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### Нови продукти

## TOPFIELD

Идеалният приемник  
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Висококачествени филтри  
за С-обхвата, предоставящи  
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# DiZiPiA

VENUS  
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AL7210

### Нови продукти

## 4-сегментна мрежова сателитна антена на VENUS

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### Нови продукти

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## DS4H-9160

# HDTV PVR приемник с двоен тунер

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# TMS

## SRM-2100



Start the New year with Topfield Media Solution.

### PVR



Playing recorded programmes at up to 64 times speed at maximum.

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Supporting video files of DivX 3.11, 4.1 and 5.x.

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- Live-chatting available among network users.

[www.i-topfield.com](http://www.i-topfield.com)

# Само за читателите на ТЕЛЕ-сателит "Светът на спътниците" на SatcoDX

Програмата на SatcoDX "Светът на спътниците" съдържа технически данни за всички спътници в света



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SatcoDX 04/2009

## Светът на СПЪТНИЦИТЕ

База данни за програмиране на всички спътници в света - информационна програма

### Software V3.12 bul sdx Creator

Таблицы на всички спътници в света  
Всички канали от всички спътници

Sat Wizard: Кои канали могат да се приемат от Вашето място и с Вашето оборудване?  
DishTrak: Кои спътници могат да се приемат?  
Channel Locator: Открий желанния канал  
Online Chart Updates:  
Актуализация през Интернет по всяко време

Receiver Programming: Сортирай и филтрирай, след това зареди в SatcoDX съвместим приемник

Satellite Footprints: Виж къде са насочени сателитните лъчове

Exporting and Printing of Chart Data:  
Запиши твоите персонализирани списъци

Експорт на данни в sdx формат  
Програмирай твоя SatcoDX съвместим приемник

БЕЗПЛАТНО Включва пълно копие на сп. TELE-satellite, бр. 01/2009

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

Продукт на списание TELE-satellite & Broadband  
Само за частно и лично ползване  
ISSN 1461-5384  
SatcoDX.com

Изтеглете програмата на SatcoDX от тук:  
[www.TELE-satellite.com/cd/0904/bul](http://www.TELE-satellite.com/cd/0904/bul)

Пълен списък на каналите от всички спътници в света с технически данни.

Position Code and Satellite	Type	Ch	Freq	Px	Channel Name	Coverage
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.760	V	Telefuturo (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
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.781	V	Teletcentro	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.786	V	Feeds	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	5E	3.825	H	Deus e Amor	PAN01REA
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	7E	3.869	H	Gamavision	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	R-DIG	7E	3.869	H	Radio Sonorama	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	9E	3.882	H	Feeds	PAN01REA
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	18	4.040	V	CTC-Mundo	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	18	4.071	V	UCV TV	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	19	4.096	H	TNP - Television Nacional	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	19	4.096	H	Education A Distancia	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	R-DIG	19	4.096	H	Radio Nacional del Peru (r	PAN01RLW
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4.106	V	VLLI-TV	PAN01RLW	

Автоматично показване на всички приемни сателитни канали.

Table with columns: Satellite Position and Name, Coverage Code, Dish Size, Azimuth, Elevation.

Автоматично програмиране на съвместимите със SatcoDX приемници.

Program Receiver settings: SatcoDX Industry Standard Protocol, Power, Flow Control, etc.

Постоянна актуализация на данните през нашите Интернет сървъри.

Database Update progress bar and status information.

Satellite footprint map for 3150 PANAMSAT 1R (315.0E - 45.0W) with technical details.

Възможност за печат на списъците с каналите и зоните на покритие в HTML формат.



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50-years celebration!

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Laporan Perusahaan  
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Laporan Penerimaan  
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Най-голямото сателитно списание в света

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Новини от компаниите  
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**Rapporto di Ricezione**  
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USA gyártmány

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Egy vízióval bíró ember  
A multimédia világa  
a NanoXX-nál

**Vétel beszámoló**  
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Amerikai műholdjelek  
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NanoXX的多媒体世界

**中文**

接收报告  
欧洲的美国电视  
在特内里费接收美国的卫星信号

谷鸟的SMART公司  
国人的

**TESZT BESZÁMOLÓ**  
**Jiuzhou DTS6600**  
全家的PVR高清电视

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**50 YEARS** 1958-2008  
50-years celebration!

DVB-S2 High Definition Receiver With Common Interface. MPEG 2

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NED Het grootste Satelliet Tijdschrift van de Wereld # 208

**SATELLIET** 12-01 2008  
& BREEDBAND

**Bedrijfsrapport**  
Satellietshotels voor op open zee  
SeaTel's hoge kwaliteit antennes,  
gemaakt in de VS

**Bedrijfsrapport**  
Een man met een visie  
De wereld van de multimedia  
bij NanoXX

**Ontvangstrapport**  
TV uit de VS in Europa  
Ontvangst van Amerikaanse  
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Een Duitse beginner wordt groot

**TESTRAPPORT**  
**Jiuzhou DTS6600**  
HDTV PVR voor de hele familie

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& BROADBAND

**Przegląd firm**  
Czasze satelitarne na otwarte morze  
Wysokiej jakości anteny SeaTel - made in USA

**Przegląd firm**  
Człowiek z wizją  
Świat multimediów w NanoXX

**Raport odbiorczy**  
TV z USA w Europie  
Odbiór amerykańskich  
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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

**Relatório de Ensaio**  
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HDTV PVR Para Toda a Família

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

**Отчеты о приеме**  
Американское ТВ в Европе  
Прием сигналов из Америки со спутника на испанском острове Тенерифе

**Обзор компаний**  
Дальновидный прогноз  
Мир Мультимедиа от «NanoXX»

**Тестируем**  
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Персональный видео рекордер телевизионной высокой четкости для всей семьи

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Satellitantenner för det öppna havet  
SeaTels högkvalitativa antenner tillverkade i USA

**Företagsrapport**  
En man med en vision  
Den multimediala världen hos NanoXX

**Mottagningsrapport**  
Amerikansk TV i Europa  
Mottagning av amerikanska satellitsignaler på Teneriffa

**Testrapport**  
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HDTV PVR för hela familjen

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TUR Dünyanın En Büyük Uydu Donanımı Dergisi # 208

12-01 2009

# 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

**Test**  
Jiuzhou DTS6600  
Aile Boyu HDTV PVR uydu alıcısı

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**50-years celebration!**

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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

ABC  BIZNIS

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Tel.: +421 38 5313508, Fax: +421 38 5313508, E-mail: info@abcbiznis.sk, Web: www.abcbiznis.sk

[www.opensat.info](http://www.opensat.info)

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# Уважаеми Читатели

Когато се заговори за безплатно сателитно приемане за всеки гражданин, Китай се оказва едно от последните изолирани места на нашата планета. Но дори и там нещата започват да се променят през настоящата година. Индивидуалното сателитно приемане ще стане възможно с въвеждането на китайския DTH формат, което означава, че технологията на сателитното приемане ще проникне дълбоко в огромния местен потребителски пазар. Китай обаче, е решил да въведе свой собствен нов цифров стандарт: ABS-S. За неговите технически аспекти ще можете да прочетете повече подробности в една от статиите на настоящия брой на списанието.

Всичко това означава, че разнообразието от цифрови стандарти не спира да нараства. Добре си спомням разгорещените дискусии, които водихме тук, в TELE-satellite преди много години, когато цифровата сателитна телевизия в MPEG-2 формат се появи на хоризонта. Много от нас се страхуваха, че в бъдеще ще има ограничено разнообразие от приемници, тъй като те могат да бъдат само цифрови. Очевидно, грешахме! Ако погледнете към разнообразието от приемници, което предлага понастоящем цифровата технология, то по всички стандарти надхвърля дори и най-смелите ни мечти по време на аналоговата епоха.

В същото време се оказва, че различните стандарти могат да бъдат интегрирани само в един продукт. Например, нормални са нашите очаквания, че новите лъскави HDTV приемници с DVB-S2 ще могат лесно да обработват нормалните DVB-S излъчвания. Вероятно, няма да е далеч деня, когато новия китайски ABS-S стандарт ще бъде интегриран също и в DVB-S/S2 приемниците. Просто бъдете готови за времето, когато кашоните с приемници ще бъдат украсени с много повече логотипи, търговски марки и етикети, в сравнение с днешните.

Най-голямото предимство на ABS-S стандарта е, че той е съвсем нова разработка, което означава, че работи много по-ефективно в сравнение с DVB-S. Това е лукса да бъдеш търпелив и



да чакаш. Технологията непрекъснато върви напред и в повечето случаи един нов стандарт също означава стъпка напред. Във всички случаи, ще бъде интересно да се наблюдава дали и как ABS-S стандарта ще завоюва солидно положение на пазарите извън Китай. До известна степен, това ще зависи от лицензионната политика за ABS-S, но най-вече ще бъде определено от онези китайски производители, които успеят да намалят разходите си, за да влязат първи на огромния китайски пазар. ABS-S може да се окаже основен конкурент на DVB-S2 стандарта, който също идва с обещанието за намалени разходи, благодарение на по-ниските изисквания за ширина на лентата.

Въвеждането на китайския DTH формат в същото време отваря китайския пазар за всички останали сателитни компании, въпреки че, повечето от големите играчи така или иначе вече присъстват в Китай. Сигурно е, че сателитната промишленост ще получи допълнителен импулс, което само по себе си е много добра новина при настоящата икономическа криза. Всичко това идва да покаже, че винаги има място за прогрес - трябва само да предложите верния продукт в точното време на точния пазар.

**Искрено Ваш,  
Alexander Wiese**

*P.S.: Моят любим радио канал за този месец е Peppermint FM, една нова германска станция от Astra 19.2° Изток (12.633 Н) със страхотно non-stop музикално разнообразие, без новини, само с собствени кратки рекламни блокове. Мотото на станцията е 'Бъди свеж и млад.'*

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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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## NEW TECHNOLOGIES – NOW ON STOCK



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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 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

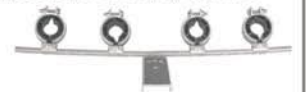


From 2 in/1 out up to 17 in/36 out

**sa SPAUN** Full Range

**Parts**

Multifeederholder for 2, 3, or 4 LNB



Wallmounts

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- 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

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**MICROELECTRONICS TECHNOLOGY INC.**

High-Line-Series



AVAILABLE AS:

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- MTI AP 82 XT2N Twin
- MTI AK54 XT2N Quad

- 40 mm
- 0,2 dB

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IDLP UST110-CUO10-8PP

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



**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



**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**

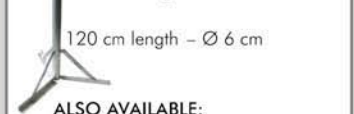
E-85 Multifocus 48° Dish



- 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



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.

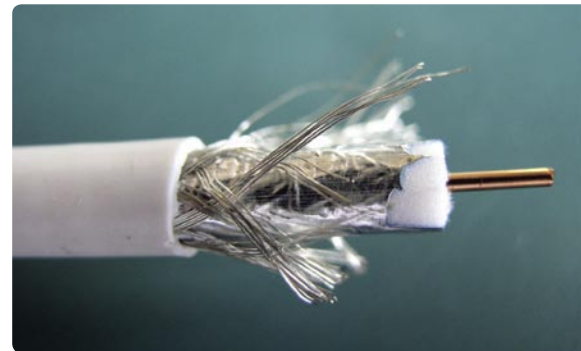
LNBs are subjected to the elements and their performance suffers if moisture cannot be kept outside. But even if your old LNB is still fine it's well worth getting a modern universal LNB with a low noise figure (0.3 dB), which will improve the threshold of your system in any case.



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 ■







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# 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.

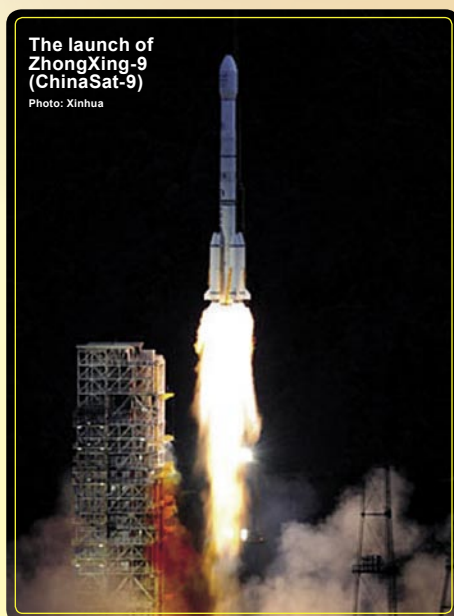
It all started back in June 2002 when the Chinese AVS standard has been published. AVS stands for Audio Video coding Standard. AVS compared to MPEG has some advantages. It has twice or three times the coding efficiency of the traditional MPEG-2 - so it is closer to H.264 (popularly called MPEG-4). However, 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.

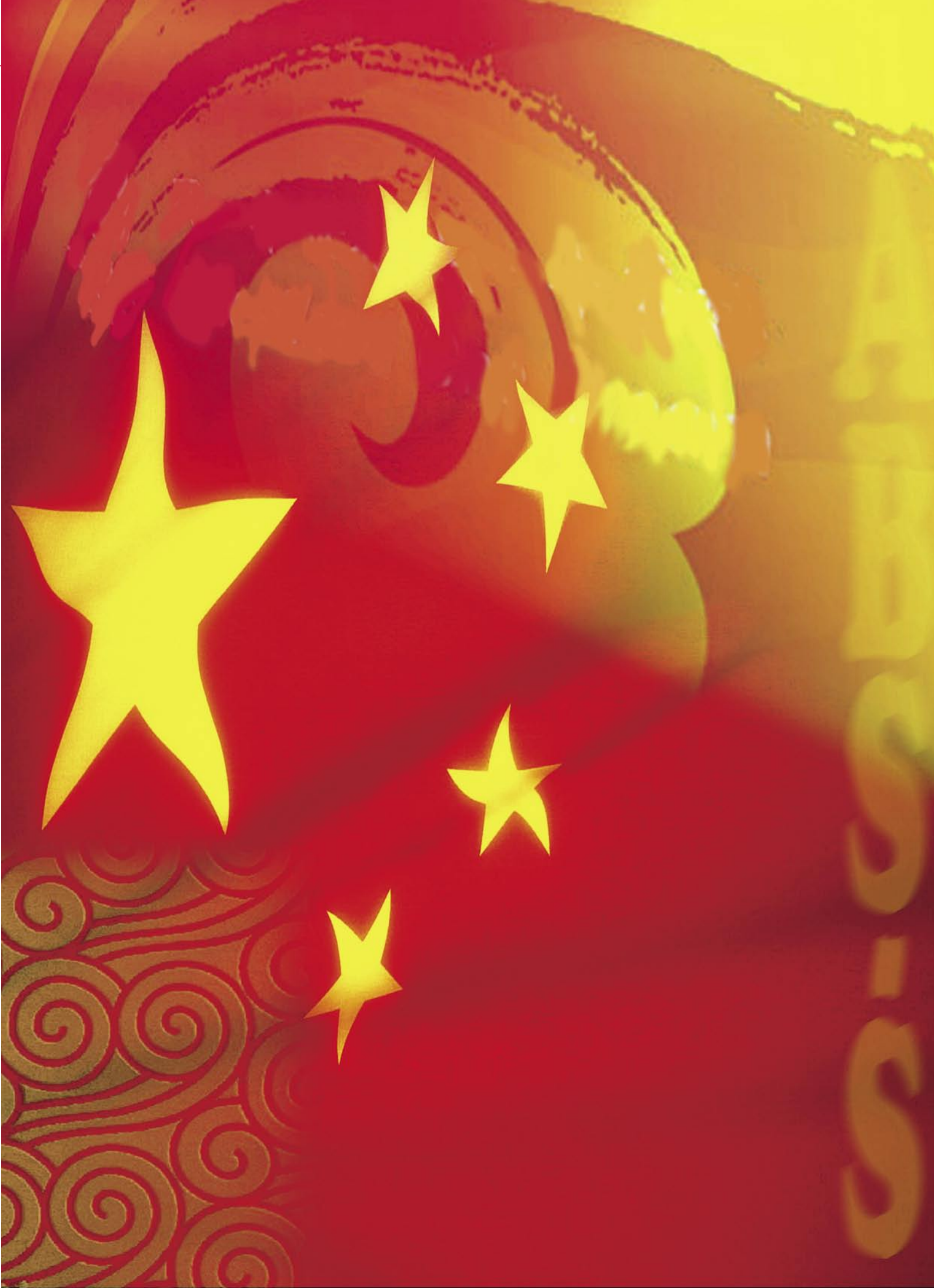
It can be interesting to watch what the world IC maker will do. Will they ignore the new standard and let the Chinese manufacturers monopolize the China market, or they will fight to offer their own implementation of ABS-S/AVS compatible chips? Will it be possible to create a universal chip suitable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

## По-голям и по-добър

*Въпреки че не е с най-звучното име, приемникът DS4H-9160 на корейския производител Dizipia веднага прави впечатление със своя размер и външен вид. Неговата лъскава, черна кутия с размери 43 см (Ш), 28 см (Д) и 6 см (В) го прави по-голям от повечето съвременни приемници, а здравият метал, от който тя е направена, означава, че той е и много тежък. Лъскавият преден панел включва един красив и ясен дисплей за показване на каналната информация.*

Дистанционното управление е също по-голямо в сравнение с други дистанционни и има размери 24x5 см. В допълнение, то може да се програмира, за да функционира и с телевизора и това аз го осъществих много бързо и лесно с кодовете, дадени на последната страница на ръководството. Поне веднъж и аз да не се ровя в Интернет за допълнителни кодове, за да го накарам нещо да работи! Дистанционното управление е ясно подредено, а клавишите се

усещат с приятно кликане по тях при натискане, като в същото време (за разлика от много други), тук не е необходим голямо усилие на натиск за осъществяване на контакт. Друг плюс е осветяването на бутоните за телевизора и приемника при тяхното натискане.

Предният панел има още една забележителна характеристика: една необикновена решетка, съставена от малки червени светлини. На пръв поглед те изглеждат просто като индикаторни

светлини, но всъщност те представляват малки бутони, с които могат да се управляват по-голяма част от най-важните функции на приемника. Предният панел също включва два CI слота и един USB порт, скрити под едно капаче отдясно.

От задната страна са разположени почти всички необходими изводи. Тук е антенният вход за всеки един от двата налични тунера, заедно със съответния loop-through изход, като сигнала на първия тунер може да се

прехвърли към втория, ако е наличен само един антенен кабел. За тази цел, към приемника е включен един малък допълнителен loop-through кабел. HDMI и S/PDIF са налични за цифрово видео и аудио, заедно с традиционните два скарт конектора, компонентно и композитно видео и RCA стерео аудио жакове. Тук има още един USB конектор, а също и RS232, и дори Ethernet порт, въпреки че няма информация в ръководството, с която да се обяснява как да се използва последният.

### Настройка на приемника

Свързването на приемника се осъществява лесно с някои ясни, помощни схеми, дадени в ръководството. Всеки един от конекторите е показан със снимка, а отделните опции са подробно обяснени. Изяснено е и нещо много важно, което би могло да причини объркване в някои потребители: ако се използва само една антена за свързване с loop-through кабела, превключването на каналите по време на запис се ограничава само в рамките на един транспондер. Двата входа за конвертори могат да се зада-



дат към различни спътници, така че две отделни стационарни антени също могат да се използват, но все пак това ще ограничи броя на гледаните и записваните по едно и също време канали.

При първоначално пускане на приемника се включва инсталационния съветник, с който се определят местното време, часовата зона и предпочитаните езици. Тук има ограничения в опциите за езици - за екранните менюта и съобщенията са налични само английски, немски и руски, докато (незнайно защо!), списъкът на езиците за аудио и субтитрите е малко по-различен; тук, руският е заменен с френски.

След това преминаваме към екрана за търсене на канали, в който първоначално се задават и търсят избраните от нас спътници. Поддържат се моторизирани антени с DiSEqC и USALS протоколи. Могат лесно да се зададат координатите (дължина и ширина) на настоящото местоположение и приемникът веднага ще изчисли позициите на спътниците, които желаете (и можете) да приемате.

Списъкът на предварително програмите

спътници в приемника е много внушителен - има около 170 от тях! Бих Ви предизвикал да откриете спътник, който отсъства от този списък, но все пак, в случай че такъв има, или в бъдеще се появят нови спътници, те могат лесно да бъдат добавяни, изтривани и редактирани, ако е необходимо. Също така, честотите на спътниковите транспондери изглеждат напълно актуализирани.

Сканирането на каналите

е приятно и бързо, като пълното сканиране на спътника ASTRA 2 отне само осем минути. След като каналите са вече в паметта на приемника, има голям набор от функции, с които има възможност за по-нататъшното им редактиране и сортиране.

Целият канален списък се извежда само с едно натискане на бутона "OK" по време на телевизионното гледане. Този списък може да бъде бързо сортиран по азбучен ред, кодирани/FTA канали, или да се остави в неговото първоначално състояние, подреден по номер на



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Portuguese	Português	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/por/dizipia.pdf">www.TELE-satellite.com/TELE-satellite-0903/por/dizipia.pdf</a>
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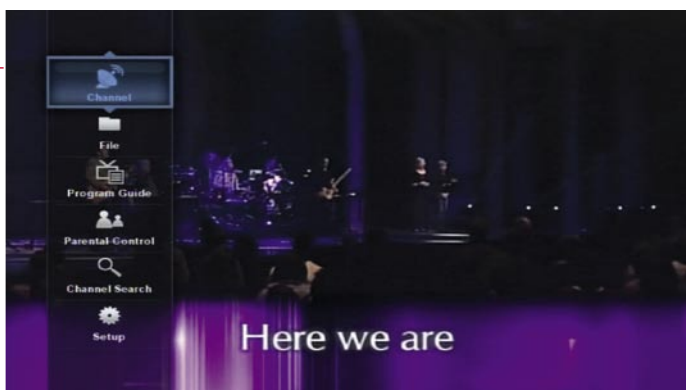
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Информация за канала |

канал. Приятно впечатление остава "zoom" функцията, с която каналния списък може да се превключва между запълване на целия екран или само част от лявата му страна, оставяйки място за телевизионната картина отдалечно.

Достъпът до всички редактури и организационни функции се осъществява от тук, което е много по-лесно, отколкото всеки път да превключвате към съответното меню за редакция. Каналите могат да се предвиждат нагоре и надолу по списъка, ако това е необходимо. Могат да се създадат неограничен брой списъци за предпочитани канали, като добавянето в тях, както и редактирането на каналите, се извършва много лесно.

Ако имате малки деца, тук се предлагат две опции за родителски контрол - нормалния метод с парола, или възможността изцяло да бъдат скрити определени канали, докато паролата отново се въведе. В допълнение на това, можете да ограничите гледаните канали до отделен списък за предпочитани канали или да зададете определено време преди приемника сам да се изключи - за да не позволите на децата да седят пред телевизора през целия ден! С друга опция се ограничават позволените програми за гледане до определена възрастовата граница, въпреки че това

изцяло зависи от това, дали доставчика излъчва правилна информация за възрастовата класификация.

## Функции на хард диска

Тъй като HD излъчванията използват много информация и поради това високата скорост на трансфера е от голямо значение, в приемника се използва интерфейс SATA, вместо традиционния IDE. За съжаление, в нашия тестови модел липсваше вътрешно инсталиран хард

диск и това ме накара да тествам изцяло свързването на такъв към USB портовете.

Предварително не бях много уверен в успеха си, но дори един сравнително стар USB диск, свързан със задния USB порт доказва с безпроблемното си функциониране (включително и със записването на HD канали), че не съм прав. Имаше случаи обаче, когато картината се влошаваше, както можеше и да се очаква. Но все пак беше възможно, гледайки един HD канал, да се запише друг канал на USB-свързания диск, въпреки че качеството не беше 100% перфектно.

Външните дискове използват стандартната FAT32 файлова система, така че запазването и изтеглянето на записи към компютър става съвсем лесно. Наличният в приемника file manager е лесен за работа от всеки, който борави с компютри, има познатата структура на файлове и директории и дори използва символа ".." за връщане към началната директория.

Съществува функция за автоматично изтриване, в случай че искате да освободите дисковото пространство от стари записи. При тази система обаче, винаги има опасност да бъде изтрит важен запис, но благодарение на една спомагателна

опция за защита на отделните записи, тук може да бъде избегнато както случайното им изтриване, така и включването на функцията за автоматично изтриване. Също така има възможност и за родителски контрол върху записите, осигурен чрез защита с парола.

Функцията "Timeshifting" е също възможна при гледане на телевизионни програми "на живо". Необходимо е само едно натискане на бутона "пауза", след което стават достъпни бутоните за "пренавиване" назад и "бързо напред". Една допълнителна функция разделя записаните програми на сегменти (подобно на главите в DVD диск). По този начин става възможна директната навигация по тях, вместо програмата да бъде търсена с "пренавиване" назад във времето. Стандартното време за временен запис на програми е фабрично фиксирано на 30 минути, но тази стойност може да се променя в първоначалните настройки до максимум 2 часа.

Известно разочарование може да бъде липсата на функции за редакция. Винаги е от полза да има дори малък брой бутони за редактиране, с оглед премахване на рекламите от записите и е жалко, че тук такава опция отсъства. Като любител на спортните пре-



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давания, на мен също ми липсваше възпроизвеждането на бавна скорост, което аз често използвам.

## Ежедневно използване

Навигацията по спътниците, каналите и менютата на приемника е сравнително лесна, въпреки че не е съвсем интуитивна, както при други известни приемници. Например, дори и след доста дълго време на използване на този приемник, аз все още не съм наясно за функцията на бутона "back", който всъщност би трябвало да връща менютата назад до последното ниво! Това не се прави дори и от бутона "menu", както нормално може да се очаква. Вместо тях, това се прави (поне отчасти) от бутона "exit"; в останалите случаи, той прави това, което се очаква от него - цялостно излизане от системата на менюто.

Качеството на картината е все още голям проблем при повечето HD приемници, но за щастие, HD качеството на Dizipla е близко до очакваното. Изображенията със стандартна разрешаваща способност са скалирани, когато се гледат в HD резолюция и това прибавя допълнително качество на картината, в сравнение с това, получавано от RGB скарт извода.

На дистанционното управление тук има един много важен бутон, с който лесно могат да се превключват резолюциите. Използвана е идея, взета от компютрите. След като резолюцията се

смени, на екрана излиза поле, в което трябва да потвърдите, че виждате картината. По подразбиране излиза "Не", така че ако няма картина, просто натискате бутона OK, с което се връщате към предишната резолюция. Налични са прогресивен и interlace режими, с обхват от 480 до 1080 сканиращи редове.

Широкоекранните излъчвания са вече нещо обикновено в наши дни и за мен беше приятно да установя, че всички опции в този приемник са създадени за тях. За гледането на 4:3 екрани тук са налични режимите "пощенска кутия" (letterbox) и "панорама" (pan/scan). При обратния вариант - излъчваната 4:3 върху екран 16:9 могат да бъдат гледани без страничните черни ленти или увеличавани, ако това се налага. Има дори и специален бутон на дистанционното управление за превключване между двата режима 16:9 и 4:3.

Аз имах проблеми при стартирането на EPG функцията, тъй като за нея е необходим вътрешен хард диск за съхраняване на информацията. Ако приемем, че тази функция ще работи по подходящ начин в окончателния вариант на приемника, може да се каже, че тя предоставя всички възможни опции, от които се нуждаем и очакваме от нея. В бъдеще, ще могат да се задават програми за записване или само за гледане. Както при каналния списък, синият бутон може да се използва за превключване уголемяването на EPG дисплея между пълен



Меню за настройка на телевизора |



EPG |

или частичен екран. Програмите, които се задават за запис, могат да са с поставен родителски контрол в определено време. Възможен е също и традиционния запис в режим на таймер.

Нормалното сърфиране по каналите е бързо и благодарение на възможността за широк екран, става почти безпроблемно. След като каналите са вече сортирани в желания ред, или в предпочитаните списъци, движението по тях става лесно. Бутонът "back" най-накрая намира своето приложение тук: натискането му ни връща към последния гледан канал. В приемника има вграден телетекст, а определени бутони на дистанционното управление предоставят достъп до субтитрите и допълнителните

аудио записи. Има и една специална опция за потребителите на pay-TV системи. Както обикновено, ако бъде направен запис на кодирана програма, е необходимо ползването на валидна карта, за да гледате записа по-късно. Но тук има специална "декодираща" опция. В предварително зададено време по Ваш избор, например, когато спите, приемникът започне да "работи" върху записания файл и да отстранява кодировката. Разбира се, остава в сила необходимостта от валидна карта за декодиране на картината.

Тъй като има два USB порта, лесно е да свържете единия от тях към хард диска (както направих и аз), а през втория - да получите достъп до други USB устройства. Аудио MP3 файлове също





могат да се възпроизведат, а картината изглежда великолепна на голям HD екран.

## Обща оценка

Това е един добър приемник с много опции за свързване и разнообразни допълнителни възможности. След като го използвате за определено време обаче, започвате да го усещате като спортна кола, която има ограничен скоростта в двигателя, чийто софтуер не е достатъчно добре разработен. Навигацията по

менютата е понякога малко изморяваща, тъй като те не са така интуитивни, както на другите известни PVR приемници.

Положителните страни на приемника са: подаване на добра картина и лесно регулиране на размера и формата на изображението с предназначенията за това бутони и CI слотове. Като PVR приемник за ежедневна употреба, той ще върши много добра работа.

## Мнение на експерта

+

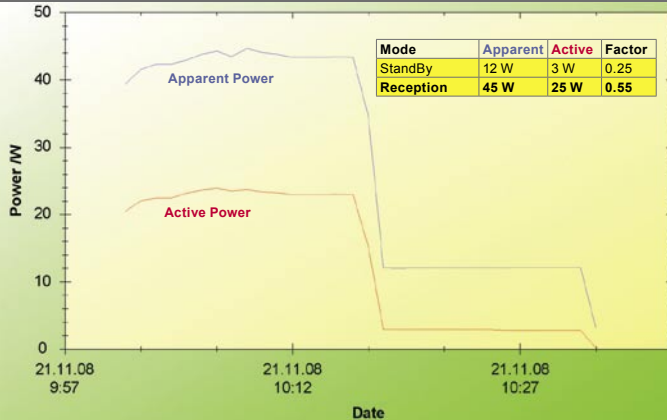
Двоен тунер с опции за голям обхват от антени и начини за свързване, възможност за декодиране, пълна поддръжка на широкоекранни телевизори и HD резолюции;  
SW актуализация и запис на компютър през Ethernet;  
Записване на два канала и възпроизвеждане на един записан файл;  
Функция Timeshifting;  
32-битово цветно екранно меню;  
Лесно за използване операционно меню;  
Поддръжка на операционна система Linux  
Поддръжка на 1080p видео резолюция



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Test Center  
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-  
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## ENERGY DIAGRAM



Списък на записаните файлове |



Възпроизвеждане на записан файл |

## 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

## Красота отвън и отвътре



Телевизорите с висока разделителна способност вече започват своя триумфален победен марш. Но ако погледнете статистиката в сайта [www.SatcoDX.com](http://www.SatcoDX.com), ще отбележите разочароваща реалност: HOTBIRD, например (13° Изток) има не повече от 29 HDTV канала, в сравнение със останалите 1355 SDTV канала в PAL. За тази мрачна статистика, разбира се, могат да бъдат изтъкнати много причини, но най-важните от тях са финансовите: създаването на достатъчно голяма ширина на лента струва скъпо и, ако доставчиците понастоящем предлагат SDTV услуги, те биха предлагали HDTV само като добавка към първите. За крайния потребител това означава, че въпреки наличността на модерен широкоекранен плосък телевизор, той ще продължава да гледа SDTV канали, но поради големината на екрана, качеството на картината няма да е достатъчно добро.



