



**WEB BASED  
PRODUCT CATALOGUE  
2010**

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# PRODUCTS

## TV & Satellite analysers

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### TV EXPLORER *HD* High definition TV analyser

The very first meter of its kind to actually meet the requirements to be called a real HDTV instrument.


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### TV EXPLORER *II+*

16:9 transfective LCD, visible by the direct sunlight. This model includes the highest range of functions. Contains a 1 GB memory to capture screens and to record and play video. It can decode encrypted channels.


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### TV EXPLORER *II*

16:9 transfective LCD, visible by the direct sunlight. Can measure DVB-S2 High Definition channels and DVB-H TV mobile TV. It covers the return band for cable TV. Shows the constellation diagram for all standards and it is delivered with the transport case and the software to download measurements.

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### TV EXPLORER

TV EXPLORER has **changed** the way to make and to understand the measurements. It is the first TV & Satellite analyser that **fits** in your hands, with a weight **less than 2 kg**. It is fully automatic, detects the type of signal, standard, modulation, speed of transmission, etc to synchronise the signal and, display all the measurements at once.

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### US TV EXPLORER *II*

North American version of the TV EXPLORER *II* and *II+* analysers.

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### US TV EXPLORER

North American version of the TV EXPLORER analyser.

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### PROLINK-4C *Premium* Advanced TV and satellite level meter

This model is suitable for those that want the best performance in spite of weight and size. It includes the maximum specifications such as constellation, measurement of DAB and WiFi. Common Interface is built in.

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### TVHUNTER DTT finder

The **TVHUNTER** is a **small handheld easy to use meter**, that has been designed for the installation of Digital Terrestrial Television systems. It includes the basic measurements to ensure the quality of reception: MER, CBER, VBER, etc.

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### SATHUNTER Satellite hunter

Designed for the installation of Direct to Home systems, fully automatic and extremely easy of use.

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## TV EXPLORER *HD* High definition TV analyser

This new jewel of the **PROMAX** range will become a reference in the industry for being the very first meter of its kind to actually meet the requirements to be called a real HDTV instrument.

Would it be possible to have all those features in a 2 kg meter?

- Video decoding: MPEG-2 and MPEG-4 H.264
- Audio decoding: MPEG-1, MPEG-2 and AAC
- Video formats: SD (standard definition) and HD (high definition)
- Video resolutions: 1080i, 720p and 576i
- Screen formats: 16:9 and 4:3
- HDMI interface
- DVB-T/H, DVB-C and DVB-S/S2
- CAM module (Conditional Access) for encrypted channels
- TS-ASI input and output



 Click on the image to enlarge it.

<b>FREQUENCY MARGIN</b>	From 5 to 1000 MHz and from 950 to 2150 MHz
<b>VIDEO</b> Digital modulations Resolutions Video formats Colour system TV standard Aspect ratio	DVB-T, DVB-H, DVB-S, DVB-S2, DVB-C 1080i, 720p, 576 i MPEG-2, MPEG-4 H.264 PAL, NTSC, SECAM M, N, B, G, I, D, K, L 16:9, 4:3
<b>CONNECTIONS</b>	RF, SCART, HDMI, TS-ASI (input and output), USB, Common Interface
<b>DIGITAL MEASUREMENTS</b>	Power, CBER, VBER, MER, C/N, Link margin, Noise Margin
<b>ANALOGUE MEASUREMENTS</b>	Level, V/A, C/N, desviación, FM deviation and demodulation
<b>ADVANCED FUNCTIONS</b>	Channel searching and channel tables generation (EXPLORER) Signal type automatic identifying (AUTO ID) Constellation diagram for DVB-T/H, DVB-C, DVB-S and DVB-S2 Echoes analyser mode Built-in spectrum analyser with direct access keys Datalogger (measurements automatic acquisition and storage) for digital and analogue channels SAT IF test (IF distribution network response for satellite band) Attenuation test function (signal distribution network response for terrestrial band) DiSEqC generator and LNB supply Audio and Video recording and playing

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## TV EXPLORER **II+**


The TV EXPLORER range has changed forever the concept of the field strength meter. From now on, meters will be smaller, lighter weight and much more easy to use than in the past. Just press one key and the instrument measures and decodes the signal under test.

The new **TV EXPLORER II+** continues with this philosophy and hits again with innovating features. At a first glance the instrument unveils an impressive 6,5" screen with 16:9 panoramic format and transfective technology.

However, **TV EXPLORER II+** introduces many new features. It allows measuring of High Definition satellite **DVB-S2** signals and **DVB-H** for **mobile TV** broadcasting. It covers Cable TV return path. It can display the **constellation** diagram for DVB-T/H/C/S/S2. Allows automatic measurements through the **DATALOGGER** function with a massive 1 GB internal memory.

It allows access to encrypted channels by means of *Common Interface* (patented function).



 Click on the image to enlarge it.

<b>COVERING</b>	Terrestrial, satellite, cable and mobile TV
<b>FUNCTIONS</b>	Spectrum analyser / Measurements / Signal decoding
<b>MEASUREMENTS</b> <b>ANALOGUE</b> <b>DIGITAL</b> <b>COFDM 2k / 4k / 8k</b> <b>QPSK</b> <b>8PSK</b> <b>QAM 16/32/64/128/256</b>	Simultaneous display of all the measurements Level, Video/Audio, C/N Power, C/N, Channel identification MER, CBER, VBER, Noise margin, MER by carrier MER, CBER, VBER, Noise margin MER, CBER, LBER BER, MER
<b>TUNING</b>	By channel or frequency (IF or direct in satellite)
<b>EXPLORER FUNCTION</b>	Channel searching and channel tables generation
<b>AUTO ID FUNCTION</b>	Signal type automatic identifying
<b>AUTO ADJUSTMENT FUNCTION</b>	Reference level auto adjustment
<b>CONSTELLATION DIAGRAM</b>	DVB-T / DVB-H / DVB-C / DVB-S / DVB-S2
<b>DISPLAY</b>	6.5" transfective LCD TFT visible under sunlight 16:9 format
<b>UTILITIES</b>	Automatic measurements Measurements reports Satellite IF test
<b>ADVANCED FUNCTIONS</b>	Encrypted channels ( <i>Common interface</i> ) Video recording and playing 1GB internal memory Screen capture: specrum / constellation / MER by carrer Internet automatic updates USB interface (for updates and data transfer) Cable TV return path measurements (5 MHz) PkTools software included Transport case included
<b>DIMENSIONS &amp; WEIGHT</b>	230 x 161 x 76 / 2.5 kg approx.

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## TV EXPLORER II

The TV EXPLORER range has changed forever the concept of the field strength meter. From now on, meters will be smaller, lighter weight and much more easy to use than in the past. Just press one key and the instrument measures and decodes the signal under test.

The new **TV EXPLORER II** continues with this philosophy and hits again with innovating features. At a first glance the instrument unveils an impressive 6,5" screen with 16:9 panoramic format and transfective technology.

However, **TV EXPLORER II** introduces many new features. It allows measuring of High Definition satellite **DVB-S2** signals and **DVB-H** for **mobile TV** broadcasting. It covers Cable TV return path. It can display the **constellation** diagram for DVB-T/H/C/S/S2. Allows automatic measurements through the **DATALOGGER** function with a massive 128 MB internal memory.



 Click on the image to enlarge it.

<b>COVERING</b>	Terrestrial, satellite, cable and mobile TV
<b>FUNCTIONS</b>	Spectrum analyser / Measurements / Signal decoding
<b>MEASUREMENTS</b> <b>ANALOGUE</b> <b>DIGITAL</b> COFDM 2k / 4k / 8k QPSK 8PSK QAM 16/32/64/128/256	Simultaneous display of all the measurements Level, Video/Audio, C/N Power, C/N, Channel identification MER, CBER, VBER, Noise margin MER, CBER, VBER, Noise margin MER, CBER, LBER BER, MER
<b>TUNING</b>	By channel or frequency (IF or direct in satellite)
<b>EXPLORER FUNCTION</b>	Channel searching and channel tables generation
<b>AUTO ID FUNCTION</b>	Signal type automatic identifying
<b>AUTO ADJUSTMENT FUNCTION</b>	Reference level auto adjustment
<b>CONSTELLATION DIAGRAM</b>	DVB-T / DVB-H / DVB-C / DVB-S / DVB-S2
<b>DISPLAY</b>	6.5" transfective LCD TFT visible under sunlight 16:9 format
<b>UTILITIES</b>	Automatic measurements Measurements reports Satellite IF test
<b>ADVANCED FUNCTIONS</b>	Internet automatic updates USB interface (for updates and data transfer) Cable TV return path measurements (5 MHz) PkTools software included Transport case included
<b>DIMENSIONS &amp; WEIGHT</b>	230 x 161 x 76 / 2.5 kg approx.

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## TV EXPLORER


The new **TV EXPLORER** is the first TV&SAT analyser that **fits your hands**, with a weight **less than 2 kg**.

The new **TV EXPLORER** is been designed for the installation, maintenance and surveillance of **terrestrial, satellite** and **cable** TV systems. It is ideal to be used in this transition period from analogue to digital, as it covers a wide range of standards, **PAL / SECAM / NTSC** in analogue and **COFDM / QPSK / QAM** in digital.

It includes, in addition to other innovative features, **EXPLORER** and **AUTO ID** functions for **detecting** and **identifying automatically** channels in the band, an **improved graphical user interface** that shows all measurements for each signal in a single screen, and **direct access** buttons to the most common functions.

With only pressing a key, the instrument measures and decodes the signal.



 Click on the image to enlarge it.

<b>COVERAGE</b>	Terrestrial, satellite and cable TV
<b>FUNCTIONS</b>	Spectrum analyser / Measurements / Signal decoding
<b>MEASUREMENTS</b> <b>ANALOGUE</b> <b>DIGITAL</b> <b>COFDM 2k/4k/8k</b> <b>QPSK</b> <b>QAM 16/32/64/128/256</b>	All measures shown simultaneously Level, Video/audio,C/N Power, C/N, Channel identifying MER, CBER, VBER, Noise margin MER, CBER, VBER, Noise margin BER, MER
<b>TUNING</b>	By channel and frequency (FI or direct if satellite)
<b>"EXPLORER" FUNCTION</b>	Automatic channel search and channel plan creation
<b>"AUTO ID" FUNCTION</b>	Automatic identification of the type of signal
<b>MONITOR</b>	TFT LCD 5" (320 candles/m <sup>2</sup> )
<b>UTILITIES</b>	Automatic datalogger Measurements data reports Satellite FI test
<b>ADVANCED FUNCTIONS</b>	Internet automatic updates PkTools software (optional) Transport case (optional)
<b>DIMENSIONS AND WEIGHT</b>	230 x 161 x 76 mm / 2 kg. approx.

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## US TV EXPLORER II

The TV EXPLORER range has changed forever the concept of the field strength meter. From now on, meters will be smaller, lighter weight and much more easy to use than in the past. Just press one key and the instrument measures and decodes the signal under test.

The new **US TV EXPLORER II** (for North America) continues with this philosophy and hits again with innovating features. At a first glance the instrument unveils an impressive 6,5" screen with 16:9 panoramic format and transfective technology.



 [Click on the image to enlarge it.](#)

However, **US TV EXPLORER II** introduces many new features. It allows measuring of High Definition satellite **DVB-S2** signals. It covers Cable TV return path and 1 GHz. It can display the **constellation** diagram for DVB-S/S2 and QAM. Allows automatic measurements through the **DATALOGGER** function with a massive 1 GB internal memory.

<b>COVERING</b>	Terrestrial, satellite, cable (QAM annex A and annex B)
<b>FUNCTIONS</b>	Spectrum analyser / Measurements / Signal decoding
<b>MEASUREMENTS</b> ANALOGUE DIGITAL 8VSB DSS QPSK DVB-S QPSK DVB-S2 8PSK QAM (16/32/64/128/256)	Simultaneous display of all the measurements Level, Video/Audio, C/N Power, C/N, Channel identification MER, SER, VBER, Noise margin MER, CBER, VBER, Noise margin MER, CBER, VBER, Noise margin MER, CBER, LBER BER, MER, Noise margin
<b>TUNING</b>	By channel or frequency (IF or direct in satellite)
<b>EXPLORER FUNCTION</b>	Channel searching and channel tables generation
<b>AUTO ID FUNCTION</b>	Signal type automatic identifying
<b>AUTO ADJUSTMENT FUNCTION</b>	Reference level auto adjustment
<b>CONSTELLATION DIAGRAM</b>	DVB-S / DVB-S2 and QAM
<b>DISPLAY</b>	6.5" transfective LCD TFT visible under sunlight 16:9 format
<b>UTILITIES</b>	Automatic measurements Measurements reports Satellite IF test
<b>ADVANCED FUNCTIONS</b>	Video recording and playing 1GB internal memory Screen capture: spectrum / constellation Internet automatic updates USB interface (for updates and data transfer) Cable TV return path measurements (5 MHz) Cable TV 1 GHz PkTools software included Transport case included
<b>DIMENSIONS &amp; WEIGHT</b>	230 x 161 x 76 mm / 2.5 kg approx.

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## US TV EXPLORER


The new **US TV EXPLORER** (*for North America*) is the first TV&SAT analyser that **fits your hands**, with a weight **less than 2 kg**.

The new **US TV EXPLORER** is been designed for the installation, maintenance and surveillance of **terrestrial, satellite** and **cable** TV systems. It is ideal to be used in this transition period from analogue to digital, as it covers a wide range of standards, **NTSC** in analogue and **8VSB / QPSK / QAM** in digital.

It includes, in addition to other innovative features, **EXPLORER** and **AUTO ID** functions for **detecting** and **identifying automatically** channels in the band, an **improved graphical user interface** that shows all measurements for each signal in a single screen, and **direct access** buttons to the most common functions.

With only pressing a key, the instrument measures and decodes the signal.



 Click on the image to enlarge it.

<b>COVERAGE</b>	Terrestrial, satellite and cable TV
<b>FUNCTIONS</b>	Spectrum analyser / Measurements / Signal decoding
<b>MEASUREMENTS</b> <b>ANALOGUE</b> <b>DIGITAL</b> <b>8VSB</b> <b>QAM (ITU-T J.83B)</b> <b>DVB-S QPSK</b> <b>DSS QPSK</b>	All measures shown simultaneously, MPEG and AC3 decoder Level, Video/audio,C/N Power, C/N, Channel identifying MER, VBER, SER MER, BER CBER, VBER, MER CBER, VBER, MER
<b>TUNING</b>	By channel and frequency (FI or direct if satellite)
<b>"EXPLORER" FUNCTION</b>	Automatic channel search and channel plan creation
<b>"AUTO ID" FUNCTION</b>	Automatic identification of the type of signal
<b>MONITOR</b>	TFT LCD 5" (320 candles/m <sup>2</sup> )
<b>UTILITIES</b>	Automatic datalogger Measurements data reports Satellite FI test
<b>ADVANCED FUNCTIONS</b>	Internet automatic updates PkTools software (optional) Transport case (optional)
<b>DIMENSIONS AND WEIGHT</b>	230 x 161 x 76 mm / 2 kg. approx.


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## PROLINK-4C *Premium* Advanced TV and satellite level meter

The result of uniting PROMAX ELECTRONICA's long experience in the design of TV signal analysers with the latest in technological progress, the **PROLINK 4C Premium** brings together the functions installers seek most, all in one small, light-weight, portable instrument.



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- \* TV & Satellite measurements for Analogue & Digital channels
- \* COFDM, QPSK and QAM measurements
- \* MPEG decoder for free and encrypted channels
- \* Automatic measurements
- \* Constellation for QAM and COFDM
- \* 5" display
- \* Measurements for Wi-Fi and DAB technologies

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## TVHUNTER DTT finder


The consolidation of the Digital Terrestrial Television and the approaching to the date scheduled for the "analogue switch-off" have increased the demand for adapting analogue installations to the digital terrestrial format.

The **TVHUNTER** is a **DTT finder** that allows a fast **terrestrial antennas alignment**, and it carries all the required measurements to ensure an optimal reception: MER, CBER, VBER, etc.

The **TVHUNTER** guides the user through three steps: Detection of the transmitter, identification of the multiplex signal and fine-tuning adjustment in order to obtain the best quality signal.

The **TVHUNTER** has been specially designed to stand rough working conditions. It includes a back-light display and offers a long battery life.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	474 to 858 MHz (UHF)
<b>TEST POINTS</b>	16 maximum
<b>RF INPUT</b>	Universal, interchangeable adapter
<b>DVB-T MEASUREMENTS</b>	Channel power, MER, CBER, VBER
<b>ACCESSORIES</b>	AC adapter, car lighter adapter, F-BNC/DIN/F adapters, mains cord, USB 2.0 cable, carrying suitcase, carrying belt, case (optional), CD-ROM, user manuals

[▶ Back to TV & Satellite analysers](#)

More products in this family 


## SATHUNTER Satellite hunter

The **SATHUNTER** is an instrument designed for the installation of Direct To Home (**DVB-S/S2**) satellite reception systems. It is **fully automatic** and **very easy to use**. Just turn the dish and the instrument will show up the identification of the selected satellite when it is detected. The instrument is actually reading the information transmitted by the satellite and displays its orbital position and the service list..

It detects signal from any analogue or digital satellite thanks to the built-in wide band detector. Once a satellite signal has been found it is possible to confirm with no possibility of error if the received satellite corresponds to the one desired.

Equipment settings can be modified at will using a PC computer and the supplied software through USB.



 Click on the image to enlarge it.

<b>3-STEP PROCESS</b>	Satellite detection, identification, fine adjust
<b>SATELLITES</b>	16 maximum
<b>SYMBOL RATE (DVB-S)</b>	2 to 45 Mbauds
<b>SYMBOL RATE (DVB-S2)</b>	
<b>QPSK</b>	From 2 to 33 Mbauds
<b>8PSK</b>	From 2 to 30 Mbauds
<b>BATTERIES</b>	Long life Li-Ion batteries
<b>CONFIGURATION</b>	Includes CD-ROM and USB cable to modify configuration

# PRODUCTS

## Test signal generators

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### RP-250 Multicarrier Generator

Generates 8 carriers that can be used to test coaxial cable networks and associated devices



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### RP-050 IF and UHF signal generator



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### RP-080 Test signal generator

It generates up to 4 independent pilot carriers with selectable level.



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### NG-281, NG-282 Noise generators

Noise generators specifically designed to be used in any sort of television installations, by cable (CATV) and/or by aerial (MATV).



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## RP-250 Multicarrier Generator

The pilot generator **RP-250** is an instrument designed to verify coaxial networks and associated devices. It is an ideal test instrument to generate reference signals in order to equalise frequency bands being suitable for downlink channels, return path frequency band, digital TV antenna installations, cable TV, ISM band (Wireless Bluetooth) and satellite TV.

A local area network connector also is available in order to integrate it in the quality management monitoring systems.



 [Click on the image to enlarge it.](#)

<b>FREQUENCY RANGE</b>	5 - 2500 MHz
<b>CARRIERS</b>	3 x UHF & VHF band 3 x SAT band 1 x sub band 5 to 100 MHz 1 x ISM band
<b>RESOLUTION</b>	10 kHz
<b>CARRIER LEVELS</b>	90 to 110 dB $\mu$ V
<b>COMMUNICATIONS</b>	RS-232C and Ethernet ports
<b>PROTOCOLS</b>	HTTP and SNMP


[▶ Back to Test signal generators](#)

More products in this family

## NG-281, NG-282 Noise generators

Noise generators **NG-281 / NG-282** are a large bandwidth devices, specifically designed to be used in any sort of television installations, by cable (CATV) and/or by aerial (MATV).



 [Click on the image to enlarge it.](#)

<b>NG-281</b>	From 5 to 1000 MHz, level 70 dB $\mu$ V, flatness $\pm$ 2 dB
<b>NG-282</b>	From 20 to 2000 MHz, level 50 dB $\mu$ V, flatness $\pm$ 3 dB
<b>POWER SUPPLY</b>	Internal rechargeable batteries or external power adaptor

[▶ Back to Test signal generators](#)

More products in this family

## RP-050 IF and UHF signal generator

The satellite IF and UHF simulator **RP-050** is a radio frequency pilot generator that permits to test the response of the entire television system prior to having the antennas or the Headend installed. It can be used for the certification of TV wires, test of new satellite installations, headend fault locator, and many other.



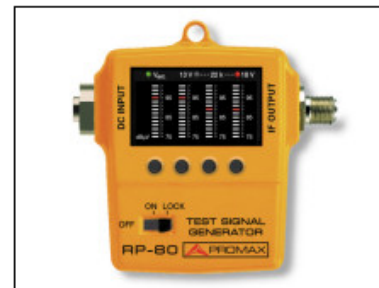
<b>L BAND TEST PILOTS</b>	1050 / 1575 / 2100 MHz
<b>UHF TEST PILOT</b>	537.5 MHz
<b>LEVEL</b>	LOW MODE: 90 dBmV ± 4 dB HIGH MODE: 105 dBmV ± 4 dB
<b>SIGNAL DETECTION</b>	22 kHz
<b>SUPPLIED VOLTAGE DET.</b>	13 / 18 V in a coaxial cable

[▶ Back to Test signal generators](#)

More products in this family

## RP-080 Test signal generator

The **RP-080** is a handy, versatile and easy to use signal generator with which satellite receivers and coaxial cables of buildings can be checked. It generates up to **4 independent pilot carriers** with selectable level (from 75 to 105 dBµV).



- \* **4 PILOT CARRIERS: 85 MHz, 750 MHz, 1000 MHz, 2150 MHz**
- \* **Selectable and independent carrier level for each one: from 75 to 105 dBµV**
- \* **LED indicators for each carrier output level**
- \* **13, 18 V and 22 kHz signal detection.**
- \* **Power supply from the LNB or external DC supply.**
- \* **Ergonomic and compact format.**

# PRODUCTS

## Accessories for Field strength meters

[▶ Back to product index](#)

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### RM-104 PkTools

**PkTools** is a remote control software application designed for the **TV Explorer**, **TV Explorer II**, **TV Explorer II+** and **PROLINK Premium** field strength meters.



