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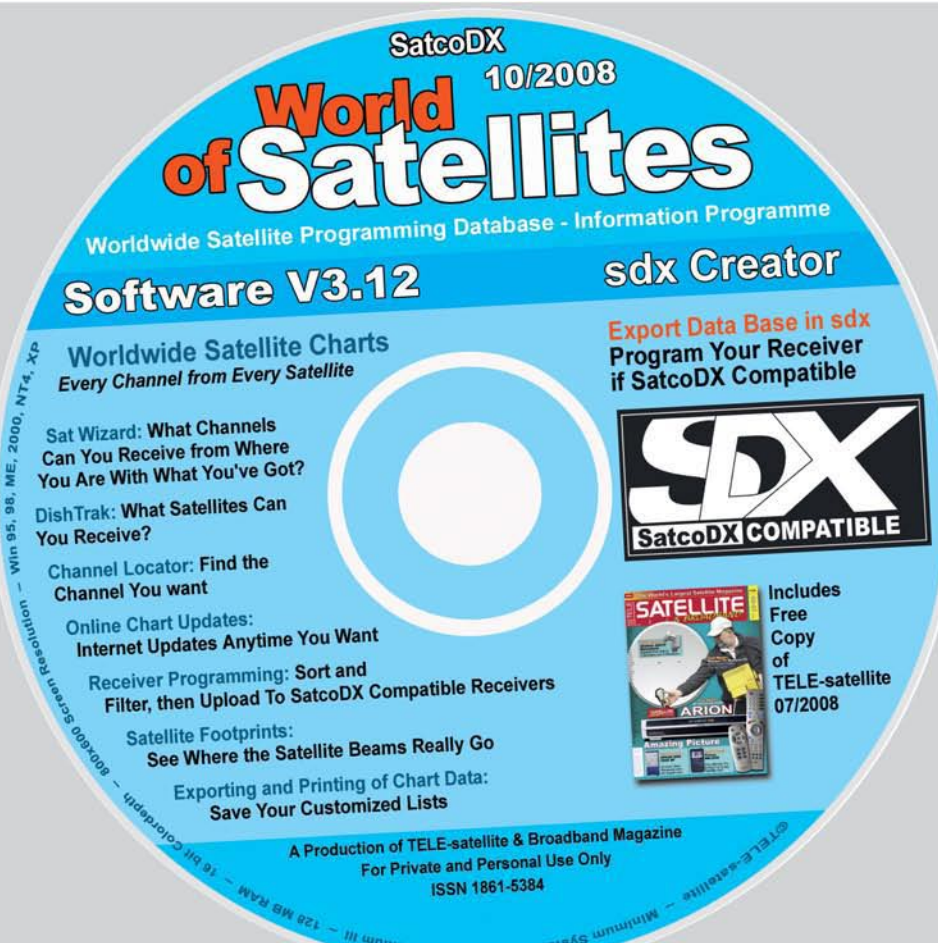
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3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.764	V	Canal 5 El Lider	PANDORUN	Spanish
3150 PANAMSAT 1R (315.0E - 45.0W)	TV-DIG	4	3.764	V	Telecadena 7 y 4	PANDORUN	Spanish
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205
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e 4 Receptores

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Promax TV Explorer II+
Localizar Esses Transponders
Escondidos

Português

Relatório de Ensaio
AF-9400PVR HDMI
ARION

AF-9400PURH

AF-9400PVR HDMI

Imagem Extraordinária

Relatório de Ensaio
SPAUN SMS
5808 NF
Ligue Mais
Receptores
Sem Nenhuma
Perda de Sinal

Relatório de Ensaio
Trimax
SM-2200
O Último Brinquedo -
O Que Um Entusiasta
de Satélites Deve Ter

Ler Revista TELE-satélite online:

<http://magazine.tele-satellite.com/TELE-satellite-0807-por.pdf>

ROM Cea mai mare revistă de satelit al lumii # 205 07-08 2008

TELE SATELLITE & BROADBAND

Reportaje teste
Monoblock
Jiuzhou JQA1P
Extindeți-vă antena la
2 sateliți și 4 receptoare

Reportaje teste
Promax TV Explorer II+
Găsiți acele transpondere
ascunse

Românesc

Reportaje teste
AF-9400PVR HDMI
ARION

AF-9400PVR HDMI
ARION

Imagine uluitoare

Reportaje teste
SPAUN SMS
5808 NF
Conectați mai multe
receptoare fără a
pierde semnal

Reportaje teste
Trimax
SM-2200
Cea mai nouă
jucărie - o necesi-
tate pentru fiecare
fan al sateliților

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RUS Крупнейший в мире спутниковый журнал # 205 07-08 2008

TELE САТЕЛЛАЙТ & BROADBAND

Тестируем
Jiuzhou JQA1P
Monoblock
Модернизируем
Вашу антенну для
2 спутников и 4 приемников

Тестируем
Promax TV Explorer II+
Поиск скрытых
приемопередатчиков

Русский

Тестируем
AF-9400PVR HDMI
ARION

AF-9400PVR HDMI
ARION

Удивительное изображение

Тестируем
SPAUN SMS
5808 NF
Объединяем
больше
приемников без
потери сигнала

Тестируем
Trimax
SM-2200
Идеальная
игрушка -
для каждого
спутникового
любителя

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SVE Världens största satellittidning # 205 07-08 2008

TELE SATELLIT & BROADBAND

Testrapport
Jiuzhou JQA1P
Monoblock
Utöka din antenn till
2 satelliter för 4 mottagare

Testrapport
Promax TV Explorer II+
Hitta de gömda
transponderna

Svenska

Testrapport
AF-9400PVR HDMI
ARION

AF-9400PVR HDMI
ARION

Fantastisk bild

Testrapport
SPAUN SMS
5808 NF
Anslut fler
mottagare utan
signalförstärkning

Testrapport
Trimax
SM-2200
Den slutliga
leksaker -
Ett måste för varje
satellitentusiast

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TUR Dünyanın En Büyük Uydu Donanımı Dergisi # 205 07-08 2008

TELE SATELLITE & GENİŞBANT

Test
Jiuzhou JQA1P
Monoblock
Bir Antene
2 Uydu, 4 Alıcı

Test
Promax TV Explorer II+
Gizli Transponder
Kalmayacak!

Türkçe

Test
AF-9400PVR HDMI
ARION

AF-9400PVR HDMI
ARION

Mükemmel Görüntü Kalitesi

Test
SPAUN SMS
5808 NF
Sinyal Kayıpsız
Daha Fazla
Uydu Alıcı

Test
Trimax
SM-2200
Uydu Tufkanlarının
Vazgeçemeyeceği
Harika Bir Oyuncak

Uluslararası TELE-satellite Dergisi'ni online okuyun:
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TM-5000 Series with USB PVR & Component

92%
 "What Satellite"
 Jan 08



- 10,000 Channel Memory
- Component (YPbPr) Output
- Very Fast & Detailed Blind Search
- USB 2.0 for Software Download/Upload, MP3 & JPEG Playback
- Record/Playback FTA Channels by USB
- Super Sensitive Tuner

TM-5200 D USB

Free-To-Air Satellite Receiver

TM-5300 D+ USB

Built-in Smart Card Reader

TM-5400 CI+ USB

Card Reader + Common Interface

TM-5600 CI USB

Common Interface Slot

TM-6000 Series High Definition USB PVR



- 10,000 Channels
- Record Scrambled/FTA Channels by USB
- USB 2.0 for Software Download/Upload, MP3 & JPEG Playback
- MPEG-4 & H.264 (1080i/720p/576p/576i)
- 1 Smart Card Reader & 2 CI

TM-6800 HD

DVB-S/S2 Satellite

TM-6900 HD COMBO

DVB-S/S2 Satellite & DVB-T Terrestrial

TM-3000 Series



TM-3500 D+ USB:

- 6,000 Channels
- Timeshift
- Built-in Smart Card Reader
- Record Scrambled/FTA Channels by USB
- Record 1 Channel and watch another at the same time! (on same TP)

TM-3100 D

Free-To-Air Satellite Receiver

TM-3200 D+

Built-in Smart Card Reader

TM-3300 2CA

2 Card Readers

TM-3400 CI+

Card Reader + Common Interface

HDTV

METABOX[®]

Amazing Digital World with High Definition TV



HDMI USB 2.0 HD HIGH DEFINITION DOLBY DIGITAL DTS-ES DVB Digital Video Broadcasting

METABOX[®] HD CI

VFD DISPLAY

DVB-S/DVB-S2 (H.264) HD, SD Compliant

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USB 2.0 on the front panel

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CONTACT : master@metamultimedia.net

WEBSITE : www.metamultimedia.net

METABOX[®]
www.metamultimedia.net



VENUS
Universal Dish for
C and Ku Band30



ABCOM IPBOX 9000 HD PLUS
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DVB-C or DVB-T.....36



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Dear Readers



Rising energy costs are having an impact on the satellite industry as well. While the energy consumption of satellite receivers and other components has always been an issue, it is only recently that this topic has moved to the centre of attention. Scarce resources and increasing costs are the major contributing factors for that. If you want to keep your energy bill at bay we have a solution for you: watch less satellite TV!

There is, however, an alternative which sounds a lot better: keep watching but at half the price – simply by using devices that consume less power. While the first solution is in our hands, the alternative is the manufacturer's business. Many of them have already realised that potential and have started to introduce low-energy receivers and devices.

Of course we at TELE-satellite are following this development very closely. From the current issue onward we will also publish the so-called TELE-satellite Energy Award, which describes the power factor. The closer it is to the value 1, the better. While the power factor does not indicate whether a device consumes little or much power, it does

describe how efficient power is being used. After all, a PVR with integrated hard disk will always use more power than a simple set top box without any extras. If the power factor is high this means that energy is used very efficiently rather than being wasted.

The power factor is rated between 0 and 1. In actual fact a power factor of 1 can only be reached in theory. Realistic figures usually lie between 0.5 and 0.6. In this issue, TELE-satellite author Jacek Pawlowski explains in more detail all you need to know about the power factor and how it is calculated. You'll find out that it's not enough to only measure energy consumption with an ampere meter. But that's what TELE-satellite is here for – looking beyond the headlines!

**Yours,
Alexander Wiese**

P.S.: My favourite radio station this month is BG Radio from Bulgaria on THOR 3 at 359.2° East (0.8° West), 12.169 H, playing contemporary music without a lot of talk.

ADVERTISERS

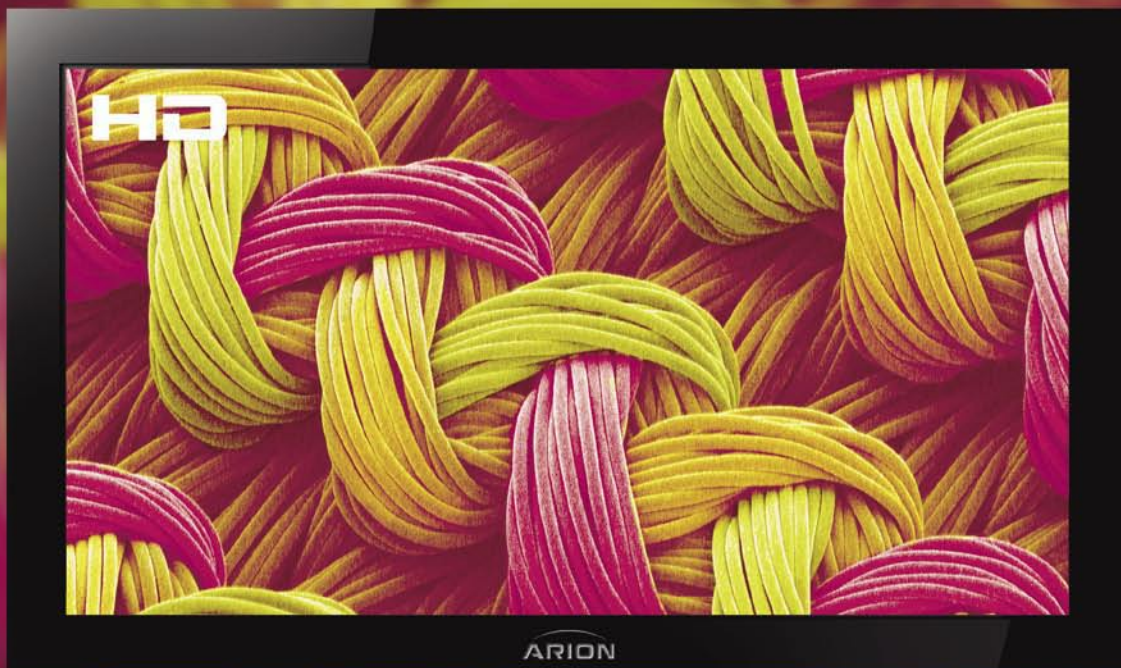
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Who makes HD quality?



Pure & Vivid HD picture / Stylish wide body (430mm) with VFD front panel display / Supporting 2 CAMs of DVB Common Interface Standard / Various Video Display Format With PAL/NTSC/576p/720p/1080i 50Hz/60Hz Support / HDMI Digital Audio & Video Output / Easy and Fast Auto Programming, Intuitive User Interface / Supports RS-232C port for S/W upgrade

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Good Choice Better Life!

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www.arion-digital.de

High Definition Digital Satellite Receiver ARION AF-4000HDCI



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NEW TECHNOLOGIES – NOW ON STOCK

We are official **HUMAX** distributor

HDTV Receiver Selection

HUMAX

PR-HD 1000 / PR-HD 1000 C



HDTV for satellite and cable reception

- Suitable for Premiere and Premiere HD
- MPEG4 / MPEG2 Technology
- opt. out for Dolby Surround Sound
- Nagravision embedded
- HDMI (with HDCP)
- 2 x CI Slots
- 2 x Scart

HUMAX

iCORD



Twin HDTV PVR Receiver

- Recording 4 channels whilst watching a live tv or Play-back
- Time shifted recording for 2 hours
- Integrated 160 or 320 GB HDD
- 1080i, 720p, 576p, 576i video resolution
- Audio decoding: Dolby AC-3 (Dolby Digital)
- AV File transfer by USB 2.0 port
- 2 Common Interfaces
- HDMI output

TOPFIELD

TF-7700 HD PVR



HDTV Digital Satellite Receiver with Personal Video Recorder

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

TOPFIELD

TF-7700 HSCI / TF-7700 HCCI



HDTV for satellite and cable reception

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

HUMAX

PREMIERE Receiver

PR FOX II



- Premiere and Kabel Digital
- 1000 services (TV and Radio) programmable
- Optical digital output

BLU FOX S

blucom **ENTAVIO**



- Premiere and Premiere Star
- interactive services via mobile phone by Bluetooth
- Optical digital output

BLU FOX CI

blucom **ENTAVIO**



- Premiere and Premiere Star
- interactive services via mobile phone by Bluetooth
- 1x CI Slot
- Optical digital output

TOPFIELD

TF 6000 FE



Digital Satellite Receiver

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

TF 6000 T

Digital Terrestrial Receiver

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

HUMAX

F3 FOX CI



Digital Satellite Receiver with CI Slot

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

Measuring Instruments

emitor

MEGALOOK

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

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

ALSO AVAILABLE:

- Combolook
- Digital Satlook NIT
- Satlook Micro +
- Satlook Mark IV

DIGISAT PRO ACCU



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

ALSO AVAILABLE:

- Digisat
- Digisat+
- Digisat Pro
- Digisat Multi

DIGIAIR dB



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

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

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Мы говорим и даём консультации на русском языке!

ALPS

GIBERTINI

PREMIERE

Inverto

MW

**MICROELECTRONICS
TECHNOLOGY INC.**

Stab

NETWORK streaming clients

ELANVISION EV-8000S



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

TOPFIELD
TF-6000 PVR E-LAN



Digital Satellite Personal Video Recorder

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

Available in black and silver

TOPFIELD
TF-6000 PVR W-LAN



Digital Satellite Wireless Lan PVR

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

Available in black and silver

PCMCIA-Modules



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

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

LNBs

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



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

MAXIMUM
V-Series



AVAILABLE AS:

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

Full LNB range MAXIMUM available from stock

Multiswitches / DiSEqC - Switches

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



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

SPAUN

Full Range

Parts

Multifeederholder for 2, 3, or 4 LNB



Wallmounts

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



- F-Connector – 7 mm
- F-Connector – 7 mm waterresistant
- F-Connector – 4 mm and more

Remotesystems

- AV-Linker – Videosender for remote control
- Remote Blaster
- Zapline 2 and more



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

invacom QDH 031



AVAILABLE AS:

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

Full LNB range INVACOM available from stock

**MICROELECTRONICS
TECHNOLOGY INC.**

High-Line-Series



AVAILABLE AS:

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

Full LNB range MTI available from stock

Dishes

GIBERTINI

IRTE

TRIAx

emme esse
MULTIMEDIA SYSTEM



- 40 cm – White
- 70 cm – White, Black, Red
- 90 cm – White, Black, Red
- 100 cm – White, Black, Red
- 120 cm – White
- 130 cm – White, Black
- 160 cm – White

Big Dishes directly from our warehouse!
KTI, ORBITRON, IRTE

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



Motors

Aktuatoren/ Actuators

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



H-H Mounts

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

Balcony mounting parts

- 25 cm distance – Steel
- 50 cm distance – Steel



120 cm length – Ø 6 cm

ALSO AVAILABLE:

- Balcony stand 100 cm Aluminium
- Balcony stand 100 cm Steel
- Balcony stand "Holland"
- Balcony holder L-form 25 cm
- Balcony holder L-form 50 cm



Edited by
Branislav Pekic

EUROPE

EUROPE

EBU EXPANDS HD CAPACITY FOR OLYMPIC GAMES

NTT Electronics Corporation has delivered its HDTV MPEG-2 Encoder HE5100 to European Broadcasting Union. EBU is using NTT Electronics' HE5100 to expand HD capacity on its contribution network. NTT Electronics' encoders will be used for live coverage of the 2008 Beijing Olympics Games, Euro2008, Tour de France, Roland Garros, and Wimbledon. The HE5100, delivered to EBU, incorporates the internally-developed single-chip MPEG-2 codec LSI to realize high image quality in a compact unit. It supports both SDTV signals (576i/512i/480i) and HDTV signals (1080p/1080i/720p).

AUSTRIA

TELECOM AUSTRIA SELECTS ALCATEL-LUCENT TO BOOST IPTV

Alcatel-Lucent has been selected by Telekom Austria, Austria's major service provider, to enrich its IPTV offering. The operator is launching two state-of-the-art features – Time shift TV and High-Definition TV (HDTV), enhancing the service experience of its aonTV subscribers. Customers will be able to stop live broadcasts, take a break, and then continue to watch the transmission of the program thanks to Telekom Austria's Time shift TV capabilities. Additionally, the launch of Telekom Austria's HDTV service brings to the Austrian households the next level of visual quality and TV-experience.

BELARUS

ZTE AWARDED IPTV CONTRACT FROM BELTELECOM

ZTE Corp has signed an IPTV project contract with the Republican Unitary Telecommunication Enterprise (RUE) Beltelecom in the Republic of Belarus. Since May 2006, Beltelecom has been initiating the national IPTV development and conducting IPTV trial tests with leading providers in the industry. ZTE has beaten other competitors in the contract bid with its network video technology, which has a solid network performance infrastructure design and end-to-end multimedia solutions.

BELGIUM

BELGACOM IPTV REVENUES UP 125 PER CENT

Belgacom has announced that first quarter revenues from its IPTV service rose 125 percent in the period relative to the same three months of last year, reaching a total of €18 million. The total number of subscribers for the TV service rose by 43,931 during the period to reach 349,250. ARPU also rose from EUR 13.40 to EUR 17.40 per month by the same year-on-year comparison.

BULGARIA

CABLETEL INTRODUCES HDTV

CableTel became the second Bulgarian cable operator to launch digital HDTV in May. The company's main competitor, Eurocom, has already announced the launching of the same service with three channels. CableTel's starting pack-

age includes four channels in the new format - Discovery, National Geographic, Eurosport and Premium Digital. By the end of 2008, the package would contain a total of 10 channels. CableTel's HDTV service will be available in 16 areas, where the company has digital television platforms. The operator is investing EUR 300.000 in the new platform. CableTel's HDTV service is offered at BGN 19.90 a month, on top of the subscription fee for regular cable. The decoder costs BGN 349.

CROATIA

T-HT ENDS FIRST QUARTER WITH 56.355 IPTV SUBSCRIBERS

T-Hrvatski Telekom (T-HT) totaled 56.355 customers for its MAXtv IPTV service at the end of the first quarter of this year, compared to 15.976 at the end of March 2007. MAXtv offers over 70 national and international TV channels as part of the basic package, with premium channels such as HBO costing extra. Subscribers additionally have access to over 1,200 national and international titles on-demand.

CZECH REPUBLIC

TELEFONICA O2 ADDS MULTI-ROOM VIEWING

Telefónica O2 Czech Republic has added a new service called Multi to its IPTV offering, enabling customers to watch different channels from the service on two TV sets located in different parts of the home. The service costs CZK 50 (US\$ 3.11) per month, and customers must also rent a second set-top box for CZK 150 per month, or can purchase it outright for CZK 3,499. A new modem with two ports is also required, costing CZK 1.

DENMARK

A+ LAUNCHES CABLE IPTV SERVICE

Telecom and data services provider A+ Group in June launched a cable IPTV service in the town of Ishøj, delivered using a CMTS bypass solution from US firm GoBackTV. The solution provided by GoBackTV comprises the GigaQAM IP (CMTS core and upstreams), GigaQAM (edgeQAM) and RetroVue Application Server resource manager to deliver A+ Group's "FastTV" switched IPTV service to DOCSIS 1.1, 2.0 and 3.0 cable modems without wasting valuable upstream channel bandwidth. FastTV currently offers subscribers in other parts of Denmark up to 50 standard-definition and two high-definition channels.

FRANCE

ORANGE WITH 1.41 MILLION EUROPEAN IPTV SUBSCRIBERS

Orange reached the figure of 1.41 million European IPTV subscribers at the end of March, compared to 770,000 one year previously. The number of Liveboxes sold across Europe in the 1H reached 6.8 million units, compared to 4.6 million in the same period of last year. Orange had a total of 1.28 million IPTV subscribers in France by the end of the first quarter or 72 percent more than in the same period of 2007. VOD services rose to 1.064 million paid-for downloads, compared to 401,000 in the same period of last year.

CSA ISSUES HD LICENSES TO FOUR TV CHANNELS

France's broadcasting authority the CSA has issued HD digital terrestrial television licenses to private networks TF1 and M6 plus pubcasters France 2 and Arte. The ten-year renewable licenses require HD broadcasts to begin by October 30 at the latest. TF1 and M6 have committed to airing at least 80% of their content in HD by the end of 2012. As part of a major initiative towards

fuller HD broadcasting in France, the CSA has also recently invited pay TV operators to put forward proposals for premium HD DTT. So far, only Canal Plus has filed an application.

ITALY

TISCALI EXTENDS IPTV TO MORE CITIES

Tiscali has extended its IPTV service to a further six Italian cities, including Turin, bringing the total number of cities reached to nine. The operator initially launched the service in Milan, Rome and Cagliari in December 2007. The company is reportedly targeting a customer penetration in Italy of 11% by 2009.

THE NETHERLANDS

KPN ADDS 56.000 IPTV SUBSCRIBERS IN FIRST QUARTER

KPN added 56.000 subscribers to its IPTV service in the first quarter of this year, reaching 553.000 and getting a 19% share of the country's digital TV market. The company's share of the Dutch broadband market as a whole was around 44% and KPN is now connecting the first customers to a new FTTH and FTTC network to enable enhanced triple-play services.

SES ASTRA LAUNCHES HDTV BOUQUET

SES Astra has launched a new High Definition (HD) bouquet on Astra targeting the Dutch and Belgian markets. Dutch satellite TV provider, CanalDigitaal, and Belgian sister company, TV Vlaanderen, broadcast their new HDTV package via the Astra satellites at the 23.5 degrees East orbital position. The initial offering includes the documentary channels, Discovery HD and National Geographic HD, as well as the Dutch-based classical music and opera channel Brava HDTV. The launch of additional HD channels is planned for the near future.

POLAND

TPSA ADDS 9.000 IPTV SUBSCRIBERS IN 1Q 2008

TPSA has reported in its first quarter results that it added 9,000 subscribers to its IPTV service during the period to reach a total of 49,000. The company also reached 405,000 Livebox subscribers and a total of 2,079,000 retail broadband subscribers.

