APX RADIO
SOFTWARE CATALOG

MOTOROLA SOLUTIONS

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ADDING MORE VALUE TO YOUR COMMUNICATIONS.

This catalog provides a comprehensive overview of all optional software features available for Motorola Solutions APX™ P25 two-way radios.

1. OPERATION MODE
- Analog Trunking (SmartNet/SmartZone)
- Digital Conventional (P25)
- Digital Trunking (P25 Phase I)
- Digital Trunking (SmartNet/SmartZone P25 Phase I Interoperability)
- Digital Trunking (SmartNet/SmartZone or P25 Phase I)
- Digital Trunking (SmartNet/SmartZone)

2. ADVANCED SYSTEM KEY
- Hardware Key

3. SECURE
Encryption Type
- AES Encryption
- AES, DES-XL, DES-OFB Encryption
- DES, DES-XL, DES-OFB Encryption
- 3-Day Key Retention

Multikey Type
- Multikey
- P25 OTAR with Multikey
- Tactical Re-Key with Multikey

4. SYSTEM ENHANCEMENTS
- Adaptive Noise Suppression
- Digital Tone Signaling
- Dual Band Operation
- DVRS MSU Activation
- DVRS PSU Activation
- Enhanced Data
- Enhanced Zone Bank
- Enhancement Level 1
- Enhancement Level 2
- Extended Dispatch
- Extreme 1-Sided Noise Reduction
- Front Panel Programming
- Group Services
- Mandown Operation
- Mission-Critical Geofencing
- Multicast Voting Scan
- One Touch/Status Message
- Out-of-the-Box Wi-Fi Provisioning
- P25 Radio Authentication (Link Layer)
- Personnel Accountability
- Programming over P25 (OTAP)
- Radio Trace
- Security Emergency Package
- Site Selectable Alert for P25 Trunking
- Tactical Stun/Kill
- TDMA Operation (P25 Phase II)
- Wi-Fi Capability

OPERATION MODE

GIVE YOUR NETWORK THE RIGHT REACH AND EFFICIENCY.

ANALOG TRUNKING (SMARTNET/SMARTZONE)

Provides Type II Motorola Analog Trunking in 3600 baud. Designed to address the APCO-16 standard, analog SmartNet/SmartZone trunking enables features like PTT ID, Emergency Calls, and Voice Encryption.

PORTABLES	Q241/H38, Q443
MOBILES	G241/G51, Q443
NOTES	–

DIGITAL TRUNKING (P25 PHASE I)

Provides P25 Phase I FDMA digital trunking on narrowband (12.5 kHz) channels with a control channel at 9600 baud, as described in the TIA-102 standard. Compliance to Project 25 standards for trunked voice systems enables seamless inter-agency communications and enhanced system capabilities.

PORTABLES	QA04096
MOBILES	GA01339
NOTES	–

DIGITAL CONVENTIONAL (P25)

Provides P25 Talkaround (simplex or direct) and Repeater (half-duplex or indirect) operation that enables interoperable conventional digital coverage. P25 Conventional Operation supports data features like Integrated Voice and Data (IV&D) that enables GPS location services, text messaging, and Programming over P25 (POP25).

PORTABLES	Q806/H35, Q811, QA02593, QA04097, Q361
MOBILES	G806/G48, Q811, G361
NOTES	–

DIGITAL TRUNKING (SMARTNET/SMARTZONE P25 PHASE I INTEROPERABILITY)

Provides P25 Phase 1 FDMA digital trunking on narrowband (12.5 kHz) channels with a control channel at 9600 and 3600 baud, as described in the TIA-102 standard. Compliance to Project 25 standards for trunked voice systems enables seamless inter-agency communications and enhanced system capabilities.

PORTABLES	Q806/H38/Q361/Q173, QA02812, QA02592
MOBILES	G806/G51/G361/G173, QA02812
NOTES	–

DIGITAL TRUNKING (SMARTNET/SMARTZONE OR P25 PHASE I)

Provides P25 Phase I FDMA digital trunking on narrowband (12.5 kHz) channels with a control channel at 9600 or 3600 baud, as described in the TIA-102 standard. Compliance to Project 25 standards for trunked voice systems enables seamless inter-agency communications and enhanced system capabilities.

PORTABLES	QA02756
MOBILES	QA02756
NOTES	–

DIGITAL TRUNKING (SMARTNET/SMARTZONE)

Provides Phase 1 FDMA digital trunking on narrowband (12.5 kHz) channels with a control channel at 9600 baud, as described in the TIA-102 standard.

