

10GB ETHERNET SFP+ ULTRA LOW POWER SR OPTICAL TRANSCEIVER

OVERVIEW

FCI's TRX10GVP2010C2 10Gb/s Ethernet 850nm Multi Mode SFP+ SR Optical Transceiver is designed for datacenter networking links up to 400m and uses half the power of competitive options.

The TRX10GVP2010C2 is compliant with SFP+ MSA specifications (SFF-8431, SFF-8432, SFF-8472), 10 Gigabit Ethernet specifications (10GBASE-SR/SW), and also 10G Fibre Channel (1200-MX-SN-I). It is RoHS 6/6 compliant per Directive 2002/95/EC and laser class 1 safety compliant per IEC/CDRH.

The TRX10GVP2010C2 is the most power efficient way to transmit optical 10Gb Ethernet traffic in the datacenter.



FEATURES

- Ultra Low Power Consumption at 0.25W Typical
- Supports Commercial Temperature Range
- Ethernet 10GBASE-SR/SW Compliance
- Fibre Channel 1200-MX-SN-I Compliance
- SFF-8431 SFP+ Electrical MSA Compliance
- SFF-8436 SFP+ Mechanical MSA Compliance
- SFF-8472 SFP+ Diagnostic Interface MSA Compliance
- Data rate transparent from 9.95Gb/s to 11.3Gb/s
- Laser Class 1 IEC / CDRH compliant
- ROHS 6/6 Compliance

BENEFITS

- Lowers energy cost
- Simplifies thermal management
- Operates over temperature range of 0°C to +70°C (case)
- Ethernet Transmission distance up to 400m (multi mode fibre)
- Interoperable with other 10GBASE-SR/SW compatible transceivers
- Fibre Channel Transmission distance up to 400m (multi mode fibre)
- Electrically interoperable with all SFP+ ports
- Mechanically interoperable with all SFP+ ports
- Supports duplex LC optical connectors
- Allows for connection discovery and signal condition monitoring
- Supports Non-standard protocols in this range of data rates
- Eye-safe laser source
- Does not contain hazardous materials

▶ 10GB ETHERNET SFP+ ULTRA LOW POWER SR OPTICAL TRANSCEIVER



TECHNICAL INFORMATION

MATERIALS

- Mates with:
 - Board Connector: FCI/PN 10122424 series
- Cage:
 - 1x4 cage configuration– FCI P/N10122382, 10126907 & 10126908 series
 - 1x2 cage configuration– FCI P/N 10127103 & 10127105 series
 - 1x4 cage configuration– FCI P/N 10122388, 10126909 & 10126910 series
- LC Interface: FCI/P/N 10120511-series

ELECTRICAL PERFORMANCES

- Power Supply Voltage: 3.3V
- Data Rate per Lane: 10Gbps
- Power Consumption: 0.25W (typ.)
- Transmitter Type: 850nm VCSEL laser
- Receiver Type: PIN-diode

ENVIRONMENTAL

- RoHS 6/6 compliant
- Laser Class 1 / CDRH
- Operating Temperature Range: 0°C to 70°C

SPECIFICATIONS

- Module meets MSA –Small Form Factors
 - SFF-8431 / Electrical
 - SFF-8432 / Mechanical
 - SFF-8472 / Diagnostic
- Product Specification: GS-12-1278

APPROVALS AND CERTIFICATIONS

- UL: E251142-191
- TUV: 213137-019
- FDA: 0312716

PACKAGING

- Individual Blister Package

SUPPORTED STANDARDS

- 10GBASE-SR per IEEE 802.3
- 10GBASE-SW per IEEE 802.3

TARGET MARKETS/APPLICATIONS

- Communications
 - Switches
- Data
 - Data Center
 - High Performance Computing
- Industrial

PART NUMBERS



| Application | Standard | Part Number |
|-------------------|----------------------------|----------------|
| 10G Ethernet LAN | IEEE 802.3ae 10GBASE-SR | TRX10GVP2010C2 |
| 10G Ethernet WAN | IEEE 802.3ae 10GBASE-SW | TRX10GVP2010C2 |
| 10G Fibre Channel | Fibre Channel 1200-MX-SN-I | TRX10GVP2010C2 |

OP15FP+SRC080115EA4

10GB ETHERNET SFP+ LRM OPTICAL TRANSCEIVER

OVERVIEW

FCI's TRX10GDL0610C3 10Gb/s Ethernet 1310nm Multi Mode SFP+ LRM Optical Transceiver is designed for 10Gb Ethernet using legacy fiber. Links up to 220m can be made over FDDI-quality fiber links and over OM1/2/3/4 multimode fiber.

