

GENERAL DESCRIPTION

The XRP7704EVB-XPM is designed to allow individuals to program the NVM (Non-Volatile Memory) in the XRP7704, XRP7708, XRP7740, and XRP7714.

The board consists of a microcontroller with on board flash, pass fail indicators, a “push-to-program” button, a TQFN40 socket, and a USB port for powering and loading in new programming parameters. The information stored in the on board flash memory can be changed through the use of Exar’s Digital Power Studio available at Exar’s web site.

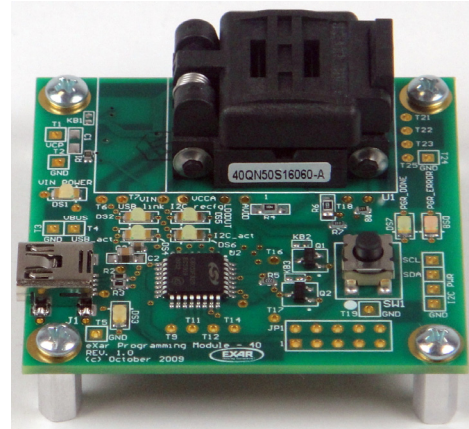
The firmware embedded in the microcontroller validates the presence of the IC, ensures the chip is able to be programmed to the desired values, and then validates the data after the write. Should any error occur, and indicator LED will illuminate on the board.

A USB Type A to Mini-B cable is required to initially program this board.

The socket has an approximate life time of 1000 insertions.

Additional technical information and all related documentation on Exar’s Power^{XR} family of devices can be found on Exar’s website at www.exar.com.

EVALUATION BOARD MANUAL



FEATURES

- **Capable of programming XRP7704, XRP7708, XRP7740, and XRP7714**
- **On board Flash**
- **Stand alone operation**
- **Register validation**

