

# Bell



## Bell Subscriber Equipment Guide

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# Introduction

Public safety communications are fundamental to the ongoing viability, sustainability and security of modern societies. The Province of Manitoba's commitment to migrate to a P25 network demonstrates a focus on citizen wellbeing by ensuring that mission-critical tools remain available to Manitoba first responders and public service organizations.

Leveraging technological innovation and driving evolution to next generation technologies, such as LTE, Bell has been at the forefront of communication services in Canada for over 136 years. Recognized as a global leader in a broad range of communication technologies, we are also a proven, professional network operator with extensive experience providing best-in-class solutions, services and devices.

**Bell is pleased to present this Subscriber Equipment Guide to assist Public Safety Entities with radio equipment decisions.**

We understand that communication technologies for public safety entities (PSE) must perform flawlessly and without interruption. As the incumbent public safety radio communications service provider in Manitoba since 1997, we are able to leverage our full control of the existing FleetNet system and network to offer a seamless migration to the new Public Safety Communications Service (PSCS). Furthermore, our collaboration with Manitoba over the past several years, and our extensive history working with Manitoba public safety agencies, put us in a unique position to understand PSE requirements to ensure you are equipped with the right information to make strategic radio equipment decisions.

Bell combines the knowledge, trust and province-wide resources of the local Bell MTS team, with the strength and experience of the Bell Mobility national radio team. Bell Mobility has over 30 years of experience providing mission-critical public safety land mobile radio service, and currently provides province-wide service to governments in four provinces. No other service provider provides this scale, expertise and stability. With over 80,000 public safety radio subscribers in Canada, no other service provider is trusted more than Bell to support first responders and public service organizations when it matters most.

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## Table of Contents

Introduction .....	1
PSCS Approved Radio List .....	3
Appendix A – Bell Recommended Radios.....	9

## PSCS Approved Radio List

Currently, only Motorola Solutions P25 radios are approved for use on the PSCS. Following transition, at the request of a PSE or third party, Bell is prepared to certify P25 compliant radios from other manufacturers for use on the PSCS. The requesting party will be responsible for all costs related to Bell's certification testing process. The current list of approved radios and minimum software requirements is identified in Table 1.0:

**Table 1.0 – Approved Radio List**

Manufacturer	Model	Minimum Software Requirements
Motorola Solutions	APX™ 8000H All-Band P25 Hazloc Portable Radio	APX 8000H ALL BAND PORTABLE MODEL 2.5 or APX 8000H ALL BAND PORTABLE MODEL 3.5  ALL RADIOS REQUIRE: <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> FOR ENCRYPTED RADIOS ADD: <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 8000HXE All-Band P25 Hazloc Portable Radio	APX 8000HXE ALL BAND PORTABLE MODEL 2.5 or APX 8000HXE ALL BAND PORTABLE MODEL 3.5  ALL RADIOS REQUIRE: <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> FOR ENCRYPTED RADIOS ADD: <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 8000XE All-Band Portable Radio	APX 8000XE ALL BAND PORTABLE MODEL 1.5, APX 8000XE ALL BAND PORTABLE MODEL 2.5, or APX 8000XE ALL BAND PORTABLE MODEL 3.5  ALL RADIOS REQUIRE: <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> FOR ENCRYPTED RADIOS ADD: <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>

Manufacturer	Model	Minimum Software Requirements
Motorola Solutions	APX™ 8000 All-Band P25 Portable Radio	<p>APX 8000 ALL BAND PORTABLE MODEL 1.5, APX 8000 ALL BAND PORTABLE MODEL 2.5, or APX 8000 ALL BAND PORTABLE MODEL 3.5</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 8500 All-band P25 Mobile Radio	<p>APX 8500 ALL BAND MP MOBILE</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OP APEX</li> <li>✓ SMARTZONE OPERATION APX</li> <li>✓ P25 TRUNKING SOFTWARE</li> <li>✓ APX MOBILE RADIO AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> <li>✓ AES ENCRYPTION APX</li> </ul>
Motorola Solutions	APX™ 7000XE Multi-Band P25 Portable Radio	<p>APX 7000XE MULTI-BAND PORTABLE MODEL 3.5</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 7000 Multi-Band Portable Radio	<p>APX 7000 MULTI-BAND PORTABLE MODEL 3.5</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 7500 Multi-Band Mobile Radio	<p>APX 7500 MULTI-BAND MP MOBILE</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OP APEX</li> <li>✓ SMARTZONE OPERATION APX</li> <li>✓ P25 TRUNKING SOFTWARE</li> <li>✓ APX MOBILE RADIO AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> <li>✓ AES ENCRYPTION APX</li> </ul>

