

GUI TRF3765

The basic requirement of the GUI TRF3765 is to communicate to the TRF3765 device. The GUI also handles calculation and sets the required values for the entered frequency. The user can manually manipulate the values to check the settings.

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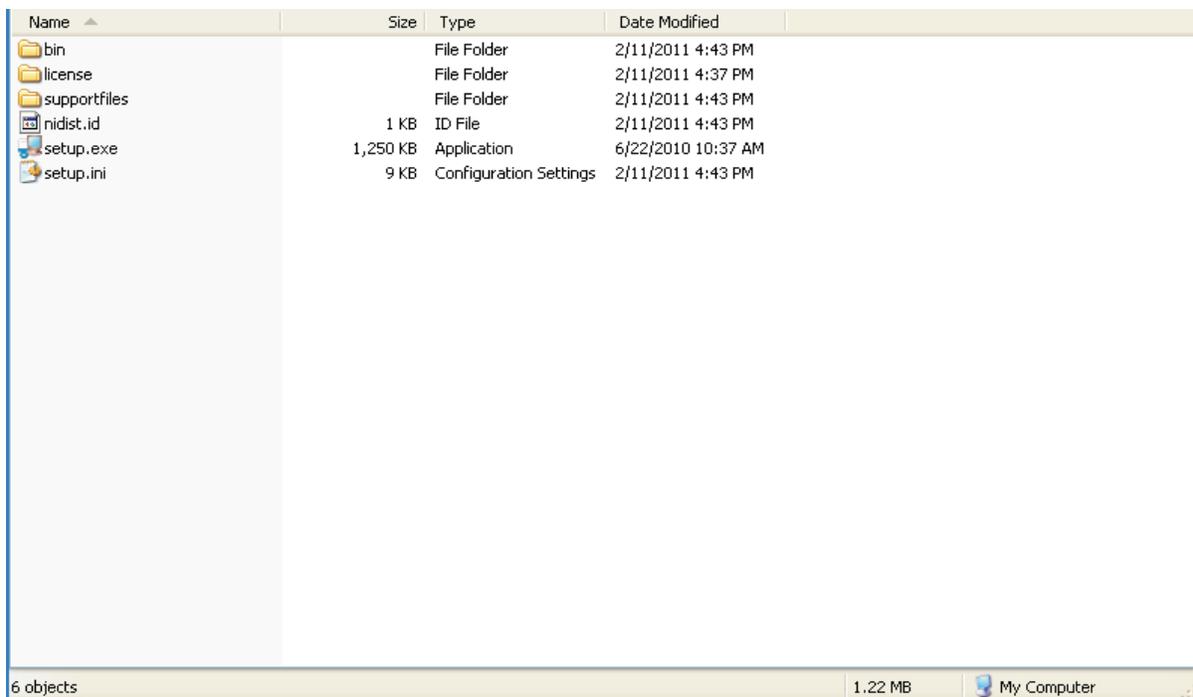
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1 Getting Started

A compact disc (CD) contains the files necessary to install the GUI and the required components. The following steps describe the GUI installation.

1.1 Installation Guide

1. Insert the CD, and locate the volume folder where the installer file is located.



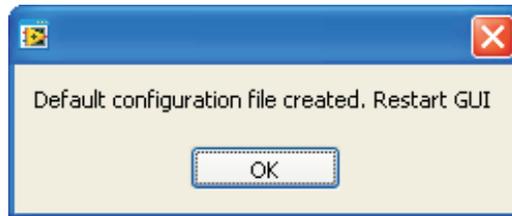
2. Double-click the *setup.exe* file, and the installation starts immediately.
3. Follow the steps, read, and agree to the License information. Select the location of the file.
4. The installation takes a few minutes to complete. After completion, click *Finish*.

1.2 Start the GUI Execution

The following path begins the GUI execution.

Start → **All Programs** → **TRF37XX** → **TRF37XX.exe**

The first time the software starts, it creates a configuration file (TRF3765.ini) for the GUI. It pops up a window similar to the following inset. The user needs to click **OK**, and restart the GUI from the same location.

