NB3H5150 GUI Manual

Software Installation

1) Download NB3H5150 GUI software.
   a. Visit www.onsemi.com and search part number NB3H5150.
   b. GUI software can be found under the "Evaluation Board Documents" links on the NB3H5150 product webpage.
2) Download and Unzip GUI software "ONSEMI_NB3H5150_Customer_GUI_Opt08.zip".
3) Within unzipped file you will find executable file "ONSEMI_GUI.exe".
   a. Double click on executable file to launch GUI.

Software and Hardware Initialization

1) Connect Evaluation Board to a USB port on PC.
2) Allow Windows to install all necessary drivers for evaluation board USB interface hardware. This will occur automatically.
3) Double click on ONSEMI_GUI.exe to initiate GUI.
4) Click on "Reset USB" to ensure GUI establishes connection with board
5) Click on "Find Device" button to ensure GUI establishes connection with NB3H5150.
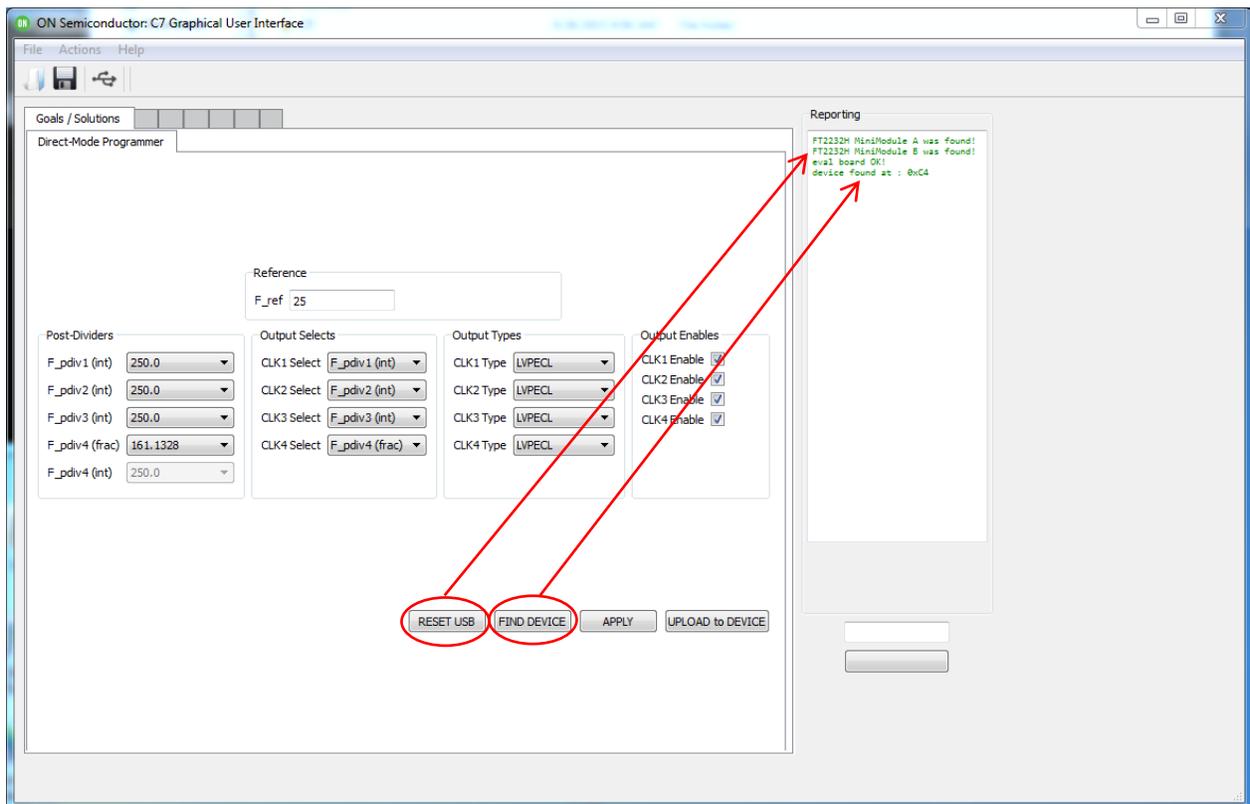6) NB3H5150MNGEVB is now ready to program.

