



SOLiD's 2W Remote Optic Unit (N2ROU) is designed for the ALLIANCE Release 6 DAS and can be mixed with other ALLIANCE remote units (1W, 5W, and 20W) in a single system all driven by a common head end.

The 2W remote unit delivers +33 dBm output power per band at the antenna port for the 600, 700LTE, 700 FirstNet, 800 (Sprint), 850C, 1900P, 2100AWS, 2300WCS bands. For 2.5TDD band, output power is +32 dBm, and for VHF/UHF, +24 dBm.

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. The unit is designed for wall mounting, indoors or outdoors, but can be rack mounted using an additional bracket. A dry contact relay can be used for input alarms from external units, like battery backup systems.

Features

- Seven commercial bands in one cabinet: 700 (including FirstNet), 800/850, 1900, 2100, 600, 2300, 2500
- Flexible 2500TDD deployment: either SISO (one or two sub-bands) or MIMO (one sub-band)
- VHF/UHF support in Add-on Remote (AOR)
- NEMA 4 rated
- Simplified installation, commissioning, management
- Wall mount indoors or outdoors. Rack mount with additional bracket.
- Convection cooled

Operation

For the downlink signal path, the N2ROU receives optical signals from the system’s optic modules (iOMs) then converts them to RF signals in the R-Optic unit. The signals move to the remote drive units (RDUs) where they are amplified and filtered to remove out-of-band signals. The multiplexer in the N2ROU combines RF signals from multiple RDUs and then delivers them to a single antenna port. The process is reversed for the uplink path. With the DMS-1200, the technician can monitor and control the operation of each N2ROU.

