

RS9110 PRODUCT BRIEF

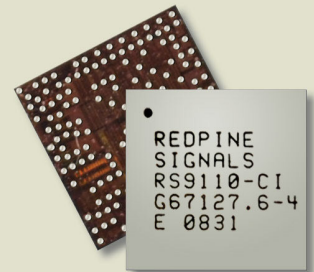


Expanding Wireless Horizons

RS9110

IEEE 802.11N BASEBAND AND MAC PROCESSOR

From Redpine's Lite-Fi™ product family, the RS9110 is an ultra low power 802.11abgn Baseband and MAC processor targeted for handheld, mobile and battery-operated devices. The device offers full compliance to IEEE 802.11n Draft 2.0 in a single antenna mode and uses patented power-save techniques to deliver significantly improved battery life. Using advanced 11n techniques such as Space Time Block Codes (STBC), the RS9110 delivers robust performance and extended range while being fully backward compatible with existing 802.11abg devices.



Features

- Single antenna IEEE 802.11n with STBC support
- 1x1 802.11n mode conforming to WiFi Alliance's handheld (HH) certification profile
- Extensive, patented low-power techniques to minimize power consumption through intelligent power management
- Full throughput SDIO v1.2/2.0, SPI and EBI host interfaces
- Zero host overhead architecture with proprietary processor core
- WEP, TKIP and AES hardware engines for line speed security support
- Advanced 802.11e-based QoS support, including WMM and WMM-PS
- Bluetooth coexistence support
- Backward compatibility with IEEE 802.11abg

Benefits

- Robust multipath performance and extended range using STBC
- Higher throughput with 802.11n MAC enhancements
- Minimal battery utilization during VoIP, media streaming and data transfer use cases
- On-chip memory to enable customer-specific software differentiation and provide lowest BOM
- Ease of system integration and minimal use of host resources
- Wi-Fi® and Bluetooth throughputs maximized using innovative coexistence algorithms
- Small system footprint to enable compact, low-cost designs

Applications

- Multi-mode cellular phones, smart phones, and PDAs needing Wi-Fi capability
- VoWiFi/VoIP handsets
- Personal Navigation Devices
- Media nodes and players with MP3 music and MPEG4 video support
- Digital still cameras and camcorders
- Mobile gaming platforms with peer-to-peer capability

Specifications

Network Standard Support	IEEE 802.11a/b/g/h/i/j, Draft 802.11 n/k/r
Data Rates	802.11n: 6.5, 13, 19.5, 26, 39, 52, 58.5, 65 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps
Modulation Techniques	OFDM with BPSK, QPSK, 16-QAM, and 64-QAM 802.11b with CCK and DSSS
QoS	WMM and WMM Power Save Support
Wireless Security	802.11i: AES, TKIP, WEP, WPA, and WPA2
802.11n Features	MCS 0-7, STBC, RIFS, Greenfield Protection, A-MPDU, A-MSDU Aggregation with Block-ack, PSMP, MTBA
Host Interfaces	SDIO v1.2/2.0, SPI, Memory-mapped interface (EBI)
Other Interfaces	I ² C, SPI, GPIO, UART
Reference Clock Input	9.6, 13, 19.2, 26, 38.4, 40, 52 MHz
Supply Voltage	Core VDD 1.2V ± 10% IO VDD 3.3V ± 10%
Package Options	WLCSP & UFLGA
Operating Temperature	Industrial Grade -40°C to +85°C
Certification	Wi-Fi (WPA, WPA2, WMM, WMM Power-save, WPS, 11n Draft 2.0)

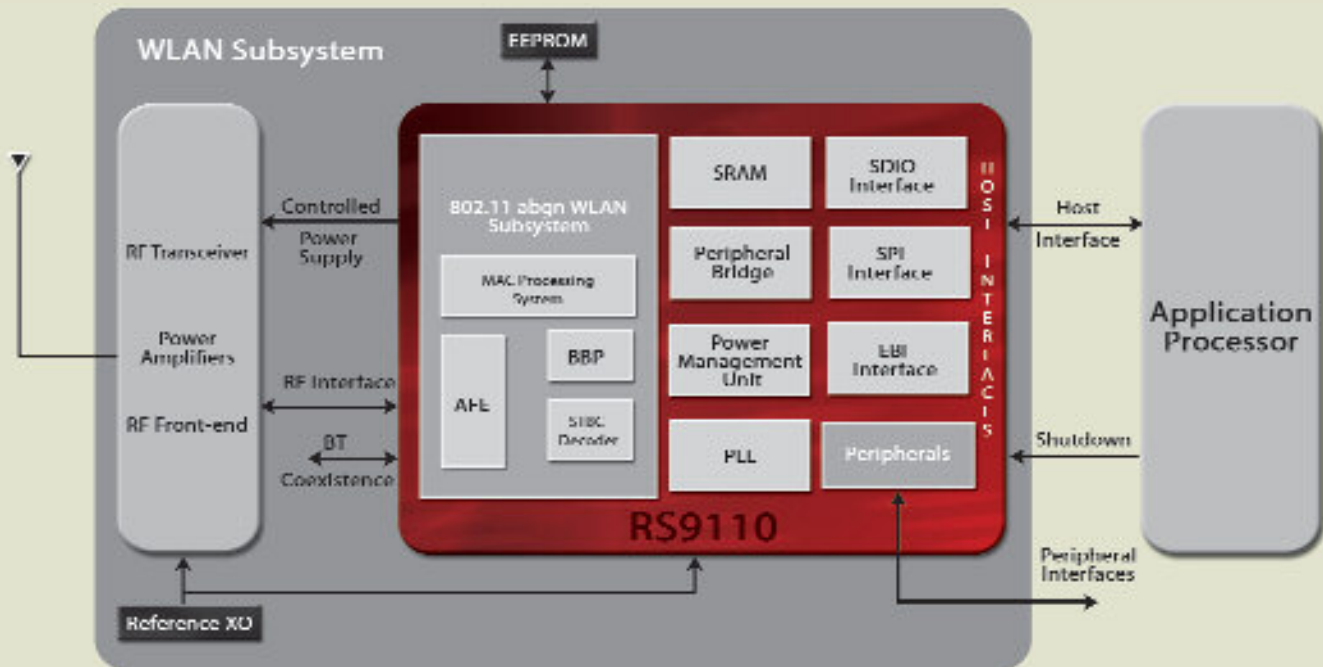
Module Reference Design

A complete module reference design, which integrates the RS9110 Baseband and MAC with a RF transceiver and power amplifier, is available from Redpine Signals, Inc.

Software Package

Redpine Signals provides a comprehensive software package that includes complete MAC firmware, reference drivers, manufacturing software and configuration graphical user interface (GUI) for Linux, Windows® Embedded CE, Windows Mobile and Windows XP. Additional support for host/client communications, information exchange between host and RS9110, WLAN configuration and power management is also available.

RS9110 PROCESSOR SYSTEM DIAGRAM



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Ultra Low Power Wi-Fi®