



Motorola Solutions

**MOTOTRBO® 2.X System Release Notes**  
**Professional Commercial Radios (PCR) & Accessories**

Version: R2.9.0 v03

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**System Release R2.9.0**

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## Scope

These MOTOTRBO 2.X System Release Notes cover the following MOTOTRBO products:

- DP1400, SL1600, DP2000 Series, SL2600, DP3441, DP4000 Series, DP4000Ex Series, DP4000ExMA Series and SL4000 Series Portables
- DP2000e Series, DP3000e Series, DP4000e Series and SL4000e Series Portables
- DM1000 Series, DM2600 and DM4000 Series Mobiles
- DM4000e Series Mobiles
- DR 3000, MTR3000, SLR 1000, SLR 5500 and SLR8000 Repeaters
- Radio Management
- CPS
- Air Tracer
- Tuner
- RDAC
- Multi Channel Device Driver (MCDD)
- Device Discovery and Mobility Service (DDMS)
- MOTOTRBO Network Interface Service (MNIS) Data Gateway
- MOTOTRBO Network Interface Service (MNIS) VRC Gateway
- MNIS Status Agent
- Capacity Max Bridge
- Capacity Max ESU
- Capacity Max Trunk Controller
- System Advisor
- System Design Tools
- IMPRES™ Fleet Management Software
- Second generation MOTOTRBO MPT1327 GOB
- MPT1327 GOB CPS
- Second generation MOTOTRBO Connect Plus GOB
- Connect Plus GOB CPS
- Connect Plus Infrastructure (XRC 9000 / 9100 Controller, XRT 9000 / 9100 Gateway, XRI 9100 Interconnect, Network Manager, Network Manager Connection Tool, XRT Configuration Tool)

Please refer to the latest MOTOTRBO 1.X System Release Notes for details on the following MOTOTRBO products:

- DP 3000 Series Portables
- DM 3000 Series Mobiles
- First generation MOTOTRBO MPT1327 GOB

## Abbreviations

CPS	Customer Programming Software
CFS	Charge for Software
OTAP	Over The Air Programming
RM	Radio Management
OB	Option Board
RDAC	Repeater Diagnostics and Controls

## What's New in System Release R2.9.0

### New Capacity Max Features

#### Shared Frequency Control Channel

It allows customer who do not have dedicated channel(s) at one or more sites to have Capacity Max system, such as a Capacity Plus system can be replaced by Capacity Max when this feature is enabled. Also the fault tolerance of a Capacity Max's site having less than four dedicated channels can be improved by configuring a shared channel as a candidate control channel.

#### Enhanced Telephony

Using the DMR industry-standard signaling method (Access Code and Phone Number Digits on the control channel) through the MNIS VRC Gateway, Allows customers on Capacity Max systems to make DMR industry-standard compliant calls to a landline phone, in addition to receiving compliant individual/group calls from a landline phone.

#### Call Priority

It 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, the high priority call can preempt and take over the trunk channels occupied by a Normal priority call.

This feature supports the escalation of voice call, telephony call, remote monitor as well as data calls.

#### Talkgroup Subscription Option

Added a CPS/RM option to disable Talkgroup Subscription in Capacity Max Open mode. This allows a dealer to turn off this feature on 3rd party systems that does not support this feature.

### New Infrastructure Features

#### MOTOTRBO Link

The MOTOTRBO Link feature enables over-the-air backhaul via SLR repeaters in a multi-site IP Site Connect system. This functionality is useful in areas where no site link connectivity exists. To use MOTOTRBO Link, only SLR repeaters can be used in the IP Site Connect network and the backhaul chain.

#### Enhanced Channel Change

Enables the ability to rapidly change from one channel to another (analog to analog only or digital to digital only) on a SLR repeater in a single site conventional or IP Site Connect system.

### New Radio Features

#### Certificate Based Wi-Fi Access (WPA-Enterprise 802.1x)

Added WPA/WPA2 Enterprise Wi-Fi Support allowing Wi-Fi enabled MOTOTRBO radios to access certificate based WiFi networks. Supports certificate management via Simple Certificate Enrollment Protocol and enrollment via a WPA-PSK network.

#### **BT Volume Up Down AT Commands**

Add Bluetooth AT Commands for Volume Up/Down. Supported accessories are now able to adjust radio volume.

#### **Support for 3M Peltor BT PTT protocol**

Support the Bluetooth PTT protocol from 3M Peltor for their WS ProTac XP and WS Alert XPI series of accessories. Radio must enable the BT ACCESSORY COMMAND CFS feature for this to work.

#### **Closed (Resolved) Issues**

See “Resolved Issues in Product Release” section.

## Product Versions

Listed below are all MOTOTRBO Product Versions associated with the different R2.9 system releases.

MOTOTRBO Product	Release R2.9.0
DP1400 Portables	R01.01.30.0000 (CP 11.00.46)
SL1600 Portables	R01.01.30.0000 (CP 11.00.46)
DP2000/DP2000e Series Portables	R02.09.00.0001 (CP 14.00.13)
SL2600 Portables	R02.09.00.0001 (CP 14.00.13)
DP3441/DP3000e Series Portables	R02.09.00.0001 (CP 14.00.13)
DP4000/DP4000e Series Portables	R02.09.00.0001 (CP 14.00.13)
DP4000Ex/DP4000Ex MA Series Portables	R02.09.00.0001 (CP 14.00.13)
SL4000/SL4000e Series Portables	R02.09.00.0001 (CP 14.00.13)
DM1000 Series Mobiles	R01.01.30.0000 (CP 11.00.46)
DM2600 Mobiles	R02.09.00.0001 (CP 14.00.13)
DM4000/DM4000e Series Mobiles	R02.09.00.0001 (CP 14.00.13)
DR 3000 Repeaters	Not yet available for general release
MTR3000 Repeaters	Not yet available for general release
SLR 1000 Repeaters	Not yet available for general release
SLR 5500 Repeaters	Not yet available for general release
SLR 8000 Repeaters	Not yet available for general release
Radio Management	2.11.44.0
CPS	16.0 (Build 823)
Air Tracer	10.0 (Build 32)
Tuner	16.0 (Build 238)
RDAC	9.0 (Build 106)
Multi Channel Device Driver (MCDD)	2.1.3

