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Enthusiast Report
 Visiting South Africa's
 "Grandfather of Satellites"

Test Report
Horizon HDSM USB PLUS



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

Complete Channel Lists from Every Satellite With all Technical Data

Position Code and Satellite	Type	Ch	Freq	P	Channel Name	Coverage
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.760	V	Telufuturo (left audio)	PANORLW
3150 PANAMSAT 1R (315.0E - 45.0W)	R-DIG	4	3.760	V	Radio Futuro (right audio)	PANORLW
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.764	V	Canal 5 EL Lider	PANORLW
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10-11
2007



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Global Satellite Chart by TELE-satellite

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TV Signal Level Meter



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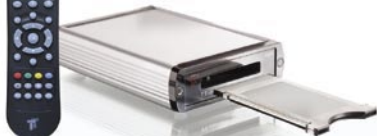


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LM870N, LM870W and LM870 TVR are specially designed and manufactured for CATV system installation and testing. They are a portable instrument, easy to carry with many functions.

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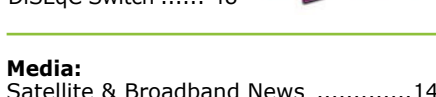
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Dear Readers



There are two kinds of TV viewers. There are channel surfers to which I also belong. They turn the TV on when it suits them and switch from one channel to another until they find something interesting. If they decide they don't like what they found, they continue surfing. There is no advanced plan and they don't typically stay true to any particular channel.

Then there's the other group: they sit down and study the TV Guide or EPG and decide on a certain program. They gather their peanuts, chips and beer and sit and watch that program from beginning to end.

What does this difference in TV viewers have to do with satellite reception? As negligible as this difference sounds, it truly does have a significant effect on the receiver market. While the channel surfing group has little or no need for PVR boxes, the situation is different for the TV planning group: the PVR technology has found a home with them. These viewers don't sit in front of the TV exactly at the times given in the TV Guide. No, they add 15 minutes!

It's very simple: at the start of the program they turn their PVR boxes on and when they finally sit down on their couches 15 minutes later, they simply use the fast-forward button. This group uses the PVR as a commercial-killer. At the start of a commercial break, they fast-forward past it.

And now we come to the main reason what the difference in these two groups means to the satellite industry. The

long-awaited boom in HDTV will only first get off the ground when there are HDTV receivers with PVRs. We are not too far away from that day; the first HDTV PVR receivers will soon be on the market. That there are so far very few of these units available has to do with the enormous amount of data that is connected with HDTV. The manufacturers and distributors don't even know what size hard drive they should install; this is a significant cost factor.

This is the reason why there are more and more receivers, even DVB-S models, with external hard drives and USB connections available. In this way, manufacturers and distributors don't need to choose a hard drive; they leave that to the user.

So, after this excursion into the psychology of these two TV viewer groups, we now know why we had to wait so long for the HDTV boom: it simply has to do with the fact that HDTV receivers with built-in PVRs are only now appearing on the market. Only now will HDTV start to pick up ground since for a large portion of TV viewers there is now a reason to buy an HDTV receiver: it has a built-in PVR.

Sincerely,

Alexander Wiese

P.S.: My favorite radio station of the month is Radio Zainet from Italy (13 ° E, Hotbird, 11.200V 27500), a student radio station that often plays unusual music.

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HDMI Output 576p, 720p and 1080i

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

NEW

S60.12 PV2R
Multiroom



Digital Multiroom Twin Receiver

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

HUMAX NEW

PR FOX II



BLU FOX S



TOPFIELD

TF 6000 FE



Digital Satellite Receiver

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

TF 6000 T
Digital Terrestrial Receiver

- MPEG-2 Digital and fully DVB compliant
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HUMAX

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Digital Satellite Receiver with CI Slot

- Scrambled channel receivable with DVB CI.
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- Music Player
- API (Plugin) Interface
- Autobookmark (optional)
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- Twin Tuner (with Loophrough)
- 2 CI + 1 Cardreader (optional)
- Alpha-Numeric VFD Display
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- Realtime Clock
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TOPFIELD NEW

TF-6000 PVR E-LAN



Digital Satellite Personal Video Recorder

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

TF-6000 PVR W-LAN



Digital Satellite Wireless Lan PVR

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- Monoblock Twin Universal
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- Circular
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- 40 cm - White
- 70 cm - White, Black, Red
- 90 cm - White, Black, Red
- 100 cm - White, Black, Red
- 120 cm - White
- 130 cm - White, Black
- 160 cm - White

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



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- Heavy Actuators - 24", 36"



H-H Mounts

- SG 99 - up to 1,00 m
- SG 107 - up to 1,10 m
- SG 2100 A DiSeqC 1.2 - up to 1,00 m
- Stab HH100 DiSeqC 1.2 - up to 1,00 m
- Stab HH120 DiSeqC 1.2 - up to 1,20 m



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Edited by
Branislav Pekic

EUROPE

**CZECH REPUBLIC
VOLNY LAUNCHES IPTV SERVICE**

Czech telecom operator Volny has announced the launch of a new IPTV service called Volny TV. The service offers nearly 40 Czech and foreign TV stations, as well as first-run movie channels, video-on-demand, HBO Digital, the VOLNY Album, which enables on-line viewing and sharing of photos published on the Internet, games and radio. VOLNY TV also includes the service "My TV", which enables viewers to organise their own channel by compiling all the programs that they want to watch.

**ITALY
TISCALI TO LAUNCH IPTV IN OCTOBER**

Italian telecommunications company Tiscali will be launching its new IPTV service in late October. Thanks to a distribution deal with public broadcaster RAI, Tiscali TV will access three RAI channels, namely RAI Fiction, Rai Cultura and RAI Junior. Tiscali TV subscribers will also be offered PVR features that will allow for on demand access to these channels and to RAI 1, RAI 2 and RAI 3.

**PORTUGAL
PT LAUNCHES IPTV SERVICE**

Portugal Telecom has launched an 88 channel IPTV service in three target markets - Lisbon, Oporto and Castelo Branco - but intends to roll out the service to the entire country, with more than 100 channels, in the coming months. The launch of the IPTV service, which includes VOD and True HD content, will transform PT into a quadruple play operator (fixed and mobile telephony, Internet and TV). PT has invested over EUR 10 million to date in the service. Alcatel-Lucent have been selected as technological partner.

**RUSSIA
KOREA TELECOM TO LAUNCH IPTV TRIALS**

Korea Telecom plans to launch an IPTV service in Russia before doing so at home. Trials began August in Russia's Maritime Province ahead of a full launch next year. KT currently offers an Internet TV service in Korea called Mega TV, but it's considered only a halfway service as legal limitations bar real-time broadcasting. KT works through an affiliate in the Maritime Province, NTC, which has an 80% stake in the service in the Russian province. NTC has secured 30 Russian broadcast channels and plans to air real-time broadcasts over the Internet. It will also provide movies, TV programs and sports content via video on demand (VOD).

**UNITED KINGDOM
C&W and INUK TO DELIVER
IPTV NATIONWIDE**

Cable & Wireless will be first to deliver national IPTV services via broadband, through a wholesale deal with Inuk Networks, a triple-play service provider which has developed a platform to distribute broadcast quality TV and carrier-class telephony over closed IP-based networks. In addition, C&W will offer Inuk's IPTV platform to other wholesale DSL customers who want to provide their customers with a digital television offering. Cable & Wireless will deliver this triple-play offering to Freewire, Inuk's subsidiary. Besides the BBC, ITV, Channel 4, Five and Disney's ABC1, Inuk has also signed up international channel

partners including France's TV5, Al Jazeera, Germany's Deutsche Welle and PCNE of China.

SKY NEWS SIGNS UP WITH JALIPO

Sky News is making its 24-hour news service available online via internet TV start-up Jalipo, joining the likes of BBC World, EuroNews and Al Jazeera. Jalipo has opted for a pay-as-you-go model for TV, whereby viewers pay only for the amount of TV they have watched using the company's J:Credits system, rather than a monthly subscription. Sky News broadcasts will now be available via Jalipo in three different quality streams, with a range of on-demand content supporting the live channel feed.

OFCOM PLANS TERRESTRIAL HDTV

UK broadcasting regulator Ofcom has revealed plans for terrestrial HDTV services delivered through an aerial. According to Ofcom, it is possible to support four high-definition channels on the existing DTT network. Ofcom is expected to enforce a reshuffling of the DTT capacity with a partial move to MPEG-4 and/or DVB-T2 video compression for the new services.

NORTH AMERICA

**UNITED STATES
DIRECTV-10 BECOMES OPERATIONAL**

The DirecTV-10 satellite launched recently from Baikonur sent its first on-orbit signals in July to the Boeing Mission Control Centre in El Segundo, California, indicating the satellite is operating normally. The new satellite will enable DTH service provider DirecTV Group to expand its HDTV programming across continental USA, Hawaii and Alaska. After about two months of in-orbit testing, the satellite will move to its operating position of 102.8 degrees West. Its sister satellite, DirecTV-11, will also be launched this year. DirecTV expects to offer 100 HDTV channels by the end of 2007.

**HALLMARK PLANS HDTV
CHANNEL FOR 2008**

Crown Media Holdings has announced that it would launch the high-definition Hallmark Movie Channel in the first quarter of 2008. CEO Henry Schleiff told analysts that the operator of the Hallmark Channel was looking to fill a family-friendly niche in television programming. The high-definition channel will be simulcast alongside the Hallmark Movie Channel.

LATIN AMERICA

**BRAZIL
OI INVESTS US\$ 150 MILLION FOR IPTV TRIAL**

Brazilian fixed-line operator Oi is to invest US\$ 150 million in the launch of an IPTV trial in Rio de Janeiro, scheduled for later in 2007. Oi has already started the investing the funds in the purchase of a new platform to support the IPTV technology and upgrade the data distribution network.

**CHILE
TELSUR LAUNCHES IPTV SERVICE
IN SOUTHERN CHILE**

Chilean telecoms operator Telefónica del Sur (Telsur) has launched a "WiTV" IPTV service available for consumers in parts of southern Chile. Telsur has been planning the IPTV launch for more than a year and will offer the service on its broadband network between the southern Chilean cities of Concepción and Puerto Montt. Telsur has invested around US\$ 30 million in upgrading and expanding its broadband network, which now has around 50,000 clients. The service will offer some 80 channels.

**TELEFONICA LAUNCHES IPTV
SERVICE IN SANTIAGO**

The Chilean unit of Spanish giant Telefónica has launched IPTV services in capital Santiago, its first in Latin America. The operator has invested US\$ 20 million into network upgrades and equipment purchases to facilitate the IPTV rollout. The service is still in its initial phase and limited to parts of Santiago, but should expand to other parts of the city by next year. By the end of the year, Telefónica expects to have some 3,000-5,000 IPTV subscribers. The IPTV service offers VOD, with some 240 hours of content available. Swiss-based Advanced Digital Broadcast (ADB) has been selected as the supplier of IPTV set-top boxes.

TELEFONOS DE MEXICO TO ACQUIRE ZAP

Telmex Chile Holding, a unit of Telefonos de Mexico SAB, Mexico's biggest fixed-line telephone company, has agreed to buy Chilean satellite-television operator Zap Television Satelital Directa. Telmex will use Zap to offer packages of telephone, high-speed Internet and television services to residential customers. The deal, worth as much as US\$ 20 million, will give Telmex access to about 40,000 subscribers.

ASIA & PACIFIC

**CHINA
CHINASAT 6B LAUNCHED SUCCESSFULLY**

The Zhongxing-6B (ChinaSat-6B) communications satellite, manufactured by Thales Alenia Space, has been successfully orbited by a Chinese CZ-3B Chang Zheng-3B launch vehicle. ChinaSat-6B carries 38 C-band transponders that will be used for DTH broadcasting, and will enable satellite operator ChinaSatcom to expand its services throughout mainland China. The satellite operates in geosynchronous orbit stationed at 115.5 degrees East. SatcoDX lists the channels as they start to transmit at www.satcodx4.com/1155/

**INDIA
MTNL LAUNCHES IPTV SERVICES**

Government owned telecom company Mahanagar Telephone Nigam has finally announced the commercial launch of its IPTV service. The company had been testing their IPTV services in 200 homes across Delhi on a trial basis. MTNL is charging RS 500 as registration fee and a monthly fee of RS 90 will be charged for 30 free-to-air channels and the bouquet of Star and Zee networks. Viewers can pay an additional RS 30 to get Sony network channels. The software, hardware service set-up and content delivery for IPTV service is being managed by Aksh Optifibre. UTStarcom is providing the Rolling Stream, a broadband digital TV delivery solution.

**BHARTI AIRTEL IPTV TO
DEBUT BY YEAR'S END**

Bharti Airtel is planning to launch an IPTV service by the end of the year, targeting high-end consumers of the top 6-7 cities. The company has been testing the service in 1,000 households in Gurgaon. The launch would take place in Delhi and would be expanded to other cities including Mumbai, Chennai, Kolkata, Hyderabad, Bangalore, Gurgaon and Jaipur. Bharti is collaborating with UTStarcom for their IPTV service launch in the Indian market. The company is also aiming to launch its DTH service by the fourth quarter.

**INDIA SIGNS SATELLITE LAUNCH
CONTRACT WITH ARIANESPACE**

India's cabinet approved in August the placing of a contract worth up to US\$ 67.5 million with European space launch company Arianespace for launching satellites. According to Information

Minister Priyaranjan Dasmuni, the contract will facilitate the timely launch of GSAT-8/INSAT-4G in 2008/2009 and would also enable a number of navigation, telecommunications, TV broadcasting and broadband services.

INDONESIA

M2B WORLD OPTS FOR BNS IPTV SOLUTION

Hong Kong-based IP solutions provider BNS has deployed an end-to-end IPTV solution for Singapore's M2B World to launch its M2Btv service in Jakarta in August. M2Btv delivers multiple TV channels live over the Internet to homes that have a high-speed internet connection. Subscribers will be provided with a set-top box that connects to their broadband to watch the programs on demand on their TV sets. M2Btv will offer a wide variety of content which will be available through a tiered subscription service ranging from free access to premium a la carte. M2B World aims to sign up around one million subscribers this year for the Jakarta service, which is the second market M2Btv in launching in after Singapore, where the service debuted in July 2006. The service is set to launch in a number of other markets in the region in the near future, including Japan, China, Korea, Taiwan, Australia Malaysia and Thailand.

THALES ALENIA TO BUILD AND LAUNCH PALAPA-D SATELLITE

Indonesian satellite operator PT Indosat has contracted Thales Alenia Space to build and launch its broadband Internet satellite Palapa-D. The satellite is to be launched in 2009 and will have 24 standard C-band, 11 extended C-Band and 5 Ku-band transponders, with coverage of Indonesia, ASEAN countries, other Asian countries, the Middle East and Australia. About 40% of the transponders will be used by Indosat for its own purposes while the remaining 60% will be rented out. Palapa-D will occupy the same orbital slot as Palapa-C2, whose service life expires in 2011.

ISRAEL

SPACECOM TO ACQUIRE AMOS 4 SATELLITE

Spacecom Satellite Communications has announced it will purchase the Amos-4 communications satellite from Israel Aerospace Industries (IAI) for US\$ 365 million. Amos-4 should be launched in 2011 and placed at an orbital position around 70 degrees East. Amos-4 will incorporate multiple steerable beams in both Ku and Ka bands and will extend coverage to South East Asia and Africa. The Amos-3 satellite is scheduled for launch in 2007 and will be placed at 4 degrees West, eventually replacing Amos-1.

JAPAN

RUSSIAN ROCKET TO LAUNCH JCSAT-11

A Russian Proton-M rocket will put into orbit the Japanese telecom satellite JCSAT-11 from the Baikonur spaceport on September 6. The satellite belongs to JSAT Corporation.

BSAT-3A SUCCESSFULLY LAUNCHED BY ARIANESPACE

The BSAT-3a broadcasting satellite designed and built by Lockheed Martin for the Broadcasting Satellite System Corporation (B-SAT) of Japan, handling direct television links for the entire Japanese archipelago. It has been launched successfully on August 14 aboard an Ariane 5-ECA rocket. BSAT-3a will be located at orbital location 110 degrees East. BSAT-3a contains 12 130-W Ku-band channels (eight operating at one time) and is the sixth DBS in the 12GHz BSS band procured by B-SAT.

NEW ZEALAND

TARGETCAST TO PROVIDE IPTV SOLUTION

Local company TargetCast is negotiating to provide a local TV network with a user-friendly

broadband and IPTV platform technology solution, that is capable of providing TIVO-like functionality. Providing an optional full screen mode and pre-emptive downloadable client and content management capabilities, access will be provided to both current and archived shows. The system is unique in its ability to compare users, identify potential common interests, and present content either intuitively or through community recommendations that can then be accepted, denied or given a moderated rating with regards to future delivery.

SINGAPORE

SINGAPORE TELECOM LAUNCHES IPTV SERVICES

Singapore Telecommunications (SingTel) has started offering its IPTV services called 'mio TV' tomorrow, with an initial 33 TV channels. Subscribers can choose any channel at a minimum monthly subscription fee of 15 Singapore dollars, excluding taxes. Channel prices range from 3.21 dollars per month for the Zee Music channel, up to 12.84 dollars per month for high-definition TV channels.