Figure 1: USB Connection Validation

I²C Programming

NB3H5150MNGEVB GUI contains many features that make it easy to program NB3H5150 quickly and accurately.

Step 1: Output Frequency Selection

1) Select desired output frequency per output channel (CLK1-4) via Post-Dividers dropdown menus.
2) CLK1-3 outputs can be programmed to Integer-N frequencies.
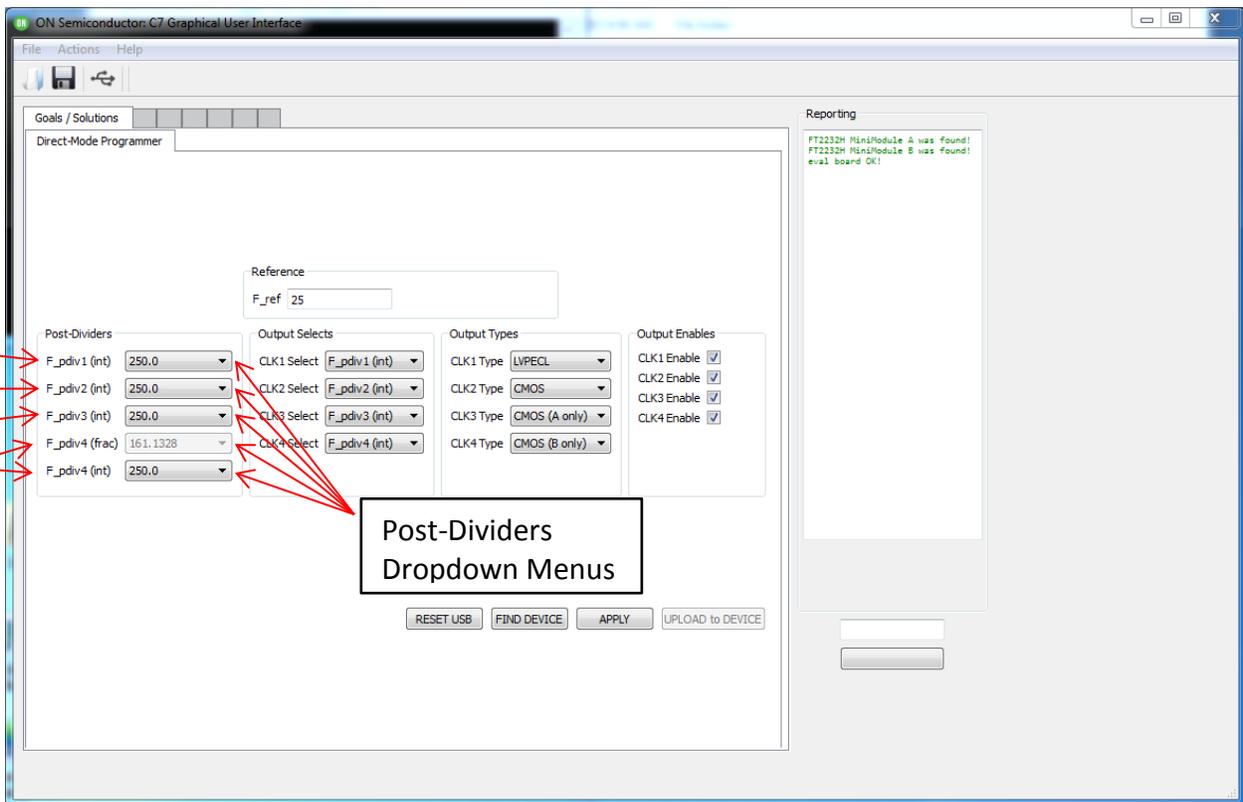3) CLK4 output can be programmed to either Integer-N or Frac-N frequencies.

