

DUAL GIGABIT ETHERNET TRANSCEIVER

Extending the flexibility of the EPX™ and TransPort™ Test Systems, the Dual Gigabit Ethernet module is a transceiver that provides the highest port density available for testing multi-layer Ethernet equipment. With many user-defined settings, the Dual Gigabit Ethernet module generates and analyzes traffic. It also tracks transmit and receive statistics.

EXPANDABLE MULTIPLE RATE TESTING

Unlike other test equipment, gnubi's™ test products give you the flexibility to create the test applications that you need now and the expandability to grow with your testing needs in the future. You can mix the Dual Gigabit Ethernet Transceiver with other gnubi telecom test and data modules in a single chassis for multiple rate testing.

SIMULTANEOUS MULTI-CHANNEL TESTING

With the Dual Gigabit Ethernet Transceiver, you can install as many as 17 modules in an EPX16™ chassis for simultaneous multi-channel testing. Using EPXam tools such as Group Manager, Test Controls, or Script Runner, control multiple instances of the same test simultaneously. Or conduct different tests at the same time.

TRAFFIC GENERATION

The Dual Gigabit Ethernet Transceiver module provides tremendous flexibility in traffic generation. Virtually all frame parameters are user configurable, including MAC and IP headers, payload contents, frame size, and checksums.

A sequence of 16 unique frames can be defined. This sequence of frames forms the basis of a test in which frames can be generated continuously, a specified number of times, or a specified amount of time.

A powerful set of error generation capabilities are also provided. For example, you can configure frames to contain FCS errors, payload bit errors, or random (physical) errors. Insert errors one at a time or at a specified rate.

TRAFFIC ANALYSIS

The Dual Gigabit Ethernet Transceiver provides a comprehensive set of statistics. These statistics are collected in real time and displayed in EPXam. PRBS pattern checking enables you to see the exact number of bit errors that are occurring, instead of simply indicating that a checksum has failed.

EASY TO USE

You can start testing quickly and easily with the EPXam graphical user interface. Other ease-of-use features include saving and restoring configurations, connecting remotely with a web browser, scripting, and sharing resources with other users.

UPGRADABLE

As new features are developed for gnubi's test modules, download the upgrades from our website. Visit www.gnubi.com to learn about the latest features and upgrades.



Features

- Highest port density on the market
- Two independent ports per module
- As many as 34 Gigabit Ethernet ports in a single EPX16 chassis
- Wire-speed traffic generation and analysis
- Up to 16 customizable frames per sequence
- Auto-negotiation
- Continuous, loop count, and timed modes
- 22-byte to 16-kbyte frame length
- User-defined MAC/IP addresses
- Layer 2, 3, or 4 encapsulation
- PRBS pattern checking
- Powerful error generation
- Full-featured graphical and command-line user interfaces
- Multi-user, remote access via web browser

Applications

- Production, validation, and metro market applications that test multiple rates and channels
- Networking device load generation
- Analysis of equipment's error-handling capability
- Performance measurement for MSPPs, switches, and routers

Specifications

Dual Gigabit Ethernet Transceiver

Model	EPX5000	Dual Gigabit Ethernet Transceiver
Installation	All gnuBi chassis models; uses one slot	
Signal Rate	1000 Mbps	
Physical Interface	LC optical fiber	1000Base-SX (850 nm multimode) 1000Base-LX (1310 nm single mode)
	Sensitivity/Overload	850 nm: -18 (max)/0 (min) dBm 1310 nm: -20.5 (max)/-3 (min) dBm
	Output	850 nm: $P_0 = -9.5/-4$ dBm (minimum/maximum) 1310 nm: $P_0 = -9.5/-3$ dBm (minimum/maximum)
	Power meter	± 3 dBm
	Ports	Two transceiver ports per module
Traffic Generation	Frame Length	22 bytes to 16 kbytes; fixed or user-defined
	Frame Definitions	Up to 16 user-defined
	Interframe Gap	User-defined (32 nsec to 1 minute)
	Operating Modes	Continuous, loop count, or timed
Addresses	MAC/IP	User defined
Data Patterns	PRBS	True and Inverted: $2^{15}-1, 2^{20}-1, 2^{23}-1$
	Other	All ones, all zeroes, or 2, 4, 8, 16, or 32-bit user-defined pattern Increment/decrement byte
Layer Encapsulation	Layer 2	Ethernet II
	Layer 3	IP v4
	Layer 4	UDP
Error Insertion	Frame Length	Oversize or undersize
	FCS	Off, correct, and incorrect; Insert a single error or at IE-3 to IE-9 rates
	Payload, Random	Insert a single error or at IE-3 to IE-9 rates
	Other	Symbol errors
Protocol Support	Auto-negotiation, flow control	
Statistics	Rx and Tx	Frames, valid frames, frame rate, valid frame rate, errored frames, errored frame rate, FCS errored frames, oversize and undersize frames, valid length with FCS errors, bytes, valid frame bytes, errored frame bytes, bit rate, valid frame bit rate, errored frame bit rate
	Pattern Checking	Rx and Tx: Frames with LPS, bytes compared, bit errors, bit error rate
Traffic Analysis	Logging	
	Pattern Checking	Pattern placement at layer 2, 3, or 4
Operating Temperature	0 to 40° Celsius, non-condensing	
Warranty and Service	Standard	1 year parts and labor
	Extended	Service Plan available

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