PORTUGAL

PORTUGAL TELECOM ENDS QUARTER WITH 47.000 IPTV SUBSCRIBERS

Portugal Telecom added 26.000 subscribers to its "Meo" IPTV service during the first quarter, bringing the total to 47.000. The telco gained 7.000 new subscribers in January of this year, 8.000 in February and 11.000 in March. These net additions do not include subscribers to the Meo satellite TV service launched earlier this year. CEO Zeinal Bava said that Portugal Telecom aims for Meo to be available to 90% of the country's population by the end of this year. The IPTV service currently offers a total of 107 channels.

DS2 SELECTED BY PORTUGAL TELECOM

High-speed cable communications provider, DS2, has been selected to supply remotely-managed multi-channel IPTV for Portugal. Portugal Telecom will be using UPA-Compliant 200Mbps powerline cables, supplied by DS2, which have been proven to reduce installation costs, and times, for IPTV services. One of the main features of Portugal Telecom's new IPTV plan is that they can offer their customers both HD and SD channels on differing TVs through providing them with two set-top-boxes (STB). Part of the attraction of DS2's powerline technology, is that it allows

customers of Portugal Telecom to have their STBs installed anywhere in the house without extra wiring.

RUSSIA

MICROSOFT SIGNS FIRST RUSSIAN IPTV DEAL

Microsoft has scored its first deal in Russia and the CIS for its Media-room IPTV platform, which will power a new service being launched by Corbina Telecom. Corbina TV will launch with over 100 channels and access to over 1,000 on-demand films, cartoons and series, plus DVR capabilities when it goes live sometime this summer. Corbina Telecom is a subsidiary of VimpelCom, which claims 51.7 million subscribers.

SPAIN

TELEFONICA ADDS 43.000 IPTV SUBSCRIBERS

Telefonica added 43.000 new IPTV subscribers during the first quarter of 2008, and increased its IPTV penetration rate among its existing broadband customers to more than 11 per cent, from just over 10 per cent this time last year. The IPTV numbers helped Telefonica to a 22.4 per cent increase in first quarter net income to \$2.38 billion.

SWEDEN

TERACOM TO OFFER IPTV WITH DREAMPARK MIDDLEWARE

Teracom has chosen Dreampark's Dreamgallery IPTV Middleware solution. Teracom plans to offer IPTV services using Dreamgallery through its recent acquisition of IPTV operator Svenska Basboxbolaget. Dreampark's IPTV middleware product, Dreamgallery, is the most deployed IPTV middleware in Europe. Clients include Canal Digital, Comvie, Dansk Bredband, FastTV, iVisjon, Smile Content and ViaSat.

TELIA SONERA PASSES 400.000 IPTV SUBSCRIBERS

TeliaSonera has announced that it passed 400,000 subscribers to its IPTV services in the first quarter of this year, with total TV subscriber numbers reaching 797,000. In Sweden alone it reached 318,000 IPTV subscribers by the end of March 2008, an increase of 236,000 from the same period of last year. TeliaSonera reported however that of the 236,000 new Swedish subscribers it gained in the past 12 months, only 14,000 joined in the first three months of this year, and attributed this to increased churn and the national conversion from analogue to digital broadcasting at the end of 2007.

VIASAT TO SELL PAY-TV PACKAGES TO TELIA

Modern Times Group's Viasat Broadcasting has signed a five year agreement with Swedish telecom operator Telia to enable Viasat to market and sell its pay-TV channel packages to Telia's more than 300,000 IPTV customers and broadband subscribers. Viasat's free-TV channels TV3, TV6, TV8 and ZTV, which together account for a third of the commercial viewing in Sweden, have also been included in Telia's 'Lagom' and 'Stor' packages.

SWITZERLAND

TICINOCOM CONDUCTS TESTS OF IPTV SERVICE

Swiss ISP Ticinocom has conducted beta tests of an IPTV offering, called Ticinocom TV, providing the service for free to its ADSL subscribers. The beta service is initially carrying four public service channels - Italian-language offerings TSI 1 and 2, French-language channel TSR 1 and German-language channel SF 1. Once the service is officially launched, it is expected to carry over 100 channels, and will compete with Swisscom's established offering Bluewin TV.

UKRAINE

COMSTAR-UKRAINE INTRODUCES IPTV IN ODESSA

Comstar-Ukraine, a subsidiary of Russian telco Comstar-UTS, has launched a double-play service in the Ukrainian city of Odessa, offering IPTV and high-speed Internet services. The service offers an EPG service called Teleguide for scheduled broadcast content, Reminder to notify subscribers of upcoming favourite programmes and movies, and a DVR function called TSTV.

UNITED KINGDOM

BRITISH TELECOM ADDS 94.000 IPTV SUBSCRIBERS IN Q1

British Telecom added 94,000 subscribers to its BT Vision IPTV service during the first quarter of 2008, bringing the total to 214,000. Out of the total net additions during the period, the subscription attachment rate at point of sale averaged 68%, while the average number of views across all subscribers averaged 29 views per month.



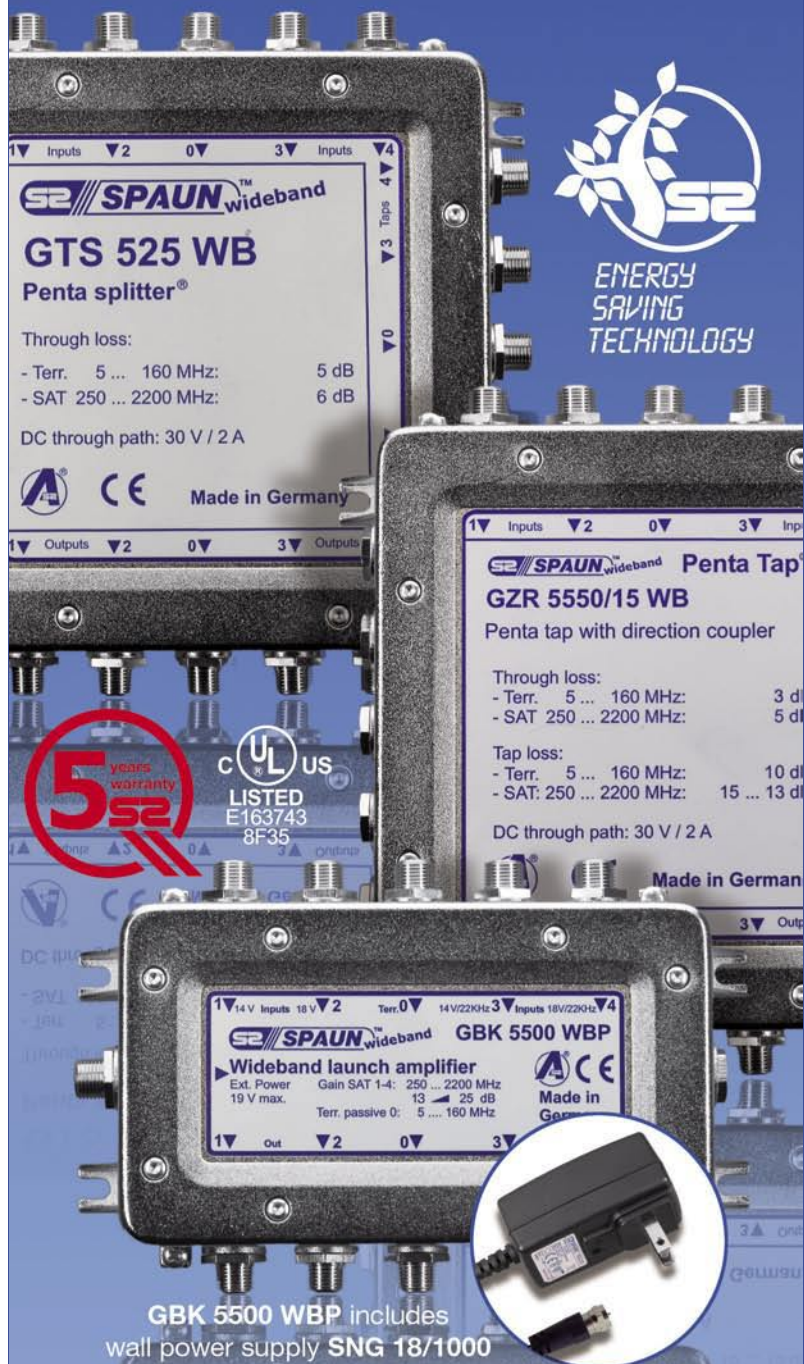
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BT VISION SIGNS SVOD DEAL

BT Vision is to become Europe's first major IPTV player to launch a subscription video-on-demand service featuring content from a US major following a deal to offer Universal's PictureBox service to its customers. The SVoD rights will be made available to BT following exploitation by Sky on its traditional linear premium movie channels. PictureBox is being offered for GBP 5 a month, with viewers being able to choose from 28 Universal titles at any one time.

PACE TO SUPPLY V-BOX FOR BT VISION

BT Vision has chosen Pace Group to supply the next-generation V-box for its IPTV service. The STB was previously supplied by Royal Philips Electronics which is now owned by Pace. The new V-box is an HD capable next-generation PVR with two tuners - providing both DTT channels and IPTV connectivity for on-demand content and interactive services. The V-box provides access to 40 Freeview TV channels and 30 radio channels and can record 80 hours of content. It is based on Microsoft Mediaroom IPTV middleware and Nagravision conditional access technology.

FREESAT TO PROVIDE FREE HD CHANNELS

UK consumers can now get HDTV without having to sign up to cable or satellite for the first time following the launch of BBC and ITV's Freesat service. Freesat, which is now available to 98 percent of UK households through a satellite dish, offers up to 80 channels, including BBC HD, for a one-off fee of about GBP 200. There will be no monthly subscription. ITV HD will not be part of the initial Freesat programming line-up, but it is scheduled to arrive later in the year when around 200 channels will be available.

BBC TO TRIAL HD SUCCESSOR

The BBC is taking part in trials of a new high definition technology, Super Hi-Vision, which is 16 times the resolution of standard HD. Super Hi-Vision, or Ultra High Definition (UHD), provides 7680x4320 resolution images and 22.2 channel immersive audio. It has now reached the stage where test transmissions can be carried out, and the BBC, together with NHK of Japan, and RAI of Italy, will show live Super Hi-Vision pictures at the Amsterdam IBC 2008 technology show in September.

NORTH AMERICA

UNITED STATES

MIDWEST VIDEO SOLUTIONS TO BRING IPTV TO RURAL AREAS

Three independent Wisconsin telecommunications providers are joining forces to start Midwest Video Solutions with the goal of providing IPTV "head-end" services to other telecom companies for the provision of video services in rural areas. The three companies will provide the facilities required for deploying high-end video services to subscribers. They plan to coordinate video signals from two downlink facilities, which will be located in different geographic areas, and transport the aggregated streams to other providers. The video streams will be provided over a redundant fiber optic network, and offer more than 200 channels of TV and digital music, including HD channels.

SUREWEST RECORDS 180 PERCENT INCREASE IN IPTV SUBSCRIBERS

Independent telco SureWest Communications has revealed in its first quarter results that it achieved a 180% increase in subscribers to its IPTV services relative to the same period of last year, reaching a total of 55,200 customers. Of this increase, 172% was attributed to its acquisi-

tion of Kansas City-based Everest Broadband in February of this year. The remaining 8% increase in IPTV subscribers was attributed to "continued high demand" for a recently launched high-definition DVR, supplied by ADB, and increased demand for other premium features including On Demand and high-definition TV. ARPU for video services increased from US\$ 61 in the first quarter of last year to US\$ 64 in the first three months of this year.

POSTDATA TO LAUNCH IPTV SERVICE IN CALIFORNIA

South Korea-based IT services provider Posdata is teaming up with set top box maker Celrun and digital TV platform provider Acanetv to launch a new IPTV service in the U.S. this September. The new service will launch in California and will target Asians who watch Korean television shows and movies. The company is ready to make an initial investment of 10 billion won (US\$ 10 million) and says it already has the contracts in place with the content providers. Postdata plans to eventually expand the network to other areas of the U.S. and offer IPTV services to the mainstream.

TV ONE TO LAUNCH HD CHANNEL

TV One, which targets African-American viewers, will launch a High-Definition channel in the fourth quarter of this year. The new HD channel will be a simulcast of its standard-def channel. TV One's line-up includes classic sitcoms and dramas, such as Martin and Good Times, and movies as well as some original programming. TV One did not reveal if any TV providers have agreed to carry the new high-def channel. However, Comcast and DirecTV both have an equity stake in the network.

FSN TO ROLL-OUT HD IN 2009

Fox Sports Net (FSN) has announced that it will start to upgrade to round-the-clock high definition telecasts in the first quarter of 2009. The move will see more than 3,000 Major League Baseball, National Basketball Association, National Hockey League and NCAA Football and Basketball events shown in HD. The 16 owned-and-operated FSN regional sports networks already air more than 1,700 live high-definition telecasts.

SEA LAUNCH TAKES GALAXY-18 SATELLITE TO SPACE

The Sea Launch international corporation carried out a successful launch of the Zenit-3SL rocket with the Galaxy-18 satellite on May 21. The Galaxy-18 satellite will allow the largest US satellite company Intelsat to provide modern services of the cable television, information and communications services to its subscribers in the continental part of the United States, the states Alaska and the Hawaii islands, as well as Mexico and Canada. The satellite features 24 C- and 24 Ku-band transponders.

SHOWTIME TO ADD 8 HD CHANNELS IN AUGUST

Showtime has announced it will add eight new High-Definition channels in August, bringing its overall HD channel total to 12. Another 10 HD channels will be launched by the first quarter of 2009. For its part, HBO plans to offer all content in HD by the end of this year. Currently, the pay network broadcasts about 85 per cent of its programming in HD.

LATIN AMERICA

BRAZIL

GVT PREPARES FOR IPTV LAUNCH

Telephony and internet access provider GVT says it is ready to launch IPTV services as soon as the government has amended the telecom law to allow

telecom operators to broadcast TV content on their networks. 58% of the operator's 1.37 million subscriber base is already taking broadband as well as telephony services. GVT's network is capable of delivering broadband connectivity of up to 15Mbps. The addition of IPTV would require that a user have access to a minimum 1.5Mbps-2Mbps connection, rising to 6Mbps-8Mbps for HDTV channels.

ASIA & PACIFIC

BRUNEI

RTB BRUNEI TO INTRODUCE HDTV FOR THE OLYMPICS

Radio Television Brunei plans to introduce HDTV soon and to broadcast the opening and closing ceremonies of the Beijing Olympics in high definition. RTB has been carrying out trials using a new 100W transmitter with an HD channel at its Subok earth station near the capital, Bandar Seri Begawan. An HD studio will be operational by the end of July, once all the necessary equipment has been delivered. A new 5kW transmitter will be installed by August to transmit RTB's SD (Standard Definition) and HD channels. The transmitter will also be used to launch a DVB-H trial.

CHINA - HONG KONG

CITY TELECOM ADDS 43,000 CUSTOMERS

Hong Kong's City Telecom has revealed in its results for the six-month period ended 29 February that it added 43,000 customers to its broadband, voice and IPTV services during the period to reach a total of 726,000. During the period the company launched hybrid HD terrestrial/IPTV set-top boxes for all customers in Hong Kong, with off-net customers having access to the set-top box via a rental plan.

CHINASAT 9 TO LAUNCH IN JUNE

China's first direct broadcast satellite (DBS) Chinasat 9 is set to be launched in June. It is part of a DBS system which will transmit signals covering 98 per cent of the nation's territory. It's capable of transmitting up to 200 radio and TV channels to users throughout China, including Hong Kong, Macao and Taiwan. China Direct Broadcast Satellite Co Ltd will have a total of five satellites in orbit and also plans to add Sinosat-4 and Sinosat-6 to its line-up by 2010.

INDIA

MTNL LAUNCHES IPTV IN MUMBAI

MTNL and Aksh Optifibre have launched an IPTV and video phoning service in Mumbai. The IPTV service Aksh-Tel delivers TV programming with add on features like time-shift television and video on demand. The cost for the whole service package, which includes VoIP, video, IPTV and landline telephony, is RS 4,999 per month. Aksh Optifibre is expecting around 50,000 customers in nine months from Delhi and Mumbai; presently it has 3,500 customers in Delhi.

IOL NETCOM SELECTS VERIMATRIX FOR IPTV SECURITY

IOL Netcom has selected Verimatrix as the content security provider for India's first IP-based on-demand television service available to more than 250,000 subscribers. IOL will also be offering premium, MPEG-4 content through subscriber's home PC via Verimatrix's ViewRight PC Player. IOL plans to offer the PC as a viable second screen in a subscriber's home in order to provide a cost-effective option to view its on-demand movie library and 150 broadcast channels.

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UTSTARCOM GETS UNITED TELECOMS CONTRACT

UTStarcom has been awarded a contract by United Telecoms Limited (UTL) to deliver IPTV, bandwidth on demand and VoIP services in the state of Goa. Upon completion, the Gigabit Ethernet Passive Optical Network (GEAPON)/fibre technology network will be the first specifically designed to deliver e-Governance and triple play solutions in India. The deployment of the Goa Broadband Network is an expansion of UTStarcom's recently deployed fibre network with United Telecoms Ltd. The end-to-end network will serve more than 100,000 subscribers in Goa.

NATGEO TO LAUNCH HDTV CHANNEL IN INDIA

National Geographic Channel Network will introduce four new channels in India, namely Nat Geo Wild, Nat Geo Adventure, Nat Geo Music and Nat Geo HD (High Definition) after it gets regulatory approval. The company is looking to launch the channels on all the media platforms including cable TV, direct-to-home and even IPTV.

DISH TV TO ROLL OUT HDTV BY END-2008

DTH service provider Dish TV will launch an HD platform by the end of this year. The company, which recently announced free set top boxes (STBs) for its subscribers, has plans to introduce the latest MPEG-4 technology enabled STBs along with the HD platform for broadcasting. It is also holding talks with TV channels for production of HD content. Dish TV is also promising DTH reception on trains, airplanes and buses, in cooperation with Indian Railways, Kingfisher Airlines and Ashok Leyland.

SOUTH KOREA

THALES TO BUILD KOREAN SATELLITE

KT, Korea's leading fixed-line operator, has selected Thales Alenia Space (TAS) of France to build its latest commercial satellite that will be launched in 2010. KT and TAS signed a deal for the development of the Mugunghwa-6, which will replace the currently operating Mugunghwa-3 scheduled to be shut down in late 2011. The Mugunghwa-6 will enable the introduction of HD satellite broadcasting. KT currently operates two satellites, the Mugunghwa-3 and the Mugunghwa-5, for its satellite broadcast service.

HANARO SEEKS 2 MILLION IPTV SUBSCRIBERS TO BREAK EVEN

Fixed-line carrier Hanarotelecom will have to wait at least three years to reap profits from its Web-based TV business, according to CEO, Cho Shin. "I believe that it will be difficult for us to make profits from the IPTV business for the next three to five years because of the bruising competition in the market," Shin said, adding that they need 2 million IPTV subscribers to reach the break-even point. The company has so far managed to sign up 860,000 subscribers for its IPTV service Hana TV and aims to pass the 1.6 million mark by the end of 2008.

SONY MOVIES ON MEGA IPTV PLATFORM

Sony Pictures Television International (SPTI) has signed a 'day-and-date' video-on-demand licensing deal with South Korean telco provider KT Corporation, to offer movies and TV shows on KT's Mega TV IPTV platform. The 'day-and-date' aspect of the deal will make the movie titles available to Mega TV's customer's on-demand on the same day as the local home video/DVD release. KT launched its Mega TV service nationally in July 2007, making the service available to its 6.5 million internet users.

SRI LANKA

SRI LANKA TAKES FIRST STEPS TOWARDS SATELLITE LAUNCH

The Sri Lanka Telecommunications Regulatory Commission (TRC) has taken the first step towards launching Sri Lanka's first satellite. Speaking to the "Daily Mirror", TRC Director General Priyantha Kariyaperuma said two engineers had gone to the International Telecommunication Union (ITU) based in Geneva for registration purposes. He said the satellite would be named after science fiction Guru the late Sir Arthur C. Clarke. Kariyaperuma added that TRC hoped to launch the satellite network within the next two years though no timeframe had been fixed for the project. According to his words, TRC hopes to get support from countries like China and Japan to construct and launch the satellite.

TAIWAN

PTS LAUNCHES HDTV TRIALS

Public Television Service (PTS), a government-sponsored non-profit terrestrial TV broadcaster, in May initiated the broadcasting of HiHD, the first HD digital TV channel in Taiwan, on a trial basis. The government has provided a NT\$ 2.8 billion (US\$ 88 million) subsidy to have PTS establish a nationwide HDTV broadcast network in three phases. In addition, the government has offered a subsidy of NT\$ 400 million for 63 programs to be delivered through HiHD, PTS said. The trial broadcasts cover only the metropolitan areas of Taipei and Kaohsiung for the time being.

MICROSOFT AND CHUNGHWA TELECOM TEAM UP FOR IPTV

Microsoft and Chunghwa Telecom, Taiwan's No.1 telecom carrier, will launch a joint venture called IPTV Ecosystem Development Center. The operation will see Microsoft offer its Mediaroom platform for IPTVs while Chunghwa integrating systems. The operation will work with Taiwan's set-top box makers and content providers to tap markets overseas. Chunghwa has contracted Tatung to supply 50,000 IPTV set-top boxes and plans to offer the Beijing Olympic Games on IPTV.

UNITED ARAB EMIRATES

TELESAT WINTS SATELLITE CONSULTING CONTRACT

Telesat has won a consulting contract with Al Yah Satellite Communications Company PrJsc (Yahsat). The Canadian company will provide Yahsat with consulting services during the construction and launch of Yahsat's first two satellites, which will be launched in late 2010 and early 2011. Yahsat provides hybrid satellite communications services to commercial and governmental clients in the Middle East, Africa, Europe and southwest Asia.

VIETNAM

VINASAT-1 SUCCESSFULLY LAUNCHED

On April 18, Arianespace boosted two communications satellites into geostationary orbit (GTO). The Star One C2 satellite will be positioned in geostationary orbit at 70 degrees West. It is fitted with 28 C-band, 16 Ku-band and one X-band transponder to provide communications, multimedia and broadband Internet services for South America. Vinasat-1 will be positioned at 132 degrees East and is fitted with 12 Ku-band and 8 C-band transponders. It will provide radio, television and telephone transmission services throughout Vietnam and Asia countries. The Vietnam Posts and Telecommunications Corporation (VNPT) has said that 16 clients

have so far registered to use Vinasat-1 services, including Ho Chi Minh City Television and the VTC. First transmissions have already been noted in C-band and can be checked on SatcoDX's satellite chart (www.SatcoDX.com/1320/).

PACIFIC-OCEANIA

AUSTRALIA

ABC AND FOXTEL TO LAUNCH IPTV

The Australian Broadcasting Corp. recently announced that it would launch an IPTV service later this year, while the Seven Network, in partnership with Yahoo, is investigating its own IPTV plans. Pay-TV provider Foxtel also plans to introduce a broadband-on-demand service via its digital set-top box later this year. IPTV pioneers Reeltime Media and Anytime On-Demand both recently closed down.

NEW ZEALAND

VIDEO EZY TO ROLL OUT IPTV PLATFORM

Video Ezy will roll out an IPTV platform and set top box middleware to enable the delivery of an electronic video rental service to more than 1,000 stores across Australia and New Zealand. The stores in its chains serve more than eight million customers. The main components of the electronic rental service includes an in-store kiosk with movie library, branded USB or iPod-type storage system and an in-home Java set top box. Customers simply plug the USB or iPod into the kiosk to select movies to rent for later playback on the Java set top box. Digisoft has been selected to provide the IPTV platform and set top box software.

SKY TO INTRODUCE HDTV

From July, pay-TV operator Sky launches its new high-definition satellite service and a successor to the MySky digital recorder. Sky will broadcast Sky Sport 1 and Sky Sport 2, Sky Movies and Sky Movies Greats in HD, the fruit of more than \$65 million of investment in digital TV production. Sky has more than 720,000 subscribers, but only 31,000 are MySky users. Pace has conducted a major revamp of the MySky box, allowing for pictures to be displayed in 720p and 1080i high-definition formats. Sky TV is also in negotiations with TV3 to show its HD channel.

