – 18V + 22 KHz

In this way, all of the available satellite IF bands from the SlimLine LNB are delivered to the SMS 41609 WBP multiswitch at the same time. The switch then routes the desired band/polarization to the connected receivers based on the control signals received by the switch from each of the receivers.

As mentioned earlier, one of these bands is the 250 to 750 MHz frequency band. Depending on the DirecTV receiver model, an internal or external BBC (base band converter) module is used to upconvert this frequency band to the standard satellite IF band so that the receiver can access these signals.

If the satellite system to be installed involves the use of more than 16 receivers, then additional multiswitches need to be used.

In some cases, this system must also be capable of handling terrestrial TV signals as well. The SPAUN SMS 41609 WBP multiswitch does not have a terrestrial input so for applications like this the SMS 41609 WBP can be used. Also, now that we are dealing with more than one multiswitch, it becomes necessary to include signal amplifiers

and signal taps to the SPAUN set up as well.

For the first part of our test we wanted to set a baseline measurement from which a comparison could be made when the SPAUN components were added. So, before any SPAUN components were put in place, we measured and

test we used the following SPAUN components:

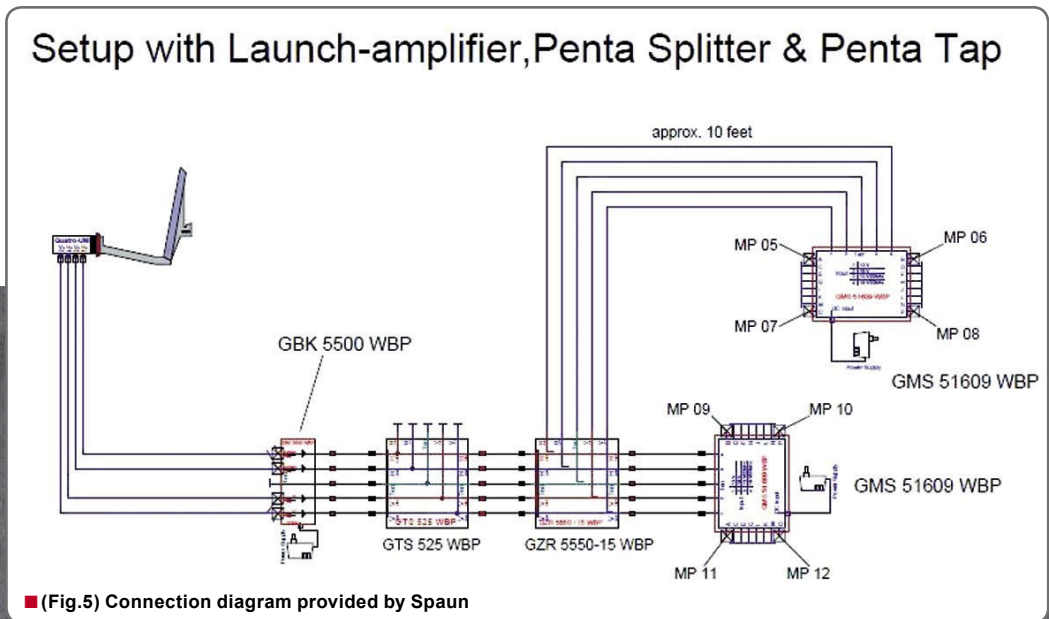
- 1xGBK 5500 WBP Wide-band Launch Amplifier
- 1xGTS 525 WB Penta Splitter
- 1xGZR 5550/15 WB Penta Tap with Directional Coupler
- 2xGMS 51609 WBP Compact 16-Output Multiswitch

These components were connected to each other as shown in the diagram in Fig.5. The actual connected components can be seen in Fig.6. In the normal setup, the four cables from the SlimLine LNB were routed to a grounding block (Fig.7) at a location outside of the house just

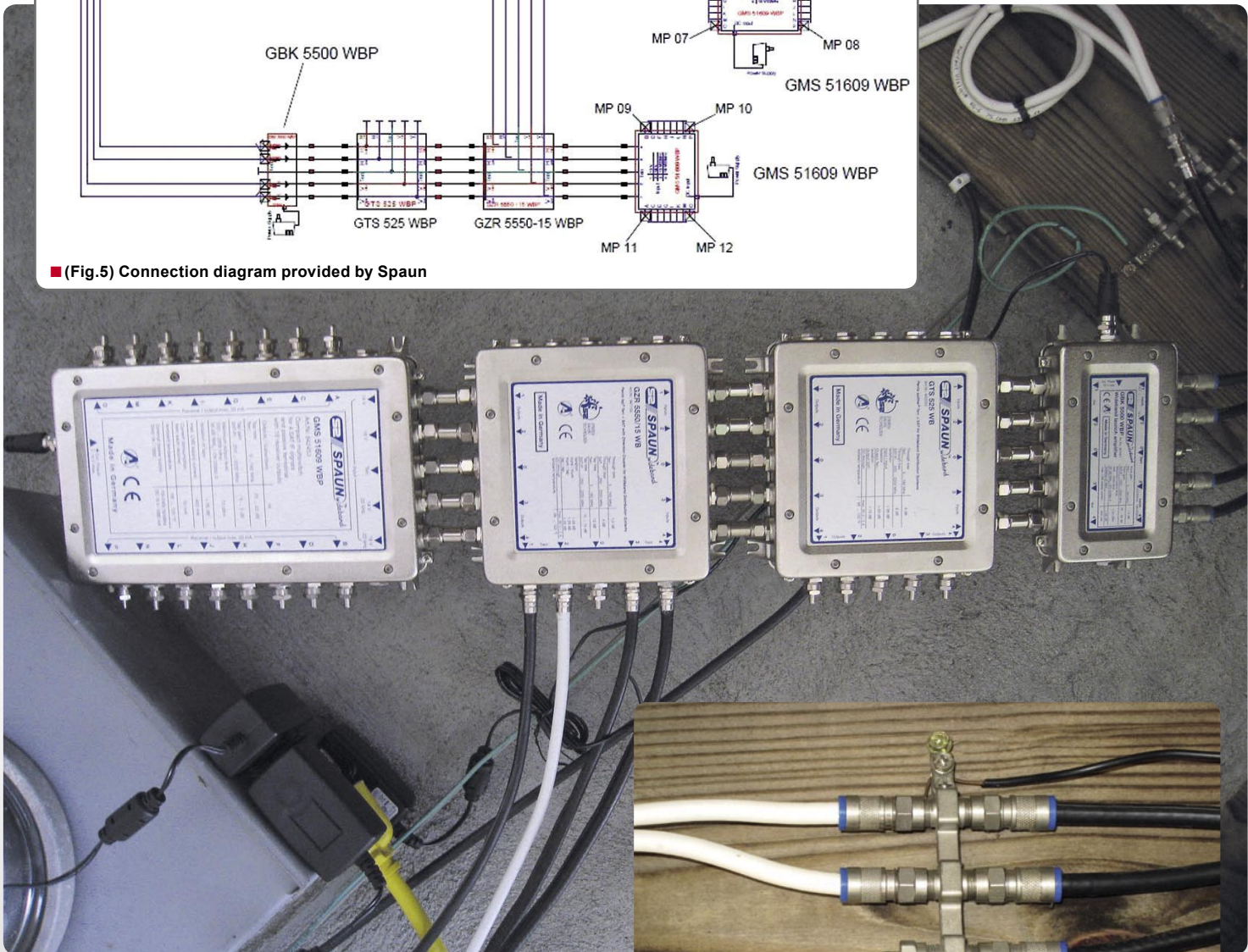
before the cables went into the house. This was a convenient point to connect the SPAUN components.

The four IF cables were removed from the grounding block and connected to the four inputs on the SPAUN Launch Amplifier. This particular setup has the capability to provide independent satellite signal outputs for up to 32 receivers.

For the purpose of our tests we opted to measure the outputs at the eight Measuring Points (MP) highlighted in Fig.5. The unused outputs were terminated with 75



■ (Fig.5) Connection diagram provided by Spaun



■ (Fig.6) Our actual setup for this test. Now up to 32 receivers could be connected

recorded all the active transponders on the five satellites using the signal strength display that is included in the DirecTV receiver setup menu.

For the second part of our

Grounding block conveniently located for us to change the cables: the black colored cables are the ones coming from dish.

(Fig.8) DirecTV Satellite at 101 west

Table with 10 columns: Transponder#, Normal, MP05, MP06, MP07, MP08, MP09, MP10, MP11, MP12. Rows 1-32.

(Fig.9) DirecTV Satellite at 110 west

Table with 10 columns: Transponder #, Normal, MP05, MP06, MP07, MP08, MP09, MP10, MP11, MP12. Rows 9, 11, 13.

(Fig.10) DirecTV Satellite at 119 west

Table with 10 columns: Transponder #, Normal, MP05, MP06, MP07, MP08, MP09, MP10, MP11, MP12. Rows 22-32.

(Fig.11) DirecTV Satellite at 99a west

Table with 10 columns: Transponder #, Normal, MP05, MP06, MP07, MP08, MP09, MP10, MP11, MP12. Rows 1-14.

(Fig.12) DirecTV Satellite at 99b west

Table with 10 columns: Transponder #, Normal, MP05, MP06, MP07, MP08, MP09, MP10, MP11, MP12. Rows 1-24.

Ohm terminations. The MP's were also terminated with 75-Ohm terminations when they were not connected to a receiver.

As with the first part of the test, all the active transponders for the five satellites were measured and recorded for each of the MP's (MP05 to MP12) using the same DirecTV receiver menu display.

differences between the measured signal strengths at MP09 to MP12 and the normal setup. In this case the measured signal strengths were somewhat lower at these four MP's than those of the normal setup.

Conclusion

So, is the number of receiver outputs using these SPAUN components limited to 32? Absolutely not. If you need more than 32 outputs for your specific DirecTV setup, simply add additional SPAUN components!

Looking closely at each of the tables you can see that the measured signal strengths at MP05 to MP08 compared very nicely to the normal setup. In fact there was very little difference between any of the measurements and in some cases there was no difference at all.

It shouldn't. SPAUN has been around since 1969 and in that time has built up quite a bit of experience when it comes to manufacturing satellite components. They make quality products that fully live up to expectations.

There was, however, some

(Fig.13) DirecTV Satellite at 103a west

Table with 10 columns: Transponder #, Normal, MP05, MP06, MP07, MP08, MP09, MP10, MP11, MP12. Rows 1-24.

(Fig.14) DirecTV Satellite at 103b west

Table with 10 columns: Transponder #, Normal, MP05, MP06, MP07, MP08, MP09, MP10, MP11, MP12. Rows 1-14.

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FUNCTION

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- DIVIX SUPPORTED



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AWARD Winning Satellite Receivers

TELE SATELLITE AWARD & BROADBAND
02-03/2009

TOPFIELD TF6000PVR ES
Easy to use family oriented receiver with built-in upscaler – ideal for use on LCD or plasma TVs

Manufacturer	Topfield
Website	www.topfield.co.kr
Function	HDTV PVR Satellite Receiver with Scaler
DVB-S2/LAN	●/●
Channel Memory	5000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	●/●
Scart/Digital Audio	●/●



TELE SATELLITE AWARD & BROADBAND
02-03/2009

DIZIPIA DS4H-9160
A competent receiver with lots of connection options and powerful capabilities

Manufacturer	Dizipia
Website	www.dizipia.com
Function	HDTV Satellite Receiver with Scaler
DVB-S2/LAN	●/●
Channel Memory	!
DiSEqC	1.0 / 1.2 / 1.3
S-Video/HDMI	—/●
Scart/Digital Audio	●/●



TELE SATELLITE AWARD & BROADBAND
12-01/2009

JIUZHOU DTS6600
A brilliant blend of ease of use and great functions

Manufacturer	Jiuzhou
Website	www.jiuzhou.com.cn
Function	Digital PVR Satellite Receiver for SDTV/HDTV
DVB-S2/LAN	●/—
Channel Memory	5000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	—/●
Scart/Digital Audio	●/●



TELE SATELLITE AWARD & BROADBAND
12-01/2009

OPENSAT XT-9500 HD
Style and substance in a single package


Manufacturer	ABC BIZNIS
Website	www.opensat.info
Function	HDTV Satellite Receiver with two CI slots
DVB-S2/LAN	●/—
Channel Memory	!
DiSEqC	1.2
S-Video/HDMI	—/●
Scart/Digital Audio	●/●



TELE SATELLITE AWARD & BROADBAND
12-01/2009

TEVII S650 – DVB-S2 USB BOX
Compact HDTV receiver for PC or laptop computer with comprehensive software

Manufacturer	TeVii Technology
Website	www.tevii.com
Function	USB box for the reception of SDTV and HDTV, radio and data on the PC
DVB-S2/LAN	●/—
Channel Memory	unlimited
DiSEqC	1.0, 1.1, 1.2, 1.3
S-Video/HDMI	—/—
Scart/Digital Audio	—/—



TELE SATELLITE AWARD & BROADBAND
12-01/2009

AB IPBOX 900HD
Perfect HD receiver both for a family as for the satellite enthusiast

Manufacturer	AB-COM
Website	www.abcom.sk
Function	Digital Linux-based HDTV PVR receiver for DVB-S, DVB-S2, DVB-C and DVB-T
DVB-S2/LAN	●/●
Channel Memory	10000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	—/●
Scart/Digital Audio	●/●



TELE SATELLITE AWARD & BROADBAND
10-11/2008

IMPERIAL SATBOX HD
Perfect HDTV Reproduction with Ease of Use and Extraordinary Display

Manufacturer	DVB-Shop
Website	www.dvbshop.net
Function	HDTV Satellite Receiver
DVB-S2/LAN	●/●
Channel Memory	7000
DiSEqC	1.0 / 1.2
S-Video/HDMI	—/●
Scart/Digital Audio	●/●



TELE SATELLITE AWARD & BROADBAND
10-11/2008

TOPFIELD TF7700HSCI
A solidly built SDTV and HDTV receiver that includes a variety of very practical features

Manufacturer	Topfield
Website	www.topfield.co.kr
Function	HDTV PVR Satellite Receiver
DVB-S2/LAN	●/—
Channel Memory	5000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	—/●
Scart/Digital Audio	●/●



TELE SATELLITE AWARD & BROADBAND
10-11/2008

SONICVIEW SV-360 ELITE PVR
A family-friendly receiver and easiest to use with a multitude of features

Manufacturer	Sonicview
Website	www.sonicviewusa.com
Function	Digital Satellite PVR Receiver with two tuners
DVB-S2/LAN	—/—
Channel Memory	6000
DiSEqC	1.0 / 1.1 / 1.2
S-Video/HDMI	●/—
Scart/Digital Audio	—/●



TELE SATELLITE AWARD & BROADBAND
10-11/2008

VENUS NEW MILLENNIUM II-EP
Easy to use receiver for big motorized dishes at an economic price

Manufacturer	PT. Subur Semesta
Website	www.subursmt.com
Function	Digital Satellite Receiver for motorized dishes
DVB-S2/LAN	—/—
Channel Memory	4000
DiSEqC	1.2
S-Video/HDMI	—/—
Scart/Digital Audio	—/—



TELE SATELLITE AWARD & BROADBAND
08-09/2008

ABCOM IPBOX 9000 HD PLUS
A huge range of connection options make this box a true all-rounder – yet it remains easy to use as a family receiver.

Manufacturer	ABCom
Website	www.abipbox.com
Function	HDTV PVR for DVB-S, DVB-S2, DVB-C and DVB-T
DVB-S2/LAN	●/●
Channel Memory	10000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	●/●
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
08-09/2008

IMPERIAL DB 1 CI HDMI
Practical and user-friendly interface – the perfect match for satellite radio listeners and DXers

Distributor	DVBShop
Website	www.dvbshop.net
Function	Digital Satellite Receiver with CI-Slot
DVB-S2/LAN	—/—
Channel Memory	5000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	—/●
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
06-07/2008

ARION AF9400PVR HDMI
A solid and easy to use receiver that with its Scaler can present satellite channels in excellent quality.

Manufacturer	Arion, South Korea
Website	www.arion.co.kr/global
Function	Digital Satellite PVR Receiver with built-in Scaler
DVB-S2/LAN	●/—
Channel Memory	8000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	●/●
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
04-05/2008

OPENSAT X9000HDCI
Fasten your seatbelt: super fast channel zapping combined with superb audio and video quality in SD and HD

Manufacturer	ABC BIZNIS
Website	www.opensat.info
Function	DVB-S/S2 MPEG2/4 HD Receiver with single tuner
DVB-S2/LAN	●/—
Channel Memory	4000
DiSEqC	1.0 / 1.2
S-Video/HDMI	—/●
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
04-05/2008

METABOX HD COMBO CI
HD all-rounder for satellite and terrestrial reception with perfect usability – great as a box for the whole family

Manufacturer	Metamultimedia
Website	www.metamultimedia.net
Function	HDTV Receiver for DVB-S, DVB-S2 and DVB-T
DVB-S2/LAN	●/—
Channel Memory	10000
DiSEqC	1.0 / 1.2 / 1.3
S-Video/HDMI	●/●
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
04-05/2008

NANOXX 9500HD
Small enclosure, superbly crisp picture, extremely fast channel search, and connection for HDD

Manufacturer	NanoXX
Website	www.nanoxx.info
Function	Digital HDTV PVR Receiver
DVB-S2/LAN	●/●
Channel Memory	10000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	●/●
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
04-05/2008

TOPFIELD TF7720HSIR
Ideal HDTV Receiver for FTA and Irdeto encrypted channels

Manufacturer	Topfield
Website	www.topfield.co.kr
Function	DVB-S, DVB-S2 HDTV Receiver with Irdeto CA
DVB-S2/LAN	●/—
Channel Memory	5000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	●/●
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
02-03/2008

TOPFIELD TF7700 HDPVR
Fully capable twin receiver with proven HDTV technology and outstanding picture quality.

Manufacturer	Topfield
Website	www.topfield.co.kr
Function	Digital DVB-S, DVB-S2 HD-PVR Receiver with ethernet connection
DVB-S2/LAN	●/●
Channel Memory	5000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	●/●
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
02-03/2008

AB IPBOX 350PRIME PVR
A Linux-based Receiver as Powerful as Never Before

Manufacturer	AB-COM
Website	www.abcom.sk
Function	Linux-based receiver for terrestrial, cable and satellite DVB reception
DVB-S2/LAN	—/●
Channel Memory	4000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	—/—
Scart/Digital Audio	●/●

TELE SATELLITE AWARD & BROADBAND
02-03/2008

NANOXX 9600 IP
Perfectly working CA receiver with smart use of network interface

Manufacturer	NanoXX
Website	www.nanoxx.info
Function	Digital CA satellite receiver with PVR functionality via network
DVB-S2/LAN	—/●
Channel Memory	6000
DiSEqC	1.0 / 1.2 / 1.3
S-Video/HDMI	—/—
Scart/Digital Audio	●/●

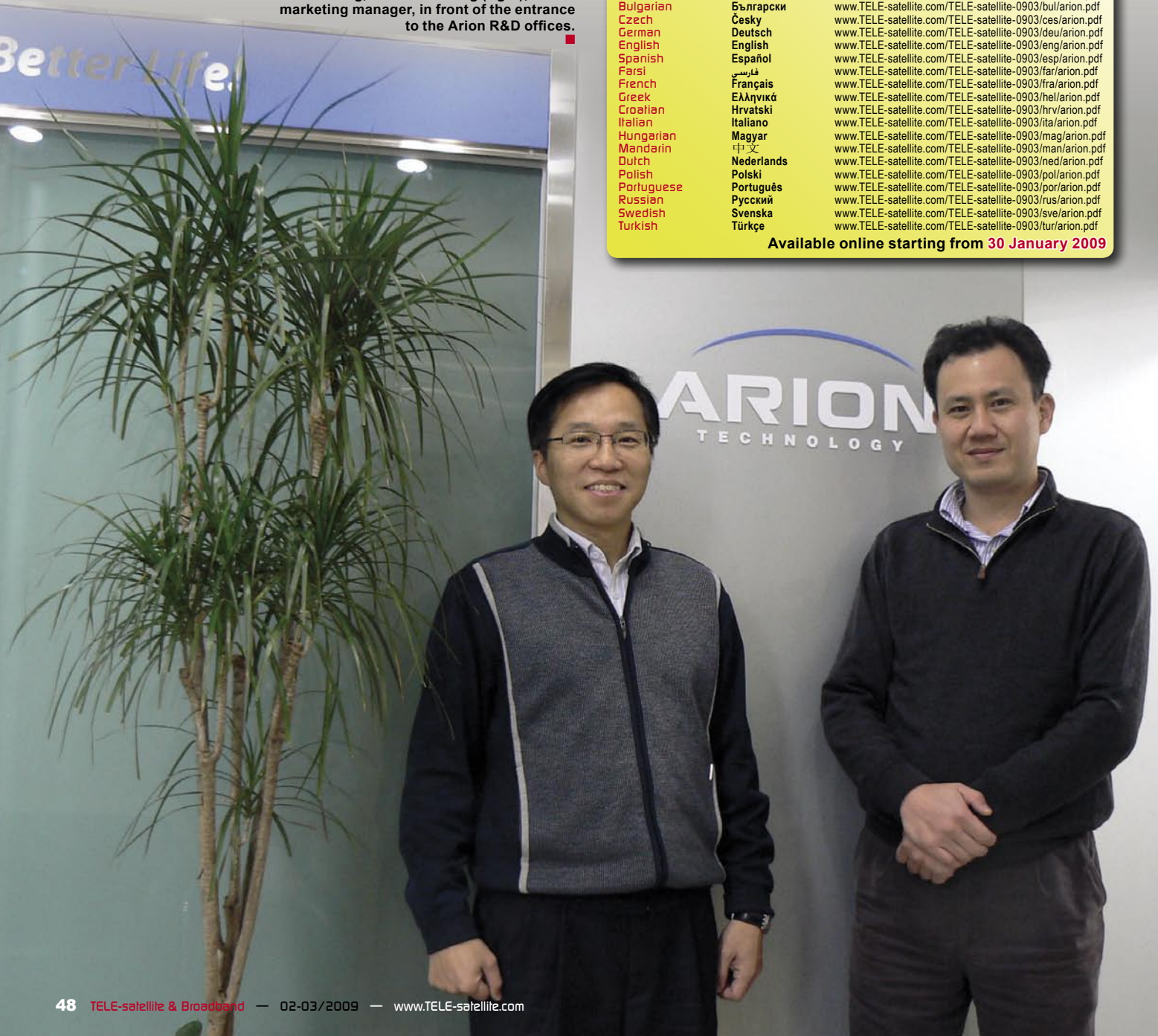
Arion on its way

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 Anyang, one of the southern suburbs of Seoul. This time we visited to find out how Arion has managed to sail through the rough seas of last year and which expansion plans are on the road map for 2009.

We find senior marketing manager, Sam Chang in a new building, not far from the old company headquarters. He gives an update of what has happened: "We relocated to this place because here we can offer our employees better working conditions." Arion currently has a total staff level of 80, 50 of which are working as engineers in R&D center in Anyang city, Korea. "The main manufacturing of Arion receivers takes place in southern China." Sam Chang explains.

Marketing manager Joey Lee adds some geographical information: "30 percent of our products go to India, another 30 percent are dispatched to South America and the remaining 40 percent are distributed

Thomas Roh (left), director of sales & marketing, and Sam Chang (right), senior marketing manager, in front of the entrance to the Arion R&D offices.



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■ Isn't it obvious? A company with so many dishes on the roof must have something to do with satellite receivers. Jeong Woo Lee is one of Arion's engineers and is seen here aligning a LNB. In the background you can see the skyline of Anyang, one of Seoul's southern suburbs.

in Europe." Sam Chang adds, "Our own sales office in Argentina has been actively operational since the early of 2007" and continues by revealing that "in 2009 we are planning to keep growing in Western Europe, in particular."

Thomas Roh is the director of sales & marketing and provides some details regarding the major markets for Arion: "Since 2006, Arion has been focusing more on TV operator markets in Latin America, India and other emerging markets and

contracted with leading cable and satellite TV operators. But soon, we are coming back to Europe, one of our main STB markets, with enhanced new HD platforms such as ST7101 based HD, HD PVR-ready and Broadcom based dual HD PVR." It is there that Arion makes a special point in

setting up cooperation with various satellite and cable providers.

What about Arion's product range? "Clearly, the HD market currently is in Europe," Sam Chang suggests and continues by listing the products that will be introduced to the European market in 2009: "In the first quarter of 2009, we have scheduled to launch a PVR-ready HDTV receiver, which means that an external hard disk can be connected to the box. This will be followed by a receiver with integrated

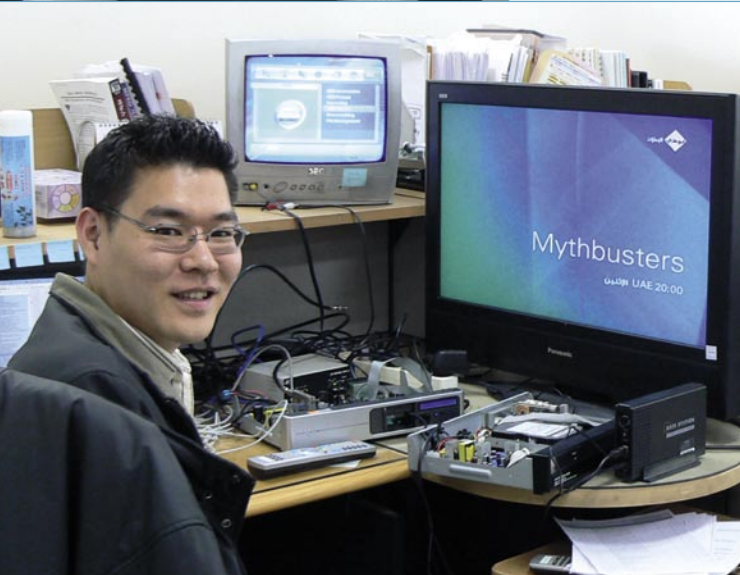


■ The Arion sales team at work.

■ Joey Lee, marketing manager in the Arion marketing team.



■ H.M. Park is Arion's senior managing director and leads the 50 hardware and software engineers in the R&D team.



■ One of the software engineers fine-tuning the software for the new HD PVR receiver that will be launched soon.



■ Do not disturb! The circuit design of a new receiver is discussed by a team of engineers.

hard disk in the second quarter and for the end of 2009 you may even expect some IPTV boxes." Joey Lee adds "as soon the first pilot receivers become available we will ship a sample to TELE-satellite for doing a test report." We at TELE-satellite and of course our readers as well look forward to these new MPEG-4 HDTV receivers, not least because Arion products have always led the pack in terms of quality.

If you prefer to meet Arion representatives in person you can mark two exhibitions in your schedule for 2009: "We will have stands at ANGA and at IBC," Sam Chang confirms.

Arion is as active as ever and we can't wait to see the new Arion quality receivers!

■ A quality receiver must undergo the most stringent quality checks: Eun-Ju Choi is a testing engineer in the quality team and is seen here checking how a new Arion receiver line behaves in the heat chamber.



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

SonicView can still be found in this industrial park. Two units have been leased by SonicView. "But in just a few months we will move into our own building", says Steve Falvey, SonicView CFO, "The warehouse here is just too small for our strongly growing sales." ■



If you manage to sell more satellite receivers than you ever dreamed in the first year of business, then there should be no problems at all reaching the million mark in four years – who knows, maybe even in three years! SonicView, based in California, was only founded at the end of 2006. Bobby Sanz took ownership in summer 2007 and sales have increased dramatically ever since. That's quite a success story, one that Tony Lively, SonicView's Sales Manager, has to explain to us in more detail.

In summer 2007 Bobby Sanz acquired Start-up company SonicView. That's when the action began. Tony explains, "SonicView was a start up Satellite receiver company going up against some pretty heavy hitters in the North American market. The company started with just three employees. It was a small operation in the beginning. With a superior product line and knowledge of the North American market Bobby acquired the exclusive American & worldwide distribution rights for a Korean receiver manufacturer."

Bobby pulled together a team of first-rate professionals to grow his company. Steve Falvey, who worked for a large American bank as Vice President, came on board. After retiring, he started as SonicView's CFO and since then has been running daily operations. The decision to jump on board with SonicView was actually quite easy: Bobby Sanz is his son.

Steve's experience as a bank manager opened the financial doors to SonicView and allowed them to build up their receiver business in grand style.

In 2008, SonicView's sales doubled since Bobby first acquired the business. Expectations for 2009 have already increased over what were originally targeted.

Where is this optimism coming from? "The FTA market in North America is still in its infancy", explains Tony, "The numerous immigrants here are only now figuring out that they can watch TV from home via satellite at no charge." SonicView's satellite receivers were conceived exactly for this market.

"There's a second market of viewers who up until now have been paying for their TV and are slowly but surely discovering that there's a large number of free channels that can be received." With the current economic downturn, many are asking themselves why they should fork over money to a Pay-TV provider.

SonicView is opening up a third market for themselves with their expansion into South America. "This is a large and untapped market", Tony is convinced, "We call it 'white space'."

The professionalism of SonicView can readily be seen: first all of the shipping and transport issues are worked out before any local dealers are sought out. "We reduce our risk in that we mostly only ship to the border; everything else is taken care of by our local partners." Crime and corruption are things that a company like SonicView must keep a distance from. Tony continues, "We always require payment in advance to keep our risk to a minimum."

A look at their product palette shows us that an organized hand is at work here. The receivers are exactly configured for the market. There is the upper class model HD8000 for HDTV reception via satellite as well as terrestrially, then there's the SV360 Elite that TELE-satellite only recently introduced and comes with dual satellite tuners, and the SV360 in a single-tuner version.

By the time SonicView arrives at the CES show in Las Vegas in January 2009, they will have three more receivers to show the world: an HDTV version of the SV360 with one or two tuners and a light version for the South American market with a single tuner and UHF modulator instead of an HDMI output.

Tony provided us with a look at their business: "We sell about the same number from each of the three models, in other words, 30% each."

SonicView currently has 11 employees and ships only to wholesalers. "Our customers are made up of eight regional distributors in the USA, Canada and Mexico", explains Tony and then continues, "These distributors in turn deliver to roughly 130 dealers."

SonicView's product palette is expected to be expanded. Tony explains, "In 2008



■ CFO, Steve Falvey, is a former banker. Steve knows how to successfully finance a company and how to quickly drive it to the top.



■ SonicView's Sales Manager Tony Lively reading the TELE-satellite issue with the SonicView test report. "I've learned quite a lot from TELE-satellite", reveals Tony, "I especially enjoy the reports from all the different countries."



■ The native Brazilian Patricia Moreira Renco is their International Business Consultant and is working at building up the South American dealer network.