PORTABLES	Q806/H38
MOBILES	G806/G51
NOTES	–

ADVANCED SYSTEM KEY

HARDWARE KEY

Provides the highest security for programming an APX radio onto an ASTRO 25 system by requiring a hardware-based Advanced System Key to be present in the CPS upon programming. This restricts legacy software keys from being used to program any system on the radio. When the radio is ordered with this option the customer must provide a System ID that will be set in the radio and is known as the Owner System ID. For flexibility purposes, the Owner System ID ASK can be used to disable the hardware restriction, thereby supporting legacy software keys.

Hardware-based Advanced System Keys are more secure since they cannot be electronically shared, they cannot be copied due to unique serial numbers, they can be set to expire, and they can be setup limits and ranges for some system fields like Unit and Talkgroup IDs.

PORTABLES	QA01648
MOBILES	QA01648
NOTES	Radio must be operating in a P25 trunked system. Replaces the standard legacy software key that now ships standard with all APX Radios.

SECURE: ENCRYPTION TYPE

PROTECT YOURSELF FROM UNAUTHORIZED ACCESS AND MALICIOUS DISRUPTION.

AES ENCRYPTION

AES was adopted by APCO as the P25 encryption standard in 2002. AES offers 256-bit encryption and is defined in Federal Information Processing Standard 197 (FIPS-197). AES is currently the recommended and most robust type of digital encryption.

PORTABLES	Q629
MOBILES	Q629
NOTES	Radio must be operating in a digital system.

AES, DES-XL, DES-OFB ENCRYPTION

AES was adopted by APCO as the P25 encryption standard in 2002. AES offers 256-bit encryption and is defined in Federal Information Processing Standard 197 (FIPS-197). AES is currently the recommended and most robust type of digital encryption. DES provides 56-bit encryption for analog-only channels. DES-XL provides 56-bit encryption for analog and digital channels. DES-OFB provides 128-bit encryption for digital-only channels.

PORTABLES	Q15
MOBILES	Q15
NOTES	Radio must be operating in a digital system.

DES, DES-XL, DES-OFB ENCRYPTION

DES provides 56-bit encryption for analog-only channels. DES-XL provides 56-bit encryption for analog and digital channels. DES-OFB provides 128-bit encryption for digital-only channels.

PORTABLES	Q625
MOBILES	Q625
NOTES	–

3-DAY KEY RETENTION

Enables the radio to store encryption keys. When disabled, all encryption keys are erased within 30 seconds whenever the radio's battery is removed or when the radio is reprogrammed. Users may extend the 30 second window by purchasing a 3-Day Key Retention mechanism that adds a 1GB flash memory card to the radio for temporary security storage.

PORTABLES	N/A
MOBILES	GA00236
NOTES	–

SECURE: MULTIKEY TYPE

MULTIKEY

Allows multiple encryption keys and multiple encryption algorithms to be loaded into a radio. These keys could be for different types of encryption algorithms or different keys associated with different talk-groups, personalities, or channels. Using multiple keys increases the security level of the system, making it more difficult to eavesdrop, intercept, or hack communications.

PORTABLES	H869
MOBILES	W969
NOTES	–

P25 OTAR WITH MULTIKEY

Provides encrypted systems with the ability to quickly deliver new encryption keys to secure radios over-the-air via a radio channel from a centralized key management server using a P25 standards-based interoperable solution. This allows system security administrators to efficiently and securely redistribute encryption keys on systems with highly sensitive voice and data communications, making it more difficult to eavesdrop, intercept, or hack communications. This feature requires a central Key Management Facility (KMF) and a KVL4000 key loader to deliver encryption keys to the radios. Tactical Rekey is included with the purchase of this feature.

PORTABLES	Q498
MOBILES	G298
NOTES	Radio must be operating in a P25 trunked system.

TACTICAL REKEY WITH MULTIKEY

Loads encryption keys into radios over the air on a digital talk-around (simplex) channel using a KVL4000 key loader. The key loader must be connected to a gateway radio via an RS232 cable. For smaller fleets, this feature allows administrators to efficiently and securely redistribute encryption keys in order to better protect the integrity of the system. Multikey is included with the purchase of this feature.

PORTABLES	H04
MOBILES	H04
NOTES	Radio must have Integrated Voice and Data and digital channels.

SYSTEM ENHANCEMENTS

GET THE MOST FROM YOUR INVESTMENT.

