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06-07 2007

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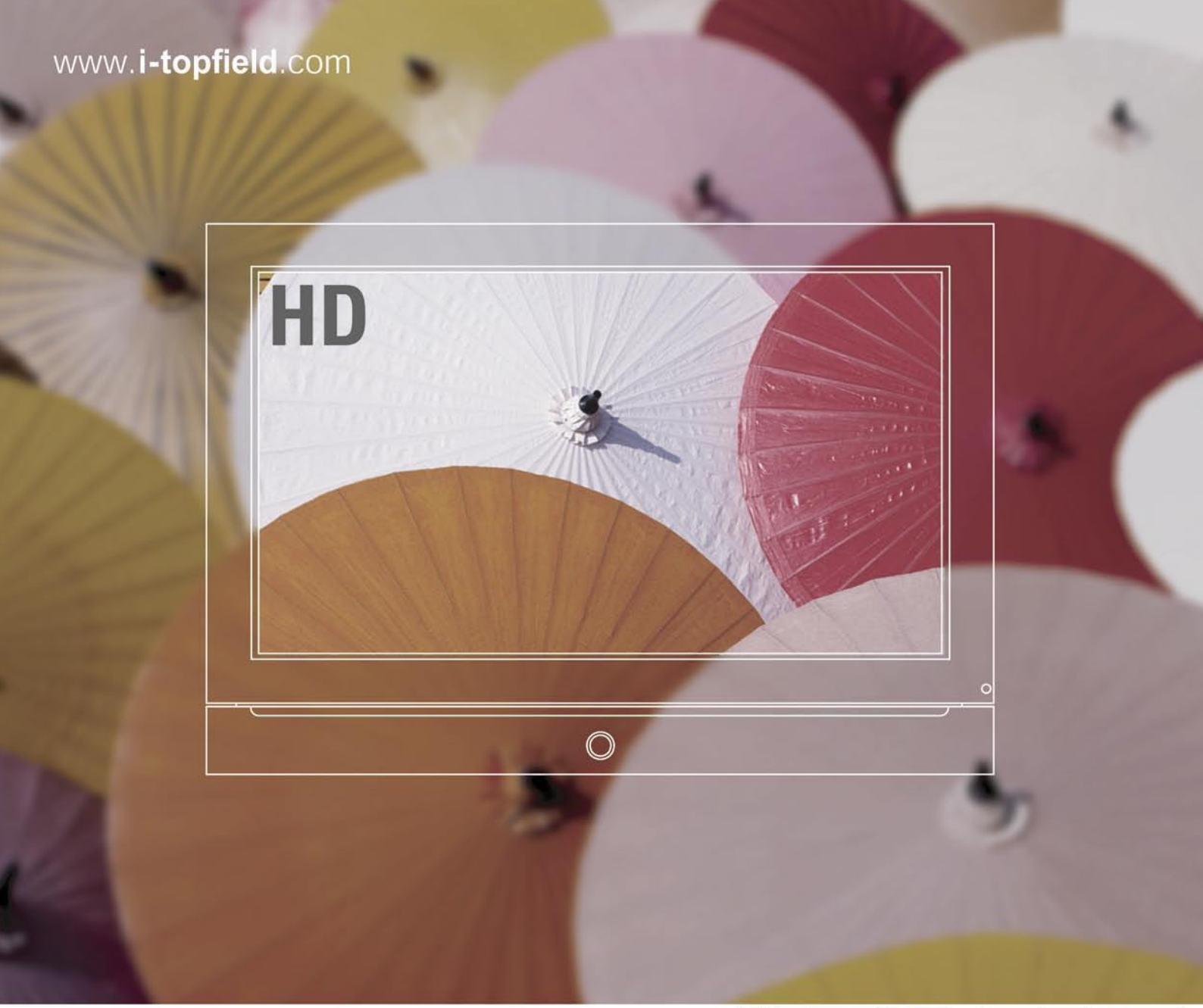

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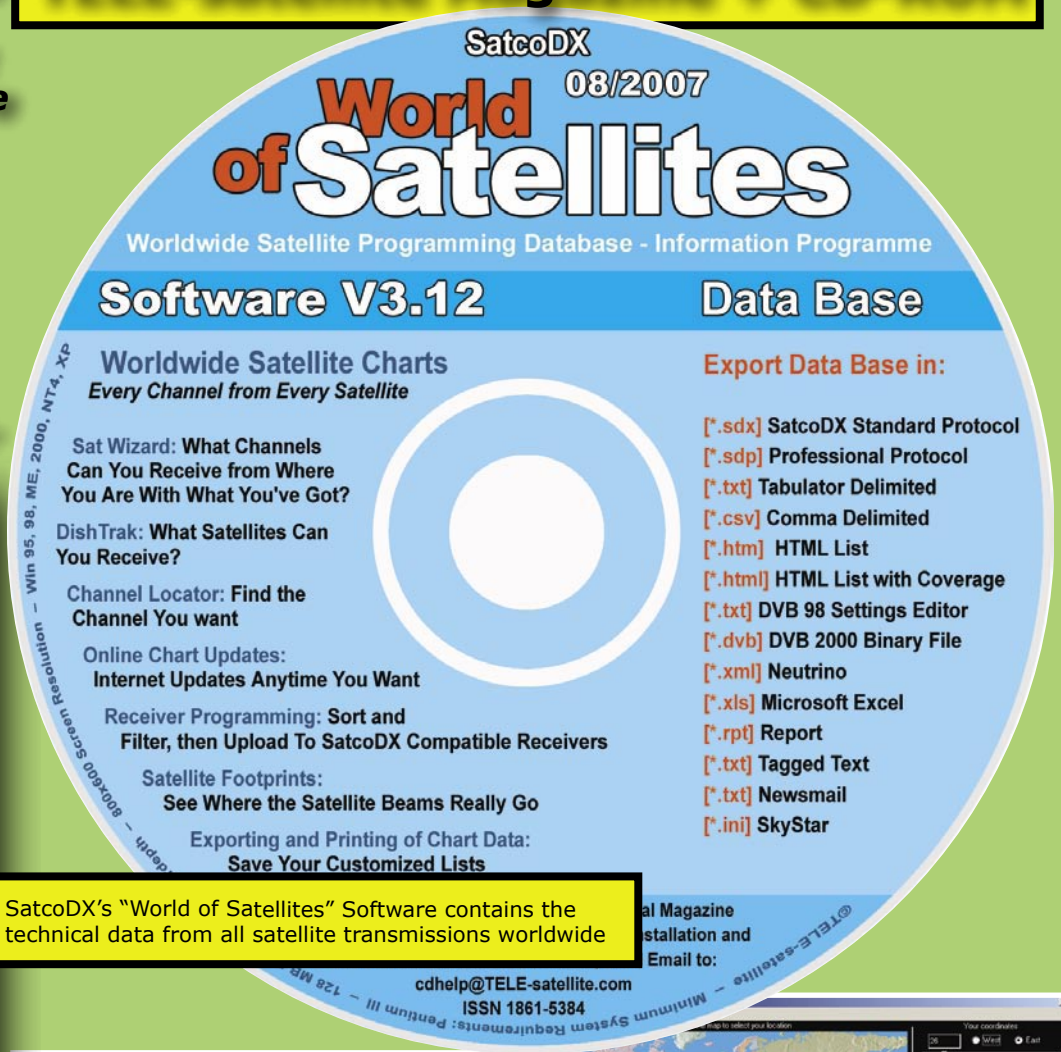
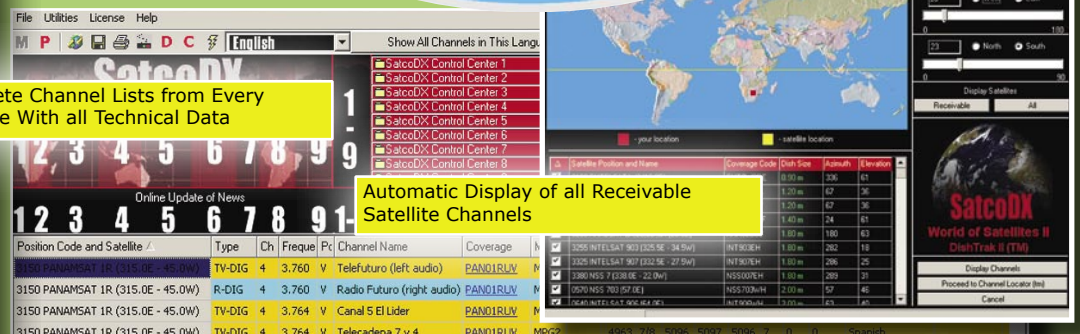


SatcoDX's "World of Satellites" Software contains the technical data from all satellite transmissions worldwide



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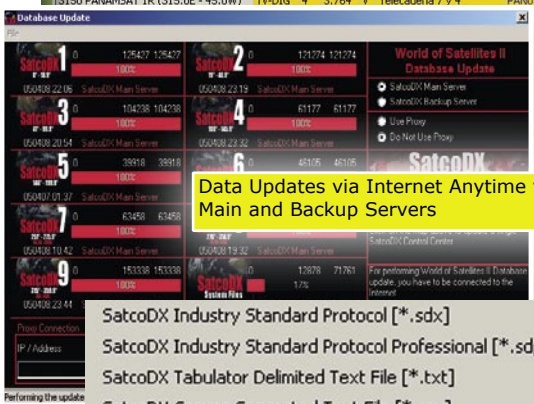

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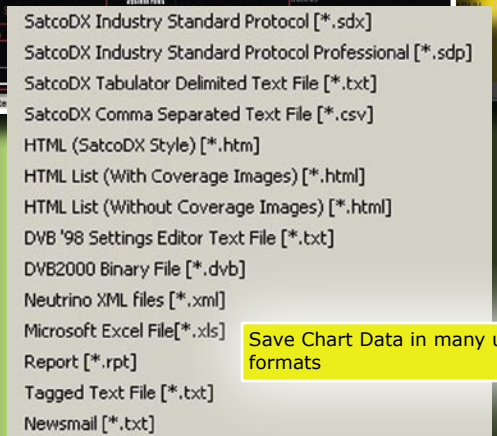

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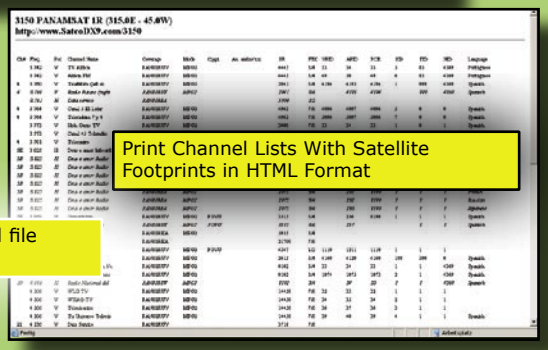

Print Channel Lists With Satellite Footprints in HTML Format

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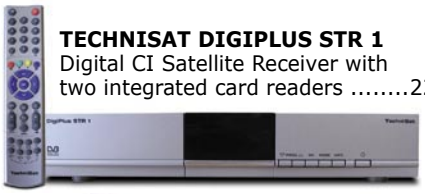

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Dear Readers

Satellite parts, that is, receivers, LNBs, dishes, etc., seem to have prices that go in only one direction: down. This makes the consumer happy since it has become less expensive year after year since the beginning of the satellite age to purchase a satellite system. Unfortunately, the manufacturers and dealers don't share that enthusiasm: they must regularly plan for less and less profit. But there are also other aspects of this lowering-price trend: other technologies are also becoming less expensive. This results in new variations where two technologies are combined.

In this edition we are presenting just such a fusion: a motorized antenna with a built-in GPS receiver allowing the motor to align itself. Two technologies that thanks to continuously decreasing manufacturing costs can now be combined. A few years ago you would have thought of this idea as merely a vision that would have been too expensive. That isn't true today anymore.

Satellite reception and GPS actually belong together since satellite reception is above all a question of position. Which satellite you can receive depends on your location on the Earth. What good is the best receiving equipment if you can't receive anything where you are? GPS delivers your position with extreme accuracy. If this is coordinated with a satellite list, such as SatcoDX, you will not only know what channels you can receive but the satellite system can automatically set itself up to these channels.

This idea can be taken yet a step further: why not an LNB with built-in GPS? A small display on the LNB could tell the user to what elevation and azimuth the antenna must be turned to in order to receive the desired satellites. Or, why not simply an add-on to the antenna? But let's come back down to Earth. This would probably never see the light of day since an antenna only needs to be aligned once and these tools would still be too expensive despite them being as cheap as they are. The system introduced in this issue deals with a mobile reception system that truly does need to be properly aligned more than once. But why not a signal analyzer with built-in GPS?

You can bet that TELE-satellite will be discussing the subject of combined technologies more often in the future. You might have noticed that the word "broadband" now appears in the subtitle of TELE-satellite magazine. Satellite reception is not so isolated anymore. Everything is coming together and leaning towards computer technology. This includes not only channel reception but also the operation of the receiver. The age-old rule that a receiver needs to be in the living room and must be controlled by a remote control is no longer valid. The combination possibilities of various technologies are expanding; new variations are becoming possible.

With broadbanded greetings,

AlexanderWiese

P.S.: My favorite radio station of the month: "Das Modul" (that's what the display says) on ASTRA (19.2° E) 12.266H with non-stop music interrupted only by station identification pauses, naming this station as "Bavarian Open Radio". This is one of those stations whose name doesn't match what is sent in the data stream, but who cares, the music is good!

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EUROPE & AFRICA

FINLAND

YLE FACED WITH MONEY PROBLEMS FOR HDTV

Mikael Jungner, the chief executive of the Finnish Broadcasting Company (YLE) told the Finnish News Agency (STT) in March that it did not intend to rush to introduce high-definition television (HDTV) broadcasts. According to Jungner YLE would make a decision on the matter at the earliest in 2010 as with current levels of funding, YLE simply cannot afford it.

HOLY SEE

VATICAN INITIATES HDTV BROADCASTS

The Vatican Television Center (CTV) entered the world of high-definition broadcast on April 15. The first high-definition program was the Mass celebrated by Pope Benedict XVI on April 15, in anticipation of his 80th birthday the following day. CTV airs about 200 events each year, and cooperates with other television networks in coverage of major papal events.

SPAIN

TELEFONICA AND CANAL AD IN HDTV DEAL

Telefonica Servicios Audiovisuales will acquire and co-produce content for Canal AD, the first HDTV channel to be produced out of Spain. Soft-launched in December, Canal AD has inked a carriage deal on satellite system Hispasat 1C, whose footprint covers Spain, Portugal and the rest of Europe. It can be viewed free of charge by viewers who own an HD-ready TV set and buy a 60cm satellite dish and DVB-HD MPEG4/AVC decoder. Telefonica also plans to incorporate Canal AD onto its Spanish Imagenio Internet TV service within the next six months and to adapt the channel for its direct-to-home pay TV services in Brazil, Chile and Colombia. Rival Digital Plus is studying the possibility of launching its own HD channel.

UNITED KINGDOM

PRESSURE MOUNTS ON OFCOM OVER HD

A group of broadcasters, retailers and manufacturers is leading a campaign to ensure universal availability of high-definition TV in the UK. Members of the HDforAll campaign - which includes the BBC, ITV, Channel 4, Sony, Samsung and the Dixons retail group - want Ofcom to reserve up to one third of the spectrum for digital terrestrial TV viewers. Executives from ITV, the BBC and Channel 4 met DTI Minister Margaret Hodge in an eleventh-hour plea for guaranteed spectrum to supply free HDTV The broadcasters warned that Ofcom's proposals to auction off a huge slice of the airwaves ahead of analogue switch-off would leave them unable to offer HD, with its superior pictures and sound, to Freeview viewers. They fear that wealthy mobile phone companies would outbid them, leaving Sky and cable as the only available routes for those customers wanting HD. Ofcom argues that it cannot specify what spectrum is used for.

NORTH & SOUTH AMERICA

PERMIRA SEES SATELLITE GROWTH

The satellite industry is poised for both stronger growth and more consolidation, according to Tom Lister, a partner at Permira, a major investor in the technology, media and telecoms arenas. The private equity firm was part of an investor group that bought Intelsat for about US$ 5 billion in early 2005. Lister said that valuations of satellite companies have risen to about nine times their cash flows from about six times, and that gross margins are about 70 percent. "There are really five or six big players today," Lister said, speaking at the Reuters Hedge Funds and Private Equity Summit. "I think there will be more consolidation." Lister declined to name possible candidates for takeovers but said that major satellite companies, which provide service to media, government and telecoms companies, need to make acquisitions to fill in geographic areas that may not be covered by their networks. He expected companies to add quasi-governmental regional service providers, such as in Mexico, to their holdings.

CANADA

NEW EXPRESSVU HD RECEIVERS IN JULY

DTH satellite TV operator Bell ExpressVu will be replacing its current line-up of high definition receivers with new MPEG4 models in July. Consumers will be able to choose from three new high definition receivers – the ExpressVu 6141, 9241 and 9242. After July 2007, consumers will only be able to purchase the new models, as the current will be discounted and cleared out. ExpressVu does not make its own receivers but purchases them from Echostar.

STAR CHOICE LAUNCHES TWO NEW HD CHANNELS

Star Choice will be adding five new high definition (HD) channels and two standard definition (SD) channels to its line-up by the end of May. In March, the operator added two HDTV stations - WGN HD and HDNet. The first includes HD programming from the popular CW network including Smallville, Gilmore Girls, Veronica Mars, One Tree Hill, and much more. HDNet is a Canadian version of the popular U.S. station. In May, Star Choice plans to launch three new French HD channels: Canal Vie HD, Series + HD, and Z tele HD. Canal Vie HD features women's programming while Series+ HD and Z tele HD provide various types of entertainment programming. Once the three French HD stations are available, the DTH broadcaster will be offering its 870,000 customers 25 HD Channels – 20 English and five French.

TELESAT LAUNCHES ANIK F3 SATELLITE

Telesat successfully launched the latest generation of its communication satellites, the Anik F3 in April 10, from the Baikonur cosmodrome in Kazakhstan atop a Russian Proton Breeze M rocket owned by International Launch Services. The satellite built by EADS Astrium is to add to telecommunications service in North America and to supplement the functions of the Anik F2 satellite. The new satellite is expected to provide service for direct-to-home television in the United States, broadband internet services, and telecommunications for Bell Canada and other BCE Inc.-related companies. The Anik F3 will also broadcast television signals to northern Canada and remote areas of the country. The Anik F3 offers service on the C, Ka and Ku frequency bands. It has 32 Ku-band transponders, 24 C-band transponders, and several in the Ka-band, and is expected to be in service for about 15 years.

HUGHES SUPPLIES BROADBAND SATELLITE SYSTEM TO GALAXY

Hughes Network Systems has supplied a broadband satellite system to Galaxy Broadband Communications, which operates its Network Operations Center from a teleport in Ontario. The fully redundant satellite system enables Galaxy Broadband to extend its broadband satellite service offerings beyond consumer internet access, to a wide range of value-added commercial applications, including VoIP, reaching enterprise, small business and government customers across Canada. The Hughes broadband satellite system is based on the IPoS (IP over Satellite) industry standard, including DVB-S2 with ACM (Adaptive Coding Modulation). Galaxy will also provide new service plans that can be customized to improve the performance of satellite VPN connections and other business applications.

USA

DIRECTV TO LAUNCH 100 HDTV CHANNELS BY END-2007

DirecTV Group chief financial officer Michael Palkovic said in March the direct-broadcast satellite giant is moving ahead in its plans to launch 100 HDTV channels by the end of the year, but he conceded that some of those channels will be multiple feeds from sports packages like NFL Sunday Ticket. Palkovic said DirecTV already has about 70 HD channels under contract and that number is growing. He added that 70 or 80 of the HD channels would be considered year-round channels. When DirecTV's capacity expansion is completed next year, it will offer more than 1,500 local HDTV channels and more than 150 national HDTV channels. Currently there about 10 national HD channels, with rival EchoStar Communications offering those packages, as well as about 10 Voom channels, the HD offering from Rainbow Media Holdings.

ASIA & AUSTRALIA

ASIA & PACIFIC

HDTV TAKING OFF, CLAIMS REPORT

Although significant barriers remain for widespread HDTV content delivery in the Asia/Pacific, it is taking off with consumers, according to a report by market research company In-Stat. Total consumer revenue from HDTV content broadcasted in the region is forecast to jump from US$3.2 billion in 2006 to US$8.06 billon by 2012. HDTV content is being marketed as a premium in Asia/Pacific, with the hope of increasing monthly revenues for cable and satellite operators, as well as providing terrestrial TV broadcasters with a new weapon in the fight against pay-TV services. The report claims that over 9.9 million TV households in five Asia/Pacific countries (Australia, China, Japan, South Korea, and Singapore) received and watched HDTV programming by the end of 2006. In-Stat expects that number to climb rapidly over the next three years. Japan is currently leading the HDTV content development, with over 8.5 million households receiving and watching HD service as of the end of 2006.

AUSTRALIA

SONY PARTNERS TEN'S HD AFL BROADCASTS

Sony Australia has joined forces with Network Ten and the Australian Football League in becoming a major sponsor of TEN's High Definition (HD) AFL telecasts as well as the AFL's official consumer electronics partner. Major broadcast partnership of TEN's HD AFL telecasts, including Saturday night home and away season games, TEN's finals and the 2007 Grand Final, which will be exclusively live on TEN. Digital Broadcasting Australia estimates that 36% (or 720,000) of the 2 million Australian homes with free to view digital television had HD receivers as of December 2006. Sony's own research, in conjunction with GfK, claims consumer spending on HD hardware represented 53% of the market in the fourth quarter of 2006, up 130% on the same period a year ago.

ARIANE TO LAUNCH OPTUS D3 SATELLITE

Optus has chosen Arianespace to orbit its D3 satellite. Optus D3 will be orbited by an Ariane launcher or a Soyuz launcher in 2009 from Europe's Spaceport in French Guiana. Optus D3 will be the fifth satellite launched by Arianespace for the Australian operator. Optus D1 was launched by

Arianespace in October 2006, following Optus and Defence C1 in 2003 and Aussat A3 in 1987. Optus D2 is scheduled for launch by Arianespace later this year. Optus' parent company Sing-Tel also chose Arianespace to launch its ST-1 satellite in 1998. Orbital Sciences Corporation will construct the Optus D3 spacecraft using the Star-2 platform. The satellite will be positioned at 156 degrees East, providing direct TV broadcast, Internet, telephony and data transmission services for Australia and New Zealand.

CHINA – HONG KONG

VOOM HD LAUNCHES IN HONG KONG

Rainbow Media has reached a deal to launch its VOOM HD channel in Hong Kong on PCCW's Now Broadband TV platform, allowing subscribers to view the content, subtitled in Chinese, both in standard definition, from April, and in HD shortly thereafter. The agreement marks the first launch of VOOM HD in Asia. The channel offers viewers exclusive content that includes adventure travel, fashion, luxury lifestyle, art, live concerts, action sports and video gaming. The global VOOM HD channel has launched on Scandinavia's Canal Digital, Sweden's Com Hem, Estonia's Elion and Latvia's IZZI, and is expected to launch in Singapore later this year. It also airs as a branded block in Korea.

INDIA

DD PLANS HDTV PILOT

Public broadcaster Doordarshan has approved a proposal for a pilot project in high definition television (HDTV). The facility for field production in HDTV was envisaged to be set up in Delhi in 2007-2008, according to a Doordarshan spokesperson.

PRASAR BHARATI IN PILOT PROJECT

Public broadcaster Prasar Bharati will invest close to Rs 30 crore in running pilot projects on mobile TV, high-definition TV and car TV. It plans to launch mobile TV in Delhi by May and later expand it to other metros. "We will also invest Rs 15 crore in a pilot project for high definition television," B S Lalli, chief executive officer, Prasar Bharati, said. High-definition television is a priority area for Doordarshan before the New Delhi Commonwealth Games, 2010. The Indian Government has made its intentions clear that the telecast of the Commonwealth Games will be on a high-definition format.

INSAT 4B FULLY OPERATIONAL

The Indian Space Research Organisation's latest communication satellite, the Insat 4B, became fully operational in mid-April, a month after it launched from French Guiana. The Insat 4B, located at 93.5 degrees East, carries the following payloads: 12 Ku- band 36 MHz and 27 MHz bandwidth Transponders; 2 C-band 36 MHz bandwidth transponders. Kalanithi Maran's Sun Group has booked seven Ku-band transponders on Insat-4B for its soon-to-launch DTH service Sun Direct, while Prasar Bharati's free-to-air (FTA) package DD Direct Plus has booked five. Sun will be using MPEG-4 technology that will allow it to compress more TV channels per transponder.

ISRAEL

HDTV TO ARRIVE IN 2008

The HOT cable and YES satellite services will start transmitting digital (HD) broadcasts late this year or in the beginning of 2008, according to officials at NDS. According to Abe Peled, NDS's Israeli chairman and CEO, the potential market for HD TV is huge, as there are 1.73 billion households around the globe with TVs, more. Among the company's new technologies, some of them already available abroad, are HD television for subscribers over cellular phones and portable video players.

MALAYSIA

WIRELESS FREQUENCIES INTERFERING WITH MEASAT 2 SATELLITE

The Malaysian Government may have to withdraw the licences of wireless broadband service providers that are using the 3.5GHz frequency, as they have been found to interfere with transmissions between the Measat-2 communications satellite and its earth station. Energy, Water and Communications Minister Datuk Seri Dr Lim Keng Yaik blamed the Malaysian Communications and Multimedia Commission (MCMC), which had given out the 3.5GHz spectrum licences. Lim said he was considering pulling back the licences, adding that he had no numbers yet on how many licences were handed out. According to the Asia-Pacific Satellite Communications Council, satellite operations in Australia, Bolivia, Fiji, Hong Kong, Pakistan and Indonesia have been affected by similar interference.

SINGAPORE

HALF OF HOMES TO HAVE HDTV IN FIVE YEARS

The Media Development Authority (MDA) claims that half of all homes in Singapore have HDTV in five years, it will be considered a high take-up rate. But MDA hopes to achieve that target in a shorter time than that. It is organising competitions around Singapore to promote HDTV but it realises that the technology will take time to enter homes. Singaporeans got a glimpse of a new revolution in broadcasting when MediaCorp aired the final three matches of the World Cup last year in high definition formula. Some months later, StarHub launched two HD channels. SingTel will be the next service provider to join the bandwagon using the Internet Protocol TV (IPTV). MediaCorp, which has concluded a successful trial of terrestrial transmission of HD services, is looking into the feasibility of offering commercial HD services. In February this year, nearly two-thirds or 67 percent of all TV sets sold were HD-ready, compared from just 29 percent in February last year. Singapore is the first country in Southeast Asia to offer HD services.

TAIWAN

HIGH DEFINITION TV DEVELOPMENT PROJECT LAUNCHED

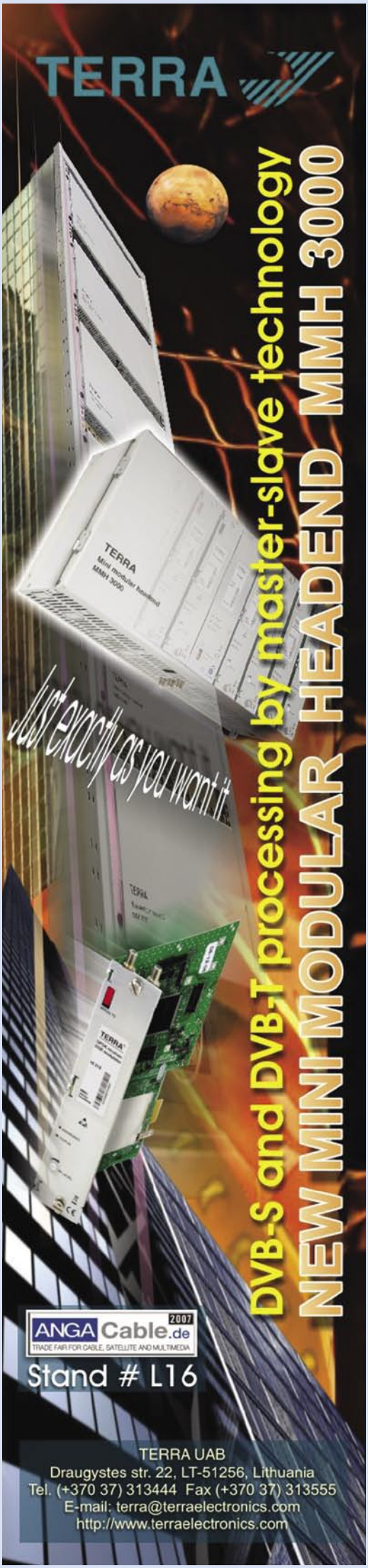
A two-year television digitization project was launched in March, aimed at transforming Taiwan's television transmission systems into high-definition TV by 2010. Officials said high-definition transmission tests via satellite are expected to begin before 2008. This will allow viewers to be able to watch live transmissions of the 2008 Beijing Olympic Games. They said they hope more diverse educational TV programs will be produced in Taiwan.

AFRICA

NIGERIA

GILAT TO LAUNCH KU BAND SATELLITE

The Executive Vice President, Sales and Marketing, of Israel's Gilat Satcom, Avihu Bergman, has disclosed that the telecoms firm based in Israel will launch its KU-Band service in Nigeria. Bergman pointed out that Gilat Satcom will be coming into the KU Band service segment with the latest technology on the Shiron platform with the DVBS 2 standard ACM in order to cope with likely changes in the environment like rain, storms etc. He added that Gilat Satcom, will operate with the KU-Band Intelsat 904 satellites whose beam is currently focused on Nigeria so that it will greatly help in minimising rain fade and other problems associated with the Ku-band width.



How MPEG really works

An expert view on the deeper secrets of digital compression

Clive J. Grove

MPEG is all about data reduction. The original signal is converted to a data stream, then reduced. The resultant, when recovered, will always be at best a near representation of the original. The system is therefore lossy. This is acceptable in this context, because the human eye is a tolerant organ, typically only capable of detecting one error per 120,000 samples. The ear on the other hand is capable of detecting one error per 1.5 million samples. Sound is therefore treated differently in MPEG.

All the "PEG's" employ the same basic reduction system. The differences between them occur in the detail.

DVB S or S2 is all about giving the signal ruggedness. The signal has been generated in an electrically clean environment. In the transmission path it is now about to enter a very noisy domain. Every type of noise and distortion can be expected. The signal has therefore to be prepared for this. Inevitably there will be some small sacrifices to be paid for this process in the expansion of the original data.

It is also worth noting that the DVB-S and the DVB-T process their signals very differently at this point. The "magic bullet" is DCT: Discrete Cosine Transform. This is because of DCT's ability to represent the most visually significant information in an image using only a few coefficients. Unlike the Discrete Fourier Transform, which essentially does the same computation, however creating many more higher order components. Therefore it creates a less efficient overall compression.

The DCT is only one component in a bag of many very powerful compression tools. A block structure is applied, 64 macro blocks are created, the resultant has DCT applied separately to each block. This process converts the macro blocks from the frequency time domain to the spacial frequency coefficients. This vastly reduces the data.

What is left tends to lower frequency components. The DCT values obtained are loaded. RGB values are transformed into a grey scale. Blue and Red are used for colour and are resolved at half bandwidth. All remaining components are close to zero. These are deemed insignificant and filtered away as system noise. The 64 macro blocks are 64 8x8 blocks of pixels these blocks increase in frequency content horizontally and vertically. They contain all statistical shapes that can exist.

The system selects a block having the closest match of co-efficients to the macro block of video and applies DCT. To recover the information multiply each identified block by its DCT weight and the result is the original image. We now quantize the each DCT value by an integer. This results in a loss of precision and typically only leaves a few non zero co-efficients.

We now scan the quantized coefficients in a zig zag order. This has the effect of grouping all the non-zero coefficients together. Run level encoding is applied. This will produce a sequence of number pairs. The first value is number of preceding zeros. The second value is the level or non zero number. This string is now easily applied to an Entropy encoder. This will assign a short code to frequently occurring groups and will apply a long code to infrequently occurring groups. The result is a further compressed image. Further tools are used for motion estimation.

Data can be significantly reduced further if the previous frame is extracted from the present frame. The residual image, that contains little data is the difference between the previous frame and the present frame. This is typically achieved processing 16 x 16 luminance samples at a time. These are compared with the neighbouring areas in the previous frame. The closest match is found, this is the reference area. The offset is calculated between the current macroblock and the reference prediction area. This then is the motion vector.

Subtract the reference area from the current macroblock. Encode the difference macroblock with an encoder. This means that little data will be left in the difference macroblock. This means more efficient compression. Further tools are the inter-frame processes. Typically the encoder will be set to work on a group of 12 frames. These are the I Frame (Intra frame). These are compressed to stand alone. They are not predicted from the other frames. They therefore contain the most data.

The P Frame (Predicted Frame) are predicted by referring to an earlier frame. The B frame (between Frames) are predicted by referring to both of the neighbouring frames. It is evident that by using P and B frames it greatly improves the efficiency of the picture compression because these frames only contain the differences between the frames. In general terms there is little change between any pair of television frames, therefore the only data that needs be transmitted is the difference information between the prediction and the actual frame of video.

Now the various documents published by DVB, ETSI, ITU etc do not instruct manufacturers how to build encoders or decoders. Rather they provide guidelines to and algorithms for the MPEG system. As a result, in the marketplace the only common parameters are what goes in and what comes out of any given box. Vast differences may be experienced in user facilities and the performance experienced.

MPEG 2 only provides for three input definition levels.

Low Level 360x288 (A VHS Level).

Main Level 720x576 (Broadcasting).

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P.162-IW
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Complete description of all models on
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High Level 1920x1152 (Used for HD and specialist applications).

Further there are three luminance/chrominance sampling structures defined. 4:4:4, 4:2:2, and 4:2:0.

In the real world, the most widely used format is 720x576 at 4:2:0, known as MP@ML. Only recently has 4:2:2 been used to any real extent. Then it is usually reserved for prestige events.

Operationally most encoders will default to auto resolution rate when switched to MP@ML. In this mode the encoder will adjust its input clock speed to match the detail within the incoming video. It thereby maximizes its parameters and a good compression results. Register overruns are avoided and the unit avoids the blockiness that would result from too low an input clock rate.

I have tested encoders albeit with a low bit rate option at 0.5Mb/s. On typical video no blockiness or other artifacts were experienced. There are however certain known "MPEG Artifacts". On certain video conditions where excessive edginess is found: say long grass on a medium close up. There the system will take over and produce a false picture where all grass has exactly the same structure, angle and shape. Another example is the ocean. When waves in a scene predominate and they are at certain distances, MPEG takes over and produces an ocean with waves that are exactly the same as their neighbours. Lastly flames in a fire are capable of throwing artifacts under certain conditions. All these examples are rare but can occur when very low data rates are in use.

One further tool for compression used on low data rate channels is Statistical Multiplexing (Also used in the creation of a Bouquet). Normally an MPEG signal is generated then is muxed to match the modulator. When Statistical Multiplexing is used, a first pass is made. The signal will have all the tables and other information present. Sometimes bit stuffing will have been applied to balance the budget. Stat Muxing is set up to remove all designated information and bit stuffing leaving only the desired tables. This allows for increased bit rates to be used within a fixed envelope.

A modern high quality encoder will support football, a generally accepted high activity sport, with its output modulator set to 3MHz with an FEC of 3/4 running in 4:2:2. At these settings there will be no blockiness, no edginess (mosquitoes) or any perceptible resolution drop. This I recently proved over several matches.

We are now ready to move forwards into AVC (H264) with S2. However, this has also had the effect of turning back the clock. As previously stated "its all in the detail". With AVC a mobile macroblock structure is implemented. The encoder has to decide on the fly what blocks of video are meaningful and what size they will be. Up to 32 frames are to be simultaneously stored. Then the system has to create a modified DCT analysis on that block. Storing the resultant in the "Bin", a new interactive store. On subsequent frames that information has to be recovered, motion modified redisplayed. At some point it must be canned and a new macroblock captured. At present this is causing a number of manufacturers a great deal of consternation. It has caused a number to advertise single slice framing and a limit of about 6 MHz on the HD output.

The new AVC holds the promise of sub 1MHz SD and 2MHz HD. Alas I think it will take a few years before this ideal is met. In the meantime there seems to be no restrain upon the use of MPEG 2 with S2. This should result in sub 1MHz channels - If only the set top box manufacturers keep up.

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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. Futher 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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AB IP Box 250S PVR

Linux-based treasure box

If you ever traveled to Slovakia you probably know that the small town of Topolčany is mainly famous for its beautiful medieval castle and wonderful beer. But now new times are coming, and the company AB-COM, with headquarters in Topolčany, is becoming even more well known, and not just inside Slovakia. And this has a reason. Linux-based satellite receivers keep gaining popularity worldwide. Mainly among DXers, fans of satellite reception, who enjoy experimenting, but also among the regular users as well. AB-COM didn't just follow this trend, but also put a lot of effort into each released model. No wonder that the previous AB IP Boxes received such positive response. We were lucky to get a chance to test the latest one, AB IP Box 250S PVR.

TELE SATELLITE AWARD & BROADBAND 06-07/2007

AB IP BOX 250S PVR
Best Linux-based Satellite Receiver, ensuring the rich variety of available firmware, plugins and service software

The first praise goes to the designers – we opened the package, delivered to our office, to find simply, but at the same time, stylishly designed receiver. AB IP Box 250S PVR is available in two color variants – black and silver. Front panel contains a horseshoe-shaped Standby button, seven control buttons (Menu, Exit, OK, Left, Right, Up and Down), which allow to control the majority of receiver's functions, and a numerical display, which shows the number of the currently selected channel, current time in Standby mode, as well as the service information when needed.

Last, but not least, there is an universal smartcard reader slot, which, with pre-installed firmware, allows to get access to channels encrypted in Xcrypt or Firecrypt.

Rear panel greets us with the first surprise. It starts quite usual – LNB input with a corresponding loop-through output, two Scart connectors, three RCAs outputting the Video and Stereo sound, Digital Audio output and a RS-232 port. And an Ethernet port, which will play a very important role in the interaction with AB IP Box 250S PVR. Design of the remote control is very simple, but at the same time, quite logic. The only unusual thing is that the EPG button is located right next to the "0" key, below all other numbers. All other buttons are where you expect them to be, so you will get used to it quite quickly.

The remote control of AB IP Box 250S PVR can also control your TV set, list of the supported models (a very BIG list!) can be found on the last pages of the receiver's user manual.

Installation

Even the regular user, who is not planning to endlessly experiment with his receiver, will find the installation quite simple. After the first power-up and the welcome screen, AB IP Box 250S PVR will ask if you would like to format the installed hard disk. If you choose not to do it now, it can be formatted later from the main menu.

Clear and understandable wizard will guide you through the installation process. First the box wants to know which languages you would prefer for the on-screen menu, audio and subtitles. Second screen allows configuring the local time, as well as the video settings.

Third one is for the LNB selection. First increase the number of installed LNBs in the menu, then highlight the appearing string. Clicking OK will bring a sub-window to the screen with all the needed parameters, including the satellite name, LOF, which can be absolutely flexibly selected, and the DiSEqC settings. AB IP Box 250S PVR supports all DiSEqC versions from 1.0, 1.1, 1.2 to USALS, so it can easily become the heart of your multi-satellite reception system.

Logically, the next step is the channel search. Scanning 78 pre-programmed transponders on ASTRA 1 position at 19.2 deg. East took 6 minutes 10 seconds. SCPC reception was tested on EUTELSAT SESAT at 36 deg. East, and AB IP Box 250S PVR didn't disappoint us here. Channel search can be performed in Automatic or Manual mode, with possibility to select a network search, to leave out encrypted or FTA channels, or to keep all. You do not need to worry too much about filling channel memory: AB IP Box 250S PVR top limit is 10,000 channels!

Channel switching speed is pretty fast – less then a second for the channels within the same transponder, and a bit more (but still within 1.5 seconds) for different transponders. Channel names with non-Latin character sets (f.e. Cyrillic) are displayed correctly, so does the EPG information too. However, EPG screen itself still awaits some improvements to be done. It is fast, all the information is loaded and displayed appropriately, but switching between days and channels can be confusing at first. It also might take time until you figure it out, how to navigate through the main menu. It consists of three main items – "User's option", "System Setup" and "About". Three icons in the left part of the screen – with two faces, a sprocket and a question mark represent respectively each of them. You can switch between these three items with Left and Right buttons on the remote control or receiver's front panel, while the sub-items are navigated with Up and Down buttons.

Channels can be arranged into an unlimited number of favorite lists, with default ones called "Sport", "Drama", "News", "Movie" and "Music". Adding channels to them only requires couple of clicks. Switching between the "Favorite" mode and "Full Channel List" mode happens by pressing the "FAV" button on the remote control. Main list can be sorted alphabetically, by provider, encryption mode or satellite. Moving channels around or deleting the unwanted ones is also a matter of seconds.

PVR

Of course, presence of these three letters in the model name is already promising the possibility to record and play. The test unit we've got was equipped with 80 GB HDD, which is enough for recording approximately 40 hours of video. It's possible either to record the programming manu-

ally, by pressing the button with red circle on the remote control, or by selecting your favorite TV shows from the EPG. Pressing the same red circled button in the EPG mode will mark the program for recording. Recordings of video and audio material, as well as "timer reservations" are handled in a special menu, called "File List Management", which can be accessed by pressing the button with an envelope. It is also here, where you can choose the video or audio recordings to be played. But! There is much more, what you can do with them. Remember the nice Ethernet socket on the receiver's real panel? Maybe we can get the recordings to the PC somehow? Or maybe it's good for anything else?