Този проблем е вече взет под внимание от южнокорейския производител Topfield и сега те предлагат едно интелигентно решение с техния нов приемник TF6000PVR ES. Той много прилича на предишният (TF6000PVRE), с тази важна разлика, че има една важна опция: upscaler.

Този upscaler приема входящия сигнал и увеличава неговата разделителна способност чрез интерполация на липсващите пиксели, като по този начин се избягват растерите; нещо, което не би могло да се избегне при нормалното увеличение на резолюцията. Ние, в TELE-satellite бяхме много любопитни да подложим този приемник на цялостен тест, за да видим как работи на практика тази нова функция.

Когато извадихме приемника от кашона, забелязахме, че TF6000PVR ES беше с по-малка ширина от очакваната - 38 см, в сравнение с



43 см на предишния модел (TF6000PVRE). Но така или иначе, тази по-малка ширина не намалява по-никакъв начин неговата елегантност.

В центъра на предния панел е разположен един много лесен за разчитане буквено-цифрен VFD дисплей; до него има три бутона за управление на приемника, в случай, че отсъства дистанционното управление. Четирите бутона за усилване и превключване на каналите са поставени в един сребристо оцветен кръг. Той, заедно със осветения в синьо Standby бутон, придават много впечатляващ вид на приемника.

Зад едно капаче от дясната страна на предния панел могат да се открият два CI слота за PayTV приемане. Те могат да приемат всички нормални модули, като Irdeeto, Viaccess, Seca, Conax, Nagravision или Cryptoworks и работят заедно без никакви проблеми. Както можеше да се очаква, на задния панел на TF6000PVR ES са разположени всички възможни изводи за свързване. В допълнение към сателитния IF вход с looped-through изход за двата тунера, тук също ще откриете HDMI изход, два скарт конектора, три RCA жака за видео и стерео аудио изходи, S-Video изход, оптичен цифров аудио изход, USB 2.0 жак и интерфейс за Ethernet. Въпреки че вече не се използва много, тук има и RS-232 интерфейс за свързване с компютър.

Дистанционното управление приляга много добре към ръката, а бутоните са подходящо обозначени и лесно достъпни.

Както и от самия приемник, ние бяхме също така възхитени и от изработката на дистанционното. Ръководството на потребителя, както може да се очаква от Topfield, е написано в много ясен и разбран стил, достатъчно добре илюстрирано там, където е необходимо, и отговаря по компетентен и ясен начин на всички въпроси, които биха могли да възникнат по време на използването на приемника.

## Ежедневна употреба

След включването му за първи път, новият приемник на Topfield стартира с изведане на главното меню, в което подканя потребителя да го настрои според неговите специфични нужди и в съответствие с неговата антенна система, преди да се премине

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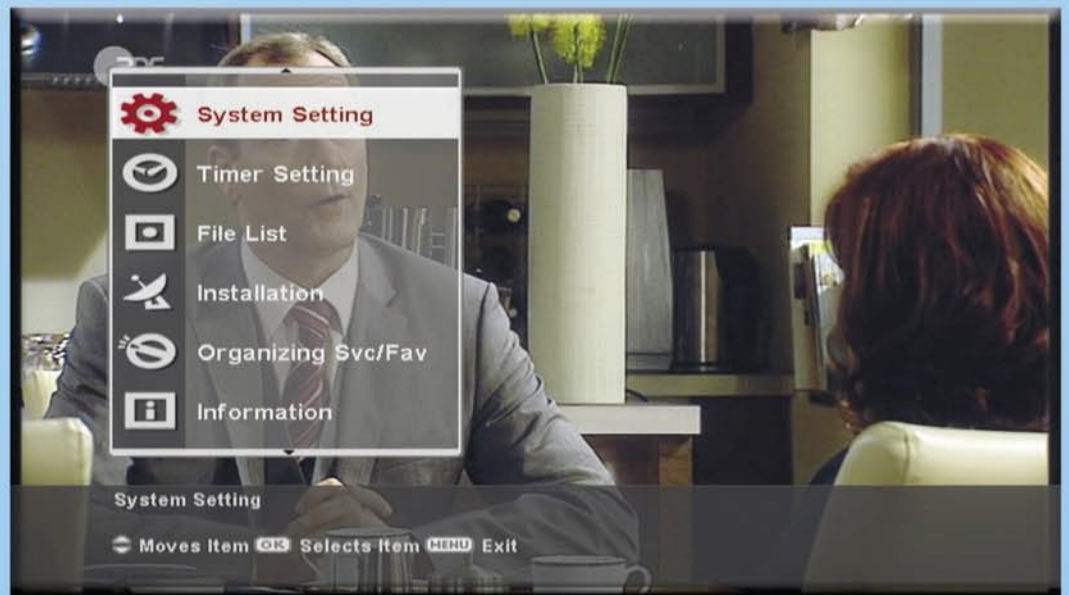
Arabic	العربية	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/ara/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/ara/topfield.pdf</a>
Indonesian	Indonesia	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/bid/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/bid/topfield.pdf</a>
Bulgarian	Български	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/bul/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/bul/topfield.pdf</a>
Czech	Česky	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/ces/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/ces/topfield.pdf</a>
German	Deutsch	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/deu/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/deu/topfield.pdf</a>
English	English	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/eng/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/eng/topfield.pdf</a>
Spanish	Español	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/esp/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/esp/topfield.pdf</a>
Farsi	فارسی	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/far/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/far/topfield.pdf</a>
French	Français	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/fra/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/fra/topfield.pdf</a>
Greek	Ελληνικά	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/hel/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/hel/topfield.pdf</a>
Croatian	Hrvatski	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/hrv/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/hrv/topfield.pdf</a>
Italian	Italiano	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/ita/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/ita/topfield.pdf</a>
Hungarian	Magyar	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/mag/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/mag/topfield.pdf</a>
Mandarin	中文	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/man/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/man/topfield.pdf</a>
Dutch	Nederlands	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/ned/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/ned/topfield.pdf</a>
Polish	Polski	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/pol/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/pol/topfield.pdf</a>
Portuguese	Português	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/por/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/por/topfield.pdf</a>
Russian	Русский	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/rus/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/rus/topfield.pdf</a>
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Turkish	Türkçe	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/tur/topfield.pdf">www.TELE-satellite.com/TELE-satellite-0903/tur/topfield.pdf</a>

Available online starting from **30 January 2009**

по-нататък. Тук отсъства инсталационен съветник, но на практика такъв не е необходим, тъй като структурата на менюто на Topfield е много логично построена и дори и начинаещ би могъл лесно да се ориентира в него.

Първото нещо, което трябва да се направи, е да се зададе езика на екранното меню в системните настройки.

TF6000PVR ES предлага много голям избор на езици, от които може да изберете: German, English, French, Spanish, Arabic, Greek, Turkish, Danish, Swedish, Norwegian, Dutch, Polish, Persian, Finnish, Czech и дори(!) български. След като езика вече е избран, потребителят може да продължи с отделните елементи на менюто.



Добре подреденото главно меню на приемника TF6000PVR ES



Както всички останали сателитни приемници, TF6000PVR ES може да задава времето автоматично, през спътник. За разлика обаче, от много други конкурентни модели, Topfield предоставя голям брой разнообразни възможности за неговата настройка. Например, източникът за настройка на времето може да бъде ограничен само до кодираните канали и дори до определени транспондери. За съжаление, тази функция е необходима, като се има предвид факта, че много от доставчиците (с изключение на основните DTH позиции) не включват задължително в своите излъчвания точното време и по този начин често подават невярна информация за него. Тук може да се активира/деактивира дори стандартното и лятното време само с натискане на един бутон; затова вече не е необходимо да се тревожите за разликата с GMT. Разбира се, часът и датата могат също да се настройват и ръчно. TF6000PVR ES работи с часовник с реално време – той поддържа точното време дори и след прекъсване на тока и за разлика от много други приемници, може автоматично да стартира записа с таймер, след възстановяване на електрическото захранване.

Благодарение на интеграцията upscaler, TF6000PVR ES е идеалния приемник за използване със съвременните

телевизори с плоски екрани. Тук също има и интегриран HDMI изход, през който приемника може да конвертира видео сигнала до 576p, 720p или 1080i. За да станат нещата дори още по-лесни, потребителят може да прави тези настройки с използване на специален бутон директно от дистанционното управление, без да има нужда да минава през няколко страници от менюто.

Ако все пак искате да свържете Вашия нов Topfield приемник с телевизора през скарт конекторите, Вие имате на разположение RGB, CVBS, S-Video или YUV. Картината може да бъде зададена на 4:3 и на 16:9. Има и допълнителни режими за 4:3 при гледане на 16:9. Поддържат се PAL и NTSC, както и автоматичното превключване между двата формата, така че телевизионното приемане от Америка в Европа и обратно не представлява никакъв проблем. Благодарение на интегрирания upscaler, възможно е също да се регулира размера на картината с +/- 20%, така че изображението да отговаря изцяло на използвания телевизор.

След като бъдат извършени всички настройки, приемникът може да се конфигурира да бъде в съответствие със съществуващата антенна система. Двата тунера могат да бъдат захранени с отделни

сателитни сигнали - това би било идеалното приложение на този приемник, или те могат да използват един и същ входящ кабел. Вторият вариант има значителни ограничения за единия тунер по време на запис на дадена програма върху другия тунер. Тези ограничения не биха съществували, ако се използваха два отделни сателитни сигнала.

Новият приемник на Topfield идва с препрограмиран списък от 156 европейски, азиатски и американски спътника. Най-популярните позиции между тях са изцяло актуализирани, въпреки че преразглеждане на неактивните позиции също не би било лоша идея.

Високо оценяваме големия брой възможности за настройки, които биха могли да се направят за всеки отделен спътник. Има много предварително програмирани стойности за честотата на локалния осцилатор (LOF), от които може да се избира, но ако е необходимо, възможно е и ръчно вкарване на LOF стойности. Това дава възможност за използване на нестандартни конвертори. В приемника са интегрирани всички налични DiSEqC протоколи, така че могат да се приемат различни спътникови позиции. DiSEqC 1.0 позволява приемането на до четири спътника, 1.1 се използва при мултифокусни антени с до 16

конвертора, а DiSEqC 1.2 и 1.3 (USALS) - за управление на моторизирани антени.

След като тези параметри бъдат настроени, следващата стъпка е запълването на каналната памет на приемника от 5000 канала (ТВ: 3500, радио: 1500). Тази задача може да се реши както с ръчното, така и с автоматичното сканиране с помощта на препрограмираните транспондерни данни. Има и разширен режим на сканиране с ръчно въвеждане на PID-ове. Подобно на споменатите вече сканирания, мрежовото сканиране може също да бъде ограничено до свободните или кодираните канали.

Скоростта на приемника при сканиране на канали е също много впечатляваща: бяха необходими само четири минути, за да бъде сканиран нашия тест спътник с над 100 транспондера. Да не забравяме все пак, че TF6000PVR ES не е HDTV приемник и следователно не може да приема DVB-S2 и/или MPEG4/H2.64 сигнали. Но все пак, той приема стандартните SDTV сигнали и ги обработва с неговия upscaler, така че се получава картина със значително по-добро качество на съвременните LCD или плазмени телевизори.

След като бъде сканирана някоя от големите сателитни DTH платформи, много е възможно каналния списък да



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Ultra-small 60cm  
broadband.

**NEW! 2406.**  
Commercial quality  
60cm broadband.

**NEW! ST14.**  
New design.  
Better performance.

## Same company. Advanced technology. Strengthened by Cobham.

Sea Tel's logo has changed with the addition of Cobham's name, but Sea Tel's superior products and service remain the same. Along with the new logo and the recently released 2406 60cm antenna, Sea Tel is pleased to announce a smaller, lighter 60 cm Tx/Rx antenna system, the USAT 24, an Ultra Small Aperture Terminal. Plus the new ST14 TV-at-Sea antenna features an advanced pedestal assembly, made of durable nylon polyamide injection molding used on aircraft antennas. Tests reveal 1.3 dB more signal than competitors.

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бъде запълнен със стотици канали, голяма част от които въобще да не представляват интерес за потребителя, поради факта например, че са кодирани и следователно не могат да се приемат. Именно поради тази причина, много важно е да има възможност за редактиране на този списък, така че да останат само желаните канали. В продължение на много години Topfield е показвал на света как става това и при този приемник също няма промяна. Каналите в списъка на TF6000PVR ES могат лесно да се изтриват, преименуват, преместват или блокират с ПИН код, така че децата да не могат да гледат програми, които не са предназначени за тях. Списъкът може да бъде автоматично подреден по няколко различни начина, а желаните от Вас канали - да се преместват в неограничен брой различни списъци "Предпочитани", така че да могат лесно да бъдат откривани само с едно натискане на бутон от дистанционното управление.

След като всички настройки се извършат и сканирането приключи, потребителят може да излезе от главното меню и приемника ще се включи на първия приет канал от списъка. Заедно с него се появява също и една информационна лента за този канал, показваща неговите технически параметри и характеристики (DD-аудио, субтитри, текст, кодировка, и т.н.), плюс информация за текущата излъчвана програма, с уговорката, разбира се, че тази информация се предоставя от доставчика. Същата информационна лента се появява

и при превключване между каналите.

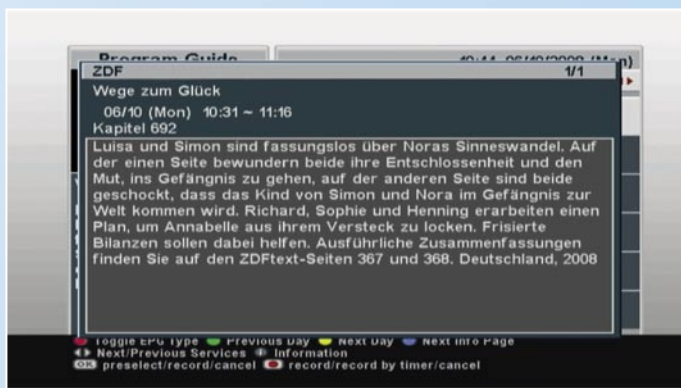
Натискането на бутона Info извежда разширена информация за текущите програми. Бутонът Guide дава преглед на предстоящите програми, включително и подробна информация за програмите в следващите седем дни. Тук също се предполага, че доставчикът предоставя тази информация. Също така, има два режима на показване, които можете да изберете. Особено практична е възможността да се програмират настройките на таймера за запис директно от EPG опцията. Всичко, което трябва да направите е да натиснете един бутон, за да бъде маркирана някоя програма за запис.

Достъпът до подробния канален списък на Topfield става с натискане на бутона OK. Тук има множество режими за сортиране и търсене, с които можете лесно да откриете желания от Вас канал. Ако е необходимо, потребителят може сам да избере с кой тюнер да приеме избория от него сателитен канал или този избор да остави на самия приемник. Втората опция може да е по-добрия избор, ако в момента се извършва запис. Времето за превключване между каналите е много добро и дори, ако двата канала са на различни транспондери, то не е повече от една секунда.

Използваните от Topfield тюнери имат изключително висока чувствителност и нямат никакви проблеми с приемането на слаби сигнали, каквито са тези на ASTRA2D, 28.2° Изток или NILESAT, 7° Запад. Бяхме доволни и от SCPC възможностите на при-



Канален списък с множество възможности за настройка |



Разширена EPG информация |



Информационна лента |

емника; приетите сигнали започваха от 1.0 Ms/sec и даваха картина без смущения. Не сме виждали много приемници в нашата изпитателна лаборатория, които могат да приемат трудния RSP канал от EUTELSAT SEASAT, 36° Изток със скорост на символите само 1.0 Ms/sec.

Има и много други допълнителни функции, които перфектно допълват цялостната картина на TF6000PVR ES. В този списък, разбира се, са включени всички възможни и многобройни опции на програмирация се таймер (а те са: възможност за седмично, ежедневно, през сед-



мицата, или през почивните дни записване), невероятната леснота за използване на този приемник, чудесно функциониращия телетекст декодер, както и многобройните включени практически екстри.

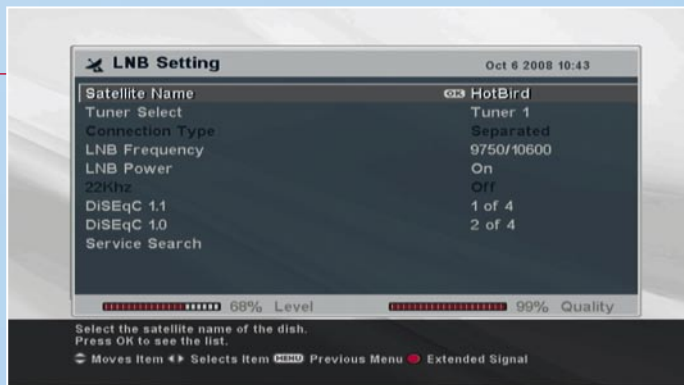
PVR функцията без съмнение стои начело на списъка. Приемникът може да записва едновременно два канала на интегрирания хард диск и да ги възпроизвежда без никакво изменение на качеството. Благодарение на функцията "timeshift", също е възможно да се спре на пауза текущо излъчвана програма, в случай че възникне някакво неочаквано прекъсване, като например - телефонно позвъняване. След като това непредвидено събитие отmine, програмата може да бъде възобновена от момента на прекъсването ѝ. Друга много практична функция се нарича "Показалец". С натискане на един бутон може да се маркира специфично място по време на запис, така че то да бъде лесно намерено в по-късен стадий.

USB 2.0 и мрежовият интерфейс на задния панел дават възможност за свързване с компютър, работещ под Windows. Записите могат да се прехвърлят от приемника към този компютър посредством тези два интерфейса и от там може да се запишат на DVD. Естествено, данните могат да се прехвърлят също и в обратната посока, а има възможност и за трансформиране на TF6000PVR ES в MP3 джукбокс с копиране на MP3 файлове в него. През мрежовия интерфейс са достъпни уеб и FTP сървър, с които записите на хард диска могат да бъдат управлявани. Дори могат

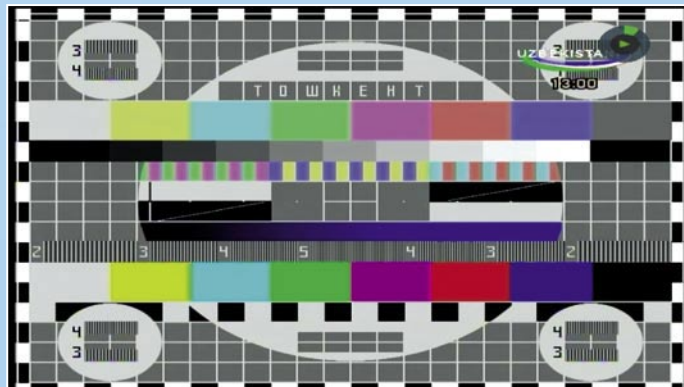
да бъдат задавани записи с таймер директно на компютър. За съжаление скоростта на пренос на данни през мрежовия интерфейс е само 1MB/сек и това може да доведе до продължително изтегляне на по-дългите записи. Конфигурацията на мрежовата връзка може да управлява от DSL модем или рутер, който също може да бъде използван, тъй като TF6000PVR ES поддържа DHCP протокола.

Функцията картина-в-картина е също много практична. Тя дава възможност за превключване на втори канал или към по-рано вече записана програма, докато по основния канал тече рекламно време. В този период, основният канал ще се вижда в малък прозорец и след приключване на търговската реклама е необходимо само едно натискане на бутон, за превключване на приемника обратно към него.

Една от причините за големия успех на всички Topfield приемници е възможността за получаване на безплатния TAP интерфейс, позволяващ на потребителите да качват в приемника си собственооръчно направен софтуер. TF6000PVR ES не прави изключение в тази област. Благодарение на своята хардуерна прилика с TF6000PVRE, почти целия наличен TAP софтуер също може да работи и в новия TF6000PVR ES. Ние изпитаме популярния EPG TAP, ZPG и открихме, че той функционира перфектно в приемника, като добавя към и без това отличната EPG функция на Topfield многобройни други функции, като например, автоматично събиране на EPG информация в определено време, така че



Настройки на конвертора



Приемане на слаби сигнали, като този от спътника EXPRESS AM1, 40° Изток

тя да бъде винаги налична и перфектно сортирана за потребителя.

Компанията Topfield непрекъснато работи за подобряване на своите приемници и следователно предлага различни начини за изтегляне на своите софтуерни актуализации. Това може да стане през спътник, от Интернет чрез мрежовия интерфейс, или нужния файл може да бъде изтеглен в персоналния компютър от уеб сайта на Topfield и впоследствие пренесен в приемника през неговия USB интерфейс.

И накрая, няколко думи относно интегрирания "upscaler". Трябва да е съвсем ясно, че той не може да вземе слаб сигнал (имащ ниска скорост на пренос на данни) и да го превърне в супер ясна HD

картина. Не може да искаме толкова много. Но той може да подобри картината по такъв начин, че това, което може да се види на LCD или плазмен телевизор, да бъде много близко до качеството на изображението от стандартен 80 cm телевизор. Другите канали, излъчващи в SD формат с по-висока скорост на пренос на данни, могат да бъдат обработени от функцията "upscaler" на Topfield, така че да предоставят видимо по-добро изображение, за което крайния потребител би казал, че силно се доближава до HD качеството.



## Мнение на експерта

+

TF6000PVR ES е лесен за използване, приятелски настроен цифров приемник. Благодарение на интегрирания upscaler, той е напълно подходящ за използване с LCD или плазмени телевизори и дава картина с видимо подобро качество. PVR функциите са много практични и след като веднъж свикнете с тях, никога няма да искате да ги изоставите.



Thomas Haring  
TELE-satellite  
Test Center  
Austria

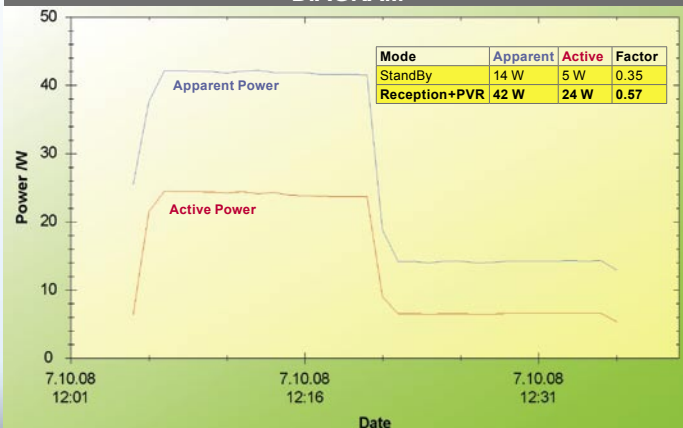
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Наличната канална памет от само 5000 канала би могла да бъде по-голяма. Добре би било на задния панел да има и мрежов ключ.

## 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



Първите 15 минути: активно функциониране с превключване между каналите, записи, възпроизвеждане и т.н. Следващите 15 минути: режим на готовност



3PG TAP за разширяване на EPG функцията |



Аудио/Видео настройки |



DHCP поддръжка за лесна мрежова настройка |



Редактор на каналния списък |



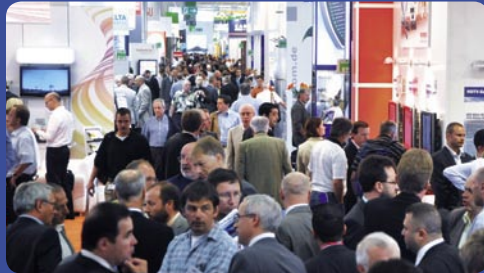
Стандартна EPG функция





# ANGA Cable

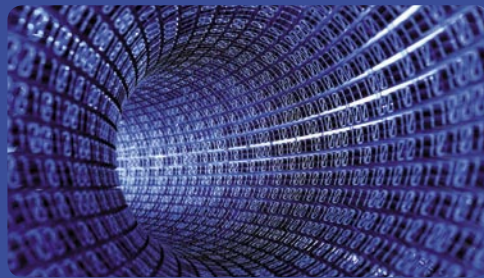
Trade Fair for Cable, Broadband and Satellite



## ➔ The Exhibition

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- 12,000 trade visitors from 68 countries
- 22,000 sqm exhibition space (gross)

26 – 28 May 2009  
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[www.angacable.com](http://www.angacable.com)

# 4-сегментна антенна система от Venus

*Индонезийският производител PT Subur Semesta (широко известен със своето търговско име Venus) е разработил иновационна мрежова антенна система, която е напълно подходяща за приемане на C-обхвата и може да бъде сглобена много лесно, благодарение на своя интелигентен дизайн.*

Това, което прави антената по-различна, е идеята да се разделят нейните 12 панела на четири сегмента. Така, това което се получава в крайна сметка, са четири антени четвъртинки, всяка от които се състои от три предварително изработени панела. Естествено, това много ускорява нейното сглобяване.

Този продукт се предлага с ръководство за монтаж, което дава възможност

■ Новата мрежова антенна система AL7210 (цифрите показват нейния диаметър във футове/метри) на PT Subur Semesta е произведена в съответствие с една иновационна производствена система и се състои от само четири ¼ антени сегменти.



■ Четирите сегмента на мрежовата антена на PT Subur Semesta.



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AL7210

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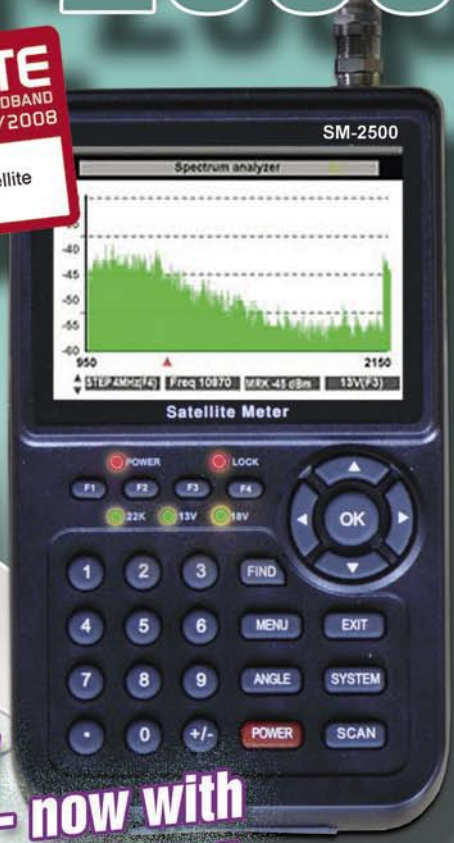
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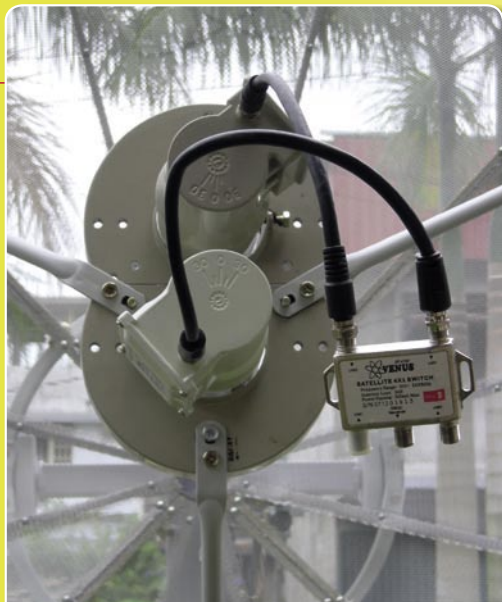
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■ Монтирана е поставка за два конвертора с двоен ключ.



■ Патентованата от PT Subur Semesta либела върши чудеса при настройката на антената.

сглобяването и пускането на антената в работен режим да стане за не повече от 30 минути. Като в това време е включено и правенето на снимките за тази статия!

Отделните компоненти

имат много високо качество: те са изцяло галванизирани, така че освен бързото сглобяване, новата антена на Venus предлага и много години надеждна работа. Ние имаме възможност да тест-

ваме 2.1-метровата антена, която се продава предимно в Индонезия. Поради близкото разположение на страната до екватора, тук са необходими много големи ъгли на елевация и именно поради тази причина антената се окачва на края на мачтата. При ъгъл на елевация почти 90°, характерен за тази част на света, всеки друг тип окачване не би работил по никакъв начин.

Мрежовата антена на PT Subur Semesta се произвежда почти напълно автоматично, като делът на ръчната работа представлява само 15 процента от общия производствен процес. Това осигурява консистентно качество и отделните панели имат точна параболична форма. Подобно на плътната антена, тази има почти същата монтажна основа. Между другото, новата мрежова антена се предлага с почти същите скоби и монтажни елементи, както и плътните антени на компанията PT Subur Semesta.

Размерът от 2.1 метра е избран от PT Subur Semesta поради следната причина: в някои райони на Индонезия, антени с размер 1.8 метра просто не работят, докато 2.7-метровите са твърде големи

и тежки за по-голямата част от страната. Както се оказва, диаметърът от 2.1 м е перфектния размер за Индонезия. От компанията ни съобщиха, че това е само началото. PT Subur Semesta има намерение първо да стъпи на техния вътрешен пазар, а след това да започне да прави и предлага антени от този тип, но с други размери и на международния пазар.

Подобно на другите видове антени от PT Subur Semesta, този модел също се предлага с патентованата от Venus либела. Благодарение на своите прикачени магнети, тя може лесно да се закрепва във всякаква хоризонтална или вертикална позиция върху монтажните скоби и скалата веднага ще отчете текущия ъгъл. С това се избягва отчайващата и уморителна фина настройка за позицията на антената.

За нашия тест ние използвахме окачване на два конвертора на една поставка. Този вариант, заедно с варианта 4-в-1 конвертора за приемане на C-обхвата, също се предлагат от PT Subur Semesta. Тези конверторни окачвания са идеални за условията в Индонезия, тъй като те дават възможност за приемане на сигнали от няколко спътника на различни позиции с една антена. Възможните опции са: PALAPA C2 (113.00) и TELKOM 1 (108.00), или ASIAPAT 3S (105.50) и ASIAPAT 2 (100.50), или всичките четири едновременно.

След само няколко минути настройка, ние бяхме в състояние да приемаме сателитни телевизионни сигнали с новата антена. Очевидно, новата мрежова антенна система на PT Subur Semesta е иновационно решение за производство на антенни панели с постоянно високо качество. Към всичко това може да се добави бързия монтаж и лесното транспортиране.



■ Всичко вече е готово, сега предстои да се измери приемания сигнал.



■ Чудесно! Уредът показва перфектно приемане.

## Мнение на експерта

+

Новата мрежова антенна система Venus на PT Subur Semesta просто блести, благодарение на нейното високо качество. Сглобяването ѝ е лесно, благодарение на интелигентният ѝ дизайн. Антената се предлага с всички необходими монтажни компоненти, така че можете да започнете да гледате сателитна телевизия веднага след нейната настройка.



