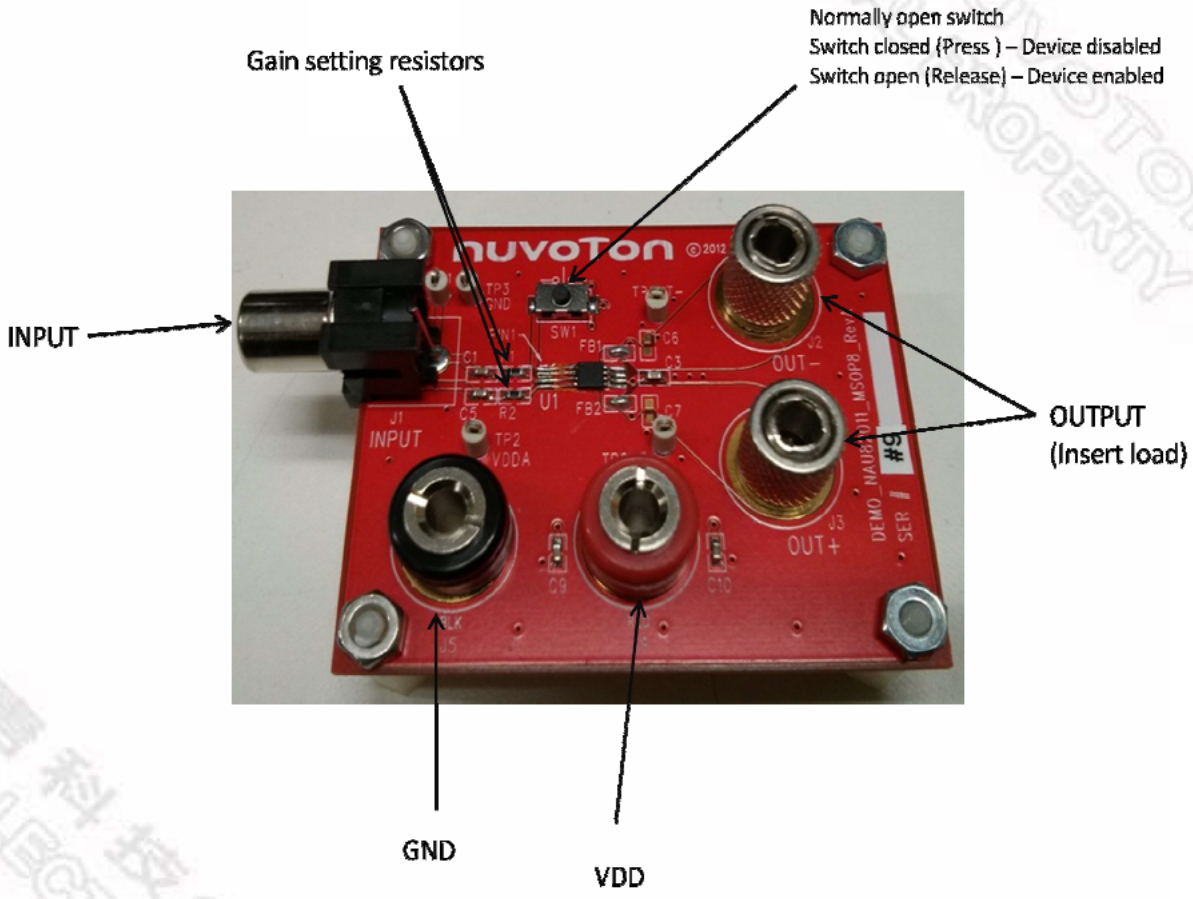
NAU82011WG Evaluation Board User Manual



1. General Description

The NAU82011WG is a mono high efficiency filter-free Class-D audio amplifier with variable gain, which is capable of driving a 4Ω load with up to 2.9 W output power. This device provides chip enable pin with extremely low standby current and fast start-up time. The ability to configure with either single-ended or differential inputs is included. The NAU82011WG has advanced features like 100dB SNR, 91% efficiency and low quiescent current. The NAU82011WG is ideal for the portable applications of battery drive.

2. EVB Set Up



Power Connection

An external DC Voltage supply with a compliance of at least 2 Amperes should be connected to VDD & GND.

Gain Setting

NAU82011WG is a variable gain amplifier. The gain can be varied by varying the external input resistors(R1). The device has an on chip feedback resistor of 300kΩ. The gain is expressed as follows

$$Gain = \frac{300\ k\Omega}{R1\ k\Omega}\left(\frac{V}{V}\right) \qquad Gain\ (dB) = 20\log\frac{300\ k\Omega}{R1\ k\Omega}$$

The Evaluation board comes with 150kΩ resistors or a Gain of 6dB.

Input Connection

The default input configuration is single ended mode. If differential configuration is desired then, the 0 ohm resistor R3 needs to be removed. If Audio Precision Analyzer is used as input source, Unbalanced inputs are to be selected for single ended operation or Balanced inputs for differential mode.

