SAFE-COM WIRELESS

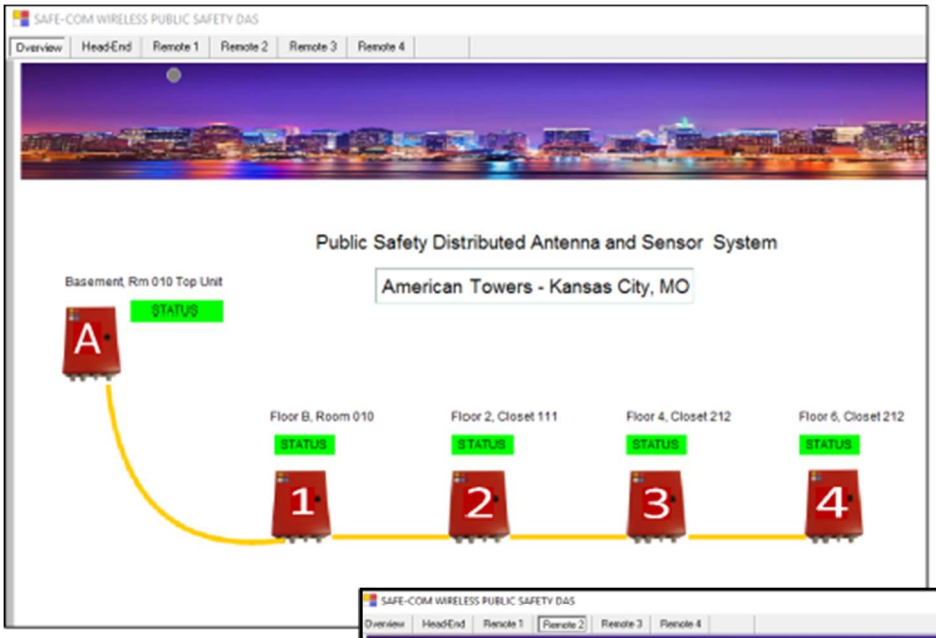
Safe-Com DASassure ™
Public Safety Distributed Antenna System
Off-Air Solution
VHF, UHF, 700, 800 & 900 MHz

- Class A Channelized and/or Class B Fiber DAS + BDA
- Supports All Five Public Safety + Federal Bands + FirstNet
- 1 Watt RF Output
- Upgradeable – add new channels, even new bands
- Small Size : 12 x 15 or 18 x 18 inch, NEMA 4
- Very Low Power Consumption
- Lowest Spurious due to advanced filtering design
- Unique front-end design for interlaced & close-in pairs

Safe-Com's *DASAssureTM* is a patent-pending fiber Distributed Antenna System utilizes a new architecture that addresses the challenges of designing, deploying and maintaining a Public Safety DAS over its life-time. This innovative approach utilizes dedicated parallel channel processing assuring the lowest spurious and highest signal performance for clear mission-critical coverage enhancement. This modular hot-swap card system permits expansion on ANY frequency or band thanks to it's distributed architecture. Multi-bands and interlaced frequency challenges are accommodated easily based on the modular sub-band filtering technology. The design is the most compact fiber DAS available – fitting up to 5 bands in one enclosure. All this with the industry's lowest power consumption of 50 watts avg. This also makes the industrys' first Li-Ion battery backup system the smallest available with 12 - 24 hours packed into < 0.7 ft^3. 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	0.5 to 1 Watt nominal
RF Input, max, no damage	-10 dBm
Noise Figure, typ.	6 - 8 dB
Gain, typ. (consult applications)	50 to 80 dB
Spurious	FCC Compliant
Filter bandwidth - Class A - Class B	 <75kHz 100kHz to 5 MHz (as required by application)
Gain Control	30 dB + (1dB steps)
Operating Temperature	-10 to +50°C
Power (+12VDC via BBU)	25 to 65W typ.*
Size Type 1	10 x 15 x 7 inches, 25lbs
Size Type 2	18 x 18 x 7 inches, 40lbs