WORLD

INTELSAT AND PANASONIC BRING BROADBAND TO THE SKIES

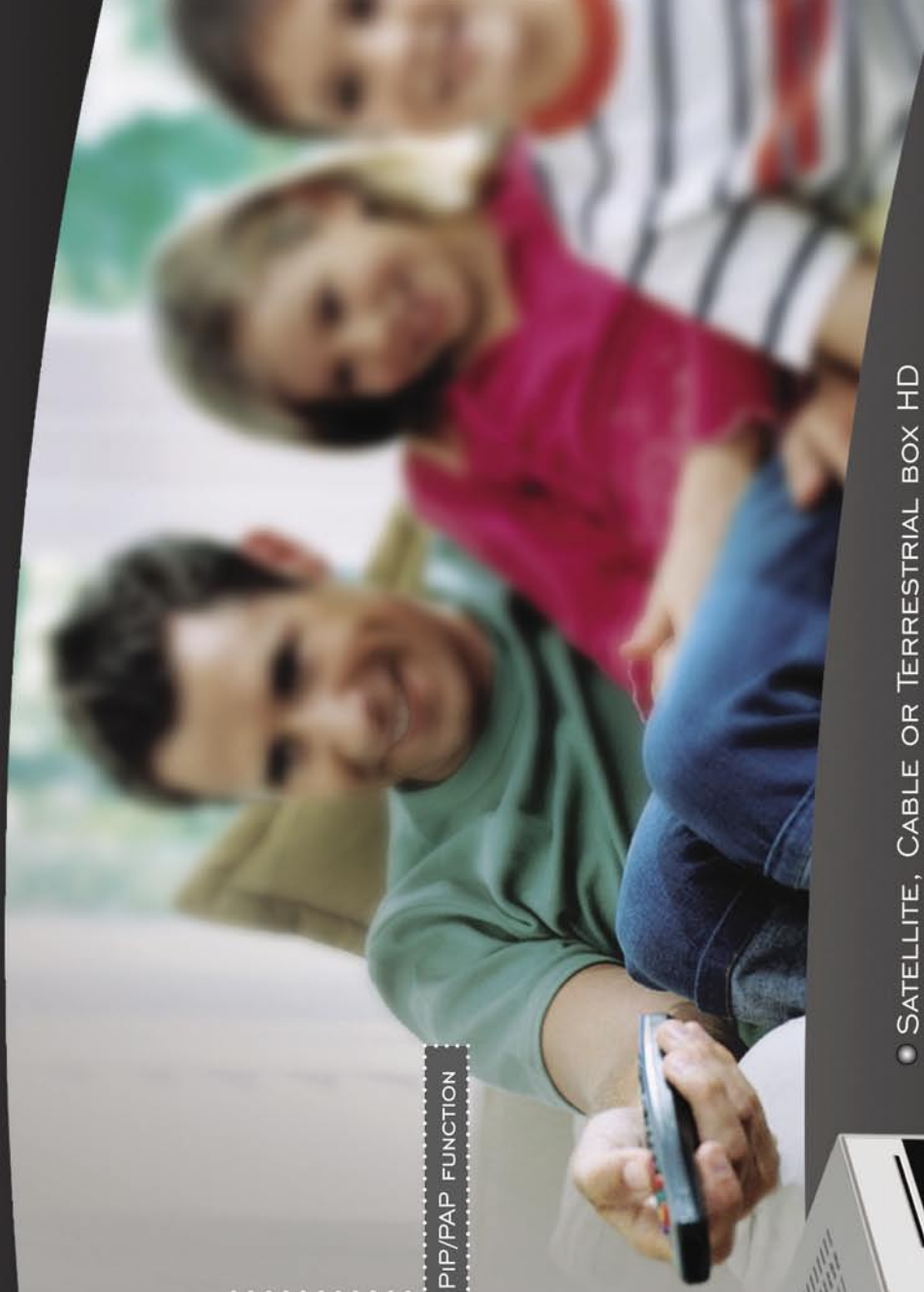
Intelsat and Panasonic have signed a multi-year service agreement that will result in the next generation of in-flight passenger broadband access. Panasonic is introducing an advanced satellite transmission platform that will allow airline passengers the ability to access Internet-based information and entertainment. The Panasonic eXConnect platform will leverage Intelsat's existing GlobalConnex SM Network Broadband service which is available on Intelsat's global satellite fleet of 53 in-orbit satellites, and regional teleport facilities. Panasonic eXConnect enables two-way broadband connectivity that provides a wide range of applications useful to both the passengers and crew such as VPN, live television, shopping, streaming media, telemedicine, operational applications and personal devices integrated to the airline's in-flight entertainment systems.

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Power Factor

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All our satellite toys need electrical energy to operate. Obviously, all of us like to have the devices that consume as little energy as possible. Not only our bills are lower then but we also protect our environment. In TELE-satellite, we usually provide information on power consumption of the tested products. The power is generally expressed in Watts (W) but sometimes also in Volt-Amperes (VA). What is the difference?

The power expressed in Watts is the true or active power. This is the power that is really consumed by the device. And this power is recorded by an energy counter in your house. The apparent power is expressed in VA and it is just a product of the mains effective voltage multiplied by the effective current flowing to the device. The true power can be measured only with a dedicated power meter while the apparent power you can measure with typical universal multimeter by taking first the voltage and then the current measurement.

If we power the resistive load like an incandescent bulb or a heater, both powers are equal. This is because the current is also sinusoidal as the voltage and there is no phase shift between them. But such loads are not the majority of the devices we connect to the mains. If a load is rather inductive than resistive, like the motor in your fridge or washing machine, the current is no longer in phase with voltage. To show you how the current phase can be shifted with respect to the voltage, we used electronic CAD for simulating electronic circuit.

Figure 1 presents a simple circuit in which a load is a small resistance connected in series with a rather large inductance. This could be a good representation of a motor running idle. The voltage source represents the mains supply.

For such load, the current is heavily shifted in phase related to voltage. Almost 90°. This can be seen in Figure 2. Now if we measure the true power, we will get a very small result but if we measure the apparent power (voltage x current) we will get quite big value. Why the active power is low? Without using mathematical equations, we can explain it in the following way: during the positive half of voltage waveform, the current is for some time positive and for some time negative. When the current is positive the power flow from the source to the load but when it is negative, the power returns to the source. The power flowing to the load is only slightly higher than the one returning. Only this difference is the active power. The same reasoning can be done for a negative half of voltage sinusoid but in this case, when the current is negative, the power flows to the load and returns when current is positive. Plus and plus gives a plus and minus and minus gives a plus too.

Technical people say that such load has a low power factor. Power factor is the ratio of the true power to the apparent power. It is always positive and reaches 1 for purely resistive loads. For all other types of loads power factor is less than 1.

If you like formulae, you can write:

$$PF = \frac{P}{S}$$

where:

PF – power factor

P – active power

S – apparent power

In a real world, the simple load like the one presented in Figure 1, can easily be corrected by adding a capacitor of well chosen value across the supply voltage. This introduces the reverse phase shift to the current and thanks to such compensation, we get much better power factor.

Well, this is the very basic explanation about the power factor. However, if you

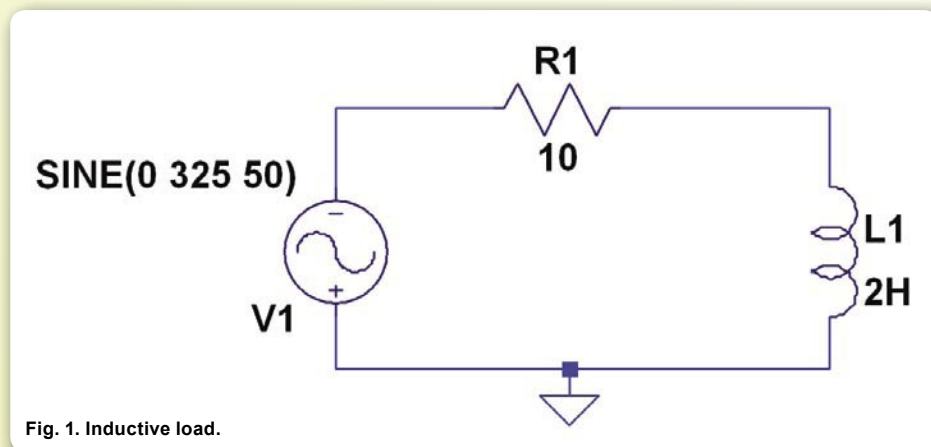


Fig. 1. Inductive load.

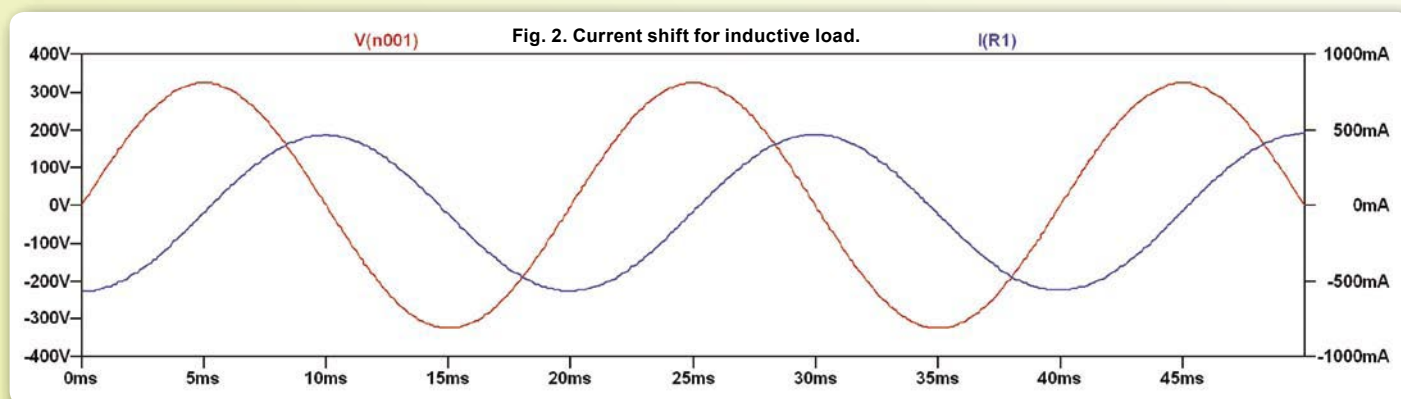


Fig. 2. Current shift for inductive load.



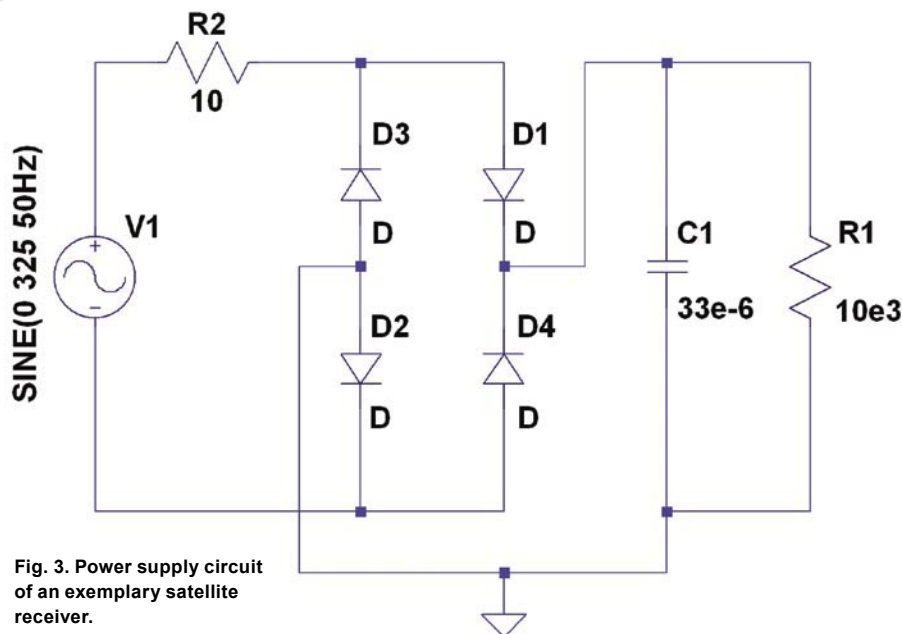


Fig. 3. Power supply circuit of an exemplary satellite receiver.

consider typical electronic equipment like a satellite receiver or a multiswitch, you will discover that the above explanation is far away from reality. Let's consider the power supply circuit used in almost any electronic device – see Figure 3. It has a bridge rectifier D1-D4 and storage capacitor C1. R1 is the rest of the device (including microprocessors, displays, etc.) that consumes DC power. The input current flows only when the mains voltage is close to maximum – see Figure 4.

Now, if we measure the true power, we will get $P = 5.15 \text{ W}$.

However, if we measure the voltage and current, we will have:

$$U_{\text{eff}} = 230 \text{ V}$$

$$I_{\text{eff}} = 92 \text{ mA}$$

The apparent power would be:
 $S = 230 \text{ V} \times 92 \text{ mA} = 21.2 \text{ VA}$

So, the power factor:
 $\text{PF} = 5.15 / 21.2 = 0.24$

Why is that so? It looks as if the current is in phase with the voltage. But the current is no longer a sinusoid and this makes a world of difference!

OK, now the trickier part. The periodical waveform like that of our current is equivalent to a sum of many sinusoidal waveforms. We call them harmonics. In our case, we can represent the current as the

sum of sinusoids of the odd harmonics: 50 Hz, 150 Hz, 250 Hz, 350 Hz, 450 Hz, and so on. Figure 5 shows a frequency spectrum of the current $I(R2)$ from Figure 4

The most important fact is that only the fundamental waveform of 50 Hz frequency contributes to the active power. If you drew

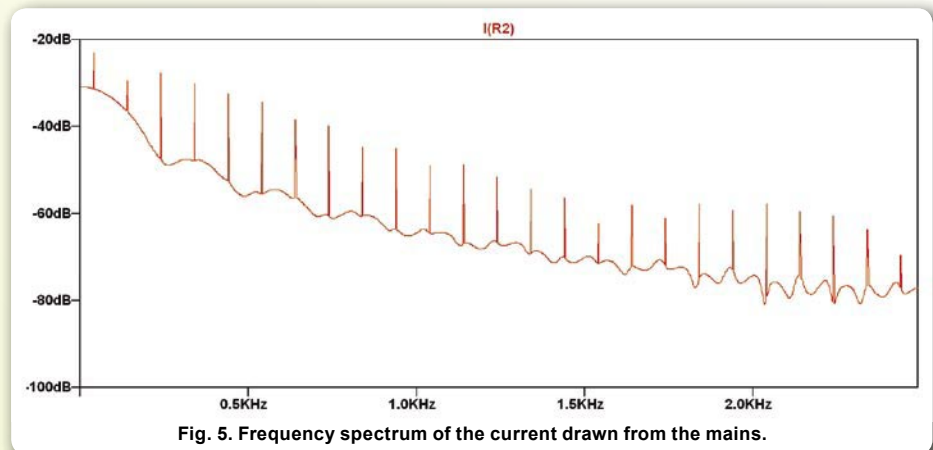


Fig. 5. Frequency spectrum of the current drawn from the mains.

only the fundamental component of the current, it would look like that in Figure 6. Compare it with Figure 4.

On our last drawing – Figure 7, you can see the third harmonic (150 Hz) and the voltage waveform. The harmonic is shown exaggerated for clarity. Such combination (voltage at fundamental frequency and current at third harmonic) does not produce

any active power. And this is also true for all higher harmonics,

Now the most important question. What is wrong with low power factor? If the apparent power is greater than the active power it means that in the wiring of your house and outside the house the greater current flows than it should. The wires have non-zero resistance, so some power is dissipated in them. Do you like your wires in the wall to get warm? You pay for such unnecessary "heating". Your energy meter counts it. Low PF presents even greater problem for energy providers. Their systems need to have extra current capacity in order to allow the usage of low PF loads. This means bigger transformer, thicker cables etc. On one hand, we - end users - have to pay for this. On the other hand, we use up more natural resources than necessary.

That's why in many countries there are regulations forcing the equipment manufacturers to ensure high power factor. This is not so easy as with simple motor but it can be done by adding power factor correcting circuit. It requires extra components, occupies space inside the equipment and is not

for free. The equipment is bigger, heavier and costlier.

We know that many of our readers are environment cautious people. That's why in the future TELE-satellite reports, we will present power consumption graphs of the devices we test. One such graph is shown in Figure 8. This is a satellite PVR receiver with embedded HDD. During the first few

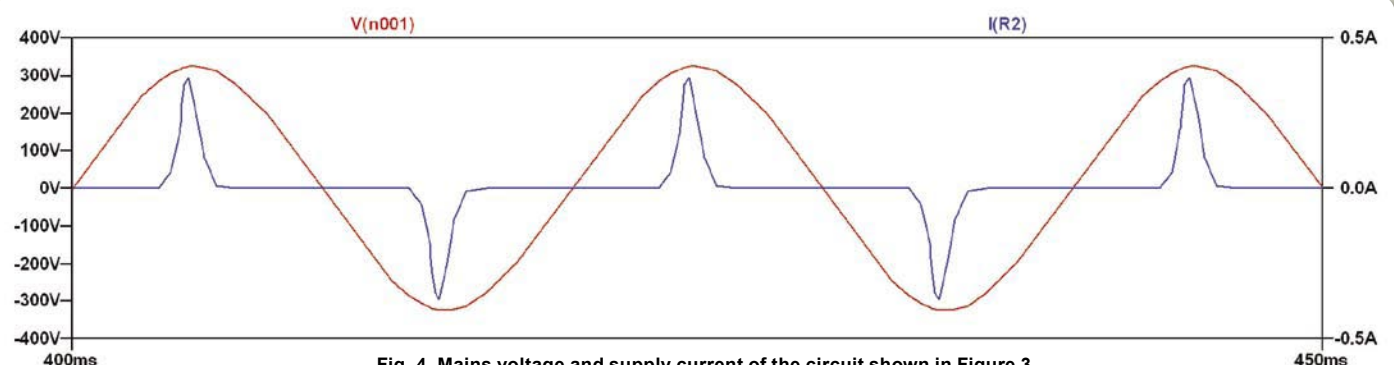


Fig. 4. Mains voltage and supply current of the circuit shown in Figure 3.

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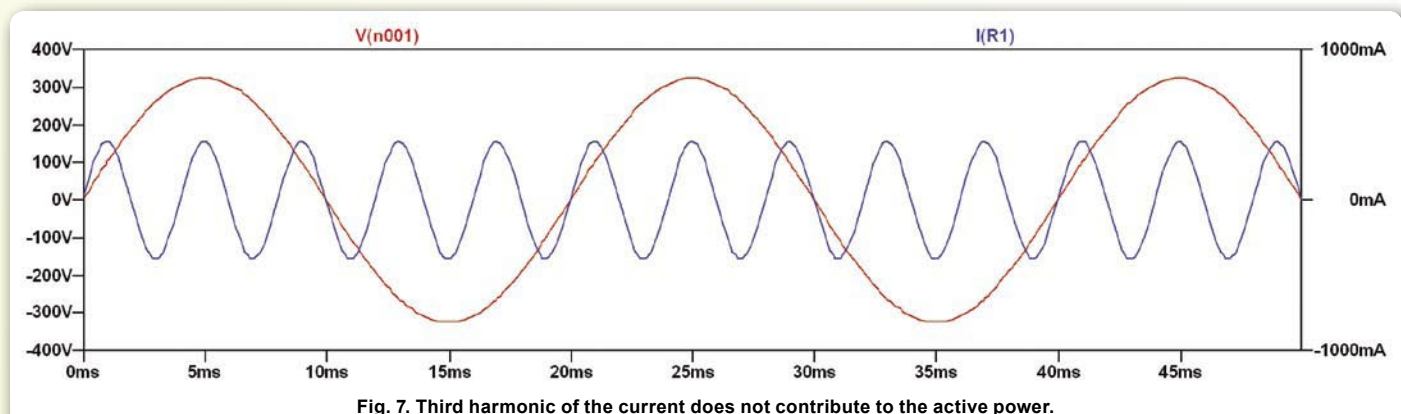
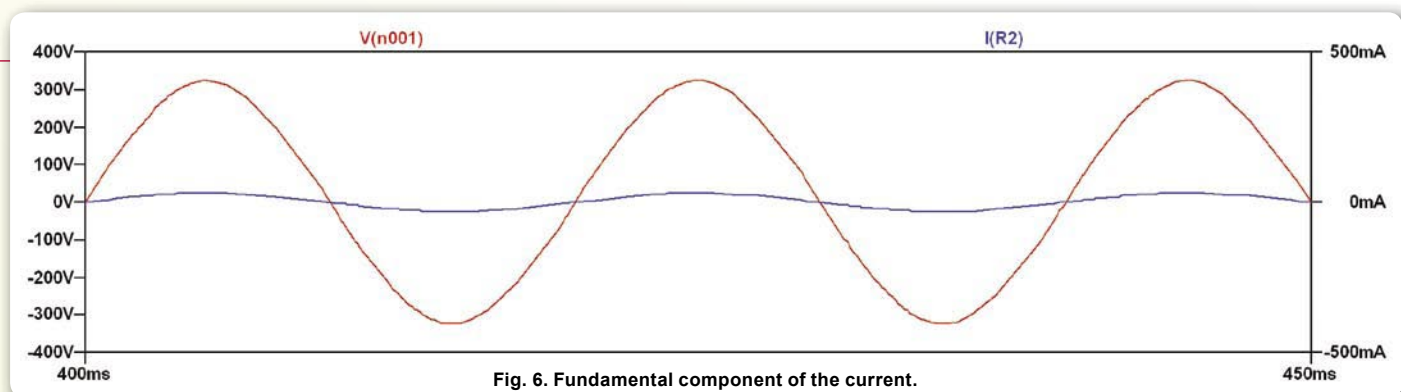
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minutes the receiver uses its HDD, than the disk is switched off and after a further few minutes, the receiver is switched to standby.

When the disk is working, the true power consumption is 39 W, the apparent power is 62 W and the power factor 0.63

($=39/62$). When the disk is switched off the active power gradually decreases to 33 W, the apparent one goes down to 54 and power factor is now equal to 0.61. Finally, in standby mode, $P = 28$ W, $S = 46$ W and $PF = 0.61$. You do not have to be an expert to see that this receiver when switched to standby still keeps a lot of its circuitry

operational. If you have such receiver, you should consider switching it completely off every night. PF around 0.6 is not impressive but acceptable for this kind of equipment.

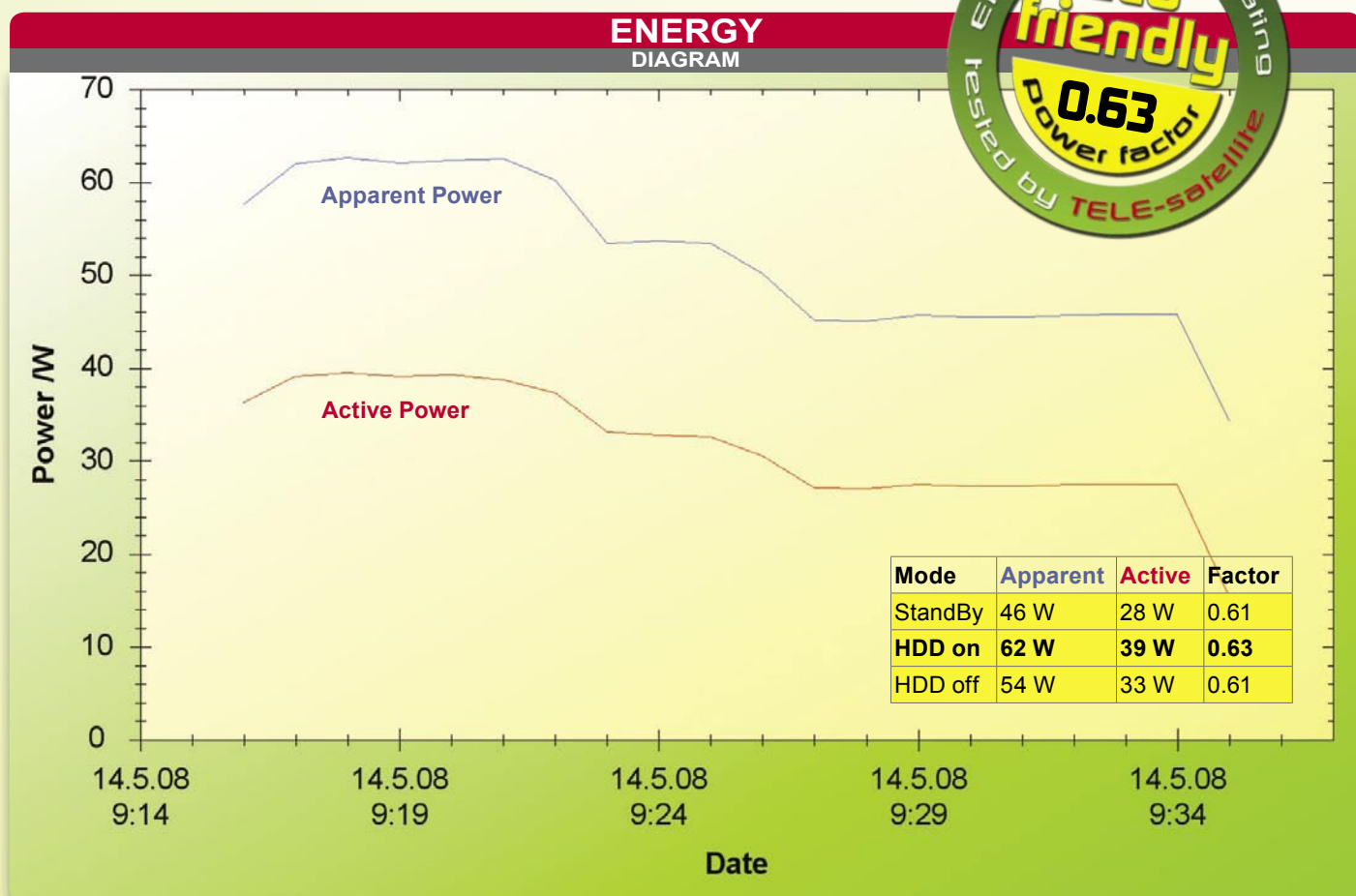


Fig. 8. Active and apparent power consumption of a satellite PVR receiver.

