

During the deployment of Digital Television in Europe **PROMAX** has been an active participant in defining the quality parameters and the necessary measurements required to ensure a good signal reception. Its contribution has been instrumental in DVB-T, DVB-T2, ATSC and DTMB standards. Nowadays it collaborates with various institutions in Japan and South America to provide expertise in the implementation of the ISDB-T/TB Digital Television system.

The **TV EXPLORER** has become in many countries the reference measurement tool for all actors in the value chain from broadcast stations which must offer proper transmission performance, installers that need to ensure good reception quality, to government agencies needing to control that all broadcast stations are respectful with the licenses assigned.

We are glad to present the **ATSC** and **ISDBT-Tb** versions of this product with the hope that they will satisfy the customer needs in North and South America.

High Definition TV Analyzer

TV EXPLORER **HD**

ISDB-T/T_B

Spectrum

Measurements

Image

ATSC

DVB-T/T2

DOLBY
DIGITAL PLUS 1

ASI-TS
IN&OUT

HDMI
HIGH SPEED VIDEO INTERFACE



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NAB Show 2013
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Las Vegas, Nevada, USA
Stand SU10702
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Coverage Analysis: RM-404 + GPS = **RM-404G**

- ✓ It automatically acquires measurements in a moving vehicle.
- ✓ It associates GPS coordinates.
- ✓ The measurements obtained can be exported to a GIS (Geographic Information System)

TV EXPLORER **HD**

+
GPS



High Definition TV Analyzer

TV EXPLORER ISDB-T/T_B

- Broadcast, TV Cable & Satellite
- ISDB-T/T_B, DSS, DVB-C, QAM Annex A & B and DVB-S/S2
- Video: MPEG-2, MPEG-4 H.264 (1080i, 720p and 576i resolution) and 1 s
- Independent layer measurements in ISDB-T / TB
- Analysis of transmission parameters
- Basic analysis of TS
- Sound: Dolby Digital Plus, HE-AAC, AAC and MPEG-1/2
- Screen formats: 16:9 and 4:3
- Constellation diagram
- HDMI Interface
- CAM module (Conditional Access) for encrypted channels
- TS-ASI input and output
- Fiber-optic measurements available

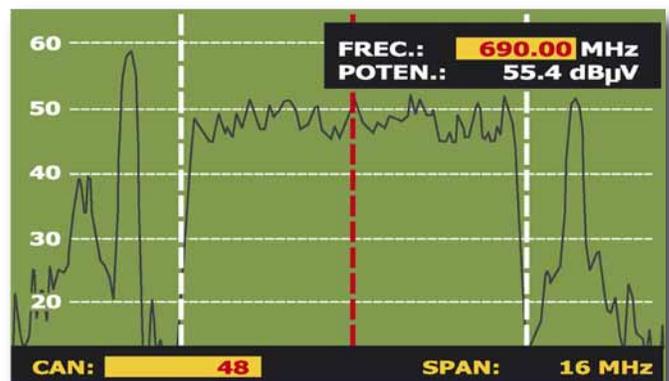


Basic analysis and displaying screen image

Optical module



Constellation diagram



Spectrum Analyzer

TVHUNTER ISDB-T/ T_B TVHUNTER+ DVB-T2

Antenna alignment and all measurements in:

TDT ISDB-T / T_B DVB-S DVB-S2

All Measurements with ONLY 3 KEYS



ISDB-T/TB Measurements

Power from 40 to 100 dB μ V

MER 0 to 33 dB

CBER 1 E-5 to 1 E-1

VBER 1 E-7 to 1 E-3

VHF-UHF

1.- Detection

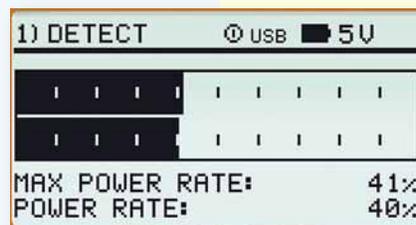
It detects signals from any analogue or digital terrestrial broadcast with the built-in wide band detector. In this mode the meter shows information about the received signal power in the form of two graphic bars with two different time constants and an audible indicator to help align the aerial to the optimum detection.

2.- Identification

In this mode the TVHUNTER+ shows information about the received digital channel and programmes included in the service list as well.