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# SPAUN Switch for USA

Ron Roessel

*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

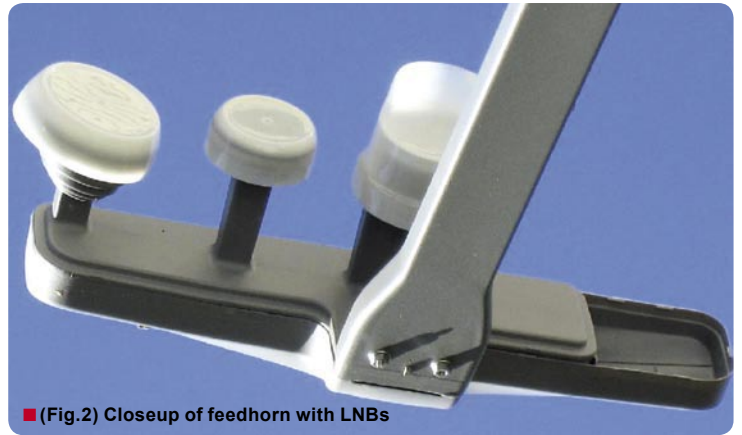
ers! In 2007 DirecTV began offering 70 HD channels and today that number has risen to over 130 HD channels.

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

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 subscrib-

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

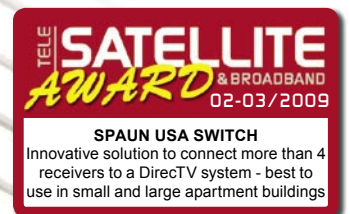
satellite antenna. Obviously, a standard DirecTV satellite system can't handle this all by itself. That's where SPAUN comes in.

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



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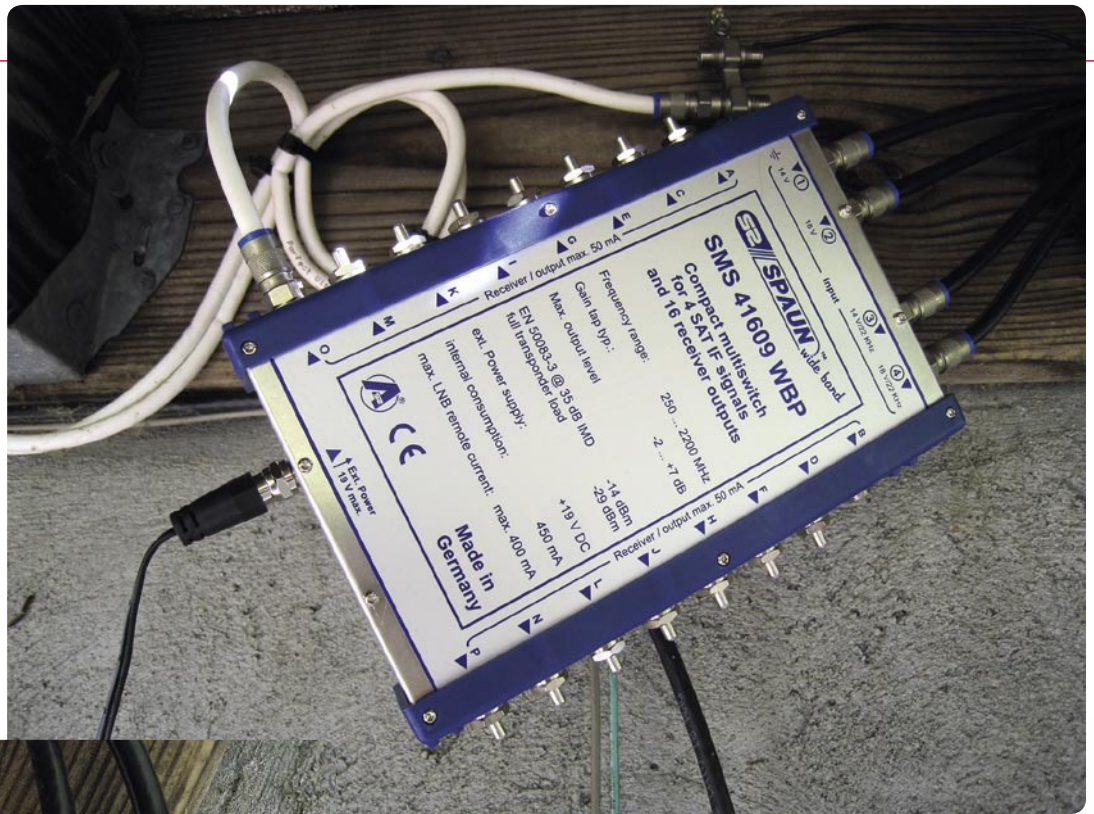
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two add up to five. Then you might be asking yourself how it can be possible to switch between five different satellites and at the same time give all the connected receivers access to these satellites independent of each other.

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:

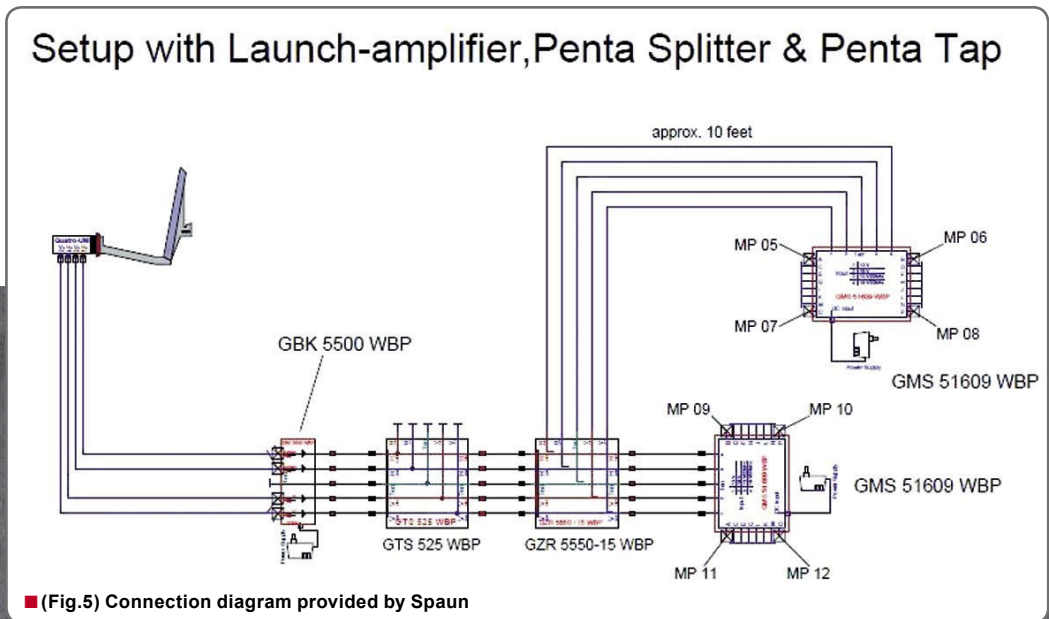
- 1xGBK 5500 WBP Wide-band Launch Amplifier
- 1xGTS 525 WB Penta Splitter
- 1xGZR 5550/15 WB Penta Tap with Directional Coupler
- 2xGMS 51609 WBP Compact 16-Output Multiswitch

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

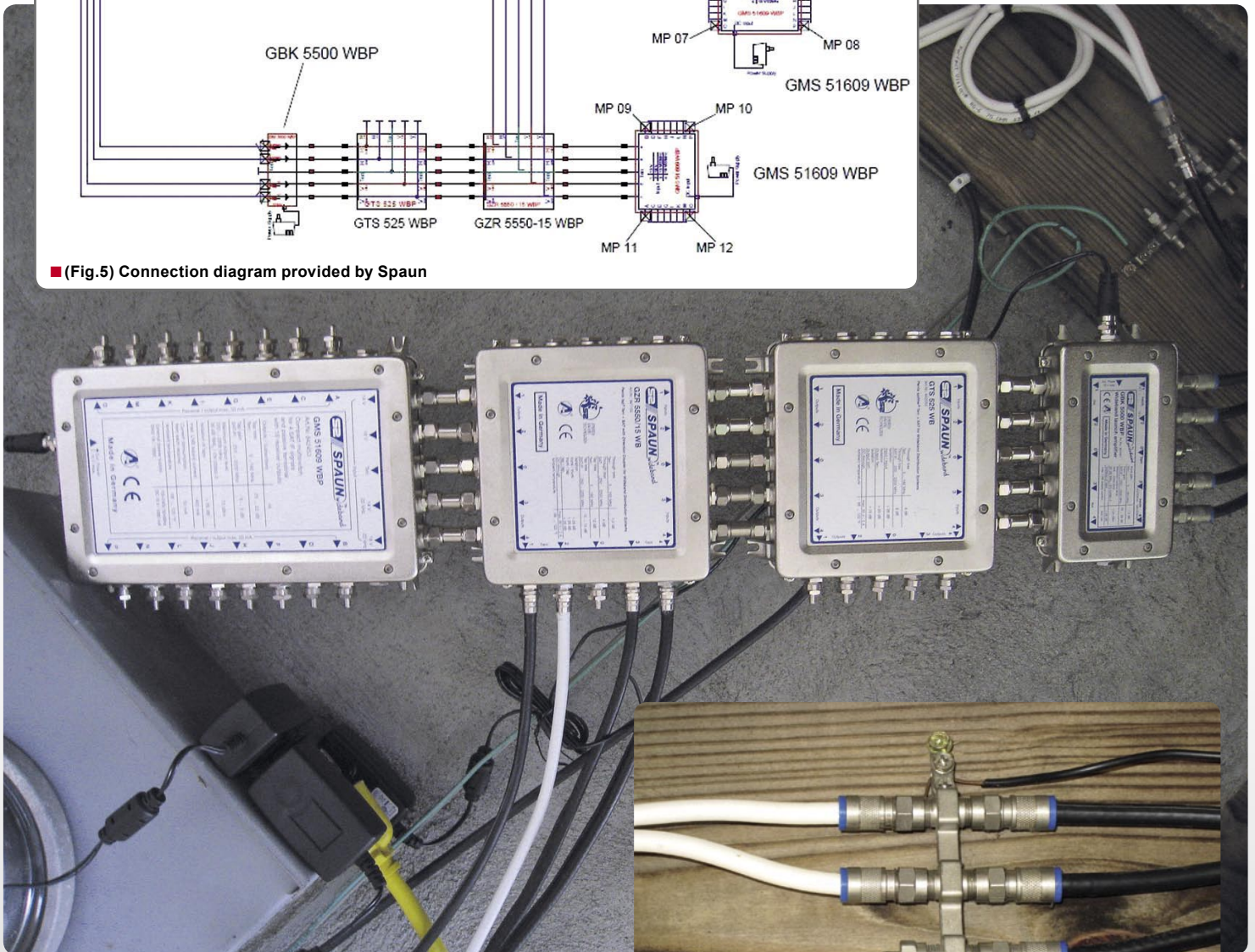
before the cables went into the house. This was a convenient point to connect the SPAUN components.

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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Scart/Digital Audio	●/●

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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.subursemesta.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	●/●

# Възходящото движение на Arion

*Преди повече от една година сп. TELE-satellite публикува статия, разказваща за успехите на южно-корейския производител на висококачествени приемници с марката Arion, с главна квартира, намираща се в гр. Anyang, едно от южните предградия на Сеул. Настоящото ни поредно посещение имаше за цел да разбере как компанията Arion успява да запази своето възходящо движение, въпреки съществуващите трудности през отминалата година, както и какви са техните планове за 2009г.*

Thomas Roh (отляво), директор по продажбите и маркетинга и Sam Chang (отдясно), главен маркетингов мениджър, пред входа на офисите за проучване и разработка на Arion.

Открихме мениджърът по маркетинг Sam Chang в новата сграда на компанията, недалеч от старата им главна квартира. Той ни разказа за новите неща, които се случват при тях: "Преместихме се на това място, защото тук можем да предложим на нашите служители по-добри работни условия." В момента Arion разполага с 80 броя служители, 50 от които работят като инженери в центъра за проучване и разработка в гр. Anyang, Южна Корея. "Основното производство на приемниците Arion се осъществява в южен Китай," обяснява Sam Chang.

Неговата колежка в областта на мар-

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Hungarian	Magyar	<a href="http://www.TELE-satellite.com/TELE-satellite-0903/mag/arion.pdf">www.TELE-satellite.com/TELE-satellite-0903/mag/arion.pdf</a>
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■ Не е ли очевидно? Компания с толкова много сателитни антени на покрива може би има нещо общо със сателитните приемници. Jeong Woo Lee е един от инженерите на Arion и тук той поставя и настройва конвертор. В далечината може да се види хоризонта на Anyang - едно от южните предградия на Сеул.

кетинга Joey Lee добавя малко географска информация: "30 процента от нашите продукти се изнасят за Индия, други 30 процента се изпращат в Южна Америка, а останалите 40 процента се разпространяват в Европа." Sam Chang добавя, "Нашият офис в Аржентина работи от началото на 2007г.", и продължава: "през 2009г. планираме да продължим с нашето разрастване, този път в Западна Европа."

Thomas Roh, който е директор по продажби и маркетинг, ни съобщава допълнителни подробности във връзка с по-големите пазари за компанията: "От 2006г., Arion се фокусира най-вече върху пазара на телевизионните оператори в

Латинска Америка, Индия и някои други развиващи се пазари, като компанията е сключила договори с някои от водещите в тези страни кабелни и сателитни ТВ оператори. Но много скоро ние ще се върнем към Европа, където се намира един от нашите основни STB пазари, с нови и по-усъвършенствани HD платформи, а точно със следните модели приемници: HD-базирания ST7101, HD PVR-ready,

и Broadcom-базирания двоен HD PVR." Точно тук Arion набляга най-много на осъществяване на сътрудничество с различни сателитни и кабелни доставчици.

А сега няколко думи за продуктите, които произвежда Arion. "Пазарът в Европа е изцяло обхванат от HD манията", започва многозначително Sam Chang, след което изброява техните продукти, които ще се появят на европейския пазар през следващата година: "През първото тримесечие на 2009г. сме планирали да пуснем PVR-ready HDTV приемник, което означава, че към него може да се свърже външен хард диск. Той ще бъде последван през второто тримесечие на

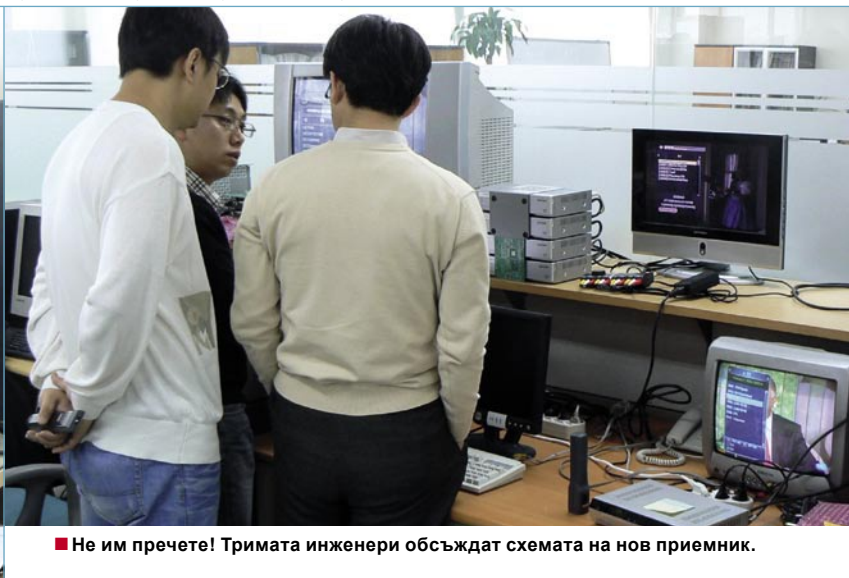
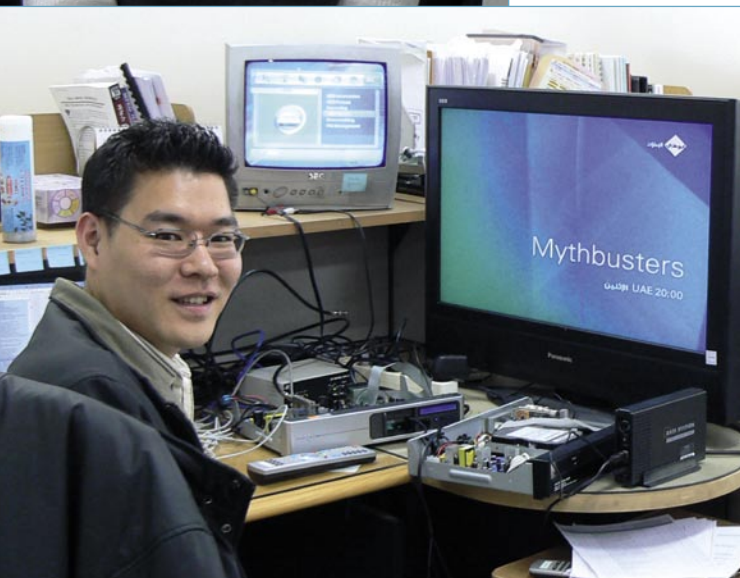
■ Екипът по продажби на Arion по време на работа.



■ Joey Lee, маркетингов мениджър в маркетинговия екип на Arion.



■ H.M. Park е главен управляващ директор във фирмата Arion. Той ръководи екип от 50 инженери в областта на хардуера и софтуера в групата за проучване и разработка.



■ Не им пречете! Тримата инженери обсъждат схемата на нов приемник.

■ Един от софтуерните инженери извършва фина настройка на софтуера за новия HD PVR приемник, който скоро ще се появи на пазара.

2009г. от приемник с интегриран хард диск, а за края на годината подготвяме няколко вида IPTV приемника." Joey Lee добавя: "веднага, след като бъдат готови първите пилотни приемници, ние ще изпратим един изпитателен прототип на TELE-satellite за изготвяне на тест отчет." Ние, в TELE-satellite, и разбира се всички наши читатели очакваме с нетърпение тези нови MPEG-4 HDTV приемници, най-малкото, защото продуктите на Arion винаги са били водещи по отношение на качеството.

"Ако имате желание да се срещнете лично с представителите на компанията Arion, можете да отбележите две изложения във Вашата план-програма за 2009г.: ANGA и IBC," потвърждава Sam Chang.

Arion се намира както винаги във възходящо движение и ние нямаме търпение да видим новите, качествени приемници на тази компания!

■ Всеки качествен приемник трябва да премине през най-строги качествени проверки: Eup-Ju Choi е инженер по изпитването в екипа за качествен контрол и тук я виждаме да проверява как се държи новия приемник Arion в условията на топлинна камера.



# Милионери за 3-4 години! SonicView, САЩ

Компанията SonicView все още може да бъде открита в тази промишлена зона. Две от помещенията са взети от нея на лизинг. "Само след няколко месеца ние се местим в нашата нова сграда", казва Steve Falvey, главния финансист на SonicView. "Складовите помещения са твърде малки за нашите силно нарастващи продажби."



*Ако още през първата година на Вашия бизнес сте успял да продадете повече сателитни приемници, отколкото сте си мечтал, то тогава няма да имате проблем да направите първия си милион за 3-4 години! Компанията SonicView, намираща се в Калифорния, е основана едва в края на 2006г. Bobby Sanz става неин собственик през лятото на следващата година и оттогава продажбите драстично нарастват. Това е един разказ за успеха, за който ще ни разкаже в повече подробности Tony Lively - управителят по продажби на SonicView.*

През лятото на 2007г., Bobby Sanz придобива едва прощаващата компания SonicView и от този момент екшъна започва. Tony обяснява: "SonicView беше по това време една съвсем млада компания, застанала срещу няколко огромни гиганта на североамериканския пазар. В началото започнахме само с трима служители и силно ограничена дейност. С една отлична производствена линия и добри познания на североамериканския пазар, Bobby обаче успява за кратко време да придобие изключителните права за дистрибуция в Америка и останалия свят за един корейски производител."

Bobby успява да събере екип от първокласни професионалисти, с помощта на които компанията се разраства. Steve Falvey, който преди това е работил като вицепрезидент в една голяма американска банка, се присъединява също към групата, след като се пенсионира. Той започва като главен финансов ръководител на SonicView и оттогава ръководи ежедневните финансови операции. Решението да започне работа в компа-

нията SonicView всъщност е взето съвсем лесно - Bobby Sanz е негов син.

Опитът, който Steve притежава като банков управител успява да отвори финансовите врати за SonicView и дава възможност на компанията да започне изграждането на своя бизнес с приемници в един отличен стил.

През 2008г., веднага след като Bobby придобива този бизнес, продажбите на SonicView се удвояват. Очакванията за 2009г. са дори по-големи в сравнение с първоначалните прогнози. И все пак, откъде идва този оптимизъм? "Пазарът на FTA приемници в Северна Америка е все още в своя първоначален стадий", обяснява Tony, "Многобройните имигранти тук едва сега започват да осъзнават, че могат да гледат безплатно телевизионните програми от техните страни през спътник." Сателитните приемници на SonicView са създадени точно за този пазар.

"Има и второстепенен пазар от потребители, които до сега са плащали за гледане на телевизия и бавно, но сигурно откриват наличието на голям брой некодирани канали, които могат да се приемат." При настоящата икономическа криза, много от тях си задават въпроса, дали трябва да плащат на Pay-TV доставчиците.

SonicView се готви да отвори трети пазар за своите продукти с разширение в Латинска Америка. "Това е един голям и цялостен пазар", е убеден Tony, "наричаме го още 'бяло пространство'."

Професионализмът на екипа на SonicView може да бъде видян навсякъде, но преди всичко той е в транспортната схема на доставките. Всички проблеми в тази област се оглеждат и решават по подходящ начин преди да се потърсят местните дилъри. "Намаляваме риска като извозваме нашата стока до граничните пунктове; всичко останало от там нататък е грижа на нашите местни партньори." Престъпната дейност и корупцията са неща, които компания като SonicView трябва да държи далеч от себе си. Tony продължава, "Ние винаги искаме плащането да бъде извършено в аванс, за да ограничим нашия риск до минимум."

Един поглед върху производствената гама на компанията показва, че тук кипи високо организирана дейност. Приемниците са точно конфигурирани за пазара. Компанията предлага един първокласен модел HD8000 за HDTV приемане през спътник и ефирно; приемника SV360 Elite, който сп. TELE-satellite наскоро представи и който се предлага с двоен сателитен тунер; и SV360 - приемник с единичен тунер.

През м.януари 2009г., когато SonicView ще се представи на CES изложението в Лас Вегас, те ще имат готови още три приемника, които ще покажат на света: HDTV версия на SV360 с единичен или двоен тунер и опростена версия за пазара в Латинска Америка с единичен тунер и UHF модулатор вместо HDMI изход.

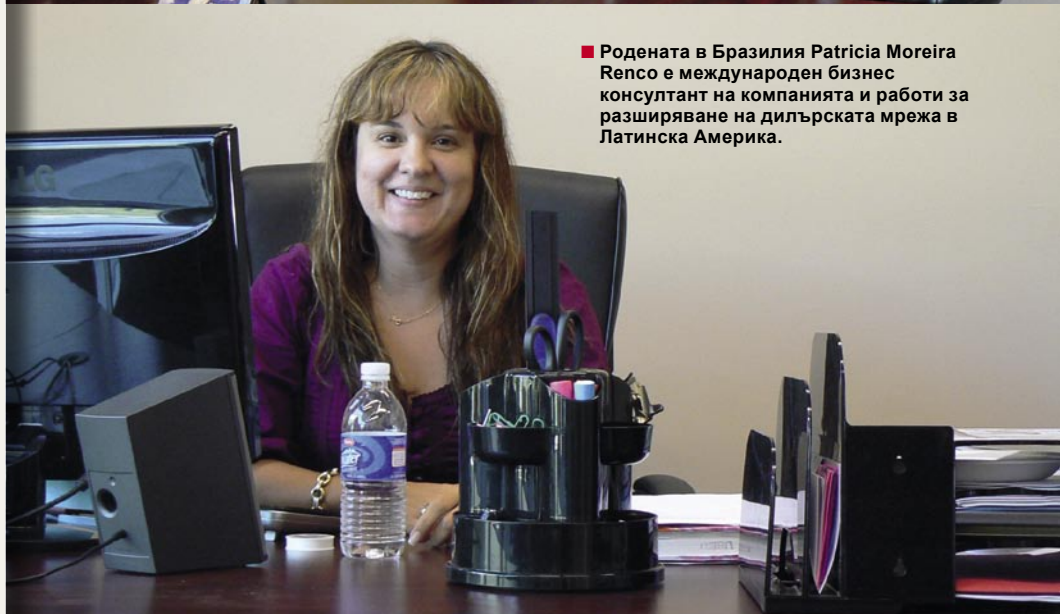
Tony хвърля светлина по отношение на техния бизнес: "Ние продаваме еднакво количество и от трите приемника, по 30% от всеки един от тях." Понастоящем SonicView има 11 служители и прави доставки само към своите търговци на едро. "Имаме осем регионални дистрибутора, разположени в САЩ, Канада и Мексико, обяснява Tony и продължава, "Всеки един от тези дистрибутори прави доставки към още около 130 дилъра." Производствената гама на SonicView се очаква да бъде разширена. Tony обяснява, "През 2008г. само 10% от



■ Главният финансист Steve Falvey идва от банковите среди. Той отлично знае как да управлява финансите на компанията и как бързо да я изкачи на върха.



■ Tony Lively, който е управител по продажби на SonicView, разлива броя на сп. TELE-satellite със статията за техния продукт. "От вашето списание научих твърде много", разказва Tony, "Особено много съм впечатлен от статиите, които идват от различните страни по света."



■ Родената в Бразилия Patricia Moreira Repco е международен бизнес консултант на компанията и работи за разширяване на дилърската мрежа в Латинска Америка.

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Това е управителя на склада Chris Witcomb, който обяснява: "Един кашон съдържа пет приемника, а 1000 от тези кашони се поставят в един контейнер с общо 5000 приемника. Това е минималното количество, което всеки наш дистрибутор трябва да закупи, но за повечето от тях дори и това количество е малко. Веднага след като пристигне доставката, тя изцяло се препраща още на следващия ден", обяснява Chris.

Ken Cherry е специалист по контрол на изделията и не само регулира изпращането им към дистрибуторите, но също така се занимава и с всички формалности по вноса, свързани с доставките от Южна Корея. "Транспортът от чужбина се извършва за около една седмица, като още един ден трябва за митническа обработка", обяснява Ken.



Управителят по техническата поддръжка Adam Dunn по време на работа, ремонтира повреден приемник. Той обяснява, "Имаме много малко върнати продукти; миналата година те съставляваха само .002% от годишните ни продажби." Висококачествените продукти на SonicView са още една причина за техния сензационен успех.



нашите продажби съставляваха аксесоари, но очакваме техния брой рязко да се увеличи през 2009г., когато този процент ще нарасне до 50% от нашите общи продажби." Това включва предимно мултиключове и HDMI кабели, но също и конвертори и USB флеш памети за PVR приемници.

Bobby Sanz има много големи планове за бъдещето и е готов да ги преведе в реалност: професионално финансиране; перфектно конструирани продукти, които идеално съответстват на пазара; оптимално разполагане на производството им във времето. Кой знае, може би компанията SonicView ще успее да достигне милиона от продажби на сателитни приемници само за три години!

Техническата поддръжка на SonicView на практика се извършва от Dick и Julie Sweeney от Мичиган, и Rick Caylor (на снимката) от Канзас сити, Мисури. Той е основния специалист в SonicView, в случай че възникне труден проблем за оправяне и винаги помага на клиентите да разрешат техните проблеми относно сателитното приемане и най-вече тези, отнасящи се до моторизирани системи. Rick поглежда към своите антени и казва, "Имаме шест антени за 13 приемника. 3.0-метровата плътна антена и 2.5-метровата алуминиева антена са моторизирани, 90 см антена е за DirecTV, 75 см - за Galaxy 25, и има още две моторизирани 75 см антени." Rick е заклет любител на фийдовете, като предимно се интересува от автомобилни състезания и има свой сателитен форум, в който публикува фийдове за тях: [www.websitetoolbox.com/mb/rickcaylor](http://www.websitetoolbox.com/mb/rickcaylor)

Тези печати се използват от SonicView, за да покаже на крайните потребители доверието, което компанията дава на своите дилъри. Те ги получават едва, след като бъдат добре проверени от SonicView; от своя страна, дилърите поставят печатите на своите уеб страници.

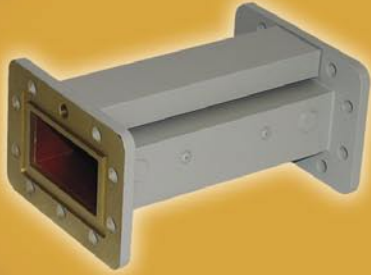




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# HDTV от Jiuzhou

Сградата на Jiuzhou Electric, намираща се в индустриалния high-tech Nanshan парк в западната част на гр. Shenzhen (Китай), е празнично декорирана за 50-тата годишнина на компанията.

Броят на hi-tech компаниите, които имат 50-годишна корпоративна история не е много голям. Една от тях е фирмата Jiuzhou, с местонахождение в гр. Sichuan, Китай. През 2008г. компанията чествува своята 50-годишнина, която беше отбелязана също и от нас, в брой 03/2008 на сп. TELE-satellite. Официалното чествуване се състоя на 16 ноември в главната квартира на корпорацията в гр. Sichuan.

И така, основният въпрос е: какво може да се очаква от компанията през тяхната 51-ва година?

