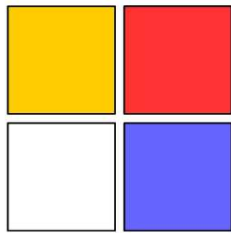


SAFE-COM**WIRELESS**

Safe-Com DASassure™
Public Safety Distributed Antenna System
SAFE-1030 Bidirectional Amplifier
VHF, UHF, 700, 800 & 900 MHz

- Class A and/or Class B BDA
- Supports All Five Public Safety and Federal Bands + FirstNet
- 1 Watt RF Output
- Field Upgradeable – add new channels and new bands
- Small Size : 11 x 15 or 18 x 18 inch, NEMA 4
- Low Power Consumption
- Lowest Spurious due to advanced filtering design
- Unique front-end design, exceptional filtering



Safe-Com's *DASassure™* is a patent-pending passive Distributed Antenna System utilizing a new architecture that provides a modular, upgradeable, redundant and power efficient Public Safety in-building coverage solution. This innovative approach utilizes dedicated parallel channel processing assuring the lowest spurious and highest signal performance for clear mission-critical coverage enhancement. The modular hot-swap card system permits single channel expansion on any frequency thanks to its micro-power™ amp architecture. The design is the most compact BDA available – fitting up to 5 bands into a ~11x15x7inch NEMA 4 unit. All this with the industry's lowest power consumption of 50 watts* avg. at quiescent operation. This also makes the battery backup system the smallest available with 12 or 24 hours packed into < 0.5 ft³. Safe-Com's high-quality manufacturing system and superior applications support assures your success and the public's safety.

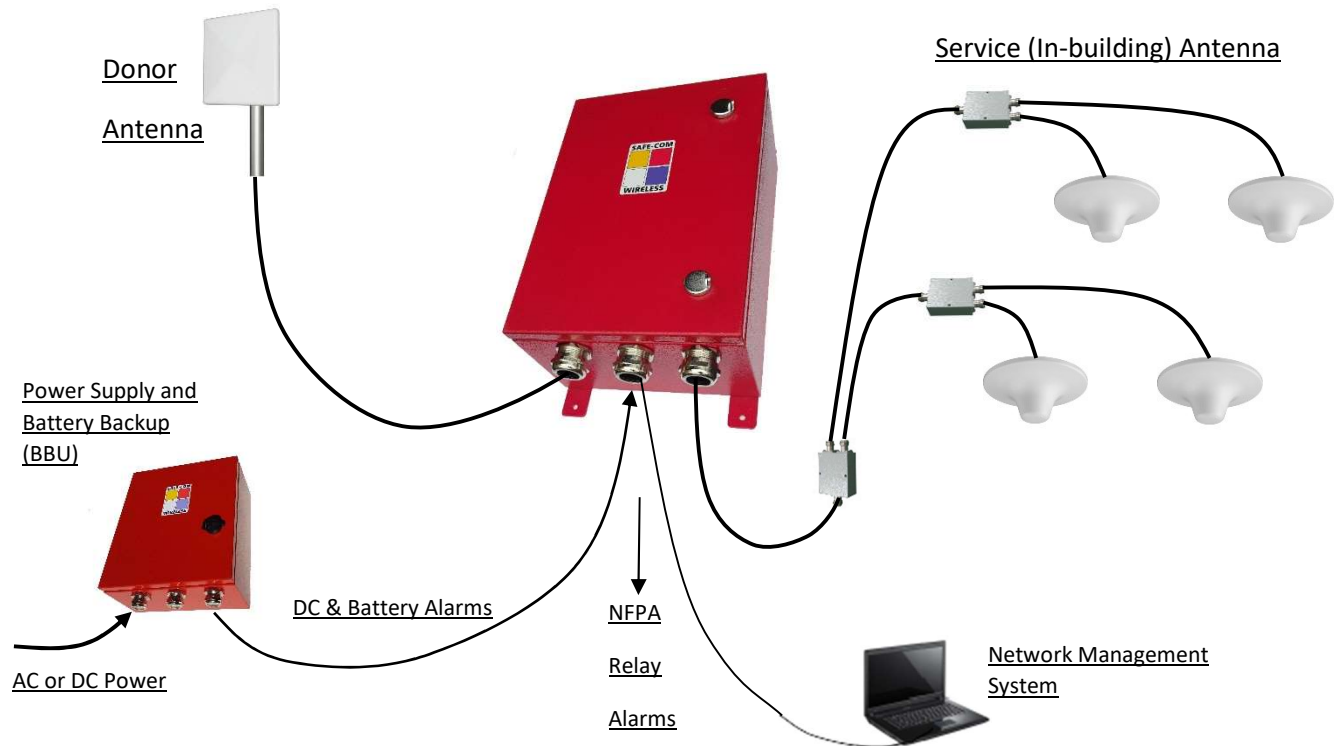
Parameter	Value
Output Power per Band	
- 700/800 MHz:	30dBm +/- 2dB
- UHF:	28dBm +/- 2dB
- VHF:	27dBm +/- 2dB
RF Input, max, no damage	0 dBm
Noise Figure, typ.	6 - 8 dB
Gain, typ. (consult applications)	50 - 80 dB
Spurious	FCC Compliant
Gain Control	30 dB
Operating Temperature	0 to +50°C
Power (DC via Battery Backup)	25 to 65W typ.*
NEMA4: Size Type 1	11 x 15 x 7 inches, ~25lbs
NEMA4: Size Type 2	18 x 18 x 7 inches, ~40lbs

