NAU88L21 Demo Board User Manual

The PCB name: NAU88L21_CEVB_Ver:D

Ordering P/N: NL-NAU88L21

For additional information or questions, please contact: Nuvoton Technology Corporation.

www.nuvoton.com

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1 OVERVIEW

The NAU88L21 is an ultra-low power high performance audio codec that supports both analog and digital audio functions. It includes one I2S/PCM interface, one digital microphone interface, one digital mixer, two high quality DACs and ADC's, and one stereo class G headphone amplifier.

2 INTRODUCTION

The DEMO_NAU88L21_QFN system is designed to allow a thorough evaluation of the audio codec.

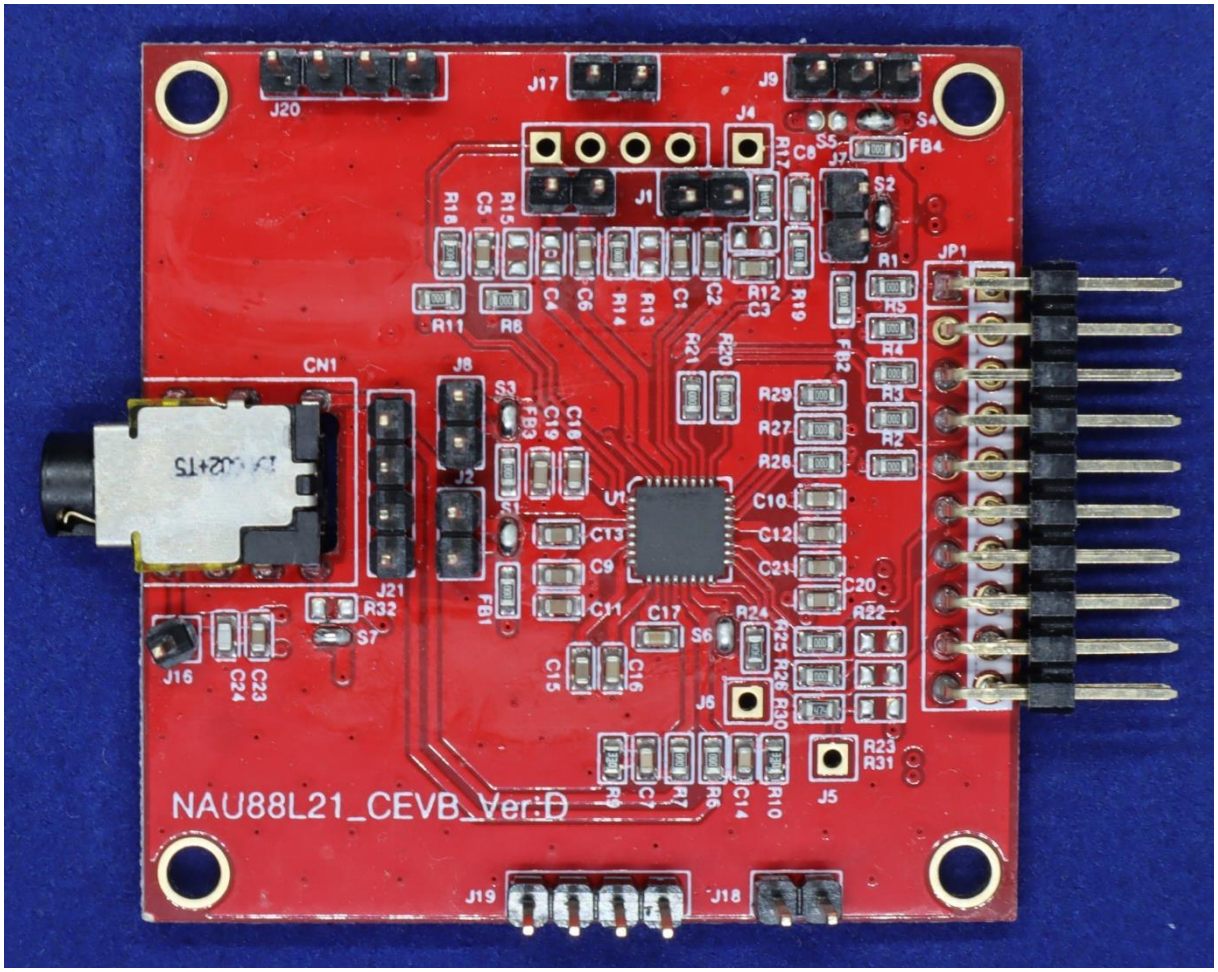


Figure 2-1 NAU88L21 Demo Board

2.1 Top View

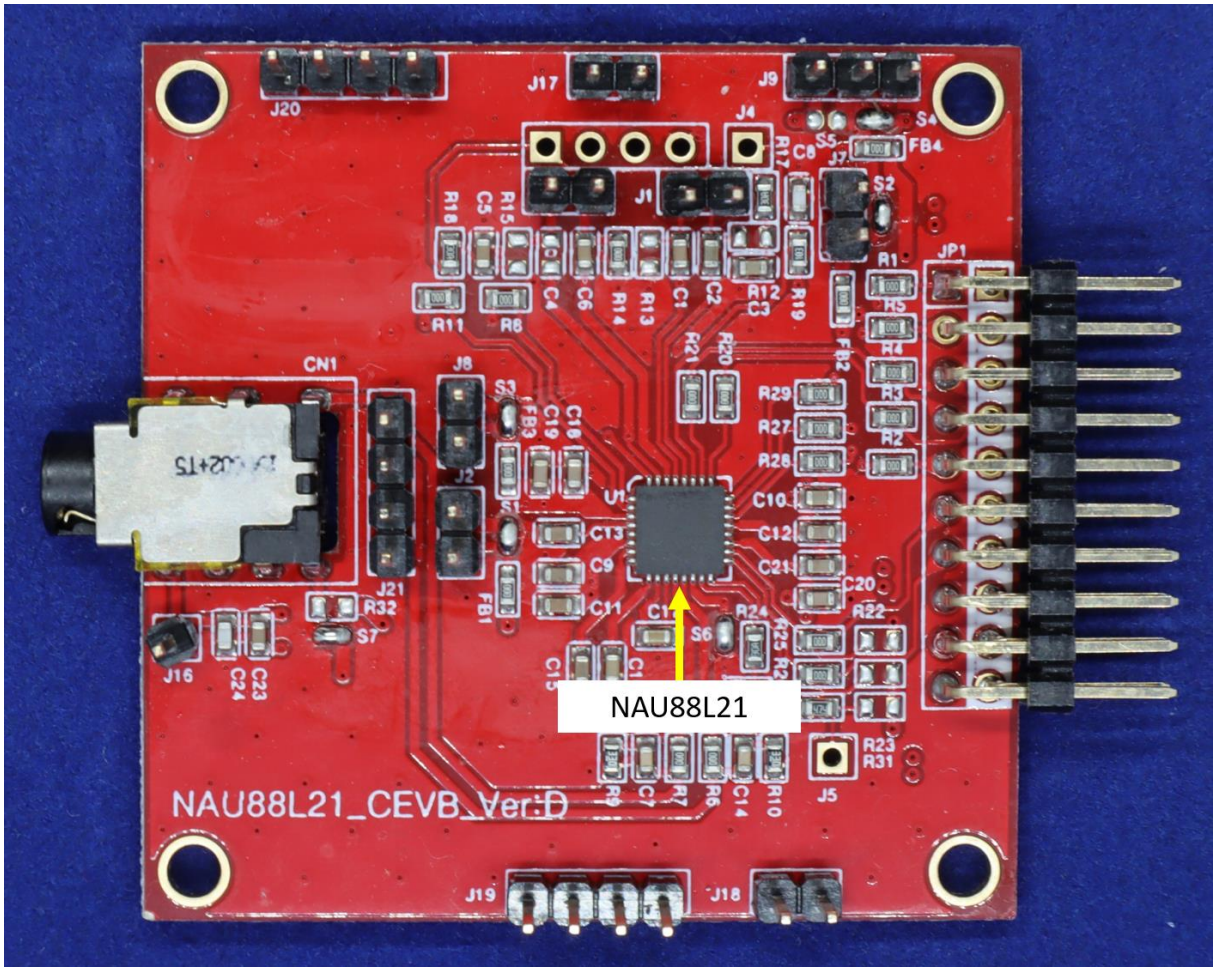


Figure 2.1-1 Top View

Name	Description
NAU88L21	Audio CODEC

Table 2.1-1 Main Components

2.2 Input / Output

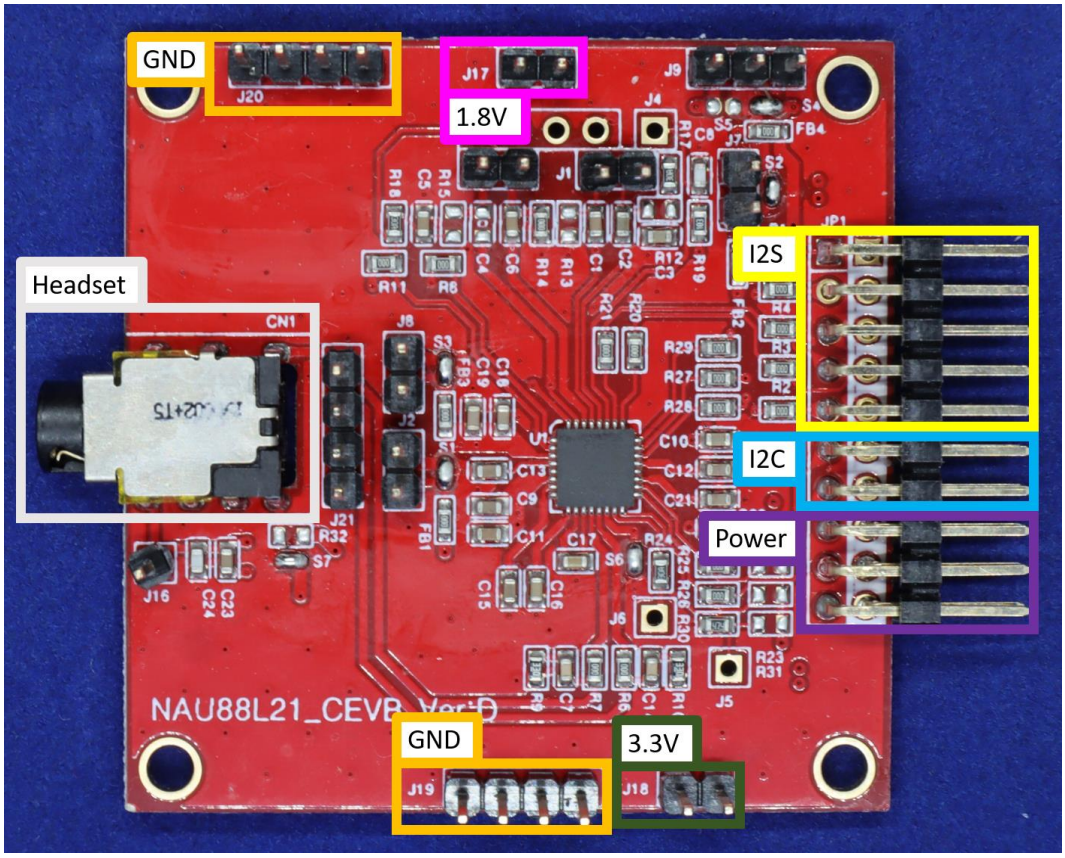


Figure 2.2-1 Input / Output

Name	Description
JP1	Pin 1 – I2S Interface – MCLK, Master Clock Pin 3 – I2S Interface – BCLK, Bit Clock Pin 5 – I2S Interface – DACIN Pin 7 – I2S Interface – ADCOUT Pin 9 – I2S Interface – FS ,Frame Sync Pin 11 – I2C Interface – SDA Pin 13 – I2C Interface – SCL Pin15 – Power. Provide power to Demo board. – VDDIO Pin 17 – Power. Provide power to Demo board. – VDD1.8 Pin 19 – Power. Provide power to Demo board. – VDD3.3
J17 - J20	Power. These pins can also provide the power to demo board. J17 - J20 or JP1 select one of them.
CN1	Headset connector.