EVALUATION BOARD DETAILS

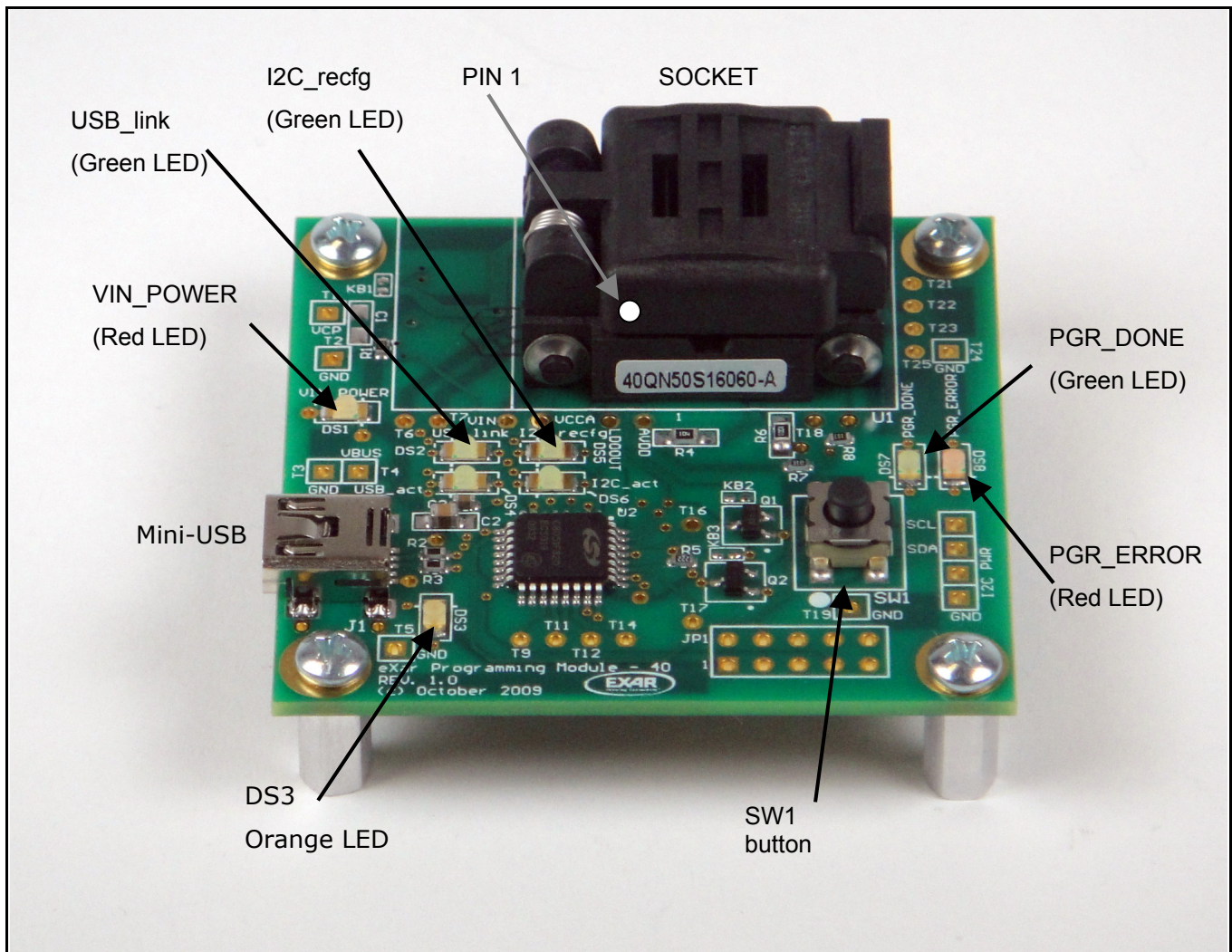


Fig. 1: XRP7704EVB-XPM Evaluation Board Details

ORDERING INFORMATION

Refer to XRP7704's datasheet and/or www.exar.com for exact and up to date ordering information.

USING THE EVALUATION BOARD

It is not the intention of this operator’s manual to provide detailed information on the use of the Digital Power Studio software, but simply the steps necessary to program the required number of sample units.

INSTALLING DIGITAL POWER STUDIO

The flash on this board is programmed by using the Digital Power Studio application. This application is available at www.exar.com. Download the application and install. A desktop icon will be created that looks like this.



Fig 2: Digital Power Studio Icon

ATTACHING THE XPM

Connect the XPM board to your computer through a USB cable with a standard USB connector plugged into the computer and the mini-USB plugged into the XPM board. See Fig 3. The first time a XPM board is connected to the computer, it will ask for a driver to be loaded. The driver for this board is found in C:\Program Files\Exar\Digital Power Studio.

Once this is completed, the “USB_link” and “DS3” LEDs should be lit. The “I2C_recfg” may or may not be on.



Fig 3: USB Mini-B to USB Type A

RECOGNIZING THE XPM

Upon starting, the Digital Power Studio performs a default board search. It should find the XPM board attached and identify it as being “connected” in a note on the lower left of the window. There will also be a tab at the upper far right that says “XPM” as in Fig 4.

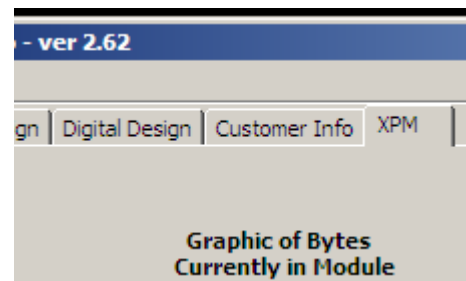


Fig 4. XPM Tab

If the board is connected after the Digital Power Studio is started, it may be necessary to manually search for the board. See Fig. 5 for finding the “Board Search” under the “File” menu. Click on “Board Search” to begin a search for the board. When successfully completed the XPM tab will appear.

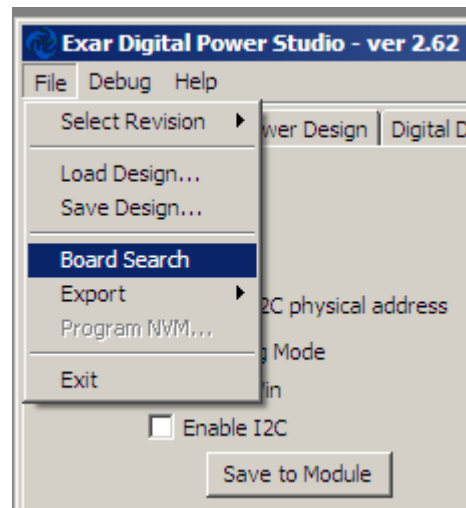


Fig 5: Board Search Menu

The USB_link and DS3 LEDs should be lit and the I2C_recfg may also be lit.

PROGRAMMING THE XPM

Once the hardware connections have been made and communications to the XPM have been established, one can now load the desired configuration file (*.cfg) into the on board flash. Go to the "Load Design" menu option as in Fig 6. Once open it may be necessary to navigate to the directory where the *.cfg file has been stored on the PC. Remember, that selecting the correct configuration file is a critical step in ensuring the samples are properly programmed.

