

# **Communication Service, Inc.**

12403 MacCorkle Avenue Charleston, West Virginia 25315  
304-949-4160 304-949-4164 Fax

01/25/13 09:24:50 AM  
West Virginia Purchasing Division

January 23, 2013

Department of Administration  
Attn: Connie Oswald  
2019 Washington Street East  
P. O. Box 50130  
Charleston, WV 25305-0130

RE: ABCA93

We are pleased to enclose specification sheets on the following Harris radio we are proposing for your consideration

This is the Harris Unity XG-100P Portable radio. It is available with the specifications you are requesting. This radio has a 3 year warranty and is approved on the WV SORN Equipment List.

You can visit the Harris website at: [www.harris.com](http://www.harris.com)  
When you get to the website, go to the tab markets, public safety and then open up the Law Enforcement tab. This should give you any additional information you need.

We look forward for the opportunity to quote pricing to you from the Harris line of radio products.

Thanking you in advance, we are

Yours truly,



Donna Thaxton

**HARRIS**<sup>®</sup>  
*assuredcommunications*<sup>®</sup>



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
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**Solicitation**

NUMBER
ABCA93

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
CONNIE OSWALD 304-558-2157

VENDOR

RFQ COPY  
 TYPE NAME/ADDRESS HERE  
 Communication Service, Inc.  
 12403 MacCorkle Avenue  
 Charleston, W 25315

SHIP TO

ALCOHOL BEVERAGE CONTROL  
 COMMISSION  
 VARIOUS LOCALES AS INDICATED  
 BY ORDER

DATE PRINTED
01/11/2013

BID OPENING DATE: 01/11/2013

01/28/2013

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
REQUEST FOR INFORMATION						
<p>THE STATE OF WEST VIRGINIA AND ITS AGENCY THE WEST VIRGINIA ALCOHOL BEVERAGE CONTROL ADMINISTRATION IS SEEKING INFORMATION FOR THE PURCHASE OF TWO-WAY RADIOS PER THE ATTACHED SPECIFICATIONS. THE AGENCY IS REQUESTING LITERATURE, SPECIFICATIONS OR A WEB ADDRESS, ETC. ON ANY RADIO THAT WILL MEET THE SPECIFICATIONS.</p> <p>ALL INTERESTED VENDORS WISHING TO PROVIDE INFORMATION ABOUT THEIR PRODUCTS SHOULD RESPOND TO THIS REQUEST BY PROVIDING LITERATURE, SPECIFICATIONS AND INFORMATION ON THEIR PRODUCTS.</p> <p>THIS IS A REQUEST FOR INFORMATION ONLY AND IS SOLELY USED FOR INFORMATION AND PLANNING PURPOSES. THIS REQUEST FOR INFORMATION DOES NOT CONSTITUTE EITHER A REQUEST FOR PROPOSAL OR QUOTATION (RFP/RFQ) OR A PROMISE TO ISSUE A RFP OR RFQ IN THE FUTURE.</p> <p>RESPONSES WILL BE RECEIVED UNTIL JANUARY 28, 2013 BY 1:30 PM.</p> <p>PLEASE SEE ATTACHED INSTRUCTIONS TO BIDDERS, TERMS AND CONDITIONS AND SPECIFICATIONS.</p>						

SIGNATURE <i>Alana Shaxton</i>	TELEPHONE 304-949-4160	DATE 1-23-2013
TITLE Office Manager	FEIN 55-0547641	ADDRESS CHANGES TO BE NOTED ABOVE

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



State of West Virginia  
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 01/11/2013

BID OPENING DATE: 01/28/2013 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		725-74		
TWO-WAY RADIOS, PORTABLE						
DIGITAL PORTABLE TWO-WAY RADIOS PER THE ATTACHED SPECIFICATIONS.						
***** THIS IS THE END OF RFQ ABCA93 ***** TOTAL: _____						

SIGNATURE		TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE	

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



The Unity XG-100P is the only portable radio that provides

- Full-Spectrum multiband frequency coverage
- Harris' proprietary noise suppression capability
- Built-in GPS and Bluetooth® wireless technology
- Next-generation user interface

The Unity XG-100P Full-Spectrum Multiband Radio's user-centric design delivers unprecedented interoperability, ease of use, and advanced capabilities in a radio that users can depend on for years to come.

#### **Unprecedented Interoperability**

The XG-100P covers all portable land mobile radio frequency bands in a *single* radio:

- VHF band (136-174 MHz)
- UHF bands (380-520 MHz)
- 700/800 MHz bands (762-870 MHz)

The XG-100P is a truly interoperable solution, capable of supporting:

- APCO P25 Trunking
- P25 Conventional
- Analog FM Wideband and Narrowband Modes
- MDC-1200 Analog ID
- Conventional Voted Scanning

The XG-100P can scan continuously across all bands and encryption types. Additionally the radio can scan Conventional and P25 Conventional channels while on a P25 Trunked system. The Unity XG-100P puts unprecedented connectivity in the hands of its user.

#### **Operation in High-Noise Environments**

The XG-100P features Harris' proprietary noise suppression capability to provide clear and crisp voice quality in high-noise environments for use in any mode, including both analog and digital communications. The radio is designed with dual microphones and advanced signal processing technology for built-in noise suppression. Additionally, the

radio supports accessories such as remote speaker microphones for use with this capability.

#### **GPS-Enabled Situational Awareness**

The XG-100P incorporates a Global Positioning System (GPS), enabling user position to be sent securely over the air for personnel position tracking and rapid response for emergencies. This positional information can also be received by other Unity radios and displayed directly on screen for tactical situational awareness of all radio users.

#### **Next-Generation User Interface**

The user-centric design of the XG-100P offers significant capability and flexibility beyond push-to-talk:

- Large, full-color display features next-generation graphical user interface (GUI)
- Intuitive use of the radio's features, including GPS, customized scanning, and front panel programming
- Ergonomic design with easy-to-use buttons for hand-held operation
- Large knobs and a configurable top display provide instantaneous radio control when operating in a holster

#### **Bluetooth Wireless Technology**

Wireless audio and data accessories for the XG-100P are supported by built-in Bluetooth technology. Additionally, the wireless data interface can be used to connect a computer for programming and configuring radios, with no cable connections required. For security purposes, all connections are initiated and managed from the radio interface and can be secured using AES encryption. Additionally, the Bluetooth transceiver can be disabled, if desired.

#### **Extended Channel Capacity**

The XG-100P is designed to maximize interoperability by providing the channel capacity necessary to operate on many systems across all frequency bands:

- Able to store 1,250 channels and 512 system profiles per mission plan
- Able to store up to 10 mission plans for a total of 12,500 channels
- Can be completely reconfigured from the front panel by loading different mission plans for different situations

#### **Software-Defined Radio Architecture**

Harris has a long history of fielding mission-critical software-defined radios that support evolving customer requirements through software-only upgrades. The XG-100P builds upon this experience and expertise, featuring a true software-defined radio architecture that allows flexibility for future growth, including a software-only upgrade to the APCO P25 Phase 2 standards when available.

The XG-100P also meets the applicable standards of the Department of Homeland Security's P25 Compliance Assessment Program (CAP).

#### **Future-Proof Investment**

Every XG-100P is built to exceed the MIL-STD-810F military standards for ruggedness and immersion. With a 3-year standard radio warranty, the XG-100P Full-Spectrum Multiband Radio is a future-proof investment.

Technical specifications represent typical performance and are subject to change without notice.  
Product sales are subject to applicable U.S. export control laws.

### General Specifications

#### Dimensions (H x W x D):

(Without Knobs and Antenna)

With battery:

6.50 x 2.43 x 1.83 in.  
(167.6 x 61.7 x 46.5 mm)

#### Approximate Weight (with Battery):

22.5 oz (638g)

#### Input Voltage:

7.5 VDC (nominal)

#### Immersion:

1 meter for 30 minutes in accordance with MIL-STD-810F

#### Battery Life (at 5% Tx, 5% Rx, and 90% standby):

Li-Polymer: >12 hours (3600 mAh)

#### Operating Temperature Range:

-4 to +140°F (-20 to +60°C)

#### Relative Humidity:

Per MIL-STD-810F

#### Altitude:

Operational: 15,000 ft (4,572 m)  
In Transit: 40,000 ft (12,192 m)

#### Front Display:

176 pixels x 200 pixels, 2.2 in. transreflective LCD, 16-bit color with white LED backlight

#### Top Display:

128 pixels x 32 pixels, 0.91 in. Organic Light-Emitting Diode (OLED)

#### Keypad:

Backlight, 2 soft keys, 5-way navigation key, 4x3 keypad, home button

#### Buttons/Switches:

Large PTT button, on/off knob, volume knob, red emergency button, 16-position top-mounted rotary knob, 2-position concentric switch, 3-position toggle switch, 3 programmable side buttons

#### TX/RX Indicator:

Multi-color LED

#### Channel Capacity:

12,500 (1,250 per mission plan)

### Options and Accessories

Speaker microphones, programming software and cables, surveillance accessories, antennas, cases, straps, belt loops and swivel mounts, and desk chargers

### Intrinsically Safe Options

Intrinsically Safe for Class I, II, III Division 1, Groups D, F, and G hazardous (classified) locations and suitable for Class I, Division 2, Groups A, B, C and D hazardous (classified) locations.



### Transmitter

Typical Performance	Full-Spectrum Multiband
Frequency Range (MHz):	136-174 (VHF), 380-520 (UHF), 762-870 (700/800)
Rated RF Power Trunked (W):	VHF: 1-6, UHF: 1-5, 700/800: 0.5-3
Rated RF Power Talkaround (W):	VHF: 1-6, UHF: 1-5, 700/800: 0.5-3
Frequency Stability (-30 to +60°C) (ppm):	±0.5
Modulation Limiting (kHz):	2.5, 4, 5 (FM)
Audio Response (dB):	+1/-3
Spurious and Harmonics (dBc):	-70, FCC Part 90
FM Hum and Noise @ 25 kHz (dB):	VHF: -51, UHF: -54, 700/800: -50
FM Hum and Noise @ 12.5 kHz (dB):	VHF: -45, UHF: -47, 700/800: -44
Audio Distortion (%):	<1.25
P25 Modulation Fidelity (%):	<1.00
P25 Adjacent Channel Power (dBc):	>67
Emission Designators:	16K0F3E, 11K0F3E, 8K4F1E, 8K4F1D, 12K00G1E, 12K00G1D, 14K0F3E

### Receiver

Typical Performance	Full-Spectrum Multiband
Frequency Range (MHz):	136-174 (VHF), 380-520 (UHF), 762-870 (700/800)
Channel Spacing (kHz):	12.5, 25
Sensitivity (12 dB SINAD) (dBm):	VHF: -121.1, UHF: -123.0, 700/800: -121.4
P25 Reference Sensitivity (5% BER) (dBm):	VHF: -121.0, UHF: -122.9, 700/800: -121.4
Adjacent Channel Rejection @ 25 kHz (dB):	VHF: 77.8, UHF: 73.7, 700/800: 72.7
P25 Adjacent Channel Rejection @ 12.5 kHz (dB):	VHF: 66.2, UHF: 62.2, 700/800: 62.0
Intermodulation (dB):	VHF: 74.3, UHF: 78.8, 700/800: 78.5
Spurious and Image Rejection (dB):	VHF: 70, UHF: 75, 700/800: 70
FM Hum and Noise @ 25 kHz (dB):	VHF: -54.8, UHF: -49.1, 700/800: -48.2
FM Hum and Noise @ 12.5 kHz (dB):	VHF: -53.8, UHF: -43.7, 700/800: -42.8
Rated/Max. Audio Output (mW):	500/1200
Audio Distortion:	1.1% @ rated power

### Environmental Specifications

Standard	Parameter	Methods & Procedures
MIL-STD-810F*	Low Pressure	500.4/1,2
	High Temperature	501.4/1,2
	Low Temperature	502.4/1,2
	Temperature Shock	503.4/1
	Solar Radiation	505.4/1
	Blowing Rain	506.4/1
	Humidity	507.4
	Salt Fog	509.4
	Blowing Dust & Sand	510.4/1,2
	Immersion	512.4/1
	Vibration (Minimum Integrity)	514.5/1, Category 24
	Vibration (Basic Transportation)	514.5/1, Category 4
	Shock (Functional/Basic)	516.5/1
	Shock (Transit Drop)	516.5/4
	Shock (Bench Handling)	516.5/6

\*Also meets equivalent superseded MIL-STD-810C, -D, and -E.

### Digital Operation

APCO P25	
Vocoding Method:	AMBE+2™ Enhanced Full Rate & Enhanced Half Rate
Data Rate (kbps):	9.6
Modulation:	C4FM
Encryption algorithms:	AES, DES-OFB, DES-CFB
Encryption keys:	128 keys (64 AES, 64 DES)
Encryption keying:	Harris Keyloader, P25 Conventional and Trunked OTAR, KVL-3000+

### Regulatory Data

Frequency Range (MHz)	RF Output (W)	Frequency Stability (ppm)	FCC Type Acceptance Number	Applicable FCC Rules	Industry Canada Certification Number	Applicable Industry Canada Rules
136-174	6	0.5	AQZ-XG-100P00	80, 90	122D-XG100P00	RSS-119
380-520	5	0.5	AQZ-XG-100P00	90	122D-XG100P00	RSS-119
763-775, 793-805	2.5	0.5	AQZ-XG-100P00	90	122D-XG100P00	RSS-119
806-824, 851-869	3	0.5	AQZ-XG-100P00	90	122D-XG100P00	RSS-119



Public Safety and Professional Communications | www.pspc.harris.com  
221 Jefferson Ridge Parkway | Lynchburg, VA USA 24501 | 1-800-368-3277 (+1-434-455-6403)

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## VC4000 Charger Unity® XG-100P

# VERSATILE CHARGING FOR MAXIMUM EFFICIENCY

The VC4000 Charger

- > Is a rapid charger
- > Is compatible with Lithium Polymer and Lithium Ion battery packs
- > Can be mounted in a vehicle or used as a desk charger



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assuredcommunications®

### STANDARD FEATURES

The VC4000 is a rapid charger with the capability to charge Lithium Polymer and Lithium Ion batteries in 4 hours or less. The charger supports the Unity XG-100P portable and is independent from frequency or system operation. The VC4000 includes the following features:

- > Colored LEDs: Provide charging status.
- > Positive Latch: Ensures that the radio or battery pack is securely in place while it is in the charger.
- > Versatile Mounting Options: Enables the charger to easily fit different vehicle mounting requirements.
- > Automatic Restart: Constantly monitors the battery while it is in the charger and will start charging the battery as soon as it falls below 90% of capacity.
- > Optimal Charging without Overcharging: Provides microprocessor-controlled charging for long battery life and maximum battery performance.
- > Protective Circuitry: Prevents damage to battery resulting from charging batteries that are not within the required temperature or voltage range.
- > Charging Efficiency: Communicates with the battery's internal fuel gauge for optimal charging efficiency.
- > Repeater Control: Has an enable/disable circuit for use with a vehicular repeater. The vehicular repeater is enabled when the radio is removed from the charger.
- > Ignition Sense (Dipswitch configurable): Unit is turned off when the ignition is turned off, preventing vehicle battery drain.

### VERSATILE DESIGN

The versatile design of the VC4000 provides the flexibility to meet different users' needs. The unit can charge the battery with or without the radio attached and can also accommodate a radio with the speaker mic and/or belt clip still attached.

The charger may be hard wired for permanent installation or powered using the optional DC cigarette lighter adapter for temporary in-vehicle installation. The VC4000 may also be used for desktop charging with the optional AC adapter.

## GENERAL SPECIFICATIONS

### Applications:

Charges Lithium Polymer and Lithium Ion batteries for the Unity XG-100P

### Source Voltage:

11 to 16 VCC

### Dimensions (D x W x H):

#### With Bracket:

3.125 x 5.125 x 5.437 in.  
(7.94 x 13.02 x 13.81 cm)

#### Without Bracket:

3.125 x 4.312 x 4.375 in.  
(7.94 x 10.95 x 11.11 cm)

### Weight:

#### With Bracket:

13.0 oz (368g)

#### Without Bracket:

10.2 oz (289g)

### Construction:

Polycarbonate and ABS blend

### Color:

Black

### Charge Current:

1.5A

### Mounting:

Cables, hardware, U-shaped bracket for mounting above or beneath dash, fuse, connector terminals for repeater control, and ignition sense

### Temperature Limits:

Operating: -22 to +140°F  
(-30 to +60°C)

Charging: +32 to +122°F  
(+0 to +50°C)

### Options:

#### Power Supply Kit:

Includes AC Adapter and Cigarette Lighter Adapter

### RoHS Compliant



Public Safety and Professional Communications  
221 Jefferson Ridge Parkway  
Lynchburg, VA 24501 USA

1-800-368-3277 (+1-434-455-6403)

www.pspc.harris.com

## COMPACT AND RUGGED DESIGN

### ENVIRONMENTAL SPECIFICATIONS

STANDARD	PARAMETER	METHODS & PROCEDURES
MIL-STD-801G	Vibration	514.6 PI, CAT 4 & 24
	Shock	516.6 PI, IV, V, & VI
	Solar Radiation	505.5 PI
	Low Temperature	502.5 PI & II
	High Temperature	501.5 PI & II
	Temperature Shock	503.4
	Humidity	507.5 PI & II
	Low Pressure	500.5 PI

### OPTION NUMBER

VC4000 for Unity XG-100P: XPCH4J

### REGULATORY SPECIFICATIONS

FCC Certification: Meets FCC Part 15  
Industry Canada: ICES-003  
Automotive Directive: 72/245/EEC – 95/54/EC

10R-037621

Australian C-Tick Mark



Technical specifications are subject to change without notice. Products sales are subject to applicable U.S. export control laws.