Table 2.2-1 Input / Output

2.3 Jumpers

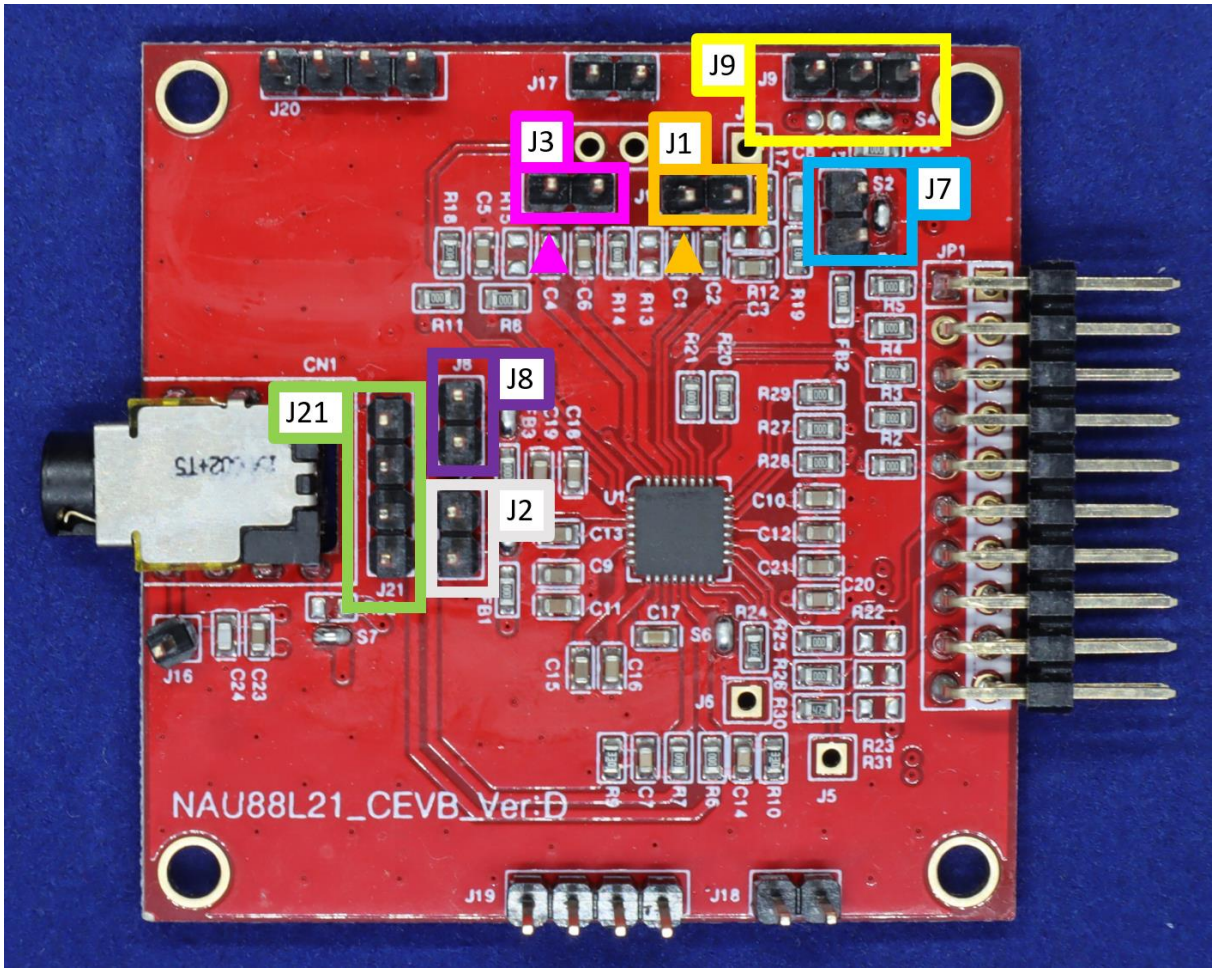
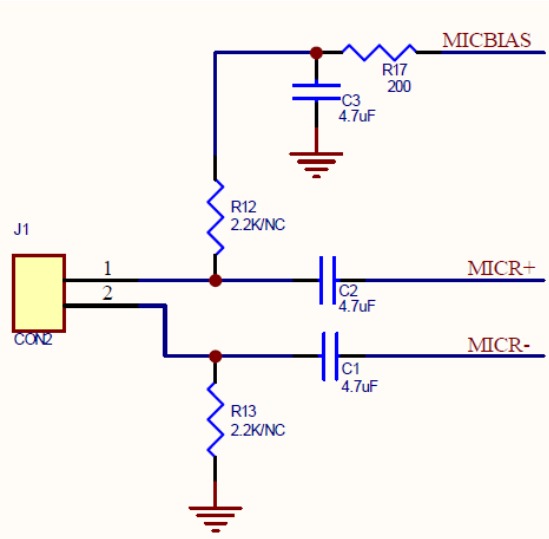
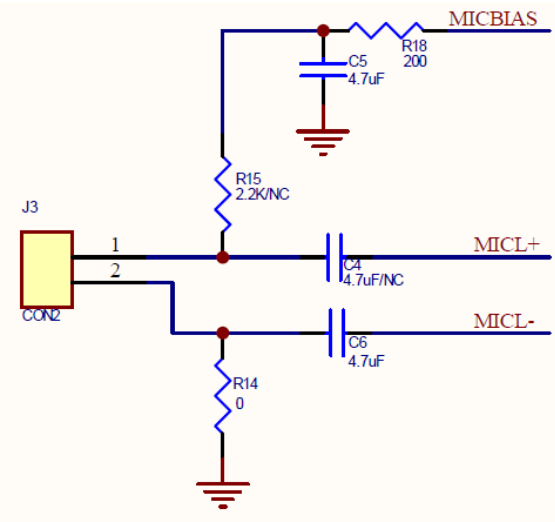
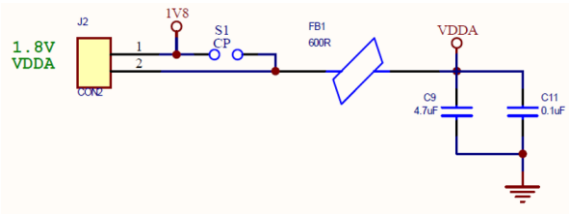


