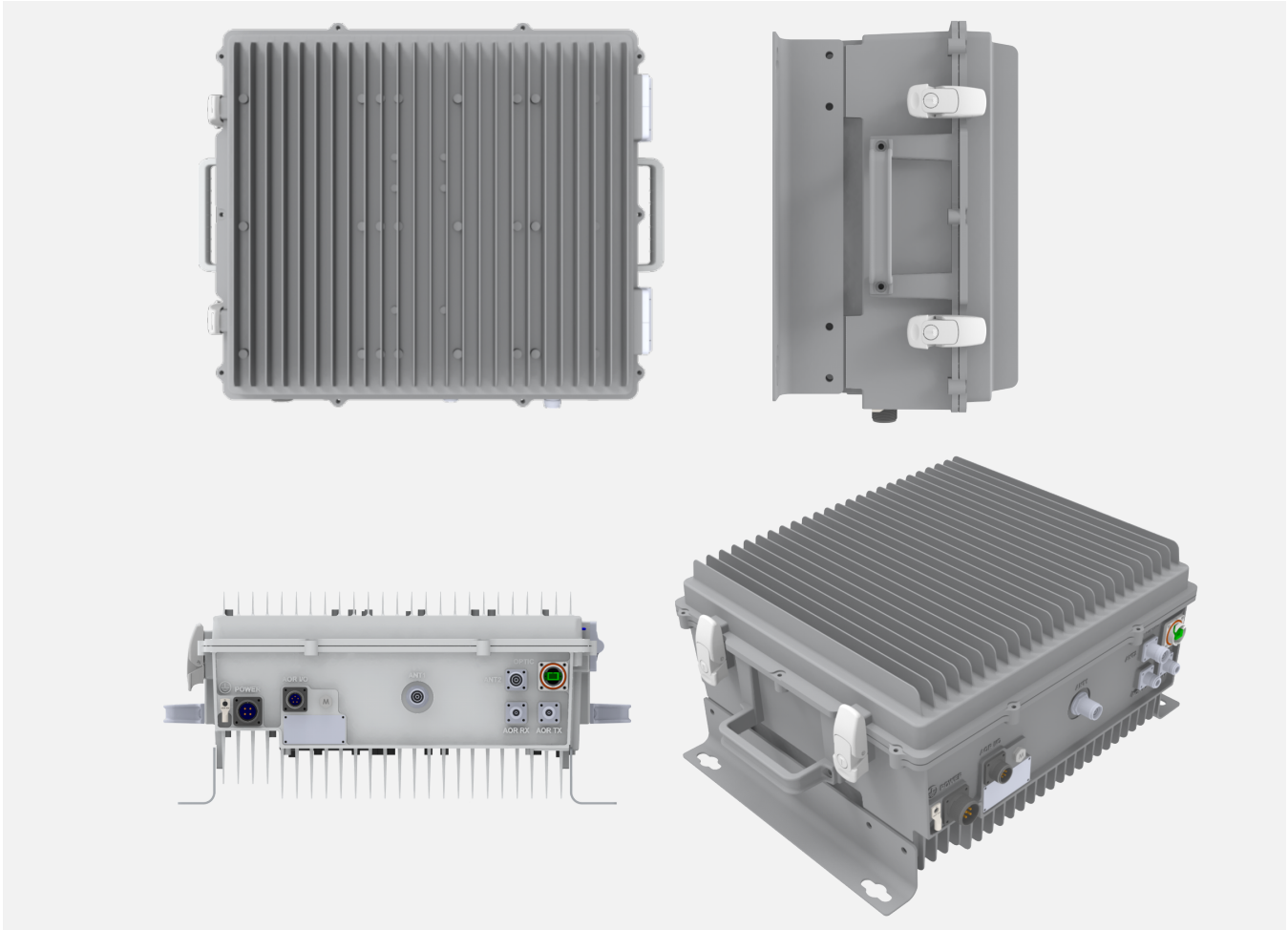


ALLIANCE Multi-Operator DAS
2W Low-Power Remote Optic Unit (N2ROU)
 Product Specifications / Parts List



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 Low-power 2W Remote Optic Unit (N2ROU) can support up to seven commercial bands in one cabinet, each delivering 2W of output power. An add-on remote unit (AOR) is supported for additional RF services.

The 2W N2ROU features:

- Up to 7 Bands in one cabinet
- Easy install, commissioning, and management
- Flexible 2500TDD deployment: either SISO (one or two sub-bands) or MIMO (one sub-band)
- Rugged construction: IP66 / NEMA 4 certified
- Up to 9 bands on one fiber

Specifications

RF Parameters		All Bands
Input Power	TX	LPOI: -10 to +20 dBm. HPOI: +15 to +43 dBm each port
	RX	N2ROU: -50 dBm max
Output Power	TX	+33 dBm for all modules except +32 dBm for 2500TDD
	RX	0 dBm ± 0.5 dB all bands except -3 dBm for 2100AWS / 2300WCS and -20 dBm for 2500TDD
System Gain	TX	53 dB max all modules except 52 dB for 2500TDD
	RX	50 dB max all bands except 30 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		4dB for all modules except 5 dB for 2500 TDD, 1900PCS and 3 dB for 2300 WCS
VSWR		1.54:1 typical, 1.65:1 max.

