

**SOLID**

# ALLIANCE Multi-Operator DAS Enhanced BTS Interface Unit (eBIU) Product Specification

## Enhanced Base Station Interface Unit with Integrated Point of Interface (POI)

### Specifications / Parts List



**ALLIANCE is a multi-operator DAS solution for commercial wireless services. The Enhanced BIU with integrated POI is compatible with all of SOLiD's current and legacy low, medium and high power remote units.**

**Modular design means lower operational costs and unparalleled RF performance, cost efficiency and flexibility.**

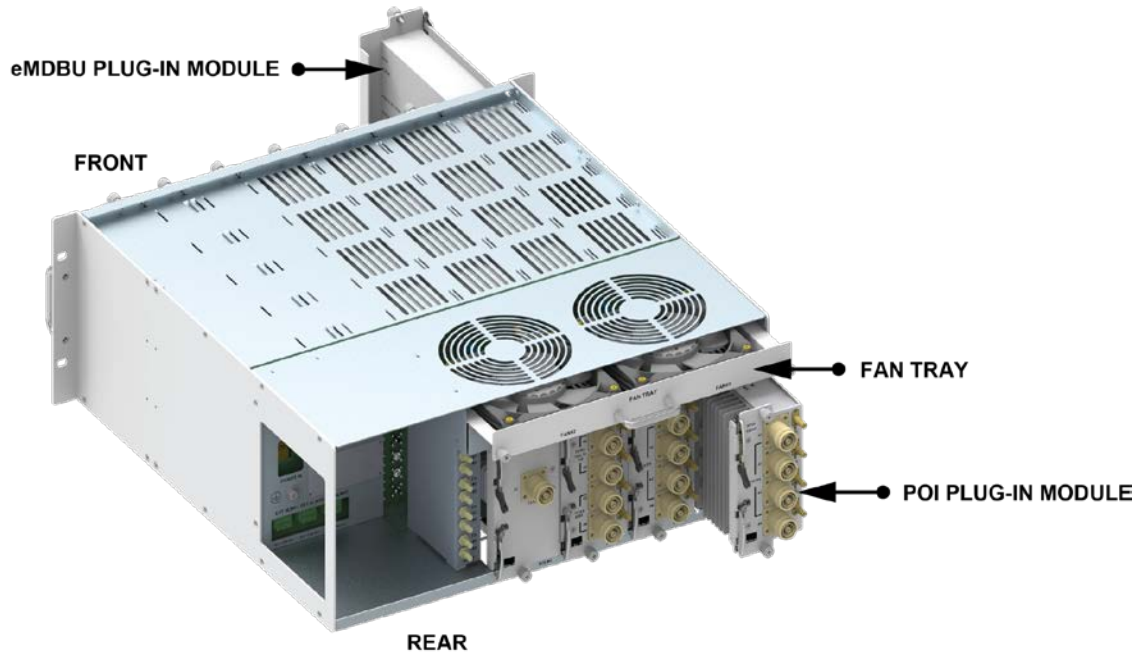
**Rugged construction meets the latest fire codes and requirements for harsh environmental conditions.**

- Integrated low and high power Point of Interface (POI) modules which can be mixed or matched in a single chassis
- Accepts simplex or duplex feeds from carrier equipment
- Reduced footprint: 16 services in 4RU
- Integrated AC or DC power supply module
- 4.3-10 connectors
- Multiple frequency bands in a single unit
- Software configurable uplink and downlink paths for each service
- Auto Level Control (ALC) uplink and downlink for each service

**Operation**

The eBIU receives downlink signals from the base station (BTS) or bi-directional amplifier (BDA). Each signal is then independently monitored, filtered and controlled automatically in the eBIU and transmitted to the system's ODUs (Optic Distribution Units). The ODU converts the RF signals to optical signals and transmits them via fiber to the remote units (ROUs).

At the ROU, signals are amplified and sent via coax to the remote antennas placed throughout the building or campus. For the uplink path, the process is reversed allowing the eBIU to route each frequency to the proper operator.



