



## ColdFusion2 - 2 Slot, Layer 1 Switch - Data Sheet

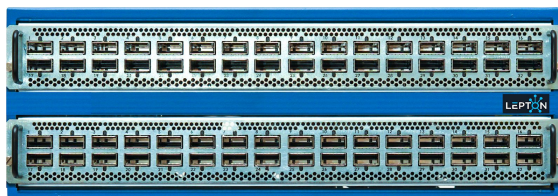
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### OVERVIEW

When considering a layer 1 switch you no longer have to choose between performance, features and affordability. ColdFusion is the only Layer 1 Switch to offer:

- Multimode, Singlemode, AOC, DAC, PSM4, RJ-45 Copper
- Any speed ranging between 10Mbps up through 128Gbps
- Protocol agnostic support including FC, Ethernet, OTN, 1394A/B
- Flexible port count configurations including 32, 64, 128 and 256 port architectures
- High density: 4 rack units for fully populated system
- Full wire-speed unicast, multicast/broadcast and arbitrated loop
- Port level diagnostics

ColdFusion offers best in class features sets in an affordable design.



### Benefits

Lepton's ColdFusion Layer 1 switch addresses the final roadblock in complete test lab automation: the physical layer. Once wired to ColdFusion, test configurations can be initiated using remote commands or API scripting to fully automate tests, eliminating the need for manual set-up. This greatly improves CAPEX and OPEX and optimizes any test automation software deployment.

## System Details

ColdFusion's Optical-Electrical-Optical (OEO) architecture is protocol agnostic Layer 1 switch with sub 50 ms connection time, zero insertion loss, and a fixed, deterministic latency of <50ns.

The chassis includes an integrated fabric, control components, and a replaceable fan unit mounted on the back panel which operates at a variable speed, and adjusts automatically with the system temperature. ColdFusion supports 2 redundant, hot-swappable AC or DC power supplies.

The ColdFusion switch supports up to two modular data blades for scalable applications. Using the 64 SFP port blade, the system scales up to 128ports of SFP/SFP+ and/or SFP28 ports supporting bit rates up to 28Gbps. Using the 32 QSFP port blade, the system scales to either 64 ports of native QSFP/QSFP+ and or QSFP28 ports supporting up to 128GBps or, implementing industry standard breakout cables, you can scale this system up to 256 SFP client interface ports supporting up to 28GBps.

ColdFusion is managed via one system control module with a front panel that provides status LEDs, an IP status text display, and management interface ports for remote and local access. ColdFusion is controlled via CLI commands and/or a web GUI. Automation can be performed using Python API, or RESTful scripting language. Test lab automation software offered by third party technology partners may also be used for complete provisioning and control of the ColdFusion switch.

## Specifications

<b>Physical Specifications</b>	
Dimensions	8.75" H x 17.25" W x 17.5" D 53.34 cm x 43.815 cm x 43.815 cm
Rack Mounting	19" with mounting ears, 4RU
Weight (fully loaded system)	50.9 lbs/23.08 kg
System controller Interfaces	Ethernet RJ45 (remote), 2 x USB, HDMI (local monitor), serial port
<b>Optical Characteristics</b>	
Ports	64 QSFP28 sockets. Each port partitions into four 100M to 28G lanes using break-out cables.

Physical Media	<ul style="list-style-type: none"> <li>• Single Mode, Multi-mode (Including media conversion between mapped ports)</li> <li>• Active Optical Cable (AOC)</li> <li>• Direct Attach Cable (DAC)</li> <li>• PSM4</li> <li>• RJ-45 Copper</li> </ul>
Application Data Rates	10Mbps to 128G
Application Protocols	Including, but not limited to: Ethernet, Fibre Channel, OTN, and InfiniBand. ColdFusion supports any other serial data communication protocols within the range of 10Mbps to 128Gbps
Fixed Latency (port-to-port, maximum)	<50ns at 128G
Insertion Loss	0 dB
Switching Time	<50ms
Pluggable Fiber-optic Transceivers (Provided by user)	Must comply with FDA CDRH performance standards.
Mapping	<ul style="list-style-type: none"> <li>• Full wire-speed unicast, multicast and broadcast</li> <li>• Link/port flapping simulation - user-defined parameters</li> </ul>
Port level diagnostics	TX power, RX power, LOS, temperature
<b>Power Supply Specifications</b>	
Source Input Maximum Current	5.1 Amps per power supply up to 10.2 Amps per system with two power supplies installed
Source Input Voltage	90-140 VAC (1000 Watts output per power supply at 115 VAC) 180-264 VAC (2000 Watts output per power supply at 230 VAC)
Power Supply Units	115 VAC source: four power supplies required, no redundancy 230 VAC source: two power supplies required, optional two redundant
Input Voltage Range	180-264 VAC = 2000 Watts output at 230 VAC 90-140 VAC = 1000 Watts output at 115 VAC
Frequency	47 Hz to 63 Hz

Maximum Input Current	5.1 Amps at 100/200 VAC
Inrush Current	50 Apk
EMI (Conducted and Radiated)	Class A
Hold-up Time	11 ms at 95% load
Nominal Output	12.2 Volts at 163.9 Amps
Standby Output	12 Volts at 3.5 Amps
LED Status	Solid Green = Main output on Blinking Amber = Standby or No AC power
<b>Environmental Conditions</b>	
Operating Temperature (at full output power)	-17.78°F to 122°F 0°C to 50°C
Operating Altitude	16,400 feet/4998.72 meters
Operating Humidity	< 95%, non-condensing
<b>Safety and Compliance</b>	
	<ul style="list-style-type: none"> <li>• FCC Part 15 (Class A)</li> <li>• RoHS Compliant</li> <li>• CE Declaration of Conformity (Europe)</li> <li>• Reach Compliant</li> </ul>
Proposition 65 (California)	Lepton products may contain chemicals known to California to cause cancer, birth defects, or other reproductive harm.
<b>Management Interface</b>	
Interfaces	GUI, CLI and SSH
Application Program Interfaces (API) and Scripting Languages	Python API, RESTful
Test Automation Software Integration	Third party SW Automation platforms widely accepted.

## ***The Basics: What is a layer 1 Switch***

*A physical layer switch, or Layer 1(L1) switch, operates at the physical layer of the OSI (Open System Interconnection) model. The easiest way to think of a Layer 1 switch is an electronic, programmable patch panel. It simply establishes the physical connection between ports. The connection is established using software commands and thus, allows test topologies to be automatically or remotely configured. A layer 1 switch does not read, manipulate or use packet/frame headers to route the data. L1 switches are fully transparent to the data and typically have a very low latency. Completely transparent connections between ports are important in testing environments as this allows the tests to be as accurate as if there were a patch cord between the devices.*