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Test Report
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Company Report
Telemedia

An Inside Look at
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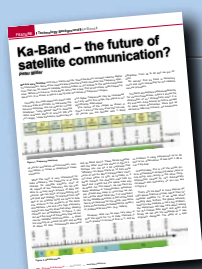
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Twin



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Dear Readers



In this issue we will be touching on two subjects that would be worth thinking about a little bit more. The first is a report on a manufacturer of TV's with integrated multi-tuners. This is really nothing new; TV's with built-in satellite receivers have been around for several years now but never really caught on. Today however, I believe these requirements have changed. Today you can find TV signals that are not only terrestrial and via satellite, but also via the Internet and mobile radio frequencies. For the user this technology has become much more complex; these various transmission techniques deliver a remarkable variety of programming. If you want to receive "every channel", you'd need a receiver that can get it all.

The question for the user is no longer which of the technologies should be used, but rather which of them would give the user the highest number of channels. If one technique is used, for example Internet TV, interesting channels available through another technique would be effectively filtered out. Obviously, it would be logical to take this decision away from the user and offer products that can receive all the technologies.

Another topic in this issue is satellite reception in South Africa. This developed country is so far away from other developed countries that you occasionally find isolated solutions as well as surprising innovations. One of these unique solutions is the use of

10.7 GHz as the intermediate frequency in the LNBs available there instead of the typical 10.6 GHz. This came about because the local PayTV providers transmit everything in the high band except for one transponder. To be able to receive this odd transponder, the intermediate frequency was simply changed. An example of an innovation would be a PVR not with two tuners, as we have long been used to, but with three. We will tell you more about this unique design in a future test report in TELE-satellite.

Even more interesting is that the number of available channels in South Africa will soon take large turn upwards and this will have interesting consequences on the neighboring countries in southern Africa – the countries of the sub-Saharan region. We will be able to witness the birth of a new reception region and with it the birth of a new market. There aren't too many places left on Earth that are not properly covered; satellite TV is making its way to every corner of the globe. TELE-satellite will take you along for the ride!

Sincerely,

Alexander Wiese

P.S.: My favorite radio station of the month: "Radio 3", a radio channel from Spain's RTVE national radio service on HOTBIRD (13 east), 11,785H, Audio 3539. Music outside of the mainstream, technically sound and professional.

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- 2 x CI Slots
- 2 x Scart

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TF-7700 HSCI **NEW**



High Definition Digital SAT-Receiver

- 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

eycos

55.12 PVRH **NEW**
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HDMI Output 576p, 720p and 1080i

- 8000 Services (TV and Radio) programmable
- Alphanumeric VFD Display
- 2 x Common Interface
- USB 2.0
- Videosignal RGB, CVBS, S-Video YUV

S60.12 PV2R **NEW**
Multiroom



Digital Multiroom Twin Receiver

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- Alphanumeric VFD Display
- Multipicture Mosaik function
- 2 x Common Interface
- USB 2.0
- Videosignal RGB, CVBS, S-Video YUV

HUMAX

NEW

PR FOX II



BLU FOX S



TOPFIELD

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

TF 6000 T
Digital Terrestrial Receiver

- MPEG-2 Digital and fully DVB compliant
- 2000 services (TV and Radio) programmable
- Multilingual Audio support

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



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Stab

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- IBM Power PC ("STB04500/Pallas")
- Recording 2 channels simultaneously while playback another from HDD
- One touch recording with capability of taking over the pre-stored time-shift buffer
- Music Player
- API (Plugin) Interface
- Autobookmark (optional)
- Easy Creation of Favorite Lists during live operation
- Twin Tuner (with Loophrough)
- 2 CI + 1 Cardreader (optional)
- Alpha-Numeric VFD Display
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TOPFIELD NEW

TF-6000 PVR E-LAN



Digital Satellite Personal Video Recorder

- Local Area Network (HTTP / FTP)
- Picture-in-Picture
- Dual Recording

TF-6000 PVR W-LAN



Digital Satellite Wireless Lan PVR

- Wireless Lan PVR
- Alphanumeric VFD Display
- Dual decoding (PIP) and Dual tuner

Multiswitches / DiSEqC - Switches

- SPAUN
- DTRON
- JAEGER
- JOHANSSON



From 2 in/1 out
up to 17 in/8 out



Full Range



DIGISAT PRO ACCU



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

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LNBs

- MTI
- BEST
- INVACOM
- ALPS
- INVERTO, etc.



- Single Universal
- Twin Universal
- Quattro Universal
- Quad Universal
- Octo LNB
- Monoblock Single Universal
- Monoblock Twin Universal
- Monoblock Quattro Switch
- KU
- C Band
- Circular
- and many more

PCMCIA-Modules

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



NEW GENERATION

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

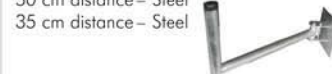
Parts

Multifeeder for 2, 3, or 4 LNB



Wallmounts

15 cm distance - Aluminium
25 cm distance - Aluminium
35 cm distance - Aluminium
45 cm distance - Aluminium
50 cm distance - Steel
35 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



Dishes

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IRTE

TRIAx

emme esse
MULTIMEDIA SYSTEM



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

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KTI, ORBITRON, IRTE

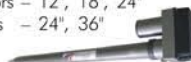
SDI 1,50 m
SDI 1,80 m
Mesh 3,10 m
Mesh 3,70 m
Irte 2,00 m
Irte 2,40 m



Motors

Aktuatoren/ Actuators

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



H-H Mounts

SG 99 - 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



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Edited by
Branislav Pekic

EUROPE & AFRICA

THE NETHERLANDS

DAILY TO LAUNCH IPTV SERVICE

Dutch newspaper De Volkskrant is to launch an IPTV service as part of plans to broaden the reach of its new video service VK.tv. Speaking at the Digital Trends conference in Amsterdam, Bas Broekhuizen, managing editor of VK.tv, told industry delegates that De Volkskrant had accepted that its paper's readership was in decline and was engaged in a process of spreading the brand as a trusted news product through its new video wing.

POLAND

MULTIMEDIA POLSKA SELECTS TANDBERG FOR HDTV LAUNCH

Multimedia Polska has selected the next-generation high definition (HD) and standard definition (SD) MPEG-4 AVC encoding solutions and IP EdgeQAM modulators from Tandberg Television to power the introduction of its digital cable HD services. The HD service has been launched with two-way capability, allowing Multimedia Polska to offer additional interactive services in the future.

PORTUGAL

PORTUGAL TELECOM LAUNCHES IPTV SERVICE

Portugal Telecom launched an 88 channel Internet Protocol Television service in June. The launch of the IPTV service, which includes video-on-demand and True HD content, will transform PT into a quadruple play operator (fixed and mobile telephony, Internet and TV), which will heighten competition between PT and PTM. PT has invested over €10 million to date in the service, and will initially launch IPTV in three target markets -- Lisbon, Oporto and Castelo Branco -- but intends to roll out the service to the entire country, with more than 100 channels, in the coming months.

RUSSIA

NTV PLUS OPTS FOR OPENTV HDTV PLATFORM

Russia's DTH operator NTV-Plus will launch high definition television services using OpenTV's advanced digital television solutions. The solution delivered by OpenTV includes OpenTV Core2 for High Definition Television (HDTV) and supports both high definition and standard definition channels broadcast in MPEG-4 and MPEG-2 using DVB-S2. The operator's launch, on Thomson set-top boxes using the ST7100 chipset and Viaccess Conditional Access, is expected in the second quarter of 2007.

SWEDEN

SIRIUS 4 TO BECOME OPERATIONAL IN AUTUMN

Swedish Space Corporation (SSC) has taken over responsibility for operations of SES Sirius' Sirius-4 satellite. The new generation telecom satellite will become operational this autumn. The satellite will be the largest of the Sirius fleet, which presently comprises two active satellites.

TURKEY

TANDBERG CHOSEN BY DIGITURK

Tandberg Television is providing a next-generation digital video system for Turkish DTH operator, Digiturk. To continue to grow its offering with more channels and the introduction of advanced services such as HDTV and VOD, Digiturk is aiming

to achieve greater bandwidth and operational efficiency through a system upgrade. Tandberg Television's statistically multiplexed encoders are being deployed by its Turkish business partner and local integrator Broadcast Muhendislik. High definition program delivery will be enabled by the EN8090 MPEG-4 AVC encoder, while the E5770 and E5775 MPEG-2 encoders will support standard definition MPEG-2 distribution.

UNITED KINGDOM

BBC UNVEILS FREE HDTV CHANNEL

Plans for the country's first free-to-air high definition TV channel has been unveiled by the BBC. The new channel will screen for nine hours every evening, broadcasting a mix of programmes including children's shows, documentaries and lifestyle programmes as well as big budget dramas, soaps, comedies and music shows. It will also feature major live sports fixtures, possibly including parts of the 2012 Olympics. The proposal promises that repeats will only make up a maximum of 30 per cent of programming initially and that the number of repeats screened will fall over time. It is estimated the new service will cost the BBC £21 million per year. If approved by the BBC Trust, it will start screening for four hours a day later this year and will be fully operational by 2009. The proposed BBC channel will be available on free digital TV as well as satellite and cable.

BBC, CHANNEL 4 AND ITV PLAN DOWNLOAD CHANNEL

BBC, Channel 4 and ITV; the big three terrestrial broadcasters are said to be in talks about developing a video download service. The initiative by the BBC, Channel 4 and ITV would be designed to be open to other broadcasters, including Channel Five. The big three terrestrial broadcasters are said to be in talks about developing a video download service for viewers to watch shows such as EastEnders, Coronation Street and Hollyoaks from one source. "Project Kangaroo", the initiative by the BBC, Channel 4 and ITV, will "do for broadband what Freeview did for digital TV", a spokesman said. It aims to create a "one-stop shop" media player for viewers to download their favourite shows. At first, it is expected to deliver programmes to computers via broadband, but the ultimate aim is to transmit direct to televisions.

THE AMERICAS

BARBADOS

C&W TO ROLL-OUT IPTV SERVICE

The international telecommunications giant Cable & Wireless is getting ready to roll out IPTV, or Internet Protocol Television, on its network of telephone lines after more than three years of building up an island-wide broad-band system. At roll-out up to 80 per cent of customers would be within reach of the service. The system could be launch in the 4Q of 2007, with a major roll-out in the first or second quarter of next year.

CANADA

INDUSTRY CANADA AWARDS SATELLITE LICENSES

Industry Canada increased competition for Telesat Canada in June when it issued more than half of 12 new licences for satellite airwave spectrum to the market's newest entrant. Ciel Satellite Communications Inc. has only one satellite in orbit, but it was awarded seven additional licences for satellite spectrum used for new telecommunications, broadband and television services including high-definition (HD) programs. Telesat, which has seven satellites in orbit and two under construction, scooped up five licences. The two Ottawa-

based companies have told the government they plan to spend several billion dollars launching new satellites. They could be in orbit as early as 2010.

UNITED STATES OF AMERICA

FREE ABC HDTV CHANNEL FROM JULY

ABC has announced the launch of a free online high definition channel at abc.com. The channel will go into beta testing in July. It will provide resolution of 1280 by 720 pixels, the same as ABC's broadcast signal. When the fall lineup goes on the air, viewers will be able to view the new shows online. There will also be national news, local content, and "geo-targeting" of ads.

TBN TO LAUNCH HDTV CHANNEL IN 4Q

Trinity Broadcasting Network plans to launch a High-Definition channel in the fourth quarter of this year. The network, which made the announcement at the National Cable Show in Las Vegas, says it will be the first "faith-based" TV network to go high-def. In addition to the network's HD lineup, TBN plans to send high-def programming to 33 local affiliates.

DIRECT-10 LAUNCH DELAYED

The planned June 20 launch of DirecTV's DirecTV-10 satellite has been delayed to July 6th, due to complications in the delivery of the satellite to the launch facility in Kazakhstan. DirecTV-10 is planned to give the DirecTV service up to 100 national HD channels and expanded local HD services when it begins regular transmissions in September. Next year, DirecTV is to launch a second HD satellite, DirecTV-11, which will enable DirecTV to deliver a total of 1,500 local and 150 national HD channels.

ASIA & PACIFIC

CHINA

SHANGHAI TELECOM TO LAUNCH IPTV TRIALS

China Telecom's subsidiary Shanghai Telecom will launch IPTV trials in July using China's homegrown audio video coding standard (AVS), according to an official from the Shanghai Division Institute of Computing Technology (SHICT), which is part of the Chinese Academy of Sciences.

SINOSAT 3 SATELLITE LAUNCHED

China launched a communications satellite on June 1 aboard a Long March-3A carrier rocket. The government said the SinoSat-3 satellite will be used for radio and television broadcasting. The satellite was not developed as a replacement for the inoperable SinoSat-2, Xinhua said, though Sino Satellite Communications Co., the satellite's operators, may use SinoSat-3 to replace part of the service the other satellite was to have provided.

INDIA

MNTL TARGETS 40,000 IPTV SUBSCRIBERS

Telecom PSU Mahanagar Telephone Nigam Limited (MTNL) is targeting 40,000 IPTV subscribers within this fiscal year. He said that the PSU is in talks with TV channels for offering the entire package of programmes for its subscribers. The company was one of the first telecom companies to announce its pilot launch of IPTV in November 2006. The current IPTV subscriber base stands at around 1,000. The company had tied up with a content provider to offer the TV channels on its IPTV platform. There are plans to launch 150 channels for the Mumbai subscribers, but no time frame has been announced.

GOLDSTONE SIGNS UP 12 TV CHANNELS

Goldstone has inked agreements with 12 new national and international channels for providing live channel content on its IPTV platform. The IPTV channels aim to cover localised languages in India, Europe, China, Sri Lanka, and Nepal.

Goldstone has signed an agreement with Asia Today Limited, Mauritius, a subsidiary of Zee Telefilms Limited, to market, sell and distribute Zee channels to subscribers in eight countries in the Asia Pacific region. Goldstone will use patented technology for Triple play services, which will deliver excellent quality video at only 600 kbps.

BSNL TO INTRODUCE IPTV IN MAJOR CITIES

Bharat Sanchar Nigam Limited (BSNL) will soon launch IPTV services in cities like Chennai, Hyderabad, Bangalore and Kolkata. CEO A K Sinha said the decision was taken after the successful launch in Pune recently and added that other towns and cities would also be included. BSNL plans to have 20 million broadband connections by the year 2010.

INSAT 4CR TO BE LAUNCHED IN SEPTEMBER

The Indian Space Research Organisation (ISRO) is scheduled to launch its communication satellite INSAT-4CR in September, as a replacement to INSAT-4C which was reduced to debris during its unsuccessful launch last year. INSAT-4CR is identical to INSAT-4C with 10/12 Ku-band transponders. Some of the transponders of INSAT-4CR are for DTH and others for VSAT and High Bit Rate Data Transfer Services. ISRO is also planning to augment the present INSAT system capacity of 200 transponders to 500 in the next five years. In the immediate future, a total of seven satellites are planned in the INSAT-4 series of which two satellites, INSAT-4A and INSAT-4B have already been launched. The remaining satellites are slated for launch before 2010-11.

SRI LANKA

SLT TO LAUNCH IPTV BY YEAR'S END

Sri Lanka Telecom (SLT) is planning to commence an IPTV service within six months. SLT has already obtained the license for the service, a SLT spokesperson said. SLT hopes to use the country's widest network available to provide a user-friendly TV service with competitively priced packages. The multimedia service will provide TV, video on demand and many other facilities via the broadband connection.

QATAR

QTEL LAUNCHES IPTV PACKAGE

Qtel has formally launched its IPTV and mobile phone television services, Mozaic TV, which gives access to on-demand and broadcast TV using Internet Protocol technology. Mozaic Mobile allows users of 3G or GPRS mobile handsets to access a multi-media entertainment and news service. Qtel has tied up with Rotana, CNN, Nokia Siemens and Motorola to provide the service.

UNITED ARAB EMIRATES

EADS AND THALES TO BUILD YAHSAT SATELLITE

Dubai-based Al Yah Satellite Communications (Yahsat) has selected the consortium of EADS Astrium and Thales Alenia Space to build its \$1.7 billion dual satellite communications system. Yahsat, a wholly owned subsidiary of the Mubadala Development Company, Abu Dhabi's government-owned investment arm, will serve commercial and government clients in the Middle East, Africa, Europe and South East Asia. Yahsat will develop, procure, own and operate a hybrid communication satellite system, and fill gaps in the existing satellite market.

VIETNAM

VIETNAM TO BUILD SECOND SATELLITE

Vietnam has announced its intent to build its second satellite, VinaSat-2, while setting 29 March 2008 as the launch date for its first satel-

lite, VinaSat-1. According to local media reports, 30 per cent of the hardware for VinaSat-1 had been manufactured, while the remaining 70 per cent would be completed before January 2008. The construction of two tracking and telemetry stations, one in Ha Tay province and the other in Binh Duong province, are to be completed by June 30, 2008. VinaSat-1 will provide telecom services to remote and isolated areas of Vietnam. VinaSat-1, the first satellite to be bought by Vietnam, is being manufactured by Lockheed Martin Commercial Space Systems. VinaSat-1, a C-/Ku-band hybrid satellite, is expected to have a minimum service life of 15 years.

AFRICA

KENYA

KENYA CONTRIBUTES TO WORLDSPACE REVENUE DECLINE

A drop in the number of Kenyan subscribers contributed greatly to a decline in revenue for U.S. satellite-based digital radio services provider Worldspace. The decline in subscribers was caused by the expiry on January 1, this year, of a contract between the firm and the Kenya Institute of Education to broadcast primary school education programmes throughout the country. The contract accounted for about 13,000 subscribers in Kenya. In total, the company ended the first quarter of this year with 191,646 subscribers worldwide, a loss of 7,459 from the close of the previous year's first quarter. Worldspace reported revenues of \$3 million in the first three months of the year, compared with \$3.5 million for the corresponding period in 2006. The operator recorded a net loss of \$35.5 million for the first quarter of 2007, compared with a \$29.2 loss million for the first quarter of 2006. Apart from Kenya, the other country where subscription did not grow as expected was India, where the number of new subscribers was 65 per cent down from the fourth quarter of 2006.

NIGERIA

NIGCOMSAT-1 SIGNS UP CUSTOMERS

Within a week of its launch on May 13, the Nigeria Communication Satellite (NIGCOMSAT-1) has begun to attract the attention of international vendors, with some of the leading satellite operators approaching Nigeria for the supply of Ka-Band transponder to boost its services. "The satellite which went into orbit on May 13, 2007 has a good beginning because immediately after its successful launch some big satellite operators in Europe approach Nigeria for the supply of transponder of Ka-Band to boost their services in Europe and other parts of the world", says managing director, Hamed Rufai. According to him the satellite which covers about 38 countries in Africa has the capacity to revolutionize the telecom sector and enable Nigeria to realise US\$ 60-70 million annually from the sales of transponder alone

SOUTH AFRICA

HDTV CHANNEL READY BY 2010

Sentech intends to launch at least one HDTV satellite channel in time for the 2010 Soccer World Cup, according to South Africa's Communications Minister Ivy Matsepe-Casaburri. During a National Assembly debate, she also said that Sentech would build a second teleport to provide additional capacity needed for the 2010 satellite uplink requirement. Sentech was on schedule to meet government's commitment of providing about 80 per cent DTT coverage by 2010. The SABC planned to have six more high definition units in place by the end of 2009, also in line with the technology plan for 2010.

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Ka-Band – the future of satellite communication?

Peter Miller

We are very familiar with the C and Ku bands. These bands are normally used for digital TV transmission. Some of our readers also know the S band. However, the frequency spectrum that can be used for satellite communication is not limited to the above mentioned ones. Before we move on to Ka-Band, let's have a look first at the whole radio frequency spectrum. It is shown in figure 1 along with the names of frequency ranges.

Formally, the radio spectrum starts with 3 Hz and ends at 300 GHz. In real world, the low-end extremes are not used for normal broadcast. "Long Waves" band in classical radio receivers starts at around 100 kHz (LF range). Lower frequency ranges may be

and higher frequencies may be considered but only within this range, the signal is not significantly attenuated.

The names of the ranges as shown in figure 1 are not the only ones that we use. Of course you are familiar with C Band

altogether. From 18 to 40 GHz we got 22 GHz!

No wonder that Ka band is becoming more and more interesting for the satellite service providers.

The Earth atmosphere behaves differently for various frequencies. Figure 3 shows the attenuation of our atmosphere when it is dry and wet. A dip around 22 GHz is caused by water vapor attenuation. Were this all we had to take into account, we would have

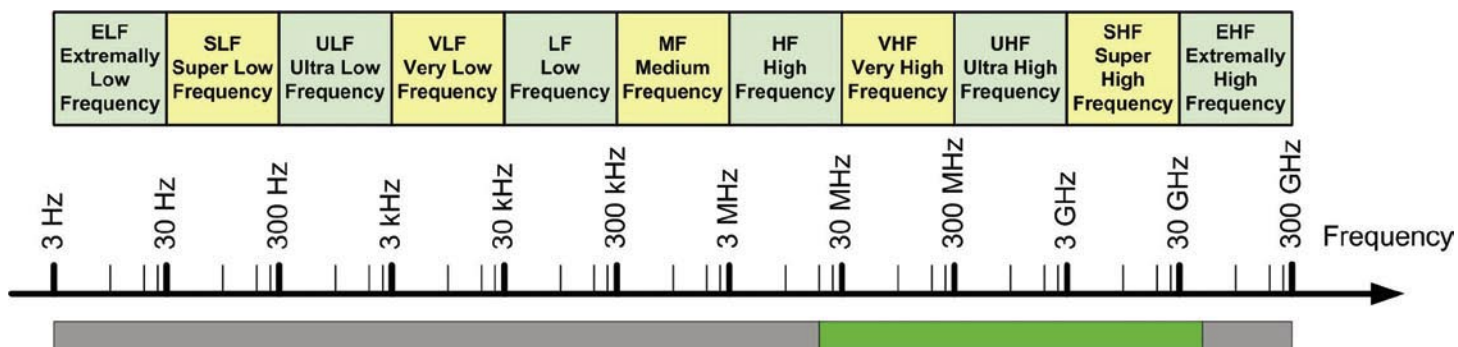


Figure 1. Frequency spectrum.

of use for submarine communication, communication in mines or geophysics measurements.

While this topic is very interesting for radio amateurs, low frequency is of little interest for satellite industry. First of all, signals of low frequency are not suitable to convey large amount of data per second. We can think of transmitting digital (and also analog) TV starting from 100 MHz or so. Another thing we have to take into account is the property of the Earth atmosphere. Low and very high frequency signals are heavily absorbed when passing through our atmosphere. In figure 1, you can see the range of frequency that we can use for satellite communication – a green bar starting at around 20 MHz and ending at about 40 GHz. Occasionally also lower

and Ku Band terms. These bands together with the other ones are shown in figure 2. Perhaps you can be a bit surprised that "officially" Ku Band starts at 12 GHz while some of the Ku Band transponders transmit even below 11 GHz, so formally in X Band. Indeed, the downlink uses both Ku Band and X Band but the uplink uses only Ku Band. For this reason, we call them Ku Band satellites or transponders. Moreover, you should also keep in mind that we can not use the whole band (Ku, C or whatever) for the satellite downlink. A part of the band has to be reserved for the uplink, and some parts of the bands are dedicated for military or professional services (e.g. radars).

However, what can be seen very easy is that the space for TV or data channels is much greater in Ka band than in C, and Ku

no problem in using frequencies up to 50 GHz or so. Attenuation of less than 1 dB is not a big deal.

Unfortunately this is not the whole picture. Atmosphere containing water vapor is one thing, and raining is the other thing. Attenuation caused by rain dramatically increases with frequency, as you can see in figure 4.

That's why Ka Band is more popular for high speed Internet access rather than for classical satellite TV. If we speak about sending data to/from the global network, losing a few packets is not a big problem. Our equipment will take care about asking for the missed data again and again and finally we will see the webpage as it was originally designed. The delay of a split

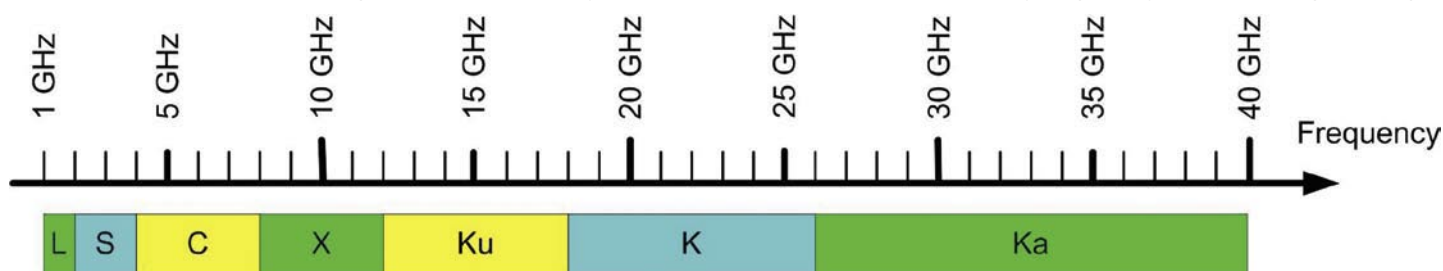


Figure 2. Satellite bands.



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second or even longer usually does not pose a problem in the Internet based communication. Of course, we cannot say the same about digital TV reception.

Example: WildBlue, USA

Although there are similarities between these two applications like: QPSK modulation, error correction schemes, small satellite dishes, there is one significant difference. Satellite equipment for Ka Band

is built around a transceiver rather than a receiver. If we have equipment from a company like WildBlue,USA, we not only receive data from a satellite but transmit it as well. This is a 2-way communication. No telephone line or whatever is needed to complete the Internet connection. For the reception 19.7-20.2 GHz range is used. For transmission: 29.5-30.0 GHz. The IF frequencies for this setup are: 1.0-1.5 GHz and 1.8-2.3 GHz for reception and transmission respectively. Receiver of the modem can handle QPSK signal with FEC 1/2, 2/3 and 3/4 as well as 8PSK with FEC 2/3 and 5/6.

When transmitting, only QPSK with FEC = 1/2 is used. The

dish delivered to the end users is of Cas-segrain type.