Figure 2.3-1 Jumpers

Name	Pin definition	Description
J1	Analog mic right channel input	 Default R12 = NC R13 = NC

<table>
<tr>
<td>J3</td>
<td>Analog mic left channel input</td>
<td> 

Default
R14 = 0
R15 = NC
C4 = NC</td>
</tr>
<tr>
<td>J2</td>
<td>VDDA power source selection</td>
<td> 

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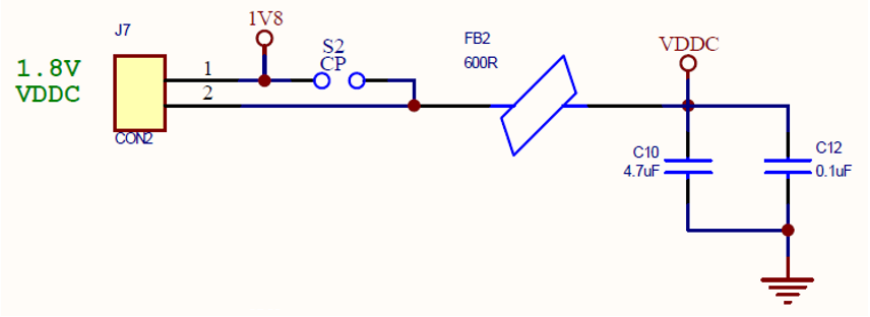
<tr><td>S1</td><td>Short(default)</td><td>Open</td></tr>
<tr><td></td><td>Using power from JP1</td><td>Using power from J2</td></tr>
</table></td>
</tr>
<tr>
<td>J7</td>
<td>VDDC power source selection</td>
<td> 

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<tr><td>S2</td><td>Short(default)</td><td>Open</td></tr>
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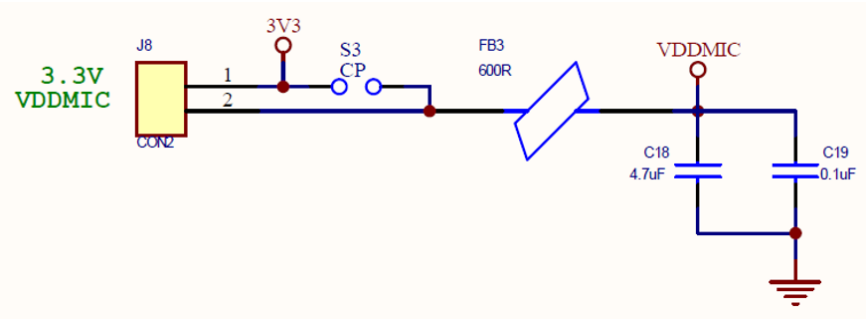
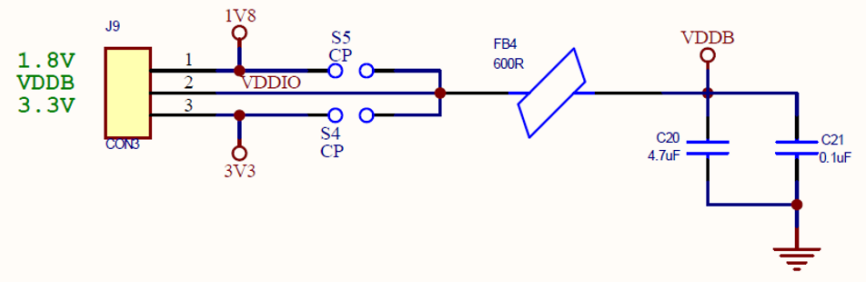
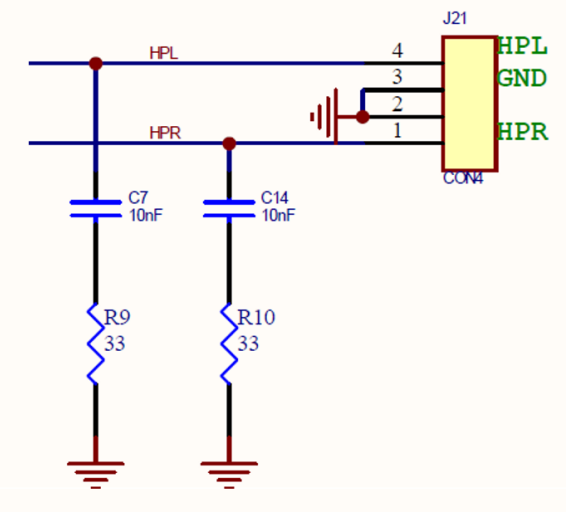
</table>

