

Two-Way Radio Selection Guide

FIND THE RIGHT RADIO FOR ANY JOB. RIGHT HERE.



Motorola is a company of firsts with a rich heritage of innovation. We continue to invent what's next – connecting people, delivering mobility and making technology personal.



Versatile and powerful, to keep your staff connected.

Motorola's diverse array of portable and mobile two-way radios enable you to efficiently coordinate and communicate with your mobile workforce. Ideal for use by a variety of industries looking to remain competitive in today's market, Motorola radios deliver a high quality communication solution designed to help increase efficiency, productivity and worker safety while lowering operating costs.

Manufacturing

Make it easy for all staff, from line workers to maintenance to security, to collaborate as a single, unified work team while increasing productivity and worker safety.

"MOTOTRBO has great quality audio and enables us to communicate very effectively from one building to another. The new system is definitely a huge improvement, and it's going to help us move to even higher levels of efficiency."
— Operations Manager, Georgia Nut Company

Transportation and Logistics

Deliver goods safely and efficiently while increasing customer service with accurate, real-time information.

"The Motorola radios help us keep order throughout our operation. It's just something we can't be without." — President, Paul Bugar Trucking Inc.

Education

Give staff and faculty constant access to critical information and enhance safety and efficiency in your schools.

"Universities are in the people business and we have to sell the safety of our campus. MOTOTRBO provides reliable communications that help us keep our campus safe." — Director of Campus Security, North Park University

Hospitality

Communicate discreetly for seamless coordination of your entire service staff and enhanced customer service.

"I've talked to each of the vice presidents that have received these radios, and they're just ecstatic... MOTOTRBO has done so much for us, increasing our efficiency and decreasing response time. The whole system has been a boon for us, and now every department is talking about getting a MOTOTRBO."
— VP of Security, Four Winds Resort and Casino



Commercial and Professional Uses

Portable and Mobile Radios

The right two-way radio can empower an entire organization by providing real-time information to your workforce. Suddenly, fleet members are more effective and informed. Individuals can make more meaningful contributions to the overall business objective. Significant savings in travel time and money are realized. Safety and efficiency are no longer mutually exclusive. Motorola has portable radios perfect for employees who work on-site in hospitality, manufacturing and retail enterprises, as well as mobile radios perfect for employees in transportation, delivery and public service sectors. Motorola two-way radios – Transforming the enterprise, Empowering the individual.

Whether your workforce is comprised of employees primarily located on-site at your facility, mobile in vehicles or a combination of both, two-way radios enable your employees to stay connected. Portable radios are ideal for employees who work on-site; mobile radios are installed in vehicles and ideal for your on-the-go workforce.

Depending on the features and functionality needed for your business, Motorola's portable and mobile radios have both commercial and professional types.

COMMERCIAL RADIOS

A basic, easy to use communication solution that is ideal for elementary and high schools, hotels, restaurants, food service, construction and delivery operations.

- » *Simple, basic solution for work team communication*
- » *Compact models*
- » *Display and non-display models*
- » *Limited or non-key pad models*
- » *Repeater capability for increased coverage when needed*
- » *Hands-free communication with voice activation*
- » *Variety of audio and carrying accessories*

PROFESSIONAL RADIOS

The ideal communication solution for larger organizations with more complex communication needs such as: manufacturing, warehousing, collegiate campuses, resorts, utilities and public service operations.

- » *The most robust solution*
- » *Variety of scanning and signaling options*
- » *High number of channels to organize large work groups*
- » *Intrinsically safe models for use in hazardous work environments*
- » *Data applications such as GPS location tracking and text messaging*
- » *Option board capability to enable customized applications*
- » *IMPRES™ audio and energy accessory solutions*

Use the step-by-step selection guide on the following pages to refine your search.

Radio Selection

Portable and Mobile Radios

User Needs

There are three basic factors you need to select which radio is right for you.

- >> *Number of Users / Channels*
- >> *Frequency Band*
- >> *Features*

Number of Users / Channels

The number of individual users as well as the number of talk groups you need to maintain determines the number of channels you will require in a radio. For example, if you wish a certain department to maintain its own talk group, it would require a dedicated channel for that department. If two or more individuals need to maintain private communications, a dedicated channel would be required. It is not uncommon to have multiple channels within a department for special projects where more than one operation or event is occurring simultaneously. In addition, the use of digital technology increases the capacity of your system by dividing your existing channels into two time slots. This enables you to double the number of users on your system without the need for additional infrastructure equipment. Lastly, when making decisions regarding the number of channels you require, it is very important to keep future expansion in mind.

