The CP560 DVB-T2 Gateway provides a central point of control for DVB-T2 and T2Lite networks, enabling operators to take advantage of more efficient spectrum utilization with the most advanced terrestrial broadcasting standard.

DVB-T2 offers significantly better frequency utilisation with a bandwidth increase of up to 50% allowing for more channels and a better utilization of the spectrum.

CP560 encapsulates the transport stream into the DVB-T2 Modulator Interface. The T2-MI also controls the modulator parameters and provides the accurate timing and rate control required in a Single Frequency Network (SFN).

The CP560 provides flexible interfacing with ASI or IP inputs, and T2-MI outputs over ASI and IP. It encapsulates MPEG Transport Streams in Physical Layer Pipe (single and multi-PLP).

Nevion cProcessors can be configured via an easy-to-use web interface, which also offers extensive built-in stream monitoring. Scheduled software upgrades can be performed via Connect, VideoIPath, or any NMS.

Applications
- Gateway between DVB-T2 head-ends and transmission network
- Centralized control and signalling of DVB-T2 modulators
- Synchronization for DVB-T2 SFN networks
- DVB-T2 preprocessing
- T2Lite networks

Key features
- DVB-T2 MI interface to the DVB-T2 and T2Lite modulators
- Single and multiple PLP operation
- Seamless SFN/MFN T2 switching between units in 1+1 configuration
- ASI and IP input/output interfaces with redundancy
- User-friendly configuration and control
- Compact, cost-effective solutions with 2 units in 1RU
CP560 DVB-T2 Gateway

T2-MI encapsulation
The CP560 DVB-T2 Gateway encapsulates Transport Streams in T2-MI frames to interface with DVB-T2 modulators. The T2-MI interface includes the original input TS, L1-signalling for the configuration of the modulators and timing information for synchronization.

SFN synchronization
Using a 1PPS input, the CP560 DVB-T2 Gateway generates a very accurate time stamp for the synchronization of transmitters in SFN networks. The continuity and accuracy of these time stamps is crucial for the SFN operation.

Multiple PLPs
Transport Stream inputs are mapped to physical layer pipes (PLP). This feature allows for different protection and coding of data and services. The CP560 supports up to 8 PLPs.

Individual addressing
All modulators receiving the T2-MI from a DVB-T2 Gateway will have the same configuration. The CP560 allows for individual control and configuration of modulators by sending T2-MI individual addressing frames to the modulator corresponding to a given ID.

Transport Stream monitoring
In order to ensure error free processing, the CP560 monitors the input streams according to TR 101 290 priority 1. In case of errors in the input streams, alarms are raised to inform the operator and traps are forwarded to the NMS.

Input redundancy
The reliability of the system can be increased using the Automatic Input Switching features. This input redundancy feature allows the unit to switch between redundant inputs (ASI and/or IP) based on TR101 290 pri1 alarms.

Transport Stream over IP
The output Transport Stream is encapsulated according to SMPTE 2022-2 including the handling of FEC. (SMPTE 2022-1). The CP560 supports multiple VLANs (IEEE 802.1Q), IP QoS and VLAN CoS/802.1P for per-flow traffic prioritization.

User-friendly configuration
The user interface of the CP560 is simple and very intuitive, it is designed to help the operator configure the unit quickly. Running on any web browser the GUI can be accessed from any computer.
**CP560 DVB-T2 Gateway**

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**Transport Stream interfaces**

- **DVB-ASI**
  - 10 bidirectional DVB ASI ports (EN 50083-9, Annex B)
  - 1-8 inputs/2 - 8 output copies
  - Bit rate: 0.1 - 21.3 Mbit/s
  - 188 or 204 byte packet length
  - Burst and Spread mode
  - Female BNC connectors 75 Ohm

- **Gigabit Ethernet (option)**
  - 2 x 100/1000Base-T Ethernet, 1 x SFP
  - Connectors: 2 x RJ45 (100/1000base-T), SFP
  - TS Encapsulation: SMPTE 2022 - 1/2
  - Forward Error Correction (FEC): SMPTE 2022-1
  - Protocols: IEEE 802.3 Ethernet, VLAN (802.1Q) ARP, IPv4, UDP, TCP, RTP, ICMPv2/3
  - Up to 8 input streams over IP

