Real-time DVB-T/T2 Analyzer IT-15T2

RoHS EHE C€

DVB
Digital Video
Broadcasting

- Full digital measurements: MER, -pre and -post BER, PER

- Analog video level, C/N, V/A ratio

- Fast spectrum analysis (45 to 900 MHz)

- Constellation and echo diagram

- Powering of antenna amplifier

- AC/DC voltage measurements

- PC connecting

- Up to 3 hours battery work

PLANAR

PLANAR, an already proven manufacturer of reliable and modern «field» meters, presents almost the only one of its kind compact handheld DVB-T/T2 signal meter with the ability to save the results and work via PC.

The IT-15T2 is designed for testing and adjustment of television and broadcasting distribution networks as well as of separate components of such networks and other electronic devices. The Analyzer allows you to measure the channel level, parameters of TV signal with analog and digital modulation of DVB-T and DVB-T2 standards.

This meter is ideal tool for regulating processes of installation and troubleshooting - and reasonable price makes it feasible for system operators to outfit their entire fleet.

Standard delivery Set

The IT-15T2 Analyzer
with Li-Po battery included
F-F RF adapter
Rubber boot
Car lighter adapter
12V/1.2A charger
Reference card
Operating Manual

Level Measurement Mode

The IT-15T2 can measure signal levels of both analog and digital channels. For analog signals the meter will display the video carrier level, video frequency, C/N, and V/A ratio. For digital channels, the IT-15T2 measures the digital average channel power and displays the center frequency.

The IT-15T2 allows users to see all channel levels on one screen, and quickly check if certain channels are missing or if the network has other issues, such as tilt or ripple. An adjustable marker is available to find specific channel identification and troubleshooting.

When working without a channel plan upon entering the mode channel types are also performed after a signal appears at the device input (if there was no signal before).

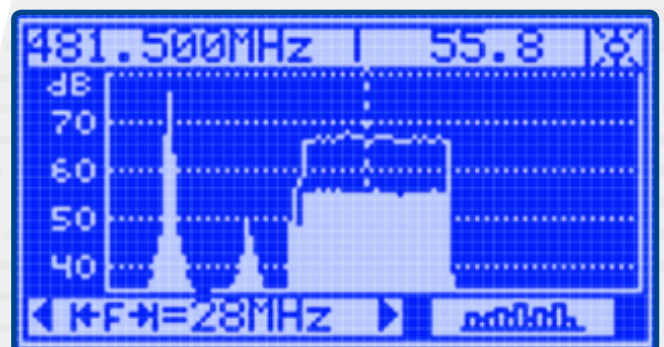## SCAN measurement Mode
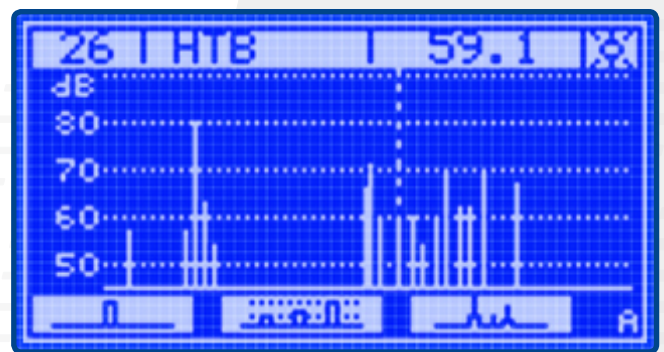
RIPPLE measurement mode
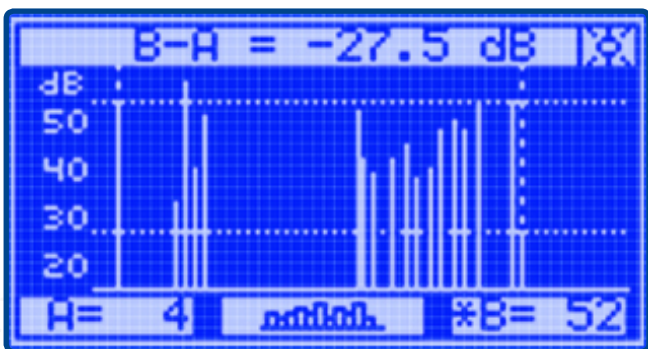
In this mode you will see the channels signal level as vertical bars and two dashed lines of ripple between two selected channels. The tilt function shows a graphical and numerical representation of the channel level, slope line between the peaks of selected channels with or without the specified frequency plan.