The TRX10GDL0610C3 is compliant with SFP+ MSA specifications (SFF-8431, SFF-8432, SFF-8472), and 10 Gigabit Ethernet specifications (10GBASE-LRM). It is RoHS 6/6 compliant per Directive 2002/95/EC and laser class 1 safety compliant per IEC/CDRH.

The TRX10GDL0610C3 improves cost efficiency of 10GbE upgrades by re-using existing structured fiber cable.



FEATURES

- Supports Commercial Temperature Range
- Ethernet 10GBASE-LRM Compliance
- SFF-8431 SFP+ Electrical MSA Compliance
- SFF-8436 SFP+ Mechanical MSA Compliance
- SFF-8472 SFP+ Diagnostic Interface MSA Compliance
- Data rate transparent from 9.95Gb/s to 11.3Gb/s
- Low Power Consumption
- Laser Class 1 IEC / CDRH compliant
- RoHS 6/6 Compliance

BENEFITS

- Operates over temperature range of 0°C to +70°C (case)
- Transmission distance up to 220m (multi mode fiber, including FDDI-grade)
- Interoperable with other 10GBASE-LRM compatible transceivers
- Electrically interoperable with all SFP+ ports
- Mechanically interoperable with all SFP+ ports
- Supports duplex LC optical connectors
- Allows for connection discovery and signal condition monitoring
- Supports Non-standard protocols in this range of data rates
- Only 0.8W (Typ.) power consumption
- Eye-safe laser source
- Does not contain hazardous materials





TECHNICAL INFORMATION

MATERIALS

- Mates with:
 - Board Connector: FCI P/N 10122424 series
 - Cage:
 - 1x1 cage configuration- FCI P/N 10122382, 10126907 & 10126908 series
 - 1x2 cage configuration- FCI P/N 10127103 & 10127105 series
 - 1x4 cage configuration- FCI P/N 10122388, 10126909 & 10126910 series
 - LC interface: FCI P/N 10120511-series

ELECTRICAL PERFORMANCE

- Power Supply Voltage: 3.3V
- Data Rate per Lane: 10Gbps
- Power Consumption: 0.55W (typ.)
- Transmitter Type: 850 nm VCSEL laser
- Receiver Type: PIN-diode

ENVIRONMENTAL

- RoHS 6/6 compliant
- Laser Class 1 / CDRH
- Operating Temperature Range: 0°C to 70°C

PART NUMBERS

SPECIFICATIONS

- Module meets MSA –Small Form Factors
 - SFF-8431 / Electrical
 - SFF-8432 / Mechanical
 - SFF-8472 / Diagnostic
- Product Specification: GS-12-0984

APPROVAL AND CERTIFICATIONS

- UL : E251142-191
- TUV : 2113137-019
- FDA : 0312716

PACKAGING

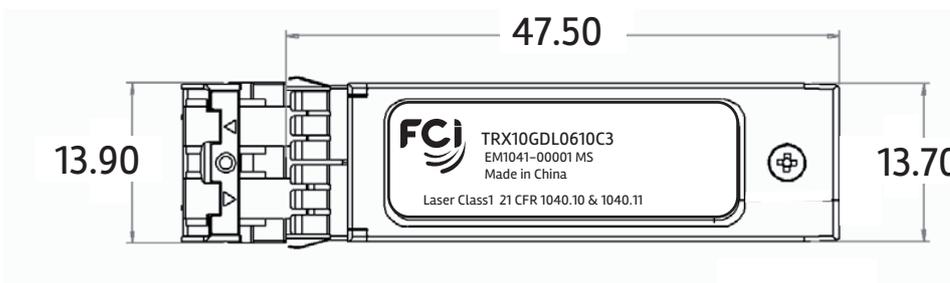
- Individual Blister Package

SUPPORTED STANDARDS

- 10GBASE-LRM per IEEE 802.3

TARGET MARKET/ APPLICATIONS

- Communications
 - Switches
- Data
 - Data Center
 - High Performance Computing
- Industrial



| Application | Standard | Part Number |
|--------------|------------------------|----------------|
| 10G Ethernet | IEEE 802.3 10GBASE-LRM | TRX10GDL0610C3 |

OP/SFP+LRM0714EA4

10GB ETHERNET SFP+ LR OPTICAL TRANSCEIVER

OVERVIEW

FCI's TRX10GDP0310C1 10Gb/s Ethernet 1310nm Single Mode SFP+ LR Optical Transceiver is designed for 10km datacenter networking links.