SOUTH KOREA

KOREA TELECOM LAUNCHES HDTV ON IPTV

Korea Telecom has launched its new IPTV service using HDTV set-top boxes, which provides over 1,200 on-demand videos and 27 interactive services. Also available are an electronic program guide, user-created content, digital photos and personalized stock, and weather and sports information. The IPTV service uses HDTV set-top boxes based on STMicroelectronics' STI710x family of highly integrated HDTV decoder chips. During the final trial, KT chose the STI710x-based set-top boxes from Humax (model name: TS-110) and Samsung (SMT-H6170), both of which are KT's consortium partners for the country's IPTV service. Additionally, LG-Nortel, another consortium partner for the service, is also developing its set-top boxes based on the STI710x.

UNITED ARAB EMIRATES

ASTRIUM AND THALES ALENIA WIN YAHSAT CONTRACT

Al Yah Satellite Communications Company (Yahsat), a wholly owned subsidiary of the Mubadala Development Company, had awarded a contract to a joint team of Astrium and Thales Alenia Space to build their US\$ 1.66 billion dual satellite communications system ready for a launch in the second half of 2010. Yahsat will provide broadcasting services, internet trunking via satellite, corporate data networks and backhauling services to telecom operators. The Yahsat system will comprise of two operational satellites -YahSat 1A and YahSat 1B. Yahsat 1A is to be stationed at the orbital position of 52.5° East.

AFRICA

AFRICA

RASCOM TO LAUNCH AFRICA'S FIRST SATELLITE

The West Africa Development Bank (BOAD) has partnered with Africa's Regional Organisation of Satellite Communication (RASCOM), to launch Africa's first satellite in orbit to give coverage to the whole continent. So far, all satellite communication in orbit is provided by Western companies. A satellite giving coverage to the African continent will not only improve telecommunication services in the continent but will also make sure that digital satellite broadcasting services are accessible to the majority of Africans. The project is expected to cost about 1.6 billion FCFA. The RASCOM-1 satellite will be launched on December 1 from French Guiana. It will have both Ku-band and C-band transponders and will be positioned at 2.85 degrees East.

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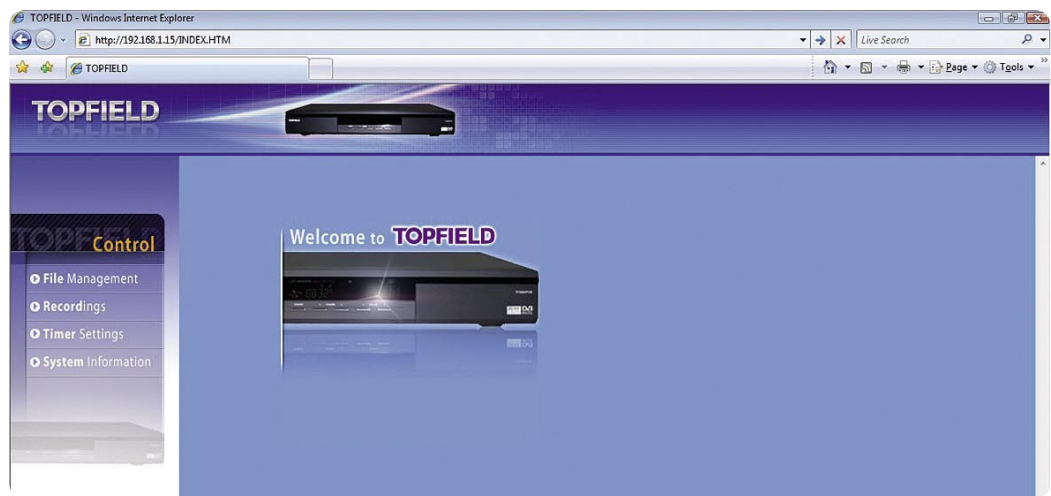
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The Network Connection – a jack with multiple uses

Thomas Haring

More and more manufacturers are now fitting their PVR receivers with not only the standard USB 2.0 jack but also a network interface, whether it's wired or wireless. The reasons for this are actually quite obvious: if you've ever tried to link components via USB 2.0 that are more than 10 – 15 meters apart, you would already know that you are approaching the limits of its capabilities.

Manufacturers are running into customers that have their receiver's set up in the living room but have their PC's installed somewhere else such as in an office on the second floor. Incorporating network technology actually saves manufacturers quite a bit of extra



FTP access on a Topfield receiver via an Internet connection

work. While USB connections require the use of additional drivers and programs in order to transfer recordings, this necessity all but disappears with a network connection thanks to standardized protocols such as FTP; every usable tool can be

put into service without any problems.

And let's not forget that a network connection also gives you access to the great wide outside world; that is, if your Internet connection and router are prop-

erly configured, you can access your hard drive from anywhere in the world.

This can be very practical if you happen to be away on business sitting in a hotel room and want to confirm that your programmed timer recordings all happened as planned. But it also offers totally new possibilities such as the legal exchange of video recordings. This would allow, for example, relatives in the USA to directly access native-language recorded programs from a receiver's hard drive and easily transfer them via the Internet. All you need is someone on the other end to set up and take care of a receiver and arrange for an Internet connection.

While many manufacturers slowly but surely are recognizing the advantages of a network connection, others are quite a few steps ahead. In addition to FTP, the Internet works primarily with the HTTP protocol; why not give the receiver its own web server?

The possibilities that would then be opened would be fascinating: imagine you are working with your PC and it suddenly dawns on you that you forgot to set the recording of your favorite TV program. Normally you would have to get up and walk to the living room and start the recording on your receiver manually. But if you happen to own a receiver with a network inter-



Direct Internet reception of a satellite receiver via the web interface of the receiver



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RECEIVERS THAT STRONGLY DIFFERS THESE DEVICES FROM OTHER PRODUCTS.

The same way you can configure your own personal computer you can adjust your Linux **AB IPBox** satellite receiver. Thanks to the **Multiboot** function just choose one of the operating system - image (for example Enigma) and utilize its advantages or simply select the other one. It is easy to set up the default image.



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A video stream, for example, from a satellite receiver is received via the Internet using a Slingbox

face that offers the required functions, you could then stay in your seat and access your receiver's control center from your web browser.

Depending on the make and

model of the unit, nearly every function is made available to you. The basic functions are the same in almost every model: you can start and stop recordings, timers can be set

and existing recordings can be deleted, moved, renamed or copied to the PC.

Other manufacturers take it a step further and offer the full control of your unit through the use of a virtual remote control that is blended in to the screen. In other words, you can control and activate all of the functions of your box as if you were standing directly in front of it.

Even here you have to think ahead. You might be thinking to yourself that these features might not really be necessary since walking from your office to the living room occasionally might not be a bad thing. But to be able to control your receiver from your hotel room while on vacation, that's where these features would really come in handy.

With such a receiver, you would be able to control and utilize it from any point in the world. One of the larger set-top-box manufacturers was especially brilliant and included alarm and security functions in

the unit. Before you go on vacation, connect your receiver to a small video camera and position it, for example, in the vicinity of your front door. While you are away, you can at any time check to see if everything at home is still as it should be and that no one decided to break in while you were gone.

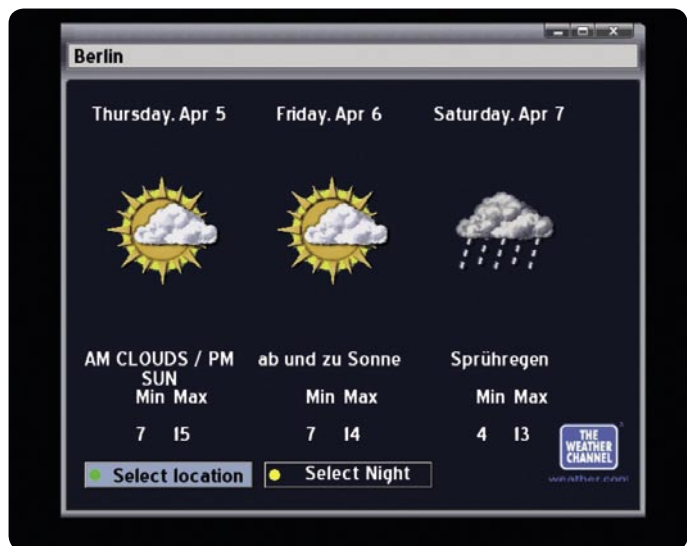
The more control possibilities your receiver has, the more important security tends to become. No doubt you wouldn't be all too happy if someone decided to access your digital receiver without your permission and inflicted damage such as deleting your recordings or your channel/favorites lists.

For this reason, most manufacturers did not forget about your security and offer password access to your FTP and HTTP connections. Of course, this feature can be deactivated if you're dealing with nothing more than your own internal network at home.

The third interesting possibility with a network connection


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The receiver displays weather data acquired via the Internet

has to do with streaming services. This all belongs under the heading IPTV, something you may have been hearing more and more about over the last several years.

Besides Internet and telephone services, every Internet provider with a reasonable reputation also offers IPTV. This

is becoming more and more popular thanks to the higher bandwidth Internet connections that are now readily available. Unfortunately, these extra services are still somewhat expensive and watching TV on your PC isn't really all that much fun.

But think about the worldwide applications of this technology

and imagine this situation: you are on vacation somewhere in the Caribbean but still don't want to miss the eight o'clock news from home. Unless you're from the USA, the chances of finding this on some channel on the hotel TV are slim to none.

So why not grab your laptop, establish an Internet connection and watch that news program live via the Internet? All you need to make this happen is a set-top-box with a network interface and audio/video streaming capabilities plus a hotel with a high-speed Internet connection. In conjunction with the FTP and HTTP services of your box, you can not only control your receiver from afar, but also view audio and video from your receiver.

If these possibilities sound intriguing to you but you happen to have a box without a network interface, have no fear, there are other ways for you to construct your own IPTV system.

Elsewhere in this issue of TELE-satellite we provided a

report on the Slingbox, a device that can take any signal source and distribute it as an IPTV stream in your local network or over the Internet. Thanks to the included IR transmitter, all of your other electronic devices such as your TV, VCR, DVD player, satellite receiver, etc., can be activated and controlled from a distance.

The fourth and (for hobbyists) most interesting application would be the accessing of data through the set-top-box via the Internet. While most of the larger manufacturers use this practical feature for software and channel list updates, there are some that have taken this a step further to make their receiver just a bit more interesting. The fun begins with some small gadgets that can, for example, display current weather data or inform you of newly arrived e-mails. It can go as far as providing access to the Internet so that you can download a variety of useful programs such as MP3 players, picture viewers, etc., directly to your set top box.

TechnoTrend S2-3650CI

Handy HDTV-CI Receiver for Your PC



The German company

TechnoTrend has for some time now been working on HDTV solutions for your PC or laptop. Since many PC's have problems with available card slots, TechnoTrend decided to design an external box that is easily connected to your PC or laptop through the USB 2.0 interface.

Incorporating a USB 2.0 interface was not an arbitrary choice; this type of connection has established itself as a standard that can be found on most modern PCs and laptops today. There's also a nice little side-effect: thanks to the computing power that comes with a PC, TechnoTrend can offer its little HDTV receiver box for an unbeatable price.

On the front side of the S2-3650CI box that is only 15x10x3 cm in size can be found a CI module slot for reception of any PayTV form. In addition to

checking out Irdeco, Alphacrypt, Conax and Viaccess modules, we also confirmed that a Cryptoworks module was just as easily recognized. PayTV reception is therefore not a problem at all.

On the back can be found an IF input, a USB connection as well as a connection for the external 12V power supply.

The included remote control sits nicely in your hand although the buttons themselves are rather small; unless you have smaller fingers, pressing two buttons at the same time is a

definite possibility. The included 48-page user manual provides detailed instructions on how to use their own "TechnoTrend Media Center" software.

Thanks to the USB connection, installation is a piece of cake. We also appreciated the overall mechanical quality of the box; no plastic parts were used. This left us with a very positive impression.

Everyday Use

The installation of the S2-3650CI box and its accompanying software is plug&play compatible. After connecting the box to a PC, the hardware is automatically recognized by Windows at which point it asks for the driver CD.

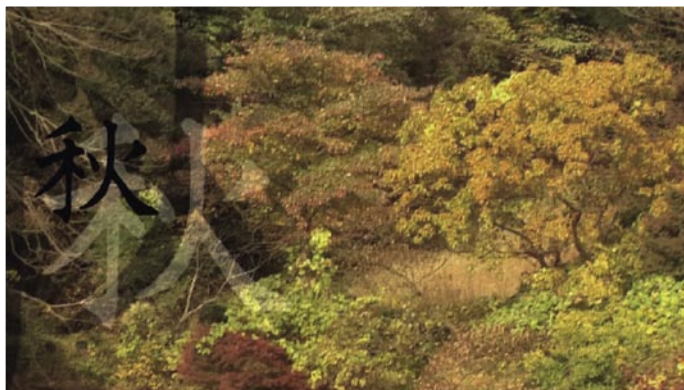
Once installed, the only remaining step is to set up the "TechnoTrend Media Center". It isn't even necessary to restart the PC; the box can be used immediately. We also had no trouble setting up this box on a 32-bit Windows Vista machine.

Some extra points were awarded here.

TechnoTrend recommends using an Intel Pentium 733 MHz PC for normal DVB-S. For DVB-S2 it should be at least a 3.4 GHz Pentium 4 or AMD 3500+/Dualcore along with a powerful graphics card such as the ATI X1800/X1900 or Nvidia 6600GT/7600GT. The PC itself must also be operating under Windows XP or Vista.

The included software is divided into two sections: the TechnoTrend Media Center software for TV reception and a tool for accessing data services such as Internet via satellite. The Media Center comes preprogrammed with a nearly complete channel list from the popular European ASTRA 19.2° east orbital position. The entire channel list is sorted by provider making it easy to find the channel you want.

If you want to receive other satellite besides ASTRA, this can be handled via the Channel Search menu. More than 90



HDTV via ASTRA 19.2° east as an example |



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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
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- Automatic fast and trickle charge modes
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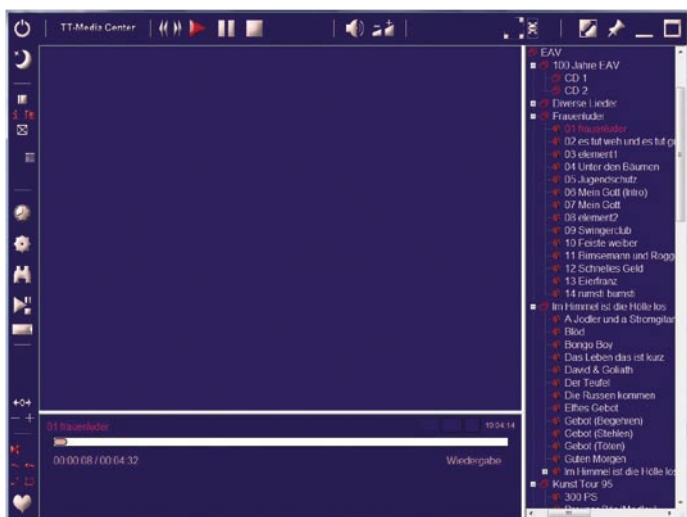
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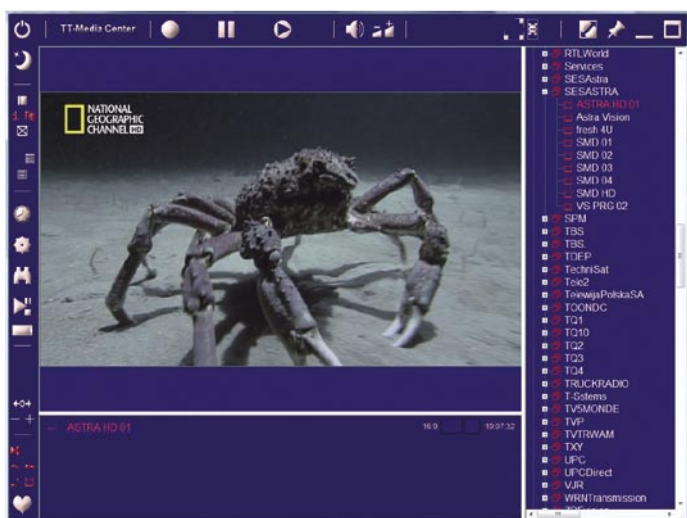
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The Media Center as a Jukebox – MP3 playback!



HDTV via ASTRA 19.2° east in a window!



EPG!



European, Asian and American satellites are preprogrammed with up-to-date data; this helps to make channel scanning fun again. It is also just as easy to expand or edit the transponder data.

Even every possible local oscillator frequency (LOF) is freely selectable.

In addition to a manual transponder scan, an entire orbital position can be scanned automatically. An 80-transponder satellite required about nine minutes for this task to be completed.

DiSEqC 1.0 is available for the control of up to four LNBs. Unfortunately, DiSEqC 1.1 for the control of up to 16 LNBs is currently not supported. At this point it should be mentioned that an unlimited number of channels can be stored and thanks to its easy-to-understand presentation and the Favorites lists, you should never lose track of what you have.

The "main panel" of the Media Center is divided into three sections. Thanks to the preprogrammed channel list, the user can jump right into TV viewing; the first channel doesn't need any more than two seconds to appear on the screen.

The channel switching time is actually quite good considering this is all happening through a PC. Switching between channels on the same transponder is taken care of in just about one second; between two different transponders, the software needs about two seconds. EPG data can also be displayed as long as this information is made available by the provider. Information on current and upcoming programs is displayed in a window near the bottom of the screen.

The EPG in the S2-3650CI box might make some owners of standard set to boxes green with envy. The software is able to read in all of the EPG data only a few seconds after switching to a new channel. The user can then take this data, including expanded EPG data, and arrange it in a more easy-to-read fashion with just the push of a button.

A Channel Magazine function

is also offered. In this mode the software displays the EPG data of all previously defined channels next to each other in an organized way so that, for example, with a single glance you can see what your favorite channels have in store for you in the evening.

