TELEDYNE LECROY
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Z01t Odin

1Gbps Ethernet Traffic Generator with 6 x 100/1000M Base-T1 copper ports

Key Features

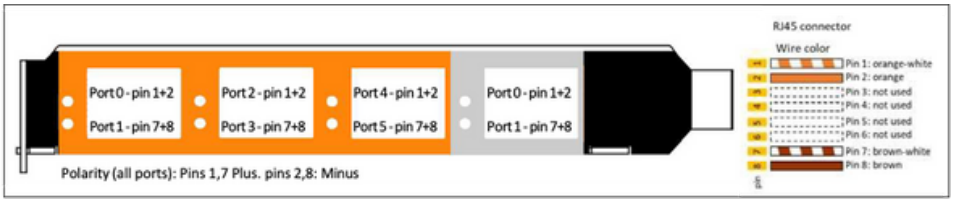
- Designed for testing Automotive Ethernet
- Native 1000BASE-T1 and 100BASE-T1 interfaces
- Choice of chassis
- Predefined test suites for RFC 2544
- Industry's best automation options

The Z01t Odin is a 2-speed 6-port 1Gbps/100Mbps Ethernet traffic generator designed for testing Automotive Ethernet.

The module has native 1000BASE-T1 and 100BASE-T1 interfaces making it ideal for testing Automotive Ethernet up to 1Gbps.

It comes complete with a full range of test software (as part of the Xena Value Pack) which includes predefined test suites for RFC 2544, and comprehensive test automation options.

The Z01t Odin is available for Xena's 4U 12-slot B720/2400 chassis and our robust easy-to-transport1U Compact chassis.



Find out more here:

PORT LEVEL FEATURES	
Interface category	100/1000M Ethernet
Total number of test ports (software configurable)	6 x 100/1000M
Interface options	1000BASE-T1 or 100BASE-T1
Number of physical interface form factor	6 x RJ45 (100/1000M), - see graphic above
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 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 -1000 ppm (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 (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 distributions from 56 to 16384 bytes
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	±8 ns
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 100/1000M Ethernet	
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	10W
Weight	0.33 lbs (0.15 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

- Z01tc Odin XenaCompact 1U chassis with 1GE 2-speed test module for 6 x 100/1000M Base-T1 copper
- Z01t Odin 1GE 2-speed test module for 6 x 100/1000M Base-T1 copper

Product Code

C-Odin-1G-3S-6P-T1-RJ45
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Local sales offices are located throughout the world. Visit our website to find the most convenient location.

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