<b>MOTOTRBO Product</b>	<b>Release R2.9.0</b>
Device Discovery and Mobility Service (DDMS)	03.90.5001
MOTOTRBO Network Interface Service (MNIS) Data Gateway	02.90.5002
MOTOTRBO Network Interface Service (MNIS) VRC Gateway	02.90.5002
MOTOTRBO Network Interface Service (MNIS) Status Agent	02.90.5000
Capacity Max Bridge (CMB)	Not yet available for general release
Capacity Max ESU	Not yet available for general release
Capacity Max Trunk Controller	Not yet available for general release
Capacity Max System Advisor	Not yet available for general release
Capacity Max ESU Launchpad	Not yet available for general release
Capacity Max System Server One-Click Upgrade	Not yet available for general release
MNIS VRC Gateway	Not yet available for general release
System Design Tools	06.08
R2.X MPT1327 GOB	R01.02.06
MPT1327 GOB CPS	R02.00.04
R2.X Connect Plus GOB	R02.07.36 (CP 1.1.19)
R2.X Connect Plus GOB CPS	Not yet available for general release
XRC 9000 / 9100 Controller	Not yet available for general release
XRT 9000 / 9100 Gateway	Not yet available for general release
XRI 9100 Interconnect	Not yet available for general release
Network Manager (merged with XRC / XRI packages)	Not yet available for general release



MOTOTRBO Product	Release R2.9.0
Network Manager Connection Tool	Not yet available for general release
XRT Configuration Tool	Not yet available for general release

Notes:

1. Due to its size, the combined CPS / RM file which is available to download from Motorola Online has been split into 3 parts. To download and install:
  - a. Download MOTOTRBO CPS 16.0 (Parts 1, 2 & 3).
  - b. Use 7-Zip to unzip each part individually to the same folder.
  - c. Use 7-Zip again to Unzip cps\_16\_dot0\_build823.zip.001.
  - d. Install in the usual way from the resulting cps\_16\_dot0\_build823 folder.
  - e. Alternatively, the combined CPS / RM is available as an orderable DVD (GMVN5141\_).
2. For Capacity Max, the ESU Launchpad Application shall be ordered via Model# T8486A in the order system.
3. The Capacity Max System Server One Click Upgrade which contains Trunk Controller, VRC Gateway and System Advisor shall be ordered via Model# T8480A in the order system.
  - a. Please refer to the section “Upgrading a *Capacity Max System from R2.8 to R2.9.0*” of Capacity Max System Release Upgrade Guide for additional details. It is available on MOL and the Upgrade Guide applies for the patch upgrade as well.
  - b. For both ESU Launchpad application and Capacity Max System Server One Click Upgrade files take a week to be delivered. It is recommended to include the time taken for the package to be delivered into planning.
4. For Capacity Max, updated Switch and Router configuration files are also available on MOL.
5. USB 3.0 port is not supported for the repeater upgrade. With R2.8.0 and newer repeater release, the recommendation is to use USB 2.0 port on the PC or connect repeater via USB 2.0 hub when upgrading the repeater via USB.

## Product Availability

The following table indicates which MOTOTRBO products covered by this document can be ordered as a DVD and which can be downloaded from the MOTOTRBO Resource Centre at Motorola Online.

MOTOTRBO Product	Orderable DVD Part Number	MOTOTRBO Resource Centre Location
Upgrade Package for DP1400 and SL1600 Portables	N/A	R2.X Device Firmware
Upgrade Package for DP2000/DP2000e Series, SL2600, DP3441, DP3000e Series, DP4000/DP4000e Series, DP4000Ex Series and DP4000ExMA Series Portables	N/A	R2.X Device Firmware
Upgrade Package for SL4000/SL4000e Series Portables	N/A	R2.X Device Firmware
Upgrade Package for DM1000 Series Mobiles	N/A	R2.X Device Firmware
Upgrade Package for DM2600 Mobiles	N/A	R2.X Device Firmware
Upgrade Package for DM4000/DM4000e Series Mobiles	N/A	R2.X Device Firmware
Upgrade Package for DR 3000 and MTR3000 Repeaters	N/A	R2.X Device Firmware
Upgrade Package for SLR 1000, SLR 5500 and SLR 8000 Repeaters	N/A	R2.X Device Firmware
Radio Management	GMVN5141_	Programming Software (CPS, Tune, Air, Tracer)
CPS	GMVN5141_	Programming Software (CPS, Tune, Air, Tracer)
Air Tracer	GMVN5141_	Programming Software (CPS, Tune, Air, Tracer)
Tuner	GMVN5141_	Programming Software (CPS, Tune, Air, Tracer)
RDAC	GMVN5520_	N/A
Multi Channel Device Driver (MCDD)	GMVN5141_	Programming Software (CPS, Tune, Air, Tracer)
Device Discovery Mobility Service (DDMS)	GMVN5141_	Programming Software (CPS, Tune, Air, Tracer)
MOTOTRBO Network Interface Service (MNIS) Data Gateway	GMVN5141_	Programming Software (CPS, Tune, Air, Tracer)
MOTOTRBO Network Interface Service (MNIS) Status Agent	GMVN5141_	Programming Software (CPS, Tune, Air, Tracer)
R2.X MPT1327 GOB Upgrade Kit	N/A	R2.X Device Firmware
MPT1327 GOB CPS	N/A	Programming Software (CPS, Tune, Air, Tracer)

## Training Material

The following courses are now available on the Learning Management System (LMS) and open for enrolment to Partners and Customers.

### **New Courses**

PCT2024 - New Features for MOTOTRBO™ Release 2.9

### **Registration**

Registration for these classes is open and available through the LMS at:

<https://learning.motorolasolutions.com>

## Important Notes

### CPS 15.5 (Build 797) May Result in Radio's Volume Always Set to Maximum

When using R2.8.5 CPS 15.5 (Build 797) to clone / write a pre-R2.6.0 CPS archive containing Min Speaker Volume set to "Muted" to a radio which is on R2.6.0 or newer, Min Speaker Volume is reset to the max speaker volume after the clone / write operation.

Notes:

1. The issue does not occur if the Min Speaker Volume is set to other values.
2. The issue does not occur with Radio Management (R2.8.5 RM 2.9.15.).

