ERCES SIGNAL BOOSTERS / BDA

Radio Solutions Inc. Class B BDAs are high gain band-selective signal boosters/bi-directional amplifiers that can be designed and customized to meet all public safety frequency band ranges. It is intended to provide reliable two-way radio signal coverage inside buildings, tunnels and other structures. The band selective design delivers a reliable performance in even the most challenging RF environments. State of the art design delivers high reliability and excellent performance in a compact, all-inclusive package. RSI Class B BDAs have been tested and evaluated in accordance with UL2524 requirements for In-building 2-Way Emergency Radio Communication Enhancement Systems, NFPA and IBC/IFC standards compliance—making it the best choice for public safety and other mission critical applications.

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL 2524
- NFPA 72 Compliance
- FCC Title 47 Part 90
- IFC Compliance
- CSFM: 7300-1703:0505
- NFPA 1221 Compliance
- FCC Title 47 Part 15b

UL 2524 Listed

Version 2: 03/06/2020

Electrical Specification

Specification	SB400M2A-1-UL SB400M2A-2-UL	SB150M2A-1-UL	SB800M2A-1-UL	SB700M2A-1-UL	SB7800M2A-1-UL
Frequency Range	450-490MHz UHF	150-174MHz VHF	806-815MHz Uplink 851-860MHz Downlink	793-805 MHz Uplink 763-775 MHz Downlink	793-815MHz Uplink 851-860MHz & 763-775 MHz Downlink
Passband	100KHz -3MHz*	-	-	-	-
Maximum Bandwidth, each band	3MHz	-	-	-	-
Maximum Gain (adjustable)	92dB max. (90dB typ.)	92dB max. (90dB typ.)	92dB (Typ)		
Gain Adjustment, 1dB attenuator increments	50dB to 92dB = 42dB total adjustment range				
Maximum Composite Output Power (i.e. signal carrier max. power)	32dBm	30dBm	30dBm	30dBm	DL: 31dBm Composite UL: 28dBm
Power Limiter Adjustment, 1 dB attenuator increments	32dBm to 18dBm	30dBm to16dBm	30dBm to 16dBm	30dBm to 16dBm	28dBm to 14dBm
Impedance	50 Ohm				
Maximum RF Signal Input Level for FCC spurious limits compliance	-20dBm				
Absolute Maximum Input RF Signal Level	0dBm continuous, +10dBm peak				
Noise Figure	<6.5dB typ.8dB max.	<6.5dB typ.8dB max.	<6.5dB typ.8dB max.	<6.5dB typ.8dB max.	<6.0dB typ. 7dB max.
Trouble indications	Two Form C relays for each of the troubles: AC Power Status, Charger Status, Low Battery Capacity, BDA Trouble, Antenna Trouble and Aux Alarm. Second relay contact set provided for a LED annunciator panel.				
Event Logger	Standard SD Card up to 16GB. Mini SD with adapter. Real- time clock time stamp included				
AC Power Supply	Two independent power supplies with 110-240VAC/2.1A 50/60Hz each.				
Power Supply Efficiency	91% (Typ.)				
DC Power Supply	Requires two (2) 75Ah 12V AGM Sealed L.A. batteries in series for Secondary power. Maximum Current Draw: 2.5A @24VDC				
Run Time with standard 2x75Ah 60% de-rated Battery Backup	24 Hours under full load				
Battery Charging with the Built-in Charger**	Charging Current Limited to 5A max				
Operating Temperature***	-4°F to +77° F (-20°C to +25°C)***				
FCC ID	2AHVPSB400M1A 2AHVPSB400M2A	2AHVPSB150M2A	2AHVPSB800M2A	2AHVPSB700M2A	2AHVPSB7800M2A
FCC Certifications	FCC Title 47 Part 90, FCC Title 47 Part 15b				

*Multiple channels can be combined within the 3MHZ duplexer band-pass. Multiple bands can be combined in the same enclosure. Other channel bandwidths may be available, please inquire with your specific requirements.

**Only use approved lead-acid batteries supplied by Radio Solutions Inc. along with the Signal Booster

***This system meets NFPA requirements for operation at an extended operating temperature range, however, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15-25º C/60-77º F.

Mechanical Specification

Dimensions	NEMA-4 (UL Type-4) Enclosure: 20.55”Wx24”Hx8.32”D - Total Width Including Heatsinks: 23.23” - Total Height Including Mounting Tabs: 26.22”
Signal Booster Enclosure Type	NEMA-4 (UL Type-4) Sealed Enclosure, Aluminum with Powder Coat. Enclosure color: Red.
Weight – Standard Enclosure, Single Band Configuration, NFPA Compliant Version with two power supplies	<59lbs
RF Connectors	N-Female
Battery Enclosure Color	Red, includes louvered vents on both sides
Backup Battery Enclosure	NEMA-3R Type (UL Type-3R) Approved. 23”W x 13”H x 8.3”D
Connections	Four ½” trade size cutouts provided for conduit or strain relief fittings for power, battery backup and communication wiring. For unused cutouts, use UL Type-4 rated ½ conduit hub plugs.

Version 2: 03/06/2020