MAX78615+PPM

Evaluation Kit Quick Start Guide (Revision 1.0)

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1 Introduction

The MAX78615+PPM evaluation kit demonstrates the capability of the MAX78615+PPM. The MAX78615+PPM chipset monitors up to three voltages and three current through up to three galvanically isolated ADCs. The kit connects to a PC through a USB cable that provides both power and data communication to the board. A Windows®-based graphical user interface (GUI) communicates with the device over a virtual COM port for simplified access to measurement data and controls.

The MAX78615+PPM evaluation kit manual provides additional information including configuration diagrams, schematics, and jumper settings. The data sheet includes the details on signal processing, operations and device settings. It also includes the registers map with description. Both these documents should be used during the setup and evaluation phase of the MAX7815+PPM.

1.1 Package Contents

The MAX78615+PPM evaluation board demo kit includes:

- MAX78615+PPM evaluation board
- USB cable assembly USB A-B 28/24 1.8M (Tyco/Amp 1487588-3)
- CD with documentation, GUI application, and USB drivers
- Calibration coefficients document (hardcopy only)

1.2 System Requirements

In addition to an AC source and load for measuring, the MAX78615+PPM evaluation kit provides a GUI to be used with a PC with the following features:

- 1GHz processor and 1 GB RAM
- Minimum 1024 x 768 video display resolution
- Available USB port
- Microsoft® Windows 7 or Windows XP®

