

PL360B

Multi-Protocol Modem for Power Line Communication

Summary

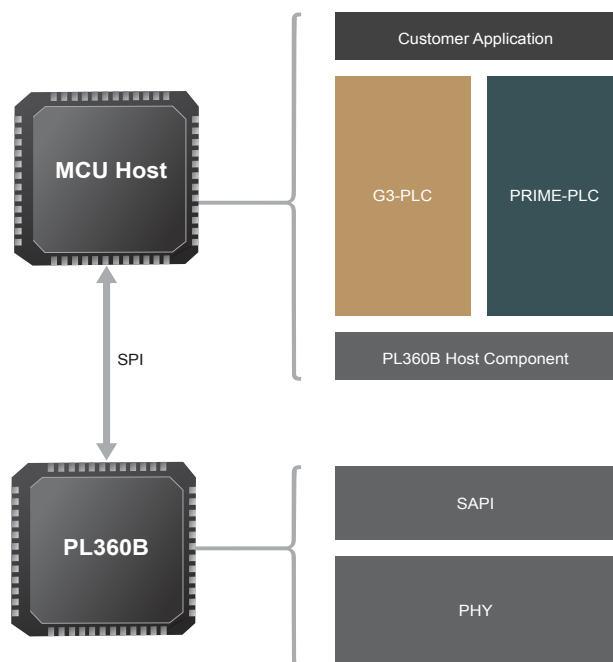
The PL360B is a programmable modem for narrow-band Power Line Communication (PLC), able to run any PLC protocol in the frequency band below 500 kHz.

This device has been designed to comply with FCC, ARIB, KN60 and CENELEC EN50065 regulations matching requirements of Internet of Things and Smart Energy applications. It supports state-of-the-art narrow-band PLC standards such as ITU G.9903 (G3-PLC®), ITU G.9904 (PRIME) as well as any other narrowband PLC protocols, being at the same time a future-proof platform able to support the evolution of these standards.

The PL360B has been conceived to be driven by external Microchip host devices, thus providing an additional level of flexibility on the host side. The Microchip host device loads the proper PLC-protocol firmware before modem operation and controls the PL360 modem.

Key Features

- Programmable narrow-band PLC modem
- Integrated PLC Front end
 - PGA with automatic gain control and ADC
 - DAC and transmission driver support direct line driving or external Class-D amplifier driving
 - Digital transmission level control
 - Supports two independent transmission branches for the PLC signal
 - Up to 500 kHz PLC signal bandwidth
 - Cryptographic engine and secure boot
 - AES 128, 192, 256 supported
 - Secure boot: supports AES-128 CMAC for authentication and AES-128 CBC for decryption
 - Fuse programming control for decryption and authentication
- Optimized PLC modem architecture
 - Combines high-performance CPU with specific co-processors for digital signal processing, plus dedicated hardware accelerators for common PLC tasks
 - Dedicated SRAM memories for code and data
- Available in 48-pin TQFP and 48-pin QFN packages



Target Applications

- Smart metering
- Street lighting
- Home and building energy management systems
- Solar energy
- Plug-in hybrid electric vehicle charging stations
- Industrial and home automation

MPL360B Evaluation Kit (ATPL360-EK)

ATPL360-EK is an evaluation kit for the PL360B modem from Microchip. The evaluation kit includes two PL360MB smart metering boards, allowing to evaluate the performance of PL360B device in point to point links using PLC.

Each PL360MB board in this evaluation kit is a full-featured platform to develop a complete Smart Meter. PL360MB boards include a PL360B modem for PLC, driven by a SAM4CMS16C ARM Cortex-M4 microcontroller with embedded metrology analog front end. The kit includes:

- Two ATPL360MB modem boards
 - Two coupling boards to configure the evaluation kit for frequencies below 100 kHz (CENELEC profile)
 - Two coupling boards to configure the evaluation kit for frequencies above 150 kHz (FCC and ARIB profiles)
- Documentation for PLC hardware design
 - Schematics, PCB layout, gerbers and BOM
 - PL360B datasheet
 - Application notes for PLC hardware design
- PLC software (G3-PLC and PRIME)
 - Examples showing how to use and configure the PHY layer on the PL360B
 - Complete G3-PLC and PRIME software stack to implement an end device
 - PAN coordinator/base node “lite” example application
 - Software documentation
- Microchip tools for PLC developers: PC applications to evaluate the performance of the PL360B and network level (PHY tester, Multi-protocol sniffer)

Ordering Information

Part Number	Temperature Range	Package	Carrier Type
MPL360BT-I/Y8X	Industrial (–40 to +85°C)	48-pin TQFP	Tape and Reel
MPL360B-I/Y8X	Industrial (–40 to +85°C)	48-pin TQFP	Tray
MPL360BT-I/SCB	Industrial (–40 to +85°C)	48-pin QFN	Tape and Reel
MPL360B-I/SCB	Industrial (–40 to +85°C)	48-pin QFN	Tray

Evaluation Kit Ordering Information

Part Number	Description
ATPL360-EK	PL360B Evaluation Kit

For more information, please email PLC@microchip.com.