



Request for Quote

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ONE CAPITOL HILL
PROVIDENCE RI 02908

CREATION DATE : 09-AUG-18
BID NUMBER: 7596592
TITLE: TRAFFIC CONTROL TRUCKS

BID CLOSING DATE AND TIME:10-SEP-2018 11:00:00

BUYER: Ward, Alyssa J
PHONE #: 401-574-8472

**B
I
L
L
T
O**
DOT ACCOUNTS PAYABLE
TWO CAPITOL HILL, RM 230
SMITH ST
PROVIDENCE, RI 02903
US

**S
H
I
P
T
O**
DOT MAINTENANCE BUSINESS OFFICE
360 LINCOLN AVE
WARWICK, RI 02888
US

Requisition Number: 1562497

Note to Bidders: Any questions regarding this solicitation can be forwarded via email to DOA.PurQuestions7@purchasing.ri.gov

Line	Description	Quantity	Unit	Unit Price	Total
1	<p>All questions regarding this solicitation must be forwarded to doa.purquestions7@purchasing.ri.gov no later than August 27th 2018 at 3:30PM. A pre-bid conference will be held for this solicitation on August 20th, 2018 at 10:30am at 360 Lincoln Ave Warwick, RI 02888 2nd floor.</p> <p>TRAFFIC CONTROL TRUCKS BRAND _____ MODEL _____</p>	8.00	Each		

Delivery: _____

Terms of Payment: _____

It is the Vendor's responsibility to check and download any and all addenda from the RIVIP. This offer may not be considered unless a signed RIVIP generated Bidder Certification Cover Form is attached and the Unit Price column is completed. The signed Certification Cover Form must be attached to the front of the offer

Contract Terms and Conditions

Table of Contents

Terms and Conditions.....II
 BID STANDARD TERMS AND CONDITIONSII
 TERMS AND CONDITIONS FOR THIS BIDII
 RIVIP INFO - BID SUBMISSION REQUIREMENTSII

Terms and Conditions

BID STANDARD TERMS AND CONDITIONS

TERMS AND CONDITIONS FOR THIS BID

RIVIP INFO - BID SUBMISSION REQUIREMENTS

It is the vendor's responsibility to check and download any and all addenda from the RIVIP. This offer may not be considered unless a signed RIVIP generated Bidder Certification Cover Form is attached and the Unit Price column is completed. The signed Certification Cover Form should be attached to the front of the offer. Each bid proposal must be submitted in a separate sealed envelope with the bidder's name and address and the specific "Solicitation Number," "Solicitation Title," and the "Bid Proposal Submission Deadline" marked in the upper left-hand corner of the envelope.

The bid proposal must be delivered (via mail, messenger service, or personal delivery) to the Division of Purchases and date-stamped/receipted by the date and time specified for the bid proposal submission deadline. Bidders should mail bid proposals sufficiently in advance of the bid proposal submission deadline to ensure timely delivery to the Division of Purchases or, when delivering a bid proposal in person or by messenger, should allow additional time for parking and clearance through security checkpoints. Bid proposals must be addressed to:

Rhode Island Department of Administration

Division of Purchases, 2nd Floor

One Capitol Hill, Providence, RI 02908-5855

Bid proposals that are not received by the Division of Purchases by the bid proposal submission deadline for whatever reason will be deemed late and will not be considered. The submission time will be determined by the time clock in the Division of Purchases. Postmarks will not be considered proof of timely submission.

Bid proposals in electronic format are not accepted at this time.

At the bid proposal submission deadline, bid proposals will be opened and read aloud in public.

DIVESTITURE OF INVESTMENTS IN IRAN REQUIREMENT:

No vendor engaged in investment activities in Iran as described in R.I. Gen. Laws §37-2.5-2(b) may submit a bid proposal to, or renew a contract with, the Division of Purchases. Each vendor submitting a bid proposal or entering into a renewal of a contract is required to certify that the vendor does not appear on the list maintained by the General Treasurer pursuant to R.I. Gen. Laws §37-2.5-3.

Rhode Island
Department of Transportation

Highway Maintenance Division

Traffic Control Truck

GENERAL:

The following specification is for eight (8) traffic control trucks for the Rhode Island Department of Transportation, Highway Maintenance Department. The units shall be the latest current model of standard design manufactured, complete with all standard equipment, special tools and warranties. Bidders are to supply the latest printed literature and detailed specifications on equipment the bidder purposes to furnish. All specifications listed within this bid packet are minimum requirements. It is expected that chassis providers and respective up-fitting/body builders communicate and understand the coordination that is required for this build.

All completed units shall comply with all applicable O.S.H.A. ANSI, FMVSS standards and regulations. The specifications listed below shall be considered minimum requirements.

Any manufacture's deviation from the specification, no matter how minor, shall be noted on a separate sheet and be referenced to the section. The deviation shall be explained in detail and identified as an Exception, Clarification or Enhancement.

CHASSIS MANUFACTURER AND MODEL NUMBER:

Indicate manufacturer and model number of the chassis quoted.

Manufacturer: _____

Model: _____

Body Manufacturer: _____

Body Model: _____

CHASSIS DATA:

The chassis shall be a minimum 19,500 lbs. G.V.W.R., Cab to Axle length of 120 inches and dual rear wheels. The chassis charging system shall be adequate to meet the requirements of the specified equipment.

Comply: _____

NOTE: The intention of this specification is not to proclude a Chevrolet, Dodge, Ford or other equivalent chassis that meets the 19,500 lb GVWR and specification requirements. All exceptions, clarifications or enhancement shall be explained.

NOTE: It is expected that chassis providers and respective up-fitting/body builders communicate and understand the coordination that is required for this build. Any manufacture's deviation from the specification, no matter how minor, shall be noted on a separate sheet and be referenced to the section. The deviation shall be explained in detail and identified as an Exception, Clarification or Enhancement.

14 Ft. PLATFORM BODY

These dimensions are typical and are to represent the body proportions. Minor changes are acceptable.

- DIMENSIONS:** Outside – 172" long x 96" wide heavy-duty platform body
- CONSTRUCTION:** Cross members are 4" 7 gauge formed steel "C" channels (50,000 psi)
Outer rails are 5-3/4" 7 gauge high-strength steel
Front and rear end long sill gussets, 7" structural steel long sills
gussets every cross member w/ cross members 12" on center.
Recessed lights w/ shock resistant rubber grommets and loom protected wires
2" x 4" reinforced stake pockets on 24" centers
40" high galvanized steel racks all around with a bolt or latch to secure the racks to the body.
Eight (8) flush mount "D" rings, evenly spaced on each side of the body floor.
- FLOOR:** 3/16" thick diamond plate floor
- LIGHTS/WIRING:** All clearance and marker lights shall be LED and meet FMVSS 108 requirements
- PAINT:** Body shall be painted Black. Deck shall be coated with non-slip, black rubberized flexible coating - work surface.
- BULKHEAD:** Rectangular full width bulkhead, heavy duty reinforced. Four (4) 3" square posts will be evenly spaced on bulkhead to provide additional stiffness and strength.
- INSTALLATION:** Shall include black injection molded poly rear fenders, 107 back-up alarm, two(2) rear side access steps, all body lighting shall be run through a chassis mounted Truck-Lite junction box, rubber grommet ICC lights LED.
Comply: _____

CONE PLACEMENT PLATFORM

A heavy duty vertical liftgate type platform shall be install at the rear of the platform body as a work platform for the placement of Traffic Cones. It shall be constructed such that the platform can be in the lowered position while the vehicle is traveling. It shall have a minimum lift capacity 2000lbs. The platform shall be fitted with collapsible safety railing at least 42" in height. The safety rail shall be configured to allow placement of Traffic Cones from each side and rear. I shall also be constructed such that it allows for the platform to be used as a lift gate to load material. Two fall protection anchor points shall be provided in opposite corners of the platform capable of supporting a static load of 5,000 lbs. and comply with ANSI A92.2 4.9.4 "Attachment of Fall Protection". Dual controls shall be supplied for platform operation; one set at curbside of the platform body and one set on platform.
Comply: _____

COMMUNICATION SYSTEM

Communication system shall be installed that provides for hands free communications between the driver and the worker in the platform. Comply: _____

UNDER BODY TOOL BOX

(2) 48" x 18" x 18" Aluminum frame mounted, located one on each side of body. Comply: _____

REAR BUMPER:

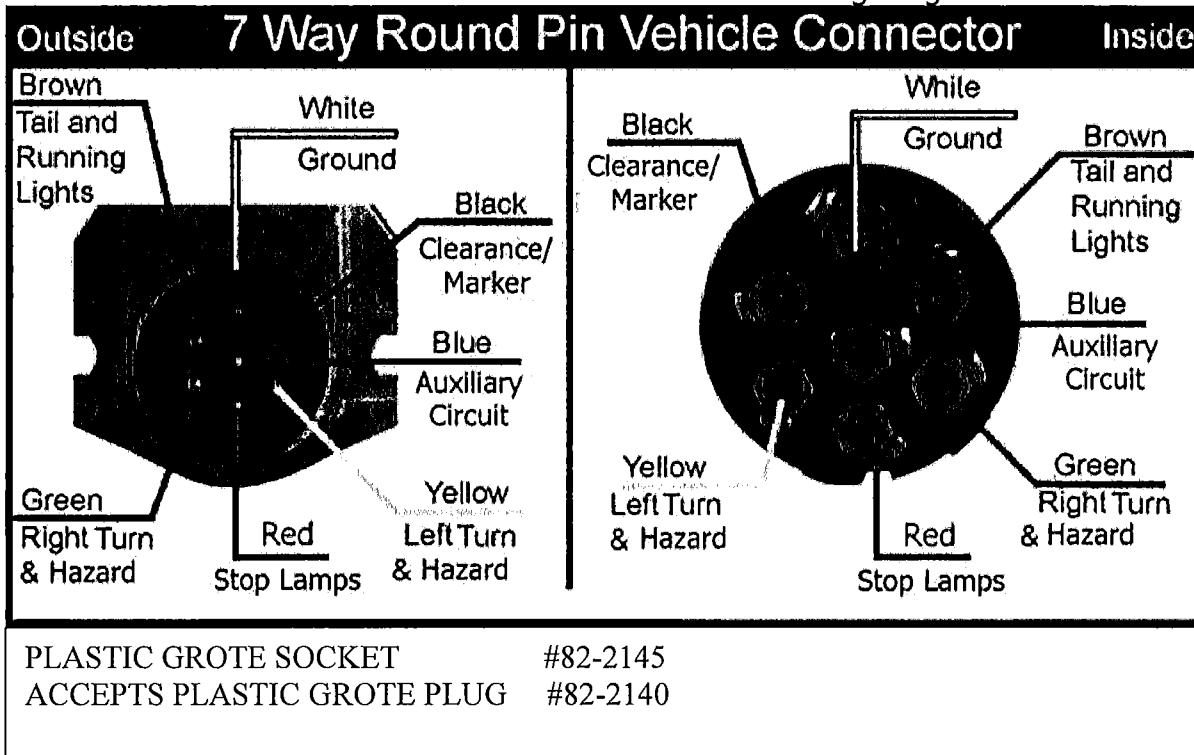
The rear of the chassis shall be extended and supported with steel channel to create a rugged mounting area for the ICC bumper. This structure shall contain reinforcement for an integral ICC bumper, side access steps and support a "multi-hitch" assembly with chain loops. The "multi-hitch" shall be secured with four (4) bolts and be equipped with a 2" ball and pintle combination. The mounting surface for the ball and pintle combination shall be fabricated such the center of hitch height is adjustable from 16" to 25".

Comply: _____

TRAILER PLUG:

A trailer plug compatible with RIDOT equipment shall be supplied.

RIDOT Standard Truck Wiring Diagram



Comply: _____

CONSPICUITY MARKING:

Conspicuity marking shall be installed along the sides and rear of the body.

Comply: _____

TRUCK MOUNTED FULL MATRIX MODULAR PVMS DISPLAY

Construction and Configuration

Mounting	Fold down mounted to the front of platform body such that the bottom of the panel is flush with the top of the ta cab when in use.
Lift Mechanism	Power actuated to lift display panel.
Display Panel Frame	Aluminum
Display Panel Support	Tubular Steel Support Frame that allows for the panel to be lower such that it does not extend above the top of the tank when not in use. It shall be mounted such that it does not interfere with the operation of the hose reels.
Coating	Black powder coat finish

Comply: _____

Display Panel

Type	Full Matrix sign composed of interchangeable display modules
Size	Pixel arrangement of no less than 24 pixels x 48 pixels and no greater than 30 pixels x 56 pixels.
Pixel LED's	Each pixel shall be composed of 1, 2, or 4 LED's in a closely spaced arrangement so to as to appear as a single round image at normal viewing distances.
LED Color	590mm(+/- 2mm) amber-colored LED
LED Viewing Angle	24° to 30° cone of vision
Standard Font	5 pixels wide by 7 pixel high
LED Output Level	Automatically adjusts to ambient conditions and is manually adjustable from 0 to 100%.

Comply: _____

Sign Controller

Type	Handheld control unit shall be able to be operated from inside the truck cab
Menu Display	Control panel shall provide sign status and current message display or display sequence name.
Actuator Control	Shall provide control of Display Panel lift mechanism
Battery Monitoring	Shall display battery output parameters or provide a low battery warning
Security	Shall be password protected

Comply: _____

Sign Display Features

Typical Message	Three(3) line display with eight(8) 12" characters on each line
Messages	Minimum of ninety nine(99) user programmable messages
Fonts	Shall include multiple sizes and widths of fonts
Graphics	Arrow board function, at a minimum
Programming	User shall be able to create, edit, save and display messages consisting of single and multiple pages.

