

EXA 700 TAB

USER'S GUIDE

9"

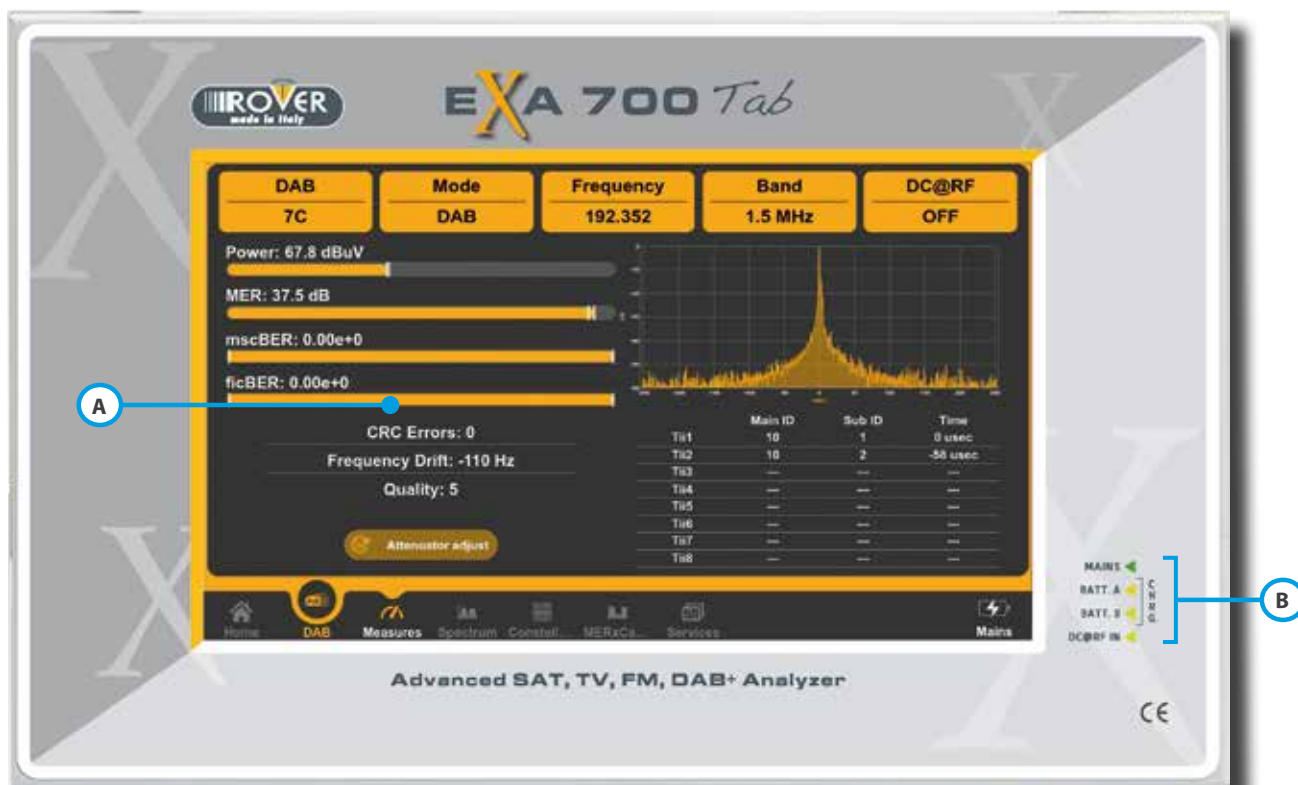
DISPLAY



www.roverinstruments.com

GET TO KNOW YOUR EXA 700 TAB

FRONT PANEL



A. Display Touch 9" Pollici

B. LEDs

• POWER



To turn on press the 'HOME' key.



To turn off press and hold the 'HOME' key



Or press the 'HOME' Button once and touch the SHUTDOWN icon

• RESET HARDWARE



10" Reset

With instrument ON, keep the "HOME" key pressed for 10" and turn ON again.

SIDE PANELS

• TOP SIDE



1. TV/RF Ingress type "N" 50 Ω
2. SAT/RF ingress type "F" 75 Ω
3. DC at RF IN ON/OFF Remote power switches 50/75 Ω
4. Slot Common Interface for CAM Module
5. ASI Transport Stream IN/OUT
6. LAN Ethernet RJ45
7. Power key
8. Backup Battery Switch

• OTHER SIDES

RIGHT



LEFT



9. HDMI Output
10. USB A 3.0 for memory stick
11. USB A 2.0 for memory stick
12. Power Input connector (12 VDC - 4A)
13. Right speaker
14. Left speaker

MULTI-PURPOSE BAG

Make work easier by taking advantage of your multi-purpose bag.



1

Work safely and without restrictions with both **hands free**.

Connect the shoulder strap to the two hooks at the corners of the bag (top left and bottom right), so you can hang your meter around your neck leaving both hands free.

2



3

The **sunlight shield flap** allows improved visibility of the high brightness display.



Secure your meter by connecting it to the antenna mast or in your car using the practical **ring belt with quick attachment**.

4



5

If you change the configuration of the shoulder strap, you can easily **carry** the meter vertically **by your side**.



6

You can also **carry** your instrument **using** its practical **handle**.



7

You can use the bag's convenient **stand flap** for operation on a counter.





INSTRUMENT CONFIGURATION



Touch SETTING ICON to access to the General settings menu



Settings menu configuration



Touch NETWORK ICON to access to the Network settings menu



Touch DATE & TIME ICON to access to the Date & Time Actualization menu



Touch FILES ICON to access to the Local Memory menu



Touch UPGRADE ICON to access to the Software Upgrade menu



Touch INFORMATION ICON to access to the Instrument Information menu



Touch DIAGNOSTIC ICON to access to the Function Diagnostic menu



SCREEN SHOT

The "SCREEN SHOT" function allows you to directly save the TFT monitor screens in an external memory.



- If you wish, connect an external memory source (not provided) to the USB A 3.0 or 2.0 socket otherwise the USB ICON will not appear
- Set the instrument on the screen to be saved: Spectrum, Measurements, Constellation, Echoes etc. Now you will have 2 different solutions:



Swipe the screen down



Touch LOCAL MEM or USB ICON to save to the desired memory



Or swipe the screen up and touch LOCAL MEM or USB ICON to save to the desired memory

N.B.: The files are saved in .jpeg format.



