

DAC5682/TSW3100 Evaluation Boards

Rev 1.2 – 04/12/07

INSTALLATION GUIDE

IMPORTANT NOTICE

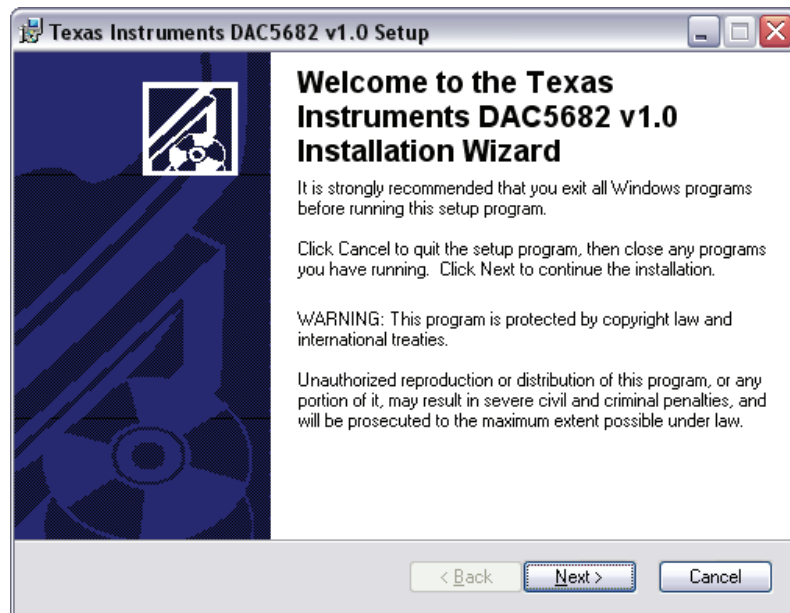
THE PRODUCTS PRESENTED HERE ARE EXPERIMENTAL, DEVELOPMENTAL OR PROTOTYPE PRODUCTS. THE PRODUCT SPECIFICATIONS ARE PRELIMINARY AND SUBJECT TO CHANGE WITHOUT NOTICE. TI MAKES NO WARRANTY, EITHER EXPRESSED, IMPLIED OR STATUORY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A SPECIFIC PURPOSE, AS TO THESE PRODUCTS AND IT DOES NOT REPRESENT THAT A FINAL PRODUCTION VERSION WILL BE SOLD BY TI.

1. Software Installation

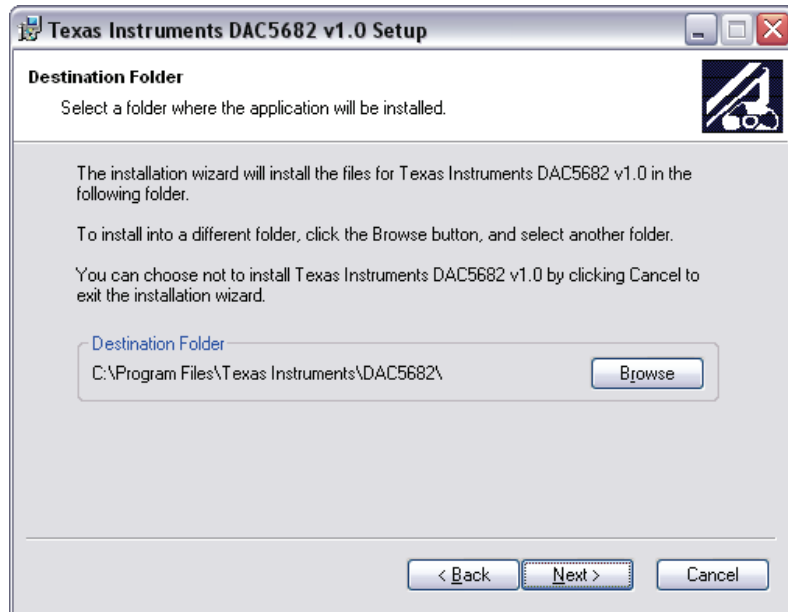
All necessary software to communicate with the DAC5682 and TSW3100 Evaluation Board Modules (EVM) is provided on the enclosed CD. This section describes in detail how to install the required software.

1.1 DAC5682 USB Control Software Installation

1. Open the “DAC5682 Installer” folder located on the installation CD and double-click on the “setup.exe” file. The DAC5682 Installation Wizard will open. Click “Next” to continue with the installation.



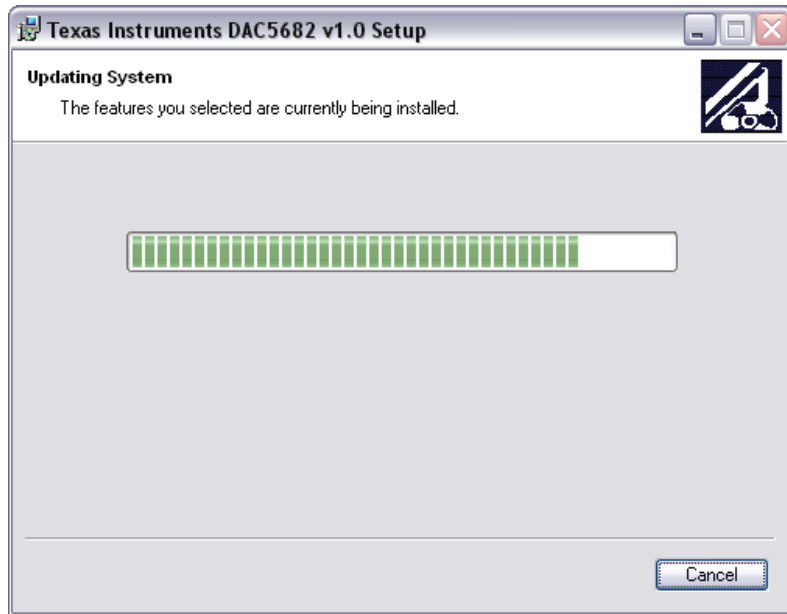
2. Unless another location is specified, the software will be loaded in the destination folder C:\Program Files\Texas Instruments\DAC5682\. Click "Next".