ADAPTIVE NOISE SUPPRESSION

Based on the ambient noise level, the noise suppression algorithm dynamically adapts to balance maximum noise cancellation with optimum voice clarity.

PORTABLES	QA09006
MOBILES	N/A
NOTES	–

DIGITAL TONE SIGNALING

Reduces response time by alerting entire groups of responders simultaneously. Commonly used in Fire Rescue to alert first responders to an incident by broadcasting a series of distinct, recognizable tones followed by a voice transmission from dispatch. This allows an entire fire department to be simultaneously alerted to an emergency situation, as opposed to unit-to-unit dispatch (Call Alert). Responders can keep their radios in a quiet or silent mode until an alarm is raised. This feature works on P25 conventional or trunked systems, providing digital Quik-Call II operation (identical in operation to the legacy analog version). The feature supports encode from an APX portable or mobile with a DTMF keypad from release 7.17.5.

PORTABLES	QA09000
MOBILES	QA09000
NOTES	Radio must be operating in a digital system.

DUAL BAND OPERATION

Enables secondary frequency band of APX 7000, APX 7000XE, and APX 7500 radios, enabling seamless operations across disparate systems. Secondary band can be 7/800 MHz, VHF, UHF Range 1, or UHF Range 2.

PORTABLES	QA00579
MOBILES	GA00579
NOTES	Radio must have been purchased as Dual-Band Capable.

DVRS MSU ACTIVATION

Allows an APX mobile radio acting as a Mobile Subscriber Unit (MSU) in a Digital Vehicular Repeater System (DVRS) environment to extend the system coverage to surrounding Portable Subscriber Unit (PSU) units. The MSU can be used in Local mode when only portable to portable communications are required, or it can be used in System mode which will enable full DVRS repeat locally and back into the system.

PORTABLES	N/A
MOBILES	GA00631
NOTES	Radio must be operating in a P25 trunked system.

DVRS PSU ACTIVATION

Allows an APX portable or mobile radio acting as a Portable Subscriber Unit (PSU) in a Digital Vehicular Repeater System (DVRS) environment to be used in areas where only Mobile Subscriber Unit (MSU) coverage is available and PSU coverage is either intermittent or non-existent. The PSU Activation provides access to a suite of system features that would otherwise not be available in DVRS mode. Some examples are PSU Registration and Deregistration, AES/DES Encryption, Private Call, Call Alert / Page, Failsoft / Out of Range / Site Trunking Indicator, Single-Unit OTAR, Phone Interconnect, Dynamic Regrouping, Single-Unit GPS, Remote DVR Activation, and Phase 2 TDMA operation.

PORTABLES	QA00631
MOBILES	QA00631
NOTES	Radio must be operating in a P25 trunked system.

ENHANCED DATA

Enhanced Data offers 12x greater throughput of data by using a more efficient scheduling method. Data such as Supervisory Control and Data Acquisition (SCADA), machine telemetry and personnel biometrics can be sent at a faster rate, providing faster updates of electronic sensors, crash notifications, maintenance needs, vehicle speeds, environmental conditions and weather updates.

PORTABLES	QA03399
MOBILES	QA03399
NOTES	Radio must be operating in a P25 trunked system and have Integrated Voice and Data enabled. Enhanced Data with GPS location requires radio to be enabled with Integrated Voice and Data, Enhanced Data, and GPS Activation.

ENHANCED ZONE BANK

Allows APX Model 1.5 portable radios to increase capacity from 96 to 1,200 channels by increasing the number of zone banks from 2 to 75. This feature ensures complete interoperability for chiefs or administrators who need to communicate with more users and agencies from the simplified user interface of a Model 1.5 radio.

PORTABLES	QA01768
MOBILES	N/A
NOTES	For Model 1.5 radios (with no keypad) only.

ENHANCEMENT LEVEL 1

The Level 1 feature enhances APX 4000 and APX 4500 radios from 50 to 75 zones, from 512 to 1000 channels, from 35 to 50 systems, from 1000 to 1,500 contacts, from 500 to 1000 voice announcements, and from 48 to 64 encryption keys. This enables the radio to grow as the customer's requirements grow.

PORTABLES	QA01770
MOBILES	QA01770
NOTES	APX 4000 and APX 4500 radios only.

ENHANCEMENT LEVEL 2

The Level 2 feature enhances APX 6000 and APX 6500 radios from 75 to 125 zones, from 1000 to 2000 channels, 50 to 75 systems, from 1500 to 2,500 contacts, from 1000 to 2000 voice announcements, and from 64 to 128 encryption keys. This enables the radio to grow as the customer's requirements grow.