Comply: _____

Electrical and Environmental Requirements

Display Panel Power 12 VDC from the vehicle's electrical system
Operating Temperature Minimum range -22°F to 164°F

Comply: _____

Maintenance, Repair and Extended Warranty

Maintenance 2-year full onsite maintenance based on manufacture's requirements
Repair Local repair representative who shall respond within 72-hour period. All repairs shall be performed at its field location or at a RIDOT facility.
Warranty Two (2) year maintenance, repair and extended warranty on all components supplied with this unit.

Comply: _____

ELECTRICAL, WARNING and LIGHTING SYSTEMS

ELECTRICAL SYSTEM:

All electrical equipment installed shall conform to current automotive electrical system standards. The wiring shall be individually and permanently color-coded on the insulation, shall be properly supported and attached to body members and protected from abrasion. The main low voltage chassis to body interface point and distribution panel shall be provided at the rear of the chassis cab interior, behind the seat. This area shall provide easy access for service. The distribution panel shall be labeled and shall contain body electrical relays, and wire connection bar. The distribution panel shall contain electrical harness quick disconnects or connectors to facilitate removal of the body module in the future. Electrical connections in exposed areas shall be made using heat shrink or weatherproof connections. All electrical equipment switches shall be mounted on a switch panel mounted in the cab console with access to both the driver and passenger and be powered by key-switch accessory. These light switches shall be rocker type with integral indicator light to show when the circuit is energized. All switches shall be appropriately identified as to function. All console wiring shall allow for the components to be reposition within the console for user preference. **All body light wiring shall be installed in conduit to stay out of the elements.**

Comply: _____

WARNING LIGHTS:

3.375" x 7.625" semi-oval, amber LED warning lights, model M7AC / M7FC integral flasher, scan lock patterning and clear lenses with chrome plated surface mount flange adapters shall be mounted in the following locations:

- Two (2) mounted on the front grille area, one (1) each side
- Two (2) mounted on the front fenders, below the chassis designation, one (1) each side
- Two (2) mounted on the side of the platform body above the rear wheels, one (1) each side
- Four (4) mounted in the rear corners of body one (1) each side facing the side and one (1) each side facing the rear. They shall be switched separately. The rear lights shall be visible with the cone placement platform in the stored position.
- Four (4) mounted in the rear corners of cone placement platform one (1) each side facing the side and one (1) each side facing the rear. They shall be switched separately.

The rear lights shall be visible with the lift in the stored position.

NOTE: Each directional LED is to be programmed and flash in an alternating pattern as directed by RIDOT Motor Pool. Final placement of all lighting shall be approved by RIDOT Motor Pool.

Comply: _____

WORK LIGHTING:

Eight (8) LED work lights with a minimum output of 48 Watts. The work lights shall provide full illumination of truck bed and surrounding work area.

Two (2) lights affixed to the bulkhead facing the body.

Six (6) lights mounted under the body, three (3) each side, angled outwardly toward the ground and side of the vehicle.

These Eight (8) lights shall be switched one for the load bed lights and one for each side.

Comply: _____

SWITCHING:

Switches shall operate the compartment lights, load bed lights, working lights, all warning lights and a spare and be powered by key-switch accessory.

Comply: _____

ADDITIONAL EQUIPMENT:

5 lb. ABC UL Rated 3A:40B:C industrial fire extinguisher, reflector kit, and first aid kit

A 5 gallon absorption capacity universal spill response kit

Two (2) grip strut wheel chocks

Pin style cone holder capable of holding 6 cones

One Motorola APX 1500 Project 25, 700/800 MHz digital radio installed and ready for use, powered by key-switch accessory. (Attachment #1)

Three sets of Ignition keys, with keyless entry remotes for all vehicles.

Comply: _____

CONSOLE:

Supply a Havis Products center console, compatible with the chassis purchased shall be configured as follows:

30" Enclosed 10" high console - HAVIS C-3010

Tunnel Mount Assembly - HAVIS C-TMW (Chassis specific)

Equipment Mounting Bracket - HAVIS C-EB25-WTA-1P

Equipment Mounting Bracket, 2.5" Mounting Space - HAVIS C-EB25-XTL-1P

2 Lighter Plug Outlets - HAVIS C-LP-2

Mounting component - HAVIS C-AP-0645

Internal Cup Holders - HAVIS C-CUP2-I

Armrest for Top Mount, Console, Large Pad - HAVIS C-ARM-103

All required blank panels to fill console opening

Comply: _____

Regular Cab Model

Comply: _____

Powertrain:

6.6 Liter Minimum Turbo Diesel
Minimum Output of 350 hp
Minimum Torque of 700 lb.-ft.
Diesel Exhaust Brake
180 amp alternator
730 amp battery with run down protection
Engine oil cooler, transmission oil cooler
6-speed electronic sequential shift control automatic transmission
with overdrive, lock-up, driver selection and power take-off provision
Limited slip differential
Axle Ratio: Minimum 4.10, Maximum 4.88
Proportional Electronic Trailer Brake Controller
Skid Plates for Engine and Transmission
Stainless steel exhaust
87 mph Maximum Speed
19,500 lbs. Minimum GVWR

