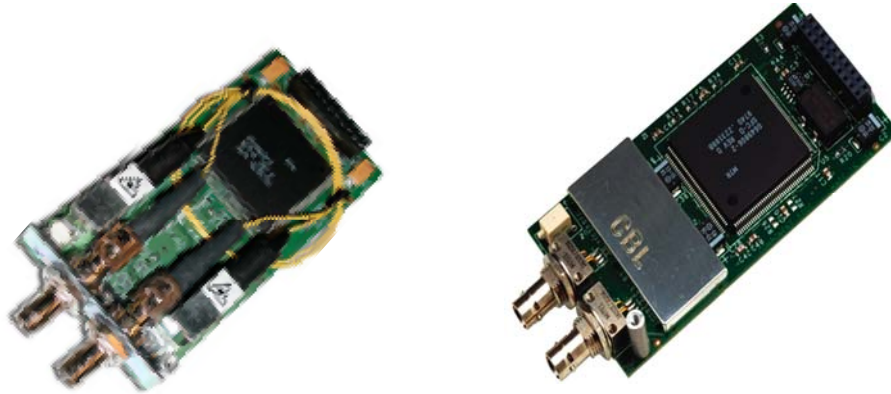




CBL™ Intelligent Lon Fibre SMX Transceiver

Features



- ❖ Neuron devices to fibre using standard SMX format
- ❖ Linear bus or ring network topology
- ❖ LonMark standard fibre transceiver
- ❖ EIA 709.4 compliant
- ❖ Multimode version available in 880 nm or 1320 nm wavelengths
- ❖ Supports 1.25 MB/s LonWorks throughput with large node count (750+ nodes)
- ❖ Single fibre core communication reduces installation cost by 50%.
- ❖ Up to 15 km (1320 multimode) links without repeaters
- ❖ Ring redundancy and link monitoring to insure reliability
- ❖ Single +5 volt \pm 0.25 VDC operation

Description

Fibre optic interconnection is ideal for applications needing high throughput, expandability, immunity to electromagnetic interference or communications over long distances. Maximum LonWorks communication throughput is maintained on the fibre optic interconnect regardless of the distance or number of nodes attached. A fibre optic ring can implement multiple subnets with several hundred fibre optic nodes (the allowable number of nodes is a function of average link length and the fibre optic cable

characteristics; 750 to 3,000 node capacity is typical). These capabilities make the transceivers ideal solutions for large projects with substantial LonWorks message traffic as well as small projects to connect as few as two nodes together. And both are 100% compatible with the LonMark fibre optic standard. The transceivers include an Echelon® 3120 Neuron® chip for built-in-test to monitor the fibre optic network. Transceivers provide weak link detection by monitoring and providing status messages for received optical power, jammed receiver detection and other status checks during communication, and may be reprogrammed to meet user-specific needs**.

The approach of creating links and back-bones using Ethernet relies upon a shared network connection. In contrast, a LonFibre based network delivers predictable and consistent performance being dedicated to LonWorks only. Ethernet link latency and throughput will degrade as non-LonWorks traffic increases. Worse still an Ethernet link is a single point of failure if its supporting file server fails.

Ring topology provides fault tolerance

- 1) All data is transmitted and received via a single fibre optic cable (bi-directional single-fibre)
- 2) Data is transmitted in one direction when the ring is intact, eventually closing on itself. Nodes are assigned a transparent token to assure they participate in the ring topology. Network hardware provides and manages token assignment with no impact to users or client devices.
- 3) If the fibre ring is broken (either physical damage to a fibres link or some network node is damaged or powered off), data will then travel in both directions on each fibre so all nodes remain connected in the presence of a single fault.
- 4) Continuous link monitoring – flags a marginal link signal problem before failure

