



MOTOROLA SOLUTIONS

Rowan County, North Carolina

Project 25 Subscriber Units

Bid # 2022-005 | Technical Response

September 29, 2021

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Bid # 2022-005 | Technical Response

Motorola Solutions, Inc.
8720 Red Oak Blvd., Suite 410
Charlotte, North Carolina 28217
USA

September 29, 2021

Rowan County Procurement Officer
Attention: Anna Bumgarner
130 W Innes Street
Salisbury, NC 28144

Subject: BID # 2022-005 for Project 25 Subscriber Units

Dear Ms. Bumgarner:

Motorola Solutions, Inc. (Motorola Solutions) is pleased to present Rowan County (County) with the following Project 25 Subscriber Units proposal. We thank you for the continued trust you have placed in our technology, our team, and our partners, and we appreciate the opportunity to continue serving the County and its mission.

Along with our local North Carolina business partner, Mobile Communications America (MCA), Motorola Solutions will work diligently to provide subscriber radios and services that will support the County for many years to come. We value our long-standing relationship with Rowan County and are committed to delivering the best in product quality, technology advancements, and service support.

Motorola Solution's proposal is subject to the terms and conditions of the P25 Subscriber Agreement between Rowan County, NC and Motorola Solutions, or a negotiated version thereof. Pricing purchase discount incentives will remain valid for 90 days from the date of this proposal submission. Our individual radio unit pricing will remain valid for a period of two years from date of contract, with an option to extend pricing for another two years.

Motorola Solutions acknowledges receipt of all addenda issued specific to this Bid. If you should have any questions or require additional information, please contact Taylor Rawls, (704) 577-9619. We look forward to your positive review of our proposal, subsequent discussions, and helping Rowan County to achieve their communication goals and objectives.

Sincerely,

MOTOROLA SOLUTIONS, INC.



Scott Adler
Regional Vice President, Southeastern Territory
North America Government Markets



ROWAN COUNTY, NORTH CAROLINA

P25 SUBSCRIBER UNITS

EXECUTIVE SUMMARY | BID# 2022-005 | SEPTEMBER 29, 2021



MOTOROLA
SOLUTIONS



Rowan County has a clear vision for mission critical voice communications to provide enhanced audio and radio reliability for its first responders and public service personnel.

Motorola Solutions' offering will enhance the ability of your first and secondary responders to safely perform their jobs with rugged, dependable APX P25 radios. The timely transition of your two-way radio fleet to P25 TDMA operation will dramatically improve voice and data capacity within the County.



FIRE SERVICE RADIOS

The Fire Service requires clear two-way radio transmissions, in the highest noise environments and in a ruggedized form factor. The APX P25 extreme environment radios and accessories are designed by firefighters to meet the dangerous conditions of operating in the hazard zone.

APX 6000XE Portable

From day one, the APX 6000XE P25 two-way portable radio has met the most demanding performance expectations for the Fire Service. The APX 6000XE delivers trusted performance in a single-band solution without compromising on the extreme form factor or features that are required for operation in the hazard zone. The APX 6000XE supports other technologies like Wi-Fi®, Adaptive Audio Engine, and Bluetooth® 4.0 wireless technology today. With its integrated FLASHport, the APX 6000XE gives Rowan County flexibility to add new software features in the future without replacing the radio unit. Collaboration with both MSA and Scott Safety allow us to deliver intelligible voice and data communications when pairing APX XE radios with SCBA devices.



APX XE 500 Speaker Mic

The APX XE500 Remote Speaker Microphone (RSM) is the perfect companion to the APX 6000XE. XE500 RSM utilizes 5 integrated microphones and an Adaptive Audio Engine. Similar to the radio, it automatically changes the level of noise suppression, microphone gain, windporting and speaker equalization to produce clear and loud audio in any environment. The XE500 RSM features a designated Channel Knob that has been designed to mimic the Channel Knob of the APX 6000XE radio. With the same fit and feel, firefighters can easily change channels when their radios are worn under their turnout coat. The XE 500 and its cable are designed to withstand heat exposure of 500°F (260°C) for up to 5 minutes.

APX 4500 Mobile

The APX 4500 brings together powerful technology in a compact, rugged, mobile radio that's easy on your budget. The unit is built to meet the rugged demands of the Fire Service. Available as either dash or remote mount, its simplified design makes installation quick and easy. APX 4500 with the O2 control head is rated at IP56 durability which means it meets the highest level of certification for uncompromising performance in wet, dusty, and hazardous conditions. Equipped with safety features such as integrated GPS, intelligent lighting and voice announcement, your Fire Service personnel can safely and effectively complete the mission at hand.



