

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

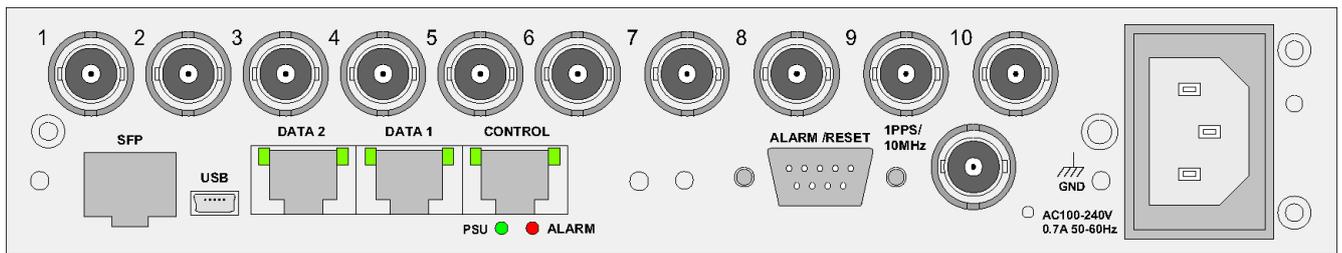
The reliability of the system can be increased using the Automatic Input Switching features. This input redundancy feature allows the unit to switch between redundant inputs (ASI and/or IP) based on TR101 290 pri1 alarms.

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.



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 - 213 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, IGMPv2/3 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-signalling 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, 8MHz, 10MHz
Individual Addressing	MISO PAPR parameters Transmitter frequency offset Transmitter time offset Transmitter power
Future Extension 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 pri1 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

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, 1/2-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

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 TSolP 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



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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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cProcessor

CP560

DVB-T2 Gateway

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, VideoPath, 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

