Datasheet

UC2

The UC2 module, which adopts the Centum Form-factor Pluggable 2 (CFP2) packaging, is designed for the high-speed and bidirectional telecommunication system.

The UC2 module supports up to 100GE and OTU4 signal transmission with a distance up to 10 km (UC2-100G/LR4), 40 km (UC2-100G/ER4), 80 km (UC2-100G/ZR4), and MAN applications (UC2-400G/DCO-E (B), UC2-400G/DCO-WE (B), UC2-200G/DCO-E (B), and UC2-100G/DCO(B)).

The UC2 module complies with ITU-T and IEEE standards, and refers to the specifications of Multi Source Agreement (MSA). It adopts the standard Little Connector (LC) interface, electrical connector, and shielding shell, thus improving EMI performance.

Features

- Low power consumption, stable performance, high efficiency, and energy conservation
- Maximum power consumption in normal working conditions: 6 W (UC2-100G/LR4), 7.5 W (UC2-100G/ER4), 9 W (UC2-100G/ZR4), 24 W (UC2-100G/DCO (B) and UC2-200G/DCO-E (B)), 25 W (UC2-400G/DCO-E (B) and UC2-400G/DCO-WE(B))
- Maximum power consumption in low power consumption mode: 2 W
- Standard LC connector
- Single +3.3 V power supply
- Metal packaging, with outstanding EMI performance
- Support the commercial operating temperature (altitude: 0–1800 m) of 0°C to 70°C for the UC2-100/ZR4, UC2-100G/DCO (B), UC2-200G/DCO-E (B), UC2-400G/DCO-E (B), and UC2-400G/DCO-WE (B) and -5°C to 70°C for other models. At an altitude of 1800 m to 5000 m, the maximum operating temperature of the UC2 module reduces by 1°C for every 220 m increase in altitude. The storage temperature is -40 to 85°C. The relative humidity is 5%–85% (non-condensing, non-icing inside)
- Provide stronger monitoring feature (complying with CFP MSA Management Interface Specification).
- Comply with Class 1 laser safety standards.

Typical scenarios

- MAN, AN, and high-speed data communication devices
- Ethernet 100GE and OTN OTU4

Ordering information

Model	Description
UC2-100G/LR4	CFP2 packaging, compatible with 103.1 Gbit/s and 111.8Gbit/s, 10 km, dual fibers, LC interface, with wavelength of 1295.56/1300.05/1304.58/1309.14nm, commercial, DDM, RoHS

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Model	Description
UC2-100G/ER4	CFP2 packaging, compatible with 103.1 Gbit/s and 111.8 Gbit/s, 40 km, dual fibers, LC interface, with wavelength of 1295.56/1300.05/1304.58/1309.14nm, commercial, DDM, RoHS
UC2-100G/ZR4	CFP2 packaging, compatible with 103.1 Gbit/s and 111.8 Gbit/s, 80 km, dual fibers, LC interface, with wavelengths 1295.56/1300.05/1304.58/1309.14 nm, commercial, DDM, RoHS
UC2-100G/DCO (B)	CFP2 packaging, compatible with 103.1 Gbit/s and 111.8 Gbit/s, MAN application, dual fibers, LC interface, with wavelengths ranging from 1528.77 (196.10 THz) to 1565 (191.3 THz), commercial, DDM, RoHS
UC2-200G/DCO-E (B)	CFP2 packaging, compatible with 103.1 × 2 Gbit/s and 111.8 × 2 Gbit/s, MAN application, dual fibers, LC interface, with wavelengths ranging from 1528.77 (196.10THz) to 1565 (191.3 THz), commercial, DDM, RoHS
UC2-400G/DCO-E (B)	CFP2 packaging, compatible with 103.1 × 4 Gbit/s and 111.8 × 4 Gbit/s, MAN application, dual fibers, LC interface, with wavelengths ranging from 1528.77 (196.10 THz) to 1565 (191.3 THz), supporting the 75-GHz sending frequency interval for 64 channels of DWDM application or 100-GHz sending frequency interval for 48 channels of DWDM application, commercial, DDM, RoHS
UC2-400G/DCO-WE (B)	CFP2 packaging, compatible with 103.1 × 4 Gbit/s and 111.8 × 4 Gbit/s, MAN application, dual fibers, LC interface, with wavelengths ranging from 1524.11 (196.7 THz) to 1572.06 (190.7 THz), supporting the 75-GHz sending frequency interval for 80 channels of DWDM application, commercial, DDM, RoHS

