



Technical Note

#TN-P0004



To: Placer GPS 45X
Resellers and Users
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Subject: Placer GPS 45X Firmware Update Procedures

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1. Introduction

The Placer GPS 45X family firmware application code can be updated in the field, enabling our customers to take advantage of ongoing enhancements to Placer's feature set without the overhead and expense of factory upgrades.

This document describes how to update the Placer GPS 45X firmware in the field.

2. Re-Flash Preparation and Setup

2.1. Create a Re-Flash Directory

You will need to access Trimble's web site to download the correct firmware files. (www.trimble.com/mpc/placer/download/index.htm), so you'll want to create a directory on your PC to accept the self extracting zip files corresponding to your Placer communications configuration.

2.2. Determine Placer 450 Board Level

The Placer GPS 450 has two board level options: C and D. The Placer GPS 455 has only the D level option.

Rev C and Rev D units can be distinguished in the following manner:

- The response to the >QVR;HW=< TAIP message is either "PLACER 450 Rev C" or "PLACER 450 Rev D"
- The Rev D units have a "D" following the part number and product name on the label. Rev C units have no such indication.

2.3. Download the Re-flash Zip Files

Trimble's web site (referenced above) contains only the most recent version of firmware available for the Placer GPS 455 and Placer GPS 450 (Rev C and Rev D).

2.4. Apply Power to the Placer GPS 45X

The upgrade requires that the Placer GPS 45X unit be powered on. This can be either the vehicle battery (if the unit is already installed) or a separate power source for updating outside of a vehicle installation.

2.5. Connect to the MDT port

At this point, you'll need to connect a cable to your PC's COM port and the MDT port of the Placer GPS 45X. The default port settings are 9600, 8, n, 1.

2.6. Record the Placer Configuration

This is an extremely important step. Updating the Placer firmware resets all configuration information back to factory default values, including any DR calibration values.

You'll want to query and record important configuration information (vehicle ID, destination address, DR calibration values, etc.) for each Placer prior to updating the firmware. You can communicate with the Placer via TAIP query messages (>Q...<) using the Windows 3.1 Terminal or Windows 95 Hyper-Terminal program files that are included in each of the self extracting download files.

For the DR option, use >QX1< to record the odometer, left gyro and right gyro scale factors. Please refer to the TAIP appendix in your manual for additional information.

2.7. Enable TAIP or TSIP on the MDT port (if necessary)

The Placer GPS 45X family comes from the factory with TAIP enabled on the MDT port. You'll only need to do this step if you have previously changed the MDT port configuration.

2.8. Exit to DOS

The firmware update procedure relies on a DOS batch file to update the firmware.

2.9. Unzip the Re-flash Files

We use the DOS Zip utilities, so you'll need to execute the self extracting zip file command in the re-flash directory. Each self extracting download file contains the PLCRFLSH.EXE update utility, the P45XCCCC.BAT file, FLASH.INI, and the P45XCCCC.ROM update program file, in addition to the firmware version release notes, these instructions, and other relevant utility programs, including the Windows 3.1 Terminal and Windows 95 Hyper-Terminal program files.

3. Updating the Firmware

Each Placer GPS 45X protocol supported (MAP27, CDPD, TAIP) has a batch file that will execute the firmware update.

NOTE: You can only update firmware within your product family. For example, a Placer GPS 450/CDPD cannot be changed to a Placer GPS 450/MAP27 in the field.

3.1. Batch File Editing and Selection

3.1.1. COM Port Selection in DOS Batch File

The batch files listed below assume the use of COM1 on your PC. If COM1 is not available, please change all references in the batch file to the proper COM port, typically 2 if 1 is not available. The COM port reference in the batch file is -Port1. Use any text editor PRIOR TO executing the batch file.



3.1.2. Batch File Choices - Placer GPS 450

To upgrade the Placer GPS 450/TAIP, type P450TAIP.BAT at the DOS prompt and press ENTER.
 To upgrade the Placer GPS 450/MAP27, use P450M27.BAT at the DOS prompt and press ENTER.
 To upgrade the Placer GPS 450/CDPD, use P450CDPD.BAT at the DOS prompt and press ENTER.

3.1.3. Batch File Choices - Placer GPS 455

To upgrade the Placer GPS 455/TAIP, type P455TAIP.BAT at the DOS prompt and press ENTER.
 To upgrade the Placer GPS 455/MAP27, use P455M27.BAT at the DOS prompt and press ENTER.
 To upgrade the Placer GPS 455/CDPD, use P455CDPD.BAT at the DOS prompt and press ENTER.

3.1.4. Batch file execution confirmation

The batch file will prompt for a confirmation. Press Y and ENTER to proceed with the firmware update process. Press N and ENTER to terminate the firmware update process. The batch file launches the PLCRFLSH.EXE program with the parameters in the FLASH.INI file. This will start the re-flashing process and each stage of the process will be reported on the screen as status information. The last stage in the process is to 'reboot' the Placer firmware.

3.2. Progress Reporting

Once started, the update application will provide progress feedback. You will see the following messages:

```

Do you really want to do this[Y,N]?
Programming Receiver FLASH
Placer 45x Flash Utility. Version 0.06
Establishing communication .... done
Switching to 38400 baud ..... done
Configuring DR hardware ..... done
Handling Requests ..... done
Clearing battery backed RAM .. done
Erasing program space ..... done
Flashing new program ..... done
Clearing fatal error log ..... done
Booting Receiver ..... done
  
```



3.3. Firmware Update Complete

Once the Placer GPS 45X has rebooted itself, the firmware update is complete and you can return to Windows or proceed to update the next Placer.

However, since the firmware update process resets the Placer's configuration values back to factory defaults, you'll need to use the Windows 3.1 Terminal or Windows 95 Hyper-Terminal programs and the Trimble supplied files (referenced above) to restore your settings. Please refer to the Placer Installation and Operations manual for additional information on how to do that.

4. Troubleshooting

Communications settings are the most common problems encountered during the firmware update procedures. If the re-flash program cannot communicate with the Placer, make sure you re-check the COM port number used on your PC and the COM port settings prior to calling Trimble's Technical Assistance Center.