

GainSpan GS1010

Ultra Low-Power Wireless Single Chip



PRODUCT OVERVIEW

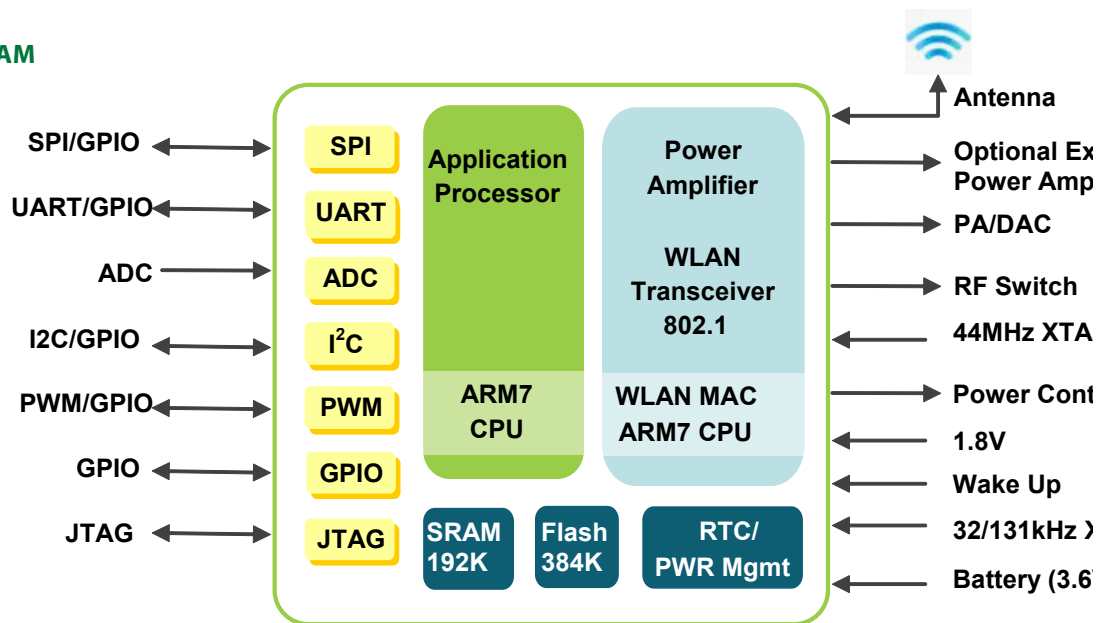
GS1010 device along with its embedded software stack is designed to be a highly integrated ultra low power wireless single chip which contains an 802.11 radio, media access controller (MAC) and baseband processor, on-chip flash memory and SRAM, and an applications processor all on a single package. It offers a highly scalable, reliable, manageable and secure wireless link to meet the growing demand of wireless sensor networks utilizing the broadly accepted IEEE 802.11 standards infrastructure. This solution is ideal for use in industrial and commercial building automation and process monitoring applications. In addition, the solution provides capabilities such as location awareness which also make it well suited for logistics and supply chain applications for tracking asset location and status.

FEATURES & BENEFITS

- **Highly Integrated wireless SOC with 802.11 radio, MAC and Baseband, Integrated PA, Application CPU, RTC, SRAM and FLASH**
 - Reduces system cost of implementing separate devices and lowers design complexity
 - Ultra small form-factor reduces board space
- **Supports IEEE 802.11**
 - Lowers customer’s total cost of ownership (TCO) in network implementation and management
 - Seamlessly integrates with existing 802.11b/g infrastructure and utilizes the 802.11 security, manageability, ease-of-use, and quality of service

- **802.11i/WPA2 Authentication, AES Hardware encryption**
 - Enterprise level security & reliability for sensor networks
- **Power Management**
 - Optimized for battery powered application with very low power consumption for multiple years of battery life
- **Location Awareness**
 - Enables users to trace and monitor assets
- **Multiple I/O: SPI, UART, PWM, I2C, ADC, GPIO**
 - Provides flexibility in system design for easier integration
- **Firmware, Device drivers, Reference Application SW, APIs, and SDK**
 - Reduces customer development time for application software enabling faster time to market

BLOCK DIAGRAM



SPECIFICATIONS

Dual-Core Processors	Two 32-bit ARM7 CPU @44MHz 1 for applications (APP) : 1 dedicated to radio (WLAN)
On Board Memory	RAM 192KBytes FLASH 384KBytes
Radio	802.11 (Wi-Fi) b/g compatible; 1/2Mbps BPSK/QPSK
Security	802.11i (WPA2 – PSK, WPA, WEP), AES Encryption
RF Power Receive Sensitivity	9dbm typical (measured) -92dbm @ 1Mbps and -90dbm @2Mbps
Range	50-70M Indoor : 200-300M+ Outdoor (Typical)
Operating Temp Range	-40 to +85 °C industrial temp
Location Awareness	RSSI
Software Protocol Support	IPv4, (TCP/IP), UDP, SNMP, RTOS (Green Hills)
Standby State with RTC*	1- 5uA depends on voltage on RTC
Package	10 x 10 x 0.85 mm; 102-pin dual row QFN; RoHS compliant
I/Os	UART (2), I2C, SPI (2), ADC(2), PWM(3), GPIO(32)

* Lowest power state

APPLICATIONS



SMART ENERGY HOME



BUILDING AUTOMATION



ASSET TRACKING



COLD STORAGE MONITORING