



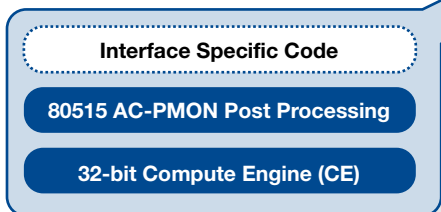
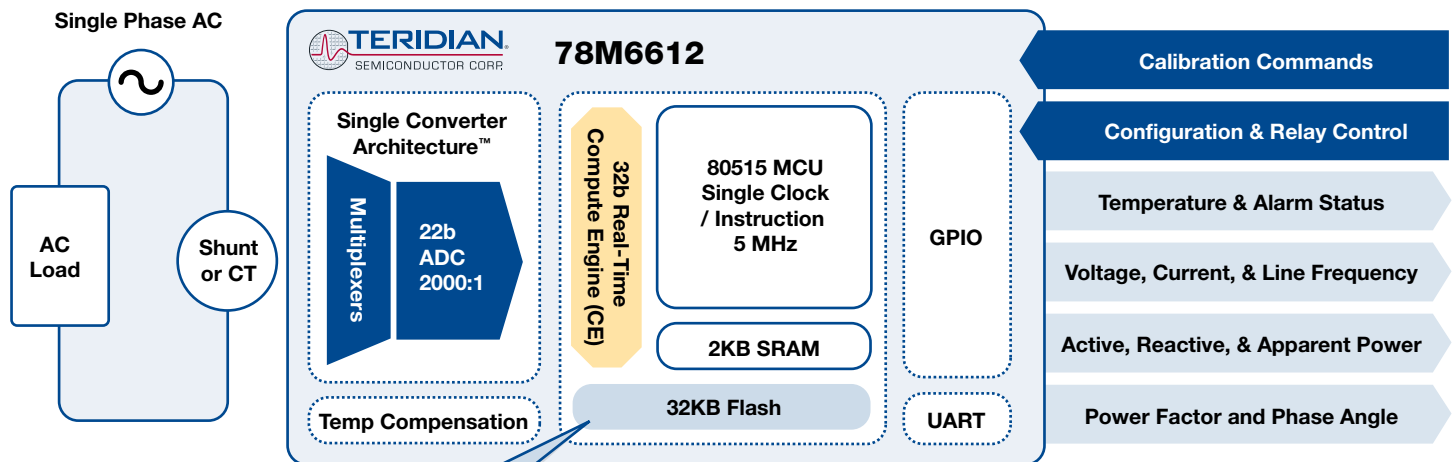
Power and Energy Measurement IC

Description

The 78M6612 is a highly integrated, single phase AC power measurement and monitoring (AC-PMON) IC for consumer and enterprise applications capable of 0.5% Wh or better accuracy over 2000:1 current range and over temperature. Four analog inputs are provided for measuring up to two AC loads or wall outlets using Teridian's patented Single Converter Technology™ and 32-bit computation engine (CE). The 78M6612 device also includes an 8-bit MPU core with 32KB of embedded FLASH, a UART interface, and a number of GPIO for easy integration into any power supply or outlet monitoring unit. The 78M6612 is available in both 64-LQFP and 68-QFN lead free package options and consumes roughly 30mW under typical operating conditions.

Complete firmware is available from Teridian supporting the serial UART interface for simplified calibration, configuration, and data extraction. Firmware options for emulating I²C, PMBus, or SMBus interfaces using GPIO are also available. Firmware can be pre-loaded into the IC by Teridian or modified by customers as needed.

