



EMERGENCY RESPONDER RADIO COVERAGE GUIDELINE

Pursuant to California Fire Code §510, as adopted by the Cities of Burlingame and Millbrae and the Town of Hillsborough, all new buildings shall have approved radio coverage for emergency responders. When an Emergency Responder Radio Coverage (ERRC) system is required by Central County Fire Department, the following criteria and requirements shall be met. Questions on these requirements should be directed to the Prevention Division at (650) 558-7600.

DESIGN SPECIFICATIONS

1. ERRC system shall be designed in accordance with CFC 510, NFPA 1221, NFPA 72, and other relevant codes.
2. Details of ERRC system shall also be provided on the building construction plans for Building Division review purposes. Architectural pages shall indicate locations and methods of required rated pathways as required by NFPA 1221. Riser cables installed within a rated room which meets the minimum required rating, shall have physical protection against damage approved by the fire department.
3. Locations of Bi-directional Antennae and other related equipment shall be approved by Fire Department. Risers may not be installed within exit stairwells. Rooms which contain this equipment shall meet rating requirements and be clearly labeled. Uninterruptable Power Supply (UPS) equipment shall be contained within a NEMA Type 4 enclosure.
4. A dedicated functional panel for the ERRC system shall be installed and provided next to the building fire alarm control panel.
5. Design shall include individual radio frequencies as determined by the Authority Having Jurisdiction (AHJ). A full list of San Mateo County Public Safety frequencies can be obtained from Central County Fire Department. Donor site locations are as follows:
 - Fire: 950 Tower Lane, Foster City
 - Police primary: Central County Fire Department station 35 – 2832 Hillside Drive, Burlingame
Police secondary: Burlingame Police Department – 1111 Trousdale Drive, Burlingame

6. Radio channels shall be filtered in accordance with FCC bandwidth limitations for those specific radio frequencies. Example: if a VHF radio channel is licensed at 12.5 kHz bandwidth – filter in the system shall correspond to the same bandwidth.
7. Simplex channels will not be added to any system as they can cause irreparable harm in the form of interference.
8. Design shall include an Emergency Power Off (EPO) switch that when activated is capable of removing power from all active electronics in the system. EPO shall be located adjacent to the Fire Alarm Control Panel (FACP). This is for the purpose of interference mitigation. Systems should be left in the “on” position under normal conditions.
9. Design shall be flexible to allow for additions and deletions of radio frequencies and radio bands as specified by the FCC CFR 47 Part 90 for public safety.
10. Radio Frequency emissions generated within the building (downlink frequencies within the building OR captured signal to a portable radio (subscriber unit) generated within the building from the ERRCS) shall be controlled and shall not propagate outside of the structure.
11. All systems shall be designed not to exceed CFR 47 FCC Part 90 for Public Safety radio frequency bandwidths per individual frequency utilized within the system.
12. Radio frequencies and radio frequency bands not used in the system shall be filtered for signal attenuation at or below surrounding noise floor as measured at the location of the system.

VENDOR QUALIFICATIONS

Designer. On new systems designed for existing structures as well as new structures; a Professional Engineer (P.E.) licensed in the State of California shall approve by affixing their P.E. seal to the design documents.

Testing. For system acceptance a certified IEEE—WCET (Institute of Electrical and Electronics Engineers – Wireless Communications Engineering Technologies Certification) or other local fire authority approved professionally certified person shall test and sign-off on testing within the structure. The IEEE-WCET or other approved professionally certified person shall inspect and test on an annual basis and sign a record of completion attesting to the proper function of the system on all bands and frequencies designed into the system.

NOTE – this should not be a verification of the system design OR an acceptance test certification between the vendor and building owner. This test is functional and should be performed after acceptance testing is completed between the building owner and the installation vendor. This test should serve as the (ERRCS Qualification) – in other words, this test would certify to the local Fire Authority that the system is functioning

Installer. Installation of approved ERRC systems shall be conducted by a State of California licensed C-7, C-10 or C-16 contractor.

PERMITS

A separate permit for ERRCS shall be obtained from Central County Fire Department. Application and plans shall be submitted for review and approval prior to installation.

TESTING

1. Testing of channels and frequencies may only occur during specific conditions set forth by San Mateo County Public Safety Communications. Refer to CCFD ERRC Testing Requirements sheet for testing parameters. A list of radio frequencies corresponding with each city is attached. Central County Fire Department does not provide radio equipment for testing.
2. Contractor shall complete attached Emergency Responder Radio Coverage System Testing Requirements document and give to Central County Fire Department at least 7 days prior to testing.
3. Central County Fire Department shall review third-party testing report prior to scheduling final inspection.
4. System shall be successfully tested by Fire Department prior to building occupancy.
5. Contractor shall complete attached ERRC Information Sheet and give to Central County Fire Department at time of final inspection.
6. Property owner shall provide a copy of the maintenance contract for required annual service to the Fire Department at time of final inspection.

