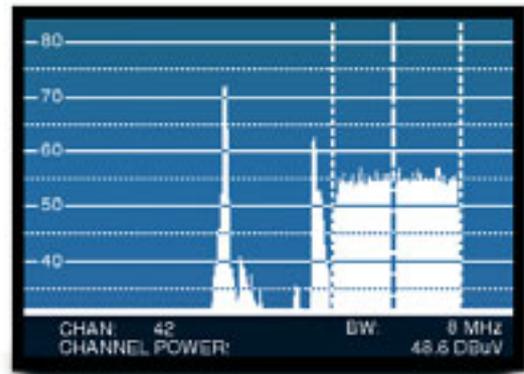




Then there is a range of modulation types for these carriers 16QAM, 64QAM, QPSK.... The code rates and the Guard Intervals are also configurable and different from one operator to another.

In some cases, the compatibility of the existing analogue channels with the new digital ones creates intrinsic incompatibilities. In the UK, for instance, the topology of the network includes digital channels next to analogue channels. Some of these analogue channels have in addition to its 6 MHz audio carrier, a NICAM carrier behind. This causes an overlap with the digital



multiplex in the adjacent channel. To solve this, the digital multiplex can be shifted forward.

The broadcasters have yet another compromise when deciding the 'load' of the multiplex. If we consider a multiplex with a 64 QAM modulation and hence a 24 Mbits/sec payload, 4 video channels at 6 Mbits/sec or 6 video channels at 4 Mbits/sec can be supported. Depending on the partition carried out the decoding times can change.

**D**TT service has been launched or announced in practically all Europe. While in most of countries the coverage has already reached a large percentage of its population, some others are just starting with trials and test transmissions.

In any case, the implementation of the system is now started and the digital switch over will take place within the next few years.

Many digital television set top boxes and integrated digital televisions are sold during the launch campaigns but, not always these devices are ready to be marketed. As a result, the rate of replacements is high. Installers and distributors rush to replace defective units but there are certainly problems in the field. This is not an optimum situation because changes in the transmission conditions, channel plans, etc. might revert into reception problems eventually.

The challenge is not small for the manufacturers. There are many different network configurations depending on the country and lately, on the operator itself.

First of all the allocation of the channels. Digital channels are placed in any part of the spectrum, depending on the country's spectrum plan.

The multiplex can be operated in 2k or 8k mode. This parameter determines the number of carriers that are transporting the information within the channel.



Receiver and iDTV manufacturers produce their products to get the lowest cost possible and therefore have to be universal, considering that their receivers will have to cover all possible present and future broadcast possibilities. The performance of these devices varies not only in between different manufacturers but also among equipment of the same type.

This test bench will allow to reproduce any different conditions as found in any area and help to identify receiving problems that could hardly be found otherwise.

With a test bench composed of 2 analogue sources and 2 digital sources, for instance, it will be possible to simulate any combination of channels:



Digital - Digital - Analogue



Digital - Analogue - Digital

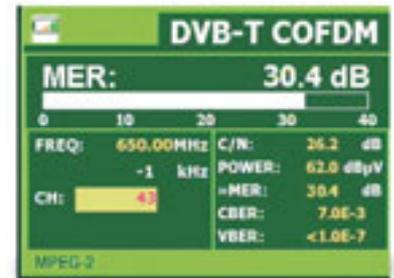


Analogue - Digital - Analogue



We can now test how the change in level or power on each individual signal influences onto the others. We can also check the effect of the digital on the NICAM of the precedent channel or even shift the signals as required.

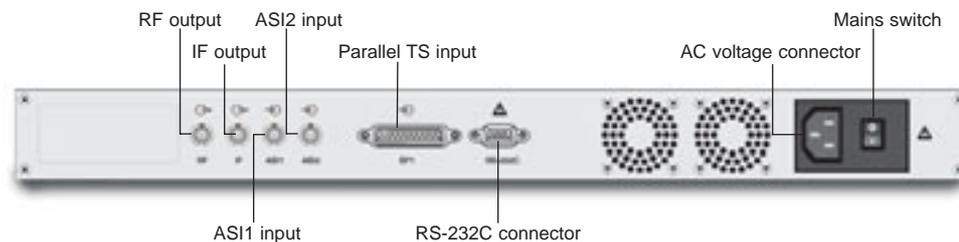
The **PROMAX** Analysers will become a perfect allied to make all of the tests. It allows to measure both the analogue and the digital signals, check the spectrum and also demodulate the signal.



Making strict performance test to the receivers and iDTV's is a must and a solution to reach high rejection rate levels.

The **MO-170** can modulate a DTV multiplex at any frequency in the range of 45 MHz to 875 MHz in the range of -30 to -70 dBm in steps of 1 dB. The DVB-T parameters are programmable.

The combination of the **MO-170** and the **PROMAX** analyser provides a very low cost solution for testing of DTV receivers, iDTV's and related equipment.



If you are interested in a customised test solution, please contact with us on [promax@promax.es](mailto:promax@promax.es).

The **MO-170's** can be piled up. When combined with analogue generators they can simulate complete networks. To generate the analogue channels the **PROMAX GV-998** or **GV-898** can be used.