If you're sitting comfortably watching TV and the telephone rings or someone comes knocking at your door, the TimeShift function lets you pause the program you are watching and pick it up again at a later time.

With the help of the Timer function, numerous programs can be marked for recording; weekly and daily timers are supported. Naturally, for recordings to take place the PC must be turned on; at the end of a recording, the Media Center will see to it that the PC is turned off. Of course a currently running program can be recorded at any time on the PC's hard drive.

We were quite pleased with the integrated teletext function. In only a few seconds it managed to download all of the available pages making it possible to access any of those pages or sub-pages in those same few seconds. These pages can also be saved in HTML format on your PC.

The TechnoTrend manufactured tuner is quite sensitive and has no problems handling small bandwidth SCPC signals. Our 1.6 Ms/sec test transponder was no obstacle for the S2-3650CI box; high symbolrates also presented no difficulties. In addition to QPSK modulation (necessary for DVB), the box and software also supports DVB-S2. Reception of the constantly increasing number of HDTV programs in MPEG4 using the H264 standard is no longer a problem.

After checking out all of the basic functions, we naturally wanted to test its HDTV capabilities. It didn't take long at all to find the FTA channels on ASTRA at 19.2° east and in just about two seconds we were enjoying the first channel in top-notch picture quality.

Only in a direct comparison could we see what the difference in HDTV quality meant. While

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Dutch	Nederlands	www.TELE-satellite.com/TELE-satellite-0711/ned/technotrend.pdf
Polish	Polski	www.TELE-satellite.com/TELE-satellite-0711/pol/technotrend.pdf
Russian	Русский	www.TELE-satellite.com/TELE-satellite-0711/rus/technotrend.pdf
Turkish	Türkçe	www.TELE-satellite.com/TELE-satellite-0711/tur/technotrend.pdf

SDTV channels hardly put any kind of load on the CPU of our Intel Core2 1.86 GHz machine, HDTV reception required much more CPU power. Our machine was able to handle this without any problems; there were also no negative effects to be seen on any of the other software programs that were running. It is therefore possible to watch

TV and work on your PC at the same time. Video and audio flowed smoothly with perfect synchronization between the two at all times.

If you happen to have an AC3 or Dolby Digital stereo system linked with your PC, you can naturally also take advantage of superior audio quality in addition to a super-sharp picture.

tion to a super-sharp picture.

is possible to program all of the buttons on the included remote control to whatever you need if the default settings happen to not be good enough. In addition to TechoTrend's Media Center software, a variety of other programs are also made available that can be used with this box.

Contrary to some DVB-S2 set top boxes, the TechnoTrend Media Center has no trouble handling BBC's Sky Digital transponders on ASTRA 2D at 28.2° east.

In addition to TV reception, the Media Center can also play back videos from the PC in all the different formats. Thanks to the integrated picture-in-picture function, the live TV picture can be displayed at the same time in a small window or vice-versa, the live picture in a large window and the video playback in a small window.

And don't worry; if you're one of those that simply can't do without ProgDVB, you can relax, this box also works nicely with this software. In the latest version of ProgDVB, DVB-S2 support was also implemented; the Media Center as tuning aid in the background is now a thing of the past.

Annoying commercials can be skipped over. Not only that, the software can also act as a jukebox and play back any music data format. This is all nicely integrated into the channel list.

A special note for DXer's and hobbyists: the TechnoTrend S2-3650CI box can, like many other PC DVB-S solutions, also handle MPEG 4:2:2 assuming of course that the proper Codec is installed.

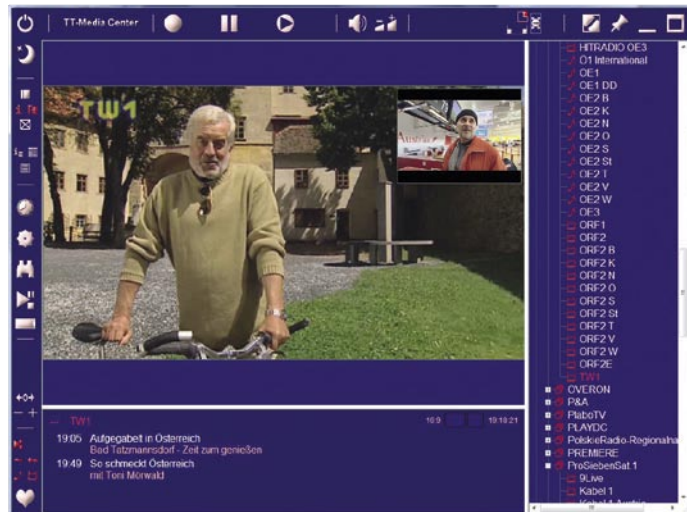
Through its own menu page in the Media Center software it



Teletext |



TV Guide |



Picture in Picture |

Expert conclusion

+

The TechnoTrend S2-3650CI is a true alternative to an HDTV set top box. You get quite a bit of power for not too much money. The included software functioned perfectly.



Thomas Haring
 TELE-satellite
 Test Center
 Austria

-

An expansion of the DiSEqC protocol to 1.1 would be nice to have.

TECHNIC DATA

Distributor	DVB-Shop, Deutschland
Tel.	+49-34954/31960
Fax	+49-34954/49233
Website	www.dvbshop.net
E-Mail	webmaster@dvbshop.net
Model	TechnoTrend S2-3650CI
Function	USB box for reception of DVB and DVB-S2 in SDTV/HDTV
Channel Memory	unlimited
Satellites	93
Symbolrate	4-45 Ms/sec.
SCPC Compatible	yes (starting at 1.6 Ms/sec. in our test)
USALS	no
DiSEqC	1.0
EPG	yes
C/Ku-Band Compatible:	yes

Jiuzhou DVS-2018BS Professional Receiver



If you ever made holes in hard concrete with a no-name drill and then switched to a professional drill, you know the difference. The word "professional" is very often a synonym for high quality, high endurance and solidity. Can you imagine a hairdresser using a cheap dryer bought in a supermarket instead of a professional hair dryer?

In satellite TV, we also have professional receivers. One of such units was sent to us from its Chinese manufacturer – Jiuzhou Tech. The package was quite big and solid. That's the way you expect a professional or test & measurement equipment to be packed. The receiver is contained in a 1U case that can be mounted in a standard 19" equipment rack. The elegance of the front panel is partly spoiled by the lack of flap covering the slot for 2 CI modules. But the professional equipment is not designed to beautify your living room. The LCD display is a 2x20 character

receiver, PC and a TV-set. The power cord is detachable and has 3 wires. The grounding wire provides shielding as well as equals the potential between different devices contained in metal housings. The same effect can be achieved with the earthing connector located at the left. If you ever experienced a small electric shock when connecting cables to your set-top-box, this is because the commercial receivers do not use the third wire in a power cord to ground their metal case.

Before we describe the rest of the connectors, we should explain what the functions of

analog TV modulator tuned to a desired channel and then are distributed over entire network. In this way, the conversion is made from satellite digital TV to cable analog TV. Such signal can be received directly by a classical TV-set connected to the cable network. The operator must install in the headend as many professional receivers as many TV channels he wants to introduce into the network.

In digital cable network, we do not use the analog video and audio as the input to the modulator. We need the data stream transmitted by a transponder. Normal commercial receiver can not output such stream. Only professional receiver offers such possibility. The stream is available at the ASI output. ASI stands for Asynchronous Serial

cable operator may choose to combine the channels in different multiplexes than the originals on satellites. So, this is not always that simple that we have a one-to-one equivalent of satellite transponders in a cable network. Anyway, whatever the operator chooses to do, he always needs one professional receiver per one transponder. Note the difference: this time not one for a channel but one for a transponder.

Back to the rear panel, one ASI output is used to output the decrypted stream (provided that we inserted a proper



type with backlight. Next to it, the status LED shines either in red or in green depending on the transponder lock state. There are only 6 control buttons: Menu, OK and the navigational arrows. No Standby button. No remote control. This receiver is not supposed to be operated remotely.

The front panel does not look very different from the commercial receivers, but you cannot say the same about the rear panel. Only some of the connectors are the same as in a family receiver: LNB IN, LOOP OUT, RS 232, RCA stereo audio plus video and the power switch. We can easily guess that they are dedicated to connect: an LNB, a second

a professional receiver are for those readers who never met such device before. Professional receiver should receive a digital satellite TV signal from a selected transponder and output either the analog video and audio of a chosen TV channel or the whole digital bit stream containing all data transmitted by a transponder. The professional receivers are used in cable TV headends: analog or digital ones.

If we have a classical analog cable network, we use the analog video output (BNC connector with CVBS signal) and the balanced audio output on XRL connectors. Both signals are routed to the

Interface and together with SPI (Synchronous Parallel Interface) are the interfaces used in digital TV headends for transferring data streams. Such stream contains video, audio and programming and descriptive data concerning all channels from a given transponder. We can feed it into the input of a digital cable TV modulator (QAM modulator) and "mirror" the whole transponder in the cable network. Of course, the viewers must have cable set-top-boxes in their houses. These are equivalents of satellite receivers but for the digital cable TV.

Having the transport streams from a few transponders, the

CAM with a valid smartcard on the front panel) and the other - the original, not decrypted stream. The latter can be sent to another professional receiver for decryption (via ASI input) or to other headend equipment..

Installation

The on-screen graphics of DVS-2018BS consists of just a welcome screen and a very basic infobar (channel number, channel name, PCR PID, video PID and audio PID). All settings are done with the help of the 2-row front panel display. Because of that, the menu structure can not be complicated. The Main Menu consists of 4 items:



QUALITY MADE IN GERMANY

integrated
DigiButler  Service



GOOD (2,2)
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Best rating 2,2

TechniSat HD-Vision

The first LCD-TV with 3 x DigitalDirect capability



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. An integrated CI slot can be used for additional CAM based encryption systems. 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 Stiftung-Warentest with a rating of 2.2.

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Italian	Italiano	www.TELE-satellite.com/TELE-satellite-0711/ita/jiuzhou.pdf
Hungarian	Magyar	www.TELE-satellite.com/TELE-satellite-0711/mag/jiuzhou.pdf
Mandarin	中文	www.TELE-satellite.com/TELE-satellite-0711/man/jiuzhou.pdf
Dutch	Nederlands	www.TELE-satellite.com/TELE-satellite-0711/ned/jiuzhou.pdf
Polish	Polski	www.TELE-satellite.com/TELE-satellite-0711/pol/jiuzhou.pdf
Russian	Русский	www.TELE-satellite.com/TELE-satellite-0711/rus/jiuzhou.pdf
Turkish	Türkçe	www.TELE-satellite.com/TELE-satellite-0711/tur/jiuzhou.pdf

- User Installation
- Channel Search
- Channel Manager
- CI

After entering the User Instal-

lation submenu, you can set all relevant parameters of the transponder and the LNB you use. Everything is very basic. For example, you do not select

the second digit. When all digits are set, another OK finishes the process. In this way you can do all settings without 0-9 buttons.

Also in this submenu, we may set the digital data parameters like: output packet length (in bytes) and input/output ASI ports. The digital data stream can be output in either 188 or 204 bytes long packets. 188 packets are without the Reed Solomon error correction code. If we select this format, the following device (the QAM modulator) must be set to add these 16 bytes.

Having done that, we may proceed to the second submenu: Channel Search. Here, we can search the just entered transponder in the Search TP submenu item. If the transponder transmits the NIT table listing tuning parameters of other transponder, we may get different results choosing one of the 2 other possibilities: Search SAT or Search Network. Search SAT results in searching all transponders provided in the NIT table of the first one we entered manually.

For example after entering the very first transponder of Hotbird 13° East (10.719 V, 27500) and then starting the Search SAT, we got 419 TV channels and 154 radio channels (both scrambled and FTA). Searching the TPS transponder on 10.758V, 27500 resulted with 403 TV and 153 radio channels. Search Network did not work with the above mentioned transponders but it worked with another one – 10.892 H, 27500. This is the home transponder of the Polish Cyfra+ platform. Network search ended for this transponder with 631 TV channels and 197 radio channels. Satellite search – with 655 TV and 202 radio channels. Evidently, which channels and how many of them are found depends on the data transmitted by the initial transponder in the NIT table.

The channel search was pretty fast. DVS-2018BS was able to find 655 channels on Hotbird within 2.5 minute. However, an intriguing question is: what the satellite and network search are needed for in a professional receiver? The answer is this: the same channel can be transmitted via more than one transponder. In such situ-

ation it may be useful to enter the tuning parameters of transponders containing that channel of interest. If something happens to the basic transponder, we may quickly switch to the other transponder and ensure the continuity of service.

The last menu item in the Channel Search menu is the OTA download with receiver firmware updates. The upgrade can also be done with a PC via serial interface provided on the rear panel.

In the Channel Manager submenu, you choose which channels to decrypt with which CAM module. Another action we may do when in Channel Manager submenu, is switching between TV and radio. When we leave it, it will stay either in TV or radio mode.

The receiver correctly outputs teletext in the VBI form. It was no problem to see it with a TV-set equipped with a teletext decoder!

Everyday Use

To check the receiver performance, we tuned it to a number of transponders and channels. Among them, we tried transponders with low and high symbol rates. For example, we managed to lock to the Pgm1 channel on a SCPC transponder (11.135V, SR=1425, 3/4) on Hellas Sat 2 (39°E) as well as to The Voice channel (12.524H, SR=30000, 7/8) on the same satellite. Pgm1 was actually beyond the specified range (2~45 Msps) but DVS-2018BS locked to it immediately. The quality of the tuner left nothing to be desired. Adding extra attenuation in front of the receiver (to simulate very long cable) did not influenced its quality readings.

Speaking of which, many important reception parameters depend more on the used LNB rather than a receiver. For example frequency drift of the local oscillator of LNB is usually much greater than the receiver frequency drift. The same holds true for the C/N ratio.

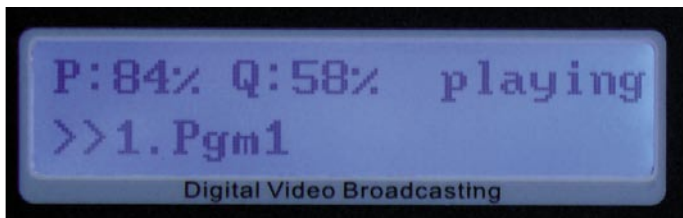
The professional receiver must be able to resist well the intermodulation since we provide to its input a very wide spectrum of frequencies with strong and weak signals, and yet it must output video and audio of exceptionally high quality and stable level. We can nothing but



Channel search |



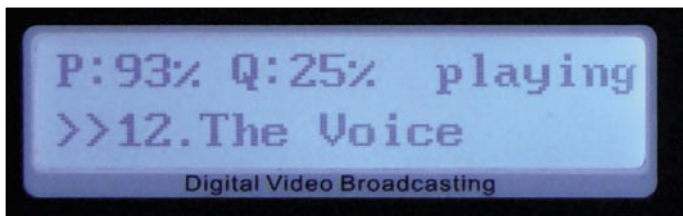
Welcome screen |



Playing Pgm1 |



Infobar |



Playing The Voice |

polarization of the signal but the LNB Power (OFF, 14 V for vertical or 18 V for horizontal). You also have to set manually the 22 kHz signal presence or absence. When entering frequency, you can not do that normally - there is no remote control unit with 0-9

buttons.

It works in the following way. When you press the OK button, the first digit of the frequency value is highlighted. With up/down arrows, you can change it to the proper value and then press a right arrow to move the highlight to



Quad



Monoblock



Octo



Twin



AP8-XTS2E



AP8-ST2E

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• Low Power Consumption



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praise Jiuzhou for these things.

But that's not all. We rarely think about the stability of receiver software. It is an extremely important parameter for the equipment we want to install in a headend.

One very simple but dramatically effective test for software stability is leaving the receiver for a longer period of time (e.g. for a whole night) with a very weak signal - just slightly over the reception threshold. Tremendous amount of bit errors is present in the incoming signal then. Not every receiver can survive this test. We checked that DVS-2018BS could handle

that test without failure!

Once we turned on the receiver, there was not much to do with it. Of course, we could change channels with up/down arrows (less than 2 seconds needed) or adjust volume with left/right arrows, but of course there was no EPG, Favorite lists and all that stuff we usually test in commercial boxes. The professional receiver is supposed to stay on the transponder we tuned it in with exactly the same settings. Did you hear a story about a shopping mall owner who used a kind of commercial satellite receiver as a source of music for his loudspeaker system? Everything was working fine

until the first power outage. On power up, the receiver started to play very loudly and of course nobody knew where the key to the equipment room was. You may imagine that a professional receiver is not supposed to enter

standby mode or change its settings after power cycling.

It should recover as soon as possible with exactly the same settings as before. And that's exactly what DVS-2018BS does.

Experts Conclusion

+

This is very stable, solid receiver. It is well equipped by Jiuzhou with external cables (ASI BNC-BNC) and adapters (XRL to BNC). Some of its features are even not marketed by the manufacturer (like teletext output or the SCPC reception below 1.5 Msps). It quickly restores to its initial settings after power failure.



Peter Miller
TELE-satellite
Test Center
Poland

-

Since this a very basic unit, some users may need more advanced features depending on their headends, like 4:2:2 handling, network control or more audio formats.