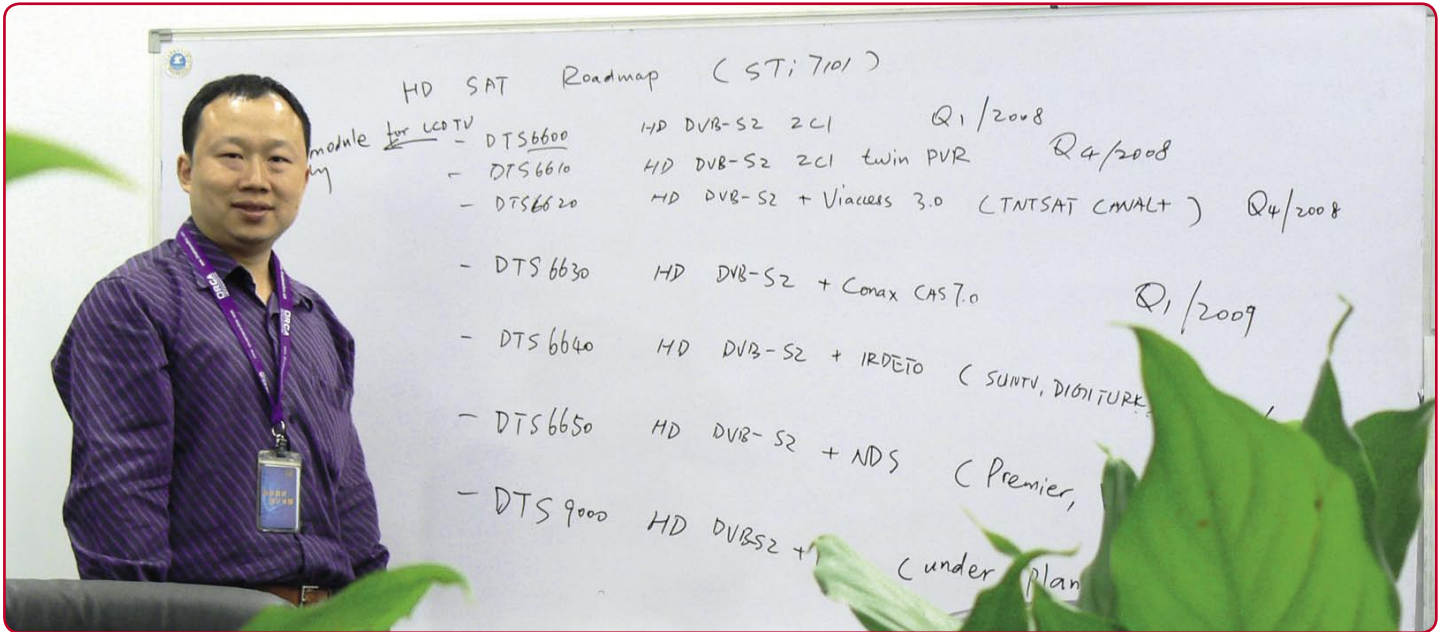





# Новите разработки през 51-та година

Изследователската и дистрибуторска база на Jiuzhou се намира в гр. Shenzhen, недалеч от Хонг Конг, в южната част на Китай. Точно там се срещнахме с Huang Wei, директора по продажбите на компанията Shenzhen Jiuzhou Electric, включващ и техния клон Digital Telemedia, който отговаря за сателитните приемници на групировката Jiuzhou. Освен сателитни, Jiuzhou също предлага и приемници за кабелна/ефирна телевизия и IPTV.

"Цифровата ефирна телевизия DMB-TH, която вече функционира в Hong Kong, ще бъде въведена в Китай през следващата година," ни съобщава Huang Wei, преди да се



Директорът по продажби Huang Wei показва изминатия път за производството на новите модели приемници на Jiuzhou за 2009г. – всички те вече са оборудвани със ST чипсетове.

впусне в подробно описание за сателитните продукти. "През 2008г. около 95 процента от нашите приемници бяха предназначени за стандартната разделителна способност, но през следващата година делът на приемниците с висока разделителна способност ще бъде значително увеличен, до 20 - 25 процента."

За да посрещне високото търсене на пазара, Jiuzhou ще предложи широка гама от нови модели. В своето предишно издание, сп. TELE-satellite вече представи приемника DTS 6600. Междувременно излезе новият им модел DTS 6610 с двоен тунер, който също предстои да бъде тестван много скоро при нас в TELE-satellite.

"DTS 6620 е също съвсем нов модел, произведен специално за френския



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pay-TV доставчик TENTSAT на Canal Plus," продължава Huang Wei, докато обрисова схемата за новите модели и датите за тяхното пускане на пазара. "През следващата година ще представим модели с интегрирани модули Sopax и Irdeco за Индия и Турция, а също и с NDS." В момента, в продажба е и IPTV моделът, но "точно в този период неговото търсене не е много голямо, въпреки че France Telecom са направили официална заявка", признава Huang Wei.

По принцип, всички приемници са PVR и към USB порта може да свърже хард диск или флаш памет. "Ние постоянно работим заедно с основните програмни доставчици и затова правим нашите продукти според техните спецификации," Huang Wei обосновава подробностите на бизнес стратегията на Jiuzhou. Това означава, че от техническа гледна точка Jiuzhou има възможност да вгради хард диск като фабрична характеристика на приемника и по този начин да предложи пълен PVR.

"Тук в Shenzhen ние имаме около 250 софтуерни инженери, като ежегодно увеличаваме работните места с 20 - 30 нови бройки," гордо заявява Huang Wei



■ Chen Jun е един от софтуерните инженери в Jiuzhou. Тук той програмира софтуера на HDTV.

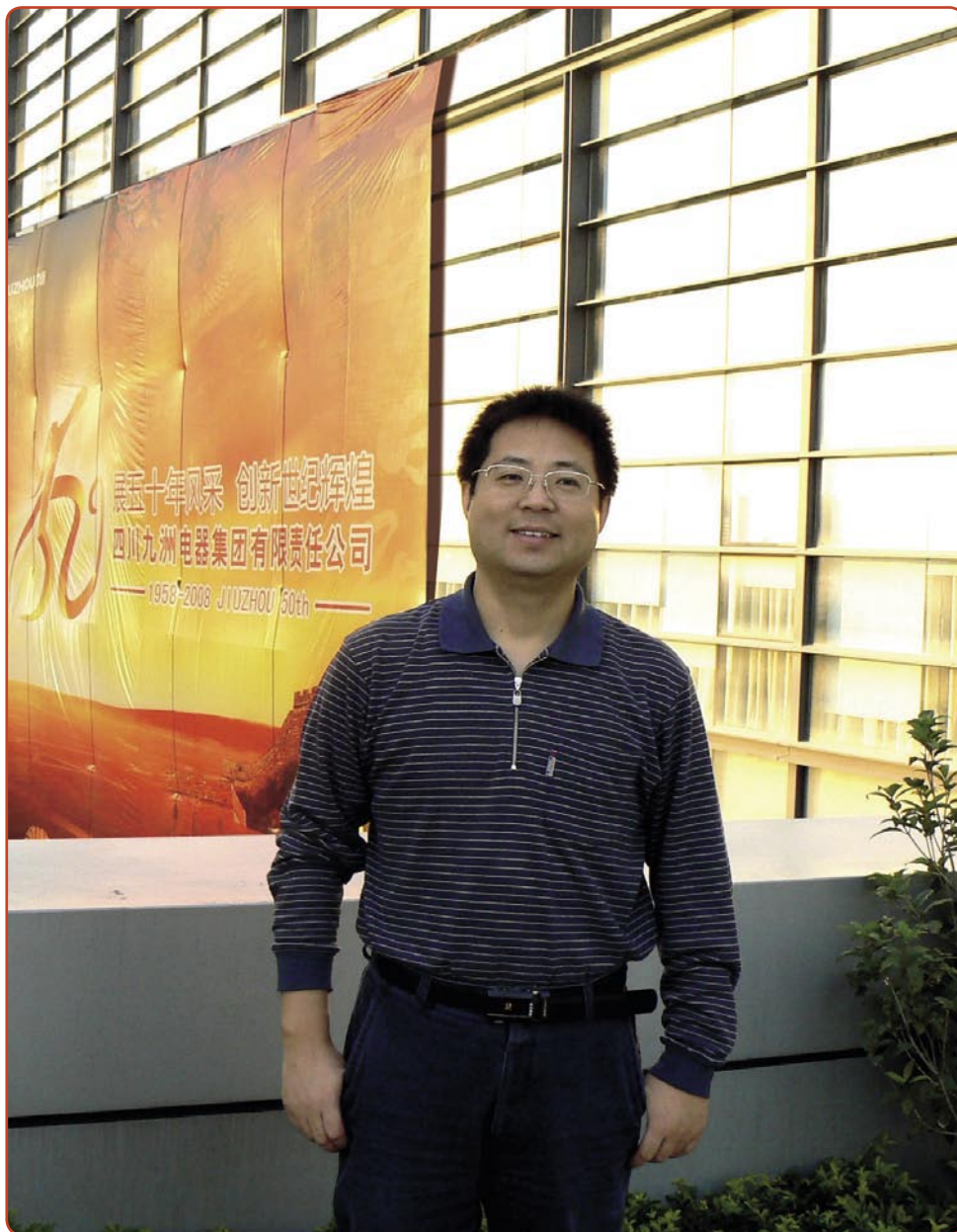
и обяснява, че по този начин Jiuzhou е в състояние много лесно да посрещне изискванията на всеки потребител. "Приемниците 'Combo', например, не представляват никакъв проблем и дори в тях може да се интегрира Dolby аудио, тъй като наскоро придобихме лиценз за него."

ABS е най-новата ни разработка – за повече подробности, моля, вижте съответната статия в настоящия брой на списанието. ABS е стандарт за излъчване, въведен за DTH предаванията в Китай и може да стане основен за китайския пазар. "Все още очакваме да получим окончателните спецификации, но през 2009г. със сигурност ще видим масовото му приложение и използване," заявява Huang Wei.

В следствие на това, в Jiuzhou смятат, че 20 процента от техните приемници ще бъдат ABS модели, 50 процента ще бъдат за стандартна разделителна способност и 20 процента - за висока разделителна способност. Huang Wei заключава: "ние също произвеждаме приемника "6600" като карта за LCD екраните." Това означава, че продуктите на Jiuzhou могат да се интегрират дори и на други маркови продукти.

Означава ли това, че с това се изчерпват всички новини за сателитните приемници и компанията Jiuzhou? Съвсем не е така! Групировката Jiuzhou дава подслон и на още една компания: Jiuzhou Electronic, която е производител на професионални сателитни приемници, използвани предимно като крайни устройства от кабелните телевизионни доставчици. В последния брой на миналата година (11/2007) сп. TELE-satellite представи един такъв приемник (DVS-2018BS).

■ Tang Erman - директорът по външен маркетинг на групировката Jiuzhou стои на озеленената веранда на сградата на Jiuzhou Electric. Огромният постер отзад отразява 50-тата годишнина на Jiuzhou.





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- Quality indicator (Pre BER) displayed alongside RF Level (dBuV)
- Pre and Post BER can be displayed with their actual values (setup option)
- 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
- Automatic fast and trickle charge modes
- 12 volt in car charger supplied
- USB lead supplied
- CE approved
- Compliant with EN 61326-1 : 2006 (EMC) and EN 61010-1 : 2001 (Electrical safety)
- Registered design
- Free product support via phone and email

#### HDSM USB PLUS (additional features)

- Easy to use Spectrum Display Mode
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- Histogram display with up to 9 simultaneous carrier measurements for single cable installations (SCR)
- Data Logging (upload installation measurement data to your PC)

#### HORIZON DIGITAL TERRESTRIAL METER (HDTM)



- Displays Signal Strength (RF level) with DVB-T indicator.
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- Built in intelligent universal mains charger 100 – 240V AC (CE approved) with V delta detection for fast and then trickle charging.
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Тъй това беше приемник със стандартна разделителна способност, директорът по износа Yonchin Shou обяснява, че новия модел DVS-2018CS е вече HDTV съвместим. "Сега, кабелните компании вече могат да включат също и HDTV канали в техния излъчвания." Дори и със CI модули, ако това е необходимо.

Сп. TELE-satellite понастоящем работи върху отчет от изпитването на този конкретен модел. "Този приемник е направен за MPEG-2, но всички наши инженери (над 200) в Sichuan и Beijing вече работят върху MPEG-4 модела," ни съобщава Yonchin Shou част от бъдещите проекти на компанията. "Но за съжаление, понастоящем търсенето на MPEG-4 приемници не е твърде голямо."

Дори и на повече от 50 години компанията Jiuzhou има нови, свежи идеи за други модели. Естествено, ние се позаинтересувахме и за пазарните стратегии на Jiuzhou, като се обърнахме към Tang Erman за отговор. Г-н Tang е директор на отдела за външен маркетинг на групировката Jiuzhou и, когато беше попитан къде той вижда бъдещите пазари за продуктите на Jiuzhou, неговият отговор беше: "търсенето в Европа и Северна Америка е най-вече за HDTV приемници, докато в Азия все още се търсят SDTV моделите."

Tang Erman разпределя пазарните ресурси в съответствие с това търсене: "През 2009г. ще бъдем представени на дванадесет специализирани изложения," ни съобщава Tang Erman и обяснява различията спрямо 2008г.: "През последната година имаме малки щандове на 19 панаира, докато през 2009г. този брой ще бъде намален, но за

■ В шоу-рума на Jiuzhou е показан диапазона на продуктите на компанията. Седнали на дивана са: Kitty (отляво) - помощничка на Linda Lee (дясно) от отдела за външен маркетинг на групировката Jiuzhou.



■ Директорът по продажби Yonchin Shou показва новия професионален сателитен HDTV приемник DVS-2018CS в последния CATV каталог ([www.jiuzhoutech.com](http://www.jiuzhoutech.com)).

сметка на това големината на изложбената площ ще се увеличи."

Разбира се, Jiuzhou също разчита и на Интернет като рекламна среда. Tang Erman ни разкрива, че "25 процента от бюджета за маркетинг се изразходва за онлайн реклама." Преди всичко нашите цели са B2B сайтовете Alibaba или Globalsources. "15 процента от нашите рекламни ресурси отиват в печатна реклама, каквато е тази в сп. TELE-satellite, а 60 процента се изразходват в специализираните панаири и изложения."

Tang Erman също обяснява причината за този начин на разпределяне на парите за реклама: "Получаваме много запитвания в резултат на нашата онлайн рекламна дейност, но в крайна сметка идват твърде малки поръчки. Присъствието ни на панаири ни носи най-много заявки, тъй като там влизаме в директен контакт с дистрибуторите на едро". От друга страна, участието ни на панаири ни струва много скъпо и при това "шоуто приключва само за няколко дни," изразява своето съжаление Tang Erman. Затова използваме нашата





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печатна реклама: "По този начин оста-  
вяме за дълго време пред погледа на  
много от нашите потенциални клиенти,  
което ни дава възможност да оформим  
нашия образ." Tang Erman е изключи-  
телно доволен от своята цялостна

пазарна стратегия и заявява: "искаме  
да запазим тези пропорции и не пла-  
нираме големи промени в нея." Отделът  
на Tang Erman се състои от 20 служи-  
тели в Shenzhen, които отговарят за  
външните комуникации.

Jiuzhou – активни, както винаги, дори  
и през своята 51-ва година!

■ Софтуерният инженер Zhu Xiaoyong изпитва  
HDTV прототип с реален сателитен сигнал.



# 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

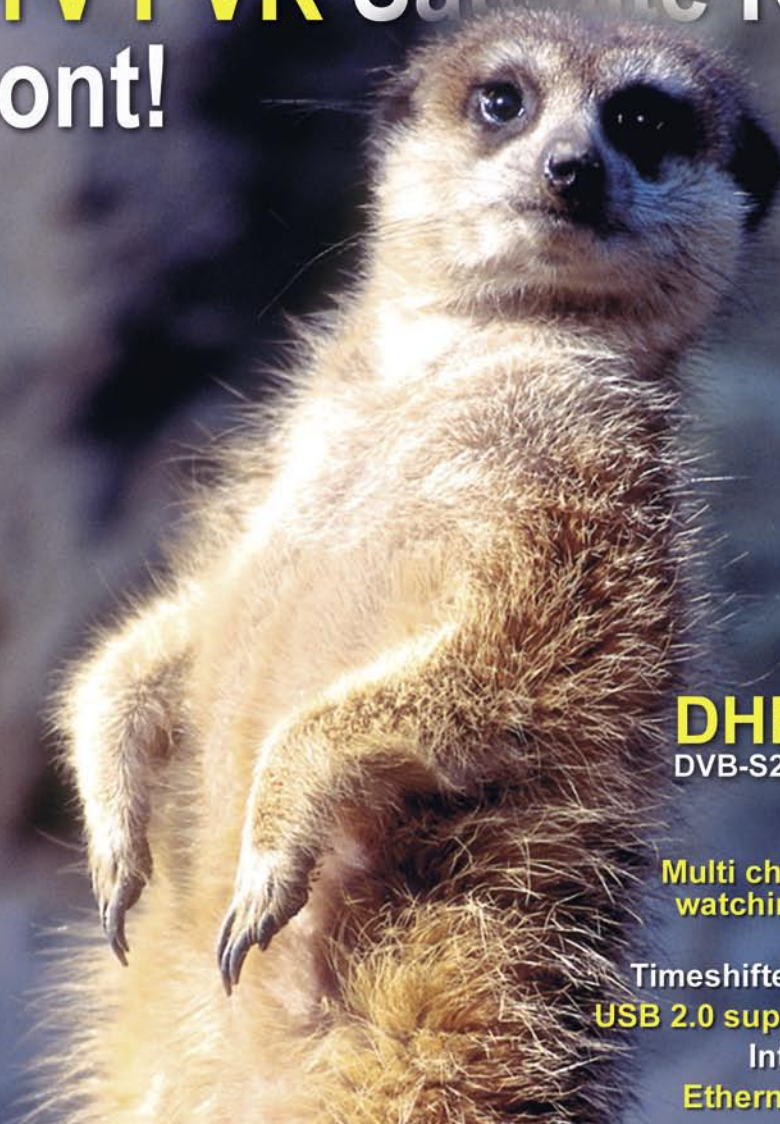
to install satellite systems for sporting events in many of the sports bars in Amsterdam and this makes up about 40% of our sales today."

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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# Microwave Filter Company

## Специални филтри с високо качество Made in USA



■ Carl Fahrenkrug е президент на компанията Microwave Filter

Сателитните системи могат да приемат не само телевизионни, радио и информационни канали, които нормално всички ние гледаме и слушаме, но също така и някои нежелани сигнали, причиняващи смущения. Как да избегнем този тип интерференция? Компанията MFC, един от пионерите в производството на сателитни филтри, базирана в САЩ, произвежда голямо разнообразие от такива филтри, елиминиращи този тип смущения.



■ Винаги на телефона в разговор с клиентите: Sandy Nelevovitz е главен сътрудник в отдела за маркетинг и ръководи екипа по продажби.



■ Scott Parsell, директор по продажбите, ръководи мрежата на MFC за вътрешни и международни представители по продажбите и непрекъснато търси нови благоприятни възможности за развитието на компанията.

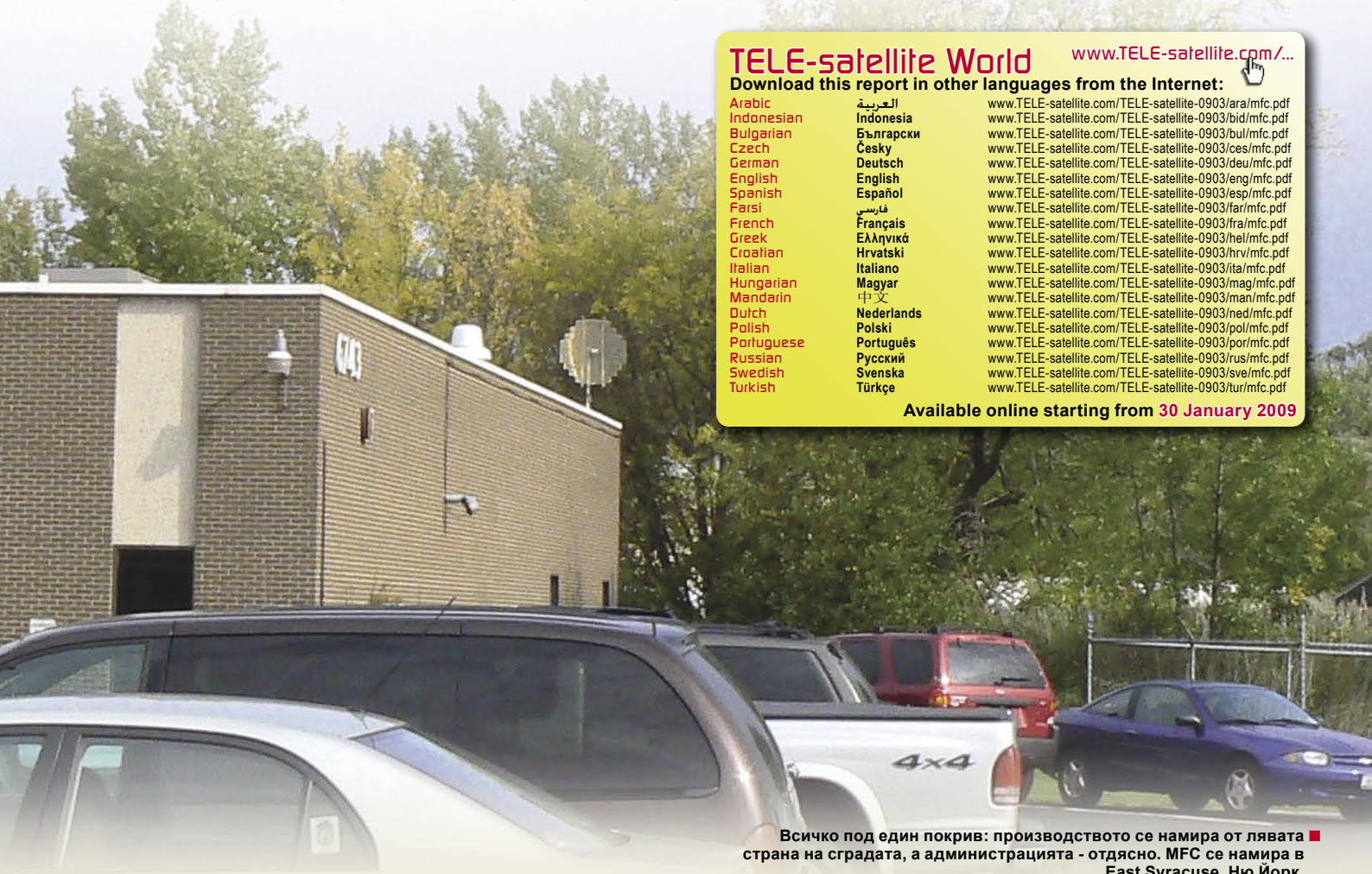
“Компанията е основана през 1967г. в Ню Йорк”, обяснява Sandy Nelepovitz, главен сътрудник в отдела за маркетинг на MFC и до известна степен сърцето и душата на компанията. Тъй като тя работи тук вече 30 години, с готовност на разказва историята на компанията: “нейният основател - Glyn Bostick, първоначално започва своя бизнес в един гараж, с производство на филтри, които се използват от радиолюбителите. През 1973г. се преместихме в настоящия офис. По това време бяхме под

наем и дележахме сградата с други компании. Едва през 1983г., когато нашият бизнес се разрастна, бяхме в състояние да закупили цялата площ от 3700 квадратни метра.”

Директорът по продажби, Scott Parsell, който е в MFC повече от 20 години, обяснява, “Въпреки, че през годините имаше много икономически и технологични кризи в индустрията на телекомуникациите, бизнесът на MFC остана стабилен - най-вече поради факта, че ние предлагаме голямо разнообразие от филтърни продукти и по

случаи, междинните IF филтри са безполезни и единственото решение е тези сигнали да бъдат елиминирани с bandpass филтър, поставен при вълновода, преди преобразуване на сигнала към по-ниската честота.

Scott продължава, “Предлагаме различни видове bandpass филтри: за стандартен обхват (500 MHz), за разширен обхват (600 MHz), и за супер разширен обхват (800 MHz). Също така предлагаме и настроени по поръчка филтри за специ-



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Available online starting from **30 January 2009**

Всичко под един покрив: производството се намира от лявата страна на сградата, а администрацията - отдясно. MFC се намира в East Syracuse, Ню Йорк.



Eric Logan е един от инженерите-техници. Той може да конфигурира на своя компютър филтърна конструкция точно според желанието на клиента. MFC също така предлагат много филтри за военни цели (напр. - X-обхвата).

този начин, на практика снабдяваме целия телекомуникационен пазар (Satcom, CATV, ефирно излъчване, Wireless, и.т.н.). Това продуктово разнообразие означава, че нашият успех не зависи от успеха или неуспеха на определена пазарна ниша.” Освен това, определени производствени методи, въведени преди няколко години, са увеличили ефективността на нашето производство, като по този начин компанията MFC е станала още по-конкурентна.

А какво точно произвежда MFC? Scott споменава един от най-популярните продукти на компанията, “Нашите серии bandpass филтри за С-обхвата се използват в цял свят в антените за приемане на С-обхвата. Тези филтри се инсталират между конвертора и вълновода и отстраняват нежеланите сигнали от съседните честотни обхвати.” Въпреки, че тези нежелани сигнали са извън приемания обхват, мощността им е толкова голяма, че те на практика претоварват конвертора и създават частична или постоянна интерференция по целия С-обхват. В тези

ални приложения. Така че можем да предоставим всеки желан модел филтър за работа със С-обхвата във всяка точка на света.”

А в кои случаи ще имаме нужда от такъв филтър? Scott ни дава няколко примера, “Алтиметърните сигнали, излъчвани между търговските самолети и летищата, могат да се разпознаят като едни от най-ранните видове смущения за операторите в С-обхвата. Но, този проблем обикновено се ограничава предимно до антените за С-обхвата, разположени в близост до летищата. След това идват мощните радарни сигнали, използвани за военни наблюдения (напр., самолетите AWACS), които също предизвикват проблеми в много приемни антени за С-обхвата. Този тип наблюдения рязко се увеличиха след атаките от 9/11 и изглежда, че почти всички антени за С-обхвата в САЩ (и дори други части в света) са засегнати. Затова се приема, че радарното излъчване продължава да е основната причина за смущения за операторите в С-обхвата.”



■ Ако нещата се усложняват, инженерният екип се събира, за да разработи конкретни решения. Paul Mears (отляво) е вицепрезидент на инженерния отдел, Bob Paul (в средата) е главен инженер, а Mike Wise (отдясно) е инженер-механик.

“Наскоро,” Scott добавя, “възникна нов източник на интерференция в С-обхвата - Wimax”. В различни части на света Wimax работи в обхвата 3.3-3.8 GHz. Тези Wimax сигнали могат да нарушат сателитното приемане дори и в разширения С-обхват (3.4-4.2 GHz), поради общия честотен обхват, на който те излъчват. В тези случаи, операторът, използващ този обхват трябва да инсталира bandpass филтър за С-обхвата, за да режектира нежеланите Wimax сигнали. Но, тъй като филтърта режектира същата честота на Wimax сигналите, част от ниските честоти на С-обхвата ще бъдат също подтиснати (принесени в жертва).

И все пак, операторите в С-обхвата нямат нищо против да пожертват част от този обхват, стига да има добър резултат и ясно приемане в останалата част на С-обхвата. Тъй като Wimax стандарта е сравнително нов, Scott вижда потенциално растяща нужда от филтри за операторите в С-обхвата, за разрешаване на този проблем в цял свят. В сравнение с излъчванията в С-обхвата, операторите в Ku-обхвата се сблъскват със значително по-малко смущения от други източници, тъй като те работят в по-малко задръстен обхват с по-висока честота в сравнение с претрупания нискочестотен С-обхват.

“И все пак, TRF (Transmit Reject Filters) са необходими за много трансиверни приложения за Ku-обхвата - особено там, където се извършва uplink и downlink посредством една и съща антена. TRF се монтира от страната на приемането (10.7-12.75 GHz) на вълновода, за да елиминира наличните силни сигнали (13.75-14.5 GHz)”, пояснява Scott. Въпреки, че компанията MFC също произвежда bandpass филтри и за Ka-обхвата, “търсенето на тези филтри е значително по-малко”, признава Scott, “тъй като операциите в този честотен обхват засега са ограничени.”

Sandy Neleporovitz ни предоставя още данни за компанията, “Нашите най-големи клиенти са американските компании, тъй като MFC продължава да бъде водещия доставчик на CATV филтри за кабелните телевизионни оператори в САЩ”. Sandy продължава, “Нашите продажби в чужбина са между 5% и 7% от 1992г. Ние обаче очакваме тези продажби да се увеличат с нарастващото търсене на сателитни филтри в чуж-

плати транспортните разходи, ако филтърта не го задоволява.” Но тъй като клиентите обикновено предварително знаят какъв вид филтър им трябва, те не използват често този метод.

Но какво се случва, когато те не знаят какъв вид филтър да изберат? Sandy обяснява, “Нашите агенти по продажбите включват технически сътрудници, които са запознати с повечето проблеми, с които се сблъскват нашите клиенти и съответно могат да им помогнат при избора на подходящ за тях филтър.” А за тези клиенти, които все още не са сигурни дали нашият филтър ще им бъде от полза, 30-дневната гаранция, която даваме предоставя възможност просто да закупят и изпробват нашия стандартен филтър, като по този начин избягват високата цена за наемане на консултант за решаване на техния проблем.

През годините компанията MFC се е утвърдила в интересната и сложна пазарна ниша от света на спътниците. С отличните познания и обвързаност към високото качество, MFC може лесно да се приспособи към специалните желания на всеки клиент. Ако търсите начин да надвиете интерференцията, Вие сте открил вярното решение във филтрите на MFC.

бина.” Всеки може да направи поръчка от MFC, независимо дали става дума за голямо количество или само за единична бройка. “Ние дори даваме 30-дневна гаранция на стандартните филтри с връщане на парите, коментира Sandy, “клиента трябва само да си



■ Ruth Arace - управител на отдел “Човешки ресурси”, ни разказва за служителите на MFC: “Имаме 6 инженери, 36 служители в производството и 11 администратори.”



В близост до фрезувъчната CNC машина с Bruce Sentoff (отляво) и Dale Newton (отдясно). Телата на много филтърни модели се произвеждат тук от цели блокове. “Ние програмираме машините от вечерта, след което те работят автоматично през цялата нощ”, обяснява Bruce Sentoff.

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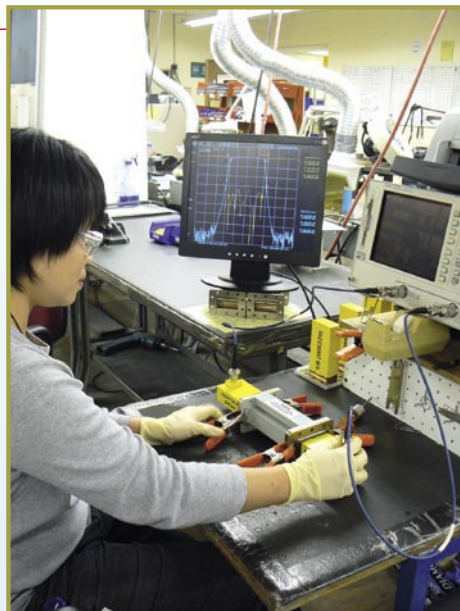
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■ Dale Newton ни показва производствения процес: от големите алуминиеви блокове (отляво) се правят филтърните тела заедно с всички отвори за конекторите и винтовете (отдясно).



■ Приемащата проба във филтъра се поставя на място от Vertell Brantley. Лепилото, което се използва трябва да се остави да се втвърди за около три часа; филтрите се съхраняват в тази камера от околния въздух, след което се фиксират с водоустойчиво покритие.



■ Дали всичко е минало успешно по време на производствения процес? Thuy Naylor провежда окончателния тест, за да определи дали филтъра работи според спецификациите, като го свързва към мрежовия анализатор с цел да се увери в правилното му функциониране.



■ Тук филтъра се сглобява механично. Служителката на MFC Melissa Bench го приготвя за запояване в горещата печка...



■ Bill Adamo, който е ръководител на групата за качествен контрол, ни показва как се изпитва на налягане водоустойчивото покритие на филтъра: "Филтърът се поставя тук и му се въздейства с въздушно налягане от 5 PSI." По този начин може да се провери дали вътрешността на конектора, както и поставянето на кожата са херметизирани. "Дори и най-малкото разхерметизиране може да доведе до навлизане на влага с времето и това да измени характеристиките на филтъра", казва Bill Adamo, "Ние изпитваме абсолютно всички филтри!" Всеки един от нашите клиенти може да бъде напълно сигурен, че всички филтри на MFC изцяло отговарят на техните висококачествени спецификации.