The power of Linux

AB IP Box 250S PVR would be a regular PVR-receiver, if not its architecture. Being built on IBM PowerPC405 processor with Linux operation system, firmware of this receiver is an open-source project. Receiver's architecture turned out to be compatible with alternative firmwares released for other Linux-based receivers, after some slight modifications they can also be used with AB IP Box 250S PVR. Those which were already converted and are tested to be working with it, can be found on the official AB-COM support website. We found its address on a white sticker attached to the receiver's packaging – http://www.abcom.sk and http://www.download.abcom.sk.

But before we start experimenting, it makes sense to visit the nearest electronics store and buy two cables – the cross-over Ethernet cable and a null-modem cable. Then from the website mentioned above we download two programs – "PC Editor" and "Flash Tools". You can also download several "image" files, the ones that you'd like to try. Make sure that the electricity ain't going to disappear in the next minutes, and let the experimenting begin!

If you're afraid of damaging your receiver by uploading the new firmware from the PC, AB IP Box 250S PVR gives you another option. It can be connected directly to the Internet via PPPoE or Dialup. Several web and FTP sites with official or alternative firmware are already pre-programmed. The chosen version will be downloaded directly into the receiver's memory and installed.

However, we went a different way, by testing both the Ethernet and RS-232 connection. RS-232 firmware upgrade with Flash Tools software can take up to half an hour or more, but it will be done for sure, since some earlier versions of the official firmware might not support the Ethernet upgrade. The latter is done from the PC Editor program, there AB IP Box 250S PVR model is called "CubeCaFe". But it's not only for the firmware upgrade. Channel lists can be conveniently edited, and later re-uploaded to the receiver. Import of the SatcoDX *.sdx files is completely supported in the PC Editor.

Once the Ethernet connection is established, you can find the information about it in the "About" – "Network Info" menu. Make note of the IP address assigned to the box. Because if you open your favorite web browser and type it in, you will see a lot of interesting things. First you will be prompted for a user ID and a password (use "relook" for both), and after you enter them, you'll land in "Geckow Webinterface", the "web-server" of your AB IP Box 250S PVR. Here you can check the EPG, address the receiver with a virtual remote control, schedule programs for recording and save recorded programs on your computer. AB IP Box 250S PVR also has an "FTP-server", you can connect to it by using any FTP client, entering the IP of your box, using "root" as the user name and "relook" as the password. You can find the recordings in /var/media/video directory. However, if you download them via the FTP, you'll have to convert them to .mpg first, by using the simple "MakePS" utility, which is also available at the official AB-COM support website.

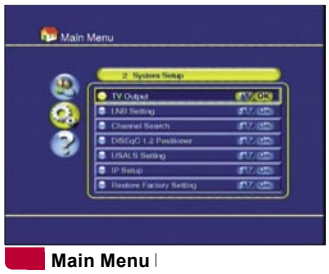
Since this is an open-source system, there are not just a lot of various firmwares available, but also lots of plug-ins. For example, you can install games, MP-3 player or other utilities. All of them, and a lot more, can be found on the website mentioned above. But that's not all. AB IP Box 250S PVR hides a lot more treasures inside, which we'll let you discover by yourself. Because if we'll tell you everything, it wouldn't be so much fun to experiment, would it ? And satellite reception is no longer just watching TV channels or listening to radios, it's much, much more now.

TECHNIC DATA

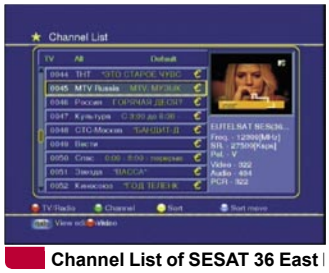
Manufacturer	AB-COM, Topoľčany, Slovakia
Fax	+421 38 5322027
E-mail	info@abcom.sk
Model	AB IP Box 250S PVR
Function	Digital Linux-based PVR satellite receiver
Processor	IBM PowerPC 405
Channel Memory	10000
Symbol Rate	Up to 45 Ms/s
SCPC Compatible	Yes
USALS	Yes
DiSEqC	1.0, 1.1, 1.2, 1.3
Scart connectors	2
Audio/Video outputs	3xRCA
UHF Modulator	No
S-Video	No
Component output	No
0/12V connection	No
Digital audio output	Yes
LAN	Yes
EPG	Yes
C/Ku-band compatible	Yes
Power supply	AC220V, 50Hz / AC110V, 60Hz

Firmware upgrade via RS-232

Default welcome screen



Main Menu

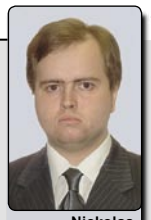


Channel List of SESAT 36 East

Recording Management

Receiver's web interface

Expert conclusion



Nickolas Ovsyadovskiy
TELE-satellite Test Center Hungary

+

AB IP Box 250S PVR is just the thing for those who love to experiment. Linux-based open source project ensures the rich variety of available firmware, plugins and service software. Its Ethernet port expands the possibilities even further, since the receiver can be almost completely controlled via the Internet from the next room or from any place thousand kilometers away. Of course, all the usual functions are where they are expected to be, so the regular users won't be disappointed either.

–

EPG and the Main Menu of the official firmware could be a bit more user-friendly, but this is a minor software problem, which doesn't affect the big picture and, hopefully, will be solved soon. Anyhow, it takes only a few minutes to upload an alternative one.

Jiuzhou BSB11

TELE SATELLITE AWARD & BROADBAND 06-07/2007
JIUZHOU BSB11
The best Monoblock Single LNB tested for ASTRA and HOTBIRD in Europe

Monoblock Single LNB

2 satellites from one dish

In previous issue of TELE-satellite, my fellow editor, Heinz Koppitz published an article about the problems you may encounter when using a monoblock LNB. Because his article was meant for the newbies rather than for the more advanced readers (it appeared in the Beginner Section), no wonder that it did not contain measurement results. So, when I got the monoblock LNB from Jiuzhou, I immediately thought that except for the product evaluation, this test report can be an excellent appendix to what Heinz has written.

Jiuzhou Monoblock LNB with 6° spacing, main area of use would be for ASTRA and HOTBIRD in Europe. Any other two satellites would suit as well, provided they are 6° apart and receivable with strong enough signals.

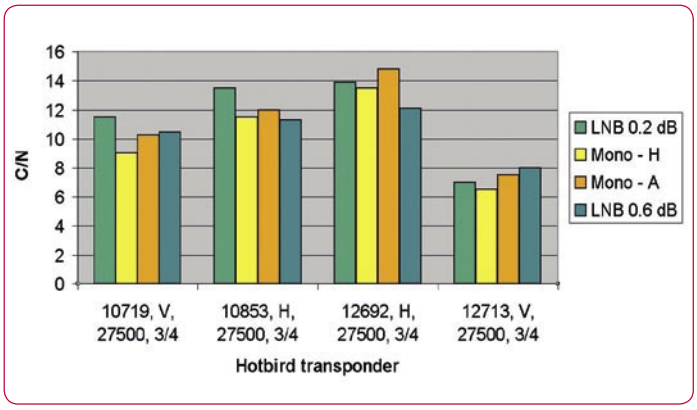


Figure 1. BSB11 noise performance in comparison wit reference LNB's.

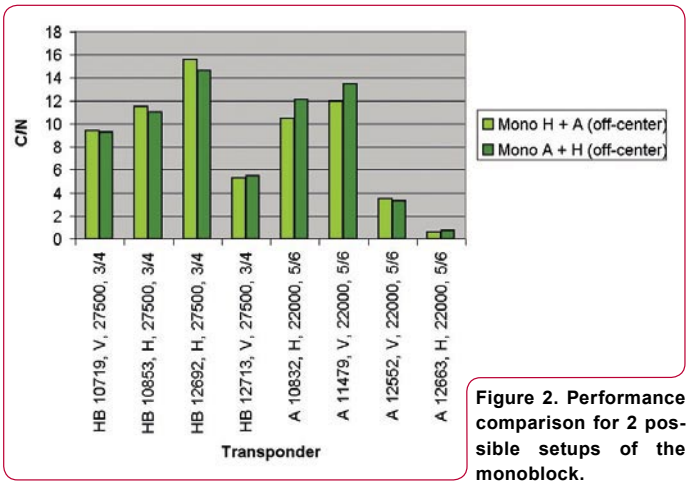


Figure 2. Performance comparison for 2 possible setups of the monoblock.

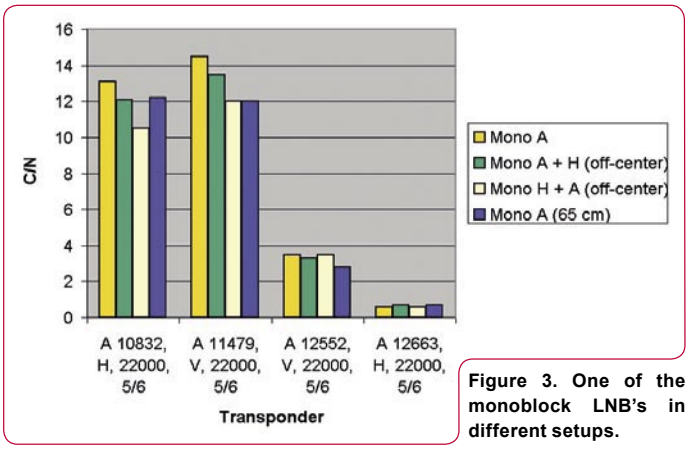


Figure 3. One of the monoblock LNB's in different setups.

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DiSEqC 1.2

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BSB11 looks very solid when you keep it in hand. Of course, it is heavier than a single LNB, its weight is more comparable to twin or quad LNB's. Its F connector has no additional protection against weather conditions. At the bottom side of the body, you can see small holes through which the condensed water vapor can leak out. Classical but efficient solution to prevent degradation of LNB performance due to moisture.

On the top side, you can find engraved markings: ASTRA and HOTBIRD on the two feeds. Nice enhancement for the beginners. If your antenna is presently aligned to Astra (19.2° East), you mount the ASTRA feed of the monoblock in the antenna holder. If your antenna is aligned to Hot Bird (13° East), you mount it the other way round: HOTBIRD feed is in the holder and ASTRA feed is hanging off-center. Is this LNB really calculated for ASTRA-HOTBIRD 6.2° distance? We would rather say that it could be used for any 2 satellites that are about 6° apart. ASTRA and HOTBIRD are probably the very first choice for most satellite enthusiasts in Europe because they transmit large number of channels (including a lot of FTA ones).

Jiuzhou BSB11 is a universal Ku-Band monoblock single LNB. As in every universal LNB, its LOF's are 9.75 and 10.6 GHz. Jiuzhou claim typical noise figure of their device to be 0.6 dB which is not the most impressive value today but before drawing a final conclusion wait for the actual results. Monoblock LNB's are designed to work with offset dishes of diameter around 80 cm. Some users say that they used them successfully with the diameters between 75 and 90 cm. We tested it with a 85 cm dish; its reflector dimensions are: 780x832 mm, and the external dimensions: 852x903 mm. Dish of such dimensions would most likely be the choice of a professional installer when dealing with a monoblock LNB.

Before taking measurements of a 2 satellite setup, we decided to compare the noise performance of every half of the BSB11 with the reference devices. Figure 1 presents the results of the monoblock LNB's in comparison with 0.2 dB and 0.6 dB single LNB's. The antenna was aligned to HOTBIRD (13° East). The higher C/N value, the better signal quality and the greater margin for bad weather conditions.

While the results for the low frequency part of Ku-Band were as expected: the 0.2 dB LNB had visibly better signal quality, it was not so obvious for the high frequency end. In fact, ASTRA LNB of the BSB11 performed slightly better than the 0.2 dB single LNB!

That's why we asked our readers not to draw conclusions too fast. We can not judge the total LNB performance based only on the stated noise figure, the more so as it is only a typical value.

The next test was about determining if one of the possible setups is visibly better: HOTBIRD LNB off-center or ASTRA LNB off-center. The results are shown in figure 2. As you can see it is not so easy to say which is better. Evidently, LNB situated off-center provides worse signal in comparison with the central position. Based only on those measurements (4 transponders) I would vote for the setup: ASTRA in the center and HOTBIRD off-center.

As you can see in figure 2, placing the LNB off-center makes signal quality drop. But how much? To give you some orientation we compared the performance of the off-center LNB with the same LNB mounted on a 65 cm dish. The results are presented in figure 3.

The leftmost result (yellow bar) is the LNB placed and perfectly adjusted in the center of an 85 cm offset dish (the performance of the second half of a monoblock totally ignored). The next bar (green) is the result when the LNB is still in the center but the alignment was done to reach maximum signal for the off-center companion - HOTBIRD LNB. The following (beige) bar is the result when the LNB is in the off-center position and the dish is aligned to get the best signal from that LNB. The last (blue) bar shows the result for the same LNB mounted centrally on the 65 cm dish.

Our setup procedure was like that:
- align the central LNB for the best signal
- switch to the off-center LNB and change the alignment to get the best signal from that LNB (except for turning the dish, tilt the monoblock as well)
- check if the central is still receiving signal but do not try to align the system again; just leave it as it is

The holes at bottom of Monoblock keep it dry inside, allowing for condensed water to leak out

If you will follow this way and your dish is 85 cm, you may expect that the central LNB will work as if it is mounted on 75 cm dish, and the off-center LNB will work as if it is mounted on 65 cm dish. Please keep in mind that we did the alignment with the help of a dedicated satellite meter. If you do not have one, you may need quite a lot of patience before you reach the optimum setup.

Once we had determined what we can expect from the off-center LNB, we had to check it. This time, the HOTBIRD LNB was off-center and we connected to it the receiver that normally worked with the 65 cm fixed dish aimed at HOTBIRD (13° East). The receiver had absolutely no problem in receiving all the channels it normally received from HOTBIRD with a 65 cm dish. Of course, receiving ASTRA posed no problem either since its LNB was in the central position.

TECHNIC DATA

Manufacturer	Shenzhen Xiangcheng Electronic Science &Technology Co. Ltd, China, a unit of Jiuzhou
Internet	www.skytrack.cn
E-mail	liujun755@163.com
Telephone	+86 (755) 27495436 EXT: 1033
Fax	+86 (755) 27496486
Model	BSB11
Function	Universal Ku-Band Monoblock Single LNB
Noise Figure	0.6 dB (typ.)
LOF	9.750 and 10.600 GHz
DiSEqC Switching	Satellite A = HOT BIRD, Satellite B = ASTRA
Frequency Stability	+/- 1 MHz max. / T=const. +/- 3 MHz / T= –30…+70°C
Gain	50 dB (min.)
Gain Variation (P-P)	5 dB (typ.)
Cross Polarization Isolation	25 dB (typ.), 20dB (min.)
Phase Noise at 1 kHz Offset	-60 dBc/Hz
Phase Noise at 10 kHz Offset	-80 dBc/Hz
Phase Noise at 100 kHz Offset	-100 dBc/Hz
DC Current Consumption	220 mA (max.)
Operating Temperature	-30…+70°C

Expert conclusion

Peter Miller
TELE-satellite
Test Center
Poland

+

Despite being specified as having noise figure of 0.6 dB, BSB11 performance only in the lower part of Ku-Band was inferior to a single 0.2 dB LNB. It performed equally well as the 0.2 dB device at the higher end of Ku-Band. We were able to achieve very satisfactory results when receiving HOTBIRD and ASTRA satellites for which the device is mainly dedicated. Except for the noise figure, all other specs are very much alike the other good LNB's on the market today.

-

The manufacturer may consider adding a protective sleeve for the F-connector.

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TechniSat DigiPlus STR 1

Elegant CI Receiver with LCD Display

There are already plenty of bulky CI receivers with segmented displays available. So you can just imagine how excited we were to actually be holding an elegant receiver with readable display on our hands!

The new TechniSat DigiPlus STR1 was nicely packed and impressed us not only from its external appearance but also from its internal workings. The large and extremely easy to read display in the middle of the front panel stands out as soon as you open the box. To the left behind a flap are two well-hidden integrated card readers for Conax and Cryptoworks.

To our great surprise, we found that one of these slots was already fitted with a TechniSat Smart Card for a 30-day free trial of the radio package on Astra at 19.2° east. If you happen to like listening to that radio package, just fill out the order card that came with the receiver package to keep the Smart Card active after the 30-day trial.

Six buttons are located to the right of the display for control of the receiver should the remote control not be available. Nevertheless, it would be a good idea to keep fresh batteries in the remote since most of the receiver's features can only be accessed through the remote.

As long as we're on the subject of remote controls: TechniSat is trying to follow a very straight line by including the same remote in all of their units. If you already have a TechniSat box to call your own, you should have no trouble at all getting comfortable with the remote that comes with the DigiPlus STR1. It sits nicely in your hand and all buttons are within easy reach of your thumb.

On the rear panel, you will find two Scart connectors, three RCA jacks for video and stereo audio, a digital audio output (optical and coaxial), a satellite IF input as well as a service connection. Unfortunately, you won't find a main power switch, a looped-through IF output, an S-Video output and a modulator output.

The included user manual is in typical TechniSat quality: it is quite detailed with numerous illustrations and should therefore be an excellent tool even for beginners.

Everyday Use

After turning on the receiver for the first time, you are taken directly to the Installation Assistant that guides through all of the necessary setup parameters step-by-step. Choosing the desired OSD language is the first step. You can choose between German, French, Italian, English and Spanish. A second version of this receiver with the choices English, Turkish, Czech, Hungarian and Bulgarian is also available.

The next step involves selecting your location. A large selection is available that includes Germany, Switzerland, Great Britain, Spain, Holland, Turkey, Denmark, Norway, Russia, Luxembourg, Austria, The Czech Republic, France, Italy, Belgium, Poland, Sweden, Finland and Greece. If you now ask yourself what the use would be in the receiver knowing location, the answer is simply ISIPRO. The ISIPRO system was developed by TechniSat to provide up-to-date and country-specific channel lists to the user. As soon as a new channel is added or an old one removed, the receiver recognizes this automatically and loads the updated channel list via satellite. The days of time-consuming channel scans and channel sorting are over.

The next step is based on your existing antenna system. Naturally the receiver is compatible with all standard DiSEqC protocols as well as with the TechniSat developed Multyenne system previously introduced by TELE-satellite. The Multyenne system provides for multiple satellite reception at the same time. A DiSEqC motor can also be operated. The preprogrammed satellite list includes all of the more popular DTH satellites in Europe. 13 additional satellites can be manually added if need be.

The DigiPlus STR1 supports a variety of LNBs, from your basic single LNB, through a Quattro LNB up to and including TechniSat's own one-cable solution (Disicon series). Additionally, there are also corresponding local oscillator frequency (LOF) values for the C-band and also for circular LNBs available. And if you absolutely must use your S-band antenna with this new TechniSat receiver, you can set up the necessary LOFs manually. A pair of signal and quality displays constantly keep an eye out on the incoming satellite signal letting you easily adjust all the settings as needed for optimum reception.

Before the installation procedure comes to an end, the receiver takes a quick look to see if any new software is available via satellite. Only after this step is completed can you get into the channel menu. The user must choose between the ISIPRO system mentioned earlier and an automatic channel scan for all or free-to-air (FTA) only channels. We began our tests by activating the ISIPRO system; the download of an up-to-date channel list started immediately and was completed in just about one minute. The DigiPlus STR1 needed a little more time, roughly eight minutes, to download SFI data. This system is similar to the familiar EPG but on the one hand it comes with a number of sort and search functions and on the other it is a single download for all of the major broadcasters with information up to a week in advance.

After successfully exiting the Installation Assistant, the receiver switches over to the first receivable channel. The Info bar that immediately appears displays the current channel number and name as well as the title of the current program. This information is also visible on the receiver's LCD display and can easily be read from a distance. The receiver switches between channels in just under a second

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- 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
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and there are no noticeable video or audio distortions after switching channels.

Since we entered Austria as our test location, all German language channels including those from Austria were loaded. Even the large German PayTV providers were made available in the channel list. If we had chosen Switzerland as our location, all of the corresponding German-language channels would have been placed at the head of the list. Overall, this is a well thought out and extremely practical feature. It should also be noted that the so-called option channels of various PayTV providers were also supported and displayed without any problems.

To change channels, simply press the OK button to display the channel list. The current TV channel continues to be visible in a smaller window in the upper right corner of the screen. The channel list can also be sorted by provider and each channel can have its EPG info displayed assuming that this data is available. A push of the SFI button opens the editorially arranged EPG system that can handle a large number of channels. Various modes such as an overview (what happens to be playing on each channel) plus a total and detailed overview of all the channels can be accessed in just seconds.

Pushing the red function button provides access to the Timer settings from which you can choose between a video recorder timer and a channel switching timer. The channel switching timer lets you switch to another channel automatically at a specified time while the video recorder timer operates in a locked mode so that no one can accidentally change channels or turn the receiver off while a program is being recorded.

If you've never been too happy with the quality of the Scart's CVBS signal, you can go into the Settings menu and change the output to RGB or S-Video plus activate automatic 16:9 switching. TechniSat also did not forget to include child protection settings; in addition to a typical PIN lock-out of the entire menu system, individual TV and radio channels can also be hidden from the nosy kids.

As practical as the ISIPRO system is, it could never cover every desired channel. This is reason enough for us to take a closer look at the manual channel scan.

The Channel Scan menu offers four different modes: an automatic scan on all available satellites, a scan of individual satellites or transponders as well as a manual scan with PID entry for DXers. In all four modes, the scan can be set for all or FTA-only channels. A look at the preprogrammed transponder data reveals that they are for the most part up-to-date. For our channel scan test, the DigiPlus STR1 managed to scan 80 transponders in a little over eight minutes. All things considered, not bad at all.

The picture was not so rosy with the reception of very weak signals. Only those signals starting with a C/N of roughly 5dB could be processed by the receiver and displayed distortion-free. We were thus unable to use our 1.2-meter antenna on the relatively weak horizontal signals from NILESAT at 7° west. Even our test center in Berlin reported little to no success on ASTRA2D at 28.2° east with a 1.2-meter dish.

These less than positive results with its tuner sensitivity were more than made up for with this box's SCPC capabilities. Our test transponder with a symbolrate of 1.142 Ms/sec. was processed effortlessly and displayed without any distortion.

Radio fans will be very happy the first time they switch from TV to radio mode. Even in this mode the STR1 displays easy-to-read channel names, not to mention EPG data should it be available. Now you no longer need to turn the TV on in radio mode since even the TV and radio channel list is visible in reduced size on the receiver's display.

Expert Opinion

Thomas Haring
TELE-satellite
Test Center
Austria

+

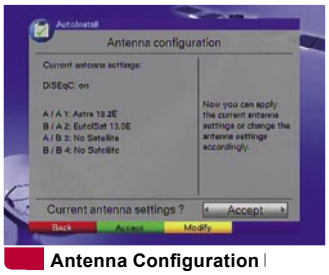
The TechniSat DigiPlus STR1 is an ideal receiver for every living room and every age group. It is very easy to use and, thanks to the Installation Assistant and the ISIPRO system, many of the setup difficulties that might otherwise pop up with a standard receiver are done away with. It also comes with quite a few setting variations for the more ambitious user or the professional. SCPC reception is very good and thanks to the SFI system the user has access to a fully-featured electronic program guide that other receivers cannot offer.

-

It would have been nice to see a main power switch, a satellite looped-through IF output and modulator on the rear panel.

TECHNIC DATA

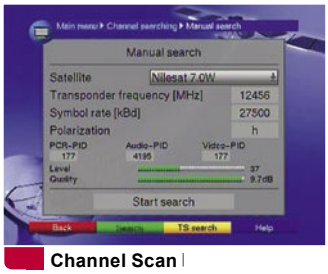
Manufacturer	TechniSat Digital GmbH, 54550 Daun, Germany
Tel	+49-6592-712-600
Fax	+49-6592-4910
E-Mail	http://www.technisat.com/en/kontakt.php
Model	DigiPlus STR1
Function	Digital CI Satellite Receiver with two integrated card readers
Channel Memory	5000
Satellites	33
Symbolrates	1-45 Ms/sec.
SCPC Compatible	yes, starting at 1.142 Ms/sec. (test result)
USALS	no
DiSEqC	1.0 / 1.2
Scart Connectors	2
Audio/Video Outputs	3 x RCA
UHF Modulator	no
Programmable 0/12 Volt	no
Digital Audio Output	yes, optical and coaxial
EPG	yes
C/Ku-band Compatible	yes
Power Supply	180-250 VAC, 50 Hz



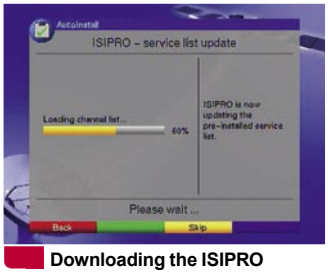
Antenna Configuration

Main Menu

SCPC Reception



Channel Scan



Downloading the ISIPRO Channel List

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info@stab-italia.com

MobiSet 4 CAP 900

Kathrein's New GPS Antenna Package for RV's

Heinz Koppitz

We knew it would happen: positioners can precisely point an antenna to a satellite while a GPS unit can provide geographical data. Users of mobile receivers such as RV owners have been waiting for quite some time for manufacturers to combine these two systems. It would end the time-consuming and sometimes aggravating task of aligning to your favorite satellite every time you move to a new location. The inauguration of the digital satellite age made this job even more difficult.

The MobiSet 4 CAP 900 in its operational position...

The day we've all been waiting for has finally come. Kathrein has developed a new package for campers. Kathrein has always catered to this target group with such products as 12-Volt boxes and the exceptional BAS 60 flat antenna that date back to the analog age. Their new CAP family of products was developed by Kathrein specifically with digital technology in mind. Antenna, tuner and receiver are now bundled into a single package that makes it possible to automatically search for satellites.

The new MobiSet 4 CAP 900 has been completely redesigned. The flat antenna was replaced by a 90 cm offset dish mounted on the antenna motor. The antenna is controlled by the receiver and will automatically retract into its stowed position when the vehicle's motor is started. Protection is included to guarantee that the antenna stays in this stowed position while the vehicle is in motion. But even while the antenna itself it idle, the GPS system remains active and checks its position every ten minutes, storing the new data.

The antenna can only be reactivated when the vehicles ignition has been turned off. The receiver then takes the most recent position and current GPS data, recalculates the new elevation and skew angles and drives the antenna precisely to the correct satellite. The correct azimuth is found by rotating the antenna on its vertical axis. Thanks to its ability to turn a full 360°, the RV can be parked in any position. The correlation between the GPS data and the last known location makes realignment of the antenna so fast that in most cases the satellite can be found within 30 seconds. In this way a selected channel can be very quickly accessed – assuming of course that there is a clear view to the satellite.

...and here in its stowed position when not in use, such as while driving.

The MobiSet 4 CAP 900 package includes a motorized antenna, a retractable dish plus a twin LNB all integrated into one unit. It weighs in at 19 Kg and is mounted on the roof of the vehicle. This increases the overall height of the vehicle by 23cm with the antenna in its stowed position. Three cables from the antenna are routed through a 38mm hole in the vehicle's roof to the inside of the vehicle where a maximum of two receivers (and two TV's) can be connected. The first receiver must be the UFS 740sw since it is the only one capable of providing the necessary Kathrein-specific CAP commands for the antenna. The second receiver can be whatever you want; it could even be an HDTV box or MPEG-4 receiver. This system won't become obsolete anytime soon.

The package includes an assortment of cables, mounting hardware and even a special polyurethane sealant. The only additional items you really need are a TV and radio. The antenna is designed for use on 12-Volt DC systems although the receiver can even be plugged into a wall if needed using the included power supply. If you also want to run the antenna itself from a wall socket, you would need a power supply that can deliver 12V/15A.

The motorized antenna is mounted on the roof of the vehicle with relative ease using five screws. The included sealant helps to guarantee a secure bond to the roof. Our tests were successful in every aspect. The motorized antenna operated quickly and reliably. After turning on the receiver (with the vehicles ignition turned off), the antenna moved to the correct position in just a few seconds. Even the difficult-to-receive BBC transponders on Astra at 28.5° east could be viewed without any problems. The skew for the Turksat bird was also properly set.

An all-in-one package. The MobiSet 4 CAP 900 comes with everything you see here.

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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
NAGV	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/Nagrvision
VIVG	Viaccess/Videoguard
WGNR	Wegener

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
4.0 East			**EUROBIRD 4**							
T	11.160	H	AFLENZ E-S		27500	3	2082	2083	2081	
T	12.130	V	DVBS2		27500		3841	3842	3841	
T	12.130	V	Standard_TV		27500		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 S		27500	3	200	201	200	
T	11.725	H	EU Test		27500	3	400	401	400	
T	11.843	H	LNK	____	27500	3	6246	6247	6246	
T	11.881	H	Kanal 10		27500	3	5071	5072	5071	
R	11.977	V	{Empty Name}		27500	3		2192		
R	11.996	H	{Empty Name}		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				
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	{Empty Name}	____	27500	3		100	100	
R	12.418	H	{Empty Name}	____	27500	3		402	402	
R	12.418	H	{Empty Name}	____	27500	3		400	400	
R	12.418	H	{Empty Name}	____	27500	3		400	400	
R	12.418	H	{Empty Name}	____	27500	3		500	500	
R	12.418	H	{Empty Name}	____	27500	3		500	500	
R	12.418	H	{Empty Name}	____	27500	3		100	100	
R	12.418	H	{Empty Name}	____	27500	3		202	202	
R	12.418	H	{Empty Name}	____	27500	3		500	500	
R	12.418	H	{Empty Name}	____	27500	3		100	100	
R	12.418	H	{Empty Name}	____	27500	3		402	402	
T	12.418	H	EMP TEST CHANNEL	____	27500	3	110	100	110	
D	12.418	H	EMP TEST ALT CH		27500	3			3300	
R	12.418	H	{Empty Name}	____	27500	3		100	100	
R	12.418	H	{Empty Name}	____	27500	3		402	402	
R	12.418	H	{Empty Name}	____	27500	3		400	400	
R	12.418	H	{Empty Name}	____	27500	3		400	400	
R	12.418	H	{Empty Name}	____	27500	3		500	500	
R	12.418	H	{Empty Name}	____	27500	3		500	500	
R	12.418	H	{Empty Name}	____	27500	3		100	100	
R	12.418	H	{Empty Name}	____	27500	3		202	202	
R	12.418	H	{Empty Name}	____	27500	3		500	500	
R	12.418	H	{Empty Name}	____	27500	3		100	100	
R	12.418	H	{Empty Name}	____	27500	3		402	402	
R	12.418	H	ALT VC 33	____	27500	3		400	400	
R	12.418	H	ALT VC 59	____	27500	3		500	500	
T	12.637	H	TV1000 Poland F		14463	3	431	432	431	
T	12.697	V	WBS Television		14685	3	1569	1570	1569	
7.0 East			**EUTELSAT W3A**							
T	10.880	V	Euro1080 HD1 MP4	IRDT	17360	3	308	256	308	
H	10.880	V	Euro1080 HD5		17360	3	260	261	260	
H	10.880	V	Euro1080HD4U		17360	3	270	271	270	
T	10.880	V	EXQI Eu	IRDT	17360	3	34	35	34	
D	10.927	V	SIMS W3A Redund		27500					
D	10.927	V	SKYPLEX W3A XPA		27500					
D	10.927	V	Skyplex-amber		27500					
T	10.927	V	Skygate Test		27500		2564	2565	2564	
T	11.190	H	RODRIGUES TV1 a		3210	1	308	256	8190	
T	11.190	H	MBC-R0D. TV2 &	____	3210	1	309	258	8189	
T	11.190	H	MBC-R0D. TV2 &	____	3210	1	309	258	8189	
T	11.190	H	MBC-R0D. TV2 &		3210	1	309	258	8189	
D	11.263	H	Streaming		27491	2				
T	11.342	H	ORTM		27500	2	5802	2105	5802	
D	11.342	H	AT&T		27500	2			515	
T	11.449	V	JOJO	____	29500	1	2114	2161	2114	
D	11.449	V	VESTEL ZAP DOWN		29500	1				
D	11.449	V	HUMAX DOWNLOAD		29500	1				
T	11.449	V	TÜRKMAX	____	29500	1	2115	2163	2115	
T	11.449	V	ZONE REALITY	____	29500	1	2116	2165	2116	
T	11.449	V	LIG TV	____	29500	1	2107	2167	2107	
R	11.449	V	TEST	____	29500	1		2208		
D	11.449	V	CAM SW		29500	1				
T	11.449	V	ELMAX	____	29500	1	2111	2157	2111	
T	11.449	V	Z	____	29500	1	2199	2299	2199	
T	11.449	V	RETROMAX	____	29500	1	2118	2168	2118	
R	11.449	V	POWERTURK	____	29500	1		2318		
R	11.449	V	POWER FM	____	29500	1		2420		
R	11.449	V	MASAL RADYO	____	29500	1		2207		
D	11.470	H	{Empty Name}		30000	5				
T	11.470	H	AKILLI TV	____	30000	5	2106	2209	2106	
T	11.470	H	{Empty Name}	____	30000	5	2905	2906	2905	
D	11.492	V	{Empty Name}		30000	3				
D	11.513	H	{Empty Name}		27500	3				
D	11.534	V	{Empty Name}		30000	3				
T	11.534	V	BUSINESS CHANNEL	____	30000	3	2106	2206	2106	
D	11.596	H	PHILIPS DOWNLOA		30000	3				
D	11.596	H	{Empty Name}		30000	3				
D	11.596	H	{Empty Name}		30000	3				
D	11.617	V	{Empty Name}		30000	3				
T	11.617	V	NAT. GEO. WILD	____	30000	3	2108	2210	2108	
T	11.617	V	BTV 2	____	30000	3	2119	2219	2119	
T	11.637	H	24	____	30000	3	2150	2250	2150	
D	11.637	H	{Empty Name}		30000	3				
D	11.678	H	{Empty Name}		30000	3				
D	12.641	H	{Empty Name}		30000	1				
D	12.641	H	{Empty Name}		30000	1				
D	12.641	H	{Empty Name}		30000	1			593	
D	12.641	H	{Empty Name}		30000	1			1000	
D	12.727	H	{Empty Name}		30000	1			600	
D	12.727	H	{Empty Name}		30000	1			609	
T	12.727	H	{Empty Name}		30000	1	901	902	901	
D	12.727	H	INTERSAT AFRICA		30000	1			614	
D	12.727	H	AFRIQUE TELECOM		30000	1			1000	
D	12.727	H	SatSurf		30000	1				
10.0 East			**EUTELSAT W1**							
T	11.126	H	JSCTLPRT		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	{Empty Name}		2170	3	4194	4195	4194	
T	11.163	H	{Empty Name}		2170	3	4194	4195	4194	
T	11.179	H	{Empty Name}		2532	3	308	256	8190	
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	
D	10.758	V	CANAL+		27500	3				
D	10.758	V	Playin TV		27500	3				
T	10.834	V	FRANCE 2	____	27500	3	320	330	320	
T	10.834	V	FRANCE 3	____	27500	3	520	530	520	
H	10.834	V	TPS CINECOMEDY	____	27500	3	2720		2720	
T	10.873	V	FRANCE 5	____	27500	3	820	830	820	
T	10.873	V	La Chaîne Parle	____	27500	3	1020	1030	1020	
T	10.873	V	FRANCE 4	____	27500	3	520	530	520	
D	10.873	V	Votre_Contrat		27500	3				
R	10.892	H	{Empty Name}	____	27500	3		116	116	
R	10.892	H	{Empty Name}	____	27500	3		137	137	
R	10.892	H	{Empty Name}	____	27500	3		120	120	
R	10.892	H	{Empty Name}	____	27500	3		123	120	
R	10.892	H	{Empty Name}	____	27500	3		121	120	
R	10.911	V	{Empty Name}		27500	3		5831	5831	
R	10.911	V	{Empty Name}		27500	3		4030	4030	
T	10.911	V	M6	____	27500	3	120	130	120	
T	10.911	V	TF1	____	27500	3	420	430	420	
R	10.930	H	{Empty Name}	____	27500	3		701	133	
T	10.930	H	Nova Scope	____	27500	3	516	690	516	
T	10.949	V	Turner Classic	____	27500	3	7601	7611	7699	
T	10.949	V	Cartoon Network	____	27500	3	7501	7511	7599	
T	10.949	V	GCUK Test Servi	____	27500	3	7501	7511	7599	
R	10.971	H	VOT West		27500	3		535	535	
R	10.971	H	Turizm Radyosu		27500	3		536	536	
T	11.013	H	PITV		27500	3	3701	3702	3701	
T	11.013	H	Inanna TV		27500	3	263	519	263	
T	11.013	H	Gali Kurdistan		27500	3	261	517	261	
R	11.013	H	London TBC		27500	3		592	592	
R	11.013	H	RUSSIAN RADIO		27500	3		614	358	
T	11.034	V	W9	____	27500	3	120	130	120	
T	11.034	V	CLP TV		27500	3	720	730	720	
T	11.054	H	TSBS-MB-rum	____	27500	5	410	302	410	
T	11.116	V	Wedding TV	____	27500	3	2201	2211	2201	
R	11.116	V	Radio Mojdeh		27500	3		7811	7401	
T	11.137	H	GEM TV		27500	3	3533	3653	3533	
R	11.200	V	Radio Potenza C		27500	5		541	542	
T	11.220	H	{Empty Name}	____	27500	2	165	422	165	
T	11.220	H	CNBC Europe	____	27500	2	171	440	171	
R	11.240	V	{Empty Name}		27500	3		2821	2821	
R	11.240	V	{Empty Name}		27500	3		2562	2570	
T	11.278	V	HBO	____	27500	3	160	80	160	
R	11.278	V	Music Choice 5	____	27500	3		613	613	
T	11.278	V	DISCOVERY	____	27500	3	172	124	172	
R	11.278	V	tech 3		27500	3		121	121	
T	11.278	V	MTV2	____	27500	3	170	118	170	
R	11.278	V	Music Choice 7	____	27500	3		625	625	
R	11.278	V	Music Choice 6	____	27500	3		620	620	
R	11.278	V	Music Choice Ur	____	27500	3		625	625	
R	11.278	V	Music Choice Da	____	27500	3		613	613	
T	11.278	V	CNBC	____	27500	3	171	120	171	
T	11.278	V	HBO2	____	27500	3	168	112	168	
R	11.278	V	Music Choice Ro	____	27500	3		619	619	
T	11.278	V	ESPN Classic Sp	____	27500	3	169	116	169	
T	11.278	V	EXTREME SPORTS	____	27500	3	165	100	165	
T	11.278	V	ZONE REALITY	____	27500	3	167	108	167	
T	11.278	V	EDUSAT	____	27500	3	164	96	164	
T	11.278	V	NATIONAL GEO	____	27500	3	166	104	166	
T	11.278	V	ANIMAL PLANET	____	27500	3	162	88	162	
T	11.278	V	HALLMARK	____	27500	3	161	84	161	
T	11.355	V	Music Box	____	27500	3	2565	2564	2565	
R	11.411	H	Makedonsko Radio		27500	3		2905	2905	
T	11.411	H	TEST		27500	3	2942	2947	2942	
T	11.411	H	KC - H		27500	3	2501	2502	2501	
T	11.411	H	TKS 01		27500	3	101	102	101	
T	11.411	H	FOX TV	____	27500	3	1701	1702	1701	
T	11.411	H	IPN TV		27500	3	2942	2947	2942	
T	11.411	H	RTC Calabria		27500	3	2935	2940	2935	
T	11.411	H	TIZIANA SAT		27500	3	2926	2927	2926	
T	11.411	H	Italy & Italy		27500	3	2906	2907	2906	
T	11.411	H	Cancao Nova		27500	3	2912	2929	2912	
T	11.411	H	Bethel TV		27500	3	2931	2932	2931	
T	11.411	H	Mktv Sat		27500	3	2944	2945	2944	
T	11.411	H	Art Channel		27500	3	2904	2915	2904	
T	11.411	H	HOT CHILI		27500	3	2909	2910	2909	
T	11.411	H	NAPOLI NOVA		27500	3	2914	2919	2914	
T	11.411	H	TAPESH TV2		27500	3	2921	2922	2921	
T	11.411	H	ADJARA TV		27500	3	2924	2925	2924	
T	11.411	H	RETE CAPRI		27500	3	2949	2950	2949	
R	11.411	H	Makedonsko Radio		27500	3		2905	2905	
T	11.411	H	ECTV		27500	3	2952	2953	2952	
T	11.411	H	.SEX CHAT		27500	3	2961	2962	2961	
T	11.411	H	APOSTOLIC ONENE		27500	3	2971	2972	2971	
T	11.411	H	Saudi arabian T		27500	3	2981	2982	2981	
T	11.411	H	{Empty Name}		27500	3	2981	2982	2981	
T	11.411	H	OnX		27500	3	2991	2900	2991	
T	11.432	V	Sportitalia	____	27500	2	518	710	518	
T	11.432	V	SI Live 24	____	27500	2	519	720	519	
D	11.449	H	Wojna i Pokoj		27500	2			512	
D	11.449	H	{Empty Name}		27500	2			512	
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	
R	11.541	V	TEST		22000	5		998	998	
R	11.541	V	PLAY Test		22000	5		2001	2001	
T	11.541	V	Planet Channel		22000	5	4210	4211	4210	
R	11.541	V	RADIO RELAX		22000	5	213	3528	3528	
R	11.541	V	RADIO RELAX		22000	5		3528	3528	
T	11.585	V	BFM TV		27500	3	1420	1421	1420	
T	11.585	V	NRJ 12		27500	3	1491	1492	1491	
T	11.604	H	TR2 Sat		27500	5	285	2620	285	
T	11.604	H	CARPE DIEM		27500	5	293	294	293	
T	11.604	H	FREE CHANNEL		27500	5	515	516	515	
T	11.623	V	ARTE		27500	3	223	233	223	
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	11.642	H	Bloomberg Frenc	____	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	11.681	H	NT1		27500	3	168	112	168	
R	11.727	V	{Empty Name}		27500	3		6662	6662	
R	11.727	V	{Empty Name}		27500	3		6692	6692	
T	11.727	V	Telesat		27500	3	2731	2732	2731	
R	11.843	V	{Empty Name}		27500	3		2581	2581	
R	11.881	V	{Empty Name}		27500	3		3120	8190	
T	11.977	H	Cultoon	____	27500	3	2466	2467	2466	
T	12.034	V	Class CNBC	____	27500	3	171	444	171	
T	12.149	V	VARESE SAT		27500	3	144	145	144	
T	12.149	V	STUDIO 100 TV		27500	3	272	273	272	
T	12.149	V	FUEGO		27500	3	288	289	288	
T	12.149	V	BLU		27500	3	304	305	304	
R	12.226	V	VOA Urdu Radio		27500	3		5032	5032	
T	12.245	H	Gulli		27500	3	121	131	121	
T	12.245	H	ITELE	____	27500	3	222	223	222	
T	12.245	H	EUROPE 2 TV		27500	3	200	220	200	
T	12.245	H	DAN TV		27500	3	203	213	203	
T	12.265	V	pdf-tv.de		27500	3	513	514	513	
T	12.265	V	GM	____	27500	3	2010	2020	2010	
T	12.303	V	CRO MUSIC CHANN		27500	3	1260	1261	1260	
T	12.322	H	France 24 (in A		27500	3	521	522	521	
T	12.437	H	PRESS TV		27500	3	311	103	311	
T	12.460	V	Virtual Hungary	____	27500	3	1260	1222	1260	
R	12.460	V	{Empty Name}		27500	3		1120	1120	
T	12.460	V	Virtual KidsCo	____	27500	3	910	908		
T	12.460	V	KidsCO EastEur	____	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	KidsCO EastEur	____	27500	3	910	1622		