The eBIU can be configured with high power (20W) or low power (100mW) Point of Interface (POI) modules or high/low modules can be mixed in the same chassis. The high power POI has an input range from +15dBm to +43dBm and the low power from -10dBm to +20dBm. All POI modules offer both duplex and simplex ports for connectivity with carrier equipment.

A fan tray draws air across cooling fins on the modules when using high power POIs. SOLiD recommends leaving 1U of space above and below the unit to dissipate heat when using the high power POIs.

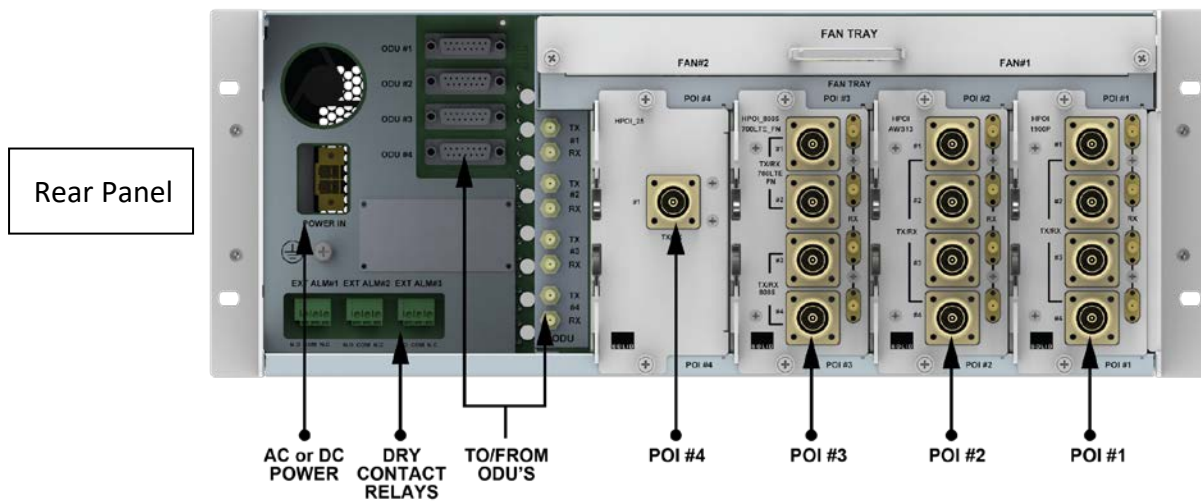
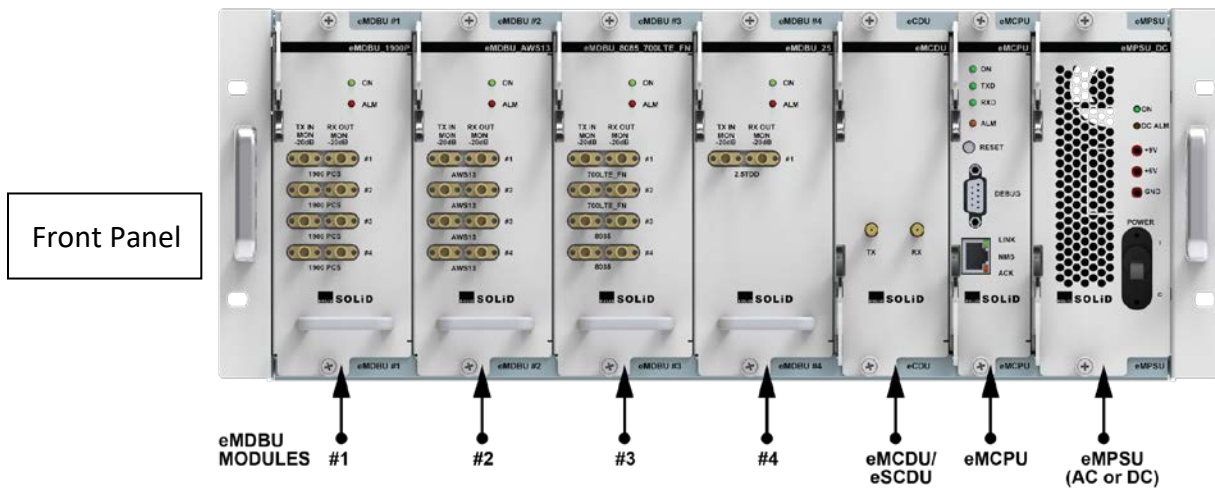
For deployments requiring more than 16 services per sector, a second eBIU, configured as a secondary (or slave) unit, can be connected to the primary eBIU via the eMCDU module.

