XenaBay Series

Modular Ethernet Test Systems

Specifications

Port Level Features

XenaBay system	M1CFP100 / M2CFP40	M2XFP/SFP+/CX4 / M6SFP+	M6SFP
Interface category	100G, 40G, and 10G Ethernet	10G Ethernet	10/100/1000M Ethernet
Number of test ports	1 x 100G / 2 x 40G / 8 x 10G	2 / 2 / 2 / 6	6 x 10/100/1000M
Interface options	M1CFP100 : 1 x 100GBASE-LR4 1 x 40GBASE-LR4 1 x 100GBASE-SR10 [2] 2 x 40GBASE-SR4 [2] 8 x 10GBASE-SR [2] M2CFP40 : 1 x 40GBASE-LR4 2 x 40GBASE-SR4 [2] 8 x 10GBASE-SR [2]	M2XFP : 2 x 10GBASE-SR / LR / ER M2SFP+ : 2 x 10GBASE-SR / LR / ER M2CX4 : 2 x 10GBASE-CX4 M6SFP+ 6 x 10GBASE-SR / LR / ER	10/100/1000BASE-T [1] 1000BASE-X (SFP-MSA) 100BASE-FX [3] 100BASE-BX [3]
Number of transceiver module cages	1 x CFP	2 x XFP / 2 x SFP+ / - / 6 x SFP+	6 x SFP
Port statistics [4]	Link state, FCS errors, pause frames, ARP/PING, error injections, training packet All traffic: RX and TX Mbit/s, packets/s, packets, bytes Traffic w/o test payload: RX and TX Mbit/s, packets/s, packets, bytes		
Adjustable Inter Frame Gap (IFG)	Configurable from 16 to 56 bytes, default is 20B (12B IFG + 8B preamble)		
Transmit line rate adjustment	Ability to adjust the effective line rate by forcing idle gaps equivalent to range of ±400 ppm, in increments of 10 ppm		
ARP/PING	Supported (configurable IP and MAC address per port)		
Field upgradeable	System is fully field upgradeable to product releases (FPGA images and Software)		
Histogram statistics [4]	Two real-time histograms per port. Each histogram can measure one of RX/TX packet length, IFG, or Latency distribution for all traffic, a specific stream, or a filter		

Transmit Engine

XenaCompact system	M1CFP100 / M2CFP40	M2XFP/SFP+/CX4 / M6XFP+	M6SFP
Number of transmit streams per port	64 (wire-speed)	256 (wire-speed)	32 (wire-speed)
	Each stream can generate millions of traffic flows through the use of field modifiers		
Test payload insertion per stream	Wire-speed packet generation with timestamps, sequence numbers, and data integrity signature optionally inserted into each packet.		
Stream statistics [4]	TX Mbit/s, packets/s, packets, bytes, FCS error, Pause		
Bandwidth profiles	Burst size and density can be specified. Uniform and bursty bandwidth profile streams can be interleaved		
Field modifiers	16-bit header field modifiers with inc, dec, or random mode. Each modifier has configurable bit-mask, repetition, min, max, and step parameters.		
	2 modifiers per stream	5 modifiers per stream	2 modifiers per stream
Packet length controls	Fixed, random, butterfly, and incrementing packet length distributions. Packet length from 56 to 16384* bytes		
Packet payloads	Repeated user specified 1 to 18B pattern, a 8-bit incrementing pattern		
Error generation	Undersize length (56 bytes min.) and oversize length (16384* bytes max.) packet lengths, injection of sequence, misorder, payload integrity, and FCS errors		
TX packet header support and RX auto-decodes	Ethernet, Ethernet II, VLAN, ARP, IPv4, IPv6, UDP, TCP, LLC, SNAP, GTP, ICMP, RTP, RTCP, STP, MPLS, PBB, or fully specified by user		

*(*only 9200 bytes in 40 & 100G mode)*

1) Requires Finisar SFP module FCLF-8521-3 with sgmii host interface
2) Requires Reflex Photonics CFP 100GBASE-SR10 Parallel Optical Module
3) Requires Source Photonics SFP modules with sgmii host interface
4) counter size: 64 bits

XENA NETWORKS

Specifications

Receive Engine

XenaBay system	M1CFP100 / M2CFP40	M2XFP / SFP+ / CX4	M6SFP
Number of traceable Rx streams per port	512 (wire-speed)	2048 (wire-speed)	680 (wire-speed)
Automatic detection of test payload for received packets	Real-time reporting of statistics and latency, loss, payload integrity, sequence error, and misorder error checking		
Stream statistics [4)]	RX Mbit/s, packets/s, packets, bytes. Loss, payload integrity errors, sequence errors, misorder errors Min latency, max latency, average latency		
Latency measurement accuracy	±8 ns, in module ±16 ns, between modules	±8 ns, in module ±16 ns, between modules	±16/32 ns, in module (o/e) ±32/48 ns, between module
	Latency measurements can calibrate and remove latency from transceiver modules		
Number of filters: - 64-bit user-definable match-term patterns with mask, and offset - frame length comparator terms (longer, shorter) - user-defined filters expressed from AND/OR'ing of the match and length terms.	4 4 4	6 6 6	6 6 6
Filter statistics [4)]	Per filter: RX Mbit/s, packets/s, packets, bytes.		

Capture

XenaBay system	M1CFP100 / M2CFP40	M2XFP / SFP+ / CX4	M6SFP
Capture criteria	All traffic, stream, FCS errors, filter match, or traffic without test payloads		
Capture start/stop triggers	Capture start and stop trigger: none, FCS error, filter match		
Capture limit per packet	16 – 16384* bytes		
Wire-speed capture buffer per port	384 kB	64 kB	16 kB
Low speed capture buffer per port (10Mbit/s speed)	4096 packets (any size)		

*(*only 9200 bytes in 40 & 100G mode)*

100/40G framed BERT and PCS layer

XenaBay system	M1CFP100 / M2CFP40
Payload Test pattern	PRBS 2^31
Error Injection	Manual single shot bit-errors or bursts, automatic continuous error injection
Frame size and header	Fixed size from 56 to 16484* bytes, any layer 2/3/4 frame header
Alarms	Pattern loss, bit-error rate threshold
Error analysis	Bit-errors: seconds, count, rate Mismatch '0' / '1': seconds, count, rate Logging and analysis of bit-error event timing
PCS virtual lane configuration	User defined skew insertion per Tx virtual lane, and user defined virtual lane to SerDes mapping for testing of the Rx PCS virtual lane re-order function.
PCS virtual lane statistics	Relative virtual lane skew measurement (up to 2048 bits), sync header and PCS lane marker error counters, indicators for loss of sync header and lane marker, BIP8 errors
PCB Tx line clock adjustment	Ability to adjust the parts per million (ppm) Tx frequency over a range of -400 to +400 ppm

*(*only 9200 bytes in 40 & 100G mode)*

Chassis Specifications

4U PHYSICAL
- 4.64" (H) x 17" (W) x 17.9" (D)
- Four Rack Unit (RU) high
- Color: Black

ENVIRONMENTAL
- Operating Temperature: 10 to 35° C
- Storage Temperature: -40 to 70° C
- Humidity: 8% to 90% non-condensing

POWER
- AC Voltage: 100-240 VAC
- Max watt: 120W (chassis)

REGULATORY - FCC (US), CE (Europe)

XENA NETWORKS

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