

**SOLiD**

# **ALLIANCE Multi-Operator DAS**

## **5W Mid-Power Remote Optic Unit (MROU)**

### **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 Mid-power Remote Optic Unit (MROU) can support up to seven bands, each delivering 5W of output power. An Add-on remote unit (AOR) is supported for additional RF services.**

The 5W mid-power MROU features:

- Combiners support one or two antenna ports
- Easy install, commissioning, and management
- Fan and convection cooled
- Rugged construction: IP66 / NEMA 4 certified
- B25, B66 & AWS-4 supported in one remote

## Specifications

RF Parameter		All Bands
Input Power	TX	LPOI: -10 to +20 dBm. HPOI: +15 to +43 dBm each port
	RX	MROU: -50 dBm max
Output Power	TX	+37 dBm for all bands
	RX	All bands -3 dBm $\pm$ 0.5 dB
System Gain	TX	57dB max for all band
	RX	All bands 47 dB max; 25 dB gain control at remote all bands
Spurious Emissions		Maximum Intermodulation Distortion. TX: $\leq$ -13 dBm @ 9kHz to 5GHz
Nominal Impedance		50 Ohm
VSWR		1.66:1 typical, 1.8:1 max at each band In / Out ports
<b>NOTES:</b> TX Input power refers to the DAS headend. TX Output power is measured at the antenna port. TX and RX Output power is $\pm$ 0.5dB. Additional gain control available at head end including uplink gain control. See the AOR data sheet for VHF/UHF specifications.		

RF Parameter	600 MHz	700LTE+ Band 14	800/ 850 Cell	1900 PCS	2100 AWS
NF UL (typical)	4.5 dB	3.5 dB	2.9 dB	4 dB	3.4 dB
NF UL (max)	5.0 dB	4.2 dB	3.4 dB	4.5 dB	3.9 dB
IIP <sub>3</sub> UL (typical)	-23.5 dBm	-21.2 dBm	-21.4 dBm	-19.8 dBm	-23.2 dBm
IIP <sub>3</sub> UL (max)	-24.0 dBm	-21.7 dBm	-21.9 dBm	-20.3 dBm	-23.7 dBm
EVM DL (typical)	1.6%	1.8%	1.8%	1.9%	1.8%
EVM DL (max)	2.0%	2.2%	2.2%	2.3%	2.2%
Ripple DL (typical)	3.5 dB	1.9 dB	2.7 dB	1.6 dB	1.6 dB
Ripple DL (max)	4 dB	4 dB	4 dB	4 dB	4 dB
Downlink (DL)	617-652	729-768	862-894	1930-2020	2110-2200
Uplink (UL)	663-698	699-716 777-798	817-849	1850-1915	1695-1780
<b>NOTES:</b> NF (noise figure) represents system noise tested with one remote connected. Add 2 dB to NF when using Optical Expansion Unit (OEU or iOEU) or 1-port optic module. EVM performance includes 0.7% error from signal source. NF, IIP <sub>3</sub> and EVM specs are measured with 0 dB attenuation.					

Power Consumption (Max)	600 MHz	700LTE+Band 14	800/ 850Cell	1900 PCS	2100 AWS
5W MRDU	60W	50W	48W	59W	62W
MROU Chassis	RCPU, RPSU, R-Optic = 16W				
<b>NOTES:</b> For total power, add the power consumption of the included MRDU's to the chassis' power consumption.					

Optical	Specification
Wavelength	Tx: 1550 nm; Rx: 1310 nm
Loss	4-port optic module: 5 dBo max.; 1-port optic module: 10 dBo max.

Mechanical	Specification
Mounting Type	Wall or rack (fits standard 19" rack with bracket)
Antenna Connectors	7/16 DIN female
External Alarm Interface	5-Pin connector on bottom panel
Optical Connector	SC / APC, Step Ferrule, Waterproof, Single Mode Fiber
Monitoring Port	- 40 dB ( $\pm 3$ dB), SMA female, TX output only, located on combiner unit
Craft Port	Serial interface RS-232 9-pin D-sub male
Dimensions (WxHxD)	12.6" x 45.9" x 10.2" (320 x 1165 x 260 mm) including wall mount bracket
Weight	137 lbs. (62 kg) max with 6 MRDUs
MTBF	8.96 Years (worst case, fully loaded unit)
Ingress Protection	IP66, NEMA 4
Operating Environment	Temp: -13 to 131°F / -25 to +55°C. Humidity: 0% to 90% Non-condensing

