



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

NUMBER
DPS1418

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE
304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE
Motorola Solutions, Inc.
7031 Columbia Gateway Drive
3rd Floor
Columbia, MD 21046
FEIN #36-1115800

V
E
N
D
O
R

WEST VIRGINIA STATE POLICE

4124 KANAWHA TURNPIKE
SOUTH CHARLESTON, WV
25309 304-746-2141

S
H
I
P
T
O

DATE PRINTED
06/26/2014

BID OPENING DATE: 07/24/2014

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		725-74		
DIGITAL MOBILE AND PORTABLE RADIOS						
OPEN-END CONTRACT						
THE WEST VIRGINIA STATE PURCHASING DIVISION ON BEHALF OF THE WEST VIRGINIA STATE POLICE, IS SOLICITING BIDS FOR THE PURCHASE DIGITAL MOBILE AND PORTABLE RADIOS FOR THE STATE AGENCIES WITHIN THE DEPARTMENT OF MILITARY AFFAIRS AND PUBLIC SAFETY, PER THE ATTACHED SPECIFICATIONS.						
ATTACHMENTS INCLUDE:						
1. INSTRUCTIONS TO VENDORS SUBMITTING BIDS						
2. GENERAL TERMS AND CONDITIONS						
3. DPS1418 SPECIFICATIONS						
4. CERTIFICATION AND SIGNATURE PAGE						
5. PURCHASING AFFIDAVIT						
6. VENDOR PREFERENCE CERTIFICATE						
THE MODEL/BRAND/SPECIFICATIONS NAMED HEREIN ESTABLISH THE ACCEPTABLE LEVEL OF QUALITY ONLY AND ARE NOT INTENDED TO REFLECT A PREFERENCE OR FAVOR ANY PARTICULAR BRAND OR VENDOR. VENDORS WHO ARE BIDDING ALTERNATES SHOULD SO STATE AND INCLUDE PERTINENT LITERATURE AND SPECIFICATIONS. FAILURE TO PROVIDE INFORMATION FOR ANY ALTERNATES MAY BE GROUNDS FOR REJECTION OF THE BID. THE STATE RESERVES THE RIGHT						

08/13/14 10:05:42AM
West Virginia Purchasing Division

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

NUMBER

DPS1418

PAGE

2

ADDRESS CORRESPONDENCE TO ATTENTION OF:

TARA LYLE
304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

Motorola Solutions, Inc.
7031 Columbia Gateway Drive
3rd Floor
Columbia, MD 21046
FEIN # 36-1115800

WEST VIRGINIA STATE POLICE

4124 KANAWHA TURNPIKE
SOUTH CHARLESTON, WV
25309 304-746-2141

DATE PRINTED

06/26/2014

BID OPENING DATE:

07/24/2014

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
TO WAIVE MINOR IRREGULARITIES IN BIDS OR SPECIFICATIONS IN ACCORDANCE WITH SECTION 148-1-4(F) OF THE WEST VIRGINIA LEGISLATIVE RULES AND REGULATIONS.						
***** THIS IS THE END OF RFQ DPS1418 ***** TOTAL:						\$ 2,761,519.77

SIGNATURE

TELEPHONE

DATE

TITLE

FEIN

ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. **REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.
2. **MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.
3. **PREBID MEETING:** The item identified below shall apply to this Solicitation.
 - ☒ A pre-bid meeting will not be held prior to bid opening.
 - ☐ A **NON-MANDATORY PRE-BID** meeting will be held at the following place and time:

 - ☐ A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing. Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in, but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. **VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are non-binding.

Question Submission Deadline: July 11, 2014 at 4:00 pm

Submit Questions to: Tara Lyle, File 32

2019 Washington Street, East

Charleston, WV 25305

Fax: (304) 558-4115

(Vendors should not use this fax number for bid submission)

Email: Tara.L.Lyle@wv.gov

5. **VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including that made at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.
6. **BID SUBMISSION:** All bids must be signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include hand delivery, delivery by courier, or facsimile. The bid delivery address is:

Department of Administration, Purchasing Division

2019 Washington Street East

Charleston, WV 25305-0130

The bid should contain the information listed below on the face of the envelope or the bid may not be considered:

SEALED BID: _____
 BUYER: _____
 SOLICITATION NO.: _____
 BID OPENING DATE: _____
 BID OPENING TIME: _____
 FAX NUMBER: _____

In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus N/A convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: ☐ Technical
☐ Cost

7. **BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when time stamped by the official Purchasing Division time clock.

Bid Opening Date and Time: July 24, 2014 at 1:30 pm

Bid Opening Location: Department of Administration, Purchasing Division
 2019 Washington Street East
 Charleston, WV 25305-0130

8. **ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.
9. **BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

GENERAL TERMS AND CONDITIONS:

1. **CONTRACTUAL AGREEMENT:** Issuance of a Purchase Order signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.
2. **DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.
 - 2.1 **"Agency" or "Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.
 - 2.2 **"Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods and services requested in the Solicitation.
 - 2.3 **"Director"** means the Director of the West Virginia Department of Administration, Purchasing Division.
 - 2.4 **"Purchasing Division"** means the West Virginia Department of Administration, Purchasing Division.
 - 2.5 **"Purchase Order"** means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the successful bidder and Contract holder.
 - 2.6 **"Solicitation"** means the official solicitation published by the Purchasing Division and identified by number on the first page thereof.
 - 2.7 **"State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
 - 2.8 **"Vendor" or "Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. **CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☒ **Term Contract**

Initial Contract Term: This Contract becomes effective on award
and extends for a period of one (1) year(s).

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Renewal of this Contract is limited to three (3) successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed 36 months in total. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

Release Order Limitations: In the event that this contract permits release orders, a release order may only be issued during the time this Contract is in effect. Any release order issued within one year of the expiration of this Contract shall be effective for one year from the date the release order is issued. No release order may be extended beyond one year after this Contract has expired.

☐ **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within days.

☐ **One Time Purchase:** The term of this Contract shall run from the issuance of the Purchase Order until all of the goods contracted for have been delivered, but in no event shall this Contract extend for more than one fiscal year.

☐ **Other:** See attached.

4. **NOTICE TO PROCEED:** Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Purchase Order will be considered notice to proceed

5. **QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☒ **Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

- ☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.
- ☐ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.
- ☐ **One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.
6. **PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification.
7. **EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.
8. **REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.
- ☐ **BID BOND:** All Vendors shall furnish a bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.
- ☐ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of . The performance bond must be issued and received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.
- ☐ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be issued and delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a

performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable.

☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

☐ **WORKERS' COMPENSATION INSURANCE:** The apparent successful Vendor shall have appropriate workers' compensation insurance and shall provide proof thereof upon request.

☐ **INSURANCE:** The apparent successful Vendor shall furnish proof of the following insurance prior to Contract award and shall list the state as a certificate holder:

☐ **Commercial General Liability Insurance:**
or more.

☐ **Builders Risk Insurance:** builders risk – all risk insurance in an amount equal to 100% of the amount of the Contract.

☐☐☐☐☐

The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed above.

☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Purchasing Division.

☐☐☐☐

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award regardless of whether or not that requirement is listed above.

9. **LITIGATION BOND:** The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.
10. **ALTERNATES:** Any model, brand, or specification listed herein establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.
11. **EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.
12. **LIQUIDATED DAMAGES:** Vendor shall pay liquidated damages in the amount
for

This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy.
13. **ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part. Vendor's signature on its bid signifies acceptance of the terms and conditions contained in the Solicitation and Vendor agrees to be bound by the terms of the Contract, as reflected in the Purchase Order, upon receipt.
14. **REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee if applicable.
15. **COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation

during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

16. **FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.
17. **PAYMENT:** Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears, to the Agency at the address on the face of the purchase order labeled "Invoice To."
18. **UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.
19. **DELIVERY:** All quotations are considered freight on board destination ("F.O.B. destination") unless alternate shipping terms are clearly identified in the bid. Vendor's listing of shipping terms that contradict the shipping terms expressly required by this Solicitation may result in bid disqualification.
20. **INTEREST:** Interest attributable to late payment will only be permitted if authorized by the West Virginia Code. Presently, there is no provision in the law for interest on late payments.
21. **PREFERENCE:** Vendor Preference may only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Resident Vendor Certification form has been attached hereto to allow Vendor to apply for the preference. Vendor's failure to submit the Resident Vendor Certification form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.
22. **SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid on or after July 1, 2012, in accordance with West Virginia Code § 5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to submission of its bid to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.
23. **TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
24. **CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract.

The Purchasing Division Director may cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-7.16.2.

- 25. WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.
- 26. TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.
- 27. APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.
- 28. COMPLIANCE:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendors acknowledge that they have reviewed, understand, and will comply with all applicable law.
- 29. PREVAILING WAGE:** On any contract for the construction of a public improvement, Vendor and any subcontractors utilized by Vendor shall pay a rate or rates of wages which shall not be less than the fair minimum rate or rates of wages (prevailing wage), as established by the West Virginia Division of Labor under West Virginia Code §§ 21-5A-1 et seq. and available at <http://www.sos.wv.gov/administrative-law/wagerates/Pages/default.aspx>. Vendor shall be responsible for ensuring compliance with prevailing wage requirements and determining when prevailing wage requirements are applicable. The required contract provisions contained in West Virginia Code of State Rules § 42-7-3 are specifically incorporated herein by reference.
- 30. ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.
- 31. MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary, no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). **No Change shall be implemented by the Vendor until such time as the Vendor receives an approved written change order from the Purchasing Division.**
- 32. WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.
- 33. SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or

maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

34. **ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.
35. **WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.
36. **STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.
37. **BANKRUPTCY:** In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.
38. **[RESERVED]**
39. **CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.
40. **DISCLOSURE:** Vendor's response to the Solicitation and the resulting Contract are considered public documents and will be disclosed to the public in accordance with the laws, rules, and policies governing the West Virginia Purchasing Division. Those laws include, but are not limited to, the Freedom of Information Act found in West Virginia Code § 29B-1-1 et seq.

If a Vendor considers any part of its bid to be exempt from public disclosure, Vendor must so indicate by specifically identifying the exempt information, identifying the exemption that applies, providing a detailed justification for the exemption, segregating the exempt information from the general bid information, and submitting the exempt information as part of its bid but in a segregated and clearly identifiable format. Failure to comply with the foregoing requirements will result in public disclosure of the Vendor's bid without further notice. A Vendor's act of marking all or nearly all of its bid as exempt is not sufficient to avoid disclosure and **WILL NOT BE HONORED**. Vendor's act of marking a bid or any part thereof as "confidential" or "proprietary" is not sufficient to avoid disclosure and **WILL NOT BE HONORED**. In addition, a legend or other statement indicating that all or substantially all of the bid is exempt from disclosure is not sufficient to avoid disclosure and **WILL NOT BE HONORED**.

Vendor will be required to defend any claimed exemption for nondisclosure in the event of an administrative or judicial challenge to the State's nondisclosure. Vendor must indemnify the State for any costs incurred related to any exemptions claimed by Vendor. Any questions regarding the applicability of the various public records laws should be addressed to your own legal counsel prior to bid submission.

- 41. LICENSING:** In accordance with West Virginia Code of State Rules §148-1-6.1.7, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.
- 42. ANTITRUST:** In submitting a bid to, signing a contract with, or accepting a Purchase Order from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.
- 43. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid for the same material, supplies, equipment or services; (2) that its bid is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this RFQ in its entirety, understands the requirements, terms and conditions, and other information contained herein. Vendor's signature on its bid also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

The individual signing this bid on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

- 44. PURCHASING CARD ACCEPTANCE:** The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract unless the box below is checked.

☐

Vendor is not required to accept the State of West Virginia's Purchasing Card as payment for all goods and services.

- 45. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, *etc.* and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing. Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.
- 46. INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.
- 47. PURCHASING AFFIDAVIT:** In accordance with West Virginia Code § 5A-3-10a, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.
- 48. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by and extends to other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"). This Contract shall be extended to the aforementioned Other Government Entities on the same prices, terms, and conditions as those offered and agreed to in this Contract. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.
- 49. CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire any interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder.

Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

50. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

- ☒ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.
- ☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.requisitions@wv.gov.

51. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision.

The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

52. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West

- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.

The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

- a. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- b. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

53. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products.

This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference.

If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000019

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia State Police for all state agencies within the Department of Military Affairs and Public Safety to establish an open-end contract for Digital Mobile and Portable Radios, replacement parts and accessories.
2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
 - 2.1. **“Contract Item” or “Contract Items”** means the list of items identified in Section 3, Subsections 1,2,3,4,5,6,and 7 below.
 - 2.2. **“Pricing Pages”** means the schedule of prices, estimated order quantity, and totals attached hereto as Exhibit A and used to evaluate the RFQ.
 - 2.3. **“RFQ”** means the official request for quotation published by the Purchasing Division and identified as DPS1418.

3. **GENERAL REQUIREMENTS:**

3.1 Contract Items and Mandatory Requirements: Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below. No split awards will be made from this solicitation. **ALL RADIOS LISTED BY THE VENDOR IN THE PRICING PAGES MUST BE APPROVED BY THE STATEWIDE INTEROPERABLE EXECUTIVE COMMITTEE PER EXECUTIVE ORDER NO. 2-11, and must be compatible with the Statewide Interoperable Radio Network (SIRN).** Any Vendor submitting a response to this RFQ should submit the specifications for each radio that they are offering with their bid.

3.1.1 DIGITAL DUAL BAND MOBILE RADIOS

3.1.1.1 Digital Dual Band mobile radio shall be capable of at least one thousand two hundred fifty (1250) channel operation and shall be P-25 Phase 2 compliant.

3.1.1.2 Each Digital Dual Band Mobile Radio shall come with the following: Specified radio, under dash mounting bracket, remote speaker, microphone, microphone hang-up clip, all necessary cables, including ignition sense wire, mounting hardware, and instruction manual.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000020

- 3.1.2 Digital Dual Band mobile radio shall be capable of operating in the following frequency bands: VHF (136-174 Mhz.), UHF R1(380-470 Mhz.), 700 Mhz. (764-776 Mhz., 794-806 Mhz.) 800 Mhz. (806-824 Mhz, 851-870 Mhz.).
- 3.1.3 Digital Dual Band mobile radio shall be capable of utilizing the following channel spacing: 6.25 Khz., 12.5 Khz. and 25 Khz.
- 3.1.4 Digital Dual Band mobile radio shall be capable of using the following encryption algorithms: AES/ DES-OFB.
 - 3.1.4.1 Digital Dual Band mobile radio shall have an Encryption Algorithm Capacity of eight (8).
 - 3.1.4.2 Encryption Keys Module for the Digital Dual Band mobile radio shall be capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID).
 - 3.1.4.3 The Encryption frame re-sync interval shall be: P25 CAI 300 mSec.
 - 3.1.4.4 Encryption keying shall be loaded by a Motorola Key Variable Loader (KVL 3000+).
 - 3.1.4.5 Synchronization shall be: XL-Counter Addressing; OFB-Output Feedback.
 - 3.1.4.6 The Vector Generator shall be the National Institute of Standards and Technology (NIST) approved random number generator.
 - 3.1.4.7 The encryption shall be digital.
 - 3.1.4.8 Key erasure shall be accomplished by keyboard command and tamper detection.
 - 3.1.4.9 Encryption standards shall be: FIPS 140-2 Level 3, FIPS 197.
 - 3.1.4.10 Key storage shall be in tamper protected volatile or non-volatile memory.
- 3.1.5 Digital Dual Band mobile radio shall be capable of the following transmit power levels: 10-30 watts (700 Mhz), 10-35 watts (800 Mhz.), 10-50 watts (VHF dash mount low-medium power), 25-110 watts (VHF Remote mount high power), 10-40 watts (UHF 380-470 MHz. dash mount low-medium power), 25-110 watts (UHF 380-470 MHz. remote mount high power),. The Vendor shall list the high power range option as a separate listing in the Pricing Pages.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

C00021

- 3.1.5.1** Transmitter channel spacing shall be: 25/12.5 kHz in the 700 MHz. range; 25/12.5 kHz in the 800 MHz range; 30/25/12.5 kHz in the VHF range; 25/12.5 kHz in UHF range.
- 3.1.5.2** The frequency separation shall be the full bandwidth.
- 3.1.5.3** Frequency stability shall be +/- 0.8 PPM in all frequency ranges.
- 3.1.5.4** Audio distortion shall be 0.50% in all frequency ranges.
- 3.1.5.5** FM Hum and Noise at 25 kHz separation shall be: 50 dB in 700 MHz and 800 MHz, 53 dB in VHF, UHF range. At 12.5 kHz separation shall be 48 dB in 700 MHz and 800 MHz, 52 dB in VHF, and 50 dB in UHF range .
- 3.1.5.6** Modulation Fidelity (C4FM) for 12.5 kHz digital channel shall be 1.10% in all frequency ranges.
- 3.1.6** Digital Dual Band mobile radio shall be P-25 compliant, P-25Trunking if an option shall be included.
- 3.1.7** Digital Dual Band mobile radio shall be capable of multi-band operation. Multi-band means the following: a multi-band radio shall be capable of operating in two bands in the same radio. Each multi-band radio shall be configured to operate in one of the following configurations: VHF (136-174 Mhz) and UHF (380-470 Mhz), VHF (136-174 Mhz) and 700/800 (764-870 Mhz), UHF (380-470 Mhz), 700/800 (764-870 Mhz),. Each frequency combination shall be listed as a separate option in the Pricing Pages.
- 3.1.8** Digital Dual Band mobile radio shall be capable of scanning both bands of the radio at the same time.
- 3.1.8.1** Radio shall be capable of using and storing user defined scan lists.
- 3.1.8.2** Predefined scan lists may be edited by the user utilizing buttons on the radio.
- 3.1.8.3** Scan lists shall be able to be established at the user/keypad level.
- 3.1.8.4** Scanning shall be enabled and disabled by depressing no more than one button one time.
- 3.1.8.5** The radio shall be able to simultaneously scan both bands in the radio as well as "Trunking" and "Conventional" channels.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

- 3.1.9 Digital Dual Band mobile radio shall be capable of Over-The-Air Programming (OTAP) and Over-The-Air Rekeying (OTAR).
- 3.1.9.1 The radio shall have OTAP enabled.
- 3.1.9.2 The manufacturer's OTAP infrastructure software and hardware must be compatible and operational through the existing SIRN equipment and software connected to the Motorola Core Switch to facilitate OTAP, or it must be furnished at no additional charge.
- 3.1.10 Digital Dual Band mobile radio shall meet the following standards: MIL-STD 810C, MIL-STD 810D, MIL-STD 810E, MIL-STD 810E, MIL-STD 810F, MIL-STD 810G.
- 3.1.11 Digital Dual Band mobile radio shall be capable of using multiple control head configurations and Vendor shall list each control head configuration as an option on the Pricing Pages.
- 3.1.12 Receiver channel spacing shall be 25/12.5 kHz in 700 MHz, 800 MHz, UHF Range. Receiver channel spacing shall be 30/25/12.5 kHz in the VHF Range.
- 3.1.12.1 Maximum frequency separation shall be full bandsplit for each frequency range.
- 3.1.12.2 Audio output power at 3% distortion shall be 7.5 W or 15 W for all frequency ranges.
- 3.1.12.3 Receiver frequency stability shall be +/- 0.8 PPM for all frequency ranges.
- 3.1.12.4 Analog sensitivity at 12dB SINAD shall be -121 dBm for 700 MHz and 800 MHz. Analog sensitivity at 12dB SINAD shall be -123 dBm using a pre-amp and -119 dBm standard for VHF, and UHF.
- 3.1.12.5 Digital sensitivity at 5% BER shall be -121.5 dBm for 700 MHz and 800 MHz. Digital sensitivity at 5% BER shall be - 123 dBm using a pre-amp and -119 dBm standard for VHF, and UHF.
- 3.1.12.6 Intermodulation at 25 kHz shall be 82 dB for 700 MHz and 800 MHz. Intermodulation at 25 kHz using a pre-amp shall be 84 dB in VHF, 82 dB in UHF. Intermodulation at 25 kHz without a pre-amp shall be 86 dB for VHF, and UHF.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000023

3.1.12.7 Intermodulation at 12.5 kHz shall be 82 dB for 700 MHz and 800 MHz. Intermodulation at 12.5 kHz using a pre-amp shall be 85 dB in VHF, 83 dB in UHF. Intermodulation at 12.5 kHz without a pre-amp shall be 86 dB in VHF and 85 dB in UHF range 1 and UHF.

3.1.12.8 Spurious rejection shall be 91 dB for 700 MHz and 800 MHz, 95 dB for VHF, and 93 dB for UHF.

3.1.12.9 Audio Distortion as rated shall be 1.2%.

3.1.12.10 FM Hum and Noise at 25 kHz separation shall be 59 dB for 700 MHz, 800 MHz and VHF, and 55 dB for UHF.

3.1.12.11 FM Hum and Noise at 12.5 kHz separation shall be 50 dB for all frequency ranges.

3.1.12.12 Selectivity at 25 kHz shall be 85 dB for all frequency ranges, at 12.5 kHz it shall be 75 dB for all frequency ranges, at 30 kHz it shall be 90 dB for VHF.

3.1.13 Digital Dual Band mobile radio shall operate at 13.8V DC +/- 20% Negative Ground

3.1.13.1 Standby current at 13.8 V shall be no greater than 0.85A for all frequency ranges.

3.1.13.2 Receive current at rated audio at 13.8V shall be no greater than 3.2A for all frequency ranges.

3.1.13.3 Transmit current at rated power shall be no greater than: 136-174 MHz (10-50 Watts), 13A (50 W), 8A (15W); 380-470 MHz (10-40 Watts), 11A (40 W), 8A (15W); 764-870 MHz (10-35 Watts), 12A (50W), 8A (15W); 136-174 MHz (25-110 Watts) 20A (110W), 380-470 MHz (25-110Watts) 24A (110W).

3.1.14 Digital Dual Band mobile radio shall be Integrated GPS capable.

3.1.14.1 GPS shall be capable of receiving at least 12 channels.

3.1.14.2 GPS tracking sensitivity shall be -153dBm or better.

3.1.14.3 GPS accuracy shall be <10 meters (95%).

3.1.14.4 GPS cold start shall be <60 seconds (95%).

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000024

- 3.1.14.5 GPS hot start shall be <10 seconds (95%).
- 3.1.14.6 GPS mode of operation shall be Autonomous.
- 3.1.15 Digital Dual Band mobile radio shall support the following trunking standards:
clear or digital encrypted ASTRO 25 9600 baud Trunked operation.
- 3.1.16 Digital Dual Band mobile radio shall have Analog MDC-1200 and
Digital APCO P25 Conventional (CAI) Systems Configurations enabled.
- 3.1.17 Digital Dual Band mobile radio shall be capable of Embedded Digital signaling
(ASTRO and ASTRO 25).
 - 3.1.17.1 Astro Mode signaling rate shall be 9.6kbps.
 - 3.1.17.2 Digital ID capacity shall be 10,000,000 Conventional / 48,000 Trunking.
 - 3.1.17.3 Digital access codes shall be at least 4,096 network site addresses.
 - 3.1.17.4 Astro Digital user Group network site addresses shall be at least 4,096
network addresses.
 - 3.1.17.5 Project 25-CAI Digital User Group addresses shall be
at least 65,000 Conventional / 4,096 Trunking.
- 3.1.18 Digital Dual Band mobile radio must use Windows XP or newer software for all
programming functions.
 - 3.1.18.1 Programming cable must use USB technology to connect to the
programming computer.
 - 3.1.18.2 All currently licensable frequencies shall be considered acceptable to the
unit.
 - 3.1.18.3 Each channel shall be individually programmable with regard to
wideband/narrowband operation, digital/analog, trunking/non- trunking,
encode/decode, encrypted/non-encrypted, transmit frequency, receive frequency,
digital/analog CTCSS tones/no-tones.
 - 3.1.18.4 The radio shall have an alphanumeric display with a minimum of 2 rows
of 14 characters each.
 - 3.1.18.5 The radio shall have a minimum of 5 programmable function buttons.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000025

3.1.18.6 The radio shall have an “emergency” button with a clearly distinctive color.

3.1.18.7 The radio shall have a menu navigation button capability.

3.1.19 Each Digital Dual Band Mobile radio shall have the following configurations available for purchase:

3.1.19.1 Digital Dual Band Mobile radio, 380-470 Mhz and VHF, with AES Encryption, Dash Mount (low-medium power as specified in section 3.1.5).

3.1.19.1.1 Digital Dual Band Mobile Radio, 380-470 MHz and 700 MHz, with AES encryption, Dash Mount (low-medium power as specified in section 3.1.5).

3.1.19.1.2 Digital Dual Band Mobile Radio, 380-470 MHz and 800 MHz, with AES encryption, Dash Mount (low-medium power as specified in section 3.1.5).

3.1.19.2 Digital Dual Band Mobile radio with, 380-470 MHz and VHF, with AES Encryption, Remote mount (low-medium power as specified in Section 3.1.5).

3.1.19.2.1 Digital Dual Band Mobile radio with, 380-470 MHz and 700 MHz, with AES Encryption, Remote mount (low-medium power as specified in Section 3.1.5).

3.1.19.2.2 Digital Dual Band Mobile radio with, 380- 470 MHz and 800 MHz, with AES Encryption, Remote mount (low-medium power as specified in Section 3.1.5).

3.1.19.2.3 Hand Held Full Function Control Head for Digital Dual Band Mobile radio with Remote Mount.

3.1.19.3 Dual control head option for Remote mount Digital Dual Band Mobile radio.

3.1.19.4 Digital Dual Band Mobile radio 380-470 MHz and VHF with NO AES Encryption, Dash mount (low-medium power as specified in Section 3.1.5).

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000026

3.1.19.4.1 Digital Dual Band Mobile Radio, 380-470 MHz and 700 MHz, NO AES encryption, Dash Mount (low-medium power as specified in section 3.1.5).

3.1.19.4.2 Digital Dual Band Mobile Radio, 380-470 MHz and 800 MHz, NO AES encryption, Dash Mount (low-medium power as specified in section 3.1.5).

3.1.19.5. Digital Dual Band Mobile radio 380-470 MHz and VHF with NO AES Encryption, remote mount (low-medium power as specified in Section 3.1.5).

3.1.19.5.1 Digital Dual Band Mobile Radio, 380-470 MHz and 700 MHz, NO AES encryption, remote Mount (low-medium power as specified in section 3.1.5).

3.1.19.5.2 Digital Dual Band Mobile Radio, 380-470 MHz and 800 MHz, NO AES encryption, remote Mount (low-medium power as specified in section 3.1.5).

