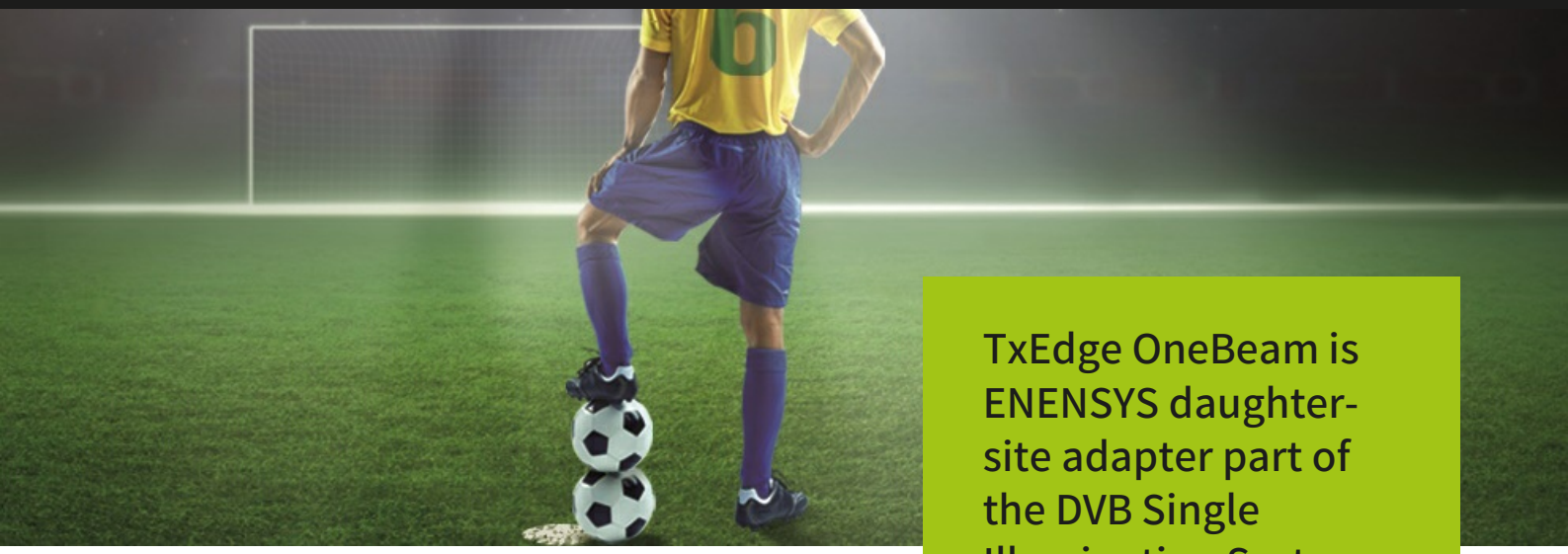
TxEdge OneBeam

DVB-SIS Daughter Site Adapter - DTH to DTT



TxEdge OneBeam is ENENSYS daughter-site adapter part of the DVB Single Illumination System (DVB-SIS), installed at transmitter sites and deployed since 2014 in several countries.

Until now, two different distribution networks have been required to deliver a content bouquet to DTH and DTT (DVB-T/T2) viewers. OneBeam is the ENENSYS end-to-end solution to build DTT multiplex from one or two DTH sources. It relies on the same satellite transponder to deliver both DTH services and to feed DTT transmitters, drastically reducing the OPEX costs with fast ROI.

DVB-T and DVB-T2 SFN Operations

Operating in conjunction with SmartGate units at head-end, the TxEdge is instrumental in building national or regional DVB-T or DVB-T2 multiplexes. The TxEdge receives one or two MPEG-2 TS at the input (ASI, IP or DVB-S/S2) and outputs a deterministic TS (in DVB-T) or T2-MI stream (in DVB-T2) to operate over Single Frequency Networks (SFN). It is supported by ENENSYS' HDc chassis platform, enabling maximum density, flexibility, scalability and cost-efficiency.

Services Filtering and PSI/SI Update

The TxEdge selects the services from the DTH streams, allocates them to the different PLP in DVB-T2 and performs advanced PSI/SI processing to update PSI/SI information (PAT, CAT, PMT, BAT, NIT SDT, EIT) related to the filtered services.

