

COMMSCOPE CP854TU

OBI-FREE RFOG NODE



The COMMSCOPE CP85xTU/UU/WU RFoG Optical Network Unit (R-ONU) is part of the COMMSCOPE Optical Beat Interference elimination "OBI-free" technology family that supports cost-effective deployment of full interactive video, voice, and data services over an RFoG network.

COMMSCOPE OBI-free technology enables multiple simultaneous upstream RF channel transmissions, enabling multiple MAC domains and full DOCSIS® 3.0 channel usage to efficiently coexist, offering increased upstream bandwidth usage for RF returns as compared to non-OBI-free models.

- 36 dBmV RF output level supports multi-subscriber (MDU) applications while conforming to key elements of the SCTE174 RFoG Standard
- OBI-free technology enables high performance upstream operation in an RFoG environment
- 5 to 42, 65, or 85 MHz returns on 1610 nm wavelength
- Return path wavelength management supports up to 16 R-ONUs transmitting into a single optical receiver
- 51, 85, or 102 to 1002 MHz forward bandwidths on 1550 nm wavelength
- DFB laser transmitter supports full DOCSIS 3.0 operation
- PON pass-through and no PON pass-through options
- Low RIN and wide dynamic range
- RF test point facilitates ease of installation and troubleshooting
- DC power supported via RF port or dedicated power port
- Indoor and outdoor mounting options

SPECIFICATIONS

PHYSICAL	
Dimensions	6.4" W x 4.2" H x 1.5" D (16.3 cm x 10.4 cm x 3.8 cm)
Weight	1.0 lb (0.45 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	
Input voltage range	+10.5 to 18 VDC from wall adapter or UPS. Recommended power supply: PS1921W-10 (ordered separately)
Power consumption, max	13.5 W max at turn on; 9 W max after 1 minute
CONNECTORS	
Optical interface (RF)	IEC 61754-4 compliant SC/APC recessed female fiber connector for 1550/1610 nm RF
Optical interface (PON) (CP85xUU and CP85xWU Only)	IEC 61754-4 compliant SC/APC recessed female fiber connector. Passes 1 Gbps (1490/1310 nm) and 10 Gbps (1577/1270) nm downstream/upstream optical signals to compatible CPE. CP85xUU Limited to 1 Gbps only. This is a passive connection with no amplification or attenuation.
RF interface	75 ohm coax "F-female" connector
DC power interface	75 ohm coax "F-female" connector
Forward path RF -20 dB Test point	75 ohm coax "F-female" connector

DOWNSTREAM	
OPTICAL RECEIVER	
Input wavelength	1540–1565 nm
Input power range, nominal	+1 to –5 dBm
RF PERFORMANCE	
RF passband	51 to 1002 MHz (CP851TU, CP851UU, CP851WU) 85 to 1002 MHz (CP854TU, CP854UU, CP854WU) 102 to 1002 MHz (CP859TU, CP859UU, CP859WU)
Channel loading	Analog NTSC (up to 550 MHz), 256 QAM at -6 dBc (550-1002 MHz)
RF output level, Nominal	(@3.2% OMI) 36 dBmV/ch at 1002 MHz
Slope (51-1002 MHz)	6 dB linear
Flatness over the passband, excluding slope, max	± 1.5 dB
Output return loss	> 16 dB
Output level stability	± 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 dBc)
CNR	> 48 dB (typical system performance, -5 dBm, 20 km, 1x32 splitter)
CSO	> -60 dB (at 0 dBm input power)
CTB	> -60 dB (at 0 dBm input power)
RETURN PATH	
OPTICAL TRANSMITTER	
Transmission wavelength	1610 nm ± 10 nm
Output power	3.0 ± 1.0 dBm
RF PERFORMANCE	
Passband	5–42 MHz (CP851TU, CP851UU, CP851WU) 5-65 MHz (CP854TU, CP854UU, CP854WU) 5-85 MHz (CP859TU, CP859UU, CP859WU)
RF input range	7-25 dBmV
Squelch threshold	5 dBmV
Dynamic range @ 30 dB CNR	–20 dBm input to OR3144H receiver); 5-42 MHz return: 18 dB (35 MHz loading); 5-65 MHz return: 15.8 dB (60 MHz loading); 5-85 MHz return: 15 dB (80 MHz loading)
Input return loss	> 16 dB (within passband)
PON PERFORMANCE CP85XUU AND CP85XWU ONLY	
Receive input wavelengths	1575 – 1580 nm (10 Gbps) and 1480 – 1500 nm (1 Gbps); (CP85xUU limited to 1480 – 1500 nm 1 Gbps only)
Transmission wavelengths	1260 – 1280 nm (10 Gbps) and 1260 – 1360 nm (1 Gbps); (CP85xUU limited to 1260 – 1360 nm 1 Gbps only)
Transmit wavelengths	
Isolation – 1550 nm to PON, min	-50 dB
Isolation – 1610 nm to PON, min	-15 dB
Isolation – 1577/1490 PON to RFoG	-50 dB
Isolation – 1310/1270 PON to RFoG	-25 dB
STATUS INDICATOR LED	
Green = optical input power	≥ -11 dBm (± 1 dB)
Red = 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	
EMI/EMC complies with FCC Class B and ANSI/SCTE 174 2010	
CE mark certified	
US/C 60950-1, IEC/EN 60950-1	
Class 1 laser product per IEC 60825-1 and FDA 21 CFR 1040.10/11	
Compliant with surge requirements of ANSI/SCTE 174 2010	

ORDERING INFORMATION

FORWARD PATH (MHZ) REVERSE PATH (MHZ)	54 – 1002 5 – 42	85 – 1002 5 – 65	102 – 1002 5 – 85
RF + 1 Gbps PON Pass-through	CP851UU-01-00	CP854UU-01-00	CP859UU-01-00
RF + 10/1 Gbps PON Pass-through	CP851WU-01-00	CP854WU-01-00	CP859WU-01-00
RF Only (no PON Pass-through)	CP851TU-01-00	CP854TU-01-00	CP859TU-01-00
Power Supply Units must be ordered separately.			