Frequency Band

For most general applications there are 3 categories of frequency bands to consider:

- >> *VHF (Very High Frequency) at 136-174 MHz*
- >> *UHF (Ultra High Frequency) at 403-512 MHz*
- >> *800 / 900 MHz*

All bands have advantages for specific applications. As a rule, the higher the frequency, the better the in-building penetration. However, as you increase in frequency, you will decrease in range. VHF frequencies (136-174) are better suited for outdoor applications where maximum range is required with little to no obstructions. UHF and the 800 / 900 MHz frequencies are better suited for indoor applications or environments with obstructions. VHF and UHF frequency bands are typically used for conventional two-way radios systems while 800 / 900 MHz frequency bands are commonly used for trunking two-way radio systems.

Features

A wide variety of features are available to help increase the efficiency, productivity and safety of your workforce. Efficiency/productivity features include integrated data applications that increase a radio's capability beyond voice communication, and telephone interconnect, which enables radios to talk with a telephone PBX system. Safety features include emergency notification for use during urgent situations and intrinsically safe certifications for hazardous work environments.

Two-Way Radio Features

Intrinsically Safe

Intrinsically Safe is a designation which affirms that a portable radio, with an attached certified battery, is safe for use in locations where flammable gas, vapors or combustible dust may be present according to the Division, Class and Group for which it has been approved.

Telephone Interconnect

Telephone Interconnect is a feature that enables a radio system to be connected to a telephone PBX system, which allows radios to make phone calls using the radio keypad.

Technology

Two-way radios have traditionally used analog technology. Digital technology is the next generation of two-way radio and offers several advantages over analog including clearer audio, integrated data applications, 40% longer battery life and increased capacity.

Text Messaging / GPS

Using digital technology, Text Messaging communicates between radios, radios and dispatch systems, and radios to any email-capable device. Also using digital technology, GPS enables location tracking of vehicles and personnel in outdoor environments.

Third Party Data Applications

Third Party Data Applications expand the functionality of digital radios by enabling customized applications to be built for your unique business needs including dispatch solutions, work order ticket management, system monitoring and much more.

Trunking

Trunking is a radio system configuration that uses a control channel to efficiently organize the radios and conversations on your radio system. This enables a large number of radio users to operate on the same system.

Emergency Call

Emergency Call allows a radio user, with the push of a button, to send a distress message to all other radios users to indicate an emergency and be given priority to talk.

Quik-Call II™ Signaling

Quik-Call II signaling is an analog two-tone format used for paging over a two-way voice channel. The decoding of tones allows the radio to receive only messages intended for its specific user, and activates that radio when to start listening to a conversation. The encoding of tones allows the radios to send such messages to specific units. This is a feature commonly used by rural fire departments.

DTMF Signaling

Dual-Tone Multi-Frequency (DTMF) Signaling enables radio users to use the radio keypad to control another device that is pre-programmed to recognize the tones as commands. This feature is commonly used to open/close gates, turn off/on sprinkling systems or place a phone call using the telephone interconnect feature.

MDC 1200 Signaling

MDC 1200 Signaling uses low speed data packet transmissions that grants radio users access to a number of enhanced features such as unit ID, selective inhibit, radio check and selective calling.

Enhanced / Basic Privacy

Enhanced / Basic Privacy is a technology that allows a transmitting radio to send out a scrambled audio signal and a receiving radio to unscramble that signal. This helps to prevent unauthorized users from listening to sensitive communications

IMPRES™

IMPRES is a state-of-the-art, Motorola exclusive technology that enables communication between the radio and accessory, resulting in the prolonged life of your batteries, longer talk time and clearer audio delivery.

