Microcom DPCM Upgrade Procedures
Revision 2
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1. Introduction

The purpose of this document is to guide users through the process of updating the firmware in a Microcom Dual Pilot Control Module (DPCM).

The application used to perform the upgrade is called the DPCM Monitor Utility. It is a lightweight windows application that can be downloaded and run without needing to be installed.   The Utility can be downloaded from Microcom's website under the DPCM webpage as part of a zip file.

The other items included in the zip file are firmware image files and this document. The firmware files are less than 200Kb in size and are simple hex files. The DPCM contains two processors, the Main and the IRIG which serve different functions and so require different firmware.
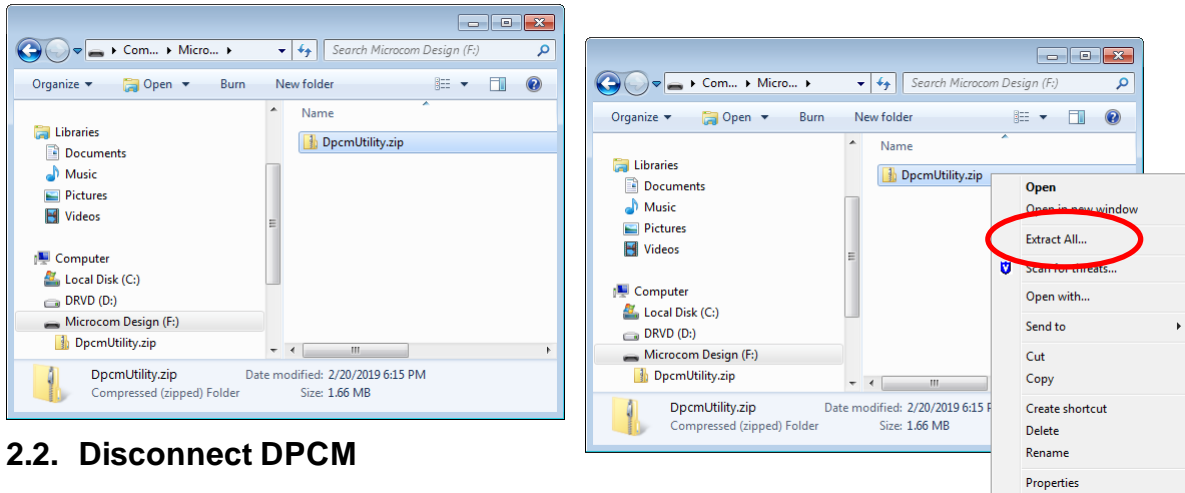
2. DPCM Upgrade Example

The following procedure will describe the steps taken to upgrade a DPCM from firmware versions M: V3.03, I: V1.06 to M: V3.04, I: V1.07.

2.1. Download and Un-zip

Download the zip file from Microcom's website under the DPCM webpage. Un-zip all of the files to a convenient location.

2.2. Disconnect DPCM

2.2.1. Test Port

IMPORTANT

Disconnect any RS-232 connections from the front panel DB-9 Test Port. Having a connection on this port could disrupt the upgrade process.

IMPORTANT

2.2.2. Ethernet

IMPORTANT

Disconnect any services using the Ethernet port on the rear of the DPCM. This can be accomplished either by physically removing the Ethernet cable from the DPCM or by closing the DAMS NT application(s). It is likely that there are two DAMS NT applications running, A and B. Both MUST be closed to complete this upgrade successfully.
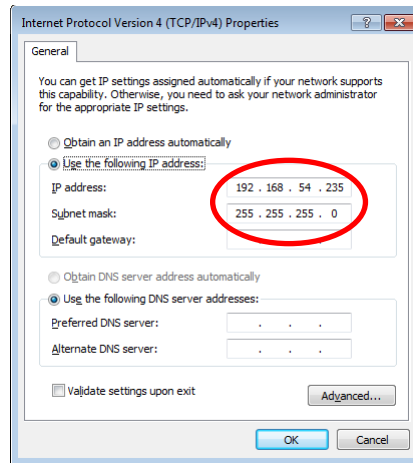
IMPORTANT

2.3. PC Setup

2.3.1. DPCM IP Address

The IP address of the DPCM can be found in the DAMS NT application. In this example the IP was found to be 192.168.54.211.

