

Code Requirements and Product Standards

Emergency Radio Communication Enhancement Systems (ERCES) were first introduced in the 2009 International Building Code. The ERCES requirement was established to address the performance of emergency responders' portable radios inside buildings because building construction, building size, construction features, and other elements can absorb or block radio communications.

Today's Codes like the IBC 2015 Section 916, IFC 2018 Section 510, NFPA 72 2010, NFPA 1221 2016 require all buildings to have an approved level of radio coverage within the building based on the existing coverage levels of the public safety communication systems of the jurisdiction at the exterior of the building. This can be achieved by enhancing the in-building radio frequency signal coverage with an ERCES which comprises of a BDA / Signal Booster and Distributed Antenna System (DAS).

UL2524 product performance listing and standard was only recently introduced for ERCES. UL2524 listing provides AHJs, A&Es, and building owners the certainty from an independent third-party organization that systems are code compliant and installed BDA systems will provide reliable communications for emergency responders.

How is the NOTIFIER BDA Unique?

REQUIREMENTS	HONEYWELL BDA SYSTEMS	NON-CODE COMPLIANT
UL 2524 Listed	Yes	No
100% IFC 2009 Compliant	Yes	No
100% IFC 2015 Compliant	Yes	No
100% IFC 2018 Compliant	Yes	No
100% NFPA 72 Compliant	Yes	No
100% NFPA 1221 Compliant	Yes	No
100% FCC Compliant	Yes	SOme
Supervised Dedicated Annunciator	Yes	No
Oscillation Reduction with Continued Operation*	Yes	Some
Zero Noise During Idle	Yes	No
Built-in Fire Alarm Module for Direct Interconnection	Yes	No
Requires Factory Training before Purchase	Yes	Some
Requires FCC License before Purchase	Yes	Some

*The Non-Code Compliant BDA Systems reduce gain then return to normal operation. If Oscillation continues the system powers off and all coverage is lost.

Contact a Honeywell Fire Authorized Engineered Systems Distributor who is factory-trained and certified on BDA/ERCES systems to see if the Honeywell BDA Solution is right for your facility.

SAFER BUILDINGS COALITION

Content provided under license from Safer Buildings Coalition ©2020 All Rights Reserved

For More Information
www.hwll.co/FireBDA

NOTIFIER
12 Clintonville Road
Northford CT 06472
203.484.7161
www.notifier.com

NFBRBDATri I Rev 01 I 02/20
© 2020 Honeywell International Inc.

NOTIFIER® by Honeywell

Bi-Directional Amplifiers/ Emergency Responder Radio Coverage Systems **Quick Reference Guide**



NOTIFIER® by Honeywell

FAQS

What are NFPA's requirements for annunciator at the FACP or is FACP monitoring adequate?

A dedicated annunciator panel must be located in the fire command center or other location designated by the AHJ. The BDA status must also be monitored by the building's fire alarm system.

Does the Building Code require BDAs for Police and Fire Departments?

The code requires coverage for Emergency Responders. The AHJ will determine which Emergency Responder agencies need to be included in the system. Generally, it includes Fire, Fire Mutual Aid, Police and EMS.

Who determines what public safety agencies are to be supported under the provisions for "Emergency Responder Radio Coverage"?

The AHJ will determine which agencies will need coverage.

What skills, education, or experience must a technician have to install, commission, and service a BDA system?

This depends on the jurisdiction, but typically FCC GROL or approved equivalent and manufacturer certification.

How to Determine if a BDA System is Beneficial to Your Building?

An RF Survey must be performed. Typically performed by specialized FCC GROL certified technician and some fire department radio personnel, a RF Survey is accomplished by measuring the Downlink/Uplink signal strengths in decibels-milliwatts (dBm) using special measuring devices.
The survey can be determined before the building construction starts with a signal survey on the building site followed by software-simulated radio propagation modeling. This results in heat maps that show predicted signal coverage levels. Results are submitted to AHJ to determine if a BDA is required or if a waiver is appropriate.

