UniFi™-1 Portable

Combination IEEE 802.11b/g

Single Chip Radio Modem and MAC

Product Brief

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Features

- Dual mode IEEE 802.11b/g chip
- Interfaces to SDIO and SPI hosts
- Low power 1.5V operation
- Small board footprint. Minimal external components required
- Support for IEEE 802.11e EDCA QoS
- Full support for WEP40/64 and WEP104/128; WPA/WPA2 (802.11i) enhanced encryption modes
- Bluetooth Wi-Fi cellular coexistence support via priority and channel signalling schemes
- Long battery life in power save modes
- RoHS compliant

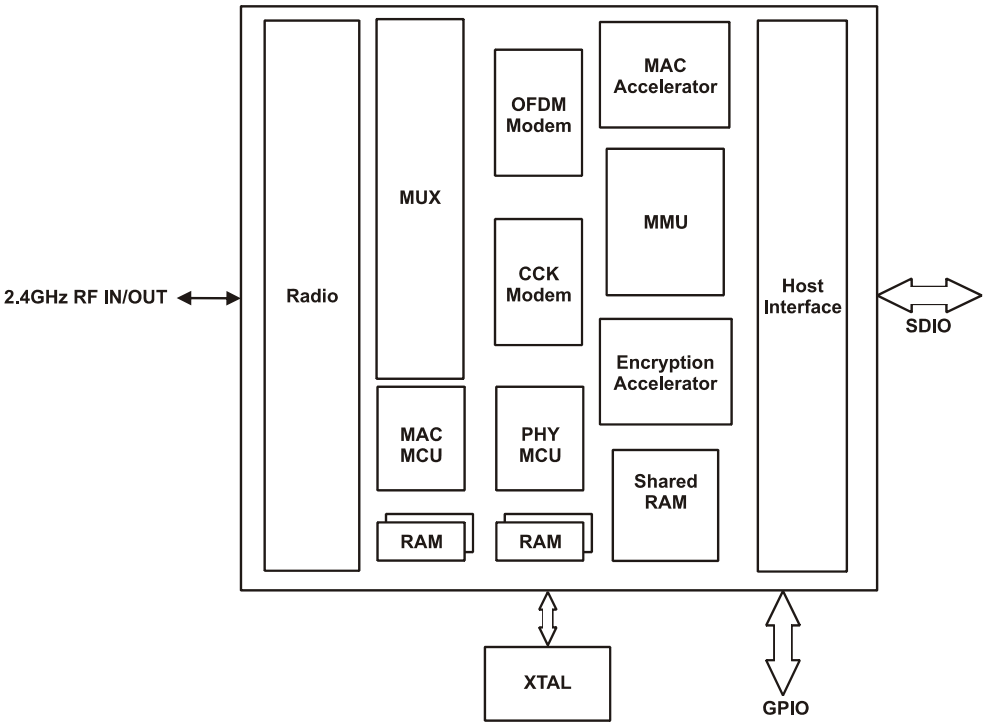
Description

UniFi-1 Portable b/g single chip device supports IEEE 802.11b and IEEE 802.11g standards on a single die, operating in 2.4GHz radio band.

The RF front-end includes the CCK modem (used for 802.11b) and the OFDM modem (used for 802.11g). Dual RISC processors and hardware accelerators for 802.11 MAC functions and encryption are provided, delivering full 54Mbps operation. The devices provide full QoS for 802.11e and security support for 802.11i.

Applications

- Cellular and FMC handsets
- Digital still cameras, personal video recorders
- MP3 players
- PDAs
- VoWiFi Phones
- Other portable devices



UniFi-1 Portable b/g System Architecture

1 Device Details

Radio

- Fully integrated VCO
- Fully integrated direct conversion receiver
- Baseband for 2.4GHz
- Fast AGC and wide dynamic range allow excellent robustness against fading
- No production trims or adjustments required
- Support for common cellular reference frequencies
- On-chip crystal driver

Transmitter

- No external PA required for short range cellular handset applications
- Supports external PA for enhanced range
- Low output spurii in cellular bands
- Supports power compensation for stable transmit power across temperature

Receiver

- Good receiver sensitivity
- Supports an external LNA for enhanced sensitivity
- High cellular blocking for good coexistence with cellular radios

Synthesiser

- Fully integrated synthesiser; no external VCO varactor diode, resonator or loop filter

Processor Subsystem

- Dual 60MHz RISC processors
- Independent dedicated on-chip instruction and data RAMs per CPU
- Separate timers, interrupt controller and watchdog for each CPU

MAC Accelerator

- Supports BSS and IBSS
- Control of radio TX power on per-packet basis
- EDCA (802.11e QoS packet scheduling)

Auxiliary Features

- Two 8-bit DACs

CCK Modem

- Supports 1, 2, 5.5 and 11Mbps modes

OFDM Modem

- Supports 6, 9, 12, 18, 24, 36, 48 and 54Mbps
- Options for partial clocking for power saving
- Dynamic power saving

Physical Interfaces

- SDIO interface (incorporating SPI bus mode)
- Unity coexistence interface

Encryption

- Hardware support for WEP40/64, WEP104/128, AES and TKIP

Package Options

- 88-ball WLCSP 5.8mm x 6.4mm x 0.7mm 0.5mm pitch, Pb-free

Document History

Revision	Date	Reason for Change
a	17 JUL 06	Original publication of the product brief. CSR reference: uport-pb-001P.
1	29 JAN 07	Updated features. Associated with firmware v2.4. Changed document reference to CS-112851-PB.
2	02 FEB 07	Updated product information

UniFi™-1 Portable b/g WLCSP

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CS-112851-PBP2

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RoHS Compliance

UniFI devices meet the requirements of Directive 2002/95/EC of the European Parliament and of the Council on the Restriction of Hazardous Substance (RoHS).

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