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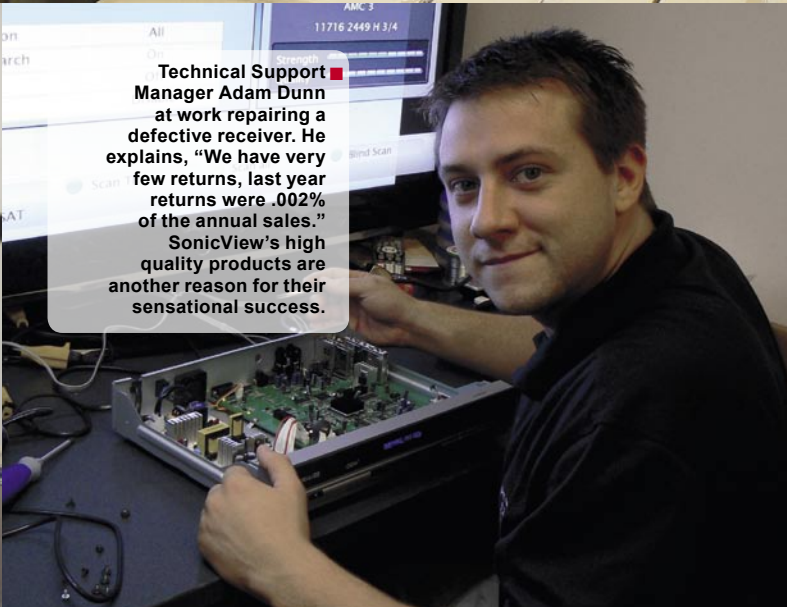


This is warehouse manager Chris Witcomb. He explains, "One box contains five receivers and 1000 of these boxes fit in one container for a total of 5000 receivers." That is the minimum number a distributor must buy but for many of them that is not nearly enough. "No sooner does a delivery arrive, it is completely reshipped by the next day", comments Chris.

Ken Cherry is Inventory Control Specialist and not only regulates the shipping to the distributors but also handles all of the import formalities related to the deliveries from South Korea. "The overseas transport takes about one week plus one day to clear customs", explains Ken.



Technical Support Manager Adam Dunn at work repairing a defective receiver. He explains, "We have very few returns, last year returns were .002% of the annual sales." SonicView's high quality products are another reason for their sensational success.



only 10% of our sales were of accessories but we expect to sharply increase this number in 2009, in fact, accessories could make up half of our sales in the future." This would mostly include multiswitches and HDMI cables but also LNBs and USB sticks for PVRs.

Bobby Sanz has quite a few plans for the future and is properly prepared to make this all happen: professional financing, perfectly thought-out products ideally suited for the market and optimal timing.

Who knows, maybe SonicView will succeed in becoming receiver millionaire in just three years!

SonicView Tech Support is Dick and Julie Sweeney from Michigan, and Rick Caylor (picture) from the vicinity of Kansas City, Missouri. He is SonicView's specialist when it comes to difficult problems and helps customers solve satellite reception problems and especially those from motorized systems. Rick refers to his dishes and says, "I have six antennas with 13 receivers. A 3.0-meter solid dish, a 2.5-meter aluminum dish, each with motors, plus a 90cm dish for DirecTV, a 75cm dish for Galaxy 25 and two motorized 75cm antennas." Rick is an avid feedhunter and is particularly interested in auto racing for which he also operates a satellite forum on which he lists auto racing feeds: www.websitetoolbox.com/mb/rickcaylor



These seals are used by SonicView to show end-users the trust they have placed in their dealers. They only get these seals after being checked out by SonicView; the dealers in turn place these seals on their homepage.

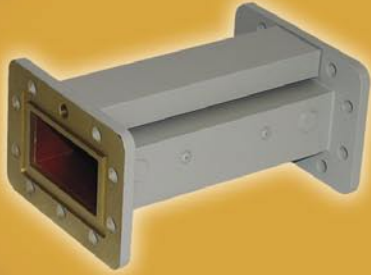




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HDTV by Jiuzhou

The Jiuzhou Electric building in the Nanshan high-tech industrial park in the western area of Shenzhen (China) is festively decorated for the company's 50th anniversary.

The number of hi-tech companies looking back on a 50 corporate history is very small. One of the very few is Jiuzhou from Sichuan in China. In 2008 the company celebrated its 50th anniversary, as TELE-satellite reported in issue 03/2008. The official celebrations took place on 16 November at the corporate headquarters in Sichuan.

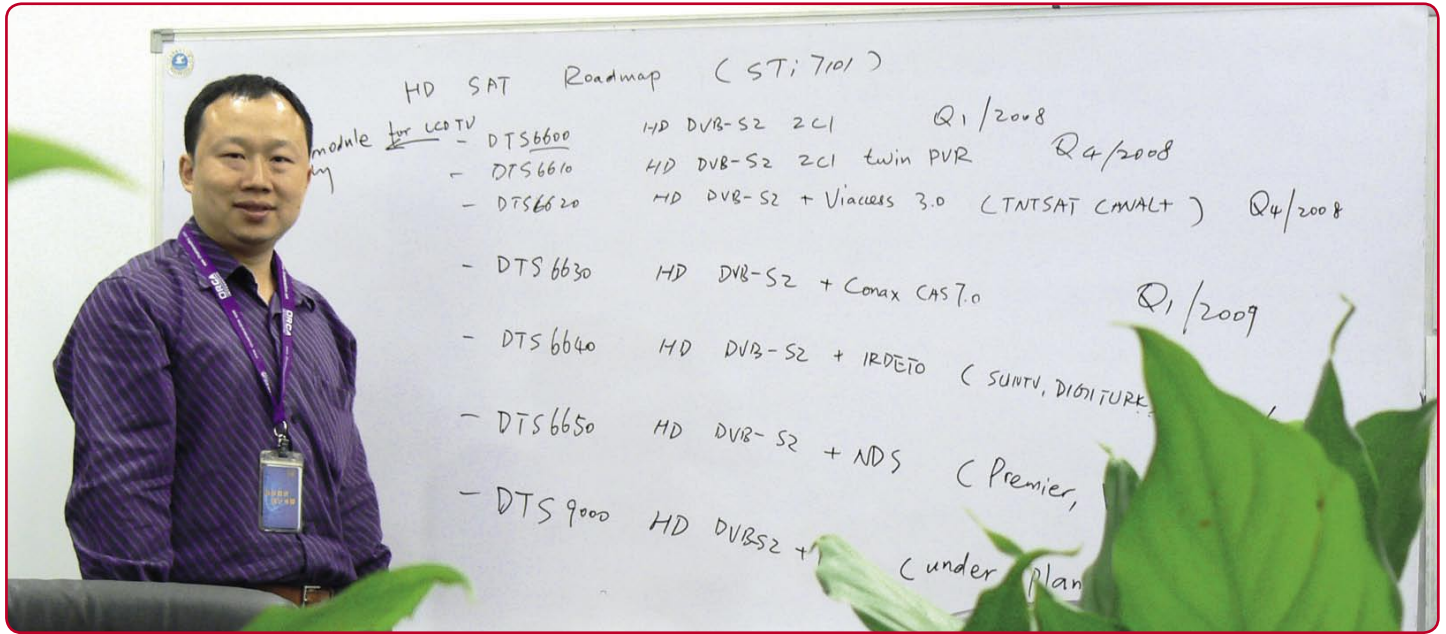
Now the question is: what's in store for the 51st year?

A large white logo and the word 'JIUZHOU' in a bold, sans-serif font, positioned at the bottom of the page. The logo is a stylized 'ji' symbol followed by the word 'JIUZHOU'.

The Latest Development in Year 51

Jiuzhou's distribution and research base is located in Shenzhen, right next to Hong Kong in China's south. That's where we met Huang Wei, sales director of Shenzhen Jiuzhou Electric and its subsidiary Digital Telemedia, who is in charge of set-top boxes within the Jiuzhou Group. Apart from satellite receivers Jiuzhou also offers receivers for cable TV, terrestrial TV and IPTV.

"DMB-TH digital terrestrial TV was already launched in Hong Kong, and China is set to introduce it in 2009," according to



■ Sales director Huang Wei shows the road map for the new Jiuzhou receiver models in 2009 – all of them are equipped with ST chipsets.

Huang Wei, before he switches over to the satellite field: "In 2008 some 95% percent of our products were for standard definition, but in 2009 the high definition segment will increase strongly to make up 20 to 25 percent."

Jiuzhou has a full range of new models in store to meet demand. In the previous issue TELE-satellite already presented the DTS 6600. In the meantime, the DTS 6610 with twin tuner was also launched and will be tested by TELE-satellite shortly.

"The DTS 6620 is also brand-new and made especially for French pay TV providers TNTSAT of Canal Plus," Huang Wei continues while charting the new models



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and their market launch dates on a board. "In the course of 2009 we will be presenting models with integrated Conax, Irdeto for India and Turkey, as well as with NDS." Even an IPTV model is currently in the making, but "right now the demand is simply not there yet," Huang Wei reveals, "even though France Telecom has published a tender."

In principle, all receivers are PVR, since a hard disk or memory stick can be attached to the USB port. "We are increasingly working together with major content providers and therefore produce according to their specifications," Huang Wei details the Jiuzhou business strategy. This means that from a technical standpoint Jiuzhou is able to build in a hard disk as a factory-made feature and thus offer a full-scale PVR.

"Here in Shenzhen we currently employ some 250 software engineers and add 20 to 30 new jobs each year," Huang Wei proudly states and explains that this way Jiuzhou is able to meet customer require-



■ Chen Jun is one of the software engineers at Jiuzhou. Here he is seen programming the software of a HDTV receiver.

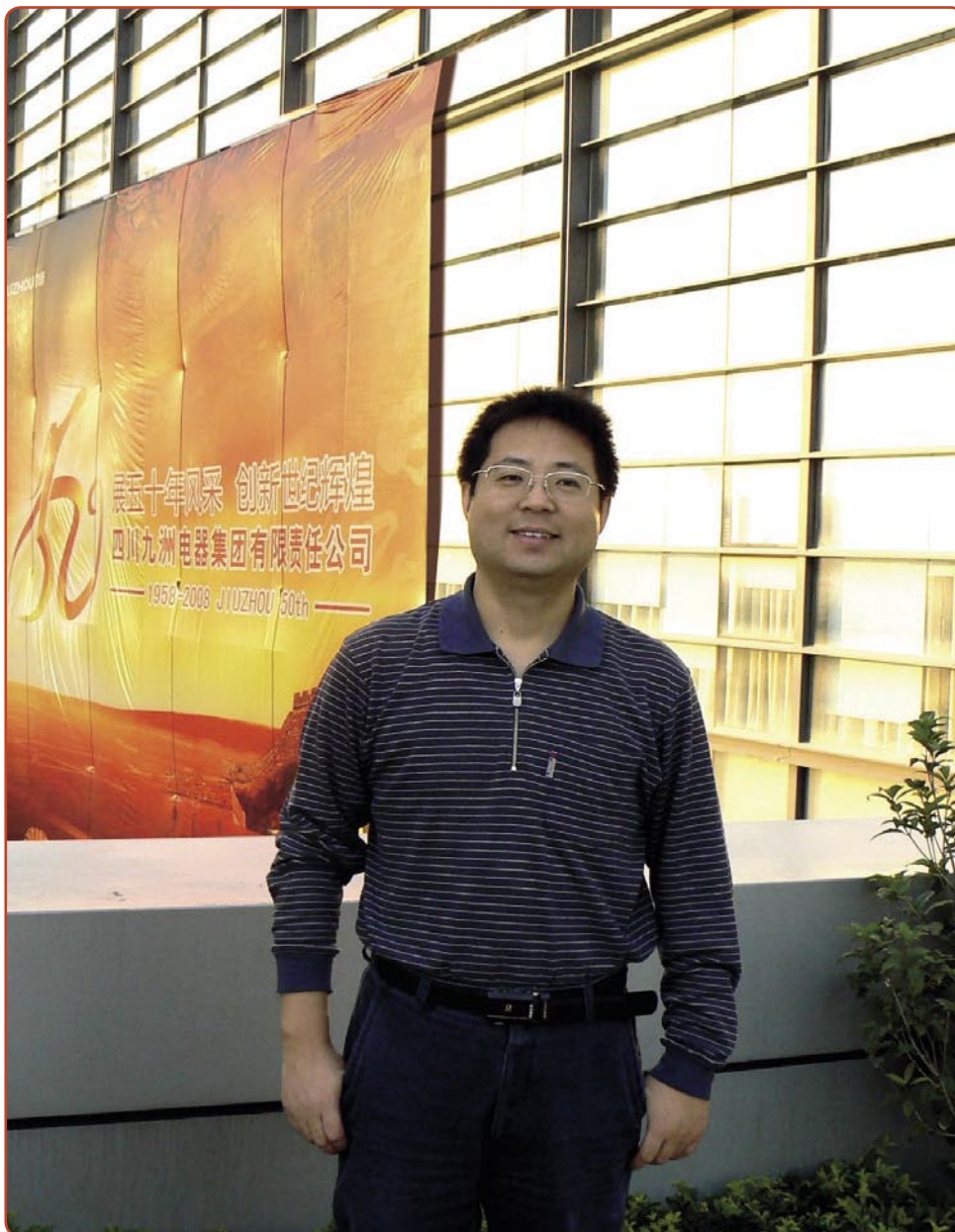
ment quite easily. "Combo receivers, for instance, do not pose a problem at all, and even Dolby audio can be integrated since we have recently acquired a license for that."

ABS is one of the most recent developments – please see the feature report in this issue for more details. ABS is the broadcasting standard implemented for DTH transmissions in China and could be a major draw card for the Chinese market. "We're still waiting for final specifications, but 2009 should see the roll-out of ABS," Huang Wei states.

As a consequence Jiuzhou projects that 20 percent of their receivers will be ABS models. 50 percent will be for standard definition and 20 percent for high definition. Huang Wei concludes that "we also manufacture the 6600 receiver as a plug-in board for LCD panels." This means Jiuzhou products are integrated even in other brand's products.

Does this mean that's all for now regarding satellite receivers and Jiuzhou? Not at all! The Jiuzhou Group is home to one more company: Jiuzhou Electronic, which is a manufacturer of professional satellite receivers that are mainly used as head-end receivers by cable TV providers. TELE-satellite presented the DVS-2018BS in issue 11/2007.

While this was a standard definition receiver, export director Yonchin Shou explains that the new model DVS-2018CS



■ Jiuzhou Group Overseas marketing director Tang Erman on the green porch of the Jiuzhou Electric building. The huge poster in the background celebrates Jiuzhou's 50th anniversary.



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- Toggle to display Post BER and Carrier to Noise (dB)

- DiSEqC switch commands (available from sub menu)
- Symbol rates 2Msymb to 45Msymb
- Frequency range 950 to 2150MHz
- Input impedance 75 Ohms
- LNB Pass / Fail test function
- LNB short circuit protection
- Satellite cable integrity test
- Upgradeable firmware
- Intelligent internal AC charger 100 to 240 V AC
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- Registered design
- Free product support via phone and email

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is HDTV compatible. "Now cable companies can also include HDTV channels in their offerings." Even with CI modules, if need be.

TELE-satellite is currently working on a test report for this particular model. "The current model is made for MPEG-2, but our more than 200 engineers in Sichuan and Beijing are already working on an MPEG-4 model," Yonchin Shou tells us of future projects. "Right now, however, the demand for MPEG-4 receivers is still rather subdued."

Even after 50 years Jiuzhou is fresh with ideas for new models. Naturally, we are also interested in the marketing strategies employed by Jiuzhou and turn to Tang Erman for answers. Tang is director of the Jiuzhou Group Overseas Marketing Department and – when asked where he sees future markets for Jiuzhou products – believes that "in Europe and North America the demand clearly is for HDTV receivers, while Asia wants SDTV."

Tang Erman allocates marketing resources accordingly: "In 2009 we will be present at twelve specialized exhibitions," Tang Erman tells us and explains the differences to 2008: "Last year we had small stands at 19 fairs, in 2009 the number of fairs will decrease for us, but the size of our stand will increase."

■ The company's product range is displayed in the Jiuzhou show room. Sitting on the couch: Kitty (left), assistant to Linda Lee (right), from Jiuzhou Group Overseas Marketing Department.



■ Sales director Yonchin Shou points to the new DVS-2018CS professional HDTV satellite receiver in the brand new CATV catalogue (www.jiuzhoutech.com).

Of course Jiuzhou also relies on the Internet as an advertising medium. Tang Erman reveals that "25 percent of our marketing budget is spent on online advertising." Mainly B2B sites Alibaba or Globalsources are targeted. "15 percent of our advertising resources go into print advertising like in TELE-satellite, and 60 percent are spent on specialized fairs and exhibitions."

Tang Erman also explains why the

money is distributed like that: "We receive a lot of feedback from online advertising, but we only generate small orders. Fair presence is most efficient in terms of generating orders, as we get in contact with wholesale distributors there." On the other hand, participating in fairs costs a great deal of money and "the show is over after only a few days," Tang Erman regrets. So then there's still print advertising: "This way we are pres-





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ent in front of our potential customers' eyes for a long time which gives us the opportunity to shape our image." Tang Erman is very satisfied with his overall marketing strategy and states that "we

want to keep this ratio and are not planning any major shifts." Tang Erman's department consists of 20 employees in Shenzhen, who are responsible for external communications.

jiuzhou – as active as ever, even in its 51st year!

■ A HDTV prototype is tested by software engineer Zhu Xiaoyong with a real satellite signal.



Worldwide Satellite in Northern Holland

The Dutch are known for their love of RV's and naturally want to be able to enjoy satellite reception in their mobile homes. A company that sells and installs the necessary motorized antennas is Worldwide Satellite located in northern Holland, in Purmerend near Edam north of Amsterdam.

Dennis van Leeuwen is one of the co-owners of Worldwide Satellite and immediately sets the record straight: "Today only 30% of our sales are related to mobile satellite system installations." Dennis along with his brother and partner Rob founded the company in 1995. "Back then we operated four

video rental stores", explains Dennis and then went on, "but business continued to get worse and worse so we switched our business over to satellite equipment."

It was an obvious move considering that Dennis is an amateur radio

enthusiast and was already interested in satellites back in 1989 when ASTRA started. "Only if you have fun with what you do can you be successful", suggests Dennis.

At first the two brothers installed satellite systems only for private end-users but after a few years that changed. Dennis explains: "We began

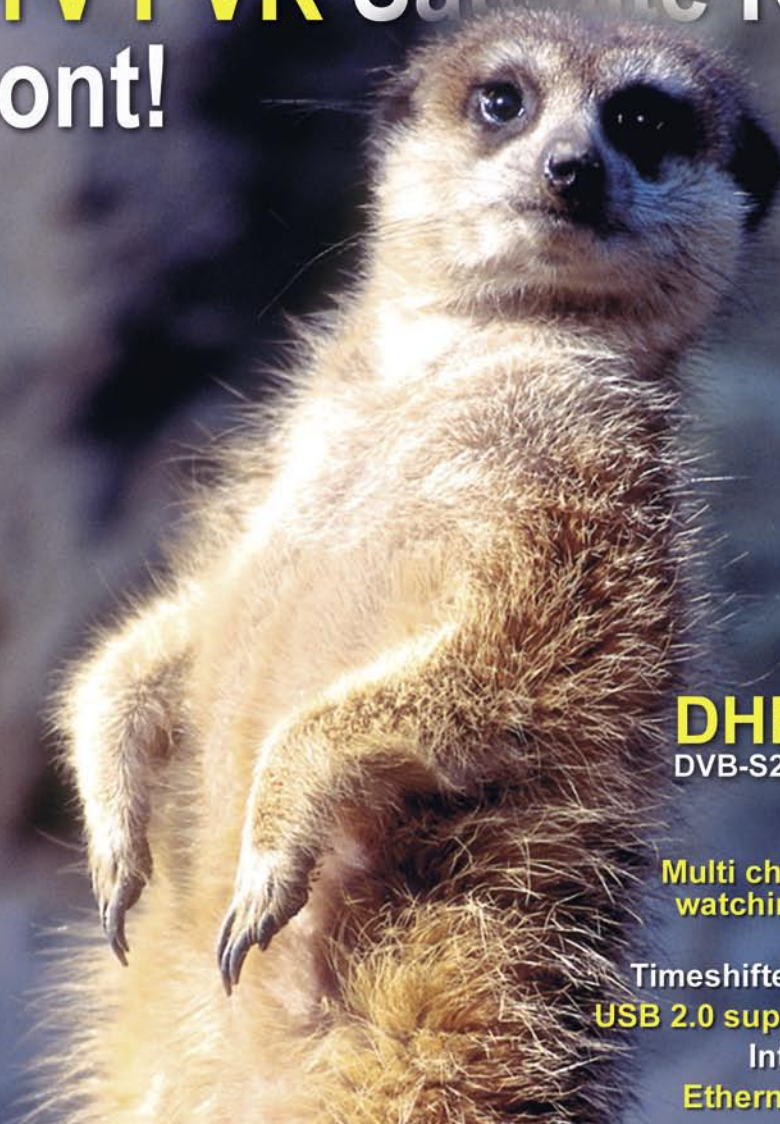
to install satellite systems for sporting events in many of the sports bars in Amsterdam and this makes up about 40% of our sales today."

Installations for professional customers is not only more interesting than those for private end-users, reveals Dennis, "It also is more challenging since in many cases new solutions have to be found." Their professional customers include not only sports bars but also professional programming providers above all in the Hilver-

The two brothers Dennis and Rob van Leeuwen purchased this section in Purmerend's industrial park. It is made up of two floors totaling 400 sq-m and comes with a sales area, a stockroom and large garage to install motorized systems on RV's. A customer's RV is pictured here.



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Main Menu





Dennis van Leeuwen in Worldwide Satellites sales and display room. One of their hot products is motorized satellite systems for RV's.



Rob van Leeuwen is seen here standing in front of a demonstration rack with receivers from various manufacturers. Ron and Dennis are brothers and operate Worldwide Satellite together.

sum region. "We also took part in satellite systems on oil platforms", explains Dennis.

Rob provides us with some insight into the products that are used: "In The Netherlands, multiple satellite reception is in high demand, especially ASTRA at 19.2 east and 28.2 east as well as HOTBIRD at 13 east. The best solution for these satellites is a Multi-LNB dish." Since The Netherlands is covered by strong signals, a 90cm diameter antenna would do the job. "On the professional side, we supply 120cm dishes", comments Rob, "We don't use larger antennas." Since Worldwide Satellite's customers are sophisticated, they only offer quality receivers such as those from Topfield and Arion.

Worldwide Satellite does not have any employees. "We used to use freelance installers", comments Dennis about the past, "but more often than not they were unreliable." Today, during the week Dennis and Rob are out on the road installing satellite systems while on Fridays and Saturdays their store is open for customers. "It can be a lot of work for us", says Dennis, "but it makes us happy."



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Satellite systems receive not only the TV, radio and data channels that you actually want, but also unwanted signals that may cause interference. How do you get rid of these interfering signals? MFC, a manufacturing pioneer of satellite filters based in the USA, produces a variety of filters that eliminate such interference.



■ Carl Fahrenkrug is Microwave Filter Company's President and CEO



■ Always on the phone with customers: Sandy Nelepovitz is Senior Marketing Associate and manages the sales team.



■ Scott Parsell, Director of Sales, manages MFC's network of domestic and international sales representatives who continually seek out new opportunities for the company.

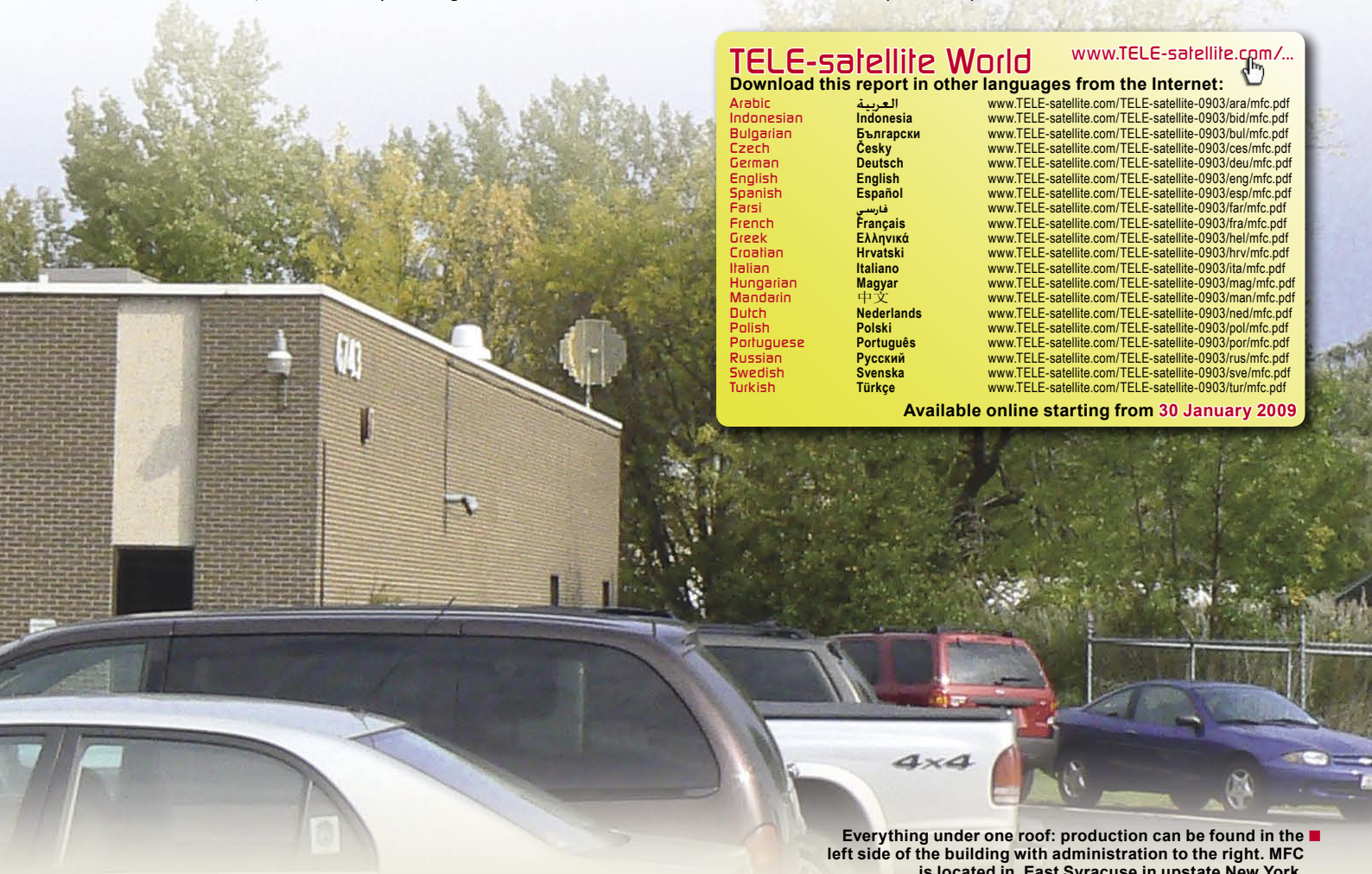
"The company was founded in 1967, here in upstate New York", explains Sandy Nelepovitz, MFC's Senior Marketing Associate and to some extent, the heart and soul of the company. Having been with MFC for 30 years now, she readily offers some company history, "Glyn Bostick, the founder of MFC, actually started the business in a garage, producing filters for amateur radio use. In 1973, we moved to our current location. At that time, we were only renting a

portion of the facility, while sharing it with other companies. In 1983, as business continued to grow, we were able to purchase the entire 3700 square meters facility."

Scott Parsell, Director of Sales, who has been with MFC for almost 20 years, further explains, "Despite the economic downturns and technological shifts that have occurred in the telecom industry over the years, MFC's business remains solid - in large part due to the fact that we offer a wide variety

Consequently, 1st & 2nd stage IF filters are useless and the only solution is to eliminate these signals with a bandpass filter at the feed before downconversion.

Scott continues, "We offer standard band (500 MHz), extended band (600 MHz) and super-extended band (800 MHz) bandpass filters. We also offer custom-tuned filters for special applications. So, we can provide the right model filter for C-band operations in any corner of the world."



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Everything under one roof: production can be found in the left side of the building with administration to the right. MFC is located in East Syracuse in upstate New York.



Eric Logan is one of the engineering technicians. He can configure filter designs exactly to customer requirements directly on his PC. MFC also offers many filters for military use (e.g. - X-band).

of filter products - serving, virtually, all telecom market segments (Satcom, CATV, Broadcast, Wireless, etc.). This product diversity means that our success is not dependent upon the success of one specific market segment." Additionally, lean manufacturing techniques, implemented some years ago, have increased production efficiency - allowing MFC to be more competitive.

What exactly does MFC produce? Scott refers to one of MFC's more popular product lines, "Our series of C-band bandpass filters are used on C-band receive dishes throughout the world. These filters are installed between the LNB and the feed, removing undesired signals located above or below the desired band."

Although these undesired signals are out-of-band, their power level is so high, they essentially saturate the LNB and create intermittent or continuous interference patterns across the entire C-band.

When do you need a filter like this? Scott gave us a few examples, "Altimeter signals bouncing between commercial aircrafts and airports were recognized as one of the earlier types of out-of-band interference to C-band operators. However, that problem is usually limited to C-band dishes located near airports. Then along came the high-powered radar signals used in military surveillance (e.g.- AWACS planes) which caused problems to many more C-band dishes. This surveillance increased sharply after the 9/11 attacks and it seemed as though every C-band dish in the US was being affected, along with many other dishes around the world. As a result, radar continues to be the # 1 cause of interference to C-band operators."

"More recently," Scott adds, "a new source of C-band interference has surfaced - Wimax". In various parts of the world, Wimax operates within the (3.3-3.8) GHz range. These Wimax signals can disrupt



■ If it becomes complicated, the engineering team gets together and develops special solutions. Paul Mears (left) is Vice President of Engineering, Bob Paul (center) is Chief Engineer and Mike Wise (right) is Mechanical Engineer.

solution." However, since customers usually know in advance what type of filter they need, they do not usually need to take advantage of the money-back guarantee.

Of course, what happens when they do not know what type of filter to choose? Sandy explains, "Our sales staff includes technical associates who are familiar with most of the problems that face our customers. So, given the application, they can assist the customer in selecting the appropriate filter for that job." But for those customers that are still not sure if a filter will even solve their problem, this guarantee allows them to simply buy and try a standard filter, thus avoiding the high cost of hiring a consultant to determine their solution.

Over the years MFC has built itself an interesting and sophisticated niche market in the world of satellites. With their combined knowledge and their commitment to high quality, MFC can easily accommodate the special wishes of any customer. If you're looking for a way to fight interference, you've found the right solution in MFC's line of filters.

C-band satellite reception of the super-extended C-band (3.4-4.2 GHz) – due to the common band of frequencies they share. In those instances, the C-band operator must install a C-band bandpass filter to reject the undesired Wimax signals. However, since the filter is rejecting same frequency Wimax signals, some of the lower C-band is also rejected (sacrificed).

Nonetheless, C-band operators are willing to sacrifice some of the C-band, if the result is good, clean reception of the remaining portion of the C-band. Since Wimax is relatively new, Scott sees a potentially-growing need for filters for C-band operators to solve this problem worldwide.

Compared to C-band operations, Ku-band operators face much less interference from other sources, since they operate in a less-congested, higher frequency band than the crowded C-band.

"Nonetheless, TRFs (Transmit Reject Filters) are needed on many Ku-band transceiver applications - where uplink and downlink takes place through the same antenna. The TRF is mounted on the receive side (10.7-12.75 GHz) of the feed to eliminate the strong transmit signals (13.75-14.5 GHz) that are present", explains Scott.

While MFC also manufactures bandpass filters for the Ka-band, "the demand for Ka-band filters is still quite low", concedes Scott, "since operations in this frequency band have been limited to this point."

Sandy Nelepovitz provided further company insight, "Our largest customer base is domestic - since MFC also continues to be a leading provider of CATV filters to cable TV operators within the US". Sandy continues, "Export sales have been between 5% - 7% since 1992. However, we expect those sales to increase further with the rising demand for satellite filters outside of the US."

