The IT-100 Analyzer is designed to ensure high-performance control and adjustment of television and broadcasting distribution networks as well as of separate components of such networks, or other electronic devices.

Measurement of TV signal parameters:

- ITU_T J.83 Annex A/B/C cable TV: channel power, MER, BER, constellation diagram, channel response, channel reception quality monitoring;
- DVB-T/T2 terrestrial TV: channel power, MER, BER, constellation diagram, echo diagram, channel reception quality monitoring;
- DVB-S/S2 satellite TV: channel power, MER, BER, constellation diagram, channel reception quality monitoring;
- PAL/SECAM/NTSC analog TV: channel level, V/A, C/N, HUM modulation, CSO/CTB intermodulations, channel reception quality monitoring;
- IPTV: variability of IP packets the arrival interval, delay factor throughout the stream measurement, number of received IP packets, frames bitrate, IPTV stream reception quality monitoring;
- analysis of MPEG transport stream structure: real time analysis in accordance with TR101290 standard, viewing the stream structure, measuring bit rate of elementary streams, measuring parameters of PCR time stamps occurrence, recording and presentation of TS sample;
- optical signal power measurement as well as all parameters TV signal in fiber-optic CATV measurement;
- measurement of remote networks powering DC and AC voltage.

IT-100 MultiSystem TV Signal Analyzer

Video and audio Testing:

- SD or HD MPEG2, MPEG4 digital channels;
- Encrypted channels with CAM module connection;
- IPTV channels;
- PAL, SECAM, NTSC analog channels.

Measurement modes:

- Single channel parameters measurement;
- Full-scan with flatness and tilt measurement for all channels;
- Comparison of current measurement data and measurement data from data logs;
- Time domain graphs for Power, MER and BER of digital channels;
- Data logging;
- ETSI TR101290 analysis of MPEG TS structure;
- Transport stream recording for further analysis;
- Spectrum analysis;
- CSO-CTB measurement;
- Optical channel power measurement;
- Measurement with optical receiver;
- HUM measurement.

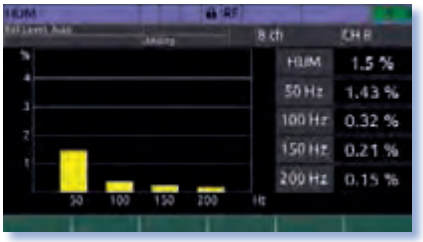
Features:

- 4.3 inch 480x272 pixels color TFT display;
- Analyzer control by using keyboard or VPN commands via Ethernet;
- Common Interface slot for CAM module connection;
- External devices powering supporting DiSEqC 1.2;
- Powered by batteries, by an external charger or from the car lighter adapter;
- Built-in loudspeaker for audio monitoring;
- Input F-male 75Ω connector and optical connector with SC/FC replacement adapters;
- Communication ports:
  - USB 2.0 host interface (connection to PC);
  - USB 2.0 device interface (connection of USB storage devices);
  - Ethernet RJ45 10/100 interface (control or IPTV).

