PCI9501
CDMA

PCI9501 CDMA Digital Baseband Processor

PCI9501 GENERAL FEATURES

Complete IS-95-B baseband solution, exceeding all IS-98-B specifications, as well as IS-95A support

Low voltage operation

Software-controlled power management

Supports Asynchronous Data, Fax, and Packet Data Services (IS-707A)

Supports Short Message Service (IS-637)

Layered/Modular design

Portable and Extensible

Uses resources efficiently and is designed for testability

Complete Documentation, as well as support of OTAPA (Over the Air Provisioning and Activation)

Internal 13k QCELP and 8k EVRC Vocoders

Built-in acoustic signal processing

Support for external μ-Law, A-Law or Linear CODECs from a variety of manufacturers

PCI9501 MICROPROCESSOR SUBSYSTEM FEATURES

Powerful and efficient 32-bit RISC ARM microprocessor core

Two on-board UARTs, one with fully compliant IS-707 hardware flow control

Flexible External Memory Interface supports 2 MByte 8 and 16-bit devices with programmable wait states

Source-level debugging via the JTAG interface

Versatile Direct Memory Access controller

PCI9501 PHYSICAL LAYER PROCESSING FEATURES

Supports 64 kbps+ data (IS-95-B) on both forward and reverse links

Programmable Search Processing, RAKE Processing, channel coding/decoding, and modulation

Internal digital FM subsystem for AMPS operation

Direct interface to a variety of RF and mixed-signal devices

It's no mystery what your customers want: great features, long battery life, low prices. Now, with the PCI9501 Digital Baseband Processor, it's no longer a mystery how to deliver this performance.

Of course, your customers won't care that the PCI9501 exceeds all IS-95B specifications on both the forward and reverse links. But we can assure you they'll take note of exceptionally clear voice quality, low voltage operation due to highly integrated design, and low power consumption due to software-controlled power management.

By capitalizing on a flexible, integrated design, the PCI9501 enables you to lower the price of your handsets while protecting your margins. Support for a wide array of external components gives you even more flexibility. Prices are reduced, boosting your competitiveness.

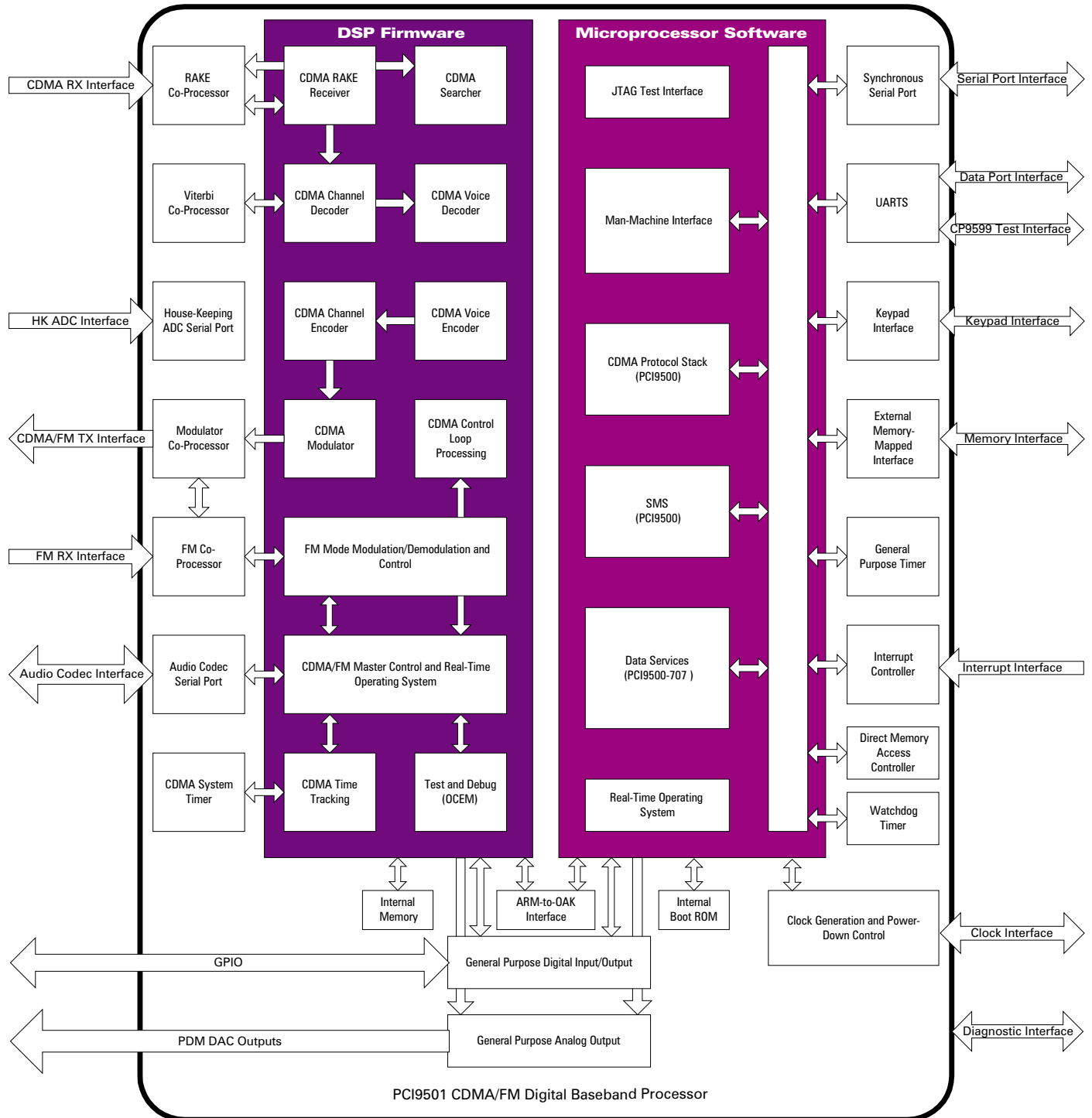The PCI9501. It gives your CDMA handsets The Power To Compete—on performance and on price.

