



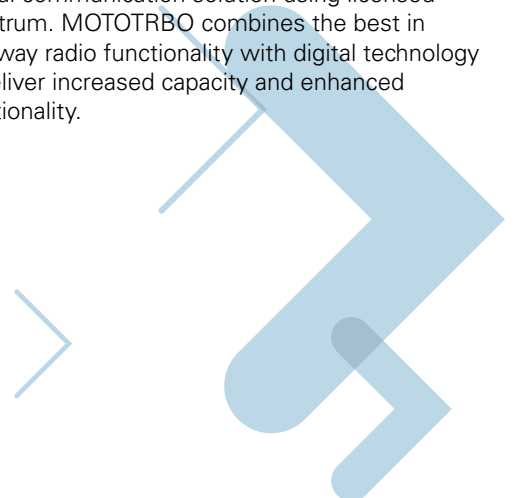
# MOTOTRBO™

## Better Basics in Digital Two-way Radio Functionality

In the ongoing effort to improve your workforce productivity and operational effectiveness, you need to be able to communicate with and provide information to your employees virtually anywhere and at anytime. This is especially important when your workers are mobile in industries such as transportation, manufacturing, private security, public administration, building construction and large campus services such as education and hospitality.

Mobile workers need clear and reliable communications. A missed call, garbled message or a dead battery can mean lowered productivity, wasted time and money, unsatisfied customers, interruptions to essential services, or even lost business.

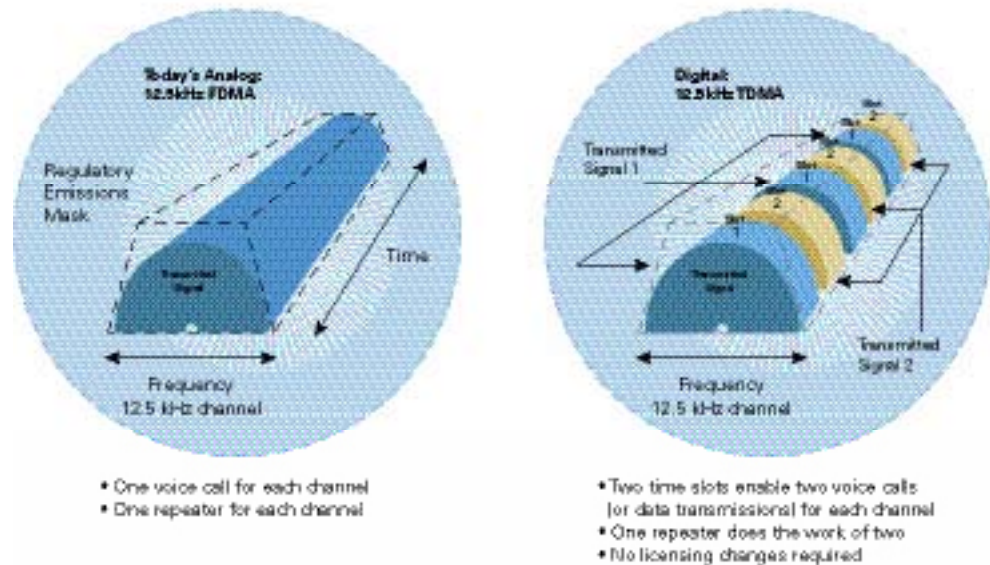
Improving workforce productivity and operational effectiveness for mobile professionals requires superior communications quality, reliability and functionality. MOTOTRBO™ is the first digital two-way radio system from Motorola specifically designed to meet the requirements of professional organizations that need a customizable business spectrum. MOTOTRBO combines the best in two-way radio functionality with digital technology to deliver increased capacity and enhanced functionality.



## FACT SHEET

MOTOTRBO™  
Better Basics in Digital Two-way Radio Functionality

### Increased Capacity Within Existing 12.5kHz Repeater Channels



When FDMA technology is used to split a channel into two sub-channels, the resulting signals must still fit within the channel's required emissions mask

### Increased Capacity

The MOTOTRBO system utilizes Time-Division Multiple-Access (TDMA) digital technology. TDMA divides a 12.5 kHz channel into two alternating time slots. In this way, two-slot TDMA can provide 6.25 kHz equivalent efficiency in an existing 12.5 kHz channel – with no changes to licensing requirements. This provides twice the calling capacity, as compared to analog or FDMA radios, for the price of one license. For example, if you have 10 voice users today on an existing 12.5, 20 or 25 kHz channel, the utilization of a MOTOTRBO repeater can double the number of voice users, with the opportunity to increase the number of users even further if needed.

Furthermore, professional users can decrease spectrum congestion while doubling the efficiency of their licensed repeater channels. Two-slot TDMA allows two simultaneous conversations within a 12.5 kHz channel with a single repeater. One repeater can do the work of two – saving you the costs associated with infrastructure acquisition, setup and maintenance.

### Enhanced Functionality

#### Longer talk time

One of the biggest challenges with mobile devices has always been battery life. With two-slot TDMA technology, each call uses only one of the two slots and thus requires only half of the transmitter's capacity.