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- + 10.000 Channels Memory, DVB-C Standard, Blind Scan 5,4,3,2,1 MHz
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- + USB1.1 Plug for Software + Channellist Upgrades + JPG-Foto Show
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Technotrend Budget S-1500 incl. CI (Common Interface)	DVB-S	69,90 €	58,74 €
Technotrend Budget S-1500 incl. Remotecontrol	DVB-S	52,79 €	44,36 €
Technotrend Connect USB S2400 (USB 2.0)	DVB-S	53,40 €	44,87 €
Technotrend Premium S-2300 "modded" Hardware MPEG2	DVB-S	122,70 €	103,11 €
Technotrend S2-3200 HDTV-S2 + Remote + Common Interface	DVB-S/DVB-S2 (HDTV)	89,69 €	75,37 €
Technotrend S2-3200 HDTV-S2 incl. Remote	DVB-S/DVB-S2 (HDTV)	77,60 €	65,21 €
Technotrend S2-3600 HDTV-S2 USB 2.0	DVB-S/DVB-S2 (HDTV)	75,26 €	63,24 €
Technotrend S2-3650 HDTV-S2 USB+CI (Common Interface)	DVB-S/DVB-S2 (HDTV)	117,80 €	98,99 €

TERRESTRIAL

Technotrend Budget T-1500 incl. CI (Common Interface)	DVB-T	66,99 €	56,29 €
Technotrend Budget T-1500 incl. Remotecontrol	DVB-T	49,90 €	41,93 €
Technotrend CT-3650 HDTV-S2 USB+CI (Common Interface)	DVB-C, DVB-T	129,99 €	109,24 €
Technotrend Budget T-3000 Hybrid Digital and Analog	DVB-T	50,90 €	42,77 €
Technotrend Premium T1200 (HardwareMPEG2 Decoder)	DVB-T	99,00 €	83,19 €
Technotrend TT TV-Stick USB 2.0 incl. antenna and active 5V output	DVB-T	29,90 €	25,13 €

CABLENETWORK

Technotrend Premium C-2300 Hybrid HardwareMPEG2	DVB-C	79,90 €	67,14 €
Technotrend Budget C-1501 incl. CI (Common Interface)	DVB-C	69,90 €	58,74 €
Technotrend Budget C-1501 incl. Remotecontrol	DVB-C	53,30 €	44,79 €
Technotrend Budget C-1501 incl. CI (Common Interface)	DVB-C	67,40 €	56,64 €
Technotrend CT-3650 HDTV-S2 USB+CI (Common Interface)	DVB-C, DVB-T	129,99 €	109,24 €

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Technotrend Budget PCI CI (for Budget/Nova Serie), V 1.1	SAT/CABLE/TERR.	21,50 €	18,07 €
Technotrend Budget PCI CI (for Budget/Nova Serie), V 1.0A	SAT/CABLE/TERR.	17,99 €	15,12 €
Technotrend Premium 3.5" CI incl. Remotecontrol (f. 2 CAM)	SAT/CABLE/TERR.	69,90 €	58,74 €

SCM Microsystems St@rkey USB 1.1 Satellite PC-receiver

SCM Starkey DVB-S USB 1.1 incl. Prog	DVB CD DVB-S	19,99 €	16,80 €
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08-09/2008

VENUS MADE OF GALVALUME
Universal dish for C and Ku band
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A Dish Named Venus

Quality Made in Indonesia

The manufacturing of Venus dishes, a brand of Indonesian company PT Subur Semesta, was the focus of a report in TELE-satellite issue 03/2008. But how well would those dishes perform in the real world? That's what we wanted to find out first-hand in Europe, and PT Subur Semesta was kind enough to forward a 1.8 m segmented dish to us by airfreight.

To make sure the dish arrives in perfectly sound condition the manufacturer used a tailor-made transport bag in which the triangular transport package fit in perfectly. Everything we needed to assemble the dish was included in that package: the six segments that would make up the parabolic antenna in the end, all screws needed to firmly attach the segments to each other, as well as feed holder rods and the mounting ring for the back side, plus all rods and the base ring for the antenna stand. To make sure the assembled dish will look as intended by the manufacturer a manual is also provided and gives detailed instructions.

Even a single person is able to connect the six segments to each other, as they are just about small enough for two hands only. At the TELE-satellite Test Center in France we are no newcomers when it comes to dish assembly, but we would not go as far as to say that for us this is routine procedure. Nevertheless, the dish was up and standing after less than half an hour. But then again, there's really no way you could make any mistakes when setting it up. Even as soon as during assembly of the individual segments,

the robustness of the segments struck us right way. Dishes provided by other manufacturers that we set up in the past seemed much more delicate and caused us to handle all components with great care. The risk of unintentionally bending one of the segments had been very high in those cases. It's a totally different story with the Venus dish: the wall thickness of the Galvalume segments is 0.6 mm, which provides sufficient protection against bending. This is an important point not only during assembly, but much more during everyday operation, because you'd expect from a satellite dish that it would withstand strong winds and even storms without damage for years to come. Galvalume is a special alloy consisting of 55% aluminium and 45% zinc, which makes it extremely durable. PT Subur Semesta sources their Galvalume from Australian producer Bluescope.

Everyday use

The feed holders of the Venus dish are designed for standard C band feeds, which allowed us to mount a C band LNB from our technical storage right away. What we did not expect but



1.8 m Venus dish of PT Subur Semesta as delivered

appreciated all the more was that PT Subur Semesta was considerate enough to throw in shortening rings for 40 mm LNBs as well. What's the point of that? Well, they make the dish and feed mount Ku band compatible. Strictly speaking, this is not absolutely true as conventional Ku band LNBs are designed and optimised for offset dishes, and you should rather go for special Ku band LNBs for parabolic antennas if you want to use them with your Venus dish. The point remains, however, that the Venus antenna can be used for C band just as well as for Ku band reception.

The reception capabilities of the dish met the expectations we had towards a dish of that

size. The major advantage of the Venus dish is its sturdy segments which ensure the dish stays in shape even during storms and which prevent deformations up to a very high degree.

Conclusion

Never before had we assembled a C band dish as quickly. What's more, the stability of the segments makes sure the dish will stay operational over many years. We particularly appreciated the shortening ring for 40 mm Ku band LNBs, which is a thoughtful bonus that makes a universal C and Ku band antenna out of the Venus dish and opens many doors for prospective users.

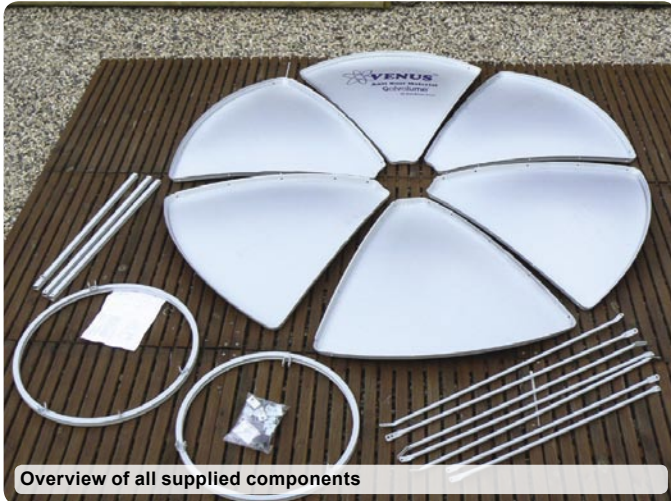
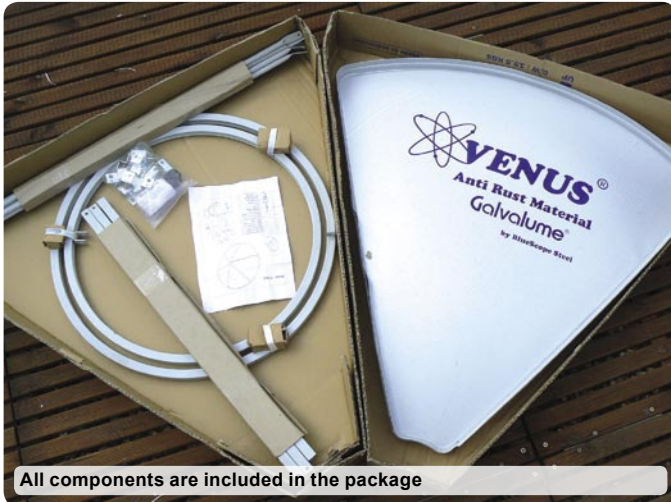
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Anything missing? The LNB!



Which LNB? PT Subur Semesta supplies its antenna with an important shortening ring. That way you can easily exchange the C band LNB for a standard Ku band LNB.



The moment of truth has arrived: a Promax professional signal meter verifies the reception capacity of the Venus dish



Brilliant alignment tool: a water-level with magnetic holders allows precise adjustment of the brackets



The assembled dish mounted on the supplied stand

Expert opinion

+

Very strong segments increase confidence in the antenna's resistance to deformation. By using Galvalume alloy the dish ensures a long durability. The dish is supplied with all components and can be mounted very fast.



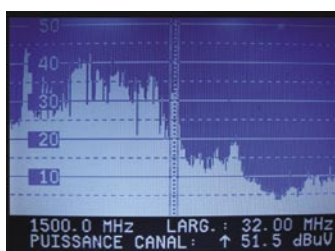
Sylvain Oscul
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Test Center
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TECHNIC DATA

Manufacturer	PT. Subur Semesta, Jl. Kamal Raya No. 8A RT 14/09, Tegal Alur, Jakarta Barat 11820, Indonesia
Tel	+62-21-5559733
Fax	+62-21-5559805
Email	subursmt@gmail.com
Website	www.subursmt.com
Model	Venus 1.8m Galvalume
Function	6-segment dish for C and Ku band including base
Size	1.8m
Focal length	68.2cm
C band gain	35.98dB
Ku band gain	45.54dB
F/D ratio	0.38
Available colours	grey, cool grey, green



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ABCom IPBOX 9000 HD Plus

HDTV via DVB-S, DVB-S2, DVB-C or DVB-T

Recent developments and product launches follow a clear trend: PVRs are becoming the norm for HDTV reception as well and while the pioneers of HDTV PVRs equipped their products with a single tuner at the beginning, these days two integrated tuners have become standard so that at least two simultaneous recordings are now possible. Most manufacturers have such offerings in their range and ABCom is no exception. However, their new IPBOX 9000 HD Plus has a few astonishing extra goodies in store as well, as you will see shortly.

ABCom offers their latest box in silver or black, which will please customers who prefer electronic gadgets to fit in smoothly with the rest of their existing equipment. So if your flat screen TV and home theatre receiver is black, simply go for the black IPBOX as well.

The receiver's front panel comes with the standard standby button, an easy to read

alphanumeric VFD display and – stylishly hidden behind a flap – eight buttons to control the box whenever the remote is not at hand or out of battery.

The same flap also hides two CI slots for all standard Conditional Access modules such as Irdeto, Seca, Viaccess, Nagravision, Conax or Cryptoworks.

The level of workmanship is

high and the box is pleasing to the eye as well.

Turning around the IPBOX 9000 HD Plus reveals a perfectly equipped back panel. What strikes right away is the fact that the two tuners are not permanently integrated but rather only plugged in as modules. So if you would like to not only receive DVB-S and DVB-S2 signals, but rather also DVB-T or DVB-C, all you have to do is open the receiver and exchange one tuner (or both) for a different one.

By the way, the only difference between the IPBOX 9000 HD and the IPBOX 9000 HD Plus is that the Plus model comes with two DVB-S2 tuners as standard.

The great thing is you don't have to be a scientist to be able to exchange tuner modules and even with no technical background at all it should be feasible. Each tuner always comes with a loop-through output so that an additional receiver can be connected or the input signal can be forwarded from tuner 1 to tuner 2.

Right next to the slots for the two tuners two scart euroconnectors are available to connect a CRT TV or a conventional VCR.

If you're lucky enough to own a beamer there are three RCA sockets for providing a YUV signal, three more RCA sockets put out composite video and stereo audio. Of course there's





**TELE SATELLITE
AWARD & BROADBAND**
08-09/2008

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

also an optical output for digital audio and HDMI for lossless digital video and audio transmission to an LCD or plasma TV.

In addition, you'll find an S-video connector, a telephone jack, a USB 2.0 host interface and USB 1.0 client interface, a 10/100 Mbit Ethernet port as well as an RS-232 serial interface. There's even a mechanical power switch to disconnect the receiver from the mains.

The remote control that comes with the package sits nicely in your hand, boasts clearly labelled buttons and – given the enormous range of features offered by this box – is not filled to the brim with keys and buttons.

If we really have to identify a downside it's the rather small size of the RC buttons, so you'd better factor in some extra time and training until you get really used to working with the remote.

Initial setup

When turned on for the first time an installation wizard pops up on screen and asks for the

preferred on-screen, audio and subtitle language(s). As it turns out the IPBOX 9000 HD Plus is a genuine globetrotter, with available languages including English, Russian, French, Dutch, Italian, German, Danish, Slovak, Czech, Hungarian, Norwegian, Polish, Portuguese, Spanish, Swedish, Greek, Turkish, Korean, Croat, Bosnian and Serbian.

Next, the receiver wants to know the local time difference to GMT and whether the clock should be synced via satellite or set manually by the user.

The third segment of the installation wizard takes care of configuring the reception system that is used with the receiver. By default the IPBOX 9000 HD Plus comes with a list of 161 currently active satellites which – apart from all relevant European positions – includes Asian and American birds as well. By and large the transponder lists seem to be up to date, even though we detected some weak spot for a few satellites, such as NILESAT 7° West, for example.

What really thrilled us were the countless detailed options for satellite configuration. First

and foremost all DiSEqC protocols (1.0, 1.1, 1.2 and 1.3/USALS) are implemented in an exemplary way and various other settings make sure the IPBOX 9000 HD Plus will fit perfectly into any existing reception equipment, no matter how out of the ordinary. The LOF can of course also be set manually so that all varieties of LNBs are supported. Control signals such as 22 kHz can be manually activated or you can let the receiver arrange all settings automatically.

This brilliant overall impression is further enhanced by the intelligent way in which signals are distributed to both tuners. Either both tuners are provided with signals or one of them becomes master while the second becomes slave and is hooked to the first with a short connecting cable so that it can receive its signal from the first tuner.

Finally, the installation wizard prompts the user to initiate a signal scan. You can choose whether this should be done for tuner 1 only or for both tuners, and you can select whether all set satellites should be scanned or whether you'd like to limit the

HDMI DD DOLBY DIGITAL DV3
HDMI DD DOLBY DIGITAL DV3



search to individual positions. Convenient features like network scan or FTA only are available and in case you're looking for signals on a particular transponder only the IPBOX 9000 HD Plus even lets you even finish the installation wizard with a manual search by defining a valid frequency with correct polarisation and FEC values.

Either way, the installation will not finish before one search mode is selected and completed and this is actually a good thing because what's the point of satellite receiver with no channels on its list? By the way, here's an important message to all DXers out there: Of course the IPBOX 9000 HD Plus allows manual input of PID values instead of performing a search, so it's the perfect gadget for feed hunting as well.

Thanks to the automatic signal scan the channel memory fills up quickly. Its capacity for 10,000 channels is impressive and means that the IPBOX 9000 HD Plus can be the perfect companion for rotary antennas

and will easily accommodate all the channels that become available.

Where there's so much light, there has to be some shadow as well, as we were not really happy about the time it took to scan a 110-transponder satellite. More than seven minutes definitely is too long for a receiver that is supposed to be state of the art.

Once the scan is completed you're all set to actually use the box for watching and listening. Before that, however, it's a good idea to flick through the main menu and familiarise yourself with all the features that are available. One of them is the extremely convenient transponder editor that allows adding new transponders to the satellite list in a breeze. Alternatively, you can also edit or delete existing entries.

As we're talking about a DVB-S2 receiver here both QPSK and 8PSK modulation is supported with FEC values of 1/2, 2/3, 3/4, 3/5, 4/5, 5/6, 6/7, 7/8, 8/9 and 9/10. The same menu even includes DVB-T channels for EU countries and Australia, which can also be edited and extended.

Video is provided to the TV either as YUV, S-video, CVBS or RGB in analog format, or digitally via HDMI in 520p for PAL and NTSC or 720p and 1080i at 50 or 60 Hz. Dolby Digital 5.1 audio is available as PCM or bit stream via a fibre-optical cable or can be deactivated in case it is not needed.

Once you open extended settings menu you realise what the receiver has on offer. Its Ethernet port cries out for connecting it to a DHCP compatible router so that the receiver is automatically assigned an IP address and all required parameters such as standard gateway address and DNS server can be obtained from the router. If you prefer to set all parameters manually you're welcome to do it that way as well and the IPBOX 9000 HD Plus can even automatically establish a DSL connection using either the PPoE or PPP protocols.

In case you're still waiting for more out of the ordinary features have a look at the hard disk manager for the built-in 500 GB hard disk. Rarely before have we tested a PVR with so many individual settings options, which include extending the time shift buffer to up to eight hours and the option to save the complete buffer content with a single click

on the RECORD button. You can also automatically add a pre-defined amount of time before and after each timer recording or you can activate a temperature-sensitive fan control system. If you encounter problems with your hard disk it can be formatted or checked the next time the system starts up. Similar to a PC the receiver then detects and repairs any problems in the file structure so that you can rest assured that all your recordings are stored reliably.

As the IPBOX 9000 HD Plus is based on the Linux operating system it can access all available and enabled drives and directories in a local network thanks to its Ethernet port. To that end mount points for NFS and CIFS are available. This way individual directories or complete hard disks (for example with MP3 audio files or image files) can be enabled and accessed with the receiver.

We particularly liked the option to make a software update via the local network. The IPBOX 9000 HD Plus is pre-configured to access the correct FTP server and this way can download current software from the Internet at any time and in next to no time. This creates an added value for users as they can be certain to always run the latest software version without having to rely on

TELE-satellite World

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

Available online starting from 25 July 2008



updates via satellite which take much longer and are less reliable. In our test the operating system was updated flawlessly and ABCom even lets the user know beforehand which bugs will be fixed and which new features will be added with the updated software.

Everyday use

Once the initial setup is completed you can leave the main menu and let the receiver tune into the first channel on the list. Pressing the OK button prompts the clearly laid out channel list to appear on screen, with a small preview window in the right section of the screen showing the currently selected channel.

It's quite common that more than 2,000 channels are stored in the channel list after a scan of one or two popular satellites, so the first job always is to neatly rearrange that list so that it becomes user friendly rather than overwhelming. Luckily, the IPBOX 9000 HD Plus offers a range of sorting options according to CAS/FTA, FTA/CAS, alphabet, provider and satellite. Channels you watch on a regular basis can conveniently be moved into one of the favourites lists which are extremely powerful and versatile, so that each family member can create their personal list and never has to mess around with the endless overall list. Thanks to a dedicated button on the remote control the favourites lists can be called up with the touch of a button.

Every time you switch to a new channel or press the INFO button on the remote control the receiver inserts a cleverly arranged info bar with icons indicating features like Dolby

Digital audio, teletext, subtitles, broadcasting standard etc. In addition the bar informs viewers which tuner is in use and which satellite transmits the currently watched channel. Two coloured meters let you know the level of signal strength and quality.

To access the entire program details provided by the individual channels all you have to do is press the EPG button. With another touch of the same button you can call up extended information about the selected event and with the RECORD button you can set a timer entry for recording that event.

Video and audio are of very good quality in everyday use and zapping between channels is reasonably fast. Even when

switching from standard definition to high definition channels your patience is not put to test. Time shift is a feature you will never again want to do without as it allows freezing an event at any given time and then continuing from that very moment, in case the telephone rings or any disturbance happens while you're watching TV.

In our test recording and playing back SD and HD contents took place flawlessly, and we also liked that playback always continued from where it was last stopped. The overall remarkable ease of use of this receiver is complemented by useful add-ons such as picture-in-picture, integrated teletext decoder and automatic detection of sub-channels. Thanks to two built-in tuners it is possible to simultaneously record two events without interference or interruption, no matter whether SDTV or HDTV.

One of the few negative aspects we noted is that it sometimes seems to take forever until the box reacts to commands sent by the remote control, and that in some cases we had to reboot the receiver by turning the main power switch off and on again to bring it back to life. However, we assume that the manufacturer will address these issues with one of the next software updates.

As mentioned above the IPBOX 9000 HD Plus comes with a range of multimedia features,

all of which are implemented with user friendliness in mind. Both the MP player and the picture viewer can be activated with dedicated buttons on the remote control, so that a single touch of a button is all that's needed. However, we were only able to play back content that was stored on the internal hard disk as we did not manage to gain access to a digital camera connected to the USB host interface, a USB memory stick or an external hard disk.

No test is complete without pushing the receiver to the edge with weak signals, and the IPBOX 9000 HD Plus had to share the same destiny as any other box we evaluate. To that end we fed it with very weak signals from ASTRA2D at 28.2° East, BADR 26° East and the horizontal polarisation of NILE-SAT 7° West. All results were fairly average and we obtained flawless reception with a C/N value of approximately 5 dB and higher.

We did notice, however, that the signal quality bar of the IPBOX 9000 HD Plus seems to have a mind of its own as it showed 96% signal quality for a transponder that merely reached the threshold level. SCPC reception of the IPBOX 9000 HD Plus was OK with glitch-free reception of signals from TURKSAZ2A 42° East with 2 Ms/s.

The manufacturer is constantly working on improving the Linux-based software of this receiver and as a next step they are planning to implement IPTV. A simple software update via the local network will add that feature to a box that is right up there with the best even right now.





Expert Opinion



The IPBOX 9000 HD Plus is a new-generation HD PVR receiver that is convenient to use every day. The manufacturer constantly improves the operating software so that we can expect new features for a box that already includes all you could wish for.



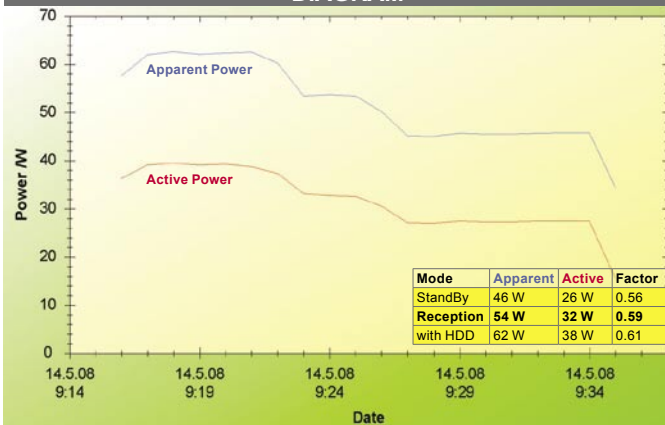
Thomas Haring
TELE-satellite
Test Center
Austria

Signal scans should be faster. There were a number of system crashes during our test.

