

Specification

Standards

- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.11n

Wireless Signal Rates

- IEEE 802.11b: 11, 5.5, 2 and 1Mbps
- IEEE 802.11g: 54, 48, 36, 24, 18, 12, 9 and 6Mbps
- IEEE 802.11n: (20 MHz BW) 75Mbps

Security

- 64/128-bit WEP
- WPA/WPA2 —Wi-Fi Protected Access
- WPA/WPA2-PSK (Pre-Shared Key)

Radio and Modulation Type

- DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM

Channels

For product available in the USA/Canada market, only channel 1-11 can be operated. Selection of other channels is not possible.

Wireless Frequency Range

- 2.4GHz ISM Band (2412M-2462MHz)

Wireless Operating Range

- Indoors: Up to 328 feet (100 meters)
- Outdoors: Up to 1,312 feet (400 meters)

Bandwidth

- 20MHz

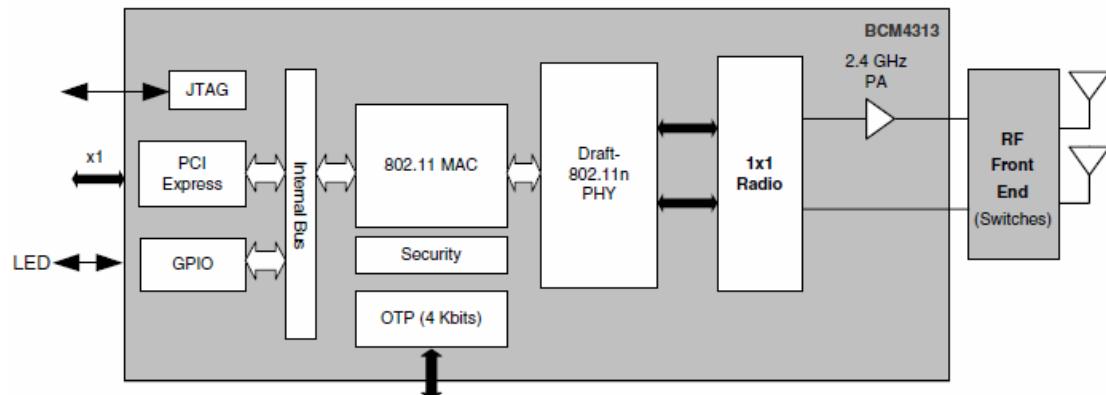
Output power

- 20dBm(MAX)

Antenna

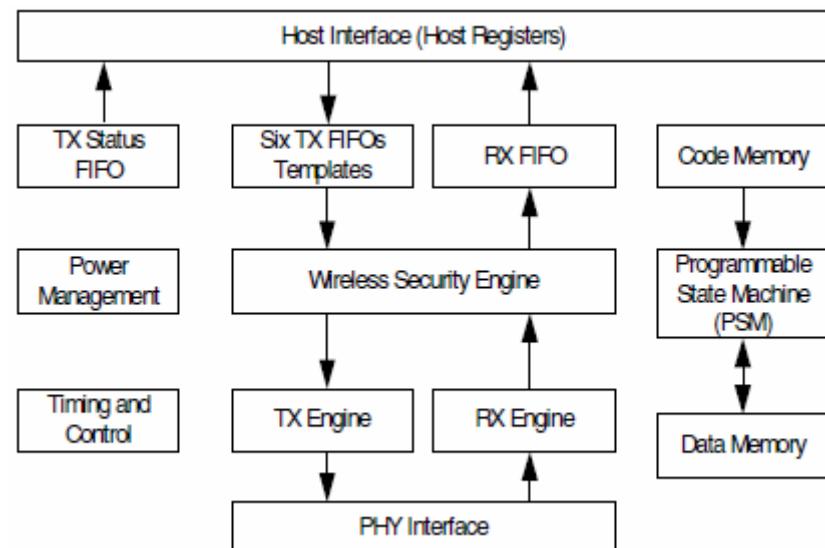
- 3dBi fixed omnidirectional antenna

Function Diagram



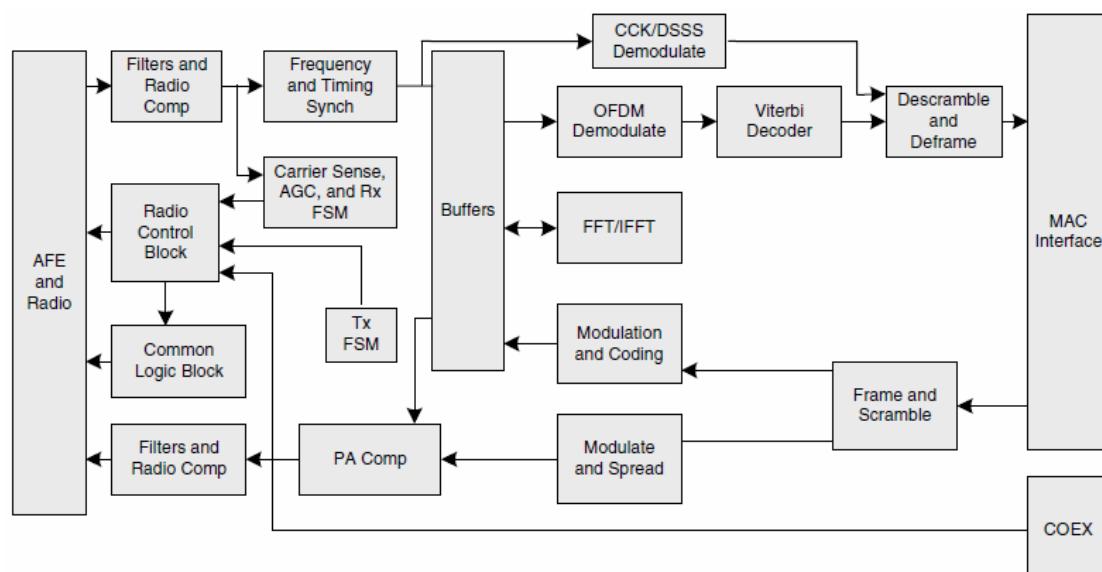
MAC Block and its Diagram: The MAC core supports the transmission and reception of packet sequences, together with related timing, without any packet-by-packet driver interaction. Time-critical tasks requiring response times of only a few milliseconds are handled in the MAC core. This achieves the required medium timing while minimizing driver complexity. Also, the MAC driver processes incoming packets that have been buffered in the MAC core in bursts, enabling high bandwidth performance.

The MAC driver interacts with the MAC core to prepare transmit packet queues and to analyze and forward received packets to upper software layers. The internal blocks of the MAC core are connected to a Programmable State Machine (PSM) through the host interface that connects to the internal bus



Integrated Radio Transceiver and its Diagram.

The BCM4313 PHY provides baseband processing at all mandatory Draft-802.11n data rates up to 72.2 Mbps, and the legacy rates specified in IEEE 802.11a/b/g, including 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps. This core acts as an intermediary between the MAC and the 2.4 GHz radio, converting back and forth between packets and baseband waveforms.



RECEIVER PATH

The BCM4313 has a wide dynamic range, direct conversion receiver. It employs high-order, on-chip channel filtering to ensure reliable operation in the noisy 2.4 GHz ISM band. The excellent noise figure of the receiver makes an external LNA unnecessary.

TRANSMITTER PATH

Baseband data is modulated and upconverted to the 2.4 GHz ISM band. Linear on-chip power amplifiers are included, which are capable of delivering a nominal output power exceeding +15 dBm while meeting the IEEE 802.11g specification. The TX gain has a 65 dB range with a resolution of 0.125 dB.