DMS 1200



iBIU SIGNAL INTERFACE

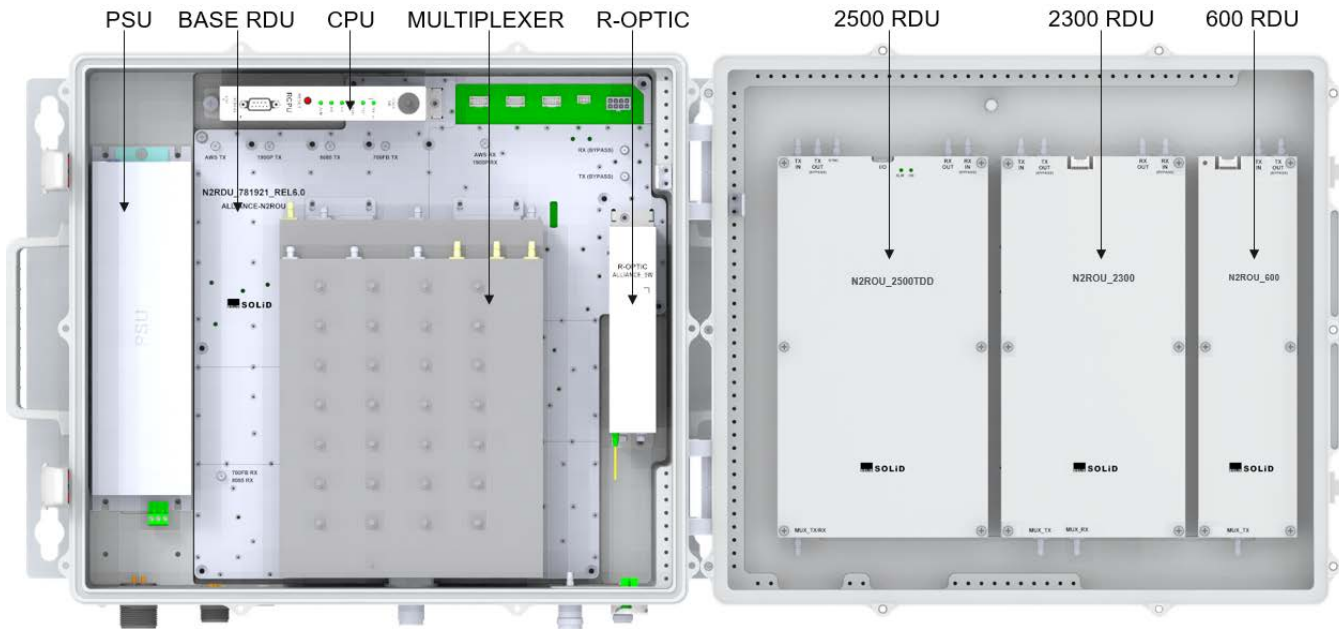
One fiber strand per remote unit

Optional OEU (Optic Expansion Unit), iODU (Optical Distribution Unit), and AOR (Add-on Remote) not shown.

N2ROU 2W



N2ROU Components



Unit Name	Unit Description
2W Remote Optic Unit (N2ROU)	Enclosure with CPU, R-Optic, AC or DC power supply, base amplifier, 5-band or 7-band multiplexer
Remote Drive Units (N2RDUs)	Amplifies downlink / uplink signals.
R Optic Unit	RF to Optic / Optic to RF conversion. Connects to iODU
Power Supply Unit (PSU)	AC: 110 - 120V, Output 29.2V, 9V, 6V. DC: -48V (-42 to -56V), Output 29.2V, 9V, 6V
Central Processor Unit (CPU)	Controls and monitors signal of each unit. RS-232 port for connecting management PC
Multiplexer (5-band or 7-band)	Combines/distributes Tx signals from / Rx signals to the RDUs.
Dry Contact Relay	Used for input alarms from external units, like battery backup systems

Specifications

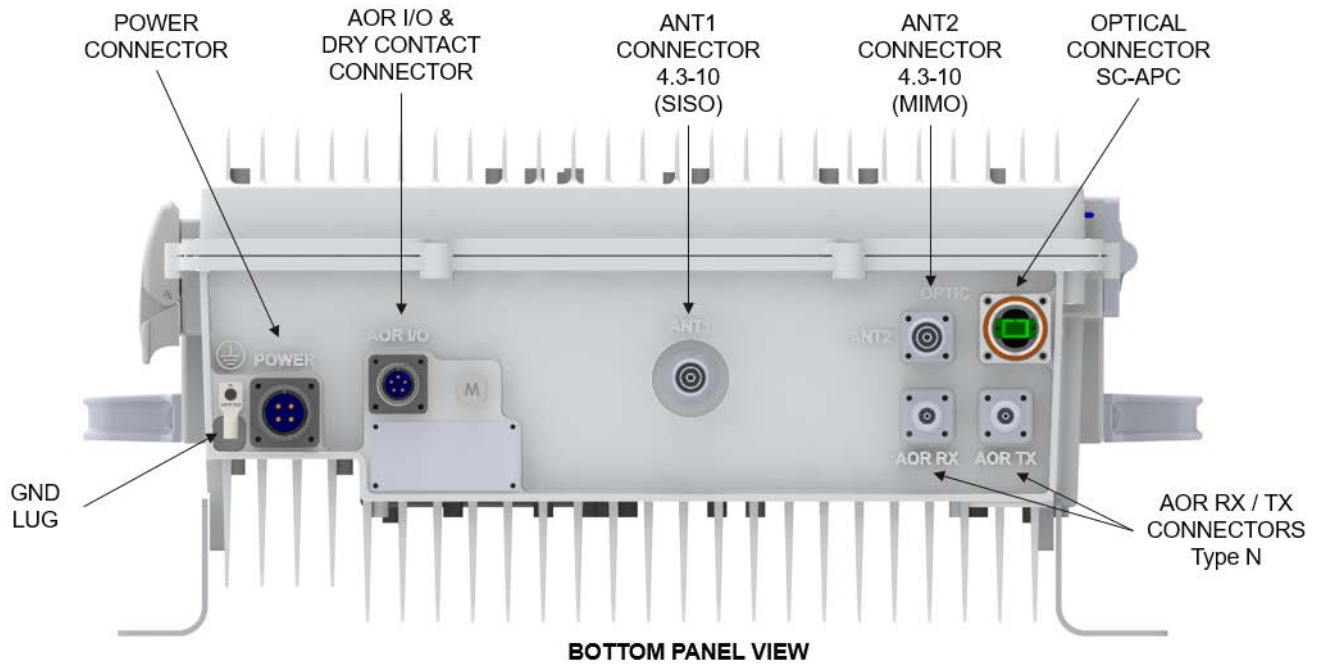
Frequency Band	Downlink (Tx)		Uplink (Rx)	
	Frequency (MHz)	Bandwidth (MHz)	Frequency (MHz)	Bandwidth (MHz)
600	617-652	35	663-698	35
700LTE+700FN	729-768	39	699-716 / 777-798	17 / 21
800 Sprint + 850C	862-894	32	817-849	32
1900PCS	1930-1995	65	1850-1915	65
2100 AWS 1+3	2110-2180	70	1710-1780	70
2300 WCS	2350-2360	10	2305-2315	10
2500TDD LTE	2496.8-2690	Lower Band: 71.2 Middle Band: 37.8 Upper Band: 71.2	2496.8-2690	Lower Band: 71.2 Middle Band: 37.8 Upper Band: 71.2
VHF	136-174	38	136-174	38
UHF	B1: 380-434 B2: 396-450 B3: 450-512	54 54 62	B1: 380-434 B2: 396-450 B3: 450-512	54 54 62

