MOTOROLA SOLUTIONS

SRX 2200 SINGLE-BAND PORTABLE RADIO

READY FOR ACTION. BUILT TO LAST.

Photo Courtesy of Cpl Erik Villagran

In difficult terrain and combat environments, soldiers must effectively communicate with each other to coordinate successful tactical operations and improve response time. The SRX 2200 P25 two-way portable radio is evolving to support new technologies like Wi-Fi®, Adaptive Audio Engine, and Bluetooth® 4.0 wireless technology, all while delivering trusted APX™ performance in a single-band solution without compromising the combat form factor or features tactical and base personnel require.

VOICE AND DATA, ALL AT ONCE

Update your radio fleet without interrupting voice communications with secure Wi-Fi. This dramatically improves the speed of configuring new codeplugs, firmware and software features over-the-air via Radio Management*. Agencies can pre-provision up to 20 secure Wi-Fi hotspots so personnel can easily access updates at the facility or in the field.

HEAR AND BE HEARD

The SRX 2200 is equipped with a 3-watt speaker, 3 integrated microphones and Adaptive Audio Engine. This changes the level of noise suppression, microphone gain, windporting and speaker equalization to produce clear and loud audio in any environment.

PROTECT COMMUNICATIONS FROM BEING COMPROMISED

The SRX 2200 radio is designed specifically for tactical and base personnel, with an array of special features that are battle-tested and military-trusted. For example, the SRX 2200 is tamperproof and features 256 bit AES encryption along with FIPS 140-2 Level 3 validation to protect voice and data communications from being compromised.

Protect the integrity of your system with Tactical Inhibit (Stun/Kill). This feature allows a radio administrator to remotely disable a potentially compromised radio. It also provides a reactive security tactic against cloned or stolen radios attempting to eavesdrop or interrupt critical communications.

* Radio Management application simplifies APX™ radio configuration and management by programming up to 16 radios at one time and tracking which radios have been successfully programmed, providing a clear view of the entire radio fleet and a codeplug history for each radio.

MINIMIZE ENEMY DETECTION

Every SRX 2200 radio contains settings that enable covert operations and minimize enemy detection. Ultra-low power operation allows military personnel to communicate in 0.25-watt transmission for low detection (UHFR1 only). Additional settings provide users with the ability to disable lights, tones, and reduce the display backlight, which then becomes visible with night vision goggles.

EMERGENCY FIND ME

With Bluetooth 4.0 wireless technology and our APX Mission Critical Wireless portfolio, users can now connect a variety of wireless audio accessories and data devices to their APX radio. Bluetooth 4.0 also enables Emergency Find Me, a feature providing emergency personnel with an added layer of safety by detecting a first responder in need of assistance, and guiding nearby personnel to their location. Once an emergency is activated on the SRX 2200, a Bluetooth beacon signals other Bluetooth-enabled APX radios within range. Data such as signal strength is used to determine proximity and guide the nearest personnel to the user in distress.

SEAMLESS ON-SCENE COMMUNICATION

Ensure fast and seamless communication and collaboration across all responders arriving on a scene. Mission Critical Geofence automatically changes a radio's active talkgroup based on its GPS location and an agency-defined virtual barrier. For example, an incident commander can create a geofence around the 3-block radius of a burning building so that all arriving military personnel are automatically placed in the same talkgroup.

FEATURES AND BENEFITS:

RF BANDS

- 700/800 MHz, VHF, and UHF Range 1
- 9600 Baud Digital APCO P25 Phase 1 FDMA and Phase 2 TDMA Trunking
- 3600 Baud SmartNet®, SmartZone®, SmartZone, Omnilink Trunking
- Digital APCO 25, Conventional, Analog MDC 1200, Quick Call II System Configurations
- Narrow and Wide Bandwidth Digital Receiver (6.25 kHz Equivalent/25/20/12.5 KHz)[1]