2.3.2. PC IP Address

The PC that will be running the Utility will need to be on the same subnet as the DPCM so its' IP address might need to be changed. In this case the PCs IP was changed to 192.168.54.235 and the subnet mask to 255.255.255.0 as seen in the screen shot below.
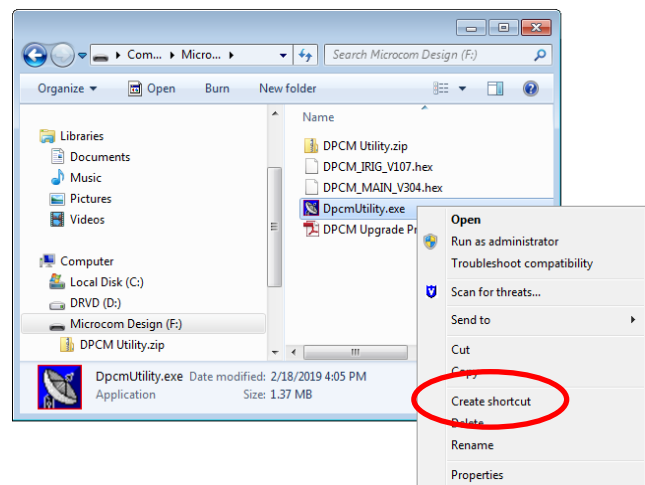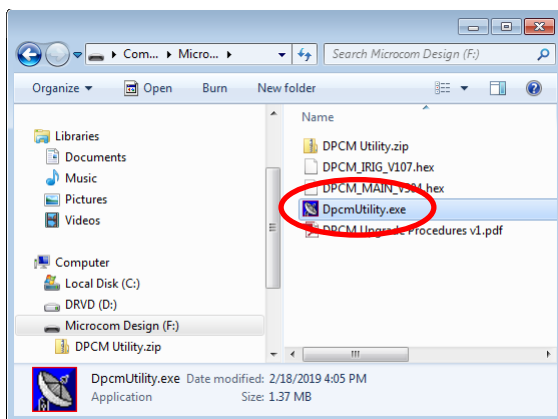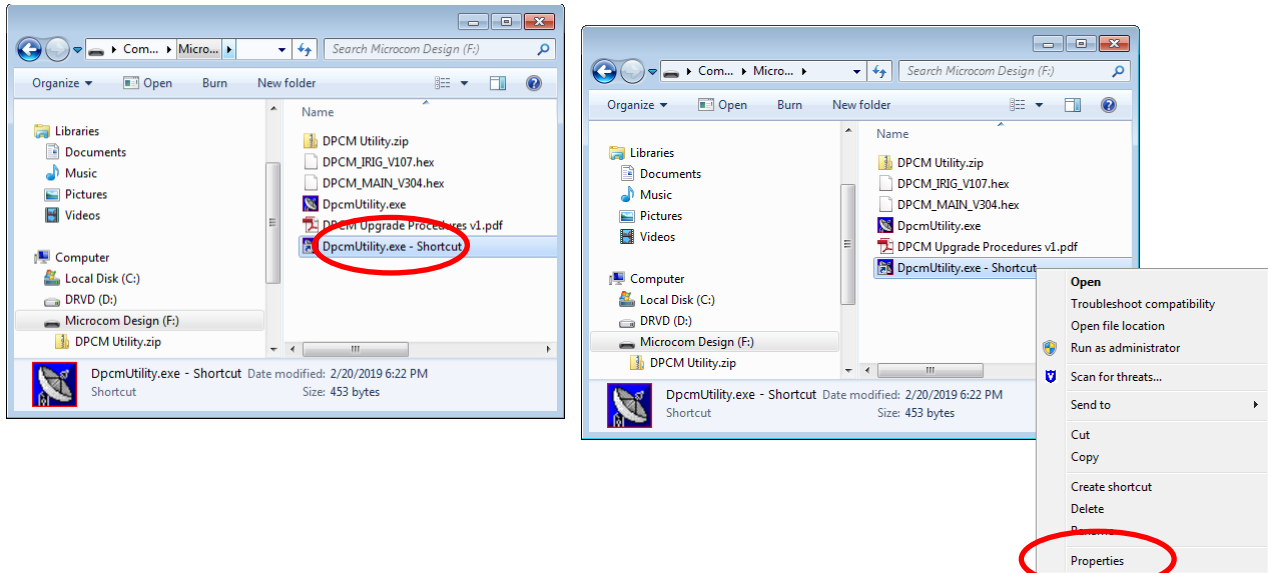

