MTM5000/MTM800FuG Series

TETRA Terminals Software Release Note

MR19.2 Software Release

Terminal software	Code plug	Firmware
MTM5000 / MTM800FuG - Transceiver	1059	R27.XXX.9463
MTM5000 / MTM800FuG - Head	7461	R14.000.9463

CPS Plus Release : R07.50.00.35_PLATFORM_P7.5

R07.40.05.00_PLATFORM_P7.4

Document revision: 1.0

Revision Date: 8 May 2020

Change History

Rev	Date	Author	Description
1.0	May 8, 2020	Yang Lirong	MR19.2 Release Notes

Acronyms and Abbreviations

Acronym	Definition
AT	Hayes Command set
AuC	Authentication Centre
CMG	Crypto Management Group
CPS	Customer Programming Software
CR	Change Request
DGNA	Dynamic Group Number Assignment
DMO	Direct Mode Operation
E2EE	End to End Encryption
FDPC	Full Duplex Private Call (ie a normal phone call to a TETRA Terminal)
FKP	Full Keypad
GPS / GNSS	Global Positioning System / Global Navigation Satellite System
GCAI	Global Core Accessory Interface
GSSI	Group Subscriber Identification (Talk Group)
HDPC	Half Duplex Private Call
IOP	Intra-Operability
ISSI	Individual Subscriber Identification
KVL	Key Variable Loader
LIP	Location Information Protocol
LKP	Limited Keypad
Mic	Microphone
MMI	Man to Machine Interface
MR	Mobile Release
MS	Mobile Station also known as 'Terminal'
MSPD	Multislot Packet Data
NGCH	Next Generation Control Head – used to control the Mobile transceiver
OTAR	Over The Air Rekeying
OTB	One-Touch Button. Buttons 1 to 9, * and # can be configured in the CPS as One-Touch Buttons.
PD	Packet Data
PDU	Protocol Data Unit
PEI	Peripheral Equipment Interface
PHF	Personal Hands-Free
PIN	Personal Identity Number
PPC	Pre-emptive Priority Call
PSTN	Public switched telephone network
RSM	Remote Speaker Microphone
RUA/RUI	Radio User Authentication (RUA) & Radio User Identity (RUI)
SCK	Static Cipher Key
SDS	Short Data Service
SW	Software
SwMI	Switching and Management Infrastructure
TG	Talkgroup
TMO	Trunked Mode Operation
TXI	Transmit Inhibit
CRYPTR micro	SD based Motorola crypto solution
UCM-M	Universal Crypto Module – Motorola Advanced Crypto Module

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Introduction

The overall purpose of this document is to introduce the reader to the MR19.2 Software release prior to operating TETRA terminals into which it has been installed.

The MR19.2 Software release supports the following TETRA terminals.

Terminal	350-390 MHz	380-430 MHz	410-470 MHz	806-870 MHz
MTM5200	Yes	Yes	Yes	Yes
MTM5400	Yes	Yes	Yes	Yes
MTM5500	Not applicable	Yes	Yes	Yes
MTM800FuG (*BSI TEA2 only)	Not applicable	Yes*	Not applicable	Not applicable
MTM800FuG ET (*BSI TEA2 only)	Not applicable	Yes*	Not applicable	Not applicable

This document outlines the key functionality delivered with the MR19.2 Software release. For more detailed descriptions of the TETRA terminals, please refer to:
https://www.motorolasolutions.com/en_xu/products/tetra.html

Previous Customer Release Notes are also available from Motorola online, or through your usual Motorola channel partner account manager.

1.   Benefits

1.1   New Features

For a full description refer to the Feature User Guide which can be found at http://learning.motorolasolutions.com by searching for the appropriate device.

MR19.2 Software is introduced alongside the 7.5 version CPS^{Plus} .and iTM. The existing 7.4 version of CPS^{Plus} .and iTM could still be used by MR19.2. For further information on these refer to http://learning.motorolasolutions.com by searching TETRA Terminals/Integrated Terminal Management and CPS Plus 7.5 and iTM respectively.

The MR19.2 Software Features are as follows.

