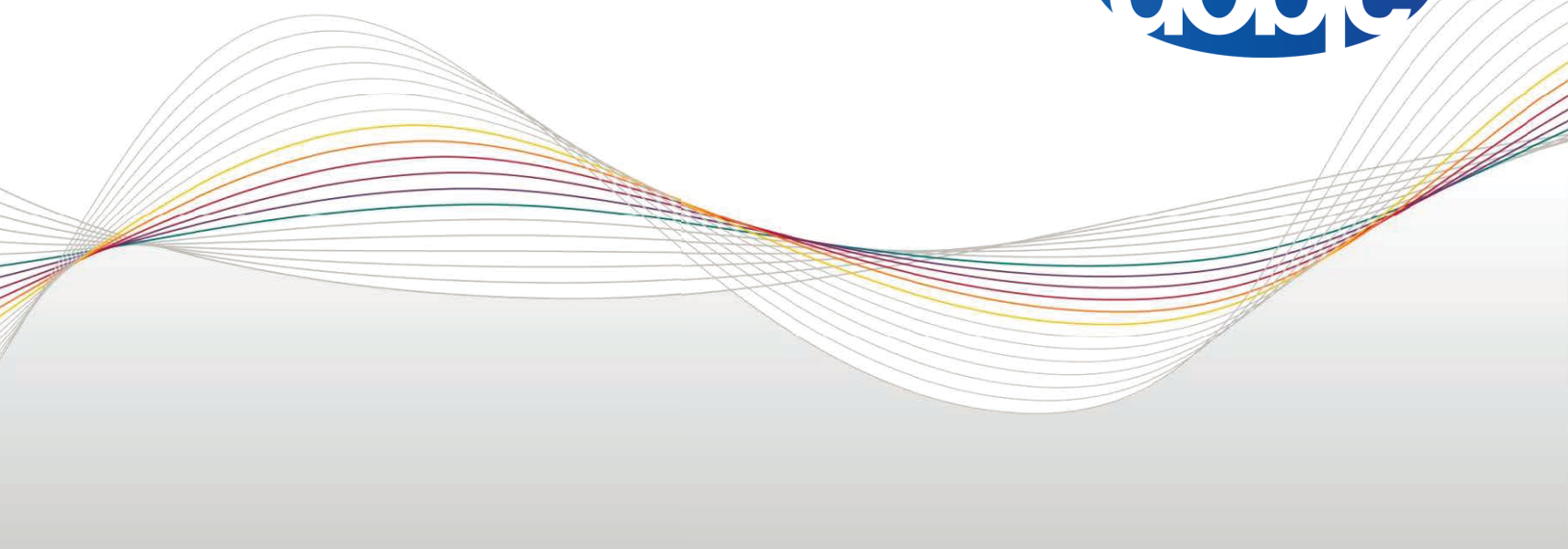
F6 FPGA Field Programmer Reference Guide



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TP-F6FPGA-RG Rev B

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Introduction

This document covers the setup and use of the FPGA Field Programmer standalone tool for F6150sv CPU4.

Warning: Use the FPGA Standalone application ONLY with F6 CPU4. If you attempt to use the application with CPU3 or CPU2, the application will not work as intended.

Setup

Follow the below steps to set up the application:

Note: If you do not yet have the FPGA Tool file, go to https://www.doble.com/support/downloads/fseries/. Find and download file under the *Protection Suite* heading.

1. Extract the .zip FPGA_Standalone folder to a place on your PC. Enter the provided password when prompted to. Contact Doble support at **support@doble.com** if you do not have a password.
2. Open the *FPGA_Standalone.exe* file. The tool opens the following window:

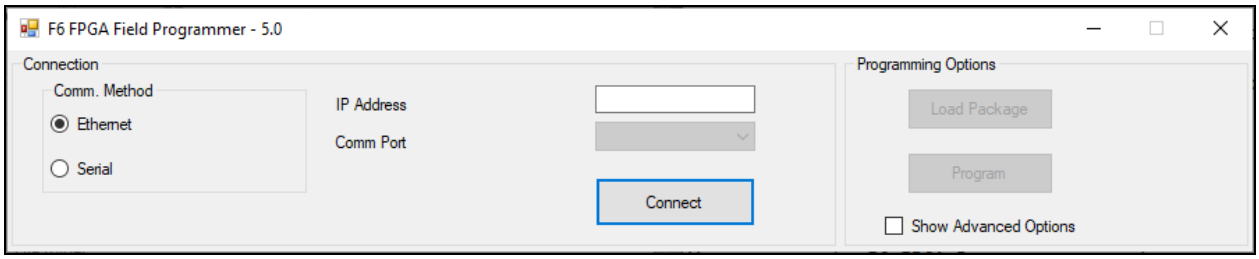

Figure 1 - F6 FPGA Field Programmer

The F6 FPGA Field Programmer is now ready for use.

Using the Tool

This standalone FPGA programming tool is used to update an F6150sv CPU 4 instrument to a new FPGA image. The download file includes the tool as well as the needed FPGA update file.