2.3.3. Ethernet Cable

Now that the DPCM and PC are both on the same subnet they can be connected together either by directly running a cat5 cable between the PC and DPCM or by using an Ethernet switch.
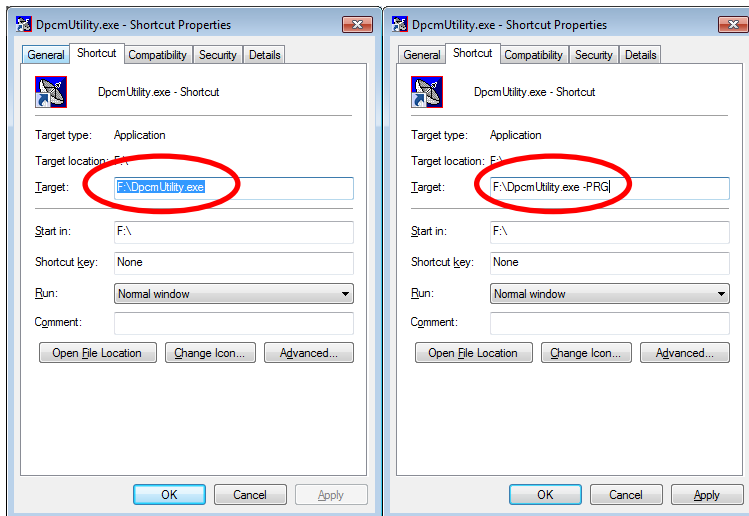
2.3.4. Shortcut

A shortcut needs to be created to the application so that it can be run with a programming parameter. There should be four files contained in the zip file the executable, two hex files, and a pdf. Right click on the executable and select the "Create shortcut" option.

This will create a shortcut as shown in the screenshot below. Right click on the shortcut and select the "Properties" option.
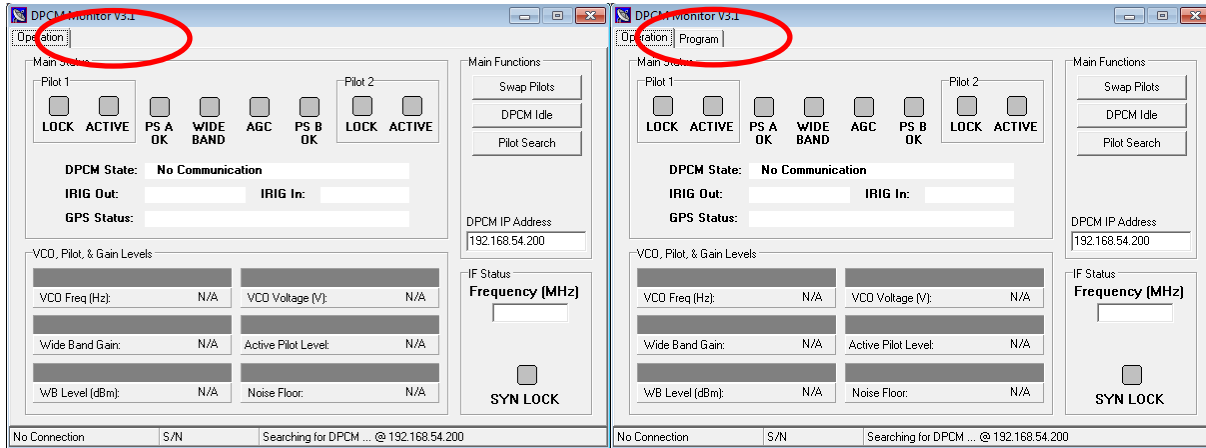