NOTES: For 2500 and UHF, operator can select band using management software. VHF/UHF requires AOR.

RF Parameters		600	700LTE+FN	800 Sprint / 850C	1900P
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			
	Rx	0 dBm±0.5 dB			
System Gain	Tx	53 dB			
	Rx	30 to 50 dB			
EVM	(Tx %)	TBD	1.8%		
Noise Figure (Max)	Rx	TBD	5.5 dB	4.5 dB	5.3 dB
VSWR		TBD	1.7:1 max at each band In / Out ports		
Spurious	Tx	TBD	Spurious Emissions: ≤ -13 dBm @ 9kHz to 5GHz		
Nominal Impedance		TBD	50 ohm		
RF Parameters		2100 AWS 1+3	2300 WCS	2500TDD	VHF/UHF
Input Power	Tx	LPOI: -10 to +20 dBm. HPOI: +15 to +43 dBm each port			LPOI: -10 to +20 dBm
	Rx	N2ROU: ≤ -50 dBm max			AOR: ≤ -54 dBm
Output Power	Tx	33 dBm		32 dBm	24 dBm
	Rx	-3 dBm		-20 dBm ± 0.5 dB	-4 dBm
System Gain	Tx	53 dB		52 dB	39 dB
	Rx	30 to 50 dB		10 to 30 dB	20 to 40 dB
EVM	(Tx %)	1.3%	1.0%	1.8%	NA
Noise Figure (Max)	Rx	3.6 dB	5.3 dB	5.6 dB	7.0 dB
VSWR		1.7:1 max at each band In / Out ports			
Spurious	Tx	Spurious Emissions: ≤ -13 dBm @ 9kHz to 5GHz			
Nominal Impedance		50 ohm			

NOTES: TX Input power refers to the DAS headend. TX Output power is measured at the antenna port ± 0.5dB. Noise figure = system noise tested with one remote connected. Add 2dB to noise figure when using OEU or 1-port optic modules. Additional gain control available at head end including uplink gain control. 600 module available 2019 Q1.

