



MISSOURI DEPARTMENT OF PUBLIC SAFETY, OFFICE OF THE DIRECTOR
DPS GRANTS

RADIO INTEROPERABILITY GUIDELINES

Effective Date January 2025

Pursuant to federal guidelines, communication projects funded with any federal grant program, administered by DPS, should support the Statewide Communication Interoperability Plan (SCIP). Missouri has built a statewide public safety interoperable communications system, known as the Missouri Statewide Interoperability Network (MOSWIN). MOSWIN is a network of communications towers, base stations, and communications software designed to provide the infrastructure for interoperable communications throughout the state to both state public safety agencies and any local public safety jurisdiction that wishes to use the system for interoperable communications.

Only APCO, Project 25 VHF/700/800 MHz (dual-band or multi-band), digital trunking enabled radios are eligible for federal grant programs administered by DPS. Digital mobile radios compliant with P25 specifications embody certain fundamental advantages, including interoperability. The term "interoperability" refers to radio equipment in compliance with P25 specifications, regardless of the manufacturer, that allow users to be interoperable with each other.

Agencies applying for radio interoperability equipment must identify the following within the "Budget-Equipment Narrative Justification" section of the application:

- Vendor and model of requested equipment
- How equipment will be used
- Attest the requested equipment will be connected to the MOSWIN

*A copy of the vendor quote **MUST** be uploaded to the "Named Attachments" form of the application.

Encryption Requirements:

To be P25 CAP Compliant and eligible for Federal or State of Missouri grant funding, radios must meet one of the following encryption requirements:

- Have no encryption
- Have AES 256 algorithm
- Have AES 256 algorithm along with any other non-standard encryption algorithms

The infographic is titled "P25 CAP ENCRYPTION REQUIREMENTS" in large, bold, light blue letters. Below the title, it states: "To be P25 CAP compliant and eligible for Federal grant funding, radios must meet one of the following encryption requirements:". The infographic is divided into three columns by vertical dotted lines. The first column shows a white icon of a key crossed out by a diagonal line inside a circle, with the text "Have no encryption" below it. The second column shows a white icon of a single key, with the text "Have AES 256 algorithm (for U.S. agencies only)" below it. The third column shows a white icon of two keys, with the text "Have AES 256 algorithm along with any other non-standard encryption algorithms" below it.

P25 CAP ENCRYPTION REQUIREMENTS

To be P25 CAP compliant and eligible for Federal grant funding, radios must meet one of the following encryption requirements:

- Have no encryption
- Have AES 256 algorithm (for U.S. agencies only)
- Have AES 256 algorithm along with any other non-standard encryption algorithms

Mobile Radios:

Applicant agencies applying for mobile (vehicle dash mounted, remote mount, or base station) radios must ensure that the model being requested is P25 compliant and can operate in the P25 trunked mode at the time of purchase. (Essentially the mobile radio must be a MOSWIN capable and the vendor has completed the MOSWIN vendor certification process for the radio).

The only approved mobile radios are listed below:

- Motorola APX8500 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Harris XG/XM-100 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Harris XL-200 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Kenwood VM-8000 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Kenwood VM-7730 Dual-Deck 8.34.9 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Kenwood VM-7930 Dual-Deck 8.34.9 P25 VHF/700/800 MHz (dual-band), digital trunking enabled

Portable Radios:

MOSWIN is designed to provide 95% coverage on accessible roads for a properly installed mobile radio. MOSWIN was not designed for portable radios. Portable radio coverage varies greatly based on a number of variables.

The only approved portable (handheld) radios are listed below:

- Motorola APX8000 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Motorola APX NEXT P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Kenwood VP-8000 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- BK Tech BKR9000 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Harris XL-200 P25 VHF/700/800 MHz (dual-band), digital trunking enabled
- Tait TP-9800 P25 VHF/700/800 MHz (dual-band), digital trunking enabled

Agencies must attest within the grant application the requested portable radio will be paired with a MOSWIN mobile radio via a public safety grade in-car repeater (repeater). Agencies applying for portable radios must identify the following within the “Budget-Equipment Narrative Justification” section of the application:

- MOSWIN mobile radio make and model the repeater will be paired with
- Make and model of the repeater including the existing or applied for FCC frequency band (VHF, 700/800 MHz, UHF)

* Portable radios will **NOT** be funded if these conditions are not met.