The preferred workaround is to regenerate codeplugs from the default radio or clone an R2.6 or later codeplug archive. Alternatively, correct the Min Speaker Volume after the clone / write operation by reading the radio, configuring the Min Speaker Volume to Muted and writing the radio.

### Use of Old Archive Codeplugs

It is generally good practice to use codeplugs generated from the default codeplug associated with the latest firmware release rather than reuse very old archived codeplugs which is not recommended.

In order to obtain the improvements in audio clarity introduced as part of the R2.6 system release it is especially important to use codeplugs generated from firmware release R2.6 or later.

### Upgrade of Early Firmware

When an upgrade spanning multiple releases is to be performed it is strongly recommended that the upgrade be performed in multiple steps spanning no more than 3 major releases.

### 2.X MPT1327 GOB Upgrade Kit

The 2.X MPT1327 GOB Upgrade Kit supports Windows 7.

When installing and launching the 2.X MPT1327 GOB Upgrade Kit on a Windows 7 computer, select "Run as administrator".

The R1.X and R2.X MPT1327 GOB Upgrade Kits cannot be installed together on the same computer. So if the R1.X MPT1327 GOB Upgrade Kit is already installed then this will have to be un-installed before the R2.X MPT1327 GOB Upgrade Kit can be installed

The R2.X MPT1327 GOB Upgrade Kit does NOT preserve the 2.X MPT1327 GOB configuration, so before upgrading the 2.X MPT1327 GOB firmware read the 2.X MPT1327 GOB configuration using the MPT1327 GOB CPS and save it to a \*.rad file. After upgrading the 2.X MPT1327 GOB firmware, the saved \*.rad file can be written back to the 2.X MPT1327 GOB using the MPT1327 GOB CPS.

## MPT1327 GOB CPS

The MPT1327 GOB CPS supports Windows 7.

When installing and launching the MPT1327 GOB CPS on a Windows 7 computer, select “Run as administrator”.

## MPT1327 / Connect Plus Options

Certain radio models can be ordered with factory fitted MPT1327 / Connect Plus option boards.

(NOTE: the generic option board can NOT be field upgraded to support MPT1327)

## MPT1327 / Connect Plus GOB Firmware Compatibility

Where a radio contains an MPT1327 / Connect Plus option board it's important to adhere to the following simple rules in order to ensure full compatibility between the option board firmware and the radio firmware:

1. On installing an MPT1327 / Connect Plus option board, ensure that both the option board and the radio contain the latest available firmware versions.
2. On upgrading a radio to the latest available firmware version, ensure that the option board also contains the latest available firmware version.
3. On upgrading an option board to the latest available firmware version, ensure that the radio also contains the latest available firmware version.

Options boards for DP4000/DM4000 series radios are NOT forward compatible with DP3000e/DP4000e/DM4000e series radios and option boards for DP3000e/DP4000e/DM4000e series radios not backwards compatible with DP4000/DM4000 series radios.

## Radio Management 2.8.1X

After upgrading an existing database from a pre-R2.8.0 RM version 2.x to R2.8.0 RM version 2.8.14 an error occurs which results in an additional step being required before attempting to register additional license key features to existing radios in template mode.

The additional step is not required after the upgrade from RM 1.x to RM 2.8.14 or for any radios using configuration mode or to new radios added to the RM database.

To add a new license to an existing radio in RM template mode:

1. Schedule and perform a read job with the affected radio in the RM template mode
2. Register a license as normal

There is no need to perform a read operation when applying subsequent licenses.

If a license is applied without first reading the radios then when registering radios “**error #1 Value cannot be null. Parameter name: key**” is displayed and may be corrected as follows:

1. Schedule and perform a read job with the affected radio in the RM template mode
2. Recover and restore radio licenses (from the actions icon menu select Settings / Licenses / Radio Licenses, then apply and activate the licenses )
3. Schedule and perform a write operation as normal.

### **MOTOTRBO Subscriber WAVE Client**

The WAVE OnCloud option introduced as part of System Release R2.8.0 (Firmware Version: R02.08.00.0004) is not supported by subscribers and this option is being removed in the following release. For System Release R2.8.0, ensure that the WAVE Enterprise option is selected.

### **R02.07.01.0000 Firmware Upgrade Packages**

Do NOT use the R02.07.01.0000 firmware upgrade packages to upgrade DM2000 Series, DM4000 Series and DM4000e Series Mobiles in the field to firmware version R02.07.01.0000. If you have already done so then read the important Motorola Solutions Technical Notification (MTN-0044-17).

#### **IMPORTANT NOTES:**

1. There is NOT an issue with using the R02.07.01.0000 upgrade packages to upgrade portables in the field to firmware version R02.07.01.0000.
2. There is also NOT an issue for DM2000 Series, DM4000 Series and DM4000e Series Mobiles shipping from the Motorola factory with firmware version R02.07.01.0000 already installed.

### **SMA / MX Connector Antennas**

Even though the SMA antennas are non-GPS, the SMA portable models still support GPS / GNSS since all DP4x01e series portables contain internal GPS / GNSS antennas.

Only SMA antennas should be attached to SMA portable models. Attaching a standard (MX) antenna to an SMA portable will damage the SMA connector centre pin on the portable.

Conversely, only standard (MX) antennas should be attached to standard (MX) portables. Attaching an SMA antenna to a standard (MX) portable will degrade performance.

### **Expanding Existing R2.6.x Capacity Max Systems**

**Adding R2.7.x Radios to an existing R2.6.x Capacity Max System:** If using radios with R2.7.x (or later) firmware, then Radio Management must be upgraded to at least version 2.4.11 (included with CPS version 14.0). Upgrading the Capacity Max infrastructure is not required as RM is able to manage the existing R2.6.x Infrastructure equipment.

**Adding R2.7.x Infrastructure Components to an existing R2.6.x Capacity Max System:** Infrastructure communication protocols were significantly modified in R2.7 in order to support capacity expansion in terms of the number of sites, Trunk Controllers (TC's), MOTOTRBO Network Interface Service (MNIS) Voice and Radio Command (VRC) Gateways, and System Advisors (SA's) as well as Data Gateway

redundancy. As a result, the Capacity Max system must be upgraded to R2.7 prior to adding new (R2.7) infrastructure components such as CMSS's or repeaters. This upgrade process is detailed in the "Capacity Max Infrastructure R2.6.0 to R2.7.0 Upgrade Guide." In particular, adding an R2.7.x repeater to an existing site with R2.6.x repeaters is not supported, because this action disables all R2.6.x repeater functionality at that site until all repeaters are upgraded to R2.7.x.