Conclusion

So, is Ka Band the future of satellite communication? Yes and no. Yes, because we continuously need more and more wide bandwidth signals and lower bands are getting chock full. Ka Band offers us additional frequency ranges at already occupied satellite positions. No, because it is much more weather dependent than Ku and especially C Band, so moving digital TV transponders from the lower bands to Ka Band would be a very risky step unless the targeted world region is very dry.

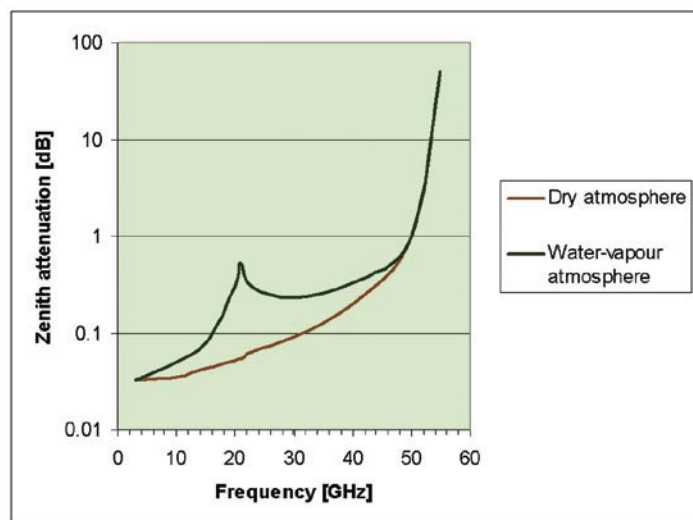


Figure 3. The Earth atmosphere attenuation as a function of signal frequency.

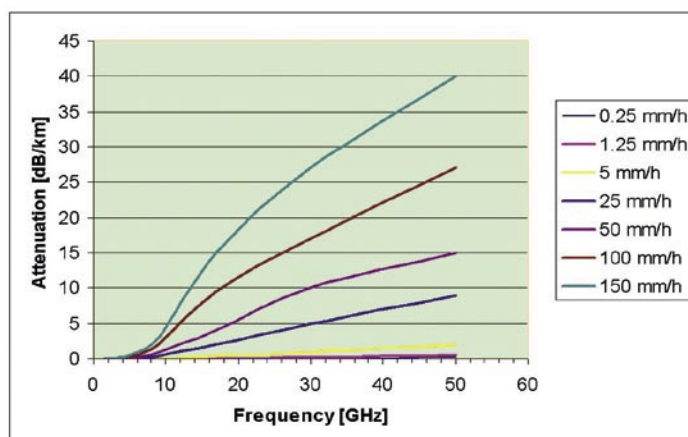


Figure 4. Attenuation caused by rain as a function of frequency and rain intensity.

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TechniSat HD-Vision

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TechniSat HD-Vision is the first LCD TV to feature an integrated multi-reception tuner for all transmission standards including DigitalSAT, digital and analogue cable TV as well as DVB-T. The decoding system CONAX is integrated for Pay-TV and Pay-Radio. Further systems can be received through the available CI-Slots by CI-Modul. The HD-Vision range includes a 32 and 40 inch model, with or without integrated hard drive (PVR), with over 30 individual models. The HD-Vision was voted best TV by the Stiftung-Warentest with a rating of 2.2.



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August 31 - September 5, 2007



IBC, Amsterdam / The Netherlands,
Hall 1 / Both 5.217, September 7 - 11, 2007

Jiuzhou DTS1601

A Very Solid Receiver

bled or both as well as the option to scan with or without NIT, the user can also opt for a blind scan. This is of course an extremely convenient way to update the channel list stored in the receiver for any given satellite. Naturally, you could



The small size of this receiver was our first surprise when we opened the package: it was just about 26 x 20 x 4 cm and came with a very appealing front panel. An eight-segment alphanumeric VFD display is located in the center of the aesthetically pleasing metallic casing. A status LED can be found next to the display. One power button on the left side plus six function buttons positioned centrally allow for full control of the receiver even without the remote control. On the right side is a flap where you will find a slot for a card reader (not operational in this model) and another smaller SD-card reader slot!

The rear panel of this unit is fitted with a typical LNB input and its looped-through output, a modulator in/out, two Scart connectors, one coaxial S/PDIF digital audio output, an RS-232 interface and an S-video output. There is even a main power switch!

The internal workings of this receiver are housed in an elegant metallic gray cabinet. The ergonomically designed remote control is also gray in color and is not cluttered with too many buttons. It should take no time at all to get comfortable using this remote. Our test model also included a "prototype" of the user manual in English. The manual is packed with detailed information that will help even a novice get this box up and running.

The easiest way to connect the Jiuzhou DTS1601 to a TV is via a Scart cable. Although there is also an S-video output, this would be better served connected to a projection TV in conjunction with the S/PDIF audio output connected to a separate amplifier. The next step is setting up the antenna. The Jiuzhou DTS1601 is inte-

grated with the DiSEqC 1.0, 1.2 and GOTO X protocols. Thus you could use a fixed dish with up to four LNBs or a motorized antenna system.

When turning on this receiver for the first time, the Jiuzhou DTS1601 asks you to configure the preferred menu language (OSD) as well as the languages for the 1st audio, 2nd audio and subtitles. The set of languages available in our test unit had a distinctively Central European flavor to them. Next the display needs to be set up. This includes selecting the proper TV mode (PAL, NTSC, AUTO), screen aspect ratio (4:3 or 16:9), video output (CVBS, RGB, S-Video) and modulator setting for those that still use older TV sets.

The local time is set up next.

The user has the option of having the time automatically set via satellite (all you need to do is select your local time zone) or setting the time and date manually. Here you will also find a factory default feature that restores the receiver's settings and channel list back to what they were when you first opened the box. Normally, this feature is used only if you have no other choice.

After configuring the antenna system, the next logical step would be to start a channel scan. Here, you can choose between "Auto Scan" and "Manual Scan". In Manual Scan mode, you can choose a desired satellite, add another satellite, edit the transponders or delete satellites or individual transponders. In other words, you can do everything a satellite enthusiast would need to do.

But the power side of this receiver can be seen in its "Auto Scan" mode. On top of the usual transponder-based scan using data already in the receiver's memory and the choice between FTA, scram-

also check out the SatcoDX web site for up to date channel information.

Everyday Use

To start with, the Jiuzhou DTS1601 is certainly small and elegant enough to fit in anybody's "entertainment rack". The VFD display shows the channel names and can easily be read from a distance; this means that when you just want to listen to your favorite radio station, you won't need to have the TV or monitor turned on and consequently save a little on your electric bill. But the main reason to have a satellite receiver is to watch TV.

The Jiuzhou DTS1601 produces a very sharp picture. Switching between channels is fast and allows for easy-going channel surfing. Pressing the OK button once reveals the channel list where you can navigate with the up or down buttons or use the left and right buttons for page jumping. As soon as a channel on the list is highlighted, its full-screen video appears immediately in



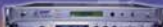


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Model. CKU 0001

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INFOSAT Signal Level Meter

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the background. Pressing a second time on the OK button selects the highlighted channel and makes the channel list vanish. The EPG button shows the programming schedule of the channels. In this mode, the Left/Right buttons expand the EPG to the previous / next dates. The green button brings up details of the selected broadcast. A Timer program is also available in EPG mode.

The remote control unit has a few more interesting features: a button labeled "Mosaic" brings up nine frames on the TV screen, each of them displaying a still image of a neighboring channel including the one you were watching which shows live. You can then navigate to the other channels which would become live if you remain on the channel for a short time. Furthermore, a dedicated "Edit" button on this same remote will help the user reorganize the often overcrowded channel list and move channels into any of four Favorites lists.

And lastly there is a button "Replay": this unique feature supports a 15 seconds replay function.

The Jiuzhou DTS1601 implements a very efficient teletext function that can even display information in non-Latin characters. Last but not least, we wouldn't want you to think that we forgot about the SD-card reader behind the almost invisible flap on the front panel. It gives you the capability to play back MP3 files or display a slide

show of your digital photos. This is a welcome change from boring TV programming.

This same SD-card reader can also be used to update the receiver's firmware. This is an alternative to an OTA update or an update via the RS-232 interface.



Expert conclusion



The Jiuzhou DTS1601 is a well designed, solid receiver with firmware that works flawlessly. It never locked up throughout all of our testing. The remote control unit is ergonomically designed and works well with the receiver. The integrated tuner is quite sensitive and was able to lock on every receivable frequency at our location even with a motorized dish. Furthermore, we appreciated the VFD display, the S-video and S/PDIF outputs and especially the SD-card reader. If we had any suggestions for the manufacturer, it would perhaps be to upgrade the firmware so that the MPEG and/or DivX playback of files would be possible.



Yanis Patalidis
TELE-satellite
Test Center
France

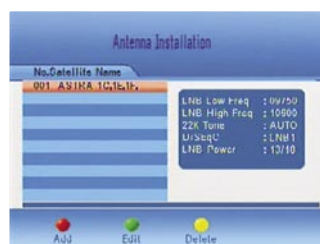
Unfortunately, three jacks for composite video and stereo audio outputs were missing.

TECHNIC DATA

Manufacturer	Jiuzhou
Web Page	www.jiuzhou.com.cn
Model	Jiuzhou DTS1601
Function	Digital Satellite Receiver FTA
Channel Memory	4800, Satellites 64
Symbolrates	2-45 Ms/sec.
SCPC Compatible	yes
USALS	GOTO X
DiSEqC	1.0 / 1.2
Scart Connectors	2
Audio/Video Outputs	no
UHF Modulator	yes
Programmable 0/12Volt	no
Digital Audio Output	yes, coaxial
EPG	yes
C/Ku-band Compatible	yes
Power Supply	90-240 VAC, 50/60 Hz
Consumption	25 W max.



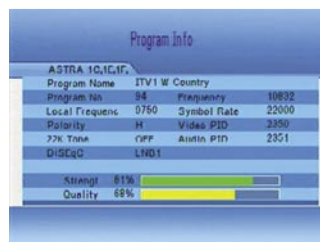
Antenna configuration |



LNB settings |



Split screen |



Installation menu |



Edit menu |



SD Card menu |



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OPENSAT X7000CI

A Receiver for Everyday Use

A satellite system is no longer a luxury item in today's world. A receiver is as common as a washing machine in today's modern home. Yet it should still

be easy to use and of course be able to do almost everything. And let's not forget, it should also be reliable. Did we find the ideal box here? Our tests will tell.



We have to admit that we were a little disappointed to find out that this receiver could not decode HDTV or MPEG-4 signals. Truthfully though, these functions are still the wave of the future and aren't used all that much today yet. Also, an alphanumeric channel display would have been much more fun than the four-digit display that actually does come with the receiver.

Despite all this, we were sympathetic with the way this receiver works. It simply can handle anything that is thrown at it quickly and without any problems. The remote control is ergonomic and comes with all of the expected function buttons.

The X7700CI is not too large and therefore doesn't take up much room. At the same time however it isn't too small either so limiting the number of connectors on the rear panel was not necessary.

Almost everything is there: RCA jacks for video and audio, SCART jacks for a TV and VCR, even terrestrial signals can be looped through and routed to a TV via a UHF channel. Of course, an IF looped-through output is also available so that a second receiver can be connected. This could be an analog receiver or some other special receiver.

Up to four fixed antennas or LNBS can be connected and controlled via DiSEqC 1.0 commands. A DiSEqC antenna motor is also no trouble to use. Once it is aligned to the south and to the North Star, the receiver drives the antenna motor with DiSEqC commands to the desired satellite position. You can choose from up to 60 preprogrammed satellite positions but, of course, depending on your location and the size of your dish, not all of them might be usable.

The alignment to individual satellite positions using a standard DiSEqC 1.2 motor is somewhat difficult; a USALS motor would function much better in this situation. Simply enter in your location and

every satellite will automatically be found.

The receiver comes from the factory without any channels stored in memory but this does not prevent you from accessing the Installation menu. Language, audio and video settings have already been taken care of; you really only need to select the desired satellites and start the channel scan. Your TV enjoyment can begin right after that.

The receiver's channel scan speed is actually quite good: the X7700CI only needed just under three minutes to complete a scan of 79 transponders for FTA channels. The receiver can also handle encrypted channels with its two CI slots.

For this application we have

a small tip: your first channel scan should be for FTA channels since most of the encrypted channels on a satellite would probably not be used anyway. Only then should you scan those transponders opened up by your SmartCard.

The channels found during a scan are divided into separate satellite lists and conveniently sorted by TV and radio. These channels can then be further organized by placing them in one of 12 different Favorites lists that can be renamed as desired. This helps to make it much easier to find the channels you want to watch.

We were especially impressed with the outstanding Edit function that makes it possible to modify existing transponder





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- Full backwards compatibility with existing HDSM downloads
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- Faster processor with recall of last selection used
- New manual carrier configuration mode
- Twice the satellite setting capacity with 64 selections available
- Lock indication within 100ms of acquiring the satellite
- Custom program files available on request (e.g. VSAT)
- L-Band, C-Band, Ku-Band and Ka-Band capability
- 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

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From Test To Measurement

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values, add new transponder data or even define new satellites.

Information can be called up four different ways. Pushing the OK button displays a 12-row channel list. The Info button displays the channel name and current program name along with a colored bar graph in the Info display that indicates the remaining time in a program. A second window also shows the reception parameters.

Pushing the EPG button displays detailed programming information; this could be information for the entire day or a preview of the upcoming week. Teletext services can also be viewed and very quickly at that since it is constantly downloading information packets in the background.

The built-in timer also includes a sleep timer as well as automatic receiver turn-on control. Together with the EPG, multiple channels can be programmed for recording up to a week in advance.

In between recordings, the receiver switches itself in and out of Standby mode.



Experts Conclusion

Opensat delivers a fast receiver with which all FTA and encrypted channels can be received.



- Low power consumption
- Universal application
- Easy to program and simple to use
- Detailed EPG
- Fast channel switching
- Fast teletext
- STAB-USALS for motorized antennas



Heinz Koppitz
TELE-satellite
Test Center
Germany

No main power switch.

TECHNIC DATA

Supplier	RESYS, Macedonia
Internet	www.opensat.info
Model	Opensat X7000 CI
Power Consumption	6 /12 Watt (Stand-By/Off)
Channel Memory	6000 (3000 TV, 3000 Radio)
Satellites	max. 60
RF-Modulator	Yes (Auto/PAL/NTSC)
Listings	Satellite, TV, Radio, Favorites
Editors	Satellite, Transponder, Program, Timer
Connectors	IF In/Out, ANT In/Out, 2xSCART, RCA, RS-232
DiSEqC	1.0, 1.2 and Stab-USALS
EPG	Day, next day, week with program details
Timer	Sleep-off, Switch-on, EPG-programmable On/Off
Support, Upgrade	Upgrades and Support-SW from Homepage (PC-use)



EPG Text with Window |



Information Display |



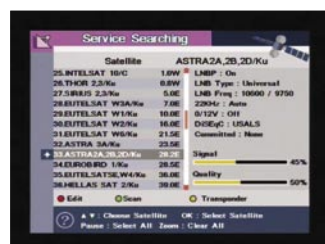
EPG Content |



Transponder Add Menu |



Channel List Astra 2 |



Satellite list with USALS |





Designer & Manufacturer of Satellite Antenna



JONSA Satellite Antennas Simplify Communication



JONSA Technologies Co., Ltd

website : www.jonsa.com.tw
e-mail : saccount@jonsa.com.tw
Tel : +886 49 2260666
Fax : +886 49 2260675



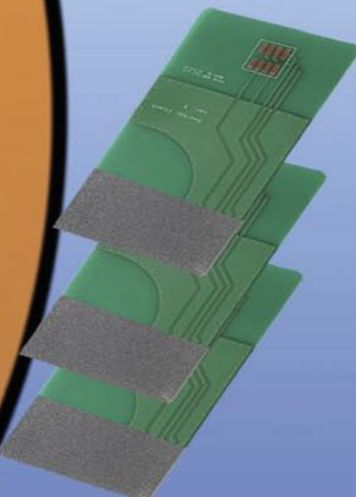
Wireless *SmartWi.net* Residential Cardsplitter

SmartWi is a wireless card splitter solution which can be used in household with more than one set top box.



Wireless SmartWi works on most common set top box for Satellite, Cable and Terrestrial systems

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Wireless SmartWi come standard with
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3 Wireless Smartwi client card
1 Power adaptor for Smartwi master.



Contact information
<http://www.smartwi.net>
E-Mail : info@smartwi.net

SmartWi Denmark
Distribution Center
Phone + 45 702 600 31

Slingbox

Links Your Satellite Receiver to the Internet



Virtual Remote Control

limited by its transmission footprint on the ground. This simply means that even though you might be able to theoretically receive a satellite, it could happen that the signal is so weak where you are that it would take an extremely large antenna to get a workable signal (if at all). Most likely, you'd end up in a location that makes it impossible to receive your home satellites.

Cable system operators and digital terrestrial distribution also wouldn't work since they can typically only deal with local

Imagine that your boss sends you away on an overseas business trip for several months – in a world that gets closer and closer every day, this scenario is not exactly unrealistic. Naturally, while you're away, you'd like to continue watching your favorite TV channels from home. But it won't take long for the disappointment to set in; even though our world is getting smaller and smaller, this is not really true for TV reception.

The fact remains that because of your geographical position not all satellites from around the world can be received; more precisely, a relatively small range of about 140° are above the horizon.

Add to this the fact that a signal from a satellite is

programming due to cost and space limitations. Only a few years ago, reception of your home TV channels in another part of the world was a problem that had no solution. But thanks to ever faster Internet connections and ever higher bandwidths, a new TV reception possibility has slowly but surely established itself: IPTV.

Many of you have probably already heard of the term IPTV; it has to do with a technology whereby a TV channel in digital form from a service provider is delivered to your home via the Internet and routed to either your PC or to a specialized set-top-box for your TV. In this form, it becomes possible to watch not only regular TV channels, but also feature films, sporting events, etc., for a fee.

And as long as we're on the subject of money, access to this form of TV is not exactly cheap and is usually restricted to your Internet providers own network and not, for example, in a hotel room while on vacation or if you're away on a business trip.

Sling Media began developing their own IPTV system several years ago exactly for

these applications that anyone can easily install at home. The Slingbox takes care of encoding and compressing the input signal from almost any source and placing it in an audio/video stream that can be carried via a network or the Internet without any problems.

At first we were a little skeptical if such a system would even work, especially via the Internet. Naturally, we were quite anxious to get started when the delivery truck showed up with the Slingbox package.

At first glance, the box did not appear all that spectacular; the front of the box sported nothing more than two LEDs that showed its current status. The right LED indicated the box's power status while the left LED showed an active network connection.

On the rear panel you will find in addition to audio/video and S-video outputs, also a VHF/UHF tuner connection (our test box used "F" connectors) as well as a port for an external IR receiver and naturally the network interface RJ45 jack. Power is supplied via the included adapter; the box is happy with 6V.



Slingplayer



The Slingbox converts any TV signal into an

IPTV stream



Slingbox connections

Overall, the workmanship of the Slingbox left us with a very positive impression. All necessary connector cables as well as a detailed user manual and CD with the required software are included in the package.

Everyday Use

The connection and initial turn on of the Slingbox is self-explanatory. All you need is a free network connection on your router and a connection to an A/V box. Before actually using the box over the Internet, the manufacturer suggests first performing a thorough test using your internal network; we thought this was a good idea.

Contrary to other streaming services, Sling Media developed their own Slingplayer for playback of their streams. This is actually necessary in order to take full advantage of all the functions of the box. It also provides an extra measure of security.

After installing the software, the player immediately recognizes all the Slingboxes connected on the local network. Yes, it is possible to operate multiple boxes inde-

pendently from each other. To prevent unauthorized access to the Slingbox, the next step involves setting up an administrator and user password. If a friend wants to access your box via the Internet, you simply need to give him the user password to limit his access to A/V streams. The administrator password would provide access to all of the boxes settings via the Internet.

care of, the Slingbox then asks you to configure all the different input sources. This includes activating the A/V and S-Video inputs that don't require any additional configuration as well as controlling and starting a scan with the help of the integrated tuner. Once everything is correctly set up, the first attempt at streaming can begin.

We used a standard digital satellite receiver with the Slingbox and connected everything to our relatively large internal network. The Slingplayer was started on one of our office PCs and just one mouse-click later we were able to see the A/V signal from the satellite receiver, and all in exceptional video quality.

The datarate between the box and Slingplayer was variable and was directly related to how much movement there was in the video: the more movement in the video, the higher the datarate. The picture quality can be manually controlled by the user to match the actual capabilities of the network or Internet connection.

are, there is one problem that even you cannot solve: only one signal can be connected at any one time.

The Sling Media designers didn't want to accept that so easily so they came up with a rather clever solution to this problem: the included IR transmitter. It is simply placed in front of the reception diode of the desired A/V box and then connected to the SlingBox.

A virtual remote control can be displayed via the Sling Box software and includes almost all of the same functions of the real remote control. If, for example, you decide to push the P+ button to switch channels, the Slingplayer takes that command and routes it to the SlingBox via the network which then sends it to the IR transmitter on the particular A/V box. The remote control codes from a large variety of entertainment electronic equipment were already preprogrammed so we had no trouble operating our satellite receiver from a distance.

The Slingbox needs about five seconds to convert and encode the input signal. As a result, the actual A/V signal reaches the Slingplayer with only a minor delay.

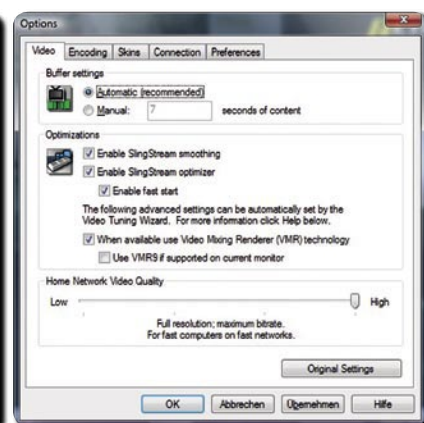
Even though these five seconds, when compared to professional equipment that doesn't really operate that much faster, is actually quite good, it is unfortunately a little too slow to operate the units from afar. For this reason Sling Media implemented a so-called Control Mode that



A/V Configuration



Channel Scan



Slingplayer Network Settings

pendently from each other. To prevent unauthorized access to the Slingbox, the next step involves setting up an administrator and user password. If a friend wants to access your box via the Internet, you simply need to give him the user password to limit his access to A/V streams. The administrator password would provide access to all of the boxes settings via the Internet.

Once these settings have been taken

with hardly any motion and 1700 kbps for video with extensive motion.

When used with a local network, these transmission rates were not a problem, that is, we were unable to detect any video breakup or any other type of interference during our tests.

Just a few mouse clicks is all that is needed to switch between the different signal inputs (tuner, A/V input or S-Video input). As practical as these three inputs

reduces the video processing to an absolute minimum.

This makes it not as much fun watching a normal TV but the box does typically handle the stream in less than a second and thus makes it much easier to use from afar since the attached receiver reacts almost simultaneously with receiving the IR command.

After such a successful test with our

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local office network, we naturally wanted to see how well signals were transmitted via the Internet. For this task we asked our TELE-satellite colleague in the USA to install the Slingplayer on his PC. Back here all we had to do was to configure the Slingbox with just a couple of mouseclicks to accept signals from outside of our network and we also had to identify what port on our router the Slingbox would use so that our fun would not be interrupted by a firewall.

In only just a few minutes we got the good news! Our colleague in the USA was watching German TV in exceptionally good quality and from what we could see on our satellite receiver, he was actually having quite a bit of fun surfing through all the different German channels. This all took place from across the Atlantic Ocean via the Internet and also with the help of the attached IR transmitter on the receiver.

Since our office has an always-on high-speed Internet connection, we also wanted to hook up the Slingbox to a DSL connection to see if it was possible to deliver decent audio and video through this type of broadband connection.

We disconnected the box from our office setup and brought it to the home of one of our employees. We again needed the

assistance of our colleague in the USA who was once again happy to report on the excellent picture quality he was enjoying – but at a price. The DSL connection could not be used for any other simultaneous activity. A typical DSL connection does not offer the same upload speed as it does download speed. It must also be taken into account that a fully loaded upload will also put the brakes on download speed.

At the moment the developers are diligently working on new features and improvements for the Slingbox; as soon as new software becomes available, it can be downloaded into the box via the Internet.

A recent update included the ability to transfer Slingbox A/V content directly to a UMTS compatible mobile phone. Unfortunately, this service does not function as yet all over the world and is currently limited to Great Britain.

It is only just a matter of time before mobile telephone service providers around the world make this feature available to everyone.

Conclusion

Overall the Slingbox functioned very well and can be used almost anywhere. A company or an office, for example, can take the signal from a security camera and

distribute it to dozens of their employees PC's. Just think of all that cabling that would no longer be needed!

The box can be used just as easily to watch TV from any place around the world; you can even control the receiver on the other side of the world via the Internet! The bandwidth available through a typical DSL connection would even be enough although simultaneous surfing of the Internet would only be recommended if you truly have the proper Internet connection.