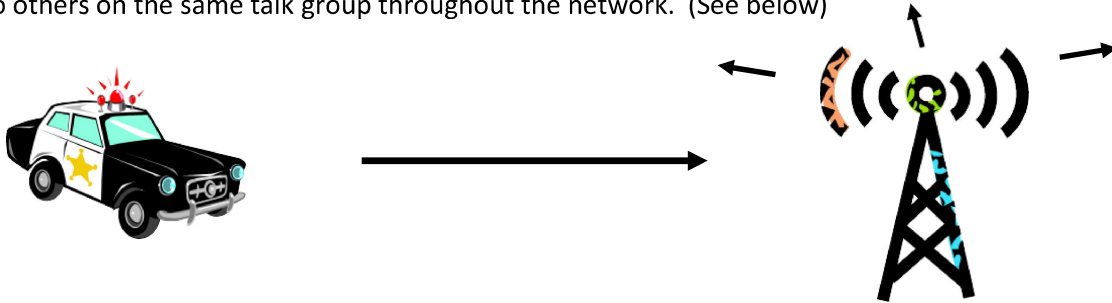
Repeaters:

Agencies applying for repeaters **MUST** ensure the frequency band of the repeater is compatible with the band of the radio(s) with which it will operate. Agencies must identify in the “Budget” form, specifically the “Budget–Equipment Narrative Justification” section, of the application:

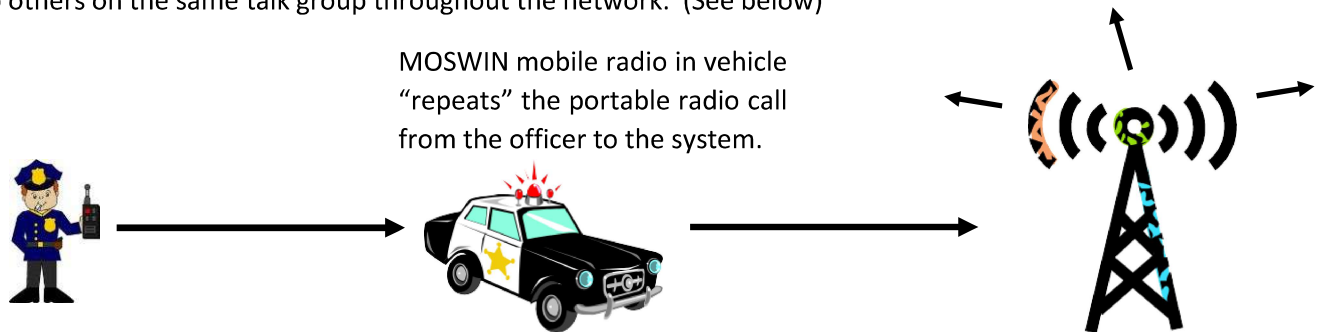
- How the agency will utilize the repeater
- How the repeater model is compatible with the radio(s) with which it will be paired

Below are visual depictions to assist with understanding radio connections. Remember, MOSWIN is built to support P25 certified mobile radios.

MOSWIN certified P25 mobile (in-car) radios “talk” to the local MOSWIN site. The MOSWIN site broadcasts the call to others on the same talk group throughout the network. (See below)



MOSWIN certified P25 portable (handheld) radios “talk” to the repeater. The repeater is connected to the mobile (in-car) radio. The mobile radio “talks” to the local MOSWIN site. The MOSWIN site broadcasts the call to others on the same talk group throughout the network. (See below)



P25, dual-band portable on FCC licensed frequencies. Linked to the MOSWIN mobile radio in the vehicle via a repeater.

In-bound radio calls from the system are received by the MOSWIN mobile radio in the vehicle and transmitted via a repeater to the P25, dual-band portable on FCC licensed frequencies.

Contact the Missouri Interoperability Center for additional clarification, to request MOSWIN access, and/or to troubleshoot connection options:

Phone: (573) 522-1714

Email: moswin.sysadmin@dps.mo.gov 24/7 Help Desk: 855-4-MOSWIN (855-466-7946)