3.1.19.5.3 Hand Held Full Function Control Head for Digital Dual Band Mobile radio with Remote Mount.

3.1.20 Spare Microphone for Digital Dual Band Mobile radio.

3.1.21 The Digital Dual Band Mobile radio shall be capable of having at least two "Dynamic" zones in the radio permitting users to create user defined zones of channels/talkgroups.

3.1.22 Programming Software for Digital Dual Band Mobile Radio. Programming software shall include unlimited seats.

3.1.23 Programming Cable for Digital Dual Band Mobile radio.

3.1.24 High Power Option (up to 110 watts added on to Digital Dual Band Mobile radio, (as specified in section 3.1.5).

3.1.25 GPS enable shall be an option.

3.1.25.1 GPS antenna for GPS for Digital Dual Band Radio

3.1.26 AC power supply to convert a digital dual band radio into above station.

3.1.27 Desk style microphone for digital dual band radio.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000027

- 3.1.28 Optional spare remote speaker for Digital Dual Band Mobile Radio.
- 3.1.29 Encryption Key Loader cable (for KVL3000+) for Digital Dual Band Mobile radio.
- 3.1.30 Digital Dual Band radio shall be Phase 2 capable and must meet current P25 standards, and be backwards and forwards compatible and future-ready to support new technology and data applications.
- 3.1.31 Over-The-Air Programming (OTAP) shall be enabled, unless requested to not be included.
 - 3.1.31.1 There shall be an option for removing the OTAP feature from the radio.
- 3.1.32 Over-The-Air Rekeying (OTAR) shall be available as an option to be enabled.

3.2 DIGITAL SINGLE BAND MOBILE RADIO

- 3.2.1 Digital Single Band mobile radio shall be capable of at least one thousand two hundred fifty (1250) channel operation and shall be P-25 Phase 2 compliant.
 - 3.2.1.1 Each Digital Single Band Mobile Radio shall come with the following: Specified radio, under dash mounting bracket, remote speaker, microphone, microphone hang-up clip, all necessary cables, including ignition sense wire, mounting hardware, and instruction manual.
- 3.2.2 Digital Single Band mobile radio shall be capable of operating in the following frequency bands: VHF (136-174 Mhz.), UHF (380-470 Mhz.), 700 Mhz. (764-776 Mhz, 794-806 Mhz.), 800 Mhz. (806-824 Mhz., 851-870 Mhz.).
- 3.2.3 Digital Single Band mobile radio shall be capable of utilizing the following channel spacing: 6.25 Khz., and 12.5 Khz.
- 3.2.4 Digital Single Band mobile radio shall be capable of using the following encryption algorithms: AES/DES-OFB.
 - 3.2.4.1 Digital Single Band mobile radio shall have an Encryption Algorithm Capacity of eight (8).
 - 3.2.4.2 Encryption Keys Module for the Digital Single Band mobile radio shall be capable of storing 1024 keys. Programmable for 64 Common Key Reference (CKR) or 16 Physical Identifier (PID).

-
- 3.2.4.3 The Encryption frame re-sync interval shall be: P25 CAI 300 mSec.
- 3.2.4.4 Encryption keying shall be loaded by a Key Variable Loader (KVL).
- 3.2.4.5 Synchronization shall be: XL-Counter Addressing ; OFB-Output Feedback.
- 3.2.4.6 The Vector Generator shall be the National Institute of Standards and Technology (NIST) approved random number generator.
- 3.2.4.7 The encryption shall be digital.
- 3.2.4.8 Key erasure shall be accomplished by keyboard command and tamper detection.
- 3.2.4.9 Encryption standards shall be: FIPS 140-2 Level 3, FIPS 197.
- 3.2.4.10 Key storage shall be in tamper protected volatile or non-volatile memory.
- 3.2.5 Digital Single Band mobile radio shall be capable of the following transmit power levels: 10-30 watts (700 Mhz), 10-35 watts (800 Mhz.), 10-50 watts (VHF dash mount low-medium power), 25-110 watts (VHF Remote mount high power), 10-40 watts (UHF dash mount low-medium power), 25-110 watts (UHF Remote mount high power). The Vendor shall list each power range option as a separate listing in the Pricing Pages.
- 3.2.5.1 Transmitter channel spacing shall be: 25/12.5 kHz in the 700 MHz. range; 25/12.5 kHz in the 800 MHz range; 30/25/12.5 kHz in the VHF range; 25/12.5 kHz in UHF.
- 3.2.5.2 The frequency separation shall be the full bandwidth.
- 3.2.5.3 Frequency stability shall be: $\pm 0.00015\%$ in 700 Mhz, $\pm 0.00015\%$ in 800 Mhz., $\pm 0.0002\%$ in VHF, $\pm 0.0002\%$ in UHF R-1, $\pm 0.0002\%$ in UHF R-2 frequency ranges.
- 3.2.5.4 Audio distortion shall be 2% in all frequency ranges.
- 3.2.5.5 FM Hum and Noise at 25 kHz separation shall be: -50 dB in 700 MHz and 800 MHz, -53 dB in VHF, and UHF. At 12.5 kHz separation shall be - 48 dB in 700 MHz and 800 MHz, -52 dB in VHF, and -50 dB in UHF.
- 3.2.5.6 Modulation Fidelity (C4FM) for 12.5 kHz digital channel shall be ± 2.8

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000029

kHz. in all frequency ranges.

- 3.2.6 Digital Single Band mobile radio shall be P-25 compliant, P-25 Trunking if an option shall be included.
- 3.2.7 Digital Single Band mobile radio shall be configured to operate in one of the following configurations: VHF (136-174 Mhz), UHF (380-470 Mhz), 700/800 (764-870Mhz). Each frequency range shall be listed as a separate option in the Pricing Pages.
- 3.2.8 Digital Single Band mobile radio shall be capable of scanning both Analog channels and digital channels in the same scan list.
 - 3.2.8.1 Radio shall be capable of using and storing user defined scan lists.
 - 3.2.8.2 Predefined scan lists may be edited by the user utilizing buttons on the radio.
 - 3.2.8.3 Scan lists shall be able to be established at the user/keypad level.
 - 3.2.8.4 Scanning shall be enabled and disabled by depressing no more than one button one time.
 - 3.2.8.7 The radio shall be able to simultaneously scan both bands in the radio as well as "Trunking" and "Conventional" channels.
- 3.2.9 Digital Single Band mobile radio shall be capable of Over-The-Air Programming (OTAP) and Over-The-Air Rekeying (OTAR).
 - 3.2.9.1 The radio shall have OTAP enabled.
 - 3.2.9.2 The manufacturer's OTAP infrastructure software and hardware must be compatible and operational through the existing SORN equipment and software connected to the Motorola Core Switch to facilitate OTAP, or it must be furnished at no additional charge.
- 3.2.10 Digital Single Band mobile radio shall meet the following Standards: MIL-STD 810C, MIL-STD 810D, MIL-STD 810E, MIL-STD 810F, MIL-STD 810G.
- 3.2.11 Digital Single Band mobile radio shall be capable of using multiple control head configurations and Vendor shall list each control head configuration as an option on the Pricing Pages.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000030

- 3.2.12** Receiver channel spacing shall be 25/12.5 kHz in 700 MHz, 800 MHz, and UHF. Receiver channel spacing shall be 30/25/12.5 kHz. in the VHF Range.

3.2.12.1 Maximum frequency separation shall be full bandsplit for each frequency range.

3.2.12.2 Audio output power at 3% distortion shall be 7.5 W or 15 W for all frequency ranges.

3.2.12.3 Receiver frequency stability shall be +/- 0.8 PPM for frequency ranges.

3.2.12.4 Analog sensitivity at 12dB SINAD shall be -121 dBm for 700 MHz and 800 MHz. Analog sensitivity at 12dB SINAD shall be -123 dBm using a pre-amp and -119 dBm standard for VHF, and UHF range.

3.2.12.5 Digital sensitivity at 5% BER shall be -121.5 dBm for 700 MHz and 800 MHz. Digital sensitivity at 5% BER shall be - 123 dBm using a pre-amp and - 119 dBm standard for VHF, and UHF range.

3.2.12.6 Intermodulation at 25 kHz shall be 82 dB for 700 MHz and 800 MHz. Intermodulation at 25 kHz using a pre-amp shall be 84 dB in VHF, and 82 dB in UHF. Intermodulation at 25 kHz without a pre-amp shall be 86 dB for VHF, and UHF.

3.2.12.7 Intermodulation at 12.5 kHz shall be 82 dB for 700 MHz and 800 MHz. Intermodulation at 12.5 kHz using a pre-amp shall be 85 dB in VHF, and 83 dB in UHF. Intermodulation at 12.5 kHz without a pre-amp shall be 86 dB in VHF and 85 dB in UHF.

3.2.12.8 Spurious rejection shall be 91 dB for 700 MHz and 800 MHz, 95 dB for VHF, and 93 dB for UHF.

3.2.12.9 Audio Distortion as rated shall be 1.2%.

3.2.12.10 FM Hum and Noise at 25 kHz separation shall be 59 dB for 700 MHz, 800 MHz and VHF, and 55 dB for UHF.

3.2.12.11 FM Hum and Noise at 12.5 kHz separation shall be 50 dB for all frequency ranges.

3.2.12.12 Selectivity at 25 kHz shall be 85 dB for all frequency ranges, at 12.5 kHz it shall be 75 dB for all frequency ranges, at 30 kHz it shall be 90 dB for VHF.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000031

3.2.13 Digital Single Band mobile radio shall operate at 13.8V DC +/- 20%, Negative Ground

3.2.13.1 Standby current at 13.8 V shall be no greater than 0.85A for all frequency ranges.

3.2.13.2 Receive current at rated audio at 13.8V shall be no greater than 3.2A for all frequency ranges.

3.2.13.3 Transmit current at rated power shall be: 136-174 MHz (10-50 Watts), 13A (50 W), 8A (15W); 380-470 MHz (10-40 Watts), 11A (40 W), 8A (15W); 450-520 MHz (10-45 Watts), 11A (45 W), 8A (15W); 764-870 MHz (10-35 Watts), 12A (50W), 8A (15W); 136-174 MHz (25-110 Watts) 20A (100W), 380-470 MHz (25-110Watts) 24A (100W).

3.2.14 Digital Single Band mobile radio shall be Integrated GPS capable.

3.2.14.1 GPS shall be capable of receiving at least 12 channels.

3.2.14.2 GPS tracking sensitivity shall be -153dBm or better.

3.2.14.3 GPS accuracy shall be <10 meters (95%).

3.2.14.4 GPS cold start shall be <60 seconds (95%).

3.2.14.5 GPS hot start shall be <10 seconds (95%).

3.2.14.6 GPS mode of operation shall be Autonomous.

3.2.15 Digital Single Band mobile radio shall support the following trunking standards: clear or digital encrypted ASTRO 25 Trunked operation.

3.2.16 Digital Single Band mobile radio shall be capable of Analog MDC-1200 and Digital APCO P25 Conventional Systems Configurations.

3.2.17 Digital Single Band mobile radio shall be capable of Embedded Digital signaling (ASTRO and ASTRO 25).

3.2.17.1 Astro Mode signaling rate shall be 9.6kbps.

3.2.17.2 Digital ID capacity shall be 10,000,000 Conventional / 48,000 Trunking.

3.2.17.3 Digital access codes shall be at least 4,096 network site addresses.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000032

- 3.2.17.4** Astro Digital user Group network site addresses shall be at least 4,096 network addresses.
- 3.2.17.5** Project 25-CAI Digital User Group addresses shall be at least 65,000 Conventional / 4,096 Trunking.
- 3.2.18** Digital Single Band mobile radio must use Windows XP or newer software for all programming functions.
- 3.2.18.1** Programming cable must use USB technology to connect to the programming computer.
- 3.2.18.2** All currently licensable frequencies shall be considered acceptable to the unit.
- 3.2.18.3** Each channel shall be individually programmable with regard to wideband/narrowband operation, digital/analog, trunking/non-trunking, encode/decode, encrypted/non-encrypted, transmit frequency, receive frequency, digital/analog CTCSS tones/no-tones.
- 3.2.18.4** The radio shall have an alphanumeric display with a minimum of 2 rows of 14 characters each.
- 3.2.18.5** The radio shall have a minimum of 5 programmable function buttons.
- 3.2.18.6** The radio shall have an "emergency" button with a clearly distinctive color.
- 3.2.18.7** The radio shall have a menu navigation button capability.
- 3.2.19** Each Digital Single Band Mobile radio shall have the following Options available for purchase:
- 3.2.19.1** Digital Single Band Mobile radio, 1250 channels, 380-470 MHz with, AES Encryption, Dash Mount (low-medium power as specified in section 3.2.5).
- 3.2.19.1.1** Digital Single Band Mobile Radio, 1250 channels VHF, with AES encryption, Dash Mount (low-medium power as specified in section 3.1.5).
- 3.2.19.2** Digital Single Band Mobile radio with, 1250 channels AES Encryption, 380-470 MHz, Remote mount (low-medium power as specified in Section 3.2.5).

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000033

3.2.19.2.1 Digital Single Band Mobile Radio, 1250 channels VHF, with AES encryption, remote Mount (low-medium power as specified in section 3.1.5).

3.2.19.2.4 Hand Held Full Function Control Head for Digital Single Band Mobile radio with Remote Mount.

3.2.19.3 Dual control head option for Remote mount Digital Single Band Mobile radio.

3.2.19.4 Digital Single Band Mobile radio, 1250 channels, 380-470 MHz, with NO AES Encryption, Dash mount (low-medium power as specified in Section 3.2.5).

3.2.19.4.1 Digital Single Band Mobile Radio, 1250 channels VHF, NO AES encryption, dash Mount (low-medium power as specified in section 3.1.5).

3.2.19.5 Digital Single Band Mobile radio, 1250 channels, 380-470 MHz, with NO AES Encryption, remote mount (low-medium power as specified in Section 3.2.5).

3.2.19.5.1 Digital Single Band Mobile Radio, 1250 channels VHF, NO AES encryption, remote Mount (low-medium power as specified in section 3.1.5).

3.2.20 Spare Microphone for Digital Single Band Mobile radio.

3.2.21 Programming Software for Digital Single Band Mobile Radio. Programming software shall include unlimited seats.

3.2.22 Programming Cable for Digital Single Band Mobile radio.

3.2.23 High Power Option (up to 110 watts added on to Digital Single Band Mobile radio (as specified in section 3.1.5).

3.2.24 GPS enable shall be an option.

3.2.24.1 GPS antenna for Digital Single Band Mobile Radio

3.2.25 AC power supply to convert a Digital Single Band Mobile radio into a base station.

3.2.26 Desk microphone for a Digital Single Band radio.

- 3.2.27 Optional remote speaker for Digital Single Band Mobile Radio.
- 3.2.28 Encryption Key Loader cable (for KVL3000) for Digital Single Band Mobile radio.
- 3.2.29 The Digital Single Dual Band Mobile radio shall be capable of having at least two "Dynamic" zones in the radio permitting users to create user defined zones of channels/talkgroups.
- 3.2.30 Digital Single Dual Band portable radio shall be Phase 2 capable and must meet current P25 standards, and be backwards and forwards compatible and future-ready to support new technology and data applications.
- 3.2.31 Over-The-Air Programming (OTAP) shall be enabled, unless requested to not be included.
 - 3.2.31.1 There shall be an option for removing the OTAP feature from the radio.
- 3.2.32 Over-The-Air Rekeying (OTAR) shall be available as an option to be enabled.

3.3 DIGITAL DUAL BAND PORTABLE RADIO

- 3.3.1 Digital Dual Band Portable radio shall be capable of at least one thousand two hundred (1200) channels, shall have a dual display The front display shall have a full bitmap color LCD display with 4 lines of text of at least 14 characters, 2 lines of ICONs, 1 menu line with 3 menus and be white backlit. The backlit keypad shall have at least 2 soft keys, 4 direction Navigation key, Home and button, and a 4 X 3 keypad and shall be P-25 Phase 2 compliant.
 - 3.3.1.1 Digital Dual Band Portable shall be delivered with the following: the radio, antenna, battery, spare battery, a hard plastic case, a rapid charger, a 3" belt clip, a remote speaker microphone with a 3.5mm audio jack, and instruction manual.
- 3.3.2 Digital Dual Band Portable radio shall be capable of operating in the following frequency bands: VHF (136-174 Mhz.), UHF(380-470 Mhz.), 700 Mhz. (764-776 Mhz., 794-806 Mhz. 800 Mhz. (806-824 Mhz., 851-870 Mhz.).
- 3.3.3 Digital Dual Band portable radio shall be capable of utilizing the following channel spacing: 6.25 Khz., 12.5 Khz. and 25 Khz.

3.3.4 Digital Dual Band portable radio shall be capable of using the following encryption algorithms: AES/DES-OFB.

3.3.4.1 Digital Dual Band portable radio shall have an Encryption Algorithm Capacity of eight (8).

3.3.4.2 Encryption Keys Module for the Digital Dual Band mobile radio shall be capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID).

3.3.4.3 The Encryption frame re-sync interval shall be: P25 CAI 300 mSec.

3.3.4.4 Encryption keying shall be loaded by a Key Variable Loader (KVL).

3.3.4.5 Synchronization shall be: XL-Counter Addressing ; OFB-Output Feedback.

3.3.4.6 The Vector Generator shall be the National Institute of Standards and Technology (NIST) approved random number generator.

3.3.4.7 The encryption shall be digital.

3.3.4.8 Key erasure shall be accomplished by keyboard command and tamper detection.

3.3.4.9 Encryption standards shall be: FIPS 140-2 Level 3, FIPS 197.

3.3.4.10 Key storage shall be in tamper protected volatile or non-volatile memory.

3.3.5 Digital Dual Band portable radio shall be capable of the following transmit power levels: 1- 2.5 watts (700 Mhz), 1- 3 watts (800 Mhz.), 1 - 6 watts (VHF), 1- 5 watts (UHF).

3.3.5.1 Transmitter channel spacing shall be: 25/12.5 kHz in the 700 MHz. range; 25/12.5 kHz in the 800 MHz range; 30/25/12.5 kHz in the VHF range; 25/12.5 kHz in UHF.

3.3.5.2 The frequency separation shall be the full bandsplit.

3.3.5.3 Frequency stability shall be +/- 0.00010% in all frequency ranges.

3.3.5.4 Audio distortion shall be 0.60% in 700Mhz. range, 1 % in 800 Mhz range, 0.50% in VHF range, 0.50% in UHF range.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000036

3.3.5.5 FM Hum and Noise at 25 kHz separation shall be: 48 dB in 700 MHz., -47 dB in 800 MHz, 47 dB in VHF, and UHF. At 12.5 kHz separation shall be -46 dB in 700 MHz., -45 dB in 800 MHz, VHF, and UHF.

3.3.6 Digital Dual Band portable radio shall be P-25 compliant, P-25 Trunking if an option shall be included.

3.3.7 Digital Dual Band portable radio shall be capable of multi-band operation. Multi-band means the following: a multi-band radio shall be capable of operating in two bands in the same radio. Each multi-band radio shall be configured to operate in one of the following configurations: VHF (136-174 Mhz) and UHF (380-470 Mhz), VHF (136-174 Mhz) and 700/800 (764-870 Mhz), UHF (380-470 Mhz), 700/800 (764-870 Mhz), Each frequency combination shall be listed as a separate option in the Pricing Pages.

3.3.8 Digital Dual Band portable radio shall be capable of scanning both bands of the radio at the same time.

3.3.8.1 Radio shall be capable of using and storing user defined scan lists.

3.3.8.2 Predefined scan lists may be edited by the user utilizing buttons on the radio.

3.3.8.3 Scan lists shall be able to be established at the user/keypad level.

3.3.8.4 Scanning shall be enabled and disabled by depressing no more than one button one time.

3.3.8.5 Digital Dual Band Mobile radio shall be capable of having a separate scan list for each zone as well as at least two "Dynamic" scan lists for the radio.

3.3.8.6 The radio shall be able to simultaneously scan both bands in the radio as well as "Trunking" and "Conventional" channels.

3.3.9 Digital Dual Band portable radio shall be capable of Over-The-Air Programming (OTAP) and Over-The-Air Rekeying (OTAR).

3.3.9.1 The radio shall have OTAP enabled.

3.3.9.2 The manufacturer's OTAP infrastructure software and hardware must be compatible and operational through the existing SIRN equipment and software connected to the Motorola Core Switch to facilitate OTAP, or it must be furnished at no additional charge.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

- 3.3.10** Digital Dual Band portable radio shall meet the following standards: MIL-STD 810C, MIL-STD 810D, MIL-STD 810E, MIL-STD 810F, MIL-STD 810G.
- 3.3.11** Digital Dual Band portable radio shall be Phase 2 capable and must meet current P25 standards, and be backwards and forwards compatible and future-ready to support new technology and data applications.
- 3.3.12** Receiver channel spacing shall be 25/12.5 kHz in 700 MHz, 800 MHz, and UHF. Receiver channel spacing shall be 30/25/12.5 kHz in the VHF Range.
- 3.3.12.1** Maximum frequency separation shall be full bandsplit for each frequency range.
- 3.3.12.2** Audio output power at rated shall be 1000 mW for all frequency ranges.
- 3.3.12.3** Receiver frequency stability shall be +/- 0.8 PPM for frequency ranges.
- 3.3.12.4** Analog sensitivity at 12dB SINAD shall be 0.250 μ V for 700 MHz and 800 MHz. Analog sensitivity at 12dB SINAD shall be 0.216 μ V for VHF and 0.234 μ V for UHF.
- 3.3.12.5** Digital sensitivity at 5% BER shall be 0.251 μ V for 700 MHz and 800 MHz. Digital sensitivity at 5% BER shall be 0.188 μ V for VHF and 0.207 μ V for UHF.
- 3.3.12.6** Sensitivity at 25 kHz shall be 75.7 dB for 700 MHz and 800 MHz. Sensitivity at 25 kHz shall be 79.3 dB in VHF, and 78.3 dB in UHF.
- 3.3.12.7** Sensitivity at 12.5 kHz shall be 67.5 dB for 700 MHz and 800 MHz. Sensitivity at 12.5 kHz shall be 70 dB in VHF, and 68.1 dB in UHF.
- 3.3.12.8** Spurious rejection shall be 76.6 dB for 700 MHz and 800 MHz, 93.2 dB for VHF, 80.3 dB for UHF.
- 3.3.12.9** Audio Distortion as rated shall be 0.9% for 700MHz and 800 MHz, 1.2% for VHF and 0.91% for UHF.
- 3.3.12.10** FM Hum and Noise at 25 kHz separation shall be -54 dB for 700 MHz and 800 MHz and -53.8 dB for VHF, and -53.5 dB for UHF.
- 3.3.12.11** FM Hum and Noise at 12.5 kHz separation shall be -48 dB for 700

MHz and 800 MHz and VHF, it shall -47.4 dB for UHF.

3.3.12.12 Intermodulation shall be 80 dB for 700 MHz and 800 MHz, 80.5 dB for VHF and 80.2 dB for UHF.

3.3.13 Digital Dual Band portable radio shall be Integrated GPS capable.

3.3.13.1 GPS shall be capable of receiving at least 12 channels.

3.3.13.2 GPS tracking sensitivity shall be -151dBm or better.

3.3.13.3 GPS accuracy shall be <10 meters (95%).

3.3.13.4 GPS cold start shall be <60 seconds (95%).

3.3.13.5 GPS hot start shall be <10 seconds (95%).

3.3.13.6 GPS mode of operation shall be Autonomous.

3.3.14 Digital Dual Band portable radio shall support the following trunking standards: clear or digital encrypted ASTRO 25 Trunked operation.

3.3.15 5 Digital Dual Band portable radio shall be capable of Analog MDC-1200 and Digital APCO P25 Conventional Systems Configurations.

3.3.16 Digital Dual Band portable radio shall be capable of Embedded Digital signaling (ASTRO and ASTRO 25).

3.3.16.1 Astro Mode signaling rate shall be 9.6kbps.

3.3.16.2 Digital ID capacity shall be 10,000,000 Conventional / 48,000 Trunking.

3.3.16.3 Digital access codes shall be at least 4,096 network site addresses.

3.3.16.4 Astro Digital user Group network site addresses shall be at least 4,096 network addresses.

3.3.16.5 Project 25-CAI Digital User Group addresses shall be at least 65,000 Conventional / 4,096 Trunking.

3.3.17 Digital Dual Band portable radio must use Windows XP or newer Software for all programming functions.

3.3.17.1 Programming cable must use USB technology to connect to the programming computer.

3.3.17.2 All currently licensable frequencies shall be considered acceptable to the unit.

3.3.17.3 Each channel shall be individually programmable with regard to wideband/narrowband operation, digital/analog, trunking/non-trunking, encode/decode, encrypted/non-encrypted, transmit frequency, receive frequency, digital/analog CTCSS tones/no-tones.

3.3.17.4 The radio shall have an alphanumeric display with a minimum of 2 rows of 14 characters each.

3.3.17.5 The radio shall have a minimum of 5 programmable function buttons.

3.3.17.6 The radio shall have an "emergency" button with a clearly distinctive color.

3.3.17.7 The radio shall have a menu navigation button capability.

3.3.18 Each Digital Dual Band portable radio shall have the following options available for purchase if purchased with a UHF option.

3.3.18.1 Digital Dual Band portable radio, Statewide Operation 380-470 MHz UHF and VHF operation with, AES Encryption (SIRN Tier 1).

3.3.18.1.1 Digital Dual Band Portable Radio, Statewide Operation 380-470 MHz UHF and 700 MHz operation with AES encryption (SIRN Tier 1).

3.3.18.1.2 Digital Dual Band Portable Radio, Statewide Operation 380-470 MHz UHF and 800 MHz operation with AES encryption (SIRN Tier 1).

3.3.18.2 Digital Dual Band portable radio, Statewide Operation 380-470 MHz UHF and VHF operation without AES Encryption, (SIRN Tier 2).

3.3.18.2.1 Digital Dual Band Portable Radio. Statewide Operation 380-470 MHz and 700 MHz operation without AES Encryption, (SIRN Tier 2).

3.3.18.2.2 Digital Dual Band Portable Radio, Statewide Operation 380-470 MHz and 800 MHz operation without AES Encryption, (SIRN Tier 2).

