



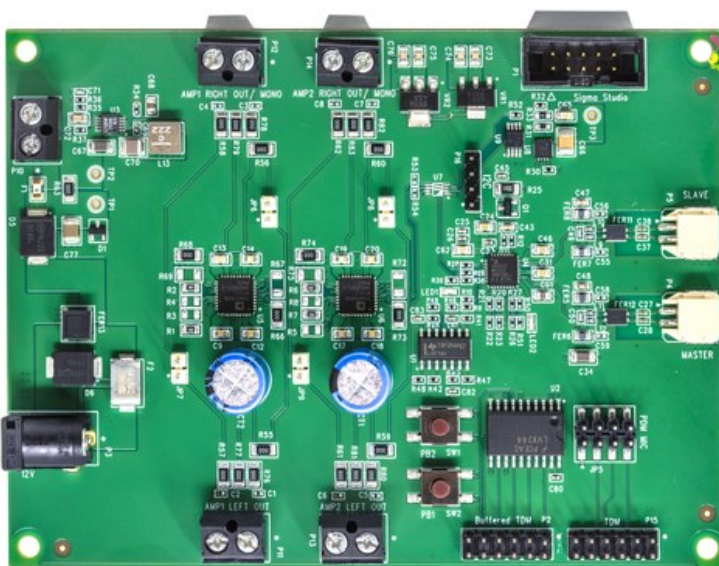
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The [Previously approved version](#) (18 Jan 2019 20:48) is available. 🇬🇧

A2B Class-D Amplifier Module for SHARC Audio Module

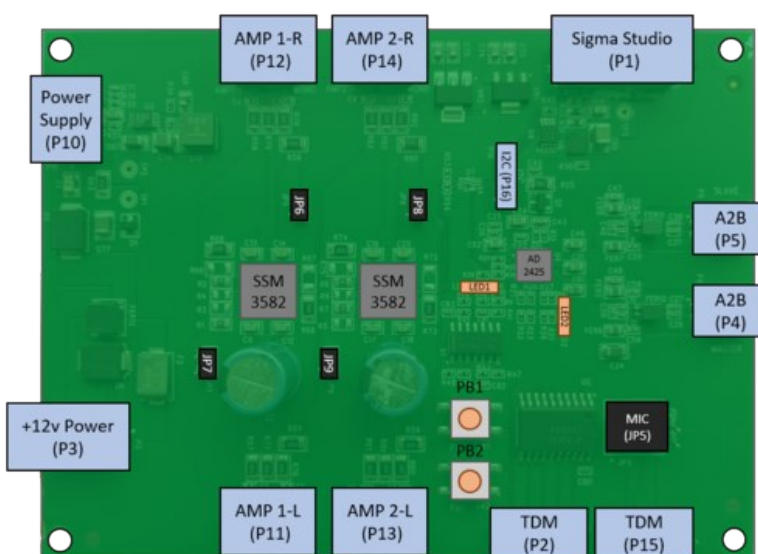
The [SHARC Audio Module](#) A² B Class-D Amplifier Module is an [A2B](#) connected board that contains two Class-D [SSM3582](#) amplifier ICs, providing 4 channels of audio output.

Table of Contents

- ♦ [A2B Class-D Amplifier Module for SHARC Audio Module](#)
- ♦ [Schematics, PCB Layout, Bill of Materials](#)
- ♦ [Automotive Audio Bus \(A2B\) Interface Duraclick \(P4, P5\)](#)
- ♦ [SSM3582 Class-D Amplifier](#)
- ♦ [USBi Connector for SigmaStudio \(P1\)](#)
- ♦ [+12v Input Power Jack \(P3\)](#)
- ♦ [Power Supply Input \(P10\)](#)
- ♦ [Pushbuttons \(PB1, PB2\)](#)
- ♦ [GPIO LEDs \(LED1, LED2\)](#)
- ♦ [PDM/TDM Connectors](#)
- ♦ [EEPROM](#)



The A² B Class-D Amplifier Module



Block Diagram of the A² B Class-D Amplifier Module

Schematics, PCB Layout, Bill of Materials

SHARC Audio Module A² B Class-D Amplifier Module Design and Integration Files



- [Schematics](#)
- [Bill of Materials \(Coming Soon\)](#)

Automotive Audio Bus (A2B) Interface Duraclick (P4, P5)

The A² B bus uses crossover cables to connect nodes to each other. **P4** connects to upstream towards the Master Node in the network and **P5** connects downstream to the next slave in the network.

The A² B Class-D Amplifier Module uses the  **AD2428W** IC.

SSM3582 Class-D Amplifier

There are two **ADI**  **SSM3582** Class-D amplifiers on the A² B Class-D Amplifier Module. Each is two channels.

At 16V, the max power per channel is ~24w of power.

P11 AMP1 Left Channel Output

1	Positive
2	Negative

P12 AMP1 Right Channel Output/MONO

1	Positive
2	Negative

P13 AMP2 Left Channel Output



1	Positive
2	Negative

P14 AMP2 Right Channel Output/MONO

1	Positive
2	Negative

Populate **JP6** & **JP7** to configure AMP1 into MONO Output on **P12** . Populate **JP8** & **JP9** to configure AMP2 into MONO Output on **P14** .

USBi Connector for SigmaStudio (P1)

The USBi Connector on the  **SHARC Audio Module** allows for the use of the USBi adapter for  **SigmaStudio** and bare metal programming.

+12v Input Power Jack (P3)

The A² B Class-D Amplifier Module is designed to run off a 12v to 16v supply. A 12v 2A DC power supply is included in the kit. The barrel connector on the A² B Class-D Amplifier Module can handle up to 3A current.

Power Supply Input (P10)

P10 is a power supply input jack to connect up to 16v @ 8A MAX. There is an 8A fuse on the Positive input of the P10 connector.

Pushbuttons (PB1, PB2)

Two **GPIO** pushbuttons are provided on the A² B Class-D Amplifier Module. They are connected as follows:

- **PB1** is connected to **I01** on **AD2425W**
- **PB2** is connected to **I02** on **AD2425W**

GPIO LEDs (LED1, LED2)

There are two **GPIO**-controlled LEDs on the A² B Class-D Amplifier Module. They are connected as follows:

- **LED1** is connected to **IO0** on the **AD2425W**
- **LED2** is connected to **IO7** on the **AD2425W**

PDM/TDM Connectors

JP5 PDM MIC

3.3v	1	2	GND
DRX0	3	4	GND
DRX1	5	6	GND
BLCK	7	8	GND

P2 Buffered TDM Signals

B_DTX0	1	2	GND
B_DTX1	3	4	GND
B_DRX0	5	6	GND
B_DRX1	7	8	GND
B_FSYNC	9	10	GND
B_BLACK	11	12	GND

P15 Unbuffered TDM Signals

DTX0	1	2	GND
DTX1	3	4	GND
DRX0	5	6	GND
DRX1	7	8	GND
FSYNC	9	10	GND
BLCK	11	12	GND

EEPROM

The A² B Class-D Amplifier Module has a TWI 256k EEPROM for configuration data. The EEPROM used is the  [24FC256I/MS](#).

Navigation - SHARC Audio Module

Prev.: [Audio Project Fin](#)

Up: [Hardware Reference](#)

Next.: [Faust and the SHARC Audio Module](#)