Output Connection

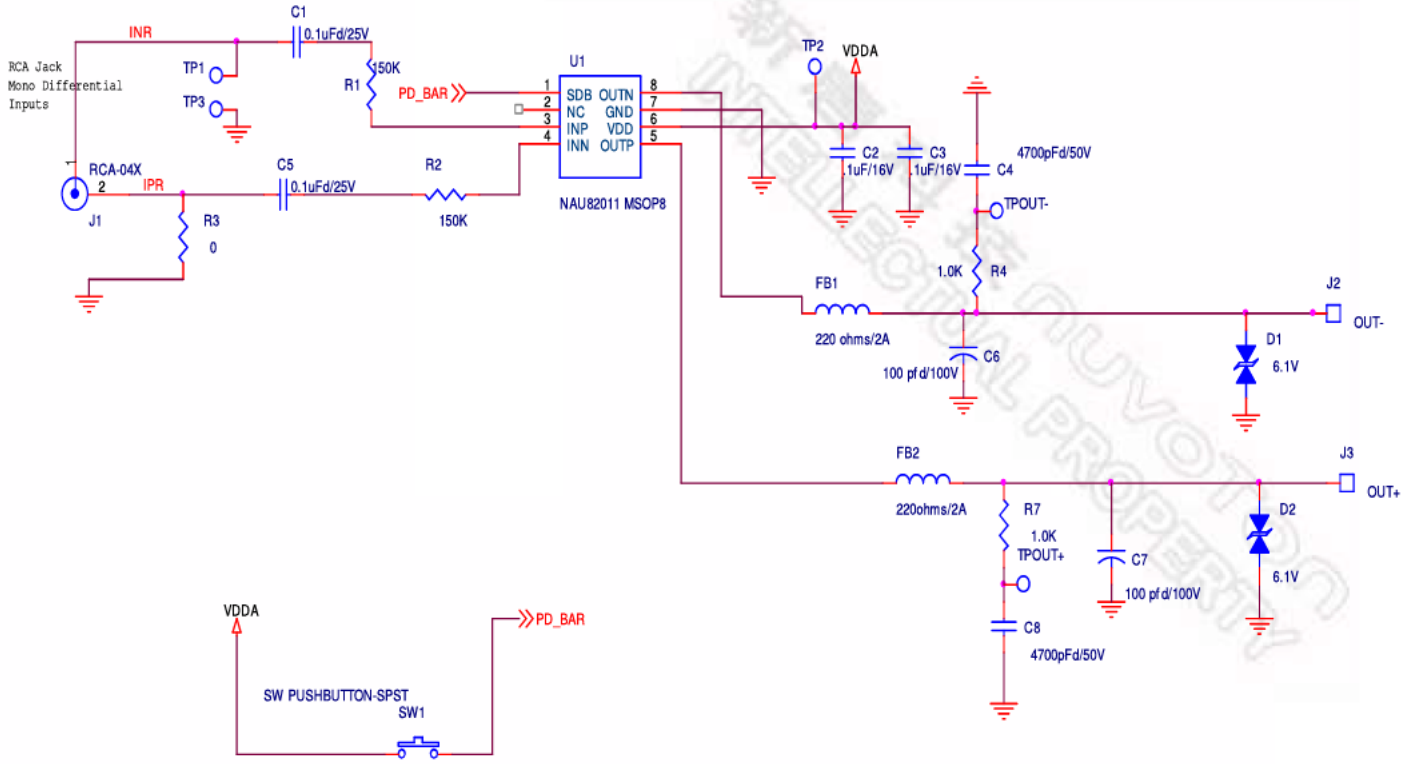
An 8 ohm 68uH load should be connected on the output channel (J3- J2). Connect the outputs to the inputs of the Audio Precision Analyzer (Balanced) via the AP0025 Aux Filter.

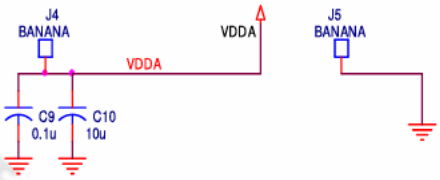
Power Up

For optimum performance the board should be power up with in switch closed state. Once the power is applied switch must be released to power up the board. Then, the input signal can be applied.

Important note:
When using a power supply, it is recommended to use a 330µF capacitor across the power pins to suppress any supply glitches, as a safety measure. When a battery is used, the capacitor is not required. In normal applications too, the capacitor is not required.

3. Schematic:


C1
0.1uFd/25V
INR
RCA Jack
Mono Differential
Inputs
TP1
TP3
R1
150K
PD_BAR
U1
SDB OUTN
NC GND
INP VDD
INN OUTP
NAU82011 MSOP8
TP2
VDDA
C2
1uF/16V
C3
1uF/16V
C4
4700pFd/50V
TPOUT-
RCA-04X
J1
IPR
C5
0.1uFd/25V
R2
150K
R3
0
1.0K
R4
FB1
220 ohms/2A
C6
100 pf d/100V
J2
OUT-
D1
6.1V
FB2
220ohms/2A
J3
OUT+
R7
1.0K
TPOUT+
C7
100 pf d/100V
D2
6.1V
C8
4700pFd/50V
VDDA
PD_BAR
SW PUSHBUTTON-SPST
SW1


J4
BANANA
VDDA
VDDA
J5
BANANA
C9
0.1u
C10
10u