

Wireless LAN Integrated Medium Access Controller with Baseband Processor



The Intersil ISL3893 Wireless System on Chip (WiSOC™) is part of the PRISM Duette™, Dual Band radio chipset. The ISL3893 directly

interfaces with the Intersil's ISL3690 Dual Band Direct Conversion transceiver. Adding Intersil's ISL3090 10GHz VCO and Intersil's ISL3990 Dual Band Power Amp completes an end-to-end WLAN Chipset solution providing both 5 GHz 802.11a and 2.4GHz 802.11b/g access point capability. The 802.11 protocol is implemented in firmware to allow custom WLAN solutions.

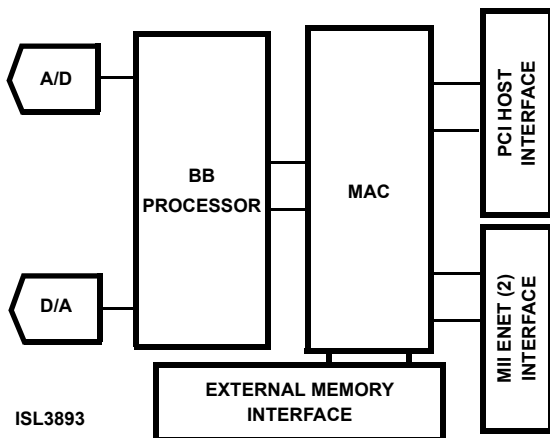
Firmware implements the full IEEE 802.11 Wireless LAN MAC protocol. It supports BSS under Distributed Coordination Function (DCF). This allows the ISL3893 to serve as a self hosted Access Point.

Orthogonal Frequency Division Multiplexing (OFDM) modulated with BPSK, QPSK, 16QAM, or 64QAM and a variety of convolutional coding rates provides 8 selectable data rates at 2.4GHz and 5GHz. Differential phase shift keying modulation schemes, DBPSK and DQPSK with data scrambling capability along with Complementary Code Keying provide 4 additional selectable data rates at 2.4GHz.

Built-in flexibility allows the ISL3893 to be configured for a range of applications. The MAC is based on the ARM 946E processor core that offers a wide variety of code development support tools.

The ISL3893 is housed in a thin plastic BGA package.

Simplified Block Diagram



Features

- Firmware implements the full IEEE 802.11a/b/g Wireless LAN MAC protocols
- Internal WEP Engine allows 64 or 128 bit Encryption
- AES Hardware Accelerator
- PC133 SDRAM Interface
- Asynchronous Flash Memory Interface
- On-Chip Boot ROM
- Instruction and Data Tightly Coupled Memory, Instruction and Data Cache
- Firmware controlled antenna diversity
- Data Rates 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54Mbps
- Modulation . . OFDM with BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK, CCK
- Convolutional coding and interleaving on all OFDM rates
- Targeted for OFDM Multipath Delay Spreads > 800ns for 6Mbps, and >100ns for 54Mbps
- Targeted for CCK Multipath Delay Spreads > 90ns at 11Mbps, >200ns at 5.5Mbps and >360ns at 1 and 2Mbps
- Direct interface with the ISL3690 Direct Conversion Transceiver.
- Two Medium Independent Interfaces (MII) for ethernet use.
- Mini-PCI Host Capability.

Applications

- High Data Rate Wireless LAN Systems Targeting the IEEE 802.11a and g Standards.
- Wireless Routers.
- Self Hosted Access Point with the capability to host a mini-PCI daughter card for additional functionality.

Ordering Information

PART NUMBER	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
ISL3893IK	-40 to 85	316 Lead BGA	V316.17x17
ISL3893IK-TK	-40 to 85	Tape and Reel	