

*Made
to Measure*



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ASI T.S.
ANALYZER

T2 MI
ANALYZER

IPTV
ANALYZER

OPTIC
ST/SC/FC



DOLBY
APPROVED

DOCSIS
CATV

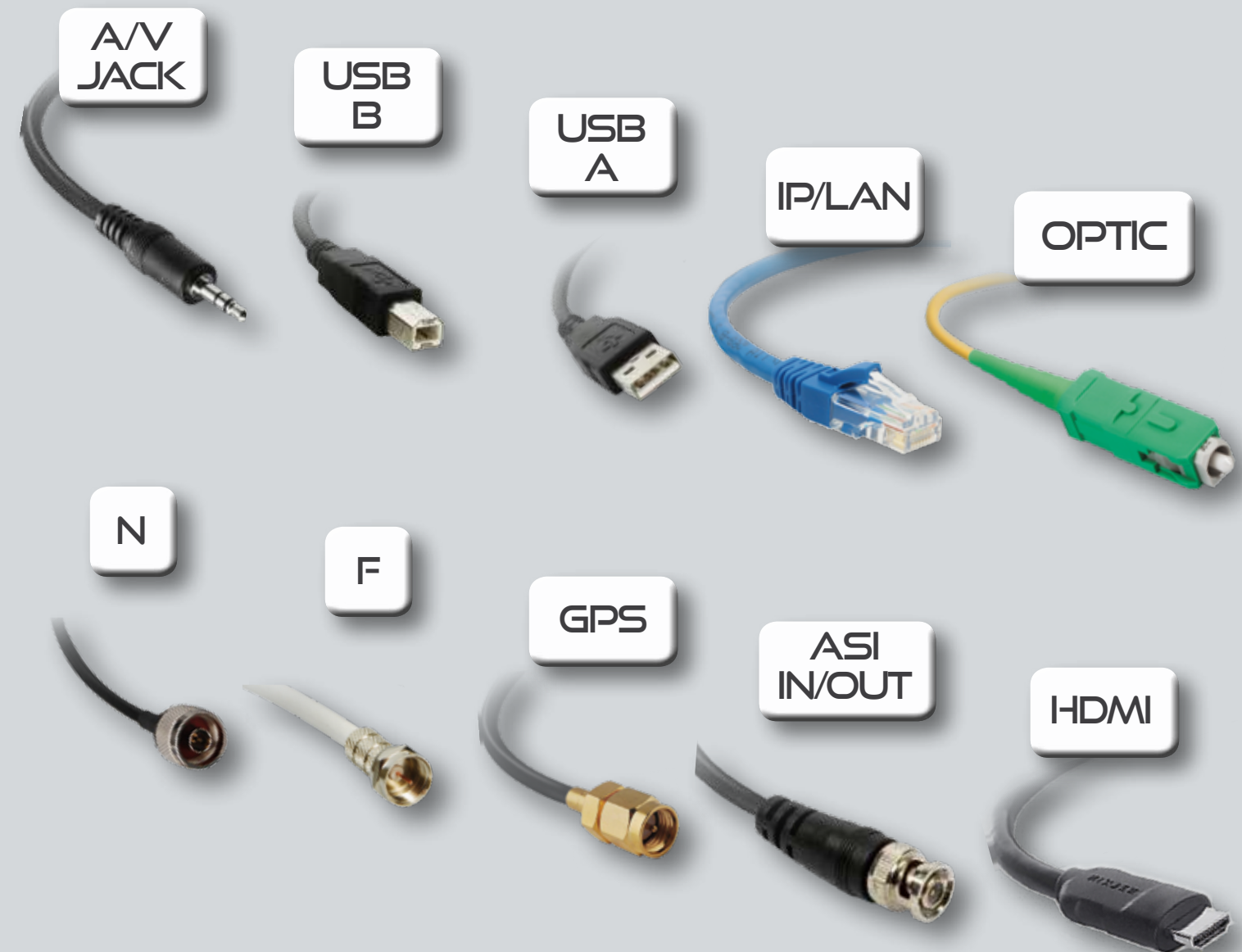
75Ω
"F"
CONNECTOR

50Ω
"N"
CONNECTOR

DAB+



AVIONIC ALUMINIUM BODY



NEW NAVIGATION ICON MENU

A new user interface very intuitive. It allow the fast selection of the function and of the measure you need with one click.



WIDE BAND RECEPTION

Compatible with the new systems WIDE BAND LNB, our equipments are able to measure the full band from 230 to 2.340 MHz.



WI-FI ANALYSIS

Analyze all the wi-fi networks in the building and than check the power of the signal.



SATELLITE FAST TEST

Thanks to this function the user can check up to 4 satellite transponders quality at the same time. Also usefull to check the correct function of the LNB in all the polarities.



NETWORK DELAY

The Network Delay measurement is indispensable when operating in DVB-T SFN networks. It measures the Transport Stream Network Delay and checks that it does not exceed the TS MIP packet maximum value.



GPS

The meter has an internal GPS receiver. It allows you to carry out the analysis of a GPS reception antenna quality. It also provides time reference for the Network Delay function and location data when performing on-field measurement loggers when driving in a car or standing on. This is practical for Network Operators because it allows signal verification coverage in specific areas and simultaneous comparison of several signals.



ETR 101-290 T.S. ANALYZER

The meter has a built-in TS analyzer that provides complete ETR101-290 priority 1-2-3 alarms monitoring. It analyses the transport streams, either demodulated from one of the RF inputs, injected via the ASI input connector or received via the GbE interface.



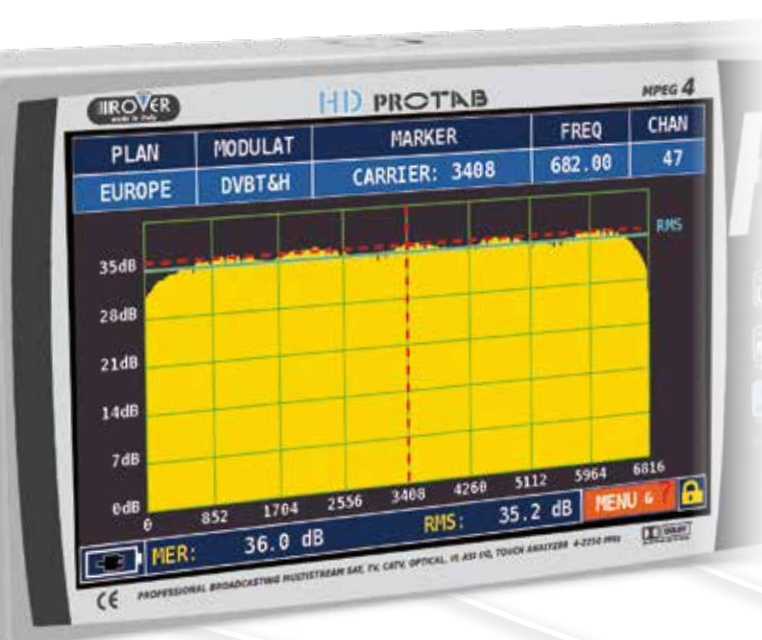
BARSCAN LEVEL GRAPH

Simultaneously check the level/power of all analog & digital channels. In TV standard canalization the meter displays the level/power of all channels as a bar graph. In AUTOMEMORY or MANUMEMORY PLAN the meter displays only the memorized channels and distinguishes Analog and Digital signals using two different colours (shows audio level).



MER VS CARRIER

The MER measurement, performed for every single carrier in a DVB-T & T2 COFDM mux, is an indispensable tool to spot the impairments on the received digital signal.



MER vs CARRIER Reverse visualization.

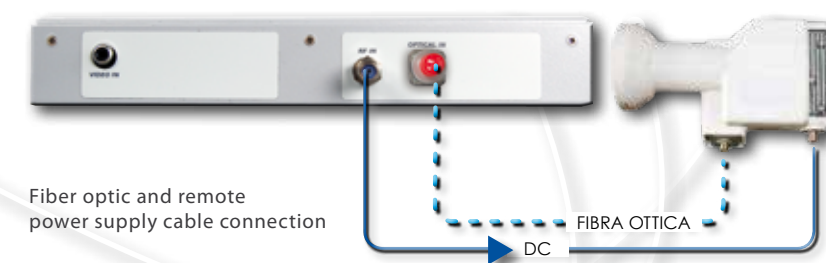


INTERCHANGEABLE OPTICAL CONNECTOR



OPTIC

The meter has an internal optical to RF converter. Can measures the OPTICAL POWER and OPTICAL ATTENUATION, carries out RF measurements (from the optical input), decodes the services and visualizes the spectrum.



Fiber optic and remote power supply cable connection



Measurements and pictures



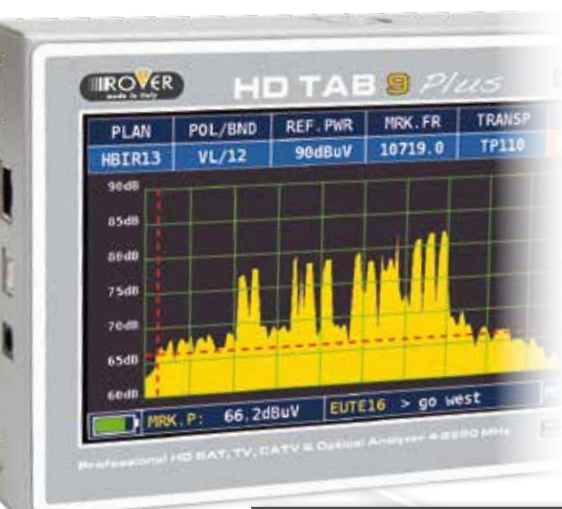
Spectrum visualization

Looking for HOTBIRD 13°

SAT EXPERT FUNCTION

The "SATEXPERT SW" function, is a valuable aid for a fast satellite antenna pointing to a wanted satellite.

Through text messages, which appear from time to time on the screen, the measuring instrument will indicate in which direction to move the satellite dish, to the east or to the west, until you reach the wanted satellite.



Found HOTBIRD 13°

Example pointing Hot Bird 13° East
The tool informs you that the dish is oriented on the correct satellite via the message HIR13 FOUND!

LONG TERM CHANNEL LOGGER OR QoS

Record the Quality of Service (QoS) using the WEEKLY CHANNEL LOGGER SW application (supplied with the ROVER HD Series).

This useful tool monitors and records the trend of the main parameters of a digital signal over time (from 30 minutes to 7 days): TV, Cable, Satellite, Radio or FM (DAB option available for specific models).

It is excellent for reception problems that occur occasionally.