DVB-T/T2 TELEVISION ANALYZER

SWITCH TO TV MODE



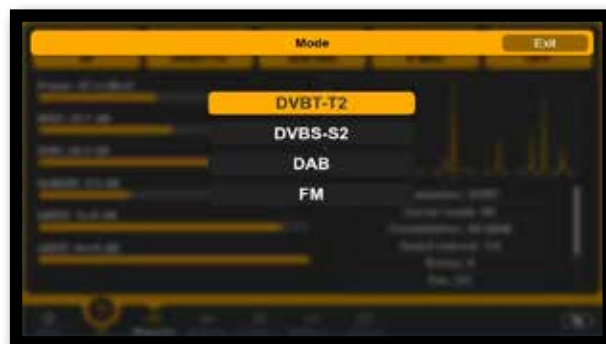
Touch the TV Icon



Main TV measurements screen



Touch EUROPE and select the Country & Channel desired, touch APPLY to confirm or EXIT



Touch MODE if you want to change the receiving mode



Touch FREQUENCY if you want to change the frequency received



Touch BAND if you want to change the bandwidth received



Touch DC@RF if you want to enable remote power supply

ECHOES VISUALIZATION & MARKERS SELECTION



Touch the ECHOES GRAPHIC to zoom IN the Impulse response



Touch the colored MARKERS BOXES to select the available markers

DVB-T TRANSMISSION PARAMETERS



Touch the PARAMETERS LIST to zoom IN the transmission parameters



DVB-T transmission parameters list example

DVB-T2 TRANSMISSION PARAMETERS



Touch the PARAMETERS LIST to zoom IN the transmission parameters



DVB-T2 transmission parameters list example

INFO DVB-T2



Touch INFO T2 to access to DVB-T2 informations

PLP SELECTION



Touch SELECTION PLP to access to PLP Selection menu



TV SPECTRUM ANALYZER

SWITCH TO TV SPECTRUM MODE



Touch the TV Icon



Touch the Spectrum Icon



TV Spectrum example



Touch SPAN to change the Span value



Touch dB/DIV to change the dB division value



Touch REFERENCE LEVEL to change the Reference Level value



Touch MARKERS to access to the MARKERS SETUP MENU



MARKERS, MAX and MIN HOLD, AVERAGE, SHOULDER MASK SX and DX CONFIGURATION EXAMPLE



TV CONSTELLATION ANALYZER

SWITCH TO TV CONSTELLATION MODE_____



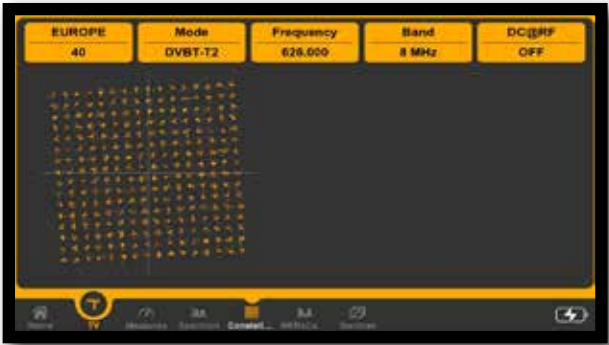
Touch the TV Icon



Touch the Constellation Icon



DVB-T Constellation example



DVB-T2 Constellation example



TV MER VS CARRIER ANALYZER

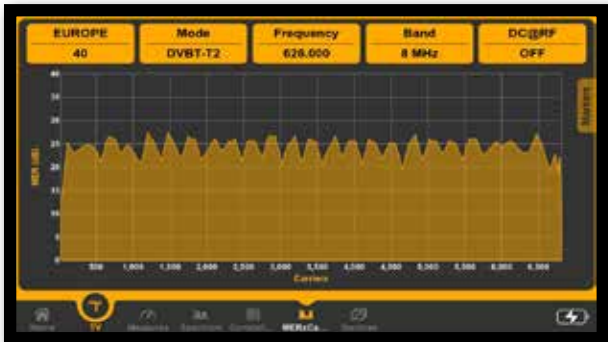
SWITCH TO MER VS CARRIER MODE



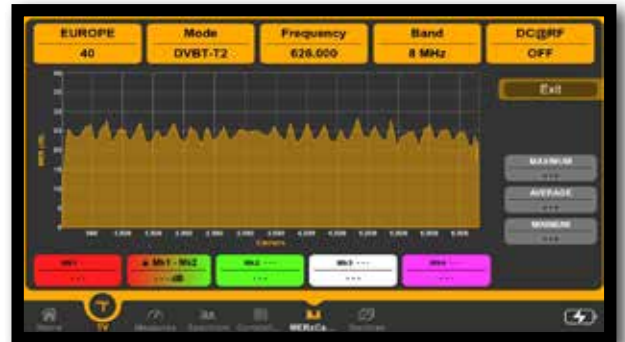
Touch the TV Icon



Touch the MER VS CARRIER Icon



DVB-T MER VS CARRIER analyser example



Touch Markers to access to the Markers setup menu



MARKERS, MAXIMUM and MINIMUM, AVERAGE CONFIGURATION EXAMPLE



TV MPEG SERVICE

SWITCH TO TV MPEG SERVICE MODE



Touch the TV Icon



Touch the Service Icon



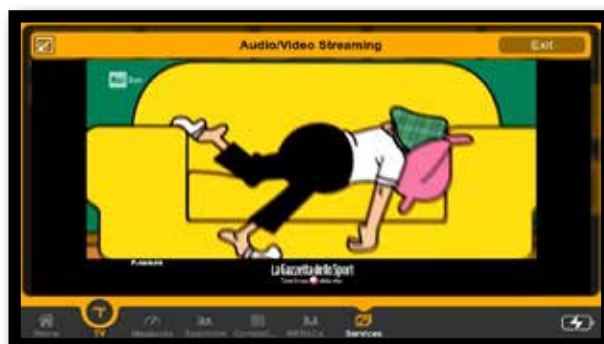
TV Service List example



Touch the SERVICE desired



Touch the PLAY SYMBOL to start the selected TV channel



FULL SCREEN image example

TV ETR 290 ANALYZER

SWITCH TO TV ETR 290 ANALYZER MODE _____



Touch the TV Icon



Touch the Service Icon



TV Service List example



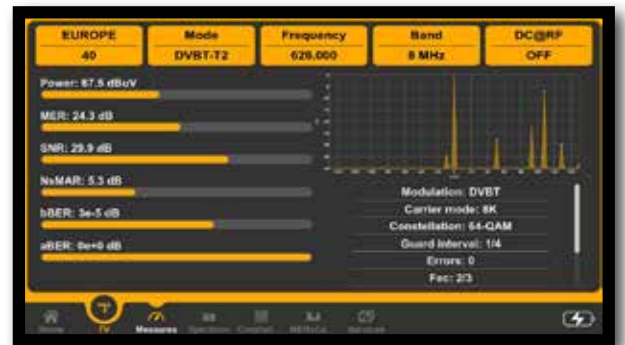
Touch ETR-290 icon to start ETR Analyzer

TV STREAM RECORDING

SWITCH TO TV STREAM RECORDING MODE _____



Touch the TV Icon



Touch the Service Icon

The screenshot shows the TV Service List example. It displays a list of services with columns for Channel, Name, Frequency, Band, and DC&RF. The list includes services like Rai 3 HD, Rai Sport, Rai Scuola, Rai 5, RTV San Marino, Rai 2 HD, Rai 1 HD, and Rai 4. On the right side, there are two progress bars for Bit Rate (Mbps) and Stuffing (Mbps). At the bottom, there is a navigation bar with icons for Home, TV, Measures, Spectrum, Control, HDTV/LD, and Services.

