

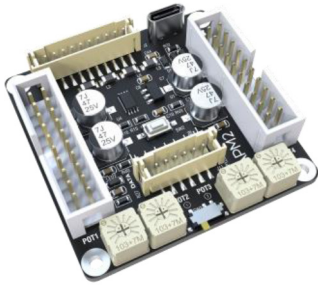
Audio Processing Module Series

Digital Signal Processor Kernel Board

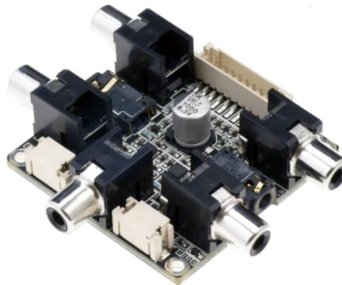
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RoHS
Compliant

FC CE



SURE-APM2



SURE-APM2 - INT

Applications

- Digital Crossover
- Bass Enhancement
- Noise Suppression System
- EQ Adjustment
- Home Theatre / Car Audio

Benefits

- Easy for Integration
- Highly Cost-Effective

Features

- Equipped with ADAU1701 Chip
- 28/56 bit Digital Signal Processor Engine
- 24bit ADC/DAC Resolution
- 48kHz Sample Rate
- On-board Potentiometer for audio system control
- 5V USB Type-C Power
- Supporting SigmaStudio Programming (USBi or ICP)
- Compact Size & Light Weight
- Supporting 2-in, 3-out Interface Extension Board
- PCB Size: 2 x 2 inches

Overview

ADAU1701 Digital Signal Processor - SURE-APM2

The product is a digital signal processor kernel board based on ADAU1701 chip, supporting functions as gain adjustment, high-low pass filter, bass enhancement and so on. There are built-in ADC and DAC, whose dynamic range reaches 98.5dB. THD of ADC is -83dB and that of DAC is -90dB. There are four on-board potentiometers on APM2 for the gain and cut-off frequency adjustment of treble and bass. It can control the audio to the actual listening environment, speaker configurations and your music preference.

The product can supports write and download program in SigmaStudio through original USBi or ICP programmer. Taking customer's operation and real-time control requirements into consideration, it developed an APP or PC UI, with which can get the remote control of audio system (Need to connect with ICP for remote control).

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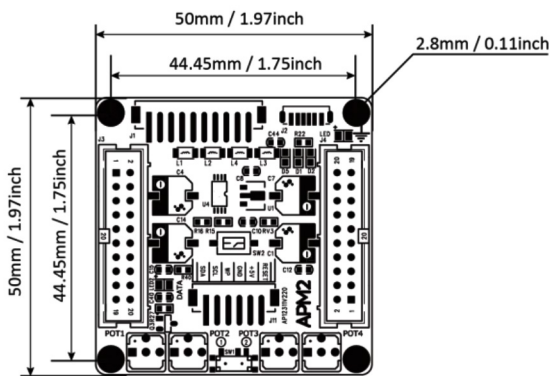
It provided open-sourced demo programs of DSP products. Can download them for reference before programming.
As for the correspondence of hardware and software, please refer to <The correspondence of APM2 hardware and DSP program.pdf>.

Interface Extension Board – SURE- APM2 - INT

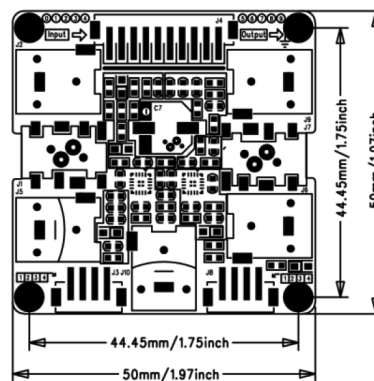
To help customers with easy system integration, it had designed an interface extension board SURE- APM2 - INT for use with SURE-APM2, which is the same PCB size with SURE-APM2.

