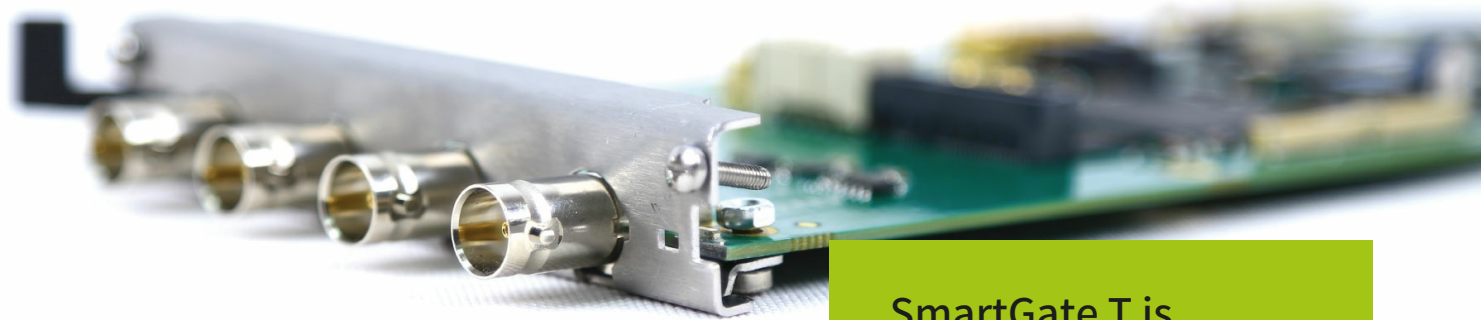


# SmartGate T

## DVB-T SFN Adapter



**SmartGate T is ENENSYS' SFN adapter module for DVB-T that inserts synchronization data to enable Single Frequency Network broadcasting.**

The SmartGate T receives at the input a MPEG-2 TS over ASI or IP, inserts MIP packet to synchronize all the DVB-T transmitters to broadcast the DVB-T multiplex over Single Frequency Networks and performs bit rate adaptation and PCR restamping to match with DVB-T transmission parameters. It outputs the new MPEG-2 TS with MIP packet over ASI or IP.

### SFN Management

The ENENSYS SFN Adapter provides synchronization (timestamp) information to all DVB-T transmitters to generate the same data at the very same time over the same frequency. It can also control individually each DVB-T transmitter to set remotely frequency offset or time offset information.

### 1+1 seamless redundancy - SFNguard

ENENSYS' patented technology, SFNguard, is the unique 1+1 redundancy mechanism that guarantees a seamless switch-over in SFN to avoid any TV black-out during change-over operation between 1+1 MIP inserter. Combined with ENENSYS seamless ASI switch, ASIIPGuard or the ENENSYS seamless IP switch, IPGuard, it offers a unique solution to maintain DVB-T transmission after MIP inserter change-over upon input failure or product maintenance.

### T2 ready

The SmartGate T is running in a new generation platform to provide higher density, to operate with other ENENSYS module in the same chassis and to provide high reliability features with redundant power supplies. The product can migrate to a DVB-T2 Gateway (T2Gateway for HDc) without changing the hardware by only a firmware update.

### Dense solution

Operating at the head-end after DVB multiplexer, the SmartGate T for HDc runs in the HDc chassis to embed up to 6x SmartGate T modules in 1U so that the same chassis can output up to 6 TS with MIP packets over ASI or IP.

### MIP inserter with IP inputs/outputs

The SmartGate T receives at the input a MPEG-2 TS over ASI or IP, inserts MIP packet to synchronize all the DVB-T transmitters to broadcast the DVB-T. multiplex over Single Frequency Networks and performs bit rate adaptation and PCR restamping to match with DVB-T transmission parameters. It outputs the new MPEG-2 TS with MIP packet over ASI or IP. It can support redundant IP inputs and mirrored IP outputs.