Anyone can order from MFC, whether it's a large number of filters or just a single one. "We even offer a 30-day money-back guarantee on standard filters", comments Sandy, "the customer only has to pay for the shipping costs, if that filter is not the



■ Ruth Arace is Human Resources Manager and provides us a glimpse of MFC's employees: "We have 6 engineers, 36 production and 11 administrative associates."



■ At the CNC milling machine with Bruce Sentoff (left) and Dale Newton (right). The bodies of many filter models are produced here out of solid blocks. "We program the machines in the evening after which they run automatically overnight", explains Bruce Sentoff.

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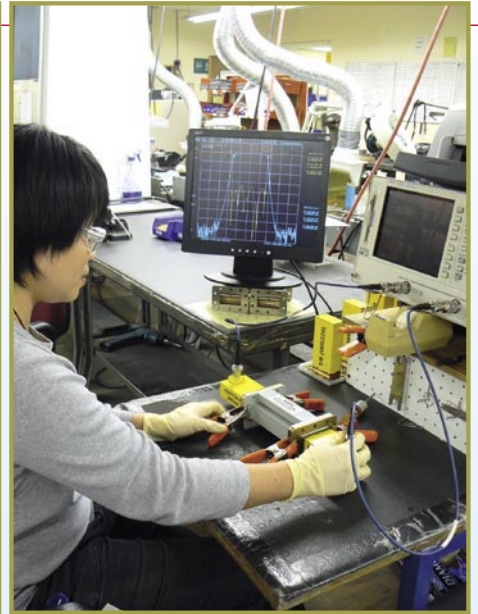
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■ Dale Newton shows us the production sequence: out of a solid block of aluminum (left) a complete filter body is milled with all the openings for connectors and screws (right).



■ The reception probe in the filter is put in place by Vertell Brantley. The glue that is used needs to set for three hours; the filters are stored in this chamber protected from the surrounding air. Thereafter, the filters are fixed with a weather-tight seal.



■ Did everything run correctly during production? Thuy Naylor performs a final test to determine if the filter lives up to its specifications by connecting it to a network analyzer to confirm performance.



■ Here a filter is mechanically assembled. MFC employee Melissa Bench prepares a filter for the soldering oven...



■ Bill Adamo is Quality Control Group Leader and shows us how the weather-tight seal of a filter is pressure tested: "The filter is placed here and pressurized with air at 5 PSI." In this way they can check if the inside of the connector, as well as its mounting to the housing are air tight. "The smallest leak can let moisture in over time and could alter the characteristics of the filter", says Bill Adamo, "We test 100% of our filters!" Every customer can be sure that each and every MFC filter lives up to its high-quality specifications.



■ MFC virtually does it all by themselves: the completed filters are sprayed here with a protective color coating.



■ ...the actual soldering process takes place in this soldering oven through which the filters pass.



■ En route to the customer: the completed and fully tested filters are packed and shipped from here to customers around the world.



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ABC BIZNIS – true battlers

This is a young team on its way to the top in the European satellite receiver market under their own brand OPENSAT. ABC BIZNIS was only founded at the end of 2004 and has managed to become a major supplier of satellite receivers in the short time since then. Unfortunately, the path to success was darkened by the tragic death of the company's founder in 2008. We wanted to find out how ABC BIZNIS was able to cope with this tragic event.

■ Veronika Rešetková has only been ABC BIZNIS's director for a few months. A photo of her son Erik, who founded the company and who died recently, has a special place on her office desk. It is he who is her driving force behind making ABC BIZNIS a major player.

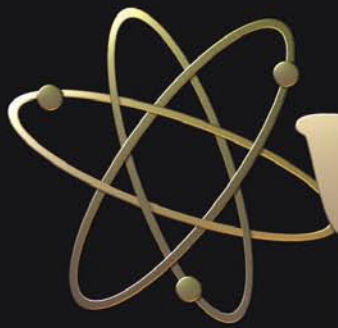
Today, ABC BIZNIS is an established wholesaler for the local Slovak market, offering also antennas, LNBS, coax cables and receivers. As a manufacturer ABC BIZNIS exports its own receivers under the OPENSAT brand.

At the beginning of 2007 the company started production of its first receiver line that was marketed as OPENSAT. They started with a range of four SD receivers which was complemented in mid-2007 by the first HD receiver and mid-2008 by the second HD offering. Incidentally, this was also the product that TELE-satellite showcased in its previous issue.

So how did they cope with the sudden loss of their founder? The answer can be found in the very young team set up by new director Veronika Rešetková, who retells what has happened since: "After the death of my son Erik, who was the founder of ABC BIZNIS, I took over the management of his business." Veronika emphatically makes a point: "There



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■ Marketing manager Veronika Rešetková, daughter of director Veronika Rešetková and sister of company founder Erik Rešetka. She devises the ABC BIZNIS advertising strategies and decides on ad designs: "Different shades of green and black are our corporate colours."



■ ABC BIZNIS company premises: the warehouse is in front, with the office complex in the background. "But that's not all," reveals marketing manager Veronika Rešetková: "There's still additional storage area rented at another company."



■ View of the accounting department with account manager Zelmira Remenova (left), account assistant Martina Ondrusova (centre) and systems administrator Jefferson Kenji Takahashi.



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are rumours that we are looking for a merger or partnership, but this is nonsense!"

As proof of this, two important pillars provide support in her daily routine: on the one hand it is her team of 14 employees who are 100 percent behind the company's vision, and on the other it is the extensive knowledge which Veronika Rešetková acquired in her previous job in the management of a similar business in the technology sector.

Erik's younger sister, also named Veronika, takes us back to the beginnings of the company: "Even at the age of 13 Erik used to help out in our father's business." His professional career also began in his father's company, but after some ten years Erik felt it was time to bring to life his own ideas,

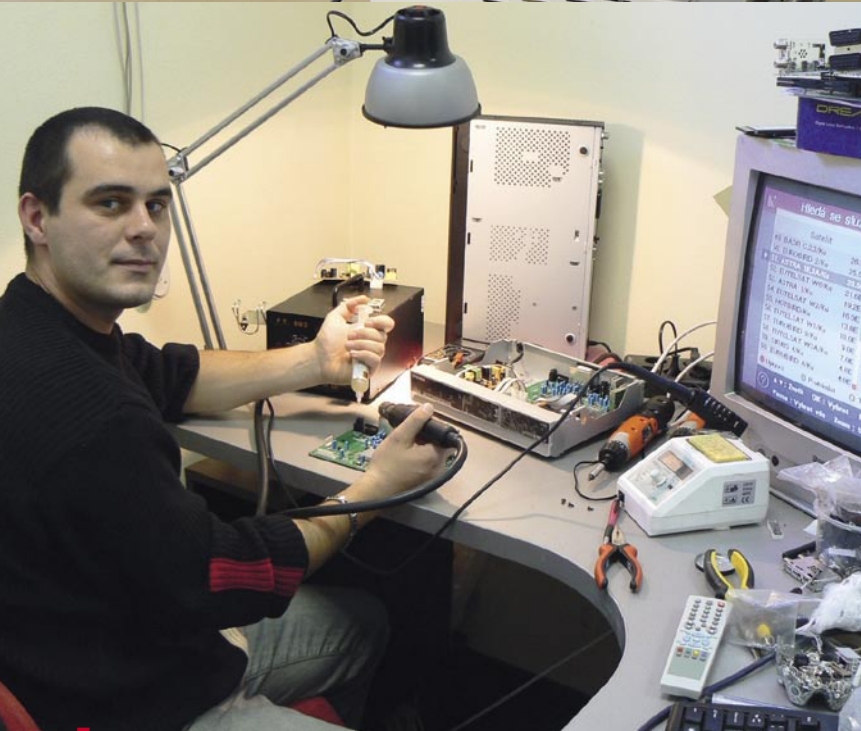
■ Goods are prepared for dispatch at the warehouse. Warehouse manager Martin Patay operates the forklift, Lukas Michalik (right) is one of the drivers, and Jefferson Kenji Takahashi (left) checks a receiver that is designated for dispatch.



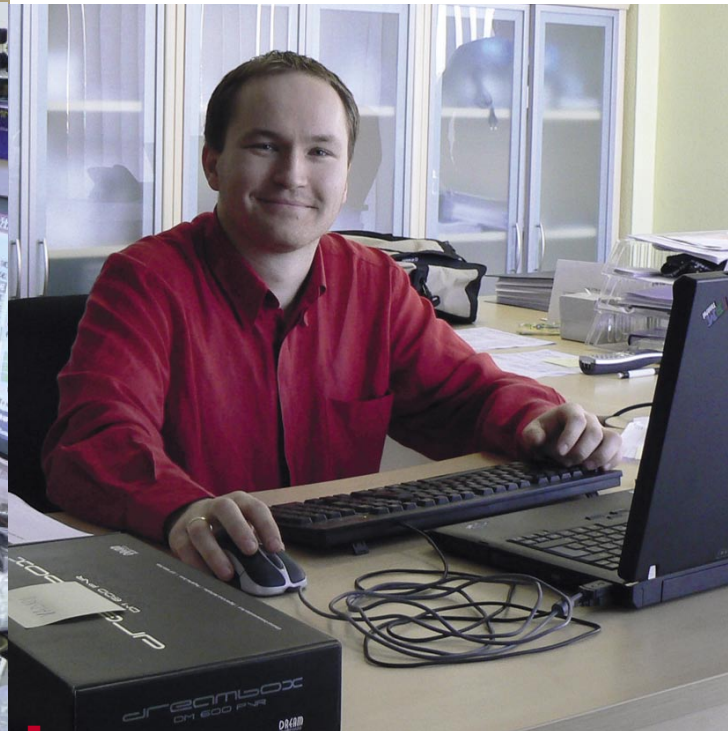
■ Purchasing manager Karolina Štreicherová is in constant touch with suppliers.



■ Everyone ordering a satellite receiver from ABC BIZNIS gets in touch with sales manager Hana Danišová. She speaks English perfectly and offers professional support for customers from all over Europe. Naturally, she is very proud of the success models of ABC BIZNIS: "The OPENSAT X7000 is our biggest seller – 40 percent of receiver orders are for this particular model." 25 percent each are for the OPENSAT X7000CI and X7700, while the remaining ten percent are currently for the XT9500HD, a HDTV box.



■ Even a top-quality product may fail at some point. Peter Ciljak is one of ABC BIZNIS two technicians. Here he is seen replacing a faulty chipset on a motherboard.



■ IT manager Alexander Marko takes care of the in-house infrastructure and also offers support to ABC BIZNIS customers.

which mainly focused on creating his own brand OPENSAT. He teamed up with Karolina Štreicherová, who is the ABC BIZNIS purchasing manager today, and a driver and in 2004 founded the company ABC BIZNIS.

Thanks to his creative ideas and the fact that they represented exactly what the market was looking for it did not take long for him to succeed with the products he put to market under his own brand OPENSAT. Soon he established OPENSAT on the local market in Slovakia, and then in 2007 he started to look for the foreign market,

which first meant the Czech market. Soon he managed to achieve an export ratio of 40 percent, with the year 2008 seeing an export quota of even 50 percent of OPENSAT branded receivers going to abroad.

Karolina Štreicherová has been part of the team since the very beginning and informs us about the export quotas of the OPENSAT brand to various markets: "The Czech Republic as our immediate neighbour takes the biggest share of OPENSAT products, which comprises some 50 percent, followed by Germany and Switzerland with 20

percent each and the rest of Europe with 10 percent."

ABC BIZNIS currently targets countries like Spain and Portugal, where they would like to see their market share grow and are therefore looking for distribution partners. "And we are also looking at Austria and the Benelux countries," adds Karolina "as well as at our neighbouring countries Hungary and Ukraine where we also need more distributors."

Director Veronika Rešetková then reveals a significant selling argument: "We ship all

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our products free of charge!" This is made possible by a fleet of four Mercedes Benz Sprinter transporter vans which are owned by ABC BIZNIS and which are on the road delivering all across Europe most of the time. "We have no minimum order restrictions either," Veronika adds "and so we can even deliver small patches without adding charges." This is an important benefit for small dealers and distributors in particular. "We want to give small customers the chance to grow, and this way we can grow with them," Veronika has another good point. Sales manager Hana Danišová has even more good news in store: "Generally, all our products come with a two-year warranty!"

By the time you read this there will be new models in shelves. Sales manager Hana Danišová lists the new additions: "There is the OPENSAT 3000 CR PVR which is a PVR with a single smart card reader. Then there's the OPENSAT 3000 CRCI PVR which has a CI module in addition. Both models are also available as OPENSAT 3500 HDMI PVR and OPENSAT 3500 CI HDMI PVR which – as the names suggest – also feature HDMI."

Even though the loss of the company founder was as tragic an event as you can imagine, the entire team around Veronika Rešetková has become even closer since then. They all act in concert and each and every one has their designated task so that operations run extremely smoothly. Veronika, daughter of the new manager and sister of the company founder, has a simple explanation for their success: "We all know what Erik wanted to achieve and we're working towards that goal with this in mind."

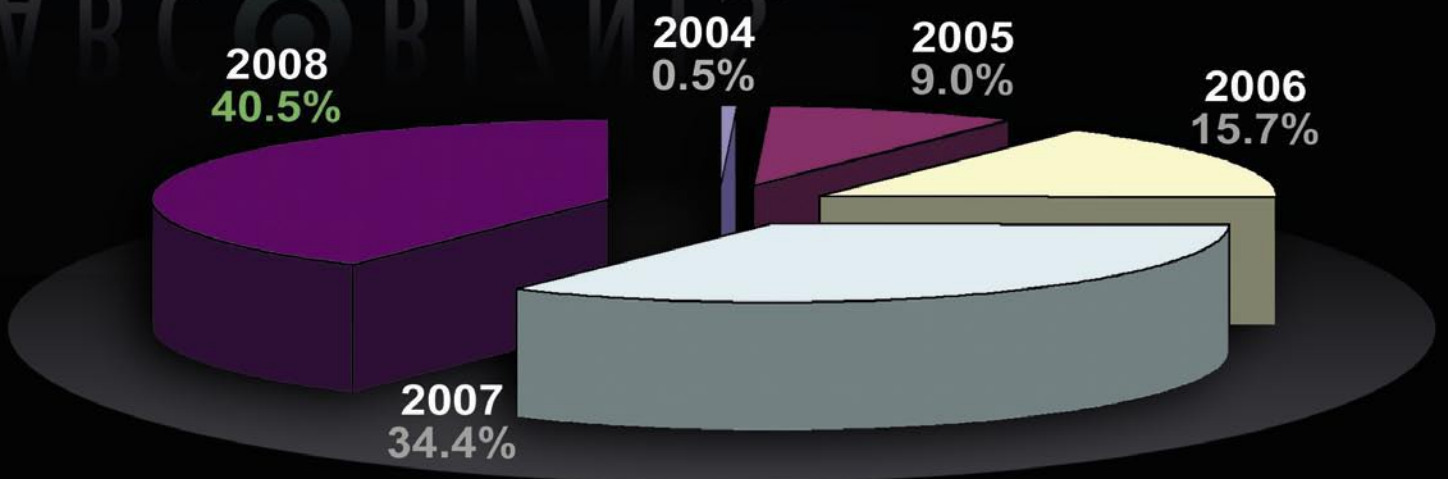
ABC BIZNIS has been up to a sky-rocketing development since 2004. Back then turnover in Euros was only 0.5 percent of total turnover, compared with 40.5 percent in 2008.



Getting ready for a group photo: the two Veronikas (mother in centre, daughter next to her) surrounded by almost all employees. The average staff age is between 30 and 35 years.

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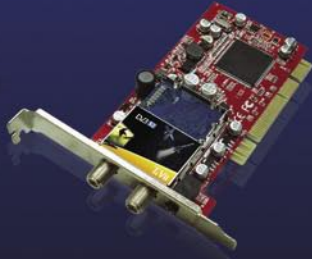




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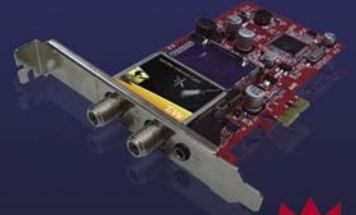
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Manfred Weller, who comes from Cologne/Germany, arrived in Tenerife in the Canary Islands in 1987. He started as a time share salesman: tourists would purchase ownership in a vacation apartment for a certain time each year. But, as an electrician by trade, he soon began to miss working with his hands and in 1989 joined a local satellite company installing dishes. After a few years he decided to go out on his own and in 1994 founded his own company Mennyfix right in the middle of the tourist hotspot Playa Las Americas in southern Tenerife.

Naturally, that was a clever move since on the one hand, long-term tourists wanted to watch their TV from home, and on the other hand digital TV started peaking in 1994. "I imported quite a few D-boxes into Tenerife", remembers Manfred, "Back then BBC Prime still existed and thus our customers were the English." With five employees he installed mostly 100cm antennas: "In our first year it was nearly 2000 systems!" commented Manfred proudly.

But that kind of success did not continue, it didn't take too long to reach the saturation point. This made it necessary for Manfred to look for other types of customers: "Today we install satellite systems mostly for sports bars; this makes up roughly 60% of our sales. The remaining 40% continue to be with private customers."

Manfred, who married a nice English girl, states that 65% of their customers are from Great Britain. "The English are crazy about sports!" And Manfred knows how to deliver their sporting events and from what satellites to get them from. 60% of the satellite antennas his company installs are 1.1 meters in diameter, 30% are 3.0-meter offset dishes for ASTRA 2 reception and 10% are the smaller 60cm antennas for the reception of the Showtime package on NILESAT. "Every soccer game can be seen there", says Manfred. He really loves that programming provider from Dubai.

Manfred is skeptical about the future: "In ten years I believe everything will go through the Internet." He suggests that two-way Internet via satellite will have a chance, "but

Manfred Weller set up his shop in the Mar-Ola apartment complex right in the middle of the tourist capital Las Americas in the town of Los Cristianos.

Mennyfix

Obviously, the company name Mennyfix is a play on words: "many fix", the guy who can fix anything. Menny is the nickname for Manfred Weller who moved to Tenerife from Germany 21 years ago and began selling and installing satellite systems.

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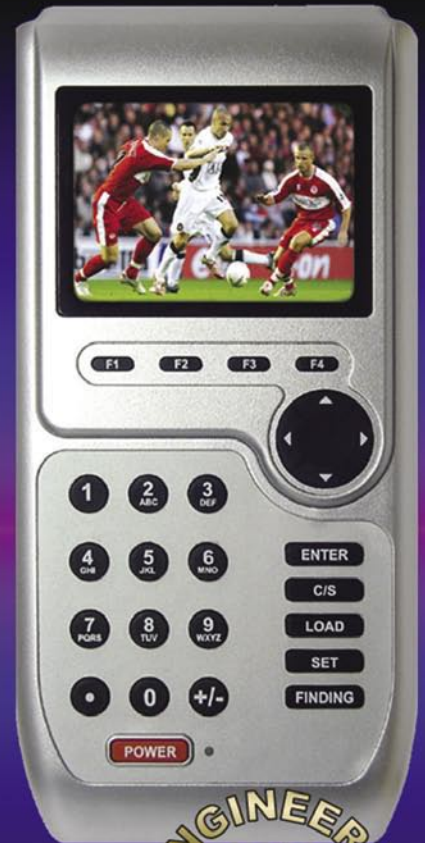
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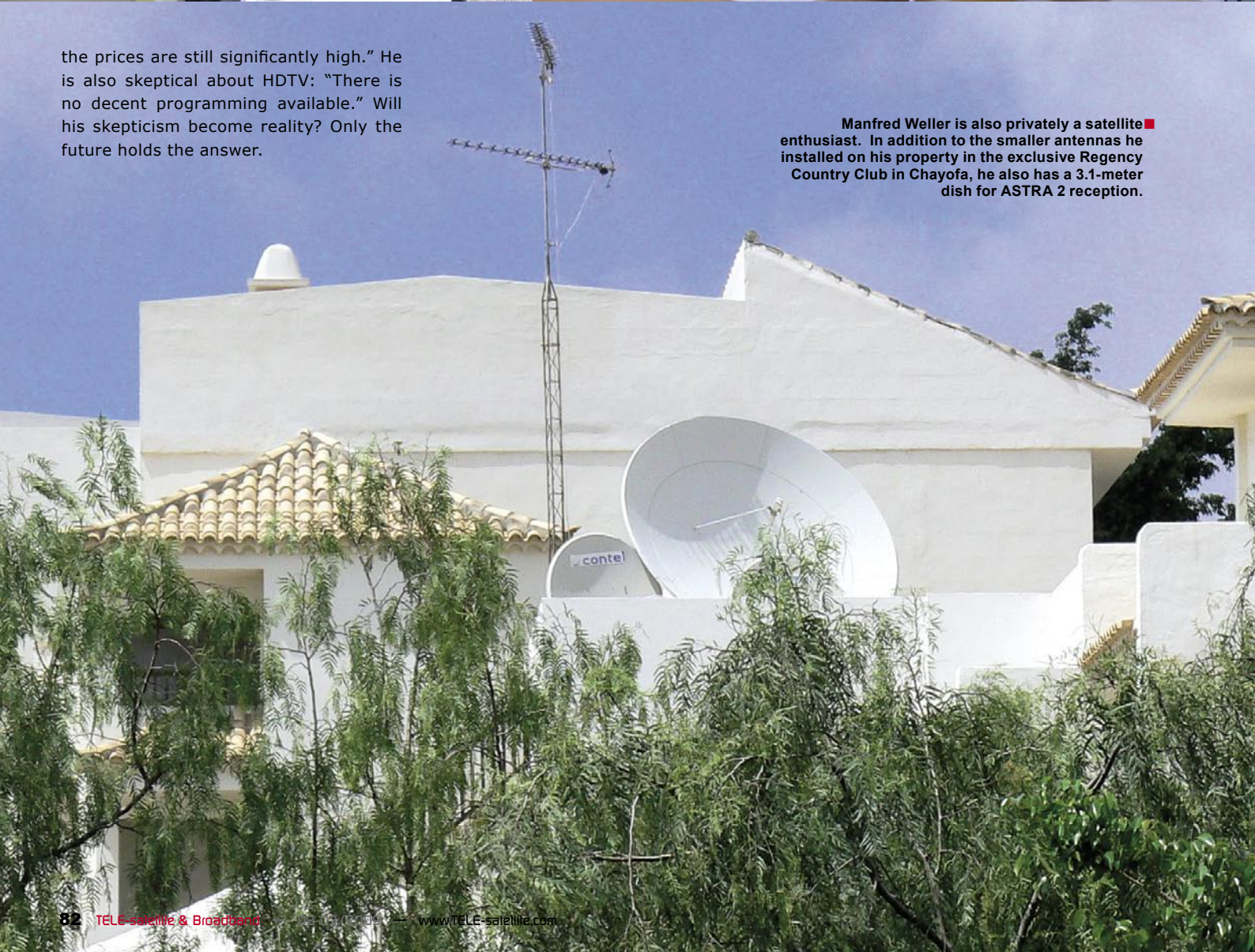
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Manfred Weller, nicknamed Menny, speaking with customers. After hanging up his landline telephone, it doesn't take long for his mobile phone to ring. He can speak with his customers fluently in three languages: German, English and Spanish. He has been reading TELE-satellite regularly for the past 14 years.

the prices are still significantly high." He is also skeptical about HDTV: "There is no decent programming available." Will his skepticism become reality? Only the future holds the answer.

Manfred Weller is also privately a satellite enthusiast. In addition to the smaller antennas he installed on his property in the exclusive Regency Country Club in Chayofa, he also has a 3.1-meter dish for ASTRA 2 reception.



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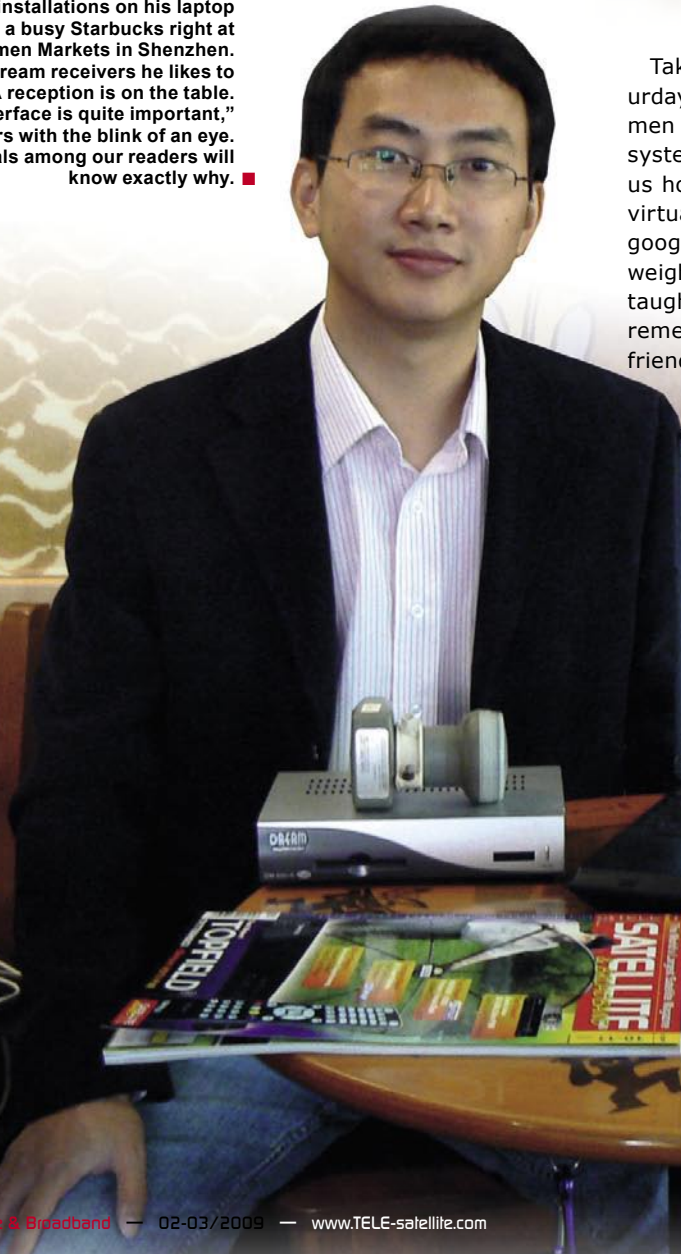
Shenzhen Satellites

As of now private satellite reception is still illegal in China, but in actual fact you can always find a loophole if 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.



■ Laoge works on setting up a reception system with three LNBs.

Laoge shows us a picture of one of his first installations on his laptop computer in a busy Starbucks right at the Dongmen Markets in Shenzhen. One of the Dream receivers he likes to use for AGILA reception is on the table. "The LAN interface is quite important," Laoge whispers with the blink of an eye. Professionals among our readers will know exactly why. ■



Take Laoge, for example. We met him on a busy Saturday at a Starbucks right in the helter skelter of Dongmen Markets in Shenzhen. He has been installing satellite systems for foreigners in Shenzhen since 2006 and tells us how everything started: "It was back in 2006 when I virtually stumbled across the www.tv88.cn website while googling." The site is run by Daxue, one of the heavyweights of the satellite community in southern China. "He taught me everything about satellite reception," Laoge remembers. The two got in touch and soon became friends. One day a Filipino living in Shenzhen approached



■ Thanks to his skills as software engineer Laoge has written a little application for recording the video stream of the Dreambox. He calls it Dreambox Recorder v1.0 and offers it for download at tv88.cn/Soft.

Daxue because he wanted to have a satellite system set up at his home. Daxue hardly speaks any English, however, and forwarded this request to Laoge. "This Filipino became my first customer," Laoge tells us with pride. And his first job was to install a 60 cm antenna for reception of AGILA at 146° East.

Laoge was commissioned to set up five more systems in 2006, one year later the number of jobs had risen to 15 and in 2008 Laoge installed a total of 32 antennas. "But it's still only a hobby. I'm a software engineer by profession," Laoge explains and adds that "I charge 2000 RMB (approx. 200 EUR) for each installation – and this includes antenna,

LNB and receiver." Where does Laoge source his components? "I buy them at auctions on www.taobao.com," Laoge tells us. Taobao is something like the Chinese version of e-bay.

90 percent of Laoge's customers originally come from the Philippines and most of them live in the Nanshan area of Shenzhen. The AGILA offering, however, includes more than 30 English language channels and therefore might be interesting for foreigners with other nationalities as well. The following satellites can also be received quite easily in Shenzhen: APSTAR 1 at 138° East, APSTAR 2R at 76.5° East and ASIAsat at 122° East.



■ Daxue (left), one of the more known satellite enthusiasts in China, and Laoge (right) meet at a satellite exhibition.

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Edited by
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EUROPE

EUROPE

ASTRA WITH 55 HDTV CHANNELS

The number of HD channels broadcast via the Astra Satellite System has increased significantly, reaching 55 in October 2008, an increase of 13 channels since August. With 55 HD channels broadcast from its main orbital positions, Astra represents the most important HDTV platform in Europe. The SES group, including SES Astra, SES Americom and SES New Skies, today transmits a total of 137 HD channels.

SPACE SYSTEMS/LORAL TO PROVIDE SIRIUS 5 SATELLITE

Space Systems/Loral (SS/L) has been awarded a contract to manufacture a new spacecraft for Luxembourg-based satellite operator SES. Designed to be located at 5 degrees East, SIRIUS 5 is configured with two Ku-band beams, one serving customers in the Nordic and Baltic countries and the other serving Sub-Saharan African. It has a total of 36 active Ku-band transponders available. The spacecraft also has two C-band beams, one with Global coverage and one with Hemispheric coverage, which can be operated with up to 24 active C-band transponders. The satellite design also includes a Ka-band uplink capability. The satellite is scheduled for delivery in 2011 and is designed to provide service for more than 15 years.

SES LAUNCHES ASTRA 1M SUCCESSFULLY

SES ASTRA's new ASTRA 1M satellite was successfully launched on November 8 from Baikonur to the orbital position 19.2 degrees East. It will be brought into its final orbital position in few weeks and will be made commercially available in January 2009 after extensive in-orbit testing. It will deliver DTH services including HDTV to Continental Europe.

MTV TO LAUNCH HDTV SERVICE WITH GLOBECAST

MTV Networks International has selected GlobeCast for the recent launch of its first international HDTV service dedicated to music and kids. MTVNHD carries music based and kids' programming that is original, acquired and from MTVNI's multi-branded library. The 24-hour English-language HDTV service will initially be available in Denmark, Finland, Norway, Poland and Sweden, with plans to expand to France, Germany, the Netherlands, Portugal, the United Kingdom, Argentina, Brazil, Chile, Colombia, Mexico and Venezuela in the coming months.

BULGARIA

MEGALAN SELECTS SECUREMEDIA FOR IPTV SERVICE

ISP Megalan Networks has selected content security from US firm SecureMedia to secure its new triple-play service including IPTV which it has launched in Sofia. Megalan Networks has selected SecureMedia's Encryptonite ONE System to protect its new triple-play service, delivered over its fibre-to-the-building (FTTB) network with over existing 50,000 subscribers. The Bulgarian ISP also reportedly plans to rollout the service to other major population centres in Bulgaria in the future.

CROATIA

T-HT WITH 100,000 SUBSCRIBERS FOR IPTV SERVICE

T-Hrvatski Telekom (T-HT) has announced its client base has increased to 100,000 for its MAXtv IPTV product. This represents a rise of 40% since the end of June this year. MAXtv, which launched in September 2006, includes more than 100 local and international TV channels and a VOD library.