Note: It is strongly recommended to use an Ethernet connection when updating your FPGA images. USB can be used, but the update speed is far slower.

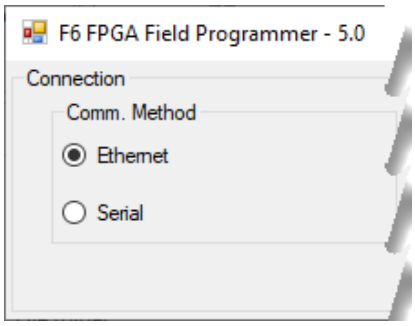

Figure 2 - F6 FPGA Field Programmer Comm. Method Designation

Connecting the Tool to your F6 CPU4

1. Enter the IP address of your F6 instrument in the designated field.

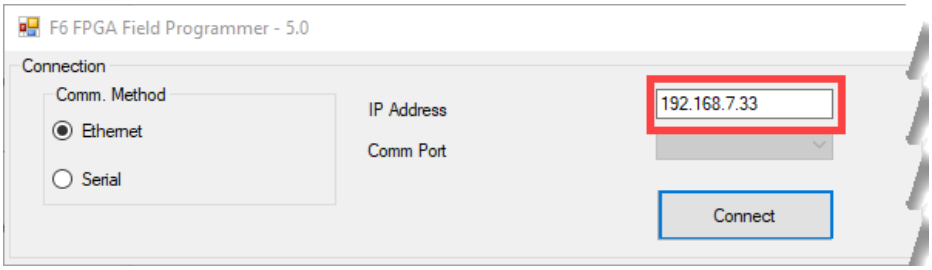

Figure 3 - IP Address Entry

2. Click **Connect**. The following window opens as the instrument resets and connects:

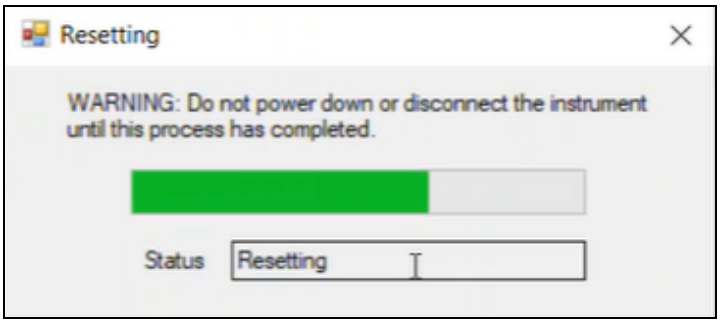

Figure 4 - Instrument Connection; Resetting Window

Wait for the progress bar to fill. Once it does, a similar window labeled **Scanning** opens. Wait for the progress bar to fill. Once it does, the connection is made and the **Connect** button should now read **Disconnect**.

Updating to a New FPGA Image

You can check the current FPGA version by opening Protection Suite to the **Instrument→Connect/Verify** tab and clicking the **...** next to your instrument on the **Instrument Activity** table. The FPGA file for this tool corresponds with **F6870 Sampled Values Publication**. An update is needed if the version is earlier than v1.1.

Note: Disconnect GPS antenna from the F6 instrument before updating your FPGA.

1. Click **Load Package**. A file browser window opens.
2. Navigate to the location of the desired.fkpg file. Select it and click **Open**.

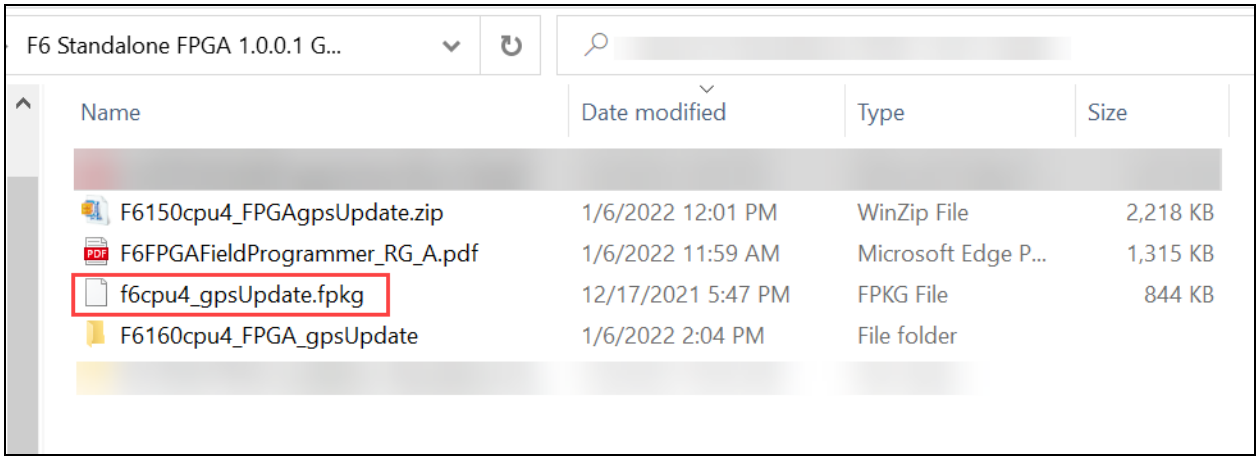

Figure 5 - Browse for FPGA Update File

3. Click **Program**. A window opens labeled **Programming**, with a progress bar and status.

Wait for the programming to complete. Once it is complete, a window opens directing you to reboot the instrument.