TECHNIC DATA

Manufacturer	SICHUAN JIUZHOU ELECTRIC GROUP CO., LTD, 17th Floor, China Youse Building, 6013 Shennan Avenue Futian District 518040, ShenZhen, Guangdong, CHINA
Webpage	www.jiuzhou.com.cn
Contact	overseas@jiuzhou.com.cn
Tel	+86-816-2468774
Fax	+86-816-2468903
Model	DVS-2018BS
Function	Professional Digital Satellite Receiver with 2 CI slots
Input	DVB-S, MPEG-2, ISO/IEC 13818-1
Input frequency range	950MHz to 2150MHz (DVB-S)
Input signal level	-65 to -25dBm
Symbol rate	2.0 to 45.0 MS/s
SCPC compatible	yes, confirmed from 1.425 Msps
C/Ku compatible	yes, any LOF can be entered manually
Video	ISO/IEC 13818-2, MPEG-2 MP@ML PAL/NTSC (4:3), max resolution 720x576, 1.0Vp-p, 75 ohm
Audio	ISO/IEC 13818-3, MPEG-1 Layer I&II, output: single track, left, right and stereo, balanced and non-balanced
Power supply	87-265 V AC, 50/60 Hz, 35 W max.
Dimensions	480 x 320 x 45 mm
Hardware	Main chip: STi5518BQC, 81MIPS, FLASH: 16Mb, AV SDRAM: 32Mb

TechniSat DigitSim S2

Compact Satellite Powerhouse with Two Systems for SIM Cards



Satellite receivers are currently available in every possible price class but really good units are getting harder to find. One manufacturer that has always stood for quality, ease-of-use and the latest hardware technology, the company TechniSat from Germany, just recently sent us their latest model from their Digit receiver line, the DigitSim S2.

This quality receiver is solidly built and is so small that it can be taken almost anywhere. In combination with an equally small satellite antenna such as the Multytenne for reception of up to four satellites and also from TechniSat, it would make the perfect companion on any camping trip or whenever you go to your vacation home.

At just 16 x 10.5 x 3.5 cm, it has only two LEDs on the front panel that show its current operational status.

And because of its small size, there obviously wasn't all that much room in the back for too many connectors so TechniSat concentrated on what was absolutely necessary, namely a Scart jack, an IF input as well as a connection for an external 12V power supply.

But what about the SIM card? Again, because of its size, the DigitSim S2 is far too small for a standard CI module or PayTV

card. Because of this, TechniSat opted to use the newest SIM card technology, something that has been used for some time in mobile telephones.

Many PayTV providers already offer their cards in the standard larger format as well as in the new smaller SIM card format such as in the Czech Republic, Slovakia and also with TechniSat's own radio package. Other providers are also making the smaller SIM format available; this trend will only continue.

The built-in card reader in the DigitSim receiver series supports the Conax encryption system (DigitSim S1) and in the

DigitSim S2 box the Cryptoworks system.

The included remote control, as expected from TechniSat, sits comfortably in your hand with all the buttons clearly marked. It's a good idea to always have fresh batteries on hand since the receiver can't really be used at all without the remote because of the lack of control buttons on the box itself.

The included user manual comes with detailed information, numerous pictures and clearly explains all of the functions of this box so that even a beginner will have no trouble understanding what is going on.

As an extra bonus, TechniSat includes a SmartCard that provides a 120-day free trial of the TechniSat radio package. For a small monthly charge, the same

card can be used to access the MTV Unlimited package for all viewers in Europe.

Everyday Use

What could possibly be more annoying than a technical piece of equipment that is complicated to use? It certainly wouldn't be much fun to buy a new receiver and then spend hours reading through the user manual.

This is exactly what TechniSat for years has been trying to eliminate and even the DigitSim S2 is no exception. A graphically pleasing and easy-to-follow Setup Assistant guides the user in simple steps through the initial installation after which it asks what the desired OSD language should be. The user can choose between German, English, French, Spanish, Italian, Turkish, Swedish, Portuguese,



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Russian, Greek, Polish, Czech, Hungarian and Dutch; you should have no trouble finding one to match your needs.

After selecting the audio language, you are asked to enter your location and then go through some basic settings such as choosing daylight savings time or standard time.

In order for the receiver to automatically switch between the two, it must know in what country and in what time zone it will be used. The country selection determines what happens with the automatic sorting and updating of the channel list and helps to place regional, country-specific channels at the top of the list.

The antenna configuration menu was set up for the popular European satellite pair ASTRA at 19.2° east and HOTBIRD at 13° east. If there are other satellites that interest you or if DiSEqC parameters need to be used, this can directly be handled with the Installation Assistant.

In addition to standard Ku-band universal LNBFs, TechniSat's own Multytenne system for reception of up to four satellites as well as the Disicon single-cable solution can be used. Even LNBFs with unusual LOFs are no problem at all;

these can be set up manually. If you happen to have a DiSEqC motor, you are also in luck; both the DiSEqC 1.2 and 1.3 (USALS) protocols are supported.

The search for a software

update via satellite marks the end of the initial installation. The DigitSim S2 then asks the user if a channel scan for all channels or encrypted-only channels should be started.

If you really want to have it easy, simply select ISIPRO, TechniSat's automatic channel update system. In this mode the receiver loads a prepared channel list via satellite that from that point on will be automatically kept up to date.

And if a specific country was selected during set up, this channel list will be arranged such that, for example, an Austrian will always find ORF or

someone from Switzerland will always find SF at the top of the list.

The receiver is now ready to use. If any special settings need to be addressed, such as the audio/video output signal or complicated DiSEqC parameters, this can be handled later through the six-category main menu.

The DigitSim S2 supports CVBS and RGB although YUV and S-Video are not available. But then, who would install a projection TV system or a flat

satellite was completed in a little over eight minutes. Obviously, no speed records were broken here but it is still in the acceptable range. On the positive side, the ISIPRO system does not require the user to first run a manual scan and already provides an up-to-date channel list that contains all of the most important channels. For more experienced users, of course there's also a PID scan.

If you decide against the ISIPRO system despite all of its advantages, you can fall



screen TV in their RV? The receiver can handle both PAL and NTSC signals; reception of US feeds is therefore not a problem.

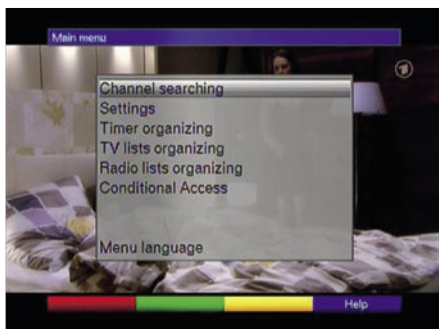
The preprogrammed satellite list includes unfortunately only 20 European satellites. 13 additional satellites can be added manually.

TechniSat provided this little receiver with enough space for only 4000 channels. If the DigitSim S2 is used with a DiSEqC motor, then sooner or later you will have a problem with available channel memory.

A scan of an 80-transponder

back on a variety of sorting and editing possibilities. Individual channels can be moved or deleted while popular channels can be moved into Favorites lists. The editing functions are separated for the TV and radio channel lists helping to promote organization and clarity.

Another highlight of this receiver is the automatic downloading of EPG data at a specific time via satellite. In this way, when you actually want to look at this data, you won't have to wait any length of time; it will immediately be available. For the user this has the distinct advantage that all of the EPG



Main Menu |



Satellite List |



SCPC Reception via EUTELSAT 36° east |

data is downloaded regardless of what channel happens to be selected at the time and therefore can provide, for example, a list of all primetime programming with the push of a single button on the remote control.

Even in normal TV mode this little TechniSat receiver presents itself very well. After pressing the OK button a nicely organized channel list is displayed that in addition to a preview window also shows the current EPG data for that channel. The list can be sorted by



favorites list or by provider.

The channel switching time between two channels on different transponders is outstanding at less than one second. After each channel change an Info bar appears with EPG information and additional channel data (teletext, AC3, audio, subtitles, etc.).

A double-push of the OK button brings up expanded EPG information as long as this data is made available by the provider.

The SFI button on the remote control starts the electronic program guide that simulta-

neously displays either the current or upcoming information for up to 12 channels or, if desired, the entire programming data for a single channel. You can also set up timer entries directly from the EPG so that you'll never again miss your favorite programs.

The TechniSat-built tuner showed its excellent sensitivity in our tests and had no trouble handling weaker signals with C/N values between 4 and 5 dB.

The receiver showed its best side with SCPC reception: our

test transponder on EUTELSAT SEASAT at 36° east with a symbol rate of 1.628 Ms/sec. was handled effortlessly even though the manufacturer's specifications start at 2 Ms/sec.

The perfect overall picture of the DigitSim S2 is enhanced even further by the speedy teletext decoder and the easy-to-use parental control feature.

Expert Conclusion



Thomas Haring
TELE-satellite
Test Center
Austria

+

The operation of the DigitSim S2 from TechniSat is clearly and logically arranged making it easy to use even for newcomers. The family-friendly living room receiver proves itself with its well thought out features and reliable functions. Its small size makes it perfect for use in RVs or for your weekend cabin in the woods. It slips easily into your pocket so you can take it anywhere. We especially liked its excellent sensitivity and its fast channel switching speed.

Its available channel memory could stand for improvement; 4000 channels for a CI receiver with DiSEqC motor support might not be enough.

TECHNIC DATA

Manufacturer	TechniSat Digital GmbH, 54550 Daun, Germany
Tel	+49-(0) 65 92 / 712-600
Fax	+49-(0) 65 92 / 49 10
Website	www.technisat.com
Model	DigitSim S2
Function	Digital CI Satellite Receiver
Channel Memory	4000
Satellites	33
Symbol rates	2-45 Ms/sec.
SCPC Compatible	yes, 1.628 Ms/sec in our tests
USALS	yes
DiSEqC	1.0 / 1.2 / 1.3
Scart Connectors	1
Audio Connectors	no
UHF Modulator	no
0/12 Volt Output	no
Digital Audio Output	no
EPG	yes
C/Ku-Band Compatible	yes
Power Supply	180-250 VAC / 50 Hz via Power Supply; 12V / 1.6A direct



SFI EPG Overview |



EPG Data of a Channel |



DiSEqC Motor Settings |

Technotrend TT-micro S320

Video transmission via HDMI

In the past, the video signal from receiver to TV used to be transmitted as an analog video or colour signal. In 2003, the specifications for HDMI (High Definition Multimedia Interface) were defined, allowing a fully digital transmission of video and audio data to any compatible output device. This improved technology is

increasingly being used these days, especially since 'HD ready' television sets are able to process HDMI signals. So if a high-end DVB set-top box capable of receiving HDTV is available, the signals are sent to these TVs through HDMI using the HDTV protocol.

Common Interface module which needs to be inserted in the receiver's CI slot.

By default, the receiver is pre-programmed with the transponder data of 18 satellites. However, since the



Technotrend now makes use of this technology in the low-cost sector as well.

Admittedly, this satellite receiver can only receive MPEG-2 channels, which means the new high-resolution MPEG-4 signals being tested at the moment will not show up on your TV screen. However, even the quality of regular PAL channels is improved to an extent that comes close to true HDTV.

In order to achieve this, Technotrend uses a technical gadget called upscaler – a system which extrapolates the existing 625 PAL lines to simulate 1080 lines. This way, the irritating visible line structure – which most of all LCD screens suffer from – disappears and the image becomes clearer to

watch.

I particularly like this receiver because of its future-proof technology, even though it has some minor limitations which, however, will not compromise its everyday use. In addition, it is small and lightweight, does not consume much energy and can easily be used in cars or campervans as well, thanks to its 12 VDC power unit. Its very low signal threshold makes it an ideal travel companion.

Switching channels or between TV and radio takes place quickly and without any switching distortions, which is proof of a state-of-the-art operating system. Software updates are available via ASTRA1 and downloads start without long delays. On-screen information about current and

next events is displayed whenever a new channel is selected and content as well as presentation are up to expectations.

It goes without saying that a full EPG (Electronic Program Guide) in extended mode is available, meaning you can look up events up to one week in advance and set the timer directly in EPG mode.

Teletext is integrated as well and as an added feature it stores all received pages so that any selected page shows up immediately.

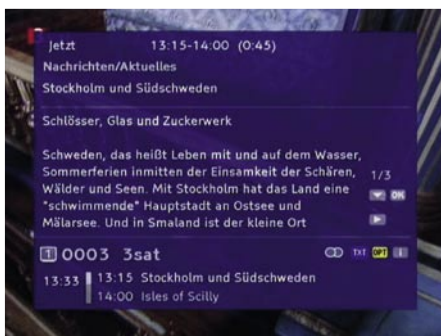
A full signal search is finished in next to no time and can be limited to free-to-air, encrypted or all signals. If you intend to receive encrypted channels as well you need a smartcard of the respective content provider and a

receiver only uses DiSEqC 1.0 and toneburst your options are limited to either a single LNB, a monoblock for two satellites or a multifeed system for four satellites. You cannot connect a rotating dish to this receiver.

Channels are stored in



Full channel list | Favourite list 1 |



3sat program guide |



Overview of events |

Arabic	العربية	www.TELE-satellite.com/TELE-satellite-0711/ara/technotrendHDMI.pdf
Indonesian	Indonesia	www.TELE-satellite.com/TELE-satellite-0711/bid/technotrendHDMI.pdf
Bulgarian	Български	www.TELE-satellite.com/TELE-satellite-0711/bul/technotrendHDMI.pdf
German	Deutsch	www.TELE-satellite.com/TELE-satellite-0711/deu/technotrendHDMI.pdf
English	English	www.TELE-satellite.com/TELE-satellite-0711/eng/technotrendHDMI.pdf
Spanish	Español	www.TELE-satellite.com/TELE-satellite-0711/esp/technotrendHDMI.pdf
French	Français	www.TELE-satellite.com/TELE-satellite-0711/fra/technotrendHDMI.pdf
Greek	Ελληνικά	www.TELE-satellite.com/TELE-satellite-0711/hel/technotrendHDMI.pdf
Croatian	Hrvatski	www.TELE-satellite.com/TELE-satellite-0711/hrv/technotrendHDMI.pdf
Italian	Italiano	www.TELE-satellite.com/TELE-satellite-0711/ita/technotrendHDMI.pdf
Hungarian	Magyar	www.TELE-satellite.com/TELE-satellite-0711/mag/technotrendHDMI.pdf
Mandarin	中文	www.TELE-satellite.com/TELE-satellite-0711/man/technotrendHDMI.pdf
Dutch	Nederlands	www.TELE-satellite.com/TELE-satellite-0711/ned/technotrendHDMI.pdf
Polish	Polski	www.TELE-satellite.com/TELE-satellite-0711/pol/technotrendHDMI.pdf
Russian	Русский	www.TELE-satellite.com/TELE-satellite-0711/rus/technotrendHDMI.pdf
Turkish	Türkçe	www.TELE-satellite.com/TELE-satellite-0711/tur/technotrendHDMI.pdf

two lists, one including all TV channels and the other all radio channels. With an average German viewer in mind, the channels in each list are arranged the way most viewers receiving ASTRA1 channels in a German-speaking country will be happy with.

The fact that channels cannot be rearranged in the overall lists might irritate some users, but this is compensated for by the availability of four favourite lists each for TV and radio channels, where you



can arrange channels to your heart's content.

Another feature that is irritating at first, but logical at second thought is the complete lack of control buttons on the front panel, which is limited to the CI slot and a single LED to

indicate the operating status.

It's a similar story on the back panel: apart from the sockets for the LNB and power cord there are only the analog and - more importantly - digital outputs for video and audio.

TECHNIC

DATA

Distributor	DVB-Shop, Deutschland
Tel.	+49-34954/31960
Fax	+49-34954/49233
Website	www.dvbshop.net
E-Mail	webmaster@dvbshop.net
Model	TT-micro S320 HDMI
Power Supply	12 V DC or 230 V AC
Power Consumption	10/11 Watt (Stand-By/Off)
Size	25x17x3,5 cm
Weight	650 g
DiSEqC	1.0 and Toneburst
Satellites	max. 4 of 18
RF-Modulator	No
Program Listings	TV, Radio, Favorites
Teletext	800 Page Memory
EPG	Day, next day, week with program details
Timer	EPG-programmable On/Off
Connectors	IF In, 2xSCART, 2xRCA, S/PDF, HDMI, Power Supply
Upgrades	Via Satellite

Expert Conclusion

This is a small low-cost receiver with good features for all standard requirements.

- + perfect video thanks to HDMI and upscaler
- easy to use
- fast channel switching
- fast teletext



Heinz Koppitz
TELE-satellite
Test Center
Germany

- overall channel lists cannot be edited
not suitable to rotating dishes



Systeminformation	
Hauptmenü / Technische Informationen	
Hardware-Version	000F 0014 13C2 000B
Systemschlüssel	0000-0001 / FFFF-FFFF
MAC-Adresse	nicht verfügbar
Produkt	TechnoTrend TT-micro® S320
Software-Version	1.65.02 / Jun 27 2007 09:03
Software-Aktualisierung	OK

System information |

Programminformation	
TV * 0004 Bayerisches FS - MPEG2	
Satellit	Astra (19,2°E)
Transponder	11836 MHz - H - 27500
Netzwerk	0001 ASTRA
Anbieter	ARD
Service-ID	28107 Audio-PID 202
Teletext-PID	204 Video-PID 201
Signalstärke	13,0 dB 65%
Signalqualität	0.00e+00 100%

Program information |



Info bar after switching channels |

Horizon HDSM USB PLUS

"even a total dummy can use it"

Let's be frank, when it came, we were amused. What was this? It was small - no more than 1/2 of a cat (see the photo). The simple case resembling the ones you could buy in every electronic Do-It-Yourself store and the front panel with only arrow buttons did not promise much. And this

yellow color! We thought: "No, this can not be really useful - probably just a toy for the amateurs who do not care how much time they spend playing with their satellite dishes..." How wrong we were!

