

SAT, TV, CATV, OPTIC AND IPTV ANALYZERS

ATOM HD STCOL: the super-combined, High Definition, SAT, TV & CATV analyzer, also for Fiber Optic & IPTV signals, and at last analog SAT is back!

The new Rover ATOM HD super analyzer measures any type of signal and also shows high definition pictures. It is ready to test all SAT, TV and CATV systems, with coaxial cable, fiber optic or with IPTV cabling.

TV programming is moving more and more towards High Definition content and events. To adapt the performance of reception systems, the installer must be supported by suitable and up to date instruments that comply with the latest technological innovations. Rover offers a wide range of SAT, TV and CATV analyzers that satisfy these requirements. The new ATOM HD completes the range and has all the essential features required today, such as fiber optics, IPTV and, because of a market demand, the return of Analog SAT, for simple and precise antenna pointing.



WHAT CAN THE ATOM HD MEASURE? EVERYTHING!

SAT	Digital DVB-S QPSK
	Digital DVB-S2 8PSK
	(new) Analog with pictures and audio
TV	Digital DVB-T (T2 optional HW)
	Digital DVB-H Analog with pictures and audio
CATV	Digital DVB-C (C2 optional future HW)
	Analog with pictures and audio
GSM	Measurements for small GSM telephone repeaters
OPTIC (new)	TV & CATV An. & Dig. pictures, audio & spectrum
	SAT An. & Dig. pictures, audio & spectrum
IPTV-LAN (new)	DVB-IPTV with pictures and audio
	Measurements PLR, Jitter, Latency
MPEG	MPEG2-SD and HD, HD pictures
	MPEG4-SD and HD, HD pictures Audio AAC & Dolby AC3 or DD+ licenses
C.I.	Slot for CAM
2 Displays	TFT 4.5" 16:9 and LCD 2.5" 16:9
DIGI ANALYSIS	Automatic interference analysis in TERRESTRIAL DIGITAL

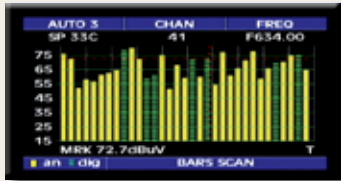
It weighs only 2.5 Kg and is supplied in a practical transport bag. The flap that protects the display works, not only as a light and rain shield, but also has a functional technical chart with all the suggested SAT, TV AND CATV measurement values and telephone numbers of the Rover SERVICE department.

The right side panel has numerous connectors. An optical module (optional) can be inserted in the upper section using three connections: the F connector is connected to the optic LNB for remote powering, the optic input receives the LNB signal and there is an RF output (resulting from the optic signal conversion) from 4 to 3.900 MHz. In the center you can find the ATOM HD's RF input and, in the lower part, the USB and SCART connectors and the switch that blocks the DC voltage to the RF input. The PCMCIA CAM CARD SLOT is visible on the right.





ECHO MEASUREMENT, impulse response, the only one in real time to minimize Digital Terrestrial interferences.



BARSCAN. All the ANALOG and DIGITAL channels are clearly visible on one screen.



The LED TFT display, with a 16:9, 4.5" format, guarantees excellent picture visualization, accurate spectrum verification of the signal without neglecting any details of the signals shown. It is currently the fastest digital spectrum with memory available.

Compact, light & easy to use

The ATOM HD is in the top range of professional analyzers with reduced weight and dimensions: it is compact (its measurements are 115x245x180 cm) and light (weighing only 2.5 Kg). The ATOM HD has a dual function encoder (rotate and press) to navigate simply and quickly in the OSD menus. The keyboard, which is rainproof, facilitates access to the measurements thanks to easy-to-understand graphic icons.

Dual display

- The ATOM HD has two displays, side by side:
 - The color TFT screen, 16:9 4.5" is back lit with LED's, it has high brightness and can reproduce picture sharpness and details even in direct sunlight;
 - The 2.5" 16:9 graphics display can also show all the measurement parameters that, together with picture and spectrum selection, allows full measurement verification.



The left side panel has an HDMI output to connect an external HD TV or monitor, the LAN IPTV socket for IP television channel tests, structured cabling and the 12V power supply socket.