Channel	Name	Frequency	Band	DC&RF
1051	Rai 3 HD	2.61 MHz	8 MHz	OFF
1053	Rai Sport	2.73 MHz	8 MHz	OFF
1054	Rai Scuola	1.60 MHz	8 MHz	OFF
1057	Rai 5	1.60 MHz	8 MHz	OFF
1058	RTV San Marino	1.60 MHz	8 MHz	OFF
1052	Rai 2 HD	4.00 MHz	8 MHz	OFF
1055	Rai 1 HD	2.53 MHz	8 MHz	OFF
1056	Rai 4	2.90 MHz	8 MHz	OFF

TV Service List example



Touch RECORD Icon to Start and Stop TV Stream recording



DVB-S/S2 SATELLITE ANALYZER

SWITCH TO SAT MODE



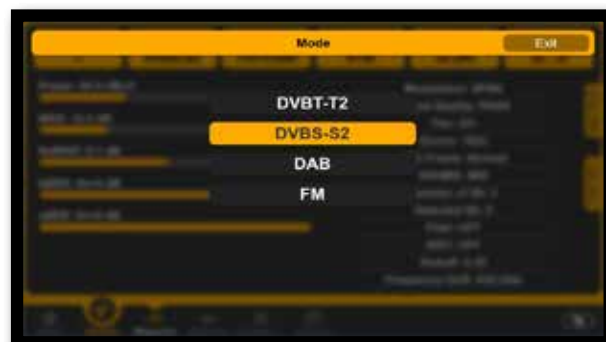
Touch the SAT Icon



Main SAT measurements screen



Touch EUTE 5 and select the Satellite & Transponder desired, touch APPLY to confirm or EXIT



Touch MODE if you want to change the receiving mode



Touch FREQUENCY if you want to change the frequency received



Touch OSCILLATOR if you want to change the LNB Local Oscillator value



Touch SYMBOL RATE if you want to change the Symbol Rate value



Touch RF SUPPLY LNB if you want to change the Band and the Polarization & DiSEqC value