Figure 2: Output Frequency Selection

Step 2: Output Selects (Input Reference, Integer-N & Frac-N)

1) Select input reference frequency. *(Default 25MHz Crystal)*
2) For bypass mode select "F_ref" in the "Output Selects" dropdown menu. This feature can be used to verify crystal frequency and ppm of input.
3) For Integer-N mode select "F_pdivX(int), you can then select from Integer-N frequencies.
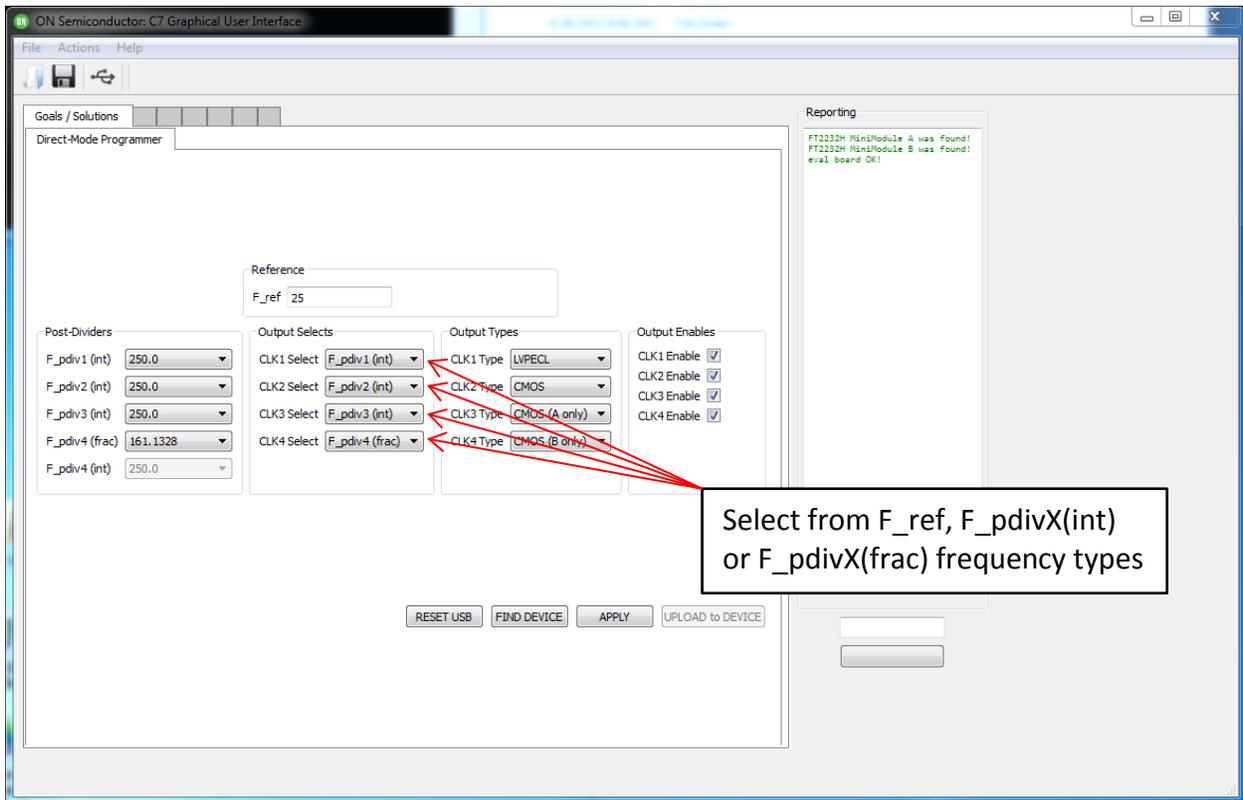4) For Frac-N mode select "F_pdivX(frac), you can then select from Frac-N frequencies.

