

CABLE TV & DATA ANALYSER

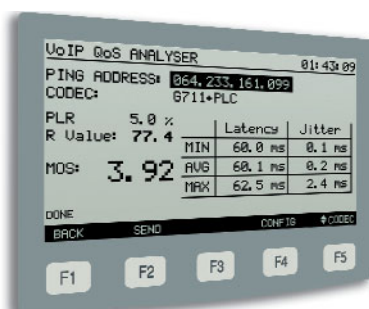
***PROMAX-27** is an analyser for the installation, configuration and maintenance of video and high speed data interactive services over TV networks based on the EuroDOCSIS and DOCSIS 2.0 standard. It allows the qualification of VoIP and IPTV services.*



VoIP

VoIP (voice over IP) or IP Telephony, is a group of resources that make it possible for the voice signal to travel over the Internet using IP (Internet Protocol). The **PROMAX-27 VoIP** function performs an analysis of the network based on the quality of service parameters, named UGS, according to the standards DOCSIS / EuroDOCSIS.

The **PROMAX-27** analyses the most important factors that may affect the quality of communication, including latency, jitter, lost packets, MOS and R value. This comprehensive analysis will ensure the achievement of an excellent quality of call.

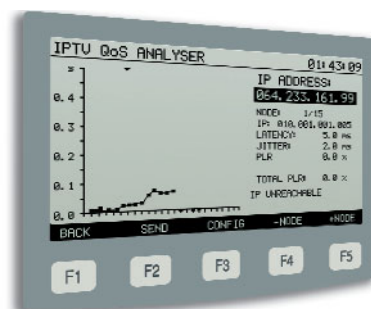


IPTV service analysis

Internet Protocol Television (IPTV) has become the most common denomination for the distribution systems of television and / or video signals using IP on a network infrastructure

PROMAX-27 analyses parameters that can affect quality signal, like latency, jitter, lost packets and **trace route**, which trace the route of sent packets on a graph.

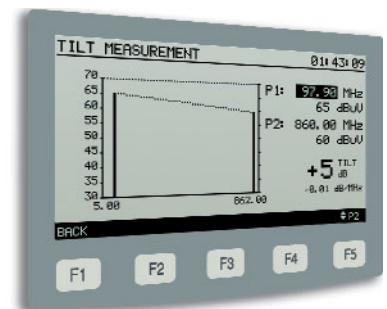
This function may be useful to detect possible bottlenecks



TILT function

The TILT test is an utility to equalize the line. For that, are used two pilot signals that are transmitted normally at the beginning and at the end of the CATV network band.

These two pilots are the ones that can be tuned simultaneously on the screen. By this way you can evaluate the losses slope and therefore readjust equalizers of amplifiers in order to compensate these losses and ensure a flat response across the band.



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The **PROMAX-27** is capable of the following measurements:

Downstream:

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

Upstream:

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

Communications Test (in Registered mode):

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

Packet loss ratio

When the **PROMAX-27** operates in registered mode, it can communicate in the network and can show useful data related to the IP addresses allocation and the form in which the packets flow throughout the network.

The instrument calculates the ratio of packages received (PLR) which represents a statistical measurement about the traffic effectiveness through the network, as well as the maximum and minimum times for those receptions. This will allow to evaluate the network capability to support certain transport services (e.g. voice on IP) and to determine the global performance of the overall system.

Upstream and Downstream

The **PROMAX-27** communicates with the CMTS and shows the most important information related to the transmission: frequencies assigned in the upstream and downstream, signal quality in the downstream (power, BER, MER), power transmitted by the modem and attenuation in the return band.

The upstream attenuation is a very important parameter and the installer must verify if this parameter is within the specified range.

MER and Constellation

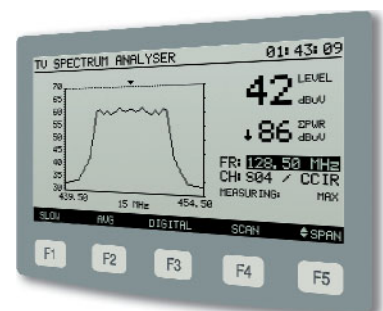
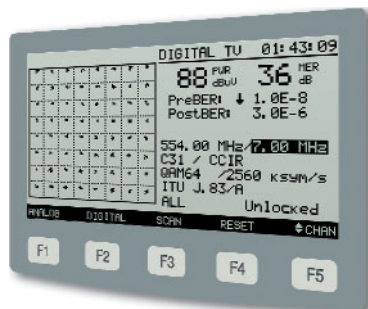
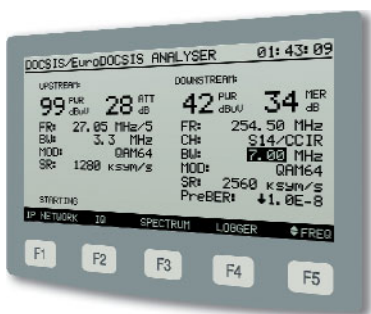
These measurements are decisive for the early detection of excessive noise in the system or intermodulation problems in the downstream. In general, a lower MER can mean system operating problems, as well as a slow speed due to the packets loss and interruptions.

