



Four Generations of Energy Meter SOC Ingenuity

Empowering the Next Generation

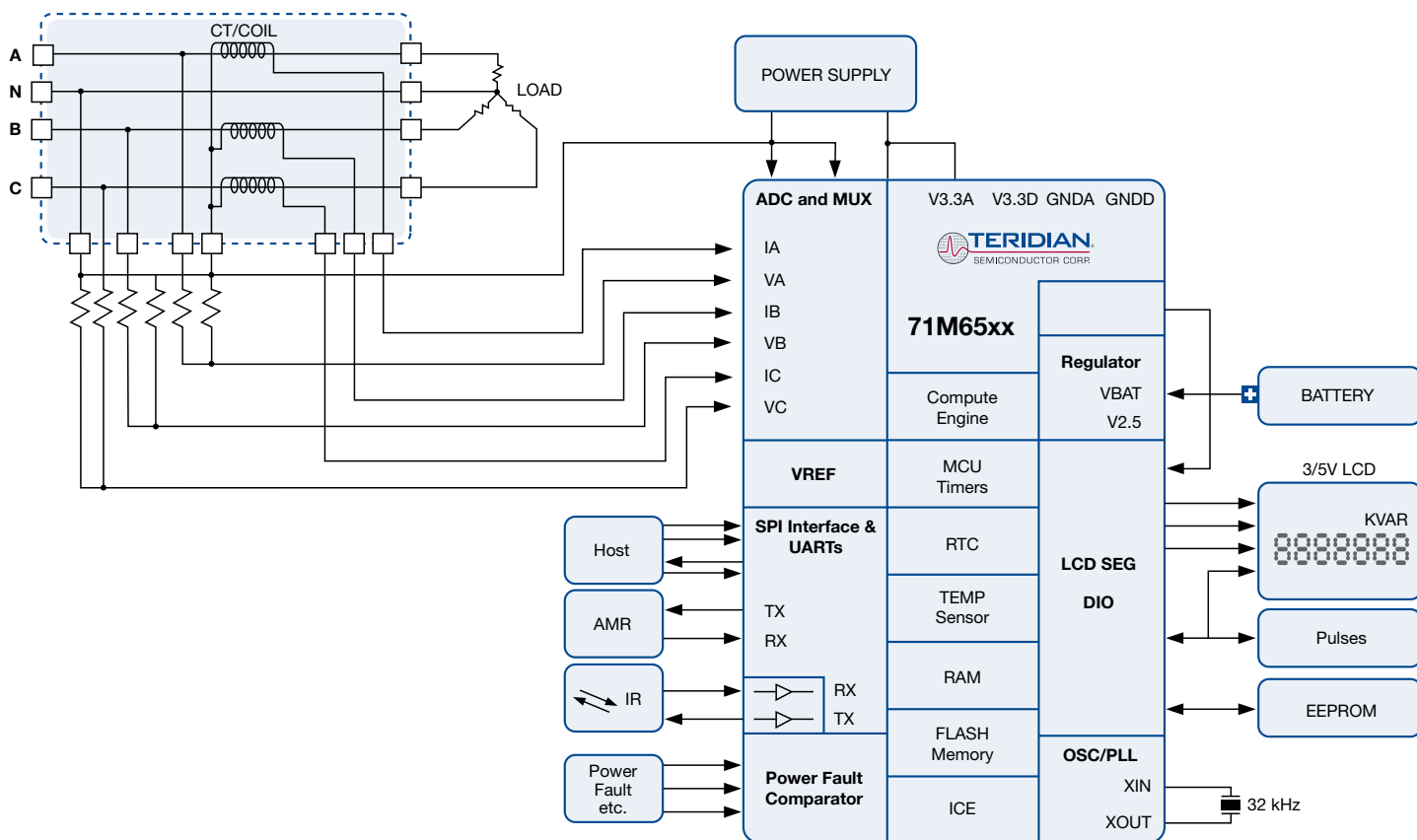
Teridian's solutions for energy metering are comprised of a wide array of system-on-chip (SOC) devices which provide a highly accurate, reliable, and cost effective alternative to multi-chip implementations. Teridian's patented Single Converter Technology[®] delivers better than 2000:1 dynamic range and a unique 32-bit programmable metrology engine which can be adapted to meet changing customer requirements.

With four generations of metering SOC products and more than 30M units shipped to date, Teridian's products are supported by one common development platform which provides faster time-to-market, enhanced reliability and lower cost to OEM's developing residential, commercial, industrial and grid meters.