The application allows you to measure, store and display (locally or remotely*) the parameters of the digital signals under test: DVB-S/T/C = Power, MER, ERROR, bBer, aBer; DVB-S2/T2/C2 = Power, MER, ERROR, aBer, Lber, PER, Ldcp. Each recorded parameter is graphically represented on the display using different colors for easy identification.



CROSS REFERENCE

FREQ. RANGE	4 - 2,250 MHz	4 - 2,250 MHz	4 - 2,250 MHz	4 - 2,250 MHz	44 - 2,250 MHz
LEVEL RANGE	28 - 130 dBµV	28 - 130 dBµV	28 - 130 dBµV	28 - 130 dBµV	30 - 100 dBµV
STANDARD DVB-T/S/C2	● (C2 opt.)	● (C2 opt.)	● (no C2)	● (no C2)	● (no C2)
STANDARD DVB-T2/T2 LITE	opt.	opt.	opt.	opt.	opt.
STANDARD DVB-S2 MULTISTREAM	●	●	—	—	—
WIDE BAND IN	—	●	opt.	opt.	—
SAT EXTENSION up to 2.610 MHz	opt.	●	opt.	opt.	—
DAB	opt.	opt.	—	—	—
CAM C.I.	●	—	—	—	—
LTE ANALYSIS	●	●	●	●	—
OPTICAL INPUT	●	●	●	—	—
H265 HEVC	opt.	opt.	—	—	—
SAT EXPERT	●	—	●	—	—
TS ANALYZER ETR 101 290	●	—	—	—	—
TS RECORDER	opt.	opt.	opt.	opt.	—
MER VS CARRIER	●	●	●	●	—
MER	●	●	●	●	●
CONSTELLATION	●	●	●	●	● ONLY CATV/SAT
DISEqC - dCSS - SCR	●	●	●	●	●
REFLECTOMETER	●	●	opt.	opt.	—
MINISPECTRUM	●	—	—	—	—
ECHOES ANALYSIS	●	●	●	●	—
ANALOG TV	MEAS & PICT	MEAS & PICT	MEAS & PICT	MEAS only	MEAS only
WI-FI	—	opt.	—	—	—
GPS	opt.	—	—	—	—
NOISE MARGIN GRAPH	●	●	●	●	—
IPTV	opt.	opt.	—	—	—
ASI IN-OUT	●	—	—	—	—
LAN	●	●	●	—	—
REMOTE MONITORING	●	●	opt.	—	—
DRIVE TEST	opt.	—	—	—	—
DOLBY AC3DD +	opt.	opt.	opt.	opt.	opt.
VIDEO IN RCA (CVBS)	●	●	●	●	—
HDMI OUT	●	●	—	—	—
USB	A + B	A + B	A + B	A + B	B
TFT	9" Touch	9" Touch	7" Touch	7" Touch	4,3" Touch
TOUCH SCREEN DISPLAY	●	●	●	●	●
WEIGHT & DIMENSIONS	2,6 Kg /29 x 17 x 5,5 cm	1,8 Kg /15,5 x 27 x 4 cm	1,4 Kg /13 x 25,5 x 4 cm	1,4 Kg /13 x 25,5 x 4 cm	1 Kg /12 x 18,5 x 4,5 cm
BATTERY CAPACITY	6 A h	4 A h	2,2 A h	2,2 A h	2,2 A h
BAG	RUGGED BAG	RUGGED BAG	RUGGED BAG	EASY BAG	EASY BAG
DOCSIS	DOWN STREAM	DOWN STREAM	DOWN STREAM	DOWN STREAM	DOWN STREAM

NOTES

THE MOST EASY, ACCURATE & COMPLETE
COMBINED SAT, TV & CATV FIELD METER TOUCH



- ACCURATE & EASY TO USE
- DVB-S/S2, DVB-T/T2 (OPT.), DVB-C
- ALL DIGITAL MEASUREMENTS
- DiSEqC & SCR dCSS
- FULL MPEG 2 - 4 SD & HD PICTURES
- ANALOG TV & VIDEO INPUT
- AUTOMEMORY & AUTOQUALITY
- SPECTRUM WITH MEMORY PEAK
- ROBUST METAL HOUSING
- RAIN PROOF BAG
- LONG DURATION LI-PO BATTERIES

OPTIONS: check the Cross reference on page 12.

MAIN FUNCTIONS

MEASUREMENTS & SPECTRUM ANALYSIS

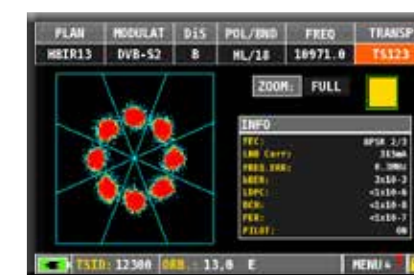
- **Frequency Range:** TV 44 to 880 MHz, SAT 930 to 2.250 MHz. Level accuracy: 3 dB.
- **Input Impedance:** 75 ohm (interchangeable "F" connector).
- **Power range Meas.:** TV and SAT from 30 to 100 dBμV, 120 dBμV with ext. attenuator.
- **Net-id.**
- **Spectrum with MAX HOLD:** full spect. capabilities with memory peak, variable span and automatic reference level.
- **Constellation:** for TV/CATV and SAT signals.
- **Digital Meas:** Digital Power, MER, BER, PER.
- **Analog Meas and Picture:** Analog level, V/A ratio.
- **Quality:** Digital Auto quality Test.
- **Digital Pictures:** MPEG2-4 SD & HD pictures with Service List & Video bit Rate.
- **TV Memory Plan:** World Wide countries with related channels plans pre-memorized.
- **SAT Memory Plan:** More than 2.000 transponders prememorized for world wide Satellite.
- **Manual Memory Plan:** Programmable TV, SAT (or combined TV/SAT) by PC or Local Keyboard.
- **Loggers:** TV, SAT & combined with stop & go function.
- **Free SMART PC interface program and FW upgrades.**
- **OPTIONS*:** check the Cross reference on page 12.

GENERAL SPECIFICATIONS

- **4,3" TFT TOUCH display:** 16:9 high resolution.
- **DC voltage at RF input:** 5 - 12 - 18 - 24 V, DiSEqC, SCR, dCSS.
- **Battery:** Rechargeable Li-Po battery pack, 3 hour duration.
- **Power supply & Battery charger:** 12/18 Vdc, 1A.
- **USB PC Interface:** For SW upgrade and memory plan management.
- **Housing:** Metal box and rain proof bag.
- **Size:** H 12,0 x W 18,5 x D 4,5 mm (meter only).
- **Weight:** 1 Kg.
- **Easy bag supplied** (elite bag optional).

* Some options must be requested when ordering the instrument.

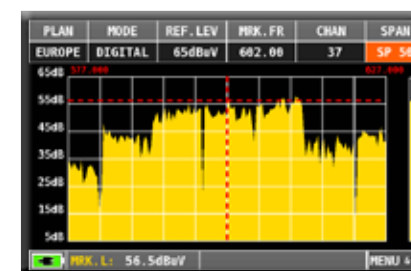
MEASUREMENT EXAMPLES



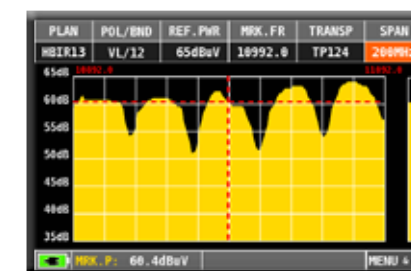
DVB-S2 Constellation



DVB-T2 Constellation (opt.)



TV Spectrum

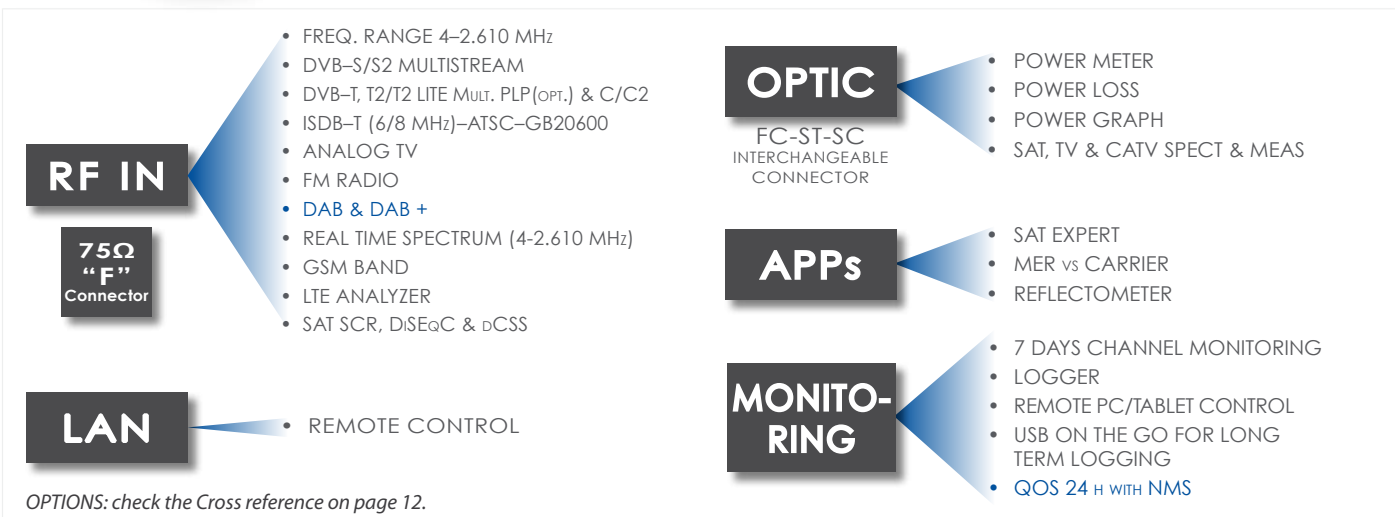


SAT Spectrum



Service list & picture

THE MOST ADVANCED & ACCURATE **TABLET** ANALYZER



OPTIONS: check the Cross reference on page 12.

SPECIAL FUNCTIONS

- Exclusive patented ROVER AUTODISCOVERY system:** automatically detects and selects analog and digital COFDM/QAM TV signals in both measurement and spectrum mode.
- HELP function:** automatically identifies all the signals with digital modulation SAT, TV and CATV.
- Automatic Assistant:** Signal Quality analysis, Channel Scan memorization.
- Barscan TV & CATV function** from 10 to 100 channels on one screen.
- Buzzer & Noise Margin real time graph.**
- Exclusive included APP:** SAT Expert.
- MER versus CARRIER**
- Reflectometric measurements APP**
- LAN Interface:** for remote web browser internet Monitoring with opt. APP.