Menu Mode

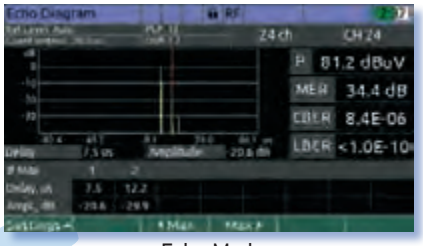
Full Scan Mode

Channel Mode

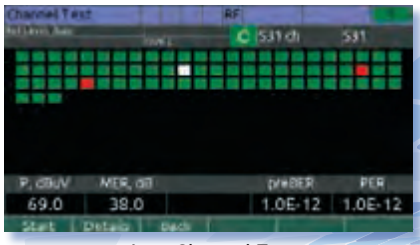


HUM Mode

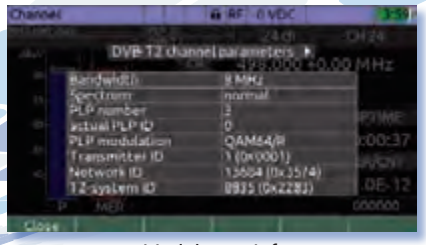
CSO/STB Mode



Echo Mode



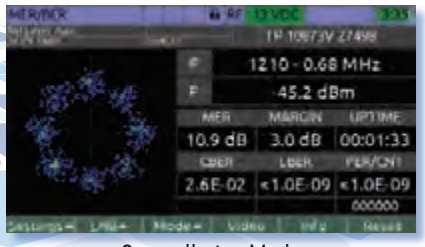
Auto Channel Test



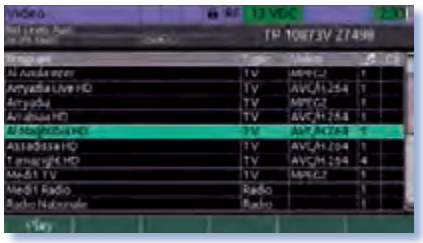
Modulation Info

Spectrum Mode

Channel Mode



Constellation Mode

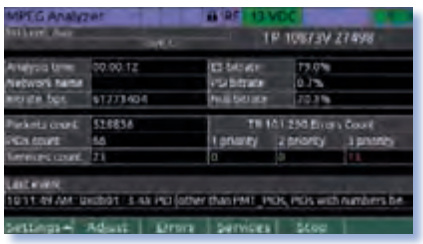


Services Map

TV Picture Mode

Statistic Mode

IPTV Measurement



TS Analysis

TS Analysis

TV Picture

GENERAL

Monitor	4.3 inch TFT display, 480x272 pixels
Battery	Li-ion
Charge time	80% volume for 3 hours
Battery life	at least 4 hours
Warm-up time	less than 2 min
Remote feeding	5/12/13/18/24V, Max 5W
Operating temperature range	from -10 to 50 °C
Dimension (WxHxL)	245x150x65 mm
Weight	1.5 kg

INCLUDED ACCESSORIES

Mains Charger
Mains charger Cable
Rechargeable Li-ion battery
Transport sling
Carrying case
«F» female – «F» female adapter
«F» male – «IEC» female adapter
Screwdriver
FC optical adapter with dust cap
SC optical adapter with dust cap
USB cable
Car lighter adapter

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Specifications

TRANSPORT STREAM, CODECS

Video codec	H.264/AVC L4.1 HP, MPEG-2 MP@HL, VC-1 AP L3, AVS PL 6.0
Video resolution	1080i60, 1080p30, 720p60, 576p
Aspect ratio	16:9, 4:3
Audio codec	MPEG1 L1/2, HE-AAC
CAM module	EN50221 (DVB-CI) PCMCIA interface
Bitrate max	80 Mbit/s
TS record	up to 10 min
TS testing	TR101290 real time, three levels
Video info	type, bitrate, format, aspect ratio, profile, PID
Audio info	type, bitrate, format, mono/stereo, language, PID
Service info	network, provider, NID, ONID, scrambled/free, TSID, SID, LCN

OPTICAL INPUT

Connector type (9/125 single-mode)	replaceable FC/SC
Operating wavelength range	1100 to 1650 nm
Measurement optical power range	-20 to +8 dBm
Operating optical power range	-9 to +2 dBm
Maximum input optical power	+10 dBm
Power measurement accuracy (at 1310 and 1550 nm wavelength)	±0.5 dB
Power measurement resolution	0.1 dB

DVB-T MEASUREMENT

Operating frequency range	42 to 1002 MHz
Power level range	35 to 115 dBuV
Power measurement accuracy (C/N more than 20 dB)	±1.2 dB
Modulation	QPSK,16QAM, 64QAM
MER measurement range	up to 35 dB
MER measurement accuracy	±2.0 dB
MER resolution	0.1 dB
BER measurement range	1.0E-2 to 1.0E-12

DVB-T2 MEASUREMENT

Operating frequency range	42 to 1002 MHz
Power level range	35 to 115 dBuV
Power measurement accuracy (C/N more than 20 dB)	±1.2 dB
DVB-T2 standard	1.3.1
Modulation	QPSK,16QAM, 64QAM, 256QAM
MER measurement range	up to 32 dB
MER measurement accuracy	±2.0 dB
MER resolution	0.1 dB
BER measurement range	1.0E-2 to 1.0E-12

DVB-S/S2 measurement

Operating frequency range	950 to 2150 MHz
Power level range	45 to 115 dBuV
Power measurement accuracy (C/N more than 20 dB)	±1.2 dB
DVB-T2 standard	1.3.1
Modulation	QPSK, 8PSK, 16APSK, 32APSK
MER measurement range	up to 25 dB
MER measurement accuracy	±2.0 dB
MER resolution	0.1 dB
BER measurement range	1.0E-2 to 1.0E-9

SPECTRUM ANALYZER

Operating frequency range:	
- TV mode	5 to 1200 MHz
- Sat mode	950 to 2150 MHz
Frequency step	25 kHz
Level measurement range:	
- TV mode	20 to 120 dBuV
- Sat mode	20 to 120 dBuV
Level measurement accuracy (23 °C)	±1.2 dB
Level measurement accuracy (-10 to +50 °C)	±1.5 dB
Level resolution	0.1dB
Frequency span	10,20,50,100,200 400,800,1200 MHz
Detector mode	Peak, RMS
Reference level	50 to 120 dBuV (10 dB step)
Resolution bandwidth	50, 100, 250, 1000 kHz
Markers	2
Sweep time in quick mode:	
- 1200 MHz span	less than 250 ms
- 400, 800 MHz span	less than 170 ms
- 10 to 200 MHz span	less than 70 ms

DIGITAL CATV MEASUREMENT

Operating frequency range	42 to 1002 MHz
Power level range	35 to 115 dBuV
Power measurement accuracy (C/N more than 20 dB)	±1.2 dB
TV standard	J.83 ANNEX A/B/C
Modulation	64QAM to 256QAM
Symbol rate	4.0 to 7.2 Msps
MER measurement range	up to 42 dB
MER measurement accuracy	±2.0 dB
MER resolution	0.1 dB
BER measurement range	1.0E-3 to 1.0E-12

ANALOG TV MEASUREMENT

Operating frequency range	42 to 1002 MHz
TV standard	B/G, I, D/K, M/N
Color standards	PAL, SECAM, NTSC
Level measurement range	30 to 120 dBuV
Level measurement accuracy	±1.2 dB
Level measurement resolution	0.1 dB
C/N measurement range (channel level more than 65 dBuV)	up to 50 dB
HUM measurement range	0.6 to 20%

IT-100

Remote control of the IT-100 Multisystem TV Signal Analyzer

In the latest update of the Analyzer's software (it100_build_180424.bs2 from 04/24/2018), it became possible to remotely control the Meter via VNC and FTP protocols. Remote control of measurement equipment is a traditional and very demanded function. It allows to access a device that is at any distance. In addition, remote control greatly extends the use of the Meter.

To remotely control, it is necessary to connect the Analyzer to an Ethernet network. Connection to the Ethernet network and configuration of the network parameters are described in detail in the operation manual in the section "Network parameters setting". You need to install any VNC client (UltraVNC, TightVNC, etc.) on a PC or a tablet, from which you intend to operate the Meter. Programs are free as a rule and can run on different devices and different operating systems.

Connection to the device requires no complicated configuration. Generally, you only need to enter the IP address of the Meter or its domain name.

A distinctive feature of controlling the device via the VNC protocol is ease of operation. It does not take even minimal time to learn the user interface.

While establishing a connection, the appearance of the device is displayed on the computer screen, and you work with it as if it would be in your hands. The same information as on the screen of the real Analyzer is visible on the screen of the virtual Meter. The virtual Meter works the same as the real one.

Thanks to the remote control, the IT-100 TV signal analyzer acquires new capabilities. So, for example, if the IT-100 TV signal analyzer is installed on the headend, its measurements will always be available to the service personnel at any point where there is a connection to the network.

Another successful use can be the positioning of antennas, the connection to which in their installation place is impossible or difficult, since the feeder cable goes strait to the building. The analyzer is connected to the antenna inside the building and measurement results are output to the tablet. The technician positions the antenna by monitoring the signal level measured by the IT-100 Analyzer on the tablet.

The image of the remote TV signal analyzer can be displayed on a large screen. This feature is widely used while training personnel how to work with the Meter.

Using remote control, it is convenient to compare the readings of several Analyzers located in different points of the cable network. Images of such Meters can be displayed on the screen of one computer.

Access to the Meter's files with measurement results is performed via FTP protocol. To work with the files, it is necessary to install any of the FTP clients on the remote computer (for example, FileZilla, FireFTP or SmartFTP). Most programs are free.

Like VNC clients, FTP clients require no complicated configuration. Besides the IP address of the Meter or its domain name, it is usually required to enter a login and password, which are ignored by the IT-100 TV Signal Analyzer.

Working with files via FTP does not differ from working with any file manager. Files can be copied, deleted or renamed.