The relaxed cat of TELE-satellite editor shows the very small dimension of the new HDSM USB PLUS satellite meter from HORIZON.

Full of skepticism, we started to examine the accessories. The leather bag had a strap to hang it on your neck but you can also fasten it to your belt. There are openings in the bag through which you can attach a cable, should it be a car charger

lead, USB lead or a mains power cord (all included in the package). Yes, the power supply unit is built in! No more headaches with connecting a box to another box and to a wall outlet. Despite having the power supply unit inside its case, HDSM USB PLUS is not heavy at all. Everything is based on Velcro and is really practical in everyday use.

We started with charging the

built-in accumulator using the mains lead. The manufacturer clearly states in the user manual that we are getting the unit not charged. During charging, the meter was showing us the percentage of battery capacity. Another thing worth mentioning is the intelligence built into the charging circuit. You can leave your meter for an extended period of time without a fear that something bad will happen

to your battery. Although the manual recommends continuing the first charging for 24 hours, we noticed that after approximately 1.5 hour, the accumulator charge rose from 10 % to 100%. Of course, we could not wait 24 hours before giving the meter a try. Right after charging, we started.

Operating the meter could not be simpler. You connect the



HORIZON did a wonderful job in giving the installer all data he needs with a simple push of a button:



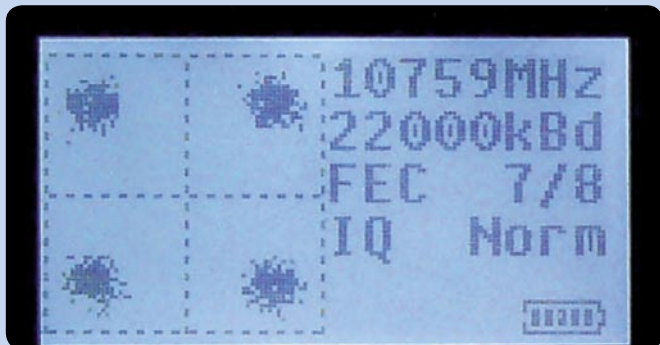
Signal Level and Channel BER before correction



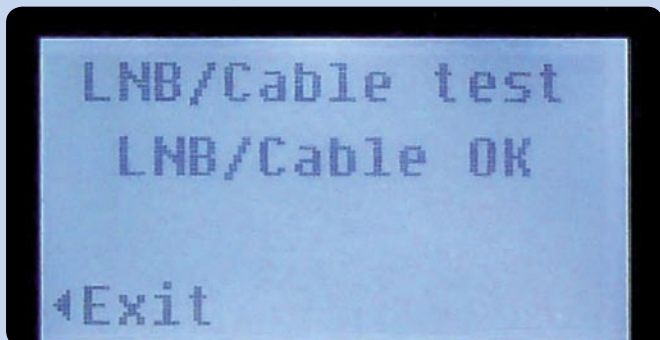
Carrier to Noise Ratio and the Post Viterbi BER



Frequency Spectrum



Constellation Diagram



LNB Cable test

Arabic	العربية	www.TELE-satellite.com/TELE-satellite-0711/ara/horizon.pdf
Indonesian	Indonesia	www.TELE-satellite.com/TELE-satellite-0711/bid/horizon.pdf
Bulgarian	Български	www.TELE-satellite.com/TELE-satellite-0711/bul/horizon.pdf
German	Deutsch	www.TELE-satellite.com/TELE-satellite-0711/deu/horizon.pdf
English	English	www.TELE-satellite.com/TELE-satellite-0711/eng/horizon.pdf
Spanish	Español	www.TELE-satellite.com/TELE-satellite-0711/esp/horizon.pdf
French	Français	www.TELE-satellite.com/TELE-satellite-0711/fra/horizon.pdf
Greek	Ελληνικά	www.TELE-satellite.com/TELE-satellite-0711/hel/horizon.pdf
Croatian	Hrvatski	www.TELE-satellite.com/TELE-satellite-0711/hrv/horizon.pdf
Italian	Italiano	www.TELE-satellite.com/TELE-satellite-0711/ita/horizon.pdf
Hungarian	Magyar	www.TELE-satellite.com/TELE-satellite-0711/mag/horizon.pdf
Mandarin	中文	www.TELE-satellite.com/TELE-satellite-0711/man/horizon.pdf
Dutch	Nederlands	www.TELE-satellite.com/TELE-satellite-0711/ned/horizon.pdf
Polish	Polski	www.TELE-satellite.com/TELE-satellite-0711/pol/horizon.pdf
Russian	Русский	www.TELE-satellite.com/TELE-satellite-0711/rus/horizon.pdf
Turkish	Türkçe	www.TELE-satellite.com/TELE-satellite-0711/tur/horizon.pdf

cable from LNB to the input F connector, switch the meter on, select with the arrow buttons the satellite you want to align your dish to and that's it. Now, you can rotate your dish until you hear a sound generated by the meter and see the level and quality readings. If you find nothing, increase or decrease the dish elevation angle and start rotating it again. In practice, it takes you at most a minute to find the desired satellite. In our tests it did not take us more than 5-15 seconds but we already had some experience where to look for which satellite and what to do with the elevation setting for every of them.

When you turn your antenna by a big angle, it is sometimes good to observe the meter - not only wait for the "success sound". When you notice an increase in signal level, you may want to start switching the HDSM USB PLUS to other satellites (left and right arrows) until you identify the satellite your antenna is currently looking at. This gives you a clear hint whether to turn it more to the East or to the West.

The meter stores in its memory 64 transponders from 32 satellites (2 transponders per satellite: one with horizontal and one with vertical polarization). Additionally, you can enter manually one additional transponder - the one you care most in your routine installations. When doing this, you will notice that the choice of LOF's is very wide - the meter is compatible with C, Ku and Ka Bands.

We were asking ourselves how it was possible that HDSM USB PLUS "knew" which transponders to use when identifying satellites in our location? As we all know, in different regions of the world, you receive different satellites. Even if the same satellite is receivable in different locations, it is quite common that you are able only to receive

some of the satellite beams in one location and quite different beams in the other location. This means that the meter may need to use different transponders for identifying the same satellite in the UK, Spain or Poland. We found no explanation of that in the manual, so we turned to the Horizon webpage (www.horizonhge.com). Only then did everything become clear. The meter is preprogrammed with the set of transponders depending on the target country. In other words, different transponders are stored in HDSM USB PLUS memory when it is sold in the UK and different when it is sold in Poland. In fact, in the download section of Horizon site, we found 14 different preconfigured downloads including Russia, Brazil and China. We know from our experience that choosing the right transponders for a particular location (country) requires a lot of time and effort. Horizon did it for us. Thanks!

When the meter identifies the desired satellite, it plays a short sound and below the signal level bar, it displays an additional one showing signal quality in %. Below the 2 bars we can see the channel BER value displayed (QBER). This is the BER before the Viterbi error correction. Generally, QBER should be below 1.0 E-2, otherwise we may observe video distortions.

We may switch the meter to show another set of values. Instead of the signal level, signal quality and QBER, we may have C/N ratio and the post Viterbi quality expressed in % and post Viterbi BER value (VBER). While the VBER is not very practical (it rapidly jumps from very bad to very good values), the C/N ratio can be used for comparing different antenna setups. For example, you may see how inserting a multiswitch in the reception setup influences the C/N ratio.

Apart from these modes,

the meter may show frequency spectrum graph. This view may be useful when aligning antenna for very weak signals. In the spectrum mode, we may change the span (with up/down arrows) in the following steps: 60, 120, 240, 480, 960 and 1200 MHz as well as the center frequency (with the left/right arrows) within the band.

For those who prefer to evaluate the quality signal graphically rather than numerically, Horizon implemented an additional mode in the HDSM USB PLUS meter. It is the QPSK constellation diagram. The more concentrated dots in every quarter, the better the signal (less noisy).

In this small "a quarter of a cat" volume, Horizon managed to pack even more. You may connect the HDSM USB PLUS after a DiSEqC switch and using the meter menu, you will be able to select satellite A, B, C or D. Not sure about the cabling and/or LNB condition? Run the LNB/Cable test. The meter will detect both short circuit and open circuit (no consumption of power typical for an LNB).

Important for the professional is the ability to log the measurement results. This facilitates reporting the work done at remote locations. HDSM USB PLUS can be reprogrammed via the USB port (what is evident from its name). In this way we may upgrade to newer versions of the firmware, download the logged values or upload the transponder settings should we decide to take the meter to Brazil for vacation.

We did a few measurements to find out how accurate the meter is in comparison with another instrument. We found

differences from up to 1 dB in signal level measurements. Note that the HDSM USB PLUS readings are calculated from the true digital Q+I values - other instruments may use analogue sources for their readouts and their readings may differ significantly from HDSM USB PLUS.

You may fully trust the meter when it tells you that one antenna setup is better than the other one. You may also be sure that the antenna alignment done with HDSM USB PLUS is the best possible if only you were patient enough to fine tune the azimuth, elevation and LNB skew.



Ready to use: the belts make it easy to carry the meter, f.i. on top of roof

Experts Conclusion

+

The meter is very handy and light. However, the most important feature of HDSM USB PLUS is its ease of use. We did not even think one could offer a meter so easy to use having all necessary settings correctly preprogrammed by the manufacturer! Good job! Do not be tricked by its toy-like appearance. It is a real, very useful meter. DVB-S2 will be offered soon, also readings of MER will be offered in a future software release.



Peter Miller
TELE-satellite
Test Center
Poland

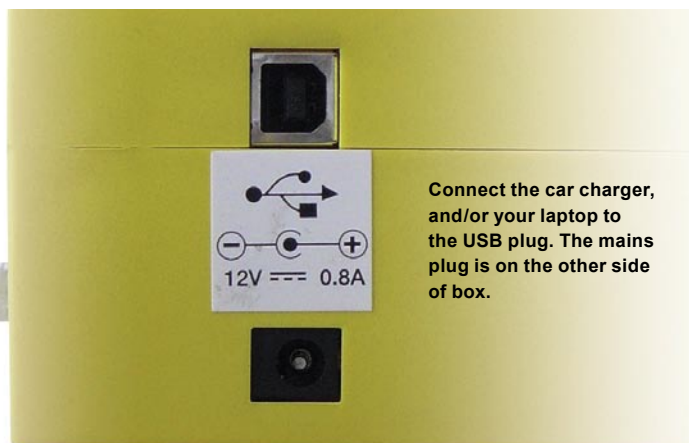
-

Horizon could make the sound announcing the transponder lock a bit louder.

TECHNIC

DATA

Manufacturer	Horizon Global Electronics Ltd.
Fax	+44 (0) 1279 417025
E-mail	sales@horizonhge.com
Web page	www.horizonhge.com
Model	HDSM USB PLUS
Function	Antenna alignment meter
Input frequency	950~2150 MHz
C/Ku-Band compatible	Yes (DVB-S)
Signal level	-65 dBm to 25 dBm
Symbol Rate	1~45 Msps
LNB supply	250 mA nom., 500 mA max.
Number of pre-programmed satellites	32 (horizontal & vertical polarization)
Power supply	100~240 V, 50/60 Hz, 0.31A max. 12 V DC, 0.8 A max.
Operational time when fully charged	5 hours typ.



Connect the car charger, and/or your laptop to the USB plug. The mains plug is on the other side of box.

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www.stab-usals.us

info@stab-italia.com

Eycos S80.12 HD

First PVR for HDTV

No matter whether it's Anga Cable, Cabsat or Cebit, the catchword at all consumer electronics fairs these days is HDTV. While standard set-top boxes with CI interfaces were the talk of the town last year, this year manufacturers have made another leap forward and proudly present their new HDTV PVR receivers to a stunned audience.

One of the first companies to add such a unit to their product range is the up-and-coming Korean company Eycos, which has teamed up with tried-and-tested distributor Satforce for the German-speaking and European markets.

Naturally, our expectations were high when one of the first boxes of the S80.12 HD series arrived directly off the assembly line at our editorial office.

After it has been switched on the blue 9-digit alphanumeric display is illuminated which – together with the seven silver buttons on the front panel and the black case – creates a perfect appearance.

Generally, owners of this product are advised to keep a ready supply of spare batteries for the remote control, as the buttons on the box can only be used to perform a limited



External Freecom 500GB harddisk

sockets for stereo audio and video, YUV and – naturally, for a HDTV receiver – HDMI it impresses thanks to USB 2.0 and S-ATA interfaces.

While the reasoning behind the USB 2.0 interface is pretty clear to us, most of you will probably ask about the purpose of the S-ATA interface. The answer is quite simple, really: as one of the first manufacturers of PVRs Eycos has come to appreciate

Secondly, it generally can be a tiresome job to connect a receiver to a PC in order to transfer data because more often than not the PC is located in a different room of the house and endless cables are required.

Thirdly, many people like to bring their recordings to friends or their holiday home without having to create a DVD first. All these reasons clearly point



When we unpacked the unit all colleagues present agreed that the looks of the receiver were simply perfect. Finally, a manufacturer has decided to do away with all those labels and logos on the front panel indicating DiSEqC, MPEG, DD or whatever else there might be to brag about included features. We cannot praise this enough and hope that other manufacturers will follow suit so that stylishly designed boxes will not be spoiled by too many logos any longer.

number of operations. Two CI slots are hidden behind a flap on the right side of the front panel and can take up all standard CA modules like Irdeto, Seca, Viaccess, Conax, Cryptoworks, Alphacrypt etc.

If the front panel excites you, then the rear panel will probably leave you lost for words. Apart from all the usual suspects such as satellite IF input and loop-through output, digital audio output, scart and RCA

the fact that the permanently integrated receiver harddisk in many cases is far from being the perfect solution.

Firstly, consumers are forced to decide about the size of the harddisk right at the shop where they buy the device, and exchanging the harddisk afterwards is not only a tricky job but also requires an authorised dealer in order to make sure the warranty does not become void.

to a clear solution, which is an external harddisk.

Eycos has realised that this is what consumers demand and any external harddisk can be used with their latest device, no matter whether it sports a USB 2.0 or S-ATA interface.

You can even connect a harddisk to both interfaces in which case the receiver will ask which disk to use every time you start a recording or set a timer for a



THE 04 SATELLITE TV SYSTEMS FROM SEA TEL. QUALITY YOU CAN ACTUALLY TOUCH.



The 04 Series features 30" to 50" systems with an industry-first touch screen control.

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



Look to the leader. Look to Sea Tel.

A Cobham Company

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recording. Swapping harddisks and transferring data to a PC becomes child's play and to top it off, even a USB stick with sufficient memory can be attached to the USB interface so that you can put several hours of recording in your pant pockets, for example.

Updating the operating system of the receiver can also take place with a USB stick so that the also available RS-232 interface will be out of work most of the time.

Our test unit came with an external Freecom 500GB hard-disk which has the added benefit of switching off as soon as the receiver goes into standby.

From a design point of view it also fits in nicely with the new S80.12 HD thanks to its blue LED on the front panel.

A USB extension cable is also included, which allows connecting external USB devices without having to fiddle around with the interface on the back of the receiver – a very thoughtful gesture.

The workmanship of the receiver lives up to the expectations we have in Eycos and the remote control is also

robust and sturdy, even though some users might find it to be a bit oversized. All buttons are clearly labelled and beginners should be able to use it right away, too.

Our test unit was shipped with a German operating manual and although this was labelled as a pre-release version it included all required information in a neat and sufficient manner.

Everyday use

The Eycos S80.12 HD is a product clearly geared towards the European market and thus it is hardly surprising that it comes pre-programmed with all channels that are likely to be received in European countries. The channel list includes up-to-date parameters for ASTRA 19.2° East, HOTBIRD 13° East and TURKSAT 42° East.

By the time the receiver is officially available in stores Eycos have promised to add ASTRA 3A 23.5° East and ASTRA2 28.2, both of which carry several HDTV channels across Europe. An updated channel list will also be made available on the manufacturer's website at www.eycos.de.

Pushing the 'Menu' button

will also leave you stunned, because Eycos has managed to arrange the many features of their new S80.12 HD into four neatly structured areas.

The first area deals with the antenna configuration and the channel list. All in all, 175 European, Asian and American satellites are listed, yet the list is not fully up-to-date and needs some revision. The manufacturer has promised to address this problem and offer an update by the time the official sales starts.

The receiver can handle C-band as well as Ku-band signals and even the most exotic LOFs won't pose a problem thanks to a manual LOF setting. You can choose to use the new Eycos receiver with a DiSEqC rotating system or a multifeed antenna since it features DiSEqC 1.0, 1.2 as well as 1.3 (USALS). The only thing missing is DiSEqC 1.1.

In line with all the positive attributes mentioned so far the receiver is also very quick when scanning for signals. Four and a half minutes is all it took to fully scan an 80-transponder satellite and it may well be that it set a new record for this job. All-in-all there is memory for

6000 channels, which should be sufficient for most users.

The second menu area helps to personalise the device, starting from selecting the desired language of the OSD (English, French, German, Spanish, Italian, Russian, Turkish, Dutch, Czech or Polish) and ranging from setting the brightness of the front panel LED all the way to a number of OSD settings.

A feature worth mentioning is the automatic detection of AC3 audio. Thanks to this, owners of DD 5.1 home theatre systems won't have to manually select the Dolby Digital soundtrack – this task is fully taken care of by the receiver.

The AV settings of the S80.12 HD can be used to pair the receiver with your TV set or beamer by choosing parameters like resolution (576p, 720p or 1080i), colour system (PAL or NTSC) as well as signal types CVBS or RGB for those using a scart connection.