Manufacturer	Model	Minimum Software Requirements
Motorola Solutions	APX™ 6000XE P25 Enhanced Portable Radio	<p>APX 6000XE 7/800 MHZ MODEL 1.5 PORTABLE, APX 6000XE 7/800 MHZ MODEL 2.5 PORTABLE, or APX 6000XE 7/800 MHZ MODEL 3.5 PORTABLE</p> <p>ALL RADIOS REQUIRE :</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 6000 P25 Enhanced Portable Radio	<p>APX 6000 7/800 MHZ MODEL 1.5 PORTABLE, APX 6000 7/800 MHZ MODEL 2.5 PORTABLE, or APX 6000 7/800 MHZ MODEL 3.5 PORTABLE</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 6500 Single-Band P25 Mobile Radio	<p>APX 6500 7/800 MHZ MID POWER MOBILE</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OP APEX</li> <li>✓ SMARTZONE OPERATION APX</li> <li>✓ P25 TRUNKING SOFTWARE</li> <li>✓ APX MOBILE RADIO AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> <li>✓ AES ENCRYPTION APX</li> </ul>
Motorola Solutions	APX™ 4000 Single-Band P25 Portable Radio	<p>APX 4000 7/800 MHZ MODEL 2 PORTABLE or APX 4000 7/800 MHZ MODEL 3 PORTABLE</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ 3600 OR 9600 TRUNKING BAUD SIN</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 4500 Single-Band P25 Mobile Radio	<p>APX 4500 7/800</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ 3600 OR 9600 TRUNKING BAUD SIN</li> <li>✓ APX MOBILE RADIO AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION APX</li> <li>✓ MULTIPLE KEY ENCRYPTION OPERATION</li> </ul>

Manufacturer	Model	Minimum Software Requirements
Motorola Solutions	APX™ 3000 Single-Band P25 Covert Portable Radio	<p>APX COVERT 7/800 MHZ MODEL 1 PORTABLE</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ SOFTWARE TRUNKING 9600 BAUD OR 3600 BAUD</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	APX™ 1500 Single-Band P25 Mobile Radio	<p>APX 1500 7/800</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ SW P25 TRUNKING</li> <li>✓ APX MOBILE RADIO AUTHENTICATION</li> </ul> <p>ENCRYPTED RADIOS NOT AVAILABLE</p>
Motorola Solutions	APX™ 1000 Single-Band P25 Portable Radio	<p>APX 1000 7/800 MHZ MODEL 2 PORTABLE APX 1000 7/800 MHZ MODEL 3 PORTABLE</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ P25 TRUNKING</li> <li>✓ 25 LINK LAYER AUTHENTICATION</li> </ul> <p>ENCRYPTED RADIOS NOT AVAILABLE</p>
Motorola Solutions	APX™ 900 Single-Band P25 Portable Radio	<p>APX 900 7/800 MHZ MODEL 2 PORTABLE APX 900 7/800 MHZ MODEL 3 PORTABLE</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ P25 TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION (AVAILABLE ONLY AT TIME OF PURCHASE)</li> <li>✓ MULTIKEY</li> </ul>
Motorola Solutions	APX™ Consolettes	<p>ALL CONSOLETTES REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ ASTRO DIGITAL CAI OPERATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ P25 9600 BAUD TRUNKING</li> <li>✓ P25 LINK LAYER AUTHENTICATION</li> </ul> <p>FOR ENCRYPTED RADIO SUPPORT ADD:</p> <ul style="list-style-type: none"> <li>✓ AES ENCRYPTION</li> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> </ul>
Motorola Solutions	XTS™ 2500 Portable Radio*	<p>XTS 2500 - ALL MODELS</p> <p>ALL RADIOS REQUIRE:</p> <ul style="list-style-type: none"> <li>✓ P25 DIGITAL 9600 BAUD TRUNKING</li> <li>✓ RADIO AUTHENTICATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ ASTRO DIGITAL CAI OPERATION</li> </ul> <p>FOR ENCRYPTED RADIOS ADD:</p> <ul style="list-style-type: none"> <li>✓ MULTIKEY</li> <li>✓ AES</li> </ul>



