ENENSYS

T2Gateway for HDc
DVB-T2 Gateway (T2-base or T2-lite)

T2GATEWAY FOR HDC IS ENENSYS' DVB-T2 GATEWAY MODULE (T2 BASE OR T2-LITE) THAT ENCAPSULATES ONE OR SEVERAL MPEG-2 TRANSPORT STREAMS INTO A DVB-T2 MULTIPLEX, INSERTS SYNCHRONIZATION DATA FOR SINGLE FREQUENCY NETWORK BROADCASTING, ALLOCATES DATA INTO THE DIFFERENT PHYSICAL LAYER PIPES AND GENERATES T2-MI PACKETS OVER ASI AND IP.

Running at the head-end, the **T2Gateway for HDc** encapsulates one or several MPEG-2 Transport Streams stemming from a DVB multiplexer into DVB-T2 BaseBand frames. It outputs the resulting T2-base or T2-lite compliant multiplex using the **T2-MI** (T2-Modulator Interface) protocol through ASI and IP. The **T2Gateway** runs in the HDc chassis that can embed up to 6x **T2Gateway** modules in 1U: the same chassis can output up to 6 T2-MI streams over ASI or IP.

DVB-T2 GATEWAY WITH MULTIPLE PLP SUPPORT

The **T2Gateway** is the central body of the operational DVB-T2 network as it provides in-band control and signaling to all the DVB-T2 modulators. When using Multiple PLP (Physical Layer Pipes) feature to provide service-specific robustness, the **T2Gateway for HDc** enables all the modulators to generate the same PLP data in a deterministic manner.

SFN MANAGEMENT

Also the **T2Gateway for HDc** enables SFN broadcasting over DVB-T2. It provides in-band (T2-MI) and out-of-band (T2-MIP) synchronization information to all modulators to generate the same data at the very same time over the same frequency. It also supports MISO broadcasting to increase SFN performance. It generates relative or absolute timestamp.

SEAMLESS REDUNDANCY - T2GUARD

ENENSYS' patented technology, **T2Guard**, is the unique 1+1 or N+1 redundancy mechanism that guarantees a seamless switch-over in SFN and MFN to avoid any TV black-out during switch-over operation between 1+1 or N+1 redundant T2 Gateways. In 1+1 mode, the **T2Guard** applies with two T2Gateways in automatic redundancy either with **ASIIPGuard**, ENENSYS' seamless ASI switch, or with **IPGuard V2**, ENENSYS' seamless IP switch.

APPLICATIONS

- DVB-T2 SFN/MISO build-up
- DVB-T2 Mobile broadcasting
- DVB-T2 Multi-PLP management
- Seamless 1+1 redundancy (patented technology)
- DVB-T2 regionalisation

BENEFITS

- Embedded in High Density chassis (HDc):
  - to allow multiple T2Gateway in 1U
  - to combine with InverTS, ASIIPGuard, …
  - to enable future-proof technology
- Central body of the DVB-T2 network
- Quick handling of the DVB-T2 complexity
- Improve coverage when broadcasting over SFN
- Avoid TV black-out during 1+1 redundancy
- Interoperability proven with transmitters
- T2-lite broadcasting for mobile reception

CHARACTERISTICS

- Encapsulation into DVB-T2 baseband frame
- Configuration of DVB-T2 modulators
- T2-lite and T2-base support
- L1-post scrambling support
- In-band type A and B signalling
- DVB-T2 SFN Adaption with MISO support
- Single and Multiple PLP management
- 2PLP supported by default - 4 and 8 as an option
- PAPR TR and ACE signalling
- Individual addressing of T2 transmitters
- Future Extension Frame (FEF) broadcasting
- Generation of T2-MI packets over ASI; IP option
- JumboT2MI (option) for higher T2-MI bit rate
- In-band delivery of firmware and configuration
- Validation of DVB-T2 transmission parameters
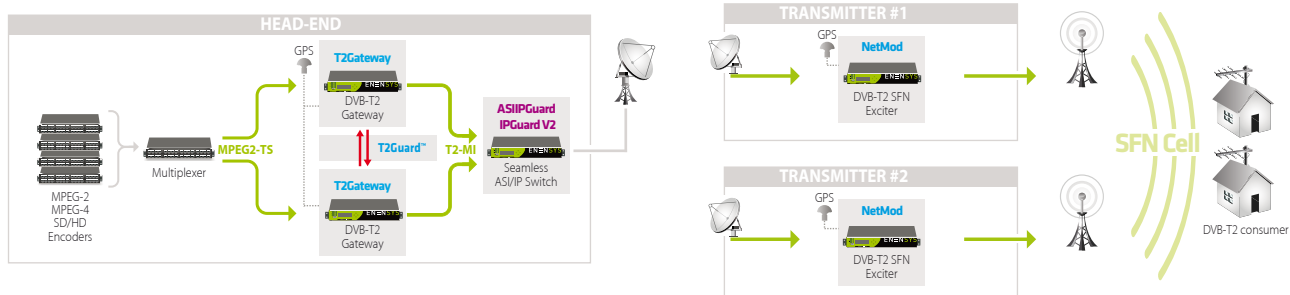
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INPUTS

