



SERVICE BULLETIN - OPTIONAL

Part No.: MTP136D-000GN

Description: Mission Transceiver Panel Mount	
Service Manual: N/A	Service Bulletin No.: MTP136D-000GN-603-0002
ECO No.: ECO1220	Subject: Optional 1.02 Firmware Update

Prepared By:	Checked By:	Approved By:
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1. Planning Information

1.1. Applicability

This bulletin is applicable to all units with firmware version 1.01.

Part Number	Unit Serial Number	Authorized Software Upgrade
MTP136D-000GN	117954 and up	Version 1.02 Installed at factory.
MTP136D-000GN	108104 – 117953	Optional field loadable upgrade.

1.2. Reason

Firmware update consisting of customer requested features and minor bug fixes including but not limited to:

- Added file browser for selection of profile during import.
- Added customization for profile name on export.
- Added customization for LCD dimming behavior.
- Added customization for radio volume limits.
- Corrected volume knob non-linearity.
- Improved error messages during profile import and export.

See Section 5 for a comprehensive list of version differences.

1.3. Description

MTP136D field loadable firmware upgrade to version 1.02.

1.4. Compliance

Optional: This service bulletin may be incorporated at the customer's discretion.

1.5. Approval

No change to existing approval.

1.6. Costing

Firmware includes minor improvements and is provided by AEM to customers free of charge for field loadable firmware installations.

1.6.1. Field Loadable Firmware

Installation of the firmware is to be accomplished by the customer through use of this bulletin. AEM Support may be contacted for assistance in the case of an issue.

1.6.2. Optional Factory Upgrade Parts and Labour

The customer may elect to have the factory perform the upgrade. Shipping cost to and from the factory and the associated labour for installation are **not** subject to warranty consideration and will incur a fee to be paid for by the customer.

One (1.0) hour estimated. Includes required test time.

1.7. Special Equipment Required

- Windows 10 or newer computer with internet access.
- USB C cable.
- USB C thumb drive.

1.8. Weight and Balance

Not affected.

1.9. Electrical Load Data

Not affected.

1.10. References

None.

1.11. Other Publications Affected

Operators Guide (MTP136D-000GN-813-0) and Installation Manual (MTP136D-000GN-815-0) have been revised to reflect 1.02 firmware.

2. Procedure Instructions

This section assumes operational familiarity with the MTP136D.

Updating from firmware version 1.01 to 1.02 will **erase** all options. To backup, follow the *Export Profile* procedure in the Operators Guide (MTP136D-813-0) or the Installation Manual (MTP136D-815-0) **before upgrading**. Profiles used on 1.01 firmware can be converted for use in 1.02 by following the Profile Conversion Procedure below.

**2.1. Upgrade Procedure**

#	Procedure	Completed
1.	Power on the MTP136D by rotating MAIN VOL clockwise past the detent.	
2.	MENU > More > System > Login.	
3.	Enter the admin password, <i>iac</i> , and press ENTER.	
4.	MENU > More > System > Prgm > System.	
5.	MENU > Prgm.	
6.	The MTP136D will enter USB Bootloader mode causing the screen to fade.	
7.	Connect a USB cable from the MTP136D's DATA port to a Windows computer.	
8.	Open a web browser and navigate to the AEM Radio Firmware Programmer located at www.aem-corp.com on the MTP136D product page under software.	
9.	Follow the instructions to program 1.02 firmware. Driver installation with administrator access is required for first time use.	
10.	Wait for the MTP136D to restart. It is normal for errors to be shown on screen during the first startup after programming a different firmware.	
11.	Clear all errors by pressing ENTER on each. If any errors persist past the first startup, contact AEM support.	