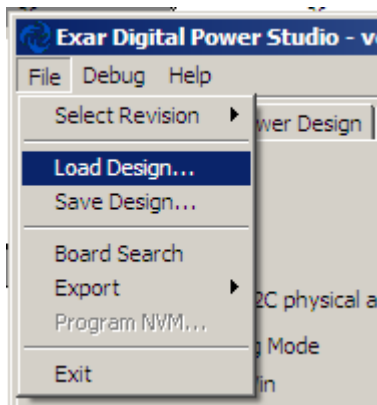


Fig 6. "Load Design" Menu

Once the configuration file is loaded, click on the XPM tab. With the XPM tab selected as in Fig 7, ensure that the "Reconfig Mode" box is selected. When this box is selected, the I2C_recfg LED will be lit on the XPM board.

The "Graphic of Bytes Currently in Module" will be blank if this is the first time the XPM module is used. This graphic is not designed to provide quantitative information and may be ignored by the operator.

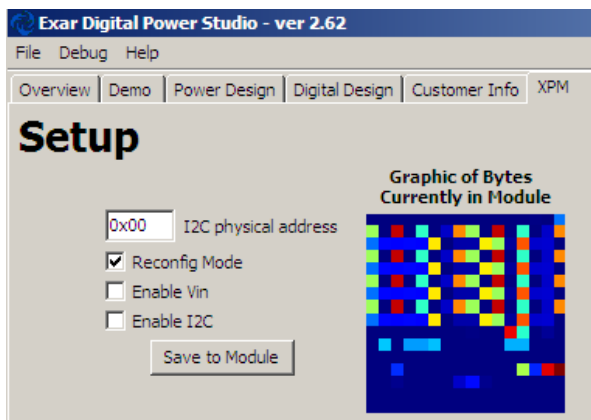


Fig 7. XPM Tab

With the proper configuration file loaded and the Reconfig Mode box checked, click on the "Save to Module" button. The result should be a dialog box as shown in Fig 8 below.

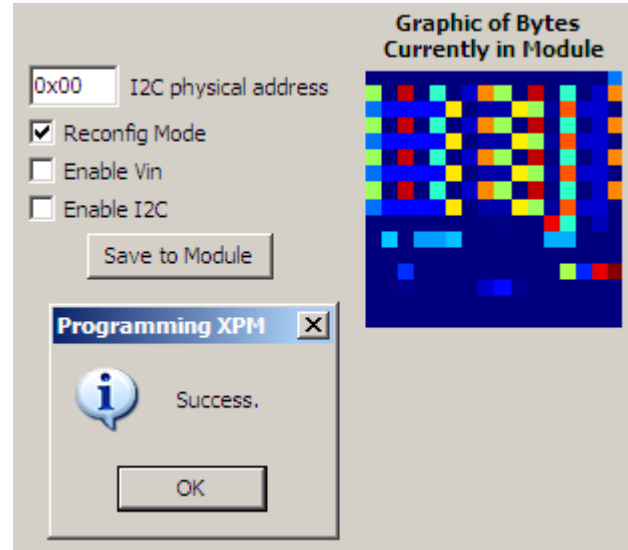


Fig 8. Programming Success

Click the OK button. The Digital Power Studio will then automatically shift to the "Customer Info" tab. You are now ready to start programming ICs.

PUSH BUTTON PROGRAMMING

The XPM board may be left connected to the PC for powering through the USB port or connected to a cell phone charger which has a mini-USB connector.

Place a XRP7704, XRP7708, XRP7740 or XRP7714 into the socket and ensure that it is oriented to pin 1. See Fig 1 for pin 1 location. Close and latch the socket. Push the button, SW1. The VIN_POWER LED will flash and the green PGR_DONE LED should stay lit. This means that the IC was successfully programmed. Remove the IC and set aside with the finished units.

Should the red PGR_ERROR LED light or both the PGR_ERROR and PGR_DONE LED light, then the IC should be discarded.

Repeat push button programming until all the desired units are completed.



REVISION HISTORY

Revision	Date	Description
1.0.0	01/14/2010	Initial release of document
1.0.1	01/18/2010	Minor corrections

FOR FURTHER ASSISTANCE

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Exar Technical Documentation:

<http://www.exar.com/TechDoc/default.aspx?>



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