Telink

Soundbar 6p1 EVB User Guide

TLSR9517C+TLSC9805A

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2021-11-29

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1. Product introduction

- **1.1 General introduction**
  - This document introduces TLSR9517C-Soundbar kit. This kit is suitable for verifying various Soundbar series solutions for 1p1/2p1/4p1/6p1 and other solution demos.
- **1.2 Kit material list**
  - The ordering name of TLSR9517C-Soundbar kit is TLSR9517CBAR56D. The materials in the kit are listed below:
    - 1x TLSR9517CBAR56D
    - 1x TLSR9 DEV KEY, including Dupont cable
    - 1x USB cable
    - 1x Whip antenna

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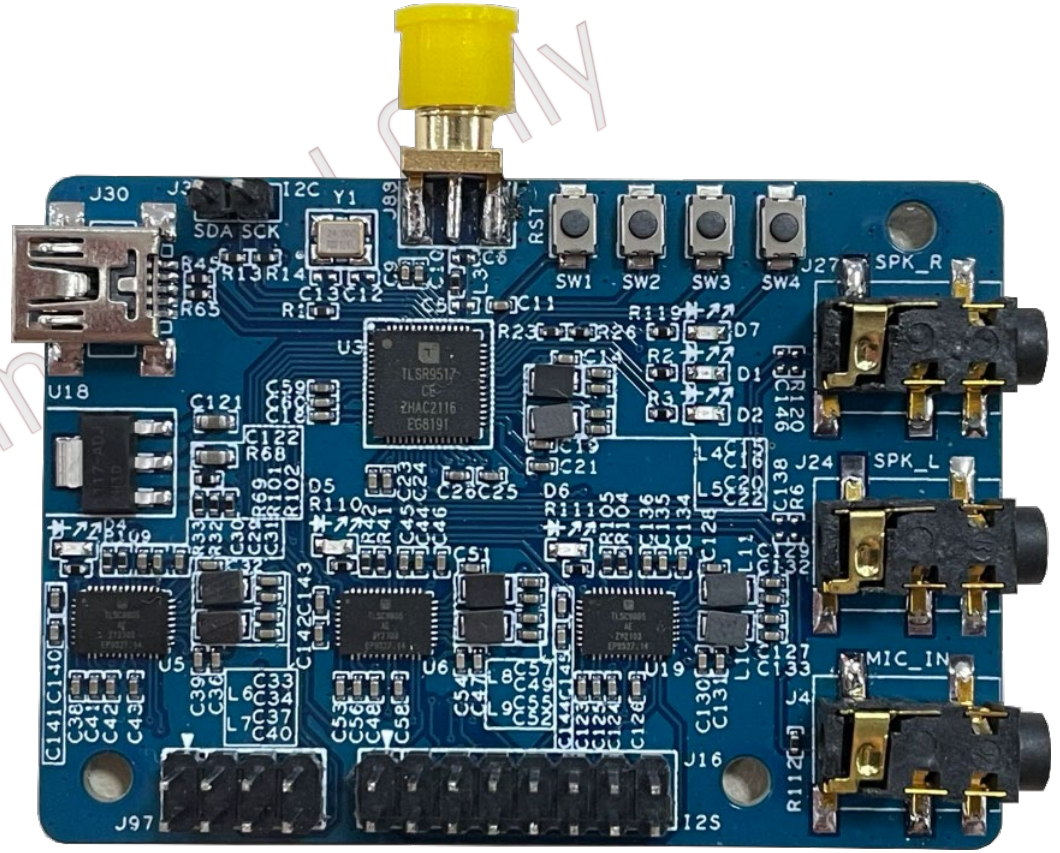
1. Product introduction – continued

- 1.2 Kit material list – continued



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2. EVB introduction

2.1.1 Soundbar 6p1 EVB introduction

- The Soundbar 6p1 EVB is a 6p1 audio development board based on the TLSR9517C as the master chip and three TLSC9805A as the slave chips. This EVB has the following features:
  - Integrated 32-bit RISC-V MCU;
  - Supports 6.1 channel output;
  - Supports Line-in / Line-out test;
  - Supports I2S IN / I2S OUT test;
  - USB power supply for debug and test.