3. Click "Next" on the screen below to begin the installation.



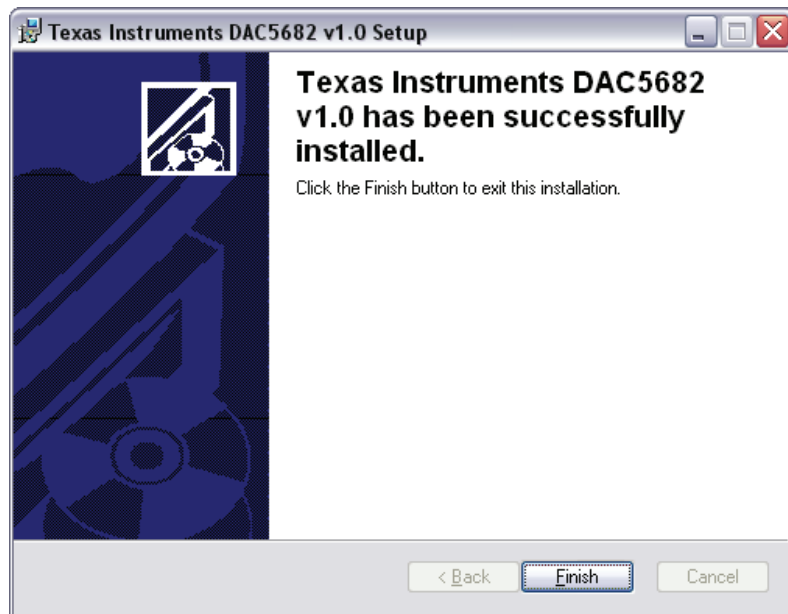
4. The following screen will be displayed as the software is installed.



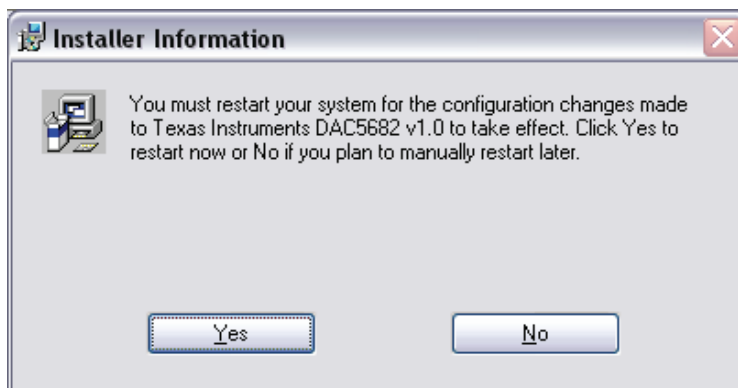
5. If the following screen appears during installation, press "Continue Anyway".



6. Click "Finish" to complete the installation.



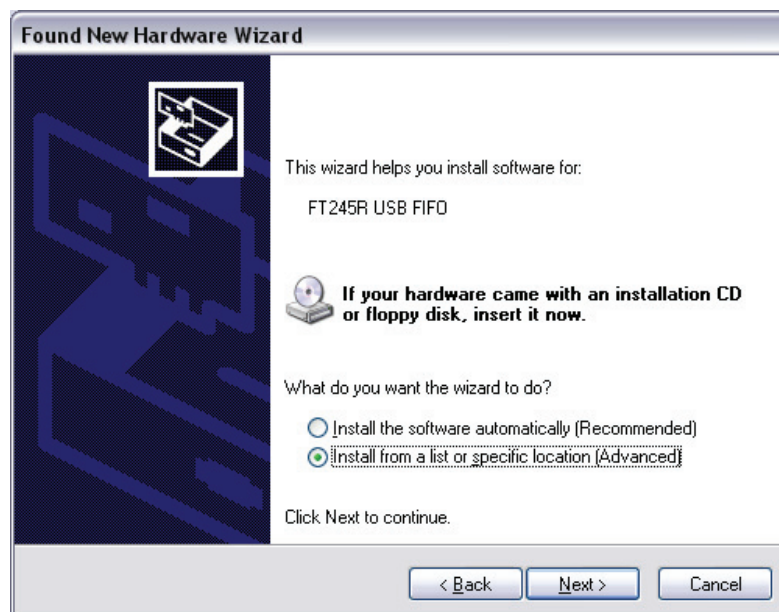
7. Click "No" to restart the computer.



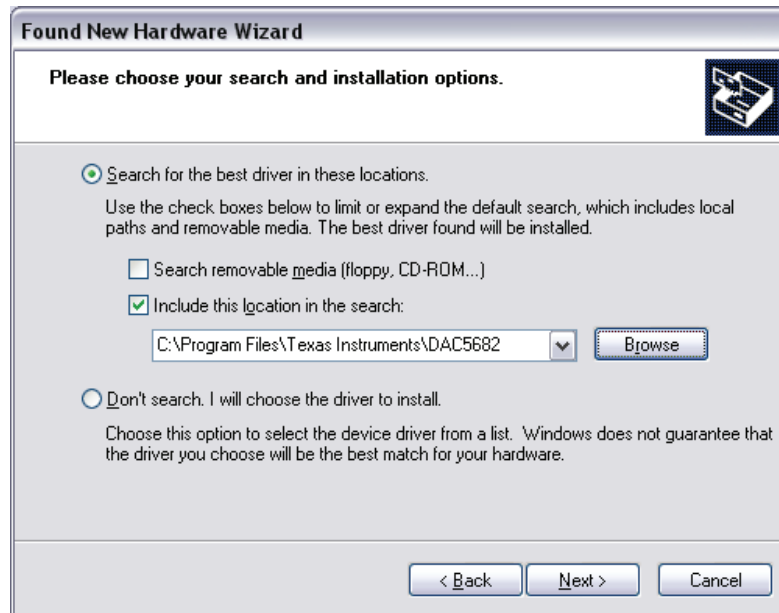
8. Connect the DAC5682 EVM to a spare USB port of the host PC using the included USB cable. The Windows Found New Hardware Wizard should open; if this is not the case make sure the cable is connected properly. Select "No, not this time" from the options available and then click "Next" to proceed with the installation.



