

## EDGEPROBE NANO QAM DVB-T/T2 Compact Monitoring Probe

WITH ITS SMALL, COMPACT AND EASY TO HANDLE DESIGN, THE EDGEPROBE NANO DVB-T/T2 IS THE IDEAL TOOL FOR FIELD TECHNICIANS TO TRANSPORT IN ORDER TO VALIDATE AND MONITOR 24/7 ALL POINTS OF A DTV NETWORK.

EDGEPROBE NANO IS ABLE TO MONITOR DVB-T AND DVB-T2 SIGNALS THROUGH ITS RF INPUT (144 X 137 MM COMPACT FORMAT).

COMBINED WITH A NETWORK MONITORING SYSTEM OR NOT, THE EDGEPROBE NANO PROVIDES A POWERFUL BROADCAST NETWORK ALERT & DIAGNOSIS TOOL ALLOWING DTV NETWORK OPERATORS TO MONITOR GLOBAL TRENDS AND ANTICIPATE POTENTIAL FAILURES.



### APPLICATIONS

- Network operators
  - automate the tests of new transmitter
  - temporary monitoring/investigation tool
  - rebroadcasting receiver: RF to ASI or IP
- Broadcasters: off-air monitoring probe to validate the on-air content
- TV/STB producers: automated tests against a professional receiver
- Labs: easy & simple access to live DTV sources /Live transmission recorder

### Accurate DVB-T/T2 RF signal quality monitor

Signal Level, MER, SNR, BER

Modulation parameters, L1 signaling in DVB-T2, TPS in DVB-T

RF Spectrum & Constellation display

DVB-T, DVB-T2 (1.1.1, 1.2.1, 1.3.1) & T2 Lite support

DVB-T2 Single/Multi-PLP reception support

### TS monitor and forward over ASI/IP interfaces

TX site input through the ASI and IP inputs (up to 4 in 1RU)

Forward the analyzed TS/T2-MI over ASI or IP output

VLAN support on the IP Data link

### Complete T2-MI monitoring

Single/Multi-PLP support

ETSI TR 101 290 T2-MI packet

T2 L1 pre/post signaling

Network Delay

PLP extraction and TS PLP analysis

### Internal GNSS receiver (Hardware option)

Generates an internal 1PPS reference signal for SFN synchronization measurements (SFN Drift, Frequency Offset)

GPS & GLONASS support

### BENEFITS

- Small, Silent & Magnetized: can be installed anywhere
- Remotely accessible, compatible with low bandwidth control networks (GPRS/3G)
- Portable tool for maintenance team
- Easy to use and configure
- Standalone: no need for PC
- Enables SNMP test automation
- Low power consumption 8W

### Complete SFN synchronisation monitor

**Transmission site SFN monitor: quick identification of which TX site is causing SFN issues!**

- RF Frame Delay & Drift
- Carrier Frequency Offset & Drift
- Before modulator: Network Delay of TS (MIP packet) or T2-MI streams

**SFN overlapping Reception Area monitor:** Channel Impulse Response (Echo Delay and Level alarming thresholds) – with **TestTree's Unique Echo Pattern** monitor

### Complete TS monitoring

ETSI TR 101 290 Priority 1, 2, 3

QoS indicators (optional): Service Availability Error & Service Degradation Error

Verify Regionalization: Service Plan view, PID/Service presence, Scrambling

Service & components bitrates

### 32 GB of internal storage

Alarm logs up to 6 months

RF parameter trends up to 6 months

TS/T2-MI recording (trigger: manual or automatic by SNMP)

### User-friendly interface

Easy-to-use HTML5 interface compatible with most recent browsers (Google Chrome, Mozilla Firefox...)

15 minutes only for a first configuration

### ORDERING CODES

#### EdgeProbe Nano DVB-T/T2

Options

#### DVB-T/T2 Compact Monitoring Probe

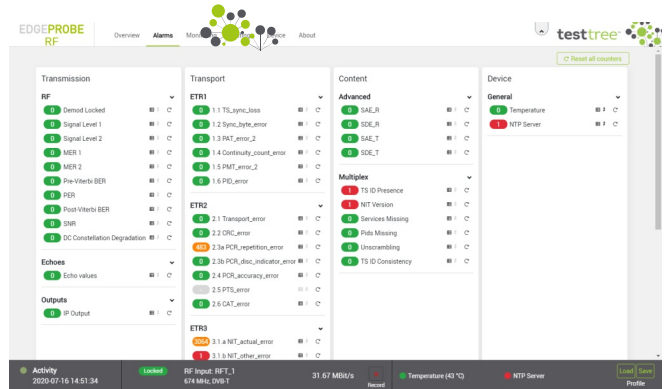
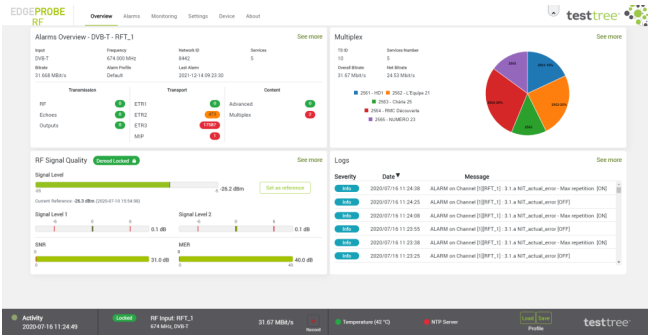
**SW ACCESS** : RF Monitoring, Round-Robin, ETSI TR 101 290 Monitoring (Priorities 1, 2, 3)

