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Dedicated Public Safety DAS Annunciator Panel Requirements

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Annunciator Panel Functions



- Important part of the DAS frequently overlooked
- Provides on-site situational awareness for incident commander:
 - Is the DAS operational?
 - Location of any failed sectors
 - If on backup battery, how long will it sustain operation
- Provides system status information to Main Fire Alarm Panel / Monitoring Service

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

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**

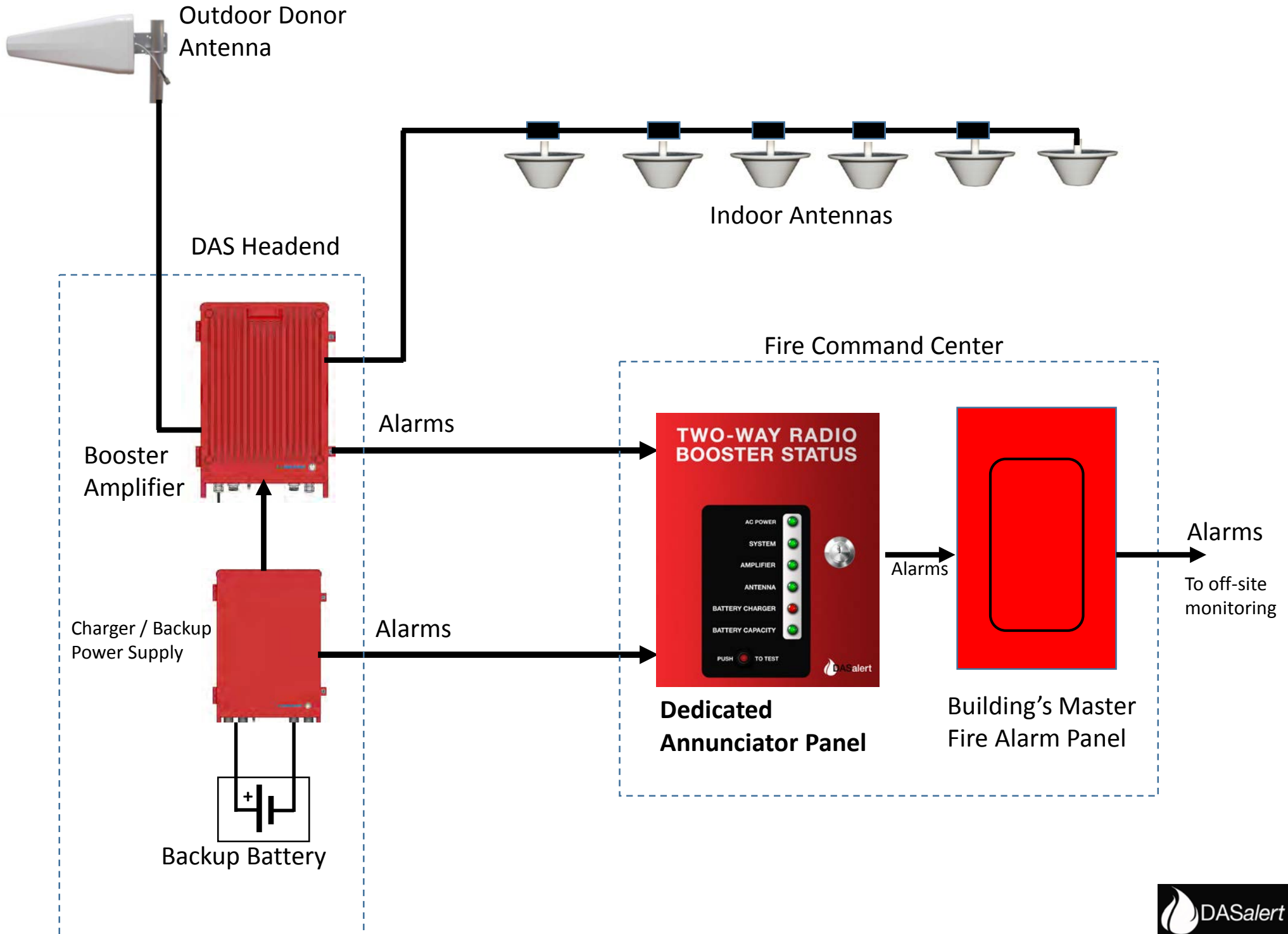
(2) The communications link between the dedicated monitoring panel and the two-way radio communications enhancement system **must be monitored for integrity**

Code References



NFPA CODE	Version	Section Number	Page
NFPA-72	2010	24.5.2.6.2	72-127
NFPA-72	2013	24.5.2.6.2	72-135
NFPA-72	2016	Referenced NFPA-1221	72-19
NFPA-1221	2016	9.6.13.2	1221-32
NFPA-5000	2012	ANNEX F Section 3.7.2	5000-563
NFPA-5000	2015	ANNEX F Section 3.7.2	5000-585