Codes and Standards Reference Guide

Most current adopted Building Codes and Installation Standards require Emergency Responder Radio Signal strength and coverage to be measured in all new and some existing construction. This Reference Guide provides a summary of the key requirements in the national consensus model codes and installation standards that govern the installation, testing and maintenance of in-building emergency responder.

CODE REQUIREMENTS	NFPA*		IFC	
	NFPA 72 - 2013	NFPA 1221 - 2016	IFC 510 - 2015	IFC 510 - 2018
In-Building Solution Required	Section 24.5.2	Section 9.6	Section 510.1	Section 510.1
Level 1, Level 2 or Level 3 Pathway Survivability	2 Hour for Riser Coaxial Cable Section 24.3.6.8.1	2-Hour for Riser Coaxial Cable Section 9.6.2.1.1	Not Addressed in Section 510. Referenced in 24.3.6.8.1 of NFPA 72-2013	Yes, Section 510.4.2. Reference to NFPA 1221
Plenum Rated Coaxial Cable Required	Yes, Riser & Feeder Coaxial Cable Section 24.3.6.8.1.1	Yes, Riser & Feeder Coaxial Cable Section 9.6.2.1.1.1	Not Addressed in Section 510. Referenced in 24.3.6.8.1.1 of NFPA 72-2013	Yes, Section 510.4.2. Reference to NFPA 1221
Lightning Protection Required	Not addressed in Section 24.5.2	Yes, In accordance with NFPA 780 Section 9.6.3	Not Specifically Addressed in Section 510	Yes, Section 510.4.2 Per NFPA 780 as Referenced in NFPA 1221
Isolation of Donor Antenna Required	Yes, 15 dB Section 24.5.2.3.3	Yes, 20 dB Section 9.6.9	Not Specifically Addressed in Section 510	Yes, 20 dB Section 510.4.2.4 (4)
Secondary Power Source	12 Hours Section 24.5.2.5.5.2	12 Hours Section 9.6.12.2	24 Hours Section 510.4.2.3	12 Hours - Section 510.4.2.3 or 2-Hours Battery with Emergency Generator
Signal Strength and Area Coverage Required	-95 dBm - Section 24.5.2.3 90% General Section 24.5.2.2.2 99% Critical Section 24.5.2.2.1	DAQ 3.0 - Section 9.6.8 90% General - Section 9.6.7.5 99% Critical - Section 9.6.7.4	-95 dBm - Section 510.4.1 95% General - Section 510.4.1 99% Critical - Not Specifically Addressed in Section 510	DAQ 3.0 - Section 510.4.1.1 95% General - Section 510.4.1 99% Critical - Section 510.4.2 Reference to NFPA 1221
Monitoring By Fire Alarm Required	Yes - Section 24.5.2.6	Yes - Section 9.6.13	Yes - Section 24.5.2.6 NFPA 72 -2013	Yes - Section 9.6.13 NFPA 1221-2016
Cabinets for Equipment and Battery Backup Required	Yes, NEMA 4/NEMA 4X Section 24.5.2.5.2	Yes, NEMA 4/NEMA 4X Section 9.6.11.2	Yes, NEMA 4 Section 510.4.2.4 (1) & (2)	Yes, NEMA 4/NEMA 3R Section 510.4.2.4 (1) & (2)
Monitor Antenna Malfunction Required	Yes, Donor Antenna Section 24.5.2.6(2)(a)	Yes, Donor Antenna Section 9.6.13.1(2)(a)	Yes, Section 24.5.2.6(2)(a) NFPA 72-2013	Yes, Donor Antenna Section 510.4.2.5
System Acceptance/ Testing	Section 24.5.2.1.2	Section 9.6.4, 11.3.9 & 11.3.9.1	Section 510.5.3	Section 510.5.3

*- **NFPA 1 Section 11.10:** In all new and existing buildings, minimum radio signal strength for fire department communications shall be maintained at a level determined by the AHJ. Where required by the AHJ, two-way radio communication enhancement systems shall comply with NFPA 1221.