ATOM HD STCOL: MAIN FEATURES

Frequencies	
Terrestrial CATV (MHz)	4-1.000
GSM extended band (MHz)	up to 1.000
Satellite (MHz)	930-2.250
Measurements	
Digital standards	DVB-S, DVB-S2, DVB-T, DVB-H, DVB-C, (T2 upgradable)
Digital modulations	QPSK, 8PSK, COFDM, QAM
HD measurements	Yes
RF digital measurements	Power, Noise Margin, A-BER, B-BER, MER, PER, EVM, QUALITY LDPC, BCH
Optical measurements	Wavelength 1.310-1.550 nm
Optic power margin	Power -25/+10 dBm, accuracy 0,1 dB
Structured IP cable measurem.	PLR, Jitter, Latency - MPEG2/4
Screens	
Color monitor	LED TFT 4.5", 16:9
Display	LCD 2.5" graphic
Functions	
Constellation	Yes, QPSK, 8PSK, COFDM and QAM
COFDM echo analysis	Yes, in real time, up to 16 simultaneously
Max Hold	Yes
DiSeqC	Yes
SCR driver	Yes
Datalogger	Yes, via USB
Memory plans	Yes, 199 measurements and spectrum
Motor control	Yes
Various	
Battery autonomy	2 / 3 hours
Signal inputs	RF with F, BNC & IEC connectors, optic with interchangeable metal ring (FC, ST & SC connections), IP TV type RJ45
Interfaces	HDMI output, Slot Common Interface, USB, SCART, Bluetooth (optional)
Pictures	Yes, SD MPEG2 - HD MPEG4 and analog SAT
Firmware upgrades	Yes, via USB
Power supply & Accessories	Protective bag with shoulder strap, various adapters, USB cable power supply, cigarette lighter socket, DiSeqC switch, lightshield
Weight	2.5 Kg
Dimensions	115 x 245 x 180 cm

"Traditional" measurements

One of the strong points of the ATOM HD is the number of functions and measurements that it provides: it can measure any HD television signal distributed via terrestrial, satellite and digital cable networks, supporting all standards: DVB-T (digital terrestrial), DVB-H (Mobile TV), DVB-S and -S2 (digital and analog satellite), DVB-C (cable TV) and analog PAL, SECAM and NTSC. It can carry out analog measurements in real time, including level and signal-to-noise ratio C/N, showing the terrestrial and satellite pictures of the program (including analog).

It can also make all digital measurements, for example the power, Noise Margin, EVM, the BER before and after Viterbi, the MER, PER, etc. It is possible to install and check GSM telephone repeaters thanks to the extended terrestrial frequency band, 4 a 1.000 MHz. Among its advanced measurements there is the Noise Margin, which calculates the dB margin available before the received digital signal goes below the standard threshold and not

be able to show any pictures. There is also automatic quality analysis (FAIL-MARGINAL-PASS), a useful function because it provides a performance evaluation of the distribution system, indicating "PASS" if the system is working correctly. If the performance is critical the meter shows "MARGINAL", or "FAIL" in the absence of minimum working conditions.

Optical signal measurement

In public installations such as hotels, nursing homes, hospitals, holiday villages etc., and in residential systems, fiber optics are beginning to be used to deliver all the satellite programs received by the system's satellite dish.

In this context, the ATOM HD is very helpful to the installer because it adapts to any optical signal source showing great versatility. Using the HD-OPT-Optic Module, the meter can measure optical signals with a maximum input level of 10 dBm, selecting two optic windows 1.310 and 1.550 nm to obtain at the output, an RF converted optic signal in the frequency band from 4 to 3.900 MHz. It also automatically measures the

The ATOM HD's optical connectors

FC connector



ST connector



SC connector



The ATOM HD's optical input has interchangeable metal rings that can adapt to all the most used FC, ST & SC optical connectors, this is unique in the market.

level (optic attenuation with an accuracy of 0.1 dB) and is suitable for FTTH, PON and hybrid FIBER/COAX cable systems.

ATOM LIGHT: Compact, light, complete and easy to use.

The ATOM LIGHT is a professional SAT, TV and CATV analyzer with reduced weight and dimensions: only 1.4 Kg and 22 x 8 x 19 cm.

It has an encoder to navigate in the OSD menus and a keyboard with only 8 keys that are all very easy to understand: HOME, to turn on the meter and return to the meter's home page; VOLUME that also adjusts the colors and some basic functions; SAT, TV and CATV to directly select the relevant signal measurements; SPECT to visualize the spectrum; PLAN to recall the memory plan and BARSCAN to automatically scan the TV band.

The information regarding all the measurements, the program list of a DTT multiplex or of a SAT transponder, the A/V PID, the settings and the pictures are all shown on a single display, making access to the main information instantaneous. The TFT LED 3.1" display, in 16:9 format, has a surprisingly clear and sharp visualization, even in poor light. The autonomy varies from 3 to 4 hours.

The ATOM LIGHT analyzes terrestrial analog and digital DVB-S, DVB-S2, DVB-T, DVB-H, DVB-C signals, measuring all parameters: power, Noise Margin, Quality, EVM, BER before and after Viterbi, MER, PER, etc. It is possible to visualize signal power for GSM repeaters thanks to an extended terrestrial band measurement mode. Obviously it carries out all measurements on High Definition signals.

Using the Autodiscovery function, the ATOM LIGHT can detect if the signal is analog or digital and automatically configures to carry out the respective measurements. It also has a measurement that detects reflected terrestrial signals: ECHOES, the impulse response. For dual-feed systems the ATOM LIGHT can simultaneously measure signals from two LNB's, or from a dual LNB without having to move the coaxial cable from one LNB to another.

