datasheet

nSure

TNS4200

Media Monitoring Probe

The TNS4200 is a powerful toolbox for continuous monitoring of broadcast streams and signals. It enables fast fault detection and diagnostics in an easy-to-use and intuitive user interface.

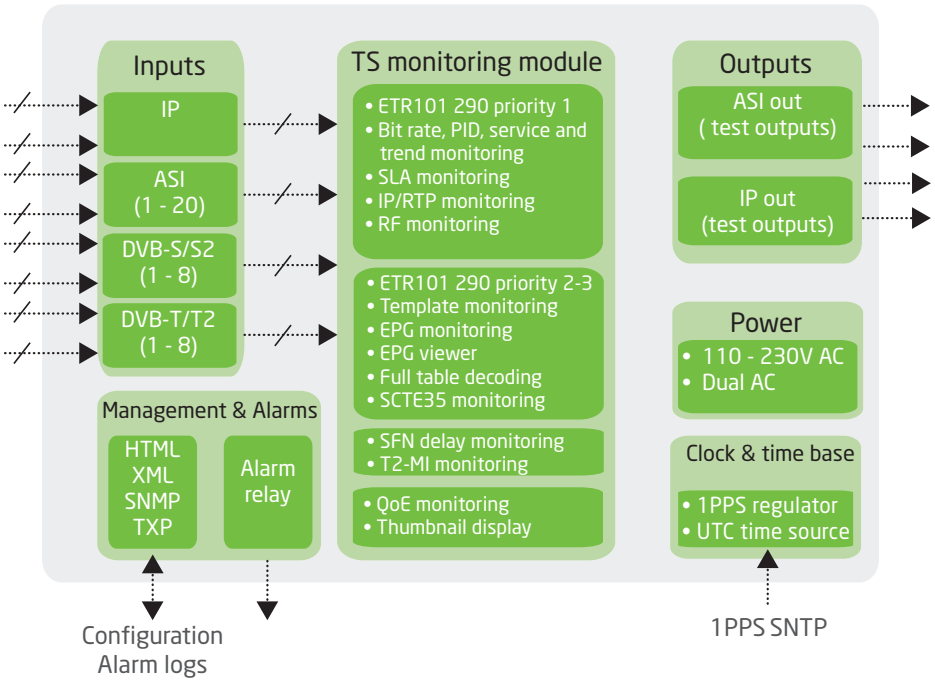
Thanks to it's high density and flexibility the TNS4200 offers a cost effective solution for monitoring video-centric networks at various locations. By simplifying error tracking it helps resolve issues faster ensuring higher uptimes.
The alarm engine is extremely flexible and allows users to customize alarm profiles to suit their unique application. In addition to QoS It offers monitoring features for QoE and provides stream analysis features useful in trouble-shooting situations.
The TNS4200 continuously monitors a very high number of streams reaching an unrivalled density on 1RU without compromises on the performance. The streams can be received on IP/Ethernet, DVB-ASI, DVB-S/S2 and DVB-T2 offering the required flexibility to operate in different environments and applications.
Nevion nSure products can be configured via an easy-to-use web interface and interact with overlaying network management systems.

Applications

- Monitoring of head-ends for IPTV, Satellite, Cable and DTT networks
- Remote monitoring of signals in DTT networks
- End-to-end monitoring of contribution links
- SLA compliance monitoring

Key features

- Very high input density per 1RU with up to
  - 300 simultaneous TSoIP inputs (SPTS)
  - 20 simultaneous ASI inputs
  - 8 simultaneous DVB-S/S2 /T/T2 inputs
- QoS monitoring
  - IP/UDP/RTP monitoring
  - ETSI TR101 290 priority 1-3
  - Service and PIDs monitoring (bit rates, names, components,...)
  - Ad-insertion monitoring and logging (SCTE35)
  - Template monitoring down to component level,
  - HbbTV monitoring
  - SLA monitoring
- QoE monitoring
  - Thumbnail display
  - Black and freeze frame detection (configurable thresholds)
  - Audio Silence monitoring
  - EPG analysis and monitoring w/ built-in EPG viewer
- SFN monitoring



High number of inputs

TNS4200 monitors a very high number of transport streams simultaneously. It can monitor up to 300 SPTS streams coming on IP.
For conventional signals such as DVB-ASI, DVB-S2 and DVB-T2 the unit can be populated with daughter board to receive these signals.

Transport stream monitoring

TNS4200 monitors the transport streams according to ETR101 290 priority1-3. The monitoring can be carried out simultaneously on all inputs independently of their interfaces (TSoIP, DVB-ASI, DVB-S2, DVB-T2).

Template monitoring

Templates add a level of autonomy and simplify operation by comparing the incoming signals to a user defined template for the stream content and syntax. Planning of maintenance work or changes in the programming, such as insertion of live content, becomes easier.