LAW ENFORCEMENT RADIOS

In Law Enforcement, focus is your greatest resource. Technology should assist you in your mission, not distract you. The APX line of radios are designed to create safer outcomes, whether its ensuring emergency calls are prioritized, sensitive communications are protected and clearly heard or simply your radio battery gets you through your shift.

APX 6000 Portable

The APX 6000 portable is equipped with a full keypad, 12-hour battery, GPS location service, AES encryption, priority scan and customizable user profiles. Whether operating in covert mode, traffic enforcement or suspect incarceration, the APX 6000 is designed to create a safer operating environment for law enforcement personnel.



APX 4500 Mobile

The APX 4500 brings together powerful technology in a compact, rugged, mobile radio that's easy on your budget. It seamlessly unifies public works, utility, rural public safety and transportation users to first responders so they can communicate effectively in the moments that matter. A simplified dash mount design makes installation quick and easy. Its IP56 durability rating meets the highest level of certification for uncompromising performance in wet, dusty, and hazardous conditions. Equipped with safety features such as integrated GPS, intelligent lighting and AES encryption, your teams can safely and effectively complete the mission at hand.



PUBLIC SERVICE RADIOS

The APX 900 is designed for public works, government services and education teams who need essential communication at an affordable price. It delivers great core features, with an efficiency-focused design – including Bluetooth® wireless connectivity.

APX 900 Portable

From city festivals to natural disasters, seamless communication is critical to coordinating effective and safe responses. The APX 900 series radios are simple to use and are certified for reliable P25 communication on P25 compliant radio networks. The APX 900 provides additional ruggedness and software based feature sets including GPS location and Over-the-Air Programming, so you can manage your workforce confidently and efficiently. With tactile, dedicated knobs for volume and channel, you can communicate freely without taking your eyes off the task. Even in dark areas and confined spaces, you can be confident you're using the radio without error. Because Public Service agencies' mission often requires extended response and recovery times after emergency events, we offer the APX 900 to the County with a battery that meets 12-hour shift operation.



APX 1500 Mobile

The APX 1500 mobile radio provides rugged simplicity with built-in loud and clear speaker, full color display and single knob controls. This self-contained dash-mount configuration is easy to install in most vehicles. The APX 1500 P25 mobile radio is equipped with all the features you need at a price you can afford. It delivers all the benefits of TDMA technology in the most compact P25 capable mobile in the industry.



APX RADIOS' BEST-IN-CLASS IN ALL-ENVIRONMENT TESTING

Receiver	Spec	Benefit
Audio Output	3 W	Loud Audio
Frequency Stability	± .3 ppm	Clearest Audio & Improved Coverage
Sensitivity (Digital 5% BER)	.25 µV	Improved Coverage
Selectivity (12.5kHz)	82 dB	Improved Coverage
Intermodulation	82 dB	Improved Coverage
Spurious Response	98 dB	Improved Coverage
FM Hum & Noise (12.5kHz)	-53 dB	Clearest Audio & Improved Coverage
Audio Distortion	0.9%	Clearest Audio
Transmitter	Spec	Benefit
Frequency Stability (12.5kHz)	± .25 ppm	Improved Coverage
FM Hum and Noise	± 51 dB	Clearest Audio & Improved Coverage
Audio Distortion	0.9%	Clearest Audio

APX RF Performance Advantages

APX radios significantly outperform competing radios in key RF metrics, ensuring superior talk-in/talk-out capability. Motorola Solutions offers best-in-class RF specifications for better performance in challenging/fringe coverage/In-Building environments.

Intermodulation Distortion/Rejection (Higher dB = better performance)

- APX hardware is optimized to reduce Intermodulation Distortion with a specification that is up to 2 times better than our competitors.
- This dramatically increases the radios coverage performance in high RF traffic environments (Cities/ Urban Centers). Sensitivity (Lower the µV = better performance):
- Lowest possible signal strength that a radio can intelligibly detect in a given environment (the lower the (µV) number the better).
- Allows the radio to receive signals in difficult coverage areas such as inside buildings. Selectivity/ Adjacent Channel Rejection (Higher dB = better performance):
- Radio's ability to hear only the voice traffic from the desired channel, and reject other signals that are very close to that frequency.
- Specification helps considerably when operating near other transmitters, especially in urban environments with high RF traffic.

Audio Distortion (Lower the % distortion = better performance)

- Measurement of the amount of audio distortion produced at a given output power level.
- Less distortion equals clearer/crisper voice being heard from the radio especially at high audio volume.
- FM Hum and Noise (Higher dB = better performance): Measurement of the radio noise floor of both Transmitter and Receiver.
- Lower noise floor of the radio means greater the likelihood that a low-level radio signal will come through, such as when the talker is whispering.

