WASATCH FIRE DISTRICT
251 East 1200 South Heber City, UT 84032
435-940-9636

ERRC Requirements
IFC 510 / NFPA 1221 / UL 2524

Emergency Responder Radio Communications (ERRC)
Emergency Responder Radion Communication Enhancement System (ERRCES)

Equipment shall be for 700 MHz P25 Radio System

WHERE REQUIRED

1. Initial Testing

- **Fire Code Official to make final determination if an ERRCES is required.**
  All new construction built under the IBC must be analyzed for approved emergency responder radio coverage.
  The following occupancies must provide testing from a certified and approved third party:
  - Any structure that is **above or below the lowest level of fire vehicle access.**
  - **High Rise, Assembly, Mercantile, Multi Family or Large Footprint Structures.**

    Single story, wood framed structures less than 12,000 square feet with no underground may be analyzed by Fire District personnel.

- **DAQ grid test**
  - **Building must be "dried in" with all exterior glass, interior walls, and drywall installed.**
  - **If the outer skin is metal, mesh, or other RF blocking materials, building must be fully enclosed.**
- **It is highly recommended and encouraged that if the building is of notable size, made with heavy concrete/steel, or has an underground component that the owner take steps early on to establish the early integration of an ERRCS for pathway prior to substantial completion testing so as not to delay certificate of occupancy.**

INSTALLATION PERMIT/REQUIREMENTS

2. Installer Requirements 510.5.2

- **FCC GROL License**
- **Project References**
- **Product Certifications**
- **NICET Certifications**

WASATCH FIRE DISTRICT
251 East 1200 South Heber City, UT 84032
435-940-9636

3. Letter of Consent / Frequency and Site Information

- **Obtain from Utah Communications Authority (UCA)**
- **UCA SHALL be notified prior to system initiation/testing.**
- www.uca911.org/ 801-840-4200
- https://www.uca911.org/Application-for-Letter-of-Consent-to-operate-a-Bidirectional-Amplifier

4. Construction Permit (Included with building permit)

- **wasatchfire.org/wfd-permits2**
- **Add system to LIV or approved compliance engine for notice of annual inspections.**
- **A construction permit for the installation of or modification to an ERRC or related equipment is REQUIRED. Maintenance performed in accordance with the IFC is not considered a modification and does not require a permit. Fees will be assessed upon the conclusion of the plan review according to the current adopted fee schedule.**
- **A complete RF design in clear, easy to understand format.**
- **A copy of all equipment specification sheets.**
- **A summary of design assumptions and scope of work.**

5. Equipment Requirements

- NEMA 4 Equipment Enclosure / NEMA 3R Battery Enclosure
- Class A Amplifier per UCA Letter dated February 21, 2025 effective March 1, 2025
- UL2524 Compliant

6. Acceptance Testing Procedures (IFC Section 510 and NFPA 1221)

- **DAQ grid test with passing 3.0 or better over 95% of general areas**
- **DAQ grid test with passing 3.0 or better over 99% of critical areas**
  - Minimum 20 Non-Critical Areas (95%)
  - Separate Readings for ALL Critical Areas
  - Digital Audio Quality of 3.0 (Speech understandable with slight effort/Occasional repetition due to noise/distortion) See DAQ Chart
  - Acceptance test must be on battery power per applicable code.
- Record the gain values and keep on file with owner and equipment.
- Ensure spurious oscillations are not being generated by the signal booster.
- Class B systems tested for Near-Far issues (510.5.3 item #8) *Pre UCA Class A requirement*
- Monitored Alarm testing of all conditions listed NFPA 1221 (9.6.13.2.1) 2019.
- Isolation test results
- Exterior leakage analysis

WASATCH FIRE DISTRICT
251 East 1200 South Heber City, UT 84032
435-940-9636

7. Close Out Package

- Detailed Cover Page Tower Information
- Map-Tower, Buildings, Distance
- Frequency Information
- UL and DL Gain settings
- Survey Notes
    - Preferred Tower
    - Alternate Tower
    - Frequencies Used (Control)

8. Annual Inspection

- **DAQ grid test with passing 3.0 or better over 95% of general areas.**
- **DAQ grid test with passing 3.0 or better over 99% of critical areas.**
    - Minimum 20 Non-Critical Areas (95%)
    - Separate Readings for ALL Critical Areas
    - Digital Audio Quality of 3.0 (Speech understandable with slight effort/Occasional repetition due to noise/distortion) See DAQ Chart
- Visually inspect all equipment, cabling, and ground connections
- Ensure the gain values are the same as they were upon initial acceptance.
- Ensure spurious oscillations are not being generated by the signal booster.
- Backup batteries and power supplies to be tested under load for 1 hour. Replace if <70%
- Monitored Alarm testing of all conditions listed NFPA 1221 (9.6.13.2.1) 2019.
- Additional Frequencies and Change of Frequencies per IFC 510.4.2.6

9. Reporting

- Completion report submitted to Wasatch Fire for initial testing, construction, or annual testing.
    - Detailed cover page, name, location,
    - System design (as built), construction test results, link budget, pictures, equipment locations.
    - UCA letter of consent
    - DAQ grid test results in visual format
    - Installer contact information, site contact information
- Wasatch Fire performs on site radio checks in ALL critical areas and at random in non-Critical.
- Annual Recertification Reminder

WASATCH FIRE DISTRICT
251 East 1200 South Heber City, UT 84032
435-940-9636

UCA
UTAH COMMUNICATIONS AUTHORITY

5215 Wiley Post Way #550
Salt Lake City, UT 84116
Phone 801-840-4200
www.uca911.org

February 21, 2025

UCA NEWSLETTER 2025-001

IMPORTANT UPDATE ON BDA USAGE ON UTAH'S PUBLIC SAFETY NETWORK

In 2013, the Federal Communications Commission (FCC) adopted new rules for Bi-Directional Amplifiers (BDA's) which went into full effect on March 1, 2014. The FCC requires that non-licensees who seek to operate signal boosters must obtain the consent of the licensee[s] whose signals they intend to amplify. Consent will be provided as a letter, which the FCC requires is kept on file for presentation upon the request of the FCC or licensees.

The FCC requires signal boosters to be used on a non-interference basis. As such, if a signal booster is suspected of causing harmful interference, the operator must turn off or adjust the settings of the device at the request of the Utah Communications Authority (UCA) or the FCC.

Starting March 1, 2025, the Utah Communications Authority (UCA) will no longer allow Class B bi-directional amplifiers (BDAs) on the Statewide Public Safety P25 network. However, if you already have a Class B BDA installed, you can continue using it until it either causes interference or fails, at which point, it must be replaced with a Class A BDA.

This phased transition gives agencies and stakeholders time to upgrade to Class A BDAs, which are more reliable and less likely to interfere with the P25 network. Class A BDAs meet stricter technical standards, ensuring better performance, and compatibility with the P25 system.

To prepare for this change, public safety agencies should:

- Evaluate their current BDA setups
- Monitor for any performance issues
- Plan and budget for future replacements
- Coordinate with UCA to stay compliant with updated technical guidelines

For any questions or assistance, please reach out to Dan Dialogue, Assistant Director, Radio Network Division at ddialogue@uca911.org. UCA is here to help ensure a smooth transition and maintain strong communication across the network.

Thank you,

Tina Mathieu
Executive Director
Utah Communications Authority