2.2. Verification Procedure

#	Procedure	Expected	Observed
1.	Restart the MTP136D by rotating MAIN VOL counterclockwise past the detent followed by clockwise past the detent.	No errors, settles on Home screen.	
2.	Navigate to the System Information screen by pressing MENU > More > System > Info and verify the <i>SW Ver</i> field.	1.02	
3.	Navigate to the System Information screen by pressing MENU > More > System > Info and verify the <i>CRC</i> field.	0x243C6028	


2.3. Profile Conversion Procedure

#	Procedure	Completed
1.	Open a web browser and navigate to the AEM Radio Firmware Programmer located at www.aem-corp.com on the MTP136D product page under software.	
2.	Select radio model MTP136D.	
3.	Select firmware version 1.02.	
4.	Open an existing 1.01 profile.	
5.	Follow the prompts to convert the profile to 1.02.	

6.	Download the new profile onto a USB C thumb drive.	
7.	Follow the Import Profile procedure in the Installation Manual (MTP136D-815-0) or the Operators Guide (MTP136D-813-0) to load the converted profile into the MTP136D.	

2.4. Recovery Procedure

These steps restore the original firmware and are only required in the case of a programming error that results in a failed startup condition.

#	Procedure	Completed
1.	Power off the MTP136D by rotating MAIN VOL counterclockwise into the detent	
2.	Unfasten the MTP136D from the instrument panel and slide it out until the small opening on the left side of the chassis can be easily accessed. 	
3.	Use a pin, pick, or small screwdriver to press and hold the button inside the opening.	
4.	While holding the button, power on the MTP136D by rotating MAIN VOL clockwise past the detent.	
5.	Release the button. The screen will be blank indicating the MTP136D is in USB Bootloader mode.	
6.	Open a web browser and navigate to the AEM Radio Firmware Programmer located at www.aem-corp.com on the MTP136D product page under software.	
7.	Follow the instructions to program (restore) the original firmware version. Driver installation with administrator access is required for first time use.	



3. Material Information

No materials required.

4. Reference Documents

Operators Guide (MTP136D-813-0) is required to complete the optional profile conversion procedure.

5. Version Differences

This section details the differences between firmware versions 1.01 and 1.02. Each change mentions an issue code in the form of *MTP-xxxx* used for internal issue tracking.

Default lighting behavior has changed, new units will ship in Day mode rather than Auto mode.

5.1. New

Screenshots

Screenshots can now be taken by pressing ENTER+MENU when a USB mass storage device is connected. They are saved as a bitmap file with an incrementing name to the root directory.

MTP-1862.

Indication of button test mode

Button test is now indicated using an arrow on the action menu item.

MTP-1877.

LCD auto mode customization

Three Admin options, "Transition", "Day", and "Hysteresis", under the heading "Auto LCD Mode" on the Admin Options Screen allow complete customization of the dimming behavior in Auto mode.

MTP-1891, MTP-1925, MTP-1940, MTP-1952, MTP-1965, MTP-2010.

LCD brightness mode control

A new user option, "LCD Mode", on the Brightness Screen action menu provides manual control over the LCD brightness mode. Default is now Day mode rather than Auto mode.

MTP-1892.

Profile import selection

Profile import now supports selection from a list of all ".json" files in the root directory of the connected USB drive.

MTP-1893, MTP-1945.

Export profile name customization

Exported profile name can now be customized on the Export Screen.

MTP-1894, MTP-1931.

Skip disabled channels

Changing channels on the Home Screen will now skip disabled or unsupported channels.

MTP-1895, MTP-1922.

Unsupported channels

Channels that require features not available on the current hardware or software configuration will now show up as "Unsupported" on the home screen with receive and transmit functionality disabled. This allows for import of wideband channels on narrowband radios and P25 channels on analog radios.

MTP-1901, MTP-1928, MTP-1981.

Import error log per profile

Import error log name now includes the name of the profile it was generated from.

MTP-1915.

Button test automatic scroll

Enabling button test mode will now jump to the "Last Button" menu item.

MTP-1920.

LCD dimming range

Two new admin options, "Darkest" and "Brightest", under the heading "LCD Dimming Range" on the Admin Options Screen allows for adjusting what voltage the LCD is darkest and brightest when being dimmed by the panel dimming input.