This meter can also store spectrum pictures and use them later if you need to point a dish towards the same satellite (peak memory): simply superimpose the stored spectrum and the one obtained from the LNB mounted on the dish to be pointed to make sure that you have made a proper alignment to the correct satellite.



The optic input module is interchangeable and can adapt to the more commonly used FC, ST and SC connectors, unique in its kind.

Testing IPTV systems

Also in this case, for communities, hotels, hospitals, etc, a structured cabling may deliver many services using the IPTV protocol including TV programs, at a relatively low cost. With the new COFDM digital terrestrial and QPSK/8PSK satellite head ends, that transform the signal received from the antenna in IPTV protocol, it is also possible to distribute television programs in a structured cable network. These networks also have IGMP switches that guarantee an extended bandwidth up to 1 GB/sec. Using the ATOM HD, through the RJ 45 socket on the side panel, you can test IP television signals in the data stream both at the output of a head end and at the port of the switch, checking the correct operation of equipment and the quality of the cabling. Once you have carried out the control of the parameters of the encapsulated channels in the IPTV stream, channels/programs can be seen on the meter's display, the installer can certify the quality of the IPTV signals.

Special functions

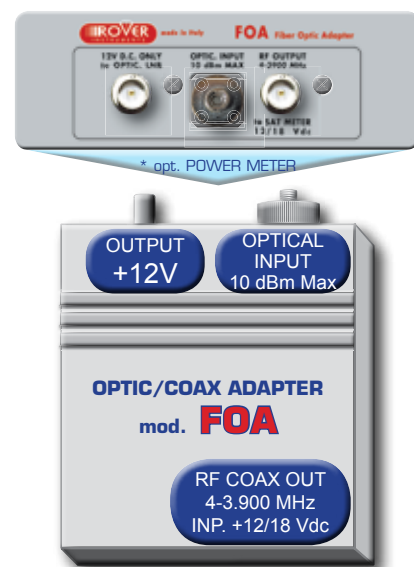
The ATOM HD has many features typical to Rover meters such as SAT, TV and CATV for the direct selection of measurements of the relative signals, SPECT for spectrum visualization (the fastest digital SAT spectrum with memory), PLAN to recall the memory plans and BARSCAN to visualize the bar spectrum of the terrestrial band. The information about all these measurements, the program list of a DTT multiplex or a SAT transponder, the A/V PID's, the settings and pictures are all shown on one screen for immediate access to the most important information. With the Autodiscovery function the ATOM HD can see if the TV signal is analog or digital and set the respective measurements. For installations in areas where there are reflected signals, a real-time analysis is available for ECHOES, through the impulse response and the ATOM HD is the only meter that can show up to 16 echoes in real time. **The newest feature of the meter is the DIGIANALYSIS, that can analyze interferences in Terrestrial Digital signals that do not lock and try to understand what they are and how to resolve the problem.** The installation of dual-feed SAT systems is fast: the ATOM HD can simultaneously measure signals from both LNB's or from a dual LNB without having to move the coaxial cable from one LNB to another. The ATOM HD can store spectrum images and recall them at a later stage as a mask, for the next time that you need to point the antenna towards the same satellite: simply superimpose the stored spectrum on the one generated by the LNB of the satellite dish to be pointed. The constellation diagram shows the graphic of the modulation of the digital QPSK, 8PSK, COFDM and QAM signals. Among the numerous functions provided we must not forget the handling of single cable SCR systems to check the signal at the input of each decoder in the system and, with the new SCR

AUTO function, stores automatically the various type of current and future SCR's. A fundamental part of the new generation of Rover analyzers is the Data Logger, which is simple to use and allows, together with the SMART PRO computer software, the generation of documentation necessary to commission a system with a complete set of measurements, required mainly in public buildings.

Extensive connectivity

Even though the ATOM HD is a compact meter, it has many connectors on its side panels. The HDMI output allows the transfer of images to a High Definition TV, whereas the video input/output, accessible via SCART, allows you to visualize pictures from a closed circuit camera, or from external audio/video sources. This meter decodes the encrypted channels through a common interface slot throughout a CAM and relative smart card. It has a battery with good autonomy: up to three hours with only one display. The USB socket allows you to update the instrument to future software versions, this is free of charge via web and in case of assistance you may count on the help of a fantastic ROVER service and repair department, operating from 8 to 18 hours on working days.

FOA, Optic Signal Adapter (low cost)



The FOA is an adapter for optic signals. It is an economical accessory that allows the conversion of optical signals to RF, from 4 to 3900 MHz. It can be used with any TV and SAT field strength meter for measurements and spectrum. It is supplied with the more commonly used FC, ST and SC optic connectors.