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000040

- 3.3.19 Programming Software for Digital Dual Band portable Radio. Programming software shall include unlimited seats.
- 3.3.20 Programming Cable for Digital Dual Band portable radio.
- 3.3.21 Public Safety Yellow housing
- 3.3.22 GPS enable shall be an option.
- 3.3.23 Spare speaker microphone w/3.5mm audio jack.
- 3.3.24 Spare battery.
- 3.3.25 Spare ac rapid charger.
- 3.3.26 Spare antenna for Digital Dual Band Portable Radio.
 - 3.3.26.1 Spare GPS/Dual Band antenna for Digital Dual Band Portable Radio.
- 3.3.27 Battery life shall have the capability to be 8 hours or greater. A Lithium-Ion battery or Lithium Polymer battery is acceptable. Nickel-Cadmium batteries are not acceptable.
 - 3.3.27.1 A rapid charge battery shall be provided and shall be able to reach full capacity in 4 hours.
 - 3.3.27.2 The radio shall have a duty cycle of 5/5/90 per Telecommunications Industry Association/Electronic Industry Alliance (TIA/EIA), specification 903 (5% receive/5% transmit/90% standby).
- 3.3.28 Spare hard plastic case with a 3 inch belt clip.
- 3.3.29 Encryption Key Loader cable (for KVL3000) for Digital Dual Band Portable Radio (2000 channels).
- 3.3.30 The Digital Dual Band Portable radio shall be capable of having at least two "Dynamic" zones in the radio permitting users to create user defined zones of channels/talkgroups.
- 3.3.31 Over-The-Air Programming (OTAP) shall be enabled, unless requested to not be included.

3.3.31.1 There shall be an option for removing the OTAP feature from the radio.

3.3.32 Over-The-Air Rekeying (OTAR) shall be available as an option to be enabled.

3.4 DIGITAL SINGLE BAND PORTABLE RADIO

3.4.1 Digital Single Band Portable radio shall be capable of at least one thousand (1000) Channels, have a dual display. The front display shall have a full bitmap color LCD display with 4 lines of text of at least 14 characters, 2 lines of ICONs, 1 menu line with 3 menus and be white backlit. The backlit keypad shall have 3 soft keys, 4 direction Navigation key, Home and Data buttons and shall be P-25 Phase 2 compliant.

3.4.1.1 Digital Single Band Portable shall be delivered with the following: the radio, antenna, battery, spare battery, a hard plastic case, a rapid charger, a 3" belt clip, a remote speaker microphone with a 3.5mm audio jack, and instruction manual.

3.4.2 Digital Single Band Portable radio shall be capable of operating in the following frequency bands: VHF (136-174 Mhz.), UHF (380-470 Mhz.), 700 Mhz. (764-776 Mhz., 794-806 Mhz.) 800 Mhz. (806-824 Mhz., 851-870 Mhz.).

3.4.3 Digital Single Band portable radio shall be capable of utilizing the following channel spacing: 6.25 Khz., 12.5 Khz. and 25 Khz.

3.4.4 Digital Single Band portable radio shall be capable of using the following encryption algorithms: AES/DES-OFB.

3.4.4.1 Digital Single Band portable radio shall have an Encryption Algorithm Capacity of eight (8).

3.4.4.2 Encryption Keys Module for the Digital Single Band mobile radio shall be capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID).

3.4.4.3 The Encryption frame re-sync interval shall be: P25 CAI 300 mSec.

3.4.4.4 Encryption keying shall be loaded by a Key Variable Loader (KVL).

3.4.4.5 Synchronization shall be: XL-Counter Addressing ; OFB-Output Feedback.

3.4.4.6 The Vector Generator shall be the National Institute of Standards and

Technology (NIST) approved random number generator.

3.4.4.7 The encryption shall be digital.

3.4.4.8 Key erasure shall be accomplished by keyboard command and tamper detection.

3.4.4.9 Encryption standards shall be: FIPS 140-2 Level 3, FIPS 197.

3.4.4.10 Key storage shall be in tamper protected volatile or non-volatile memory.

3.4.5 Digital Single Band portable radio shall be capable of the following transmit power levels: 1- 3 watts (700 Mhz), 1- 3 watts (800 Mhz.), 1 - 6 watts (VHF), 1- 5 watts (UHF).

3.4.5.1 Transmitter channel spacing shall be: 25/12.5 kHz in the 700 MHz. range; 25/12.5 kHz in the 800 MHz range; 30/25/12.5 kHz in the VHF range; 25/12.5 kHz in UHF.

3.4.5.2 The frequency separation shall be the full bandsplit.

3.4.5.3 Frequency stability shall be +/- 0.00010% in all frequency ranges.

3.4.5.4 Audio distortion shall be 0.60% in 700Mhz. range, 1 % in 800 Mhz range, 0.50% in VHF range, 0.50% in UHF range.

3.4.5.5 FM Hum and Noise at 25 kHz separation shall be: -48 dB in 700 MHz., -47 dB in 800 MHz, -47 dB in VHF, and UHF range 1. At 12.5 kHz separation shall be -46 dB in 700 MHz., -45 dB in 800 MHz, VHF, and UHF.

3.4.6 Digital Single Band portable radio shall be P-25 compliant, P-25 trunking if an option shall be included.

3.4.7 Digital Single Band portable radio shall be capable of single band operation.

3.4.8 Digital Single Band portable radio shall be capable of scanning both analog channels and digital channels in the same scan list.

3.4.8.1 Radio shall be capable of using and storing user defined scan lists.

3.4.8.2 Predefined scan lists may be edited by the user utilizing buttons on the radio.

3.4.8.3 Scan lists shall be able to be established at the user/keypad level.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000043

-
- 3.4.8.4 Scanning shall be enabled and disabled by depressing no more than one button one time.
- 3.4.8.5 The radio shall be able to simultaneously scan both bands in the radio as well as "Trunking" and "Conventional" channels.
- 3.4.9 Digital Single Band portable radio shall be capable of Over-The-Air Programming (OTAP) and Over-The-Air Rekeying (OTAR).
- 3.4.9.1 The radio shall have OTAP enabled.
- 3.4.9.2 The manufacturer's OTAP infrastructure software and hardware must be compatible and operational through the existing SIRN equipment and software connected to the Motorola Core Switch to facilitate OTAP, or it must be furnished at no additional charge.
- 3.4.10 Digital Single Band portable radio shall meet the following standards: MIL-STD 810C, MIL-STD 810D, MIL-STD 810E, MIL-STD 810F, MIL-STD 810G.
- 3.4.11 Digital Single Band portable radio shall be Phase 2 capable and must meet current P25 standards, and be backwards and forwards compatible and future-ready to support new technology and data applications.
- 3.4.12 Receiver channel spacing shall be 25/12.5 kHz in 700 MHz, 800 MHz, UHF. Receiver channel spacing shall be 30/25/12.5 kHz in the VHF Range.
- 3.4.12.1 Maximum frequency separation shall be full bandsplit for each frequency range.
- 3.4.12.2 Audio output power at rated shall be 500 mW for all frequency ranges.
- 3.4.12.3 Receiver frequency stability shall be +/- 0.8 PPM for frequency ranges.
- 3.4.12.4 Analog sensitivity at 12dB SINAD shall be 0.250 μ V for 700 MHz and 800 MHz. Analog sensitivity at 12dB SINAD shall be 0.216 μ V for VHF and 0.234 μ V for UHF.
- 3.4.12.5 Digital sensitivity at 5% BER shall be 0.251 μ V for 700 MHz and 800 MHz. Digital sensitivity at 5% BER shall be 0.188 μ V for VHF and 0.207 μ V for UHF.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000044

- 3.4.12.6** Selectivity at 25 kHz shall be -75.7 dB for 700 MHz and 800 MHz. Sensitivity at 25 kHz shall be -79.3 dB in VHF, and -78.3 dB in UHF.
- 3.4.12.7** Selectivity at 12.5 kHz shall be -67.5 dB for 700 MHz and 800 MHz. Sensitivity at 12.5 kHz shall be -70 dB in VHF, and -68.1 dB in UHF.
- 3.4.12.8** Spurious rejection shall be -76.6 dB for 700 MHz and 800 MHz, -93.2 dB for VHF, -80.3 dB for UHF.
- 3.4.12.9** Audio Distortion as rated shall be 0.9% for 700MHz and 800 MHz, 1.2% for VHF and 0.91% for UHF.
- 3.4.12.10** FM Hum and Noise at 25 kHz separation shall be -54 dB for 700 MHz and 800 MHz and -53.8 dB for VHF, and -53.5 dB for UHF.
- 3.4.12.11** FM Hum and Noise at 12.5 kHz separation shall be -48 dB for 700 MHz and 800 MHz and VHF, it shall -47.4 dB for UHF.
- 3.4.12.12** Intermodulation shall be -80 dB for 700 MHz and 800 MHz, -80.5 dB for VHF and -80.2 dB for UHF.
- 3.4.13** Digital Single Band portable radio shall be Integrated GPS capable.
- 3.4.13.1** GPS shall be capable of receiving at least 12 channels.
- 3.4.13.2** GPS tracking sensitivity shall be -159 dBm or better.
- 3.4.13.3** GPS accuracy shall be <10 meters (95%).
- 3.4.13.4** GPS cold start shall be <60 seconds (95%).
- 3.4.13.5** GPS hot start shall be <10 seconds (95%).
- 3.4.13.6** GPS mode of operation shall be Autonomous.
- 3.4.14** Digital Single Band portable radio shall support the following trunking standards: clear or digital encrypted ASTRO 25 Trunked operation.
- 3.4.15** Digital Single Band portable radio shall be capable of Analog MDC-1200 and Digital APCO P25 Conventional Systems Configurations.
- 3.4.16** Digital Single Band portable radio shall be capable of Embedded Digital signaling (ASTRO and ASTRO 25).

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000045

- 3.4.16.1 Astro Mode signaling rate shall be 9.6kbps.
- 3.4.16.2 Digital ID capacity shall be 10,000,000 Conventional / 48,000 Trunking.
- 3.4.16.3 Digital access codes shall be at least 4,096 network site addresses.
- 3.4.16.4 Astro Digital user Group network site addresses shall be at least 4,096 network addresses.
- 3.4.16.5 Project 25-CAI Digital User Group addresses shall be at least 65,000 Conventional / 4,096 Trunking.
- 3.4.17 Digital Single Band portable radio must use Windows XP or newer software for all programming functions.
 - 3.4.17.1 Programming cable must use USB technology to connect to the programming computer.
 - 3.4.17.2 All currently licensable frequencies shall be considered acceptable to the unit.
 - 3.4.17.3 Each channel shall be individually programmable with regard to wideband/narrowband operation, digital/analog, trunking/non-trunking, encode/decode, encrypted/non-encrypted, transmit frequency, receive frequency, digital/analog CTCSS tones/no-tones.
 - 3.4.17.4 The radio shall have an alphanumeric top display with a minimum of 2 rows of 14 characters each, plus a full bitmap color LCD display of 4 rows of text X 14 characters, 2 lines of icons, 1 menu line X 3 menus.
 - 3.4.17.5 The radio shall have a backlight keyboard, 3 softkeys, a 4 direction navigation key, home and data buttons.
 - 3.4.17.6 The radio shall have an "emergency" button with a clearly distinctive color.
- 3.4.18 Each Digital Single Band portable radio shall have the following options available for purchase.
 - 3.4.18.1 Digital Single Band portable radio, Statewide Operation 380-470 MHz UHF with AES Encryption (SIRN Tier 1)
 - 3.4.18.1.1 Digital Single Band Portable radio, VHF operation with

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

AES encryption.

3.4.18.2 Digital Single Band portable radio, Statewide Operation 380-470 MHz UHF without AES Encryption, (SIRN Tier 2)

3.4.18.2.1 Digital Single Band Portable radio, VHF operation without AES encryption.

3.4.19 Programming Software for Digital Single Band portable Radio. Programming software shall include unlimited seats.

3.4.20 Programming Cable for Digital Single Band portable radio.

3.4.21 Public Safety Yellow housing

3.4.22 GPS enable shall be an option.

3.4.23 Spare speaker microphone w/3.5mm audio jack.

3.4.24 Spare battery.

3.4.25 Spare ac rapid charger.

3.4.26 Spare antenna for Digital Single Band Portable Radio.

3.4.26.1 Spare GPS capable antenna for Digital Single Band Portable Radio.

3.4.27 Battery life shall have the capability to be 8 hours or greater. A Lithium-Ion battery or Lithium Polymer battery is acceptable. Nickel-Cadmium batteries are not acceptable.

3.4.27.1 A rapid charge battery shall be provided and shall be able to reach full capacity in 4 hours.

3.4.27.2 The radio shall have a duty cycle of 5/5/90 per Telecommunications Industry Association/Electronic Industry Alliance (TIA/EIA), specification 90(5% receive/5% transmit/90% standby).

3.4.28 Spare hard plastic case with 3 inch belt clip.

3.4.29 Encryption Key Loader cable (for KVL3000+) for Digital Single Band Portable Radio (2000 channels).

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

- 3.4.30** The Digital Single Band Portable radio shall be capable of having at least two “Dynamic” zones in the radio permitting users to create user defined zones of channels/talkgroups.
- 3.4.31** Over-The-Air Programming (OTAP) shall be enabled, unless requested to not be included.
- 3.4.31.1** There shall be an option for removing the OTAP feature from the radio.
- 3.4.32** Over-The-Air Rekeying (OTAR) shall be available as an option to be enabled.

3.5 DIGITAL SINGLE BAND MOBILE RADIO (DASH MOUNT ONLY)

- 3.5.1** Digital Single Band mobile radio shall be capable of at least 512 channel operation and shall be P-25 Phase 2 compliant.
- 3.5.1.1** Each Digital Single Band Mobile Radio shall come with the following: Specified radio, under dash mounting bracket, remote speaker, microphone, microphone hang-up clip, all necessary cables, including ignition sense wire, mounting hardware, and instruction manual.
- 3.5.2** Digital Single Band mobile radio shall be capable of operating in the following frequency bands: VHF (136-174 Mhz.), UHF R1(380-470 Mhz.), 700 Mhz. (764-776 Mhz, 794-806 Mhz.), 800 Mhz. (806-824 Mhz., 851-870 Mhz.).
- 3.5.3** Digital Single Band mobile radio shall be capable of utilizing the following channel spacing: 6.25 Khz., 12.5 Khz., 25 Khz., and 30 Khz.
- 3.5.4** Digital Single Band mobile radio shall be capable of using the following encryption algorithms: AES, and ADP
- 3.5.4.1** Digital Single Band mobile radio shall have an Encryption Algorithm Capacity of one (1).
- 3.5.4.2** Encryption Keys Module for the Digital Single Band mobile radio shall be capable of storing 1024 keys. Programmable for 64 Common Key Reference (CKR) or 16 Physical Identifier (PID).
- 3.5.4.3** The Encryption frame re-sync interval shall be: P25 CAI 300 mSec.
- 3.5.4.4** Encryption keying shall be loaded by a Key Variable Loader (KVL).
- 3.5.4.5** Synchronization shall be: XL-Counter Addressing ; OFB-Output Feedback.

-
- 3.5.4.6 The Vector Generator shall be the National Institute of Standards and Technology (NIST) approved random number generator.
- 3.5.4.7 The encryption shall be digital.
- 3.5.4.8 Key erasure shall be accomplished by keyboard command and tamper detection.
- 3.5.4.9 Encryption standards shall be: FIPS 140-2 Level 3, FIPS 197.
- 3.5.4.10 Key storage shall be in tamper protected volatile or non-volatile memory.
- 3.5.5 Digital Single Band mobile radio shall be capable of the following transmit power levels: 10-30 watts (700 MHz), 10-35 watts (800 Mhz.), 10-50 watts (VHF), 10-40 watts (UHF R-1) 10-45 watts (UHF R-2) 450-485 MHz , 10-40 watts (UHF R-2 485-512 Mhz). 10-25 watts (UHF R-2 512-520 MHz). The Vendor shall list each power range option as a separate listing in the Pricing Pages.
- 3.5.5.1 Transmitter channel spacing shall be: 25/12.5 kHz in the 700 MHz range; 25/12.5 kHz in the 800 MHz range; 30/25/12.5 kHz in the VHF range; 25/12.5 kHz in UHF Range 1 and 25/12.5 kHz in UHF Range 2.
- 3.5.5.2 The frequency separation shall be the full bandwidth.
- 3.5.5.3 Frequency stability shall be: $\pm 0.00015\%$ in 700 MHz, $\pm 0.00015\%$ in 800 Mhz., $\pm 0.0002\%$ in VHF, $\pm 0.0002\%$ in UHF R-1, $\pm 0.0002\%$ in UHF R-2 frequency ranges.
- 3.5.5.4 Audio distortion shall be 2% in all frequency ranges.
- 3.5.5.5 FM Hum and Noise at 25 kHz separation shall be: -50 dB in 700 MHz and 800 MHz, -53 dB in VHF, UHF range 1 and UHF Range 2. At 12.5 kHz separation shall be -48 dB in 700 MHz and 800 MHz, -52 dB in VHF, and -50 dB in UHF range 1 and UHF range 2.
- 3.5.5.6 Modulation Fidelity (C4FM) for 12.5 kHz digital channel shall be ± 2.8 kHz. in all frequency ranges.
- 3.5.6 Digital Single Band mobile radio shall be P-25 compliant, P-25 Trunking if an option shall be included.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000049

- 3.5.7** Digital Single Band mobile radio shall be configured to operate in one of the following configurations: VHF (136-174 MHz), UHF R1 (380-470 Mhz), and UHF R2 (450-520 Mhz), 700/800 (764-870Mhz). Each frequency range shall be listed as a separate option in the Pricing Pages.
- 3.5.8** Digital Single Band mobile radio shall be capable of scanning both analog channels and digital channels in the same scan list.
- 3.5.8.1** Radio shall be capable of using and storing user defined scan lists.
- 3.5.8.2** Predefined scan lists may be edited by the user utilizing buttons on the radio.
- 3.5.8.3** Scan lists shall be able to be established at the user/keypad level.
- 3.5.8.4** Scanning shall be enabled and disabled by depressing no more than one button one time.
- 3.5.8.5** Digital Dual Band Mobile radio shall be capable of having a separate scan list for each zone as well as at least two "Dynamic" scan lists for the radio.
- 3.5.8.6** The radio shall be able to simultaneously scan both bands in the radio as well as "Trunking" and "Conventional" channels.
- 3.5.9** Digital Single Band mobile radio shall be capable of Over-The-Air Programming (OTAP) and Over-The-Air Rekeying (OTAR).
- 3.5.9.1** The radio shall have OTAP enabled.
- 3.5.9.2** The manufacturer's OTAP infrastructure software and hardware must be compatible and operational through the existing SORN equipment and software connected to the Motorola Core Switch to facilitate OTAP, or it must be furnished at no additional charge.
- 3.5.10** Digital Single Band mobile radio shall meet the following Standards: MIL-STD 810C, MIL-STD 810D, MIL-STD 810E, MIL-STD 810E, MIL-STD 810F, MIL-STD 810G.
- 3.5.11** Digital Single Band mobile radio shall be configured as a dash mount only.
- 3.5.12** Receiver channel spacing shall be 25/12.5 kHz in 700 MHz, 800 MHz, UHF Range 1, and UHF Range 2. Receiver channel Spacing shall be 30/25/12.5 kHz in the VHF Range.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000050

3.5.12.1 Maximum frequency separation shall be full bandsplit for each frequency range.

3.5.12.2 Audio output power at 3% distortion shall be 7.5 W or 15 W for all frequency ranges.

3.5.12.3 Receiver frequency stability shall be +/- 0.8 PPM for frequency ranges.

3.5.12.4 Analog sensitivity at 12dB SINAD shall be -121 dBm for 700 MHz and 800 MHz. Analog sensitivity at 12dB SINAD shall be -123 dBm using a pre-amp and -119 dBm standard for VHF, UHF range 1 and UHF range 2.

3.5.12.5 Digital sensitivity at 5% BER shall be -121.5 dBm for 700 MHz and 800 MHz. Digital sensitivity at 5% BER shall be -123 dBm using a pre-amp and -119 dBm standard for VHF, UHF range 1 and UHF range 2.

3.5.12.6 Intermodulation at 25 kHz shall be 82 dB for 700 MHz and 800 MHz. Intermodulation at 25 kHz using a pre-amp shall be 84 dB in VHF, 82 dB in UHF range 1 and UHF range 2. Intermodulation at 25 kHz without a pre-amp shall be 86 dB for VHF, UHF range 1 and UHF range 2.

3.5.12.7 Intermodulation at 12.5 kHz shall be 82 dB for 700 MHz and 800 MHz. Intermodulation at 12.5 kHz using a pre-amp shall be 85 dB in VHF, 83 dB in UHF range 1 and UHF range 2. Intermodulation at 12.5 kHz without a pre-amp shall be 86 dB in VHF and 85 dB in UHF range 1 and UHF range 2.

3.5.12.8 Spurious rejection shall be 91 dB for 700 MHz and 800 MHz, 95 dB for VHF, 93 dB for UHF range 1 and UHF range 2.

3.5.12.9 Audio Distortion as rated shall be 1.2%.

3.5.12.10 FM Hum and Noise at 25 kHz separation shall be 59 dB for 700 MHz, 800 MHz and VHF, 55 dB for UHF range 1 and 57 dB for UHF range 2.

3.5.12.11 FM Hum and Noise at 12.5 kHz separation shall be 50 dB for all frequency ranges.

3.5.12.12 Selectivity at 25 kHz shall be 85 dB for all frequency ranges, at 12.5 kHz it shall be 75 dB for all frequency ranges, at 30 kHz it shall be 90 dB for VHF.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000051

3.5.13 Digital Single Band mobile radio shall operate at 13.8V DC \pm 20%, Negative Ground.

3.5.13.1 Standby current at 13.8 V shall be no greater than 0.85A for all frequency ranges.

3.5.13.2 Receive current at rated audio at 13.8V shall be no greater than 3.2A for all frequency Ranges.

3.5.13.3 Transmit current at rated power shall be: 136-174 MHz (10-50 Watts), 13A (50 W), 8A (15W); 380-470 MHz (10-40 Watts), 11A (40 W), 8A (15W); 450-520 MHz (10-45 Watts), 11A (45 W), 8A (15W); 764-870 MHz (10-35 Watts), 12A (50W), 8A (15W).

3.5.14 Digital Single Band mobile radio shall be Integrated GPS capable.

3.5.14.1 GPS shall be capable of receiving at least 12 channels.

3.5.14.2 GPS tracking sensitivity shall be -153dBm or better.

3.5.14.3 GPS accuracy shall be <10 meters (95%).

3.5.14.4 GPS cold start shall be <60 seconds (95%).

3.5.14.5 GPS hot start shall be <10 seconds (95%).

3.5.14.6 GPS mode of operation shall be Autonomous.

3.5.15 Digital Single Band mobile radio shall support the following trunking standards: clear or digital encrypted ASTRO 25 Trunked operation.

3.5.16 Digital Single Band mobile radio shall be capable of Analog MDC-1200 and Digital APCO P25 Conventional Systems Configurations.

3.5.17 Digital Single Band mobile radio shall be capable of Embedded Digital signaling (ASTRO and ASTRO 25).

3.5.17.1 Astro Mode signaling rate shall be 9.6kbps.

3.5.17.2 Digital ID capacity shall be 10,000,00 Conventional / 48,000 Trunking.

3.5.17.3 Digital access codes shall be at least 4,096 network site addresses.

3.5.17.4 Astro Digital user Group network site addresses shall be at least 4,096 network addresses.

3.5.17.5 Project 25-CAI Digital User Group addresses shall be at least 65,000 Conventional / 4,096 Trunking.

3.5.18 Digital Single Band mobile radio must use Windows XP or newer Software for all programming functions.

3.5.18.1 Programming cable must use USB technology to connect to the programming computer.

3.5.18.2 All currently licensable frequencies shall be considered acceptable to the unit.

3.5.18.3 Each channel shall be individually programmable with regard to wideband/narrowband operation, digital/analog, trunking/non-trunking, encode/decode, encrypted/non-encrypted, transmit frequency, receive frequency, digital/analog CTCSS tones/no-tones.

3.5.18.4 The radio shall have a full bitmap color LCD display of 3 rows of text X 14 characters, 1 lines of icons, 1 menu line X 3 menus, night/day mode button.

3.5.18.5 The radio shall have an “emergency” button with a clearly distinctive color.

3.5.19 Each Digital Single Band Mobile radio shall have the following options available for purchase:

3.5.19.1 Digital Single Band Mobile radio, (512 channels) 380-470 MHz, with, AES Encryption, Dash Mount (low- medium power as specified in section 3.5.5).

3.5.19.1.1 Digital Single Band Mobile radio, (512 channels) VHF, with AES Encryption, Dash Mount (low- medium power as specified in section 3.5.5).

3.5.19.2 Digital Single Band Mobile radio, (512 Channels) 380-470 MHz w/o AES Encryption, Dash mount (low-medium power as specified in Section 3.5.5).

3.5.19.2.1 Digital Single Band Mobile radio, (512 Channels) VHF, w/o AES Encryption, Dash Mount (low-medium power as specified in section 3.5.5).

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000053

- 3.5.20 Spare Microphone for Digital Single Band Mobile radio.
- 3.5.21 Programming Software for Digital Single Band Mobile Radio. Programming software shall include unlimited seats.
- 3.5.22 Programming Cable for Digital Single Band Mobile radio.
- 3.5.23 High Power Option (up to 110 watts added on to Digital Single Band Mobile radio (as specified in section 3.5.5).
- 3.5.24 GPS enable shall be an option.
 - 3.5.24.1 GPS antenna for Digital Single Band mobile radio.
- 3.5.25 AC power supply for desk top operation.
- 3.5.26 Desk microphone for a Digital Single Band radio.
- 3.5.27 Optional remote speaker for Digital Single Band Mobile Radio (512 Channels).
- 3.5.28 Encryption Key Loader cable (for KVL3000+) for Digital Single Band Mobile Radio (512 channels).
- 3.5.29 The Digital Single Band Mobile radio shall be capable of having at least two "Dynamic" zones in the radio permitting users to create user defined zones of channels/talkgroups.
- 3.5.30 Digital Single Band mobile radio shall be Phase 2 capable and must meet current P25 standards, and be backwards and forwards compatible and future-ready to support new technology and data applications.
- 3.5.31 Over-The-Air Programming (OTAP) shall be enabled, unless requested to not be included.
 - 3.5.31.1 There shall be an option for removing the OTAP feature from the radio.
- 3.5.32 Over-The-Air Rekeying (OTAR) shall be available as an option to be enabled.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000054

3.6 DIGITAL SINGLE BAND PORTABLE RADIO

3.6.1 Digital Single Band Portable radio shall be capable of at least 512 channels and shall be P-25 Phase 2 compliant.

3.6.1.1 Digital Dual Band Portable shall be delivered with the following: the radio, antenna, battery, spare battery, a hard plastic case, a rapid charger, a 2 1/2" belt clip, a remote speaker microphone with a 3.5mm audio jack, and instruction manual.

3.6.2 Digital Single Band Portable radio shall be capable of operating in the following frequency bands: VHF (136-174 Mhz.), UHF (380-470 Mhz.), 700 Mhz. (764-776 Mhz., 794-806 Mhz.) 800 Mhz. (806-824 Mhz., 851-870 Mhz.).

