SILVERADO AVIONICS INC.
COMMUNICATIONS SYSTEMS ENGINEERING
2500 AIRPORT ROAD NAPA CA. 94558 707 255-5588

Contra Costa County Solicitation #0904-018

(Project 25 Professional Grade 700-800Mhz Portable Radios)

N O T E S

1. Specification section D(1).

   Silverado has been involved in project 25 radio and accessory sales for over three years and has in house technical support for same.

2. Specification section D(3).

   Silverado is a current supplier to most California State agencies including CALFIRE, Depts of Justice, Emergency Services, Fish & Game, Parks & Rec, CHP, CALTRANS, etc.

   We also supply "Professional Grade" radio equipment to most of the State's counties, including Contra Costa, as well as many California cities plus the State of Nevada Dept of Forestry.

   Most agencies that might participate in the contract are aware of our capabilities and services.

WARRANTY:

Our standard warranty is two years on the radios and one year on accessories and batteries. Extended warranties out to 5 years are available.

Battery Considerations:

Our standard 1950mH Li-ION battery 90/5/5/ duration specification is 15 hours with battery saver off and 18 hours with saver turned on.

Battery recycling requirements:

The manufacturer has agreed to provide battery recycling information and assistance in compliance with specifications.

A "Bluetooth" option for this radio is currently in final engineering approval status and should be available within 60 days.

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CONTRA COSTA COUNTY SOLICITATION # 0904-018
PROJ 25 PROFESSIONAL GRADE 700-800mHZ PORTABLE RADIOS TIER II & III

DESCRIPTION	MODEL	TIER II	TIER III
800 MHZ HH T-II W/BATT,ANT & CLIP	KNG-P800	$1510.00	$1615.00
I.S. OPTION	KZA 0558	$160.40	$160.40
AES/DES ENCRYPTION	KZA 0577	$208.98	$208.98
OTAR PROGRAMMING	KZA 0578	$385.00	$385.00
CLAMSHELL FOR "AA"	KAA 0120	$46.88	$46.88
FAST DESKTOP CHGR	KAA 0300	$103.50	$103.50
FAST VEHICLE CHGR	KAA 0355	$203.55	$203.55
FAST 6 SLOT CHGR	KAA 0301	$538.20	$538.20
SPEAKER-MICROPHONE	KAA 0200	$110.40	$110.40
MISC HEADSET SYSTEMS	KAA 0226	$189.75	$189.75
LEATHER CASE	KAA 0421	$51.75	$51.75
CHEST CARRY CASE	KAA 0447	$45.54	$45.54
I.S. BATTERY	KAA 100IS	$182.85	$182.85
PROGRAMMING CABLE	KAA 0710	$100.00	$100.00
PROGRAMMING SOFTWARE	KAA 0730	$90.00	$90.00
KEY LOADER CABLE	KAA 0587	$200.00	$200.00
12 CAVITY CARRY CASE	KAA CC	$636.54	$636.54

kng800.pln

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SIGNATURE PAGE

The undersigned is a representive of Silverado Avionics and is authorized to act on behalf of same.

05/28/09

ROBERT J. SAMO, President

Date

Silverado Avionics, Inc.
2500 Airport Road
Napa, Ca 94558
707 255-5588

Certified Calif Small Business
Certification # 00011567

Federal ID# 94-1741438

The KNG P800 Digital Portable Radio

763-870 MHz

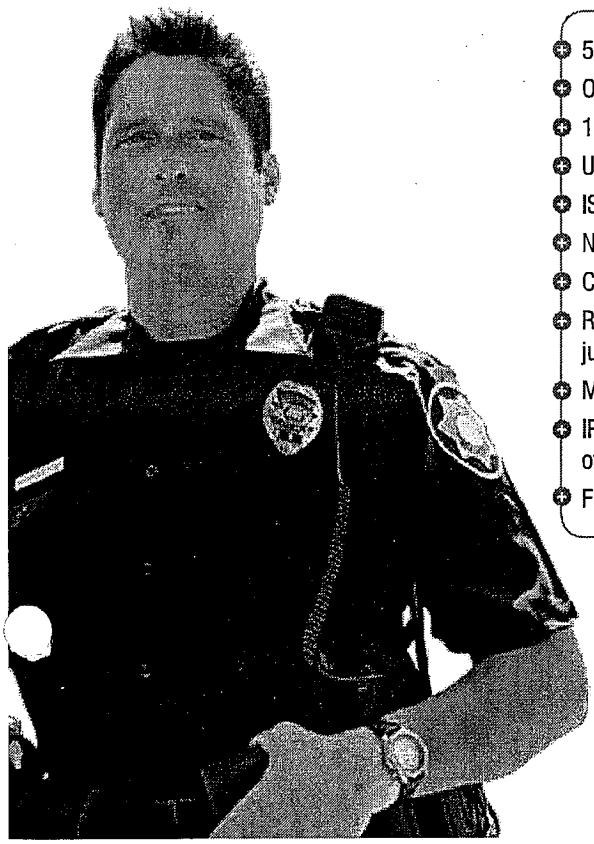
Built-to-last. Built-for-life.