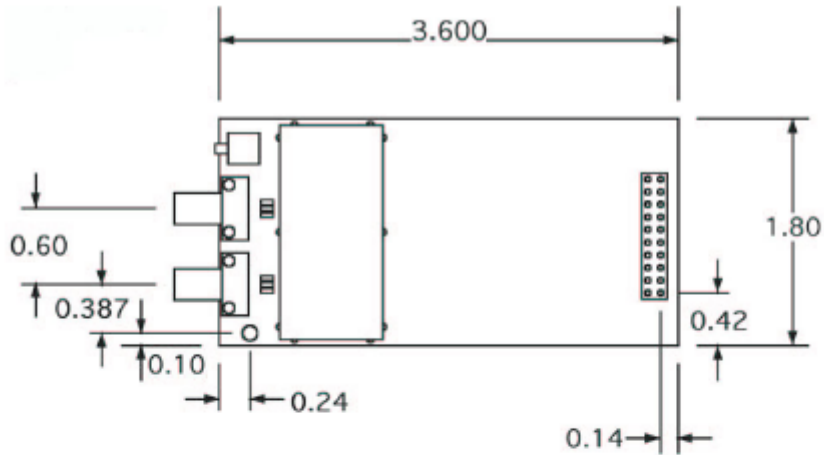
Installation

Connections

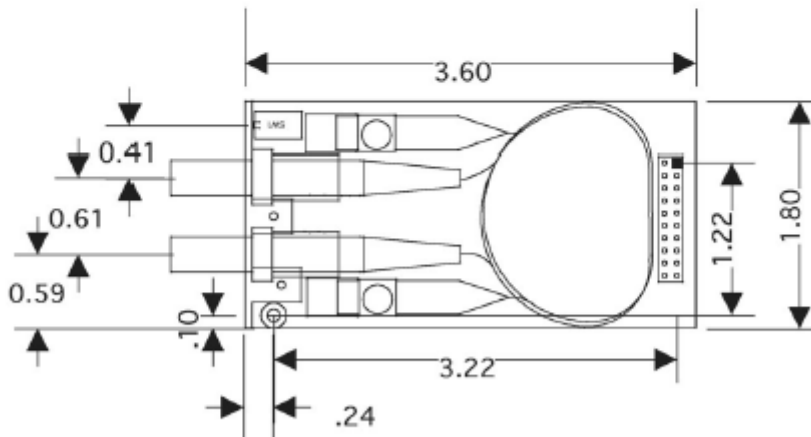
Fibre ports must always be connected so that a left port is connected to a right port of the next device in the ring. Segments must obey the same rules; i.e. even if only two nodes are connected, the left port of one must connect to the right port of the next. All connections must be made with multimode or single mode fibre optic cable, using ST style termination. Good quality terminations (optical loss of 0.5dB or less, typical) are required. Minimum use of patch panel connections is recommended, as each patch introduces optical loss. See “Typical Optical Power” document on web site or contact CNS directly as below.

Specification

Mechanical -



MultiMode



Single Mode

Pinout:

1-VCC	3-ID0	5-ID1	7-ID2	9-ID3	11-ID4	13-NC	15-NC	17-CK	19-VCC
2-GND	4-CP4	6-CP2	8-CP1	10-CP0	12-CP3	14-NC	16-RS	18-BS	20-GND

Electrical –

Operating voltage: 5 VDC, $\pm 5\%$, <50mV ripple

Network –

Two ST connectors for fibre network connection, 880nm and 1320nm Multi Mode Fibre supported. The unit is compatible with 62.5/125 micron and 100/140 micron multimode fibre. 50/125 may be used with reduced optical link budgets.

Environmental-

Operating temperature: 0C to +70C
Humidity: 95% non-condensing

Optical Performance Information

MultiMode 880nm	Performance	Comment (62.5/125micron)
Coupled Power	-10 to -12 dBm	
Receive Sensitivity	-26dBm	
Link Budget	14-16dBm	
Maximum Distance between nodes	3km	Assumes insertion loss for 2 connections (0.6dB) and 3.2dB fiber loss/km. 3dB margin

MultiMode 1320nm	Performance	Comment (62.5/125micron)
Coupled Power	-12 to -14 dBm	
Receive Sensitivity	-28dBm	
Link Budget	13-15dBm	
Maximum Distance between nodes	15km	Assumes insertion loss for 2 connections (0.6dB) and 0.45dB fiber loss/km. 3dB margin

Ordering Information

Model No – CNS7X000-5

X = 5 for 880
2 for 1320

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