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SatcoDX Satellite Chart

New Satellite Channels Since Last Issue of TELE-satellite Magazine

Compiled by the Worldwide SatcoDX Monitoring Stations, exclusively for TELE-satellite Magazine

Explanation CRYPT

BCNV	Betacrypt/Nagravision
BCRT	Betacrypt
BISS	BISS
COCN	Conax/Cryptoworks/Nagravision
COCR	Conax/Cryptoworks
COMG	Conax/Mediaguard
CONV	Conax/Nagravision
CONX	Conax
CRYW	Cryptoworks
CWVA	Cryptoworks/Viaccess
DMV_	DMV
DRMC	DreamCrypt
IRCW	Irdeto/Cryptoworks
IRDT	Irdeto
IRKF	Irdeto/KeyFly

IRMG	Irdeto/Mediaguard
IRNV	Irdeto/Nagravision
IRVG	Irdeto/Videoguard
MCV_	Mediaguard/Cryptoworks/Viaccess
MCVI	Mediaguard/Cryptoworks/Viaccess/Irdeto
MDS_	MDS
MGCW	Mediaguard/Cryptoworks
MGIV	Mediaguard/Irdeto/Videoguard
MGRD	Mediaguard
MGVC	Mediaguard/Videoguard/Cryptoworks
MGVG	Mediaguard/Videoguard
MGVI	Mediaguard/Viaccess/Irdeto
NAVG	Nagravision
NTL2	NTL 2000
POVU	PowerVu

PVU+	PowerVu+
RAS_	RAS
SKYC	Skycrypt
TASC	Tadiran Scopus
TVCM	TV/COM
VC2+	VC2+
VCIR	Viaccess/Irdeto
VCON	Viaccess/Conax
VGRD	Videoguard
VIC_	Viaccess/Irdeto/Cryptoworks
VICS	Viaccess
VIMG	Viaccess/Mediaguard
VINA	Viaccess/Nagravision
VIVG	Viaccess/Videoguard
WGNR	Wegener

Typ	Freq	Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
[GHz]							PID	PID	PID	
4.0 East EUROIRD 4										
T 11.160	H	AFLNZE-S	27500 3	2082	2083	2081				
T 12.130	V	DVB52	27500 3	3841	3842	3841				
T 12.130	V	Standard_TV	27500 3	4401	4402	4401				
5.0 East SIRIUS 2.3										
T 11.725	H	EU Test	27500 3	400	401	400				
T 11.725	H	EBS Europe By 5	27500 3	200	201	200				
D 11.804	H	CORE SI	27500 3							
T 11.804	H	TV4 Film	27500 3	6091	6092	6091				
T 11.804	H	TV400	27500 3	6001	6002	6001				
T 11.804	H	Viasat Sport 2	27500 3	6061	6062	6061				
T 11.804	H	Viasat Sport 3	27500 3	6071	6072	6071				
D 11.804	H	CORE SI	27500 3							
D 11.804	H	XSI_Data	27500 3							
T 11.881	H	Kanal 10	27500 3	5071	5072	5071				
T 11.881	H	TV1000 Plus One	27500 3	5051	5052	5051				
D 11.881	H	XSI_Data	27500 3							
T 11.881	H	GOD Channel	27500 3	5061	5062	5061				
D 11.996	H	Pace Download 4	27500 3							
D 11.996	H	CORE SI	27500 3							
D 11.996	H	DATA	27500 3							
D 11.996	H	Triax DVB65	27500 3							
D 11.996	H	Triax DVB63	27500 3							
D 11.996	H	Triax DVB75Si	27500 3							
D 11.996	H	05010024	27500 3							
D 11.996	H	Pace Download	27500 3							
D 11.996	H	Pace Download 2	27500 3							
T 11.996	H	Sirius Channel	27500 3	4111	4112	4111				
D 11.996	H	Pace Download 3	27500 3							
D 11.996	H	04020102	27500 3							
D 11.996	H	TRC Data1	27500 3							
T 11.996	H	SvSp	27500 3	4031	4032	4031				
T 11.996	H	K75 NORDEN	27500 3	4021	4022	4021				
D 11.996	H	TT	27500 3	4026	4026					
D 11.996	H	HUMAX DOWNLOAD	27500 3							
D 11.996	H	01 39 01 33	27500 3							
D 11.996	H	Nokia 220	27500 3							
D 11.996	H	Nokia Download	27500 3							
D 11.996	H	Nokia Download	27500 3							
D 11.996	H	Nokia Download	27500 3							
D 11.996	H	04010121	27500 3							
D 11.996	H	Pace Download 4	27500 3							
D 11.996	H	CORE SI	27500 3							
D 11.996	H	XSI_Data	27500 3							
T 12.073	H	FEED	27500 3	513	514	513				
R 12.111	H	VTM	27500 5	2350	2365					
T 12.150	H	Max Info	27500 3	2501	2502	2501				
T 12.150	H	TvRM	27500 3	6401	6402	6401				
R 12.150	H	Romantic	27500 3	2503	2501					
R 12.150	H	InfoPro	27500 3	2502	2501					
R 12.150	H	Radio SON	27500 3	503	6401					
T 12.188	H	Hallmark Romani	27500	1160	1120	1160				
T 12.188	H	Hallmark Hungar	27500	1260	1220	1260				
T 12.188	H	Hallmark Poland	27500	1360	1320	1360				
T 12.188	H	Hallmark Hungary	27500	1460	1420	1460				
T 12.188	H	Hallmark Benelu	27500	1560	1504	1560				
T 12.188	H	Hallmark Scandi	27500	1660	1604	1660				
T 12.188	H	Hallmark Russia	27500	1760	1720	1760				
T 12.188	H	Hallmark Israel	27500	1860	1820	1860				
R 12.188	H	Engineering Tes	27500	1120	1120					
R 12.188	H	Engineering Tes	27500	1120	1120					
T 12.188	H	Hallmark Romani	27500	1160	1121	1160				
T 12.188	H	H Virtual Eastern	27500	1160	1122	1160				
T 12.188	H	Hallmark Croatia	27500	1260	1220	1260				
T 12.188	H	Hallmark Hungary	27500	1260	1222	1260				
T 12.188	H	Hallmark Poland	27500	1360	1320	1360				
T 12.188	H	H Virtual Czech R	27500	1360	1322	1360				
T 12.188	H	Hallmark Turkey	27500	1460	1420	1460				
T 12.188	H	H Virtual Turkey	27500	1460	1422	1460				
T 12.188	H	Hallmark Benelu	27500	1560	1504	1560				
T 12.188	H	H Virtual Benelux	27500	1560	1506	1560				
T 12.188	H	Hallmark Scandi	27500	1660	1604	1660				
T 12.188	H	Hallmark Hungary	27500	1760	1720	1760				
T 12.188	H	Hallmark Russia	27500	1760	1722	1760				
T 12.188	H	Hallmark Israel	27500	1860	1820	1860				
T 12.188	H	H Virtual KidsCo	27500	910	908					
T 12.188	H	Hallmark Bulgar	27500	910	908					
R 12.188	H	Engineering Tes	27500	1120	1120					
T 12.188	H	Hallmark Hungar	27500	1260	1222	1260				
T 12.188	H	KidsCO EastEur	27500	910	909					
T 12.188	H	Hallmark Czech-	27500	1260	1204	1260				
T 12.188	H	Hallmark Hungary	27500	1260	1220	1260				
T 12.188	H	H Virtual Poland	27500	1360	1320	1360				
T 12.188	H	Hallmark Czech-	27500	1260	1204	1260				
T 12.188	H	Hallmark Bulgar	27500	910	908	910				
T 12.188	H	KidsCO EastEur	27500	910	908					
T 12.188	H	KidsCO EastEur	27500	910	902					

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	12.188	H	KidsCO EastEur	-----	27500		910	1520		
T	12.188	H	KidsCO EastEur	-----	27500		910	1522		
T	12.188	H	KidsCO EastEur	-----	27500		910	1620		
T	12.188	H	KidsCO EastEur	-----	27500		910	1622		
T	12.188	H	Bulgarian Enc 1	-----	27500		1160	1121		
R	12.188	H	Engineering Tes	-----	27500		1120	1120		
R	12.188	H	Engineering Tes	-----	27500		1120	1120		
R	12.188	H	Engineering Tes	-----	27500		1120	1120		
R	12.188	H	Engineering Tes	-----	27500		1120	1120		
R	12.188	H	Engineering Tes	-----	27500		1120	1120		
R	12.188	H	Engineering Tes	-----	27500		1120	1120		
R	12.188	H	Engineering Tes	-----	27500		1120	1120		
R	12.188	H	Engineering Tes	-----	27500		1120	1120		
T	12.226	H	Animal Planet M	-----	25540 7	1360	1324	1360		
T	12.265	H	Univermag	-----	27500 3		621	622 621		
R	12.418	H	ALT VC 33	-----	27500 3		400	400		
R	12.418	H	ALT VC 59	-----	27500 3		500	500		
T	12.697	V	WBS Television	-----	14685 3		1569 1570	1569		
7.0 East EUTELSAT W3A										
T	10.899	V	LUXE.TV SD TEST	-----	9404 3		2051 2053	2051		
T	10.899	V	LUXE.TV SD TEST	-----	9404 3		2061 2063	2061		
T	10.899	V	LUXE.TV SD	-----	9404 3		99 4451	99		
H	10.899	V	LUXE.TV HD	-----	9404 3		101 256	101		
T	10.899	V	LUXE.TV SD TEST	-----	9404 3		2061 2063	2061		
D	10.927	V	PUSH	-----	27500					
D	11.046	H	News	-----	2209 2					
D	11.046	H	Radio	-----	2209 2					
T	11.175	V	TV Polonia	-----	27500 3		514 670	514		
T	11.175	V	TVP Kultura	-----	27500 3		516 690	516		
T	11.175	V	TV P1	-----	27500 3		512 650	8190		
T	11.175	V	TV P2	-----	27500 3		513 660	8190		
T	11.175	V	TV P3	-----	27500 3		515 680	8190		
T	11.175	V	Int6	-----	27500 3		517 700	8190		
T	11.175	V	TVP Sport	-----	27500 3		518 710	8190		
T	11.175	V	TVP Historia	-----	27500 3		519 720	8190		
T	11.190	H	MBC-RDD.TV2 &	-----	3210 1		309 258	8189		
T	11.190	H	MBC-RDD.TV2 &	-----	3210 1		309 258	8189		
T	11.263	H	T-Systems D-118	-----	27491 2		200 300	8190		
R	11.283	V	RFI Cambodge	-----	27500 3		1700 1700			
R	11.283	V	RFI Kaboul	-----	27500 3		1700 1700			
R	11.283	V	RFI WS Ouest	-----	27500 3		1700 1700			
R	11.283	V	RFI WS Sud	-----	27500 3		1700 1700			
R	11.283	V	RFI Worldspace	-----	27500 3		1700 1700			
R	11.283	V	RFI World1	-----	27500 3		1700 1700			
R	11.283	V	RFI World2	-----	27500 3		1700 1700			
R	11.283	V	RFI World3	-----	27500 3		1700 1700			
R	11.283	V	RFI Fileas	-----	27500 3		1703 1703			
D	11.342	H	AT&T	-----	27500 2			515		
T	11.342	H	Africable	-----	27500 2		5752 5753	5752		
D	11.342	H	AT&T	-----	27500 2			515		
D	11.342	H	Voxlink MIP	-----	27500 2			651		
T	11.470	H	AKILLI TV	-----	30000 5		2106 2209	2106		
T	11.470	H	MTV Türkiye	-----	30000 5		2119 2229	2119		
T	11.470	H	ATA TV	-----	30000 5		2113 2223	2113		
T	11.596	H	KANAL 778	-----	30000 3		2109 2209	2109		
T	11.617	V	NICKELODEON	-----	30000 3		2109 2215	2109		
T	11.617	V	KANAL 781	-----	30000 3		2110 2120	2110		
D	11.617	V	TDS850-R	-----	30000 3					
T	11.637	H	KANAL 80	-----	30000 3		2116 2154	2116		
D	12.520	H	IP-Roaming	-----	27500 1					
T	12.563	H	Fox Sports Afri	-----	30000		1005 2005	1005		
T	12.563	H	MTV base	-----	30000		1007 2007	1007		
T	12.563	H	Nickelodeon	-----	30000		1008 2008	1008		
T	12.563	H	El Entertainment	-----	30000		1009 2009	1009		
T	12.563	H	Kiss	-----	30000		1010 2010	1010		
T	12.563	H	BBC World	-----	30000		1011 2011	1011		
T	12.563	H	Sky News	-----	30000		1012 2012	1012		
T	12.563	H	Al Jazeera Int	-----	30000		1013 2013	1013		
T	12.563	H	GOD	-----	30000		1017 2017	1017		
D	12.563	H	Software Downlo	-----	30000					
T	12.563	H	G Prime	-----	30000		1001 2001	1001		
T	12.563	H	G Prime + 3	-----	30000		1002 2002	1002		
T	12.563	H	G Sport 1	-----	30000		1003 2003	1003		
T	12.563	H	G Sport 2	-----	30000		1004 2004	1004		
D	12.727	H	SatSurf	-----	30000 1					
D	12.727	H	INTERNET SOLUTI	-----	30000 1			914		
10.0 East EUTELSAT W1										
T	11.126	H	JSCITLPR1	-----	4340 3		1001 1011	1001		
T	11.140	H	GCP Occa	-----	3255 3		512 1010	512		
T	11.152	H	(Empty Name)	-----	2170 3		308 256 8190			
T	11.160	H	Service 2	-----	2170 3		3601 3604 3601			
13.0 East HOTBIRD 6,7A,8										
R	10.719	V	Music Choice Pop	-----	27500 3		607 607			
R	10.719	V	Music Choice 3	-----	27500 3		601 601			
T	10.719	V	TEST	-----	27500 3		161 84	161		
T	10.949	V	Arte & Arte Cha	-----	27500 3		5001 5001	5001		

Typ	Freq	Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
[GHz]							PID	PID	PID	
T 11.470	V	THARISANAM	27500 3	129	132	129				
T 11.470	V	Andisheh	27500 3	145	148	145				
T 11.470	V	OMID EIRAN	27500 3	257	260	257				
T 11.470	V	BET NAHRIN	27500 3	273	276	273				
T 11.470	V	JAM E JAM	27500 3	289	292	289				
T 11.470	V	DIDAR	27500 3	305	308	305				
T 11.470	V	SALAAM TV	27500 3	321	324	321				
T 11.470	V	Mktv Sat	27500 3	33	36	33				
T 11.470	V	Rikstv	27500 3	49	52	49				
T 11.470	V	Nessma TV	27500 3	65	68	65				
T 11.470	V	Satlink promo	27500 3	81	84	81				
T 11.470	V	Channel 6	27500 3	97	100	97				
T 11.470	V	MATHURAM	27500 3	113	116	113				
T 11.470	V	THARISANAM	27500 3	129	132	129				
T 11.470	V	Andisheh	27500 3	145	148	145				
T 11.470	V	OMID EIRAN	27500 3	257	260	257				
T 11.470	V	BET NAHRIN	27500 3	273	276	273				
T 11.470	V	JAM E JAM	27500 3	289	292	289				
T 11.470	V	DIDAR	27500 3	305	308	305				
T 11.470	V	SALAAM TV	27500 3	321	324	321				
R 11.470	V	Makedonsko Radio	27500 3	4116	4116					
R 11.488	H	Music Choice 1	27500 3	631	631					
R 11.488	H	Music Choice KI	27500 3	631	631					
R 11.488	H	Music Choice 2	27500 3	637	637					
T 11.541	V	BERGAMOSAT	22000 5	232	233	232				
R 11.541	V	RADIO RELAX	22000 5	3528	3528					
T 11.541	V	LA7	22000 5	213	214	213				
T 11.604	H	TR2 Sat	27500 3	285	260	285				
T 11.604	H	CARPE DIEM	27500 3	293	294	293				
T 11.604	H	FREE CHANNEL	27500 3	515	516	515				
T 11.604	H	The Spirit Word	27500 3	3010	3020	2910				
T 11.604	H	pdfTV	27500 3	2910	2920	2910				
T 11.642	H	Bloomberg Franc	27500 3	1160	1120	1160				
T 11.642	H	Bloomberg Itali	27500 3	1260	1220	1260				
T 11.642	H	Bloomberg Europ	27500 3	1360	1320	1360				
T 11.642	H	Bloomberg Germa	27500 3	1460	1420	1460				
T 11.642	H	Bloomberg Engli	27500 3	1560	1520	1560				
T 11.642	H	Bloomberg TV	27500 3	1760	1720	1760				
T 11.642	H	Bloomberg Europ	27500 3	1360	1320	1360				
T 11.642	H	Bloomberg Germa	27500 3	1460	1420	1460				
T 11.642	H	Bloomberg Engli	27500 3	1560	1520	1560				
T 11.642	H	Miracle TV	27500 3	1860	1820	1860				
T 11.642	H	SAT-7 PARS	27500 3	1960	1920	1960				
D 11.642	H	Fileas	27500 3							
T 11.642	H	ERTSAT Europe	27500 3	2101	2111	128				
R 11.642	H	Era 2	27500 3	2113	128					
R 11.642	H	Era 3	27500 3	2114	128					
R 11.642	H	Era Sport	27500 3	2115	128					
R 11.642	H	Era 5	27500 3	2116	128					
R 11.642	H	Era 1	27500 3	2112	128					
T 11.727	V	Infochannel TV	27500 3	2731	2732	2731				
T 11.727	V	Sardinia TV	27500 3	2731	2732	2731				
T 11.843	V	Fox Crime +1	27500 3	2451	2452	2451				
T 11.977	H	Cultoon	27500 3	2466	2467	2466				
T 12.092	H	Subacquea	27500 3	4894	4895	4894				
T 12.207	H	Newroz	27500 3	1169	1170	1169				
T 12.226	V	VOA TV 1 (HB1-8)	27500 3	4260	4220	4260				
T 12.226	V	IBB OS Download	27500 3	4260	4220	4260				
T 12.226	V	IBB OS Download	27500 3	4260	4220	4260				
T 12.226	V	VOA TV 240 (HB1)	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	VOA TV 241 (HB1)	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	VOA TV 242 (HB1)	27500 3	4260	4220	4260				
T 12.226	V	VOA TV 250 (HB1)	27500 3	4260	4220	4260				
T 12.226	V	VOA TV 251 (HB1)	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	VOA TV 252 (HB1)	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	Sawa Levant Rad	27500 3	4530	4530					
T 12.226	V	VOA Music Mix 2	27500 3	4260	4220	4260				
T 12.226	V	Sawa Iraq Radio	27500 3	4532	4532					
T 12.226	V	VOA Music Mix 2	27500 3	4260	4220	4260				
T 12.226	V	Sawa Gulf Radio	27500 3	4622	4622					
T 12.226	V	Sawa N. Africa	27500 3	4630	4630					
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	Sawa Egypt Radi	27500 3	4620	4620					
T 12.226	V	Farda Radio 294	27500 3	4632	4632					
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	VOA Persian TV	27500 3	4760	4720	4760				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	VOA Music Mix 2	27500 3	4260	4220	4260				
T 12.226	V	Sawa Sudan Radi	27500 3	4730	4730					
T 12.226	V	IBB TV Dedicate	27500 3	4560	4520	4560				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	VOA Persian TV	27500 3	4760	4720	4760				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	Sawa Lebanon Ra	27500 3	4732	4732					
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4260	4220	4260				
T 12.226	V	VOA TV 100 (HB1)	27500 3	4260	4220	4260				
T 12.226	V	IBB VOA RFERL R	27500 3	4222	4222					
T 12.226	V	IBB VOA RFERL R	27500 3	4232	4232					
T 12.226	V	VOA Music Mix 1	27500 3	4320	4320					
T 12.226	V	IBB VOA RFERL R	27500 3	4322	4322					
T 12.226	V	IBB VOA RFERL R	27500 3	4330	4330					
T 12.226	V	IBB VOA Radio 1	27500 3	4332	4332					
T 12.226	V	IBB VOA RFERL R	27500 3	4420	4420					
T 12.226	V	IBB VOA RFERL R	27500 3	4422	4422					
T 12.226	V	IBB VOA RFERL R	27500 3	4430	4430					
T 12.226	V	IBB VOA RFERL R	27500 3	4432	4432					
T 12.226	V	IBB VOA RFERL R	27500 3	4522	4522					
T 12.226	V	Sawa Levant Rad	27500 3	4530	4530					
T 12.226	V	Sawa Iraq Radio	27500 3	4532	4532					
T 12.226	V	Sawa Egypt Radi	27500 3	4620	4620					
T 12.226	V	Sawa Gulf Radio	27500 3	4622	4622					
T 12.226	V	Sawa N. Africa	27500 3	4630	4630					
T 12.226	V	Farda Radio 119	27500 3	4632	4632					
T 12.226	V	IBB VOA RFERL R	27500 3	4722	4722					
T 12.226	V	Sawa Sudan Radi	27500 3	4730	4730					
T 12.226	V	Sawa Lebanon Ra	27500 3	4732	4732					
T 12.226	V	Sawa Levant Rad	27500 3	4820	4820					
T 12.226	V	Sawa Iraq Radio	27500 3	4822	4822					
T 12.226	V	Sawa Egypt Radi	27500 3	4830	4830					
T 12.226	V	Sawa Gulf Radio	27500 3	4832	4832					
T 12.226	V	Sawa N. Africa	27500 3	4920	4920					
T 12.226	V	Sawa Sudan Radi	27500 3	4922	4922					
T 12.226	V	Farda Radio 306	27500 3	4930	4930					
T 12.226	V	Sawa Lebanon Ra	27500 3	4932	4932					
T 12.226	V	Al Hurra-Europe	27500 3	5060	5020	5060				



The complete SatcoDX Global Satellite Chart "World of Satellites" with technical data of all satellite transponders worldwide is exclusively available to TELE-satellite Magazine readers.

R 12.226	V	VOA Urdu Radio	27500 3	5032	5032					
R 12.245	H	DAN Radio	27500 3	295	203					
T 12.245	H	PTV	27500 3	137	157	137				
T 12.265	V	SRI TV	27500 3	310	320	310				
T 12.322	H	France 24 (in A	27500 3	521	522	521				
R 12.322	H	RADIO S BEOGRAD	27500 3	545	545					
T 12.380	V	Saudi arabia TV2	27500 3	3120	3130	3120				
T 12.437	H	PRESS TV	27500 3	311	103	311				
T 12.460	V	Virtual KidsCo	27500 3	910	908					
T 12.460	V	Hallmark Bulgar	27500 3	910	908					
T 12.460	V	KidsCO EastEur	27500 3	910	909					
T 12.460	V	KidsCO EastEur	27500 3	910	900					
T 12.460	V	KidsCO EastEur	27500 3	910	902					
T 12.460	V	KidsCO EastEur	27500 3	910	1520					
T 12.460	V	KidsCO EastEur	27500 3	910	1522					
T 12.460	V	KidsCO EastEur	27500 3	910	1620					
T 12.460	V	Bulgarian Enc 1	27500 3	1160	1121					
T 12.460	V	Encoder 1p10 te	27500 3	1010	1000	1010				
R 12.520	V	HKR	27500 3	4044	4044					
T 12.520	V	Health&Beauty TV	27500 3	4106	4107	4106				
T 12.520	V	THOU TV	27500 3	4108	4109	4108				
T 12.520	V	OASI TV	27500 3	4110	4111	4110				
T 12.520	V	NOELLO SAT	27500 3	4112	4113	4112				
T 12.540	V	HECT 18	27500 3	5129	5130	5129				
D 12.558	V	CID090005000	27500 3							
D 12.558	V	CID090002000	27500 3							
D 12.558	V	CID090006001	27500 3							
T 12.558	V	Live Casino TV	27500 3	2590	2591	2590				
D 12.558	V	CID090002000	27500 3							
D 12.558	V	Oldies Radio	27500 3	2611	2611					
D 12.558	V	CID09000a000	27500 3							
D 12.558	V	CID090002001	27500 3							
D 12.558	V	CID010001001	27500 3							
D 12.558	V	CID08002a001	27500 3							
R 12.673	V	[Empty]	27500 3	2897	2834					
R 12.673	V	Radio Fes	27500 3	2897	2834					
T 12.673	V	AL MAGHRIBIA	27500 3	308	309	307				
T 12.673	V	TVM INTER+L	27500 3	35	36	34				
T 12.673	V	ARRABIAA	27500 3	46	47	45				
T 12.673	V	TVM INTER	27500 3	1026	1027	1026				
T 12.673	V	ASSADISSA	27500 3	1041	1042	1041				
D 12.673	V	MAP SAT	27500 3							
T 12.673	V	Medi1SAT	27500 3	2050	2051	2050				
T 12.673	V	Arriadia	27500 3	2562	2563	2561				
R 12.673	V	Radio national	27500 3	2817	2818					
R 12.673	V	Radio Dakhla	27500 3	2882	2835					
R 12.673	V	Chaine inter	27500 3	2833	2818					
R 12.673	V	Amazigh	27500 3	2850	2818					
R 12.673	V	Radio Mohamed VI	27500 3	2866	2818					
R 12.673	V	Radio Fes	27500 3	2897	2835					
D 12.673	V	DVBH INT	27500 3							
D 12.673	V	DVBH Service	27500 3							
16.0 East			EUTELSAT W2							
T 11.010	V	GTV	27500 3	524	5634	155				
T 11.010	V	Europa TV	27500 3	523	761	154				
T 11.012	H	GCI E242/MAIN	12800 7	32	256	32				
T 11.012	H	E-228.VIA	12800 7	2305	2311	2305				
T 11.276	H	G.AZARBIAJCAN TV	11100 5	2007	3007	2007				
T 11.449	H	Premium Promo	27500 7	2101	2102	2101				
T 11.449	H	Premium 1	27500 7	2121	2122	2121				
T 11.449	H	Premium 2	27500 7	2141	2142	2141				
T 11.449	H	Premium 3	27500 7	2161	2162	2161				
T 11.449	H	Premium 4	27500 7	2181	2182	2181				
T 11.449	H	Premium 5	27500 7	2201	2202	2201				
T 11.449	H	BBF	27500 7	2261	2262	2261				
T 11.449	H	Kohat	27500 7	2281	2282	2281				
T 11.449	H	Koha TV	27500 7	2301	2302	2301				
T 11.449	H	TiranaTV	27500 7	2321	2322	2321				
T 11.449	H	Vizion+H	27500 7	2341	2342	2341				
T 11.449	H	KTV	27500 7	2361	2362	2361				
T 11.449	H	RTV 21	27500 7	2381	2382	2381				
R 11.486	H	Kreol FM	29950 3	601	601					
T 11.486	H	M6	29950 3	120	137	120				
T 11.486	H	CC Star	29950 3	170	187	170				
T 11.486	H	TF6	29950 3	122	139	122				
T 11.486	H	Serie Club	29950 3	129	146	129				
T 11.486	H	Teva	29950 3	130	147	130				
T 11.486	H	Ma Planete	29950 3	131	148	131				
T 11.486	H	TeleReunion	29950 3	977	978	977				
T 11.486	H	CC Premier	29950 3	167	184	167				
T 11.486	H	CC Frisson	29950 3	168	185	168				
T 11.486	H	CC Classic	29950 3	169	186	169				
D 11.486	H	CC Culte	29950 3	162	162	4095				
T 11.486	H	Antenne Reunion	29950 3	135	152	135				
R 11.486	H	Cherie FM	29950 3	691	691					
D 11.486	H	Horoscope	29950 3							
T 11.486	H	RTL9	29950 3	683	700	683				
T 11.486	H	Tempo	29950 3	1250	1251	1250				
D 11.486	H	Chasse et Peche	29950 3	683	700	4095				
T 11.486	H	Piwi	29950 3	126	162	126				
T 11.486	H	CC Famiz	29950 3	512	612	512				
R 11.486	H	EXO FM	29950 3	685	685					
T 11.486	H	Supersport 3	29950 3	689	690	689				
T 11.486	H	Discovery	29950 3	692	693	692				
R 11.486	H	NRJ Reunion	29950 3	597	597					
R 11.486	H	Radio 1	29950 3	696	696					

