100G ZR pluggable coherent module

Compatible with Nokia 7250 IXR, 7730 SXR and 7750 SR routers

Relentless demand for increased capacity at a lower cost per bit is compelling network operators to continuously upgrade and optimize their IP-optical network designs. Nokia coherent routing utilizes a new generation of digital coherent optics (DCOs) in compact pluggable form factors, enabling routers to connect directly and efficiently over DWDM wavelengths.

100G ZR applications

100G ZR is a standardized, interoperable 100G coherent interface specification available in the router-pluggable QSFP28 format. It is profile-optimized for high-density IP access and aggregation applications such as wireless front-haul and mid-haul, and wireline broadband aggregation.

The 100ZR module features -8 dBm output power for a small thermal footprint and can deliver 100 Gb/s over a single dark fiber span over distances of up to 80 km without external amplification. With external amplification, it offers full C-band tunable WDM over distances up to 120 km.

100G ZR Technical specifications

Table 1. Nokia 100G coherent tunable DWDM module part number

Part Number	Description	Interface
3HE19775AA	QSFP28 - 100G ZR Coherent -8dBm 0/70C	100GBase-ZR

Table 2. Nokia part number: 3HE19775AA – QSFP28 – 100G -8dBm ZR 0/70C

QSFP28 - 100G -8dBm ZR 0/70C		
Parameter	**Unit**	**Mode**
Modulation format		DP-DQPSK
Buad Rate	Gbaud	27.9525
Data Rate	Gbit/s	111.81
Signal Spectral Width at 3dB down from Peak	GHz	~26
Signal Spectral Width at 10dB down from Peak	GHz	~34
Signal Spectral Width - Min Tx Spectral excursion	GHz	-1.8
Signal Spectral Width - Max Tx Spectral excursion	GHz	+1.8
Single or Dual Polarization		Dual
Number of subcarriers		1
Inband Transmit OSNR	dB	40
Out of Band Transmit OSNR	dB	35
Minimum configurable Transmit power	dBm	-8
Maximum configurable Transmit power	dBm	-4
Minimum configurable Frequency	GHz	191700
Maximum configurable Frequency	GHz	196100
Configurable Frequency Resolution	GHz	50
Minimum Receive OSNR	dB	17.5
Pre FEC BER required to achieve 1E-15 post FEC BER		4.50E-03
FEC Type		StairCase-FEC
Minimum Grid Spacing (i.e., effective channel spectral bandwidth)	GHz	50
Minimum Receiver Signal Power	dBm	-18
Maximum Receiver Signal Power	dBm	1
Maximum allowed Chromatic Dispersion	ps/nm	6000
Chromatic Dispersion penalty for maximum compensation	dB	1.0
Maximum allowed Polarization Mode Dispersion	ps	10
Polarization Mode Dispersion penalty for maximum compensation	dB	0.5
Maximum allowed Polarization Dependent Loss	dB	0.5
Polarization Dependent Loss penalty for maximum compensation	dB	0.5
Maximum allowed State of Polarization change	krad/s	50
State of Polarization penalty for maximum tracking speed	dB	0.5
Maximum Receiver Total Power	dBm	1
Power consumption	kW	0.0055

Operating environment

- Temperature: 0-70°C (32°F to 158°F)
- Relative humidity: 5% to 95%

About Nokia

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