Figure 3: Outputs Selection

Step 3: Output Level Selection

1) Select desired output level per output channel (CLK1-4) via Output Types dropdown menus.
2) CLK1-4 channels have LVCMOS or LVPECL capabilites.
3) Each channel has two output traces in order to provide differential LVPECL outputs or 2 In-Phase LVCMOS ouptuts. In the case only one LVCMOS output is needed, CMOSA or CMOSB traces can be selected.
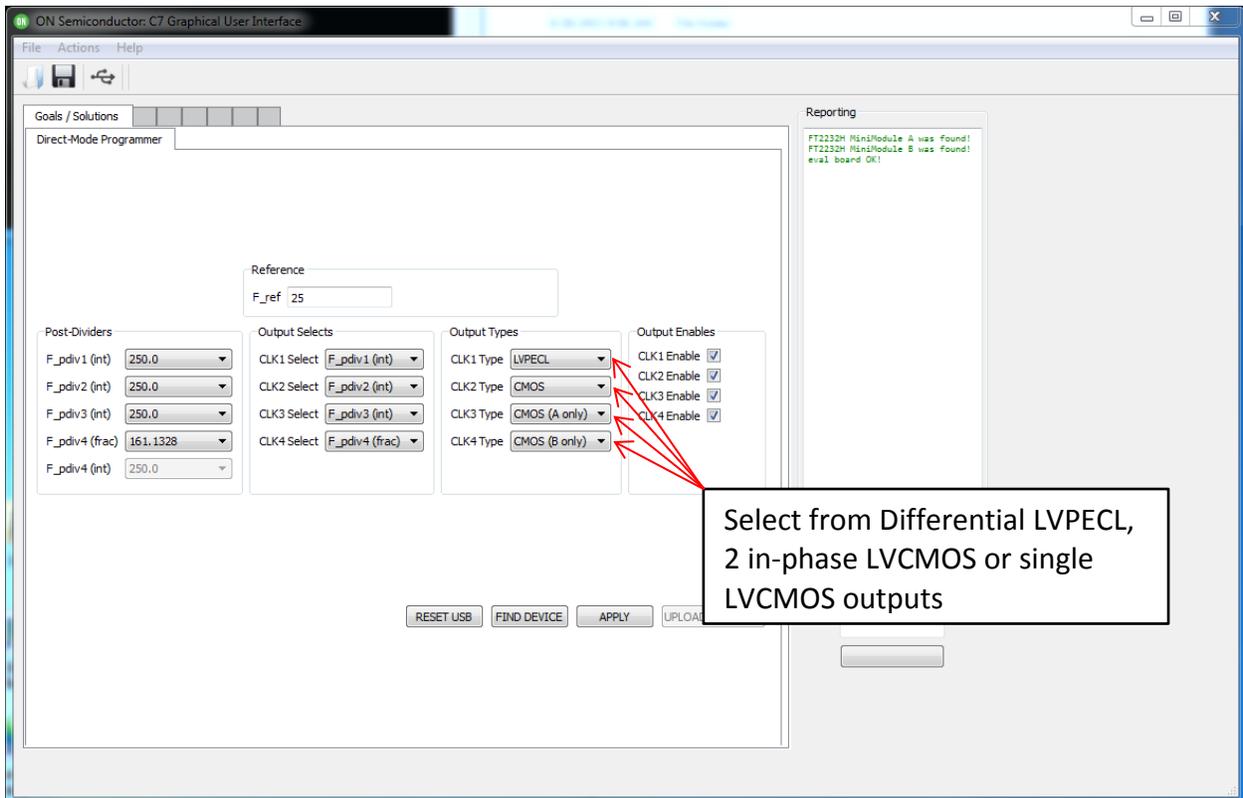