The display of the constellation diagram and the bit error rate (BER) are other key measurements to evaluate the performance of the downstream.

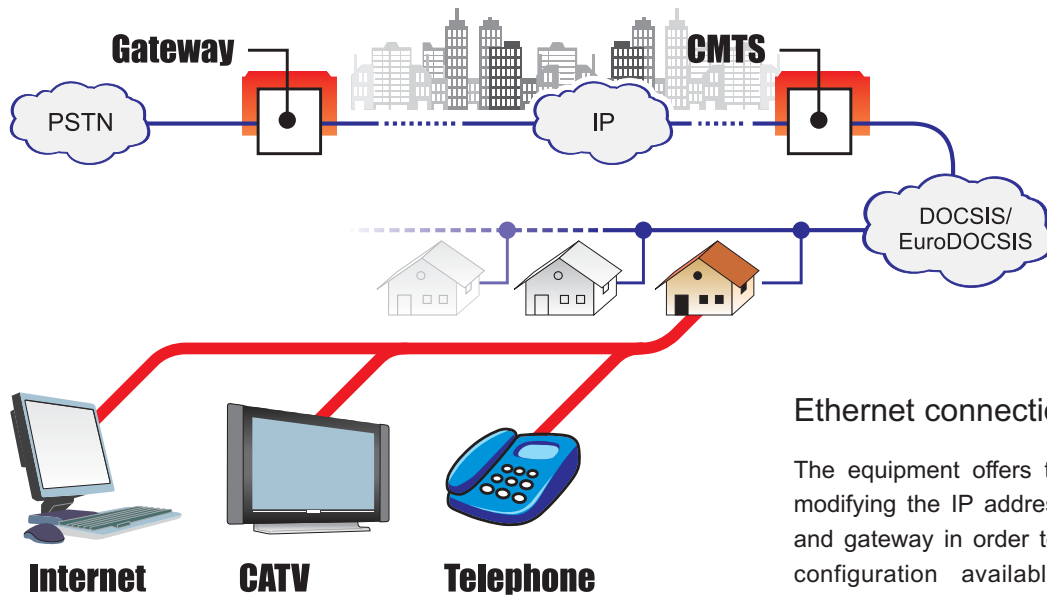
Spectrum Analysis

When in Scan mode all the carriers or a portion of them are displayed in the screen.

When the tuned channel is zoomed, it shows in one screen the channel under test, both adjacent channels and the level measurement. It is extremely useful to view interference's at a glance.



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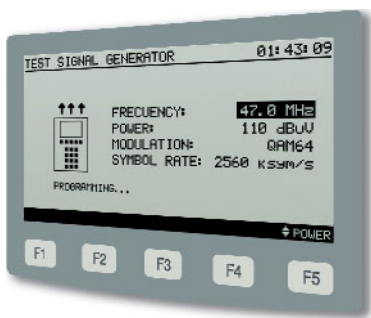


Ethernet connection

The equipment offers the possibility of modifying the IP address, subnet mask and gateway in order to make the web configuration available through the ethernet port.

Channel Qualification

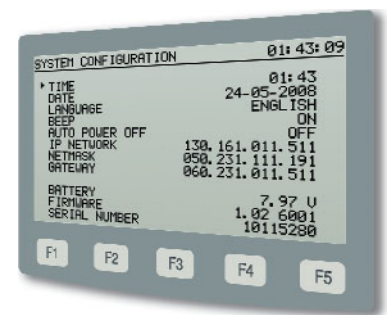
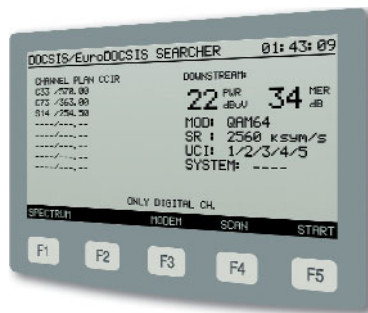
The **PROMAX-27** includes a signal generator, a pilot signal with selectable level, frequency, modulation and symbol rate. It can be programmed to continuous or TDM mode in order to evaluate the quality of the upstream channel.



Channel Searching

This function carries out an exploration of all **EURODOCSIS / DOCSIS** channels, collecting them in a list.

For each channel it shows the power level received, the MER and the corresponding upstream channel identifier.



Datalogger mode

Most of the measurements both for the upstream and for the downstream (including IQ constellation) can be stored in the internal memory by means of the Datalogger function with up to 30 positions of capacity. All these data can be transferred to a personal computer (PC) to be processed later or to be included in the automated measurement reports.