Naturally, you can also define whether your TV is 4:3 or 16:9, so that the receiver sends the correctly formatted signal via HDMI. Furthermore, the internal clock can be set manually or synced with satellite data.

Download this report in other languages from the Internet:

Arabic	العربية	www.TELE-satellite.com/TELE-satellite-0711/ara/eycos.pdf
Indonesian	Indonesia	www.TELE-satellite.com/TELE-satellite-0711/bid/eycos.pdf
Bulgarian	Български	www.TELE-satellite.com/TELE-satellite-0711/bul/eycos.pdf
German	Deutsch	www.TELE-satellite.com/TELE-satellite-0711/deu/eycos.pdf
English	English	www.TELE-satellite.com/TELE-satellite-0711/eng/eycos.pdf
Spanish	Español	www.TELE-satellite.com/TELE-satellite-0711/esp/eycos.pdf
French	Français	www.TELE-satellite.com/TELE-satellite-0711/fra/eycos.pdf
Greek	Ελληνικά	www.TELE-satellite.com/TELE-satellite-0711/hel/eycos.pdf
Croatian	Hrvatski	www.TELE-satellite.com/TELE-satellite-0711/hrv/eycos.pdf
Italian	Italiano	www.TELE-satellite.com/TELE-satellite-0711/ita/eycos.pdf
Hungarian	Magyar	www.TELE-satellite.com/TELE-satellite-0711/mag/eycos.pdf
Mandarin	中文	www.TELE-satellite.com/TELE-satellite-0711/man/eycos.pdf
Dutch	Nederlands	www.TELE-satellite.com/TELE-satellite-0711/ned/eycos.pdf
Polish	Polski	www.TELE-satellite.com/TELE-satellite-0711/pol/eycos.pdf
Russian	Русский	www.TELE-satellite.com/TELE-satellite-0711/rus/eycos.pdf
Turkish	Türkçe	www.TELE-satellite.com/TELE-satellite-0711/tur/eycos.pdf

One of the main features of a PVR is the possibility of setting the timer to record a certain event. Here the Eycos box draws a distinction between Event Timer and Remind Timer.

Setting a Remind Timer will simply prompt the receiver to switch to a selected channel at a given time, while an Event Timer entry will make sure the receiver records the selected program on the harddisk. In total, 30 timer entries can be defined, and genuine couch potatoes will appreciate the fact that daily or weekly events can be programmed as well.

The last two menu areas deal with any CI modules that might be inserted and with the two interfaces for external harddisks. Similar to the Windows Explorer you can directly address external USB or S-ATA harddisks. New directories can be created at the touch of a button and recordings can be deleted, moved or renamed. New disks can be formatted and the data consistency of existing disks can be checked at any time.

One button labelled 'Upload Channel' can easily be overlooked, yet it hides a feature many owners of satellite receivers have been waiting for for ages. Simply press the button and the current channel list is transferred to and stored on the harddisk.

For one thing, this facilitates channel list editing to a large extent, and for another thing, this feature is handy to

create a backup which can be used whenever the channel list gets messed up after a channel search or a system reset.

Zapping between channels is real fun with the S80.12 HD, because the new channel appears on screen after about one second. Even when switching between HDTV and SDTV channels we did not experience any noticeable delay.

If you want to start a new recording manually all you have to do is push the 'Record' button. In case two harddisks are attached the receiver asks which of the two you'd like to use.

Since the new Eycos box is only equipped with a single tuner you can only watch channels that are transmitted on the same transponder as the recorded channel and you can only switch to any other channel once the recording has finished.

Even though we tried real hard we were unable to upset the receiver during recording a HDTV channel. All recordings were played back brilliantly and without any glitches.

The tuner used by Eycos turned out to be worth every penny and even when pushed to the limits with a weak signal from NILESAT 7° West at a test site in Vienna we could not detect any difficulties. BBC HD also came in interference-free at another test site in Munich.

The S80.12 HD also passed

our SCPC test when it received and processed symbol rates from as low as 1.6 MS/s. No troubles with DVB-S2 reception either, which is available for symbol rates between 10 and 32 MS/s.

Expert Conclusion

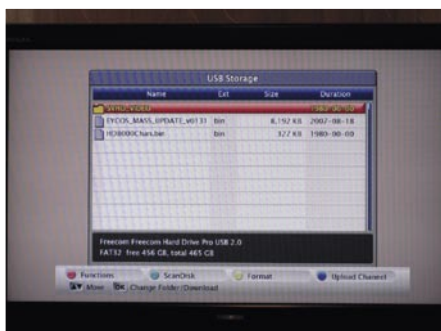


The Eycos S80.12 HD is one of the very first PVR receivers for receiving and recording HDTV channels, and even as a pioneer in the field it worked reliably and flawlessly during our tests. The external harddisk brings back the fun to transferring data to a PC and creating DVDs, so that a cosy evening in front of the telly at the weekend lodge is no longer out of the question – simply bring along the harddisk with your favourite movies or shows. In general, the new Eycos is a perfect addition to your living room equipment as it's very easy to familiarise oneself with all its features.

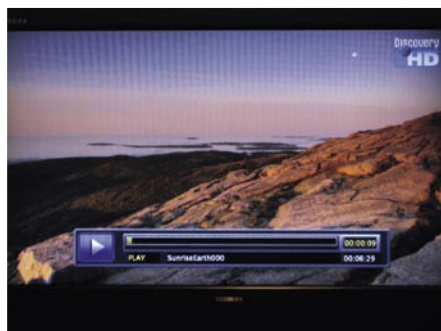
The DiSEqC 1.1 protocol for addressing up to 16 LNBS would come in handy for all owners of a multifeed antenna.



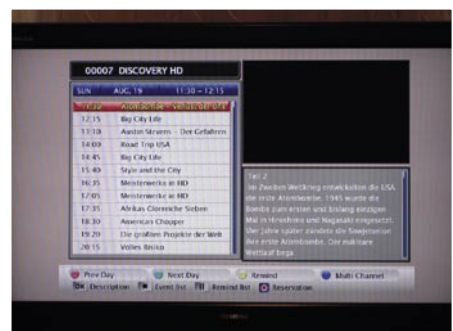
TECHNIC DATA	
Manufacturer	Eycos
Distributor	Satforce Kommunikationstechnik GmbH
Tel	+49 (0)86 54 773 851
Fax	+49 (0)86 54 773 852
E-Mail	info@satforce.com
Model	S80.12 HD
Function	Digital HDTV Satellite PVR Receiver
Channel memory	6000
Satellites	175
Symbol rate	2~45 Ms/sec. (in our test from approx. 1.6 Ms/s) in DVB-S or: 10~31 Ms/s in DVB-S2
SCPC compatible	yes
USALS	yes
DiSEqC	1.0 / 1.2 / 1.3
Scart euroconnectors	2
Audio/Video outputs	3xRCA
YUV	yes
HDMI	yes
USB 2.0	yes
S-ATA	yes
UHF output	no
0/12 Volt connection	no
Digital Audio output	yes
EPG	yes
C/Ku-Band compatible	yes
Power supply	95-250 VAC, 50/60 Hz



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SPAUN SMS 91609 NF Multiswitch

2 Birds For You and Your Neighbors

There are a variety of multiswitches available on the market. Some of them are designed for many satellites, the others for many receivers. Some are cascadable – what is especially useful

We decided to have a closer look at the new SMS 91609 NF from German manufacturer SPAUN. It is a multiswitch designed to work with 2 Quattro LNB's and up to 16 receiver outputs. Its bigger "brothers" (SMS 92009 NF & SMS 93609 NF) are designed to serve 20 and even 36 receivers!

Evidently these devices are designed to be installed in blocks of apartments in the regions where only 1 or 2 satellites are the most popular and desired by inhabitants.

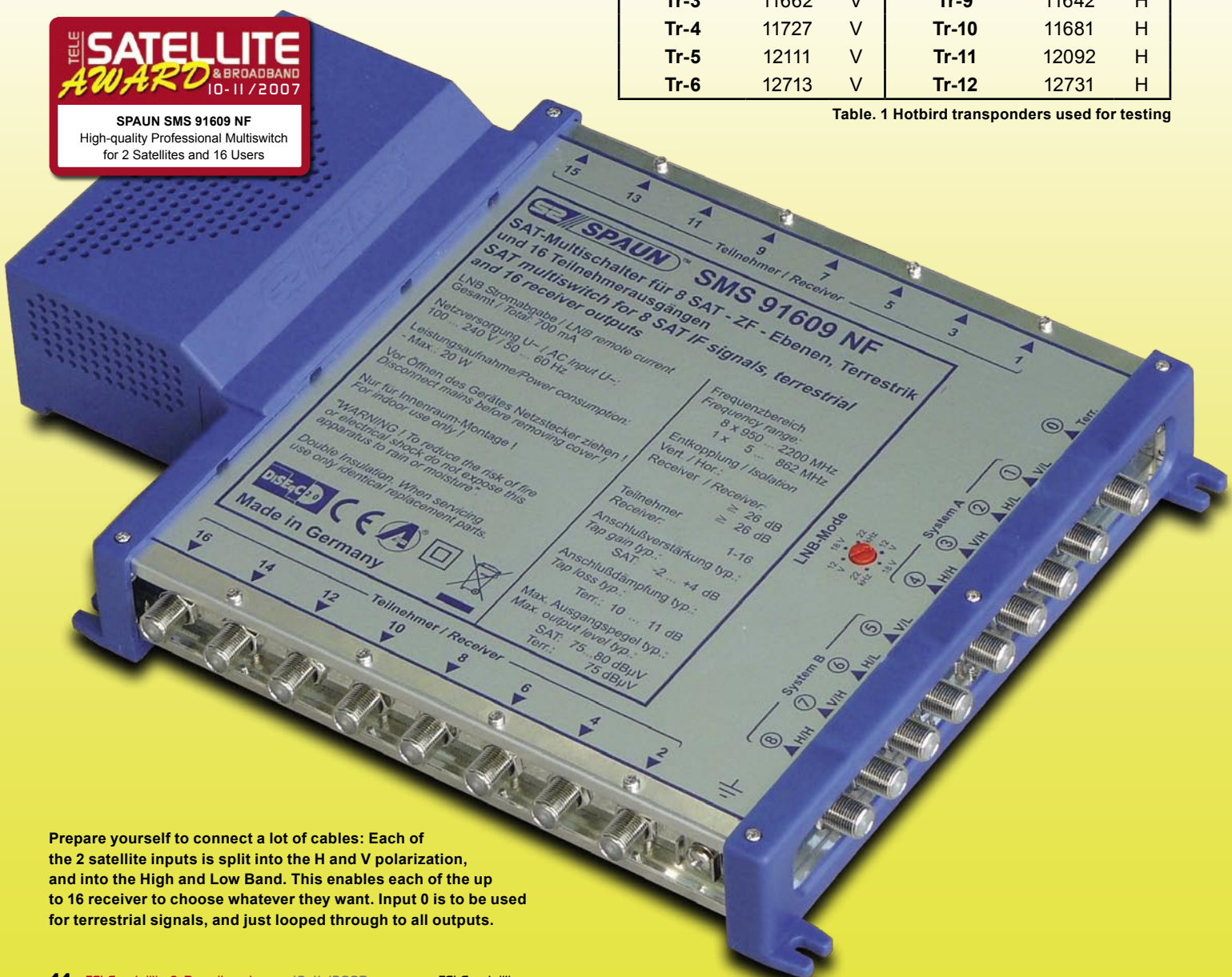
As you can see on the photographs, the workmanship of the switch leaves absolutely nothing

to be desired. SMS 91609 NF looks very professional. Instead of 2 Quattro LNB's, you may connect Quad, Twin or Twin Universal LNB's. You only need to

set accordingly the "LNB Mode" switch located at the top of SMS 91609 NF. Except for the satellite inputs, the multiswitch can also insert the signal from a terrestrial antenna to its 16 outputs. The antenna must be connected to input "0". The unit is powered from 100~240 V, 50/60 Hz mains. Thanks to

Transponder	Freq.	Pol.	Transponder	Freq.	Pol.
Tr-1	10719	V	Tr-7	10723	H
Tr-2	11278	V	Tr-8	11219	H
Tr-3	11662	V	Tr-9	11642	H
Tr-4	11727	V	Tr-10	11681	H
Tr-5	12111	V	Tr-11	12092	H
Tr-6	12713	V	Tr-12	12731	H

Table. 1 Hotbird transponders used for testing



Prepare yourself to connect a lot of cables: Each of the 2 satellite inputs is split into the H and V polarization, and into the High and Low Band. This enables each of the up to 16 receiver to choose whatever they want. Input 0 is to be used for terrestrial signals, and just looped through to all outputs.



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the drawings on the top cover, nobody will have a problem in connecting everything in the right way.

To test the performance of this switch, we selected 12 transponders of Hotbird (13° East) as sources of the input signal. Their parameters are provided in table 1. Of course, we equipped our antenna with a Quattro LNB (0.2dB) to see if the multiswitch correctly chooses the LNB output. Figure 1 shows the tap gain of the SMS 91609 NF for 3 outputs (Receiver 1, 3 and 5).

Tap gain tells you how much the signal is amplified at the receiver output in comparison with the signal coming from the LNB. If the tap gain is negative, it means that the signal is attenuated. SPAUN specifies this parameter as: -2...+4 dB typically. As you can see in the chart, for some frequencies, we got even better amplification than promised.

In the next step we checked how much the quality of signal suffers after passing the multiswitch. For this purpose we measured Modulation Error Ratio that is more credible and stable when measured with the

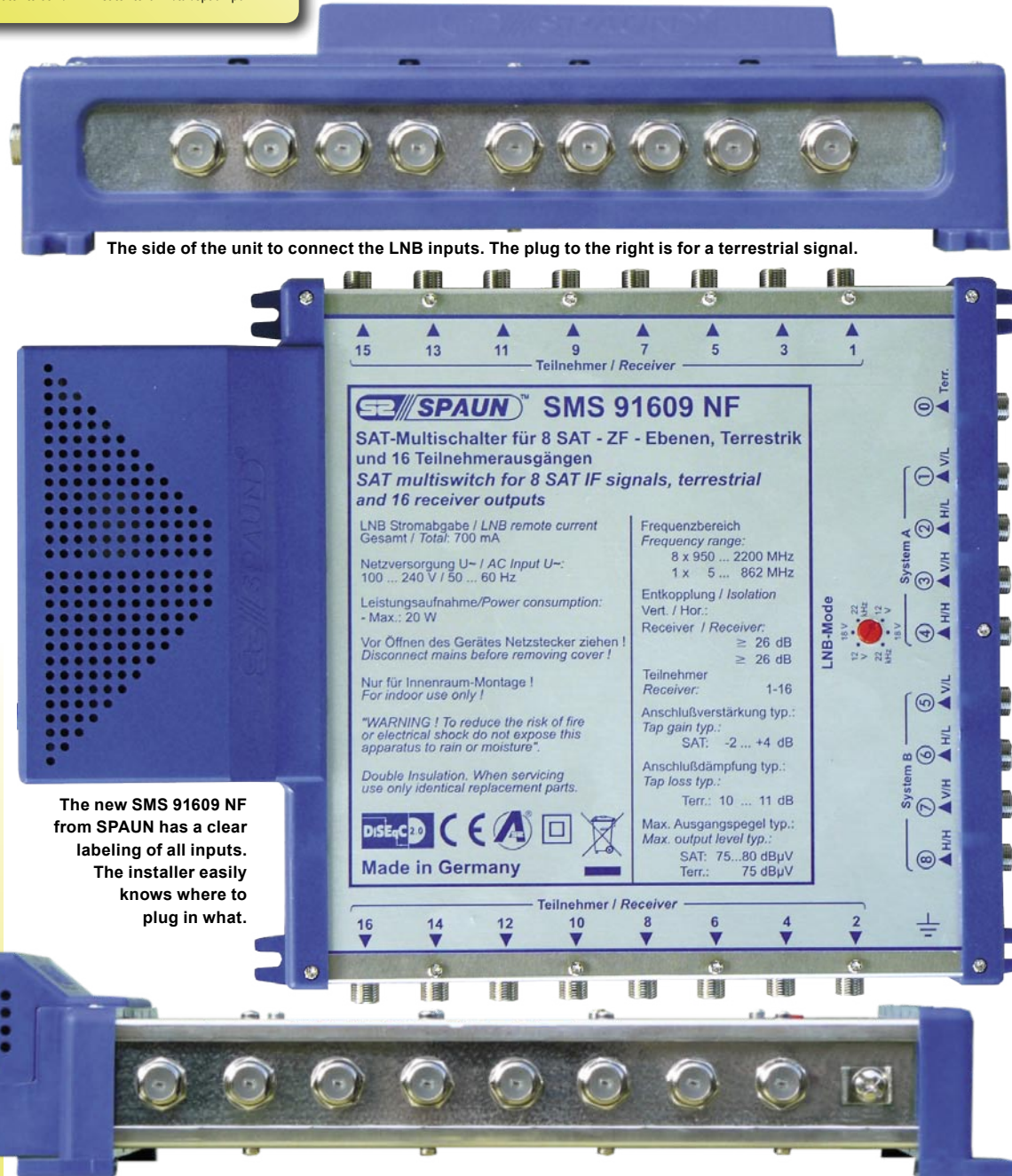
The SMS 91609 NF is a small unit with just enough space to house the F-plugs. Here we see one of the 2 sides to connect 8 receivers. The screw at the right is used to earth the unit.

real life signals than the C/N ratio. Although MER is derived from the number of bit errors rather than the measurement of carrier and noise power, both measures are strongly correlated. The higher the MER, the higher the C/N and the better

signal quality. Every multiswitch decreases the quality of the incoming signal – that's physics. How it goes for the SMS 91609 NF? You can see it in figure 2.

