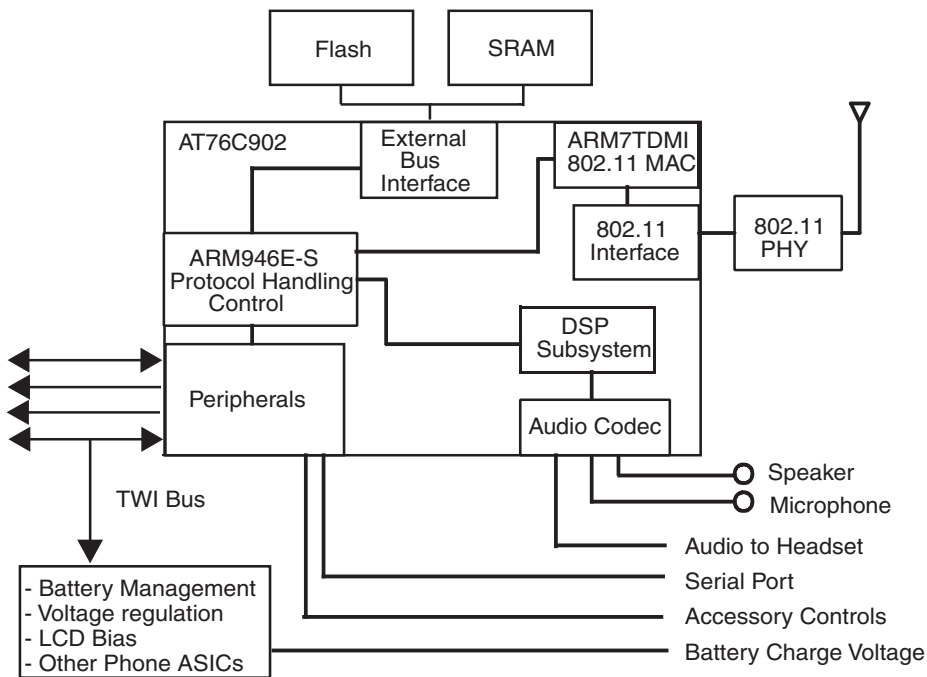


Features

- ARM946E-S™ Core (ARM9) for implementing the VoIP Protocol, TCP/IP, VPN and Controlling the Phone Functions with Internal 8K Instruction Cache and 8K Data Cache Used for Fast Execution of the Communications Protocols and RTOS with Reduced Power Consumption
- ARM7TDMI™ Core (ARM7) for Implementing the 802.11 MAC Layer
- Configurable Memory Banks to Assign Memory where Best Needed in Chip
- 16-bit Dual-MAC DSP for Implementing the G.723.1, G.729 and G.711.1 Standards, in Addition to Acoustic Echo Cancellation
- Integrated Audio Codec with Two Differential Multiplexed Microphone Inputs, One Differential Speaker Output and One Differential Auxiliary Output Path
- Glueless External Memory Interface Supporting up to 16 MB of External SRAM, 16 MB of Flash and 512 MB of SDRAM
- Hardware Security Accelerators Attached to the Common Bus Offer Instantaneous Encryption/Decryption and Authentication Support for the Following Algorithms: CCM/CTR/CBC Modes of Advanced Encryption Standard (AES) DES/3DES, WEP64/128, Temporal Key Integrity Protocol (TKIP) and MD-5, SHA-1 Hash Functions for IP Security
- USB Slave Interface (Control, Interrupt, Bulk-in and Bulk-out Endpoints)
- UART with Support to be used as USART
- Serial Peripheral Interface (SPI) and Two Wire Serial Interface (TWI)
- 64-key Keypad Interface
- 4x4 LED Matrix Controller
- Minimum of 5 GPIO Pins (up to 62 Available on Configuration)
- 208-lead BGA Package
- 1.8 Volt Core Voltage Supply
- 3.3 Volt I/O Voltage Supply

Figure 0-1. Typical Application Using AT76C902



Wireless VoIP Processor Implementing the 802.11 Standard

AT76C902 Summary

NOTE: This is a summary document. The complete document is available under NDA. For more information, please contact your local Atmel sales office.



1. Description

AT76C902 is a highly integrated ASSP that can be used as part of a wireless phone that utilizes an 802.11a/b/g wireless LAN medium and carries voice over IP (VoIP) packets. Specified in this datasheet, an ARM[®] processor based subsystem performs all of the PLCP and low MAC functions and baseband operations defined in 802.11a/b/g. A TeakDSPCore[™] and an internal CODEC perform the decoding and encoding of voice traffic. An interrupt controller and multiple support peripherals are also included.

1.1 Applications

The VoIP baseband device is intended to be used in a wireless phone which operates by encapsulating voice data within IP frames and transmitting the frames over a contention based wireless medium. Specifically, the first application of the device is targeted at a wireless phone operating on an 802.11a/b/g wireless LAN at 2.4 GHz and at 5.2 GHz (using 802.11a). [Figure 0-1](#) shows an example of the device being utilized in a wireless phone.



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