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T = TV Digital	T = TV Digital Crypt
R = Radio Digital	R = Radio Digital Crypt

T = TV Analog **T** = TV Analog Crypt
R = Radio Analog **R** = Radio Analog Crypt

H = TV High Definition
H = TV High Definition Crypt



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SatcoDX NEW Satellite Channels 08/2007

Typ	Freq	Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
[GHz]							PID	PID	PID	
T	4.172	H	LSTV		4650		768	769	768	
87.5 East CHINASTAR 1										
T	3.733	H	MYAWADY TV		5925	3	4194	4195	4194	
T	3.780	V	(Empty Name)		27500	3	513	514	513	
T	3.780	V	(Empty Name)		27500	3	257	258	257	
T	3.833	H	FOOD		9265		1073	1074	1073	Chinese
T	3.833	H	FOOTBALL1		9265		1041	1042	1040	Chinese
T	3.869	V	(Empty Name)		13300	3	2010	2012	8190	
T	4.060	V	(Empty Name)		27500	3	2013	2015	2013	
R	4.100	V	(Empty Name)		27500	3	1541	8190		
88.0 East ST 1										
T	3.410	H	Service 2		2222	3	513	514	33	
T	3.677	H	Service 1		3400		33	34	8190	
T	11.693	H	TVLanka 3		12000		1360	1320	1360	
T	11.693	H	TVLanka 5		12000		1560	1520	1560	
T	11.693	H	TVLanka 6		12000		1660	1620	1660	
T	11.693	H	TVLanka 2		12000		1260	1220	1260	
R	11.693	H	TVL Radio 1		12000		3120	3120		
R	11.693	H	TVL Radio 4		12000		3420	3420		
R	11.693	H	TVL Radio 3		12000		3320	3320		
T	11.693	H	TVLanka 1		12000		1160	1120	1160	
R	11.693	H	TVL Radio 2		12000		3220	3220		
T	11.693	H	TVLanka 4		12000		1460	1420	1460	
90.0 East YAMAL 201										
R	3.944	L	Radio Radonezh/		15550	3	5302	5301	Russian	
R	3.944	L	Russkoe Mezhdun		15550	3	5704	5301	Russian	
R	3.944	L	Radio Zvezda		15550	3	4505	5301	Russian	
91.5 East MEASAT 1,3										
D	10.982	V	DS DMR 101		30000	7				
T	10.982	V	(Empty Name)		30000	7	322			
T	11.483	V	ESPN	MGRD	30000	7	160	80	160	English
T	11.483	V	CER	MGRD	30000	7	174	136	174	Malay
T	11.483	V	ABO	MGRD	30000	7	172	128	172	English
T	11.483	V	BBC	MGRD	30000	7	171	124	171	English
T	11.483	V	VT	MGRD	30000	7	120	120	170	English
T	11.483	V	APL	MGRD	30000	7	169	116	169	English
T	11.483	V	GC	MGRD	30000	7	168	112	168	English
T	11.483	V	RTM2	MGRD	30000	7	167	108	167	Malay
T	11.483	V	RTM1	MGRD	30000	7	166	104	166	Malay
T	11.483	V	AEC	MGRD	30000	7	165	100	165	Chinese
T	11.483	V	DISC	MGRD	30000	7	164	96	164	English
T	11.483	V	IVJ	MGRD	30000	7	163	92	163	English
T	11.483	V	CINE	MGRD	30000	7	162	88	162	English
T	11.483	V	DISC1	MGRD	30000	7	161	84	161	English
D	11.483	V	DS DMR 103		30000	7				
R	11.483	V	RAAGA	MGRD	30000	7	192			Hindi
R	11.483	V	MSQA	MGRD	30000	7	191			English
R	11.483	V	XFM	MGRD	30000	7	190			English
R	11.483	V	OSAI	MGRD	30000	7	189			Malay
R	11.483	V	SINAR	MGRD	30000	7	188			Malay
R	11.483	V	MLD	MGRD	30000	7	187			English
R	11.483	V	JAZ	MGRD	30000	7	186			English
R	11.483	V	IB	MGRD	30000	7	185			English
R	11.483	V	NLG	MGRD	30000	7	184			English
R	11.483	V	GOLD	MGRD	30000	7	183			English
R	11.483	V	ROCK	MGRD	30000	7	182			English
R	11.483	V	LITE	MGRD	30000	7	181			English
R	11.483	V	MIX	MGRD	30000	7	180			English
R	11.483	V	HITZ	MGRD	30000	7	179			English
R	11.483	V	OPUS	MGRD	30000	7	178			English
R	11.483	V	MY	MGRD	30000	7	177			English
R	11.483	V	ERA	MGRD	30000	7	176			Malay
D	11.483	V	RAD		30000	7				
R	11.483	V	GAME		30000	7	198			
T	11.563	V	ES	MGRD	30000	7	173	132	173	English
T	11.563	V	JYU	MGRD	30000	7	172	128	172	English
T	11.563	V	DRT	MGRD	30000	7	171	124	171	English
T	11.563	V	DH&H	MGRD	30000	7	170	120	170	English
T	11.563	V	IE	MGRD	30000	7	169	116	169	English
T	11.563	V	SM	MGRD	30000	7	168	112	168	English
T	11.563	V	CTV4	MGRD	30000	7	167	108	167	Chinese
T	11.563	V	BBC	MGRD	30000	7	166	104	166	English
T	11.563	V	@15	MGRD	30000	7	165	100	165	English
T	11.563	V	TVI	MGRD	30000	7	164	96	164	English
T	11.563	V	BTU	MGRD	30000	7	163	92	163	English
T	11.563	V	ASSP	MGRD	30000	7	162	88	162	English
T	11.563	V	HHK	MGRD	30000	7	161	84	161	English
T	11.563	V	SWR	MGRD	30000	7	160	80	160	English
D	11.563	V	DS DMR 106		30000	7				
T	11.643	V	SPRT	MGRD	30000	7	160	80	160	English
T	11.643	V	TV9	MGRD	30000	7	176	144	176	English
T	11.643	V	AJE	MGRD	30000	7	177	146	177	English
T	11.643	V	ZEE	MGRD	30000	7	174	136	174	Hindi
T	11.643	V	SHX	MGRD	30000	7	173	132	173	Chinese
T	11.643	V	ETVA	MGRD	30000	7	172	128	172	English
T	11.643	V	TRAV	MGRD	30000	7	171	124	171	English
T	11.643	V	TV3	MGRD	30000	7	170	120	170	Malay
T	11.643	V	NICK	MGRD	30000	7	169	116	169	English
T	11.643	V	NHK	MGRD	30000	7	167	108	167	Japanese
T	11.643	V	NCEO	MGRD	30000	7	161	84	161	English
D	11.643	V	DS DMR 102		30000	7				
D	11.643	V	ITV		30000	7				
D	11.833	V	DS DMR 101		30000	7				
R	11.833	V	(Empty Name)		30000	7	322			
T	12.333	V	ESPN	MGRD	30000	7	160	80	160	English
T	12.333	V	CER	MGRD	30000	7	174	136	174	Mandarin
T	12.333	V	ABO	MGRD	30000	7	172	128	172	English
T	12.333	V	BBC	MGRD	30000	7	171	124	171	English
T	12.333	V	VT	MGRD	30000	7	120	120	170	English
T	12.333	V	APL	MGRD	30000	7	169	116	169	English
T	12.333	V	GC	MGRD	30000	7	168	112	168	English
T	12.333	V	RTM2	MGRD	30000	7	167	108	167	Malay
T	12.333	V	RTM1	MGRD	30000	7	166	104	166	Malay
T	12.333	V	AEC	MGRD	30000	7	165	100	165	Mandarin
T	12.333	V	DISC	MGRD	30000	7	164	96	164	English
T	12.333	V	IVJ	MGRD	30000	7	163	92	163	English
T	12.333	V	CINE	MGRD	30000	7	162	88	162	English
T	12.333	V	DISC1	MGRD	30000	7	161	84	161	English
D	12.333	V	DS DMR 103		30000	7				
R	12.333	V	RAAGA	MGRD	30000	7	192			Hindi
R	12.333	V	MSQA	MGRD	30000	7	191			English
R	12.333	V	XFM	MGRD	30000	7	190			English
R	12.333	V	OSAI	MGRD	30000	7	189			English
R	12.333	V	SINAR	MGRD	30000	7	188			Malay
R	12.333	V	MLD	MGRD	30000	7	187			English
R	12.333	V	JAZ	MGRD	30000	7	186			English
R	12.333	V	IB	MGRD	30000	7	185			English
R	12.333	V	NLG	MGRD	30000	7	184			English
R	12.333	V	GOLD	MGRD	30000	7	183			English
R	12.333	V	ROCK	MGRD	30000	7	182			English
R	12.333	V	LITE	MGRD	30000	7	181			English
R	12.333	V	MIX	MGRD	30000	7	180			English
R	12.333	V	HITZ	MGRD	30000	7	179			English
R	12.333	V	OPUS	MGRD	30000	7	178			English
R	12.333	V	MY	MGRD	30000	7	177			English
R	12.333	V	ERA	MGRD	30000	7	176			Malay
D	12.333	V	RAD		30000	7				
R	12.333	V	GAME		30000	7	198			

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	12.414	V	SWR	MGRD	30000	7	160	80	160	English
T	12.414	V	ES	MGRD	30000	7	173	132	173	English
T	12.414	V	JYU	MGRD	30000	7	172	128	172	Japanese
T	12.414	V	DRT	MGRD	30000	7	171	124	171	English
T	12.414	V	DH&H	MGRD	30000	7	170	120	170	English
T	12.414	V	IE	MGRD	30000	7	169	116	169	English
T	12.414	V	SM	MGRD	30000	7	168	112	168	English
T	12.414	V	CTV4	MGRD	30000	7	167	108	167	Mandarin
T	12.414	V	BBC	MGRD	30000	7	166	104	166	English
T	12.414	V	@15	MGRD	30000	7	165	100	165	English
T	12.414	V	TVIQ	MGRD	30000	7	164	96	164	English
T	12.414	V	BTU	MGRD	30000	7	163	92	163	English
T	12.414	V	ASSP	MGRD	30000	7	162	88	162	English
T	12.414	V	HHK	MGRD	30000	7	161	84	161	English
D	12.414	V	DS DMR 106		30000	7				
T	12.493	V	SPRT	MGRD	30000	7	160	80	160	English
T	12.493	V	TV9	MGRD	30000	7	176	144	176	English
T	12.493	V	AE	MGRD	30000	7	177	146	177	Hindi
T	12.493	V	ZET	MGRD	30000	7	174	136	174	Hindi
T	12.493	V	SHX	MGRD	30000	7	173	132	173	Mandarin
T	12.493	V	ETVA	MGRD	30000	7	172	128	172	English
T	12.493	V	TRAV	MGRD	30000	7	171	124	171	English
T	12.493	V	TV3	MGRD	30000	7	170	120	170	Malay
T	12.493	V	NICK	MGRD	30000	7	169	116	169	English
T	12.493	V	NHK	MGRD	30000	7	167	108	167	Japanese
T	12.493	V	NGEO	MGRD	30000	7	161	84	161	English
D	12.493	V	DS DMR 102		30000	7				
D	12.493	V	ITV		30000	7				
91.6 East			C-Band:MEASAT 13							
T	3.841	V	Celestial 2	POVU	30000	3	110	100	110	Mandarin
T	3.841	V	BBC Entertainment	POVU	30000	3	210	200	210	English
T	3.841	V	GOAL TV1	POVU	30000	3	310	300	310	English
T	3.841	V	GOAL TV2	POVU	30000	3	510	500	510	English
T	3.841	V	AFC	POVU	30000	3	410	400	410	English
T	3.841	V	JIA YU	POVU	30000	3	610	600	610	Mandarin
T	3.841	V	Celestial 1	POVU	30000	3	810	800	810	Mandarin
T	3.841	V	GMA	POVU	30000	3	710	700	710	English
T	3.841	V	HISTORY	POVU	30000	3	910	900	910	English
T	3.841	V	CRIME&INVESTIGA	POVU	30000	3	1010	1000	1010	English
T	3.876	V	RTM 1		12520	3	301	201	301	Malay
T	3.876	V	RTM 2	BISS	12520	3	302	202	302	Malay
T	3.876	V	RTM FEED 1		12520	3	303	203	303	Malay
T	3.876	V	RTM FEED 2		12520	3	304	204	304	Malay
R	3.876	V	KLASIK NASIONAL		12520	3	401	401	402	Malay
R	3.876	V	MUZIK FM		12520	3	402	402	402	Malay
R	3.876	V	SUARA MALAYSIA 1		12520	3	403	403	403	Malay
R	3.876	V	ASYIK FM		12520	3	404	404	404	Malay
R	3.876	V	TRAXX FM		12520	3	405	405	405	Malay
R	3.876	V	AI FM		12520	3	406	406	406	Malay
R	3.876	V	MINNAL FM		12520	3	407	407	407	Malay
R	3.876	V	SUARA MALAYSIA 2		12520	3	408	408	408	Malay
T	3.888	V	RTM Sarawak TV		3980		305	205	305	Malay
R	3.888	V	Sarawak FM		3980		701	701	701	Malay
R	3.888	V	Red FM		3980		702	702	702	Malay
R	3.888	V	Wai FM		3980		703	703	703	Malay
R	3.888	V	Sarawak FM 4		3980		704	704	704	Malay
R	3.888	V	Sarawak FM 5		3980		705	705	705	Malay
T	4.040	V	WFC	IRD	27990	3	2000	2001	2000	Malay
93.5 East			C-Band:INSAT 3A							
T	3.902	V	SCOPUS-NET-TECH		2100		4194	4195	4194	
T	3.917	V	INDIAVISION		2000		4194	4195	4194	
T	4.147	V	NSTPL		3000		308	256	8190	
T	4.147	V	NSTPL		3000		4194	4195	8190	
93.6 East			INSAT 3B							
T	10.990	V	DD1		27500		501	601	701	
T	10.990	V	DD NEWS		27500		502	602	702	
T	10.990	V	DD SPORTS		27500		503	603	703	
T	10.990	V	DD INDIA		27500		504	604	704	
T	10.990	V	DD BHARATI		27500		505	605	505	
T	10.990	V	DD BANGLA		27500		506	606	506	
T	10.990	V	DD-CHANDANA		27500		507	607	507	
T	10.990	V	DD GUJARATI		27500		508	608	708	
T	10.990	V	DD KASHIR		27500		509	609	709	
T	10.990	V	LOK SABHA		27500		511	611	511	
R	10.990	V	AIR VBS		27500		709	709	709	
R	10.990	V	AIR TELUGU		27500		708	708	708	
R	10.990	V	AIR MARATHI		27500		703	703	703	
R	10.990	V	AIR TAMIL		27500		704	704	704	
T	11.070	V	DD NORTH EAST		27500		521	621	721	
T	11.070	V	DD ODISHA		27500		522	622	522	
T	11.070	V	DD PPRHVA		27500		523	623	523	
T	11.070	V	DD PUNJABI		27500		524	624	524	
T	11.070	V	DD SAHYADRI		27500		525	625	725	
T	11.070	V	DD SAPTAGIRI		27500		526	626	526	
T	11.070	V	DD MALAYALAM		27500		527	627	727	
T	11.070	V	DD MH1 MUSIC		27500		528	628	728	
T	11.070	V	DD RAJYA SABHA		27500		529	629	529	
T	11.070	V	DD AKASH BANGLA		27500		530	630	530	
T	11.070	V	DD AIR GUJRATI		27500		721	721	721	
T	11.070	V	FM RAINBOW		27500		725	725	725	
T	11.070	V	AIR PUNJABI		27500		727	727	727	
T	11.070	V	FM GOLD		27500		728	728	728	
T	11.070	V	DD RAJYA SABHA		27500		531	631	531	
T	11.150	V	KAIRALI TV		27500		531	631	731	
T	11.150	V	DW TV		27500		532	632	732	
T	11.150	V	ETC PUNJABI		27500		533	633	733	
T	11.150	V	SMILE TV		27500		534	634	534	
T	11.150	V	AAJ TAK		27500		535	635	735	
T	11.150	V	ZEE MUSIC		27500		536	636	536	
T	11.150	V	SUN NEWS		27500		537	637	537	
T	11.150	V	SUN TV		27500		538	638	538	
T	11.150	V	TV9		27500		539	639	539	
T	11.150	V	STAR UTSAV		27500		540	640	540	
R	11.150	V	AIR KANNADA		27500		731	731	731	
R	11.150	V	AIR BANGLA		27500		732	732	732	
R	11.150	V	AIR HINDI		27500		733	733	733	
R	11.150	V	AIR N E		27500		735	735	735	
T	11.490	V	TEST-11		27500		571	671	571	
T	11.490	V	TEST-12		27500		572	672	572	
T	11.490	V	TEST-13		27500		573	673	573	
T	11.490	V	TEST-14		27500		574	674	574	
T	11.490	V	TEST-15		27500		575	675	575	
T	11.490	V	TEST-16		27500		576	676	576	
T	11.490	V	TEST-17		27500		577	677	577	
T	11.490	V	TEST-18		27500		578	678	578	
T	11.490	V	TEST-19		27500		579	679	579	
T	11.490	V	TEST-20		27500		580	680	580	
R	11.490	V	AIR MALAYALAM		27500		881	881	881	
R	11.490	V	AIR ASSAMEE		27500		882	882	882	
R	11.490	V	FM R/BOW-CHN		27500		883	883	883	
R	11.490	V	FM GOLD-MUM		27500		884	884	884	
T	11.570	V	GYANDARSHAN		27500		551	651	551	
T	11.570	V	JAIN TV		27500		552	652	552	
T	11.570	V	TEST-3		27500		553	653	553	
T	11.570	V	TEST-4		27500		554	654	554	
T	11.570	V	DD URDU		27500		555	655	555	
T	11.570	V	JAYA TV		27500		556	656	556	
T	11.570	V	HEADLINES TODAY		27500		557	657	557	

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SatcoDX NEW Satellite Channels 08/2007

Typ Freq Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
[GHz]					PID	PID	PID	
T 11.874	H Ariana Afghan	22000 3	1280	1281	1280			
T 11.874	H Telepace	22000 3	519	2124	519			
T 11.874	H Studio 1+1	22000 3	1020	1030	1020			
T 11.874	H DMC	22000 3	869	870	869			
T 11.874	H KJC TV	22000 3	1560	1520	1560			
T 11.874	H RTV21	22000 3	1660	1620	1660			
R 11.874	H RTV21 Radio	22000 3	1622	1622				
R 11.874	H Globecast 210	22000 3	4197	4197				
R 11.874	H GLR Radio 1	22000 3	1122	1122				
T 11.874	H NurTV	22000 3	4096	4097	4096			
R 11.874	H DZAR radio	22000 3	1523	1523				
T 11.874	H The Old Path	22000 3	171	109	171			
R 11.874	H Futbol DP	22000 3	1422	1422				
T 11.874	H Top Channel	22000 3	4024	4034	4024			
R 11.874	H Top Albanian Ra	22000 3	4535	4535				
T 11.874	H Ariana Afghan	22000 3	1280	1281	1280			
T 11.874	H Telepace	22000 3	2161	519	2161			
T 11.874	H DMC	22000 3	869	870	869			
T 11.874	H KJC TV	22000 3	1560	1520	1560			
T 11.874	H NurTV	22000 3	4096	4097	4096			
R 11.874	H DZAR radio	22000 3	1523	1523				
T 11.874	H The Old Path	22000 3	109	171	109			
R 11.874	H Futbol DP	22000 3	1422	1422				
R 11.874	H Top Albanian Ra	22000 3	4535	4535				
T 11.999	H Saudi TV2	20000 3	4527	4537	4527			
T 12.053	V Press TV	22000 3	1301	1311	1301			
T 12.122	H ARIA Internatio	20000 3	831	832	831			
T 12.122	H LOVEWORLD	20000 3	799	800	799			
T 12.122	H PAYAM E AFGHAN	20000 3	783	784	783			
T 12.122	H RTS	20000 3	895	896	895			
T 12.122	H MAC TV	20000 3	911	912	911			
T 12.122	H DA-AL	20000 3	879	880	879			
T 12.122	H KACTV	20000 3	863	864	863			
T 12.123	H Affiliate Chann	20000 3	927	928	927			
T 12.146	V Jordan TV	22000 3	2073	2083	2073			
T 12.152	H Thai Asia	20000 3	32	33	32			
T 12.152	H Didar	20000 3	35	36	35			
T 12.152	H Tapesh TV	20000 3	44	45	44			
T 12.152	H Iran TV	20000 3	57	56	57			
T 12.152	H Jaam-E-Jam	20000 3	58	59	58			
R 12.152	H KRIS	20000 3	37	37				
R 12.152	H Globecast 13	20000 3	43	43				
R 12.152	H Bahai Radio	20000 3	54	54				
R 12.152	H KW1L/KW1R	20000 3	55	55				
R 12.152	H KW2L/KW2R	20000 3	60	60				
R 12.152	H Radio Seoul	20000 3	53	53				
T 12.152	H Omid-E-Iran	20000 3	61	62	61			
T 12.152	H Tasvir Iran	20000 3	72	73	72			
T 12.152	H ETV	20000 3	288	289	288			
R 12.152	H EthiopianRadio	20000 3	4112	4112				
T 12.177	V GNF Movies	23000 2	2081	2082	2081			
T 12.177	V CCN	23000 2	35	36	35			
T 12.177	V KURD TV	23000 2	4083	259	4083			
T 12.177	V TBN Russia	23000 2	4084	260	4084			
T 12.177	V FTV	23000 2	37	38	37			
T 12.177	V TCS-TV	23000 2	262	263	262			
T 12.177	V JCTV	23000 2	113	114	5920			
T 12.177	V WRN Fra EUR	23000 2	54	54				
T 12.177	V WRN Mu NAM	23000 2	50	50				
R 12.177	V WRN Eng NAM	23000 2	49	49				
T 12.177	V GODS LEARNING CH	23000 2	59	60	59			
T 12.177	V TBN ENLACE	23000 2	56	57	56			
T 12.177	V TBN	23000 2	33	34	33			
T 12.177	V LAOBC/BTV	23000 2	43	44	43			
T 12.177	V SOAC	23000 2	4130	4131	5664			
T 12.177	V Emmanuel TV	23000 2	4085	261	4085			
R 12.177	V Glas Drine BiH	23000 2	1064	1085				
R 12.177	V Hmong / Soomaa	23000 2	1064	1085				
T 12.177	V CHURCH CHANNEL	23000 2	47	48	47			
R 12.177	V KIRN RADIO 670	23000 2	46	5664				
R 12.177	V ASIAN FM	23000 2	19					
R 12.177	V Best NCE	23000 2	72					
R 12.177	V Diana	23000 2	213	213				
265.0 East (95.0 West) GALAXY 3C								
T 3.754	V (Empty Name)	2978 3	33	34	33			
R 11.810	H MTI1	20000 3	32	32				
R 11.810	H MTI2	20000 3	34	34				
D 11.866	H (Empty Name)	21500 3						
D 11.866	H (Empty Name)	21500 3						
T 12.050	H MAC TV	20000 3	608	609	608			
D 12.086	V (Empty Name)	5000 3						
269.0 East (91.0 West) GALAXY 11								
R 3.920	H EWTN Audio Test	26000 3	804	804				
T 3.920	H Europe	26000 3	1560	1520	1560			
T 3.920	H PAC RIM	26000 3	1260	1220	1260			
T 3.920	H Span Dom	26000 3	1360	1320	1360			
T 3.920	H Canada	26000 3	1460	1420	1460			
T 3.920	H Domestic	26000 3	1160	1120	1160			
T 3.920	H Africa	26000 3	1660	1620	1660			
T 3.920	H WEWN	26000 3	1360	1332	1360			
R 3.920	H Radio Pas	26000 3	1322	1322				
R 3.920	H wewn	26000 3	1332	1332				
T 3.920	H Domestic-Englis	26000 3	1160	1230	1160			
T 3.920	H radio Direct	26000 3	1232	1232				
T 3.920	H Real SP & Radio	26000 3	1360	1320	1360			
T 3.920	H Europe audios 3	26000 3	1560	1530	1560			
R 3.920	H Sirius satellit	26000 3	1222	1222				
R 3.920	H Dalet-Astra	26000 3	1630	1630				
R 3.920	H covenant	26000 3	1632	1632				
R 3.920	H WQOP-IHR	26000 3	1330	1330				
R 3.920	H Fund Appeal	26000 3	1232	1332				
T 3.920	H Radio 95	26000 3	1160	1230	1160			
T 3.920	H David Radio	26000 3	1160	1120	1160			
T 3.920	H Radio 96	26000 3	1360	1320	1360			
R 3.920	H Radio 97	26000 3	1332	1332				
T 3.920	H Radio 98	26000 3	1232	1232				
T 3.920	H Span Int	26000 3	710	700	710			
R 3.920	H Occasional	26000 3	806	806				
T 3.920	H UK/Ireland	26000 3	810	800	810			
R 3.920	H EWTN Audio Test	26000 3	804	804				
T 4.135	H TOC- DIVIDS 1	6112 3	1260	1220	1260			
T 4.135	H TOC- DIVIDS 2	6112 3	1160	1120	1160			
T 12.060	V Occasional Use	26700 3	1160	1120	1160			
T 12.060	V Occasional Use	26700 3	1260	1220	1260			
T 12.060	V LETN	26700 3	1360	1320	1360			
T 12.060	V FETN	26700 3	1460	1420	1460			
T 12.060	V HSTN	26700 3	1560	1520	1560			
T 12.060	V LTCN	26700 3	1660	1620	1660			
T 12.060	V Occasional Use	26700 3	1760	1720	1760			
T 12.060	V TXCN	26700 3	1860	1820	1860			
T 12.060	V Occasional Use	26700 3	1960	1920	1960			
R 12.060	V AAFES	26700 3	1322	1360				
269.1 East (90.9 West) NIMIQ 1								
T 12.224	R HSTDV	NAGV	20000 5	4642	4644	4642		
T 12.224	R CPACF	NAGV	20000 5	5666	5668	5666		
T 12.224	R NEWS1	NAGV	20000 5	6434	6435	6434		
T 12.224	R A-LOH	NAGV	20000 5	4130	4131	4130		
T 12.224	R CTV-L	NAGV	20000 5	4898	4899	4898		