FRANCE

PRIVATE MEDIA SIGNS IPTV CONTENT DEAL WITH VIRGINMEGA

Adult content provider Private Media Group has signed an agreement with Virginmega France for the supply of content for distribution on the PC platform of Virginmega.fr and its IPTV operator partner. Private's content is currently available in 18 European countries via 35 IPTV providers covering a subscriber base of 7.3 million. Private's presence in the European IPTV market represents close to 75% market coverage.

FOUR FRENCH TV CHANNELS GO HDTV

Four major French terrestrial HD channels launched in October, joining Canal Plus HD. TF1, M6 and France 2 are broadcasting their HD streams over R5, a new MPEG-4 DVB-T multiplex system with 27 transmitters covering about 40% of the French population. An additional 24 transmitters are planned to extend coverage to 60% by May. Arte is broadcast from the R4 multiplex, which has around 80% national coverage. An estimated 750,000 HD-ready TV sets have been sold in France so far this year, for a national total of around 7.2 million.

ORANGE FRANCE WITH 1.6 MILLION SUBSCRIBERS

France Telecom's Orange France had 1.603 million digital TV customers by the end of the third quarter of this year, of which 70,000 were subscribers to its new DTH service, and recorded a 64.4% year-on-year growth for its digital TV service (IPTV and satellite) in the period.

GERMANY

DT WITH 333,000 CUSTOMERS FOR IPTV SERVICE

Deutsche Telekom reported a 33% jump in IPTV orders during the third quarter, and now has about 333,000 customer orders total for its Entertain IPTV service. About 257,000 customers actually had service activated at the end of the third quarter. DT is aiming to get 500,000 customers signed up by the end of this year.

GREECE

PRIMETEL INTRODUCES ARABIC MIDDLEWARE

PrimeTel, which provides voice, video and data services in Greece as well as developing IPTV middleware for other operators, has launched an Arabic user interface for its IPTV middleware product PrimeTV. It supports features such as TV Zapping, VOD, user interface in multiple languages, multicast EPG, caller ID on-screen, network PVR and time-shifting. The middleware also features interactive applications such as Internet video, interactive music video jukebox, photo gallery with USB upload functionality, games, email, chat and RSS news.

ITALY

TELECOM ITALIA TARGETS 1.5 MILLION IPTV SUBSCRIBERS

In its new three-year strategy, Telecom Italia is aiming to reach 1.5 million IPTV subscribers by the

end of 2011, an ambitious gain from the 218,000 customers reported for the end of last September. The operator expects to reach 300,000 subscribers for its IPTV service Alice TV by the end of this year, and was recently reported to be already trialling fibre-to-the-home (FTTH) services, including IPTV, for commercial launch in 2009.

LITHUANIA

TWO WAY MEDIA IN IPTV GAMES DEAL WITH PENKI KONTINENTAI

UK interactive media production company Two Way Media has signed a licensing deal with Lithuanian IPTV operator Penki Kontinentai to supply a package of unique games as part of a new games service on the Lithuanian service provider's IPTV platform. The package features puzzle and strategy games including Two Way Media's most successful titles such as Buzzwords, Maze Master, Deal With It and Jelly Sets. Penki Kontinentai currently has around 25,000 subscribers for its IPTV service.

TEO WITH 47,500 IPTV SUBSCRIBERS

Telecommunications operator TEO ended the third quarter of 2008 with 47,500 IPTV subscribers, compared to 28,000 at the end of the second quarter of this year. TEO recently added NBA TV to its 'Interactive GALA' IPTV and 'Digital GALA' DTT service, thus becoming the first operator in the region to offer the channel.

MACEDONIA

MAKTEL LAUNCHES MAXTV IPTV SERVICE

Makedonski Telekom (MakTel) launched an IPTV service in November, under the brand MaxTV. The operator also intends to offer the IPTV service as part of a triple-play bundle, 3 MaxTV, with internet access and fixed telephony. MakTel's basic MaxTV package costs MKD 999 (USD 20.48) per month and 3 MaxTV will be offered in two flavours – both of which require a one-off subscription payment of MKD 1,200. For MKD 2,499 per month, customers can take the unlimited internet traffic option, which also includes unlimited voice calls on the telco's network and over 70 TV channels.

THE NETHERLANDS

KPN WITH 30,000 IPTV SUBSCRIBERS

KPN ended the third-quarter 2008 with 700,000 subscribers for its combined digital TV operations, with 30,000 of these being IPTV subs and the remainder being customers for its pay-DTT service 'Digitenne'. This total number of 700,000 subscribers for all digital TV operations increased 69% year-on-year in the third-quarter of this year, while growth figures for its IPTV services in the period were not available.

POLAND

TPSA ADDS 3,000 IPTV SUBSCRIBERS IN Q3

TPSA added 3,000 IPTV subscribers in the third quarter of this year to reach 57,000 at the end of the period. The telecom operator also launched a satellite TV service in October in order to expand its footprint for the provision of triple-play services.

CYFROWY POLSAT LAUNCHES ECHOSTAR'S NEW STBS

EchoStar Europe's advanced HD set-top box has been introduced by Cyfrowy Polsat, the largest Polish satellite television platform serving 2.4 million subscribers. The DBS-7100HD is equipped with the latest, single-chip silicon solution and features HDMI connectivity for a high quality connection to flat screen HD-enabled TV sets, Ethernet port for future-upgrade to a high speed, broadband return channel for the delivery of advanced,

value-added services, and Dolby Digital loop-through for delivery of high quality sound to a home cinema system.

RUSSIA

IPTV SUBSCRIBERS TO DOUBLE BY 2012

According to a report by research company J'son&Partners, 600,000 Russian households will have IPTV by 2012, a twofold increase from 2007. Revenue from providing the IPTV service will reach US\$ 19 million in 2008, increasing to US\$ 56 million in 2012. The largest operators in the Russian IPTV sector in the first half of 2008 were Stream-TV, which accounted for 61% of the market, and Svyazinvest (31%).

EUTELSAT TO COMPENSATE SHORTAGE OF SATELLITE CAPACITY

The Space Communications company is short of satellites to guarantee communications and TV broadcasting throughout Russia, according to its deputy general director Ksenia Drozdova. Satellite use is approaching 100%, while five out of the 10 satellites used by the company have reached the limit of their service life. With the goal of bridging the problem, Eutelsat and Space Communications have reached a deal on the assignment of satellites for guaranteeing communications in Russian territory, with the W2 satellite to be placed at the use of the Russian company.

REDCOM BRINGS HDTV TO FAR EAST REGION

Consumers in Russia's eastern region of Khabarovsk will now be able to enjoy affordable access to HDTV, VOD and other multimedia services through a Metro Multiservice Transport Network (MMTN) that is based on Cisco technology. Redcom, Khabarovsk's leading telecommunications service provider, has implemented a strong network backbone that is scalable and fault-tolerant with high levels of security, selecting Cisco's Ethernet Fiber to the Home solution with Metro Ethernet technology. With Metro Ethernet, Redcom can now also differentiate traffic, offer flexible billing options to consumers, and expand bandwidth to meet peaks in service demand.

SCANDINAVIA

TELIA SONERA RACHES 450,000 IPTV SUBSCRIBERS

TeliaSonera added 23,000 IPTV customers in the third quarter of 2008 across all regions to bring its total to 450,000, with over half of its IPTV customer base in Sweden paying to receive the service. In Sweden, more than 100,000 new subscriptions year-on-year were added to reach 320,000, however the company reported no growth on a quarter-on-quarter comparison in the country. TeliaSonera had a total of 839,000 digital TV subscribers across all regions, including its cable TV operations in Denmark.

AMINO ACQUIRES TILGIN'S IPTV BUSINESS

Set-top box supplier Amino Technologies has acquired Tilgi's IPTV business, paying 30 million Swedish Kronor (US\$ 3.6 million) for the Swedish vendor's loss-making IPTV set-top box business, which has sold and delivered 500,000 units to date. Tilgin has between 10 and 15 customers, mostly in Europe, with very little overlap between the two firms' customer bases.

SPAIN

REGULATOR SUSPENDS TELEFONICA'S TRIPLE-PLAY

The Spanish Telecommunications Market Commission (CMT) has temporarily suspended Telefónica from providing commercial services, including IPTV and Internet access, over its new fibre-to-the-home (FTTH) network, following a complaint lodged by Orange España. Orange España claims that Telefónica has not finalised wholesale access terms for the network infrastructure, and the CMT determined that services may only be launched on the new network once it is satisfied that agreements with alternative providers have been reached for access to the network. Telefónica recently launched trials on the network in Madrid and Barcelona to test Internet access at 30 Mbps, as part of a triple-play offer that includes its IPTV service Imagenio. Telefónica is thought to have planned to reach more than 1,000 FTTH clients by the end of 2009.

TELEFONICA LAUNCHES IMAGENIO HD

Telefónica has launched a new high-definition service for its IPTV service Imagenio, available to those IPTV subscribers which are connected to its new fibre-to-the-home (FTTH) network. All subscribers which have signed for a Trío Futura 10 or 30 Mbps connection are receiving an HD-capable set-top box, and the new Imagenio HD service currently offers the channel AXN in high-definition. Telefónica reportedly plans to gradu-

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ally increase the number of HD channels available, starting with addition of Canal+ in the near future.

SWITZERLAND

SWISSCOM BLUEWIN TV ADDS HD VOD TITLES

Swisscom's Bluewin TV is offering 130 feature films, concerts and documentaries in high-definition on-demand with Dolby Digital 5.1 sound, with prices starting at CHF 2.50 (US\$ 2) each. Viewers will initially be able to choose from over 70 feature films, over 40 concert recordings and around 30 documentaries. A "large number" of dubbed films will also be made available in their original language with Dolby Digital 2.0. Bluewin TV had 95,000 paying customers at the end of September, up from 80,000 at the end of the second quarter of 2008 and 52,000 in September 2007.

TURKEY

SEACHANGE AND ARGELA TO BRING IPTV TO TURK TELEKOM

IPTV and VOD software, systems and services provider SeaChange International has partnered with Turkey-based telecom solutions provider Argela to provide IPTV solutions for Turk Telekom, for which SeaChange is also providing systems integration and professional services. SeaChange and Argela's combined product offering will enable telecom operators to offer telephony, messaging, Internet access, mobility services, VOD and personal video recording services that integrate seamlessly with their service delivery platforms (SDP). The companies are partnered to bring these services to the rapidly growing market for IPTV.

AIRTIES SELECTS OPERA FOR NEW IPTV STB

AirTies has selected Opera 9.5 for devices from Opera Software to serve as the presentation engine for its new high-definition 'Air 7120' IPTV set-top box. The selection of Opera 9.5 for devices is intended to lend web browsing capabilities to the Air 7120, as well as allow developers to quickly and easily create user interfaces and other applications using Web technology such as HTML and CSS. The company adds that using widgets, users of the Air 7120 can additionally access Internet content in the form of small applications directly from the set-top box's home screen.

UNITED KINGDOM

BROADCASTERS TO LAUNCH HD ON DTT

Channel 4, the BBC and ITV are to be given free high-definition spectrum on the Freeview digital terrestrial platform, according to media regulator Ofcom. It plans to auction an additional HD channel to commercial players by the end of 2010. The new channels will roll out on a regional basis starting next fall with nationwide coverage expected by the end of 2012. ITV will broadcast its peak time schedule on the new service plus football and drama, Channel 4 intends to feature a mixed genre service including more than 150 hours of movies in the first year on air, while the BBC is yet to reveal its plans for its HD channel.

BBC PLANS OPEN IPTV PLATFORM

The BBC is in preparations to create an open industry standard Internet TV platform codenamed 'Canvas', intended to enable content providers to easily launch Web TV services, according

to Erik Huggers, the corporation's Director of Future Media & Technology, speaking at industry event Mipcom. He stated that the service would potentially be available via a set-top box and enable "any service to build applications onto the platform". Huggers estimates that, if approved, Canvas is at least 12 to 18 months away.

BT VISION LAUNCHES CATCH-UP IPTV PLATFORM

BT has become the first company to offer catch-up television from all the UK's terrestrial networks, after linking up with ITV to make the broadcaster's programming available via digital TV service BT Vision. The deal, which sees ITV syndicating its content in a closed VOD platform for the first time, provides full catch-up for eight days through BT Vision's TV Replay service. The move also gives viewers access to archive programming from terrestrial channel ITV1 and digital channels ITV2, ITV3 and ITV4.

SKY LAUNCHES ONLINE TV SERVICE

BSkyB has launched its standalone online pay-TV service Sky Player TV, providing access to some Sky channels without the need to subscribe to its satellite-based service. The service offers internet users a choice of three packages with prices ranging from £15 (US\$ 22) to £34 a month. The Entertainment Pack costs £15 per month and includes the Disney Channel, British Eurosport, National Geographic Channel, Sky News, Sky Sports News, MTV One, Nickelodeon and Nick Jr.

FOX SIGNS VOD/IPTV DEAL WITH BT VISION

20th Century Fox has signed a deal with BT Vision giving the IPTV operation rights to a

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range of new and classic Fox films. Some of the titles included in the pact are "Shine a Light," "The Happening" and "Dr. Seuss' Horton Hears a Who." Library titles include "Alien Resurrection," "The Beach," "Die Hard" and "I, Robot." The deal enables BT Vision subscribers to rent the shows on a PPV basis and follows on from a similar one inked with Disney-ABC.

BBC INTRODUCES LIVE STREAMS ON IPTV PLAYER

The BBC's free broadband Internet TV (IPTV) service, iPlayer, has introduced live streams from its BBC One and BBC Two TV channels. BBC Three, BBC Four, CBBC, CBeebies and BBC News are already being broadcast in this way. The move means that popular shows, such as EastEnders, Heroes and Never Mind The Buzzcocks, are available online to license fee payers.

NORTH AMERICA

ARIANESPACE TO LAUNCH VIASAT-1

Arianespace and ViaSat have signed the launch Service & Solutions contract for the ViaSat-1 satellite. The high-capacity Ka-band spot beam satellite is scheduled for launch by an Ariane 5 during the first half of 2011 from the Guiana Space Center, Europe's Spaceport in Kourou, French Guiana. ViaSat-1 will be dedicated to providing broadband internet media services to consumers and businesses over North America. With a capacity estimated at 100 Gbps and built by Space Systems/Loral, ViaSat-1 is expected to be (at launch) the highest capacity satellite in the world.

CANADA

ZENIT ROCKET TO LAUNCH TELSTAR SATELLITE

The Zenit-3SLB carrier rocket is scheduled to lift off from the Baikonur Cosmodrome space center at the end of December to launch a U.S. Telstar satellite. The satellite, built by Space Systems/Loral for Telesat Canada's Loral Skynet telecom subsidiary, will provide services from 39 high-power Ku-band transponders spread across four different geographic beams in each of North and Central America, Europe, Africa and the maritime Atlantic Ocean region from its orbital slot at 15° West.

TELESAT TO MANAGE TWO NEW SATELLITES

Telesat has won a job to manage the in-orbit operations for two satellites that will soon be launched into U.S. and Canadian orbital slots. Virginia-based Mobile Satellite Ventures (MSV) and its Canadian joint venture partner have chosen Telesat to operate their MSV-1 and MSV-2 next-generation satellites, which are respectively scheduled to be launched into the U.S. orbit in 2009 and into the Canadian orbital slot in 2010. MSV, which also has operations in Ottawa, said the two satellites will be two of the world's most powerful commercial satellites, enabling wireless coverage for conventional handsets and devices throughout the United States and Canada. Under the agreement, Telesat will conduct in-orbit operations of the two satellites from its Satellite Operations Centre in Ottawa and its backup facility in Mount Jackson, Virginia.

INTRACOM DELIVERS IPTV SOLUTION TO WIGHTMAN TELECOM

Greece-based Intracom Telecom, a part of Sitronics, has delivered its fsjcdn MPEG-4 IPTV solution to Canada-based Wightman Telecom, through its subsidiary, Conklin-Intracom, based in the US. Wightman Telecom has selected the fsjcdn MPEG-4 IPTV delivery solution to serve communities in the counties of Bruce, Grey, Huron, Wellington and Perth of Ontario. Wightman Telecom has started deploying these services to customers that are reached with their new fiber to the home initiative, as well as those served through existing copper infrastructure via xDSL.

UNITED STATES

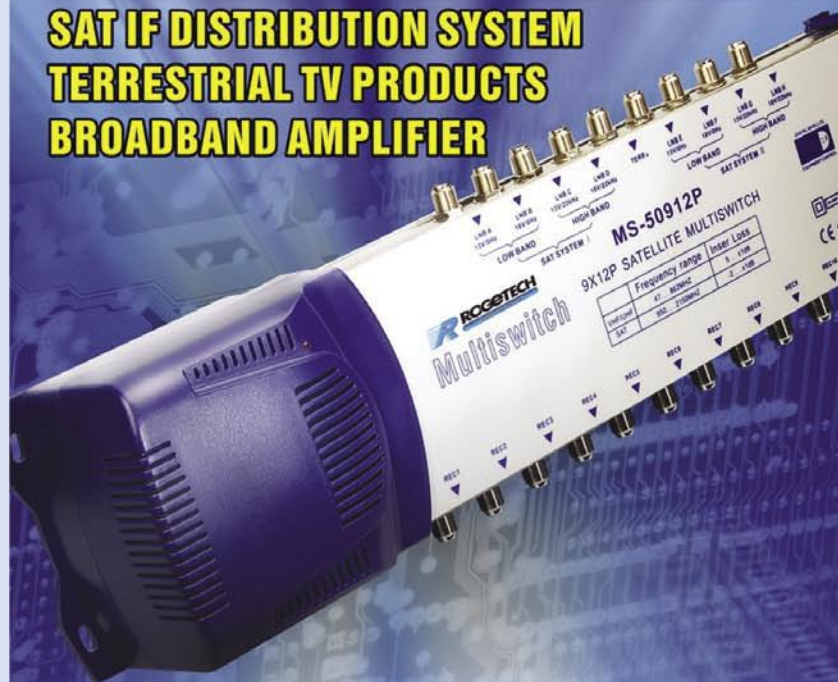
ENTONE SELECTED BY ITC FOR IPTV DEPLOYMENT

Entone's Hydra IP video gateway has been chosen by Interstate Telecommunications Cooperative, Inc. (ITC) for their IPTV rollout. ITC provides local telephone, digital television and broadband services to subscribers in South Dakota and Minnesota. ITC now offers a triple play service bundle of voice, video, and data using Entone's Hydra IP video gateway, part of Entone's Connected Home Solution that eliminates the need for multiple set-top boxes or new home wiring to deliver IPTV services. Using patent-pending technology, Hydra can deliver multiple video streams over a single DSL or Ethernet connection using existing in-home coax cabling.

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AT&T TO SELL IPTV SERVICE AT RETAIL SERVICE

AT&T has signed agreements with Wal-Mart and Circuit City to sell its 'U-verse TV' IPTV service and 'U-verse High Speed Internet' broadband service in over 600 retail locations across the US from this month. The agreements are the first national retail deals for AT&T U-verse, which will initially be offered at Circuit City and Wal-Mart stores located near neighbourhoods where U-verse services are available. AT&T already sells its IPTV and Internet services direct to the consumer across the US and reached 549,000 subscribers to U-verse TV at the end of the first half of this year, with the aim of passing 1mn by the end of this year.

KIT DIGITAL TO DELIVER IPTV STB

IPTV technology and solutions provider KIT digital has been selected by TV2Moro, a new firm backed by several ethnic television aggregators and producers, to deploy a new IPTV set-top box (STB) service to deliver programming to ethnic consumers in North America. The TV2Moro/KIT digital partnership has a minimum term of 48 months, and involves platform development fees, ongoing platform licensing fees, and a revenue share model based on the number of subscribers adopting the service. TV2Moro's initial commercial roll-out will include a top-tier bouquet of Arabic language channels, and is scheduled for the beginning of 2009, with a test phase taking place now.

RURAL IPTV CARRIERS GET HBO, CINEMAX RIGHTS

The National Rural Telecommunications Cooperative (NRTC) has forged a long-awaited agreement

with Home Box Office (HBO) that will allow rural IPTV carriers to offer a range of HBO and Cinemax standard-definition and high-definition programming. The video distribution agreement grants NRTC members rights to 26 HBO and Cinemax MPEG-2 SD offerings and 26 MPEG-4 HD feeds, as well as subscription video-on-demand rights.

SES AMERICOM FILLS UP CAPACITY ON AMC-21 SATELLITE

Within the first month of AMC-21 becoming commercially available, a total of 16 transponders are under contract and utilizing the new Ku-band capacity at 125 degrees West. AMC-21's high powered 50-U.S. state, Mexico, Southern Canada and Caribbean coverage is proving to be in great demand across multiple segments: media, enterprise and government. It is currently providing service to customers such as PBS, U.S. Army, U.S. Marine Corps (through Arrowhead), U.S. Northern Command (through ARTEL) and maritime broadband users.

WORLDSPACE FILES FOR BANKRUPTCY

Satellite operator WorldSpace has filed for Chapter 11 bankruptcy protection after repeated failures to meet debt obligations and to pay its employees. The company, which broadcasts its satellite radio services to more than 170,000 paid subscribers in 10 countries throughout Europe, Africa and Asia, sought Chapter 11 protection in the U.S Bankruptcy Court in Wilmington. It listed assets of US\$ 307.4 million and liabilities of US\$ 2.12 billion.

VERIZON DELIVERS 1,000 HD VOD OFFERINGS

Verizon's FiOS TV customers can now enjoy more than 1,000 HD video-on-demand (VOD) titles per

month, including HD content from several movie channels: Starz, Showtime and Sundance Channel. Verizon's FiOS TV VOD library offers titles that encompass a broad range of interests, including kids, music, pop culture, Spanish language, and home and leisure. The library offers more than 11,000 titles per month - 8,500 are free of charge.

ION TV SUITE TO LAUNCH IN HD DURING 2009

ION Media Networks has plans to launch its suite of networks - ION Television, qubo, and ION Life -- in high definition (HD) in 2009. ION Television, the Company's flagship general entertainment network, will be available as ION Television HD beginning the first quarter. The ION Television network features hit programs from CBS Television, NBC Universal, RHI Entertainment, Sony Pictures Television, Twentieth Television and Warner Bros., among others. ION Media Networks' digital TV brands, qubo, a multilingual kids network that champions literacy and positive values, and ION Life, a digital network dedicated to active lifestyles and personal growth, will also be upgraded to high definition later in 2009.

TV-DESI LAUNCHES NEW IPTV SERVICE FOR ASIANS

TV-Desi, a subsidiary of NeuLion and JumpTV, has launched a new IPTV service with a selection of live South Asian TV content to the Indian, Pakistani and Bangladeshi communities in North America. TV-Desi features a line-up of over 40 popular channels including: Sony Entertainment Television Asia, Indus TV, Aaj, NDTV, ATN, Ekushey, Diganta, RTV, Hum TV, Amrita TV, IBN-Lokmat, TV9 News as well as North American Desi channels ITV, ASC and many others. The live TV package

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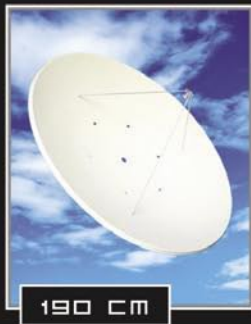
240 CM



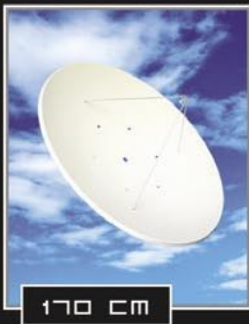
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210 CM



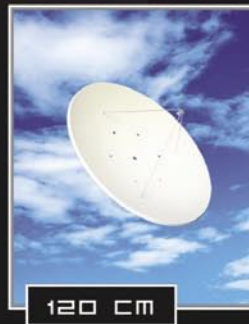
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TWIN LAKES TELEPHONE COOPERATIVE LAUNCHES IPTV TRIALS

Twin Lakes Telephone Cooperative Corporation (Twin Lakes), based in the state of Tennessee, has installed and successfully tested its new IPTV services, based on a platform supplied by Infinite Video, a subsidiary of Canadian firm Event Technologies. With board approval, Twin Lakes will contract to deploy the system to offer 11 broadcast channels over its existing DSL network, including local television programming.

LATIN AMERICA

COLOMBIA

EMCALI AIMS FOR 13,000 IPTV CLIENTS

Colombian multi-utility Emcali expects to reach approximately 13,000 IPTV subscribers once the company launches the service. The company, which serves the city of Cali, currently has 70,000 clients in the broadband segment. National TV services regulator CNTV will soon open a bidding process for five licenses for pay-TV services, with Emcali expected to bid for one. ZTE has been selected as the technological partner.

VENEZUELA

VENESAT-1 LAUNCHED INTO ORBIT

The country's first satellite Simon Bolivar or Venesat-1 was successfully launched on October 29 as part of a joint project with China that started three years ago. The whole project is to cost USD 406 million and the Venesat-1, with a

designed life of 15 years, will be used in broadcasting, distance learning, medical services, among others. The satellite became operational on December 20. Venezuela intends to launch its second satellite, for its own use, in 2013.

ASIA

GOLDSTONE TO LAUNCH IPTV SERVICES IN MALAYSIA, THAILAND

Software technology and services company Goldstone Technologies will launch IPTV services in two South-East Asian countries—Malaysia and Thailand. Goldstone has tied-up with MOL AccessPortal Berhad (MOL) of Malaysia to launch the IPTV service in Malaysia.

ORBITAL COMPLETES WORK ON NSS-9 SATELLITE

Orbital Sciences Corporation (ORB) has completed final testing on the SES New Skies NSS-9 commercial communications satellite. The NSS-9 will now be stored at the company's Dulles (Virginia) facilities until the company is notified of the launch date. Orbital stated that the spacecraft was designed, manufactured and tested in approximately 22 months from the start of the contract to the completion of the pre-shipment review. NSS-9 carries 28 active C-band transponders and features three beams that can be interconnected on a transponder-by-transponder basis: a global beam providing coverage of the entire earth visible from its 183 degrees East orbit slot, another beam covering Australia, Indonesia, the Philippines, Japan, China, Korea and the Pacific Islands, and a third beam providing coverage and connectivity to the U.S., Hawaii and Polynesia.

IPTV TO REACH 22.4 MILLION SUBSCRIBERS BY 2013

Market research firm Frost & Sullivan has estimated that the number of IPTV subscribers across 13 countries in the Asia-Pacific region may grow to 22.4 million by 2013. The latest research titled "IPTV Business Case" predicts that IPTV subscription will grow by an amazing 32.7 per cent over the next four years. Of the 13 countries, the researcher says, eight had commercial IPTV services in 2007, while the rest are conducting trials for deployments over the coming months. Asia-Pacific accounted for about a third of the global IPTV subscriber base last year. While Hong Kong is leading the group with 1.02 million subscribers, Mainland China is running close behind with 0.93 million customers, a figure that makes up 22.7 percent of the region's market.

CHINA

CHINA TELECOM TOPS 1.5 MILLION IPTV SUBSCRIBERS

China Telecom passed 1.51 million IPTV subscribers by the end of the third quarter of this year, according to Interfax China, compared to 940,000 subscribers reported in May of this year. The service is provided in cooperation with Shanghai Media Group (SMG) and has been available in major cities such as Shanghai, Jiangsu, Guangdong, Zhejiang and Shaanxi since 2005, offering broadcast and on-demand content, including high-definition, as well as information services.

JIANGSU PROVINCE IPTV SUBSCRIBERS UP 471 PERCENT

The number of IPTV subscribers in China's Jiangsu Province, located on the east coast of the country, rose by 471% in the first nine months of this year, according to Interfax China, making this the biggest

rise in IPTV adoption in the country during the period. Jiangsu Province had an IPTV subscriber base of over 200,000 by the end of September 2008, compared to 35,000 at the end of 2007. The province's growth rate has even exceeded Shanghai, which witnessed a growth of around 150% during the first nine months of this year to reach over 600,000 IPTV subscribers at the end of September.

SMC TO LAUNCH IPTV IN GUANGDONG PROVINCE

Southern Media Corp. (SMC) plans to launch a new interactive TV and IPTV platform in the Guangdong Province in 2009, according to Interfax China. The platform is expected to be put into operation at the beginning of 2009, covering 50,000 trial users, and at full capacity is expected to be able to support 700,000 users simultaneously. The platform will reportedly be connected to the local hybrid fibre-coaxial (HFC) network in Guangdong Province and China Telecom's IPTV network, with the IPTV content to be carried on China Telecom's IPTV network.

HUAXIA NETWORK RECEIVES IPTV LICENSE

China's State Administration of Radio, Film and Television (SARFT) has issued a new IPTV licence to Beijing firm Huaxia Network. The SARFT has previously awarded licences to operators including China Central Television (CCTV), Shanghai Media Group (SMG), Southern Media Corporation (SMC), China Radio International (CRI) and Hangzhou-based Wasu. The IPTV licence covers the delivery of broadcast programming to televisions, while video-sharing websites currently have permits for audio-visual programming to be received by computers.

UTSTARCOM GETS IPTV ORDER FROM HUNAN PROVINCE

UTStarcom has signed an agreement with Best Tone Information Service Corporation to deploy a video information distribution network in Hunan province of China. The network would provide a fresh revenue source for UTStarcom through video advertisement in the province. As much as 3,500 iPAD1000 terminals are scheduled to go live in office buildings, government facilities, supermarkets, hotels, hospitals and schools in Hunan Province this year. The iPAD1000 technology could integrate UTStarcom's RollingStream IPTV set-top boxes, ADSL modem, Wi-Fi adapter, IPTV network connection and video monitor into a single terminal station.

INDIA

AKSH TARGETS 40,000 IPTV SUBSCRIBERS

Aksh Optifibre intends to increase its IPTV subscriber base to 40,000 by 2008-end. The company, trying to diversify into services by launching its IPTV services in 22 cities, currently has around 8,000 subscribers in Delhi and 2,000 in Mumbai. It is in the process of raising funds to part fund its ambitious expansion across north India. It rolls out its TV services over the copper-line infrastructure of public sector telecom operators such as MTNL and BSNL.

BHARTI AIRTEL TO LAUNCH IPTV IN SIX CITIES

After launching a DTH service, Bharti Airtel have started a trial run of their proposed IPTV service in New Delhi and are now planning to launch its commercial services in six cities (Delhi, Mumbai,

Kolkata, Chennai, Bangalore and Hyderabad) soon. According to the president of telecom services, Atul Bindal, currently 1,000 households in New Delhi are covered on a pilot basis. Airtel currently has 2.5 million customers for both landline and broadband, whom it plans to target with IPTV services.

BSNL TO LAUNCH IPTV SERVICE IN PUNJAB

Ludhiana will soon become the first city in Punjab to receive the IPTV service, which will be launched in January 2009 by BSNL. The ISP is targeting a cable TV subscriber base of about 82 million users by counting on their 30 million landline subscribers across the country. After launching IPTV services in Jaipur and Jodhpur in Rajasthan in September, the company is planning to bring IPTV to more than 100 cities. BSNL will provide 120 TV channels to its broadband subscribers at a monthly rental of Rs 150, apart from a security deposit of Rs. 999 for a set-top box.

DTH OPERATORS TO OFFER HD CONTENT

DTH operators such as Dish TV and Sun Direct are planning to add HD content as a separate bouquet in the next few months. Currently, the popular DTH bouquets (80-120 channels) are available at Rs 150-300 a month across most DTH platforms. The HD bouquet of 10-15 channels may cost 20-30 per cent more than the regular bouquet, sources said. Dish TV will add the HD content once it gets additional transponder space on Protostar satellite, Sun Direct is launching its own HD channels on the existing transponder bandwidth, while others like Tata Sky, Big TV and Airtel's Digital TV are also expected to follow suit.