RF output power and power consumption depends on configuration. Consult the sales department.

NFPA Alarm Outputs: Relay outputs

1. System Component Failure – Summary Alarm
2. Active emitter fail / Power amp
3. Donor Antenna Fail
4. Battery Charge Fail
5. AC Power loss
6. Low Battery Capacity

System Diagram - BDA



The Safe-Com Wireless Public Safety Bidirectional Amplifier (BDA) features:

- Plug-in Modular card system: Each low-cost card performs narrow-band signal processing on a single frequency. This allows wide flexibility in configuring the system with mixed frequency bands, for example 3 VHF, 8 UHF and five 800 MHz frequencies in one Class A channelized unit.
- Excellent wall plug efficiency: Due to the modular architecture, frequencies that are not keyed up can have their cards shut down to preserve power. This reduces heat within the NEMA enclosure, relaxes demand on battery backup reducing costs, and improves reliability for a longer life and fewer failures.
- Advanced Super-heterodyne front end: Significantly improves near-far performance compared to legacy technology, eases close-in TX and RX frequency management, and therefore interlaced frequencies are handled with ease – as close as <200kHz. Consult with Applications Engineering with your challenging frequency spectrum.

Network Management System

Network Management System

Configuration Overview 11B10001

BDA 11B10001
Power Supply: 5.4V
Setup...

Alarms

Current: SYSTEM ANTENNA AC POWER BATT LOW BATT CHARGER DOOR AUX ---
History: SYSTEM ANTENNA AC POWER BATT LOW BATT CHARGER DOOR AUX ---

Cards

Slot	Description	Serial Number and Status	Type	Frequency Band	IF Filter Bandwidth	RF Input	RF Output	RF Status	Input Attenuation	Output Attenuation	
1	BA000020	BA000020	Off-Air Receiver	930MHz	[RF PORT 2]	LOW	--	Good	6dB	4dB	Configure...
2											
3											
4	CC000009	CC000009	Channelizer	929.137472 MHz	50 kHz	--	LOW	Good	--	--	Configure...
5	CC00000A	CC00000A	Channelizer	929.612480 MHz	50 kHz	--	LOW	Good	--	--	Configure...
6	CC00000D	CC00000D	Channelizer	940.867520 MHz	50 kHz	--	LOW	Good	--	--	Configure...
7											
8	BA000021	BA000021	Off-Air Receiver	900MHz	[RF PORT 2]	-56dBm	--	Good	6dB	6dB	Configure...
9											
10	CC00000C	CC00000C	Channelizer	901.281280 MHz	50 kHz	--	LOW	Good	--	--	Configure...

Config message received.

DASSassure™ NMS
A full featured Network Management Systems assures you have control of your radio network. Shown here is the control panel of the NMS displaying the individual channel control.

You have full insight and remote control of each band, each channel and full independent uplink and downlink controls. Critical monitor values related to each fielded unit is displayed clearly and distinctly. (Graphic details subject to change).

High reliability and ultimate flexibility is assured by design. The ground breaking architecture of the Safe-Com DAS solution guarantees it.

