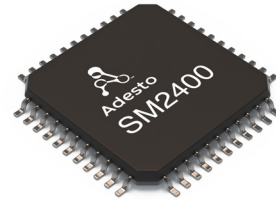# SM24xx Series
Multi-standard power line communications modem

Universal Modem Chip

Comprehensive multi-standard platform, superior noise performance, low system cost

Establish a communications network with existing installed power lines! The SM2400/SM2480 is the ultimate Narrowband Power Line Communication (N-PLC) modem that combines cost effective design optimized for PLC applications with high flexibility to address industry standard protocols, future new standards and high robust proprietary modes.

SM2400

Configurable power line communications modem

System-On-Chip (SOC)

Data rates up to 400kbps

Configurable operational bands (5 - 500 kHz)
- CENELEC
- ARIB
- FCC

Supports OFDM, BPSK for superior communication

Comprehensive multi-standard capability
- PRIME
- IEEE 1901.2
- G3-PLC
- Proprietary XXR

32-bit dual core highly flexible and programmable architecture
- PHY (Physical Layer)
- MAC (Media Access Controller)

High-speed 256-bit AES-CCM for secure commucications

Cost optimized integrated analog front-end (AFE)

Peripheral Interfaces
Interfaces for adding optional components
- UART
- JTAG
- SPI
- GPIO

SM2480

Grid connected micro-inverter and lighting controller

Includes all SM2400 features with additional analog signal control functions

Extremely flexible PWM controller with up to 300kHz with 10ns resolution designed for fast and flexible signal adjustments

Uniquely capable platform for MPPT and other control algorithms

High precision dual ADCs

4 High speed programmable comparators for fault detection

5 High speed DACS

Adesto

www.adestotech.com

APPLICATIONS

- Smart grid communications
- Advanced Metering Infrastructure (AMI)
- Automated Meter reading (AMR)
- Street lighting control and smart ballasts
- Solar and alternative energy management
- Smart home energy monitoring
- Factory and Building Automation (BA)
- Supervisory Control and Data Acquisition (SCADA)

Extremely Robust XXR Mode

Extremely robust communication adapted for power line noise profile

Up to 4 independent channels (carriers) placed anywhere in the spectrum
- Optimized frequency placement based on noise and impedance environment

Channels can be used for redundancy (diversity) by sending same data
- Data combined in optimal manner
- Correct data reception only requires one good channel or one combination of channels

Every channel is RS coded and includes CRC

Capable of extended ranges up to several kilometers
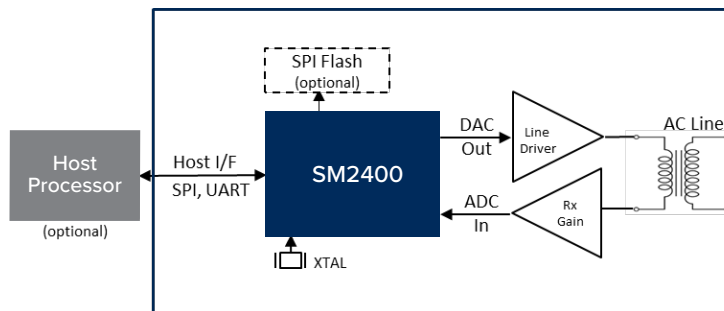
Block diagram of SM2400 modem interface solution

Additional Support Features

SMESH: "Simple Mesh" Protocol

Designed for solar, lighting and small metering deployments

Self-healing and discovery

Limited number of nodes (< 100)

Simple network management and firmware update

Serial-to-PLC Bridging

RS232 extension and RS485 replacement
Data and command modes (ASCII or TP pass-through)
MODBUS

SunSpec Compliance

Rapid Shutdown compliant (NEC 2017) with interleaved PLC Communications

Rapid Evaluation and Development

Hardware

Plug-in module(s) optimized for FCC, CEN-A and CEN-BC
Mini USB connection
IEC power connection
Built-in power line coupling circuit
Ability to bypass on board switched-mode power supply and use external DC supply
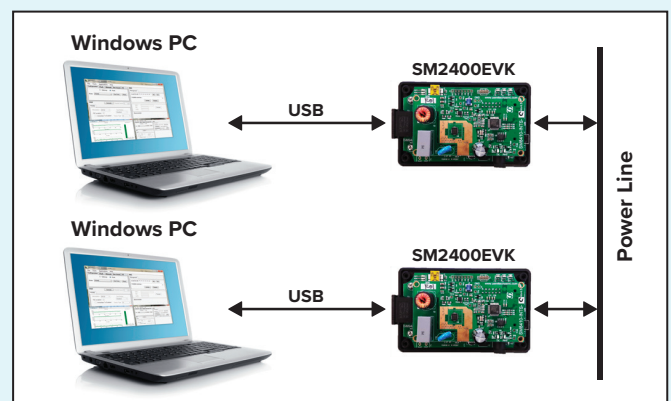
Software

Programmable/downloadable firmware
- PRIME / G3 / IEEE 1901.2 / XXR

Unified development framework and tools for all firmware packages
Unified serial host protocol allowing direct interface to MACs, PHYs, CLs
Unified GUI for testing and experimentation

Evaluation kits are available to run communications testing via a powerline and PCs. EVK Part Number: SM2400-EVK2-M*n-x*

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