The TRX10GDP0310C1 is compliant with SFP+ MSA specifications (SFF-8431, SFF-8432, SFF-8472), 10 Gigabit Ethernet specifications (10GBASE-LR/LW), and also 10G Fibre Channel (1200-SM-LL-L). It is RoHS 6/6 compliant per Directive 2002/95/EC and laser class 1 safety compliant per IEC/CDRH.

Today's datacenters are larger than ever and the 10km reach of the TRX10GDP0310C1 is more than sufficient to make these connections.



FEATURES

- Supports Commercial Temperature Range
- Ethernet 10GBASE-LR/LW Compliance
- Fibre Channel 1200-SM-LL-L Compliance
- SFF-8431 SFP+ Electrical MSA Compliance
- SFF-8436 SFP+ Mechanical MSA Compliance
- SFF-8472 SFP+ Diagnostic Interface MSA Compliance
- Data rate transparent from 9.95Gb/s to 11.3Gb/s
- Low Power Consumption

BENEFITS

- Operates over temperature range of 0°C to +70°C (case)
- Ethernet Transmission distance up to 10km (single mode fiber)
- Interoperable with other 10GBASE-LR/LW compatible transceivers
- Fibre Channel Transmission distance up to 10km (single mode fiber)
- Electrically interoperable with all SFP+ ports
- Mechanically interoperable with all SFP+ ports
- Supports duplex LC optical connectors
- Allows for connection discovery and signal condition monitoring
- Supports Non-standard protocols in this range of data rates
- Only 0.75W (Typ.) power consumption





TECHNICAL INFORMATION

MATERIALS

- Mates with:
 - Board Connector: 10122424-1012F
 - Cage:
 - 1x1 cage configuration- FCI P/N 10122382, 10126907 & 10126908 series
 - 1x2 cage configuration- FCI P/N 10127103 & 10127105 series
 - 1x4 cage configuration- FCI P/N 10122388, 10126909 & 10126910 series
 - LC interface: FCI P/N 10120511-series

ELECTRICAL PERFORMANCE

- Power Supply Voltage: 3.3V
- Data Rate per Lane: 10 Gbps
- Power Consumption: 0.75 (typ.)
- Transmitter Type: 1310 nm DFB laser
- Receiver Type: PIN-diode

ENVIRONMENTAL

- RoHS 6/6 Compliant
- Laser Class 1/ CDHR
- Operating Temperature Range: 0°C to 70°C

SPECIFICATIONS

- Module meets MSA- Small Form Factor
 - SFF-8431/ Electrical
 - SFF-8432/ Mechanical
 - SFF-8472/ Diagnostic
- Product Specification: GS-12-0974

APPROVALS AND CERTIFICATIONS

- TUV: 2113137-019
- UL: E251142-191
- FDA: 0312716

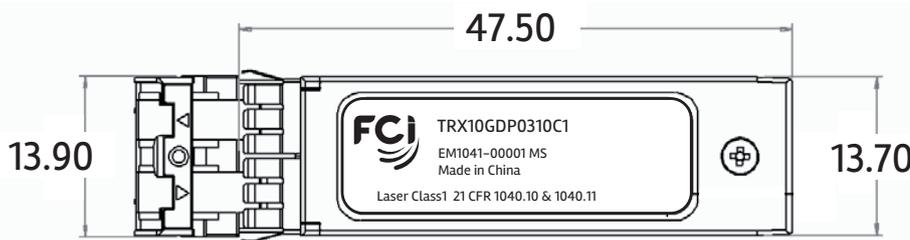
PACKAGING

- Individual Blister Package

TARGET MARKET/ APPLICATIONS

- Communications
 - Switches
- Data
 - Data Center
 - High Performance Computing
- Industrial & Instrumentation

PART NUMBERS



| Application | Standard | Part Number |
|----------------------|----------------------------|----------------|
| 10G Ethernet LAN/WAN | IEEE 802.3 10GBASE - LR/LM | TRX10GDP0310C1 |

OP/SFP+LR070714EA4

10GB ETHERNET SFP+ INDUSTRIAL TEMPERATURE LR OPTICAL TRANSCEIVER

OVERVIEW

FCI's TRX10GDP0311A1 10Gb/s Single Mode Telecom SFP+ LR Optical Transceiver is designed for 10km outdoor networking links and other applications requiring an Industrial grade operational temperature range.