NOTES: TX Input power refers to the DAS headend. TX Output power is measured at the antenna port. TX and RX Output power is ± 0.5dB. Additional gain control available at head end including uplink gain control. See the AOR data sheet for VHF/UHF specifications.

RF Parameters	600 MHz	700LTE+ FirstNet	800/850 Cell	1900 PCS	2100 AWS	2300 WCS	2500 TDD (100 MHz)
NF (typical)	4.3 dB	4.8 dB	4.2 dB	4.6 dB	3.1 dB	5 dB	4.8 dB
NF (max.)	4.8 dB	5.5 dB	4.5 dB	5.3 dB	3.6 dB	5.3 dB	5.6 dB
IIP ₃ (typical)	-20.2 dBm	-20.4 dBm	-15 dBm	-17.3 dBm	-19.8 dBm	-18 dBm	-19.3 dBm
IIP ₃ (max.)	-20.9 dBm	-20.9 dBm	-15.5 dBm	-17.8 dBm	-20.3 dBm	-18.5 dBm	-20 dBm
EVM (typical)	1.5%	2.0%	2.0%	1.9%	1.5%	1.3%	2.5%
EVM (max.)	2.0%	2.5%	2.5%	2.5%	2.0%	1.7%	2.6%
Downlink	617-652	729-768	862-894	1930-1995	2110-2180	2350-2360	2496.8-2690
Uplink	663-698	699-716 777-798	817-849	1850-1915	1710-1780	2305-2315	2496.8-2690

NOTES: For 2500TDD services, the operator sets the sub-band using management software. NF represents system noise tested with one remote connected. Add 2 dB to NF when using Optic Expansion Unit (OEU or iOEU) or 1-port optic module. EVM performance includes 0.7% error from signal source. NF, IIP₃ and EVM specs are measured with 0 dB attenuation

Power Consumption (Max)	Base Module: 700LTE+FN / 800/850C / 1900PCS / 2100AWS	600 MHz	2300 WCS	2500 TDD
2W N2RDU	139W	35W	56W	49W
N2ROU Chassis	RCPU, RPSU, R-Optic = 16W			

NOTES: For total power, add the power consumption of the included N2RDU'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.

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.

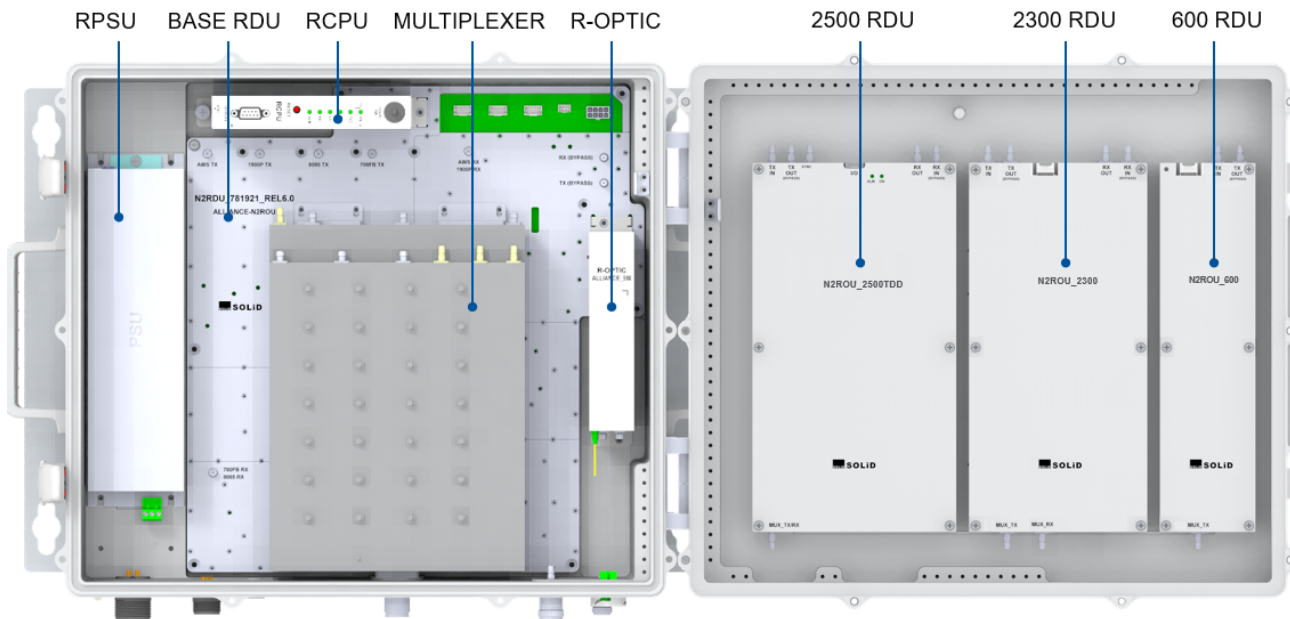
Mechanical	Specification
Mounting Type	Wall mount standard or rack mount with additional bracket
Antenna Connectors	Antenna port type: 4.3-10 DIN
External Alarm Interface	5-Pin connector on bottom panel
Optical Connector	SC / APC, Step Ferrule, Waterproof, Single Mode Fiber
Monitoring Port	- 30 dB, (±3 dB), SMA Female, TX output only, located on multiplexer
Craft Port	Serial interface RS-232 9-pin D-sub Male
Dimensions (WxHxD)	21 x 16.5 (10U) x 10.2 inches (535 x 420 x 260mm) Including wall mount bracket
Weight	73 lbs. (33 kg) for base model (4 bands). Max 86 lbs. (39 kg) with 7 bands.
MTBF	11.51 Years (worst case, fully loaded unit)
Ingress Protection	IP66, NEMA 4
Operating Environment	Temp: 14° to 122°F / -10° to 50°C. Humidity: 5 to 90% non-condensing

