

UNIVERSAL TV EXPLORER PRODIG-5



GENERAL

Description

The television explorer **PRODIG-5 (EXPLORER)** represents an evolutionary step with respect to the traditional field strength meters. The continuous **PROMAX** innovation process in the sector of field strength meter yields an instrument that changes the way to take and understand television signals measurements.

This equipment incorporates important advances in the **functional** aspects as well as in the **ergonomics** to allow the installers to make their work with maximum **comfort** and **speed**. Simultaneously the instrument is **reliable** for any possible problem at the **input signal**, at the **distribution components** or the **receiver equipment**.

The **PRODIG-5** has been designed to satisfy all the necessities of measurement during the **transition from analogue transmissions to digital** in **terrestrial, satellites** and **cable** systems, Allowing measurements of **analogue** signals as well as **digital ones**. When pressing the **auto identification** key, it searches and identifies the **signal under test**. First it recognises whether the signal is an analogue channel or a digital one. If the channel is analogue, it determines the television standard of the signal. When the signal is digital (**DVB**), it analyses for each modulation type **QAM / QPSK / COFDM** all the associated parameters such as the modulation system: **carriers 2k-8k, symbol rate, code rate**, etc. and determines the value of the signals under test.

The **PRODIG-5** includes the main **TV standards: M, N, B, G, I, D, K** and **L**, adopting, apart from the characteristic parameters of the standard, the correcting automatic system to obtain in all the cases an accurate measuring of the input signal level. It accepts any TV system (**PAL, SECAM** and **NTSC**) and allows the user to work directly with **digital TV** signals decoding them, so that the television image may be viewed, and directly measuring the power, carrier/noise ratio (**C/N**), the bit error rate (**BER**) and the modulation error ratio (**MER**), as well for **DVB-T (COFDM)** as **DVB-S (QPSK)** and **DVB-C (QAM)** signals. Being a multistandard instrument, it can be efficiently used in any country of the world.

Includes a **symbol-based keyboard** that allows direct access to the various functions that are displayed simultaneously on screen.

The **PRODIG-5** makes a **dynamic exploration** of the spectrum, detecting all the channels in the explored band, this applies for the **terrestrial** and the **satellite** television bands. The meter **locates** all the channels in the spectrum **with no need** of any **previous information** about the number of channels, the type of signals transmitted or their characteristics. With the data collected after each exploration, it creates a register that contains **tables of channels** that can be independent for each **system or installation**. At any time, the measurement sessions using only the pretuned channels can be repeated. In this way it is possible to optimise the measurement process.

Shown on the front panel are the **type of measurement** that is being carried (Terrestrial-Satellite/Analogue-Digital) and the data is presented on a hi-res 5" graphic **TFT** display. The

equipment incorporates a light sensor that activates the contrast and luminosity of the display according to the environmental conditions.

The **EXPLORER** is an **ideal size** to hold **with a hand**. The instrument can be held to the body with the carrying bag, which at the same time protects it from the rain. Because it is designed for outdoor use, it includes an **anti-shock** protector that completely covers the instrument, and optionally can be supplied with a strong transport case. As well, the front panel does not have any keys nor gaps to avoid accidental water ingress.

The **PRODIG-5** is designed to integrate measurements that require different operating configurations. In this way it incorporates a specific function to facilitate the **alignement of antennas**. When activating the alignment function the instrument is set automatically to offer a **fast spectrum sweep** and a high **sensitivity** graphical bar that allows **fine adjust** for the maximum signal. In addition it includes a module for the **powering of LNBS** and **DVB-T antennas** to 5V, and the commands for the **programming of DiSEqC 1.2 devices**.

The **EXPLORER** can be updated to new software versions that extend the available functions in the future. That means it can incorporate new benefits without additional cost. For example in the **test of satellite signals distribution networks**, the use in combination with an **IF** generator to carry out an easy verification of the installations before the operation begins.

