

# MOTOTRBO™ FEATURES CATALOGUE (EMEA)

Discover the ultimate in seamless operations with a total MOTOTRBO solution



**MOTOROLA** SOLUTIONS

# HOW TO USE THIS CATALOG

**A**  
M2021.01

## INTELLIGENT AUDIO

YOUR CALLS, ALWAYS AT THE PERFECT VOLUME

COMPATIBLE

- B**
- DM1400
  - DM1600
  - DM2600
  - DM4400e
  - DM4401e
  - DM4600e
  - DM4601e
  - DP1400
  - DP2400e
  - DP2600e
  - DP3441e
  - DP3661e
  - DP4400e
  - DP4401e
  - DP4600e
  - DP4601e
  - DP4800e
  - DP4801e
  - DP4401 Ex
  - DP4801 Ex
  - Ion
  - SL1600
  - SL2600
  - SL4010e
- Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

YOUR RADIO MONITORS BACKGROUND NOISE AND ADJUSTS THE SPEAKER VOLUME, SO YOU DON'T HAVE TO

- Receive-only feature that enhances the audibility of voice calls.
- Users can still adjust volume using the volume control, but this feature eliminates the need for continual adjustment.
- Accessories are not required, but selected accessories also support this feature.
- In loud environments, the speaker volume is automatically increased to compensate.
- In quiet environments, the volume is automatically reduced.

COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE



AUDIO

**G**



**A**

Catalog version

**B**

Radio and system compatibility

**C**

Feature name

**D**

Feature tagline

**E**

Summary

**F**

Full description

**G**

Category icon



# CATEGORIES



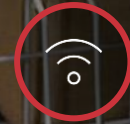
**AUDIO**



**EFFICIENCY AND  
PRODUCTIVITY**



**SAFETY AND  
SECURITY**



**CONNECTIVITY**



**SYSTEMS**



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**AUDIO**



# INTELLIGENT AUDIO

YOUR CALLS, ALWAYS AT THE PERFECT VOLUME

## COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## YOUR RADIO MONITORS BACKGROUND NOISE AND ADJUSTS THE SPEAKER VOLUME, SO YOU DON'T HAVE TO

- Receive-only feature that enhances the audibility of voice calls.
- Uses the radio or accessory's microphone to monitor background noise levels.
- In loud environments, the speaker volume is automatically increased to compensate.
- In quiet environments, the volume is automatically reduced.
- Users can still adjust volume using the volume control, but this feature eliminates the need for continual adjustment.
- Accessories are not required, but selected accessories also support this feature.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE



# IMPRES™ AUDIO

I HEAR YOU, HOWEVER YOU SPEAK

## COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## YOUR RADIO WORKS SEAMLESSLY WITH YOUR ACCESSORIES TO ENSURE THAT EVERY CALL IS HEARD PERFECTLY

- Digital signal processors (DSP) fine-tune the audio signal from the microphone, enhancing clarity and reducing background noise.
- IMPRES™ accessories communicate their own unique set of audio parameters to the radio's DSP, further optimising the audio processing.
- IMPRES technology optimises the Automatic Gain Control (AGC) to compensate for variability of input level.
- IMPRES audio accessories are required to receive the benefits of this feature when using accessories.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE



# WINDPORTING

I HEAR YOU, NOT THE WIND

**COMPATIBLE**

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## YOUR MICROPHONE MINIMISES WIND NOISE, SO YOU CAN COMMUNICATE CLEARLY IN DIFFICULT WEATHER

- Helps you communicate effectively and be heard clearly through wind, rain, and severe weather.
- Eliminates the booming and howling from wind blowing across lapel microphones or RSMs.
- Prevents water from clogging the microphone for clearer transmissions.
- Compatibility sidebar refers built in radio microphone, not optional accessories.
- Windporting is available on select accessories.

**COMPATIBILITY KEY**

COMPATIBLE

LIMITED

NOT COMPATIBLE



# ACOUSTIC FEEDBACK SUPPRESSOR

YOU'LL NEVER NEED TO STEP AWAY TO MAKE A CALL

**YOUR RADIO BLOCKS ACOUSTIC FEEDBACK FROM OTHER RADIOS TO ELIMINATE UNPLEASANT “HOWLING”**

Attempting group calls while near other radios can result in acoustic feedback. Audio coming out of surrounding speakers feeds back into the microphone until nobody can hear anything except an unpleasant “howling” noise.

- This receive-only feature improves the overall ability to communicate in the presence of acoustic feedback.
- MOTOTRBO radios are able to recognise the audio feedback from nearby radios and discard it.
- Eliminates the need to step away from colleagues to make a call.
- This feature was introduced in software release 2.2A.

#### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE



#### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

# AUTOMATIC GAIN CONTROL (AGC)

## BETTER AUDIO IN REAL LIFE CONDITIONS

### EVERYONE CAN BE HEARD CLEARLY, WHETHER THEY WHISPER OR SHOUT INTO THE MICROPHONE

Although the DMR vocoder delivers excellent voice quality, input levels into the vocoder must fall within a specific range to produce optimal quality. This can be difficult if users don't speak directly into the microphone or are speaking over heavy background noise.

- Automatic Gain Control (AGC) produces the best voice quality possible under real life conditions.
- IMPRES audio builds on this technology to deliver optimal voice quality over an even greater input range.
- AGC produces uniform speech loudness at the receiving radio.
- Soft talkers, shouters and users who turn away from the microphone will still come through loud and clear.

#### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE



COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max



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# MICROPHONE DISTORTION CONTROL

## CRISP AUDIO, HOWEVER LOUDLY YOU SPEAK

### YOUR RADIO ADJUSTS ITS MICROPHONE TO MATCH YOUR VOICE, SO YOUR CALL IS NEVER DISTORTED

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- Transmit-only feature that improves voice quality when the user is speaking loudly into the microphone.
- Radio continuously monitors the quality of the speech data as it is being processed.
- When it detects early signs of audio distortion, the radio reduces the sensitivity of the microphone until the distortion disappears.
- Works alongside Automatic Gain Control (AGC), monitoring and controlling distortion of transmit audio.
- This feature was introduced in software release 2.2A.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# SWITCH SPEAKER

YOUR AUDIO, WHEREVER YOU NEED IT



## COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## YOU CAN SWITCH AUDIO FROM YOUR HEADSET TO YOUR RADIO'S SPEAKER WITHOUT UNPLUGGING

- Direct the audio stream to either an attached accessory or to the radio speaker, without the need to detach the accessory.
- Previously, the radio's internal speaker would be muted whenever an audio accessory was attached.
- Now you can send the audio in either direction without disconnecting the headset or earpiece.
- Switch speaker is activated through the radio menu or by pressing a pre-programmed button.
- This feature was introduced in software release 2.4.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE

# USER-SELECTABLE AUDIO PROFILES

AUDIO CUSTOMISED TO YOU AND YOUR ENVIRONMENT

**YOUR RADIO'S AUDIO CHARACTERISTICS CAN BE TUNED  
TO SUIT YOUR PREFERENCE AND YOUR WORKPLACE**

Everyone's hearing is different based on age and work history. Variable background noise adds to the issue.

- Customise your radio's audio to your preference and work environment.
- Select from two different "ambience" settings and six different audio profiles.
- This feature was introduced in software release 2.4.

#### Ambience profiles:

- **Default**
- **Loud:** For loud environments: increases volume and noise suppression
- **Work Group:** For quiet environments: enables feedback suppression

#### Audio Profiles:

- **Level 1:** Mild compensation, for users exposed to industrial noise
- **Level 2:** Moderate compensation, for users exposed to industrial noise
- **Level 3:** Maximum compensation, for users exposed to industrial noise
- **Treble Boost:** For a "brighter" sound
- **Mid Boost:** For a more "nasal" tone – similar to legacy radios
- **Bass Boost:** For a deeper sound



#### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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#### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

# TRILL ENHANCEMENT

## INCREASED FIDELITY FOR MORE LANGUAGES

**COMPATIBLE**

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e

DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

### YOUR RADIO REPRODUCES MORE LANGUAGES WITH BETTER ACCURACY

- The industry-standard AMBE+2™ vocoder allows digital radio to be extremely efficient, and additionally, it helps remove some of the background noise from transmissions.
- However, the algorithm struggles to reproduce some languages perfectly.
- In particular, the “trill” or rolling “rrrr” sound in the Latin languages is transformed into a flattened “r”.
- This feature applies additional audio processing in the transmitting radio to enhance the sharpness of the trill.
- In this way, speech is more intelligible, but there is minimal impact to the way voice is transmitted.
- Non-MOTOTRBO radios will benefit from the enhanced transmissions but will not be able to respond with comparable audio clarity.
- This feature was introduced in software release 2.4.

**COMPATIBILITY KEY**
**COMPATIBLE**

LIMITED

NOT COMPATIBLE



# SINC+ NOISE CANCELLATION

## FLEXIBLE, AFFORDABLE NOISE CANCELLATION

### YOUR RADIO GIVES YOU MORE OPTIONS TO FILTER OUT BACKGROUND NOISE, SO YOU'RE HEARD MORE CLEARLY

- All MOTOTRBO radios have basic noise cancellation to provide background noise suppression in a wide range of user environments.
- This feature was introduced in software release 2.5.
- SINC+ (enhanced Single-input Industrial Noise Cancellation) provides two new configurations: "Enhanced" and "Enhanced Auto":
  - **"Enhanced"** applies exceptional background noise suppression for consistently noisy environments.
  - **"Enhanced Auto"** adapts the amount of suppression based on the volume of ambient noise detected, and is ideally suited for users who move between quiet and loud environments.



#### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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#### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

#### DP1400

DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex

DP4801 Ex  
lon

#### SL1600

SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max



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# DUAL-MICROPHONE NOISE SUPPRESSION

## POWERFUL NOISE CANCELLATION

**YOUR RADIO CAN FILTER OUT EVEN THE MOST NOISY ENVIRONMENTS, ENSURING YOU'RE ALWAYS HEARD**

- All MOTOTRBO radios have basic noise cancellation to provide background noise suppression in a wide range of user environments.
- Dual-microphone noise cancellation is able to remove almost all background noise, concentrating specifically on the voice of the user rather than the sounds around them



COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex

Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# MUTE MODE

INSTANTLY MUTE AUDIO WHENEVER NEEDED



## COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## EASILY MUTE AND UNMUTE YOUR RADIO AS YOU MOVE BETWEEN NOISY AND QUIET ENVIRONMENTS

- Allows you to immediately mute your radio without turning down the volume or powering off the radio.
- Radios can be un-muted if there is an emergency or by a set timer that you can program on your radio.
- In some situations, you may enter an environment where you need your radio to be silent immediately.
- This feature was introduced in software release 2.7.
- Triggered by a programmable button or a “face down” position, Mute Mode puts your radio into a silent state.
- Face Down muting is only available on radios with accelerometer.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE



# RX AUDIO LEVELING

CONSISTENT AUDIO, FOR ALL VOLUMES

## COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## YOUR RADIO ADJUSTS FOR INCONSISTENT AUDIO LEVELS ON THE OTHER END

If you have mixed fleets of radios and radio configurations you have likely experienced varying audio levels.

Rx Audio Leveling:

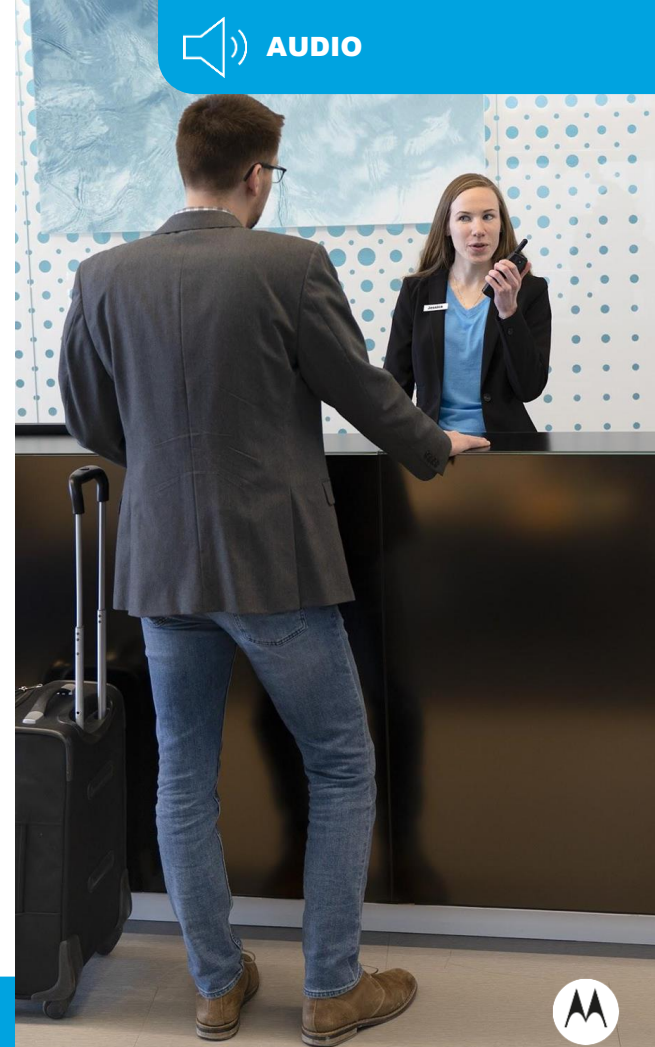
- Adjusts every received transmission to the desired volume level so that the delivered audio is consistent for all transmissions.
- Ensures audio levels are consistent no matter who or what is on the other end.
- Keeps your audio consistent over a wide range of transmit levels and user-use positions.
- Is available in Analogue and Digital Mode.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE

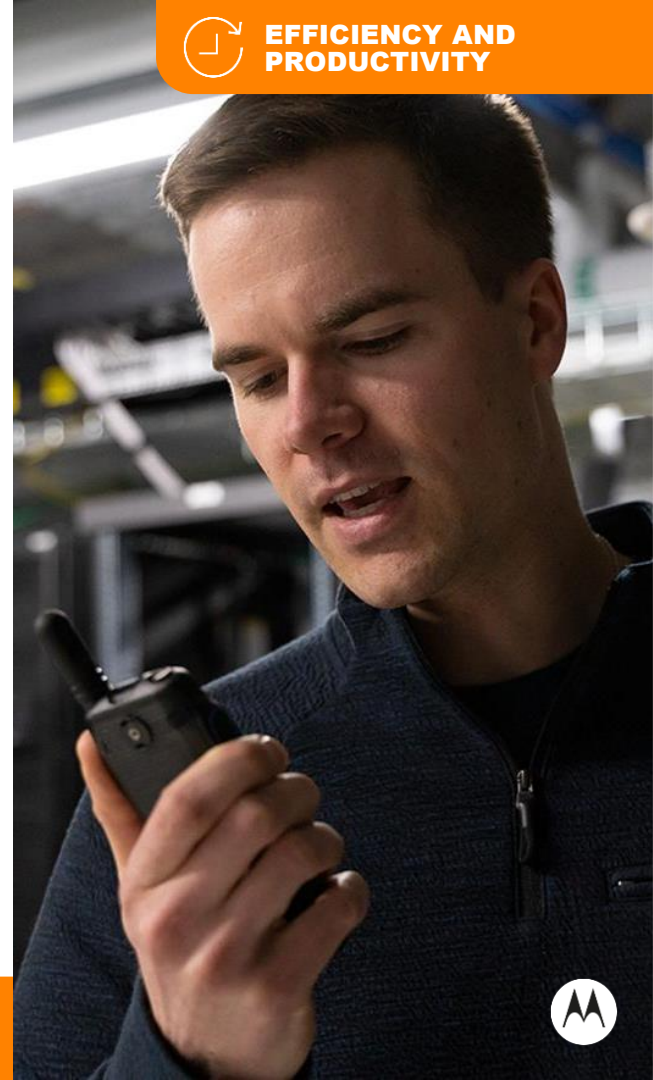




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**EFFICIENCY  
AND  
PRODUCTIVITY**





# DUAL CAPACITY DIRECT MODE

**DOUBLE YOUR CAPACITY AT NO EXTRA COST**

**UNLOCK THE FULL CAPACITY OF DMR WITHOUT A REPEATER, DOUBLING YOUR CHANNEL CAPACITY AT NO EXTRA COST**

In most systems, to allow both timeslots of a 12.5kHz DMR channel to carry simultaneous and independent traffic you need a repeater to provide the timing reference.

