



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

# Request for Quotation

RFQ NUMBER
DPS0938

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
JOHN ABBOTT 304-558-2544

RFQ COPY

TYPE NAME/ADDRESS HERE

Edge Technology Distributors, Inc.  
234 Blountstown Highway  
Tallahassee, Florida 32304

WEST VIRGINIA STATE POLICE

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

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
05/31/2009				

BID OPENING DATE: 06/17/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		725-74	1,194.96	1,194.96
LOW-BAND MOBILE TWO-WAY RADIO						
OPEN-END CONTRACT TO PROVIDE LOW BAND MOBILE TWO-WAY RADIOS FOR THE WEST VIRGINIA STATE POLICE, PER THE ATTACHED SPECIFICATIONS.						
EXHIBIT 3						
LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE ON ..... AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.						
UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.						
RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.						

RECEIVED

2009 JUN 17 A 8:17

PURCHASING DIVISION  
STATE OF WV

SEE REVERSE SIDE FOR TERMS AND CONDITIONS			
SIGNATURE	TELEPHONE	DATE	
<i>Ch. C. [Signature]</i>	850-575-0911	6-16-09	
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE	
Sec.	113801222		

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

## GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the **West Virginia Code** and the **Legislative Rules** of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the **West Virginia Code**.
8. Vendor preference will be granted upon written request in accordance with the **West Virginia Code**.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the **Legislative Rules** of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

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### INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in case of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130



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Purchasing Division  
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LINE	QUANTITY	UOF	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.						
OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)						
QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. 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.						
ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN STATE CONTRACT ORDER (FORM NUMBER WV-39) TO THE VENDOR FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL COPY OF THE WV-39 SHALL BE MAILED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT, A SECOND COPY MAILED TO THE PURCHASING DIVISION, AND A THIRD COPY RETAINED BY THE SPENDING UNIT.						
BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
<i>[Signature]</i>	800-55-0911	6-16-09
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Sec.	113801222	

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THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM.						
REV. 05/26/2009						
EXHIBIT 4						
LOCAL GOVERNMENT BODIES: UNLESS THE VENDOR INDICATES IN THE BID HIS REFUSAL TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO COUNTY, SCHOOL, MUNICIPAL AND OTHER LOCAL GOVERNMENT BODIES, THE BID SHALL EXTEND TO POLITICAL SUBDIVISIONS OF THE STATE OF WEST VIRGINIA. IF THE VENDOR DOES NOT WISH TO EXTEND THE PRICES, TERMS, AND CONDITIONS OF THE BID TO ALL POLITICAL SUBDIVISIONS OF THE STATE, THE VENDOR MUST CLEARLY INDICATE SUCH REFUSAL IN HIS BID. SUCH REFUSAL SHALL NOT PREJUDICE THE AWARD OF THIS CONTRACT IN ANY MANNER.						
REV. 3/88						
NOTICE						
A SIGNED BID MUST BE SUBMITTED TO:						
DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
<i>[Signature]</i>	850-575-0911	6-19-09
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Sec.	113801222	

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THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:						
SEALED BID						
BUYER:				JOHN ABBOTT (32)-----		
RFQ. NO.:				DPS0938-----		
BID OPENING DATE:				06/17/2009-----		
BID OPENING TIME:				1:30 PM-----		
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:						
850-575-9545				-----		
CONTACT PERSON (PLEASE PRINT CLEARLY):						
Charlie Livingston, Jr.				-----		
***** THIS IS THE END OF RFQ DPS0938 ***** TOTAL:						
						1,194.96

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Chlc</i>	TELEPHONE 850-575-0911	DATE 6-16-09
TITLE Sec.	FEIN 113801222	ADDRESS CHANGES TO BE NOTED ABOVE

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

## MOBILE RADIO SPECIFICATIONS FOR LOW BAND RADIO

The West Virginia State Police desires to establish an open-end contract for the purchase of mobile police/emergency radio equipment and related accessories. The contract will be available for use by other entities of state government, as well as counties and municipalities. Vendors are to use the attached Price Quotation Form. Vendors may submit a list of additional options for the equipment listed, however those items will not be considered for bid award.

### EQUIPMENT SPECIFICATIONS

		Meets Spec	
		<u>Yes</u>	<u>No</u>
<b>1. LOW BAND MOBILE RADIO EQUAL TO KENWOOD TK-690H Type 3</b>			
1.1.	Radio shall be capable of operating in a band of 39-50 MHz with no degradation of rated specification.	✓	_____
1.2.	Radio must have at least 160 channel capacity, with 2 channel priority scan capability.	✓	_____
1.2.1.	Priority scan is defined as a scan that continues to periodically check the priority channels for activity if not already locked on one of those channels and change to the active priority channel when activity is detected.	✓	_____
1.2.2.	Scanning shall include talk back scan.	✓	_____
1.2.2.1.	Talk back scan is defined as scanning that allows the operator to talk back to a calling station that is received for a predetermined number of seconds.	✓	_____
1.2.2.2.	The transmit channel shall be the same channel as was received prior to the expiration of the talk back scan timer.	✓	_____
1.2.2.3.	This time period shall be from .1 to 5 seconds.	✓	_____
1.2.2.4.	At the expiration of this time, the receiver shall return to normal scanning.	✓	_____

		Meets Spec	
		<u>Yes</u>	<u>No</u>
1.2.2.5.	The selected transmitter channel shall then be the channel selected at the time scanning began.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2.2.6.	The transmit channel shall be the channel that is displayed on the LCD display at the time the scan button is depressed to initiate scanning.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.3.	Radio shall have an RF Output power of 110 watts.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.4.	Alpha-numeric display of at least 12 characters shall be provided on the control head.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.5.	Control head of the unit shall have the ability to act as a light control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.6.	Standard microphone shall be provided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.7.	External speaker shall be provided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.7.1.	Receiver audio stage shall be capable of a minimum of 10 watts of audio at 4 ohms impedance.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.7.2.	The speaker shall be driven by this audio amplifier and must be capable of dissipating the entire audio capability.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.7.3.	An internal speaker driven by a restricted audio source is not acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.8.	Unit shall have a programmable carrier controlled timer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.9.	Radio shall have programmable encode and decode capability for both CTCSS tones and digital coded squelch, with a minimum of one pair of tones, not necessarily the same, for each programmed channel.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.10.	CTCSS decoder must be capable of decoding CTCSS tones of 350 Hz modulation level or less.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Meets Spec	
	Yes	No
1.11. Both transmitter and receiver must comply with all FCC requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.12. A key lock shall be provided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.13. Radio control head shall be remote mounted from T/R unit. A minimum of 20 feet of control cable shall be provided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.14. Power cabling shall be at least 20 feet in length.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.15. Vehicular Repeater Compatibility:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.15.1. Radio shall be ready to interface with a Pyramid vehicular repeater. All modifications necessary shall be performed by the manufacturer prior to delivery.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.15.2. Control heads shall have the ability to provide for activation of a Pyramid vehicular repeater.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.15.3. Control head shall provide notification visual indication when the vehicular repeater is activated.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.16. Radio shall turn on and off with ignition sense and the package contain anything necessary for that to occur.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.17. Any radio modification required under the specification, including but not limited to jumper installation or removal, etc., must be performed prior to delivery. All modifications are to be made by the manufacturer of the equipment, NOT by vendors if bid is awarded to local vendor rather than the manufacturer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.18. Vendor shall provide complete specification information on any products bid with their bid submission.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>2. PROGRAMMING SOFTWARE &amp; HARDWARE</b>		
2.1. All radio programming must be able to be performed on any Microsoft Windows 98/2000/XP/VISTA based computer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Meets Spec <u>Yes</u>	<u>No</u>
2.2. The vendor shall make available for purchase all programming software and cabling necessary to program all radios.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2.3. All software and programming hardware shall be priced in a manner that the purchaser may buy additional quantities of these items individually.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2.4. The vendor shall provide six sets of programming software and any hardware and cabling necessary for interfacing with the personal computer to the West Virginia State Police. (Proprietary programmers are not acceptable.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>3. GENERAL SPECIFICATIONS AND WARRANTY</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.1. One complete operating manual shall be provided for every piece of equipment purchased.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.2. Schematics will be available for all equipment purchased. A minimum of 7 complete depot level service/repair manuals will be provided to the West Virginia State Police.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.3. All items are to be available for purchase separately and each item is to be individually priced.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.4. All features that are placed in the radio by way of programming or feature encoding will remain for the life of the radio. Any lost feature information (ie. # of channels, type of radio, etc) will be replaced at no charge for the life of the radio.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.5. All equipment shall be warranted for a minimum period of at least 3 year, including parts and labor.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.6. The equipment warranty period shall begin when the equipment is first placed in service.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.7. Winning vendor must provide written certification from the manufacturer that they are authorized dealers of this equipment.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

