

# EDGEPROBE ADVANCED ISDB-T/TB

# ISDB-T/Tb

## Head-End, SFN TX & SFN Reception DTTV Monitoring: RF, ASI, IP

THE IDEAL TOOL FOR ACCURATE & COST-EFFECTIVE MONITORING OF THE QUALITY ACTUALLY DELIVERED TO ALL POINTS OF ISDB-T AND ISDB-TB NETWORKS.



Combined with a Network Monitoring System or not, the EdgeProbe Advanced provides a powerful broadcast network alert & diagnosis tool allowing DTV network operators to monitor global trends and anticipate potential failures.

EdgeProbe Advanced is able to monitor ISDB-T and ISDB-Tb signals at transmitter outputs, through its RF inputs (up to 4 in 1RU), as well as at modulator input and at Head-End/distribution links, through its ASI and IP inputs.

## APPLICATIONS

- 24/7 Monitoring and Maintenance of both Head-End and TX sites (SFN/MFN, RF/Baseband)
- Generation of Service Availability reports for Service Level Agreements
- Rebroadcasting receiver: RF to ASI or IP, with transcoding capacities
- Live transmission recorder

## BENEFITS

- Standalone, easy to use and configure, fast deployment, SNMP compatible
- Increase customer satisfaction by detecting & preventing DTV network degradations before your customers do
- Reduce TX sites maintenance cost by anticipating and identifying issues
- Plan and improve the network configuration by identifying global trends
- Remotely accessible, compatible with low bandwidth control networks (GPRS/3G)
- Low power consumption 20W

### Accurate ISDB-T/Tb RF signal quality monitor

Signal Level, MER, SNR, BER per Layer A/B/C

Modulation parameters: TMCC, Layer A/B/C

RF Spectrum & Constellation display

RF shoulder attenuation

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

Monitor TS & BTS baseband distribution links at Head-End output and TX site input through the ASI and IP inputs (up to 4 in 1RU)

Forward the analyzed TS over ASI or IP output

VLAN support on the IP Data link

### SFN monitor in TX or Reception area

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

- RF Frame Delay & Drift
- Carrier Frequency Offset & Drift
- Before modulator: BTS stream integrity

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

### Complete TS & BTS monitor

ETSI TR 101 290 Priority 1, 2, 3

BTS monitor: IP packet and TMCC alarms

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 (up to 4 in 1RU)

Alarm logs up to 6 months

RF parameter trends up to 6 months

TS recording (manual trigger)

### Remote connection

Compatible with all Network Monitoring Systems, providing a powerful network alert & diagnosis tool: monitor global trends and anticipate potential failures.

Compatible SNMP v2c and v2c INFORM for alarming and device configuration

Web GUI access: support of low bandwidth Internet connection (3G, GPRS)

### Transcoding solution for confidence monitoring:

Coupled with a TRANSBOX device, EdgeProbe can provide service transcoding and forward to third-party analysis systems

Controlled by the EdgeProbe, the TRANSBOX performs:

- service extraction from the input TS (SPTS or MPTS)
- real-time audio/video transcoding: 1 to 10 Mbps output bitrate
- transcoded SPTS forward over IP Data

### Internal GNSS receiver (Hardware option)

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

GPS & GLONASS support

Dual Power Supply (Hardware option):

additional Power Supply can be installed on the equipment in order to ensure the power redundancy

The screenshot displays the EdgeProbe software interface with the following tabs and data:

- Alarms Overview - ISOB-T - Gbbo, Sample** (See more)
 

Type	Frequency	Service ID	Services
ISOB-T	444.000 MHz	1650	2
Bitrate	82.508 MBits/s		
Alarm	RF_Default	Last Alarm	2019-08-21 15:57:29

 Transmission: RF, SFP, Echoes, Outputs
   
 Transport: ETR1, ETR2, ETR3
   
 Context: Advanced, Multiplex
- Multiplex** (See more)
 

Multiplex Name	TS ID	Services
TS 10	1650	2
Service Number		Overall Bitrate: 82.51 MBits
2		Net Bitrate: 11.19 MBits

 A pie chart shows: 01200 - Gbbo-HD (87.3%)
- RF Monitoring** (General, Local, See more)
 

Signal Quality	Signal Level
SNR	30.1 dBm (Current Reference: 30.0 dBm, 2019-08-21 15:56:00)
Gap View 1	SNR: 21.9 dB, MER: 25.28
Gap View 2	SNR: 21.9 dB, MER: 25.28

 A graph shows Signal Level vs Frequency (400 to 480 MHz).
- Spectrum** (See more)
 

RF Power	Central frequency 400.000 MHz
400	400
410	410
420	420
430	430
440	440
450	450
460	460
470	470
480	480

 A graph shows Power (dBm) vs Frequency (400 to 480 MHz).
- Constellation** (RF Power, RF Level, See more)
 

RF Power	RF Level
400	400
410	410
420	420
430	430
440	440
450	450
460	460
470	470
480	480

 A graph shows RF Power (dBm) vs Frequency (400 to 480 MHz).

