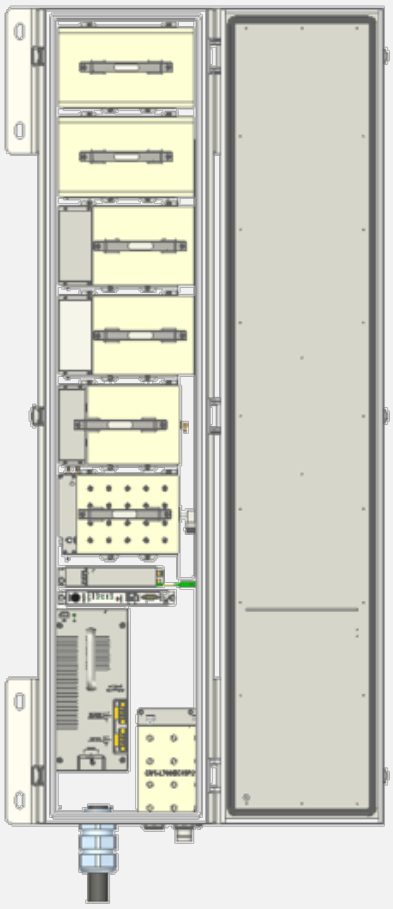
ALLIANCE Multi-Operator DAS

Multi-Power Remote Optic Unit (MPROU)

Product Specifications / Parts List



The ALLIANCE Release 6 platform is SOLiD's multi-operator, neutral host Distributed Antenna System (DAS) that efficiently delivers wireless RF signals into any indoor or outdoor location difficult to cover with traditional macro networks.

The Multi-Power Remote Optic Unit (MPROU) can support up to seven commercial bands, each delivering 5W or 20W of output power.

The MPROU features:

- Multi-band combiner provides one antenna port
- Easy install, commissioning and management
- External fan cooled
- Rugged construction: UL Type 4X certified
- Up to 7 bands in one cabinet and on one fiber

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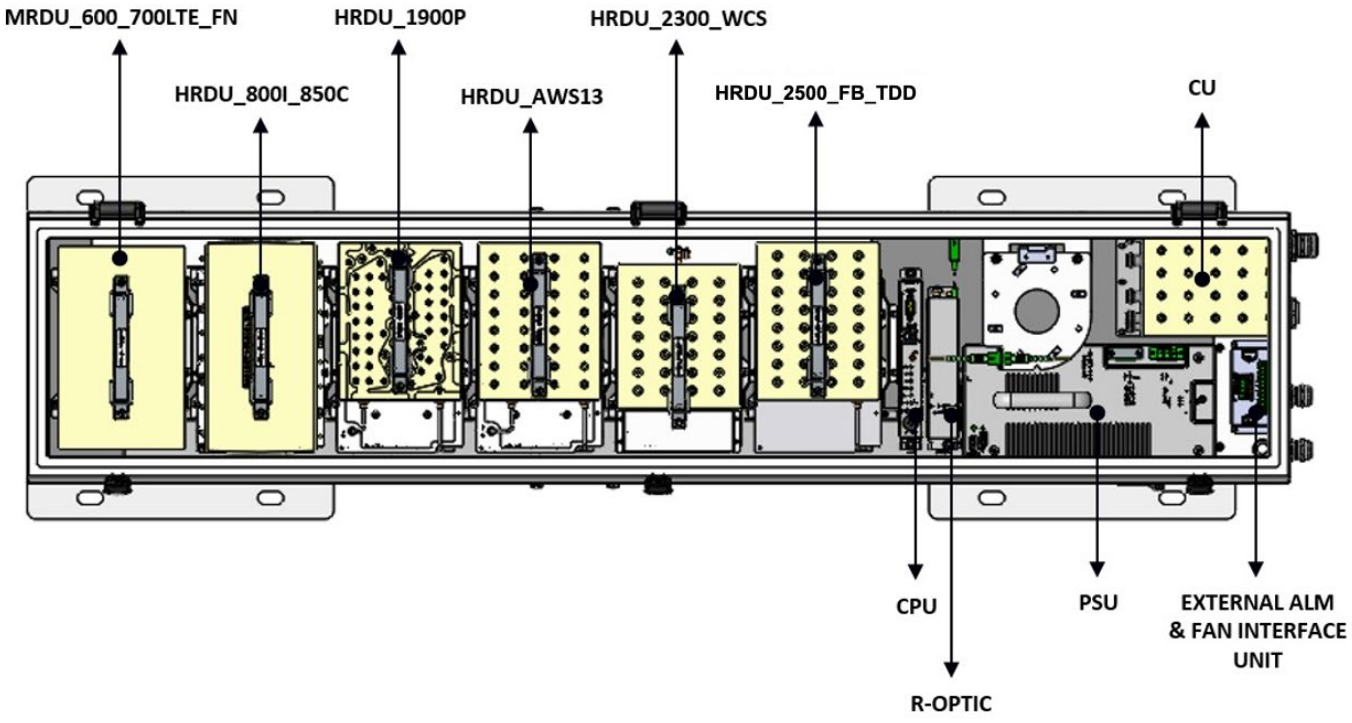
Overview

