



Video Gateways

TVG425

Transport Stream Gateway

The TVG425 Transport Stream Gateway boosts Nevision's position as the market leader for transport of compressed video over IP networks.

By taking advantage of the inherent flexibility of IP, broadcasters and service providers can deliver an efficient, affordable and scalable solution for professional quality video contribution and distribution.

The TVG425 provides bidirectional transmission of up to eight independent MPEG-2 Transport Streams (TS), flexible interfacing with support for ASI, Ethernet and SONET/SDH, as well as built-in TS monitoring and switching capabilities that enable cost-effective and high availability video transport solutions.

Nevion Video Gateways can be configured via an easy-to-use web interface, which also offers extensive built-in monitoring. Connection management can be performed via Connect, VideoPath, or any 3rd party NMS

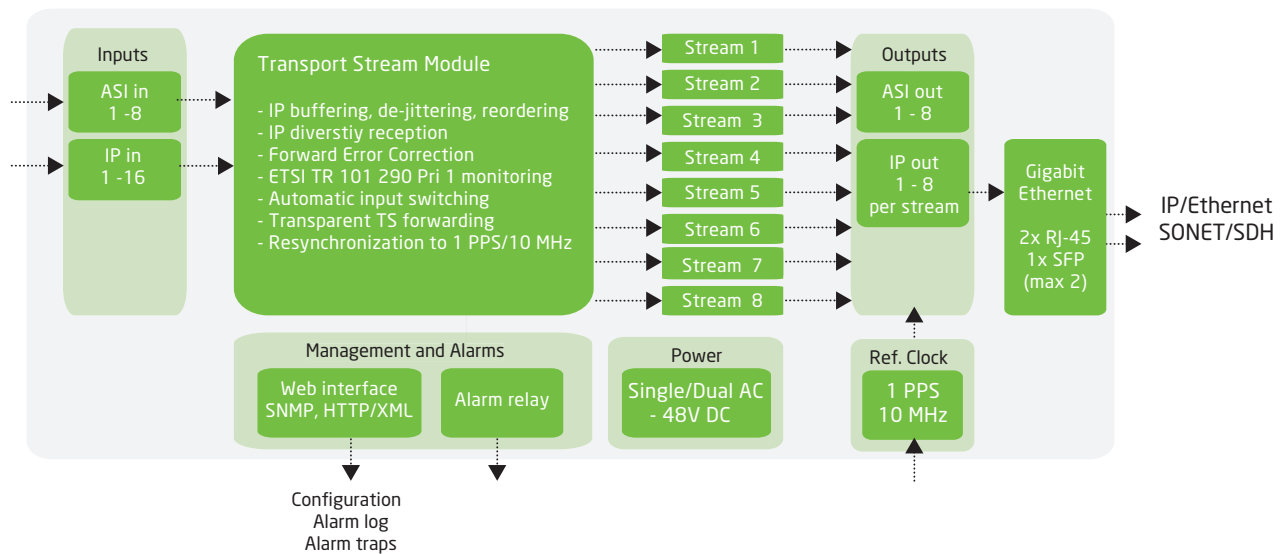
Applications

- Professional broadcast contribution and distribution
- Transport Stream interface adaptation
- Managed video services over IP
- DVB-T, DVB-T2, DVB-H SFN/MFN distribution over IP

Key features

- Transmission of up to 8 Transport Streams (TS) over IP
- Standards-compliant TS over IP + FEC (2022-1/2)
- Bidirectional operation on a port-by-port basis
- Flexible interfacing to ASI, IP/Ethernet and SONET/SDH
- Multi-network connectivity with 2x GigE ports for TS/IP
- IP multicast, unicast and multiple unicast output
- Hitless switching with IP diversity reception (SMPTE 2022-7)
- Automatic input switching for TS source redundancy
- Integrated VLAN, QoS configuration, IP and RIP-2 routing for multicast source redundancy
- Built-in TS monitoring (ETSI TR 101 290 Pri 1)
- Embedded Redundancy solutions (1+1 main/standby)
- DVB-T/T2 SFN support with resync to external 1PPS
- User-friendly web GUI for monitoring and control





Up to 8 Transport Streams per unit

The TVG425 can handle up to 8 independent MPEG-2 Transport Streams per unit (licensed from 1-8).

Flexible interfacing

The TVG425 is extremely flexible in terms of input and output interfaces for Transport Streams. Supported interfaces include DVB-ASI, IP over Ethernet and IP over SONET/SDH. The 8 ASI ports can be used as input, output, or output copies, and can be reconfigured on a port-by-port basis without affecting the operation of the unit.