- MOTOTRBO radios are able to synchronise automatically and collaboratively, eliminating the requirement for a central timing reference.
- This allows you to use both timeslots, doubling capacity and increasing spectrum efficiency without the cost of a repeater and its associated infrastructure.
- This feature was introduced in software release 2.1.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------

**COMPATIBLE**

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex

- Ion
- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max



**EFFICIENCY AND  
PRODUCTIVITY**



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# EXTENDED RANGE DIRECT MODE

## EXTEND YOUR RADIOS REACH

### HIGH CAPACITY, AND HIGH COVERAGE AT A LOW COST

#### COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- Significantly increases coverage area on a single frequency beyond a direct mode solution.
  - Inbound burst is repeated 90 ms later on outbound (time division duplex).
  - Radio can receive directly from another radio or through repeater.
  - Best reception path selected.
- No need to change channels to talkaround when not in vicinity of repeater.
- When receiving directly from radio, talkaround icon is displayed.
- Subscribers can continue to operate in Direct Mode and the improvement in range will be transparent to the subscriber.
- Transmissions with other Direct Mode users will not be impacted.
- This is a chargeable feature on the repeater only, not on the subscriber.

#### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# HIGH EFFICIENCY GPS

INCREASED PRECISION AT NO EXTRA COST

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

## INCREASE THE PRECISION, CAPACITY AND RELIABILITY OF YOUR GPS SOLUTION WITHOUT ADDING MORE CHANNELS

- This feature reduces the size of MOTOTRBO GPS location update messages, increasing the effective GPS capacity of the system.
- When used with a control station console, capacity increases by 200-350%; and with a wireline console by 200-700%.
- You can use the additional capacity in one or more of these ways:
  - **Increase the precision** of the location information, by increasing the GPS location update rate (max 1 every 7.5s).
  - **Increase the number of GPS users** without using extra channels.
  - **Increase reliability** by reducing the message collision rate.
- This feature was introduced in software release 2.3.



COMPATIBILITY KEY

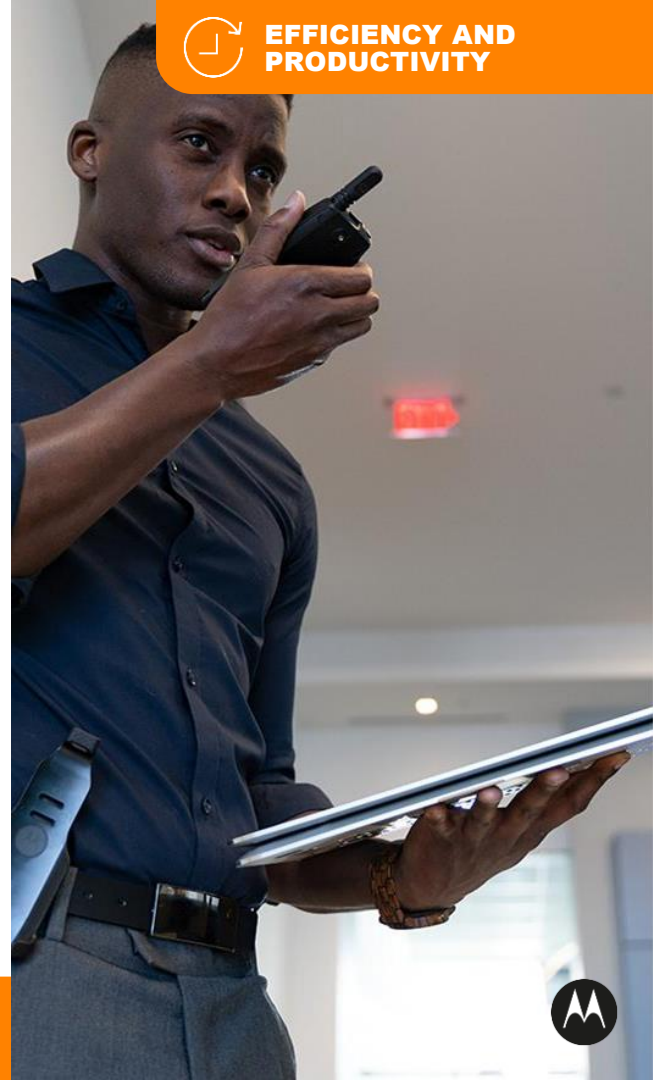
COMPATIBLE	LIMITED	NOT COMPATIBLE
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# VOICE ANNOUNCEMENT

## YOUR RADIO KEEPS YOU INFORMED



EFFICIENCY AND  
PRODUCTIVITY



### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex

Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## YOUR RADIO CAN BE PROGRAMMED TO CONFIRM ACTIONS OR ALERTS WITH AN AUDIO PROMPT

When you're working in limited visibility, or when you need to keep your eyes on the job, or when you just need 100% confidence you've hit the right button, voice announcement can help.

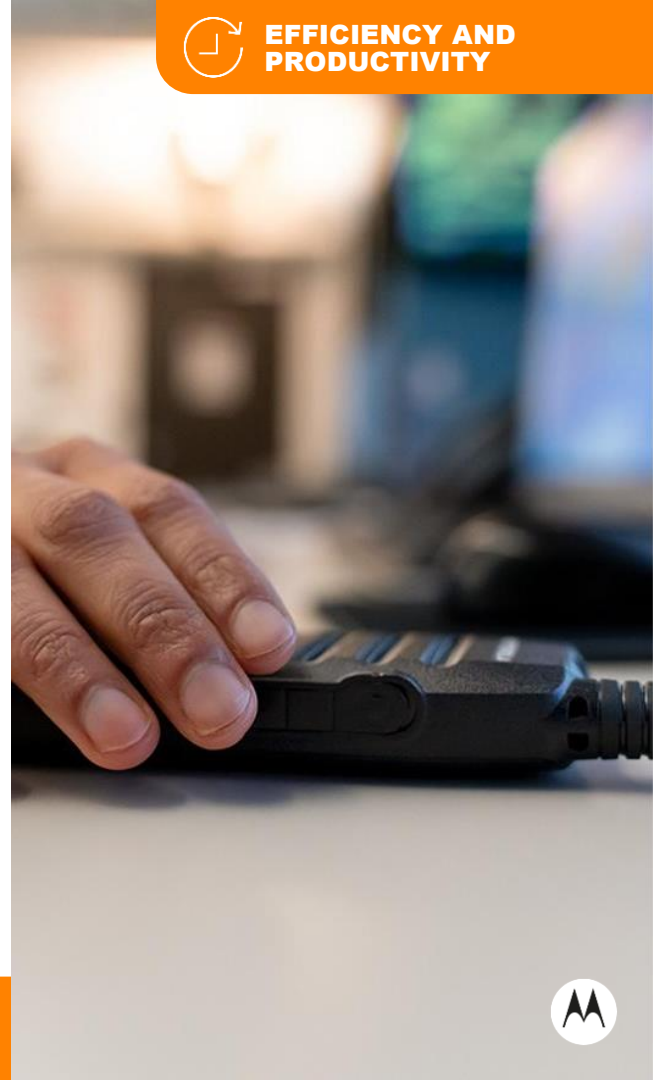
- Allows you to associate a pre-recorded audio clip with a radio function.
- Includes a large selection of audio files is provided by Motorola, but you can also record your own.
- When you switch channels, your radio will announce the name of the new channel.
- Files and associations are managed through the CPS software.
- When you transition between zones, your radio will let you know.
- Radio can confirm that you hit your programmable buttons without looking.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE



# TEXT TO SPEECH

## YOUR RADIO READS TEXT OUT LOUD

### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex

Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

### YOUR RADIO CAN NOW READ TEXT OUT LOUD: CHANNELS, ZONES, FUNCTIONS, MESSAGES AND WORK ORDER TICKETS

- Removes the dependency on pre-recorded voice announcement files by installing speech synthesis software on the radio itself.
- Channel names, zones, programmable button functions, text messages and work order tickets are all read out loud to you.
- You can define a custom dictionary to ensure accurate readout of abbreviations
- Choose from 27 different languages and several different voices.
- Programmable buttons can be configured to:
  - Turn the feature on and off.
  - Repeat the last announcement.
- All parameters are configurable using the CPS.
- This feature was introduced in software release 2.4.

#### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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M2021.01

# VOICE OPERATED TRANSMISSION (VOX)

## PUSH-TO-TALK BECOMES SPEAK-TO-TALK

### VOICE ACTIVATION ALLOWS YOUR RADIO TO BE COMPLETELY HANDS-FREE

- Allows your radio to start transmitting automatically when it hears your voice.
- Provides hands-free radio usage when you are operating machinery or driving.
- Designed to work with specific accessories that position the microphone close to your mouth.
- If your radio uses a Talk Permit Tone (TPT), you would say a “trigger” word, then wait for the Talk Permit Tone before beginning your message.
- The VOX functionality is turned off when you press the PTT button. It can be turned back on using a pre-programmed button, changing the channel, or power-cycling the radio.

#### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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#### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max



# PROGRAMMABLE BUTTONS

## YOUR RADIO, PERSONALISED

### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## YOU CAN PERSONALISE YOUR RADIO TO ACCESS FUNCTIONS WITH ONE TOUCH

- Because MOTOTRBO radios have so many features and functions, it's sometimes useful to program quick access shortcut keys.
- Every MOTOTRBO radio has programmable buttons, and a wide range of different functions can be assigned to them through the CPS.
- Some radios have a dedicated (and recessed) orange emergency button
- The emergency function can also be assigned to any programmable button on any radio that supports digital emergency.
- The SL1600 programmable button can scroll through up to 7 different functions.



### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# IMPRES™ ENERGY

SAFER, SMARTER, POWERED FOR LONGER



EFFICIENCY AND  
PRODUCTIVITY



## COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## IMPRES TECHNOLOGY GIVES YOU THE MOST FROM YOUR BATTERY INVESTMENT

The rated storage capacity of a rechargeable battery varies significantly over its lifetime from factors such as manufacturing tolerances, age, usage history, and environmental conditions. If you use an ordinary battery, you may encounter situations where it dies unexpectedly, stops charging prematurely, and potentially fails to operate at the worst possible moment.

- IMPRES radios, batteries and chargers monitor the state of the battery cells.
- You will receive early notifications of a battery nearing the end of its life, and can plan replacement accordingly.
- You will never need to throw away a perfectly good battery based only on its age, ensuring you get the longest possible lifetime out of each battery.
- IMPRES chargers automatically sense when a battery needs reconditioning, and schedules a deep discharge and recharge cycle to maximise the life of the cells.
- The lifetime of IMPRES batteries is on average 40% longer than ordinary batteries.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE

# IMPRES™ 2 ENERGY

## LONG LIFE BATTERIES TO PROTECT YOUR INVESTMENT



### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e

DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## IMPRES 2 TECHNOLOGY GIVES YOU EVEN LONGER LIFETIMES ON YOUR BATTERIES

The rated storage capacity of a rechargeable battery varies significantly over its lifetime from factors such as manufacturing tolerances, age, usage history, and environmental conditions. If you use an ordinary battery, you may encounter situations where it dies unexpectedly, stops charging prematurely, and potentially fails to operate at the worst possible moment.

- IMPRES 2 radios, batteries and chargers monitor the state of the battery cells.
- You will receive early notifications of a battery nearing the end of its life, and can plan replacement accordingly.
- You will never need to throw away a perfectly good battery based only on its age, ensuring you get the longest possible lifetime out of each battery.
- IMPRES 2 chargers automatically sense when a battery needs reconditioning, and schedules a deep discharge and recharge cycle to maximise the life of the cells.
- The lifetime of IMPRES 2 batteries is on average 60% longer than ordinary batteries.

### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# OPTION BOARD

A PLATFORM FOR CREATIVITY

**COMPATIBLE**

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

---

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex

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- Ion

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- SL1600
- SL2600
- SL4010e

---

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

## AN EXTRA INTERNAL PROCESSOR FOR YOUR RADIO, ALLOWING DEVELOPERS TO CUSTOMISE YOUR RADIO'S FUNCTIONALITY

- MOTOTRBO radios have an internal interface to accommodate an option board containing its own processor and software.
- The option board can interoperate with the radio to create a custom end-user feature or solution, which can be as simple as Man Down, or as complex as trunking.
- The board has access to the radio inputs, and can instruct the radio to perform certain actions.
- The option board can also activate and deactivate specific functions such as Scan or Text Messaging.
- The option board allows the radio to communicate with other devices within the radio system, such as a server hosting a database.