Emergency Warning System

As an option, it offers Emergency Warning System (EWS) support, providing information about immediate dangers such as earthquakes, tsunami, etc. The TxEdge replaces all the services in the SFN/DTT multiplex by one EWS service under EWS trigger-control, generated by ENENSYS EWSCaster.

Standard solution

OneBeam solution is fully compliant to DVB-SIS standard, providing interoperability with any vendors. The TxEdge rebuilds the DTT Multiplex based on a standardized DSACI and Framing & Timing packet.

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Applications

- Simulcast DTH services and Terrestrial DTT
- Create DTT multiplex from existing DTH services
- Secure DTT site feeds using DTH signal as redundancy
- Covering DTT 'black spots' with DTH services
- Deploy regional service broadcasting
- Implement Emergency Warning System

Other benefits

- Straight-forward OPEX cost reduction
- Short-term Return on Investment (ROI)
- Unmatched field-proven technology
- DTT SFN roll-out
- Fully compliant with DVB-SIS standard
- Transparent for DTH receivers
- Reuse existing head-end system

Technical specifications

INPUTS

Control
1x Gigabit Ethernet (RJ45) for GUI/SNMP

1x or 2x DTH source MPEG2-TS
Up to 2x ASI (BNC) inputs
Up to 2x Gigabit Ethernet (RJ45) for MPEG-2 TS carried over IP inputs
Up to 2x DVB-S/S2 inputs (F-type) with HDmIISat-TxEdge-OneBeam (one active)

GPS
1x PPS (BNC 50 Ω)
1x TNC for internal GPS

OUTPUTS

TS with MIP / T2-MI stream
Up to 4x ASI (BNC) outputs
Up to 2x Gigabit Ethernet (RJ45) for T2MI or TS with MIP over IP streams

FEATURING

DVB-SIS standard
TS 103 615 V1.1.1

DVB-S/S2 input
QPSK, 8PSK, 16APSK, 32APSK
Roll-off : 0.15, 0.20, 0.25, 0.35
Multiple Input Stream (MIS) support

Descrambling
BISS Mode 1 descrambling (option)
Multi-service capable, supporting up to 10 independent services
Apply to any input (ASI/IP/SAT)

DTH services filtering
In-band service configuration
Dual DTH input - option
Mapping DTH services to DTT MUX
Multiple PLP support (DVB-T2) – 2 PLP supported by default

PSI/SI update
Update SI data for DTT services
PAT, PMT, CAT, NIT, SDT, EIT P/F, EIT Schedule table management

SFN Remux
Deterministic TS with MIP or T2-MI generation for SFN broadcasting from one or two DTH feeds

EWS support
Update all TV programs with EWS audiovisual stream
SFN compliant

FEC management
SMPTE 2022-1 (Pro MPEG CoP#3)
FEC input correction (TSoIP)

Monitoring
Real-time monitoring of incoming streams, Web-based GUI
Full SNMPv2 support

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PHYSICAL

HDc

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 or 48V DC

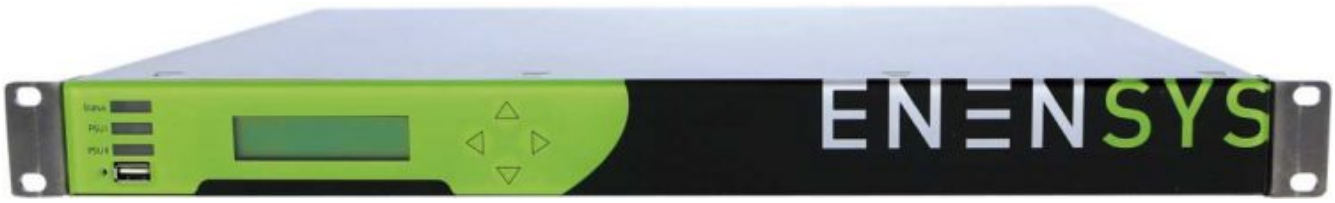
Control IP Port
1x Gigabit Ethernet (RJ45) control port

Data IP Ports
2x Gigabit Ethernet (RJ45) data port

Power consumption
20W/module

Operating temperature
0 to 50°C / 0 to 122°F with 3 modules - 0 to 45°C / 0 to 113°F with 6 modules

