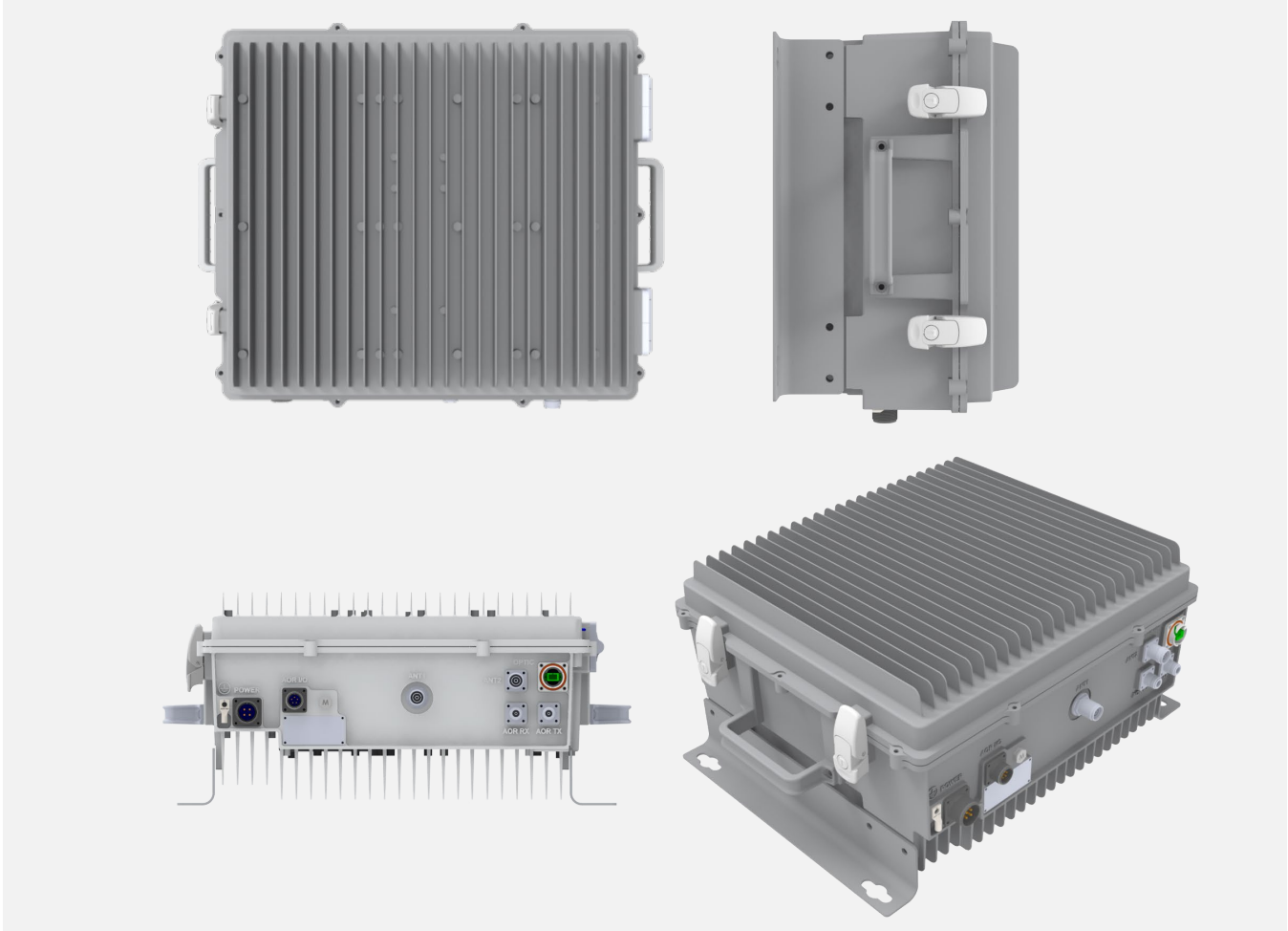


ALLIANCE Multi-Operator DAS
2W Low-Power Remote Optic Unit (N2ROU)
 Product Specifications / Parts List



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 available for supporting VHF/UHF services.