**SW PERFORMANCE** : RF Monitoring, Round-Robin, ETSI TR 101 290 Monitoring (Priorities 1, 2, 3), Service Plan & Multiplex View

**SW ULTIMATE** : RF Monitoring, Round-Robin, ETSI TR 101 290 Monitoring (Priorities 1, 2, 3), Service Plan & Multiplex View, IP Monitoring (Jittering, RTP FEC...), T2-MI Monitoring, OneBeam Monitoring

**EPA3-GNSS** : Add GNSS support on the module (hardware)

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## MONITORING FEATURES

RF Monitor	Power – Signal Level, SNR, MER, BER
Demodulation status	Lock / Unlock
Signal level	Measure from -90 to -5 dBm $\pm 1$ dBm, typically $\pm 0.5$ dBm, resolution 0.2 dBm Unit: dBm or dB $\mu$ V
Constellation, Spectrum display	.
MER	0 to 40 dB (0 to 36 dB; $\pm 1$ dB, 36 to 40 dB; $\pm 2$ dB)
SNR	0 to 40 dB $\pm 1$ dB
BER (DVB-T)	Pre/Post-Viterbi, Post-RS
BER (DVB-T2)	Pre/Post-LDPC, Post-BCH
Modulation parameters	L1 signaling in DVB-T2, TPS in DVB-T
SFN Monitor at RX site (SFN overlapping area)	Channel Impulse Response (CIR) monitoring in the SFN overlapping reception area: Echoes Delay and Power Level alarming masks With <b>TestTree's unique Echo Pattern</b> monitor: more reliable echo in error identification even if the main (strongest) echo suffers changes!
SFN Monitor at TX site	Quick identification of which TX site is causing SFN issues! Time Synchronization: RF Frame Drift Frequency Synchronization: Carrier Frequency Offset ( $\pm 1$ Hz, resolution 0.1 Hz)
Distribution Network Delay	Delay for the TS (with MIP packet) / T2-MI stream between the Broadcast Gateway and the Remote Transmission Site. Measured before the modulator.
IP Link Monitor	UDP/RTP supported Network Jitter, RTP packet errors, FEC
T2-MI Monitor	Single/Multi-PLP support ETSI TR 101 290 T2-MI packet, L1 pre/post signaling T2-MI Network Delay PLP extraction and TS PLP analysis (ETR 101 290)
OneBeam/Single Illumination Monitor	Specific PID from the DTH stream used to recover the T2-MI distribution on TX site
ETSI TR 101 290	MPEG-2 TS Monitor, ETSI TR 101 290 Priority 1, 2, 3 TS (with MIP packet) Network Delay
QoS	SAE (Service Availability Error), SDE (Service Degradation Error) based on ETR 101 290
Service Plan	Verify regional services, Service & PID bitrates, Scrambling, Service & PID presence Thumbnails for unencrypted video services (refresh rate might vary upon encoding) PSI/SI tables decoding
Round-Robin	Monitor sequentially several channels over 1 RF input in a Round-Robin mode. Monitoring context (measurement alarms) are kept between successive rounds.
Extended Memory	32 GB of internal storage for: Event logs up to 6 months, Trends up to 6 months, analyzed TS/T2-MI recording

## INTERFACES

Control	1 x Gigabit Ethernet for: HTTP Web GUI (management), SNMP v2/v2c/INFORM (alarm traps and OID command SET/GET), FTP (firmware update, log file download, profile update)
RF	1 x RF input (N-type female – 50 $\Omega$ )
Standards	DVB-T – ETSI EN 300 744 DVB-T2 & T2 Lite – ETSI EN 302 755 v1.3.1, ETSI TS 102 831 T2-MI – ETSI TS 102 773
Frequency range	40 to 1000 MHz
Sensitivity	-80 to -5 dBm; RF lock down to -80dBm
Channel bandwidth	1.7, 5, 6, 7 & 8 MHz
TS/T2-MI	1 x ASI in/out (BNC-type female – 75 $\Omega$ )
TS/T2-MI	1 x Gigabit Ethernet for Data in/out (VLAN support)
GNSS & Time Reference	1x GNSS antenna input (SMA-type – 50 $\Omega$ ) (GPS/GLONASS) HW option, 3.3V antenna power up 1x 1PPS input (BNC-type female – 50 $\Omega$ )
Web UI	HTML5 User Interface, compatible with up-to-date browsers (Google Chrome, Mozilla Firefox...)

## PHYSICAL

Height: 30 mm / 1.2 in, Width: 140 mm / 5.5 in, Depth: 140 mm / 5.5 in
Power supply: 12 VDC, 100-240 VAC to 12 VDC adapter provided
Power consumption: 8W

## ENVIRONMENT

Operating temperature	-20 to 50°C / -4 to 122°F
Storage temperature	-20 to 70°C / -4 to 158°F
Humidity	0 to 95%, non condensing