MAIN FUNCTIONS

MEASUREMENTS & SPECTRUM ANALYSIS

- Freq. Range:** TV and CATV TUNER, extended band, 4-1000 MHz; SAT TUNER, extended band, 930-2.610 MHz; GSM extended band, 860-1.000 MHz for telephone repeater installation.
- Input Impedance:** 75 ohm (interchangeable "F" connector).
- Digital Meas:** Digital Power, MER, BER, PER, LDPC, BCH, Noise Margin, MER versus CARRIER.
- Analog Meas & Picture:** Analog level, V/A ratio.
- Power range Meas.:** TV 28 to 130 dBμV, SAT 30 to 130 dBμV.
- Net-id on board:** Net-id, NID, TSID, LCN, SAT Orbit Position.
- Fast spectrum with MAX HOLD:** full spect. capabilities with memory peak, variable span and automatic reference level.
- Constellation:** for TV/CATV and SAT signals.
- Echoes, Pre-echoes, Micro-echoes:** Representation in real Time.
- Quality:** Digital Auto quality Test: PASS-MARGINAL-FAIL.
- Digital Pictures:** MPEG2-4 SD & HD pictures with Program List, Audio Video PIDs, LCN, Video bit Rate all on one screen.
- TV Memory plan:** World Wide countries with related channels plans pre-memorized.
- SAT Memory Plan:** More than 2.000 transponders prememorized for world wide Satellite.
- Manual Memory Plan:** Programmable TV, SAT (or combined TV/SAT) by PC or Local Keyboard.
- Loggers:** TV, SAT & combined with stop & go function.
- Audio:** AAC supplied, DOLBY (opt.).
- Optical Power meter:** with interchangeable FC-ST-SC connector for fiber optic testing (FTTH & FTTX).
- Free SMART PC interface program and FW upgrades.**
- OPTIONS*:** check the Cross reference on page 12.

GENERAL SPECIFICATIONS

- 7" TFT TOUCH display:** 16:9 high resolution.
 - DC voltage at RF input:** 5 - 12 - 18 - 24 V, DiSeqC, SCR, dCSS.
 - Battery:** Li-Po battery pack, 4 h duration & Battery Test function (2 h for Lite version)
 - Power supply & Battery charger:** 12 Vdc, 1A.
 - USB PC Interface:** For SW upgrade and memory plan management.
 - USB PC Interface:** For storage memory stick.
 - Housing:** Metal box and padded bag.
 - Weight:** only 2 Kg. **Size:** H 14,0 x W 24,0 x D 4,0 cm (meter only).
- * Some options must be requested when ordering the instrument.

MEASUREMENT EXAMPLES



DVB-T2 (opt.) rotated Constellation 256 QAM mod., on the right relative modulation parameters & M-PLP



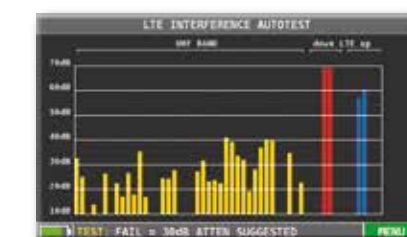
ECHO MEASUREMENT in SFN networks, with impulse response in real time, green area shows the guard interval



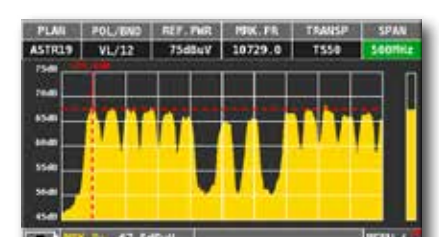
DVB-S2 multistream Constellation 8PSK mod., on the right relative modulation parameters & ISSY



Spectrum TV 100 MHz span

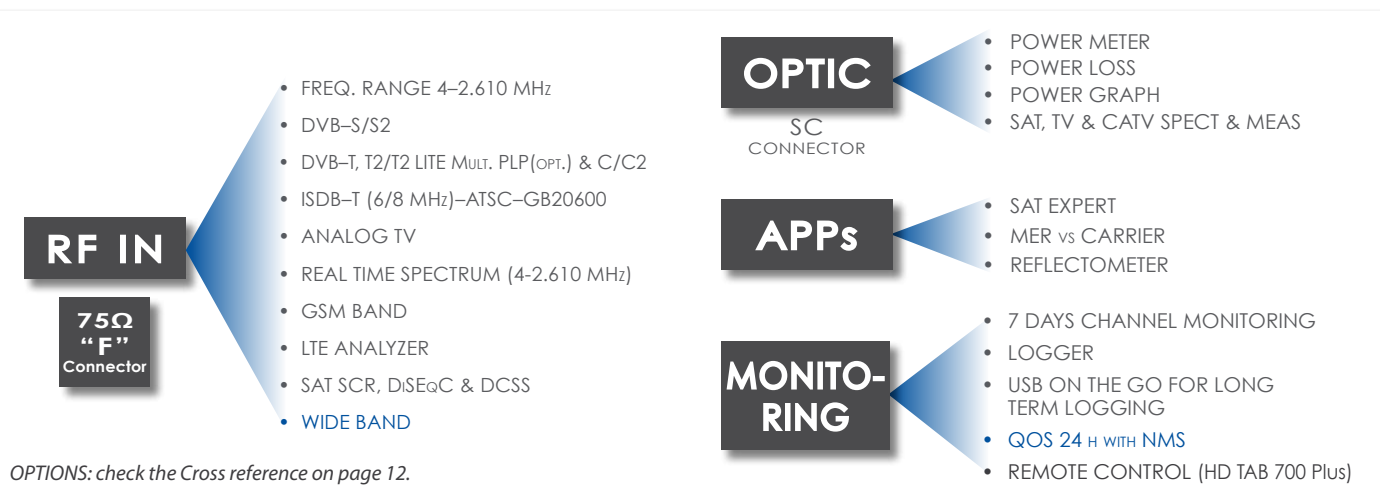


LTE Interference Autotest



Satellite spectrum with 500 MHz SPAN

THE NEW GENERATION OF TABLET ANALYZERS



OPTIONS: check the Cross reference on page 12.

SPECIAL FUNCTIONS

- Exclusive patented ROVER AUTODISCOVERY system:** automatically detects and selects analog and digital COFDM/QAM TV signals in both measurement and spectrum mode.
- HELP function:** automatically identifies all the signals with digital modulation SAT, TV and CATV.
- NEW:** Exclusive Easy navigation menu.
- Automatic Assistant:** Signal Quality analysis, Channel Scan memorization.
- Barscan TV & CATV function** from 10 to 100 channels on one screen.
- Buzzer & Noise Margin real time graph.**
- MER versus CARRIER**
- Reflectometric measurements APP**
- LAN Interface:** for remote web browser internet Monitoring with opt. APP.

MAIN FUNCTIONS

MEASUREMENTS & SPECTRUM ANALYSIS

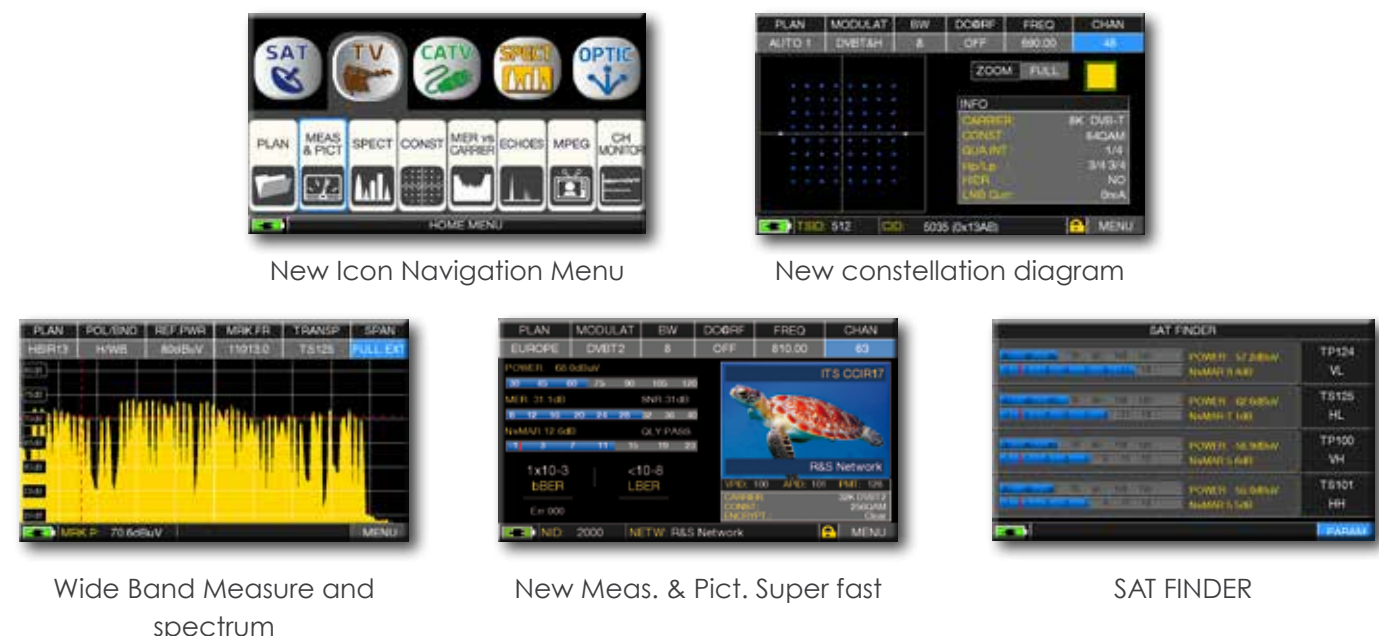
- Freq. Range:** TV and CATV TUNER, extended band, 4-1250 MHz; SAT TUNER, extended band, 930-2.610 MHz; GSM extended band, 860-1.000 MHz for telephone repeater installation.
- Input Impedance:** 75 ohm (interchangeable "F" connector).
- Digital Meas:** Digital Power, MER, BER, PER, LDPC, BCH, Noise Margin, MER versus CARRIER.
- Analog Meas & Picture:** Analog level, V/A ratio.
- Power range Meas.:** TV 28 to 130 dBuV, SAT 30 to 130 dBuV.
- Net-id on board:** Net-Id, NID, TSID, LCN, SAT Orbit Position.
- Fast spectrum with MAX HOLD:** full spect. capabilities with memory peak, variable span and automatic reference level.
- Constellation:** for TV/CATV and SAT signals.
- Echoes, Pre-echoes, Micro-echoes:** Representation in real Time.
- Quality:** Digital Auto quality Test: PASS-MARGINAL-FAIL.
- Digital Pictures:** MPEG2-4 SD & HD pictures with Program List, Audio Video PIDs, LCN, Video bit Rate all on one screen.
- TV Memory plan:** World Wide countries with related channels plans pre-memorized.
- SAT Memory Plan:** More than 2.000 transponders prememorized for world wide Satellite.
- Manual Memory Plan:** Programmable TV, SAT (or combined TV/SAT) by PC or Local Keyboard.
- Loggers:** TV, SAT & combined with stop & go function.
- Audio:** AAC supplied, DOLBY (opt.).
- Optical Power meter:** with SC connector for fiber optic testing (FTTH & FTTX) (opt. in HD TAB 700).
- Free SMART PC interface program and FW upgrades.**
- OPTIONS*:** check the Cross reference on page 12.