From figures 1 and 2, you can deduce that there is no big difference between the outputs.

To confirm this is the truth, we measured more outputs at the same input test signal. The results are shown in figure 3. It is now evident that all outputs are practically identical. None of the neighbors using this multiswitch will be getting worse signal than the others.



The side of the unit to connect the LNB inputs. The plug to the right is for a terrestrial signal.

The new SMS 91609 NF from SPAUN has a clear labeling of all inputs. The installer easily knows where to plug in what.

Fig. 1. Tap gain for different test signals.

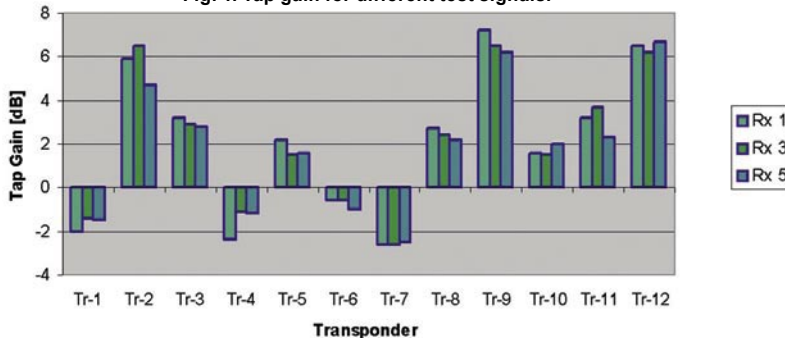
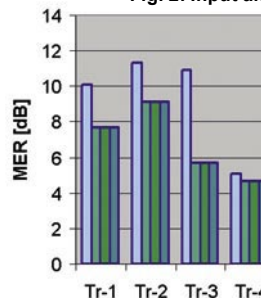


Fig. 2. Input and



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Experts Conclusion

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SPAUN's SMS 91609 NF is a high-quality professional solution for a group of users requiring the reception from only 2 satellites, providing they will not need to extend the system in the foreseeable future. The multiswitch is very simple to install. It has good satellite tap gain and low terrestrial tap loss. Its 16 outputs are practically identical in performance.



Peter Miller
 TELE-satellite
 Test Center
 Poland

-

If the satellites to be received are not the very strong ones, you better use a bigger dish to compensate for the inevitable signal loss of the multiswitch.

TECHNIC

DATA

Manufacturer	SPAUN Electronic, Byk-Gulden-Str. 22 D-78224 Singen, Germany
Webpage	www.spaun.de
E-mail	info@spaun.de
Phone	+49 (0) 7731-86730
Fax	+49 (0) 7731-64202
Model	SMS 91609 NF
Function	Multiswitch with embedded power supply
Inputs	8 LNB + 1 terrestrial
Receiver outputs	16
Cascade outputs	none
Input frequency	950~2200 MHz (Sat.) and 5~862 MHz (Terr.)
IF tap gain	-2~+4 dB
Terrestrial tap loss	10 ~11 dB
Isolation between satellite inputs	> 30 dB
Remote power supply	700 mA per LNB
Power supply	100~240 V / 50~60 Hz 36 W max.
Operating temperature range	-20... + 50° C/dry indoor use

and output MER for different test signals.

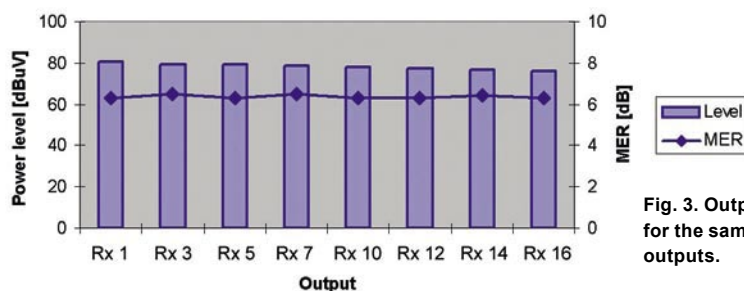
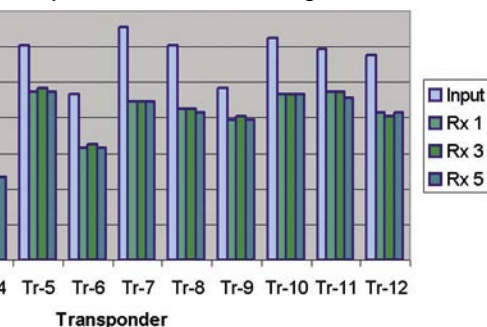


Fig. 3. Output power and MER for the same signal and many outputs.

EMP P.168-W

“Motorized” DiSEqC Switch

DiSEqC 1.0 and 1.1 are for switching LNB’s, and DiSEqC 1.2 and 1.3 (USALS) are for controlling motors. Right? Right for everybody but not for EMP-Centauri! EMP-Centauri is a large manufacturer of multiswitches and DiSEqC switches as well as related accessories. Evidently, there must

have been a young engineer in that company who did not know that DiSEqC 1.2 was for motors - not for switches. Thanks to that fortunate event, we can now enjoy the P.168-W switch. The switch that can be controlled both with standard DiSEqC 1.1 and DiSEqC 1.2 commands!

The first nice thing about the switch becomes evident right after the first look. Yes, this is a switch to be mounted outside. Its protective cover and all connectors mounted on the bottom side leave no doubt about it. It means that one hole in your window frame is enough to get access up to 8 antennae. Moreover, you can use it to route the signal from your terrestrial antenna too. Of course you will need to split it up back to satellite and terrestrial cables after passing a window or a wall.

But let’s say something about the control of the switch. P.168-W can be driven by DiSEqC 1.1 command “Write N1” which selects one out of eight “uncommitted switches” (spe-

cific DiSEqC term). Namely, the following DiSEqC commands are used: Switch 1 (A/B), Switch 2 (A/B), Switch 3 (A/B) and Switch 4 (A/B).

If your hunger is not satisfied with 8 birds, you may extend this distribution system with the additional “normal” DiSEqC 1.0 switches. That’s because P.168-W responds only to the commands reserved for DiSEqC 1.1. So, when cascaded, the system can offer you even 32 LNB inputs (4x8). Naturally,



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Figure 1. The principle of operation of P.168-W.

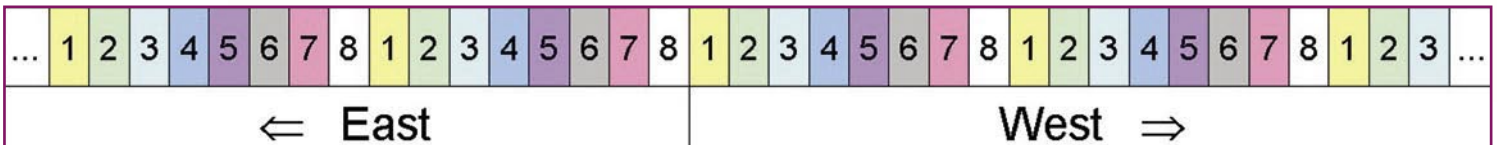
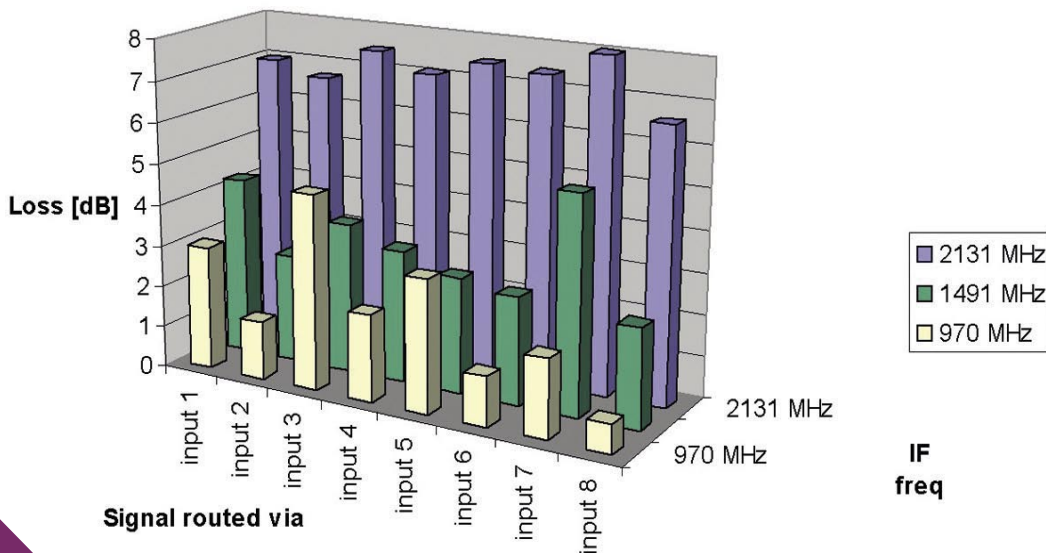


Figure 2. Signal loss versus frequency for different inputs.



your receiver would have to be compatible with DiSEqC 1.0 & 1.1.

But let’s focus on 8 inputs. It is a fact that not all receivers support DiSEqC 1.1. If your receiver supports only DiSEqC 1.0, the P.168-W will be of no use for you. However if it supports DiSEqC 1.2 you may use it very easily. And that’s where the magic of this product is!

Normally, DiSEqC 1.2 commands are used to move the dish to the East or to the West. In the motor installation menu you have the commands like: “Go to reference”, “Go to West” and “Go to East”. Sometimes also: “One step East” and “One step West”. Now, if you press and hold “Go West”

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the receiver will be sending commands to move motor to the West in small steps. P.168-W is designed in such way to recognize the "position of the motor" and switch on and off its switches in turn. It can be explained as in figure 1.

For example, if we are continuously "moving the dish" to the West, after a while Switch 1 will be turned on, a moment later it will be turned off and Switch 2 will be turned on, etc. After Switch 8, Switch 1 will be turned on again, then switch 2 and so on. We checked that the selection repeats over and over again in both direction: East and West. So it is not really any problem to teach your receiver how to control P.168-W. You connect your LNB to one of its inputs, set in the installation menu that this satellite signal comes from the DiSEqC 1.2 motor, and start "moving the dish" either to East or West. After maximum a few seconds, you will notice the signal. So, you release the button and execute Save command in the motor installation menu. From this moment on, your receiver will remember how to switch to this satellite with DiSEqC 1.2

command. You repeat the process with the rest of LNB's connected to other switch inputs.

Once you understand the DiSEqC 1.2 control idea, you will not like to return to the classical DiSEqC commands like Sat Position (A/B) or Option (A/B) which are quite often confusing for the "normal" people.

How fast is the switching between satellites? Is it comparable with a real motor system? Absolutely not! The switching is immediate, it is just a matter of milliseconds. You will not notice a difference between

channel zapping within one satellite and between different satellites!

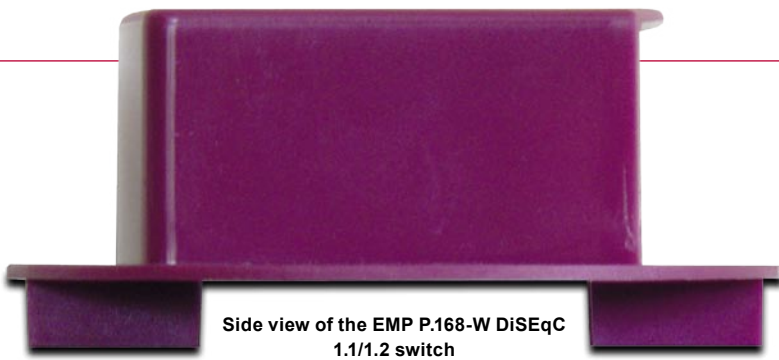
Having checked the installation and the satellite switching speed, we moved to the electrical characteristics of the product. First



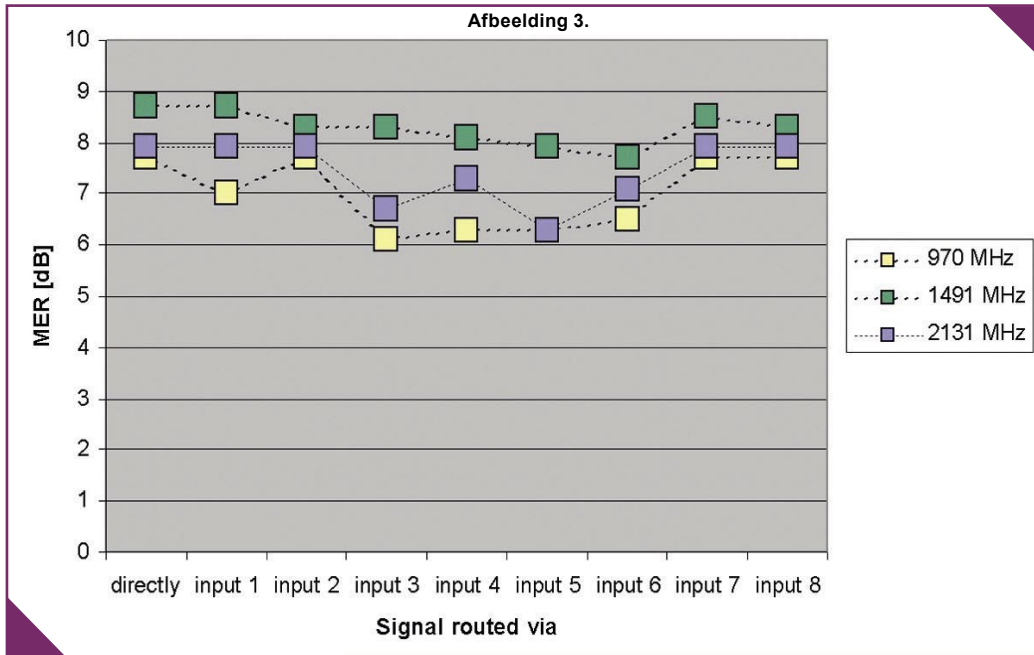
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Side view of the EMP P.168-W DiSEqC 1.1/1.2 switch



switch. We were much more concerned about its noise performance. How much quality suffers when signal passes the switch? To evaluate this, we measured the modulation error ratio when the LNB was connected directly to the analyzer and when it was connected via different inputs of the switch. We tested all 8 inputs and the results were amazingly good! See figure 3. For some combinations of frequency and input port, the deterioration of signal quality was immeasurable! In the worst case the MER was reduced by less than 2 dB. This is pretty good! You may even use this switch with your DX antenna but if you do, it is a good idea to try the most critical satellite on different switch inputs. In our test sample, input 2, 7 and 8 were the best.

parameter we measured was the signal loss. P.168-W is a passive device so it can not amplify signal, it can only attenuate it. The specification promises 5 dB loss on the average. As you can see in figure 2, it varies from about 1dB to almost 8 dB, being better for the lower end of L-band and worse for the higher end. There was no need to check it for various bands or polarizations because every LNB outputs the intermediate frequency in 950~2150 MHz range.

So far, so good. But the signal loss is not the most critical parameter for a



Experts Conclusion

+

EMP P.168-W DiSEqC 1.1/1.2 switch is a very smart device. It is not only easy to install with DiSEqC 1.1 or 1.2 compatible receivers, but its electrical performance is really superior! For some input ports and frequencies, we were even unable to detect any change in signal quality despite using a dedicated analyzer (not just a commercial receiver).



Peter Miller
TELE-satellite
Test Center
Poland

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It is difficult to attach cables to this switch – the connectors are too close to one another. If we could, we would also change the color of the casing. We usually do not pay attention to such kind of attributes for switches that are supposed to be mounted somewhere under the roof, but P.168-W will most likely be put in a visible place with a bunch of white cables connected to it from the bottom. Why not grey or white?

TECHNIC DATA

Manufacturer	EMP-Centauri, Czech Republic
Internet	www.emp-centauri.cz
Fax	+420-376-323-809
Model	P.168-W
Function	8+1 inputs DiSEqC 1.1/1.2 switch
Frequency range	5-2300 MHz
Control	DiSEqC 1.1, 1.2
Insertion Loss	Sat inputs: 5dB avg.; Terr. input: 3 dB avg.
Isolation	30 dB avg.
LNB current	400 mA max.
Current drawn	50 mA max.
Dimensions (w,d,h)	112.3 x 112.3 x 48.3 mm
Temperature range	-30°C~+70°C

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Table of satellite channels for EUBOR64 4.0 East, EUBOR64 4.044.0 East, EUBOR64 4.044.0 East, and SIRIUS 2.065.0 East.

Table of satellite channels for SIRIUS 2.065.0 East, SIRIUS 2.065.0 East, SIRIUS 2.065.0 East, and SIRIUS 2.065.0 East.

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Main table containing satellite data with columns for Frequency, Channel Name, Symbol rate, Coverage, and various service details. Includes sections for EUTELSAT, HELIAS, TURKASAT, and EXPRESS AM1.

