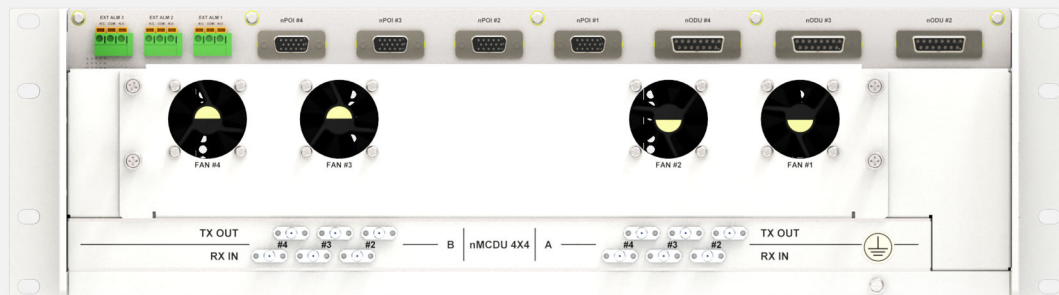
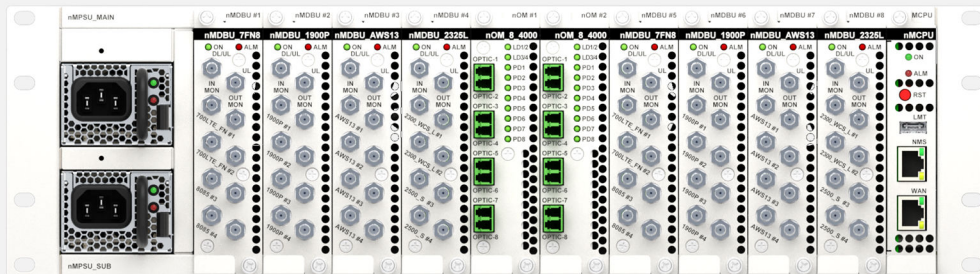


ALLIANCE Multi-Carrier DAS

BTS Interface Unit (nBIU)

Product Specification / 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 nBIU serves as the system headend, receiving RF signals from and sending RF signals to the base station (BTS) or bi-directional amplifier (BDA).

The nBIU is compatible with all current REL6 remote units including the Fiber2Antenna edgeROUs.

- Integrated AC or DC power supply unit
- QMA connectors on simplex or duplex capable ports
- Automatic Level Control (ALC) uplink and downlink for each service
- Integrated optic modules
- Optional point-of-interface (POI) modules for high power inputs
- Accepts simplex or duplex feeds from carrier equipment
- Small footprint: 32 services in 3RU including up to 16 optical ports

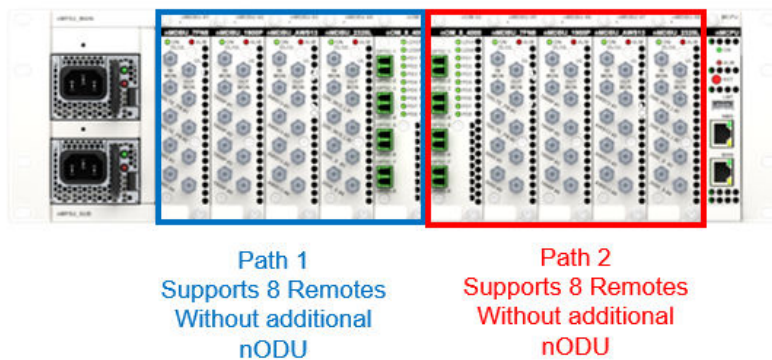
Overview

The nBIU serves as the system headend, receiving RF signals from and sending RF signals to the base station (BTS) or bi-directional amplifier (BDA). In the nBIU, each signal is independently filtered, attenuated and controlled. The optical modules in the nBIU converts the RF signals and transmits them via fiber to and from the remote units.

The nBIU can be configured with any combination of nMDBU modules and allows flexibility to support either one or two signal paths per 3 rack unit chassis. nPOI subracks and modules are available in cases where base station downlink input power exceeds +30 dBm. The nBIU is compatible with all current ALLIANCE DAS REL6 remote units including eROU (<1W), N2ROU (2W), MROU (5W), HROU (20W), and MProu (5W-20W).