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### RM-204 PkWatch

Software designed for monitoring and massive data logging, using the **PROLINK-4 Premium** as a measuring instrument.



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### CV-589 5.8 GHz band converter

Radio frequency down converter for the 5.5 to 5.8 GHz frequency range.



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### CV-245 2.4 GHz band converter

Radio frequency down converter for the 2.4 to 2.5 GHz frequency range.



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### AMC/1 Master aerial

Connected to any Field Strength meter is able to find the intensity of the electric field in any location.



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### MS-250 Satellite detector

Signal sensor covering the intermediate frequency band of Satellite TV (950-2050 MHz).



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More products in this family

## RM-104 PkTools

**PkTools** is a remote control software application designed for the **TV Explorer**, **TV Explorer II**, **TV Explorer II+** and **PROLINK Premium** field strength meters. Users will find several utilities inside the **PkTools** software, that allow them to:

- Generate and print measurement reports.
- Manage datalogger measurement data.
- Edit channel plans.
- Edit measurement configurations.
- Watch on the PC monitor the spectrum analyser.



[▶ Back to Accessories for Field strength meters](#)

More products in this family

## RM-204 PkWatch

The **PKWATCH** software is designed for monitoring and massive data logging, using the **PROLINK-4 Premium** as a measuring instrument. It is very useful for long term or permanent monitoring purposes in TV, radio, satellite or Cable TV applications. It allows to store data, generate graphics, create MS Excel or MS Access files, etc. With the support of a computer it can send SMS alarm messages to a mobile telephone.



- SELECTION OF TV OR RADIO CHANNELS TO BE MONITORED
- SELECTION OF TV MEASUREMENTS
  - SIGNAL LEVEL
  - VIDEO/AUDIO RATIO
  - CARRIER/NOISE RATIO
  - DIGITAL CHANNEL POWER
  - BER FOR QPSK, QAM AND COFDM
- SELECTION OF PASS/FAIL LIMITS FOR EACH TEST
- LOGGING OF MEASUREMENTS AND TEST FAILURES IN SEPARATE FILES

[▶ Back to Accessories for Field strength meters](#)

More products in this family

## CV-589 5.8 GHz band converter

The **CV-589** is a radio frequency down converter for the 5.7 to 5.8 GHz frequency range. This band which is 100 MHz wide is down converted to the frequency range from 1500 to 1600 MHz so that it can be viewed and measured using a SAT band spectrum analyser.

Possible applications cover wireless point to point link alignment, wireless LAN (WLAN) extenders or ISM (Industrial Scientific Medical) signal testing, etc...



- \* Converts signals from ISM 5.8 GHz to IF satellite band
- \* Supply from the signal level meter

[▶ Back to Accessories for Field strength meters](#)

More products in this family

## CV-245 2.4 GHz band converter

The **CV-245** is a radio frequency down converter for the 2.4 to 2.5 GHz frequency range. This band which is 100 MHz wide is down converted to the frequency range from 1483 to 1583 MHz so that it can be viewed and measured using a SAT band spectrum analyser.

Possible applications cover wireless point to point link alignment, wireless LAN (WLAN) extenders or ISM (Industrial Scientific Medical) signal testing, etc...



- \* Converts signals from ISM 2.4 GHz to IF satellite band
- \* Supply from the signal level meter

▶ [Back to Accessories for Field strength meters](#)

More products in this family

### AMC/1 Master aerial

Connected to any Field Strength meter is able to find the intensity of the electric field in any location.



 [Click on the image to enlarge it.](#)


▶ [Back to Accessories for Field strength meters](#)

More products in this family

### MS-250 Satellite detector

The **MS-250** is a signal sensor covering the intermediate frequency band of Satellite TV (950-2050 MHz) intended for pointing any TVRO parabolic antenna to the selected satellite.



 [Click on the image to enlarge it.](#)

<b>FREQUENCY RANGE</b>	950 - 2050 MHz
<b>MARGIN</b>	-30 to +5 dBm
<b>INDICATION</b>	Analogue
<b>FEATURES</b>	<ul style="list-style-type: none"> <li>- Acoustic level indication</li> <li>- Supply from set Top Box</li> <li>- Voltage measurement</li> </ul>



# PRODUCTS

## Cable TV analysers

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### PROMAX-27 DOCSIS AND EuroDOCSIS networks analyser

Designed for for the installation and maintenance of video and high speed data interactive services over TV networks based on the EuroDOCSIS and DOCSIS 2.0 standard. Supports VoIP and IPTV.



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### PROMAX 10 *Premium* Cable TV QAM Analyser

This instrument is compatible with European, American, and Japanese digital and analogue standards from cable TV networks.



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### PROMAX-8 *Premium* Cable TV Analyser

Cable TV network analyser that includes spectrum analyser, SCAN, automatic data acquisition, among other functions.



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### PROMAX-4, PROMAX-5, PROMAX-6 Cable TV Analysers

With a replaceable input connector and automatic selection of the most suitable input attenuator.



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### PROLINK-1C Basic TV Analyser

It covers the entire 46 to 870 Mhz frequency band in cable TV and MMDS analogue or digital frequency bands.



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## PROMAX-27 DOCSIS AND EuroDOCSIS networks analyser

**PROMAX-27** is an analyser for the installation and maintenance of video and high speed data interactive services over TV networks based on the **EuroDOCSIS and DOCSIS 2.0 standard**. It allows the qualification of **VoIP** and **IPTV** services and it includes several test modes such as the **TILT** function that allows equalisation of the line.

It includes the **LOGGER** function, which allows to take and save to the internal memory a number of measurements, so they can be analysed, transferred to a PC or printed.



 Click on the image to enlarge it.

<b>Downstream</b>	<ul style="list-style-type: none"> <li>Channel power measurement</li> <li>Quality test: MER, BER, Pre BER and Post BER</li> <li>Constellation diagram</li> <li>Full band power</li> <li>Frequency, channel and active channel plan</li> <li>Modulation type and symbol rate</li> </ul>
<b>Upstream</b>	<ul style="list-style-type: none"> <li>Power measurement</li> <li>Attenuation at CMTS</li> <li>Frequency and bandwidth</li> <li>Modulation and symbol rate</li> <li>Communications test</li> </ul>
<b>Communications Test (in Registered mode)</b>	<ul style="list-style-type: none"> <li>IPTV analyser (television over IP)</li> <li>VoIP analyser (voice over IP)</li> <li>IP report</li> <li>Ping test</li> <li>Ratio of lost packets</li> </ul>

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More products in this family 

## PROMAX 10 *Premium* Cable TV QAM Analyser

The **PROMAX-10 *Premium*** 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 measures power level measurement over a complete frequency band, very useful for detecting saturation in the input of some broadband demodulators. **PROMAX-10 *Premium*** is a multistandard instrument, so it can be used in any network in the world.



 [Click on the image to enlarge it.](#)

<b>FUNCTIONS</b>	Level meter, Logger, Scan, Tilt, Spectrum analyser, Transient detector, Cable digital analyser
<b>DIGITAL MEASUREMENTS</b>	Channel power, C/N, Bit Error Rate (Pre-BER, Post-BER), MER, DVB-QAM constellation
<b>ANALOGUE MEASUREMENTS</b>	Level, C/N, C/A ratio, CSO-CTB intermodulation

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More products in this family 

## PROMAX-8 *Premium* Cable TV Analyser

Analyser that incorporates all the functions for the installation, verification and maintenance of CATV systems. It includes different configurations to measure in channel parameters such as Signal Level, Channel Power, V/A, C/N, CSO and CTB. Many different ways of presenting the information can be selected such as Channel measurements, SCAN, Spectrum with max. and min. hold, Datalogger, TILT, etc.



 [Click on the image to enlarge it.](#)

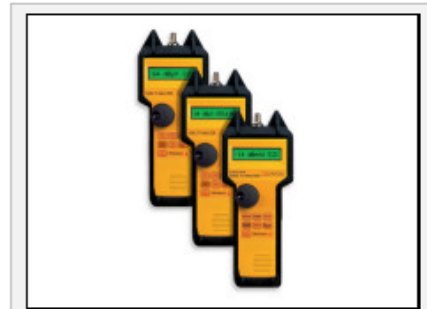
<b>MEASUREMENTS</b>	Digital Channel Power, Signal Level, V/A, C/N, CSO & CTB
<b>PRESENTATION MODES</b>	Channel measurements, channel sweep, spectrum with Max-Min hold, data acquisition, tilt
<b>RESOLUTION</b>	10 kHz

[▶ Back to Cable TV analysers](#)

More products in this family 

## PROMAX-4, PROMAX-5, PROMAX-6 Cable TV Analysers


The **PROMAX-4 / PROMAX-5 / PROMAX-6** models, are instruments designed to measure the basic parameters to determine the quality of the signal in a CATV system in a fast and simple manner. We have implemented three versions so to offer different options depending on the needs. It is a one hand operation instrument with direct reading of the measurement on an illuminated LCD screen. It incorporates a audio demodulator together with an speaker. A exchangeable input connector so to avoid damaging the instrument.



 [Click on the image to enlarge it.](#)

- \* **C/N measurements:** PROMAX-4, PROMAX-5, PROMAX-6
- \* **Return Path:** PROMAX-5, PROMAX-6
- \* **Channel Power measurements:** PROMAX-6
- \* **Program memories:** PROMAX-4, PROMAX-5


[▶ Back to Cable TV analysers](#)

More products in this family 

## PROLINK-1C Basic TV Analyser

Basic instrument for CATV measurements. Ideal for those applications where Signal Level for analogue and Channel Power for digital are the only measurements needed. It covers frequencies in the range of 46 MHz to 870 MHz and optionally the frequencies between 5 MHz and 48 MHz. Also available there is an option for external supply of microwave link networks.



 [Click on the image to enlarge it.](#)

<b>MEASUREMENTS</b>	Channel Power, Signal Level & V/A
<b>FREQUENCY RANGE</b>	48.25 MHz to 870 MHz (5 - 870 MHz optional)
<b>PC CONNECTION</b>	Remote control software via RS-232C



# PRODUCTS

## Test signal generators for Cable TV

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### RP-250 Multicarrier Generator

Generates 8 carriers that can be used to test coaxial cable networks and associated devices



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### RP-100, RP-100Q Return Path multi-carrier generator

These generators allow to inject two (model RP-100) or four (model RP-100Q) carriers to test the return band operation in portions of a cable TV network. It operates the range up to 100 MHz.



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### RP-200 Multicarrier generator

The **RP-200** is a handheld pilot generator at *downstream* and *upstream* in CATV installations. The frequency and level of each pilot can be set independently



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## RP-250 Multicarrier Generator

The pilot generator **RP-250** is an instrument designed to verify coaxial networks and associated devices. It is an ideal test instrument to generate reference signals in order to equalise frequency bands being suitable for downlink channels, return path frequency band, digital TV antenna installations, cable TV, ISM band (Wireless Bluetooth) and satellite TV.

A local area network connector also is available in order to integrate it in the quality management monitoring systems.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	5 - 2500 MHz
<b>CARRIERS</b>	3 x UHF & VHF band 3 x SAT band 1 x sub band 5 to 100 MHz 1 x ISM band
<b>RESOLUTION</b>	10 kHz
<b>CARRIER LEVELS</b>	90 to 110 dB $\mu$ V
<b>COMMUNICATIONS</b>	RS-232C and Ethernet ports
<b>PROTOCOLS</b>	HTTP and SNMP

[▶ Back to Test signal generators for Cable TV](#)

More products in this family 

## RP-100, RP-100Q Return Path multi-carrier generator

This generator cover the needs for testing the return path, the **RP-100** and **RP-100Q**, signal generators are designed for the activation and later verification of the return path in CATV networks. These instruments are capable of generating 2 (**RP-100**) or 4 (**RP-100Q**) carriers that, inserted in a remote outlet, allow to observe the correct functioning in the head-end or any other point down in the line.


The instrument allows to independently program 2 or 4 pilots between 5 and 100 MHz with an output level in the range of 90 to 110 dBμV (30-50 dBmV) adjustable in steps of 1 dB. Since it permits to select independent frequencies for each pilot, you can perform multiple and simultaneous tests from different places or by different operators. The instrument comes with an internal rechargeable battery so it can be used on a remote site.



 Click on the image to enlarge it.

<b>NUMBER OF PILOTS</b>	2 (RP-100) or 4 (RP-100Q)
<b>FREQUENCY RANGE</b>	From 5 MHz to 100 MHz
<b>PILOT LEVELS</b>	From 30 to 50 dBmV (adjustable in 1 dB steps)
<b>FREQUENCY RESOLUTION</b>	10 kHz

[▶ Back to Test signal generators for Cable TV](#)

More products in this family 


## RP-200 Multicarrier generator

The **RP-200** is a handheld pilot generator at direct frequency band (*downstream*) as well as at return band (*upstream*) in a CATV installation.

One of its main features, and advantages over other instruments on the market, is that the **RP-200** is fully-configurable by the user, i.e. the frequency and level of each pilot can be set independently.

The **RP-200** is powered by rechargeable batteries or the mains using the supplied mains adapter. The battery charger is built-in.



 Click on the image to enlarge it.

<b>CARRIER FREQUENCY</b>	5 – 900 MHz
<b>RESOLUTION</b>	10 kHz
<b>ACCURACY</b>	< ± 10 ppm at 22°C
<b>CARRIERS</b>	4
<b>NUMBER OF CARRIERS</b>	4
<b>CARRIER LEVEL</b>	30 - 50 dBmV
<b>LEVEL ACCURACY</b>	1 dB
<b>LEVEL ACCURACY</b>	± 2 dB
<b>IMPEDANCE</b>	75 Ω

## PRODUCTS

### Signal Recorder/Player/Analyser

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

MPEG-2 transport stream recorder and player that can record continuously up to 15 hours of transport stream (at 20 Mbps) and then play it back later on at pleasure.



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#### TG-130 Transport Stream Recorder/Processor/Player

The **TG-130** is a versatile MPEG-2 *Transport Stream* processor, recorder and player with an integrated **DVB-T** tuner that allows the TS capture in real time.



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## PRODUCTS

### TV Distribution: Signal Recorder/Player/analyser

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

MPEG-2 transport stream recorder and player that can record continuously up to 15 hours of transport stream (at 20 Mbps) and then play it back later on at pleasure.



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#### TG-130 Transport Stream Recorder/Processor/Player

The **TG-130** is a versatile MPEG-2 *Transport Stream* processor, recorder and player with an integrated **DVB-T** tuner that allows the TS capture in real time.



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More products in this family

## TG-140 TS Recorder / Processor / Player

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.



Click on the image to enlarge it.

<b>INPUTS</b>	ASI transport stream Maximum data rate 150 Mbps
<b>OUTPUTS</b>	ASI transport stream SPI parallel transport stream Maximum data rate 90 Mbps
<b>STORAGE CAPACITY</b>	Hard disk 160 GB 15 hours of 20 Mb/s transport stream
<b>PC CONNECTION</b>	USB interface Ethernet interface

► [Back to Signal Recorder/Player/Analyser](#)

More products in this family

## TG-130 Transport Stream Recorder/Processor/Player

The **TG-130** is a versatile **MPEG-2 Transport Stream** processor, recorder and player with an integrated **DVB-T** tuner that allows the TS capture in real time.

It can record a transport stream continuously for several minutes and then play it back later at pleasure. The recorded streams can also be processed to create others TS transport streams with different content.

The **TG-130** is a useful equipment to work in the field where maybe it is not possible to find electricity available.

The **TG-130** in combination with a digital modulator, such as **MO-170** for **DVB-T** for instance, becomes a highly flexible and affordable **digital broadcast signal simulator**.



Click on the image to enlarge it.

<b>INPUTS</b> ASI Transport Stream RF	Maximum data rate 40 Mb/s DVB-T from 35 to 100 dB $\mu$ V
<b>OUTPUTS</b>	ASI Transport Stream SPI parallel Transport Stream Maximum data rate 32 Mb/s
<b>STORING CAPACITY</b>	Memory card 4 GB 20 minutes approx (20 Mbits/s)
<b>PC CONNECTION</b>	Ethernet Interface



# PRODUCTS

## Digital TV Generators

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### MO-170 DVB-T and DVB-H Modulator

The MO-170 is a general purpose DVB-T and DVB-H modulator designed to achieve the maximum performance yet at an affordable price. The unit has three selectable MPEG-2 TS inputs (2xASI and 1xSPI).



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### MO-280 SFN/MFN DTMB modulator

Professional SFN/MFN DTMB modulator. Two ASI MPEG-2 TS inputs, one 10 MHz GPS reference input and one 1pps GPS reference input. Includes two test modes.



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### MO-270 DTMB MODULATOR

DTMB modulator compliant for China's digital terrestrial broadcasting. MPEG-2 Transport Stream input (SPI or ASI). The output is a TDS-OFDM modulated DTMB signal upconverted to IF or RF.



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

MPEG-2 transport stream recorder and player that can record continuously up to 15 hours of transport stream (at 20 Mbps) and then play it back later on at pleasure.



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### GV-998 Digital TV MPEG-2 generator

The GV-998 generates the necessary signals to verify the most common anomalies that can occur in Digital TV receivers (MPEG-2 system), with analogue A/V input.



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## MO-170 DVB-T and DVB-H Modulator

The **MO-170** is a general purpose **DVB-T and DVB-H modulator** contained in a 19" 1U chassis, fully compliant with the DVB-T/H specification ETSI EN 300 744 v1.5.1. The unit has three selectable MPEG-2 TS inputs (two serial ASI inputs and one parallel SPI input). The input to the modulator is an MPEG-2 Transport Stream (TS) in DVB-SPI or DVB-ASI formats. The outputs from the unit are the COFDM modulated DVB-T/H signal upconverted to IF and RF.

The modulator has been designed to achieve the maximum performance yet at an affordable price. The **MO-170** supports 2k, 4k and 8k modes, hierarchical transmission and it can operate in Multi Frequency Networks (MFN). The digital coding and modulation process is implemented with programmable logic devices using PROMAX proprietary IP. This makes the design highly flexible, allowing to tailor it to any particular application.



 Click on the image to enlarge it.

<b>MPEG-2 TS INPUTS</b>	2x DVB-ASI, 1x DVB-SPI TS packets of 188 or 204 bytes (auto detect) Const. avg. TS packet rate in slave mode (no packet stuffing) Packet stuffing and PCR re-stamping in master mode
<b>OUTPUTS</b> <b>IF OUTPUT</b> <b>RF OUTPUT</b>	Fixed at 36 MHz (when RF output is off) / 0 dBm fixed 45-875 MHz (1 Hz steps), -87 to -27 dBm (1dB steps, optional up to +6 dBm)
<b>OPERATING MODES</b>	MASTER or SLAVE
<b>DVB-T/H PARAMETERS</b> <b>IFFT SIZE</b> <b>GUARD INTERVALS</b> <b>CODE RATES</b> <b>CONSTELLATIONS</b> <b>HIERARCHICAL MODES</b> <b>CHANNEL BANDWIDTH</b> <b>MFN OPERATION</b>	2k, 8k (4k with DVB-H option) 1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 QPSK, 16QAM, 64QAM 16QAM and 64QAM with constellation ratio $\alpha = 1, 2$ or 4 6, 7, 8 MHz (user-selectable) Available
<b>REMOTE CONTROL</b>	RS-232C interface (DB-9 male connector)

[▶ Back to Digital TV Generators](#)

More products in this family ▼

## MO-280 SFN/MFN DTMB modulator

The **MO-280** is a professional **SFN/MFN DTMB modulator** fully compliant with the GB20600-2006 and the GY/T 229. 1-2008 standards contained in a 19" 1U chassis. The unit has **two serial ASI MPEG-2 TS inputs**, one **10 MHz GPS reference input** and one **1pps GPS reference input**. The GPS inputs are used in combination with the Second Frame Initialization Packet (SIP) embedded in the transport streams for SFN synchronisation purposes.



 Click on the image to enlarge it.

In MFN mode, the **MO-280** is able to work with any incoming bit rate as long as the net bit rate resulting from dropping all NULL packets present in the stream is strictly lower than the value given in the DTMB specification for the modulation parameters in use.

Two **test modes** are available in the **MO-280** DTMB modulator, single tone output and test TS generation.

<b>MPEG-2 TS INPUTS</b>	2xSerial ASI-TS MPEG-2 inputs TS packets of length 188 or 204 bytes (automatic detection)
<b>SYNCHRONISATION (GPS)</b> <b>Inputs</b> <b>Outputs</b>	10 MHz input and 1 pps input 10 MHz output
<b>OUTPUTS</b> <b>IF Output</b> <b>RF Output</b>	31 to 26 MHz (1 Hz steps). MER > 43 dB 45 to 875 MHz (1 Hz steps). MER > 38 dB
<b>DTMB PARAMETERS</b> <b>Carrier mode</b> <b>Frame header length</b> <b>Frame header phase</b> <b>FEC rates</b> <b>Constellations</b> <b>Time interleaving</b> <b>MFN operation</b>	Single, Multicarrier 420, 595, 945 symbols Fixed, Rotating 0.4, 0.6, 0.8 4QAM-NR, 4QAM, 16QAM, 32QAM, 64QAM 240, 720 Available
<b>TESTS MODES</b>	- Generate a single carrier at the channel central frequency whose level equals the average DTMB output power. - Internal generation of test TS using PRBS sequences (length 15 / 23 embedded within NULL packets)

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## MO-270 DTMB MODULATOR

The **MO-270** is a **DTMB modulator** compliant with **China's national standard specification** for digital terrestrial broadcasting GB20600-2006. The input to the modulator is an MPEG-2 Transport Stream (TS) in **SPI** or **ASI** formats. The output from the unit is a **TDS-OFDM modulated DTMB signal** upconverted to **IF** or **RF**.

