RF over Glass (RFoG)

CP86xTU/WU-01-00

High-Power RFoG 1.2 GHz OBI-free MDU R-ONU with 16-to-1 Optical Receiver Support

FEATURES

- 48 dBmV high-output RF 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
- 54, 85, or 102 to 1218 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
- Integrated 100 – 240 V_{AC} Power Supply
- Indoor and outdoor mounting options

PRODUCT OVERVIEW

The ARRIS CP86xTU/WU RFoG Optical Network Unit (R-ONU) is part of the ARRIS 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. ARRIS 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.

The upstream wavelength management feature designed into the CP86xTU/WU R-ONU enables up to 16 CP86xTU/WU R-ONUs to be deployed transmitting into a single optical receiver. An internal rotary switch selects one of sixteen wavelength management options for the upstream optical receiver. The 48 dBmV RF high-output level supports a wide array of MDU splitter network designs, removing the need for distribution amplifiers. The units are available in bandwidth options: 5-42 MHz return with 54-1218 MHz forward; 5-65 MHz return with 85-1218 MHz forward; or 5-85 MHz return with 102- 1218 MHz forward, using 1550 nm downstream and 1610 nm upstream wavelengths. The R-ONUs support IEEE EPON and ITU GPON/XGPON overlay with RFoG across the same fiber network. The CP86xWU-01-00 PON pass-through version includes an integrated WDM and optical pass-through port for 10G/1G xPON on 1577/1490 nm forwards and 1270/1310 nm returns, enabling direct PON connection to compatible CPE. Combined with the ARRIS portfolio of multiwavelength transmitters, a wide selection of optical passives, VHub, low noise return receivers, and AgileMax® solutions, the CP86xTU/WU-01 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}. Inlet connector is an IEC 60320-1/C16. Mating AC power cord is IEC 60320-1/C15 with country specific mains plug. Power cord ordered separately.
Power consumption, max	25 W max
Connectors	
Optical interface (RF)	IEC 61754-4 compliant SC/APC recessed female fiber connector for 1550/1610 nm RF/PON Network
Optical interface (PON) (CP86xWU 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. This is a passive connection with no amplification or attenuation.
RF interface	75 ohm coax “F-female” connector
RF -20 dB Test point	75 ohm coax “F-female” connector
Downstream	
Optical Receiver	
Input wavelength	1525–1565 nm
Input power range, nominal	+1 to –5 dBm
RF Performance	
RF passband	54 to 1218 MHz (CP861TU, CP861WU) 85 to 1218 MHz (CP864TU, CP864WU) 102 to 1218 MHz (CP869TU, CP869WU)
Channel loading	Analog NTSC (up to 550 MHz), 256 QAM at -6 dBc (550–1218 MHz)
RF output level, Nominal (@3.1% OMI)	48 dBmV/ch at 1218 MHz, adjustable with JXP pads
Slope (54-1218 MHz)	9 dB linear, set with JXP equalizer
Flatness over the passband, excluding slope, max	± 1.5 dB
Output return loss	> 14 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	> 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 (CONTINUED)

Characteristics	Specification
Return Path	
Optical Transmitter	
Transmission wavelength	1610 nm ± 10 nm
Output power	3.0 ± 1.0 dBm
RF Performance	
Passband	5–42 MHz (CP861TU, CP861WU) 5–65 MHz (CP864TU, CP864WU) 5–85 MHz (CP869TU, CP869WU)
RF input range	7-28 dBmV
Squelch threshold	5 dBmV
Dynamic range @ 30 dB CNR	–16 dBm (input to OR3144H receiver); 5–42 MHz return: 20 dB (35 MHz loading); 5–65 MHz return: 18 dB (60 MHz loading); 5–85 MHz return: 17 dB (80 MHz loading)
Input return loss	> 16 dB (> 14 dB for CP869TU/WU)
PON Performance	**CP86xWU only**
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)
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 (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 ARRIS representative regarding enclosures for other indoor/outdoor mounting options.
Standards and Certifications	
	EMI/EMC complies with FCC Class B
	CE mark compliant
	IEC/EN/UL/CSA 60950-1
	IEC/EN 60825-1, IEC/EN 60825-2 (Laser Class 1)
	FDA 21 CFR 1040.10/11 LN #50
	Compliant with surge requirements of EN61000-4-5, Class 3

ORDERING INFORMATION

Forward Path (MHz) Reverse Path (MHz)	54–1218 5–42 Model Name	85–1218 5–65 Model Name	102–1218 5–85 Model Name
RF + 10/1 Gbps PON Pass-through	CP861WU-01-00	CP864WU-01-00	CP869WU-01-00
RF Only (no PON Pass-through)	CP861TU-01-00	CP864TU-01-00	CP869TU-01-00
AC/Mains Power Cords*	**USA Model Name**	**Europe Model Name**	**United Kingdom Model Name**
* Must be ordered separately. Packaged in quantities of 10 only.	PL8001	PL8002	PL8003

RELATED PRODUCTS

OR3144H Quad Diplexer/Return Receiver	OR4178H Diplexer/Return Receiver
CH3000 Headend Chassis	NC2000, NC4000
AgileMax®	VHub

Customer Care

Contact Customer Care for product information and sales:

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

Note: Specifications are subject to change without notice.

1510794-RevC_CP86xTU-WU-Family-High-Power OBI-free-MDU-RONU 10/2018 EA-29088