



MISSOURI DEPARTMENT OF PUBLIC SAFETY, OFFICE OF THE DIRECTOR
CRIMINAL JUSTICE/LAW ENFORCEMENT (CJ/LE) UNIT
OFFICE OF HOMELAND SECURITY (OHS)

RADIO INTEROPERABILITY GUIDELINES

Digital mobile radios compliant with APCO Project 25 (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.

Pursuant to federal guidelines, communication projects funded with Justice Assistance Grant (JAG), Local Law Enforcement Block Grant (LLEBG), State Homeland Security Program (SHSP), or Urban Area Security Initiative (UASI) monies 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 jurisdiction that wishes to use the system for their interoperable communications.

Radios are manufactured with bands: 1) VHF (single-band) or 2) VHF/700/800 MHz (dual-band). Initially, the MOSWIN sites were built in the VHF band. Additional MOSWIN sites have since been added that have been built out to 700 MHz. Future MOSWIN sites may be built out in 700 MHz.

Applicant agencies applying for grant funds from the CJ/LE Unit or OHS for MOSWIN radios should be aware that dual-band (multi-band or all-band) radios (VHF/700/800 MHz) are the best opportunity for local agencies to harness the coverage and capacity being implemented by the State in the MOSWIN. System users must have a dual-band (VHF/700/800 MHz) mobile radio, installed to the manufacturer's recommended specifications, to obtain optimum benefit from system enhancement. VHF band radios are not compatible with 700 MHz band tower sites, and 700/800 MHz band radios are not compatible with VHF band tower sites. Dual band (VHF/700/800) radios will be able to connect to all MOSWIN sites. As a result, **JAG, LLEBG, SHSP, and UASI funds will only be permitted for models of radios that are dual-band.**

➤ **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 certified radio). Funds will not be permitted for mobile radio models which do not meet these standards. In addition, pursuant to SCIP, JAG, LLEBG, SHSP, and UASI funds will only be permitted for auto-roaming dual-band mobile radio models. Those models include:

Vendor	Model	Model Number	Hardware Version	Firmware Version	Date Certified by Vendor	Band	Unit Type
Motorola	APX8500	M37TSS9PW1AN	18X088-891490-6	15.12.00	5/30/2017	Dual-Band	Mobile
Kenwood	VM900	VM900	Viking VM900	8.14.12	3/29/2016	Dual-Band	Mobile
Harris	XG-100M	Unity	Ver 1 - Rev F	ECP15A/RPM 8A	1/14/2013	Dual-Band	Mobile
Harris	XL-200M	XL-200M	Rev. A	XLP R09A27	11/13/2019	Dual-Band	Mobile

Applicant agencies applying for mobile radios must identify the vendor and model of the requested radio within the “Budget” form of the application. A copy of the vendor quote can be uploaded to the “Other Attachments” form of the application also. (This information is needed to determine if the requested model is eligible for funding.)

In addition, applicant agencies applying for mobile radios must articulate in the “Budget” form, specifically the “Budget–Equipment Justification” section, of the application how the requested radio will be used and whether or not the requested radio will be connected to the MOSWIN.

➤ Portable Radios:

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

Applicant agencies applying for portable (handheld) 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 portable radio must be a MOSWIN certified radio.) Funds will not be permitted for portable radio models which do not meet these standards. In addition, pursuant to SCIP, JAG, LLEBG, SHSP, and UASI funds will only be permitted for dual-band portable radio models. Those models include:

Motorola	APX8000	H84KDH9PW7AN	18X0A8-911490-7	R13.00.05	2/11/2016	Dual-Band	Portable
Kenwood	VP900	VP900	Viking VP900	8.6.121	6/19/2013	Dual-Band	Portable
Harris	XL-200P	XL-200P(XL-PFM1M)	14035-1000-01 REV. A	XLP R01A10-R08	2/11/2016	Dual-Band	Portable

NOTE: Hardware and Firmware version listed are the minimum requirements. Later hardware and firmware version for the listed eligible mobiles and portables are acceptable.

Applicant agencies applying for portable radios must identify the vendor and model of the requested radio within the “Budget” form of the application. A copy of the vendor quote can be uploaded to the “Other Attachments” form of the application also. (This information is needed to determine if the requested model is eligible for funding.)