### Capacity Max Talkpath Licenses

In R2.7, Capacity Max Talkpath Licenses have been moved from the "CMSS hosting the VRC Gateway" to the "CMSS hosting the Trunk Controller." As a result, every active Talkpath on a Standalone VRC on an R2.6.x system will require a new Talkpath license be installed on each CMSS with a Trunk Controller (primary and alternate) in the system for R2.7. Note, no additional Talkpath licenses are required for the Talkpaths on Redundant VRC Gateways and no additional Talkpath licenses are required for existing VRC Gateways that are already on CMSS with Trunk Controllers.

### Capacity Max Switch / Router Configurations

For Capacity Max, updated Switch and Router configuration files are also available on MOL.

### Restricted Access To System as Standard (RAS)

In order to provide better security for radio systems, from system release R2.7.1 onwards RAS is enabled by default (with a default key) on all radios and repeaters.

- To add a new radio or repeater to an existing system **without RAS**, disable RAS and delete the default key when programming.
- To add a new radio or repeater to an existing system **with RAS**, update the RAS key when programming.
- When upgrading an existing radio/repeater to R2.7.1, the RAS settings in the existing radio/repeater are preserved.
- To clone a radio, there are no additional steps required (the cloning operation overwrites the default settings).
- The DEFAULT Key can be found in the CPS/RM OLH.

### CPS Compatibility with Old Archive Codeplugs

CPS version 14.0 (build 717) does not support codeplug versions older than 06.00.14 (system release R2.3) and will fail with error #4784 ("Operation failed to complete") when trying to read a radio / open a file containing such a codeplug version. To avoid this issue the radio should be upgraded using the CPS device update function. If this is not possible, then the CPS should be updated to at least version 14.0 (build 738).

### Receiver Robustness

System release R2.7.1 includes changes to improve the receiver robustness for all Enhanced 'e' series radios under rarely occurring RF conditions. Dealers investigating reports of very occasional missed-calls

on Enhanced 'e' series radios are advised to upgrade their radios to system release R2.7.1 as part of the normal RF / Interference investigation process.

### **RM / CPS Backwards Compatibility with SLR 8000 Repeaters**

RM Version 2.1.17 and CPS Version 13.5 (or later) are not backwards compatible with SLR 8000 repeaters containing earlier firmware than the following:

- VHF: R02.00.06.72 (Codeplug R03.00.56)
- UHF: R02.00.06.53 (Codeplug R03.00.56)

This means that SLR 8000 repeaters must be upgraded to the above releases (or later) before they can be configured with RM Version 2.1.17 and CPS Version 13.5 (or later).

### **RM / CPS Feature Registration**

Effective November 2016, Motorola Solutions are making changes to the Entitlement Identification (EID) license certification. As a result, older versions of RM and the CPS are no longer be able to register new feature EID licenses and so customers are required to upgrade to RM Version 2.1.17 / CPS Version 13.5 (or later).

- Customers upgrading to RM Version 2.1.17 / CPS Version 13.5 (or later) are still able to register any non-registered licenses pending from previous software releases.
- Customers remaining on an earlier RM / CPS release are required to register any outstanding EID licenses before the November 2016 deadline. Any attempts with an earlier RM / CPS release to register an EID feature after this deadline shall result in a failure due to an older certification exchange error.

### **SLR 5500 Repeater and RAS**

SLR 5500 repeaters containing Firmware R02.06.00.07 / Codeplug R03.00.21 exhibit issues with the RAS (Restricted Access to System) feature. Furthermore, non-SLR 5500 repeaters in mixed repeater system configurations where the Master repeater is an SLR 5500 repeater containing Firmware R02.06.00.07 / Codeplug R03.00.21 appear also to exhibit the same RAS issues. However, this effect is caused by the system topology and not the non-SLR 5500 repeaters, since non-SLR 5500 repeaters do not have this RAS issue.

Customers should avoid upgrading SLR 5500 repeaters to Firmware R02.06.00.07 and should upgrade directly to at least Firmware R02.06.00.08 / Codeplug R03.00.24. Any customers with SLR 5500 repeaters already on R02.06.00.07 and configured to use the RAS feature should upgrade to at least Firmware R02.06.00.08 / Codeplug R03.00.24, whereupon they should then re-configure the correct RAS Authentication Key in the upgraded SLR 5500 repeater.

Archives containing Codeplug R03.00.21 (and R03.00.22) must NOT be used after a repeater has been upgraded to at least Firmware R02.06.00.08. It is important therefore that Archives containing Codeplug



R03.00.21 (and R03.00.22) are deleted and that new Archives are created (if required) from the upgraded repeater.

### **Control Head Cable Flex**

The cable flex (part 30012045001) supplied with older (Numeric / Colour Display) Control Head, Remote Mount Control Head and Handheld Control Heads kits is not compatible with the new DP4000e series mobiles.

To determine if a given Numeric Display Model Control Head kit is compatible with the new DM4000e series mobile radios, refer to its part number. If the part number is PMLN5677\_, then the cable flex (part 30012045001) needs to be replaced with a newer cable flex (part 30012045002) before the Numeric Display Control Head kit can be used with the DM4000e series mobile radios. If the part number is PMLN7500\_, then the Numeric Display Control Head kit is already compatible with the DM4000e series mobiles.

To determine if a given Colour Display Model Control Head kit is compatible with the new DM4000e series mobile radios, refer to its part number. If the part number is PMLN5678\_, then the cable flex (part 30012045001) needs to be replaced with a newer cable flex (part 30012045002) before the Colour Display Control Head kit can be used with the DM4000e series mobile radios. If the part number is PMLN7501\_, then the Colour Display Control Head kit is already compatible with the DM4000e series mobiles.

To determine if a given Remote Mount Control Head kit (PMLN6404\_) is compatible with the new DM4000e series mobile radios, refer to the part number on the Remote Transceiver Interface. If the part number is PMLN6402\_, then the cable flex (part 30012045001) needs to be replaced with a newer cable flex (part 30012045002) before the Remote Mount Control Head kit can be used with the DM4000e series mobile radios. If the part number is PMLN7504\_, then the Remote Mount Control Head kit is already compatible with the DM4000e series mobiles.

