

ALLIANCE Multi-Operator DAS

High Power Mid-Band Remote Unit (HROU_4000_3B)

Product Specifications / Parts List



The ALLIANCE 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-Band High-power Remote Optic Unit supports a total of three modules: 2500TDD, 3450, and Cband

The Mid-Band HROU_4000_3B features:

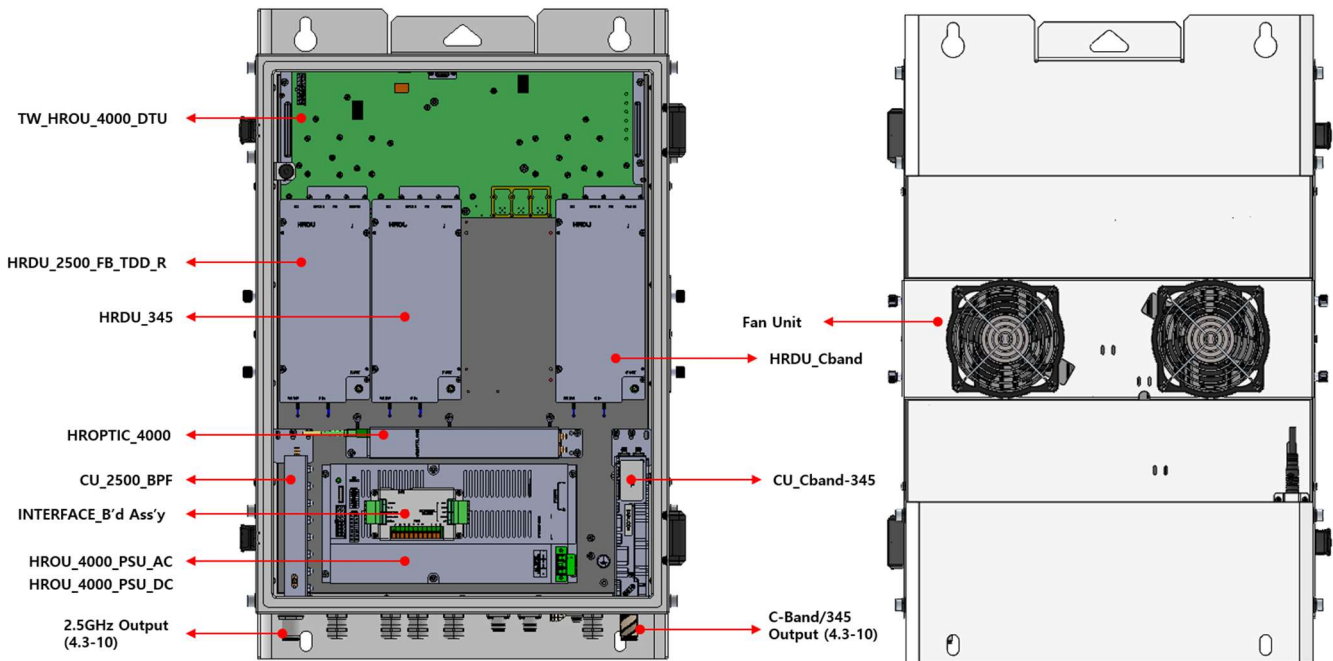
- Combiners and filters support two antenna ports
- Rugged construction: UL Type 4X certified.
- Currently supports 2500TDD/3450/Cband SISO over one fiber

Overview

This highly efficient, small footprint unit currently supports 2500TDD (2496MHz-2690MHz), Cband (3700MHz-3980MHz) and 3450 (3450MHz-3550MHz) bands in a SISO configuration within a single chassis.

The enclosure incorporates a rugged, yet compact UL Type 4x 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. A dual fan unit is attached at the rear of the unit as standard equipment.

The HROU_4000_3B must be deployed on a dedicated iBIU headend, that is, not mixed with other ALLIANCE remotes that are not running mid-band (>3GHz) services. However, the HROU_4000_3B and the mid-band edgeHUB / edgeROUs can be deployed together on the same iBIU headend unit.