3.6.3 Digital Single Band portable radio shall be capable of utilizing the following channel spacing: 6.25 Khz., 12.5 Khz. and 25 Khz.

3.6.4 Digital Single Band portable radio shall be capable of using the following encryption algorithms: AES.

3.6.4.1 Digital Single Band portable radio shall have an Encryption Algorithm Capacity of ONE (1).

3.6.4.2 Encryption Keys Module for the Digital Single Band mobile radio shall be capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID).

3.6.4.3 The Encryption frame re-sync interval shall be: P25 CAI 300 mSec.

3.6.4.4 Encryption keying shall be loaded by a Key Variable Loader (KVL).

3.6.4.5 Synchronization shall be: XL-Counter Addressing ; OFB-Output Feedback.

3.6.4.6 The Vector Generator shall be the National Institute of Standards and Technology (NIST) approved random number generator.

3.6.4.7 The encryption shall be digital.

3.6.4.8 Key erasure shall be accomplished by keyboard command and tamper detection.

3.6.4.9 Encryption standards shall be: FIPS 140-2 Level 3, FIPS 197.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000055

- 3.6.4.10 Key storage shall be in tamper protected volatile or non-volatile memory.
- 3.6.5 Digital Single Band portable radio shall be capable of the following transmit power levels: 1- 3 watts (700 Mhz), 1- 3 watts (800 Mhz.), 1 - 6 watts (VHF), 1- 5 watts (UHF R-1).
 - 3.6.5.1 Transmitter channel spacing shall be: 25/12.5 kHz in the 700 MHz. range; 25/12.5 kHz in the 800 MHz range; 30/25/12.5 kHz in the VHF range; 25/12.5 kHz in UHF Range.
 - 3.6.5.2 The frequency separation shall be the full bandsplit.
 - 3.6.5.3 Frequency stability shall be +/- 0.00010% in all frequency ranges.
 - 3.6.5.4 Audio distortion shall be 1 % in all frequency ranges.
 - 3.6.5.5 FM Hum and Noise at 25 kHz separation shall be: -47 dB in 700 MHz., -47 dB in 800 MHz, -47 dB in VHF, and UHF range. At 12.5 kHz separation shall be -45 dB in 700 MHz., -45 dB in 800 MHz, UHF range, and -47 dB in VHF.
- 3.6.6 Digital Single Band portable radio shall be P-25 compliant, P-25 Trunking if an option shall be included.
- 3.6.7 Digital Single Band portable radio shall be capable of single band operation.
- 3.6.8 Digital Single Band portable radio shall be capable of scanning both analog channels and digital channels in the same scan list.
 - 3.6.8.1 Radio shall be capable of using and storing user defined scan lists.
 - 3.6.8.2 Predefined scan lists may be edited by the user utilizing buttons on the radio.
 - 3.6.8.3 Scan lists shall be able to be established at the user/keypad level.
 - 3.6.8.4 Scanning shall be enabled and disabled by depressing no more than one button one time.
 - 3.6.8.5 The radio shall be able to simultaneously scan both bands in the radio as well as "Trunking" and "Conventional" channels.
- 3.6.9 Digital Single Band portable radio shall be capable of Over-The-Air Programming (OTAP) and Over-The-Air Rekeying (OTAR).

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

3.6.9.1 The radio shall have OTAP enabled.

3.6.9.2 The manufacturer's OTAP infrastructure software and hardware must be compatible and operational through the existing SIRN equipment and software connected to the Motorola Core Switch to facilitate OTAP, or it must be furnished at no additional charge.

3.6.10 Digital Single Band portable radio shall meet the following standards: MIL-STD 810C, MIL-STD 810D, MIL-STD 810E, MIL-STD 810F, MIL-STD 810G.

3.6.11 Digital Single Band portable radio shall be Phase 2 capable and must meet current P25 standards, and be backwards and forwards compatible and future-ready to support new technology and data applications.

3.6.12 Receiver channel spacing shall be 25/12.5 kHz in 700 MHz, 800 MHz, UHF Range. Receiver channel spacing shall be 30/25/12.5 kHz in the VHF Range.

3.6.12.1 Maximum frequency separation shall be full bandsplit for each frequency range.

3.6.12.2 Audio output power at rated shall be 500 mW for all frequency ranges.

3.6.12.3 Receiver frequency stability shall be +/- 1.0 PPM for all frequency ranges.

3.6.12.4 Analog sensitivity at 12dB SINAD shall be 0.226 μ V for 700 MHz and 800 MHz. Analog sensitivity at 12dB SINAD shall be 0.216 μ V for VHF and 0.234 μ V for UHF.

3.6.12.5 Digital sensitivity at 5% BER shall be 0.266 μ V for 700 MHz and 800 MHz. Digital sensitivity at 5% BER shall be 0.188 μ V for VHF and 0.207 μ V for UHF range.

3.6.12.6 Selectivity at 25 kHz shall be -76 dB for all frequency ranges.

3.6.12.7 Selectivity at 12.5 kHz shall be -67 dB for 700 MHz and 800 MHz. Sensitivity at 12.5 kHz shall be -70 dB in VHF, and -67 dB in UHF.

3.6.12.8 Spurious rejection shall be -76.6 dB for 700 MHz and 800 MHz, -85 dB for VHF, 80.3 dB for UHF.

3.6.12.9 Audio Distortion as rated shall be 1.0% for all frequency ranges.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000057

3.6.12.10 FM Hum and Noise at 25 kHz separation shall be -53 dB for 700 MHz and 800 MHz and -51 dB for VHF, and -50 dB for UHF.

3.6.12.11 FM Hum and Noise at 12.5 kHz separation shall be -47 dB for 700 MHz and 800 MHz, it shall -45 dB for VHF, UHF.

3.6.12.12 Intermodulation shall be -75 dB for 700 MHz and 800 MHz, -76 dB for VHF and -77 dB for UHF.

3.6.13 Digital Single Band portable radio shall be Integrated GPS capable.

3.6.13.1 GPS shall be capable of receiving at least 12 channels.

3.6.13.2 GPS tracking sensitivity shall be -159 dBm or better.

3.6.13.3 GPS accuracy shall be <10 meters (95%).

3.6.13.4 GPS cold start shall be <60 seconds (95%).

3.6.13.5 GPS hot start shall be <10 seconds (95%).

3.6.13.6 GPS mode of operation shall be Autonomous.

3.6.14 Digital Single Band portable radio shall support the following trunking standards: clear or digital encrypted ASTRO 25 Trunked operation.

3.6.15 5 Digital Single Band portable radio shall be capable of Analog MDC-1200 and Digital APCO P25 Conventional Systems Configurations.

3.6.16 Digital Single Band portable radio shall be capable of Embedded Digital signaling (ASTRO and ASTRO 25).

3.6.16.1 Astro Mode signaling rate shall be 9.6kbps.

3.6.16.2 Digital ID capacity shall be 10,000,00 Conventional /48,000 Trunking.

3.6.16.3 Digital access codes shall be at least 4,096 network site addresses.

3.6.16.4 Astro Digital user Group network site addresses shall be at least 4,096 network addresses.

3.6.16.5 Project 25-CAI Digital User Group addresses shall be at least 65,000 Conventional / 4,096 Trunking.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000058

- 3.6.17** Digital Single Band portable radio must use Windows XP or newer Software for all programming functions.
- 3.6.17.1** Programming cable must use USB technology to connect to the programming computer.
- 3.6.17.2** All currently licensable frequencies shall be considered acceptable to the unit.
- 3.6.17.3** Each channel shall be individually programmable with regard to wideband/narrowband operation, digital/analog, trunking/non-trunking, encode/decode, encrypted/non-encrypted, transmit frequency, receive frequency, digital/analog CTCSS tones/no-tones.
- 3.6.17.4** The radio shall have an alphanumeric display with a minimum of 2 rows of 14 characters each.
- 3.6.17.5** The radio shall have a minimum of 5 programmable function buttons.
- 3.6.17.6** The radio shall have an “emergency” button with a clearly distinctive color.
- 3.6.17.7** The radio shall have a menu navigation button capability.
- 3.6.18** Each Digital Single Band portable radio shall have the following options available for purchase.
- 3.6.18.1** Digital Single Band portable radio (512 Channels), Statewide Operation 380-470 MHz UHF with, AES Encryption (SIRN Tier 1).
- 3.6.18.1.1** Digital Single Band Portable Radio (512 Channels), VHF Operation with AES encryption.
- 3.6.18.2** Digital Single Band portable radio, Statewide Operation 380-470 MHz UHF without AES Encryption, (SIRN Tier 2)
- 3.6.18.2.1** Digital Single Band Portable Radio (512 Channels), VHF operation without AES encryption.
- 3.6.19** Programming Software for Digital Single Band portable Radio. Programming software shall include unlimited seats.
- 3.6.20** Programming Cable for Digital Single Band portable radio.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000059

- 3.6.21 Public Safety Yellow housing
- 3.6.22 GPS enable shall be an option.
- 3.6.23 Spare speaker microphone w/3.5mm audio jack.
- 3.6.24 Spare battery.
- 3.6.25 Spare ac rapid charger.
- 3.6.26 Spare antenna for Digital Single Band Portable Radio.
 - 3.6.26.1 Spare GPS capable antenna for Digital Single Band Portable Radio
- 3.6.27 Battery life shall have the capability to be 8 hours or greater. A Lithium-Ion battery or Lithium Polymer battery is acceptable. Nickel-Cadmium batteries are not acceptable.
 - 3.6.27.1 A rapid charge battery shall be provided and shall be able to reach full capacity in 4 hours.
 - 3.6.27.2 The radio shall have a duty cycle of 5/5/90 per Telecommunications Industry Association/Electronic Industry Alliance (TIA/EIA), specification 903 (5% receive/5% transmit/90% standby).
- 3.6.28 Spare hard plastic case with 2 ½ inch belt clip.
- 3.6.29 Encryption Key Loader cable (for KVL3000+) for Digital Single Band Mobile Radio (512 channels).
- 3.6.30 The Digital Single Band Portable radio shall be capable of having at least two "Dynamic" zones in the radio permitting users to create user defined zones of channels/talkgroups.
- 3.6.31 Over-The-Air Programming (OTAP) shall be enabled, unless requested to not be included.
 - 3.6.31.1 There shall be an option for removing the OTAP feature from the radio.
- 3.6.32 Over-The-Air Rekeying (OTAR) shall be available as an option to be enabled.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

3.7 Digital Remote Controlled Base Station System (Consolette)

- 3.7.1** Digital Remote Controlled Base Station System (Sometimes called a Consolette) consists of an RF base station configured as a consolette, meeting the specification listed in section 3.1, an aggregate device configured as a junction box allowing a desk top controller to be remotely located in excess of 5000 feet from the RF base station, and a desk top controller.
- 3.7.2** Digital Remote Controlled Base Station System (Sometimes called a Consolette) consists of an RF base station configured as a consolette, meeting the specification listed in section 3.2, an aggregate device configured as a junction box allowing a desk top controller to be remotely located in excess of 5000 feet from the RF base station, and a desk top controller.
- 3.7.3** Desk top controller shall be similar in appearance to an office desk phone. It shall be configured to allow full control of the base station through a display and preprogrammed function buttons.
- 3.7.3.1** It shall support speaker phone and hand set operations. The desk set controller shall be an MC5000 Deskset controller or equal.
- 3.7.3.2** The digital deskset controller shall remotely control all radio functions and frequencies of the Consolette.
- 3.7.3.3** All of the functionality provided by the buttons from the radio shall be duplicated on the deskset with customized labels, so a user that is familiar with the radio can easily use the deskset.
- 3.7.3.4** Desk top controller shall have automatic line leveling to compensate for variations in phone lines.
- 3.7.3.5** Desk top controller shall have a 2-line, 20 character backlit display capable of showing all text messages generated by the radio control head.
- 3.7.3.6** Desk top controller shall have an adjustable mounting bracket to allow optimal viewing angles for desktop operation.
- 3.7.3.7** Desk top controller shall come standard with a 110/220VAC, 50/60 Hz power supply.
- 3.7.3.8** Desk top controller shall accept line impedance of 600Ω nominal to 10KΩ.
- 3.7.3.9** Desk top controller shall have an adapter kit to allow for wall mount applications.

- 3.7.3.10 Desk top controller shall support an IP interface to the signal Aggregate Device, and an IP interface to the base station device.
- 3.7.3.11 Desk top controller shall support a SB9600 digital interface to RF base station device.
- 3.7.3.12 Desk top controller shall support a Tone Remote Control interface to an RF base station device.
- 3.7.3.13 Desk top controller shall be able to directly connect to the RF base station device without the use of a signal aggregate device.
- 3.7.3.14 Desk top controller shall support direct programming configuration.
- 3.7.3.15 Desk top controller shall support remote programming configuration through a LAN connection.
- 3.7.4 Signal Aggregate Device shall support four desktop controllers.
 - 3.7.4.1 Signal Aggregate Device shall come standard with a 110/220VAC, 50/60 Hz power supply.
 - 3.7.4.2 Signal Aggregate Device shall allow the Desk top controller to be located in excess of 5000 feet from the radio.
 - 3.7.4.3 Signal Aggregate Device shall be capable of both tone remote and DC remote control.
- 3.7.5 RF Base station(Consolette) shall be a Digital Dual Band radio, and shall meet the same specifications as those listed in section 3.1 of this document.
- 3.7.6 RF Base station (Consolette) shall be a Digital Single Band radio, and shall meet the same specifications as those listed in section 3.2 of this document.
- 3.7.7 RF base station (Consolette) shall come standard with a 110/220VAC, 50/60 Hz Power supply.
- 3.7.8 RF base station (Consolette) shall support IP interface to Signal Aggregate Device.
- 3.7.9 RF base station (Consolette) shall support Tone Remote control to Signal Aggregate Device.
- 3.7.10 RF base station (Consolette) shall support SB9600 Digital Interface to Signal Aggregate Device.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

3.8 WARRANTY and SOFTWARE

- 3.8.1 All items offered for purchase under this RFQ shall be warranted by the seller for a period of not less than one year.
- 3.8.2 Vendor shall furnish a copy of the most current version of software with each radio.
- 3.8.3 All features that are placed into the radio by way of programming shall remain for the life of the radio.
- 3.8.4 Any lost feature (i.e., number of channels, type of radio, etc.) will be replaced at no charge during the warranty period.
- 3.8.5 All firmware needed to correct radio product defects as identified by the user agency must be provided free of charge during the warranty period. This does not include enhancements or addition of features.

4. CONTRACT AWARD:

- 4.1 **Contract Award:** The Contract is intended to provide Agencies with a purchase price on all Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.
- 4.2 **Pricing Pages:** Vendor should complete the Pricing Pages by placing the cost of a single unit of the requested item in the "Unit Price" section and then multiplying the "Unit Price" by the "Estimated Quantity" and then placing the result in the "Extended Price". The Vendor will then total all of the "Extended Price" lines and place the total at the bottom of the "Extended Price" column. Vendor should complete the Pricing Pages in their entirety as failure to do so may result in Vendor's bids being disqualified.

The Pricing Pages contain a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

Notwithstanding the foregoing, the Purchasing Division may correct errors at its discretion. Vendor should type or electronically enter the information into the Pricing Pages to prevent errors in the evaluation.

5 ORDERING AND PAYMENT:

- 5.1 Ordering:** Vendor shall accept orders by regular mail, facsimile, e-mail, or any other written forms of communication. Vendor may, but is not required to, accept on-line orders through a secure internet ordering portal/website. If Vendor has the ability to accept on-line orders, it should include in its response a brief description of how Agencies may utilize the on-line ordering system. Any on-line ordering system must have the capability to restrict prices and available items to conform to the Catalog originally submitted with this RFQ. Vendor shall ensure that its on-line ordering system is properly secured prior to processing Agency orders on-line.
- 5.2 Payment:** Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

6 DELIVERY AND RETURN:

- 6.1 Delivery Time:** Vendor shall deliver standard orders within 30 working days after orders are received. Vendor shall deliver emergency orders within 20 working days after orders are received. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met.
- 6.2 Late Delivery:** The Agency placing the order under this Contract must be notified in writing if orders will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from a third party.

Any Agency seeking to obtain items from a third party under this provision must first obtain approval of the Purchasing Division.

- 6.3 Delivery Payment/Risk of Loss:** Standard order delivery shall be F.O.B. destination to the Agency's location. Vendor shall include the cost of standard order delivery charges in its bid pricing/discount and is not permitted to charge the Agency separately for such delivery. The Agency will pay delivery charges on all emergency orders provided that Vendor invoices those delivery costs as a separate charge with the original freight bill attached to the invoice.
- 6.4 Return of Unacceptable Items:** If the Agency deems the Contract Items to be unacceptable, the Contract Items shall be returned to Vendor at Vendor's expense and with no restocking charge. Vendor shall either make arrangements for the return within five (5) days of being notified that items are unacceptable, or permit the Agency to arrange for the return and reimburse Agency for delivery expenses. If the original packaging cannot be utilized for the return, Vendor will supply the Agency with appropriate return packaging upon request. All returns of unacceptable items shall be F.O.B. the Agency's location. The returned product shall either be replaced, or the Agency shall receive a full credit or refund for the purchase price, at the Agency's discretion.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

- 6.5 Return Due to Agency Error:** Items ordered in error by the Agency will be returned for credit within 30 days of receipt, F.O.B. Vendor's location. Vendor shall not charge a restocking fee if returned products are in a resalable condition. Items shall be deemed to be in a resalable condition if they are unused and in the original packaging. Any restocking fee for items not in a resalable condition shall be the lower of the Vendor's customary restocking fee or 5% of the total invoiced value of the returned items.

7 MISCELLANEOUS:

- 7.1 No Substitutions:** Vendor shall supply only Contract Items submitted in response to the RFQ unless a contract modification is approved in accordance with the provisions contained in this Contract.
- 7.2 Vendor Supply:** Vendor must carry sufficient inventory of the Contract Items being offered to fulfill its obligations under this Contract. By signing its bid, Vendor certifies that it can supply the Contract Items contained in its bid response.
- 7.3 Reports:** Vendor shall provide quarterly reports and annual summaries to the Agency showing the Agency's items purchased, quantities of items purchased, and total dollar value of the items purchased. Vendor shall also provide reports, upon request, showing the items purchased during the term of this Contract, the quantity purchased for each of those items, and the total value of purchases for each of those items. Failure to supply such reports may be grounds for cancellation of this Contract.
- 7.4 Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Peter Marotta
Telephone Number: 304-860-5051
Fax Number: 410-712-4996
Email Address: petermarotta@motorolasolutions.com

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000065

PLEASE NOTE:

PRICING PAGES WILL BE ADDED VIA ADDENDUM.

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety, understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Motorola Solutions, Inc.

(Company)

*


(Authorized Signature)

Timothy D. Askeland, Division Controller, USFGMD

(Representative Name, Title)

410-712-6200

(Phone Number)

410-712-4996

(Fax Number)

August 12, 2014

(Date)

* Motorola's proposal is based on acceptance of all clarifications/additional terms included herein.

Motorola includes the following supplemental contract terms as part of its proposal and anticipates incorporation of these terms in the final contract to be negotiated between the parties. To the extent the Supplemental Terms and Conditions conflict with the RFQ's terms and conditions, the Supplemental Terms and Conditions shall take precedence.

Supplemental Terms and Conditions

1.1 FREIGHT, TITLE, AND RISK OF LOSS. Motorola will pre-pay and add all freight charges to the invoices. Title to the Equipment will pass to Customer upon shipment. Title to Software will not pass to Customer at any time. Risk of loss will pass to Customer upon delivery of the Equipment to the Customer. Motorola will pack and ship all Equipment in accordance with good commercial practices.

2.1 NON-MOTOROLA SOFTWARE. Any Non-Motorola Software is licensed to Customer in accordance with the standard license, terms, and restrictions of the copyright owner on the Effective Date unless the copyright owner has granted to Motorola the right to sublicense the Non-Motorola Software pursuant to the Software License Agreement, in which case it applies and the copyright owner will have all of Licensor's rights and protections under the Software License Agreement. Motorola makes no representations or warranties of any kind regarding Non-Motorola Software. Non-Motorola Software may include Open Source Software. All Open Source Software is licensed to Customer in accordance with, and Customer agrees to abide by, the provisions of the standard license of the copyright owner and not the Software License Agreement. Upon request by Customer, Motorola will use commercially reasonable efforts to determine whether any Open Source Software will be provided under this Agreement; and if so, identify the Open Source Software and provide to Customer a copy of the applicable standard license (or specify where that license may be found); and provide to Customer a copy of the Open Source Software source code if it is publicly available without charge (although a distribution fee or a charge for related services may be applicable).

3 NOT APPLICABLE

4 NOT APPLICABLE

5 REPRESENTATIONS AND WARRANTIES

5.1. EQUIPMENT WARRANTY. During the Warranty Period (which shall mean one (1) year from the date of System Acceptance or Beneficial Use, whichever occurs first), Motorola warrants that the Equipment under normal use and service will be free from material defects in materials and workmanship. The Warranty shall run for twelve months from the scheduled date of Final System Acceptance or Beneficial Use whichever occurs first. Any change to this date must be agreed to by mutually acceptable change order.

5.2. Motorola Software Warranty. Unless otherwise stated in the Software License Agreement, during the Warranty Period, Motorola warrants the Motorola Software in

accordance with the terms of the Software License Agreement and the provisions of this Section 5 that are applicable to the Motorola Software. The Warranty shall run for twelve months from acceptance of the Software or eighteen months from delivery, whichever occurs first. Any change to this date must be agreed to by mutually acceptable change order.

5.3. EXCLUSIONS TO EQUIPMENT AND MOTOROLA SOFTWARE

WARRANTIES. These warranties do not apply to: (i) defects or damage resulting from: use of the Equipment or Motorola Software in other than its normal, customary, and authorized manner; accident, liquids, neglect, or acts of God; testing, maintenance, disassembly, repair, installation, alteration, modification, or adjustment not provided or authorized in writing by Motorola; Customer's failure to comply with all applicable industry and OSHA standards; (ii) breakage of or damage to antennas unless caused directly by defects in material or workmanship; (iii) Equipment that has had the serial number removed or made illegible; (iv) batteries (because they carry their own separate limited warranty) or consumables; (v) freight costs to ship Equipment to the repair depot; (vi) scratches or other cosmetic damage to Equipment surfaces that does not affect the operation of the Equipment; and (vii) normal or customary wear and tear.

5.4. WARRANTY CLAIMS. To assert a warranty claim, Customer must notify Motorola in writing of the claim before the expiration of the Warranty Period. Upon receipt of this notice, Motorola will investigate the warranty claim. If this investigation confirms a valid warranty claim, Motorola will (at its option and at no additional charge to Customer) repair the defective Equipment or Motorola Software, replace it with the same or equivalent product, or refund the price of the defective Equipment or Motorola Software. That action will be the full extent of Motorola's liability for the warranty claim. If this investigation indicates the warranty claim is not valid, then Motorola may invoice Customer for responding to the claim on a time and materials basis using Motorola's then current labor rates. Repaired or replaced product is warranted for the balance of the original applicable warranty period. All replaced products or parts will become the property of Motorola.

5.5. ORIGINAL END USER IS COVERED. These express limited warranties are extended by Motorola to the original user purchasing the System for commercial, industrial, or governmental use only, and are not assignable or transferable.

5.6. DISCLAIMER OF OTHER WARRANTIES. THESE WARRANTIES ARE THE COMPLETE WARRANTIES FOR THE EQUIPMENT AND MOTOROLA SOFTWARE PROVIDED UNDER THIS AGREEMENT AND ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES. MOTOROLA DISCLAIMS ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

6 INTELLECTUAL PROPERTY INDEMNIFICATION

6.1 Motorola will defend at its expense any suit brought against Customer to the extent it is based on a third-party claim alleging that the Equipment manufactured by Motorola or the Motorola Software ("Motorola Product") directly infringes a United States patent or copyright ("Infringement Claim"). Motorola's duties to defend and indemnify are conditioned upon: Customer promptly notifying Motorola in writing of the Infringement Claim; Motorola having sole control of the defense of the suit and all negotiations for its settlement or compromise; and Customer providing to Motorola cooperation and, if requested by Motorola, reasonable assistance in the defense of the Infringement Claim. In addition to Motorola's obligation to defend, and subject to the same conditions, Motorola will pay all damages finally awarded against Customer by a court of competent jurisdiction for an Infringement Claim or agreed to, in writing, by Motorola in settlement of an Infringement Claim.

6.2. If an Infringement Claim occurs, or in Motorola's opinion is likely to occur, Motorola may at its option and expense: (a) procure for Customer the right to continue using the Motorola Product; (b) replace or modify the Motorola Product so that it becomes non-infringing while providing functionally equivalent performance; or (c) accept the return of the Motorola Product and grant Customer a credit for the Motorola Product, less a reasonable charge for depreciation. The depreciation amount will be calculated based upon generally accepted accounting standards.

6.3. Motorola will have no duty to defend or indemnify for any Infringement Claim that is based upon: (a) the combination of the Motorola Product with any software, apparatus or device not furnished by Motorola; (b) the use of ancillary equipment or software not furnished by Motorola and that is attached to or used in connection with the Motorola Product; (c) Motorola Product designed or manufactured in accordance with Customer's designs, specifications, guidelines or instructions, if the alleged infringement would not have occurred without such designs, specifications, guidelines or instructions; (d) a modification of the Motorola Product by a party other than Motorola; (e) use of the Motorola Product in a manner for which the Motorola Product was not designed or that is inconsistent with the terms of this Agreement; or (f) the failure by Customer to install an enhancement release to the Motorola Software that is intended to correct the claimed infringement. In no event will Motorola's liability resulting from its indemnity obligation to Customer extend in any way to royalties payable on a per use basis or the Customer's revenues, or any royalty basis other than a reasonable royalty based upon revenue derived by Motorola from Customer from sales or license of the infringing Motorola Product.

6.4. This Section 6 provides Customer's sole and exclusive remedies and Motorola's entire liability in the event of an Infringement Claim. Customer has no right to recover and Motorola has no obligation to provide any other or further remedies, whether under another provision of this Agreement or any other legal theory or principle, in connection with an Infringement Claim. In addition, the rights and remedies provided in this Section 6 are subject to and limited by the restrictions set forth in Section 8.

7 **GENERAL INDEMNIFICATION** Motorola will indemnify and hold Customer harmless from any and all liability, expense, judgment, suit, cause of action, or demand for personal injury, death, or direct damage to tangible property which may accrue against Customer to the extent it is caused by the negligence of Motorola, its subcontractors, or their employees or agents, while performing their duties under this Agreement, if Customer gives Motorola prompt, written notice of any claim or suit. Customer will cooperate with Motorola in its defense or settlement of the claim or suit. This section sets forth the full extent of Motorola's general indemnification of Customer from liabilities that are in any way related to Motorola's performance under this Agreement.