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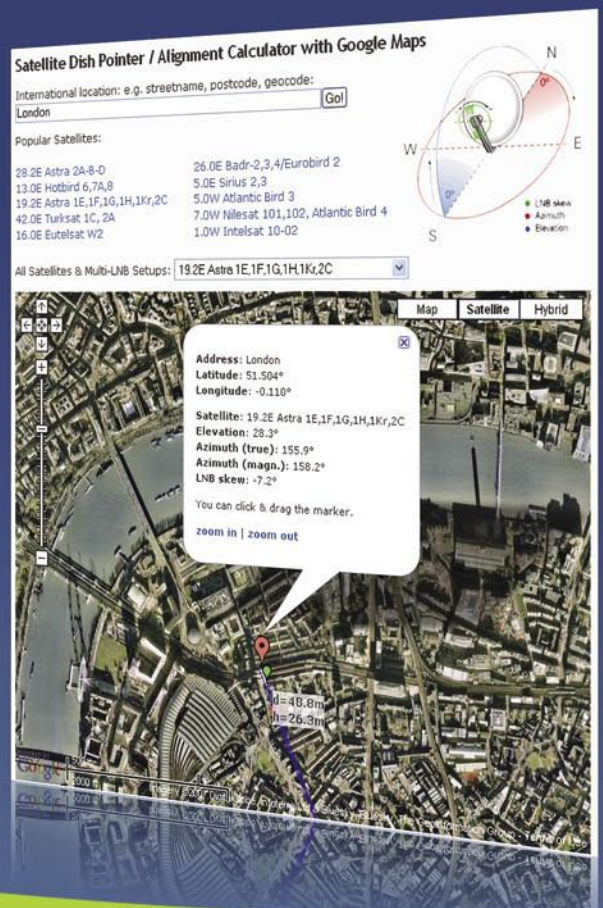
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JAPAN

NHK LAUNCHES ON DEMAND INTERNET PAY-TV

Japan Broadcasting Corp (NHK) has started an on-demand distribution of TV programmes for a fee over the internet. The service comprises two types of programme - recently missed programmes that are available for about one week after their initial airing including popular daily short dramas, and those in NHK's "library" comprising around 1,200 archived programmes including those that drew strong viewer interest in the past. The programmes are offered at 105-315 yen each. A monthly package plan is also available for missed programmes.

JAPAN WITH OVER 3 MILLION IPTV SUBSCRIBERS BY 2012

Japan is expected to top 3 million IPTV subscribers by 2012, according to new figures from research firm ROA Group, with approximately 10% of the predicted total to be accounted for by fibre-to-the-home (FTTH) subscribers, while IPTV's penetration will reach 6% by 2012. The average growth rate of IPTV subscribers in the country between 2006 and 2012 is expected to reach 65%, with Japan expected to close 2008 with an estimated 400,000 subscribers. Three companies are currently providing IPTV services in Japan, according to the research firm - NTT Plara with its offering 'Hikari TV', KDDI with its service 'Hikari One TV', and BB Cable Corporation with its offering 'BBTV'.

MITSUBISHI ELECTRIC GETS ORDER FOR ST-2 SATELLITE

Mitsubishi Electric has received an order to build the ST-2 communications satellite for a joint venture between Singapore's SingTel and Taiwan's Chunghwa. Currently, SingTel and Chunghwa jointly

own the ST-1 and use this satellite in their various communications businesses. The ST-2 will succeed the ST-1 as their next communications satellite. For the production of the ST-2, Mitsubishi Electric has proposed to use its original DS2000 satellite bus platform, which was developed based on the Engineering Test Satellite-8 (ETS-8) made for NASDA.

KAZAKHSTAN

KAZAKH SATELLITE BROUGHT BACK INTO ORBIT

Experts have managed to bring a malfunctioning Kazakh satellite, KazSat-1, back into geostationary orbit. The US\$ 65 million satellite stopped broadcasting on June 8. The Khruichev space research and production centre said it had fixed the problem together with Kazakh specialists earlier in October, and the satellite would resume its regular operation once all of its systems had been tested. Khruichev is currently building a second satellite for Kazakhstan, KazSat-2, in cooperation with Russian and foreign companies, including the Russian Institute of Space Engineering and European company Alcatel Alenia Space. KazSat-2 is to be launched in 2009.

LEBANON

ORANGE AND SOLIDERE LAUNCH FIRST IPTV SERVICE

Orange Business Services and Solidere have launched Lebanon's first IPTV service with 120 on-demand TV channels in central Beirut with a range of movies, sports and TV programs streamed directly to their TVs over a state-of-the-art Metro Ethernet network. It is believed to be one of the first commercially available IPTV services in the Middle East, and the first to support broadcast and on-demand HDTV. The service has been delivered, installed, supported and integrated into the existing

Solidere-operated private broadband network that was designed and deployed by Orange in 2006.

PAKISTAN

PTCL REPORTS OVER 1,000 IPTV SUBSCRIBERS

Pakistan Telecommunication Company (PTCL) has reported that its new IPTV service now has 1,070 customers, following its launch in four major cities in the country. Launched last August, the service has subsequently been introduced in five major cities in Azad Jammu and Kashmir, and will be expanded to 144 other cities shortly. Initially, 100 TV channels are available and the IPTV service is free of charge until February 2009.

SINGAPORE

VOOM TEAMS UP WITH IFW FOR 2009 LAUNCH

Voom HD Holdings has signed a co-production and distribution deal with Singapore's Infinite Frameworks (IFW), in a bid to ramp up high-definition programming over the next five years. The deal sees each partner investing US\$ 10 million in production and post-production, in collaboration with productions worldwide, to develop an HD slate across sports, art, lifestyle, fashion and music. All post-production will be handled at IFW's Singapore facilities, and the company also receives support from the Media Development Authority of Singapore (MDA).

STARHUB LAUNCHES NEW HD DVR

Pay-TV operator Starhub has launched a new HD DVR - HubStation HD - which enables customers to watch and record both SD and HD programmes. The HubStation HD also provides access to free broadband Internet service and StarHub's Digital Voice service. Starhub launched the first com-

mercial HD service in Southeast Asia in January 2007. Since then, the number of HD channels offered by StarHub TV has grown to five - HD5, NGC HD, Discovery HD, The History Channel HD and Sports HD. HD5 is offered to all StarHub TV customers at no extra cost while Sports HD is made available free to Sports Group customers. The other three channels are packaged together under the Education HD group.

SOUTH KOREA

KT TO OFFER NATIONAL TV CHANNELS ON IPTV

KT has reached agreements with KBS and SBS over the retransmission of their content for Web-based television. The company said it was also close to reaching an agreement with MBC, meaning that the programs of all three terrestrial broadcasters will be available on Mega TV, the company's IPTV brand. Other IPTV operators, SK Broadband and LG Dacom, are also in talks with the television networks for similar arrangements.

SK BROADBAND SELECTS TANDBERG FOR IPTV

SK Broadband is deploying a Tandberg Television IPTV head end, which includes HD and SD MPEG-4 AVC encoding. This solution will enable SK Broadband to launch linear broadcast television services in 2009, following the recent granting of regulatory approval for Korean IPTV providers to introduce broadcast services to complement existing VOD content. SK Broadband intends to introduce 30 SD and 10 HD channels initially.

TAIWAN

CHUNGWA TELECOM ENDS Q3 WITH 591,000 SUBSCRIBERS

Chunghwa Telecom reached 591,000 subscribers for its 'Multimedia On Demand' (MOD) IPTV service at the end of the third quarter of this year, of which 82,000 were new subscriptions added during the period, representing a 65.2% increase year-on-year. The operator had a total of 4.32 million broadband subscribers as of the end of last September, including ADSL and fibre-to-the-building (FTB) subscribers, an increase of 2.4% from the same time last year.

UNITED ARAB EMIRATES

AL ROSTAMANI PARTNERS WITH NAGRAVISION ON IPTV PLATFORM

Al Rostamani Communications has partnered with Nagravision to offer telecoms operators in the Middle East a complete end-to-end IPTV/Video on Demand platform. The Nagravision platform provides access control, rights management, EPG and content protection, while Al Rostamani Communications will provide the system integration services to assist telecoms operators to deliver their digital TV services, including HD content and on-demand programming, to any of the three screens of TV, PC and mobile device.

DU SURPASSES 50,000 IPTV SUBSCRIBER MARK

du has passed 50,000 subscribers for its IPTV service, a multilingual offering offering both local and international channels, secured by content protection technology from UK firm Latens. du selected Latens IPCAS, a software-based CAS for IPTV, replacing traditional smart cards with Secure Software Modules and removing the cost of additional hardware while decreasing time to launch.

AUSTRALIA & PACIFIC

NEW ZEALAND

FREEVIEW LAUNCHES HD BOX

The free-to-air equivalent of Sky's Television's MySky HDi set-top box has gone on sale in New Zealand, allowing Freeview viewers record simultaneous programmes and pause and rewind "live" television at the touch of a button. The boxes are selling for around \$1000, but prices are likely to fall relatively quickly. The box can store 80 hours of high definition TV programmes or 240 hours of SD programmes, and double as a digital receiver. Sky TV announced in November that 31,000 of its subscribers were renting its MySky HDi personal video recorders.

AFRICA

ARIANESPACE TO LAUNCH RASCOM SATELLITE IN 2010

Arianespace and Thales Alenia Space have signed a launch service and solutions contract for the pan-African communications satellite, Rascom-QAF 1R which is scheduled for launch into geostationary transfer orbit in 2010. It will be launched by an Ariane 5 or Soyuz rocket from Europe's Spaceport in French Guiana. Rascom-QAF 1R will provide telecommunication services in rural areas of Africa over a period of 15 years, along with domestic and international connections, direct TV broadcast services and internet access. It will be equipped with 12 Ku-band transponders and eight C-band transponders. Replacing Rascom-QAF 1, it will be positioned at 2.85 degrees east.

NIGERIA

TECHNICAL PROBLEMS SHUT DOWN NIGERIAN SATELLITE

A Nigerian satellite - which was launched to provide phone, broadband Internet and broadcasting services to rural Africa - was switched off in December due to technical problems. The US\$ 257 million Chinese-built satellite was launched into space from China in May 2007. It was expected to boost Nigeria's communications revolution and further the drive to make Internet technology accessible to the remote rural villages of the continent.

SOUTH AFRICA

SECUREMEDIA SELECTED FOR IPTV CONTENT PROTECTION

Goal Technology Solutions, based in Johannesburg, is to launch a triple-play service including IPTV across its GoalNet Network, secured by SecureMedia's Encryptonite ONE CA/DRM system. Goal Technology Solutions operates a fibre-to-the-kiosk (FTTK) and Powerline Communication access network for the delivery of its triple-play service, which it is reportedly planning on expanding to other major population centres in South Africa and neighbouring territories.

WORLD

ATIS RELEASES NEW IPTV STANDARD

The Alliance for Telecommunications Industry Solutions (ATIS) has released a new standard created by the ATIS IPTV Interoperability Forum (IIF) specifying the initial set of activities that prepare devices in the consumer domain to receive and consume IPTV services. The new Network Attachment and Initialization of Devices and Client Discovery of IPTV Services (AIS-0800017) standard is described by ATIS as a foundation specification addressing fundamentals such as the initialisation

and attachment phases for the Delivery (home) Network Gateway (DNG) and the IPTV Terminal Function (ITF), which includes the set-top box. Specifically, the new release covers network attachment, service provider discovery, service provider attachment and services discovery procedures.

INTELSAT RETIRES MARISAT-F2 SATELLITE

After 32 years of serving ships at sea and scientists at the South Pole, an aging communications satellite owned by Intelsat has been retired. The Marisat-F2 satellite, manufactured by Hughes Aircraft and launched in 1976, had only a five-year design life, yet until the end, the communications payload continued operating within its original specifications, Intelsat engineers said. Once dubbed "The Little Satellite That Could," Marisat-F2 is believed to have been the oldest commercial communications satellite still actively operating in space. The final assignment of Marisat-F2 had been to provide Internet service to research scientists stationed at the Amundsen-Scott South Pole Station.

MTVNHD SET FOR GLOBAL ROLL OUT

MTV Networks (MTVN) is set to roll out its high-definition channel MTVNHD on the UK's Sky platform and Israel's Hot, and across Latin America. MTVNHD will be available in the UK, Israel, Argentina, Chile, Colombia, Venezuela, Peru, Ecuador, the Caribbean Islands and Uruguay by the end of 2008.

GLOBAL IPTV SUBSCRIBERS TO REACH 89.6 MILLION IN 2012

The number of global IPTV subscribers will hit 89.6 million in 2012, up from 20.4 million this year, according to Multimedia Research Group's latest IPTV Global Forecast. By region, Europe is expected to be ahead of Asia in 2012, with a 41.5 per cent share of the global IPTV market, followed by Asia with 35.8 per cent. North America will have just a 17 per cent share of total worldwide subscribers. It will, however, lead the market in terms of gross service revenues, raking in about US\$ 13 billion, thanks to a higher ARPU.

MORE THAN 1500 NEW TRANSPONDER LEASES IN NEXT TEN YEARS

NSR's latest multi-client market research report, the "Global Assessment of Satellite Demand, 5th Edition," projects that the commercial satellite transponder leasing market should emerge relatively unscathed from the current global economic crisis. Between 2007 and 2017, NSR forecasts that global demand for commercial C- and Ku-band transponders will increase by more than 1,500 36 MHz transponder equivalents, and revenues will grow at the average annual rate of 4.5%. NSR anticipates that the majority of transponder demand growth in the coming ten years will be generated by various video services. In fact, 83% of the newly leased transponders will be for video distribution, DTH and video contribution & occasional use television services. On the revenues side of the picture, NSR estimated that the industry generated US\$ 8.33 billion in 2007 from commercial C- and Ku-band capacity leasing, and this should grow to US\$ 12.90 billion in 2017.

BNS LAUNCHES HD VOD VIA IPTV

BNS has launched an advanced in-room entertainment, room control and A/V solution for hotels and multi dwelling unit (MDU) developers looking to meet their customers' expectations for HD content delivered to their room. Part of the offering includes state-of-the-art room automation and A/V facility design and installation that are based on IP delivery. Connected via an IP network, the system is centrally programmed and controlled via an easy to operate management software. It is easy to operate and integrates seamlessly with existing Property Management Systems (PMS).



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Exhibition Preview

● **3 - 5 March 2009: CABSAT 2009**

Middle East's Electronic Media & Satellite Communications
Dubai World Trade Center, UAE
www.cabsat.com



● **18 - 20 March 2009: Convergence India 2009**

17th International Exhibition & Conference
Pragati Maidan, New Delhi, India
www.convergenceindia.org



● **21 - 23 March: CCBN 2009**

The 17th China Content Broadcasting Network Exhibition
China International Exhibition Center, Beijing, China
www.ccbn.tv



● **25 - 27 March 2009: Satellite 2009**

Exhibition for Satellite Enabled Communication
Walter E. Washington Convention Center, Washington, USA
www.satellite2009.com



● **25 - 27 May 2009: MECOM 2009**

Middle East Communications Exhibition, Forum, TV
Abu Dhabi National Exhibition Centre, Abu Dhabi, UAE
www.mecomexpo.com



● **26 - 28 May 2009: ANGACABLE 2009**

Tradefair for Cable, Broadband and Satellite
Koelnmesse, Cologne, Germany
www.angacable.com



● **16 - 19 June 2009: CommunicAsia 2009**

20th International Communications and Information
Technology Exhibition & Conference
Singapore Expo, 1 Expo Drive, Singapore 486150
www.communicasia.com



● **26 - 28 August 2009: SET 2009**

18th Broadcast & Cable International Fair
Centro de Exposições, Rod. dos Imigrantes
04329-900 São Paulo (SP), Brasil
www.broadcastcable.com.br



● **6 - 11 October 2009: CeBIT Eurasia**

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E5 Karayolu, Gürpınar Kavşağı, 34522 Büyükçekmece
İstanbul, Turkey

TELE-satellite Deadlines

Editorial Deadlines, Magazine Publishing Dates

<i>Number</i>	<i>Issue</i>	<i>Deadline</i>	<i>Hardcopies</i>	<i>Available Online</i>
#210	04/2009	6 February 2009	13 March 2009	27 March 2009
#211	06/2009	3 April 2009	15 May 2009	29 May 2009
#212	08/2009	5 June 2009	17 July 2009	31 July 2009
#213	12/2009	2 October 2009	13 November 2009	27 November 2009
#214	02/2010	4 December 2009	15 January 2010	29 January 2010

SatcoDX Global Satellite Chart 02/2009

Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate
11513 V ITV	29950	11536 H Eurosport 2	30000	11534 V EUROSPORT	27500	12070 H PREMIERE START	27500	12405 V DELUXE MUSIC	27500	12402 V L'ÉQUIPE TV	27500
11513 V Pro Tv Int	29950	11536 H Eurosport 1	30000	11534 V ELLES TV	27500	12070 H CRIME	27500	12405 V DELUXE MUSIC	27500	12402 V NATIONAL GEO	27500
11513 V Trinit	29950	11536 H G SPORT ONE	30000	11534 V LCI	27500	12070 H RLT PASSION	27500	12405 V DELUXE MUSIC	27500	12402 V DMAX	27500
11513 V Minisat	29950	11536 H Hotshot	30000	11534 V PLANETE	27500	12070 H P-BOER70ER	27500	12405 V DELUXE MUSIC	27500	12402 V PLANETE NL/OMIT	27500
11513 V Radio K	29950	11536 H Infosport	30000	11534 V PLANETE JUNIORS	27500	12070 H P-BOER90ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11513 V RF	29950	11536 H M6 Music Hits	30000	11534 V PLANETE TV	27500	12070 H P-BOER100ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11513 V Vocea Evangheliei	29950	11536 H M6 Music Black	30000	11534 V TUI	27500	12070 H P-BOER110ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V B92	30000	11536 H M6 Music Hits	30000	11534 V TMC	27500	12070 H P-BOER120ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V Cinemania	30000	11536 H M6 Music Hits	30000	11534 V VOYAGE	27500	12070 H P-BOER130ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V Doq	30000	11536 H M6 Music Hits	30000	11534 V MTV ENTERTAINMENT	27500	12070 H P-BOER140ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V Enter	30000	11536 H M6 Music Hits	30000	11534 V MTV Euro	27500	12070 H P-BOER150ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V Film +	30000	11536 H M6 Music Hits	30000	11534 V TPS STAR	27500	12070 H P-BOER160ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V Happy/Kosava	30000	11536 H M6 Music Hits	30000	11534 V MTV IDOL	27500	12070 H P-BOER170ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V HBO Adria	30000	11536 H M6 Music Hits	30000	11534 V MTV MUSIC	27500	12070 H P-BOER180ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V RTS1	30000	11536 H M6 Music Hits	30000	11534 V MTV MUSIC HITS	27500	12070 H P-BOER190ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V RTS2	30000	11536 H M6 Music Hits	30000	11534 V MTV PULSE	27500	12070 H P-BOER200ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V SOS	30000	11536 H M6 Music Hits	30000	11534 V NICK PREMIUM (P)	27500	12070 H P-BOER210ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V Sport Klub	30000	11536 H M6 Music Hits	30000	11534 V COMEDY CENTRAL Ge	27500	12070 H P-BOER220ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V Studio 5	30000	11536 H M6 Music Hits	30000	11534 V MTV Germany	27500	12070 H P-BOER230ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11554 V Super TV	30000	11536 H M6 Music Hits	30000	11534 V NICK Germany	27500	12070 H P-BOER240ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
11556 V Ultra TV	30000	11536 H M6 Music Hits	30000	11534 V VIVA Germany	27500	12070 H P-BOER250ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12530 V Radio B92	30000	11536 H M6 Music Hits	30000	11534 V Cool	27500	12070 H P-BOER260ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12530 V MEOLO TV	2156	11536 H M6 Music Hits	30000	11534 H Duna TV	27500	12070 H P-BOER270ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12530 V Top Music	2156	11536 H M6 Music Hits	30000	11534 H MDR Thüringen	27500	12070 H P-BOER280ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12530 V BN Rsrpska	4340	11536 H M6 Music Hits	30000	11534 H NDR FS HH	27500	12070 H P-BOER290ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12530 V DM SAT	2156	11536 H M6 Music Hits	30000	11534 H NDR FS MV	27500	12070 H P-BOER300ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12530 V first_service	2934	11536 H M6 Music Hits	30000	11534 H NDR FS NW	27500	12070 H P-BOER310ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12600 V ATLAS	6771	11536 H M6 Music Hits	30000	11534 H NDR FS SH	27500	12070 H P-BOER320ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12600 V RTV MONTENEGRO	6771	11536 H M6 Music Hits	30000	11534 H NDR FS TH	27500	12070 H P-BOER330ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12600 V RTV ATLAS	6771	11536 H M6 Music Hits	30000	11534 H NDR FS TT	27500	12070 H P-BOER340ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12600 V Radio Montenegro	6771	11536 H M6 Music Hits	30000	11534 H NDR FS UU	27500	12070 H P-BOER350ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12648 V BH-Radio1	5200	11536 H M6 Music Hits	30000	11534 H NDR FS VV	27500	12070 H P-BOER360ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 V 44-SNA TV promo	30000	11536 H M6 Music Hits	30000	11534 H NDR FS WW	27500	12070 H P-BOER370ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 V 77-AUDIO UNIC	15000	11536 H M6 Music Hits	30000	11534 H NDR FS XX	27500	12070 H P-BOER380ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 H CH 10 - UNIRE BLU	15000	11536 H M6 Music Hits	30000	11534 H NDR FS YY	27500	12070 H P-BOER390ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 H CH 20 - U VERDE S	15000	11536 H M6 Music Hits	30000	11534 H NDR FS ZZ	27500	12070 H P-BOER400ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 H CH 4 - SNA TV	15000	11536 H M6 Music Hits	30000	11534 H NDR FS AA	27500	12070 H P-BOER410ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 H CH 6 - U GRIGIO S	15000	11536 H M6 Music Hits	30000	11534 H NDR FS BB	27500	12070 H P-BOER420ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 H CH 7 - SPORTIVE S	15000	11536 H M6 Music Hits	30000	11534 H NDR FS CC	27500	12070 H P-BOER430ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 H UNIRE 1 - GRIGIO	15000	11536 H M6 Music Hits	30000	11534 H NDR FS DD	27500	12070 H P-BOER440ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 H UNIRE 2 - GRIGIO	15000	11536 H M6 Music Hits	30000	11534 H NDR FS EE	27500	12070 H P-BOER450ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12650 H CH 3 - CANALE TES	15000	11536 H M6 Music Hits	30000	11534 H NDR FS FF	27500	12070 H P-BOER460ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Kanal A	30000	11536 H M6 Music Hits	30000	11534 H NDR FS GG	27500	12070 H P-BOER470ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V POP TV	30000	11536 H M6 Music Hits	30000	11534 H NDR FS HH	27500	12070 H P-BOER480ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V SportKlub Slovenija	30000	11536 H M6 Music Hits	30000	11534 H NDR FS II	27500	12070 H P-BOER490ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V TV Pika	30000	11536 H M6 Music Hits	30000	11534 H NDR FS JJ	27500	12070 H P-BOER500ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V TV Slovenia	30000	11536 H M6 Music Hits	30000	11534 H NDR FS KK	27500	12070 H P-BOER510ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V ALFA TV	30000	11536 H M6 Music Hits	30000	11534 H NDR FS LL	27500	12070 H P-BOER520ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V ART Channel	30000	11536 H M6 Music Hits	30000	11534 H NDR FS MM	27500	12070 H P-BOER530ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V ASTRO TV	30000	11536 H M6 Music Hits	30000	11534 H NDR FS NN	27500	12070 H P-BOER540ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Duga TV	30000	11536 H M6 Music Hits	30000	11534 H NDR FS OO	27500	12070 H P-BOER550ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Estate TV & TVI	30000	11536 H M6 Music Hits	30000	11534 H NDR FS PP	27500	12070 H P-BOER560ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Hiphop TV	30000	11536 H M6 Music Hits	30000	11534 H NDR FS QQ	27500	12070 H P-BOER570ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V InfoTV	30000	11536 H M6 Music Hits	30000	11534 H NDR FS RR	27500	12070 H P-BOER580ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Radio SvetPlus	30000	11536 H M6 Music Hits	30000	11534 H NDR FS SS	27500	12070 H P-BOER590ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V StatističVestestest	30000	11536 H M6 Music Hits	30000	11534 H NDR FS TT	27500	12070 H P-BOER600ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Svet Plus	30000	11536 H M6 Music Hits	30000	11534 H NDR FS UU	27500	12070 H P-BOER610ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Test	30000	11536 H M6 Music Hits	30000	11534 H NDR FS VV	27500	12070 H P-BOER620ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V TV 24 SAT	30000	11536 H M6 Music Hits	30000	11534 H NDR FS WW	27500	12070 H P-BOER630ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V TV Jasmin	30000	11536 H M6 Music Hits	30000	11534 H NDR FS XX	27500	12070 H P-BOER640ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V GRAND	30000	11536 H M6 Music Hits	30000	11534 H NDR FS YY	27500	12070 H P-BOER650ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Kriko i Romengo	30000	11536 H M6 Music Hits	30000	11534 H NDR FS ZZ	27500	12070 H P-BOER660ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V KISS DOINA WLASKI	30000	11536 H M6 Music Hits	30000	11534 H NDR FS AA	27500	12070 H P-BOER670ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V KISS RADIO - MINH	30000	11536 H M6 Music Hits	30000	11534 H NDR FS BB	27500	12070 H P-BOER680ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V KISS ROK RADIO -	30000	11536 H M6 Music Hits	30000	11534 H NDR FS CC	27500	12070 H P-BOER690ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V LUKA NAKA	30000	11536 H M6 Music Hits	30000	11534 H NDR FS DD	27500	12070 H P-BOER700ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V LUBJICA-KAMENJE	30000	11536 H M6 Music Hits	30000	11534 H NDR FS EE	27500	12070 H P-BOER710ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V M6 MITIC BILJANA	30000	11536 H M6 Music Hits	30000	11534 H NDR FS FF	27500	12070 H P-BOER720ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V MKS RADIO	30000	11536 H M6 Music Hits	30000	11534 H NDR FS GG	27500	12070 H P-BOER730ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V Miroslav Radio	30000	11536 H M6 Music Hits	30000	11534 H NDR FS HH	27500	12070 H P-BOER740ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V ORV Valentino BH	30000	11536 H M6 Music Hits	30000	11534 H NDR FS II	27500	12070 H P-BOER750ER	27500	12405 V DELUXE MUSIC	27500	12402 V REAL TIME	27500
12726 V PLANET MUSIC	30000	11536 H M6 Music Hits	30000	11534 H NDR FS JJ							

Freq Pol Channel Name GHz	Symbol rate	Freq Pol Channel Name GHz	Symbol rate	Freq Pol Channel Name GHz	Symbol rate	Freq Pol Channel Name GHz	Symbol rate	Freq Pol Channel Name GHz	Symbol rate		
● 10.788 V CHAMPIONS 4	22000	● 11.656 V TNC INT	22000	● 11.555 H DSF	28500	12.526 V CT 2	27500	● 11.055 H LIFE FM	27500	● 11.823 V Futura News	27500
● 10.788 V CHAMPIONS 3	22000	● 11.656 V RAD. ROMANIA	22000	● 11.656 V RAD. ROMANIA	22000	● 12.526 V CT 4	27500	● 11.055 H LOVE SONGS	27500	● 11.823 V Future USA	27500
● 10.788 V TAQUILLA 10	22000	● 11.555 H Kabel eins	22000	● 11.555 H Kabel eins	22000	● 12.526 V Lada 11876 MHz	27500	● 11.055 H MONAWAT	27500	● 20.0 East	27500
● 10.788 V AXN	22000	● 11.555 H N24	28500	● 11.555 H N24	28500	● 12.526 V Prima TV	27500	● 11.055 H MONTE CARLO	27500	● 11.823 V LBCI	27500
● 10.818 V C+ ACCION...39	22000	● 12.699 V FR3 BORDEAUX	22000	● 11.555 H Oraai TV (eng)	28500	● 12.526 V CT 24	27500	● 11.055 H MONTV	27500	● 11.823 V TV Academy	27500
● 10.818 V C+ COMEDIA	22000	● 12.699 V FR3 TOULOUSE	22000	● 11.555 H ProSachsen	28500	● 12.526 V Cro Radio	27500	● 11.055 H POP	27500	● 11.823 V TeleLiban	27500
● 10.818 V CANAL COCINA	22000	● 12.699 V FR3 LIMOGES	22000	● 11.555 H Sat. 1	28500	● 12.526 V BBC CT	27500	● 11.055 H RAB	27500	● 11.823 V test 5	27500
● 10.818 V CARACOL TV	22000	● 12.699 V FR3 LYON	22000	● 11.555 H Tele 5	28500	● 12.526 V Cro 1-Radiozurnal	27500	● 11.055 H ROCK	27500	● 11.823 V Thane Express	27500
● 10.818 V DUNE ESPANOL	22000	● 12.699 V FR3 MARSEILLE	22000	● 11.555 H HRTV	28500	● 12.526 V Cro 2+CR/7	27500	● 11.055 H SUPER GOLD	27500	● 11.823 V TV5 Monde Hour	27500
● 10.818 V EQUANITY	22000	● 12.699 V FR3 BORDEAUX	22000	● 11.555 H HRTV P+	28500	● 12.526 V Cro 3-Itavia	27500	● 11.055 H HUPER RADIO	27500	● 11.823 V Radio Orient	27500
● 10.818 V FOX	22000	● 12.699 V FR3 ROUEN	22000	● 11.555 H HRTV P+	28500	● 12.526 V Cro 4-Dur	27500	● 11.075 H AL RYADIAVY	27500	● 11.823 V HBC Int	27500
● 10.818 V SCI FI	22000	● 12.699 V FR3 RENNES	22000	● 11.555 H HRTV P+	28500	● 12.526 V Cro Leonardo	27500	● 11.075 H AMERICA PLUS	27500	● 11.823 V Al-Arabiya	27500
● 10.818 V TV 1	22000	● 12.699 V FR3 TOULOUSE	22000	● 11.555 H HRTV P+	28500	● 12.526 V Cro Radio	27500	● 11.075 H C-Span	27500	● 11.823 V HBC Action	27500
● 10.818 V TV 2	22000	● 12.699 V FR3 NANTES	22000	● 11.555 H DW 1	28500	● 12.526 V Cro Radio Wave	27500	● 11.075 H CNBC-US	27500	● 11.823 V HBC Maxia	27500
● 10.832 H ORF 1 HD	22000	● 12.729 V FR3 NIC	22000	● 11.555 H DW 4	28500	● 12.526 V Cro Region	27500	● 11.075 H MUSIC NOW	27500	● 11.823 V HBC PERSIA	27500
● 10.832 H Bibel TV	22000	● 11.171 V BLOOMBERG	22000	● 11.555 H DW 5	28500	● 12.526 V Progias	27500	● 11.075 H H Ptest	27500	● 11.823 V HBC1	27500
● 10.832 H RTBF SAT	22000	● 11.171 V BABYFIRST	22000	● 11.555 H HRTV P+	28500	● 12.526 V BBC World (eng)	27500	● 11.075 V SUPER COMEDY	27500	● 11.823 V HBC2	27500
● 10.832 H CINEMAX	22000	● 11.171 V CANAL OISEA	22000	● 11.555 H HRTV P+	28500	● 11.075 V Al Hayat Series	27500	● 11.075 V Al Khajal	27500	● 11.823 V HBC3	27500
● 10.832 H Radio Horeb	22000	● 11.171 V COSMOPOLITAN	22000	● 11.555 H Kulturadio	28500	● 11.075 V Al Lubnan	27500	● 11.075 V Al Hubbah TV	27500	● 11.823 V HBC4	27500
● 10.832 H Radio neue Hoffnung	22000	● 11.171 V HISTORIA	22000	● 11.555 H Kulturadio	28500	● 11.075 V Family One	27500	● 11.075 V Family One	27500	● 11.823 V HBC5	27500
● 10.832 H RDC	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H Kulturadio	28500	● 11.075 V MARCHABA	27500	● 11.075 V MARCHABA	27500	● 11.823 V HBC6	27500
● 10.832 H RTBF International	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V TALEMIAH	27500	● 11.075 V TALEMIAH	27500	● 11.823 V HBC7	27500
● 10.847 H ARD FUTURE	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC8	27500
● 10.847 H COMEDY CENTRAL	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC9	27500
● 10.847 H COMPRA SMS	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC10	27500
● 10.847 H FERIA PILAR	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC11	27500
● 10.847 H GIGA DIGITAL+	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC12	27500
● 10.847 H IBERROLA	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC13	27500
● 10.847 H LIGA 07/08	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC14	27500
● 10.847 H MUSICA DIGITAL	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC15	27500
● 10.847 H PLAY TV	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC16	27500
● 10.847 H TV 1	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC17	27500
● 10.847 H RAD. LATINAS	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC18	27500
● 10.847 H RADIOS	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC19	27500
● 10.847 H TAQUILLA	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC20	27500
● 10.847 H TEST_CSD1	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC21	27500
● 10.847 H TEST_CSD2	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC22	27500
● 10.847 H TEST_CSD3	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC23	27500
● 10.847 H TEST_CSD4	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC24	27500
● 10.847 H TEST_CSD5	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC25	27500
● 10.847 H (Empty)	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC26	27500
● 10.871 H RADIO5 ESP	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC27	27500
● 10.882 H TVPI	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC28	27500
● 10.882 H INT6	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC29	27500
● 10.882 H TV Sport	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC30	27500
● 10.882 H TVP	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC31	27500
● 10.882 H TOP INFO	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC32	27500
● 10.877 V ALPHALRADIO	28780	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC33	27500
● 10.847 V SALAHADIN TV	2170	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC34	27500
● 11.527 V AL TV	28500	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC35	27500
● 11.596 V CIPRO PRO	6511	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC36	27500
● 12.637 V AL HD	2520	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC37	27500
● 10.877 V BABYFIRST	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC38	27500
● 10.877 V C+ DEPORTES	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC39	27500
● 10.877 V C+ FUTBOL	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC40	27500
● 10.877 V CALLE 13	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC41	27500
● 10.877 V CANAL...30	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC42	27500
● 10.877 V FOX NEWS	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC43	27500
● 10.877 V GOL	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC44	27500
● 10.877 V NET GEOGRAPH	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC45	27500
● 10.877 V PLAYBOY TV	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC46	27500
● 10.877 V CHAMPIONS 3	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC47	27500
● 10.877 V AXN	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC48	27500
● 10.921 H bebe tv	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC49	27500
● 10.921 H Hubs Hustler	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC50	27500
● 10.921 H Boomerang	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC51	27500
● 10.921 H Cartoon Network/CTM	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC52	27500
● 10.921 H MGM	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC53	27500
● 10.921 H STVI	22000	● 11.171 V PEOPLEARTS	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC54	27500
● 10.921 H TA3	22000	● 11.171 V VIAJAR	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC55	27500
● 10.921 H Viastat 3	22000	● 11.171 V HISTORIA	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC56	27500
● 10.921 H Viastat Explorer	22000	● 11.171 V METEO	22000	● 11.555 H MDR FIDRAGO	28500	● 11.075 V WATANI	27500	● 11.075 V WATANI	27500	● 11.823 V HBC57	27500
● 10.921 H Viastat History</											

