


## DSP 28bit/56bit 50MHz 50MIPS Automotive 48-Pin LQFP Tray



Images are for reference only

[Inquiry](#)

<b>Manufacturer:</b>	<a href="#">Analog Devices, Inc</a>
<b>Package/Case:</b>	LQFP48
<b>Product Type:</b>	Embedded Processors & Controllers
<b>RoHS:</b>	RoHS Compliant/Lead free 
<b>Lifecycle:</b>	Active

### General Description

The signal processing of the ADAU1401A is comparable to that found in high end studio equipment. Most processing is done in full 56-bit, double-precision mode, resulting in very good low level signal performance. The ADAU1401A is a fully program-mable DSP. The easy to use SigmaStudio™ software allows the user to graphically configure a custom signal processing flow using blocks such as biquad filters, dynamics processors, level controls, and GPIO interface controls.

The ADAU1401A programs can be loaded on power-up either from a serial EEPROM through its own self-boot mechanism or from an external microcontroller. On power-down, the current state of the parameters can be written back to the EEPROM from the ADAU1401A to be recalled the next time the program is run.

Two  $\Sigma$ - $\Delta$  ADCs and four  $\Sigma$ - $\Delta$  DACs provide a 98.5 dB analog input to analog output dynamic. Each ADC has a THD + N of -83 dB, and each DAC has a THD + N of -90 dB. Digital input and output ports allow a glueless connection to additional ADCs and DACs. The ADAU1401A communicates through an I2C® bus or a 4-wire SPI port.

## Key Features

28-/56-bit, 50 MIPS digital audio processor

2 ADCs: SNR of 100 dB, THD + N of -83 dB

4 DACs: SNR of 104 dB, THD + N of -90 dB

Complete standalone operation

Self-boot from serial EEPROM

Auxiliary ADC with 4-input mux for analog control

GPIOs for digital controls and outputs

Fully programmable with SigmaStudio graphical tool

28-bit × 28-bit multiplier with 56-bit accumulator for full double-precision processing

Clock oscillator for generating master clock from crystal

See Data Sheet for Additional Information

## Application

Multimedia speaker systems

MP3 player speaker docks

Automotive head units

Minicomponent stereos

Digital televisions

Studio monitors

Speaker crossovers

Musical instrument effects processors

In-seat sound systems (aircraft/motor coaches)

Data Sheet, Rev. 0, 4/10

## Recommended For You

---

### **ADAU1701JSTZ**

Analog Devices, Inc  
QFP48

### **AD1890JP**

Analog Devices, Inc  
PLCC

### **AD1974WBS TZ**

Analog Devices, Inc  
LQFP-48

### **AD1940YSTZ**

Analog Devices, Inc  
QFP

### **AD1895AYRSZ**

Analog Devices, Inc  
SSOP28

### **AD2428WCCSZ-RL**

Analog Devices, Inc  
LFCSP32

### **AD1866RZ**

Analog Devices, Inc  
SOP16

### **ADAU7002ACBZ-R7**

Analog Devices, Inc  
WLCSP8

### **AD1955ARSZ**

Analog Devices, Inc  
SSOP28

### **ADAU1701JSTZ-RL**

Analog Devices, Inc  
LQFP48

### **AD1896AYRSZ**

Analog Devices, Inc  
SSOP28

### **AD1852JRSZ**

Analog Devices, Inc  
SSOP28

### **ADAU1962AWBSTZ**

Analog Devices, Inc  
LQFP-80

### **ADAU1966WBSTZ**

Analog Devices, Inc  
QFP80

### **AD1974YSTZ**

Analog Devices, Inc  
QFP