9. Select "Install from a list or specific location (Advanced)" as shown below and then click "Next".



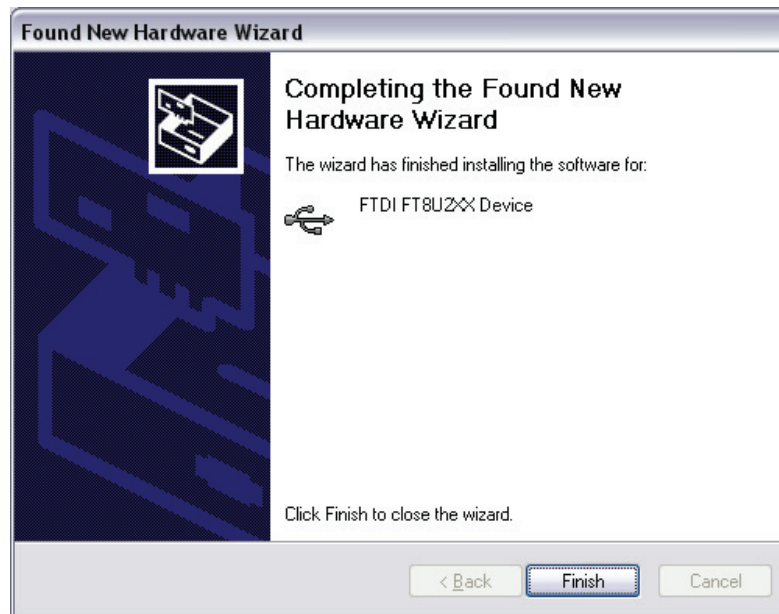
10. Select "Search for the best driver in these locations" and browse for the folder where the DAC5682 program was installed (the default location is C:\Program Files\Texas Instruments\DAC5682). Once the file path has been selected, click "Next" to proceed.



11. If Windows XP is configured to warn when unsigned (non-WHQL certified) drivers are about to be installed, the following screen will be displayed unless installing a Microsoft WHQL certified driver. Click on "Continue Anyway" to continue with the installation. If Windows XP is configured to ignore file signature warnings, no message will appear.

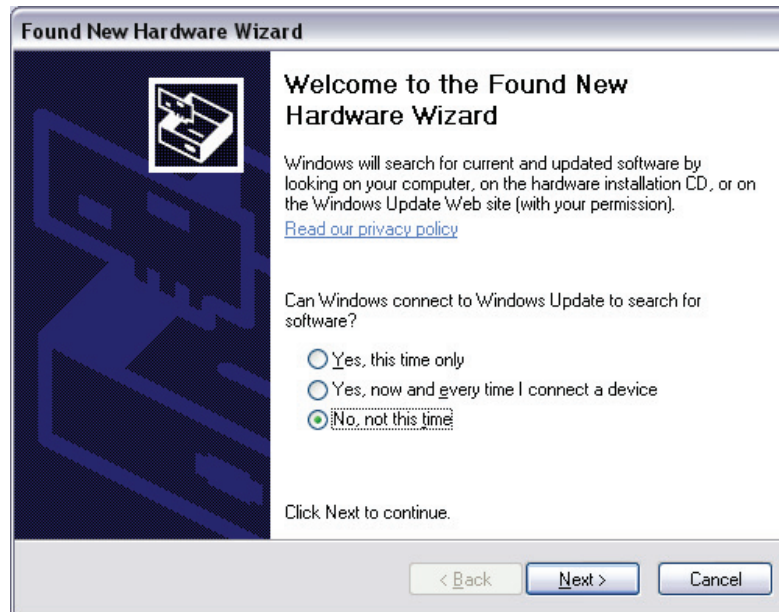


12. Windows should then display a message indicating that the installation was successful.
Click "Finish" to complete the installation.

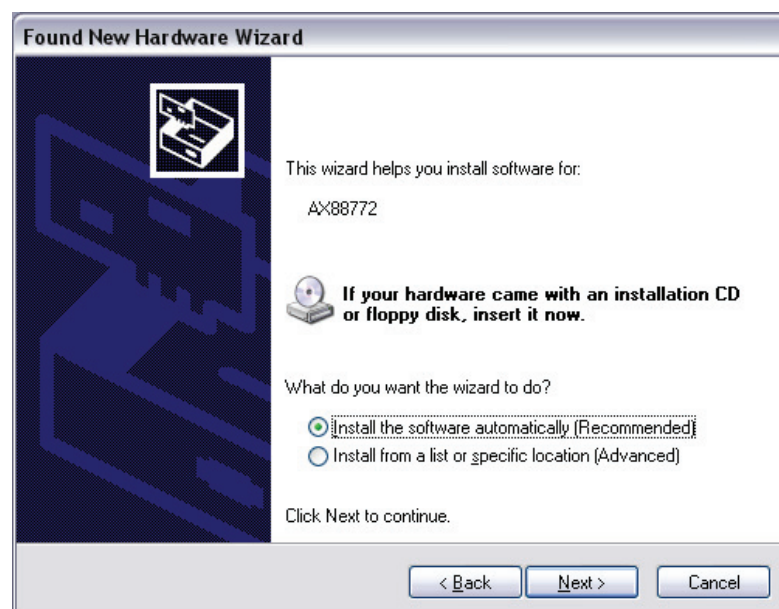


1.2 USB to Ethernet Adapter Installation

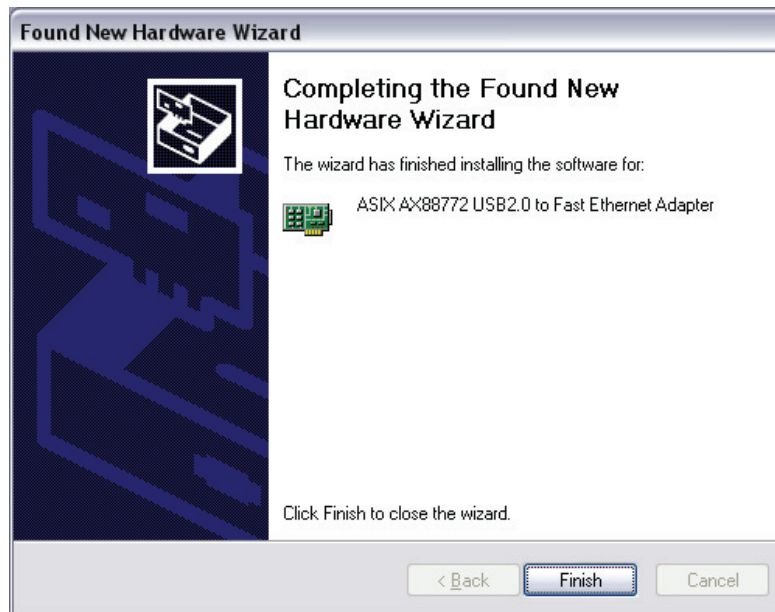
1. Connect the included USB to Ethernet adapter to a spare USB port of the host PC. The Windows Found New Hardware Wizard should open; if this is not the case make sure the cable is connected properly. Select “No, not this time” from the options available and then click “Next” to proceed with the installation.



