HIGH-SPEED OPTICAL TRANSCEIVERS

100G NRZ QSFP28 DR1 GEARBOX

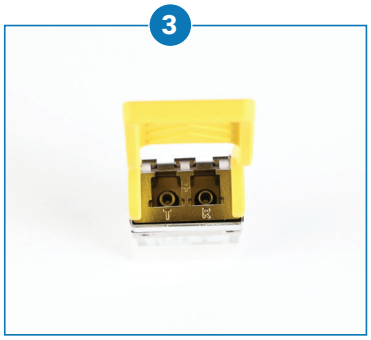
Regional Availability — Global

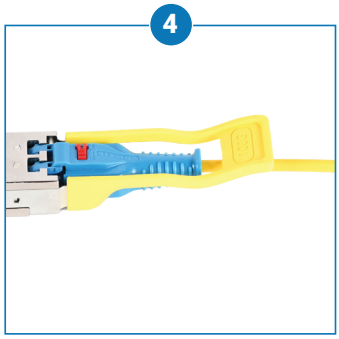
Siemon's 100G NRZ DSP[1] transceivers are designed to meet and exceed industry performance standards. Each transceiver supports 25G per lane electrically (host-side) and is offered in a QSFP28 form factor. These transceivers support 100G per lane optically (fiber-side) utilizing a gearbox[2]. Our DSP-based design is optimized for a significantly lower pre-FEC[3] BER[4], achieving error-free post-FEC performance. These transceivers support Ethernet protocols and a data center reach of DR1 (Singlemode).

Siemon NRZ transceivers complement Siemon's portfolio of high-speed fiber and copper connectivity solutions in addition to our End-to-End fiber solutions. Our transceivers are supported by expert technical resources, ensuring reliable connectivity for today's most demanding networks.

1: DSP– Digital Signal Processor
2: Gearbox - A data-rate/lane converter for electrical and optical interfaces of a transceiver (e.g. converts 25G/L DR4 to 100G/L DR1)
3: FEC – Forward Error Correction
4: BER – Bit Error Rate







1. Error-Free Post-FEC Performance

2. MSA Compliant Connectors

3. LC Duplex UPC

4. Singlemode Fiber

Network Equipment
- Network Interface Card (NIC)
- Accelerator Cards
- Switches
- Servers
- Storage
- Routers

Applications
- Top-of-Rack
- Rack-to-Rack
- Switch-to-Switch
- Switch-to-Server
- AI/ML Clusters

Protocol Support
- Ethernet 100GbE
  - 100GAUI-4

Standards Compliance
- IEEE 802.3bm
- SFF-8636
- SFF-8661
- SFF-8679
- IEC 60825-1
- Class 1 Laser 21 CFR 1040.10 & 1040.11
- RoHS / REACH

ABSOLUTE RATINGS

REACH TYPE	SYMBOL	DR1
STORAGE TEMPERATURE	T_C	-40 to 85°C (-40 to 185°F)
RELATIVE HUMIDITY	RH	5 to 85%
SUPPLY VOLTAGE (MAX)	V_{CC}	3.6 V

OPERATIONAL SPECIFICATIONS

REACH TYPE	SYMBOL	DR1
OPERATING CASE TEMPERATURE	T_{OPR}	0 to 70°C (32 to 158°F)
SUPPLY VOLTAGE (TYP)	V_{CC}	3.3 V
POWER CONSUMPTION (MAX)	P_{MAX}	4.5 W
DATA RATE PER ELECTRICAL LANE	-	25G
SIGNALING RATE PER ELECTRICAL LANE	SRL_{EL}	25.7812 GBd
DATA RATE PER OPTICAL LANE	-	100G
SIGNALING RATE PER OPTICAL LANE	SRL_{OP}	53.125 GBd
WAVELENGTH	λ_C	1310 nm
POWER BUDGET[1] (MIN)	PB	4.1 dB
TRANSMIT OUTER OPTICAL MODULATION AMPLITUDE (OMA_{OUTER}) PER LANE	T_{OMA}	-0.3 to 4.2 dBm
RECEIVER SENSITIVITY (OMA_{OUTER}) PER LANE (MAX)	S_{OMA}	-4.4 dBm
TRANSMITTER AND DISPERSION EYE CLOSURE (TDECQ) PER LANE (MAX)	TDECQ	3.5 dB
DAMAGE THRESHOLD / RECEIVER OVERLOAD (MIN)	DT	6.5 dBm
EXTINCTION RATIO (MIN)	ER	3.5 dB
BIT ERROR RATIO (BER)	BER	Pre-FEC BER = 1E-8 Post-FEC BER = 1E-15
OPERATING DISTANCE (MAX)	L_{MAX}	500m (OS2)

1.Power Budget (MIN) is calculated using the minimum value from the following equation for each end of a given channel. Optical Channel Loss should not exceed this value.

$$\text{Minimum Power Budget} = \left(\text{Minimum Transmit } OMA_{OUTER} \text{ per Lane}\right) - \left(\text{Maximum Receiver Sensitivity } OMA_{OUTER} \text{ per Lane}\right)$$

MECHANICAL PROPERTIES

CONNECTOR TYPE	QSFP28
INSERTION FORCE (MAX)	60N
EXTRACTION FORCE (MAX)	30N
RETENTION FORCE (MAX)	90N
DURABILITY (MIN)	250 Cycles

Additional information available upon request. Please contact our Technical Sales Group if you require further information.

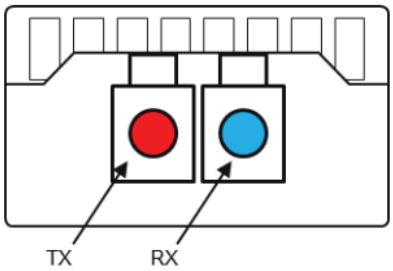
Ordering Information

100G NRZ Ethernet

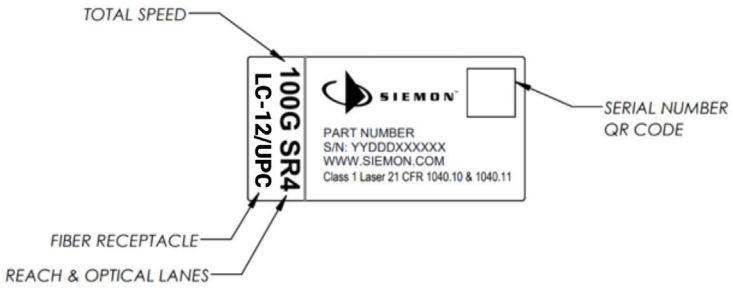
Singlemode Part Number	Connector Type	Reach Type	Max Length	Optical Interface
XCRQ100DR1-2U1L	QSFP28	DR1	500m (OS2)	LC Duplex UPC

Please contact our Technical Sales Group if you require connectivity or cable configurations that are not listed above
All transceivers have pinned optical connectors and require unpinned mating fiber connectors unless otherwise specified

LC Duplex UPC



Product Label



SCAN TO DOWNLOAD SPEC SHEET

Because we continuously improve our products, Siemon reserves the right to change specifications and availability without prior notice.

North America
P: (1) 860 945 4200

Mexico
P: (521) 556 387 7708/09/10

Latin America
P: (571) 657 1950/51/52

Europe
P: (44) 0 1932 571771

Asia Pacific
P: (61) 2 8977 7500

Siemon OEM Technologies
P: (1) 860 945 4213
www.siemon.com/OEM

China
P: (86) 215385 0303

India, Middle East & Africa
P: (971) 4 3689743

www.siemon.com