

SAFE-1020/SAFE-1015 Fiber DAS

UL 2524 Certified Public Safety Distributed Antenna System



Class A Channelized and/or Class B Fiber DAS (BDA + Remote)

Supports all five public safety and federal bands + FirstNet

The most compact fiber DAS available, featuring a new modular architecture.

- 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. 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.
- The system is field upgradeable. SAFE-1020 head-end units and SAFE-1015 remote units can be configured using star, linear or star/linear topology.



SAFE-1015 and SAFE-1020 units shown above.

Power / Mechanical

Power supply	9 to 12 VDC, DC provided by battery backup unit (120 VAC optional)
Power consumption	80 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 unit: SAFE-BBU-1000 Battery backup unit: SAFE-BBU-2000 Remote alarm annunciator: SAFE-AN-1002
Remote unit capacity	Unlimited (with expansion modules at head-end)
Optical loss budget	0 to 10 dB

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) 0.5 to 3 watts
Noise figure*	6 to 8 dB (typical)
Gain control Gain range	30 dB + (1dB steps) 50 to 90 dB (typical)
Operating temperature	14 to 122°F (-10 to 50°C)
Size & weight (based on system design)	Small 1020: 15 x 12 x 6.7 inches - 25 lbs (typical) Large 1020: 19 x 18 x 6.7 inches - 40 lbs (typical) Small and large sizes available for both the SAFE-1020 and SAFE-1015
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

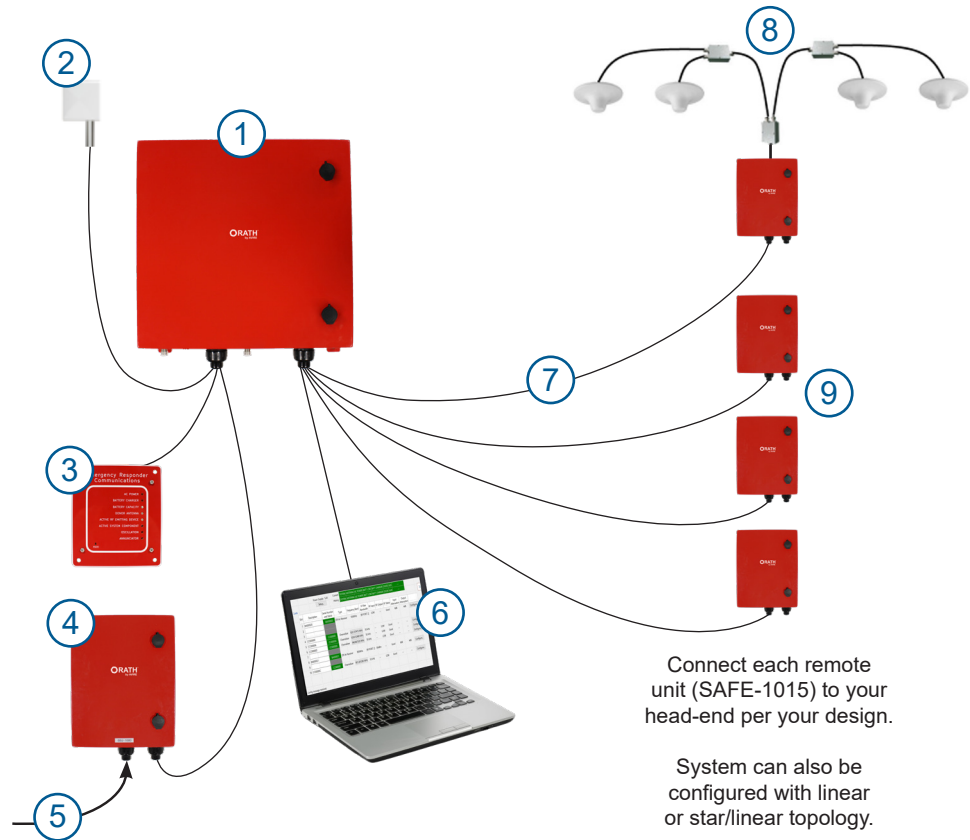
* RF output power, output power per band, noise figure and power consumption depends on configuration. Consult Customer Service for applications and quotations support.

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System Diagram (Star Topology)

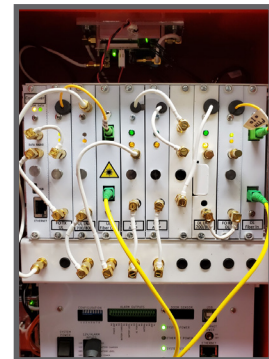
- ① SAFE-1020 head-end off-air channelizer
- ② Donor antenna
- ③ Remote annunciator
- ④ Power supply and battery backup (BBU)
- ⑤ AC power
- ⑥ Network management system (NMS)
- ⑦ One or two fiber strands
- ⑧ Service (in-building) antenna
- ⑨ SAFE-1015 remote unit



Head End Configuration Example

Plug and play feature permits multi-band and multi-technology - Class A and/or Class B - integrated into one system.

- Each channel card is a sub-band channel card with bandwidth between <math>< 50\text{ kHz}</math> up to 16 MHz, depending on application requirements.
- System requires an uplink and downlink channel cards, depending on system design.



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.