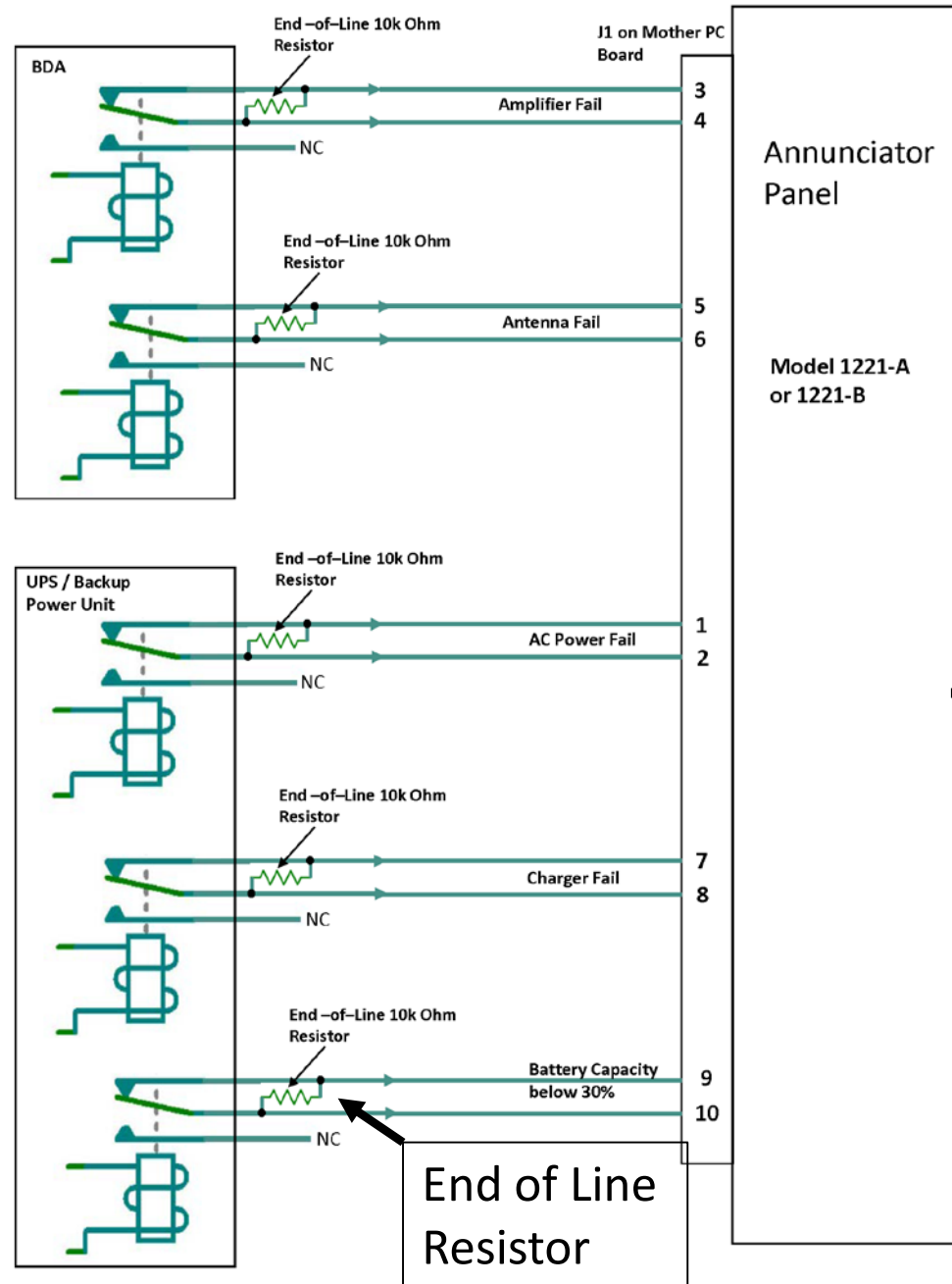
Annunciator Panel Connects to DAS and Main Fire Panel



- **Amplifier Status**
Indicates amplifier is not operational
- **Donor Antenna Status**
Disconnected, severed, shorted or open cable feed to antenna
- **AC Power**
Code requires a dedicated power feed from building's power panel that must be monitored
- **Battery Capacity**
When only 30 % of battery capacity is available, alarm must trigger
- **Battery Charger**
If the backup battery charger has failed, the alarm must trigger
- **System Overall Status**
Summary alarm triggers when any of the above alarms are active or if there is a communications fault (severed, shorted or disconnected cable between the DAS and the panel).

- Panel should be easily Identified with minimum ½” lettering
- Annunciators easy to see in a smoky room. Colors should comply with NFPA-79
- The enclosure must be NEMA-4 rated
- Separate panel for each active device (Amplifier)
- Must have its own backup battery (with charger) that provides a minimum of 24 hours of operation when AC power fails
- All cables going in or out must be in conduit
- To meet **communications integrity** requirements: Connections to the DAS equipment must be “supervised loops” to detect disconnected, shorted or severed wires
- Provide standard alarm relays that connect to building’s master fire alarm panel or an audible alarm in “constantly attended” areas
- Any failure modes should result in a “Fail Safe” alarm.

