

Equipment Specifications

VHF or UHF Personal 2-way Radio

Section 10006

Personal emergency communications device

COMMERCIAL GRADE VHF OR UHF PERSONAL 2-WAY RADIO

PART 1 – GENERAL

The intent of this document is to specify the minimum criteria for the design, supply, installation, and commissioning of an emergency wireless transceiver.

1.1 SUMMARY

- A. The high quality transceiver shall be designed for any governmental or commercial notification application.

1.2 REFERENCES

- A. Canadian Standards Association (CSA)
- B. Conformity for Europe (CE)
- C. Federal Communications Commission (FCC)
- D. Underwriters Laboratories (UL)

1.3 DEFINITIONS

- A. No Substitutes: The exact make and model number identified in this specification shall be provided without exception.
- B. Or Equal: Any item may be substituted for the specified item provided that in every technical sense, the substituted item provides the same or better capability and functionality.
- C. Or Approved Equal: A substitute for the specified item may be offered for approval by the Owner. The proposed substitution must, in every technical sense, provide the same or better capability and functionality as the specified item. Such requests for approval shall be submitted in accordance with the provisions of PART 1.05 – SUBMITTALS, and must be obtained within the time frames outlined.

1.4 SYSTEM DESCRIPTION

1. The high quality transceiver shall be designed for any wireless calling application. It shall be compatible with commercial grade VHF or UHF radios employing 12.5 or 25 kHz modulation with standard, sub-audible, or digital coded squelch.

1.5 SUBMITTALS

- A. General: Submittals shall be made in accordance with the Conditions of the Contract and Submittal Procedures Section.
- B. Shop Drawings and Schematics: Shall depict the transceiver in final proposed "as built" configuration. The following must be provided:
 1. Connection diagrams for interfacing equipment.
 2. List of connected equipment.
 3. Locations for all major equipment components to be installed under this specification.
- C. Product Data: The following shall be provided:
 1. Technical data sheets.
 2. A complete set of instruction manuals.
- D. Quality Assurance Submittals: The following shall be submitted:
 1. Checkout Report: The Contractor shall provide the Owner with a checkout report for each transceiver. The report shall include:
 - a. A complete list of every device.
 - b. The date it was tested, and by whom.
 - c. If rested, the date it was rested, and by whom.
 - d. The final test report shall indicate that every device was tested successfully.
 2. Manufacturer's Instructions: The Contractor shall deliver **TBD** sets of System Operation and Maintenance Manuals (if available) to the Owner.
 3. Notice of Completion: When the final acceptance has been satisfactorily completed, the Owner shall issue a notice of completion to the Contractor.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The transceiver provider shall provide 24/7 technical assistance and support via a toll-free telephone number at no extra charge.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. General: Delivery, storage, and handling of the transmitter/annunciator shall be in accordance with the manufacturer's recommendations.
- B. Ordering: The manufacturer's ordering instructions and lead-time requirements must be followed in order to avoid installation delays.
- C. Delivery: The transceiver shall be delivered in the manufacturer's original, unopened, undamaged container with identification labels intact.
- D. Storage and Protection: The transceiver shall be stored and protected from exposure to harmful weather conditions and at the environmental conditions recommended by the manufacturer.

1.8 PROGRAMMING

- A. Programming of frequency, low battery alerts, User ID and number of emergency message alerts shall be performed by bidder. An optional PC programming kit shall also be available.

1.9 SEQUENCING

1.10 SCHEDULING

1.11 WARRANTY

- A. General: The warranty period shall be minimum of twelve (12) months from the manufacture date code under normal use and service.

1.12 MAINTENANCE

- A. Preventative Maintenance Agreement During Warranty: As a separate price item, the Contractor shall provide preventative maintenance during the warranty period. Maintenance shall include, but no be limited to:

1. Labor and materials, at no additional cost, to repair the transceiver .
2. Labor and materials, at no additional cost, to provide test and adjustments to the transceiver.
3. Regular inspections.

B. Preventative Maintenance Agreement: As a separate price item, the Contractor shall provide a complete Maintenance Agreement or a period of **TBD** months after the conclusion of the warranty period. The Maintenance Agreement shall include, but not be limited to:

1. Labor and materials, at no additional cost, to repair the transceiver.
2. Labor and materials, at no additional cost, to provide test and adjustments to the transceiver.
3. Regular inspections.