The modulator has been designed to achieve the maximum performance yet at an affordable price. The digital coding and modulation process is implemented with programmable logic devices using **PROMAX** proprietary IP. This makes the design highly flexible, allowing to tailor it to any particular application.



 Click on the image to enlarge it.

<b>MPEG-2 TS INPUTS</b>	2x ASI, 1xSPI TS packets of length 188 or 204 bytes
<b>OUTPUTS</b> <b>IF OUTPUT</b> <b>RF OUTPUT</b>	36 MHz, 50 Ω BNC female connector 45-875 MHz, 50 Ω & 8486; BNC female connector
<b>DTMB PARAMETERS</b> <b>MODULATION</b> <b>FEC</b> <b>CONSTELLATION</b> <b>TIME INTERLEAVING</b> <b>GUARD INTERVALS</b>	TDS-OFDM, 1 or 3780 subcarriers 0.4, 0.6, 0.8 4QAM-NR, 4QAM, 16QAM, 32QAM, 64QAM 240 or 720 symbols 1/4, 1/6, 1/9
<b>TEST MODES</b>	- Blank a number of carriers - Generate a single carrier at the central frequency whose level equals the average TDS-OFDM output power. - Test Transport Stream packet generation using PRBS sequences of length 15 or 23 bits


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More products in this family ▼

## TG-140 TS Recorder / Processor / Player

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.



 Click on the image to enlarge it.

<b>INPUTS</b>	ASI transport stream Maximum data rate 150 Mbps
<b>OUTPUTS</b>	ASI transport stream SPI parallel transport stream Maximum data rate 90 Mbps
<b>STORAGE CAPACITY</b>	Hard disk 160 GB 15 hours of 20 Mb/s transport stream
<b>PC CONNECTION</b>	USB interface Ethernet interface


[▶ Back to Digital TV Generators](#)

More products in this family ▼

## GV-998 Digital TV MPEG-2 generator

The Multistandard and Multisystem Generator of analogue and digital television signals **GV-998** with MPEG-2 format TS output, is able to generate the necessary signals to verify the most common anomalies that can occur in Digital TV receivers. The system has an analogue external input of audio and video.



 Click on the image to enlarge it.

<b>TS GENERATION</b>	MPEG-2 format, audio/video valid program
<b>SOUND</b>	Variable frequency for TV decoder verification
<b>ANALOGUE TV</b>	Multistandard and multisystem signal generation

# PRODUCTS

## Analog TV Generators

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### GV-898+, GV-798+ PAL/NTSC/SECAM TV pattern generator

These are the most complete instruments of this type: 37 different patterns (including 16:9), messages, interfaces as S-VHS or SCART, RS-232 controlling, etc.



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### GV-698+ TV pattern generator

This generator is particularly suitable for those industrial sectors that require high-quality pictures; equipped with 23 pattern charts, and sound options.



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### GV-198 Video generator

Low-cost TV signal generator with 9 pattern charts, 5 outputs, and 4:3 & 16:9 patterns.



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### GV-241 Monitor test generator

Designed for the testing of computer monitors, compatible with up to 29 graphics system divided into two groups in order to facilitate selection.



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## GV-898+, GV-798+ PAL/NTSC/SECAM TV pattern generator

These TV signal generators have the widest selection of functions for an instrument of this type, including the possibility to **generate YPb Pr signals**. Multistandard and multisystem, 37 different patterns, 16:9 and 3:4 formats, VITS & WSS, teletext, VPS and PDC. Possibility to display messages (clock, text). All common interface connectors such as S-VHS or SCART are available; the RS-232 interface is specially useful being bidirectional to control the instrument and for data exchange. Output level of up to 80 dBmV with a progressive attenuation in steps of 1 dB. Specially indicated for those applications where a high quality signal is required, such as adjustment and verification lines, production studios, industrial applications, investigation centres, etc.



[Click on the image to enlarge it.](#)

<b>MULTISTANDARD</b>	PAL / PAL60 / SECAM / NTSC
<b>CONFIGURATIONS</b>	32 memories
<b>MODULATION</b>	Vestigial Side Band (GV-898+) Double Side Band (GV-798+)

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More products in this family

## GV-698+ TV pattern generator

The **GV-698+** is a TV pattern generator (23 patterns) with excellent price / performance ratio which is specially suitable for service of all kinds of TV receivers. This pattern generator has the features usually found only in professional units, such the NICAM sound, the teletext, or the 16:9 patterns.



[Click on the image to enlarge it.](#)

<b>STANDARD TV</b>	PAL B, G, H, D, K, I, M, N NTSC M SECAM B, G, H, D, K, K1, I, L
<b>FREQUENCY</b>	37-865 MHz

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More products in this family 

## GV-198 Video generator


The **GV-198** video generator has nine pattern charts available, allowing essential settings to be made in any television receiver, as well as to detect abnormalities through a visual picture examination. The charts can be in format 4:3 and 16:9. The **GV-198** is designed to cover the basic standards: NTSC / PAL / SECAM. It has EUROCONNECTOR with the controlled commutation signal, as well as a composite synchronism output.



 Click on the image to enlarge it.

<b>STANDARD</b>	PAL B/G, D/K, I, N NTSC M SECAM B/G, D/K, L
<b>OUTPUTS</b>	Composite video signals, R-G-B, Trigger, Low frequency, Radiofrequency
<b>TEST PICTURES</b>	Colour bars Red/Green/Blue/White/Black pattern Checkboard Grid Dots


[▶ Back to Analog TV Generators](#)

More products in this family 

## GV-241 Monitor test generator

The **GV-241** is a universal generator for the testing of computer monitors, which greatly facilitates their adjustment, control and repair. It provides up to 29 possible graphics system, which are divided into two groups in order to facilitate their selection. The signals obtained with this generator are truly reliable in terms of synchronism periods, and both line and frame blanking periods.



 Click on the image to enlarge it.

<b>TEST PICTURES</b>	Colour bars, patterns (red, green, blue), scale of greys, crosshatch, multiburst, white 100% with grey rectangle
<b>OUTPUTS</b>	R, G, B, CVS, HS, VS, CS

# PRODUCTS

## Optical fibre instruments

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### PROLITE-75 FTTH Analyser

For analysis, installation and maintenance of fiber optic networks based on GPON architecture. The instrument provides filtered measurements, individualized and simultaneous for the three wavelengths that are used in fiber (1490 and 1550 nm for Downstream and 1310 nm for Upstream).



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### PROLITE-60 Field Optical spectrum analyser

For install, maintain or troubleshoot systems using more than one wavelength on the same fibre.



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### PROLITE-11 Visual fault locator

A pocket-size visual fault locator equipped with a 650-nm high power visible laser diode.



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### PROLITE-23 Optical power meter

Compact, lightweight and easy-to-use instruments for optical fibre network, with unique characteristics of quick testing.



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### PROLITE-30 Optical fibre identifier

By non-destructive macroband detection technology & mechanism damp technology, identify optical fibres without any damage.



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### PROLITE-50 Micro OTDR

Hand-held, compact, lightweight, easy-to-use & intelligent tools for optical fibre network.



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### PROLITE-90 Dual Wave length LASER light source

PROLITE-90 is a compact, battery operated dual wavelength laser light source.



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### PROLITE-85 SLED light source

Light source at 60 nm and 1550 nm wavelength, with three different output connector set-ups, depending on customer necessities.



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## PROLITE-75 FTTH Analyser

The **PROLITE-75** is an instrument optimized for analysis, installation and maintenance of fiber optic networks based on GPON architecture (Gigabit-capable Passive Optical Network), that is, networks based on technology FTTH / PON, that provide speed over 1 Gbps. The instrument provides filtered measurements, individualized and simultaneous for the three wavelengths that are used in fiber (1490 and 1550 nm for Downstream and 1310 nm for Upstream). It provides quick access to all options of the instrument by means of a straightforward graphical interface very easy-to-use.



 Click on the image to enlarge it.

The **PROLITE-75** provides a Visible Fault Locator that emits a laser light that is helpful, for example to identify a particular fiber, the location of breaks or cuts, macrobendings, damaged or dirty connectors... Any mistake or problem at the installation is identified efficiently with this function.

- **FTTH Portable Analyser capable of measuring simultaneously three wavelengths (1310, 1490 and 1550 nm) in FTTH / PON systems and optimized for GPON architecture.**
- **Pass-through connection between the emitter center (OLT) and home (ONT) allowing full communication between them during testing.**
- **Visible Fault Locator by laser emission.**
- **Upstream BURST Detection at 1310 nm.**
- **Possibility of modular expansion: OTDR Module and Channel Analyser Module.**
- **Data transfer to PC.**
- **Ideal for fieldwork: lightweight, resistant to adverse conditions and backlit.**
- **Graphical interface simple and very intuitive, easy-to-use.**
- **Ambidextrous cursor keys, softkeys and alphanumeric keypad.**
- **Connectors protected from dust and external elements by sliding lids built into the instrument.**
- **Rechargeable Li-On Batteries.**

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More products in this family

## PROLITE-60 Field Optical spectrum analyser

It is not possible to properly install, maintain or troubleshoot systems using more than one wavelength on the same fibre without having an optical spectrum analyser. PROMAX introduces the **PROLITE-60**, the first low cost field optical spectrum analyser. This unique masterpiece is possible thanks to the use of a new type of monochromator recently developed by PROMAX engineering team.



 Click on the image to enlarge it.

<b>WAVELENGTH RANGE</b>	1250 - 1650 nm
<b>SPAN RANGE</b>	10 nm - 400 nm
<b>RESOLUTION</b>	0.15 nm
<b>INPUT RANGE</b>	-60 dBm to 10 dBm
<b>3 HOURS AUTONOMY</b>	


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More products in this family

## PROLITE-11 Visual fault locator

**PROLITE-11** Visual Fault Locator is equipped with a 650-nm high power visible laser diode, can be operated in CW (continuous) or MOD (1 Hz modulation) mode. There are two LED indicators RED and GREEN: The RED one shows the operating mode of the Laser Diode output signal, and the GREEN one indicates low battery level. **PROLITE-11** is housed in a pocket-size, rugged brass casing, and comes with a carrying pouch.



 Click on the image to enlarge it.

<b>LIGHT SOURCE</b>	Class 3A laser diode
<b>CENTRAL WAVELENGTH</b>	650 nm ± 10 nm
<b>LASER LIGHT PULSE DURATION</b>	CW mode pr 6% duty cycle at 1 Hz
<b>CONNECTOR</b>	Universal
<b>DIMENSIONS</b>	192 mm length, 22 mm diameter

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More products in this family

## PROLITE-23 Optical power meter

The **PROLITE-23** optical power meters are compact, lightweight and easy-to-use instruments for optical fibre network, with unique characteristics of quick testing. Widely favored for their quality, value, reliability, accuracy and safety, the pocketsize **PROLITE-23** can support accurate testing of single mode and multimode optical fibre systems, with features of large LCD display, damp and shock proof design and dual-way powering system.

The internal microprocessor and lineal amplifier technology ensure the long-time accuracy. Besides, **PROLITE-23** has a large memory capacity of 3200 records and can transfer the measurement data to a PC for editing and printing.



 Click on the image to enlarge it.

<b>CALIBRATED WAVELENGTH</b>	850, 1300, 1310, 1490, 1550 nm
<b>MEASUREMENT RANGE</b>	From -60 to +17 dBm
<b>DATA STORAGE</b>	3200 records
<b>FUNCTIONS</b>	W / $\mu$ W / dBm / dB (REF), auto-zeroing, data hold...
<b>OPTICAL CONNECTOR</b>	FC / PC (interchangeable SC, ST)
<b>DIMENSIONS</b>	147 x 75 mm (width x height)

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More products in this family

## PROLITE-30 Optical fibre identifier

The **PROLITE-30** series are handheld, easy-to-use optical test instruments that identify optical fibres without any damage by detecting the optical signals being transmitted through the fibers. By non-destructive macroband detection technology & mechanism damp technology, it avoids opening the fiber at the splice point for identification and interrupting service.

The **PROLITE-30** can accurately detect the optical signals, signal directions and the presence of 2 kHz modulated tone. It can test all kinds of fibres, including fibres of 250  $\mu$ m and 900  $\mu$ m as well as jacketed fibers of 2 mm and 3 mm.



 Click on the image to enlarge it.

<b>WAVELENGTH RANGE</b>	800 ~ 1700 nm
<b>SIGNAL TYPE</b>	Continuous wave, 270 Hz $\pm$ 10%, 1 kHz $\pm$ 10%, 2 kHz $\pm$ 10%
<b>LED DISPLAY</b>	Signal, direction, frequency (270 Hz, 1 kHz, 2 kHz), intensity (5 class), low battery
<b>FIBRE TYPE</b>	250 $\mu$ m, 900 $\mu$ m and 2 mm, 3 mm Jacketed fibre

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More products in this family 

## PROLITE-50 Micro OTDR

The **PROLITE-50** series are optical fault locating and analyzing tools for optical fibre network, and feature hand-held, compact, lightweight, easy-to-use, intelligent and quick test. The Large LCD display and backlight design makes testing work more comfort and convenient no matter during daytime or at night.

As a fault locating and analyzing tool the **PROLITE-50** are easier, smaller and more economical than typical equipments of its class, with higher user value. Besides, **PROLITE-50** can save and transfer the measurement curves data to a PC by the provided software for further analyzing, reporting and printing.



 Click on the image to enlarge it.

<b>DYNAMIC RANGE</b>	24 / 22 dB (1 $\mu$ S)
<b>WAVELENGTH</b>	1310 $\pm$ 20 nm, 1550 $\pm$ 20 nm
<b>FIBRE TYPE</b>	Single mode
<b>SELECTABLE PULSE WIDTH</b>	30, 100, 275, 1000, 2500 nS
<b>SELECTABLE RANGES</b>	1,3, 2,5, 5, 10, 20, 40, 80, 120 km
<b>MEASUREMENT DATA STORAGE</b>	300 test curves


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More products in this family 

## PROLITE-90 Dual Wave length LASER light source

**PROLITE-90** is a compact, battery operated dual wavelength laser light source. Using one single output connector it is ideal for testing of fibres intended to carry more than one wavelength. Laser sources can be modulated in a special way to make optical power measurements on two different wavelengths easier.



 Click on the image to enlarge it.

<b>WAVELENGTH</b>	1310 / 1550 nm
<b>WAVELENGTH MODES</b>	Selectable Dual/Single output
<b>MULTIPLEXED OPTICAL OUTPUT</b>	

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## PROLITE-85 SLED light source


The **PROLITE-85** is a SLED light source with a **bandwidth of 60nm and a wavelength of 1550nm**. It is high efficient in optical communications (C Band) and all broadband applications, which are around this wavelength and needs a stable light source to be injected to the system.

The light source is stabilized to keep the signal level and the spectral response with a great range of temperatures.

It is a portable and stand-alone system thanks to the rechargeable battery, which allow the **PROLITE-85** to run for a long time.

The output light source connectors could be customized depends on the customer necessities at the time of placing an order.



 Click on the image to enlarge it.

<b>WAVELENGTH</b>	1550 nm (please contact us for other wavelength)
<b>FWHM SPECTRAL BANDWIDTH</b>	Typically 60 nm
<b>OUTPUT POWER</b>	-2.5 dBm typ. / SM 9 fibre /125 µm
<b>OUTPUT CONNECTOR</b>	Type FC, SC, E2000 (according to order)
<b>AUTHONOMY</b>	Typically 14 h.



# PRODUCTS


## Power Line Communications (PLC)

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### PROPOWER PLC network evaluation


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### TC-475 Mains cable tracer (Power Line)

Wiring tracer for lines connected to the mains. It is ideal for applications like PLC (Power Line Communications), Domotics, and in general the drawn up of network cables for low voltage distribution.

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## PROPOWER PLC network evaluation

New **PROPOWER** range is made up of two basic elements: a **PLC Spectrum Analyser** and a **PLC test signal Generator**. All instruments have been designed for field use and combined use allow to test the network response to PLC test signals.



 Click on the image to enlarge it.

### PROPOWER-5 (PLC SPECTRUM ANALYSER)

**FREQ. RANGE**  
**POWER**  
**FUNCTIONS**

1 - 50 MHz  
From -90 to 10 dBm  
Spectrum mode, tilt mode, data acquisition

### PROPOWER 1 (PLC NOISE GENERATOR)

**FREQ. RANGE**  
**POWER**

1 - 50 MHz  
5 dBm


[▶ Back to Power Line Communications \(PLC\)](#)

More products in this family 

## TC-475 Mains cable tracer (Power Line)

The cable tracer **TC-475** is an instrument designed to identify an electrical lead within amount of a set of electrical leads, locate leads in electrical installations, leads into walls and to assign electrical circuits to protection devices. In addition, it can be used for install or inspect a PLC line (Internet / Data transmission using the electric network). This device consists of a transmitter and a receiver.



 Click on the image to enlarge it.

**FREQUENCY MARGIN**

30 - 70 Hz

**CONSUMPTION**

1 W approx.

**DEPTH**

Up to 40 cm.

**SENSIBILITY**

Variable



# PRODUCTS

## Wireless Communications (Wi-Fi)

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### **PROFI-70 Wireless networks analyser**

The PROFI-70 is an analyser of local area wireless networks (WLAN). (Wi-Fi Wireless Fidelity networks that fulfills the IEEE standard 802.11b and 802.11g).



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### **CV-589 5.8 GHz band converter**

Radio frequency down converter for the 5.5 to 5.8 GHz frequency range.



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### **CV-245 2.4 GHz band converter**

Radio frequency down converter for the 2.4 to 2.5 GHz frequency range.



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▶ [Back to Wireless Communications \(Wi-Fi\)](#)

More products in this family


## PROFI-70 Wireless networks analyser

The **PROFI-70** is an analyser of local area wireless networks (WLAN). (**Wi-Fi Wireless Fidelity** networks that fulfills the IEEE standard **802.11b** and **802.11g**). These types of communication networks have been widely deployed, due to the facility of development and the comfort to access to them. But, thus they operate in a free-band; these networks require a continuous and accurate control of the broadcasting cover, including as well the analysis of the interferences as the control of the access security.

In the design of the **PROFI-70** special care has been taken to create a practical, accurate, yet easy-to-use device. A simple alphanumeric keypad including soft-keys facilitates direct access to the various operating modes. Once accessed, ambidextrous navigation and selection keys can be used to easily modify any parameter of the measurements.

It has a **RS-232 interface** for connection to a printer or computer to generate reports on the measurements performed.



 Click on the image to enlarge it.

<b>TUNING</b>	
<b>TUNING RANGE</b>	From 2412 to 2484 MHz (ISM band)
<b>TUNING MODE</b>	By channel (CH1 - CH14: IEEE 802.11 / 802.11b/g standard)
<b>SENSITIVITY</b>	- 90 dBm
<b>INPUTS</b>	
<b>INPUT A</b>	
<b>MEASURING RANGE</b>	From -90 to -20 dBm
<b>MAXIMUM INPUT LEVEL</b>	+10 dBm
<b>INPUT B</b>	
<b>MEASURING RANGE</b>	From -40 to +30 dBm
<b>MAXIMUM INPUT LEVEL</b>	+30 dBm
<b>DATALOGGER FUNCTION</b>	
<b>MEASUREMENTS</b>	Channel, SSID, MAC, Power and Signal/Noise ratio

[▶ Back to Wireless Communications \(Wi-Fi\)](#)

More products in this family

### CV-589 5.8 GHz band converter

The **CV-589** is a radio frequency down converter for the 5.7 to 5.8 GHz frequency range. This band which is 100 MHz wide is down converted to the frequency range from 1500 to 1600 MHz so that it can be viewed and measured using a SAT band spectrum analyser.

Possible applications cover wireless point to point link alignment, wireless LAN (WLAN) extenders or ISM (Industrial Scientific Medical) signal testing, etc...



[Click on the image to enlarge it.](#)

- \* Converts signals from ISM 5.8 GHz to IF satellite band
- \* Supply from the signal level meter

[▶ Back to Wireless Communications \(Wi-Fi\)](#)

More products in this family

### CV-245 2.4 GHz band converter

The **CV-245** is a radio frequency down converter for the 2.4 to 2.5 GHz frequency range. This band which is 100 MHz wide is down converted to the frequency range from 1483 to 1583 MHz so that it can be viewed and measured using a SAT band spectrum analyser.

Possible applications cover wireless point to point link alignment, wireless LAN (WLAN) extenders or ISM (Industrial Scientific Medical) signal testing, etc...



[Click on the image to enlarge it.](#)

- \* Converts signals from ISM 2.4 GHz to IF satellite band
- \* Supply from the signal level meter

# PRODUCTS

## Broadcast: Monitoring systems

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### PROWATCH *DEIDE 3* Detection and Identification of Digital TV and radio signals

PROMAX is presenting the new PROWATCH *DEIDE3* equipment, based on technology developed on our R+D labs. PROWATCH *DEIDE3* are equipment for detection, identification and continuous monitoring systems for radio and digital TV signals with remote control.



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### PROWATCH *TELMO* Remote control and monitoring

PROWATCH *TELMO* user-customizable system is designed for the remote control and measuring of Digital Terrestrial Television (DTT). It is composed of a compact module in rack version as well as a compact chest for wall or DIN rail mounting. The unit, once configured, is self-operated.



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## PROWATCH *DEIDE 3* Detection and Identification of Digital TV and radio signals


PROMAX is presenting the new **PROWATCH *DEIDE3*** equipment, based on technology developed on our R+D labs. **PROWATCH *DEIDE3*** equipment, are detection, identification and continuous monitoring systems for radio and digital TV signals with remote control.