Feature	Summarised Description	Enablement Needed	Platforms Affected
MTM5000 series UHF refresh	MTM5000 series UHF refresh models increased radio RAM memory size to 128MB, and NAND flash from 1Gb to 2Gb. UHF Refresh introduces following new tanapas*: PMUE5486A PMUE5488A GMUE5489A PMUE5490A PMUE5491A PMUE5492A	No	MTM5000 Series

	GMUE5493A PMUE5494A PMUE5495A PMUE5496A GMUE5497A PMUE5498A PMUE5499A GMUE5500A * Hardware will be released in future release.		
MTM5000 series control head refresh	MTM5000 series control head has been refreshed and introduces following new control head part numbers*: PMVN4379A PMVN4380A PMVN4381A PMVN4382A PMVN4383A PMVN4385A PMVN4386A PMVN4387A PMVN4388A PMVN4389A PMVN4390A PMVN4391A PMVN4392A PMVN4393A PMVN4394A PMVN4395A PMVN4396A PMVN4397A PMVN4398A PMVN4399A PMVN4400A PMVN4425A * Hardware will be released in future release.	No	MTM5000 Series Control Head

1.2   Changes / Improvements

Changes / improvements have also been included within this MR19.2 Software Release:

Change / Improvement	Summarised Description	Platforms Affected

1.3   Software Ordering Option (Terminals)

Terminal Software selection:

Europe Middle East and Africa

Device Software Release Options
GA01740AA - ADD: MR19.2 SOFTWARE

Asia Pacific and China

Device Software Release Options
QA07979AA - ADD: MR19.2 Software

1.4   Software Release Pack DVD Ordering Details

DVDs (Regional specific differences included below)

Europe Middle East and Africa

Software Release Pack DVDs
GMVN6248A - MR19.2 CLR SOFTWARE
GMVN6249A - MR19.2 TEA1 SOFTWARE
GMVN6250A - MR19.2 TEA2 SOFTWARE
GMVN6251A - MR19.2 TEA3 SOFTWARE
GMVN6252A - MR19.2 TEA2 BSI SOFTWARE

iTM/CPS DVDs
GMVN6247A - FIRMWARE,CPS SOFTWARE DVD R7.5
GMVN6214A - iTM One R7.4 DVD
GMVN6215A - iTM Enterprise R7.4 DVD
GMVN6259A - iTM One R7.5 DVD
GMVN6260A - iTM Enterprise R7.5 DVD

Added Device Software Feature Options
NA

Aftermarket Software Features - Added iTM/CPS Software Feature Licenses
NA

Aftermarket Software Features - iTM options
NA

Asia Pacific and China

Software Release Pack DVDs
PMVN4418A - MR19.2 CLR SOFTWARE
PMVN4419A - MR19.2 TEA1 SOFTWARE
PMVN4420A - MR19.2 TEA3 SOFTWARE

iTM/CPS DVDs
PMVN4367A - CPS SOFTWARE DVD R7.5
GMVN6214A - iTM One R7.4 DVD
GMVN6215A - iTM Enterprise R7.4 DVD
GMVN6259A - iTM One R7.5 DVD
GMVN6260A - iTM Enterprise R7.5 DVD

Added Device Software Feature Options
NA

Aftermarket Software Features - Added iTM/CPS Software Feature Licenses
NA

1.5   CPS 7.5 Upgrade / Downgrade

Upgrades
CPS7.5 Plus supports Upgrade from the following releases.

