

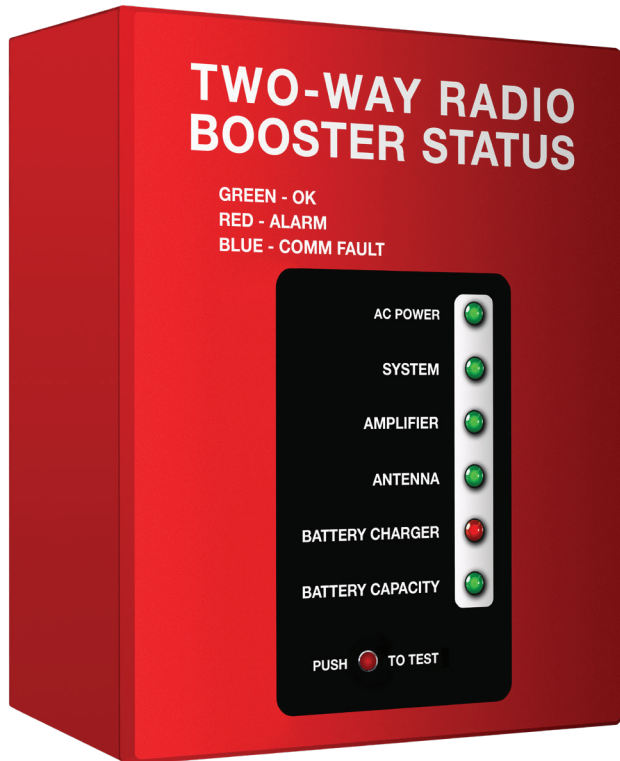


NFPA-Compliant Public Safety Radio Enhancement System Monitoring Unit and Annunciator Panel



DASAlert Models 1221-A & 1221-B

Meets NFPA-72 (2010, 2013 & 2016) and current NFPA-1221 codes for a
Dedicated Annunciator and Monitoring Panel



Displays Status of:

- BDA
- Donor Antenna
- AC Power
- Battery Capacity
- Battery Charger
- System Status

Includes Form-C relay contacts to interface with any fire alarm system

Monitors communications link for integrity

Includes independent circuitry to check antenna, AC power, battery capacity, charger and overall system status

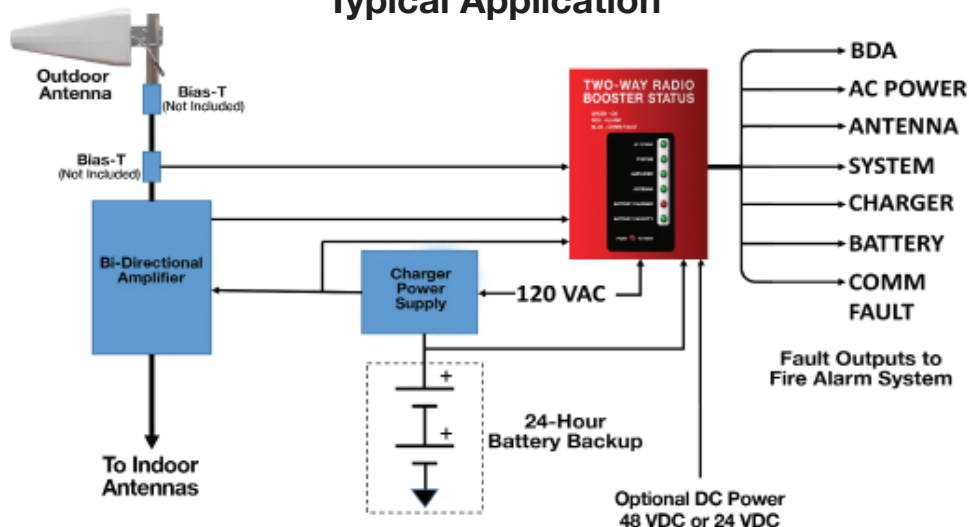
Mates with or augments monitoring of any BDA, antenna, charger, battery or UPS

Low cost, easy to install and program
Small size NEMA-4: 10”H x 8”W x 4”D

Backed up by internal battery (included)

Easy installation to optional primary power sources:
48 VDC or 24 VDC, or 120 VAC

Model 1221-A Monitor and Annunciator Panel Typical Application



Code Requirements

The current edition of the NFPA 1221 fire code (shown below) and NFPA-72 (2010, 2013 & 2016) describe the requirements for monitoring the performance of Public Safety in-building two-way Radio Enhancement Systems with a dedicated panel. This panel is required to be located in the fire command center but some jurisdictions require that it be located in the same room as the Radio Enhancement System.

These panels are designed to meet all these requirements. In addition, Model 1221-A contains additional circuitry to enhance and augment the alarm sensing capabilities of the BDA and the DAS backup emergency power supply if they are not code compliant.

Fault Signaling Relays

Some DAS components are not configured with the appropriate Form-C alarm relays that can interface properly with all Fire Alarm Systems. This unit provides these alarm relays. They can be programmed to mate with any Fire Alarm System with their 'normally OFF' or 'normally ON' states for any 'fail safe' convention that is required by the Fire Alarm System.