**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
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EFFICIENCY AND  
PRODUCTIVITY



M2021.01

# SCAN

YOUR RADIO IS ALWAYS ON THE ALERT

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

## YOU CAN PROGRAM YOUR RADIO TO LISTEN OUT FOR CALLS ACROSS YOUR WHOLE TEAM

- Scan instructs a radio to listen for activity on several channels and/or talkgroups, as defined by a **Scan List**.
  - When the radio detects a call in progress on one of these channels or talkgroups, it pauses the scan and plays the transmission.
  - If “talkback” is configured, the user can then push the PTT button and reply to that channel / talkgroup.
- The scanning of multiple channels is called **Channel Scan**.
  - It is more flexible and the Scan List can even include analogue channels, but you may miss calls, as the radio cannot tune to multiple frequencies / technologies at the same time.
  - It is therefore recommended that the Scan List is kept as short as possible.
- The scanning of multiple talkgroups on the same channel is called **Group Scan**.
  - Group scan is ideal for small, simple systems
  - Because only one call takes place on a channel at any given time, the scanning radio will never miss a transmission.
- The Scan List can contain one Priority-1 and one Priority-2 channel; all others are considered Non-Priority.
- Higher priority channels are scanned more frequently.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# PRIORITY MONITOR SCAN

## YOUR RADIO IS ALWAYS ON THE ALERT

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### YOUR CAPACITY MAX RADIO WILL INTERRUPT YOUR CALL WHEN A HIGHER PRIORITY CALLS STARTS

- This feature allows you to manage calls according to their priority in a busy environment.
- When the system is set up, talkgroups can be assigned priority levels (1 or 2).
- Calls are initiated on these talkgroups in the normal way.
- Idle radios will be listening on the control channel, and will join if they are members of the talkgroup.
- Priority Monitor Scan announces the priority call to all radios in calls.
- Radios participating in other calls will be on trunked channels, would not hear the call announcement on the control channel, and so would not know that the priority call has started.
- The call announcement is repeated 4x per second on the control channel (2x per second if the repeater is also hosting the control channel).
- If the new priority call is relevant to them, radios will leave the call in progress, and make a Late Entry to the priority call.
- Radios will not leave Emergency, Multi-Group, Private or Site All Calls.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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**EFFICIENCY AND  
PRODUCTIVITY**



M2021.01

# HOME CHANNEL REMINDER

## YOUR RADIO KEEPS YOU IN TOUCH

### COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

## YOUR RADIO REMINDS YOU WHEN YOU'RE AWAY FROM YOUR REGULAR CHANNEL

- When a user primarily uses just one channel, you can program the radio to set that as the “Home Channel”.
- This is particularly useful for inexperienced workers, helping them stay on the right channel except when a special situation arises.
- If the user changes the channel, either deliberately or by accident and does not return within a time limit, the radio can be configured to sound a “reminder”.
- The reminder can be a pre-programmed voice announcement or a text-to-speech programmed prompt.
- This feature is configured through the CPS software.
- This feature was introduced in software release 2.4A.

### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------

# TEXT MESSAGING

COMMUNICATE EFFECTIVELY AT ALL TIMES

## CONNECT WITH YOUR COLLEAGUES EVEN WHEN IT'S NOT APPROPRIATE TO TALK

- MOTOTRBO has a built-in text messaging service that can be expanded for even greater capability.
- Radio users can create, send, receive, store and display text messages to and from other radio users – individuals or groups.
- Messages can be freeform (with optional predictive text entry), or one of up to 10 pre-programmed “quick texts”.
- Non-display radios can only send quick texts (using programmable buttons) (highlighted as limited).
- Display radios can send and receive freeform and quick texts, and can store up to 30 received or sent text messages.
- The MOTOTRBO Text Messaging Server extends the service:
  - Radios can send/receive texts to/from email accounts.
  - The MOTOTRBO Text Messaging Application can be run on a Windows PC connected to a MOTOTRBO radio.
  - Dispatchers can use the Application to access an extended feature set, including presence.
  - Third party applications are also available to extend text messaging capabilities even further.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------



# RADIO MANAGEMENT

## EFFICIENT RADIO FLEET PROGRAMMING

**COMPATIBLE**

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

### PROGRAM YOUR RADIOS EFFICIENTLY USING TEMPLATES OR FLEXIBLE CONFIGURATION LIBRARIES

- Radio Management streamlines the programming of your radios – particularly in large fleets.
- Create “template” codeplugs that allow efficient cloning of radio configurations while allowing for individual radio identifiers.
- You can use Over-the-Air Programming to update radios remotely.
- For direct programming, a Device Programmer PC application can program up to 16 radios simultaneously.
- Device Programmer queries the radio and the database and makes updates as required.
- From Radio Management version 2.0, a Device Programmer can use Wi-Fi to send large files to the radio.
- Radio Management 2.0 also introduces “Configuration Mode”.
  - Allowing you to create codeplugs from a library of common components, rather than rigid templates.
  - For example you can maintain a common set of talkgroups across a system, regardless of radio model.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# OVER-THE-AIR PROGRAMMING (OTAP)

**PROGRAM YOUR RADIOS ANYWHERE, ANYTIME**

**COMPATIBLE**

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion

- SL1600
- SL2600
- SL4010e

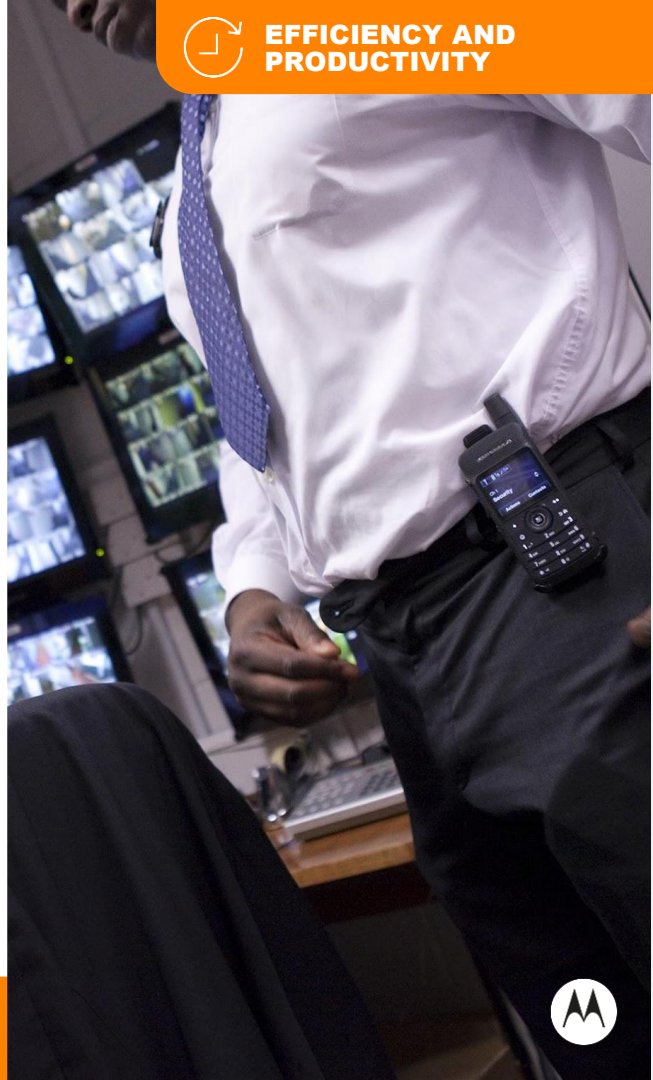
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

## THE BENEFITS OF RADIO MANAGEMENT, WITHOUT THE NEED TO TOUCH YOUR RADIOS

- Over The Air Programming allows you to use the data capabilities of MOTOTRBO to update your radios' configurations.
- Updates are downloaded to the radio in the background and are implemented according to the schedule you define.
  - Radios do not need to be taken out of service or returned to a central location.
- Using Radio Management, you can define and schedule changes to your radio codeplugs which can be implemented over-the-air. These changes can be:
  - Enablement of new features
  - New or modified channels, talkgroups and aliases
- Your business is not disrupted and users can continue to communicate throughout the process.
- Ion OTA programming is only available over Wi-Fi or LTE

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# WI-FI SOFTWARE UPDATES

## COMPLETE, NO-TOUCH RADIO FLEET MANAGEMENT

**COMPATIBLE**

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### YOUR RADIOS CAN NOW BE COMPLETELY UPDATED, WITHOUT THE NEED TO BRING THEM BACK TO BASE

- This feature uses the Wi-Fi interface on the latest generation of radios to enhance Over-the-Air Programming.
- You can now send large files to your radios – for example new radio firmware, voice announcement files and splash screen images.
- The device programmer must be connected to Wi-Fi network, but can be located remotely – at the Radio Dealership office for example.
- All the functionality of Over-the-Air Programming is available over Wi-Fi.
- Updates can be batch-programmed and scheduled for a particular date.
- Radios continue to operate as normal while they are downloading updates.
- Remote updates save the time and cost of locating all radios, bringing them to a central location and disrupting business operations.
- This feature requires version 2.0 of Radio Management.
- In R2.9, Certificate Based Wi-Fi Access was released to comply with WPA-Enterprise 802.1x networks.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# IMPRES™ BATTERY MANAGEMENT

**SAFER, SMARTER, POWERED FOR LONGER**

## CHECK THE LONG-TERM HEALTH OF YOUR RADIO BATTERIES WHENEVER THEY'RE INSERTED INTO A CHARGER

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- IMPRES Battery Management allows you to check and record the condition of your batteries.
- IMPRES chargers read the battery state and condition and upload that data to the Battery Management Application (BMA).
- The BMA maintains a record for each battery, showing age, type, serial number, condition, charging history and health.
- From this data, you can:
  - See which batteries need to be replaced, and when.
  - Reduce unplanned downtime from unexpected battery failures.
  - Eliminate the waste of premature battery disposal.
  - Reduce your holding of spare batteries.
  - Identify and correct poor workplace charging practices.
  - Identify missing or lost batteries.
- Chargers must be connected to the BMA using USB or Ethernet.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# IMPRES™ OTA BATTERY MANAGEMENT

**SAFER, SMARTER, POWERED FOR LONGER**

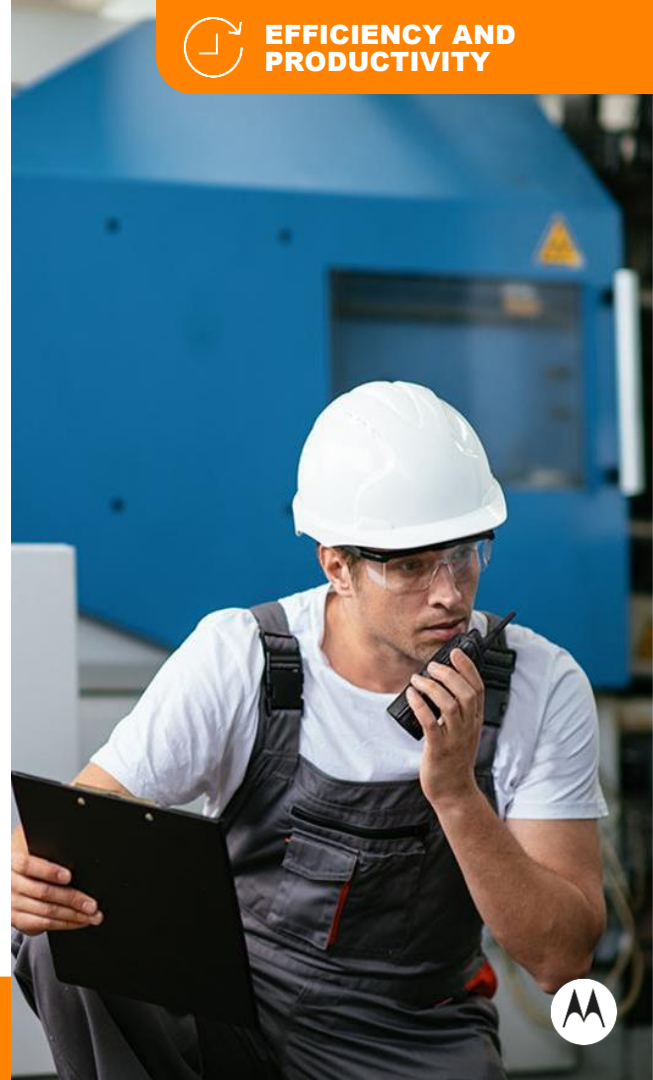
## TRACK THE LONG-TERM HEALTH OF YOUR RADIO BATTERIES WHILE THEY'RE IN USE

- COMPATIBLE**
- DM1400
  - DM1600
  - DM2600
  - DM4400e
  - DM4401e
  - DM4600e
  - DM4601e
  - DP1400
  - DP2400e
  - DP2600e
  - DP3441e
  - DP3661e
  - DP4400e
  - DP4401e
  - DP4600e
  - DP4601e
  - DP4800e
  - DP4801e
  - DP4401 Ex
  - DP4801 Ex
  - Ion
  - SL1600
  - SL2600
  - SL4010e
  - Direct Mode
  - Conventional
  - IP Site Connect
  - Capacity Plus
  - Capacity Max

- IMPRES Battery Management supports automatic collection of battery data over the air, removing the need for wired connections to charger units.
- In the same way as “wired” IMPRES Battery Management, the Battery Management Application (BMA) maintains a record for each battery that’s used on the system.
- The BMA can get its data via the MOTOTRBO radio network itself, either through a direct MNIS (IP) connection to a repeater, or using a control station.
- Parameters are configurable through the CPS – but by default, radios register their battery one hour after they power-up, and a battery’s data is read once every 21 days.
- Over-the-air Battery Management manages the long-term health of batteries.
  - It is not meant to show real-time energy levels.
  - If immediate battery data is needed, a manual read of a battery can be requested via the BMA, but this results in additional data traffic.
- This feature was introduced in software release 2.4.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# HOSPITALITY WORK ORDER TICKETING

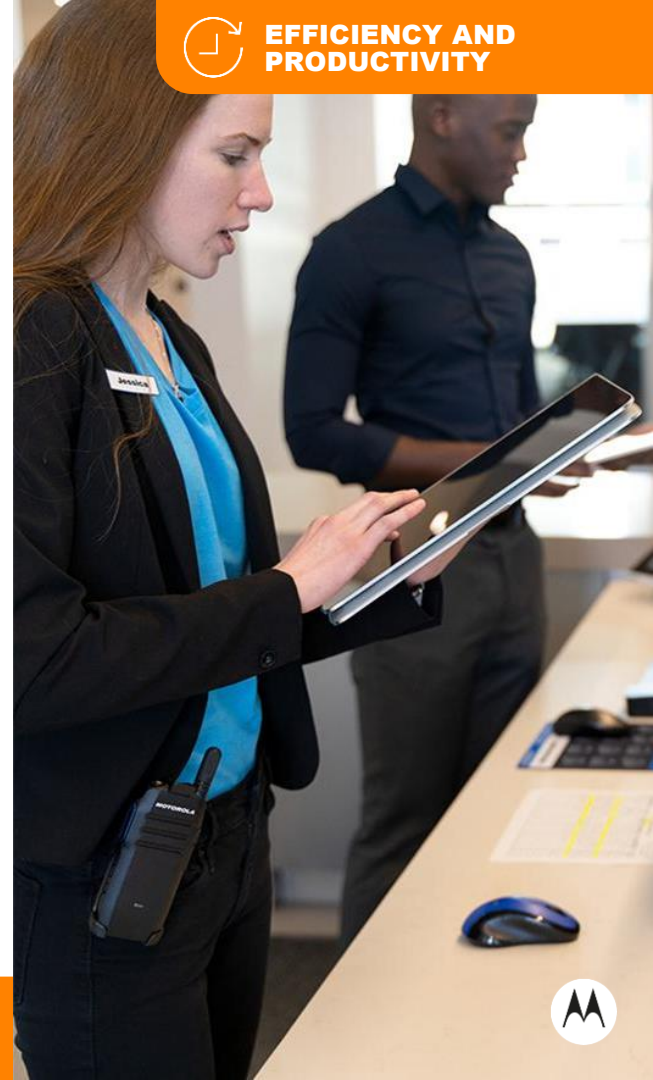
THE GUEST EXPERIENCE IN YOUR WORKERS' HANDS

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

## IMPROVED EFFICIENCY AND ACCOUNTABILITY FOR DIFFERENTIATING THE GUEST EXPERIENCE

- Work Order Ticketing allows you to coordinate activities and manage issues more efficiently within the hotel or resort.
- MOTOTRBO has been integrated into the world's leading hospitality Work Order Ticketing solutions:
  - HotSOS
  - SynergyMMS
  - eConnect
  - Guestware
- Tickets use pre-configured templates on the radio, simplifying entry and translation. Tickets are allocated to the right users in the right language.
- The work order ticket process can be more discreet than conversations, with no need to speak any sensitive information or room numbers.
- The accountability of a ticket also leads to better employee ownership, and can even be linked to staff rewards and compensation.



COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# EVENT-DRIVEN LOCATION UPDATE

SO YOU KNOW WHAT'S HAPPENING, AND WHERE

## YOUR RADIO CAN BE CONFIGURED TO SEND AN ALERT AND LOCATION UPDATE WHENEVER AN EVENT OCCURS

COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400

DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
lon

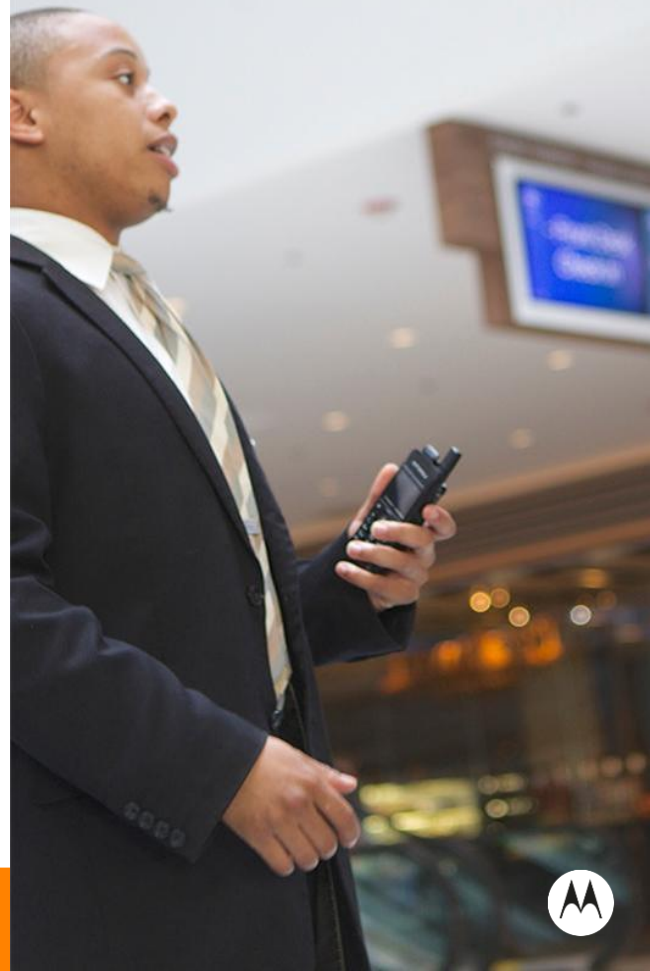
SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

- To provide you with better visibility of your fleet and better accountability of your workforce, this feature enables the reporting of events and their locations.
- The MOTOTRBO radio must be connected to the external “trigger” device via the accessory connector GPIO lines.
- The corresponding “GPS Report” entry in the radio’s CPS must also be enabled.
- An alert will then be sent to the dispatcher whenever the event occurs, identifying incident and location. Event examples include:
  - School bus / truck door opening or closing
  - Snowplow vehicle’s salt spreader being activated
  - Security guard’s weapon being drawn
  - Refinery worker’s breathing apparatus low air alarm
- Using a suitable application, you can also record alerts with their time and location and archive them for future reference.
- This feature was introduced in software release 2.4.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# SCREEN BACKLIGHT CONFIGURATION

## USE YOUR SCREEN BACKLIGHT TO ALERT YOU

### YOUR RADIO SCREEN CAN BE CONFIGURED TO LIGHT UP WHENEVER YOU NEED IT, AND FOR AS LONG AS YOU NEED IT

- COMPATIBLE**
- DM1400
  - DM1600
  - DM2600
  - DM4400e
  - DM4401e
  - DM4600e
  - DM4601e
  - DP1400
  - DP2400e
  - DP2600e
  - DP3441e
  - DP3661e
  - DP4400e
  - DP4401e
  - DP4600e
  - DP4601e
  - DP4800e
  - DP4801e
  - DP4401 Ex
  - DP4801 Ex
  - ion
  - SL1600
  - SL2600
  - SL4010e
  - Direct Mode
  - Conventional
  - IP Site Connect
  - Capacity Plus
  - Capacity Max

- If you can't hear your radio – perhaps you're working in an extremely noisy environment, or you turned the volume all the way down – you can use the screen backlight as an alert.
- Rather than just illuminating in response to a key-press, the backlight can be configured to illuminate whenever a call is received:
  - Voice call
  - Text message
  - Job ticket
  - Telemetry message
  - Call alert
  - Emergency alarm
- The display can be configured to stay on for a suitable interval:
  - 5, 10, 15, 20, 25, 30, 40, 50 or 60 seconds, or indefinitely.
  - Extended backlight use will drain the battery prematurely.
  - To safeguard battery life, the backlight for SL-series radios cannot be left on indefinitely.
- This feature was introduced in software release 2.4.


**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# MULTI-BUTTON PTT

## BETTER OPTIONS FOR CUSTOMISED ACCESSORIES

**COMPATIBLE**

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### YOU CAN CREATE YOUR OWN RADIO INTERFACE WITH INDIVIDUAL BUTTONS FOR EACH CHANNEL

- For specific applications, you may need to embed your MOTOTRBO radio interface in a vehicle or control panel, and key up different channels with different external buttons. This feature allows you to realise that. Interfacing to the radio's accessory connector, you can assign inputs to channels.
- For example, you could design an interface panel with 4 buttons and configure it such that pressing button 1 calls dispatch; button 2 calls the supervisor; button 3 calls the maintenance team, and button 4 calls the emergency response crew.
- This is a chargeable feature. To use it, you must first purchase the Entitlement Identification (EID). Button assignments and functions can then be configured through CPS.
- Motorola does not produce customised interface panels, but can advise you on the design of your own.
- This feature was introduced in software release 2.4.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------

# LOW VOLTAGE BATTERY TECHNOLOGY

**SAFER, SMARTER, POWERED FOR EVEN LONGER**

- COMPATIBLE**
- DM1400
  - DM1600
  - DM2600
  - DM4400e
  - DM4401e
  - DM4600e
  - DM4601e
  - DP1400
  - DP2400e
  - DP2600e
  - DP3441e
  - DP3661e
  - DP4400e
  - DP4401e
  - DP4600e
  - DP4601e
  - DP4800e
  - DP4801e
  - DP4401 Ex
  - DP4801 Ex
  - Ion
  - SL1600
  - SL2600
  - SL4010e
  - Direct Mode
  - Conventional
  - IP Site Connect
  - Capacity Plus
  - Capacity Max

## YOUR RADIO AND BATTERY WORK TOGETHER TO DELIVER EXTREMELY LONG TALK-TIMES

- This feature increases the talk-time of portable radios without increasing battery size or weight.
- MOTOTRBO radio power is nominally 7.4V, and a fully-charged battery delivers 7.4V.
  - However, as the battery discharges, its output voltage drops.
  - When the voltage drops to 6V, a standard radio and battery shut off, leaving a significant amount of energy remaining in the battery.
- MOTOTRBO radios with low-voltage batteries will continue to operate until the voltage drops to 5V, making more of the battery's capacity available for use.
- The new "low voltage" batteries are still nominally 7.4V, but provide power down to 5V.
- In this way, real world battery life can be increased to >27 hours.
- Low voltage batteries will work with earlier-generation radios, but without increasing talk-time.
- New radios are compatible with standard batteries, but will not deliver significantly better battery life.
- This feature was introduced in software release 2.5.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
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M2021.01

# DYNAMIC GROUP NUMBER ASSIGNMENT

WHEN YOUR TEAMS DYNAMICALLY CHANGE

ALLOWS CONSOLE OPERATORS TO DYNAMICALLY CREATE AND REMOVE TALKGROUPS FOR EMERGENCY OR SPECIAL SITUATIONS

- Introduced in R2.10.
- Great for situations where teams are constantly changing and working on different situations together:
  - Baggage handlers and airline crews coordinating a new plane arrival.
  - Trucks and warehouse teams making a delivery.
  - Event staff and technical staff setting up for a large event.

COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e

DP3441e  
DP3661e  
DP4400e  
DP4401e

DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------

# COMPATIBLE BATTERY DETECTION

## ENSURE MAXIMUM BATTERY LIFE

### ENSURE YOUR BATTERIES DELIVER MOTOTRBO PERFORMANCE BY DETECTING AND ALERTING USER TO NON-COMPATIBLE BATTERIES

- COMPATIBLE
- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- When a non-genuine (i.e. not Motorola Solutions) Battery is attached “Unknown Battery” message displayed and quick alert tone is sounded.
- Feature was introduced in software release 2.10.0.
- For Ion, approved chargers will prevent incompatible batteries from charging

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





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**SAFETY  
AND  
SECURITY**





# ALL CALL

## COMMUNICATE WITH EVERYONE WHO NEEDS TO KNOW

### COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### COMMUNICATE TO ALL RADIOS CONNECTED TO SYSTEM REGARDLESS WHAT TALKGROUP THEY HAVE SELECTED

- An All Call is a broadcast voice call between a call initiating entity and all the entities present at a location or on a channel, depending on the system type:
  - An entity could be an authorised radio, a voice application, or a data application depending on system type.
  - A location could be a site, a set of sites, or all sites in a system depending on the system type.
- Like a talkgroup call, a broadcast call has a hangtime, but only the call initiator can transmit or terminate a call during that hang time.
- A Capacity Max system supports a voice site-wide, multi-site and system wide All Call.
- Capacity Plus supports a one way voice call between a privileged operator and all users on a logical channel.

#### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





# TRANSMIT INTERRUPT

## WHEN YOUR CALL MUST GO THROUGH

### USE YOUR RADIO TO CLEAR THE CHANNEL SO URGENT TRAFFIC CAN GET THROUGH

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex Ion

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- The Transmit Interrupt suite of features allows a supervisor or dispatcher's radio to clear a channel when it is in use.
- Voice Interrupt allows a supervisor's radio to stop and clear down a voice transmission, then start a new voice transmission.
- It is typically used to communicate urgent information to a group in an emergency situation.
- Emergency Voice Interrupt allows a supervisor's radio to stop a voice transmission, and start its own emergency transmission.
- Remote Voice De-key allows a supervisor's radio to stop a voice transmission, for example to silence a radio that is inadvertently transmitting.
- Data Over Voice Interrupt allows a data application to stop a voice transmission and start a data transmission.
- All MOTOTRBO radios can respond to (decode) Transmit Interrupt commands, but only designated radios can issue Transmit Interrupt commands.
- The following radios are decode only: DM1400, DM1600, DP1400, SL1600

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# VOICE INTERRUPT AND PRE-EMPTION

## WHEN YOUR CALL MUST GO THROUGH

### YOUR CAPACITY MAX SYSTEM CAN INTERRUPT A CALL WHENEVER A PRIORITY TRANSMISSION IS NEEDED

- Capacity Max provides features that allow you to interrupt existing calls if there's an urgent requirement.
- **Voice Interrupt** allows a supervisor (radio user or dispatch console operator) to interrupt a radio that is currently transmitting.
- This allows the supervisor to speak to other users on the call. After the interruption, the call can continue as before.
- All MOTOTRBO radios can respond to Voice Interrupt commands, but only designated radios and applications can issue Voice Interrupt commands.
- **Call Pre-emption** is initiated by the system whenever a priority call (Emergency Call or All Call) is initiated, but no vacant channel is available.
- The system tears down an existing call and takes over the channel for the priority call. The call is terminated and must be restarted.

#### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE

#### COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

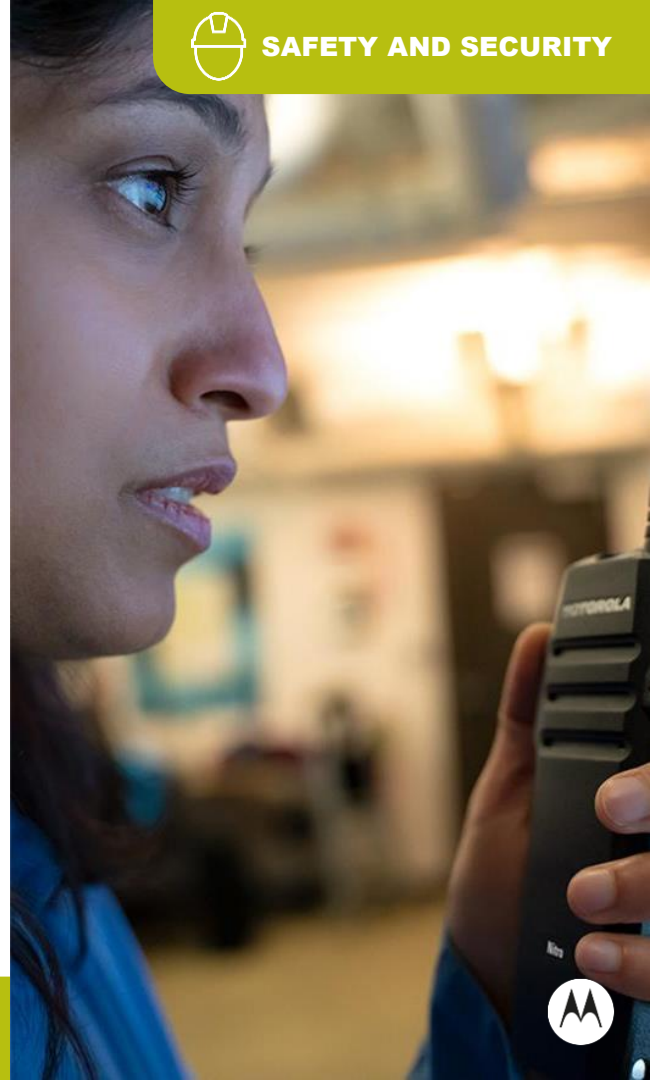
Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max





# PRIORITY CALL

## ESCALATE YOUR MOST IMPORTANT CALLS

### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e

DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

### PRIORITY CALL FEATURE ALLOWS A CAPACITY MAX USER TO ESCALATE THE PRIORITY OF THE INITIATING CALL

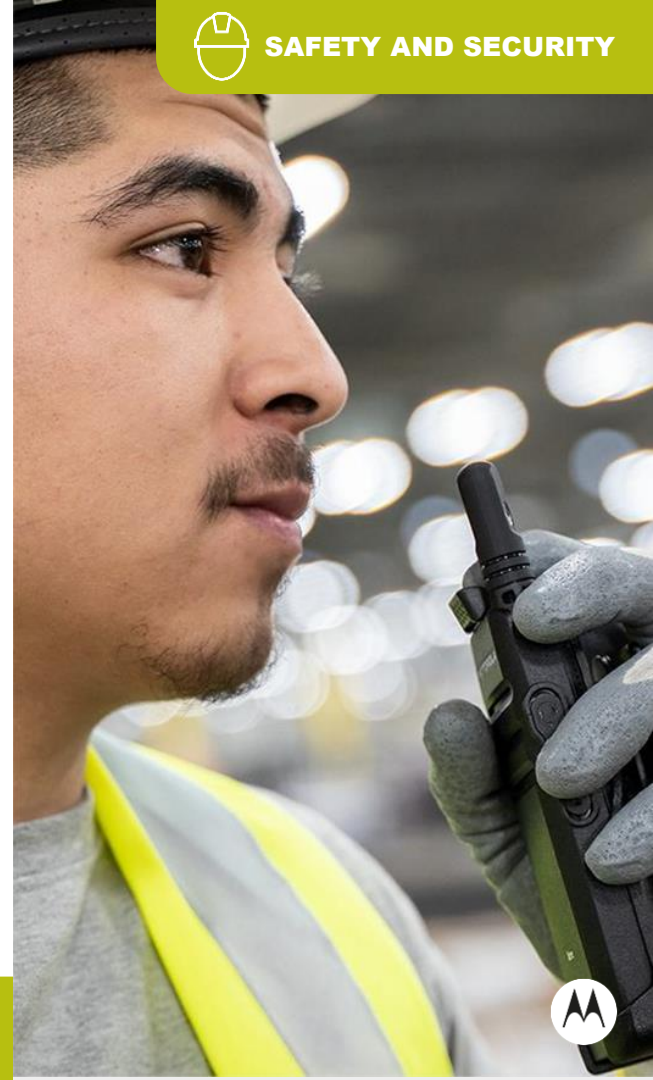
- If an idle channel is not available at one or more associated sites, a High priority call (selected using a programmable button) preempts an ongoing lower priority call in a system busy environment.
- The following transmission types support Priority Call:
  - **Voice Call:** Group Call, Unconfirmed Private Call, Confirmed Private Call, Conventional Telephony Call, and Enhanced Telephony Call.
  - **Remote Monitor:** Priority level of remote monitor and FOACSU calls follow the service initiator radio's call priority level setting.
  - **Data Call:** Proprietary Text Message, DMR Tier 3 Text Message, and DMR Tier 3 Job Ticket.
  - **Note:** Escalation for telemetry and GPS transmission is not supported.

#### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE





# DIGITAL EMERGENCY

## GET HELP WHEN YOU REALLY NEED IT



### COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

## A MOTOTRBO USER IN DISTRESS CAN SOUND AN ALARM TO SUMMON ASSISTANCE

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- Digital Emergency can be triggered by a feature (e.g. Man Down), or by pressing the Emergency button or footswitch.
- When the emergency is initiated:
  - Supervisors receive audio and visual alerts with the initiator's ID.
  - Initiating and supervisor radios enter Emergency Mode.
  - Calls contain an emergency indication, and are transmitted using Emergency Voice Interrupt.
- The radio can be configured to do the following:
  - Emergency Alarm only.
  - Emergency Alarm and Emergency Call.
  - Emergency Alarm with Voice to Follow.
  - Emergency Voice Interrupt for Emergency Alarm.
  - Emergency Voice Interrupt for Emergency Voice.
- Once the situation is resolved, the Emergency is cleared by the supervisor and initiator radios.

### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------



# EMERGENCY SEARCH TONE

YOUR RADIO DIRECTS RESCUERS TO YOUR LOCATION

## COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## YOUR RADIO WILL SOUND A LOUD AUDIO ALARM WHEN IT ENTERS EMERGENCY MODE

- When you trigger an Emergency Call, you may not be able to describe your location.
- If the alarm is triggered by a Man Down notification, you may not even be able to speak.
- The Emergency Search Tone feature causes your radio to emit a continuous attention-grabbing sound as soon as it enters Emergency Mode.
- Rescuers can then come to your assistance by following the sound of the radio.
- The tone also has some deterrence effect: for example if a security guard feels threatened by a crowd, the Emergency Search Tone will clearly signal to all present that reinforcements are on the way.
- This feature was introduced in software release 2.4A.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE





# REMOTE MONITOR

ANOTHER SET OF EARS, JUST WHEN YOU NEED THEM

COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## YOU CAN DISCREETLY ACTIVATE ANOTHER RADIO'S MICROPHONE, AND LISTEN IN TO WHAT'S HAPPENING

- Sometimes you need to find out more about a radio's situation.
- For example when one of your staff is incapacitated or unresponsive, or when a radio is suspected stolen.
- The Remote Monitor command instructs the target radio to initiate a private call to the commanding radio.
- The microphone is activated for a set duration, but without giving any indication to the user.
- All MOTOTRBO radios can respond to Remote Monitor commands, but only designated radios can issue Remote Monitor commands.
- The following radios are respond only: DM1400, DM1600, DP1400, SL1600

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





# RADIO DISABLE / ENABLE

## KEEP CONTROL OF WHO USES YOUR RADIOS

### COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### YOU CAN USE YOUR RADIO OR APPLICATION TO REMOTELY DISABLE AND RE-ENABLE OTHER RADIOS

- To have proper control over your radio fleet, you need to be able to remove rogue or stolen radios from service – then re-enable them when they're recovered.
- The "Disable" command disables a radio, and can be sent from a suitably configured radio, or from a third-party application.
- Once a radio is disabled, it will show a blank display, will not be able to make or receive calls, and will be locked to its site or channel.
- Radios can be re-enabled by using the "Enable" command from a radio or application.
- The target radio must be turned on and be within coverage of the site or channel where it was disabled.
- Radios can also be re-enabled through the CPS.
- All MOTOTRBO radios can respond to Radio Enable or Disable commands, but only designated radios can issue Radio Enable or Disable commands.
- The following radios are respond only: DM1400, DM1600, DP1400, SL1600

#### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





# MAN DOWN

## YOUR RADIO CALLS FOR HELP WHEN YOU CAN'T

### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## IF THE RADIO'S POSITION OR MOVEMENT FALLS OUTSIDE NORMAL USER BEHAVIOR, IT INITIATES AN EMERGENCY CALL

- This feature is designed to safeguard workers who are at risk of being incapacitated in a hazardous environment.
- The radio contains a timer which can be activated if:
  - **Movement:** Radio moves.
  - **No movement:** Radio stops moving.
  - **Angle:** Radio is tilted beyond a certain angle.
  - **Angle + No movement:** Radio is tilted and stops moving.
- When the timer expires, the radio will sound a warning to the user.
  - If the warning is not acknowledged promptly, the radio will initiate an emergency call.
  - At the same time it will start audible and visual beacons on the radio, to help rescuers find the user quickly.
- The feature is available on radios with a built-in accelerometer:
  - DP3000e series, SL4010e, DP4801 Ex and some DP4000e Series radios.

### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE





# LONE WORKER

## YOUR RADIO TAKES CARE OF YOU

### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e

DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

### IF A USER SHOWS NO SIGNS OF ACTIVITY FOR A PERIOD, THE RADIO WILL INITIATE AN EMERGENCY CALL

- This feature is designed to safeguard workers who are working alone. All parameters are configured through the CPS software.
- If there is no activity on the radio for a period of time, the radio will issue an alert to the user.
- If the user does not acknowledge the alert promptly, the radio will initiate an Emergency Call.
- At the same time it will start audible and visual beacons, to help rescuers find the user quickly.

#### COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE





# BASIC PRIVACY

## YOUR RADIO KEEPS YOUR CONFIDENTIALITY

### COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
ion  
SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## YOUR RADIO ENCODES YOUR VOICE AND DATA TO PREVENT YOU BEING OVERHEARD

- Basic Privacy is a simple feature that helps keep your voice and data calls confidential without impacting your system performance.
- The feature is designed to prevent casual eavesdropping, but does not provide strong protection against a determined hacker.
- It uses a digital algorithm to encode voice and data, using a single 16-bit key from the 255 predefined keys available.
- Signalling and control messages are not encoded.
- Basic and Enhanced Privacy features use Motorola proprietary mechanisms, and are not interoperable.
- Privacy types cannot be mixed within a system.
- Enhanced Privacy provides a higher level of protection than Basic Privacy, but may result in slightly lower voice quality and slightly increased system access times.

### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------



# ENHANCED PRIVACY

## YOUR RADIO SECURES YOUR CALLS

### YOUR RADIO ENCODES YOUR VOICE AND DATA TO PROTECT YOUR CALLS

**COMPATIBLE**

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

**DP1400**

- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- Enhanced Privacy is a feature that helps keep your voice and data calls highly confidential.
- The feature is designed to be a strong protection against a determined attack.
- It uses the ARC4 cryptographic digital algorithm to encode voice and data using a 40-bit key.
- The radio can store 16 different keys, and can use different keys for different channels.
- All voice and data calls are encoded, but signaling and control messages are not.
- Basic and Enhanced Privacy features use Motorola proprietary mechanisms, and are not interoperable.
- Privacy types cannot be mixed within a system.

**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------



# IP RATING

## YOUR RADIO IS PROTECTED

### COMPATIBLE

DM1400	54
DM1600	54
DM2600	54
DM4400e	54
DM4401e	54
DM4600e	54
DM4601e	54

## YOUR RADIO IS BUILT TO BE TIGHTLY SEALED AGAINST DUST AND MOISTURE

DP1400	54
DP2400e	67
DP2600e	67
DP3441e	68
DP3661e	68
DP4400e	68
DP4401e	68
DP4600e	68
DP4601e	68
DP4800e	68
DP4801e	68
DP4401 Ex	67
DP4801 Ex	67
Ion	68
SL1600	54
SL2600	54
SL4010e	54

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- The IP Rating (International Protection or Ingress Protection) is a 2-digit code that declares how well a product is sealed.
- The first number refers to protection against solid objects:

#	Object Size	Example
0	—	No protection against contact and ingress of objects
1	>50 mm	Protected against large objects
2	>12.5 mm	Protected against fingers
3	>2.5 mm	Protected against tools
4	>1 mm	Protected against wires
5	Dust	Dustproof: Dust may enter, but not enough to interfere with product operation
6	Dust	Dust-tight: No dust may enter

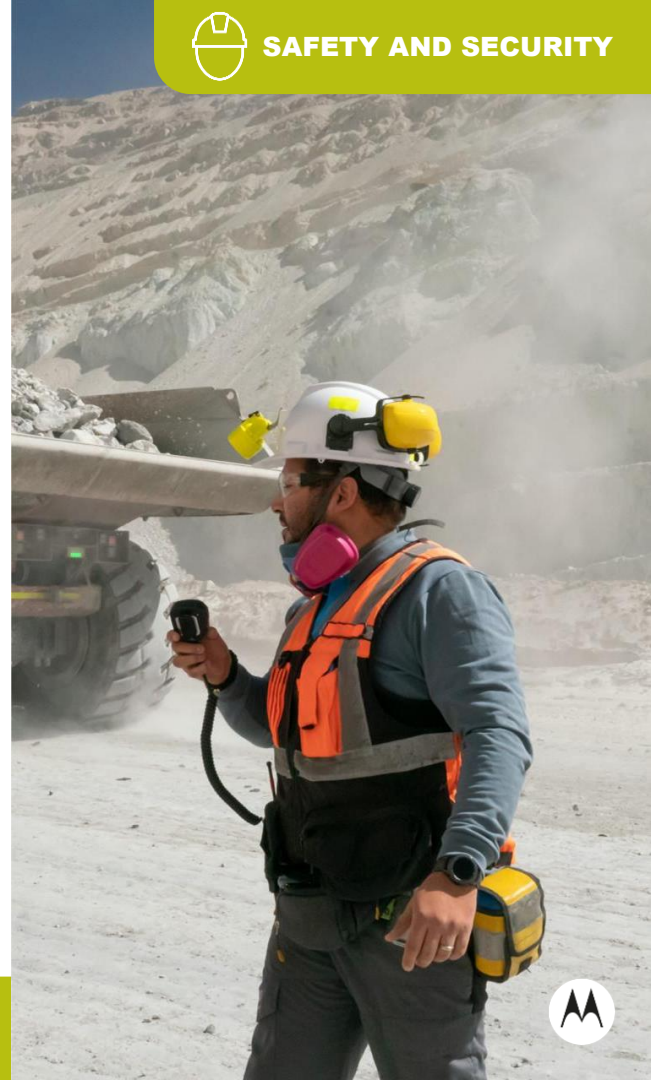
- The second number refers to protection against liquids:

#	Protection
0	Not protected against liquid intrusion
1	Protected against vertical dripping water
2	Protected against water dripping at an angle
3	Protected against spraying water
4	Protected against splashing water
5	Protected against water jets
6	Protected against powerful water jets
7	Protected against immersion (up to 1m / 3ft for 30 mins)
8	Protected against immersion (beyond 1m / 3ft – Motorola tests to 2m / 6.6 ft for 2 hrs)

- Portable radios generally require better sealing than mobile radios.

### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





# HAZARDOUS LOCATION CERTIFICATION

## YOU'RE SAFER IN DANGEROUS ENVIRONMENTS

### YOUR RADIO IS CERTIFIED FOR USE IN POTENTIALLY FLAMMABLE AND EXPLOSIVE ENVIRONMENTS

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

DP1400

- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

- A “HazLoc” (Hazardous Location) is an area where flammable or explosive gases, liquids, dust or “flyings” may be encountered.
- Health and safety regulations often mandate that products used in these areas must be HazLoc-certified.
- The industry standards are:
  - **TIA-4950:** TIA (Telecommunications Industry Association) standard. Motorola product is tested and certified by UL (Underwriters’ Laboratories). Product has a white certification marking.
  - **ATEX Directive 2014/34/EU:** Specified and certified to harmonized standards under the European ATEX Directive. Product is coloured blue.
- For TIA-4950 compliance, the radio must use the correct battery: Standard batteries cannot be used on TIA radios and vice versa.
- ATEX Certified radios are mechanically unique and only ATEX certified batteries fit to the radios.
- From software release 2.5, you can program the radio to sound an alert if the wrong battery is installed: see HazLoc Battery Mismatch Alert feature.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------

INDUSTRY STANDARDS

- TIA-4950
- ATEX





M2021.01

# HAZLOC BATTERY MISMATCH ALERT

## YOU'RE SAFER IN DANGEROUS ENVIRONMENTS

### COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

### YOUR HAZLOC RADIO ALERTS YOU WHEN AN INCOMPATIBLE BATTERY IS ATTACHED

### DP1400

- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex Ion

- This feature provides an audible and visual alert when the wrong battery is attached to a Hazloc-certified radio.
- The radio certification type (None, UL, ATEX) must be set when the radio is first programmed from the MOTOTRBO CPS.
- During power up, the radio detects the attached battery. The radio will respond according to the matrix below:
- If the battery is not of the correct type, the radio will sound an alert and play a voice announcement (if configured).
- The radio status LED will also turn red, and for display radios, "Wrong Battery" is displayed on the screen.
- For a list of Hazloc-approved radio models and corresponding batteries, refer to the device data sheets.

	ATEX Battery	UL Battery	Next-Gen UL Battery
MOTOTRBO ATEX-certified Radio	-	ALERT	ALERT
MOTOTRBO UL-certified Radio	ALERT	-	ALERT
Next-Gen MOTOTRBO UL-certified Radio	ALERT	ALERT	-

### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max



# INDOOR LOCATION TRACKING

## LOCATE ALL YOUR WORKERS AT A GLANCE

### YOUR RADIO SYSTEMS TRACKS YOUR WORKERS, EVEN WHEN THEY ARE INSIDE THE BUILDING

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- lon
- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- Uses Bluetooth Low Energy (a mode of Bluetooth 4.0) to find the position of radios inside a building.
- Relies on Bluetooth beacons (“iBeacons”), which are installed at known, fixed points around the building.
  - These small, battery-operated units broadcast their unique identifier over Bluetooth.
  - The radio continually listens for iBeacons, and periodically sends a measurement report (beacon IDs and their signal strengths) over the MOTOTRBO data channel to a dispatcher application.
  - The application uses the report to calculate the likely position of the radio and displays it on a map in a similar way to GPS.
  - The more beacons the radio reports, the more accurate the location fix will be.
- Motorola offers iBeacons for sale as part of this solution. Compatible applications are available from our Application Partners
- This feature was introduced in software release 2.6.
- This feature was enhanced in software release 2.10 to provide a more accurate history trail of the radio’s movement which can be displayed on a control room application.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





M2021.01

# RESTRICTED ACCESS TO SYSTEM

## KEEP YOUR PRIVATE SYSTEM PRIVATE

### UNAUTHORISED USERS ARE PREVENTED FROM COMMUNICATING THROUGH YOUR REPEATER

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e

- DP4401 Ex
- DP4801 Ex
- Ion

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- RAS (Restricted Access to System) provides two methods to prevent unauthorised subscribers from accessing the system: RAS Key Authentication and Radio ID Range Check.
- **Radio ID Range Check:** A range of radio IDs is configured in the repeater. Only if the transmitting radio ID is within this range will its transmissions be repeated.
- When used together, they provide robust and flexible options to control access.
- This feature was introduced in software release 2.2.
- **RAS Key Authentication:** Through the CPS, the repeater and the radios are configured with RAS “keys” (between 6 and 24 characters long).
  - The radio uses its RAS key to encode transmissions, and the repeater uses its key to decode them.
  - If the radio’s RAS key is incorrect or missing, the repeater will disregard the transmission.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------



# SUBSCRIBER ACCESS CONTROL

## TOTAL CONTROL OF YOUR SYSTEM

**YOU CAN DEFINE WHO CAN ACCESS YOUR CAPACITY MAX SYSTEM, AND WHICH SERVICES AND SITES THEY CAN USE**

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- A Capacity Max system uses Subscriber Access Control (SAC) to define which radios can register on the system, which services they can use, and which sites they can access.
- This allows the system owner to maintain good security and provide differential service levels to different types of user.
- Using Radio Management, the system administrator can individually disable or enable the following services for each radio, application, and data gateway:

**Permitted to Initiate:**

- Group Data Call
- Individual Data Call
- Group Voice Call
- Broadcast Call
- Individual Voice Call
- Multi-site Voice All Call
- Site-wide Voice All Call
- Telephone Call
- Emergency Call
- Remote Monitor
- Short Data Call
- Stun / Revive
- Call Alert

**Permitted to Receive:**

- Individual Voice Call
- Stun / Revive
- Remote Monitor
- Individual Telephone Call

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





# STUN / REVIVE

## SECURE YOUR SYSTEM FROM STOLEN RADIOS



### COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### YOU CAN QUICKLY DEACTIVATE A RADIO TO PREVENT IT ACCESSING YOUR CAPACITY MAX SYSTEM

- Capacity Max uses Subscriber Access Control (SAC) to define which radios can access a system.
- You can remove or block a user's access by disabling them in the SAC database.
- However, sometimes you need to block a radio immediately – for example when you suspect that it is stolen.
- The “Stun” command is issued by a Control Room Application (console) over the control channel, a wireless console, or wireless radio.
- The Stun instructs the radio not to process any user-initiated requests for service.
- The receiving radio authenticates the command, then acts on it.
- A “Stunned” radio will continue to register on the system, roam to different sites, and send location updates, but it will not be able to initiate or receive calls.
- A radio is “Revived” using a command from the Control Room Application, or by USB re-programming.

### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------



M2021.01

# RADIO KILL

## SECURE YOUR SYSTEM FROM STOLEN RADIOS

### COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### YOU CAN USE YOUR APPLICATION TO REMOTELY KILL, OR PERMANENTLY DISABLE, A RADIO

- Allows you to remove rogue or stolen radios from service, permanently.
- A radio can only be killed from a voice application, like a console.
- A killed radio disables all functionalities across all personalities.
- The radio will accept only commands which are essential for un-killing the radio.
- Code-plug or firmware cannot be programmed into a killed radio.
- While powered on, it indicates its "Killed" state.
- In Killed state, the radio does not respond to the keypad, channel knob, or buttons.
  - The radio does not make over-the-air transmission and reception.
  - A killed radio cannot be revived from the Kill state by any over-the-air message.
  - A radio being killed will always authenticate the network using the same authentication key used for registration.
- Un-kill can only be done at a Motorola Solutions Service Centre.

### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------



# HONEYWELL CONNECTED SAFETY SOLUTION

## SAFETY ALERTS FROM HONEYWELL CONNECTED SENSORS

### INCREASE WORKER SAFETY WITH ALERTS FROM HONEYWELL CONNECTED SENSORS

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e

- DP4401 Ex
- DP4801 Ex
- Ion

- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- Enable MOTOTRBO portables (via Bluetooth) to receive alerts from Honeywell Detectors via Honeywell Safety Suite app
- Uses MOTOTRBO system (IP Site Connect, Capacity Plus Single/Multi Site, Capacity Max) as backhaul for data
- Alerts include:
  - abnormal levels of gases
  - Man Down
  - panic button
  - location information
- Supports up to 4 gas sensor alerts from a single Honeywell Gas Detector device
- Available in MOTOTRBO DP4601e & DP4801e radios models that support Bluetooth LE 4.0\*
- A CFS license will be required per radio (implemented in Release M2021.03)

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





**CONNECTIVITY**



# BLUETOOTH AUDIO

## UNLEASHES YOU AND YOUR RADIO



## COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

### STEP AWAY FROM YOUR DESK, STEP OUT OF YOUR DRIVING SEAT, AND STILL STAY CONNECTED

- Allows you to connect wireless audio accessories such as headsets, earpieces and push-to-talk buttons to your radio.
- You are free to roam up to 10 meters (30 feet) from your radio, while staying connected to your colleagues.
- For users of mobile radios, you can step out of the cab, check the load of your truck, supervise the children in the back of the bus and deliver the package to the front door – all without losing connectivity.
- For users of portable radios, you can leave your radio on your desk, move freely around your office and still stay in touch.
- Bluetooth Audio also enables the use of specialised accessories, such as an in-ear earpiece for covert communications.
- Some radios are compatible with Bluetooth 4.0, but this delivers no additional audio functionality.

## COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE



# BLUETOOTH DATA

## CONNECT WITH CONVENIENCE

### COMPATIBLE

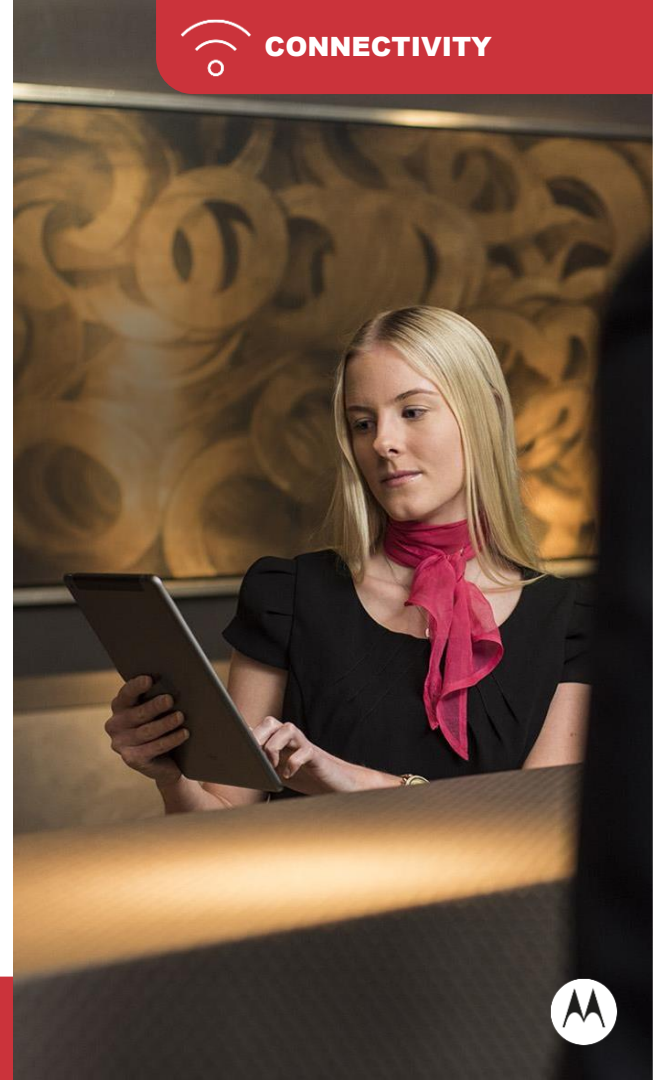
- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### YOUR RADIO CAN INTERFACE WITH OTHER BLUETOOTH DEVICES FOR EASIER DATA ENTRY AND CONTROL

- To enhance the data capabilities of MOTOTRBO radios, you can interface a Bluetooth data entry device to the radio – for example a barcode scanner.
- When used with a Work Order Ticketing system, this significantly increases the convenience of the user interface.
- Other smart devices can also use the Bluetooth data connection as a network interface (Personal Area Network, or PAN).
- Bluetooth 4.0 delivers:
  - **Classic Bluetooth:** Backwards-compatibility with earlier devices.
  - **Bluetooth Low Energy:** Lower power consumption, with approximately the same range. Optimised for fast setup of simple links – so ideal for applications such as Indoor Location Tracking.
  - Future interoperability with new Bluetooth accessories and sensors.

#### COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# TELEMETRY

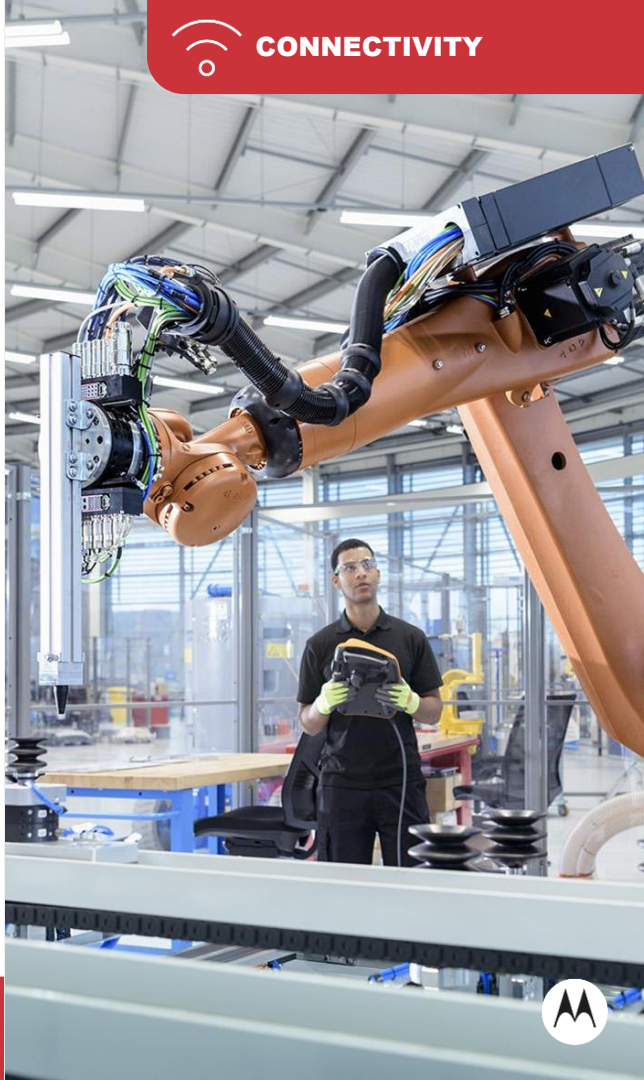
## EVERYTHING INTERCONNECTED BY MOTOTRBO

**COMPATIBLE**

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

### USE YOUR RADIO NETWORK TO INTERCONNECT PEOPLE, MACHINES AND SENSORS

- MOTOTRBO radios have a programming interface that can also support GPIO (General Purpose Input / Output) and USB signalling for telemetry purposes.
- This can be used to connect MOTOTRBO users to sensors:
  - For example, your security system can be connected to a MOTOTRBO radio, so you receive a text alert on your radio when an intrusion is detected.
  - Or your production machinery can be connected to a MOTOTRBO radio, so your maintenance technicians receive breakdown notifications on their radios – including diagnostic information, if required.
- It can also be used to connect MOTOTRBO users to actuators:
  - For example you can connect a MOTOTRBO radio to the door lock of a secure facility – and lock and unlock the door remotely using your radio.
- And it can be used for a combination of both:
  - For example a remote environmental sensor can send periodic readings to a remote server, using a data channel on the MOTOTRBO system.


