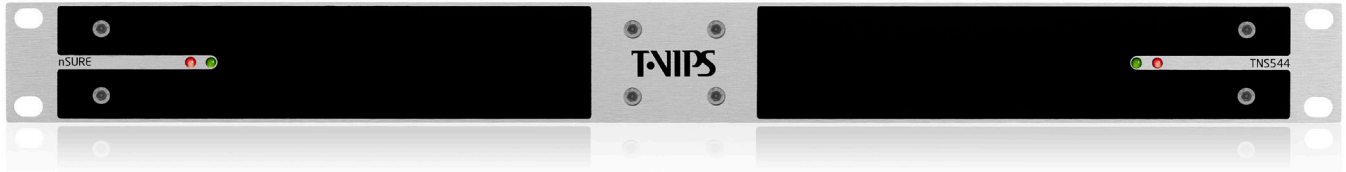


TNS544 TSoIP Switch



The TNS544 TSoIP Switch is an ideal solution for intelligent redundancy switch-over between MPEG Transport Streams in IP-based video centric networks.

It ensures robustness and maximises the uptime of your broadcast services by continuously monitoring all inputs and switches seamlessly to a back up if errors are detected or signal is lost.

The TNS544 is part of T-VIPS' nSure product line which is designed to ensure the delivery of high-quality video content. The nSure product line simplifies the monitoring, analysis and switching of transport streams and services throughout video broadcast networks.

The TNS544 offers flexible configuration of inputs, number of switches and outputs. It can be delivered with up to four 2:1 or two 4:1 switches in one device. All inputs are monitored simultaneously in each switch. Any delay differences between the inputs are automatically compensated enabling seamless switching without any disturbance to end users. The TNS544 also supports switching between non-identical Transport Streams without having sync loss on the output.

The TNS544 supports IP unicast and multicast, as well as output diversity in which a transport stream can be sent to multiple different unicast or multicast IP destinations. Powerful IP tools for FEC, Quality of Service (ToS/CoS), VLAN and routing are provided.

Applications

- IP-based video centric networks requiring top class reliability
- Satellite, terrestrial and cable distribution and contribution

Key Features

- **Intelligent Transport Stream switching**
 - Automatic/manual seamless switching
 - Automatic/manual network delay compensation
 - Fully transparent operation at TS packet level (no PCR restamping or packet re-ordering)
- **High density and flexible switch configuration**
 - Up to 4 independant switches in 1RU ½-width 19"
 - Configurable number of inputs per switch (2-4 inputs)
 - Output diversity (up to 8 TS over IP outputs per switch)
 - Fully configurable alarm based switching criteria
- **Extensive TS monitoring and error detection**
 - Simultaneous monitoring of all input MPEG Transport Streams
 - Error detection according to ETSI TR 101 290 specification
 - PCR analysis
 - Content alarms
 - PSIP related alarms from ATSC A/78
- **Industry-leading support for IP video technologies**
 - Two Gigabit Ethernet interfaces for TS over IP
 - IP multicast, unicast and multiple unicast support
 - Optional support for Ethernet over Sonet OC-3 / SDH STM-1
 - IP wrapping of Transport Streams using SMPTE 2022-2
 - Forward Error Correction according to SMPTE 2022-1
 - Support for multiple VLANs (IEEE 802.1Q)
- **User-friendly configuration and control**
 - WEB/XML based remote control
 - SNMP agent for easy integration with NMS systems
 - Integrated with T-VIPS Connect



TNS544 TSoIP Switch



Ethernet Interfaces

Type: 2 x 100/1000Base-T Ethernet
1 x SFP (option)

Connectors: RJ45 (100/1000Base-T), SFP

TS Encapsulation: SMPTE 2022-2

Forward Error Correction: SMPTE 2022-1

Protocols: IEEE 802.3 Ethernet, VLAN (802.1Q)
ARP, IPv4, UDP, TCP, RTP, IGMPv2/3

Switch Capabilities

No. of switches: 1-4 switches per unit

No. of input per switch: 2-4 TS inputs per switch

No. of outputs: 1-8 TS outputs copies per switch

Max TS over IP inputs: 8 (2x4)

Max TS over IP outputs: 32 (8x4)

Switching modes: Automatic with input prioritization
Manual switch-over

Redundancy switching: 2:1, 3:1 and 4:1 Redundancy switching

TS delay compensation: Automatic or manual

Monitoring and Analysis Features

Monitoring: TR 101 290 Priority 1-3 real-time monitoring of all inputs
Configurable thresholds values.

Transport Stream analysis: Effective and total bitrate.
Overview of all PIDs

Service analysis: Service Id, name and components

PID analysis: Type, scrambling and dynamic bitrate.
Graphical view of bitrate.
Bit rate monitoring with configurable min and max threshold for any PID

PCR analysis: Histogram view of jitter

Table analysis: Comprehensive PSI/SI/PSIP table analysis

SLA monitoring: Top level statistics of up time

Alarm log: Circular persistent log of up to 10 000 entries

Control and Management

Type: 1 x 10/100 Base-T Ethernet, RJ45

Features: Element control through HTTP/ WEB.
XML Configuration import and export via HTTP. SNMP traps for integration with NMS. SNMP MIBs for export of transport stream information and alarm status

Protocol: HTTP, XML, SNMPv2c

Local control: USB

Alarm Relay: 9 pin D-SUB

Maintenance Port: USB version 1.1

Physical and Power

Input Voltage: 100-240V AC +/- 10%, 50/60 Hz
Dual power supply (optional single PSU)

Dimensions: 1RU, full width 19" (optional 1/2-width)
(WxDxH) 420 x 300 x 44.5mm

Power Consumption: ~35 W

Environmental Conditions

Operating Temperature: 0°C - +50°C

Storage Temperature: -20°C - +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