TECHNIC DATA

Manufacturer	ABCom s.r.o., Gogolova 1, 95501 Topolcany, Slovakia
Tel	+421-38-5362-611
Fax	+421-38-5322-027
E-Mail	info@abcom.sk
Model	IPBOX 9000 HD Plus
Function	Digital HDTV PVR receiver for DVB-S, DVB-S2, DVB-C and DVB-T reception
Channel memory	10000
Satellites	161
Symbol rate	2-45 Ms/sec. (2 Ms/sec and higher in our test)
SCPC	yes
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
USALS	yes
Scart	2
HDMI	yes, 520p for PAL and NTSC via HDMI not supported
A/V output	3 x RCA
YUV output	3x RCA
UHF output	no
S-Video output	yes
0/12 Volt connection	no
Dig. Audio connection	yes
Ethernet port	yes
USB 2.0 Host	yes
USB Client	yes
RS232 interface	yes
EPG	yes
C/Ku band compatible	yes
Power supply	110-245 VAC, 50/60 Hz
Power consumption	50W max. (according to manufacturer)
Dimension	375x60x280mm

ENERGY DIAGRAM



At 09:16 the box boots, then operates normally with activated hard disk from 09:17. At 09:22 the hard disk is shut down, at 09:27 the receiver is set to standby mode and at 09:34 the receiver is disconnected from the mains.



Main menu |



Channel list |



EPG |



Firmware update via Internet |



LNB settings |



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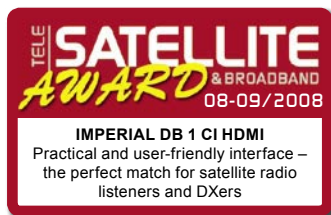
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**Spectrogram and Merogram: monitors spectrum
and MER by channel to trace impulsional impairments (*patent pending)**

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Imperial DB 1 CI HDMI

Efficiency meets convenience



Satellite receivers are not too different from each other when it comes to reception technology. Almost any receiver will provide you with reasonable video and audio quality. What sets set-top boxes apart from each other is the way they interact with their users. Who hasn't lost his temper when trying to set up new equipment for the first time? Who hasn't spent ages looking for the right item in the menu, and who hasn't despaired bringing some order into a channel list comprising hundreds of digital channels? If all that sounds familiar to you you'll be

some icing on the cake as it features a HDMI interface for connecting a flat screen TV set. Its integrated upscaler can be set to output up to 1080 lines which means that large flat screen TVs will be able to show smoother and clearer standard-definition video.

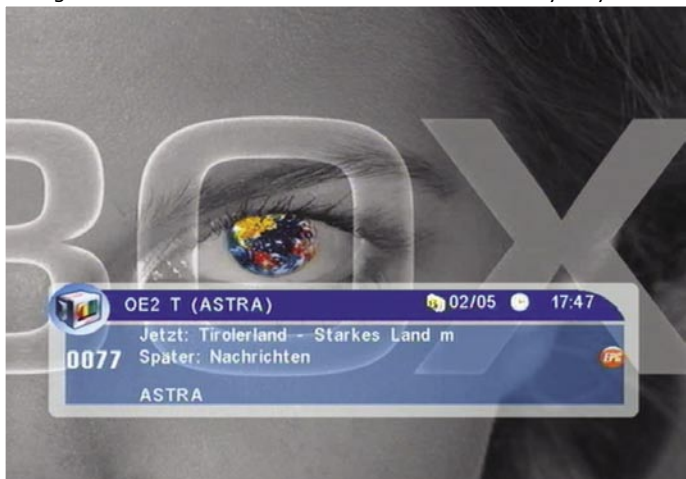
The channel memory has capacity for 5000 stored stations, which is about average these days. Given the fact that all FTA satellite channels in Europe would only fill half the memory this is more than sufficient, however.

Stored channels are listed in an overall list and up to 32 favourite lists, which are all divided between TV and radio. All of these lists can of course be edited to suit your personal needs, which means that each entry can be blocked, deleted, renamed or moved. And if the need arises to add a new transponder or even a complete



satellite you'll be happy to find that this will easily be possible thanks to the convenient user interface.

It is evident right from the start that this receiver is the



Radio information bar |

happy to read that we discovered a box with easy installation, fast signal scan and comfortable channel zapping. And as an added bonus it only consumes 6 Watts in standby and 12 Watts when turned on, so it doesn't only look after its users but also after the environment. Even when a motorised dish is operated by this receiver, its energy consumption increases by a mere 2 Watts.

The box measures 260 x 145 x 45 mm which means it looks so small you would never suspect it is packed to the brim

with useful features. However, that impression changes as soon as you turn it on for the first time and realise its front display is alphanumeric, for example. This makes sure you can listen to and zap between radio stations without ever having to turn on your TV.

The receiver features both an optical (S/PDIF) and electrical (RCA) output for digital audio so that you can listen to your favourite stations with the best available audio quality.

But of course it doesn't stop with radio reception and even the TV part of the package has



TV information bar |



connect two LNBs to two STBs using **onecable**



Stacker De-Stacker Stacker De-Stacker^{plus}

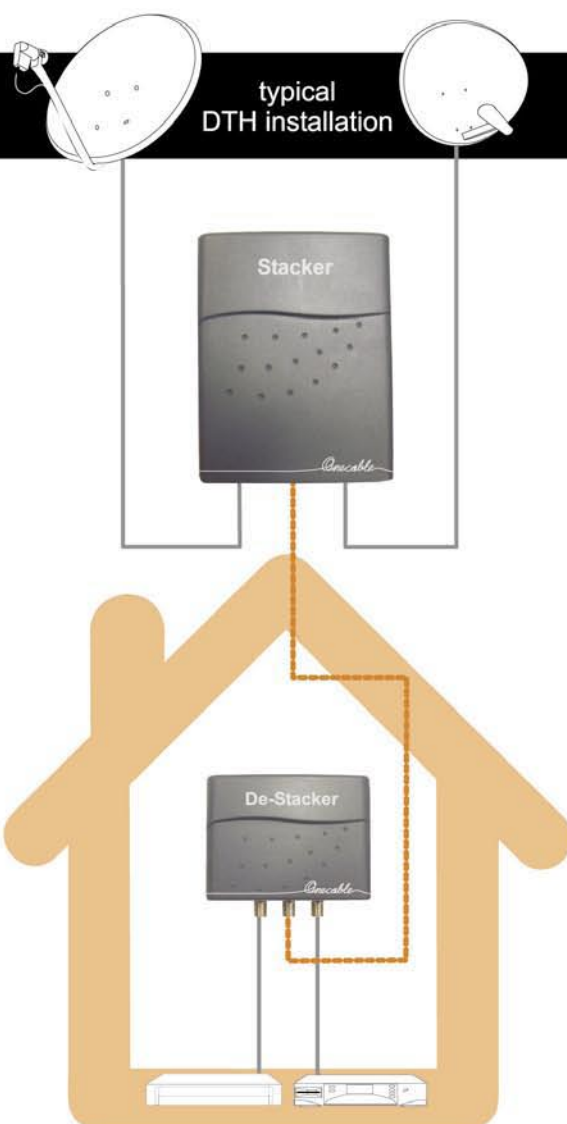
globalinvacom.com

The Stacker De-Stacker enables two IF feeds, taken from the LNB or Multi-Switch, to be combined together (with UHF) onto a single coaxial cable for connection to PVRs or independent STBs.

Two versions are available now from globalinvacom distributors:

- 'Standard' - for cable lengths up to 30m*
- '**plus**' - for cable lengths up to 60m*

* using RG6/CT100 type cable



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Available online starting from 25 July 2008

result of a brand new concept and design that is based on ease of use. If you call up the channel list (ten items are shown at a time) by pressing the OK button on the remote you're able to scroll down without actually changing the channel right away. Only when you have found the station you'd like to watch you press

and stays on screen permanently in radio mode, providing information such as:

- number and name of channel
- name of satellite
- title of current even
- title of next event
- date and time
- encryption (if applicable)

will scan and store all pages, which means that each selected page appears on screen right away. Using the cursor buttons it is possible

up to 31 cascaded antennas, while H-H rotary antennas can be controlled using either DiSEqC 1.2 for manually aligning the dish for each satellite,



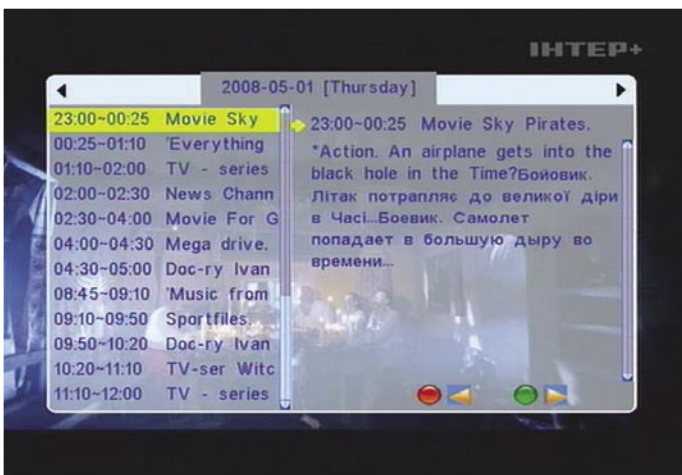
Program Listing |

to jump up and down in steps of one page or 100 pages at a time.

Coloured bars indicating signal strength and signal quality do not appear on screen when watching channels, which might take some time to get used to at first. They are available for menu items if the relevant information is required, however, such as for adjusting the antenna or for transponder scans. All DiSEqC protocols are supported, which DiSEqC 1.0 controlling up to four antennas and DiSEqC 1.1

or using USALS for automatic setup. Whenever you decide to perform a signal search there are several options available. First, individual transponders can be selected for a scan, which takes approximately one second per transponder. A full satellite can of course also be searched according to the pre-stored transponder list, which in our test took some five minutes.

This box does a particularly good job with organising channels of several satellites. Each satellite can be individually



Timetable |

OK once again to switch to that channel.

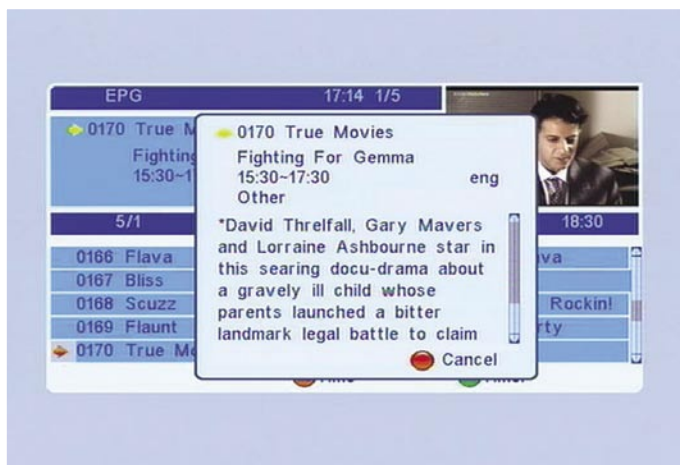
While scrolling up or down, however, all relevant transponder data (frequency, polarisation, symbol rate) pop up for the highlighted channel. If you prefer an overview of several channels you can call up thumbnails of nine channels, which gives an almost Internet-like experience.

An info bar on the bottom of the screen provides channel data every time you change channels or press the INFO button. This bar disappears after a few seconds in TV mode

- availability of subtitles, teletext and EPG

Pressing the INFO button twice or the EPG button calls up a description of the current event. The EPG also shows a grid of five additional channels complete with a preview for one week. For each channel in the preview a detailed description can be inserted, if provided by the channel. The EPG comes complete with a timer for up to eight entries.

The list of smart features continues with teletext. Press the TXT button and the box



Extended EPG |



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selected from a dedicated list and has its own channel list starting with position 1. The favourites lists are organised the same way and can be used to create customised lists with TV and radio stations according to several criteria.

Thanks to the fact that satellite and transponder lists remain intact even if all channels lists are deleted it is possible to conveniently re-organise lists by fully deleting them and then performing a new search.

TECHNIC DATA

Distributor	DVBShop, Brehnaer Straße 18 D-04509 Neukyhna OT Pohritzsch, Germany
Tel	+49-34954-31960
Fax	+49-34954-49233
E-Mail	webmaster@dvbshop.net
Website	www.dvbshop.net
Model	IMPERIAL DB 1 CI HDMI
DiSEqC	1.0, 1.1, 1.2, USALS
Satellites	17 preset plus additional positions
Channel Listings	All, Satellites (each for TV and Radio)
Favorites	32 (each for TV and Radio)
Teletext	Full Page Memory
EPG	Extended 5 Channel Display, Program Details for 7 Days
Timer	8 for all EPG Programs
CI-Slot	1
HDMI Output	ja
Scart Connectors	2
Audio/Video Outputs	3 x RCA
Digital Audio Output	ja
Power Supply	175 ... 250 VAC
Power Usage	6/12 Watt (Stand-By/Reception)

Expert Opinion

+

Modern receiver featuring all currently useful interfaces which is easy and comfortable to operate.

Alphanumeric display
Energy saving
Fully DiSEqC and USALS compatible

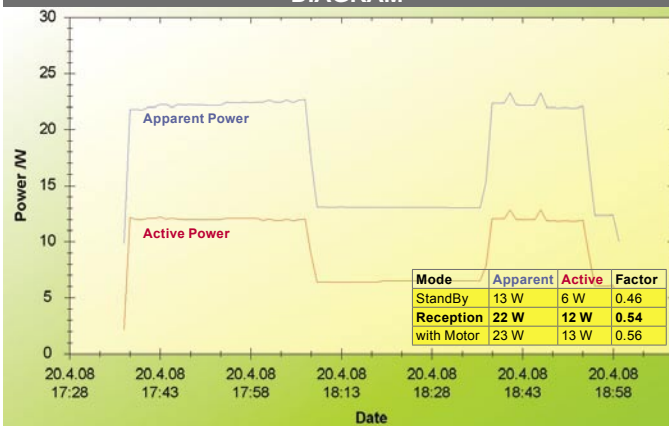


Heinz Kopplitz
TELE-satellite
Test Center
Germany

-

Does not support MPEG-4.

ENERGY DIAGRAM



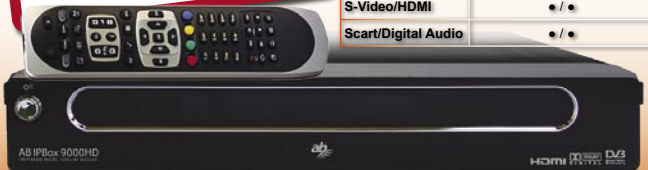
Starting with some peaks when switching channels, followed by standby mode and then some more peaks when starting up the motor of a rotary antenna.

AWARD Winning Satellite Receivers

TELE SATELLITE AWARD & BROADBAND
08-09/2008

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

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



TELE SATELLITE AWARD & BROADBAND
08-09/2008

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

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



TELE SATELLITE AWARD & BROADBAND
06-07/2008

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

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



TELE SATELLITE AWARD & BROADBAND
04-05/2008

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

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



TELE SATELLITE AWARD & BROADBAND
04-05/2008

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

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



TELE SATELLITE AWARD & BROADBAND
04-05/2008

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

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



TELE SATELLITE AWARD & BROADBAND
04-05/2008

TOPFIELD TF7720HSIR
Ideal HDTV Receiver for FTA and Irdeeto encrypted channels

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



TELE SATELLITE AWARD & BROADBAND
02-03/2008

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

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



TELE SATELLITE AWARD & BROADBAND
02-03/2008

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

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



TELE SATELLITE AWARD & BROADBAND
02-03/2008

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

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



TELE SATELLITE AWARD & BROADBAND 12-01/2008

NanoXX 9400
Very fast low-threshold blind scan receiver – ideal for DXers



Manufacturer	NanoXX
Website	www.nanoxx.info
Function	Blind scan receiver with USB
DVB-S2/LAN	— / —
Channel Memory	10000
DiSEqC	1.0 / 1.1 / 1.2
S-Video/HDMI	— / —
Scart/Digital Audio	● / ●

TELE SATELLITE AWARD & BROADBAND 12-01/2008

INFOSAT ZIMPLE BOX 3
Fast and easy to use receiver for FTA reception with a very sensitive tuner



Manufacturer	Infosats
Website	www.infosats.com
Function	MPEG2 FTA Receiver with Blind Scan
DVB-S2/LAN	— / —
Channel Memory	1000
DiSEqC	1.0 / 1.2
S-Video/HDMI	— / —
Scart/Digital Audio	— / —

TELE SATELLITE AWARD & BROADBAND 12-01/2008

ARION AF-4000HDCI
A receiver that will make any newbie happy as well as please any pro with its endless possibilities



Manufacturer	Arion
Website	www.arion.co.kr
Function	HDTV satellite receiver with CI slot
DVB-S2/LAN	● / —
Channel Memory	4000
DiSEqC	1.0 / 1.1 / 1.2 / 1.3
S-Video/HDMI	— / ●
Scart/Digital Audio	● / ●

TELE SATELLITE AWARD & BROADBAND 10-11/2007

TECHNOTREND S2-3650CI
HDTV Reception with Many Features for Little Money



Manufacturer	DVB-Shop
Website	www.dvbshop.net
Function	USB box for reception of DVB and DVB-S2 in SDTV/HDTV
DVB-S2/LAN	● / —
Channel Memory	unlimited
DiSEqC	1.0
S-Video/HDMI	— / —
Scart/Digital Audio	— / —

TELE SATELLITE AWARD & BROADBAND 10-11/2007

JIUZHOU DVS-2018BS
Very Stable, Solid Receiver for Professional Use



Manufacturer	Jiuzhou
Website	www.jiuzhou.com.cn
Function	Professional Digital Satellite Receiver with 2 CI slots
DVB-S2/LAN	— / —
Channel Memory	!
DiSEqC	—
S-Video/HDMI	— / —
Scart/Digital Audio	— / —

TELE SATELLITE AWARD & BROADBAND 10-11/2007

TECHNISAT DIGITSIM S2
Exceptional Mini-receiver with Very High Signal Sensitivity and Ease-of-Use



Manufacturer	TechniSat Digital
Website	www.technisat.com
Function	Digital Satellite Receiver with two Systems for SIM Cards
DVB-S2/LAN	— / —
Channel Memory	4000
DiSEqC	1.0 / 1.2 / 1.3
S-Video/HDMI	— / —
Scart/Digital Audio	● / —

TELE SATELLITE AWARD & BROADBAND 10-11/2007

TECHNOTREND TT-MICRO S320
Top video quality thanks to HDMI – at an affordable price



Manufacturer	DVB-Shop
Website	www.dvbshop.net
Function	Digital satellite receiver with HDMI
DVB-S2/LAN	● / —
Channel Memory	!
DiSEqC	1.0
S-Video/HDMI	— / ●
Scart/Digital Audio	● / ●

TELE SATELLITE AWARD & BROADBAND 08-09/2007

JIUZHOU DTS1601
Well designed, solid receiver with a mature firmware and blindscan



Manufacturer	Jiuzhou
Website	www.jiuzhou.com.cn
Function	Digital Satellite Receiver FTA
DVB-S2/LAN	— / —
Channel Memory	4800
DiSEqC	1.0 / 1.2
S-Video/HDMI	● / —
Scart/Digital Audio	● / ●

TELE SATELLITE AWARD & BROADBAND 08-09/2007

OPENSAT X7000CI
A very fast receiver simple to use



Manufacturer	OPENSAT
Website	www.opensat.info
Function	Digital satellite receiver with 2 CI-Slot
DVB-S2/LAN	— / —
Channel Memory	6000
DiSEqC	1.0 / 1.2
S-Video/HDMI	— / —
Scart/Digital Audio	● / —

TELE SATELLITE AWARD & BROADBAND 06-07/2007

AB IP BOX 250S PVR
Best Linux-based Satellite Receiver



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

Diamond line LNB's of GT-SAT International

Powerful LNB's



A few years ago, we were observing the improvement in noise performance of LNB's. The older LNBs that had the noise figure of 0.8 dB or even larger than 1 dB have been replaced by LNBs with noise figures specified as 0.6, 0.3 or even 0.2 dB (typically). If you read regularly TELE-satellite, you know that not always the measurements do prove that 0.2 dB marked devices are better than 0.6 dB devices for every frequency or polarization. Our recent tests showed that there is a rather low difference in noise performance of today's good quality products. So, how can a manufacturer make a difference and offer a customer a better product?

Another parameter that is quite important for systems with long coax cables is the output power provided by the LNB. Since a coax cable attenuates the signal, if we need to feed a receiver that is far away from an LNB, we need to insert an amplifier at the LNB output. Such amplifier means additional cost. It can also spoil the noise performance of the system.

The alternative is to use an LNB that already provides a stronger signal. And the Diamond high gain line of GT-

SAT International are just such products, which we took from the market: single, twin, quad and quattro LNB's (GT-LST40D, GT-T40D, GT-QD40D and GT-QT40D). These products have high conversion gain, so when compared with a regular LNB they should create visible stronger signal at the output.

To check this, we quickly build the measurement system: 60 cm dish aimed at HOTBIRD 13° East, 0.3dB reference LNB, satellite signal analyzer, 10dB signal attenu-

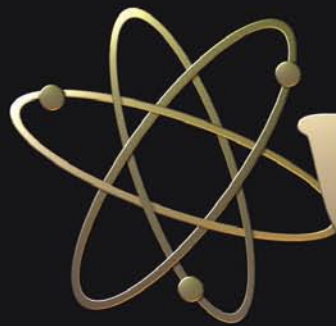
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INDONESIA

Transponder	Pol.	Freq.
Tr-1	V	10719
Tr-2	H	10723
Tr-4	V	11240
Tr-3	H	11296
Tr-5	H	11642
Tr-6	V	11662
Tr-8	V	11727
Tr-7	H	11747
Tr-9	H	12092
Tr-10	V	12111
Tr-11	V	12713
Tr-12	H	12731

Table 1. Transponders selected as signal sources.

ator, a piece of coax cable and a few 75 ohm terminations (to terminate not connected outputs of a quad and quattro LNB's). We selected transponders situated at the beginning, at the end and in the middle of the low and high subband of Ku-Band. Six transponders for vertical and six for horizontal polarization – see Table 1.

Graphs in Figure 1 and 2 show the results. The yellow bar represents the reference LNB. The specification was not overoptimistic. Everybody can see that the whole family provide much stronger signal than the regular LNB by 7 to 12 dB. Please mind that a coax cable introduces 20~30 dB attenuation per 100 m. Based on our results, we can say that the diamond line LNB's compensate the attenuation introduced by 30~50 meters of a coax cable. That is 10~15 stories of a building!

We knew already before the measurements that these LNB's should have bigger output power than normally. So it was not a big surprise. But there are no free lunches. If you improve one parameter, you usually have to agree for a degradation of something else. In this case, we were afraid that the noise performance had suffered. We measured the modulation error ratio (MER). This is the very practical method to check noise performance when real life signals like transponders are used.

In Figure 3 and 4 you can see that our fears were baseless. The single and twin LNB's proved to be very comparable with our reference.

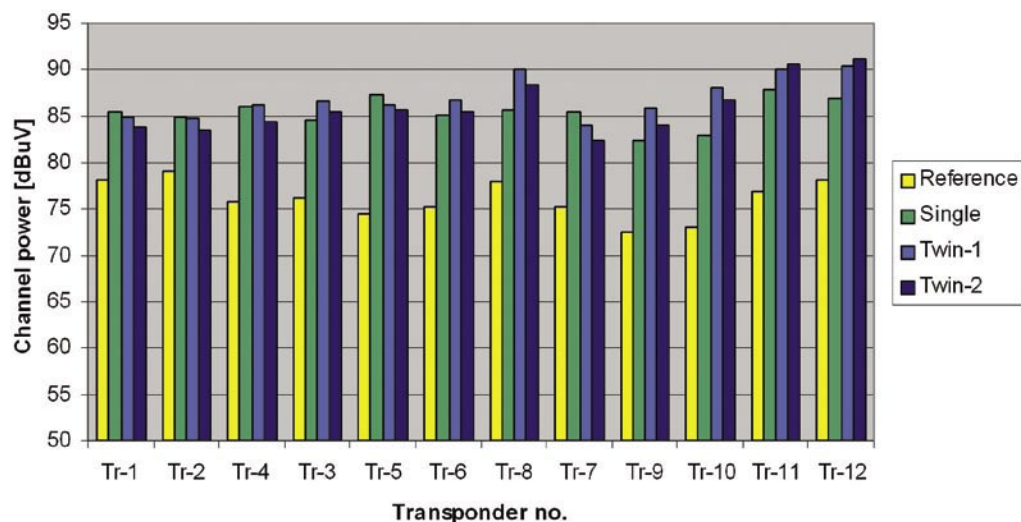


Fig. 1. Outputs of the single and twin LNB's of GT-SAT compared to the reference LNB.