To determine if a given Handheld Control Head kit (PMLN7131\_) is compatible with the new DM4000e series mobile radios, refer to the part number on the Handheld Control Head Transceiver Adapter. If the part number is PMLN7033\_, then the cable flex (part 30012045001) needs to be replaced with a newer cable flex (part 30012045002) before the Handheld Control Head kit can be used with the DM4000e series mobile radios. If the part number is PMLN7502\_, then the Handheld Control Head kit is already compatible with the DM4000e series mobiles.

### **Firmware Version R02.50.04**

Do NOT use the R02.50.04 firmware upgrade packages to upgrade radios in the field to firmware version R02.50.04. If you have already done so, or if you have received radios from Motorola containing firmware version R02.50.04, then use the latest available upgrade packages to upgrade radios containing firmware version R02.50.04 to at least firmware version R02.50.05.

## CPS DVD Tuner Installer

Revision AH of the CPS DVD (Part Number: GMVN5141AH) contains an issue with the Tuner installer whereby the user may be requested to download and install “.net framework 4.5.1” separately. This only happens if the Tuner is installed from the CPS DVD and there is no CPS installed on the PC prior to the Tuner installation. To avoid this problem either install the CPS on the PC prior to installing the Tuner or download and install the Tuner which is available from the Motorola Online Resource Centre.

## AES Interoperability

The Advanced Encryption Standard (AES) implementation introduced as part of system release R2.4 does NOT interoperate with the pre-R2.4 MOTOTRBO AES implementation. As such, all radios in an existing fleet with the pre-R2.4 AES implementation enabled must be upgraded to at least system release R2.4 before deploying any radios into that fleet with the new R2.4 AES implementation enabled.

## Upgrading Radio Systems Running Applications

To avoid unforeseen issues resulting from upgrading deployed radio systems running Applications, we recommend that you check first with your Application provider to ensure that the version of Application you are running is fully compatible with the new version of radio system.

## Enhanced Codeplug Password Protection

Firmware R01.00.10 / R02.30.10 (System Release R02.03.10) introduces a “Read/Write” codeplug password protection option which is unintended for our region. It is highly recommended therefore that this option is NOT selected for the following reasons:

- (a) If this option is selected and the password is subsequently lost then the radio shall have to be returned to the Motorola repair centre for recovery.
- (b) Support for this option shall be removed in a future system release.

Use of the “Read Only” codeplug password protection option remains unaffected and still allows radios to be recovered to a default state using the “device recover” function within the CPS.

## Digital Voting Systems

Satellite Receivers in Digital Voting systems employing NAI (Network Application Interface) voice and data applications do NOT require NAI Licenses.

Satellite Receivers in Digital Voting Systems employing DTP (Digital Telephone Patch) do NOT require DTP licenses (note: DTP licenses are required only by Gateway repeaters which connect to a Phone Gateway device).

For repeater firmware R02.30.12 (or later), Satellite Receivers in Capacity Plus / Linked Capacity Plus systems employing Digital Voting do NOT require Capacity Plus / Linked Capacity Plus licenses.

## CSBK Data

For system release R2.3 (repeater FW: R02.30.02 / radio FW: R02.30.01), CSBK Data is NOT supported if the system contains a Single Site / IP Site Connect repeater configured with the Enhanced GPS option enabled on one slot and disabled on the other slot. This is due to a known issue (see CCMPD01838363 below) which is targeted to be resolved in the next system release.

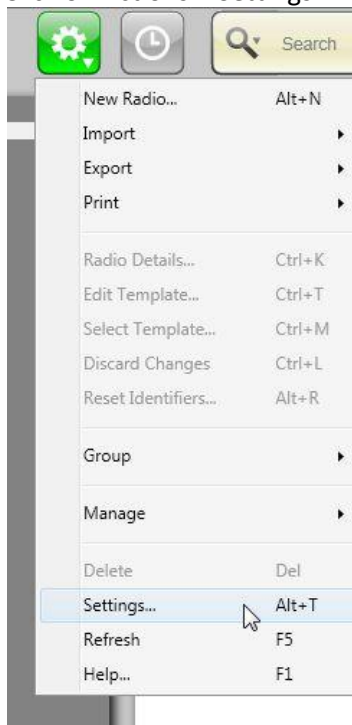
## CfS Database Migration

The Motorola CfS database migrated to a new server during December 2013 and so any Cfs licenses purchased since this date will require CPS version R10.0 (Build 510) or later to be installed for feature registration and activation.

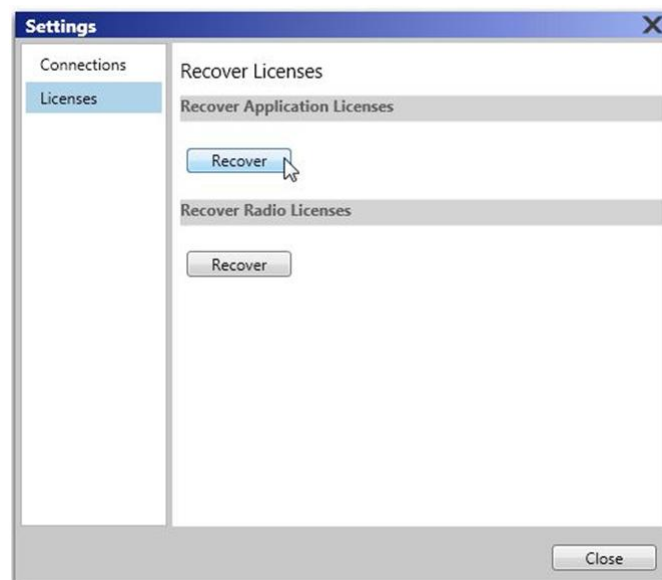
## Radio Management R1.2

After upgrading the RM Server to R1.2 the existing RM licenses need to be recovered as follows:

1. Click on Actions > Settings



2. Click on the Licenses tab and click on Recover Application Licenses



## Operation with Bluetooth Accessories

Any SL4000 Series radios that were upgraded in the field to R02.06.20 should be upgraded to at least R02.06.33 in order to resolve an issue whereby they may fail to operate consistently when used in conjunction with Bluetooth accessories.

