

FEATURES

- 43 dBmV high-output RF level supports multi-subscriber (MDU) applications
- OBI-free return path wavelength management for up to 8 R-ONUs transmitting into a single optical receiver
- 72 to 1000 MHz forward bandwidth @ 1550 nm and 5 to 60 MHz return on 1610 nm wavelength
- 10/10, 10/1, 2/1, 1/1 Gbps PON pass-through option
- AGC ensures constant RF output over the optical input range
- DFB laser supports full DOCSIS® 3.0 operation
- RF Output test point
- Integrated 100–240 VAC Power Supply
- Supplied with PSE certified JIS C 8303 power cord (see Ordering Information)

The CP866TC/WC RFoG Optical Network Unit (R-ONU) is part of the CommScope Optical Beat Interference elimination “OBI-free” technology family that provides cost-effective deployment of fiber to the premises over an RFoG network.

The CP866TC/WC return wavelength management ensures OBI-free transmissions for up to eight CP866TC/WC R-ONUs transmitting into a single optical receiver, providing subscribers with high performance and a high quality of service.



An internal rotary switch selects one of eight wavelengths for the upstream optical transmitter, ensuring complete OBI-free performance. The 43 dBmV RF high-output level supports a wide array of MDU splitter network designs, removing the need for distribution amplifiers. The module has bandwidth of 5–60 MHz return with 72–1000 MHz forward, using 1550 nm downstream and 1610 nm upstream wavelengths. These R-ONUs support IEEE EPON and ITU GPON/XGPON overlay with RFoG across the same fiber network, and the DFB (Distributed Feed Back) upstream transmitter laser operates in CW (carrier wave, always on) mode. A built-in 100–240 Volts AC power supply supports worldwide power grids, reducing parts count and installation costs.

The CP866WC-02-00 R-ONU provides PON pass-through via an integrated WDM optical pass-through port for 10/10G PON on 1577/1270 nm downstream/upstream (DS/US), 10G/1G PON on 1577/1310 nm DS/US, and 2/1 (Turbo) and 1/1 Gbps PON on 1490/1310 nm, enabling direct PON transmission to compatible CPE. Combined with the CommScope portfolio of multiwavelength transmitters, a wide selection of optical passives, VHub/UVHub, low noise return receivers, and AgileMax[®] solutions, the CP866TC/WC-02 R-ONUs leverage existing HFC infrastructures and back-office systems to provide cable operators with the ability to extend their fiber networks easily, incrementally, and economically.

SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	10.5" W x 6.01" H x 2.55" D (26.9 cm x 15.4 cm x 6.5 cm)
Weight	4.0 lb (1.8 kg)
Environmental	
Operating Temperature Range	-20° to +60°C (-4° to 140°F)
Storage Temperature Range	-40° to +85°C (-40° to 185°F)
Humidity	5% to 95% non-condensing
Power Requirement	
AC Power	100–240 V _{AC} , 50/60 Hz with IEC 60320-1/C16 inlet
Power Consumption, max	25 W max
Connectors	
Optical Interface	SC/APC (IEC 61754-4 compliant)
Optical Interface (PON pass-through)	SC/APC (IEC 61754-4 compliant)
RF Interfaces	F-type female
RF -20 dB Forward Path Test Point	F-type female
Forward Path	
Optical Receiver	
Input Wavelength	1525 to 1563 nm
Input Power Range, Nominal	+1 to -5 dBm
RF Performance	
RF Passband	72 to 1,000 MHz
Channel Loading	Analog NTSC (72 to 550 MHz), 256 QAM at -6 dBm (550 to 1,000 MHz)
RF Output Level, Nominal (@ 3.1% OMI)	43 dBmV/ch at 1000 MHz, adjustable with JXP pads
Slope (72–1000 MHz)	9 dB linear, set with JXP equalizer
Flatness, 72 to 1,000 MHz	± 1.5 dB maximum excluding slope
Output Return Loss	14 dB minimum
Automatic Gain Control	± 2.0 dB (over +1 to -5 dBm input power)
Link Performance	CW loading to 550 MHz and 256 QAM loading above 550 MHz at -6 dBm
CNR	> 47 dB (typical system performance, -5 dBm, 20 km, 1x32 splitter)
CSO	< -60 dB (at 0 dBm input power)
CTB	< -58 dB (at 0 dBm input power)

SPECIFICATIONS

Characteristics	Specification
Return Path	
Optical Transmitter	
Wavelength	1610 nm ± 10 nm
Output Power	3.0 dBm ± 1.0 dB
RF Performance	
Passband	5 to 60 MHz
Dynamic Range @ 30 dB CNR	18 dB (-16 dBm input to OR3144H receiver)
Input Return Loss	16 dB minimum
PON Performance	
Receive Input Wavelengths	1575–1580 nm (10 Gbps) and 1480–1500 nm (1 Gbps)
Transmission Wavelengths	1260–1280 nm (10 Gbps) and 1260–1360 nm (1 Gbps)
PON Pass-through Insertion Loss	1 dB maximum
Isolation – 1550 nm to PON, min	-18 dB
Isolation – 1610 nm to PON, min	-55 dB
Isolation – 1577/1490 PON to RFoG	-45 dB
Isolation – 1310/1270 PON to RFoG	-55 dB
Status Indicator LED	
Green (operating)	Optical input power ≥ -13 dBm (± 1 dB)
Red (not operating)	Optical input power < -13 dBm (± 1 dB)
Mounting	
	Direct mounting on an interior wall or in optional outdoor housing. Contact your CommScope representative regarding enclosures for other indoor/outdoor mounting options.
Standards and Certifications	
	VCCI 32-1:2016, Class B
	IEC 62368-1
	IEC 60825-1, IEC 60825-2 (Class 1 laser product)
	Compliant with surge requirements of EN61000-4-5, Class 3
	CE mark compliant

ORDERING INFORMATION

	Model Number	Return Path RF Bandwidth	Forward Path RF Bandwidth
With 10G PON Pass-through	CP866WC-02-00	5 to 60 MHz	72 to 1,000 MHz
No PON Pass-through	CP866TC-02-00	5 to 60 MHz	72 to 1,000 MHz

NOTE:

The enclosed PL8004 power cable shipped with the module must only be used for CP866 modules and cannot be used for any other purpose.

RELATED PRODUCTS

OR3144H Quad Diplexer/Return Receiver	OR4xxx Diplexer/Return Receiver
XE4202M Remote OLT (R-OLT)	Optical Passives

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

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Note: Specifications are subject to change without notice.

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