Unit Name	Unit Description
High Power Mid-Band Remote Optic Unit (HROU_4000_3B)	Enclosure including DTU (RCPU), RPSU_AC or DC, Multiplexer, R-Optic, Fan
Remote Power Supply Unit (PSU) AC or DC	AC Version: Input power 100 to 240V DC Version: Input power -48 VDC (-42 ~ -56V) Both: Output power: +50.2VDC, +12VDC
Remote Central Processor & Digital signal processor Unit (CPU and DTU)	Controls signal of each unit Monitors iBIU/iODU/iOEU status through FSK modem communication Performs DPD to improve the PAU efficiency Acquires synchronization for 5G NR TDD signals

High Power Remote Drive Unit (HRDU)	Filters and amplifies downlink / uplink signals
Remote Optic Module (R-Optic)	Converts downlink optical signals to RF and uplink RF signals to optical
CU_Cband-345	Combine Cband with 3450 – 4.3-10 RF Output
CU_2500_BPF	Filter and provide output for 2500TDD Band - 4.3-10 RF Output
Interface Board	External Alarm Interface. Fan interface
Fan Unit	Rear fan unit included.

Specifications

Frequency Bands, MHz		
Band	Frequency	Maximum Occupied Bandwidth
Cband	3700 - 3980	280
3450	3450 – 3550	100
2500TDD	2496 - 2690	194

RF Parameters		All Bands
Input Power	TX	LPOI: -10 to +20 dBm. HPOI: +15 to +43 dBm each port
	RX	HROU: -50 dBm max
Output Power	TX	Cband: 32 Watts (+45 dBm) 3450: 16 Watts (+42 dBm) 2500TDD: 20 Watts (+43dBm)
	RX	-23 dBm ± 1 dB
System Gain	TX	Cband: 65 dB max 3450: 62 dB max 2500TDD: 63 dB max
	RX	27 dB max; 25 dB gain control at remote for all bands
Spurious Emissions		Maximum Intermodulation Distortion. For SISO System: TX: ≤ -13 dBm @ 9kHz to 5GHz
Nominal Impedance		50 Ohm
System Ripple		< 5 dB
VSWR		1.47:1 typical, 1.80:1 max.
NOTES: TX Input power refers to the DAS headend. TX Output power is measured at the antenna port. Additional gain control available at head end including uplink gain control.		

RF Parameters	Cband	2500TDD	3450
NF (typical)	5.2 dB	3.8 dB	4.5 dB
NF (max)	6 dB	6 dB	6 dB
IIP ₃ (typical)	-22.7 dBm	-23.1 dBm	-23.4 dBm
IIP ₃ (min)	-28 dBm	-28 dBm	-28 dBm
EVM (typical)	2.9%	2.3%	1.7%
EVM (max)	3.5%	3.5%	3.5%

Mechanical	Specification
Mounting Type	Wall or rack (fits standard 19" rack with bracket). Vertical mounting only.
Antenna Connectors	4.3-10 Female (2)
External Alarm Interface	5-Pin connector on bottom panel
Optical Connector	SC / APC, step ferrule, waterproof, single mode fiber
Monitor Port	- 40 dB (±3 dB), SMA female, TX output only, located on combiner unit
Craft Port	Serial interface RS-232 9-pin D-sub, male
Dimensions (HxWxD)	28.5" x 19.7" x 9.5" (725 x 500 x 240 mm) including wall mount bracket
Weight	84 lbs. (38 kg) max (fully loaded)
Ingress Protection	UL Type 4X
Sealing (Remote Unit)	IEC 60 529 EN 60 529 (IP66 Compliant)
Operating Environment	Temp: -13° to 131°F / -25 to +55°C. Humidity: 0% to 90% non-condensing

Power Consumption	Specification (Typical Power Consumption)
HRDU Modules	100W per module (HRDU_2500_FB_TDD_R @ 43 dBm output power) 87W per module (HRDU_345 @ 42 dBm output power) 151W per module (HRDU_Cband @ 45 dBm output power)
HROU_4000 Chassis	120W, includes Power Supply Unit, R-Optic, and DPD Board (including RCPUs)

Optical	Specification
Wavelength	Tx: 1550 nm; Rx: 1310, 1330 nm
Loss	4-port optic module: 5 dBo max.; 1-port optic module: 10 dBo max.

Regulatory	Specification
Type Approval	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.

Parts List

Part Number	HROU_4000_3B / HRDU
HROU_4000_AC_3B	High Power Mid-Band Remote Optical Unit Chassis, AC Power, Tri-band SISO, CUs Included
HROU_4000_DC_3B	High Power Mid-Band Remote Optical Unit Chassis, DC Power, Tri-band SISO, CUs Included
HRDU_Cband	High Power Amplifier Module, 3700~3980MHz, TDD
HRDU_345	High Power Amplifier Module, 3450~3550MHz, TDD
HRDU_2500_FB_TDD_R	High Power Amplifier Module, 2496~2690MHz, TDD



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