The SOLiD ALLIANCE Multi-Power Remote Optic Unit (MPROU) provides a single chassis solution that supports all commercial cellular bands from 600 to 2700 MHz with output power levels optimized for bandwidth and frequency. The MPROU shares the same headend as all other ALLIANCE remotes, including edgeROU, N2ROU, MROU, and HROU.

The MPROU enclosure incorporates a rugged, but compact UL Type 4X design. Units can be wall mounted, indoors or outdoors. An external alarm port on the bottom of the enclosure can accept input alarms from connected equipment like battery backup systems.

A multi-band combiner unit supports single antenna configurations. A dual fan unit is included to dissipate heat when mounted horizontally or vertically.



Unit Name	Unit Description
Multi-Power Remote Optic Unit (MPROU)	Enclosure including RCPU, RPSU_AC or DC, Multiplexer, R-Optic, Dual Fan
Remote Power Supply Unit (PSU)	AC: 90-240 VAC. DC: -40.8 to -57.6 VDC. Output power +29 VDC
Remote Central Processor Unit (CPU)	Controls and monitors signals for each unit
Remote Drive Units (MRDU/HRDU)	Filters and amplifies downlink / uplink signals (up to six)
Remote Optic Module (R-Optic)	Converts downlink optical signals to RF and uplink RF signals to optical
Combiner (CU)	Combines downlink signals and separates uplink signals for each band
External Alarm & Fan Interface Unit	Provides port for connecting external alarms and power port for external fan unit. Fans turn on/off automatically based on operating temperature.

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Specifications

RF Parameters		All Bands
Input Power	TX	LPOI: -10 to +20 dBm. HPOI: +15 to +43 dBm each port
	RX	MPROU: -50 dBm max
Output Power	TX	See Table Below
	RX	All bands -3 dBm ± 0.5 dB (except 2500TDD -23 dBm ± 1 dB)
System Gain	TX	5W: 57dB max. 20W: 63 dB max.
	RX	All bands 47 dB max (except 27 dB for 2500TDD); 25 dB gain control at remote all bands
Spurious Emissions		Maximum Intermodulation Distortion. TX: ≤ -13 dBm @ 9kHz to 5GHz
Nominal Impedance		50 Ohm
System Ripple		4 dB for all modules except 5 dB for 2500 TDD and 3 dB for 2300 WCS
VSWR		1.65:1 typical, 1.8:1 max at each band In / Out ports
NOTES: TX Input power refers to the DAS headend. TX Output power is measured at the antenna port.		