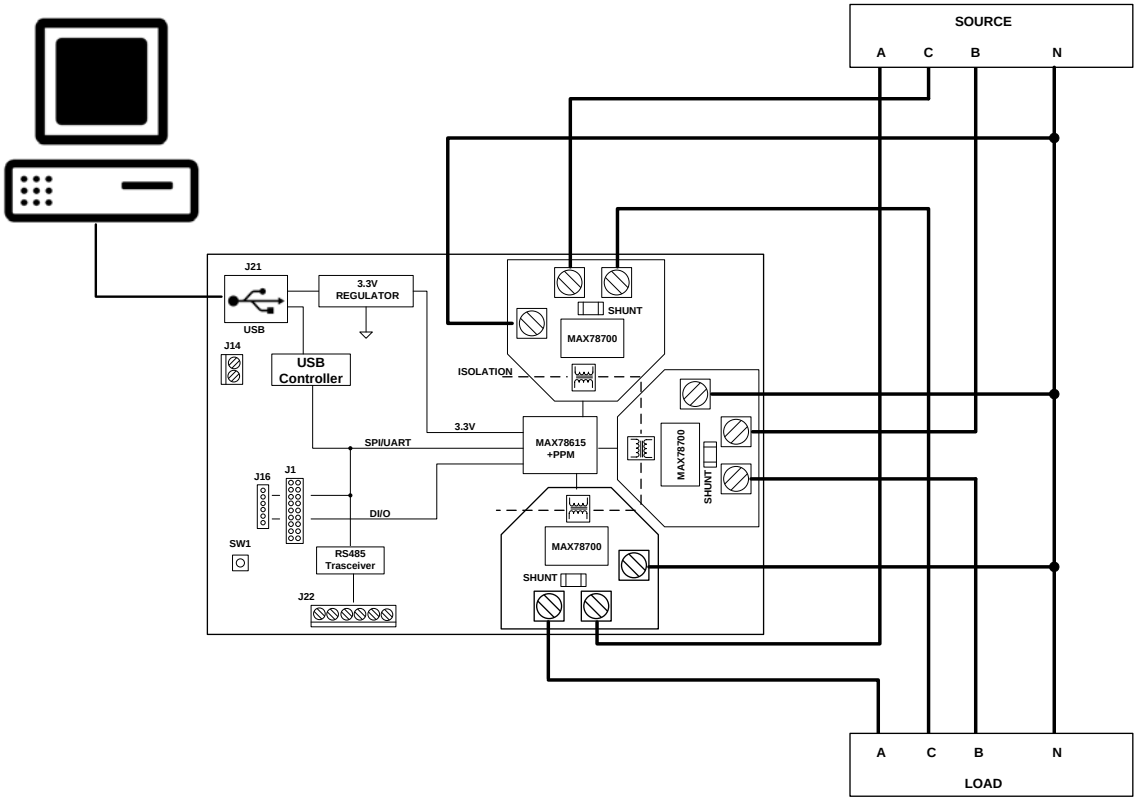


Figure 1. MAX78615+PPM Evaluation Kit Typical Connection Diagram

1.3 Safety and ESD Notes

EXERCISE CAUTION WHEN LIVE AC VOLTAGES ARE PRESENT!



Standard ESD precautions must be taken when handling electronic equipment.



Exercise extreme caution handling the hardware and connecting test equipment to the non-isolated portion of the MAX78615+PPM modem board (highlighted in red below). Ignoring the safety requirements can lead to shock, injury, and damage of the hardware.

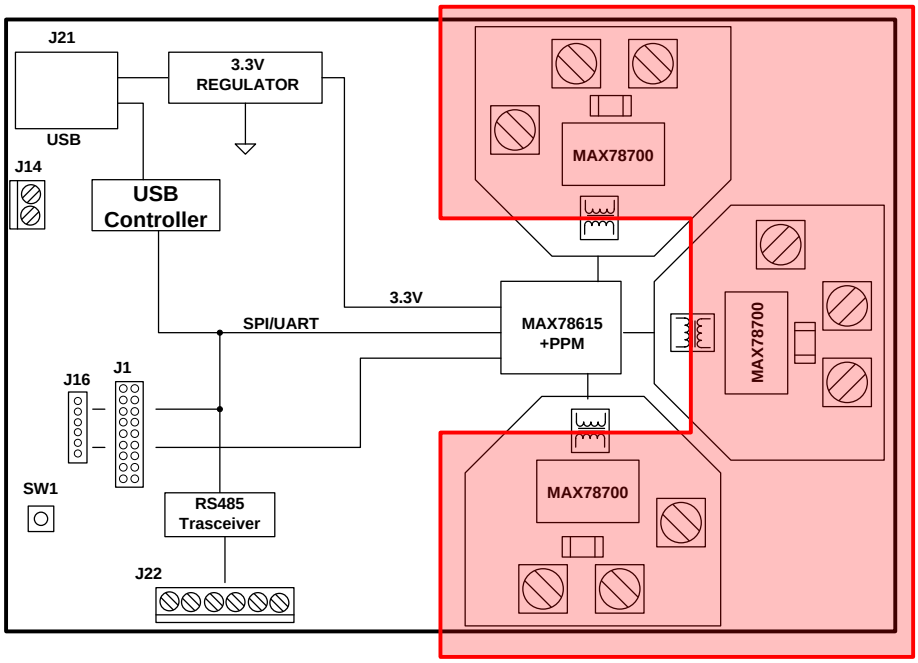


Figure 2. MAX78615+PPM Non-isolated (Shock Hazard) Area in Red

The board components and firmware settings are designed to operate with the following nominal AC electrical ranges:

Voltage	Current	Line Frequency
10VAC–400VAC	10mA–15A	46Hz-64Hz

2 Installation and Setup

The jumpers on the MAX78615+PPM evaluation kit are set from the factory (default). In the default configuration, the board is powered through the USB cable, providing also data communication to the board.

The selected interface is SPI, connected to the SPI/UART to USB bridge. A Windows-based graphical user interface (GUI) communicates with the device over a USB/SPI virtual COM port. The GUI provides a simple access to measurement data and controls.