SatcoDX Global Satellite Chart 02/2009

Freq Pol Channel Name	Symbol rate GHz
12.130 H ALAM TV 27500	
12.130 H ARIRANG 27500	
12.130 H ASHOROQ TV 27500	
12.130 H Decision Makers TV 27500	
12.130 H Dubai One 27500	
12.130 H Dubai Racing 27500	
12.130 H Dubai Sport 27500	
12.130 H Dubai Sports 2 27500	
12.130 H Dubai TV 27500	
12.130 H INFINITY Z 27500	
12.130 H IQRA 27500	
12.130 H Jawa 27500	
12.130 H Marasil 27500	
12.130 H Niat 27500	
12.130 H Sama Dubai 27500	
12.130 H SHARQA TV 27500	
12.130 H Al Mirbad Radio 27500	
12.130 H Al Arabiya 27500	
12.130 H ALHAGADIA 27500	
12.140 H Al Hayat 27500	
12.140 H AlRwaad 27500	
12.140 H Amwaj 27500	
12.140 H Al Arabiya 27500	
12.140 H Bedayah Neesaya TV 27500	
12.140 H Dafeel 27500	
12.140 H FUMoon Plus 27500	
12.140 H Naha TV 27500	
12.140 H Hayatouna TV 27500	
12.140 H Safa TV 27500	
12.140 H Whtany 27500	
12.160 H TV Arabiya 27500	
12.160 H Ghiras TV 27500	
12.160 H MTV ARABIA 27500	
12.160 H Nickelodeon 27500	
12.170 H MOOR DUBAI 27500	
12.180 H AL-EMAN 16200	
12.180 H SHEBA 16200	
12.180 H YAMANIA 16200	
12.180 H YEMEN 1 27500	
12.180 H YEMEN R1 16200	
12.180 H YEMEN R2 16200	
12.180 H YEMEN R3 16200	
12.180 H YEMEN R4 16200	
12.200 H Aslam Hawaa 27500	
12.200 H Al-Iraqi 27500	
12.200 H Al-majd 27500	
12.200 H Al-Madina Duran 27500	
12.200 H PEACE TV 27500	
12.200 H PSC 27500	
12.200 H Qatar TV 27500	
12.200 H RTD DUBOIT 27500	
12.200 H Sahara 27500	
12.200 H Shada 27500	
12.200 H Sudan TV 27500	
12.200 H TV Arabiya Duran 27500	
12.200 H Djibouti Radio 27500	
12.200 H PSC Radio 27500	
12.200 H Qatar Radio 27500	
12.200 H Radio Baghdad 27500	
12.200 H Sudan R1 27500	
12.200 H Sudan R2 27500	
12.200 H Tayba Radio 27500	
12.220 H Bahrain S5 27500	
12.220 H Bahrain Sport 27500	
12.220 H Bahrain TV 27500	
12.220 H Test 1 27500	
12.220 H Test 2 27500	
12.220 H Test 3 27500	
12.220 H Test 4 27500	
12.220 H Test 5 27500	
12.220 H Test 6 27500	
12.220 H Test 7 27500	
12.220 H Test 8 27500	
12.220 H Test 9 27500	
12.220 H Arab Classical Music 27500	
12.220 H Bahrain FM 27500	
12.220 H Bahrain Radio genera 27500	
12.220 H Holy Quran Channel 27500	
12.220 H News Channel 27500	
12.220 H Radio Bahrain 27500	
12.220 H Test 1 27500	
12.220 H Traditional Music 27500	
12.284 H Aamal 27500	
12.284 H AL-SANAIA 1 27500	
12.284 H DAV 27500	
12.284 H Entria 27500	
12.284 H Ethiopia 27500	
12.284 H Future USA 27500	
12.284 H Mauritania TV 27500	
12.284 H Montada 27500	
12.284 H RAMATTAN MOBASHER 27500	
12.284 H Rawas TV 27500	
12.284 H Roayah 27500	
12.284 H Scope TV 27500	
12.284 H Syrian Education 27500	
12.284 H EMARAT FM 27500	
12.284 H Entria R1 27500	
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12.284 H Entria R340 27500	

SatcoDX Global Satellite Chart 02/2009

Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate
11.892 H NTV	12800	11.899 V KIBIRI BENC TV	2960	11.980 V Z TV	4150	11.766 H TURKAST TEST 7	27500	11.843 H ESPN CLASSIC	27500	11.973 V HALY	27500
11.892 H NTV Sport	12800	11.899 V MNC TURK	2960	11.980 V ZAZANTEP OLAY	22000	11.766 H UNIA	27500	11.843 H SHOWMOVIES	27500	11.973 V Kanal Avrupa	27500
11.892 H NTV Radyo	12800	11.899 V CYS FREQ	2960	11.103 V KANAL 55	2175	11.766 H Abu Dhabi Radio	27500	11.843 H TRAVEL & LIVING	27500	11.973 V BERAT	27500
11.892 H Radyo Eksen	12800	11.899 V FIRSIT FM	2960	11.102 V D COÇUK	30000	11.766 H ALFORAT	27500	11.843 H WORLD	27500	11.973 V HALY	27500
11.905 H KANAL D	6666	11.903 V KONTY	2200	11.102 V D COÇUK	30000	11.766 H POLIS RAYODU	27500	11.843 H CNN INTERNATIONAL	27500	11.973 V Kanal Avrupa	27500
11.905 H SMART HITS	6666	11.906 V ASIO	26000	11.102 V D COÇUK	30000	11.766 H POLIS RAYODU	27500	11.843 H D SHOPPING	27500	11.973 V TGRTR FM	27500
11.905 H SMART JAZZ	6666	11.906 V DEM	26000	11.102 V FX	30000	11.777 H KANAL 7	4800	11.843 H FASHION TV	27500	11.973 V TGRTR FM	27500
11.905 H SMART OLDSIES	6666	11.906 V DugumTV	26000	11.102 V L0CA1	30000	11.777 H RAYO 7	4800	11.843 H KANAL D	27500	11.973 V (Empty Name)	27500
11.905 H SMART ROCK	6666	11.906 V Genc TV	26000	11.102 V L0CA2	30000	11.778 V AL SHARJAH	27500	11.843 H TV 3	27500	11.973 V (Empty Name)	27500
11.905 H SMART SLOW	6666	11.906 V GERCEK TV	26000	11.102 V L0CA3	30000	11.778 V CNC-ARABIA	27500	11.843 H KANAL 5	27500	11.973 H TURKAST TEST 1	27500
11.905 H IRADYO PORTAL	6666	11.906 V HAYAT TV	26000	11.102 V L0CA4	30000	11.778 V Dubai One	27500	11.843 H TV 5	27500	11.973 H TURKAST TEST 2	27500
11.905 H RAYO D	6666	11.906 V KANAL 12	26000	11.102 V MOVIES 24	30000	11.778 V Dubai Racing Channel	27500	11.844 V Clup TV	4444	11.973 H TURKAST TEST 3	27500
11.905 H ANKA TV	2328	11.906 V KANAL 12	26000	11.102 V MOVIES 24 EROTICA	30000	11.778 V Dubai Sports	27500	11.844 V Tarafar TV	4444	11.973 H TURKAST TEST 4	27500
11.905 H EUROSPORT HD	17900	11.906 V M-ON	26000	11.102 V MOVIESMART	30000	11.778 V Dubai TV	27500	11.844 V AKILLI TV	4444	11.973 H TURKAST TEST 5	27500
11.905 H HDTV SMART	17900	11.906 V Manolya TV	26000	11.102 V MOVIESMART	30000	11.778 V MUSICPLUS	27500	11.844 V Smart	4444	11.973 H TURKAST TEST 6	27500
11.905 H DISCOVERY HD	17900	11.906 V MAVI KARADENIZ	26000	11.102 V YESILCAM XXX	30000	11.778 V NOJOOM 1	27500	11.844 V Tarafar TV	4444	11.973 H TURKAST TEST 7	27500
11.905 H KANAL D HD	2328	11.906 V Mavi Karadeniz	26000	11.102 V SMART PROM	30000	11.778 V Sams Dubai	27500	11.844 V AKILLI TV	4444	11.973 H TURKAST TEST 8	27500
11.905 H Nickelodeon	4000	11.906 V TURKISH SHOW	26000	11.102 V Z TV	27500	11.778 V Space Toon Arabic	27500	11.844 V Clup TV	4444	11.973 H TURKAST TEST 9	27500
11.905 H MTV TURKYE	4000	11.906 V TV 5 Int	26000	11.102 V SMART HITS	30000	11.778 V SMART JAZZ	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 10	27500
12.002 H atv	4800	11.906 V TURKISHOP	26000	11.102 V SMART JAZZ	30000	11.102 V SMART OLDSIES	30000	11.844 V AKILLI TV	4444	11.973 H TURKAST TEST 11	27500
12.008 H KANAL 1	4400	11.906 V Yotv	26000	11.102 V SMART OLDSIES	30000	11.102 V SMART ROCK	30000	11.844 V AKILLI TV	4444	11.973 H TURKAST TEST 12	27500
12.008 H Intercom	4400	11.906 V DEM RAYO	26000	11.102 V SMART SLOW	30000	11.102 V SMART SLOW	30000	11.844 V AKILLI TV	4444	11.973 H TURKAST TEST 13	27500
12.008 H MARMARA RAYO	4400	11.906 V KUFE FM	26000	11.104 V YESILCAM	2050	11.104 V YESILCAM	2050	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 14	27500
12.015 H TGRTR Haber	4800	11.906 V Metro FM	26000	11.106 V D FASHION	30000	11.106 V D FASHION	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 15	27500
12.015 H TGRTR Pazariama	4800	11.906 V KANAL INT	26000	11.106 V DA VINCI LEARNING	30000	11.106 V DA VINCI LEARNING	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 16	27500
12.028 H FOX	5380	12.028 H FOX	5380	11.106 V DA VINCI LEARNING	30000	11.106 V DA VINCI LEARNING	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 17	27500
12.028 H samanyolu tv	4557	12.028 H FOX	5380	11.106 V FANTASY	30000	11.106 V FANTASY	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 18	27500
12.028 H Bure FM	4557	12.028 H FOX	5380	11.106 V FX	30000	11.106 V FX	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 19	27500
12.028 H NTV Radyo	2328	12.028 H FOX	5380	11.106 V L0CA1	30000	11.106 V L0CA1	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 20	27500
12.028 H Shaber Radyo	4557	12.028 H FOX	5380	11.106 V L0CA2	30000	11.106 V L0CA2	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 21	27500
12.127 H Blnko TV	7400	12.127 H FOX	5380	11.106 V L0CA3	30000	11.106 V L0CA3	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 22	27500
12.127 H Denge TV	7400	12.127 H FOX	5380	11.106 V L0CA4	30000	11.106 V L0CA4	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 23	27500
12.127 H Ekin TV	7400	12.127 H FOX	5380	11.106 V MOVIES 24	30000	11.106 V MOVIES 24	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 24	27500
12.127 H Ekin TV	7400	12.127 H FOX	5380	11.106 V MOVIESMART	30000	11.106 V MOVIESMART	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 25	27500
12.127 H ILAN TV	7400	12.127 H FOX	5380	11.106 V SMART HITS	30000	11.106 V SMART HITS	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 26	27500
12.127 H IMAN TV	7400	12.127 H FOX	5380	11.106 V SMART JAZZ	30000	11.106 V SMART JAZZ	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 27	27500
12.127 H Piny	7400	12.127 H FOX	5380	11.106 V SMART OLDSIES	30000	11.106 V SMART OLDSIES	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 28	27500
12.127 H Kanal 6	7400	12.127 H FOX	5380	11.106 V SMART ROCK	30000	11.106 V SMART ROCK	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 29	27500
12.125 H ASTRO	3703	12.127 H FOX	5380	11.106 V SMART SLOW	30000	11.106 V SMART SLOW	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 30	27500
12.125 H FASIL	3703	12.127 H FOX	5380	11.106 V SMART SLOW	30000	11.106 V SMART SLOW	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 31	27500
12.125 H ALJAZEER	2222	12.127 H FOX	5380	11.106 V SMART SLOW	30000	11.106 V SMART SLOW	30000	11.844 V Tgrtr FM	3150	11.973 H TURKAST TEST 32	27500

Main table containing satellite frequency, channel name, symbol rate, and coverage information. Includes sub-sections for various satellite coverage areas like EURASIASAT 1, INTENSAT 904, and INTENSAT 906.

Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate
GHz		GHz		GHz		GHz		GHz		GHz	
12.534V RAJ DIGITAL	40730	3.675 R DUB-3HRD3	33483	4.000 H VESAT2	26120	3.940 V 791 STARCOM	28100	3.860 V 723 STAR Sports	27500	3.265 H Animax	20000
12.534V RAJ TV	40730	3.675 R DUB-3R MYK	33483	4.149 V BAR	11850	3.940 V STAR GOLD Int'l	28100	3.860 V 742 STAR Sports	27500	3.265 H BBC Knowledge	20000
12.534V SAHARA ONE	40730	3.675 R Kultur-2+Vest-FM	33483	4.149 V MACAU1	11850	3.940 V STAR NEWS	28100	3.860 V 755 ESPN	27500	3.265 H Celestial Movies	20000
12.534V SAMAY TV	40730	3.675 R TRKS_Kamchatka	33483	4.149 V MACAU2	11850	3.940 V STAR PLUS	28100	3.860 V 763 STAR Sports	27500	3.265 H Disc. Travel & Living	20000
12.534V STAR ONE	40730	3.675 R TRKS_MSK	33483	4.149 V MACAU3	11850	3.960 H Boomerang	27500	3.860 V 772 ESPN India	27500	3.265 H ESPN	20000
12.534V STAR PLUS	40730	3.675 R Radio Asia-FM	33483	4.149 V MACAU4	11850	3.960 H Boomerang SE Asia	27500	3.860 V 781 ESPN India	27500	3.265 H ESPN India	20000
12.534V ZEE GUJARATI	40730	3.675 R DFM Region	33483	4.149 V MACAUS	11850	3.960 H Cartoon Asia	27500	3.860 V ESPN Asia	27500	3.265 H HNC	20000
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2		3.960 H Cartoon Australia	27500	3.860 V ESPN Philippines	27500	3.265 H HNC World	20000
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	100.0 East		3.960 H Cartoon Philippines	27500	3.860 V ESPN Sports	27500	3.265 H HNC Universal Channel	20000
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.960 H Cartoon Taiwan	27500	3.860 V STAR Sports SEA	27500	3.265 H HNC [V]	20000
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.960 H NewsSource DNEW	27500	3.860 V 480 CUE	27500	3.265 H RCTI	20000
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		3.960 H TSN Australia	27500	ASIASAT3S		3.265 H BBC World Service	20000
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		3.980 V 511	28100	ASIASAT3S		3.265 H Radio Kis FM	20000
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		3.980 V 702 STAR PLUS	28100	ASIASAT3S		3.265 H Radio Net Woman	20000
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.980 V 704 STAR Movies	28100	ASIASAT3S		3.265 H RadioNet Mandiri	20000
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.980 V 707 STAR PLUS	28100	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		3.980 V 737 Adventure	28100	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		3.980 V 741 History/Adventure	28100	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		3.980 V 751 Star World India	28100	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.980 V 752 Channel [V] Int'l	28100	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.980 V 754 Star Plus Paki	28100	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		3.980 V 777 STAR One India	28100	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		3.980 V 700 Vijay India	28100	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		3.980 V 701 Adventure	28100	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.980 V Channel [V]	28100	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.980 V History/Adventure	28100	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		3.980 V STAR GOLD	28100	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		3.980 V STAR Movies	28100	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		3.980 V STAR One India	28100	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.980 V STAR PLUS	28100	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		3.980 V STAR World	28100	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.000 H 604 Channel [V] Int'l	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.000 H 715 Phx Info	26500	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.000 H 716 Star Chinese M	26500	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.000 H 731 Movies Int'l	26500	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.000 H 748 Star World Asia	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.000 H 749 Star World	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.000 H 751 Movies Int'l	26500	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.000 H 766 Channel [V] Int'l	26500	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.000 H 775 Movies Int'l	26500	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.000 H 776 Movies Int'l	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.000 H 777 Movies Int'l	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.000 H 778 King Kong Region	26500	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.000 H Channel [V] Int'l	26500	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.000 H Nat. Geo	26500	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.000 H STAR Movies Int'l	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.000 H STAR World	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.000 H Subtitle-Test	26500	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.000 H 726 Phx Info	26500	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.000 H 743 Phoenix Cinema	26500	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.000 H 745 King Kong	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.000 H 747 Channel [V] Chin	26500	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.020 V FIRANG	27250	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.020 V Sahara PHIL	27250	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.020 V Sahara One	27250	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.020 V Alami Sahara	27250	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.020 V Sahara BH	27250	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.020 V Sahara MUM	27250	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.020 V Sahara NAT	27250	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.020 V Sahara NCR	27250	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.020 V Sahara UP	27250	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.040 H ASTV TV 240	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.040 H Farda Radio 404	20400	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.040 H HBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/Download 8	20400	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/Download 9	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE JAGRAN	40730	3.675 R Radio Asia-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R DFM Region	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZEE TELUGU	40730	3.675 R HI-FM	33483	ASIASAT 2 100.5° East		4.040 H IBB VO/REFR/RAI	20400	ASIASAT3S			
12.534V ZOOM TV	40730	3.675 R MAXIMUM	33								

Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate		
12.355 V 04-FASHION TV	43000	12.643 H JS3	21096	12.421 H CHV	22500	12.733 V DMC	22500	12.728 V ABC FM NT	24450		
12.355 V 05-SUN TV	43000	12.643 H KBT	21096	12.421 H DSPT	22500	12.733 V FGA	22500	12.728 V ABC FM Q	24450		
12.355 V 06-MASTV	43000	12.643 H NBC	21096	12.421 H DTV	22500	12.733 V ERT	22500	12.728 V ABC FM SA	24450		
12.355 V 07-ATV	43000	12.643 H SHP	21096	12.421 H KAN7	22500	12.733 V Kurdast	22500	12.728 V ABC FM SE	24450		
12.355 V 08-ATV	43000	12.643 H VSC	21096	12.421 H MAZZ	22500	12.733 V Oman TV	22500	12.728 V ABC JJJ	24450		
12.355 V 09-TVBS	43000	12.643 H FOX Japan	21096	12.421 H M20	22500	12.733 V Russia Today	22500	12.728 V ABC KQ	24450		
12.355 V 10-TV XINGHE	43000	12.305 V Feed	5275	12.421 H CTV	22500	12.733 V TGN	22500	12.728 V ABC RN CT	24450		
12.355 V 11-TVBS	43000	12.597 V Radio	21096	12.421 H PACE	22500	12.733 V TVRI	22500	12.728 V ABC RN Q	24450		
12.355 V 12-TVBS	43000	12.628 V Test Card	21096	12.519 V MPT India	22500	12.733 V Suryan FM	22500	12.728 V ABC RR V	24450		
12.355 V 13-CTVNEWS	43000	12.718 V Dream FM 107	21096	12.519 V Star Gold	22500	12.733 V ABC RR Q	24450	12.728 V ABC RR N	24450		
12.355 V 14-UBNEWS	43000	12.718 V The Mabuhay Channel	21096	12.519 V Star One	22500	12.733 V ABC RR S	24450	12.728 V ABC RR SA	24450		
12.355 V 15-HALLMARK CHAN	43000	12.718 V The Mabuhay Channel 2	21096	12.519 V Star Plus	22500	12.733 V ABC RR T	24450	12.728 V ABC RR NT	24450		
12.355 V 16-ZHUJIANG	43000	12.688 V DAA-TV	3400	12.519 V Zee TV	22500	12.733 V ABC RR U	24450	12.728 V ABC RR V	24450		
12.355 V 17-CTVNEWS	43000	12.688 V DAA-TV 2	3400	12.519 V Al Hayat	22500	12.733 V ABC RR W	24450	12.728 V ABC RR X	24450		
12.355 V 18-OC	43000	12.688 V DAA-TV 3	3400	12.519 V Sun	22500	12.733 V ABC RR Y	24450	12.728 V ABC RR Z	24450		
12.355 V 19-CTV	43000	12.688 V DAA-TV 4	3400	12.519 V SMTV	22500	12.733 V ABC RR AA	24450	12.728 V ABC RR AB	24450		
12.355 V 20-MTV	43000	12.688 V DAA-TV 5	3400	12.546 V IAC	22500	12.733 V ABC RR AC	24450	12.728 V ABC RR AD	24450		
12.355 V 21-CTV HD	43000	12.688 V DAA-TV 6	3400	12.546 V IAC	22500	12.733 V ABC RR AE	24450	12.728 V ABC RR AF	24450		
12.355 V 22-LIVE TV	43000	12.688 V DAA-TV 7	3400	12.546 V IAC	22500	12.733 V ABC RR AG	24450	12.728 V ABC RR AH	24450		
12.355 V 23-CTV	43000	12.688 V DAA-TV 8	3400	12.546 V IAC	22500	12.733 V ABC RR AI	24450	12.728 V ABC RR AJ	24450		
12.355 V 24-CELESTIAL TV	43000	12.688 V DAA-TV 9	3400	12.546 V IAC	22500	12.733 V ABC RR AK	24450	12.728 V ABC RR AL	24450		
12.355 V 25-CTV Channel TVB3 3001	43000	12.688 V DAA-TV 10	3400	12.546 V IAC	22500	12.733 V ABC RR AM	24450	12.728 V ABC RR AN	24450		
C-Band: 12.5137-13.473				C-Band: 24.28-40				C-Band: 35-44			
13.81 East				MEASAT 2 148.0° East				15.0 East			
3.599 V 13 亞洲本港台	30000	3.645 H Test	1171	3.725 V GMTA Manila	13432	12.733 V DMC	22500	12.728 V ABC FM NT	24450		
3.599 V 15 PTS DIMCO 公視	30000	3.871 V Feeds	1851	3.725 V International 1	13432	12.733 V FGA	22500	12.728 V ABC FM Q	24450		
3.599 V 16 MCCA 電影台	30000	3.715 V FOX Japan	3000	3.725 V International 2	13432	12.733 V ERT	22500	12.728 V ABC FM SA	24450		
3.599 V 17 ETV-N 東森新聞台	30000	3.810 V Chat TV 1	4300	3.725 V International 3	13432	12.733 V Kurdast	22500	12.728 V ABC FM SE	24450		
3.599 V 18 ETV-Asia 東森亞洲台	30000	3.810 V ST Channel	4300	3.725 V International 4	13432	12.733 V Oman TV	22500	12.728 V ABC KQ	24450		
3.599 V 19 TVT WORLD 台灣國際台	30000	3.834 H Testing	2612	3.725 V International 5	13432	12.733 V Russia Today	22500	12.728 V ABC RN CT	24450		
3.599 V 20 JET 日本台	30000	3.834 H NBN	2612	3.725 V International 6	13432	12.733 V TGN	22500	12.728 V ABC RN Q	24450		
3.599 V 21 ETVyo 東森幼幼台灣國際	30000	3.837 V Channel 11	2930	3.725 V International 7	13432	12.733 V TVRI	22500	12.728 V ABC RR V	24450		
3.599 V 22 Test1	30000	3.854 H TCT World	3000	3.725 V International 8	13432	12.733 V Suryan FM	22500	12.728 V ABC RR W	24450		
3.599 V 23 Test2	30000	3.870 H ABC 5	3566	3.725 V International 9	13432	12.733 V ABC RR Q	24450	12.728 V ABC RR S	24450		
3.599 V 24 Test3	30000	3.951 V ABC-NON	2200	3.725 V International 10	13432	12.733 V ABC RR R	24450	12.728 V ABC RR T	24450		
3.599 V 25 Test4	30000	3.985 H RPN 9	5425	3.725 V International 11	13432	12.733 V ABC RR U	24450	12.728 V ABC RR V	24450		
3.599 V 14 T2UCHI 慈濟大愛	30000	3.892 H Channel 11	5425	3.725 V International 12	13432	12.733 V ABC RR W	24450	12.728 V ABC RR X	24450		
3.600 V 01 ATIS 華人商業電視台	30000	3.892 H Church Channel	5425	3.725 V International 13	13432	12.733 V ABC RR Y	24450	12.728 V ABC RR Z	24450		
3.600 V 02 CTV 中視	30000	3.892 H ABC-NON	2200	3.725 V International 14	13432	12.733 V ABC RR AA	24450	12.728 V ABC RR AB	24450		
3.600 V 03 CTV 華視	30000	3.985 H Kabayan TV	2000	3.725 V International 15	13432	12.733 V ABC RR AC	24450	12.728 V ABC RR AD	24450		
3.600 V 04 FTV 民視	30000	3.985 H apexcom1	2000	3.725 V International 16	13432	12.733 V ABC RR AE	24450	12.728 V ABC RR AF	24450		
3.600 V 05 FTV 民視新聞	30000	3.985 H apexcom2	2000	3.725 V International 17	13432	12.733 V ABC RR AG	24450	12.728 V ABC RR AH	24450		
3.600 V 06 Uplink 1	30000	3.985 H apexcom3	2000	3.725 V International 18	13432	12.733 V ABC RR AI	24450	12.728 V ABC RR AJ	24450		
3.600 V 07 Uplink 2	30000	3.989 H CH 1	2000	3.725 V International 19	13432	12.733 V ABC RR AK	24450	12.728 V ABC RR AL	24450		
3.600 V 08 Uplink 3	30000	4.040 H TELETRON TEST	3009	3.725 V International 20	13432	12.733 V ABC RR AM	24450	12.728 V ABC RR AN	24450		
3.600 V 09 SETI 亞洲衛星	30000	4.092 H IBC13	9760	3.725 V International 21	13432	12.733 V ABC RR AO	24450	12.728 V ABC RR AP	24450		
3.600 V 10 SEMI 三立衛星	30000	4.092 H Solar Sports	9760	3.725 V International 22	13432	12.733 V ABC RR AQ	24450	12.728 V ABC RR AR	24450		
3.600 V 11 CTV 中視	30000	4.092 H Solar Sports	9760	3.725 V International 23	13432	12.733 V ABC RR AS	24450	12.728 V ABC RR AT	24450		
3.600 V 12 HollywoodMovie 好萊塢3000	30000	4.092 H DZAS	9760	3.725 V International 24	13432	12.733 V ABC RR AU	24450	12.728 V ABC RR AV	24450		
4.124 V BBC Arabic	3255	4.165 V ACQ TV TEST BROCS	3735	11.537 H AUSTRALIAN NW	35500	12.733 V ABC RR AW	24450	12.728 V ABC RR AX	24450		
4.124 V BBC English (E Asi)	3255	4.165 V FAMILYLAND TV	3735	11.537 H BIBI	35500	12.733 V ABC RR AY	24450	12.728 V ABC RR AZ	24450		
4.124 V BBC English (E Asi)	3255	4.165 V Empty Name	3735	11.537 H DISNEY	35500	12.733 V ABC RR BA	24450	12.728 V ABC RR BB	24450		
4.124 V BBC English Aus NZ	3255	4.165 V TEST BROCS TV	3735	11.537 H DISNEY	35500	12.733 V ABC RR BC	24450	12.728 V ABC RR BD	24450		
4.124 V BBC English News	3255	4.165 V TV-ON-CHNL	2179	11.537 H HALLMARK	35500	12.733 V ABC RR BE	24450	12.728 V ABC RR BF	24450		
4.124 V BBC Mandarin	3255	4.188 V UMTV 37	2160	11.537 H HDTV	35500	12.733 V ABC RR BG	24450	12.728 V ABC RR BH	24450		
4.124 V BBC Pac Feed 1	3255	4.188 V UMTV 38	2160	11.537 H HDTV	35500	12.733 V ABC RR BI	24450	12.728 V ABC RR BJ	24450		
4.124 V BBC Pac Feed 2	3255	4.192 V Isat Feeds	2169	11.537 H HDTV	35500	12.733 V ABC RR BK	24450	12.728 V ABC RR BL	24450		
4.124 V BBC Pac Feed 3	3255	12.301 H ABC 5	25600	11.537 H HDTV	35500	12.733 V ABC RR BM	24450	12.728 V ABC RR BN	24450		
4.124 V BBC Pac Feed 4	3255	12.301 H ABS-CBN 2	25600	11.537 H HDTV	35500	12.733 V ABC RR BO	24450	12.728 V ABC RR BO	24450		
14.01 East				MEASAT 2 148.0° East				15.0 East			
10.981 V FNS	29812	12.301 H ABS-CBN 2	25600	11.537 H HDTV	35500	12.733 V ABC RR BP	24450	12.728 V ABC RR BP	24450		
10.981 V MuZTV+Love	29812	12.301 H MTV Phil	25600	11.537 H HDTV	35500	12.733 V ABC RR BQ	24450	12.728 V ABC RR BQ	24450		
11.090 V FNS	4996	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BR	24450	12.728 V ABC RR BR	24450		
11.090 V MuZTV+Love	4996	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BS	24450	12.728 V ABC RR BS	24450		
11.104 V Yakuta	5789	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BT	24450	12.728 V ABC RR BT	24450		
10.981 V FNS	29800	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BU	24450	12.728 V ABC RR BU	24450		
10.981 V MuZTV+Love	29800	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BV	24450	12.728 V ABC RR BV	24450		
11.104 V Yakuta	5789	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BW	24450	12.728 V ABC RR BW	24450		
C-Band: EXPRESS AM-3				MEASAT 2 148.0° East				15.0 East			
EXPRESS AM-3 140.0° East				MEASAT 2 148.0° East				15.0 East			
3.76 R Magadan	4285	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BX	24450	12.728 V ABC RR BX	24450		
3.76 R Duzh-GTRK CAXA	4340	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BY	24450	12.728 V ABC RR BY	24450		
3.76 R AZIMUTV	4340	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR BZ	24450	12.728 V ABC RR BZ	24450		
3.76 R Duzh-1+RDR1	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CA	24450	12.728 V ABC RR CA	24450		
3.76 R Duzh-2+RDR2	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CB	24450	12.728 V ABC RR CB	24450		
3.76 R Orbita-IR+Mayak	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CC	24450	12.728 V ABC RR CC	24450		
3.76 R Orbita-2R+Yuzest	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CD	24450	12.728 V ABC RR CD	24450		
3.76 R Sport	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CE	24450	12.728 V ABC RR CE	24450		
3.76 R Kultura-1	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CF	24450	12.728 V ABC RR CF	24450		
3.76 R NTV7	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CG	24450	12.728 V ABC RR CG	24450		
3.76 R Radio Mayak	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CH	24450	12.728 V ABC RR CH	24450		
3.76 R Radio RussiaD1	33470	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CI	24450	12.728 V ABC RR CI	24450		
3.76 R MATBEBCA	3199	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CJ	24450	12.728 V ABC RR CJ	24450		
SUPERBIRD-1				MEASAT 2 148.0° East				15.0 East			
12.523 H AMX	21096	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CK	24450	12.728 V ABC RR CK	24450		
12.523 H AXN	21096	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CL	24450	12.728 V ABC RR CL	24450		
12.523 H CNN International	21096	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CM	24450	12.728 V ABC RR CM	24450		
12.523 H CTN	21096	12.301 H RPN 9	25600	11.537 H HDTV	35500	12.733 V ABC RR CN	24450	12.728 V ABC RR CN	24450		
12.523 H EPG Channel Guide											