PRICE QUOTATION

Item 1.0, Low Band Radio

\$ 1,194.96Specify Make Vertex Model# VX-6000 Remote PKG-SH

Item 2.0 Programming Software and cables

(A) Radio Programming Software

\$ No Charge

(B) Radio Programming Interface &amp; Cable

\$ 89.00 \*

TOTAL:

\$ 1,283.96

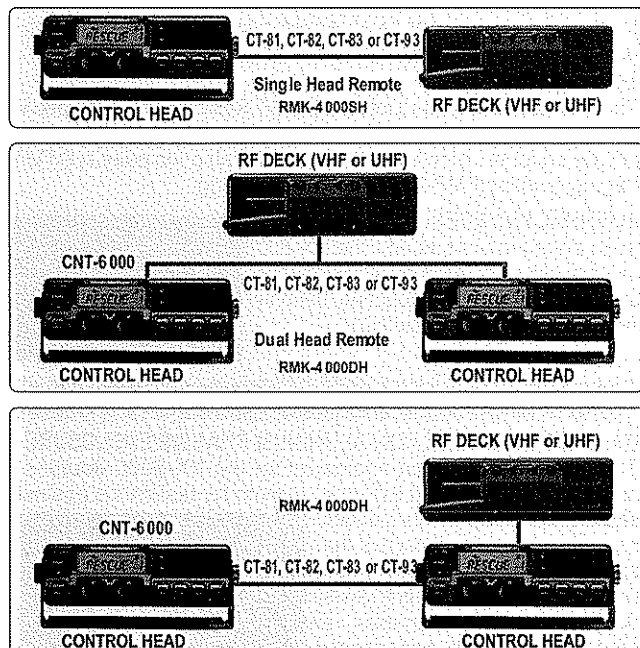
The first (6) six Radio Programming Interface & Cable sets are included. The 89.00 price only applies for additional units.

## VERSATILITY

### MULTI CONFIGURATION SYSTEM

#### ONE RF DECK TO MULTIPLE HEAD CAPABILITIES

A single VX-6000 RF Deck may be controlled by two different Control Heads, allowing control of the radio from more than one location. Depending on the installation requirements, both Control Heads may be connected directly to the RF Deck, or the two Control Heads may be connected in a series "Daisy Chain" configuration.



#### 250 CHANNEL CAPACITY

Huge 250-channel capacity may be partitioned into as many as 20 Memory Groups, with no limit on the number of channels in each Group. A single radio may therefore be programmed with channel sets for a number of different jurisdictions or organizations.

#### PRIORITY SCAN

The VX-6000's versatile scanning system includes a Priority Scan function, which provides scanning of all channels (or channels within a Memory Group) while maintaining a priority watch on a particularly important channel. Scanning will halt immediately, and operation will revert to the Priority Channel if activity is detected on the Priority Channel.

#### GROUP SCAN

The versatile scanning options allow simple scanning of selected channels, and scanning with a priority channel. The group scan feature allows scanning of multiple groups at the same time. This is critical for those mutual aid and disaster preparedness situations where communications among many agencies is a must.

#### DTMF SIGNALING & DIALING FEATURES

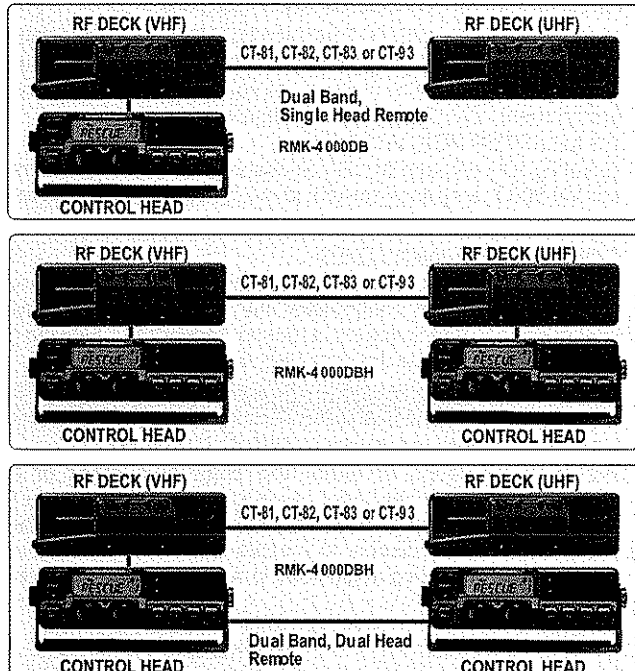
When used with the optional MH-53B7A DTMF Microphone, the VX-6000 may be configured for both manual and Speed Dial DTMF calling. All versions provide programmable PTT ANI for business or fleet applications.

#### CTCSS / DCS ENCODE + DECODE

Field programming of the CTCSS tones or DCS codes is available, allowing access to multiple systems or quick configuration for multi-jurisdictional operations.

#### DUAL BAND CAPABILITY

Two VX-6000 Control Heads and RF Decks, on different bands, may be networked to allow multi-band operation. VHF, UHF, or VHF Low Band radios may be combined to meet complicated communications requirements involving federal, state, and local government and/or forestry operations.



#### USER SELECTABLE TONES / CODES

High-performance Encoder/Decoder circuits for both CTCSS and Digital Code Squelch are provided for access to tone/code controlled systems.

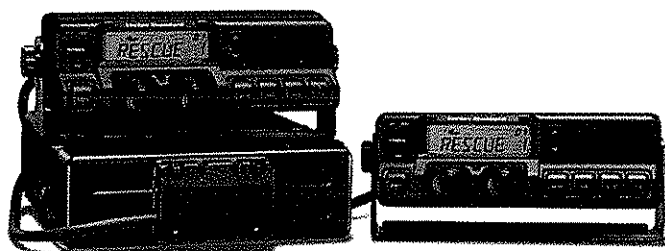
#### BUILT IN 25 PIN (DB-25) ACCESSORY CONNECTOR

The VX-6000 includes a built-in standard DB-25 connector, for ease of integration of the radio into your communications system. The DB-25 connector includes a number of logic status lines, Squelch state and level indicators, and Data I/O connections. Horn Alert and other accessories also can be connected through the DB-25 connector.



#### INTERNAL ACCESSORY INTERFACING

The VX-6000 Series is easily interfaced to 3rd-party accessories. The optional CN-6 Interface Unit provides a quick interconnection platform for signaling, control, and other accessory boards used in public safety environments.



## HIGH PERFORMANCE

**POWER OUTPUT: 120 W (LOW BAND), 110 W (VHF), 100 W (UHF)**

The VX-6000's construction includes a massive, die-cast outer case which doubles as the heatsink. And the Automatic Power Control (APC) circuit ensures stable power output over a very wide range of ambient temperatures.

### WIDE-BAND COVERAGE

Coverage beyond typical frequency limits allows programming in "guard band" channel allocations, and ensures compatibility for programming in a wide variety of locations.

### 12.5/25 kHz BANDWIDTH PROGRAMMABLE PER CHANNEL

The VX-6000 may be programmed with Wide or Narrow operating bandwidths, channel by channel, to conform to your local channel environment. Ideal for multi-jurisdiction operations.

### 2.5 kHz STEP FOR VHF/UHF

Ensuring full compatibility with all channel loading requirements, the VX-6000's synthesizer provides 2.5 kHz resolution. Channel programming therefore is straightforward in all configuration situations.

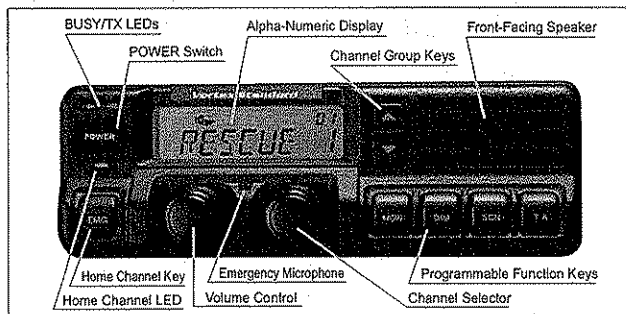
### COMPANDER INCLUDED

For narrow-band channel applications, the built-in Audio Companding system compresses the voice waveform during transmission, and expands it during reception, allowing full-sounding audio despite the restricted transmission bandwidth.

## EASY USER INTERFACE

### LARGE 8-DIGIT ALPHANUMERIC DISPLAY

Providing indication of either the channel number or an Alphanumeric Channel Label of up to 8 characters, the LCD display utilizes large, bold characters on its high-intensity backlit amber LED display to provide excellent visibility over a wide range of viewing angles and in difficult lighting situations.



### 7 PROGRAMMABLE BACKLIT KEYS

The front panel keys may be programmed by the dealer for a variety of operating functions, allowing customization of the front panel functions to your unique requirements. The keys are illuminated from behind, as well, for easy viewing at night.

### LOUD 5W/10W AUDIO OUTPUT

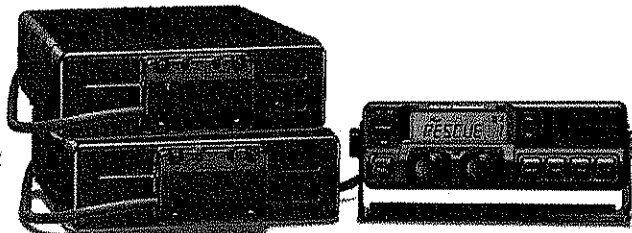
The VX-6000's high-powered audio (5 Watts standard, 10 Watts optional) is coupled to a large, front-facing speaker, producing high-quality, crisp audio that will punch through even in the noisy environments experienced by public safety officers.

### STATUS QUICK-CHECK (SQC) FEATURE

The VX-6000 can be programmed to include the Status Quick Check (SQC) feature, which allows the user to check the configuration of all controls, keys, and knobs on the radio. This enables the operator to avoid missing important communications in the event that a control or switch is set to the wrong position.

### RADIO TO RADIO CLONE FEATURE

For quick programming of VX-6000 radios for an emergency task force, the Clone feature allows copying of all channel and other configuration data from one VX-6000 to another, using the optional CT-72 Cloning Cable.



## SECURITY

### EMERGENCY FUNCTIONS

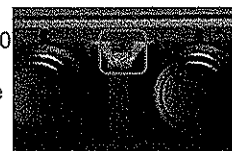
The VX-6000 may be programmed to transmit an Emergency DTMF ANI burst, with or without a live microphone engaged, to alert the dispatcher to an emergency situation requiring assistance to the user.

### ENCRYPTION

The FVP-25 Encryption Unit or FVP-35 Rolling code encryption Unit provides security for your important public safety and private security communications, and it also includes a DTMF Paging function (FVP-25) for selective calling.

### INTERNAL EMERGENCY MICROPHONE

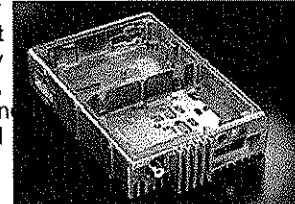
In an emergency situation, the VX-6000 can transmit using an internal microphone should the regular microphone become damaged or otherwise unusable.



## DURABLE CONSTRUCTION

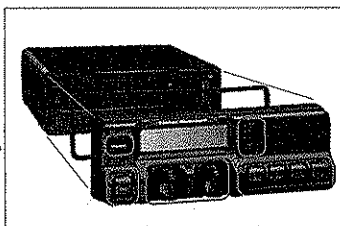
### DIE-CAST CONSTRUCTION ALUMINUM CHASSIS/ENCLOSURE

The one-piece die-cast enclosure for the VX-6000 doubles as its chassis, yielding extreme strength for resistance against shock and vibration. This uniquely rugged construction ensures that specifications and functionality will be maintained for many years, despite the shock, vibration, and other abuse typically experienced by radios in public safety use.



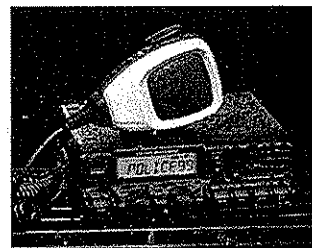
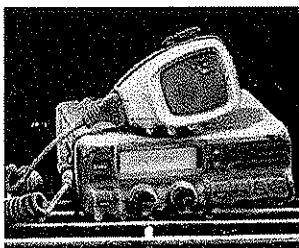
### HIGH-RELIABILITY CONSTRUCTION

The ABS front panel is sealed by a robust O-ring, and all switches are covered by U-shaped silicone rubber gaskets to protect the internal circuitry from dust, humidity, salt fog, and driving rain.



### WATER-SHIELD MICROPHONE CONNECTION

The multi-pin microphone connector on the side of the VX-6000, sealed for protection against weather, provides a convenient connection point for the available microphones. Its gold-plated contacts ensure many years of reliable service.



### OTHER FEATURES:

•TALK AROUND •BCLO, BTLO, AND TOT FUNCTIONS

**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 Resident Vendor Preference, if applicable.

1. Application is made for 2.5% resident 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% resident 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% resident 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% resident 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% resident 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% resident 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.

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: \_\_\_\_\_ Signed: \_\_\_\_\_

Date: \_\_\_\_\_ Title: \_\_\_\_\_

\*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

STATE OF WEST VIRGINIA  
Purchasing Division**PURCHASING AFFIDAVIT****VENDOR OWING A DEBT TO THE STATE:**

**West Virginia Code** §5A-3-10a provides that: 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 the debt owed is an amount greater than one thousand dollars in the aggregate.

**PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:**

If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the **West Virginia Code**. The vendor **must** make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the **West Virginia Code** and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the **West Virginia Code** may take place before their work on the public improvement is begun.

**ANTITRUST:**

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will 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 the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

**LICENSING:**

Vendors 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 agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

**CONFIDENTIALITY:**

The vendor agrees that he or she 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/noticeConfidentiality.pdf>.

Under penalty of law for false swearing (**West Virginia Code** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: Edge Technology Distributors, Inc.

Authorized Signature: [Signature] Date: 6-16-09

# VX-6000 SERIES

## HIGH POWER VHF/UHF Mobile Radios



- 250 CHANNEL CAPACITY
- POWER OUTPUT: 120 W (LOW BAND), 110 W (VHF), 100 W (UHF)
- 12.5 / 25 kHz BANDWIDTH PROGRAMMABLE PER CHANNEL
- 2.5 kHz STEP FOR VHF/UHF
- LARGE 8-DIGIT ALPHANUMERIC DISPLAY
- 7 PROGRAMMABLE BACKLIT KEYS
- PRIORITY SCAN / GROUP SCAN
- DUAL BAND CAPABILITY
- ONE RF DECK TO MULTI HEAD CAPABILITIES
- DTMF SIGNALING & DIALING FEATURES
- AUDIO COMPANDER
- USER SELECTABLE TONES / CODES
- CTCSS / DCS ENCODE + DECODE
- EMERGENCY FUNCTIONS
- ROLLING CODE ENCRYPTION
- RADIO TO RADIO CLONE FEATURE
- TALK AROUND
- BCLO, BTLO, AND TOT FUNCTIONS
- BUILT IN 25 PIN (DB-25) ACCESSORY CONNECTOR
- HEAVY-DUTY PUBLIC SAFETY MICROPHONE AVAILABLE
- MIL- STD 810 C/D/E



 **Vertex Standard**



# VX-6000

SERIES

High Power, High Spec, Reliability, Ruggedness and Versatility: these are the essential elements in a successful communications system. Vertex Standard VX-6000 provides the features, performance, and toughness to get your message through under the most demanding public safety operating conditions. It's a perfect blend of rugged design, flexible signaling options, superb ergonomics, and expandability, making the VX-6000 series an outstanding choice for your future communications needs.





## Accessories & Options

					
<b>RMK-4000SH</b> Remote Kit for Single Transceiver	<b>MH-25B7A</b> Standard Microphone	<b>MH-53C7A</b> Heavy Duty Microphone	<b>MH-53A7A</b> Heavy Duty Noise Canceling Microphone	<b>MH-53B7A</b> Heavy Duty Noise Canceling DTMF Microphone	<b>MLS-100</b> Mobile Loud Speaker (12 W Peak Power)

					
<b>RMK-4000DH</b> Remote Kit for Dual-Head Installations	<b>CT-93</b> Cable for RMK-4000 33 ft (10 m)	<b>F2D-8</b> 2-Tone Decode Unit (Requires FIF-7)	<b>F5D-14</b> 5-Tone ENC/DEC Unit (Requires FIF-7)	<b>VTP-50</b> VX-Trunk Unit (Requires FIF-7)	<b>FVP-25</b> Encryption/DTMF Pager Unit (Requires FIF-7)
					
<b>RMK-4000DB</b> Remote Kit for Dual Band Installations	<b>CT-81</b> Cable for RMK-4000 20 ft (6 m)	<b>MDC1200</b> Digital ANI Encoder Unit (Requires FIF-7)	<b>FVP-35</b> Rolling Code Encryption Unit (Requires FIF-7)	<b>FIF-7</b> Interface Board for F2D-8, F5D-14, VTP-50, FVP-25	<b>CN-6</b> Interface Board for Accessories
					
<b>RMK-4000DBH</b> Remote Kit for Dual Band plus Dual Head Installations	<b>CT-82</b> Cable for RMK-4000 8 ft (2.5 m)	<b>FP-1030A</b> External Power Supply (13.8 V, 30 A)	<b>MMB-79</b> Mobile Mounting Bracket	<b>MMB-77</b> Locking Mobile Mounting Bracket	
					
<b>CNT-6000</b> Control Head	<b>RF DECK w/ MMB-77</b> RF Deck for Multi Band Operation	<b>CT-70</b> Radio Programming Cable (Requires VPL-1)	<b>CT-71</b> Radio to PC Programming Cable	<b>CT-72</b> Radio to Radio Programming Cable	<b>CE49</b> Programming Software

Various accessories listed may not be available in some countries.

## Specifications

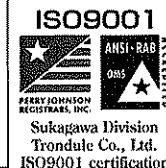
	VX-6 000L	VX-6 000V	VX-6 000U
General Specifications			
Frequency Range	29.7-37 MHz (A) 37-50 MHz (B)	148-174 MHz (C)	450-480 MHz (D)
Number of Channels	250 Channels		
Channel Spacing	20 kHz	12.5/25 kHz	
PLL Steps	5/6.25 kHz	2.5/5/6.25 kHz	
Power Supply Voltage	13.4 V DC ±15 %		
Current Consumption	LOW	VHF	UHF
TX	22 A	25 A	28 A
RX	2.2 A	2.2 A	2.2 A
STBY	0.6 A	0.6 A	0.6 A
Operating Temperature Range	-22° F to +140° F (-30° C to +60° C)		
Frequency Stability	Better than ±5.0 ppm	Better than ±2.0 ppm	
RF Input-Output Impedance	50 Ohms		
Audio Output Impedance	4 Ohms		
Dimensions (WHD)	7" x 2.4" x 11.9" (178 x 60 x 301 mm)		
Weight	15.4 lb. (6.9 kg)		
Receiver Specifications			
Measurements made per EIA standard TIA/EIA-603			
Circuit Type	Double-conversion Super-heterodyne		
Sensitivity(EIA 12 dB SINAD)	0.25 µV		
Adjacent Channel Selectivity	85 dB	85 / 80 dB	85 / 77 dB
Intermodulation	80 dB	80 / 75 dB	80 / 75 dB
Spurious and Image Rejection	90 dB	90 dB	90 dB
Audio Output	5 W @ 4 Ohms 3 % THD (10 W @ 4 Ohms 3 % / Optional MLS-100)		
Transmitter Specifications			
Measurements made per EIA standard TIA/EIA-603			
Power Output	120 W/50 W	110 W/50 W	100 W/ 50 W
Modulation	16K0F3E	16K0F3E , 11K0F3E	
Maximum Deviation	5 kHz	5.0 / 2.5 kHz	
Conducted Spurious Emissions	80 dB Below Carrier		
Audio Distortion (@1 kHz)	< 2 % @1kHz		
Microphone type	Dynamic		
Microphone impedance	600 ohms		

Measurements per EIA standards unless noted above. Specifications subject to change without notice or obligation.

## Applicable MIL-STD

Standard	MIL 810C Methods/Procedures	MIL 810D Methods/Procedures	MIL 810E Methods/Procedures
Low Pressure		500.2/Procedure 2	500.3/Procedure 2
High Temperature	501.1/Procedure 1, 2	501.2/Procedure 1, 2	501.3/Procedure 1, 2
Low Temperature	502.1/Procedure 1	502.2/Procedure 1, 2	502.3/Procedure 1, 2
Temperature Shock	503.1/Procedure 1	503.2/Procedure 1	503.3/Procedure 1
Solar Radiation	505.1/Procedure 1	505.2/Procedure 1	505.3/Procedure 1
Rain*		506.2/Procedure 1, 2	506.3/Procedure 1, 2
Humidity	507.1/Procedure 2	507.2/Procedure 2	507.3/Procedure 2
Salt Fog		509.2/Procedure 1	509.3/Procedure 1
Dust		510.2/Procedure 1	510.3/Procedure 1
Vibration	514.2/Procedure 8, 10	514.3/Procedure 1 Cat. 10	514.4/Procedure 1 Cat. 10
Shock	516.2/Procedure 1, 5	516.3/Procedure 1, 4	516.4/Procedure 1, 4

\* Control Head Only



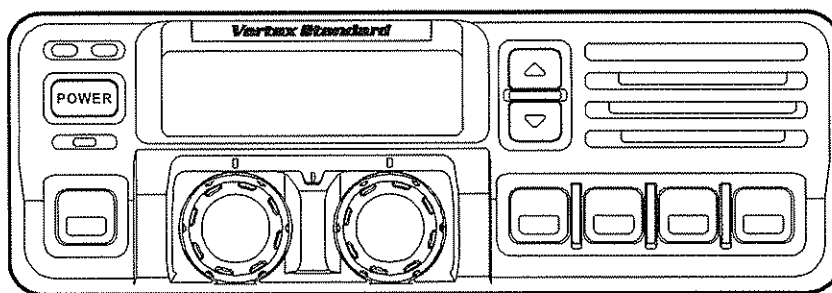
**Vertex Standard**  
**US Headquarters**

10900 Walker Street, Cypress, CA 90630, U.S.A.  
Phone 714/827-7600; Fax 714/827-8100  
http://www.vxstdusa.com



# VX-6000

## OPERATING MANUAL MANUAL DE OPERACIÓN



**VERTEX STANDARD CO., LTD.**

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**VERTEX STANDARD**

**US Headquarters**

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**YAESU UK LTD.**

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Winchester, Hampshire, SO23 0LB, U.K.

**VERTEX STANDARD HK LTD.**

Unit 5, 20/F., Seaview Centre, 139-141 Hoi Bun Road,  
Kwun Tong, Kowloon, Hong Kong



***English***

# Congratulations!

You now have at your fingertips a valuable communications tool - a **vertex** two-way radio! Rugged, reliable and easy to use, your **vertex** radio will keep you in constant touch with your colleagues for years to come, with negligible maintenance down time.

Please take a few minutes to read this manual carefully. The information presented here will allow you to derive maximum performance from your radio. After reading it, keep the manual handy for quick reference, in case questions arise later on.

We're glad you joined the **vertex** team. Call on us any time, because our business is communications. Let us help you get your message across.

## NOTICE

There are no user-serviceable points inside this transceiver. All service jobs must be referred to your Authorized Service Center or Network Administrator.

## Safety / Warning Information

**WARNING** - DO NOT operate the VX-6000L/V/U radio when someone (bystanders) outside the vehicle is within following range.

### Safety Training information:

Antennas used for this transmitter must not exceed an antenna gain of 0 dBd. The radio must be used in vehicle-mount configurations with a maximum operating duty factor not exceeding 50%, in typical Push-to-Talk configurations.

This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control the exposure conditions of its passengers and bystanders by maintaining the minimum separation distance of following range.

Failure to observe these restrictions will result in exceeding the FCC RF exposure limits.

### Antenna Installation:

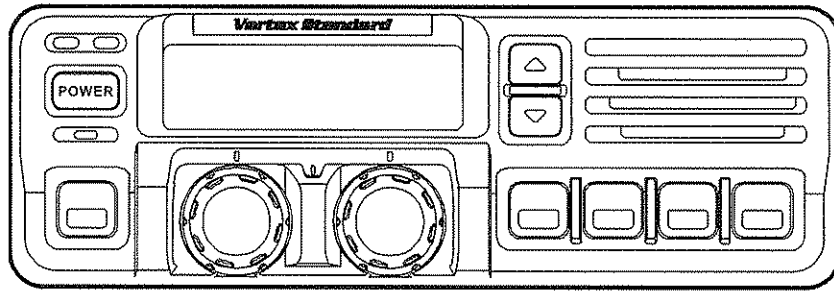
For rear deck trunk installation, the antenna must be located at least following range away from rear seat passengers in order to comply with the FCC RF exposure requirements.

For roof top installation, the antenna must be placed in the center of the roof.

### Radiated frequency and Distance

VX-6000V (C)	VX-6000U (D)
4.85 Feet (1.48 m)	3.77 Feet (1.22 m)

# VX-6000 Operating Manual



The VX-6000 Series are full-featured FM transceivers designed for flexible mobile and base station business communications in the VHF (110/60 Watts: programmable) and UHF (100/50 Watts: programmable) Land Mobile Bands. Each model is designed for reliable business communications in a wide variety of applications, with a wide range of operating capability provided by its leading-edge design.

The 250-channels memories can each be programmed with a 8-character channel name.

Important channel frequency data is stored in EEPROM and flash memory on the CPU, and is easily programmable by dealers using a personal computer and the VERTEX STANDARD CT-71 Programming Cable and CE35 Software.

The pages which follow will detail the many advanced features provided on the VX-6000 transceiver. After reading this manual, you may wish to consult with your Network Administrator regarding precise details of the configuration of this equipment for use in your application.

## **For North American Users Regarding 406 MHz Guard Band**

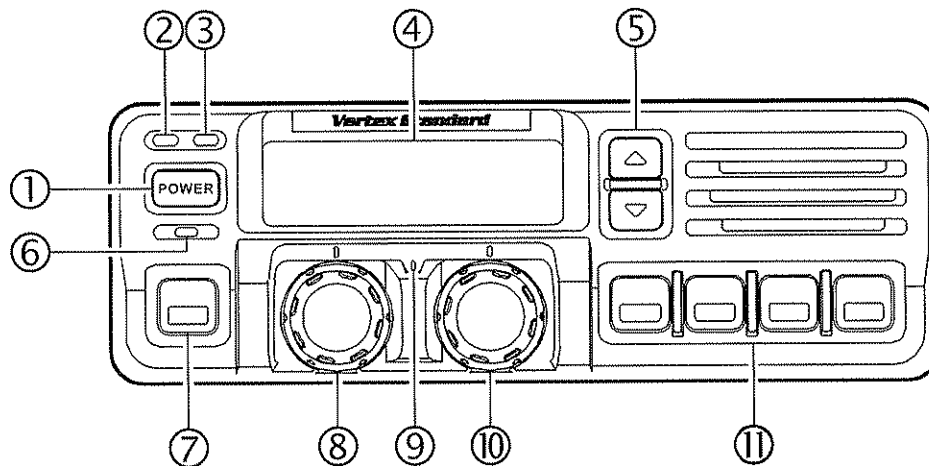
The U.S. Coast Guard and National Oceanographic and Atmospheric Administration have requested the cooperation of the U.S. Federal Communications Commission in preserving the integrity of the protected frequency range 406.0 to 406.1 MHz, which is reserved for use by distress beacons. Do not attempt to program this apparatus, under any circumstances, for operation in the frequency range 406.0 - 406.1 MHz if the apparatus is to be used in or near North America.

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# CONTROLS & CONNECTORS

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## *Front Panel*



① **POWER Button**

Press the button to turn the transceiver ON and OFF.

② **TX Indicator**

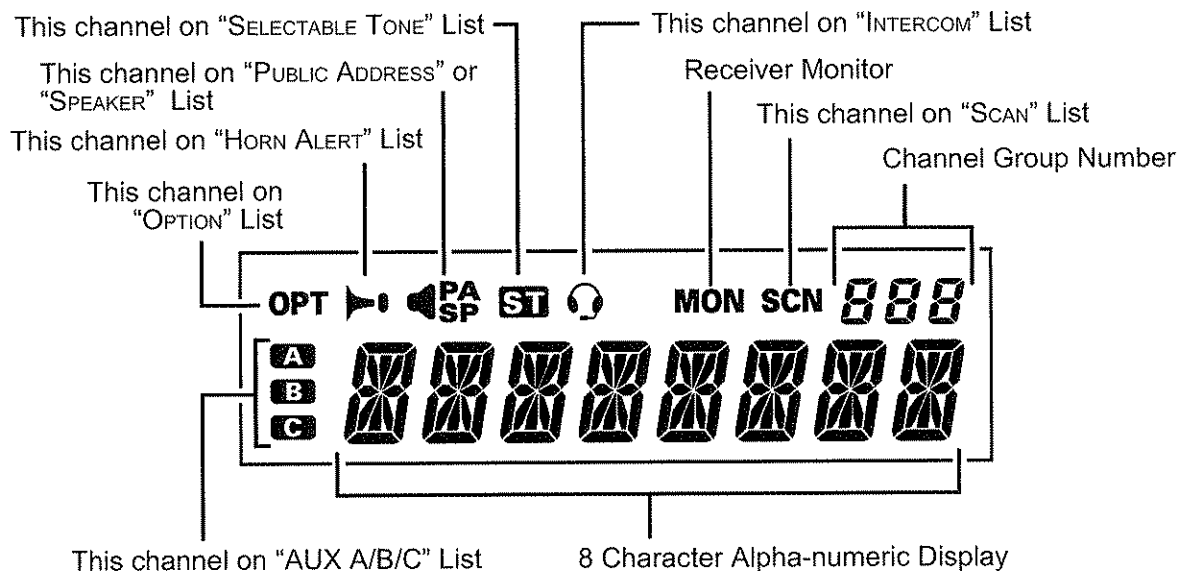
This lamp glows red when the radio is transmitting.

③ **BUSY Indicator**

This lamp glows green when the channel is busy.

④ **Liquid Crystal Display**

The display includes an 8-character alpha-numeric section showing channel and group names, status and identity information, and error messages. Additional indicators on the display show priority channel assignments and scan include / exclude selection.



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## CONTROLS & CONNECTORS

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⑤ **▲/▼ Button**

Pressing these buttons changes the current group (and displayed group number or name). Holding this button for more than 1/2 second causes the function to repeat.

⑥ **SQC Indicator**

This lamp glows orange when incorrect position at the setting of CE35.

⑦ **Programmable Function Button (PF button)**

This button can be set up for special applications, such as high/low power selection, monitor, dimmer, talk-around, and call alert function, as determined by your network requirements and programmed by your VERTEX STANDARD dealer.

⑧ **VOLUME Knob**

This knob sets the volume of the receiver.

⑨ **EMERGENCY Microphone**

The emergency microphone is located behind this small slit. When the emergency feature is activated, this Microphone is enabled.

⑩ **CHANNEL Selector Knob**

This knob select the operating channel.

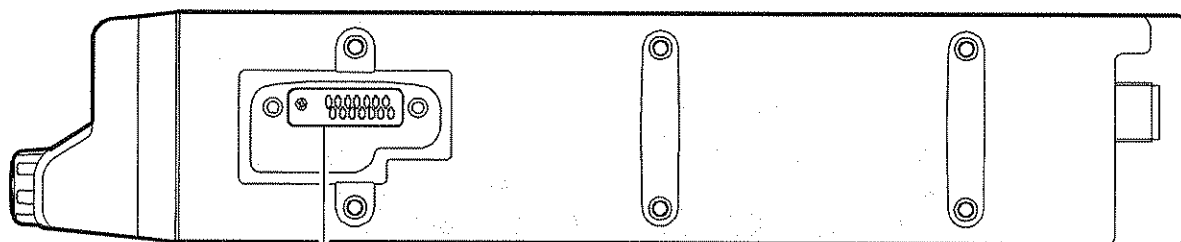
⑪ **Programmable Function Button (PF button)**

This button can be set up for special applications, such as high/low power selection, monitor, dimmer, talk-around, and call alert function, as determined by your network requirements and programmed by your VERTEX STANDARD dealer.

### *Side Panel*

**Microphone Jack** (It is on both sides.)

Connect the microphone plug to this jack.



Microphone Jack

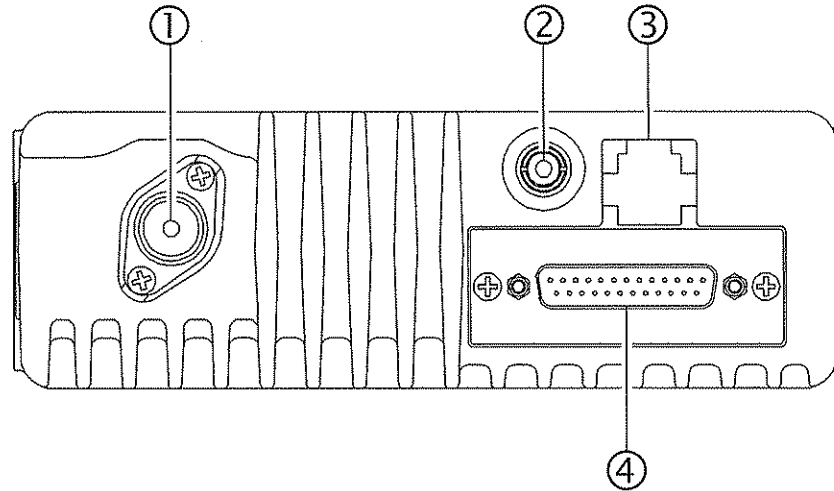


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## CONTROLS & CONNECTORS

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### *REAR (Heatsink)*



① **Antenna Socket**

The 50-ohm coaxial feedline to the antenna must be connected here, using a type-M (PL-259) plug.

② **External Speaker Jack**

An external loudspeaker may be connected to this 2-contact, 3.5-mm mini-phone jack.

**Caution:** Do not connect this line to ground, and be certain that the speaker has adequate capability to handle the audio output from the VX-6000.

③ **13.6-V DC Power Connector**

The supplied DC power cable must be connected to this 4-pin connector. Use only the supplied fused cable, extended if necessary, for power connection.

④ **DSUB 25-Pin Accessory Connector**

External TX audio line input, PTT (Push To Talk), Squelch, and external RX audio line output signal may be obtained from this connector for use with accessories such as data transmission/reception modems, etc.

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# BASIC OPERATION OF THE TRANSCEIVER

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**Important!** - Before turning on the radio the first time, confirm that the power connections have been made correctly and that a proper antenna is connected to the antenna jack.

## Switching Power ON/OFF

Push the **POWER** switch turn on the radio. The display will become illuminated. The radio will start up on the last channel used prior to shut-down during the previous operating session.

Turn the **CHANNEL** selector knob to choose the desired operating channel. A channel name will appear on the display. If you want to select the operating channel from a different Memory Channel Group, press the **UP** (▲) or **DOWN** (▼) button to select the Memory Channel Group you want before selecting the operating channel.

## Setting the Volume

Turn the **VOLUME** knob clockwise to increase the volume, and counterclockwise to decrease it. If no signal is present, press and hold in the **MON** button more than 1/2 seconds; background noise will now be heard, and you may use this to set the **VOLUME** knob for the desired audio level. Press and hold the **MON** button more than 1/2 seconds to quiet the noise and resume normal (quiet) monitoring.

## Transmitting

To transmit, wait until the “**BUSY**” indicator is off (the channel is not in use), and press the **PTT** (Push-To-Talk) switch on the side of the microphone (the “**TX**” indicator will appear or the “**TX**” indicator will glow red). While holding in the **PTT** switch, speak across the face of the microphone in a clear, normal voice level, and then release the **PTT** switch to receive.

## Selecting Groups and Channels

- Press the **UP** (▲) or **DOWN** (▼) button (repeatedly, if necessary) to select a different group of channels.
- Turn the **CHANNEL** selector knob to select a different channel *within the current group*.

## Automatic Time-Out Timer

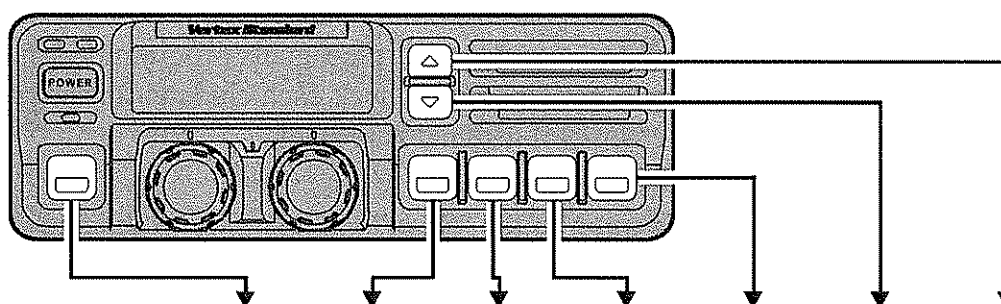
If the selected channel has been programmed for automatic time-out, you must limit the length of each transmission. While transmitting, a beep will sound five seconds before time-out. Another beep will sound just before the deadline; the “**TX**” indicator will disappear and transmission will cease soon thereafter. To resume transmitting, you must release the **PTT** and wait for the “penalty timer” to expire (if you press the **PTT** before this timer expires, the timer restarts, and you will have to wait another “penalty” period)

# ADVANCED OPERATION

## Programmable Function Button (PF button)

The VX-6000 includes the seven **Programmable Function Buttons (PF button)**. The **PF** button functions can be customized, via programming by your VERTEX STANDARD dealer, to meet your communications/network requirements. Some features may require the purchase and installation of optional internal accessories. The possible **PF** button programming features are illustrated at the below, and their functions are explained on page 8.

For further details, contact your VERTEX STANDARD dealer. For future reference, check the box next to each function that has been assigned to the **PF** button on your particular radio, and keep it handy.



Functions	Programmable Function Button (PF button)													
	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec
None														
SCAN (SCN)														
Dual Watch														
Call/Reset														
Talk-Around (TA)														
Alpha Numeric (A/N)														
DIMMER (DIM)														
Emergency (EMG)														
Horn Alert (HA)														
Home Channel (HOM)														
Intercom (IC)														
Low Power (LOW)														
GRP UP														
GRP DWN														
CH UP														
CH DWN														
AUX A														
AUX B														
AUX C														
Public Address (PA)														
Monitor (MON)														

# ADVANCED OPERATION

Functions	Programmable Function Button (PF button)													
	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec	<1.5 sec	>1.5 sec
RCL														
Selectable Tone (ST)														
SP*														
Squelch Level (SQL)														
Compander														
Encryption** (OPT)														

\* requires RMK-4000

\*\* requires Encryption Unit

## Channel Scan

The Scanning feature is used to monitor multiple signals programmed into the transceiver. While scanning, the transceiver will check each channel for the presence of a signal, and will stop on a channel if a signal is present.

### To activate scanning:

- ☐ Press the assigned **PF** button of the “Scan” momentarily to activate scanning.
- ☐ The scanner will search the channels, looking for active ones; it will pause each time it finds a channel on which someone is speaking.

### To stop scanning

- ☐ Press the assigned **PF** button of the “Scan”.
- ☐ Operation will revert to the channel to which the **CHANNEL** selector knob is set.

**Note:** Your dealer may have programmed your radio to stay on one of the following channels if you press the **PTT** switch during scanning pause:

- ☐ Current channel (“Talk Back”)
- ☐ “Last Busy” channel
- ☐ “Priority” channel
- ☐ “Home” channel
- ☐ “Scan Start” channel

## Dual Watch

The Dual Watch feature is similar to the Scan feature, except that only two channels are monitored:

- ☐ The current operating channel; and
- ☐ The “Priority” channel.

### To activate Dual Watch:

- ☐ Press the assigned **PF** button of the “Dual Watch”.
- ☐ The scanner will search the two channels; it will pause each time it finds a channel on which someone is speaking.

### To stop Dual Watch:

- ☐ Press the assigned **PF** button of the “Dual Watch”.
- ☐ Operation will revert to the channel to which the **CHANNEL** selector knob is set.

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## ADVANCED OPERATION

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### ARTS (Auto Range Transpond System)

This system is designed to inform you when you and another ARTS-equipped station are within communication range.

During ARTS operation, your radio automatically transmits for about 1 second every 25 (or 55) seconds (the interval is programmed by Dealer) in an attempt to Shake hands with the other station.

If you move out of range for more than one minutes, your radio senses that no signal has been received, a ringing beeper will sound. If you subsequently move back into range, as soon as the other station transmits, your beeper will sound.

### The PF Button Function

The **PF** (Programmable Function) button can be programmed by the dealer to provide two of the other functions described below.

To activate the primary Accessory function, press the **PF** button momentarily. To access the secondary Accessory function (which may include the Alarm), press and hold the **PF** button for 1.5 seconds or longer.

#### Call/Reset

When this feature is programmed and a selective call has been received, momentarily press the assigned **PF** button of the “**Call/Reset**” to reset the flashing indicator and mute the receiver, otherwise press the assigned **PF** button of the “**Call/Reset**” to sent your radio’s identification code (ANI) to the dispatcher.

#### Talk-Around

The feature causes the assigned **PF** button of the “**Talk-Around**” to select simplex operation on semi-duplex channels: the transmit frequency becomes the same as the receive frequency (regardless of any programmed offset for the channel).

***Note:** This feature has no effect on simplex channels. After pressing the button, “-TAKARD-” is displayed on the LCD.*

#### Alpha Numeric

Press the assigned **PF** button of the “**Alpha Numeric**” to switch the display between the Group/Channel number, and the Group/Channel name (alphanumeric). A tone will sound each time you switch between numerical and alphanumeric display.

#### DIM

Press the assigned **PF** button of the “**DIM**” to adjust the brightness of the display and key backlight.

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## ADVANCED OPERATION


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### EMG (Emergency)

Press the assigned **PF** button of the “**EMG**” to initiate an emergency call (requires ANI board). When an emergency call is made, no tone is emitted and the display does not change. To end the emergency call, turn the transceiver power OFF.

### HA (Horn Alert)


Press the assigned **PF** button of the “**HA**” to turn the Horn Alert function ON or OFF. If you receive a call from the base station with 2Tone or DTMF signaling, horn alert will activate.

When you turn Horn Alert ON, a tone will sound and “” appears on the display.

### Home (Home Channel)

Press the assigned **PF** button of the “**Home**” to select the pre-programmed Home Channel. Press it again to return to the previous channel. If used while scanning, pressing this key a second time will change to the revert channel.

### IC (Intercom)

This feature requires dual head configuration. Press the assigned **PF** button of the “**IC**” to turn the intercom feature ON or OFF. While ON, you can press the PTT switch to communicate to another control head operator without transmitting over the air. When you press this key, a tone sounds and “” appears on the display. The intercom can be used even while scanning and receiving a call.

### Low Power

Press the assigned **PF** button of the “**Low Power**” to set the radio's transmitter to the “Low Power” mode.

Press this key again to return to “High Power” operation when in difficult terrain.

### GRP UP/DWN

Press the assigned **PF** button of the “**GRP UP**” or “**GRP DWN**” to select a different group of channels.


### CH UP/DWN

Press the assigned **PF** button of the “**CH UP**” or “**CH DWN**” to select a different channel within the current group.

### AUX A/B/C

Press the assigned **PF** button of the “**AUX A**”, “**AUX B**”, or “**AUX C**” to turn the output port (respectively).

### PA (Public Address)

Press the assigned **PF** button of the “**PA**” to use the transceiver as a PA amplifier. When you enable this function, a tone sounds and “**PA**” appears on the display. The public address can be used even while scanning and receiving a call.

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## ADVANCED OPERATION

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### **MONI (Monitor)**

Press the assigned **PF** button of the “**MONI**” momentarily to cancel CTCSS and DCS signaling squelch; the “**MON**” icon appears on the display. Press and hold this key for 1/2 seconds to hear background noise (unmute the audio); the **MON** icon blinks on the display.


### **RCL (Channel Recall)**

During scan, you can press the assigned **PF** button of the “**RCL**” to select the last called channel.

### **ST (Selectable Tone)**

Press the assigned **PF** button of the “**Selectable Tone**”, then rotate the CHANNEL selector knob to select a 2-Tone.

### **SP**

Press the assigned **PF** button of the “**SP**” to switch “Front panel”, “Front panel & Body” and “Body” speaker. When “Body” is selected, a tone sounds and the “ **SP**” icon appears on the display. You can use this function while scanning and receiving a call. However, all audio will be emitted from the PA speaker.

### **SQL (Squelch Level)**

You can manually adjust the squelch level using this function:

1. Press the assigned **PF** button of the “**SQL**”. A tone sounds and SQL appears on the display with the current squelch level.
2. Rotate the CHANNEL selector knob to select the desired level.
3. Press the this key. A tone sounds and the display returns to the normal channel.

### **COMP (Compander)**

Press the **PF** button assigned to the “**COMP**” function to turn the “Compander” IC ON or OFF.

This IC contains two variable gain circuits configured for compressing and expanding the dynamic range of the radio's transmitted and received audio signal.

When you enable this function, the signal-to-noise ratio can be improved by reducing the transmitted audio dynamic range.

### **Encryption (Option)**

When the Voice Scrambler feature is enabled, pressing the assigned **PF** button of the “**Encryption**” toggles the Scrambler on and off.

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## OPTIONAL ACCESSORIES

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<b>MH-25</b> <sub>B7A</sub>	Microphone
<b>MH-53</b> <sub>C7A</sub>	Heavy Duty Microphone
<b>MH-53</b> <sub>A7A</sub>	Heavy Duty Microphone w/Noise Canceler
<b>MH-53</b> <sub>B7A</sub>	Heavy Duty DTMF Microphone w/Noise Canceler
<b>CE35</b>	Programming Software
<b>CT-70</b>	Radio Programming Cable (Requires VPL-1)
<b>CT-71</b>	Radio to PC Programming Cable
<b>CT-72</b>	Radio to Radio Programming Cable
<b>CT-81</b>	Cable for RMK-4000 (6 m)
<b>CT-82</b>	Cable for RMK-4000 (2.5 m)
<b>CT-83</b>	Cable for RMK-4000 (0.6 m)
<b>CNT-6000</b>	Control Head
<b>RF DECK</b>	RF Deck w/MMB-75 (for Dual Band Installations)
<b>RMK-4000SH</b>	Remote Kit (for Single Transceiver)
<b>RMK-4000DH</b>	Remote Kit (for Dual-Head Installations)
<b>RMK-4000DB</b>	Remote Kit (for Dual Band Installations)
<b>RMK-4000DBH</b>	Remote Kit (for Dual Band plus Dual Head Installations)
<b>F2D-8</b>	2-Tone Decode Unit (Requires FIF-7)
<b>F5D-14</b>	5-Tone ENC-DEC Unit (Requires FIF-7)
<b>VTP-50</b>	VX-Trunk Unit (Requires FIF-7)
<b>FVP-25</b>	Encryption/DTMF pager Unit (Requires FIF-7)
<b>FP-1030</b>	External 30A Power Supply
<b>MLS-100</b>	Mobile Loud speaker (12 W Peak Power)
<b>MMB-79</b>	Mobile Mounting Bracket
<b>MMB-77</b>	Locking Mobile Mounting Bracket
<b>FIF-7</b>	Inter face Board (for F2D-8, F5D-14, VTP-50, FVP-25)
<b>CN-6</b>	Inter face Board (for Accessories)