8 **LIMITATION OF LIABILITY**

8.1 Except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, indemnification, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of the Equipment, Software, or services with respect to which losses or damages are claimed. **ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT** be liable for any commercial loss; inconvenience; loss of use, Time, DATA, GOOD WILL, REVENUES, profits or savings; or other **SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT, THE SALE OR USE OF THE EQUIPMENT OR SOFTWARE, OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT.** This provision survives the expiration or termination of the Agreement and applies notwithstanding any contrary provision. No action for contract breach or otherwise relating to the transactions contemplated by this Agreement may be brought more than one (1) year after the accrual of the cause of action, except for money due upon an open account.

9 **DEFAULT AND TERMINATION**

9.1 **DEFAULT BY A PARTY.** If either Party fails to perform a material obligation under this Agreement, the other Party may consider the non-performing Party to be in default (unless a Force Majeure causes the failure) and may assert a default claim by giving the non-performing Party a written and detailed notice of default. Except for a default by Customer for failing to pay any amount when due under this Agreement which must be cured immediately, the defaulting Party will have thirty (30) days after receipt of the notice of default to either cure the default or, if the default is not curable within thirty (30) days, provide a written cure plan. The defaulting Party will begin implementing the cure plan immediately after receipt of notice by the other Party that it approves the plan. If Customer is the defaulting Party, Motorola may stop work on the project until it approves the Customer's cure plan.

9.2. **FAILURE TO CURE.** If a defaulting Party fails to cure the default as provided above in Section 9.1, unless otherwise agreed in writing, the non-defaulting Party may

terminate any unfulfilled portion of this Agreement. In the event of termination for default, the defaulting Party will promptly return to the non-defaulting Party any of its Confidential Information. If Customer is the non-defaulting Party, terminates this Agreement as permitted by this Section, and completes the System through a third Party, Customer may as its exclusive remedy recover from Motorola reasonable costs incurred to complete the System to a capability not exceeding that specified in this Agreement less the unpaid portion of the Contract Price. Customer will mitigate damages and provide Motorola with detailed invoices substantiating the charges.

Exhibit A
SOFTWARE LICENSE AGREEMENT

This Exhibit A Software License Agreement ("Agreement") is between Motorola Solutions, Inc., ("Motorola"), and Progress Energy ("Licensee").

For good and valuable consideration, the parties agree as follows:

Section 1 DEFINITIONS

- 1.1 "Designated Products" means products provided by Motorola to Licensee with which or for which the Software and Documentation is licensed for use.
- 1.2 "Documentation" means product and software documentation that specifies technical and performance features and capabilities, and the user, operation and training manuals for the Software (including all physical or electronic media upon which such information is provided).
- 1.3 "Open Source Software" means software with either freely obtainable source code, license for modification, or permission for free distribution.
- 1.4 "Open Source Software License" means the terms or conditions under which the Open Source Software is licensed.
- 1.5 "Primary Agreement" means the agreement to which this exhibit is attached.
- 1.6 "Security Vulnerability" means a flaw or weakness in system security procedures, design, implementation, or internal controls that could be exercised (accidentally triggered or intentionally exploited) and result in a security breach such that data is compromised, manipulated or stolen or the system damaged.
- 1.7 "Software" (i) means proprietary software in object code format, and adaptations, translations, de-compilations, disassemblies, emulations, or derivative works of such software; (ii) means any modifications, enhancements, new versions and new releases of the software provided by Motorola; and (iii) may contain one or more items of software owned by a third party supplier. The term "Software" does not include any third party software provided under separate license or third party software not licensable under the terms of this Agreement.

Section 2 SCOPE

Motorola and Licensee enter into this Agreement in connection with Motorola's delivery of certain proprietary Software or products containing embedded or pre-loaded proprietary Software, or both. This Agreement contains the terms and conditions of the license Motorola is providing to Licensee, and Licensee's use of the Software and Documentation.

Section 3 GRANT OF LICENSE

3.1. Subject to the provisions of this Agreement and the payment of applicable license fees, Motorola grants to Licensee a personal, limited, non-transferable (except as permitted in Section 7) and non-exclusive license under Motorola's copyrights and Confidential Information (as defined in the Primary Agreement) embodied in the Software to use the Software, in object code form, and the Documentation solely in connection with Licensee's use of the Designated Products. This Agreement does not grant any rights to source code.

3.2. If the Software licensed under this Agreement contains or is derived from Open Source Software, the terms and conditions governing the use of such Open Source Software are in the Open Source Software Licenses of the copyright owner and not this Agreement. If there is a conflict between the terms and conditions of this Agreement and the terms and conditions of the Open Source Software Licenses governing Licensee's use of the Open Source Software, the terms and conditions of the license grant of the applicable Open Source Software Licenses will take precedence over the license grants in this Agreement. If requested by Licensee, Motorola will use commercially reasonable efforts to: (i) determine whether any Open Source Software is provided under this Agreement; (ii) identify the Open Source Software and provide Licensee a copy of the applicable Open Source Software License (or specify where that license may be found); and, (iii) provide Licensee a copy of the Open Source Software source code, without charge, if it is publicly available (although distribution fees may be applicable).

Section 4 LIMITATIONS ON USE

4.1. Licensee may use the Software only for Licensee's internal business purposes and only in accordance with the Documentation. Any other use of the Software is strictly prohibited. Without limiting the general nature of these restrictions, Licensee will not make the Software available for use by third parties on a "time sharing," "application service provider," or "service bureau" basis or for any other similar commercial rental or sharing arrangement.

4.2. Licensee will not, and will not allow or enable any third party to: (i) reverse engineer, disassemble, peel components, decompile, reprogram or otherwise reduce the Software or any portion to a human perceptible form or otherwise attempt to recreate the source code; (ii) modify, adapt, create derivative works of, or merge the Software; (iii) copy, reproduce, distribute, lend, or lease the Software or Documentation to any third party, grant any sublicense or other rights in the Software or Documentation to any third party, or take any action that would cause the Software or Documentation to be placed in the public domain; (iv) remove, or in any way alter or obscure, any copyright notice or other notice of Motorola's proprietary rights; (v) provide, copy, transmit, disclose, divulge or make the Software or Documentation available to, or permit the use of the Software by any third party or on any machine except as expressly authorized by this Agreement; or (vi) use, or permit the use of, the Software in a manner that would result in

the production of a copy of the Software solely by activating a machine containing the Software. Licensee may make one copy of Software to be used solely for archival, back-up, or disaster recovery purposes; provided that Licensee may not operate that copy of the Software at the same time as the original Software is being operated. Licensee may make as many copies of the Documentation as it may reasonably require for the internal use of the Software.

4.3. Unless otherwise authorized by Motorola in writing, Licensee will not, and will not enable or allow any third party to: (i) install a licensed copy of the Software on more than one unit of a Designated Product; or (ii) copy onto or transfer Software installed in one unit of a Designated Product onto one other device. Licensee may temporarily transfer Software installed on a Designated Product to another device if the Designated Product is inoperable or malfunctioning, if Licensee provides written notice to Motorola of the temporary transfer and identifies the device on which the Software is transferred. Temporary transfer of the Software to another device must be discontinued when the original Designated Product is returned to operation and the Software must be removed from the other device. Licensee must provide prompt written notice to Motorola at the time temporary transfer is discontinued.

4.4. When using Motorola's Radio Service Software ("RSS"), Licensee must purchase a separate license for each location at which Licensee uses RSS. Licensee's use of RSS at a licensed location does not entitle Licensee to use or access RSS remotely. Licensee may make one copy of RSS for each licensed location. Licensee shall provide Motorola with a list of all locations at which Licensee uses or intends to use RSS upon Motorola's request.

4.5. Licensee will maintain, during the term of this Agreement and for a period of two years thereafter, accurate records relating to this license grant to verify compliance with this Agreement. Motorola or an independent third party ("Auditor") may inspect Licensee's premises, books and records, upon reasonable prior notice to Licensee, during Licensee's normal business hours and subject to Licensee's facility and security regulations. Motorola is responsible for the payment of all expenses and costs of the Auditor. Any information obtained by Motorola and the Auditor will be kept in strict confidence by Motorola and the Auditor and used solely for the purpose of verifying Licensee's compliance with the terms of this Agreement.

Section 5 OWNERSHIP AND TITLE

Motorola, its licensors, and its suppliers retain all of their proprietary rights in any form in and to the Software and Documentation, including, but not limited to, all rights in patents, patent applications, inventions, copyrights, trademarks, trade secrets, trade names, and other proprietary rights in or relating to the Software and Documentation (including any corrections, bug fixes, enhancements, updates, modifications, adaptations, translations, de-compilations, disassemblies, emulations to or derivative works from the Software or Documentation, whether made by Motorola or another party, or any improvements that result from Motorola's processes or, provision of information

services). No rights are granted to Licensee under this Agreement by implication, estoppel or otherwise, except for those rights which are expressly granted to Licensee in this Agreement. All intellectual property developed, originated, or prepared by Motorola in connection with providing the Software, Designated Products, Documentation or related services, remains vested exclusively in Motorola, and Licensee will not have any shared development or other intellectual property rights.

Section 6 LIMITED WARRANTY; DISCLAIMER OF WARRANTY

6.1. The commencement date and the term of the Software warranty will be a period of ninety (90) days from Motorola's shipment of the Software (the "Warranty Period"). If Licensee is not in breach of any of its obligations under this Agreement, Motorola warrants that the unmodified Software, when used properly and in accordance with the Documentation and this Agreement, will be free from a reproducible defect that eliminates the functionality or successful operation of a feature critical to the primary functionality or successful operation of the Software. Whether a defect occurs will be determined by Motorola solely with reference to the Documentation. Motorola does not warrant that Licensee's use of the Software or the Designated Products will be uninterrupted, error-free, completely free of Security Vulnerabilities, or that the Software or the Designated Products will meet Licensee's particular requirements. Motorola makes no representations or warranties with respect to any third party software included in the Software.

6.2 Motorola's sole obligation to Licensee and Licensee's exclusive remedy under this warranty is to use reasonable efforts to remedy any material Software defect covered by this warranty. These efforts will involve either replacing the media or attempting to correct significant, demonstrable program or documentation errors or Security Vulnerabilities. If Motorola cannot correct the defect within a reasonable time, then at Motorola's option, Motorola will replace the defective Software with functionally-equivalent Software, license to Licensee substitute Software which will accomplish the same objective, or terminate the license and refund the Licensee's paid license fee.

6.3. Warranty claims are described in the Primary Agreement.

6.4. The express warranties set forth in this Section 6 are in lieu of, and Motorola disclaims, any and all other warranties (express or implied, oral or written) with respect to the Software or Documentation, including, without limitation, any and all implied warranties of condition, title, non-infringement, merchantability, or fitness for a particular purpose or use by Licensee (whether or not Motorola knows, has reason to know, has been advised, or is otherwise aware of any such purpose or use), whether arising by law, by reason of custom or usage of trade, or by course of dealing. In addition, Motorola disclaims any warranty to any person other than Licensee with respect to the Software or Documentation.

Section 7 TRANSFERS

Licensee will not transfer the Software or Documentation to any third party without Motorola's prior written consent. Motorola's consent may be withheld at its discretion and may be conditioned upon transferee paying all applicable license fees and agreeing to be bound by this Agreement. If the Designated Products are Motorola's radio products and Licensee transfers ownership of the Motorola radio products to a third party, Licensee may assign its right to use the Software (other than RSS and Motorola's FLASHport® software) which is embedded in or furnished for use with the radio products and the related Documentation; provided that Licensee transfers all copies of the Software and Documentation to the transferee, and Licensee and the transferee sign a transfer form to be provided by Motorola upon request, obligating the transferee to be bound by this Agreement.

Section 8 TERM AND TERMINATION

8.1 Licensee's right to use the Software and Documentation will begin when the Primary Agreement is signed by both parties and will continue for the life of the Designated Products with which or for which the Software and Documentation have been provided by Motorola, unless Licensee breaches this Agreement, in which case this Agreement and Licensee's right to use the Software and Documentation may be terminated immediately upon notice by Motorola.

8.2 Within thirty (30) days after termination of this Agreement, Licensee must certify in writing to Motorola that all copies of the Software have been removed or deleted from the Designated Products and that all copies of the Software and Documentation have been returned to Motorola or destroyed by Licensee and are no longer in use by Licensee.

8.3 Licensee acknowledges that Motorola made a considerable investment of resources in the development, marketing, and distribution of the Software and Documentation and that Licensee's breach of this Agreement will result in irreparable harm to Motorola for which monetary damages would be inadequate. If Licensee breaches this Agreement, Motorola may terminate this Agreement and be entitled to all available remedies at law or in equity (including immediate injunctive relief and repossession of all non-embedded Software and associated Documentation unless Licensee is a Federal agency of the United States Government).

Section 9 UNITED STATES GOVERNMENT LICENSING PROVISIONS

This Section applies if Licensee is the United States Government or a United States Government agency. Licensee's use, duplication or disclosure of the Software and Documentation under Motorola's copyrights or trade secret rights is subject to the restrictions set forth in subparagraphs (c)(1) and (2) of the Commercial Computer Software-Restricted Rights clause at FAR 52.227-19 (JUNE 1987), if applicable, unless they are being provided to the Department of Defense. If the Software and Documentation are being provided to the Department of Defense, Licensee's use, duplication, or disclosure of the Software and Documentation is subject to the restricted rights set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer

Software clause at DFARS 252.227-7013 (OCT 1988), if applicable. The Software and Documentation may or may not include a Restricted Rights notice, or other notice referring to this Agreement. The provisions of this Agreement will continue to apply, but only to the extent that they are consistent with the rights provided to the Licensee under the provisions of the FAR or DFARS mentioned above, as applicable to the particular procuring agency and procurement transaction.

Section 10 CONFIDENTIALITY

Licensee acknowledges that the Software and Documentation contain Motorola's valuable proprietary and Confidential Information and are Motorola's trade secrets, and that the provisions in the Primary Agreement concerning Confidential Information apply.

Section 11 LIMITATION OF LIABILITY

The Limitation of Liability provision is described in the Section 8 of the Supplemental Terms and Conditions.

Section 12 NOTICES

Notices are described in the Primary Agreement.

Section 13 GENERAL

13.1. COPYRIGHT NOTICES. The existence of a copyright notice on the Software will not be construed as an admission or presumption of publication of the Software or public disclosure of any trade secrets associated with the Software.

13.2. COMPLIANCE WITH LAWS. Licensee acknowledges that the Software is subject to the laws and regulations of the United States and Licensee will comply with all applicable laws and regulations, including export laws and regulations of the United States. Licensee will not, without the prior authorization of Motorola and the appropriate governmental authority of the United States, in any form export or re-export, sell or resell, ship or reship, or divert, through direct or indirect means, any item or technical data or direct or indirect products sold or otherwise furnished to any person within any territory for which the United States Government or any of its agencies at the time of the action, requires an export license or other governmental approval. Violation of this provision is a material breach of this Agreement.

13.3. ASSIGNMENTS AND SUBCONTRACTING. Motorola may assign its rights or subcontract its obligations under this Agreement, or encumber or sell its rights in any Software, without prior notice to or consent of Licensee.

13.4. GOVERNING LAW. This Agreement is governed by the laws of the United States to the extent that they apply and otherwise by the internal substantive laws of the State to which the Software is shipped if Licensee is a sovereign government entity, or

the internal substantive laws of the State of Illinois if Licensee is not a sovereign government entity. The terms of the U.N. Convention on Contracts for the International Sale of Goods do not apply. In the event that the Uniform Computer Information Transaction Act, any version of this Act, or a substantially similar law (collectively "UCITA") becomes applicable to a party's performance under this Agreement, UCITA does not govern any aspect of this Agreement or any license granted under this Agreement, or any of the parties' rights or obligations under this Agreement. The governing law will be that in effect prior to the applicability of UCITA.

13.5. **THIRD PARTY BENEFICIARIES.** This Agreement is entered into solely for the benefit of Motorola and Licensee. No third party has the right to make any claim or assert any right under this Agreement, and no third party is deemed a beneficiary of this Agreement. Notwithstanding the foregoing, any licensor or supplier of third party software included in the Software will be a direct and intended third party beneficiary of this Agreement.

13.6. **SURVIVAL.** Sections 4, 5, 6.3, 7, 8, 9, 10, 11 and 13 survive the termination of this Agreement.

13.7. **ORDER OF PRECEDENCE.** In the event of inconsistencies between this Exhibit and the Primary Agreement, the parties agree that this Exhibit prevails, only with respect to the specific subject matter of this Exhibit, and not the Primary Agreement or any other exhibit as it applies to any other subject matter.

13.8 **SECURITY.** Motorola uses reasonable means in the design and writing of its own Software and the acquisition of third party Software to limit Security Vulnerabilities. While no software can be guaranteed to be free from Security Vulnerabilities, if a Security Vulnerability is discovered, Motorola will take the steps set forth in Section 6 of this Agreement.

RFQ No. DPS 1418STATE OF WEST VIRGINIA
Purchasing Division**PURCHASING AFFIDAVIT**

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:Vendor's Name: Motorola Solutions, Inc.

Authorized Signature: _____

Date: August 12, 2014State of MarylandCounty of Howard, to-wit:Taken, subscribed, and sworn to before me this 12th day of August, 2014.My Commission expires October 16, 2017.**AFFIX SEAL HERE****NOTARY PUBLIC**Regan Baxter*Purchasing Affidavit (Revised 07/01/2012)*

REGAN BAXTER
Notary Public-Maryland
Howard County
My Commission Expires
October 16, 2017

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

1. Application is made for 2.5% vendor preference for the reason checked:

- ____ Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
 ____ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or** 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
 ____ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or**,

2. Application is made for 2.5% vendor preference for the reason checked:

- ____ Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,

3. Application is made for 2.5% vendor preference for the reason checked:

- ____ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,

4. Application is made for 5% vendor preference for the reason checked:

- ____ Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or**,

5. Application is made for 3.5% vendor preference who is a veteran for the reason checked:

- ____ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or**,

6. Application is made for 3.5% vendor preference who is a veteran for the reason checked:

- ____ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

7. Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.

- ____ Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: Motorola Solutions, Inc.

Signed: _____

Date: August 12, 2014

Title: Division Controller, USFGMD



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

NUMBER
DPS1418

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE 304-558-2544

RFQ COPY

VENDOR
TYPE NAME/ADDRESS HERE
Motorola Solutions, Inc.
7031 Columbia Gateway Drive
3rd Floor
Columbia, MD 21046
FEIN # 36-1115800

SHIP TO
WEST VIRGINIA STATE POLICE

4124 KANAWHA TURNPIKE
SOUTH CHARLESTON, WV
25309 304-746-2141

DATE PRINTED
07/10/2014

BID OPENING DATE: 08/06/2014

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				ADDENDUM NO. 1		
				SEE ATTACHED PAGES.		
				END OF ADDENDUM NO. 1		
0001	1	LS		725-74		
				DIGITAL MOBILE AND PORTABLE RADIOS		
				***** THIS IS THE END OF RFQ	DPS1418 ***** TOTAL:	\$ 2,761,519.77

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

SOLICITATION NUMBER: DPS1418**Addendum Number: 1**

The purpose of this addendum is to modify the solicitation identified as DPS1418 ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

- ☒ Modify bid opening date and time
- ☐ Modify specifications of product or service being sought
- ☐ Attachment of vendor questions and responses
- ☐ Attachment of pre-bid sign-in sheet
- ☐ Correction of error
- ☒ Other

Description of Modification to Solicitation:

1. The bid opening has moved from 07/24/2014 to 08/06/2014. The bid opening time remains at 1:30 pm.
2. The question deadline has been extended from 07/11/2014 to 7/22/2014.
3. Pricing pages will be issued under separate addendum.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DPS1418

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

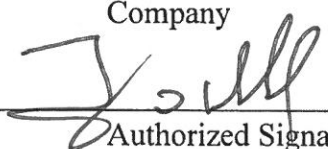
(Check the box next to each addendum received)

<input checked="" type="checkbox"/> Addendum No. 1	<input type="checkbox"/> Addendum No. 6
<input checked="" type="checkbox"/> Addendum No. 2	<input type="checkbox"/> Addendum No. 7
<input checked="" type="checkbox"/> Addendum No. 3	<input type="checkbox"/> Addendum No. 8
<input type="checkbox"/> Addendum No. 4	<input type="checkbox"/> Addendum No. 9
<input type="checkbox"/> Addendum No. 5	<input type="checkbox"/> Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Motorola Solutions, Inc.

Company


Authorized Signature

August 12, 2014

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

NUMBER
DPS1418

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE 304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE
Motorola Solutions, Inc.
7031 Columbia Gateway Drive
3rd Floor
Columbia, MD 21046
FEIN # 36-1115800

V
E
N
D
O
R

WEST VIRGINIA STATE POLICE

4124 KANAWHA TURNPIKE
SOUTH CHARLESTON, WV
25309 304-746-2141

S
H
I
P
T
O

DATE PRINTED

07/15/2014

BID OPENING DATE: 08/14/2014

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 2						
SEE ATTACHED PAGES.						
END OF ADDENDUM NO. 2						
0001	1	LS		725-74		
DIGITAL MOBILE AND PORTABLE RADIOS						
***** THIS IS THE END OF RFQ DPS1418 ***** TOTAL:						\$ 2,761,519.77

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

SOLICITATION NUMBER: DPS1418
Addendum Number: 2

The purpose of this addendum is to modify the solicitation identified as DPS1418 ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

- ☒ Modify bid opening date and time
- ☐ Modify specifications of product or service being sought
- ☐ Attachment of vendor questions and responses
- ☐ Attachment of pre-bid sign-in sheet
- ☐ Correction of error
- ☒ Other

Description of Modification to Solicitation:

1. The bid opening has moved from 08/06/2014 to 08/14/2014. The bid opening time remains at 1:30 pm.
2. The question deadline has been extended from 07/22/2014 to 7/25/2014.
3. Pricing pages attached.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000003

DPS 1418 – Pricing Page

Digital Mobile and Portable Radios

Item #	Description	Estimated Annual Quantity (ea) *	Unit Price	Extended Price
3.1.19.1	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and VHF w/AES encryption, Dash mount, low/med power, remote speaker, and microphone.	50	\$ 5,250.89	\$ 262,544.50
3.1.19.1.1	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and 700 MHz, w/AES encryption, Dash Mount, low/med power, remote speaker, and microphone.	1	\$ 5,250.89	\$ 5,250.89
3.1.19.1.2	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and 800 MHz, w/AES encryption, Dash Mount, low/med power, remote speaker, and microphone.	5	\$ 5,250.89	\$ 26,254.45
3.1.19.2	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and VHF w/AES encryption, Remote mount, low/med power, remote speaker, and microphone.	25	\$ 5,369.57	\$ 134,239.25
3.1.19.2.1	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and 700 MHz w/AES encryption, Remote mount, low/med power, remote speaker, and microphone.	1	\$ 5,369.57	\$ 5,369.57
3.1.19.2.2	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and 800 MHz w/AES encryption, Remote mount, low/med power, remote speaker, and microphone.	1	\$ 5,369.57	\$ 5,369.57
3.1.19.2.3	Hand Held Full Function Control Head for Digital Dual Band Mobile Radio with Remote Mount, remote speaker, and microphone.	5	\$ 220.74	\$ 1,103.70
3.1.19.3	Dual Control Head option for Remote Mount Dual Band Mobile Radio	5	\$ 393.30	\$ 1,966.50
3.1.19.4	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and VHF NO AES encryption, dash mount, low/med power, remote speaker, and microphone.	1	\$ 4,695.44	\$ 4,695.44
3.1.19.4.1	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and 700 MHz, NO AES encryption, Dash Mount, low/med power, remote speaker, and microphone.	1	\$ 4,695.44	\$ 4,695.44
3.1.19.4.2	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and 800 MHz, NO AES encryption, Dash Mount, low/med power, remote speaker, and microphone.	1	\$ 4,695.44	\$ 4,695.44

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000004

3.1.19.5	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and VHF NO AES Encryption, Remote mount, low/med power, remote speaker, and microphone.	1	\$ 4,814.12	\$ 4,814.12
3.1.19.5.1	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and 700 MHz NO AES encryption, Remote mount, low/med power, remote speaker, and microphone.	1	\$ 4,814.12	\$ 4,814.12
3.1.19.5.2	Digital Dual Band Mobile Radio, 1250 channels, 380-470 MHz and 800 MHz NO AES encryption, Remote mount, low/med power, remote speaker, and microphone.	1	\$ 4,814.12	\$ 4,814.12
3.1.19.5.3	Hand Held Full Function Control Head for Digital Dual Band Mobile Radio with Remote Mount	1	\$ 220.74	\$ 220.74
3.1.20	Spare microphone for Digital Dual Band Mobile Radio	25	\$ 54.00	\$1,350.00
3.1.22	Programming software for Digital Dual Band Mobile Radio	25	\$ 375.00	\$ 9,375.00
3.1.23	Programming Cable for Digital Dual Band Mobile Radio	25	\$ 63.75	\$1,593.75
3.1.24	High Power Option for Digital Dual Band Mobile Radio	20	\$ 140.07	\$2,801.40
3.1.25	Enable GPS on Digital Dual Band Mobile Radio	20	\$ 75.00	\$1,500.00
3.1.25.1	GPS antenna for Digital Dual Band Mobile Radio	20	\$ 56.25	\$1,125.00
3.1.26	AC Power Supply to convert a Digital Dual Band radio into a base station.	1	\$ 233.91	\$ 233.91
3.1.27	Desk top style microphone for Digital Dual Band Mobile radio	1	\$ 126.75	\$ 126.75
3.1.28	Optional remote mount speaker.	5	\$ 45.38	\$226.88
3.1.29	Encryption Key Loader cable (for KVL3000+) for Digital Dual Band Mobile radio.	5	\$ 94.13	\$470.63
3.1.31.1	Delete Over-The-Air-Programming feature	5	\$ (69.00)	\$ (345.00)
3.1.32	Enable Over-The-Rekeying feature	5	\$ 282.90	\$1,414.50
3.2.19.1	Digital Single Band Mobile Radio, 380-470 MHz, 1250 channels, w/AES encryption, Dash mount, low/med power, remote speaker, and microphone.	100	\$ 4,197.52	\$419,752.00
3.2.19.1.1	Digital Single Band Mobile Radio, VHF, 1250 channels, w/AES encryption, Dash mount, low/med power, remote speaker, and microphone.	10	\$ 4,197.52	\$41,975.20
3.2.19.2	Digital Single Band Mobile Radio, 380-470 MHz, 1250 channels, w/AES encryption, Remote mount, low/med power, remote speaker, and microphone.	10	\$ 4,316.20	\$43,162.00
3.2.19.2.1	Digital Single Band Mobile Radio, VHF, 1250 channels, w/AES encryption, Remote mount, low/med power, remote speaker, and microphone.	1	\$ 4,316.20	\$4,316.20