T = TV Digital
R = Radio Digital
T = TV Digital Crypt
R = Radio Digital Crypt
T = TV Analog
R = Radio Analog
T = TV Analog Crypt
R = Radio Analog Crypt
H = TV High Definition
H = TV High Definition Crypt
D = Data Channel
P = Package

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	12.476	H	Tele A		27500	3	663	664	663	
T	12.476	H	Napoli TLA		27500	3	666	667	666	
T	12.476	H	Italiamia		27500	3	669	670	669	
T	12.476	H	Podroze TV		27500	3	672	673	672	
T	12.520	V	RBC-TV		27500	3	603	604	603	
T	12.520	V	Jewels Sorg1		27500	3	4100	4101	4100	
T	12.520	V	Jewels Sorg2		27500	3	4102	4103	4102	
T	12.520	V	Jewels Sorg3		27500	3	4104	4105	4104	
R	12.520	V	HKR		27500	3		4044	4044	
T	12.520	V	Health&Beauty TV		27500	3	4106	4107	4106	
T	12.540	H	DIRECT 8		27500	3	5129	5130	5129	
D	12.558	V	alenia		27500	3				
D	12.558	V	SIMS Signaling		27500	3				
D	12.558	V	alenia		27500	3				
D	12.558	V	AleniaSpazio		27500	3				
D	12.558	V	AleniaSpazio		27500	3				
D	12.558	V	SIMS Signaling		27500	3				
D	12.558	V	CSF DC-75		27500	3				
D	12.558	V	SIMS Signaling		27500	3				
T	12.558	V	S24		27500	3	7152	7153	7152	
D	12.558	V	skn-92-8		27500	3				
D	12.558	V	TOR_VVF		27500	3				
D	12.558	V	CID02000901		27500	3				
T	12.558	V	ONE		27500	3	6930	6931	6930	
D	12.558	V	CID01000100		27500	3				
D	12.558	V	CID09000500		27500	3				
D	12.558	V	CID09000200		27500	3				
D	12.558	V	CID09000201		27500	3				
R	12.558	V	Radio Deejay HR		27500	3		2574	2574	
D	12.558	V	CID09000700		27500	3				
R	12.673	V	{Empty}		27500	3		2897	2834	
T	12.692	H	TMC	VICS	27500	3	164	96	164	
16.0 East			**EUTELSAT W2**							
T	11.010	V	TV7 PP	____	27500	3	36	37	36	
T	11.010	V	VIARA		27500	3	32	44	32	
T	11.010	V	Planeta Folk TV		27500	3	34	35	34	
T	11.010	V	Europa TV		27500	3	523	761	154	
T	11.012	H	GCI E242/MAIN		12800	7	32	256	32	
T	11.266	H	VIZION PLUS		2170	3	4194	4195	4194	
T	11.276	H	BFTV Europe	____	11100	5	2006	3006	2006	
T	11.276	H	JLTV		11100	5	2008	3008	2008	
T	11.276	H	G.AZARBAJCAN TV		11100	5	2007	3007	2007	
R	11.294	H	RADIO HAY		13333			3016	2003	
T	11.325	H	AXN-Crime-cze	____	27500	3	100	113	100	
T	11.325	H	AXN-SciFi-cze	____	27500	3	200	213	200	
T	11.427	V	OBN	____	26700	5	311	441	443	
T	11.427	V	Service12	____	26700	5	312	445	312	
T	11.449	H	Premium Promo		27500	7	2101	2102	2101	
T	11.449	H	A-1		27500	7	2281	2282	2281	
T	11.471	V	TVR2	____	29950	3	610	600	610	
T	11.471	V	TVR Cluj		29950	3	710	700	710	
T	11.471	V	TVR1 PowerVu	____	29950	3	110	100	110	
T	11.471	V	TVR2 PowerVu	____	29950	3	210	200	210	
T	11.471	V	TVRi		29950	3	310	300	310	
T	11.471	V	TVR Cultural		29950	3	410	400	410	
R	11.471	V	Romania in Dire		29950	3		301	301	
R	11.471	V	Romania Interna		29950	3		303	303	
T	11.471	V	TVR1	____	29950	3	510	500	510	
T	11.471	V	TVR Craiova		29950	3	810	800	810	
T	11.471	V	TVR Iasi		29950	3	910	900	910	
T	11.471	V	TVR Timisoara		29950	3	1010	1000	1010	
T	11.513	V	HBO Comedy		29950	7	2801	2802	2801	
T	11.595	V	FOX Crime - PP	____	28800	7	517	700	133	
T	11.658	H	MISE A JOUR		30000	3	2047			
T	12.682	H	TV7		2892	3	333	800	8190	
T	12.703	H	TVM-I		2750		4194	4195	4194	
T	12.733	V	TV Pika		16277	2	101	102	101	
T	12.733	V	Carli TV		16277	2	201	202	201	
T	12.733	V	TV3 Slovenia		16277	2	501	502	501	
R	12.733	V	KISS ROM RADIO		16277	2		5101	5101	
R	12.733	V	KISS RADIO		16277	2		5102	5102	
R	12.733	V	GRAND		16277	2		5103	5103	
R	12.733	V	KISS DOINA VLAS		16277	2		5104	5104	
R	12.733	V	Radio Brod		16277	2		5105	5105	
R	12.733	V	Radio Koprivnica		16277	2		5106	5106	
R	12.733	V	RADIO AS - SABA		16277	2		5107	5107	
R	12.733	V	KISS NAJ RADIO		16277	2		5108	5108	
R	12.733	V	ORV Valentino BH		16277	2		5109	5109	
R	12.733	V	Radio Glas Drine		16277	2		5110	5110	
R	12.733	V	Radio Opanak		16277	2		5111	5111	
R	12.733	V	STUDIO M		16277	2		5112	5112	
R	12.733	V	YU PLANET BEC		16277	2		5113	5113	
R	12.733	V	Radio SvetPLUS		16277	2		5114	5114	
19.2 East			**ASTRA 1E,1F,1G,1H,1KR,2C**							
T	10.847	V	{Empty}		22000	5	163	400	163	
T	10.847	V	{Empty}		22000	5	163	400	163	
T	10.921	H	AXN	____	22000	5	651	660	651	
T	11.097	V	FERIA DE ABRIL		22000	5	165	100	165	
T	11.436	V	Tell You		22000		495	496	495	
T	11.436	V	glamour-girls		22000		751	752	751	
T	11.436	V	phab 8		22000		1007	1008	1007	
T	11.436	V	Tell You		22000		495	496	495	
T	11.436	V	glamour-girls		22000		751	752	751	
T	11.436	V	phab 8		22000		1007	1008	1007	
T	11.436	V	Wellenlängen TV		22000		1519	1520	1519	
T	11.436	V	1-Weiber TV		22000		1775	1776	1775	
T	11.436	V	Uschi's Schwest		22000		3311	3312	3311	
T	11.538	V	Russia Today		22000	5	604	624	604	
T	11.538	V	NRJ Hits		22000	5	608	628	608	
T	11.597	V	Best of shopping		22000	5	225	245	225	
T	11.597	V	M6 BOUTIQUE LA		22000	5	1120	1130	1120	
T	11.778	V	BFT	____	27500	3	166	102	166	
T	11.817	V	MEZZO.	____	27500	3	166	104	166	
T	12.012	V	CINE+ FOOT+ 11	____	27500	3	171	124	171	
T	12.051	V	SAT.1 CH		27500	3	1535	1536	1535	
D	12.090	V	DATASYSTEM 84		27500					
T	12.090	V	W9	____	27500		162	88	162	
T	12.090	V	PINK TV	____	27500		168	112	168	
T	12.090	V	DISCOVERY	____	27500		167	108	167	
T	12.090	V	M6 MUSIC HITS	____	27500		166	104	166	
T	12.090	V	TELETOON	____	27500		165	100	165	
T	12.090	V	C CINEMA STAR	____	27500		164	96	164	
T	12.090	V	INFOSPORT	____	27500		163	92	163	
T	12.090	V	W9	____	27500		162	88	162	
T	12.090	V	SERIE CLUB	____	27500		161	84	161	
T	12.168	V	TF6		27500	3	160	80	160	
D	12.168	V	DATASYSTEM 88		27500	3				
T	12.168	V	FRANCE 4	____	27500	3	168	112	168	
T	12.168	V	CANAL HD		27500	3	169	116	169	
T	12.168	V	FRANCE 4	____	27500	3	168	112	168	
T	12.168	V	EXTREME SPORTS	____	27500	3	167	108	167	
T	12.168	V	PIWI	____	27500	3	166	104	166	
T	12.168	V	{Empty}		27500	3	165	100	165	
T	12.168	V	TELETOON+1	____	27500	3	164	96	164	
T	12.168	V	TPS FOOT	____	27500	3	163	92	163	
T	12.168	V	EUROSPORT 2	____	27500	3	162	88	162	
T	12.168	V	USHUAIA TV	____	27500	3	161	84	161	
T	12.246	V	UProm.TV		27500	3	2559	2560	2559	
T	12.285	V	RTL9	____	27500	3	175	140	175	

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.

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
D	12.304	H	UPC Direct Radio		27500	3			1281	
T	12.324	V	SAILING CHANNEL	____	27500	3	171	124	171	
T	12.344	H	PRIVATE SPICE	____	27500	3	521	120	8190	
T	12.344	H	DORCEL TV		27500	3	522	124	8190	
T	12.460	H	Daystar Televis		27500	3	3567	3568	3567	
T	12.460	H	Deutsches Gesun		27500	3	1023	1024	1023	
R	12.515	H	Radio 54		22000	5		114	8190	
D	12.522	V	{Empty Name}		22000	2			160	
H	12.522	V	{Empty Name}	____	22000	2	163		163	
H	12.522	V	{Empty Name}	____	22000	2	161		161	
T	12.522	V	{Empty Name}		22000	2	164		163	
T	12.544	H	SAT.1		22000		255	256	255	
T	12.544	H	ProSieben		22000		511	512	511	
T	12.544	H	Kabel 1		22000		767	768	767	
T	12.544	H	N24		22000		1023	1024	1023	
T	12.544	H	9Live		22000		1279	1280	1279	
R	12.574	H	{Empty Name}		22000	5		222	8190	
R	12.574	H	{Empty Name}		22000	5		220	8190	
R	12.574	H	{Empty Name}		22000	5		225	8190	
R	12.574	H	{Empty Name}		22000	5		226	8190	
R	12.574	H	{Empty Name}		22000	5		227	8190	
R	12.574	H	{Empty Name}		22000	5		229	8190	
R	12.574	H	{Empty Name}		22000	5		230	8190	
R	12.574	H	{Empty Name}		22000	5		228	8190	
R	12.574	H	{Empty Name}		22000	5		231	8190	
R	12.574	H	{Empty Name}	____	22000	5		232	8190	
R	12.574	H	{Empty Name}	____	22000	5		233	8190	
R	12.574	H	{Empty Name}	____	22000	5		234	8190	
R	12.574	H	{Empty Name}		22000	5		235	8190	
R	12.574	H	{Empty Name}		22000	5		236	8190	
R	12.574	H	{Empty Name}		22000	5		240	8190	
R	12.574	H	{Empty Name}		22000	5		239	8190	
T	12.574	H	Film1.3	____	22000	5	519	86	8190	
D	12.574	H	Downl		22000	5			8190	
T	12.604	H	WDR Aachen		22000	5	3301	3302	3301	
T	12.604	H	WDR Wuppertal		22000	5	3301	3302	3301	
T	12.604	H	WDR Bonn		22000	5	3301	3302	3301	
T	12.604	H	WDR Duisburg		22000	5	3301	3302	3301	
D	12.604	H	STB Adimo		22000	5				
D	12.604	H	KaCTFL		22000	5				
T	12.610	V	NDS_RR		22000	5	1111	1112	1111	
D	12.610	V	NDS_DATA		22000	5			5632	
H	12.610	V	SMD HD		22000	5	133	134	133	
D	12.610	V	Proxy test		22000	5				
H	12.610	V	ASTRA HD 01		22000	5	133	134	133	
T	12.610	V	NDS_VOTE		22000	5	1111	1112	1111	
T	12.610	V	NDS_COD		22000	5	1111	1112	1111	
T	12.610	V	SRVMVD		22000	5	1111	1112	1111	
T	12.610	V	SMD EU 1		22000	5	1111	1112	1111	
T	12.610	V	SMD EU 2		22000	5	1111	1112	1111	
T	12.610	V	SMD EU 3		22000	5	1111	1112	1111	
T	12.610	V	SMD EU 4		22000	5	1111	1112	1111	
T	12.610	V	SMD DEV 01		22000	5	1111	1112	1111	
T	12.610	V	SMD DEV 03		22000	5	1111	1112	1111	
T	12.610	V	SMD DEV 04		22000	5	1111	1112	1111	
T	12.610	V	SMD 01		22000	5	1111	1112	1111	
T	12.610	V	SMD 02		22000	5	1111	1112	1111	
T	12.610	V	SMD 03		22000	5	1111	1112	1111	
T	12.610	V	SMD 04		22000	5	1111	1112	1111	
D	12.610	V	SMD 09		22000	5				
D	12.610	V	SMD 10		22000	5				
T	12.610	V	VS PRG 02		22000	5	1301	1302	1301	
T	12.610	V	VS PRG 03		22000	5	1301	1302	1301	
T	12.633	H	erotik24		22000	5	222	322	222	
T	12.633	H	1AFUN		22000	5	223	323	223	
T	12.633	H	Phab 13		22000	5	224	324	224	
T	12.633	H	Phab 14		22000	5	225	325	225	
T	12.633	H	Phab 15		22000	5	226	326	226	
T	12.633	H	Vic TV 6		22000	5	220	320	220	
T	12.633	H	Manneskraft.TV		22000	5	206	306	206	
T	12.633	H	Night.TV		22000	5	212	312	212	
T	12.633	H	Vic TV 3		22000	5	215	315	215	
R	12.633	H	WRN Deutsch		22000	5		356	356	
T	12.640	V	BLOOMBERG TV	____	22000	5	163	92	163	
T	12.729	V	Cbars 75		19895	3	100	101	100	
21.5 East			**EUTELSAT W6**							
D	11.345	H	IFA DVB-H servi		28780	7				
T	11.571	H	Feeds (MEDIA GR		2800	3	4194	4195	4194	
T	11.571	H	Feeds (-1)		2800	3	769	770	769	
T	11.571	H	Feeds (TV)		2800	3	100	110	100	
23.5 East			**ASTRA 1D,3A**							
H	10.758	V	Euro1080 HD1	IRDT	22000	7	308	256	308	
H	10.758	V	Euro1080 HD1 MP4	IRDT	22000	7	307	255	307	
H	10.758	V	EXQI	IRDT	22000	7	34	35	34	
H	10.758	V	Euro1080 HD1		22000	7	308	256	308	
T	10.758	V	Euro1080 HD1 MP4		22000	7	307	255	307	
D	10.803	H	Proxy_10		22000	2				
H	10.803	H	ASTRA HD		22000	2	1475	2475	1475	
H	10.803	H	H.264 HD		22000	2	1476	2476	6476	
H	10.842	V	{Empty Name}		13333	3	260	261	260	
H	10.842	V	{Empty Name}		13333	3	270	271	270	
H	10.842	V	Euro1080 HD5		13333	3	260	261	260	
H	10.842	V	Euro1080HD4U		13333	3	270	271	270	
H	10.842	V	{Empty Name}		13333	3	260	261	260	
H	10.842	V	{Empty Name}		13333	3	270	271	270	
T	11.513	H	Ch1 BT + KT	____	27500		258	259	257	
T	11.513	H	Ch2 BPK	____	27500		514	515	513	

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.513	H	Ch3 BR	____	27500		770	771	769	
T	11.513	H	Ch4 MAZ		27500		1026	1027	1025	
T	11.513	H	SAT1 National		27500		1282	1283	1282	
T	11.513	H	SAT1 NRW		27500		1282	1283	1282	
T	11.513	H	SAT1 NS/Bremen		27500		1282	1283	1282	
T	11.513	H	SAT1 HH/SH		27500		1282	1283	1282	
T	11.513	H	SAT1 RhlPf/Hess		27500		1282	1283	1282	
T	11.513	H	Test BY		27500		1282	1283	1282	
T	11.513	H	tvtraveller	____	27500		4353	4354	4353	
T	11.513	H	Volksmusik.tv /		27500		4609	4610	4609	
T	11.592	V	Disney Playhouse	____	27500	9	951	952	951	
T	11.592	V	{Empty Name}	____	27500	9	891	892	891	
T	11.592	V	Cartoon Network	____	27500	9	2631	2632	2631	
T	11.592	V	Turner Classic	____	27500	9	2641	2642	2641	
T	11.592	V	The Biography C	____	27500	9	2651	2652	2651	
T	11.635	H	{Empty Name}	____	27500	9	1011	1012	1011	
T	11.635	H	{Empty Name}	____	27500	9	1021	1022	1021	
T	11.635	H	{Empty Name}	____	27500	9	1051	1052	1051	
T	11.635	H	{Empty Name}	____	27500	9	1081	1082	1081	
T	11.635	H	{Empty Name}	____	27500	9	1091	1092	1091	
T	11.635	H	{Empty Name}	____	27500	9	1261	1262	1261	
T	11.635	H	{Empty Name}	____	27500	9	511	512	511	
T	11.635	H	{Empty Name}	____	27500	9	521	522	521	
T	11.635	H	{Empty Name}	____	27500	9	2241	2242	2241	
T	11.635	H	{Empty Name}	____	27500	9	2271	2272	2271	
T	11.635	H	{Empty Name}	____	27500	9	1031	1032	1031	
R	11.635	H	{Empty Name}	____	27500	9		1301	1301	
R	11.635	H	{Empty Name}	____	27500	9		1302	1302	
R	11.635	H	{Empty Name}	____	27500	9		1303	1303	
R	11.635	H	{Empty Name}	____	27500	9		1304	1304	
R	11.635	H	{Empty Name}	____	27500	9		1305	1305	
R	11.635	H	{Empty Name}	____	27500	9		1306	1306	
R	11.635	H	{Empty Name}	____	27500	9		1307	1307	
R	11.635	H	{Empty Name}	____	27500	9		1308	1308	
R	11.635	H	{Empty Name}	____	27500	9		1309	1309	
R	11.635	H	{Empty Name}	____	27500	9		1311	1311	
R	11.635	H	{Empty Name}	____	27500	9		1312	1312	
R	11.635	H	{Empty Name}	____	27500	9		1313	1313	
R	11.635	H	{Empty Name}	____	27500	9		1314	1314	
R	11.635	H	{Empty Name}	____	27500	9		1315	1315	
R	11.635	H	{Empty Name}	____	27500	9		1317	1317	
R	11.635	H	{Empty Name}	____	27500	9		1319	1319	
R	11.635	H	{Empty Name}	____	27500	9		1320	1320	
R	11.635	H	{Empty Name}	____	27500	9		1321	1321	
R	11.635	H	{Empty Name}	____	27500	9		1322	1322	
R	11.635	H	{Empty Name}	____	27500	9		1323	1323	
R	11.635	H	{Empty Name}	____	27500	9		1324	1324	
R	11.635	H	{Empty Name}	____	27500	9		1325	1325	
R	11.635	H	{Empty Name}	____	27500	9		1326	1326	
R	11.635	H	{Empty Name}	____	27500	9		1327	1327	
R	11.635	H	{Empty Name}	____	27500	9		1328	1328	
R	11.635	H	{Empty Name}	____	27500	9		1329	1329	
R	11.635	H	{Empty Name}	____	27500	9		1330	1330	
R	11.635	H	{Empty Name}	____	27500	9		1331	1331	
R	11.635	H	{Empty Name}	____	27500	9		1332	1332	
R	11.635	H	{Empty Name}	____	27500	9		1333	1333	
R	11.635	H	{Empty Name}	____	27500	9		1334	1334	
R	11.635	H	{Empty Name}	____	27500	9		1335	1335	
R	11.635	H	{Empty Name}	____	27500	9		1336	1336	
R	11.635	H	{Empty Name}	____	27500	9		1337	1337	
R	11.635	H	{Empty Name}	____	27500	9		1338	1338	
R	11.635	H	{Empty Name}	____	27500	9		1339	1339	
R	11.635	H	{Empty Name}	____	27500	9		1340	1340	
R	11.635	H	{Empty Name}	____	27500	9		1341	1341	
R	11.635	H	{Empty Name}	____	27500	9		1342	1342	
R	11.635	H	{Empty Name}	____	27500	9		1343	1343	
R	11.635	H	{Empty Name}	____	27500	9		1344	1344	
R	11.635	H	{Empty Name}	____	27500	9		1345	1345	
R	11.635	H	{Empty Name}	____	27500	9		1346	1346	
R	11.635	H	{Empty Name}	____	27500	9		1347	1347	
R	11.635	H	{Empty Name}	____	27500	9		1310	1310	
T	11.635	V	Select Kino Inf	____	27500	9	2001	2002	2001	
T	11.635	V	Select Kino 1 (	____	27500	9	2011	2012	2011	
T	11.635	V	Select Kino 2 (	____	27500	9	2021	2022	2021	
T	11.635	V	Select Kino 3 (	____	27500	9	2031	2032	2031	
T	11.635	V	Select Kino 4 (	____	27500	9	2041	2042	2041	
T	11.635	V	Select Kino 5 (	____	27500	9	2051	2052	2051	
T	11.635	V	Select Kino 6 (	____	27500	9	2061	2062	2061	
T	11.635	V	Select Kino 7 (	____	27500	9	2071	2072	2071	
T	11.635	V	redXclub Info	____	27500	9	2091	2092	2091	
T	11.635	V	redXclub 1	____	27500	9	2101	2102	2101	
T	11.635	V	redXclub 2	____	27500	9	2111	2112	2111	
T	11.675	V	{Empty Name}	____	27500	9	1201	1205	1201	
T	11.723	H	ASTRA SD		22000	2	1570	2570	1570	
T	11.991	H	Nova	____	27500	3	2580	2581	2580	
T	12.032	H	ASTRA		27500	3	305	306	305	
D	12.032	H	DEV PF Annt		27500	3				
D	12.032	H	DEV VS		27500	3				
D	12.032	H	DEV Sat@1.		27500	3				
D	12.032	H	DEV Proxy		27500	3				
D	12.032	H	DEV VPN		27500	3				
D	12.032	H	DEV VPNP		27500	3				
D	12.032	H	VPF PF Annt		27500	3				
D	12.032	H	VPF VS		27500	3				
D	12.032	H	VPF SAT@1.		27500	3				
D	12.032	H	VPF Proxy		27500	3				
D	12.032	H	VPF VPNP		27500	3				
D	12.032	H	VPF VPN		27500	3				
D	12.032	H	VPF CHSI		27500	3				
H	12.032	H	H.264 1080i		27500	3	512	513	3840	
T	12.525	V	XXX Xtreme	____	27500	3	160	80	160	
R	12.565	H	EXPRES 7		27500	2		2566	2566	
D	12.565	V	{Empty Name}		27500	3				
D	12.565	V	{Empty Name}		27500	3				
D	12.565	V	{Empty Name}		27500	3				
D	12.565	V	{Empty Name}		27500	3				
T	12.605	H	{Empty Name}	____	27500	9	1041	1042	1041	
T	12.605	H	{Empty Name}	____	27500	9	1071	1072	1071	
T	12.605	H	{Empty Name}	____	27500	9	461	462	461	
T	12.605	H	{Empty Name}	____	27500	9	471	472	471	
T	12.605	H	{Empty Name}	____	27500	9	491	492	491	
T	12.605	H	{Empty Name}	____	27500	9	501	502	501	
T	12.605	H	{Empty Name}	____	27500	9	901	902	901	
T	12.605	H	{Empty Name}	____	27500	9	2411	2412	2411	
T	12.605	H	{Empty Name}	____	27500	9	2421	2422	2421	
T	12.605	H	{Empty Name}	____	27500	9	821	822	821	
T	12.605	H	{Empty Name}	____	27500	9	481	482	481	
T	12.605	H	{Empty Name}	____	27500	9	2231	2232	2231	
T	12.605	H	{Empty Name}	____	27500	9	2251	2252	2251	
T	12.605	H	{Empty Name}	____	27500	9	2281	2282	2281	
T	12.605	H	{Empty Name}	____	27500	9	821	822	821	
T	12.605	H	{Empty Name}	____	27500	9	481	482	481	
T	12.605	H	{Empty Name}	____	27500	9	501	502	501	
T	12.605	H	{Empty Name}	____	27500	9	461	462	461	
T	12.605	H	{Empty Name}	____	27500	9	481	483	481	
T	12.605	H	{Empty Name}	____	27500	9	821	823	821	
T	12.641	H	L1 TV		2220	7	768	769	768	
T	12.672	V	RTL MCR (ENEX		13016	3	308	256	8190	
T	12.672	V	RTL OFFROAD D220		13016	3	4194	4195	4194	

The Full Chart with the most up-to-date channel data is available exclusively for TELE-satellite readers from SatcoDX's CD "World of Satellites"
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26.0 East — BADR-2,3,4 & EUROBIRD 2

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.075	V	**Taiba**		27500	3	42	40	42	
T	11.075	V	**AlFajr**		27500	3	1009	1209	1009	
T	11.075	V	**Aviation**		27500	3	4097	4099	4097	
T	11.075	V	**Osool**		27500	3	2106	2107	2106	
T	11.075	V	**Al Madina**		27500	3	49	50	49	
T	11.075	V	**Bahry**		27500	3	45	46	45	
T	11.075	V	**Al Omma**		27500	3	53	55	53	
T	11.075	V	**Al Hekmah**		27500	3	57	59	57	
T	11.075	V	**Ch 4 Teen**		27500	3	62	64	62	
R	11.585	V	**Polskie Radio**		27500	3		769	769	
T	11.585	V	**Noorsat Promo**		27500	3	100	769	100	
T	11.585	V	**DM TV**		27500	3	3341	3342	3341	
T	11.585	V	**DUNIA TV**		27500	3	516	1284	516	
T	11.585	V	**ZAOL TV**		27500	3	515	1283	515	
T	11.585	V	**HUDA**		27500	3	1022	1024	1022	
T	11.585	V	**New TV**		27500	3	2003	3006	2003	
T	11.585	V	**TIS**		27500	3	36	37	36	
T	11.585	V	**Al Falestinyah**		27500	3	32	110	32	
T	11.585	V	**ATC**		27500	3	34	35	34	
D	11.604	H	**SDSJ2**		27500	3				
T	11.604	H	**DISCOVERY T&L**		27500	3	656	657	656	
T	11.604	H	**STC**	____	27500	3	704	705	704	
T	11.604	H	**DISCOVERY SCIEN**	____	27500	3	688	689	688	
T	11.604	H	**DISCOVERY CHANN**	____	27500	3	672	673	672	
T	11.604	H	**PTEST**	____	27500	3	640	641	640	
T	11.604	H	**TRACE**	____	27500	3	624	625	624	
T	11.766	H	**Al Zawra**		27500	3	4160	4120	4160	
T	11.785	V	**EL Emarah**		27500	3	310	320	310	
T	11.785	V	**Sahm TV**		27500	3	410	420	410	
T	11.785	V	**Jaras TV**		27500	3	510	520	510	
T	11.785	V	**Ghinwa**		27500	3	710	720	710	
T	11.785	V	**Strike**		27500	3	910	920	910	
T	11.785	V	**Escape TV**		27500	3	1010	1020	1010	
T	11.785	V	**FashionTV Arabia**		27500	3	1210	1220	1210	
T	11.785	V	**konouz-TV**		27500	3	1310	1320	1310	
T	11.785	V	**A1 Shop**		27500	3	1510	1520	1510	
T	11.785	V	**Future USA**		27500	3	210	220	210	
T	11.919	H	**AL-Arabiya**		27500	3	401	601	401	
T	11.919	H	**MBC1**		27500	3	402	602	402	
T	11.919	H	**MBC2**		27500	3	403	603	403	
T	11.919	H	**MBC3**		27500	3	404	604	404	
T	11.919	H	**MBC4**		27500	3	405	605	405	
T	11.919	H	**MBC Action**		27500	3	406	606	406	
T	11.919	H	**MBC Int**	____	27500	3	427	627	427	
T	11.919	H	**TXT TV**		27500	3	428	628	428	
T	11.919	H	**ChatCom**		27500	3	429	629	429	
R	11.919	H	**Jeddah FM**		27500	3		701	701	
R	11.919	H	**MBC FM**		27500	3		702	702	
R	11.919	H	**Riyadh FM**		27500	3		703	703	
R	11.919	H	**Panorama**		27500	3		704	704	
R	11.919	H	**Panjordon**		27500	3		705	705	
R	11.919	H	**MBC FM ER**		27500	3		706	706	
T	11.938	V	**Yemen TV**		27500	3	831	832	831	
T	11.938	V	**Beeaty TV**		27500	3	100	110	100	
H	11.958	H	**LUXE.TV HD**		27500	3	101	102	101	
H	11.958	H	**LUXE.TV HD**		27500	3	101	102	101	
T	11.958	H	**HD VISIO TV**		27500	3	201	202	201	
T	11.996	H	**Arabsat Promoti**		27500	3	2560	2520	2560	
T	11.996	H	**Test 2**		27500	3	3860	3820	3860	
T	12.015	V	**Saudi-1**		27500	3	512	650	128	
T	12.015	V	**Saudi-2**		27500	3	513	660	129	
T	12.015	V	**Saudi Sport**		27500	3	514	670	130	
T	12.015	V	**Al-Ekhabariah**		27500	3	515	680	131	
T	12.015	V	**Saudi TV**		27500	3	516	690	132	
R	12.015	V	**Holy Quran**		27500	3		651	128	
R	12.015	V	**Saudi Radio-1**		27500	3		661	129	
R	12.015	V	**Saudi Radio-2**		27500	3		671	130	
R	12.015	V	**European**		27500	3		681	131	
R	12.015	V	**Radio-5**		27500	3		691	132	
D	12.015	V	**{Empty Name}**		27500	3				
T	12.015	V	**{Empty Name}**		27500	3	2308	2309	2308	
T	12.015	V	**{Empty Name}**		27500	3	2310	2311	2310	
T	12.015	V	**{Empty Name}**	____	27500	3	2312	2313	2312	
T	12.015	V	**{Empty Name}**		27500	3	2314	2315	2314	
D	12.015	V	**{Empty Name}**		27500	3				
T	12.032	H	**JSC**		27500	3	512	650	128	
T	12.032	H	**JSC Mubasher**		27500	3	513	660	129	
T	12.032	H	**JSC English**		27500	3	514	670	130	
T	12.032	H	**JSC Sports**		27500	3	515	680	131	
T	12.032	H	**JSC Children**		27500	3	516	690	132	
T	12.032	H	**JSC Documentary**		27500	3	517	700	133	
T	12.032	H	**Qatar TV 1**		27500	3	518	710	134	
T	12.032	H	**Alkass**		27500	3	519	720	135	
T	12.032	H	**Test**		27500	3	520	730	136	
T	12.032	H	**Test**		27500	3	521	740	137	
R	12.032	H	**Sout Al Khaleej**		27500	3		652	128	
R	12.032	H	**Qatar Radio**		27500	3		662	129	
T	12.166	V	**Ghiras TV**		27500	3	32	33	32	
T	12.166	V	**AGHANI TV**		27500	3	38	39	38	
T	12.166	V	**DUBAI Award for**		27500	3	202	203	202	
T	12.205	V	**DJbouti**		27500	3	3101	3201	3101	
T	12.205	V	**Sudan TV**		27500	3	3102	3202	3102	
T	12.205	V	**PSC**		27500	3	3103	3203	3103	
T	12.205	V	**Qatar TV**		27500	3	3104	3204	3104	
T	12.205	V	**Al-Iraqia**		27500	3	3105	3205	3105	
T	12.205	V	**Yemen TV**		27500	3	3106	3206	3106	
T	12.205	V	**Al-Majd**		27500	3	3107	3207	3107	
T	12.205	V	**Al-Majd Quran**		27500	3	3108	3208	3108	
T	12.205	V	**Al Hekmah**		27500	3	3109	3209	3109	
T	12.205	V	**AR TV**		27500	3	3110	3210	3110	
T	12.205	V	**Sudan2**		27500	3	1660	1620	1660	
R	12.205	V	**Sudan R1**		27500	3		3212	3212	
R	12.205	V	**Sudan R2**		27500	3		3213	3213	
R	12.205	V	**Al-Iraqia R1**		27500	3		3214	3214	
R	12.205	V	**Al-Iraqia R2**		27500	3		3215	3215	
R	12.205	V	**PSC Radio**		27500	3		32	32	
R	12.205	V	**Qatar Radio**		27500	3		3218	3218	
T	12.225	H	**Bahrain TV**		27500	3	512	650	128	
T	12.225	H	**Bahrain 55**		27500	3	513	660	129	
T	12.225	H	**Bahrain Sport**		27500	3	514	670	130	
T	12.225	H	**Test 1**		27500	3	515	680	131	
T	12.225	H	**Test 2**		27500	3	516	690	132	
T	12.225	H	**Test 3**		27500	3	517	700	133	
T	12.225	H	**Test 4**		27500	3	518	710	134	
T	12.225	H	**Test 5**		27500	3	519	720	135	
T	12.225	H	**Test 6**		27500	3	520	730	136	
T	12.225	H	**Test 7**		27500	3	521	740	137	
R	12.225	H	**Bahrain Radio g**		27500	3		651	128	
R	12.225	H	**Bahrain FM**		27500	3		661	129	
R	12.225	H	**Radio Bahrain**		27500	3		671	130	
R	12.225	H	**Arab Classical**		27500	3		681	131	
R	12.225	H	**News Channel**		27500	3		691	132	
R	12.225	H	**Test 1**		27500	3		701	133	
R	12.225	H	**Holy Quran Chan**		27500	3		711	134	
R	12.225	H	**Traditional Mus**		27500	3		721	135	
T	12.523	H	**KTV.H.Quran**		27500	3	53	54	53	
T	3.827	V	**{Empty Name}**		5612	3	35	36	35	
T	3.827	V	**{Empty Name}**		5612	3	33	34	33	

28.2 East — ASTRA 2A-B-D (28.5E)

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	10.714	H	**ITV2+1**		22000	5	2341	2342	2341	
T	10.759	V	**Men & Motors**		22000	5	2367	2368	2367	
T	11.222	H	**MKTV**		27500	2	2312	2313	2312	
T	11.222	H	**Fashion TV**		27500	2	2339	2340	2339	
T	11.222	H	**Racing World**	____	27500	2	2329	2330	2329	
T	11.222	H	**Racing UK**	____	27500	2	2332	2341	2332	
T	11.224	V	**MusFlashTV**		27500	2	2309	2312	2305	
T	11.224	V	**PTV Global**		27500	2	2313	2314	2313	
T	11.260	V	**Trends TV**		27500	2	2317	2318	2328	
T	11.260	V	**52115**		27500	2	2329	2330	2329	
R	11.262	H	**Newstalk**		27500	2		2335	2335	
T	11.307	V	**TV Warehouse1**		27500	2	2312	2313	2307	
T	11.307	V	**53373**		27500	2	2325	2326	2325	
T	11.344	H	**LivexxxBabes**		27500	2	2334	2335	2334	
R	11.389	V	**Starpoint Radio**		27500	2		2375	2375	
T	11.488	V	**Channel 'S'**		27500	2	2330	2331	2329	
T	11.488	V	**France 24**		27500	2	2327	2328	2327	
T	11.488	V	**Smart Shop TV**		27500	2	2306	2307	2305	
T	11.488	V	**Channel S ATN**		27500	2	2310	2311	2322	
T	11.488	V	**Channel S NTV**		27500	2	2308	2309	2321	
T	11.488	V	**Channel Punjab**		27500	2	2319	2320	2318	
T	11.488	V	**Unity Muslim**		27500	2	2316	2317	2316	
T	11.488	V	**revelation**		27500	2	2313	2314	2312	
T	11.488	V	**Turn On TV 2**		27500	2	2315	2325	2326	
T	11.488	V	**Info TV2**		27500	2	2332	2333	2334	
T	11.488	V	**Channel 'S'**		27500	2	2330	2331	2329	
T	11.527	V	**Channel M**		27500	2	2380	2381	2379	
T	11.527	V	**DD-News**		27500	2	2383	2384	2382	
R	11.565	V	**GMS5**		27500	2		4045	4045	
R	11.565	V	**GS19**		27500	2		3222	3222	
R	11.565	V	**GMS4**		27500	2		4211	4211	
T	11.565	V	**DISC**		27500	2	2613	2614	2613	
R	11.565	V	**GMS6**		27500	2		3510	3510	
R	11.565	V	**GMS3**		27500	2		3737	3737	
T	11.565	V	**FDRE**		27500	2	3519	3517	3519	
R	11.565	V	**GMS9**		27500	2		3225	3225	
R	11.565	V	**GS23**		27500	2		3231	3231	
R	11.565	V	**GS18**		27500	2		3228	3228	
T	11.565	V	**Heineken Dal**		27500	2	2505	2509	2505	
R	11.565	V	**GS21**		27500	2		2607	2607	
T	11.585	H	**RedHot All Girl**	____	27500	2	2353	2354	2353	
T	11.623	H	**BabyTV**	____	27500	2	2319	2320	2305	
D	11.662	H	**Ladbrokes**		27500	2				
D	11.662	H	**Ladbrokes test**		27500	2				
T	11.758	H	**1489**	VGRD	27500	2	2321	2322	2304	
R	12.012	V	**GS13**		27500	2		2517	2517	
R	12.012	V	**GS10**		27500	2		2527	2527	
R	12.012	V	**GS11**		27500	2		2590	2590	
T	12.012	V	**EENT**		27500	2	2505	2509	2505	
R	12.012	V	**GMS2**		27500	2		3219	3219	
R	12.012	V	**{Empty Name}**		27500	2		2607	2607	
T	12.012	V	**SHEL**		27500	2	3020	3021	3020	
R	12.012	V	**GMS7**		27500	2		3017	3017	
R	12.012	V	**GMS8**		27500	2		3529	3529	
R	12.012	V	**GS15**		27500	2		3548	3548	
T	12.012	V	**SAAB**		27500	2	3097	3098	3097	
R	12.012	V	**GMS3**		27500	2		3737	3737	
R	12.012	V	**GMS4**		27500	2		4211	4211	
T	12.246	V	**AUDI**		27500	2	3204	3205	3204	
R	12.246	V	**RLII**		27500	2		3717	3717	
T	12.246	V	**VMNP**		27500	2	3016	3014	3016	
D	12.246	V	**VGVP**		27500	2				
T	12.246	V	**ARMY**		27500	2	3054	3055	3054	
T	12.284	V	**1824**	____	27500	2	513	641	8190	
T	12.422	H	**ITV Play**		27500	2	2361	2362	2361	
T	12.422	H	**7505**	____	27500	2	2314	2316	2314	
T	12.460	H	**INTA**		27500	2	2649	2648	2649	
T	12.460	H	**Gamestar New**		27500	2	512	640	2304	
T	12.460	H	**COTD**		27500	2	4268	4266	4268	
R	12.460	H	**Sky Upgrade**		27500	2		4007	4007	
T	12.460	H	**ADID**		27500	2	3035	3036	3035	
D	12.460	H	**PINR**		27500	2				
T	12.523	H	**GNTV**		27500	2	2334	2335	2305	
T	12.559	H	**Channel 'S'**		27500	2	2330	2331	2329	
T	12.559	H	**France 24**		27500	2	2327	2328	2327	
T	12.559	H	**Smart Shop TV**		27500	2	2306	2307	2305	
T	12.559	H	**Channel S ATN**		27500	2	2310	2311	2322	
T	12.559	H	**Channel S NTV**		27500	2	2308	2309	2321	
T	12.559	H	**Channel Punjab**		27500	2	2319	2320	2318	
T	12.559	H	**Unity Muslim**		27500	2	2316	2317	2316	
T	12.559	H	**revelation**		27500	2	2313	2314	2312	
T	12.559	H	**Turn On TV 2**		27500	2	2315	2325	2326	
T	12.559	H	**Info TV2**		27500	2	2332	2333	2334	
T	12.559	H	**54044**		27500	2	2313	2314	2313	
T	12.559	H	**54040**		27500	2	2305	2306	2305	
T	12.559	H	**54042**		27500	2	2305	2306	2305	
T	12.559	H	**54043**		27500	2	2308	2309	2308	
T	12.559	H	**Setanta Golf**	____	27500	2	2315	2316	2327	
T	12.559	H	**Rangers TV**	____	27500	2	2313	2314	2313	
T	12.559	H	**Setanta Sports1**	____	27500	2	2305	2306	2318	
T	12.559	H	**Celtic TV**	____	27500	2	2311	2312	2311	
H	12.559	H	**Setanta Sports2**	____	27500	2	2312	2313	2311	
T	12.559	H	**PPV 1**	____	27500	2	2319	2320	2319	
T	12.559	H	**54005**		27500	2	2319	2320	2319	
T	12.559	H	**54002**	____	27500	2	2321	2322	2318	