The **spectrum analyser** features with high accuracy, resolution, sensitivity and sweep speed allows the instrument to be very useful for applications such as the **installation of antennas** or the detection of complex **impulsional noise** events. It presents an innovative control system based on four arrows, that makes the use of the spectrum analyser very intuitive. The arrows allow adjusting the **reference level** by steps of 10dB and the frequency margin **span** on screen.

Also, the meter incorporates a **DiSEqC²** command generator and permits to supply different voltages to the external unit (**5 V / 13 V / 15 V / 18 V / 24 V**) and includes an **EUROCONNECTOR**, or Scart connector, for audio/video input/output.

The **PRODIG-5** is powered by **rechargeable battery** or can be connected to the mains through the supplied **external DC power charger**.

It incorporates an **RS-232C** interface, which enables service to be carried out, and the checking, setup and calibration processes.

This instrument due to its extreme-compact design, technical specifications and low cost now becomes the industry standard instrument for the installer.

² DiSEqCTM is a trademark of EUTELSAT.

Specifications

CONFIGURATION FOR MEASURING LEVEL AND POWER

TUNING	Digital frequency synthesis. Continuous tuning from 45 to 865 MHz and from 950 to 2150 MHz
Tuning modes	Channel or frequency (IF or downlink in the satellite band). Channel plan configurable on demand
Resolution	45-865 MHz: 50 kHz 950-2150 MHz: < 200 kHz (span FULL-500-200-100-50-32-16 MHz).
Automatic search (<i>Explorer</i>)	Threshold level selectable. DVB-T or DVB-C selection
Signal identification	Analogue and digital. Automatic.
RF INPUT	
Impedance	75 Ω
Connector	Universal, with BNC or F adapter.
Maximum signal	130 dB μ V
Maximum input voltage	
DC to 100 Hz	50 Vrms (powered by the AL-103 power charger) 30 Vrms (not powered by the AL-103 power charger)
45 MHz to 2150 MHz	130 dB μ V

DIGITAL SIGNALS MEASUREMENT

POWER RANGE

COFDM:	45 dB μ V to 100 dB μ V.
QAM:	45 dB μ V to 110 dB μ V.
QPSK:	44 dB μ V to 114 dB μ V.

MEASUREMENTS

DVB-T (COFDM):	Power, CBER, VBER, MER, C/N
Presentation:	Numeric and level bar.
DVB-C (QAM):	Power, BER, MER, C/N
Presentation:	Numeric and level bar.
DVB-S (QPSK):	Power, CBER, VBER, MER, C/N
Presentation:	Numeric and level bar.

COFDM SIGNAL PARAMETERS

Carriers	2k / 8k (Selected by the user).
Guard Interval	1/4, 1/8, 1/16, 1/32 (Selected by the user).
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8.
Modulation	QPSK, 16-QAM, 64-QAM.
Spectral inversion	Selectable: ON, OFF.
Hierarchy	Indicates hierarchy mode.

QAM SIGNAL PARAMETERS

Demodulation	16/32/64/128/256 QAM.
Symbol rate	1000 to 7000 kbauds.
Roll-off (α) factor of Nyquist filter	0.15.
Spectral inversion	Selectable: ON, OFF

QPSK SIGNAL PARAMETERS

Symbol rate	2 to 45 Mbauds.
Roll-off (α) factor of Nyquist filter	0.35.
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8 and AUTO.
Spectral inversion	Selectable: ON, OFF

VIDEO

Format	MPEG-2 / DVB (MP@ML).
Services decoding	Service list and PIDs

ANALOGUE SIGNALS MEASUREMENT**LEVEL MEASUREMENT****Measurement range**

Terrestrial TV & FM bands 10 dB μ V to 120 dB μ V (3.16 μ V to 1 V)

Satellite TV band 30 dB μ V to 120 dB μ V (31.6 μ V to 1 V)

Reading Auto-range, reading is displayed on an OSD window

Digital Absolute value calibrated in dB μ V, dBmV or dBm.

Analogue Relative value through an analogue bar on the screen.

Measurement bandwidth

230 kHz (Terrestrial band) ■ 4 MHz (Satellite band) (maximum band ripple 1 dB).

Audible indicator

LV audio. A tone with pitch proportional to signal strength.