- Detection of radio signals received in a specific location, in the radio as well as in the digital and analogue television bands.
- Identification of each one of the signals received, obtaining the information provided by the radio broadcaster either in the signal itself or for visual and/or sound identification.
- Permanent monitoring of a variable area of the radio spectrum, carrying out an analysis of the detected variations.
- The equipment or measuring station can carry out the previous operations in local mode or through remote control by other analogue equipment.
- It works with digital radio (**DAB**), terrestrial digital television (**TDT**) according to the **DVB-T (COFDM modulation)** standard, **FM-RDS** radio and analogue TV signals.



 Click on the image to enlarge it.

► [Back to Broadcast: Monitoring systems](#)

More products in this family 

## PROWATCH *TELMO* Remote control and monitoring


The **PROWATCH *TELMO*** user-customizable system is designed, in its standard format, for the **remote control and measuring of Digital Terrestrial Television (DTT)**. It is composed of a **compact module**, designed for an easy integration in the available structure of a transmitter, a repeater or a gap-filter.

The unit, once configured, is operating **on its own**, controlling the quality of service parameters for up to 6 multiplex, with levels of Warning and Alarm that can activate switches.

Its configuration can be modified by means of **remote control**, so it does not need to integrate any type of user interface (screen, keyboard).

Supply voltage is from the transmitter with a 48 v input.



 Click on the image to enlarge it.

<b>AVAILABLE FORMATS</b>	DIN rail system 19" Rack system
<b>INPUTS</b> RF input RS-232 Ethernet	F-type female connector, 50 Ω Remote control in DIN rail format Remote control in 19" rack format
<b>MONITORING</b>	6 DTT multiplexes management 12 alarms Remote PC monitoring
<b>SNMP PROTOCOL</b>	Under Ethernet connection (for 19" Rack format)



# PRODUCTS

## Broadcast: Modulators

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### MO-180 DVB-T and DVB-H modulator

MO-180 is a DVB-T/H modulator for SFN/MFN contained in a standard 1U 19" chassis. It has two TS DVB-ASI inputs and a DVB-SPI TS input.



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

MPEG-2 transport stream recorder and player that can record continuously up to 15 hours of transport stream (at 20 Mbps) and then play it back later on at pleasure.



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## MO-180 DVB-T and DVB-H modulator


The **MO-180** is a **DVB-T/H** modulator for SFN/MFN implemented in a standard 1U 19" rack.

The modulator has **two Transport Stream DVB-ASI** and one **DVB-SPI** TS inputs. It has 10 MHz 1 pps input to be used together the MIP packet contained in the Transport Stream, to allow the SFN synchronisation.

### HD

Services included in the transport stream can be audio, video or data in **MPEG-2**, **MPEG-4** formats and can correspond to **free to air** or **encrypted** programs in standard definition (**SDTV**) or high definition (**HDTV**).



 Click on the image to enlarge it.

<b>MPEG-2 TS INPUT</b>	2xDVB-ASI 75 Ω 1xDVB-SPI LVDS DB-25 Support for burst and continuous packet modes
<b>OUTPUTS</b> <b>IF Output</b> <b>RF Output</b>	50 Ω BNC-type female connector Normal or inverted spectrum polarity 50 Ω BNC-type female connector 45 - 875 MHz margin
<b>DVB-T/H PARAMETERS</b> <b>Carriers</b> <b>Guard intervals</b> <b>In-depth DVB-H symbol interleavers</b> <b>Constellations</b> <b>Hierarchical modes</b> <b>SFN/MFN</b> <b>Pre-corrector</b> <b>TPS signaling</b> <b>Channel bandwidths</b> <b>Modulation parameters</b>	2k, 4k, 8k 1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 In 2k and 4k QPSK, 16 QAM and 64 QAM 16 QAM and 64 QAM, constellations with a = 1, 2 ó 4 Yes Non-linear, Crest Factor CellID, DVB-H time slicing and MPE-FEC 5, 6, 7 and 8 MHz May be extracted from the MIP packet
<b>TEST MODES</b>	Carrier blanking Pilot carriers Single carrier TS packet generation PRBS generation Bit error injection
<b>CONTROL INTERFACE</b>	RS-232C (SNMP compatible)


► [Back to Broadcast: Modulators](#)

More products in this family

## TG-140 TS Recorder / Processor / Player

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.



 Click on the image to enlarge it.

<b>INPUTS</b>	ASI transport stream Maximum data rate 150 Mbps
<b>OUTPUTS</b>	ASI transport stream SPI parallel transport stream Maximum data rate 90 Mbps
<b>STORAGE CAPACITY</b>	Hard disk 160 GB 15 hours of 20 Mb/s transport stream
<b>PC CONNECTION</b>	USB interface Ethernet interface

## PRODUCTS

### TV Distribution: ASI inputs / COFDM outputs

[▶ Back to product index](#)

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#### MO-160 DVB-T Modulator

Modulates an ASI or SPI Transport Stream input to a COFDM channel in the 475-875 MHz band.



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#### MO-161 DVB-T Modulator

Modulates an ASI or SPI Transport Stream input to a COFDM channel in the 45-875 MHz band.



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## PRODUCTS

### TV Distribution: Analogue A/V inputs / COFDM outputs

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#### MO-160 DVB-T Modulator

Modulates an ASI or SPI Transport Stream input to a COFDM channel in the 475-875 MHz band.



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#### MO-161 DVB-T Modulator

Modulates an ASI or SPI Transport Stream input to a COFDM channel in the 45-875 MHz band.



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▶ [Back to TV Distribution: ASI inputs / COFDM outputs](#)

More products in this family

## MO-160 DVB-T Modulator

The **MO-160** is a general purpose **DVB-T** modulator built in a 1 unit for 19" rack according to the ETSI EN 300 744 v1.5.1 DVB-T specification.

The unit has two ASI inputs for MPEG-2 Transport Stream. The output is a COFDM modulated signal with a selectable frequency or channel **from 475 MHz to 875 MHz**.

The digital codification and modulation process has been implemented over own PROMAX intellectual property programmable logic devices. This is the reason why we can warrant an optimal yield with a very competitive cost.

The **MO-160** is ideal for TV distribution applications specially when the advantages of COFDM modulation is required but at same time the distribution cost per program has to be within a budget.



 Click on the image to enlarge it.

### HD

Services included in the transport stream can be audio, video or data in **MPEG-2**, **MPEG-4** formats and can correspond to **free to air** or **encrypted** programs in standard definition (**SDTV**) or high definition (**HDTV**).

<b>MPEG-2 TS INPUT</b>	2x DVB-ASI, 1x DVB-SPI TS packets of 188 or 204 bytes (auto detect) Const. avg. TS packet rate in slave mode (no packet stuffing) Packet stuffing and PCR re-stamping in master mode
<b>OUTPUTS IF OUTPUT RF OUTPUT</b>	Fixed at 36 MHz (when RF output is off) / 0 dBm fixed 475-875 MHz (1 Hz steps), -87 to -27 dBm (1dB steps, optional up to +6 dBm)
<b>OPERATING MODES</b>	MASTER or SLAVE
<b>PROGRAM SELECTION</b>	Service selection without table rebuilding (PID Filtering)
<b>DVB-T/H PARAMETERS IFFT SIZE GUARD INTERVALS CODE RATES CONSTELLATIONS HIERARCHICAL MODES CHANNEL BANDWIDTH MFN OPERATION</b>	2k, 8k 1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 QPSK, 16QAM, 64QAM 16QAM and 64QAM with constellation ratio $\alpha = 1, 2$ or 4 6, 7, 8 MHz (user-selectable) Available
<b>REMOTE CONTROL</b>	RS-232C interface (DB-9 male connector)

► [Back to TV Distribution: ASI inputs / COFDM outputs](#)

More products in this family

## MO-161 DVB-T Modulator

The **MO-161** is a general purpose **DVB-T** modulator built in a 1 unit for 19" rack according to the ETSI EN 300 744 v1.5.1 DVB-T specification.

The unit has two ASI inputs for MPEG-2 Transport Stream. The output is a COFDM modulated signal with a selectable frequency or channel **from 45 MHz to 875 MHz**.


The digital codification and modulation process has been implemented over own PROMAX intellectual property programmable logic devices. This is the reason why we can warrant an optimal yield with a very competitive cost.

The **MO-160** is ideal for TV distribution applications specially when the advantages of COFDM modulation is required but at same time the distribution cost per program has to be within a budget.

### HD

Services included in the transport stream can be audio, video or data in **MPEG-2**, **MPEG-4** formats and can correspond to **free to air** or **encrypted** programs in standard definition (**SDTV**) or high definition (**HDTV**).



 Click on the image to enlarge it.

<b>MPEG-2 TS INPUT</b>	2x DVB-ASI, 1x DVB-SPI TS packets of 188 or 204 bytes (auto detect) Const. avg. TS packet rate in slave mode (no packet stuffing) Packet stuffing and PCR re-stamping in master mode
<b>OUTPUTS IF OUTPUT RF OUTPUT</b>	Fixed at 36 MHz (when RF output is off) / 0 dBm fixed 45-875 MHz (1 Hz steps), -87 to -27 dBm (1dB steps, optional up to +6 dBm)
<b>OPERATING MODES</b>	MASTER or SLAVE
<b>PROGRAM SELECTION</b>	Service selection without table rebuilding (PID Filtering)
<b>DVB-T/H PARAMETERS IFFT SIZE GUARD INTERVALS CODE RATES CONSTELLATIONS HIERARCHICAL MODES CHANNEL BANDWIDTH MFN OPERATION</b>	2k, 8k 1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 QPSK, 16QAM, 64QAM 16QAM and 64QAM with constellation ratio $\alpha = 1, 2$ or 4 6, 7, 8 MHz (user-selectable) Available
<b>REMOTE CONTROL</b>	RS-232C interface (DB-9 male connector)

# PRODUCTS

## TV Distribution: QPSK inputs / COFDM outputs

[▶ Back to product index](#)

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### MO-162 QPSK to COFDM Transmodulator

Allows selection of a number of services from a satellite transponder and converts them directly in a COFDM multiplex. Covers from 475 to 875 MHz band.



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### MO-163 QPSK to COFDM Transmodulator

Allows selection of a number of services from a satellite transponder and converts them directly in a COFDM multiplex. Covers from 45 to 875 MHz band.



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► [Back to TV Distribution: QPSK inputs / COFDM outputs](#)

More products in this family

## MO-162 QPSK to COFDM Transmodulator

The **MO-162** is a direct **QPSK to COFDM transmodulator**. It is built in a 1 unit for 19" rack according to the ETSI EN 300 744 v1.5.1 DVB-T specification.

Allows selection of a number of services from a satellite transponder within the satellite IF band from 950 to 2150 MHz and modulates them directly within a COFDM Digital Terrestrial Television multiplex in the **475 to 875 MHz** range.


The digital codification and modulation process has been implemented over own PROMAX intellectual property programmable logic devices. This is the reason why we can warrant an optimal yield with a very competitive cost.

The **MO-162** is ideal for TV distribution applications specially when the advantages of COFDM modulation is required but at same time the distribution cost per programme has to be within a budget.

### HD

Services included in the transport stream can be audio, video or data in **MPEG-2**, **MPEG-4** formats and can correspond to **free to air** or **encrypted** programs in standard definition (**SDTV**) or high definition (**HDTV**).



 Click on the image to enlarge it.

<b>INPUTS</b> <b>QPSK INPUT</b>	950 - 2150 MHz / -65 dBm to -25 dBm F female connector
<b>MPEG-2 TS INPUT</b>	2x DVB-ASI, 75 Ω BNC female connector TS packets of 188 or 204 bytes (auto detect) Const. avg. TS packet rate in slave mode (no packet stuff) Packet stuffing and PCR re-stamping in master mode
<b>OUTPUTS</b> <b>IF OUTPUT</b> <b>RF OUTPUT</b>	Fixed at 36 MHz (when RF output is off) / 0 dBm fixed 475 - 875 MHz (1 Hz steps), -87 to -27 dBm (1dB steps, optional up to +6 dBm)
<b>PROGRAM SELECTION</b>	Transponder selection by frequency and Service selection without table rebuilding (PID Filtering)
<b>DVB-T PARAMETERS</b> <b>IFFT SIZE</b> <b>GUARD INTERVALS</b> <b>CODE RATES</b> <b>CONSTELLATIONS</b> <b>CHANNEL BANDWIDTH</b> <b>MFN OPERATION</b>	2k, 8k 1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 QPSK, 16QAM, 64QAM a ≤ 1, 2, 4 6, 7, 8 MHz (user-selectable) Available
<b>REMOTE CONTROL</b>	Fast Ethernet (RJ45 Connector) (Optional: SNMP Protocol)

► [Back to TV Distribution: QPSK inputs / COFDM outputs](#)

More products in this family

## MO-163 QPSK to COFDM Transmodulator

The **MO-163** is a direct **QPSK to COFDM transmodulator**. It is built in a 1 unit for 19" rack according to the ETSI EN 300 744 v1.5.1 DVB-T specification.

Allows selection of a number of services from a satellite transponder within the satellite IF band from 950 to 2150 MHz and modulates them directly within a COFDM Digital Terrestrial Television multiplex in the **45 to 875 MHz** range.


The digital codification and modulation process has been implemented over own PROMAX intellectual property programmable logic devices. This is the reason why we can warrant an optimal yield with a very competitive cost.

The **MO-163** is ideal for TV distribution applications specially when the advantages of COFDM modulation is required but at same time the distribution cost per programme has to be within a budget.

### **HD**

Services included in the transport stream can be audio, video or data in **MPEG-2**, **MPEG-4** formats and can correspond to **free to air** or **encrypted** programs in standard definition (**SDTV**) or high definition (**HDTV**).



 Click on the image to enlarge it.

<b>INPUTS</b>	
<b>QPSK INPUT</b>	950 - 2150 MHz / -65 dBm to -25 dBm F female connector
<b>MPEG-2 TS INPUT</b>	2x DVB-ASI, 75 Ω BNC female connector TS packets of 188 or 204 bytes (auto detect) Const. avg. TS packet rate in slave mode (no packet stuff) Packet stuffing and PCR re-stamping in master mode
<b>OUTPUTS</b>	
<b>IF OUTPUT</b>	Fixed at 36 MHz (when RF output is off) / 0 dBm fixed
<b>RF OUTPUT</b>	45 - 875 MHz (1 Hz steps), -87 to -27 dBm (1dB steps, optional up to +6 dBm)
<b>PROGRAM SELECTION</b>	Transponder selection by frequency and Service selection without table rebuilding (PID Filtering)
<b>DVB-T PARAMETERS</b>	
<b>IFFT SIZE</b>	2k, 8k
<b>GUARD INTERVALS</b>	1/4, 1/8, 1/16, 1/32
<b>CODE RATES</b>	1/2, 2/3, 3/4, 5/6, 7/8
<b>CONSTELLATIONS</b>	QPSK, 16QAM, 64QAM a ≤ 1, 2, 4
<b>CHANNEL BANDWIDTH</b>	6, 7, 8 MHz (user-selectable)
<b>MFN OPERATION</b>	Available
<b>REMOTE CONTROL</b>	Fast Ethernet (RJ45 Connector) (Optional: SNMP Protocol)

# PRODUCTS


## TV Distribution: Power Amplifiers & Combiners

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### TD-500 COFDM DVB-T Professional Combiner & Splitter

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Combiner with up to 4 modules of 4 inputs each and 1 output or splitter with up to 4 modules of 1 input and 4 outputs. One unit 19 inch rack mount.

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### TD-522 22 dBm DVB-T RF Signal Combiner Amplifier

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DVB-T (COFDM) combiner (4 inputs, 1 outputs), providing 46 dB amplification and 22 dBm power.

[▶ More information...](#)



► [Back to TV Distribution: Power Amplifiers & Combiners](#)

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## TD-500 COFDM DVB-T Professional Combiner & Splitter

The **TD-500** is a general purpose **DVB-T combinator and distributor** to be assembled in a 19-inches 1U-height rack. The equipment, in its basic configuration, has **two identical internal modules** including **4 inputs and 1 output** or **1 input and 4 outputs**. Anyone of these modules can be used as combinator or distributor.

The equipment can be delivered with different configurations and offers up to 4 combinator / distributor modules with 2 and 4 inputs (refer to PROMAX for availability). Each one of these modules is bi-directional, being those of 2 input/output that which offers less loss.

The basic **TD-500** can combine **4 RF signals** coming from 4 modulators and to distribute the combined RF signal to 4 distribution lines.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	45 MHz to 875 MHz
<b>TOTAL INSERTION LOSSES</b> 45 MHz to 50 MHz 50 MHz to 450 MHz 450MHz to 900 MHz	6.9 dB (typical) / 7.3 dB (max.) 7.3 dB (typical) / 8.1 dB (max.) 8.1 dB (typical) / 9.3 dB (max.)
<b>ISOLATION</b> 45 MHz to 50 MHz 50 MHz to 450 MHz 450MHz to 900 MHz	22 dB (typical) / 20 dB (min.) 28 dB (typical) / 20 dB (min.) 22 dB (typical) / 15 dB (min.)
<b>RETURN LOSSES</b> 45 MHz to 875 MHz	25 dB (typical), 16 dB (min.)
<b>COMBINATOR MODE</b>	4 inputs, 1 output (RF 50Ω BNC female)
<b>COMBINATOR MODE</b>	1 input, 4 outputs (RF 50Ω BNC female)

▶ [Back to TV Distribution: Power Amplifiers & Combiners](#)

More products in this family

## TD-522 22 dBm DVB-T RF Signal Combiner Amplifier

The **TD-522** is a combiner to be assembled in a rack cabinet of 19 inches and 1U height. It is an instrument designed to combine different RF (**COFDM**) signals in DVB-T format. The system provides 46 dBm amplification and an output power of 130 dBμV (+22 dBm) which allows offair distribution in reduced areas.

The **TD-522** can combine up to 4 RF input signals from different sources, such as **DTT** signals, **CCTVs**, modulators and more, distributing the combined RF output signal through the distribution network.

This is a solution of higher quality than those often used by Z connections, due to it preserves the original quality better and maintains lower noise levels.



Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	From 50 MHz to 860 MHz
<b>MODULATION</b>	COFDM
<b>RF OUTPUT COFDM POWER GAIN MAX. OUTPUT LEVEL</b>	22 dBm 46 dB ±3 dB between each input - output 1 channel to 130 dBμV, 2 channels to 127 dBμV, 4 channels to 124 dBμV and 8 channels to 121 dBμV
<b>RF INPUT MAX. COFDM INPUT LEVEL</b>	4 inputs 1 channel to 84 dBμV ± 3dB, 2 channels to 81 dBμV ± 3 dB, 4 channels to 78 dBμV ± 3 dBμV and 8 channels to 75 dBμV ± 3 dB

# PRODUCTS

## Technology training systems

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### EC-696 Analogue Communications training system

This is an emitters, transmission channels, receivers, modulators and demodulators system designed to be an easy to set up analogue transmission system.



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### EC-796 Digital Communications training system

This equipment, designed for teaching digital transmission systems, consists in the emitter and receiver (easy to set up) modules.



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### EF-970 Fibre Optic communications training system

It makes easy training, demonstrating and experimenting the Fibre Optics communication system, as well as the actual latest tendencies.



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### EU-850 Universal Digital TV receiver trainer

Oriented to the learning of the theoretical and practical contents about the operation of the digital television receivers as well as the basis and the processes related to the transmission, reception and distribution of the digital television.



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## EC-696 Analogue Communications training system

It is composed of two modules, the emitter and the receiver. It has several types of emitters, transmission channels, receivers, modulators and demodulators, in order to configure various analogue transmission systems. For instance, it permits to compare the advantages of several transmission systems over others, including those fibre-optics based, or to analyse interference phenomena between channels.



 Click on the image to enlarge it.

<b>MODULATIONS</b>	AM, FM, PWM, FDM
<b>INPUT / OUTPUT</b>	Generator, microphone / Oscilloscope, headphones
<b>TRANSMISSION</b>	Two-wire, coaxial, Fibre Optics, Infra Red & Radio


[▶ Back to Technology training systems](#)

More products in this family

## EC-796 Digital Communications training system

It is composed of two modules, the emitter and the receiver. It has several types of emitters, transmission channels, receivers, modulators and demodulators, in order to configure various digital transmission systems. For instance, it permits to compare the advantages of several transmission systems over others, including those fibre-optics based, or to analyse interference phenomena between channels.



 Click on the image to enlarge it.

<b>MODULATIONS</b>	ASK, FSK, BPSK, QAM, QPSK, DQPSK
<b>INPUTS</b>	Generator, microphone/oscilloscope, headphone
<b>TRANSMISSION</b>	Two-wire, coaxial, Optical fibre, Infra Red, Radio

[▶ Back to Technology training systems](#)

More products in this family ▼

### EF-970 Fibre Optic communications training system

The **EF-970** professional trainer is an innovative training system, designed for the learning, demonstration and experimentation with the Fibre Optics communication systems, the phenomenon related to light and the principles of transmission through Optical Fibres; as well as the latest tendencies like LASER and WDM systems.



<b>EMITTER KIT</b>	Two independent channels, with LED and laser-photoemitters. 8 inputs, BF generator, miliammeter
<b>RECEIVER KIT</b>	With calibrated optical power meter.
<b>OP-970-1</b>	4 optical inputs, the analogue channel has a gain of 40 dB Conjunto de accesorios para prácticas, incluye posicionador óptico, un atenuador y un acoplador variable de fibra
<b>OP-970-2</b>	Conjunto de accesorios para prácticas de conexionado

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More products in this family ▼

### EU-850 Universal Digital TV receiver trainer

The Trainer Universal Digital TV Receiver **EU-850** is a didactic equipment oriented to the learning of the theoretical and practical contents about the operation of the digital television receivers (satellite, terrestrial and cable) as well as the basis and the processes related to the transmission, reception and distribution of the digital television (COFDM, QPSK and QAM).



