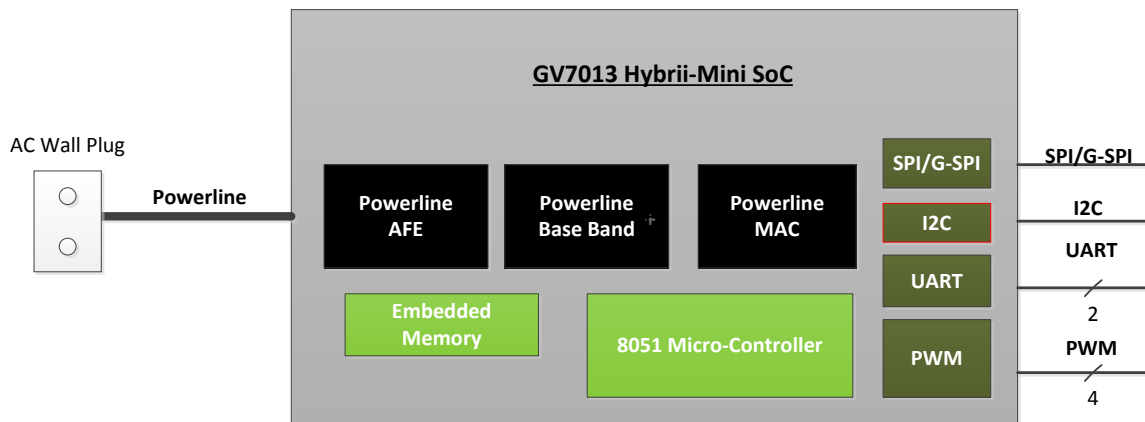


GV7013 Hybrii-Mini™ SoC Product Brief

Cost Sensitive System-on-Chip Featuring Wide Band Power Line Communications



Product Description

The Hybrii-Mini™ SoC (GV7013) is a cost sensitive hybrid System-on-Chip (SoC) featuring wide band powerline communications.

Applications

- Home Energy Management System
- Building Energy Management System
- MDU
- Home Area Networks
- Home Gateways
- Routers
- STBs and TVs
- Solar DC-AC inverters and Micro-inverters
- Smart Meters / Appliances
- Controlled LED Lighting, Signage and Display's

Key Features

- Integrate wide band powerline communications
- Embedded high performance 8051 MCU
- Integrate Ethernet 10/100 MAC
- Features SPI, (2) UART, (4) PWM, I2C and GPIO pins
- Supports a serial flash
- Utilizes a single low cost 24MHz crystal
- Industrial temperature range from -40 to +85 °C
- RoHS, 11 x11 mm 100-QFN package

Wide Band Power Line Communications

- Integrate Analog Front End (AFE) with PHY Baseband and MAC
- Wideband spectrum: from 2 to 28 MHz
- Data rates:
 1. Mini-ROBO mode: 3.8 Mbps
 2. STD-ROBO mode: 4.9 Mbps
 3. HS-ROBO mode: 9.8 Mbps
- Differential I/O for RX/TX
- Integrate filters
- Integrate internal line driver:
 1. Differential output swing: 1.5 V_{PP} @ 50 Ω
 2. Capable to support other impedance loads
 3. Peak current: 7.5 mA
- Receiver gain: -18 dB to +48 dB
- Wide dynamic Range: 66 dB
- Supports: 277 VAC and DC
- AES 128 encryption/ decryption co-processor

Embedded Micro-Controller

- Integrate low power 8-bit 8051 MCU
- Integrate 256 Kbytes of RAM for code memory
- Integrate 48 Kbytes of RAM for data memory
- Boots from internal ROM or from external serial flash
- Supports external serial flash: 256 Kbytes to 2 Mbytes

Serial Peripheral Interface

- 4 pins interface including a clock pin
- Support both Master and Slave modes
- Configurable to interface up to 8 slave devices
- Support DMA for burst data transfer between Hybrii and external CPU
- Support external Interrupt with INT pin available to connect to external CPU or device

I2C Interface

- 2 pins serial interface
- Programmed as Host interface

UART Interface

- Support 2-pins UART for communication and tracing with Keil debugging tools
- Support standard UART

Serial FLASH Interface

- Support standard serial flash interface
- Instructions for micro-controller are stored in the serial flash and are downloaded to the internal Code memory via Serial FLASH interface at power up

GPIO

- 23 GPIO pins are available for software programming

I2C Interface

- 2 pins serial interface
- Programmed as Host interface

Software API

- Software API and commands are available upon request to interface with Hybrii chip through SPI and Ethernet MII

Development Kit

- Hybrii Development Kit is available upon request to sales@greenvity.com
- The development kit will include the following items:
 1. Reference design module
 2. Software and firmware in executable (binary) format
 3. Operating manual with software API and command specification

Smart LED Lighting Control with Sensor Network



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