Ruggedization

Motorola Solutions' APX radios are designed and tested to stand up to the challenging conditions that they face in real-world environments.

Built for the Challenge

- Gorilla Glass™ Lens – Tempered glass for displays which provides a wider viewing angle, plus greater scratch and heavy impact resistance than competing radios, plus prevents distorted view with polarized lenses.
- APX Endoskeleton Design (pictured) – provides improved submersibility and ruggedness for internal components.
- MIL Spec Conformance with best-in-industry shock, submerged water and scratch resistance.
- IP ratings up to IP 68 Enhanced (2M submersion for 4 Hours).
- Conformance to Motorola Solutions Internal specifications which are even more stringent than MIL Spec.
- Motorola Solutions Accelerated Life Tests.



On July 8, 2021, a Rockwell firefighter's personal vehicle caught fire as he was driving for work. By the time the local fire department arrived, the car was fully engulfed in flames. The firefighter escaped the burning car with no injuries but everything inside of the car was lost. The firefighter later found his APX portable radio in the back seat still intact but melted. While severely burned and disfigured from its original form, the radio was still operational.



“Thank you for making such great pieces of equipment and it gives us all a slight peace of mind knowing that we carry one and if we ever run into a situation, we know the radio will hold up.”

— Alan Shinn,
Rockwell Rural Fire



APX Advanced Software Features

Motorola Solutions offers a large number of standard and configurable software features to enhance the usability of APX radios for Rowan County users. Some key software features are summarized below.

- **Radio Profiles** – Radio profiles enable users to customize their radio's interface to their environments and activities, including the radio's default audio level, lighting and tone alerts. For example, a user in bright sunlight or high-noise environments can increase the lighting or audio level, or if the user is conducting ongoing, covert surveillance, they can create a profile that provides lower lighting with subdued alert tones and audio.
- **Intelligent Lighting** – Motorola Solutions APX radios offer a high resolution display that uses color and lighting to indicate radio mode, potential emergencies, or specific events. Intelligent lighting is a standard feature that enables users to see critical information at a glance, regardless of the amount of ambient lighting.
- **Text Messaging** – Offers a freeform or canned messaging solution so you can efficiently and discreetly send and receive messages to and from subscribers or dispatch operators, for example, an Amber Alert.
- **Unified Call List** – Consolidates all call lists underneath one unified list so you can easily access all information associated with a particular contact.

OTHER FEATURES INCLUDE:

- Voice Announcement
- P25 TDMA Capable
- Multiband Operation
- Seamless Scan
- Enhanced Data
- Man-Down
- WiFi
- SmartConnect
- Digital Tone Signaling

CAPABILITY, FEATURES AND FUNCTIONALITY

In response to the Rowan County's RFP specifications, Motorola Solutions is proposing a selection of APX radio models that offer financial flexibility and superior performance capabilities, to meet the specific operational needs of every agency on the new county-wide network.

Motorola's APX platform was designed in direct collaboration with public safety agencies and first responders, to ensure that every APX radio performs as needed, with purpose-built features and capabilities that drive mission critical success. With over 2 million units in the hands of end-users around the world, including 200,000 in the state of North Carolina alone, we believe that it is now the clear technology of choice for first responders.

Rugged Like No Other

- Goes beyond Military Standard specifications
- Tempered, scratch-resistant glass lens
- Submersible at 4M for 2 hours
- Fire market-specific features available
- Approved Class I, Division I Hazardous Standard

Purpose-Built User Experience

- Easy "T" grip ensures a good grip, even in wet conditions
- Spacing between controls for gloved operation
- Large accessible emergency button
- Shielded Push-to-Talk
- Better viewing with large color LCD and intelligent lighting

Loudest and Clearest Audio

- Adaptive Dual-Microphone Noise Suppression and Reduction technology
- Extreme Audio Profile improves communications in spite of background noise

