

Installing MobileMapper CE Receiver Firmware

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A. Preliminary Setup



1. Put an SD card with at least 32 MB of memory in a card reader and reformat it by right-clicking on the card reader drive in Windows Explore and selecting the Format option.
2. Download MMCE_Receiver_FW.zip from the /Mobile Mapping/MM CE/Firmware/ folder at ftp.magellangps.com. Opening zip files from ftp sites can cause improper file extraction and generate an error message saying the files are corrupted. To prevent this, always copy zip files to your hard drive before extracting the files. Due to the increased probability of file corruption when emailing data files, do NOT install firmware that was emailed.
3. Extract the contents of the zip files to the SD card, make sure the MMCE is turned off and insert the SD card into the receiver's card slot. You may use either Microsoft ActiveSync and the MMCE USB cable or Windows Explore and a card reader to transfer the files to the receiver's SD card. The contents are as follows:
 - a. Baldur.exe
 - b. E032-FeodoreAndPfl.bin
 - c. FormatWizard.exe
 - d. OS_291.nbX

Note: It takes longer to finish writing a file to an SD card than is reported by the Windows application doing the writing. If you are using a card reader, wait 15 seconds after copying before removing the card from the card reader.

4. Plug in the MobileMapper CE (MMCE) into the charger to ensure that you do not run out of power during this process.
5. Turn on the receiver after the receiver has been attached to the charger for a few seconds.
6. If you have installed any third-party software applications on the MMCE, we recommend the following:
 - a. Run any application that requires a registration number, check the application's Help menu and write down this number.
 - b. Use either Microsoft ActiveSync and the MMCE USB cable or Windows Explore and a card reader to backup all of the third-party applications and any data files to your PC.
 - c. If you post-process MMCE data, copy the file **mmppcode** from the MyDevice directory to the PC.

B. Install Operating System Version 2.91

1. On the MobileMapper CE, tap the Start icon  at the lower left of the Desktop then **Settings > Control Panel** and double-tap the Thales System Info icon. If you already have OS F/W Version 2.91, proceed to Step D.
2. Double-tap **My Computer** on the **Desktop**, navigate to the Windows folder, and double-tap **OSLoader**.
3. Tap **OK** on the popup that asks you to choose a new "image file."






4. Navigate to the SD card, select **OS_291.nbX** and press **OK** at the top right of the browsing window.
5. Tap **Yes** to confirm that you want to update the operating system. It takes 2.5 minutes to install.
6. Tap **OK** on the popup saying the operating system has been updated successfully.
7. You must now restore the MMCE to factory settings. This will delete any applications or data files from the MyDevice and Windows directories, so make sure you have completed Step A2 (see above). To restore the MMCE to factory settings, do the following:
 - a. **My Computer** should still be open to the Windows folder. Double-tap the **Restore Factory Settings** icon (or restoreFactorySettings.exe).
 - b. Tap the second option “Restore factory settings at next boot” and tap **OK**.
 - c. Tap **Yes** on the **Confirmation** window acknowledging the need to reinstall applications.
 - d. Tap the **X** in the upper right of the **My Computer** screen and tap  > **Suspend**, select **Full Shut Down Mode** and tap **OK**.
 Note: Putting the MMCE into full shut down mode is required after restoring the receiver to factory defaults. If putting the MMCE into full shut down mode ever fails to turn off the power LED on the front of the MMCE within 15 seconds, the process of restoring it to factory settings has failed. You must then simultaneously press the Power/ESC/ENTER buttons to shut the receiver off. Then turn the receiver back on and repeat the steps to restore it to factory settings again until you are able to turn it off by tapping  > **Suspend** > **Full Shut Down Mode**.
 - e. When both LEDs on the front panel are off, turn the receiver back on.
 - f. Recalibrate the screen according to the directions on the top of the display. Press the **Enter** button when done.

C. Format MMCE's MyDevice Directory

Important! After installing OS 2.91 for the first time, you must run the MMCE Format Wizard to ensure MMCE's MyDevice directory is properly formatted.

1. Double-tap **My Computer** on the **Desktop**, navigate to the SD card and double-tap the **FormatWizard** application.
2. If your **MyDevice** directory is already formatted to use FAT16, you will see the message: “Wizard finished successfully. No reboot required.” Tap **OK** to exit the Wizard, tap **X** to exit the **My Computer** browser, and proceed to **Section D** below.
3. But if your MMCE's MyDevice directory does need to be reformatted, you will see a message telling you that this operation will delete all files on **MyDevice**. You have already saved any applications or data files in Step A2, so tap **Continue**.
4. When formatting is complete, tap **OK** on the **Format Wizard** window and the device will reboot automatically.
5. Recalibrate the screen according to the directions on the top of the display. Press the **Enter** button when done.