Technical specifications

Model	Rate (Gbit/s)	Tx optical power (dBm)	Overload point (dBm)	Rx optical power (dBm)	Target distance (km)
UC2-100G/LR4 (100GE services)	103.1	-4.3 to 4.5 (each lane)	> 5.5 (each lane)	-10.6 to 4.5 (each lane)	10
UC2-100G/LR4 (OTU4 services)	111.8	-0.6 to 4.0 (each lane)	> 5.5 (each lane)	-6.9 to 4 (extinction ratio: 4–7 dB) (each lane) -8.8 to 2.9 (extinction ratio: > 7 dB) (each lane)	10
UC2-100G/ER4 (100GE services)	103.1	-2.9 to 2.9 (each lane)	> 5.5 (each lane)	-20.9 to 4.5 (each lane)	40
UC2-100G/ER4 (OTU4 services)	111.8	-2.7 to 2.9 (each lane)	> 5.5 (each lane)	-23.2 to 4.5 (each lane)	40
UC2-100G/Z4	103.1 and 111.8	1–6.5 (each lane)	> 4.5 (each lane)	-28 to 4.5 (each lane)	80

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Model	Rate (Gbit/s)	Tx optical power (dBm)	Overload point (dBm)	Rx optical power (dBm)	Target distance (km)
UC2-100G/DCO (B)	103.1 and 111.8	-10 to -7	> 0	Input power range: -18 to 0 Input power sensitivity: > -32 (OFEC, OSNR > 35 dB)	MAN application
UC2-200G/DCO-E (B)	103.1 × 2 and 111.8 × 2	-5 to 5	> 5	Input power range: -18 to 5 Input power sensitivity: > -21 (OFEC and OSNR > 35 dB)	MAN application
UC2-400G/DCO-E (B)	100G × 4 100G × 2 OTU4 × 4 OTU4 × 2 400G × 1	-8 to 5	> 0	● 400G PS-16QAM HG SDFEC: input power range: -12 to 0; input power sensitivity: > -20 (SD-FEC and OSNR > 35 dB) ● 200G PS-16QAM SDFEC: input power range: -18 to 5; input power sensitivity: > -21 (SD-FEC and OSNR > 35 dB) ● 200G DP-QPSK SDFEC: input power range: -18 to 5; input power sensitivity: > -21 (SD-FEC and OSNR > 35 dB)	MAN application

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Model	Rate (Gbit/s)	Tx optical power (dBm)	Overload point (dBm)	Rx optical power (dBm)	Target distance (km)
UC2-400G/DCO-WE (B)	100G × 4 100G × 2 OTU4 × 4 OTU4 × 2 400G × 1	-8 to 5	> 0	• 400G PS-16QAM HG SDFEC: input power range: -12 to 0; input power sensitivity: > -20 (SD-FEC and OSNR > 35 dB) • 200G PS-16QAM SDFEC: input power range: -18 to 5; input power sensitivity: > -21 (SD-FEC and OSNR > 35 dB) • 200G DP-QPSK SDFEC: input power range: -18 to 5; input power sensitivity: > -21 (SD-FEC and OSNR > 35 dB)	MAN application

- The input power range of the UC2-100G/DCO (B) is -18 to 0 dBm and that of the UC2-200G/DCO-E (B) is -18 to 5 dBm, which makes the system reach the optimal state. When OFEC is enabled, OSNR > 35 dB, and the minimum input power sensitivity of the aforementioned optical modules meets the requirements of post-FEC, the BER < 10^{-15}.
- The input power range of the UC2-400G/DCO-E (B) and UC2-400G/DCO-WE (B) in 400G PS-16QAM HG SDFEC mode is -12 to 0 dBm. The input power range of the UC2-400G/DCO-E (B) and UC2-400G/DCO-WE (B) in 200G PS-16QAM SDFEC or 200G DP-QPSK SDFEC mode is -18 to 5 dBm. These ranges make the system reach the optimal state. When SD-FEC is enabled, OSNR > 35 dB, and the minimum input power sensitivity of the aforementioned optical modules meets the requirements of post-FEC, the BER < 10-15.
- For the UC2-100G/DCO (B), no dispersion compensation is needed within 2400 km.
- For the UC2-200G/DCO-E (B), no dispersion compensation is needed within 1200 km.
- For the UC2-400G/DCO-E (B) and UC2-400G/DCO-WE (B), no dispersion compensation is needed within 600 km.
- The actual transmission distance of customer services is affected by optical signal insertion loss, SNR, and other factors. Therefore, it is generally smaller than the target distance.
- The Optical Signal to Noise Ratio (OSNR) referred to in this document is Back to Back (B2B) value, instead of the system value. To calculate the system value, add the actual system cost (such as the costs on the site, long-distance transmission line, and optical instruments) to the B2B value.

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