HT8912 Power Line Communication Transceiver

The high performance system on chip for power line communication

General Description:

HT8912 is using OFDM modulation and demodulation technology of power line carrier communication chip, the use of advanced digital and analog mixed design technology and process, provide the power line high speed rate, high reliability, high sensitivity, data communication, data transmission can be realized and the application of various types of remote meter reading.

HT8912 is high integrated SOC chip, which will simulate the circuit, digital signal processors and 8051 MCU is fully implemented in a single chip. HT8912 uses orthogonal frequency division multiplexing (OFDM) modulation and demodulation, efficient transmission mode of FEC, flexible and can be equipped with reliable, so that it can be serious attenuation and pulse interference environment of power line under the strong adaptive signal to realize reliable communication at. HT8912 integrated 8051 kernel can be completed MAC layer and the above protocol required for a variety of functions and applications.

The HT8912 physical layer protocol is the international standard G3 basis, according to the Chinese power carrier to further optimize the environment to. HT8912 maximum support 1024 sub carrier, sub carrier using DPSK modulation, support DPBSK, DQPSK and D8PSK to realize the rate mode different, in order to realize the FEC reliable supports a variety of convolutional coding, so that in the

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environment of power line with different complicated noise can realize reliable communication.

HT8912 uses the 7*7mm LQFP48L package, the normal working temperature range from -40 ° C to +85 ° C, is a SOC chip with industrial grade.

Features:

- Power: 3.3V
- on-chip integration of the 8051 kernel, the compatibility of the 8051 instruction set and bus structure
- on-chip 128KB program memory and SRAM memory
- modulation system: DBPSK, DQPSK, D8PSK
- on-chip 10 bit ADC and high dynamic range automatic gain control circuit
- on-chip 10 bit DAC and simulated image filter
- support working frequency range: 3 KHz to 500 KHz, can be configured by the user
- support a maximum of 2048 sub carrier
- Synchronization acquisition support high reliability
- receive sensitivity is better than 10dBuV
- The data transmission rate of up to 246Kbps
- Programmable Cascaded forward error correction coding (convolutional and RS codes)
- supports programmable CRC core
- support chips working state monitoring: received signal strength indication, SNR
- support automatic repeat request (ARQ) can enhance the error detection function and improve the data stability
- support carrier sense multiple access / collision avoidance (CSMA/CA) read write channel arbitration
- support Tone Map function can automatically avoid bad channel
- support robust transmission mode
- on-chip hardware watchdog circuit
- built in low power RTC
- support built-in AES128 key management

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- support UART, SPI, I2C interface
- It supports a variety of DMA
- support built-in AES128 key management
- support the output infrared modulation signal

Typical applications:

- Remote automatic meter reading
- Intelligent Home Furnishing
- Street lamp control
- Industrial automation
- Intelligent building control
- The remote monitoring and control

Classification of information:

PART	TEMP RANGE	PIN-PACKAGE
HT8912	-40℃ -+85℃	48 LQFP

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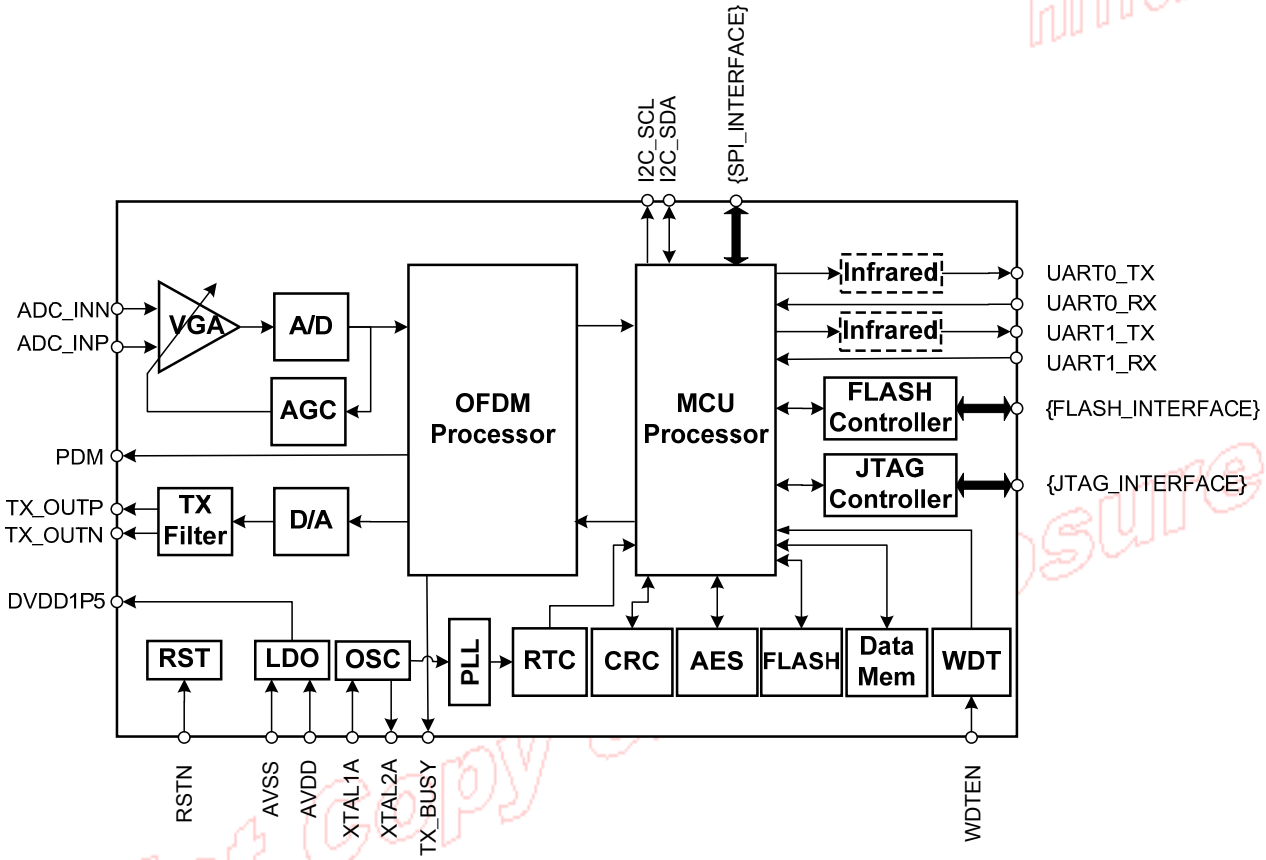
Block Diagram:



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PIN Assignment: