



Made in Russia
PLANAR

IT-100

MULTISYSTEM
TV SIGNAL ANALYZER



IT-100

MULTISYSTEM TV SIGNAL ANALYZER

IT-100 Multisystem TV Signal Analyzer is designed for measuring parameters of digital and analog TV signals and for video and audio testing. The Analyzer enables measurement of the following parameters for analog TV channels: channel level, Video to Audio (V/A) ratio, Carrier to Noise (C/N) ratio.

It allows measuring the following parameters of digital TV channels: channel power and Carrier to Noise (C/N) ratio. For J.83 Annex A/B/C (cable television), DVB-T/T2 signals (broadcasting television), DVB-S/S2 signals (satellite television), IT-100 offers measurement of reception quality parameters: modulation error ratio (MER), bit error rate (BER), constellation diagram, and echo diagram. The Analyzer allows of ETSI TR101290 real time analysis of MPEG transport stream.

The Analyzer features operation in CATV networks distributing through coaxial or fiber-optic cables, as well as in IPTV channels.

IT-100 offers automatic defining of the channel settings (channel frequency, TV standard, symbol rate, modulation, etc.).

The Analyzer can be connected to a personal computer to enable remote access to its functions and updating its firmware. External memory devices can be connected to the Analyzer via USB interface to enable data storage. IT-100 also features spectrum measurement mode. It allows measuring DC and AC voltage of remote networks powering and television and broadcasting reception distribution systems, as well as supplying power to antenna amplifiers or LNBS. The Analyzer supports DiSEqC 2.1 command system.

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. The Analyzer allows of measurement of TV signal level, DVB-C/T/T2/S/S2 digital and analog signal parameters. It also enables measurements of optical signal power and fiber-optic cable network parameters.

The Analyzer can be used both in laboratory, powered by an external power source, and in field, powered by batteries.



MEASUREMENT OF TV SIGNAL PARAMETERS:

- PAL/SECAM/NTSC analog TV: channel level, V/A, C/N, modulation depth, HUM modulation;
- DVB-C, ITU-T J.83 Annex B cable TV: channel power, MER, BER, constellation diagram, time domain error rate analysis;
- DVB-T/T2 - channel power, MER, BER, constellation diagram, echo diagram;
- DVB-S/S2 - channel power, MER, BER, constellation diagram;
- ETSI TR101290 analysis of MPEG transport stream structure and recording a stream to file.

VIDEO AND AUDIO TESTING:

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

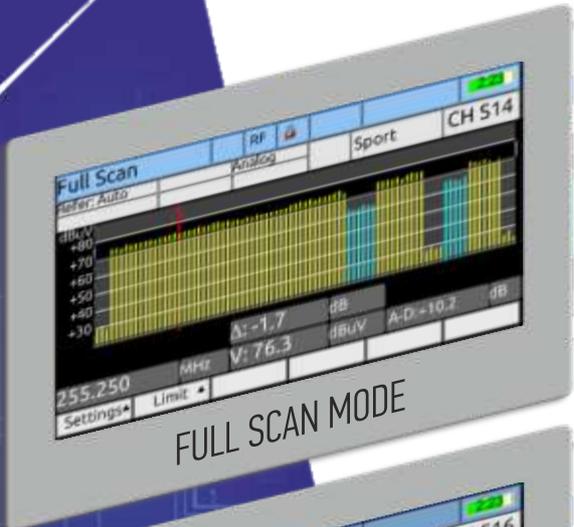
FEATURES:

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

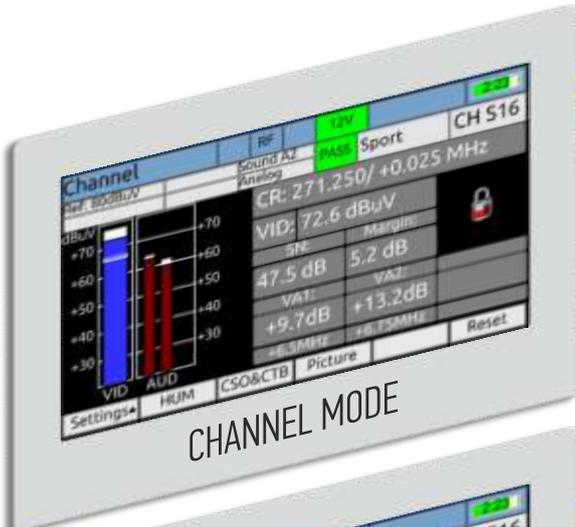
Made in Russia

 PLANAR

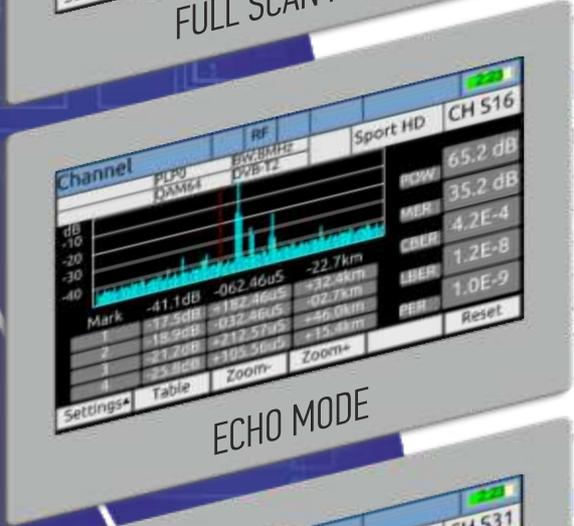




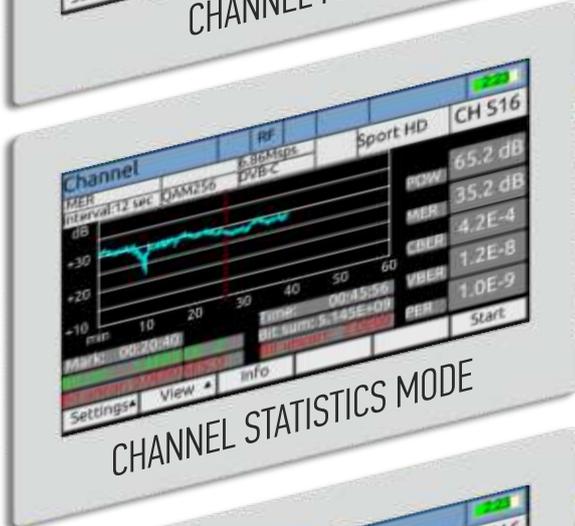
FULL SCAN MODE



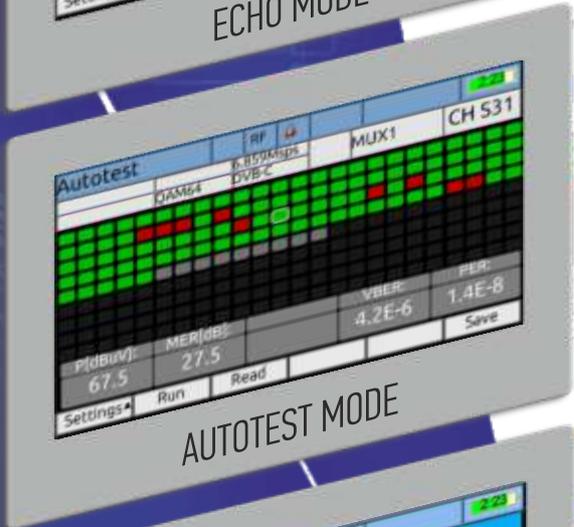
CHANNEL MODE



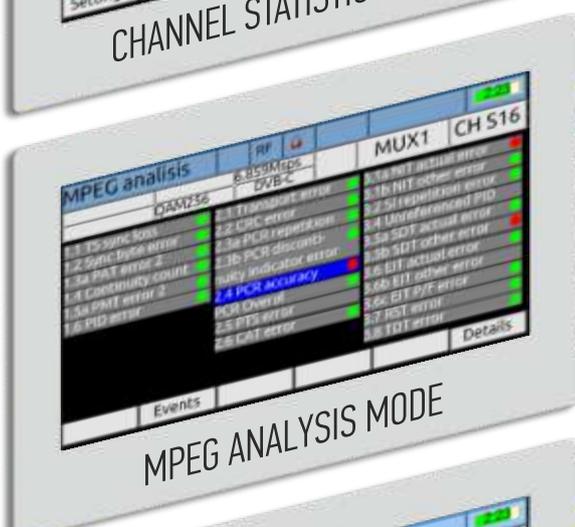
ECHO MODE



CHANNEL STATISTICS MODE



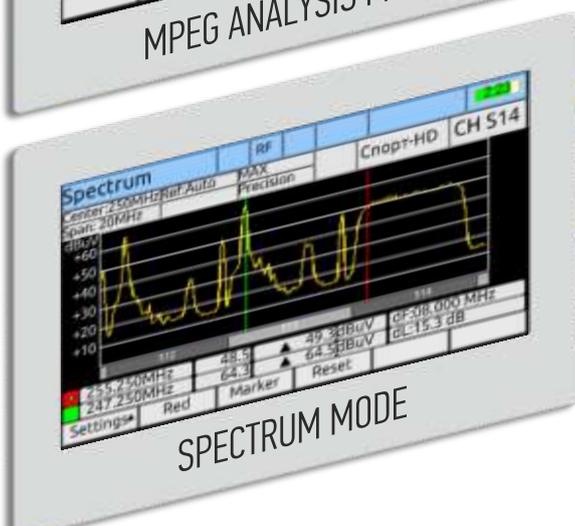
AUTOTEST MODE



MPEG ANALYSIS MODE



PICTURE MODE



SPECTRUM MODE

Made in Russia

PLANAR, LLC, 32, Elkina str.
 Chelyabinsk, 454091, RUSSIA
 tel. / fax: +7 351 265 1069
 welcome@planarchel.ru, www.planarchel.ru

SPECIFICATIONS

SPECTRUM ANALYZER

Operating frequency range:	- TV mode - Sat mode	5 to 1200 MHz 950 to 2150 MHz
Frequency step		25 kHz
Level measurement range	- TV mode - Sat mode	20 to 120 dBuV 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
Warm-up time		less than 2 min
Sweep time in quick mode	- 1200 MHz span - 400,800 MHz span - 10 to 200 MHz span	less than 250 ms less than 170 ms less than 70 ms

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-3 to 1.0E-10

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 35 dB
MER measurement accuracy	±2.0 dB
MER resolution	0.1 dB
BER measurement range	1.0E-2 to 1.0E-10

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
Modulation	QPSK, 8PSK, 16APSK, 32APSK
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-10

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 standards	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-10

ANALOG TV MEASUREMENT

Operating frequency range	42 to 1002 MHz
TV standards	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	1 to 20%

SPECIFICATIONS

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
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
Quick start guide

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	

RF INPUT

Connector type	75 Ohm, F-male
Maximum input power	130 dBuV (+20 dBm)

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

INTERFACES

USB interface	USB 2.0 host and USB 2.0 device high speed interface
Ethernet	Ethernet RJ45 10/100M interface
DC supply input	12V
CAM module	CI interface



Made in Russia

PLANAR

PLANAR, LLC, 32, Elkina str., Chelyabinsk 454091, RUSSIA
tel./fax: +7 351 265 1069, welcome@planarchel.ru, www.planarchel.ru