ENENSYS

TbGateway
ISDB-T/Tb Gateway

TBGATEWAY OPERATES AT THE HEAD-END TO GENERATE A BTS STREAM FOR SFN BROADCASTING OR ISDB-T/T_B MULTIPLEX OVER MFN OR SFN NETWORKS.

BTS Generator for SFN Broadcasting

Operating at the head-end after the multiplexer, **TbGateway** aims at generating a BTS stream from an MPEG-2 Transport Stream (SPTS/MPTS). It can receive the incoming TS over ASI or IP, generates IIP packet with TMCC data and output a BTS stream so that ISDB-T/Tb transmitters can broadcast over SFN.

1+1 Seamless Redundancy - TbGuard

ENENSYS' patented technology, **TbGuard**, is the unique 1+1 redundancy mechanism that guarantees a seamless switch-over in SFN and MFN modes to avoid any TV black-out during switch-over operation between two redundant TbGateways. The **TbGuard** applies with two TbGateways that are redundant either with **ASIIPGuard**, ENENSYS' seamless ASI switch, or with **IPGuard**, ENENSYS' seamless IP switch.

OneBeam - Satellite Bandwidth Optimization

With **OneBeam** option, the **TbGateway** allows a standard (MPEG-2) transport stream to be used within the satellite delivery network, removing the need for proprietary equipment to access or monitor the content stream. But also, it optimizes the satellite bandwidth by delivering only useful information providing significant cost savings. With **OneBeam** option, the **TbGateway** outputs the incoming MPTS with some additional information (TbMarkers) so that a standard and optimized MPEG-2 TS is distributed over satellite. At the transmission sites, the **TbEdge** generates the BTS stream based on TbMarkers for MFN or SFN broadcasting. With **OneBeam**, the **TbGateway** and **TbEdge** allow to combine DTH and DTT services as well as the broadcasting of regional content in SFN environment.

APPLICATIONS

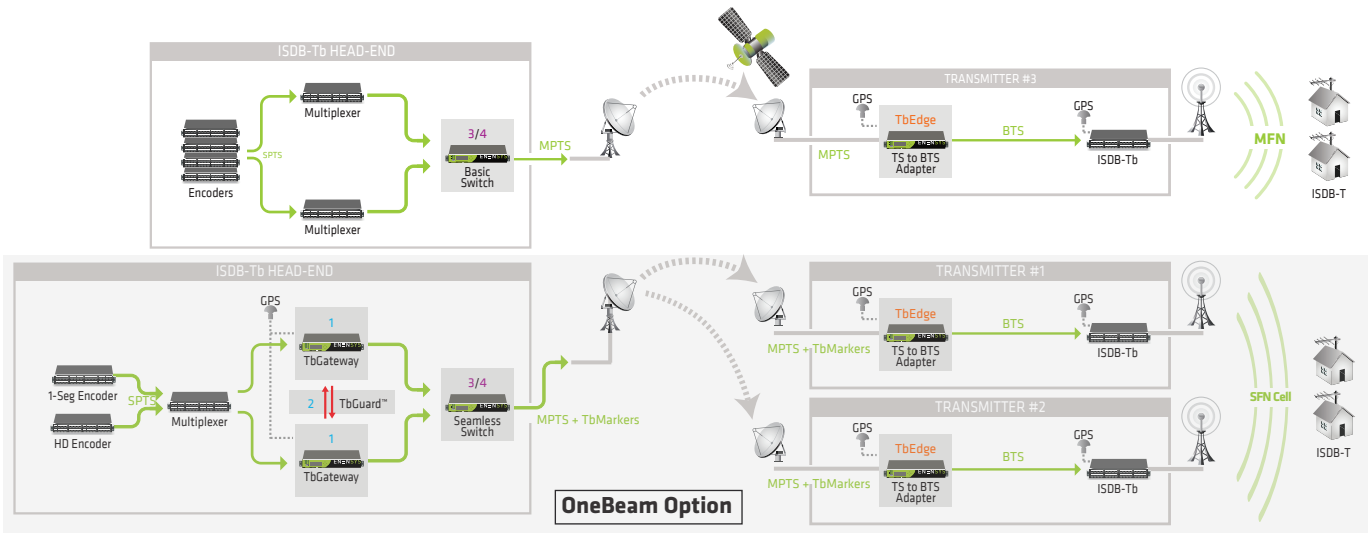
- ISDB-T/Tb broadcasting
- SFN broadcasting support
- Regionalization support
- Use existing DTH services to build ISDB multiplex
- Backup DTT transmission site with DTH stream