5-Year

Warranty For All Proposed Radios and Accessories



APX 6000

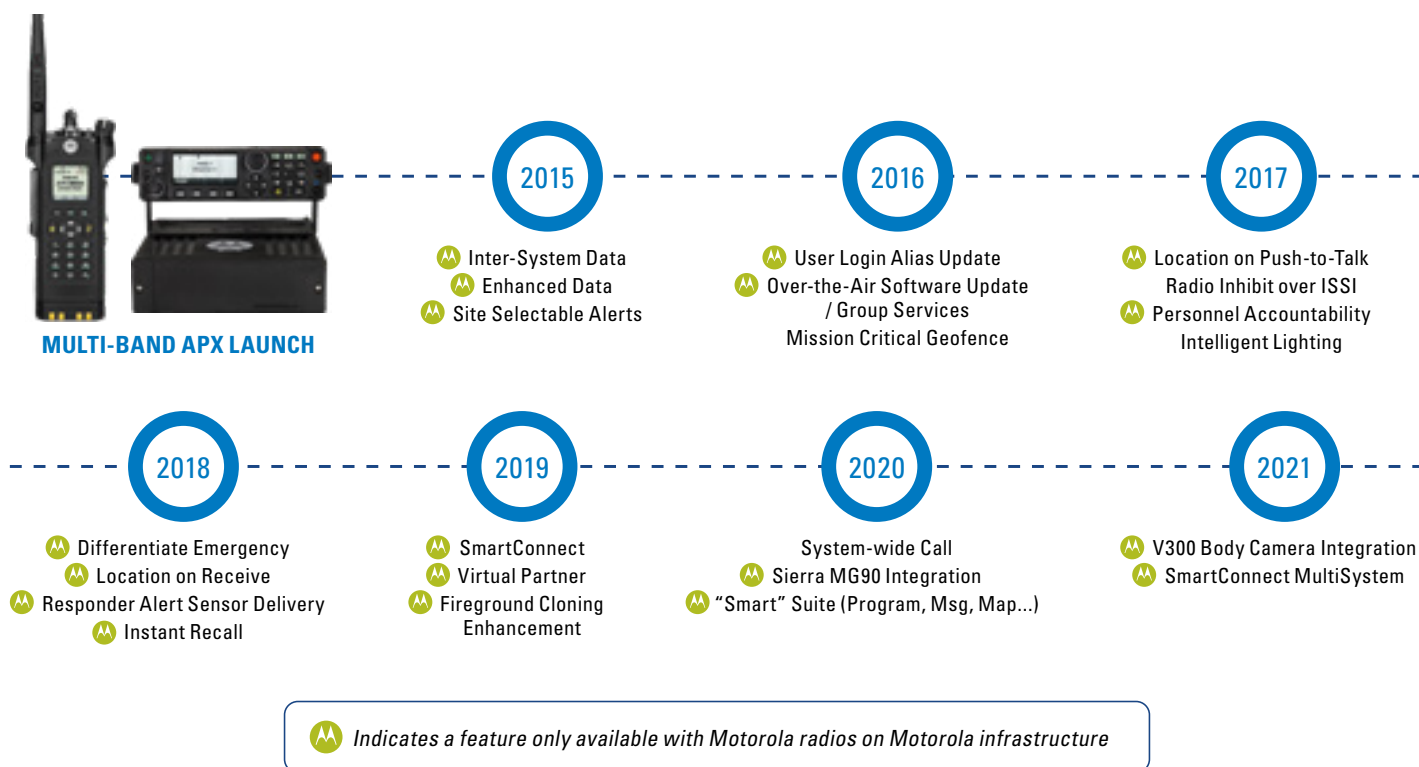
APX 6000XE




APX 4500

Benefits of Motorola Radios on the Motorola System

There are numerous benefits specific to the use of Motorola radios on a Motorola radio system. When purchasing Motorola radios in North Carolina, you will have one company that is responsible for the performance of all equipment from a field mobile or portable all the way to Dispatch and the radio network that connects the first responders. Motorola equipment and software is designed and tested to work best together. Also, Motorola has included features for operational benefits that go beyond the basic P25 standards for equipment. These value added benefits are only possible when using Motorola radios on a Motorola radio system.





The Kannapolis Fire Department ultimately chose the Motorola APX radios to upgrade our entire fleet of radios. The APX radio provides reliable communication required for public service to operate along with the ruggedness to withstand everyday use in the fire service. Two standout features we looked at were the ability to alert personnel to calls of service utilizing QCII and the Mission Critical Wireless Bluetooth for clearer communications while wearing SCBA. These features paired with Motorola Support made the APX radio an obvious choice.

— C. TRAVIS BARNHARDT
Safety / Logistics Officer, Kannapolis Fire Department

Wilson Fire/Rescue Services chose the APX6000XE radios along with the XE RSM with the Xtreme Temperature Cable because of its ability to operate in the extreme environments our firefighters face each and every day. Having the APX6000's equipped with SmartConnect will allow our first responders to transmit over Wi-Fi in areas they otherwise would not be able to, a feature that increases the safety of our personnel and gives them the advantage of maintaining communication throughout an incident. Radio Management provides us with the capability to program or update our radios over Wi-Fi without taking the radios out of service. The overall reliability of our APX radios has enhanced the service to our community and provided confidence that our communications platform will provide exceptional operations for years to come.

— JIM CAMPBELL
Deputy Fire Chief Wilson Fire/Rescue Services

THANK YOU

For more information, please visit us on the web at:
www.motorolasolutions.com



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