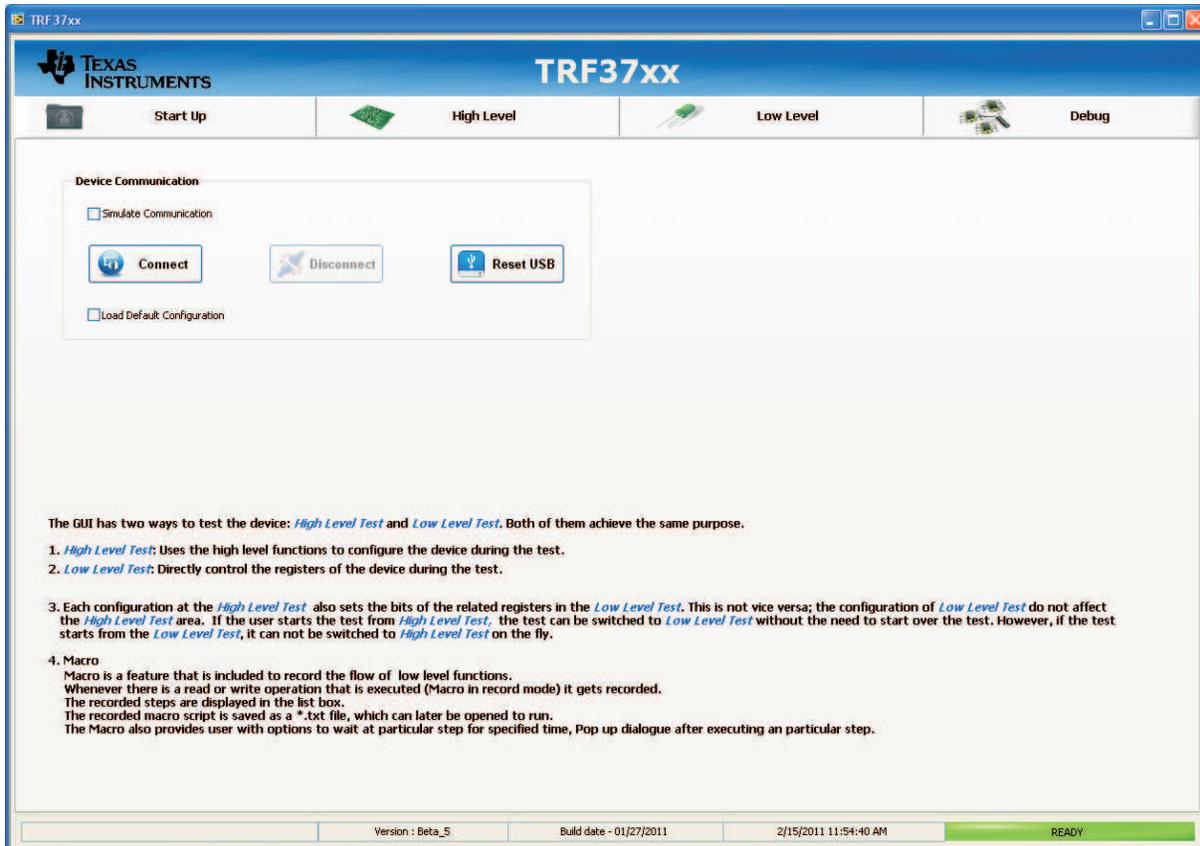


The GUI then appears.

2 GUI Options and Pages Available

2.1 Start the GUI Execution

The GUI by default points to the start-up page, i.e., Device Communication.



Options available on the start-up page:

- **Simulate Communication** – When enabled and connected, it simulates the communication between the GUI and the device.
- **Connect** – Connect to the device and in the case of simulation, simulates the connection. Every time the GUI or device is restarted (powered down and up again), the connection needs to be established.
- **Disconnect** – Disconnecting the connection before closing the GUI is mandatory.
- **Reset USB** – Reset the connection between the device and the GUI.
- **Load Default Configuration** – When enabled, it asks the user for the default configuration file. By default, the GUI points to a file. This needs to be turned ON/OFF before connecting to the device

NOTE: The GUI does not allow the user to navigate to another tab when the device is unconnected.

2.2 High Level – Register Display

The High Level tab has all the register information. The user can manipulate the register settings as required, and the corresponding values are written into the registers.