As in life-saving, mission-critical communications. The KNG P800 does it all and then some. It meets or exceeds APCO Project 25 specifications, and comes complete with a customizable keypad, multi-line display and a number of available options. Other features include full interoperable functions and USB PC programmability. When it's all on the line, only one radio will do: the KNG P800.

New dimensions in digital portable radio.

The KNG P800 from RELM Wireless is ergonomically shaped to fit the hand as easily as it fits the holster. Better yet, because it weighs in at last than 16 ounces, it can make a small, but real difference in total load volume for those who carry a large amount of gear over an extended period of time. Plus, with battery life nearly double that of other radios in its class, the KNG P800 provides particular relief for airport security officers accustomed to carrying a spare battery around to get through their shifts.

At sea or on land, the KNG P800 really proves its mettle as an IP67-certified device that resists dust, mist and water up to one meter in full submersion. So, whether the task calls for an amphibious operation in open water, a foot pursuit through a driving rain or a search and rescue mission in a deep fog, it's the only radio you'll ever need. A whole new RELM of possibilities, indeed.



- 512 channels and up to 63 zones
- Over-The-Air-Rekeying (OTAR) encryption
- 18+ hours of battery life
- USB PC programmable
- IS options available
- NIST-certified AES and DES/OFB encryption
- Customized keypad and multi-line display
- RS-232 radio-to-radio cloning in just minutes
- MIL-STD 810 C/D/E/F
- IP67 dust tight/immersion up to 1m of submersion
- Future options – GPS and Trunking

General Specifications	***P800***
Frequency Range (MHz)	763 - 870
Channels w/ Variable Zone Size	512
Zones (up to)	63
Opertaing Voltage (V Nominal)	10
Channel Spacing (kHz)	12.5/25
Channel Increments (kHz)	TBD
Operating Temperature (°C)	-30 to +60
Dimensions (W in x D in x H in)	2.5 x 1.8 x 5.5
Weight w/Battery (oz)	16
Standby Current Draw (mA) With Battery Save "On"	20
FCC ID (pending)	K95KNGP800
Receiver Specifications	
Sensitivity (dBm)	-119
P25 Sensitivity (dBm)	-119
Adjacent Channel Rejection (dB) Per TIA/EIA-603 2.1.6	72 (63)
P25 Adjacent Channel Rejection (dB)	60
Spurious and Images (dB)	75
Intermodulation Rejection (dB)	75
Audio Distortion at 500mW (%)	2
Current Draw (mA)	255
Transmitter Specifications	
RF Power (Watts)	3 / 1
Frequency Stability (ppm)	1.5
Audio Distortion (%)	3
FM Hum & Noise (dB)	50 (45)
Spurious and Harmonics (dB)	75
Current Draw (mA)	1500

Narrowband specifications are denoted in parenthesis.