SatcoDX Global Satellite Chart 02/2009

Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate	Freq Pol Channel Name	Symbol rate
12384 L Noggin	20000	12384 L UVE1	9666	12384 L UVE2	9666	12384 L ARDY	20000	12384 L BUBY	20000	12384 L WHFT	20000
12384 L SunShine Network	20000	12384 L UVE3	9666	12384 L UVE4	9666	12384 L BAUM	20000	12384 L WEXX	20000	12384 L WKAI	20000
12384 L The Weather Channel	20000	12384 L UVE5	9666	12384 L UVE6	9666	12384 L CACTV	20000	12384 L WLED	20000	12384 L WMEG	20000
12384 L Destinations Audio	20000	12384 L UVE7	9666	12384 L UVE8	9666	12384 L CDTV	20000	12384 L WMLD	20000	12384 L WKPH	20000
12384 L Latino Pop	20000	12384 L UVE9	9666	12384 L UVE10	9666	12384 L CDTV	20000	12384 L WWSB	20000	12384 L WKSN	20000
12384 L Muzak	20000	12384 L UVE11	9666	12384 L UVE12	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WKXN	20000
12384 L Muzak 2	20000	12384 L UVE13	9666	12384 L UVE14	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WBOY	20000
12384 L Viva Marachi	20000	12384 L UVE15	9666	12384 L UVE16	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WDTV	20000
12384 L Animal Planet	20000	12384 L UVE17	9666	12384 L UVE18	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSB	20000
12384 L CNBC US	20000	12384 L UVE19	9666	12384 L UVE20	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L Comedy Central	20000	12384 L UVE21	9666	12384 L UVE22	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L Fox Sports Northwest	20000	12384 L UVE23	9666	12384 L UVE24	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L HBO West	20000	12384 L UVE25	9666	12384 L UVE26	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L Lifetime	20000	12384 L UVE27	9666	12384 L UVE28	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L MSNBC	20000	12384 L UVE29	9666	12384 L UVE30	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L TBS Superstation (20000	12384 L UVE31	9666	12384 L UVE32	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L TV Land	20000	12384 L UVE33	9666	12384 L UVE34	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L VH1 US	20000	12384 L UVE35	9666	12384 L UVE36	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L WGN Superstation	20000	12384 L UVE37	9666	12384 L UVE38	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L Contemporary Christi	20000	12384 L UVE39	9666	12384 L UVE40	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L Contemporary Instrum	20000	12384 L UVE41	9666	12384 L UVE42	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L Contemporary Jazz Pt	20000	12384 L UVE43	9666	12384 L UVE44	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L Easy Instrumentals	20000	12384 L UVE45	9666	12384 L UVE46	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12384 L Jazz Traditions	20000	12384 L UVE47	9666	12384 L UVE48	9666	12384 L CDTV	20000	12384 L WWSN	20000	12384 L WWSX	20000
12414 L Black Stars East	20000	12414 L UVE49	9666	12414 L UVE50	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12414 L Encore East	20000	12414 L UVE51	9666	12414 L UVE52	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12414 L Exstasy	20000	12414 L UVE53	9666	12414 L UVE54	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12414 L Lifetime Movie Netwo	20000	12414 L UVE55	9666	12414 L UVE56	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12414 L Pas TV	20000	12414 L UVE57	9666	12414 L UVE58	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12414 L Starz Cinema East	20000	12414 L UVE59	9666	12414 L UVE60	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12414 L Starz East	20000	12414 L UVE61	9666	12414 L UVE62	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12414 L Starz Family East	20000	12414 L UVE63	9666	12414 L UVE64	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12414 L Starz Theater East	20000	12414 L UVE65	9666	12414 L UVE66	9666	12414 L CDTV	20000	12414 L WWSN	20000	12414 L WWSX	20000
12428 L Westerns East	20000	12428 L UVE67	9666	12428 L UVE68	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L KABC-TV	20000	12428 L UVE69	9666	12428 L UVE70	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L KCBS-TV	20000	12428 L UVE71	9666	12428 L UVE72	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L KNBC-TV	20000	12428 L UVE73	9666	12428 L UVE74	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L KSLA-TV	20000	12428 L UVE75	9666	12428 L UVE76	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L KTTV-TV	20000	12428 L UVE77	9666	12428 L UVE78	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L KWGN-TV	20000	12428 L UVE79	9666	12428 L UVE80	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L WPXI-TV	20000	12428 L UVE81	9666	12428 L UVE82	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L WWSB-TV	20000	12428 L UVE83	9666	12428 L UVE84	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L WWOR-TV	20000	12428 L UVE85	9666	12428 L UVE86	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L WXTV-TV	20000	12428 L UVE87	9666	12428 L UVE88	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L 70's Songbook	20000	12428 L UVE89	9666	12428 L UVE90	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L Big Band Era	20000	12428 L UVE91	9666	12428 L UVE92	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L Classic Rock Alternat	20000	12428 L UVE93	9666	12428 L UVE94	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L Eurostyle	20000	12428 L UVE95	9666	12428 L UVE96	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L JukeBox Gold	20000	12428 L UVE97	9666	12428 L UVE98	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L Nonstop Hip Hop	20000	12428 L UVE99	9666	12428 L UVE100	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L ABC Family	20000	12428 L UVE101	9666	12428 L UVE102	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L Cartoon Network	20000	12428 L UVE103	9666	12428 L UVE104	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L CNN Headline News	20000	12428 L UVE105	9666	12428 L UVE106	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L CNN Entertainment TV	20000	12428 L UVE107	9666	12428 L UVE108	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L MTV US	20000	12428 L UVE109	9666	12428 L UVE110	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L MTV East	20000	12428 L UVE111	9666	12428 L UVE112	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L Nickelodeon West	20000	12428 L UVE113	9666	12428 L UVE114	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L TCM - Turner Classi	20000	12428 L UVE115	9666	12428 L UVE116	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L The New TNN	20000	12428 L UVE117	9666	12428 L UVE118	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12428 L Travel Channel	20000	12428 L UVE119	9666	12428 L UVE120	9666	12428 L CDTV	20000	12428 L WWSN	20000	12428 L WWSX	20000
12443 L USA Network East	20000	12443 L UVE121	9666	12443 L UVE122	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Adult Alternative	20000	12443 L UVE123	9666	12443 L UVE124	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Hawaiian Music	20000	12443 L UVE125	9666	12443 L UVE126	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Hot Hits	20000	12443 L UVE127	9666	12443 L UVE128	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Kids tunes	20000	12443 L UVE129	9666	12443 L UVE130	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L LDS Radio Network	20000	12443 L UVE131	9666	12443 L UVE132	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Modern Rock Alternat	20000	12443 L UVE133	9666	12443 L UVE134	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Power Rock	20000	12443 L UVE135	9666	12443 L UVE136	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Cinemax East	20000	12443 L UVE137	9666	12443 L UVE138	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Cinemax East	20000	12443 L UVE139	9666	12443 L UVE140	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Cinemax East	20000	12443 L UVE141	9666	12443 L UVE142	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Cinemax East	20000	12443 L UVE143	9666	12443 L UVE144	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Cinemax East	20000	12443 L UVE145	9666	12443 L UVE146	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Cinemax East	20000	12443 L UVE147	9666	12443 L UVE148	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	20000
12443 L Cinemax East	20000	12443 L UVE149	9666	12443 L UVE150	9666	12443 L CDTV	20000	12443 L WWSN	20000	12443 L WWSX	

SatCoDX Global Satellite Chart Q2/2009

Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz
12.224 R ISSUE	20000	12.370 R NFLN	20000	12.516 R Vu8	20000	12.661 R COMDV	20000	11.960 H 32 - Hallmark	28800	11.845 H Feed	17800
12.224 R LONVY	20000	12.370 R NHL-C	20000	12.516 R Vu8	20000	12.661 R NML2	20000	12.000 H 13 - Discovery Scienc	28800	21.500 Est (35.0 West)	
12.224 R MTV	20000	12.370 R NHL-E	20000	12.516 R Vu8	20000	12.661 R NNL-N	20000	11.960 H 34 - Disc. Civilization	28800	North America	
12.224 R NCAR2	20000	12.370 R PBS-E	20000	12.516 R Vu8	20000	12.661 R NTL6	20000	11.960 H 35 - NatGeo	28800	NiMO2	
12.224 R RCv04	20000	12.370 R PBS-V	20000	12.516 R WEN	20000	12.661 R OTDtv	20000	11.960 H 36 - TVE	28800	21.8 Est (42.0 West)	
12.224 R RCv05	20000	12.370 R RFL	20000	12.516 R WGN	20000	12.661 R RCv08	20000	12.000 H 37 - Animal Planet	28800	NiMO2K3	
12.224 R TSC	20000	12.370 R WEA	20000	12.516 R GYX28	20000	12.661 R RCv08*	20000	12.000 H 02 - RIT Noticias	28800		
12.224 R TVLND	20000	12.370 R WEA*	20000	12.516 R GYX29	20000	12.661 R SRC-A	20000	12.000 H 03 - SOS Espiritual	28800		
12.224 R Vu22	20000	12.370 R WEA+1	20000	12.516 R GYX30	20000	12.661 R SUPRA	20000	12.000 H 04 - TV Escola	28800		
12.231 R RFI	20000	12.370 R WGN	20000	12.516 R GYX31	20000	12.661 R TVO	20000	12.000 H 05 - Rede Globo	28800		
12.231 R A-VIC	20000	12.370 R NPR	20000	12.516 R METRO	20000	12.661 R Vu7	20000	12.000 H 06 - DW-TV	28800		
12.231 R CW11	20000	12.370 R NPR*	20000	12.516 R BTVM	20000	12.661 R Vu26	20000	12.000 H 07 - TV Enlace	28800		
12.231 R GAME	20000	12.384 R CAN-D	20000	12.516 R NUMAG	20000	12.661 R VuF2	20000	12.000 H 08 - Terra Viva	28800		
12.231 R HLTH	20000	12.384 R CANH	20000	12.516 R NUMAG	20000	12.661 R HDRPE	20000	12.000 H 09 - Bandeirantes	28800		
12.231 R NCAR4	20000	12.384 R CAN-Z	20000	12.530 R ANO	20000	12.661 R ALERT	20000	12.000 H 10 - Fox Life	28800		
12.231 R NHL8	20000	12.384 R DRM	20000	12.530 R CAN-E	20000	12.661 R ALRT	20000	12.000 H 11 - Bloomberg	28800		
12.231 R OLN	20000	12.384 R SE	20000	12.530 R CAN-S	20000	12.661 R BFVSC	20000	12.000 H 12 - Boomerang	28800		
12.231 R QUITV	20000	12.384 R SE3	20000	12.530 R CAN-S	20000	12.530 R LCN	20000	12.000 H 13 - Discovery Chann	28800		
12.231 R RA	20000	12.384 R SE3	20000	12.530 R CAN-S	20000	12.530 R VRA*	20000	12.000 H 14 - Discovering Kids	28800		
12.231 R Vldv	20000	12.384 R SE4	20000	12.530 R LELEQ	20000	12.530 R VRA*	20000	12.000 H 15 - Disney Channel	28800		
12.231 R Vu15	20000	12.384 R SERIE	20000	12.530 R TQS-M	20000	12.530 R TQS-M	20000	12.000 H 16 - ESPN Internatio	28800		
12.231 R Vu24	20000	12.384 R SRC-V	20000	12.530 R TVA-M	20000	12.530 R TVA-M	20000	12.000 H 17 - TNT	28800		
12.231 R VU25	20000	12.384 R TRAK	20000	12.530 R TVA-T	20000	12.530 R TVA-T	20000	12.000 H 18 - CNN Espanol	28800		
12.231 R CBC1T	20000	12.384 R WAHSA	20000	12.530 R CC-M	20000	12.530 R TVA-T	20000	12.000 H 19 - Home & Health	28800		
12.253 R VN510	20000	12.399 R CBC-A	20000	12.530 R CJAD	20000	12.530 R CJAD	20000	12.000 H 20 - IIGD	28800		
12.253 R VN515	20000	12.399 R CBC-a	20000	12.530 R CJPJ	20000	12.530 R CJPJ	20000	12.000 H 21 - CJC	28800		
12.253 R VN520	20000	12.399 R CBC-b	20000	12.530 R CJPJ	20000	12.530 R CJPJ	20000	12.000 H 22 - RTM	28800		
12.253 R VN525	20000	12.399 R MCTV	20000	12.530 R METO	20000	12.530 R METO	20000	12.000 H 23 - Climatempo	28800		
12.253 R VN530	20000	12.399 R MCTV*	20000	12.530 R PC-M	20000	12.530 R PC-M	20000	12.000 H 24 - Discovery Turbo	28800		
12.253 R VN535	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.545 R CITY1	20000	12.000 H 25 - Discovery Turbo	28800		
12.253 R VN540	20000	12.399 R NCA4*	20000	12.545 R CITY2	20000	12.545 R CITY2	20000	12.000 H 26 - TCM	28800		
12.253 R VN545	20000	12.399 R NHL7	20000	12.545 R FOXE	20000	12.545 R FOXE	20000	12.000 H 27 - Animal Planet	28800		
12.253 R VN550	20000	12.399 R NHLMH	20000	12.545 R RIXE	20000	12.545 R RIXE	20000	12.000 H 28 - ESPN Brasil	28800		
12.253 R VN555	20000	12.399 R OMNH	20000	12.545 R RIXE	20000	12.545 R RIXE	20000	12.000 H 29 - Travel & Living	28800		
12.253 R VN560	20000	12.399 R OMNH*	20000	12.545 R RIXE	20000	12.545 R RIXE	20000	12.000 H 30 - Woodoo	28800		
12.253 R VN565	20000	12.399 R TRDP	20000	12.545 R M1	20000	12.545 R M1	20000	12.000 H 31 - Rede Globo	28800		
12.253 R VN570	20000	12.399 R TRDP*	20000	12.545 R M1	20000	12.545 R M1	20000	12.000 H 32 - Hallmark	28800		
12.253 R VN575	20000	12.399 R Vison	20000	12.545 R RCV04	20000	12.545 R RCV04	20000	12.000 H 33 - Discovery Scienc	28800		
12.253 R VN580	20000	12.399 R VISON*	20000	12.545 R RCV04*	20000	12.545 R RCV04*	20000	12.000 H 34 - Disc. Civilization	28800		
12.253 R VN585	20000	12.399 R Vu25	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 35 - NatGeo	28800		
12.253 R VN590	20000	12.399 R Vu26	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 36 - TVE	28800		
12.253 R VN595	20000	12.399 R Vu27	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 37 - Animal Planet	28800		
12.253 R VN600	20000	12.399 R XPR2	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 38 - DW-TV	28800		
12.253 R VN605	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 39 - TV Enlace	28800		
12.253 R VN610	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 40 - Terra Viva	28800		
12.253 R VN615	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 41 - Bandeirantes	28800		
12.253 R VN620	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 42 - Rede Globo	28800		
12.253 R VN625	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 43 - Discovery Chann	28800		
12.253 R VN630	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 44 - Discovering Kids	28800		
12.253 R VN635	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 45 - Disney Channel	28800		
12.253 R VN640	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 46 - ESPN Internatio	28800		
12.253 R VN645	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 47 - TNT	28800		
12.253 R VN650	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 48 - CNN Espanol	28800		
12.253 R VN655	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 49 - Home & Health	28800		
12.253 R VN660	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 50 - IIGD	28800		
12.253 R VN665	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 51 - CJC	28800		
12.253 R VN670	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 52 - RTM	28800		
12.253 R VN675	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 53 - Climatempo	28800		
12.253 R VN680	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 54 - Discovery Turbo	28800		
12.253 R VN685	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 55 - Discovery Turbo	28800		
12.253 R VN690	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 56 - TCM	28800		
12.253 R VN695	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 57 - Animal Planet	28800		
12.253 R VN700	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 58 - ESPN Brasil	28800		
12.253 R VN705	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 59 - Travel & Living	28800		
12.253 R VN710	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 60 - Woodoo	28800		
12.253 R VN715	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 61 - Rede Globo	28800		
12.253 R VN720	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 62 - Hallmark	28800		
12.253 R VN725	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 63 - Discovery Scienc	28800		
12.253 R VN730	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 64 - Disc. Civilization	28800		
12.253 R VN735	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 65 - NatGeo	28800		
12.253 R VN740	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 66 - TVE	28800		
12.253 R VN745	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 67 - Animal Planet	28800		
12.253 R VN750	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 68 - DW-TV	28800		
12.253 R VN755	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 69 - TV Enlace	28800		
12.253 R VN760	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 70 - Terra Viva	28800		
12.253 R VN765	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 71 - Bandeirantes	28800		
12.253 R VN770	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 72 - Rede Globo	28800		
12.253 R VN775	20000	12.399 R XPR2*	20000	12.545 R RUV1	20000	12.545 R RUV1	20000	12.000 H 73 - Discovery Chann	28800		

Main table listing satellite channels with columns for Freq, Pol, Channel Name, Symbol rate, GHz, and Symbol rate. Includes sub-sections for various satellite systems like NSS10CN, HISPASAT 1C, and HISPASAT 1D.

Table listing satellite channels for INTELSAT 907 332.5° East, including channel names and symbol rates.



Table listing satellite channels for INTELSAT 907 332.5° East, including channel names and symbol rates.

Table listing satellite channels for HISPASAT 1C 330.0° East, including channel names and symbol rates.



Table listing satellite channels for HISPASAT 1C 330.0° East, including channel names and symbol rates.

Table listing satellite channels for HISPASAT 1D 330.0° East, including channel names and symbol rates.

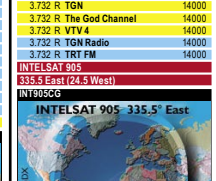


Table listing satellite channels for HISPASAT 1D 330.0° East, including channel names and symbol rates.

Table listing satellite channels for HISPASAT 1D 330.0° East, including channel names and symbol rates.



Table listing satellite channels for HISPASAT 1D 330.0° East, including channel names and symbol rates.

SatcoDX Global Satellite Chart 02/2009

Freq Pol Channel Name	Symbol rate	GHz	Freq Pol Channel Name	Symbol rate	GHz	Freq Pol Channel Name	Symbol rate	GHz	Freq Pol Channel Name	Symbol rate	GHz	Freq Pol Channel Name	Symbol rate	GHz
1.0408 H COMSATION	14400	11.678 H NBA Path 2	28570	1.0408 H COMSATION	14400	1.0408 H COMSATION	14400	1.0408 H COMSATION	14400	1.0408 H COMSATION	14400	1.0408 H COMSATION	14400	1.0408 H COMSATION

SatcoDX World Statistics



Alexandru Porosanu
TELE-satellite
Statistics Center
Romania

Encryption Worldwide

Encryption	Dec 2007	Nov 2008	Dec 2008	2008/2007
POVU	934	841	888	-4.93%
VGRD	1188	728	806	-32.15%
NAGV	1547	805	791	-48.87%
IRDT	968	509	525	-45.76%
MLT2	287	287	287	0.00%
VICS	385	256	237	-38.44%
MGRD	588	211	192	-67.35%
CONX	465	221	188	-59.57%
BCNV	302	176	176	-41.72%
IRVG	178	174	174	-2.25%
CRYW	217	179	157	-27.65%
MDS_	64	63	63	-1.56%
BISS	92	62	58	-36.96%
VIMG	95	45	45	-52.63%
VCZ+	54	44	44	-18.52%
IRMG	49	24	24	-51.02%
MGVC	110	24	24	-78.18%
MGCW	33	24	24	-27.27%
PVU+	23	23	23	0.00%
BCRT	38	17	14	-63.16%
NTL	7	9	9	28.57%
IRCW	11	9	9	-18.18%
NDS	6	6	6	0.00%
RAS	8	5	5	-25.00%
WCIR	7	5	5	-28.57%
IRDETO	13	4	4	-Inf
PVNV	3	3	3	0.00%
VISK	3	3	3	0.00%
WGNR	3	3	3	0.00%
CCGN	6	3	3	-50.00%
IRNV	4	3	3	-25.00%
CONV	2	2	2	0.00%
KEYF	2	2	2	0.00%
EBU (BISS-E)	1	1	1	0.00%
NTL	1	1	1	0.00%
DRMC	1	1	1	0.00%
CWVA	3	1	1	-66.67%
CODI	2	1	1	-50.00%
NTL2	1	1	1	0.00%

Top 40 Video PIDs Worldwide

Video PID	Dec 2007	Nov 2008	Dec 2008	2008/2007
512	349	343	372	6.59%
513	320	321	322	0.62%
308	418	304	301	-27.99%
1160	288	281	270	-6.25%
33	258	247	244	-5.43%
514	270	257	238	-11.85%
516	187	229	235	25.67%
515	185	214	216	16.76%
4130	245	203	202	-17.55%
518	153	180	178	16.34%
517	146	172	172	17.81%
1260	202	162	161	-20.30%
519	141	159	157	11.35%
163	168	154	157	-6.55%
160	142	142	141	-0.70%
161	140	140	140	0.00%
520	120	136	136	13.33%
521	126	142	136	7.94%
1360	155	128	133	-14.19%
5922	166	125	124	-25.30%
162	122	120	122	0.00%
165	108	113	119	10.19%
4194	171	120	114	-33.33%
101	101	97	110	8.91%
1760	169	108	109	-35.50%
164	103	106	107	3.88%
1460	124	102	106	-14.52%
4642	135	106	103	-23.70%
170	84	85	102	21.43%
522	73	101	101	38.36%
4386	138	105	101	-26.81%

Top 40 Audio PIDs Worldwide

Audio PID	Dec 2007	Nov 2008	Dec 2008	2008/2007
256	449	336	339	-24.50%
1120	272	265	256	-5.88%
4131	225	185	186	-17.33%
100	153	168	174	13.73%
660	154	174	173	12.34%
650	149	165	168	12.75%
640	117	127	150	28.21%
1220	178	149	148	-16.85%
36	146	142	141	-3.42%
80	136	133	133	-2.21%
34	142	132	133	-6.34%
84	131	120	124	-5.34%
1320	135	119	123	-8.89%
700	98	119	122	24.49%
5923	153	117	116	-24.18%
88	113	112	115	1.77%
104	104	111	113	8.65%
96	101	104	109	7.92%
4195	172	115	109	-36.63%
116	81	109	107	32.10%
92	101	102	107	5.94%
670	151	107	107	-29.14%
680	97	105	106	9.28%
108	97	94	99	2.06%
102	96	86	98	2.08%
4643	122	98	97	-20.49%
4387	127	100	97	-23.62%
1420	109	93	96	-11.93%
112	98	102	95	-3.06%
6179	103	92	93	-9.71%
258	143	91	89	-37.76%
4899	126	90	89	-29.37%
690	77	87	88	14.29%
202	66	80	88	33.33%
400	106	90	88	-16.98%

Transmission Types Worldwide

Type	Dec 2007	Nov 2008	Dec 2008	2008/2007
TV-DIG-CRYPT	10729	11149	11448	6.70%
TV-DIG	7656	7121	7131	-6.86%
R-DIG	4216	3961	4082	-3.18%
DATA	2083	2152	2161	3.74%
R-DIG-CRYPT	1472	1263	1304	-11.41%
TV-SD-CRYPT	143	448	438	206.29%
TV-HD-CRYPT	208	256	356	71.15%
TV-ANA	129	100	100	-22.48%
TV-SD	55	91	99	80.00%
TV-HD	60	83	67	11.67%
R-ANA	64	47	47	-26.56%
TV-ANA-CRYPT	57	45	45	-21.05%

Transponder Polarization Worldwide

Polarization	Dec 2007	Nov 2008	Dec 2008	2008/2007
V	11520	11827	11875	3.08%
H	11569	11291	11757	1.63%
R	2273	2087	2166	-4.71%
L	1584	1500	1477	-6.76%

Top 100 Ku band Frequencies Worldwide

Frequency	Dec 2007	Nov 2008	Dec 2008	2008/2007
12.226	184	185	184	0.00%
12.149	147	167	177	20.41%
11.823	71	163	176	147.89%
12.399	162	158	160	-1.23%
11.785	84	153	152	80.95%
12.355	96	151	151	57.29%
11.804	41	154	151	268.29%
11.938	92	129	139	51.09%
11.747	42	135	136	223.81%
12.302	36	95	135	275.00%
12.092	86	122	127	47.67%
12.322	96	99	126	31.25%
12.341	113	125	122	7.96%
12.418	91	117	121	32.97%
11.766	77	118	119	54.55%
12.661	64	120	118	84.38%
11.996	68	116	116	70.59%
12.523	95	112	115	21.05%
12.647	90	110	111	23.33%
12.643	70	107	109	55.71%
11.919	50	101	107	114.00%
12.628	106	106	106	0.00%
12.282	132	101	101	-23.48%
12.428	118	100	99	-16.10%
12.407	98	62	98	0.00%
12.265	75	97	97	506.25%
12.688	75	100	97	29.33%
12.253	72	96	96	33.33%
12.053	50	94	95	90.00%
12.015	40	91	95	137.50%
10.970	69	61	95	37.68%
12.224	79	96	95	20.25%
12.726	18	90	94	422.22%
11.843	79	92	93	17.72%
12.360	72	90	91	26.39%
11.836	62	87	90	45.16%
12.207	199	101	90	-54.77%
12.303	127	100	89	-29.92%
12.012	101	91	89	-11.88%
11.727	92	98	87	-5.43%
12.284	34	86	86	152.94%
11.283	77	65	86	11.69%
12.268	88	87	86	-2.27%
11.900	48	83	85	77.08%
11.862	32	84	84	162.50%
12.638	45	83	83	84.44%
12.516	78	83	83	6.41%
11.778	12	83	83	591.67%
11.635	68	81	82	20.59%
12.169	68	81	81	19.12%
12.476	71	94	80	12.68%
12.603	81	83	79	-2.47%
12.472	78	90	79	-12.22%
12.239	50	78	78	56.00%
12.574	219	76	78	-64.38%
12.311	101	70	76	-24.75%
12.632	72	73	75	4.17%
12.297	75	74	75	0.00%
12.545	88	73	75	-14.77%
12.501	70	74	74	5.71%
12.130	30	74	74	146.67%
12.380	98	73	73	-25.51%
12.414	109	88	73	-33.03%
11.170	58	49	72	24.14%
12.608	14	73	72	414.29%
11.604	64	71	72	12.50%
12.326	154	72	72	-53.25%
11.617	68	68	71	4.41%
12.604	182	71	70	-61.54%
12.034	29	76	69	137.93%
12.565	55	66	69	25.45%
11.596	31	60	68	119.35%
11.010	82	22	67	-18.29%
12.563	40	67	67	67.50%
12.607	45	67	66	46.67%
12.246	165	64	65	-60.61%
11.623	94	61	65	41.30%
12.370	46	69	65	-30.85%
12.723	64	64	64	Inf
11.554	25	65	64	156.00%
12.456	88	63	64	-27.27%
12.577	68	65	64	128.57%
12.644	56	65	63	Inf
12.384	82	63	63	-23.17%
12.443	111	68	62	-44.14%
11.642	76	53	62	-18.42%
12.581	24	50	62	158.33%
10.972	64	62	61	-4.69%
11.050	56	10	61	8.93%

Top 40 Symbol Rate Usage Worldwide

Symbol Rate	Dec 2007	Nov 2008	Dec 2008	2008/2007
27500	8963	9106	9306	3.83%
30000	2260	2450	2717	20.22%
20000	2801	2491	2451	-12.50%
22000	1276	1087	1036	-18.81%
28000	538	509	508	-5.58%
19510	446	456	456	2.24%
21096	410	410	410	0.00%
22500	71	379	396	457.75%
29270	276	286	286	3.62%
27800	267	289	277	3.75%
28500	215	276	276	28.37%
29950	193	238	238	23.32%
26000	127	212	201	58.27%
24500	130	210	196	50.77%
27684	175	175	175	0.00%
26480	76	113	141	85.53%
21300	106	106	106	Inf
30800	106	104	104	-1.89%
18000	7	7	100	1328.57%
26470	107	109	100	-6.54%
22425	83	93	93	12.05%
27690	62	83	92	48.39%
3428	51	89	90	76.47%
28800	25	86	89	256.00%
40700	19	89	89	368.42%
33483	15	85	86	36.76%
26667	136	85	85	Inf
27489	85	85		