BENEFITS

By using the PCI9501, you will realize…

■ superior product performance

■ substantially longer talk and standby times

■ a significant reduction in time-to-market

■ dramatically lower production costs

■ minimal development costs

■ a comprehensive roadmap of tiered products

PRAIRIECOMM
The Power To Compete™

PCI9501 CDMA Digital Baseband Processor

DSP Firmware

- RAKE Co-Processor
- CDMA RAKE Receiver
- CDMA Searcher
- Viterbi Co-Processor
- CDMA Channel Decoder
- CDMA Voice Decoder
- House-Keeping ADC Serial Port
- CDMA Channel Encoder
- CDMA Voice Encoder
- Modulator Co-Processor
- CDMA Modulator
- CDMA Control Loop Processing
- FM Co-Processor
- FM Mode Modulation/Demodulation and Control
- Audio Codec Serial Port
- CDMA/FM Master Control and Real-Time Operating System
- CDMA System Timer
- CDMA Time Tracking
- Test and Debug (OCEM)

Microprocessor Software

- JTAG Test Interface
- Man-Machine Interface
- CDMA Protocol Stack (PCI9500)
- SMS (PCI9500)
- Data Services (PCI9500-707)
- Real-Time Operating System

Left interfaces:
- CDMA RX Interface
- HK ADC Interface
- CDMA/FM TX Interface
- FM RX Interface
- Audio Codec Interface

Right interfaces:
- Synchronous Serial Port — Serial Port Interface
- UARTS — Data Port Interface, CP9599 Test Interface
- Keypad Interface — Keypad Interface
- External Memory-Mapped Interface — Memory Interface
- General Purpose Timer
- Interrupt Controller — Interrupt Interface
- Direct Memory Access Controller
- Watchdog Timer
- Clock Generation and Power-Down Control — Clock Interface

Bottom blocks:
- Internal Memory
- ARM-to-OAK Interface
- Internal Boot ROM
- General Purpose Digital Input/Output
- General Purpose Analog Output
- GPIO
- PDM DAC Outputs
- Diagnostic Interface

PCI9501 CDMA/FM Digital Baseband Processor

ELECTRICAL SPECIFICATIONS

Power Supply: 2.7 –3.6 V DC

Operating Temperature Range: -40 to +85˚C

Storage Temperature Range: -55 to +150˚C

Clock Frequency: 19.2, 19.68, 19.8 MHz and 32 kHz sleep mode

Chipset allows mobile up to 200 hours of standby time

PACKAGING

180-ball Flex PBGA package with 0.8 mm pitch

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