Trend monitoring

Operators 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.

Alarms and logs

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

SFN delay monitoring

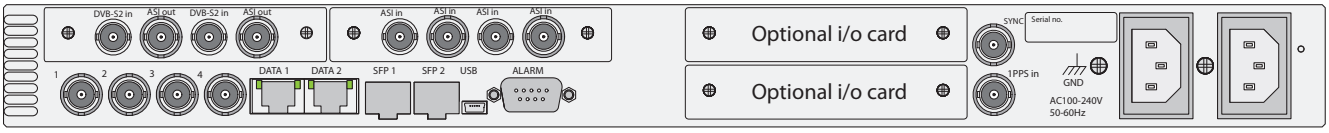
This feature checks the delay of the streams in the network and compares this figure to the time stamp signalled in the MIP packets or DVB-T2 time stamps. If the delay budget is exceeded an alarm will be raised informing the operator of the imminent failure of the SFN network.

T2-MI monitoring

Monitoring the T2-MI (transmitter feed) ensures error free DVB-T2 transmission. TNS4200 helps the operator verify the synchronization and configuration information for the modulators and determine the source of transmission errors.

User-friendly configuration

The user interface of the TNS4200 is simple and very intuitive, it is designed to help the operator configure the unit quickly. The GUI runs on any web browser and can be accessed from any computer.



Transport stream interfaces

DVB-ASI	4 DVB ASI i/o ports (EN 50083-9, Annex B) up to 16 additional ASI i/o ports (on up to 4 optional i/o boards) 188 or 204 byte packet length Burst and Spread mode (packet and byte mode) Female BNC connectors 75 Ohm
TSoIP	Up to 300 SPTS simultaneously Up to 75 MPTS simultaneously 2 x 100/1000 Base-T Ethernet (2 x RJ45) 2 xSFP+ ports Protocols: IEEE 802.3 Ethernet, VLAN (802.1Q), ARP, IPv4, UDP, TCP, RTP, IGMPv2/3 TS Encapsulation SMPTE 2022 -1/2
DVB-S/S2	2x DVB-S/S2 inputs per card, up to 4 boards per 1RU 2x F-type connector, 75 Ohms 2x ASI outputs Antenna power.13V/18V/off, 500 mA max. current Frequency range 950-2150 MHz (L-Band) Return loss > 7 dB Constellations QPSK, 8PSK, 16APSK, 32APSK Multistream support ISSY synchronization PLS support
DVB-T2	2x DVB-T2 inputs per board, up to 4 boards per 1 RU 2x F-type connector, 75 Ohms Frequency range 178 - 858 MHz (DVB-T2) Channel bandwidth 1.7; 5; 6; 7 and 8 MHz Demodulation of all DVB-T2 modes, (T2Base, T2Lite), MISO/SISO, M-PLP

Monitoring & analysis

QoS monitoring	IP/RTP monitoring ETR101 290 priority 1-3 Service and PID monitoring Template monitoring down to descriptor level Trend monitoring Conditional access monitoring Ad-insertion monitoring and logging(SCTE35) HbbTV monitoring SLA monitoring (per input, per unit) Service performance & availability T2-MI monitoring (L1-signalling, time stamps, BB-frames and PLPs) MIP monitoring and SFN delay monitoring
QoE monitoring	Thumbnail display Black and freeze frame detection Audio monitoring and audio silence detection (MP1L2, AAC) EPG monitoring (with gap detection and EPG viewer)
DVB-T2 monitoring	MER, SNR, Input level, Carrier frequency offset, C/N, BER, LDPC iterations, BCH... Transmission parameters Shoulder measurements SFN drift monitoring (DVB-T2) Channel impulse response
DVB-S/S2 monitoring	MER, BER, PER, power, AGC level, C/N, AFC... Transmission parameters
Analysis	Full PSI/SI/PSIP table decoding and analysis PCR and PCR jitter analysis with histogram MIP packets analysis T2-MI analysis Service analysis with graphical views PID analysis with graphical views Spectrum diagram (DVB-T2) Constellation diagram (DVB-S/S2/T/T2) Stream recorder for offline analysis
Alarms & logs	Standardized alarm levels according to ITU-T X.733 Configurable alarm severity level (individual, PID level, service level, input level) Alarm filters and profiles Large logs (100.000 entries) Exportable (XML, CSV) logs

Time synchronization

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

Control and management

Management ports	100/1000 Base-T Ethernet Connector: RJ45
Element control through HTTP/WEB based GUI	
XML Configuration import and export via HTTP	
Protocols	HTTP, XML, SNMPv2c
Alarm Relay	9 pin D-SUB. Two relays supported; one at configurable alarm level
Maintenance Port	USB