GENERAL SPECIFICATIONS

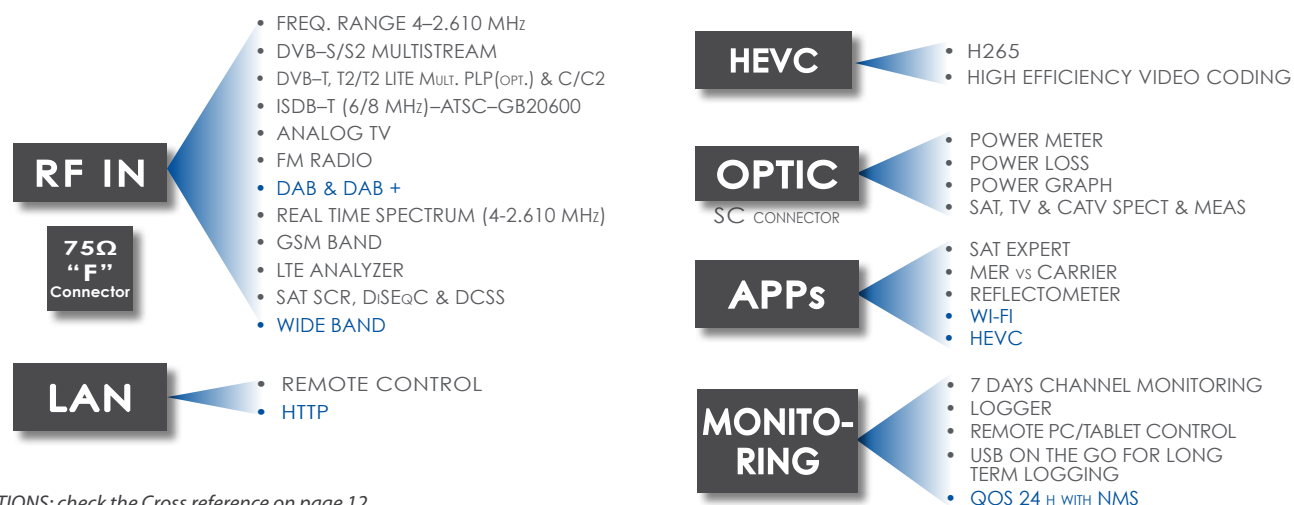
- 7" TFT TOUCH display:** 16:9 high resolution.
- DC voltage at RF input:** 5 - 12 - 18 - 24 V, DiSEqC, SCR, dCSS.
- Battery:** Li-Po battery pack, 2 h duration.
- Power supply & Battery charger:** 12 Vdc, 1A.
- USB PC Interface:** For SW upgrade and memory plan management.
- USB PC Interface:** For storage memory stick.
- Housing:** Metal box and bag elite (Easy bag in HD TAB 700).
- Weight:** only 1,4 Kg. **Size:** H 25,5 x W 13,0 x D 4,0 cm (meter only).

* Some options must be requested when ordering the instrument.

MEASUREMENT EXAMPLES



THE NEW GENERATION OF **TABLET** ANALYZERS



OPTIONS: check the Cross reference on page 12.

SPECIAL FUNCTIONS

- Exclusive patented ROVER AUTODISCOVERY system:** automatically detects and selects analog and digital COFDM/QAM TV signals in both measurement and spectrum mode.
- NEW:** Exclusive Easy navigation menu.
- HELP function:** automatically identifies all the signals with digital modulation SAT, TV and CATV.
- Automatic Assistant:** Signal Quality analysis, Channel Scan memorization.
- Barscan TV & CATV function** from 10 to 100 channels on one screen.
- Buzzer & Noise Margin real time graph.**
- Exclusive included APP:** SAT Expert.
- MER versus CARRIER**
- Reflectometric measurements APP**
- LAN Interface:** for remote web browser internet Monitoring with opt. APP.

MAIN FUNCTIONS

MEASUREMENTS & SPECTRUM ANALYSIS

- Freq. Range:** TV and CATV TUNER, extended band, 4-1250 MHz; SAT TUNER, extended band, 930-2.610 MHz; GSM extended band, 860-1.000 MHz for telephone repeater installation.
- Input Impedance:** 75 ohm (interchangeable "F" connector).
- Digital Meas:** Digital Power, MER, BER, PER, LDPC, BCH, Noise Margin, MER versus CARRIER.
- Analog Meas & Picture:** Analog level, V/A ratio.
- Power range Meas.:** TV 28 to 130 dBμV, SAT 30 to 130 dBμV.
- Net-id on board:** Net-id, NID, TSID, LCN, SAT Orbit Position.
- Fast spectrum with MAX HOLD:** full spect. capabilities with memory peak, variable span and automatic reference level.
- Constellation:** for TV/CATV and SAT signals.
- Echoes, Pre-echoes, Micro-echoes:** Representation in real Time.
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- Digital Pictures:** MPEG2-4 SD & HD pictures with Program List, Audio Video PIDs, LCN, Video bit Rate all on one screen.
- TV Memory plan:** World Wide countries with related channels plans pre-memorized.
- SAT Memory Plan:** More than 2.000 transponders prememorized for world wide Satellite.
- Manual Memory Plan:** Programmable TV, SAT (or combined TV/SAT) by PC or Local Keyboard.
- Loggers:** TV, SAT & combined with stop & go function.
- Audio:** AAC supplied, DOLBY (opt.).
- Optical Power meter:** with SC connector for fiber optic testing (FTTH & FTTX).
- Free SMART PC interface program and FW upgrades.**
- OPTIONS*:** check the Cross reference on page 12.

GENERAL SPECIFICATIONS

- 9" TFT TOUCH display:** 16:9 high resolution.
- DC voltage at RF input:** 5 - 12 - 18 - 24 V, DiSEqC, SCR, dCSS.
- Battery:** Li-Po battery pack, 3 h duration & Battery Test function
- Power supply & Battery charger:** 12 Vdc, 2A.
- USB PC Interface:** For SW upgrade on-line and memory plan management.
- USB PC Interface:** For storage memory stick.
- Housing:** Metal box and bag elite. Padded bag optional.
- Weight:** only 1,8 Kg. **Size:** H 27,0 x W 15,5 x D 4,0 cm (meter only).

* Some options must be requested when ordering the instrument.