RF Parameter	600 MHz	700LTE + Band 14	800/ 850 Cell	1900PCS	2100AWS	2300WCS	2500TDD (Full Band)
Output Power	5W	5W	20W	20W	20W	20W	20W
NF (typical)	4.5 dB	3.5 dB	3.5 dB	4.2 dB	3.1 dB	4.1 dB	5.5 dB
NF (max.)	5.0 dB	4.2 dB	3.9 dB	4.7 dB	3.6 dB	4.6 dB	6 dB
IIP_3 (typical)	-23.5 dBm	-21.2 dB	-18.3 dB	-17.3 dB	-19.6 dB	-17.4 dB	-21.5 dBm
IIP_3 (max.)	-24.0 dBm	-21.7 dB	-18.8 dB	-17.8 dB	-20.1 dB	-17.9 dB	-22.0 dBm
EVM (typical)	1.5%	1.8%	1.7%	2.1%	2.0%	1.0%	2.7%
EVM (max.)	2.0%	2.2%	2.2%	2.6%	2.5%	1.5%	3.4%
Downlink	617-652	729-768	862-894	1930-1995	2110-2180	2350-2360	2496-2690
Uplink	663-698	699-716 777-798	817-849	1850-1915	1710-1780	2305-2315	2496-2690
NOTES: The EVM performance in this table includes 0.7% error from the signal source.							

Module Power Consumption (Max)	600 MHz	700LTE + Band 14	800/ 850Cell	1900 PCS	2100 AWS	2300WCS	2500TDD (Full Band)
RDU	120W		135W	130W	121W	127W	185W
MPROU Chassis	RCPU, RPSU, R-Optic, Fan = 65W						
NOTES: Power consumption of fully configured remote is 897W							
Optical	**Specification**						
Wavelength	Tx: 1550 nm; Rx: 1310 nm						
Loss	4-port optic module: 5 dBo max.; 1-port optic module: 10 dBo max.						
Regulatory	**Specification**						
Type Approval	FCC, IC, FCC Part 15 Subpart B, Class A						
Safety	NRTL Certified						
FDA/CDRH	This equipment uses a Class 1 LASER according to FDA/CDRH Rules. This product conforms to all applicable standards of 21 CFR Chapter 1, Subchapter J, Part 1040.						

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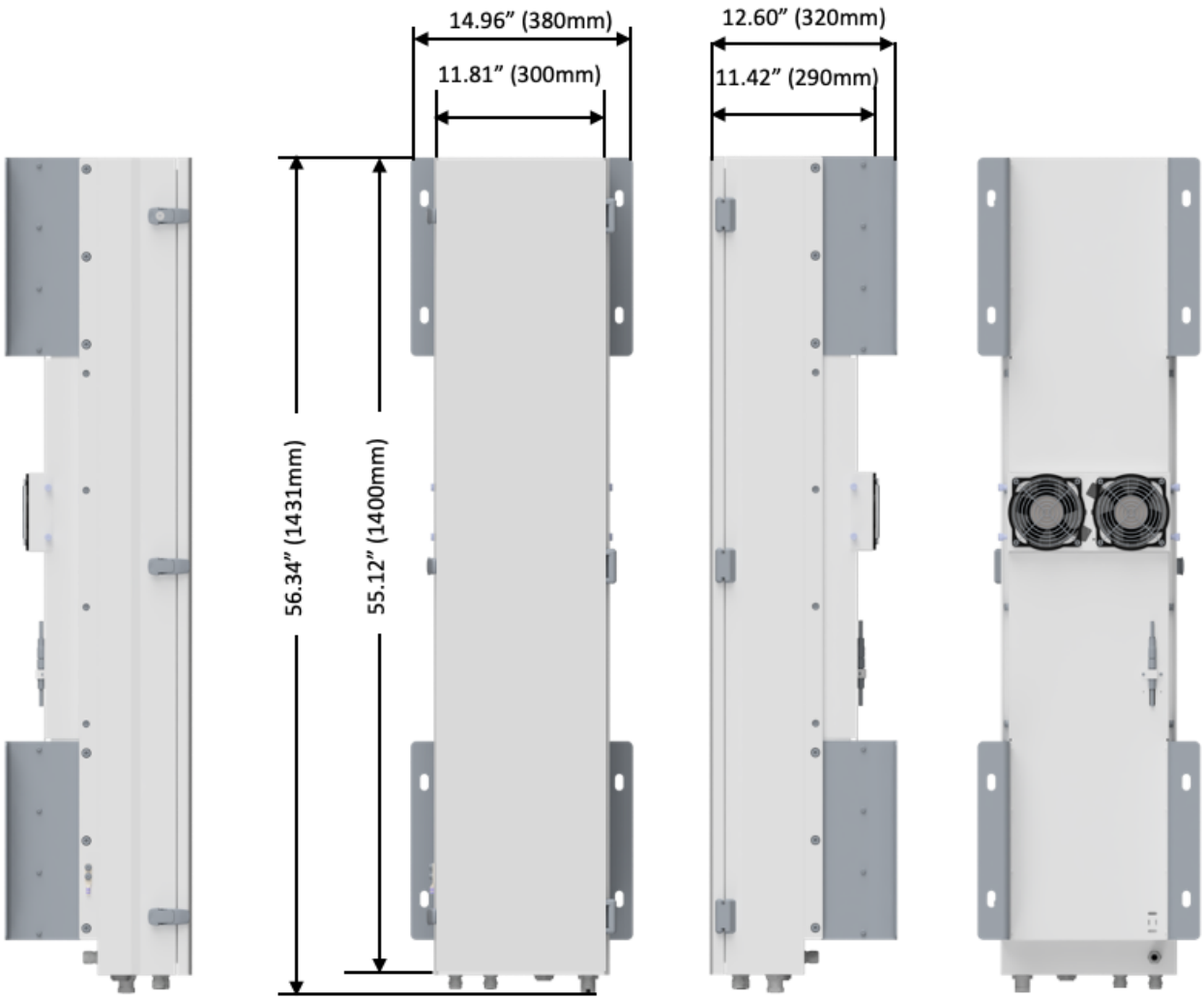