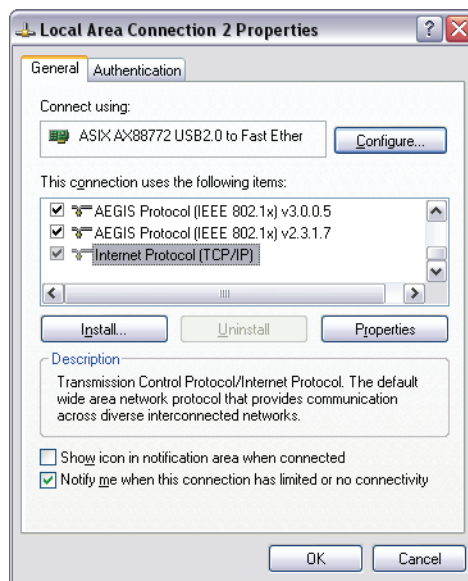
2. Insert the USB to Ethernet Adapter installation CD, the installation should start automatically. If not, select the “Install the software automatically” option and click “Next”.



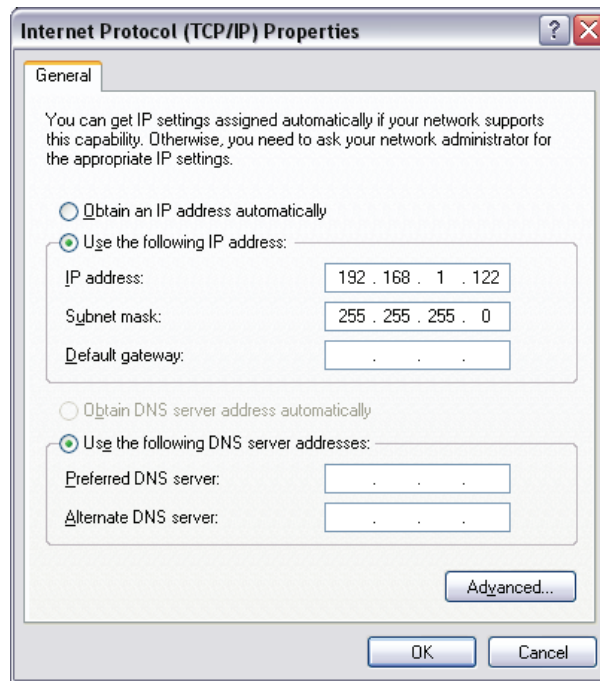
3. Wait for the wizard to complete. Press “Finish” to complete the installation.



4. Restart the computer.
5. To configure the USB to Ethernet network, from the Windows start menu, go to the Control Panel and select Network Connections. Double-click on the Local Area Connection whose device name is “ASIX AX88772 USB2.0 to Fast Ethernet Adapter”.
6. Double-click on the “Internet Protocol (TCP/IP)” option from the General tab.



7. Select “Use the following IP address” and enter the values shown on the screen below.
Press OK on both screens.



The image shows the "Internet Protocol (TCP/IP) Properties" dialog box. The "General" tab is selected. It contains instructions about automatic IP assignment and two main sections for manual configuration. The first section, "Use the following IP address:", is selected with a radio button. It contains three text boxes: "IP address" with the value "192 . 168 . 1 . 122", "Subnet mask" with the value "255 . 255 . 255 . 0", and "Default gateway" which is empty. The second section, "Use the following DNS server addresses:", is also selected with a radio button. It contains two text boxes: "Preferred DNS server" and "Alternate DNS server", both of which are empty. At the bottom right of the dialog is an "Advanced..." button. At the very bottom are "OK" and "Cancel" buttons.

Internet Protocol (TCP/IP) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 192 . 168 . 1 . 122

Subnet mask: 255 . 255 . 255 . 0

Default gateway: . . .

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server: . . .

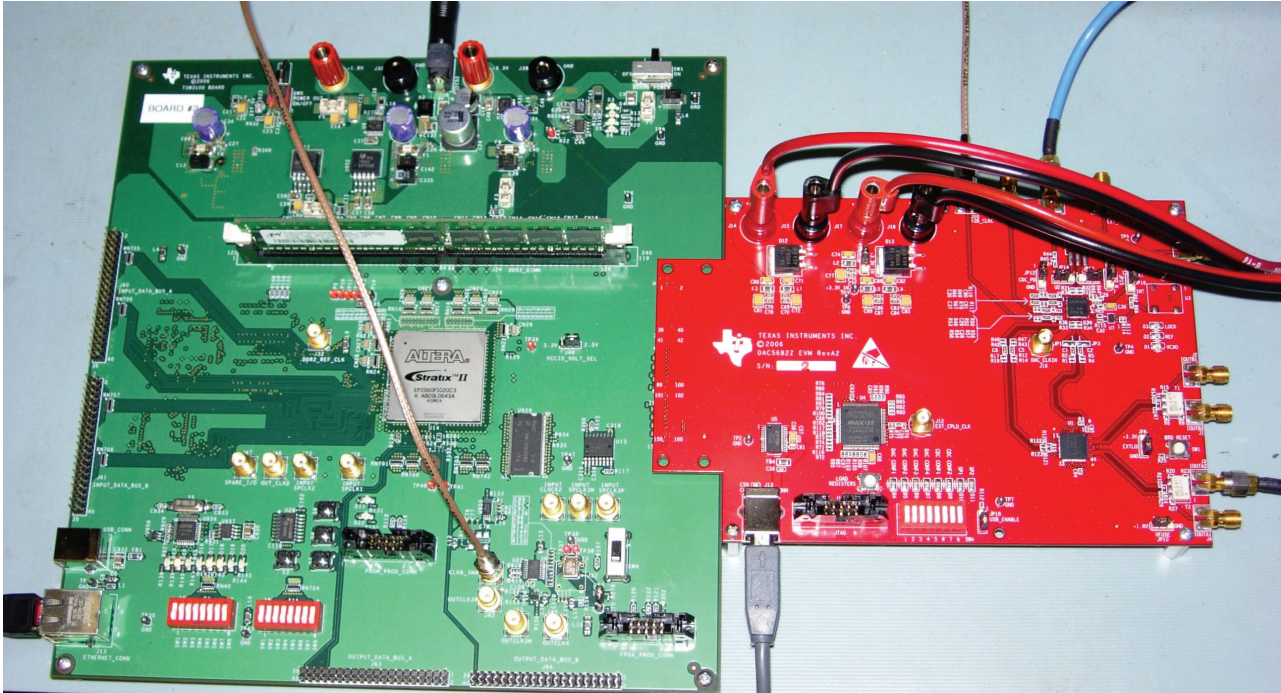
Alternate DNS server: . . .