PLS SELECTION



Touch SELECTION PLS to access
to PLS Selection menu

ISI SELECTION



Touch SELECTION ISI to access
to ISI Selection menu



SAT SPECTRUM ANALYZER

SWITCH TO SAT SPECTRUM MODE_____



Touch the SAT Icon



Touch the Spectrum Icon



5 dB div SAT Spectrum example



Touch SPAN to change the Span value



Touch dB/DIV to change the dB division value



Touch REFERENCE LEVEL to change the Reference Level value



Touch MARKERS to access to the MARKERS SETUP MENU



MARKERS, MAX and MIN HOLD, AVERAGE, SHOULDER SX and DX CONFIGURATION EXAMPLE



SAT CONSTELLATION ANALYZER

SWITCH TO SAT CONSTELLATION MODE _____



Touch the SAT Icon



Touch the Constellation Icon



DVB-S Constellation example



DVB-S2 Constellation example



SAT MPEG SERVICE

SWITCH TO SAT MPEG SERVICE MODE



Touch the SAT Icon



Touch the Service Icon



SAT Service List example



Touch the SERVICE desired



Touch the PLAY SYMBOL to start the selected SAT channel



FULL SCREEN image example

SAT ETR 290 ANALYZER

SWITCH TO SAT ETR 290 ANALYZER MODE _____



Touch the SAT Icon



Touch the Service Icon

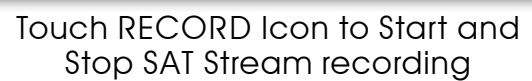


SAT Service List example



Touch ETR-290 icon to start ETR Analyzer

SWITCH TO SAT STREAM RECORDING MODE_____



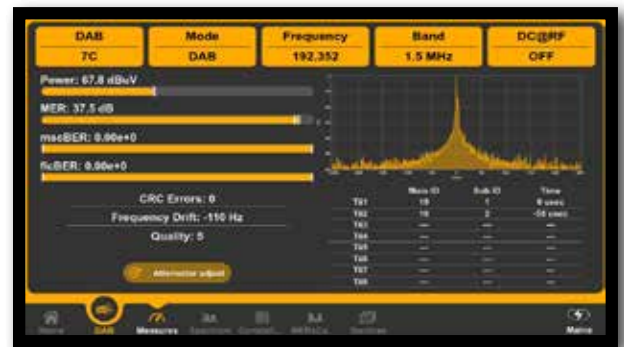


DAB ANALYZER

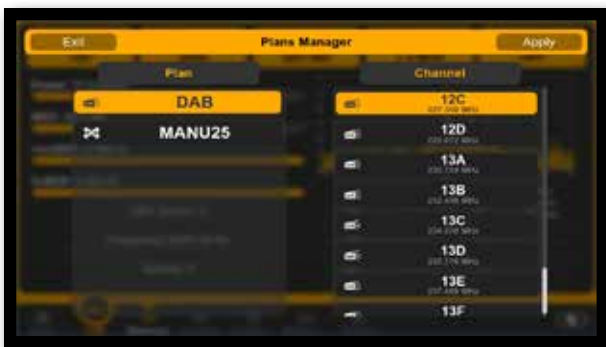
SWITCH TO TV DAB MODE



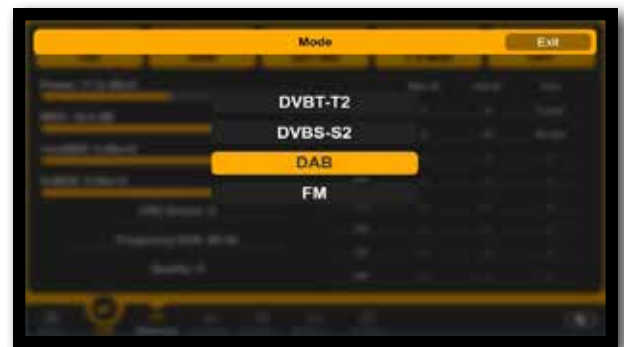
Touch the DAB Icon



Main DAB Measurements screen



Touch DAB and select the Channel desired, touch APPLY to confirm or EXIT



Touch MODE if you want to change the Receiving Mode

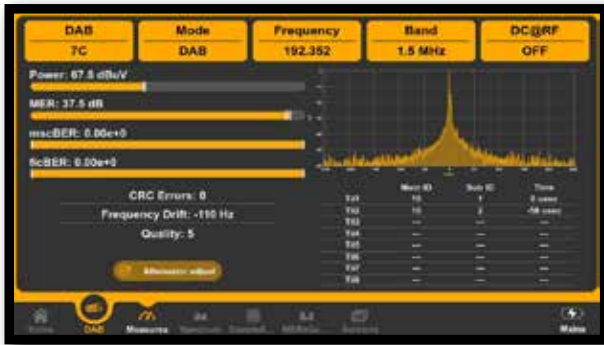


Touch FREQUENCY if you want to change the Frequency received

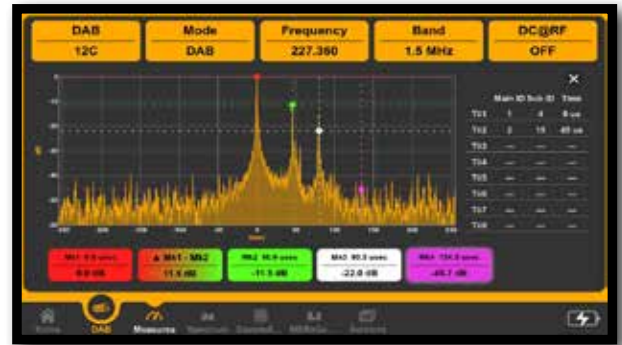


Touch DC@RF if you want to enable Remote Power Supply

ECHOES VISUALIZATION & MARKERS SELECTION



Touch the ECHOES GRAPHIC to zoom IN the Impulse response



Touch the colored MARKERS BOXES to select the available markers

TRANSMISSION PARAMETERS



Touch the PARAMETERS LIST to zoom IN the transmission parameters



DAB transmission parameters list example

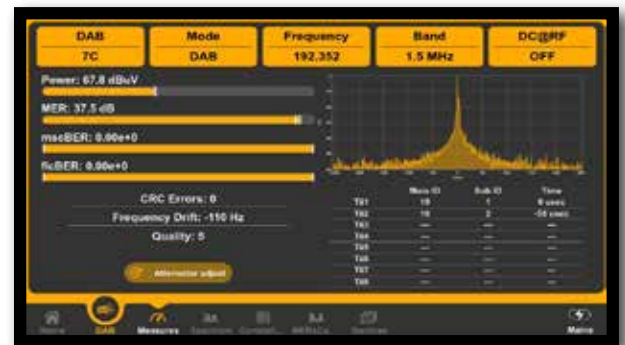


DAB SPECTRUM ANALYZER

SWITCH TO DAB SPECTRUM MODE



Touch the DAB Icon



Touch the Spectrum Icon



DAB Spectrum example



Touch SPAN to change the Span value



Touch dB/DIV to change the dB division value



Touch REFERENCE LEVEL to change the Reference Level value



Touch MARKERS to access to the MARKERS SETUP MENU



MARKERS, MAX and MIN HOLD, AVERAGE, SHOULDER SX and DX CONFIGURATION EXAMPLE

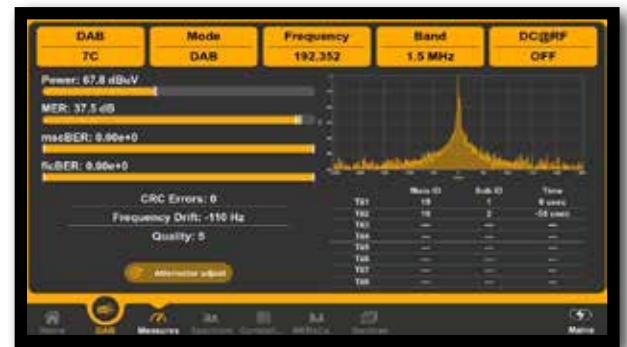


DAB CONSTELLATION ANALYZER

SWITCH TO DAB CONSTELLATION MODE _____



Touch the DAB Icon



Touch the Constellation Icon



DAB Constellation example

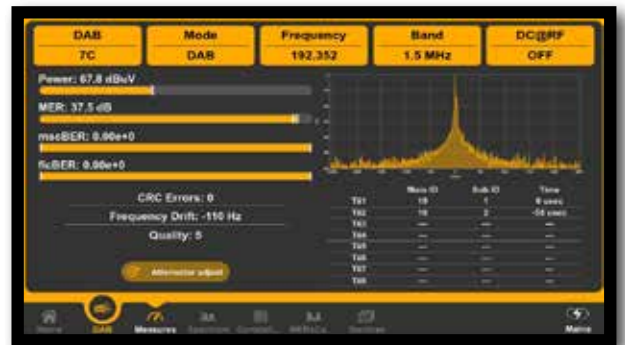


DAB MER VS CARRIER ANALYZER

SWITCH TO DAB MER VS CARRIER MODE_____



Touch the DAB Icon



Touch the MER VS CARRIER Icon



DAB MER VS CARRIER analyser example



Touch Markers to access to the Markers setup menu



MARKERS, MAXIMUM and MINIMUM, AVERAGE CONFIGURATION EXAMPLE



DAB MPEG SERVICE

SWITCH TO DAB MPEG SERVICE MODE _____



