Smart Metering Gateway Platform

Summary

Our next-generation smart metering gateway platform combines narrowband Power Line Communication (PLC) with other communication technologies to route traffic between different types of interfaces, like broadband PLC, cellular or Ethernet.

The smart metering gateway platform contains a PIC32CXMTG, a System-on-Chip (SoC) catered to industrial IoT, commercial and industrial metering applications. Based on a 32-bit Arm® Cortex®-M4F core, PIC32CXMTG MCU runs the application code and the hybrid communications software.

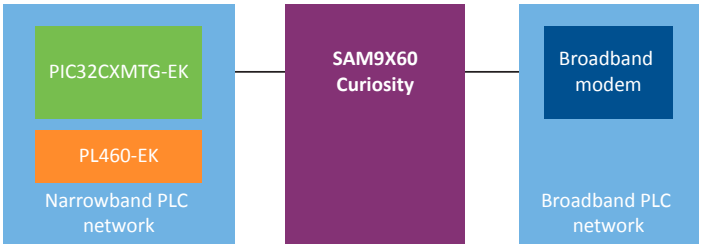
The smart metering gateway platform contains a PL460, a programmable modem for narrowband PLC. PL460 embeds the PLC signal amplification stage, providing a highly integrated solution that reduces the total bill of materials, simplifies the layout and eases the modem design. PL460 operates with an external MCU, PIC32CXMTG in this case.

The smart metering gateway platform also leverages SAM9X60, a high-performance, ultra-low-power ARM926EJ-S CPU-based embedded microprocessor (MPU. The device integrates powerful peripherals for connectivity and user interface applications, and offers security functions, TRNG, as well as high-performance crypto accelerators for AES and SHA.

Target Applications

The smart metering gateway platform targets applications such as data concentrators, distribution automation and gateways.

Smart Metering Gateway



Product Features

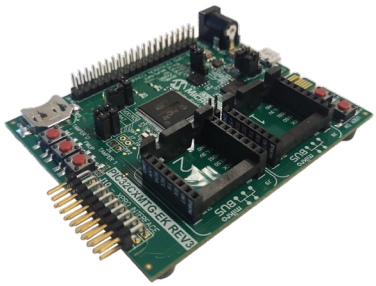
- High-performance, ultra-low-power embedded MPU that runs up to 600 Mhz and integrates powerful peripherals for connectivity and user interface applications. It
  - Offers state-of-the-art security functions such as secure boot, secure key storage, high performance crypto accelerators and tamper pins
- High-performance secure MPU that runs up to 200 Mhz with advanced features like QSPI interface with eXecute-in-Place (XIP) coupled with on-the-fly AES128 encryption bridge, Secure Boot, secure key storage, LCD controller, anti-tampers and FLEXCOM peripherals to support many different interfaces
- Support for G3-PLC and PRIME profiles
- Narrowband PLC interface based on G3-PLC and PRIME
  - Support for CEN-A, FCC and ARIB profiles in the 0–500 kHz band
  - PL460 modem that embeds a Class D PLC signal amplifier to provide a top-performing signal injection efficiency above 40%

Getting Started

The smart metering gateway platform uses the following kits and boards:

PIC32CXMTG-EK Evaluation Kit

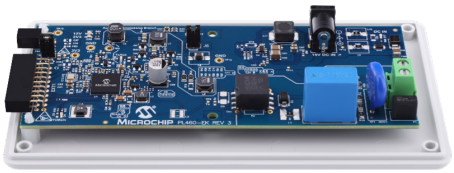
The PIC32CXMTG-EK is an evaluation kit with the PIC32CX-MTG SoC for advanced metering infrastructure applications.



Learn more at https://www.microchip.com/en-us/development-tool/EV11K09A.

PL460-EK Evaluation Kit

The PL460-EK is an Xplained PRO extension board featuring a PL460 modem for narrowband PLC communication.



Learn more at https://www.microchip.com/en-us/development-tool/PL460-EK.

SAM9X60 Curiosity Development Board

The SAM9X60 Curiosity Development Board is based on the SAM9X60D1G SiP, a high-performance, low-power ARM926EJ-S CPU-based embedded MPU. The board is delivered with free Linux® distribution and bare-metal C code examples.

Learn more at https://www.microchip.com/en-us/development-tool/EV40E67A.

BroadBand PLC From Microchip Partner

The smart energy gateway platform is compatible with broadband PLC modules from different Microchip partners using an Ethernet connection.

Learn More and Buy

Visit our smart energy product pages to learn more about smart metering gateway technology: https://www.microchip.com/smartenergy

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