■ MFC си прави всичко сама: тук готовите филтри се пръскат със защитно цветно покритие.



■ ...реалният процес по запояването се извършва тук, в тази печка, през която преминават филтрите.



■ По пътя към клиента: готовите и изцяло тествани филтри се опаковат и изпращат от това място към клиентите по цял свят.



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# ABC BIZNIS

## – истинските бойци

*Това е един млад екип, който е поел пътя към върха на европейския пазар за сателитни приемници със своята добре известна марка OPENSAT. Основана едва в края на 2004г., компанията ABC BIZNIS успява в много кратки срокове да си спечели името на един от основните доставчици на сателитни приемници. За съжаление, пътят към техния успех е засенчен от трагичната смърт на основателя на компанията през 2008г. Именно затова, ние пожелахме да разберем как ABC BIZNIS се справя и се опитва да превъзмогне на това трагично събитие.*

■ Veronika Rešetková е директор в ABC BIZNIS само от няколко месеца. На нейното бюро се вижда снимката на синът ѝ Ерик - основоположника на компанията, починал наскоро. Именно той е нейната движеща мотивация да направи ABC BIZNIS основен играч на пазара.

Днес, ABC BIZNIS е установена компания на местния словашки сателитен пазар за продажби на едро, предлагаща както приемници, така и антени, конвертори и коаксиални кабели. Като производител, ABC BIZNIS също предлага и за външния пазар своите приемници с марката OPENSAT.

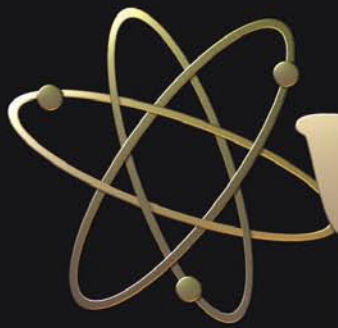
В началото на 2007г. компанията стартира производствената линия на своя първи приемник, известен на пазара под името OPENSAT. В началото те предлагат четири модела SD приемници, към които, няколко месеца по-късно, се прибавя и техния първи HD приемник, а в средата на настоящата година - се появява и втората им HD оферта. Между другото, именно този продукт беше представен в предишния брой на сп. TELE-satellite.

И така, как тази компания успява да превъзмогне внезапната загуба на техния създател? Отговорът може да бъде открит в сравнително младия по възраст екип, съставен от новия директор на фирмата Veronika Rešetková, която ни разказа какво се случи междуременно: "След смъртта на моя син Ерик - основателя на ABC BIZNIS, аз поех управлението на него-



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■ Маркетинг мениджърът Veronika Rešetková, дъщеря на управляващия директор Veronika Rešetková и сестра на основоположника на компанията Erik Rešetka. Тя развива рекламната стратегия на ABC BIZNIS и определя вида на рекламите: "Нашите корпоративни цветове са зелено и черно с различни оттенъци."



■ Помещенията на компанията ABC BIZNIS: отпред се вижда склада, а на заден план е офис комплекс. "Но това не е всичко," разкрива маркетинг мениджърът Veronika Rešetková: "Имаме и още една голяма складова площ, дадена под наем на друга компания."



■ Поглед към счетоводния отдел с главен счетоводител Zelmira Remenova (отляво), помощник счетоводителя Martina Ondrusova (в центъра) и системния администратор Jefferson Kenji Takahashi.



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вия бизнес." Veronika беше категорична: "Има слухове, че ние търсим обединение или съдружничество, но това са глупости", пояснява тя. И като доказателство на това, тук има две важни опори, които осигуряват подкрепата в нейната ежедневна работа: от една страна това е нейния екип от 14 служители, стоящи на 100 процента зад визията на компанията, а от друга - изключителните познания, които Veronika Rešetková придобива по време на предишната си работа в управлението на подобен бизнес в технологичния бранш. Малката сестра на Ерик, която също се нарича Veronika, ни разказва за самото начало на създаването на компанията: "Още от 13-годишната си възраст, Ерик помагаше на баща си в бизнеса." Професионалната му кариера започва в собствената му фирма, но десетина години по-късно Ерик решава, че е време сам да поеме своя собствен

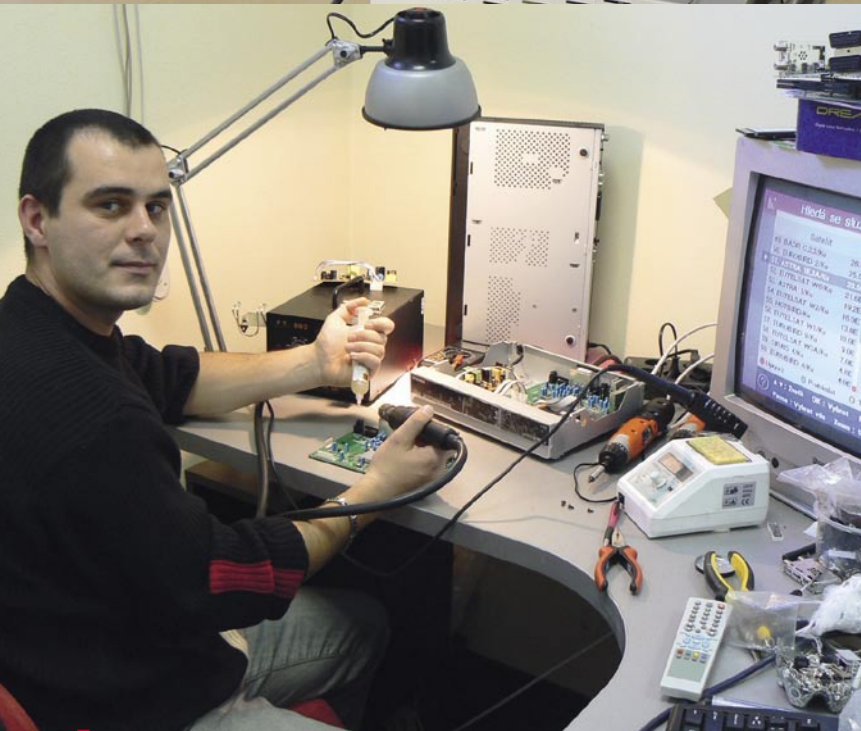
■ Тук, в склада, стоките се подготвят за изпращане. Виждаме управителят на склада Martin Patau, който работи с електрикара, отдясно е един от шофьорите (Lukas Michalik), а Jefferson Kenji Takahashi (отляво) проверява приемника, който е предназначен за изпращане.



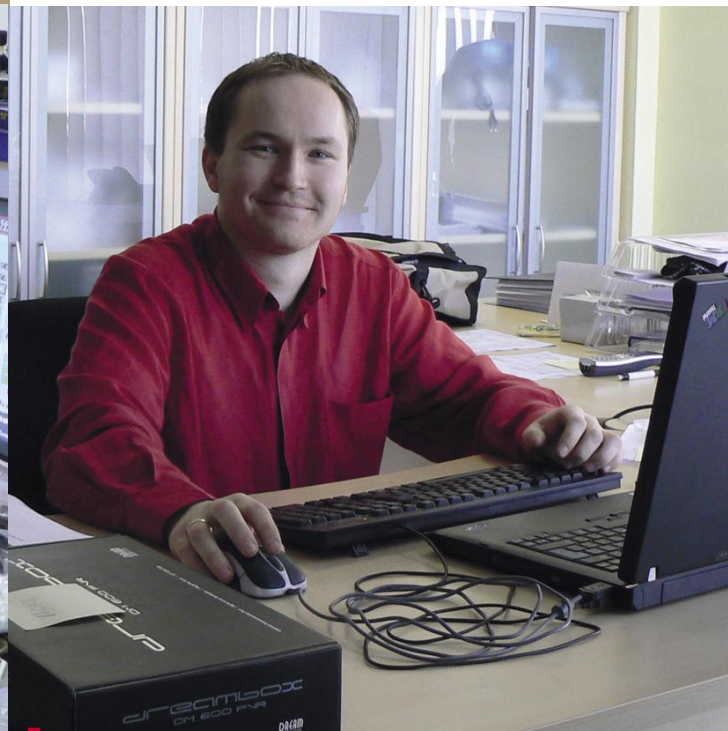
■ Управителят по продажбите Karolina Štreicherová е в постоянен контакт с доставчиците.



■ Всеки клиент, който си поръча сателитен приемник от компанията ABC BIZNIS, влиза в контакт с управителя по продажби Hana Danišová. Тя говори перфектно английски и предлага професионална помощ на всички клиенти навсякъде в Европа. Естествено, тя е горда с успеха на приемниците на компанията ABC BIZNIS: "Най-много се продава OPENSAT X7000: 40 процента от заявките за приемници са за този модел." 25 процента са за всеки един от моделите OPENSAT X7000C1 и X7700, а останалите 10 процента са за HDTV приемника XT9500HD.



■ Дори и в приемник с отлично качество може понякога да възникнат проблеми. Peter Čiřjak е един от двамата техници в ABC BIZNIS. Тук го виждаме да заменя неизправен чипсет върху дънната платка.



■ ИТ мениджърът Alexander Marko отговаря за вътрешната инфраструктура и също така предлага помощ на клиентите на ABC BIZNIS.

път и се фокусира върху създаването на продукта OPENSAT. В общо съдружие с Karolina Štreicherová, която понастоящем е търговски управител на ABC BIZNIS, и още един негов колега през 2004г. те основават компанията ABC BIZNIS.

Благодарение на неговите творчески идеи и факта, че те изцяло отразяват търсенето на пазара, не е трябвало да мине много време преди Ерик да пробие на пазара със своите продукти, които се представят под името OPENSAT. Съвсем скоро, Ерик утвърждава това име на местния пазар в Словакия, а след това - през 2007г., той започва да предлага своите

продукти и в чужбина, отначало - само на чешкия пазар. Не минава много време и той успява да осъществи 40 процента износ в чужбина, като през настоящата година това число нараства дори до 50 процента от общите продажби на приемниците с марка OPENSAT.

Karolina Štreicherová, която е част от фирмения екип още от самото създаване на компанията, ни информира за износните квоти на продуктите с марка OPENSAT на различните пазари: "Чешката република, като наш най-близък съсед, взема най-големия дял от приемниците OPENSAT, съставляващ около 50 процента; следват

Германия и Швейцария, всяка с по 20 процента, а на другите европейски страни принадлежат останалите 10 процента."

Понастоящем компанията ABC BIZNIS насочва своите усилия към страни като Испания и Португалия, където те искат да видят увеличение на пазарния дял и поради тази причина търсят партньори за дистрибуция на своите продукти. "Също така искаме да влезем и на пазарите на Австрия и страните от Бенелукс," добавя Karolína, "както и при нашите останали съседни Унгария и Украйна, където също се нуждаем от дистрибутори."

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Rešetková ni razkri една съществена тайна в техните продажби: "Ние транспортираме нашите продукти безплатно!" Това се осъществява посредством четири транспортни коли, марка Mercedes Benz Sprinter, собственост на ABC BIZNIS, които пътуват по пътищата на цяла Европа почти цялостно. "Нямаме ограничения за минимално количество заявки," добавя Veronika, "и поради това можем да изпращаме дори и малки по обем пакети безплатно." Това е особено важно за печалбата най-вече на малките търговци. "Искаме да им предоставим шанс да разширят своя бизнес, а по този начин и ние ще разширим нашия" - добавя Veronika още една от своите гледни точки. Управителят по продажбите Hana Danišová има дори още по-добри новини: "Като цяло, всички наши продукти се продават с две години гаранция!"

Когато четете тази статия, на пазара вече ще са излезли техните нови приемници. Управителят по продажбите Hana Danišová описва новите модели: "Това е OPENSAT 3000 CR PVR, който е PVR приемник с четец за една смарт карта и OPENSAT 3000 CR CI PVR със CI модул. И двата модела са също налични като OPENSAT 3500 HDMI PVR и OPENSAT 3500 CI HDMI PVR, които - както показва името им - притежават и HDMI опция."

Въпреки че, както може да си представите, загубата на създателя на компанията е трагично събитие, целият екип, събран около настоящия директор Veronika Rešetková, изглежда сплотен повече от всякога. Те винаги действат в съгласие и всеки един от тях има своя задача, която преследва, така че работата в компанията върви изключително гладко. Veronika, дъщерята на новия управител и сестра на починалия създател на компанията, има много просто обяснение за техния успех: "Ние всички знаем какво искаше да постигне Ерик и затова работим заедно за постигане на тази цел."

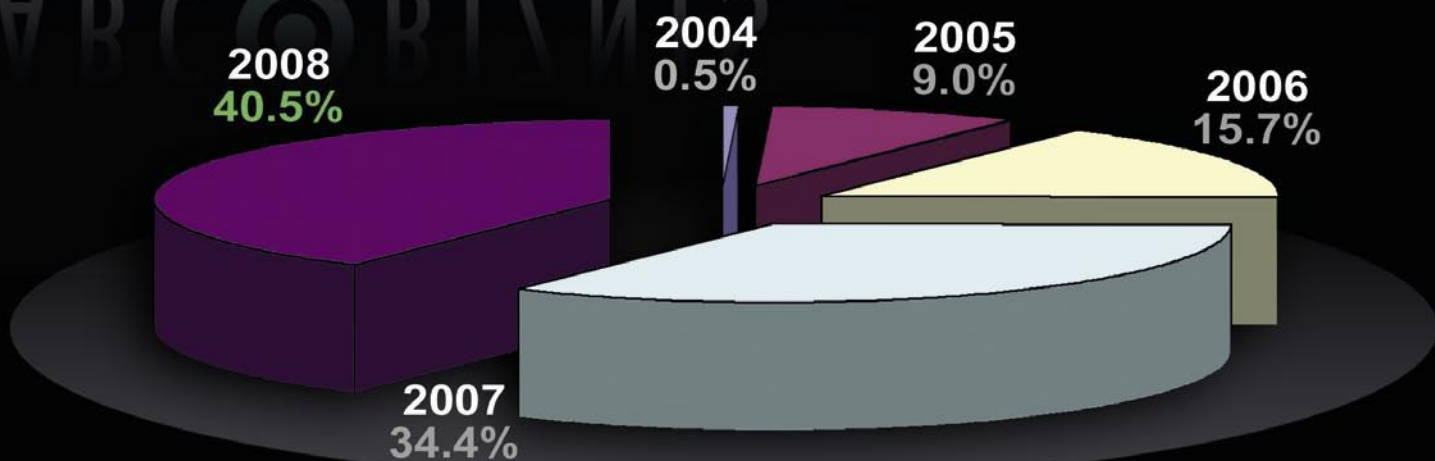
ABC BIZNIS has been up to a sky-rocketing development since 2004. Back then turnover in Euros was only 0.5 percent of total turnover, compared with 40.5 percent in 2008.



Готови за групова снимка: двете Вероники (майката в центъра и дъщерята до нея), заобиколени от почти всички служители на компанията. Средната възраст на състава е между 30 и 35 години.

# ABC BIZNIS®

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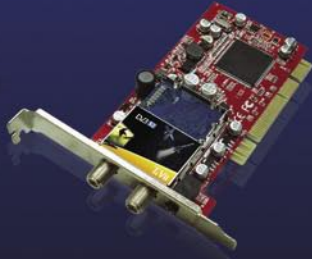




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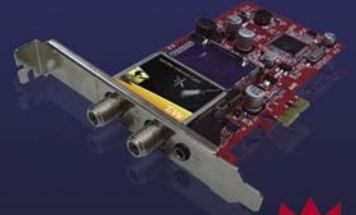
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Manfred Weller, who comes from Cologne/Germany, arrived in Tenerife in the Canary Islands in 1987. He started as a time share salesman: tourists would purchase ownership in a vacation apartment for a certain time each year. But, as an electrician by 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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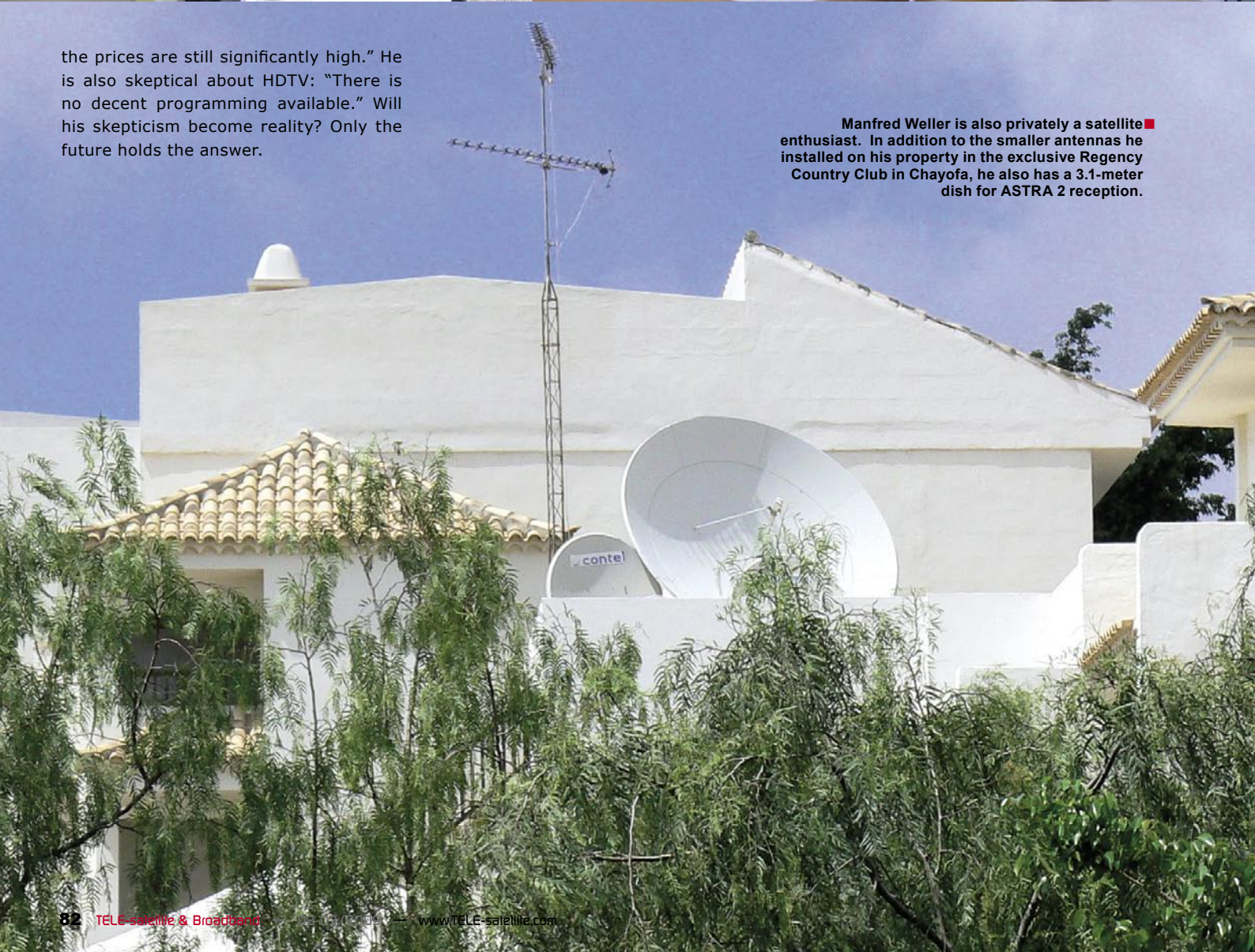
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**Manfred Weller, nicknamed Menny,** speaking with customers. After hanging up his landline telephone, it doesn't take long for his mobile phone to ring. He can speak with his customers fluently in three languages: German, English and Spanish. He has been reading TELE-satellite regularly for the past 14 years.

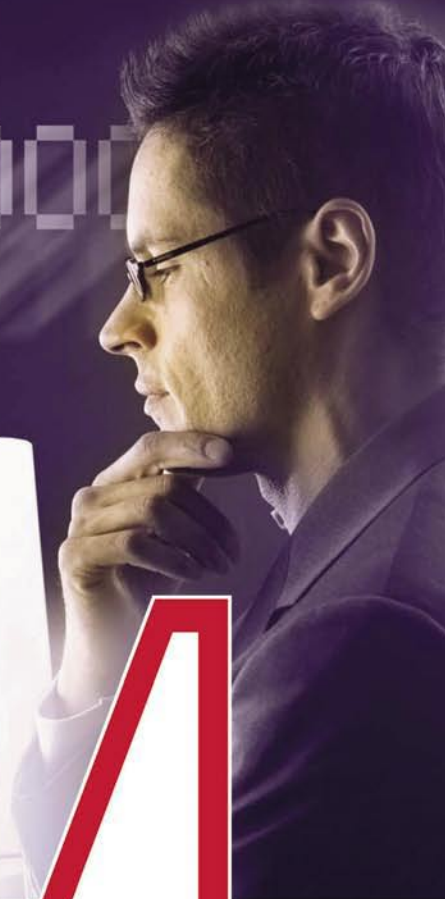
the prices are still significantly high." He is also skeptical about HDTV: "There is no decent programming available." Will his skepticism become reality? Only the future holds the answer.

**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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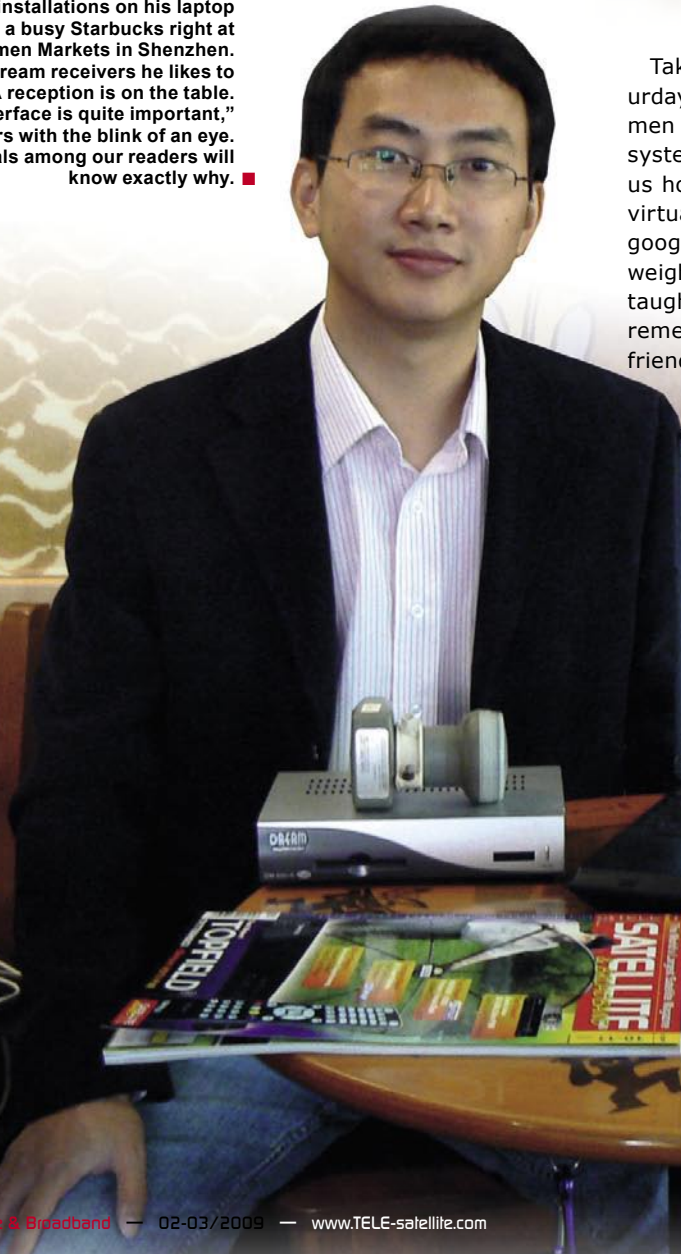
# Shenzhen Satellites

*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](http://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](http://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](http://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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**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**

**TELIAISONERA 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

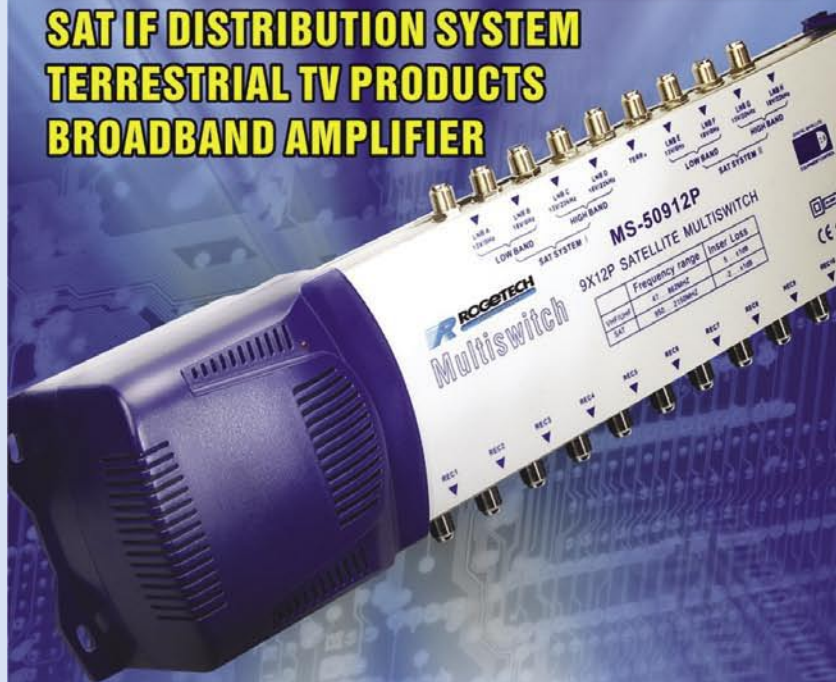
#### ENTONE SELECTED BY ITC FOR IPTV DEPLOYMENT

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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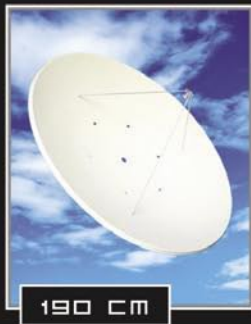
240 CM



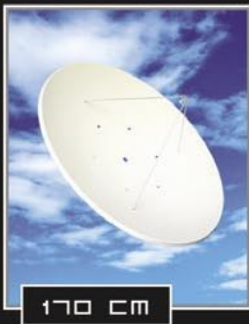
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210 CM



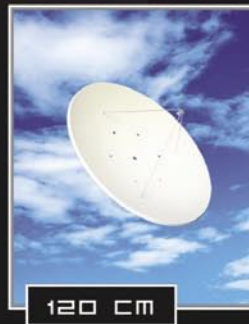
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### TWIN LAKES TELEPHONE COOPERATIVE LAUNCHES IPTV TRIALS

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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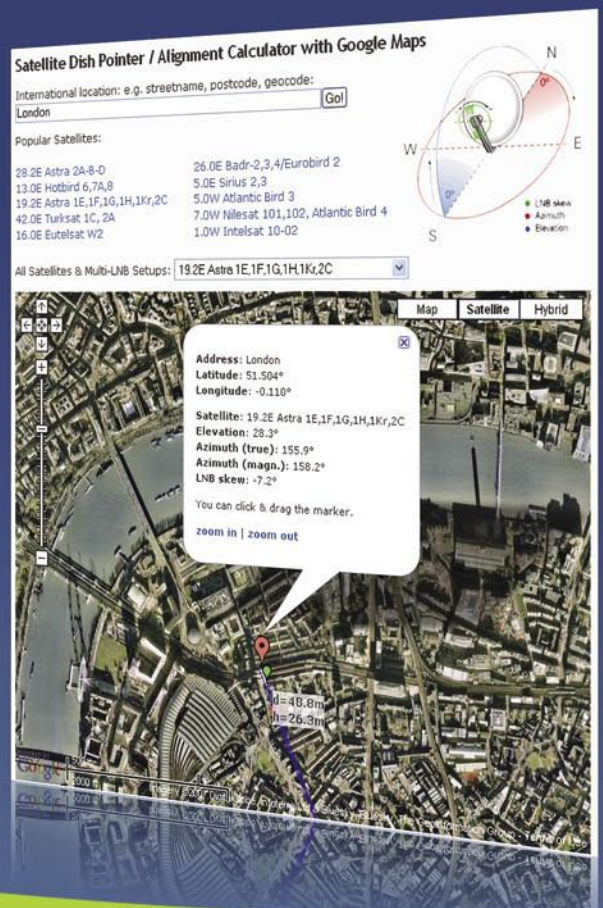
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### JAPAN

#### 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 Khrunichev 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. Khrunichev 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](http://www.cabsat.com)



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

17th International Exhibition & Conference  
Pragati Maidan, New Delhi, India  
[www.convergenceindia.org](http://www.convergenceindia.org)



● **21 - 23 March: CCBN 2009**

The 17th China Content Broadcasting Network Exhibition  
China International Exhibition Center, Beijing, China  
[www.ccbn.tv](http://www.ccbn.tv)



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

Exhibition for Satellite Enabled Communication  
Walter E. Washington Convention Center, Washington, USA  
[www.satellite2009.com](http://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](http://www.mecomexpo.com)



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

Tradefair for Cable, Broadband and Satellite  
Koelnmesse, Cologne, Germany  
[www.angacable.com](http://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](http://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](http://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