Overview

SOLiD’s 2W Remote Optic Unit (N2ROU) can be mixed with 1W, 5W, and 20W remotes in a single system all driven by a common head end.

This highly efficient, small footprint unit can support up to seven bands simultaneously. An optional Add-on Remote unit (AOR) can be connected to the N2ROU to offer additional RF services, like VHF/UHF.

The N2ROU enclosure incorporates a rugged, yet compact NEMA 4 design. Units can be wall or rack mounted, indoors or outdoors. A dry contact relay can be used for input alarms from external units, like battery backup.



Unit Name	Unit Description
2W Remote Optic Unit (N2ROU)	Enclosure with CPU, R-Optic, AC or DC power, base amplifier, multiplexer
Remote Power Supply Unit (RPSU)	AC: 100 to 240V; DC: -42 to -56V
Remote Central Processor Unit (RCP)	Controls and monitors signals for each unit
Remote Drive Unit (N2RDU)	Filters and amplifies downlink / uplink signals
Remote Optic Module (R Optic)	Converts downlink optical signals to RF and uplink RF signals to optical
Multiplexer	Combines/distributes Tx signals from / Rx signals to the N2RDUs
Dry Contact Relay	Used for input alarms from external units, like battery backup systems

Ordering Information / Part Numbers

Base Models: The base model can be ordered with AC or DC power. The base model includes the 7-band multiplexer, CPU, power supply, R-Optic unit, and the base 4-band amplifier covering 700LTE full band (includes 700 FirstNet), 800 (Sprint) / 850 MHz, 1900 PCS, and 2100 AWS 1+3.

Additional Bands: Order additional bands with the initial purchase or add later by ordering the corresponding amplifiers (N2RDU_600, N2RDU_2300, N2RDU_2500TDD, N2RDU_2500_100TDD or N2RDU_2500_M). These modules can be installed in the field with minimal service disruption.

2500TDD Configurations: 2500TDD services can be configured as a single sub-band, dual sub-band, or MIMO. For a single sub-band, order one SISO 2500TDD amplifier (N2RDU_2500TDD or N2RDU_2500_100TDD). For two sub-bands, order one SISO (N2RDU_2500TDD only) and one MIMO amplifier (N2RDU_2500TDD_M) and the combiner kit (2500TDD_DUP Kit). For MIMO, order one SISO (N2RDU_2500TDD or N2RDU_2500_100TDD) and one MIMO amplifier (N2RDU_2500TDD_M, supports only 60MHz of MIMO) and the filter kit (2500TDD_BPF Kit).

VHF/UHF: The Add-on Remote (AOR) is required to support VHF/UHF. Order the AOR (ROU_Add-on_AC or DC), an amplifier (PS2RDU_E_VHF_UHF), and cable kit (N2ROU-AOR_AC).

External Alarm: The cable kit (N2ROU-DRY) is needed to support an external alarm when an AOR is not used.

Part Number	2W N2ROU / N2RDU
N2ROU_BASE_7B_AC	2 WATT Remote Unit, 700/8085/1900/2100, MUX_7B - AC
N2ROU_BASE_7B_DC	2 WATT Remote Unit, 700/8085/1900/2100, MUX_7B - DC
N2RDU_600	2 WATT Amplifier Module, 600
N2RDU_2300	2 WATT Amplifier Module, 2300
N2RDU_2500TDD	2 WATT Amplifier Module, 2500TDD, LTE
N2RDU_2500_100TDD	2 WATT Amplifier Module, 2500TDD, 100MHz Contiguous, LTE + NR
N2RDU_2500TDD_M	2 WATT Amplifier Module, 2500TDD, MIMO
2500TDD_DUP Kit	2 WATT Combiner/RF cables for Dual 2500 Modules
2500TDD_BPF Kit	2 WATT Combiner/RF cables for MIMO 2500 Modules
N2ROU-AOR_AC	2 WATT Cable Kit for Add-on Remote
N2ROU-DRY	2 WATT Cable Kit for External Alarm Input

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

SOLiD Operations Manual – ALLIANCE DAS REL6

SOLiD Installation Manual – ALLIANCE DAS REL6

SOLiD Data Sheet – ALLIANCE MTBF Specification



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