**DVB-T2 adaptation**

- **DVB-T2 MI encapsulation**
  - DVB-T2 versions 1.1.1, 1.2.1 and 1.3.1
  - L1-signaling frame generation
  - Baseband frame encapsulation

- **Multiple PLP support**
  - Up to 8 PLPs

- **SFN operation**
  - DVB-T2 time stamps insertion
  - DVB-T2 MIP insertion

- **Bandwidth support**
  - 1.7MHz, 5MHz, 6MHz, 7MHz, 10MHz

- **Individual Addressing**
  - MISO
  - PAPR parameters
  - Transmitter frequency offset
  - Transmitter time offset
  - Transmitter power

Future Extention Frames (FEF) support
T2Lite support for mobile applications

**Time synchronization**

- **Clock reference**
  - 1PPS input (50 Ohm female BNC)

- **UTC time reference**
  - SNTP over the management interface (RJ45)

**Redundancy and monitoring**

Synchronisation of DVB-T2 frames between units operating in 1+1 configuration.
The synchronisation is software based and does not require communication between the units.

- **Input redundancy**
  - Input switching on loss of signal and TR101 290 pri alarms

- **Input signal monitoring**
  - TR 101 290 priority

**Interface adaptation**

- **IP smallcasting**
  - Up to eight output copies on IP

- **FEC insertion**
  - Variable matrix size for each output copy

- **Format conversion**
  - ASI to IP, IP to ASI

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**Management**

- **Management port**
  - 10/100 Base-T Ethernet
  - Connector: RJ45

- **Element control through HTTP/WEB based GUI**

- **XML Configuration import and export via HTTP**

- **SNMP agent for integration with Network Management System (NMS)**

- **Protocols**
  - HTTP, XML, SNMPv2c

- **Alarm Relay**
  - 9 pin D-SUB, Two relays supported; one at configurable alarm level

- **Maintenance Port**
  - USB version 1.1

**Physical and environmental characteristics**

- **Input Voltage**
  - 100-240V AC +/- 10%, 50/60 Hz,
  - optional: -48V DC

- **Power consumption**
  - 35W max

- **Dimensions**
  - 1RU, ½-width 19"
  - (WxDxH) 210 x 300 x 44.5mm

- **Operating temperature**
  - 0°C to 50°C

- **Storage temperature**
  - -20°C to 70°C

- **Relative humidity**
  - 5% to 95% (non condensing)

**Compliance**

- **CE:** 73/23/EEC (Low voltage equipment) 89/336/EEC
  - (Electromagnetic compatibility)

- **CSA:** Designed for CSA approval

- **Safety:** IEC60950 and EN60950

- **EMC:** EN55022, EN55024, EN6100-3-2

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**Product options**

- **CP560-DC**
  - -48V DC power supply

- **CP560-AC2**
  - Dual 230V power supplies

- **CP560-SFP + x**
  - SFP modules for interface adaptation

- **CP560-SFP**
  - Enable SFP socket

- **CP560-IP**
  - Enable Ethernet interfaces for TSIP inputs and outputs

- **CP560-FEC**
  - Enable Forward Error Correction for the IP interfaces

- **CP560-ISW**
  - Automatic input switching for input redundancy

- **CP560-ASIN**
  - Enable ASI ports

- **CP560-T2SFN**
  - Enables T2 SFN framing and generation of DVB-T2 time stamps for SFN operation

- **CP560-PLPX**
  - Additional PLPs including TS inputs
cProcessor

Our award-winning cProcessor transport stream processing and multiplexing products make the complex simple.

Even better, they enable tailoring of regional and local service packages, component filtering, advanced updating of PSI/SI/PSiP tables, and enhanced quality of service.

User friendly, highly robust and cost effective. It’s this simplicity and performance that has secured our place in some of the world’s most advanced terrestrial networks.

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