Built-in input signal monitoring

All input Transport Streams are monitored according to ETSI TR 101 290 Pri 1 alarm conditions. DVB/ATSC service and table information is shown in the web user interface. The input signal monitoring is helpful for broadcasters and service providers to verify the quality of the video signal at demarcation points in a broadcast distribution network.

Reliable transmission over IP

The TVG425 includes a number of features to ensure robust operation and graceful degradation in presence of IP transport impairments, including buffering for IP jitter compensation, packet reordering and SMPTE 2022-1 Forward Error Correction. In fact, the TVG425 Extended FEC implementation is able to correct much larger burst packet loss compared to standard 2022-1 FEC. As an example, for a TS bit rate of 38 Mbit/s, the burst loss protection period can be up to 69 ms.

Hitless switching with IP diversity

The TVG425 is equipped with dual GigE interfaces for transport over redundant IP network links, and supports multiple IP unicast/multicast outputs (up to 8 per TS). On the receiving side, IP diversity reception, compliant with SMPTE 2022-7 (SIPS), enables hitless switching on packet loss or link failures.

Automatic input switching

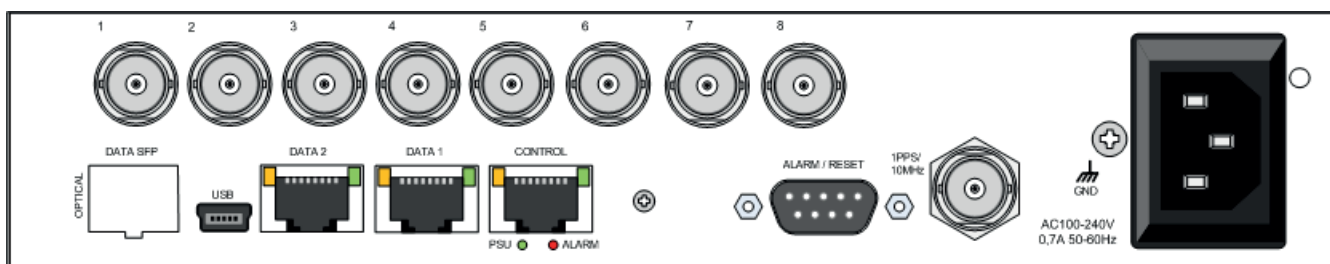
The TVG425 supports built-in source redundancy, with automatic switching on loss of signal or critical input signal alarms. Any alarm condition in ETSI TR 101 290 Pri 1 can be used to trigger a switch. Input streams can be ASI, IP or a combination of ASI and IP inputs.

Ideal for DVB-T/T2 SFN distribution

The TS packet handling in the TVG425 is fully transparent in order to support DVB-T/T2 signal distribution in SFN networks. In addition, the bitrate of the output TS can be resynchronized to a 1 PPS or 10 MHz external reference to remove all jitter from the incoming IP stream and present a perfect TS to the DVB-T/T2 modulator.

User-friendly configuration

The user interface of TVG425 is simple and very intuitive. It has been designed to allow operator to configure the unit quickly and reliably. Running in any web browser, the GUI can be accessed from any connected computer.



Transport Streams

| | |
|--------------------|------------------------------------|
| Number of channels | 1-8 MPEG-2 Transport Streams (TS) |
| Input ports | Up to 8 on DVB-ASI, Up to 16 on IP |
| Output ports | Up to 8 on DVB-ASI, Up to 64 on IP |

ASI Interface

| | |
|---------------|--|
| Type | DVB-ASI (EN 50083-9, Annex B) |
| Connector | Female BNC (75 Ohm) |
| Modes | Burst and spread |
| Packet length | 188 bytes transparent, 204 bytes supported but only 188 bytes sent |
| Bitrate | Max. 213 Mbit/s |

Ethernet Interfaces

| | |
|-----------------|--|
| Number of ports | 2 x 100/1000Base-T Gigabit Ethernet 1 x 1000Base-SX/LX Gigabit Ethernet |
| Connector type | 2x RJ-45, 1x SFP (option) |
| Interface type | Gigabit Ethernet, 802.3ab (electrical), 802.3z (optical) Fast Ethernet (FE) IEEE 802.3u, Ethernet IEEE 802.3i |
| Protocols | IP/UDP/RTP, ARP, IGMPv2/v3, Diffserv/TOS, 802.1Q (VLAN tagging), 802.1P (VLAN priority), HTTP/TCP |
| Protocols: | IEEE 802.3 Ethernet, VLAN (802.1Q) ARP, IPv4, UDP, TCP, RTP, IGMPv2/3, RIP-2 |
| Bitrate: | Max. 750 Mbit/s (total) |