Typ Freq Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
[GHz]					PID	PID	PID	
T 12.224	R CBC-L	NAGV	20000 5	5154	5155	5154		
T 12.224	R RCvU0	NAGV	20000 5	6946	6947	6946		
T 12.224	R Vu22	NAGV	20000 5	6690	6691	6690		
T 12.224	R CPAC	NAGV	20000 5	5666	5667	5666		
T 12.224	R ISSUE	NAGV	20000 5	6178	6179	6178		
T 12.224	R HIST	NAGV	20000 5	4642	4643	4642		
T 12.224	R MTV	NAGV	20000 5	5410	5411	5410		
T 12.224	R TVLND	NAGV	20000 5	5922	5923	5922		
T 12.224	R TSCD	NAGV	20000 5	4386	4387	4386		
T 12.239	L CBC-O	NAGV	20000 5	4386	4387	4386		
T 12.239	L A-VIC	NAGV	20000 5	4130	4131	4130		
T 12.239	L WPX	NAGV	20000 5	4642	4643	4642		
T 12.239	L IFC	NAGV	20000 5	6434	6435	6434		
T 12.239	L Vu15	NAGV	20000 5	5666	5667	5666		
T 12.239	L Vu24	NAGV	20000 5	4898	4899	4898		
T 12.239	L OLIN	NAGV	20000 5	5410	5411	5410		
T 12.239	L LBN	NAGV	20000 5	5154	5155	5154		
T 12.239	L OUTT-C	NAGV	20000 5	6946	6947	6946		
T 12.239	L BBC-C	NAGV	20000 5	5922	5923	5922		
T 12.239	L GAME	NAGV	20000 5	6178	6179	6178		
T 12.239	L RAI	NAGV	20000 5	6690	6691	6690		
T 12.253	R VNU50	NAGV	20000 5	1750	3750	1750		
T 12.253	R VNU51	NAGV	20000 5	1751	3751	1751		
T 12.253	R VNU52	NAGV	20000 5	1752	3752	1752		
T 12.253	R VNU53	NAGV	20000 5	1753	3753	1753		
T 12.253	R VNU54	NAGV	20000 5	1754	3754	1754		
T 12.253	R VNU55	NAGV	20000 5	1755	3755	1755		
T 12.253	R VNU56	NAGV	20000 5	1756	3756	1756		
T 12.253	R VNU57	NAGV	20000 5	1757	3757	1757		
T 12.253	R VNU58	NAGV	20000 5	1758	3758	1758		
T 12.253	R VNU59	NAGV	20000 5	1759	3759	1759		
T 12.253	R VNU60	NAGV	20000 5	1760	3760	1760		
T 12.268	L CTVUdv	NAGV	20000 5	4386	4400	4386		
T 12.268	L CBCdv	NAGV	20000 5	4642	4656	4642		

Typ	Freq	Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
[GHz]										
D 12.399	R	D8FF4			20000	5			2143	
D 12.399	R	D8FF6			20000	5			2239	
D 12.399	R	D8FF7			20000	5				
D 12.399	R	D8FF9			20000	5			2207	
D 12.399	R	D8FFB			20000	5				
D 12.399	R	D8FFC			20000	5				
D 12.399	R	D8FFF			20000	5				
T 12.414	L	ONEDv		NAGV	20000	5	6178	6192	6178	
T 12.414	L	MUSMX		NAGV	20000	5	4898	4899	4898	
T 12.414	L	Prise		NAGV	20000	5	5666	5667	5666	
T 12.414	L	CBC-M		NAGV	20000	5	5410	5411	5410	
T 12.414	L	OMNI2		NAGV	20000	5	5922	5923	5922	
H 12.414	L	RCVu3		NAGV	20000	5	6946	6947	6946	
T 12.414	L	Vu21		NAGV	20000	5	4130	4131	4130	
T 12.414	L	ESPNc		NAGV	20000	5	5154	5155	5154	
T 12.414	L	CIVIL		NAGV	20000	5	4642	4643	4642	
T 12.414	L	ONE		NAGV	20000	5	6178	6179	6178	
T 12.414	L	SHO-E		NAGV	20000	5	1616	1616	1616	
T 12.414	L	SPIKE		NAGV	20000	5	6690	6691	6690	
R 12.428	R	VPRNT		NAGV	20000	5	1280	1280		
T 12.428	R	NTV		NAGV	20000	5	5154	5155	5154	
T 12.428	R	CITYW		NAGV	20000	5	4642	4643	4642	
D 12.428	R	MOVIE			20000	5	947	946		
T 12.428	R	HPI-1		NAGV	20000	5	5922	5923	5922	
T 12.428	R	HPI-2		NAGV	20000	5	6178	6179	6178	
D 12.428	R	MOVIE2			20000	5	947	946		
T 12.428	R	COURT		NAGV	20000	5	6434	6435	6434	
T 12.428	R	BOOK		NAGV	20000	5	4386	4387	4386	
R 12.428	R	VPRNT		NAGV	20000	5	1280	1280		
D 12.428	R	RG4			20000	5	703			
D 12.428	R	RG8			20000	5	707			
D 12.428	R	MOVIE			20000	5	946			
D 12.428	R	MOVIE2			20000	5	946			
D 12.428	R	RG4			20000	5	703			
D 12.428	R	RG8			20000	5	707			
T 12.443	L	RFO		NAGV	20000	5	6434	6435	6434	
T 12.443	L	ATV		NAGV	20000	5	4386	4387	4386	
T 12.443	L	CBC-H		NAGV	20000	5	6178	6179	6178	
T 12.443	L	CITYE		NAGV	20000	5	4898	4899	4898	
T 12.443	L	SCN		NAGV	20000	5	6946	6947	6946	
T 12.443	L	ACCES		NAGV	20000	5	5154	5155	5154	
D 12.443	L	SSrv4			20000	5	904			
T 12.443	L	CLT		NAGV	20000	5	5410	5411	5410	
D 12.443	L	SSrv6			20000	5	904			
R 12.443	L	VOAR		NAGV	20000	5	1287	1287		
R 12.443	L	OZ-FM		NAGV	20000	5	1286	1286		
R 12.443	L	CBC1H		NAGV	20000	5	1282	1282		
R 12.443	L	CHED		NAGV	20000	5	1280	1280		
D 12.443	L	RG9			20000	5				
D 12.443	L	SLFSV			20000	5	904			
D 12.443	L	BILE			20000	5	950			
D 12.443	L	BILF			20000	5	951			
D 12.443	L	KIDE			20000	5	864			
D 12.443	L	KIDF			20000	5	869			
D 12.443	L	KIDFS			20000	5	864			
D 12.443	L	SSrv4			20000	5	904			
D 12.443	L	SSrv6			20000	5	904			
D 12.443	L	RG9			20000	5				
D 12.443	L	SLFSV			20000	5	904			
D 12.443	L	BILE			20000	5	950			
D 12.443	L	BILF			20000	5	951			
D 12.443	L	KIDE			20000	5	864			
D 12.443	L	KIDF			20000	5	869			
D 12.443	L	KIDFS			20000	5	864			
D 12.443	L	KIDSS			20000	5	864			
T 12.457	R	TTEDv		NAGV	20000	5	4130	4132	4130	
T 12.457	R	TTWdv		NAGV	20000	5	4386	4388	4386	
T 12.457	R	TTFDv		NAGV	20000	5	6690	6692	6690	
T 12.457	R	TOONF		NAGV	20000	5	6690	6691	6690	
T 12.457	R	MC1		NAGV	20000	5	1320	1320	1320	
T 12.457	R	MC2		NAGV	20000	5	1321	1321	1321	
T 12.457	R	MC3		NAGV	20000	5	1322	1322	1322	
T 12.457	R	MC4		NAGV	20000	5	1323	1323	1323	
T 12.457	R	EA1		NAGV	20000	5	1324	1324	1324	
T 12.457	R	EA2		NAGV	20000	5	1325	1325	1325	

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
						PID		PID		
T	12.457	R	TOONE	NAGV	20000	5	4130	4131	4130	
T	12.457	R	TOONW	NAGV	20000	5	4386	4387	4386	
T	12.457	R	FMILY	NAGV	20000	5	4898	4899	4898	
T	12.457	R	FAM-W	NAGV	20000	5	4642	4643	4642	
T	12.472	L	CTV-c	NAGV	20000	5	6178	6192	6178	
T	12.472	L	GLB-S	NAGV	20000	5	6434	6435	6434	
T	12.472	L	CTV-C	NAGV	20000	5	6178	6179	6178	
T	12.472	L	GLB-C	NAGV	20000	5	5154	5155	5154	
T	12.472	L	CBC-C	NAGV	20000	5	5666	5667	5666	
T	12.472	L	CITYC	NAGV	20000	5	6946	6947	6946	
T	12.472	L	MIRCL	NAGV	20000	5	5922	5923	5922	
T	12.472	L	SEXTV	NAGV	20000	5	1745	1745	1745	
D	12.472	L	VENLP		20000	5			169	
T	12.472	L	PCENUS	NAGV	20000	5	1749	1749	1749	
T	12.472	L	PLBOY	NAGV	20000	5	1780	1780	1780	
R	12.472	L	EDGE	NAGV	20000	5	1281		1281	
R	12.472	L	105FM	NAGV	20000	5	1280		1280	
R	12.472	L	960AM	NAGV	20000	5	1284		1284	
D	12.472	L	VGME		20000	5			269	
D	12.472	L	VGME5		20000	5			269	
D	12.472	L	ITRIV_AP		20000	5			608	
D	12.472	L	IHORO_E		20000	5			624	
D	12.472	L	IHORO_F		20000	5			625	
D	12.472	L	PC		20000	5			857	
D	12.472	L	IHRFS		20000	5			624	
D	12.472	L	IHRFS		20000	5			625	
D	12.472	L	NTNS		20000	5			608	
D	12.472	L	PCS		20000	5			857	
D	12.472	L	VENLP		20000	5			169	
D	12.472	L	VGME		20000	5			269	
D	12.472	L	VGME5		20000	5			269	
D	12.472	L	ITRIV_AP		20000	5			608	
D	12.472	L	IHORO_E		20000	5			624	
D	12.472	L	IHORO_F		20000	5			625	
D	12.472	L	PC		20000	5			857	
D	12.472	L	IHRFS		20000	5			624	
D	12.472	L	IHRFS		20000	5			625	
D	12.472	L	NTNS		20000	5			608	
D	12.472	L	PCS		20000	5			857	
T	12.486	R	CBC-w	NAGV	20000	5	5922	5924	5922	
T	12.486	R	TVA-R	NAGV	20000	5	6690	6691	6690	
T	12.486	R	VuCom	NAGV	20000	5	6946	6947	6946	
T	12.486	R	NEWS2	NAGV	20000	5	4898	4899	4898	
T	12.486	R	CBC-W	NAGV	20000	5	5922	5923	5922	
T	12.486	R	DOCU	NAGV	20000	5	7458	7459	7458	
T	12.486	R	Vu26	NAGV	20000	5	6178	6179	6178	
T	12.486	R	GOLF	NAGV	20000	5	5666	5667	5666	
T	12.486	R	TECH	NAGV	20000	5	4642	4643	4642	
T	12.486	R	TRAVL	NAGV	20000	5	5154	5155	5154	
T	12.486	R	TYV-W	NAGV	20000	5	5410	5411	5410	
T	12.486	R	CMT	NAGV	20000	5	6434	6435	6434	
T	12.486	R	VNU5	NAGV	20000	5	4386	4387	4386	
T	12.501	L	DvCom	NAGV	20000	5	6434	6436	6434	
T	12.501	L	CFJC	NAGV	20000	5	6946	6947	6946	
T	12.501	L	RCVu1	NAGV	20000	5	4130	4131	4130	
T	12.501	L	RCVu2	NAGV	20000	5	5922	5923	5922	
T	12.501	L	SCRM	NAGV	20000	5	4898	4899	4898	
T	12.501	L	Vu20	NAGV	20000	5	6178	6179	6178	
T	12.501	L	SPEED	NAGV	20000	5	5410	5411	5410	
T	12.501	L	YTV-E	NAGV	20000	5	4642	4643	4642	
T	12.501	L	VIBE	NAGV	20000	5	5666	5667	5666	
T	12.501	L	LW	NAGV	20000	5	6690	6691	6690	
T	12.501	L	LTROPW	NAGV	20000	5	5154	5155	5154	
T	12.501	L	CMYD2	NAGV	20000	5	6434	6435	6434	
T	12.501	L	C-CAN	NAGV	20000	5	4386	4387	4386	
T	12.516	R	ABCDv	NAGV	20000	5	4130	4132	4130	
H	12.516	R	GLB-W	NAGV	20000	5	5922	5924	5922	
T	12.516	R	CAN-V	NAGV	20000	5	6178	6179	6178	
T	12.516	R	VuF8	NAGV	20000	5	5154	5157	5154	
T	12.516	R	VuF9	NAGV	20000	5	4898	4901	4898	
T	12.516	R	GLB-W	NAGV	20000	5	5922	5923	5922	
T	12.516	R	ABC-E	NAGV	20000	5	4130	4131	4130	
T	12.516	R	M-XS	NAGV	20000	5	1302	1302	1302	
T	12.516	R	Vu8	NAGV	20000	5	5154	5155	5154	
T	12.516	R	Vu9	NAGV	20000	5	4898	4899	4898	
T	12.516	R	SNETW	NAGV	20000	5	4386	4387	4386	

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T = TV Digital	T = TV Digital Crypt
R = Radio Digital	R = Radio Digital Crypt

T = TV Analog	T = TV Analog Crypt
R = Radio Analog	R = Radio Analog Crypt

H = TV High Definition	D = Data Channel
H = TV High Definition Crypt	P = Package

SatHawk 4000

Available at Sadoun Satellite Sales

Digital Satellite Signal Meter & Satellite Identifier



Features:

- 120 Satellites Memory
- C & KU Band Compatibility
- USB 2.0
- 3800 mAh Battery
- User Programmable
- Works with most LNBs including DishPro Plus.
- Worldwide Compatibility
- Fast Satellite Identification



What is included in the box:

- SatHawk 4000 signal meter
- AC Wall Adapter
- DC Car Charger
- Carrying Case
- Operating Instructions

Dealers Wanted

This meter is programmable, user friendly and ideal for installation of digital satellite TV antennas. Works with DBS, DSS, most KU-band satellites, and C-band satellites.



SatHawk

Distributed in the USA by

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www.sathawk.tv or www.sadoun.com

SatcoDX NEW Satellite Channels 08/2007

Typ	Freq	Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
[GHz]							PID	PID	PID	
T 3.721	L	FOX Life Latin	19995 3	1160	1120	1160				
T 3.721	L	FOX Life Brazil	19995 3	1260	1220	1260				
T 3.721	L	FX Latin	19995 3	1360	1320	1360				
T 3.721	L	FX Brazil	19995 3	1460	1420	1460				
T 3.721	L	Utilissima Satel	19995 3	1660	1620	1660				
T 3.721	L	Sci Fi Latin	POVU	19995 3	1560	1520	1560			
T 3.721	L	Baby TV	POVU	19995 3	1760	1720	1760			
T 3.803	L	Russia Today	27500 3	1425	1435	1425				
T 3.861	R	COLOMBIA	2711 3	308	256	8190				
T 3.879	R	CANAL DE NOTICIA	15474 5	710	700	710				
T 3.879	R	DAILY JOURNAL	15474 5	810	800	810				
T 3.972	L	(Empty Name)	3330 3	100	110					
R 3.986	L	RADIO AM	3180 3	56	56					
T 4.043	L	4.043	L	EbS Europe By S	8681					
200201	200									
T 4.043	L	EU Test	8681	400	401	400				
T 4.043	L	(Empty Name)	8681	200	201	200				
T 4.043	L	(Empty Name)	8681	400	401	400				
T 4.060	L	Management TV	3000 3	100	101	100				
T 4.060	L	Management TV	3000 3	2160	2120	2160				
T 4.063	R	(Empty Name)	8500 5	100	101	100				
T 4.090	R	(Empty Name)	2515 7	101	102	101				
T 4.090	R	(Empty Name)	2515 7	201	202	201				
T 4.090	R	(Empty Name)	2515 7	101	102	101				
T 4.090	R	(Empty Name)	2515 7	201	202	201				
T 4.090	R	(Empty Name)	2515 7	101	102	101				
T 4.100	R	(Empty)	6111 3	1110	1211	1110				
T 4.100	R	(Empty)	6111 3	1110	1211	1110				
T 4.108	R	(Empty Name)	3280 5	33	34	8190				
T 4.142	L	(Empty Name)	2222 7	3601	3604	3601				
T 4.143	L	(Empty Name)	4800 3	6160	6120	6160				
325.5 East (34.5 West) INTELSAT 903										
T 11.095	V	Canal Satellite	30000 3							French
T 11.500	V	Canal Satellite	30000 3							French
T 11.560	V	Canal Satellite	30000 3							French
T 11.600	V	Canal Satellite	30000 3							French
T 11.640	V	Canal Satellite	30000 3							French
330.0 East (30.0 West) HISPASAT 1C,1D										
T 11.508	V	B1_OCS2	9547 3	2260	2220	2260				
D 11.508	V	COM RADIO (Ence	9547 3							
D 11.508	V	COM RADIO (Apag	9547 3							
T 11.508	V	B1_OCS2	9547 3	2260	2220	2260				
D 11.508	V	COM RADIO (Ence	9547 3							
D 11.508	V	COM RADIO (Apag	9547 3							
D 11.615	H	ANTENA 1	27500 3			400				
D 11.615	H	ANTENA 2	27500 3			401	401			
D 11.615	H	RTP Test	27500 3			400	400			
D 11.675	H	RADIO ECCA	16187 7	1122	1122					
T 11.731	H	41_OCS-2	28120 5	401	402	401				
D 11.811	H	DSI012CAB	27500 3							
D 11.811	H	DCI012CAB	27500 3							
T 11.811	V	R.LATINAS	30000 3	171	400	171				
T 11.811	V	INFOBOLSA	30000 3	171	400	171				
T 11.811	V	IBERDROLA	30000 3	171	400	171				
T 11.811	V	TIENDAS	30000 3	171	400	171				
T 11.811	V	IBERDROLA	30000 3	171	400	171				
T 11.811	V	TIENDAS	30000 3	171	400	171				
T 11.891	H	Canal Programac	27500 3	4105	4106	4105				
T 11.891	H	BBC World	27500 3	4176	4177	4176				
R 11.891	V	Guia digital+	30000 7	254	254					
D 11.891	V	Amigos+	30000 7							
D 11.891	V	CARTELERIA	30000 7							
T 11.972	V	God TV	27500 3	2001	3001	2001				
T 11.972	V	TV Aragon	27500 3	32	33	32				
R 11.972	V	Radio Aragon	27500 3	34	34					
T 11.972	V	Feed TSA4	27500 3	4240	4241	4240				
T 12.092	V	IBS	27500 3	101	111	101				
T 12.149	V	TD2.0	27500 3	4353	4354	4353				
T 12.149	V	89-OCS-OVERON	27500 3	311	312	311				
R 12.380	V	San Fermin	27500 3	254	254					
D 12.380	V	TEST2	27500 3							
D 12.380	V	TEST	27500 3							
R 12.456	V	Audi	30000 7	254	254					
T 12.456	V	(Empty)	30000 7	163	400	163				
T 12.456	V	Paquetes	30000 7	163	400	163				
T 12.456	V	Recibo	30000 7	163	400	163				
T 12.456	V	Contactanos	30000 7	163	400	163				
T 12.456	V	(Empty)	30000 7	163	400	163				
T 12.456	V	Amigos+	30000 7	163	400	163				
T 12.456	V	(Empty)	30000 7	163	400	163				
T 12.456	V	Tu mando	30000 7	163	400	163				
T 12.456	V	PORTADA	30000 7	171	124	171				
T 12.456	V	SAN FERMIN	30000 7	163	400	163				
335.5 East (24.5 West) INTELSAT 905										
T 11.674	V	Star Gold	27500 3	1901	1911	1999				
T 11.674	V	Channel Punjab	27500 3	2101	2111	2199				
T 11.674	V	Channel S	27500 3	2201	2211	2299				
338.1 East (21.9 West) C-Band: NSS 7										
R 3.650	R	VTM	27500 3	2350	2365					
T 4.055	R	NessmaTV	27500 7	122	132	122				
T 4.179	R	Syrian TV	27500 7	3021	3031	3021				
T 4.179	R	Yemen TV	27500 7	3022	3032	3022				
T 4.179	R	Abu Dhabi TV	27500 7	3023	3033	3023				
T 4.179	R	Oman TV	27500 7	3024	3034	3024				
T 4.179	R	Oman-Holy Quran	27500 7	3037	3037					
T 4.179	R	Saudi	27500 7	3028	3038	3028				
T 4.179	R	Qatar TV	27500 7	3029	3039	3029				
T 4.179	R	Sharjah TV	27500 7	3023	3083	3073				
T 4.179	R	Sudan TV	27500 7	3071	3081	3071				
T 4.179	R	Jamahirya TV	27500 7	3027	3082	3072				
R 4.179	R	Emirates FM	27500 7	3531	3531					
R 4.179	R	Voice Of People	27500 7	3532	3532					
R 4.179	R	Main General Pr	27500 7	3533	3533					
R 4.179	R	Program One	27500 7	3534	5081					
R 4.179	R	Radio Quran	27500 7	3535	5081					
R 4.179	R	Sudan Radio	27500 7	3536	3536					
R 4.179	R	Quatar radio	27500 7	3538	3538					
R 4.179	R	Radio Omduman H	27500 7	3539	3539					
R 4.179	R	Oman Radio	27500 7	3540	3540					
R 4.179	R	Voice of Youth	27500 7	3541	3541					
R 4.179	R	Sharjah FM	27500 7	3542	3542					
R 4.179	R	Sana'a radio	27500 7	3631	3631					
R 4.179	R	Aden Radio	27500 7	3632	3632					
R 4.179	R	Syrian TV	27500 7	3021	3031	3021				
R 4.179	R	Yemen TV	27500 7	3022	3032	3022				
R 4.179	R	Abu Dhabi TV	27500 7	3023	3033	3023				
R 4.179	R	Oman TV	27500 7	3024	3034	3024				
R 4.179	R	Oman-Holy Quran	27500 7	3037	3037					
R 4.179	R	Saudi	27500 7	3028	3038	3028				
R 4.179	R	Qatar TV	27500 7	3029	3039	3029				
R 4.179	R	Sharjah TV	27500 7	3023	3083	3073				
R 4.179	R	Sudan TV	27500 7	3071	3081	3071				
R 4.179	R	Jamahirya TV	27500 7	3027	3082	3072				
R 4.179	R	Emirates FM	27500 7	3531	3531					
R 4.179	R	Voice Of People	27500 7	3532	3532					
R 4.179	R	Main General Pr	27500 7	3533	3533					
R 4.179	R	Program One	27500 7	3534	5081					
R 4.179	R	Radio Quran	27500 7	3535	5081					

Typ	Freq	Pol	Channel Name	Crypt	SR	FEC	Video	Audio	PCR	Language
[GHz]							PID	PID	PID	
R 4.179	R	Sudan Radio	27500 7	3536	3536					
R 4.179	R	Quatar radio	27500 7	3538	3538					
R 4.179	R	Radio Omduman H	27500 7	3539	3539					
R 4.179	R	Oman Radio	27500 7	3540	3540					
R 4.179	R	Voice of Youth	27500 7	3541	3541					
R 4.179	R	Sana'a radio	27500 7	3631	3631					
R 4.179	R	Syrian TV	27500 7	3021	3031	3021				
R 4.179	R	Yemen TV	27500 7	3022	3032	3022				
R 4.179	R	Abu Dhabi TV	27500 7	3023	3033	3023				
R 4.179	R	Oman TV	27500 7	3024	3034	3024				
R 4.179	R	Oman-Holy Quran	27500 7	3037	3037					
R 4.179	R	Saudi	27500 7	3028	3038	3028				
R 4.179	R	Qatar TV	27500 7	3029	3039	3029				
R 4.179	R	Sharjah TV	27500 7	3023	3083	3073				
R 4.179	R	Sudan TV	27500 7	3071	3081	3071				
R 4.179	R	Jamahirya TV	27500 7	3027	3082	3072				
R 4.179	R	Emirates FM	27500 7	3531	3531					
R 4.179	R	Voice Of People	27500 7	3532	3532					

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TELE-satellite Receiver Guide