ORDERING INFORMATION: 78M6612-IGT/F (64-LQFP) or 78M6612-IM/F (68-QFN)



- ### KEY FEATURES AND BENEFITS
- > Turnkey solution reduces development time and investment for adding AC power metering into system power supply
 - > Precision power measurement over a wide current dynamic range allows confirmation of low power system operating modes down to 10mA
 - > Line voltage and frequency measurements provide early warnings of AC source overload or failure
 - > Intelligent control of switches or relays at zero crossing increases reliability and durability
 - > Statistical data can be used to detect early failure of AC/DC power supply or type of AC load being monitored



Application

- > Home and Commercial Automation
- > Computer Power Supplies
- > Communication Power Supplies

78M6612 Outlet Monitoring Unit Demo

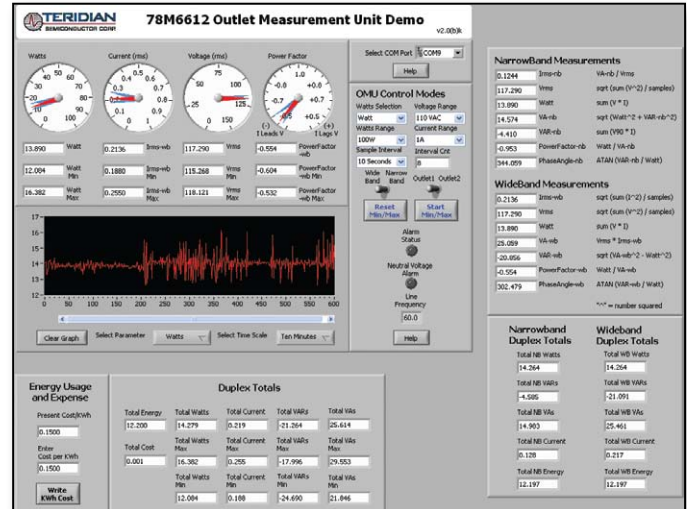


Teridian's 78M6612 Outlet Measurement Unit (OMU) is a compact demonstration unit employing the 78M6612 SOC. The 78M6612 monitors the AC line voltages, frequency, and load current. The embedded firmware calculates items such as RMS line voltage and RMS load current, watts, VA, VAR and power factor. The real time data is transmitted via the serial interface to a PC for display in a Windows® based Graphical User Interface (GUI). The USB interface is used as the communications link and also supplies power to the OMU.

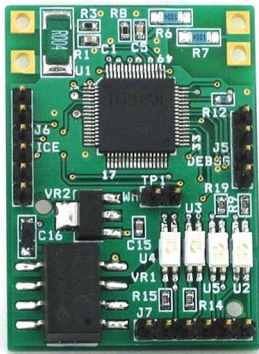
ORDERING NUMBER: 78M6612-DB/OMU-USB

The Windows® GUI provides the following controls and information:

- Power, current, voltage and power factor indicator dials
- Adjustable display scales
- Minimum and peak parameter tracking
- Selectable strip chart display format
- Narrow-band vs Wide-band measurement
- Selectable sample size averaging
- Line Frequency measurement
- Alarm Status Indicators

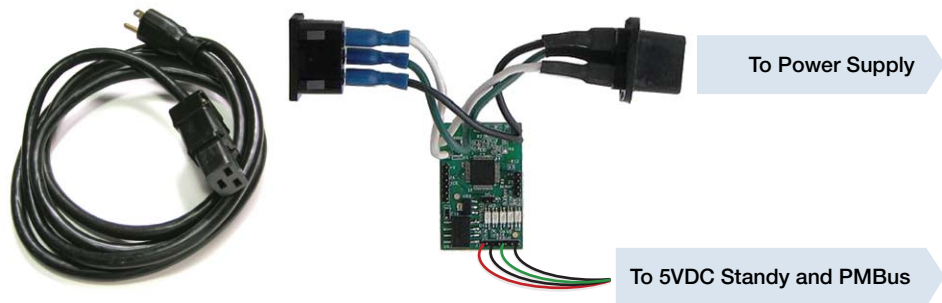


AC-PMON Evaluation Board



The 78M6612 AC-PMON evaluation board is the quickest way to integrate energy measurement or power monitoring into any application. These boards are reduced in size and include all the necessary isolation components for the 5V supply and communications interface. Multiple firmware or interface options are available.

ORDERING NUMBER: 78M6612-EVM-1



An example test setup for server PSU

The AC-PMON board can also serve as a prototyping platform for optional software development and debug. Contact Teridian for more information on recommended Keil 80515 Compiler Kits, Signum Systems In Circuit Emulator (ICE), and Teridian's TFP2 Flash Programming Modules for programming production quantities.