<u>Datasheet</u>



$TNS544\,$ TSoIP Switch



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

It ensures robustness and maximizes 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 ASI and IP input signals as well as 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

- ASI/IP 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 re-stamping or packet re-ordering)
- Ignore Null Packets matching mode allows seamless switching between streams with different null-packet distribution

• High density and flexible switch configuration

- Up to 4 independent switches in 1RU
- Configurable number of inputs per switch (2-4 inputs)
- ASI hardware option enables seamless switching between ASI and IP input signals
- 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
 - Content alarms

• 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

ASI interface (option)

Inputs: 4 x DVB-ASI

Outputs: 4 x DVB-ASI (in passive mode each input is passed through to its corresponding output)

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 (2×4)
Max TS over IP outputs:	32 (8x4)
Switching modes:	Automatic with input prioritization Manual switch-over
Matching modes:	Normal or Ignore Null Packets mode
Redundancy switching:	2:1, 3:1 and 4:1 Redundancy switching
TS delay compensation:	Automatic or manual

Monitoring and Analysis Features

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Monitoring:	ETR 101 290 Priority 1 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.
Alam log:	Circular persistent log of up to 10 000 entries.

Dual AC PSU version (1RU, full width 19")

Control and Management

Туре:	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 AC Power Supply
Input Voltage Option:	-48V DC
Dimensions:	1RU, full-width 19' (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: 7 8	73/23/EEC (Low voltage equipment) 39/336/EEC (Electromagnetic compatibility)
	Designed for CEA approval

CSA: Designed for CSA approval

Safety: IEC60950 and EN60950

EMC: EN55022, EN55024, EN6100-3-2

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T-VIPS continuously improves its product portfolio and reserves the right to modify the specifications without prior notice. Revision Date: 06.2012