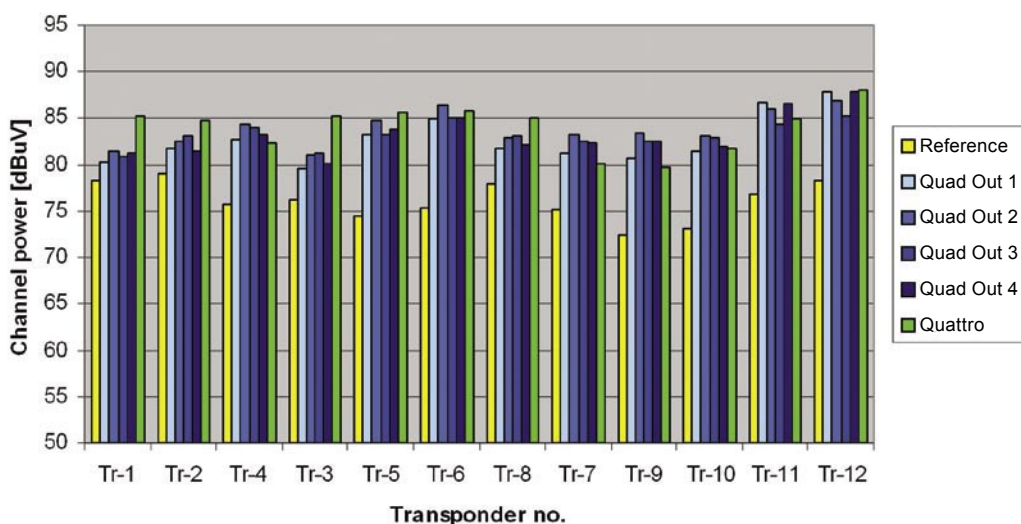


Fig. 2. Outputs of the quad and quattro LNB's of GT-SAT compared to the reference LNB.

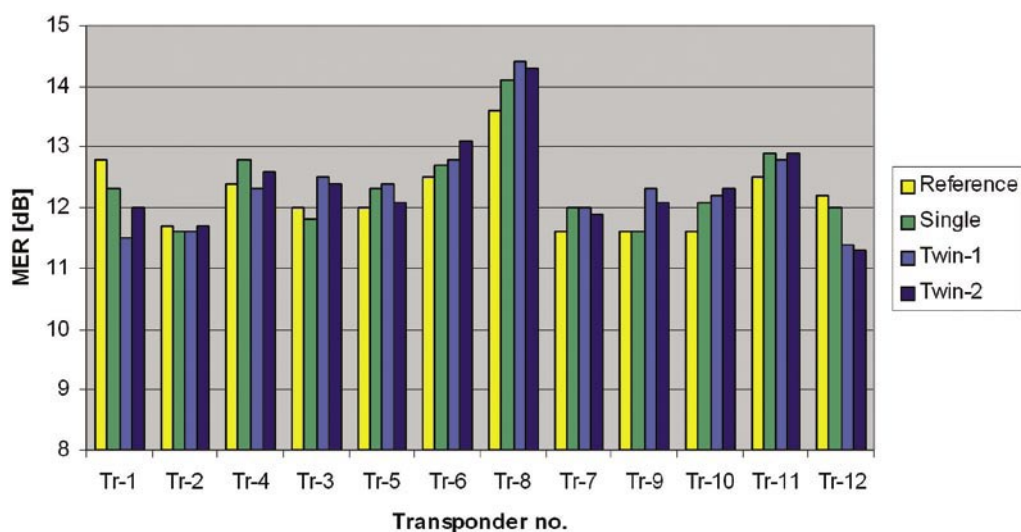


Fig. 3. Noise performance of the single and twin LNB's of GT-SAT compared to the reference LNB.

	Reference	Single	Twin-1	Twin-2	Quad-1	Quad-2	Quad-3	Quad-4	Quattro
HI Band	139	146	198	199	196	198	198	200	243
LO Band	122	129	183	182	181	182	183	183	228

Table 2. DC current consumption [mA]

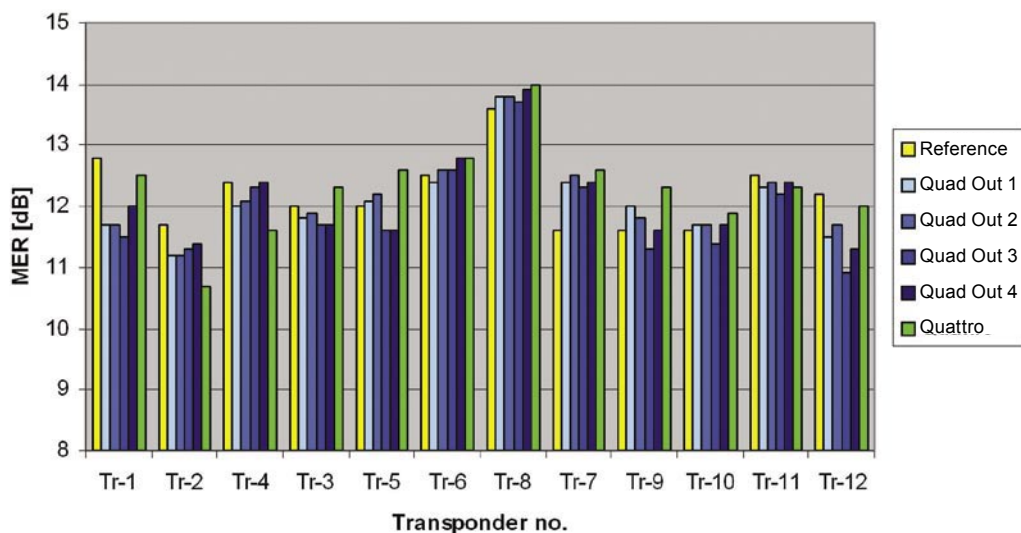


Fig. 4. Noise performance of the quad and quattro LNB's of GT-SAT compared to the reference LNB.

we would say it was slightly worse. The quattro LNB was again better than our reference.

Generally, when compared with today's regular low noise LNBs, the Diamond Line family is significantly better in output power and more or less equal in noise performance.

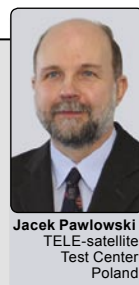
Finally, we also measured the current consumed by the devices – see table 2. The single model consumed less than 100 mA, the twin and quad models less than 200 mA and the quattro a little bit more than 200 mA. That's slightly more than the regular LNB's but it is something one should expect from a high power output devices.

These LNBs are the perfect choice for difficult reception areas and allow for plenty of bad weather signal reduction.

Expert Opinion

+

Increased output power allows you to extend the coax cable by 30-50 meters or introduce lossy distribution devices. Very good noise performance – the same as the good regular devices have. Connectors located not too close each other. Weather protection of F-connectors in all models. Good workmanship.



-

none

TECHNIC

DATA

Manufacturer/Distributor	GT Sat International s.a.r.l 16, Rue Millewee, L-7257 Helmsange-Walferdange, Luxembourg
E-mail	info@gt-sat.com
Telephone	+352-26432203
Fax	+352-26432204
Models	GT-LST40D (single) GT-T40D (twin) GT-QD40D (quad) GT-QT40D (quattro)
Description	Universal Ku-Band LNB's for Offset Dishes
Noise Figure	0.2 dB (typical)
LOF	9.750 and 10.600 GHz
L.O. Frequency Stability	+/-1 MHz (Max) @ Room Temp.
Conversion Gain	63 ~ 67 dB
Gain Flatness 26 MHz Bandwidth	+/-0.5dB (Typ.)
Cross-Pol. Isolation	27 dB (Typ.)
Image Rejection	45 dB (Min.)
Operating Temperature Range	-40°C ~ +65°C



globalinvacom Stacker/ De-Stacker

Two for the Price of One



PVR Twin Tuners, whether they are SD or HD boxes, are very high on everyone's wish list but in the end most don't buy their dream receiver for reasons as simple as the lack of an input cable. Most apartments are only supplied with a single cable connection and even in single family homes for many years it was never expected that a modern satellite receiver would need two independent signal sources. Occasionally, with a little effort, you might be able to snake a second cable through the walls into your living room but, more often than not, this is not possible.

The receiver manufacturers came up with a partial solution by fitting their boxes with a looped-through output from the first tuner so that both tuners could be connected to the same cable. But if you happen to be using tuner #1 for a recording, the available channels on tuner #2 are limited to the same polarization that is in use on tuner #1. You really can't have that much fun with your new Twin Tuner PVR with this kind of set up.

The British company **globalinvacom**, better known to our regular readers because of their new fiber optic LNB, decided to address this problem and came

up with a simple yet ideal solution. The Stacker and its counterpart, the De-Stacker, take the signals close to an antenna or Quattro-Multiswitch and com-

bine the two into one cable. The De-Stacker in the living room separates the two signals again so that the receiver can now have two fully independent satellite signals connected to it.

The Stacker is delivered from the factory in a stable, weather-resistant plastic housing. It should be installed as close as possible to the twin LNB or Quattro-Multiswitch; a cable tie is included to make it easy to install it directly on the satellite antenna mast. Mounting holes are also available for installation on a wall.

The heart of this discovery is inside the housing: a small

metal box with three satellite IF connections. Two of these connections are for LNB1 and LNB2 while the third is connected to the existing coax cable.

The LNB1 input is compatible with the 950-2150 MHz frequency range typical for DVB-S/DVB-S2 IF signals while the LNB2 input covers the range from 47-2150 MHz. This expanded range lets you also connect a terrestrial antenna onto the second input.

The workmanship of the Stacker is quite good; it is properly labeled and should therefore prevent any possible mistakes in connecting the cables. The system is designed to work in

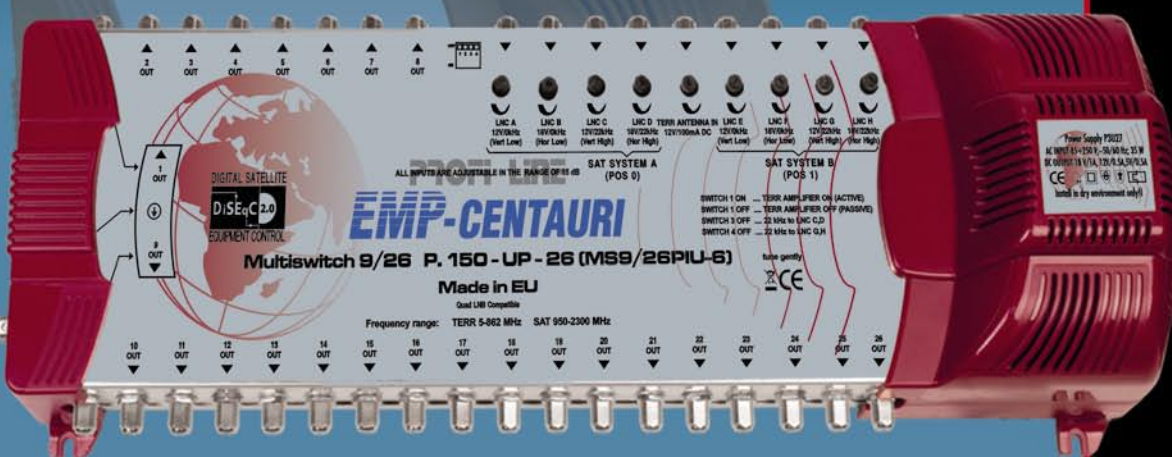


Stacker/ De-Stacker Set

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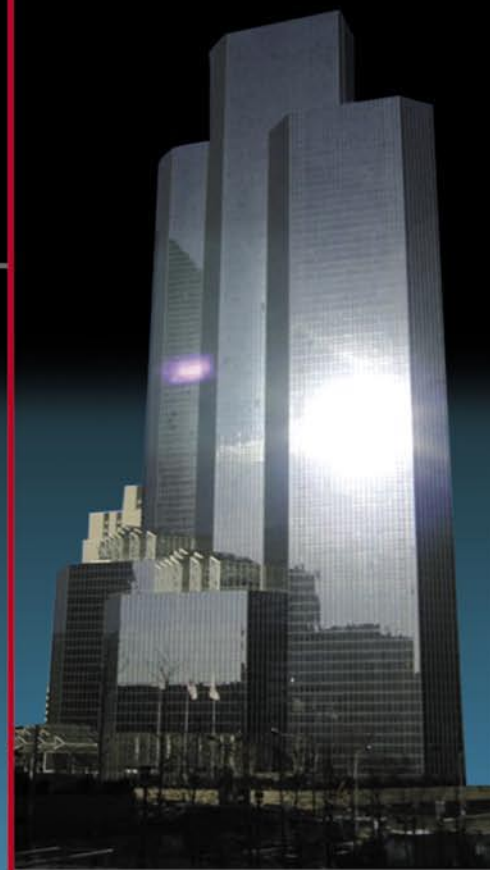
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external temperatures ranging from -15°C to +40°C and is well protected from moisture. A separate power supply for the Stacker is not needed; it gets its power from the existing coax cable.

The De-Stacker is roughly 1/3 the size of the Stacker and is also fitted with three satellite IF connections. Since the De-Stacker would normally only be used inside, away from the elements, it does not come with a weather-proof housing. The connections are thus easily accessible.

The workmanship of the De-Stacker is just as good as the Stacker with all of the connections nicely labeled. Should you run into any problems, a service telephone number can be found on the back.

Unlike the Stacker, the De-Stacker does need its own power supply and for this purpose that manufacturer has included a 20V power supply that uses less than 5W.

Even though the Stacker/De-Stacker is for the most part self-explanatory, Inva-com went the extra mile and included a very detailed user manual that takes the installation and assembly and explains it step by step.

Everyday Use

Several years ago we tested a similar system from another manufacturer but because of some technical problems and a lack of sophistication, it never really was able to penetrate the market. Of course, this made it all the more interest-

ing for us when we connected the Stacker to a 75cm antenna with Twin LNB pointed to ASTRA2 at 28.2°.

The manufacturer recommends using CT100 coax cable between the Stacker and De-Stacker, a suggestion that we naturally listened to for the time being.

The distance between the Stacker and De-Stacker modules was roughly 65 feet (20 meters). To really put this system through the ringers, we selected four frequencies from each band at the start of the test with emphasis on frequencies that covered the edges of the bands.

As you can clearly see in Table #1, all four test frequencies were receivable at the De-Stacker without any problems. We were especially impressed that there was hardly any difference between the measured signal before the test without the new **globalinvacom** system and the measured signal with the new Stacker/De-Stacker system. For all practical purposes this difference was negligible.

Our tests also quickly showed that the LNB1 connection was slightly better able to process signals compared to LNB2. But this is expected and the manufacturer clearly states that in the specifications. The maximum C/N difference between a pass-through signal and one that was routed through the Stacker/De-Stacker was roughly 1.4 dB. For modern DTH satellites this is absolutely no problem.

The De-Stacker Plus comes

with a built-in amplifier and increases the LNB1 input level by approximately 9 dB and the LNB2 input by about 6 dB. This should take care of most signal loss conditions.

But we weren't going to let the **globalinvacom** system get off that easy. We decided to raise the difficulty rating by increasing the cable length between the Stacker/De-Stacker to about 115 feet (35 meters).

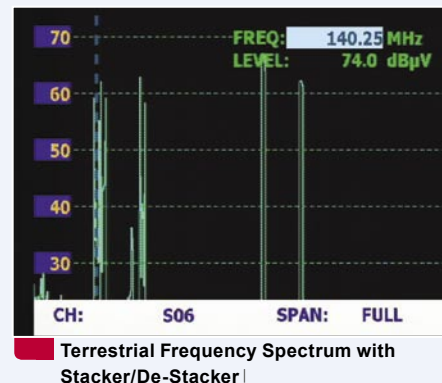
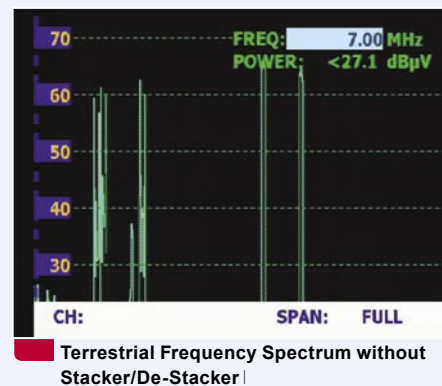
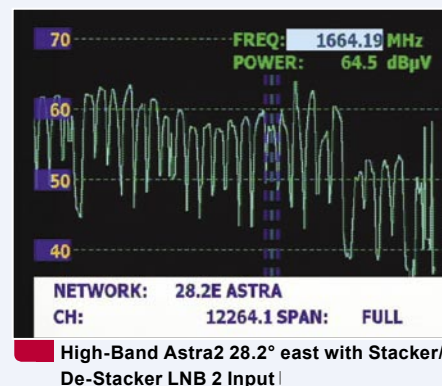
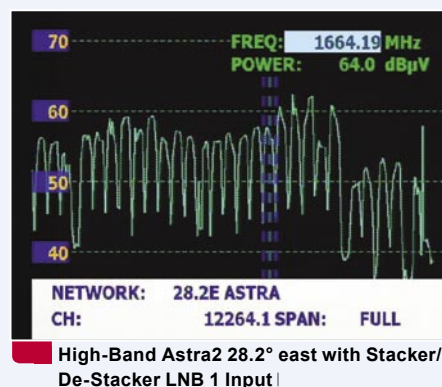
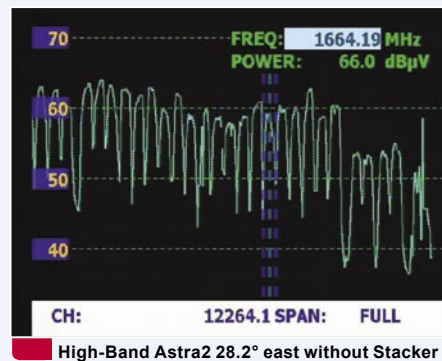
But even this could not disturb the **globalinvacom** Stacker even though the manufacturer recommends that the De-Stacker Plus be used for cable lengths over 100 feet (30 meters). The De-Stacker Plus guarantees interference-free reception with cable lengths up to 200 feet (60 meters).

In addition to connecting this system to a twin LNB, it is also possible to connect the Stacker/De-Stacker to a Quattro-Multiswitch. To check the validity of the manufacturers claim we linked the Stacker to two outputs from our 5/18 multiswitch (four LNB inputs for the Quattro LNB plus terrestrial input) and as expected, the **globalinvacom** product did not disappoint us.

We do have to mention though that the Stacker/De-Stacker system is not designed to be used when DiSEqC signals are present. DiSEqC signals will not pass through the **globalinvacom** system; only the 22 kHz switching signals for low and high band will pass through as will the voltage switching for polarization. Therefore, the Stacker/De-Stacker system can be used on these three applications:

- Reception of two satellites each with their own LNB
- Reception of one satellite using a twin LNB
- Reception of one satellite with a Quattro-LNB and multiswitch

As we already mentioned, the entire terrestrial frequency range can be handled by the LNB2 connection. Figure 4 shows the frequency spectrum with a direct connection of our TV Explorer II analyzer to the multiswitch. Figure 5 shows the terrestrial signal through



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- L-Band, C-Band, Ku-Band and Ka-Band capability
- Quality indicator (Pre BER) displayed alongside RF Level (dBuV)
- Pre and Post BER can be displayed with their actual values (setup option)
- Toggle to display Post BER and Carrier to Noise (dB)

- DiSEqC switch commands (available from sub menu)
- Symbol rates 2Msymb to 45Msymb
- Frequency range 950 to 2150MHz
- Input impedance 75 Ohms
- LNB Pass / Fail test function
- LNB short circuit protection
- Satellite cable integrity test
- Upgradeable firmware
- Intelligent internal AC charger 100 to 240 V AC
- Automatic fast and trickle charge modes
- 12 volt in car charger supplied
- USB lead supplied
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Table 1:

ASTRA2	Stacker LNB 1	Stacker LNB 2	without Stacker
11256V	59.8dBμV/CN 12.4 dB	61.0dBμV/CN 11.6 dB	62.2dBμV/CN 13.1 dB
10961H	59.5dBμV/CN 14.5 dB	63.3dBμV/CN 14.7 dB	64.5dBμV/CN 15.0 dB
12204V	66.0dBμV/CN 16.0 dB	66.0dBμV/CN 15.1 dB	68.7dBμV/CN 15.8 dB
12262H	54.1dBμV/CN 13.3 dB	64.5dBμV/CN 13.4 dB	66.0dBμV/CN 14.7 dB

Signal comparison Stacker/De-Stacker System and direct cable connection

the Stacker/De-Stacker system. In addition to all of the DVB-T channels, we were also able to receive the analog camera signal from the main entrance of our test lab without any problems and at nearly the same level (63 dBuV).

If you happen to have a wall outlet, in most cases this can also be used as long as it can support frequencies up to 3850 MHz. The manufacturer recommends wall outlets from Global Euroframe and Euromod HQF.

Does it have to be CT100 coax cable?

Up until now, we only used CT100 cable between the Stacker and De-Stacker as recommended by the manufacturer. But in reality, most end users already have cable that is of lesser quality. This was reason enough for us to test this as well.

We happened to find a roll of older coax cable gathering dust in our storeroom and decided to replace the high quality coax with this older cable. As long as the cable lengths were fairly short, we did not encounter any problems but, as the cable lengths increased, the more problematic the transmission became.

Therefore we strongly recommend that you use the cable suggested by the manufacturer especially if a length of more than 33 feet (10 meters) is to be used.

How does the Stacker/De-Stacker actually work?

As the name suggests, the signals of a twin LNB or a multiswitch are stacked on top of each other. In normal satellite reception, the LNB converts the incoming satellite signals to the 950-2150 MHz so that they can be efficiently carried by a coax cable. The Stacker does nothing more than transfer the LNB2 signals in the 47-2150 MHz range while taking the LNB1 input signals and converting them to the 2650 to 3850 MHz range. The Stacker essentially expands the useable frequency range.

The job of the De-Stacker is to take the higher frequency signals that are now on the LNB1 input and reconvert them such that both De-Stacker outputs are in the 950-2150 MHz range and thus compatible with DVB-S/DVB-S2 receivers. A built-in amplifier makes up for any signal loss that may have occurred.



Expert Opinion

+

The *globalinvacom* Stacker/De-Stacker passed all of our tests quite convincingly. If high quality cable is used, there should be no problems using cable lengths of 100 feet (30 meters) or more; the De-Stacker Plus model according to the manufacturer can do 200 feet (60 meters) or more. The installation is simple and its workmanship is quite good. Even if you don't take the manufacturer up on the recommended cabling, the Stacker/De-Stacker still functioned without any problems.