The TRX10GDP0311A1 is compliant with SFP+ MSA specifications (SFF-8431, SFF-8432, SFF-8472), 10 Gigabit Ethernet specifications (10GBASE-LR/LW), and also 10G Fibre Channel (1200-SM-LL-L). It is RoHS 6/6 compliant per Directive 2002/95/EC and laser class 1 safety compliant per IEC/CDRH.

The wide operating temperature range of -40°C to $+85^{\circ}\text{C}$ allows the TRX10GDP0311A1 to operate in the most demanding environments.



FEATURES

- Supports Industrial Temperature Range
- Ethernet 10GBASE-LR/LW Compliance
- Fibre Channel 1200-SM-LL-L Compliance
- SFF-8431 SFP+ Electrical MSA Compliance
- SFF-8436 SFP+ Mechanical MSA Compliance
- SFF-8472 SFP+ Diagnostic Interface MSA Compliance
- Data rate transparent from 9.95Gb/s to 11.3Gb/s
- Low Power Consumption
- Laser Class 1 IEC / CDRH compliant
- RoHS 6/6 Compliance

BENEFITS

- Operates over an extended temperature range of -40°C to $+85^{\circ}\text{C}$ (case)
- Ethernet Transmission distance up to 10km (single mode fiber)
- Interoperable with other 10GBASE-LR/LW compatible transceivers
- Fibre Channel Transmission distance up to 10km (single mode fiber)
- Electrically interoperable with all SFP+ ports
- Mechanically interoperable with all SFP+ ports
- Supports duplex LC optical connectors
- Allows for connection discovery and signal condition monitoring
- Supports Non-standard protocols in this range of data rates
- 0.8W (Typ.) power consumption
- Eye-safe laser source
- Does not contain hazardous materials



▶ 10GB ETHERNET SFP+ INDUSTRIAL TEMPERATURE LR OPTICAL TRANSCEIVER



TECHNICAL INFORMATION

MATERIALS

- Mates with:
 - Board Connector: FCI P/N 10122424 series
 - Cage:
 - 1x1 cage configuration- FCI P/N 10122382, 10126907 & 10126908 series
 - 1x2 cage configuration- FCI P/N 10127103 & 10127105 series
 - 1x4 cage configuration- FCI P/N 10122388, 10126909 & 10126910 series
 - LC interface: FCI P/N 10120511-series

ELECTRICAL PERFORMANCE

- Power Supply Voltage: 3.3V
- Data Rate per Lane: 10Gbps
- Power Consumption: 0.80W (typ.)
- Transmitter Type: 1310 nm DFB laser
- Receiver Type: PIN-diode

ENVIRONMENTAL

- RoHS 6/6 compliant
- Laser Class 1 / CDHR
- Operating Temperature Range: -40°C to +85°C
- Temperature Life - EIA 364-17, Method A, Condition 3, Time Condition C, 500 hours, 85°C
- Mixed Flowing Gas - EIA 364-65, Class IIA - 10 days unmated and 10 days mated (EIA-364-21)

PART NUMBERS



| Application | Standard | Part Number |
|----------------------|--------------------------|----------------|
| 10G Ethernet LAN/WAN | IEEE 802.3 10GBASE-LR/LW | TRX10GDP0311A1 |
| 10G Fibre Channel | 1200-SM-LL-L | TRX10GDP0311A1 |

SPECIFICATIONS

- Module meets MSA -Small Form Factors
 - SFF-8431 / Electrical
 - SFF-8432 / Mechanical
 - SFF-8472 / Diagnostic
- Product Specification: GS-12-1108

APPROVALS AND CERTIFICATIONS

- TUV : EN60950-1:2001
- FDA : CDRH 21 CFR 1040.10 and 1040.11

PACKAGING

- Individual Blister Package

SUPPORTED STANDARDS

- 10GBASE-LR per IEEE 802.3
- 10GBASE-LW per IEEE 802.3
- 10GFC per 1200-SM-LL-L

TARGET MARKET/ APPLICATIONS

- Communications
 - Wireless Infrastructure
 - Switches
- Data
 - Data Center
 - High Performance Computing
- Industrial
 - Uncontrolled temperature environments

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