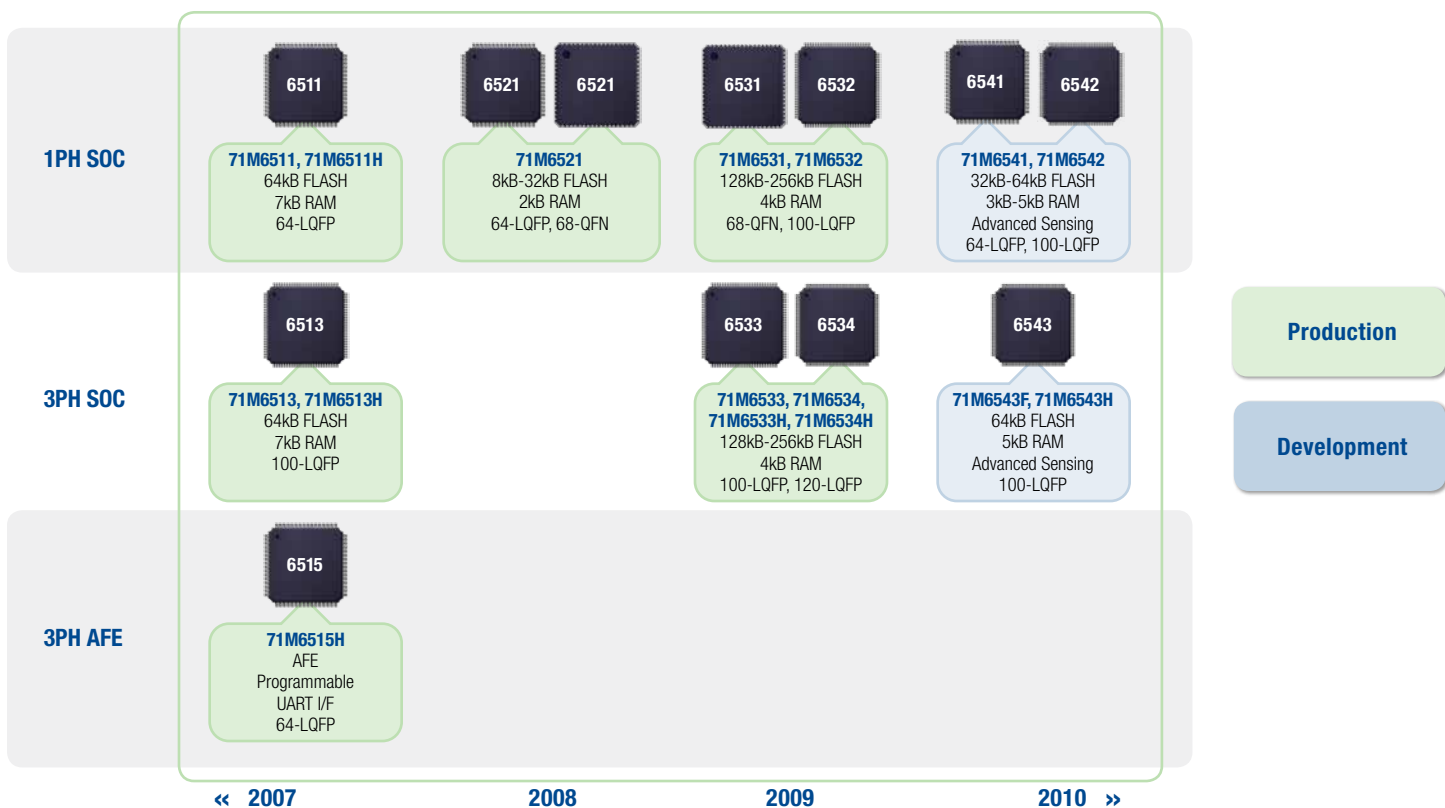
Teridian's 71M65xx family of products meet worldwide (ANSI, IEC) requirements for smart metering systems as well as low end Watt-Hour, anti-tamper and prepayment applications.

Standard features include low power consumption, battery backed RTC, temperature compensation, 8-bit MCU, Flash, LCD driver, multiple serial ports, and up to 0.1% accuracy across industrial temperature range. Please refer to the selection guide for specific features and specification details of individual products.

