

Smart Metering Hybrid Communications Platform

Summary

Our Smart Metering Hybrid Communications Platform combines radio frequency and powerline technology to create a seamlessly managed network. Supported by industry-leading protocols such as G3-PLC and PRIME, our hybrid radio Power Line Communication (PLC) solutions provide enhanced network coverage when compared to previous radio and PLC-only Advanced Metering Infrastructure (AMI) solutions.

The PIC32CXMTG series of microcontrollers (MCUs) is our next-generation smart metering platform that caters to Industrial IoT (IIoT), commercial and industrial metering applications. Based on a single 32-bit Arm® Cortex®-M4F core, the PIC32CXMTG runs the application code and the hybrid communications software.

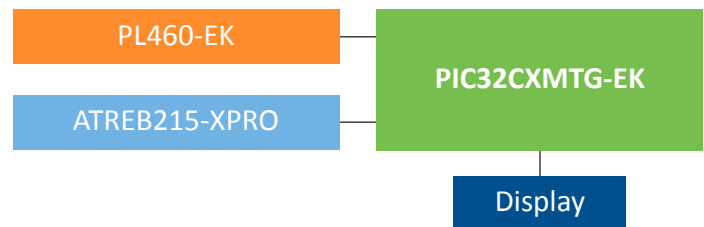
The PL460 is a programmable modem for narrow-band PLC. The PLC signal amplification stage is embedded in this device to provide a highly integrated solution that reduces your Bill of Materials (BoM), simplifies your layout and speeds up the development of your modem design. The PL460 is operated with an external MCU like the PIC32CXMTG.

The RF215 is a fully integrated radio transceiver for sub-1 GHz and 2.4 GHz bands. It is specially designed for smart metering and other applications that implement IEEE® Std 802.15.4g, ETSI TS 102 887-1 and IEEE Std 802.15.4. The RF215 is operated with an external MCU like the PIC32CXMTG.

Target Applications

The Smart Metering Hybrid Communications Platform targets smart electric meter, smart grid communications, distribution automation and smart plug applications.

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Product Features

- High-performance, secure MCU running at up to 200 MHz with advanced features including a QSPI interface with eExecute-in-Place (XIP), on-the-fly AES128 encryption bridge, secure boot, secure key storage, LCD controller, anti-tampering and FLEXCOM peripherals that support a variety of interfaces
- Support for G3-PLC and PRIME hybrid profiles
- Single network over wired and wireless media
- Radio interface based on IEEE 802.15.4g
 - WiSUN-FSK PHY (863 MHz–870 MHz) by default
 - RF215 transceiver supports SUN OFDM-50 and OFDM-100 modes, which provide up to four times better Frame Error Rate (FER) than standard Frequency-Shift Keying (FSK) in urban environments
- PLC interface based on G3-PLC and PRIME protocols:
 - CEN-A, FCC and ARIB profiles supported in the 0 to 500 kHz bands
 - Embedded Class-D PLC signal amplifier in PL460 modem provides signal injection efficiency above 40%

Learn More and Buy

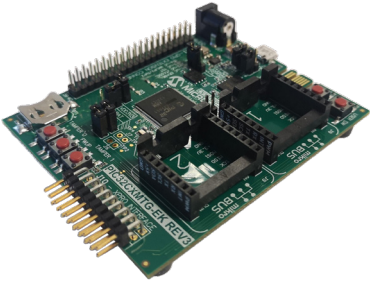
Visit our Smart Energy product pages to learn more about our hybrid technology <https://www.microchip.com/smartenergy>

Getting Started

We offer the following kits and boards for the Smart Metering Hybrid Communications Platform:

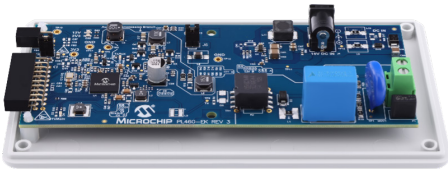
PIC32CXMTG-EK Evaluation Kit

The PIC32CXMTG-EK is an evaluation kit featuring the PIC32CXMTG System on Chip for advanced metering infrastructure applications.



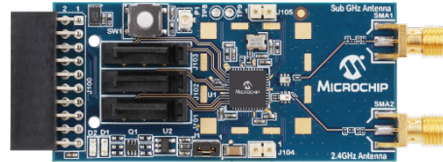
PL460-EK Evaluation Kit

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



ATREB215-XPRO-A Extension Board

The ATREB215-XPRO-A is a Xplained PRO extension board with and AT86RF215 radio transceiver for RF communication.



MikroElektronika OLED W Click

The OLED W click includes a 96 × 39 pixel, white monochrome, passive matrix OLED display.