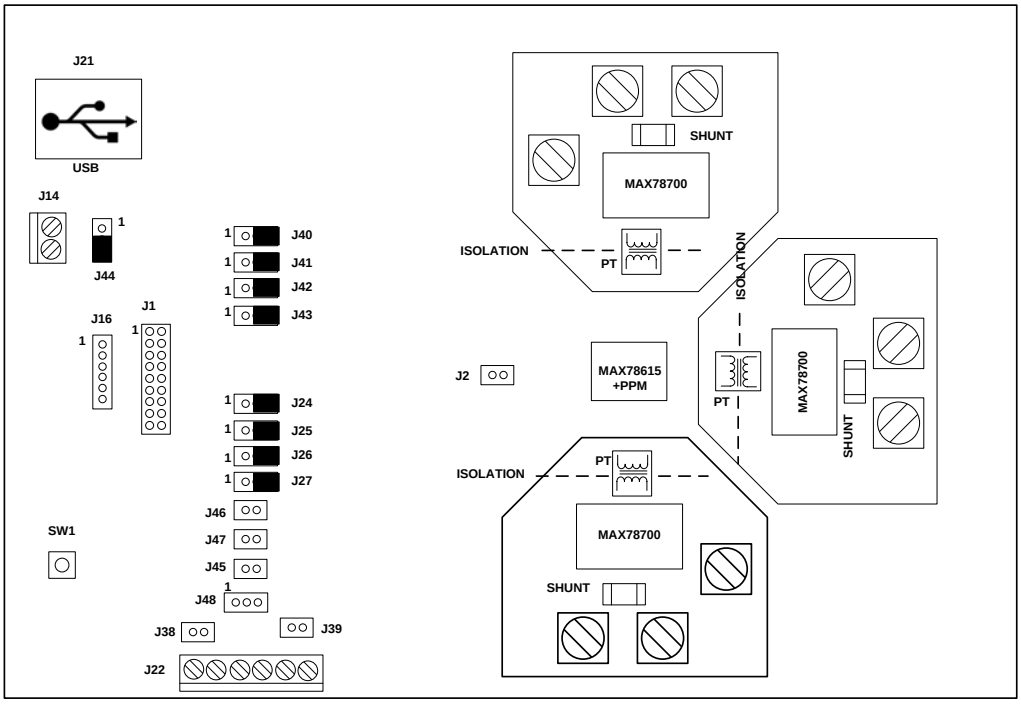


Figure 3. MAX78615+PPM Evaluation Kit Default Jumpers Settings

2.1 USB Driver Installation

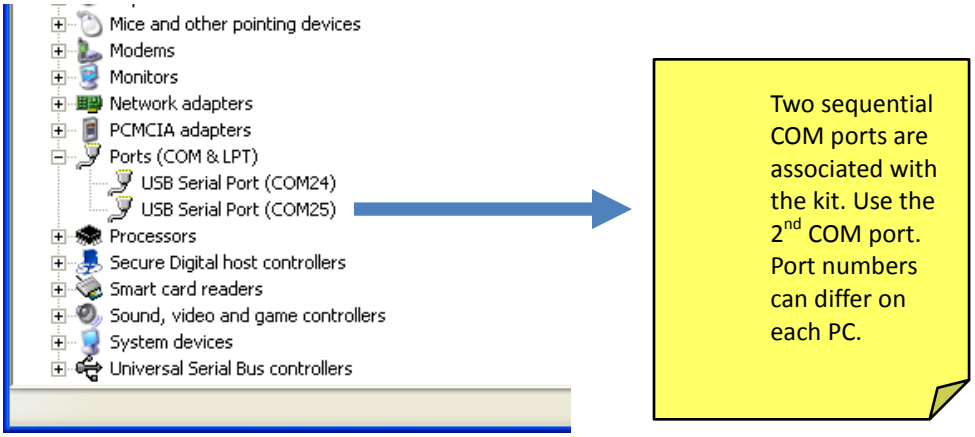
This evaluation kit includes an isolated USB interface for serial communications with a PC. The FTDI USB controller IC FT2232 performs the USB functions. The FTDI Windows driver presents a virtual COM port for enabling serial communications. The FTDI Windows driver is a certified driver for Windows XP and Windows 7.