Touch the DAB Icon



Touch the Service Icon



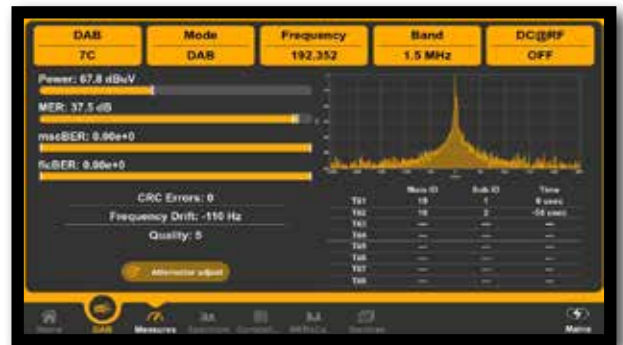
DAB Service List example

DAB STREAM RECORDING

SWITCH TO DAB STREAM RECORDING MODE_____



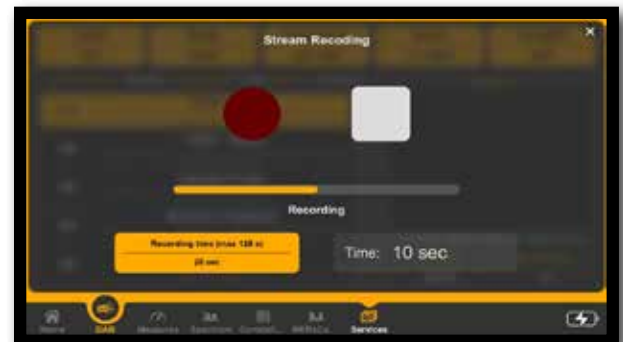
Touch the DAB Icon



Touch the Service Icon



DAB Service List example



Touch RECORD Icon to Start and Stop DAB Stream recording



SWITCH TO FM MODE



Touch the FM Icon



Main FM measurements screen



Touch MODE if you want to change the receiving mode

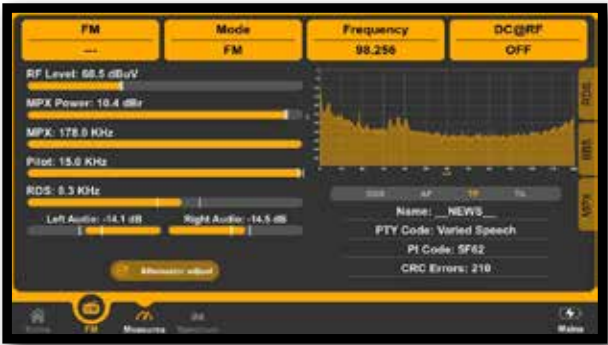


Touch FREQUENCY if you want to change the frequency received

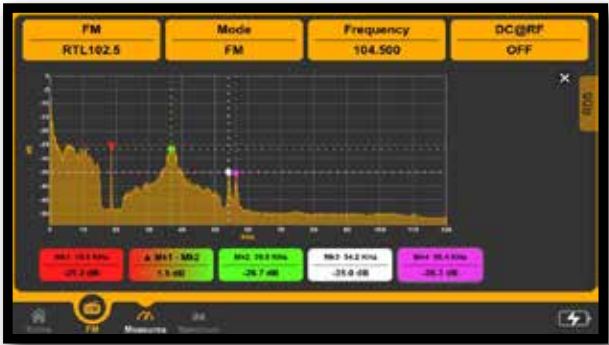


Touch DC@RF if you want to enable remote power supply

MPX VISUALIZATION & MARKERS SELECTION

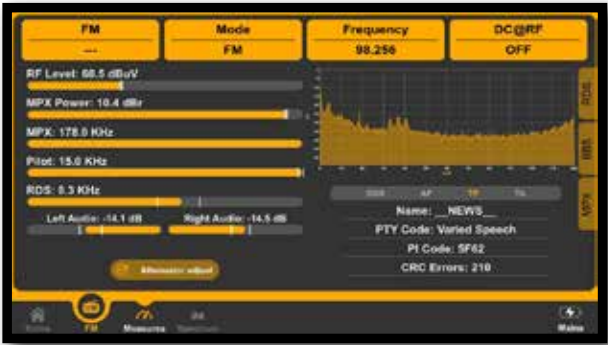


Touch the MPX GRAPHIC to zoom IN the MPX Informations



Touch the colored MARKERS BOXES to select the available markers

TRANSMISSION PARAMETERS

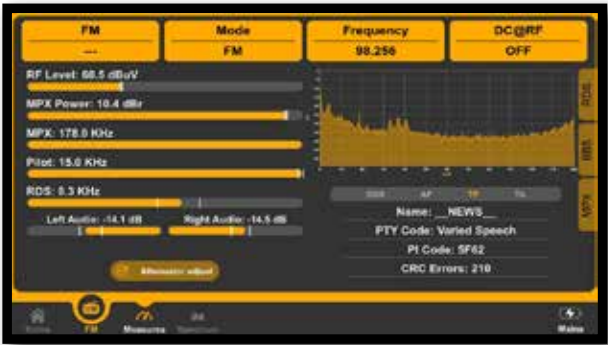


Touch the PARAMETERS LIST to zoom IN the transmission parameters



FM transmission parameters list example

RDS TRANSMISSION PARAMETERS



Touch the RDS ICON to zoom IN the RDS Transmission parameters



RDS transmission parameters list example



FM SPECTRUM ANALYZER

SWITCH TO FM SPECTRUM MODE _____



Touch the FM Icon



Touch the Spectrum Icon



FM Spectrum example



Touch SPAN to change the Span value



Touch dB/DIV to change the dB division value



Touch REFERENCE LEVEL to change the Reference Level value



Touch MARKERS to access to the MARKERS SETUP MENU



MARKERS, MAX and MIN HOLD, AVERAGE, SHOULD SX and DX CONFIGURATION EXAMPLE



ASI ANALYZER (TS & T2MI)

SWITCH TO ASI MODE



Touch the ASI/IP/FILE Icon



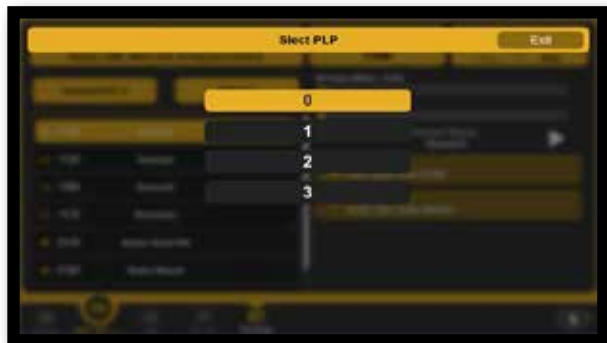
Main ASI measurement screen



Touch ETR-290 ICON to start ETR-290 analyzer



Example about T2MI MULTI PLP



Example of PLP Selection when receiving a T2MI Stream



T2MI Informations



IP TV ANALYZER, (TS OVER IP), (T2MI OVER IP)

SWITCH TO IP MODE



Touch the ASI/IP/FILE Icon



Touch IPTV ICON to start IPTV analyzer



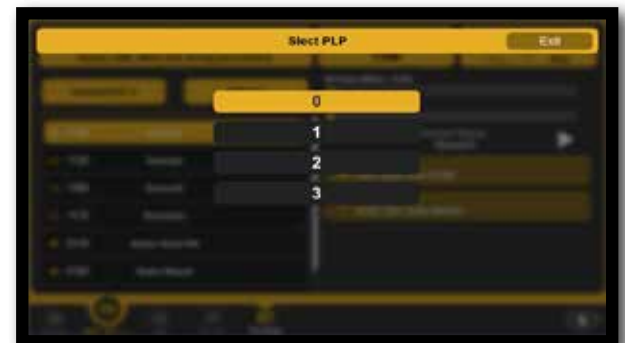
Touch ETR-290 ICON to start ETR-290 analyzer



Touch IP STATIC ICON to start IPTV measures



Example about T2MI MULTI PLP



Example of PLP Selection when receiving a T2MI Stream



T2MI Informations



FILE ANALYZER

SWITCH TO FILE MODE



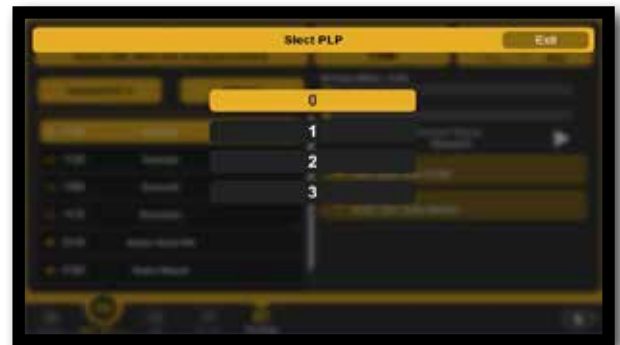
Touch the ASI/IP/FILE Icon



Touch TS FILE ICON and select the file desired analyzer



Example about T2MI MULTI PLP



Example of PLP Selection when receiving a T2MI Stream



T2MI Informations



SWITCH TO ETI MODE _____



Touch the ETI/EDI Icon



Select the file required



Main ETI screen



SWITCH TO EDI MODE



Touch the ETI/EDI Icon



Touch EDI ICON



Main EDI screen



MEMORY MANAGEMENT

RECALL A FILE MEMORY



Touch the SETTINGS Icon to access to the GENERAL SETTINGS menu



Touch FILES Icon to access at the local Memory



Touch FILES Icon to access to the local Memory folder desired



Example of opening a DATA-SHOOT file



Example of opening a SCREENSHOOT file

RECALL A FILE IN MEMORY

NOTES

[illegible]