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SatcoDX Global Satellite Chart 10/2007

Freq/Ch Channel Name	Symbol rate	Freq/Ch Channel Name	Symbol rate	Freq/Ch Channel Name	Symbol rate	Freq/Ch Channel Name	Symbol rate	Freq/Ch Channel Name	Symbol rate	Freq/Ch Channel Name	Symbol rate	Freq/Ch Channel Name	Symbol rate
3.987.0 ETV 3000	3.987.0 Alameas 5200	3.991.0 A2 2000	3.991.0 BTV 3 2000	3.991.0 BTV 4 2000	3.991.0 SABC 2 2000	3.991.0 SABC 3 2000	3.991.0 BTV 1 2000	3.991.0 BTV 2 2000	3.991.0 BTV 3 2000	3.991.0 BTV 4 2000	3.991.0 BTV 5 2000	3.991.0 BTV 6 2000	3.991.0 BTV 7 2000

SatcoDX Global Satellites chart 10/2007

Freq/Pol Channel Name	Symbol rate	Freq/Pol Channel Name	Symbol rate	Freq/Pol Channel Name	Symbol rate	Freq/Pol Channel Name	Symbol rate	Freq/Pol Channel Name	Symbol rate	Freq/Pol Channel Name	Symbol rate	Freq/Pol Channel Name	Symbol rate	Freq/Pol Channel Name	Symbol rate
#1100 AS2	30000	#1101V DSR 104	30000	#1101H1 TOTATU	40000	#1101V1 Venus Radio 2	27000	#1101H1 CH285	26680	#1101V1 Helix 1	28000	#1101H1 CTV4	41810	#1101V1 CTV4	41810
#1101V1 DSR 104	30000	#1101H1 CH285	26680	#1101H1 CH285	26680	#1101V1 Venus Radio 2	27000	#1101H1 CH285	26680	#1101V1 Helix 1	28000	#1101H1 CTV4	41810	#1101V1 CTV4	41810
#1101H1 CH285	26680	#1101V1 Venus Radio 2	27000	#1101H1 CH285	26680	#1101V1 Venus Radio 2	27000	#1101H1 CH285	26680	#1101V1 Helix 1	28000	#1101H1 CTV4	41810	#1101V1 CTV4	41810

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Main table listing satellite channels with columns for frequency, polarization, and channel name. Includes sections for ASIASAT 4, SINOSAT 3, THAIACOM 1A, and various regional channels.

Satellite Global Chart 10/2007

Freq/Ch Channel Name	Symbols rate	Freq/Ch Channel Name	Symbols rate	Freq/Ch Channel Name	Symbols rate	Freq/Ch Channel Name	Symbols rate	Freq/Ch Channel Name	Symbols rate	Freq/Ch Channel Name	Symbols rate	Freq/Ch Channel Name	Symbols rate	Freq/Ch Channel Name	Symbols rate
12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000
12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000	12.2011 ABC-CHI2	30000

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*02021 CRKT	20000	*02021 CRKT	20000	*02021 CRKT	20000	*02021 CRKT	20000	*02021 CRKT	20000	*02021 CRKT	20000	*02021 CRKT	20000	*02021 CRKT	20000

Main table containing satellite data with columns for Frequency, Channel Name, Symbol rate, and various satellite names like BRASILEX, AMAZONAS, and INTNSW.

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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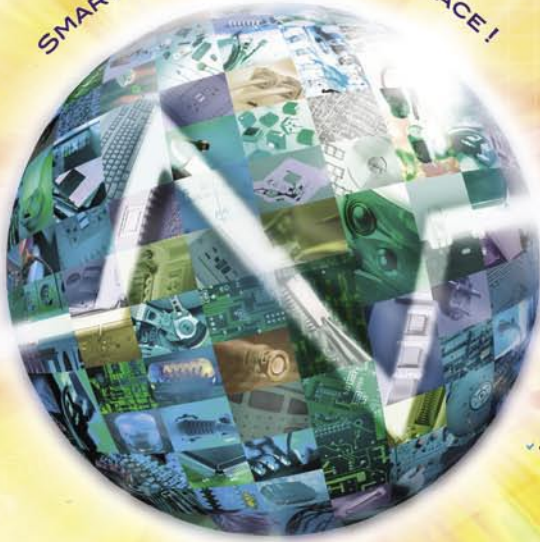
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„Only the Best“

Alexander Wiese

Only the best brands and the best quality, that is satellite wholesaler Doebis' business strategy. Their customers are exclusively dealers and other wholesalers; not end users. The concentration on quality products is a logical consequence to focusing on dealers: while end users primarily look at price and perhaps not so much at quality, with professionals it is the opposite. Since professional antenna installers are paid by their customers to erect the perfect satellite system, these installers need to use quality parts. In reality, the pros themselves are also looking closely at their costs.

Founded in 1987 by Hilmar Doebis, this company literally started in a garage. This garage eventually became a barn. Hilmar was a satellite enthusiast and was occupied back then with the sale of actuators with which he had great success. His company expanded but after 10 years he reached his personal limits. Since he had accumulated a customer base consisting of more than 1000 domestic and international addresses, his business became very attractive to others. The company Gäfgen saw the potential and acquired Doebis in 1998. Gäfgen is an old-time wholesaler in the electronics installation field; it was founded in 1920.

Since Gäfgen took over, Rainer Werking has been running things. Christoph Goebels

is owner and operator of Doebis. In 2003 Doebis moved to a new location in the business district of the small town of Muendersbach and only 17 km from the main highway to Frankfurt.

The fact that the mother company deals in the electronics installation field can be seen on the building: as soon as it gets dark out, the ceiling lights automatically come on – but only when motion sensors detect that someone has entered the room. Even the warehouses are heated although not with a normal heating system. It is much more ingenious. Rainer Werking explains, "10 holes were drilled that go 70 meters down into the ground. From there the ground water, sitting at a constant temperature of



▲ Rainer Werking modestly refers to himself as "Team Leader" and not General Manager. In reality he manages Doebis. But he really doesn't need a title; he already has one: he is the current German seniors shot-put champion!

14 ° C (57 ° F), is sent via circulating pumps to the heating system installed in the floor." And what is used to heat in the winter is also used to cool in the summer. Gäfgen is always happy to bring visitors to see the



▲ Doebis' facility in Muendersbach. The offices are located towards the front with the warehouses in the rear. A sign on the front door lets everyone know that multiple languages are spoken here: besides English and German, customers can also communicate in Turkish, Russian and French.

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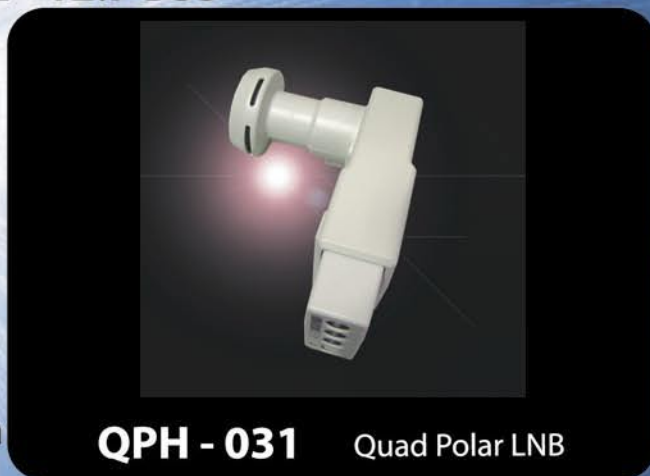
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These two female employees have no problems working with all of the male employees. Kerstin Kraemer (left) handles all the incoming telephone calls while Jutta Lang (right) handles the media side of the business such as web site design as well as the ads that appear in every TELE-satellite issue. Jutta Lang has quite a bit of work ahead of her: Doebis is planning an online store where registered customers can place their orders.



Here is the technical support team: Dennis Hering (left), Erol Alguel (center) and Claus Ruebesam (right). Claus comments, "We handle all incoming repair contracts on the same day." Nothing is left lying around; it is all part of Doebis' customer service. Every work station has three antenna connections to the antenna farm at the front of the building. There you will find a 1.0-meter motorized antenna, a 1.2-meter motorized antenna, a Toroidal 90 for Turksat, Arabsat, Hotbird, Astra, W3A and Thor, a Maximum E85 Multifocus dish and a 1.0-meter multifeed. A small 60cm antenna with more than a 30-meter cable run serves as a reference point. "This allows us to test whether a reception problem is at the receiver end or at the antenna end", explains Claus.

advantages of the energy saving techniques used at the Doebis facility.

The lighting and heating systems aren't the only thriftiness that can be seen at Doebis; a visitor at the main entrance won't find a main lobby with a receptionist, instead they would walk right into the sales room. "Effective" would have to be the best word to describe the way Doebis operates. In 1998 when Doebis changed hands there were only seven employees; today it is 18. Rainer Werking, who made a point of highlighting the "Team Leader" title on his business card, counted them for us: "We have five technical employees, four office employees plus a Team Leader, five warehouse workers plus supervisor, a media designer and my secretary who also answers the telephone."

Doebis has everything a satellite installer would need, and then a little bit more. What satellite dealer today needs a 4.9-meter antenna? No problem, "we can deliver a dish like that immediately, we have them in stock", explains Rainer Werking as he shows the dish. Sure enough, there it is, a

A look in the shipping department: Maximilian Steiger prepares a package for shipping while warehouse supervisor Wilfried Kleeman looks over the shipping paperwork. The boxes on the pallets in the background have already been packed and are ready to be moved into one of the two shipping containers. There are always two containers sitting on their loading docks. Doebis works with the shipping company GLS; the containers are picked up every day and the boxes are delivered to the customers.



DXer's dream ready to be picked up! Naturally though, the majority of their business comes from other products: "70% of our sales involve receivers", notes Rainer Werking, "10% are from LNBS, 5% from signal analyzers with the rest being from dishes and accessories."

That it is receivers that make up most of the sales is obvious: they are the most expensive products. What about HD receivers? Rainer Werking surprised us: "For 2007 20% of our receivers are HD models, for 2008 we expect this to climb to 40% - of course, with the right kind of HD channels,

A look at the antenna section of the warehouse. Rainer Werking is holding two of the most asked for dishes. On the shelves to the right are mounting rings for the 1.9-meter antennas. Doebis also stocks 3.05 and 3.65-meter mesh antennas!



The Sales Team at work: customer orders find their way here to Karl-Friedrich Morgenthal (left) and Rainer Six (right)...



...and Thorsten Mueller (left) and Peter Michels-Thies (right) who is also project manager.



What do their sales look like geographically? "75% of our sales are domestic with the remaining 25% internationally in Europe", explains Rainer Werking, "we don't expect this ratio to change in the future." An expansion internationally is not being planned at this time. New customers must first go through a very strict set of controls: "Doebis requires proof of who they are, and for international customers, their tax and value-added tax numbers are needed", explains Rainer Werking their strategy to sell only to professional dealers.

What does Doebis see for the future? "Home Multimedia, that is, receivers with network connections", reveals Peter Michels-Thies, project manager. "HD Receivers", suggests Rainer Werking, "Our property is 8000 Sq-meters in size of which 1100 Sq-meters has already been occupied. We could expand 500 Sq-meters any time we want." There is enough room for continuous expansion at Doebis! Focusing on dealers has been a successful strategy, and coupled with rational and effective management, it is possible to offer attractive prices. Doebis is setting itself up very nicely for the future!

it could be even more."

Not much free space can be seen in the warehouse. No problem, an extension can easily be added.

Doebis focuses their efforts on quality brands. "Up until two years ago, some of our products were 'private label'", reflects Rainer Werking, "but we gave that up." It was a good decision; this gave Doebis the freedom to distribute products from quality manufacturers. "We currently have 100 different receiver models", explains Product Manager Karl-Friedrich Morgenthal. Every model from Humax is offered; Doebis is the main distributor for Humax in the German-speaking region. Models from Topfield and Eycos are also offered.

Rainer Werking shows us his favorite picture: "Where there is Unity, there is also Success". He explains that the end-effect looks something like this: "If the warehouse should get very busy, management also gets involved: we roll up our sleeves and work together to make sure that everything is packed for shipment." Teamwork becomes reality.



Tony Di Rienzo



Tony moved his equipment cabinet away from the wall to show us his cabling. He can connect up to six receivers on his antennas. A 4DTV receiver functions as a central power supply for the LNBS and also acts as the positioner for the actuator motor. All additional receivers are connected as slaves via a splitter or DiSEqC switch.



Tony Di Rienzo in his backyard standing next to his 3-meter dish. In front of him is one of his 120cm antennas with Stab motor.

Tony Di Rienzo should be a familiar name with TELE-satellite readers. In the 03/2006 issue, TELE-satellite reported on his C-band reception experiments using a small dish. That report created quite a stir on the satellite scene. We wanted to know what Tony was up to so

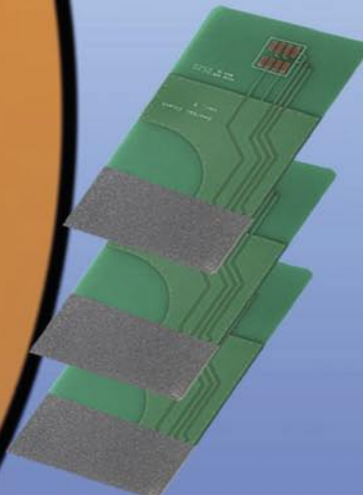
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P.168-W

9in/1out switch for direct connection of up to 8 SAT antennas to one receiver. The switch can be used practically with any type of DiSEqC receiver. Inputs are selected by DiSEqC 1.2 command "Goto nn" (6B), or by DiSEqC 1.1 command "Write N1" (39). Additional input for terrestrial antenna allows to combine satellite and terrestrial signals into one cable. The unit features weather-proof casing and short-circuit protection.



P.162-IW

2in/1out DiSEqC 2.0 switch in weatherproof housing for connection of 2 satellite positions to one receiver. The inputs of the switch are controlled from a receiver by "Position" command and are through for 22 kHz and DiSEqC signals, short-circuit protection is included.

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we paid him a visit at his house in a suburb of Toronto.

Tony came to Canada from Abruzzo, Italy back in 1968. He is a construction installer by trade and this gave him the urge to start building. His satellite hobby really began when he was at a friend's house that had a big dish. "I really liked all the sports feeds that I couldn't get on regular tv", Tony recalls. He found out that there were satellite feeds that allowed him to watch all kinds of sporting events. He shelled out CAD \$3700 and had a 3-meter dish

erected in his yard back in 1988. What's so surprising: "That is still the same dish over there in the yard!" It still stands and receives feeds just like it did back then.

Even the actuator is almost the original; he upgraded from a VonWeise 18" actuator to a 24" actuator of the same brand name. The larger actuator gave him a turning radius from 20° west to 137° west: "This lets me receive 52 satellites", explains Tony proudly. He also has two additional 120cm antennas installed, one in his yard and another on his roof, and both of

which run on Stab HH120 motors. With these he receives his favorite satellites Telstar 12 at 15° west and Atlantic Bird at 12.5° west.

Tony, who is married with three kids, is a real-life tester with Fortec Star. New receivers are tested by him in real-life situations so that flaws can be identified early. "Every function in the software must be checked from scratch anytime there is an update", explains Tony who enjoys this work. He is looking forward to testing the upcoming HD prototype from FortecStar.



Tony performs blind scans using a prototype of the Fortec Star Lifetime Classic with CI; he uses the receiver to the right for his regular channels.



Tony can test two receivers by splitting the video inputs of his Sony TV. In this example he shows us a PAL signal from the Quali HD receiver in the image to the left. The image to the right shows the same channel from a Fortec Star receiver using an LNB splitter. This allows him to confirm whether or not PAL signals are correctly converted into NTSC.

„Satellite Grandfather“

Ivor Cartmell is very proud of his nickname: "Grandfather of Satellites". He was born in Zambia, an area that previously belonged to North Rhodesia. In his own quiet way he really does live up to the name "grandfather". And as such he has accumulated quite a bit of satellite business experience.

Ivor, who studied mechanical engineering, worked as a manager in the production of brakes and clutch assemblies. After he retired, he devoted his time to satellite reception. The deciding factor was a Christmas present he received in 1994. Ivor explains, "My son gave me a satellite system as a gift."

When the PayTV provider DSTV started a few years later, Ivor started his business. In 1998 he entered into a cooperation with the religious 7th Day Adventists who transmit the 3ABN channel via THAICOM. Today Ivor supports 10 installers and supplies them with complete sets at a good price. "80% of these systems are shipped with a 65cm antenna, the remainder get a 100cm dish", explains Ivor.

He sells 500 to 600 of these systems every year and utilizes his employees to install about 100 of these systems. Ivor has ambitions: "It is my dream to operate an uplink station." He certainly has the room for it.

Ivor inside his shack in which he is constantly at work testing new receivers and pre-programming them before they are sold to customers.



Ivor in front of his locally made 4.0-meter mesh antenna; the holes in the mesh are so small that this dish is perfectly suited for the Ku-band. He installed the actuator in such a way that he can turn his antenna nearly 180°! Other dishes include three motorized 2.2-meter antennas as well as smaller 1.2-meter and 60cm antennas. The "flowered" antenna is pointed to THAICOM at 78.5° east for the C-band with the Ku-band LNB looking at 68.5° east.





On this plot in the suburb of Midrand, north of Johannesburg, Ivor has room for not only numerous antennas, but also for chickens and a swimming pool.

To the left partially hidden behind a tree are three more 100cm antennas installed near the corner of the house and aligned to 36° east (for Multichoice), 68.5° east (for Christian Channel) and 16° east (for the French-language channels from Mauritius and Madagascar).



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MCS Caxton in Johannesburg/South Africa, distributes TELE-satellite Magazine in South Africa, Namibia, and Botswana. Butch Courtney (left) is MCS Managing Director, Alexander Wiese (center) Publisher, and Luisa Rebelo, MCS Account Manager for TELE-satellite Magazine.

Exhibition Preview

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www.eebc.net.ua



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



- **9 - 13 October 2007: Taipei International Electronics Autumn Show**
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www.taitronics.org/taipei/

- **22 - 25 November 2007: Broadcast Cable & Satellite eurasia**
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İstanbul Expo Center, Yeşilköy, Istanbul, Turkey
www.cebit-bcs.com



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www.cstb.ru

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