

Cableados y Conexiones

DAC ACTIVO (DIRECT ATTACH CABLES) SFP+ 10 Gb/s

Product Specification Sheet

NED9110

High Speed SFP+(Small Form-factor Pluggable) Direct Attach Active Copper Cables , 0.5m to 15m Reach

10G SFP+ Direct Attach Cable (DAC) provides high performance in 10 Gigabit Ethernet (10GbE) network applications, using an enhanced SFP+ connector to send 10Gbps data through one paired transmitters and receivers over a thin twinax cable.

QSFP+ (Quad Small Form-factor Pluggable Plus) Cable Assemblies are high speed, low latency, twinaxial copper cables used for high speed network backbones, enterprise network switching and network storage. The cables offer a highly cost-effective way to establish a 40-Gigabit link between QSFP+ ports of QSFP+ switches within racks and across adjacent racks. QSFP+ cables are used for 40GBASE and Infiniband standards, to maximize performance.

Cableados y Conexiones

NED9110 Overview

NEM Engine's NED9110 high speed SFP+ Direct Attach Cable (DAC) provides high performance in 10 Gigabit Ethernet (10GbE) network applications, using an enhanced SFP+ connector to send 10Gbps data through one paired transmitters and receivers over a thin twinax cable. They are compliant with electrical standards SFF-8431, SFF-8083 and mechanical standard SFF-8432, EEPROM standard SFF-8472.

Product Features

- Active Copper (Equipped with chipset as signal repeater) (Cable Length: 0.5~15m)
- Support for multi-gigabit data rates up to 10.5Gbps
- Data rates backward compatible to 1Gbps
- Hot-pluggable SFP 20PIN footprint
- I/O Connector designed for high speed differential signal applications
- Improved Pluggable Form Factor (IPF) compliant for enhanced EMI/EMC performance
- Compatible with industry standard SFP cages +Switches
- EEPROM signature can be customized.
- Low Power Consumption < 0.5W
- Temperature Range: 0~ 70 °C
- RoHS-6 Compliant

Applications

- 10G Ethernet
- InfiniBand, Fiber Channel 4G/8G/10G
- Sonet Multiplatform support
- High Performance Computing Clusters
- High End Servers
- Metro Network Switch/Cross Connect

Standard

- Compliant with electrical standards SFF-8431, SFF-8083
- Compliant with mechanical standard SFF-8432
- Compliant with EEPROM standard SFF-8472
- RoHS Compliant

Description

● NEM Engine's NED9110 high speed SFP+ Direct Attach Cable assemblies are designed to meet data center, networking and high performance computing application needs for a high density cabling interconnect system capable of 10Gb/s per channel transmission rates. They are designed to be fully compatible in form factor and optical/electrical connections according to meet the requirements of Small Form Factor industry standards.

● SFP+ Connectors meet the harshest external operating conditions including temperature, humidity and EMI interference. Final test and quality systems assure high quality cable assemblies conforming to the high-speed electrical performance requirements in industry specifications.

● SFP+ copper modules allow hardware manufactures to achieve high port density, configurability and utilization at a very low cost and reduced power budget.

Cableados y Conexiones

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard Tc	0	25	70	°C
Storage Temperature	Ts	-40		85	°C
Power Supply Voltage	Vcc	3.13	3.30	3.47	V
Power Dissipation	PD			0.5	W
Relative Humidity	RH	5		95	%
Data Rate			10.5		Gbps

Product Characteristics

Test Type	Test Item	Target	Reference
Electrical Characteristics	Differential Mode RL(SDDII)	0.01<f<4.1 ; < -12+2*SQRT(f) 4.1<f<11.1 ; < -6.3+13*log10(f/5.5) Where f is in GHz Measurements units: dB	SFF 8431
	Common mode return loss (SCCII)	0.01<f<2.5 ; < -7+1.6(f) 2.5<f<11.1 ; < -3 Where f is in GHz Measurements units: dB	SFF 8431
	NEXT	< -26dB from 1MHz to 11GHz	/
	Cable assembly Impedence	100+/- 100hm Rise time of 30 ps (20 %- 80 %)	(20%~80 %)
	Insertion Loss Deviation	-1dB≤ILD≤1dB 300KHz≤f≤6GHz	/
Environmental Characteristics	Operating Temperature	-40~85°C	Cable operating temp. range
	Thermal Shock	Electrical performance meet the specification requirement	EIA-364-32D. Method A. TC-1. -55 10 85C, 100 cycles, 15 min, dwells
	Cyclic Temp. & Humidity	Electrical performance meet the specification requirement	EIA-364-31 Method III, Test Cond A
	Salt spray	48 hours salt spraying after shell corrosive area less than 5%	EIA-364-26
	Temperature Life	Performance meets the specification requirement	EIA-364-17B w/ RH, Damp heat 85C at 85% RH for 500 hours
Mechanical Characteristics	Mechanical Vibration	Performance meets the specification requirement	EIA-364-28E.11 TC-VII, Test Cond. D 15minutes in X,Y,Z axis.
	Cable Plug Retention in Cage	90N Min.	No functional damage to cable plug below 90N. Per SFF-8432 Rev 5.0
	Cable Retention in Plug	90N Min.	EIA-455-6B
	Mechanical Shock	Performance meets the specification requirement	Clamp and Shock per EIA-364-27B, TC-G, 3times in 6directions, 100g, 6ms
	Cable plug Insertion	18N(Max.)	SFF-8432 Rev 5.0
	Cable plug extraction	12.5N(Max.)	SFF-8432 Rev 5.0
	Durability	50 Time. No evidence of physical damage	EIA-364-09; perform plug&unplug cycles Plug and Receptacle mate rate: 250times/hour