EXA 700 TAB TECHNICAL SPECIFICATIONS

Supported standards	
SAT:	DVB-S DVB-S2&S2X
TV:	DVB-T DVB-T2 Multi-PLP
RADIO:	FM DAB/DAB+
ASI:	ASI IN/OUT
LAN:	TSoVerIP and EDI input
RF input performances (42-2.250 MHz)	
2 RF inputs:	N. 1 - 50 Ω "N" TV Band, N. 1 75 Ω "F" SAT Band
50Ω input matching (RL):	TV/CATV >20 dB
75Ω input matching (RL):	SAT >16 dB
Audio decoding	
MPEG-1 Layer I / II (ISO-IEC 13818-3) Dolby Digital Plus Dolby AC-3 AAC & HE AAC	
Video decoding	
MPEG-2 MP@ML HDTV (ISO-IEC 13818-2) MPEG-4/AVC (ISO-IEC 14496-10) ITU-T H.264 ITU-T HEVC	
Digital Satellite	
Standard:	DVB-S DVB-S2 Single Stream (DTH) DVB-S2 Multi stream (for Broadcast Multiple Network, Transmitter feeding) DVB-S2X Single Stream (DTH) DVB-S2X Multi stream (for Broadcast Multiple Network, Transmitter feeding)
RF input:	75 Ω "F" connector 25 to 130dBμV - Max input power without damage +30 dBm (30V without simultaneous generation of internal voltage to the RF input)
Input level range:	
Frequency range:	900 MHz to 2250 MHz
Frequency resolution:	1MHz (with 100 KHz AFC Control)
Roll Off:	Automatic selection in line with the selected standard
FEC:	Automatic selection
Symbol Rate:	DVB-S: 1 to 45MS/s DVB-S2&S2X: 2 to 45MS/s
ISI Selection (DVB-S2 Multistream):	From 1 to 10
ISSY synchronization (DVB-S2 Multi-stream):	Automatic detection and reading
Pilot (DVB-S2):	On, off. Automatic detection & reading
FEC Frame (DVB-S2):	Normal, short. Automatic detection and reading
LNB Control:	V (13V) / H(18V) polarization 22kHz tone DiSEqC 1.0 and 2.0,
Digital SAT Measurement	
Synchronization indication:	Unlock, Power Too Low, Lock
RF power level accuracy:	1dB
RF level unit:	dBμV, dBmV, dBm selectable
AFC - Capture range:	0 to 5MHz – step 100kHz
LNB frequency error measurement:	Up to 5 MHz
MER Range:	Up to 25dB
MER Accuracy:	0,5dB up to 18dB - 1dB from 19 to 25dB

BER before Viterbi (DVB-S):	up to 1E-06
BER after Viterbi (DVB-S):	up to 1E-08
BCH (DVB-S2) (S2X):	up to 1E-06
LDPC (DVB-S2) (SX):	up to 1E-08
Constellation:	Constellation diagram
Digital Terrestrial TV	
Standard:	DVB-T DVB-T2
RF input:	50 Ω "N" connector
Input level range:	25 to 130 dB μ V - Max input power without damage +30dBm (30V without simultaneous generation of internal voltage to the RF input)
Frequency range:	42MHz to 900 MHz
Frequency resolution:	50kHz
Channel Bandwidth:	5MHz, 6 MHz, 7 MHz, 8 MHz
Digital TV Measurement	
Synchronization indication:	Unlock, Power Too Low, Lock
RF power level accuracy:	1dB max
RF level unit:	dB μ V, dBmV, dBm Selectable
MER Range:	Up to 40dB
MER Accuracy:	1 dB,
BER before Viterbi (DVB-T):	up to 1E-06
BER after Viterbi (DVB-T):	up to 1E-08
BCH (DVB-T2):	up to 1E-06
LDPC (DVB-T2):	up to 1E-08
Constellation:	Normal and Rotated
Echoes measurement:	for DVB-T and DVB-T2 signals
MER vs Carrier:	MER measurement for DVB-T and DVB-T2 signals
Digital Radio	
Standard:	DAB DAB+
RF input:	50 Ω "N" connector
Input level range:	25 to 130 dB μ V - Max input power without damage +30dBm (30V without simultaneous generation of internal voltage to the RF input)
Frequency range:	42MHz to 900 MHz
Frequency resolution:	1 kHz
Channel Bandwidth:	1.5MHz
Digital Radio Measurement	
Synchronization indication:	Unlock, Power Too Low, Lock
RF power level accuracy:	1dB max
RF level unit:	dB μ V, dBmV, dBm Selectable
MER Range:	Up to 40dB
MER Accuracy:	1 dB
FIC BER:	up to 1E-06
MSC BER:	up to 1E-06
Graphics:	Constellation, echoes, MerxCarrier
TII	Up to 8
Analog Radio	
Standard:	FM
RF input:	50 Ω "N" connector
Input level range:	25 to 130 dB μ V - Max input power without damage +30dBm (30V without simultaneous generation of internal voltage to the RF input)
Frequency range:	42MHz to 900 MHz
Frequency resolution:	1 KHz
Analog Radio Measure	
Synchronization indication:	Unlock, Power Too Low, Lock
RF power level accuracy:	1dB max
RF level unit:	dB μ V, dBmV, dBm Selectable
MPX power:	-12 to +12dB
MPX Khz:	up to 120Khz
Stereo Pilot:	up to 15Khz
RDS Pilot:	up to 15Khz

Graphics:	MPX spectrum
Audio:	L/R
RDS:	PS, PT, TP, Clock, Text and Alternatives Frequency
LAN IP/ASI/EDI/ETI/TS over IP	
IP Interface	
LAN:	1 Gb/s Ethernet interface
IP protocol:	UNICAST/MULTICAST RTP/UDP EDI
IP measurement	
Streaming status:	Present, Not Present
Number of MPEG packet size:	1 - 7
TS packet size:	188, 204
Number of missing packets:	0 - ∞
IP Stream Jitter:	0 - 1000 ms
IAT:	MIN, MAX, MED
TS Bitrate:	0 - 216 Mb/s
Transport Stream Content:	TS and T2-MI
EDI measurement	
Ensembled:	ID and name
Service List:	Service Type, bitrate, protection, CU, Slide Show, CRC
ASI mode	
ASI Mode:	MPEG-TS on ASI packet length 188/204 bytes
ASI Status:	Lock 188, Lock 204, Unlock
ASI Bitrate:	0 - 216 Mb/s
Input / output:	75 Ω BNC connectors
Transport Stream Content:	TS and T2-MI
SAT, TV Spectrum analyzer	
Measurement parameters	
Frequency range:	42MHz to 2.250 MHz
RF level range:	5 to 130dB μ V
Resolution Bandwidth:	TV = 100kHz SAT = 4MHz /1MHz selectable
SPAN:	TV: 2MHz, 5 MHz, 7 MHz, 10 MHz, 20 MHz, 50 MHz, 100 MHz, 200MHz SAT: 50MHz, 100MHz, 200MHz, 500MHz, FULL band 930-2.250 MHz
Markers	Up to 4 markes, shoulder mask, min Hold, Max Hold, Average
dB/div scale selection:	1dB/div, 2dB/div, 5dB/div, 10dB/div
Visualization modes:	Full Picture or Envelope MENU Selectable
Transport Stream Analyzer	
TS interface	
Transport Stream content:	TS and T2-MI
TR 101 290 v1.2.1 ANALYSIS	
1st priority monitoring:	1.1 Sync loss 1.2 Sync byte 1.3.1 PAT Int 1.3.2 PAT PID 1.3.3 PAT scr 1.4.a Cont [Ord]
2nd priority monitoring:	2.1 Transport error 2.2 CRC error 2.3a PCR repetition error 2.3b PCR discontinuity error
3rd priority monitoring:	3.1 PID error 3.2 SI Rep 3.4 UNREF PIDS 3.5 SDT error
TS information monitoring	
PSI/SI tables decoding:	Visualization of service list, stream type