In addition, applicant agencies applying for portable radios must articulate in the “Budget” form, specifically the “Budget–Equipment Justification” section, of the application how the requested radio will be used and whether or not the requested radio will be connected to the MOSWIN.

Furthermore, applicant agencies applying for portable radios must provide information in the “Budget” form, specifically the “Budget–Equipment Justification” section, of the application that addresses 1) the portable radio will support mission critical communications as verified through prior testing*, 2) the proximately to an existing MOSWIN site, or 3) the portable will be matched with an in-car repeater. During the application review process, preference for portable radios will be given to requests that include an in-car repeater for the portable radio within the same application or where the applicant agency has included clear information within the application that documents that an in-car repeater and mobile radio are in-service and are ready to support the requested portable radio.

***LLEBG only. SHSP and UASI require all portables to be paired with VHF/700/800 mobile and in-car repeater to allow for statewide deployment and operation.**

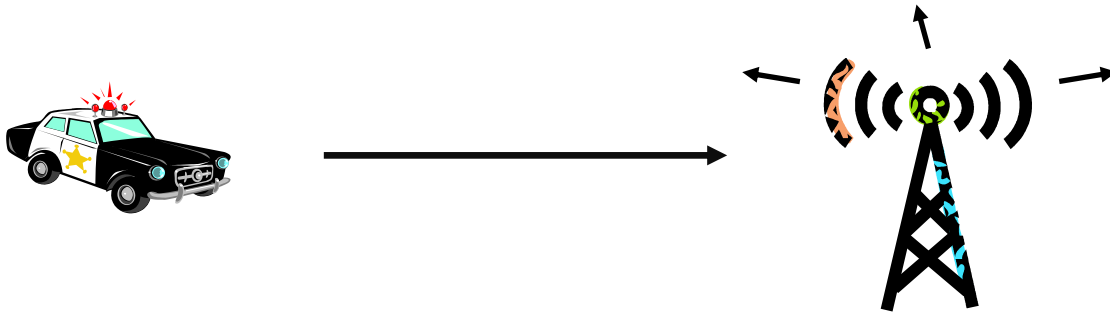
➤ Repeaters:

Applicant agencies applying for repeaters must identify the vendor and model of the requested repeater within the “Budget” form of the application. A copy of the vendor quote can be uploaded to the “Other Attachments” form of the application also. (This information is needed to determine if the requested model is appropriate for funding.)

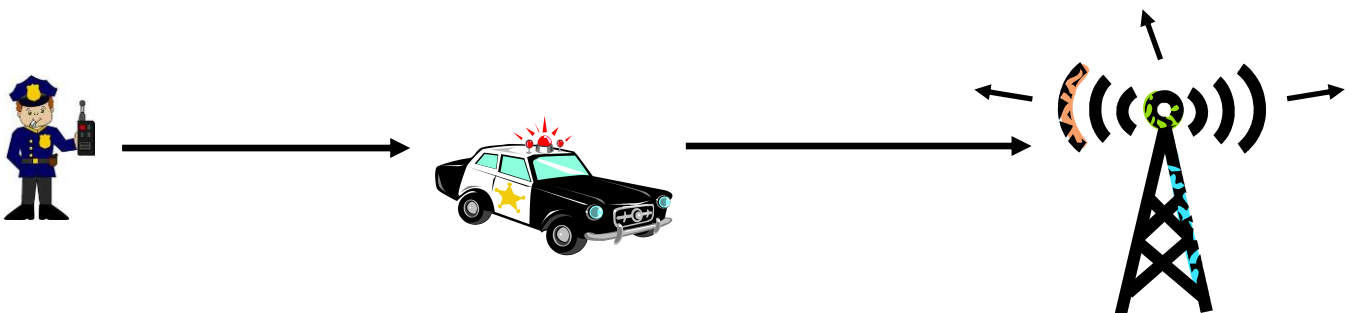
In addition, applicant agencies applying for repeaters must ensure that the band of the repeater is compatible with the band of the radio(s) with which it will operate. Applicant agencies must articulate in the “Budget” form, specifically the “Budget–Equipment Justification” section, of the application how they plan on utilizing the repeater requested and how the requested model is compatible with the radio(s) with which it will be used.

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 talkgroup throughout the network. (See below)



MOSWIN certified P25 portable (handheld) radios “talk” to the in-car repeater. The in-car 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 talkgroup throughout the network. (See below)



Effective Date: August 1, 2020

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)