Upon attaching the MAX78615+PPM evaluation board to the PC, the **Found New Hardware Wizard** automatically launches and installs the appropriate driver files. If your PC does not find the FTDI driver files on its local hard disk drive, locate and reference the FTDI USB driver and utilities subdirectory on the CD. The FT2232 controller is powered from the USB cable and is active even when no AC power is applied to the MAX78615+PPM evaluation kit.

Notes: If an older FTDI driver has been previously installed, it is recommended to remove the older version before installing this newer FTDI driver. Execute the **ftdiClean.exe** utility from the FTDI USB driver and utilities subdirectory. For FTDI driver support on other operating systems, check the FTDI website at *http://www.ftdichip.com/FTDrivers.htm*.

2.1.1 Confirm COM Port Mapping

- Launch the **Control Panel** and click on the **System** icon.
- The **System Properties** screen appears. Click on the **Hardware** tab. Click on **Device Manager**. Under **Ports (COM & LPT)**, look for the **USB Serial Port** assignment.
- Take note of the COM port assignment for the USB serial port.



2.1.2 FTDI COM Port Troubleshooting

If the FTDI device driver did not install properly, there would be no assigned COM port number for the FTDI controller. To repeat the USB driver installation, see *Section 2.1*.

Microsoft Windows might associate a ball-point device to the FTDI USB controller. When this occurs a FTDI device COM port assignment is available through the HyperTerminal, but there is no communications data. Verify whether a ballpoint device has been added to the Human Interface Devices through the device manager. See *Section 2.1.1* for access to the device manager. If a ballpoint device exists, delete it and unplug and replug the evaluation kit's USB cable.

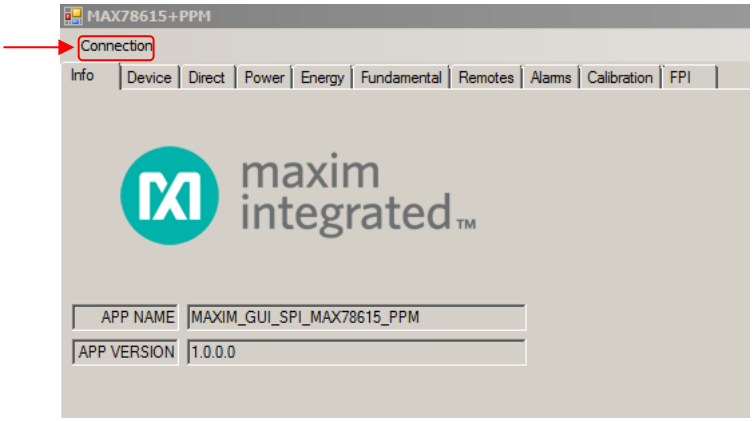
3 Graphical User Interface (GUI)

A graphical user interface (GUI) is included on the MAX78615+PPM evaluation kit CD to facilitate quick evaluation of the MAX78615+PPM energy measurement device. The GUI requires Microsoft.NET Framework 4 on the PC for which the GUI is to execute on. Upon invoking the GUI executable file, an installation wizard can appear if Microsoft.NET Framework 4 is not installed on the PC. Follow the installation wizard instructions, or download Microsoft.NET Framework 4 from the Microsoft website prior to launching the GUI.

3.1 GUI Initialization

The graphical user interface (GUI) is self-explanatory when used with the MAX78615+PPM data sheet. The user, however, should note the following about the evaluation kit hardware:

- Serial COM Port:
  - Following the installation instructions in Section 2, launch the GUI executable. Click the **Connection** drop-down menu and select **Connect**.



The GUI auto-detects the presence of an SPI device, if the evaluation kit is not connected or the MAX78615+PPM interface selection is different than SPI an error message is displayed.

4 Contact Information

For more information about Maxim products or to check the availability of the MAX78615+PPM, contact technical support at *www.maximintegrated.com/support*.

Revision History

Revision	Date	Description	Pages Changed
0	2/15	Initial release	—