



Request for Quote

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

CREATION DATE : 12-FEB-14
 BID NUMBER: 7548483
 TITLE: KA BAND MODE RADAR UNITS - DPS
 BID CLOSING DATE AND TIME: 14-MAR-2014 11:30:00

BUYER: McGurn, Cheryl A
 PHONE #: N/A

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 DOA CONTROLLER
 ONE CAPITOL HILL, 4TH FLOOR
 SMITH ST
 PROVIDENCE, RI 02908
 US

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 DPS STATE POLICE HEADQUARTERS
 311 DANIELSON PIKE
 NORTH SCITUATE, RI 02857
 US

Requisition Number: 1352688
 Note to Bidders: .
 ENFORCER KA-BAND RADAR UNITS

PER THE ATTACHED SPECIFICATIONS -VENDOR COMPLIANCE NEEDED WITH REQUIREMENT OF:
 "BUY AMERICAN ACT"

FOR ADDITIONAL INFORMATION CONTACT: CHERYL.MCGURN@PURCHASING.RI.GOV

Line	Description	Quantity	Unit	Unit Price	Total
1	RI STATE POLICE ENFORCER MOVING MODE RADAR UNITS Line Note to Bidders: . . VENDOR COMPLIANCE NEEDED WITH THE FOLLOWING REQUIREMENT OF THE BUY AMERICA ACT. PROVISIONS OF THE BUY AMERICA (49 U.S.C. 5323(j)). CLARIFICATION OF THE BUY AMERICA ACT AS FOLLOWS: "IF A STATE CONFIRMS THAT A FINAL PRODUCT (CHILD SAFETY SEATS OR OTHER PRODUCTS) IS PRODUCED/ASSEMBLED IN THE U.S. THEN IT'S PURCHASE CAN BE APPROVED. TO BE CLEAR, IF THE FINAL MANUFACTURED PRODUCT ITSELF IS PRODUCED IN THE UNITED STATES THERE IS NO NEED TO INQUIRE ABOUT ITS COMPONENT PARTS." ANY GOODS THAT ARE PURCHASED WITH FEDERAL FUNDS MUST BE PRODUCED/ASSEMBLED/ IN THE UNITED STATES IN ORDER TO COMPLY WITH THIS LAW. . . VENDOR MUST INITIAL TO CONFIRM COMPLIANCE OF "BUY AMERICA ACT" INITIALS: _____	102.00	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



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration

DIVISION OF PURCHASES

One Capitol Hill, 2nd floor
Providence, RI 02908-5855

TEL: (401) 574-8100

FAX: (401) 574-8387

TDD: (401) 574-8228

Website: www.purchasing.ri.gov

Enforcer with two Ka-band antennas, Fastest Vehicle and Manual Same Direction Modes and Detachable Display

This specification describes State-of-the-Art Ka-band traffic radar with two antennas. The radar shall measure vehicle speeds from a stationary or moving patrol vehicle. The radar shall be capable of measuring the speed of vehicles moving in the same direction as the patrol vehicle while the patrol vehicle is moving, and it shall be equipped with a fastest vehicle mode. The radar shall also have a mode that measures speeds while at the same time evading radar detectors. The radar shall conform to all NHTSA specifications, and it shall be listed on the most recent IACP Consumer Products List.

1. SYSTEM DESCRIPTION

1.1 The radar system shall consist of a separable display/counting unit, remote control unit, two Ka-band antennas, and all necessary cables and brackets necessary for installing the system in a patrol vehicle.

1.2 The display unit shall house all of the speed displays and status indicators for the radar system. No connectors will be present on the front panel of the display unit. It shall connect to the counting unit via a single DB-15 connector. The display unit shall be no larger than 1.5" tall by 5" wide by 1.4" deep.

1.3 The counting unit will contain the speed processing hardware for the radar. It shall be no larger than 1.5" tall by 5" wide by 2" deep. It shall connect to the display unit with via a single DB-15 connector. It shall have receptacles on its rear for connecting two antennas, and a DB-9 connector for interfacing to other equipment.

1.4 The radar shall be supplied with a wired remote control unit. The most-used keys of the remote shall be raised and contoured so that the remote control can be easily operated while the operator is driving. The rest of the buttons on the remote control shall be located at a lower level so that they do not get in the way while the radar is being operated. An optional remote control shall also be available, which shall communicate to the rest of the system via infrared technology and have at least three LEDs aimed in different directions in order to ensure the communications link.

1.5 The radar shall be able to measure speeds in all of the standard radar modes:

stationary, opposite direction moving, and same direction moving. In addition, the radar shall have a stopwatch mode.

1.6 The radar shall include a mode of operation that allows the operator to measure the speed of targets using the microwave radar beam without setting off any radar detectors. In this mode, the radar, upon command from the operator, shall transmit short, computer-controlled radar burst in order to measure target speed. The duration of this pulse must be short enough so that radar detectors are not alerted. This mode of operation must be in addition to the traditional Standby or RF Hold mode of the radar.

1.7 The radar shall be upgradeable for adding or removing features in the field. This shall be accomplished by upgrading the unit through its RS-232 data port and shall not require any change in hardware. Radars which require the user to return its radars to the manufacturer for upgrade or which require hardware changes for upgrades (for example, changing programmable memory modules) shall not be considered.

2. SYSTEM SPECIFICATION

2.1 The radar unit shall operate at a nominal 13.6 Vdc and be fully operational from 10.8 Vdc to 16.5 Vdc (battery voltage +/- 20%).

2.2 Operating current shall never exceed 1.8 Amps.

2.3 The radar unit shall operate from -30 °C (-22 °F) to 60 °C (140 °F).

2.4 The radar unit shall operate up to 90% relative humidity @37 °C (99 °F).

2.5 The audio shall use the true Doppler signal reflected from the target vehicle. The audio shall increase in volume as the target vehicle approaches the antenna and increase in pitch with an increase in closing speed.

2.6 The counting unit shall be of the modem DSP (Digital Signal Processor) type utilizing Fast Fourier Transform (FFT) technology.

2.7 All indicators and displays shall automatically adjust their brightness for optimal day/night viewing.

2.8 The radar unit shall use standard RS-232 signal levels and a 9 pin connector to communicate with external devices such as a large display, a remote display, or camera system. The protocol transmitted through this data port shall be a format accepted by at least five different manufacturers of in-car video equipment so that the agency will not be locked into a single brand or group of brands. The manufacturer must include a copy of their data protocol and a list of compatible video systems to the agency upon request.

2.9 Since there is no established case law for fastest mode, the mode shall operate on a momentary basis, and the radar shall be incapable of locking fastest mode speeds. A unit which displaces the strongest target's speed with the fastest vehicle's speed or allows the speed of the fastest vehicle to be locked in is not

acceptable. Fastest mode shall be disabled when the radar is operating in same direction moving mode.

3. SYSTEM INDICATOR

3.1 When the operating voltage is below 10.8 Vdc, the radar unit shall display no active speed readings and shall indicate the low voltage condition.

3.2 The radar unit shall employ radio frequency detection circuitry and the presence of such interference shall be indicated. The radar unit shall not display any active speed indication when interference is present.

3.3 The radar unit shall indicate the currently active antenna. This indication shall employ an easily-understandable cluster of LEDs that shall be laid out in the shape of a roadway. Via this mode window, the operator must be able to tell if the radar is in standby or if it is transmitting, which antenna is currently selected, and the direction of the target vehicle.

3.4 The indication of the radar mode must be retained after a speed has been locked in and the unit placed in standby. The radar unit shall indicate the antenna on which a target was locked and the target's direction of motion with a flashing indication of one of the mode window's target arrows.

3.5 The radar unit shall indicate the activation of fastest mode.

3.6 The radar unit shall indicate via the mode window when it is operating in the same direction moving mode.

3.7 The radar unit shall indicate stationary mode operation by marking the unused patrol window with dashes and lighting a stationary icon.

4. SPEED INDICATORS

4.1 The radar unit shall provide a dedicated patrol speed numeric display. In standby mode, this display shall display the patrol speed at the time of target locking. This window must be colored green for easy recognition.

4.2 The radar unit shall provide a dedicated strongest target speed numeric display. This display must be located on the left side of the display unit. So that the target speed window can be most easily observed by the officer, its digits must be at least 0.4 inches tall, larger than the other speed displays, and red in color. In standby mode, this display shall be blank. Under no circumstances shall any target other than the strongest be presented in this display

4.3 The radar unit shall provide a locked target display. This display may be used for other temporary modes such as to display fastest targets or to indicate selection of a slow target during same direction operation. An icon must be present below this display to indicate the nature of the speed that is displayed in this window (fastest vehicle speed or locked target speed. This display shall be colored yellow for easy recognition

4.4 The radar shall only lock the speed of the strongest target. If the lock button is pressed while the radar is in fastest vehicle mode, the radar shall lock the speed of the strongest target.

4.5 In stationary mode, the radar unit shall display target speeds from 15 mph (24 kph) to 200 mph (321 kph).

4.6 In opposite direction moving mode, the radar unit shall display patrol speeds from 12 mph (19 kph) to 80 mph (129 kph) when city mode is selected. When highway mode is selected, the radar unit shall display patrol speeds from 12 mph (19 kph) to 90 mph (144 kph).

4.7 In opposite direction moving mode, the radar unit shall display target speeds from 15 mph (32 kph) to a closing speed of 200 mph (321 kph).

4.8 In same direction moving mode, the radar unit shall display patrol speeds from 20 mph (40 kph) to 80 mph (129 kph) when city mode is selected. When highway mode is selected, the radar unit shall display patrol speeds from 12 mph (19 kph) to 90 mph (144 kph).

4.9 In same direction moving mode, the radar unit shall display target speeds of +/- 70% of the patrol speed. Target speed must be a minimum of 3 mph (5 kph) greater or lesser than the patrol speed in order to be displayed.

5. DISPLAY UNIT CONTROLS

5.1 Only one control shall be present on the display unit. It shall have a push button switch for power on/off. This button shall be a membrane-type switch and shall be capable of operation with gloved hands.

6. REMOTE CONTROL UNIT

6.1 The radar unit shall implement a remote control in which all controls shall employ tactile feedback. The remote control shall be capable of operation with gloves on. The housing of the remote control must be contoured to fit the hand comfortably.

6.2 The remote control shall have two distinct sets of buttons: a raised set of rubber buttons for controlling the basic functions of the radar that must be control while the vehicle is moving and a lower set of membrane-type switches for controlling the functions that are operated while the vehicle is not moving.

6.3 The raised set of buttons shall be made of a UV-resistant rubber. They shall be contoured to fit the operator's thumb in the center of the cluster. Each key shall be labeled as to function with both an icon and text. The cluster of keys shall have a manual backlight. The cluster shall consist of the following keys:

Front
antenna
Rear
antenna
Standby

Same direction
Opposite
direction Lock
Fastest/Slower

6.4 The flat set of membrane keys shall control the rest of the functions of the radar. All of the operating functions of the radar, with the exception of On/Off, must be controlled from the remote control. The flat keys shall consist of

Moving/Stationary
Stopwatch Test
Patrol Blank - Patrol
Low/Hi
+
Menu
2nd
Function
Backlight

6.5 The menu button shall be used to change the volume of the Doppler audio, adjust the range of the radar, select POP mode, and change the squelch.

6.6 The remote control shall be corded and attach to the rear of the counting unit.

6.7 An alternate remote control shall be available, at no additional charge, which is wireless, has all of the features of specifications 6.1 through 6.6, and operates from two AA-size batteries. It shall communicate to the display unit via an infrared data link. Each display/counting unit shall be able to accept both the standard or alternate remote control units with no modification of the display/counting unit required.

7. ANTENNA

7.1 The radar antenna shall operate on the standard radar frequency of 33.800 +/- 0.100 GHz (Ka band) It shall employ a Gunn-type oscillator, a horn-type antenna, and two beam-lead mixer diodes.

7.2 The antenna output power shall not exceed 50 milliwatts.

7.3 The antenna's radiated power density shall not exceed 2 mW/cm² at 5 cm.

7.4 The antenna shall be type-accepted in compliance with FCC Part 90.

7.5 The radar beam shall be circularly polarized, and the beam width between the half power points shall not be less than 13 degrees and shall not exceed 15 degrees.

7.6 The Doppler detector shall utilize beam lead diodes.

7.7 The antenna shall be completely weatherproof, able to be mounted indefinitely outside of the patrol vehicle. The waterproof seal of the antenna shall be located at

the rear of the antenna, so that it is protected from water impinging on the face of the antenna. The front of the antenna shall be enclosed in a seamless, black plastic cover.

7.8 In order to reduce the complexity of the radar antenna and reduce the mean time between failures (MTBF) of the antennas, the antennas shall employ analog signals when communicating the speed information (Doppler signals) to the counting unit. The conversion of the signal to a digital format shall be performed by digital-to-analog converters located in the counting unit.

8. SPEEDOMETER INTERFACE

8.1 Each radar shall be able to be equipped with a module which allows it to access the vehicle's speedometer information in order to verify the patrol speed.

8.2 The speedometer interface must be able to access information directly from the vehicle's tachometer pulses (VSS line).

8.3 The speedometer interface unit must not prevent interfacing the radar to an in-car video system.

8.5 When the speedometer interface is used with the radar, the selection of Hi/Lo speed range shall be performed automatically by the radar.

8.6 When the speedometer interface is attached, the patrol speed range of the radar shall be increased to 120 mph.

Contract Terms and Conditions

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Terms and Conditions

BID STANDARD TERMS AND CONDITIONS

TERMS AND CONDITIONS FOR THIS BID

RIVIP INFO - BID SUBMISSION REQUIREMENTS

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**MAILING ADDRESS FOR BID PROPOSALS ISSUED BY THE STATE OF RHODE ISLAND,
DIVISION OF PURCHASES**

All Bid Proposals must be submitted by mail or hand delivered to:

- State of Rhode Island
- Department of Administration
- Division of Purchases, Second floor
- One Capitol Hill
- Providence, RI 02908-5855

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.

VENDOR SPECIFICATIONS

ALL VENDORS MUST INCLUDE SPECIFICATIONS WITH BID PROPOSAL (EVEN THOSE BIDDING BRAND SPECIFIED). FAILURE TO SUBMIT SPECIFICATIONS WITH BID PROPOSAL MAY RESULT IN DISQUALIFICATION OF BID. ITEMS IN CATALOGS MUST BE CLEARLY MARKED AND PAGES TABBED.

DELIVERY PER AGENCY

DELIVERY OF GOODS OR SERVICES AS REQUESTED BY AGENCY.

AWARD

THE STATE, AT ITS SOLE DISCRETION, SHALL RESERVE THE RIGHT TO MAKE ONE OR MULTIPLE AWARDS FOR THIS REQUIREMENT AND/OR TO REJECT ANY OR ALL BIDS.