ICON MENU



New Icon Navigation Menu



Wi-Fi Analyzer



New constellation diagram



Wide Band Measure and spectrum



New Meas. & Pict. Super fast



SAT FINDER

THE PROFESSIONAL & ACCURATE TOUCH SCREEN ANALYZER

DVB-T2/C2/S2
H265 - HEVC

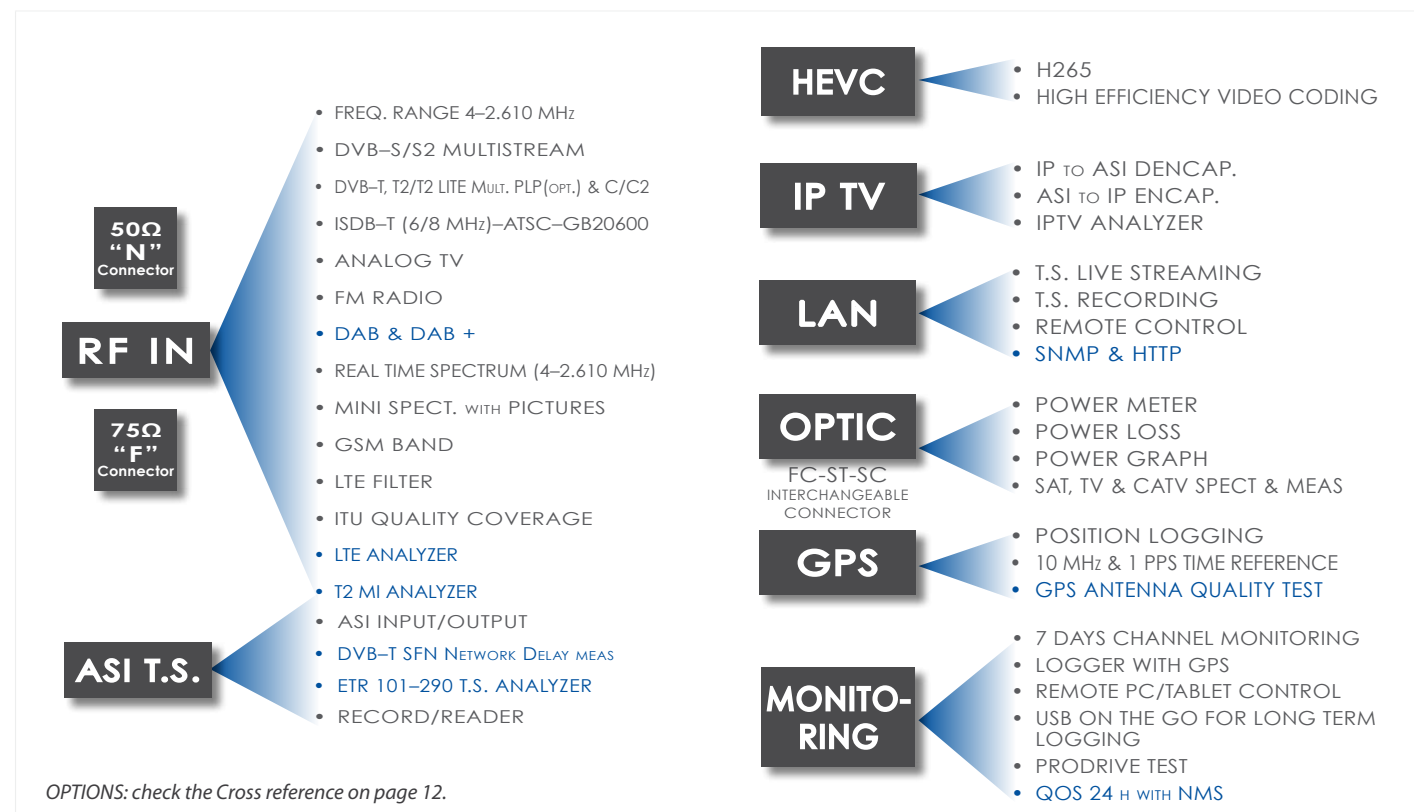
AUTOMATIC, FAST & EASY-TO-USE

9" HIGH BRIGHTNESS 16:9 DISPLAY

FULL TOUCH Excludable

EXCLUSIVE DUAL COMMANDS

MECHANICAL Keys & Encoder



MAIN FUNCTIONS

SPECIAL FUNCTIONS

- ETR 101-290 T.S. Analyzer.
- **Exclusive patented ROVER AUTODISCOVERY system:** auto-matically detects and selects analog and digital COFDM/QAM TV signals in both measurement and spectrum mode.
- **HELP function:** automatically identifies all the signals with digital modulation SAT, TV and CATV.
- **Automatic Assistant:** Signal Quality analysis, Channel Scan memorization.
- **Barscan TV & CATV function from 10 to 100 channels on one screen.**
- **Buzzer & Noise Margin real time graph for digital signals microinterruptions.**
- **Reflectometric measurements APP.**
- **PRODRIVE TEST:** REMOTE MONITORING and LOGGING: TS, measurements, spectrum, thumbnails.
- **Optical Input signals.**
- **SATELITE:** SAT SCR, DiSeqC, SCR & dCSS, Motorized antenna, Dual LNB, SAT FINDER, SAT EXPERT
- **Custom Channel Plans:** 25 (199 ch. per plan), Programmable TV, SAT (or combined TV/SAT) by PC or Local Keyboard.
- **Loggers:** TV, SAT & combined with stop & go function.
- **SAT Memory Plan:** More than 2.000 transponders prememorized for world wide Satellite.
- **Free SMART PC interface program and FW upgrades.**
- **OPTIONS*:** check the Cross reference on page 12.

SPECIFICATIONS: MEASUREMENTS & SPECTRUM ANALYSIS

- **Frequency Range:** TV, CATV & Radio: 4-1250 MHz (TAB 9 PLUS); SAT: 950-2250 MHz (2610 with Sat extension opt.).
- **Frequency Resolution:** TV & CATV 25 KHz; SAT: 5 or 1 MHz selectable.
- **Power range Meas.:** TV 28 to 130 dBμV, SAT 30 to 130 dBμV.
- **Digital Meas:** Digital Power, MER (32 to 42 dB depending on modulation), BER, PER, LDPC, BCH, Noise Margin, MER versus CARRIER.
- **Analog Meas & Picture:** Analog level, V/A ratio.
- **Measurement Resolution:** 0.1 dB.
- **Level Measurement Accuracy:** 1 dB typ. (2 dB max.)
- **Resolution Filter Bandwidth:** TV & CATV: 100 KHz @ -3 dB; SAT: 1 MHz or 5 MHz @ -3 dB selectable.
- **Constellation:** for TV/CATV and SAT signals.
- **Spectrum:** Real time, Max Hold and spectrum memorization with real time compare function.
- **Net-id on board:** Net-id, NID, TSID, LCN, SAT Orbit Position.
- **Echoes, Pre-echoes, Micro-echoes:** Representation in real Time.
- **Quality:** Digital Auto quality Test: PASS-MARGINAL-FAIL.
- **TS:** TR 101-290 v1.2.1 ANALYSIS, SI, PMT, bit rate, network delay, MPEG services and tables.
- **IPTV:** measurements and picture decoding.

OPTICAL MEASUREMENTS

- **FC-ST-SC interchangeable input connectors.**
- **Automatic loss calculation.**
- **Wavelengths (nm):** 1310, 1490, 1550.
- **Range:** -25 to 10 dBm.
- **Resolution:** 0.1 dB.
- **Accuracy:** +/- 0.5 dB.
- **Optical to RF conversion.**

COMM. PORTS AND OUTPUTS

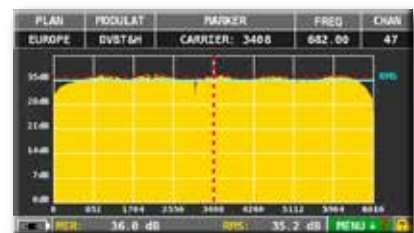
- **RF Input** : 75 ohm (interchangeable "F").
- **LAN**: RJ45 10/100 base Ethernet.
- **USB 2.0**: Type B (PC Interface).
- **USB 2.0**: Type A (USB drive).
- **Digital Pictures**: MPEG2-4 SD & HD pictures with Program List, Audio Video PIDs, LCN, Video bit Rate all on one screen.
- **Audio**: AAC supplied, DOLBY (opt.).
- **Asynchronous Serial Interface (ASI)**: ASI input on 75Ω BNC connector, ASI output on 75Ω BNC connector.
- **Audio / Video**: Composite A/V input, HDMI output.
- **Common Interface**: PCMCIA slot for single/multi-service CAM modules.

GENERAL SPECIFICATIONS

- **9" TFT TOUCH display**: 16:9 high resolution and high brightness.
- **Power Supply**: Built in LiPo battery with up to 6 hours duration & Battery Test function.
- **DC voltage at RF input**: 5 - 12 - 18 - 24 V, DiSEqC, SCR, dCSS.
- **PC Interface**: USB.
- **Front-Panel**: Alpha numeric keypad.
- **Power Save**: TFT backlight timer, brightness adj.
- **PC Management**: SMART software.
- **Weight**: only 2,6 Kg with batteries.
- **Size**: H 29,0 x W 17,0 x D 5,5 cm.
- **Housing**: Aluminium and Steel and padded bag.

* Some options must be requested when ordering the instrument.

MEASUREMENT EXAMPLES



MER vs CARRIER: normal visualization



Spectrum SAT 500 MHz span



Single channel monitoring: 30 minutes



Spectrum TV 100 MHz span



DVB-T2 (opt.) rotated Constellation 256 QAM mod., on the right relative modulation parameters & M-PLP



ECHO MEASUREMENT in SFN networks, with impulse response in real time, green area shows the guard interval



ETR 101290 Transport Stream Analyzer



GPS antenna Quality, constellation & Position.



LTE Interference Autotest

CATV OR SAT INSTRUMENTS



THE MOST EASY, ACCURATE & COMPLETE SAT TOUCH METER



MAIN FUNCTIONS

MEASUREMENTS & SPECTRUM ANALYSIS

- **Frequency Range:** SAT 930 to 2.150 MHz. Level accuracy: 3 dB.
- **Input Impedance:** 75 ohm (interchangeable "F" connector).
- **Power range Meas.:** SAT 28 to 92 dBμV, 120 dBμV with ext. attenuator.
- **Net-id on board.**
- **Fast spectrum with MAX HOLD:** full spect. capabilities with memory peak, variable span and automatic reference level.
- **Constellation SAT.**
- **Dig. meas:** Digital Power, MER, BER, PER.
- **Quality:** Digital Auto quality Test.
- **Digital Pictures:** MPEG2-4 SD & HD pictures with Service List, Video bit Rate.
- **SAT Memory Plan:** More than 2.000 transponders prememorized for world wide Satellite.
- **Manual Memory Plan:** Programmable by PC or Local Keyboard.
- **Loggers:** with stop & go function.
- **Dolby:** (opt.).
- **Free SMART PC interface program and FW upgrades.**
- **AVAILABLE OPTIONAL APPs *:** HD DOLBY audio (specify when ordering), Elite bag.

GENERAL SPECIFICATIONS

- **4,3" TFT TOUCH display:** 16:9 high resolution.
- **DC voltage at RF input:** 5 - 12 - 18 - 24 V, DiSEqC, SCR, dCSS.
- **Battery:** Rechargeable Li-Po battery pack, 2 hour duration.
- **Power supply & Battery charger:** 12 Vdc, 1A.
- **USB PC Interface:** For SW upgrade and memory plan management.
- **Housing:** Metal box and rain proof bag.
- **Size:** H 123 x W 185 x D 44 mm (meter only).
- **Weight:** 1 Kg.
- **Easy bag supplied** (Elite bag optional).

* Some options must be requested when ordering the instrument.

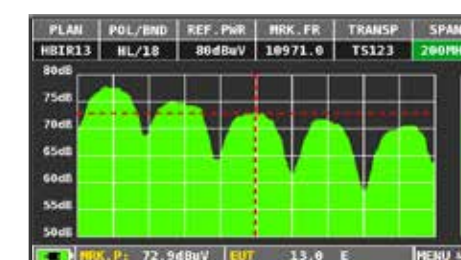
MEASUREMENT EXAMPLES



DVB-S2 Constellation



Digital Measurements



SAT Spectrum



Service list & picture

- ACCURATE & EASY TO USE
- DVB-S/S2
- ALL DIGITAL MEASUREMENTS
- DISEQC & SCR
- FULL MPEG 2 - 4 SD & HD PICTURES
- AUTOMEMORY & AUTOQUALITY
- SPECTRUM WITH MEMORY PEAK
- ROBUST METAL HOUSING
- RAIN PROOF BAG
- LONG DURATION LI-PO BATTERIES

THE NEW FRONTIER: WIDE BAND LNB 230-2.340 MHz



- WIDE BAND 230 - 2.340 MHz with dSCR (dCSS), SCR & DiSeqC
- Drives standard & wideband LNBs
- Orbit position & programme listing & data
- MPEG 2-4 with SD-HD Picture
- Spectrum with MAX HOLD for precise dish alignment
- Full Logging capabilities
- SAT EXPERT: the fastest SAT identification APP
- PC Interface for free updates
- WiFi Network test (optional)
- Free basic SW upgradeable on-line

MEASUREMENT EXAMPLES



Main measurements and live picture

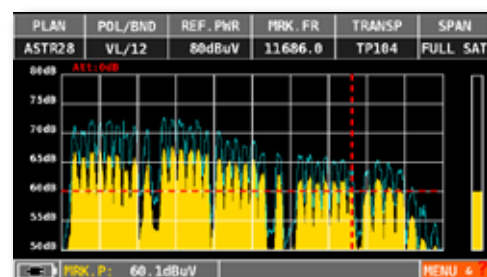
ZOOM



Navigate to the picture to zoom, enter to return to measurements



8PSK Constellation



Fast spectrum with peak memory "MAX H" for perfect dish alignment

MAIN FUNCTIONS

DVB-S/S2 (DEMODULATION)

- **Frequency band:** 230-2340 MHz for standard and Wide Band LNBs.
- **Interchangeable input connector:** "F type".
- **Power Supply at RF input:** OFF, +13, +18 V, 22 kHz (0.3 A), DiSeqC, dSCR/SCR, WIDE-BAND LNB.
- **Digital power measurement dynamic range at RF input:** from 30 to 115 typ. dBuV.
- **Noise Margin Measurements.**
- **DVB-S/S2 Symbol Rate setting:** 2-45 MS/s, in 1 kS/s steps.
- **Measurement Parameters:**
 - bBER up to 2×10^{-6} (before Viterbi)
 - aBER up to 2×10^{-8} (after Viterbi)
 - MER 2-25 dB resolution 0.1 dB
 - PER 10-2 to 10-7 (DVB S2)
 - BCH 10-2 to 10-8 (DVB S2)
 - LDPC 10-2 to 10-8 (DVB S2)
- **FEC:** DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8; DVB-S2: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10.
- **Automatic quality test:** FAIL, MARGINAL, PASS.
- **Noise Margin Measurements:** from -1 to 12 dB with built in FEC compensation.
- **NET. ID.** Shows bouquet and transponder names, the encryption system, orbital position and date.