<table>
<tr>
<td>J8</td>
<td>VDDMIC power source selection</td>
<td>


<table>
<tr><td>S3</td><td>Short(default)</td><td>Open</td></tr>
<tr><td></td><td>Using power from JP1</td><td>Using power from J8</td></tr>
</table>
</td>
</tr>
<tr>
<td>J9</td>
<td>VDDB power source selection</td>
<td>


<table>
<tr><td>S4</td><td>S5</td><td>Result</td></tr>
<tr><td>Short (default)</td><td>Open (default)</td><td>Using 3.3V from JP1</td></tr>
<tr><td>Open</td><td>Short</td><td>Using 1.8V from JP1</td></tr>
<tr><td>Open</td><td>Open</td><td>Using power from J9</td></tr>
</table>
</td>
</tr>
<tr>
<td>J21</td>
<td>Output signal pin headers.</td>
<td>


</td>
</tr>
</table>

Table 2.3-1 Jumpers

2.4 Schematic

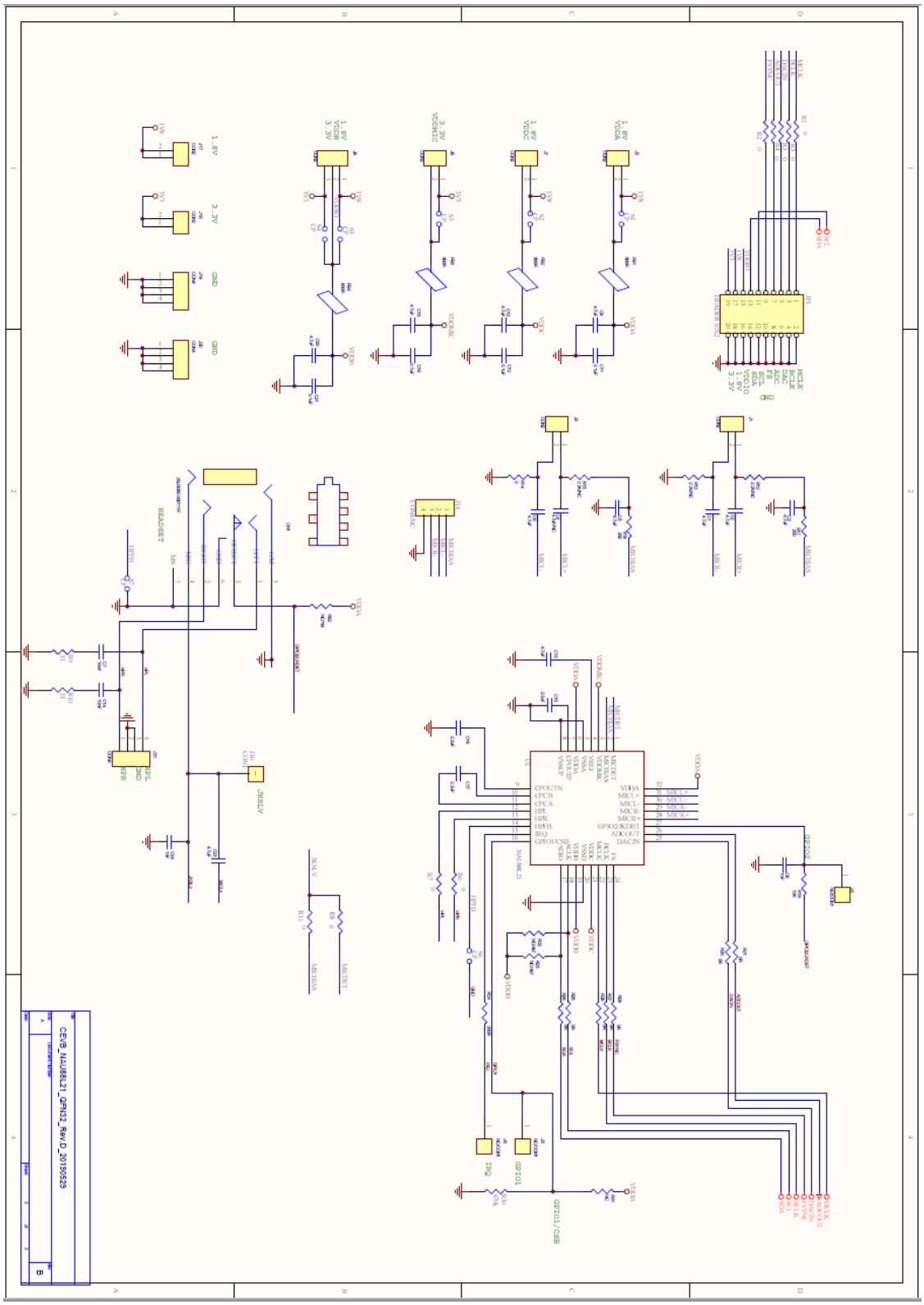


Figure 2.4-1 Schematic

2.5 Bare Board

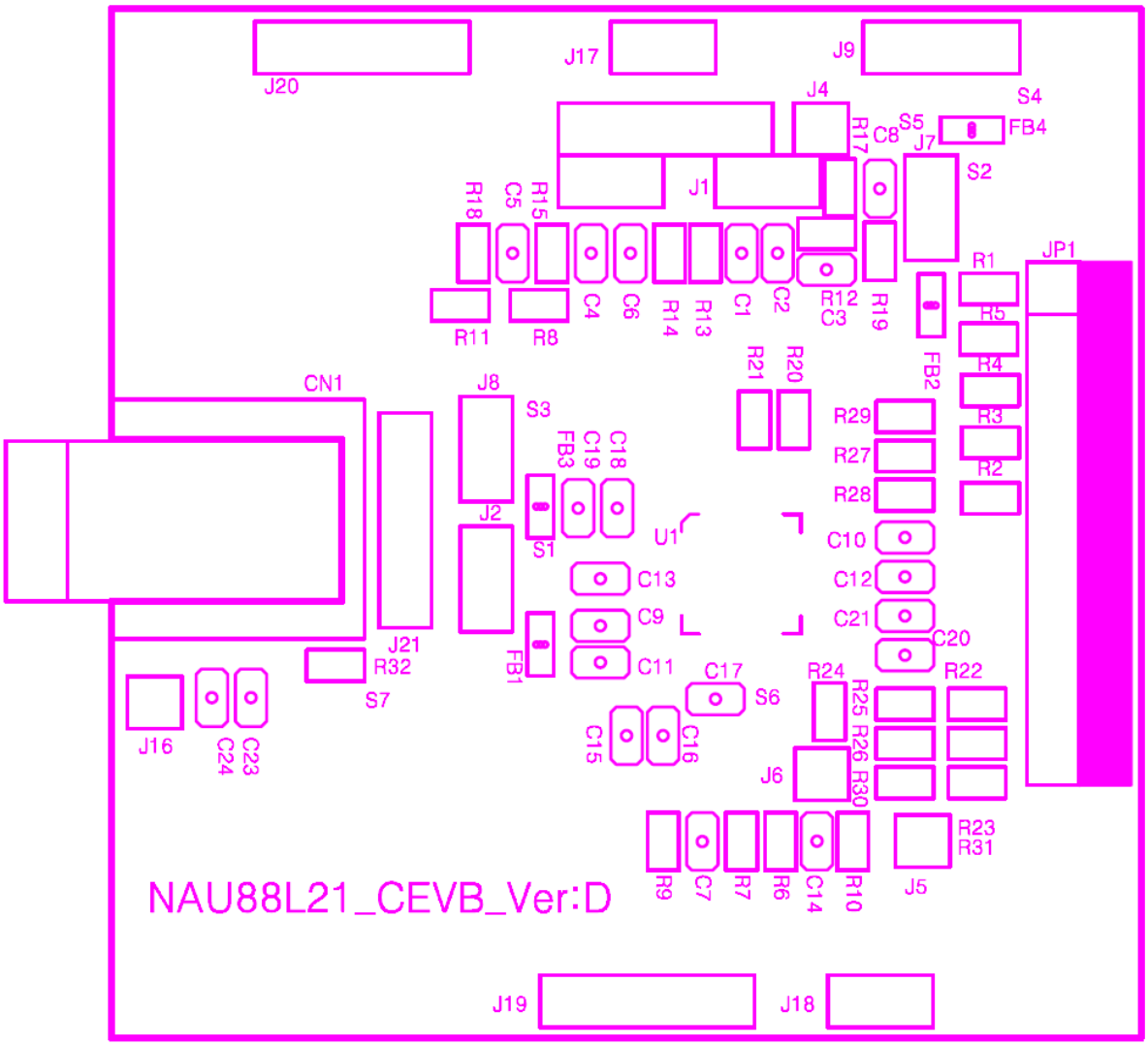


Figure 2.5-1 Top View of Bare Board

3 CONNECTED TO AUDIO CONTROL BOARD

If there is Nuvoton's Audio Control Board, NAU88L21 Demo Board can be used with Audio Control Board (USB_I2C_I2S_Control_Board_V1.1). When the Audio Control Board is connected to the NAU88L21 Demo Board, the PC or USB host can use the GUI to control the NAU88L21 Demo Board and know the status of the NAU88L21 Demo Board.