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
10.788 V CHAMPIONS 4	22000	11.685 V TWC INT	22000	11.555 H DSF	28500	12.525 V CT 2	27500	11.055 H LIFE FM	27500	11.823 V Future News	27500
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10.788 V TAQUILLA 10	22000	11.685 V FR3 AMIENS	22000	11.555 H N24	28500	12.525 V Lada 11876MHz	27500	11.055 H MONATE CARLO	27500	11.823 V LBCI	27500
10.818 V AXN	22000	12.699 V FR3 BORDEAUX	22000	11.555 H Orain TV (eng)	28500	12.525 V Prima TV	27500	11.055 H MONTONE	27500	11.823 V L'Espresso	27500
10.818 V C+ ACCION...39	22000	12.699 V FR3 BORSAUX	22000	11.555 H ProSieben	28500	12.525 V ProSieben	27500	11.075 H C-SPAN	27500	11.823 V The Academy	27500
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10.818 V CANAL COCINA	22000	12.699 V FR3 LYON	22000	11.555 H Tele 5	28500	12.525 V Cro-1-Radiouzumal	27500	11.055 H ROCK	27500	11.823 V test 5	27500
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10.847 V MUSICA DIGITAL	22000	11.171 V CHAMPIONS 1	22000	11.555 H DW 4	28500	12.525 V Cro-4+R2	27500	11.075 H H&M	27500	11.823 V MBC10	27500
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10.847 V RAD. LATINAS	22000	11.171 V CHAMPIONS 4	22000	11.555 H DW 4	28500	12.525 V Cro-4+R2	27500	11.075 H H&M	27500	11.823 V MBC13	27500
10.847 V RADIOS	22000	11.171 V PAR. COMEDY	22000	11.555 H DW 4	28500	12.525 V Cro-4+R2	27500	11.075 H H&M	27500	11.823 V MBC14	27500
10.847 V TAQUILLA	22000	11.362 H arte HD	22000	11.555 H DW 4	28500	12.525 V Cro-4+R2	27500	11.075 H H&M	27500	11.823 V MBC15	27500
10.847 V TEST_CSD1	22000	11.362 H Simul HD	22000	11.555 H DW 4	28500	12.525 V Cro-4+R2	27500	11.075 H H&M	27500	11.823 V MBC16	27500
10.847 V TEST_CSD2	22000	11.362 H Simul SD	22000	11.555 H DW 4	28500	12.525 V Cro-4+R2	27500	11.075 H H&M	27500	11.823 V MBC17	27500
10.847 V TEST_CSD3	22000	11.362 H Simul SD	22000	11.555 H DW 4	28500	12.525 V Cro-4+R2	27500	11.075 H H&M	27500	11.823 V MBC18	27500
10.847 V TEST_CSD5	22000	11.362 H Simul SD	22000	11.555 H DW 4	28500	12.525 V Cro-4+R2	27500	11.075 H H&M	27500	11.823 V MBC19	27500
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10.882 H INT6	22000	11.345 H ALPHA	28780	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC23	27500
10.882 H TVP Sport	22000	11.440 V SALAHADIN TV	2170	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC24	27500
10.882 H TVP	22000	11.527 V AL TV	2600	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC25	27500
10.882 H TOP INFO	22000	11.592 V CIPREGO PRO	6511	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC26	27500
10.877 V AL0 LATINO	22000	12.537 V AL. HD	2532	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC27	27500
10.877 V BABYFIRST	22000	11.592 V AL. HD	2532	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC28	27500
10.877 V C+ DEPORTES	22000	11.592 V AL. HD	2532	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC29	27500
10.877 V C+ FUTBOL	22000	11.592 V AL. HD	2532	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC30	27500
10.877 V CALLE 13	22000	10.862 H Ocko TV	22000	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC31	27500
10.877 V CANAL...30	22000	11.836 H INT. TV	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC32	27500
10.877 V FOX NEWS	22000	11.836 H SMD 01	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC33	27500
10.877 V GOL	22000	11.836 H SMD 02	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC34	27500
10.877 V NET GEOGRAPH	22000	11.836 H SMD 03	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC35	27500
10.877 V PLAYBOY TV	22000	11.836 H SMD 04	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC36	27500
10.877 V CHAMPIONS 3	22000	11.836 H SMD 05	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC37	27500
10.877 V AXN	22000	11.836 H SMD 06	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC38	27500
10.921 H bebe tv	22000	11.836 H SMD 07	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC39	27500
10.921 H Blue Hustler	22000	11.836 H SMD 08	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC40	27500
10.921 H Boomerang	22000	11.836 H SMD 09	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC41	27500
10.921 H Cartoon Network/CTM	22000	11.836 H SMD 10	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC42	27500
10.921 H MGM	22000	11.836 H SMD 11	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC43	27500
10.921 H STVI	22000	11.836 H SMD 12	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC44	27500
10.921 H TA3	22000	11.836 H SMD 13	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC45	27500
10.921 H Viastat 3	22000	11.836 H SMD 14	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC46	27500
10.921 H Viastat Explorer	22000	11.836 H SMD 15	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC47	27500
10.921 H Viastat History	22000	11.836 H SMD 16	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC48	27500
10.921 H Travel	22000	11.836 H SMD 17	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC49	27500
10.921 H TV 24 HORAS	22000	11.836 H SMD 18	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC50	27500
10.979 V CANAL 7	22000	11.836 H SMD 19	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC51	27500
10.979 V CLASICO	22000	11.836 H SMD 20	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC52	27500
10.979 V CUATRO	22000	11.836 H SMD 21	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC53	27500
10.979 V EUROSPORT	22000	11.836 H SMD 22	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC54	27500
10.979 V G. HERMANO	22000	11.836 H SMD 23	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC55	27500
10.979 V HISTORIA	22000	11.836 H SMD 24	2900	11.592 V Club TV	28500	11.592 V Club TV	28500	11.075 H H&M	27500	11.823 V MBC56	27500
10.979 V HOG											







# 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	11.990 V MNC TURK	2960	11.766 H ZAZANTEP OLAY	22000	11.766 H UNIA	27500	11.843 H ESCORT	27500	11.973 H Kanal Avrupa	27500
11.892 H NTV Radyo	12800	11.999 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 H BERAT	27500
11.892 H Radyo Eksen	12800	11.999 V FIRSIT FM	2960	11.102 V D COÇUK	30000	11.766 H ALFORAT	27500	11.843 H WORLD	27500	11.973 H HALY	27500
11.908 H KANAL D	2960	11.973 V KONTY	2200	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.843 H CALENDAR NETWORK	27500	11.973 H Kanal Avrupa	27500
11.908 H SMART HITS	6666	11.996 V ASIO	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.843 H D SHOPPING	27500	11.973 H TGRTR FM	27500
11.908 H SMART JAZZ	6666	11.996 V DEM	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.843 H FASHION TV	27500	11.973 H TGRTR FM	27500
11.908 H SMART OLDSIES	6666	11.996 V DugumTV	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.843 H KANAL D	27500	11.973 H (Empty Name)	27500
11.908 H SMART ROCK	6666	11.996 V KANAL 12	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.843 H STAR TV	27500	11.973 H (Empty Name)	27500
11.908 H SMART SLOW	6666	11.996 V GERCEK TV	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.843 H TV 35	27500	11.973 H (Empty Name)	27500
11.908 H IRADYO PORTAL	6666	11.996 V HAYAT TV	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V CLUP TV	4444	11.973 H (Empty Name)	27500
11.908 H RADYO D	6666	11.996 V KANAL 12	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V Tarafar TV	4444	11.973 H (Empty Name)	27500
11.924 H ANKA TV	3333	11.996 V KANAL 12	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V AKILLI TV	4444	11.973 H (Empty Name)	27500
11.970 H EUROSPORT HD	17900	11.996 V M-ON	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V Smart	4444	11.973 H (Empty Name)	27500
11.970 H HDTV SMART	17900	11.996 V Manolya TV	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V Clup TV	4444	11.973 H (Empty Name)	27500
11.970 H DISCOVERY HD	17900	11.996 V MAVI KARADENIZ	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V Tarafar TV	4444	11.973 H (Empty Name)	27500
11.970 H KANAL D HD	17900	11.996 V Genc TV	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V AKILLI TV	4444	11.973 H (Empty Name)	27500
11.970 H Nickelodeon	4000	11.996 V TURKISH PROM	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V Smart	4444	11.973 H (Empty Name)	27500
11.984 H MTV TURKEY	4000	11.996 V TV 5 Int	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V TGRTR FM	3150	11.973 H (Empty Name)	27500
12.002 H atv	4800	11.996 V TURKISHOP	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V ALSHARJAN RADIO	27500	11.973 H (Empty Name)	27500
12.008 H KANAL 1	4400	11.996 V YoTV	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V EDYV Radio E	27500	11.973 H (Empty Name)	27500
12.008 H Intercom	4400	11.996 V DEM RADYO	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 V CNN TURK	27500	11.973 H (Empty Name)	27500
12.008 H MARMARA RADYO	4400	11.996 V KUFE FM	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H COMEDY SMART	27500	11.973 H (Empty Name)	27500
12.015 H TGRTR Haber	4800	11.996 V Metro FM	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H DISCOVERY CHANNEL	27500	11.973 H (Empty Name)	27500
12.015 H TGRTR Pazartema	4800	11.996 V Super FM	26000	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H Disney Channel	27500	11.973 H (Empty Name)	27500
12.028 H ANKA TV	3333	12.126 V KANAL INT	6666	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H CNN INTERNATIONAL	27500	11.973 H (Empty Name)	27500
12.028 H FOX	5380	12.126 V tv1	6666	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H COMEDY SMART	27500	11.973 H (Empty Name)	27500
12.028 H samanyoluTV	4557	12.126 V ULKE TV	6666	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H DISCOVERY CHANNEL	27500	11.973 H (Empty Name)	27500
12.028 H Bure FM	4557	12.126 V ...	6666	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H Disney Channel	27500	11.973 H (Empty Name)	27500
12.028 H NTV Radyo	4557	12.126 V ...	6666	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H CNN INTERNATIONAL	27500	11.973 H (Empty Name)	27500
12.028 H Shaber Radyo	4557	12.126 V RADYO 7	6666	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H COMEDY SMART	27500	11.973 H (Empty Name)	27500
12.127 H Blnko TV	7400	12.134 V BUSINESS	3333	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H DISCOVERY CHANNEL	27500	11.973 H (Empty Name)	27500
12.127 H Denge TV	7400	12.140 V NUMBER ONE TV	4444	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H Disney Channel	27500	11.973 H (Empty Name)	27500
12.127 H Ekin TV	7400	12.140 V TURKAST ANITIM	4444	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H CNN INTERNATIONAL	27500	11.973 H (Empty Name)	27500
12.127 H Ekin TV	7400	12.140 V NUMBER ONE FM	4444	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H COMEDY SMART	27500	11.973 H (Empty Name)	27500
12.127 H ILAN TV	7400	12.140 V POLIS RADYOSU	4444	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H DISCOVERY CHANNEL	27500	11.973 H (Empty Name)	27500
12.127 H IMAN TV	7400	12.140 V RADYO KLAS	4444	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H Disney Channel	27500	11.973 H (Empty Name)	27500
12.127 H Piny	7400	12.140 V RESID MYDONOSE	4444	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H CNN INTERNATIONAL	27500	11.973 H (Empty Name)	27500
12.127 H Kanal 6	7400	12.140 V AZAD AZERBAJAN	2800	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H COMEDY SMART	27500	11.973 H (Empty Name)	27500
12.135 H ASTRO	3703	12.140 V ...	2800	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H DISCOVERY CHANNEL	27500	11.973 H (Empty Name)	27500
12.135 H FASIL	3703	12.140 V ...	2800	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H Disney Channel	27500	11.973 H (Empty Name)	27500
12.135 H ALJAZEER	2222	12.140 V ...	2800	11.102 V D COÇUK	30000	11.766 H POLIS RADYOSU	27500	11.844 H CNN INTERNATIONAL	27500	11.973 H (Empty Name)	27500

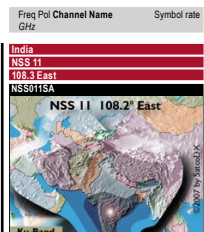
Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz	Freq Pol Channel Name	Symbol rate GHz
12.553 H Viva	8888	11.977 H DISCOVERY	27500	11.996 V Mjude Akdeniz	26000	11.591 V Star Movies	27689	11.044 V Radio CH53	44950	4.055 R Sawa N. Africa Radio	26000
12.553 H Nesali TURK	8888	11.977 H NIGEL	27500	11.996 V Mjude Radyo Faga	26000	11.591 V Star World	27689	11.044 V Radio CH53	44950	4.055 R Sawa Sudan Radio 455	26000
12.553 H Radyo Viva	8888	11.977 H NICKLEODEON	27500	11.996 V Ozgur Radyo Ankara	26000	11.591 V Star World	27689	11.095 V NTN	6400	4.055 R VOJ Dibout/Farda	26000
12.553 H Show Radyo	8888	11.977 H KANAL 7	27500	11.996 V RADYO	26000	11.591 V Zee Cinema	27689	11.095 V RUTR	6400	4.055 R VOA Sawa Iradi	26000
12.553 H Rastu2	27500	11.977 H KANAL 7	27500	11.996 V RADYO SAHIN	26000	11.591 V Zee Cinema	27689	11.095 V RUTR	6400	4.055 R VOA/SAWA Levant Ra	26000
12.559 V BERAT	27500	12.008 H ATV Turkiye	4800	11.996 V RADYO TATLISES	26000	11.591 V Zee Cinema	27689	11.161 V STV	5785	4.055 R RTI Kabon	27500
12.559 V HALAY	27500	12.008 H Kanal 1	4400	11.996 V Radyo Time	26000	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis	27500
12.597 V Kanal Avrupa	27500	12.008 H Turc K	4400	11.996 V Radyo Vatn	26000	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis2	27500
12.601 H KANAL A	4400	12.017 H TURK FM	8150	11.996 V Radyo Spor	26000	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis3	27500
12.601 H Radyo A	4400	12.017 H TRT Haber TV	8150	11.996 V Radyo Spor	26000	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis4	27500
12.602 H KANAL A	4400	12.017 H TRT Pazarlama TV	8150	11.996 V Radyo Spor	26000	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis5	27500
12.602 H KANAL A	4400	12.017 H Blank audio channel	8150	11.996 V Radyo Spor	26000	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis6	27500
12.607 H OLAY TV LF M	2650	12.017 H TRT FM	8150	11.996 V Radyo Spor	26000	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis7	27500
12.609 V IMEDI TV	3700	12.028 H Samanyolu TV	4557	12.126 V HUBER TV	6665	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis8	27500
12.615 V atv Avrupa	4800	12.134 V Audio tests	4557	12.126 V tv	6665	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis9	27500
12.615 V TURKUVAZ	4800	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis10	27500
12.615 V	4800	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis11	27500
12.615 V atv radyo	4800	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis12	27500
12.620 V YENI ASIR TV	2400	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis13	27500
12.620 V MPTV	2222	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis14	27500
12.620 V MPR RADIO	2222	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis15	27500
12.620 V KANAL BIZ	2222	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis16	27500
12.620 V BERAT	2300	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis17	27500
12.620 V HALAY	2300	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis18	27500
12.620 V Kanal Avrupa	2300	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis19	27500
12.620 V EGE TV	2300	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis20	27500
12.620 V Kral Avrupa	4800	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis21	27500
12.620 V NTV Bati	4800	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis22	27500
12.620 V Intercom	4800	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis23	27500
12.620 V KACAKAR TV	3333	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis24	27500
12.620 V Rze TV	3600	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis25	27500
12.620 V TEST	3333	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis26	27500
12.620 V TravelTurk	3600	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis27	27500
12.620 V YILDIZ TV	3333	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis28	27500
12.620 V KACAKAR TV	3333	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis29	27500
12.620 V RIJZENIN SESI	3333	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis30	27500
12.620 V TEST	3333	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis31	27500
12.620 V SKYTURK	4250	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis32	27500
12.620 V HABERTURK TV	3900	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis33	27500
12.620 V YABAN TV	3900	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis34	27500
12.620 V Intercom	3900	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis35	27500
12.620 V SHOW TV	4444	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis36	27500
12.620 V D MACK	9150	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis37	27500
12.620 V MARC DORCEL	9150	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis38	27500
12.620 V PEMBE SMART	9150	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis39	27500
12.620 V BERAT	2344	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis40	27500
12.620 V HALAY	2344	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis41	27500
12.620 V Kanal Avrupa	2344	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis42	27500
12.620 V 24	8888	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis43	27500
12.620 V STR	8888	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis44	27500
12.620 V Radyo ABC	8888	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis45	27500
12.620 V AKSU TV	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis46	27500
12.620 V G. ANTEP OLAY TV	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis47	27500
12.620 V HILAL TV	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis48	27500
12.620 V KANAL 35	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis49	27500
12.620 V KANAL 7	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis50	27500
12.620 V MAVI KARADENIZ	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis51	27500
12.620 V TEMPO TV	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis52	27500
12.620 V TURKSTEST 1	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis53	27500
12.620 V TURKSTEST 2	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis54	27500
12.620 V TURKSTEST 3	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis55	27500
12.620 V TURKSTEST 4	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis56	27500
12.620 V TURKSTEST 5	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis57	27500
12.620 V TV 58	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis58	27500
12.620 V VATAN TV	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis59	27500
12.620 V GOZYASI FM	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis60	27500
12.620 V SEYR FM	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis61	27500
12.620 V AKSU TV	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis62	27500
12.620 V G. ANTEP OLAY TV	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis63	27500
12.620 V HILAL TV	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis64	27500
12.620 V KANAL 35	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	27689	11.161 V STV	5785	4.055 R RTI Languis65	27500
12.620 V KANAL 7	3000	12.126 V HUBER TV	6665	12.141 V EAS PROMO	4442	11.632 V CH 18	2				







Main table listing satellite channels, frequencies, and symbols. Includes sub-tables for ASIASAT 2, ASIASAT 35, ASIASAT 100.5° East, ASIASAT 100.5° East, CAKRAWARTA 1, and NSS10A.



NSS10A NSS 101.0° East

Table listing channels for NSS10A, including frequencies and symbols.



NSS10B NSS 101.0° East

Table listing channels for NSS10B, including frequencies and symbols.



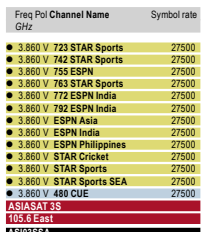
NSS10C NSS 101.0° East

Table listing channels for NSS10C, including frequencies and symbols.



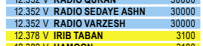
NSS10D NSS 101.0° East

Table listing channels for NSS10D, including frequencies and symbols.



ASIASAT 35 100.5° East

Table listing channels for ASIASAT 35, including frequencies and symbols.



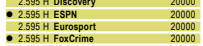
ASIASAT 100.5° East

Table listing channels for ASIASAT 100.5° East, including frequencies and symbols.



ASIASAT 100.5° East

Table listing channels for ASIASAT 100.5° East, including frequencies and symbols.



ASIASAT 100.5° East

Table listing channels for ASIASAT 100.5° East, including frequencies and symbols.

Table listing channels for ASIASAT 2, including frequencies and symbols.

ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.

Table listing channels for ASIASAT 2, including frequencies and symbols.

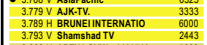
ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



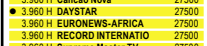
ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.

Table listing channels for ASIASAT 2, including frequencies and symbols.

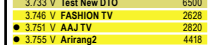
ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



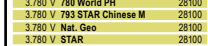
ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



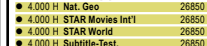
ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.

Table listing channels for ASIASAT 2, including frequencies and symbols.

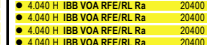
ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



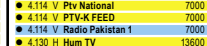
ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



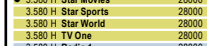
ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.

Table listing channels for ASIASAT 2, including frequencies and symbols.

ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.



ASIASAT 2 100.5° East

Table listing channels for ASIASAT 2, including frequencies and symbols.

# 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
4.067 V Lnh Rzh8	5990	3.840 H CCTV-11	27500	4.375 V zht7 Stereo	5990	11.958 R Skywave Info	24440	12.688 V Cinema R	21096	3.414 V VTV3	9768
4.067 V Lnh Rzh9	5990	3.840 H CCTV-12	27500	4.192 V Hebei TV	6000	11.958 R Sport Channel	24440	12.688 V Kinokan	21096	3.414 V VTV4	9768
4.067 V SW1 stereo	5990	3.840 H CCTV-2	27500	4.192 V Hebei Radio2	6000	11.958 R Goal 2	24440	12.688 V Korea Pop	21096	3.414 V VTV5	9768
4.067 V SW2 stereo	5990	3.840 H CCTV-7	27500	4.192 V Hebei Radio3	6000	11.958 R Happy Together	24440	12.688 V Korean Songs	21096	<b>C-Band: APSTAR 6</b>	
4.067 V ZH1 stereo	5990	3.840 H CCTV-MUSIC	27500	4.192 V Hebei Radio4	6000	11.958 R Sky	24440	12.688 V Latin	21096	<b>133.4 East</b>	
4.067 V ZH2 stereo	5990	3.840 H CCTV-Stream date	27500	4.192 V HebeiRadio5	6000	11.958 R ANIMAX	24437	12.688 V MuzoTalk	21096	<b>AP5006CB</b>	
4.067 V ZH3 stereo	5990	3.846 V SHANXI SAT TV	5950	<b>KOREASAT 3   116.0° East</b>		11.958 R AXN	24437	12.688 V Okinawa Music	21096	<b>APSTAR 6   134.0° East</b>	
4.067 V ZH4 stereo	5990	3.846 V SHANXI TV	5950	11.958 R BBC	24437	11.958 R AXN	24437	12.688 V Oldies	21096	<b>C-Band</b>	
4.067 V zht2 Stereo	5990	3.854 V Henan TV	4420	11.958 R Bloomberg	24437	11.958 R RCTV	24437	12.688 V R&B & Soul	21096	<b>31 36 40</b>	
<b>C-Band: CHINAPAC 2</b>		3.854 V Hubei Radio	4420	11.958 R CCTV-4	24437	11.958 R RCTV-9	24437	12.688 V Rock/Pop Artists 5	21096	<b>http://www.SatcoDX.com/1340</b>	
3.765 H TVRI JKT	5555	3.854 V HN Radio2	4420	11.958 R CCTV-5	24437	11.958 R RCTV-9	24437	12.688 V Rock/Pop Artists 6	21096	<b>Coverage Code AP5006CB</b>	
3.774 H rct1	6520	3.854 V HN Radio5	4420	11.958 R CCTV-9	24437	11.958 R ETV Asia	24437	12.688 V Rock/Pop Artists 7	21096	<b>APSTAR 6   134.0° East</b>	
3.774 H rct2	6520	3.861 V Ningxia Radio	4800	11.958 R ETV Asia	24437	11.958 R ETV Asia	24437	12.688 V Rock/Pop Artists 8	21096	<b>31 36 40</b>	
3.774 H Trijaya Network	6520	3.871 V NLTV	9080	<b>C-Band: ASIATASAT 4</b>		<b>C-Band: ASIATASAT 4</b>		12.688 V Rock/Pop Artists 9	21096	<b>http://www.SatcoDX.com/1340</b>	
3.925 H Service 1	4208	3.871 V SKTVS	9080	<b>ASI4004B</b>		12.211 E Guangxi TV	5720	12.688 V Rock/Pop Artists 10	21096	<b>31 36 40</b>	
3.934 H PT SCTV IDJKT	6620	3.871 V SK-NG/IGS-BC	9080	<b>ASI4004B</b>		3.845 H Guangdong	17800	12.688 V Rock/Pop Artists 11	21096	<b>http://www.SatcoDX.com/1340</b>	
3.935 V rct1	3000	3.871 V SK-NG/IGS-BC	9080	<b>ASI4004B</b>		3.893 H HLJ	6800	12.688 V Rock/Pop Artists 12	21096	<b>Coverage Code AP5006CB</b>	
3.935 V rct2	3000	3.871 V SK-XiQu-BC	9080	<b>ASI4004B</b>		3.909 H JMR	8934	12.688 V Rock/Pop Artists 13	21096	<b>31 36 40</b>	
3.936 V Trijaya Network	3000	3.871 V SK-XiYun-BC	9080	<b>ASI4004B</b>		3.922 H Yunnan	7250	12.688 V Rock/Pop Artists 14	21096	<b>http://www.SatcoDX.com/1340</b>	
4.000 H PT SCTV IDJKT	6620	3.871 V SK-NG/IGS-BC	9080	<b>ASI4004B</b>		3.933 H Travel TV	6590	12.688 V Rock/Pop Artists 15	21096	<b>Coverage Code AP5006CB</b>	
4.000 H rct1	6620	3.871 V SK-SHao-BC	9080	<b>ASI4004B</b>		3.989 H KZTV	5600	12.688 V Rock/Pop Artists 16	21096	<b>31 36 40</b>	
4.000 H rct2	6620	3.871 V SK-XiQu-BC	9080	<b>ASI4004B</b>		12.023 H Liveing	21096	12.688 V Rock/Pop Artists 17	21096	<b>http://www.SatcoDX.com/1340</b>	
4.000 H Trijaya Network	6620	3.871 V SK-XiYun-BC	9080	<b>ASI4004B</b>		4.080 H CTCTV	27500	12.688 V Rock/Pop Artists 18	21096	<b>Coverage Code AP5006CB</b>	
4.053 V ANTEVE	6510	3.880 H CCTV-3	27500	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 19	21096	<b>31 36 40</b>	
4.053 H ASIALINK	5640	3.880 H CCTV-6	27500	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 20	21096	<b>http://www.SatcoDX.com/1340</b>	
4.053 V ANTEVE	6510	3.880 H CCTV-8	27500	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 21	21096	<b>Coverage Code AP5006CB</b>	
4.074 V PT SCTV IDJKT	6500	3.880 H CCTV-9	27500	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 22	21096	<b>31 36 40</b>	
4.074 V rct1	6500	3.880 H CCTV-9	27500	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 23	21096	<b>http://www.SatcoDX.com/1340</b>	
4.074 V rct2	6500	3.880 H CCTV-9	27500	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 24	21096	<b>Coverage Code AP5006CB</b>	
4.074 V Trijaya Network	6500	3.880 H CCTV-9	27500	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 25	21096	<b>31 36 40</b>	
4.080 H CH10	28125	3.885 H SDET V	4340	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 26	21096	<b>http://www.SatcoDX.com/1340</b>	
4.080 H CH11	28125	3.882 H JXTV1	4420	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 27	21096	<b>Coverage Code AP5006CB</b>	
4.080 H CH3	28125	3.882 H JXTV2	4420	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 28	21096	<b>31 36 40</b>	
4.080 H CH6	28125	3.882 H JXTV3	4420	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 29	21096	<b>http://www.SatcoDX.com/1340</b>	
4.080 H CH7	28125	3.882 H JXTV4	4420	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 30	21096	<b>Coverage Code AP5006CB</b>	
4.080 H Global TV	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 31	21096	<b>31 36 40</b>	
4.080 H Global TV2	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 32	21096	<b>http://www.SatcoDX.com/1340</b>	
4.080 H MainTV	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 33	21096	<b>Coverage Code AP5006CB</b>	
4.080 H Spacecom	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 34	21096	<b>31 36 40</b>	
4.080 H 68H	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 35	21096	<b>http://www.SatcoDX.com/1340</b>	
4.080 H Antero	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 36	21096	<b>Coverage Code AP5006CB</b>	
4.080 H BBC	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 37	21096	<b>31 36 40</b>	
4.080 H Delta FM	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 38	21096	<b>http://www.SatcoDX.com/1340</b>	
4.080 H Delta2 FM	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 39	21096	<b>Coverage Code AP5006CB</b>	
4.080 H POP FM	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 40	21096	<b>31 36 40</b>	
4.080 H Pro2 FM	28125	3.900 H JSTV	6670	11.747 L	21300	12.023 H Liveing	21096	12.688 V Rock/Pop Artists 41	21096	<b>http://www.SatcoDX.com/1340</b>	
4.185 V TPI TV Makin Asyik	6700	3.910 V GSTV	8400	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 42	21096	<b>Coverage Code AP5006CB</b>	
4.185 V R DanguDang TPI	6700	3.910 V GSTV	8400	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 43	21096	<b>31 36 40</b>	
3.926 V rct1	4208	3.910 V GSTV	8400	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 44	21096	<b>http://www.SatcoDX.com/1340</b>	
3.926 V rct2	4208	3.910 V GSTV	8400	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 45	21096	<b>Coverage Code AP5006CB</b>	
3.926 V Service 1	4208	3.910 V GSTV	8400	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 46	21096	<b>31 36 40</b>	
3.926 V Trijaya Network	4208	3.910 V GSTV	8400	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 47	21096	<b>http://www.SatcoDX.com/1340</b>	
3.932 H PT SCTV IDJKT	6620	3.925 V Anhv Service	8835	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 48	21096	<b>Coverage Code AP5006CB</b>	
4.054 H ASIALINK	5632	3.925 V Anhv Service	8835	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 49	21096	<b>31 36 40</b>	
4.054 V KCTV	3000	3.925 V Anhv Service	8835	12.330 H	27489	12.330 H	27489	12.688 V Rock/Pop Artists 50	21096	<b>http://www.SatcoDX.com/1340</b>	
<b>KOREASAT 5</b>		3.940 V TJBINHAI	5950	12.410 H	27489	12.410 H	27489	12.688 V Rock/Pop Artists 51	21096	<b>Coverage Code AP5006CB</b>	
12.458 H DIGITAL SNG	3072	3.940 V TJQUXIAN	5950	12.410 H	27489	12.410 H	27489	12.688 V Rock/Pop Artists 52	21096	<b>31 36 40</b>	
12.578 H EEC SAT HUB1	5200	3.940 V TJXINMI	5950	12.410 H	27489	12.410 H	27489	12.688 V Rock/Pop Artists 53	21096	<b>http://www.SatcoDX.com/1340</b>	
12.641 H FGV SAT	3700	3.940 V TJZONGHE	5950	12.410 H	27489	12.410 H	27489	12.688 V Rock/Pop Artists 54	21096	<b>Coverage Code AP5006CB</b>	
12.665 H MBC TV-LINK	3699	3.950 H Guangdong 1	11400	12.450 H	27489	12.450 H	27489	12.688 V Rock/Pop Artists 55	21096	<b>31 36 40</b>	
12.731 H FSTV	28187	3.950 H GXTV	11400	12.450 H	27489	12.450 H	27489	12.688 V Rock/Pop Artists 56	21096	<b>http://www.SatcoDX.com/1340</b>	
12.731 H SANG S TV	28187	3.951 V BEIJING KAKU	9525	12.450 H	27489	12.450 H	27489	12.688 V Rock/Pop Artists 57	21096	<b>Coverage Code AP5006CB</b>	
12.731 H SkyCast 07	28187	3.951 V BEIJING TV	9525	12.450 H	27489	12.450 H	27489	12.688 V Rock/Pop Artists 58	21096	<b>31 36 40</b>	
12.731 H SkyCast 10	28187	3.980 V 城市新视觉	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 59	21096	<b>http://www.SatcoDX.com/1340</b>	
12.731 H SkyCast 11	28187	3.980 V 东方卫视	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 60	21096	<b>Coverage Code AP5006CB</b>	
12.731 H SkyCast 12	28187	3.980 V 东方卫视	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 61	21096	<b>31 36 40</b>	
12.731 H SkyCast 2	28187	3.980 V 东方卫视	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 62	21096	<b>http://www.SatcoDX.com/1340</b>	
12.731 H SkyCast 4	28187	3.980 V 东方卫视	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 63	21096	<b>Coverage Code AP5006CB</b>	
12.731 H SkyCast 08	28187	3.980 V 东方卫视	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 64	21096	<b>31 36 40</b>	
12.731 H SkyCast 09	28187	3.980 V 东方卫视	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 65	21096	<b>http://www.SatcoDX.com/1340</b>	
12.731 H SkyCast 1	28187	3.980 V 东方卫视	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 66	21096	<b>Coverage Code AP5006CB</b>	
<b>C-Band: CHINASAT 6B</b>		3.980 V 东方卫视	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 67	21096	<b>31 36 40</b>	
4.000 V 中国网络直播	27500	4.000 V CCTV-1	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 68	21096	<b>http://www.SatcoDX.com/1340</b>	
4.020 V 百姓健康	27500	4.020 V CCTV-5	27500	12.730 H	27489	12.730 H	27489	12.688 V Rock/Pop Artists 69	21096	<b>Coverage Code AP5006CB</b>	
4.020 V 财富天下	27500	4.020 V CCTV-9	27500	12.73							









