U.S./International Modem DAA Line Codec Chipset

AD1803/AD1804

FEATURES

Low Power Modem Codec AD1803 and Silicon DAA AD1804
AD1803 Can Be Used as a Stand-Alone Modem/Voice/ Telephony Codec Independent of the AD1804
Intel AC'97 Rev 2.1-Compliant Modem Codec Implementation
AC'97 or DSP Style Serial Interface
Supports all Modem/Fax Standards Including V.90
Software Programmable DAA and Compliant with U.S. and International PTT Standards
FCC and CTR21 Approved
Capacitively Coupled Clock and Data Interface Across Isolation Barrier
Multiple Crystal/Clock Rates Supported
Programmable Gain, Attenuation and Mute
On-Chip Signal Filters
Digital Interpolation and Decimation Filters
Analog Output Low Pass
Programmable Sample Rates
From 6.4 kHz to 16 kHz
With 1 Hz, 8/7 Hz and 10/7 Hz Resolution
Digital Monitor Speaker Output
Integrated Ring Detector and Support for Soft Caller-ID Decode
24-Lead TSSOP Package
0.6 μm CMOS Technology
Operation from 3.3 V or 5 V Supply
Advanced Power Management
Supports Wake-Up on Ring from D3-Cold System State

APPLICATIONS

Modems (PC and Embedded)
Voice and Telephony
Fax Machines, Answering Machines, Speakerphones
PBX Systems
Smart Appliances

REFERENCE DESIGN

Available

PRODUCT OVERVIEW

The AD1803/AD1804 chipset allows the implementation of a low-cost full Modem DAA Line Interface and codec with minimal external components. The AD1803 can also be used as a stand-alone codec for voice/handset/telephony applications, or as a cellular telephone interface.

The AD1803 is an Intel AC'97 Rev 2.1-compliant modem codec (refer to Intel's AC'97 specifications at www.intel.com) with selectable AC'97 or a DSP-style serial interface.

The AD1803 codec uses high-performance sigma-delta ADC and DACs with programmable gain/attenuation. It has a digital monitor output with selectable mix from ADC and DAC channels for call progress monitoring. The AD1803 supports ring validation and wake-up interrupt output signalling. The AD1803 has programmable filters dedicated to impedance synthesis and when used with the AD1804, it provides a complete digital line termination impedance synthesis control loop.

The AD1804 is a solid-state line-side analog phone interface device that replaces a conventional discrete DAA. The AD1804 eliminates the need for transformer, relays, opto-isolators and a 2-to-4-wire hybrid. The AD1804 uses high-performance sigma-delta ADC and DACs with programmable gain/attenuation. It has digitally selectable line termination impedances.

The AD1804 features a Ring Detect comparator making the chipset capable of ring and line reversal detection and validation. The Ring/CID Buffer allows any line signal, whether ring, line reversal, or even Caller ID data, to be sampled and driven directly into the codec's main ADC channel for processing independent of the AD1803.

The AD1804's dc line-hold current DAC, dc line voltage sense ADC and the hold current regulator supports off-hook and pulse dialing functions in addition to meeting the dc hold requirements of a given country. The AD1804 CTR21 circuit allows the implementation of a high power dc shunt path without the need for costly external high-power transistors to ensure compliance to CTR21 DC hold current limit requirements.

The AD1804 hybrid provides 2-to-4-wire conversion, local echo cancellation and correctly terminates the transmission line.

The AD1803/AD1804 chipset features Analog Device's proprietary isolation barrier techniques using low-cost high-voltage capacitors to meet US and international isolation requirements.

The AD1803/AD1804 supports several advanced power management features with several power-saving modes. The chipset also supports wake-up on ring from D3-Cold system state.

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ORDERING GUIDE

Model	Temperature Range	Package Description	Package Option
AD1803JRU	0°C to 70°C	24-Lead Thin Shrink Small Outline Package	RU-24
AD1804JRU	0°C to 70°C	24-Lead Thin Shrink Small Outline Package	RU-24

OUTLINE DIMENSIONS

Dimensions shown in inches and (mm).

24-Lead TSSOP
(RU-24)