Interface Between DAS and Annunciator Panel



Located in DAS Headend or at Remote Amplifiers

Located in Fire Command Center

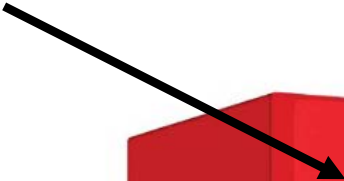
End of Line Resistor

To Master Fire Alarm Panel

Typical Annunciator Panel



1/2" Lettering



**TWO-WAY RADIO
BOOSTER STATUS**

GREEN - OK
RED - ALARM
BLUE - COMM FAULT

3/8" High Brightness
LEDS



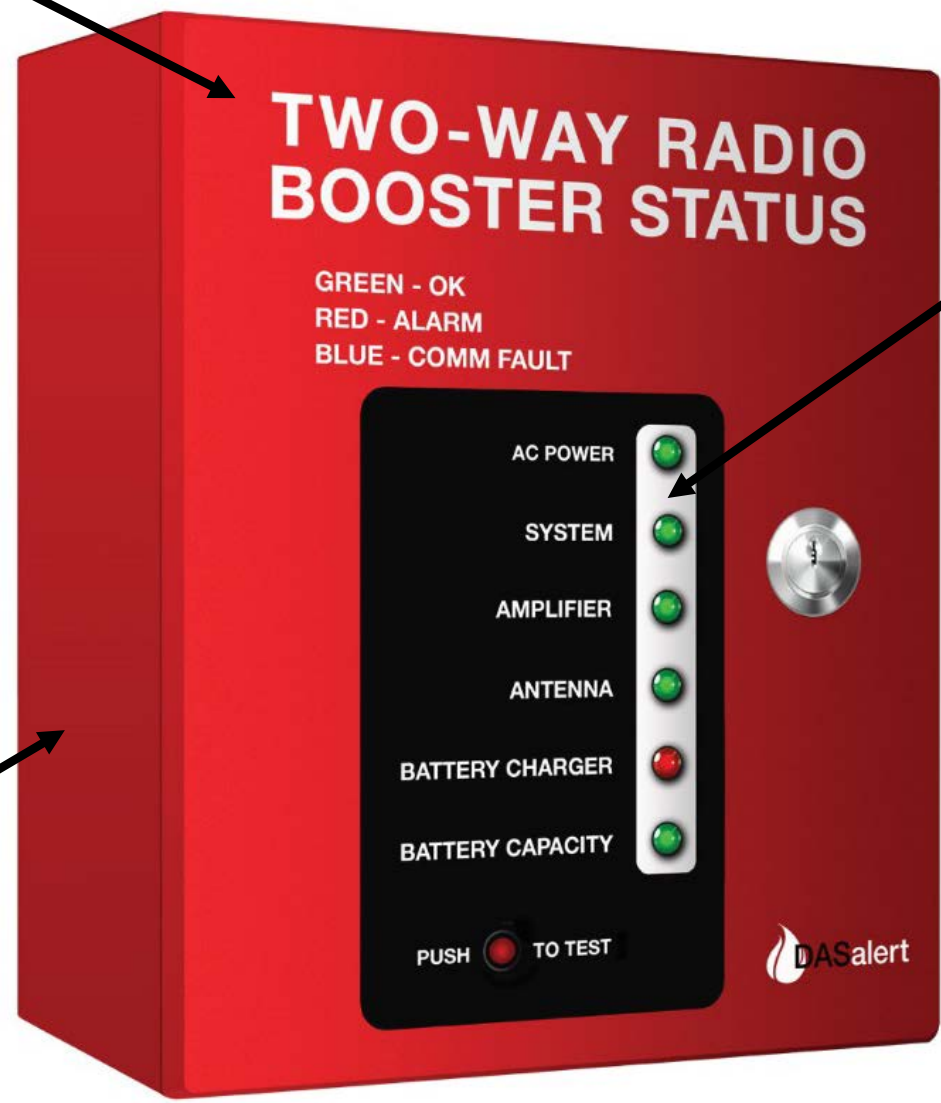
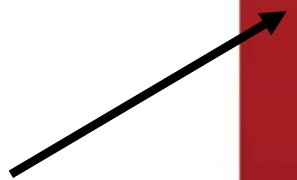
AC POWER
SYSTEM
AMPLIFIER
ANTENNA
BATTERY CHARGER
BATTERY CAPACITY



PUSH  TO TEST



NEMA-4 Enclosure



- **Emergency Cut Off Switch**

Shuts entire system off

Required in some jurisdictions to provide a means to disable the system if it fails in a mode that causes radio interference or jamming of local frequencies

Should be located in Fire Command Center

- **Push to Test switch**

Tests all displays and relays in each possible mode