# 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	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 WWHO	26000
12384 L Sunshyne Network	20000	12384 L UVE3	9666	12384 L UVE4	9666	12384 L BAUM	20000	12384 L BWHX	20000	12384 L WIKX	20000	12384 L WKBW	20000
12384 L The Weather Channel	20000	12384 L UVE5	9666	12384 L UVE6	9666	12384 L CACTV	20000	12384 L COLRS	20000	12384 L WLSD	20000	12384 L WKEG	20000
12384 L Destinations Audio	20000	12384 L UVE7	9666	12384 L UVE8	9666	12384 L CDTV	20000	12384 L DOC	20000	12384 L WLED	20000	12384 L WPHX	20000
12384 L Latino Pop	20000	12384 L UVE9	9666	12384 L UVE10	9666	12384 L CUBA1	20000	12384 L FRESH	20000	12384 L WWTB	20000	12384 L WWSN	20000
12384 L Muzak	20000	12384 L UVE11	9666	12384 L UVE12	9666	12384 L CUBA2	20000	12384 L JTV	20000	12384 L WWSR	20000	12384 L WXII	20000
12384 L Muzak 2	20000	12384 L UVE13	9666	12384 L UVE14	9666	12384 L CUBA3	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Viva Marachi	20000	12384 L UVE15	9666	12384 L UVE16	9666	12384 L CUBA4	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Animal Planet	20000	12384 L UVE17	9666	12384 L UVE18	9666	12384 L CUBA5	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L CNBC US	20000	12384 L UVE19	9666	12384 L UVE20	9666	12384 L CUBA6	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Comedy Central	20000	12384 L UVE21	9666	12384 L UVE22	9666	12384 L CUBA7	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Fox Sports Northwest	20000	12384 L UVE23	9666	12384 L UVE24	9666	12384 L CUBA8	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L HBO 2 West	20000	12384 L UVE25	9666	12384 L UVE26	9666	12384 L CUBA9	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Lifetime	20000	12384 L UVE27	9666	12384 L UVE28	9666	12384 L CUBA10	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L MSNBC	20000	12384 L UVE29	9666	12384 L UVE30	9666	12384 L CUBA11	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L TBS Superstation (	20000	12384 L UVE31	9666	12384 L UVE32	9666	12384 L CUBA12	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L TV Land	20000	12384 L UVE33	9666	12384 L UVE34	9666	12384 L CUBA13	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L VH1 US	20000	12384 L UVE35	9666	12384 L UVE36	9666	12384 L CUBA14	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L WGN Superstation	20000	12384 L UVE37	9666	12384 L UVE38	9666	12384 L CUBA15	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Contemporary Christi	20000	12384 L UVE39	9666	12384 L UVE40	9666	12384 L CUBA16	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Contemporary Instrum	20000	12384 L UVE41	9666	12384 L UVE42	9666	12384 L CUBA17	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Contemporary Jazz Ft	20000	12384 L UVE43	9666	12384 L UVE44	9666	12384 L CUBA18	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Easy Instrumentals	20000	12384 L UVE45	9666	12384 L UVE46	9666	12384 L CUBA19	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12384 L Jazz Traditions	20000	12384 L UVE47	9666	12384 L UVE48	9666	12384 L CUBA20	20000	12384 L KTV	20000	12384 L WWSU	20000	12384 L WYFF	20000
12414 L Black Starz East	20000	12414 L UVE49	9666	12414 L UVE50	9666	12414 L CUBA21	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12414 L Encore East	20000	12414 L UVE51	9666	12414 L UVE52	9666	12414 L CUBA22	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12414 L Exstasy	20000	12414 L UVE53	9666	12414 L UVE54	9666	12414 L CUBA23	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12414 L Lifetime Movie Netwo	20000	12414 L UVE55	9666	12414 L UVE56	9666	12414 L CUBA24	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12414 L Pas TV	20000	12414 L UVE57	9666	12414 L UVE58	9666	12414 L CUBA25	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12414 L Starz Cinema East	20000	12414 L UVE59	9666	12414 L UVE60	9666	12414 L CUBA26	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12414 L Starz East	20000	12414 L UVE61	9666	12414 L UVE62	9666	12414 L CUBA27	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12414 L Starz Family East	20000	12414 L UVE63	9666	12414 L UVE64	9666	12414 L CUBA28	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12414 L Starz Theater East	20000	12414 L UVE65	9666	12414 L UVE66	9666	12414 L CUBA29	20000	12414 L KTV	20000	12414 L WWSU	20000	12414 L WYFF	20000
12428 L Westerns East	20000	12428 L UVE67	9666	12428 L UVE68	9666	12428 L CUBA30	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L KABC-TV	20000	12428 L UVE69	9666	12428 L UVE70	9666	12428 L CUBA31	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L KCBS-TV	20000	12428 L UVE71	9666	12428 L UVE72	9666	12428 L CUBA32	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L KNBC-TV	20000	12428 L UVE73	9666	12428 L UVE74	9666	12428 L CUBA33	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L KSLA-TV	20000	12428 L UVE75	9666	12428 L UVE76	9666	12428 L CUBA34	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L KTTV-TV	20000	12428 L UVE77	9666	12428 L UVE78	9666	12428 L CUBA35	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L KWGN-TV	20000	12428 L UVE79	9666	12428 L UVE80	9666	12428 L CUBA36	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L WPX-TV	20000	12428 L UVE81	9666	12428 L UVE82	9666	12428 L CUBA37	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L WISB-TV	20000	12428 L UVE83	9666	12428 L UVE84	9666	12428 L CUBA38	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L WWOR-TV	20000	12428 L UVE85	9666	12428 L UVE86	9666	12428 L CUBA39	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L WXTV-TV	20000	12428 L UVE87	9666	12428 L UVE88	9666	12428 L CUBA40	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L 70's Songbook	20000	12428 L UVE89	9666	12428 L UVE90	9666	12428 L CUBA41	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L Big Band Era	20000	12428 L UVE91	9666	12428 L UVE92	9666	12428 L CUBA42	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L Classic Rock Alternat	20000	12428 L UVE93	9666	12428 L UVE94	9666	12428 L CUBA43	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L Eurostyle	20000	12428 L UVE95	9666	12428 L UVE96	9666	12428 L CUBA44	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L JukeBox Gold	20000	12428 L UVE97	9666	12428 L UVE98	9666	12428 L CUBA45	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L Nonstop Hip Hop	20000	12428 L UVE99	9666	12428 L UVE100	9666	12428 L CUBA46	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12428 L ABC Family	20000	12428 L UVE101	9666	12428 L UVE102	9666	12428 L CUBA47	20000	12428 L KTV	20000	12428 L WWSU	20000	12428 L WYFF	20000
12443 L Cartoon Network	20000	12443 L UVE103	9666	12443 L UVE104	9666	12443 L CUBA48	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L CNN Headline News	20000	12443 L UVE105	9666	12443 L UVE106	9666	12443 L CUBA49	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L CNN Entertainment TV	20000	12443 L UVE107	9666	12443 L UVE108	9666	12443 L CUBA50	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L HRTV US	20000	12443 L UVE109	9666	12443 L UVE110	9666	12443 L CUBA51	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L MTV East	20000	12443 L UVE111	9666	12443 L UVE112	9666	12443 L CUBA52	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L Nickelodeon West	20000	12443 L UVE113	9666	12443 L UVE114	9666	12443 L CUBA53	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L TCM - Turner Classic	20000	12443 L UVE115	9666	12443 L UVE116	9666	12443 L CUBA54	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L The New TNN	20000	12443 L UVE117	9666	12443 L UVE118	9666	12443 L CUBA55	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L Travel Channel	20000	12443 L UVE119	9666	12443 L UVE120	9666	12443 L CUBA56	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L USA Network East	20000	12443 L UVE121	9666	12443 L UVE122	9666	12443 L CUBA57	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L Adult Alternative	20000	12443 L UVE123	9666	12443 L UVE124	9666	12443 L CUBA58	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L Hawaiian Music	20000	12443 L UVE125	9666	12443 L UVE126	9666	12443 L CUBA59	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000
12443 L Hot Hits	20000	12443 L UVE127	9666	12443 L UVE128	9666	12443 L CUBA60	20000	12443 L KTV	20000	12443 L WWSU	20000	12443 L WYFF	20000



# 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 NMLC	20000	12.516 R Vu8	20000	12.661 R NMLZ	20000	11.960 H 33 - Discovery Scien	28800	21.5.0 East (35.0 West)	
12.224 R MTV	20000	12.370 R NHL-E	20000	12.516 R Vu8	20000	12.661 R NMLN	20000	11.960 H 34 - Disc. Civilization	28800	AMC0302K	
12.224 R NCAR2	20000	12.370 R PBS-E	20000	12.516 R Vu8	20000	12.661 R NMLT	20000	11.960 H 35 - NatGeo	28800	AMC 2.250.0 East	
12.224 R RCVu8	20000	12.370 R PBSdv	20000	12.516 R WFN	20000	12.661 R OTDtv	20000	11.960 H 36 - TVE	28800	AMC 2.250.0 East	
12.224 R RCVu8	20000	12.370 R RFL	20000	12.516 R WFN	20000	12.661 R RCVu8	20000	11.960 H 37 - Animal Planet	28800	AMC 2.250.0 East	
12.224 R TSC	20000	12.370 R WEA	20000	12.516 R GYX28	20000	12.661 R RCVu8	20000	12.000 H 02 - RIT Noticias	28800	AMC 2.250.0 East	
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	AMC 2.250.0 East	
12.224 R Vu22	20000	12.370 R WEA+	20000	12.516 R GYX39	20000	12.661 R SUPRA	20000	12.000 H 04 - TV Escola	28800	AMC 2.250.0 East	
12.231 R RFI	20000	12.370 R WGN	20000	12.516 R GYX39	20000	12.661 R TVO	20000	12.000 H 05 - Discovery Chann	28800	AMC 2.250.0 East	
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	AMC 2.250.0 East	
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	AMC 2.250.0 East	
12.231 R GAME	20000	12.384 R CAN-D	20000	12.516 R BTVM	20000	12.661 R VuF2	20000	12.000 H 08 - Terra Viva	28800	AMC 2.250.0 East	
12.231 R HLTV	20000	12.384 R CANH	20000	12.516 R NUMAG	20000	12.661 R HDRPE	20000	12.000 H 09 - Bandeirantes	28800	AMC 2.250.0 East	
12.231 R NCAR4	20000	12.384 R CAN-Z	20000	12.530 R ANAG	20000	12.661 R ALERT	20000	12.000 H 10 - Fox Life	28800	AMC 2.250.0 East	
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	AMC 2.250.0 East	
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	AMC 2.250.0 East	
12.231 R QUTTV	20000	12.384 R SE3	20000	12.530 R CAN-S	20000	12.661 R LCN	20000	12.000 H 13 - Discovery Chann	28800	AMC 2.250.0 East	
12.231 R RA	20000	12.384 R SE3	20000	12.530 R CAN-S	20000	12.661 R LOCK	20000	12.000 H 14 - Discovering Kids	28800	AMC 2.250.0 East	
12.231 R Vldv	20000	12.384 R SE4	20000	12.530 R TLEQ	20000	12.661 R MOVDH	20000	12.000 H 15 - Disney Channel	28800	AMC 2.250.0 East	
12.231 R Vu15	20000	12.384 R SERIE	20000	12.530 R TQS-M	20000	12.661 R NETHD	20000	12.000 H 16 - ESPN Internatio	28800	AMC 2.250.0 East	
12.231 R Vu24	20000	12.384 R SRC-V	20000	12.530 R TVA-M	20000	12.661 R SPLTY	20000	12.000 H 17 - TNT	28800	AMC 2.250.0 East	
12.231 R VU24	20000	12.384 R VRAK	20000	12.530 R TVA-T	20000	12.661 R SPRTH	20000	12.000 H 18 - CNN Espanol	28800	AMC 2.250.0 East	
12.231 R CBC1T	20000	12.384 R WAHSA	20000	12.530 R CC-M	20000	12.661 R Vu*	20000	12.000 H 19 - Home & Health	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R CBC-A	20000	12.530 R CJAD	20000	12.661 R VuP*	20000	12.000 H 20 - IIGD	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R CBC-a	20000	12.530 R CJPJ	20000	12.661 R Q10*	20000	12.000 H 21 - CJC	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R CBC-b	20000	12.530 R CJPJ	20000	12.661 R Q10*	20000	12.000 H 22 - RTT	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R MCTV	20000	12.530 R METO	20000	12.676 R ADR	20000	12.000 H 23 - Climatempo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R MCTV*	20000	12.530 R PC-M	20000	12.676 R BRSSH	20000	12.000 H 25 - Discovery Turbo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R TQS-Q	20000	12.000 H 26 - TCM	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R TQS-Q	20000	12.000 H 27 - Animal Planet	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R TQS-Q	20000	12.000 H 28 - ESPN Brasil	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R TQS-Q	20000	12.000 H 29 - Travel & Living	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R TQS-Q	20000	12.000 H 30 - Woodfoo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R TVANR	20000	12.000 H 31 - Discovery Chann	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R TVANR	20000	12.000 H 32 - Hallmark	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX12	20000	12.000 H 33 - Discovery Scien	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX13	20000	12.000 H 34 - Disc. Civilization	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX14	20000	12.000 H 35 - NatGeo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX16	20000	12.000 H 36 - TVE	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX17	20000	12.000 H 37 - Animal Planet	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX18	20000	12.000 H 38 - ESPN Brasil	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX19	20000	12.000 H 39 - Travel & Living	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX20	20000	12.000 H 40 - Woodfoo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX21	20000	12.000 H 41 - Discovery Chann	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX22	20000	12.000 H 42 - Hallmark	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX23	20000	12.000 H 43 - Discovery Scien	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX24	20000	12.000 H 44 - Disc. Civilization	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX25	20000	12.000 H 45 - NatGeo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX26	20000	12.000 H 46 - TVE	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX27	20000	12.000 H 47 - Animal Planet	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX28	20000	12.000 H 48 - ESPN Brasil	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX29	20000	12.000 H 49 - Travel & Living	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX30	20000	12.000 H 50 - Woodfoo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX31	20000	12.000 H 51 - Discovery Chann	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX32	20000	12.000 H 52 - Hallmark	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX33	20000	12.000 H 53 - Discovery Scien	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX34	20000	12.000 H 54 - Disc. Civilization	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX35	20000	12.000 H 55 - NatGeo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX36	20000	12.000 H 56 - TVE	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX37	20000	12.000 H 57 - Animal Planet	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX38	20000	12.000 H 58 - ESPN Brasil	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX39	20000	12.000 H 59 - Travel & Living	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX40	20000	12.000 H 60 - Woodfoo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX41	20000	12.000 H 61 - Discovery Chann	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX42	20000	12.000 H 62 - Hallmark	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX43	20000	12.000 H 63 - Discovery Scien	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX44	20000	12.000 H 64 - Disc. Civilization	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX45	20000	12.000 H 65 - NatGeo	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX46	20000	12.000 H 66 - TVE	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.676 R GYX47	20000	12.000 H 67 - Animal Planet	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY1	20000	12.676 R GYX48	20000	12.000 H 68 - ESPN Brasil	28800	AMC 2.250.0 East	
12.253 R VN810	20000	12.399 R NCA4	20000	12.545 R CITY2	20000	12.67					







Main table listing satellite channels with columns for Freq Pol Channel Name, Symbol rate, and GHz. Includes multiple maps of the Americas and Europe showing satellite coverage areas.

Supplemental table listing satellite channels, including specific coverage codes and additional channel details.

# 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

Freq	Pol	Channel Name	Symbol rate
12.302 H	NEOSP		27500
12.302 H	Primo Sport Arabia		27500
12.302 H	Sharat		27500
12.302 H	TBO		27500
12.302 H	ATV		27500
12.302 H	Al Dayer		27500
12.302 H	ALHAKEKA		27500
12.302 H	Dawn News		27500
12.302 H	FM		27500
12.302 H	SHART		27500
12.302 H	ISHART TV		27500
12.302 H	LBC EU		27500
12.302 H	Nourmina		27500
12.302 H	Seven Stars		27500
12.302 H	AYAM FM		27500
12.302 H	Rotana Radio Jordan		27500
12.302 H	SPN JORDAN		27500
10.775 H	AL Dewitya		27500
10.775 H	Al Oqetha		27500
10.775 H	Al Waseet		27500
10.775 H	ALGHADER		27500
10.775 H	AL Saha Wajamal		27500
10.775 H	ALWAL		27500
10.775 H	Cairo Cinema		27500
10.775 H	Dewan Al Arab		27500
10.775 H	Hambal Afrados		27500
10.775 H	Irad Edu		27500
10.775 H	Nickelodeon TV		27500
10.775 H	Panorama Drama 2		27500
10.775 H	Test1-3		27500
10.775 H	Test1-4		27500

Freq	Pol	Channel Name	Symbol rate
12.614 H	SEX ON TV	CRYSTAL	8790
12.614 H	SEX ON TV DIAMOND		8790
12.614 H	SEX ON TV GOLD		8790
12.614 H	SEX ON TV SILVER		8790
12.614 H	SEX ON TV CLASSIC		8790
12.614 H	HAPESH TV		8790
12.711 H	PNK SK		40000
11.471 V	M6		29950
11.471 V	Orange cine choc		29950
11.471 V	Orange cine gants		29950
11.471 V	Orange cine happy		29950
11.471 V	Orange cine max		29950
11.471 V	Orange cine novo		29950
11.471 V	Orange cinema serie		29950
11.471 V	W9		29950
12.615 H	SEX ON TV CRYSTAL		8789
12.615 H	SEX ON TV DIAMOND		8789
12.615 H	SEX ON TV SILVER		8789
12.615 H	SEX ON TV CLASSIC		8789
12.615 H	HAPESH TV		8789

Freq	Pol	Channel Name	Symbol rate
10.925 H	Boom Comedy		27500
10.925 H	Boom Drama		27500
10.925 H	Boom Hop!		27500
10.925 H	Boom Sport One		27500
10.925 H	Boom Sport Two		27500
10.925 H	Extreme Sports		27500
10.925 H	Favorit TV		27500
10.925 H	Kanal D		27500
10.925 H	Kay Geographic		27500
10.925 H	Playboy		27500
10.925 H	Sport Klub Ro		27500
10.925 H	Sport Ro		27500
10.925 H	TVR Cultural		27500
10.925 H	Viasat History		27500
11.122 H	TV Amna RA		1852
11.260 H	A 4 storyline		27500
11.260 H	anime+ Hungary		27500
11.260 H	anime+ Romania		27500
11.260 H	Filmuzeev		27500
11.260 H	HiTV		27500
11.260 H	Minimax Huni+A		27500
11.260 H	Minimax Romi+A		27500
11.260 H	CH2		27500
11.260 H	CHX		27500
11.260 H	Minimax Hungary		27500
11.260 H	Minimax Romania		27500
11.260 H	Minimax Serbia		27500
11.260 H	Teledia 2		27500
11.260 H	Teledia 3		27500
11.260 H	Teledia 6		27500
11.260 H	Gong Radio		27500
11.260 H	Juventus Radio		27500
11.260 H	Katavasio Radio		27500
11.303 H	ATV		19540
11.303 H	Cosmay Central		19540
11.303 H	SK PL		19540
11.303 H	SK PL +		19540
11.303 H	Sportklub		19540
11.303 H	Vital TV		19540
11.303 H	Radio1		19540
11.303 H	Katavasio Radio		19540
11.324 H	NET TV		3350
11.333 H	HTV-RT		3500
11.347 H	TMT		2800
11.351 H	GROATEL D5NG		3350
11.359 H	NOVA TV		3350
11.423 H	SKANALAS		2892
11.427 H	NTV HAYAT BH		5926
11.427 H	NTV HAYAT SA		5926
11.435 H	TV Eolonia		2089
11.443 H	TRM		4165
11.443 H	TRM		4165
11.560 H	LBC World		13400
11.560 H	CNN		13400
11.560 H	Duna TV		13400
11.560 H	Music Channel		13400
11.560 H	MTV		13400
11.560 H	ProTV Intl		13400
11.560 H	TaralTV		13400
11.575 H	FRENCH LOVER TV		8887
11.575 H	CN Sibiria		8887
11.575 H	ON TV		8887
11.575 H	LIFE TV Estonia		8887
11.575 H	TBN Russia		8887
11.586 H	Carli TV		7958
11.586 H	Golte		7958
11.586 H	MTV Adria		7958
11.591 V	ARTE		20000
11.591 V	France 2		20000
11.591 V	France 3		20000
11.591 V	France 5		20000
11.591 V	LCP		20000

Freq	Pol	Channel Name	Symbol rate
11.412 H	HBO Poland		7926
11.422 H	HBO Poland (AC3)		7926
11.412 H	HBO Poland for STB		7926
11.412 H	HBO Poland		7926
11.412 H	HBO Poland for ST		7926
11.412 H	HBO Poland Origin		7926
11.412 H	Subtitling Test		7926
11.412 H	OS Download 2		7926
11.650 H	Telesport		21350
11.650 H	Radio Trinitas		21350
11.650 H	Canal 1		21350
11.650 H	Ginx TV		21350
11.650 H	Good Life Channel		21350
11.650 H	Trinitas TV		21350
11.650 H	TV Neptun		21350
11.650 H	Radio Logos		21350
11.650 H	HBO Reintregria		21350
11.690 H	Gumor TV		7200
11.690 H	MUSIC BOX		7200
11.690 H	REAL ESTATE TV		7200
10.723 V	RTL Klub		30000
10.723 V	TV2		30000
10.759 V	Eurosport HD		30000
10.759 V	HBO HD		30000
10.759 V	History HD		30000
10.759 V	NatGeo HD		30000
10.759 V	mr1-Kossuth		30000
10.759 V	mr2-Petof		30000
10.759 V	mr3-Barok		30000
11.179 H	TVR		6666
11.179 H	TVRM		6666
11.179 H	TVRM Cultural		6666
11.179 H	NATIONAL GEOGRAPH		2750
11.338 H	Scamtona		2650
11.557 H	BBC World		13400
11.557 H	CNN		13400
11.557 H	Duna TV		13400
11.557 H	Music Channel		13400
11.557 H	MTV Ro		13400
11.557 H	Music Max Adult		13400
11.557 H	MusicMax		13400
11.557 H	OTV		13400
11.557 H	ProTV Intl		13400
11.557 H	RealTV		13400
11.557 H	Loyds Live		27500
11.543 H	Radio LBC		27500
11.543 H	CAPYLOT		27500
11.543 H	FIP Region		27500
11.543 H	France Bleu Frequenz		27500
11.543 H	France Bleu		27500
11.543 H	France Bleu Moduli		27500
11.543 H	Duna TV		27500
11.543 H	Prod.31 (GFI)		27500
11.543 H	Prod.31 CONF		27500
11.543 H	Radio Soleil		27500
11.543 H	RF contribution		27500

Freq	Pol	Channel Name	Symbol rate
11.592 V	Music 24		27500
11.592 V	Geographic		27500
11.592 V	The Discovery Channel		27500
11.592 V	VH1 Classic		27500
11.592 V	Yes 2		27500
11.592 V	Yes TV		27500
11.677 V	DVBbox		27500
11.677 V	Eurosport Channel 33		27500
11.677 V	ESPN		27500
11.677 V	MTV Base		27500
11.677 V	Open Channel		27500
11.677 V	Music Monitor		27500
11.677 V	Music Select		27500

Freq	Pol	Channel Name	Symbol rate
12.527 H	InfoPro		27500
12.527 H	EuroFM		27500
12.527 H	RADIOVE		27500
12.527 H	4 Story TV		27500
12.563 H	B92		27500
12.563 H	Fashion		27500
12.563 H	Education Channel 33		27500
12.563 H	HBO Adria		27500
12.563 H	MTV Comedy Adria		27500
12.563 H	HBO Hungary		27500
12.563 H	Jeitx CE		27500
12.563 H	Kapital Network		27500
12.563 H	M1		27500
12.563 H	Minimax		27500
12.563 H	MTV Europe		27500
12.563 H	Redstar		27500
12.563 H	Net TV		27500
12.563 H	Romantica Hu		27500
12.563 H	Service 10-1		27500
12.563 H	Spektrum		27500
12.563 H	Sport Klub		27500
12.563 H	Sport Klub +		27500
12.563 H	Sport Klub Croatia		27500
12.563 H	TVR Cultural		27500
12.563 H	TVR3		27500
12.563 H	Viva Tv		27500
12.563 H	Juventus Radio		27500
12.563 H	Cartoon Network		27500
12.563 H	Roxy Radio		27500
12.607 H	DVBbox		27500
12.607 H	EuroSport News		27500
12.607 H	Interstar		27500
12.607 H	MSL		27500
12.607 H	DigiFilm 2		27500
12.607 H	Discovery Ro		27500
12.607 H	CNN		27500
12.607 H	Echo TV		27500
12.607 H	EuroSport 2		27500
12.607 H	Galaksija		27500
12.607 H	Star 5		27500
12.607 H	Kanal D		27500
12.607 H	MTV Adria		27500
12.607 H	Nat Geo CE		27500
12.607 H	RealTV		27500
12.607 H	OBN		27500
12.607 H	LBC		27500
12.607 H	Nashe Kino		27500
12.607 H	RTL		27500
12.607 H	RTB		27500
12.607 H	RTS 1		27500
12.607 H	RTS 2		27500
12.607 H	Service 9-1		27500
12.607 H	TaralTV		27500
12.607 H	Zvezda		27500
12.607 H	A2		27500
12.607 H	DigitInfo		27500
12.607 H	Acasa		27500
12.607 H	Animal Planet CE		27500
12.607 H	AXN		27500
12.607 H	Cartoon Network		27500
12.607 H	Discovery Ch		27500
12.607 H	Film +		27500
12.607 H	Film + CE		27500
12.607 H	Test 1		27500
12.607 H	Hic TV		27500
12.607 H	Joj		27500
12.607 H	Markiza		27500
12.607 H	MTV Box		27500
12.607 H	National Geo		27500
12.607 H	NOVA Sport		27500
12.607 H	Ocko		27500
12.607 H	Prva CH		27500
12.607 H	Reality CE		27500
12.607 H	RTL Klub		27500
12.607 H	TA 3		27500
12.607 H	Russian Music Box		27500
12.607 H	Viasat 3		27500
12.607 H	Viasat Explorer		27500
12.607 H	DDTV		27500
12.607 H	Pratch		27500
12.607 H	Yes 1		27500
12.607 H	National FM		27500
12.607 H	Radio S		27500
12.607 H	Szef FM		27500
12.607 H	Radio Z1		27500
12.607 H	Yes 2		27500
12.607 H	Yes 3		27500
12.607 H	Yes 4		27500
12.607 H	Yes 5		27500
12.607 H	Yes 6		27500
12.607 H	Yes 7		27500
12.607 H	Yes 8		27500
12.607 H	Yes 9		27500
12.607 H	Yes 10		27500
12.607 H	Yes 11		27500
12.607 H	Yes 12		27500
12.607 H	Yes 13		27500
12.607 H	Yes 14		27500
12.607 H	Yes 15		27500
12.607 H	Yes 16		27500
12.607 H	Yes 17		27500
12.607 H	Yes 18		27500
12.607 H	Yes 19		27500
12.607 H	Yes 20		27500
12.607 H	Yes 21		27500
12.607 H	Yes 22		27500
12.607 H	Yes 23		27500
12.607 H	Yes 24		27500
12.607 H	Yes 25		27500
12.607 H	Yes 26		27500
12.607 H	Yes 27		27500
12.607 H	Yes 28		



# 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%

## Transmission Types Worldwide

Type	Dec 2007	Nov 2008	Dec 2008	2008/2007
TV-DIG-CRYPT	10729	11449	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	78	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	104	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	85	Inf
20600	81	82	81	0.00%
25000	48	48	78	62.50%
29000	61	59	74	21.31%
26652	29	64	74	155.17%
28100	71	76	72	1.41%
25600	70	70	70	0.00%
28700	25	70	70	180.00%
28125	94	67	67	-28.72%
24440	284	66	63	-77.82%
26657	30	62	63	110.00%
3255	46	65	63	36.96%

## Top 80 C band Frequencies Worldwide

Frequency	Dec 2007	Nov 2008	Dec 2008	2008/2007
4.000	128	117	114	-10.94%
4.060	193	103	103	-46.63%
4.175	70	71	101	44.29%
4.040	94	89	92	-2.13%
4.080	83	93	90	8.43%
4.055	113	63	90	-20.35%
4.180	47	71	72	53.19%
4.140	55	64	64	16.36%
4.100	47	60	63	34.04%
4.120	70	62	62	-11.43%
4.120	79	59	59	-25.32%
4.060	51	40	40	-21.57%
4.025	23	48	34	47.83%
4.071	2	33	34	1600.00%
4.179	23	32	32	39.13%
4.083	9	32	32	255.56%
4.177	29	22	31	Inf
4.106	29	29	29	0.00%
4.147	24	25	25	4.17%
4.067	22	22	22	0.00%
4.004	12	13	20	Inf
4.124	12	18	18	50.00%
4.151	17	17	17	0.00%
4.185	35	17	17	-51.43%
4.043	19	17	17	-10.53%
4.087	17	16	17	0.00%
4.041	17	17	17	0.00%
4.064	17	16	16	-5.88%
4.125	10	3	14	40.00%
4.005	18	20	14	-22.22%
4.113	8	8	13	62.50%
4.062	17	13	13	-23.53%
4.084	24	2	12	-64.17%
4.143	9	11	11	22.22%
4.149	4	10	11	175.00%
4.107	7	9	9	28.57%
4.168	9	9	9	0.00%
4.192	8	8	8	0.00%
4.110	12	8	8	-33.33%
4.189	4	8	8	100.00%
4.184	1	8	8	700.00%
4.159	8	8	8	0.00%
4.157	7	7	7	0.00%
4.091	6	7	7	16.67%
4.021	14	7	7	-50.00%
4.034	8	7	7	-12.50%
4.092	8	7	7	-12.50%
4.118	5	6	6	20.00%
4.065	5	6	6	20.00%
4.042	9	5	6	-33.33%
4.172	6	6	6	0.00%
4.054	5	5	6	20.00%
4.132	3	5	6	100.00%
4.130	4	6	6	50.00%
4.114	2	7	6	200.00%
4.166	7	6	6	-14.29%
4.126	5	6	6	20.00%
4.170	6	5	6	0.00%
4.137	4	6	6	50.00%
4.017	2	2	5	150.00%
4.097	4	4	5	



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

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Programme Verteilsatelliten für Europa im Sendebereich 10.95 bis 11.70 GHz

Stand: Februar 1988

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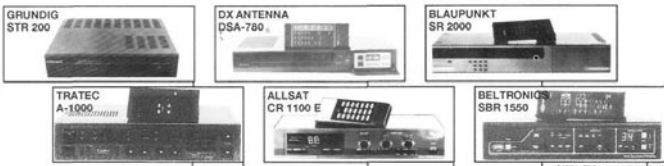
### Fernsehen über Satellit

