Salt River Pima-Maricopa Indian Community (SRPMIC) Application Process for

Public Safety Emergency Responder Radio Systems

(Distributed Antenna Systems / Bi-Directional Amplification Systems)

Effective August 8, 2025

Section 1: Applicability

****All new or remodeled commercial occupancies require the installation of a Public Safety Emergency Responder Radio System in areas of buildings and structures where signal strength does not meet the minimum criteria due to building construction features and/or location and shall meet the requirements of the currently adopted codes.****

SRPMIC Public Safety Emergency Responder Radio Systems

SRPMIC Public Safety Emergency Responder Radio Systems will be a deferred submittal and must follow the deferred submittal policy (see Section 3 below).

The Public Safety Radio System design shall be in accordance with the SRPMIC adopted ICC Building and Fire codes, including appendices and amendments:

International Building Code
International Fire Code
NFPA 1, NFPA 72, NFPA 101, NFPA 1221 and NFPA 1225
National Electric Code
ANSI/BICSI 006-2020
UL 2524
SRPMIC Ordinances, policies and standards

Public Safety Radio Systems shall not infringe on or be overrun by adjacent building communication systems or cellular telephone service provider systems.

There are 3 exceptions as spelled out in the International Fire Code:

1. Where approved by the building official and the fire code official, a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained instead of an approved radio coverage system.
2. Where it is determined by the fire code official that the radio coverage system is not needed.
3. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency responder radio coverage system.

Section 2: Existing SRPMIC Public Safety Radio Systems

SRPMIC utilizes FCC licensed public safety radio frequencies in the 769MHz - 775MHz and 799MHz - 805MHz bands, and shall be readily adaptable to other public safety emergency radio frequencies in the 800MHz radio frequency spectrum, specifically 806MHz - 816MHz and 851MHz - 861MHz bands. The public safety radio amplification system shall be capable of modification or expansion in the event of frequency changes required by the FCC, or additional frequencies made available by the FCC.

SRPMIC only approves the use of donor signals from the SRPMIC Public Safety Radio System. The radio system has 5 broadcast sites available including a 4 site simulcast, with broadcast locations at the following:

- Site 1: Saddleback (Tower) - 10190 E MCKELLIPS RD, SCOTTSDALE, AZ 85256

- Site 2: Talking Stick Resort (Building Top) - 9800 E INDIAN BEND RD, SCOTTSDALE, AZ 85256
- Site 3: Shea-Beeline (Tower) - 33 33 38.9 N 111 42 20.4 W , FORT MCDOWELL, AZ 85264
- Site 4: Granite Reef (Tower) - 33 31 06.57 N 111 41 36.50 W , MESA, AZ 85215

And a standalone site at:

- Site 5: Thompson Peak (Tower) -33 38 39.3 N, 111 48 42.7 W , SCOTTSDALE, AZ 85255

Section 3: Building Permit Application and Submittal

All recommended in-building solution system components; subcomponents, devices, and equipment shall be clearly shown in the deferred submittal provided to SRPMIC for permit. The permit applicant shall be the building owner/property management company or authorized design professional installing contractor.

The minimum qualifications of the system designer and lead installation personal shall include both the following per the International Fire Code:

1. A valid FCC-issued general radio operator's license.
2. Certification of in-building system training issued by an approved organization or approved school, or a certificate issued by the manufacturer of the equipment being installed.

Design Documentation Requirements:

1. Must identify any coordination with electrical systems, tie-ins, details for penetrations through fire rated construction assemblies, and/or other information as determined by the fire code official.
2. Show electrical circuit required, backup power, antenna system and any other associated amplification equipment including panel locations and labeling.
3. Proposed signal levels from the BDA system and indoor antennas.
4. Indoor antenna layouts and signal grid layouts of the BDA system for each level. A one line diagram show cross section showing all major components from roof top with donor antenna, head-in location, Alarm and monitoring system location, equipment component list (light protection, grounding, cables antennas, splitters, etc..) for each floor.
5. Detailed Head-In location plan shall show detail equipment layout, power requirements, and back up.
6. A floor plan drawing showing Signal Propagation Map before and after activation of system – provide a color map indicating signal strengths as designed and then as installed by As-Built following testing requirements below.
7. The amplification system shall be:
    a. Fully Rebandable to meet FCC requirements.
    b. Classified as Type A (channelized) and FCC approved (FCC ID# sticker)
    c. Supported by manufacturer for 5 years after installation.
    d. Equipped with Uninterruptable Power supply (UPS), or auxiliary battery system.
    e. Equipped with an approved communication device that is programmed to report the assigned BDA/DAS identification to the approved monitoring entity, in the event of system impairment, operational failure, or loss of power, or connect the supervisory and trouble alarm contacts to the building fire alarm system.
8. Shall detail the model numbers for all the proposed equipment (i.e. BDA system, Indoor Antennas, Donor Antenna, UPS, etc.)
9. Rack layout documentation.