This will bring up the properties dialog. In the "Target:" field append " –PRG" to the end of the field and click the "OK" button, there is a space between the .exe and the -PRG. This will execute the Utility with the programming option enabled.
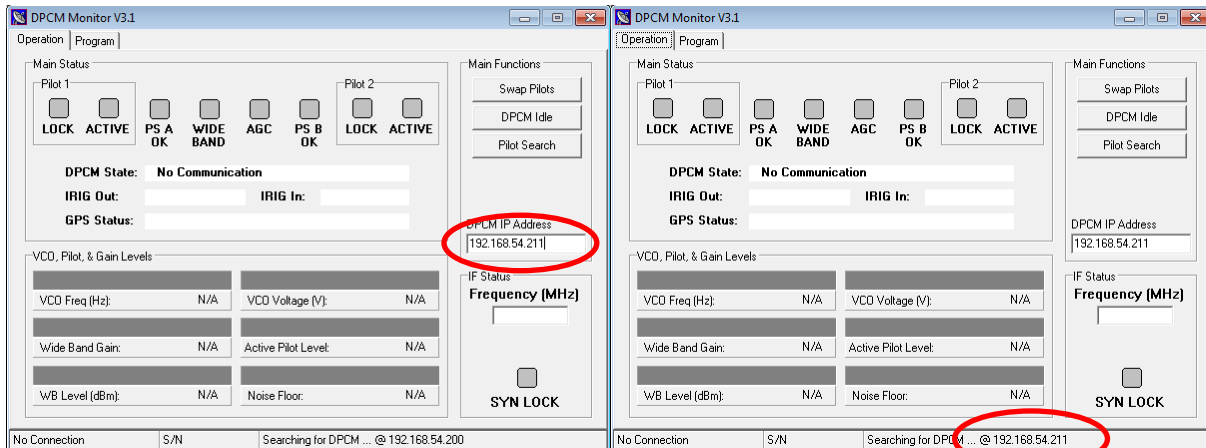
2.4. Run DPCM Utility

Execute the DPCM Utility by double clicking on the shortcut that was just modified. The Utility will first start without the "Program" tab as shown in the screenshot on the left, after 2 seconds the "Program" tab will appear as shown in the screenshot on the right.
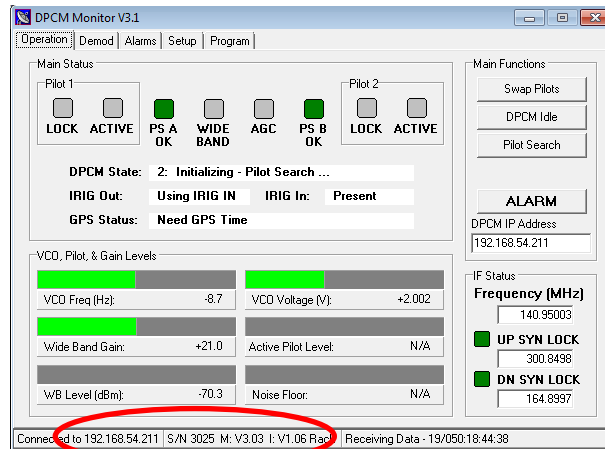

2.4.1. DPCM IP Address

The IP address of the DCPM that was found in section 2.3.1 must be entered in the "DPCM IP Address" field as shown in the screen shot below and to the left. Use the tab key on the keyboard to exit the IP Address field once completed. This will signal to the Utility that the IP has been completed and can be updated as seen in the screen shot below and to the right.
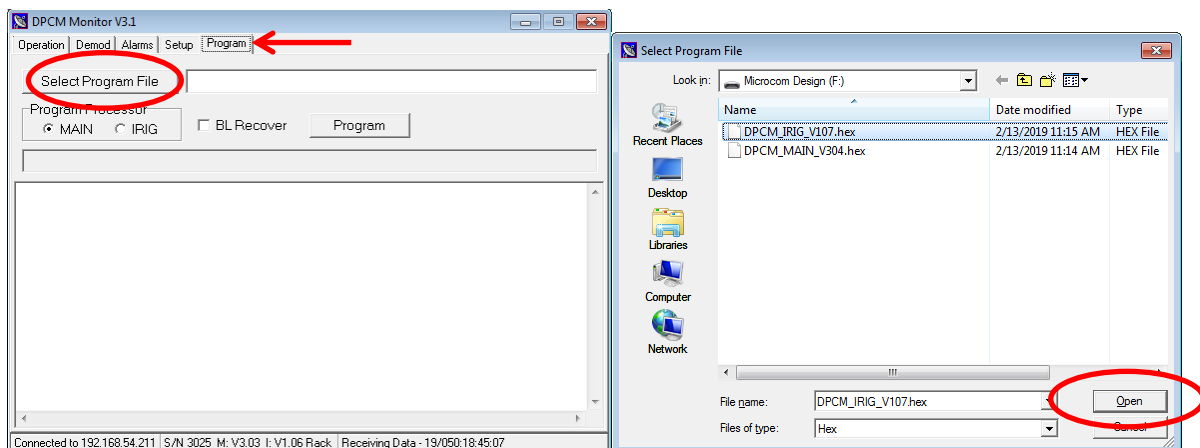
2.5. Connected

After approximately 30 seconds the Utility will connect to the DPCM which is shown in the screen shot below. Now that the Utility is connected to the DPCM it would be a good time to log the IP address, serial number, and firmware versions of the Main and IRIG processors. In this example the IP is 192.168.54.211, the serial number is 3025 and the firmware versions are 3.03 for the Main and 1.06 for the IRIG.
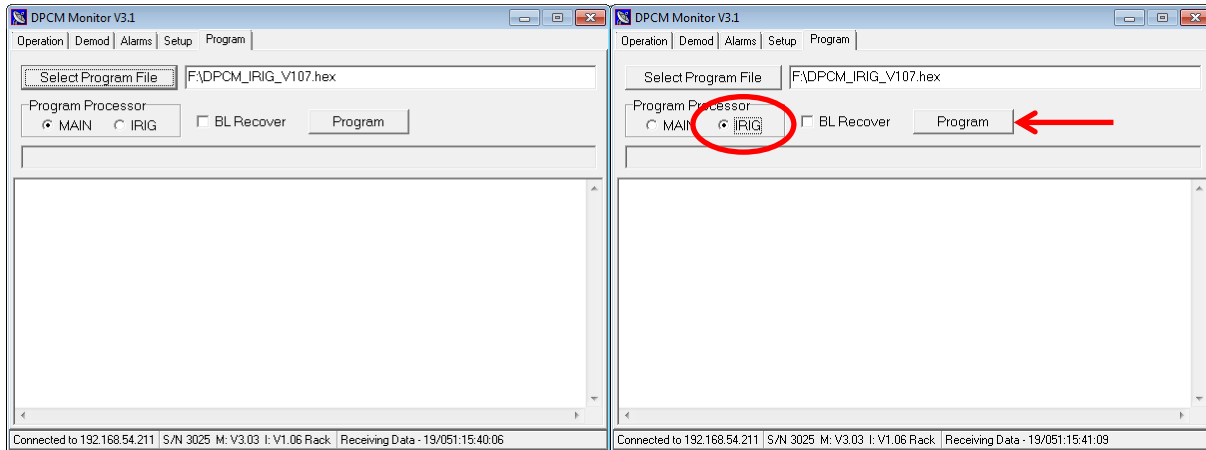
2.6. Program