3.- Adjustment

It allows fine pointing the reception antenna, to optimise the digital measurements such as channel power, MER, VBER and CBER on preselected channels. All information is displayed on the screen in a very convenient way so that optimising the aerial alignment becomes really easy. MER in particular is shown numerically and through a graphic bar as well. VBER and CBER can be shown together or graphically.



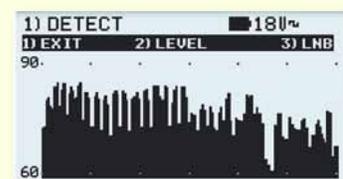
Detection screen



Identification screen



Adjust screen



The SATHUNTER+ is the answer to the need for an installation tool that allow making the job in a fast way and it includes all necessary measurements to secure the quality of reception.

The SATHUNTER+ has been designed to guarantee the maximum number of installations with the best quality, helping the installer to evaluate the results.

The equipment determines if the quality of the signal is enough for reception. For that, it is based on the internal BER measurement and the modulation error ratio (MER).

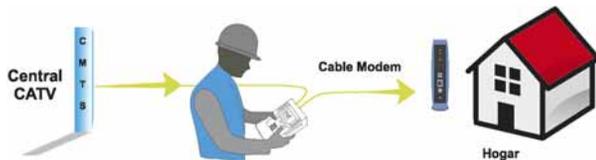
The SATHUNTER+ processes all the information and gives to the installer just the information he requires, making his work as easy as possible.

The SATHUNTER+ is very easy to use and it guides the user through **three steps**, enabling to localize the satellite, guaranteeing its identification and accurately adjusting the receiver antenna to obtain the best quality of signal.



Cable TV & Data Analyzer Docsis / Eurodocsis 3.0 PROMAX-37

PROMAX-37 is an analyzer for the installation, configuration and maintenance of video and high speed data interactive services over TV networks based on the **EuroDOCSIS** and **DOCSIS 3.0** standard. It allows the qualification of VoIP and IPTV services. It incorporates the most advanced functions which includes channel bonding technology.



Downstream:

- Σ Power measurement
- Channel power measurement
- Quality test: MER, BER, Pre BER and Post BER
- Constellation diagram
- Full band power
- Frequency, channel and active channel plan
- Modulation type and symbol rate
- Spectrum / Scan measurements

Upstream:

- Σ Power measurement
- Power measurement
- Attenuation at CMTS
- Frequency and bandwidth
- Modulation and symbol rate
- Communications test

Communications Test (in Registered mode):

- IPTV analyzer (television over IP)
- VoIP analyzer (voice over IP)
- IP report
- Ping test
- Ratio of lost packets

Digital and analog channel TV measurements

Serial interface to External Cable Modem (loop-through mode)

It includes all PROMAX-10 SE RF measurements

Cable TV QAM Analyzer PROMAX-10 SE

The **PROMAX-10 SE** incorporates the measurements for installation, verification and maintenance of reception and distribution systems for FM radio, MATV, CATV and MMDS, including the sub-band (return path). Now it includes a new function to measure power level measurement over a complete frequency band, very useful for detecting saturation in the input of some broadband demodulators. **PROMAX-10 SE** is a multistandard instrument, so it can be used in any network in the world.

- BER & MERr on QAM digital signals
- Multistandard annex A / B / C
- Digital & Analogue channels
- Broadband power detection
- Scan C/N, CSO, CTB
- Transient detector

- Max. and min. hold
- Channel power by integration
- Tilt
- Datalogger
- Printing
- PC connection

QAM Constellation



Test signal generator for coaxial cable RP-110B

The **RP-110** is a test signal generator to certificate coaxial cable in all the bands used for coaxial cable: CATV and SMATV.