Front



Back

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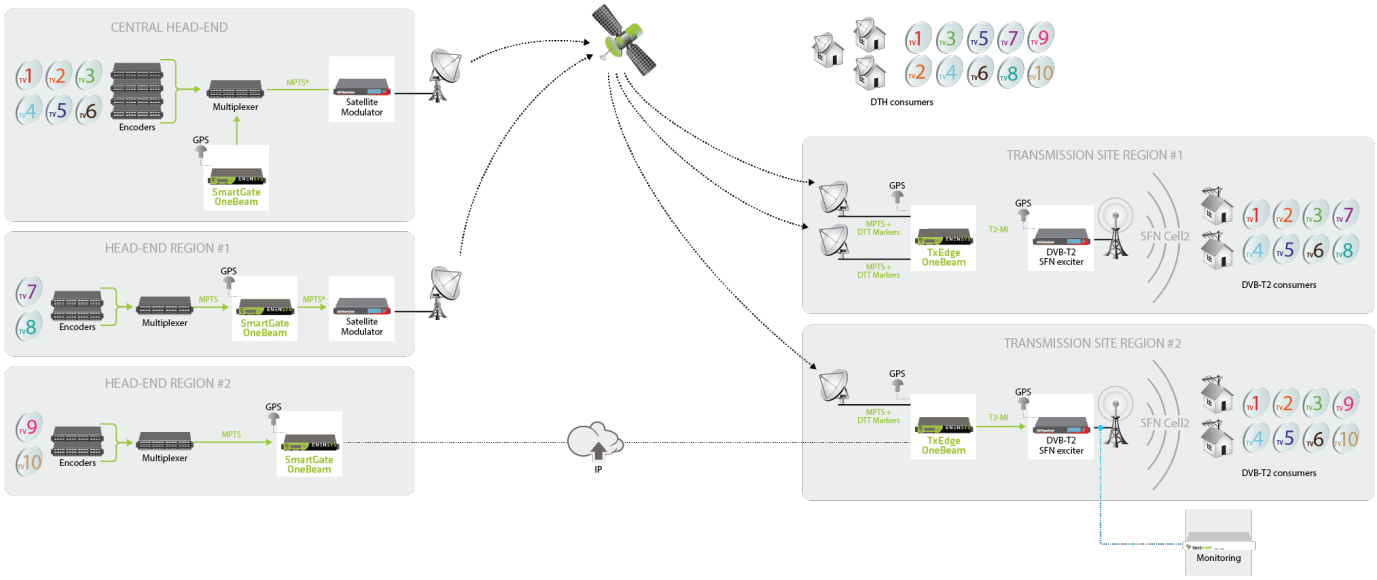
OneBeam DVB-T2 architecture



Ordering codes

HDc-220VRedundant

High Density chassis with 2x 220V AC Power supplies

HDc-48VRedundant

High Density chassis with 2x 48V AC Power supplies

HDmII-TxEdge-OneBeam

SFN ReMUX module for HDc chassis using 1 slot with 2x ASI inputs and 2x ASI outputs

HDmII-TxEdge-OneBeam-2ASI+

SFN ReMUX module for HDc chassis using 2 slots with 2x DVB-ASI inputs and 4x DVB-ASI outputs

HDmIISat-TxEdge-OneBeam

SFN ReMUX module for HDc chassis using 1 slot with 2 x DVB-S/S2 Satellite inputs (up to 32 APSK) - one active and 2x ASI inputs/outputs

HDmIISat-TxEdge-OneBeam-2ASI+

SFN ReMUX module for HDc chassis using 2 slots with 4x DVB-ASI outputs and 2x F-type connectors for DVB-S/S2 satellite inputs

Ordering options

NN6-GPSv2 (hardware)

Internal GPS receiver option

TxEdge-OneBeam-DualSource

Enable to combine services with a second feed

TxEdge-OneBeam-OptiBeam

Optimize SI tables generation

TxEdge-OneBeam-TSDescrambler

Enable the interface with HDm-TSDescrambler module to descramble incoming feed

TxEdge-OneBeam-EWS

EWS management to alert for immediate dangers

TxEdge-OneBeam-BISS

BISS-1 descrambling

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