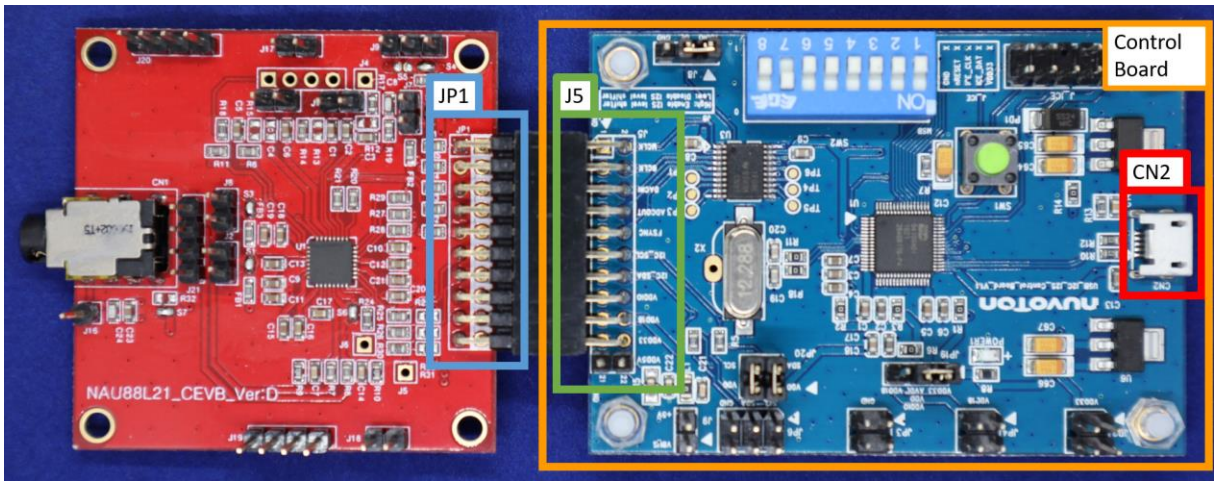


Figure 3-1 Connection Audio Control Board

Signal path:

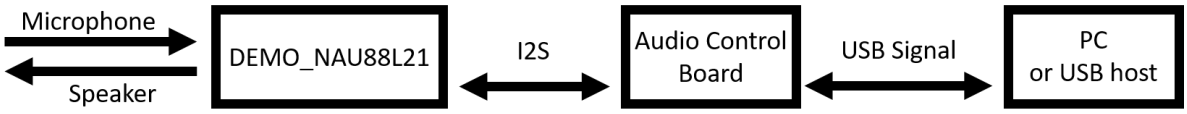


Figure 3-2 Signal Path

Board setting SOP:

Reference Figure 3-1

Step1: Connect JP1 of the NAU88L21 Demo Board to J5 of the Audio Control Board.

Step2: Connect CN2 of the Audio Control Board to PC or USB host via USB cable.

4 REVISION HISTORY

Date	Revision	Description
2021.02.23	1.0	1st version release

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