Thomas Haring
TELE-satellite
Test Center
Austria

PVRs can be used only with Twin LNBS or Quattro-Multi-switches, that is, for a single satellite

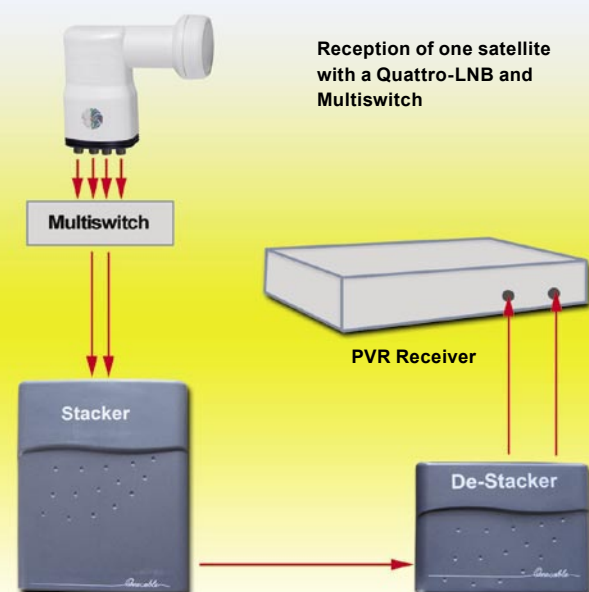
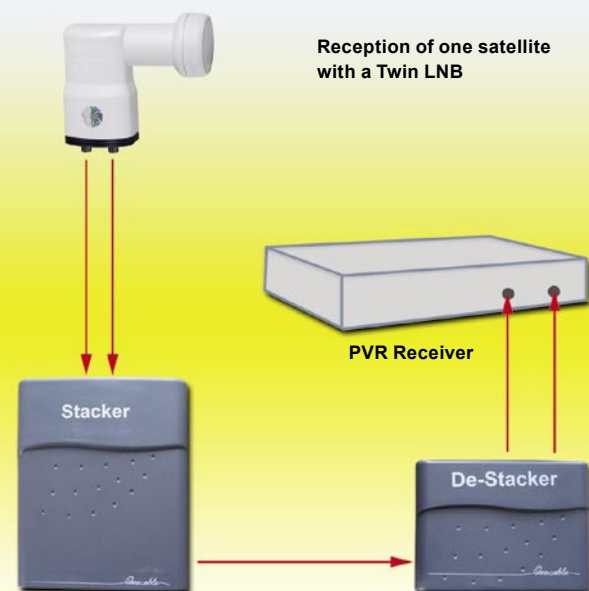
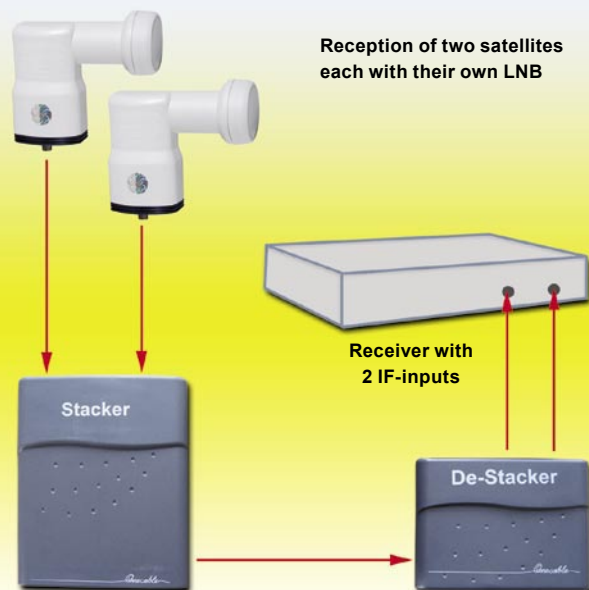
TECHNIC DATA

Manufacturer	globalinvacom Winterdale Manor, Southminster Road Althorne, Essex, CM3 6BX, UK
Tel	+44 (0)1621 743440
Email	sales@globalcom.co.uk
Model	Stacker/De-Stacker
Function	Transmission of 2 separate signals via one coax cable
Input Frequency Range Stacker LNB 1	950-2150 MHz
Input Frequency Range Stacker LNB 2	47-2150 MHz
Output Frequency Range Stacker	47-3850 MHz
Signal Loss Stacker LNB 1	0 dB
Signal Loss Stacker LNB 2	-2 dB
Power Usage Stacker	supplied through De-Stacker
Dimensions Stacker	155x122x35mm
Operating Temperature Stacker	-15 bis +40 °C
Input Frequency Range De-Stacker	37-3850 MHz
Output Frequency Range De-Stacker LNB 1	950-2150 MHz
Output Frequency Range De-Stacker LNB 2	47-2150 MHz
Signal Loss De-Stacker LNB 1	0 dB (+9 dB De-Stacker Plus)
Signal Loss De-Stacker LNB 2	-2 dB (+6 dB De-Stacker Plus)
Power Supply	External AC Adapter
Dimensions	116x90x32mm
Min. Input Level up to 100 feet (30m)	+68 dBμV
Min. Input Level up to 200 feet (60m)	+70 dBμV
Max. Input Level at LNB 1 Input:	+95 dBμV

ENERGY DIAGRAM



After turning it on, the De-Stacker's power usage remains constant. Switching operations in the De-Stacker do not affect its energy usage.





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SATCATCHER DIGIPRO EXCEL-TV
Easy to use, extremely accurate
and with a brilliant display



SatCatcher Digipro Excel-TV

Small signal meter with TV display

Until a few years ago it was relatively easy to align a new antenna to a desired satellite positions. All that was needed was an analog receiver and you then slowly moved the dish until one of the analog channels came in clearly. These days, however, this method doesn't work any longer because most satellites almost exclusively transmit digital signals. From an economic point of view this development is only natural because with the same capacity that was taken up by a single analog channel, today up to ten digital channels are beamed back down to earth. So we've ended up with a virtually non-existent analog offering and thus no easy way to adjust our dishes.

Some of our readers might argue that digital receivers are perfectly suitable for this task thanks to their signal strength and signal quality meters, but all we can reply to them is: Try it out for yourself and you'll find that it is extremely difficult to reach an optimum alignment because these digital meters only react very slowly to signal changes, whereas professional devices (and also analog receivers) provide feedback in real time, which is what really counts.

For exactly that reason TELE-satellite presents signal meters for the alignment of satellite dishes every once in a while. Some of them cost about as much as a used small car, while others are designed for more budget-conscious buyers. British company SatCatcher has just launched its new Digipro Excel-TV to prove all those wrong who say inexpensive equals inefficient.

Their signal meter comes in a very robust carrying case made of aluminium and safely rests inside with foam padding all around, together with all the accessories that are part and parcel of the overall package.

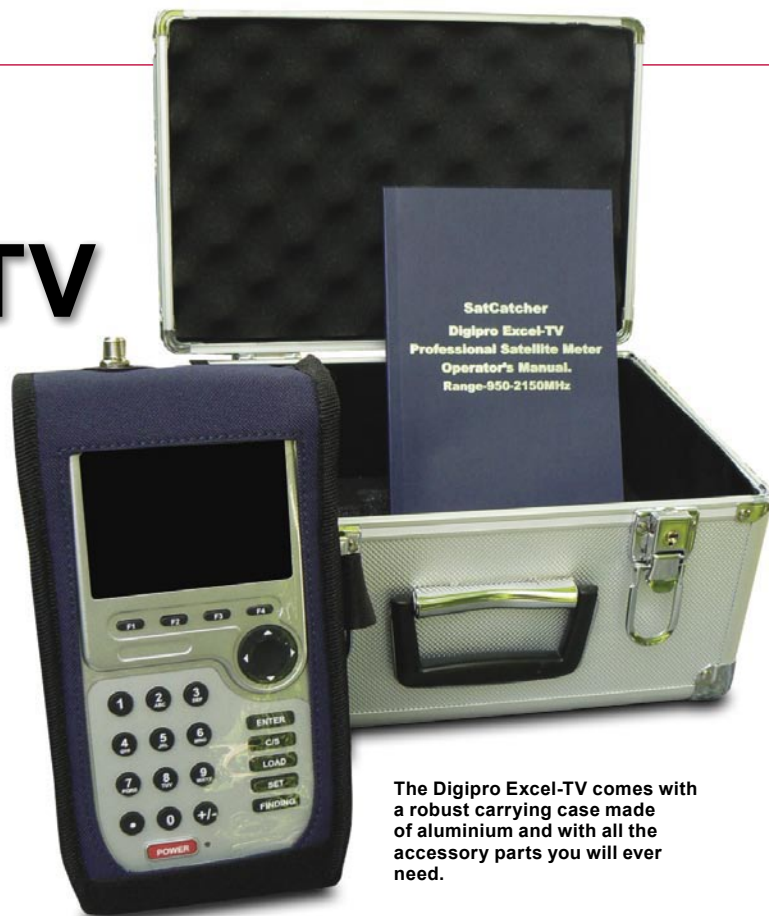
The Digipro Excel-TV unit itself features a 3.5-inch LCD display and a total of 22 buttons plus arrow buttons on the front panel to operate the meter. On the top you find the satellite IF input socket, with the socket for the charger and

an interface for connecting the device to the PC being located on the bottom. When using the Digipro Excel-TV outside for adjusting the antenna a sturdy protective cover with viewing window protects it from the elements. A charger for the battery pack that is built into the Digipro Excel-TV, an adaptor for charging the meter in your car, a connecting cable for use between the Digipro Excel-TV and the PC, a CD-ROM with software and a comprehensive user manual with numerous illustrations which will also please laymen are all included in the package.

The standard of workmanship leaves an exceedingly positive impression and all buttons have a nice feel to them. The LCD display can be read well even under direct sunlight.

Everyday use

When we had a look at the technical specifications of the Digipro Excel-TV during our tests we were surprised to read that the meter is operational for up to five hours before the built-in battery needs to be recharged. When compared to many competing meters – whose batteries usually last no longer than two to three hours – this is a remarkable achievement, and one that we were able to verify in our test too. In order to ensure this long battery power the meter should be charged from the mains for at least four to five hours before



The Digipro Excel-TV comes with a robust carrying case made of aluminium and with all the accessory parts you will ever need.

usage. Before starting to align the dish we recommend installing the software of the CD-ROM because in order to fulfill all its promises the Digipro Excel-TV needs a current transponder and satellite list as well as the exact geographic position of the

installation site. Both can be set very conveniently using the SatCatcher software. Dozens of cities worldwide are pre-stored so that in many cases it is not necessary to look up your own location and enter it manually. Of course the list can be edited

SatCatcher's Digipro Excel-TV in use: aligning an offset antenna to ASTRA 2B



Spectrum display



to add new entries and free online services such as Dish-Pointer.com for example are very handy tools for determining precise location data. The European software version includes an extensive list of 64 pre-stored satellite positions and whenever several satellites are co-positioned at the same orbital spot, each satellite is listed separately and can also be selected individually.

This is an important feature because even though several satellites often share the same position they frequently have different footprints which means that depending on the reception region only signals from specific satellites might come in strongly enough. ASTRA2D at 28.2° East is a classic European example for that: in the UK and Ireland its signals can be received with dish sizes of no more than 70 cm, while in Eastern Austria a diameter of three meters would be required to receive the exact same signal. On the other hand, ASTRA2A and ASTRA2B share the same position and can be received with small antennas all over Central Europe.

Each satellite comes with a list of several transponder entries, which can also be edited or extended if the need arises. An updated list is made available for download by the manufacturer in regular intervals, or you can always turn to www.SatcoDX.com for up-to-date data or at the "World of Satellites" software delivered on CD-ROM with each issue of TELE-satellite.

Once all required parameters are entered or selected the meter needs to be hooked up to the PC with the included cable (serial COM port) so that all information can be transferred

to the measuring device in a breeze.

Antenna alignment

Before you can go about aligning your antenna you need to load the desired satellite on the meter first. All you need to do for that is press the FINDING button which calls up the satellite list which before was shown by the PC software as well. From that list you need to select your desired satellite. Each satellite on the list is divided into its horizontal and vertical polarisation and low and high band, because even if we are dealing with one satellite only, chances are that one polarisation or band targets a different market than the other and thus not all signals can be received at all locations.

With the FINDING menu and the ORIENTATION sub-item the meter calculates the elevation and azimuth settings required to correctly point the antenna to the chosen satellite. A virtual compass shows the approximate orientation of the antenna during the alignment process. Generally, your antenna should show first signs of life as soon as the settings suggested by the meter are implemented on the antenna.

Once that stage is finished the Digipro Excel-TV switches from finding mode to alignment mode and displays signal strength and signal quality with the help of two extremely sensitive bars. C/N, BER as well as signal strength are permanently measured and indicated in dB and/or dBµV. There is even an acoustic indicator representing the current measurement so that changes can be noticed even without looking at

the meter simply by listening to the changing pitch of the sound. That way you always have immediate feedback telling you if antenna movements improve or deteriorate the incoming signal. In case a signal does not come in right away you may decide to select a different transponder out of the pre-stored list. As soon as the best possible signal strength has been found you can press the TV button so that the Digipro Excel-TV reads out the NIT of the chosen transponder and displays the channels transmitted on that transponder.

If you were skeptical whether all that bars and pitching sounds actually led to something, now that you can actually watch TV on the Digipro Excel-TV signal meter you have proof that the antenna points to the right satellite. Any FTA channel can be displayed and using the arrow buttons you can even zap between channels.

A more experienced user will

use the quick route:

- press finding button
- select satellite needed
- press F4: this goes to spectrum to make the install
- press F4 again: this goes to signal screen for fine tune
- another press F4 to download tv channel for ultimate verification of the satellite found.

Each measurement result can be saved for later analysis with the touch of a button. This is a very handy feature in situations when you need to align a motorised or multi-feed antenna and you need to have reception data of all available satellites for reference once setup is completed.

Apart from pre-stored transponder data or those edited on the PC it is also possible to add new transponder parameter directly in the meter. LOF, LNB power supply and the 22 kHz signal may just as well be adjusted right with the signal meter. That way you can use Digipro Excel-TV both for the Ku

Done! The dish points to the right satellite and the Digipro Excel-TV now becomes a miniature TV.





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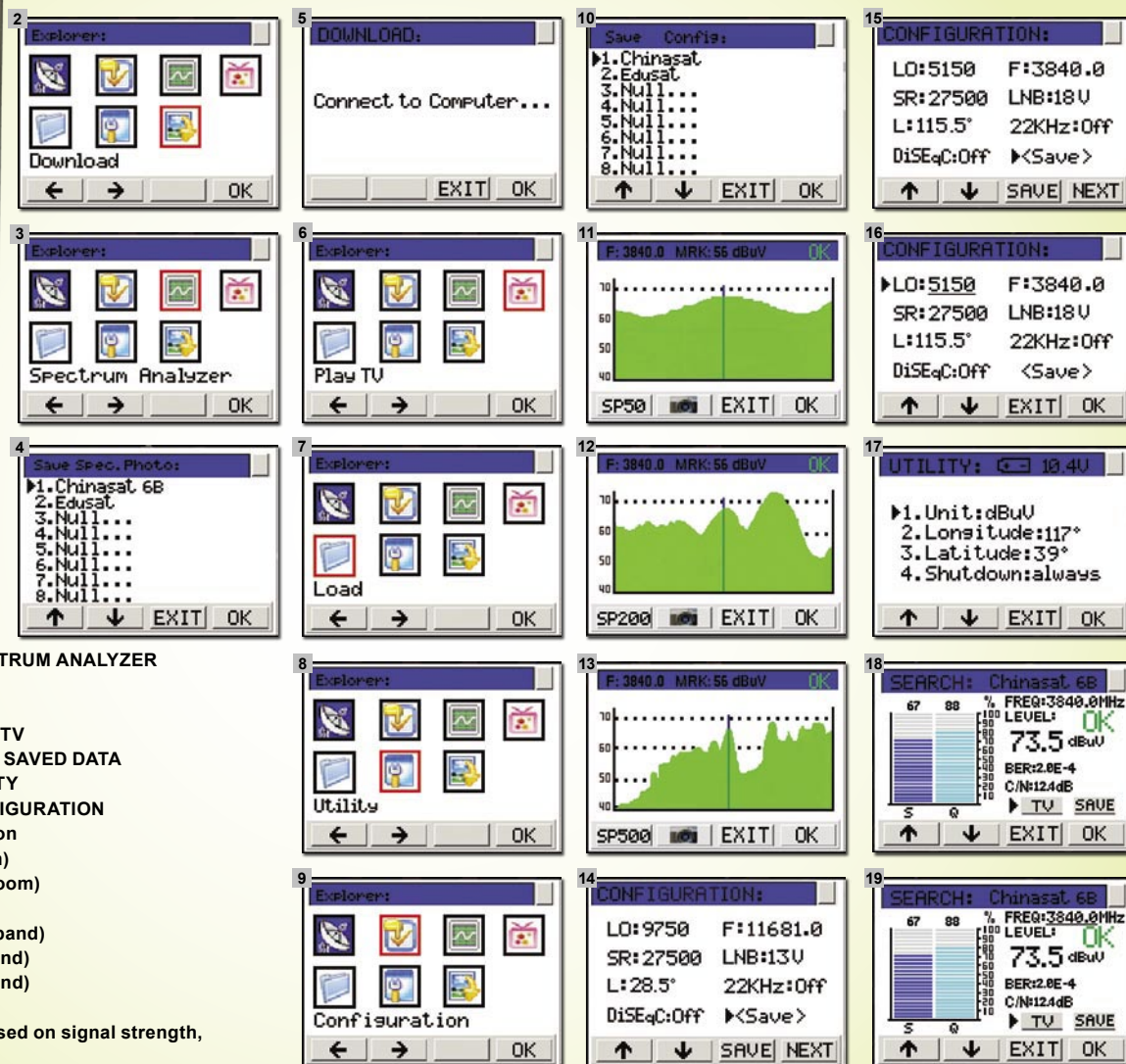


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DigiPro Excel TV Screenshots:



- 1 – Main menu, menu item FINDING for aligning the antenna
- 2 – Main menu, menu item DOWNLOAD for exchanging data with the PC
- 3 – Main menu, menu item SPECTRUM ANALYZER
- 4 – Saving spectrum photo
- 5 – Downloading data to the PC
- 6 – Main menu, menu item PLAY TV
- 7 – Main menu, menu item LOAD SAVED DATA
- 8 – Main menu, menu item UTILITY
- 9 – Main menu, menu item CONFIGURATION
- 10 – Saving satellite configuration
- 11 – Spectrum photo (high zoom)
- 12 – Spectrum photo (medium Zoom)
- 13 – Spectrum photo (low Zoom)
- 14 – Satellite configuration (Ku band)
- 15 – Satellite configuration (C band)
- 16 – Satellite configuration (C band)
- 17 – UTILITY menu
- 18 – Display shot for aligning based on signal strength, C/N and BER
- 19 – Saving spectrum photos



USB interface for connecting the device to the PC next to the socket for power supply.



F-socket for connecting the LNB on the top side.

and C bands, or any other available band for that matter.

The DigiPro Excel-TV can also be operated when connected to a multiswitch since it supports DiSEqC 1.0 (for up to eight LNBs).

The manufacturer has also equipped its latest meter with DiSEqC 1.2 as well as USALS (DiSEqC 1.3) which the manufacturer claims is the only meter in the world with USALS.

With its front panel buttons the motor can move the antenna to position 0 with a single touch of a button and with the SET button the motor can be commanded to rotate the dish directly to the position of the currently selected satellite. Similar to the measurement results, all changes to the satellite list can also be saved directly in the meter for later use. As an alternative to using the signal strength

and signal quality indicators for antenna alignment you may decide to switch to spectrum mode with three different zoom levels, which is used to move the antenna until the spectrum that corresponds to the chosen satellite is displayed.

To facilitate this process a number of spectrum photos are pre-stored in the meter or can be added at a later stage so that current measurement results can be compared to default spectrum photos.

The UTILITY menu allows customising the DigiPro Excel-TV according to personal preferences. If you cannot or do not want to use the provided PC software for whatever reasons you can enter your actual geographic location there. Furthermore, you can set a specified period of time after which the signal meter

shuts down automatically to save valuable battery capacity.

During our tests we aligned a number of antennas and one DiSEqC rotary dish with the help of DigiPro Excel-TV and in each case were impressed with the ease of use and intuitive interface of this measurement device. We particularly liked the perfectly readable LCD display and the acoustic signal indicator. Thanks to the sturdy carrying case and its protective cover this meter is the perfect match for any satellite dish installer, no matter whether it's up on the roof or down in the back yard.

The provided PC software can be used to update the DigiPro Excel-TV's internal database at any time and the manufacturer offers relevant data for download from its website in an exemplary way.

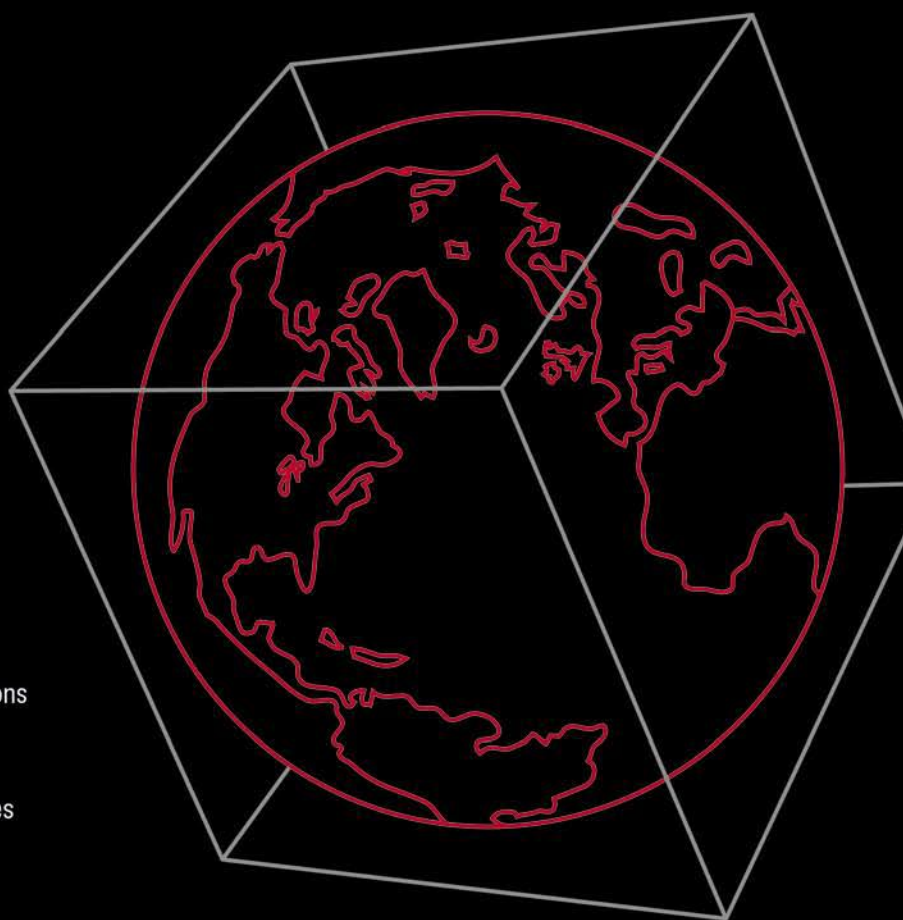


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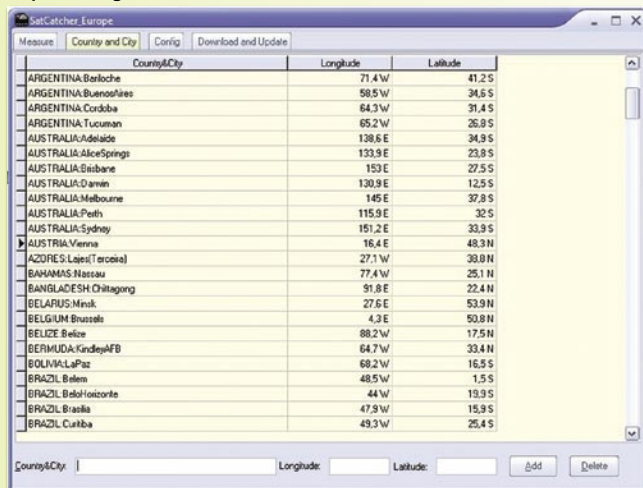
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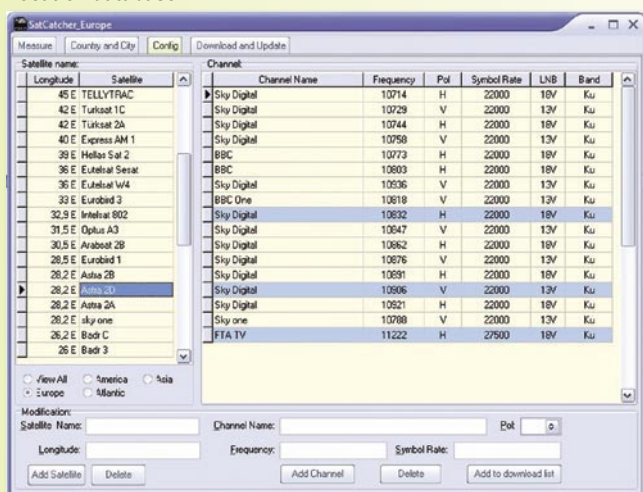
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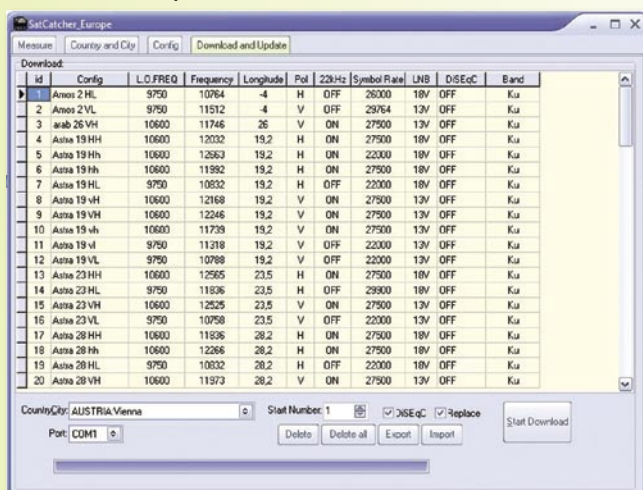
PC application for selecting one's location and for calculating the required angles.



Location database



Satellite and transponder database



Downloading saved data

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Available online starting from 25 July 2008

Expert Opinion

+

Ease of use, very precise measurement results and the perfectly readable display are some of the strengths of the Digipro Excel-TV. It offers numerous useful features and can almost be classified as a must-have for the professional engineer and enthusiast alike. May even be used as mini TV set.