AUDIO & VIDEO OUTPUT

- **4,3" color TFT** 16:9 high resolution monitor with Auto-Off timer: after 5 or 10 min without use.
- **MPEG2 & MPEG4 SD & HD.**
- **Audio decoding:** AC3 - EC3 (Dolby Digital - Dolby Digital Plus) opt.; AAC - HEAAC opt.

SAT SPECTRUM ANALYSIS

- **Frequency band:** 230-2340 MHz.
- **Span:** 50-100-200-500-FULL - WIDEBAND-LOW BAND-HIGH BAND.
- **dB/div:** 5.
- **Display dynamic range:** >30 dB.
- **Marker measurement resolution:** 0.1 dB.
- **Measurement filter bandwidth:** 5 MHz at -3 dB.
- **Reference level:** from 30 to 120 dBuV, from -60 dBmV to +60 dBmV.
- **Reference level settings:** automatic and manual adjustable.
- **MAX HOLD** (peak hold).

SOFTWARE AND FIRMWARE:

- "SMART" PC interface program for SOFTWARE (FW-Firmware) and MEM plan editing is available free of charge on Rover Instruments web site.

- **SOFTWARE** (FW) upgrades are available free of charge. Check periodically Rover Instruments web site.
- **MEM:** Satellite transponder list file (MEM PLAN) upgrades are available free of charge. Check periodically Rover Instruments web site.

MEMORY:

99 available Memory Plans & Datalogger function.

POWER SUPPLY:

- **External power supply** 12 V 1A.
- **Battery** 7,2 V 4,3 Ah.
- **Built in rechargeable batteries** with option for field serviceable module for battery replacement.
- **Li battery technology**, where user serviceable module supported instrument to be supplied with two battery modules as standard.
- **Battery duration at 25°C:**
 - 3 hours in satellite alignment mode
 - >4 hours in Wi-Fi mode where supported
- Low Battery indicator: with acoustic signaling and visual indication on graphic display.
- **Automatic power management features**
 - Back panel illumination has user adjustable time out
 - Indication of battery status charge
- **Battery re-charge time:** 1 hour for approx. 50% capacity, <6 hours for full charge.
- **On-board battery recondition cycle** and condition reporting (battery test).
- **Meter power off** automatically after 5, 10 minutes user selectable, option for user selectable always on.

DIMENSIONS AND WEIGHT

- H 8,0 x W 22,5 x D 21,5 cm.
- 1.3 kg with batteries, bag and accessories.
- ABS plastic housing rain, dust & shockproof.

WI-FI (optional)

- Wi-Fi network testing: 2.4 GHz and 5 GHz.

ACCESSORIES

- **Carrying protective bag with side pocket bag and shoulder strap.**
- **TRASF-12V-1A0-G-UK:** AC/DC adapter: 100V-240V/12 VDC, 1A.
- **CNN-F-0153:** interchangeable F - F double female input connector.

Some options must be requested when ordering the instrument.

IT HAS NEVER BEEN SO SIMPLE, ACCURATE & COMPLETE



**A well job done
in 3 seconds!**

Connect the
CATV socket and
automatically SCAN
the Power and Quality
up-to 140 channels in
blocks of 8 channels.

- EASY TO USE FULLY AUTOMATIC
- **SIMULTANEOUS ANALYSIS
IN BLOCKS OF 8 DIGITAL
AND/OR ANALOG CHANNELS**
- FULLY AUTOMATIC MEASUREMENTS
- **FAST QUALITY MEASUREMENTS**
- WORLDWIDE TV
STANDARDS
- **LI-PO LONG BATTERY
DURATION**
- ROBUST METAL HOUSING
- **RAIN PROOF BAG**

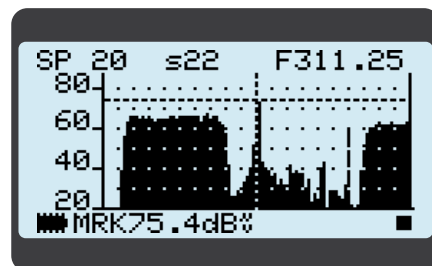
MEASUREMENT EXAMPLES



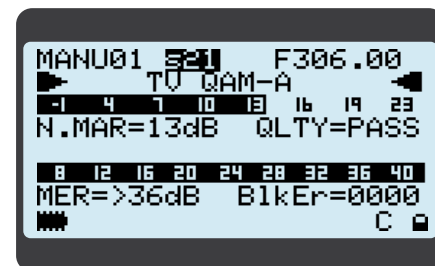
Icon menu



8 digital channels block analysis



Spectrum with Memory Peak



DVB-C Measurements

MAIN FUNCTIONS

MEASUREMENTS & SPECTRUM ANALYSIS

- Frequency Range: 5 MHz to 1.000 MHz.
- Input Impedance: 75 ohm (interchangeable "F" connector).
- Power range MEAS.: 10 to 100 dBμV (-50 dBmV to 60 dBmV) 120 dBμV with ext. attenuator.
- Fast spectrum with MAX HOLD: Full spect. capabilities with peak memory, variable span and automatic reference level.
- Meas: All digital and analog measurements, see table below.
- Quality FAIL - MARGINAL - PASS: Measuring the quality and the power up-to 140 CHs in blocks of 8 Digital or Analog channels simultaneously.
- Barscan: TV analog and digital bars scan form 10 to 100 channels.
- Memory plan: World Wide countries with related channels plans are pre-memorized.
- Free basic SW upgradeable on-line.

SPECIFICATIONS

LEVEL MEASUREMENT & SPECTRUM ANALYSIS

- Frequency Range: TV, CATV and Radio 5-1000 MHz
- Frequency Resolution: 25 KHz
- RF Input Impedance: 75 Ω (interchangeable "F" connector)
- Dynamic Range: 1 dBuV to 125 dBuV
or -59 to +65 dBmV
or -112 to +16 dBm
- Measurement Resolution: 0.1 dB
- Level Measurement Accuracy: 1 dB typ. (2 dB max.)
- A/V Ratio: up to 22 dB, +/- 1.5 dB (2 dB max.)
- S/N Ratio: up to 45dB +/-1.5 dB Max; 45-50dB +/-2dB
- Resolution Filter Bandwidth: 100 KHz @ -3 dB
- Custom Channel Plans: 25 (199 ch. per plan)

POWER & DIGITAL MEASUREMENTS

- Frequency Band: 5-1000 MHz
- Power Meas. Dynamic Range: 25 to 125 dBμV, -45 to 65 dBmV
- BER Measurement: (pre) bBER up to 1 x 10⁻⁹
(post) aBER up to 1 x 10⁻⁹
- MER Measurement: up to 40 dB
(1 dB typ., 2 dB max.)

INGRESS MEASUREMENTS

- Ingress Scan Spectrum
- Frequency: 5 -65 MHz
- Level: 5 dBuV to 125 dBuV
- Accuracy: +/- 2dB
- BW: 100 KHz @ -3dB

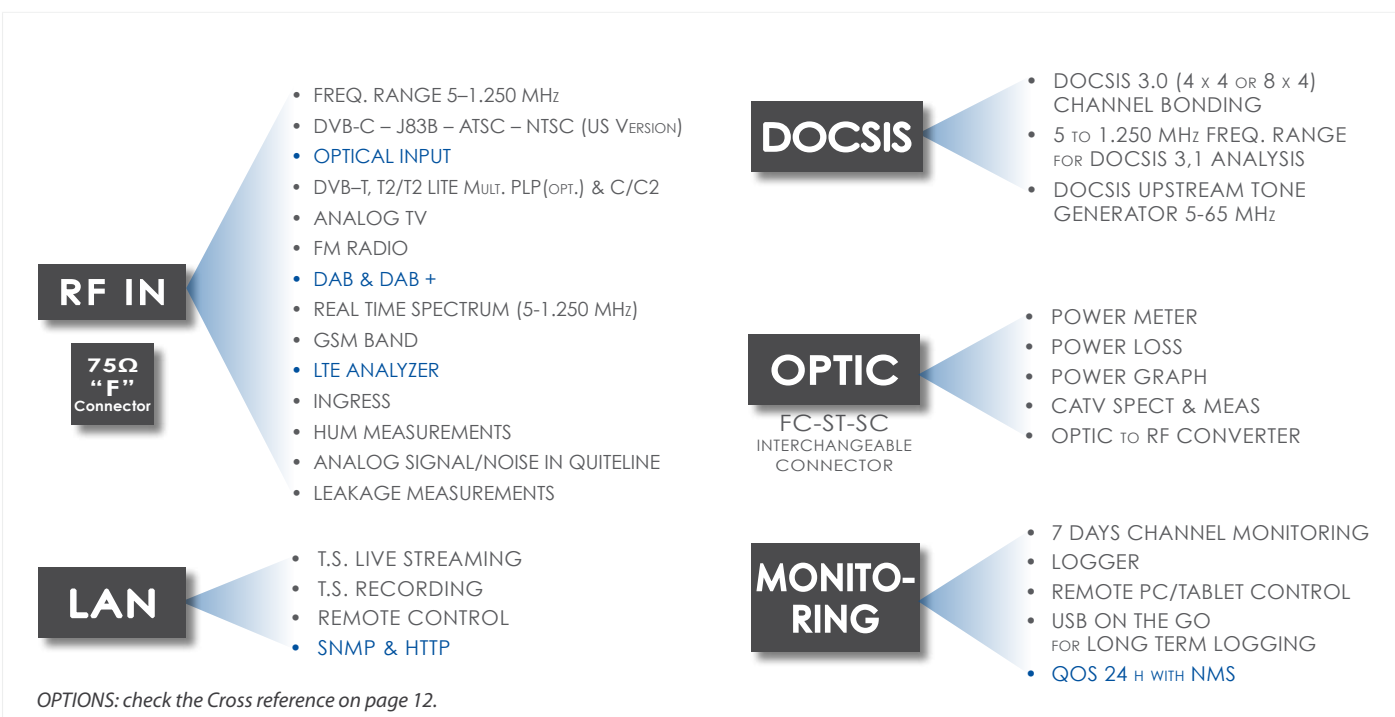
LEAKAGE MEASUREMENTS

- Frequency Range:
- 115-140 MHz (USA), 250-490 MHz (EUROPE)
- Resolution: 25 KHz
- Antenna type: selectable

GENERAL SPECIFICATIONS

- DC voltage at RF input: 5Vdc.
- Battery: Rechargeable Li-Po battery pack, 5 hour duration.
- USB Micro: For battery charge and PC interface for SW up-grade and memory plan management.
- Housing: Metal box and rain proof bag.
- Size: H 95 x W 160 x D 34 mm (meter only).
- Weight: 500 gr.