Select the "Program" tab to being the programming process. Click the "Select Program File" button, this will pop up a selection dialog box as shown below and to the right. Select the "DPCM_IRIG_V107.hex" file and click the open button. This will select the file to be programmed.
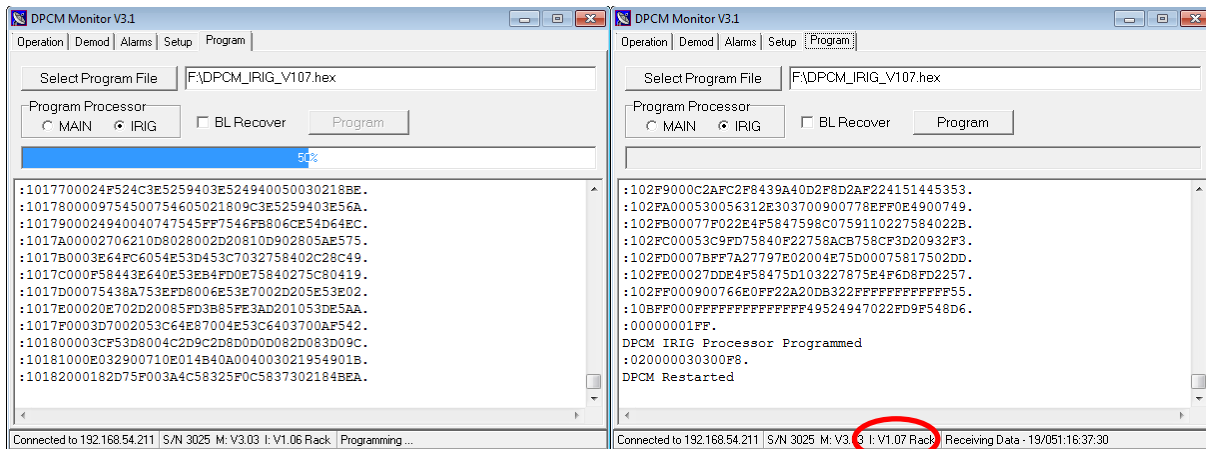
2.6.1. Select IRIG

Next we will need to change the "Program Processor" selection radio box to "IRIG".
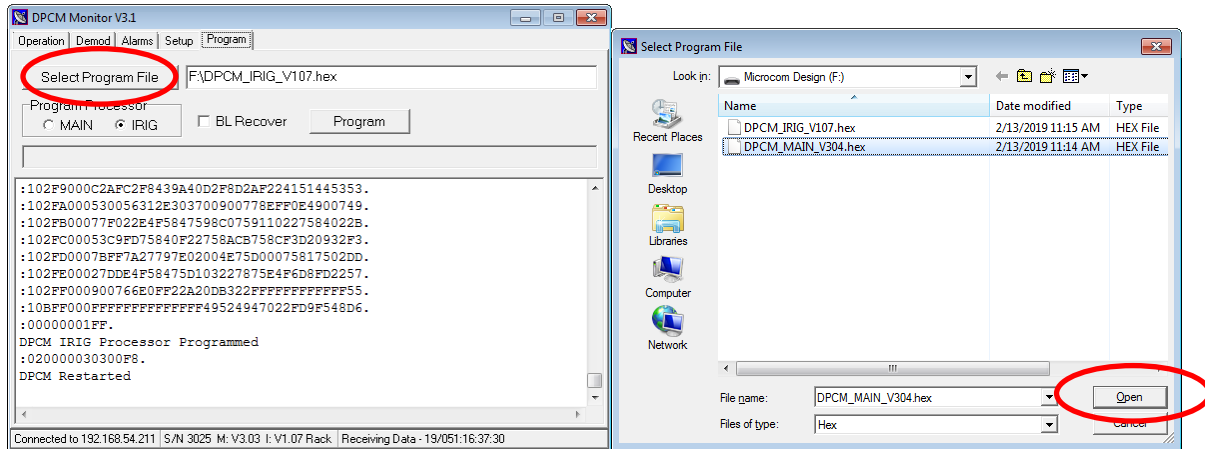