SURE- APM2 - INT is a 2-in, 3-out extension board, offering various input and output interfaces as RAC ports, 3.5mm jack and PH connectors. Need a 10-pin cable to connect SURE-APM2 and SURE- APM2 - INT, which comes with SURE- APM2 - INT

Diagram



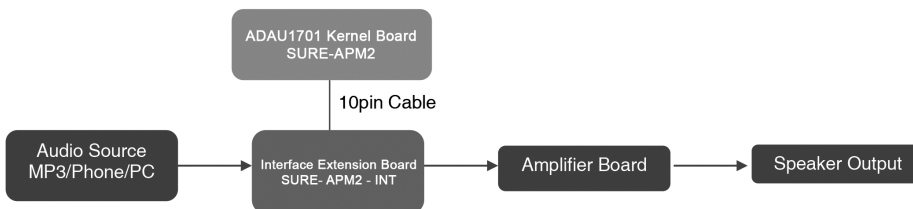
ADAU1701 Digital Signal Processor - SURE-APM2



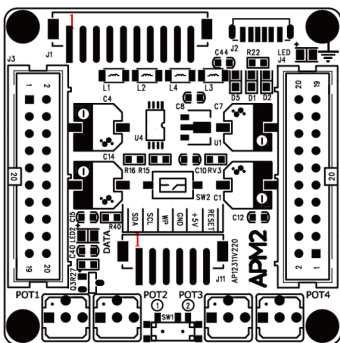
Interface Extension Board - SURE- APM2 - INT

Dimensions : Inches (Millimetres)

Minimum System



Pin Definition SURE-APM2



Power Supply Connector

J2
5V USB Type-C

Audio Extension Connector

J1 PH-10pos-2mm
For connection with SURE- APM2 - INT, the 10-pin cable comes with SURE- APM2 - INT.

Pin	Definition	Pin	Definition
1	AINL	6	OUTL1
2	SGND	7	OUTR2
3	AINR	8	OUTL2
4	+3.3V	9	GND
5	OUTR1	10	VIN

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Audio Processing Module Series

Digital Signal Processor Kernel Board



Programming Connector

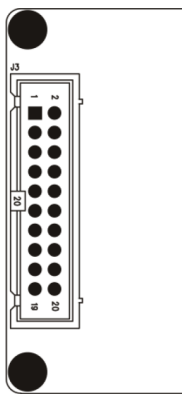
J11 PH-6pos-2mm

For connection with ICP programmer for programming or remote control, the 6-pin cable comes with ICP

Pin	Definition
1	SDA
2	SCL
3	WP
4	GND
5	+5V
6	RESET

Extension Port

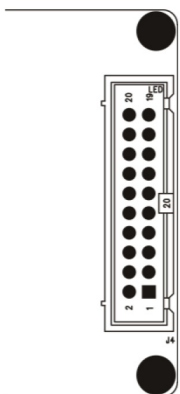
J3



Pin	Definition	Pin	Definition
AD0	Analog Audio Input 0	GND	Ground
AD1	Analog Audio Input 1	GND	Ground
SCL	I2C Clock	WB	EEPROM Write Back
SDA	I2C Data	WP	EEPROM Write Protection
RST	Reset (Active Low)	DAC0	Digital-to-Analog Converter 0
MP2	Multiple-Purpose Input & Output Pin, on APM2, these are used for potentiometer. (Refer to ADAU1701 data sheet for detailed information)	DAC1	Digital-to-Analog Converter 1
MP3		DAC2	Digital-to-Analog Converter 2
MP8		DAC3	Digital-to-Analog Converter 3
MP9		GND	Ground
DPW	Digital Power Output	+3.3V	Power Supply (Output)

Extension Port

J4



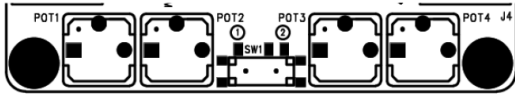
Pin	Definition	Pin	Definition
VIN	Other Power In	GND	Ground
MP4	Multiple-Purpose Input & Output Pin (Refer to ADAU1701 data sheet for detailed information)	GND	Ground
MP5		GND	Ground
MP1		GND	Ground
MP0		GND	Ground
MP7		GND	Ground
MP6		GND	Ground
MP10		GND	Ground
MP11		GND	Ground
MCLK		GND	Ground