In this mode you will see the spectrum of the input signal in tunable scanning range.

The Analyzer performs spectrum scanning by making consecutive measurements in frequency points with 125 kHz step. The spectrum diagram contains two traces: trace with the current level and trace with the maximum level.

Spectrum measurement mode

MER/BER measurement Mode

In this mode the screen displays the measured signal quality parameters of DVB-T or DVB-T2 channels in the form of a table. Users can change the display to view Channel info, ECHO or Constellation diagram.
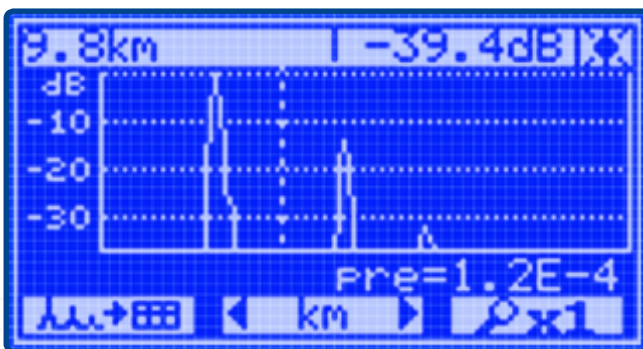
CONSTELLATION measurement mode

In this mode you will see the constellation diagram of DVB-T or DVB-T2 channels and also the basic signal quality parameters.

When synchronization with the channel is achieved, the diagram will display accumulated samples of the demodulated input signal as points. The coordinates of these points correspond to the values of signal quadrature component.


ECHO GRAPH measurement mode

In this mode you will see the impulse response curve of DVB-T or DVB-T2 channels and also the basic signal quality parameters.

Once synchronization is achieved, you will see the channel impulse response graph, which shows the dependence of echo amplitude from the main signal delay value. Echo amplitude value is measured in respect to the main signal amplitude equal to 0 dB.

External Devices Powering Mode

This mode is used for powering the receiving antenna equipment via the Analyzer input connector.

External devices powering is possible only in the measurement modes, during automatic defining of the channel plan and opening of the channel data logger page. In other modes external devices powering is turned off.
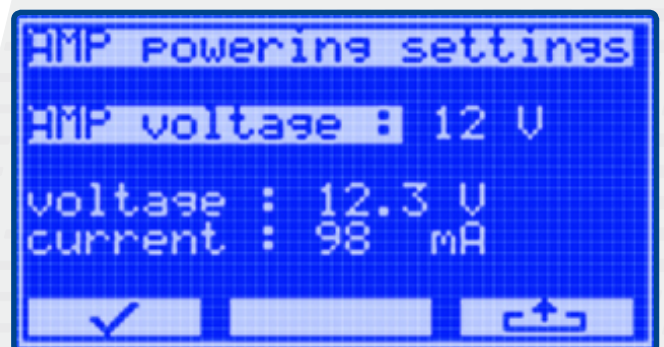
ItToolsT2 Software

You can control the operation of your IT-15T2 via PC by USB connection. The ItToolsT2 software is available at our website http://www.planarchel.ru. The software allows you to:

• measure the parameters of analog and digital (DVB-T and DVB-T2) channels in the similar way they are measured by the Analyzer;

• measure the spectrum within random frequency range (from 45 to 900 MHz);

• create and view the channel data logger pages;

• create and edit channel plans;

• edit the channel template of the Analyzer;

• save and printout the measurement reports;

