![alereon logo]

AL5000 Family Chipset (AL5100/AL5300)

Worldwide Wireless USB Chipset Covers Entire UWB Spectrum from 3.1–10.6 GHz

High Integration

Alereon's highly integrated AL5000 Family of Worldwide Wireless USB chipsets integrates the RF transceiver, BBP/MAC, and firmware/software, to implement a complete WiMedia Ultra Wideband (UWB) product that supports all protocol adaptation layers, including Certified Wireless USB device and dual-role device technology. The Alereon AL5000 family covers all worldwide Band Groups 1, 3, 4, and 6 from 3.1–10.6 GHz and was designed for desktop and laptop PCs; after market hubs, adapters, and cards; and embedded devices including PC peripherals, mobile handsets, and digital cameras, where space and power consumption are at a premium.

AL5100 RF Transceiver

The Alereon AL5100 RF transceiver adds worldwide coverage and additional integration to the AL4100 RF transceiver. The AL5100 transceiver integrates sensitive analog front-end components including synthesizer VCO/PLL, anti-alias filters, LNAs, PAs, and transmit/receive (T/R) switches, and supports a single-ended connection to the antenna eliminating external baluns. When combined with the Alereon AL5300 BBP/MAC, the AL5100 RF transceiver supports all current mandatory WiMedia specifications for worldwide Band Groups 1, 3, 4, and 6, including all TFCs 1–10.

AL5300 BBP/MAC

The Alereon AL5300 BBP/MAC integrates all digital and mixed-signal circuitry for a WiMedia UWB system providing high-speed wireless connectivity using Certified Wireless USB, WiMedia Link Layer Protocol, and next-generation high-speed Bluetooth.The AL5300 BBP/MAC uses a low-power, highly efficient RISC processor combined with high-precision hardware timers and specialized hardware for accelerating encryption, packet processing, and memory management. A programmable flexible host interface supports any one of multiple industry standards.
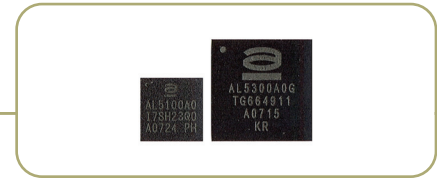
Programmable Host Interface

CF+/General Purpose Parallel
> Supports CF+ Memory and I/O Modes
> Supports Memory Mapped Interface
> 8-Bit or 16-Bit Word Selectable
> Read and Write times as short as 60 ns

SDIO
> 1-Bit and 4-Bit Modes

USB ULPI
> Compatible with USB 2.0
> Configurable as host or device

Features

- Highly integrated RF Transceiver and BBP/MAC
  - Integrated synthesizer VCO/PLL
  - Integrated anti-alias filters
  - Integrated transmit/receive (T/R) switches, LNAs, PAs
  - Single-ended antenna connection eliminates external balun
- All Worldwide Band Groups 1, 3, 4, 6 (3.1 – 10.6 GHz)
- All TFCs 1–10 (TFI, FFI, TFI2)
- All WiMedia data rates: 53.3, 80, 106.7, 160, 180, 400, and 480 Mbps
- Flexible MAC protocol engine supports all industry standard WiMedia protocols
- 128-Bit AES Encryption for secure wireless link
- CogniPHY™ Detect and Avoid (DAA) technology
- Programmable host interface:
  - CF+/General Purpose Parallel
  - SDIO
  - USB ULPI
- Wireless-on-the-Go™ enables peer-to-peer sharing
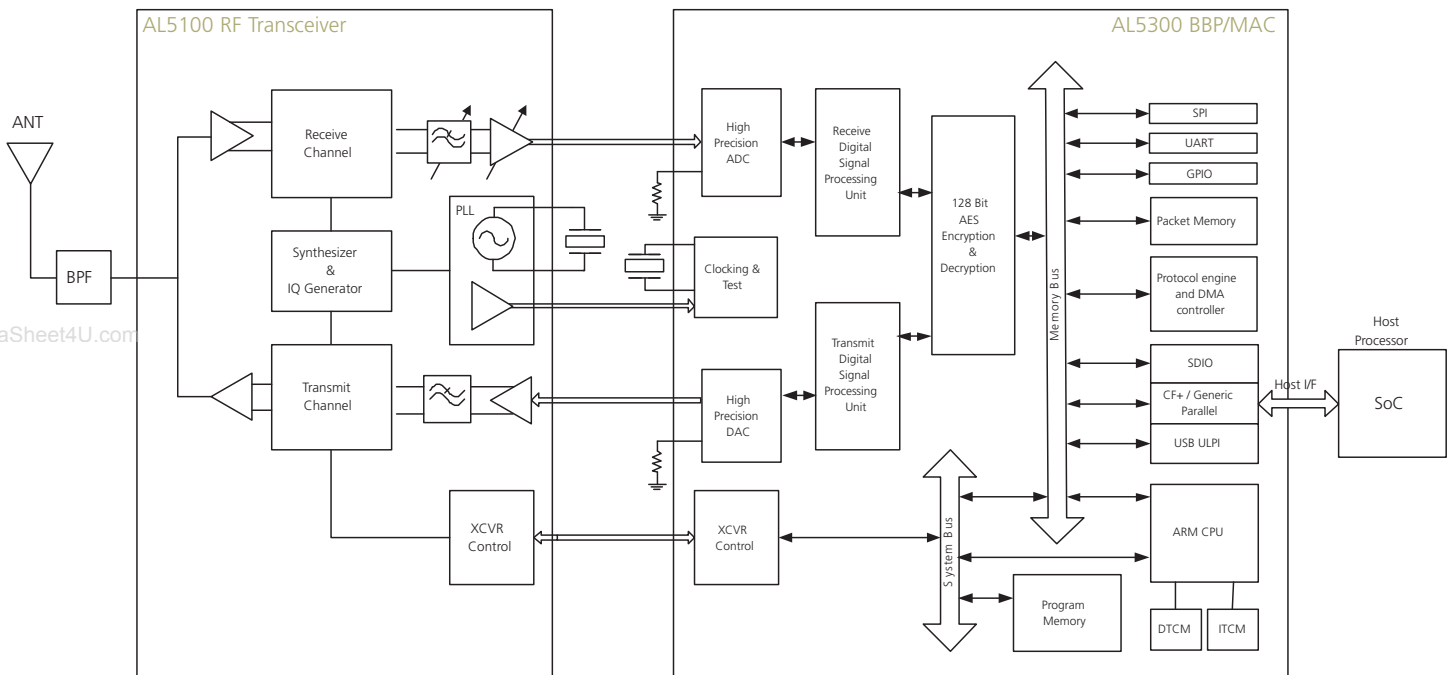
Firmware/Software

Alereon's firmware/software partitioning minimizes the memory and processing demands on the host application. Software drivers are available for PC operating systems including Windows XP/Vista and Linux, and popular embedded O/S including Windows CE/WM5.0 and embedded Linux. Development kits are available to support custom software development.

Wireless-on-the-Go™

Alereon's innovative Wireless-on-the-Go™ technology enables peer-to-peer file sharing based on the AL5300 dual-role device capability. Selected applications include:
> Printer hosted by a PC that simultaneously hosts a digital still camera/cell phone for image printing
> Cell phone communicating directly with another cell phone
> Personal media player communicating directly with another personal media player
> Digital video camera or cell phone communicating to a TV
> Set-top box communicating to a TV

(((life without wires)))™

alereon™

Worldwide Wireless USB
System Block Diagram

AL5100 RF Transceiver — AL5300 BBP/MAC block diagram

AL5000 Family Chipset (AL5100/AL5300) Key Specifications	
Chipset	AL5100 RF Transceiver, AL5300 BBP/MAC
WiMedia Protocols	Wireless USB Host, Wireless USB Device Wireless USB Dual-Role Device WLP, High-Speed Bluetooth
Data Rates (Mbps)	53.3, 80, 106.7, 160, 200, 320, 400, 480
WiMedia Channels	TFC 1–10 (TFI, FFI, TFI2)
WiMedia Band Groups	1, 3, 4, 6 (3.1 – 10.6 GHz)
Host Interface Options	CF+/Generic Parallel, SDIO, USB ULPI

CONTACT INFORMATION

The Americas
Alereon, Inc.
Tel: +1 (512) 345-4200
sales@alereon.com

Bager Electronics
http://www.bagersales.com/
contact.htm

Japan
Hideaki Yamaai
Hakuto Co., Ltd.
Tel: +81 (3) 3355-7622
yamaai-h@hakuto.co.jp

Korea
Stephen Ma
Aiji System Co., Ltd.
Tel: +82 (31) 223-6611
stephen_ma@aijisystem.com

Brian Kim
Uniquest Corporation
Tel : +82 (31) 708-9988
brian@uniquest.co.kr

Taiwan
Alereon, Inc.
Tel: +886 (932) 315-978
fred.chiang@alereon.com

Richard Chen
Edom Technology Co., Ltd.
Tel: +886 (2) 2657-8811
richardchen@edom.com.tw

China/Hong Kong
Mark Wai
RTI Holdings Ltd.
Tel: +86 (852) 2180-6166
mark.wai@rti.com.hk

Terence Cheung
RTI China Ltd.
Tel: +86 (755) 8236-6450
terence@rti.com.hk

For more information, register at http://www.alereon.com/RegisterUserAccount

About Alereon

Alereon, Inc. is a fabless semiconductor company using revolutionary Ultra Wideband (UWB) radio technology to develop high-bandwidth, low-power, low-cost Wireless USB and WiMedia UWB chipsets that are ideal for today's portable products, like digital cameras, mp3 players and cell phones. Our mission is to replace the complex tangle of wires that interconnect today's electronic devices with wireless links.