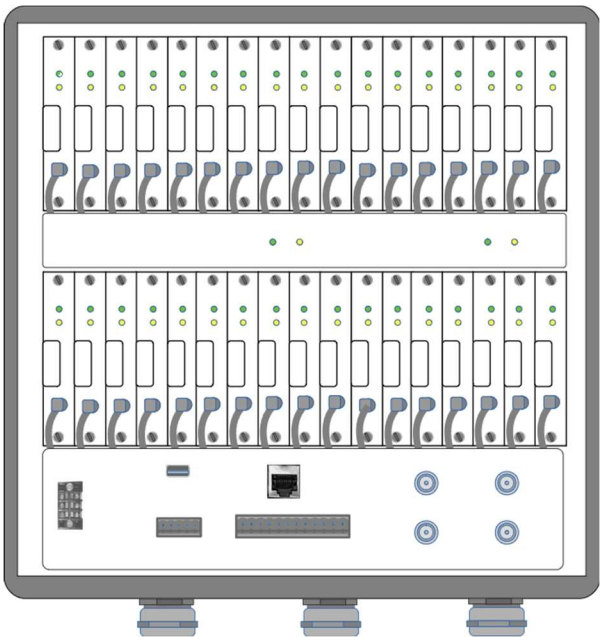
No major single point of failures as can be found in other current designs. Public safety requires reliability and Safe-Com delivers.

BDA Layout – Type 2 enclosure

Modular architecture offers full flexibility for frequency and band configuration.

Efficient power usage. All channel frequency modules not used are un-powered. Reduces load on battery backup and improves reliability.

Alarm /Power Panel Connections: DC power in- 3 position screw terminal; USB local NMS connection; Battery/ power Alarm input, Ethernet (option); NFPA Alarm outputs; Bidirectional RF ports (Example shown: UHF, 700/800 Donor Ports and two dual service Antenna Ports).



Safe-Com DASassure™
Public Safety Distributed Antenna System
Off-Air Solution
VHF, UHF, 700, 800 & 900 MHz

Product Ordering Information:

Series Model Number: SAFE-1000 Standard Features:

- NEMA 4 Enclosure
- NEMA Red Color
- Alarm outputs
- USB Computer Interface
 with Windows NMS Configuration Software
- DC Input Power Supply

Base Model Numbers:

SAFE-1030 : BDA Class A Channelizer or Class B
Other options:
SAFE-1010 : Head-end Fiber Unit – Direct Connect to Radio Base-Station – Class A and /or Class B
SAFE-1015 : Remote Fiber Unit – Used with SAFE_1010 or SAFE-1020 Fiber DAS
SAFE-1020 : Off-Air Channelized Fiber DAS – Class A and /or Class B

Model Number Format:

SAFE-1030: **A**V – **B**U – **C**7 – **D**8 – **E**9 – **F**F

A = Number of RF radio channel in VHF Band – Including Federal Bands 138 – 150MHz
B = Number of RF radio channel in UHF Band – Including Federal Bands 380 – 420MHz
C = Number of RF radio channel in 700 MHz Band – narrow-band
D = Number of RF radio channel in 800 MHz Band
E = Number of RF radio channels in 900 MHz Band
F = Number of 5MHz channels in First-Net Band

Options:

PX : Power options: X = 1 for 12V DC input – default; 2 for 48V DC, 3 for 120VAC
BY : Battery options: Y = 12 or 24 for hours of Battery backup – external unit 10 x 12 x 6 inches, with charger
RS : Redundancy Switching at Card Level. Requires open plug-in slots available for backup card(s).
EN : Ethernet NMS option for remote access, monitoring and SNMP, (future, check availability at time of order)
Fiber options
TZ : Topology options: Z = S for Star (default) or L for Linear or X for hybrid (define configuration with order)

Example Order Model Number: SAFE-1030A: 2V-4U-48 Options: B12

Description: BDA - Channelized Class A (SAFE-1030)
 with two VHF (2V), four UHF (4U), four 800 (48) MHz channels

Options included: B12 = 12 Hours Battery backup

Frequencies and modulation required with order – example detail shown:

two VHF: 151.475 DL/151.975 UL (FM) / 162.500 DL/163.500 UL (FM)
two UHF: 453.475 DL/458.475 UL (Tetra) / 500.8 DL/503.8 UL (Tetra)
two 800 : 854.3125 DL (-45MHz UL) / 854.4375 DL (-45MHz UL) P25

Power / Mechanical

Power Supply	85-240 VAC (12 VDC, -48 VDC option) Note: Depending on configuration, power supply may be external unit
Power Consumption	100 watts maximum peak, 40 watts avg. (with 10 frequencies, lower power with fewer frequencies)
Size, weight	15 x 12 x 6.7 inches - 25 lbs. per unit (Type 1) or 18 x 18 x 7 inches - 30 lbs. (Type 2)
Enclosure, ports	NEMA 4, IP65, Heavy duty Nickel-plated brass water-proof cable feed-throughs
Alarms	NFPA alarm outputs, optically isolated contact closures
Battery Backup Option	12 or 24 hours – 300 x 275 x 165mm NEMA 4 (12 hour unit)
FCC Identifier	2AKSM-SAFE2

The information enclosed is believed to be accurate. Changes may be made to improve the availability or the performance of the product.