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000005

3.2.19.2.4	Hand Held Full Function Control Head for Digital Single Band Mobile radio with Remote Mount.	1	\$ 354.66	\$354.66
3.2.19.3	Dual Control Head option for Digital Single Band Mobile Radio w/remote mount	10	\$ 414.00	\$ 4,140.00
3.2.19.4	Digital Single Band Mobile Radio, 380-470 MHz, 1250 channels, NO AES encryption, dash mount, low/medium power, remote speaker, and microphone.	5	\$ 3,642.07	\$18,210.35
3.2.19.4.1	Digital Single Band Mobile Radio, VHF, 1250 channels, NO AES encryption, dash mount, low/medium power, remote speaker, and microphone.	1	\$ 3,642.07	\$ 3,642.07
3.2.19.5	Digital Single Band Mobile Radio, 308-470 MHz, 1250 channels, NO encryption, remote mount, low/med power, remote speaker, and microphone.	1	\$ 3,760.75	\$3,760.75
3.2.19.5.1	Digital Single Band Mobile Radio, VHF, 1250 channels, NO encryption, remote mount, low/med power, remote speaker, and microphone.	1	\$ 3,760.75	\$3,760.75
3.2.20	Spare microphone for Digital Single Band Mobile Radio	25	\$ 54.00	\$1,350.00
3.2.21	Programming Software for Digital Single Band Mobile Radio	10	\$ 375.00	\$3,750.00
3.2.22	Programming Cable for Digital Single Band Mobile Radio	10	\$ 63.75	\$ 637.50
3.2.23	High Power Option for Digital Single Band Mobile Radio	5	\$ 345.00	\$1,725.00
3.2.24	Enable GPS on Digital Single Band Mobile Radio	5	\$ 69.00	\$ 345.00
3.2.24.1	GPS antenna for Digital Single Band Mobile Radio	5	\$ 56.25	\$281.25
3.2.25	AC Power Supply to convert a Digital Single Band radio into a base station.	5	\$ 233.91	\$1,169.55
3.2.26	Desk top style microphone for Digital Single Band Mobile radio	5	\$ 126.75	\$ 633.75
3.2.27	Optional remote speaker for Digital Single Band Mobile Radio	5	\$ 45.38	\$ 226.88
3.2.28	Encryption Key Loader cable (for KVL3000+) for Digital Dual Band Mobile radio.	5	\$ 94.13	\$470.63
3.2.31.1	Delete Over-The-Air-Programming feature	5	\$ (69.00)	\$(345.00)
3.2.32	Enable Over-The-Air-Rekeying feature	5	\$ 282.90	\$1,414.50
3.3.18.1	Digital Dual Band Portable Radio, 1200 channels, dual display, 380-470 MHz and VHF operation w/AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, and speaker microphone w/3.5mm audio jack (SIRN Tier 1)	200	\$ 5,691.69	\$1,138,338.00

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

3.3.18.1.1	Digital Dual Band Portable Radio, 1200 channels, dual display, 380-470 MHz and 700 MHz operation w/AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, and spare battery, and speaker microphone w/3.5mm audio jack (SIRN Tier1)	1	\$ 5,691.69	\$5,691.69
3.3.18.1.2	Digital Dual Band Portable Radio, 1200 channels, dual display, 380-470 MHz and 800 MHz operation w/AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, and speaker microphone w/3.5mm audio jack (SIRN Tier 1).	1	\$ 5,691.69	\$ 5,691.69
3.3.18.2	Digital Dual Band Portable Radio, 1200 channels, dual display, 380-470 MHz and VHF operation, wo/AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, speaker microphone w/3.5mm audio jack (SIRN Tier 2)	1	\$ 5,136.24	\$5,136.24
3.3.18.2.1	Digital Dual Band Portable Radio, 1200 channels, dual display, 380-470 MHz and 700 MHz operation wo/AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, and speaker microphone w/3.5mm audio jack (SIRN Tier2)	1	\$ 5,136.24	\$5,136.24
3.3.18.2.2	Digital Dual Band Portable Radio, 1200 channels, dual display, 380-470 MHz and 800 MHz operation wo/AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, and speaker microphone w/3.5mm audio jack (SIRN Tier 2).	1	\$ 5,136.24	\$ 5,136.24
3.3.19	Programming Software for Digital Dual Band Portable Radio	5	\$ 375.00	\$1,875.00
3.3.20	Programming Cable for Digital Dual Band Portable Radio	5	\$ 56.25	\$ 281.25
3.3.21	Option for "Public Safety Yellow" housing for Digital Dual Band Portable radio	5	\$ 18.75	\$93.75
3.3.22	Option to enable GPS feature upon original purchase	5	\$ 69.00	\$ 345.00
3.3.23	Spare speaker microphone w/3.5mm audio jack for Digital Dual Band Portable Radio	25	\$ 85.60	\$ 2,140.00
3.3.24	Spare battery for Digital Dual Band Portable radio	25	\$ 105.00	\$ 2,625.00
3.3.25	Spare ac rapid charger for Digital Dual Band Portable Radio	25	\$ 93.75	\$2,343.75
3.3.26	Spare antenna for Digital Dual Band Portable Radio	25	\$ 33.00	\$825.00
3.3.26.1	Spare GPS/Dual Band antenna for Digital Dual Band Portable Radio	25	\$ 33.00	\$825.00
3.3.28	Spare hard plastic case with 2 1/2 inch and 3 inch belt clips.	20	\$ 30.75	\$615.00
3.3.29	Encryption Key Loader cable (for KVL3000+) for Digital Dual Band Mobile radio.	5	\$ 82.50	\$412.50

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000007

3.3.31.1	Delete Over-The-Air-Programming feature	5	\$ (69.00)	\$(345.00)
3.3.32	Enable Over-The-Air-Rekeying feature	5	\$ 282.90	\$1,414.50
3.4.18.1	Digital Single Band Portable Radio, 1000 channels, dual display, 380-470 MHz operation w/AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, and speaker microphone w/3.5mm audio jack (SIRN Tier 1)	50	\$ 3,712.71	\$185,635.50
3.4.18.1.1	Digital Single Band Portable Radio, 1000 channels, dual display, VHF operation w/AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, and speaker microphone w/3.5mm audio jack	1	\$ 3,712.71	\$ 3,712.71
3.4.18.2	Digital Single Band Portable Radio, 1000 channels, dual display, 380-470 MHz operation, w/o AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, speaker microphone w/3.5mm audio jack (SIRN Tier 2)	1	\$ 3,157.26	\$3,157.26
3.4.18.2.1	Digital Single Band Portable Radio, 1000 channels, dual display, VHF operation w/o AES encryption, antenna, battery, rapid style ac charger, hard plastic case with 3" belt clip, spare battery, and speaker microphone w/3.5mm audio jack	1	\$ 3,157.26	\$3,157.26
3.4.19	Programming Software for Digital Single Band Portable Radio	10	\$ 375.00	\$3,750.00
3.4.20	Programming Cable for Digital Single Band Portable Radio	10	\$ 56.25	\$562.50
3.4.21	Option for "Public Safety Yellow" housing for Digital Single Band Portable radio	2	\$ 17.25	\$34.50
3.4.22	Option to enable GPS feature upon original purchase	2	\$ 80.00	\$ 160.00
3.4.23	Spare speaker microphone w/3.5mm audio jack for Digital Single Band Portable Radio	5	\$ 85.60	\$428.00
3.4.24	Spare battery for Digital Single Band Portable radio	10	\$ 105.00	\$1,050.00
3.4.25	Spare ac rapid charger for Digital Single Band Portable Radio	5	\$ 100.00	\$ 500.00
3.4.26	Spare antenna for Digital Single Band Portable Radio	5	\$ 16.80	\$ 84.00
3.4.26.1	Spare GPS capable for Digital Single Band Portable Radio	5	\$ 15.75	\$ 78.75
3.4.28	Spare hard plastic case with 3 inch belt clip	20	\$ 30.75	\$ 615.00
3.4.29	Encryption Key Loader cable (for KVL3000+) for Digital Dual Band Mobile radio.	5	\$ 88.00	\$ 440.00
3.4.31.1	Delete Over-The-Air-Programming feature	5	\$ (80.00)	\$(400.00)
3.4.32	Enable Over-The-Air-Rekeying feature	5	\$ 328.00	\$1,640.00

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

3.5.19.1	Digital Single Band Mobile Radio, 380-470 MHz, 512 channels, w/AES encryption, Dash mount, low/med power, remote speaker, microphone.	10	\$ 4,059.52	\$40,595.20
3.5.19.1.1	Digital Single Band Mobile Radio, VHF, 512 channels, w/AES encryption, Dash mount, low/med power, remote speaker, microphone.	10	\$ 4,059.52	\$ 40,595.20
3.5.19.2	Digital Single Band Mobile Radio, 380-470 MHz, 512 channels, w/o AES encryption, Dash mount, low/med power, remote speaker, microphone.	10	\$ 3,504.07	\$35,040.70
3.5.19.2.1	Digital Single Band Mobile Radio, VHF, 512 channels, w/o AES encryption, Dash mount, low/med power, remote speaker, microphone.	1	\$ 3,504.07	\$3,504.07
3.5.20	Spare microphone for Digital Single Band Mobile Radio	10	\$ 54.00	\$ 540.00
3.5.21	Programming Software for Digital Single Band Mobile Radio	1	\$ 375.00	\$ 375.00
3.5.22	Programming Cable for Digital Single Band Mobile Radio	1	\$ 63.75	\$ 63.75
3.5.23	High Power Option for Digital Single Band Mobile Radio	1	\$ 345.00	\$ 345.00
3.5.24	Option to enable GPS feature upon original purchase	1	\$ 75.00	\$ 75.00
3.5.24.1	GPS antenna for Digital Single Band mobile radio.	1	\$ 56.25	\$ 56.25
3.5.25	AC Power Supply to convert a Digital Single Band radio into a base station.	1	\$ 233.91	\$ 233.91
3.5.26	Desk top style microphone for Digital Single Band Mobile radio	1	\$ 126.75	\$ 126.75
3.5.27	Optional remote speaker for Digital Single Band Mobile Radio (512 channels)	1	\$ 45.38	\$ 45.38
3.5.28	Encryption Key Loader cable (for KVL3000+) for Digital Dual Band Mobile radio.	1	\$ 94.13	\$ 94.13
3.5.31.1	Delete Over-The-Air-Programming feature	5	\$ (69.00)	\$ (345.00)
3.5.32	Enable Over-The-Air-Rekeying feature	5	\$ 282.90	\$ 1,414.50
3.6.18.1	Digital Single Band Portable Radio, 512 channels, 380-470 MHz operation w/AES encryption, antenna, battery, rapid style ac charger, regular hard plastic case, belt clip, spare battery, and speaker microphone w/3.5mm audio jack (SIRN Tier 1)	5	\$ 4,019.76	\$ 20,098.80
3.6.18.1.1	Digital Single Band Portable Radio, 512 channels, VHF operation w/AES encryption, antenna, battery, rapid style ac charger, hard plastic case, regular belt clip, spare battery, and speaker microphone w/3.5mm audio jack	1	\$ 4,019.76	\$ 4,019.76

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000009

3.6.18.2	Digital Single Band Portable Radio, 512 channels, 380-470 MHZ operation, wo/AES encryption, antenna, battery, rapid style ac charger, hard plastic case, regular belt clip, spare battery, speaker microphone w/3.5mm audio jack (SIRN Tier 2)	5	\$ 3,464.31	\$17,321.55
3.6.18.2.1	Digital Single Band Portable Radio, 512 channels, VHF operation wo/AES encryption, antenna, battery, rapid style ac charger, hard plastic case, regular belt clip, spare battery, and speaker microphone w/3.5mm audio jack	1	\$ 3,464.31	\$ 3,464.31
3.6.19	Programming Software for Digital Single Band Portable Radio	1	\$ 375.00	\$ 375.00
3.6.20	Programming Cable for Digital Single Band Portable Radio	1	\$ 56.25	\$ 56.25
3.6.21	Option for "Public Safety Yellow" housing for Digital Single Band Portable radio	1	\$ 18.75	\$ 18.75
3.6.22	Option to enable GPS feature upon original purchase	1	\$ 75.00	\$ 75.00
3.6.23	Spare speaker microphone w/3.5mm audio jack for Digital Single Band Portable Radio (512 channels)	1	\$ 80.25	\$ 80.25
3.6.24	Spare battery for Digital Single Band Portable radio (512 channels)	1	\$ 105.00	\$ 105.00
3.6.25	Spare ac rapid charger for Digital Single Band Portable Radio (512 channels)	1	\$ 93.75	\$ 93.75
3.6.26	Spare antenna for Digital Single Band Portable Radio (512 channels)	1	\$ 15.75	\$ 15.75
3.6.26.1	Spare GPS capable antenna for Digital Single band portable radio	1	\$ 15.75	\$ 15.75
3.6.28	Spare hard plastic case with 2 1/2 inch belt clip.	1	\$ 21.75	\$ 21.75
3.6.29	Encryption Key Loader cable (for KVL3000+) for Digital Dual Band Mobile radio.	1	\$ 82.50	\$82.50
3.6.31.1	Delete Over-The-Air-Programming feature	5	\$ (69.00)	\$ (345.00)
3.6.32	Enable Over-The-Air-Rekeying feature	5	\$ 282.90	\$ 1,414.50
3.7.1	Consolette consisting of Desk top controller, Signal Aggregate Device, Dual Band Mobile Radio (section 3.1 specifications), all required power supplies	5	\$ 9,466.86	\$47,334.30
3.7.2	Consolette consisting of Desk top controller, Signal Aggregate Device, Single Band Mobile Radio (section 3.2 specifications), all required power supplies	5	\$ 9,190.86	\$ 45,954.30
3.7.3	Separate Desk Top Controller	2	\$ 1,802.15	\$ 3,604.30
3.7.4	Separate Signal Aggregate Device	5	\$ 1,790.75	\$ 8,953.75
3.7.5	Separate Desktop Base Station (Consolette) section 3.1 specifications W/O Desk top Controller and Signal Aggregate Device	5	\$ 5,873.96	\$ 29,369.80

REQUEST FOR QUOTATION
DPS 1418 DIGITAL MOBILE AND PORTABLE RADIOS

000010

3.7.6	Separate Desktop Base Station (Console) section 3.2 specifications W/O Desk top Controller and Signal Aggregate Device	5	\$ 5,597.96	\$27,989.80
Failure to use this form may result in disqualification.		Total Cost:		\$ 2,761,519.77
Bidder / Vendor Information: Name: Motorola Solutions, Inc. Address: 7031 Columbia Gateway Drive, 3rd Floor Columbia, MD 21046 Phone #: 304-860-5051 Email Address: petermarotta@motorolasolutions.com				
Contact Coordinator Information: Name: Peter Marotta Address: 7031 Columbia Gateway Drive, 3rd Floor Columbia, MD 21046 Phone #: 304-860-5051 Email Address: petermarotta@motorolasolutions.com				
*Quantities are estimated annual usage for bidding purposes and bidder's information.				

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DPS1418

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

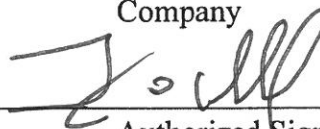
(Check the box next to each addendum received)

<input checked="" type="checkbox"/> Addendum No. 1	<input type="checkbox"/> Addendum No. 6
<input checked="" type="checkbox"/> Addendum No. 2	<input type="checkbox"/> Addendum No. 7
<input checked="" type="checkbox"/> Addendum No. 3	<input type="checkbox"/> Addendum No. 8
<input type="checkbox"/> Addendum No. 4	<input type="checkbox"/> Addendum No. 9
<input type="checkbox"/> Addendum No. 5	<input type="checkbox"/> Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Motorola Solutions, Inc.

Company



Authorized Signature

August 12, 2014

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Solicitation

NUMBER
DPS1418

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
TARA LYLE 304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

Motorola Solutions, Inc.
7031 Columbia Gateway Drive
3rd Floor
Columbia, MD 21046
FEIN # 36-1115800

V
E
N
D
O
R

WEST VIRGINIA STATE POLICE

4124 KANAWHA TURNPIKE
SOUTH CHARLESTON, WV
25309 304-746-2141

S
H
I
P
T
O

DATE PRINTED
07/30/2014

BID OPENING DATE: 08/14/2014

BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 3						
SEE ATTACHED PAGES.						
END OF ADDENDUM NO. 3						
0001	1	LS		725-74		
DIGITAL MOBILE AND PORTABLE RADIOS						
***** THIS IS THE END OF RFQ DPS1418 ***** TOTAL:						\$ 2,761,519.77

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE Labeled 'VENDOR'

SOLICITATION NUMBER: DPS1418**Addendum Number: 3**

The purpose of this addendum is to modify the solicitation identified as DPS1418 ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

- ☐ Modify bid opening date and time
- ☐ Modify specifications of product or service being sought
- ☒ Attachment of vendor questions and responses
- ☐ Attachment of pre-bid sign-in sheet
- ☐ Correction of error
- ☐ Other

Description of Modification to Solicitation:

1. The bid opening remains 08/14/2014 at 1:30 pm.
2. Responses to vendor questions attached.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A**Questions:**

- Q1: I did not find a reference to the number of required years of warranty. Is there a requirement for a warranty period, and if so, how many months, years.
- A2: To delete Section **3.8.1** in its entirety and replace with the following:
- 3.8.1 All items offered for purchase under this RFQ shall be warranted by the seller for a period of three (3) years.

Other Information:

1. The bid opening remains 08/14/2014 at 1:30 pm.
2. No additional questions will be accepted on this RFQ.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DPS1418

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

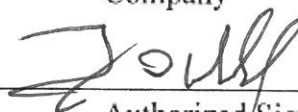
(Check the box next to each addendum received)

<input checked="" type="checkbox"/> Addendum No. 1	<input type="checkbox"/> Addendum No. 6
<input checked="" type="checkbox"/> Addendum No. 2	<input type="checkbox"/> Addendum No. 7
<input checked="" type="checkbox"/> Addendum No. 3	<input type="checkbox"/> Addendum No. 8
<input type="checkbox"/> Addendum No. 4	<input type="checkbox"/> Addendum No. 9
<input type="checkbox"/> Addendum No. 5	<input type="checkbox"/> Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Motorola Solutions, Inc.

Company



Authorized Signature

August 12, 2014

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

SPECIFICATION SHEET
PRELIMINARY



APX™ 6500

PROJECT 25 MOBILE RADIO

We've put exceptional flexibility into an advanced mission critical mobile radio that's easy to operate and intuitive to use. The APX 6500 P25 mobile allows users to choose from 2 control heads, mid and high power models and multiple installation configurations in an easy to install design. Innovative safety features such as GPS location tracking, intelligent lighting and one-touch controls help to keep first responders safer than ever before.

Focus on the task not the technology, with the hardworking mission critical mobile that turns mission critical into mission complete.



FLEXIBLE PLATFORM

- Interchangeable control heads (O3 and O5) and transceivers (mid power and high power). Dual control head support offered on the O5
- O3 hand held control head – this unique, palm-sized device is easy to read and operate, with its large color display and keypad
- O5 control head – gives you a rugged display, easy-to-use controls and five programmable soft buttons for even more radio flexibility

EASY TO INSTALL AND EFFORTLESS TO USE

- Mid-power model fits into any existing XTL footprint, so you can reuse mounting holes and cables
- High-power model trunnion design lets you remove the radio without removing the cables
- 12 character RF ID label helps you track information without uninstalling your radio

CUTTING-EDGE TECHNOLOGY AND ADVANCED FEATURES

- Project 25 Phase 2 technology provides twice the voice capacity
- Integrated GPS lets you locate and track an individual or vehicle
- Advanced features like intelligent lighting, radio profiles and text messaging improve communication and coordination



APX™ 6500 SPECIFICATIONS

FEATURES AND BENEFITS:

Available in 700/800 frequency bands

Up to 870 Channels

Trunking Standards supported:

- Clear or digital encrypted Trunked Operation
- Capable of SmartZone®, SmartZone Omnilink, SmartNet®

Analog MDC-1200 and Digital APCO P25 Conventional System

Configurations

Narrow and wide bandwidth digital receiver (6.25kHz/12.5kHz/25kHz)

Embedded digital signaling (ASTRO and ASTRO 25)

Integrated GPS capable

Integrated Encryption Hardware

Intelligent lighting

Radio profiles

Unified Call List

Meets applicable MIL-STD 810C, D, E, F and G

Ships standard IP54

Utilizes Windows XP, Vista and Windows 7 Customer Programming Software (CPS)

■ Supports USB Communications

■ Built in FLASHport™ support

Re-use of most XTL™ accessories, plus new IMPRES accessories

OPTIONAL FEATURES:

Enhanced Encryption Software Options

Programming over Project 25 (POP25)

Text Messaging

Over the Air Re-Key (OTAR)

12 character RF ID asset tracking

Tactical OTAR

TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

		700 MHz	800 MHz
Frequency Range/Bandsplits		764-776 794-806	806-825 851-870
Channel Spacing		25/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj*		10-30 Watts Max	10-30 Watts Max
Frequency Stability* (-30°C to +60°C; +25°C Ref.)		±0.00015 %	±0.00015 %
Modulation Limiting*		±5 kHz /±2.5 kHz	±5 kHz /±4 kHz (NPSPAC) /±2.5 kHz
Modulation Fidelity (C4FM) 12.5kHz Digital Channel		±2.8 kHz	±2.8 kHz
Emissions*	Conducted* Radiated*	-70/-85 dBc -20/-40 dBm	-70 dBc -20 dBm
Audio Response*		+1, -3 dB (EIA)	+1, -3 dB (EIA)
FM Hum & Noise (25 & 20 KHz /12.5 KHz)		40/34 dB	40/34 dB
Audio Distortion*		2 %	2 %

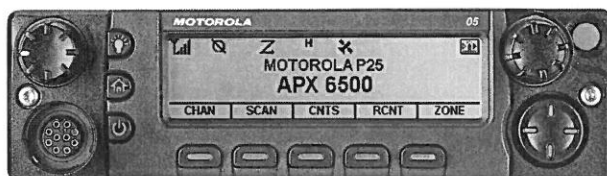
DIMENSIONS

		Inches	Millimeters
Mid Power Radio Transceiver		2 x 7 x 8.6	50.8 x 177.8 x 218.4
O5 Control Head		2 x 7 x 2.5	50.8 x 180.3 x 63.5
Mid Power Radio Transceiver and O5 Control Head-Dash Mount		2 x 7 x 9.6	50.8 x 180.3 x 243.8
Mid Power Radio Transceiver and Remote Mount		2.0 x 7 x 9.6	50.8 x 180.3 x 243.8
High Power Radio Transceiver		2.9 x 11.5 x 8.8	74 x 293 x 223
High Power Radio Transceiver with Handle		3.4 x 11.5 x 8.8	87 x 293 x 223
Mid Power Radio Transceiver and Control Head Weight		7.0 lbs	3.17 kg
High Power Radio Transceiver Weight	With Trunnion	14.2 lbs	6.4 kg
	Without Trunnion	12 lbs	5.4 kg



03 Hand Held Control Head features

- 4 lines: 2 lines text (14 characters), 1 line icons, 1 line soft menu keys
- 3 x 6 keypad with up to 24 programmable soft keys
- Cellular style user interface and color display



05 Control Head features

- Tri-color LCD display
- 4 lines: 2 lines text (14 characters), 1 line icons, 1 line soft menu keys
- 3 x 6 keypad microphone accessory with 3 programmable soft keys
- 5 programmable soft key buttons and 5 scroll-through menus with
- Up to 24 programmable soft keys
- Dual control head configuration to fully control a single radio from 2 different wired locations

RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS

	700 MHz	800 MHz
Frequency Range/Bandsplits	764-776	851-870
Channel Spacing	25/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit
Audio Output Power at 3% distortion*	7.5W or 13W**	7.5W or 13W**
Frequency Stability* (-30°C to +60°C; +25°C Ref.)	±0.00015 %	±0.00015 %
Analog Sensitivity*	12 db SINAD	0.25 µV
Digital Sensitivity	1% BER 5% BER	0.3 µV 0.25 µV
Intermodulation	80 dB	80 dB
Spurious Rejection	90 dB	90 dB
Audio Distortion at rated*	3.00%	3.00%
Selectivity	25 kHz/30 kHz 12.5 kHz	80 dB 65 dB

SIGNALING (ASTRO MODE)

Signaling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO® Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions.

POWER AND BATTERY DRAIN

Model Type	764-870 MHz
Minimum RF Power Output	10-35 Watt (764-870 MHz)
Operation	13.8V DC ±20% Negative Ground
Standby at 13.8V	764-870 MHz (10-35 Watt) 0.85A
Receive at Rate Audio at 13.8V	764-870 MHz (10-35 Watt) 3.2A
Transmit Current (A) at Rated Power (W)	764-870 MHz (10-35 Watt) 12A (35W), 8A (15W)

GPS SPECIFICATIONS

Channels	12
Tracking Sensitivity	-153 dBm
Accuracy**	<10 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<10 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GPS

APX™ 6500 SPECIFICATIONS

PORTABLE MILITARY STANDARDS 810 C, D, E, F & G

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot	501.5	I-A1, II
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I-C3, II
Temperature Shock	503.1	—	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I-C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I-A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	—	507.5	II-Aggravated
Salt Fog	509.1	—	509.2	—	509.3	—	509.4	—	509.5	—
Blowing Dust	510.1	I	510.2	I, II	510.3	I, II	510.4	I, II	510.5	I, II
Vibration	514.1w	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I-cat.24
Shock	516.2	I, III	516.3	I, IV	516.4	I, IV	516.5	I, IV	516.6	I, V, VI

ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	1
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 64 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL — Counter Addressing OFB — Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 FIPS 197

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-30°C / +60°C
Storage Temperature	-40°C / +85°C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP54, MIL-STD

FCC TYPE ACCEPTANCE ID

Band	Output Power	Transmitter Number
764-870 MHz	10-35 Watt	AZ492FT5858

* Measured in the analog mode per TIA/EIA 603 under nominal conditions

** Accuracy specs are for long-term tracking
(95th percentile values >5 satellites visible at a nominal -130 dBm signal strength)

+ Specs includes performance for the non-GNSS/GNSS bands

++ Output power in to 8 and 3.2 Ohm external speakers respectively

Specifications subject to change without notice. All specifications shown are typical.
Radio meets applicable regulatory requirements.



