Optical Engines

Adtran

Data sheet

MicroMux™ Nano

Ten 1GbE to 10GbE packet multiplexer

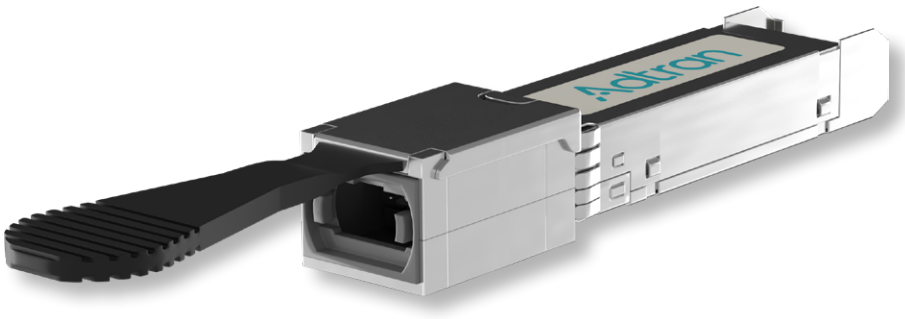
Benefits

- **Standard compliant SFP+ packaging**
  Equivalent functionality of ten standard GbE small form-factor pluggables (SFPs) in a single standard-compliant SFP+ package
- **Layer 2 Ethernet multiplexing technology**
  Standard integration into Ethernet and transport networks. Includes integrated packet buffers with VLAN mapping, filtering and tagging
- **Transparent timing support**
  Suitable for time-sensitive networks sourced from 10GbE interfaces and pass-through timing
- **Higher 1GbE port density saves rack space**
  By transforming each 10GbE port into ten 1GbE ports, MicroMux™ Nano offers higher port density than standard 10GbE pre-aggregation devices
- **MicroMux™ Nano -SX and -LX variants are designed for short-reach and long-reach MM and SM applications, respectively. Additionally, a version with 1490nm transmitter is available for applications in bidirectional links (requires an external filter) connecting to 1000Base-BX1-U transceivers.**
- **Individual channel management**
  Separate configuration, monitoring and diagnostics of individual 1GbE client channels

Overview

The ever-increasing demand for bandwidth delivery in access networks is driving solution providers and network operators to deploy equipment supporting only 10GbE and higher services. Nevertheless, there's still huge demand for 1GbE services. Our MicroMux™ Nano solves this problem and creates new value in equipment designed only for 10GbE.

Our MicroMux™ Nano transforms a 10GbE port into ten independent 1GbE ports without the need for bulky and expensive pre-aggregation devices. Available for short-reach and long-reach applications, our MicroMux™ Nano features a small form-factor plug that fits into standard 10GbE SFP+ sockets. For use in Gigabit Ethernet routers, switches or any other device that accepts standard pluggable SFP+ interfaces, our MicroMux™ Nano has multiple applications. For example, using the MicroMux™ Nano, a 10GbE Carrier Ethernet NID becomes an aggregation Carrier Ethernet switch or a 10Gbit/s optical transponder becomes a 10x1GbE muxponder. With zero footprint increase and minimal power consumption, our MicroMux™ Nano brings new capabilities and value to the network edge without consuming rack space or unnecessary cost. What's more, operational cost and complexity are also minimized. Solution providers and network operators can focus on 10Gbit/s network infrastructure, while still being able to provide legacy 1GbE services.



MicroMux™ Nano

High-level technical specifications

Parameters	MicroMux™ Nano-SX Multi-mode variant	MicroMux™ Nano-LX Single-mode variant	MicroMux™ Nano-1490nm*
Operating wavelength	850nm	1310nm	1490nm
Optical output power per channel	-11dBm to +1dBm	-9dBm to -3dBm	-9dBm to -3dBm
Extinction ratio	9dB (min.)	9dB (min.)	9dB (min.)
Transmitter dispersion penalty		3.3dB (max.)	TBD
Side-mode suppression ratio	30dB (min.)	30dB (min.)	30dB (min.)
Optical return loss tolerance	12dB (max.)	12dB (max.)	12dB (max.)
Eye mask {X1, X2, X3, Y1, Y2, Y3} Hit ratio of 5e-5 per IEEE 802.ah	15% (min.)	15% (min.)	15% (min.)
Receiver sensitivity per channel (BER 1e-12)	-17dB	-20dB	-20dB
Received optical power range per channel (dBm)	-17dBm to 0dBm	-20dBm to -3dBm	-20dBm to -3dBm
Clock accuracy	+/-100ppm	+/-100ppm	+/-100ppm
Case temperature range	O°C to 70°C	O°C to 70°C	O°C to 70°C
Power consumption	3.22W	3.22W	3.22W
Optical interface	1xMPO24 MM	1xMPO24 SM	1xMPO24 SM
IEEE optical specification	1000Base-SX	1000Base-LX10	NA

Note*: MicroMux Nano - 1490nm can be optically connected to any 1000Base-BX10-U transceiver via an external filter to multiplex the TX and RX signals on a single fiber

MicroMux™ Nano

Applications in your network

Use your latest native 10GbE equipment to offer legacy 1GbE services when and where necessary without additional cards or shelves

MicroMux™ Nano converts a 10GbE port into ten 1GbE ports with zero footprint increase.

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