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General Information	Tier 1 Minimum Specifications	Tier 2 Minimum Specifications	Tier 3 Minimum Specifications		Tier 1	KNG-P800 T2	KNG-P800 T3	Notes
Channel Bandwidth Analog/Digital	12.5,20.25 KHz/ 12.5 KHz	12.5,20.25 KHz/ 12.5 KHz	12.5,20.25 KHz/ 12.5 KHz		N/A	12.5,20.25 KHz/ 12.5 KHz	12.5,20.25 KHz/ 12.5 KHz	
Frequency Range	764-870	764-870	764-870		N/A	764-870	764-870	
RF Power Output	2.5W/1W (700) 3W/1W (800)	2.5W/1W (700) 3W/1W (800)	2.5W/1W (700) 3W/1W (800)		N/A	2.5W/1W (700) 3W/1W (800)	2.5W/1W (700) 3W/1W (800)	
Zones/Channel	16 Channels/Talkgroups or more	512 Channels/Talkgroups or more	512 Channels/Talkgroups or more		N/A	512 Channels or Talk groups	512 Channels or Talk groups	
Voice Digital Mode - Voice Coding (P25 Phase 1)	IMBE 4.4 Kbps	IMBE 4.4 Kbps	IMBE 4.4 Kbps		N/A	Enhanced IMBE P25 Vocoder AMBE+2@4.4 Kbps	Enhanced IMBE P25 Vocoder AMBE+2@4.4 Kbps	RELM uses the enhanced full rate vocoder providing substantially improved audio quality.
Frame Re-Sync Interval	180 msec	180 msec	180 msec		N/A	180 mSec - P25 Standard	180 mSec - P25 Standard	
Error Correction Method	RS-Golay, Hamming	RS-Golay, Hamming	RS-Golay, Hamming		N/A	Yes - P25 Standard	Yes - P25 Standard	
Input Voltage	7.2 V	7.2 V	7.2 V		N/A	10.8 V	10.8 V	
Dimensions (w/o Antenna or battery) (HxWxD)	6.7" x 2.52" x 1.9"	6.7" x 2.52" x 1.9"	6.7" x 2.52" x 1.9"		N/A	5.5 x 2.5 x 1.8	5.5 x 2.5 x 1.8	1.2 inches shorter.
Weight (without battery)	12.5 oz or less	12.5 oz or less	12.5 oz or less		N/A	16 oz With Battery	< 16 oz With Battery	Need to measure the radio without battery, but RELM will be substantially lighter than this requirement.
Case	Polycarbonate	Polycarbonate	Polycarbonate		N/A	YES	YES	
Opertaing Temp. Range	-30 to +60	-30 to +60	-30 to +60		N/A	-30 to +60	-30 to +60	
Channel Spacing	12.5 KHz, 25 KHz	12.5 KHz, 25 KHz	12.5 KHz, 25 KHz		N/A	12.5 KHz, 25 KHz	12.5 KHz, 25 KHz	
FCC Type Acceptance	Yes	Yes	Yes		N/A	K95KNGP800	K95KNGP800	
Receiver Inforamtion								
Sensitivity Digital Mode: 5% BER	0.35 uV or Less	0.35 uV or Less	0.35 uV or Less		N/A	.25 uV (-119 dbM)	.25 uV (-119 dbM)	
Sensitivity Analog Mode: 12 dB SINAD	0.25 uV or Less	0.25 uV or Less	0.25 uV or Less		N/A	.25 uV (-119 dbM)	.25 uV (-119 dbM)	
Intermodulation	-75 dB	-75 dB	-75 dB		N/A	-75 dB	-75 dB	
Audio Output Power	500 mW or more	500 mW or more	500 mW or more		N/A	500 mW	500 mW	
Audio Distortion (at 1000 Hz)	2% or Less	2% or Less	2% or Less		N/A	2%	2%	
Frequency Stability (-30C to +60C)	+/- 1.5 ppm	+/- 1.5 ppm	+/- 1.5 ppm		N/A	+/- 1.5 ppm	+/- 1.5 ppm	
Maximum Frequency Seperation	Full Bandsplit	Full Bandsplit	Full Bandsplit		N/A	Full	Full	

Transmitter								
RF Power Output	2.7W/1W (700) 3W/1W (800)	2.7W/1W (700) 3W/1W (800)	2.7W/1W (700) 3W/1W (800)		N/A	2.7W/1W (700) 3W/1W (800)	2.7W/1W (700) 3W/1W (800)	
Spurious & Harmonic Emissions	-75	-75	-75		N/A	-75	-75	
Audio Distortion (at 100 Hz)	2% or less	2% or less	2% or less		N/A	3%	3%	Published Specs are 3%. Engineering advises that manufacturing data shows actuals are in the 1.2% to 1.8% range so bid this at 2%
General Information								
Audio Response (at 1000 Hz ref.)	300-3000Hz or greater	300-3000Hz or greater	300-3000Hz or greater		N/A	300-3000	300-3000	
Environmental Specifications								
Mil Specs	810C,D,E,F	810C,D,E,F	810C,D,E,F		N/A	Yes	Yes	
Display	None	LCD 2 Line	LCD 3 Line		N/A	Yes - 3 Line plus Icon and Softkeys	Yes - 3 Line plus Icon and Softkeys	
Keypad	None	3 x 2	3 x 5		N/A	No - 4x1	Yes - 4x1 plus 3x4	The actual configuration of the keypad should be dependent on the user interface of the radio. RELM uses context sensative softkeys with labels defined by the radio display. This allows RELM to offer greater fuctionality with a single row of four keys over that offered using a 3 x 2 keypad with static labels.