Figure 4: Output Level Selection

Step 4: Output Enables
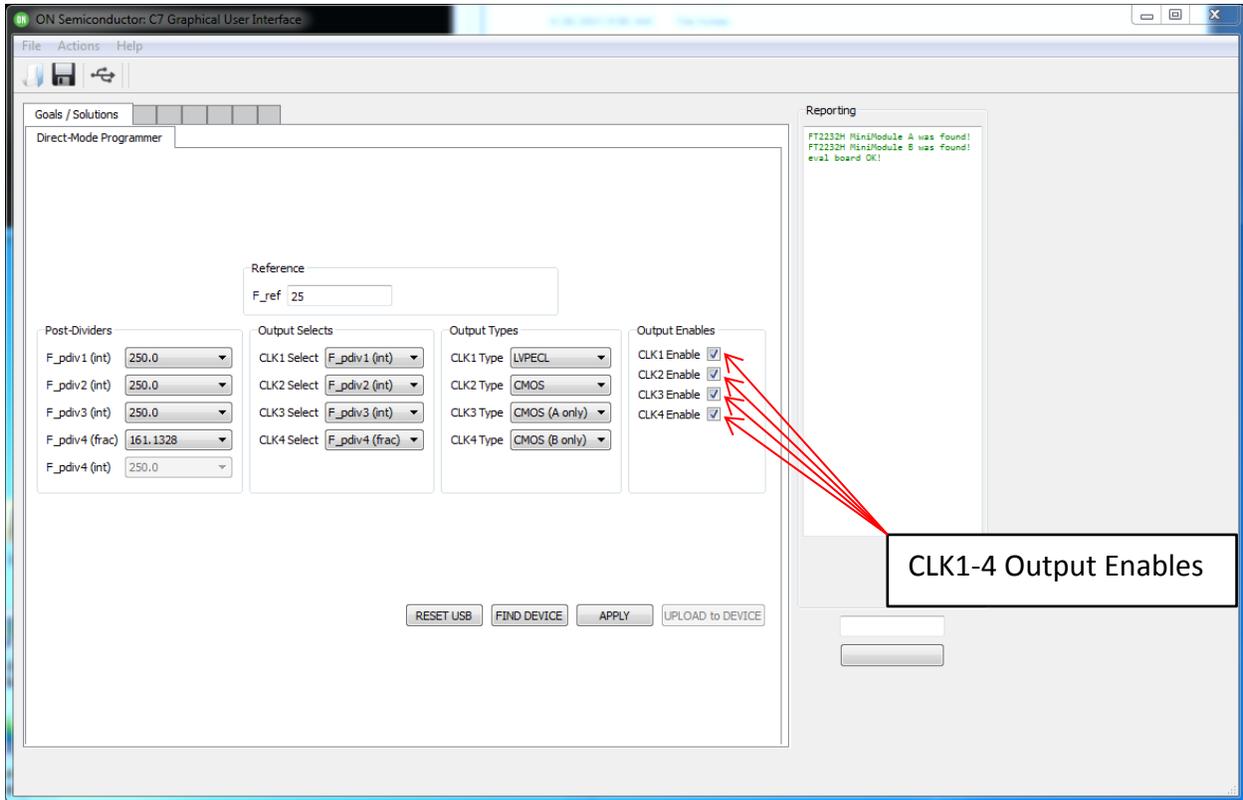
1) Enable desired outputs (CLK1-4).