38.0 East — C-Band: PAKSAT 1

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.888	H	**Punjab TV**		2990	3	51	52	53	Urdu
T	4.030	H	**SUNBIZ**		3255	3	33	36	33	
T	4.035	H	**CITE Channel**		3333	3	512	640	8190	Urdu
T	4.055	H	**Tandberg Service**		3255		308	256	8190	

39.0 East — HELLAS SAT 2

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.037	V	**STN ltd**		5210	5	309	262	261	
T	11.037	V	**Hellas Sat STN**		5210	5	513	514	513	
T	11.037	V	**CNBC Europe**		5210	5	769	770	769	
T	12.524	V	**TEST TV**		30000	5	518	674	2308	
T	12.524	V	**4E HELLAS ORTHO**		30000	5	2387	519	130	
R	12.524	V	**test1**		30000	5		682	128	
T	12.565	V	**Euro Channel**	VGRD	30000	7	291	391	291	
T	12.574	H	**{Empty Name}**		16640	7	2321	2322	2321	
T	12.648	V	**Kanal D**	VGRD	30000	7	290	390	290	
R	12.688	H	**radio Veselina N**		30000	7		2501	2501	
T	12.717	V	**Netdish**		6645	5				
T	11.623	V	**{Empty Name}**		3255	2	4194	4195	4194	
T	11.623	V	**{Empty Name}**		3255	2	4194	4195	4194	

42.0 East — TURKSAT 1C, 2A

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	10.962	V	**{Empty Name}**		3670	5	81	82	81	
T	11.159	V	**{Empty Name}**		2596	3	308	256	308	
T	11.163	V	**MPL**		2222	5	33	34	8190	
T	11.163	V	**MPL**		2222	5	33	34	8190	
T	11.163	V	**MPL**		2222	5	33	34	8190	
D	11.465	V	**{Empty Name}**		22000	3				
D	11.465	V	**{Empty Name}**		22000	3				
T	11.612	V	**Kral Karadeniz**		2900	5	513	1281	513	
T	11.612	V	**EBRT**		2900	5	515	1283	515	
T	11.612	V	**Gercek TV**		2900	5	516	1284	516	
T	11.612	V	**BenguTurk TV**		2900	5	514	1282	514	
T	11.612	V	**Kral Karadeniz**		2900	5	513	1281	513	
T	11.612	V	**Gercek TV**		2900	5	516	1284	516	
T	11.612	V	**BenguTurk TV**		2900	5	514	1282	514	
T	11.727	V	**S'NEK**	____	15555	5	2106	2170	2106	
R	11.804	V	**RADIO TEST**		24444	5		701	134	
R	11.804	V	**{Empty Name}**		24444	5		691	132	
R	11.804	V	**{Empty Name}**	____	24444	5		721	136	
R	11.804	V	**{Empty Name}**		24444	5		731	137	
R	11.804	V	**{Empty Name}**		24444	5		681	131	
T	11.804	V	**PASSION TV**	____	24444	5	524	770	141	
T	11.846	V	**TV5**		3333	3	33	36	33	
T	11.846	V	**YENI CAG**		3333	3	100	110	100	
T	11.858	V	**Tatlises**		2400	7	308	4112	8190	
T	11.858	V	**TATLISES TV**		2400	7	776	4195	776	
T	11.874	V	**{Empty Name}**		3400	7	145	148	145	
T	11.877	V	**MARMARA TV**		3750	7	309	258		
T	11.877	V	**KADIRGA**		3750	7	310	260		
T	11.959	V	**FIRST TV**		2960	3	53	54	310	
T	11.966	H	**COMEDY SMART**	VGRD	12500	5	514	670	130	English
T	11.966	H	**WORLD FASHION**	VGRD	12500	5	515	680	131	English
T	11.966	H	**TEST**	VGRD	12500	5	517		131	English
R	11.996	V	**ASY Radyo**		26000	5		580	580	
T	12.134	V	**PLAYERMAX**		3333	3	308	256	308	
T	12.134	V	**BUSINESS**		3333	3	100	110	100	
T	12.134	V	**BUSINESS CHANNEL**		3333	3	100	110	100	
T	12.134	V	**BUSINESS CHANNEL**		3333	3	100	110	100	
T	12.141	V	**Number One TV**		4442	3	770	768	770	
R	12.141	V	**Polis Radyosu A**		4442	3		769	769	
R	12.141	V	**Number One FM**		4442	3		771	771	
R	12.141	V	**Radyo Klas**		4442	3		772	772	
T	12.141	V	**EAS_PROMO**		4442	3	308	256	8190	
R	12.141	V	**RADYO MYDONOSE**		4442	3		258	8190	
R	12.513	H	**Dunya Radyo**		4400	5		102	102	
T	12.518	H	**{Empty Name}**		3125	3	308	256	308	
T	12.530	H	**{Empty Name}**		4444	3	308	256	8190	
T	12.540	H	**{Empty Name}**		3125	3	308	256	8190	
T	12.540	H	**MAX**		3125	3	408	411	408	
T	12.540	H	**EUROTURK**		3125	3	33	256	8190	
T	12.608	V	**{Empty Name}**		3700	5	4194	4195	4194	
T	12.614	V	**FLASH TV**		3333	5	308	256	8190	
T	12.633	V	**{Empty Name}**	____	4800	5	508	456	8190	
T	12.633	V	**{Empty Name}**		4800	5	308	256	8179	
R	12.633	V	**{Empty Name}**		4800	5		660	8179	
R	12.633	V	**{Empty Name}**		4800	5		260	8179	
R	12.633	V	**{Empty Name}**		4800	5		661	8179	
T	12.633	V	**{Empty Name}**		4800	5	308	256	8179	
R	12.633	V	**{Empty Name}**		4800	5		260	8179	
R	12.633	V	**{Empty Name}**		4800	5		660	8179	
T	12.659	V	**DISCOVERY CIVIL**		6666	5	512	650	512	
T	12.659	V	**DISCOVERY SCIEN**		6666	5	513	660	513	
T	12.688	H	**A Plus Live**		2400	5	4404	4352	4404	
T	12.688	H	**{Empty Name}**		2400	5	308	256	308	
T	12.688	H	**{Empty Name}**		2400	5	4404	4352	4404	
T	12.692	H	**{Empty Name}**		2800	5	33	36	33	
T	12.702	H	**ULUSAL TV**		2285	7	308	256	8190	
R	12.702	H	**YON FM**		2285	7		257	8190	
T	12.731	V	**EAS PROMO**		3333	5	34	35	8190	
T	12.731	V	**{Empty Name}**		3333	5	34	35	8190	

45.0 East — INTELSAT 12

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.499	V	**IVA TV**		4340	7	2306	2308	2305	
T	11.504	V	**NTT**		2895		1042	1065	101	
R	11.504	V	**Voice of Tigers**		2895			104	101	
T	11.511	V	**CNBC-LAHORE**		1954		308	256	8190	
T	11.591	V	**Disc Iberia Por**	____	30000	7	210	202	210	
T	11.591	V	**Iberia Test Por**	____	30000	7	910	904	910	
T	11.591	V	**Disc Iberia Tes**	____	30000	7	910	900	910	
T	11.591	V	**Disc Iberia Tes**	____	30000	7	910	902	910	
T	11.591	V	**Disc Iberia Sp**	____	30000	7	210	200	210	
T	11.592	V	**CNN**	IRDT	27680		1102	1103	101	
T	11.592	V	**BBC World**	IRDT	27680		1122	1123	102	
T	11.592	V	**Al Jazeera Engl**	IRDT	27680		1142	1143	103	
T	11.592	V	**HBO**	IRDT	27680		1162	1163	104	
T	11.592	V	**HBO Signature**	IRDT	27680		1182	1183	105	
T	11.592	V	**CineMax**	IRDT	27680		1202	1203	106	
T	11.592	V	**AXN**	IRDT	27680		1222	1223	107	
T	11.592	V	**ESPN**	IRDT	27680		1242	1243	108	
T	11.592	V	**Star Sports**	IRDT	27680		1262	1263	109	
T	11.592	V	**Discovery**	IRDT	27680		1282	1283	110	
T	11.592	V	**Animal Planet**	IRDT	27680		1302	1303	111	
T	11.592	V	**Travel & Living**	IRDT	27680		1322	1323	112	
T	11.592	V	**Nat GEO**	IRDT	27680		1342	1343	113	
T	11.592	V	**History**	IRDT	27680		1362	1363	114	
T	11.592	V	**A1**	IRDT	27680		1382	1383	115	
T	11.592	V	**Zone Reality**	IRDT	27680		1402	1403	116	
T	11.592	V	**POGO**	IRDT	27680		1422	1423	117	
T	11.592	V	**Animax**	IRDT	27680		1442	1443	118	
T	11.673	V	**Nickelodeon**	IRDT	27680		2102	2103	201	
T	11.673	V	**Cartoon Network**	IRDT	27680		2122	2123	202	
T	11.673	V	**Rupavahini**	IRDT	27680		2142	2143	203	
T	11.673	V	**Eye**	IRDT	27680		2162	2163	204	
T	11.673	V	**MTV**	IRDT	27680		2182	2183	205	
T	11.673	V	**SET MAX**	IRDT	27680		2202	2203	206	
T	11.673	V	**VH 1**	IRDT	27680		2222	2223	207	
T	11.673	V	**ITN**	IRDT	27680		2242	2243	208	
T	11.673	V	**Zee TV**	IRDT	27680		2262	2263	209	
T	11.673	V	**Zee Cinema**	IRDT	27680		2282	2283	210	
T	11.673	V	**Zee Cafe**	IRDT	27680		2302	2303	211	
T	11.673	V	**Zee Studio**	IRDT	27680		2322	2323	212	
T	11.673	V	**Zee Sports**	IRDT	27680		2342	2343	213	
T	11.673	V	**Zee Trendz**	IRDT	27680		2362	2363	214	
T	11.673	V	**Zee Music**	IRDT	27680		2382	2383	215	
T	11.673	V	**TNL**	IRDT	27680		2402	2403	216	
T	11.673	V	**Derana**	IRDT	27680		2422	2423	217	
T	11.673	V	**Swarnavahini**	IRDT	27680		2442	2443	218	
R	11.673	V	**Sha**		27680			5104	501	
R	11.673	V	**Hiru**		27680			5124	502	
R	11.673	V	**Sun**		27680			5144	503	
R	11.673	V	**Gold**		27680			5164	504	
R	11.673	V	**Sooriyan**		27680			5184	505	
R	11.673	V	**TNL**		27680			5204	506	
R	11.673	V	**Lite**		27680			5224	507	
R	11.673	V	**Asura**		27680			5244	508	
D	12.699	V	**Data**		5860	3			122	
D	12.707	V	**Control**		4075					
D	12.707	V	**PCR**		4075					
D	12.707	V	**Data**		4075					
D	12.707	V	**1Way**		4075					

49.0 East — C-Band: YAMAL 202

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.571	L	**TV Mobile**		4285	3	300	200	8190	
T	3.619	L	**PURVA_TV**		3254	3	666	4112	6665	
T	3.785	L	**SRILAKVAHINI**		1554	3	4194	4195	4194	
T	3.921	L	**DAN 1**		6430	3	4160	4120	4160	
T	3.921	L	**DAN 2**		6430	3	4260	4220	4260	
T	3.921	L	**DAN 3**		6430	3	4360	4320	4360	
T	11.106	H	**ORBIS**		5425	3	321	322	321	
T	11.186	H	**{Empty Name}**		2046	7	4131	4129	4131	

68.5 East — INTELSAT 7,10

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.170	V	**{Empty Name}**	____	26660	5	512	513	512	
T	11.170	V	**{Empty Name}**	____	26660	5	516	517	516	

T = TV Digital | **R** = Radio Digital | **T** = TV Digital Crypt | **R** = Radio Digital Crypt | **T** = TV Analog | **R** = Radio Analog | **T** = TV Analog Crypt | **R** = Radio Analog Crypt | **H** = TV High Definition | **H** = TV High Definition Crypt | **D** = Data Channel | **P** = Package

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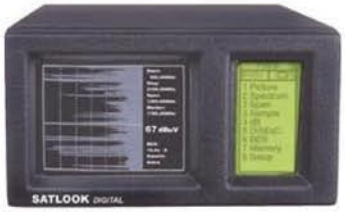

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Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.563	V	**@15**	MGRD	30000	7	173	132	173	
T	11.563	V	**ABO**	MGRD	30000	7	172	128	172	
T	11.563	V	**BBC**	MGRD	30000	7	171	124	171	
T	11.563	V	**TVIQ**	MGRD	30000	7	170	120	170	
T	11.563	V	**APL**	MGRD	30000	7	169	116	169	
T	11.563	V	**BTV**	MGRD	30000	7	168	112	168	
T	11.563	V	**RTM2**	MGRD	30000	7	167	108	167	
T	11.563	V	**RTM1**	MGRD	30000	7	166	104	166	
T	11.563	V	**AEC**	MGRD	30000	7	165	100	165	
T	11.563	V	**DISC**	MGRD	30000	7	164	96	164	
T	11.563	V	**[V]**	MGRD	30000	7	163	92	163	
T	11.563	V	**CINE**	MGRD	30000	7	162	88	162	
T	11.563	V	**HMK**	MGRD	30000	7	161	84	161	
D	11.563	V	**DS DMR 103**		30000	7				
R	11.563	V	**RAAGA**	____	30000	7		192		
R	11.563	V	**MSQA**	____	30000	7		191		
R	11.563	V	**XF FM**	____	30000	7		190		
R	11.563	V	**OSAI**	____	30000	7		189		
R	11.563	V	**SINAR**	____	30000	7		188		
R	11.563	V	**MLD**	____	30000	7		187		
R	11.563	V	**JAZ**	____	30000	7		186		
R	11.563	V	**IB**	____	30000	7		185		
R	11.563	V	**NLG**	____	30000	7		184		
R	11.563	V	**GOLD**	____	30000	7		183		
R	11.563	V	**ROCK**	____	30000	7		182		
R	11.563	V	**LITE**	____	30000	7		181		
R	11.563	V	**MIX**	____	30000	7		180		
R	11.563	V	**HITZ**	____	30000	7		179		
R	11.563	V	**OPUS**	____	30000	7		178		
R	11.563	V	**MY**	____	30000	7		177		
R	11.563	V	**ERA**	____	30000	7		176		
D	11.563	V	**RAD**		30000	7				
D	11.563	V	**GAME**		30000	7				
D	11.563	V	**DS DMR 106**		30000	7				
T	11.643	V	**ABO**	MGRD	30000	7	160	80	160	
T	11.643	V	**ANIM**	MGRD	30000	7	175	140	175	
T	11.643	V	**KIRA**	MGRD	30000	7	174	136	174	
T	11.643	V	**SUN**	MGRD	30000	7	173	132	173	
T	11.643	V	**HITZ**	MGRD	30000	7	172	128	172	
T	11.643	V	**PRIMA**	MGRD	30000	7	171	124	171	
T	11.643	V	**CEL**	MGRD	30000	7	170	120	170	
T	11.643	V	**AXN**	MGRD	30000	7	169	116	169	
T	11.643	V	**XHE**	MGRD	30000	7	168	112	168	
T	11.643	V	**TVB8**	MGRD	30000	7	167	108	167	
T	11.643	V	**ART**	MGRD	30000	7	166	104	166	
T	11.643	V	**ABO**	MGRD	30000	7	165	100	165	
T	11.643	V	**ABO**	MGRD	30000	7	164	96	164	
T	11.643	V	**ABO**	MGRD	30000	7	163	92	163	
T	11.643	V	**NEWS**	MGRD	30000	7	162	88	162	
T	11.643	V	**8TV**	MGRD	30000	7	161	84	161	
D	11.643	V	**DS DMR 104**		30000	7				
D	11.643	V	**ASL**		30000	7				
T	11.643	V	**SPRT**	____	30000	7	160	80	160	
T	11.643	V	**TV9**	____	30000	7	176	144	176	
D	11.643	V	**DS DMR 102**		30000	7				
T	11.643	V	**AJE**	____	30000	7	177	146	177	
T	11.643	V	**ZEE**	____	30000	7	174	136	174	
D	11.643	V	**ITV**		30000	7				
T	11.643	V	**SHX**	____	30000	7	173	132	173	
T	11.643	V	**ETVA**	____	30000	7	172	128	172	
T	11.643	V	**TRAV**	____	30000	7	171	124	171	
T	11.643	V	**TV3**	____	30000	7	170	120	170	
T	11.643	V	**NICK**	____	30000	7	169	116	169	
T	11.643	V	**PHNX**	____	30000	7	168	112	168	
T	11.643	V	**NHK**	____	30000	7	167	108	167	
T	11.643	V	**CNN**	____	30000	7	166	104	166	
T	11.643	V	**CNBC**	____	30000	7	165	100	165	
T	11.643	V	**SMV**	____	30000	7	164	96	164	
T	11.643	V	**RIA**	____	30000	7	163	92	163	
T	11.643	V	**VAAN**	____	30000	7	162	88	162	
T	11.643	V	**NGEO**	____	30000	7	161	84	161	
T	11.833	V	**HBO**	MGRD	30000	7	160	80	160	
T	11.833	V	**BBCE**	MGRD	30000	7	177	197	177	
T	11.833	V	**WATV**	MGRD	30000	7	176	193	176	
T	11.833	V	**ARU**	MGRD	30000	7	174	189	174	
T	11.833	V	**PIN**	MGRD	30000	7	173	185	173	
T	11.833	V	**CTV9**	MGRD	30000	7	172	181	172	
T	11.833	V	**NTV7**	MGRD	30000	7	170	153	170	
T	11.833	V	**PHDC**	MGRD	30000	7	171	157	171	
T	11.833	V	**ASSP**	MGRD	30000	7	167	108	167	
T	11.833	V	**DISN**	MGRD	30000	7	166	104	166	
T	11.833	V	**TVBS**	MGRD	30000	7	165	100	165	
T	11.833	V	**CTWK**	MGRD	30000	7	164	96	164	
T	11.833	V	**MTV**	MGRD	30000	7	163	92	163	
T	11.833	V	**SWR**	MGRD	30000	7	162	88	162	
T	11.833	V	**WLT**	MGRD	30000	7	161	84	161	
D	11.833	V	**DS DMR 101**		30000	7				
R	11.833	V	**{Empty Name}**		30000	7		322		
T	11.957	V	**8TV**	MGRD	30000	7	161	84	161	
T	11.957	V	**ABO**	MGRD	30000	7	160	80	160	
T	11.957	V	**ANIM**	MGRD	30000	7	175	140	175	
T	11.957	V	**KIRA**	MGRD	30000	7	174	136	174	
T	11.957	V	**SUN**	MGRD	30000	7	173	132	173	
T	11.957	V	**HITZ**	MGRD	30000	7	172	128	172	
T	11.957	V	**PRIMA**	MGRD	30000	7	171	124	171	
T	11.957	V	**CEL**	MGRD	30000	7	170	120	170	
T	11.957	V	**AXN**	MGRD	30000	7	169	116	169	
T	11.957	V	**XHE**	MGRD	30000	7	168	112	168	
T	11.957	V	**TVB8**	MGRD	30000	7	167	108	167	
T	11.957	V	**ART**	MGRD	30000	7	166	104	166	
T	11.957	V	**ABO**	MGRD	30000	7	165	100	165	
T	11.957	V	**ABO**	MGRD	30000	7	164	96	164	
T	11.957	V	**ABO**	MGRD	30000	7	163	92	163	
T	11.957	V	**NEWS**	MGRD	30000	7	162	88	162	
D	11.957	V	**DS DMR 104**		30000	7				
D	11.957	V	**ASL**		30000	7				
T	12.333	V	**SPRT**	MGRD	30000	7	160	80	160	
T	12.333	V	**TV9**	MGRD	30000	7	176	144	176	
T	12.333	V	**AJE**	MGRD	30000	7	177	146	177	
T	12.333	V	**ZEE**	MGRD	30000	7	174	136	174	
T	12.333	V	**SHX**	MGRD	30000	7	173	132	173	
T	12.333	V	**ETVA**	MGRD	30000	7	172	128	172	
T	12.333	V	**TRAV**	MGRD	30000	7	171	124	171	
T	12.333	V	**TV3**	MGRD	30000	7	170	120	170	
T	12.333	V	**NICK**	MGRD	30000	7	169	116	169	
T	12.333	V	**PHNX**	MGRD	30000	7	168	112	168	
T	12.333	V	**NHK**	MGRD	30000	7	167	108	167	
T	12.333	V	**CNN**	MGRD	30000	7	166	104	166	
T	12.333	V	**CNBC**	MGRD	30000	7	165	100	165	
T	12.333	V	**SMV**	MGRD	30000	7	164	96	164	
T	12.333	V	**RIA**	MGRD	30000	7	163	92	163	
T	12.333	V	**VAAN**	MGRD	30000	7	162	88	162	
T	12.333	V	**NGEO**	MGRD	30000	7	161	84	161	
D	12.333	V	**DS DMR 102**		30000	7				
D	12.333	V	**ITV**		30000	7				
D	12.333	V	**DS DMR 103**		30000	7				
D	12.333	V	**RAD**		30000	7				
D	12.333	V	**GAME**		30000	7				
T	12.414	V	**ESPN**	MGRD	30000	7	160	80	160	
T	12.414	V	**CTV4**	MGRD	30000	7	175	138	175	
T	12.414	V	**CER**	MGRD	30000	7	174	136	174	
T	12.414	V	**@15**	MGRD	30000	7	173	132	173	
T	12.414	V	**ABO**	MGRD	30000	7	172	128	172	
T	12.414	V	**BBC**	MGRD	30000	7	171	124	171	
T	12.414	V	**TVIQ**	MGRD	30000	7	170	120	170	
T	12.414	V	**APL**	MGRD	30000	7	169	116	169	
T	12.414	V	**BTV**	MGRD	30000	7	168	112	168	
T	12.414	V	**RTM2**	MGRD	30000	7	167	108	167	
T	12.414	V	**RTM1**	MGRD	30000	7	166	104	166	
T	12.414	V	**AEC**	MGRD	30000	7	165	100	165	
T	12.414	V	**DISC**	MGRD	30000	7	164	96	164	
T	12.414	V	**[V]**	MGRD	30000	7	163	92	163	
T	12.414	V	**CINE**	MGRD	30000	7	162	88	162	
T	12.414	V	**HMK**	MGRD	30000	7	161	84	161	
R	12.414	V	**RAAGA**	MGRD	30000	7		192		
R	12.414	V	**MSQA**	MGRD	30000	7		191		
R	12.414	V	**XF FM**	MGRD	30000	7		190		
R	12.414	V	**OSAI**	MGRD	30000	7		189		
R	12.414	V	**SINAR**	MGRD	30000	7		188		
R	12.414	V	**MLD**	MGRD	30000	7		187		
R	12.414	V	**JAZ**	MGRD	30000	7		186		
R	12.414	V	**IB**	MGRD	30000	7		185		
R	12.414	V	**NLG**	MGRD	30000	7		184		
R	12.414	V	**GOLD**	MGRD	30000	7		183		
R	12.414	V	**ROCK**	MGRD	30000	7		182		
R	12.414	V	**LITE**	MGRD	30000	7		181		
R	12.414	V	**MIX**	MGRD	30000	7		180		
R	12.414	V	**HITZ**	MGRD	30000	7		179		
R	12.414	V	**OPUS**	MGRD	30000	7		178		
R	12.414	V	**MY**	MGRD	30000	7		177		
R	12.414	V	**ERA**	MGRD	30000	7		176		
D	12.414	V	**RAD**		30000	7				
D	12.414	V	**GAME**		30000	7				
D	12.414	V	**DS DMR 103**		30000	7				
D	12.414	V	**DS DMR 106**		30000	7				
T	12.493	V	**8TV**	MGRD	30000	7	161	84	161	
T	12.493	V	**ABO**	MGRD	30000	7	160	80	160	
T	12.493	V	**ANIM**	MGRD	30000	7	175	140	175	
T	12.493	V	**KIRA**	MGRD	30000	7	174	136	174	
T	12.493	V	**SUN**	MGRD	30000	7	173	132	173	
T	12.493	V	**HITZ**	MGRD	30000	7	172	128	172	
T	12.493	V	**PRIMA**	MGRD	30000	7	171	124	171	
T	12.493	V	**CEL**	MGRD	30000	7	170	120	170	
T	12.493	V	**AXN**	MGRD	30000	7	169	116	169	
T	12.493	V	**XHE**	MGRD	30000	7	168	112	168	
T	12.493	V	**TVB8**	MGRD	30000	7	167	108	167	
T	12.493	V	**ART**	MGRD	30000	7	166	104	166	
T	12.493	V	**ABO**	MGRD	30000	7	165	100	165	
T	12.493	V	**ABO**	MGRD	30000	7	164	96	164	
T	12.493	V	**ABO**	MGRD	30000	7	163	92	163	
T	12.493	V	**NEWS**	MGRD	30000	7	162	88	162	
D	12.493	V	**DS DMR 104**		30000	7				
D	12.493	V	**ASL**		30000	7				
T	12.493	V	**SPRT**	____	30000	7	160	80	160	
T	12.493	V	**TV9**	____	30000	7	176	144	176	
D	12.493	V	**DS DMR 102**		30000	7				
T	12.493	V	**AJE**	____	30000	7	177	146	177	
T	12.493	V	**ZEE**	____	30000	7	174	136	174	
D	12.493	V	**ITV**		30000	7				
T	12.493	V	**SHX**	____	30000	7	173	132	173	
T	12.493	V	**ETVA**	____	30000	7	172	128	172	
T	12.493	V	**TRAV**	____	30000	7	171	124	171	
T	12.493	V	**TV3**	____	30000	7	170	120	170	
T	12.493	V	**NICK**	____	30000	7	169	116	169	
T	12.493	V	**PHNX**	____	30000	7	168	112	168	
T	12.493	V	**NHK**	____	30000	7	167	108	167	
T	12.493	V	**CNN**	____	30000	7	166	104	166	
T	12.493	V	**CNBC**	____	30000	7	165	100	165	
T	12.493	V	**SMV**	____	30000	7	164	96	164	
T	12.493	V	**RIA**	____	30000	7	163	92	163	
T	12.493	V	**VAAN**	____	30000	7	162	88	162	
T	12.493	V	**NGEO**	____	30000	7	161	84	161	

91.6 East — C-BAND: MEASAT 1,3

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.841	V	**Celestial 2**	POVU	30000		110	100	110	
T	3.841	V	**BBC Entertainme**	POVU	30000		210	200	210	
T	3.841	V	**GOAL TV1**	POVU	30000		310	300	310	
T	3.841	V	**GOAL TV2**	POVU	30000		510	500	510	
T	3.841	V	**AFC**	POVU	30000		410	400	410	
T	3.841	V	**JIA YU**	POVU	30000		610	600	610	
T	3.841	V	**Celestial 1**	POVU	30000		810	800	810	
T	3.894	V	**M3 Launch**		3255	3	910	900	910	Malay
T	3.924	H	**World Fashion**	IRDT	1860	7	1010	1011	1010	English
T	4.040	V	**WFC**	IRDT	27990		2000	2001	2000	
T	3.916	V	**INDIAVISION**		2200		4194	4195	4194	
T	4.147	V	**NSTPL**		3000		308	256	8190	

95.0 East — NSS 6

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
D	11.037	H	**OTA**		40690	2				
T	11.173	H	**JANMAT**	CONX	27500	2	2911	2912	2911	
T	11.635	H	**MTV Thailand**		27500	3	515	645	515	
T	11.635	H	**VH1 Thailand**		27500	3	516	646	516	
T	11.635	H	**Nickelodeon**		27500	3	517	647	517	
T	11.635	H	**Movie Mania**		27500	3	518	648	518	
T	11.635	H	**Popper**		27500	3	519	649	519	
T	11.635	H	**Rakthai**		27500	3	520	656	520	
T	11.635	H	**Panorama**		27500	3	521	657	521	
T	11.635	H	**World Fashion C**		27500	3	528	658	528	
R	11.635	H	**Dance - Express**		27500	3		659	659	
R	11.635	H	**Rock - Express**		27500	3		660	660	
R	11.635	H	**Pop - Express**		27500	3		661	661	
R	11.635	H	**Euro - Express**		27500	3		662	662	
R	11.635	H	**Urban - Express**		27500	3		663	663	
R	11.635	H	**Love**		27500	3		664	664	
R	11.635	H	**Look Thoung Rak**		27500	3		665	665	
R	11.635	H	**Next FM**		27500	3		768	768	
D	11.635	H	**{Empty Name}**		27500	3			5632	
D	11.635	H	**{Empty Name}**		27500	3			5632	
T	11.676	V	**{Empty Name}**		28000	3	1860	1820	1860	
T	12.537	H	**ZEE MUSIC**		27500	3	536	636	536	
T	12.538	V	**24 TAAS**	CONX	40690	2	5401	5402	5401	
T	12.597	H	**MI MARATHI**	CONX	40687	3	251	252	251	
T	12.597	H	**ETV MARATHI**	CONX	40687	3	5011	5012	5011	
T	12.597	V	**SAHARA UP**	CONX	40700	2	5396	5397	6109	
T	12.647	H	**AXN**	CONX	27500	3	251	252	251	
T	12.692	V	**ZEE KANNAD**	CONX	27500	3	4519	4520	4519	

100.5 East — C-Band: ASIASAT 2

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.660	V	**PRESS TV PROMO**		27500	3	100	101	100	Arabic
T	3.785	V	**RTB AVN**		6110		308	256	8190	
T	3.799	H	**APTN Feeds (APT**	____	5632	1	200	280	2304	English
T	3.820	V	**Aljazeera Chann**		27500	3	311	312	311	
T	3.820	V	**Saudi Arabian T**		27500	3	3011	3012	3011	
H	3.840	H	**321 Tata 1**	____	26840		512	640	8190	
H	3.840	H	**322 Tata 2**	____	26840		513	644	8190	
H	3.840	H	**323 Timecode**	____	26840		513	643	8190	
T	3.880	H	**DEFAULT**		20400	1	7160	7120	7160	
T	3.880	H	**ch 2**		20400	1	7260	7220	7260	
T	3.880	H	**ch 3**		20400	1	7360	7320	7360	
T	3.880	H	**ch 4**		20400	1	7460	7420	7460	
T	3.880	H	**ch 5**		20400	1	7560	7520	7560	
T	3.880	H	**ch 6**		20400	1	1660	1620	1660	
T	3.880	H	**DCP OS Download**		20400	1	7160	7120	7160	
T	3.880	H	**CCP OS Download**		20400	1	7160	7120	7160	
T	3.880	H	**Ch. 340 - AS25-**		20400	1	7460	7420	7460	
T	3.880	H	**Ch. 370 - AS1-2**		20400	1	7160	7120	7160	
T	3.880	H	**Ch. 371 - AS1-2**		20400	1	7160	7120	7160	
T	3.880	H	**Ch. 372 - AS1-2**		20400	1	7160	7120	7160	
T	3.880	H	**Ch. 373 - AS3-4**		20400	1	7160	7122	7160	
T	3.880	H	**Ch. 374 - AS3-4**		20400	1	7160	7122	7160	
T	3.880	H	**Ch. 375 - AS5-6**		20400	1	7160	7130	7160	
T	3.880	H	**Ch. 377 - Close**		20400	1	7160	7120	7160	
T	3.880	H	**Ch. 378 - AS1-8**		20400	1	7160	7120	7160	
T	3.880	H	**Ch. 380 - AS9-1**		20400	1	7160	7220	7160	
T	3.880	H	**Ch. 381 - AS9-1**		20400	1	7160	7220	7160	
T	3.880	H	**Ch. 382 - AS9-1**		20400	1	7160	7220	7160	
T	3.880	H	**Ch. 383 - AS11-**		20400	1	7160	7222	7160	
T	3.880	H	**Ch. 384 - AS11-**		20400	1	7160	7222	7160	
T	3.880	H	**Ch. 385 - AS13-**		20400	1	7160	7230	7160	
T	3.880	H	**Ch. 388 - AS9-16**		20400	1	7160	7220	7160	
R	3.880	H	**Ch. 390 - AS17-**		20400	1		7320	7320	
T	3.880	H	**Ch. 391 - AS9-1**		20400	1	7160	7220	7160	
T	3.880	H	**Ch. 392 - AS9-1**		20400	1	7160	7220	7160	
T	3.880	H	**Ch. 393 - AS11-**		20400	1	7160	7222	7160	
T	3.880	H	**Ch. 394 - AS11-**		20400	1	7160	7222	7160	
T	3.880	H	**Ch. 395 - AS21-**		20400	1	7160	7330	7160	
T	3.880	H	**Ch. 398 - AS17-**		20400	1	7160	7320	7160	
T	3.880	H	**Ch. 401 - AS25-**		20400	1	7460	7420	7460	
T	3.880	H	**Ch. 402 - AS25-**		20400	1	7460	7420	7460	
T	3.880	H	**Ch. 403 - AS27-**		20400	1	7460	7422	7460	
T	3.880	H	**Ch. 404 - AS27-**		20400	1	7460	7422	7460	
T	3.880	H	**Ch. 405 - AS29-**		20400	1	7460	7430	7460	
T	3.880	H	**Ch. 408 - AS25-**		20400	1	7460	7420	7460	
T	3.880	H	**Ch. 409 - AS49-**		20400	1	7760	7720	7760	
T	3.880	H	**Ch. 410 - AS37-**		20400	1	7160	7530	7160	
R	3.880	H	**Ch. 411 - RFA 1**		20400	1		7620	7620	
R	3.880	H	**Ch. 412 - RFA 2**		20400	1		7622	7622	
R	3.880	H	**Ch. 413 - RFA 3**		20400	1		7630	7630	
R	3.880	H	**Ch. 414 - RFA 4**		20400	1		7632	7632	
T	3.887	V	**STTELEPORT**	POVU	4415		4194	4195	4194	
T	3.913	V	**NAPSA1**		6111		1160	1120	1160	
T	3.913	V	**DCP Upgrade**		6111		1160	1120	1160	
T	3.913	V	**CCP Upgrade**		6111		1160	1120	1160	
T	3.913	V	**NAPSA1**		6111		1160	1120	1160	
T	3.913	V	**Metromux-SA1**		6111		1260	1220	1260	
D	3.913	V	**Adventist Engli**		6111					
D	3.913	V	**Adventist Portu**		6111					
H	4.082	V	**ITRAI 3**	____	6666		512	4112	8190	
T	4.161	H	**GDTV**		4680		308	256	8190	Chinese
T	4.161	H	**TADIRAN SCOPUS**		4680		4194	4195	4194	
R	12.221	V	**CRI radio 16**	POVU	6000	3		1221	1221	Chinese
T	12.267	V	**XHTV**		5400	2	1110	1211	1110	Chinese

103.0 East — EXPESS A2,KAZSAT 1

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.675	R	**Orbita-2+Yunost**	BISS	33469	3	512	650	128	Russian
T	3.675	R	**Duble-2+RRD2**	BISS	33469	3	513	660	129	Russian
T	3.675	R	**Orbita-1+Mayak**	BISS		3	515	680	131Russian	
T	3.675	R	**Duble-1+RRD1**	BISS	31100	3	516	690	132	Russian
T	3.675	R	**Kultura-1**		31100	3	518	710	134	Russian
T	3.675	R	**MuzTV_Love**		31100	3	524	770	1300	Russian
T	3.675	R	**FNS**	BISS	31100	3	525	780	525	Russian
R	3.675	R	**Radio RussiaD2**		31100	3		661	129	Russian
R	3.675	R	**Radio Mayak**		31100	3		681	131	Russian
R	3.675	R	**Radio Yunost**		31100	3		651	128	Russian
R	3.675	R	**Radio RussiaD1**		31100	3		691	132	Russian
R	3.675	R	**Radio Maximum**		31100	3		751	1280	Russian
R	3.675	R	**Radio Love**		31100	3		771	1300	Russian
D	3.675	R	**SMR_103**		31100	3				
T	11.475	R	**FNS**	BISS	29800	3	1065	780	525	Russian

105.5 East — C-Band: ASIASAT 3S

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
H	3.680	H	**ccp download**		26666	3	1160		1160	
T	3.715	H	**AD-HOC2**		7000	3	3020	3021	3020	Chinese
T	3.733	V	**ACTION Cinema D**	CONX	6500	3	5703	5701	5703	
T	3.733	V	**CIASSIC Cinema**	CONX	6500	3	5706	5705	5706	
T	3.733	V	**PREMIER Cinema**	CONX	6500	3	5710	5708	5710	
T	3.733	V	**Test-New DTO**		6500	3	5713	5712	5713	
T	3.745	V	**{Empty Name}**		2626	3	123	133	123	
T	3.760	H	**NOW**		26000	7	1010	1011	1010	
T	3.760	H	**Bloomberg**		26000	7	1020	1021	1020	
T	3.760	H	**Indus Music**		26000	7	1030	1031	1030	
T	3.760	H	**Channel G**		26000	7	1040	1041	1040	
T	3.760	H	**Indus Vision**		26000	7	1050	1051	1050	
T	3.760	H	**Muslim TV1**		26000	7	1070	1071	8190	
T	3.760	H	**Muslim TV2**		26000	7	1070	1081	8190	
T	3.760	H	**Al Jazeera Inte**		26000	7	1090	1091	1090	
T	3.760	H	**Filmazia**	____	26000	7	1100	1101	1100	
T	3.760	H	**TV5**		26000	7	1120	1121	1120	
T	3.760	H	**Eurosport**	____	26000	7	1150	1151	1150	
T	3.760	H	**DW TV**		26000	7	1300	1301	1300	
R	3.760	H	**DW01**		26000	7		1311	8189	
R	3.760	H	**DW02**		26000	7		1321	8189	
R	3.760	H	**DW04**		26000	7		1331	8189	
R	3.760	H	**DW05**		26000	7		1341	8189	
R	3.760	H	**DW06**		26000	7		1351	8189	
R	3.760	H	**DW08**		26000	7		1361	8189	
R	3.760	H	**DW09**		26000	7		1371	8188	
R	3.760	H	**DW-M**		26000	7		1381	8188	
R	3.760	H	**RFI Francais**		26000	7		1401	1401	
R	3.760	H	**RFI Langues1**		26000	7		1411	1411	
T	3.806	V	**GXTV**		4420	3	255	256	255	Chinese
T	3.834	V	**{Empty Name}**		4420	3	1110	1211	1110	
T	3.834	V	**{Empty Name}**		4420	3	1110	257	1110	
R	3.834	V	**{Empty Name}**		4420	3		257	257	
T	4.020	V	**sahara hits**		27250	3	523	760	139	Hindi
T	4.046	V	**Tianjin TV**		5950	3	32	44	32	
R	4.046	V	**wenyi**		5950	3		35	35	
R	4.046	V	**hangu**		5950	3		46	46	
R	4.046	V	**xinwen**		5950	3		52	52	
R	4.046	V	**yinyuezb**		5950	3		49	49	
R	4.046	V	**binhan**		5950	3		51	51	

105.6 East — ASIASAT 3S

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	12.353	V	**IRIBQURAN**		30000		150	250	150	
T	12.353	V	**IRINN**		30000		151	251	151	
T	12.353	V	**SAHAR**		30000		152	252	152	
T	12.353	V	**PRESS TV**		30000		153	253	153	
R	12.353	V	**SEDAYE ASHNA**		30000			351	151	

107.7 East — CAKRAWARTA 1

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	2.535	H	**MNC Music Chann**	VGRD	20000	7	522	650	138	
R	2.596	H	**Radio Pelita Ka**	VGRD	20000	7		667	135	Indones
T	2.655	H	**MNC News**	VGRD	17000	7	512	640	8190	English
R	2.655	H	**Radio RFI**	____	17000	7		661	8190	
T	3.509	V	**RCTI**		4665	2	512	640	8190	Indones
T	3.990	H	**News Feeds (Ser**		6000	3	33	36	30	

108.2 East — NSS 11

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
D	12.273	H	**{Empty}**		30000				33	
D	12.273	H	**{Empty}**		30000				35	
T	12.273	H	**ASHIRWAD**	IRDT	30000		257	258	257	
D	12.273	H	**{Empty Name}**		30000					
T	12.411	V	**ZAMJARI 1**	POVU	11110	3	4381	4382	4381	Korean

T = TV Digital
R = Radio Digital
T = TV Digital Crypt
R = Radio Digital Crypt
T = TV Analog
R = Radio Analog
T = TV Analog Crypt
R = Radio Analog Crypt
H = TV High Definition
H = TV High Definition Crypt
D = Data Channel
P = Package