The equipment includes a **5"-TFT hi-res graphical display**, that allows the visualisation of the digital channels tuned (and the analogue channels when terrestrial reception), and also offers all the features of a **professional field strength meter**.

<b>TUNING</b>	45 to 865 MHz and from 950 to 2150 MHz
<b>RECEPTION ANALOGUE DIGITAL</b>	Terrestrial (PAL, SECAM and NTSC systems) Terrestrial (COFDM), Satellite (QPSK) and Cable (QAM) Video: MPEG-2 / DVB (MP@ML) format Service list decodification. List of services and PIDs
<b>DIGITAL MEASUREMENTS DVB-T (COFDM) DVB-C (QAM) DVB-S (QPSK)</b>	Power, CBER, VBER, MER, C/N Power, BER, MER, C/N Power, CBER, VBER, MER, C/N
<b>FUNCTIONS</b>	Identification of Analogue and Digital signals automatically, Active block diagram with Test Points, External Units power supply, signal of 22 kHz and DiSeqC 1.2 Spectrum analyser

# PRODUCTS

## Consumer electronics training systems

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### ET-893 Flat Screen Digital Terrestrial Television Training System

Designed for or the learning of the TFT-LCD and Plasma flat screen television sets operation, as well as Digital Terrestrial Television (DVB-T).



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### ET-892 Flat Screen Television Trainer

For the learning of the flat screen television sets operation equipped with TFT-LCD and Plasma technology.



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### EU-850 Universal Digital TV receiver trainer

Oriented to the learning of the theoretical and practical contents about the operation of the digital television receivers as well as the basis and the processes related to the transmission, reception and distribution of the digital television.



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### EV-830 Video trainer

This is a VHS video trainer system to assimilate the operation and repair techniques, allowing to simulate over 35 real failures.



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### ER-832 Radio training system

Advanced LW, AM and FM radio training system with fault simulator, equipped with the RDS system.



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### ED-845 DVD & CD training system

This equipment is destined to the study of the latest audio/video technology on DVD format. Consists of a DVD/CD player with fault simulator module, block diagram with test points incorporated and complete manuals.



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### EP-834 Power Amplifier trainer

Amplifier trainer equipped with 6 audio inputs, filters, listening directly from the input, fault generator and block diagram.



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### EO-865 Personal Computer training system

This multimedia PC training system is composed of widely spread and high reliability hardware components manufactured with the latest technology.



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### ET-836 Analogue / Digital Telephony training system (ISDN)

It allows the theory and practice of PABX and internal telephone networks. With a PABX exchange, ISDN terminals, charging generator modules, fault generator, etc.



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### EA-815 Universal Antenna training system

The television antenna training system has an erasable board, which allows to draw notes and measurements beside each component.



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## ET-893 Flat Screen Digital Terrestrial Television Training System

The **ET-893** is a suitable equipment for the learning of the flat screen television sets operation equipped with TFT-LCD and Plasma technology that allows the student to become familiar with the more advanced technological innovations, as well as Digital Terrestrial Television (DVB-T). The trainer includes a failures generation module.

The **ET-893** block diagram shows through an intuitive way the different stages that compounds the flat screen receiver.



 [Click on the image to enlarge it.](#)

<b>SCREEN</b>	20", 4:3 format (640x480 pixels) with OSD Systems: DVB-T, PAL B/G/I/D/K, SECAM B/G/D/K/L SCART and A/V outputs
<b>BLOCK DIAGRAM</b>	Power supply, IF and Demodulador, Video Processing, Audio Processing, System Control, Inputs/Outputs, Climbing circuit
<b>DOCUMENTATION</b>	Training Manual, Teacher's Manual, Exercises Manual, Technical Documentation, Circuits Description Manual


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## ET-892 Flat Screen Television Trainer

The **ET-892** is a suitable equipment for the learning of the flat screen television sets operation equipped with TFT-LCD and Plasma technology that allows the student to become familiar with the more advanced technological innovations, as well as in the audio reception by means of stereo/dual through analogue (Zweitton) and digital (Nicom) systems. The trainer includes a failures generation module.



 [Click on the image to enlarge it.](#)

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## EU-850 Universal Digital TV receiver trainer

The Trainer Universal Digital TV Receiver **EU-850** is a didactic equipment oriented to the learning of the theoretical and practical contents about the operation of the digital television receivers (satellite, terrestrial and cable) as well as the basis and the processes related to the transmission, reception and distribution of the digital television (COFDM, QPSK and QAM).

The equipment includes a **5"-TFT hi-res graphical display**, that allows the visualisation of the digital channels tuned (and the analogue channels when terrestrial reception), and also offers all the features of a **professional field strength meter**.



Click on the image to enlarge it.

<b>TUNING</b>	45 to 865 MHz and from 950 to 2150 MHz
<b>RECEPTION ANALOGUE DIGITAL</b>	Terrestrial (PAL, SECAM and NTSC systems) Terrestrial (COFDM), Satellite (QPSK) and Cable (QAM) Video: MPEG-2 / DVB (MP@ML) format Service list decodification. List of services and PIDs
<b>DIGITAL MEASUREMENTS DVB-T (COFDM) DVB-C (QAM) DVB-S (QPSK)</b>	Power, CBER, VBER, MER, C/N Power, BER, MER, C/N Power, CBER, VBER, MER, C/N
<b>FUNCTIONS</b>	Identification of Analogue and Digital signals automatically, Active block diagram with Test Points, External Units power supply, signal of 22 kHz and DiSEqC 1.2 Spectrum analyser

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## EV-830 Video trainer

The **EV-830** video trainer is a teaching equipment which makes it possible to assimilate, in an easy and enjoyable manner, the operation and the repair techniques of VHS video, allowing to simulate various real failures for PAL systems.



Click on the image to enlarge it.

<b>TEST POINTS</b>	Accessible from the Block Diagram
<b>FAULT SIMULATOR</b>	By micro-switches on a locked compartment
<b>DOCUMENTATION</b>	Theory, practical and professor manuals

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## ER-832 Radio training system


The **ER-832** trainer is intended for the study and practice of advanced radio receivers. The incorporated fault simulator module permits to practice units diagnosis and repairing methods. The **ER-832** has been designed from a stereo radio tuner equipped with the RDS system and with the most advanced reception circuits.



 Click on the image to enlarge it.

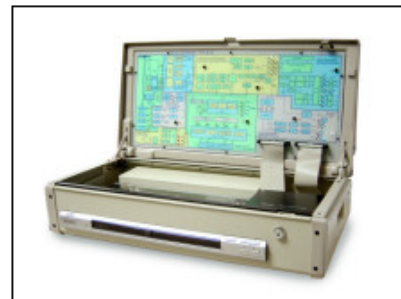
<b>TEST POINTS</b>	Accessible from the Block Diagram
<b>FAULT SIMULATOR</b>	By micro-switches on a locked compartment
<b>DOCUMENTATION</b>	Theory, practical and professor manuals


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More products in this family 

## ED-845 DVD & CD training system

Destinated to the theoretical-practical study of a DVD & CD player, the **ED-845** allows to observe the internal composition of the mechanics, analyze the signals that take part of the operation, and to simulate several faults for the study of troubleshooting and diagnostic methods. Includes documentation (theory, practical and professor manuals), a DVD and a CD disc, remote control and a block diagram that shows the generic structure of a player.



 Click on the image to enlarge it.

<b>SIGNAL FORMAT</b>	PAL/NTSC (without transcoding)
<b>AUDIO RANGE</b>	DDVD (PCM 96 kHz) 0,2 up to 44 kHz, $\pm 1$ dB DVD (PCM 48 kHz) 0,2 up to 22 kHz, $\pm 0,5$ dB CD 0,2 up to 20 kHz
<b>DYNAMIC RANGE</b>	103 dB (DVD), 99 dB (CD)
<b>AUDIO SYSTEMS</b>	MPEG-2, AC-3 5.1 canales, Dolby surround Pro-Logic, PCM 1 up to 8 channels, DTS 6 channels


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More products in this family 

### EP-834 Power Amplifier trainer

Equipped with MOFSET transistor circuits, this power amplifier trainer is intended for the comprehension of amplifier circuits and practices repairing it, thanks to the incorporated fault generator. The **EP-834** has 6 audio inputs, a block diagram (input signal sources, filters, equalizers), and comes with manuals, speakers and a remote commander.



 Click on the image to enlarge it.

<b>DIN POWER OUT</b>	70 + 70 W (DIN 4Ω to 1 kHz)
<b>AUDIO INPUTS</b>	PHONO, TUNER, CD, AUX, TAPE1/DAT, TAPE2/MD
<b>FREQUENCY RESPOSE</b>	(PHONO) 20 Hz - 20 kHz, RIAA equalisation curve ± 1 dB (Rest) 7 Hz - 70 kHz ± 0,3 dB
<b>S/N RATIO</b>	(PHONO): 80 dB (Rest): 105 dB


[▶ Back to Consumer electronics training systems](#)

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### EO-865 Personal Computer training system

The **EO-865** permits the assembly, installation and configuration of all the components composing a multimedia PC of latest generation. It is composed of widely spread and high reliability hardware components manufactured with the latest technology. Its multiple test points enable the main electrical signals, with the aim that the student may establish failure diagnostic and repairing methods.



 Click on the image to enlarge it.

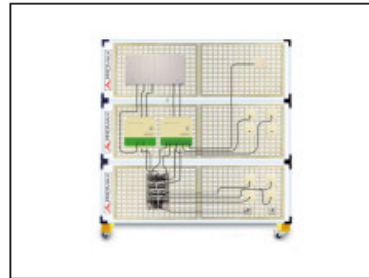
<b>SYSTEM FEATURES</b>	INTEL motherboard, Intel Core™ 2 Duo 2,2 GHz processor 1 GB DDR2 (800 MHz) 3 x PCI Express slots + 2 x PCI slots 8 USB ports + 1 serial port + 1 parallel port 8 Serial ATA channels High Definition AC'97 audio system PCI Express video card (64 MB) SATA 500 GB hard disk 3½ 1,44 MB disk drive + DVD IDE x16 Internal 56,000 bps Modem/Fax Multimedia 15" color monitor
<b>TEST POINTS</b>	Accessible from the Block Diagram
<b>FAULT SIMMULATOR</b>	By micro-switches on a locked compartment
<b>DOCUMENTATION</b>	Theory, practical and professor manuals


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## ET-836 Analogue / Digital Telephony training system (ISDN)

The **ET-836** is intended for the learning of the theory and practising of the central commutation and interior telephony networks. It incorporates a PABX exchange, internal telephone lines (analogue and RDSI), an external line simulator, tariff generator modules, channel simulator, fault simulator and connection points for analogue and digital (ISDN) terminals. It can be connected via modem and directly to a PC.



 Click on the image to enlarge it.

- \* Last generation of telephone station ISDN / analogue
- \* 2 internal analogue lines
- \* 4 external analogue lines
- \* 4 external basic access So (B+B+D)  
(it allows the connexion un to 8 independent ISDN extensions)
- \* Programming and configuration of the telephone station through PC
- \* Simulation of an urban analogue station and the circuits of tarification

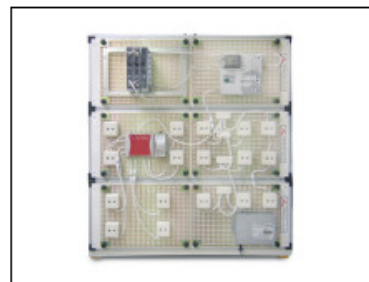
[▶ Back to Consumer electronics training systems](#)


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## EA-815 Universal Antenna training system

The **EA-815** Antenna Trainer is a system of integral education destined to the learning, demonstration and experimentation of the theory and the practice of the facilities of **MATV**, **SMATV**, **CATV** as well as to the development of the skills of installation and assembly.

Jointly with the trainer one provides a **digital terrestrial TV** receiver and a **satellite digital television** receiver, as well as a **FI simulator** for the analysis of this band in the facilities and accessories for the aiming of the antennas. In order to be able to implement other tipologies of facilities or to modify the provided installation, one includes coaxial cable, connectors, a tool for coaxial cable and elements of fixation.



 Click on the image to enlarge it.

The trainer provides itself with an **installation mounted and formed**, so that the equipment this immediately operative one from the first day, with no need to carry out connections nor adjustments.

<b>ANTENNAS</b>	UHF Antenna Off-set antenna (reflector, 4-output LNB, accessories)
<b>HEAD EQUIPMENT</b> <b>MATV</b> <b>SMATV by RF</b>	8 x UHF programmable amplifiers, 1x VHF amplifier 2 x IF-UHF programmable internal units, universal programmer
<b>ACCESSORIES</b>	Inclinometer, compass, IF simulator (RP-050), coaxial cable, connectors, coaxial cables tool, adaptation loads, bridges...



# PRODUCTS

## Industrial electronics training systems

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### TM-683 Microprocessor training system

It is intended for developing and debugging application programs related with the 68000 Microprocessor.



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### TM-311 Microcontroller training system

This microcontroller trainer, based on the 80537 microcontroller, is designed to teach programming and use of the most commonly used commercial microcontrollers.



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## TM-683 Microprocessor training system

It is intended for developing and debugging application programs related with the 68000 Microprocessor, by using a personal computer or a terminal as control elements. The software supplied is a three-module structure: Monitor, Simulator and Assembler programs.



 Click on the image to enlarge it.

<b>SOFTWARE</b>	Memory, CPU registers, files, block and port handling
-----------------	---

<b>HARDWARE</b>	CPU: $\mu$ P 68000 at 8 MHz without wait states Memory: 64 k words of 16 bits, expandable up to 64 k Inputs and outputs, expansion, control signals
-----------------	---


▶ [Back to Industrial electronics training systems](#)

More products in this family

## TM-311 Microcontroller training system

The **TM-311** microcontroller trainer has been specifically designed to quickly and efficiently teach programming and use of the most commonly used commercial microcontrollers on the market,. The instrument is based on the 80537 microcontroller whose main characteristic is its complete compatibility with the 8031/8051 range of microcontrollers, widely distributed through industry.



 Click on the image to enlarge it.

<b>CHARACTERISTICS</b>	Equipped with a 80537 microcontroller, 32 k EPROM and 32 k static RAM (program code), 32 k RAM (data), expansion connector, RS-232C/485 ports for PC
------------------------	--

<b>FEATURES</b>	Software (assembler, diagnosis and simulator), RS-232C cable, technical documentation
-----------------	---



# PRODUCTS

## Networks and Telephony

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### TC-471 LAN and telephone cable tracer

Wiring test for computer Local Area Networks (LAN) and telephony on little length and extension applications, that they do not require to be "registered".



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More information...



### TC-470 Cable tracer

Suitable for identification and maintenance of telephony networks and also for testing any kind of lines not-connected to the mains.



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### TC-475 Mains cable tracer (Power Line)

Wiring tracer for lines connected to the mains. It is ideal for applications like PLC (Power Line Communications), Domotics, and in general the drawn up of network cables for low voltage distribution.




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### TC-471 LAN and telephone cable tracer


The **TC-471** cable tester is a portable instrument whose function is to test the wiring in communication networks. Among its functions we should point out: wiring identification using terminators, short-circuit and open circuit verification.



 Click on the image to enlarge it.

<b>WIRING TYPES</b>	T568A/B, USOC, 10BASE-T, BNC/10BASE-2, TOKEN, RING, TP-PMD
<b>LCD INDICATOR</b>	2 lines by 12 characters

[▶ Back to Networks and Telephony](#)

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### TC-470 Cable tracer

The **TC-470** wiring tracer is a modern, easy-to-use instrument made up of a tone generator and an amplification probe which has been specifically designed to easily and unaggressively identify and trace cables (working in conjunction with the tone generator).



 Click on the image to enlarge it.

<b>GAIN CONTROL</b>	In order to increase sensitivity
<b>BATTERY</b>	9 V

[▶ Back to Networks and Telephony](#)[More products in this family](#)

## TC-475 Mains cable tracer (Power Line)

The cable tracer **TC-475** is an instrument designed to identify an electrical lead within amount of a set of electrical leads, locate leads in electrical installations, leads into walls and to assign electrical circuits to protection devices. In addition, it can be used for install or inspect a PLC line (Internet / Data transmission using the electric network). This device consists of a transmitter and a receiver.



<b>FREQUENCY MARGIN</b>	30 - 70 Hz
<b>CONSUMPTION</b>	1 W approx.
<b>DEPTH</b>	Up to 40 cm.
<b>SENSIBILITY</b>	Variable



# PRODUCTS

## Radio frequency (RF)

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### AE-966, AE-967 3 GHz Spectrum analysers

3 GHz spectrum analysers with a wide range of functions and tracking generator (AE-967). VGA, USB and RS-232 outputs.



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### AE-766, AE-767 Spectrum analyser

Designed for minimal set-up and adjustment, besides, the user interface allows fast and accurate measurements. The AE-767 includes a Tracking Generator.



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### AC-725 Radio Communications analyser

It is able to work in a bandwidth from 20 MHz up to 2.5 GHz.



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### GR-205 2 GHz Synthesised generator

2 GHz RF signal generator (150 kHz - 2000 MHz) with a 10 Hz accuracy.



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### GR-104 1 GHz Synthesised generator

1 GHz RF signal generator (10 MHz - 1000 MHz) with a 1 kHz accuracy.



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### GB-212 LF generator

Versatile generator for frequencies between 20 Hz and 200 kHz, with square and sinusoidal signal outputs.



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### FD-252 Digital frequency counter

The instrument is equipped, in addition to the 20 Hz-160 MHz input, a second input for measurement up to 2.4 GHz with an impedance of 50 Ohms.



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### IC-002 Multi-range RF Wattmeter

An accurate, portable, RF power meter.



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### IC-500, IC-501, IC-502 Artificial loads

The three artificial loads have coaxial input.



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## AE-966, AE-967 3 GHz Spectrum analysers

The **AE-966** / **AE-967** spectrum analysers cover a frequency band from **9 kHz** to **3 GHz** and allow a stable operation with span of 2 kHz/div to 3 GHz/div.

The **AE-966** is the basic model whereas the **AE-967** includes a **Tracking Generator**, which turns the AE-967 into a highly useful tool for the response measurement of filters, amplifiers, attenuators and, generally speaking, any kind of radio frequency system.

The plentiful measurement functions like markers, traces, power measurement, limit line, dual display and trigger make measurement more easily and quickly. The exit direct **VGA** is ideal to realize presentations. Includes **USB** interface to connect the spectrum analyser to a printer and a flash memory, and **RS-232** interface to connect to a PC. The high resolution color **TFT** monitor allows a clear reading of the on-screen measurements.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	From 9 kHz to 3 GHz
<b>BANDWIDTH</b>	3 kHz, 30 kHz, 300 kHz, 4 MHz
<b>TRACKING GENERATOR</b>	Only AE-967
<b>MEASUREMENT FUNCTIONS</b>	Phase jitter, OCBW, divisible screen, trigger, ACPR (adjacent power), markers, marker tracker, amplitude, pre-compensation, NdB (channel bandwidth covering the specified amplitude)
<b>ADVANCED OPTIONS</b>	Record and execute macros, limit lines, GO/NoGO test
<b>OPTIONAL</b>	GPIB interface, AM/FM & RBW demodulator, 10 dB preamplifier


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More products in this family ▼

## AE-766, AE-767 Spectrum analyser

The **AE-766** & **AE-767** are designed for minimal set-up and adjustment, besides, the user interface allows fast and accurate measurements. The **AE-767** includes a Tracking Generator.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	150 kHz up to 1 GHz
<b>6 ½ DIGIT DISPLAY</b>	
<b>SOFTWARE TO GET TRACE FROM PC THROUGH RS-232</b>	
<b>TRACKING FREQUENCY (AE-767) FROM 10 MHz to 1000 MHz</b>	

[▶ Back to Radio frequency \(RF\)](#)

More products in this family ▼

## AC-725 Radio Communications analyser

The Radio communications Analyser **AC-725** has been specially designed for the RF level tests, Modulation and Frequency simultaneously. It is able to work in a bandwidth from 20 MHz up to 2,5 GHz.



 Click on the image to enlarge it.

<b>BANDWIDTH</b>	20 MHz up to 2.5 GHz
<b>LEVEL</b>	-30 dBm up to 20 dBm
<b>FM MEASUREMENTS</b>	100, 50, 30, 10, FM3
<b>AM MEASUREMENTS</b>	100, 50, 30, 10%
<b>OUTPUT SIGNAL</b>	25 Hz up to 50 kHz


[▶ Back to Radio frequency \(RF\)](#)

More products in this family

## GR-205 2 GHz Synthesised generator

In this new version of the **GR-104**, the frequency range has been increased up to 2 GHz and the resolution up to 10 Hz. The **GR-205** introduces new functions as PM & AM modulators.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	150 kHz to 2000 MHz
<b>RESOLUTION</b>	10 kHz


[▶ Back to Radio frequency \(RF\)](#)

More products in this family

## GR-104 1 GHz Synthesised generator


The **GR-104** is a low cost, synthesized RF signal generator which incorporates the essential features required for most developments: test and service work-frequency accuracy and stability, wide dynamic range, low phase noise and low leak-age.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	10 MHz to 1000 MHz
<b>RESOLUTION</b>	1 kHz 1 kHz by direct keyboard entry, or in user-set increments of 1 kHz to 999.999 MHz by rotary control or increment-decrement keys
<b>PHASE NOISE</b>	-110 dBc/Hz at 25 kHz offset, 500 MHz carrier
<b>ACCURACY</b>	± 2 ppm over temperature range 5°C to 40°C


[▶ Back to Radio frequency \(RF\)](#)

More products in this family 

## GB-212 LF generator


The **GB-212** oscillator is a versatile generator for frequencies between 20 Hz and 200 kHz, with square and sinusoidal signal outputs. The harmonic distortion of the signal is very low, which makes it very suitable for high fidelity, equalizer testing, amplifier response, etc.