SONET/SDH Interface

| | |
|-----------|-------------------------------------|
| Type | SONET OC-3 / SDH STM-1 |
| Connector | SFP / Single Mode Fiber (LC duplex) |
| Bitrate | 155 Mbit/s |
| Framing | GFP (Generic Framing Protocol) |

E3/T3 Interface

| | |
|-----------|--|
| Type | E3/T3 (DS3) |
| Connector | SFP / Electrical (DIN 10/2.3) |
| Bitrate | 34.368 Mbit/s (E3), 44.736 Mbit/s (T3) |
| Framing | GFP (Generic Framing Protocol) |

Stream Processing

| | |
|--------------------------|---|
| TS Encapsulation | SMPTE 2022-2 |
| Forward Error Correction | SMPTE 2022-1 (plus extended matrix sizes) |
| TS Processing | Transparent |
| TS Monitoring | ETSI TR 101 290 (Priority 1) List of services, PIDs and SI / PSIP tables |

SFN Bitrate Synchronization

| | |
|------------------|----------------------------|
| Reference Input | 1PPS |
| Bit rate control | Automatic from MIP packets |

Control and Management

| | |
|------------------|--|
| Type | 10/100BaseT Fast Ethernet |
| Connector type | RJ-45 |
| Features | Element control through HTTP/WEB interface, Control and monitoring through SNMP, TXP support (HTTP/XML) SNMP configuration and monitoring support for integration with Network Management System. |
| Protocols | HTTP, XML, SNMPv2c |
| Alarm Relay | 9 pin D-SUB. Two relays supported; one at configurable alarm level. |
| Maintenance Port | USB Mini B version 1.1 |

Physical, power and environmental

| | |
|-------------------------|---|
| Input voltage | Single/Dual AC PSU: 100-240V AC +/- 10% Single DC PSU: -48V DC |
| Power consumption | Single PSU: 30W max, Dual PSU: 40W max |
| Dimensions (single PSU) | 1 RU, half-width 19"; 210 x 300 x 44.5mm (WxDxH) Two units may be mounted in 19" 1RU rack |
| Dimensions (dual PSU) | 1 RU, full-width 19"; 420 x 300 x 44.5mm (WxDxH) |
| Compliance | CE: 73/23/EEC (Low voltage equipment), CE: 89/336/EEC (Electromagnetic compatibility), CSA: designed for CSA approval, Safety: IEC60950 and EN60950, EMC:EN55022, EN55024, EN6100-3-2 |
| Operating temperature | 0°C to 50°C |
| Storage temperature | -20°C to +70°C |
| Relative humidity | 5% to 95% (non condensing) |

Product options

| | |
|----------------|--|
| TVG425-8ASI-IP | TVG425 Transport Stream Gateway |
| TV-HW-OPT-AC | Single 110V/220V AC PSU |
| TV-HW-OPT-AC2 | Dual 110V/220V AC PSU |
| TV-HW-OPT-DC | Single -48V DC PSU |
| TVG425-TSOX1 | 1 output Transport Stream |
| TVG425-TSOX2 | 2 output Transport Streams |
| TVG425-TSOX3 | 3 output Transport Streams |
| TVG425-TSOX4 | 4 output Transport Streams |
| TVG425-TSOX5 | 5 output Transport Streams |
| TVG425-TSOX6 | 6 output Transport Streams |
| TVG425-TSOX7 | 7 output Transport Streams |
| TVG425-TSOX8 | 8 output Transport Streams |
| TVG425-ER | Embedded Redundancy |
| TVG425-FEC | Forward Error Correction on IP input/output |
| TVG425-IDR | IP Diversity Reception (for hitless switching) |
| TVG425-SFP | Optical IP via SFP socket |
| TVG425-SFNR | SFN rate locking with 1PPS |
| TVG425-ISW | Automatic Input Switching |

Video Gateways

Nevion Video Gateways are a line of compact, powerful and cost-effective products designed for real-time contribution and distribution of broadcast quality video over IP networks.

By taking advantage of the inherent flexibility of IP networking, the Video Gateways provide broadcasters and service providers with flexible, efficient and scalable solutions for high quality professional video transport. The Video Gateway portfolio includes the market leading Transport Stream Gateway - the TVG425 - and the industry's first combined SD/HD/3G/3D JPEG 2000 contribution solution - the TVG450

CONTACT INFORMATION

The Americas

ussales@nevision.com +1 (805) 247-8560

Asia Pacific

asiasales@nevision.com +65 6872 9361

Europe and Africa

sales@nevision.com +47 33 48 99 99

Middle East

middle-east@nevision.com +971 (0)4 3901018

UK

uksales@nevision.com +44 118 9735831

nevision.com