ATTACHMENTS:

1. **ERRC Testing Requirements**
2. **ERRC Information Sheet**
3. **Burlingame, Hillsborough, Millbrae frequency lists**



EMERGENCY RESPONDER RADIO COVERAGE SYSTEM TESTING REQUIREMENTS

Compliance testing of emergency responder radio coverage systems shall be done under the following conditions:

- a. Complete and submit this sheet to the Fire Dept. at least 7 days prior to testing.
- b. Contact all dispatch centers at least 30 minutes in advance of testing for notification (see phone numbers below).
- c. Testing must be performed **ONLY** between the hours of 3:00am-6:00am, 7 days a week.
- d. The radio technician must contact the dispatch centers when testing is complete.
- e. Test results must be submitted to the Fire Department for review and approval as part of final approval of fire permit.
- f. 30 minutes prior to testing, the technician performing the test must contact the dispatch centers and report the information below:

i. Testing address: _____

ii. Radio frequencies/channels to be tested: _____

iii. Expected dates/duration of testing: _____

iv. Third Party Testing Company:

a. Name: _____

b. Phone: _____

c. FCC License #: _____

v. Name and contact number of technician on site (in the event testing must be stopped):

vi. Does testing require Dispatcher interaction? Yes ___ No ___

Dispatch phone numbers

San Mateo County Public Safety Communications (Fire/EMS): 650-363-4907

Burlingame Police Department: 650-692-0310

Hillsborough Police Department: 650-375-7470

City of Millbrae/San Mateo County Sheriff's Office: 650-697-1212



EMERGENCY RESPONDER RADIO COMMUNICATION SYSTEM INFORMATION SHEET

Building address: _____

Building name: _____

Administrative contact name/phone/email (24 hr/7 day): _____

Technical contact name/phone/email (24 hr/7 day): _____

ERRCS Equipment Make/Model: _____

Complete list of receiver/transmit frequencies:

System shutdown instructions: _____

Equipment locations (attach layout plan): _____

THIS FORM SHALL BE SUBMITTED TO CENTRAL COUNTY FIRE DEPARTMENT

San Mateo County Fire Service
Policy & Guideline Manual

P - 500

Appendix E (Burlingame):

Emergency Responder Radio System Frequency Requirements

Always try a secondary channel first and only test on channels designated for the City in which the building is located.

DISPLAY	RX FREQ	RX CTCSS	TX FREQ	TX CTCSS	NOTES
Fire Burlingame					SMCPSC (650) 368-1421
Command 21 (primary)	153.95000	114.8	156.04500	114.8	Central Command
Command 51 (secondary)	151.47500	167.9	159.01500	167.9	County Command
Police Burlingame					Burlingame PD (650) 777-4100
BRMPD1 (primary)	489.08750	114.8	492.08750	114.8	Police Dispatch
BRMPD2 (secondary)	489.56250	114.8	492.56250	114.8	Police Secondary
SMCO TAC 2 (Secondary)	488.71250	114.8	491.71250	114.8	Police County wide (650) 368-1421
Sheriff/EMS Trunked					SMCPSC (650) 368-1421
700 MHz system range	770.03125	to	773.48125		Downlink Base to Portable
	795.03125	to	798.48125		Uplink Portable to Base

San Mateo County Fire Service
Policy & Guideline Manual

P - 500

Appendix K (Hillsborough):

Emergency Responder Radio System Frequency Requirements

Always try a secondary channel first and only test on channels designated for the City in which the building is located.

DISPLAY	RX FREQ	RX CTCSS	TX FREQ	TX CTCSS	NOTES
Fire Hillsborough					SMCPSC (650) 368-1421
Command 21 (primary)	153.95000	114.8	156.04500	114.8	Central Command
Command 51 (secondary)	151.47500	167.9	159.01500	167.9	County Command
Police Hillsborough					Hillsborough PD (650) 375-7470
HILPD1 (primary)	488.33750	114.8	491.33750	114.8	Police Dispatch
HILPD2 (secondary)	484.86250	114.8	487.86250	114.8	Police Secondary
SMCO TAC 2 (Secondary)	488.71250	114.8	491.71250	114.8	Police County wide (650) 368-1421
Sheriff/EMS Trunked					SMCPSC (650) 368-1421
700 MHz system range	770.03125	to	773.48125		Downlink Base to Portable
	795.03125	to	798.48125		Uplink Portable to Base

San Mateo County Fire Service
Policy & Guideline Manual

P - 500

Appendix M (Millbrae):

Emergency Responder Radio System Frequency Requirements

Always try a secondary channel first and only test on channels designated for the City in which the building is located.

DISPLAY	RX FREQ	RX CTCSS	TX FREQ	TX CTCSS	NOTES
Fire Millbrae					SMCPSC (650) 368-1421
Command 21 (primary)	153.95000	114.8	156.04500	114.8	Central Command
Command 51 (secondary)	151.47500	167.9	159.01500	167.9	County Command
Police Millbrae					Millbrae PD (650) 697-1212
SMCO TAC 2 (Secondary)	488.71250	114.8	491.71250	114.8	Police County wide (650) 368-1421
Sheriff/EMS Trunked					SMCPSC (650) 368-1421
700 MHz system range	770.03125	to	773.48125		Downlink Base to Portable
	795.03125	to	798.48125		Uplink Portable to Base