- Six pilots of frequency and level selectable by the user (From 5 to 2150 MHz)
- Output level independent for each pilot and variable (from 80 to 110 dBμV, in 1 dB steps)
- Upstream and Downstream Bandwidth (CATV/UHF) and IF Satellite
- Frequency Resolution: 25 kHz
- User interface in several languages
- USB to PC connection for firmware updating and to configure frequencies and levels



FTTH Analyzer & Selective OPM



Professional measurements

- ✓ FTTH portable analyzer for FTTx/PON systems, optimised for GPON architecture.
- ✓ Filtered measurements, individualized and simultaneous for the three wavelengths that are used in fibers (1490 and 1550 nm for Downstream and 1310 nm for Upstream).
- ✓ Up to 10 groups of configurable threshold values: Maximum and minimum values per wavelength.
- ✓ High selectivity in measuring each wavelength.
- ✓ Relative measurement: Estimation of losses with respect to a configurable reference value.
- ✓ Expandable to channel analyzer module in C-band.
- ✓ Attenuation test. Selective filters at three wavelengths.

**optional:
C band**

Portable Optical Spectrum Analyzer **PROLITE-60**

PROLITE-60 the first Optical Spectrum Analyzer truly portable.

When various wavelengths are sharing one single fiber optical power meters can not offer much information about the problems affecting to each one of the wavelengths as the measurements are not "wavelength-selective". When we need to check at one end of the fiber something as simple as whether or not all laser sources are working properly, an optical spectrum analyzer is definitively a must have.

PROLITE-60 is the first truly portable optical spectrum analyzer, designed for field use and battery operated that is available at a very attractive price.

Using the various options available The **PROLITE-60** is suitable for many applications such as reflectometry, analysis of materials, fiber sensors or testing of photonic devices such as filters, attenuators, couplers, isolators and other optical components.



DWDM and CWDM
Applications

Selective Optical Power Meter for FTTx-xPON **PROLITE-67**

- ✓ Selective meter of losses and Optical Power at 3 wavelengths (OLTS).
- ✓ Selective Power Meter (OPM).
- ✓ Optical Return Loss Meter (ORL).
- ✓ Power Meter FTTH-GPON (xPON Meter)..
- ✓ Visual Fault Locator Device (VFL).



Triple Wavelength LASER Source **PROLITE-105**

- ✓ Triple laser source for certification of FTTH optical fiber at wavelengths 1310, 1490 and 1550 nm.

Broadcast and TV distribution headend

DIGITAL TO TV

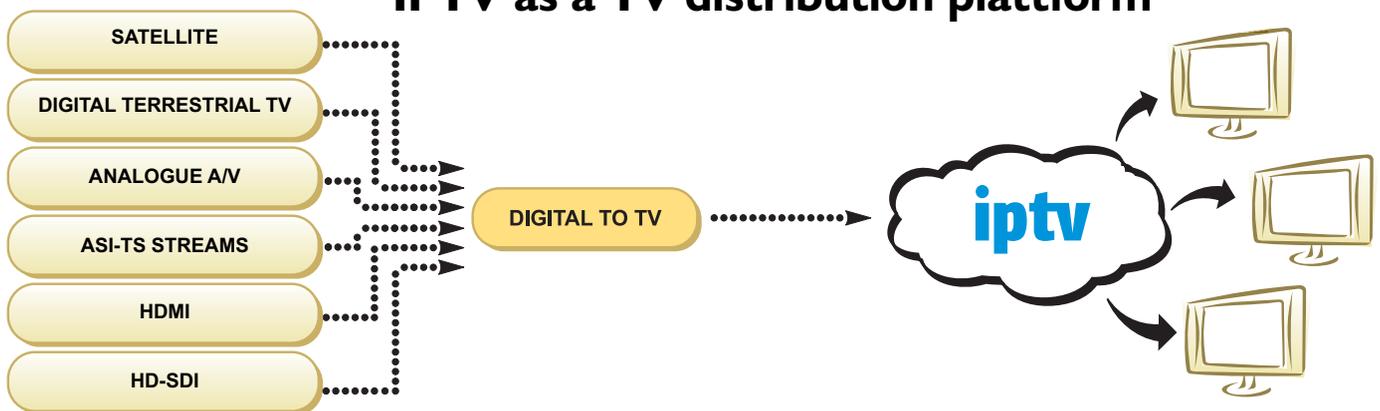


Digital To TV (DTTV) is a TV distribution headend with DVB-T and IP outputs. It can convert any source of analogue or digital video into DVB-T or IP format.

The DTTV is an ideal solution for large distribution networks of signal television such as hotels, convention centres, hospitals or ships. It allows the user to rearrange the channels spectrum, add digital local channels received via terrestrial antenna, encode analogue channels into digital format from video / audio sources, etc.