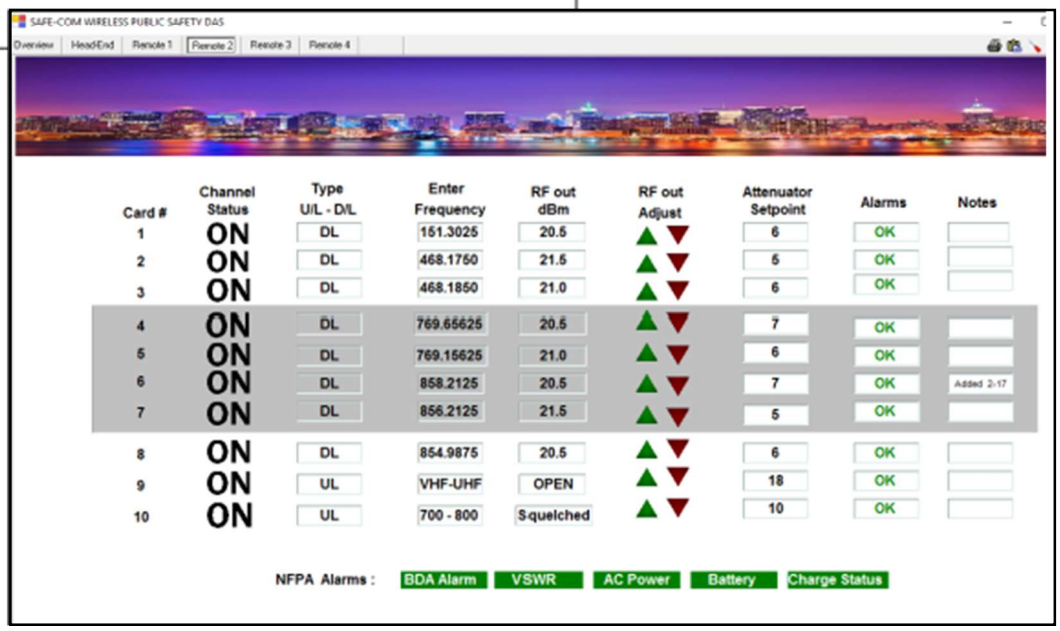
RF output power and power consumption depends on configuration. Consult the sales department.

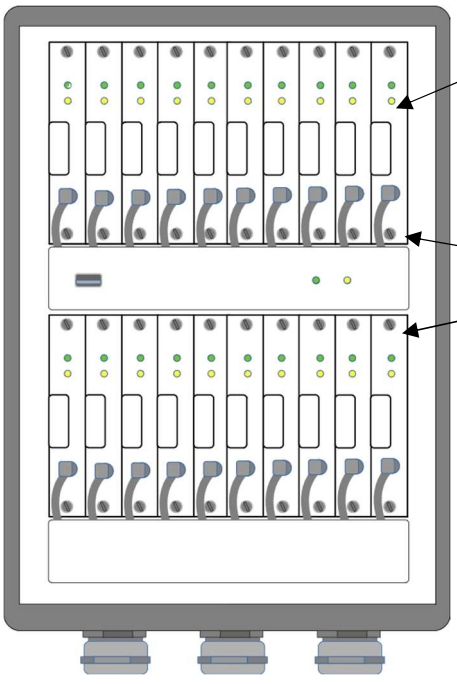


DASS*assure*™ NMS

A full featured Network Management Systems assures you have control of your radio network.
Shown here is the top layer of the NMS displaying overall status of the fielded units.

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.
(Preliminary Graphic).





Each card is a sub-band channel card with bandwidth between <50kHz up to 9 MHz, depending on application