 Click on the image to enlarge it.

<b>FREQUENCY</b>	20 Hz to 200 kHz
<b>OUTPUT CONTROL</b>	Continuous, attenuator 0 to 60 dB (20 dB steps)


[▶ Back to Radio frequency \(RF\)](#)

More products in this family 

## FD-252 Digital frequency counter

The **FD-252** digital frequency counter is designed for application that require a high frequency range. For that purpose the instrument is equipped, in addition to the 20 Hz-160 MHz input, a second input for measurement up to 2.4 GHz with an impedance of 50 Ohms.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	20 Hz to 160 MHz (input A) 100 MHz to 2.4 GHz (input B)
<b>INPUT IMPEDANCE</b>	1 M $\Omega$ // 35 pF (input A) 50 $\Omega$ (input B)
<b>MAXIMUM INPUT VOLTAGE</b>	250 V AC to 100 kHz (input A) 100 V DC or peak AC (50 Hz) RF + 18 dBm (input B)

[▶ Back to Radio frequency \(RF\)](#)[More products in this family](#)

## IC-002 Multi-range RF Wattmeter

It is an accurate, portable, RF power meter using a Rotary Detection Component to measure Direct and Reflected Power in 5 selectable power ranges. Model **81050** includes "Quick Match" type connectors for greater versatility.

[Click on the image to enlarge it.](#)

<b>FREQUENCY RANGE</b>	25 to 1,000 MHz
<b>CONECTORES</b>	"Quick Match", standard N female type (BNC, UHF, TNC male or female optional)

[▶ Back to Radio frequency \(RF\)](#)[More products in this family](#)

## IC-500, IC-501, IC-502 Artificial loads

The three artificial loads have coaxial input.

[Click on the image to enlarge it.](#)

<b>CW POWER RATING</b>	5 W (IC-500), 25 W (IC-501), 150 W (IC-502)
<b>FREQUENCY RANGE</b>	DC 1-4 GHz
<b>INCLUDED CONNECTOR</b>	N (female)



# PRODUCTS

## Test and Measurement

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### GF-857 Signal function synthesizer

Functional signal generator that applies DDS (Direct Digital Synthesis) technique and can generate frequencies at a resolution of 20 MHz. GF-857 has complete environment of computer interface, including standard RS232 and optional GPIB, to fulfill your requirement of automatic test and control.



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### GF-230, GF-232 Function generators

It allows to generate sinusoidal, square and triangular waves. The GF-232 covers from 0.2 Hz to 2 MHz and it is equipped with a 50 W output; it allows to generate pulsatory waves too.



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### GF-941 Function generator

It combines two generators in a single device which allows modulated signals to be obtained in AM or FM, frequency sweeps to be carried out and bursts to be sent from the main generator in the "burst" function.



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### GF-855 Programmable function generator

Programmable function generator with RS232 port, a high frequency accuracy and high resolution equipment.



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### MZ-505B Components tester

A very versatile component meter which allows resistance, capacitance and inductance values to be obtained.



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### MZ-805 L, C, R Components tester

The **MZ-805** is specially indicated for production processes, research laboratories...



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### OD-590, OD-591, OD-592 Digital Storage oscilloscopes

Digital Storage Oscilloscopes, up to 4 channels and 200 MHz bandwidth. Includes USB, RS-232C and optional GPIB port.



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### OD-570 Digital Storage oscilloscope

60 MHz or 150 MHz bandwidth with Colour or Mono LCD display.



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### OD-400 Digital Oscilloscopes

General purpose 2-channel digital oscilloscopes, providing three selective bandwidths of **25 MHz**, **60 MHz** and **100 MHz**, and 250 MS/s Real-Time sampling or 25 GS/s high-speed Equivalent sampling rate.



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	<b>PR-875C Universal programmer</b> Through the parallel / USB port of your PC, allows to program, read, copy or check any DIL device with up to 48 pins.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>OD-512, OD-514B Analogue oscilloscopes</b> Family of 3 double-trace oscilloscopes. They are sturdy, easy to operate and exhibit high operational reliability; they have got advanced functions and measurement capabilities.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>OS-782 Poliscopes</b> This new poliscopes OS-782 from PROMAX, with 3.8" LCD color, fits two instruments into a handheld design: 2 channels oscilloscope and digital multimeter.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>FA-851 Programmable DC power supply</b> Programmable Power Supply is controlled by Micro Processor Unit (MPU) that can easily connect communication interface RS-232 or GPIB to a computer.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>FA-405 Programmable power supply 40V, 5A</b> Provide a way of use really easy, which is uncommon in programmable power supplies. The control of the power supply is totally digital with a large LCD display. It has a RS-232C interface for remote programming by means of a PC.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>FA-363B, FA-376, FA-662B, FA-665 Power supplies</b> These power supplies possesses the major advantages given by the use of linear and commutation technology.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>BM-130D EPROMs eraser</b> An EPROM memory eraser using ultra-violet radiation.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>MR-275 Dual Digital tachometer</b> Mechanical-optical dual tachometer that allows to make revolutions per minute (RPM's) and speed (m/min.) measurements. Can be used with any motor or device. It offers a high accuracy (0.005%) up to 1 m distance (without contact).	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>IL-185 Lux meter</b> Lux meter 200,000 Lux.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>SC-002 Sound level meter</b> Particularly recommended for technicians specialising in the installation of sound and audio-visual systems.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>MP-003 Impedance meter</b> Enables knowing the resistance in DC and the minimum power required by an amplifier to attack this impedance.	<a href="#">Download PDF</a> <a href="#">More information...</a>
	<b>PE-005 Audio impedance tester</b> Allows testing of home theater and speaker system for estimate the necessary power in an installation for the suitable election of the amplifier.	<a href="#">Download PDF</a> <a href="#">More information...</a>

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## GF-857 Signal function synthesizer

The **GF-857** is a functional signal generator that applies DDS (Direct Digital Synthesis) technique and can generate frequencies at a resolution of 20 MHz, with a high frequency accuracy of 10 ppm.

Its main signal source can generate waveforms of sine wave, square wave, triangle wave, ramp wave, and arbitrary wave. **GF-857** has complete environment of computer interface, including standard RS232 and optional GPIB, to fulfill your requirement of automatic test and control.

The arbitrary waveform function offers 12000 x 12 bits data length for free compiling. The user can compile not only with keys on the front panel, but also through a compiling software "Arbitrary Waveform Composer Software for Windows".



 Click on the image to enlarge it.

<b>OUTPUT FUNCTION</b>	Sine, Triangle, Ramp, Square, Sync Output, Arbitrary
<b>FREQUENCY RANGE</b>	
<b>SINE</b>	20 mHz ~ 30 MHz
<b>SQUARE</b>	20 mHz ~ 30 MHz
<b>TRIANGLE</b>	100 mHz ~ 100 kHz
<b>RAMP</b>	10 mHz ~ 100 kHz
<b>INTERFACE</b>	RS-232 (standard), GPIB-01 (optional)


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More products in this family 

## GF-230, GF-232 Function generators

The **GF-230** is a function generator covering the frequency range from 0.1 Hz to 1 MHz in seven decades. It allows to generate sinusoidal, square and triangular waves. The **GF-232** covers from 0.2 Hz to 2 MHz and it is equipped with a 50 W output; it allows to generate pulsatory waves too.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	0.1 to 1 MHz, in 7 decades (GF-230) 0.2 to 2 MHz, in 7 decades (GF-232)
<b>OUTPUT SIGNALS</b>	Sinusoidal, triangular, square (GF-230) Sinusoidal, triangular, square, pulsatory (GF-232)


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More products in this family 

## GF-941 Function generator


It combines two generators in a single device which allows modulated signals to be obtained in AM or FM, frequency sweeps to be carried out and bursts to be sent from the main generator in the "burst" function. It includes an output attenuator and offers the possibility of varying signal symmetry as well as adding a continuous current component to the latter and it is equipped with a digital frequency indicator.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	0.2 to 20 MHz, 8 decades
<b>OUTPUT SIGNAL</b>	Sinusoidal, triangular, square
<b>FUNCTIONS</b>	Signal symmetry, AM/FM modulation, sweep, triggered "Burst"


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More products in this family 

## GF-855 Programmable function generator

**GF-855** is a functional Function generator that applies Frequency feedback control system technique and can generate high frequency accuracy with high resolution. Its main signal source can generate waveforms including sine wave, square wave, triangle wave, and ramp wave.



 Click on the image to enlarge it.

<b>WAVEFORMS</b>	Sine, Square, Triangle, $\pm$ Ramp, Pulse, AM, FM, Sweep, Trigger, Gate or Burst
<b>FUNCTION COUNTER</b>	6-digit INT/EXT Up to 150 MHz frequency range with high resolution
<b>MODULATION TYPES</b>	AM, FM, Sweep, Trigger (int/ext), Gate or Burst (implement by trigger type)
<b>WAVEFORM</b>	Sine, Square, Triangle, Ramp or Variable Symmetry Pulse


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More products in this family

## MZ-505B Components tester

The **MZ-505B** is a very versatile component meter which allows resistance, capacitance and inductance values to be obtained while at the same time being able to measure their quality factor. It has an auto range function in all measurements.



 Click on the image to enlarge it.

<b>PARAMETERS MEASURED</b>	L, C, R and D/Q
<b>RESISTANCE</b>	From 10 $\Omega$ to 10 M $\Omega$
<b>INDUCTANCE</b>	From 1 mH to 10.000 H
<b>CAPACITANCE</b>	From 1.000 pF to 10 mF


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More products in this family

## MZ-805 L, C, R Components tester

The precision bridge **MZ-805** incorporates a microprocessor that controls automatically the selection of the measurement modes and scales for a wide range of components. The **MZ-805** is specially indicated for production processes, research laboratories...



 Click on the image to enlarge it.

<b>MEASUREMENT FREQUENCY</b>	Selectable (100 Hz, 1 kHz or 10 kHz)
<b>MEASUREMENT PARAMETERS</b>	R, L, C, D, Q
<b>COMPONENT CONNECTIONS</b>	44 terminals

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More products in this family

## OD-590, OD-591, OD-592 Digital Storage oscilloscopes

The new **OD-590 / OD-591 / OD-592** Oscilloscopes from **PROMAX** comes along with *All-In-One* design, including 1 GS/s sampling rate, 25k record length, 2 and 4 channel selection, TFT color LCD display, USB support, color printout, and remote control, Battery power operation and powerful Auto-Measurement functions.

This new **PROMAX** Oscilloscope series carries bandwidths of 200 MHz & 100 MHz and inputs of 2 and 4 channels. The combination of 1 GS/s sampling rate (25 GS/s for ET sampling) and 25k points record length provides the highest value platform among all equivalent products available in the market today.



 Click on the image to enlarge it.

<b>BANDWIDTH</b> OD-590 OD-591 OD-592	100 MHz 200 MHz 200 MHz
<b>CHANNELS</b> OD-590 OD-591 OD-592	2 2 4
<b>DISPLAY</b>	5.6" TFT Color LCD
<b>SAMPLE RATE</b>	1 GS/s
<b>RECORD LENGTH</b>	25k points
<b>TRIGGER</b>	Pulse Width, TV Line, Event Delay, Time Delay
<b>VALUED FEATURES</b>	Multi-Language, FFT, Go/NoGo, Auto Setup, 27 Auto-Measures
<b>INTERFACES</b>	2xUSB (Host/Device), RS-232C, Go/NoGo Output, GPIB (optional)
<b>OSD</b>	Multi-Language Menu, Multi-Language Online Help
<b>POWER SOURCE</b>	AC 100 ~ 240 V, Optional Li-Ion battery pack


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More products in this family

## OD-570 Digital Storage oscilloscope

At 60 MHz or 150 MHz bandwidth with Colour or Mono LCD display, are designed and built to meet the demands of a modern DSO in the main stream market today. The Unmatched performance, valued plus features, user-friendly design and versatile interface make **OD-570** series a very useful equipment for most of the applications in circuit design, production test, repair service and education lab. With almost everything you could expect from a DSO, **OD-570** series provides you the best solution for waveform measurement at a surprisingly affordable price.



 Click on the image to enlarge it.

<b>BANDWIDTH</b>	60 MHz (OD-576) 150 MHz (OD-571)
<b>SAMPLE RATE</b>	25 GS/s channel
<b>RECORD LENGTH</b>	125 k/CH
<b>TRIGGER</b>	Pulse width, TV Line, Event Delay, Time Delay
<b>WAV. SIGNAL PROCESS</b>	CH1+CH2, CH1-CH2, FFT, Go/NoGo
<b>INTERFACE</b>	USB, Printer port, RS-232C, Go/NoGo output, GPIB (optional)

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More products in this family


## OD-400 Digital Oscilloscopes

**PROMAX ELECTRONICA** is announcing to the global market the new digital storage oscilloscope **OD-400** series (**OD-410**, **OD-425**, **OD-460**). The **OD-400** are a general purpose 2-channel oscilloscopes and originally designed to meet requirement in education and industrial fields without special DSO features. This series provides three selective bandwidths of **25 MHz**, **60 MHz** and **100 MHz**. The TFT color LCD display without any defect pixel, users will enjoy better measurement experience!

**OD-400** series offers dual sampling mode, giving users two options for 250 MS/s Real-Time sampling or 25 GS/s high-speed Equivalent sampling rate. What's more, with high-speed wave handling capability, more advanced triggering functions, and 2.5 kg light-weight design, it is a powerful functional oscilloscope with the best price than ever.

Ultimately, the **OD-400** are considered for the replacement of analog oscilloscope and further promoted as a personal DSO affordable to any situation such as each student in educational labs, service technicians, or industrial field needing big quantity.



 Click on the image to enlarge it.

- Large 5.6-in TFT Color Display
- 100 / 60 / 25 MHz Bandwidth
- 2 input channels
- 250 MS/s Real-Time and 25 GS/s Equivalent-Time Sampling
- 4 kPoints Record length per channel
- Save/Recall of 15 front panel settings and waveforms
- 19 Automatic Measurements
- Built-in 6 digit real-time frequency counter
- Three Math Functions: "+", "-", and "FFT"
- Advanced trigger: Pulse Width, TV Line
- Multi-Language Support and Built-in Help Menu
- PC Interface support: SD card and USB Device


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## PR-875C Universal programmer

The **PR-875C** is a universal programmer which, through the parallel or USB port of your PC, allows to program, read, copy or check any DIL device with up to 48 pins. There is available list of adapters to program devices with no DIL package.



 Click on the image to enlarge it.

<b>SOCKET</b>	DIL/ZIF 48 pins
<b>SUPPORTED DEVICES</b>	PROM, EPROM, E2PROM, Flash, PROM serie, PAL, GAL, CEPAL, PEEL, FPLA, EPLD, FPGA, $\mu$ C monochip
<b>OPERATIONS (summary)</b>	Read, blank check, verify, program, edit buffer, device ID


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## OD-512, OD-514B Analogue oscilloscopes

The new family of Oscilloscopes **OD-512** and **OD-514B** consists of 3 double-trace oscilloscopes. The OD-5XX are sturdy, easy to operate and exhibit high operational reliability, they have got advanced functions and measurement capabilities.



 Click on the image to enlarge it.

<b>BANDWIDTH</b> OD-512 OD-514B	DC a 20 MHz DC a 40 MHz (1~2 mV DC to 10 MHz)
<b>SENSITIVITY</b> OD-512 OD-514B	5 mV a 5 V/div 1 mV a 5 V/div
<b>TRIGGER SOURCES</b>	CH1, CH2, DUAL (ALT, CHOP) CH1 $\pm$ CH2
<b>TRIGGER MODES</b> OD-512 OD-514B	AUTO, NORM, TV-V, TV-H AUTO, NORM and SINGLE
<b>ACCESORIES</b>	Mains cable, 2 Probes

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More products in this family 

## OS-782 Poliscopes

This new poliscopes **OS-782** from PROMAX, with 3.8" LCD color, fits two instruments into a handheld design: 2 channels **oscilloscope** and **digital multimeter**. Following is a list with its main features:


- Two-channels oscilloscope with bandwidth of 20 MHz
- Sampling rate of 100 MS/s
- Trigger: TV and edge
- 5 automatic measurements modes
- Memory depth of 6k points by channel
- USB port
- Digital multimeter of 3 ¼ for measurements of R, V, A and C
- AC adapter and Li-ion battery
- Display LCD colour of 2.8" with backlight, 320x240 pixels
- Vertical and horizontal cursors



 Click on the image to enlarge it.

<b>2 CHANNELS OSCILLOSCOPE</b>	
<b>BANDWIDTH</b>	20 MHz
<b>SAMPLING RATE</b>	100 MS/s
<b>TRIGGER</b>	TV and Edge
<b>TRIGGER MODES</b>	Auto, Normal and Single shot
<b>AUTO MEASUREMENTS</b>	Frequency, V average, V p-p, Vrms, Cycle
<b>MATH FUNCTIONS</b>	CH1-CH2, CH2-CH1, CH1+CH2, CH1xCH2, CH1/CH2
<b>MULTIMETER</b>	
<b>DISPLAY</b>	4000 counts (3 - ¼ digits)
<b>MEASUREMENTS</b>	DC/AC Voltage, DC/AC Current, Resistance, Capacitance, Diode test, Continuity Test
<b>ACCESSORIES</b>	2 test leads, user manual, AC adapter, software CD, oscilloscope test leads and probes


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## FA-851 Programmable DC power supply

**FA-851** Programmable Power Supply is controlled by Micro Processor Unit (MPU) that can easily connect communication interface **RS-232** or **GPIB** to computer in order to satisfy users' demand for auto-testing and auto-control. The voltage and current are completely controlled by 12 bits D/A Converter with higher resolution and accuracy. Also, the digitalization of system makes a speedy, precise and convenient input of information controlled by keyboard.



 Click on the image to enlarge it.

<b>OUTPUTS</b>	
<b>VOLTAGE</b>	2x (0 ~ 32 V), 1x (0 ~ 6 V)
<b>CURRENT</b>	2x (0 ~ 2 A), 1x (0 ~ 5 A)
<b>OVP</b>	2x (0 ~ 33 V), 1x (0 ~ 7 V)
<b>ACCESSORIES</b>	Mains cable, instruction manual, programming manual


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## FA-405 Programmable power supply 40V, 5A

The **FA-405** is a 200W Power Supply that provides a continuous output. It is adjustable from 0 to 40 V and from 0 to 5 A. The power supply has over-voltage, over-current, overpower and over-temperature protections, what provide a safety work environment for users. A special button allows blocking controls for greater safety and it prevents settings from unintentional changes. The incorporation of a rotary knob as well as the buttons to program incremental changes (in percentage) provide a way of use really easy, which is uncommon in programmable power supplies. The control of the power supply is totally digital. It has a RS-232C interface for remote programming by means of a PC.



 Click on the image to enlarge it.

<b>DC VOLTAGE OUTPUT</b>	0 to 40 V
<b>CURRENT OUTPUT</b>	0 to 5 A
<b>VOLTAGE REGULATION</b>	≤ 10 mV (load) ≤ 0,05% (line)
<b>CURRENT REGULATION</b>	≤ 5 mA (load) ≤ 0,05% (line)


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## FA-363B, FA-376, FA-662B, FA-665 Power supplies

These power supplies possesses the major advantages given by the use of linear and commutation technology. Output characteristics equal to those found in linear devices are obtained.



 Click on the image to enlarge it.

<b>FA-363B</b>	30 V / 2 A aux 5 V, +15V, -15V
<b>FA-376</b>	30 V / 5 A aux 5 V
<b>FA-662B</b>	30 V / 1 A aux 5 V
<b>FA-665</b>	30 V / 5 A aux 5 V


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## BM-130D EPROMs eraser

The **BM-130D** is an EPROM memory eraser using ultra-violet radiation. Its main field of application is in the development and manufacture of microprocessor-based products. It allows the erasure of up to 40 devices of 24 pins at a time.



 Click on the image to enlarge it.

<b>FREQUENCY RANGE</b>	2,537 Amstrongs
<b>MIDDLE TIME TO FAILURE</b>	7,500 hours
<b>POWER SUPPLY</b>	230/240 V AC 50/60 Hz, 22 W

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## MR-275 Dual Digital tachometer

The **MR-275** is a mechanical-optical dual tachometer that will allow the user to make revolutions per minute (RPM's) and speed (m/min.) measurements. Can be used with any motor or device. It offers a high accuracy (0.005%) up to 1 m distance (without contact).

Small size and battery powered make it an easy and portable instrument. In addition its ergonomic design allows to be used comfortably with a single hand.



 Click on the image to enlarge it.


<b>MEASUREMENT &amp; RANGE</b>	
<b>PHOTO TACHOMETER</b>	5 to 99,999 RPM
<b>CONTACT TACHOMETER</b>	0.5 to 19,999 RPM
<b>SURFACE SPEED</b>	m/ min. 0.05 to 1,999.9 m/ min ft/min. 0.2 to 6,560 m/ min
<b>RESOLUTION</b>	
<b>RPM</b>	0.1 RPM ( < 1.000 RPM ) 1 RPM ( ≤ 1.000 RPM )
<b>m/min.</b>	0.01 m/ Min. ( < 1.000 m/Min. ) 0.1 m/ Min. ( ≤ 100 m/Min. )
<b>ft/min.</b>	0.1 ft/min. ( < 1.000 ft/min. ) 1 ft/min. ( ≤ 1.000 ft/min. )
<b>DISPLAY</b>	LCD, size 60 x 30 mm, 5 digits (99.999 count)
<b>PHOTO TACHOMETER DETECTING DISTANCE</b>	5 to 100 cm typically
<b>ACCESSORIES</b>	Carrying case, Reflecting tape marks, contact adapters (cone/funnel/wheel), User's manual, 4x 1.5V R6V AA batteries, Protective cover for emitter laser

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## IL-185 Lux meter

The **IL-185** is a digital lux meter of 3 ½ digits, easy to use and compact, designed for operation with a single hand. The measurer provides measurements in Lux units and has like basic features: LCD backligh display and functions MAX-HOLD (retention of maximum value) and DATA-HOLD (retention of measurement).



