

Safe-Com DASassure TM 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, compatible with all analog and digital signals
- Field Upgradeable add new channels and new bands
- Small Size: 12 x 15 or 19 x 18 inch, NEMA 4
- Very Low Power Consumption
- Lowest Spurious due to advanced filtering design
- Unique front-end design, exceptional filtering
- FCC Certified, UL Listed, US designed and manufactured



Safe-Com's DASAssure TM is a patentpending 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 hotswap card system permits single channel expansion on any frequency thanks to it's 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.

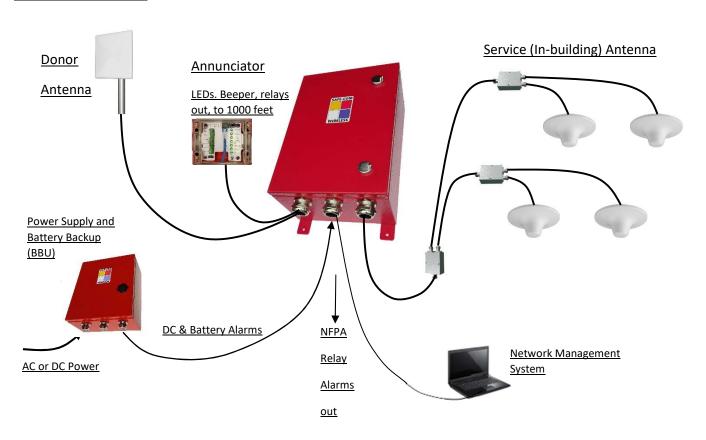
Parameter	Value
Output Power per Band	
- 700/800 MHz:	30dBm +/- 2dB
- UHF:	28dBm +/- 2dB
- VHF:	27dBm +/- 2dB
RF Input, max, no damage	0 dBm
Noise Figure, typ.	5 - 8 dB
Gain, typ. (consult applications)	50 - 80 dB
Spurious	FCC Compliant
Gain Control	30 dB
Operating Temperature	0 to +50°C
Power (DC via Battery Backup)	25 to 65W typ.*
NEMA4: Size Type 1	11 x 15 x 7 inches, ~25lbs
NEMA4: Size Type 2	18 x 19 x 7 inches, ~40lbs

RF output power, noise figure and power consumption depends on configuration. UL listing certification available. 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

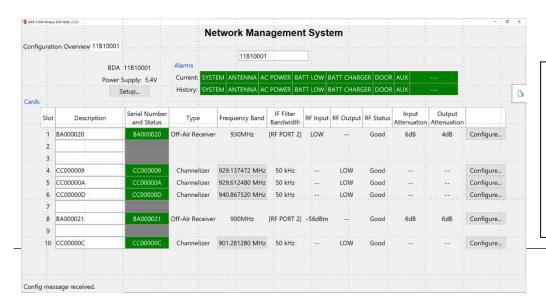
System Diagram - BDA



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



DASSassuretm 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.

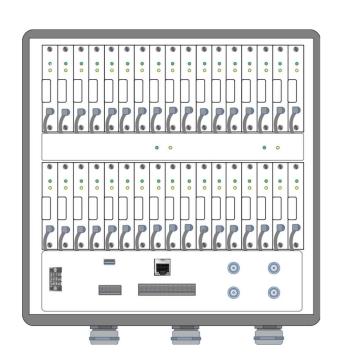
No major single point of failures as can be found in other current designs. Public safety requires reliability and Safe-Com delivers.

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 unpowered. 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 TM

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 ColorAlarm 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: AV - BU - C7 - D8 - E9 - FF

 $\underline{\mathbf{A}}$ = 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

<u>D</u> = Number of RF radio channel in 800 MHz Band

E = Number of RF radio channels in 900 MHz Band E = 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 6inches, with charger

RS : Redundancy Switching at Card Level. Requires open plug-in slots available for backup card(s).

UL : UL certified. If project requires UL listed product request at time of ordering.

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 Nickle-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.