Satellit	Position Grad	Programm	Sendeland	Sprache	Frequenz GHz	Polarisat.	Beam	Eintr.	Videot.	Mod.	Scrambl.	Empfang	Leistung dBW	Zeiten	Bemerkungen
INTELSAT VA-F11	27.5 W	MTV Europe	USA	Engl.	10.28	Horiz.	West	PAL	Neg.	ja	6.80	7.02 & 7.20 (WEGENER-System)	45	24	Videotext Begleitfilm Stereo
		Canal 10	Grönland	spanisch	10.58	Vertikal	Ost	PAL	Neg.	ja	6.80	7.02 & 7.20 (WEGENER-System)	45	24	
		Grönland	Childers Channel	englisch	11.02	Horiz.	West	PAL	Neg.	ja	6.80	7.02 & 7.20 (WEGENER-System)	45	24	Kinship // Spillfilm: Begleitfilm Stereo
		Arts Channel // Litoglyc // Schwimmsport (Fernseh)	Grönland	englisch	11.59	Horiz.	West	PAL	Neg.	ja	6.80	7.02 & 7.20 (WEGENER-System)	45	24	Kinship // Hausrat / Sport Begleitfilm Stereo
		CNN International	USA	Engl.	11.15	Vertikal	Ost	PAL	Neg.	ja	6.80	7.02 & 7.20 (WEGENER-System)	45	24	Nachrichten - Information Datenübertragung
		BBC 1/2	Grönland	englisch	11.18	Horiz.	West	SAT-TEL	ja	6.80	7.02 & 7.20 (WEGENER-System)	45	24	Videotext - Kultur Videotextübertragung	
		Anglovision	USA	Engl.	11.51	Vertikal	Ost	PAL	Neg.	ja	6.80	7.02 & 7.20 (WEGENER-System)	45	24	Nachrichten - in Vorbereitung
		TV 2 // Satelliten Information Service (Trom. Sharing)	Dän.	englisch	11.59	Horiz.	West	B-MAC	ja	6.80	7.02 & 7.20 (WEGENER-System)	45	24	Unterhaltung // Pflanzentum	
INTELSAT VA-F10	21.5 W	Telespazio	Italien	Italien	10.98	Vertikal	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung - nur Testsendungen
INTELSAT V-F6	24.5 W	Telespazio	Italien	Italien	11.13	Vertikal	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung - nur Testsendungen
GORZONT 12	14 West	TV Test	Italien	Italien	11.17	Vertikal	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung - nur Testsendungen
INTELSAT V-F2	1 West	Norwegian Kanal 1	Norwegen	norwegisch	11.51	Vertikal	Ost	SECAM	N	ja	6.80	-	45	24	Unterhaltung - Kultur
		STV2	Schweden	schwedisch	11.13	Horiz.	West	C-MAC	ja	6.80	-	45	24	Unterhaltung - Kultur	
		TV1	Israel	hebräisch	11.19	Vertikal	Ost	PAL	Neg.	ja	6.80	-	45	24	Unterhaltung - DX
		TV2	Israel	hebräisch	11.56	Vertikal	Ost	PAL	Neg.	ja	6.80	-	45	24	Unterhaltung - DX
		TV Test	Israel	hebräisch	11.59	Horiz.	West	PAL	Neg.	ja	6.80	-	45	24	Unterhaltung - DX
EUTELSAT I-F2	7 Ost	New World Chan.	USA	engl./norweg.	11.47	Horiz.	West	PAL	Neg.	ja	6.80	-	45	24	Radiogloss Progr.
EUTELSAT I-F4	10 Ost	Worldnet	Norwegen	norwegisch	11.59	Horiz.	Ost	SECAM	N	ja	6.80	-	45	24	Information
EUTELSAT I-F1	13 Ost	Telekubik	Schweiz	deutsch	10.98	Vertikal	West	PAL	Neg.	ja	6.50	-	45	24	Spillfilm
		RAL UNO	Italien	Italien	11.00	Horiz.	West	PAL	Neg.	ja	6.80	-	45	24	(Schaltplan Kabelschleifer)
		RTL plus	Luxemburg	deutsch	11.08	Vertikal	Ost	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung - Kultur
		Filmnet	Belgien	engl./holl.	11.14	Vertikal	West	PAL	Pos.	ja	6.55	7.02 (PANDA-System)	45	24	Spillfilm Begleitfilm schwedisch
		SSAT	BRD	deutsch	11.17	Horiz.	West	PAL	Neg.	ja	6.80	7.15 & 7.61	45	24	Unterhaltung
		TMS	Frankreich	französisch	11.47	Horiz.	West	PAL	Neg.	ja	6.85	-	45	8	Unterhaltung - Kultur
		Worldnet	USA	englisch	11.48	Horiz.	West	PAL	Neg.	ja	6.85	-	45	8	Information
		SAT 1	BRD	deutsch	11.50	Vertikal	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung
		Sky Channel	Grönland	englisch	11.65	Horiz.	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung
		Suoper Channel	Grönland	englisch	11.67	Vertikal	West	PAL	Neg.	ja	7.02 & 7.20 (WEGENER-System)	45	24	Begleitfilm Stereo	
INTELSAT VA-F12	60 Ost	SSAT	BRD	deutsch	10.97	Horiz.	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung
		AFR-TV	USA/BRD	deutsch	10.99	Vertikal	Ost	B-MAC	ja	6.85	-	45	24	Unterhaltung	
		West 3	BRD	deutsch	11.01	Horiz.	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung
		Tele 5	BRD	deutsch	11.13	Horiz.	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung
		Bayerisches Fern	BRD	deutsch	11.17	Horiz.	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung
		Emis Plus	BRD	deutsch	11.18	Horiz.	West	PAL	Neg.	ja	6.85	-	45	24	Unterhaltung
		Europa IV	BRD	deutsch	11.00	Horiz.	West	PAL	Neg.	ja	6.85	-	45	24	Information
		IRB TV2	Iran	farsi	10.99	Vertikal	West	PAL	Neg.	ja	6.80	-	45	24	Unterhaltung - DX
		IRB TV1	Iran	farsi	11.15	Vertikal	West	PAL	Neg.	ja	6.80	-	45	24	Kultur - DX
INTELSAT V-F5	63 Ost	AFRITS-E2	USA	englisch	11.47	Horiz.	West	NTSC	Neg.	ja	6.80	-	45	24	Unterhaltung - DX
INTELSAT V-F7	66 Ost	TRT 1	Türkei	türkisch	11.85	Horiz.	West	PAL	Neg.	ja	6.80	-	45	24	Unterhaltung - DX
		TRT 2	Türkei	türkisch	11.88	Horiz.	West	PAL	Neg.	ja	6.80	-	45	24	Unterhaltung - Testsendung - DX

### Radio über Satellit

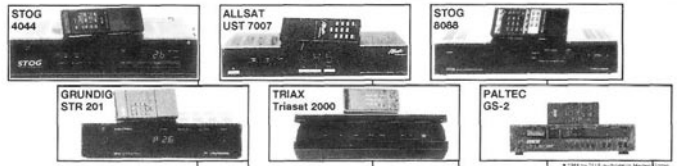
Satellit	Position Grad	Programm	Sendeland	Sprache	Frequenz GHz	Polarisat.	Beam	Eintr.	Videot.	Mod.	Scrambl.	Empfang	Leistung dBW	Zeiten	Bemerkungen
INTELSAT VA-F11	27.5 W	BBC Worldserv.	Grönland	englisch	11.18	Horiz.	West	WEGENER	7.20	-	Frei	45	24	Mono // Kurzweile	
INTELSAT V-F2	1 West	BBC Worldserv.	Grönland	diverse	11.18	Horiz.	West	WEGENER	7.20	-	Frei	45	24	Mono - Auslandsprogramme	
INTELSAT V-F4	10 Ost	NRK P1	Norwegen	norwegisch	11.20	Vertikal	Ost	Digital	MAC	ja	6.85	-	45	24	Landprogramm Stereo
EUTELSAT I-F1	13 Ost	Radio Luxemburg	Luxemburg	deutsch	11.08	Vertikal	Ost	WEGENER	7.02 & 7.20	-	Frei	45	24	Stereo	
		Radio Luxemburg	Luxemburg	deutsch	11.14	Vertikal	Ost	WEGENER	7.02 & 7.20	-	Frei	45	24	Stereo	
		Cable One	Niederl.	englisch	11.17	Horizontal	West	WEGENER	7.02 & 8.10	-	Frei	45	24	Testsendungen	
		Voice of America	USA	englisch	11.50	Vertikal	West	WEGENER	7.02 & 8.10	-	Frei	45	24	Stereo	
		BBC Worldserv.	Grönland	englisch	11.67	Vertikal	West	WEGENER	7.38	-	Frei	45	24	Mono // Kurzweile	
		BBC Worldserv.	Grönland	englisch	11.87	Vertikal	West	WEGENER	7.58	-	Frei	45	24	Mono - Auslandsprogramme	
		Deutscherfunk	BRD	deutsch	11.01	Horiz.	West	PEGNER	7.02 & 7.20	-	Frei	45	24	Stereo	
		Radio Media	BRD	deutsch	11.17	Horizontal	West	WEGENER	7.02 & 7.20	-	Frei	45	24	Stereo	
		Digital Test	BRD	deutsch	11.45	Vertikal	Ost	Digital	MAC	ja	6.85	-	45	24	Unterhaltung
		IRB Radio 2	Iran	farsi	10.99	Vertikal	West	Standard	6.18	-	Frei	45	24	Testsendungen - DX	
		IRB Radio 1	Iran	farsi	11.17	Vertikal	West	Standard	6.18	-	Frei	45	24	Landprogramm - DX	

# Satelliten Receiver



Hersteller/Importeur Gerätebezeichnung ZZF-Nummer Fernbedienungsfunktionen Kanalwahl Lautstärke Mute-Taste Tonfrequenz Einstellung Skew (Polarizer) Scanning (Frequenz) Programmdurchlauf Drehrichtung (Aktuator) Steuerung Videorecorder Berücksichtigungste Programmliste Belegung vorprogrammierte Speicher Polarisationsrelaisanschluß Polarisationsanschluß Drehrichtungsanschluß Feldstärke Meßung, (AGC) Frequenzzeige Einheit Automatischer Scanner AFC-Schalter Clamp-Schalter Fernbedienung schaltbar Fernspeisung Video-Invers-Schalter Tonträgerfrequenz Tonfrequenzbereich Stereo, Zweiton Audio Schmal-, Empfang Ton Decod., (Entzerrung) Block-ZF Eingang (1, 2Z) 2. Zwischenfrequenz Z1 Bandbreite Hub-Anpassung Breitband Ausgang MAC Decodierbar Video Ausgang Audio Ausgang Mono Audio Ausgang Stereo Video/Audio Ausgang (AV) SCART Ausgang UHF Modulationsausgang Antennen durchschleifung Testblöcken ASTRA kompatibel DSS kompatibel Bedienungseinführung Textbericht abgedruckt in TESTBEREICH Empfindlichkeit Bildqualität Tonqualität Mono Tonqualität Stereo/Zweiton AFC Wirkung 2. Z1 Bandbreitenreduzier. Bedienungskomfort Kurzschlüssel Fernsp. aus Zustand nach Netzausfall Einsatzmöglichkeiten Bereitstellung des Testber. TELE-satellit Referenz. ca Preis Bezugsquellenverzeichnis	GRUNDIG STR 200 A 600 019	TRATEC A-1000 A 676 022 US	DX ANTENNA DSA-780 A 676 011 US	ALLSAT CR 1100 E A 676 007 US	BLAUPUNKT SR 2000 A 607 542 U	BELTRONICS SBR 1550 A 676 002 U
Kanalwahl	ja	ja - Fein	ja	ja	ja	ja
Lautstärke	ja	ja	ja	ja	ja	ja
Mute-Taste	ja	ja	ja	ja	ja	ja
Tonfrequenz Einstellung	ja	ja	ja	ja	ja	ja
Skew (Polarizer)	ja	ja	ja	ja	ja	ja
Scanning (Frequenz)	ja	ja	ja	ja	ja	ja
Programmdurchlauf	ja	ja	ja	ja	ja	ja
Drehrichtung (Aktuator)	ja	ja	ja	ja	ja	ja
Steuerung Videorecorder	ja	ja	ja	ja	ja	ja
Berücksichtigungste	ja	ja	ja	ja	ja	ja
Programmliste	ja	ja	ja	ja	ja	ja
Belegung	ja	ja	ja	ja	ja	ja
vorprogrammierte Speicher	ja	ja	ja	ja	ja	ja
Polarisationsrelaisanschluß	ja	ja	ja	ja	ja	ja
Polarisationsanschluß	ja	ja	ja	ja	ja	ja
Drehrichtungsanschluß	ja	ja	ja	ja	ja	ja
Feldstärke Meßung, (AGC)	ja	ja	ja	ja	ja	ja
Frequenzzeige	ja	ja	ja	ja	ja	ja
Einheit	ja	ja	ja	ja	ja	ja
Automatischer Scanner	ja	ja	ja	ja	ja	ja
AFC-Schalter	ja	ja	ja	ja	ja	ja
Clamp-Schalter	ja	ja	ja	ja	ja	ja
Fernbedienung schaltbar	ja	ja	ja	ja	ja	ja
Fernspeisung	ja	ja	ja	ja	ja	ja
Video-Invers-Schalter	ja	ja	ja	ja	ja	ja
Tonträgerfrequenz	ja	ja	ja	ja	ja	ja
Tonfrequenzbereich	ja	ja	ja	ja	ja	ja
Stereo, Zweiton	ja	ja	ja	ja	ja	ja
Audio Schmal-, Empfang	ja	ja	ja	ja	ja	ja
Ton Decod., (Entzerrung)	ja	ja	ja	ja	ja	ja
Block-ZF Eingang (1, 2Z)	ja	ja	ja	ja	ja	ja
2. Zwischenfrequenz	ja	ja	ja	ja	ja	ja
Z1 Bandbreite	ja	ja	ja	ja	ja	ja
Hub-Anpassung	ja	ja	ja	ja	ja	ja
Breitband Ausgang	ja	ja	ja	ja	ja	ja
MAC Decodierbar	ja	ja	ja	ja	ja	ja
Video Ausgang	ja	ja	ja	ja	ja	ja
Audio Ausgang Mono	ja	ja	ja	ja	ja	ja
Audio Ausgang Stereo	ja	ja	ja	ja	ja	ja
Video/Audio Ausgang (AV)	ja	ja	ja	ja	ja	ja
SCART Ausgang	ja	ja	ja	ja	ja	ja
UHF Modulationsausgang	ja	ja	ja	ja	ja	ja
Antennen durchschleifung	ja	ja	ja	ja	ja	ja
Testblöcken	ja	ja	ja	ja	ja	ja
ASTRA kompatibel	ja	ja	ja	ja	ja	ja
DSS kompatibel	ja	ja	ja	ja	ja	ja
Bedienungseinführung	ja	ja	ja	ja	ja	ja
Textbericht abgedruckt in	ja	ja	ja	ja	ja	ja
TESTBEREICH	ja	ja	ja	ja	ja	ja
Empfindlichkeit	ja	ja	ja	ja	ja	ja
Bildqualität	ja	ja	ja	ja	ja	ja
Tonqualität Mono	ja	ja	ja	ja	ja	ja
Tonqualität Stereo/Zweiton	ja	ja	ja	ja	ja	ja
AFC Wirkung	ja	ja	ja	ja	ja	ja
2. Z1 Bandbreitenreduzier.	ja	ja	ja	ja	ja	ja
Bedienungskomfort	ja	ja	ja	ja	ja	ja
Kurzschlüssel Fernsp. aus	ja	ja	ja	ja	ja	ja
Zustand nach Netzausfall	ja	ja	ja	ja	ja	ja
Einsatzmöglichkeiten	ja	ja	ja	ja	ja	ja
Bereitstellung des Testber.	ja	ja	ja	ja	ja	ja
TELE-satellit Referenz.	ja	ja	ja	ja	ja	ja
ca Preis	ja	ja	ja	ja	ja	ja
Bezugsquellenverzeichnis	ja	ja	ja	ja	ja	ja

English Summary  
Europe's 12 most commonly used satellite receivers. All have been tested. Ratings read every grade (1 = sehr gut) - grade 10 (10 = sehr befriedigend). Rating categories include: Sensitivity (Empfindlichkeit), Picture Quality (Bildqualität), Sound Quality (Tonqualität) and Reliability (Zuverlässigkeit). New receivers appearing on Europe's market and having some impact will be added with future tables.



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Kanalwahl	ja	ja	ja	ja	ja	ja
Lautstärke	ja	ja	ja	ja	ja	ja
Mute-Taste	ja	ja	ja	ja	ja	ja
Tonfrequenz Einstellung	ja	ja	ja	ja	ja	ja
Skew (Polarizer)	ja	ja	ja	ja	ja	ja
Scanning (Frequenz)	ja	ja	ja	ja	ja	ja
Programmdurchlauf	ja	ja	ja	ja	ja	ja
Drehrichtung (Aktuator)	ja	ja	ja	ja	ja	ja
Steuerung Videorecorder	ja	ja	ja	ja	ja	ja
Berücksichtigungste	ja	ja	ja	ja	ja	ja
Programmliste	ja	ja	ja	ja	ja	ja
Belegung	ja	ja	ja	ja	ja	ja
vorprogrammierte Speicher	ja	ja	ja	ja	ja	ja
Polarisationsrelaisanschluß	ja	ja	ja	ja	ja	ja
Polarisationsanschluß	ja	ja	ja	ja	ja	ja
Drehrichtungsanschluß	ja	ja	ja	ja	ja	ja
Feldstärke Meßung, (AGC)	ja	ja	ja	ja	ja	ja
Frequenzzeige	ja	ja	ja	ja	ja	ja
Einheit	ja	ja	ja	ja	ja	ja
Automatischer Scanner	ja	ja	ja	ja	ja	ja
AFC-Schalter	ja	ja	ja	ja	ja	ja
Clamp-Schalter	ja	ja	ja	ja	ja	ja
Fernbedienung schaltbar	ja	ja	ja	ja	ja	ja
Fernspeisung	ja	ja	ja	ja	ja	ja
Video-Invers-Schalter	ja	ja	ja	ja	ja	ja
Tonträgerfrequenz	ja	ja	ja	ja	ja	ja
Tonfrequenzbereich	ja	ja	ja	ja	ja	ja
Stereo, Zweiton	ja	ja	ja	ja	ja	ja
Audio Schmal-, Empfang	ja	ja	ja	ja	ja	ja
Ton Decod., (Entzerrung)	ja	ja	ja	ja	ja	ja
Block-ZF Eingang (1, 2Z)	ja	ja	ja	ja	ja	ja
2. Zwischenfrequenz	ja	ja	ja	ja	ja	ja
Z1 Bandbreite	ja	ja	ja	ja	ja	ja
Hub-Anpassung	ja	ja	ja	ja	ja	ja
Breitband Ausgang	ja	ja	ja	ja	ja	ja
MAC Decodierbar	ja	ja	ja	ja	ja	ja
Video Ausgang	ja	ja	ja	ja	ja	ja
Audio Ausgang Mono	ja	ja	ja	ja	ja	ja
Audio Ausgang Stereo	ja	ja	ja	ja	ja	ja
Video/Audio Ausgang (AV)	ja	ja	ja	ja	ja	ja
SCART Ausgang	ja	ja	ja	ja	ja	ja
UHF Modulationsausgang	ja	ja	ja	ja	ja	ja
Antennen durchschleifung	ja	ja	ja	ja	ja	ja
Testblöcken	ja	ja	ja	ja	ja	ja
ASTRA kompatibel	ja	ja	ja	ja	ja	ja
DSS kompatibel	ja	ja	ja	ja	ja	ja
Bedienungseinführung	ja	ja	ja	ja	ja	ja
Textbericht abgedruckt in	ja	ja	ja	ja	ja	ja
TESTBEREICH	ja	ja	ja	ja	ja	ja
Empfindlichkeit	ja	ja	ja	ja	ja	ja
Bildqualität	ja	ja	ja	ja	ja	ja
Tonqualität Mono	ja	ja	ja	ja	ja	ja
Tonqualität Stereo/Zweiton	ja	ja	ja	ja	ja	ja
AFC Wirkung	ja	ja	ja	ja	ja	ja
2. Z1 Bandbreitenreduzier.	ja	ja	ja	ja	ja	ja
Bedienungskomfort	ja	ja	ja	ja	ja	ja
Kurzschlüssel Fernsp. aus	ja	ja	ja	ja	ja	ja
Zustand nach Netzausfall	ja	ja	ja	ja	ja	ja
Einsatzmöglichkeiten	ja	ja	ja	ja	ja	ja
Bereitstellung des Testber.	ja	ja	ja	ja	ja	ja
TELE-satellit Referenz.	ja	ja	ja	ja	ja	ja
ca Preis	ja	ja	ja	ja	ja	ja
Bezugsquellenverzeichnis	ja	ja	ja	ja	ja	ja

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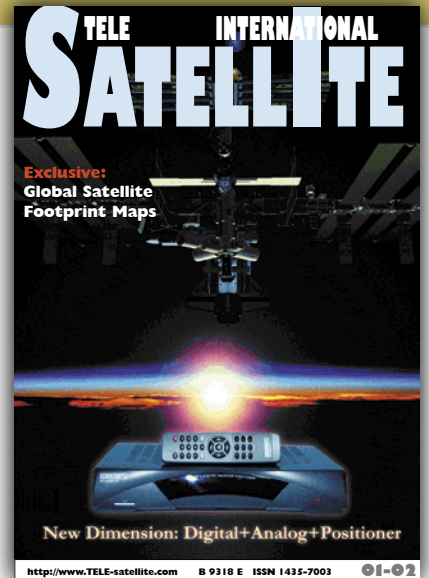
Edited by  
**Alexander Wiese**

**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**

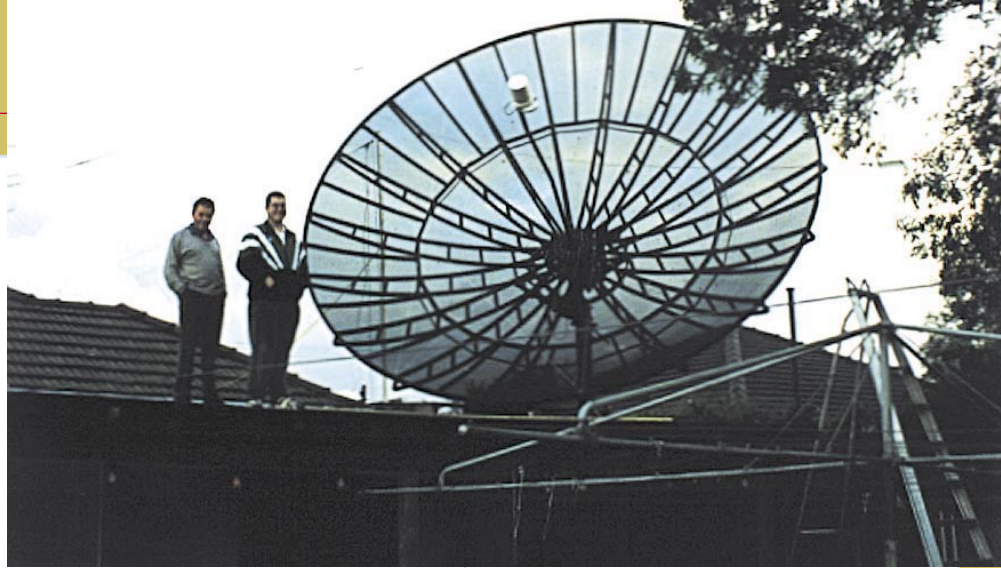
Good measuring equipment can always be recognised by its size and even more by its weight. You will see most professional engineers carrying around a heavy case. But out there, up on the roof, the heavier the tool to perfectly align the dish, the more dangerous it becomes for the one who is doing the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

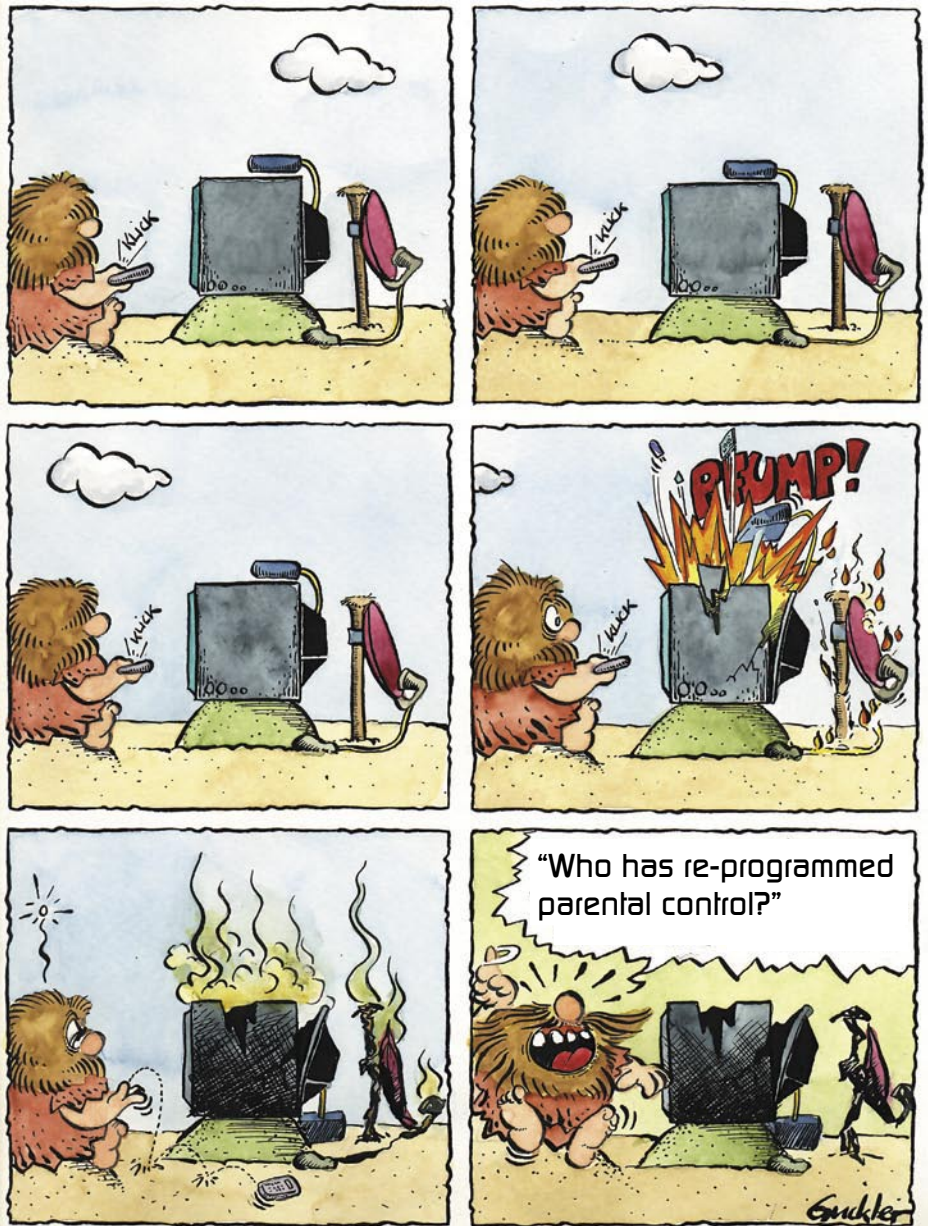
**Australian Satellite DXer Bevin Boden**

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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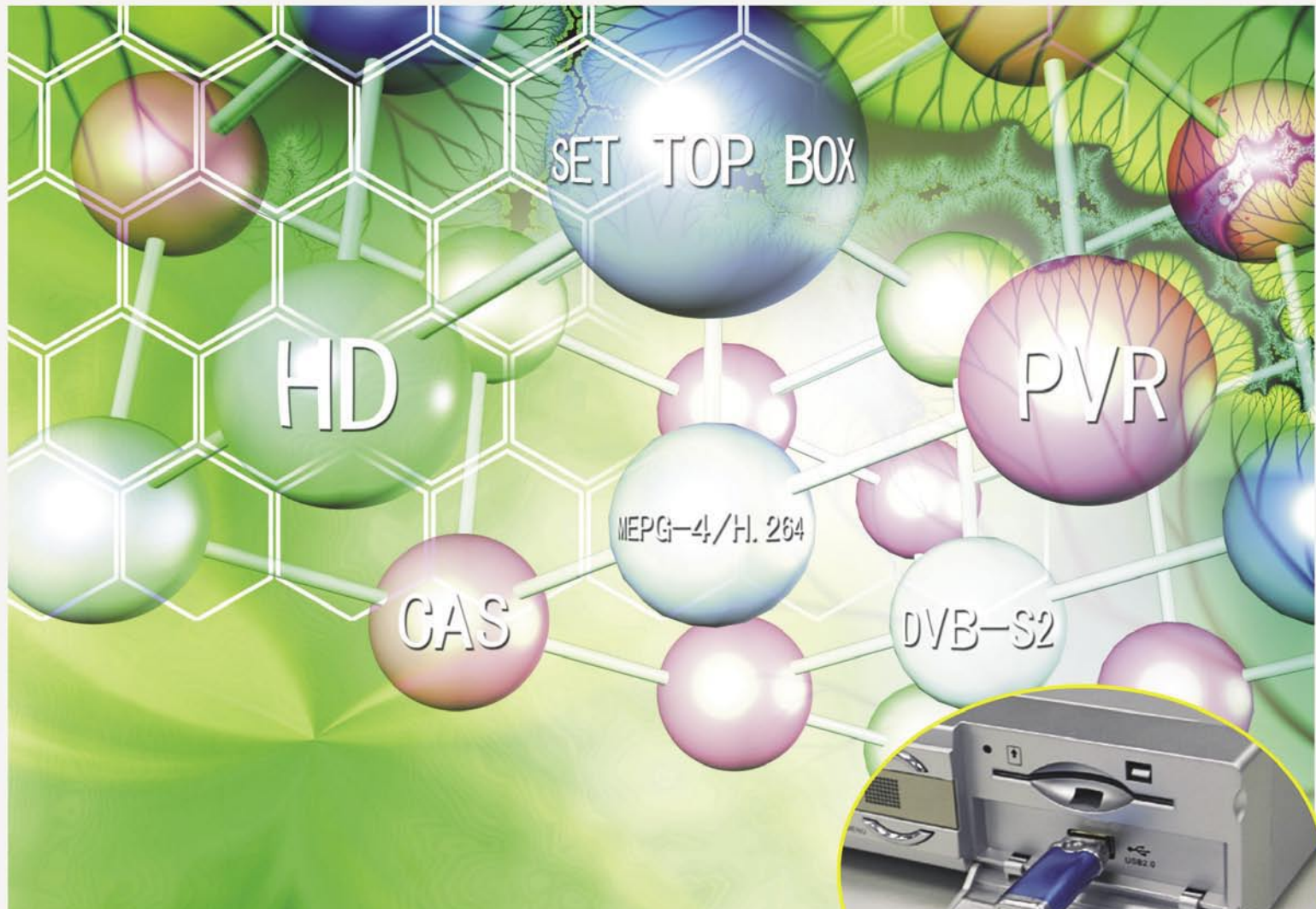
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Two(2) channel Recording while watching Play-back  
Linux Operating System  
Maximum 1TB(terabyte) HDD Supported  
Common Interface (2 CI slots)

## DS4H-8150

PVR Ready



[www.dizipia.com](http://www.dizipia.com)



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 FTA with USB2.0  
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