10. MDF or IDF power requirements and coordination with backup generator power circuits if available.
11. Fiber optics layout and interconnect (if applicable).

Section 4: Testing and Implementation

It is the building owner/property management company's responsibility to ensure that a commissioning test of the radio system occurs. The test shall ensure that two-way coverage on each floor of the building meets the minimum coverage requirements.

For all new or remodeled commercial occupancies, prior to the issuance of a certificate of occupancy for any building or structure to which these guidelines apply, the system shall be tested first by the applicant performing the installation.

- Testing for radio coverage shall be conducted after the completion of building envelope and all doors, windows, and exterior openings are closed.
- In buildings with significant internal signal impairments such as rack storage, wire mesh security screens, or other interior features, all internal construction must be completed prior to final testing for radio coverage.
- The applicant shall submit a test report including a grid test showing results from the DAS along with verification of the monitoring system test to SRPMIC for review.
- Upon review, the applicant shall schedule a time for inspection by SRPMIC to verify the newly installed system performance using portable radio units, checking radio signal strength, and intelligibility (Delivered Audio Quality - DAQ) tests in locations throughout the building.

Special consideration should be directed at critical ingress and egress paths (stairwells, lobbies, exit hallways, tunnels, below ground service entrances, rooftop enclosures, or any zone deemed critical by the Fire Code Official or Building Official).

Head end cabinet shall be labeled with system contact personnel with phone numbers or authorized vendor information for 24-hour, 7-day emergency response within two hours after notification.

Documentation required at the time of final inspection:

- Test results with floor-by-floor signal maps - Signal propagation Map (after).
- Equipment specification sheets (amplifiers, antennas, splitters, etc.).
- As-built drawings showing cable routing and antenna placement submitted electronically to scale.
- Battery backup calculations and cut sheets.
- Certification letter signed by a qualified technician attesting to system compliance.

Final Inspection:

- SRFD will perform radio testing using department radios to validate performance.
- Inspection must be scheduled via ECS Compliance's permit system or inspection line.
- Final sign-off and acceptance will be made by SRPMIC Authority Having Jurisdiction (AHJ).

System Impairments:

- Systems that experience faults must notify the monitoring service and transmit a supervisory signal.
- For outages longer than 8 hours, report the impairment directly to SRFD.

Section 5: Annual Testing

Systems shall be inspected and tested annually by the building owner/property management company.

Testing shall follow the IFC and consist of the following:

A signal strength test must be performed to ensure that the gain is the same as it was upon initial installation and acceptance along with ONE (1) of the following three (3) other tests:

- Signal to Interference plus Noise Ratio (SINR)
- Bit Error Rate Testing (BER)
- Delivered Audio Quality (DAQ)

- Batteries and power supplies shall be tested under load for a period of one hour to verify that they will properly operate during an actual power outage. If within the one-hour test period the battery exhibits symptoms of failure, the test shall be extended for additional one-hour period until the integrity of the battery can be determined. If batteries fail to meet testing requirements, they must be replaced within 30-days and retested. If batteries are beyond the manufacturer's replacement cycle and they pass the one-hour test, they must be replaced prior to the next annual test.
- All other active components shall be checked to verify operation within the manufacturer's specifications. Annual test reports demonstrating compliance must be submitted to SRPMIC AHJ for acceptance within thirty days of completion. A one-month grace period from the previous annual test date will be given for testing. Those not submitted annually may be subject to noncompliant fees required for the AHJ to re-inspect the system.
- The AHJ has authority to spot check buildings with Public Safety Radio systems registered with SRPMIC at any time and will be tested annually by the Fire Code Official during the Fire Department's annual inspection. At the end of the inspection, you will receive a certificate stating the date it passed inspection on-site.

Records Retention:

Building owners with amplification or antenna systems in place for emergency responder radios shall retain all records of initial installation and annual tests.

Contact Information

If there are any questions with any of the above information please contact a Fire Code Official:

Fire Marshal Dustin Zamboni- 480-362-6312, or
Fire Chief Tsosie Wood- 480-362-7545

Disclaimer: The Salt River Fire Department provides this document for informational purposes only. It does not replace or supersede adopted codes, ordinances, or requirements of the regional radio system operator. All ERRCS installations must fully comply with the latest applicable versions of the International Fire Code, National Electrical Code, FCC regulations, and local amendments.