Uplink – Channel Cards

Downlink – Channel Cards

Flexible, Upgradeable

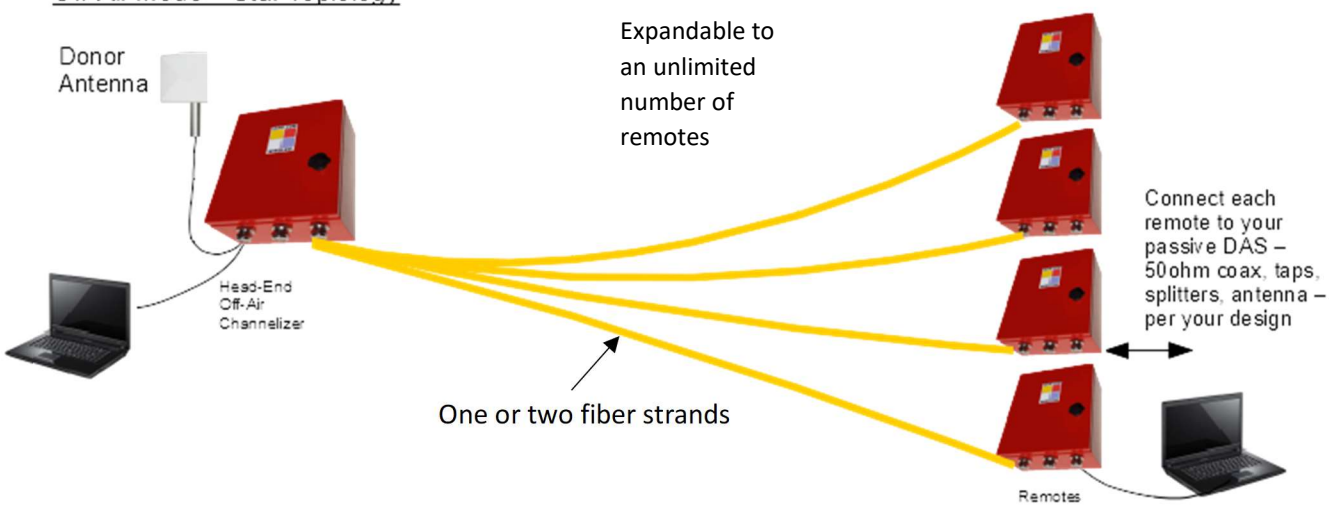
- New frequency? - plug-in a card
- Class A and/or Class B
- Any band, mix and matched

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

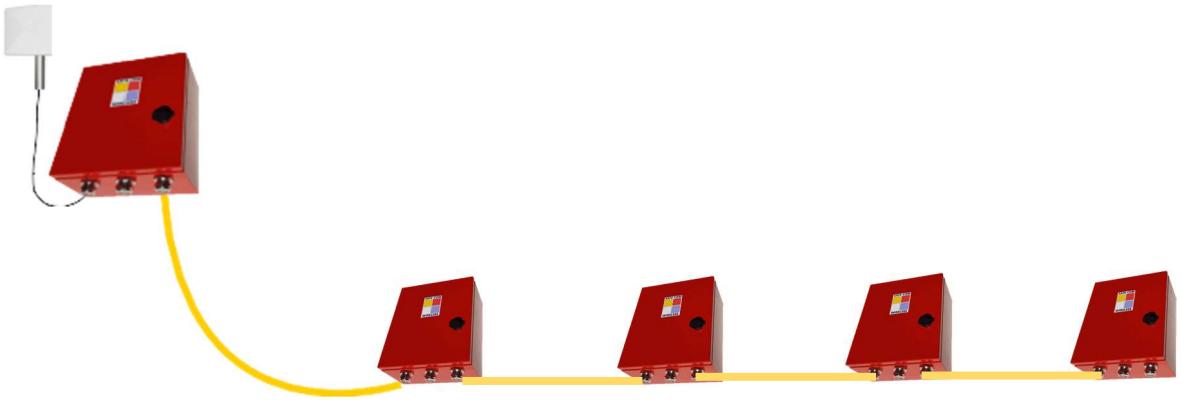
Plug and play feature permits multi-band and multi-technology - Class A and/or Class B - integrated into one system. This makes the Safe-Com Wireless SAFE-1000 BDA and Fiber DAS platform one of the most highly configurable systems in the industry.

Public safety requires reliability and Safe-Com delivers.