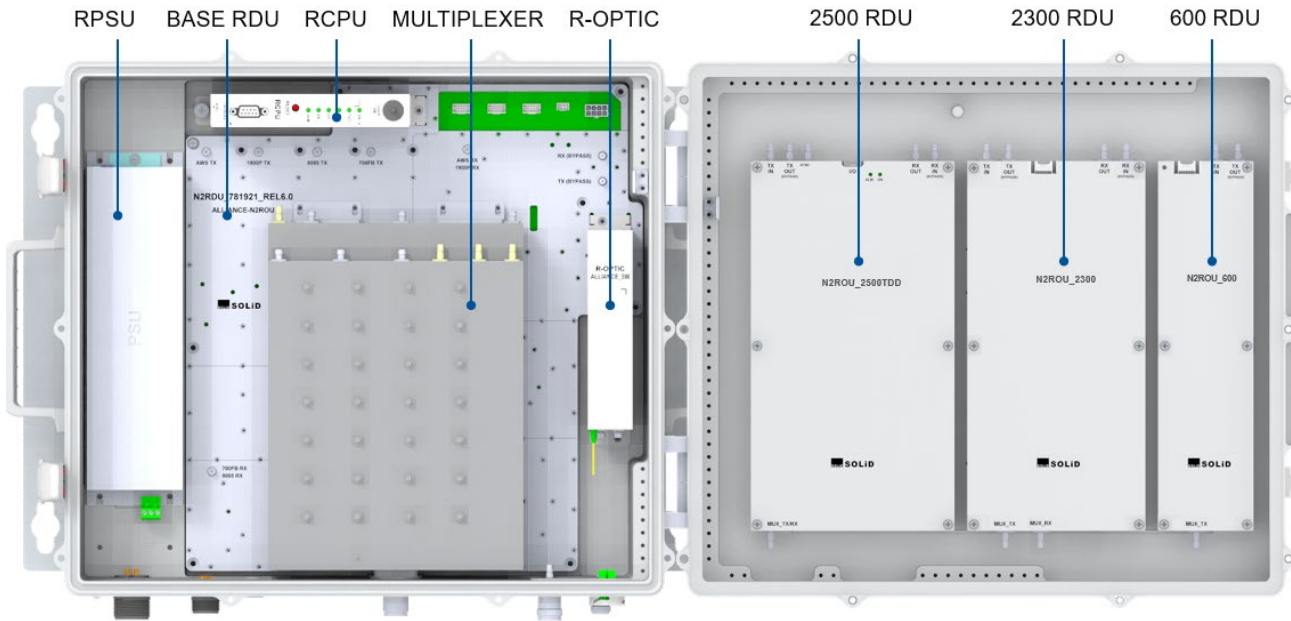
The 2W N2ROU features:

- Up to 7 bands in one cabinet/single fiber
- Easy install, commissioning, and management
- Full 194MHz bandwidth support for 2500TDD
- Rugged construction: IP66 / NEMA 4 certified
- Support for VHF/UHF with Add-on remote unit

Overview

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 VHF/UHF services.

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 (RCPU)	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 Tx signals to antenna port and distributes Rx signals to amplifiers
Dry Contact Relay	Used for input alarms from external units, like battery backup systems

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	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
VSWR		1.54:1 typical, 1.65:1 max.

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

RF Parameters	600LTE	700LTE + Band 14	800/850 Cell	1900PCS	2100AWS	2300WCS	2500 TDD (Full Band)
NF UL (typical)	4.5 dB	3.5 dB	2.9 dB	4 dB	3.4 dB	5 dB	5.2 dB
NF UL (max)	5.0 dB	4.2 dB	3.4 dB	4.5 dB	3.9 dB	5.4 dB	5.8 dB
IIP ₃ UL (typical)	-23.5 dBm	-21.2 dBm	-21.4 dBm	-19.8 dBm	-23.2 dBm	-20.3 dBm	-20.8 dBm
IIP ₃ UL (max)	-24.0 dBm	-21.7 dBm	-21.9 dBm	-20.3 dBm	-23.7 dBm	-20.8 dBm	-21.3 dBm
EVM DL (typical)	1.6%	1.8%	1.8%	1.9%	1.8%	1.3%	2.0%
EVM DL (max)	2.0%	2.2%	2.2%	2.3%	2.2%	1.6%	2.5%
Ripple DL (typical)	2.9 dB	2.1 dB	2.5 dB	2.7 dB	1.6 dB	1.1 dB	TBD*
Ripple DL (max)	4 dB	4 dB	4 dB	4 dB	4 dB	3 dB	5 dB
Downlink (DL)	617-652	729-768	862-894	1930-1995	2110-2180	2350-2360	2496-2690
Uplink (UL)	663-698	699-716 777-798	817-849	1850-1915	1710-1780	2305-2315	2496-2690

NOTES: 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, IIP₃ and EVM specs are measured with 0 dB attenuation. *TBD: new module still awaiting production data.

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

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

Power Consumption (Max)	600LTE (DL only)	Base Module: 700LTE+Band 14 / 800/850C / 1900PCS / 2100AWS	2300WCS	2500 TDD (Full Band)
2W N2RDU	31W	139W	56W	62W
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.				

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.

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 4 amplifiers providing 700LTE full band (includes Band 14), 800 (legacy 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_2500_FB_TDD_R). These modules can be installed in the field with minimal service disruption.

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

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_2500_100TDD	2 WATT Amplifier Module, 2500TDD, 100MHz Contiguous, LTE + NR
N2RDU_2500_FB_TDD_R	2 WATT Amplifier Module, 2500TDD, 194MHz Contiguous, LTE + NR
PS2RDU_E_VHF_UHF	Amplifier Module, +24 dBm, VHF/UHF
N2ROU_AOR Kit	N2ROU AOR Cable Kit
N2ROU-DRY Kit	N2ROU Dry Contact Kit

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

ALLIANCE REL6 - Low Power Remote Unit (N2ROU) - Operations & Install Guide

ALLIANCE REL6 - Add-on Remote Unit (AOR) - Operations & Install Guide

SOLiD Data Sheet - Add-On Remote Unit (AOR)

SOLiD Data Sheet – ALLIANCE MTBF Specification



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