The eBIU mounts in a 19-inch equipment rack and is powered by an internal AC or DC power supply. Supported bands include: 700MHz, 800MHz, 850MHz, 1900MHz, 2100MHz (AWS 1+3), 2.3GHz WCS, 2.5GHz.

**Standards / Certifications**

Certification	
EMC	EN 301 489-01, EN 301-489-8, EN 301-489-23
Type Approval & Certification	EN60950-1

eBIU Components	Description
Enhanced Base Station Interface Unit	eBIU chassis includes eMCDU (or eSCDU), eMCPU, eMPSU
Main Combiner Divider Unit (eMCDU) Slave Combiner Divider Unit (eSCDU)	Provides combining/splitting to support 4 eMDBU modules and 4 ODU connections. eMCDU includes interface for secondary eBIU.
Main Central Processor Unit (eMCPU)	Control and monitor system status. Control and monitor via RJ45 or RS232 connection
Main Power Supply Unit (eMPSU)	DC Input power: DC -48V, Output power: 9V, 6V AC Input power: AC 110/220V, Output power: 9V, 6V
Main Drive BTS Unit (eMDBU)	Amplify and adjust downlink and uplink RF signal Max 4 eMDBUs per eBIU.
Point of Interface (POI) Module	Low Power POI (LPOI) for typical Small Cell Interface: up to 100mW High Power POI (HPOI) for typical BTS Interface: up to 20W Conditions RF signals from carrier equipment.
LPOI Simplex Interface Module	Simplex feed-thru, 699MHz to 2700MHz.
Fan Tray	Draws air across cooling fins on POI modules
Dry Contact Relays	Used to accept input alarms from external equipment or send output alarms to NOCs or fire safety panels.



**RF Parameters**

Frequency Band	Downlink (Tx)	Uplink (Rx)
	Frequency (MHz)	Frequency (MHz)
700LTE + D Block (FirstNet)	729-768	699-716 / 777-798
Extended 850C band	862-894	817-849
1900PCS	1930-1995	1850-1915
2100 AWS 1+3	2110-2180	1710-1780
2300 WCS	2345-2360	2305-2320
2500TDD LTE	2496-2690	2496-2690

**Ordering Information / Part Numbers**

Order POI's to match desired carrier equipment power levels. POI frequency band must match associated eMDBU frequency band.

Product Description	Part Number
Blank eBIU Module	eBIU_B (eBIU BLANK)
Master eBIU, AC Version (Includes: eMCPU, eMPSU_AC, eMCDU)	eMBIU_C_AC
Master eBIU, DC Version (Includes: eMCPU, eMPSU_DC, eMCDU)	eMBIU_C_DC
1900 MHz Input Module for the eBIU	eMDBU_1900P
1900 MHz Input Module for the eBIU, Channel B for MIMO Applications	eMDBU_1900P_M
2300 WCS, 2500MHz TDD Input Module for eBIU	eMDBU_23_25
2500MHz TDD Input Module for eBIU	eMDBU_25
817-849/862-869 MHz Cellular, 700MHz Full Band Input Module for the eBIU. Includes Extended 700 band for FirstNet	eMDBU_8085_700LTE_FN
2100MHz (AWS 1+3) Input Module for the eBIU	eMDBU_AWS13
2500TDD or 2600FDD for SISO (Ports 1, 2) or MIMO (Ports 3, 4) **Late Q1 2017	eMDBU_25_26_S/M
Slave eBIU, AC Version (Includes: eMCPU, eMPSU_AC, eSCDU)	eSBIU_C_AC
Slave eBIU, DC Version (Includes: eMCPU, eMPSU_DC, eSCDU)	eSBIU_C_DC
High Power POI Module (20W), 1900MHz PCS, 4 Ports	HPOI_1900P
High Power POI Module (20W), 2300MHz WCS, 2500MHz TDD, 3 Ports	HPOI_23_25
High Power POI Module (20W), 2500MHz TDD, 1 Port	HPOI_25
High Power POI Module (20W), 800MHz Sprint, 850MHz Cellular, 700LTE + FirstNet, 4 Ports	HPOI_8085_700LTE_FN
High Power POI Module (20W), 2100MHz (AWS 1+3), 4 Ports	HPOI_AWS13
High Power POI Module (20W), 2500TDD or 2600FDD, 4 Ports (SISO 2 Ports of 25 or 26, MIMO 2 Ports of 25 or 26). ** Late Q1 2017	HPOI_25_26_S/M
Low Power POI Module (100mW), 1900MHz PCS, 4 Ports ** Q1 2017	LPOI_1900P
Low Power POI Module (100mW), 2300MHz WCS, 2500MHz TDD, 4 Ports ** Q1 2017	LPOI_23_25
Low Power POI Module (100mW), 800MHz Sprint, 850MHz Cellular, 700LTE + FirstNet, 4 Ports **Q1 2017	LPOI_8085_700LTE_FN
Low Power POI Module (100mW), 2100MHz (AWS 1+3), 4 Ports **Q1 2017	LPOI_AWS13
Low Power POI Module (100mW), Simplex feed-thru, 699MHz to 2700MHz	LPOI_SPLX