Advanced...

OK Cancel

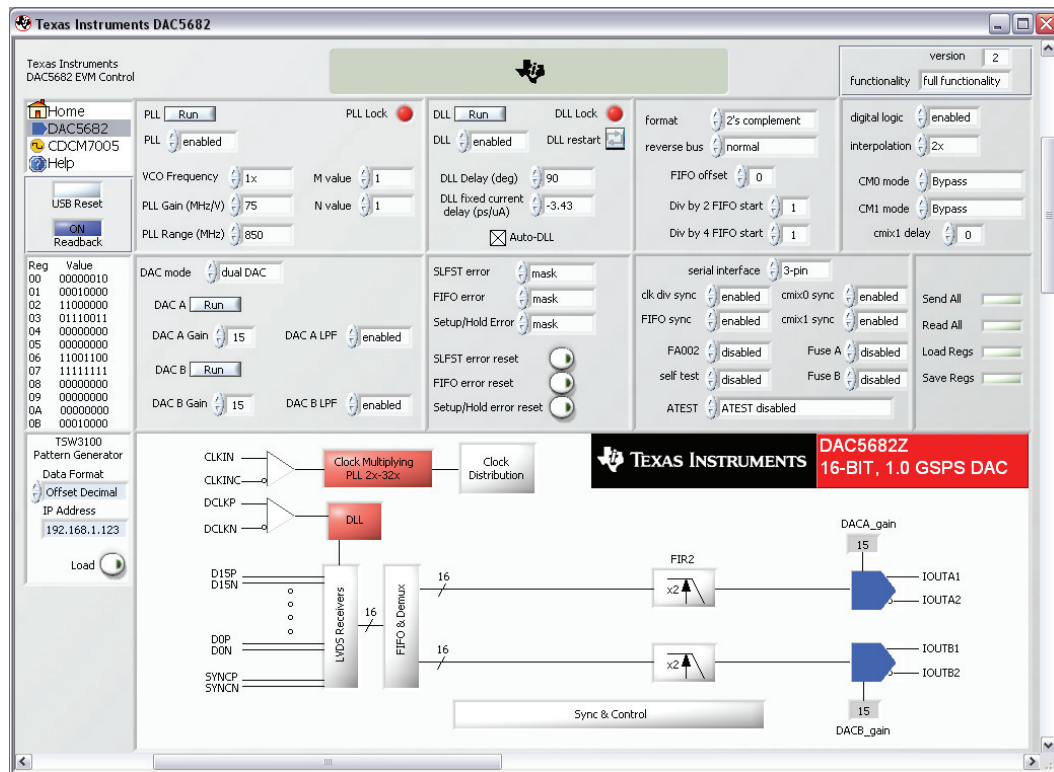
2. Test setup

The steps described in this section show how to connect and configure the TSW3100 and DAC5682 EVMs. The complete setup will look as shown on the picture below with the exception of the SMA cable going to the TSW3100 which is no longer required.

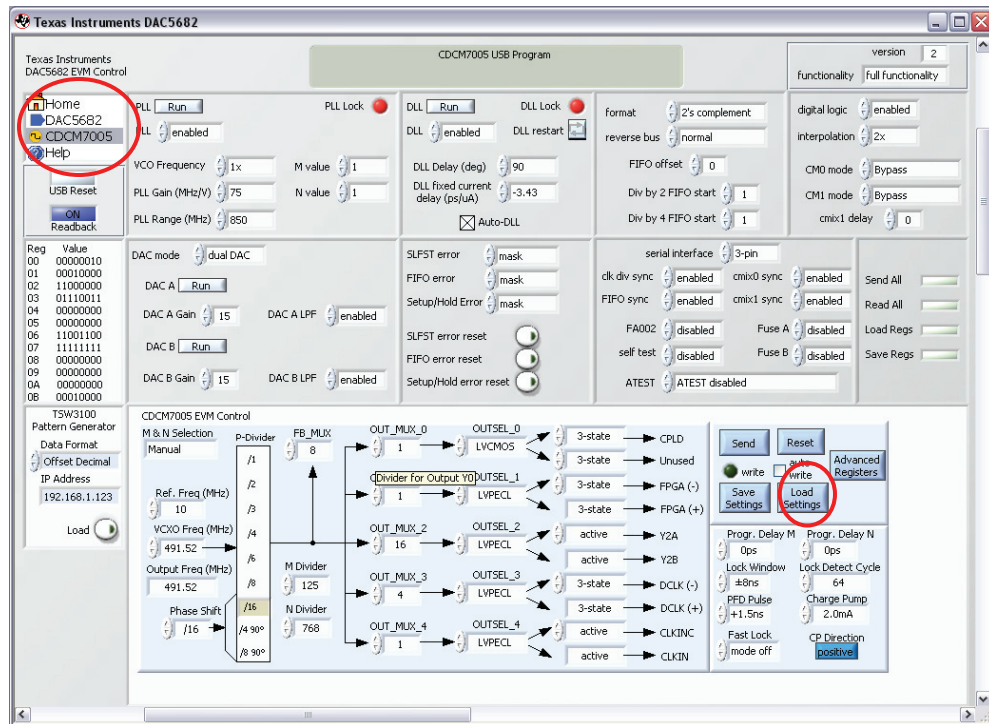


1. Copy the “Configuration Files” folder located on the enclosed CD to the host PC.
2. Connect the TSW3100 board to the DAC5682 EVM as shown on the picture above.
3. Power up the DAC5682 EVM with 1.8V DVDD (J14/J15), 3.3V AVDD (J17/J18). If using the modulator, provide 5V (J19/J20) as well.
4. Provide a 1Vpp, 0Vdc clock signal to the DAC5682 EXT_VC XO_P (J6) SMA connector. LED D1 should turn on indicating that a signal has been detected. If not, verify that the correct signal is being provided.
5. Provide a 3dBm LO signal to the DAC5682 RF_LO_IN (J23) SMA connector if using the modulator.
6. Connect the TSW3100 ETHERNET_CONN (J13) to the USB to Ethernet adapter port using the included crossover Ethernet cable.