The DTTV range comprises a large number of encoder modules, transmodulators and multiplexers. It is a headend that suits any need, thanks to its, virtually, infinite number of combinations.

IPTV as a TV distribution platform



Turn any video source into IPTV

Audio / Video outputs, corporate channels, private video channels, security cameras, video door entry system, satellite dishes, optical fiber or any other application with video / audio you wish to inject in the distribution system.



Preserve the landscape: no satellite dishes!

The Digital To TV allows us to transmit all the contents in DTT, contributing to "clean" the landscape of satellite dishes.



Change the programming whenever you want from any computer

Using the remote control software (webserver).



ISDB-T/T_B Modulator **MO-370_{LE}**



The **MO-370 LE** is a general purpose ISDB-T and ISDB-TB modulator contained in a 19" 1U chassis. The unit has two serial MPEG TS-ASI inputs. Either of these inputs can be used to modulate the COFDM signal. An additional test TS can be generated internally in the modulator. This allows generating compliant ISDB-T/TB signals even in the absence of a valid TS input.

Broadcast grade DVB-T2 modulator **MO-480 / 481**



The **MO-480** and **MO-481** is a broadcast grade DVB-T2 modulator available in a standard 1U high 19" rack case (**MO-480**) and also in an open frame chassis (**MO-481**) that can be used for MFN as well as SFN applications.

DVB T2
HDTV



The modulator has several Transport Stream and T2-MI inputs in ASI and IP formats so that it can be easily interfaced with other existing transmission equipments such as gateways. The modulator can be configured to generate any of the transmission modes listed in the corresponding DVB-T2 standard including single and multiple PLP, MISO or SISO. It can also be used for DVB-T applications.

DVB (H.264) Encoder & Transcoder **EN-264**



PROMAX EN-264 is a DVB H.264/AVC Encoder plus the MPEG-2 to H.264/AVC Transcoder. Integrated with the TSoIP board, the **PROMAX EN-264** accepts TS over IP or ASI input for transcoding, or alternatively accepts HD-SDI, HDMI, YPbPr (component) or CVBS (composite video) input for encoding, the final output is available in IP or ASI format. With extraordinary picture quality and significant bandwidth liberation, is the best choice for higher **EN-264** performance encoding and migration from MPEG-2 to H.264.

DVB TS Re-Multiplexer **MX-008**



PROMAX MX-008 is a compact and cost-effective DVB MPEG-2 TS re-multiplexer which can multiplex up to 8 ASI transport streams and deliver 2 ASI output ports. The combination of PID-packet-exchanging based technology Service, PID filtering and re-multiplexing function, and 19" rack mountable chassis make it an ideal device for a wide range of re-multiplexing applications including cable and terrestrial regional head-ends.

TS Recorder / Processor / Player **TG-140**



The **TG-140** is a versatile MPEG-2 transport stream recorder and player that can be used in a great number of applications. It can record a transport stream continuously for several hours (up to 15 hours at 20 Mbps) and then play it back later on at pleasure. Its recording capacity can be also split in plenty of shorter duration transport streams.

High Definition TV Analyzer TV EXPLORER HD



ISDB-T/T_B

ATSC

DVB-T/T2



PROMAX in the WORLD

PROMAX has, over its 50 years of existence, managed to gain a position at the forefront of technology in the areas of Electronics, Telecommunications and Broadcasting. The constant dedication and hard work in research, engineering and development have been the key to the design and production of equipment and solutions for the industry professionals that achieved the maximum level of satisfaction possible.

Following this philosophy of work and having great concern about quality has allowed us to offer reliable products and deserve the loyalty of our customers on five continents.



PROMAX in Cruise Ship



PROMAX in the Africa Cup of Nations



London 2012



Emblematic building installations

- Liceu Opera House, Barcelona
- Catalonia Parliament
- Westminster Live studios, London
- Grand prix Motorcycle Racing
- Hotels & Resorts...

Present across all five continents



PROMAX in sport arenas



Television distribution at the Westminster Live studios



DTT coverage for rural areas



DTTV Installation at the Liceu Opera House in Barcelona



PROMAX in the Athens Olympic games

For more information visit us at www.promaxelectronics.com or contact to our distributor: