CAZCOM, INC.
Wireless Solutions
dba Hi-Desert Communications
17181 Jasmine Street
Victorville, CA 92395
(760) 243-2332 fax (760) 243-0886
email: hidc@gte.net Website: CAZCOM.net

May 15, 2009

Contra Costa County
AD – Department of Information Technology 30 DOU
Office of the Administrator
30 Douglas Drive
Martinez, CA 94553

RE: 0904-018-1-01 Professional P-25 Portable Radios as Specified

We at CAZCOM, Inc., a Manufactures Representative for Tyco Electronics are pleased to submit our response to you relative to your requirement for P-25 Portable Radios.

We have been in the Communications Industry since 1981, providing equipment and services to the Public Safety and Federal Government markets.

In an effort to conform to your bid requirement for a straight forward, clear, concise, and specific response we are dispensing with the normal provision of detailed background on our Company history and remain specific to providing the information you have requested.

We have provided a quotation for the M7200 Dual Band 700/800 MHz P25 Mobile Radio, P7100 Series Scan Model Dual Band 700/800 MHz P25 Portable Radio.

Please feel free to contact me at your convenience with any questions or requirements for additional information and I will be happy to provide it.

Thank you for this opportunity to become a part of the Contra Costa County Communications Team.

Danny Hamilton

Danny Hamilton
Public Safety Marketing Director
CAZCOM, Inc.

Tel: 760-243-2332 ext 112
Fax: 760-243-0886
Cell: 760-559-2693

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REFERENCES

Bell Gardens Police Department
7100 South Garfield Avenue
Bell Gardens, CA

Director of Information Technology – James Kaddis
Police Chief – Keith L. Kilmer
562-806-7697

P25 UHF Police Department Communications System

Union Pacific Railway
10031 Foothill Blvd
Roseville, CA 95747

Deputy Chief – George J. Slaats
916-789-6070

P25 VHF and UHF California Statewide Police Department Communications System

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Regional Fire Protection Authority
A JPA of the Fire Departments for the City's of Victorville, Apple Valley, Hesperia, Barstow, Yermo, Daggett, Newberry Springs, Big Bear Lake, and Big Bear City
14343 Civic Drive
Victorville, CA 92392

Fire Chief – John Becker
760-955-1098

800 MHz Trunked P25 Multi-site Communications System

Item Response Form

Item	0904-018-1-01 - ***** PROFESSIONAL P-25 PORTABLE RADIOS AS SPECIFIED *****
Quantity	2000 each
Unit Price	SEE ATTACHED
Delivery Location	Contra Costa County

AD - DEPT OF INFORMATION TECH 30
DOU
OFFICE OF THE ADMINISTRATOR
30 DOUGLAS DR.
MARTINEZ CA 94553
Qty 2000

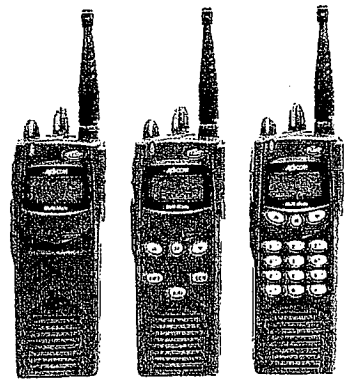
Description
FOR THE PURCHASE OF ESTIMATED 2000 PORTABLE RADIOS AS PER ATTACHED SPECIFICATIONS.

P7200 Portables

700/800 MHz

The P7200 portable is a public safety digital two-way radio that provides

- *Dual-band TDMA-capable operation*
- *Multi-Mode functionality*
- *Digital voice and IP data*



P7230 P7250 P7270

The 700/800 MHz dual-band P7200 portable radio delivers end-to-end encrypted digital voice and IP data communication. The P7200 was designed to meet the critical communication demands of public safety users. It is a high specification, feature-rich portable built to provide superior performance.

Multiple Operating Modes

The P7200 portable supports multiple operating modes, including OpenSky® digital trunked mode, Enhanced Digital Access Communications System (EDACS®) or ProVoice™ trunked mode, P25 digital trunked mode, P25 conventional mode, and conventional analog mode. As software-defined radios, the P7200 units can include all of these modes, some, or just one. Additional modes can be added later with software updates.

Advanced Digital Trunking Features

The P7200 supports the full range of OpenSky digital trunking features, including voice group calls, priority scanning, pre-emptive emergency calls, late call entry, and dynamic reconfiguration. It performs autonomous roaming for wide-area applications. High-quality voice coding and robust audio components assure speech clarity, even in noisy environments.

Mobile Data Capability

The P7200 portable can be used in high-performance wireless data systems in all operating modes listed. For mobile data applications, the P7200 serves as an Internet Protocol (IP) network node, providing end-to-end IP connectivity for an external portable computer connected to the radio's data port. For OpenSky, the 19.2-kbps data airlink rate is a standard operating feature. Users can talk and send or receive data on the same channel at the same time with just one radio.

Over-the-Air Programming

OpenSky radios benefit from a flexible, software-based design. Features and user profiles are software-defined and can be reprogrammed over the air. The radio personality, features, and operating software can all be updated over the air. Over-the-Air Rekeying (OTAR) of encryption keys is also available for OpenSky or P25 trunking operation.

Encrypted Communications

The optional Advanced Encryption Standard (AES) is available for maximum security on OpenSky, ProVoice, and P25. OpenSky operates the most advanced vocoder on a private wireless Intranet that provides maximum digital voice clarity. As an additional measure of security, P7270 radios may be password-protected, preventing unauthorized use.

Lightweight with Heavy-Duty Performance

The P7200 is more than just new electronics and software, it is the most robust mechanical package ever offered in a Tyco Electronics portable radio.

- MIL-STD-810F rugged – including 1-meter drop per TIA (even the knobs)
- Optional Immersion – 1 meter for 4 hours per MIL-STD-810F
- Non-Slip grips on the side
- Knobs with large blades for excellent tactile feel, yet rounded and with set-screws to prevent accidental changes
- Tx/Rx LED and improved clarity display for more visible signaling (including new features such as a battery-level gauge)
- Large speaker and amplified microphone for loud and clear audio
- Intrinsically safe certification (optional)
- P7100^{IP} accessory compatibility – including batteries, chargers, vehicular chargers, carrying accessories, and audio accessories.

For More Information

For more information about this or any other Wireless Systems product from Tyco Electronics, call toll free in the U.S. or Canada 800-368-3277. From outside the U.S. call +1-434-455-6403.

Tyco Electronics

Our commitment. Your advantage.

General Specifications

P7200 Portables are available in 3 models:

P7270: System Model with LCD and full keypad

P7250: Scan Model with LCD and limited keypad

P7230: Select Model with LCD and no front keypad

Dimensions (H x W x D):
(Without Knobs and Antenna)
With battery:
6.75 x 2.58 x 1.79 in.
(171.4 x 65.5 x 44.7 mm)

Weight (with Battery):
Li-Ion 19.8 oz (561g)
NiCd: 22.9 oz (649g)
NiMH: 23.9 oz (678g)

Input Voltage:
7.5 VDC (nominal)

Vibration:
5 G (per U.S. Forest Service)

Shock:
1 meter drop (per TIA/EIA-603-A)

Immersion*:
1 meter for 4 hours with 49°F (27°C) differential (MIL-STD-810F)
*P7200 immersion model only.

Battery Life (at 5% Tx, 5% Rx, and 90% standby):
Li-Ion: 14 hours (3200 mAH)
NiCd: 8 hours (1600 mAH)
NiMH: 11 hours (2400 mAH)

Operating Temperature Range:
Li-Ion: +14 to +122°F (-10 to +50°C)
NiCd: -22 to +140°F (-30 to +60°C)
NiMH: +14 to +122°F (-10 to +50°C)

Relative Humidity:
90% @ 122°F (+50°C)

Altitude:
Operational: 15,000 ft (4,572 m)
In Transit: 50,000 ft (15,240 m)

Color (case):
Black

Options and Accessories

Headset, earpiece, speaker microphones, PC programming software and cables, subminiature surveillance accessories, antennas, cases, straps, belt loops and swivel mounts, desk chargers, wall chargers, and vehicular chargers.

Intrinsically Safe Options

Factory Mutual Intrinsically Safe for Class I, II, and III, Division 1, Groups C, D, E, F, and G, Temp T3C, TA=+60°C; Nonincendive for Class I, Division 2, Groups A, B, C, and D, Temp T4, TA=+60°C.

Transmitter

	700/800
Frequency Range (MHz):	764-776, 794-825, 851-869
Rated RF Power Trunked (W):	3 (0.5-3 under software control)
Rated RF Power Talkaround (W):	3 (0.5-3 under software control)
Frequency Stability (-30 to +60°C) (ppm):	±1.5
Modulation Deviation (kHz):	2.5, 4, or 5 FM 3.75 OpenSky Trunking
FM Hum and Noise (Companion Receiver) (dB):	>40 (non-NPSPAC), >38 (NPSPAC)
Audio Response (dB):	+1/-3
Spurious and Harmonics (dBm/dBc):	Meets FCC Part 90; emission mask "G" and "H" for 800 MHz
Frequency Separation (MHz):	Full bandwidth
Audio Distortion:	<2% at rated audio @ 1000 Hz, 3 kHz deviation
P25 Modulation Fidelity (%):	<5
P25 Adjacent Channel Power (dBc):	>67

Receiver

	700/800
Frequency Range (MHz):	764-776, 851-869
Channel Spacing (kHz):	12.5, 25, PLL Step
Sensitivity (12 dB SINAD) (µV/dBm):	0.25/-119
P25 Reference Sensitivity (5% bit error rate) (µV/dBm):	0.25/-119
Digital Sensitivity (5% block error rate, OpenSky protocol, AWGN) (dBm):	-110
Adjacent Channel Rejection @ 25 kHz (dB):	>72
P25 Adjacent Channel Rejection @ 12.5 kHz (dB):	>60
Offset Channel Selectivity @ NPSPAC (dB):	>20
Intermodulation (dB):	>70
Spurious and Image Rejection (dB):	>70
FM Hum and Noise (dB):	>37 (non-NPSPAC), >35 (NPSPAC)
Frequency Stability (-30 to +60°C) (ppm):	±1.5
Frequency Separation (MHz):	Full bandwidth
Rated Audio Output (mW):	500
Audio Distortion:	2.5% @ rated power
Measurements per TIA/EIA-603-A except where noted as "P25" per TIA/EIA-102.	

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	505.4/2
	Blowing Rain	506.4/1
	Humidity	507.4
	Salt Fog	509.4
	Blowing Dust	510.4/1
	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
IEC 60529	Dust-tight and Water Immersion	IP-67
U.S. Forest Service	Vibration (10-60 Hz)	USDA LMR Standard, Section 2.15
TIA/EIA-603-A	Shock	Paragraph 3.3.5.3

*Also meets equivalent superseded MIL-STD-810C, -D, and -E.
**P7200 immersion model only. Available option that must be ordered.

Digital Operation

	OpenSky	ProVoice	P25
Vocoding Method:	Advanced MultiBand Excitation (AMBE®)	Improved MultiBand Excitation (IMBE™)	Improved MultiBand Excitation (IMBE)
Data Rate (kbps):	19.2	9.6	9.6
Modulation:	4-Level GFSK	GFSK	C4FM

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
764-806	3	1.5, 0.4*	BV8P7200	15, 90	NA	NA
806-869	3	1.5	BV8P7200	15, 90	3670A-P7200	RSS-119

*Only in OpenSky Trunking Protocol and P25 trunking modes.

M/A-COM, Inc., P. O. Box 2000, Lynchburg, Virginia 24501, Phone: 800-368-3277
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Tyco Electronics
Our commitment. Your advantage.

Hi-Desert Communications

A Division of CAZCOM, Inc.

17181 Jasmine Street – Victorville, CA 92395

(760) 243-2332 - FAX (760) 243-0886

TO: Contra Costa County

ATTN: AD-Dept of Information Tech 30 DOU

PHONE:

PROPOSAL: CCC05150902

Approximate Delivery:

ITEM	QTY	MODEL	DESCRIPTION	EACH	EXTENDED
			TYCO ELECTRONICS P7250 764-870 MHz P25 SCAN PORTABLE RADIO		
1	2000	MAPT-S7HXX	P7250 764-870 MHZ P25 Portable Radio (List $2,320.00)	$ 1,608.00	$ 3,216,000.00
2	2000	MAPT-CA	P25 Feature (List $370.00)	$ 255.30	$ 510,600.00
3	2000	MAPT-MR	Imersible Radio Option (List $240.00)	$ 165.60	$ 331,200.00
4	2000	MAPT-PA7V	NiCad High Capacity Battery (List $105.00)	$ 72.45	$ 144,900.00
5	2000	MAPT-NC5X	Antenna 764-870 MHz (List $40.00)	$ 27.60	$ 55,200.00
			OPTIONS		
6	2000	MAPT-NCH2G	Tri Chemistry Single Unit Desk Charger (List $130.00)	$ 89.70	$ 179,400.00
			Additional Options Available on Request		

Equipment Sub-Total	$ 4,437,300.00
Sales Tax	$ 388,263.75
Sub-Total	$ 4,825,563.75
Cable Fabrication	
Programming (Each Unit)	$ 5.00
Installation	
Shipping/Handling	$ 9.95
TOTAL	$ 4,825,578.70
Payment with Order	
Balance Due on Delivery	$ 4,825,578.70

Presented By: Danny Hamilton

Title: Public Safety Manager

Date: 5/15/2009

Phone: 760-243-2332 Ext.112

Accepted By: _____

Title: _____

Date: _____

Tyco Electronics

Authorized Wireless Systems Dealer

Hi-Desert Communications

A Division of CAZCOM, Inc.

17181 Jasmine Street – Victorville, CA 92395

(760) 243-2332 - FAX (760) 243-0886

TO: Contra Costa County

ATTN: AD-Dept of Information Tech 30 DOU

PHONE:

PROPOSAL: CCC09150903

Approximate Delivery:

ITEM	QTY	MODEL	DESCRIPTION	EACH	EXTENDED
			TYCO ELECTRONICS M7200 764-870 MHz P25 SYSTEM MOBILE RADIO		
1	2000	MAMV-FDLXX	M7200 764-870 MHZ P25 System Mobile Radio Full Duplex w/GPS (List $2,715.00)	$ 1,873.35	$ 3,746,700.00
2	2000	MAMV-CA	P25 Feature (List $895.00)	$ 617.55	$ 1,235,100.00
3	2000	MAMV-NZN7W	Accessory Kit w/ Cables (List $360.00)	$ 248.40	$ 496,800.00
4	2000	MAMV-CP9F	CH721 System Control Head, Remote Mount (List $825.00)	$ 569.25	$ 1,138,500.00
5	2000	MAMV-MC7Z	Microphone (List $80.00)	$ 55.20	$ 110,400.00
			Additional Options Available on Request		

Presented By: Danny Hamilton
Title: Public Safety Manager
Date: 5/15/2009
Phone: 760-243-2332 Ext.112

Equipment Sub-Total	$ 6,727,500.00
Sales Tax	$ 588,656.25
Sub-Total	$ 7,316,156.25
Cable Fabrication	
Programming	
Installation	
Shipping/Handling	
TOTAL	$ 7,316,156.25
Payment with Order	
Balance Due on Delivery	$ 7,316,156.25

Accepted By: _____
Title: _____
Date: _____

Tyco Electronics

Authorized Wireless Systems Dealer