EXAMINER *Probe*

Flexible, Compact and multipurpose.

An RF signal analyzer with ASI, SDI and Video interfaces to be used in various possible combinations: from the broadcast world to the rest of the industry as well as by an expert installer. So compact that can be fitted as a module in a 1U rack.

The Examiner is an advanced tool that may be used also by a Broadcaster, designed for TV signals monitoring stations, manufacturers of receivers and for expert installers which are dealing with complex system configurations.

A tool that analyzes all RF signals: TV, SAT, CATV, Radio FM and DAB + and equips numerous inputs and outputs: ASI, SDI, HDMI, TS over IP, RF, CVBS. The Examiner may be powered by the mains voltage 230 Vac (external power supply).

The front panel houses the main plugs: two RJ45 for network monitoring and data, CI slot and On, Lock and Alarm LEDs. On the back panel, there is the RF input and the ASI, SDI, HDMI CVBS interfaces. For the application for which the EXAMINER has been designed, it does not have a display: the screens that show the measurements may be seen on a PC, Tablet or Smartphone through any Browser interface. There are two modes to connect the EXAMINER to these devices: with a network cable to the LAN socket on the front panel or though WiFi: this requires the optional WiFi board to be installed in the unit.

Rear panel from left: 12 VDC 1 A external power supply, Composite video output (BNC), ASI or SDI, depending on model (BNC), ASI IN, Analog Audio OUT (12-pin connector), HDMI Out and RF IN (F).
The size of the new Examiner is designed to allow the insertion of the unit in a rack-mount chassis.

The Target design

Examiner is a very flexible product in its functions therefore, it may be used in many applications. Dedicated to the professional world, It is a quality solution that may be used integrated in third party products.

This has much to say about the custom application potentials for this product: it will be the user that buys this product to determine its specific use, according to the required specifications. As an example, we have considered three typical environments: broadcasting, industry and expert installer.

Broadcasting: monitoring

The Examiner may be used as a probe in a Broadcast Transmission chain, when it is necessary to use it in monitoring activities: the equipped SDI and ASI interfaces, the RF reception and the availability of the AV signals at the output, in addition to the possibility to connect the unit to a Wi-Fi network, Ethernet or 4G dongle, is crucial to understand which component generates a malfunction or a problem to be solved. The size is so compact that the Examiner maybe fitted into a 1U 19" rack. Configured in series or in parallel to any equipment in a system, it can find a malfunction, by recording all alarms that occur during the day. Some sort of control of the controller. Furthermore, the quality of the board implemented in the Examiner is at a broadcast level, which is an aspect that gives all the necessary reliability guarantees for any professional application: for this reason it is always possible to use it as the main monitoring unit.

The new EXAMINER: Features

Standard	DVB-S / S2M	DVB-T / T2
DEMODULATION		
Constellation	QPSK, 8PSK, 16APSK	QPSK, 16QAM, 64QAM, 256QAM
Auto FEC	Si	-
Channel band	-	5 MHz, 6 MHz, 7 MHz, 8 MHz, (7 & 8 MHz with SAW tuner)
Roll-off	0,2 - 0,25 - 0,35	-
PLP	-	Single & Multi PLP Selection (DVB-T2)
RF INPUT		
Connector	F type	F type
Frequency range	48 ÷ 2250 MHz	
RF dynamic range	40 ÷ 100 dBµV (with attenuator)	40 ÷ 120 dBµV (with attenuator)
ASI OUTPUT		
Standard	ASI–C MPEG–4	ASI–C MPEG–4
Connectors	2 x BNC (75 ohm) - 4 x BNC (opt.)	2 x BNC (75 ohm) - 4 x BNC (opt.)
Measurements	RF power (dBµV, dBm), Frequency offset, SNR, MER, aBER & bBER, TS bitrate TS Analyzer, Stuffing rate, FEC mode FEC frame, LDPC, Pre-BCH BER pre-LDPS BER, PLP ID Error, MPEG PER & PER (DVB-S2), ISSY	
Graphics	MER Vs carrier, Constellation with girds and zoom types, Impulse Response (-340 µs, 340 µs), Spectrum	
Alarms	Input signal Unlock, LNB, BER Power Level, SNR, ETR 101-290	Board self-test, Signal lock, Power level MER & BER ETR 101-290
Other standards	DAB+, ISDB-T, DTMB, ATSC, RADIO	

Industry:
custom integration design

The Examiner may be used by a manufacturer as a test bench instrument or implemented as a module into a rack of his own product.

Let's consider for example a manufacturer of broadcast products that must add to its transmitter also the receiver module: in this case the Examiner solves his problem and avoids further development costs.

The ease of this integration is emphasized by the size of the Examiner, that can be implemented inside the transmitter rack, thanks to its reduced dimensions and because of the dedicated ASI interfaces.

## Expert Installer:
test and monitoring

As examples of this application we suggest two cases, although the possibilities for the use of the Examiner are far more numerous.

The first example is about an installer that has to perform functionality tests on one or more products to be used in a major installation, in order to have the assurance that these products are adequate; the second example is when he has to understand the cause of a problem that occurs in an existing installation (and therefore also identify the product which is responsible).

The alarm functions designed in the Examiner, which are also user-programmable, prove to be really useful for this task.

ASI transport stream analyzer ETR 101-290.
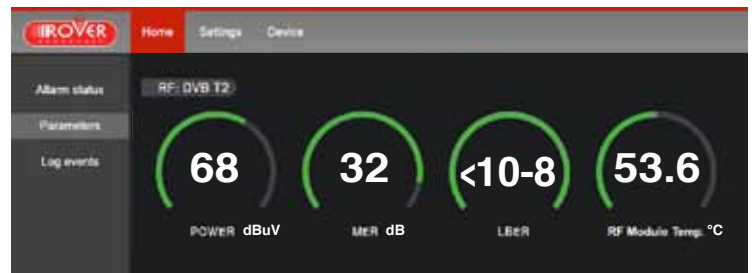
Dedicated graphic interface to show the measurements.

The spectrum display provides the possibility to select the Span.

Specifications and features are subject to change without notice.