

Emergency Responder Communications Enhancement Systems

Emergency Responder Communication Enhancement Systems (ERCES) are required to ensure reliable radio communications for public safety personnel within buildings where normal radio coverage is insufficient.

Permitting	<u>Permitting</u> Permits shall be applied for using the City of College Station's Online Portal. <u>https://etrakit.cstx.gov/etrakit/</u> • Permit is only needed for system installs ◦ Permit is not needed for survey purposes • Initial Survey Results shall be uploaded to the building permit • No work shall begin until permit is issued • Unpermitted Work may result in a citation
When ERCES Is Required	• All new buildings 12,000sqft or larger are required to be tested for radio signal strength. ◦ If the structure does not meet the signal strength requirement of -95 dBm into and out of the building in 95% of all areas on each floor of the building or 99% in critical areas an ERCES shall be installed. • Buildings or structures where construction materials, building size, or layout adversely affect in-building radio communications for public safety personnel, as demonstrated by testing and determined by the Fire Marshal.
Survey Requirements	• Each floor shall be divided into a minimum of 20 test grids. • One test sample shall be taken from the center of each grid. • A calibrated spectrum analyzer shall be used to verify a minimum signal strength of -95 dBm or greater at each test location. • General areas shall achieve a minimum of 95% compliant coverage. • Critical areas shall achieve a minimum of 99% compliant coverage. • Critical areas shall be assigned dedicated test grids in addition to the minimum twenty 20 grids per floor. • Critical areas include, but are not limited to: ◦ Elevator lobbies ◦ Exit stairwells ◦ Mechanical and equipment rooms ◦ Fire Command Center ◦ Pump or Riser Rooms • A test shall be deemed failed if 2 or more adjacent grids do not meet the required signal strength.

Emergency Responder Communications Enhancement Systems

Delivered Audio Quality (DAQ)	• Delivered Audio Quality (DAQ) testing shall be performed using the same make and model radio utilized by the Fire Department. • A minimum DAQ rating of 3.0 (speech understandable with repetition only rarely required) shall be achieved in both general and critical test grid locations. • DAQ testing locations shall correspond with the same grid locations used for signal strength testing.
Power Supply, Survivability, and Pathway Requirements	• ERCES shall be provided with primary and secondary power supplies capable of sustaining system operation for the duration required by applicable codes. • Secondary power shall consist of batteries, UPS systems, emergency generators, or a combination thereof. • All breakers controlling the ERCES shall be locked preventing it from being turned off. • All critical system components, including BDAs, power supplies, and distribution equipment, shall be housed in dedicated, accessible, and environmentally controlled spaces not exceeding 85°F • Survivability pathway shall be a 2 hour fire resistant enclosure or 2 hours fire-resistive cable shall be used. ◦ Exception: Fully Sprinklered buildings do not have a survivability requirement.
System Location	• ERCES head-end equipment shall be located in the room containing the fire alarm control panel or in an adjacent room approved by the Fire Marshal. • The equipment location shall be readily accessible to emergency responders and protected in accordance with applicable survivability requirements.
System Annunciation	• ERCES shall provide visual indication of system status, including normal operation, supervisory, and trouble conditions. • Annunciation shall be provided at the fire alarm control panel, or another location approved by the Fire Marshal. • Annunciators shall be clearly labeled and readily accessible to emergency responders.

Emergency Responder Communications Enhancement Systems

UL Listing	• The following components shall be UL listed (UL 2524) ◦ BDA/Signal Booster ◦ Repeaters ◦ Power Supplies ◦ Battery Back Up ◦ Annunciators
Nuisance, Interference, or System Failure	• Systems shall not cause interference with public safety radio operations • Any system found to be non-operational or interfering with emergency communications shall be repaired immediately • The Fire Marshal may require restricted occupancy or corrective action when system reliability is compromised
Approval Prior to Installation	• No amplification system capable of operating on frequencies used by the City of College Station may be installed without prior coordination and approval of the radio system licensee. Any such system shall comply with the standards adopted by the city.
Contact	Radio System License Holder: bvwacs@bvcog.org

Emergency Responder Communications Enhancement Systems

Additional Information and Requirements from Radio System Manager

- E-Mail to AHJ Representative and BVCOG Radio System Manager, address of test location for Frequency Pairs to test with.
- Send complete test pass or fail to AHJ and BVCOG Radio System Manager.
- If location passes, send passing test results to AHJ and BVCOG Radio System Manager.
- If location fails coverage complete form for BVCOG Radio System Manager.
- Register with FCC and provide registration number to BVCOG Radio System Manager <https://signalboosters.fcc.gov/signal-boosters/>
- Acquire any permits needed for Booster installation.
- Install equipment and notify BVCOG Radio System Manager the day it will be turned on to optimize.
- Power equipment down after optimization.
- All paperwork should be in at this time.(Booster Form, Booster Documentation, & FCC Registration)
- Setup time with AHJ and BVCOG Radio System Manager to meet on location and check booster operation.
- If equipment passes a letter will be granted to give permission to repeat licensed frequencies.

Radio Check-Out Procedures

- All requests must be made in writing AT LEAST 24 hours in advance.
- Requests can be made by sending an email to the AHJ and BVCOG Radio System Manager
- Radios must be signed for upon pickup.
- All radios are due back within 2 business days or on Friday by 3:30 pm (whichever is sooner)
- Radios must be handed to a AHJ employee or the BVCOG Radio System Manager for inspection upon return. Any damage to test radios or equipment will be replaced or repaired at borrower's expense.