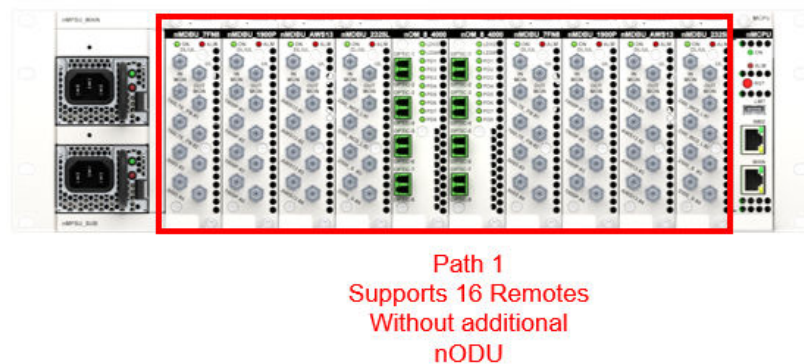
nCDU 4x4 Combines 2 Sides Separately

1 nOM8 Optic per path



nCDU 8x4 Combines All Cards to One Path

2 nOM8 Optic per path



Unit Name	Description
BTS Interface Unit (nBIU)	nBIU chassis includes nMCPU and nMPSU
Optical Module. (OM_2_4000 or OM_8_4000)	RF / Optical conversion. Up to two OMs per nBIU, either 2-port or 8-port. Link budget: 10 dBo for 2-port module. 5 dBo for 8-port module.
Main Combiner Divider Unit (nCdu_8x4 or nCdu_4x4)	Provides combining/splitting to support 8 nMDBU modules, 2 internal optical modules and three external iODU Or nODU connections.
Main Central Processor Unit (nMCPU)	Controls and monitors system status.
Main Power Supply Unit (nMPSU)	DC Input power: DC -48V, Output power: 12V, Total 700W. AC Input power: AC 110/220V, Output power: 12V, Total 800W.
Main Drive BTS Unit (nMDBU)	Amplify and adjust downlink / uplink RF signals. Maximum 8 nMDBUs per nBIU.
Fan Tray	Draws air across the internal modules.
Dry Contact Relays	Used to accept input alarms from external equipment or provide output alarms.

Specifications

RF Parameters			
Frequency Band		Downlink (Tx)	Uplink (Rx)
		Frequency (MHz)	Frequency (MHz)
FDD	700LTE + FN	729~768	699 ~ 716 / 777 ~ 798
	Extended 800I + 850C	862 ~ 894	817 ~ 849
	Extended 1900PCS	1930 ~ 2020	1850 ~ 1915
	Extended AWS1+3+4	2110~2200	1695~1780
	2300 WCS	2345 ~ 2360	2305~2320
TDD	2500FB	2496 ~2690	
	345	3450 ~ 3550	
	C-Band	3700 ~ 3980	

Mechanical/Environmental	
nBIU Total Maximum Weight	Approximately 28kg fully loaded
nMDBU UL & DL Test Ports	QMA female (-20dB)
Fiber Connector	LC/APC. Maximum 16 ports (with two 8-port optic modules)
Operating Temperature	23 to 122°F (-5 to +50°C) ambient temperature
Dimensions WxHxD / Mounting Type	482.6 x 132.5 x 455.0mm (19"X 3U X 455.0mm) / 19" Rack Mounting
Management Ports	RJ45 and USB-A Type
Dry Contact Alarm Interface	3 Input / 3 Output (Software Switchable)

