



BlueChip PLC Multi-hop

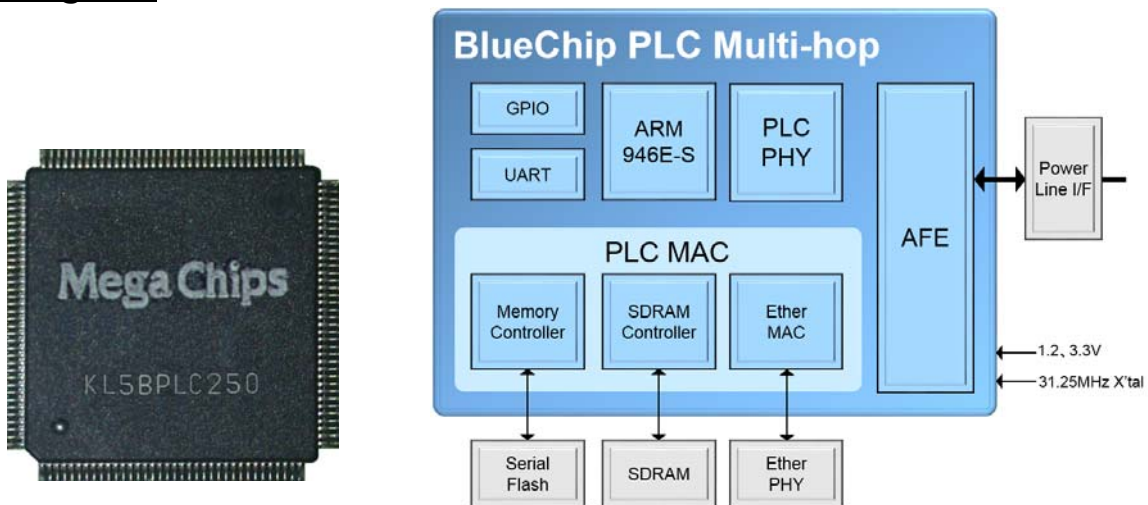
[Broad Band Power Line Communication SoC with multi-hop system]

Part#: KL5BPLC250WMP

General Description

The KL5BPLC250WMP is a Broad Band Power Line Communication SoC with multi-hop capability. Multi-hop systems can communicate over the long distances that are required for many industrial and commercial applications. The KL5BPLC250WMP enables the creation of small form factor devices that consume very low power while providing high performance. The KL5BPLC250WMP is suitable for coaxial or other cables as well as power lines.

Block Diagram



Features

- Low power consumption: 0.4W for full operation mode
- High noise immunity and high quality of service (QoS) over both AC and DC power lines
- Support multi-hop system up to 10 hops/1024 nodes
- High data rate: 10Mbps(UDP/10hops)
- SoC with integrated Analog Front End(AFE) and Baseband
- Ethernet↔Ethernet, RS485↔RS485 bridge function

Specifications

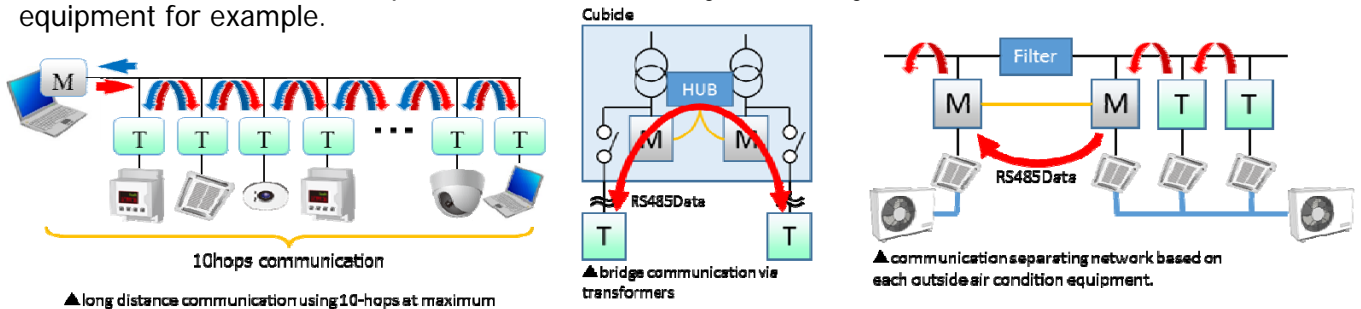
PLC Method	Frequency Band	2-28MHz	Peripheral I/F	GPIO、UART
	Modulation	Wavelet OFDM	Power Consumption (full operation mode)	0.4W(Typ)
	PHY rate	240Mbps	Supply Voltage	1.2、3.3V
	Error correction	Reed Solomon, Viterbi decoder, LDPC	Operating Temperature Range	-40~85℃
CPU	ARM946E-S 16 Kbyte Instruction Cache		Security	AES-128bit
System Clock	125MHz	Package	TQFP, 144pin, 16x16mm	

