datasheet

nSure

TNS546

TS Monitor

The TNS546 TS Monitor is a powerful toolbox for continuous monitoring of transport streams, services, PIDs and PSI/SI/PSIP tables. It enables fast fault detection and diagnostics in an easy-to-use and intuitive user interface.

The TNS546 monitors streams on DVB-ASI, SMPTE310, IP/Ethernet and thereby eliminates the costs for interface adaptation.

Thanks to its intuitive user interface operators save time for error tracking, resolve issues faster and ensure higher uptimes.

The trend monitoring functionalities help the operators to schedule maintenance and support activities reducing the opex of the system.

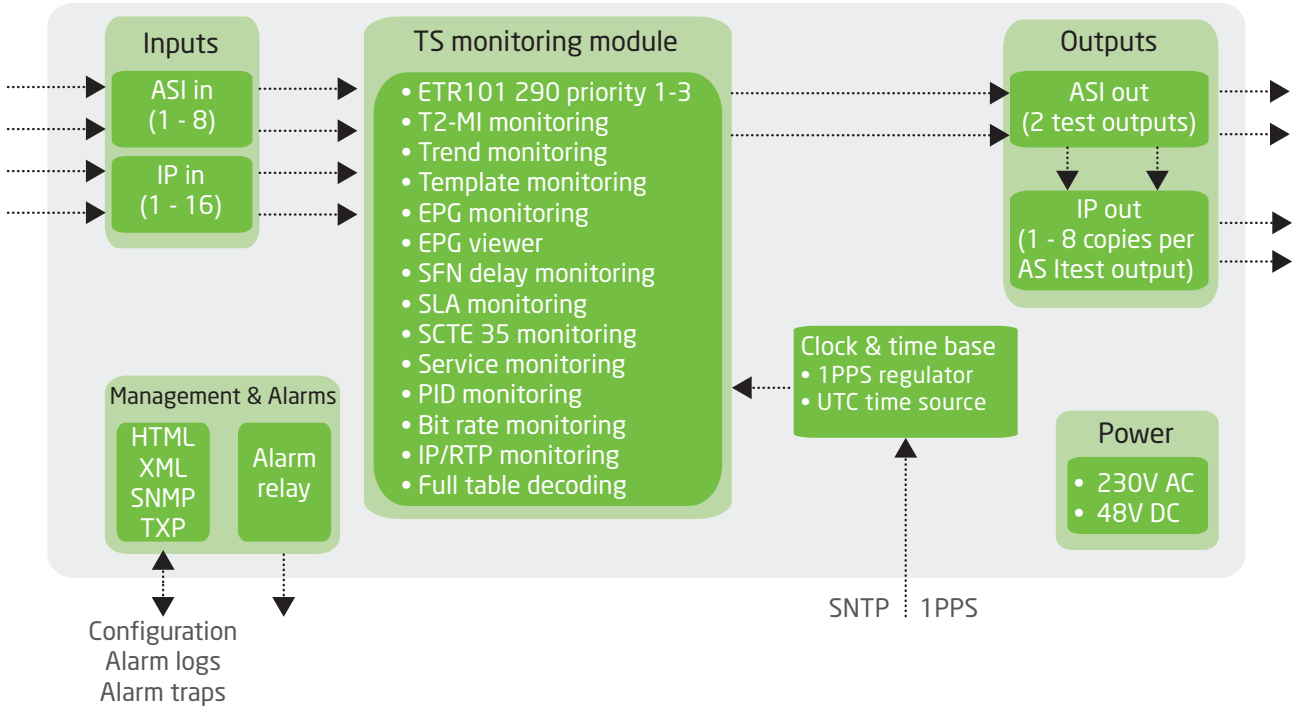
Nevion nSure products can be configured via an easy-to-use web interface and interact with overlaying network management systems. Scheduled software upgrades can be performed via Connect, VideoIPath, or any NMS.

Applications

- Central head-end monitoring
- Remote monitoring of signals
- 24/7 continuous supervision of signals
- SLA monitoring (up time statistics)
- Stand-alone monitoring

Key features

- Monitoring according to ETR101 290 priority 1-3
- T2-MI analysis for DVB-T2
- Trend monitoring
- Template monitoring
- SLA monitoring
- EPG monitoring with built-in EPG viewer
- SFN delay monitoring
- PCR analysis with jitter histogram view (accuracy & overall)
- Service, PIDs, bit rate monitoring
- IP/RTP and Media Delivery Index monitoring
- Test outputs (loop any ASI or IP input TS)
- Service streaming for remote viewing



Transport stream monitoring

TNS546 monitors the transport streams according to ETR101 290 pri1-3. The monitoring can be carried out simultaneously on all 24 inputs independently of their interfaces (DVB-ASI, SMPTE310 and IP/Ethernet).

T2-MI monitoring

To ensure error free DVB-T2 transmission it sensible to monitor the T2-MI (transmitter feed) to help the operator verify the synchronization and configuration information for the modulators and determine the source of transmission errors.

SFN delay monitoring

This feature checks the delay of the streams in the network and compares this figure to the time stamp signalled in the MIP packets or DVB-T2 time stamps. If the delay budget is exceeded an alarm will be raised informing the operator of the imminent failure of the SFN network.