BENEFITS

- Satellite bandwidth optimization with OneBeam
- Avoid TV blackout during switch-over (TbGuard)
- Full support of ISDB-T/Tb standard
- Running in High Density chassis (HDc):
  - to allow multiple TbGateway in 1U
  - to combine with ASIIPGuard, IPGuard ...
  - to enable future-proof technology
- Broadcast-grade product

CHARACTERISTICS

- ISDB-T/Tb standard based
- BTS generation by default for SFN broadcasting
- Multi-layer support
- IIP and TMCC information generation
- Services and PID filtering
- PSI/SI automatic update
- MPEG-2 TS output with OneBeam option
- IP input and output support
- Easy-to-use web based GUI
- Full SNMPv2 support



TbGateway ISDB-T/Tb Gateway

INPUTS

Control	1x Gigabit Ethernet (RJ45) for GUI/SNMP
MPEG-2 TS	Up to 2x ASI inputs (BNC) 1x Gigabit Ethernet (RJ45) - Option for TS over IP input stream
GPS	1x PPS input 1x TNC GPS antenna input - Option

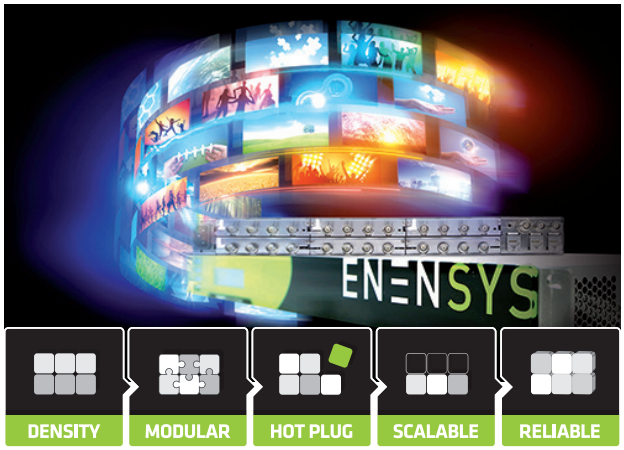
OUTPUTS

BTS or MPEG-2 TS	2x mirrored ASI outputs (BNC) 1x Gigabit Ethernet (RJ45) - Option for BTS or TS over IP output

FEATURING

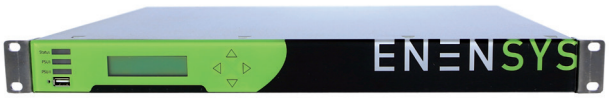
Standards	ISDB-T/ISDB-Tb
BTS generation	BTS Output from an MPEG-2 TS input for SFN broadcasting ASI or IP output (option)
ISDB-T/Tb	
Modulation	DQPSK, QPSK, 16QAM, 64QAM
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Bandwidth	6 MHz
FFT	2K, 4K, 8K
Code Rate	1/4, 1/8, 1/16, 1/32
Multi-Layer support	Layer-A, B and C management 1-seg support
PSI/SI Management	Services/PID filtering Services/PID allocation per layer
TbGuard	Patented 1+1 seamless switch-over between two TbGateways
OneBeam	MPEG-2 TS output with TbMarkers for optimizing satellite bandwidth and analysing satellite distribution
Monitoring and Supervision	Easy-to-use web based GUI User management Full SNMPv2 support

HDc MULTI



PHYSICAL

Height	43 mm / 1.69 in.
Width	443,7 mm / 17.46 in.
Depth	322,8 mm / 12,70 in.
Format	1 RU, width 19"
Front Panel	LCD Display and controls
Power supply	100-240V 50/60Hz - 48V DC (option)
Power consumption	20W/module



ORDERING CODES

HDc-Multi-220V	High Density chassis with 220V input
HDc-Multi-48V	High Density chassis with 48V input

Chassis Options

HDcMulti-In220VRedundant	110V/220V redundant power supply
HDcMulti-In48VRedundant	48V DC redundant power supply

HDm-TbGateway	TbGateway for ISDB-T (2xASI In/2xASI Out)

Module Options

TbGateway-IP	IP input and output support
TbGuard	1+1 seamless redundancy
TbGateway-OneBeam	Standard MPEG-2 TS output
NN6-GPSv2	Built-in GPS receiver

ENENSYS Networks

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RoHS 2002/95/EC