T	12.411	V	ZAMJARI 2	POVU	11110	3	4245	4246	4245 Korean
T	12.411	V	KIDS-TV	POVU	11110	3	4225	4226	4225 Korean
T	12.411	V	JBS	POVU	11110	3	4194	4195	4193 Korean
T	12.411	V	WB-TV	POVU	11110	3	4514	4516	4514 Korean
D	12.473	H	IP/DVB Service		3355				
D	12.473	H	RCS Map Table 60		3355				
D	12.473	H	{Empty Name}		3355				50
T	12.704	H	FGTV SAT	____	3700	3	350	257	350 Korean
110.5 East			**SINOSAT 1**						
T	12.622	V	CETV-1		32550	3	41	42	41 Chinese
T	12.622	V	CETV-2		32550	3	45	46	45 Chinese
T	12.622	V	CETV-Sky		32550	3	49	50	49 Chinese
112.9 East			**C-Band: PALAPA C2**						
T	3.727	H	CHANNEL 1		3000	3	1160	1120	1160
R	3.774	H	Trijaya Network		6523	3		1122	1122
R	4.073	V	Audio Elsinta		6500	3		1215	1215
113.1 East			**KOREASAT 2**						
T	12.370	H	C3TV	____	26850	3	1660	1620	1660 Korean
T	12.370	H	CTN	POVU	26850	3	1560	1520	1560 Korean
T	12.503	H	CH-1	POVU	7603	3	256	257	256 Korean
T	12.503	H	CH-2	POVU	7603	3	512	513	512 Korean
T	12.503	H	CH-3		7603	3	768	769	768 Korean
116.0 East			**KOREASAT 3**						
T	12.370	H	JOBTV	VGRD	24080	5	502	500	502 Korean
T	12.370	H	EBS3		24080	5	1402	1400	1402 Korean
T	12.430	V	CH 501	VGRD	26687	3	1801	1803	1801 Korean
T	12.430	V	CH 503	VGRD	26687	3	1821	1823	1821 Korean
T	12.430	V	CH 504	VGRD	26687	3	1831	1833	1831 Korean
T	12.430	V	CH 505	VGRD	26687	3	1841	1843	1841 Korean
T	12.430	V	CH 506	VGRD	26687	3	1851	1853	1851 Korean
T	12.430	V	CH 507	VGRD	26687	3	1861	1863	1861 Korean
T	12.430	V	CH 508	VGRD	26687	3	1871	1873	1871 Korean
T	12.430	V	CH 509	VGRD	26687	3	1881	1883	1881 Korean
T	12.430	V	CH 510	VGRD	26687	3	1891	1893	1891 Korean
T	12.430	V	CH 701	VGRD	26687	3	1460	1422	1460 Korean
T	12.501	V	KBS EARTH		3515	3	33	36	33 Korean
T	12.501	V	KBS HUB		3515	3	4194	4195	4194 Korean
T	12.522	V	1TV LINK		6328	3	100	101	100 Korean
T	12.522	V	2TV LINK		6328	3	200	201	200 Korean
T	12.550	V	CH 609	POVU	26687	7	1981	1983	1981 Korean
D	12.670	V	MegaSat1		24750	1			
122.0 East			**ASIASAT 4**						
T	3.820	V	ÏÊ·æ¼ÍÂ¼		27500	3	519	720	519 Chinese
T	3.820	V	ÖÐÐ¡Ñ§Í¬²½,¨µ¼		27500	3	518	710	518 Chinese
R	3.857	H	BeiFen		2170			1011	1011
R	3.857	H	HN YSWZ		2170			911	911
R	3.857	H	MY Radio		2170			811	811
R	3.857	H	HN LY		2170			711	711
R	3.857	H	HN NC		2170			611	611
R	3.857	H	HN YY		2170			511	511
R	3.857	H	HN XQ		2170			411	411
R	3.857	H	HN JT		2170			311	311
R	3.857	H	HN JJ		2170			211	211
R	3.857	H	HN XW		2170			111	111
D	4.149	V	Test 1		2849				
D	4.149	V	Test 2		2849				
D	4.149	V	SSE Info		2849				
D	4.149	V	Stocom		2849				
128.0 East			**JCSAT 3**						
T	4.000	V	Null-2		30000	5	1232	1233	1232
T	4.057	V	{Empty Name}		3332	3	4194	4195	4194
T	4.057	V	{Empty Name}		3332	3	513	514	513
134.1 East			**C-Band: APSTAR 6**						
T	3.460	V	{Empty Name}		27500		3110	3111	3110
T	3.460	V	{Empty Name}	____	27500		3120	3121	3120
T	3.460	V	{Empty Name}	____	27500		3130	3131	3130
T	3.460	V	{Empty Name}	____	27500		3140	3141	3140
T	3.460	V	{Empty Name}	____	27500		3150	3151	3150
T	3.460	V	{Empty Name}	____	27500		3160	3161	3160
T	3.460	V	{Empty Name}	____	27500		3170	3171	3170
T	3.460	V	{Empty Name}	____	27500		3180	3181	3180
T	3.836	V	TV		3290		32	33	32 Chinese
D	3.840	H	Skystream data		27500	3			2305
R	3.868	H	{Empty}		8680	3		91	2731 Chinese
R	3.868	H	{Empty}		8680	3		90	2730 Chinese
R	4.044	H	SZR971		4420	3		83	83
T	4.120	H	Xinjiang TV1		27500	3	160	80	160
T	4.120	H	Xinjiang TV2		27500	3	161	84	161
T	4.120	H	Xinjiang TV3		27500	3	162	88	162
T	4.120	H	Xinjiang TV4		27500	3	163	92	163
T	4.120	H	Xinjiang TV5		27500	3	164	96	164
T	4.120	H	Xinjiang TV6		27500	3	165	100	165
138.0 East			**TELSTAR 18**						
T	3.865	H	Long-distance M		4289	3	161	84	161 Chinese
T	3.865	H	Lottery Channel		4289	3	162	88	162 Chinese
D	3.888	H	Data service		2222	1			1
T	12.302	V	TVBS-N	VICS	30000	5	102	103	102 Chinese
T	12.302	V	CTI-NEWS	VICS	30000	5	53	54	53 Chinese
T	12.302	V	ET NEW-S	VICS	30000	5	901	902	901 Chinese
T	12.302	V	ET-VARI	VICS	30000	5	1301	1302	1301 Chinese
T	12.302	V	CTI-VARI	VICS	30000	5	51	50	51 Chinese
T	12.302	V	CTI-ENTER	VICS	30000	5	2101	2102	2101 Chinese
T	12.302	V	ET-DRAMA	VICS	30000	5	2501	2502	2501 Chinese
T	12.302	V	SUPER TV	VICS	30000	5	2901	45	2901 Chinese
T	12.302	V	GOLDSUN TV	VICS	30000	5	3301	3302	3301 Chinese
T	12.302	V	ET-YOYO	VICS	30000	5	3701	3702	3701 Chinese
T	12.302	V	LS-TIME	VICS	30000	5	4101	4102	4101 Chinese
T	12.302	V	ET-MOVIE	VICS	30000	5	4501	4502	4501 Chinese
T	12.302	V	FTV	VICS	30000	5	1061	1062	1061 Chinese
T	12.302	V	PTS	VICS	30000	5	1066	1067	1066 Chinese
T	12.302	V	SETTV	VICS	30000	5	1071	1072	1071 Chinese
D	12.339	H	CA		10125	3			
D	12.339	H	®¶þÂÞ°°		10125	3			
D	12.339	H	ÃÆæ®ïÇÇÖÎ		10125	3			
D	12.339	H	Ú²¿ÉÉ¿		10125	3			
D	12.339	H	¦±´¼Æ»®		10125	3			
D	12.339	H	Ç¿ÖÎÀÉÓ		10125	3			
D	12.339	H	ï»ÈÎÀÉÓ		10125	3			
D	12.339	H	þÀÏÎÀÉÓ		10125	3			
D	12.339	H	çÓ°Í¶µÝ-1		10125	3			
D	12.339	H	çÓ°Í¶µÝ-2		10125	3			
D	12.339	H	Int Table		10125	3			
D	12.339	H	úÊÀµ¹¼ÆÊ±		10125	3			
T	12.401	V	ETTV NEWS	VICS	22425	3	1031	1032	1031 Chinese
T	12.401	V	ET-ENTER	VICS	22425	3	1036	1037	1036 Chinese
T	12.401	V	TVBS	VICS	22425	3	1041	1042	1041 Chinese
T	12.401	V	TVBS-G	VICS	22425	3	1046	1047	1046 Chinese
T	12.401	V	SPORTS 1	VICS	22425	3	1051	1052	1051 Chinese
T	12.401	V	SPORTS 2	VICS	22425	3	1056	1057	1056 Chinese
T	12.430	V	AXN	VICS	22425	3	1001	1002	1001 Chinese
T	12.430	V	TOP 2	VICS	22425	3	1006	1007	1006 Chinese
T	12.430	V	TOP	VICS	22425	3	1011	1012	1011 Chinese
T	12.430	V	TVB-8	VICS	22425	3	1016	1017	1016 Chinese
T	12.430	V	XINGHE	VICS	22425	3	1026	1027	1026 Chinese
T	12.430	V	NOVEL CHANNEL	VICS	22425	3	1036	1037	1036 Chinese
T	12.538	V	CCTV 4		41250	1	512	650	2306
T	12.538	V	CCTV 9		41250	1	513	660	2308
T	12.538	V	CCTV OPERA		41250	1	514	670	2310
T	12.538	V	BEIJING		41250	1	2100	2101	2100
T	12.538	V	SHANGHAI		41250	1	2292	2293	2292
T	12.538	V	JIANGSU		41250	1	4092	4093	4092
T	12.538	V	HUNAN		41250	1	4272	4273	4272
T	12.538	V	FUJIAN		41250	1	4812	4813	4812
T	12.538	V	XIAMEN		41250	1	4818	4819	4818
T	12.538	V	GUANGDONG		41250	1	4992	4993	4992
T	12.538	V	SHENZHENG		41250	1	4998	4999	4998
T	12.598	V	Live News Ch	NAGV	43000	3	304	306	304
T	12.598	V	Odds Express	NAGV	43000	3	464	466	464
D	12.598	V	{Empty Name}		43000	3			
T	12.720	V	KBS World	NAGV	43000	3	720	722	720
T	12.720	V	HMC 1	NAGV	43000	3	672	673	672
140.0 East			**EXPRESS AM3**						
T	3.576	R	Magadan		4285	3	308	256	8190 Russian
T	3.633	R	AZIMUT-V	BISS	4340	3	4194	256	8190 Russian
T	3.730	R	MATBEEBKA		3199	3	4194	4195	4194 Russian
144.0 East			**SUPERBIRD C**						
T	12.523	H	E11		21096	3	1060	1020	1060
T	12.553	H	E71		21096	3	1060	1020	1060
T	12.613	H	VPR	____	21096		1760	1720	1760
T	12.613	H	MTR	____	21096		1460	1420	1460
T	12.613	H	TBS	____	21096		1160	1120	1160
T	12.613	H	DS1	____	21096		1860	1820	1860
T	12.613	H	DS2	____	21096		1960	1920	1960
T	12.613	H	BBG	____	21096		1360	1320	1360
T	12.613	H	JNN	____	21096		1260	1220	1260
T	12.613	H	QVC	____	21096		1660	1620	1660
T	12.613	H	KMC	____	21096		1560	1520	1560
T	12.613	H	ES1		21096		1060	1020	1060
T	12.613	H	VPR	____	21096		1760	1720	1760
T	12.613	H	MTR	____	21096		1460	1420	1460
T	12.613	H	TBS	____	21096		1160	1120	1160
T	12.613	H	DS1	____	21096		1860	1820	1860
T	12.613	H	DS2	____	21096		1960	1920	1960
T	12.613	H	BBG	____	21096		1360	1320	1360
T	12.613	H	JNN	____	21096		1260	1220	1260
T	12.613	H	QVC	____	21096		1660	1620	1660
T	12.613	H	KMC	____	21096		1560	1520	1560
T	12.613	H	ES1		21096		1060	1020	1060
T	12.613	H	VPR	POVU	21096		1760	1720	1760
T	12.613	H	MTR	POVU	21096		1460	1420	1460
T	12.613	H	TBS	POVU	21096		1160	1120	1160
T	12.613	H	DS1	POVU	21096		1860	1820	1860
T	12.613	H	DS2	POVU	21096		1960	1920	1960
T	12.613	H	BBG	POVU	21096		1360	1320	1360
T	12.613	H	JNN	POVU	21096		1260	1220	1260
T	12.613	H	QVC	POVU	21096		1660	1620	1660
T	12.613	H	KMC	POVU	21096		1560	1520	1560
T	12.613	H	ES1		21096		1060	1020	1060
T	12.643	H	E31		21096	3	1060	1020	1060
T	12.688	V	DAAI-TV		2900	5	33	34	33
146.0 East			**AGILA 2**						
T	4.165	V	FAMILYLAND TV		3735	7	1160	1120	1160
R	4.165	V	TEST BRDCST		3735	7		34	34

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Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	4.165	V	ACQ TV TEST BRD		3735	7	33	34	33	
D	12.301	H	{Empty Name}		25600	5			62	
D	12.541	H	{Empty Name}		25600	5			60	
D	12.541	V	DATA		26000	5			2307	
R	12.541	V	GV AM 792		26000	5		64	64	
D	12.581	H	{Empty Name}		25600	5				
D	12.581	H	{Empty Name}		25600	5			60	
D	12.661	H	Area 51		25600				411	
D	12.661	H	Oggonoid		25600				412	
D	12.661	H	Pinball		25600				413	
T	12.661	H	Smile of a Child		25600		163	92	163	
D	12.661	H	{Empty Name}		25600				60	

152.0 East — OPTUS B3

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
R	12.564	H	Tamil Radio		30000	2		1422	1422	
T	12.658	V	Inspiration		30000	2	505	580	505	
R	12.658	V	TSR		30000	2		1826	1861	

156.0 East — OPTUS C1

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
D	12.305	H	AITV71		30000	2				
D	12.305	H	AITV72		30000	2				
D	12.305	H	The Arcade		30000	2				
D	12.305	H	MindGames		30000	2				
D	12.305	H	Playin'TV		30000	2				
D	12.305	H	Tune		30000	2				
D	12.305	H	Mind		30000	2				
D	12.305	H	AITV96		30000	2				
D	12.305	H	AITV97		30000	2				
D	12.305	H	AITV98		30000	2				
D	12.305	H	AITV99		30000	2				
T	12.305	H	EXPO		30000	2	1031	1032	1031	
D	12.305	H	ASTRA Awards Vo		30000	2				
T	12.367	V	TVN	____	27800	3	1101	1102	1101	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
T	12.407	V	TUNE 152°E		30000	3	64	65	64	
T	12.407	V	CLK	____	30000	3	80	81	80	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
T	12.407	V	BTV2	____	30000	3	105	86	105	
T	12.407	V	BTV3	____	30000	3	96	97	96	
T	12.407	V	SKY1	____	30000	3	512	513	512	
T	12.407	V	SKY2	____	30000	3	512	515	512	
T	12.407	V	SKY3	____	30000	3	512	515	512	
T	12.407	V	SKY4	____	30000	3	512	516	512	
T	12.407	V	SKY5	____	30000	3	512	514	512	
T	12.407	V	SKY6	____	30000	3	512	513	512	
R	12.407	V	SKY7		30000	3		104	104	
T	12.407	V	SKY8	____	30000	3	544	545	544	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
R	12.407	V	Retail R1	____	30000	3		257	257	
R	12.407	V	Sport 927		30000	3		320	256	
R	12.407	V	Retail R2	____	30000	3		258	258	
R	12.407	V	Retail R3	____	30000	3		259	259	
R	12.407	V	Retail R4	____	30000	3		260	260	
R	12.407	V	Retail R5-6	____	30000	3		106	106	
R	12.407	V	SKY Radio1	____	30000	3		517	517	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
R	12.407	V	QTAB	____	30000	3		288	288	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.407	V	.		30000	3			8189	
D	12.438	H	ASTRA		27800	3			1101	
D	12.438	H	ASTRA AWARDS		27800	3			1111	
T	12.447	V	SPA	____	27800		1011	1012	8150	
T	12.447	V	SPM	____	27800		1021	1022	8150	
T	12.447	V	SPH	____	27800		1031	1032	8150	
T	12.447	V	SPB	____	27800		1041	1042	8150	
T	12.447	V	SPW	____	27800		1051	1052	8150	
T	12.447	V	AUSA	____	27800		1011	1012	8150	
T	12.447	V	GAMESWORLD		27800		1061	1062		
D	12.447	V	Mindgames		27800					
D	12.447	V	Arcade		27800					
D	12.447	V	PickNPlay		27800					
T	12.447	V	Gamesworld		27800		1061	1062		
T	12.527	V	ABC TV WA	____	30000	3	800	801	800	
T	12.527	V	GWN TV	____	30000	3	1792	1793	1792	
T	12.527	V	WLK	____	30000	3	64	65	64	
T	12.527	V	WIN	____	30000	3	1536	1537	1536	
R	12.527	V	SBS R SA	____	30000	3		546	553	
R	12.527	V	SMA BUS5	____	30000	3		325	307	
R	12.527	V	SMA BUS6	____	30000	3		336	339	
R	12.527	V	SMA BUS7	____	30000	3		341	339	
T	12.607	V	FB05	____	27800		4011	4012	4011	
T	12.607	V	FB06	____	27800		4021	4022	4021	
T	12.607	V	FB07	____	27800		4031	4032	4031	
T	12.607	V	FB08	____	27800		4041	4042	4041	
T	12.607	V	FB19	____	27800		4051	4052	4051	
T	12.607	V	FB20	____	27800		4061	4062	4061	
T	12.607	V	FB21	____	27800		4071	4072	4071	
T	12.607	V	FB22	____	27800		4081	4082	4081	
T	12.607	V	FB23	____	27800		4091	4092	4091	
T	12.607	V	FB24	____	27800		4101	4102	4101	
T	12.607	V	FB05 test	____	27800		4011	4012	4011	
T	12.607	V	FB07 test	____	27800		4021	4022	4021	
R	12.638	H	AIR02	____	27800	3		512	8190	
R	12.638	H	AIR06	____	27800	3		552	8190	
R	12.638	H	AIR07	____	27800	3		562	8190	
R	12.638	H	AIR08	____	27800	3		572	8190	
R	12.638	H	AIR09	____	27800	3		582	8190	
R	12.638	H	AIR10	____	27800	3		592	8190	
R	12.638	H	AIR11	____	27800	3		602	8190	
R	12.638	H	AIR12	____	27800	3		612	8190	
R	12.638	H	AIR13	____	27800	3		622	8190	
R	12.638	H	AIR20	____	27800	3		692	8190	
R	12.638	H	AIR23	____	27800	3		722	8190	
R	12.638	H	AIR24	____	27800	3		732	8190	
R	12.638	H	AIR25	____	27800	3		742	8190	
R	12.638	H	AIR26	____	27800	3		752	8190	
R	12.638	H	AIR27	____	27800	3		762	8190	
R	12.638	H	AIR28	____	27800	3		772	8190	
R	12.638	H	AIR29	____	27800	3		782	8190	
R	12.638	H	AIR30	____	27800	3		792	8190	
T	12.647	V	FB09	____	27800		4011	4012	4011	
T	12.647	V	FB10	____	27800		4021	4022	4021	
T	12.647	V	FB11	____	27800		4031	4032	4031	
T	12.647	V	FB12	____	27800		4041	4042	4041	
T	12.647	V	FB25	____	27800		4051	4052	4051	
T	12.647	V	FB26	____	27800		4061	4062	4061	
T	12.647	V	Adults Only 1	____	27800		4081	4082	4081	
T	12.647	V	Adults Only 2	____	27800		4091	4092	4091	
T	12.647	V	Spare	____	27800		4101	4102	4101	
T	12.647	V	AO1 test	____	27800		4081	4082	4081	
T	12.647	V	AO2 test	____	27800		4091	4092	4091	
T	12.688	H	Bio.	____	27800		1011	1012	1011	
T	12.688	H	E!	____	27800		1021	1022	1021	
T	12.688	H	How To	____	27800		1031	1032	1031	
T	12.688	H	FUEL TV	____	27800		1041	1042	1041	
T	12.688	H	Vh1	____	27800		1051	1052	1051	
T	12.688	H	Food	____	27800		1061	1062	1061	
T	12.688	H	Nick Jr	____	27800		1071	1072	1071	
T	12.688	H	Disc Science	____	27800		1081	1082	1081	
T	12.688	H	CI	____	27800		1091	1092	1091	
T	12.688	H	Disc Travel	____	27800		1101	1102	1101	
T	12.688	H	Boomerang	____	27800		1111	1112	1111	
T	12.688	H	Sci	____	27800		1081	1082	1081	
T	12.688	H	Trvl	____	27800		1101	1102	1101	
D	12.728	V	.		24450				8189	
D	12.728	V	.		24450				8189	
D	12.728	V	.		24450				8189	
D	12.728	V	.		24450				8189	
D	12.728	V	.		24450				8189	
D	12.728	V	.		24450				8189	
D	12.728	V	.		24450				8189	
D	12.728	V	.		24450				8189	
T	12.728	V	ABC TV SA	____	24450		816	817	816	
T	12.728	V	ABC TV Q	____	24450		784	785	784	
T	12.728	V	ABC TV NT	____	24450		832	833	832	
T	12.728	V	ABC TV SE	____	24450		768	769	768	
R	12.728	V	ABC FM SA	____	24450			820	820	
R	12.728	V	ABC RN SA	____	24450			821	821	
R	12.728	V	ABC RR SA	____	24450			822	822	
R	12.728	V	ABC FM NT	____	24450			836	836	
R	12.728	V	ABC RN NT	____	24450			837	837	
R	12.728	V	ABC RR NT	____	24450			838	838	
R	12.728	V	ABC FM Q	____	24450			788	788	
R	12.728	V	ABC RN Q	____	24450			789	789	
R	12.728	V	ABC RR Q	____	24450			790	790	
R	12.728	V	ABC RR AS	____	24450			839	839	
R	12.728	V	ABC JJJ	____	24450			775	775	
R	12.728	V	ABC PNN	____	24450			776	776	
R	12.728	V	ABC RR NQ	____	24450			791	791	
R	12.728	V	ABC RR V	____	24450			777	864	
R	12.728	V	ABC FM SE	____	24450			772	772	
R	12.728	V	ABC RN SE	____	24450			773	773	
R	12.728	V	ABC RR SE	____	24450			774	774	

160.0 East — OPTUS D1

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	12.420	V	Res 1401	____	22500		1001	1101	8190	
T	12.420	V	Res 1402	____	22500		1002	1102	8190	
T	12.420	V	Res 1403	____	22500		1003	1103	8190	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Hobart		5100		625	626	625	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
R	12.637	H	TAIMA		5100			1284	1284	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	TDT		5100		657	658	657	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	
T	12.637	H	SCTV Central		5100		1280	1281	1280	

166.0 East — INTELSAT 8

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
D	3.900	H	{Empty Name}		27500	3				
T	3.972	V	SBS WORLD	____	2206		768	769	768	Korean
T	4.035	V	PAS/BBCSNG Enc1		5632		308	256	8190	
T	4.035	V	PAS/BBCSNG Enc1		5632		308	256	8190	
T	4.035	V	PAS/BBCSNG Enc1		5632		308	256	8190	
T	4.035	V	PAS/BBCSNG Enc1		5632		308	256	8190	
T	4.050	V	14-4 TRANSVISION		13236	3	4183	4195	4183	
R	4.060	H	Audio for Radio		16171	3		1122	1122	
T	4.080	V	1_Ch1		30000		3088	3089	3088	
T	4.080	V	2_Ch2		30000		3104	3105	3104	
T	4.080	V	3_Ch3		30000		3120	3121	3120	
T	4.080	V	4_Ch4		30000		3136	3137	3136	
T	4.080	V	5_Ch5		30000		3152	3153	3152	
T	4.080	V	6_Ch6		30000		3168	3169	3168	
T	4.080	V	7_Ch7		30000		3184	3185	3184	
T	4.080	V	8_MOMO		30000		3200	3201	3200	
T	4.080	V	9_Ch9		30000		3216	3217	3216	
D	4.121	V	Data		5555	3				
T	4.121	V	{Empty Name}		5555	3	513	514	513	
T	4.121	V	{Empty Name}		5555	3	257	258	257	
D	4.121	V	{Empty Name}		5555	3				
T	4.131	V	{Empty Name}		5796	3	4010	4011	4010	
T	4.131	V	{Empty Name}		5796	3	4020	4021	4020	
T	4.131	V	{Empty Name}		5796	3	4020	4021	4020	
T	4.131	V	{Empty Name}		5796	3	4010	4011	4010	
T	4.140	H	Test Channel	VICS	28125	3	1560	1520	1560	
R	12.526	H	ERA Sport Radio	____	28800	3		1522	1522	
R	12.526	H	R949 TEST		28800	3		1492	1492	
D	12.646	H	DSD UEC		28066	3				
T	12.726	H	BN TV		28066	3	514	642	514	
T	12.726	H	BHT	____	28066	3	515	643	515	
T	12.726	H	DM SAT	____	28066	3	516	644	516	
T	12.726	H	BK TV	IRDT	28066	3	517	645	517	
T	12.726	H	A1 PLUS	IRDT	28066	3	518	646	518	
T	12.726	H	{Empty}	IRDT	28066	3	519	647	519	
T	12.726	H	SYRIA TV		28066	3	521	649	521	
T	12.726	H	NHK	IRDT	28066	3	522	650	522	
T	12.726	H	PINK EXTRA	____	28066	3	513	641	513	
R	12.726	H	Main General Pr		28066	3		654	654	

169.0 East — INTELSAT 2

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.901	H	P2 CCP Upgrade		30800	3	1360	1320	1360	
H	3.966	V	CRICKET WORLD C	____	6110		308	256	8190	
T	3.992	V	Channel 1	____	26470		1160	1120	1160	
T	3.992	V	Channel 2	____	26470		1260	1220	1260	
T	3.992	V	Channel 3		26470		1360	1320	1360	
T	3.992	V	Channel 5	____	26470		1560	1520	1560	
T	3.992	V	Channel 6		26470		1660	1620	1660	
T	3.992	V	MetroMux Channe	____	26470		1760	1720	1760	

237.0 East (123.0 West) — GALAXY 10R

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	4.180	H	JLTV		29270	3	710	700		
T	11.720	V	{Empty Name}		27690	3	32	33	33	
T	11.720	V	{Empty Name}		27690	3	35	34	34	
T	11.720	V	{Empty Name}		27690	3	37	36	37	
T	11.720	V	{Empty Name}		27690	3	41	42	41	
T	11.720	V	{Empty Name}		27690	3	43	44	44	
T	11.720	V	{Empty Name}		27690	3	45	46	46	
T	11.720	V	{Empty Name}		27690	3	48	49	48	
T	11.720	V	{Empty Name}		27690	3	50	51	50	
T	11.720	V	{Empty Name}		27690	3	53	54	54	
T	11.720	V	{Empty Name}		27690	3	55	56	56	
T	11.720	V	{Empty Name}		27690	3	58	57	57	
T	11.720	V	{Empty Name}		27690	3	60	59	59	
T	11.720	V	{Empty Name}		27690	3	64	63	63	
T	11.720	V	{Empty Name}		27690	3	61	62	62	
D	11.774	V	{Empty Name}		6666	1				
D	11.774	V	{Empty Name}		6666	1				
T	11.805	H	{Empty Name}		4580	3	115	116	115	
R	11.805	H	{Empty Name}		4580	3		114	114	
T	11.813	H	STV		6617	3	33	36	33	
T	11.893	V	Feeds ( )		6111		3601	3604	3601	
T	11.893	V	Feeds (Vyvx Den		6111		3601	3604	3601	
T	11.893	V	Feeds ({Empty N		6111		3601	3604	3601	
T	11.905	V	CH 1		4352	3	4194	4195	8189	
T	11.905	V	CH 2		4352	3	2305	2306	8188	
D	11.928	H	{Empty Name}		2500	3				
D	11.928	H	{Empty Name}		2500	3				
D	11.928	H	{Empty Name}		2500	3				
T	11.966	V	{Empty Name}		13021	3	201	202	203	
D	12.006	V	{Empty Name}		2222	3			1099	
D	12.022	H	{Empty Name}		10000	3				
D	12.022	H	{Empty Name}		10000	3				
D	12.022	H	{Empty Name}		10000	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
D	12.035	V	{Empty Name}		19125	3				
T	12.114	V	{Empty Name}	____	4444	3	3601	36	241	
T	12.114	V	{Empty Name}		4444	3	33	37	33	
T	12.114	V	{Empty Name}		4444	3	33	37	33	
T	12.136	V	{Empty Name}		2666	3	39	40	39	

247.0 East (113.0 West) — SATMEX 6

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.744	V	UTEG		2893	3	33	36	33	
T	3.752	V	TELEMAR		2893	3	4194	4195	4194	
T	3.847	V	Service 1		3219	3	33	34	8190	
T	3.853	H	GPO IMAGEN		3255	3	4131	4129	4387	
T	3.858	H	SIS-JAL-RADIO-TV		2803	3	4194	4195	4194	
T	3.863	H	TV-NUEVO LEON		3200	5	4194	4195	4194	
T	4.085	V	TMM TV		2821	3	4131	4129	4131	

252.7 East (107.3 West) — ANIK F1, F1R

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
D	3.780	V	VISIONPOINT DEMO		28346	7			101	
T	3.780	V	TELE QUEBEC		28346	7	2360	2320	2360	
T	3.780	V	ASTRAL/CORUS RA		28346	7	2360	2420	2360	
R	3.780	V	RADIO HUMSAFAR		28346	7		2222	2222	
R	3.780	V	ASTRAL BOOM		28346	7		2522	2522	
R	3.780	V	ROCK DETENTE		28346	7		2420	2420	
R	3.780	V	ASTRAL ENERGIE		28346	7		2220	2220	
T	3.780	V	TELE QUEBEC NEW		28346	7	510	502	510	
T	3.780	V	CORUS RADIO		28346	7	510	2622	510	
R	3.780	V	TNI		28346	7		2520	2520	
T	3.780	V	LCN	____	28346	7	110	152	110	
T	3.780	V	LCN/MAGNETO.	____	28346	7	110	152	110	
R	3.780	V	ENERGIE 2 /STD		28346	7		2730	2730	
R	3.780	V	ROCK VELOUR/STD		28346	7		2732	2732	
T	3.780	V	TEST CORUS		28346	7	510	2622	510	
T	3.780	V	MYSTERE /MPEG	____	28346	7	210	252	210	
T	3.780	V	ARGENT/MPEG	____	28346	7	310	302	310	
T	3.780	V	PRISE 2 /MPEG	____	28346	7	410	402	410	
R	3.896	V	Blackout Chann		6150			1322	1322	
D	3.896	V	PV WAN Channel		6150					
D	3.896	V	PV ADP Channel		6150					
T	3.896	V	Global TV (cabl	____	6150		1160	1120	1160	
T	3.896	V	Global TV (CII	____	6150		1160	1120	1160	
T	3.896	V	Global TV (Glob	____	6150		1160	1120	1160	
T	3.896	V	Global Gateway	____	6150		1260	1220	1260	
D	3.896	V	DCP Download Ch		6150					
D	3.896	V	CCP Download Ch		6150					
D	3.896	V	BSR Download Ch		6150					
R	3.924	V	Tone Calibrate.		3000			1213	1213	
R	3.933	V	Tone Calibrate	____	9300			1222	1222	
T	3.933	V	APTN-SE	____	9300		1160	1120	1160	
T	3.933	V	APTN-N	____	9300		1260	1220	1260	
T	3.933	V	APTN-SW	____	9300		1360	1320	1360	
T	3.933	V	RC channel	____	9300		1260	1220	1260	
R	3.962	H	7F41 & 7F42		6500	7		1220	1220	

T = TV Digital
R = Radio Digital
T = TV Digital Crypt
R = Radio Digital Crypt
T = TV Analog
R = Radio Analog
T = TV Analog Crypt
R = Radio Analog Crypt
H = TV High Definition
H = TV High Definition Crypt
D = Data Channel
P = Package

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
R	3.962	H	**7F43**		6500	**7**		1320	1320	
T	4.060	V	**Meteo Media**	____	28346	**7**	110	102	110	
T	4.060	V	**TV5/USA**	____	28346	**7**	310	302	310	
T	4.060	V	**TV5**	____	28346	**7**	210	202	210	
R	4.060	V	**RFI**	____	28346	**7**		304	304	
T	4.060	V	**RDI**	____	28346	**7**	610	602	610	
T	4.060	V	**RDI/POP**	____	28346	**7**	610	602	610	
T	4.060	V	**MUSIQUE PLUS**	____	28346	**7**	410	402	410	
T	4.060	V	**MUSIMAX**	____	28346	**7**	510	502	510	
T	4.060	V	**MUSIMAX /CLASSIC**	____	28346	**7**	510	502	510	
R	4.060	V	**CLASSIC**		28346	**7**		204	204	
T	4.060	V	**RDS**	____	28346	**7**	710	702	710	
T	4.060	V	**ASN/TV GUIDE**		28346	**7**	810	802	810	
T	4.100	V	**The Weather Net**		28346	**7**	810	800	810	
T	4.100	V	**The Weather Net**		28346	**7**	810	802	810	
T	4.100	V	**The Weather Net**		28346	**7**	810	800	810	
T	4.100	V	**The Weather Net**		28346	**7**	810	802	810	
R	4.100	V	**Iceberg Radio**		28346	**7**		1120		
R	4.100	V	**Hardcore Sports**		28346	**7**		1122		
R	4.100	V	**TWN for Sirius**		28346	**7**		803		
R	4.100	V	**Hardcore Sports**		28346	**7**		1122		
D	4.100	V	**IP Demo**		28346	**7**			308	
D	4.100	V	**IP Demo**		28346	**7**			308	

255.0 East (105.0 West) AMC 15

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.740	H	**{Empty Name}**	____	26000	**2**	5666	5667	5666	
T	11.740	H	**{Empty Name}**	____	26000	**2**	5922	5923	5922	
T	11.740	H	**{Empty Name}**	____	26000	**2**	4130	4131	4130	
T	11.740	H	**{Empty Name}**	____	26000	**2**	4386	4387	4386	
T	11.740	H	**{Empty Name}**	____	26000	**2**	4642	4643	4642	
T	11.740	H	**{Empty Name}**	____	26000	**2**	4898	4899	4898	
T	11.740	H	**{Empty Name}**	____	26000	**2**	5154	5155	5154	
T	11.740	H	**{Empty Name}**	____	26000	**2**	5410	5411	5410	
T	11.840	V	**{Empty Name}**		26000	**2**	6434	6435	6434	
T	11.840	V	**{Empty Name}**	____	26000	**2**	4130	4131	4130	
T	11.840	V	**{Empty Name}**	____	26000	**2**	4386	4387	4386	
T	11.840	V	**{Empty Name}**	____	26000	**2**	4642	4643	4642	
T	11.840	V	**{Empty Name}**	____	26000	**2**	4898	4899	4898	
T	11.840	V	**{Empty Name}**	____	26000	**2**	5154	5155	5154	
D	11.840	V	**{Empty Name}**		26000	**2**				
D	11.840	V	**{Empty Name}**		26000	**2**				
D	11.840	V	**{Empty Name}**		26000	**2**				
D	11.840	V	**{Empty Name}**		26000	**2**				
D	11.840	V	**{Empty Name}**		26000	**2**				
D	11.840	V	**{Empty Name}**		26000	**2**				
D	11.840	V	**{Empty Name}**		26000	**2**				
T	12.060	H	**{Empty Name}**	____	26000	**2**	4130	4131	4130	
T	12.060	H	**{Empty Name}**	____	26000	**2**	4386	4387	4386	
T	12.060	H	**{Empty Name}**	____	26000	**2**	4642	4643	4642	
T	12.060	H	**{Empty Name}**	____	26000	**2**	4898	4899	4898	
T	12.060	H	**{Empty Name}**	____	26000	**2**	5154	5155	5154	
T	12.060	H	**{Empty Name}**	____	26000	**2**	5410	5411	5410	
T	12.060	H	**{Empty Name}**	____	26000	**2**	5666	5667	5666	
T	12.060	H	**{Empty Name}**	____	26000	**2**	5922	5923	5922	
T	12.060	H	**{Empty Name}**	____	26000	**2**	6178	6179	6178	
T	12.060	H	**{Empty Name}**	____	26000	**2**	6434	6435	6434	
T	12.060	H	**{Empty Name}**	____	26000	**2**	6690	6691	6690	
T	12.060	H	**{Empty Name}**	____	26000	**2**	6946	6947	6946	
T	12.060	H	**{Empty Name}**	____	26000	**2**	7202	7203	7202	
T	12.060	H	**{Empty Name}**	____	26000	**2**	5410	5411	5410	
T	12.160	V	**{Empty Name}**	____	26000	**2**	4130	4131	4130	
T	12.160	V	**{Empty Name}**	____	26000	**2**	4386	4387	4386	
T	12.160	V	**{Empty Name}**	____	26000	**2**	4642	4643	4642	
T	12.160	V	**{Empty Name}**	____	26000	**2**	4898	4899	4898	
T	12.160	V	**{Empty Name}**	____	26000	**2**	5154	5155	5154	
T	12.160	V	**{Empty Name}**	____	26000	**2**	5410	5411	5410	
T	12.160	V	**{Empty Name}**	____	26000	**2**	5666	5667	5666	
T	12.160	V	**{Empty Name}**	____	26000	**2**	5922	5923	5922	
T	12.160	V	**{Empty Name}**	____	26000	**2**	6178	6179	6178	
T	12.160	V	**{Empty Name}**	____	26000	**2**	6434	6435	6434	
D	3.980	V	**VDS SEC**		26663	**7**				
T	12.126	H	**NBC Newschannel**		4231	**3**	308	256	8190	

259.0 East (101.0 West) AMC 4

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
H	3.880	V	**CNBC**		28347	**3**	623		623	
T	4.136	V	**{Empty Name}**		2170	**3**	4130	4131	4130	
T	11.655	V	**GCN TV**		30000	**1**	1060	1059	1057	
T	11.655	V	**HRT TV**		30000	**1**	1639	1638	1639	
R	11.655	V	**HRT Radio**		30000	**1**		2064	2064	
R	11.820	H	**3ABN Radio**		5700	**2**		1122	1122	
T	11.860	H	**TAN 5/YTN**		28140	**3**	3065	3066	3065	
T	11.860	H	**TAN TV 6**		28140	**3**	3081	3082	3081	
T	11.860	H	**TAN TV 7**		28140	**3**	3097	3098	3097	
T	11.860	H	**Kenya Live TV**		28140	**3**	3113	3114	3113	
T	11.860	H	**Bethel TV**		28140	**3**	3129	3130	3129	
D	11.930	V	**{Empty Name}**		5000	**3**				
T	11.983	H	**ESPERANZA TV**		5900	**2**	2160	2120	2160	
T	11.983	H	**HOPE CHANNEL**		5900	**2**	2260	2220	2260	
T	11.983	H	**ATN/ACN SERVICE**		5900	**2**	2160	2130	2160	
T	11.983	H	**ATN SERVICE 2**		5900	**2**	2160	2132	2160	
R	11.983	H	**LIFETALK RADIO**		5900	**2**		2122	2122	
T	12.120	V	**Suroyo**		30000	**3**	1028	1025	1028	
T	12.120	V	**ETN**		30000	**3**	43	45	43	

261.0 East (99.0 West) GALAXY 16

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.825	H	**SCOPUS-NET-TECH**		2604	**3**	4194	4195	4194	
T	4.000	H	**WHT - 1**		26400	**3**	100	101	8188	
R	4.000	H	**Angel 1&2**		26400	**3**		102	8188	
R	4.000	H	**Angel 3&4**		26400	**3**		103	8188	
R	4.000	H	**Angel 4&5**		26400	**3**		104	8188	
R	4.000	H	**Future 1**		26400	**3**		105	8188	
R	4.000	H	**Future 2**		26400	**3**		106	8188	
R	4.000	H	**Pulse FM**		26400	**3**		107	8188	
T	4.000	H	**LESEA Network**		26400	**3**	200	201	8189	
R	4.000	H	**Angel 1&2 - 2**		26400	**3**		202	8189	
R	4.000	H	**Angel 3&4 - 2**		26400	**3**		203	8189	
R	4.000	H	**Angel 4&5 - 2**		26400	**3**		204	8189	
R	4.000	H	**Future 1 - 2**		26400	**3**		205	8189	
R	4.000	H	**Future 2 - 2**		26400	**3**		206	8189	
R	4.000	H	**Pulse FM - 2**		26400	**3**		207	8189	
T	4.000	H	**WHT - 2**		26400	**3**	300	301	8190	
R	4.000	H	**Future 3**		26400	**3**		108	8188	
R	4.000	H	**Future 3 - 2**		26400	**3**		208	8189	
R	4.000	H	**Q-Tones**		26400	**3**		302	8190	
H	4.140	V	**Feed (ABC HD NE**		29127	**1**	520	731	170	
D	12.120	H	**{Empty Name}**		30000	**2**				
T	12.187	V	**04-Channel 4**		8500	**3**	1460	1420	1460	