APX™ 7000

Project 25 Multi-Band Portable Radio



Top Display Model:

- Up to 96 channels
- Universal Push-to-Talk
- T-Grip
- Dual Battery Latch
- Orange emergency button
- 16 position rotary knob
- 2 position concentric switch
- 3 position toggle switch
- 3 programmable side buttons
- Transmit LED indicator
- Full Bitmap Top Display
 - 1 line of icons
 - 1 line x 8 characters of text
- No keypad



Dual Display Model:

- Same as APX Top Display model plus the following features:
- 1250 channels
- Dial from pre-stored lists or free-form entry
- Programmable soft keys for easy access to radio menus
- Backlit Keypad
 - Home and Data buttons
 - 3 soft keys
 - 4 direction navigation key
 - 4 x 3 keypad
- Full Bitmap Display
 - 2 lines of icons
 - 4 lines x 14 characters of text
 - Status icons

The APX 7000 Multi-Band P25 Portable Radio delivers exceptional performance combining advanced voice and data technology driven by the challenges of mission critical users.

Motorola's 4th generation P25 subscriber is multi-band (700/800 MHz, VHF, and UHF Range 1), communicates with current and future networks (FDMA and TDMA) and has integrated GPS. Designed specifically for first responders the dual-sided mission critical design has both an audio and data side providing optimal functionality and loud and clear audio in a compact rugged form factor.



SPECIFICATION SHEET

APX 7000
Project 25 Multi-Band Portable Radio

FEATURES AND BENEFITS:

Available in 700/800 MHz, VHF, and UHF Range 1 bands

Optional multi-band operation

Trunking standards supported:

- Clear or digital encrypted ASTRO®25 Trunked Operation
- Capable of SmartZone®, SmartZone Omnilink, SmartNet®

Analog MDC-1200 and Digital APCO P25 Conventional System Configurations

Narrow and wide bandwidth digital receiver
(6.25 kHz / 12.5 kHz / 25 kHz)

Embedded digital signaling (ASTRO & ASTRO 25)

Integrated GPS capable

Seamless wideband scan

Intelligent Lighting

Radio Profiles

Unified Call List (Dual Display model only)

Expansion Slot

Micro SD removable memory card

User programmable voice announcement

Meets Applicable Mil Specs 810C, D, E and F

Ships standard IP67 (Submersible at 1 meter, 30 minutes)

Rugged option available

Public Safety Yellow and High Impact Green Rugged Housing options

Custom recessed label areas

Superior Audio Features:

- 1W high audio speaker
- Dual speakers (Dual Display model only)
- Dual microphones
- 2-mic noise canceling technology

Utilizes Windows XP and Vista Customer Programming Software (CPS)

- Supports USB communications
- Built in FLASHport™ support

Full portfolio of accessories including IMPRES batteries, chargers and audio devices

OPTIONAL FEATURES:

Enhanced Encryption capability

Programming Over Project 25

Over the Air Rekey

Text Messaging

TRANSMITTER – TYPICAL PERFORMANCE SPECIFICATIONS

	700 MHz	800 MHz	VHF	UHF Range 1
Frequency Range/Bandsplits	764-776 794-806	806-825 851-870	136-174	380-470 MHz
Channel Spacing	25/20/12.5 kHz	25/20/12.5 kHz	25/12.5 kHz	25/12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj ¹	1-3 Watts Max	1-3 Watts	1-6 Watts	1-5 Watts
Frequency Stability ¹ (-30°C to +60°C; +25°C Ref.)	±0.000020 %	±0.000030 %	±0.000025 %	±0.000025 %
Modulation Limiting ¹	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±2.5 kHz	±5 kHz / ±2.5 kHz
Emissions (Conducted and Radiated) ¹	-75 dB	-75 dB	-75dB	-75dB
Audio Response ¹	+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise	-48 dB	-47 dB	-47 dB	-47dB
Audio Distortion ¹	0.60 %	1 %	0.50 %	0.50 %

BATTERIES FOR APX 7000

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Numbers	Battery Capacity
Li-Ion IMPRES 2900 mAh (Ruggedized)	3.07" x 2.34" x 1.65"	6.53 oz	NNTN7038	2900 mAh
Li-Ion IMPRES 4200 mAh Ruggedized (IP67)	5.12" x 2.34" x 1.65"	11.29 oz	NNTN7034	4200mAh
Li-Ion IMPRES 4100 FM ² Ruggedized (IP67)	5.12" x 2.34" x 1.65"	11.29 oz	NNTN7033	4100 mAh
NiMH IMPRES 2100 mAh Ruggedized (IP67)	5.07" x 2.34" x 1.57"	11.82 oz	NNTN7037	2100 mAh
NiMH IMPRES 2000 mAh FM ² Ruggedized (IP67)	5.07" x 2.34" x 1.57"	11.82 oz	NNTN7036	2000 mAh
NiMH IMPRES 2000 mAh FM ² Ruggedized PLUS	5.07" x 2.34" x 1.57"	11.82 oz	NNTN7035	2000 mAh
NiMH IMPRES 2100 mAh Ruggedized PLUS	5.07" x 2.34" x 1.57"	11.82 oz	NNTN7573	2100 mAh

APX 7000
Project 25 Multi-Band Portable Radio

		700 MHz	800 MHz	VHF	UHF Range 1
Frequency Range/Bandsplits		764-776	851-870	136-174 MHz	380-470 MHz
Channel Spacing		12.5/25 kHz	12.5/25 kHz	12.5/25 kHz	12.5/25 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated ¹		1000mW	1000mW	1000mW	1000mW
Frequency Stability ¹ (-30°C to +60°C; +25°C Ref.)		±0.000080 %	±0.000080 %	±0.000086 %	±0.000086 %
Analog Sensitivity ³	12 dB SINAD	0.250 µV	0.250 µV	0.216 µV	0.234 µV
Digital Sensitivity ⁴	1% BER	0.347 µV	0.333 µV	0.277 µV	0.307 µV
	5% BER	0.251 µV	0.251 µV	0.188 µV	0.207 µV
Selectivity ¹	25 kHz channel	75.7 dB	75.7 dB	79.3 dB	78.3 dB
	12.5 kHz channel	67.5 dB	67.5 dB	70 dB	68.1 dB
Intermodulation		80 dB	80 dB	80.5 dB	80.2 dB
Spurious Rejection		76.6 dB	76.6 dB	93.2 dB	80.3 dB
FM Hum and Noise	25 kHz	-54 dB	-54 dB	-53.8 dB	-53.5 dB
	12.5 kHz	-48 dB	-48 dB	-48 dB	-47.4 dB
Audio Distortion ¹		.9 %	.9 %	1.20 %	0.91 %

Channels	12
Tracking Sensitivity	-151 dBm
Accuracy ⁵	<10 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<10 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GPS

[illegible]

SPECIFICATION SHEET

APX 7000
Project 25 Multi-Band Portable Radio

DIMENSIONS OF THE RADIOS WITHOUT BATTERY

	Inches	Millimeters
Length	6.29	159.71
Width Push-to-Talk button	2.31	58.69
Depth Push-to-Talk button	1.34	34
Width Top	2.98	75.69
Depth Top	1.6	40.52
Depth Bottom of Battery	1.65	41.78
Weight of the radios without battery	12.2 oz	

PORTABLE MILITARY STANDARDS 810 C, D, E & F

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1
Temperature Shock	503.1	–	503.2	I/A1C3	503.3	I/A1C3	503.4	I
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, II
Humidity	507.1	II	507.2	II	507.3	II	507.4	–
Salt Fog	509.1	–	509.2	–	509.3	–	509.4	–
Blowing Dust	510.1	I	510.2	I, II	510.3	I, II	510.4	I, II
Immersion ⁶	512.1	I	512.2	I	512.3	I	512.4	I
Vibration	514.1	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24
Mechanical Shock	516.1	I, II	516.3	I, IV	516.4	I/IV	516.5	I, IV

ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 64 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-3 FIPS 197

RUGGED OPTION SPECIFICATIONS

Leakage (immersion) ⁶	MIL-STD-810 C, D, E, F Method 512.X Procedure I
Housing Availability	Standard, Public Safety Yellow and High Impact Green

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	–30° C / +60° C
Storage Temperature ⁷	–40° C / +85° C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water & Dust Intrusion	IP67 MIL-STD

¹ Measured in the analog mode per TIA / EIA 603 under nominal conditions

² When used with an FM approved intrinsically safe radio.

³ Measured conductively in analog mode per TIA / EIA 603 under nominal conditions

⁴ Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions

⁵ Accuracy specs are for long-term tracking (95th percentile values >5 satellites visible at a nominal –130 dBm signal strength)

⁶ For rugged models only

⁷ Temperatures listed are for radio specifications. Battery storage is recommended at 25°C, ±5°C to ensure best performance

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements.



Motorola, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. www.motorola.com/governmentandenterprise 1-800-367-2346

MOTOROLA and the Stylized M Logo are registered in the U.S. Patent and Trademark Office.
All other product or service names are the property of their registered owners. © Motorola, Inc. 2009 (0910)
R3-4-2021B

APX™ 7500

Project 25 Multi-Band Mobile Radio



STANDARD FEATURES

Available in 700/800 MHz and VHF bands

Up to 1250 Channels

Optional multi-band operation

Trunking Standards supported:

- Clear or digital encrypted ASTRO® 25 Trunked Operation
- Capable of SmartZone®, SmartZone Omnilink, SmartNet®

Analog MDC-1200 and Digital APCO P25 Conventional System Configurations

Narrow and wide bandwidth digital receiver
(6.25 kHz equivalent/12.5 kHz/25 kHz)

Embedded digital signaling (ASTRO and ASTRO 25)

Integrated GPS capable

Integrated Encryption Hardware

Seamless wideband scan

Intelligent lighting

Radio profiles

Unified Call List

Expansion Slot Standard

Meets applicable MIL-specs 810C, D, E, F and G

Ships standard IP54

Utilizes Windows XP and Vista Customer Programming Software (CPS)

- Supports USB Communications
- Built in FLASHport™ support

Re-use of most XTL™ accessories

OPTIONAL FEATURES

Enhanced Encryption Software Options

Programming over Project 25 (POP25)

Text Messaging

Over the Air Re-Key (OTAR)

12 character RF ID asset tracking

The APX 7500 mobile exemplifies Motorola's commitment to meet the voice and data demands of today's first responders in mission critical environments—to enable, anywhere, anyplace, anytime connectivity. With integrated voice and data capabilities, these radios offer improved communications between multiple agencies, as well as neighboring communities, from everyday operations to disaster response.

Motorola's newest P25 mobile is multi-band (700/800 MHz and VHF), communicates with current and future networks (FDMA and TDMA)



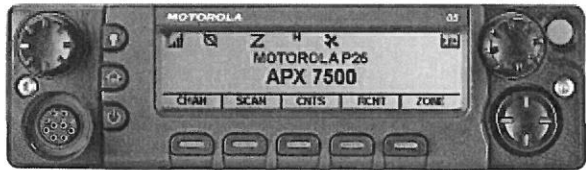
SPECIFICATION SHEET

APX 7500
Project 25 Multi-Band Mobile Radio



O3 HANDHELD CONTROL HEAD FEATURES

- 4 lines: 2 lines text (14 characters), 1 line icons, 1 line soft menu keys
- 3 x 6 keypad with up to 24 programmable soft keys
- Cellular style user interface and color display



O5 CONTROL HEAD FEATURES

- Tri-color LCD display
- 4 lines: 2 lines text (14 characters), 1 line icons, 1 line soft menu keys
- 3 x 6 keypad microphone accessory with 3 programmable soft keys
- 5 programmable soft key buttons and 5 scroll-through menus with up to 24 programmable soft keys
- Multiple control head configuration to fully control a single radio with up to 4 different wired locations
- Motorcycle configuration available

O9 INTEGRATED CONTROL HEAD AVAILABLE AS A FUTURE RELEASE.

SIGNALLING (ASTRO MODE)	
Signalling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions.

MOBILE APX7500

Dimensions	Mid Power Radio Transceiver
	2" x 7" x 8.6" (50.8 x 177.8 x 218.4 mm)
	O5 Control Head
	2" x 7" x 2.5" (50.8 x 180.3 x 63.5 mm)
	Mid Power Radio Transceiver and O5 Control Head–Dash Mount
	2" x 7" x 9.6" (50.8 x 180.3 x 243.8 mm)
Weight	Mid Power Radio Transceiver and Remote Mount
	2.0" x 7" x 9.6" (50.8 x 180.3 x 243.8 mm)
	High Power Radio Transceiver
	2.9" x 11.5" x 8.8" (74 x 293 x 223 mm)
	High Power Radio Transceiver with Handle
	3.4" x 11.5" x 8.8" (87 x 293 x 223 mm)
	Mid Power Radio Transceiver and Control Head
	7.0 lbs (3.17 kg)
	High Power Radio Transceiver
	14.2 lbs with trunnion (6.4 kg)
	12 lbs without trunnion (5.4 kg)

SPECIFICATION SHEET

APX 7500
Project 25 Multi-Band Mobile Radio

TRANSMITTER – TYPICAL PERFORMANCE SPECIFICATIONS

	700MHz	800MHz	VHF
Frequency Range/Bandsplits	764-776 794-806	806-824 851-870	136-174
Channel Spacing	25/12.5 kHz	25/20/12.5 kHz	30/25/12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj*	10-30 Watts	10-35 Watts	25-100 Watts
Frequency Stability* (-30°C to +60°C; +25°C Ref.)	±0.00015 %	±0.00015 %	±0.0002 %
Modulation Limiting*	±5 kHz/±2.5 kHz	±5 kHz/±4 kHz (NPSPAC) /±2.5 kHz	±5 kHz/±2.5 kHz
Modulation Fidelity (C4FM) 12.5kHz Digital Channel	±2.8 kHz	±2.8 kHz	±2.8 kHz
Emissions*	Conducted+ -70/-85 dBc	Radiated+ -20/-40 dBm	Conducted -70 dBc
			Radiated -20 dBm
Audio Response*	+1, -3 dB (EIA)	+1, -3 dB (EIA)	+1, -3 dB (EIA)
FM Hum & Noise (25 & 20 KHz/12.5 KHz)	40/34 dB	40/34 dB	50/40 dB
Audio Distortion*	2%	2%	2%

RECEIVER – TYPICAL PERFORMANCE SPECIFICATIONS

	700MHz	800MHz	VHF
Frequency Range/Bandsplits	764-776	851-870	136-174 MHz
Channel Spacing	25/12.5 kHz	25/20/12.5 kHz	30/25/12.5 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at 3% distortion*	7.5 W or 13 W **	7.5 W or 13 W **	7.5 W or 13 W **
Frequency Stability* (-30°C to +60°C; +25°C Ref.)	±0.00015 %	±0.00015 %	±0.0002 %
Analog Sensitivity* 12 dB SINAD	0.25 µV	0.25 µV	Pre-Amp 0.2 µV
Digital Sensitivity 1% BER	0.3 µV	0.3 µV	Standard 0.3 µV
5% BER	0.25 µV	0.25 µV	0.25 µV
Intermodulation	80 dB	80 dB	80 dB
Spurious Rejection	90 dB	90 dB	90 dB
Audio Distortion at rated*	3.00%	3.00%	3.00%
Selectivity* 25 kHz/30 kHz	80 dB	80 dB	90 dB
12.5 kHz	65 dB	65 dB	70 dB

GPS SPECIFICATIONS

Channels	12
Tracking Sensitivity	-153 dBm
Accuracy**	<10 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<10 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GPS

POWER AND BATTERY DRAIN

Model Type	136-174 MHz 764-870 MHz
Minimum RF Power Output	10-35 Watt (764-870 MHz) 25-100 Watt (136-174 MHz)
Operation	13.8V DC ±20% Negative Ground
Standby at 13.8V	764-870 MHz (10-35 Watt) 0.85A 136-174 MHz (25-100 Watt) 0.85A
Receive at Rate Audio at 13.8V	764-870 MHz (10-35 Watt) 3.2A 136-174 MHz (25-100 Watt) 3.2A
Transmit Current (A) at Rated Power (W)	764-870 MHz (10-35 Watt) 12A (35W), 8A (15W) 136-174 MHz (25-100 Watt) 20A (100W)

SPECIFICATION SHEET

APX 7500
Project 25 Multi-Band Mobile Radio

MOBILE MILITARY STANDARDS 810 C, D, E, F, & G

	MIL-STD-810C Method Proc./Cat.	MIL-STD-810D Method Proc./Cat.	MIL-STD-810E Method Proc./Cat.	MIL-STD-810F Method Proc./Cat.	MIL-STD-810G Method Proc./Cat.
Low Pressure	500.1 I	500.2 II	500.3 II	500.4 II	500.5 II
High Temperature	501.1 I,II	501.2 I/A1,II/A1	501.3 I/A1,II/A1	501.4 I/Hot, II/Hot	501.5 I-A1, II
Low Temperature	502.1 I	502.2 I/C3, II/C1	502.3 I/C3, II/C1	502.4 I/C3, II/C1	502.5 I-C3, II
Temperature Shock	503.1 –	503.2 I/A1C3	503.3 I/A1C3	503.4 I	503.5 I-C
Solar Radiation	505.1 II	505.2 I	505.3 I	505.4 I	505.5 I-A1
Rain	506.1 I,II	506.2 I,II	506.3 I,II	506.4 I,III	506.5 I, III
Humidity	507.1 II	507.2 II	507.3 II	507.4 –	507.5 II - Aggravated
Salt Fog	509.1 –	509.2 –	509.3 –	509.4 –	509.5 –
Blowing Dust	510.1 I	510.2 I,II	510.3 I,II	510.4 I,II	510.5 I, II
Vibration	514.1 VIII/F, Curve-W	514.3 I/10, II/3	514.4 I/10, II/3	514.5 I/24	514.6 I-cat.24
Shock	516.1 I,II	516.3 I,IV	516.4 I,IV	516.5 I,IV	516.6 I, V, VI

ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	7
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 48 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 FIPS 197

* Measured in the analog mode per TIA/EIA 603 under nominal conditions

** Accuracy specs are for long-term tracking (95th percentile values >5 satellites visible at a nominal
–130 dBm signal strength)

* Specs includes performance for the non-GNSS/GNSS bands

** Output power in to 8 and 3.2 Ohm external speakers respectively

Specifications subject to change without notice. All specifications shown are typical.
Radio meets applicable regulatory requirements.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	–30°C / +60°C
Storage Temperature	–40°C / +85°C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water & Dust Intrusion	IP54, MIL-STD

FCC TYPE ACCEPTANCE ID

Band	Output Power	Transmitter Number
136-174 MHz	25-100 Watt	AZ492FT3821
764-870 MHz	10-35 Watt	AZ492FT5858



Motorola, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. www.motorola.com/governmentandenterprise 1-800-367-2346

MOTOROLA and the Stylized M Logo are registered in the U.S. Patent and Trademark Office.
All other product or service names are the property of their registered owners. © Motorola, Inc. 2009 (0910)
R3-1-2037A



APX™ 6000 PROJECT 25 PORTABLE RADIO

Delivering outstanding performance in a compact form factor without sacrificing the features you need most. The APX™ 6000 is the next generation of ruggedly-reliable performers that gives you the advanced features such as Mission Critical Wireless and GPS location tracking in a small, P25 Phase 2 capable radio. Whether you're on patrol or racing to a fire, the APX 6000 puts you in greater control of your safety, response time and technology investment.

Focus on the task not the technology, with the real-world ready radio that turns mission critical into mission complete.

CUTTING-EDGE FEATURES IN A COMPACT SIZE

- Innovative T-grip design gives you a secure grip and better control
- High-contrast color display is easy to read in different lighting conditions
- Top display is quick to read while looking down, at a glance or from an angle
- Universal push-to-talk button with enhanced grooves is easy to find by "touch"

EXCELLENT AUDIO YOU CAN HEAR LOUD AND CLEAR

- Excellent audio ensures voice communications are intelligible, even in high noise environments
- Dual sided 2 microphone noise canceling technology
- Equipped with the latest AMBE digital voice vocoder

FUTURE-READY TECHNOLOGY TO RELY ON TODAY

- Small P25 Phase 2 capable radio that provides twice the voice capacity
- Backwards and forwards compatible with all Motorola mission critical radio systems
- Supports applications like Mission Critical Wireless and GPS location tracking for greater safety

- Universal Push-to-Talk
- T-Grip
- Dual Battery Latch
- Orange emergency button
- 16 position rotary switch
- 2 position concentric switch
- 3 position toggle switch
- 3 programmable side buttons
- Transmit LED indicator
- Backlit Keypad:
 - Home and Data buttons
 - 3 soft keys
 - 4 direction navigation key
 - 4 x 3 keypad
- Full Bitmap Display:
 - 2 lines of icons
 - 4 lines x 14 characters of text
 - Status icons

PRODUCT SPEC SHEET
APX™ 6000



FEATURES AND BENEFITS:

Available in 700/800 MHz, VHF, UHF R1, and UHF R2 bands
Trunking standards supported:

- Clear or digital encrypted ASTRO®25 Trunked Operation
- Capable of SmartZone®, SmartZone Omnilink, SmartNet®

Analog MDC-1200 and Digital APCO P25 Conventional System Configurations

Narrow and wide bandwidth digital receiver
(6.25 kHz equivalent / 12.5 kHz / 30 kHz / 25 kHz)

Embedded digital signaling (ASTRO & ASTRO 25)

Available in 3 models

Integrated GPS capable

Man Down

Intelligent Lighting

Radio Profiles

Unified Call List (Models 2.5 and 3.5 only)

User programmable voice announcement

Meets Applicable MIL-STD-810C, D, E, F and G

IP67 standard

(submersible 1 meter, 30 minutes)**

Yellow and green colored housing options

Custom recess label areas

Superior Audio Features:

- 0.5 W high audio speaker
- Dual microphones
- 2-mic noise canceling technology

Utilizes Windows XP, Vista and Windows 7 Customer Programming Software (CPS)

- Supports USB communications

- Built in FLASHport™ support

Full portfolio of accessories including IMPRES batteries, chargers and audio devices

OPTIONAL FEATURES:

Mission Critical Wireless

Enhanced Encryption capability

Programming Over Project 25

Over the Air Rekey

Text Messaging

Rugged submersible housing** (2 meters, 2 hours)

*Per the FCC Narrowbanding rules, new products (APX6000 UHF R1, UHF R2) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25KHz for United States - State & Local Markets only.

** Radios meet industry standards (IPx7) for immersion.




TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776, 793-806 MHz 806-824, 851-870 MHz	136-174 MHz	380-470 MHz	450-520 MHz
Channel Spacing		25/12.5 kHz	30/25/12.5 kHz	25/12.5 kHz	25/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj ¹		1-3 Watts Max	1-6 Watts Max	1-5 Watts Max	1-5 Watts
Frequency Stability ¹ (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Modulation Limiting ¹		±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±2.5 kHz	±5 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz
Emissions (Conducted and Radiated) ¹		-75 dB	-75 dB	-75 dB	-75 dB
Audio Response ¹		+1, -3 dB	+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise	700 MHz 800 MHz	-48 dB/-47 dB -46 dB/-45 dB	-47 dB -45 dB	-47 dB -45 dB	-47 dB -45 dB
Audio Distortion ¹	700 MHz 800 MHz	0.60 % 1 %	0.50 %	0.50 %	0.50 %

BATTERIES FOR APX 6000

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Number	Battery Capacity
Li-Ion IMPRES 2150 mAh IP67***	3.39" x 2.34" x 1.46"	5 oz	PMNN4403	2150 mAh
Li-Ion IMPRES 2900 mAh IP67	3.07" x 2.34" x 1.65"	6.53 oz	NNTN7038	2900 mAh
Li-Ion IMPRES 4200 mAh IP67	5.07" x 2.34" x 1.65"	11.29 oz	NNTN7034	4200 mAh
Li-Ion IMPRES 4100 mAh FM ² IP67	5.07" x 2.34" x 1.65"	11.29 oz	NNTN7033	4100 mAh
NiMH IMPRES 2100 mAh IP67	5.12" x 2.34" x 1.57"	11.82 oz	NNTN7037	2100 mAh
NiMH IMPRES 2000 mAh FM ² IP67	5.12" x 2.34" x 1.57"	11.82 oz	NNTN7036	2000 mAh
NiMH IMPRES 2000 mAh FM ² Rugged	5.12" x 2.34" x 1.57"	11.82 oz	NNTN7035	2000 mAh
NiMH IMPRES 2100 mAh Rugged	5.12" x 2.34" x 1.57"	11.82 oz	NNTN7573	2100 mAh
Li-Ion IMPRES 2300 mAh FM ² Rugged	3.39" x 2.34" x 1.65"	6.53 oz	NNTN8092	2300 mAh

***Standard shipping battery

RADIO MODELS			
			
	MODEL 1.5	MODEL 2.5	MODEL 3.5
Display	Full bitmap monochromatic LCD top display 1 line text x 8 characters 1 line of icons No menu support Multi-color backlight	Top display plus: Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight	Top display plus: Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight
Keypad	none	Backlight keypad 3 soft keys 4 direction Navigation key Home and Data buttons	Backlight keypad 3 soft keys 4 direction navigation key 4x3 keypad Home and Data buttons
Channel Capacity*	96	1000	1000
FLASHport Memory	64 MB	64 MB	64 MB
700/800 MHz (763-870 MHz)	H98UCD9PW5AN Q360EF	H98UCF9PW6AN Q360EF	H98UCH9PW7AN Q360EF
VHF (136-174 MHz)	H98KGD9PW5AN Q360EG	H98KGF9PW6AN Q360EG	H98KGH9PW7AN Q360EG
UHF Range 1 (380-470 MHz)	H98QDD9PW5AN Q360EH	H98QDF9PW6AN Q360EH	H98QDH9PW7AN Q360EH
UHF Range 2 (450-520 MHz)	H98SDD9PW5AN Q360FC	H98SDF9PW6AN Q360FC	H98SDH9PW7AN Q360FC
Buttons & Switches	Large PTT button ■ Angled On/Off volume control ■ Orange emergency button ■ 16 position top-mounted rotary switch ■ 2-position concentric switch ■ Multi-color backlight ■ 3-position toggle switch ■ 3 programmable side buttons		
Transmitter Certification			
700/800 (764-869 MHz)	AZ489FT5863		
VHF (136-174 MHz)	AZ489FT3829		
UHF Range 1 (380-470 MHz)	AZ489FT4892		
UHF Range2 (450-520 MHz)	AZ489FT4903		
FCC Emissions Designators			
FCC Emissions Designators	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E**		
Power Supply			
Power Supply	One rechargeable 2150 mAh Li-Ion Battery Standard (PMNN4403), with alternate battery options available.		