- If your FPGA is already up to date, the tool reports that no updates are available:

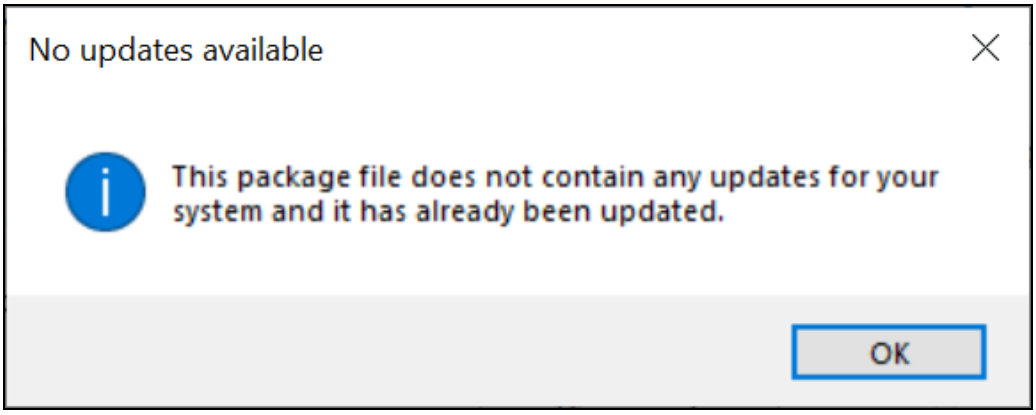

Figure 6 - No Updates Available Message

4. Reboot the instrument, then click **OK** on the **Reboot** window. Wait for the instrument to reconfigure; once it has, the following message is displayed:

Figure 7 - FPGA Program Success

5. Power cycle the F6 instrument once more. Once done, the FPGA update process is complete.

- **For F6150sv with F6870 option**: Verify the update by opening Protection Suite to the **Instrument→Connect/Verify** tab and clicking the **…** next to your instrument on the **Instrument Activity** table. In this example, the update can be verified by checking for the **(F6870) Sampled Values Publishing** option in the list:

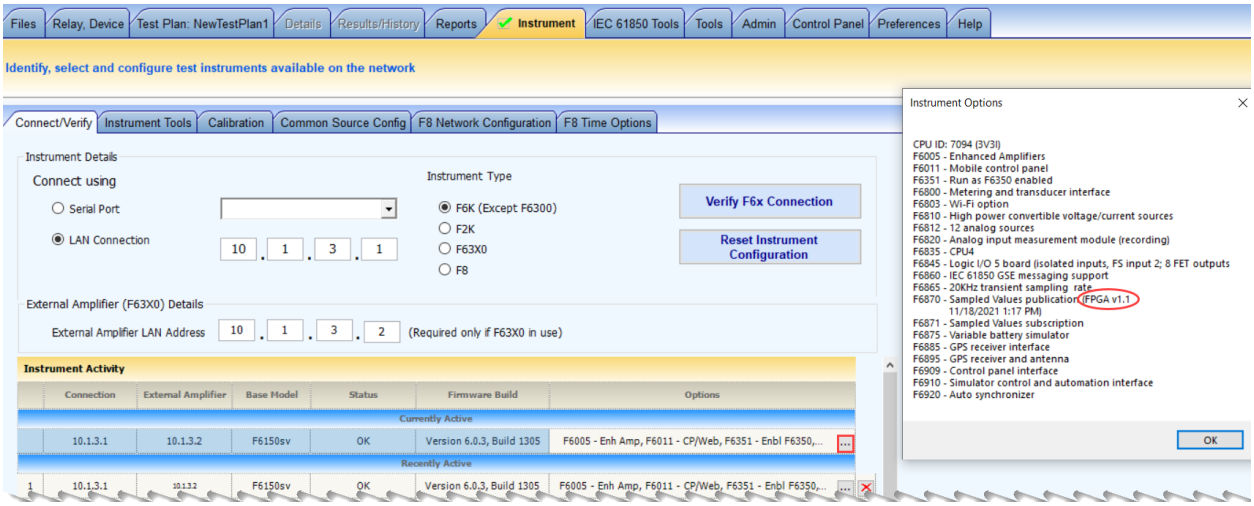

Figure 8 - Protection Suite; Instrument Options

If you are unable to verify the update by checking for the F6870 option, try connecting your GPS antenna to the test instrument. If the F6150 test instrument shows the UTC time, you can be sure that the update was successful, assuming that there are no issues with the GPS antenna itself or the signal strength.

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