2.6.2. Program IRIG

Click the "Program" button. Once complete the processor will restart and report its new firmware version.
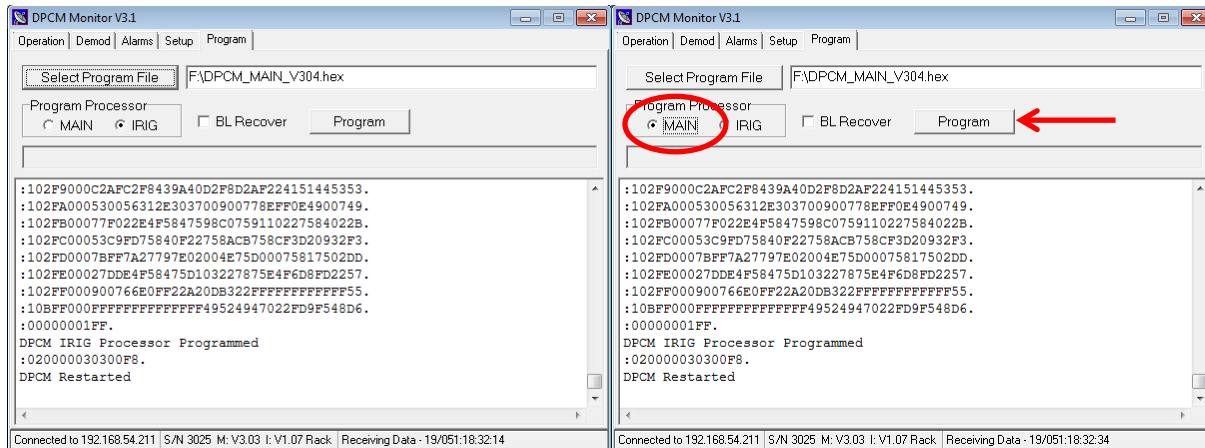
2.6.3. Select Main

Click the "Select Program File" button, this will pop up a selection dialog box. Select the "DPCM_V304.hex" file and click the open button.
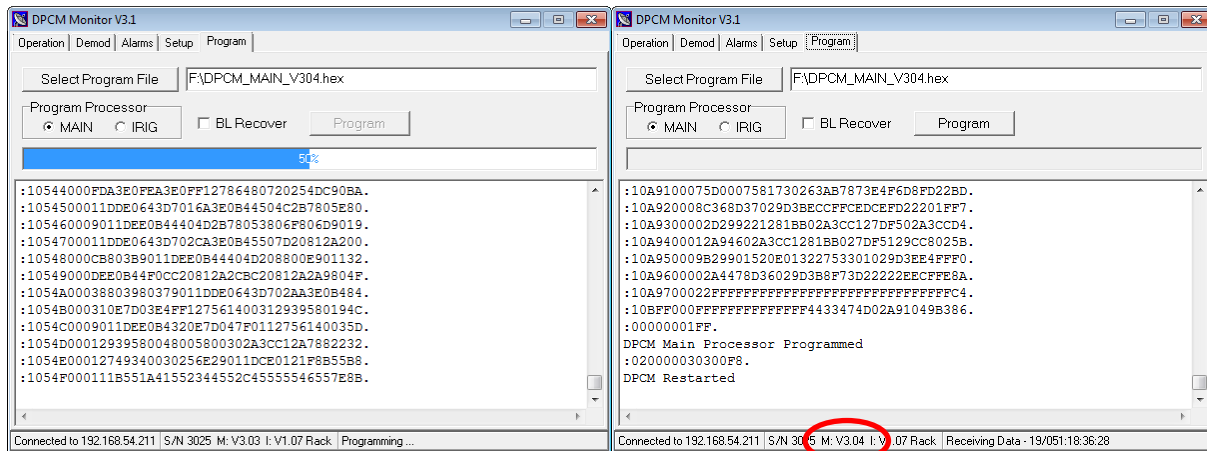

Change the "Program Processor" selection radio box to "MAIN".

2.6.4. Program Main

Click the "Program" button. Once complete the processor will restart and report its new firmware version.

2.7. Log

Now that both processors have been updates it would be a good time to log the updated firmware versions for the Main and IRIG processors. In this example the updated firmware versions are 3.04 for the Main and 1.07 for the IRIG.

2.8. Clean Up

Return the system back to the state it was found in before performing the update. Change the PCs IP settings back to what it was originally. Restart the DAMS NT application or re-connect the Ethernet connections. If applicable re-connect the front panel RS-232 test port.