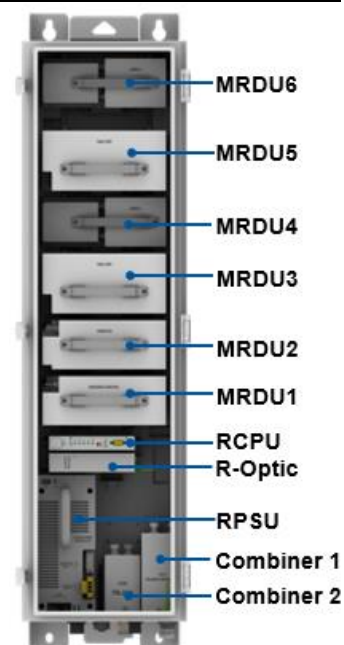
Regulatory	Specification
Type Approval	FCC, ISED, FCC Part 15 Subpart B, Class A
Safety	NRTL Certified
FDA/CDRH	This equipment uses a Class 1 LASER according to FDA/CDRH Rules. This product conforms to all applicable standards of 21 CFR Chapter 1, Subchapter J, Part 1040.

## Overview

SOLiD's 5W Mid-power Remote Optic Unit (MROU) can be mixed with all other ALLIANCE remote units in a single system all driven by a common head end.

The MROU enclosure incorporates a rugged, but compact NEMA 4 design. Units can be rack or wall mounted, indoors or outdoors. A fan unit at the bottom of the enclosure comes installed with base models. An external alarm port on the bottom of the enclosure can accept input alarms from connected equipment like battery backup systems.

Combiner units support one- or two-port antenna configurations. A dual fan unit is available for high-temp deployments.



Unit Name	Unit Description
5W Remote Optic Unit (MROU)	Enclosure including RCPU, RPSU_AC or DC, Multiplexer, R-Optic
Remote Power Supply Unit (RPSU)	AC: 100 to 240V. DC: -40.8 to -57.6V
Remote Central Processor Unit (RCPU)	Controls and monitors signals for each unit
Mid-power Remote Drive Unit (MRDU)	Filters and amplifies downlink / uplink signals
Remote Optic Module (R-Optic)	Converts downlink optical signals to RF and uplink RF signals to optical
Combiner (1 and 2)	Combines downlink signals and separates uplink signals for each band
External Fan Unit	Blows air across heatsink fins to promote cooling. Fan comes installed with standard models – MROU_C_MF_AC_CU8 and MROU_C_MF_DC_CU8 – but can also be added to any model.

## Parts List

Part Number	5W MROU / MRDU / Combiners
MROU_C_MF_AC_CU8	5 WATT Remote Optical Unit Chassis - AC Power with MROU_CU8, Fan Included
MROU_C_MF_DC_CU8	5 WATT Remote Optical Unit Chassis - DC Power with MROU_CU8, Fan Included
MROU_B	Blank Amplifier Module for 5W MROU
MRDU_600_700LTE_FN	5 WATT 600 MHz & 700MHz Amplifier Module (Includes Band 14)
MRDU_800I_850C	5 WATT 800MHz & 850MHz Amplifier Module
MRDU_1900P_E	5 WATT 1900MHz Amplifier Module, Extended Band
MRDU_AWS13_B66B70	5 WATT 2100MHz Amplifier Module (AWS1+3) Extended Band
MROU_CU8	5 WATT Combiner Unit, 600/700LTE+FN, 850IC, PCS, AWS1+3+4, 2300, 2500
ADP_DIN_N_BH	Adapter, DIN Jack to N Jack, Bulkhead
MROU_FAN_TRAY	External Fan-Tray. Fan comes installed with standard models. – MROU_C_MF_AC_CU8 and MROU_C_MF_DC_CU8 – but can also be added to any model.

Additional information is available in the following documents, available from the [SOLiD Support](#) website.

*ALLIANCE REL6 - Mid Power Remote (MROU) - Operations & Install Guide*

*SOLiD Tech Note – MROU Fan Unit Installation*

*SOLiD Data Sheet – ALLIANCE MTBF Specification*



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