	Channel Memory	Symbolrate DVB-S2	SCPC Compatible	DISEqC	USALS Compatible	NTSC/PAL	Modulator Output	Looped-Through IF	SatCoDX Compatible	Power Supply	HDMI	Digital Audio Output	Audio/Video Output	Scart Output	S-VHS Output	Volt 0/12 V	Positioner	Mechanical Polarizer	Hard Disk (Built-in)	Serial Interface	CI Slots	Embedded CA	TSI Magazine
Receivers	TV Radio	Ms/sec								Volt Hertz			RCA		S-VHS	0/12 V			GB				Issue
	AB IP Box 250S PVR																						
	10000	Up to 45 Ms/s	yes	1.0, 1.1, 1.2, 1.3	yes	PAL D/K, B/G, I	no	yes	no	AC220V/AC110V 50Hz/60Hz	no	yes (S/PDIF)	yes	yes, 2	no	no	no	no	yes	yes, RS-232	no	yes, Xcrypt or Firecrypt	#199 2007
	ARION AF-8000HDCI																						
	4000	1-45 10-30	yes	1.0, 1.1, 1.2, 1.3	yes	PAL D/K, B/G, I	no	yes	no	90-250V 50/60Hz 45W max	yes	yes (optical)	yes	yes, 2	no	no	no	no	yes, RS-232	yes, 2	no	no	#198 2007
	ARION 9400 PV2R																						
	8000	2-45	yes	1.0, 1.1, 1.2, 1.3	yes	PAL D/K, B/G, I	yes, UHF	yes	no	90-240V 50/60Hz	no	yes	yes	yes, 2	yes	yes	no	no	yes, RS-232	yes, 2	no	no	#192 2006
	ARION AF-9300PVR																						
	8000	2-45	yes	1.0, 1.1, 1.2	yes	NTSC/ PAL	yes, UHF	yes	no	100-240V 50/60Hz	no	yes (optical)	yes	yes, 2	yes	yes	no	no	yes, RS-232	yes	no	no	#188 2005
	BEETEL SD98																						
	5000	2-40	yes	1.0, 1.1, 1.2	yes	NTSC/ PAL	yes	yes	no	80-300V	no	yes (S/PDIF)	yes	no	no	yes	no	no	no	no	no	no	#193 2006
	BEL 5518																						
	2000	2-40	yes	1.0, 1.1, 1.2	no	PAL	yes	yes	no	90-270V	no	no	yes	no	no	no	no	no	no	no	no	no	#191 2006
	DGSTATION Relook 400S																						
	10000	2-40	yes	1.0, 1.1, 1.2, 1.3	yes	PAL D/K, B/G, I	yes	yes	yes	90-240V 50/60Hz	no	yes (optical)	yes	yes, 2	no	no	no	no	yes, RS-232	yes, 2	yes	yes	#191 2006
	EYCOS S55.12 PVRH																						
	8000	2-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/ PAL	yes, UHF	yes	no	100-240 VAC 50/60Hz	yes	yes (S/PDIF)	yes	yes, 2	yes	yes	no	no	yes, RS-232	yes, 2	yes, Conax	yes	#197 2007
	EYCOS S30.12 CI																						
	8000	2-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/ PAL	yes	yes	no	100-240 VAC	no	yes	yes	yes, 2	no	no	no	no	yes, RS-232	yes, 2	no	no	#192 2006
	EYCOS S50.12 PVR																						
	8000	1-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/ PAL	yes	yes	no	90-250 VAC	no	yes (optical)	yes	yes, 2	no	no	no	no	yes, RS-232	yes	no	no	#191 2006
	EYCOS S10.02F																						
	4000	2-45	yes	1.0, 1.1, 1.2	yes	NTSC/ PAL	no	yes	no	90-250 VAC	no	yes (optical)	yes	yes, 2	no	no	no	no	yes, RS-232	no	no	no	#189 2005
	FORTEC STAR MERCURY II																						
	6000	2-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/ PAL	yes, VHF	yes	no	100-120 VAC 60Hz	no	yes (S/PDIF)	yes	no	yes	no	no	no	yes, RS-232	no	no	no	#195 2006
	FORTEC STAR FSIR-5400 NA																						
	4800	2-45	yes	1.0, 1.2	yes	NTSC/ PAL	yes	yes	no	90-240V 50/60Hz	no	yes (optical)	yes	no	yes	no	no	no	yes, RS-232	no	yes, Irdeto	yes	#190 2005
	GLOBAL TEQ 6000PVR																						
	10000	1-45	yes	1.0, 1.2	yes	NTSC/ PAL	yes	yes	no	90-250V 50/60Hz	no	yes (optical)	yes	yes, 2	yes	no	no	no	yes, RS-232	yes	no	no	#190 2005
	GENERAL SATELLITE FTA-7001S																						
	5000	2-45	yes	1.0, 1.2	no	PAL/ SECAM	yes	yes	no	190-250V 50/60Hz	no	yes	no	yes, 1	yes	no	no	no	yes, RS-232	no	no	no	#189 2005
	GOLDEN INTERSTAR 9000 CI PVR Premium																						
	9000	1-45	yes	1.0, 1.1, 1.2	yes	NTSC/ PAL	yes	yes	no	100-250 VAC	no	yes (optical)	yes	yes, 2	yes	no	no	no	yes, RS-232	yes, 2	yes, 2	yes	#190 2005
	GOLDEN INTERSTAR DVB-T/S 8300 CI Premium																						
	6000	1-45	yes	1.0, 1.1, 1.2	yes	NTSC/ PAL	yes	yes	no	100-250 VAC	no	yes (optical)	yes	yes, 2	no	yes	no	no	yes, RS-232	yes, 2	yes, 2	yes	#189 2005
	HUMAX PR-HD1000																						
	5000	1-45	yes	1.0, 1.2, 1.3	yes	NTSC/ PAL	no	yes	no	90-250 VAC	no	yes (optical)	yes	yes, 2	no	no	no	no	yes, RS-232	yes, 2	yes	yes	#193 2006
	JIUZHOU DTS1601																						
	4800	2-45	yes	1.0, 1.2	yes	NTSC/ PAL	yes, UHF	yes	no	90-240 VAC 50/60Hz	no	yes (S/PDIF)	no	yes, 2	yes	no	no	no	yes, RS-232	no	no	no	#200 2007
	KATHREIN UFS 821																						
	4000	2-45	yes	1.0, 1.2, 1.3	yes	NTSC/ PAL	no	yes	yes	100-240 VAC	no	yes (optical)	yes	yes, 2	yes	no	no	no	yes, RS-232	yes, 2	no	no	#191 2006

Satellite DVB	Channel Memory	Symbolrate DVB-S2	SCPC Compatible	DISEqC	USALS Compatible	NTSC/PAL	Modulator Output	Looped-Through IF	SatcoDX Compatible	Power Supply	HDMI	Digital Audio Output	Audio/Video Output	Scart Output	S-VHS Output	Volt 0/12 V	Positioner	Mechanical Polarizer	Hard Disk (built-in)	Serial Interface	CI Slots	Embedded CA	TSL Magazine
Receivers	TV Radio	Ms/sec								Volt Hertz			RCA		S-VHS	0/12 V			GB				Issue
	MATRIX Planet																						
	3200	2-45	yes	1.0, 1.2	no	NTSC/PAL	yes RF	yes	no	90-240 VAC	no	no	yes	no	no	no	no	no	no	yes, RS-232	no	no	#196 2007
	MATRIX Java																						
	1000	2-45	yes	1.0	no	NTSC/PAL	yes RF	yes	no	80-270 VAC	no	no	yes	no	yes	no	no	no	no	yes, RS-232	no	no	#194 2006
	NEOTION 601 DVR																						
	5000	2-45	yes	1.0, 1.2	no	NTSC/PAL	no	yes	no	90-250V 50/60Hz	no	yes	yes	yes, 2	no	no	no	no	yes, external	yes, RS-232	no	yes	#188 2005
	OPENSAT X7000CI																						
	6000	1-45	yes	1.0, 1.2,	yes	NTSC/PAL	yes	yes	no	90-250V 50/60Hz	no	no	yes	yes, 2	no	yes	no	no	no	yes, RS-232	yes, 2	no	#200 2007
	PANSAT 6000HXC																						
	10000	1-45	yes	1.0, 1.2, 1.3	yes	NTSC/PAL	yes, UHF	yes	no	90-250V 50/60Hz	no	yes (S/PDIF)	yes	no	yes	yes	no	no	yes	yes, RS-232	yes, 2	no	#193 2006
	PANSAT 3500S																						
	5000	1-45	yes	1.0, 1.2	yes	NTSC/PAL	yes, UHF	yes	no	90-250V 50/60Hz	no	yes (optical)	yes	no	yes	yes	no	yes	no	yes, RS-232	no	yes, Conax	#190 2005
	PIXX Event																						
	10000	1-45	yes	1.0, 1.2	yes	NTSC/PAL	yes, UHF	yes	no	90-250V 50/60Hz	no	yes (optical)	yes	yes, 2	yes	yes	no	no	yes	yes, RS-232	yes, 2	no	#190 2005
	STAR SAT SR-X1400D																						
	6500	1-45	yes	1.0, 1.2, 1.3	yes	NTSC/PAL	yes	yes	no	100-250 VAC 50/60Hz	no	no	yes	yes, 2	no	yes	no	no	no	yes, RS-232	no	no	#193 2006
	STAR SAT SR-X2500CUCI																						
	4000	2-45	yes	1.0, 1.2, 1.3	yes	NTSC/PAL	yes	yes	yes	90-250 VAC 50/60Hz	no	no	yes	yes, 2	no	yes	no	no	no	yes, RS-232	yes, 2	yes, universal	#191 2006
	STAR SAT SR-X3500CUCI Ultra																						
	6000	2-45	yes	1.0, 1.2	no	NTSC/PAL	yes	yes	yes	90-250 VAC 50/60Hz	no	no	yes	yes, 2	yes	yes	no	no	no	yes, RS-232	yes, 2	yes, universal	#189 2005
	TECHNISAT DigiPlus STR1																						
	5000	1-45	yes	1.0, 1.2	no	NTSC/PAL	no	no	no	180-250 VAC 50Hz	no	yes (optical & coax)	yes	yes, 2	no	no	no	no	no	no	no	no	#199 2007
	TECHNISAT Digit 4S																						
	5000	1-45	yes	1.0, 1.2, 1.3	yes	NTSC/PAL	no	no	no	180-250 VAC 50Hz	no	yes (optical & coax)	yes	yes, 2	no	no	no	no	no	no	no	no	#194 2006
	TECHNISAT Digit MF4-S CC																						
	5000	1-45	yes	1.2	no	NTSC/PAL	no	no	no	230VAC 50Hz	no	yes (optical & coax)	yes	yes, 2	no	no	no	no	no	no	yes	Conax, Crypto-works	#193 2006
	TOPFIELD TF6000PVRE																						
	5000	2-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/PAL	no	yes	no	90-250 VAC 50/60Hz	no	yes (S/PDIF)	yes	yes, 2	yes	no	no	no	yes	yes, RS-232	yes, 2	no	#198 2007
	TOPFIELD TF7700HSCI																						
	5000	2-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/PAL	no	yes	no	90-250 VAC 50/60Hz	yes	yes (S/PDIF)	yes	yes, 2	no	no	no	no	no	yes, RS-232	yes, 2	no	#197 2007
	TOPFIELD TF7700HSCI																						
	5000	1-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/PAL	no	yes	no	90-250 VAC 50/60Hz	no	yes (S/PDIF)	yes	yes, 2	no	no	no	no	yes	yes, RS-232	yes, 2	no	#196 2007
	TOPFIELD TF6000PVR																						
	5000	1-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/PAL	no	yes	no	90-250V 50/60Hz	no	yes (optical)	yes	yes, 2	yes	no	no	no	yes	yes, RS-232	yes, 2	no	#192 2006
	TOPFIELD TF5000CIP																						
	5000	1-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/PAL	yes	yes	no	90-250V 50/60Hz	no	yes (optical)	yes	yes, 2	yes	no	yes	no	no	yes, RS-232	yes, 2	no	#190 2005
	TOPFIELD TF5000PVR Masterpiece																						
	5000	1-45	yes	1.0, 1.1, 1.2, 1.3	yes	NTSC/PAL	yes, UHF	yes	no	90-250V 50/60Hz	no	yes (optical)	yes	yes, 2	yes	no	no	no	yes	yes, RS-232	yes, 2	no	#188 2005
	VANTAGE VT-X121SCI																						
	4000	1-45	yes	1.0, 1.2, 1.3	yes	NTSC/PAL	yes, UHF	yes	no	90-250V 50/60Hz	no	yes (S/PDIF)	yes	yes, 2	no	no	no	no	no	yes, RS-232	yes, 2	yes, Conax	#193 2006
	VANTAGE VT-X111SCX																						
	4000	2-45	yes	1.0, 1.2, 1.3	yes	NTSC/PAL	yes, UHF	yes	yes	90-250V 50/60Hz	no	no	yes	yes, 2	no	no	no	no	no	yes, RS-232	no	yes, Conax	#191 2006



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Technisat ,InternetRadio1‘

Worldwide Radio Reception via the Internet

Broadband and IPTV: two terms that nearly everyone has heard about. And while TV via the Internet in many locations still has its share of problems with the required bandwidth, slowly and quietly Internet radio has become

an exceptional alternative to radio via antenna, cable or satellite. Thanks to the relatively small bandwidth needed, most DSL or cable Internet providers should be able to provide interference-free radio playback.

Some of you might be asking yourself what good Internet radio is when you can tune into your favorite radio stations with a simple antenna. But, clearly this is not where the potential of this new technology lies. Imagine you took your family and moved to the USA and yet still would not want to miss your favorite radio station from home.

Or maybe you just want to

have held back the appeal of this idea is the lack of appropriate receiving equipment. Who wants to sit in front of their PC and listen to radio?

The German company Technisat recognized this problem and thus developed the "InternetRadio1".

At first glance the packaging appears unremarkable but the product image suggests an elegant unit is waiting

On the front panel a blue LCD display stands out over everything else. It is used for operation of the "InternetRadio1" and the display of information about the unit.

There are no buttons or switches to be found; the radio is controlled exclusively through the remote control.

The rear panel sports two RCA audio outputs, an optical

to the main unit's audio output. The two boxes themselves are connected to each other with a short cable. Naturally, the two side boxes need to be powered; for this reason the included power cable is fitted with two connectors.

If you would prefer to use your stereo system instead of the two active boxes, this can easily be done using the two RCA jacks or the digital audio output. Thanks to the magnets, it is simple to remove the two side boxes and store them in a cabinet.

The quality of the included remote control is what you have



get to know some radio stations from other parts of the world. With radio via the Internet: not a problem; via satellite: possible to some extent; via a simple radio antenna: forget about it.

One of the problems that

inside the box. The Technisat "InternetRadio1" should make an attractive addition to any living room. The main unit in the center is mounted on an adjustable stand; the included active speakers can be attached to the sides of the main unit via magnets.

digital audio output, a network interface, a power connector and, to the surprise of everyone here in our test facility, a WLAN antenna.

With the help of the included adapter cable, the right-side active speaker box is connected

come to expect from Technisat. It sits nicely in your hand, is easy to read and comfortable to hold. Even the user manual gets a gold star; Technisat did not disappoint us here either. Overall, the workmanship and quality of the "InternetRadio1" is very good.

Everyday Use

After turning on the "InternetRadio1" for the first time, the unit jumps right into the installation assistant that guides you through the initial setup process. Next, the desired OSD language needs to be selected. You can choose from English, French, Italian, German and Spanish.

If the "InternetRadio1" detects a network cable, this connection takes priority and the WLAN function is disabled. If no network cable is connected, the radio immediately switches to WLAN mode and begins a search of the surrounding area for a WLAN network. In our case multiple access points were identified not to mention the WLAN router of our own internal network.

If the desired system cannot be recognized, the SSID can be manually entered and a new search started. The "InternetRadio1" can be used with a router as well as an ad-hoc connection.

Technisat even thought about data security and included the encryption protocols WEP (64/128), WPA and WPA2. If desired, the network connection can also work completely without encryption.

"InternetRadio1" stores the settings in one of three profiles. This gives you the advantage of using the radio in a different location with different access data. Simply activate the necessary profile to install all of the necessary settings for the new location. If you have no plans to move the radio from one place to another, simply disable this feature.

Your radio enjoyment via the Internet can now begin. But what to listen to? The "InternetRadio1" does not come preprogrammed with a radio station list. Technisat did not include a preprogrammed list because there are new stations that constantly appear and are regularly added to the list and can be downloaded via the Internet. When the box asks if it should download the current station list, simply push the OK button to download all the necessary information directly from the Technisat servers.

Technisat has its own group of people whose job is to keep the station list up to date. Currently, this list contains roughly 2000 stations. On a dedicated homepage, listeners can suggest new radio stations which then will be checked out by Technisat and eventually added to the channel list.

Those stations with poor signal qual-

ity mats to choose ranging from 70's, Blues, Rock and Classics all the way through to Folk Music. Simply click on the desired radio station and playback typically starts without any delay much like selecting a station on a standard radio, the only difference being that the audio you hear might come from the USA, New Zealand, Africa or some other corner of the world.

During playback the large display on the front provides information on the currently playing radio station, its signal quality as well as the signal quality of the WLAN connection.

Up to 10 of your favorite radio stations can be saved via the preset function on the remote control so that it would be much easier to find them. If that isn't enough, additional channels can be marked as favorites which would then appear in a separate list to provide easy access to numerous international channels.

For the most part we were quite impressed with the audio quality of most of the channels. While there were some channels that transmitted their signals with a very high data rate and thus sounded quite exceptional, there are those that used lower transfer rates with the audio quality paying the price for this data rate shortfall.

Keep in mind that the "InternetRadio1" is just an audio playback device and really has no influence on the quality delivered by the provider. But have no fear, the majority of the available radio stations send their signal in good to exceptional quality. The pre-selection by Technisat helps to make sure of this.

In connection with a Windows PC, the "InternetRadio1" can also be used to access your MP3 archive with the help of Windows Media Connect Systems. This will take your "InternetRadio1" and, in conjunction with a PC, turn it into a fully grown up jukebox that can play music for hours at a time.

The entire configuration of the system as well as software updates can be handled by almost any Internet browser in your home network thanks to the integrated web server. Even status information from the radio can be displayed.

Overall we were quite impressed with the Technisat "InternetRadio1". It provides access to hundreds of radio stations in exceptionally good quality. It is easy to use and provides excellent audio output.

Thanks to the integrated MP3 function, this radio also makes an excellent platform so that you no longer have to use your PC to play back your MP3 collection.

The range of the WLAN connection was very good; you can even take your radio outside and enjoy music in your backyard!



The underside of the radio with all of the connections plus the WLAN antenna.

Once the basic settings have been taken care of, the next step would be fine-tuning. Of course the "InternetRadio1" supports the DHCP protocol and can therefore automatically assign an IP address as well as the required gateway and DNS server. For more experienced users, there is also the capability to enter these values manually.

If you are using a proxy server in your network at home, it can be configured manually; you can even freely select the port in use.

With all the settings taken care of, the

ity (i.e. insufficient bandwidth from the provider) will be ignored. Technisat does require a minimum signal quality in order to be included in the list.

The radio station list can be sorted either by country or by format. The list includes stations from 37 different countries and offers quite a selection to choose from. From Germany alone there are nearly 200 available stations that are otherwise not readily receivable via satellite, antenna or cable.

There are 36 different radio station for-

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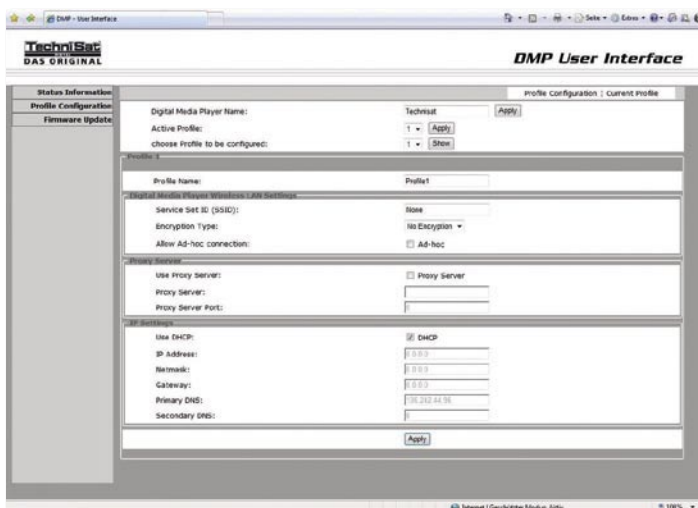
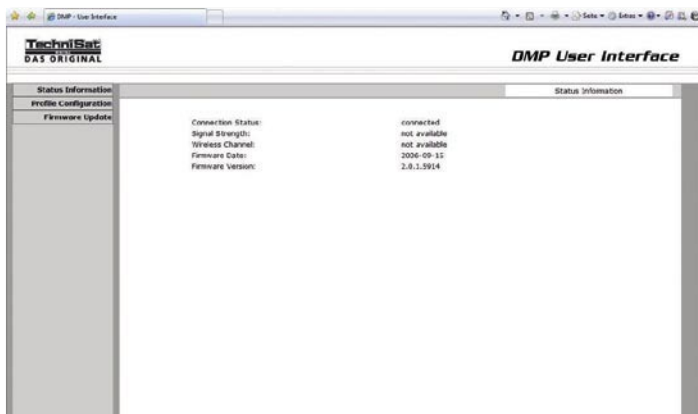
Imagine, single touch control for satellite TV. Sea Tel's **04 Series** TV-at-Sea sports an intuitive new touch screen, locking in signals with a feather touch. Whisper-quiet, the 04 Series' "super dish reflector" pushes the edge of your satellite coverage further offshore. It's just one in a family of products that insure wherever you cruise, whatever size your vessel, there's a high-performing Sea Tel perfect for you. As the leader in satellite communications at sea for more than two decades, Sea Tel stands alone. Doesn't your boat deserve the best? *Don't you deserve a Sea Tel?*



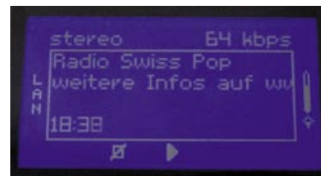
Look to the leader. Look to Sea Tel.

A Cobham Company

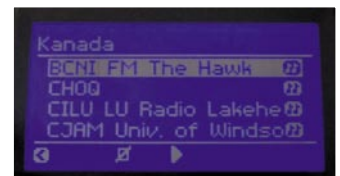
Sea Tel, Inc. 925.798.7979 www.seatel.com Sea Tel Europe +44 2380 671155



The web interface as seen on a PC monitor: here technical data is configured.



During playback the display shows all the important data such as datarate and channel name |



During a scan, the channel names are displayed. |

TECHNIC DATA



Manufacturer	Technisat Digital GmbH, 54550 Daun/GERMANY
Tel	+49-(0) 65 92 / 712-600
Fax	+49-(0) 65 92 / 49 10
E-Mail	http://www.technisat.com/en/kontakt.php
Model	,InternetRadio 1'
Function	Receiver for Internet Radio and MP3 via local network
LC-Display	128 x 64 Pixels
Audio Output	2 x RCA
Digital Audio Output	yes (optional)
Ethernet	RJ-45
Network Connections	WLAN 802.11b, 802.11g, NIC IEEE 802.3, 802.3u, UPnP, WPA, WPA2
Encryption	WEP (64/128 Bit key), WPA (WPA 2)
Data Transfer Rates	54 Mb/s (WLAN), 10/100 Mb/s (Ethernet)
Formats	MP3-Streams, MMS, MP3 (up to 320 kBit/s, CBR/VBR), M3U, PLS, WMA-9 (up to 320 kBit/s), ASX, WAV, WAX

The remote control with which all of the radio's functions are controlled.

INFOSAT

C/Ku-Band Combifeed with Integrated DiSEqC Switch

Thomas Haring and Sylvain Oscul

We have often touched on the C-band subject in TELE-satellite magazine, sometimes with larger antennas and sometimes with smaller ones. One thing was always true: a Combifeed for the reception of C-band and Ku-band with integrated DiSEqC switch (to switch between bands) as well as 14/18-volt polarization switching and 22Khz for switching between the low and high bands has not been tested by us up to this point.

The Combifeed is offered by INFOSAT in Bangkok, Thailand. While the C-band is not in all that much use anymore in Europe, it does offer some significant advantages in heavy downpours or high humidity compared to the Ku-band. Receiving both bands with a single Combifeed does make quite a bit of sense; you save the cost of having to set up a second antenna. This actually gives us a reason to once again play around with the C-band here in Europe since all that is really involved is swapping out the LNB.

The C/Ku-band feed delivered from Thailand was designed primarily for use on prime focus antennas; although with a little modification ingenuity, it can be

fitted on an offset antenna. For our first test we opted to use a 1.2-meter antenna already installed on the roof of our testing facility. Oddly enough, this antenna symbolizes the exact problem that DXer's face in Europe: if you don't have a backyard to call your own and have no choice but to install your antennas on a steep roof or on your balcony, it is often difficult to consider using a larger antenna.

Thanks to modern C-band and Ku-band satellites that transmit with more and more power, a larger antenna may not necessarily be required. A 1.2-meter antenna already gives you access to thousands of channels from around the world in the



▲ Included in the package: the Combination LNB with C and Ku-Band LNB in one housing with feed and jumper cable for the built-in DiSEqC switch.



▲ A look inside the feed opening: clearly recognizable is the dielectric that is necessary for reception of circularly polarized signals. Remove it and you have linear reception.

Ku-band. But as numerous as the Ku-band availability really is, long-distance reception is typically achieved only with C-band and thanks to this new Combifeed, it is quite easy to retrofit your current system for C-band reception.

Since offset antennas are not

◀ The INFOSAT C/Ku-LNBF can be seen here installed on a 1.8m parabolic antenna.



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

The entire assembly including antenna motor was previously aligned using a standard 40mm Ku-band LNB; the less sensitive C-band should therefore be no problem. An Eycos S55.12PVR and the Prodigy-5 signal analyzer

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

Our first tests were aimed at the C-band so we quickly set up the correct LOF and then had a look at our spectrum analyzer. It indicated a strong signal located at 3675R. We quickly started a channel scan and found numerous Russian channels with plenty of signal strength. According to the SatcoDX chan-

TELE-satellite editor Thomas Haring aligns the C/ Ku-Band LNB on a 1.2m offset antenna



were used as receivers. With great expectations, we turned the antenna to the especially strong EXPRESS A1R C-band satellite at 40° east.

According to INFOSAT, the

nel lists, South American channels with relatively high signal strength could be found on NSS 806 at 40.5° west. A number of MCPC and SCPC transponders were receivable in sufficient quality. Especially strong were

Rede Gospel on 4108R and RCN TV on 4016R; unfortunately, this channel was encrypted. Even the ImpSat Package from Venezuela on 3880R could be received but without any bad weather reserves. A few other

transponders were also receivable.