Applications

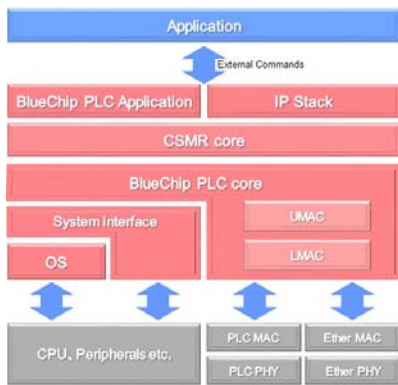
- Building Energy Management System (BEMS)
- Building Automation (BA)
- Factory Automation (FA)
- Smart meter

Network Configuration Example

The BlueChip PLC Multi-hop SoC includes both serial and Ethernet interfaces enabling the development of large-scale networks including meters, sensors, IP cameras and a variety of other networked devices. The bridge between RS485 and Ethernet enables systems to communicate through transformers as well as to separate networks normally blocked by filters to reach outside air condition equipment for example.



Software Development Kit (SDK) Software Development Kit is provided for product development, evaluation and verification. Sample programs and the Tool Manager are provided to simplify the development effort and time.



【SDK includes】

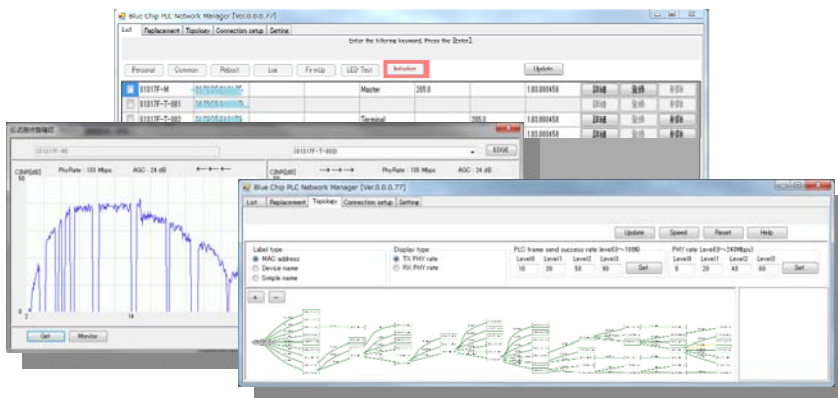
Sample firmware and programs, specifications, and a tool for writing and measurements.

※Sample programs are provided as reference examples and MegaChips does not guarantee the operation

- Master ROM generation tool
- Sample firmware(including software for RS485)
- External command datasheet
- External command sample program
- Tool Manager
 - (1) Power Control tool
 - (2) Channel Monitor tool
- Net Test tool (observe communication speed)

Maintenance Application: Network Manager

Manageability is important in a large scales networks using multi-hop system. The Network Manager simplifies the network management and monitoring.



Network Manager enables to

- Manage a whole network by any terminal.
 - Configure any terminals easily
 - Display network topology
 - Display PHY rate
 - Display information transmitted and received
 - Display CINR
 - Display AGC Gain
- ※ Accept serial-Ethernet bridge connection

HDK hardware Development kit

A hardware development kit is provided to reduce circuit development time.

- The HDK provides reference design schematics, layout guide and reference layout figure, BOM, application note.