71M65xx Functional Block Diagram



Meter IC Product Portfolio



Meter SoC Selection Guide

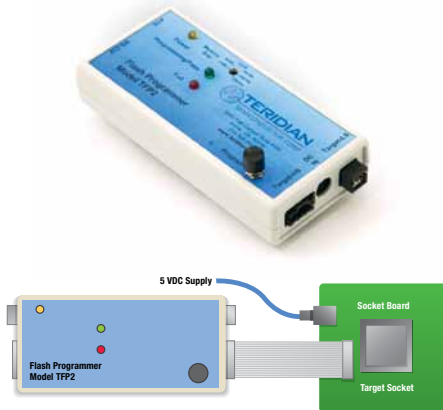
	6511	6511H	6513	6513H	6521BE/ DE/FE	6531D/F	6532D/F	6533	6533H	6534	6534H	6541D/F*	6542F*	6543F*	6543H*
Phase	Single-phase	Single-phase	Poly-phase	Poly-phase	Single-phase	Single-phase	Single-phase	Poly-phase	Poly-phase	Poly-phase	Poly-phase	Single-phase	Single-phase	Poly-phase	Poly-phase
Wh Accuracy (-40 to 85°C)	0.5%	0.1%	0.5%	0.1%	0.4%	0.4%	0.4%	0.5%	0.1%	0.5%	0.1%	0.5%	0.5%	0.5%	0.1%
Flash (kB)	64	64	64	64	8, 16, 32	128, 256	128, 256	128	128	128	256	32, 64	64	64	64
RAM (kB)	7	7	7	7	2	4	4	4	4	4	4	3, 5	5	5	5
Analog input	Single-end	Single-end	Single-end	Single-end	Single-end	Single-end	Differential	Differential	Differential	Differential	Differential	Differential Digital (1)	Differential Digital (2)	Differential Digital (3)	Differential Digital (3)
Total sensor inputs	3	3	7	7	4	4	4	7	7	7	7	3	4	7	7
MCU MIPS (8051 core)	5	5	5	5	5	10	10	10	10	10	10	5	5	5	5
Normal Operation Current (typical)	6.4mA	6.4mA	6.4mA	6.4mA	6.1mA	11.7mA	11.7mA	11.9mA	11.9mA	11.9mA	11.9mA	TBD	TBD	TBD	TBD
Brownout mode current (typical)	-	-	-	-	48µA	52µA	82µA	82µA	82µA	112µA	112µA	TBD	TBD	TBD	TBD
LCD mode current with DAC On (typical)	-	-	-	-	5.7µA	21µA	21µA	21µA	21µA	21µA	21µA	TBD	TBD	TBD	TBD
Sleep mode current (typical)	2µA	2µA	2µA	2µA	2.9µA	0.7µA	0.7µA	0.7µA	0.7µA	0.7µA	0.7µA	TBD	TBD	TBD	TBD
Hardware RTC	Yes	Yes	Yes	Yes	Yes (No for BE version)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LCD Pixels (max)	128 (32x4)	128 (32x4)	168 (42x4)	168 (42x4)	140 (35x4), 152 (38x4)	156 (39x4)	268 (67x4)	228 (57x4)	228 (57x4)	300 (75x4)	300 (75x4)	210 (35x6)	336 (56x6)	336 (56x6)	336 (56x6)
Digital I/Os (max)	12	12	22	22	14 (64-LQFP), 18 (68-QFN)	22	43	39	39	52	52	30	51	51	51
# of UARTs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SPI port	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Package types	64-LQFP	64-LQFP	100-LQFP	100-LQFP	64-LQFP, 68-QFN	68-QFN	100-LQFP	100-LQFP	100-LQFP	120-LQFP	120-LQFP	64-LQFP	100-LQFP	100-LQFP	100-LQFP

* Not in production

Programming Tools:

1. TFP2 Flash Programmer:

- > For in-system programming
- > Can be used with simple socket module board to pre-program individual ICs (refer to Programming Application note for examples of socket board schematics)



2. ADM51-ICE (In-Circuit Emulator):

- > Signum Systems ADM51 is compatible with the Keil symbolic output format.
- > Performs code emulation with breakpoints, watch windows, etc., with support of source code symbols.
- > Can be used to program small engineering and prototype build requirements



3. Third Party Programmer Supplier

- > BPM Microsystems supports Flash programmer & socket modules for Teridian's various metering devices
- > www.bpmicro.com

4. Firmware Development Tools

- > Keil www.keil.com
- > IAR Systems*

* Planned

71M65xx Demo Boards:

- > For customers' testing, prototyping and code development
- > User guide and demo code included in CD ROM
- > Provides access to many test points including V, I, and DIOs



Reference Designs:

- > Reduces customers' development cycle for faster time to market
- > Includes schematics, layout, BOM, and test reports

Register For More Information



For detailed product information register for a "My Teridian" login.

www.teridian.com/myteridian/

Provides access to: datasheets, application notes, user manuals, and SW/FW updates.