STANDARD FEATURES

- Tactical Coyote Brown Housing
- Individual Location Information (ILI) capable
- Mission Critical Wireless Bluetooth 4.0 (LE)[2]
- Emergency Find Me[2]
- IP68 (2m/4hr), Mil Std 512.X Delta - T[2]
- Listed by UL to the standards ANSI/TIA 4950-A and CAN/CSA C22.2 NO. 157-92 Classification Rating: Class I, Division 1, Groups C, D; Class II, Division 1, Group E, F, G; Class III, Hazardous (Classified) Locations. ANSI/ISA 12.12.01-2015 and CAN/CSA C22.2 No. 213-15; Class I, Division 2, Groups A, B, C, D; T3C. Tamb = -25 °C to +60 °C. when used with Motorola Battery: NNTN8921A NNTN8930A 7.4V
- ASTRO 25 Integrated Voice & Data
- Integrated GPS/GLONASS for Outdoor Location Tracking
- Voice Announcements
- ISSI 8000 Roaming
- Radio Profiles
- Dynamic Zone
- Intelligent Lighting
- Single-Key ADP Encryption
- Tactical Coyote Brown Li-Ion IMPRES 3100 mAh battery
- Text Message
- Software Key

PROGRAMMING

- Utilizes Windows 7 & 8 Customer Programming Software (CPS) with Radio Management[3]

ADAPTIVE AUDIO ENGINE (OPTIONAL)

- 3 Watt Speaker with Adaptive Equalization
- Adaptive Dual-Sided Operation
- Adaptive Noise Suppression Intensity
- Adaptive Gain Control
- Adaptive Windporting

OPTIONAL FEATURES

- Night Vision Goggle Profile
- Wi-Fi 802.11 b/g/n
- RFID Volume Knob
- Multi-key for 128 keys and Multi-Algorithm
- Programming Over Project 25 (OTAP)
- Over the Air Rekey (OTAR)
- Digital Tone Signaling
- P25 Authentication
- Man Down Capable
- IMPRES 2 Batteries

1 Per the FCC Narrowbanding rules, new products (APX6000 UHFR1, UHFR2) submitted for FCC certification after January 1, 2011 are restricted from being granted certification at 25KHz for United States – State & Local Markets only.
2 Compatible with Bluetooth 2.1, HSP, PAN, DUN and SPP Profiles found in off-the-shelf Bluetooth accessories and Bluetooth 4.x
4 Radios meet industry standards (IPx7) for submersion.
3 CPS version R12.00.00 and greater ordered after June 2014 will only support Windows 7 and 8

TRANSMITTER - TYPICAL PERFORMANCE SPECIFICATIONS

		700/800	VHF	UHF Range 1
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776, 793-806 MHz 806-824, 851-870 MHz	136-174 MHz	380-470 MHz
Channel Spacing		25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit
Rated RF Output Power Adj	700 MHz 800 MHz	1 to 3 W	1-6 W Max	1-5 W Max
Frequency Stability (-30 °C to +60 °C; +25 °C Ref.)		±0.00010 %	±0.00010 %	±0.00010 %
Modulation Limiting		±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz	±5 kHz / ±4 kHz / ±2.5 kHz
Emissions (Conducted and Radiated)		-75 dB	-75 dBc	-75 dBc
Audio Response		+1, -3 dB	+1, -3 dB	+1, -3 dB
FM Hum & Noise	25 kHz 12.5 kHz	-52 dB -47 dB	-55 dB -50 dB	-52 dB -47 dB
Audio Distortion	700 MHz 800 MHz	1.00 %	1.00 %	1.00 %

SRX 2200 ACCESSORIES[2]

NNTN8182	LiIon 3100 MAh battery (coyote brown), Rugged (Standard)
NNTN8269	SRX 2200 carrying pouch (coyote brown)
NNTN8235	Remote Speaker Microphone (coyote brown), IP57
NNTN8236	Remote Speaker Microphone with 3.5mm audio jack (coyote brown), IP54

1 0.25 W transmit in UHFR1 is for tactical use only.

2 This list represents accessories specifically designed for the SRX 2200.

The SRX 2200 is compatible with additional APX accessories. Please see your Motorola sales representative for a complete list of those accessories.