 Click on the image to enlarge it.


<b>MARGIN</b>	0.01 to 200,000 Lux
<b>RANGES</b>	20 / 200 / 2,000 / 20,000 / 200,000 lux
<b>FUNCTIONS</b>	Max. and hold
<b>BATTERY</b>	4 x 1.5 V
<b>DIMENSIONS/WEIGHT</b>	44 x 170 x 40 mm.; 220 g. battery included

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## SC-002 Sound level meter

It is particularly recommended for technicians specialising in the installation of sound and audio-visual systems. Its use is also ideal for the acoustic monitoring of local bylaws, ambient noise, acoustic insulation, etc.



 Click on the image to enlarge it.

<b>DYNAMIC RANGE</b>	From 30 to 130 dBA (RMS)
<b>FUNCTIONS</b>	Fast (LAF), Slow (LAS) and maximum
<b>BACKGROUND NOISE</b>	< 24 dBA without microphone

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## MP-003 Impedance meter

The **MP-003** is an impedance meter working at a frequency of 1 kHz which, in addition, enables knowing the resistance in DC and the minimum power required by an amplifier to attack this impedance.



<b>FUNCTIONS</b>	Measurement resistance, impedance 1 kHz, estimation of necessary minimum power
<b>MEASUREMENT RANGE</b>	From 0 to 200 / 2,000 / 20,000 $\Omega$ (impedance, resistance), From 0 to 2,000 W (power)

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More products in this family

## PE-005 Audio impedance tester

The Audio impedance tester **PE-005** allows testing of home theater and speaker system for estimate the necessary power in an installation for the suitable election of the amplifier. There are three user-selectable measurement ranges (20, 200 and 2000  $\Omega$ ) and a 1 kHz test frequency.



<b>MEASUREMENT RANGE</b>	20 $\Omega$ / 200 $\Omega$ / 2000 $\Omega$
<b>TEST FREQUENCY</b>	1 kHz
<b>ACCURACY</b> RANGE 20 $\Omega$ RANGES 200 $\Omega$ / 2000 $\Omega$	$\pm 2\%$ reading $\pm 2$ dig. or $\pm 0.1$ W, which is greater $\pm 2\%$ reading $\pm 2$ dig.
<b>ACCESORIES</b>	Test leads set with safety clamps, user's manual, transport suitcase

# PRODUCTS

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### CP-534C Capacitance meter

Measures accurately capacitances of up to 20.000 micro farads.



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### MD-200B Digital multimeter

Brings together the basic features of a professional instrument such as high accuracy, reliability and a wide range of measurements.



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### FP-2B Student series multimeter

Big display and measurement unit indication, 32 positions rotative selector, automatic polarity indication, resistance, capacity measurement and auto power off.



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### PD-163, PD-161 Industrial Series Digital Multimeters

These multimeters include by default a tape with a powerful magnet, to hang them of a metallic surface, releasing the hands for a better use and accessibility to the test point.



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### PD-185, PD-183, PD-181 Industrial Series Digital Multimeters

Users will find the basic features of a professional instrument, such as **high precision, reliability** and a **wide range of measurements**. Their reliability is also an appreciated value for their use in education.



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### OS-782 Poliscop

This new poliscop OS-782 from PROMAX, with 3.8" LCD color, fits two instruments into a handheld design: 2 channels oscilloscope and digital multimeter.



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### CT-193, CT-195, CT-237 Current clamp

DC/AC current clamp.



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### PT-125 Wattmeter clamp

Monofasic / trifasic wattmeter clamps.



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### AR-225 Phase sequence indicator

Phase sequence indicator.



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### PE-365 Digital RCD tester

This instrument features off-time measurement for Protecting Residual-Differential Current devices according to the specified default current selectable from 3 mA to 0,5 mA.



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### PE-335 Digital earth resistance meter

2 mA measuring current permits earth resistance tests without tripping earth leakage current breakers in the circuit under test.



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### PE-425 Electrical Multifunction network analyzer (LOOP, PSC and Earth Tester)

Electrical multifunction network analyzer for LOOP, PSC & Earth Test PE-425 incorporates a built-in Earth Tester and Loop/PSC tester for ranges from 0,3 to 2000 Ohms.



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### TC-470 Cable tracer

Suitable for identification and maintenance of telephony networks and also for testing any kind of lines not-connected to the mains.



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### PE-455 Insulation tester

Makes the insulation test at rated voltage into a 1 mA load, with user-selectable ranges for resistance and insulation resistance.



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### PE-457 Earth meter

Digital/Analog earth meter.



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### IL-185 Lux meter

Lux meter 200,000 Lux.



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## CP-534C Capacitance meter

The **CP-534C** digital capacitance meter measures capacitances of up to 20.000 micro farads with satisfactory accuracy. For the measurement low values, it has an end adjustment, which enables the compensation of the residual capacitance between the test cables. The inputs are fuse-protected.



 Click on the image to enlarge it.

**MEASUREMENT RANGE**

200 pF to 20,000  $\mu$ F (9 scales)

**TEST VOLTAGE**

3.2 V max

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More products in this family 

## MD-200B Digital multimeter

The **MD-200B** digital multimeter brings together the basic features of a professional instrument such as high accuracy, reliability and a wide range of measurements. It will allow measurements to be taken of current up to 10 A and reading of direct voltage diode drops.

It includes functions such as HOLD, continuity sound signal, AUTO and manual range among others. Rear illuminated display makes reading comfortable even in the dark.



 Click on the image to enlarge it.

**MEASUREMENTS**

DC / AC Voltage, DC / AC Current, Resistance, Continuity test, Diode test, Capacitance, Frequency, ADAPT measurement

**PRESENTATION**

Display 3  $\frac{3}{4}$  digit display with 42 segment analog bargraph

**POWER SUPPLY**

AC supply (10 W) or battery operation (1200 h. autonomy)

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More products in this family

## FP-2B Student series multimeter

The basic features of **FP-2B** are: 22 mm display and measurement unit indication, 32 positions rotative selector, automatic polarity indication, resistance, capacity measurement and auto power off.



 Click on the image to enlarge it.

<b>LCD INDICATOR</b>	3 ½ digits
<b>DC VOLTAGE</b>	200mV, 2V, 20V, 200V, 100V
<b>AC VOLTAGE</b>	2V, 20V, 200V, 750V
<b>DC CURRENT</b>	2mA, 20mA, 200mA, 10A
<b>AC CURRENT</b>	20mA, 200mA, 10mA
<b>RESISTANCE</b>	200Ω, 2kΩ, 20kΩ, 300kΩ, 2MΩ, 20MΩ, 200MΩ
<b>CAPACITANCE</b>	2nF, 20nF, 200nF, 2μF, 20μF
<b>MEASUREMENTS</b>	Diode Test, Continuity audible, Frequency test, Transistor hFE
<b>BASIC ACCURACY</b>	± 0,5 %


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More products in this family

## PD-163, PD-161 Industrial Series Digital Multimeters

These multimeters include the basic features of a professional instruments and a big size LCD screen. It is adequate for R+D laboratories, production chains, etc as well as for the education. PD-163 and PD-161 multimeters include by default a tape with a powerful magnet, to hang them of a metallic surface, releasing the hands for a better use and accessibility to the test point.



 Click on the image to enlarge it.

<b>TRUE RMS</b>	PD-163
<b>DC VOLTAGE</b>	200mV or 660mV ~ 600V
<b>AC VOLTAGE</b>	200mV or 660mV ~ 600V
<b>DC CURRENT</b>	660µA or 20mA ~ 10A
<b>AC CURRENT</b>	660µA or 20mA ~ 10A
<b>RESISTANCE</b>	200Ω or 600Ω ~ 66MΩ or 2000MΩ
<b>CAPACITANCE</b>	2nF or 6,6nF ~ 6.6mF or 20µF
<b>MEASUREMENTS PD-161</b>	Diode test, Continuity test, MAX/MIN hold DATA Hold

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More products in this family

## PD-185, PD-183, PD-181 Industrial Series Digital Multimeters

**PD-185, PD-183 and PD-181** Digital Multimeters have been designed under the strictest quality requirements, in order to satisfy the most rigorous security standards. Users will find the basic features of a professional instrument, such as **high precision, reliability** and a **wide range of measurements**. The **big LCD screen** and the ease of use allows their use R+D laboratories as well in production chains. Their reliability is also an appreciated value for their use in education.



<b>TRUE RMS</b>	PD-185 and PD-181
<b>DC VOLTAGE</b>	200 mV or 400 mV ~ 1000 V
<b>AC VOLTAGE</b>	200 mV or 400 mV ~ 750 V
<b>DC CURRENT</b>	200 $\mu$ A or 400 $\mu$ A ~ 20 A
<b>AC CURRENT</b>	200 $\mu$ A or 400 $\mu$ A ~ 20 A
<b>RESISTANCE</b>	200 $\Omega$ or 400 $\Omega$ ~ 20 M $\Omega$ or 40 M $\Omega$
<b>CAPACITANCE</b>	4 $\mu$ F to 40 $\mu$ F (PD-185 / PD-181)
<b>MEASUREMENTS</b>	Continuity test, Diode test, Frequency, DATA hold
<b>PD-185</b>	MAX/MIN hold and $\pm$ PEAK hold, Relative, Temperature
<b>PD-183</b>	Duty cycle, Logic test
<b>PD-181</b>	Logic test, MAX hold
<b>PC CONNECTION</b>	RS-232C port (PD-185)

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## OS-782 Poliscopio

This new poliscopio **OS-782** from PROMAX, with 3.8" LCD color, fits two instruments into a handheld design: 2 channels **oscilloscope** and **digital multimeter**. Following is a list with its main features:

- Two-channels oscilloscope with bandwidth of 20 MHz
- Sampling rate of 100 MS/s
- Trigger: TV and edge
- 5 automatic measurements modes
- Memory depth of 6k points by channel
- USB port
- Digital multimeter of 3 ¾ for measurements of R, V, A and C
- AC adapter and Li-ion battery
- Display LCD colour of 2.8" with backlight, 320x240 pixels
- Vertical and horizontal cursors



 Click on the image to enlarge it.

<b>2 CHANNELS OSCILLOSCOPE</b> <b>BANDWIDTH</b> <b>SAMPLING RATE</b> <b>TRIGGER</b> <b>TRIGGER MODES</b> <b>AUTO MEASUREMENTS</b> <b>MATH FUNCTIONS</b>	20 MHz 100 MS/s TV and Edge Auto, Normal and Single shot Frequency, V average, V p-p, Vrms, Cycle CH1-CH2, CH2-CH1, CH1+CH2, CH1xCH2, CH1/CH2
<b>MULTIMETER</b> <b>DISPLAY</b> <b>MEASUREMENTS</b>	4000 counts (3 - ¾ digits) DC/AC Voltage, DC/AC Current, Resistance, Capacitance, Diode test, Continuity Test
<b>ACCESSORIES</b>	2 test leads, user manual, AC adapter, software CD, oscilloscope test leads and probes

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## CT-193, CT-195, CT-237 Current clamp

The **CT-193**, **CT-195** and **CT-237** clamp meters are an essential instruments for low voltage installers, it offers the accuracy and reliability of a professional instrument under a safe, robust and ergonomic design.



<b>AC CURRENT</b>	40 mA to 700 mA, according to model
<b>DC CURRENT</b>	200 A to 700 A, according to model
<b>FREQUENCY</b>	Up to 20 Hz or from 430 Hz to 4.3 kHz, according to model
<b>MAX. Ø CONDUCTOR</b>	46 mm or 30 mm, according to model

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## PT-125 Wattmeter clamp

Designed for professional applications we have the **PT-125**, enabled to the measurement of three-phase current of until 2000 kW and 1200 kW in single-phase.



[Click on the image to enlarge it.](#)

<b>POWER MEASUREMENT</b>	Three-phase, active, reactive, $\cos \varphi$
<b>MEASUREMENT MARGIN</b>	2000 kW (three-phase), 1200 kW (single-phase)
<b>AC/DC DETECTION</b>	Automatic


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More products in this family

## AR-225 Phase sequence indicator

The **AR-225** consists in three high reliability instruments in one: indication of open phase, phase sequence and motor rotation. Big size crocodile clamp permit connecting easily to terminals of commutation boards.



 Click on the image to enlarge it.

<b>INPUT VOLTAGE</b>	100 V AC to 600 V AC
<b>FREQUENCY RANGE</b>	45 - 70 Hz
<b>BATTERY</b>	9V type 006P

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## PE-365 Digital RCD tester

PROMAX introduces the new Digital RCD tester **PE-365**. This instrument features off-time measurement for Protecting Residual-Differential Current devices according to the specified default current selectable from 3 mA to 0.5 mA. Some of its main features are:

- Microprocessor controlled
- LCD display 2 lines x 16 characters
- Very low consumption
- Zero crossing detection, allows to verify in the two half-waves
- Accurate digital readout of disconnection time
- Measure voltage between line and earth before testing
- Wiring polarity indicator



 Click on the image to enlarge it.


<b>TEST CURRENT</b>	3 mA, 5 mA, 10 mA, 15 mA, 20 mA, 30 mA, 50 mA, 100 mA, 150 mA, 250 mA, 300 mA and 500 mA
<b>CURRENT SELECTION</b>	Rotary switch selector
<b>VOLTMETER</b>	20 V AC ~ 280 V AC
<b>TIMER RESOLUTION</b>	1 ms (Max time = 2.999 s)
<b>ACCESSORIES</b>	Set of three safety clamps-banana cables, user's manual, transport suitcase

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## PE-335 Digital earth resistance meter

**PE-335** carries out the earth resistance measurements by using the three-electrodes method. 2 mA measuring current permits earth resistance tests without tripping earth leakage current breakers in the circuit under test. **PE-335** Digital Earth Resistance Meter comes with functions as data-holding, timer for test function, etc.



 Click on the image to enlarge it.


<b>MEASUREMENT SYSTEM</b>	Current injection of 820 Hz, 2 mA
<b>EARTH VOLTAGE</b>	0 ~ 199.9 V AC, 50 / 60 Hz
<b>MAXIMUM INPUT VOLTAGE</b>	200 V RMS
<b>RANGE AND RESOLUTION</b>	0 ~ 19.99 Ω (0.01Ω) 0 ~ 199.9 Ω (0.1Ω) 0 ~ 1999 Ω (1Ω)
<b>ACCESSORIES</b>	Test cable set, 2 auxiliary earth spikes, user's manual, transport suitcase

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## PE-425 Electrical Multifunction network analyzer (LOOP, PSC and Earth Tester)


Electrical multifunction network analyzer for LOOP, PSC & Earth Test **PE-425** incorporates a built-in Earth Tester and Loop/PSC tester for ranges from 0,3 to 2000 Ohms. It is possible to display the PSC Line, Neutral and Earth. There is also included a built-in voltmeter in the **PE-425**.



 Click on the image to enlarge it.

<b>LOOPS / EARTH / WIRES</b>	0.03 - 2000 Ω auto-ranging
<b>PROSPECTIVE SHORT CIRCUIT</b>	0 - 6 kA for 230 V AC
<b>OPERATING VOLTAGE</b>	50-275 V AC (only 50 Hz)
<b>ACCESSORIES</b>	Set of three safety clamp-banana cables, user's manual, transport suitcase


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More products in this family 

## TC-470 Cable tracer


The **TC-470** wiring tracer is a modern, easy-to-use instrument made up of a tone generator and an amplification probe which has been specifically designed to easily and unaggressively identify and trace cables (working in conjunction with the tone generator).



 Click on the image to enlarge it.

<b>GAIN CONTROL</b>	In order to increase sensitivity
<b>BATTERY</b>	9 V


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More products in this family 

## PE-455 Insulation tester

Insulation Tester **PE-455** makes the insulation test at rated voltage into a 1 mA load, with user-selectable ranges for resistance and insulation resistance.



 Click on the image to enlarge it.

<b>INSULATION RESISTANCE RANGES</b>	Auto range 20 MΩ / 200 MΩ / 2000 MΩ 20 MΩ, 200 MΩ, 2000 MΩ
<b>AC VOLTAGE</b>	0-600 V, 40-120 Hz
<b>RESISTANCE RANGES</b>	20 MΩ, 200 MΩ, 2000 MΩ
<b>ACCESORIES</b>	Test leads with safety clamps, user's manual, transport suitcase


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More products in this family

## PE-457 Earth meter

The **PE-457** carries out 2.5 readings per second for digitally indications and 10 readings/sec. in case of analogues. Also, it has low-battery indication, display with backligh and accuracy until  $\pm 2\%$  in measurements up to 20 MegaOhms.



 Click on the image to enlarge it.

<b>DISPLAY</b>	3 ½ digits and 50 segments
<b>ACCURACY</b>	AC voltage: 1.5 % Continuity mode: 1% MegaOhm mode: 3% (<1 GΩ), 5% (<4GΩ)
<b>DIMENSIONS/WEIGHT</b>	190 x 140 x 77 mm; 900 g.

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More products in this family

## IL-185 Lux meter

The **IL-185** is a digital lux meter of 3 ½ digits, easy to use and compact, designed for operation with a single hand. The measurer provides measurements in Lux units and has like basic features: LCD backligh display and functions MAX-HOLD (retention of maximum value) and DATA-HOLD (retention of measurement).



 Click on the image to enlarge it.

<b>MARGIN</b>	0.01 to 200,000 Lux
<b>RANGES</b>	20 / 200 / 2,000 / 20,000 / 200,000 lux
<b>FUNCTIONS</b>	Max. and hold
<b>BATTERY</b>	4 x 1.5 V
<b>DIMENSIONS/WEIGHT</b>	44 x 170 x 40 mm.; 220 g. battery included

## PRODUCTS

### Digital To TV

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#### Digital To TV (DTTV) DVB-T TV distribution headend

TV distribution headend with DVB-T (DTT) output. It converts any analogue or digital video source to DVB-T with a maximum of 200 programmes in the UHF band.

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#### DT-101/102 Single / Dual DVB-T Modulator

COFDM modulators compatible with DVB-T standard. They have ASI-TS input and RF output in the UHF band (optionally VHF) and are agile in frequency and output level.

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#### DT-202 Dual DVB-S to DVB-T Transmodulator

DVB-S (QPSK) to DVB-T (COFDM) transmodulators, agile in frequency and output level.

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#### DT-212 Dual DVB-T to DVB-T transmodulator

DVB-T to DVB-T (COFDM) transmodulator. Allows changing the input channel to another channel with total quality preservation.

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#### DT-301/302 Single/Dual DVB-S/S2 receiver with CAM and ASI-TS output

Digital satellite receivers compatible with DVB-S and DVB-S2 standards. They can receive a satellite transponder and deliver the transport stream in the form of TS-ASI.

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#### DT-311/312 Dual/Single DVB-T Receiver with ASI output

DTT receivers with two identical ASI-TS outputs.

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#### DT-504 Quadruple Video/Audio encoder, DVB-T output

It builds a broadcast signal in DVB-T format from four composite video and audio inputs.

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#### DT-700 16 input Quadruple 4x1 DVB-T combiner

Passive module with four combiners 4x1, which offers higher quality than those that often use 2 connections, given that preserves better the original quality and maintains lower noise levels.

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#### DT-710 8 input DVB-T combiner with one single amplified output

Combiner with 8 inputs and an amplified output, 114 dB $\mu$ V (+6 dBm) aprox.

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#### DT-722 4 input DVB-T combiner with one single amplified output

Combiner with 4 inputs and an amplified output, 130 dB $\mu$ V (+22 dBm) aprox.

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#### DT-730 DVB-T 30 dBm Power amplifier (1 W)

High quality 1 W RF power amplifier for COFDM signals, with an 30 dBm (137 dB $\mu$ V) output.

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#### DT-800 Control unit and power supply

Delivers the control and power supply for up to 7 modules, any type, and allows remote control from a PC through Ethernet port.

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#### DT-802 Control module with a redundant power supply

Double power supply, hot-swappable. Delivers the control and power supply for up to 16 modules, any type, and allows remote control from a PC through Ethernet port.

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#### DT-900 Sub-rack framework for rack or wall

Sub-rack framework that holds up to 7 modules DT-XXX plus the DT-800 power supply and control unit.

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## Digital To TV (DTTV) DVB-T TV distribution headend


**Digital To TV (DTTV)** is a TV distribution headend with DVB-T (DTT) output. The Digital To TV system converts any analogue or digital video source to DVB-T with a maximum of 200 programmes in the UHF band.

The **Digital To TV (DTTV)** allows to transmodulate Satellite TV channels to Digital Terrestrial Television multiplexes. The DVB-T resulting signal can be displayed with the help of a DTT receiver, nowadays built-in the own TV sets.

**Digital To TV (DTTV)** is an ideal headend solution for large installations, hotels, convention centers, hospitals, ships, etc. In many cases, the DVB-T signal is robust enough as to not have the need to invest in replacing the network, connexions, etc.

The **Digital To TV (DTTV)** distribution system allows to re-organise the spectrum, adding the off-air DTT channels received in the region, encoding video-audio channels, etc. Once duly configured, the system becomes autonomous and it can be remotely controlled through Ethernet. It can be rack or wall mounted .



 Click on the image to enlarge it.