Platform	Software Releases
MTM5200 legacy (800MHz)	MR19, MR18.5, MR18a, MR18, MR17.3, MR17, MR16.5, MR16.1, MR16_a, MR15.1, MR15, MR14a, MR14
MTM5400 legacy (800MHz)	MR19, MR18.5 ,MR18b, MR18a, MR18, MR17.3, MR17, MR16.5, MR16.1, MR16_a, MR15.1, MR15, MR14.2, MR14a, MR14, MR10.2.1
MTM5500 legacy (800MHz)	MR19, MR18.5, MR18b, MR18a, MR18, MR17.3, MR17, MR16.5, MR16.1, MR16_a, MR15.1, MR15, MR14a, MR14
MTM5200 legacy (UHF)	MR19, MR18a, MR18, MR17.3, MR17, MR16.5, MR16.1, MR16_a, MR15.1, MR15, MR14a, MR14
MTM5400 legacy (UHF)	MR19, MR18b, MR18a, MR18, MR17.3, MR17, MR16.5, MR16.1, MR16_a, MR15.1, MR15, MR14.2, MR14a, MR14, MR10.2.1
MTM5500 legacy (UHF)	MR19, MR18b, MR18a, MR18, MR17.3, MR17, MR16.5, MR16.1, MR16_a, MR15.1, MR15, MR14a, MR14
MTM800FuG legacy	MR19, MR18a, MR18, MR17, MR16.5, MR16.1, MR16_a, MR15.1, MR15, MR14
MTM800FuG ET Legacy	MR19, MR18a, MR18, MR17, MR16.5, MR16.1, MR16_a, MR15.1, MR15, MR14
MTM5200 refresh (800MHz)	MR19, MR18.5
MTM5400 refresh (800MHz)	MR19, MR18.5
MTM5500 refresh (800MHz)	MR19, MR18.5
MTM5200 refresh (UHF)	MR19.2 is the first release.

MTM5400 refresh (UHF)	MR19.2 is the first release.
MTM5500 refresh (UHF)	MR19.2 is the first release.
MTM800FuG refresh	MR19.2 is the first release.
MTM800FuG ET refresh	MR19.2 is the first release.

Downgrades

Downgrades are possible to the releases shown below but only the sensitive data (including tuning data) is maintained during the downgrading. If you want to roll back a radio to a previous version, the correct way is first to backup the Codeplug to be used, then downgrade to the version required, then to use the 'Restore Radio' function, which directly uses the previously backed up codeplug.

Platform	Software Releases
MTM5200 legacy (800MHz)	MR19, MR18.5, MR18a, MR18, MR17.3, MR17, MR16.1, MR16_a, MR15.1
MTM5400 legacy (800MHz)	MR19, MR18.5, MR18b, MR18a, MR18, MR17.3, MR17, MR16.1, MR16_a, MR15.1
MTM5500* legacy (800MHz)	MR19, MR18.5, MR18b, MR18a, MR18, MR17.3, MR17, MR16.1*, MR16_a*, MR15.1
MTM5200 legacy (UHF)	MR19, MR18a, MR18, MR17.3, MR17, MR16.1, MR16_a, MR15.1
MTM5400 legacy (UHF)	MR19, MR18b, MR18a, MR18, MR17.3, MR17, MR16.1, MR16_a, MR15.1
MTM5500 legacy (UHF)	MR19, MR18b, MR18a, MR18, MR17.3, MR17, MR16.1*, MR16_a*, MR15.1
MTM800FuG legacy	MR19, MR18a, MR18, MR17, MR16.1, MR16_a, MR15.1, MR15, MR14
MTM800FuG ET legacy	MR19, MR18a, MR18, MR17, MR16.1, MR16_a, MR15.1, MR15, MR14
MTM5200 refresh (800MHz)	MR19, MR18.5
MTM5400 refresh (800MHz)	MR19, MR18.5
MTM5500 refresh (800MHz)	MR19, MR18.5
MTM5200 refresh (UHF)	MR19.2 is the first release. Can not be downgraded to old releases.
MTM5400 refresh (UHF)	MR19.2 is the first release. Can not be downgraded to old releases.
MTM5500 refresh (UHF)	MR19.2 is the first release. Can not be downgraded to old releases.
MTM800FuG refresh	MR19.2 is the first release. Can not be downgraded to old releases.
MTM800FuG ET refresh	MR19.2 is the first release. Can not be downgraded to old releases.

Downgrade will only keep the tuning data and reset all other codeplug fields back to default. This functionality may be used ONLY on new radios from the factory. For rollback a radio to a previous version the "Tools->Restore Radio" shall be used instead of the downgrade. For how to use the Restore Radio, please refers to the CPS Online help.

* Releases MR16.a & MR16.1 are not supported for the MTM5500 800MHz.

2   Product and Release Information

This software release MR19.2 is for use as described in the introduction above and as detailed in the various sections.

2.1   Sales Models

Following new sales models* are introduced as part of MR19.2.

Europe Middle East and Africa:
MDM85PFA6TZ6AN   MDM85PFS6TZ5AN   MDM85PFS6TZ4AN   MDM85PFS6TZ6AN
MDM85PFS6TZ2AN   MDM85PFA6TZ5AN   MDM85PFT6TZ6AN

Europe Middle East and Africa (FUG):
MDM85PFS6TZ5AG   MDM85PFS6TZ4AG   MDM85PFS6TZ6AG   MDM85PFS6TZ2AG
MDM85PFA6TZ5AG   MDM85PFA6TZ6AG   MDM85PFT6TZ6AG   MDM85PFS6TZ5AGSP01
MDM85PFS6TZ6AGSP01   MDM85PFS6TZ2AGSP01

Asia Pacific and China:
AZM85PCS6TZ5AN   AZM85PCS6TZ6AN   AZM85PFS6TZ5AN   AZM85PFS6TZ6AN
AZM85PFT6TZ6AN

MTM5000 Series UHF refresh introduces the following new refresh tanapas*:

PMUE5486A   PMUE5488A   GMUE5489A   PMUE5490A   PMUE5491A   PMUE5492A
GMUE5493A   PMUE5494A   PMUE5495A   PMUE5496A   GMUE5497A   PMUE5498A
PMUE5499A   GMUE5500A

MTM5000 Series control head refresh introduces the following new refresh control head part numbers*:

PMVN4379A   PMVN4380A   PMVN4381A   PMVN4382A   PMVN4383A   PMVN4385A
PMVN4386A   PMVN4387A   PMVN4388A   PMVN4389A   PMVN4390A   PMVN4391A
PMVN4392A   PMVN4393A   PMVN4394A   PMVN4395A   PMVN4396A   PMVN4397A
PMVN4398A   PMVN4399A   PMVN4400A   PMVN4425A

* Note: Hardware will be released in future release.

2.2   Product Details

The following terminals with the following encryption possibilities are supported by MR19.2.

Radio Models	Encryption													
	E2EE	Clear				UCM-M				CRYPTR micro				BSI
	AIE	Clear	TEA 1	TEA 2	TEA 3	Clear	TEA 1	TEA 2	TEA 3	Clear	TEA 1	TEA 2	TEA 3	TEA 2
MTM5200		x	x	x	x	x	x	x	x					
MTM5400		x	x	x	x	x	x	x	x					
MTM800FuG														x
MTM5500		x	x	x	x	x	x	x	x					
MTM800FUG ET														x

2.3   Software improvements included in the MR19.2 SW

A range of lower level improvements requested and identified in previous releases are included in the MR19.2 Software Release, the cross referenced listings are maintained by the Customer Support Team and are available on request.

2.4   Limitations to use

NA

2.5 Motorola Technical Notifications (MTNs)

MTNs provide important updates on Motorola products, including upgrades, options and revisions, as well as alerts to potential problems and workarounds.

To gain access to the MTNs please visit:-

https://eumeainfo.motorolasolutions.com/technical_notifications_emea

2.6   User manuals

User guides may be found at http://learning.motorolasolutions.com

2.7   Features removed in this Release

None.

3   ACCESSORIES

All existing accessories are certified with MR19.2 release. No new accessories are introduced.

4   Annex - System Version

The TETRA terminals with MR19.2 Software were tested using the following infrastructure:

4.1   Dimetra 9.0.2

SwMI SR 9.0.2	SW	Version	
		NM	90.2.291
		ATR/STM	DSTM-09.00.02.36
		ZC	R09.00.02.56
		NMT	D90.2.291
		PDR	R09.00.02.37

		SDR	R09.00.02.33
SC			R09.40.26
BRC			R09.20.33 (TEA2)

AIE	Component	Version
PrC	App	R09.00.00.12
	Database	R09.00.00.12
AuC	App	R09.00.00.12
	Database	R09.00.00.12
CryptR II		R01.01.04
KVL	SW	R2.0.2000.58

5   Annex – Authenticated AT Commands

NA.