1.13 TRAINING

- A. Operator training shall be conducted for a minimum of one session, with a minimum session length of one hour at the customer’s site.
- B. Training shall include, but not be limited to, the transceiver operation and diagnostics

PART 2 – PRODUCTS

2.1 MANUFACTURED UNITS

A. Model Number/Description Table

SLX transceiver	Personal 2-way radio with unit ID and display for the VHF frequency band (SLX100) or UHF frequency band (SLX400) programmed for emergency calling and/or listening.
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2.2 SYSTEM PERFORMANCE

- A. The transceiver shall include, as a minimum, the following features/functions/specifications:
 1. The transceiver must be protected by the most extensive support services in the industry, including Customer Service, Pre-Sales Applications Assistance, After-Sales Technical

Assistance, access to Technical Online Support, and Online Training using the Internet.

2. The transceiver and its components shall be thoroughly tested before shipping from the manufacturer's facility.
3. The transceiver shall transmit emergency messages in English.

2.3 MECHANICAL SPECIFICATIONS

A. The transceiver must have the following mechanical specifications:

1. Unit Dimensions (HxWxD).....3.93" x 2.2 x 1.33"
2. Unit Weight.....10 ounces with battery
3. Shipping Weight.....3 pounds
4. Channel capacity.....60
5. Frequency Band.....VHF 136-174 MHz or UHF
405-470 MHz.
6. Squelch Type.....Carrier, CTCSS, DCS,
and 5 tone
7. Bandwidth.....12.5 compondering or 25 KHz
8. Transmitter power 5 watts VHF or 4 watts UHF
9. LCD alpha numeric display
10. Six programmable function buttons
11. Built in VOX capability
12. Priority scan
13. Programmable emergency button
14. Programmable Two tone encode/decode per channel
15. Programmable DTMF encode per channel
16. Programmable ZVEI encode/decode per channel
17. Audio output – 800 mW.
18. Message Type – Analog voice – standard or encrypted
19. Programming – Via PC with optional cable and software

2.4 ELECTRICAL POWER REQUIREMENTS

A. The transceiver must have the following electrical specifications:

1. Battery type.....1800 mAh Lithium Ion
2. Battery Life.....11 hours
3. Charger type.....Desk, rapid conditioning

2.5 ENVIRONMENTAL CONDITIONS

- A. The transceiver shall be designed to meet the following environmental conditions:
 - 1. Operating Temperature.....32 degrees to 104 degrees F (0 degrees to 40 degrees C)
 - 2. Operation Humidity.....10% to 90% relative, non condensing
 - 3. Emissions.....FCC: Part 15
 - 4. MIL-SPEC 810F
 - 5. IP-54 water resistant

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Submission of a proposal confirms that the contract documents and site conditions are accepted without qualifications unless exceptions are specifically noted.
- B. The site shall be visited on a regular basis to appraise ongoing progress of other trades and contractors, make allowances for all ongoing work, and coordinate the requirements of this contract in a timely manner.
- C. The transceiver must be inspected before installation, and shall be free of any cosmetic defects or damage.

3.2 PREPARATION

- A. Prior to installation, the transceiver shall be programmed and tested in accordance with the user's requirements.

3.3 INSTALLATION

- A. The transceiver must be installed, programmed, and tested in accordance with the user's requirements
 - 1. In order to ensure a complete, transceiver for bidding purposes, where information is not available from the Owner upon request, the worst-case condition shall be assumed.
 - 2. Interfaces shall be coordinated with the Owner's representative, where appropriate.

3. All necessary support requirements with participating law enforcement agencies for operation of the transceiver shall be coordinated by the bidder.

3.4 TESTING AND CERTIFICATION

A. The Contractor shall demonstrate the functionality of the transceiver upon completion of installation, documenting the results of all tests and providing these results to the Owner. The transceiver shall be tested in accordance with the following:

1. The Contractor shall conduct a complete inspection and test of all installed transceiver equipment. This includes testing and verifying operation with connected equipment.
2. The Contractor shall provide staff to test all devices and all operational features of the system for witness by the Owner's representative and the Authority Having Jurisdiction. All testing must be witnessed by the Owner's representative, prior to acceptance.
3. The testing and certification shall take place as following:
 - a. The transceiver shall be tested in conjunction with bidder's representative.
 - b. All deficiencies noted in the above test shall be corrected.
 - c. Test results shall be submitted to the consultant or Owner's representative.
 - d. The test and correction of any deficiencies shall be witnessed by the Owner's representative, and note.
 - e. The Owner's representative shall accept the system.
 - f. The system test shall be witnessed by the Authority Having Jurisdiction. Any deficiencies noted during the testing must be corrected.
4. A letter certification shall be provided to indicate that the tests have been preformed, and all devices are operational.

END OF SECTION
