

City of Folsom, California
Folsom Fire Code: Chapter 14.18
Signal Booster Ordinance

14.18.00 Public Safety 800 MHz Radio Building Amplification System.

A. GENERAL

Except as otherwise provided, no person shall erect, construct, change the use of or provide an addition of more than 20 % to, any building or structure or any part thereof, or cause the same to be done which fails to support adequate radio coverage for Sacramento Regional Radio Communications System, including but not limited to firefighters and police officers. For purposes of this section, adequate radio coverage shall include all of the following:

- 1) a minimum signal strength of -95 dBm available in 90% of the area of each floor of the building when transmitted from the closest Sacramento Regional Radio Communications System site;
- 2) a minimum signal strength of -95 dBm received at the closest Sacramento Regional Radio Communications site when transmitted from 90% of the area of each floor of the building;
- 3) the frequency range which must be supported shall be 821 - 824 MHz and 866-869 MHz; and
- 4) a 100% reliability factor.

When measuring the performance of a bi-directional amplifier, signal strength measurements are based on one input signal adequate to obtain a maximum continuous operating output level.

B. AMPLIFICATION SYSTEMS ALLOWED

Buildings and structures which cannot support the required level of radio coverage shall be equipped with either a radiating cable system or an internal multiple antenna system with or without FCC type accepted bi-directional 800 MHz amplifiers as needed. If any part of the installed system or systems contains an electrically powered component, the system shall be capable of operating on an independent battery and/or generator system for a period of at least twelve (12) hours without external power input. The battery system shall automatically charge in the presence of an external power input. If used, bi-directional amplifiers shall include filters to reduce adjacent frequency interference at least 35 dB below the NPSPAC band. The filters shall be tuned to 825 MHz and to 870 MHz so that they will be 35 dB below the NPSPAC frequencies of 824 MHz and 869 MHz respectively. Other settings may be used provided that they don't attenuate the NPSPAC frequencies and further provided that they are not more than one MHz from the NPSPAC frequencies.

C. TESTING PROCEDURES

1. ACCEPTANCE TEST PROCEDURE

When an in-building radio system is required, and upon completion of installation, it will be the building owner's responsibility to have the radio system tested to ensure that two-way coverage on each floor of the building is a minimum of 90%. Each floor of the building shall be divided into a grid of approximately twenty (20) equal areas. A maximum of two (2) nonadjacent areas will be allowed to fail the test. In the event that three (3) of the areas fail the test, in order to be more statistically accurate, the floor may be divided into forty (40) equal areas. In such event, a maximum of four (4) nonadjacent areas will be allowed to fail the test. After the forty (40) area test, if the system continues to fail, the building owner shall have the system altered to meet the 90% coverage requirement. The test shall be conducted using a Motorola MTS 2000, or equivalent, portable radio, talking through the Sacramento Regional Radio Communications System (SRRCS) as specified by the authority having jurisdiction. A spot located approximately in the center of a grid area will be selected for the test, then the radio will be keyed to verify two-way communications to and from the outside of the building through the SRRCS. Once the spot has been selected, prospecting for a better spot within the grid area will not be permitted.

The gain values of all amplifiers shall be measured and the test measurement results shall be kept on file with the building owner so that the measurements can be verified each year during the annual tests. In the event that the measurement results became lost, the building owner will be required to rerun the acceptance test to reestablish, the gain values.

2. ANNUAL TESTS

When an in-building radio system is required, the building owner shall test all active components of the system, including but not limited to amplifiers, power supplies and backup batteries, a minimum of once every twelve (12) months. Amplifiers shall be tested to ensure that the gain is the same as it was upon initial installation and acceptance. Backup batteries and power supplies shall be tested under load for a period of one (1) hour to verify that, they will properly operate during an actual power outage. If within the one (1) hour test period, in the opinion of the testing technician, the battery exhibits symptoms of failure, the test shall be extended for additional one (1) hour periods until the testing technician confirms the integrity of the battery. All other active components shall be checked to determine that they are operating within the manufacturer's specifications for the intended purpose.

3. FIVE YEAR TESTS In addition to the annual test, the building owner shall perform a radio coverage test a minimum of once every five (5) years to ensure that the radio system continues to meet the requirements of the original acceptance test. The procedure set forth above shall apply to such tests.

4. QUALIFICATIONS OF TESTING PERSONNEL

All tests shall be conducted, documented and signed by a person in possession of a current FCC license, or a current technician certification issued by the Associated Public-Safety Communications Officials International (APCO) or the Personal Communications Industry Association (PCIA). All test records shall be retained on the inspected premises by the building owner and a copy submitted to the Fire Department officials.

D. FIELD TESTING Police and fire personnel, after providing reasonable notice to the owner or his representative, shall have the right to enter onto the property to conduct field testing to be certain that the required level of radio coverage is present.

E. EXEMPTIONS This section shall not apply to buildings less than 5000 square feet or any R-3 occupancy.