PORTABLES	QA01771
MOBILES	QA01771
NOTES	APX 6000 and APX 6500 radios only.

EXTEND DISPATCH

This option enables Extended Dispatch functionality from a Console via a Consolette configured for ACIM control.

Decoded Functionality:

A subscriber unit can send emergency alarm, status, and message updates over-the-air at any time. The consolette will send any received these updates to the console. With the Extended Dispatch option the corresponding ACK from the console is transmitted by the consolette over-the-air to the specified subscriber on conventional channels only.

Encoded Functionality:

Allows the console user to remotely determine a specific subscriber's status, ping a specific subscriber, and put a specific subscriber into transmit mode, also to make a specific subscriber unusable and correspondingly restore a unit to normal operation via the consolette on conventional channels only. The corresponding ACK from the console is transmitted by the consolette over-the-air to the specified subscriber on conventional channels only.

PORTABLES	N/A
MOBILES	GA00469
NOTES	Extended Dispatch functions are only supported on conventional channels.

EXTREME 1-SIDED NOISE REDUCTION

Created for extremely loud environments, this feature uses the secondary microphone on the display/belt-clip side of APX portable radios as the primary noise-canceling microphone.

PORTABLES	QA01833
MOBILES	N/A
NOTES	–

FRONT PANEL PROGRAMMING

Allows users to change radio parameters (channels/zones) using the front panel controls of the radio. Users also have the ability to clone the radio zone and channel information for one or more zones by copying zone and channel information from one radio to another. This feature is ideal for Wildland Fire, or Urban Search and Rescue operations, during large-scale disasters that require disparate agencies to communicate quickly and effectively.

PORTABLES	Q53
MOBILES	N/A
NOTES	Requires portable radio with full keypad and FPP Hardware Dongle NNTN7526A.

SYSTEM ENHANCEMENTS continued

GROUP SERVICES

Group Services delivers data to a whole talkgroup. This is a quick and efficient way to disseminate data to many radios at once. The feature offers Conventional Alias updates, Trunking Alias updates, Trunking Group Messaging and Over the Air Firmware Updates. Unlike voice transmissions, the radio receives broadcast data, but cannot send. Normal voice traffic has priority, so Group Services pauses whenever there is a voice transmission.

PORTABLES	QA09008
MOBILES	GA09008
NOTES	Requires digital operation for conventional capabilities and SmartNet/SmartZone P25 Interoperability for trunking capabilities.

MANDOWN OPERATION

Allows APX portable radios to automatically send an Emergency Alarm or Emergency Call when the radio is motionless and horizontal. This feature is ideal for any lone-worker situation such as police officers, fire rescue personnel, corrections officers, petro-chemical industry workers, military personnel, and utility workers. For the safety and security of Man Down users, the feature will alert the on-scene supervisor or dispatcher of an emergency event. If a user becomes incapacitated, and is lying down and motionless, an automatic Man Down alarm will be sent out on the programmed talk group.

PORTABLES	QA01843
MOBILES	N/A
NOTES	–

MISSION-CRITICAL GEOFENCING

This feature instructs the radio to take an action whenever it senses that it has crossed a geographical boundary. For example the radio could be programmed to roam to the Mutual Aid channel whenever it leaves the county, change the display backlight color whenever the radio is outside the jurisdictional area, or join a new talkgroup whenever it is close to a major incident. The parameters (including boundary coordinates of all geo-fenced areas) are programmed into the radio codeplug using CPS or Radio Management.

PORTABLES	QA09012
MOBILES	GA09012
NOTES	Requires GPS Activation and Integrated Voice and Data.

MULTICAST VOTE SCAN

Allows radios to scan up to 10 frequencies from multiple transmission towers and select the strongest received signal using a voting process. The feature is designed to provide wide area connectivity in areas where spectrum is abundant, giving seamless coverage and enhanced access to critical communications.

PORTABLES	Q387
MOBILES	G387
NOTES	–

ONE TOUCH/STATUS MESSAGE

Allows the user to immediately transmit a pre-programmed status, message, radio ID, Enhanced Private Conversation™, or telephone interconnect message on the selected channel with the touch of one button. This reduces the time it takes to complete these radio functions so that the user can focus on the task at hand.

PORTABLES	H46
MOBILES	G683
NOTES	–

OUT-OF-THE-BOX WI-FI PROVISIONING

This option will pre-provision your APX portable radio with Wi-Fi access information like SSIDs and passwords, making it quicker and easier for you to get up and running. Additional information is supplied in a manual.