Electrical Specifications		
Downlink Input Power		Two user-selectable ranges +0 dBm to +30 dBm each port -20 dBm to +10 dBm each port
Uplink Gain		23 dB
Total Attenuation per nMDBU port	Downlink	Management Software: 30 dB variable in 0.5 dB increments
	Uplink	Management Software: Up to 50 dB variable in 0.5 dB increments**
ALC per port		30 dB Downlink / 10 dB Uplink
Nominal Impedance		50 Ohm
Power Supply Range		AC 110/220V (AC: 85 – 264V). DC: -48V (DC: -44V to -72V)
VSWR		1.5:1 at all RF ports
Monitoring level at nMDBU		TX: -20 dB, RX: -20 dB
Maximum Power Consumption		400W full Load (Total power consumption will vary depending on configuration.)
Front Panel	nMDBU	Power on: Green, Alarm: Red
	nMCPU	Power on: Green, Alarm: Red, Link: Green flickering (Comm Status)
	nMPSU	Power on: Green, Alarm: Amber
Optical Module Transmit Power		8-Port Optic Unit: 5 dBo ± 1dB to ROU/OEU/eHUB 2-Port Optic Unit: 10 dBo ± 1dB to ROU4 / OEU / eHUB
**0~50dB dependent on ALC circuit not being triggered		

nPOI Specifications

The nPOI serves as the point of interface for RF sources exceeding +30 dBm on the downlink to attenuate the signal before the nMDBU. There are three modular slots supporting two different types of wideband modules, which support either the lower/middle frequencies (LBMB) or higher frequencies (HB).



Electrical Specifications			
Downlink Input Power		nPOI: +30 dBm to +43 dBm per port	
Frequency	Tx	600 – 2700MHz (LB/MB Module)	
	Rx	2400 - 4200MHz (HB Module)	
Insertion Loss	Tx	25dB ± 1.5dB	
	Rx		
VSWR	Tx	IN	1.5 : 1 Max
		OUT	
	Rx	IN	1.5 : 1 Max
		OUT	
Passband Ripple	Tx	2.0dB _{p-p}	
	Rx		
Nominal Impedance		50 Ohm	
PIM		-153 dBc @ 2x10W tones	
BTS Interface		Input Port: 4.3-10 female Output Port: QMA female	
Size		482.6 x 43.6 x 340.0mm (19" x 1RU x 13.4") / 19" Rack Mounting	

Weight	7.5kg / 16.5lbs
Sealing	IP2X

Parts Numbers

Part Number	Description
nBIU_2P_AC	nBIU Chassis, Includes: nMCPU, nMPSU_AC, nCDU_4x4, 2 x nMODEM
nBIU_2P_DC	nBIU Chassis, Includes: nMCPU, nMPSU_DC, nCDU_4x4, 2 x nMODEM
nBIU_1P_AC	nBIU Chassis, Includes: nMCPU, nMPSU_AC, nCDU_8x4, 1 x nMODEM
nBIU_1P_DC	nBIU Chassis, Includes: nMCPU, nMPSU_DC, nCDU_8x4, 1 x nMODEM
nOM_2_4000	2 port Optical Module, 2 lambda, 10 dBo
nOM_8_4000	8 port Optical Module, 2 lambda, 5 dBo
nOM_B	Blank Optical Module for unused slots
nMPSU_AC	nBIU Chassis Power Supply, AC Power
nMPSU_DC	nBIU Chassis Power Supply, DC Power
nMDBU_7FN8	Input module, 8085 + 700LTE (Including Band 14)
nMDBU_1900P	Input module, 1900MHz with extension for AWS-4
nMDBU_AWS13	Input module, 2100MHz (AWS 1+3) with extension for AWS-4
nMDBU_Cbnd	Input module, C-Band
nMDBU_2534	Input module, 2500MHz TDD (Full Band) and 3450MHz TDD
nMDBU_2325	Input module, 2300 WCS, 2500MHz TDD (Full Band)
nMDBU_CbndM	Input module, C-Band, MIMO
nMDBU_2534M	Input module, 2500MHz TDD (Full Band) and 3450MHz TDD, MIMO
nMDBU_2325E	Input module, 2300 WCS, 2500MHz TDD (Full Band), used for direct Connect to eROUs
nMDBU_B	Blank module for nMDBU Slots
nPOI_SR	nPOI Subrack, 3 module slots
nPOI_LBMB	nPOI Low / Mid Band Module, 3 ports each, +43dBm max, 600-2700MHz
nPOI_HB	nPOI High band Module, 3 ports each, +43dBm max, 2400-4200MHz