

Product Brief

71M6511

71M6511H

Teridian Semiconductor's Power Meter ICs



The Teridian 71M6511 is a highly integrated SOC with an MCU core, RTC, FLASH and LCD driver. Teridian's Single Converter Technology™ with a 21bit 2nd order delta-sigma ADC, 3 analog inputs, digital temperature compensation, precision voltage reference and 32 bit computation engine supports a wide range of residential metering applications and sensor configurations with only a few external components. A 32kHz crystal timebase for the entire system and internal battery backup support for RAM and RTC further reduce system cost.

Maximum design flexibility is supported with multiple UARTs, I²C, power fail comparator, 5V LCD charge pump, up to 12 DIO pins and in-system programmable FLASH which can be updated with data or application code in operation. Easy conversion to ROM offers unprecedented cost structure for high volume applications. The device is offered in 0.1% and 0.5% accuracy versions.

A complete array of ICE and development tools, programming libraries and reference designs enable rapid development and certification of TOU, AMR and Prepay meters that meet worldwide electricity metering standards.

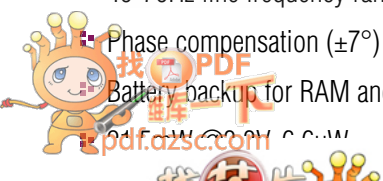
Features

- ❖ < 0.1% WH accuracy over 2000:1 range (71M6511H version)
- ❖ Exceeds IEC61036 / IEC62053 / ANSIC12.20 standards
- ❖ Voltage reference < 50ppm/°C spec.
- ❖ Three sensor inputs-VDD referenced
- ❖ Digital temperature compensation
- ❖ 21 bit 2nd order delta-sigma ADC
- ❖ Independent 32 bit compute engine
- ❖ Low jitter WH and VARH pulse output
- ❖ 40-70Hz line frequency range
- ❖ Phase compensation ($\pm 7^\circ$)

Battery backup for RAM and RTC

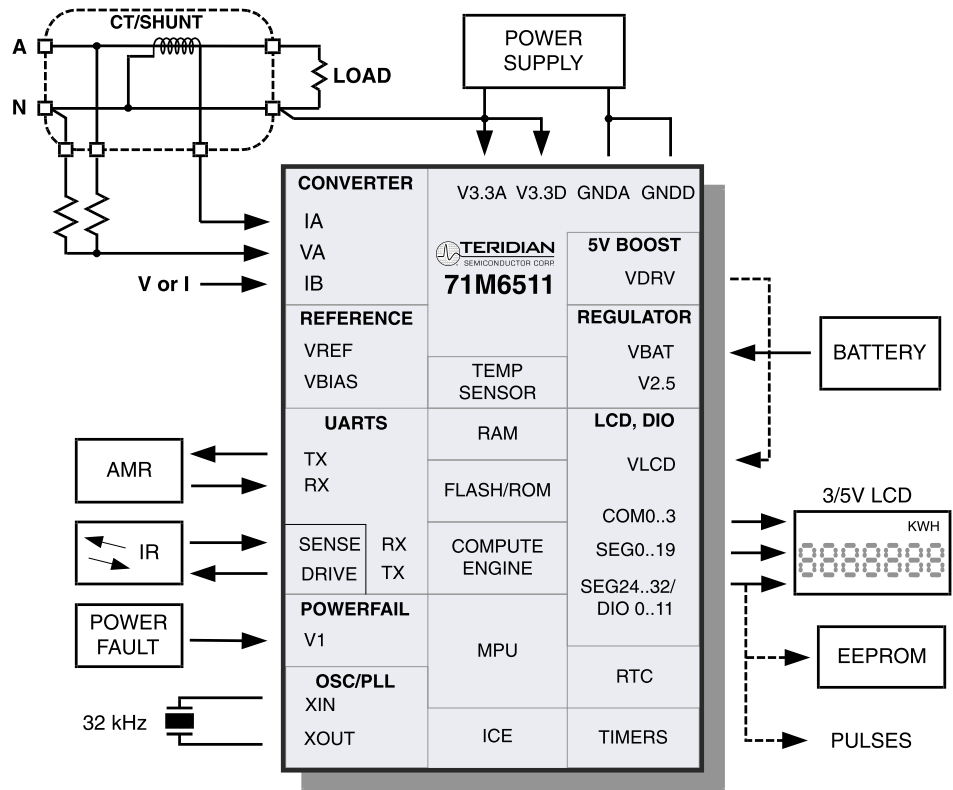
Applications

- Residential Meters
- Precision Measurement



- ❖ Flash memory option with security
- ❖ 8-bit microcontroller (80515 compatible)
- ❖ Integrated ICE for MPU debug
- ❖ High speed SSI serial output
- ❖ RTC for time of use functions
- ❖ Two event counter/timers
- ❖ Watchdog timer
- ❖ Power fail monitor
- ❖ LCD driver (up to 128 pixels)
- ❖ Up to 12 general purpose I/O pins
- ❖ 32kHz timebase for RTC, CE, and MPU
- ❖ 64kB FLASH or ROM
- ❖ 7kB total RAM
- ❖ Two UARTs for IR and AMR
- ❖ Third software UART via DIO pins
- ❖ 64-lead LQFP package (Lead-Free option)

71M6511 / 71M6511H Block Diagram



Ordering Information

PART DESCRIPTION	ORDERING NUMBER	PACKAGE MARKING
71M6511 64 pin LQFP, 0.5% accuracy	71M6511-IGT	71M6511-IGT
71M6511 64 pin LQFP Lead Free, 0.5% accuracy	71M6511-IGT/F	71M6511-IGT
71M6511H 64 pin LQFP, 0.1% accuracy	71M6511H-IGT	71M6511H-IGT
71M6511H 64 pin LQFP Lead Free, 0.1% accuracy	71M6511H-IGT/F	71M6511H-IGT