

SAFE-1030 Bi-Directional Amplifier (BDA)

UL 2524 Certified Public Safety Distributed Antenna System



Class A Channelized and/or Class B BDA

Supports all five public safety and federal bands + FirstNet

The SAFE-1030 BDA drives our passive distributed antenna system (DAS) utilizing a new architecture that provides a modular, upgradeable, and power efficient in-building public safety communication system.

- A plug-in channel card system supports multiple technologies and frequency bands in a single cabinet, combining UHF and/or VHF with 700, 800 and/or 900. The most common configuration is UHF + 700/800. FirstNet and simplex radio coverage can also be supported.
- This innovative approach utilizes dedicated parallel channel processing, assuring the lowest spurious emissions and highest signal performance for clear mission-critical coverage enhancement.
- The advanced super-heterodyne front end significantly enhances the system's ability to handle strong and weak signals simultaneously (near-far performance), simplifies the management of closely spaced transmitter and receiver frequencies, and handles interlaced frequencies with ease.



Large size class A UHF 800 configuration shown above.

Power / Mechanical

Power supply	9 to 12 VDC, DC provided by battery backup unit (120 VAC optional)
Power consumption*	100 watts maximum peak 40 watts average
Output power per band*	700/800 MHz: 30 dBm +/- 2 dB UHF: 28 dBm +/- 2 dB VHF: 27 dBm +/- 2 dB
Channel card input frequency range	VHF card: 150 - 174 MHz UHF card: 380 - 512 MHz 700/800/900 card: 763 - 941 MHz
Card capacity (each card covers a band or sub-band)	Small enclosure: 10 cards (max) Large enclosure: 20 cards (max)
Certifications	UL 2524 FCC ID: 2AKSM-SAFE2
Associated products	Battery backup: SAFE-BBU-1000 Battery backup: SAFE-BBU-2000 Remote alarm annunciator: SAFE-AN-1002

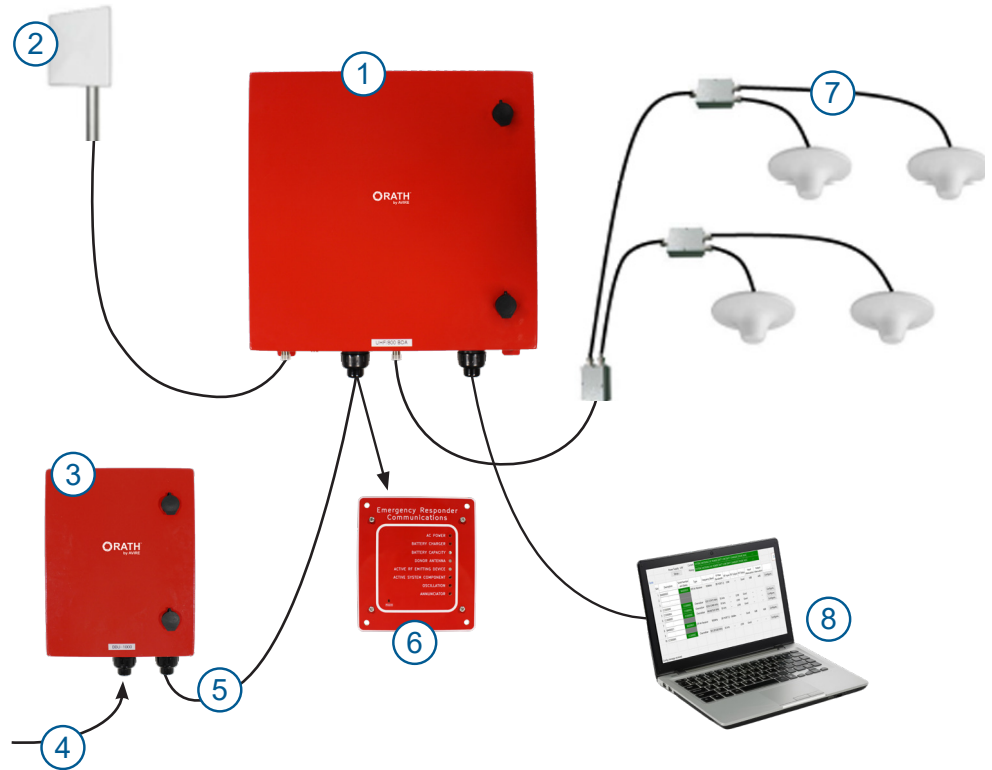
Additional Operating Features

Class A and Class B filter latency	12.5 kHz: 60 μ s 25 kHz: 35 μ s 50 kHz: 25 μ s 75 kHz: 15 μ s 200 kHz: 10 μ s 500 kHz: 8 μ s
RF input RF output*	-10 dBm (max, no damage) 1 watt (2 watts with dual band)
Noise figure*	5 to 8 dB (typical)
Gain control Gain range	60 dB (+1 dB steps) 50 to 90 dB (typical)
Operating temperature	14 to 122°F (-10 to 50°C)
Size & weight (Based on system design)	Small: 15 x 12 x 6.7 inches - 25 lbs (typical) Large: 19 x 18 x 6.7 inches - 40 lbs (typical)
Enclosure	NEMA 4
Alarms	6 NFPA alarms plus an oscillation alarm, an alarm to indicate a lost data connection to the remote annunciator, and a door alarm

* RF output power, output power per band, noise figure and power consumption depends on configuration. Consult Customer Service for applications and quotations support.

System Diagram

- ① SAFE-1030 BDA
- ② Donor antenna
- ③ Power supply and battery backup (BBU)
- ④ AC power
- ⑤ DC power & battery alarms
- ⑥ Remote annunciator
- ⑦ Service (in-building) antenna
- ⑧ Network management system (NMS)



BDA Configuration Example

The modular channel card architecture of the SAFE-1030 BDA offers full flexibility for frequency and band configuration. Three or more bands can be integrated into a single NEMA enclosure.

- Regardless of the number of RF bands or sub-bands, a single service port is provided for simple installation and commissioning. Multiple donor ports are provided as required. (RF donor and service port are N female connectors.)
- DC power input comes from BBU via 8-pin cable (provided).
- USB-B and/or Ethernet RJ45 for NMS port.
- 6 form C relays for NFPA alarms to fire panel + oscillation alarm.



Small size class A VHF interlaced configuration shown above.

WARNING. This is NOT a CONSUMER device. It is designed for installation by FCC LICENSEES and QUALIFIED INSTALLERS. You MUST have an FCC LICENSE or express consent of an FCC Licensee to operate this device. You MUST register Class B signal boosters (as defined in 47 CFR 90.219) online at www.fcc.gov/signal-boosters/registration. Unauthorized use may result in significant forfeiture penalties, including penalties in excess of \$100,000 for each continuing violation.