The user can see registers 1 through 7 and the fields which the user can set. Frequency Targets also are visible.



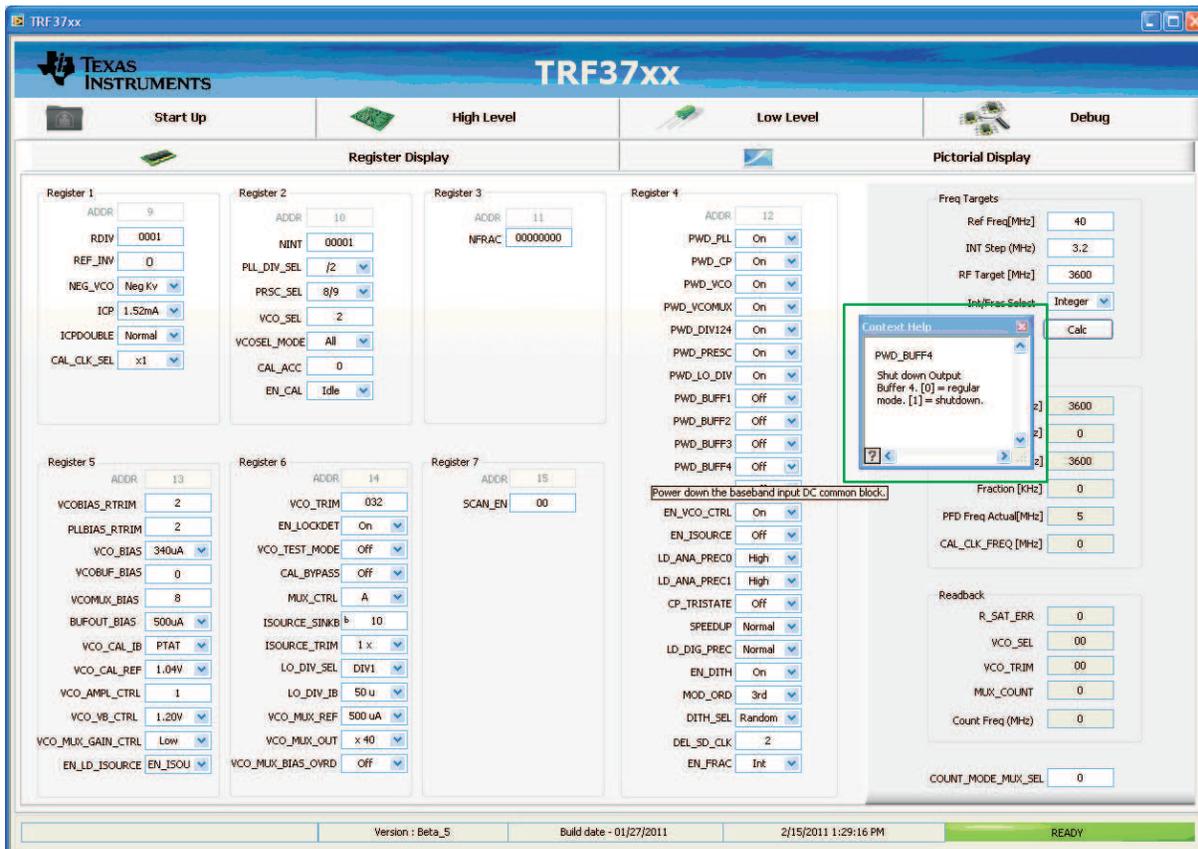
Calculation-
Frequency target
User Input Area

Options available in this page:

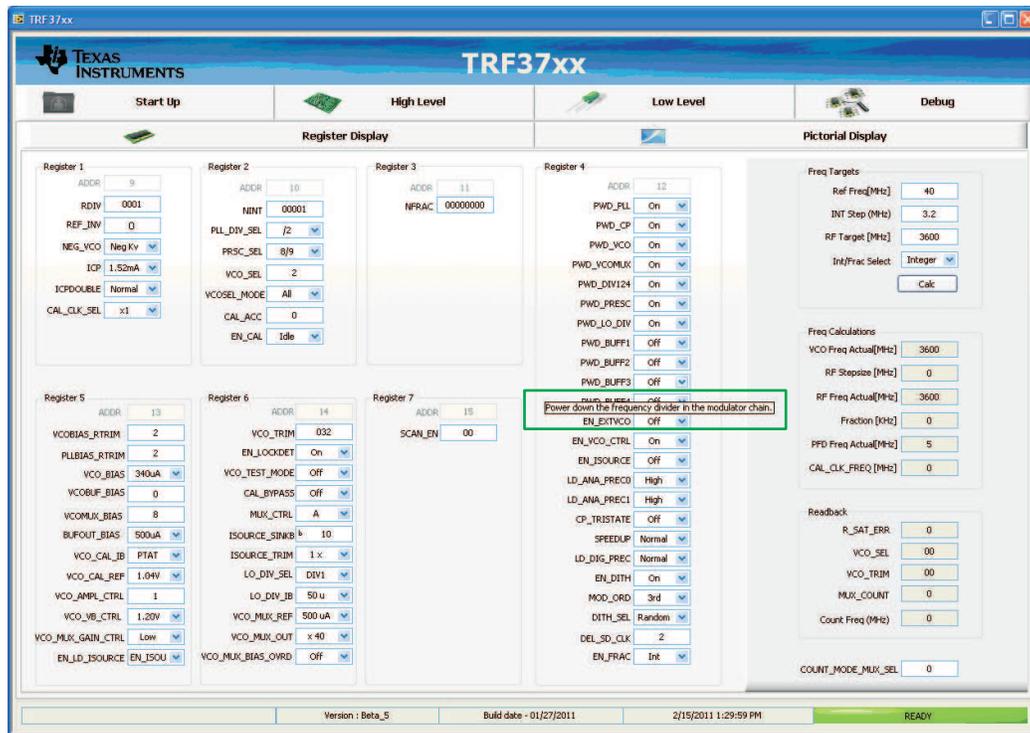
- **Calculation Frequency Targets** – The user is able to specify requirements like:
 - Reference: Frequency
 - RF Step Size
 - RF Target
 - Integer/Fractional Mode
 - Press *CALC* to calculate and set the registers so as to program as per the user inputs.
- **Frequency calculations** – Indicates the actual set components
- **Read back** – Reads the register 0 and displays the fields like:
 - R SAT ERR
 - VCO SEL
 - VCO TRIM
 - MUX Count
 - Counter Frequency
- **Registers** – The user can set any value for the register by just changing the value available.

NOTE: Press *CTRL + H* to display a small description parallel to the GUI. The GUI also provides a tip when the mouse moves over a control.

