



V2-1G-8M-TSN Test Module

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With the advantages of high bandwidth, universal Ethernet protocols, and precise control of network KPIs, Time sensitive Networking (TSN) can meet the development needs of digital and intelligent industrial networks. Targeting on the evolution direction of next-generation industrial network technology, TSN has formed a consensus in the industry. A powerful and professional testing tool is essential for widely used of any technology. The XINERTEL TSN test module can provide TSN test solution for automotive and industrial Ethernet.

Key Features

- Support 8-port Dual-PHY SFP and RJ45
- 10/100/1000M speed support on copper RJ45 port, 100/1000M speed support on fiber ports
- Support 100/1000BASE-T1 photoelectric conversion module
- All speeds support L2-3 traffic generation and protocol emulation
- Support FPGA based 100% line rate traffic generation, statistics, and packet capture
- Real-time statistics with resolution of 8ns
- Support the benchmark test suites such as RFC2544, RFC2889, and RFC3918
- Language for test software GUI: English and Chinese
- Language for test report: English and Chinese

Models

Product Name	Product Description	Product Classification
V2-1G-8M-TSN Test Module	8-port RJ45/SFP (Combo interface) 1G TSN test module	BigTao Series Test Module

Specifications

Hardware and Electrical Characteristics	
Port speed	Electric port: 10M/100M/1000M; Optical port: 100M/1000M
Port density	8 RJ45 electrical ports and 8 SFP optical ports for single module
Interface standards	1000BASE-SX, 1000BASE-LX, 10/100/1000BASE-T, 100BASE-FX and 100/1000Base-T1
Port occupation	Occupation by single port
Speed switching	Auto negotiation
Weight (kg)	1.1
Dimensions (W×H×D)	196mm×35.5mm×271mm
Temperature	0° C to 35° C
Humidity	20% to 85%
Max power consumption (W)	31 W
Traffic generation	
Max streams per port	64
Frame length (Bytes)	Electric port: 60-16383; 1000M optical port: 60-16383; 100M optical port: 60-9215
Dynamic controls for Frame length	Fixed, Increment, Decrement, Random, Auto, and IMIX
Dynamic fields	Four dynamic fields are available for each stream ; Support multiple dynamic controls such as Fixed, increment, Decrement, List, and Random.
Sending mode	Continuous, Burst, and Time Burst modes based on port; Continuous and Burst modes based on flow
Rate modify	Modify by port or flow
Latency and jitter	LIFO, FIFO , LILO, and FILO
Timestamp resolution	8 nanoseconds
Built-in protocol templates	VLAN, ICMP, PPPoE, GRE, DHCP, L2TP, IPv6, MPLS, GTP, GOOSE, VXLAN, OSPF, TCP and UDP, etc.
Customized frame	Support customizing the frame, and the edited frame template can be saved; Customized field can be checked with checksum.
Customized payload	Support importing the 32K bytes customized payload and the first 256 bytes can be adjusted with jumping
Packet error generation	CRC error, Undersize frame, Jumbo frame
Flow control	Full duplex flow control, half duplex back pressure

Flow Statistics	
Statistical streams per port	256
Statistical pattern	Csv statistics, chart statistics, automatic saving of csv files
Statistics(Port)	Tx/Rx Frames, Tx/Rx Frame Rate, Receive Bandwidth, Error Frame Statistics, Filter Statistics, and Custom Statistics, FCS Error Statistics, TCP/UDP Checksum Errors, Pause Frame Statistics, etc.
Statistics(Flow)	Tx/Rx Frames, Tx/Rx Flow rate, Rx Bandwidth, Error frame statistics, Real-time packet loss statistics, out of order statistics, delay jitter and custom statistics, etc.
Statistics operation	Support sorting of statistical results, performing mathematical operations such as addition, subtraction, multiplication, and division, and customizing the number of statistical entries for each page, etc..
Capture	
Capture buffer (Byte)	512 M per port
Capture pattern	Capture of data and receive frames of the control plane, ; Capture of sending and receiving frames of the control plane; Capture based on filter templates; Capture filtered error packets; Capture buffer overwriting; Support specifying the number of downloaded capture packets.
Protocol emulation	
Routing and MPLS	RIPv1v2, RIPv6, OSPFv2, OSPFv3, ISISv4, ISISv6, BGP, BGP4+, LDP, MPLS L3VPN, VPLS, VLL, 6VPE and 6PE
Access	PPPoE Client/Server, DHCPv4 Client/Server, DHCPv6 Client/Server, DHCPv6 PD Client/Server, L2TPv2 and 802.1x
Multicast	IGMPv1/v2/v3, MLDv1/v2, IGMP/MLD Querier and PIM-SM
Data center	VXLAN, OpenFlow, OVSD, EVPN and LACP
Other	BFD, 802.1ag, 802.3ah and IPv6 Auto-configuration
Benchmark test	RFC2544, RFC2889, RFC3918, asymmetric testing, and intelligent scripting
TSN protocol	802.1AS, 802.1QAV, 802.1Qbv, 802.1Qci, 802.1Qbu, 802.1CB and 1722 etc.
Software Platform	
Client software	RENIX
API	TCL, Python3.x, GUIToTCL and GUIToPython
GUI language	English and Chinese
Hardware Platform	
Chassis	BigTao220 and BigTao6200
Chassis operating system	Linux CentOS7.X