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Control	1x Gigabit Ethernet (RJ45) for GUI/SNMP (TCP/IP)
MPEG-2 TS 188 or 204 bytes	2x ASI (BNC) inputs 4x optional ASI (BNC) inputs Up to 2x Gigabit Ethernet (RJ45) for RTP/IP input streams - Option
GPS	1x PPS and 10 Mhz (BNC 50 Ω) 1x TNC for internal GPS - Option

OUTPUTS

T2-MI stream	2x mirrored ASI (BNC) outputs 2x additional ASI outputs - Option Up to 2x Gigabit Ethernet (RJ45) for RTP/IP output streams - Option

FEATURING

DVB-T2 standard	V1.1.1, V1.2.1, V1.3.1 support
DVB-T2 encapsulation	Encapsulation into BB frames 1.7,5,6,7,8,10 MHz bandwidth support
DVB-T2 network configuration	In-band control of T2 transmitters Individual addressing FEF management
SFN Adaptation	Integrated SFN adapter with MISO Relative and Absolute timestamp T2-MIP generation in SPLP/MPLP
PLP management	Single and Multi-PLP handling Type1 and type2 management Static and dynamic PLP allocation ISSY generation
T2-MI output	Generation of T2-MI stream over ASI; IP as an option. Optional JumboT2MI output to deliver at a higher bit rate
T2Guard	Patented seamless switch-over between 1+1 or N+1 T2 Gateways
IP management	ProMPEG CoP#3/SMPTE 2022-1 Up to 4x Gigabit ports - Option Allow 1+1 redundant IP input and mirrored IP output
In-Band files delivery	Delivering in-band configuration and firmware to other ENENSYS products (option)
Monitoring and Supervision	Validation of DVB-T2 parameters Full SNMP v2 support
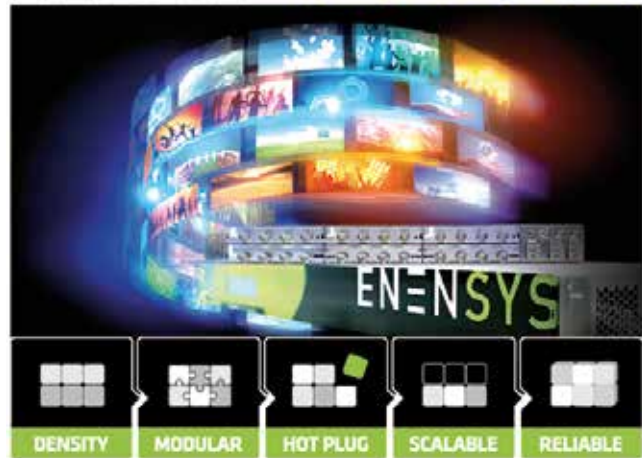
CHASSIS

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
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-T2Gateway	DVB-T2 Gateway module

Module Options

T2Gateway-IP	IP input/output from the module with 2x Gigabit and 2x SFP ports
T2Gateway-IPc	IP input/output from the chassis
T2Gateway-MPLP4	Management of up to 4 PLP
T2Gateway-MPLP8	Management of up to 8 PLP
T2Gateway-4ASI+	4 additional ASI ports
T2Guard	1+1 or N+1 seamless redundancy
T2Gateway-InBand	Conf/Firmware InBand delivery
T2Gateway-JumboT2MI	T2-MI stream at higher bit rate

ENENSYS

Networks

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RoHS
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