<b>FUNCTIONS</b>	DVB-S/S2 to DVB-T (direct transmodulation) Transport Stream to DVB-T (direct transmodulation) Video/Audio stereo to DVB-T On site Direct Control or through Ethernet
<b>DVB-T MODULATOR</b>	ASI-TS input (Dual or single) DVB-T output
<b>DVB-S TRANSMODULATOR TO DVB-T</b>	DVB-S Input (Dual or single) DVB-T output
<b>DVB-S/S2 RECEIVER</b>	DVB-S/S2 Input (Dual or single) Dual ASI-TS output (two output for each input) CAM cards reader to decode encrypted services
<b>VIDEO/AUDIO ENCODER</b>	Four Video/Audio Stereo inputs DVB-T output
<b>16 INPUT DVB-T COMBINER</b>	Includes four 4x1 combiners
<b>POWER DVB-T COMBINER</b>	Eight DVB-T inputs High gain 114 dB $\mu$ V (+6 dBm) output
<b>CONTROL UNIT AND POWER SUPPLY</b>	To control and supply 7 modules Control keys through front panel Ethernet interface for remote control Keyboard security blockage

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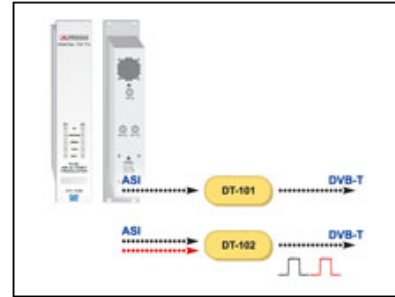
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## DT-101/102 Single / Dual DVB-T Modulator

The **DT-101** (single) and **DT-102** (dual) modules are **COFDM modulators** compatible with DVB-T standard. They have TS-ASI input and RF output in the UHF band and are agile in frequency and output level. Inputs can contain services in all sorts of formats: SD, HD, MPEG-2, MPEG-4, etc.

With PROMAX exclusive PID filtering function the user can remove video, audio or data services from the original Transport Stream. In case of using the **DT-301** or **DT-302** as a receiver, the system allows to reduce bit rate of the incoming satellite transponders to values that can be used in COFDM.

The dual DVB-T modulator (**DT-102**), includes an internal combiner that delivers a single DVB-T output with high C/N. This feature gives great robustness to the signal, allowing adding RF amplifiers in cascade during distribution with minimal loss of signal quality.



Click on the image to enlarge it.

<b>TS INPUT Connector</b>	1 ( <b>DT-101</b> ) or 2 ( <b>DT-102</b> ) DVB-ASI independent inputs BNC female, Impedance 75 Ω
<b>RF OUTPUT Connectors</b>	1 or 2 independent combined DVB-T multiplex ( <b>DT-101/102</b> ) BNC female, Impedance 75 Ω
<b>TS PROCESSING Filtering Measurements</b>	Filtering table up to 32 PID Bitrate of the output multiplex Percentage of used bitrate (relative to the maximum capacity of the multiplex)
<b>CONFIGURATION AND POWER SUPPLY</b>	Through the DT-800 control and power supply unit. Control can be done remotely from a PC.

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## DT-202 Dual DVB-S to DVB-T Transmodulator

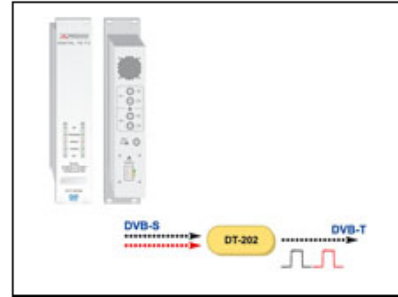
The **DT-202** modules are **DVB-S (QPSK) to DVB-T (COFDM) transmodulators**. They have direct QPSK input that can be tuned to any satellite transponder and output in the UHF band. They are agile in frequency and output level.

With our exclusive PID filtering function the user can remove video, audio or data services from the original transport stream. The system allows reducing bit rate of the incoming satellite transponders to values compatible with COFDM.

Modulation, Forward Error Correction or Guard Interval can be set to the desired values depending on the application.

This allows packing more programs in a single COFDM channel than a standard off air DTT channel. A Typical configuration for a coaxial TV distribution system can be 64QAM, FEC=3/4 and GI=1/32 so that the modulator accepts the highest bit rate possible.

The dual DVB-S to DVB-T transmodulator (**DT-202**) includes an internal combiner that delivers a single DVB-T output with high C/N. This feature gives great robustness to the signal, allowing adding RF amplifiers in cascade during distribution with minimal loss of signal quality.



Click on the image to enlarge it.

<b>DVB-S FI INPUT Connectors</b>	2 independent DVB-S FI inputs F-Type female, Impedance 75 Ω
<b>RF OUTPUT Connectors</b>	2 combined DVB-T multiplexes BNC female, Impedance 50 Ω
<b>TS PROCESSING Filtering Measurements</b>	PID Filtering with Filtering Table up to 32 PID Bitrate of the output multiplex Percentage of bitrate used relative to the maximum capacity of the multiplex
<b>CONFIGURATION AND POWER SUPPLY</b>	through the DT-800 Control Module. Control can be done remotely from a PC

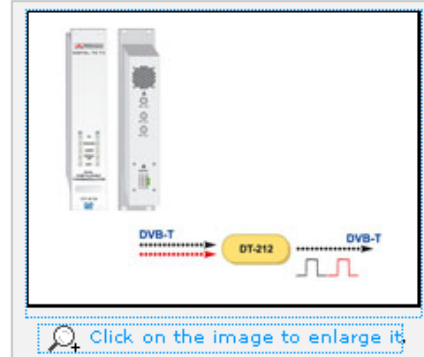
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## DT-212 Dual DVB-T to DVB-T transmodulator

The **DT-212** is a **DVB-T to DVB-T (COFDM) transmodulator**. It has a direct COFDM input that can be tuned to any multiplex and output in the UHF band. They are agile in frequency and output level.

This module allows to regenerate the quality of the multiplex when received from a noisy source. It is also interesting to change the input channel to another channel with total quality preservation.



<b>RF INPUTS Connector</b>	2 independent DVB-T inputs BNC-Type female, Impedance 75 Ω
<b>RF OUTPUT Connector</b>	2 combined independent DVB-T multiplexes F-Type female, Impedance 50 Ω
<b>TS PROCESSING Filtering Measurements</b>	PID Filtering with Filtering Table up to 32 PID Bitrate of the Output Multiplex Percentage of used bitrate relative to the maximum capacity of the multiplex
<b>CONFIGURATION AND POWER SUPPLY</b>	Through the DT-800 control and power supply unit. Control can be made remotely from a PC

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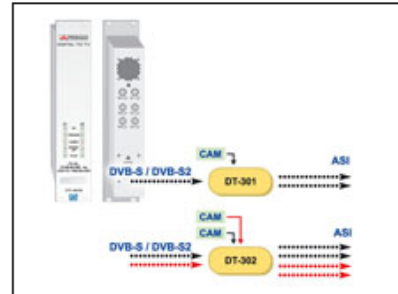
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## DT-301/302 Single/Dual DVB-S/S2 receiver with CAM and ASI-TS output

The **DT-301** (single) and **DT-302** (dual) modules are **digital satellite receivers** compatible with DVB-S and DVB-S2 standards. They can receive a satellite transponder and deliver the transport stream in the form of TS-ASI.

Each satellite receiver has two identical TS-ASI outputs. This is because satellite transponders can typically allocate a higher number of services than DVB-T multiplexes and therefore more than one COFDM modulator may be required if we want to deliver all services of the transponder to the TV distribution system.

Each satellite receiver allows inserting a Conditional Access Module (CAM). Several types of CAM can be used for de-encrypting one or more of the available encrypted programmes and being distributed (see **DT-902**).



 Click on the image to enlarge it.

<b>DVB-S/S2 IF INPUT Connector</b>	1 ( <b>DT-101</b> ) or 2 ( <b>DT-102</b> ) independent DVB-S/S2 inputs F-Type female, Impedance 75 Ω
<b>TS OUTPUT Connector</b>	1 ( <b>DT-301</b> ) or 2 ( <b>DT-302</b> ) double independent DVB-ASI outputs BNC female, Impedance 75 Ω
<b>TS PROCESSING</b>	Simultaneous decryption of multiples services (using a proper CAM module, see <b>DT-902</b> ). Selection of decrypted services by name
<b>CONFIGURATION AND POWER SUPPLY</b>	Through the DT-800 Control Module. Control can be made remotely from a PC

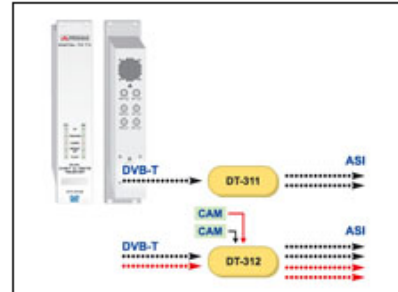
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## DT-311/312 Dual/Single DVB-T Receiver with ASI output

**DT-311:** It can be tuned to **receive a DVB-T multiplex**. It allows the selection of all or a number of programmes and it that packs them through the ASI - Transport Stream output. The built-in CAM module allows the de-encryption of programmes.

**DT-312:** Is composed of two units **DT-311** and includes two DVB-T inputs and two ASI - Transport Stream outputs.



 [Click on the image to enlarge it.](#)

<b>RF INPUT Connector</b>	1 ( <b>DT-101</b> ) or 2 ( <b>DT-102</b> ) DVB-T independent inputs F-Type female, Impedance 75 Ω
<b>TS OUTPUT Connector</b>	1 ( <b>DT-311</b> ) or 2 ( <b>DT-312</b> ) independent double DVB-ASI outputs BNC female, Impedance 75 Ω
<b>CONFIGURATION AND POWER SUPPLY</b>	Through the DT-800 Control and Power module. Control can be made remotely from a PC

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## DT-504 Quadruple Video/Audio encoder, DVB-T output

The **DT-504** module offers the possibility to **build a broadcast** signal in DVB-T format **from four composite video and audio inputs**. It is made of four independent video and audio MPEG-2 encoders and a modulator. Audio inputs can be stereo or mono.

Frequently some TV services are only available as analogue baseband video. That is the case of encrypted programmes which can only be received with a dedicated STB and smart card, signals from CCTV cameras, door entry systems, etc.

By means of the **DT-504** modulator, programmes originally in analogue format are inserted to the TV distribution network with the benefits of DVB-T technology.



 Click on the image to enlarge it.

<b>A/V INPUTS Connectors</b>	4 independent A/V inputs 3 RCA-Female connectors for each input
<b>RF OUTPUT Connector</b>	1 DVB-T multiplex Female F-type, Impedance 75 Ω
<b>MPEG-2 ENCODER</b> Video input Audio input Format Video bitrate Audio bitrate Editable parameters Measurements	PAL/NTSC Stereo/Mono/Dual/Joint Stereo MPEG-2 According to DVB-T modulation parameters From 32 to 384 kbits/s selectable Service Name, Service ID, Video PID, Audio PID, PMT PID Total bitrate
<b>CONFIGURATION AND POWER SUPPLY</b>	Via the DT-800 Control and Power module. Control can be made remotely from a PC

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## DT-900 Sub-rack framework for rack or wall

The sub-rack framework **DT-900** holds up to 7 modules DT-XXX plus the **DT-800** power supply and control unit.

Depending on how the different parts are assembled this same mounting kit can be used for direct wall mounting or to be placed in a 19" rack cabinet.



 Click on the image to enlarge it.

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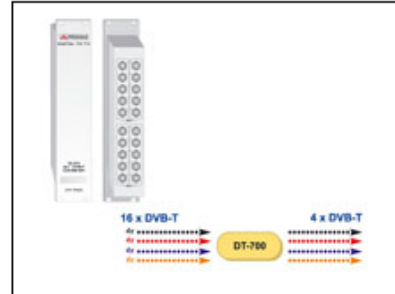
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## DT-700 16 input Quadruple 4x1 DVB-T combiner

The **DT-700** is a **passive module with four combiners 4x1** that can be used to mix the output RF signals of the COFDM modulators and transmodulators with DTT channels available in the area.

The system allows many different combinations to adapt to the needs of each system as best as possible.

This is a solution of higher quality than those that often use Z connections, given that preserves better the original quality and maintains lower noise levels.



 Click on the image to enlarge it.

<b>INPUTS FOR EACH COMBINER</b>	4 BNC female inputs 75 Ω (16 total)
<b>OUTPUTS FOR EACH COMBINER</b>	1 BNC female output 75 Ω (4 total)

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## DT-710 8 input DVB-T combiner with one single amplified output

The **DT-710** is a combiner with 8 inputs and an output designed to mix output RF signals of COFDM modulators and transmodulators with DTT channels available in the area.

The system provides an amplified output of 114 dB $\mu$ V (+6 dBm) frequently required in SMATV systems.

This is a solution of higher quality than those that often use Z connections, given that preserves better the original quality and maintains lower noise levels.



 Click on the image to enlarge it.

<b>FREQUENCY MARGIN</b>	From 50 MHz (C-2) to 860 MHz (C-69)
<b>INPUTS</b>	8 inputs Female BNC, 75 Ω impedance
<b>RF OUTPUT</b> <b>Maximum output level</b>	1 female BNC output, 75 Ω impedance 1 channel at 119 dB $\mu$ V 2 channels at 116 dB $\mu$ V 4 channels at 113 dB $\mu$ V 8 channels at 110 dB $\mu$ V 16 channels at 107 dB $\mu$ V
<b>CONFIGURATION AND POWER SUPPLY</b>	Through the DT-800 control and power supply unit. Control can be done remotely from a PC.

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## DT-722 4 input DVB-T combiner with one single amplified output

The **DT-722** is a combiner with 4 inputs and an output designed to mix output RF signals of COFDM modulators and transmodulators with DTT channels available in the area.

The system provides an amplified output of 130 dB $\mu$ V (+22 dBm) frequently required in SMATV systems.

This is a solution of higher quality than those that often use Z connections, given that preserves better the original quality and maintains lower noise levels.



Click on the image to enlarge it.

<b>FREQUENCY MARGIN</b>	From 50 MHz (C-2) to 860 MHz (C-69)
<b>INPUTS</b>	4 inputs Female BNC, 75 $\Omega$ impedance
<b>RF OUTPUT</b> <b>Maximum output level</b>	1 female BNC output, 75 $\Omega$ impedance 1 channel at 130 dB $\mu$ V 2 channels at 127 dB $\mu$ V 4 channels at 124 dB $\mu$ V 8 channels at 121 dB $\mu$ V 16 channels at 118 dB $\mu$ V
<b>CONFIGURATION AND POWER SUPPLY</b>	Through the DT-800 control and power supply unit. Control can be done remotely from a PC.

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## DT-730 DVB-T 30 dBm Power amplifier (1 W)

The DT-730 is a high quality **1 W RF power amplifier** for COFDM signals, both for single carrier or multicarrier system. The system provides an amplified output of **30 dBm (137 dB $\mu$ V)**.

This is a high quality solution that preserves the original signal quality and maintains a low noise levels.



Click on the image to enlarge it.

<b>FREQUENCY BANDS</b>	UHF from 470 MHz ~ 862 MHz
<b>INPUT</b> <b>Type</b> <b>Maximum COFDM Input</b>	1 canal a 85 dB $\mu$ V $\pm$ 3 dB 2 canales a 82 dB $\mu$ V $\pm$ 3 dB 4 canales a 79 dB $\mu$ V $\pm$ 3 dB 8 canales a 76 dB $\mu$ V $\pm$ 3 dB 16 canales a 73 dB $\mu$ V $\pm$ 3 dB 32 canales a 70 dB $\mu$ V $\pm$ 3 dB
<b>OUTPUT</b> <b>Type</b> <b>MER</b> <b>Gain</b> <b>Maximum COFDM Power</b> <b>Maximum output level</b>	1 x 50 $\Omega$ BNC female $\geq$ 35 dB 52 dB $\pm$ 3 dB +30 dBm 1 channel at 137 dBmV 2 channels at 134 dB $\mu$ V 4 channels at 131 dB $\mu$ V 8 channels at 128 dB $\mu$ V 16 channels at 125 dB $\mu$ V 32 channels at 122 dB $\mu$ V

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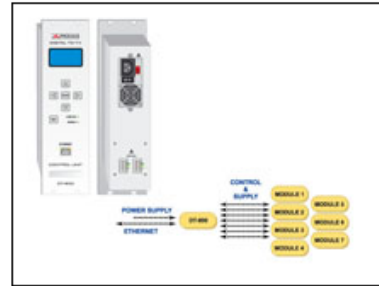
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## DT-800 Control unit and power supply

The **DT-800** delivers the control and power supply for up to 7 modules, any type.

The control is specific to each module and it is possible to change configuration of all parameters of the receivers, modulators, encoders,... at any time. Front panel keyboard and LCD provide an easy access to module functions such as tuning frequencies, output levels, PID filters, etc.. System administrator can prevent unauthorized or accidental system access by locking front panel keys.

An Ethernet port is available in case the installer wishes to take control from a PC computer. This can be particularly interesting to copy settings from one system to another or simply to reduce time of installation.



 Click on the image to enlarge it.

<b>MODULES</b> Control/Power Supply Auto-config Auto-link	Up to 7 modules DT-XXX Auto-detection of connected modules Auto-detection of interconnection between modules
<b>LOCAL INTERFACE</b>	LCD screen Navigation keypad (6 keys) 2x information LEDs: Line On / Error Intuitive Navigation Menu (tree type menu)
<b>REMOTE INTERFACE</b>	Through Ethernet port (PC software supplied). 10/100Mb. Virtual Control by means of virtual serial port.

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## DT-802 Control module with a redundant power supply

The **DT-802** is the control module of the "Digital To TV" system, with a dual redundant power supply of 300 W and two inputs for 1 or 2 different electricity suppliers. The redundant power supply works when either one of the electricity suppliers or one power module fails. The damaged power module can be replaced by hot-swapping a new one, that is, without rebooting the system. This ensures the continuity for the TV distribution system.

All other functions are equivalent to the power supply module **DT-800** but more powerful: allows the specific control of each module and configuring all the parameters associated and can work in local mode via the front keypad or by remote control via an Ethernet connection.



 Click on the image to enlarge it.

<b>MODULES</b> Control/Power Supply Auto-config Auto-link	Up to 16 modules DT-XXX Auto-detection of connected modules Auto-detection of interconnection between modules
<b>LOCAL INTERFACE</b>	LCD screen Navigation keypad (6 keys) 3x information LEDs: Line On / Error / PSU Status Intuitive Navigation Menu (tree type menu)
<b>REMOTE INTERFACE</b>	Through Ethernet port (PC software supplied). 10/100Mb. Virtual Control by means of virtual serial port.

# PRODUCTS

## HD Encoder

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

DVB H.264/AVC Encoder plus a MPEG-2 to H.264/AVC Transcoder.



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

**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 or YPbPr 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.



 Click on the image to enlarge it.

- H.264/AVC (MPEG-4 part 10), High profile, Level 4.0, 4:2:0 Chrominance sampling
- TS to TS Transcoding (MPEG-2 HD to H.264 HD/SD or MPEG-2 SD to H.264 SD)
- MPEG-1 Audio Layer1 & Layer2 encoding
- 1x Dolby Digital (AC-3) or 1x MPEG-1 audio pass through transcoding
- Supports full HD 1080i encoding
- Extensive video pre-processing solutions
- Best possible picture quality from 2.0 Mbit/s to 20 Mbit/s
- 1x Stereo pair analogue XRL Balance audio input, or digital AES/EBU audio input option
- HD-SDI, HDMI, YPbPr/RGB video input interface
- Full-Duplex TS over IP I/O, RTP protocol ready for Unicast and Multicast (does not require external encoder)
- ASI input and output
- SNMP Ethernet Management

### VIDEO

**Video input interface**

**Video Compression**

**Bit rate**

**Frame rate**

**Resolution**

HD-SDI, HDMI, YPbPr, RGB

H.264 High Profile / Level 4.0 Half-Duplex Codec

20Mbps (max.)

1fps-25/30fps

1920×1080×60i/50i, 1440×1080×60i/50i,  
1280×720×60p/50p, 720×480×60i, 720×576×50i

### AUDIO

**Audio input Interface**

**Audio Compression Format**

Stereo RCA female, 600 Ω

MPEG-1 Audio Layer 1 & Layer 2 encoding

Dolby Digital(AC-3) pass-through





# PRODUCTS

## DVB-TS Re-multiplexer

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	<p><b>MX-008 DVB TS Re-Multiplexer</b></p> <p>Can multiplex up to 8 ASI transport streams and deliver 2 ASI Independent output ports.</p>	<p> Download PDF</p> <p><a href="#">▶ More information...</a></p>
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## MX-008 DVB TS Re-Multiplexer

**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 Independent 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.



 Click on the image to enlarge it.

- Fully compliant with DVB ETSI 300421 standard
- Processing of up to 8 SPTS or MPTS
- 8 ASI inputs, 2 ASI Independent outputs
- ASI input packet length 188/204 bytes Self-adapting
- Output packet length 188/204 bytes optional
- Output rate up to 216 Mbps
- SI/PSI automatic regeneration or manual re-mapping
- Service and PID packet filtering and re-multiplexing
- Network remote control and software upgrade
- Standard 19" rack 1U chassis installation

<b>REAR PANEL</b> RS-232 ETHERNET ASI1-ASI8 IN ASI1-ASI2 OUT Power cord socket	9-pin port for debug and software upgrade 10M/100M Base-T Ethernet for network remote control DVB-ASI Input ports DVB-ASI Output ports AC 90~260V, 50Hz/60Hz
<b>DVB-ASI INPUT</b> Connector Min Sensitivity Input Level Input Bit rate Data format Package length	8 x BNC female, 75 Ω 200mV 880mV 5 to 50Mbps Byte 188/204 bytes (self-adapting)
<b>DVB-ASI OUTPUT</b> Connector Output level Rise time Fall time Deterministic jitter Output Bit rate Data format Package length	2xBNC female, 75 Ω 800mV 1200ps 1200ps 10% 5 to 80Mbps Byte 188/204 bytes (selectable)