D. Install GPS Firmware Version E032

1. Temporarily turn off real-time differential corrections by tapping  > **Programs** > **GPS Utilities** > **DGPS Configuration** > **Select Mode** and select **None** as the differential mode. Then press **OK** on the bottom left of the **Select Differential Mode** screen and then **OK** on the bottom of the **DGPS Configuration** screen.
2. Double-tap **My Computer** on the **Desktop**, navigate to the SD card and double tap **baldur.exe**. The icon resembles a memory chip.
3. Tap the “three dot” button to the right of the **Select FW Image** field, browse to the SD card, highlight **E032-FeodoreAndPfl.bin** and tap **OK** in the upper right of the screen.
4. Check that “GPS1” is selected and tap the **Connect GPS** button.
5. When the status field says “GPS connected at [Baud rate],” tap the **Load** button.
6. Wait a few minutes for the GPS firmware to load. When it says “FLASH Upload Complete” in the gray bar below the white status field, tap the **X** (not the **OK**) in the upper right of the **GPS Firmware Loader** window.
7. Tap the **X** in the upper right of the **My Computer** browsing window.
8. Reset the GPS receiver by tapping  > **Programs** > **GPS Utilities** > **GPS Reset** and press the **Cold Reset** button. Tap **OK** on the popup that says "Reset successful."
9. Tap  > **Programs** > **GPS Utilities** > **GPS Initialization** and initialize the receiver to your coordinates or check the **Choose Country** box and select your region and country or state. Then tap **OK** in the upper right of the screen.
10. Performing a **GPS Reset**, configures the MMCE to use SBAS (WAAS, EGNOS or MSAS) corrections. If you wish to use another mode of real-time differential, tap  > **Programs** > **GPS Utilities** > **DGPS Configuration** > **Select Mode**. Then press **OK** on the bottom left of the Select Differential Mode screen and then **OK** on the bottom of the DGPS Configuration screen.
11. Tap  > **Settings** > **Control Panel** > **Thales System Info** and check that **OS F/W Version** is 2.91 and **GPS F/W Version** is E032.
12. Close **Thales System Info** and double-tap the Control Panel's **Backlight Control**. To greatly increase battery life, slide the **Keypad Brightness** control all the way to the left and the **LCD Panel Brightness** control as far to the left as possible while still allowing you to see the screen clearly. You may, of course, adjust these settings at any time to fit outdoor lighting conditions.
13. Resetting the GPS receiver deletes its GPS and SBAS almanacs and the receiver should be left on in full view of the sky for several minutes any time you reset the GPS receiver. While the receiver will calculate a position within a minute (assuming you ran GPS Initialization), it will find a new position more quickly the next time you use it if it has a complete almanac. It takes about 13 minutes to download a complete GPS almanac and about 30 minutes to download a complete SBAS almanac.

E. Re-install your application software

1. Follow the installation instructions provided by the software manufacturer. Remember to reinstall the application(s) on the MMCE MyDevice directory. If you were using ESRI ArcPad version 7.0.0, we highly recommend you update to version 7.0.1, which you may download it from <http://www.esri.com/software/arcgis/arcpad/download.html>. The registration number for version 7.0.0 will work with version 7.0.1. There is a separate tech note on “Updating ArcPad” in the /Mobile Mapping/MM CE/Application Notes/ folder of [ftp.magellangps.com](ftp://ftp.magellangps.com).
2. Configure the application to run on MMCE. MMCE requires that all software applications access MMCE’s GPS receiver on COM2, using the NMEA 0183 protocol at 57,600 Baud.
3. If you are collecting GPS raw measurements for post-processing, move the file **mmppcode** from your SD card or PC back to the MyDevice directory.

F. Update another receiver

1. Remove the SD card from the first MMCE and place it in any other MMCE you wish to update.
2. Repeat Steps A2, B1 – B7, C1 – C5, D1 – D13 and E1 – E3.

G. Upgrade to MobileMapper Office 3.40 or higher (if your data logging application records data for post-processing)

1. Save the following files to a temp directory on your PC:
 - a. **C:/Program Files/Common Files/THALES Navigation/user.csl** (a list of parameters for new coordinate systems you create or old ones you revise)
 - b. **C:/Program Files/MobileMapper Office/RxDload.ini** (a list of parameters for RINEX providers - primarily the ftp addresses for observation and navigation files required for post-processed differential correction)
 - c. **C:/Program Files/MobileMapper Office/refsites.ini** (a list of coordinates of CORS you may have updated)
2. Uninstall any older version of MobileMapper Office by clicking the Windows Start button and then selecting **Control Panel > Add or Remove Programs > MobileMapper Office ver. X.XX**.
3. Double-click **My Computer** on your PC’s desktop and type “ftp.magellangps.com” in the address field to go to the Magellan professional products tech support FTP site. Click the **Folders** icon at the top of the screen and navigate to go to the /Mobile Mapping/MM Office/Software/ folder. (You may also use an FTP client application or some Internet browsers to go to the ftp site.)
4. Copy the latest MobileMapper Office update (zip) file to any directory on your hard drive. Open the zip file and extract all of the contents to the same directory. This action will write all the installation files to a sub-directory called Disk 1.
5. Launch **setup.exe** on the Disk 1 subdirectory either by using Windows Explore and double-clicking on the **setup.exe** file or by clicking **Start > Run**, browsing for **setup.exe** on the **Run** window and clicking **Open**.
6. Follow the instructions on the screen until the software has finished installing.

7. Move the following files from the temp directory back to their proper folders:
 - a. **C:/Program Files/Common Files/THALES Navigation/user.csl**
 - b. **C:/Program Files/MobileMapper Office/RxDload.ini**
 - c. **C:/Program Files/MobileMapper Office/refsites.ini**
8. You do not have to reboot your computer after updating MobileMapper Office.