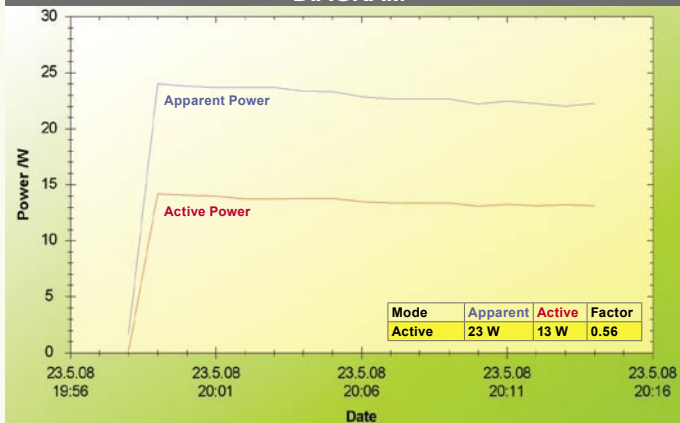
Thomas Haring
TELE-satellite
Test Center
Austria

None

TECHNIC DATA

Distributor	SatCatcher, Unit 7 Salvesen Way Hull, East Yorkshire, UK HU3 4UQ, United Kingdom
Tel	+44 (0) 148 222 15 77
Skype	02088167171 or satcatcher1
Email	sales@satcatcher.com
Model	Digipro Excel-TV
Frequency range	930~2150 MHz
Signal measurement	-65 dBm ~ -25 dBm
Input resistance	75 Ohm
Symbol rates	2~45 Ms/s
DISEqC	yes (1.0, 1.1 and 1.2)
Battery	up to 5 hours of operation, charging cycle 4~5 hours
Included	charger, charger for car power outlet, protective case, RS232 cable, CD with software, sun shield, manual
Dimension	250x120x60mm
Weight	0.8kg
Weight incl carrying case	1.6kg
Operating temperature	0°C ~ +40°C
Display	3.5" LCD colour display

ENERGY DIAGRAM



Power supply pack charging the built-in battery

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Happy Birthday 10 Years



Stab - USALS
UNIVERSAL SATELLITES
AUTOMATIC LOCATION SYSTEM

The birthday boy himself: Giorgio Bergamini ►
is the founder of the USALS program that is
celebrating its 10th anniversary in 2008.

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USALS Celebrates 10 Years

Alexander Wiese

Every TELE-satellite reader is familiar with the term USALS. In the Technical Data table of every receiver test report there is a line that identifies whether or not the receiver is USALS compatible. Today, almost every receiver on the market comes with USALS. But USALS is not just a group of letters; there's actually a human behind this term!

USALS stands for "Universal Satellite Automatic Location System" and is software that was developed exactly ten years ago by Giorgio Bergamini. But it would be much better to hear the story from the birthday boy himself so off to Italy we go near Ferrara located about equidistant from Bologna and Venice. STAB's headquarters and production facility can be found there and Giorgio Bergamini is the founder and owner of STAB, a company that has been in existence since 1970.

STAB started early on building antenna motors. In the beginning it was rotors for VHF/UHF TV antennas and when satellite reception became popular in the 1990's, they expanded to offering an assortment of satellite antenna motors. "It was 1995", remembers Giorgio Bergamini, when a few of the early satellite receiver manufacturers got together with EUTELSAT and developed the DiSEqC protocol. In 1997 it was officially introduced and included DiSEqC 1.0 for individual LNBs, DiSEqC 1.1 for two LNBs and, DiSEqC 1.2 for antenna motors.

But it was quickly discovered that the 1.2 protocol could only be used on a lim-



▲ Sandro Gnani is a STAB technician who checks each sample receiver to make sure that USALS has been correctly implemented. The manufacturer can only print the USALS logo on the receiver and its packaging when the receiver has passed every test.

ited basis: it required the storing of satellite positions in the motor and this turned out to be useless when the motor was used anywhere in the southern hemisphere. The dishes there are pointed to the north and not to the south. As a result, the order of satellites was no longer correct – it was now backwards compared to the northern hemisphere.

"In 1998 I had an idea: the positions should no longer be stored in the motor but instead in the receiver", remembers Giorgio. This was the birth of USALS. He wrote a small, but effective software program that with the help of

only the local geographical position on the Earth and a reference satellite was able to calculate all the other satellite positions directly in the receiver, and it didn't matter if you were in the northern or southern hemisphere.

Finally, in January 2000, EUTELSAT officially recognized USALS and introduced it as DiSEqC 1.3. It is identical to DiSEqC 1.2 but includes an additional line of code: "Drive Motor to Angular Position".





▲ A look in the warehouse with all the USALS tested receivers from every possible manufacturer around the world.

"Back then TELE-satellite was the first trade magazine to report on this", remembers Giorgio, "and after this report was published, the receiver manufacturers came to us to expand their software to include USALS." It turns out it's not so easy making a receiver USALS compatible. "Yes, the code itself is fairly small, but it contains functions that at first glance do not seem important", explains Giorgio about USALS's deeper secrets. "There were manufacturers that incorporated only the portion of the code that they understood", and this led to failures with specific configurations and motor incompatibility.

"Because of this, we require every manufacturer to send us a receiver sample so we can check that it fully complies with USALS", explains Giorgio, "Only then do we give permission for the manufacturer to use the USALS logo on the receiver and its packaging."

We wanted to know if anything new was in store for USALS. Giorgio Bergamini laughed quietly and said, "We are currently working on expanding USALS but we can't go into any details just yet." Giorgio promises some news in the Fall of 2008. We can't wait to see what that will be!

Giorgio Bergamini shows us the USALS code: it is made up of only 27 lines written in Excel. Receiver manufacturers must sign a non-disclosure agreement and can then incorporate this code in their receivers.



Satellite Shopping in HongKong

It's not a real surprise that satellite reception is not a major issue in Hong Kong. The city is one of the world's most densely populated urban areas full with high-rise buildings and therefore not the best of places for installing satellite dishes. Apart from that, cable television has been available for decades so the big question is: how about buying satellite components in such a place?

"There are five satellite shops in Hong Kong," explains Chris Lee, the project manager in one of them, called IntelliTech on Alp Liu Road in the Shum Shui suburb of Hong Kong's north. He goes on telling us that "most of our customers are professional installers for CATV systems."

And that's also a determining factor for IntelliTech's product range, which is mainly made up of professional distribution components. Everything from C band antennas with diameters between 180 and 300 cm all the way to 60 cm Ku band dishes is available.

"We sell about 20 systems a month," Chris reveals some business details, "which is about

the same volume as our competitors." This means satellite business in Hong Kong is quite small and straightforward.

When asked where IntelliTech sources its products Chris points out that they "obtain the Ku band dishes from China, C band LNBs from the United States and Taiwan, and the Ku band dishes from Taiwan as well". IntelliTech also sells professional measuring equipment which they also obtain from Taiwan, according to Chris Lee. The advent of HDTV will not really influence or change satellite business in Hong Kong, as HDTV will also reach the city's homes via cable networks rather than via satellite.

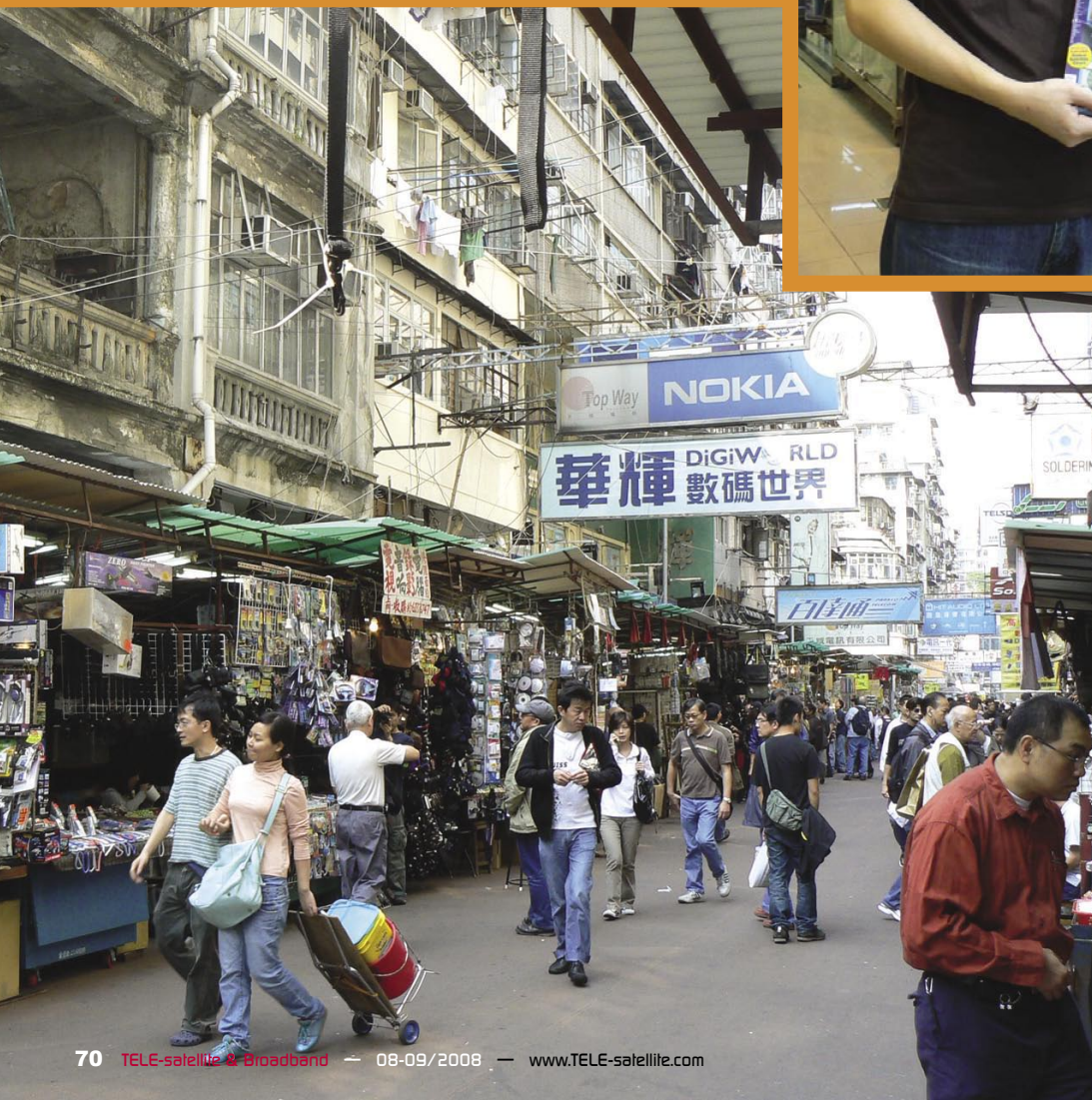


▲ Chris Lee is the project manager of IntelliTech, one of five satellite shops in Hong Kong. LNBs and measuring systems are presented in the display next to Chris Lee. IntelliTech has everything in store that is required for the professional installation of CATV and MATV systems.

◀ Alp Liu Road is closed to traffic. Instead of cars, you can find permanently erected stalls on the road, offering all electronic equipment you might ever need.

While tourists pay a premium on Nathan Road in Tsim Sha Tsui in the posh centre of Hong Kong, Alp Liu Road is where the locals shop. The MTR subway (red line) conveniently takes you there.

This picture is taken directly toward the IntelliTech shop, even though you cannot see it as all the road stalls block the view.



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Antech Uplink Car ,One Touch and Go‘

Gone are the days of huge Uplink trucks! Nowadays small cars are all that's needed for a mobile Uplink station. ANTECH has recently introduced such small mobile station, equipped with a fully operational uplink station for satellite tv. ANTECH is part of the ETNATEL Consortium, which is a network of manufacturers, service providers and suppliers in satellite technology, based in Italy.

Piero Vita, President and Technical Director of ANTECH, tells us: „In order to meet the growing needs of fast information, substantive investments have been made in new technologies to enable information operators to combine professionalism and basic importance of real time information with the use of innovative transmission instruments.“

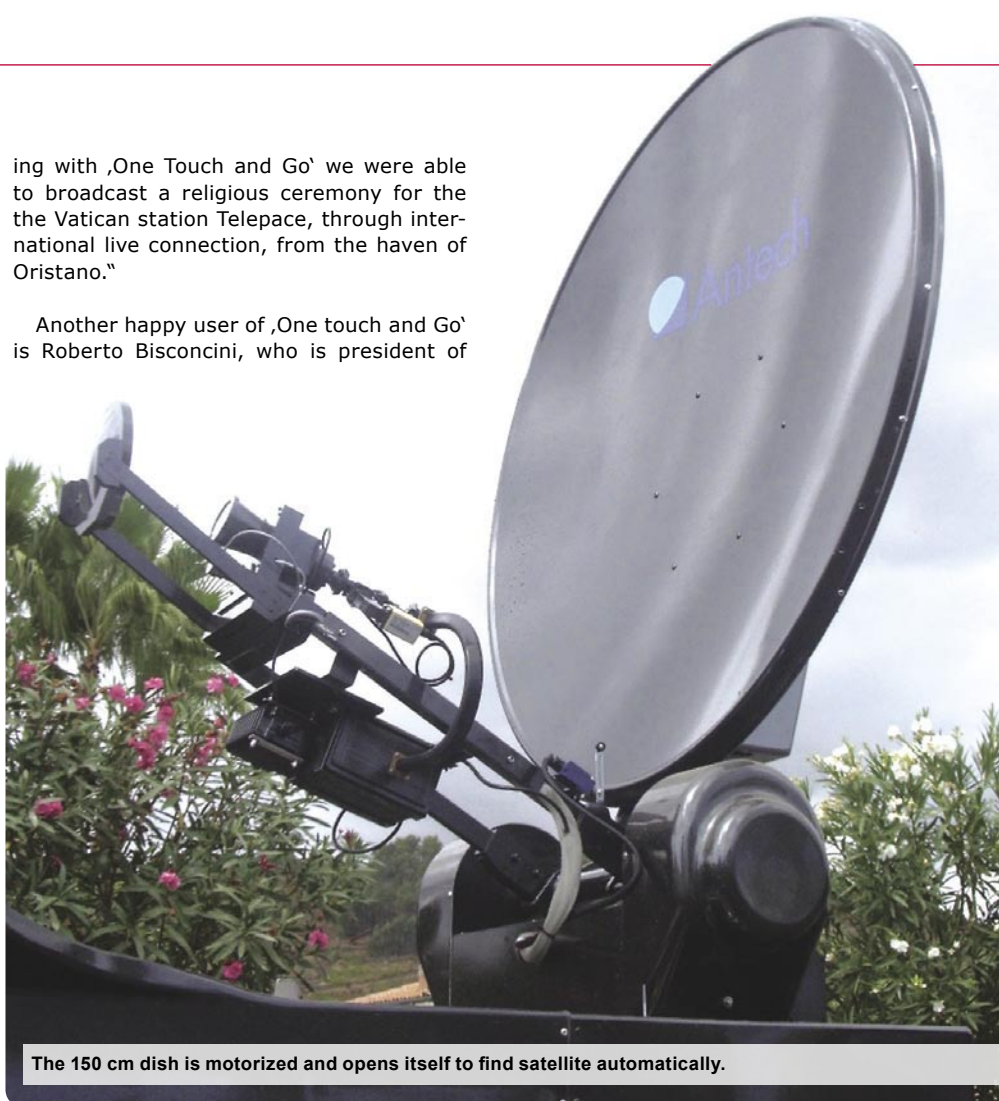
ANTECH developed its new system ,One Touch and Go' with the reporters in mind: „It does not require technicians in the team,“ highlights Piero Vita, and explains: „The satellite connection system in ,One Touch and Go' is automatic and practical to use“. Piero Vita adds: „Furthermore, by using regular cars, ,One Touch and Go' is suitable for use in urban zones, where operations with big vehicles that are not environmental friendly are often prohibited.“ ANTECH's new system does not add to the noise and air pollution.

Some early adaptors of ,One Touch and go' are companies SMT, Super TV Oristano and WeStream. SMT is a sports channel, and its managing director Francesco Caleca told us: „Recently we have used ,One Touch and Go' to broadcast live the Trapani-Erice race and the ,Hill climb of Spino' in Arezzo.“ Francesco Caleca highlights the use of ANTECH's new system: „The mobile up-link enables us to move quickly where you need to be for the journalistic shots. It is important to point out that our recordings are complex: to document an automobile race well, we must have various television cameras distributed along the race course, and with ,One Touch and Go' we have resolved that situation where a gap could have occurred.“

Gianni Ledda, who is production manager of „Super TV Oristano“ is equally impressed by ,One Touch and Go'. He tells us: „Work-

ing with ,One Touch and Go' we were able to broadcast a religious ceremony for the the Vatican station Telepace, through international live connection, from the haven of Oristano.“

Another happy user of ,One touch and Go' is Roberto Bisconcini, who is president of



The 150 cm dish is motorized and opens itself to find satellite automatically.

WeStream, a web-based service provider. Robert Bisconcini tells us: „Live events need a connection, and with the possibilities offered by ,One Touch and go' we succeeded to give the necessary support for those who manage events and can use our dedicated Webcasting services.“

Let's turn back to Piero Vita, ANTECH's

president and hear what he says: „Both TV via Internet and TV via Satellite are going through a moment of significant growth. TV via Internet will grow to 7% till 2012, while TV via Satellite will reach 24%. In the developing countries, the number of private users of TV via Satellite will double in the next 3 years.“ Piero Vita sees a big market potential here, and explains: „The growth



Piero Vita is President and Technical Director of ANTECH and the driving force behind development of ,One Touch and Go' system



The yellow button is all what's needed to be touched, and the ,One Touch and Go' system will go and start the connection to satellite. It finds the satellite itself by using sophisticated GPS tracking.



trend invites to invest bigger resources that enable broadcast managers and journalists in particular to take the market opportunity and to combine professionalism and need for information with the use of innovative transmission equipments."

Its flexibility makes ,One Touch and Go' particularly suitable for the needs of quick operation and

immediacy, that journalists and cameramen have to respect in order to seize the dramatic force of an event. At last Piero Vita tells us: „Our know-how allows ANTECH now to expand our business operations outside Italy, mainly in the emerging countries of Eastern Europe and Africa." ANTECH's strengths are their know-how and ability to meet the requirements of their clients and markets.

The ,One Touch and Go' system of ANTECH is a mobile Uplink station. Here we see it fitted into a Fiat, but it can be fitted into many other car types. ANTECH has installed ,One Touch and Go' into Mercedes Sprinter, Mitsubishi Pajero, Fiat Ducato, Nissan Patrol and Landrover Free Lander.



The van is fitted with 19" rack to hold the necessary encoders. There's ample space for further devices, depending on the need of transmission. The van is fitted with Gel batteries, which ANTECH says are sufficient to leave the ,One Touch and Go' system running for up to 12 hours, without having to switch on the car's engine. An important argument when ,One Touch and Go' is used in residential areas, where a running car engine would upset neighbours and pollute environment.

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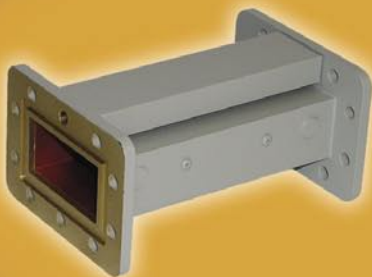
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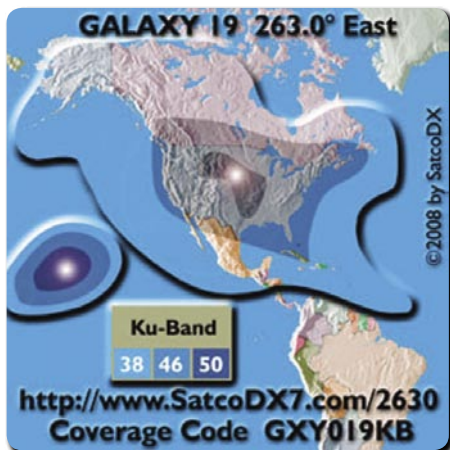
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Sylvain Oscul

EXPRESS MD 1

This new EXPRESS satellite generation will be equipped with eight C-band and one L-band transponder, along with a repeater panel and an antenna farm, to provide broadcasting and communications services across Russia, as well as governmental communications. The launch will be from Baikonour with a Proton launcher and is scheduled for 8th August. The satellite will be positioned at 53°E. No official footprints available yet.

GALAXY 19

Another new GALAXY bird for North American viewers, positioned at 263.0°E (97°W). It will replace GALAXY 25 and bring 24 Ku-band and 24 C-band transponders. The launcher is a Zenith 3 from Sea Launch's Odyssey platform in the Pacific Ocean and is scheduled for September.



MEASAT 3A

Also scheduled for September and launched from the Sea Launch's Odyssey platform by the Zenith 3 launcher, this new MEASAT will be co-located with MEASAT 3 at 91.5°E. It offers 12 Ku-band and 12 C-band transponders. The satellite has a 15 years life expectancy



New Satellites



VENESAT 1 (SIMON BOLIVAR)

The satellite will help Venezuela develop its telecommunications and TV industries with their own satellite. With 14 Ku-band and 12 C-band transponders, this satellite will start in 4th quarter of 2008 to be positioned at 277.3°E (82.7°W). The planned telecommunications satellite will blast off from Xichang Satellite Launch

Centre in Southwest China atop a Long March 3 rocket. The satellite, designed with a mission life of 15 years, will be constructed by the China Academy of Space Technology, China's new-generation telecommunications satellite platform. The satellite is also called the „Simon Bolivar Satellite“. No official Footprints available yet.

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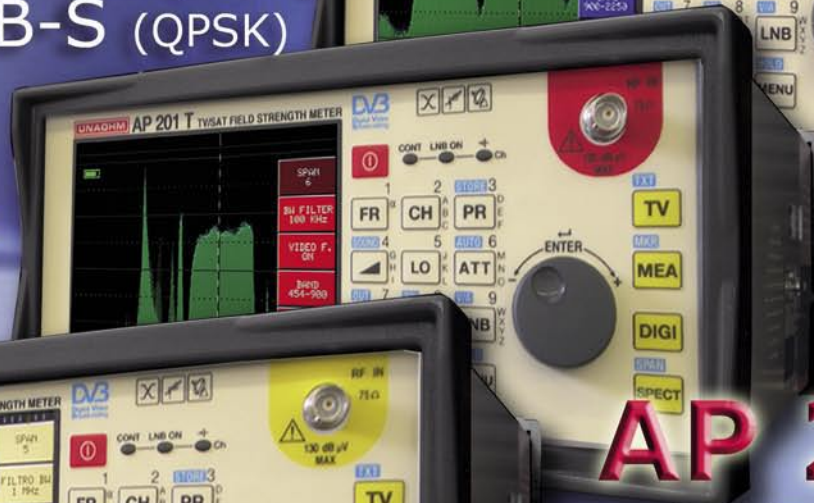
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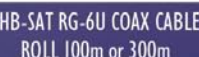
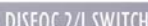
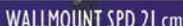
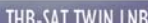
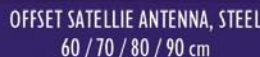
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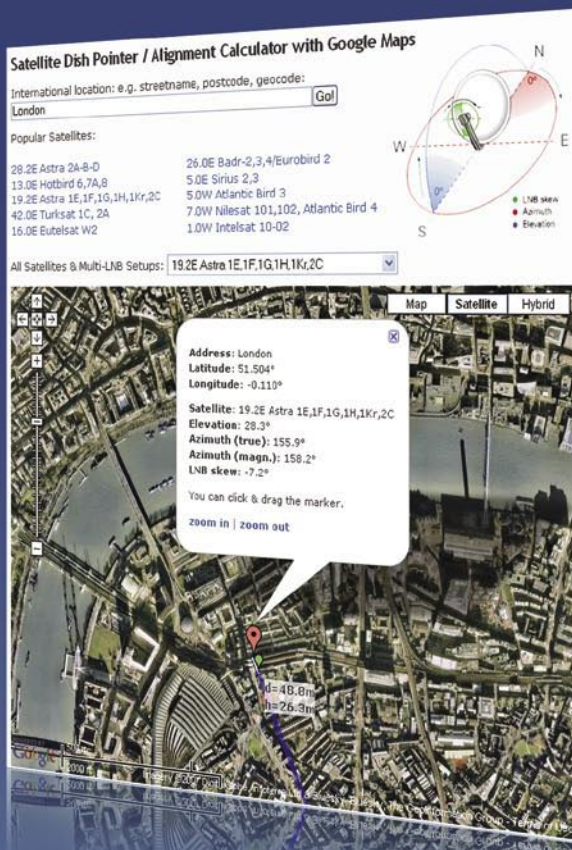
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