# SmartGate T

## DVB-T SFN Adapter

### Applications

- DVB-T SFN broadcasting
- MIP insertion according to ETSI EN 101 191
- PCR restamping and bitrate adaptation
- Redundant inputs and mirrored outputs over ASI or IP
- Seamless 1+1 redundancy (patented technology SFNguard)

### Other benefits

- Central body of the DVB-T network
- Spectrum bandwidth optimization
- Interoperability with transmitters
- Avoid TV black-out during switch-over operation
- Embedded in High Density chassis (HDC):
  - to allow up to 6x SmartGate T in 1U
  - to combine with ASIIPGuard, ...
- Upgradable to [DVB-T2 Gateway](#)
- Straight integration into any NMS: full SNMP v2 compliant
- Easy to setup and to monitor with intuitive GUI

## Technical specifications

### INPUT

#### Control

1x Gigabit Ethernet (RJ45) for GUI/SNMP (TCP/IP)

#### GPS

1x PPS (BNC 50  $\Omega$ ) input connected to an external GPS receiver

1x TNC for internal GPS connected to a GPS antenna - Option

### OUTPUT

#### MPEG2-TS

2x mirrored ASI (BNC 75  $\Omega$ ) outputs

2x Gigabit Ethernet (RJ45) for RTP/UDP/IP or UDP/IP output streams

### FEATURING

#### SFN Adaptation

MegaFrame Initialization Packet insertion according to TS 101 191

All optional functions: up to 128 transmitters at the same time for DVB-T

#### TS processing

Bit rate adaption to DVB parameters

PCR restamping

MIP packet insertion

NIT update

#### Redundancy

SFNguard, patented 1+1 seamless

Redundant ASI or IP (option) inputs

Mirrored ASI and IP (option) outputs

#### IP management

ProMPEG CoP#3/SMPTE 2022-1

2x Gigabit ports from the chassis

#### MPEG2-TS

188 or 204 bytes

2x ASI (BNC 75  $\Omega$ ) inputs

2x Gigabit Ethernet (RJ45) for RTP/UDP/IP or UDP/IP input streams

#### DVB modes

Full compliant with the standard (bandwidth, FFT, constellation, code rate)

#### T2 ready

Future-proof platform that can migrate to DVB-T2 Gateway (option)

#### SIP Insertion

Enable SIP insertion with SmartGateT-DTMB option

#### Monitoring and Supervision

Easy-to-use web GUI

Full SNMP v2 support

# SmartGate T

## DVB-T SFN Adapter

### PHYSICAL

#### HDc Chassis

#### Width

443,7 mm / 17.46 in.

#### Format

1 RU, width 19"

#### Power supply

100-240V 50/60Hz or 48V DC

#### Data IP Ports

2x Gigabit Ethernet (RJ45) data port

#### PPS input

1x PPS input

#### Power consumption

20W/module

#### Height

43 mm / 1.69 in.

#### Depth

322,8 mm / 12,70 in.

#### Front Panel

LCD Display and controls

#### Control IP Port

1x Gigabit Ethernet (RJ45) control port

#### GPS input

1x TNC for GPS/Glonass input

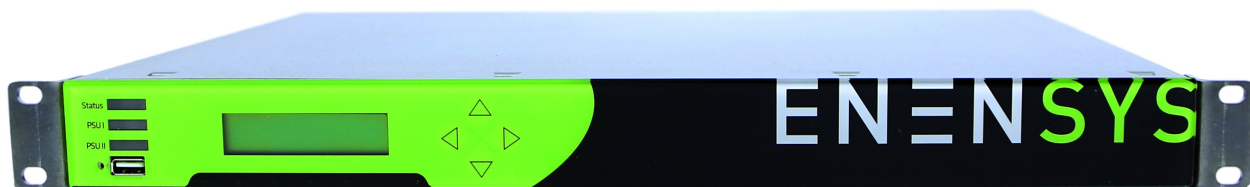
#### 10MHz input

1x 10MHz input

#### Operating temperature

0 to 50°C / 0 to 131°F with 3 modules - 0 to 45°C / 0 to 131°F with 6 modules

### Front



### Back



# SmartGate T

## DVB-T SFN Adapter

### Ordering codes

#### HDc-220VRedundant

High Density chassis with 2x 220V AC Power supplies

#### HDm-SmartGate-T

MIP inserter module using 1 slot (hardware to be ordered with one HDc chassis) with:

- 2 x DVB-ASI inputs
- 2 x DVB-ASI outputs

#### HDc-48VRedundant

High Density chassis with 2x 48V DC power supplies

### Ordering options

#### SFNGuard

1+1 seamless redundancy to avoid TV blackout during swich-over operation

#### SmartGateT-DTMB

Enable SIP insertion

#### SmartGateT-T2Gateway

Firmware upgrade to DVB-T2 Gateway

#### NN6-GPSv2

Internal GPS receiver option