263.0 East (97.0 West) GALAXY 25

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.748	V	**{Empty Name}**		7230	**3**	4178	4179	4178	
D	11.748	V	**{Empty Name}**		7230	**3**				
T	11.789	V	**Al Karma**		28125	**3**	1296	1297	1296	
T	11.789	V	**Globecast 63**		28125	**3**	1344	1345	1344	
R	11.789	V	**SANM Radio**		28125	**3**		1346	1346	
T	11.789	V	**AL MAGHRIBIA**		28125	**3**	4023	4033	4023	
R	11.789	V	**Al Maghiribia R**		28125	**3**		4533	4533	
R	11.789	V	**TDA-1**		28125	**3**		1533	1533	
R	11.789	V	**Radio Internati**		28125	**3**		1534	1534	
T	11.789	V	**UTR**	____	28125	**3**	1024	1025	1024	
T	11.789	V	**BN BOSNIA**	____	28125	**3**	1056	1057	1056	
T	11.789	V	**STV Bangla**		28125	**3**	261	262	261	
T	11.789	V	**Israel Plus**	____	28125	**3**	1360	1361	1360	
T	11.789	V	**Daskin TV**	____	28125	**3**	1072	1073	1072	
R	11.789	V	**BN Bosnia Radio**	____	28125	**3**		1058	1058	
T	11.789	V	**MHz Worldview**		28125	**3**	2960	2920	2960	
T	11.789	V	**TVK**	____	28125	**3**	300	301	300	
D	11.789	V	**{Empty Name}**		28125	**3**				
T	11.789	V	**{Empty Name}**		28125	**3**	1296	1297	1296	
T	11.789	V	**{Empty Name}**		28125	**3**	1260	1220	1260	
T	11.789	V	**{Empty Name}**		28125	**3**	1344	1345	1344	
D	11.789	V	**{Empty Name}**		28125	**3**				
R	11.789	V	**{Empty Name}**		28125	**3**		1346	1344	
T	11.789	V	**{Empty Name}**		28125	**3**	1024	1025	1024	
T	11.789	V	**{Empty Name}**		28125	**3**	300	301	300	
T	11.789	V	**{Empty Name}**		28125	**3**	2960	2920	2960	
T	11.789	V	**{Empty Name}**		28125	**3**	1056	1057	1056	
T	11.789	V	**{Empty Name}**		28125	**3**	261	262	261	
T	11.789	V	**{Empty Name}**		28125	**3**	1360	1361	1360	
T	11.789	V	**{Empty Name}**		28125	**3**	1072	1073	1072	
T	11.789	V	**{Empty Name}**		28125	**3**	4023	4033	4023	
R	11.789	V	**{Empty Name}**		28125	**3**		4533	4023	
T	11.836	V	**IRIB 2**		20770	**3**	308	256	308	
T	11.836	V	**AL-ALAM**		20770	**3**	408	356	408	
T	11.836	V	**Daystar TV**		20770	**3**	515	516	515	
T	11.836	V	**Cyrus TV**		20770	**3**	131	132	131	
T	11.836	V	**NTD**		20770	**3**	43	38	43	
T	11.836	V	**TV 7 TUNIS**		20770	**3**	262	263	130	
R	11.836	V	**Quran Radio**		20770	**3**		1089	1089	
R	11.836	V	**RADIO SARASARI**		20770	**3**		1085	1085	
R	11.836	V	**RADIO MAAREF**		20770	**3**		1087	1087	
T	11.836	V	**IRINN**		20770	**3**	1090	1091	1090	
R	11.836	V	**Tunis Radio2**		20770	**3**		3012	3012	
R	11.836	V	**STAR1&2**		20770	**3**		62	62	
R	11.836	V	**Overcomer/Star4**		20770	**3**		63	63	
R	11.836	V	**Tunis Radio1**		20770	**3**		3011	3011	
R	11.836	V	**RADIO387**		20770	**3**		560	560	
R	11.836	V	**Star5 and AVR**		20770	**3**		559	559	
R	11.836	V	**INT 1**		20770	**3**		32	32	
R	11.836	V	**INT 3**		20770	**3**		33	33	
R	11.836	V	**INT 4**		20770	**3**		34	34	
R	11.836	V	**Radio Seday-e A**		20770	**3**		129	129	
T	11.836	V	**TV Nejat**		20770	**3**	39	40	39	
T	11.836	V	**APPADANA INT**		20770	**3**	60	61	60	
T	11.836	V	**GNF Music**		20770	**3**	6432	6433	6432	
R	11.836	V	**RBN radio**		20770	**3**		35		
D	11.867	V	**{Empty Name}**		22000	**3**				
T	11.867	V	**{Empty Name}**		22000	**3**	1280	1281	1280	
T	11.867	V	**{Empty Name}**		22000	**3**	869	870	869	
T	11.867	V	**{Empty Name}**		22000	**3**	1560	1520	1560	
T	11.867	V	**{Empty Name}**		22000	**3**	4096	4097	4096	
R	11.867	V	**{Empty Name}**		22000	**3**		1523	1560	
T	11.867	V	**AssyriaSat**		22000	**3**	1160	1120	1160	
T	11.867	V	**PEN TV**		22000	**3**	2360	2320	2360	
T	11.867	V	**Globecast 403**		22000	**3**	1360	1320	1360	
T	11.867	V	**Rang-A-Rang TV**		22000	**3**	4353	4352	4353	
T	11.867	V	**Markazi TV**		22000	**3**	2160	2120	2160	
T	11.867	V	**Payam**		22000	**3**	1660	1620	1660	
T	11.867	V	**Your TV**		22000	**3**	2460	2420	2460	
T	11.867	V	**Duna TV**		22000	**3**	2060	2020	2060	
T	11.867	V	**Salaam TV**		22000	**3**	4096	4097	4096	
T	11.867	V	**Ariana TV**		22000	**3**	2920	2960	2920	
R	11.867	V	**Kossuth Radio**		22000	**3**		1422	1422	
R	11.867	V	**Darbar Sahib**		22000	**3**		1122	1122	
R	11.867	V	**Amrit Bani**		22000	**3**		1123	1123	
R	11.867	V	**Nanak Parchar**		22000	**3**		2122	2122	
R	11.867	V	**Nishkaam**		22000	**3**		2123	2123	
T	11.867	V	**Maharishi**		22000	**3**	4176	4177	4176	
T	11.936	H	**TV Romania**		20000	**3**	1360	1320	1360	
T	11.936	H	**TV Orient**		20000	**3**	4027	4037	4027	
R	11.936	H	**Romanian Radio**		20000	**3**		266	266	
D	11.936	H	**{Empty Name}**		20000	**3**				
D	11.991	V	**{Empty Name}**		22000	**3**				
T	11.991	V	**{Empty Name}**		22000	**3**	320	321	320	
T	11.991	V	**{Empty Name}**		22000	**3**	272	273	272	
R	11.991	V	**{Empty Name}**		22000	**3**		274	272	
T	11.991	V	**{Empty Name}**		22000	**3**	160	80	160	
T	11.991	V	**{Empty Name}**		22000	**3**	865	866	865	
T	11.991	V	**{Empty Name}**		22000	**3**	257	258	257	
T	11.991	V	**{Empty Name}**		22000	**3**	1030	1040	1030	
T	11.991	V	**{Empty Name}**		22000	**3**	336	337	336	
T	11.991	V	**{Empty Name}**		22000	**3**	560	561	560	
R	11.991	V	**{Empty Name}**		22000	**3**		402	400	
R	11.991	V	**{Empty Name}**		22000	**3**		1050	1030	
T	11.991	V	**{Empty Name}**		22000	**3**	400	401	400	
R	11.991	V	**{Empty Name}**		22000	**3**		562	560	
R	11.991	V	**{Empty Name}**		22000	**3**		1409	1409	
R	11.991	V	**{Empty Name}**		22000	**3**		1601	1601	
R	11.991	V	**{Empty Name}**		22000	**3**		1559	1559	
R	11.991	V	**{Empty Name}**		22000	**3**		1553	1553	
R	11.991	V	**{Empty Name}**		22000	**3**		1568	1559	
T	12.084	V	**Samanyolu TV**		22000	**3**	1360	1361	1360	
T	12.084	V	**EBRU TV**		22000	**3**	4027	4037	4027	
T	12.084	V	**BVN TV**		22000	**3**	4021	4031	4021	
T	12.084	V	**Globecast 157**	____	22000	**3**	2144	2145	2144	
T	12.084	V	**TV Polonia**	____	22000	**3**	2260	2220	2260	
R	12.084	V	**Polskie Radio 3**		22000	**3**		2222	2222	
R	12.084	V	**Polskie Radio 1**		22000	**3**		2230	2230	
T	12.084	V	**TVP 3**	____	22000	**3**	2160	2120	2160	
R	12.084	V	**Mega Comm**		22000	**3**		2122	2122	
T	12.084	V	**Tele5**	____	22000	**3**	2174	2184	2174	
R	12.084	V	**Latino Broadca**	____	22000	**3**		2132	2132	
R	12.084	V	**RNW 1**		22000	**3**		2522	2522	
R	12.084	V	**RNW 2**		22000	**3**		2530	2530	
R	12.084	V	**RNW 3**		22000	**3**		2532	2532	
R	12.084	V	**RVI-1**		22000	**3**		4104	4104	
T	12.084	V	**AZ TV**		22000	**3**	120	130	120	
R	12.084	V	**AZ Radio**		22000	**3**		121	121	
D	12.084	V	**{Empty Name}**		22000	**3**				
D	12.084	V	**{Empty Name}**		22000	**3**				
T	12.084	V	**{Empty Name}**		22000	**3**	1360	1361	1360	
T	12.084	V	**{Empty Name}**		22000	**3**	4027	4037	4027	
T	12.084	V	**{Empty Name}**		22000	**3**	4021	4031	4021	
T	12.084	V	**{Empty Name}**		22000	**3**	2460	2420	2460	
R	12.084	V	**{Empty Name}**		22000	**3**		2230	2230	
R	12.084	V	**{Empty Name}**		22000	**3**		2122	2122	
R	12.084	V	**{Empty Name}**		22000	**3**		2522	2522	
R	12.084	V	**{Empty Name}**		22000	**3**		2530	2530	
R	12.084	V	**{Empty Name}**		22000	**3**		2532	2532	
R	12.084	V	**{Empty Name}**		22000	**3**		4104	4104	
T	12.084	V	**{Empty Name}**		22000	**3**	2660	2620	2660	
T	12.084	V	**{Empty Name}**		22000	**3**	120	130	120	
R	12.084	V	**{Empty Name}**		22000	**3**		121	121	
T	12.146	V	**Saudi Arabian T**		22000	**3**	3123	3133	3123	
D	12.152	H	**{Empty Name}**		20000	**3**				
D	12.152	H	**{Empty Name}**		20000	**3**				
D	12.152	H	**{Empty Name}**		20000	**3**				
T	12.177	V	**{Empty Name}**		23000	**2**	2081	2082	2081	
T	12.177	V	**{Empty Name}**		23000	**2**	4083	259	4083	
T	12.177	V	**{Empty Name}**		23000	**2**	4084	260	4084	
T	12.177	V	**{Empty Name}**		23000	**2**	262	263	262	
T	12.177	V	**{Empty Name}**		23000	**2**	113	114	5920	
R	12.177	V	**{Empty Name}**		23000	**2**		2339	2339	
R	12.177	V	**{Empty Name}**		23000	**2**		2341	2341	
R	12.177	V	**{Empty Name}**		23000	**2**		54	54	
R	12.177	V	**{Empty Name}**		23000	**2**		50	50	
T	12.177	V	**{Empty Name}**		23000	**2**	56	57	56	
T	12.177	V	**{Empty Name}**		23000	**2**	33	34	33	
T	12.177	V	**{Empty Name}**		23000	**2**	43	44	43	
T	12.177	V	**{Empty Name}**		23000	**2**	4130	4131	5664	
T	12.177	V	**{Empty Name}**		23000	**2**	4085	261	4085	
R	12.177	V	**{Empty Name}**		23000	**2**		106	4085	
T	12.177	V	**{Empty Name}**		23000	**2**	47	48	47	
R	12.177	V	**{Empty Name}**		23000	**2**		46	5664	
R	12.177	V	**{Empty Name}**		23000	**2**		72		
R	12.177	V	**{Empty Name}**		23000	**2**		49	49	
T	12.177	V	**{Empty Name}**		23000	**2**	59	60	59	
R	12.177	V	**{Empty Name}**		23000	**2**		1064	4085	
T	12.177	V	**{Empty Name}**		23000	**2**	37	38	37	
R	12.177	V	**{Empty Name}**		23000	**2**		19		
T	12.177	V	**GNF Movies**		23000	**2**	2081	2082	2081	
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	
R	12.177	V	**Sukh Sagar Radio**		23000	**2**		2339	2339	
R	12.177	V	**Asian Gold Radio**		23000	**2**		2341	2341	
R	12.177	V	**WRN Fra EUR**		23000	**2**		54	54	
R	12.177	V	**WRN Mul 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	**Emmanuel TV**		23000	**2**	4085	261	4085	
R	12.177	V	**Glas Drine BiH**		23000	**2**		106	4085	
R	12.177	V	**SoomaaliRadio**		23000	**2**		1064	4085	
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	**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		

265.0 East (95.0 West) GALAXY 3C

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.730	V	**Vision Sports**		8825	**3**	301	302	301	
T	3.730	V	**INN News**		8825	**3**	201	202	201	
T	3.730	V	**LATV HOUSTON**	____	8825	**3**	101	102	101	
T	3.767	V	**Service 2**		6111	**3**	33	36	33	

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Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.842	H	**NPS - FO**		11000	**3**	1260	1220	1260	
T	3.842	H	**NPS - CB**		11000	**3**	1360	1320	1360	
T	3.842	H	**NPS - AB**		11000	**3**	1560	1520	1560	
T	3.842	H	**NPS - NB**		11000	**3**	1160	1120	1160	
T	3.908	V	**Horse/Dog Racin**		3074	**3**	33	36	33	
T	3.908	V	**Horse/Dog Racin**		3074	**3**	35	37	35	
T	4.168	V	**LPTV1**		6617	**3**	101	102	103	
T	4.168	V	**LPTV5**		6617	**3**	501	502	503	
T	4.168	V	**LPTV2**		6617	**3**	201	202	203	
T	4.168	V	**LPTV3**		6617	**3**	301	302	303	
T	4.168	V	**LPTV4**		6617	**3**	401	402	403	
T	4.176	V	**CATV**		6617	**3**	57	58	34	
T	4.176	V	**TV DOMINICANA**		6617	**3**	768	769	33	
T	11.780	H	**CCTV 4**		20759	**3**	512	650	128	
T	11.780	H	**CCTV 9**		20759	**3**	513	660	129	
T	11.780	H	**CCTV E&F**		20759	**3**	514	670	130	
R	11.810	H	**MTI1**		20000	**3**		32	32	
R	11.810	H	**MTI2**		20000	**3**		34	34	
D	12.086	V	**{Empty Name}**		5000	**3**				

267.0 East (93.0 West) GALAXY 26

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.711	V	**CBS NEWS**		14312	**2**	4194	4195	4216	
D	11.711	V	**CBS 2**		14312	**2**				
D	11.711	V	**{Empty Name}**		14312	**2**				
D	11.836	H	**{Empty Name}**		7180	**3**				
D	11.836	H	**{Empty Name}**		7180	**3**				
T	11.836	H	**{Empty Name}**		7180	**3**	1160	1120	1160	
T	11.865	V	**{Empty Name}**		3515	**2**	308	256	8190	
T	11.870	V	**AAFES**		4167	**2**	4154	4155	4158	
T	11.870	V	**AGHAPY**		4167	**2**	36	32	36	
T	11.870	V	**AGHAPY**		4167	**2**	36	32	36	
T	11.877	V	**{Empty Name}**	____	5079	**2**	1160	1120	1160	
T	11.877	V	**{Empty Name}**	____	5079	**2**	1160	102	1160	
T	11.877	V	**{Empty Name}**	____	5079	**2**	1160	103	1160	
T	11.877	V	**{Empty Name}**	____	5079	**2**	210	200	210	
T	11.877	V	**{Empty Name}**	____	5079	**2**	210	202	210	
T	11.877	V	**{Empty Name}**	____	5079	**2**	210	203	210	
T	11.877	V	**{Empty Name}**	____	5079	**2**	1160	1120	1160	
T	11.877	V	**{Empty Name}**	____	5079	**2**	1160	102	1160	
T	11.877	V	**{Empty Name}**	____	5079	**2**	1160	103	1160	
T	11.877	V	**{Empty Name}**	____	5079	**2**	210	200	210	
T	11.877	V	**{Empty Name}**	____	5079	**2**	210	202	210	
T	11.877	V	**{Empty Name}**	____	5079	**2**	210	203	210	
T	12.076	V	**{Empty Name}**		8679	**3**	100	101	100	
T	12.076	V	**{Empty Name}**		8679	**3**	200	201	200	
T	12.076	V	**{Empty Name}**	____	8679	**3**	300	301	300	
T	12.076	V	**{Empty Name}**	____	8679	**3**	400	401	400	
T	12.175	V	**{Empty Name}**		5147	**2**	110	100	110	
T	12.175	V	**{Empty Name}**		5147	**2**	210	200	210	
R	12.175	V	**Flower Show**		5147	**2**		303	303	
R	12.175	V	**{Empty Name}**		5147	**2**		202	202	
R	12.175	V	**{Empty Name}**		5147	**2**		102	102	
T	12.175	V	**{Empty Name}**		5147	**2**	110	100	110	
T	12.175	V	**{Empty Name}**		5147	**2**	210	200	210	
R	12.175	V	**{Empty Name}**		5147	**2**		303	303	

269.0 East (91.0 West) GALAXY 11

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.820	V	**Fox News**	____	30000	**3**	1160	1120	1160	
T	3.820	V	**Atlantic**	____	30000	**3**	1260	1220	1260	
T	3.820	V	**Central**	____	30000	**3**	1360	1320	1360	
T	3.820	V	**Pacific**	____	30000	**3**	1460	1420	1460	
T	3.820	V	**Network B/U**	____	30000	**3**	1560	1520	1560	
T	3.820	V	**Nat Geo**	____	30000	**3**	1660	1620	1660	
T	3.820	V	**FMC**	____	30000	**3**	1760	1720	1760	

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
R	3.820	V	FMC CRN		30000	3		1722	1722	
T	3.860	V	Reality	____	30000	3	110	100	110	
T	3.860	V	Soccer	____	30000	3	210	200	210	
T	3.860	V	Espanol	____	30000	3	310	300	310	
T	3.860	V	Fuel	____	30000	3	410	400	410	
T	3.860	V	Speed	____	30000	3	510	520	510	
T	3.860	V	Future 1	____	30000	3	610	600	610	
T	3.860	V	Future 2		30000	3	710	700	710	
T	3.860	V	Future 2-Dig		30000	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	4.092	H	ADHOC		2170	3	33	36	33	
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	

271.0 East (89.0 West) GALAXY 28

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	4.060	H	Sports	____	28000	3	1160	1120	1160	
T	4.060	H	Atlantic	____	28000	3	1260	1220	1260	
T	4.060	H	Spectrum	____	28000	3	1360	1320	1360	
T	4.060	H	Pacific	____	28000	3	1460	1420	1460	
T	4.060	H	News	____	28000	3	1560	1520	1560	
T	4.060	H	Xtra/TimeCode	____	28000	3	1660	1620	1660	
T	4.060	H	Guide		28000	3	1760	1720	1760	
T	4.060	H	The Pentagon Ch		28000	3	1860	1820	1860	
T	4.060	H	AFN FAMILY	____	28000	3	1960	1920	1960	
T	4.060	H	AFN MOVIE	____	28000	3	1060	1020	1060	
T	4.060	H	AFN Freedom	____	28000	3	1110	1100	1110	
T	4.060	H	Atlantic 2	____	28000	3	1260	1220	1260	
T	4.060	H	Atlantic 3	____	28000	3	1260	1220	1260	
T	4.060	H	Atlantic 4	____	28000	3	1260	1220	1260	
T	4.060	H	Atlantic 5	____	28000	3	1260	1220	1260	
T	4.060	H	Atlantic 6	____	28000	3	1260	1220	1260	
T	4.060	H	Atlantic 7	____	28000	3	1260	1220	1260	
T	4.060	H	Atlantic 8	____	28000	3	1260	1220	1260	
T	4.060	H	Atlantic 9	____	28000	3	1260	1220	1260	
T	4.060	H	Guide/NewsRadio		28000	3	1760	1730	1760	
T	4.060	H	Bright AC		28000	3	1760	1522	1760	
T	4.060	H	Country		28000	3	1760	1530	1760	
T	4.060	H	Adult Rock		28000	3	1760	1532	1760	
T	4.060	H	NPR		28000	3	1760	1232	1760	
T	4.060	H	Guide/Voiceline		28000	3	1760	1732	1760	
T	4.060	H	U/I Voicline/Sp		28000	3	1760	1332	1760	
T	4.060	H	Touch		28000	3	1760	1322	1760	
T	4.060	H	Pure Gold		28000	3	1760	1422	1760	
T	4.060	H	Hot AC		28000	3	1760	1722	1760	
T	4.060	H	Z-Rock (ABC Har		28000	3	1760	1330	1760	
T	4.060	H	ESPN Radio Spor		28000	3	1760	1122	1760	
T	4.060	H	Fox Sports Talk		28000	3	1760	1130	1760	
T	4.060	H	U/I Split /UIVo		28000	3	1760	1622	1760	
T	4.060	H	SMPTE Time Code		28000	3	1760	1630	1760	
T	4.060	H	Backhaul to Jap		28000	3	1760	1632	1760	
T	4.060	H	Contingency		28000	3	1760	1132	1760	
T	4.060	H	AFN Back-up for		28000	3	1760	1330	1760	
T	4.060	H	AFN Back-up to		28000	3	1760	1330	1760	
T	4.060	H	AFN Back-up to		28000	3	1760	1722	1760	
T	4.060	H	Backhaul from B		28000	3	1760	1522	1760	
T	4.060	H	Engineering Cha	____	28000	3	1210	1200	1210	
T	4.060	H	Bright AC		28000	3	1760	1522	1760	
T	4.060	H	Adult Rock		28000	3	1760	1532	1760	
D	11.920	V	{Empty Name}		30000	3				
T	11.955	V	NEWS1 LIVE		19533	3	308	256	8190	
T	11.955	V	ABSAT CH2		19533	3	408	356	8002	
T	11.955	V	ABC NEWS NOW		19533	3	508	456	8003	
T	12.076	H	Service 2		4883	1	3601	3604	3601	
D	12.080	V	{Empty Name}		30000	3				
D	12.100	H	{Empty Name}		30000	3				
D	12.140	H	{Empty Name}		30000	3				
D	12.140	H	{Empty Name}		30000	3				
D	12.160	V	{Empty Name}		30000	3				

273.0 East (87.0 West) AMC 3

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.725	H	{Empty Name}		4167	3	255	257	254	
T	3.732	H	APTN3 +44207482	____	5632	3	512	650	8190	
T	3.824	H	{Empty Name}		3617	3	257	258	257	
T	3.824	H	{Empty Name}		3617	3	513	514	513	
T	4.036	H	{Empty Name}		3677	3	308	257	308	
R	4.043	H	{Empty Name}		7140	1		5181	8190	
R	4.118	H	DEFAULT		9300	3		1322	1322	
T	4.118	H	PBS NY	____	9300	3	1260	1220	1260	
T	4.118	H	WPIX	____	9300	3	1360	1320	1360	
T	4.118	H	WWOR	____	9300	3	1160	1120	1160	
T	11.723	H			3675	3	1160	1120	1160	
H	12.140	V	{Empty Name}		30000	3	49		49	
H	12.140	V	{Empty Name}		30000	3	49		49	
T	12.144	H	Montana PBS Fee		4340	3	33	38	33	
T	12.144	H	Montana PBS Fee		4340	3	33	38	33	
T	12.162	H	Service 2 SD		4444	3	177	181	177	
T	12.169	H	Service 2 SD		4444	3	177	181	177	
H	12.180	V	{Empty Name}		30000	3	273		273	
H	12.180	V	{Empty Name}		30000	3	289		289	
H	12.180	V	{Empty Name}		30000	3	257		257	
H	12.180	V	{Empty Name}		30000	3	305		305	
H	12.180	V	{Empty Name}		30000	3	177		177	
H	12.180	V	{Empty Name}		30000	3	289		289	
H	12.180	V	{Empty Name}		30000	3	305		305	
H	12.180	V	{Empty Name}		30000	3	257		257	
H	12.180	V	{Empty Name}		30000	3	241		241	
H	12.180	V	{Empty Name}		30000	3	273		273	
H	12.180	V	{Empty Name}		30000	3	225		225	
H	12.180	V	{Empty Name}		30000	3	209		209	
H	12.180	V	{Empty Name}		30000	3	177		177	
H	12.180	V	{Empty Name}		30000	3	289		289	
H	12.180	V	{Empty Name}		30000	3	273		273	
H	12.180	V	{Empty Name}		30000	3	305		305	
H	12.180	V	{Empty Name}		30000	3	257		257	
H	12.180	V	{Empty Name}		30000	3	193		193	
H	12.180	V	{Empty Name}		30000	3	193		193	
H	12.180	V	{Empty Name}		30000	3	273		273	
H	12.180	V	{Empty Name}		30000	3	209		209	
H	12.180	V	{Empty Name}		30000	3	241		241	
H	12.180	V	{Empty Name}		30000	3	209		209	
H	12.180	V	{Empty Name}		30000	3	193		193	
H	12.180	V	{Empty Name}		30000	3	193		193	
H	12.180	V	{Empty Name}		30000	3	225		225	
H	12.180	V	{Empty Name}		30000	3	177		177	
H	12.180	V	{Empty Name}		30000	3	305		305	
H	12.180	V	{Empty Name}		30000	3	177		177	
H	12.180	V	{Empty Name}		30000	3	241		241	
H	12.180	V	{Empty Name}		30000	3	289		289	
H	12.180	V	{Empty Name}		30000	3	225		225	
T	12.180	V	{Empty Name}		30000	3	193		193	
T	12.180	V	{Empty Name}		30000	3	257		257	
T	12.180	V	{Empty Name}		30000	3	209		209	

277.0 East (83.0 West) AMC 9

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.749	H	Feed (NBC5 CHI		4232		308	256	8190	
T	11.756	H	Feed (WHDH DSNG)		4232		308	256	8190	
T	11.756	H	Feed (AMC1.AMC9)		4232		308	256	8190	
T	11.756	H	Feed (DIGITAL S		4232		4130	4131	4130	
T	11.762	H	Feed (WCAU_DSNG		4232		308	256	8190	
T	11.762	H	Feed (PROLINK 7		4232		308	256	8190	
T	11.768	H	Feed (DIGITAL S		4232		4130	4131	4130	
T	11.768	H	Feed (Prolink 7		4232		308	256	8190	
T	11.774	H	Feed (AMC 9/3F)		4232		4130	4131	54	
T	11.790	H	Feed (Tandberg		4232		308	256	8190	
T	11.790	H	Feed (DIGITAL S		4232		4130	4131	4130	
T	11.790	H	Feed (Service 0		4232		300	200	8190	
D	12.040	H	Feed ({Empty Na		30000					
D	12.040	H	Feed ({Empty Na		30000					
D	12.040	H	Feed ({Empty Na		30000					
D	12.060	V	Feed ({Empty Na		30000					
D	12.060	V	Feed ({Empty Na		30000					
D	12.060	V	Feed ({Empty Na		30000					
D	12.080	H	Feed ({Empty Na		30000					
D	12.080	H	Feed ({Empty Na		30000					
D	12.080	H	Feed ({Empty Na		30000					
D	12.120	H	Feed ({Empty Na		30000					
D	12.120	H	Feed ({Empty Na		30000					
D	12.120	H	Feed ({Empty Na		30000					
D	12.140	V	Feed ({Empty Na		30000					
D	12.140	V	Feed ({Empty Na		30000					
D	12.140	V	Feed ({Empty Na		30000					
D	12.160	H	Feed ({Empty Na		30000					
D	12.160	H	Feed ({Empty Na		30000					
D	12.160	H	Feed ({Empty Na		30000					
D	12.180	V	Feed ({Empty Na		30000					
D	12.180	V	Feed ({Empty Na		30000					
D	12.180	V	Feed ({Empty Na		30000					

281.0 East (79.0 West) AMC 5

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.854	V	Service 1		3979	3	53	54	8190	
T	12.182	H	NYN 1		23000	3	101	102	101	
T	12.182	H	NYN 2		23000	3	201	202	201	
T	12.182	H	NYN 3		23000	3	301	302	301	
T	12.182	H	NYN 4		23000	3	401	402	401	
T	12.182	H	NYN 5		23000	3	501	502	501	
T	12.182	H	NYN 6		23000	3	601	602	601	
T	12.182	H	NYN 7		23000	3	701	702	701	
T	12.182	H	NYN 8		23000	3	801	802	801	
T	12.182	H	NYN 9		23000	3	901	902	901	

286.0 East (74.0 West) SBS 6

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.936	V	Feed ({Empty Na		4297	3	81	84	81	
T	11.936	V	Feed (WXMI-10L		4297	3	308	55	8190	
T	11.952	H	Feed (NEWS 12		3978	3	308	256	8190	
T	11.954	V	Feed ({Empty Na		4297	3	308	256	8190	
T	11.958	V	Feed (Auto 6MHz)		4297	3	308	256	8190	
T	11.958	V	Feed ({Empty Na		4297	3	81	84	81	
T	11.964	V	Tribune DC		4297	3	308	256	8190	
T	11.977	V	Feed (WTVT TAMP		3978	3	308	256	8190	
T	11.979	H	Feed (Tandberg		3978	3	308	256	8190	
T	11.987	H	Feed (NEWS 12 C		3978	3	308	256	8190	
T	12.029	H	Feed (Auto 9MHz)		4492	3	308	256	8190	
T	12.037	H	Feed (DIRECT BR		4492	3	308	256	8190	

295.0 East (65.0 West) C-Band: BRASILSAT B2

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.706	H	BAND Pres.Prude		2462	1	308	256	8190	
T	3.792	V	Radio Gazeta		3393	3		1213	1213	
T	3.877	V	TV TAROBA		2740	1	308	256	8190	
T	4.105	V	CANAL DO BOI -		4285	1	1110	1211	1110	
T	4.112	V	NoName		4285	1	1110	1211	1110	

302.0 East (58.0 West) INTELSAT 9

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.531	H	BT5		6620	3	1160	1120	1160	
T	11.556	H	Feeds (ESP VS R		27500	3	774	784	774	
T	11.556	H	Feeds (LEV VS B		27500	3	773	783	773	
T	11.556	H	Feeds (DEP VS G		27500	3	775	785	775	

304.5 East (55.5 West) C-Band: INTELSAT 805

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.440	H	{Empty Name}		3000	3	321	110	321	
T	3.452	H	{Empty Name}		4444	2	200	210	200	
T	3.452	H	{Empty Name}		4444	2	100	110	100	
T	3.667	H	EDUCON - LAPA		3300	2	33	36	37	
T	3.677	H	ZAZ	____	4232	3	2112	3123	2112	
T	3.677	H	{Empty Name}		4232	3	2109	3117	2109	
T	3.678	H	Perú Mágico	____	4232	3	2109	3117	2109	
T	3.678	H	{Empty Name}		4232	3	2109	3117	2109	
T	3.716	H	Ch 1- TVI/Abier	____	8890	3	1160	1120	1160	
T	3.716	H	Ch 2 - Cables I	____	8890	3	1160	1120	1160	
R	3.716	H	Ch 3 - AM-FM C	____	8890	3		1130	1130	
T	3.716	H	Canal Ocasional		8890	3	1460	1420	1460	
R	3.716	H	Ch 4 - FM St. C	____	8890	3		1122	1122	
T	3.716	H	Telefe Internac	____	8890	3	1260	1220	1260	
T	3.716	H	OS Download	____	8890	3	1160	1120	1160	
T	3.751	V	{Empty Name}		5632	3	512	650	8190	
T	3.767	H	{Empty Name}		4427	2	4377	4385	4377	
T	3.816	H	Channel 01		26667	3	68	69	68	
T	3.816	H	Channel 02		26667	3	65	66	65	
T	3.816	H	Channel 03		26667	3	62	63	62	
T	3.816	H	Channel 04		26667	3	59	60	59	
T	3.816	H	Channel 05		26667	3	56	57	56	
T	3.816	H	Channel 06		26667	3	53	54	53	
T	3.816	H	Channel 07		26667	3	50	51	50	
T	3.816	H	Channel 08		26667	3	47	48	47	
T	3.816	H	Channel 09		26667	3	44	45	44	
T	3.816	H	Channel 10		26667	3	36	35	36	
T	3.816	H	Channel 11		26667	3	33	32	33	
T	3.816	H	Channel 12		26667	3	38	39	38	
T	3.816	H	Channel 13		26667	3	73	72	73	
T	3.816	H	Channel 14		26667	3	43	42	43	
T	3.816	H	Channel 15		26667	3	79	78	79	
T	3.816	H	Channel 16		26667	3	76	75	76	
T	3.816	H	Channel 17		26667	3	85	84	85	
T	3.816	H	Channel 18		26667	3	82	81	82	
T	3.900	H	MPEG TEST SERVI		3617	3	4096	4097	4096	
T	3.900	H	SIS CARIBBEAN I	____	3617	3	1160	1120	1160	
T	3.912	V	TV VAT AM		1808	3	337	340	337	
T	3.912	V	{Empty Name}		1808	3	337	340	337	
T	3.932	V	{Empty Name}		3254	3	4194	4195	4194	
T	4.020	V	F		3000	3	1160	1120	1160	
T	4.080	V	{Empty Name}		4340	3	1003	1203	8190	
T	4.158	H	{Empty Name}		1446	3	4194	4195	4194	
T	4.190	H	SCOPUS-NET-TECH		4444	3	1160	1120	1160	
D	11.496	V	{Empty Name}		7590	2			1099	
D	11.496	V	{Empty Name}		7590	2			1099	

317.0 East (43.0 West) INTELSAT 3R,6B

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	12.568	H	Aapna Desi		2170	3	4194	4195	8190	
T	12.607	V	{Empty Name}	____	6250	3	512	650	128	
T	12.715	V	Peru TV		6355	2	3601	3604	3601	

319.5 East (40.5 West) C-Band: NSS 806

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	3.676	R	{Empty Name}		3010	3	4194	4195	4194	
T	3.688	R	{Empty Name}		4444	7	4450	4451	4450	
T	3.688	R	{Empty Name}		4444	7	4194	4195	4194	
T	3.709	L	UTILISIMA		3000		1160	1120	1160	
T	3.709	L	{Empty Name}		3000		1160	1120	1160	
T	3.721	L	Utilisima 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	R	{Empty Name}		26855	7	8011	8111	8011	
T	3.803	R	{Empty Name}		26855	7	1260	1220	1260	
T	3.803	R	{Empty Name}		26855	7	1360	1320	1360	
T	3.803	R	{Empty Name}		26855	7	1460	1420	1460	
T	3.803	R	{Empty Name}		26855	7	1560	1520	1560	
T	3.803	R	{Empty Name}		26855	7	1660	1620	1660	
T	3.803	R	{Empty Name}		26855	7	1760	1720	1760	
R	3.803	R	{Empty Name}		26855	7		1134	1134	
R	3.803	R	{Empty Name}		26855	7		1134	1134	
R	3.803	R	{Empty Name}		26855	7		1134	1134	
T	3.803	R	{Empty Name}		26855	7	1162	1132	1162	
T	3.803	R	{Empty Name}		26855	7	1160	1120	1160	
R	3.803	R	{Empty Name}		26855	7		1122	1122	
T	3.803	R	{Empty Name}		26855	7	8011	8111	8011	
T	3.803	R	{Empty Name}		26855	7	1260	1220	1260	
T	3.803	R	{Empty Name}		26855	7	1760	1720	1760	
R	3.803	R	{Empty Name}		26855	7		1134	1134	
R	3.803	R	{Empty Name}		26855	7		1134	1134	
R	3.803	R	{Empty Name}		26855	7		1134	1134	
T	3.803	R	{Empty Name}		26855	7	1162	1132	1162	
T	3.803	R	{Empty Name}		26855	7	1160	1120	1160	
R	3.803	R	{Empty Name}		26855	7		1122	1122	
T	3.855	L	Via X		5900	3	200	201	200	
T	3.855	L	Z		5900	3	100	101	100	
T	3.894	R	TV A COLOR CANA		2000	5	4096	4097	4096	Spanish
T	3.972	L	{Empty Name}		3330	7	100	110		
R	3.986	L	RADIO AM		3180	3		56	56	
T	4.009	L	{Empty Name}		2450	3	4194	4195	4194	
T	4.043	L	EbS Europe By S		8681		200	201	200	
T	4.043	L	EU Test		8681		400	401	400	
T	4.044	R	Canal Noticias		2604	5	1110	1211	1110	Spanish
T	4.060	L	Management TV		3000	3	100	101	100	
T	4.060	L	Management TV		3000	3	2160	2120	2160	
T	4.142	L	{Empty Name}		2222	7	3601	3604	3601	
R	4.163	L	N Mensag		7200			73	73	
T	4.163	L	RBTI		7200		3333	3334	3333	
T	4.163	L	HBC CH 3		7200		53	54	53	

330.0 East (30.0 West) HISPASAT 1C,1D

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.731	H	41_OCS-2		28120	5	401	402	402	
T	11.731	V	FERIA ABRIL		27500	3	163	400	163	
R	11.731	V	Feria abril		27500	3		254	254	
D	11.811	H	DSI012CAB		27500	3				
D	11.811	H	DCI012CAB		27500	3				
T	11.811	V	TCM CLÁSICO	____	30000	3	165	100	165	
R	11.891	V	Promociones		30000	7		254	254	
D	11.891	V	{Empty Name}		30000	7				
T	11.972	V	Feed TSA3		27500	3	4224	4225	4224	
T	11.972	V	TV Record		27500	3	4810	4811	4810	
T	11.972	V	Canal AD		27500	3	900	901	900	
T	11.972	V	God TV		27500	3	2014	3014	2014	
T	11.972	V	God TV		27500	3	2001	3001	2001	
T	11.972	V	05_TV Aragon		27500	3	32	33	32	
R	11.972	V	Radio Aragon		27500	3		34	34	
T	12.092	V	TV Sensual		27500	3	5001	5002	5001	
T	12.092	V	Antena Erotica		27500	3	4991	4992	4991	
T	12.092	V	Canal Erotico g		27500	3	4981	4982	4981	
T	12.092	V	VIC TV		27500	3	4971	4972	4971	
T	12.092	V	WAU TV		27500	3	4961	4962	4961	
T	12.092	V	TAROT TV		27500	3	4951	4952	4951	
T	12.100	H	Tandberg Service		3000	3	308	256	8190	
T	12.149	V	TVE-2 CEUTA	____	27500	3	701	703	701	
T	12.149	V	TVE-1 CEUTA	____	27500	3	601	603	601	
R	12.226	V	Paquetes		27500	3		254	254	
R	12.226	V	Tu mando		27500	3		254	254	
R	12.226	V	Recibo		27500	3		254	254	
R	12.226	V	Distribuidores		27500	3		254	254	
R	12.226	V	Contactanos		27500	3		254	254	
R	12.226	V	Guia digital+		27500	3		254	254	
D	12.303	V	{Empty}		27500	3			162	
D	12.380	V	{Empty Name}		27500	3				
D	12.380	V	{Empty Name}		27500	3				
R	12.456	V	Contrato		30000	7		254	254	
R	12.456	V	Promociones		30000	7		254	254	
R	12.456	V	{Empty Name}		30000	7		254	254	
R	12.456	V	{Empty Name}		30000	7		254	254	
T	12.456	V	{Empty}		30000	7	163	400	163	
T	12.456	V	{Empty}		30000	7	163	400	163	
T	12.456	V	{Empty Name}		30000	7	163	400	163	
T	12.456	V	GUÍADIGITAL+		30000	7	163	400	163	
T	12.456	V	TCM MODERNO	____	30000	7	4240	4241	4240	
T	12.456	V	PORTADA		30000	7	171	124	171	
T	12.456	V	{Empty}		30000	7	163	400		

335.5 East (24.5 West) INTELSAT 905

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.674	V	SET Europe		27500	3	1301	1311	1399	
T	11.674	V	SET Max UK		27500	3	1401	1411	1499	
T	11.674	V	Sahara One		27500	3	1501	1511	1599	
T	11.674	V	Sahara Filmy		27500	3	1601	1611	1699	

338.1 East (21.9 West) C-Band: NSS 7

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
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	
R	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	3073	3083	3073	
T	4.179	R	Sudan TV		27500	7	3071	3081	3071	
T	4.179	R	Jamahirya TV		27500	7	3072	3082	3072	
R	4.179	R	Emirates FM		27500	7		3531	32	
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	
T	3.791	R	AIT		4340	3	33	34	8190	English
T	3.798	R	Service 1		4340	3	33	34	8190	English

345.0 East (15.0 West) TELSTAR 12

Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
T	11.122	V	E! Asia		19275	3	2360	2320	2360	
T	11.494	V	SOURCE3		17464	3	1960	1920	1960	
T	11.729	V	{Empty Name}		8800	3	4130	4131	4130	
T	11.729	V	{Empty Name}		8800	3	4386	4387	4386	
T	11.729	V	{Empty Name}		8800	3	4642	4643	4642	
R	11.729	V	{Empty Name}		8800	3		4644	512	
R	11.729	V	{Empty Name}		8800	3		4900	768	
R	11.729	V	{Empty Name}		8800	3		5156	256	
T	11.804	V	{Empty Name}		7595	3	108	208	108	
R	11.804	V	{Empty Name}		7595	3		128	128	
R	11.804	V	{Empty Name}		7595	3		138	138	
D	11.895	V	{Empty Name}		5000	3			50	

T = TV Digital | **R** = Radio Digital | **T** = TV Digital Crypt | **R** = Radio Digital Crypt | **T** = TV Analog | **R** = Radio Analog | **T** = TV Analog Crypt | **R** = Radio Analog Crypt | **H** = TV High Definition | **H** = TV High Definition Crypt | **D** = Data Channel | **P** = Package