We were less successful when we tried NSS7 at 22° west where we could only receive 3650R without any



problems. On Atlantic Bird 3 at 5° west we were able to easily view 4157L but all the other transponders hovered around the threshold level of the receiver. Even though the signal analyzer identified a number of clearly recognizable peaks on the display, they were still not strong enough for actual reception.

Things looked a little better on INTELSAT 907 at 27.5° west where we could receive three transponders (3715R, 3831R and 4048R). On INTELSAT 801 at 31.5° west and INTELSAT 903 at 34.5° west, only one transponder on each was receivable.

For all the others our antenna was simply too small. The normally strong EXPRESS A3 satellite at 11° west could not be received with our 120cm antenna; the signals that we saw on the spectrum analyzer were simply too weak.

The next step involved

taking a closer look towards the east. We stumbled across a few surprises: the (unfortunately encrypted) AFN package on INTELSAT 906 at 64.2° east on 4080L was identified by our receiver, the Hope Channel on INTELSAT 7 at 68.5° east on 3516V was viewable, Bangla Vision could be seen on TELSTAR 10 at 76.5° east on 4049H and the Express AM1 at 40° east delivered a number of Russian channels with plenty of bad weather reserve.

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

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

circularly polarized signals on EUTELSAT W4 at 36° east could be received in surprisingly good quality.

If you remove the dielectric in the feed, then standard Ku-band H/V signals could be received effortlessly.

The reasons for the diminished performance of the Combifeed in the Ku-band are fairly obvious. On the one hand, the included feed was not designed for use on offset antennas so you really can't blame the manufacturer for this shortfall.

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

So let's switch things around and mount the Combifeed on a real 1.8-meter parabolic

antenna that happens to be located at the SatcoDX station in Lyon, France. The Combifeed is actually designed for this type of antenna.

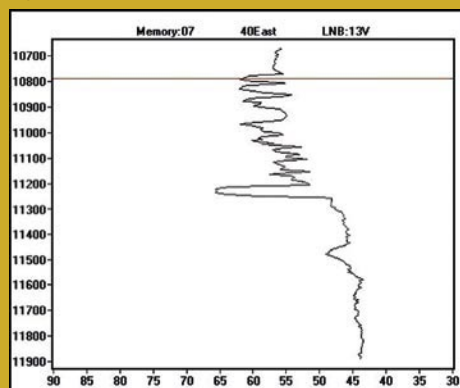
And it didn't take long for us to be surprised by the reception results. In the C-band the Combifeed, fitted with a 17K LNB, could be compared with a more expensive 15K LNB. As our signal analyzer measurements showed, the Combifeed actually performed better in some frequencies than the more expensive LNB.

As already seen in the tests with an offset antenna, reception in the Ku-band was somewhat different because the dielectric had to be removed. Then the reception results represented those of a 1.5-meter antenna.

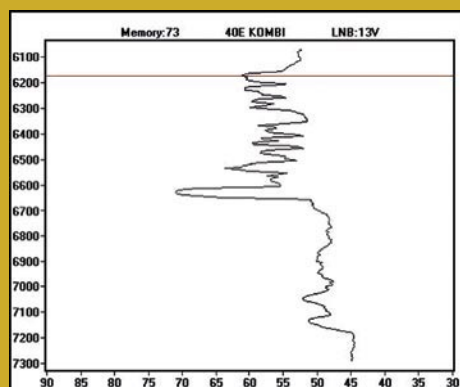
Overall we can say that it definitely pays to replace your current LNB with the INFOSAT C/Ku-band Combifeed. Don't expect miracles with signal

Signal Measurements using the C/KU-Band Combifeed

EXPRESS AM1 at 40° east, right-hand polarization

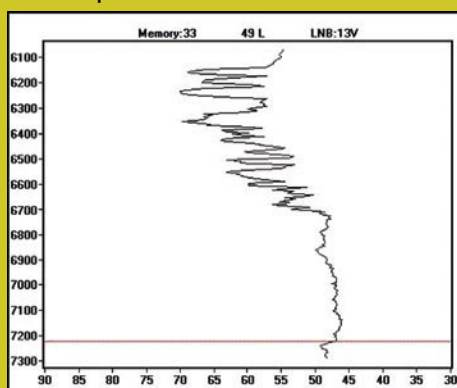


Measurement with Standard LNB

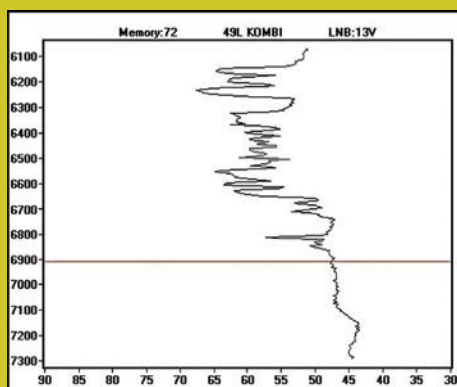


Measurement with C/Ku-Band Combifeed

YAMAL 202 at 49° east, left-hand polarization

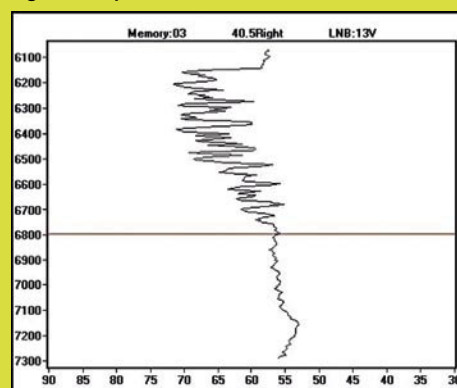


Measurement with Standard LNB

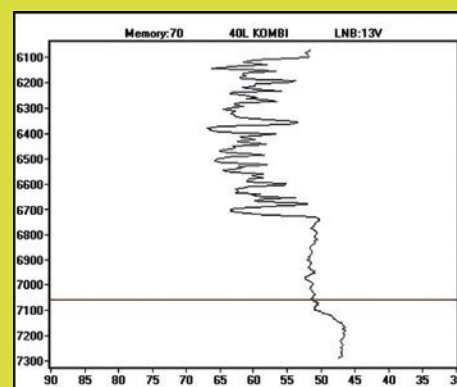


Measurement with C/Ku-Band Combifeed

NSS 806 at 319.5° east (40.5° west), right-hand polarization



Measurement with Standard LNB



Measurement with C/Ku-Band Combifeed

quality in the Ku-band, but for the reception of the strong C and Ku-band positions, the Combifeed would be the perfect choice.

At the same time, it gives you a peek at the wonderful world of C-band even with a small antenna without having to eliminate the Ku-band.

TECHNIC DATA

Model	CKU Digital LNBf
Function	C/Ku-Band Combifeed
Manufacturer	Infosat Intertrade Co., Ltd., 46/22 Moo. 5, Tiwanon Road, Baanmai, Pakkred, Nonthaburi, Thailand
Homepage	www.infosats.com
Email	niran@infosats.com
Input Frequency Range	Ku: 10.7~11.7 GHz/ 11.7~12.75 GHz linear/circular C: 3.4~4.2 GHz linear/circular
L.O. Frequency	Ku: 9.75GHz / 10.6GHz C: 5.150 GHz
Conversion Gain	65 dB
Band Switching	22 KHz
Polarization Switching	14/18V
C/KU-Band Switching	DiSeqC
Noise Figure	0.3 db (Typ.)
Output Connectors	75 Ohm F Type

Some examples
of C-band
channels that
were receivable
with the
C/Ku-Band
Combifeed:



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8 SAT-ZF-Ebenen
mit Terrestrik

8 SAT-IF-Levels
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SMS 91609 NF

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SMS 93609 NF



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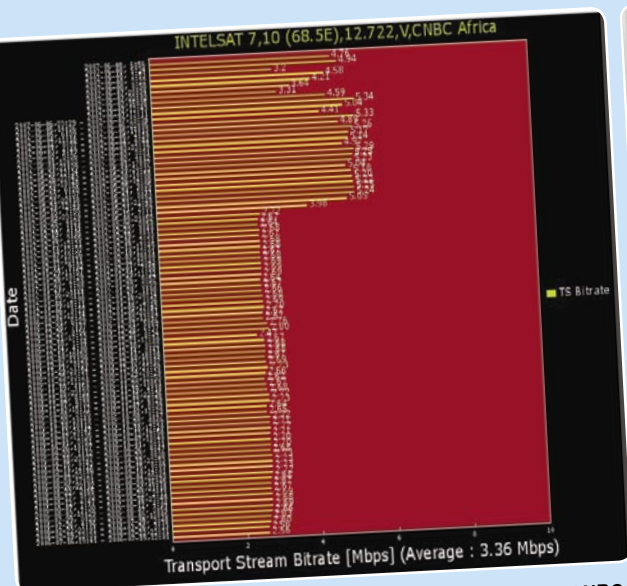
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CNBC Africa

Alexander Wiese



The CNBC offices can be found in the Sandown Mews Building and occupy the top floor of the west wing.



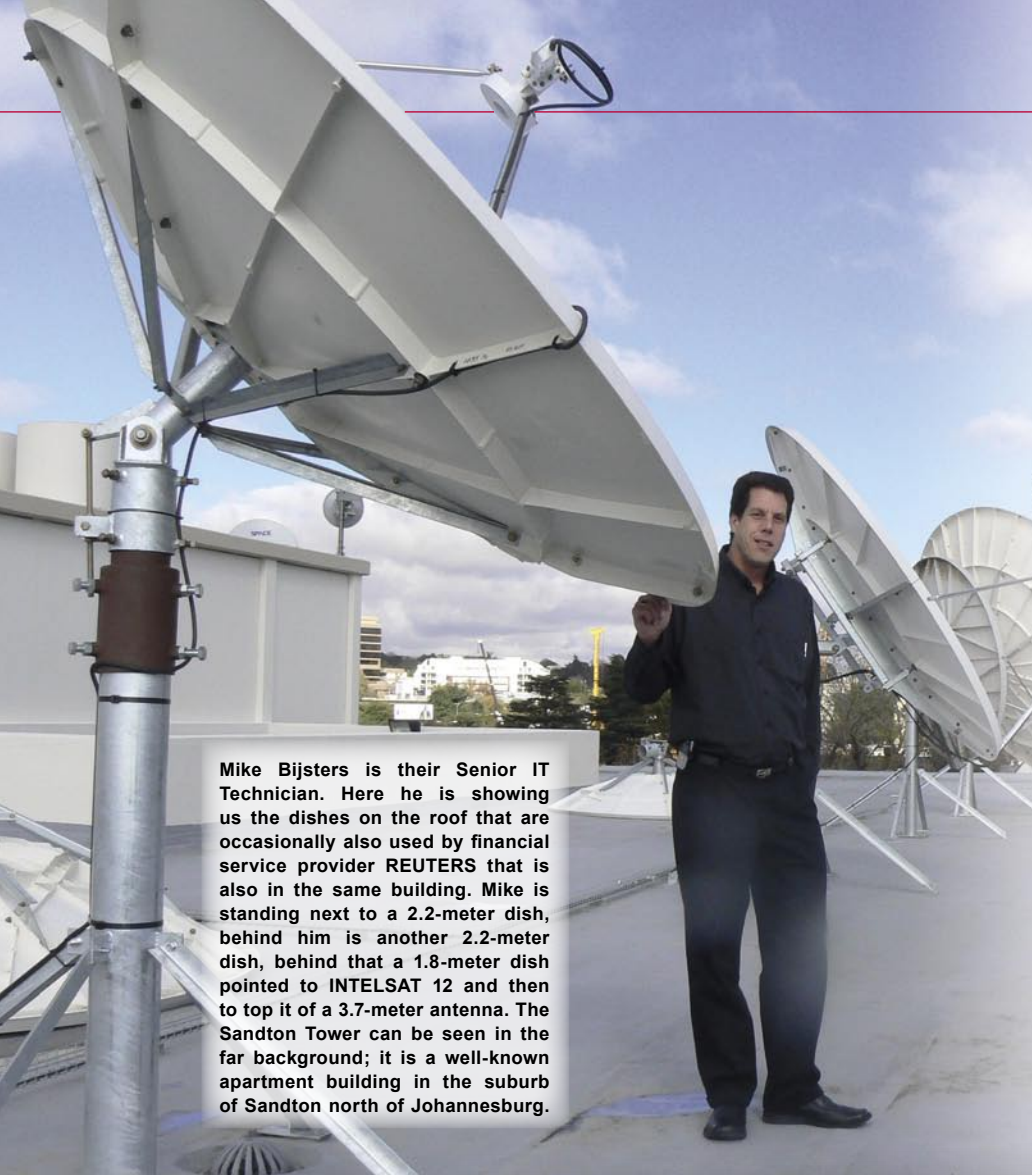
SatcoDX's scan station bit rate measurement shows how CNBC Africa's transponder went active on May 10. These bit rate graphs are generated automatically for every transponder and are based on continuous measurements.



The signals are processed here. The Tandberg slots are for satellite operations. The slots for the terrestrial microwave link to SENTECH, the South African service provider for distribution of the signals.



Freddy is one of the operators. From here the signal goes out.



Mike Bijsters is their Senior IT Technician. Here he is showing us the dishes on the roof that are occasionally also used by financial service provider REUTERS that is also in the same building. Mike is standing next to a 2.2-meter dish, behind him is another 2.2-meter dish, behind that a 1.8-meter dish pointed to INTELSAT 12 and then to top of it a 3.7-meter antenna. The Sandton Tower can be seen in the far background; it is a well-known apartment building in the suburb of Sandton north of Johannesburg.

The first African Business News Channel has been transmitting since June 1, 2007 and in principle it is the first pan-African channel. This new channel can be found on INTELSAT 10 at 68.5° east on 12.722V. SatcoDX found the test transmissions for this channel back on May 10. TELE-satellite wanted to know what was behind all of this and decided to pay a visit to the producers of this channel in Johannesburg.

Marisa Meyer is CNBC's Technical Manager and explained to us, "We were working on a very tight schedule. We could only start construction in the middle of January." The studios and the entire transmission network had to be built in just a few months. Marisa was relieved that everything worked out: "We are on the air live from 6:00AM to 10:00PM." CNBC reports on business in Africa; for the moment they are reporting on the financial markets in Johannesburg and Cape Town, South Africa, in Lagos and Abuja in Nigeria as well as in Nairobi in Kenya. Dedicated lines link the headquarters in Johannesburg with the studios in all the different financial markets while the links to Nigeria and Kenya occur via EUTELSAT W3A at 7° east. Peter Ndoro, Corporate Communications Director, let us in on his future plans: "In the next two years we want to expand our coverage to at least 10 additional African countries."

They also plan to continue transmitting FTA in order to reach as many viewers as possible. They are very ambitious!



tors in the Final Control Center.
to the satellites.



A look in the CNBC Africa studio

TV Made in Germany

Alexander Wiese

There are only a few TV manufacturers left in Germany. Production has been outsourced to other countries for quite some time now. The idea then would be to find a niche that other manufacturers haven't caught on to yet. TechniSat found just that and has been producing modern flat-screen LCD TV's since 2005. But what differentiates these units from other manufacturer's models? We wanted to know so we took a road trip to the city of Stassfurt in the province of Saxony-Anhalt in Germany to find out.

When Stassfurt was still part of East Germany, it was known as home for the manufacture of TV and radio receivers marketed under the name RFT. After German reunification in 1989, the company went through several different owners before being acquired by the TechniSat Group in 1998 and renaming the company TechniSat Teledigital AG.

From the more than 1000 employees that existed back in the days of East Germany, only 40 employees are left over. But in 2005, when production started on flat-screen LCD TV's, the employee count rose to 170. This year there are 220 and Stefan Koen, Sales Executive, told us, "We are already considering additional employees."



Production has increased by 70% in just a few years. It is a company that is constantly growing, and that with stiffer and stiffer competition. How does TechniSat do it?

Plant Manager Elisabeth Engel lets us in on the secret: "Our magic word is Multi-tuner", and Stefan Koen continues, "Our competition does not offer the functions of a multi-tuner." What is a multi-tuner? Very simply, it takes all the different transmission variants and combines them into one box. The TechniSat

flat-screen LCD TV's therefore don't need any other type of set top box. Everything is integrated: the TV's contain tuners for all kinds of signals from DVB-S (satellite), DVB-T (Terrestrial), DVB-C (cable) all the way to analog. There's even an FM tuner for listening to the radio. And the best part: every channel can be set as desired.

To complete the all-in-one palette, the flat-screen LCD TV's also come integrated with automatic channel list updates as well



▲ Elisabeth Engel, Plant Manager, and Stefan Koen, Sales Executive, in front of TechniSat's administration building in Stassfurt

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▲ TechniSat as seen from above: the warehouse is to the left with the administration building towards the front and the manufacturing facility to the rear.



▲ A look at the production floor

as firmware and software upgrades – all via the ASTRA satellite and in Germany also via terrestrial and cable TV networks. "Our competition doesn't offer any of this", comments Stefan Koen on the simpler units offered by others.

He takes it one step further: "the pixels in our flat panels are 100% functional." This means that not one of the pixels in the flat

screen is defective. He takes it to an even higher level: "Our products come with a five-year limited warranty – three year full warranty plus two year partial warranty."

So, what does the future look like? Stefan Koen told us, "We will be introducing a flat-screen LCD TV with DVB-S2 and twin tuners at the IFA exhibition in the fall of 2007. They will be available in stores starting in Septem-

ber 2007." The twin tuner suggests an additional feature: "We will soon have a DVB-S2 model with a PVR." The DVB-S version has been available with a PVR since the fall of 2006.

Where are most of the TV's sold? "90% of our sales are to the German-speaking region, i.e. Germany, Switzerland and Austria", explains Stefan Koen, "The remaining 10% are exported primarily to Scandinavia where the multi-tuner would be especially useful." For Germany he estimates that TechniSat holds a 3% market segment for flat-screen LCD TV's. TechniSat is definitely interested in expanding the export of their 'Made in Germany' products.

Where will TechniSat present their flat-screen LCD TV's? Stefan Koen provided the answer: "We will have a booth at ANGAs in Cologne, at IFA in Berlin and IBC in Amsterdam. TechniSat can also be seen at all of the important dealer shows in Germany but you will find us in Austria as well, for example, at Futura and in Switzerland at the Golden Days – both of which are in the fall."

Currently, TechniSat is producing the flat-screen TV's in two different sizes: 32-inch and 40-inch. By the time IFA rolls around, two additional sizes will be introduced: "We will be presenting a 46-inch model as well as a smaller 19-inch model", revealed Stefan Koen. Elisabeth Engel continued, "We have an R&D team in Dresden with 150 engineers; by the end of the year it will be expanded to 200 engineers." Their only function is to continue with the development of their products.

She then let us in on something new: "In early 2008 we plan on expanding the multi-tuner to include IPTV." After MPEG4, this would be the next new technology – TV via the Internet.

TechniSat really did find a niche market: TV's with every possible accessory you could think of; external set top boxes or some other equipment are no longer needed. This is a concept with a future!

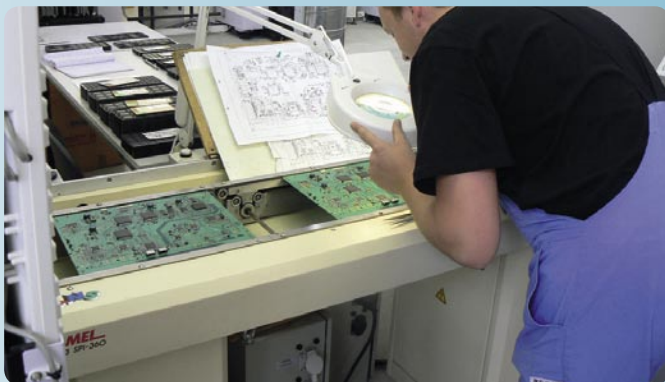


▲ A collection of TechniSat's current product flat LCD line made up of 40 different variations that include different colors, various speaker configurations (under the screen or to the left and right) and different sizes.

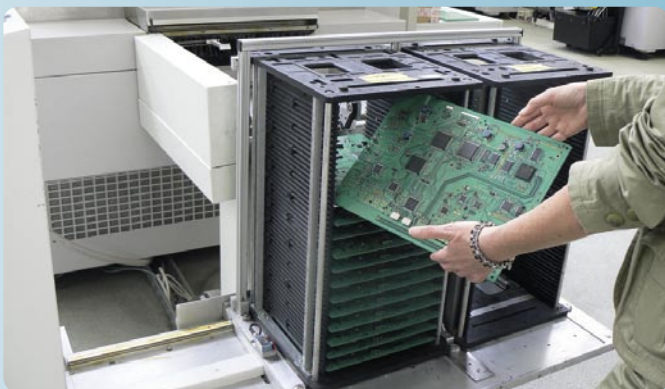
This is how TechniSat makes a flat-screen LCD TV come to life



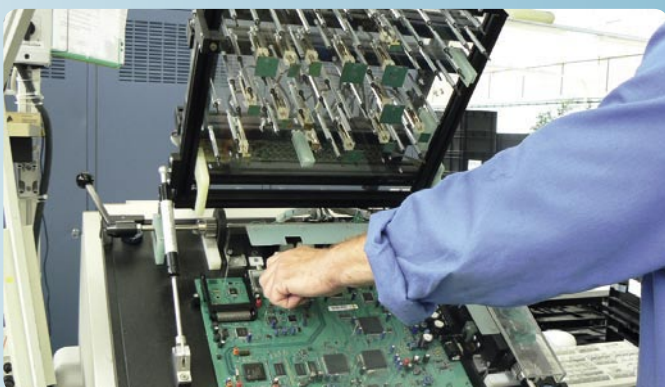
▲ The main circuit board with the component layout is delivered.



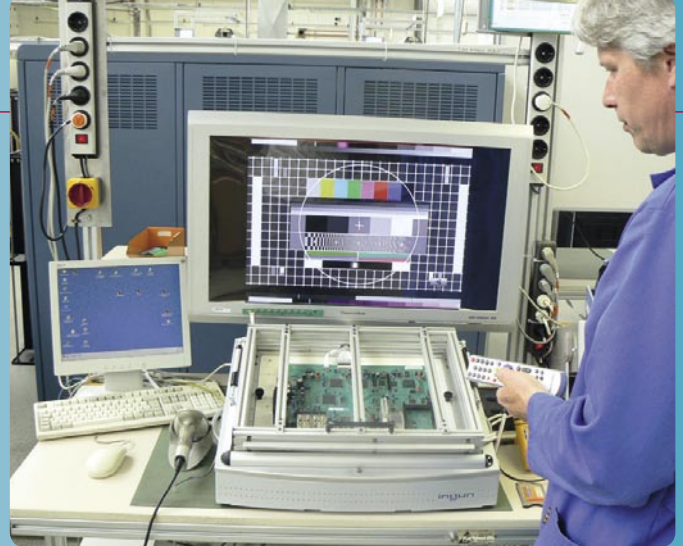
▲ After all the components are automatically added, spot checks are performed and compared to the schematic diagram



▲ The completed main boards are now ready to have the larger components manually added.



▲ Here the main boards are functionally tested. When the lid is closed, the test probes make contact with specific points on the main board allowing every possible electronic function on the board to be tested.



▲ Frank Lehmann is one of the technicians checking out a main board. The board is connected to a flat-screen LCD TV test station, all the antenna connections are plugged in, and then with a standard remote control every function can be tested in actual use.



▲ The flat-screen LCD panels arrive and are placed on the main housing and are secured from behind: this is the first step in making it a complete unit.



▲ The main board is placed on top of the LCD panel and secured in place with screws.



▲ After installing the speakers, the flat-screen LCD TV is ready to ship. A few sample units are taken out of the production line and placed on these test stands and put through a series of long-term tests.



▲ The final step: a crane is used to lower the finished product into its shipping box – and that's it!

Telemedia, Johannesburg

With Optimism for the Future – that is Peter Bretherick's motto. He operates an uplink station in Johannesburg, South Africa under not exactly ideal conditions. Peter originally came from Great Britain where he worked for many years for the BBC. In 1970 he made the move to this region, almost 5 years before South Africa TV started transmitting. In 1980 he became self-employed: his starting capital was his garage, his spectrum analyzer and his four-wheel-drive SUV. His first contract was to erect T.V. Repeaters on the diamond mines of Botswana, followed by several contracts for the establishment of the new Bophuthatswana Television. He was successful and started his own company Telemedia in 1981. In 1987 he moved into a new building in Rivonia, a suburb of Johannesburg to the north, where he can still be found today. With only four employees back then, he handled the microwave links for the channels groups for the then MNET and SABC.

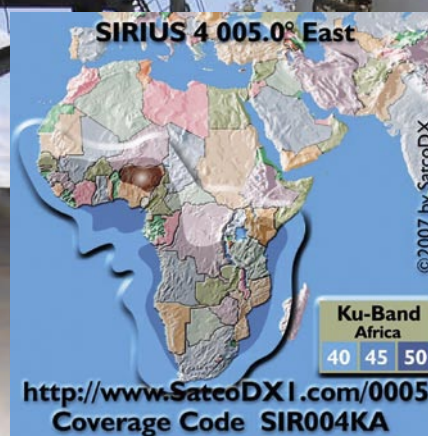
In 1994 it was finally time: South Africa's Telecom placed an order for the first satellite uplink. Peter explained to us, "We were using a Patriot TVRO antenna and modified it into an Uplink antenna." He recalled the first satellite uplink: "It was the Intelsat 704 satellite at 66° east." Over the course of the next year things

began to pick up. His employee count climbed to 10 and there were more and more uplinks, occasional feeds and SNG transmissions. "The first live transmission out of Africa was the soccer match in Malawi in 1995", comments Peter as he remembers his pioneer days. Today Telemedia employs more than 30 people of

◀ The 4.6-meter antenna to the left beams channels to HELLAS SAT 2's South African beam at 39° east; the dish mounted on the taller mast is pointed to ISS 1 at 34° west, with 7° Elevation to the satellite



◀ The footprint of the South African beam of HELLAS SAT 2 at 39° east.

