



# CITY OF ATLANTA

## FIRE – RESCUE DEPARTMENT

**KEISHA LANCE BOTTOMS**  
**MAYOR**

226 Peachtree St., SW  
Atlanta, GA 30303-3749  
PHONE (404) 546-7000  
ICHIEFS ID – ATLFDHQ

**JOEL G. BAKER**  
**FIRE CHIEF**

**DATE:** March 12, 2018

**TO:** All Fire Marshal's Office (FMO) Personnel and Contractors

**FROM:** Assistant Chief Alan B. Burton, Sr.  
Fire Marshal, Atlanta Fire Rescue Department

**SUBJECT:** 2012 International Fire Code (IFC) Section 510 Requirements for New Construction

The Atlanta Fire Rescue Department (AFRD), requires all newly constructed buildings to meet the requirements of the 2012 International Fire Code, section 510, EMERGENCY RESPONDER RADIO COVERAGE (ERRC). Any emergency responder radio coverage required by this code must be installed, tested, and operational prior to occupancy of the structure. It is the responsibility of the building owners and designers to ensure the testing, design, and installation of the emergency responder radio coverage system prior to acceptance.

The City of Atlanta Police Department manages the Motorola P25- Public Safety Radio System (P25-PSRS).

Specifically, APD's Electronic Maintenance Unit maintains and operates the system and will provide a local contact as needed.

**Application:** All new (proposed) construction and any substantial renovation(s) to existing buildings as defined in OCGA 25-2-14 (O) (d) approved after January 30, 2014. Existing buildings as required by IFC 1103.2 when ordered by the Fire Marshal. Wired systems as identified in IFC 510.1 exception 1 will not be accepted in lieu of an ERRC.

**Exceptions:** (As permitted by IFC 510.1 (2))

The following structures are not required to comply with the requirements of IFC Section 510.

1. Buildings with no more than two occupiable stories, no more than 12,000 total square feet, and no floors below grade.
2. Temporary buildings including tents when permitted by the fire marshal.

For additions to buildings, unless the exceptions above are met for the area of the addition, the entire building being expanded must meet IFC 510 requirements.

#### Testing—Needs Assessment

1) Effective June 1, 2017, initial signal strength testing must be completed prior to the approval of site plans for new buildings and building additions.

2) Field testing for signal strength certification will not be conducted prior to the building envelope being

complete and all doors, windows and exterior openings closed. In buildings with significant internal signal impairments like rack storage of metal parts, interior room enclosures that contain wire mesh security screens, or other interior or exterior features, etc.; all internal construction must be complete prior to final testing for signal strength.

3) Testing will be performed in accordance with IFC 510 using the 20-test cell (per floor) criteria for initial testing. For floors 32,000 sq. ft. or more, each floor of the building shall be divided into grids of approximately 40 ft. by 40 ft.

4) All critical areas as defined in NFPA 72 chapter 24.5.2.2.1 shall be tested individually and shall not be

counted towards the 20-test cell count.

5) Testing results will be certificate by the testing contractor and forwarded to the FMO. A copy shall be left on site with the approved plans.

6) Authorization to operate on frequencies licensed to P25-PSRS must be obtained from the Radio System Manager or local contact. NOTE: FCC Part 90.219 (b)(1)(i)—Non-licensees seeking to operate signal boosters must obtain the express consent of the licensee(s) of the frequencies for which the device or system is intended to amplify. The consent must be maintained in a recordable format that can be presented to an FCC representative or other relevant licensee investigating interference. Consent may be withdrawn by P25-PSRS for any reason with notice to the property owner.

\*See last page for a list of authorized contractors to perform the testing.

Design Considerations—All proposed ERRC system shall be designed in accordance with IFC section 510, good engineering practices and applicable regulations of the Federal Communications Commission.

Plans must be reviewed and approved by the FMO prior to installation or modification of an ERRC system. Plans shall be electronically submitted for review through [www.eplansolution.com](http://www.eplansolution.com). After plan approval by the FMO, the appropriate permit will be issued by the FMO.