CTRL + H

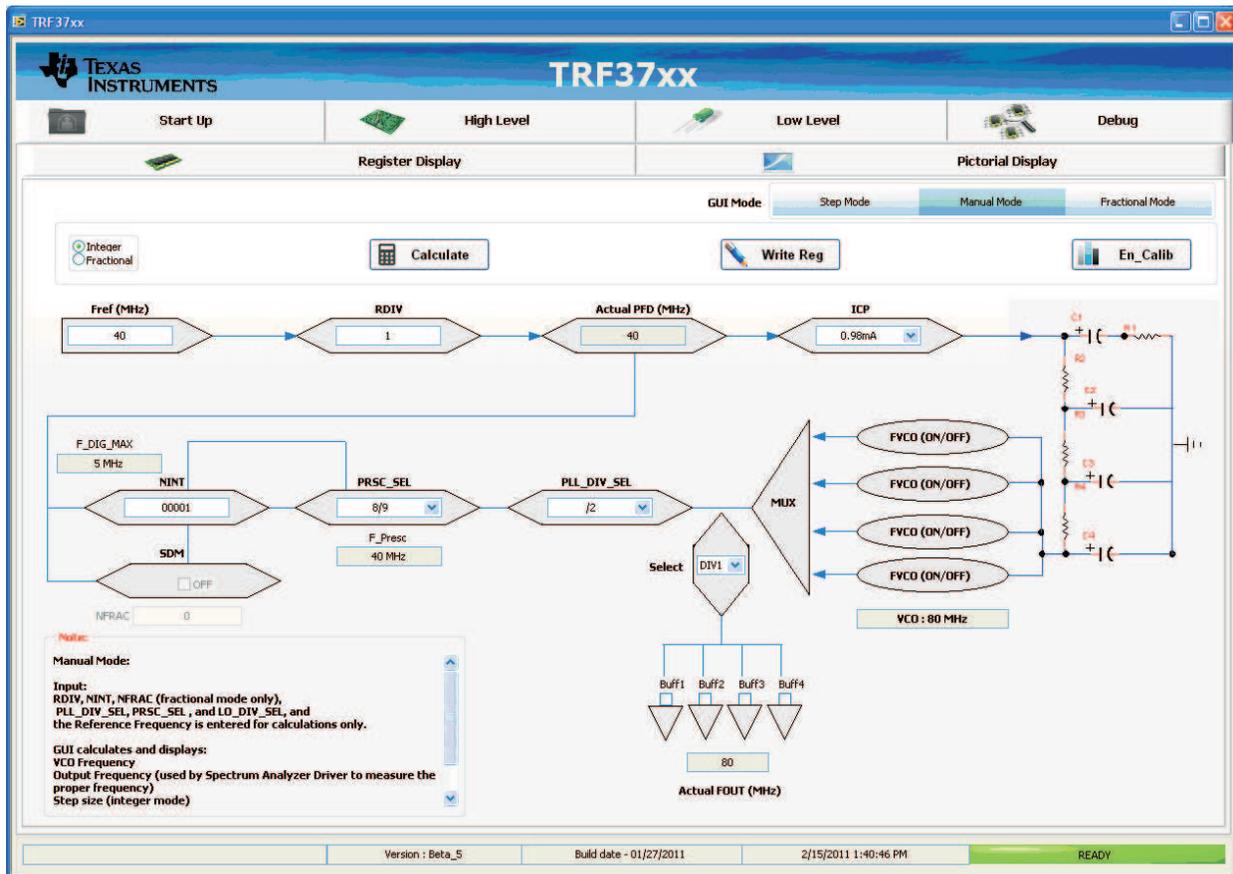


Automatic Tip Strip



NOTE: The GUI automatically writes into the registers in the High Level – Register Display.

2.3 High Level - Pictorial Display



This tab shows only the required components that are necessary to manipulate the three modes of the GUI:

1. Step Mode
2. Manual Mode
3. Fractional Mode

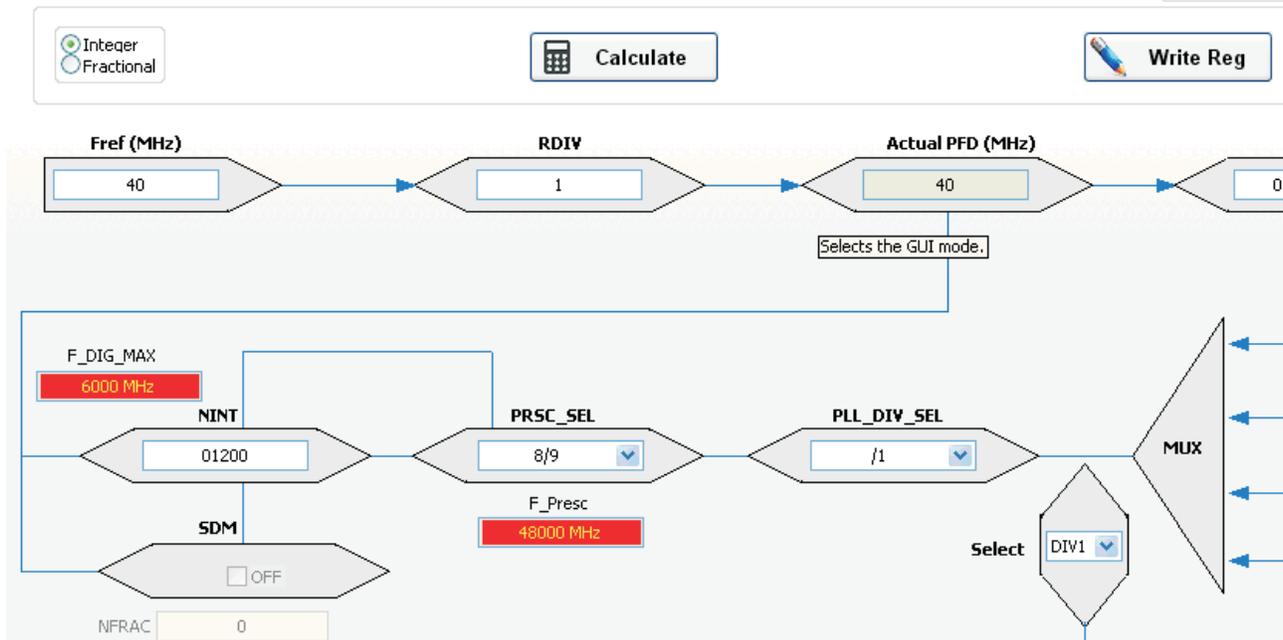
In each of the modes, the GUI grays out/disables the controls that the user cannot set. Other controllable parameters are available to edit.

