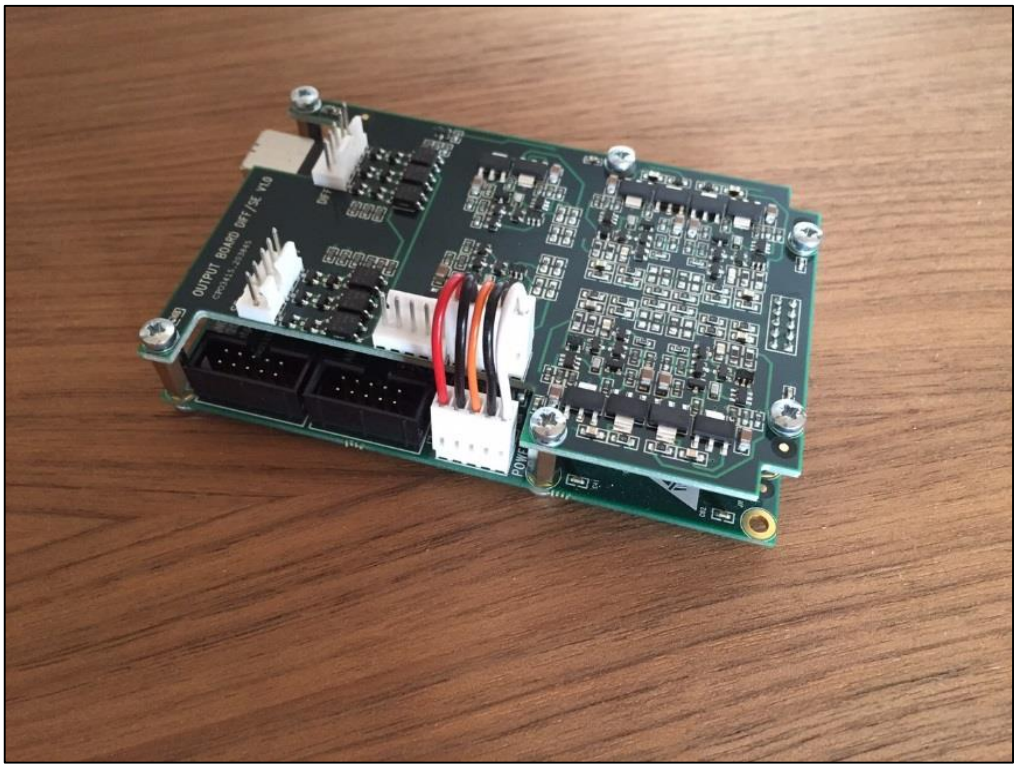


MIRAND Discrete output shield manual.