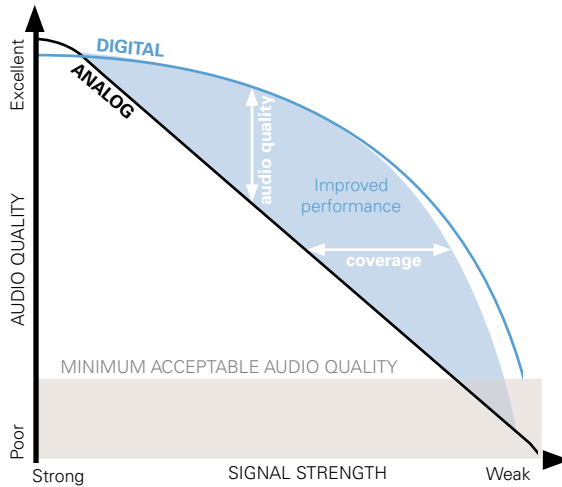
For example, in a typical duty cycle of 5 percent transmit, 5 percent receive, and 90 percent idle, the transmit time accounts for roughly 80 percent of the total current drain on the radio's battery. By cutting the effective transmit time in half, two-slot TDMA can thus enable an up to 40 percent reduction in current battery drain, or an up to 40 percent improvement in talk time. As a result, overall battery consumption per call is dramatically reduced, enabling much longer usage time in the field between charges.

A MOTOTRBO portable radio utilizing an IMPRES Lilon 2200 mAh battery with a 5/5/90 duty cycle with battery saver enabled, has an average battery life in analog mode of 9 hours and in digital mode, 13.5 hours. This results in your workforce having radio communication that lasts the duration of their work shift.

## FACT SHEET

### MOTOTRBO™ Better Basics in Digital Two-way Radio Functionality

Digital voice retains better quality than analog as signal strength decreases.



#### **Enhanced voice communication**

When signal strength drops off with distance from the transmitter, analog signals become distorted, producing audible static as signal strength degrades. By contrast, digital receivers use digital error correction technology to correct anything interpreted as an error in a signal. If the error cannot be corrected, then the signal is simply rejected.

With digital error correction technology, audio quality is more consistent across a given coverage area, resulting in clearer voice communications throughout the coverage area, as compared to analog. This helps ensure the message gets through clearly to your workers.

MOTOTRBO also features background noise suppression to help ensure communication comes through loud and clear. The static and noise rejection helps your workforce to hear better in noisy environments.

Furthermore, the IMPRES™ smart audio system utilized by MOTOTRBO enables additional enhanced audio performance and capabilities. When an IMPRES audio accessory is attached, accessory identification is sent to the radio enabling the radio to optimize its output for each type of audio accessory. Whether your team uses a surveillance kit, remote speaker microphone or temple transducer headset, the result is more consistent output across all audio accessory types, enabling your workforce to clearly hear the message and not miss a call.

#### **Durability**

MOTOTRBO meets demanding specifications to stand up to tough industrial environments. MOTOTRBO portable radios meet IP57 specifications for submersibility in 1 meter of fresh water for up to 30 minutes – ideal for wet working conditions. MOTOTRBO radios also meet U.S. Military 810 C, D, E and F, and Motorola standards for durability and reliability. Intrinsically safe models are also available on portable radios and can be used in locations where flammable gas, vapors or combustible dust may be present. Your workers can be assured that their radios will stand up to harsh working conditions.

#### **Integrated voice and data**

By combining enhanced voice with critical data applications into one device, MOTOTRBO can help to increase your operational efficiency and productivity as well as minimize costs. MOTOTRBO's two-slot TDMA technology supports both voice and data, so you can determine whether a given timeslot is used for voice calls or data calls in a manner that best fits your needs. You may elect to use both timeslots to double the number of voice users that can be supported on your repeater channel. Or you may want to equip your workforce with mobile data, messaging, or integrated GPS modem data capabilities.

MOTOTRBO features several data capabilities enabling you to gain the productivity of powerful data applications. This includes location capability via MOTOTRBO's integrated GPS modem - you can track your workers and vehicles, without cumbersome external GPS devices to install and maintain. In conjunction with location software applications, you can view the location of inbound materials and determine their expected arrival times to prepare the receiving department. You can also view the location of outbound shipments to ensure deliveries are being made timely and to the proper locations. All while coordinating your fleet to do so in the most efficient manner possible.

## FACT SHEET

### MOTOTRBO™ Better Basics in Digital Two-way Radio Functionality

Mobile workers must be able to quickly share information whether it is to prioritize an order or check the status of supplies. Text messaging enables workers to communicate this type of information quickly and easily. The MOTOTRBO text messaging feature allows communication between radios and dispatch systems, between radios and email-addressable devices, and to remote PC clients attached to radios. Whether it's the need for discreet communication by hotel staff or the ability to send quick text messages to check on inventory for a customer, you and your team are able to utilize another form of communication when voice communication is not ideal.

Third-party developers play an important role in creating customized applications that add value to you and your organization. MOTOTRBO's Application Developer Program extends the capabilities of the MOTOTRBO platform and provides niche solutions that are able to satisfy a broad range of your needs. Whether it is GPS-based tracking or a hotel service application, third-party developers can work with you to develop a customized data application to enhance your business communication.

### Summary

Today's environment of mobile workers requires efficiency and productivity in order to remain competitive. The MOTOTRBO Professional Digital Two-way Radio System brings the best in two-way radio functionality with digital technology to deliver increased capacity and enhanced functionality. Increased capacity can provide you twice the calling capacity enabling you to increase the number of users, with no changes to existing licensing requirements. And MOTOTRBO's enhanced functionality brings up to 40 percent longer battery life for longer work shifts, clearer voice communications throughout your coverage area, static and noise rejection to hear better in noisy environments, demanding specifications for harsh work environments as well as integrated voice and data capability in one device. MOTOTRBO is an ideal two-way radio communication system that is designed to help your business improve response time and increase productivity – helping make you more competitive in today's business environment.



[motorola.com/radiosolutions](http://motorola.com/radiosolutions)

MOTOROLA and the Stylized M Logo are registered in the US Patent & Trademark Office. All other product or service names are the property of their respective owners.  
© Motorola, Inc. 2008.

LE-MTRBO-BETTERBASICS-FS