Audio Processing Module Series

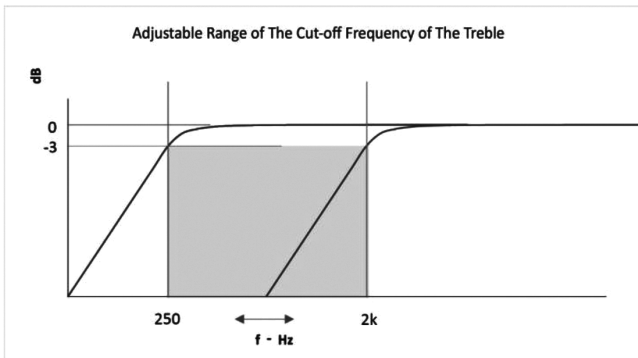
Digital Signal Processor Kernel Board

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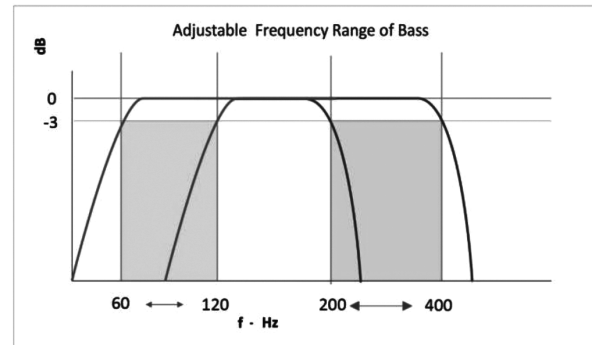


- POT1: Bass Gain
- POT2: Cut-off Frequency of Bass
- POT3: Cut-off Frequency of Treble
- POT4: Overall Gain

The adjustment range of the reset frequency



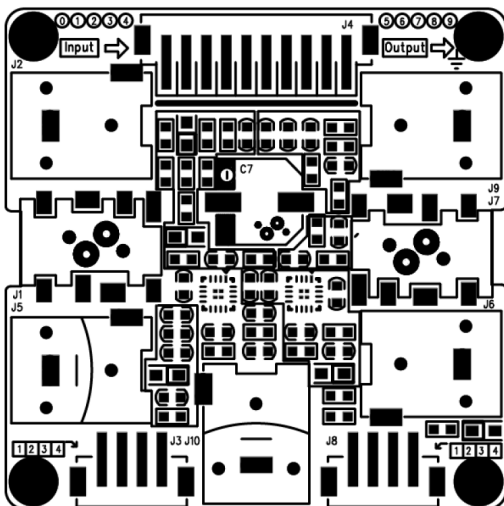
The adjustable cut-off frequency of treble: 250Hz-2kHz



■ Adjustable Range of Lower Frequency of Bass ■ Adjustable Range of Upper Frequency of Bass

The adjustable lower cut-off frequency of bass: 60Hz-120Hz
 The adjustable upper cut-off frequency of bass: 200Hz-400Hz

Pin Definition SURE- APM2 - INT



Audio Input Connector

- J1 3.5mm AUX IN
- J2, J5 RCA Jack
- J3 PH-4pos-2mm Line Input

Pin	Definition
1	INL
2	GND
3	GND
4	INR

Note: The three input methods cannot be used at the same time

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Digital Signal Processor Kernel Board



Audio Output Connector

J7 3.5mm Headphone Output

J6, J9 RCA Output

J10 RCA for Subwoofer Output

J8 PH-4pos-2mm Line Output

Pin	Definition
1	INL
2	GND
3	GND
4	INR

Connection Connector

J4

Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition
1	AINL	3	AINR	5	OUTR1	7	OUTR2	9	GND
2	AGND	4	+3.3V	6	OUTL1	8	OUTL2	10	VIN

Part Number Table

Description	Part Number
2 × In, 4 × Out Audio Digital Signal Processor Kernal Board - ADAU1701	SURE-APM2
2 × In, 3 × Out Digital Signal Processor Extension Board	SURE-APM2 - INT

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