Physical and environmental characteristics

Input Voltage	100-240V AC +/- 10%, 50/60 Hz,
Power consumption	50 - 200W max
Dimensions	1RU 19", (WxDxH) 420 x 400 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, 89/336/EEC, IEC60950, EN60950, EN55022, EN55024, EN6100-3-2, CSA

TNS4200 Media Monitoring Probe – Base Unit

TNS4200-HW-F4-AC	TNS4200 Media Monitoring Probe base unit (1RU) that can hold up to four (4) factory-installed modules (fixed back panel). 4x GigE ports (2x 100/1000Base-T, 2x 1000-BaseX SFP), 4 enabled inputs on the 4 BNC connectors for (ASI/SDI). Built-in ETSI TR 101 290 Priority 1 monitoring. Single 110V/220V AC PSU.
TNS4200-HW-F4-AC2	TNS4200 Media Monitoring Probe base unit (1RU) that can hold up to four (4) factory-installed modules (fixed back panel). 4x GigE ports (2x 100/1000Base-T, 2x 1000-BaseX SFP), 4 enabled inputs on the 4 BNC connectors for (ASI/SDI). Built-in ETSI TR 101 290 Priority 1 monitoring. Dual load-sharing 110V/220V AC PSUs.
TNS4200-HW-M4-AC2	TNS4200 Media Monitoring Probe base unit (1RU) that can hold up to four (4) field-installable modules (modular back panel). 4x GigE ports (2x 100/1000Base-T, 2x 1000-BaseX SFP), 4 enabled inputs on the 4 BNC connectors for (ASI/SDI). Built-in ETSI TR 101 290 Priority 1 monitoring. Dual load-sharing 110V/220V AC PSUs.

TNS4200 Media Monitoring Probe – Hardware Options

NNX-HW-ASI-IO-X4-F	Hardware option - ASI i/o board with four (4) BNC connectors for ASI i/o. This board is fitted in the fixed chassis.
NX-HW-S/S2-DEMOD-X2-F	Hardware option - DVB-S/S2 demodulator board with two inputs, (F-connectors, demodulate 2 signals). This board is only available for fixed chassis.
NX-HW-T/T2-DEMOD-X2-F	Hardware option - DVB-T2 demodulator board with two inputs, (demodulate 2 signals). This board is fitted in the fixed chassis.
NX-HW-T/T2-DEMOD-X2-M	Hardware option - DVB-T2 demodulator board with two inputs, (demodulate 2 signals). This board is used in the modular chassis.

TNS4200 Media Monitoring Probe – Software Options

TNS4200-SW-MPTX	Software option - Transport Stream input for (X=1,5,10,25) MPTS/SPTS for basic monitoring including ETR290 priority1, bit rate alarms (PID, service, TS bit rate), scrambling alarms, Service missing, incorrect TS ID, IP/RTP alarms.
TNS4200-SW-SPTX	Software option - Bundle for (X= 10, 25, 50, 100, 200) SPTSs inputs for basic monitoring including ETR290 priority1, bit rate alarms (PID, service, TS bit rate), scrambling alarms, Service missing, incorrect TS ID, IP/RTP alarms.
TNS4200-SW-AMMX	Software option - Enable advanced monitoring for (X= 1, 5, 10, 25) MPTS input including TR101 290 priority 2 and 3, extended EIT monitoring, template monitoring, (deviation of components down to the descriptors), DVB-T MIP, SCTE35 monitoring.
TNS4200-SW-AMP2	Software option - Enable monitoring of ETR290 priority 2 alarms and template alarms (one time license per unit) for SPTSs. This license is binary (on/off)
TNS4200-SW-QoESX	Software option - Enable the detection of black/freeze frames, audio silence (MP1L2 and AAC) and thumbnail display for (X=1, 10,.20) services.
TNS4200-SW-T2AXX	Software option - Enable the monitoring and analysis of (X=1, 5, 10) T2-MI streams. This license enables the monitoring of the T2-MI layer and enables the TS input to receive the T2-MI.
TNS4200-SW-PLPEXTX	Software option - Enable the extraction of (X=1, 5, 10) PLP from the T2-MI. The PLP is monitored according to ETR290 and treated as a TS.
TNS4200-SW-TSOX	Software option - Enable (X=1, 5, 10) TS outputs on IP (up to 4 IP destinations) or ASI (using available ports in TNS4200 chassis). Can be used to forward the streams to a remote location for confidence monitoring.
TNS4200-SW-AS2	Software option - Enable the advanced DVB-S2 profiles (16 APSK/32 APSK, ISSY, multi-stream). This option requires the NX-S/S2-DEMOD-X2-F hardware.
TNS4200-SW-FEC	Software option - Enable decoding and monitoring of FEC streams at the input (SMPTE2022-1).

CONTACT INFORMATION

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