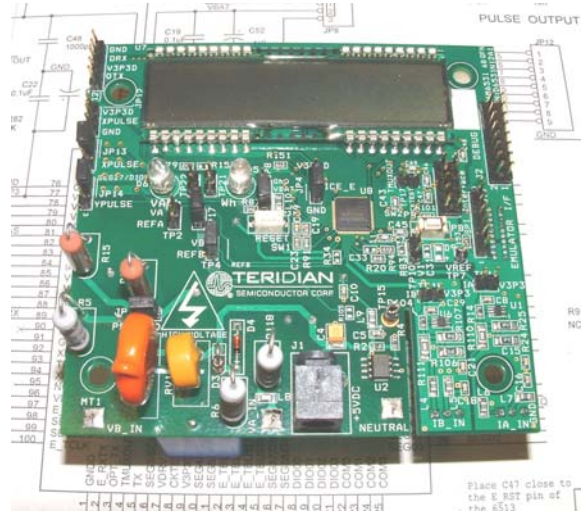# 71M6531 Demo Board

QUICK START GUIDE

Getting Started

The TERIDIAN Semiconductor Corporation (TSC) 71M65131 Demo Board is a demonstration board for evaluating the 71M6531 IC for single-phase electronic energy metering applications on a two-layer PCB. It incorporates a 71M6531 integrated circuit, peripheral circuitry such as a serial EEPROM, emulator port, and on-board power supply as well as a companion Debug Board that allows a connection to a PC through a RS232 port. The Demo Board allows the evaluation of the 71M6531 energy meter IC for measurement accuracy and overall system use.

The Demo Board is pre-loaded with MPU Demo Code in the FLASH memory of the 71M6531 IC. This embedded application is developed to exercise all peripherals, flash programming, and CPU management (clock, timing, power savings, etc.), and to provide easy access to all metering information.

Downloading of any other TSC or custom application can be done through the in-circuit emulator port using the Signum ADM51 emulator or the Flash Programmer Module (TFP-2).

Safety and ESD Notes

Connecting live voltages to the demo board system will result in potentially hazardous voltages on the demo board.

EXTREME CAUTION SHOULD BE TAKEN WHEN HANDLING THE DEMO BOARD ONCE IT IS CONNECTED TO LIVE VOLTAGES!

THIS DEMO SYSTEM IS ESD SENSITIVE! ESD PRECAUTIONS SHOULD BE TAKEN WHEN HANDLING THE DEMO BOARD!

Demo Board Kit Contents

- 71M6531 Demo board containing one 71M6531 with pre-loaded Demo Program
- Debug Board with Serial cable, DB9, Male/Female, 2m (Digi-Key order number AE1379-ND)
- Current shunt, pre-wired
- 2 x 5VDC/1,000mA universal voltage wall transformer w/ 2.5mm plug (Switchcraft 712A compatible)
- CD-ROM containing documentation (Demo Board User's Manual, data sheet, board schematics, BOM, layout), Demo Code and utilities (see file readme.txt for a list of files on the CD-ROM).

Demo Board Test Setup

The file DBUM6531_v1-2.pdf is the User Manual for the Demo Board. It contains detailed instructions on how to set up and use the Demo Board. **This document should be carefully read** and understood before attempting to use the Demo Board.

The figure below shows the basic connections of the Demo Board plus Debug Board with the external equipment.
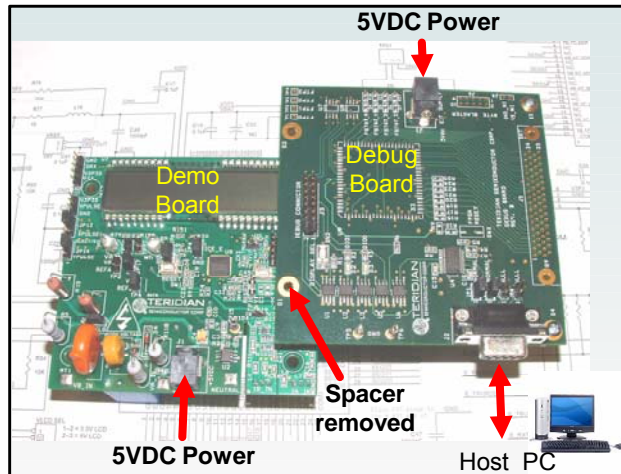
Using the Demo Board

The Demo Board is a ready-to-run meter with a Kh of 1.0 Wh/pulse. The Demo Board has been tested on a meter calibration system, but it has not been calibrated. Please refer to the Demo Board User's Manual for further details and on how to **reconfigure the Demo Board for shunt or CT configuration**.

Before using the in-circuit emulator, the latest WEMU51 application program should be downloaded from the Signum website (www.signum.com) and installed. **It is important to create a new project with the 71M6534 IC selected as the target in the project dialog. Using the ICE software with 6521 or 651X project settings will lead to unpredictable results.**

Documentation

All data sheets, user's manuals and user's guides are in electronic form, i.e. on the CD-ROM supplied with this kit. The TERIDIAN Semiconductor web site should be checked frequently for updates.

Software/Utilities

Demo code, source files, and libraries can be found in electronic form on the supplied CD-ROM. The CD-ROM also contains all tools and utilities described in the documentation.

Support

Support is available from:

TERIDIAN Semiconductor Corporation

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Phone: (714) 508-8800 ▪ Fax: (714) 508-8878
http://www.teridian.com/
meter.support@teridian.com