## Transmit / Receive Below 422MHz

Any DP2000 Series, DP3441 Series or DP4000 Series UHF portable radios that were upgraded in the field to R02.06.20 or R02.06.21 should be upgraded to at least R02.06.33 in order to resolve an issue whereby the radio may not transmit or receive consistently if operating below 422MHz.

## Battery Indicator

Any DP2000 Series, DP4000 Series or DP4000Ex(Ma) Series Portables that were upgraded in the field to release R02.06.20 should be upgraded to at least R02.06.21 in order to resolve an issue whereby the radio battery gauge shows a very low reading (or empty) when a fully charged IMPRES battery is attached.

## Linked Capacity Plus Systems

When at least one repeater in a Linked Capacity Plus system contains firmware R02.20.12 (or later), then all repeaters in that system must be at least R02.20.12. This means that before a repeater containing firmware R02.20.12 (or later) can be added to a Linked Capacity Plus system, any existing repeaters in that system containing pre-R02.20.12 firmware must be upgraded to at least R02.20.12.

Upgrade procedure: Upgrade the Master repeater first then all Peer repeaters at the Master site and finally all Peer repeaters at the other sites.

## Capacity Plus Systems

For system release R02.02.20 (repeater FW: R02.20.12 / radio FW: R02.06.12), the CPS allows Capacity Plus Channel IDs 1-16 to be defined. However, since the maximum number of Trunking repeaters per Capacity Plus system for this release is still 6 then Channel IDs 13/14 and 15/16 should not be configured.

For repeater firmware R02.30.01 (or later) the Rest/Site IP address must be configured for Capacity Plus systems. Ensure a common Rest/Site IP address is configured for all repeaters in the system.

When at least one repeater in a Capacity Plus system contains firmware R02.30.01 (or later), then all repeaters in that system must be at least R02.30.01. This means that before a repeater containing firmware R02.30.01 (or later) can be added to a Capacity Plus system, any existing repeaters in that system containing pre-R02.30.01 firmware must be upgraded to at least R02.30.01.

Upgrade procedure: Upgrade the Master repeater first then all Peer repeaters. During the upgrade radios will remain on the non-upgraded repeaters until the last Peer repeater is upgraded whereupon the radios will then switch to the upgraded repeaters.

### **R02.06.03 Firmware Upgrade Packages**

Do NOT use the R02.06.03 firmware upgrade packages to upgrade radios in the field to firmware version R02.06.03. If you have already done so, read the Important Readme document available on MOL with R02.06.04 firmware upgrade packages.

### **R02.06.04 Firmware Upgrade Packages**

Do NOT use the R02.06.04 firmware upgrade packages until you have read the Important Readme document available on MOL with these packages.

### **Radio Boot Up, Squelch and Display Operation**

Customers are encouraged to upgrade their R2.X radio firmware to at least R02.06.04 in order to improve the reliability of the radio boot up, analogue squelch and display operation.

### **RSSI Display Value**

To make a MOTOTRBO subscriber display its current RSSI value, press the left arrow three times and immediately press the right arrow three times, all within 5 seconds of power up.

### **PN, DDMS, MNIS and MCDD Applications**

The Device Discovery and Mobility Service (DDMS) application replaces the legacy Presence Notifier (PN) application. Additionally, the DDMS is backwards compatible with the PN such that existing applications that interface with the PN do not require any changes to receive presence notifications from the DDMS.

The Device Discovery and Mobility Service (DDMS), MOTOTRBO Network Interface Service (MNIS) and Multi-Channel Device Driver (MCDD) applications are included on the CPS DVD (GMVN5141\_) and are also available to download from Motorola Online.

The DDMS, MNIS and MCDD applications are not installed automatically from the CPS DVD, instead they need to be manually copied over from the top level DVD folder.

### **Programming Cables**

There is a new programming cable (PMKN4012B) for the DP4000 series radios. Note: PMKN4012B is backwards compatible with the DP 3000 series radios, however PMKN4012A is NOT forwards compatible with the DP4000 series radios.

PMKN4013C is the test & alignment / programming cable for both the DP 3000 series and the DP4000 series radios. Note: PMKN4013A and PMKN4013B are NOT forwards compatible with the DP4000 series radios.

There is also a new “USB-A to USB-B” programming cable (30009477001) and a DB25 test cable (PMKN4166A) for the SLR 5500 repeaters.

## Enhanced GPS Configuration

It is strongly encouraged to review section 2.4.3.6 of the MOTOTRBO System Planner for configuration guidelines.

## Control Station GPS Revert Option

For single site and IP Site Connect configurations, the "GPS Revert" option must be set to "Selected" in the control station radio.

## Repeater Hardware Compatibility

DR 3000 repeaters containing 32MB of memory and MTR3000 repeaters support all R1.X and R2.X features.

DR 3000 repeaters containing 8MB of memory support most R1.X features. However such repeaters do not support the IP Repeater Programming R1.X feature, Linked Capacity Plus or any of the R2.X features.

Note: Any DR 3000 repeater ordered since the launch of R1.7 contains 32MB of memory.

To determine if a given DR 3000 repeater contains 8MB of memory then check the S/Tanapa label. DR 3000 repeaters containing one of the following S/Tanapa numbers contain 8MB of memory (all other DR 3000 repeaters contain 32MB):

- PMUE2390AAEAA DR 3000 UHF1 (25-40W)
- PMUE2390AAE DR 3000 UHF1 (25-40W)
- PMUE2390BAEAA DR 3000 UHF1 (25-40W)
- PMUD2091AAEAA DR 3000 VHF (25-45W)
- PMUD2091AAE DR 3000 VHF (25-45W)
- PMUD2091BAEAA DR 3000 VHF (25-45W)
- PMUD2092AAEAA DR 3000 VHF (1-25W)
- PMUD2092BAEAA DR 3000 VHF (1-25W)
- PMUE3017AAEAA DR 3000 UHF1 (1-25W)
- PMUE3017BAEAA DR 3000 UHF1 (1-25W)
- PMUE3084AAEAA DR 3000 UHF2 (1-40W)

## DR 3000 Repeater Software Upgrade

DR 3000 repeaters containing firmware versions earlier than R01.02.xx must be upgraded to a firmware version between R01.02.xx and R01.06.xx prior to being upgraded to firmware version R01.07.xx or later.

