

RF over Glass (RFoG)

CP80x5U/8U-20-10

RFoG 1218 MHz SDU R-ONU Family with 42/54, 65/88, and 85/102 MHz Options

FEATURES

- Supports single-subscriber applications
- DOCSIS 3.1 capable
- 1550/1610 nm optical channel plans supported
- +20 dBmV RF output level at 1.2 GHz with automatic level control
- 5-42, 5-65, or 5-85 MHz return options
- 1610 nm isolated DFB upstream transmitter
- 54 to 1218, 88 to 1218, or 102 to 1218 MHz forward options on 1550 nm
- Direct replacement for 1002 MHz version; providing equal output level
- PON pass-through option enables both 10 and 1 Gbps signals
- DC power supported via RF port or dedicated power port
- Indoor and outdoor mounting options



PRODUCT OVERVIEW

To support MSOs in the deployment of Fiber to the Premises (FTTP) networks, ARRIS offers a family of RFoG Optical Network Unit (R-ONU) CPEs as part of complete end-to-end RFoG solutions, including the ARRIS chassis-based OR3144H Quad Diplexer/Return Receiver (with enhanced return path performance for DOCSIS® 3.1), the VHub™-based OR4148H Quad Diplexer/Return Receiver (for extended reach applications), as well as AgileMax® RFoG platform solutions. The CP80x5U/8U-20 SDU R-ONUs are available with three bandwidth options: 5-42 MHz return with 54-1218 MHz forward, 5-65 MHz return with 88-1218 MHz forward, or 5-85 MHz return with 102-1218 MHz forward, all using 1550 nm downstream and 1610 nm upstream wavelengths, depending on the R-ONU selected. The forward optical window of 1525 – 1565 nm enables the use of ITU channels 16 – 62 and all DWDM wavelength plans.

The CP80x5U/8U-20 SDU R-ONU is a 1.2 GHz (1218 MHz) RFoG Optical Network Unit that converts optical signals to RF signals at the customer premises. Internal optical filtering ensures the R-ONU can be safely deployed in a system with 1 GE (1490 nm) or 10 GE (1577 nm) PON downstream signals overlaid onto the same fiber without the need for any additional filtering, allowing operators to deploy advanced services as required. The CP80x5U/8U-20 devices incorporate isolated burst-mode DFB laser technology for optimal upstream digital return performance; local powering adapter or UPS solutions; rugged construction; plus weatherproof outdoor enclosures and indoor mounting solutions. The CP80x8U-20 SDU R-ONU with a 10G/1G PON pass-through feature is also available to directly support compatible PON equipped subscriber premise equipment.

Combined with the ARRIS portfolio of multi-wavelength transmitters, a wide selection of optical passives, VHub™, low noise return receivers, and AgileMax® RFoG solutions, the CP80x5U/8U-20 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	6.3" W x 3.8" H x 1.5" D (16.0 cm x 9.7 cm x 3.8 cm)
Weight	1.0 lb (0.45 kg)
Environmental	
Operating temperature range	-40° to +60°C (-40° 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 to 18 V _{DC} (12 V _{DC} nominal), from wall adapter or UPS. See Ordering Information.
Power consumption, typical	2.5 W
Connectors	
Optical interface (RF)	IEC 61754-4 compliant SC/APC recessed female fiber connector for 1550/1610 nm RF
Optical interface (PON pass-through model only)	IEC 61754-4 compliant SC/APC recessed female fiber connector for 1490/1310 nm or 1577/1270 nm GE PON
Combined RF and DC interface	75 ohm coax "F-female" connector
Pass-through V _{DC} power port	75 ohm coax "F-female" connector
Downstream	
Optical Receiver	
Input wavelength (RF)	1525 – 1565 nm
Input power range	0 to -6 dBm (for proper ALC operation)
RF Performance	
RF passbands	54 to 1218 MHz (CP8015U/CP8018U) 88 to 1218 MHz (CP8045U/CP8048U) 102 to 1218 MHz (CP8095U/8098U)
RF output level (nominal)	20 dBmV @ 1218 MHz
Output Slope	6 ± 2 dB (LF to 1218 MHz)
Flatness, max	± 2.0 dB
Output level (ALC) stability	± 1.5 dB (over optical input power range)
Link performance	
CNR	≥ 48 dB (at -3 dBm, 2.5% OMI, -157 dB/Hz RIN)
CSO	≥ 58 dB (at 0 dBm input power)
CTB	≥ 58 dB (at 0 dBm input power)
Typical system performance	3.1% OMI, -3 dBm, 20 km, 1x32 splitter
Upstream-Return Path	
Optical Transmitter	
Transmission wavelength	1610 nm ± 10 nm
Output power	3.0 ± 1.5 dBm
RF Performance	
Passband	5-42 MHz (CP8015U/CP8018U) 5-65 MHz (CP8045U/CP8048U) 5-85 MHz (CP8095U/CP8098U)
RF input range	15-45 dBmV 33 dBmV/ch Nominal Loading = (4) 6.4 MHz QAM channels
Transmitter OMI	35% (@ 39 dBmV)
Squelch threshold	9 dBmV ± 1
Dynamic range @ 30 dB NPR	20 dB (37 MHz loading, -16 dBm input to OR3144H)

SPECIFICATIONS CONTINUED

Characteristics	Specification
PON Performance	
CP80x8U Only	
Insertion loss (network to PON port)	0.6 dB (including connector)
Receive (Downstream) input wavelength (10G EPON)	1577 nm nominal (1575 – 1580 nm)
Receive (Downstream) input wavelength (1G EPON)	1490 nm nominal (1480 – 1500 nm)
Transmit (Upstream) wavelength (10G EPON)	1270 nm nominal (1260 – 1280 nm)
Transmit (Upstream) wavelength (1G EPON)	1310 nm nominal (1260 – 1360 nm)
Isolation – 1550 nm to PON, min	-18 dB
Isolation – 1610 nm to PON, min	-50 dB
Isolation – 1577/1490 PON to RFoG	-25 dB
Isolation – 1310/1270 PON to RFoG	-50 dB
Optical Receive Input Power Status LED	
LED Green	Pin > -13 dBm (± 1 dBm)
LED Red	Pin < -13 dBm (± 1 dBm)
LED Dark	No Power/DC
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	
Mounting	
Direct mounting on an interior wall or in optional outdoor housing. Contact your ARRIS representative regarding enclosures for other indoor/outdoor mounting situations.	

ORDERING INFORMATION

Forward Path (MHz)	54 – 1218	88 – 1218	102 – 1218
Reverse Path (MHz)	5 – 42	5 – 65	5 – 85
RF + 10/1 Gbps PON Pass-through, 1610 nm Return	CP8018U-20-10	CP8048U-20-10	CP8098U-20-10
RF Only, no PON Pass-through, 1610 nm return	CP8015U-20-10	CP8045U-20-10	CP8095U-20-10

PS1000 Power Inserter included. Power supply is ordered separately.

RELATED PRODUCTS

OR3144H Quad Diplexer/Return Receiver	OR4xxx Diplexer/Return Receivers
PS1000 Power Inserter	PS1921W-10 Power Adapter (meets USA DOE Class VI efficiency requirements, and features screw-support mount for USA version and F-type DC connector)

AgileMax® RFoG Solutions

Note: Specifications are subject to change without notice.

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