Options available in this page:

- **Step Mode** – User is able to specify requirements like:
 - FRef
 - INT Step Target
 - RF Target
 - User can select Integer/Fractional Mode
- **Manual Mode** – Indicates the actual set components:
 - Fref
 - RDIV
 - ICP
 - NINT
 - Presc Val
 - PLL DIV SEL
 - LO DIV SEL

- Buffers (1...4)
- Integer/Fractional Mode

The GUI calculates and displays the output, i.e., FOUT, F DIG Max, and F Presc. A warning is displayed if the F DIG MAX > 350 MHz and F Presc > 2800 MHz like the following:



User can correct for it by adjusting the required files.

- **Fractional Mode** – This mode is mainly for the fractional calculation part and the inputs needed are:
 - FPFD Target
 - FOUT Target
 - Fref

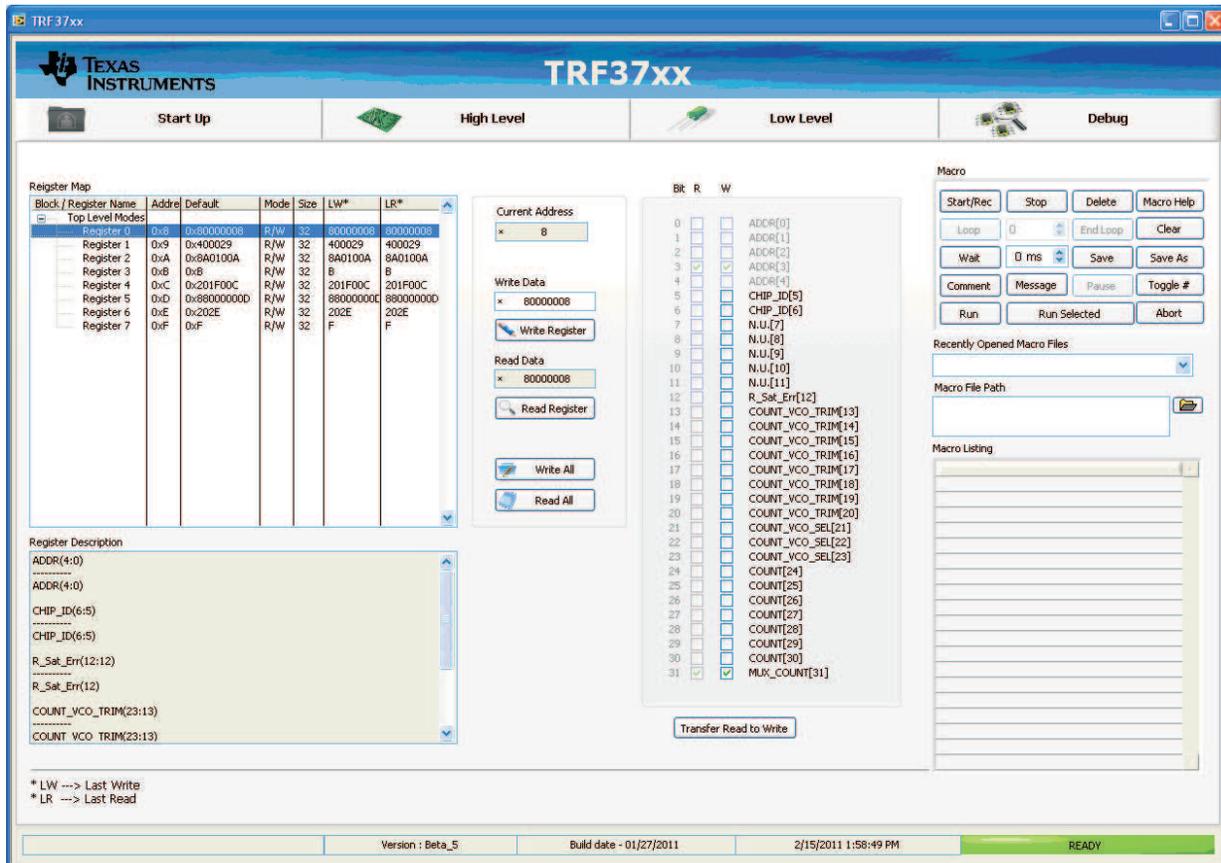
The GUI calculates NINT, RDIV, Fractional value – NFRAC, FDIG MAX, F Presc, PLL DIV SEL, LO DIV SEL, ICP, Presc Value.