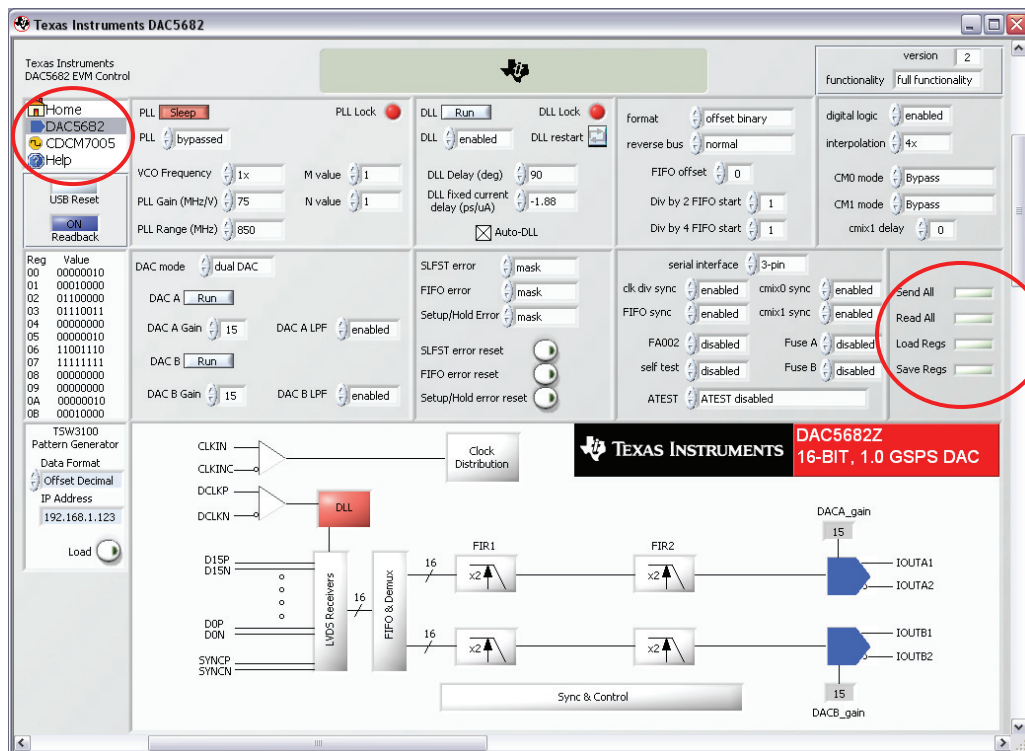
- If not already connected, connect the DAC5682 EVM to an open USB port on the host PC and open the DAC5682 USB Control Software. The following screen will appear:



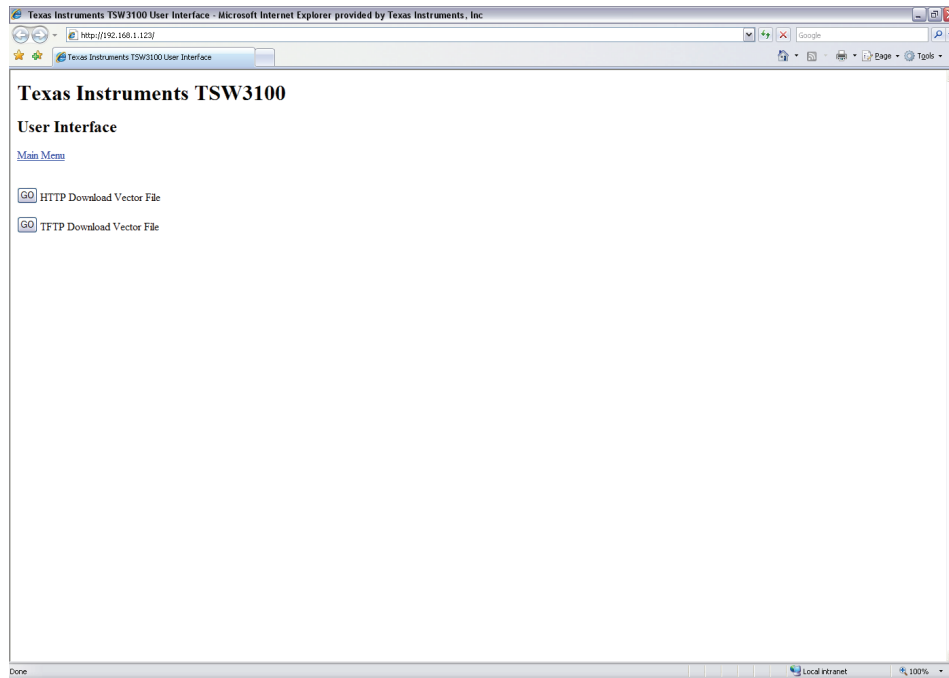
- If an error message is displayed, click on the “USB Reset” button. If the error persists, power-cycle the board and reconnect the USB cable.
- From the DAC5682 Control Software select the CDCM7005 menu. Click on the “Load Settings” button and browse for one of the “.reg7005” files located on the “Configuration Files” folder. The screen should look as shown below.



