

ND12-GBE1000 (/E)

Electrical 1000BASE-T Transceiver with AutoSFP™ functionality for Gigabit Ethernet (1.25Gbps)

Data Sheet



Description

The ND12-GBE1000 is a Small Form Factor Pluggable (SFP) 1000BASE-T electrical transceiver. The unit is specially designed to work in a pair with the ND12-T1310-R18-10 to function as a 1000BASE-T/LX Gigabit Ethernet optical media converter. It is made with AutoSFP™ enabled functionality to fit the miniHUB product range.

The unit offer full-duplex throughput of 1000 Mbps by transporting data over shielded twisted pair category 5 cables with 5-level PAM signals. The module performs the SerDes functions and link speed auto-negotiation needed for optical media conversion.

It is also available with two temperature ranges, standard and extended.

Part Number Options

Part Number	Temperature *)
ND12-GBE1000	-5°C to +55°C
ND12-GBE1000/E	-40°C to +65°C

*) Rated temperature for the complete miniHUB unit.

Features

- AutoSFP™ enabled functionality
- Compliant to IEEE 802.3:2005
- RJ45 with built in transformer
- Link lengths up to 100m per IEEE802.3
- Auto-negotiation per IEEE 802.3:2005 clause 28 (twisted pair) and clause 37 (1000BASE-X)
- Compliant to MSA-SFP pinning specification
- SFF-8472 diagnostic features
- Hot-pluggable
- Pb-free and RoHS compliant
- Available with extended temperature

SGMII

The ND12-GBE1000 supports the Serial Gigabit Media Independent Interface (SGMII). This enables the SFP to handle 10/100/1000BASE-T links while maintaining a 1.25Gbps serial speed on the optical signaling side. The connected host unit must support the SGMII interface to automatically utilize the module 10/100/1000BASE-T functionality. If the host does not support the SGMII, bit rate settings must be performed from the OC-4B-SDI motherboard.

Absolute Maximum Ratings

Absolute maximum ratings are those values beyond which functional performance is not intended, device reliability is not implied, and damage to the device may occur.

Parameter	Minimum	Maximum	Unit
Storage temperature (non-operating)	-40	+85	°C
Relative Humidity (non-condensing)	5	95	%
Supply voltage (Vcc)	-0.5	3.6	V
Control input voltage	-0.5	Vcc	V

Recommended Operating Conditions

Parameter	Minimum	Typical	Maximum	Unit
Case operating temperature:				
• ND12-GBE1000	-5		+70	°C
• ND12-GBE1000/E	-40		+85	°C
Relative Humidity (non-condensing)	5		90	%
Supply voltage (Vcc)	3.14	3.3	3.46	V

Electrical Characteristics

Parameter	Minimum	Typical	Maximum	Unit
Supply current			350	mA
Power dissipation			1100	mW
Data rate	10		1250	Mbps

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