

78K0R/Lx3-M and 78K0/Lx3-M System on Chip

Complete Single-Phase Electricity Meter Solution



78K0R/Lx3-M and 78K0/Lx3-M are application-specific microcontroller platforms for cost-effective and highly integrated single-phase electricity meters from the world's number one microcontroller supplier and leading vendor to the global metering industry.

Comprising a dedicated Digital Signal Processor (DSP) for metrology, high-end analog front-end and ultra low power microcontroller including LCD driver in a single package, 78K0R/Lx3-M and 78K0/Lx3-M offer complete functionality in a variety of packages, memory sizes and 8/16-bit core performances to suit any single-phase electricity meter design.

For more demanding meter applications the new 78K0R/Lx3-M offers up to 20 MHz 16-bit core performance and high 128 KB Flash/ 7 KB RAM memory integration.

Compelling Features

- Advanced hardware DSP-based metrology measurement unit
- Up to 20 MHz 16-bit performance
- Up to 128 KB Flash and 7 KB RAM memory integration
- Embedded 16-bit Multiplier/Divider option
- Up to 12-ch 16-bit general timer
- Multiple serial interfaces incl. UART, CSI, I2C
- 2-ch DMA option
- Multiple hardware functions to ensure quality of electricity supply
- Support for both shunt and a di/dt current sensor
- High resolution 2nd order 24-bit $\Delta\Sigma$ A/D Converter for accurate readings
- On board LCD controller for up to 160 segments
- 99 year real time calendar with independent Vdd
- On board temperature sensor for time calibration

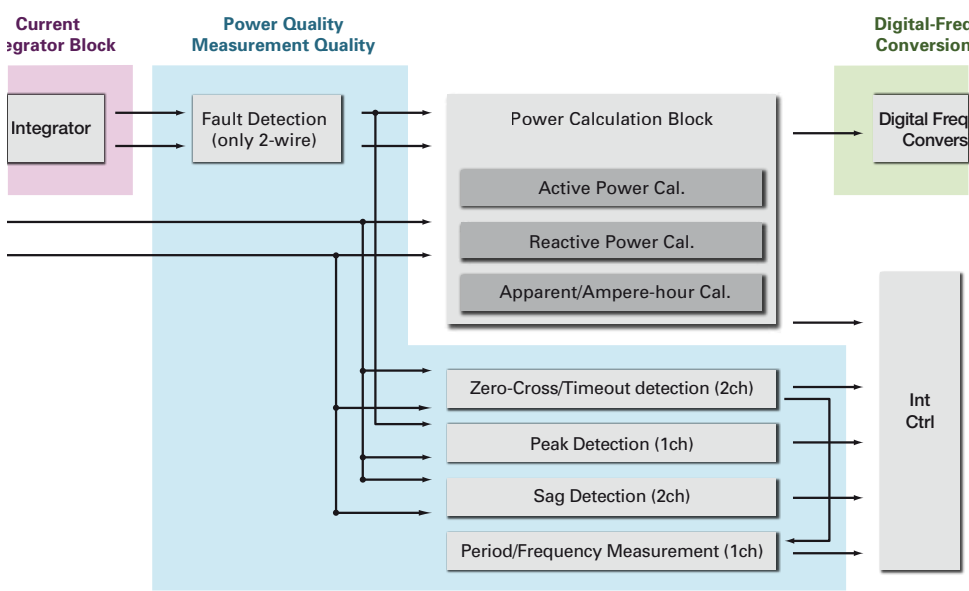


78K0R/Lx3-M and 78K0/Lx3-M Portfolio

Flash (Bytes)	128 K		
	60 K		
	48 K		
	32 K		
	16 K		
		64-pin 96seg	100-pin 160seg



*78K0R/Lx3-M



Metrology Features

- Metrology functions
- Delta sigma ADC
- Current integrator
- Power calculation function
- Power quality measurement function
- Digital frequency conversion

Complete Development Environment

78K0R/Lx-3M and 78K0/Lx3-M tools are supplied complete with all the hardware you need out of the box, as well as a code-limited trial of the IAR Embedded Workbench Integrated Development Environment.



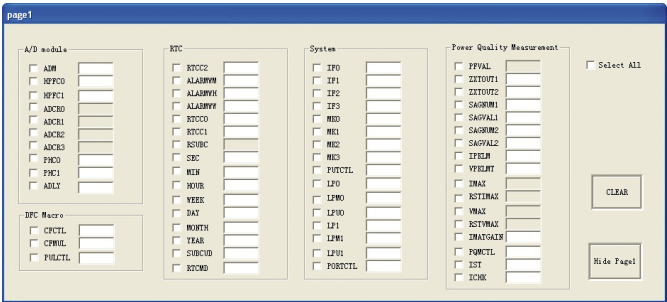
IAR Embedded Workbench



Applilet Graphical Code Development & Driver Configuration



Supported by Renesas IECUBE emulator, MINICUBE2 for On-Chip Debug & development programming and PG-FP5 for full programming



78K0R/Lx-3M and 78K0/Lx3-M are further supported by a complete hardware and software reference design, including:

- Schematics
- Bill of Materials
- Dedicated Graphical User Interface
- Application software
- Application Note

Additionally, a number of dedicated application notes and middleware libraries are available to support a variety of functions, from AES128 encryption & Flash security features to low power operation mode techniques.

System Components & Communications Solutions

To provide mandatory isolation as well as protection and robustness against electrical surges Renesas offers market-leading transistor and high speed optocouplers as well as low on-state resistance OC-MOSFETs for communication lines. Renesas further offers a great variety of high quality low power SRAM and serial EEPROM.



Full Wireless M-Bus hardware and software reference design based on Renesas microcontroller and Semtech RF transceiver.



Extremely robust powerline solutions with class leading power consumption supporting multiple standards.



Complete single-chip based hardware & software platforms supporting the ZigBee™ Professional Smart Energy Profile.



The Renesas Eco System

Dedicated Website



www.renesas.eu/meter

Personalised Content



www.renesas.eu/myrenesas

Latest News



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Renesas Presents video channel



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Engineering Community



www.renesasrulz.com

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