MTP-1929.

Lighting options set from dimming input

A "Read" action menu item was added to the new "Darkest", "Brightest", "Transition", and "Day" options for convenient matching to the current panel dimming input voltage.

MTP-1949, MTP-1966.

Record radio faults in error log

Radio faults that last more than 3 retries now show an error on screen and record the event in the error log.

MTP-2002.



Improved radio volume customization

Added a new option, "Max Volume", under the "Radio 1" and "Radio 2" headings on the User Options screen that allow adjustment of the maximum receive audio level delivered by each radio. The "Min Volume" option has been moved from the Admin Options screen to the User Options screen to match. A RESERVED menu item has replaced the previous "Min Volume" option on the Admin Options screen to prevent shifting of items below it.

MTP-2062, MTP-2063.

5.2. Changed

User and admin profile option order

Options in both user and admin profiles have been re-arranged to more closely match the on-screen order.

MTP-1632, MTP-1970, MTP-1985.

Expandable option indicators

Modifying an expandable option now hides all other expandable list indicators from other options.

MTP-1771.

Flash memory utilization improvement

Flash memory was not fully utilized resulting in one sector being unused.

MTP-1845.

Over temperature indicator

Fixed a bug where retransmitting during an over-temperature condition would not display indicator (LO!).

MTP-1825.

LCD Brightness step validation in profile

Missing validation now added to match GUI.

MTP-1853, MTP-2017.

Hide priority on disabled channels

Scan priority is now hidden on the Home Screen when channel is disabled or unsupported.

MTP-1874, MTP-1980.

Radio power during program

Issue with power control logic resulted in radios sometimes not being powered on Program Radio Screen.

MTP-1878.

Profile import and export screen wording

Wording improved on import and export screens.

MTP-1909, MTP-1911.

Menu arrow consistency

Menu arrows removed from items on Profile Select and Error Log screens.

MTP-1912.

Action menu label during character edit

Action menu during character edit on login and key entry fields showed "Login" and "Add" instead of "Save"

MTP-1918.

Guard volume detent

Guard volume knob detent could restart the guard radio under certain hardware conditions.

MTP-1942.

Missing text when scanning disabled channels

Scanning only disabled channels did not show "Scanning" on the Home Screen.

MTP-1946.

Allow deleting last list member

Deleting the last list member is no longer locked and resets that member to defaults instead.

MTP-1958.

LCD brightness panel dimming input range increase

LCD brightness panel dimming input maximum range increased by 3.3%.

MTP-1959.

Priority scan timer modification

Priority interval timer now pauses when checking higher priority channels to ensure the timer only counts total time on the locked channel.

MTP-1960.



Scan transmit

Fixed a bug where transmitting when both locked on a channel, and scanning higher priority channels, would transmit on home instead of the locked channel.

MTP-1968.

Priority scan failure edge case

Fixed a bug where transmitting immediately after leaving to scan a priority channel prevented priority channels from being scanned until scan was restarted.

MTP-1969.

Improved result messages on import and export screens

Importing an incompatible profile version now has its own message. Importing a profile that requires higher permissions now has its own message. All result messages have been improved to be more descriptive.

MTP-1978, MTP-2036.

Profile rejection on missing version

Importing a profile without a version number is now rejected.

MTP-1984.

Improved radio boot sequence

Modified the radio boot sequence to improve recovery at high temperatures. Added animated ellipses to boot message on home screen. Changed "Radio Fault" from a status to an error message.

MTP-2040.

Incorrect radio TX behavior after recovery from fault

Fixed a bug where a radio fault and subsequent recovery while PTT is held would result in the wrong TX data being transmitted after recovery.

MTP-2042.

Volume knob response improvements

Software compensation has been added to correct the non-linear volume response of both volume knobs. Increased range on the lower end of both volume knobs by ~20°.

MTP-2067, MTP-2068, MTP-2069, MTP-2070.

End of Service Bulletin