Figure 5: Output Enables

Step 5: Apply & Upload desired settings
1) Click "Apply" button to load settings into the GUI queue.
2) Click "Upload to Device" button to program the NB3H5150 device.
3) Please note status bar as part is being programmed. (Figure 6)
4) Please note "upload successful" in the reporting window to confirm desired settings were programmed to NB3H5150. (Figure 7)
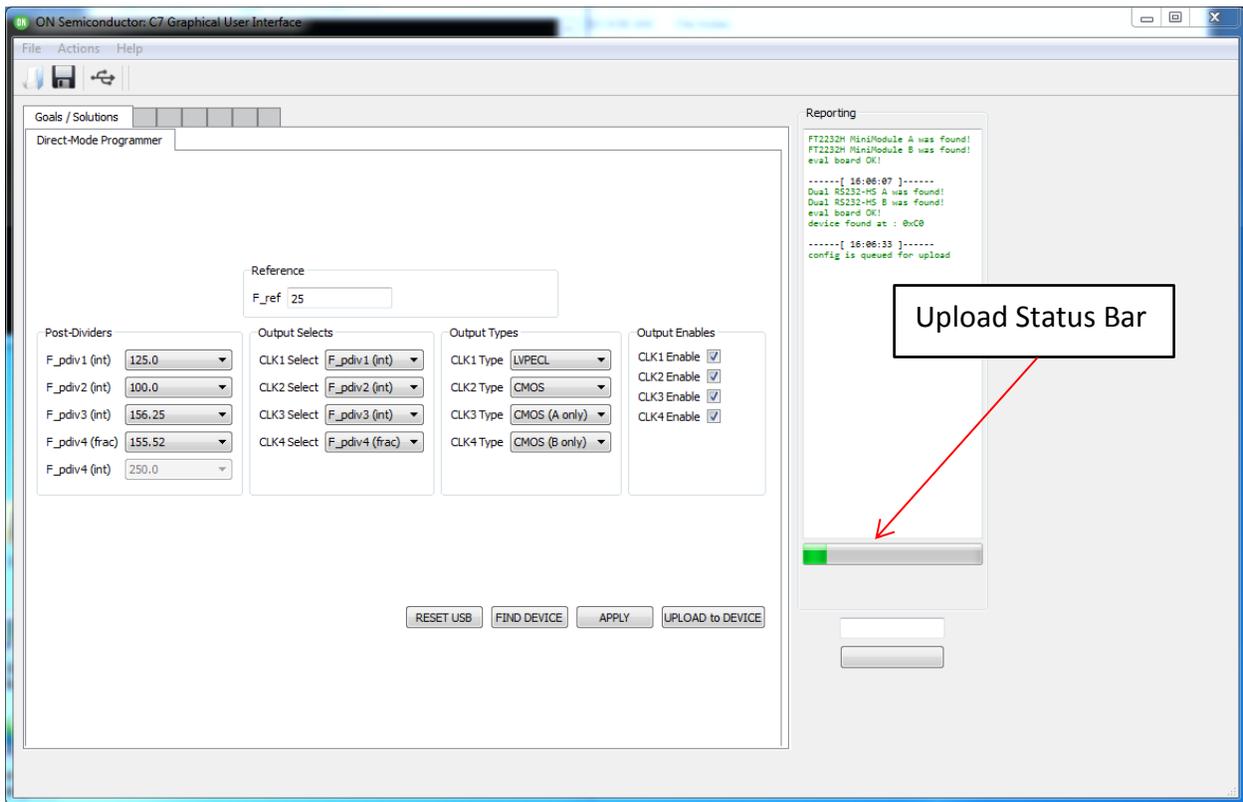5) Desired settings are now realized and NB3H5150 performance can be monitored with appropriate equipment.
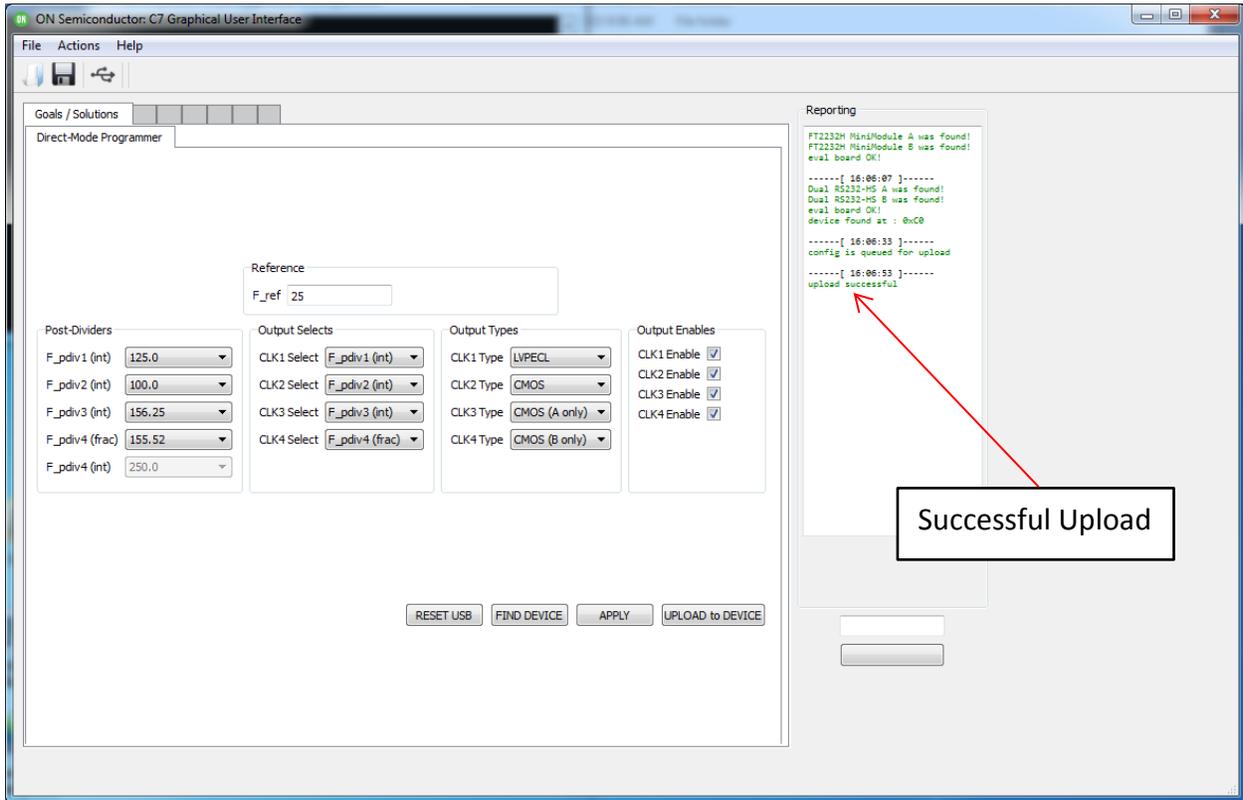