Specifications (continued)



Mechanical	Specification	
Mounting Type	Wall mount standard or rack mount with additional bracket	
Connectors	Antenna port type: 4.3-10 DIN. Fiber Connectors: SC/APC for connection to iODU or OEU	
Craft Port	Serial interface RS-232 9-pin D-sub Male for connecting management PC (on CPU)	
In / Output Port Type	N Female for connecting AOR add-on unit	
Power Consumption	165W for base model with 4 bands. Maximum 260W for 7 bands	
Dimensions (WxHxD)	22.48" x 17.72" (14U) x 10.24" (571mm x 450mm x 260mm) Includes wall mounting bracket, which can be removed if necessary	
Weight	73 lbs (33 kg) for base model (4 bands). Max 86 lbs (39 kg) with 7 bands.	
Environmental	Specification	
Environmental & IP Rating	IP66 Compliant, NEMA 4	
Operating Environment	Temp Range: -10° to 50°C. Humidity: 5 to 90% non-condensing	
Regulatory	Specification	
Type Approval & Certification	UL (UL60950-1), FCC	
EMC	FCC Part 15 compliant	
Optical	Specification	
Optics	SC / APC (Step Ferrule)	
Laser Diode / Photo Diode	1550 nm / 1310 nm (Coaxial Type)	
Optic Loss	Max 5 dBo (4-port optic module); Max 10 dBo (1-port optic module)	
Mean Time Between Failure	MTBF (Hours)	MTBF (Years)
N2ROU (AC Power) (Fully loaded)	103,050	11.76
N2ROU (DC Power) (Fully loaded)	100,938	11.51

Ordering Information / Part Numbers

Base Models: The base models can be ordered with AC or DC power and with the 5-band or 7-band multiplexer (N2ROU_BASE_5B_AC / DC or N2ROU_BASE_7B_AC / DC). The base model includes the 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.

Multiplexer: The base models ship with the 5 band or 7 band multiplexer as ordered. The 5-band unit covers the base bands plus the 2500TDD band. The 7-band unit covers all bands currently available. At the time of initial purchase, you can order the 7-band multiplexer if you anticipate adding the 600 or 2300 bands later.

Additional Bands: Order additional bands with the initial purchase or add them later by ordering the corresponding amplifiers (N2RDU_600, N2RDU_2300, N2RDU_2500TDD, or N2RDU_2500_M). The 7-band multiplexer is required. 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. To support a single sub-band, order one SISO 2500TDD amplifier (N2RDU_2500TDD). To support two sub-bands, order one SISO and one MIMO amplifier (N2RDU_2500TDD_M) and the combiner kit (2500TDD_DUP Kit). To support MIMO, order one SISO and one MIMO amplifier 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), one amplifier (RDU_150_450 or RDU_E_VHF_UHF), and cable kit (TBD).

2W L2ROU, RDU Amplifiers, AOR Add-On Remote	Part Number
2 WATT Remote Unit, 700/8085/1900/2100, MUX_5B - AC	N2ROU_BASE_5B_AC
2 WATT Remote Unit, 700/8085/1900/2100, MUX_5B - DC	N2ROU_BASE_5B_DC
2 WATT Remote Unit, 700/8085/1900/2100, MUX_7B - AC	N2ROU_BASE_7B_AC
2 WATT Remote Unit, 700/8085/1900/2100, MUX_7B - DC	N2ROU_BASE_7B_DC
2 WATT Amplifier Module, 600 *2019Q1	N2RDU_600
2 WATT Amplifier Module, 2300	N2RDU_2300
2 WATT Amplifier Module, 2500	N2RDU_2500TDD
2 WATT Amplifier Module, 2500 MIMO	N2RDU_2500TDD_M
2 WATT Combiner/RF cables for Dual 2500 Modules	2500TDD_DUP Kit
2 WATT Combiner/RF cables for MIMO 2500 Modules	2500TDD_BPF Kit
Add-on cabinet for ROU - AC Power	ROU_Add-on_AC
Add-on cabinet for ROU - DC Power	ROU_Add-on_DC
150MHz VHF & 450MHz UHF Amplifier Module (UHF Sub-band: B2, B3)	RDU_150_450
380MHz VHF & UHF Amplifier Module (Military Band) (UHF Sub-band: B1, B3)	RDU_E_VHF_UHF
Alarm Cable ROU-to-AOR cable with external alarm input pigtail	CBL_AOR_ALM
Alarm Cable ROU cable with external alarm input pigtail	CBL_ROU_ALM



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