Mechanical	Specification
Mounting Type	Wall, Indoor or outdoor
Antenna Connectors	7/16 DIN female
External Alarm Interface	Cable gland
Optical Connector	Cable gland
Monitoring Port	SMA female
Craft Port	Serial interface RS-232 9-pin D-sub male
Dimensions	14.96" W x 56.34" H x 12.60" D (380 x 1431 x 320 mm) including wall mount bracket
Weight	187 lbs. (85 kg) maximum
MTBF	8.96 Years (worst-case, fully-loaded unit)
Ingress Protection	UL Type 4X (NEMA4X). IP66
Operating Environment	Temp: -13 to 131°F / -25 to +55°C. Humidity: 0% to 90% Non-condensing

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Part Numbers

Part Number	MPROU / RDU / Combiner
MPROU_C_AC	Remote Optical Unit Chassis, 6 Bay, Multi-Power, Includes CU - AC
MPROU_C_DC	Remote Optical Unit Chassis, 6 Bay, Multi-Power, Includes CU - DC
HROU_B	20 WATT Blank Module
MRDU_600_700LTE_FN	5 WATT 600 MHz & 700MHz Amplifier Module (Includes Band 14)
HRDU_800I_850C	10 WATT 800MHz and 850MHz Module
HRDU_1900P	20 WATT 1900MHz Amplifier Module
HRDU_AWS13	20 WATT 2100MHz Amplifier Module (AWS1+3)
HRDU_2300_WCS	10 WATT 2300 MHz WCS Amp Module
HRDU_2500_FB_TDD	20 WATT 2500 MHz TDD Amplifier Module, 194MHz Contiguous, LTE + NR
HRDU_2500_100TDD	20 WATT 2500 MHz TDD Amplifier Module, 100MHz Contiguous, LTE + NR

Additional information is available in the following documents, available from SOLiD Support.

ALLIANCE REL6 – Multi-power Remote Unit MPROU - Operations & Install Guide

SOLiD Data Sheet – ALLIANCE MTBF Specification

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TL9000 H,V: R5.5/R5.0 ISO9001 CERTIFIED ISO14001

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