PMT decoding:	Service PID composition; real time refresh on service selection
Bitrate measurement:	TS total bitrate, Stuffing rate Service bitrate, ES bitrate 0 to 270Mb/s Resolution 1kb/s
T2MI information:	L1 & Time Stamp
Data storage	
ScreenShot:	JPG format
DataShot:	JSON format
Recorder:	TS, T2-MI or ETI files
Data export:	USB-On-The-Go plug to connect an external USB device 10/100 Base-T LAN to download data on an external PC (JPG, JSON or CSV format)
General data	
Integrated Controller	
Storage:	External USB drive Internal Memory
Interfaces	
Universal Serial Bus (USB):	1x USB2, USB On-The-Go for USB memory stick or HD 1x USB3, USB On-The-Go for USB memory stick or HD
Local Area Network (LAN):	1x 1G Ethernet interface (For remote control/IPTV input/EDI input)
Asynchronous Serial Interface (ASI):	ASI input on 75Ω BNC connector ASI output on 75Ω BNC connector
Audio / Video:	HDMI output
Common Interface:	PCMCIA slot for single/multi-service CAM modules
RF input:	1- 75 Ω "F" connector and 1 - 50 Ω "N"
Remote Operation	
Ethernet:	Instrument remote control. Full instrument control via Web-Browser
Very High Brightness Display	
Size:	9"
Format:	1024x600 high brightness, capacitive touch
Environmental conditions	
Operating temperature range:	-5° C to +50° C
Storage temperature range:	-25° C to 70° C
Humidity:	Up to 90%
AMSL:	Up to 3.000 m
Power Supply:	External power adapter - Input: 110 VAC to 240 VAC - 50 Hz to 60 Hz - Output: 12 VDC - 4A Internal Battery - LI-ion Polymer 8A battery duration > 4h (dependent in LNB consumption and Display Brightness)
Dimensions W x H x D:	290 mm x 200 mm x 80 mm
Body:	Aluminium and Steel
Regulation reference:	CEI EN 60721-3-7 CEI EN 60529
Weight:	
Bare instruments:	2,5 kg
Instrument with batteries:	2,9 kg
Instrument with batteries and soft bag:	3,4 kg
METER ACCESSORIES	
SUPPLIED:	Hard transport case Soft protection bag Main power adapter ac 110/240 V to dc 12V 4A

NOTES

[illegible]

NOTES

A series of horizontal dashed lines for writing notes.

SUGGESTED VALUES

This table shows the suggested measurements at a user's socket for the main digital modulations.

SUGGESTED VALUE TO: SUBSCRIBER SOCKET, KUNDEN ANTENNEN DOSE, PRESA UTENTE, PRISE DE L'ABONNE', TOMA FINAL DE USUARIO, АБОНЕНТСКИЙ РАЗЪЕМ

DVB-S QPSK			DVB-S2 8PSK			DVB-T-H & GB COFDM			DVB-T2 & GB COFDM			ATSC (USA) 8VSB		
PARAM.	MIN	TYP.	PARAM.	MIN	TYP.	PARAM.	MIN	TYP.	PARAM.	MIN	TYP.	PARAM.	MIN	TYP.
AVG PWR	40 dB μ V	50 dB μ V	AVG PWR	40 dB μ V	50 dB μ V	AVG PWR	40 dB μ V	50 dB μ V	AVG PWR	40 dB μ V	50 dB μ V	AVG PWR	-15 dBmV	-5 dBmV
NOISE MARG.	3 dB	6 dB	NOISE MARG.	3 dB	6 dB	NOISE MARG.	6 dB	9 dB	NOISE MARG.	6 dB	9 dB	NOISE MARG.	2 dB	9 dB
aBER post Viterbi	2x10 ⁻⁶	2x10 ⁻⁸	PER 8PSK	<1x10 ⁻⁷	<1x10 ⁻⁸	aBER post Viterbi	2x10 ⁻⁶	2x10 ⁻⁸	PER	1x10 ⁻⁷	1x10 ⁻⁸	bBER pre Trellis	1x10 ⁻³	<1x10 ⁻⁶
MER QPSK 2/3 FEC	9 dB	12 dB	MER 8PSK 2/3 FEC	11 dB	14 dB	MER 64 QAM 2/3 FEC	25 dB	28 dB	MER 256 QAM 2/3 FEC	25 dB	28 dB	bBER post Trellis	3x10 ⁻⁶	<1x10 ⁻⁸
MER QPSK 3/4 FEC	10 dB	13 dB	MER 8PSK 3/4 FEC	12 dB	15 dB	MER 16 QAM 2/3 FEC	20 dB	23 dB	MER 256 QAM 3/4 FEC	26,5 dB	29,5 dB	aBER pre R.S.	3x10 ⁻⁶	<1x10 ⁻⁸
MER QPSK 5/6 FEC	11 dB	14 dB	MER 8PSK 5/6 FEC	13 dB	16 dB	MER QPSK 2/3 FEC	14 dB	17 dB	MER 256 QAM 5/6 FEC	28,5 dB	31,5 dB	MER	16 dB	23 dB



made in Italy



WARNINGS



RECHARGEABLE BATTERY

This device contains a built-in Li-PO (Lithium polimer) battery that can be recharged many times. The battery contains chemicals that might wear with time even if not used. Please dispose of batteries properly.

Do not take the battery pack apart or expose it to extreme temperatures (over 50°C). If the device has been exposed to very low or high temperatures let it rest at room temperature before use.

RECHARGING THE BATTERY

The Battery must be recharged at room temperature (about 20°C) with the device turned off. To avoid premature failure of the battery never leave the device with an empty battery for prolonged periods.

SERVICE NOTES and GUARANTEE REGULATIONS

(CEE and EXTRA CEE)

ROVER Laboratories. S.p.A. has a standard guarantee period of 12 months.

This is extended to 24 months for countries within the European Community, and in any case, in accordance with the laws and/or possible regulations applied in your country.

GUARANTEE REGULATIONS:

1. IMPORTANT: the guarantee is valid only upon the presentation of invoice or receipt to ROVER Laboratories S.p.A. The purchase date must be clearly indicated on the invoice/receipt.
2. The guarantee covers the replacement free of charge of parts only, when malfunctioning is solely due to manufacturing faults. The faults must be identified and defined by ROVER personnel only.
3. The guarantee is void if:
 - a. the equipment is tampered with or repaired by non-authorized personnel
 - b. damage is found, caused by the incorrect use of the equipment, without following the advice explained in the User's Guide accompanying the equipment.
 - c. damage is found caused by the use of the equipment in unsuitable working environments.
4. The following parts are not covered by the guarantee:
 - a. Parts subject to wear, such as aesthetic ones, keyboard, plastic chassis, etc.
 - b. Batteries: 3 months from the date of purchase, if original.
 - c. Bags and carrying cases, including shoulder straps.
5. The equipment can not be replaced and the guarantee is extended after the repair of a fault.