Accuracy

Terrestrial bands ± 1.5 dB (30-120 dB μ V, 45-865 MHz) (22 °C ± 5 °C)

Satellite band ± 2.5 dB (40-100 dB μ V, 950-2050 MHz) (22 °C ± 5 °C)

Overrange indication

↑, ↓

MEASUREMENTS MODE**Terrestrial bands**

Analogue channels Level, Video-Audio ratio and Carrier-Noise ratio..

Digital channels Channel power, Carrier-Noise ratio and Channel identification.

Satellite band

Analogue channels Level and Carrier-Noise ratio.

Digital channels Channel power and Carrier-Noise ratio.

SPECTRUM ANALYSER MODE**Satellite band**

30 dB μ V to 120 dB μ V (31.6 μ V to 1 V)

Terrestrial bands

10 dB μ V to 120 dB μ V (3.16 μ V to 1 V)

Measurement bandwidth

Terrestrial 230 kHz

Satellite 4 MHz

Span

Terrestrial *Full span* (full band) - 500 - 200 - 100 - 50 - 32 - 16 - 8 MHz selectable.

Satellite *Full span* (full band) - 500 - 200 - 100 - 50 - 32 - 16 MHz selectable.

Markers

1 with Frequency and level indications..

Measurements**Terrestrial bands****Analogue channels** Level.**Digital channels** Channel power.**Satellite band****Analogue channels** Level.**Digital channels** Channel power.**MONITOR DISPLAY****Monitor**

TFT colour 5 inches.

Colour system

PAL, SECAM and NTSC

TV standard

M, N, B, G, I, D, K and L

Spectrum mode

Variable span, dynamic range and reference level by means of arrow cursors.

Sensibility40 dB μ V for correct synchronism.**BASE BAND SIGNAL****VIDEO****External video input**

Scart.

Sensibility1 Vpp (75 Ω) positive video**Video output**Scart (75 Ω)**SOUND****Input**

Scart

Outputs

Built in speaker, Scart.

Demodulation

TV PAL, SECAM, NTSC system according to DVB-T, DVB-C, DVB-S and MPEG standards.

De-emphasis50 μ s**Subcarrier**

Digital frequency synthesis according to the TV standard.

RS-232C INTERFACE

For service and calibration.

EXTERNAL UNITS POWER SUPPLY**Terrestrial and Satellite**

Through the RF input connector.

22 kHz signal

External or 5/13/15/18/24 V

Voltage

Selectable in satellite band.

Frequency0.6 V \pm 0.2 V**Maximum power**22 kHz \pm 4 kHz

5 W

DiSEqC³ GENERATOR

According to DiSEqC 1.2 standard.

POWER SUPPLY**Internal****Batteries**

7.2 V 11 Ah Li-Ion battery.

Autonomy

> 3.5 hours in continuous mode.

Recharging time

3 hours up to 80% (instrument off)

External**Voltage**

12 V

Consumption

35 W

³ DiSEqCTM is a trademark of EUTELSAT.

Auto power off Programmable. After the selected amount of minutes without operating on any control. Deactivable.

OPERATING ENVIRONMENTAL CONDITIONS

Altitude Up to 2000 m
Temperature range From 5 to 40 °C (Automatic disconnection by excess of temperature).
Max. relative humidity 80 % (up to 31°C),
decreasing lineally up to 50% at 40 °C.

MECHANICAL FEATURES

Dimensions 230 (W) x 161 (H) x 76 (D) mm
(Total size: 2.814 cm³)
Weight 1.9 kg (without holster)

INCLUDED ACCESSORIES

1x CB-044 Rechargeable Li+ battery 7,2 V 11 Ah
1x AD-055 "F"/F-BNC/F adapter
1x AD-056 "F"/F-"DIN"/F adapter
1x AD-057 "F"/F-"F"/F adapter
1x AL-103 External DC charger
1x DC-261 Carrying bag.
1x AA-103 Car lighter charger.
1x CA-005 Mains cord.

OPTIONAL ACCESSORIES

DC-299 Transport suitcase.