**COMPATIBILITY KEY**

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------





# PRE-CONFIGURED TELEPHONE PATCH

## EASY INTERCONNECT FOR TELEPHONE USERS

### TELEPHONE USERS CAN CONNECT TO A PRE-CONFIGURED RADIO CHANNEL QUICKLY AND EASILY

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex

- Ion
- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- The existing MOTOTRBO telephone patch offers flexibility, but access can be time-consuming:
  - The telephone user dials a specific number or extension.
  - After hearing the tone, they have 3 seconds to enter the radio ID and repeater slot number on their telephone keypad.
  - They will then be connected to the radio user or talkgroup.
  - If there is an error, the tone will repeat, prompting them to re-enter the radio ID and repeater slot number.
- This new enhancement allows the configuration of a “default” radio user – for example Security.
  - If the system does not detect an entry within 3 seconds of the tone, the telephone user is automatically connected to Security.
  - For example, all the desk-phones at a facility can be pre-programmed with an “Emergency” number that will always reach Security.
  - Advanced users know they can reach other radio users by entering additional information.
- This feature was introduced in software release 2.4.



COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------

# INTEGRATED WI-FI

MORE CONNECTIVITY FOR YOUR RADIO FLEET



## COMPATIBLE

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## YOUR RADIO NOW HAS A BROADBAND INTERFACE

- The Wi-Fi interface is compliant to 802.11b/g/n, and supports up to 8 Mbps data rates.
- It is designed to access only private Wi-Fi networks, using WPA, WPA2 or WEP security protocols.
- Download large configuration files to the radio, for example new radio firmware, voice announcement files and screen images.
  - This is available in software release 2.6.0, and requires the new functionality of Radio Management version 2.0. See Wi-Fi Software Updates for details.
- Wi-Fi is not designed to enable broadband services such as internet browsing on a MOTOTRBO radio, however there will be opportunities to use Wi-Fi for other purposes in the future.
- This feature was introduced in software release 2.5.

## COMPATIBILITY KEY

COMPATIBLE

LIMITED

NOT COMPATIBLE

# WAVE PTX™ CLIENT

## EXTEND YOUR RANGE WITH WAVE PTX


**CONNECTIVITY**

**COMPATIBLE**

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

Ion

SL1600

SL2600

SL4010e

Direct Mode

Conventional

IP Site Connect

Capacity Plus

Capacity Max

## EXTEND TRADITIONAL TWO-WAY RADIO TO BEYOND SITE COVERAGE AREAS

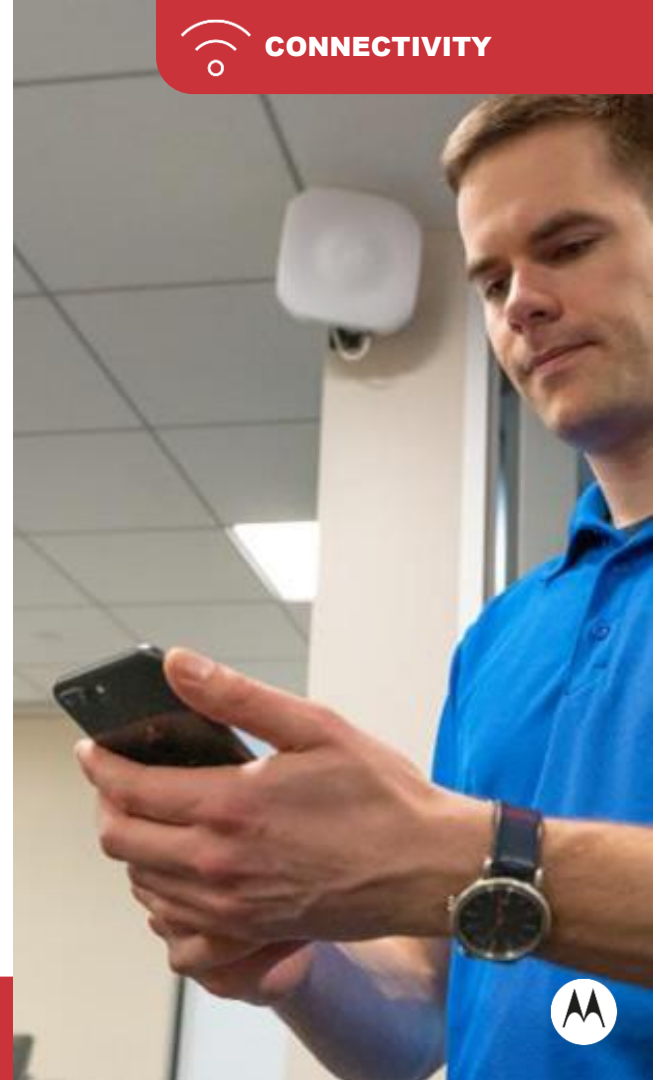
- WAVE PTX is a group communication service that connects your team across different networks and devices via Wi-Fi or LTE.
- Starting from R2.10, this service is now extended to MOTOTRBO radios.
- Radios can operate in either Radio mode or WAVE PTX mode.
- A programmable button can be configured to switch between Radio mode and WAVE PTX mode.
- In Radio mode, the user communicates using standard radio channels. All the legacy radio features including signaling, system, and calls operate as normal.
  - The existing WAVE 5K functionality is still supported as a channel personality. No change to its operation and behaviour.
- In the new WAVE PTX mode, the user communicates via Wi-Fi and has access to the WAVE PTX features.
  - Channel selector changes to WAVE PTX talkgroup selector.

**COMPATIBILITY KEY**

COMPATIBLE

LIMITED

NOT COMPATIBLE



# TELEPHONY (CAPACITY MAX)

YOUR WORKERS ARE EVEN BETTER CONNECTED

## YOU CAN CONNECT TELEPHONE USERS TO YOUR CAPACITY MAX RADIO USERS

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e

- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex

Ion

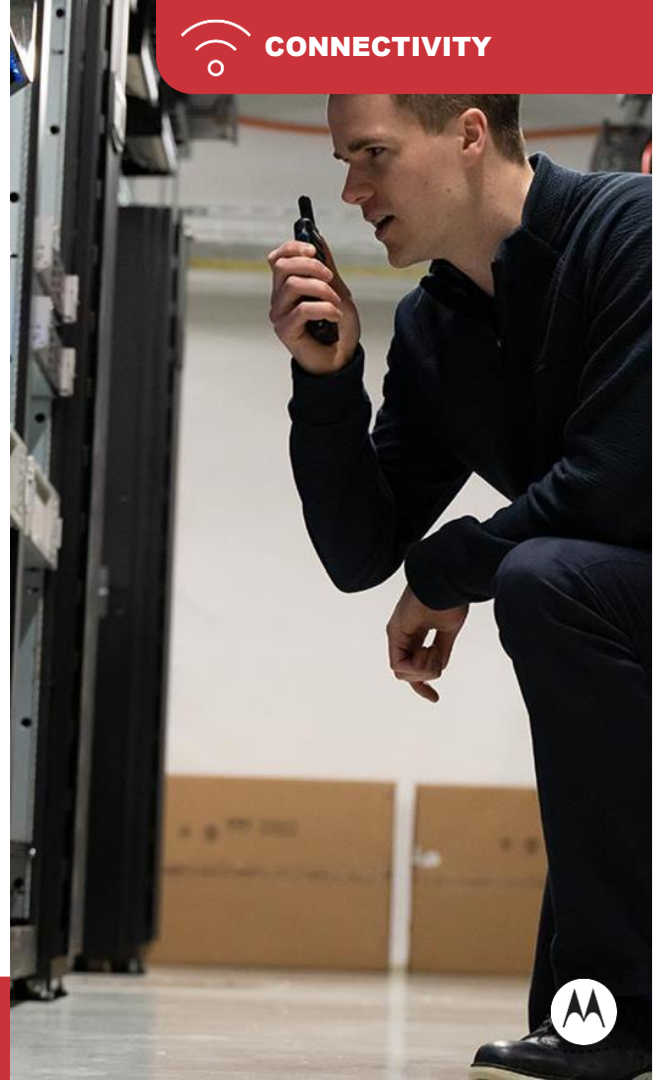
- SL1600
- SL2600
- SL4010e

- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

- Telephone interconnect on a Capacity Max system is supported through a third-party telephone application, connected to the system via the Voice and Radio Command Gateway on the Capacity Max System Server.
- The system supports the following call types:
  - Radio-initiated call to telephone.
  - Telephone-initiated call to radio.
  - Telephone-initiated call to talkgroup.
- Calls can be initiated by dialling a number on the radio keypad, through the radio address book, or with a pre-programmed button.
- Calls are half-duplex, with priority to the radio: When a radio user presses the PTT button, the telephone user is interrupted.
- This feature also supports “overdial”: the entry of numbers into an automated system (using the radio keypad) after the call is connected.
- The system administrator can enable or disable this feature per radio using Subscriber Access Control.
- Support for DMR Tier 3 industry standard compliant telephony calls has been added with R2.9.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# SHARED FREQUENCY CONTROL CHANNEL

DEPLOYMENT HAS JUST GOTTEN EASIER

NOW CUSTOMERS CAN DEPLOY CAPACITY MAX EVEN WHEN DEDICATED CHANNELS AREN'T AVAILABLE

- Customers can now choose between using a dedicated or shared channel to deploy a Capacity Max system.
- Previously, Capacity Max could only be deployed using a dedicated channel.
- Great for Capacity Plus customers looking to migrate to Capacity Max.
- Benefits customers who don't have FB8 channels available.
- The roaming performance of a shared control channel is on par with a Capacity Plus system.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
------------	---------	----------------

COMPATIBLE

DM1400  
 DM1600  
 DM2600  
 DM4400e  
 DM4401e  
 DM4600e  
 DM4601e

DP1400  
 DP2400e  
 DP2600e  
 DP3441e  
 DP3661e  
 DP4400e  
 DP4401e  
 DP4600e  
 DP4601e  
 DP4800e  
 DP4801e  
 DP4401 Ex  
 DP4801 Ex  
 Ion

SL1600  
 SL2600  
 SL4010e

Direct Mode  
 Conventional  
 IP Site Connect  
 Capacity Plus  
 Capacity Max



# MOTOTRBO LINK

LINK YOUR SITES, EVEN WHEN IP IS NOT AVAILABLE

COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

## ENABLES OVER-THE-AIR BACKHAUL USING REPEATERS IN PLACES WHERE ALTERNATIVES ARE TOO EXPENSIVE, UNAVAILABLE, OR IMPRACTICAL

- New configuration within IPSC conventional system.
  - Enables over-the-air backhaul using repeaters.
- Useful in rural areas where no site link connectivity exists.
  - Deserts, ski resorts, mines.
- Eliminates need for microwave link which is traditionally more expensive.
- Only SLR Repeaters can be used in both the IPSC network and backhaul chain.

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# CELLULAR TELEPHONY (ION)

CONNECTED VIA VOICE



COMPATIBLE

- DM1400
- DM1600
- DM2600
- DM4400e
- DM4401e
- DM4600e
- DM4601e
- DP1400
- DP2400e
- DP2600e
- DP3441e
- DP3661e
- DP4400e
- DP4401e
- DP4600e
- DP4601e
- DP4800e
- DP4801e
- DP4401 Ex
- DP4801 Ex
- Ion
- SL1600
- SL2600
- SL4010e
- Direct Mode
- Conventional
- IP Site Connect
- Capacity Plus
- Capacity Max

## EXTEND COMMUNICATION COVERAGE WITH ION'S SUPPORT FOR CELLULAR CALLING

- Ion's support for telephony enables users to make and receive phone calls on the device
- Workers can stay connected using mobile phone calls whether inside or outside LMR coverage
- Mobile telephony enables connection for users not operating on an LMR or WAVE PTX network
- Ion's support for telephony works over 3G and 4G LTE
- Telephony support requires device hardware model MDH90ZDU9RJ1AN (earlier versions cannot be upgraded)
- Calls can be heard through the radio speaker or by using one of the audio accessories listed below.
  - PMLN8295:2-Wire Swivel Loud Audio Earpiece With Eartip
  - PMLN8337:1-Wire Single Earbud with Ear Hook Loud Audio Earpiece
  - PMLN8341:1-Wire Surveillance Kit with Loud Audio Translucent Tube
  - PMLN8342:2-Wire Surveillance Kit with Loud Audio Translucent Tube
  - PMLN8342:3-Wire Surveillance Kit with Loud Audio Translucent Tube
  - PMLN8120: Receive-Only Loud Audio Translucent Tube Earpiece
  - PMMN4127: Operational Critical Wireless Remote Speaker Microphone WM500
  - PMLN8123:EP910w Operational Critical Wireless Earpiece PTT



COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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# WI-FI HOTSPOT (ION)

## WI-FI DATA CONNECTIVITY SUPPORT



COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex

Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

### THIS FEATURE PROVIDES CONNECTIVITY FOR DEVICES WITHOUT BROADBAND CONNECTION

- Wi-Fi hotspot provides internet access to other devices using Ion's 3G/4G connection
- Provides a way for devices outside their cellular coverage, or with limited data allowance, to connect to the internet
- Devices connect to Ion via direct Wi-Fi link

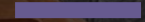
#### Example Use Case:

- The VB400 Body-Worn Camera can connect to the Ion Wi-Fi hotspot to stream live video recordings to a command centre control room

COMPATIBILITY KEY

COMPATIBLE	LIMITED	NOT COMPATIBLE
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**SYSTEMS**



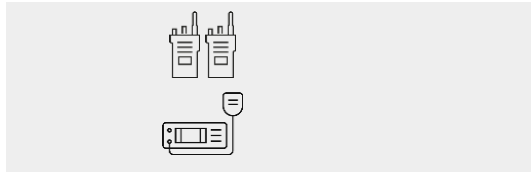
# SYSTEMS SUMMARY

## IP SITE CONNECT

### CONVENTIONAL



UP TO 15 SITES



UP TO 200 USERS

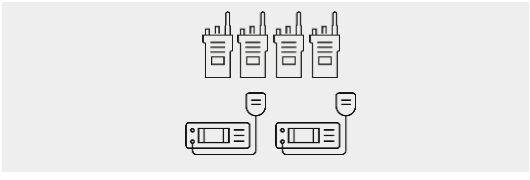
**BASELINE COVERAGE**

## CAPACITY PLUS

### TRUNKING



UP TO 15 SITES



UP TO 1600 USERS/SITE

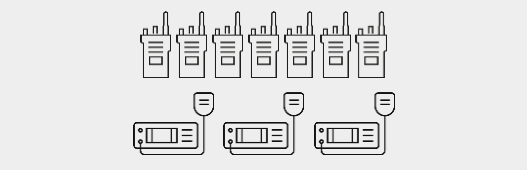
**COST-EFFECTIVE COVERAGE AND CAPACITY**

## CAPACITY MAX

### TRUNKING



UP TO 250 SITES



UP TO 3000 USERS/SITE

**COVERAGE, CAPACITY AND CONTROL**



# DIRECT MODE / TALKAROUND

## BASIC RADIO-TO-RADIO COVERAGE

### FALLBACK CONNECTIVITY, FOR LOCAL AREA COMMUNICATIONS OR DURING POWER OUTAGES

## COMPATIBLE

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

- All MOTOTRBO radios are able to connect to each other directly, without the need for any infrastructure such as a repeater.
- Coverage and capacity are limited, but for a situation such as a power outage, a basic level of communications is still possible.
- Radios communicate on a single 12.5kHz channel.
- If Dual Capacity Direct Mode is configured, the radios can use both timeslots on the channel for independent conversations.
- Coverage (range) is limited, as the power of a radio is much less than that of a repeater.
- “Direct Mode” usually refers to a system that is solely capable of radio-to-radio communications.
- “Talkaround” is a fallback mode of operation for conventional or trunked systems.
- Direct Mode can be enhanced using **Extended Range Direct Mode**.



