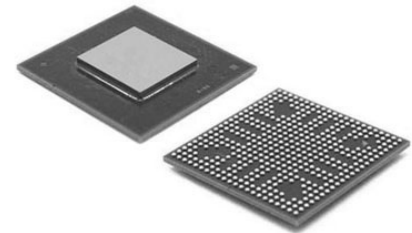


DSP Fixed-Point/Floating-Point 32bit 300MHz Automotive 88-Pin LFCSP EP Tray

Manufacturers	<a href="#">Analog Devices, Inc</a>
Package/Case	LFCSP-8
Product Type	DSP
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for ADAU1467WBCPZ300 or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

The ADAU1463/ADAU1467 are automotive qualified audio processors that far exceed the digital signal processing capabilities of earlier SigmaDSP® devices. They are pin and register compatible with each other, as well as with the ADAU1450/ADAU1451/ADAU1452 SigmaDSP® processors. The restructured hardware architecture is optimized for efficient audio processing. The audio processing algorithms support a seamless combination of stream processing (sample-by-sample), multirate processing, and block processing paradigms. The SigmaStudio® graphical programming tool enables the creation of signal processing flows that are interactive, intuitive, and powerful. The enhanced digital signal processor (DSP) core architecture enables some types of audio processing algorithms to be executed using significantly fewer instructions than were required on previous SigmaDSP generations, leading to vastly improved code efficiency.

The 1.2 V, 32-bit DSP core can run at frequencies of up to 294.912 MHz and execute up to 6144 single instruction, multiple data (SIMD) instructions per sample at the standard sample rate of 48 kHz. Powerful clock generator hardware, including a flexible phase-locked loop (PLL) with multiple fractional integer outputs, supports all industry standard audio sample rates. Nonstandard rates over a wide range can generate up to 15 sample rates simultaneously. These clock generators, along with the on-board asynchronous sample rate converters (ASRCs) and a flexible hardware audio routing matrix, make the ADAU1463/ADAU1467 ideal audio hubs that greatly simplify the design of complex multirate audio systems.

The ADAU1463/ADAU1467 have four input serial ports and four output serial ports. Each device has an asynchronous clock domain capable of operating as either a bit clock and frame sync master or slave. Each of the serial ports supports multiple data lines. The eight SDATAIOx pins each can be associated with any of the four input or four output serial ports. The use of assignable data pins allows a serial port to transmit or receive additional channels of audio data using a single bit clock and frame clock. Each of the supplemental data pins can carry from two to eight channels of serial audio. This flexible configuration provides more channels of audio input/output (I/O) without the need to run serial ports at high speed, and enables systems with additional serial audio peripherals. These expanded serial audio ports, along with the clock generators, the on-board asynchronous sample rate converters (ASRCs), and a flexible hardware audio routing matrix make the ADAU1463/ ADAU1467 ideal audio hubs that greatly simplify the design of complex, multirate audio systems.

The ADAU1463/ADAU1467 interface with a wide range of analog-to-digital converters (ADCs), digital-to-analog converters (DACs), digital audio devices, amplifiers, and control circuitry with highly configurable serial ports, I2C, serial peripheral interface (SPI), Sony/Philips Digital Interconnect Format (S/PDIF) interfaces, and multipurpose I/O pins. Dedicated decimation filters can decode the pulse density modulation (PDM) output of up to four MEMS microphones.

Independent slave and master I2C/SPI control ports allow the ADAU1463/ADAU1467 to be programmed and controlled by an external master device such as a microcontroller, and to program and control slave peripherals directly. Self boot functionality and the master control port enable

complex standalone systems.

Note that throughout this data sheet, multifunction pins, such as SDATAIO4/MP20, are referred to either by the entire pin name or by a single function of the pin, for example, MP20, when only that function is relevant.

## Features

Qualified for automotive applications

Fully programmable audio DSP for enhanced sound processing

Features SigmaStudio, a proprietary graphical programming tool for the development of custom signal flows

Up to 294.912 MHz, 32-bit SigmaDSP core at 1.2 V

Up to 24 kWords of program memory

Up to 80 kWords of parameter/data RAM

Up to 6144 SIMD instructions per sample at 48 kHz

Up to 1600 ms digital audio delay pool at 48 kHz

Audio I/O and routing

4 serial input ports, 4 serial output ports

48-channel, 32-bit digital I/O up to a sample rate of 192 kHz

Flexible configuration for TDM, I2S, left and right justified formats, and PCM

8 stereo ASRCs from 1:8 up to 7.75:1 ratio and 139 dB dynamic range

Stereo S/PDIF input and output at 192 kHz

4 PDM microphone input channels

Multichannel, byte addressable TDM serial ports

Clock oscillator for generating master clock from crystal

Integer PLL and flexible clock generators

Integrated die temperature sensor

I2C and SPI control interfaces (both slave and master)

Standalone operation

Self boot from serial EEPROM

8-channel, 10-bit SAR auxiliary control ADC

26 multipurpose pins for digital controls and outputs

## Application

Automotive audio processing

Head units

Distributed amplifiers

Rear seat entertainment systems

Trunk amplifiers

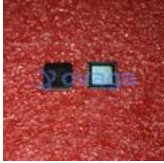
Commercial and professional audio processing

On-chip regulator for generating 1.2 V from 3.3 V supply

88-lead, 12 mm × 12 mm LFCSP package with 5.3 mm exposed pad

Temperature range: -40°C to +105°C

## Related Products



### [ADUC7022BCPZ62](#)

Analog Devices, Inc  
LFCSP-40



### [ADUC7020BCPZ62](#)

Analog Devices, Inc  
LFCSP-40



### [ADUC841BSZ62-5](#)

Analog Devices, Inc  
QFP-52



### [ADUC841BSZ62-3](#)

Analog Devices, Inc  
QFP-52



### [ADUC831BSZ](#)

Analog Devices, Inc  
QFP-52



### [ADSP-BF527BBCZ-5A](#)

Analog Devices, Inc  
BGA-208



### [ADSP-21369BBPZ-2A](#)

Analog Devices, Inc  
SBGA-256



### [ADSP-BF561SBBCZ-5A](#)

Analog Devices, Inc  
CSPBGA-256