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IXIA Power over Ethernet Load Modules

This chapter provides details about Power over Ethernet (PoE) Load Modules—specifications and features.

Ixia's Power over Ethernet (PoE) Load Modules are used to test Power Sourcing Equipment (PSE) in accordance with IEEE Std 802.3af. The PoE Load Modules emulate Powered Devices (PDs) with programmable characteristics, and include data acquisition circuits for measuring voltage, current, and time.

The PoE Load Modules are intended to be used in conjunction with Ixia's line of Ethernet traffic generator/analyzer load modules. The PoE Load Modules handle the detection, classification, and power loading aspects of 802.3af, while passively conveying Ethernet data between the PSE and the traffic generator/analyzer load modules.

Ixia offers two models of PoE Load Modules. The basic model (PLM1000T4-PD) is rated for 20 Watts continuous power dissipation per port. The advanced module (LSM1000POE4-02) is rated for 30 Watts per port, and has several additional advanced features, including configurable ZAC2 settings. Both models include 4 independent and isolated PD emulators on a single-slot load module.

Figure 17-1. PLM1000T4-PD Load Module

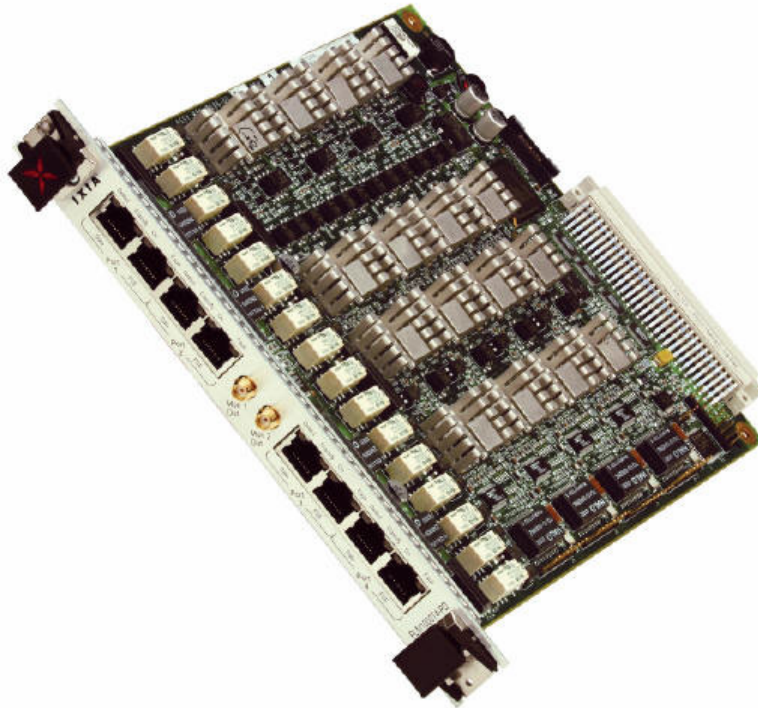


Figure 17-2. PLM1000T4-PD Load Module Face Plate



Part Numbers

The part numbers are shown in [Table 17-1](#). Items without a *Price List Name* entry are no longer available.

Table 17-1. Part Numbers for Gigabit Modules

Load Module	Price List Name	Description
PLM1000T4-PD	PLM1000T4-PD	4-port PoE Load Module, 20W/Port, emulating Powered Devices.
LSM1000POE4-02	LSM1000POE4-02	4-port PoE Load Module, 30W/Port, emulating Powered Devices.

Specifications

The load module specifications are contained in the following table. The limitations of -3, Layer 2/3, and Layer 7 cards are discussed in *Ixia Load Modules* on page 1-5.

Table 17-2. PoE Load Module Specifications

	PLM1000T4-PD	LSM1000POE4-02
# ports	4	4
Data Rate	10/100/1000 Base-T	10/100/1000 Base-T
Connector	RJ-45	RJ-45
R_SIG Range/ Resolution	2–45k/200 Ohms	2–45k/200 Ohms
C_SIG Range/ Resolution	0–220nF/10nf	0–220nF/10nf
I_CLASS Range	–60mA	0–60mA
I_CLASS Resolution/ Accuracy	0.25mA	0.25mA
DC MPS Range/ Resolution	0–60mA/0.25mA	0–60mA/0.25mA
AC MPS R_PD Range/Resolution	Zac1: 10–45k/200 Ohms Zac2: Fixed/ > 4 Ohms	Zac1: 10–45k/200 Ohms Zac2: 200–1200k/ 8k
AC MPS C_PD Range/Resolution	0–220nF/10nF	0–220nF/10nF
Data Acquisition Sample Rate	5MSPS	5MSPS
Data Acquisition Voltage Range/ Resolution/ Accuracy	0–64V/10 bits/0.5%	0–64V/10 bits/0.5%
Data Acquisition Current Range/ Resolution/ Accuracy	0–1024mA/10 bits/0.5%	0–1024mA/10 bits/ 0.5%
Data Acquisition Power Readback Accuracy	100mW	100mW
Maximum Continuous Power	20W per port	30W per port
Load Modes	Constant Current (CC) Power (CP)	Constant Current (CC) Power (CP)

Table 17-2. PoE Load Module Specifications

	PLM1000T4-PD	LSM1000POE4-02
Pulse Modes (CC only)	Single, Continuous, Inrush	Single, Continuous, Inrush
Programmable Pulse Parameters	Amplitude, Width, Duty, Slew Rate	Amplitude, Width, Duty, Slew Rate

Port LEDs

Each port incorporates a set of LEDs, as described in [Table 17-3](#) on page 17-4.

Table 17-3. PoE Load Module Port LEDs

LED Label	Usage
Detect	When green, indicates the PSE is in the detection process.
Classify	When green, indicates the PSE is in the classification process.
Powered	When green, indicates the PSE is powering the emulated PD.
Fault	When red, indicates the PSE has performed an illegal operation. PoE disconnects under a fault condition until the PSE resets.

Test Monitor Output Ports

There are two test monitor output ports on each PoE module, used to measure the power/current into a selected port. These ports can be used in conjunction with an oscilloscope to view input characteristics. The ports have the following scale:

Table 17-4. Test Monitor Ports

Factor	Measurement
DC Measurements	62.5mV out/Volts input
DC Current	4mV out/ mA Input
AC Measurement	.05V out/Volts Input (Planned Feature)

Statistics

Statistics counters for PoE cards may be found in [Table B-6](#) on page B-9.