Permits will be issued based on a review of engineering plans. A design professional seal is not required. Plans shall detail the following:

- 1) Site map showing location of target building and closest donor site antenna
- 2) Statement of work and scope of work describing the system design
- 3) Location(s) of all head end equipment and radio transmitters (BDA's)
- 4) Locations of all "critical areas" as defined in NFPA 72, 24.5.2.2.1 with anticipated signal levels (-95dBm required)
- 5) Single line schematic drawing of antenna lines and data lines
- 6) Type and location of NEMA 4 enclosures
- 7) Battery calculations to show 24 hours capacity at 100% transmit duty cycle
- 8) Floor plan showing distributed antenna system (DAS) antennas and the anticipated signal level in each test grid square, see number 4 above also
- 9) System component specification documents including coax cable(s) and data or fiber optic components, all transmitters shall be FCC Type Accepted, provide documentation
- 10) System monitoring shall include:
  - a. Monitoring equipment and identification of monitoring station
  - b. Malfunction of the BDA Loss of primary power or related electronic systems
  - c. Antennas and passive filters are exempt from monitoring

d. Fire alarm installing contractor if system is to be monitored by FACP

11) Detailed acceptance procedures including all provisions of IFC 510.5.3—talk in and talk out signal levels must be included for each zone and critical area.

12) Location of document box—shall be co-located with head end equipment

a. Documents to be included in the document box include;

i. System design diagrams

ii. Acceptance testing documents

iii. Identity of persons/company installing the system

iv. Identification of the system monitoring company with phone contact numbers

v. Test results for the preceding three years of annual test and inspection, refer to 510.6.1

vi. FCC 90.219—FCC Letter of consent from P25-PSRS.

13) Dual use antenna systems (Permitted on a case by case review basis)

a. Show the schematic layout of the head end equipment and the interconnect filtering that will prevent co-system interference.

b. Filters must be enclosed in a locked NEMA 4 cabinet.

c. Cellular system components that cannot create interference with the public safety radio system do not need to be enclosed in NEMA rated cabinets.

Technical Information—All technical information for the P25-PSRS Communications system is available by contacting the Atlanta Police Departments Electronic Maintenance Unit Manager at (404)546-2389.

Acceptance Testing and Commissioning—Systems must be inspected by personnel from the FMO or approved third party inspection services. Acceptance criteria shall be specified in the plan submittal documents and shall clearly demonstrate the ability of the system to perform in the event of an emergency. The testing shall be conducted both on primary and secondary power sources. A certificate of commissioning shall be completed by an approved contractor and signed by the

building owner's representative. An operations and maintenance manual shall be provided to the building owner as part of the commissioning. Refer to IFC 510.5.3 for additional details.

Maintenance—All system and components shall be tested annually in accordance with IFC 510.6. A system test and inspection report shall be maintained on site for inspection by the fire marshal's office. A tag shall be placed on the head end cabinet indicating the date of the last test and the results of the test. All test reports shall be submitted to the FMO in an expeditious manner. Any system that fails annual testing should be reported to the FMO within 48 hours of testing. Should a system fail to provide adequate signal, cause interference, or fail to perform as originally installed, the Fire Marshal is authorized to order the testing of the system and repair to original installation standards or the current adopted edition of the standard. The Fire Marshal is authorized to order that cellular signal boosting systems that interfere with the public safety radio system be tested or disconnected pending testing in order to eliminate interference.

NOTE: Requirements listed above are not necessarily all inclusive but are intended as a guide.

\*Authorized Contractors- Due to security concerns within the P25-PSRS Communication system, the following contractors are authorized to perform the testing.

Motorola Solutions, Inc.

1700 Beale Meade Court

Lawrenceville, GA 30043

(770)338-3601

Atlanta Communications Company

1510 Huber Street

Atlanta, Ga. 30318

404-875-9316