**Per the FCC Narrowbanding rules, new products (APX6000 UHF R1, UHF R2) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25KHz for United States - State & Local Markets only. *Enhancement package available

RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS					
		700/800	VHF	UHF Range 1	UHF Range 2
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776 MHz 851-870 MHz	136-174 MHz	380-470 MHz	450-520 MHz
Channel Spacing		25/12.5 kHz	30/25/12.5 kHz	25/12.5 kHz	25/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated ¹		500mW	500mW	500mW	1000 mW
Frequency Stability ¹ (-30°C to +60°C; +25°C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %	±0.00010 %
Analog Sensitivity ³	12 dB SINAD	0.250 µV	0.216 µV	0.234 µV	0.234 µV
Digital Sensitivity ⁴	1% BER (800 MHz) 5% BER	0.347 µV (0.333 µV) 0.251 µV	0.277 µV 0.188 µV	0.307 µV 0.207 µV	0.307 µV 0.207 µV
Selectivity ¹	25 kHz channel 12.5 kHz channel	75.7 dB 67.5 dB	79.3 dB 70 dB	78.3 dB 68.1 dB	78.3 dB 67.5 dB
Intermodulation		80 dB	80.5 dB	80.2 dB	80.2 dB
Spurious Rejection		76.6 dB	93.2 dB	80.3 dB	80.3 dB
FM Hum and Noise	25 kHz 12.5 kHz	-54 dB -48 dB	-53.8 dB -48 dB	-53.5 dB -47.4 dB	-53.5 dB -47.4 dB
Audio Distortion ¹		.9 %	1.20 %	0.91 %	0.91 %

PRODUCT SPEC SHEET
APX™ 6000

PORTABLE MILITARY STANDARDS 810 C, D, E, F & G

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Basic Hot	501.5	I/A1, II/A2
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Immersion	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.6	I, V, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

DIMENSIONS OF THE RADIOS WITHOUT BATTERY

	Inches	Millimeters
Length	5.47	139
Width Push-To-Talk button	2.39	60.7
Depth Push-To-Talk button	1.40	35.6
Width Top	2.98	75.7
Depth Top	1.58	40.1
Depth Bottom of Battery	1.24	31.5
Weight of the radios without battery	10.9 oz	309 g

ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 64 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3 FIPS 197

GPS SPECIFICATIONS

Channels	12
Tracking Sensitivity	–159 dBm
Accuracy ⁵	<10 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<10 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted) GPS

RUGGED OPTION SPECIFICATIONS

Leakage (immersion)	MIL-STD-810 C,D,E,F and G Method 512.X Procedure I
Housing Availability	Black (Standard), Public Safety Yellow and High Impact Green

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature ⁶	–30°C / +60°C
Storage Temperature ⁶	–40°C / +85°C
Humidity	Per MIL-STD
ESD	IEC 801-2 KV
Water and Dust Intrusion	IP67, MIL-STD
Immersion	MIL-STD 512.X/I

¹ Measured in the analog mode per TIA / EIA 603 under nominal conditions

² When used with an FM approved intrinsically safe radio

³ Measured conductively in analog mode per TIA / EIA 603 under nominal conditions.

⁴ Measured conductively in digital mode per TIA / EIA IS 102.CAAA under nominal conditions.

⁵ Accuracy specs are for long-term tracking [95th percentile values >5 satellites visible at a nominal –130 dBm signal strength].

⁶ Temperatures listed are for radio specifications. Battery storage is recommended at 25°C, ±5°C to ensure best performance.

Specifications subject to change without notice. All specifications shown are typical. Radio meets applicable regulatory requirements.

Motorola Solutions, Inc. 1301 East Algonquin Road Schaumburg, Illinois 60196, U.S.A. 800-367-2346
motorolasolutions.com

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. © 2013 Motorola Solutions, Inc. All rights reserved.

R3-4-2035F





WIRELESS DISPATCH EVERYWHERE

APX™ 7500 MULTIBAND CONSOLETTTE

Racing to an emergency or repairing a power outage, every moment matters as you mount a response. The right control station can make all the difference in making sure communications are clear, continuous and coordinated – across multiple users, agencies and miles.

The APX™ 7500 Consolelette is the ideal complement to your dispatch console. It's the low cost, mid-power RF control station for the ASTRO® 25 system when you want a wireless dispatch solution. Plus, you can use it as an emergency backup station when infrastructure is off-line or for wireless access to different system types for increased interoperability between agencies.

CONNECT WITH CONFIDENCE

Designed for the APX 7500 mid power series and O5 control head, the APX 7500 Consolelette combines forward-thinking technology with time-tested functionality. Project 25 Phase 2 technology delivers twice the voice capacity so you can add more users without adding more frequencies or infrastructure. And its multiband operation assures seamless interoperability – so you can talk with confidence from a squad car or desk station, a job site across town or an incident in the next county.

MIGRATE AT YOUR OWN PACE

The APX 7500 Consolelette is backwards and forwards compatible, developed to meet current P25 standards and future-ready to support new technology and data applications. Now you can achieve your interoperability objectives—whether upgrading an existing system or designing a new one—based on your dollars and deadlines.

BUILT FOR THE TOUGHEST TASKS

Innovative design and skillful engineering make the APX 7500 Consolelette a tireless performer. It can be easily serviced or programmed without removing the lid and the robust metal housing assures extra durability. An integrated front panel numeric keypad on the APX 7500 Consolelette gives you fast access to radio controls. And it meets stringent FCC and UL certifications for exceptional safety.

ROBUST AND MISSION-READY

When a power loss occurs, count on the automatic battery revert to connect your people 24/7. All you need is a DC source, such as a marine battery, to switch over automatically and keep communications going strong.

Rich in features, the APX 7500 Consolelette gives you easy access to contact information with one unified call list and the largest number of interface connections to a wide variety of consoles and desk sets. What's more, an ACIM wireless interface provides back-up dispatch if your console's link to the ASTRO 25 trunked system is ever lost.

APX 7500 MULTIBAND CONSOLETTTE

STANDARD FEATURES

Available in 700/800 MHz, VHF, UHF R1, and UHF R2 bands

Up to 1250 Channels

Optional multiband operation

Trunking Standards supported:

- Clear or digital encrypted ASTRO® 25 Trunked Operation
- Capable of SmartZone®, SmartZone Omnilink, SmartNet®

Analog MDC-1200 and Digital APCO P25

Conventional System Configurations

Narrow and wide bandwidth digital receiver
(6.25 kHz equivalent/12.5 kHz/25 kHz)

Embedded digital signaling (ASTRO and ASTRO 25)

Integrated Encryption Hardware

Seamless wideband scan

Intelligent lighting

Radio profiles

Unified Call List

ACIM/CCGW interface including:

- ID decode
- Call alert encode
- Tone remote control

Interfaces supported:

- Recorder
- Wireline
- Vehicle Interface Port
- Crosspatch
- Headsets (2)*

110/220VAC operation with battery revert capability

VU Meter and Clock

Expansion Slot Standard

2 configurations available:

- Full featured front panel
- Limited front panel

Utilizes Windows XP and Vista Customer
Programming Software (CPS)

- Supports USB Communications
- Built in FLASHport™ support

OPTIONAL FEATURES:

Enhanced Encryption Software Options

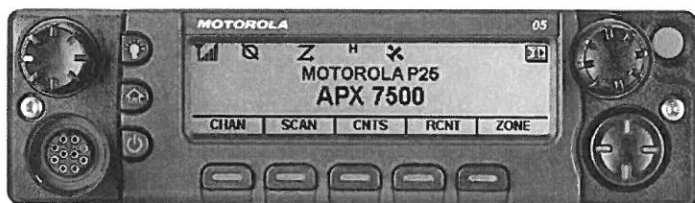
Programming over Project 25 (POP25)

Text Messaging

Over the Air Re-Key (OTAR)

Extended Dispatch Operation including:

- Emergency Alarm ACK Encode
- Radio Inhibit/Uninhibit Encode
- Radio Monitor Encode
- Radio Check Encode
- Status Query Encode
- Status Query Response Decode
- Status Update Decode
- Message Update Decode



05 CONTROL HEAD FEATURES

Tri-color LCD display

- 4 lines: 2 lines text (14 characters), 1 line icons, 1 line soft menu keys
- 3 x 6 keypad microphone accessory with 3 programmable soft keys
- 5 programmable soft key buttons and 5 scroll-through menus with up to 24 programmable soft keys

*available on full featured models only.

PRODUCT SPEC SHEET
APX™ 7500 MULTIBAND CONSOLETTTE

SIGNALLING (ASTRO MODE)

Signalling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions.

APX 7500 CONSOLETTTE

Dimensions	Limited Front Panel Configuration 16" x 18" x 4.2" (406 x 457 x 107mm) Populated Front Panel Configuration 16" x 18.75" x 4.2" (406 x 476 x 107mm)
Weight	Limited Front Panel Configuration 18.5 lbs (8.4 kg) Populated Front Panel Configuration 19.5 lbs (8.9 kg)

TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

	700 MHz		800 MHz		VHF		UHF Range 1		UHF Range 2	
Frequency Range/Bandsplits	764-776 MHz 794-806 MHz		806-824 MHz 851-870 MHz		136-174 MHz		380-470 MHz		450-520 MHz	
Channel Spacing	25/12.5 kHz		25/20/12.5 kHz		30/25/12.5 kHz		25/12.5 kHz		25/12.5 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Rated RF Output Power Adj*	10-30 Watts		10-35 Watts		10-50 Watts		10-40 Watts		10-45 Watts (450-485 MHz) 10-40 Watts (485-512 MHz) 10-25 Watts (512-520 MHz)	
Frequency Stability* (-30°C to +60°C; +25°C Ref.)	±0.00015 %		±0.00015 %		±0.0002 %		±0.0002 %		±0.0002 %	
Modulation Limiting*	±5 kHz / ±2.5 kHz		±5 kHz/±4 kHz (NPSPAC) /±2.5 kHz		±5 kHz / ±2.5 kHz		±5 kHz / ±2.5 kHz		±5 kHz / ±2.5 kHz	
Modulation Fidelity (C4FM) 12.5kHz Digital Channel	±2.8 kHz		±2.8 kHz		±2.8 kHz		±2.8 kHz		±2.8 kHz	
Emissions*	Conducted+ -70/-85 dBc	Radiated+ -20/-40 dBm	Conducted + -70 dBc	Radiated+ -20 dBm	Conducted + -85 dBc	Radiated -20 dBm+	Conducted + -85 dBc	Radiated -20 dBm+	Conducted+ -85 dBc	Radiated -20 dBm+
Audio Response*	+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)		+1, -3 dB (EIA)	
FM Hum & Noise	25 & 20 kHz 12.5 kHz	-40 dB -34 dB	-40 dB -34 dB		-50 dB -40 dB		-45 dB -40 dB		-45 dB -40 dB	
Audio Distortion*	2 %		2 %		2 %		2 %		2 %	

RECEIVER – TYPICAL PERFORMANCE SPECIFICATIONS

	700 MHz		800 MHz		VHF		UHF Range 1		UHF Range 2	
Frequency Range/Bandsplits	764-776 MHz		851-870 MHz		136-174 MHz		380-470 MHz		450-520 MHz	
Channel Spacing	25/12.5 kHz		25/20/12.5 kHz		30/25/12.5 kHz		25/12.5 kHz		25/12.5 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Audio Output Power at 3% distortion*	2.5W++		2.5W++		2.5W++		2.5W++		2.5W++	
Frequency Stability* (-30°C to +60°C; +25°C Ref.)	±0.00015 %		±0.00015 %		±0.0002 %		±0.0002 %		±0.0002 %	
Analog Sensitivity*	12 dB SINAD	0.25 µV	0.25 µV		Pre-Amp 0.2 µV	Standard 0.3 µV	Pre-Amp 0.2 µV	Standard 0.3 µV	Pre-Amp 0.2 µV	Standard 0.3 µV
Digital Sensitivity	1% BER	0.3 µV	0.3 µV		0.25 µV	0.4 µV	0.25 µV	0.4 µV	0.25 µV	0.4 µV
	5% BER	0.25 µV	0.25 µV		0.2 µV	0.3 µV	0.2 µV	0.3 µV	0.2 µV	0.3 µV
Intermodulation	80 dB		80 dB		80 dB	85 dB	80 dB	85 dB	80 dB	85 dB
Spurious Rejection	90 dB		90 dB		90 dB		90 dB		90 dB	
Audio Distortion at rated*	3.00 %		3.00 %		3.00 %		3.00 %		3.00 %	
Selectivity*	25 kHz	80 dB	80 dB		—		82 dB		82 dB	
	12.5 kHz	65 dB	65 dB		70 dB		70 dB		70 dB	
	30 kHz	—	—		90 dB		—		—	

PRODUCT SPEC SHEET
APX™ 7500 MULTIBAND CONSOLETTTE

POWER AND BATTERY DRAIN

Model Type	136-174 MHz, 380-470 MHz, 450-520 MHz, 764-870 MHz					
Minimum RF Power Output	10-35 Watt (764-870 MHz), 10-50 Watts (136-174 MHz), 10-40 Watts (380-470 MHz), 10-45 Watts (450-485 MHz), 10-40 Watts (485-512 MHz), 10-25 Watts (512-520 MHz)					
AC Operation	110 to 220VAC 50-60Hz					
AC Surge Spec	EN6100-4-5 Level 5					
DC Operation	13.8V DC +/-20% Negative Ground					
Standby at 13.8V	0.85A (764-870 MHz), 0.85A (136-174 MHz), 0.85A (380-470 MHz), 0.85A (450-520 MHz)					
Receive Current at Rated Audio at 13.8V	1.5A (764-870 MHz), 1.5A (136-174 MHz), 1.5A (380-470 MHz), 1.5A (450-520 MHz)					
Transmit Current (A) at Rated Power	136-174 MHz (10-50 Watt)	13A (50W)	8A (15W)	764-870 MHz (10-35 Watt)	35A (50W)	8A (15W)
	380-470 MHz (10-40 Watt)	11A (40W)	8A (15W)			
	450-520 MHz (10-45 Watt)	11A (45W)	8A (15W)			

ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 128 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3 FIPS 197

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-30°C / +60°C
Storage Temperature	-40°C / +85°C
Humidity	95% relative humidity
ESD	IEC 61000-4-2
Duty Cycle	EIA/TIA Intermittent Duty Cycle

FCC TYPE ACCEPTANCE ID

FCC ID	BAND AND POWER LEVEL
AZ492FT4895	10-50 Watts (136-174 MHz) and 10-40Watts (380-470 MHz)
AZ492FT5858	10-35 Watt (764-870 MHz)
AZ492FT7037	10-50 Watts (136-174 MHz) and 10-35 Watt (764-870 MHz)
AZ492FT7043	10-35 Watts (764-870 MHz) and 10-40 Watts (380-470 MHz)
AZ492FT3824	10-50 Watts (136-174 MHz)
AZ492FT4894	10-40 Watts (380-470 MHz)
AZ492FT4896	10-45 Watts (450-520 MHz)

For more information about how to interoperate without boundaries, visit motorolasolutions.com/apx

Motorola Solutions, Inc.
East Algonquin Road Schaumburg, Illinois 60196, U.S.A. 800-367-2346
motorolasolutions.com

* Measured in the analog mode per ITA/EIA 603 under nominal conditions

+ Specs includes performance for the non-GNSS/GNSS bands

++ Output power into 20 Ohm internal speaker

Specifications subject to change without notice. All specifications shown are typical.

Radio meets applicable regulatory requirements.

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. © 2011 Motorola Solutions, Inc. All rights reserved.

R3-1-2051





POWERFUL AND FLEXIBLE VOIP COMMUNICATIONS

MCD 5000 DESKSET SYSTEM

Expand your communications with VoIP technology. Scalable from small operations to complex control centers and geographically disbursed operations, you can depend on the new modular MCD 5000 Deskset System with VoIP technology for your conventional and trunked communications. Whether used in dispatch environments, back-up sites, special events or call monitoring, you can easily expand communication capabilities throughout your organization using your IP network. This easy-to-deploy solution enables communications across your network

when and where you need it most, increasing safety, awareness and coordination.

MCD 5000 DESKSET

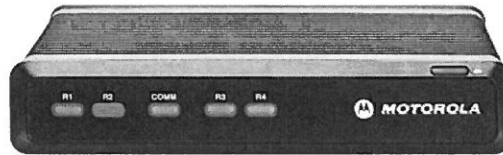
A flexible desktop console, the MCD 5000 Deskset provides digital control for a variety of Motorola two-way radios, and can connect directly to a radio or over an IP network using the MCD 5000 Radio Gateway Unit (RGU).

The MCD 5000 Deskset digital control link emulates the buttons and display of the connected radio and performs all the functions of the radio control head.

And with a large and easy-to-read color LCD screen, intuitive layout and an adjustable viewing angle, the MCD 5000 Deskset is ergonomically designed for both occasional and constant everyday use.

MCD 5000 RADIO GATEWAY UNIT

Connect the MCD 5000 Deskset to radios over your IP network using the MCD 5000 RGU. The MCD 5000 Deskset dynamically switches between MCD 5000 RGUs, giving access to additional radios across the network and expanding communications. Each MCD 5000 RGU can connect up to four radios, and each MCD 5000 Deskset can connect to one channel at a time



The MCD 5000 RGU connects radios to the MCD 5000 Deskset over your IP network

DESKSET AUDIO ACCESSORIES

With flexible communication options, you can use the handset, Push-To-Talk (PTT) switch and built-in condenser microphone, or add the optional headset, footswitch and desk microphone accessories for user convenience.

IP NETWORK

Take full advantage of VoIP technology and deploy the MCD 5000 Deskset when and where you need it on your IP network. And for locations with power availability constraints, use the power over Ethernet (PoE) port for even more installation flexibility.

CONFIGURATION AND REPORTING TOOLS

Our configuration tool offers the convenience of remote use from anywhere on the network or local use with an Ethernet connection. And you can provide timely support and save travel time when you remotely access your system to configure the MCD 5000 Deskset and MCD 5000 RGU using our comprehensive Microsoft® Windows® based utility. You can also remotely run reports and perform queries for information you need to make real-time decisions. Additional supervisor reporting tools allow monitoring of each deskset to enhance training and operational efficiencies.

OPERATIONS MANAGEMENT CENTER (OMC) SERVER

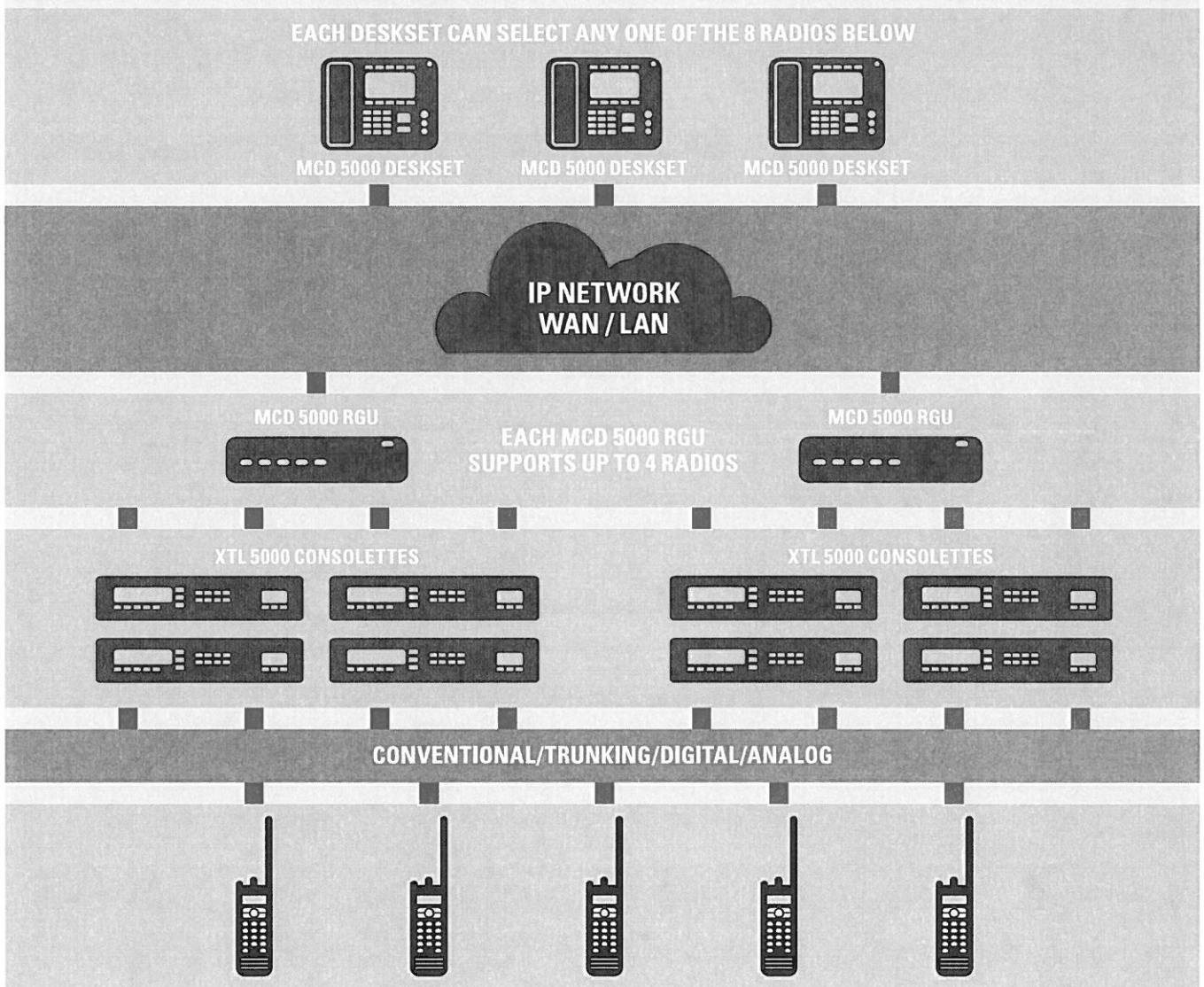
An optional main management server for the MCD 5000 Deskset System, the Operations Management Center (OMC) enables system operation, maintenance, provisioning, and control for larger installations, as well as for customers with information assurance (IA) needs.

This central repository stores registration for all system users, MCD 5000 Desksets and radio resources, along with system-wide information including alarms, logs and audits. The OMC server runs on the Red Hat® LINUX® operating system.

Providing user-level interface to the OMC, the Administrator Control Panel Client (ACP) PC allows local and remote administration access for system management activities. The ACP runs on Microsoft Windows 7 (64-bit) and is required for systems with an OMC.

EXAMPLE MCD 5000 DESKSET SYSTEM SHOWING 3 OPERATOR POSITIONS CONTROLLING UP TO 8 RADIOS

The MCD 5000 Deskset system allows multiple desksets to dynamically switch to different MCD 5000 RGUs, giving you access to additional radios for expanded communications. Each MCD 5000 Deskset can connect to one radio at a time.



TWO-WAY RADIO DEVICES

The MCD 5000 Deskset lets you control a wide variety of digital radios:

ASTRO® Consolette (W9):

ASTRO® Spectra™
ASTRO® Spectra Plus™
ASTRO® XTL™ 5000

CDM series radios:

CDM 1550™
CDM 1550 LS™
CDM1550 LS+™

MCS 2000™ Model III Control Station

PRODUCT SPEC SHEET
MCD 5000 DESKSET

SPECIFICATIONS

MCD 5000 DESKSET

Dimensions	Height: 4.17 in (106 mm) Width: 10.35 in (263 mm) Depth: 8.27 in (210 mm) Weight: 3.97 lbs (1.8 kg)
Environmental	Operating temperature: 0 °C to 50 °C (32 °F to 122 °) Storage temperature: -40 °C to 80 °C (-40 °F to 176 °F) Humidity: 5% to 95% @ +50° C (122° F), Non-Condensing
Power	Input power: +10.8 to +13.2VDC, (+12 V nominal) Dissipation: 12.5W Max. 37VDC to 57VDC. Powered via POE-PD; meeting 802.3af Standard for Powered Desksets class 0
Audio	The end-to-end distortion is no more than 3% THD The generated audio is no more than -50 dBm of Hum and Noise below the rate audio output The crosstalk between any audio signals is no more than -65 dBm at 0 dBm transmit audio power
Supported Radio Protocols	RS-232 TTL using RJ-45 connector; SB9600; USB 2.0
Regulatory-EMC	FCC part 15 class A
Safety	EN60950-1
Green Product	RoHS, WEEE Mark
Certified Standard Compliance Requirements	CE Mark, FCC part 15 A Mark, UL Mark (for P.S. only) US federal government Environmentally Preferable Specification (EPP) Program
Non-certified Standard Compliance Requirements	CSA, UL, MOTOROLA W18 certification, CMM
Deskset Regulatory Requirements	For distribution in US, For distribution in Canada, For distribution in Israel
Vocoders	G.711 and G.729

MCD 5000 RADIO GATEWAY UNIT

Dimensions	Height: 1.65 in (42 mm) Width: 8.58 in (218 mm) Depth: 10.39 in (264 mm) Weight: 5.73 lbs (2.6 kg)
Environmental	Operating temperature: -30 °C to 60 °C (-22 °F to 140 °F) Storage temperature: -40 °C to 80 °C (-40 °F to 176 °F) Humidity: 5% to 95% @ +50° C (122° F), Non-Condensing
Power	Input power: +10.8 to +14VDC, (+12 V nominal) Dissipation: 9W Max. 37VDC to 57VDC. Powered via POE-PD; meeting 802.3af Standard for Powered Desksets class 0
Audio	The end-to-end distortion is no more than 3% THD The generated audio is no more than -50 dBm of Hum and Noise below the rate audio output The crosstalk between any audio signals is no more than -65 dBm at 0 dBm transmit audio power
Supported Radio Protocols	RS-232 TTL; SB9600; USB 1.1 for MCD 5000 RGU
Regulatory-EMC	FCC part 15 class A
Safety	EN60950-1
Green Product	RoHS, WEEE Mark
Certified Standard Compliance Requirements	CE Mark, FCC part 15 A Mark, UL Mark (for P.S. only) US federal government Environmentally Preferable Specification (EPP) Program
Non-certified Standard Compliance Requirements	CSA, UL, MOTOROLA W18 certification, CMM
Deskset Regulatory Requirements	For distribution in US, For distribution in Canada, For distribution in Israel
Vocoders	G.711 and G.729

To learn more about how the MCD 5000 Deskset System can help you implement powerful and flexible VoIP communications on your network, contact your Motorola representative or visit motorola.com/dispatch.

Motorola Solutions, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. motorolasolutions.com

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. Microsoft, Windows, Windows Me and Windows Vista are registered trademarks of Microsoft Corporation in the United States and other countries. All other trademarks are the property of their respective owners. © 2011 Motorola Solutions, Inc. All rights reserved. R3-13-2015