## Specifications

Electrical Specifications		
Downlink Input Power	LPOI	-10dBm to +20dBm
	HPOI	+15dBm to +43dBm each port, -153dBc PIM
Uplink Gain Range (per port)		+5dB to -15dB using HPOI; +15dB to -5dB using LPOI & 2.5TDD HPOI
Total Attenuation per port eMDBU + POI	Downlink	Management Software: +30dB variable in 0.5dB increments Fixed POI values: +35dB (HPOI) or 10dB (LPOI) fixed from POI module, all bands.
	Uplink	Management Software: +30dB configurable in 0.5dB increments. (Note: this attenuator is shared with the ALC feature. Any hard coded attenuation will reduce the ALC action by the amount of the hard coded attenuation.) Fixed POI values: +45dB (HPOI) (35dB for 2500TDD HPOI) and 35dB (LPOI)
LPOI Simplex Board		Simplex feed-thru, 699MHz to 2700MHz. 10dB loss for TX and RX.
ALC per port		30dB Downlink / 30dB Uplink
Nominal Impedance		50 ohm
Power Supply Range		AC 110/220V (AC: 110 – 240V). DC: -48V (DC: -42V to -56V)
VSWR		1.5:1 at all in/out ports
Monitoring level at eMDBU		TX: -20dB, RX: -20dB per port at interface between eMDBU and POI
Power Consumption	Master	235W (AC version) Fully loaded (4 eMDBUs) covering bands: 700/800/850/1900/2100/2500 and powering 4 fully loaded ODUs (2 DOUs per ODU). Total power consumption will vary depending on configuration.
	Slave	115W (AC version) with 4 eMDBUs
Front Panel LED Indicator	eMDBU	Power on: Green, Alarm: Red
	eMCPU	Power on: Green, Alarm: Red LINK: Green flickering (Communication Status)
	eMPSU	Power on: Green, Alarm: Red
Mechanical/Environmental		
Total Max Weight		Approximately. 23kg (50lbs) at full load with 4 eMDBUs
HPOI BTS Interface / LPOI Small Cell Interface		TRX Duplexed Port: 4.3-10 (Female), Simplex RX Port: QMA (Female)
LPOI Simplex Interface Card		Simplex: QMA (Female)
eMDBU UL & DL Test Ports (-20dB)		QMA (Female)
Mounting Type		19" rack mount (support brackets recommended)
Operating Temperature		14 to 122°F (-10 to +50°C) ambient temperature
Dimensions		19" W x 7" H x 18" D (4RU rack height)
Serial Interface Connector		RS232 9-pin D-sub, female (for connecting management PC)
Dry Contact Alarm Interface		3 Input/3 Output (Software switchable between input/output)



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H,V: R5.5/R5.0

ISO9001  
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ISO14001