## COMPATIBILITY KEY

COMPATIBLE

OPTIONAL

NOT COMPATIBLE



# SINGLE SITE CONVENTIONAL

## BASELINE CAPACITY AND COVERAGE

**COMPATIBLE**

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

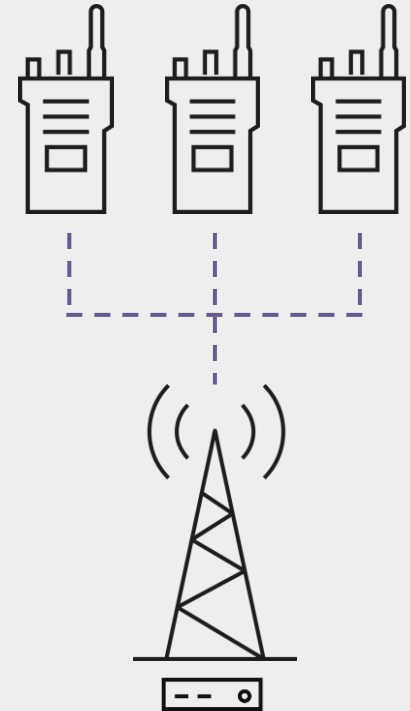
DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

### BASELINE SINGLE SITE CAPACITY AND COVERAGE

- The **Single Site Conventional** architecture consists of a single repeater supporting communications for up to 200 users.
  - This configuration provides capacity and coverage over a wide area using a pair of 12.5kHz channels, one of which is used for radio transmissions, the other for repeater transmissions.
  - Each channel is further divided into two independent timeslots.
  - To the end user, this means they now have two voice or data channels that can be managed independently, instead of one.
- This configuration can also support **Dynamic Mixed Mode**, where the repeater dynamically switches between analogue and digital based on the call it receives from the radio:
  - If an analogue radio transmits, the repeater switches to analogue mode to repeat the analogue call (one call per channel).
  - If a digital radio transmits, the repeater switches to digital mode to repeat the digital call (up to 2 calls per channel).
- Single Site Conventional can be enhanced using **Extended Range Direct Mode**.


**COMPATIBILITY KEY**
**COMPATIBLE**

OPTIONAL

NOT COMPATIBLE



# IP SITE CONNECT

COST-EFFECTIVE COVERAGE FOR MULTIPLE SITES

**COMPATIBLE**

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

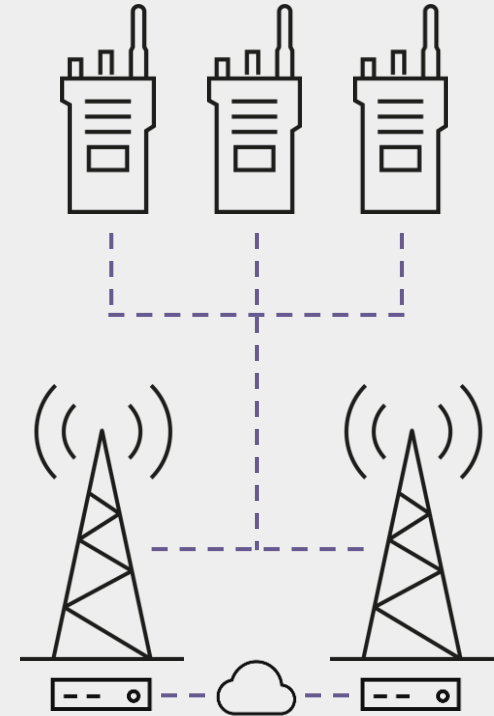
DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## MULTI-SITE INTERCONNECTION, FOR BETTER COVERAGE

- **IP Site Connect** allows you to interconnect up to 15 MOTOTRBO repeaters to increase the coverage area of a system.
- The repeaters can be in adjacent locations, or geographically isolated.
- The interconnection is directly between repeaters, using an IPv4 network.
- No new radio hardware is required, but backend network devices such as routers may be required to create an IPv4 connection between sites.
- Traffic on the IP network is authenticated and can be protected. VPNs are also supported.
- The capacity of the system is approximately the same as the capacity of a single digital repeater.
- IP Site Connect can also be used to provide multi-band support on a single site.


**COMPATIBILITY KEY**
**COMPATIBLE**

OPTIONAL

NOT COMPATIBLE



# CAPACITY PLUS (SINGLE/MULTI-SITE)

COST-EFFECTIVE COVERAGE AND CAPACITY

**COMPATIBLE**

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

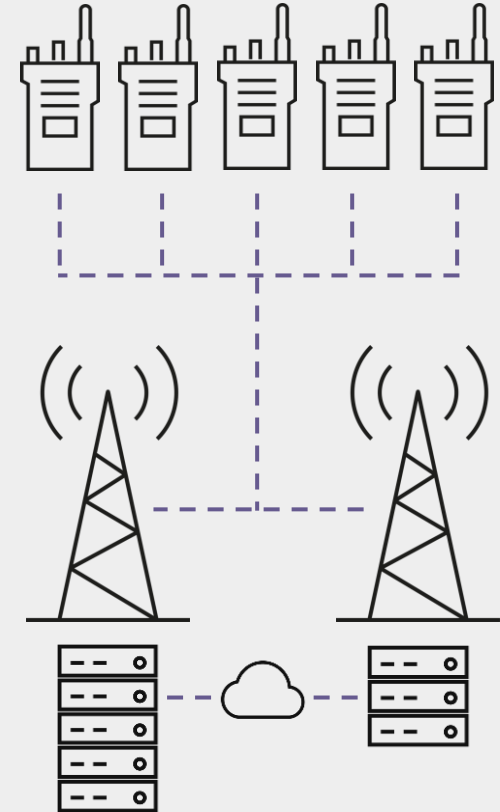
## SINGLE AND MULTI-SITE DYNAMIC TRUNKING FOR BETTER CAPACITY AND COVERAGE

DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

- Capacity Plus is an entry-level trunked system for single and multiple sites.
- Up to 15 sites can be interconnected, with up to 8 trunked voice and data repeaters (16 channels) per site.
- The systems use “dynamic trunking”:
  - All radios start on a “rest channel”
  - When a radio requests a channel, the repeater turns the rest channel into a traffic channel, and initiates the call there.
  - The repeater then finds an unoccupied channel and directs all radios not participating in the call to adopt this as the new rest channel.
- Capacity Plus does not require the allocation of a dedicated control channel.
  - It has no centralised controller and is therefore very fault-tolerant.
  - It automatically detects most types of failures, reconfigures itself, and continues to operate (with reduced capacity).
- An SL1600 model is available that is compatible with a Single Site Capacity Plus system with up to 2 repeaters.


**COMPATIBILITY KEY**
**COMPATIBLE**

OPTIONAL

NOT COMPATIBLE



# CAPACITY MAX

## COVERAGE, CAPACITY AND CONTROL

**COMPATIBLE**

DM1400

DM1600

DM2600

DM4400e

DM4401e

DM4600e

DM4601e

DP1400

DP2400e

DP2600e

DP3441e

DP3661e

DP4400e

DP4401e

DP4600e

DP4601e

DP4800e

DP4801e

DP4401 Ex

DP4801 Ex

**Ion**

SL1600

SL2600

SL4010e

Direct Mode

Conventional

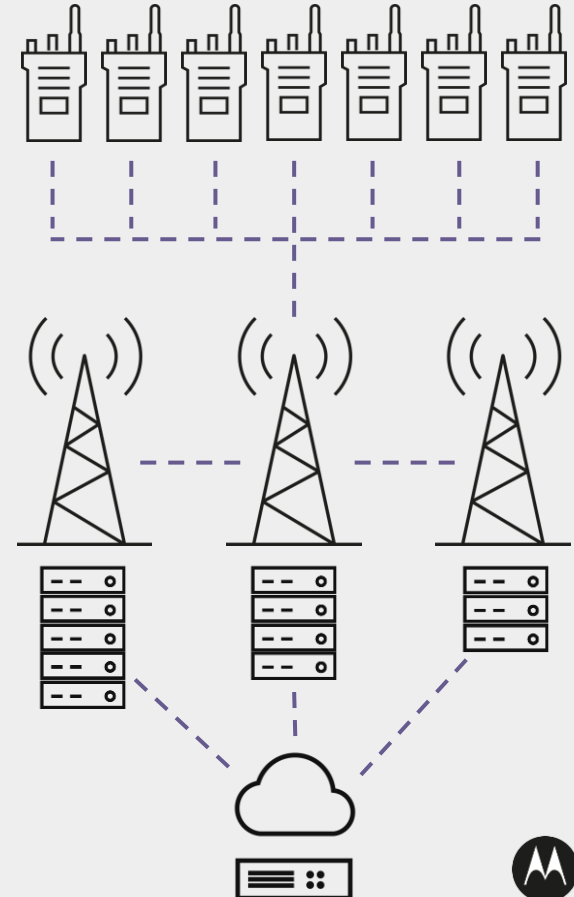
IP Site Connect

Capacity Plus

Capacity Max

### FULL TRUNKING FOR SINGLE AND MULTI-SITE DEPLOYMENTS, WITH ENHANCED CONTROL CAPABILITIES

- Capacity Max is a next generation trunking solution, built on our extensive real-world experience in DMR radio systems.
    - It uses a dedicated control channel on each site.
  - A single centralised server (redundancy optional) controls the system.
  - All signaling and traffic is routed over a standard IP network.
  - Data flow is optimised to reduce network load and improve scalability.
- High coverage and capacity:
    - Up to 250 sites
    - Up to 15 voice and data repeaters per site
    - Up to 6 data revert repeaters per site
    - Redundancy for any repeater is supported
  - Radios can be operated in 2 modes:
    - **Advantage Mode:** MOTOTRBO radios and infrastructure. Performance-optimised. Full feature set.
    - **Open Radio Mode:** MOTOTRBO radios, another vendor's infrastructure. DMR Tier III Mode of Operation. Limited feature-set.
  - Licenses must be purchased per radio and repeater.


**COMPATIBILITY KEY**

COMPATIBLE

OPTIONAL

NOT COMPATIBLE



# DIGITAL VOTING

REACH FURTHER AT LOWER COST

**COMPATIBLE**

DM1400  
DM1600  
DM2600  
DM4400e  
DM4401e  
DM4600e  
DM4601e

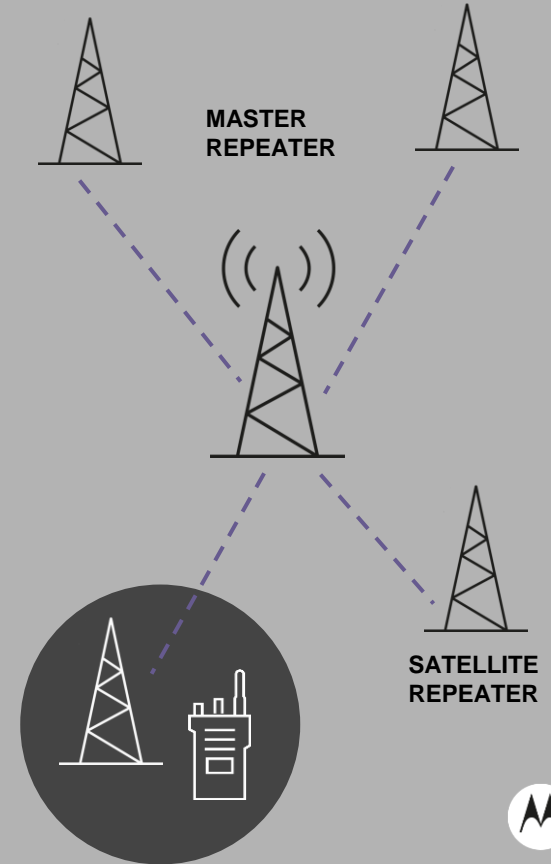
DP1400  
DP2400e  
DP2600e  
DP3441e  
DP3661e  
DP4400e  
DP4401e  
DP4600e  
DP4601e  
DP4800e  
DP4801e  
DP4401 Ex  
DP4801 Ex  
Ion

SL1600  
SL2600  
SL4010e

Direct Mode  
Conventional  
IP Site Connect  
Capacity Plus  
Capacity Max

## COVER A WIDER AREA WITH YOUR MOTOTRBO SYSTEM, WITHOUT THE COST OF ADDING TRANSMITTERS

- Because of its better transmitter power and antenna height, a repeater can transmit a signal much further than a user's radio can.
- This means that system coverage is usually limited by "talk-back" range rather than "talk-out" range.
- The Digital Voting solution introduces extra repeater sites, configured in receive-only mode.
- The "Master Repeater" analyses the signals received from the "Satellite Repeaters" and selects (votes) on which one to repeat.
- This feature improves coverage without the need to invest in extra transmitter frequencies.
- The satellite sites are also lower cost to implement, as they need less power, fewer antennas and lower bandwidth connections.
- This feature was first introduced in software release 2.3.


**COMPATIBILITY KEY**
**COMPATIBLE**

OPTIONAL

NOT COMPATIBLE



# THANK YOU

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# VERSION HISTORY

Version	Type	Description	Date
2.7.0	Update	Added features for 2.7 Release and significant updates to Capacity Max	6-January-2017
2.8.0	Update	Added features for 2.8 Release and new SL2600 radio	7-August-2017
2.9.0	Update	Added features for 2.9 release	29-May-2018
2.10.5	Update	Added features for the 2.10 and 2.10.5 releases, and audited feature/radio compatibility	05-Feb-2020
M2020.01 Global	Update	Added features and hardware for M2020.01 release	07-July-2020
M2021.01 EMEA	Update	Updated with features from M2020.02 and M2021.01 release. Added MOTOTRBO Ion radio	21-July-2021
M-ION.2022.03	Update	Added MOTOTRBO Ion Telephony and Wi-Fi Hotspot features	13-March-2023