Bottom navigation bar: Activity, Alarms, Monitoring, Settings, Device, About, testtree mode

Activity 2019-08-21 15:08:09

System

Profile

Overview Alarms Monitoring Settings Device About

EdgeProbe  
edgeprobe

Legend

RF Input, GbE, Sample  
4G Modem, 802.11

32.51 MHz/s  
IP Out

Received

32.51 MHz/s  
IP Out

Received

Temperature (41 °C)

External UTPS Present

testtree

Content

Device

General

Temperature

ICP Server

External UTPS Present

Internal UTPS 1995 pr.

DNSS signal presence

Advanced

SAE\_R

12\_SAE\_R

13\_SAE\_R

14\_Connectivity\_error

15\_MFT\_error\_2

16\_PDU\_error

ETR1

1.1 TLSlayer\_error

1.2 Sync\_link\_error

1.3 MT\_Error\_2

1.4 Connectivity\_error

1.5 MFT\_error\_2

1.6 PDU\_error

ETR2

2.1 Transport\_error

2.2 CRC\_error

2.3 POR\_repetition\_error

2.4 POR\_dslc\_error

2.5 POR\_connectivity\_error

2.6 GAT\_error

ETR3

3.1 MT\_Actual\_error

3.1.5 MT\_other\_error

3.2.5 repetition\_error

3.4 Unreferenced\_PDU

3.5 SOT\_Actual\_error

3.5.5 SOT\_other\_error

3.6 EAT\_Actual\_error

3.6.5 EAT\_other\_error

3.7 RST\_error

Transmission

RF

Denied Locked

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Signal Level 2

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## INTERFACES

RF	*
Connector In	Up to 4x RF inputs (default F-type female 75 Ω, or optional N-type female 50 Ω)
Standard	ISDB-T/Tb
Frequency range	40 to 1000 MHz
Sensitivity	-80 to -5 dBm; RF lock down to -80dBm
Channel bandwidth	6, 7 & 8 MHz
Control	Up to 2x Gigabit Ethernet for Web GUI, SNMP-V2C
Transport Stream (TS)	Up to 4x ASI in/out (BNC-type female – 75 Ω)
*	Up to 4x Gigabit Ethernet for Data in/out (VLAN support)
GNSS & Time Reference	1x GNSS antenna input (SMA-type – 50 Ω) (GPS/GLONASS) HW option, 3.3V antenna power up
*	1x 1PPS input (BNC-type female – 50 Ω)
*	1x 10MHz input (BNC-type female – 50 Ω)

## MONITORING FEATURES

RF Monitor	*
Demodulation status	Lock / Unlock
Signal level	-90 to -5 dBm: measure range
MER	0 to 40 dB
SNR	0 to 40 dB
BER	Post-Viterbi, Post-RS per Layer A/B/C
Modulation parameters	TMCC, Layer A/B/C
.	RF Spectrum & Constellation display RF Shoulder Attenuation
SFN Monitor at RX site	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)
BTS Monitor	IIP, TMCC packets monitoring
TS Monitor Base	ETSI TR 101 290 Priority 1 and 2
TS Monitor Advanced	ETSI TR 101 290 Priority 3, QoS (SAE/SDE)
Service Plan	Verify regional services, Service & PID bitrates, Scrambling, Service & PID presence
Scanning	Monitor sequentially multiple channel frequencies over 1 RF input
Extended Memory	Up to 4x 32 GB of internal storage for: Event logs up to 6 months, Trends up to 6 months, TS recording

## PHYSICAL

Height (1 or 2 monitoring units): 45 mm / 1.7 in, Width: 440 mm / 17.3 in, Depth: 145 mm / 5.7 in
Height (4 monitoring units): 45 mm / 1.7 in, Width: 440 mm / 17.3 in, Depth: 300 mm / 11.8 in
Format: 1 RU (19"), Power supply: 100-240 VAC ±10%
Power consumption: 10 W per active monitoring unit
Redundant Power Supply (HW option)



## ORDERING\_CODES

### EdgeProbe Advanced ISDB-T/Tb

### ISDB-T/Tb Advanced Monitoring Probe

options

**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...),

BTS Monitoring

**EPA3-In200URedundant** : Add 1x redundant 220V AC input in the EPA3 chassis (hardware)

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

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