BATTERIES FOR SRX 2200

Battery Capacity / Type	Dimensions (HxWxD)	Weight	Battery Part Number	Battery Capacity
Brown Li-Ion 3100 mAh[2]	3.4" x 2.3" x 1.7"	6.5 oz	NNTN8182	3100 mAh
Li-Ion IMPRES 2 3400mAh	3.4" x 2.3" x 1.7"	6.5 oz	PMNN4486	3400 mAh
Li-Ion IMPRES 2 4850mAh	5" x 2.3" x 1.7"	11.0 oz	PMNN4487	4850 mAh
Li-Ion IMPRES 2 5100mAh	5" x 2.3" x 1.7"	11.0 oz	PMNN4494	5100 mAh
Li-Ion IMPRES 2 2650 mAh	3.4" x 2.3" x 1.7"	5.7 oz	NNTN8930	2650 mAh
Li-Ion IMPRES 2 4500mAh	5" x 2.3" x 1.7"	11.0 oz	NNTN8921	4500 mAh

RADIO MODELS

	MODEL 1.5	MODEL 3.5
Display	Full bitmap monochromatic LCD top display 1 line text x 8 characters 1 line of icons No menu support Multi-color backlight	Top display plus: Full bitmap color LCD display 4 lines of text x 14 characters 2 lines of icons 1 menu line x 3 menus White backlight
Keypad	none	Backlit keypad 3 soft keys 4 direction navigation key 4x3 keypad Home and Data buttons
Channel Capacity	3000	3000
FLASHport Memory	64 MB	64 MB
700/800 MHz (763-870 MHz)	H99UCD9PW5BN	H99UCF9PW6BN
VHF (136-174 MHz)	H99KGD9PW5BN	H99KGH9PW7BN
UHF Range 1 (380-470 MHz) (Ultra Low Power option available)	H99QDD9PW5BN	H99QDH9PW7BN
Buttons & Switches	Large PTT button • Angled On/Off volume control • Emergency button • 16 position top-mounted rotary switch • 2-position concentric switch • Multi-color backlight • 3-position toggle switch • 3 programmable side buttons	
Regulatory Information		
	FCC ID	**Industry Canada**
700/800 (764-869 MHz)	AZ489FT7086	109U-89FT7086
VHF (136-174 MHz)	AZ489FT7087	109U-89FT7087
UHF Range 1 (380-470 MHz)	AZ489FT7077	109U-89FT7077
UHF Range 1 (Ultra Low Power)	AZ489FT7084	109U-89FT7084
FCC Emissions Designators		
FCC Emissions Designators	11K0F3E, 16K0F3E, 8K10F1D, 8K10F1E, 8K10F1W, 20K0F1E	
Power Supply		
Power Supply	One rechargeable 3100 mAh Li-Ion Battery Standard (NNTN8182), with alternate Black IMPRES 2 battery options available.	

1 Full featured model with Bluetooth capability
2 The standard shipping battery for the SRX2200.

RECEIVER - TYPICAL PERFORMANCE SPECIFICATIONS

		700/800	VHF	UHF Range 1
Frequency Range/Bandsplits	700 MHz 800 MHz	763-776 MHz 851-870 MHz	136-174 MHz	380-470 MHz
Channel Spacing		25/20/12.5 kHz	25/20/12.5 kHz	25/20/12.5 kHz
Maximum Frequency Separation		Full Bandsplit	Full Bandsplit	Full Bandsplit
Audio Output Power at Rated[1]		500 mW	500 mW	500 mW
Analog Sensitivity[3] Digital Sensitivity[4]	12 dB SINAD 1% BER (800 MHz) 5% BER	0.250 µV 0.375 µV 0.24 µV	0.17 µV 0.243 µV 0.15 µV	0.224 µV 0.298 µV 0.200 µV
Selectivity[1]	25 kHz channel 12.5 kHz channel	-76 dB -70 dB	-78 dB -73 dB	-77 dB -67.0 dB
Intermodulation		-80.1 dB	-80.2 dB	-80.3 dB
Spurious Rejection		-75 dB	-78 dB	-80.5 dB
FM Hum and Noise	25 kHz 12.5 kHz	-54 dB -79 dB	-54.3 dB -50.1 dB	-53.5 dB -47.5 dB
Audio Distortion[1]		0.90%	0.90%	0.70%

1 Measured per single-tone procedure

PORTABLE MILITARY STANDARDS 810 C, D, E , F & G

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Basic Hot	501.5	I/A1, II/A2
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	1 Proc	509.5	1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	1 Proc	1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Submersion	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
Vibration	514.2	VIII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.6	I, V, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

