MAX71335L

ZON P3/P3L Polyphase Electricity Meter SoC

Best-in-Class Metrology Performance and Custom Peripherals

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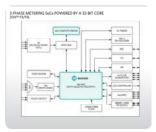ℹ Active: In Production.

OVERVIEW

Description

The ZON™ P3L/P3 (MAX71334L/MAX71335L) metering SoC (systems on chip) integrates dual 32-bit processors for polyphase metering applications. It contains 256KB flash (ZON P3) or 128KB flash (ZON P3L), 12KB RAM and a single-cycle 32 x 32 + 64 multiplier. The application processor (CPU) is a 32-bit MAXQ®30 core. The metrology processor is a proprietary compute engine (CE), a 32-bit RISC processor dedicated to computing the metering parameters from voltage and current samples.

MAX71334L, MAX71335L: Diagram

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Key Features

- Dual-Core Architecture for Improved System Performance and Flexibility
  - Dedicated 32-Bit DSP Compute Engine for Metrology Processing
  - MAXQ30 32-Bit RISC MPU Core, Up to 10 MIPS (at 10MHz), with 256kB Flash or 128kB Flash, and 12kB data RAM

Applications/Uses

- Polyphase electricity meters
- Polyphase energy monitoring
- Smart Meters

- Advanced AFE with High Accuracy and Temperature Stability
- Four Independent ADCs Measuring Four Current Channels and Three Voltage Channels
- 0.1% Wh Accuracy over 2000:1 Current Range
- Digital Temperature Compensation for Metrology and RTC
- 40Hz–70Hz Line Frequency Range, Phase Compensation (±10°)
- Low-Power 5ksps Auxiliary ADC for Environmental Monitoring
- On-Chip Digital Temperature Sensor
- Highly Integrated Product Features and Flexible Peripherals Support Broad Application Needs
  - LCD Controller Supporting Up to Eight Common Planes
  - Two PWM Control Channels with Programmable Frequency, Duty Cycle, Ramp Time
  - Two Touch Switch Inputs
  - Oscillator Based on 32kHz Watch Crystal with Internal 24MHz Backup R/C Oscillator
  - SPI (Master and Slave), Master I$_2$C

- Four UARTs (Configurable Pins), Smart Card Interface, 38kHz IR Decoder
- 100-Pin LQFP