Figure 6: Upload Status Bar

Figure 7: Successful Upload

Step 6: Saving Register Files (Optional)

Your settings can be saved as a register file and recalled at any time.

1) Follow Steps 1-4 to set desired programming parameters.
2) Go to File→Save Register File, this will save current paramters in a .rgstr file.
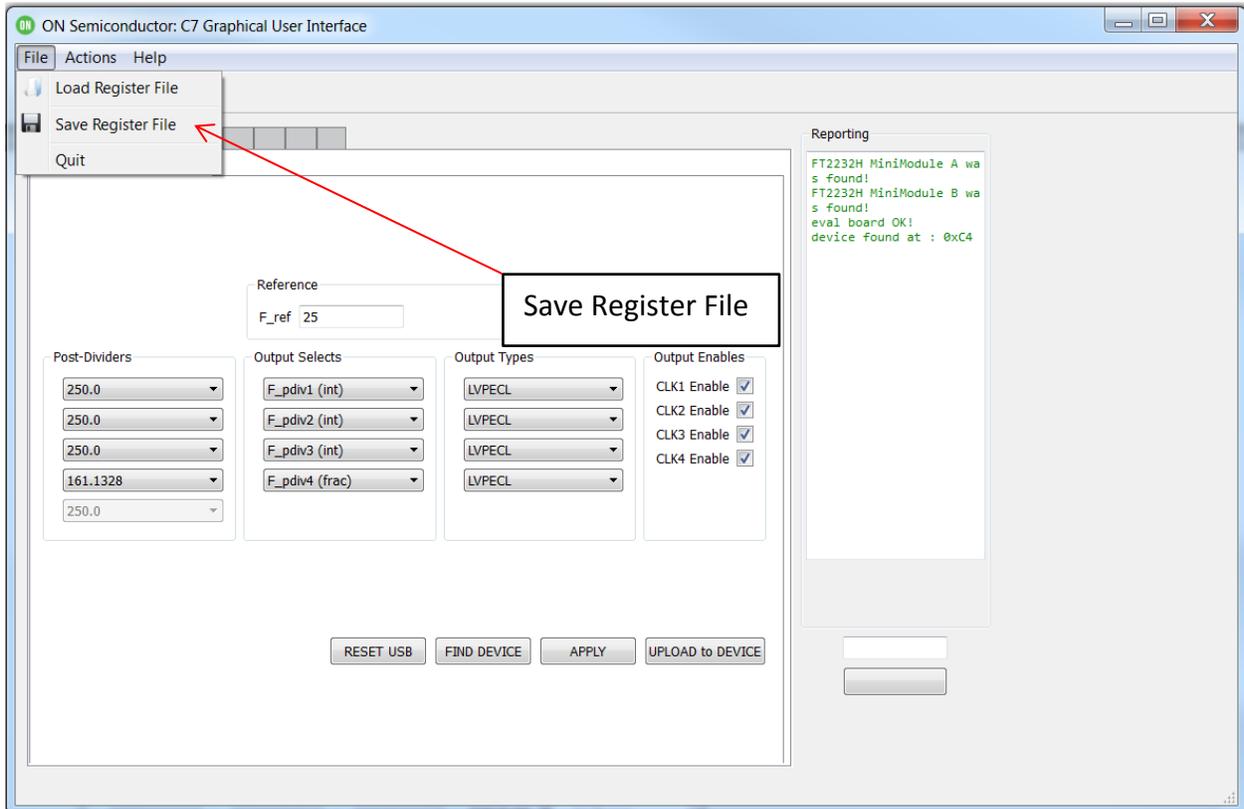3) This file can be stored anywhere on PC.