DIMENSIONS OF THE RADIOS WITHOUT BATTERY		
Length	5.47 in	139 mm
Width Push-To-Talk button	2.39 in	60.7 mm
Depth Push-To-Talk button	1.40 in	35.6 mm
Width Top	2.98 in	75.7 mm
Depth Top	1.58 in	40.1 mm
Depth Bottom of Battery	1.24 in	31.5 mm
Weight of the radios without battery	10.9 oz	309 g

MULTI-UNIT CHARGER SPECIFICATIONS	
Model Number	NNTN8185
Input Voltage	90-265 VAC
Charging Current (maximum)	1.5 A (Max charge rate for NNTN8182 battery is 1.0A)
Warranty	1 Year
Operating Temperature	5 to 40 °C (41 to 104 °F) – NNTN8182 battery can initiate a charge at a 5 °C higher ambient temperature
Charging Method	CCDT / Negative Pulse (NiCd / NiMH) and CCCV (Li-ion)

GPS SPECIFICATIONS

Constellations	GPS & GLONASS
Tracking Sensitivity	-164 dBm
Accuracy[3]	<5 meters (95%)
Cold Start	<60 seconds (95%)
Hot Start	<5 seconds (95%)
Mode of Operation	Autonomous (Non-Assisted)

EMISSION DESIGNATORS

LMR:	8K10F1D, 8K10F1E, 8K10F1W, 11K0F3E, 16K0F3E[1], 20K0F1E[1]
Bluetooth:	852KF1D, 1M17F1D, 1M19F1D, 1M04F1D
WLAN (Wi-Fi):	13M7G1D, 17M0D1D, 18M1D1D

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature[2]	-30 ºC / +60 ºC
Storage Temperature[2]	-50 ºC / +85 ºC
Humidity Per MIL-STD	ESD IEC 801-2 KV

RUGGED SPECIFICATIONS

Leakage (submersion)	MIL-STD-810 C, D, E, F and G Method 512.X Procedure I, IP68 (2 meters, 4 hours)

HOUSING COLOR

Tactical Coyote (Standard)

ENCRYPTION

Supported Encryption Algorithms	ADP, AES, DES, DES-XL, DES-OFB, DVP-XL
Encryption Algorithm Capacity	8
Encryption Keys per Radio	Module capable of storing 1024 keys. Programmable for 64 Common Key Reference (CKR) or 16 Physical Identifier (PID)
Encryption Frame Re-sync Interval	P25 CAI 300 mSec
Encryption Keying	Key Loader
Synchronization	XL – Counter Addressing OFB – Output Feedback
Vector Generator	National Institute of Standards and Technology (NIST) approved random number generator
Encryption Type	Digital
Key Storage	Tamper protected volatile or non-volatile memory
Key Erasure	Keyboard command and tamper detection
Standards	FIPS 140-2 Level 3 FIPS 197

WIRELESS CONNECTIVITY AND SECURITY

Frequency Range/Bandsplits:
Bluetooth: 2402 - 480 MHz, WLAN (Wi-Fi): 2400 - 2483.5 MHz

WLAN (Wi-Fi) 802.11 b/g/n supports WPA-2, WPA, WEP security protocols; radio can be pre-provisioned with up to 20 SSIDs[3]

Mission Critical Wireless Bluetooth 2.1 uses 96 bit encryption for pairing & 128 bit encryption for voice, signaling and data. The radio Bluetooth supports up to 6 data connections and 1 audio connection

Bluetooth 4.0 Low Energy uses 128-bit AES-CCM encryption

1 In accordance with FCC mandate, the SRX 2200 radio is restricted to 12.5 kHz operation only and does NOT support 25 kHz in the VHF and UHF Bands (excluding T-Band). This applies to customers under Rule Part 90.

2 Temperatures listed are for radio specifications. Battery storage is recommended at 25 °C, ±5 °C to ensure best performance.

3 2400 - 2483.5 MHz for EMEA region and includes guardband. Channels 1 - 11 used for FCC/IC region.

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. ©2016 Motorola, Inc. All rights reserved. 08-2016