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Typ	Freq [GHz]	Pol	Channel Name	Crypt	SR	FEC	Video PID	Audio PID	PCR PID	Language
D	11.895	V	{Empty Name}		5000	3			50	
D	11.895	V	{Empty Name}		5000	3				
D	11.895	V	{Empty Name}		5000	3				
R	11.974	V	Eng-WRN-multi		3400	3		4112	4112	
T	11.974	V	{Empty Name}		3400	3	6690	6691	6690	
R	11.974	V	{Empty Name}		3400	3		4101	4101	
R	11.974	V	{Empty Name}		3400	3		4102	4102	
R	11.974	V	{Empty Name}		3400	3		4103	4103	
R	11.974	V	{Empty Name}		3400	3		4105	4105	
R	11.974	V	{Empty Name}		3400	3		4112	4112	
T	11.974	V	{Empty Name}		3400	3	6690	6691	6690	
R	11.974	V	{Empty Name}		3400	3		4101	4101	
R	11.974	V	{Empty Name}		3400	3		4102	4102	
R	11.974	V	{Empty Name}		3400	3		4103	4103	
R	11.974	V	{Empty Name}		3400	3		4104	4104	
R	11.974	V	{Empty Name}		3400	3		4105	4105	
R	11.974	V	{Empty Name}		3400	3		4112	4112	
T	11.974	V	{Empty Name}		3400	3	6690	6691	6690	
R	11.974	V	{Empty Name}		3400	3		4101	4101	
R	11.974	V	{Empty Name}		3400	3		4102	4102	
R	11.974	V	{Empty Name}		3400	3		4103	4103	
R	11.974	V	{Empty Name}		3400	3		4104	4104	
R	11.974	V	{Empty Name}		3400	3		4105	4105	
R	11.974	V	{Empty Name}		3400	3		4112	4112	
D	11.979	H	{Empty Name}		20000	3				
D	11.979	H	{Empty Name}		20000	3				
T	12.081	H	LatinAmericaBkup		3937			4377	4385	4377
T	12.185	H	Globo TV NY		4216	3	4096	4097	4096	
347.5 East (12.5 West)			**ATLANTIC BIRD 1**							
T	11.099	H	LIFE CHANNEL		2000	5	4194	4195	4194	
T	11.137	H	R-R COMM		3000	3	4194	4195	4194	
T	11.155	H	ITALY - ITALY		1628	2	170	171	170	
T	11.165	H	TIZIANA SAT		3617	3	101	102	101	
T	11.165	H	.. Tiziana Sat 2		3617	3	201	202	201	
T	11.177	H	Sicilia SAT MAIN		2170	3	4194	4195	4194	
H	11.331	H	TJKMURAT		6000	3	100	110	100	
T	11.331	H	Exotica Channel	____	6000	3	4194	4195	4194	
T	11.331	H	Touch TV	____	6000	3	4394	4395	4394	
H	11.331	H	TJK UFUK		6000	3	100	110	100	
T	11.387	H	RIT-TV		27500	3	33	34	33	
T	11.387	H	Mktv Sat		27500	3	7601	7602	7601	
R	11.387	H	Makedonsko Radio		27500	3		7603	7603	
T	11.387	H	TRACE TV	VICS	27500	3	36	37	36	
T	11.387	H	RTVi		27500	3	41	42	41	
T	11.387	H	{Empty Name}		27500	3	1700	1702	1700	
T	11.387	H	RTVi NASHE KINO		27500	3	48	49	48	
T	11.387	H	TEST_VIPS		27500	3	200	201	200	
T	11.387	H	World Fashion		27500	3	72	71	72	
R	11.387	H	DOINA - KISS RA		27500	3		75	75	
R	11.387	H	GRAND		27500	3		77	77	
R	11.387	H	Jugradio		27500	3		79	79	
R	11.387	H	KISS Radio		27500	3		81	81	
R	11.387	H	KISS ROM		27500	3		83	83	
R	11.387	H	RAM RAJ RADIO		27500	3		85	85	
R	11.387	H	Lijepa nasa (LI		27500	3		87	87	
R	11.387	H	MB Radio PARIS		27500	3		89	89	
R	11.387	H	VULKAN radio		27500	3		91	91	
R	11.387	H	RADIO FLES		27500	3		93	93	
R	11.387	H	Radio SRNA-BOSA		27500	3		95	95	
R	11.387	H	Radio SvetPLUS		27500	3		97	97	
R	11.387	H	MegaRadio		27500	3		99	99	
R	11.387	H	TREF Radio		27500	3		101	101	
R	11.387	H	YU PLANET BEC		27500	3		103	103	
H	11.387	H	LUXE.TV HD		27500	3	105	106	105	
R	11.387	H	PEIRAIKI EKKLIS		27500	3		109	1712	
T	11.387	H	HBO COMEDY	____	27500	3	2160	2161	2160	
R	11.387	H	Radio Brod		27500	3		511	511	
R	11.387	H	Radio Koprivnica		27500	3		513	513	
R	11.387	H	AS RADIO - SABA		27500	3		515	515	
R	11.387	H	KISS NAJ Radio		27500	3		517	517	
R	11.387	H	ORV Valentino BH		27500	3		519	519	
T	11.387	H	France 24 (in A		27500	3	521	522	521	
R	11.387	H	Radio Glas Drine		27500	3		524	524	
R	11.387	H	Radio Opanak		27500	3		526	526	
R	11.387	H	Radio STUDIO M		27500	3		528	528	
R	11.387	H	Radio LIPOVAC		27500	3		530	530	
D	12.515	H	{Empty Name}		17452	3				
T	12.529	V	OASI TV		1550	3	512	768	512	
T	12.529	V	OASI TV		1550	3	512	768	512	
D	12.546	H	CallToAction		17454	3				
D	12.546	H	TEjob		17454	3				
T	12.583	H	2M NAT	____	2625	2	100	110	100	
T	12.583	H	2M NAT :		2625	2	333	800	333	
T	12.583	H	ATM 4 E260 1		2625	2	512	4112	8190	
T	12.597	H	Extra 3		1910	2	200	201	201	
T	12.632	V	RIT-TV		2141	3	33	34	33	
T	12.637	V	TV Record		4285		100	110	100	
T	12.637	V	{Empty Name}		4285		100	110	100	
T	12.740	V	PUGLIACHANNEL		1808	3	100	101	100	
T	12.740	V	Puglia Channel		1808	3	100	101	100	
349.0 East (11.0 West)			**EXPRESS A3**							
T	3.675	R	1-ch Vsemirn_Ma		29615	5	527	790	133	Russian
T	3.675	R	RTR Planeta		29615	5	528	800	134	Russian
T	3.675	R	1-ch Vsemirn_Ma		29615	5	527	790	133	
T	3.675	R	RTR Planeta		29615	5	528	800	134	
352.0 East (8.0 West)			**TELECOM 2D, ATLANTIC BIRD 2**							
R	10.970	H	RTest	____	27500	3		328	328	
T	10.972	V	arena 9 - Kabel	____	27500	3	3051	3052	3051	
T	11.008	H	DISCOVERY T&L	____	27500	3	656	657	656	
T	11.008	H	TEST6	____	27500	3	608	609	608	
T	11.008	H	TOON DISNEY	____	27500	3	560	561	560	
T	11.474	H	Yemen TV		27500	3	3028	3038	3028	
T	11.474	H	Syria Satellite		27500	3	3022	3032	3022	
T	11.474	H	Abu Dhabi		27500	3	3024	3034	3024	
T	11.474	H	Al-Baghdadiyah		27500	3	3025	3035	3025	
T	11.474	H	CLP TV		27500	3	3048	3058	3048	
T	11.474	H	ZAHRAA TV		27500	3	3029	3039	3029	
T	11.474	H	Channel Punjab		27500	3	3230	3330	3230	
R	11.474	H	Emirates FM		27500	3		3533	3533	
R	11.474	H	Voice Of People		27500	3		3536	3536	
R	11.474	H	Main General Pr		27500	3		3539	3539	
D	11.474	H	POLYCOM		27500	3				
T	11.474	H	SAT 7		27500	3	3023	3033	8190	
T	11.474	H	RTV Montenegro		27500	3	3026	3036	3026	
T	11.474	H	TELEPACE		27500	3	3027	3037	3027	
T	11.474	H	EQUIDIA PRO	____	27500	3	3321	3331	3321	
R	11.474	H	TW RADIO		27500	3		3530	3530	
R	11.474	H	RDS		27500	3		3531	3531	
R	11.474	H	Voice of Youth		27500	3		3532	3532	
R	11.474	H	Radio Thollon		27500	3		3535	3535	
R	11.474	H	Radio Montenegro		27500	3		3538	3538	
R	11.474	H	Sana`a Radio		27500	3		3041	132	
R	11.474	H	Aden Radio		27500	3		3042	133	
R	11.474	H	RADIO SAN		27500	3		3546	3546	
T	12.570	V	Noorsat Promo		27500	3	100	769	100	
T	12.570	V	Al-Watan TV		27500	3	2192	2193	2192	
T	12.570	V	Bait Al Halal		27500	3	529	1297	529	
T	12.570	V	ALSHOOQ TV		27500	3	534	1302	534	
T	12.570	V	FEED		27500	3	560	1328	560	
T	12.570	V	LBC EU		27500	3	519	720	519	
T	12.570	V	Holy Quran		27500	3	535	1303	791	
T	12.570	V	New Tv		27500	3	2003	3006	2003	
353.0 East (7.0 West)			**NILESAT 101, 102, AB4**							
R	10.795	V	Tunis Internati		27500	3		3624	3624	
R	10.795	V	Tunis National		27500	3		3625	3625	
R	10.795	V	Tunis Culture		27500	3		3626	3626	
T	10.795	V	ASSAA		27500	3	3608	3609	3608	
T	10.795	V	Addounia		27500	3	3610	3611	3610	
T	10.795	V	Al Mukhtalif		27500	3	3614	3615	3614	
T	10.795	V	Fanoos		27500	3	3612	3613	3612	
T	10.795	V	A3mal		27500	3	3627	3628	3627	
T	10.795	V	KurdSat		27500	3	3616	3617	3616	
T	10.795	V	Harmony TV		27500	3	3618	3619	3618	
T	10.795	V	KHALIJYA		27500	3	3620	3621	3620	
T	10.872	V	Fun TV		27500	3	51	52	51	
T	10.872	V	Bahrain TV		27500	3	512	650	128	
T	10.872	V	Ritmo		27500	3	901	902	2272	
T	10.872	V	ATC		27500	3	34	769	34	
T	10.872	V	Al-Bawadi		27500	3	43	44	43	
T	10.872	V	Taiba		27500	3	47	48	47	
T	10.872	V	Aviation		27500	3	4097	4099	4097	
T	10.872	V	Ch 4 teen		27500	3	62	64	62	
T	10.872	V	Zawaj		27500	3	37	38	37	
T	10.872	V	Koora		27500	3	34	35	34	
T	10.872	V	Layalina		27500	3	2048	2049	2048	
T	10.872	V	Alsahraa		27500	3	42	43	42	
T	10.872	V	Al Zawra		27500	3	4160	4120	4160	
T	10.872	V	Knotika TV		27500	3	300	301	300	
T	10.872	V	Al-Watan TV		27500	3	2192	2193	2192	
T	10.872	V	Sharm		27500	3	768	769	768	
T	10.872	V	Fatwaa		27500	3	2144	2145	2144	
T	10.872	V	Tahane		27500	3	2160	2161	2160	
T	10.872	V	Afrah Wa Tahane		27500	3	2208	2209	2208	
T	10.872	V	Silk Road		27500	3	2256	2257	2256	
T	10.872	V	Zawaj		27500	3	34	35	34	
T	10.872	V	Koora		27500	3	37	38	37	
T	10.872	V	Sharm		27500	3	768	769	768	
T	10.872	V	Fun TV		27500	3	51	52	51	
T	10.872	V	Knotika TV		27500	3	300	301	300	
T	10.872	V	Afrah Wa Tahane		27500	3	2208	2209	2208	
T	10.872	V	Al-Watan TV		27500	3	2192	2193	2192	
T	10.872	V	Fatwaa		27500	3	2144	2145	2144	
T	10.872	V	Al-Bawadi		27500	3	46	47	46	
T	10.872	V	ALSHOROOQ TV		27500	3	534	1302	534	
T	10.872	V	Aviation		27500	3	4097	4099	4097	
T	10.872	V	Ch 4 teen		27500	3	62	64	62	
T	10.872	V	Tahane		27500	3	2160	2161	2160	
T	10.910	V	Noorsat Promo		27500	3	100	34	100	
T	10.910	V	ATC - Bahrain		27500	3	768	769	768	
T	10.910	V	WTV		27500	3	6100	6101	6100	
T	10.910	V	Al-Quds		27500	3	6300	6301	6300	
T	10.910	V	Alquds		27500	3	42	43	42	
T	10.910	V	Supertech		27500	3	46	47	46	
T	10.910	V	Ultra TV		27500	3	2176	2177	2176	
T	10.910	V	Shada		27500	3	256	258	256	
T	10.930	H	AL-BABELEYA		27500	3	1000	1001	1000	
T	10.930	H	ARAB TV		27500	3	2000	2001	2000	
T	10.930	H	TEST2		27500	3	3000	3001	3000	
T	10.930	H	INDUS VISION		27500	3	4000	4001	4000	
T	10.930	H	JMC TEST4		27500	3	5000	5001	5000	
T	10.930	H	JMC TEST5		27500	3	6000	6001	6000	
T	10.930	H	JMC TEST6		27500	3	7000	7001	7000	
T	10.930	H	JMC TEST7		27500	3	8000	8001	8000	
T	10.930	H	AL-BABELEYA		27500	3	1000	1001	1000	
T	10.930	H	ARAB TV		27500	3	2000	2001	2000	
T	10.930	H	JMC TEST2		27500	3	3000	3001	3000	
T	10.930	H	INDUS VISION	____	27500	3	4000	4001	4000	
T	10.930	H	JMC TEST4		27500	3	5000	5001	5000	
T	10.930	H	JMC TEST5		27500	3	6000	6001	6000	
T	10.930	H	JMC TEST6		27500	3	7000	7001	7000	
T	10.930	H	JMC TEST7		27500	3	8000	8001	8000	
R	11.843	H	{Empty Name}		27500	3		2008	2008	
R	11.843	H	{Empty Name}		27500	3		2020	2020	
R	11.919	H	Test Radio		27500	3		3015	3015	
T	11.938	V	MBC Action		27500	3	4171	4172	4171	
D	11.977	V	{Empty Name}		27500	5				
T	11.977	V	Open TV	____	27500	5	214	314	214	
D	11.977	V	{Empty Name}		27500	5				
D	11.977	V	{Empty Name}		27500	5				
D	11.977	V	{Empty Name}		27500	5				
D	11.996	H	{Empty Name}		27500	3				
D	11.996	H	{Empty Name}		27500	3				
R	12.207	V	Radio Internati		27500	3		1042	1043	
T	12.226	H	AGHANI TV		27500	3	301	302	301	
D	12.301	H	{Empty Name}		27500	3				
T	12.360	H	Kounouz TV		27500	3	4131	4132	4131	
R	12.400	H	ALJamahereya R		27500	3		2043	2043	
355.0 East (5.0 West)			**ATLANTIC BIRD 3**							
T	11.455	V	TMC	____	6666	1	403	404	403	
T	11.475	V	TMC							French
T	11.510	V	TF1	VICS	29755	7	301	302	301	French
H	11.510	V	TF1 HD	VICS	29755	7	306	307	306	French
H	11.553	V	ARTE HD	____	30000	7	401	403	401	French
D	12.543	H	AMAURY		27500	3				
R	12.543	H	FIP Region		27500	3		3202	3202	
R	12.543	H	France Bleu Fre		27500	3		3204	3204	
H	12.587	H	Retequattro	____	19630	2	516	690	135	
H	12.587	H	S3 EI	____	19630	2	516	690	135	
D	12.587	H	OTA		19630	2				
T	12.614	H	EURONEWS-Intern		8790	5	2221	2231	2221	
T	12.614	H	HOT CHILI		8790	5	225	235	225	
T	12.614	H	NAPOLI NOVA		8790	5	226	236	226	
T	12.614	H	TAPESH TV2		8790	5	227	237	227	
T	12.614	H	ADJARA TV		8790	5	228	238	228	
T	12.614	H	TAPESH TV2		8790	5	227	237	227	
T	12.614	H	RETE CAPRI		8790	5	229	239	229	
D	12.660	H	Premium2		8100	2				
D	12.660	H	Premium4		8100	2				
D	12.660	H	Premium7		8100	2				
D	12.660	H	Premium8		8100	2				
D	12.660	H	Premium9		8100	2				
D	12.660	H	Premium10		8100	2				
D	12.660	H	Premium11		8100	2				
T	12.711	H	TFC PPV	____	30000	1	3281	3282	3281	
355.1 East (4.9 West)			**C-Band: ATLANTIC BIRD 3**							
T	3.653	R	{Empty Name}		2170	7	333	800	333	
R	3.653	R	{Empty Name}		2170	7		801	801	
T	4.023	R	{Empty Name}		2018	7	138	139	138	
356.0 East (4.0 West)			**AMOS 1,2**							
T	11.413	H	HBO Comedy Pola	____	6666	3	110	100	110	
T	11.413	H	HBO Comedy Czech	____	6666	3	210	202	210	
T	11.585	H	RR Feed		8888	3	560	516	560	
359.0 East (1.0 West)			**INTELSAT 10-02**							
D	12.520	V	RCS Map Service		17500	3			8190	
D	12.520	V	FLS Service 310		17500	3			8190	
D	12.607	V	SW DW Arion		27500	3				
R	12.643	V	Guerrilla		27500	3		6001		
R	12.643	V	Europa FM		27500	3		778		
D	12.643	V	SW DL 1160		27500	3				
R	12.687	H	{Empty Name}		27500	3		6001		
359.2 East (0.8 West)			**THOR 2,3**							
T	11.229	H	The Poker Chann		24500	7	515	652	515	
T	11.247	V	TV 2 Sonen 24/7		24500	7	517	648	517	
D	11.278	V	K1201 Loader		24500	7				
T	11.309	V	_PMT 1		24500	7	512	640	512	
R	11.403	V	RUV Ras 1		24500	7		684	684	
R	11.403	V	RUV Ras 2		24500	7		685	685	
H	11.421	H	CANAL+ FILM HD	____	25000	2	513	644	513	
T	11.421	H	SVT HD	____	25000	2	512	640	512	
D	11.434	V	Discovery HD		25000	2			513	
H	11.434	V	Voom	____	25000	2	514	648	514	
R	12.054	H	{Empty Name}		28000	3		676	8185	
R	12.054	H	{Empty Name}		28000	3		680	8185	
R	12.054	H	{Empty Name}		28000	3		696	8186	
R	12.054	H	{Empty Name}		28000	3		698	8187	
R	12.054	H	{Empty Name}		28000	3		699	8187	
R	12.054	H	{Empty Name}		28000	3		700	8188	
R	12.054	H	{Empty Name}		28000	3		701	8189	
T	12.169	H	Telestar TV		28000	7	518	664	518	
R	12.169	H	Z-ROCK		28000	7		668	668	
R	12.169	H	Focus Varna		28000	7		704	704	
D	12.246	H	UPC_EPG		28000	5			1215	
R	12.322	H	DUEN RADIO		27800	3		708	708	
R	12.380	V	Radio Guerrilla		28000			4883	3601	
R	12.380	V	Kiss FM		28000			5139	3857	
R	12.380	V	Magic FM		28000			5395	2577	
R	12.380	V	Radio Romania M		28000			5907	3345	
R	12.380	V	Radio Timisoara		28000			6163	2065	
T	12.456	V	Nick-VH1C TS	____	28000	3	512	640	512	

T = TV Digital
R = Radio Digital
T = TV Digital Crypt
R = Radio Digital Crypt
T = TV Analog
R = Radio Analog
T = TV Analog Crypt
R = Radio Analog Crypt
H = TV High Definition
H = TV High Definition Crypt
D = Data Channel
P = Package

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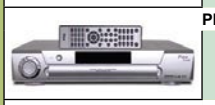
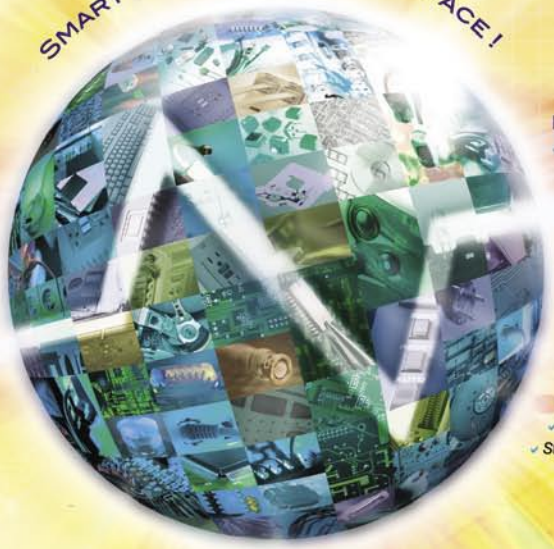
TELE-satellite Receiver Guide

Satellite DVB Receivers	Channel Memory	Symbolrate DVB-S 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 Output	Positioner	Mechanical Polarizer	Hard Disk (Built-in)	Serial Interface	CI Slots	Embedded CA	TSI Magazine
	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	no	yes, RS-232	yes, 2	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	yes, RS-232	yes, 2	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	yes, RS-232	yes	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
BOTECH CA 9000 FTA/CI	4900	2-45	yes	1.2	yes	yes	yes, UHF	yes	no	**90-260 VAC** 50/60Hz	no	yes	yes	yes, 2	no	no	no	no	no	yes, RS-232	yes, 2	no	#189 2005
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	yes, RS-232	yes, 2	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	yes, RS-232	yes, 2	yes, Conax	#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	no	yes, RS-232	yes, 2	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	yes, RS-232	yes	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	no	yes, RS-232	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	no	yes, RS-232	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	no	yes, RS-232	no	yes, Irdeto	#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	yes, RS-232	yes	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	no	yes, RS-232	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	yes, RS-232	yes, 2	yes, 2	#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	no	yes, RS-232	yes, 2	yes, 2	#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	no	yes, RS-232	yes, 2	yes	#193 2006
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	yes, RS-232	yes, 2	no	#191 2006

Satellite DVB Receivers

	Channel Memory	Symbolrate DVB-S 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 Output	Positioner	Mechanical Polarizer	Hard Disk (Built-in)	Serial Interface	CI Slots	Embedded CA	TSI Magazine
	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
	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
	QUALI-TV QS 1080IRCI for HDTV and MPEG 4:2:2																						
	unknown	2-40	yes	1.0, 1.2	no	NTSC/ PAL	no	yes	no	**100-240V** 50/60Hz	no	yes	yes	yes, 2	no	no	no	no	no	yes, RS-232	yes, 2	yes, Irdeto	#187 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, uni-versal	#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, uni-versal	#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

SMART WIRES WITH A HUMAN FACE!



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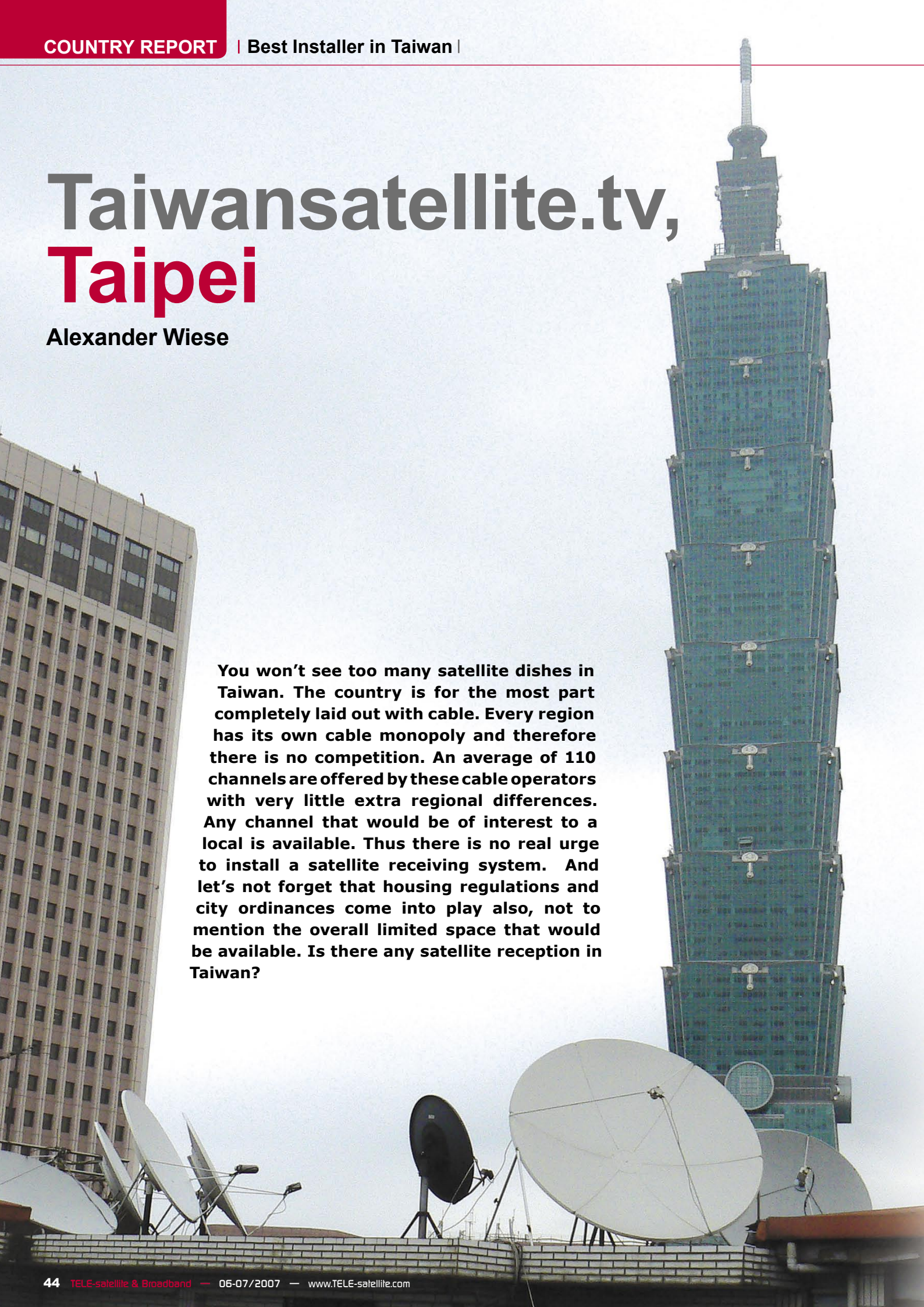

You won't see too many satellite dishes in Taiwan. The country is for the most part completely laid out with cable. Every region has its own cable monopoly and therefore there is no competition. An average of 110 channels are offered by these cable operators with very little extra regional differences. Any channel that would be of interest to a local is available. Thus there is no real urge to install a satellite receiving system. And let's not forget that housing regulations and city ordinances come into play also, not to mention the overall limited space that would be available. Is there any satellite reception in Taiwan?

Jim Edstein answered this question with a resounding "YES" and led us to his prized possession: the bar TAVERN on Shinyi Road in downtown Taipei. 70 plasma TV screens adorn the walls and hang from the ceiling over the tables. The bar area itself is stuffed with 24 small 8-inch monitors. Naturally, each monitor can be set to its own individual satellite channel.

Owner Michel Blanc told us, "The TAVERN is a sports bar; we want to show our customers as many sporting events as is possible. Our home page www.tavern.com.tw lists all the events that can be seen." Michel, a native of Switzerland who came to Taiwan 17 years ago, found the perfect satellite professional in Jim Edstein. Aside from standard reception, he also offers satellite reception from below the horizon. Well, not really, but the TAVERN bar does make European programming available such as Euronews or Swiss TV.

▲ **Michel Blanc is not only the owner of the TAVERN bar in Taipei, but he is also involved in the transportation business and also owns three other bars in Taipei. Originally from Switzerland, he is quite happy to be able to receive live Swiss TV (!) in Taipei.**

▲ **Here Jim can be seen configuring the settings for his IPTV reception from Switzerland. The two Sony receivers are for Japanese channels.**

Jim showed us exactly how this all works. The bar is located on the ground floor of a 15-story building. On the roof he installed 7 antennas: a 2.4-meter dish for THAICOM 5 reception plus six more 1.8-meter dishes for reception of INTELSAT 7,10 (formerly PAS10) at 68.5°E, JCSAT3 at 128°E, JSCAT4A at 124°E, BSAT1A,2A at 110°E and TELSTAR 18 at 138°E.

You might be asking yourself why he would use a 1.8-meter antenna when 60 or 90cm would also do the trick. Jim explains, "Sometimes it rains here so hard that normal Ku-band reception would be impossible. With a 1.8-meter dish, the signal reserve is so much that there is hardly any signal loss to speak of."

◀ **The seven antennas installed by Jim on the roof. The Taipei 101 tower can be seen in the background. At 508 meters, it is currently the tallest building in the world.**

Unfortunately, the sports channels do not transmit their signals FTA. Bar owner Michel did some calculations: "I pay 8000 Euros every year for various subscriptions." He has four subscriptions for THAICOM channels, five for Multichoice from South Africa, two for Japan's Skyperfect and one for HKC out of Hong Kong.

Jim Edstein listed his selection of receivers: "For THAICOM we use the Emetabox 3, for INTELSAT 10 it's the HiVion Box 9090X and for the Japanese channels it's the original receiver from Sony."

And what about channel reception directly from Europe, something that is physically not possible? Jim's voice got a little quieter; we heard words such as "Slingbox", "Michel's mother lives in Switzerland", and that magic word "Zattoo". He also explained that he's an ISP with an extremely fast Internet connection. Whether or not these puzzle pieces have any significance, only the professional reader will know.

▲ **Jim Edstein in front of the rack with satellite receivers (near the bottom as well as the top) and audio amplifiers. The signals are routed through a PVR so that short interruptions can be skipped over. Jim explains, "the signal has to travel nearly 200 meters from the roof down to here. I decided to use RG11 cable." For this satellite installation he used roughly 3km of coax cable.**

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Cable and satellite TV was legalized in Taiwan in 1994. Jim, who came to Taiwan from Australia 18 years ago, started his Taiwansatellite.tv business in 2000. Jim remembers: "After being a hobbyist which led others to ask me, who did my installs?, I replied it was DIY and then people asked me if I could install for them, too." Today, 85% of Taiwansatellite.tv's customers are foreigners living in Taiwan. Jim almost always installs 1.8-meter antennas with the most popular satellites being AGILA 2 and INTELSAT 10.

Supplying nearly 100 monitors with individual signals was not without its problems. Jim installed cable splitters and signal amplifiers to make it possible. ▶

◀ **One of Jim's customers is Nick from England. He is happy with his INTELSAT 10 reception. Clearly recognizable in the picture are the support struts and the lack of a mast. An idea from Jim was the support frame in the shape of a diamond on which the dish is mounted. This extra mechanical support is necessary to allow the antenna to withstand the wind forces of a Typhoon.**

His business really picked up for the World Cup 2006; in just a very short time he installed 60 satellite systems. On average he installs 120 to 150 systems each year. Even professional cable companies are beginning to approach him with questions about installing systems for more difficult satellites.

Jim has plans to expand his business: "I'm thinking about getting involved in the business of reception rights."

He certainly has the technical know-how to do this!

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News From Innovation Road

The Hsinchu Science Park in Taiwan carries the name "park" appropriately: hidden behind the trees are the offices and production facilities for MTI.

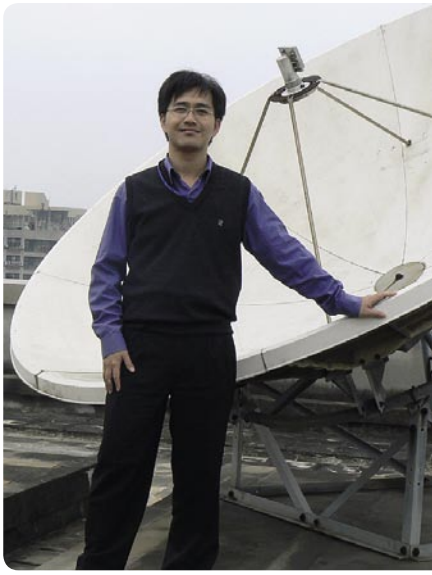
The Taiwanese LNB manufacturer MTI could not have asked for a better street name. MTI was founded in 1983, and moved to Innovation Road in the Hsinchu Science Park in 1990. This technology park, which is said to be similar to California's Silicon Valley, is occupied exclusively by high-tech companies. Hsinchu is strategically located in southwest of Taipei, roughly 1.5 train-hours from the capital and less than an hour from Taoyuan International Airport.

More than 700 employees work at the company's headquarters in Hsinchu. 800 more employees are located in WuXi on the Chinese mainland where MTI founded Jupiter Technology in 2001. Much of their final processing takes place there. LNBs have been their mainstay product since the beginning; since then, product groups such as VSAT have come into the picture. Sophie Su, MTI's Senior Product Manager, is very proud of an original satellite telephone on display in the company's showroom that Peter Arnett used to report on the first Gulf War for CNN. The photograph of him and the satellite telephone was at that time distributed around the world. Sophie remembers: "After this photo was made public, MTI's stock price rose sharply."

Eugene Wu, head of MTI's LNB Business

Chih-Ling Chang is their European Sales Manager and provides support to European Sales Director John Scott in London and technical guru "Doctor" Dave Iredale.

Raised in Florida, Tindy Liu speaks perfect "American" and is responsible for MTI's marketing. She's a fan of Japanese Comic „Doraemon"



Jeff Lin, Sales Assistant Manager responsible for the Asian market, is seen here standing on the roof of the MTI building.

Allen Yen has been MTI's COO since 2005

Group explains today's situation: "Nearly 40% of our sales come from MTI's LNB division." One would expect larger sales from the commercial VSAT division, though. Eugene tries to put things into perspective: "We sell incredibly large numbers of LNBs." This helps to realize larger profit margins despite lowering LNB prices.

Aside from that, LNBs are part of MTI's quality products. Eugene provided us with a glimpse of the company's strategy: "Our largest market is the USA where we are the primary supplier to Echostar. We're looking to become part of other top satellite TV operators' business as well."

40% of the LNBs produced are for USA and the remaining 60% are distributed between Europe and Middle East. MTI is doing quite well in Europe with the large providers. Through local distribution partners, which includes E-tronix, located in Luxembourg, MTI supplies, for example, Canal Plus in France, Sky Italia in Italy, and BSkyB in England.

How does MTI explain their outstanding market position? "Quality and reliability," comments Eugene, "It also helps that MTI has been around since the very beginning. Our customers trust us."

Not only that, there are 50 engineers that are constantly working on improvements. Eugene let us in on something new: "MTI is also teaming with major VSAT system providers and operators by providing Ka-Band transceiver, Ku-Band block up converter and TRIA for satellite broadband services in North America and Southeast Asia. MTI has manufactured over 280,000 Ka-band transceivers in the past two years and is very proud of having over 90% market shares."

But let's get back to the Ku-band. Jeff Lin, Sales Assistant Manager responsible for the Asian market, spoke to us about sales: "Single LNBs are not nearly as popular anymore. Sales of Twin and Quad LNBs have steadily risen 5-10% each year since 2005."

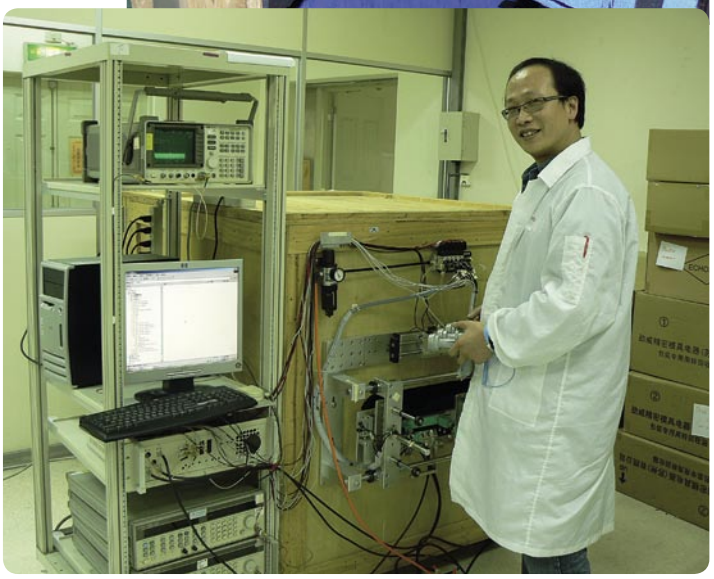
India has recently become a new market for MTI. In just the last quarter of 2006, MTI shipped more than 100,000 LNBs to India. And Sophie Su, Senior Product Manager, is convinced that this number will increase as soon as India's large TV carriers can get their operating licenses.

Will you find MTI at satellite trade shows? Tindy Liu, Market Planning Specialist, informed us that MTI will be at ANGA. "Whether or not we will be at IBC, CABSAT and SBCA has not yet been decided." However, the Sales Team employees have been visiting all of the important trade shows.

MTI presents itself as a company that certainly lives up to the name of the street: Innovations for more than 24 years have placed MTI at the head of the class.

One of MTI's latest innovations is this Octo LNB

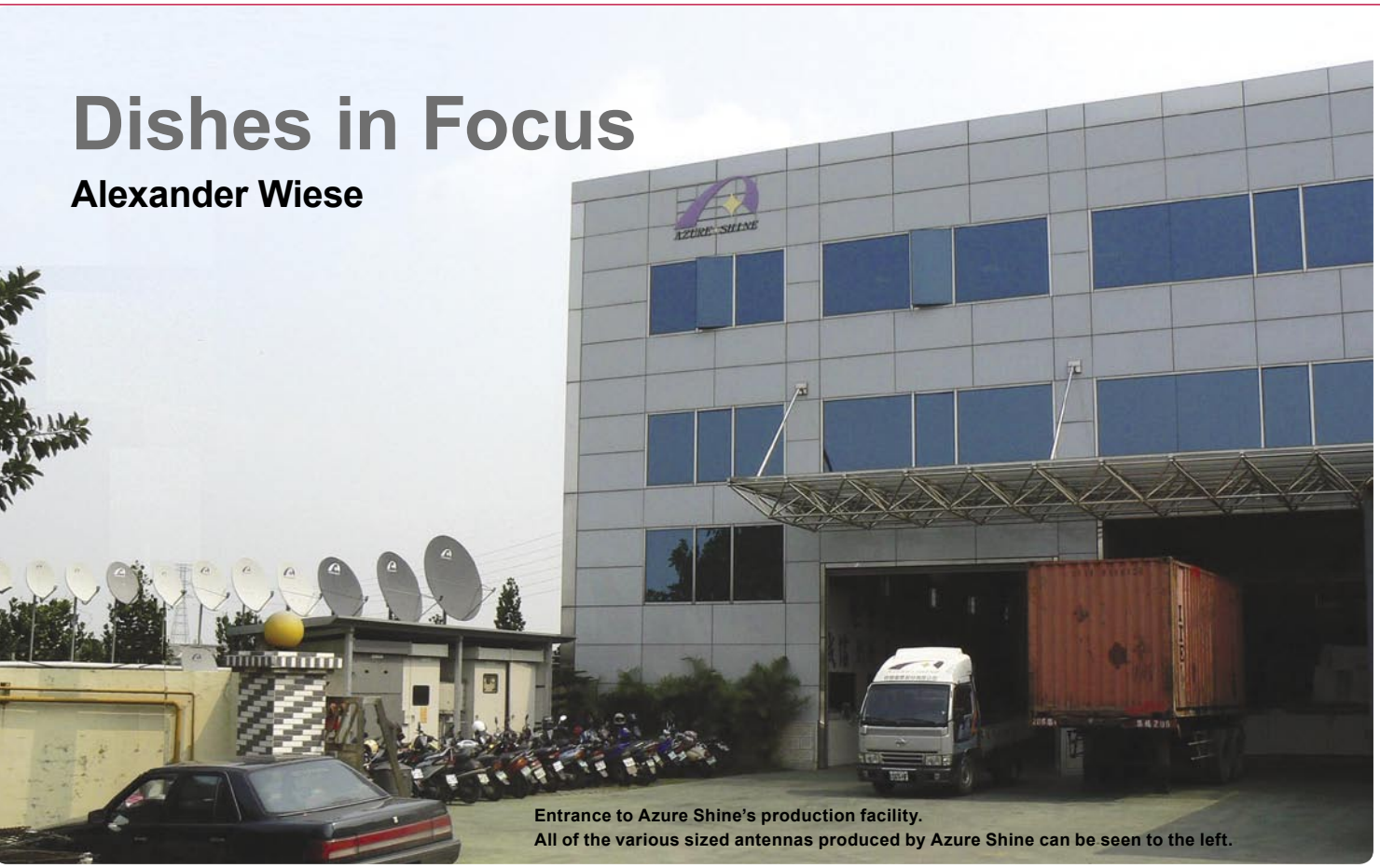
Eugene Wu, LNB Group Business Head, with one of the new Octo LNBs in the MTI showroom.



Pan Yuonan is one of the developmental engineers. Here he is testing a newly designed triple monoblock LNB for its cross-modulation resistance in an echo-free chamber. The inside of the test chamber can be seen through the open door in top picture.

Dishes in Focus

Alexander Wiese



Entrance to Azure Shine's production facility.
All of the various sized antennas produced by Azure Shine can be seen to the left.