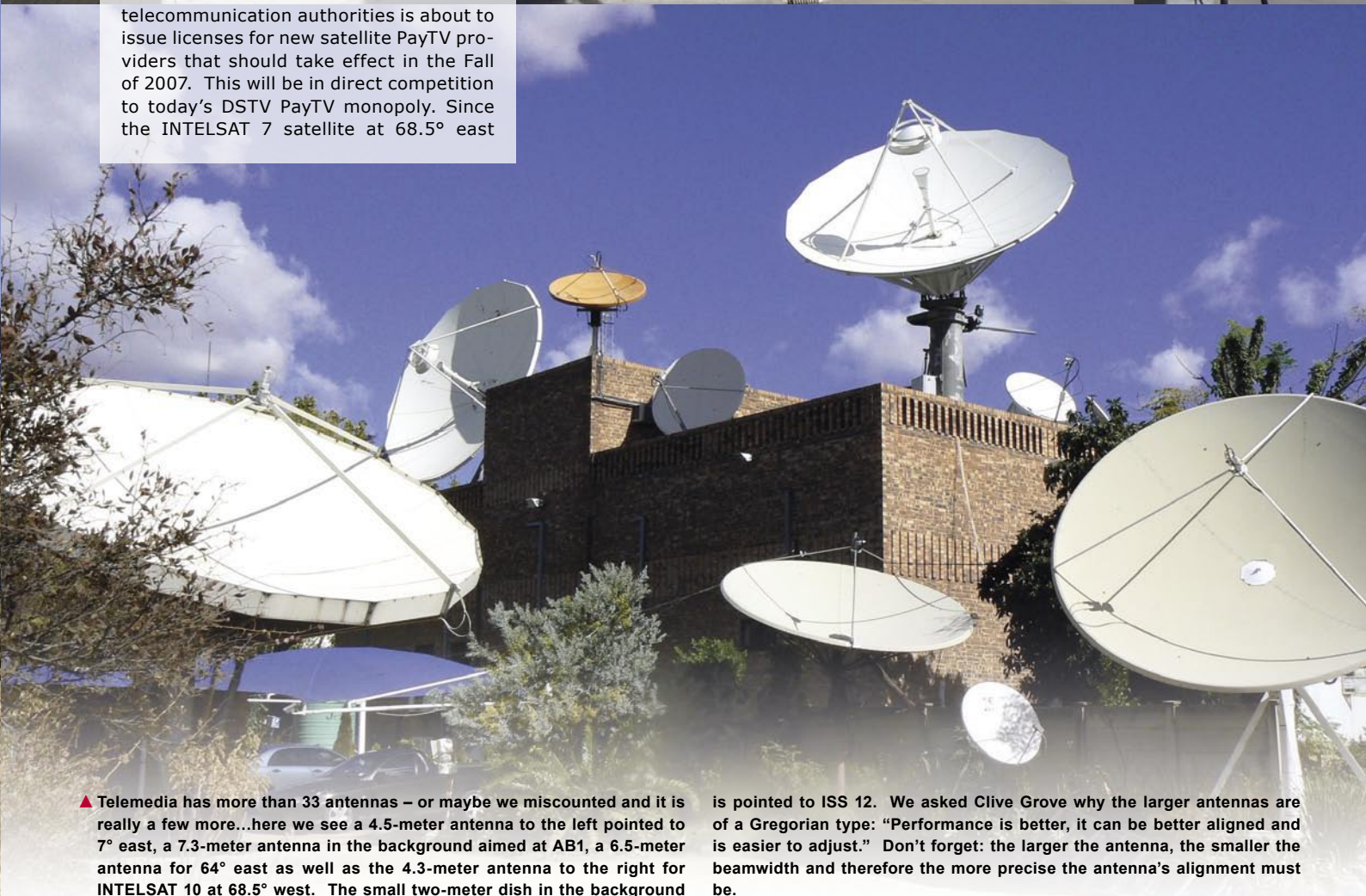


◀ The planned sub-Saharan footprint of SIRIUS 4 at 5° east to be launched towards the end of 2007.

which 20 of them are engineers, 10 are in administration plus a further eight security guards that (must) keep an eye on things 24 hours-a-day.

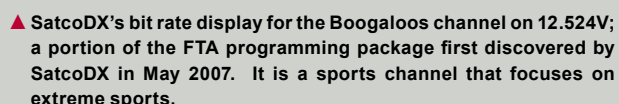
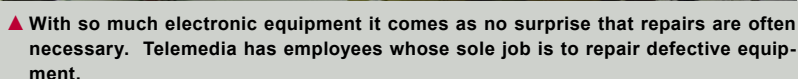
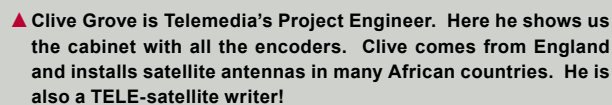
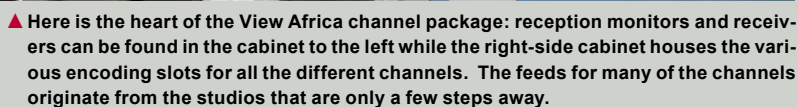
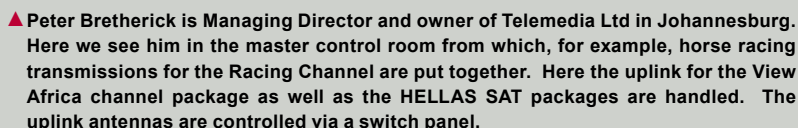
An interesting development in Africa has turned out to be the religious channels. Telemedia managed to find a gap in the market here. The company made available a number of different studios that handled all of the audio and video processing and, of course, the direct satellite uplink. There are an uncountable number of different religious groups in Africa and each of them wants their own TV channel. Telemedia offers all these religious communities the necessary infrastructure at affordable prices. The advantage is simply that the channel provider has to merely worry about the content of their programming and not, for example, about a diesel generator that would need to take over whenever there was an ESKOM (their local electric utility) power outage, and this happens more often than not. Since only a few of these religious groups operate with adequate financial support, Telemedia offers their services at very low but more than sufficient levels. Telemedia is the market leader in this area for that reason.

Peter has other reasons to be optimistic about the future: the South African telecommunication authorities is about to issue licenses for new satellite PayTV providers that should take effect in the Fall of 2007. This will be in direct competition to today's DSTV PayTV monopoly. Since the INTELSAT 7 satellite at 68.5° east



▲ Telemedia has more than 33 antennas – or maybe we miscounted and it is really a few more...here we see a 4.5-meter antenna to the left pointed to 7° east, a 7.3-meter antenna in the background aimed at AB1, a 6.5-meter antenna for 64° east as well as the 4.3-meter antenna to the right for INTELSAT 10 at 68.5° west. The small two-meter dish in the background

is pointed to ISS 12. We asked Clive Grove why the larger antennas are of a Gregorian type: "Performance is better, it can be better aligned and is easier to adjust." Don't forget: the larger the antenna, the smaller the beamwidth and therefore the more precise the antenna's alignment must be.





used by DSTV has no more capacity, the new PayTV providers will need to operate on new satellites. One possible candidate for this would be the HELLAS SAT 2 bird at 39° east. Some TV channels are already transmitting from this satellite's South African beam; SatcoDX discovered these channels back in May 2007. Who is handling the uplink for these channels? If you answered Telemedia, you would be right. But there are other candidates: the SIRIUS 4 satellite that should be launched towards the end of 2007 and be positioned at 5° east will have a South African beam. And there are even other potential satellites.

The satellite skies over South Africa are starting to get interesting. The more channels that are transmitted, the more inquiries that will arise not only for the transmission end but also for the receiving end of things. A new market is about to be born!



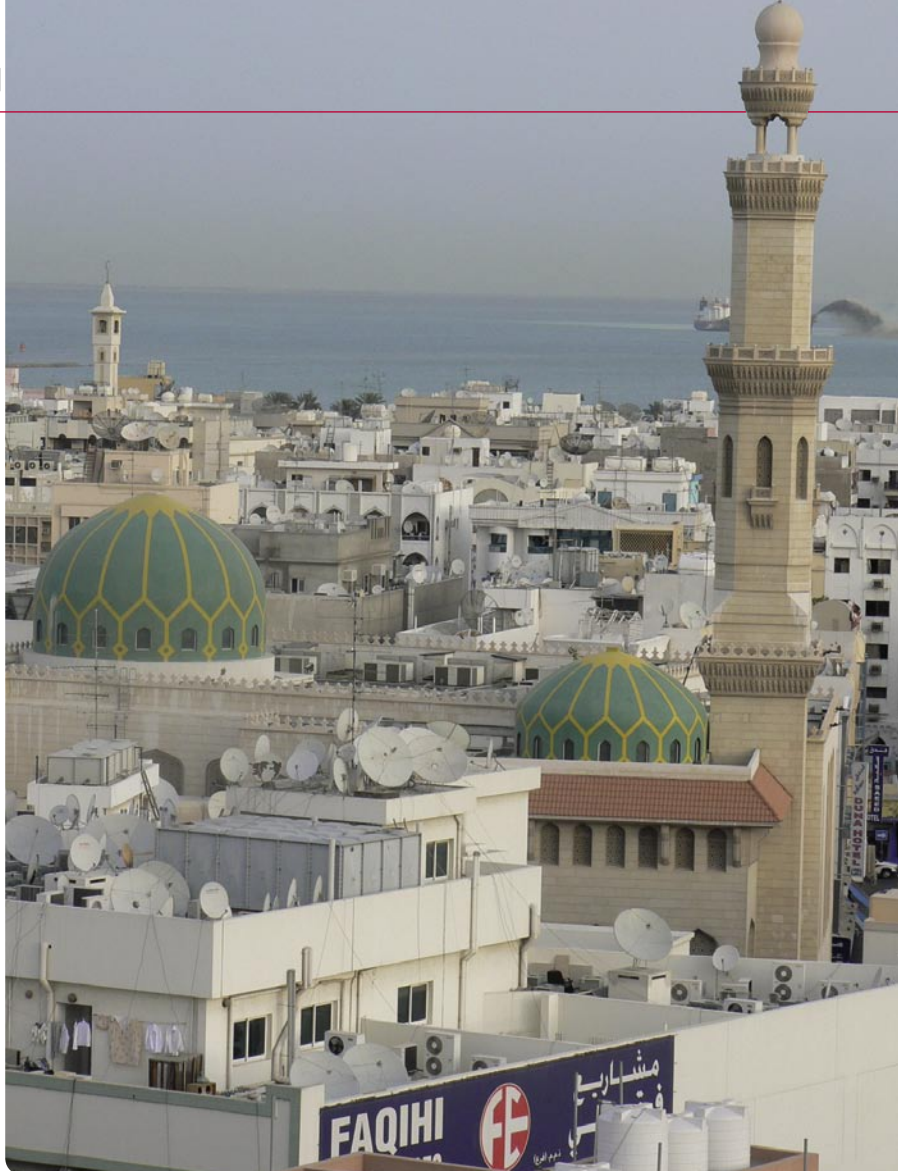
▼ A look at one of the studios from which religious channels are leased out.

On the Roofs of Dubai

A flat roof makes it easy to install a satellite antenna; it also makes it simple to make any necessary adjustments. The only obstacles are the many air conditioning units that also adorn these rooftops. The large number of nationalities that live in Dubai require the reception of many different satellites. Multiple beams from Asia and Europe can be received here in Dubai and let's not forget all the Middle Eastern beams. The antennas you can see on the roofs are pointed in all different directions; there doesn't seem to be any particular satellite that is more popular than the others. Everything that can be received is received.

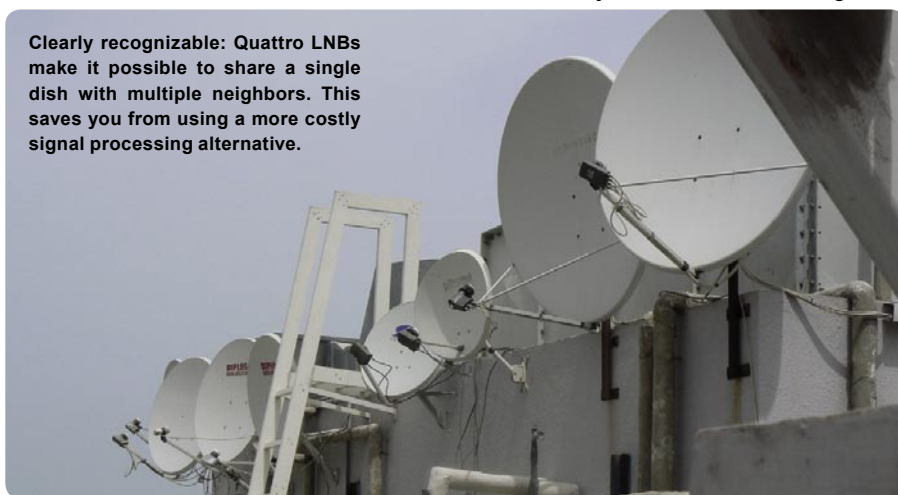


A rare sight today: an LNB for each polarization.



View of Dubai's old city with the Gulf in the background.

Clearly recognizable: Quattro LNBs make it possible to share a single dish with multiple neighbors. This saves you from using a more costly signal processing alternative.



Everyone squeeze together for the picture: numerous dishes installed one right next to the other. Don't worry, there's still room for a few more.

SMART WIRES WITH A HUMAN FACE!



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Ingo Wants to Know!

Alexander Wiese

TELE-satellite readers already know who Ingo Salomon is. He was the "cover boy" of our 11/2006 issue: the guy with the five-meter dish. We wanted to know how he was doing so we decided to pay him a visit in Stilfontein. It's a small town near Potchefstroom, a small city in the North West province about 150 km from Johannesburg.

Ingo grew up in Germany near Hamburg and watched as over the years his family members one-by-one moved to other parts of the world. An uncle of his emigrated to South Africa and Ingo also had it in mind to go there someday. That day came in 1992. "In the beginning it was hard", and since the relationship with his uncle was steadily getting worse, he felt it was nearly time to change jobs. In 1998 he moved to Stilfontein

and eventually bought a house there in 2001. "Where else would it be so easy to buy your own home other than in South Africa?"

In 2003 he acquired a 1.8-meter solid satellite antenna for ARABSAT reception at which point he became infected with a virus: the DXer virus! Back then he tuned into the 24-hour MBC2 movie channel on ARABSAT that today can no longer be received in

South Africa. The virus was getting stronger and stronger: only six months later he bought himself a 2.4-meter antenna that he modified by adding an actuator motor. When he got his hands on his first issue of TELE-satellite in 2003, the DXer sickness had reached its high point. There was no stopping it. "Every three months I had to get a new dish", remembered Ingo about those early satellite DXer days.

Today his hobby has also become his job. On the weekends he installs satellite antennas for the reception of the RTS1 and Senegal 2 channels from Senegal as well as the French channel Direct8 all of which are on EUTELSAT W3A at 7° east. Why do customers want these specific channels? Ingo explains how it started: "I was nosy. One day I saw a 2.2-meter dish on the roof of a house. I rang the doorbell and asked what channels they were receiving with

▼ Ingo Salomon on the roof of his house in South Africa. Six dishes are installed here. An additional mesh antenna can be seen in the foreground.





▲ Ingo proudly displays this SatcoDX Scan Station sign on a fence in front of his house.

Two PC's operate around-the-clock and scan up to eight satellites keeping the SatcoDX channel ▲ lists up to date. Ingo was the first to discover the channel package on the South African beam of HELLAS SAT 2 at 39° east.

it." He quickly found out that there were people from Senegal living there watching TV from their homeland. One thing led to another, this doorbell button gave him access to the Senegalese community living in South Africa and through word-of-mouth he became the most asked for specialist regarding the installation of one-meter antennas for the reception of this satellite.

For him it is a piece of cake to erect a satellite system for this satellite since his

experience as a DXer taught him many different tricks.

In the Spring of 2006 he started operating an AutoScan station for SatcoDX. Since that time he has been scanning multiple satellites for the worldwide satellite list. He is proud to be a leading satellite DXer. He is always experimenting with his antennas. With his expertise in hydraulic systems, he is always looking to develop new ways to move his antennas. He can raise and lower

his five-meter antenna mast hydraulically; it is almost certainly a one-of-a-kind construction.

Ingo can no longer be saved. The DXer virus is far too deeply embedded in him. TELE-satellite and SatcoDX couldn't be happier about this!

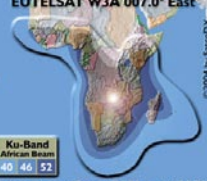
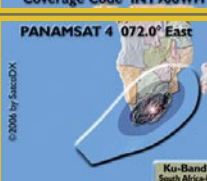
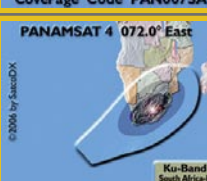
▼ An open ball bearing decreases the play of the actuator arm. Ingo is always coming up with ideas to improve performance.



▲ This is what it looks like in the back of his house. Ingo is standing in the middle of his antenna farm.

Absolutely essential while turning the antenna is a positioning guide such ▲ as this metal plate with numerous position notations.

Satellite Beams Covering Johannesburg/South Africa

Satellite	EUTELSAT W3A 007.0° East	Eutelsat W3A	EUTELSAT W2 016.0° East	Eutelsat W2	BADR-C 026.0° East	BADR-2,3,4
Position		07.0 east		16.0 east		26.0 east
Band	Ku-Band 49 46 52	KU	Ku-Band 40 45 50	KU	C-Band 27 34 40	C-Band
Beam	EUTW3AAB		EUTW2RE	EUTW2RE	BADROCCCH	BADROCCCH
Dish size	1.0m		1.0m	1.0m	1.8-2.4m	35
FTA-TV	7-8		2-4	2-4		
Language	http://www.SatcoDX1.com/0070 Coverage Code EUTW3AAB	French	http://www.SatcoDX1.com/0016 Coverage Code EUTW2RE	French	http://www.SatcoDX2.com/0260 Coverage Code BADROCCCH	Arabic/English
Satellite	INTELSAT 802 033.0° East	Intelsat 802	EUTELSAT W4 036.0° East	Eutelsat W4	HELLAS SAT 2 039.0° East	Hellas Sat 2
Position		33.0 east		36.0 east		39.0 east
Band	C-Band 34 37 41	KU	Ku-Band 36 42 45	KU	Ku-Band 45 49 51	KU
Beam			EUTW4AF	EUTW4AF		
Dish size	1.0m		1.0m	1.0m	1.0m	1.0m
FTA-TV	1-2		2-4	2-4	8-12	8-12
Language	http://www.SatcoDX2.com/0331 Coverage Code INT802WH	English	http://www.SatcoDX2.com/0360 Coverage Code EUTW4AF	French/Portuguese	http://www.SatcoDX2.com/0390 Coverage Code HEL002S1	English
Satellite	PANAMSAT 12 045.0° East	Intelsat 12	INTELSAT 906 064.0° East	Intelsat 906	PANAMSAT 7 68.5° East	Intelsat 7,10
Position		45.0 east		64.0 east		68.5 east
Band	Ku-Band 40 48 54	KU	C-Band 36 38 41	C-Band	Ku-Band 37 41 45	KU
Beam	PAN012SA		INT906WH	INT906WH	PAN007SA	PAN007SA
Dish size	1.0m		2.2-3.1m	13	1.0m	1.0m
FTA-TV	2-4				25	25
Language	http://www.SatcoDX3.com/0450 Coverage Code PAN012SA	English	http://www.SatcoDX3.com/0640 Coverage Code INT906WH	English/Portuguese	http://www.SatcoDX3.com/0685 Coverage Code PAN007SA	English
Satellite	PANAMSAT 10 68.5° East	Intelsat 7,10	PANAMSAT 4 072.0° East	Intelsat 4	PANAMSAT 4 072.0° East	Intelsat 4
Position		68.5 east		72.0 east		72.0 east
Band	C-Band 37 38 41	C-Band	Ku-Band 44 52 55	KU	Ku-Band 44 52 55	C-Band
Beam	PAN010CV		PAN004SH	PAN004SH	PAN004SH	PAN004SH
Dish size	1.8m		1.0m	1.0m	1.8m	1.8m
FTA-TV	46		2	2	4	4
Language	http://www.SatcoDX3.com/0685 Coverage Code PAN010CV	English/Hindi/Urdu/Japan	http://www.SatcoDX3.com/0720 Coverage Code PAN004SH	English/Hindi	http://www.SatcoDX3.com/0720 Coverage Code PAN004SH	French
Satellite	TELSTAR 10 076.5° East	Telstar 10	THAICOM 5 078.5° East	Taicom 2,5		
Position		76.5 east		78.5 east		
Band	C-Band 36 38 41	C-Band	C-Band 27 30 33	C-Band		
Beam	TEL010CG		THA005CG	THA005CG		
Dish size	1.8m		1.8m	1.8m		
FTA-TV	18		30	30		
Language	http://www.SatcoDX3.com/0765 Coverage Code TEL010CG	Eng/Greek/Nepali/Bangla	http://www.SatcoDX5.com/0785 Coverage Code THA005GL	English/Dutch/Urdu/Hindi		
Satellite	INTELSAT 903 325.5° East	Intelsat 903	INTELSAT 801 328.5° East	Intelsat 801		
Position		34.5 west		31.5 west		
Band	C-Band 27 33 40	C-Band	C-Band 32 35 38	C-Band		
Beam	INT903ZE		INT801EH	INT801EH		
Dish size	2.4m		2.2m	2.2m		
FTA-TV	1		2	2		
Language	http://www.SatcoDX9.com/3255 Coverage Code INT903ZE	French	http://www.SatcoDX9.com/3285 Coverage Code INT801EH	French		
Satellite	NSS-7 338.0° East	NSS 7	TELSTAR 12 345.0° East	Telstar 12		
Position		22.0 west		15.0 west		
Band	C-Band 37 39 40	C-Band	Ku-Band 42 46 52	KU		
Beam	NSS007EH		TES012ES			
Dish size	2.2m		1.0m	1.0m		
FTA-TV	23		17	17		
Language	http://www.SatcoDX9.com/3380 Coverage Code NSS007EH	English/French/Arabic	http://www.SatcoDX9.com/3450 Coverage Code TES012ES	English/Chinese		
Satellite	ATLANTIC BIRD 3 355.0° East	Atlantic Bird 3	INTELSAT 10-02 359.0° East	Intelsat 10-02		
Position		05.0 west		01.0 west		
Band	C-Band 33 35 38	C-Band	C-Band 32 32 35	C-Band		
Beam	EUTAB3TA		INT1002G	INT1002G		
Dish size	1.8m		1.8m	1.8m		
FTA-TV	18		5-11	5-11		
Language	http://www.SatcoDX9.com/3550 Coverage Code EUTAB3TA	Eng/German/Arabic/French	http://www.SatcoDX9.com/3590 Coverage Code INT1002G	English/French/Arabic		

▲ Compiled by Ingo Salomon from Stilfontein, SatcoDX AutoScan Station Johannesburg, South Africa

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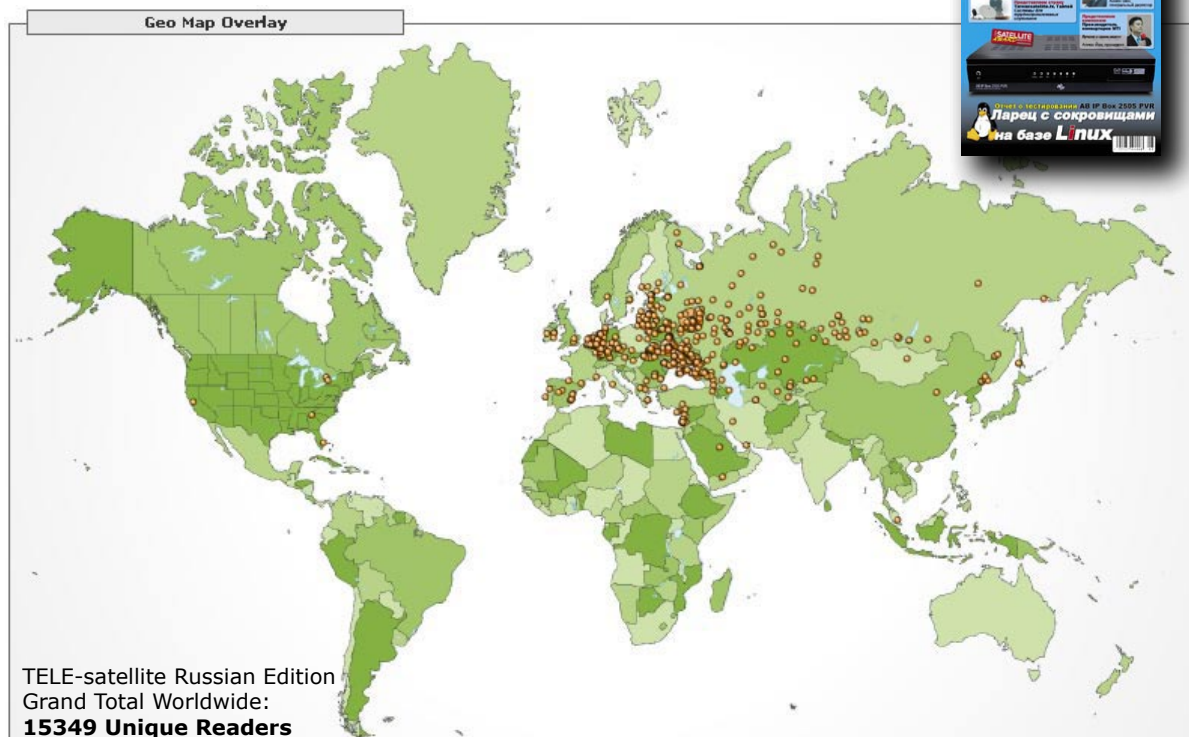
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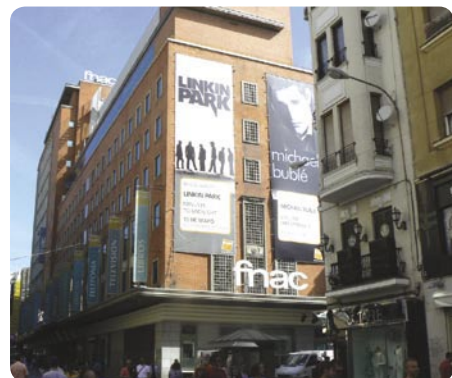
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Alexander Wiese (left), publisher of TELE-satellite, and Michael Brown (right), CEO of the Emblem Group, after formally agreeing to distribute TELE-satellite Magazine in UK.

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