Enclosure & Power Requirements

The enclosure is NEMA-4 rated consistent with the other requirements of the code and a small backup battery (included) inside the panel provides over 24 hours of service if this is needed to supplement loss of primary power. Primary power is provided by an AC socket-mounted 15 VDC power supply (included).

Communication Integrity

Per code, fault detection cables between the Radio Enhancement System and the panel are monitored to detect open circuits or short circuits to ground. If this condition is detected the panel will trigger a fault alarm to the Fire Alarm System signaling the loss of communications integrity.

Antenna Monitoring (Model 1221-A)

If the bi-directional amplifier (BDA) in the Radio Enhancement System does not have the capability to monitor donor antenna faults, the panel can provide this by adding external Bias-Ts in line with the antenna. The panel will detect common faults such as open circuits, short circuits, disconnected or severed cables leading to the antenna without impacting the RF performance of the system.

Installation

This panel provides an economical easy-to-install solution to meeting the code requirements and the flexibility to interface with and augment, if required, the fault detection and alarm signaling capabilities of a large variety of standard components used in these systems. The small size and light-weight enclosure can be wall-mounted into any installation.

Model Comparison

Module	Model 1221 A	Model 1221 B
Annunciator System with FORM-C relay outputs to main fire alarm installation	✓	✓
Alternative Donor Antenna Failure Sense Module (Bias-T fittings not included)	✓	
Alternative DAS Battery Capacity Sense Module	✓	
Alternative DAS Battery Charger Failure Sense Module	✓	
Annunciator System Backup Battery (9 Ahr)	✓	✓
Annunciator System Power Supply and Battery Charger	✓	✓

Models 1221A and 1221B Module Descriptions

Annunciator System with FORM-C relay outputs to main fire alarm system

(Models 1221A & Model 1221B)

This is the basic annunciator system that accepts ALARM signaling from external relays contained in the DAS equipment. The system accepts relay signaling indicating the following alarms:

- Loss of AC Power
- Amplifier Problems
- Antenna Problems
- DAS Battery Capacity below 30%
- DAS Battery Charger Fail
- Communications Faults
- Summary System Alarm

The annunciator system provides FORM-C dry relay contacts to provide alarm signaling with any fire alarm installation. The system will operate with DAS installations that include multiple amplifiers, antennas and power sources, and includes circuitry to detect communications faults (open or short circuits) with the DAS equipment.

Annunciator System Backup Battery

Both models are shipped with an 9 Ahr rechargeable SLA battery that mounts inside the enclosure to provide over 24 hours of backup power.

Annunciator System Power Supply and Charger

Both models are shipped with an external 15 VDC power supply and battery charger that can be connected to any 120 VAC power outlet. The battery charger includes indicators that show the health of the panel's backup battery. The need to replace this battery can be signaled to the building's main fire alarm system.

Alternative Donor Antenna Failure Sense Module

(Model 1221-A only)

This module provides a means of detecting open circuit, short circuits, disconnected, severed or loose connector problems in the antenna feed from the donor. This circuitry utilizes external bias-T fittings (not included). Multiple antennas can be connected in parallel to the same monitoring port.

Model 1221A should be used if your amplifier or other components in your installation do not have the means of detecting donor antenna problems.

Alternative DAS Battery Capacity Sense Module

(Model 1221-A only)

If your installation has a backup battery to provide emergency DAS power in the event of an AC power failure it must be monitored to detect when it has less than 30 % capacity left to power the system when primary power is lost.

Model 1221A should be used if your emergency power unit does not have this capability.

Alternative DAS Battery Charger Failure Sense Module

(Model 1221-A only)

If your installation has a backup battery to provide emergency DAS power in the event of an AC power failure, the battery charger must be monitored to detect if it has failed or is degraded.

Model 1221A should be used if your charger unit does not have this capability.

**Excerpted from NFPA 1221 (2016 Edition):
 Similar requirements in NFPA-72 (2010, 2013, 2016)**

Standard for Installation, Maintenance, and Use of Emergency Services Communications System

9.6.13.2 Dedicated Panel.

- (1) A dedicated monitoring panel shall be provided within the fire command center to annunciate the status of all RF emitting devices and system component locations. The monitoring panel shall provide visual and labeled indications of the following for each system component and RF emitting device:
- (a) Normal ac power
 - (b) Loss of normal ac power
 - (c) Battery charger failure
 - (d) Low battery capacity (to 70 percent depletion)
 - (e) Donor antenna malfunction
 - (f) Active RF emitting device malfunction
 - (g) System component malfunction
- (2) The communications link between the dedicated monitoring panel and the two-way radio communications enhancement system must be monitored for integrity.

Specifications

Dimensions	10" x 8" x 4"	Fault inputs from Radio Enhancement System	Donor Antenna OK / Fail	
	Weight		11.7 lbs	Amplifier OK / Fail
			Charger OK / Fail	
			Battery Capacity OK / Low	
Form C Dry Relay Outputs to Fire Alarm System			AC Power	AC Power ON / OFF
			System (Summary Alarm)	
		Amplifier (BDA)	Analog Inputs	Donor Antenna Sense
		Antenna		DAS Battery +/-
		Battery Charger	Certifications	UL: E65324, ETL: 4002961
		Battery Capacity		
Communications Fault	Power	120 VAC, 24 VDC or 48 VDC (100 mA max)		