PORTABLES	QA09007
MOBILES	GA09007
NOTES	Radio must have Wi-Fi Capability enabled.

P25 RADIO AUTHENTICATION (LINK LAYER)

Provides an extra level of verification every time a radio registers on the system. This enhances protection from cloned radios by requiring authentication before a radio can utilize the system. Radios must be pre-provisioned with an authentication key via the KVL 4000 keyloader. This feature offers peace-of-mind to system administrators and maximum grade-of-service to end users.

PORTABLES	QA01767
MOBILES	GA01767
NOTES	Radio must be operating in a P25 trunked system on ASTRO 25 release 7.9 or later.

PERSONNEL ACCOUNTABILITY

Provides visibility of status of on-scene personnel to the Incident Commander. This NIMS-compliant application provides automatic user/company registration with PTT ID and alias, emergency alarm indication, channel-left indication, low battery indication, power down indication, roll call, evacuation tones, manual and automatic polling.

PORTABLES	Q625
MOBILES	Q625
NOTES	–

PROGRAMMING OVER P25 (OTAP)

Provides radio configuration over-the-air using a P25 Integrated Voice and Data channel. This enables system administrators to update the radio remotely, avoiding the downtime associated with pulling radios from the field. Updates can be batched for multiple radios, and partial codeplugs if a complete update is not required.

PORTABLES	G996
MOBILES	G996
NOTES	Radio must be operating on a P25 conventional or trunked system and have Integrated Voice and Data.

RADIO TRACE

Instructs a radio to automatically key-up on a time-interval, making it easier to find a lost or stolen radio on a Type II Motorola Analog Trunking (3600 baud) system. Remote Monitor allows the dispatcher to remotely activate a radio's microphone, letting the dispatcher hear any audio the microphone picks up. This feature can help a dispatcher discreetly monitor and support a potentially dangerous situation after an officer has initiated a silent emergency alarm.

PORTABLES	H43
MOBILES	G170
NOTES	Requires digital operation on Motorola Type II 4.1 system or ASTRO 25, release 7.4 or later.

SECURITY EMERGENCY PACKAGE

Simple, easy to use O2 control head, designed specifically for school safety emergency alerting to public safety dispatcher. Multi-function knob becomes a large, orange-colored emergency button. Emergency alarms are sent to public safety dispatcher. School radio is uniquely identified to dispatcher allowing fast response.

PORTABLES	N/A
MOBILES	GA01056
NOTES	Requires O2 Control Head.

SITE SELECTABLE ALERT FOR P25 TRUNKING

Enhances the safety of responders on scene by instantly alerting them of critical situations. Alert all APX radio users at a site, notifying the users when there is a special or hazardous situation such as an evacuation from a burning building that's about to collapse or mine that is about to be blasted.

PORTABLES	QA00982
MOBILES	QA00982
NOTES	Radio must be operating in a digital trunked system.

TACTICAL STUN/KILL

Allows a radio administrator to remotely disable a potentially compromised radio via a talkaround (simplex) channel. This provides a reactive security tactic against cloned or stolen radios attempting to eavesdrop or interrupt critical communications.

PORTABLES	H02
MOBILES	N/A
NOTES	–

TDMA OPERATION (P25 PHASE II)

Provides P25 TDMA (2-slot on 12.5 kHz channel) digital voice trunking. With P25 TDMA, agencies can double their voice capacity within their fixed allocation of frequencies. Additional channel capacity can be used for improved voice service or for integrating data applications such as GPS, OTAP, and text messaging. P25 TDMA operation will meet the 2017 FCC regulatory requirement for 6.25e operation.

PORTABLES	QA00580
MOBILES	GA00580
NOTES	Radio must be operating in a P25 trunked system with Interoperability on ASTRO 25, release 7.11 or later.

WI-FI CAPABILITY

This feature enables the Wi-Fi capability on your radio. The initial application is for Radio Management: updating your radios more efficiently by eliminating the downtime associated with workshop reprogramming. Quickly update codeplug, firmware and FLASHport features using Wi-Fi 802.11n with WEP, WPA and WPA-2 security. Use APX Radio Management to automatically download update to a radio as soon as it connects to a pre-provisioned Wi-Fi access point or mobile hot spot. All radio communications are maintained while the update is downloaded.

PORTABLES	QA09001
MOBILES	GA09001
NOTES	Only selected radios. See table for compatibility.