Comply: _____

Warranty:

Basic	60 month/100,000 miles
Powertrain	60 month/100,000 miles
Corrosion Perforation	60 month/100,000 miles
Roadside Assistance	36 month/36,000 miles

Comply: _____

Wheels & Tires

Tires: 225/70R19.5G
Wheels: 19.5" x 6.0" Steel
Spare Tire and Wheel: Match above

Comply: _____

Paint:

Bright White Clear coat

Comply: _____

Interior Colors:

Gray/Black

Comply: _____

Chassis:

Cab to Axle length of 120 inches

Comply: _____

Other Requirements

Power Take Off Prep:

Hard Wired Remote Start Power Take Off

Comply: _____

Safety: Power steering, 4-wheel anti-lock disc braking system & driveline traction control, Driver and passenger side airbags, Driver and passenger manual black convex spotter folding manual extendable trailer outside mirrors, cab clearance lights, back up alarm, backup camera that provides automatic rear view camera and monitor for priority view of rear of vehicle when truck is in reverse.
Comply: _____

Comfort and Convenience: Air conditioning, AM/FM, "bluetooth", clock, 2 speakers, fixed antenna, Cruise control with steering wheel controls, 2 12V DC power outlets, retained accessory power, tilt adjustment steering wheel, intermittent windshield wipers, power windows and door locks and Upfitter switches. 2 front 4-way adjustable vinyl bucket seats with adjustable head restraints, full cloth headliner, full vinyl/rubber floor covering, separate floor mats,
Comply: _____

Analog Instrumentation: Display includes tachometer, oil pressure gauge, engine temperature gauge, voltmeter gauge, oil temperature gauge, transmission fluid temp gauge, engine hour meter, systems monitor, redundant digital speedometer, trip odometer,
Comply: _____

Exterior Features: Front license plate bracket, Black fender flares, front chrome bumper with front tow hooks, Trailer harness, mud flaps, and Driver and Passenger side black running boards.
Comply: _____

UPFIT, CONVERSION and BODY WARRANTY: (NO EXCEPTIONS)
Two (2) year onsite warranty including all parts and labor. Any repairs that cannot be completed on site shall be transported by the supplier.
Comply: _____

MANUALS:
Vendor shall provide current editions of all relevant cab and chassis manuals. This shall include but not be limited to overhaul and tune-up manuals, diagnostic, wiring, troubleshooting, and parts manuals for engine, transmission, differential and all components.

Two operator's manuals detailing the recommended operating procedure shall be delivered with each unit. These shall be supplied in both hardcopy and electronic formats. They shall consist of the following: shop manual, parts manual including exploded views of major components with their part numbers, wiring diagram, operator's manual, and a summary of warranties offered in excess of the standard one year. The manuals shall fully and clearly cover all components of the components installed on chassis by the upfitter. Manuals shall also include comprehensive trouble shooting and diagnosis information for all functions. Shop manual shall explain, in detail, procedures for overhauling all major components. QR CODES - In the Street side front compartment there shall also be a QR code. The QR code can be scanned with smartphone or tablet to access the service body operating manual and

other information. The content of the set will be evaluated for approval at the prototype approval meeting.

Any deviations from this system shall be noted on the bid and approved by the RIDOT Division of Highway & Bridge Maintenance Administration. A complete system description and product literature for major components shall accompany the bid. Failure to provide manuals may result in 5 percent of total bid being withheld.

Comply_____

TRAINING:

A "hands on" operator/technician training session that meets the requirements OSHA shall be provided at RIDOT Division of Highway & Bridge Maintenance Headquarters. The training session topics will be coordinated through RIDOT Motor Pool section and may include but are not limited to complete unit functions and operation, proper maintenance and operation of all components, engine tune-up and maintenance, and multiplex systems. The training session shall accommodate at least 24 RIDOT employees. Training shall be provided approximately 3 weeks after delivery of the first unit.

Comply_____

TRUCK DELIVERY SCHEDULE:

Fabrication of the first prototype unit shall be completed within one hundred twenty (120) days of the successful proposal. All bidders shall provide as part of their bid a schedule for the delivery of all trucks to RIDOT 360 Lincoln Ave, Warwick, RI 02888. This date shall be listed as the number of days following issuance of a Notice-to-Proceed (allow 14 days for approval of the prototype) that the bidder shall successfully deliver all units to the Rhode Island Department of Transportation. . Weekly updates shall be provided during the fabrication process including progress, pictures and any changes from the original schedule. Failure to submit a schedule will result in the bid being considered non-responsive. Failure to meet the schedule will result in 3% retention on the total order.

Comply_____

CERTIFICATE OF ORIGIN, TITLE and DELIVERY DOCUMENTATION:

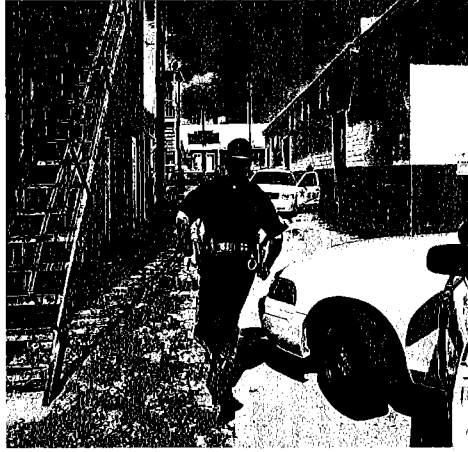
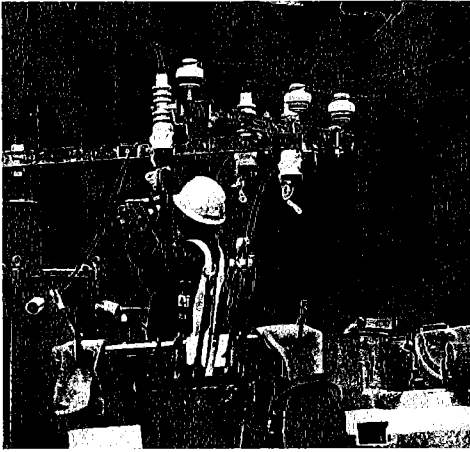
At the time of delivery to the State, each vehicles delivered shall be accompanied by a window sticker, title certificate, "Certificate of Origin," and registration documents.

1. The "Certificate of Origin" shall have the owner listed as "STATE OF RI/FLEET OPERATIONS, ONE CAPITOL HILL, PROVIDENCE, RI 02908." It shall include at a minimum, the following information:
 - THE MANUFACTURER, MODEL NAME AND NUMBER
 - THE MANUFACTURER'S VEHICLE IDENTIFICATION NUMBER (VIN)
 - THE NUMBER OF ENGINE CYLINDERS AND ENGINE TYPE
 - A GENERAL DESCRIPTION OF THE BODY AND GVW #
 - THE ODOMETER DISCLOSURE MUST BE COMPLETED ON THE VENDOR'S SIDE OF "CERTIFICATE OF ORIGIN".
2. Title certificates must be provided.
3. The successful vendors will be required to provide the following:
 - A completed application for registration and Title Certificate (TR-1) with the exception of Sections G and H. Owner to be listed as:
State of RI/Fleet Operations, One Capitol Hill, Providence, RI 02908.
 - A completed States or Use Tax Exemption Certification - Motor Vehicles. Purchaser to be listed as: State of RI/Fleet Operations, One Capitol Hill, Providence, RI 02908.

CONCLUDING STATEMENTS:

Responses to this solicitation must be submitted in duplicate and each page shall be numbered (ex. 1 of X) and include the vender's name. A Pre-Bid conference will be held for this bid at a date to be determined. Bids must be predicated on the basis of the bidder's full and unencumbered title to the vehicle(s) as of the date of delivery to the State. Bids subject to lien or assignment at the time of delivery to the State, or which stipulate third party or joint payment, will be rejected. The State may, at its sole option, elect to require presentation(s) by offerors clearly in consideration for award.

End of Specification



WORK SAFER WHEREVER THE MISSION TAKES YOU

APX™ 1500 PROJECT 25 MOBILE RADIO

Whether a marathon race is passing through the streets of downtown or a water main breaks in the city's largest pipeline, you need the ability to interoperate seamlessly and securely with other agencies and responders. You need to instantly connect and be informed to make better decisions to keep your responders and the community safe. While the advanced technology of APX radios expertly equips you for your day to day operations and the unexpected, your organization may be challenged to improve operating expenses.

The APX 1500 P25 mobile radio is equipped with all the features you need at a price you can afford. It delivers all the benefits of TDMA technology in the most compact P25 capable mobile in the industry. The APX 1500 brings together powerful technology in an easy-to-use radio that's easy on your budget. It seamlessly unifies public works, utility, rural public safety and transportation users to first responders so they can interoperate effectively in the moments that matter.

BE UP TO THE MINUTE INFORMED

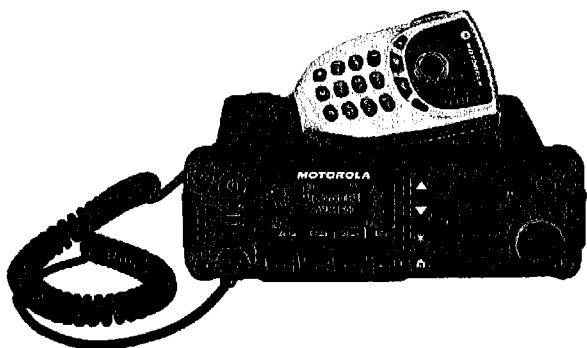
Keeping your crew safe is your number one priority. Like all our APX P25 radios trusted by responders worldwide, the APX 1500 mobile redefines safety. Your crews can count on quick, seamless interoperability and extended range wherever the mission may take them. You can depend on ADP software encryption for secure, tamperproof voice and data communications every time they connect.

The O2 Control Head with color display is easy to read and operate in all lighting conditions, from bright sunlight to dark streets. The intelligent lighting on the O2 Control Head notifies your workers when a call is received, an emergency arises, or when they are out of range. Plus, an enlarged multifunction knob makes it easy to use talk-group and volume settings when they're wearing gloves.

SIZED RIGHT FOR YOUR BUDGET

The APX 1500 gives you the ruggedibility and reliability you need at an affordable price. Since the APX 1500 is P25 Phase 2 capable for twice the voice capacity, you can add more users without adding more frequencies or infrastructure. Count on APX quality for years to come. The APX 1500 can withstand wet, dusty and hazardous conditions.

PRODUCT DATA SHEET | APX™ 1500 MOBILE RADIO



APX 1500 SPECIFICATIONS

FEATURES AND BENEFITS:

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

Channels: Standard 512

Trunking Standards supported:

- Clear or digital private Trunked Operation

Analog MDC-1200 and Digital APCO P25 Conventional System Configurations

Narrow and wide bandwidth digital receiver (6.25kHz/12.5kHz/20kHz/25 kHz)

Embedded digital signaling (ASTRO and ASTRO 25)

Intelligent lighting

Radio profiles

Unified Call List

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

Ships standard IP56

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

- Supports USB Communications
- Built in FLASHport™ support

Uses standard Dash mounted APX accessories

Software Key

ASTRO 25 integrated Voice and Data

ADP Privacy

Integrated GPS/GLONASS for outdoor location tracking

OPTIONAL FEATURES:

Programming over Project 25 (POP25)

Text Messaging

12 character RF ID asset tracking

*CPS version R12.00.00 and greater ordered after June 2014 will only support Windows 7 and 8

APX 1500 CONTROL HEAD PORTFOLIO



02 RUGGED CONTROL HEAD

- Large color display with intelligent lighting
- 3 lines of text 14 characters max / 1 line of icons / 1 line of menus
- Built in 7.5 watt speaker
- Multifunction volume/channel knob
- Night/day mode button

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	25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Rated RF Output Power Adj*	3-30 Watts (2-3 Watts Itinerant)		3-35 Watts		1-50 Watts		1-40 Watts		1-45 Watts	
Frequency Stability* (-30°C to +60°C, +25°C Ref.)	±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Modulation Limiting*	±5 kHz / ±2.5 kHz		±5 kHz/±4 kHz (NPSPEC) /±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	1.5%		1.5%		2.5%		11%		11%	
Emissions*	Conducted† -75/-85 dBc	Radiated† -20/-40 dBm	Conducted† -75 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)	
F M Hum & Noise	25 & 20 kHz 12.5 kHz	-50 dB -48 dB	-50 dB -48 dB	-50 dB -48 dB	-52 dB -51 dB	-52 dB -48 dB	-51 dB -48 dB	-51 dB -48 dB	-51 dB -48 dB	-51 dB -48 dB
Audio Distortion*	25 & 20 kHz 12.5 kHz	0.50% 0.50%	0.50% 0.50%	0.50% 0.50%	0.50% 0.50%	0.50% 0.50%	0.50% 0.50%	0.50% 0.50%	0.50% 0.50%	0.50% 0.50%

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	25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz		25/20/12.5 kHz	
Maximum Frequency Separation	Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit		Full Bandsplit	
Audio Output Power at 3% distortion*	7.5 W or 15 W ++		7.5 W or 15 W ++		7.5 W or 15 W ++		7.5 W or 15 W ++		7.5 W or 15 W ++	
Frequency Stability* (-30°C to +60°C, +25°C Ref.)	±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM		±0.8 PPM	
Analog Sensitivity*	12 dB SINAD	-120 dBm	-120 dBm	-120 dBm	Pre-Amp -123 dBm	Standard -119 dBm	Pre-Amp -123 dBm	Standard -119 dBm	Pre-Amp -123 dBm	Standard -119 dBm
Digital Sensitivity	5% BER	-121 dBm	-121 dBm	-121 dBm	-123 dBm	-119 dBm	-123 dBm	-119 dBm	-123 dBm	-119 dBm
Intermodulation Rejection	25 kHz 12.5 kHz	82 dB 82 dB	82 dB 82 dB	82 dB 82 dB	84 dB 85 dB	86 dB 86 dB	82 dB 83 dB	86 dB 85 dB	82 dB 83 dB	86 dB 85 dB
Spurious Rejection	91 dB		91 dB		95 dB		91 dB		91 dB	
Audio Distortion at rated*	2%		2%		2%		2%		2%	
Selectivity*	25 kHz 12.5 kHz 30 kHz	85 dB 75 dB —	85 dB 75 dB —	85 dB 75 dB —	89 dB 77 dB 90 dB	89 dB 77 dB 90 dB	83 dB 72 dB —	83 dB 72 dB —	83 dB 72 dB —	83 dB 72 dB —

DIMENSIONS		
	Inches	Millimeters
Mid Power Radio Transceiver	2 x 7 x 6.4	50.8 x 178 x 163
O2 Control Head	2.7 x 8.1 x 2.1	69 x 207 x 53
Mid Power Radio Transceiver and O2 Control Head - Dash Mount	2.7 x 8.1 x 8.8	69 x 207 x 223
Mid Power Radio Transceiver and O2 Control Head Weight	5.28 lbs	2.45 kg

RADIO MODELS	
700/800 (763-870 MHz)	M36URS9PWIAN
VHF (136-174 MHz)	M36KSS9PWIAN
UHF Range 1 (380-470 MHz)	M36OSS9PWIAN
UHF Range 2 (450-520 MHz)	M36SSS9PWIAN

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	136-174 MHz, 380-470 MHz, 450-520 MHz, 764-870 MHz
Minimum RF Power Output	2***-25 Watts (764-776 MHz), 2***-25 Watts (794-806 MHz), 2***-25 Watts (806-824 MHz), 2***-25 Watts (851-870 MHz), 1-25 Watts (136-174 MHz), 1-25 Watts (380-470 MHz), 1-25 Watts (450-520 MHz)
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	3.2A (764-870 MHz), 3.2A (136-174 MHz), 3.2A (380-470 MHz), 3.2A (450-520 MHz)
Transmit Current (A) at Rated Power	136-174 MHz (1-25 Watt) 9.5A (25W) 380-470 MHz (1-25 Watt) 9.5A (25W) 450-520 MHz (1-25 Watt) 9.5A (25W) 764-870 MHz (10-35 Watt) (2***-25 Watts) 9.5A (25W)

	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 Storage	501.1	I	501.2	I/A1	501.3	I/A1	501.4	I/Hot	501.5	I/A1
High Temperature Operation	501.1	II	501.2	II/A1	501.3	II/A1	501.4	II/Hot	501.5	II
Low Temperature Storage	502.1	I	502.2	I/C3	502.3	I/C3	502.4	I/C3	502.5	I/C3
Low Temperature Operation	502.1	I	502.2	II/C1	502.3	II/C1	502.4	II/C1	502.5	II
Temperature Shock	503.1	-	503.2	I/A1-C3	503.3	I/A1-C3	503.4	I/Hot-C3	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain Blowing	506.1	I	506.2	I	506.3	I	506.4	I	506.5	I
Rain Steady	506.1	II	506.2	II	506.3	II	506.4	III	506.5	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	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	-	-	510.2	II	510.3	II	510.4	II	510.5	II
Vibration Min. Integrity	514.2	VIII/F, Curve-W	514.3	I/10	514.4	I/10	514.5	I/24	514.6	I-Cat.24
Vibration Loose Cargo	514.2	XI	514.3	II/3	514.4	II/3	514.5	II/5	514.6	-
Shock Functional	516.2	I	516.3	I	516.4	I	516.5	I	516.6	I, V, VI

ENCRYPTION	
Supported Encryption Algorithms	ADP SW
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command

* 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.
 Version 2, Dec 14

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	IP56, MIL-STD

TRANSMITTER CERTIFICATION	
700/800 (764-775, 793-805, 806-824, 851-869 MHz)	AZ492FT7055
VHF (136-174 MHz)	AZ492FT4916
UHF R1 (380-470 MHz)	AZ492FT3826
UHF R2 (450-520 MHz)	AZ492FT4915

FCC EMISSIONS DESIGNATORS	
FCC Emissions Designators	8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E, 20K0F1E

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

MOTOROLA, 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. © Motorola Solutions, Inc. 2016 06-2016



PRODUCT DATA SHEET | APX™ 1500 MOBILE RADIO