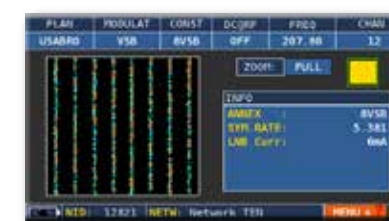
THE MOST ADVANCED & ACCURATE **TABLET** ANALYZER



MAIN FUNCTIONS

- Frequency range from 5 to 1250 MHz extended CATV and GSM telephone bands.
- Digital RF measurements 5 MHz to 1,25 GHz including average power/level, pre/post BER, MER versus CARRIER (opt.), Noise Margin, spectral analysis, and constellation.
- INGRESS mode, LEAKAGE mode, BARS SCAN and TILT.
- DOCSIS 3.0 upstream and downstream capabilities, 8 x 4 channel bonding with automatic lock to CMTS, for complete modem installation testing for both forward and return path analysis (opt.).
- Ping report, Network IP configuration.
- Lost Packet measurements, latency time and PER.
- DOCSIS upstream tone generator 5-65 MHz.
- OPTICAL POWER METER with interchangeable FC-ST-SC connector for fiber optic testing (FTTH & FTTX) and troubleshooting (opt.).
- User definable channel scan testing /logging with automatic quality analysis: FAIL-PASS-MARG.
- Assisted navigation, memory plans and automatic channel scan.
- Available with all world-wide channel plans .
- Alpha/numeric keypad for direct chan/freq selection.
- SMART software PC interface for meter upgrades, channel plans and AutoScan testing/logging management.
- Detects, measures and SHOWS pictures of MPEG 2 and 4 H264 HD High Definition programs.
- Automemory, Manual memory & Datalogger functions.
- Barscan TV & CATV function from 10 to 100 channels on one screen.
- Audio, AAC supplied, DOLBY opt.
- 7" TFT TOUCH display, 16:9, high resolution.
- Weighs only 1.6 kg, dim: H 14 x L 24 x D 4 cm.
- LI-POLIMER 4A battery with 4 hr battery capacity.
- Battery test function, to regenerate and measure the batteries and calibrate the battery indicator.
- Supplied with transport padded bag, accessories, mains and vehicle battery chargers.
- Free SMART PC interface program and FW upgrades.

MEASUREMENT EXAMPLES



VSB constellation, on the right relative modulation parameters



J83-B constellation, on the right relative modulation parameters



Single channel monitoring (for example 30 minutes)



VSB signal, all the measurements, picture and settings on one screen



J83-B signal, all the measurements, picture and settings on one screen



TV spectrum in real time, fast and super-fast with memory peak. Detects and memorizes all the details for you

SPECIFICATIONS

LEVEL MEASUREMENT & SPECTRUM ANALYSIS

- Frequency Range: TV, CATV & and Radio 5-1250 MHz
- Frequency Resolution: 25 KHz
- RF Input Impedance: 75 Ω (interchangeable “F” connector)
- Dynamic Range: 1 dBuV to 125 dBuV
or -59 to +65 dBmV
or -112 to +16 dBm
- Measurement Resolution: 0.1 dB
- Level Measurement Accuracy: 1 dB typ. (2 dB max.)
- A/V Ratio: up to 22 dB, +/- 1.5 dB (2 dB max.)
- S/N Ratio: up to 45dB +/-1.5 dB Max; 45-50dB +/-2dB
- Resolution Filter Bandwidth: 100 KHz @ -3 dB
- Custom Channel Plans: 25 (199 ch. per plan)

POWER & DIGITAL MEASUREMENTS

- Frequency Band: 5-1250 MHz
- Power Meas. Dynamic Range: 25 to 125 dBuV, -45 to 65 dBmV
- BER Measurement: (pre) bBER up to 1 x 10-9
(post) aBER up to 1 x 10-9
- MER Measurement: up to 40 dB (1 dB typ., 2 dB max.)

OPTICAL MEASUREMENTS

- FC-ST-SC interchangeable input connectors
- Automatic loss calculation
- Wavelengths (nm): 850,1310, 1490, 1550
- Range: -25 to 10 dBm
- Resolution: 0.1 dB
- Accuracy: +/- 0.5 dB
- Optical to RF conversion

INGRESS & SPECTRUM MEASUREMENTS

- Ingress Scan Spectrum
- Frequency: 5 -65 MHz
- Level: 5 dBuV to 125 dBuV
- Accuracy: +/- 2dB
- BW: 100 KHz @ -3dB

LEAKAGE MEASUREMENTS

- Frequency Range:
- 115-140 MHz (USA), 250-430 MHz (EUROPE)
- Resolution: 25 KHz
- Antenna type: selectable

DOCSIS DOWNSTREAM MEASUREMENTS

- DOCSIS 3.0 Compliant Modem (8x4 CH BONDING)
- Frequency Band: 5-1000 MHz
- Input Impedance: 75 Ω (interchangeable “F” connector)
- Range: - 45 to + 65 dBmV

- Measurements Include: Level/Power, MER, Pre/Post BER, Lost Packet, Transmit Power, Transmitted Packets, Received Packets, PER, Latency Min/Max Avg, Channel Bonding Upstream Level and IP Status
- MAC Address:Default or user defined

DOCSIS UPSTREAM & GENERATOR/TESTING

- Tone Generator Frequency: 5-65 MHz
- Modulation: QPSK, QAM, 8,16,32,64
- Typical Range: 8 to 53 dBmV (1 dB typ., 2 dB max.)
- Channel Bonding: Up to 4 upstream channels bonding supported ingress scan spectrum
- Frequency range: 5-65MHz

COMM. PORTS

- DOCSIS 3.0 and RF: F - Female
- LAN: RJ45 10/100 Ethernet
- USB 2.0: Type B (PC Interface)
- USB 2.0: Type A (USB drive)

GENERAL SPECIFICATIONS

- Power Supply: Built in LiPo rechargeable battery, external power supply 12 VDC 1A
- Battery Duration at 25°C: 4 hours
- Size: H 140 x W 240 x D 50 mm (meter only)
- PC Interface: USB
- Display: Color LCD 7” (480px x 800px)
- Front-Panel: Alpha numeric keypad
- Power Save: TFT backlight timer, brightness adj.
- PC Management: SMART software
- Standard Accessories:
 - Soft carry case and strap
 - USB 2.0 cable
 - AC adapter
 - 12V automotive charging cable
 - RF & optical interchangeable connectors
 - SMART software
- AVAILABLE OPTIONAL APPs: DVB-T/T2, DOCSIS 3.0 Cable Modem (4X4 or 8X4), Optic Input, HD DOLBY, HD MER Vs CARRIER, HD COAX Cable Reflectometer, HD Remote Control, DVB-C2.

WARRANTY

- According to your country’s laws (12 to 24 months)
- All electronic parts, except batteries, bag and damage

Some options must be requested when ordering the instrument.

MOD. CNG 70 USB USB HIGH POWER WHITE NOISE SOURCE 4 - 2.500 MHz



SPECIFICATIONS:

- | | | | |
|-----------------|--|--------------|------------------------|
| • Freq. Range : | 4 – 2.500 MHz | • Flatness: | 1,5 dB typ. 2 max |
| • Noise type : | White Gaussian | • Impedance: | 75 Ω, SMB, (50 Ω opt.) |
| • ENR: | 70 dB 75 Ω 25°C | • PSU: | USB, 5 Vdc, 80 mA |
| • Output power: | – 56 dBm (Mesured at 100 KHz spectrum RBW) | • Size: | USB stick |

Turn your Commercial Spectrum Analyzer into a Scalar Network Analyzer to measure:

ACTIVE DEVICES

- GAIN
- FLATNESS
- BW
- WSWR *

PASSIVE DEVICES

- LOSS
- FLATNESS
- BW
- VSWR *

COAX CABLE/REFLECTOMETER

- LOSS
- LENGTH
- SHORT-CIRCUIT DISTANCE **
- OPEN CIRCUIT DISTANCE **
- IMPEDANCE MISMATCH

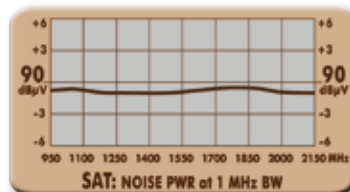
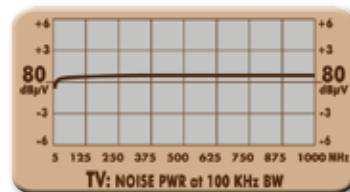
* With RF Bridge. ** With simple slide ruler, depending on Cable type

MOD. CNG 90 VERY HIGH POWER CALIBRATED & MODULATED NOISE GENERATOR



SPECIFICATIONS:

- RF Noise Signal : White Gaussian
- Freq. Range : 4-2150 MHz
- CH Power out : 97 dBμV ± 2 @ 8MHz BW
- TV Power out : 83 dBμV ± 2 @ 100KHz BW
- SAT Power out : 88 dBμV ± 2 @ 1MHz BW
- Noise Modulation : 50 Hz Flat (ON/OFF)
- RF Attenuator : 20 dB Flat
- Battery Capacity : 6-8 hours with low battery indication



The CNG 90 is the most powerful hand held noise generator currently available, in the frequency range from 4 to 2250 MHz, it allows passive coaxial cable networks testing, also of large size.

With 50 Hz modulation it is possible to measure the network C/N, without switching off the generator. A built in 20 dB RF flat attenuator also allows you to analyze and measure amplifiers or active coaxial CATV networks. The CNG 90 can be used in conjunction with any meter or spectrum analyzer, even from other brands.

MOD. MOS 4 MULTIPLE OPTICAL LASER SOURCE



SPECIFICATIONS:

- 1st wave length : 1310 n.m.
- 2nd wave length : 1490 n.m. (1625 for USA)
- 3rd wave length : 1550 n.m.
- 4th red Light : 650 n.m.
- Optical Connector : interchangeable FC-ST-SC
- Optical Power : 0 dBm Typ
- AWC : Automatic Wave Detection
- Battery Capacity : 4 - 6 hours with low Battery Indicator

The Multiple Optic laser Source "MOS 4" is suitable for any optical network, PON & FTTHx; Used in combination with ROVER analyzers (fitted with the optical option), and thanks to the AWD, it allows you to automatically and accurately check the losses for various wavelengths.