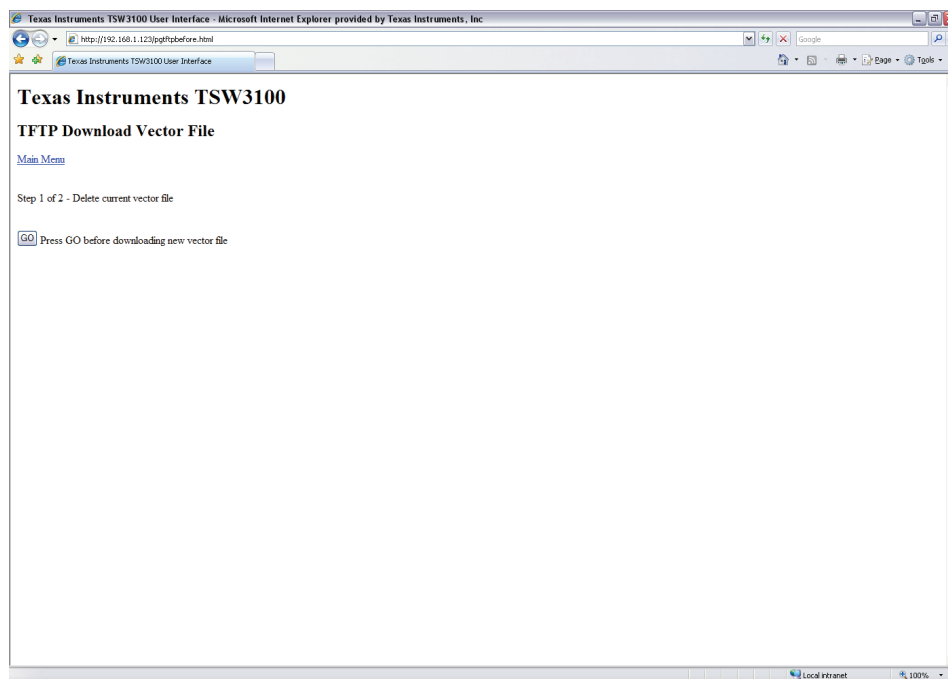
- Go back to the DAC5682 menu and click “Load Regs”. Browse for one of “.reg5682” files on the “Configuration Files” folder. If using the internal PLL make sure the PLL Lock indicator turns green. If not make sure you have the right CDCM7005 configuration and clock frequency.



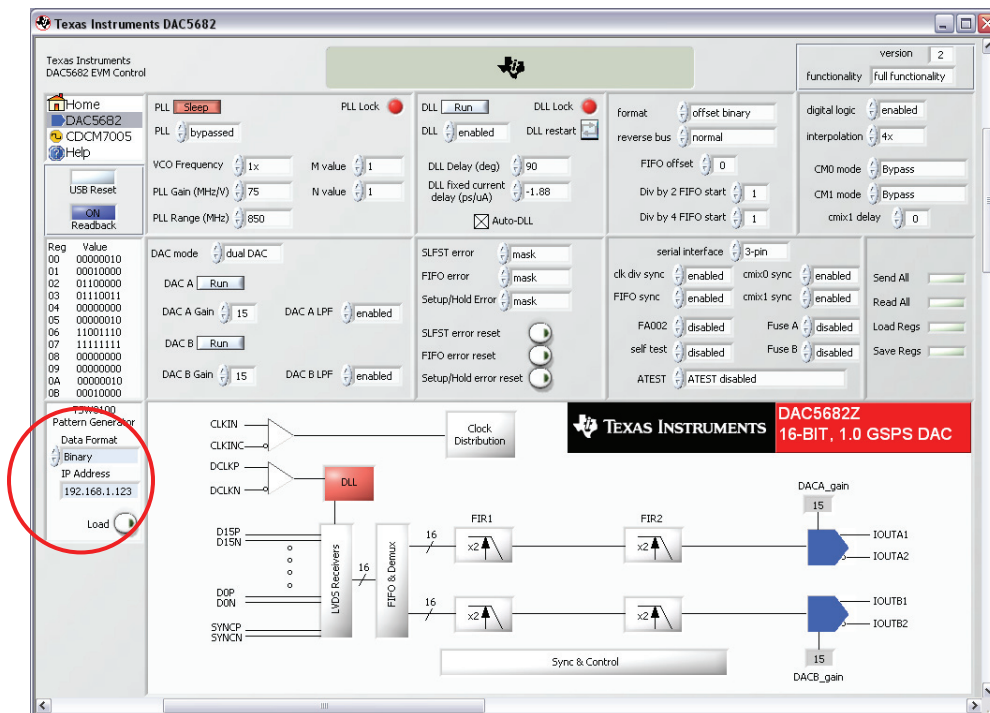
11. Provide power to the TSW3100 EVM using the included power supply and turn on SW1.
After a couple of seconds the Ethernet LED should turn on indicating that the FPGA has been initialized properly.
12. Press switch S9 on the TSW3100 board to reset the memory. This has to be done every time a new pattern is going to be loaded.
13. Open a browser window and go to address “192.168.1.123”. The following screen will be displayed. Press “Go” on “TFTP Download Vector File”.



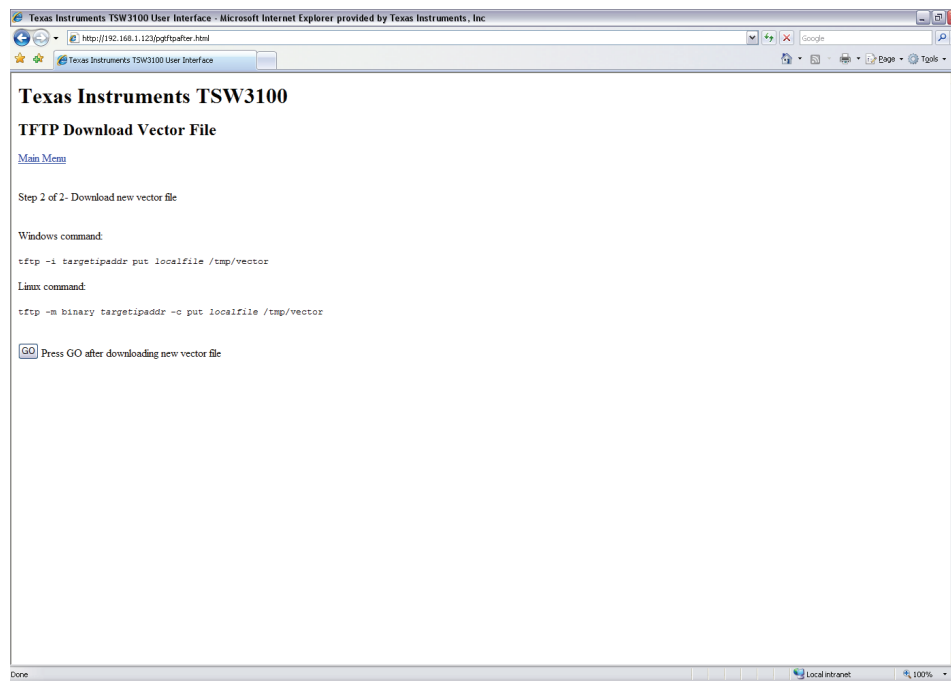
14. Press “Go” on the following screen.