Portable Radios



	Commercial Radios				Professional Radios									
Number of Channels	8 or 16	16	4 or 16	128	16, 32 or 64	4 or 16	128	16 or 32	160	160	32	1000	32	
Band Availability	VHF, UHF	VHF, UHF	VHF, UHF	VHF, UHF	VHF, UHF	VHF, UHF, Low Band	VHF, UHF, Low Band	VHF, UHF, 200 /700 MHz	800 MHz	VHF, UHF	VHF, UHF, 800/900 MHz	VHF, UHF, 800/900 MHz	VHF, UHF	
Trunking Capable				•	•			•	•	•	•	•	•	
Intrinsically Safe					•	•	•	•	•	•	•	•	•	
Telephone Interconnect				•	•	•	•	•	•	•	•	•	•	
Emergency Call						•	•	•	•	•	•	•	•	
Enhanced Privacy											•	•		
Basic Privacy		•									•	•		
Digital or Analog Technology	Analog	Analog	Analog	Analog	Analog	Analog	Analog	Analog	Analog	Analog	Digital or Analog	Digital or Analog	Analog/Digital Upgradeable	
Text Messaging / GPS											•	•		
Third Party Data Applications											•	•		
Quik-Call II™ Signaling			•	•	•	•	•	•		•	•	•	•	
DTMF Signaling				•	•	•	•	•		•	•	•		
MDC 1200 Signaling			•	•	•	•	•	•		•	•	•	•	
IMPRES™ Audio Accessories											•	•		
IMPRES™ Batteries & Chargers						•	•	•	•		•	•	•	

Mobile Radios



CM200™



PM400™



CDM750™



CDM1250™



CDM1550+LS+™



MOTORBO™
XPR™ 4350 / XPR 4380



MOTORBO™
XPR™ 4550 / XPR 4580



PM1500™

Commercial Radios

Professional Radios

	Commercial Radios	Professional Radios	Professional Radios	Professional Radios	Professional Radios	Professional Radios	Professional Radios	Professional Radios
Number of Channels	4	64	4	64	16 or 160	32	1000	255
Band Availability	VHF, UHF	VHF, UHF	VHF, UHF, Low Band	VHF, UHF, Low Band	VHF, UHF, 200 / 700 MHz	VHF, UHF, 800 / 900 MHz	VHF, UHF, 800 / 900 MHz	VHF, UHF
Trunking Capable		•			•	•	•	
Telephone Interconnect			•	•	•			•
Emergency Call	•	•		•	•	•	•	•
Enhanced / Basic Privacy						•	•	
Digital or Analog Technology	Analog	Analog	Analog	Analog	Analog	Digital or Analog	Digital or Analog	Digital or Analog Upgradeable
Text Messaging / GPS						•	•	
Third Party Data Applications						•	•	
Quik-Call II™ Signaling	•	•		•	•	•	•	•
DTMF Signaling		•	•	•	•	•	•	•
MDC 1200 Signaling	•	•	•	•	•	•	•	•
Illuminated Display	Single Digit	8 Character	Non-Display	14 Character	14 Character	Numeric	Alphanumeric	8 Character
IMPRES™ Audio Accessories						•	•	
Keypad Microphone	•	•	•	•	•	•	•	•

Peace of mind comes standard with every Motorola radio.

There's a reason why Motorola two-way radios are built to last. Motorola's rugged and reliable radios undergo rigorous testing in the design process. We use U.S. Military Standards and Accelerated Life Testing, so you can be assured Motorola radios will hold up under demanding conditions.

ISO 9001

International quality assurance system for design, development, production, installation and servicing of a product.

Accelerated Life Testing (ALT)

Simulates five years of extreme hard use. Conducted by Motorola during early product development to improve quality, design and product life.

US Military Specs 810

Environmental testing specifications for equipment performance and survivability in harsh conditions. As many as 11 unique tests are covered, including low pressure, high / low temp, shock, solar radiation, rain, humidity, dust and vibration.

Meeting the FCC mandate for 12.5 KHz

To increase spectrum efficiency and accommodate more users, the Federal Communications Commission (FCC) is mandating 25 kHz licensees to operate using 12.5 kHz efficiency by January 1, 2013. As a trusted leader in two-way communications, Motorola has been preparing for 12.5 kHz technology for over a decade and offers the broadest choice of two-way radio equipment with close to 60 models capable of operating in 12.5 kHz efficiency.

To learn more, visit www.motorola.com/enterprise/radio



The information presented herein is to the best of our knowledge true and accurate. Specifications are subject to change.

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