Figure 8: Saving Register Files

Step 7: Loading Register Files (Optional)

Register files with previously saved parameter settings can be recalled via the GUI.

1) Go to File→Load Register File, navigate to your register file and open it.

2) Click on "UPLOAD to DEVICE" button.

3) Verify "upload successful" message is displayed in reporting window. NB3H5150 has now been programmed with previously saved parameter settings. NB3H5150 performance can be monitored with appropriate equipment.
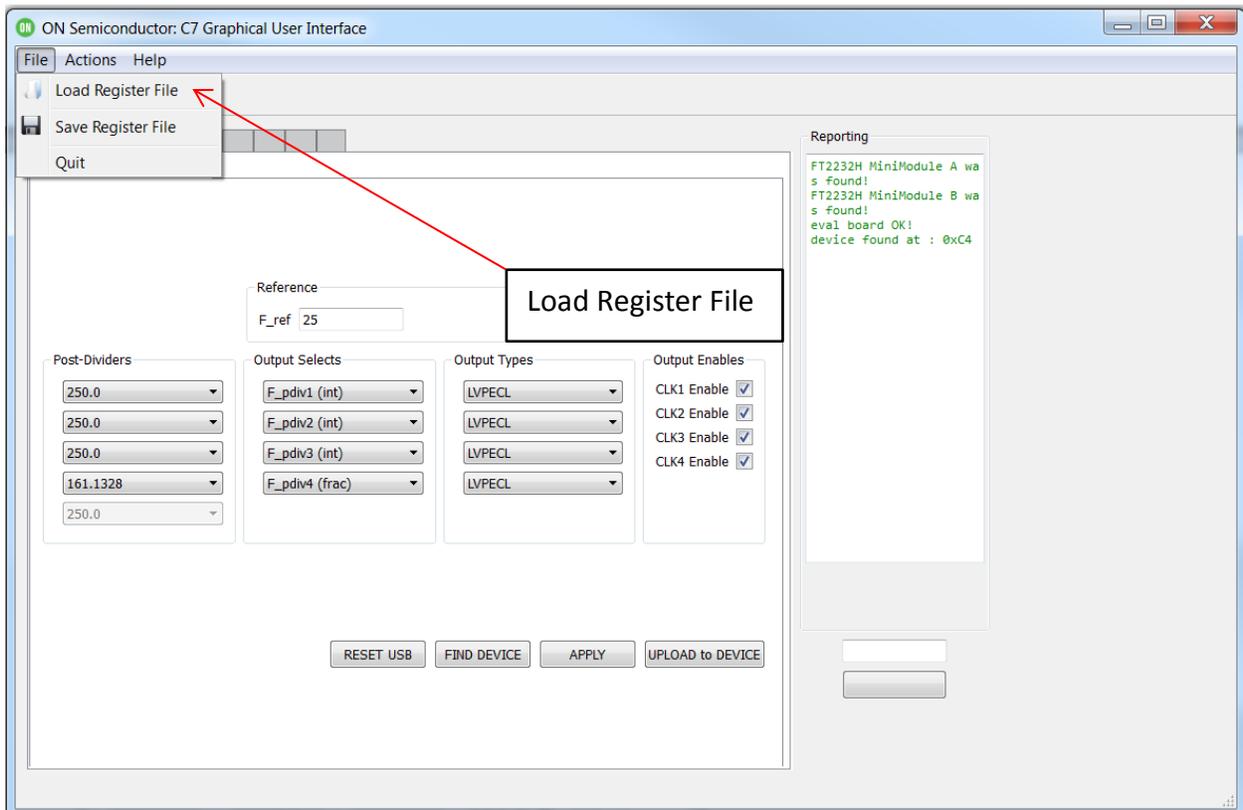

Figure 9: Loading Register Files