Cableados y Conexiones

Mechanical Dimensions

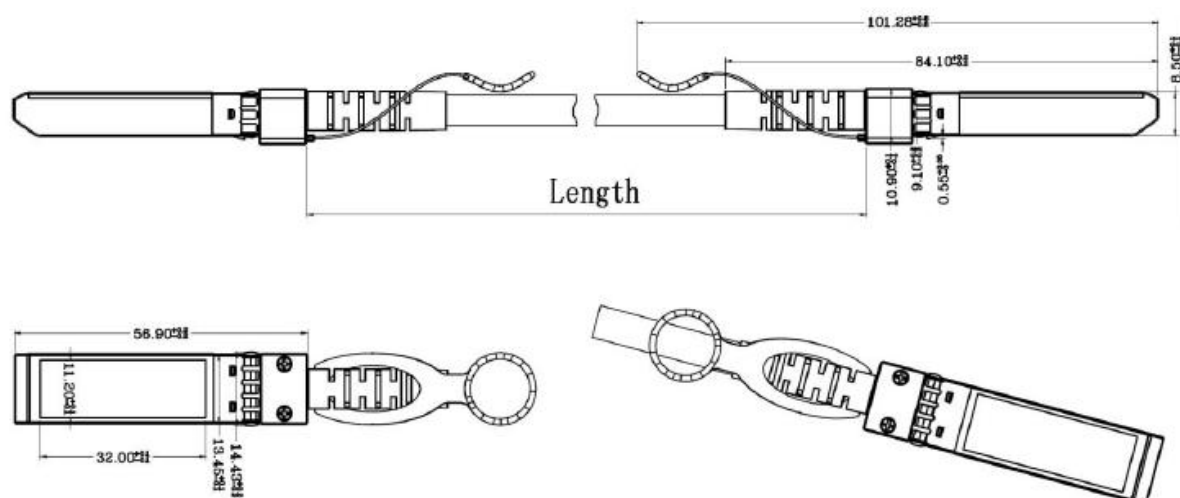


Diagram of Mechanical Dimensions

Ordering Information

Part Number	Data Rate	Cable Length	Wire Gauge	Connector Type	Temp. Range
NED9110-0.5M	Up to 10.5 Gbps	0.5m	30AWG	Active Copper	0-70°C
NED9110-1M	Up to 10.5 Gbps	1m	30AWG	Active Copper	0-70°C
NED9110-2M	Up to 10.5 Gbps	2m	30AWG	Active Copper	0-70°C
NED9110-3M	Up to 10.5 Gbps	3m	30AWG	Active Copper	0-70°C
NED9110-5M	Up to 10.5 Gbps	5m	24AWG	Active Copper	0-70°C
NED9110-7M	Up to 10.5 Gbps	7m	24AWG	Active Copper	0-70°C
NED9110-9M	Up to 10.5 Gbps	9m	24AWG	Active Copper	0-70°C
NED9110-10M	Up to 10.5 Gbps	10m	24AWG	Active Copper	0-70°C
NED9110-12M	Up to 10.5 Gbps	12m	24AWG	Active Copper	0-70°C
NED9110-15M	Up to 10.5 Gbps	15m	24AWG	Active Copper	0-70°C

Standard Copper SFP+ assemblies are offered in different wire gauges (AWG) depending on length. You can be customized diameter and distance.

SFP+ cable assemblies are hot swappable and the programmed EEPROM signature enables the host to differentiate between a copper cable assembly and a fiber optic module.

Low power consumption assists in making the active copper cable assembly an economic solution for within rack, or rack-to-rack applications.

Cableados y Conexiones

Important Notice

Important Notice:



DO NOT
Kink
the
Cable



DO NOT
Over-Bend
the Cable
Behind the
Connector



DO NOT
Twist
the
Connector



ANTISTATIC



FRAGILE

Note:

- 1) Copper type maximum length recommended at 15 meters;
- 2) Various cable lengths available for all types;
- 3) latch/tab available "On top" or "Bottom" position.