Content

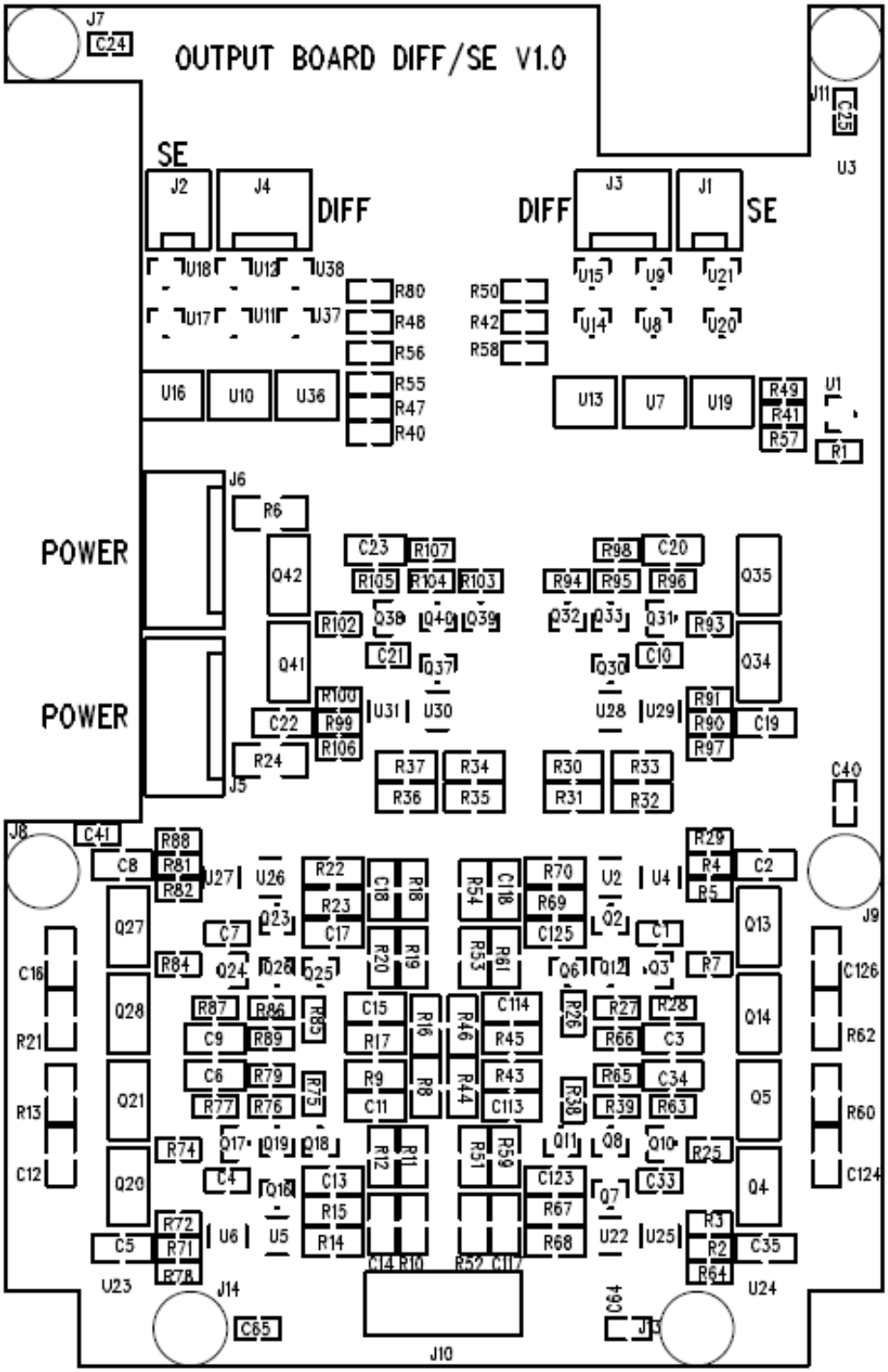
General description

This output shield is made especially for the MIRAND Audio AK4490 USB Audio DAC, but it can be used for all dacs's having a voltage output, preferable differential out.

The module is completely discrete and all stages runs in Class A. All outputs are Singleended class A equal to the frontend opamp on TSSA V2/V4/V8 control board

Key specifications

- Supply voltage : +/-15VDC
- DC offset: <20mV dc
- Single ended and balanced output.
- Gain from balanced input to output : +6dB
- Input impedance : 3.24Kohm per diff input
- Discrete SSR for transparent mute circuit.
- Size (WxLxH): 71x110x20mm (With molex connector)



Discrete output shield module V1.0

Power rerouting connector for AK4490 DAC.

PIN	Function	Description	Type
J5-1	+5.5V – +7V	Digital power supply	Input
J5-2	Digital GND	Digital GND for DAC	Input
J5-3	+15V	Analog supply	Input
J5-4	Analog GND	Analog GND for DAC	Input
J5-5	-15V	Analog supply	Input

Table 1: Power input connector Specification

The short jumper cable is to connect between J5 on the discrete output stage and J7 on the DAC mainboard.

Power input for discrete output stage and for AK4490 DAC

PIN	Function	Description	Type
J6-1	+5.5V – +7V	Digital power supply	Input
J6-2	Digital GND	Digital GND for DAC	Input
J6-3	+15V	Analog supply	Input
J6-4	Analog GND	Analog GND for DAC	Input
J6-5	-15V	Analog supply	Input

Table 2: Power input connector Specification

If the Discrete output is not to be used with MIRAND AK4490 USB Audio DAC, mount 0R 1206 SMT resistors on position. R6, R24.

SE Output Right.

PIN	Function	Description	Type
J1-1	Right output	Right output singleended	Output
J1-2	Signal GND	SE Signal GND	Output

Table 3: SE output right

SE Output Left.

PIN	Function	Description	Type
J2-1	Left output	Left output singleended	Output
J2-2	Signal GND	SE Signal GND	Output

Table 4: SE output left

DIFF Output Right.

PIN	Function	Description	Type
J3-1	Right output+	Right output positive	Output
J3-2	Signal GND	DIFF Signal GND	Output
J3-3	Right output-	Right output negative	Output

Table 5: DIFF output right

DIFF Output Left.

PIN	Function	Description	Type
J4-1	Left output+	Left output positive	Output
J4-2	Signal GND	DIFF Signal GND	Output
J4-3	Left output-	Left output negative	Output

Table 6: DIFF output left

Output board connector – J10

10 pol dual line header 2x5 , 2.54mm pitch			
PIN	Function	Description	Type
1	Right out +	Right balanced positive	Output
2	+14V	Not used	Power
3	Right out -	Right balanced negative	Output
4	/MUTE_OUT	MUTE_OUT - active low	+3.3V Logic output
5	GND	GND output stage	Power
6	DSD/PCM	Not used	+3.3V Logic output
7	Left out -	Left balanced negative	Output
8	+5.5V	Not used	Power
9	Left out +	Left balanced positive	Output
10	-14V	Not used	Power

Table 7: Output board connector Specification

Note: Remember to connect pin 4 (/MUTE_OUT) to +3 - +15VDC to enable output

Cabling notes.

Always use shielded or at least twist the cables to reduce coupling as much as possible between the wires.
Use up to 22AWG wire

Remember pin 1 on connector is the square pad on the PCB.

Ordering information

Part number: Mirand AK4490 USB Audio DAC discrete output shield V1.0

Contact information

Mirand Audio
Kroggårdvej 12
DK-5270, Odense N
Denmark
Mail to: mail@mirand-audio.dk