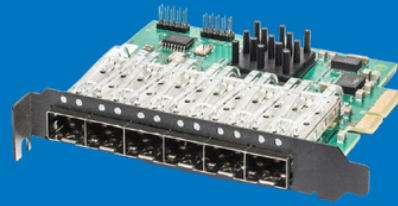# Z01sx Odin

1Gbps Ethernet Traffic Generator with 6 SFP ports

Key Features

- Supports Priority FlowControl (PFC)

- 256 tx streams

- 6 modifiers per stream

The Z01sx Odin is a 6 port 1Gbps Ethernet traffic generator. This enhanced version of the entry level Z01s Odin offers more transmit streams (256 instead of 32) six modifiers per stream (instead of 2) as well as support for Priority Flow Control.

The Z01sx Odin is available for both the 4U 12-slot Xena B720/2400 chassis and the robust transportable 1U XenaCompact chassis, and is provided with Xena's full range of complimentary software.

Find out more here:

PORT LEVEL FEATURES	
Interface category	10/100/1000M Ethernet
Total number of test ports (software configurable)	6 x 10/100/1000M
Interface options	10/100/1000BASE-T* or 1000BASE-X (SFP-MSA) or 100BASE-FX** or 100BASE-BX** *Requires Finisar SFP transceivers FCLF-8521-P2BTL with sgmii host interface* **Requires Source Photonics SFP transceivers with sgmii host interface*
Number of physical interface form factor	6 x SFP
Port statistics (counter size: 64 bits)	• 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 FrameGap (IFG)	Configurable from 16 to 63 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 -1000 ppm (increments of 10 ppm)
Transmit line clock adjustment	From -400 to 400 ppm in steps of 0.001 ppm (shared across all ports)
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 (counter size: 64 bits)	Two real-time histograms per port. Each histogram can measure one of RX/TX packet length, IFG, jitter, or latency distribution for all traffic, a specific stream, or a filter
Tx disable	Enable/disable of copper link
IGMPv2 multicast join/leave	IGMPv2 continuous multicast join, with configurable repeat interval
Oscillator characteristics	• Initial Accuracy is 3 ppm • Frequency drift over 1st year: ± 3 ppm (over 15 years: ± 15 ppm) • Temperature Stability: ± 20 ppm (Total Stability is ± 35 ppm)

TRANSMIT ENGINES	
Number of transmit streams per port	256 (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 (counter size: 64 bits)	TX Mbit/s, packets/s, packets, bytes, FCS error
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. 6 modifiers per stream
Packet length controls	Fixed, random, butterfly, and incrementing packet length from 56 to 16384 bytes (10M: 6500)
Packet payloads (basic)	Repeated user specified 1 to 18B pattern, an 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 autodecodes	Ethernet, Ethernet II, VLAN, ARP, IPv4, IPv6, UDP, TCP, LLC, SNAP, GTP, ICMP, RTP, RTCP, STP, MPLS, PBB, or fully specified by user
Pause Frames	Responds to incoming pause and PFC (Priority-based Flow Control) frames
Packet scheduling modes	- Normal (stream interleaved mode) – standard scheduling mode, precise rates, minor variation in packet inter-frame gap. - Strict Uniform – new scheduling mode, with 100% uniform packet inter-frame gap, minor deviation from configured rates. - Sequential packet scheduling (sequential stream scheduling). Streams are scheduled continuously in sequential order, with configurable number of packets per stream. - Burst. Packets in a stream are organized in bursts. Bursts from active streams form a burst group. The user specifies time from start of one burst group till start of next burst group.

RECEIVE ENGINE	
Number of traceable Rx streams per port	2016 (wire-speed)
Automatic detection of testpayload for received packets	Real-time reporting of statistics and latency, loss, payload integrity, sequence error, and misorder error checking
Jitter measurement	Jitter (Packet Delay Variation) measurements compliant to MEF10 standard with 8 ns accuracy Jitter can be measured on up to 32 streams
Stream statistics	- RX Mbit/s, packets/s, packets, bytes. - Loss, payload integrity errors, sequence errors, misorder errors - Min latency, max latency, average latency - Min jitter, max jitter, average jitter
Latency measurements accuracy	±16/32 ns (opto/elec)
Latency measurement resolution	8 ns (Latency measurements can calibrate and remove latency from transceiver modules)
Number of filters:	6 x 64-bit user-definable match-term patterns with mask, and offset 6xframe length comparat or terms (longer,shorter) 6 x user-defined filters expressed from AND/OR'ing of the match and length terms
Filter statistics	Per filter: RX Mbit/s, packets/s, packets, bytes.

CAPTURE	
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	16 kB
Low speed capture buffer per port (10Mbit/s speed)	4096 packets (any size)

HW SPECIFICATIONS	
Max. Power	5.5 W
Weight	0.37 lbs (0.165 kg)
Environmental	• Operating Temperature: 10 to 35ºC • Storage Temperature: -40 to 70ºC • Humidity: 8% to 90% non-condensing
Regulatory	FCC (US), CE (Europe)

Ordering Information

Product Description

- Z01sxc Odin- XenaCompact 1U chassis with 1GE 3-speed, 6-port test module (SFP ports)
- Z01sx Odin 10GE 6-speed, 6-port test module (SFP+)

Product Code

C-Odin-1G-3S-6P-E
Odin-1G-3S-6P-E