

# XenaCompact Series

## Compact Ethernet Test Systems



## Specifications

### Port Level Features

XenaCompact system	C1-M1CFP100 / C1-M2CFP40	C1-M2XFP / SFP+ / CX4	C1-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 x 10G	6 x 10/100/1000M
Interface options	C1-M1CFP100 : 1 x 100GBASE-LR4 1 x 40GBASE-LR4 1 x 100GBASE-SR10 (CXP) <sup>2)</sup> 2 x 40GBASE-SR4 (QSFP) <sup>2)</sup> 8 x 10GBASE-SR <sup>2)</sup> C1-M2CFP40 : 1 x 40GBASE-LR4 2 x 40GBASE-SR4 (QSFP) <sup>2)</sup> 8 x 10GBASE-SR <sup>2)</sup>	C1-M2XFP : 2 x 10GBASE-SR 2 x 10GBASE-LR 2 x 10GBASE-ER C1-M2SFP+ : 2 x 10GBASE-SR 2 x 10GBASE-LR C1-M2CX4 : 2 x 10GBASE-CX4	10/100/1000BASE-T <sup>1)</sup> 1000BASE-X (SFP-MSA) 100BASE-FX <sup>3)</sup> 100BASE-BX <sup>3)</sup>
Number of transceiver module cages	1 x CFP cage	2 x XFP / 2 x SFP+ cages	6 x SFP cages
Port statistics <sup>4)</sup>	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 <sup>4)</sup>	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	C1-M1CFP100 / C1-M2CFP40	C1-M2XFP / SFP+ / CX4	C1-M6SFP
Number of transmit streams per port	256 (wire-speed) 65535 (low-speed)	256 (wire-speed) 65535 (low-speed)	32 (wire-speed) 65535 (low-speed)
Test payload insertion per stream	Each stream can generate millions of traffic flows through the use of field modifiers Wire-speed packet generation with timestamps, sequence numbers, and data integrity signature optionally inserted into each packet.		
Stream statistics <sup>4)</sup>	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	Two 16 bit modifiers per stream with inc, dec, or random mode, with mask, repetition, min, max, and step parameters per modifier		
Packet length controls	Fixed, random, butterfly, and incrementing packet length distributions. Packet length from 56 to 16383 bytes		
Packet payloads	Repeated user specified 1 to 18B pattern, a 8-bit incrementing pattern		
Error generation	Undersize length (56B min) and oversize length (16384 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		

1) Requires Finisar SFP module FCMJ-8521-3 with sgmi host interface

2) Requires Reflex Photonics CFP module CFP 100GBASE-SR10 Parallel Optical Module (<http://reflexphotonics.com/interboard-cfp.htm>)

3) Requires Source Photonics SFP modules with sgmi host interface

4) counter size: 64 bits

# Specifications

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## Receive Engine

XenaCompact system	C1-M1CFP100 / C1-M2CFP40	C1-M2XFP / SFP+ / CX4	C1-M6SFP
Number of traceable Rx streams per port	2048 (wire-speed) 65335 (low-speed)	2048 (wire-speed) 65535 (low-speed)	680 (wire-speed) 65535 (low-speed)
Automatic detection of test payload for received packets	Real-time reporting of statistics and latency, loss, payload integrity, sequence error, and disorder error checking		
Stream statistics <sup>4)</sup>	RX Mbit/s, packets/s, packets, bytes. Loss, payload integrity errors, sequence errors, disorder errors Min latency, max latency, average latency		
Latency measurements accuracy	8 ns	16 ns	16/32 ns (opto/elec)
	Latency measurements can calibrate and remove latency from transceiver modules		
Filters	6 x 64-bit user definable match term patterns with mask, and offset 6 frame length comparator terms (longer, shorter) 6 user defined filters expressed from AND/OR'ing of the 6 match and 6 length terms.		
Filter statistics <sup>4)</sup>	Per filter: RX Mbit/s, packets/s, packets, bytes.		

## Capture

XenaCompact system	C1-M1CFP100 / C1-M2CFP40	C1-M2XFP / SFP+ / CX4	C1-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)		

## 100/40G framed BERT and PCS layer

XenaCompact system	C1-M1CFP100 / C1-M2CFP40 only
Payload Test pattern	PRBS 2 <sup>31</sup>
Error Injection	Manual single shot bit-errors or bursts, automatic continuous error injection
Frame size and header	Fixed size from 56B to 16484B, 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

## Chassis Specifications

### 1U PHYSICAL

- One Rack Unit (RU) high, color Black
- 1.7" (H) x 17.2" (W) x 9.8"(D)
- Weight: 10.0 lbs (4.5 kg)

### 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,
- REGULATORY
- FCC (US), CE (Europe)



**Xena Networks ApS**  
 Gammel Moent 19A  
 DK-1117 Copenhagen K  
 Denmark  
 Phone: +45 7020 0823  
 Fax: +45 6980 3398

**Xena Networks USA**  
 945 Concord Street #1200  
 Framingham, MA 01701  
 USA  
 Phone : +1 508-358-0127  
 Fax : +1 508-342-7018

**Sales contact:**  
 sales@xenanetworks.com