## Legacy PL Falsing

Certain legacy analogue subscribers configured for PL XZ (67 Hz), 183.5 Hz or 199.5 Hz sound "squelch tail" like bursts while DMR digital activity is present on the channel. It is recommended therefore that these tones be avoided if legacy analogue subscribers are required to operate on channels where DMR digital activity is present.

## Repeater Update Duration

When updating MOTOTRBO repeaters, it's important to ensure that the update process is not interrupted until the "Device Update Successful" message appears on the CPS screen.

## DR 3000 Repeater Hardware Upgrades

A MOTOTRBO RDAC Indicator Repeater Board Service Kit (PMLN5269) is available to upgrade pre-R1.4 VHF / UHF1 DR 3000 repeaters to support the power / fan failure diagnostic alarms.

Note: Any DR 3000 repeater ordered since the launch of R1.4 does NOT require this hardware upgrade.

To determine if a given DR 3000 repeater requires the hardware upgrade then check the S/Tanapa label. DR 3000 repeaters containing one of the following S/Tanapa numbers will require the hardware upgrade (all other DR 3000 repeaters will not):

- PMUE2390AAEAA DR 3000 UHF1 (25-40W)
- PMUE2390AAE DR 3000 UHF1 (25-40W)
- PMUD2091AAEAA DR 3000 VHF (25-45W)
- PMUD2091AAE DR 3000 VHF (25-45W)
- PMUD2092AAEAA DR 3000 VHF (1-25W)
- PMUE3017AAEAA DR 3000 UHF1 (1-25W)

## Repeater Diagnostic and Control Version

RDAC version 1.0 is NOT forwards compatible with DR 3000 repeaters containing firmware version R01.06.11 onwards and MTR3000 repeaters. To ensure compatibility, the minimum requirement is for RDAC version 2.5 to be installed.

If RDAC is used with a Linked Capacity Plus system configuration, then RDAC version 4.0 or later must be used.

## Repeater Knockdown

It is recommended that the Repeater is not in the Repeater Knockdown state while performing a CPS Read or Write operation.

## Open (Unresolved) Issues

Open (Unresolved) issues are all known or reported issues that still exist in this current software release and may occur under certain circumstances. The risk and workaround aspects are included in the release note description for overall assessment of a problem.

### Infrastructure Impact

None reported.

### Radio / CPS-RM / RDAC Impact

**Issue Number:** RMGMT-1975  
**System/Product:** RDAC  
**Description:** When click on the help button on the wizard of view features or register features, Error #1722 prompts that %1 does not exist. Please check the file name"  
**Workarounds:** Open RDAC OLH by pressing F1 or click on "Contents and Index".

**Issue Number:** DMGMT-1404  
**System/Product:** Capacity Max and RM  
**Description:** When radio ID in the radio view is changed, you need to go to Actions > Manage > Capacity Max Server Data > SAC for SAC table to get the updated radio ID. Then CMSS needs to be programmed for the updated Radio ID in the SAC.  
**Workarounds:** None

**Issue Number:** CCMPD02140203  
**System/Product:** Connect Plus / Display Radios  
**Description:** Registration popup frozen on Home screen when Silent or Silent with Voice Emergency Call or Emergency Voice is initiated right after switching to new channel. Display shows registration screen instead of TG screen. This will remain until PTT is pressed or Emergency call is complete. This only happens when a configured registration delay is present, or fringe area where registration is delayed upon channel change due to weak signal. This issue does not happen in Silent Emergency Alert.  
**Workarounds:** Do not configure registration delay.  
**Note:** As Connect Plus has been cancelled this is not planned to be fixed.

**Issue Number:** CCMPD02038621  
**System/Product:** Connect Plus / DM4000 Series  
**Description:** Toggling Horn and Light setting via both Menu and Programmable Button will result in a mismatch of the status.



Workarounds: Use only Programmable Button to toggle Horn and Light setting in Connect Plus mode.

Note: As Connect Plus has been cancelled this is not planned to be fixed.

**Issue Number:** CCMPD02140295

System/Product: RM Config Mode

Description: RM shows out-of-range error in the analyze window when running the analyze with the newly added analog channel(s) on MTR3000 VHF in RM config mode. It requires to update Tx and Rx frequency settings on the newly added analog channel(s) to the values within VHF range.

Workarounds: None

**Issue Number:** PCR\_SUB 1518

System/Product: Capacity Max with Enhanced Telephony

Description: Cannot initiate a telephone call while in a group call.

Workarounds: None

**Issue Number:** PCR\_SUB-1007

System/Product: Bluetooth Enabled Radios

Description: Radio prompt "Purchase Required" notice after pairing with a second Bluetooth device. The second device is of a type that initiates the pairing automatically.

Workarounds: Disconnect from existing Bluetooth accessories before trying to pair a second device. Once the pairing is completed you can switch between accessories with no issues.

**Issue Number:** CCMPD02111458

Product Version: DP3661e

Description: User will notice LED is blinking GREEN without an actual carrier on the below frequencies with Capacity Max or Text To Speech. Impolite transmission will not be possible. In addition there is a slight impact to battery life (maximum impact of 15 mins for PMNN4440A and 30 mins for PMNN4502A off the published specifications):

UHF1
Cap Max, Text to Speech
407.36
413.44

UHF2
Cap Max, Text to Speech
474.24
480.32

419.52
425.6
431.68
437.76
443.84
449.92
462.08
468.16

486.4
492.48
498.56
504.64
510.72
516.8
522.88

Workarounds:           None.

## Resolved Issues in R2.9 System Releases

Resolved issues are the known product problems that were reported in products releases, but have now been fixed or closed.