Manufacturer	Model	Minimum Software Requirements
Motorola Solutions	XTS™ 5000 Portable Radio*	XTS 5000 - ALL MODELS  ALL RADIOS REQUIRE: <ul style="list-style-type: none"> <li>✓ P25 DIGITAL 9600 BAUD TRUNKING</li> <li>✓ RADIO AUTHENTICATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ ASTRO DIGITAL CAI OPERATION</li> </ul> FOR ENCRYPTED RADIOS ADD: <ul style="list-style-type: none"> <li>✓ MULTIKEY</li> <li>✓ AES</li> </ul>
Motorola Solutions	XTL™ 1500 Mobile Radio*	XTS 1500 - ALL MODELS  ALL RADIOS REQUIRE: <ul style="list-style-type: none"> <li>✓ P25 DIGITAL 9600 BAUD TRUNKING</li> <li>✓ RADIO AUTHENTICATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ ASTRO DIGITAL CAI OPERATION</li> </ul> ENCRYPTED RADIOS NOT AVAILABLE
Motorola Solutions	XTL™ 2500 Mobile Radio*	XTS 2500 - ALL MODELS  ALL RADIOS REQUIRE: <ul style="list-style-type: none"> <li>✓ P25 DIGITAL 9600 BAUD TRUNKING</li> <li>✓ RADIO AUTHENTICATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ ASTRO DIGITAL CAI OPERATION</li> </ul> FOR ENCRYPTED RADIOS ADD: <ul style="list-style-type: none"> <li>✓ MULTIKEY</li> <li>✓ AES</li> </ul>
Motorola Solutions	XTL™ 5000 Mobile Radio*	XTS 5000 - ALL MODELS  ALL RADIOS REQUIRE: <ul style="list-style-type: none"> <li>✓ P25 DIGITAL 9600 BAUD TRUNKING</li> <li>✓ RADIO AUTHENTICATION</li> <li>✓ SMARTZONE OPERATION</li> <li>✓ ASTRO DIGITAL CAI OPERATION</li> </ul> FOR ENCRYPTED RADIOS ADD: <ul style="list-style-type: none"> <li>✓ ASTRO 25 OTAR W/ MULTIKEY</li> <li>✓ AES</li> </ul>
*indicates radio model is no longer in production and Flash kit upgrades are no longer available. Please contact Bell, your Motorola Solutions dealer, or Motorola Solutions directly to confirm software content of existing radios through their flashcode.		

PSE's who already have Motorola Solutions APX series radios that do not meet the minimum software requirements can upgrade their radios with a Flash kit, which must be purchased from Motorola Solutions or an authorized agent. PSEs are responsible for all costs related to upgrading their radios.

Motorola Solutions XTL and XTS Flash kits are no longer available from Motorola Solutions, and these radios will not operate on the PSCS unless previously upgraded with the software features identified in Table 1.0.

Once a radio has been provisioned with the appropriate software, the radio needs to be programmed with various features and functionality. A software codeplug is developed to capture

the unique programming requirements for each radio, and then the codeplug is applied to the radio. Bell will develop standardized codeplugs that can be used by PSE's for all new radios purchased from Bell at no additional cost to PSE's. These codeplugs will be generic in form and address many of the feature and configuration combinations required by PSCS users. For PSE's who require additional changes to the radio's features and functionality, additional charges may apply to modify the standardized codeplug.

## Subscriber Radio Recommendations

Bell is pleased to provide PSEs with the opportunity to purchase Motorola Solutions APX Series P25 two-way radios. Purchasing your radio from Bell comes with the following advantages:



### Configuration

Extensive experience configuring and programming Motorola two-way radios

Bell will ensure that your operational requirements are matched with the appropriate software, features and radio model. Codeplug development and testing is included at no extra charge.



### Transition

Fully managed transition ensures you are ready for the new Public Safety Communications Service

Purchasing your radio through Bell will result in a smooth transition to the PSCS. Bell will fully manage the process from radio purchase through configuration and transition to the PSCS.



### Support

National service desks staffed by trained, experienced public safety radio service technicians

At Bell's national radio service centres, our only job is to support public safety radio. Only experienced public safety radio service technicians will manage your urgent service requests.

Please see Appendix A for a list of Motorola Solutions APX P25 radios Bell recommends for use on the Public Safety

Communications Service. For more information on purchasing an approved radio from Bell, please contact Bell's authorized radio dealers, or contact Bell directly at:

[PSCSSupport@BellMTS.ca](mailto:PSCSSupport@BellMTS.ca)

## Appendix A – Bell Recommended Radios



**APX 8000HXE**

All-band P25 portable radio with Adaptive Audio, designed for fire and rescue teams, Class I Div 1 HazLoc



**APX 8000H**

All-band P25 portable radio with Adaptive Audio, designed for law enforcement agencies, Class I Div 1 HazLoc



**APX 8000XE**

All-band P25 portable radio with Adaptive Audio, designed for fire and rescue teams



**APX 8000**

All-band P25 portable radio with Adaptive Audio, designed for law enforcement agencies



**APX 8500**

All-band P25 mobile radio, available in mid-power (up to 50 W) and high-power (up to 100 W) versions



**APX 6000XE**

Single-band P25 portable radio with optional Adaptive Audio, designed for fire and rescue teams



**APX 6000**

Single-band P25 portable radio with optional Adaptive Audio, designed for law enforcement agencies



**APX 6500**

Single-band P25 mobile radio, available in mid-power (up to 50 W) and high-power (up to 100 W) versions



**APX 4000**

Single-band P25 portable radio, designed to balance performance with affordability



**APX 4500**

Single-band P25 mobile radio, designed to balance performance with affordability



**APX 1000**

Single-band entry-level P25 portable radio, designed for simple public safety applications



**APX 1500**

Single-band entry-level P25 mobile radio, designed for simple public safety applications



**APX 900**

Single-band P25 entry-level portable radio, designed for non-Public-Safety applications