• update the firmware of the Analyzer.
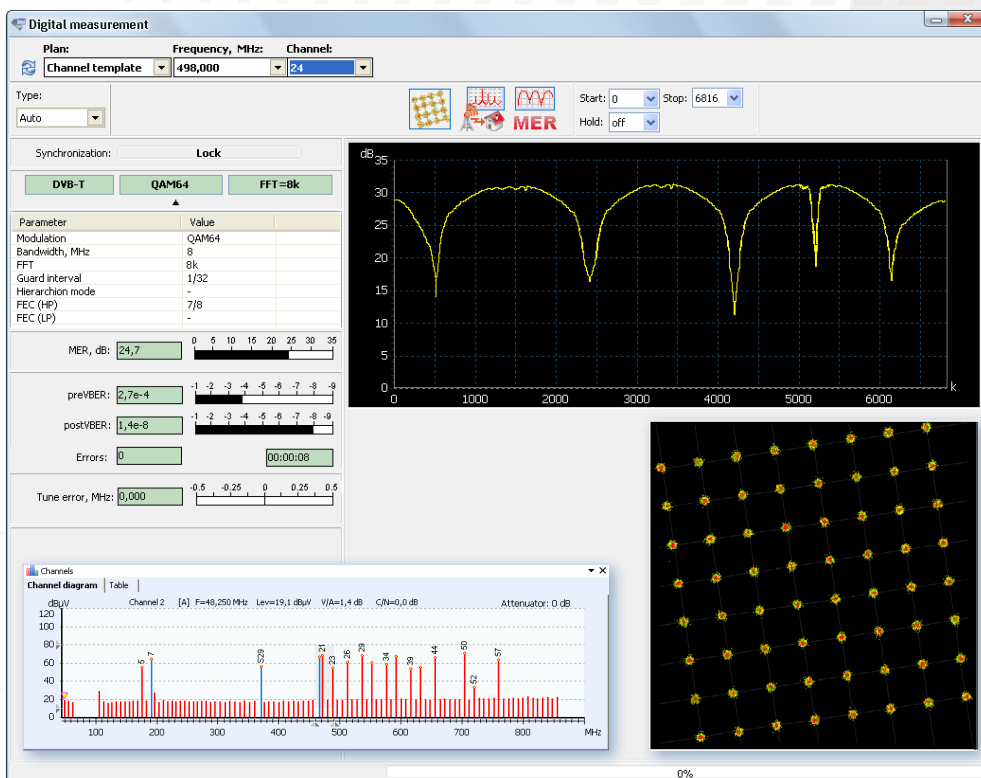
Specifications

FREQUENCY

Measurement range	45 to 900 MHz
Level tuning resolution	125 kHz

LEVEL MEASUREMENT

Video types ITU Systems	B/D/G/H/I/K/M/N
Audio types	Mono
Measurement resolution	0.1 dB
Measurement range	30 to 120 dBμV
Maximum total integrated RF power	120 dBμV
Accuracy	±1.5 dB, 25 ℃ ±2.2 dB, –10 to +50 ℃
C/N algorithm	Peak video to RMS noise
Measurement channel passband for –3 dB level	230 kHz
C/N offset	±8 MHz
C/N Selectable	On/Off per channel

SPECTRUM

Measurement bandwidth	250 kHz
Measurement resolution	0.1 dB
Display range	10 to 120 dBμV
Maximum total integrated RF power	120 dBμV
Accurate range	50 to 110 dBμV
Accuracy	±1.5 dB, 25 ℃ ±2.2 dB, –10 to +50 ℃

FULL SCAN AND TILT

Tilt	A/B delta, dB
Resolution	0.1 dB

BER MEASUREMENT RANGE

for DVB-T signals before Viterbi decoder	5E-2 to 1E-6
for DVB-T signals after Viterbi decoder	1E-3 to 1E-8
for DVB-T2 signals before LDPC decoder	5E-2 to 1E-6
for DVB-T2 signals after LDPC decoder	1E-4 to 1E-8

MER MEASUREMENT RANGE

DVB-T MER measurement range	2 to 35 dB
DVB-T2 MER (for QAM64 modulated PLP)	16 to 35 dB
Allowable frequency deviation for DVB-signal for DVB-T2 signal	±0.5 MHz ±0.1 MHz

Specifications

CHANNEL TEMPLATES

Channel templates available: OIRT; CCIR

CHANNEL PLANS

Plan creation algorithm	AutoPlan
Plan index	1 to 16 (maximum)
Plan name	15 characters (maximum)

CHANNELS

Frequency indication	6 characters (maximum)
Channel number indication	3 characters (maximum)
Signal level	4 characters (maximum)
MER Indication	3 characters (maximum)

INTERFACES

RF input	75Ω
F connector	F to F female adapter
Protection Max. sustained	150 VAC/VDC
Interface standard	USB interface v2
USB connector	USB-B receptacle

GENERAL

Display	Monochrome (320x240)
Language support	English, German
Dimensions	193 x 94 x 53 mm
Device weight	0.5 kg
Storage temperature	-20 to +50 ℃
Operating temperature	-10 to +50 ℃
Charge temperature	0 to +45 ℃
Battery	Li-POLY
Operating time	3 hours (typical)
Power supply input	100 to 240 VAC 50 to 60 Hz
Power supply output	12 VDC 0.7 A (maximum)

Test & Measurement Regional Sales

PLANAR