### Resolved in R2.9.0:

Defect ID	Release Introduced	Product	Headline
MOTOTRBO_INFRA-1399	2.7	MNIS Gateway	MNIS ignores voice client version check
CCMPD02138274	2.7	MNIS Gateway	Capacity Plus - UNITED RADIO COMMUNICATIONS INC - System Issue
CCMPD02127314	2.8	MNIS Date GW	MNIS/tunnel installation issue.
CCMPD02136886	2.8.0	Repeater	SLR1000 pin8 is not working
CCMPD02135140	2.8.0	Repeater	XPR8400-SLR5700 Does not pass TPL when set for CSQ
CCMPD02135142	2.8.0	Repeater	SLR5500 repeater rebooting continually
CCMPD02138172	2.6.0	Repeater	Capacity Max_CLEAR TALK_Mass Random Access
CCMPD02138516	2.8.0	Repeater	SLR5700_Phantom Key Ups
CCMPD02138571	2.7.0	Repeater	MNIS , Neoterra , MTR3000 , Communication issues
CCMPD02139179	2.7.0	Repeater	SLR8000 Wireline Fails to Key intermittently after multiple attempts
CCMPD02128904 (MOTOTRBO_INFRA_FW-1808)	2.7.0	Repeater	Single Site All Call in LCP mode for a certain site, all radios of the system receive that call
CCMPD02130310 (MOTOTRBO_INFRA_FW-1702)	2.7.0	Repeater	TRBO 2.8.0 DPP Phone Call fail to end call in 1st attempt but success to end call in 2nd attempt
CCMPD02133221 (MOTOTRBO_INFRA_FW-1756)	2.7.0	Repeater	Disconnecting USB cable from SLR5000 repeater while it is in site trunking causes reset
CCMPD02138284	2.7.	Device Discovery Mobility Service (DDMS)	MNIS , Neoterra , MTR3000 , Communication issues - DDMS- Subs V2 message with the range more than 25
PCR_SUB-376	1.0	Radio	XPR7550e radios are resetting 6-10 times per day (Propagated - PLIGHT1.1.30)
PCR_SUB-379	2.3A	Radio	Voice frame sequence number mismatch between Tx and Rx OB in EOB mode (propagated)
PCR_SUB-580	1.1.30	Radio	DGP8550 - PV COMUNICACIONES SA/CV - MODO DE PRUEBA EN RADIOS (propagated)
PCR_SUB-78	2.0	Radio	XPR7550e radios are resetting 6-10 times per day (Propagated - MOTOTRBO2.9.0)
PCR_SUB-225	2.3A	Radio	[MCL] P3688 / P8800R Interaction issue between Voice Playback and Tone Alert (propagated)
PCR_SUB-227	2.3A	Radio	[MCL] Voice frame sequence number mismatch between Tx and Rx OB in EOB mode (propagated)

PCR_SUB-228	2.5	Radio	[MCL]Faint 'white noise' is heard on the RLN6562A wireless RSM when used with XPR7000e series radios (propagated)
PCR_SUB-579	2.9.0	Radio	DGP8550 - PV COMUNICACIONES SA/CV - MODO DE PRUEBA EN RADIOS (propagated)
PCR_SUB-889	2.3A	Radio	XPR5550 will not key during repeater hang time. (propagated)
PCR_SUB-913	2.9.0	Radio	Fixed Privacy Key Decryption doesn't work with KMF (propagated - MOTOTRBO2.9.0)
PCR_SUB-964	2.5	Radio	P8668 Radio is unable to unmute to direct PDT call occasionally under weak signal (propagated - MOTOTRBO2.9.0)
PCR_SUB-1244	2.8.0	Radio	Failure of receiving PDT packed data if RC signal embedded (Propagated)
PCR_SUB-1245	2.8.0	Radio	Failure of PDT AMBE encryption after switching from Nvocoder encryption (Propagated)
PCR_SUB-1315	2.8.0	Radio	P8808R 3 button DP4000 model has longer power up timing on R2.8.1 FW (Propagated)
PCR_SUB-1371	2.5	Radio	OB can't receive the PUI broadcast of P2 and P3 from M6660 (Propagated - MOTOTRBO2.9.0)
PCR_SUB-1719	2.8.5	Radio	M6660 - reset once the radio receive call (Propagated - MOTOTRBO2.9.0)
PCR_SUB-1849	2.6.0	Radio	[2.9.0] SIG - Fidanque Cap Max C3 SU Forgets The Announced Sites After Power Cycle
PCR_SUB-1870	2.6.0	Radio	Cap Max_FIDANQUE_Radios are having issues making calls and accessing system resources (Propagated)
PCR_SUB-2111	2.8.0	Radio	OTAP and "Ignore Rx Clear Voice/Package Data" (propagated)
PCR_SUB-2165	2.0	Radio	[MPT OB] [NZ Kordia DIMIP] [RTS] DM4600 MPT call set up issue
PCR_SUB-2386	2.8.0	Radio	Privacy icon for PDT call screen can't be shown after radio receives a MDC call (propagated - MOTOTRBO2.9.0)
CCMPD02137114	2.8.5	Radio	Call ID screen will appear when PTT is pressed but before the radio has finished sending the PreTime
CCMPD02139650	2.5	Radio	When user performs a full codeplug (huge codeplug) OTAP upgrade via RM and request for commit and switchover together, then if the radio is power off within 10 minutes, the radio will not switchover to new software but RM will report the switchover is successful
CCMPD02105864	2.0	Radio	Pressing Cancel in the middle of switching Bluetooth headset may cause the Bluetooth menu display to lock up in rare occasion. Press PTT or change channel to recover.
CCMPD02128970	2.1	Radio	The Bluetooth menu will appear in an MPT channel even though these radios does not support Bluetooth. Selecting the menu item will cause screen to freeze. Pressing P1/P2 to change zone to recover.
CCMPD02131510	2.8.0	Radio	Radio allows user to enter FPP Dealer Mode in a WAVE

			personality when it should not. There is no adverse impact if a user does enter but many of the parameters does not apply to WAVE.
CCMPD02141465	N/A	CPS/RM	XPR7550_Paul Pellico_cannot adjust audio after upgrade to 2.8.5
CCMPD02142478	N/A	CPS/RM	MOTOTRBO Radio Management EMERGENCY RADIO SERVICE INC- Error 110170 Application Has Encountered An Error
CCMPD02142066	N/A	CPS/RM	SL3500e_Multiple end users_ SL3500e cannot set one touch to home revert.
CCMPD02142726	N/A	CPS/RM	CMSS_LRC Wireless_101003 error in RM
CCMPD02141472	N/A	CPS/RM	CPS 15.5 - English and French version still show v15.0
CCMPD02138837	N/A	CPS/RM	XPR7550 - Illinois Communications Sales Inc - Digital Mic Gain menu option not working