



AR1900

*Single-chip Mobile Solution for
Personal Access System (PAS)*



AR1900

Low Power, Compact Footprint
for Next Generation Handsets

AR1900 Chip Features

- 1.9 GHz direct-conversion RF transceiver
- $\pi/4$ -shift DQPSK modem
- TDMA controller
- 120 MHz ARM 946E-S CPU and memory controller
- Integrated ADPCM codec with click suppression
- Voice-band ADC and DAC for microphone and speaker
- Polyphonic ring tone generator and vibrator support
- Stereo headphone interface
- Parallel and serial bus LCD controller
- 4 x 6 keypad scanner
- LDO, voltage and temperature ADC for battery management
- SDIO 1.1 host interface
- USB 1.1 client interface
- UART, 2- and 3-wire serial interfaces
- SIM card interface

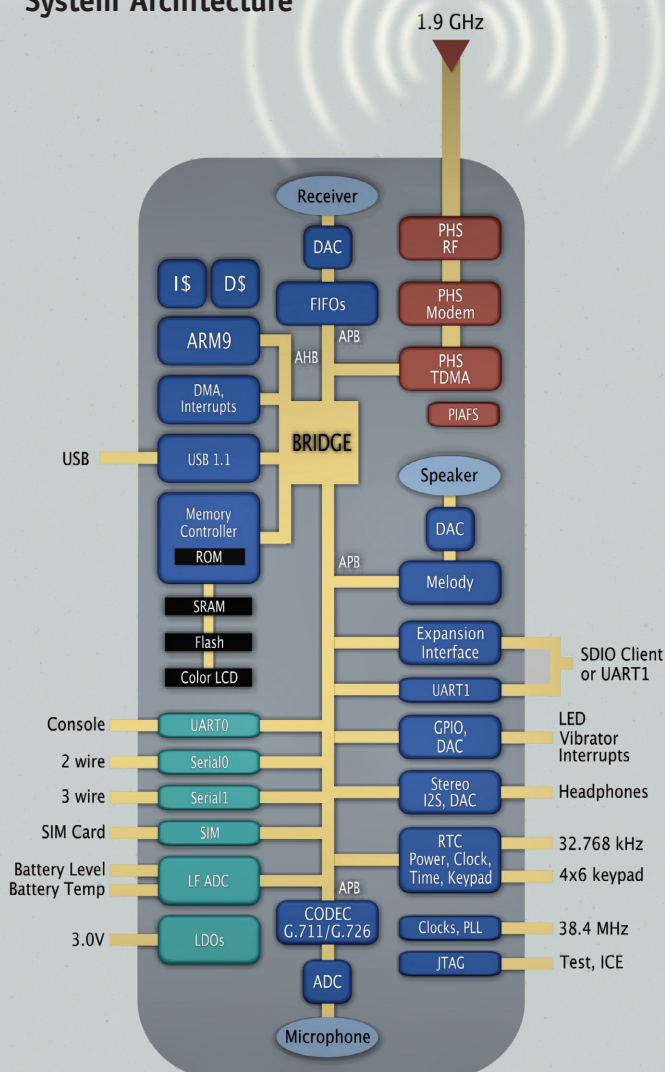
Applications

- Single-mode PHS handsets

AR1900 Technology Overview

The AR1900 implements on a single chip a 1.9 GHz radio, modem, and TDMA controller in support of the RCR STD-28 Version 3.3 PHS calling features. It also implements all the functions required of a handset, including applications processing on an ARM946E-S core, keypad and LCD control, speaker and microphone voice path, and battery management. Implemented in a standard CMOS process, the AR1900 brings a new level of integration and cost competitiveness to the PHS market.

AR1900 System Architecture



AR1900

AR1900 Personal Access System Handset Board



Actual size

The single-chip footprint of the AR1900 PHS solution enables a new class of highly-compact, power-efficient handset designs. Single-sided layouts with FR4 PCB material are possible for either flip-phone or candy-bar style handsets. With the advanced RF functions of the AR1900, features such as seamless roaming are made possible with the appropriate software. Peripherals such as cameras, MP3 players, and FM tuners, as well as a secondary LCD, can be supported via expansion interfaces. An USB 1.1 client interface for PC download applications is supported by the AR1900, as is a SIM slot for subscriber management.

AR1900 Specifications

Network Standard:	PHS (RCR STD-28 Version 3.3)
Modulation Mode:	$\pi/4$ -shift DQPSK
Radio Transmit Output Power:	+20.5 dBm (with external PA)
Radio Receive Sensitivity:	-104 dBm at 10^{-2} BER
Temperature Range:	-20 to 60°C
Operating Voltage:	2.8 to 3.2V
Package Details:	13mm x 13mm x 1.08mm 276-ball BGA

Contact your local Atheros sales representative
for more information

Atheros Communications, Inc.
t +1 408.773.5200 f +1 408.773.9940

Atheros Communications, KK – Japan
t +81 3.5501.4100 f +81 3.5501.4129

Atheros Communications, International LLC – Hong Kong
t +852 8206.1131 f +852 8206.1301

Atheros Communications, International LLC – Taiwan
t +886 2.8751.6385 f +886 2.8751.6397