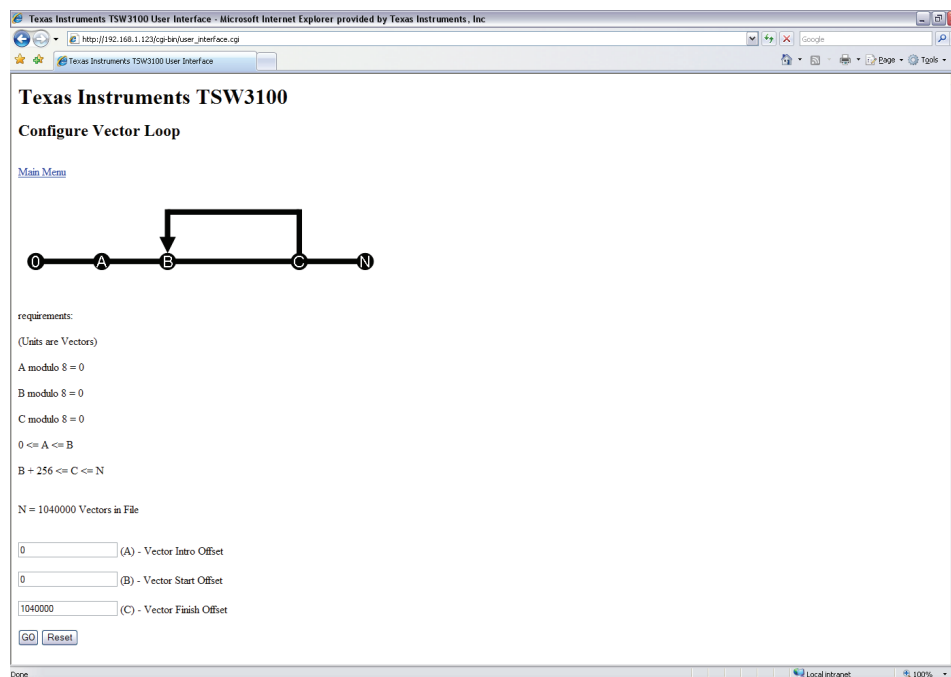
15. Go back to the DAC5682 GUI, select the appropriate data format and click on the “Load” button. Browse for the file to be loaded into the TSW3100. The number of samples must be a multiple of 8.



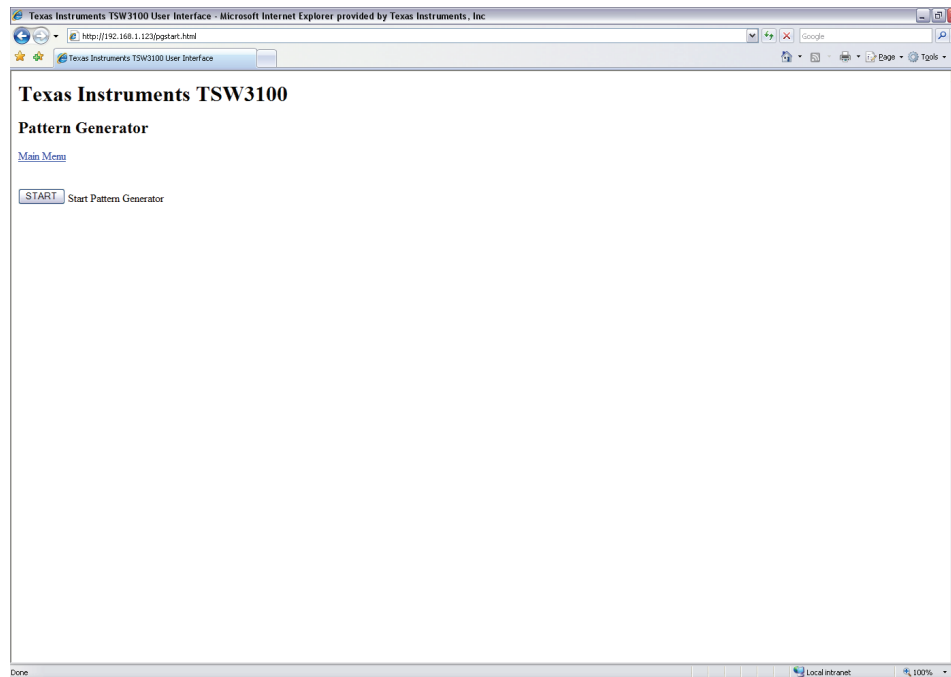
16. Return to the browser window and press “Go” on the screen below after downloading the pattern.



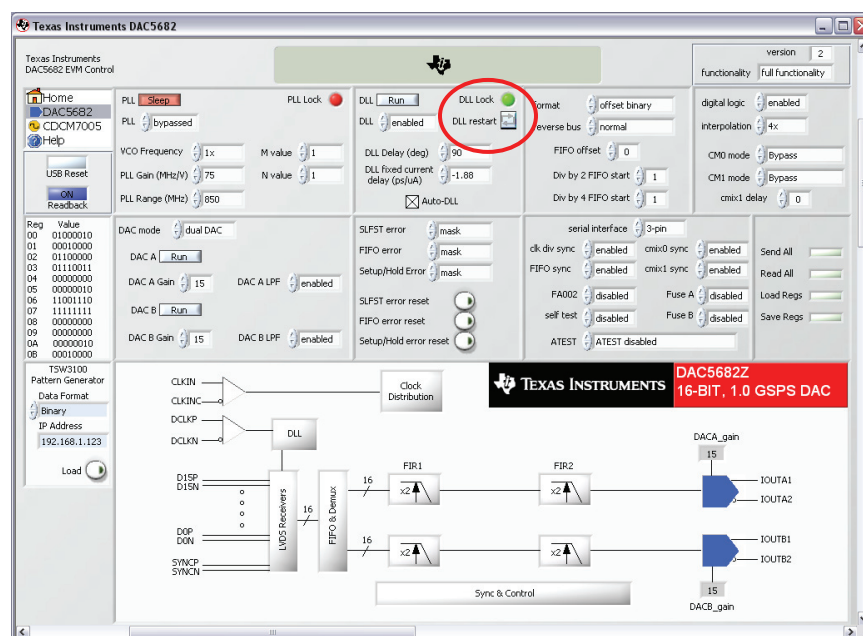
17. Make sure N is equal to the number of samples in the vector file and press “Go”.



18. Press “START” to run the pattern.



19. Click the “DLL restart button”, the DLL Lock LED should turn green.



20. Connect the modulator output RFOUT (J16 connector) or one of the DAC outputs to a spectrum analyzer.