Allen Shen started his satellite dish manufacturing company Azure Shine back in 1988 with 15 employees. He already had experience in the manufacture of satellite antennas: he had previously worked for a dish maker that primarily made wire mesh antennas. But Allen Shen saw the interest in smaller dishes beginning to grow and began his company by producing offset antennas that were 45, 55, 60 and 75cm in size and all exported to Germany and the UK at a rate of 10,000 per month. This number has increased steadily over the years and has now reached a half million per month. Azure Shine is clearly a market leader among satellite dish manufacturers. The company's headquarters is located in the Bade district of the city of Taoyuan west of Taipei/Taiwan. Taipei's international airport is also located in Taoyuan making Azure Shine's location strategically convenient.

Allen Shen is Azure Shine's General Manager.
The small pin on his lapel identifies him as a Rotary member.

Executive Engineer Bernett Lin shows the geographical distribution on the board: 35% of Azure Shine's antennas go to North and South America, 33% are exported to Asia, 14% go to Europe, 10% to Africa and 8% to Australia.

Allen Shen explains: "Up until 1991, we manufactured our antennas out of fiberglass, after that we switched over to metal." The main reason for this was increasing price pressure; metal is cheaper than fiberglass. "Recycling also plays a role", comments Allen Shen, "metal is much more ecologically friendly compared to fiberglass."

Who are Azure Shine's customers? "60% of our production is geared towards OEM products while the remaining 40% is sold partly as OEM and partly under our own name to distributors." Today Azure Shine employs 150 people of which eight belong to the Sales team. You will also bump into Azure Shine at trade shows. Marketing Executive Lilyen Yu explains their show plans: "We have our own stands at CSTB in Moscow, ANGA in Cologne and CABSAT in Dubai." They are also looking at coming to the USA but at this point it has not been decided which trade show they will take part in.

The Research and Development Team is rather large: 20 employees are constantly

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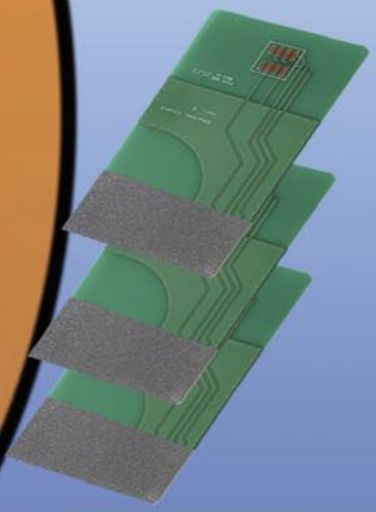
SmartWi is a wireless card splitter solution witch can be used in household with more than one set top box.

SmartWi split your subscription card and make is possible to watch differed programs on each set top box with only one subscriptions card.



Wireless SmartWi come standard with
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DiSEqC Positioner

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- Software Limit Protection

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- 3 Digit LED Display
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The pressing machine: the precut sheet metal (on the palette in the foreground) is placed flat in the pressing machine and comes back out as an offset antenna.

working on product improvements. So many R&D employees? Executive Engineer Bernett Lin describes what all these R&D employees do: "We are expanding our product palette to include VSAT antennas; an application with extremely high requirements." It all starts with a much more precise handling of the antenna surface and goes so far as producing the exact matching feed and OMT for the VSAT dish. VSAT deals with the active transmission of signals and testing includes showing, for example, that a transmitted signal actually reaches a satellite and doesn't get scattered into space because of an imprecisely installed component on the antenna.

Allen Shen adds, "Our VSAT products will reach the market by the end of April 2007. We will have uplink antennas in 75, 90, 120, 150 and 180cm sizes available." He then let us in on a little surprise: "We've just developed a totally new 3-meter antenna and production on this dish has just started."

Allen Shen gave us an impish smile and then revealed another secret: "We are also developing a mobile antenna that will have the name "Fly Away Dish Antenna" and be 45cm in diameter." We noticed that Allen Shen still had that grin on his face so we expected even more. And we were not disappointed: "It will have an integrated GPS receiver!" The antenna will "know" where it is on the Earth and will be able to automatically point itself to the correct satellites. "This mobile antenna won't be available until 2008", he tells us, slightly taking the wind out of our sails.

Azure Shine has committed itself to the Ku-band even though the larger dishes could be used for the C-band. But what about the Ka-band? Sure enough, "in September 2007 we will offer Ka-band antennas with OMT and feed in 60, 75, 80 and 90cm sizes", explains Bernett Lin. Azure Shine appears to have covered every possible application; they are a company that has focused all of their energy on satellite antennas!

Allen Shen also allows himself some time at work for a rather lucrative hobby while making a cup of tea: Azure Shine also manufacturers water dispensers that keep water cold as well as hot. Having clean drinking water available at various temperatures is something that is appreciated by many companies as well as their employees.

Allen Shen then takes a sip of his tea made with hot water from his Azure Shine produced device. Only in Taiwan!

An R&D employee takes measurements on an OMT sample. VSAT antennas are manufactured complete with OMT and feed.

The R&D Team at work

The Sales Team at work

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MOTECK's Motor Professionals

Since being founded in 2000, Moteck has been specializing in any application that would involve small motors. This would include the raising and lowering of beds, adjustable-height desks and motorized chairs. Other examples include motors for automatic doors and also windows that are out of reach and are opened and closed with motors.

But by far the largest portion of their sales (30%) can be attributed to actuator and H-H motors for satellite reception. Gary Wu, President of the company, estimates that MOTECK delivers roughly 35% of the world's supply of satellite antenna motors. This qualifies MOTECK for the title Market Leader.

MOTECK came about from a predecessor company that was founded in 1985. When MOTECK became their own company, they started with 5 employees. "Today MOTECK has 40 employees at their headquarters in Taipei", explains Gary Wu, "40 more employees are at our fabrication plant in Taoyuan in

Gary Wu is MOTECK's President

Sales Director Rita Yu with their most important wholesale partners listed on the board, that offer MOTECK products to their end-users.

In the vast "Far Eastern Plaza" office complex in eastern Taipei you will find MOTECK's headquarters on the first floor in building C, number 79.

south-western Taipei with another 200 at our fabrication plant (founded in 2002) in Suzhou in the Chinese province of Jiansu."

Mass production takes place in the Chinese factory while their R&D (Research and Development) Team as well as production of their high-quality product lines has remained in Taiwan.

"Our best year was 2005", comments Director Gerald Ku, "back then we sold roughly 1,000,000 motors." Since then sales have gone down; in 2006 it was 10% less.

President Gary Wu blames this on the many plagiarized products that have surfaced in the marketplace. He is fighting back with two different strategies: MOTECK's R&D team is constantly at work improving their products, something the plagiarist manufacturers don't invest any time in.

Also, "we have been applying for patents in all the countries we ship to and not only in those countries where the plagiarist manufacturers are located." In this way MOTECK is able to secure their rights in those countries in which they actually sell their products.

And what countries are these? Director Gerald Ku counts them out: "We ship 30% of our motors to the Middle East, another 30% go the North Africa, 20% go to Europe, 15% to Southeast Asia and 5% to North America. 90% of these sales are made up of actuator motors, with H-H motors making up the remaining 10%." MOTECK is also quite active in all of the important trade shows: "You will find us at ANGA and at CABSAT", explains Gary Wu, "Plus you will also find us twice a year at the show in Guangzhou, China."

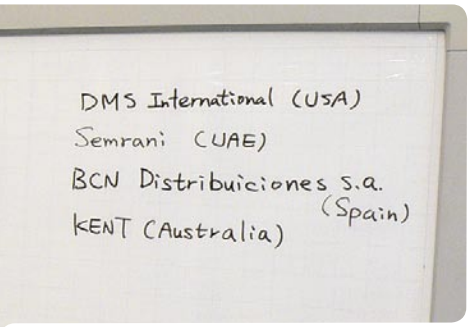
By now, curiosity has gotten the better of us: what new products are forthcoming from MOTECK? President Gary Wu enlightens us: "By the end of the year we will have H-H motors that are optimized for smaller sized antennas." The current H-H model, optimized for use on 1.2-meter dishes, will be expanded to include H-H motors for 90cm and 75 cm antennas. "We are also looking into a motor variant for 1.5-meter dishes and are exploring the idea of developing a motor for 1.8-meter antennas."

Director Gerald Ku explains the reasoning behind the motors for smaller antennas: "These motors were conceived for the European and North American markets", the larger models are intended more for the Middle Eastern and North African markets. Through specializing in all the different application locations, President Gary Wu expects an optimized price/performance ratio. "We always have to be better than our plagiarists", states Gary Wu; a feeling shared by all the other market leaders.

But they will never run out of ideas. The new HDTV satellites might require an entirely new set of solutions; mobile satellite reception is also part of the picture for MOTECK. All of these new requirements are nothing more than an incentive for MOTECK to develop more new solutions.

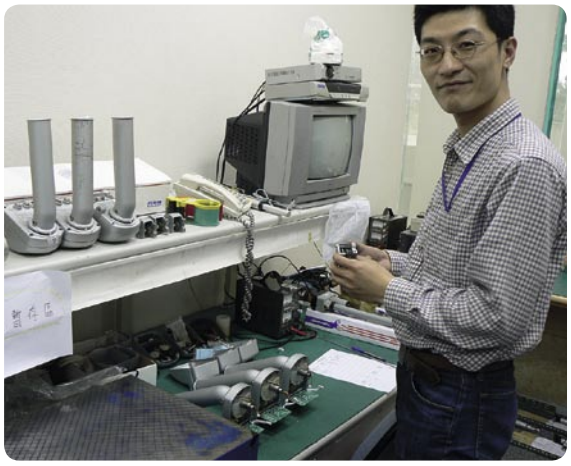
The R&D team focusing on the development of new products.

The Sales Team is made up of 12 employees that handle the ordering and worldwide shipping of MOTECK products.

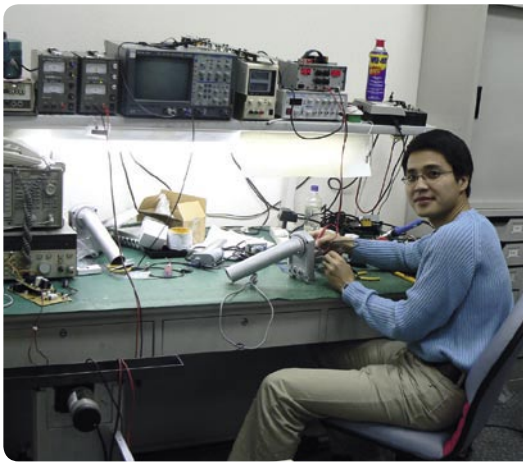


Samples are taken off of the production line and tested in combined hot/cold environmental chambers. Here the oven is heated to 70°C. Tests are conducted from -40° to +90°C.

Director Gerald Ku at work. He watches over the R&D and Product Teams.



Here the mechanical function of a production sample is checked out.



A technician checks a production sample against its technical specifications.

Satellite Channels for Taiwan - PTS's Control Center

▲ Entrance to the PTS building. The organization "Taiwan Broadcasting System" can also be found here marketing the channels from PTS.

◀ Ai-Chen Su is one of the technicians in the Master Control room that keeps an eye on the production of the TV channels. The monitors in the background are showing the signals for Channel 1 and Channel 2, with the additional monitors for Channels 3 to 6 located to the right. The employees are wearing jackets because the air conditioning system needs to keep the electronic equipment at a constant low temperature. Every employee leaves their shoes at the Master Control room entrance and puts on slippers instead.

"85% of the country is cabled", explains Ching Swen, the Executive Vice President of the "Public Television Service Foundation", founded in 1998. That really doesn't leave much room at all for direct satellite reception. Nevertheless, there is a single programming package for the Aborigines in Taiwan. As democratization came about, these Aborigines earned more rights as well as their own TV channels. Since most of these Aborigines live in the mountainous regions in the center of the country, satellite transmissions were mostly meant for them. Of the seven channels available in the package, three of them are produced by PTS.

Ching Swen invited us to visit the control room located in an adjacent building. Su Miao, Engineering Manager of the control room, described to us the setup: "Here we are able to watch over six channels; at the moment we are producing five channels. The extra spot serves as a reserve." Three of the channels are transmitted via satellite, namely the channels PTS, DIMO and HAKKA. The signal is routed via fiber optic cable to Taiwan's state-run telecommunications company CHT (Chung-Hwa Telecom) and from there is uplinked to ST-1 at 88° east via an uplink station in the Yang Min Mountains in northern Taiwan. PTS also uplinks its own PTS channel directly to ST-1 such that PTS appears there twice, in the encrypted package for the Aborigines as well as in FTA.

There's also an additional channel, MAC-TV, that is not produced by PTS. MAC-TV is a channel for all Taiwanese that are living abroad and is produced in Chinese (i.e. Mandarin, the mainstream language in Taiwan and mainland China), Cantonese, the two Aboriginal languages Hakka and Taiwanese as well as English. MAC-TV's signal is transmitted to North America via fiber optic cable where it is then retransmitted. The MAC-TV signal is also uplinked from CHT via the uplink station in Linko south of Taipei to INTELSAT 8 (166°E) for the New Zealand region, TELSTAR 10 (76.5°E) for China, SUPERBIRD C (144°E) for Japan and Korea as well as to JSAT 3 in C-Band (128°E) for Asia.

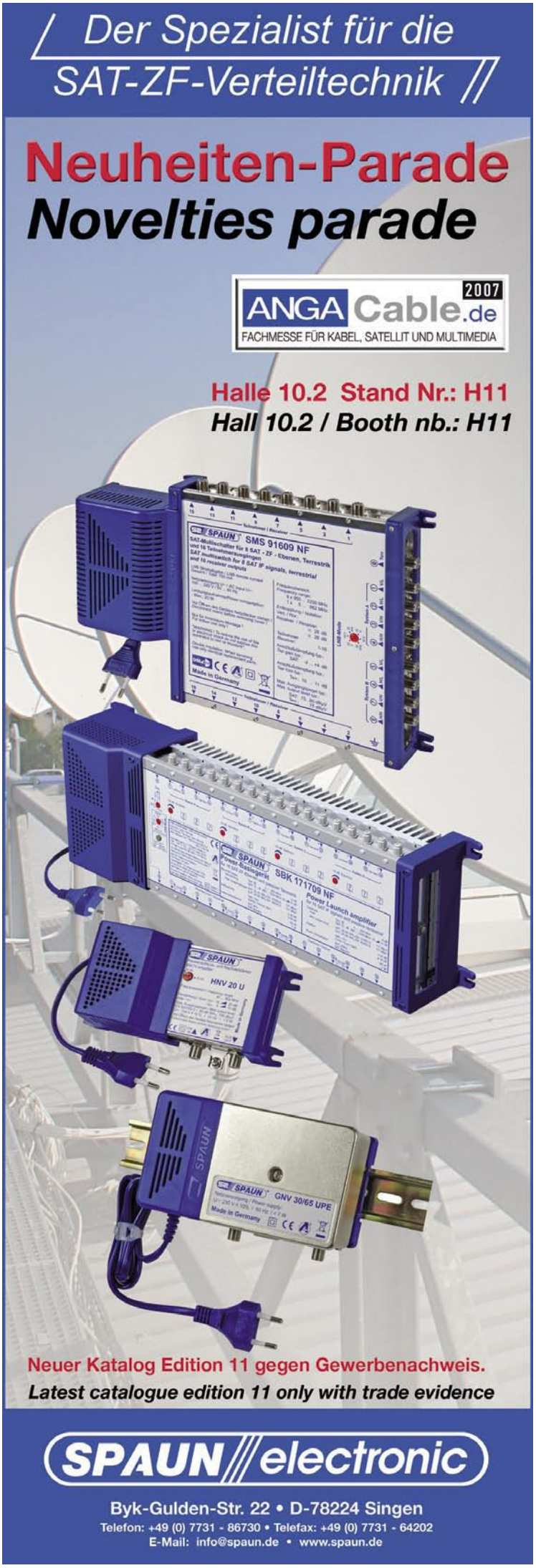
Are there any plans for HDTV? Kevin Chen, Deputy Chief of Master Control Section Engineering Department, reveals that plans are underway to upgrade to HDTV. He expects these upgrades to be installed by 2008 after which PTS will also offer HDTV programming.

There's something going on in the satellite skies above Taiwan.

▲Taiwanese satellite enthusiasts list all the channels on their homepage in Chinese characters: the picture of the programming package on ST-1 at 88° east for Taiwanese Aborigines shows encrypted channels with a blue background and FTA channels with yellow.

▲On the other end of the roof we found more antennas: the antenna to the far left is looking at AGILA, the two in the background are pointed to TELSTAR 10 and ASIASAT 3, the small 60cm dish in the front is also pointed at TELSATR 10 while the larger antenna to the right is aligned with ST-1.

▲Kevin Chen is the Engineering Manager and explains the functions of each antenna on the roof of the PTS building. The large Andrew antenna in the background is 5.6 meters in diameter and is the uplink to the ST-1 satellite at 88° east for their PTS channel. The two antennas to the left are 5 meters and 3 meters in size and are both aligned to ASIASAT. Why two antennas for the same satellite? Kevin Chen explains: "When the BBC broadcast the 2000 Millenium's live celebrations 24 hours to every region of the world, PTS took part. A second antenna was erected as a reserve to prevent anything from going wrong."



A Danish Family-Owned Business

If you cross the border from Germany into Denmark by the city of Flensburg you will bump into Kurt Olesen's single family home after only the second traffic light on the left side of the two-lane highway. You won't find a company sign either. As it turns out, that isn't even necessary since SmartWi uses modern communications technology to market their products. "We use mostly Skype", explains Kurt Olesen, founder and owner of SmartWi, "and naturally also e-mail and text messaging."

Kurt has been in this business since 1999. Back then he sold standard satellite equipment such as dishes, LNBs and receivers. He also became involved with selling Smart Cards that he acquired from Singapore, but then in 2004, with his electrical engineering background and with help from an engineering friend, Kurt came upon the idea of a wireless Smart Card reader, or SmartWi. Simply insert a Smart Card in the SmartWi to have its contents transferred wirelessly to three additional cards.

His partners in Singapore helped him find a production company in Taiwan. Now it looks like production will be outsourced in Malaysia. "Up to the end of 2006 we were able to sell roughly 30,000 SmartWi's", explains Kurt, "and for 2007 we expect to sell about 5000 SmartWi's a month." His customers are primarily dealers for which he has found a partner in almost every country in Europe and also in many other Asian and African countries. "Every dealer pays the same price, regardless of how many are ordered." In this way Kurt is able to treat every dealer the same way and every dealer has the opportunity to realize similar profits.

Much of the SmartWi market is in Sweden: "20% of our deliveries go there while an additional 10% each goes to Greece, France and Poland", comments Kurt, and then continues, "Two thirds of our SmartWi orders are sent to Europe with the remaining third going to Asia and Africa." With the exception of TELE-satellite Magazine, Mr. Olesen does not advertise anywhere else: "All of the important players in the satellite industry read TELE-satellite, plus a stand at a satellite trade show would be too expensive", reveals Kurt as he explains his marketing plan; a plan that we could only agree with!

The SmartWi's are packed for delivery in a small building adjacent to the family's home: His son Jens is responsible for packing and distribution while his wife Mona handles the incoming telephone calls as well as takes care of the books. Kurt has demonstrated that even a small family business can have great success and above all a worldwide customer base!

The Olesen Family home; SmartWi's headquarters.
The truck to the right is delivering a new version 8 SmartWi shipment to be stored in the building behind the house.

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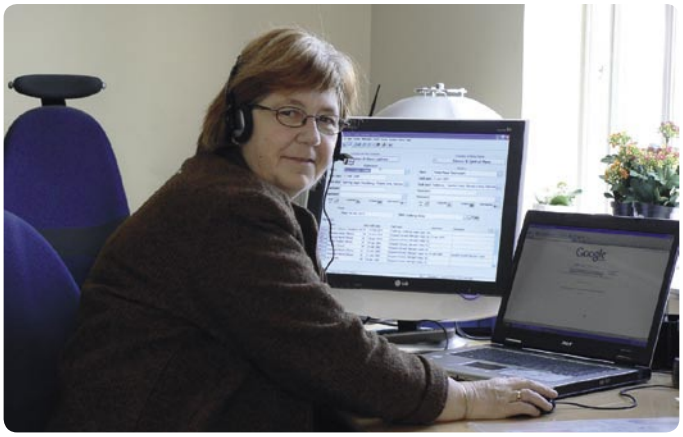
Kurt Olesen, SmartWi's owner, standing on the roof of his storage building next to the professional mast of his satellite dish.



Mona Olesen carries the Skype telephone set and handles all the incoming orders together with taking care of the books.

Jens Olesen packs and ships the SmartWi's and also randomly tests for functionality. Repairs are no longer part of the business plan: instead, defective units are exchanged and then returned to the manufacturer.

Into the Satellite Future at High Speed

The US satellite equipment dealer Sadoun, a family owned small business, is moving forward at high speed. Steady growth in product lines and manpower is quite normal for owner Jamal Sadoun. He was 18 years old when he came to Ohio in 1989 and attended the University of Toledo where he studied Mechanical Engineering. After graduating, he worked for General Motors and General Electric and learned quite a bit. In his spare time he became interested in satellite reception and began selling spare parts. In 2001 he took the leap and started Sadoun.com.

"Sadoun began as a one-man-operation" reflects Jamal, "today we have 12 employees." And they are multilingual so that they are easily able to communicate with immigrants in their native languages including Arabic, German, Thai, Chinese and Persian up to and including, of course, Americanese.

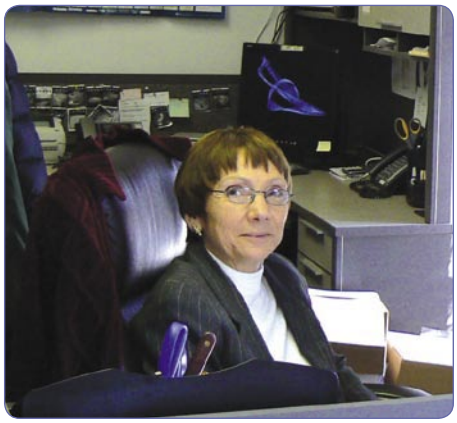
Mr. Steve is the technical guru who helps out customers with problems over the phone.

The largest portion of their sales, roughly 70%, involves end-users. The remaining 30% goes to resellers. 80% of their orders are made online via their website (www.sadoun.com). "We only get 20% of our orders over the telephone", explains Jamal, "We also provide extensive customer support through our online

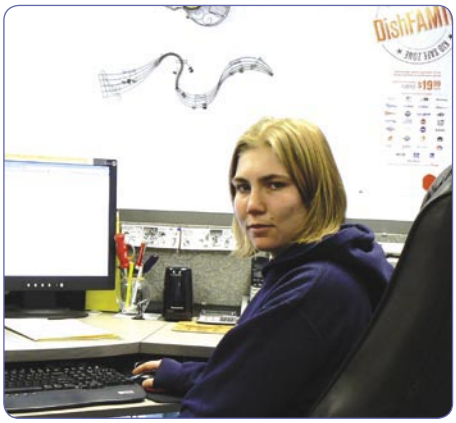
At the moment, Sadoun calls this office/warehouse building his headquarters

Jamal Sadoun in his showroom holding the new SatHawk 4000 signal analyzer to be highlighted in an upcoming issue of TELE-satellite.

Office Manager Judy Tabash always comes to work in good spirits.



Barbara Digel-Barrett takes care of accounting and finances.



Natalie Watkins is responsible for customer service.

discussion forums." Jamal himself occasionally contributes articles to these forums. When asked what his percentage of individual product sales are, he stopped to think a moment and then noted that "Receivers account for 40% of our sales, followed by antennas at 20% with the remaining 40% attributed to LNBs, motors, signal analyzers and smaller accessories."

Sadoun stocks HH motors from STAB (+/- 60° turning radius), Moteck (+/- 75° turning radius) and Sat Control (+/- 50°). In the second quarter of 2007 Sadoun will offer a Powertek motor with the Sadoun name. He has had already private-label single and dual LNBs (KUL1 and KUL2) available since the beginning of 2006 with single and dual universal LNBs (ULN1 and ULN2) added to his product line towards the end of 2006. Sadoun also stocks the DSL2; a dual LNB for use with DSS satellites. Then there's the DSLR2 with reversed polarization. This circularly polarized LNB needs to be used whenever a Toroidal dish is installed because of this antenna's subreflector.

He also has a wide selection of multiswitches. The current selection of 2/4 and 3/4 switches will be expanded with 4/4, 5/4 and 5/8 variations in the fall of 2007. The current 4/1 watertight DiSEqC switch will also be enhanced with indoor versions of the 2/1 and 4/1 in the fall of 2007.

With rapidly expanding product lines that Sadoun will soon have available, you may be asking where he will put it all. Construction is beginning on a new office/warehousebuilding that will give him 31,000 Sq-Ft of space instead of the 10,000 Sq-Ft he has now. He plans on leasing this new construction.

Not bad planning! Jamal Sadoun is managing to grow with a mixture of caution and business savvy. All in all Sadoun Satellite has everything the novice or professional Satellite enthusiast needs at a single resource location. With a huge inventory, personable sales and support staff, and an easy to navigate website, Sadoun Satellite is a benchmark in the United States of satellite service.

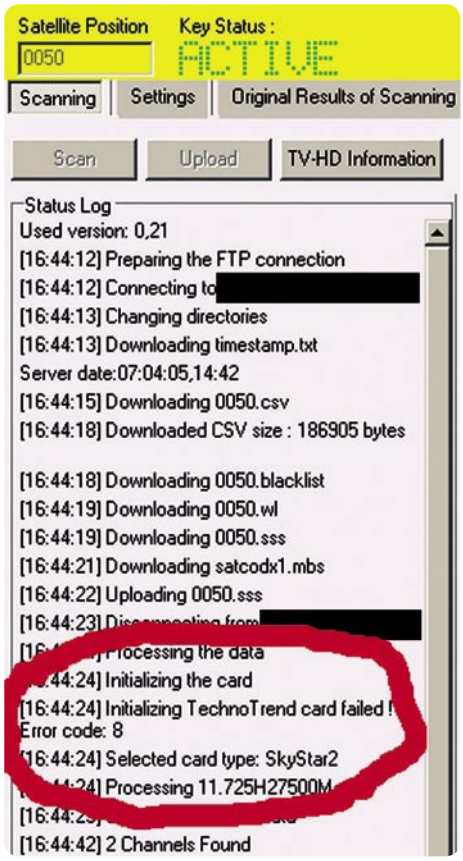
Warehouse Manager L.T. prepares shipments before delivery via FedEx, UPS or DHL.

Alexandru Porosanu
SatcoDX Software Development
answers your questions

DBV-S2 in SatcoDX

As I have observed that SatcoDX does not say anything about modulation standard (DVB-S/S2) of the transponder. I am currently writing a wrapper application on a driver and most tuner drivers, current one as well, that I have worked on need that information. They configure driver settings differently according to DVB-S and S2 selection. It is good to know broadcasting system type; however, MPG4 stream can be broadcasted via DVB-S or DVB-S2. Therefore, it is important to know which modulation standard is used as well.

Alihan Dikici, Software Engineer, Cabot Communications Ltd, Turkey



View to the Log File of SatcoDX Scanning Software: it first attempts to load a DVB-S2 card, here TechnoTrend, and when it fails it moves on to a DVB-S card, here SkyStar. A simple but effective way to detect DVB-S2 transponder.

We are currently adding the information of whether a transponder is modulated using DVB-S or DVB-S2 in the SatcoDX lists, however only for a few satellites. The reason for this limited approach is the fact that not all SatcoDX scanning stations are equipped with DVB-S2 compatible cards at this time.

The detection of whether DVB-S or DVB-S2 is available uses a simple but highly effective method of first trying to receive the transponder in DVB-S2 and – if this fails – switching to DVB-S. Most manufacturers of receivers actually use the same procedure and thus do not require this information to be available beforehand.

Thomas Haring
TELE-satellite Test Center Austria
answers your questions

The next killer-feature for satellite receivers

I am relatively new to FTA satellite as an alternative to terrestrial broadcasting. However; I am a professional in the IT world and am annoyed by a critical gap in all satellite receivers: The lack of an IP based interface. I have tried to pitch using satellite for our training systems at work, but no one (myself included) wants to mess with a remote or client software to program and control the receivers. Also, most of our equipment is in closets in different buildings, and the time/effort to make changes is unacceptable. Client software is unacceptable since we maintain strict baselines on our computer for support and security reasons.

I'd like the challenge the consumer and commercial receiver folks to deliver the following:

** Enable a receiver to be fully controlled through a native web interface using a common CAT-5 network connection.*
** Build that interface with a user name and login password to prevent unauthorized access.*
** Provide a hardware reset in the event the user name and password are lost.*
** Enable uploading and downloading of firmware and satellites via the interface.*
** Enable static and dynamic IP addressing with a machine name.*
** Support multiple languages for major markets.*
** Do it for less than $50 marginal cost over current manufacturing costs. (That's about the cost of a network printer interface.)*

For all the glitter in the ads, I see a real lagging in recognizing that modern homes are networked and remotes are a hassle. Also, the adoption of this hardware by commercial users is limited since it is based on a labor intensive „personal" interface (the remote) instead of an enterprise solution taking advantage of a network architecture.

Well, there you have it. That's what I'm waiting for before I can push for a satellite solution for our training division.

Alan Yelvington, SEMPARPAC, Emergency & Disaster Planning Information, Arlington, VA, USA

Much of what you're looking for is already available. A hint: look out for receivers based on Linux. Being a open source software, there's a lot of firmware available, including some which cover partly your requirements. Check test report about the new AB-COM box elsewhere in this issue. Provided you can assign a fixed IP, you can control that box via the web by a virtual remote control.

Then there's Topfield, who also offers in its new 6000 series two receivers with either WLAN or regular LAN connector (TF6000PVR and TF6000PVRE), but these boxes do not offer all the features you requested, for example you can't fully control them via a web interface or you can't perform a software update via LAN. Lastly, a work-around is using a Slingbox - watch out for next TELE-satellite, which will carry a test report about Slingbox.

Heinz Koppitz
TELE-satellite Test Center Germany
answers your questions

Worldwide Channels?

I've just recently started messing around with the frequency, polarity, symbol and FEC on my Sky plus box. I have become obsessed with finding all the channels I can. Sadly I have found them all :(With each channel I found it made me feel like more of a man! lol - I was wondering what sort of figure would I be looking at for descent satellite dish and receiver? I would be looking to get as many channels as possible from around the world! Also just out of interest is it possable to get a satellite that could receive all channels in the world and how many millions would it cost?

Dave Kelly, Dublin, Ireland

Unfortunately it's not possible to receive all satellite channels worldwide because each satellite has its own footprint which covers certain regions of the earth.

In Europe, and particularly in Ireland, it is currently only possible to receive a maximum of 16 satellites with an average 60 to 80 cm dish. Even for these 16 satellites to be received you'd need a moving antenna and a receiver which is DiSEqC 1.2 compatible. A SKY receiver cannot be used for this.

For more information turn to the SatcoDX CD-ROM "World of Satellites" or go to the Internet at www.SatcoDX.com.

Topfield's TF6000PVRE has a Ethernet connector and can be controlled via a web interface from remote

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Ron Roessel
TELE-satellite
Test Center North America
answers your questions

European Receiver in USA?

I picked up a copy of your magazine at Barnes & Noble and was intrigued with all of the products that don't appear to be for sale in the US. Why is that? If I were to buy one from Europe what could I receive in the US? I currently subscribe to Direct TV, would those channels be available via one of these boxes?

David Snow,
Woodinville, WA, USA

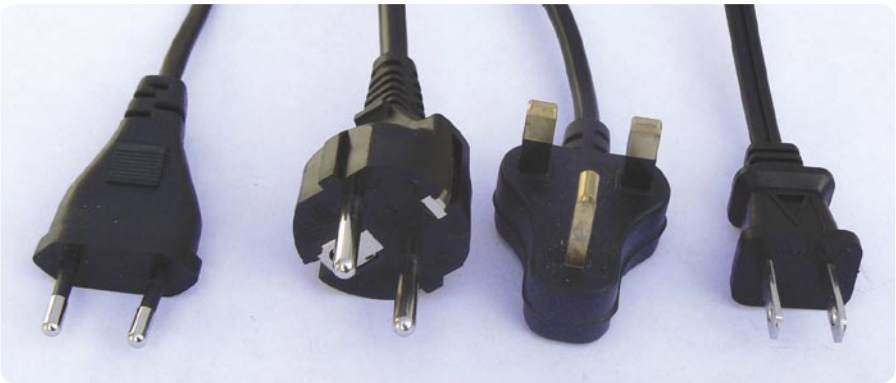
You are quite right. There are many more models of satellite receivers available elsewhere than here in North America. The overwhelming reason for this is that there simply is not as big a market here as there is everywhere else in the world. Hard to believe isn't it? But you can thank DishNetwork, DirecTV, Bell ExpressVu (Canada) and Star Choice (also Canada) for this. There are also a few other satellite providers that can be thanked too, but these are the big ones.

The very simple explanation is this: when you subscribe to any of these satellite TV providers, you MUST use their receivers or a receiver authorized to receive their programming. You can't use any other receiver.

DirecTV is a different animal altogether. Their signal is not compatible with standard MPEG-2 receivers so you couldn't use a standard receiver with DirecTV anyway. DishNetwork and Bell ExpressVu both use standard MPEG-2 DVB transmissions. This means that you can lock onto their satellite TV signals with a standard receiver and even scan for channels but unfortunately, that's about all you can do. Every channel is scrambled so you won't be able to see anything except maybe for a few promo channels.

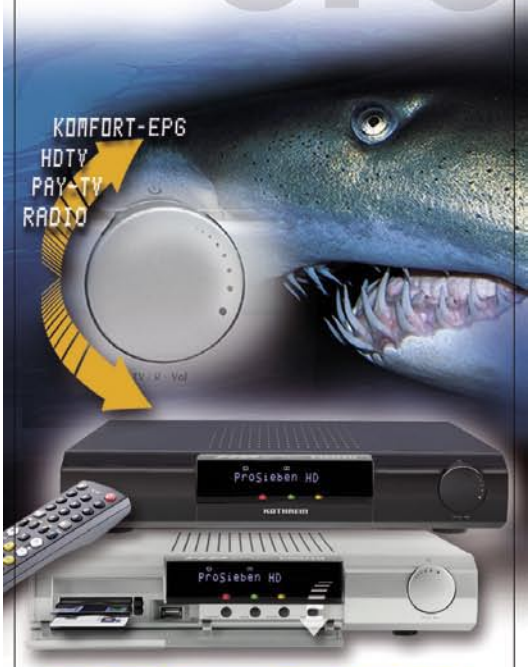
There are about 60 satellites up in the skies above North America not counting the PayTV satellites. Each of these satellites carries some FTA channels. Some carry more than others. If you are interested in foreign language programming, then Galaxy 25 is for you. Galaxy 10R offers quite a bit of English language stuff.

Most of the receivers available outside of North America will work here. You just have to make sure that you can plug them into the wall and also make sure that they can provide a compatible TV signal for your TV. This means that it should be able to handle the 110 volts/60 Hz available at our electrical outlets and it also means that the receiver should be able to give you an NTSC TV signal. Most power supplies in receivers today are universal power supplies meaning you can usually plug them in anywhere in the world. The only thing you might have to do is adapt the plug to one that fits in our electrical outlets.



Which plug comes with your satellite receiver? The two on the left are for Europe and this means 220 V, the third from left is for UK, Middle East and some Asian countries and mostly 240 V and the one at the right is for America and 110 V. Most receivers nowadays accept 110-240 V, so all you need to do is to replace with the right plug, which fits into your wall socket.

HDTV-Sat-Receiver UFS 910
Endlich mal was Scharfes sehen!



DVB S/S2 | HD TV | HDMI | KOMFORT EPG | CI | 16 Display | OSD | OTA | USB 2.0 | Dolby Digital | LINUX

Der neue **HDTV-Sat-Receiver UFS 910** kann sowohl hochauflösendes **(HDTV= High Definition Television)** als auch herkömmliches Fernsehen empfangen.

Das eingebaute Common Interface bietet Platz für die Aufnahme von zwei CA-Modulen für Pay-TV-Programme. Über das 16-stellige alphanumerische Display zeigt der Kathrein-Receiver den Programm-Namen des aktuell empfangenen Programmes an.

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CommunicAsia2007

For the 18th time CommunicAsia is holding its trade show from June 19 to 22 in the Singapore Expo center. The Expo is easy to get to: it is in eastern Singapore and only one stop away from Changi International Airport via the MRT express train.

CommunicAsia first appeared in 1979 and back then only took place every two years. The first CommunicAsia consisted of 400 exhibitors.

By 1999 CommunicAsia became a once-a-year trade show that occurred at the same time as BroadcastAsia as well as EnterpriseIT. Together the three of these shows last year were made up of a combined 2338 exhibitors and attracted 67,137 visitors. This was a 10% increase over the shows from 2005. Victor Wong, CommunicAsia's Project Director, explains this year's show: "This year the total space required will be 72,000 Sq meters and we expect it to be more successful than last year."

Victor Wong adds, "In 2006, 84% of the exhibitors came from outside of Singapore. The exhibiting companies came from 66 different countries from every region in the world." Victor Wong was quite pleased that companies from China, USA and Korea came to CommunicAsia. He provided us with some details about the exhibitors: "This year there will be 31 Group or Country Pavilions from countries such as Australia, China, France, Germany, Sweden and Singapore."

Victor Wong
CommunicAsia's Project Director

The visitors come primarily from the Southeast Asian region; in addition to those from Singapore, most of the visitors come from countries such as Indonesia, Thailand, Malaysia and India.

Victor Wong tells us more: "Visitors can discuss business with the professionals and decision makers from the industry; on top of that are leaders from regulatory authorities, satellite and service providers."

For more information, you can visit the show's homepage at www.communicasia.com

CommunicAsia has established itself as the leading trade show in the region dealing with every aspect of Information Technology.

The Goldbell Towers are appropriately named: they have a golden shine to them. The offices for the Singapore Exhibition Services company are located here on the 11th floor.

About the size of a typical credit card, this rechargeable card lets you easily ride the Metro MRT (Mass Rapid Transit) in Singapore. The trade show is located directly at the "Expo" stop on the East-West line.

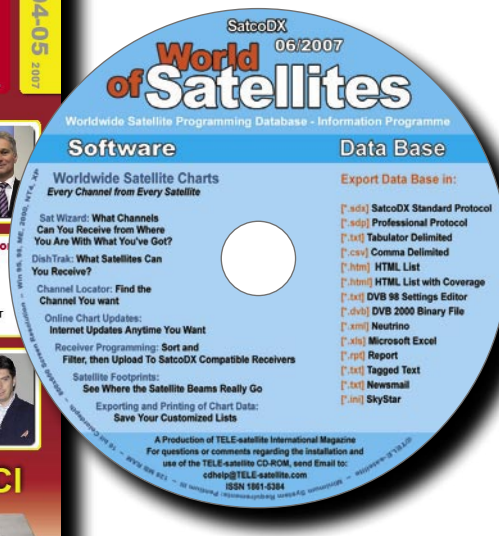
TELE-satellite's Global Distribution

TELE-satellite Magazine is available at newsstands and bookstores in many different countries. TELE-satellite is shipped by land, sea, or air to distributors all over the world and is available at many locations that offer specialized publications.

TELE-satellite Magazine is printed in English. Translations into additional languages can be found on the included CD-ROM. In some countries TELE-satellite Magazine does not come with the CD-ROM. In those countries, subscription services are available that would include the CD-ROM for subscribers of TELE-satellite Magazine.

The CD-ROM also contains the "World of Satellites" satellite chart program from SatcoDX. This powerful tool lets the user search and sort satellite channels from around the world. The user can also use this program to identify all the satellites that should be receivable from where they are with the satellite equipment they currently have plus they can go online 24 hours-a-day and download chart updates.

"World of Satellites" is only available on the CD-ROM that is included with TELE-satellite Magazine.



TELE-satellite Magazine and the SatcoDX CD-ROM contain everything you need to know when it comes to global satellite reception technology. TELE-satellite Magazine is available at many newsstands and most major bookstores around the world.

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Austria: Pressegroßvertrieb Salzburg
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If your country is not listed in TELE-satellite's Distributor List, you can go online and read TELE-satellite Magazine on the Internet in any of 17 currently available languages:
www.TELE-satellite.com

TELE-satellite Magazine can be found, for example, at this Dubai Library Distributors outlet located on Naif Road in downtown Dubai in Deira, close to the Electronics Souq on Al-Maktoum Road

Alexander Wiese (left), publisher of TELE-satellite, and Louis Lu (right), President of Taiwan English Press, after formally agreeing to distribute TELE-satellite Magazine in Taiwan.

Exhibition Preview

- **18 - 20 May 2007: Beurs Vlaanderen Digitaal**
  Digital television via satellite exhibition
  Cultureel centrum t'Spoor, Eilandsstraat 6, 8530 Harelbeke, Belgium
  www.beursvlaanderen-digitaal.be

- **22 -24 May 2007: ANGA Cable**
  Trade Fair for Cable, Satellite & Multimedia
  Koeln Messe, Cologne, Germany
  www.angacable.de

- **19 - 22 June 2007: CommunicAsia**
  International Communications and Information Technology Exhibition & Conference
  Singapore Expo, 1 Expo Drive Singapore 486150
  www.communicasia.com

- **7 - 11 September 2007: IBC**
  The World of Content Creation Management Delivery
  RAI Exhibition and Congress Centre, Amsterdam, Netherlands
  www.ibc.org

- **27 -29 September 2007: EEBC 2007**
  The Leading Electronic Media & Communications Event in Eastern Europe
  Exhibition Centre "KyivExpoPlaza", Kiev, Ukraine
  www.eebc.net.ua

- **4 - 6 October 2007: SatExpo 2007**
  Space and Advanced Telecommunications
  Vicenza Fair Grounds, Vicenza, Italy
  www.satexpo.it

TELE-satellite International Magazine is published worldwide in 17 languages:

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