Trend monitoring

Operator can track critical parameters over time (with graphical views) and identify events and recurring issues that might lead to failure. Proactive network management enables the operator to prevent errors before they affect the viewer.

EPG monitoring

To guarantee the best viewer experience and the correct operation of PVRs, TNS546 monitors the SI tables detecting errors in their syntax or gaps and inconsistencies in the signalled events.

Template monitoring

Templates add a level of autonomy to the system, simplify the configuration and allow for scheduling of the different monitoring rules. The planning of maintenance work or changes in the programming such as insertion of live event content becomes easier.

Alarms and logs

The alarms have severity levels following ITU-TX.733 and are fully configurable. The alarms hierarchy (Unit, inputs, services and PID level) allows for tailoring profiles describing the condition of the streams. Every event and alarm is stored in the circular log (10.000 entries). The logs can be exported in different formats for reporting and inspection purposes.

User-friendly configuration

The user interface of the TNS546 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.

TNS546 TS Monitor

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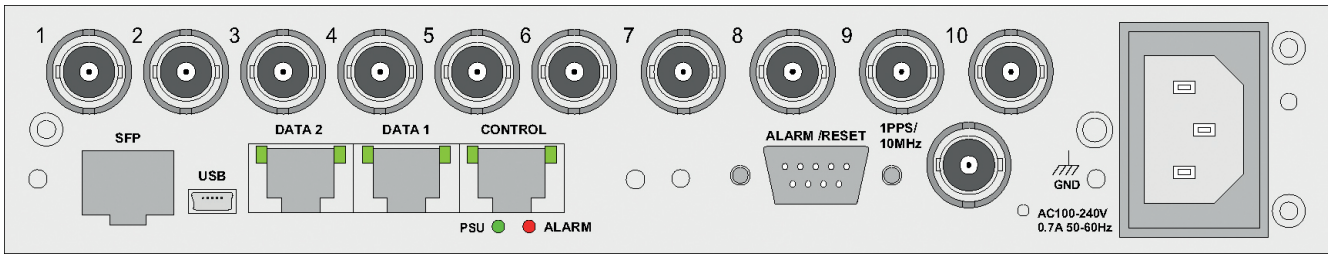

Transport stream interfaces

DVB-ASI	1-8 DVB ASI inputs (EN 50083-9, Annex B) 2 DVB ASI test outputs 188 or 204 byte packet length Burst and Spread mode Female BNC connectors 75 Ohm
SMPTE310	1 - 8 SMPTE310M-2004 inputs 188 bytes packet length 19.39265 Mbit/s, ±2.8 ppm Female BNC connectors 75 Ohm
Gigabit Ethernet (option)	16 transport streams over IP (TSoIP) 2 x 100/1000Base-T Ethernet, 1 x SFP Connectors: 2 x RJ45 (100/1000Base-T), SFP TS Encapsulation: SMPTE 2022 -1/2 Protocols: IEEE 802.3 Ethernet, VLAN (802.1Q) ARP, IPv4, UDP, TCP, RTP, IGMPv2/3)

Monitoring & analysis

Monitoring	ETR101 290 priority 1-3 T2-MI monitoring (PLP, L1-signalling, Time stamps) Trend monitoring Scheduled template monitoring EPG monitoring (with gap detection) SLA monitoring SFN delay monitoring IP/RTP monitoring Media Delivery Index monitoring Ethernet Monitoring (IP snooping) Service and PID monitoring
Analysis	Full PSI/SI/PSIP table decoding and analysis PCR and PCR jitter analysis with histogram views MIP packets analysis T2-MI analysis EPG viewer Service analysis (service ID, name and components) PID analysis (type, scrambling and bit rates) Bit rate analysis (TS, service, PID) with graphical view
Alarms & logs	Standardized alarm levels according to ITU-T X.733 Configurable alarm severity level (individual, PID level, service level, input level) Circular events log for 10.000 entries Configurable and exportable (XML, CSV) logs

Streaming and test outputs

ASI test outputs	2 independent test outputs (loop any input)
Streaming	Individual services (incl. all components) Entire multiplex (coming on any input) Up to 8 stream copies (smallcast)

Time synchronization

Clock reference	1PPS input (50 Ohm female BNC)
UTC time reference	SNTP over the management interface (RJ45)

Control and 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

Product options

TNS546-DC	- 48V DC power supply
TNS546-AC2	Dual 230V power supplies
TNS546-SFP + x	SFP modules for interface adaptation
TNS546-SFP	Enable SFP socket
TNS546-IP	Enable Ethernet interfaces for TSoIP inputs and outputs
TNS546-FEC	Enable Forward Error Correction for the IP interfaces
TNS546-ASI	Enable ASI ports
TNS546-TSIx	Additional transport stream inputs
TNS546-T2AN	T2-MI analysis and monitoring

nSure

By adding intelligence to monitoring and switching, our nSure products protect both the content owner and the network operator.

We deliver solutions for service fallback, redundancy switching including seamless switching and continuous monitoring of Video signals, transport streams, services, PIDs and PSI/SI/PSIP tables. In an increasingly complex broadcast infrastructure, our solutions simplify the day to day operations of the network operator and provide an ideal tool for video signals and transport stream handling, redundancy, error detection and correction and fast diagnostics of erroneous signals.

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