![RENESAS]

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 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 20 MHz 16-bit performance
- Up 128 KB Flash and 7 KB RAM memory integration
- Embedded 16-bit Multiplier/Divider option
- Up 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

#1MCU
REACH FURTHER

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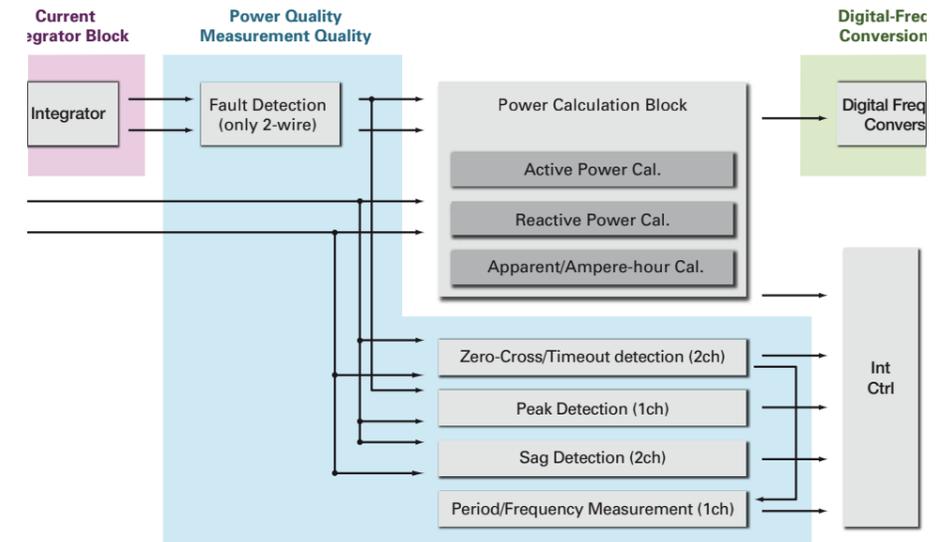
*78K0R/Lx3-M

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 SYSTEMS   IAR Embedded Workbench

Applilet   Applilet Graphical Code Development & Driver Configuration


Supported by Renesas IECUBE emulator, MINICUBE2 for On-Chip Debug & development programming and PG-FP5 for full programming
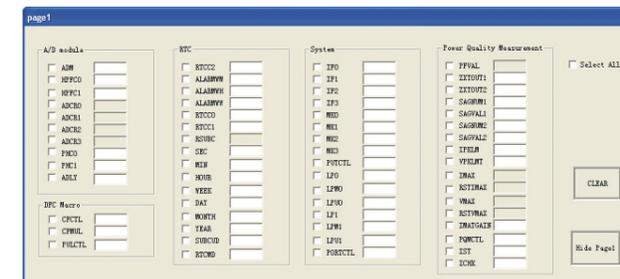
78K0R/Lx-3M and 78K0/Lx3-M are further supported by a compete hardware and software reference design, including:

- 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-MOSFESTs 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	Personalised Content	Latest News	Renesas Presents video channel
www.renesas.eu/meter	www.renesas.eu/myrenesas	www.twitter.com/renesas_europe	www.youtube.com/renesaspresents

3rd Party Network	Online Training	Engineering Community
		Think it. Build it. Post it.
www.renesas.eu/alliance	www.renesasinteractive.com	www.renesasrulz.com

Before purchasing or using any Renesas Electronics products listed herein, please refer to the latest product manual and/or data sheet in advance.

Renesas Electronics Europe
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