

# RF over Glass (RFoG)

## CP80x3U/5U/6U/8U-02-10

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

## FEATURES

- Supports single-subscriber applications while conforming to key elements of the SCTE174 RFoG Standard
- 1550/1610 nm or 1550/1310 nm optical channel plans supported
- +19 dBmV RF output levels with optical automatic level control (ALC) maintains RF output levels over a wide range of optical inputs
- 5-42, 5-65, or 5-85 MHz return options on 1610 nm or 1310 nm
- 54 to 1002, 85 to 1002, or 102 to 1002 MHz forward options on 1550 nm
- 10/1 Gbps or 1Gbps PON pass-through and no PON pass-through options
- 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® 3.0), VHub™-based OR4148H Quad Diplexer/Return Receiver (for extended reach applications), as well as AgileMax® platform solutions. The CP80x3U/5U/6U/8U SDU R-ONUs are available with three bandwidth options: 5-42 MHz return with 54-1002 MHz forward, 5-65 MHz return with 85-1002 MHz forward, or 5-85 MHz return with 102-1002 MHz forward, all using 1550 nm downstream and 1610 nm upstream wavelengths.

The CP80x3U/5U/6U/8U SDU R-ONU is a 1 GHz 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 CP80x3U/5U/6U/8U devices incorporate thermally stable 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. 1610 nm SDU R-ONUs with a PON pass-through feature are also available: CP80x6U-00 (1GE) and CP80x8U-00 (10GE/1GE), to directly support compatible PON equipped subscriber premise equipment.

Combined with the ARRIS portfolio of multiwavelength transmitters, a wide selection of optical passives, VHub™, low noise return receivers, and AgileMax® solutions, the CP80x3U/5U/6U/8U 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
<b>Physical</b>	
Dimensions	6.4" W x 4.1" H x 1.5" D (16.3 cm x 10.4 cm x 3.8 cm)
Weight	1.0 lb (0.45 kg)
<b>Environmental</b>	
Operating temperature range	-40° to +65°C (-40° to 149°F)
Storage temperature range	-40° to +85°C (-40° to 185°F)
Humidity	5% to 95% non-condensing
<b>Power Requirement</b>	
Input voltage range	10 to 18 V <sub>DC</sub> (from wall adapter or UPS, see Ordering Information). PS1000 Power Inserter included.
Power consumption, typical	2.5 W
<b>Connectors</b>	
Optical interface (RF)	IEC 61754-4 compliant SC/APC recessed female fiber connector for 1550/1610 nm RF
Optical interface (PON pass-through models 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 <sub>DC</sub> power port	75 ohm coax "F-female" connector
<b>Downstream</b>	
<b>Optical Receiver</b>	
Input wavelength	1525 – 1565 nm
Input power range	0 to -6 dBm
<b>RF Performance</b>	
RF passbands	54 to 1002 MHz (CP8013U/8015U/8016U/8018U); 85 to 1002 MHz (CP8043U/8045U/8046U/8048U); 102 to 1002 MHz (CP8095U/8098U)
RF output level	19 dBmV/ch (at 1002 MHz)
Output Slope	5 ± 2 dB
Flatness, max	± 1.5 dB
Output level stability	± 2.0 dB (over optical input power range)
Link performance	
CNR	> 48 dB
CSO	< 60 dB (at 0 dBm input power)
CTB	< 60 dB (at 0 dBm input power)
Typical system performance	3.1% OMI, -5 dBm, 20 km, 1x32 splitter
<b>Upstream-Return Path</b>	
<b>Optical Transmitter</b>	
Transmission wavelength	1610 nm ± 10 nm (CP80x5U/80x6U/80x8U); 1310 nm ± 50 nm (CP80x3U)
Output power	3.0 ± 1.0 dBm
<b>RF Performance</b>	
Passband	5-42 MHz (CP8013U/8015U/8016U/8018U); 5-65 MHz (CP8043U/8045U/8046U/8048U); 5-85 MHz (CP8095U/CP8098U)
RF input range	15-45 dBmV (35% OMI @ 39 dBmV)
Transmitter OMI	30%
Squelch threshold	13 dBmV ± 1.0 dB
Dynamic range @ 30 dB NPR	15.5 dB (60 MHz loading, -20 dBm input to the OR3144H receiver)

## SPECIFICATIONS CONTINUED

Characteristics	Specification
<b>PON Performance</b>	CP80x6U and CP80x8U Only
Receive input wavelengths	1575 – 1580 nm (10 Gbps) and 1480 – 1500 nm (1 Gbps); (CP80x6U limited to 1480 – 1500 nm 1 Gbps only)
Transmit wavelengths	1260 – 1280 nm (10 Gbps) and 1260 – 1360 nm (1 Gbps); (CP80x6U limited to 1260 – 1360 nm 1 Gbps only)
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
<b>Status Indicator LED</b>	
Green = optical input power	≥ -14 dBm (± 1 dB)
Red = optical input power	< -14 dBm (± 1 dB)
<b>Standards and Certifications</b>	
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	
<b>Mounting</b>	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 – 1002	85 – 1002	102 – 1002
Reverse Path (MHz)	5 – 42	5 – 65	5 – 85
RF + 1 Gbps PON Pass-through	CP8016U-02-10	CP8046U-02-10	N/A
RF + 10/1 Gbps PON Pass-through	CP8018U-02-10	CP8048U-02-10	CP8098U-02-10
RF Only (no PON Pass-through)	CP8015U-02-10	CP8045U-02-10	CP8095U-02-10
RF Only (1310 nm, no PON Pass-through)	CP8013U-02-10	CP8043U-02-10	N/A

One PS1000 Power Inserter is included with each R-ONU ordered. Power Supply Units must be ordered separately.

## RELATED PRODUCTS

OR3144H Quad Diplexer/Return Receiver	OR4168H Diplexer/Return Receiver
PS1911/12/13/14 Power Adapter 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)

**Note:** Specifications are subject to change without notice.

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Ask us about the complete Access Technologies Solutions portfolio:

RFoG-CP80xxU-02

Fiber-Deep

DOCSIS® 3.1

Node Segmentation

HPON™/RFoG

FTTx