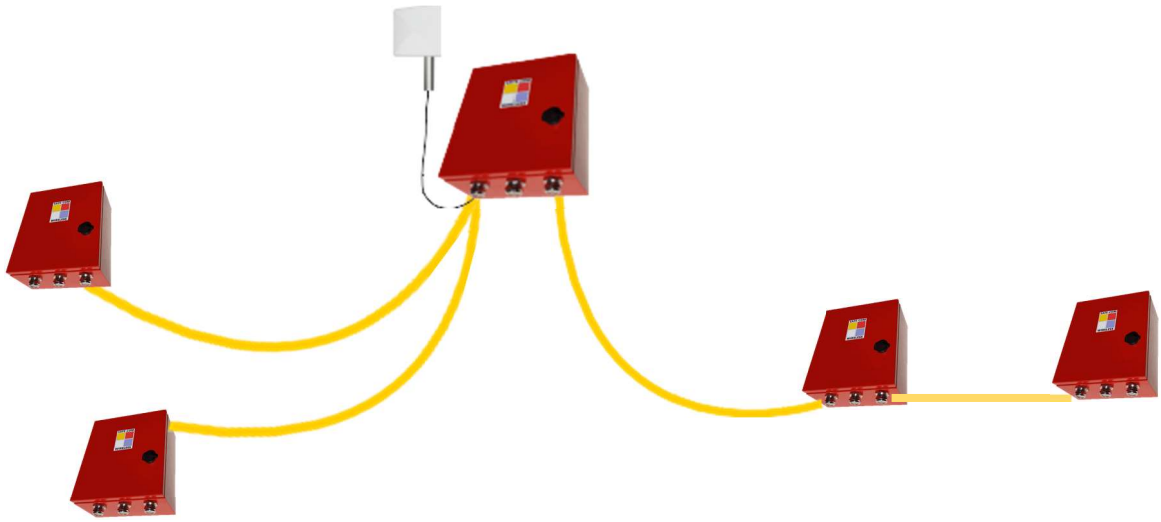
Off-Air Mode – Star Toplology



Off-Air Mode - Linear Topology



Off-Air Mode – Star / Linear Combination



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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
- 12VDC, (48VDC and 110 – 240VAC options)

Base Model Numbers:

SAFE-1010	: Head-end Fiber Unit – Direct Connect to Radio Base-Station
SAFE-1015	: Remote Fiber Unit – Used with SAFE_1010 or SAFE-1020 Fiber DAS
SAFE-1020A	: Off-Air Channelized Class A Fiber DAS
SAFE-1020B	: Off-Air Class B Fiber DAS
SAFE-1030A	: BDA Class A Channelized (<75kHz filter passbands)
SAFE-1030B	: BDA Class B (> 75kHz)

Model Number Format: SAFE-1020A: **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 450 – 512MHZ plus 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 RF radio channels in the BB 700MHz First-Net, Band 14

Options:

P**X**	: Power options: X = 1 for 12V DC input (default, use Safe-Com external battery backup); 2 = -48VDC; 3=AC
B**Y**	: Battery options: Y = 12 or 24 for hours of Battery backup – external unit 10 x 12 x 6 in., (or 18 x 18in) with charger
T**Z**	: Topology options: Z = S for Star (default) or L for Linear or X for hybrid (define configuration with order)
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)
SA	: Integrated Spectrum Analyzer, Head-End (Remote access for spectrum analyzer available)

Example Order Model Number: SAFE-1020A: 2U-27-4 Options: P1, B24, T2L/2S

Description: Off-Air Channelized Class A Fiber DAS (SAFE-1020)
with two UHF (2U), two 700 (27) and four 800 (48) MHz channels
Options included: B12 = 12 Hours Battery backup
TL2-S2 = two linear connected remotes and 2 star connected remotes

Frequencies and modulation required with order – example detail shown:
two UHF: 453.475 DL/458.475 UL (FM) / 500.8 DL/503.8 UL (FM)
two 700 : 769.68125 DL (+30MHz UL) / 769.95625 DL (+30MHz UL) P25
two 800 : 854.3125 DL (-45MHz UL) / 854.4375 DL (-45MHz UL) P25

Power / Mechanical

Power Supply	12VDC standard, (120-240 VAC & -48 VDC options) Back-up Battery Unit available
Power Consumption	65 watts maximum peak, 50 watts avg. (with 10 frequencies, lower power with fewer frequencies)
Size, weight	15 x 12 x 7 inches - 20 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, Form C relay contact closures
Battery Backup Option	12 or 24 hours – 10 x 12 or 18 x 18 in NEMA 4 (12 hour unit)
FCC / IC Identifier	FCC: 2AKSM-SAFE2 and 2AKSM-SAFE3; IC: 22303-SAFE2