




MAX71313L

ZON M1L/M1 Single-Phase Electricity Meter SoC

Best-in-Class Metrology with Ultra-low Power Metering Mode

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 Active: In Production.

OVERVIEW

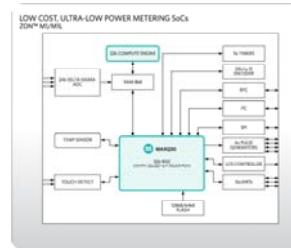
Description

The ZON™ M1L (MAX71313L) and M1 (MAX71314L) electricity meter systems-on-chip (SoC) integrate dual 32-bit processors for demanding single-phase metering applications with 128KB or 64KB flash, 8KB RAM, and a single-cycle 32 x 32 + 64 multiplier. A low-power metering mode allows metering in the presence of neutral disconnect tampering. The low-power, dedicated compute engine (CE) handles high-rate metrology processing and a 32-bit MAXQ30 MPU core handles other application functions including communications and display control.

Key Features

- Single ADC Offers High-Accuracy Performance and Cost-Effective Solution
 - Supports Up to 5 Multiplexed Inputs

MAX71313L, MAX71314L: Diagram



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- 0.1% (typ) Wh Accuracy over
2000:1 Current Range
- Dual-Core Architecture Improves
System Performance
 - Dedicated 32-bit DSP Core for
High-Rate Metrology Processing
 - MAXQ30 32-Bit RISC MPU, 10
MIPS (at 10MHz)
- Highly Integrated Product Features
and Flexible Peripherals Support
Broad Application Needs
 - 128KB (M1) or 64KB (M1L)
Flash, 8KB SRAM
 - Supports Current Transformers
or Shunts for Current
Measurement
 - RTC with Hardware Temperature
Compensation
 - Digital Temperature
Compensation for Metrology
 - 45Hz to 65Hz Line Frequency
Range
 - Phase Compensation (10)
 - Four Pulse Outputs
 - LCD Controller Supports Up to
39 Segment Drivers and Up to
Six Common Planes
 - Two PWM Channels with
Programmable Frequency, Duty
Cycle, Ramp Time
 - Five General-Purpose Timers
 - Touch Switch Input
 - SPI (Master and Slave)
 - I²C (Master and Slave)
 - 3x UARTs (One with Optical
Encoder)
- Small 64-Pin LQFP Package Saves
Board Space

- Low-Power Operation Extends Battery Life
 - Enables Metering Mode Operation During Neutral Disconnect Tampering
 - 5.6mA Consumption at 3.3V in Typical Metering Mode
 - 1.6mA Typical Current Consumption at 3.3V in Low-Power Metering Mode
 - 1.75 μ A Typical Sleep Mode Current