Edited by
Alexander Wiese

20 Years Ago

Travel into the Past
TELE-satellite Magazine
Issue 01/1988



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Satelliten-Empfang

Nur in TELE satellit die aktuellsten, nachgeprüften Satelliten-Tabellen für Europa

Europas Satelliten

Programm Verteilsatelliten für Europa im Sendebereich 10.95 bis 11.70 GHz

Stand: Februar 1988

Immer aktuell informiert mit TELE-satellit, der Satelliten-Fachzeitschrift von TELE-audiovision 089 - 448 03 28

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Professionelle Kunden werden direkt beraten von PROSAT Projektberatung Satellitenempfang Karlsruhe 0721 - 40 25 82

Fernsehen über Satellit

Satellit	Position Grad	Programm	Sendeland	Sprache	Frequenz GHz	Polarisat.	Beam	Band	Videotext	Mod.	Scrambl.	Empfang	Leistung dBW	Zeiten	Bemerkungen		
INTELSAT VA-F11	27.5 W	MTV Europe	USA	Engl.	10.28	Horiz.	West	PAL	ja	6.80	-	Pay-TV	46	24	Videotext		
		Canal 10	Grönland	spanisch	10.58	Vertikal	Ost	PAL	ja	7.02 & 7.20 (WEGENER-System)	-	Pay-TV	46	24	Begleitton Stereo		
		Grönland	englisch	11.02	Horiz.	West	PAL	ja	6.80	7.02 & 7.20 (WEGENER-System)	-	Pay-TV	46	24	Begleitton Stereo		
		Arts Channel / Litlogio / Schwespart (Film)	Grönland	englisch	11.59	Horiz.	West	PAL	ja	6.80	-	Pay-TV	46	24	Kinship / Spielfilm: Begleitton Stereo		
		CNN International	USA	Engl.	11.15	Vertikal	Ost	PAL	ja	7.02 & 7.20 (WEGENER-System)	-	Pay-TV	46	24	Nachrichten - Information		
		BBC 1/2	Grönland	englisch	11.18	Horiz.	West	SAT-TEL	ja	6.80	-	Pay-TV	46	24	Datenübertragung		
		EURO-PVS	USA	Engl.	11.47	Vertikal	West	PAL	ja	6.80	-	Pay-TV	46	24	Videotext		
		Anglovision	USA	Engl.	11.51	Vertikal	Ost	PAL	ja	6.80	-	Pay-TV	46	24	Nachrichten - in Vorbereitung		
		TV2 / Satellite Information Service (TMS; Sharpen)	Schweden	englisch	11.59	Horiz.	West	B-MAC	-	ja	di:caro	46	24	Unterhaltung / Pflanzennamen			
INTELSAT VA-F10	24.5 W	(keine kein TV-Programme)															
INTELSAT V-F6	21.5 W	Telespazio	Italien	Italien	10.98	Vertikal	West	PAL	ja	6.85	-	ja	46	24	nur Testsendungen		
		Telespazio	Italien	Italien	11.13	Vertikal	West	PAL	ja	6.85	-	ja	46	24	nur Testsendungen		
		Telespazio	Italien	Italien	11.17	Vertikal	West	PAL	ja	6.85	-	ja	46	24	nur Testsendungen		
GORZONT 12	14 West	TV Test	Schweden	russisch	11.51	Vertikal	Ost	SECAM	ja	6.80	-	Pay-TV	43	-	nur Testsendungen		
INTELSAT V-F2	1 West	Norwegen	Norwegen	norwegisch	11.01	Horiz.	West	PAL	ja	6.80	-	ja	46	24	Unterhaltung - Kultur		
		Kanal 1	Schweden	schwedisch	11.13	Horiz.	West	C-MAC	ja	-	-	ja	46	24	Unterhaltung - Kultur		
		STV2	Schweden	schwedisch	11.17	Vertikal	Ost	PAL	ja	6.80	-	ja	46	24	Unterhaltung - Kultur		
		TV1	Israel	hebräisch	11.19	Vertikal	Ost	PAL	ja	6.80	-	ja	46	24	nur Testsendungen - DX		
		TV2	Israel	hebräisch	11.56	Vertikal	Ost	PAL	ja	6.80	-	ja	46	24	nur Testsendungen - DX		
		TV Test	Norwegen	englisch/norwegisch	11.47	Horiz.	West	PAL	ja	6.80	-	ja	46	24	nur Testsendungen		
EUETELSAT I-F2	7 Ost	Worldnet	USA	englisch	11.59	Horiz.	Ost	SECAM	ja	6.80	-	ja	46	24	Radiogeo Progr.		
EUETELSAT I-F4	10 Ost	NRK	Norwegen	norwegisch	11.20	Vertikal	West	C-MAC	ja	-	-	ja	46	24	Information		
		TV2	Schweden	schwedisch	11.65	Vertikal	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung - Kultur		
		Telespazio	Schweden	deutsch	10.98	Vertikal	West	PAL	ja	6.50	-	Pay-TV	45	24	Spielfilm		
		RAI UNO	Italien	Italien	11.00	Horiz.	West	PAL	ja	6.80	-	ja	46	24	(Schaltplan Kalkulationszähler)		
		RTE plus	Luxemburg	Italien	11.08	Vertikal	Ost	PAL	ja	6.85	-	ja	46	24	Unterhaltung - Kultur		
		Filmnet	Belgien	englisch/holl.	11.14	Vertikal	West	PAL	ja	6.55	ja	Pay-TV	46	24	Spielfilm		
		SSAT	BRD	deutsch	11.17	Horiz.	West	PAL	ja	6.80	-	ja	46	24	Begleitton schwedisch (Schaltplan Kalkulationszähler)		
		TMS	Frankreich	französisch	11.47	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung - Kultur		
		Worldnet	USA	englisch	11.48	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Information		
		SAT 1	BRD	deutsch	11.50	Vertikal	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung		
		Sky Channel	Grönland	englisch	11.65	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung		
		Suor Channel	Grönland	englisch	11.67	Vertikal	West	PAL	ja	7.02 & 7.20 (WEGENER-System)	-	ja	46	24	Begleitton Stereo		
		INTELSAT VA-F12	60 Ost	SSAT	BRD	deutsch	10.97	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung
		AFR-TV	USA/BRD	deutsch	10.99	Vertikal	Ost	B-MAC	-	ja	di:caro	46	24	Unterhaltung			
		West 3	BRD	deutsch	11.01	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung		
		Toko 3	BRD	deutsch	11.03	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung		
		Bayerisches Fern	BRD	deutsch	11.17	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung		
		Erne Film	BRD	deutsch	11.18	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Unterhaltung		
		Europa IV	BRD	deutsch	11.00	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Information		
		IRB TV2	Iran	farsi	10.99	Vertikal	West	PAL	ja	6.80	-	ja	46	24	nur Testsendungen - DX		
		IRB TV1	Iran	farsi	11.15	Vertikal	West	PAL	ja	6.80	-	ja	46	24	Kultur - DX		
INTELSAT V-F5	63 Ost	AFRITS-E2	USA	englisch	11.47	Horiz.	West	NTSC	ja	6.80	-	di:caro	46	24	Unterhaltung - DX		
INTELSAT V-F7	66 Ost	TRT 1	Türkei	türkisch	11.85	Horiz.	West	PAL	ja	6.80	-	ja	46	24	Unterhaltung - DX		
		TRT 2	Türkei	türkisch	11.88	Horiz.	West	PAL	ja	6.80	-	ja	46	24	Unterhaltung - Testsendung - DX		

Zusammengestellt nach Empfangsmessungen von PROSAT Projektberatung Satellitenempfang. © 1988 by PROSAT

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Radio über Satellit

Satellit	Position Grad	Programm	Sendeland	Sprache	Frequenz GHz	Polarisat.	Beam	Band	Mod.	Scrambl.	Empfang	Leistung dBW	Zeiten	Bemerkungen	
INTELSAT VA-F11	27.5 W	BBC Worldserv.	Grönland	englisch	11.18	Horiz.	West	WEGENER	7.02	-	Frei	46	24	Mono // Kurzwelle	
		BBC Worldserv.	Grönland	diverse	11.18	Horiz.	West	WEGENER	7.20	-	Frei	46	24	Mono - Auslandsprogramme	
INTELSAT V-F2	1 West	NRK P1	Norwegen	norwegisch	11.20	Vertikal	West	Digital/MAC	-	-	Frei	46	24	Landprogramm Stereo	
EUETELSAT I-F4	10 Ost	Erne Film	BRD	deutsch	11.18	Horiz.	West	PAL	ja	6.85	-	ja	46	24	Landprogramm Stereo
EUETELSAT I-F1	13 Ost	Radio Luxemburg	Luxemburg	deutsch	11.08	Vertikal	Ost	WEGENER	7.02 & 7.20	-	Frei	46	24	Stereo	
		Radio Luxemburg	Luxemburg	deutsch	11.14	Vertikal	Ost	WEGENER	7.20 & 7.20	-	Frei	46	24	Stereo	
		Cable One	Niederl.	englisch	11.17	Horizontal	West	WEGENER	7.02 & 8.10	-	Frei	46	24	Testsendungen	
		Voice of America	USA	englisch	11.50	Vertikal	West	WEGENER	7.02 & 8.10	-	Frei	46	24	Stereo	
		BBC Worldserv.	Grönland	englisch	11.67	Vertikal	West	WEGENER	7.38	-	Frei	46	24	Mono // Kurzwelle	
		BBC Worldserv.	Grönland	diverse	11.67	Vertikal	West	WEGENER	7.58	-	Frei	46	24	Mono - Auslandsprogramme	
INTELSAT VA-F12	60 Ost	Deutscherfunk	BRD	deutsch	11.01	Horiz.	West	WEGENER	7.02 & 7.20	-	Frei	46	24	Stereo	
		Radio Media	BRD	deutsch	11.17	Horizontal	West	WEGENER	7.02 & 7.20	-	Frei	46	24	Stereo	
		Digital Test	BRD	deutsch	11.45	Vertikal	Ost	Digital/MAC	-	-	Frei	46	24	Unterhaltung	
INTELSAT V-F5	63 Ost	IRB Radio 2	Iran	farsi	10.99	Vertikal	West	Standard	6.18	-	Frei	46	24	Testsendungen - DX	
		IRB Radio 1	Iran	farsi	11.17	Vertikal	West	Standard	6.18	-	Frei	46	24	Landprogramm - DX	

Eintragungen: -DM- Empfang in Wittenberg; -M- in Wittenberg; -H- in Wittenberg; -B- in Wittenberg; -C- in Wittenberg; -E- in Wittenberg; -F- in Wittenberg; -G- in Wittenberg; -I- in Wittenberg; -J- in Wittenberg; -K- in Wittenberg; -L- in Wittenberg; -M- in Wittenberg; -N- in Wittenberg; -O- in Wittenberg; -P- in Wittenberg; -Q- in Wittenberg; -R- in Wittenberg; -S- in Wittenberg; -T- in Wittenberg; -U- in Wittenberg; -V- in Wittenberg; -W- in Wittenberg; -X- in Wittenberg; -Y- in Wittenberg; -Z- in Wittenberg; -AA- in Wittenberg; -AB- in Wittenberg; -AC- in Wittenberg; -AD- in Wittenberg; -AE- in Wittenberg; -AF- in Wittenberg; -AG- in Wittenberg; -AH- in Wittenberg; -AI- in Wittenberg; -AJ- in Wittenberg; -AK- in Wittenberg; -AL- in Wittenberg; -AM- in Wittenberg; -AN- in Wittenberg; -AO- in Wittenberg; -AP- in Wittenberg; -AQ- in Wittenberg; -AR- in Wittenberg; -AS- in Wittenberg; -AT- in Wittenberg; -AU- in Wittenberg; -AV- in Wittenberg; -AW- in Wittenberg; -AX- in Wittenberg; -AY- in Wittenberg; -AZ- in Wittenberg; -BA- in Wittenberg; -BB- in Wittenberg; -BC- in Wittenberg; -BD- in Wittenberg; -BE- in Wittenberg; -BF- in Wittenberg; -BG- in Wittenberg; -BH- in Wittenberg; -BI- in Wittenberg; -BJ- in Wittenberg; -BK- in Wittenberg; -BL- in Wittenberg; -BM- in Wittenberg; -BN- in Wittenberg; -BO- in Wittenberg; -BP- in Wittenberg; -BQ- in Wittenberg; -BR- in Wittenberg; -BS- in Wittenberg; -BT- in Wittenberg; -BU- in Wittenberg; -BV- in Wittenberg; -BW- in Wittenberg; -BX- in Wittenberg; -BY- in Wittenberg; -BZ- in Wittenberg; -CA- in Wittenberg; -CB- in Wittenberg; -CC- in Wittenberg; -CD- in Wittenberg; -CE- in Wittenberg; -CF- in Wittenberg; -CG- in Wittenberg; -CH- in Wittenberg; -CI- in Wittenberg; -CJ- in Wittenberg; -CK- in Wittenberg; -CL- in Wittenberg; -CM- in Wittenberg; -CN- in Wittenberg; -CO- in Wittenberg; -CP- in Wittenberg; -CQ- in Wittenberg; -CR- in Wittenberg; -CS- in Wittenberg; -CT- in Wittenberg; -CU- in Wittenberg; -CV- in Wittenberg; -CW- in Wittenberg; 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-EV- in Wittenberg; -EW- in Wittenberg; -EX- in Wittenberg; -EY- in Wittenberg; -EZ- in Wittenberg; -FA- in Wittenberg; -FB- in Wittenberg; -FC- in Wittenberg; -FD- in Wittenberg; -FE- in Wittenberg; -FF- in Wittenberg; -FG- in Wittenberg; -FH- in Wittenberg; -FI- in Wittenberg; -FJ- in Wittenberg; -FK- in Wittenberg; -FL- in Wittenberg; -FM- in Wittenberg; -FN- in Wittenberg; -FO- in Wittenberg; -FP- in Wittenberg; -FQ- in Wittenberg; -FR- in Wittenberg; -FS- in Wittenberg; -FT- in Wittenberg; -FU- in Wittenberg; -FV- in Wittenberg; -FW- in Wittenberg; -FX- in Wittenberg; -FY- in Wittenberg; -FZ- in Wittenberg; -GA- in Wittenberg; -GB- in Wittenberg; -GC- in Wittenberg; -GD- in Wittenberg; -GE- in Wittenberg; -GF- in Wittenberg; -GG- in Wittenberg; -GH- in Wittenberg; -GI- in Wittenberg; -GJ- in Wittenberg; -GK- in Wittenberg; -GL- in Wittenberg; -GM- in Wittenberg; -GN- in Wittenberg; -GO- in Wittenberg; -GP- in Wittenberg; -GQ- in Wittenberg; -GR- in Wittenberg; -GS- in Wittenberg; 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-IR- in Wittenberg; -IS- in Wittenberg; -IT- in Wittenberg; -IU- in Wittenberg; -IV- in Wittenberg; -IW- in Wittenberg; -IX- in Wittenberg; -IY- in Wittenberg; -IZ- in Wittenberg; -JA- in Wittenberg; -JB- in Wittenberg; -JC- in Wittenberg; -JD- in Wittenberg; -JE- in Wittenberg; -JF- in Wittenberg; -JG- in Wittenberg; -JH- in Wittenberg; -JI- in Wittenberg; -JJ- in Wittenberg; -JK- in Wittenberg; -JL- in Wittenberg; -JM- in Wittenberg; -JN- in Wittenberg; -JO- in Wittenberg;



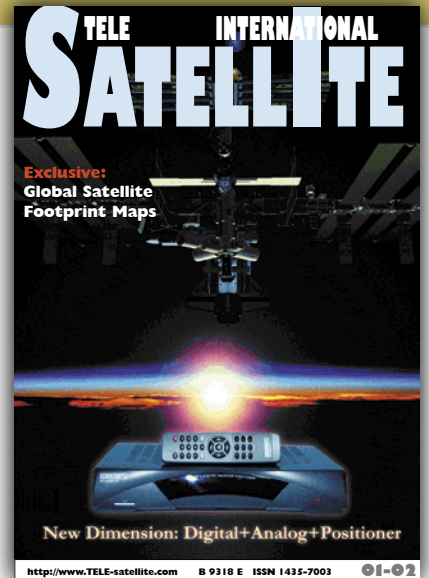
Edited by
Alexander Wiese

Echostar AD-2000 IP

So far, we have seen a reasonable amount of integrated analogue and digital receivers, one might call them universal receivers, and even with built-in positioners. But although the hardware often is comparable, the software controlling it is the most important issue. Whenever the software is of poor quality you can forget it. The box will crash, you cannot set it up the way you like, etc. These and many more flaws can make a receiver almost unusable. With this in mind, we started to look at the Echostar AD-2000IP. For over two weeks we have tested it in our labs and it was with a lot of regret that we had to send it back.

10 Years Ago

Travel into the Past
TELE-satellite Magazine
Issue 02/1999



Your first impression won't be that it is a superb receiver. It looks a little bit ordinary and does not have the high-tech looks Echostar's famous LT-8700 had. On the contrary, with only a four-digit display on the front you may not expect too much hi-tech in the box. But to start with, the display needs four figures because it can store up to 2.900 digital channels (1.500 for TV/1.400 for radio) plus 700 analogue ones. Its integrated positioner can cope with up to 50 satellite positions. Behind a coverlid there are two buttons for channel up and down and a card slot which may do its job in later versions. The receiver we tested did not have a conditional access interface.

Drake ESR 324 Earth Station Receiver

You don't know the ESR 324? Well, don't panic — it's not like you've missed the latest innovation in digital satellite technology. The ESR is a direct import from the U.S., a kind of 'first cry' of satellite reception technology. I was actually bargain-hunting for a digital receiver to use in combination with Echostar's DISH digital package when I discovered the ESR in a small country town somewhere in Montana. The unit was built in 1984 and set me back twenty bucks. Of course I knew that I would hardly be able to use this relic with my existing satellite system, but I was simply curious to find out how a 14 year old receiver would handle present-day satellite services. The first thing you notice about the ESR 324 is its weight. Used to light-weight plastic boxes the ESR 324's robust metal chassis has survived 14 years of doubtlessly heavy usage without any flaws

whatsoever. The 110 volt power unit contributed its share to the total weight of the unit. All control buttons are on the unit's front panel since there is no remote control available for the ESR 324 (after all, I'm travelling down the time tunnel all

the way to 1984). Next to the main power switch there is a scan button and two rotary switches to tune in the selected channel. It is not possible to enter a frequency directly (contrary to European products), neither is there such a thing as a program-store menu. In this respect not much has changed since the 1950s, as a matter of fact. Some may remember the rotary switches on television sets at the onset of the television age: you simply turned the knob into one direction or the other until a channel appeared on the screen. Some budget TV sets in North America still work that way even though Scan Up and Scan Down buttons on the remote control have long replaced rotary switches.

American satellites broadcast their signals according to a standardised channel grid. There are twelve channels each on the vertical and horizontal polarisation plane. Most American satellite receivers still come with a 500 MHz tuner used to scan the C-band between 3.7 and 4.2 GHz and the Ku-band between 11.7 and 12.2 GHz. That way only one control knob on the Drake ESR 324 is enough to use all the bandwidth available on U.S. satellites. The selected transponder is displayed on the front panel and a fine-tuning switch covers all the range between two channels. An additional switch is used to control the mechanic polariser. However a per-



manent polarisation can also be selected with the polarisation switch.

Once the channel is selected and tuned we have to adjust the audio parameters. With the flip of switch the standard frequency of 6.80 MHz can be selected, while a rotary switch allows the scanning of a range that must extend from 2 to 10 MHz (my estimate). Needless to say that that stereo sound was not a standard feature in 1984. On the back of the unit there is a switch that is used to choose either the C or the Ku band.

**MSK 33
Measuring QPSK and QAM**

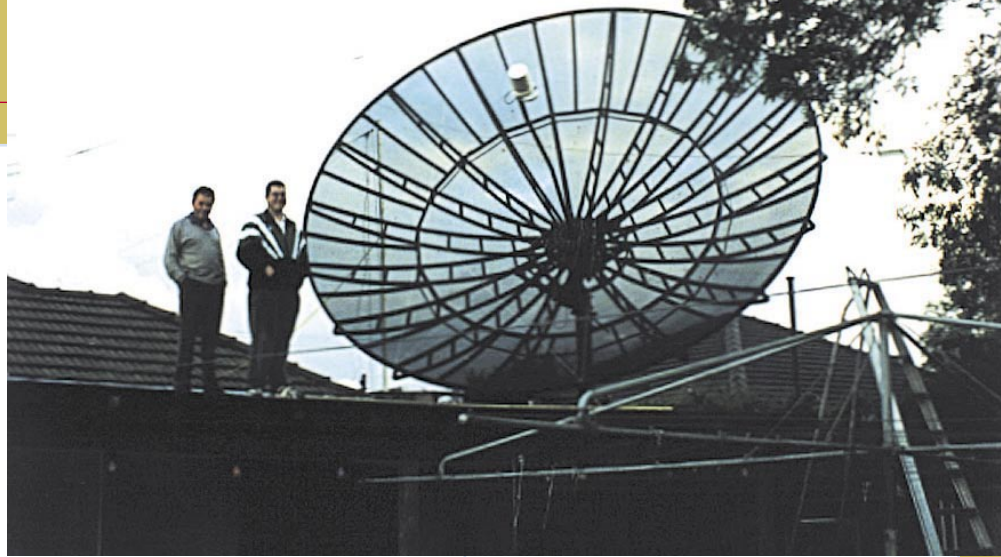
Good measuring equipment can always be recognised by its size and even more by its weight. You will see most professional engineers carrying around a heavy case. But out there, up on the roof, the heavier the tool to perfectly align the dish, the more dangerous it becomes for the one who is doing the job. Carrying around heavy stuff



on the roof of a house is not really sensible. The weight of those measuring instruments comes from the built-in cathode ray tube. Although most of the times still in black and white, the power requirements are high, increasing the weight of the batteries. Some use LC displays but most of the time, they also come with tiny buttons and a display that's hardly readable in bright sunshine. The new MSK 33 from Grundig and Kathrein weighs only 6 kg. Not very light-weighted but still a much better weight compared to the competition. It offers on-the-fly measuring and analysing digital signals, printing, LCD display, battery and power adapter. And investing in this measuring tool is a secure investment for the future, since it is built on a modular basis, making it possible to swap certain modules and upgrade to newer technologies. You might, for instance, later replace the MPEG II 4:2:0 board with an MPEG II 4:2:2 board. Many other tools can be thrown away as garbage after a few years, not the MSK 33. It will keep as valuable as it was even when newer technologies come around. The MSK 33 can also be upgraded with a graphic module making it the MSK 33/G, or the MSK 33/Q with a QPSK/QAM module.

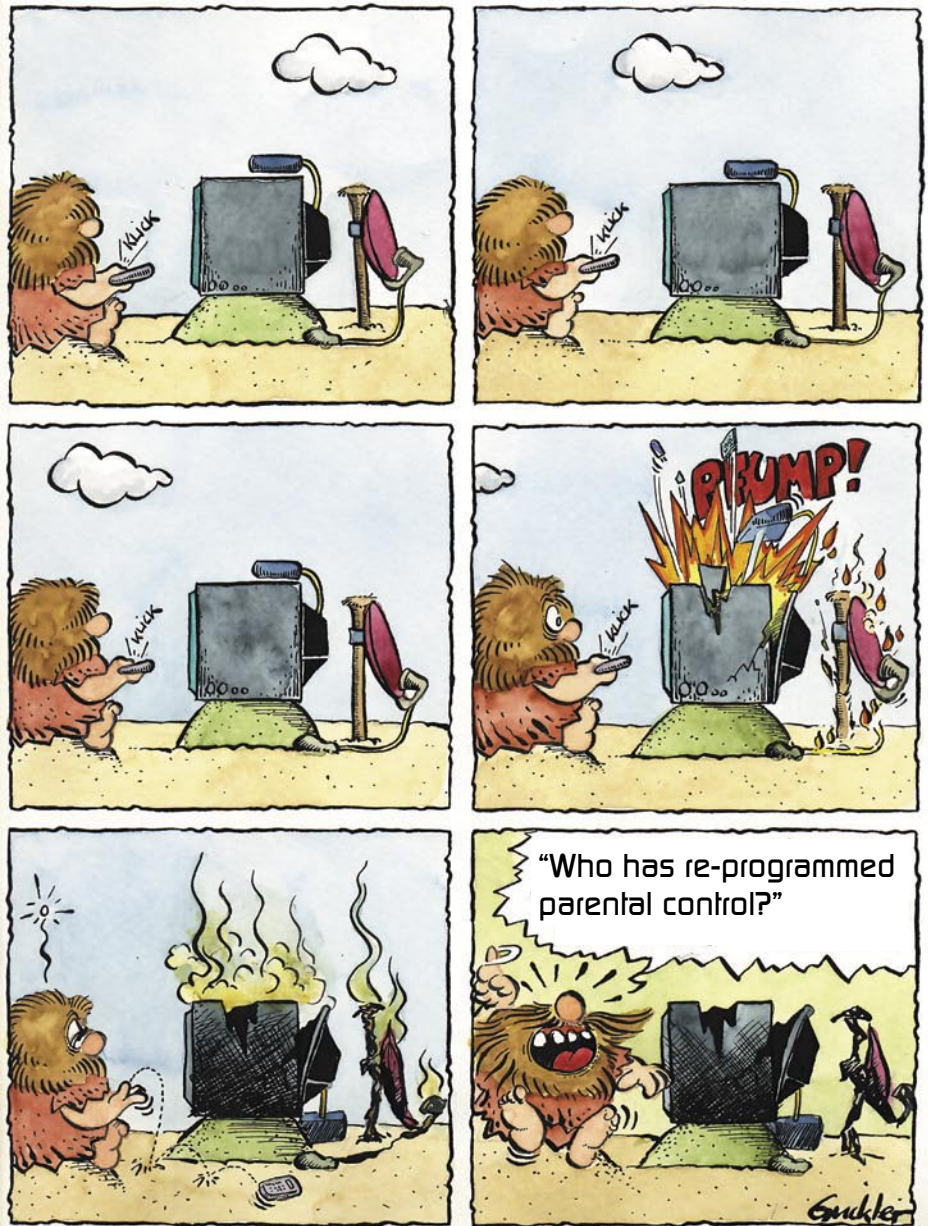
Australian Satellite DXer Bevin Boden

I attended a radio convention at Mt Gambier South Australia about three years ago. A fellow ham had a display of satellite TV on 12 GHz. The analogue receiver was fed by a 1.8 metre solid dish which I learnt later was for sale. Well, for A\$300 I made the dish and LNB mine. I was able to buy a Panasat analogue receiver for another A\$300, and when the convention was over I put this dish on the roof of the station wagon and headed for Adelaide 300 kilometres north. When I stopped to get petrol I was asked what it was that was strapped to the roof? Standard answer: a large wok as used for making lots of Chinese meals at charity functions. Oh, what a good idea, was the reply. We Australians are odd. I might add I also bought a C band LNB and polarotor as well because I knew I would get a little bored with one satellite and a couple of feeds all my life.



When I arrived home, it was up on the roof to set the dish up and watch a new world out there. News feeds, the odd movie and series transmitted for regional stations to record for later transmission and some sport. This enthusiasm lasted about a week. Time to make a couple of arms and mount up to look at C band. The Indonesian and Chinese

stations opened my eyes more than anything and I think any new enthusiast will tell you they get a tingly feeling just looking at all the life being lived by people out there. Your knowledge of the world immediately expands and you become familiar with various time zones around the world.



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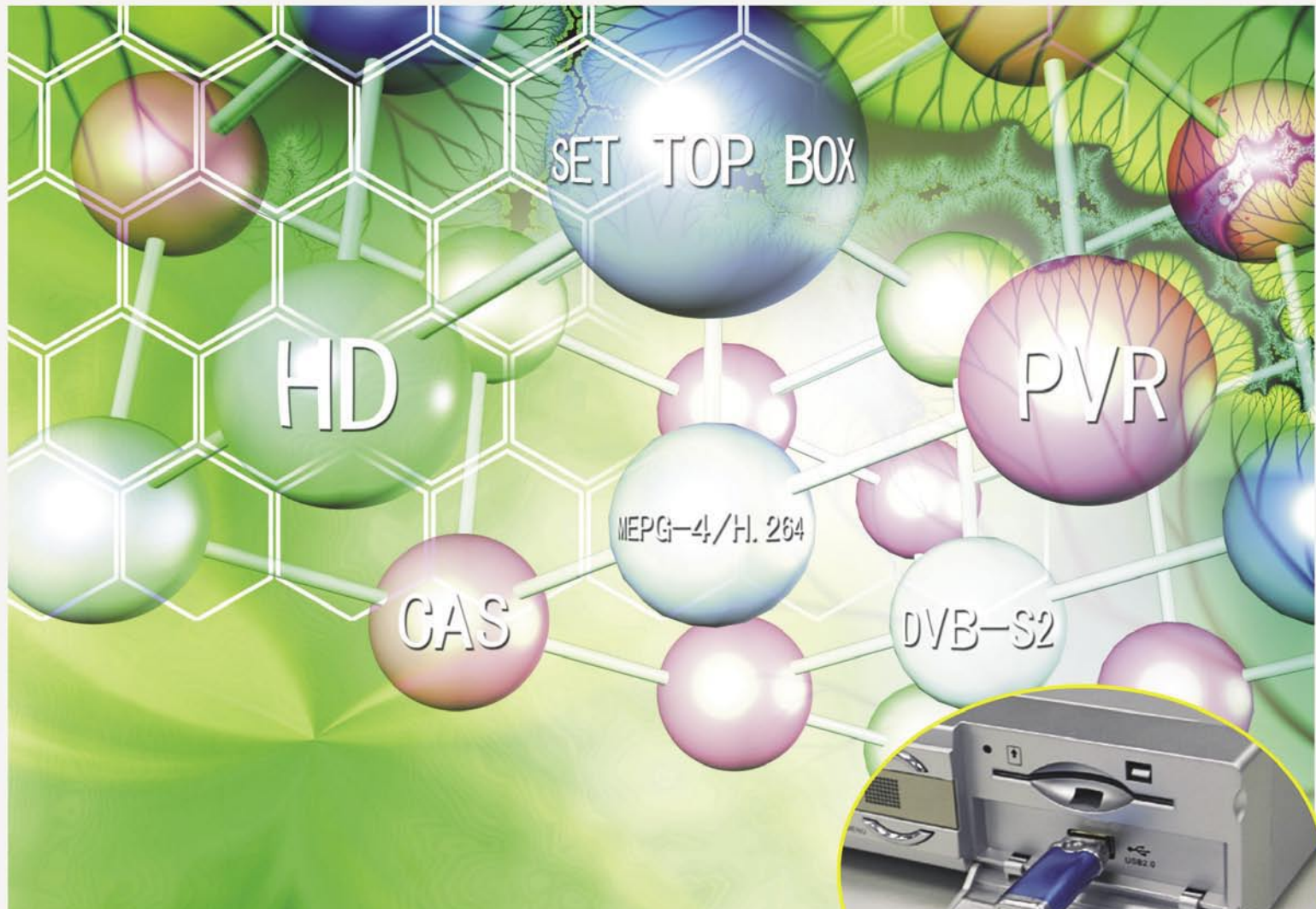
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