Furthermore, thanks to the red laser, the "MOS 4" will also allow the identification of any breaks in the optical fiber.



Close to its customers, and with over 40 years' experience in professional equipment design, ROVER Broadcast is a trusted provider of solutions for any broadcaster, offering a complete range of products for DVB digital TV network reception, processing and monitoring of digital and analog signals, network coverage analysis systems and high power optical transmitters.

SAT DVB-S2 RECEIVING/PROCESSING TV DVB-T2 MONITORING NETWORK PLATFORMS



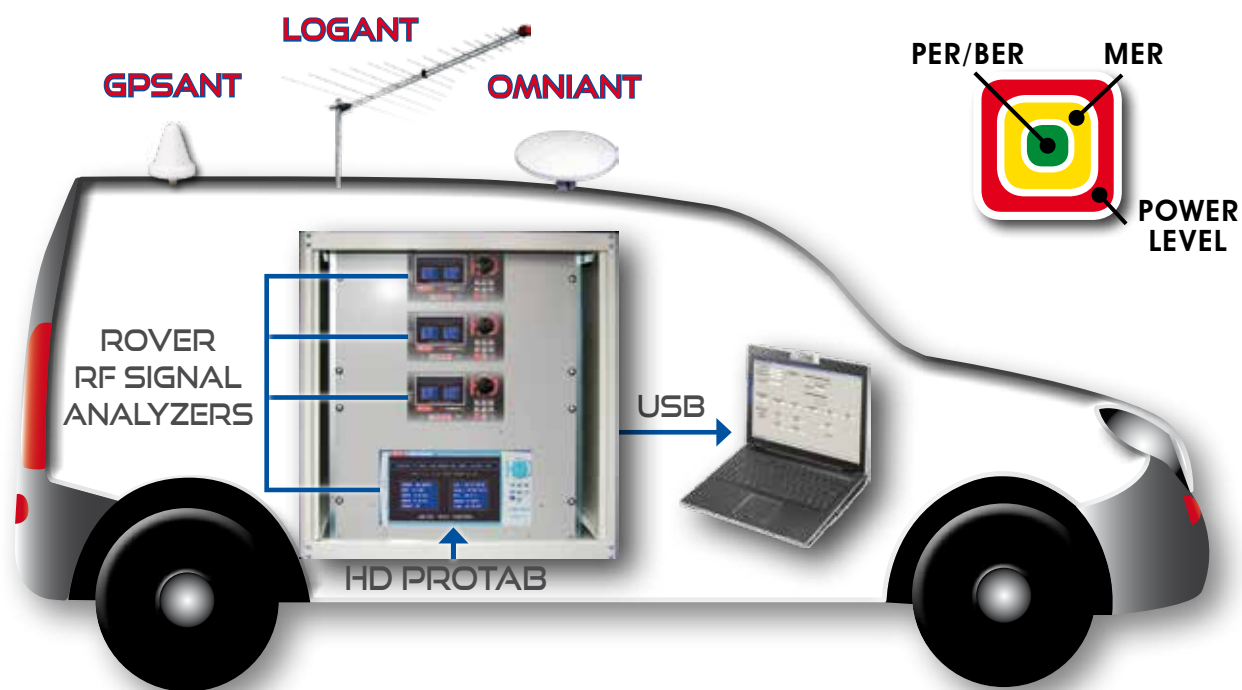
CATV & SAT LASER OPTICAL TX & RX



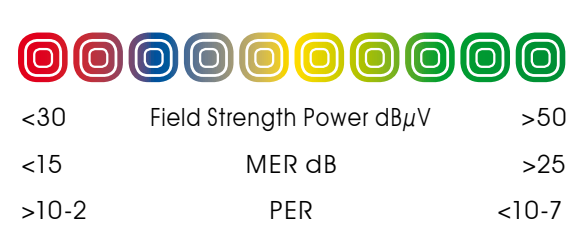
www.roverbroadcast.com



MOD. HD PRODRIVE TEST

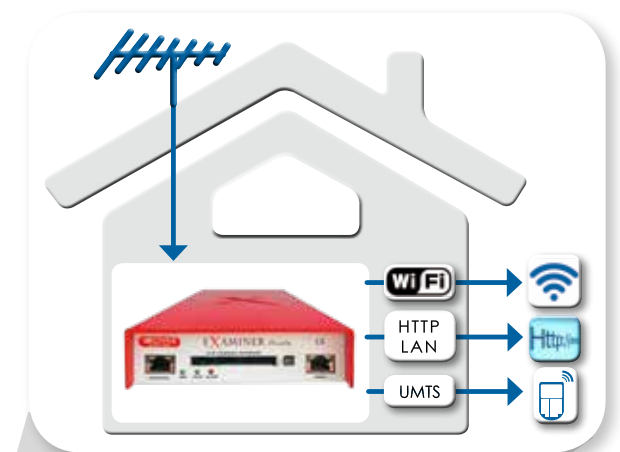


Efficient Broadcast DRIVE TEST solution for cost effective, fast & accurate, terrestrial Broadcast networks coverage analysis.
EXCLUSIVE KIT for DVB-T2 Lite mobile & stationary MULTICHANNEL measurements.



MOD. HD PROBE & NMS

Highly reliable, easy Network Management System to check 24 h Quality of Service for Radio, TV & SAT signals through multiple HD ROVER meters/probe placed in your distribution network.



HOW TO FIND US:

in Sirmione, Lake Garda, Italy.

Situated in one of the most beautiful tourist locations in Italy, on Lake Garda, ROVER can be easily reached from Milan, Bergamo, Verona and Venice airports.

Lake Garda is in the north of Italy, near the borders of Austria, Switzerland and Germany and is in the foothills of the Alps.


Lake Garda has a micro-climate, tropical in summer and temperate in winter, and where palms, olives, lemons, oranges, bouganville and even banana trees can grow.

Exploited by the Romans as long ago as 350 a.C., it is now one of the most important lakeside, spa and tourist resorts in Europe. Please find below photographs of some of the most important tourist attractions in the area.

Catullus roman ruins, 350 b.C.

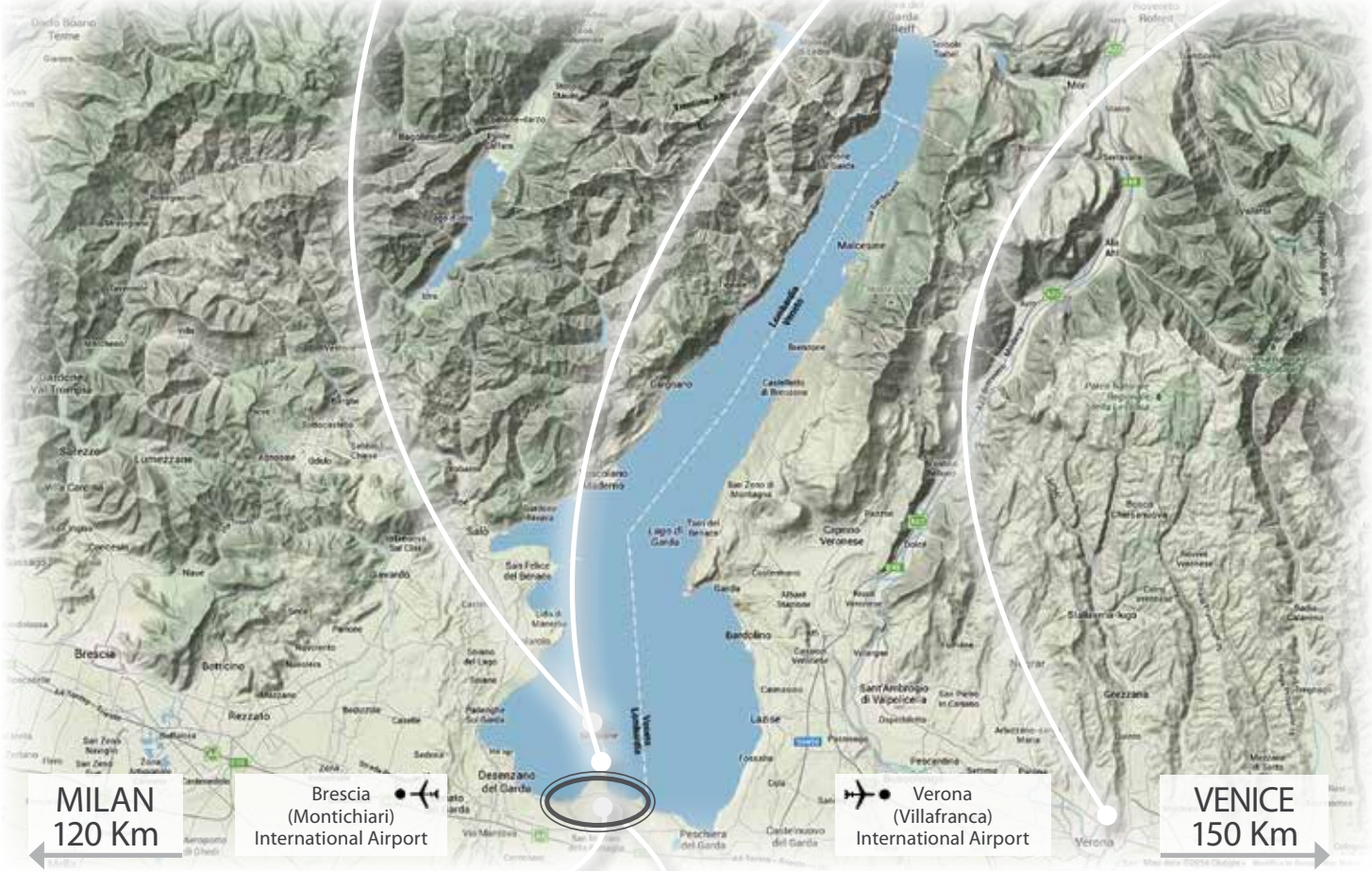


Sirmione Castle, 1.500 a.C.



Verona, roman Arena 120 b.C.





MILAN
120 Km

Brescia
(Montichiari)
International Airport

Verona
(Villafranca)
International Airport

VENICE
150 Km

GPS COORDINATES:
45° 27' 47"N, 10° 36' 24" E



ROVER Goods entrance & production



ROVER Laboratories and offices

CERTIFICATES N°
1263 ISO 9001
1264 ISO 14001
1265 BS OHSAS 18001

