

RL78/I1C Reference Meter

Prove of Concept (POC) for Metering Applications



The Reference Meter is designed as a Prove of Concept (POC) for metering using RL78/I1C MCU chip on board. This Reference Meter provides a useful metering with Renesas suite of development tools coding and debugging, using CubeSuite+ as well as programming the device using E1 emulator and/or Renesas Flash Programmer and GUI.

The Reference Meter RL78/I1C is a fantastic design with low consumption and high performance solution for metering applications. This product is built on Renesas RL78 Group MCUs that is fully integrated system with 16-bit RL78 CPU core, ultra-low power technology with high speed on chip oscillator correction function, 24-bit $\Delta\Sigma$ A/D Converter, reset and supply management, battery backup function, on chip data transfer controller (DTC) and multiple communication interfaces. The purpose of the Global Reference Meter is to help user to evaluate the capabilities of the device RL78/I1C and its peripherals by giving user a simple reference design. The Reference Meter RL78/I1C may be connected to the host PC using the included USB E1 on chip debugging interface and GUI.

Topview of Reference Meter RL78/I1C



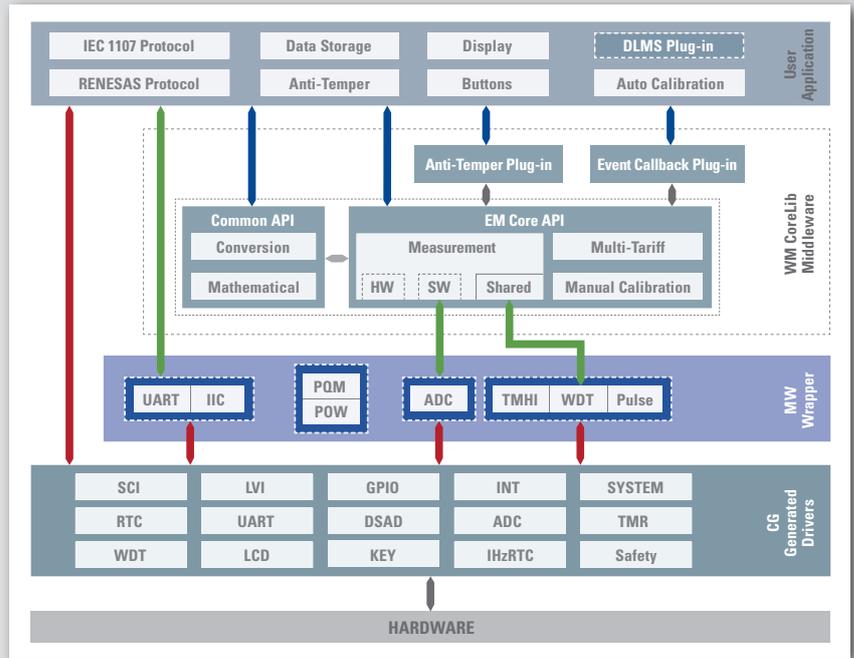
Hardware Specification

- Single phase meter class 0.5S
- Operating Voltage 220 V/110 V (-40% to +15%)
- Basic current 5 Ampere
- Maximum current 60 Ampere
- Starting current 0.2% of I_b (Basic Current)
- Operation frequency 50 Hz/60 Hz ($\pm 5\%$)
- LCD Display with 7 digits
- Power Distribution Units
- UPS and Stored Energy systems

Metering Parameter

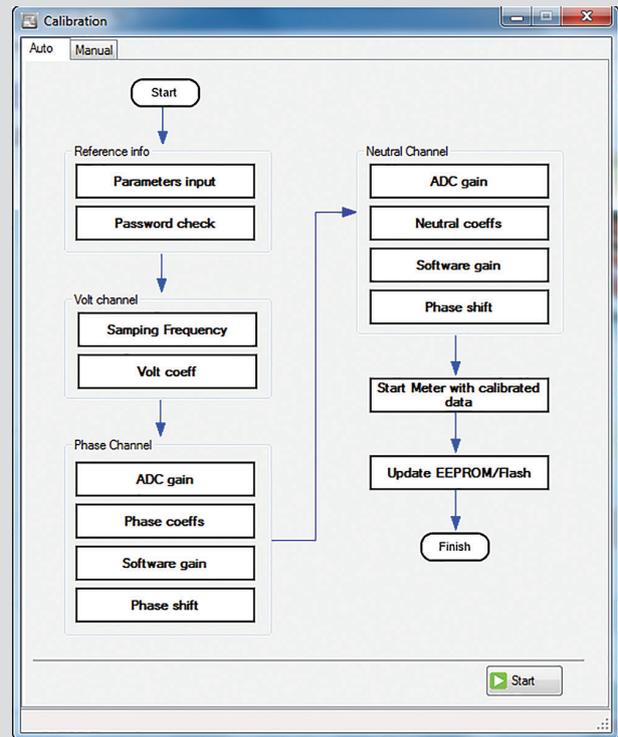
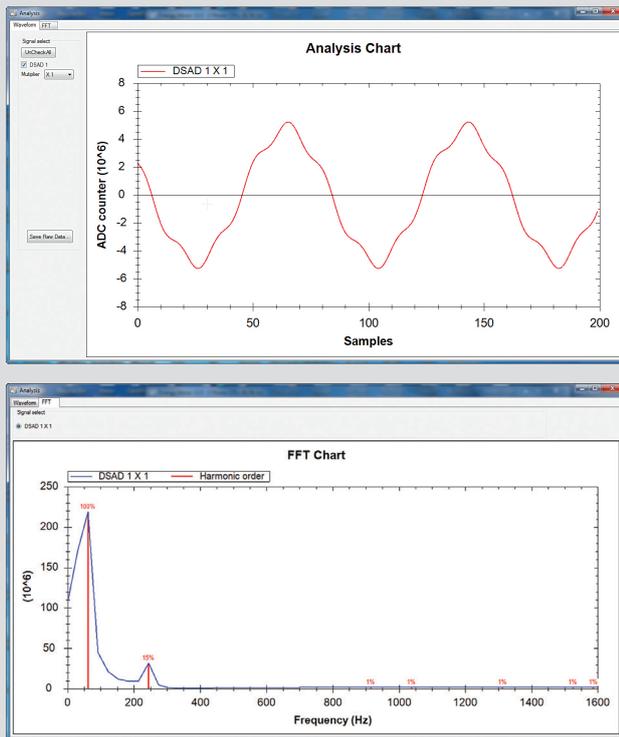
- Kilo Watt hour (kWh)
- RMS Voltage
- RMS Phase Current and Neutral Current
- Frequency
- Power Factor
- Demand Logging
 - » MD logging for six months with integration period of 30 minutes
- Anti tampering features
 - » Reverse power polarity
 - » Neutral missing / Phase missing
 - » Magnetic Sensor 0.2T
- Tampering record
 - » Current reversal
 - » Load return to earth
 - » Potential missing
 - » Magnetic tampering

EM SDK Structure



Software Suite

The RL78-I1C reference meter comes complete with a suite of tools including the e2studio IDE and software, and a Windows™ GUI for logging and visualization of the energy use on single phases, frequency, etc.



Before purchasing or using any Renesas Electronics products listed herein, please refer to the latest product manual and/or data sheet in advance.