SERVICE NOTES AND PROCEDURES:

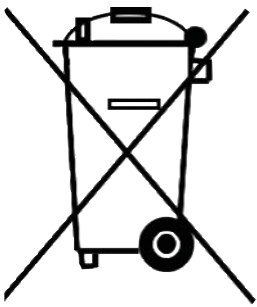
6. The equipment can only be repaired by the manufacturer or by an authorized ROVER Laboratories service center:
 - a. *Before returning the meter for repair, always contact the distributor where you purchased the unit or an authorized service center if present in your area to obtain the return procedure for your analyzer. If no authorised ROVER service centers are available in your area, please contact ROVER Laboratories S.p.A. directly at the following data:*
 - **wecare@roverinstruments.com**
 - **+39 030 990 6894** **Fax number**
 - b. *Important: please take note that non-authorised returns for repair to ROVER Laboratories S.p.A. will be rejected.*
 - c. *When returning the meter, always send it with the following documentation attached:*
 - *the fully-compiled FAULT IDENTIFICATION FORM*
 - *transport document*
 - *the eventual request for an estimate of repair costs*
 - d. *Please note that the request for an estimate of repair costs must be submitted upon return of the analyzer with a written note. If the repair cost estimate is not accepted, ROVER Laboratories reserves the right to charge the customer for the estimate costs analysis.*

7. Risks and costs for transport to ROVER Laboratories S.p.A. must be sustained by the buyer. After repair, if the equipment is under guarantee, ROVER Laboratories S.p.A. will pay for the transport returning the goods to the customer. If the instrument is not under guarantee, after repair, the equipment will be returned by courier service with the amount to be paid by the customer shown on the invoice.
8. The guarantee does not cover compensation for direct or indirect damages of any kind to people or goods caused by the use of the equipment and/or compensation caused by the suspension of use due to eventual repairs.
9. ROVER Laboratories S.p.A. is not responsible for eventual tampering and/or modifications that may cause the goods to no longer adhere to the European "CE" regulations, especially regarding EMC and safety.
10. ROVER Laboratories instruments is recognised and is fully compliant with DVB regulations and specifications (ETS 300 421-12/94) and is consequently marked with the DVB logo.

DISPOSAL OF ELECTRONIC EQUIPMENT

Disposal of electric/electronic equipment (applicable in all CEE countries and wherever separate waste collection system is applied).

This symbol on the packaging indicates that the product should not be considered as domestic waste. The product, at the moment of disposal, should be brought to a waste collection point with the proper facilities to manage electrical/electronic appliances.



Electric/electronic appliances, if not disposed of correctly, may have negative consequences on your health and environment.

Furthermore, a proper recycling procedure helps maintaining natural resources.

For more information about the correct disposal of this product, please refer to your local waste management offices or the shop where this product was bought.

METER MAINTENANCE

CLEANING THE METER

Cleaning the meter from dust and dirt is easy and helps maintaining it in optimal work conditions through the years. The cleaning procedure is simple and quick and requires only minor attention. Never use chemical aggressive products (diluent) and/or abrasive or rough clothes which may damage plastics and displays.

Always use a soft cloth, dampened with a simple water and alcohol solution or a de-greasing not abrasive liquid soap.

Keyboard and display should be gently cleaned. Rubbing the keyboard and/or the display(s) may seriously damage their functions.

MAINTENANCE AND CARE OF THE METER

This meter has been designed to withstand severe conditions of use. Even so, its life may be prolonged by respecting some simple and effective rules:

- The meter has not been designed to withstand high temperatures (over 60°C or 140° F). Those temperatures can be easily reached when the meter is left in a car, especially behind the windshield, or in the trunk. The LCD display and/or other details may easily be damaged by the extreme temperature.
- The internal battery may rapidly lose its efficiency if exposed to high or low temperatures. This will result in reduced autonomy of the meter when powered by internal battery.
- When recharging the internal battery, do allow a good air circulation around the meter and the adapter: do not cover it with clothes and do not recharge the battery when the meter is contained in its transport case
- The meter is not waterproof, even if it is protected against incidental water drops. In case of contact with water, electronic circuits may be damaged, allow the meter to dry thoroughly before trying to turn it on. Do not use hairdryer or other strong heating sources, but just leave the meter in quiet air. If possible, contact Rover Laboratories S.p.A. Technical Assistance.

FAULT IDENTIFICATION FORM (RMA)

To: ROVER INSTRUMENTS SERVICE DEPARTMENT • Fax: +39.030.9906894

E-mail: wecare@roverinstruments.com • Subject: FAULT Identification Form

PLEASE FILL IN ALL AREAS. CUSTOMER INFORMATION:

- Date Company:
- Name and surname of the holder * :
- Company address * : ZIP code * :
- Address delivery/pickup, a subsidiary of * : ZIP code * :
- VAT * :
- Tax code * :
- Telephone:
- E-mail * :
- Reference person:
- Bank support * :
- IBAN code * :

* Fields NOT required for official ROVER dealers (required for any end customer).

N.B. Please enter the TAX CODE even if it the same as your VAT number. In the case of sole proprietorship, please communicate the name and surname of the owner.

METER INFORMATION:

- Meter Model:
- Purchase date:
- Copy and invoice number (if under warranty):
- Bought from:
- Software Version (SW):(optional)
- Hardware Version (HW):(optional)
- Serial Number (S.NO):

NOTE: the information relevant to: model, serial number, firmware/hardware version are shown on the first display after you switch on (start up), or on the meter's information display in the configuration menu. If the meter does not switch on, you can find the meter's serial number on the label placed on the back of the meter.

DETAILED and ACCURATE DESCRIPTION OF FAULT:

Please describe and attach the fault, especially if OCCASIONAL, or if it occurs ONLY under certain conditions: for example "cool instrument" or "warm instrument", after no. minutes of operation, etc.

We suggest you provide photographs of the damaged parts or attach a movie that shows the problem on the display.

If descriptions of the fault are incomplete and we are unable to reproduce the fault in our laboratories, we may have to resend you the instrument unrepared.

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(*) add lines if more space is needed for your description.

TIMING OF REPAIRS: The applicable Repair times are 10 working days (barring unforeseen circumstances).

WARRANTY REPAIRS: Repairs are guaranteed for 3 months on the same intervention.

DO NOT SEND ROVER YOUR INSTRUMENT UNTIL YOU HAVE REQUESTED AND RECEIVED OUR "RMA" AND BAR CODE, WITH SHIPMENT INSTRUCTIONS, OTHERWISE THE INSTRUMENT WILL BE REJECTED ON ARRIVAL AT ROVER.

To receive information regarding the status of your authorization, write to: wecare@roverinstruments.com quoting your "RMA" number

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CUSTOMER SUPPORT

Wecare@roverinstruments.com

Skype® only for call
[wecare.roverinstruments](https://www.skype.com/people/wecare.roverinstruments)



UG-EXA700TAB-EN-V1,1

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