The user can manipulate the Presc Value, PLL DIV SEL and LO DIV SEL after the calculation; the GUI does not try to control them after the first calculation in this mode.

- **Calculation** – Calculates the output based on the mode and displays it to the user.
- **Write register** – When the user is satisfied with the calculated values, he clicks *Write Register*, which writes the calculated values into the corresponding registers.
- **Enable CAL** – Toggles the CAL bit to initialize the Calibration Sequence.

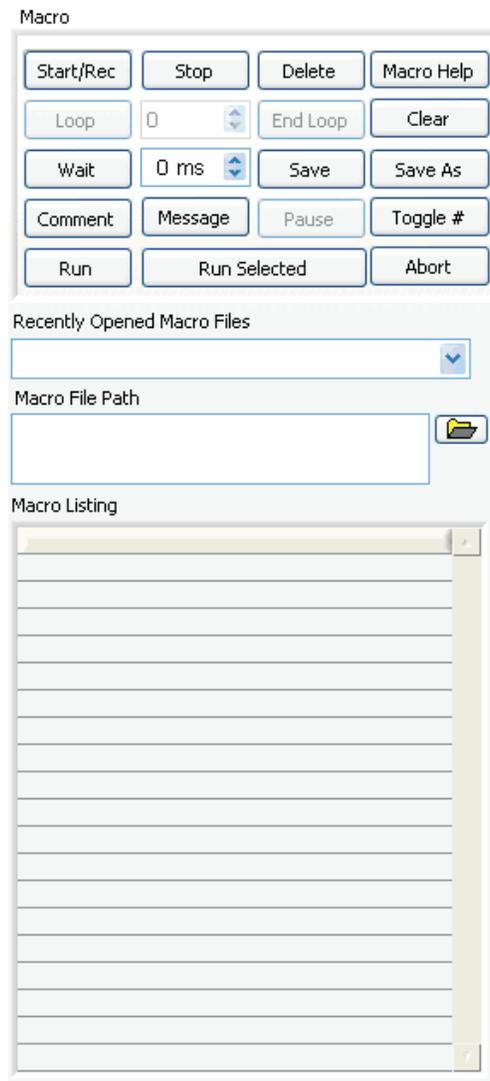
2.4 Low Level Register Display

The GUI displays the registers in a low level manner, i.e., for each register the user can see the binary indication and toggle bits and write/read registers.



Options available in this page:

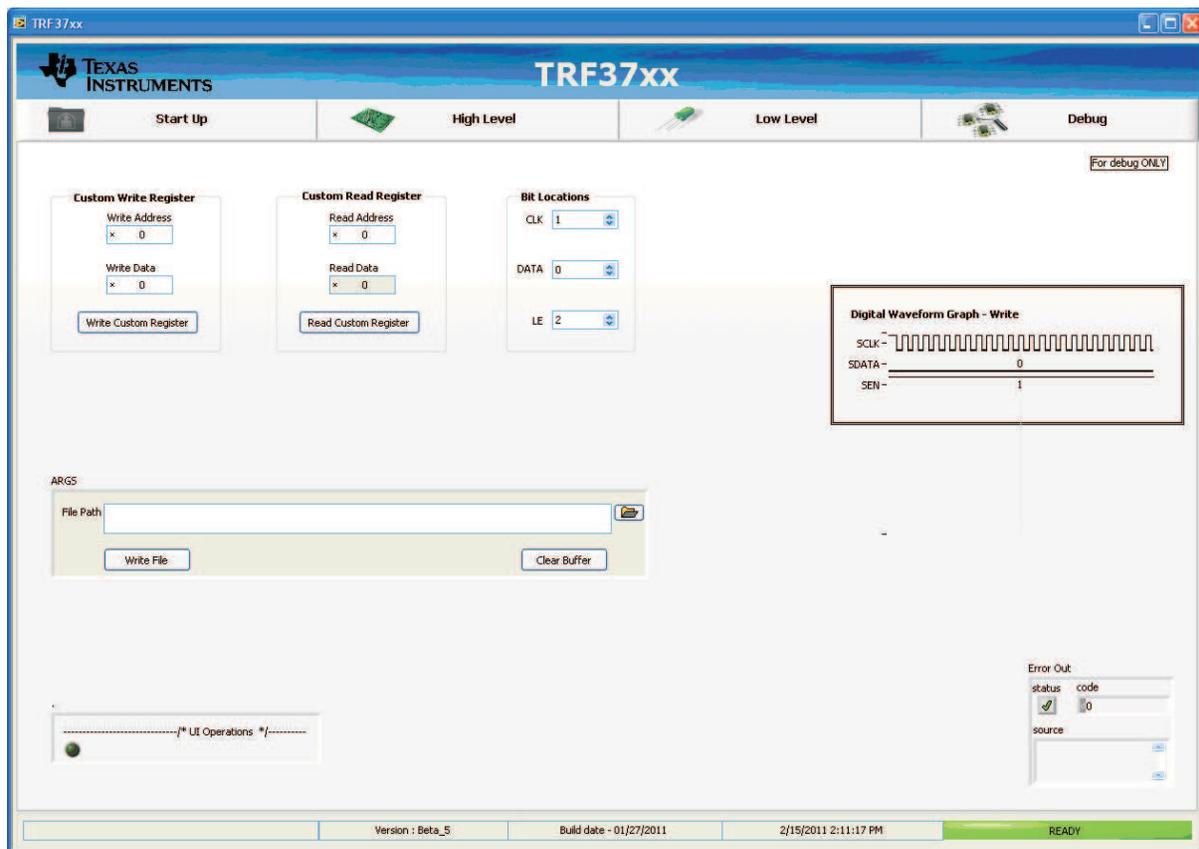
- **Register Map** – Navigates to registers
 - Based on the selection of bits that are displayed on the right pane.
- **Bits Display** – Displays the register value in binary format
 - Read column displays the last read back value (corresponds with *Read Data*)
 - Write column displays the last written value (corresponds with *Write Data*)
 - The user can click on the write column to modify the values of the register.
- **Current Address** – Displays the current address of the selected register
- **Write data** – User can enter the data in or modify the bits in the *Bits Display* when the write register is clicked; the GUI writes into the corresponding register with the value programmed. This field also corresponds with the Write Column of the Bits Display.
- **Write Register** – Button → Writes the value in the *Write Data/Bits Display* into the register.
- **Read data** – When *Read* button is clicked, the read back data is displayed here. This field also corresponds with the Read Column of the Bits Display.
- **Read Register** – Button → Read the Register value and displays in the *Read Data*.
- **MACRO:**



This is an option available to the user where, the activity in the Low Level Display page can be recorded, saved, and played back,

- Start Rec – Starts to record the activity
- Stop – Stops recording
- Save/Save as – Saves the activity logged
- Run – Runs the whole step listed in the *Macro Listing*
- Run Selected – Runs only the selected items in the Macro Listing
- Macro Listing – Displays the activity done/Steps Run
- Macro File Path – to select a macro file path that is already saved
- Recently Opened Macro Files – has a list of files which where opened recently

2.5 Debug



This screen is not used; it is only for internal debugging.

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