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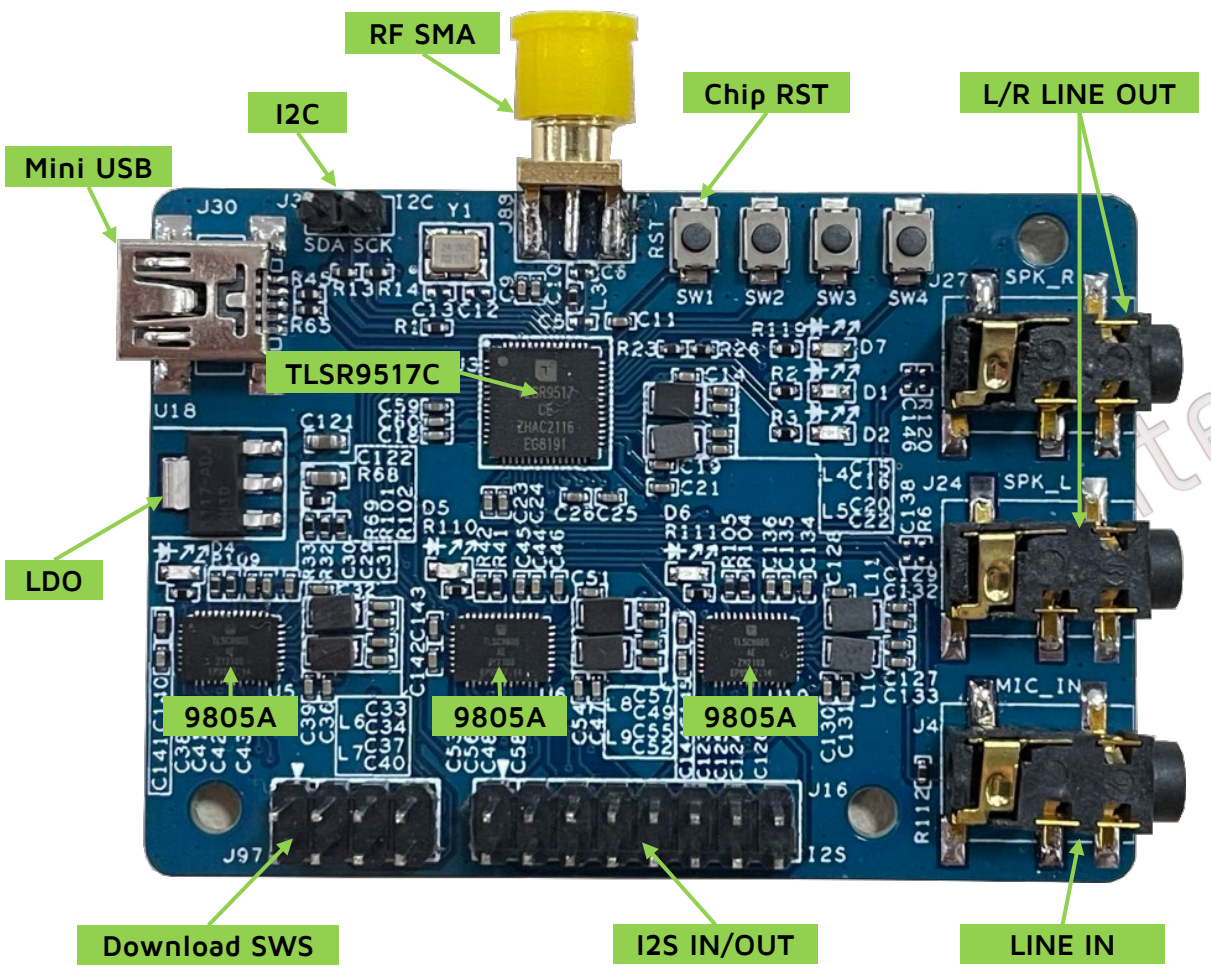
2. EVB introduction - continued



2. EVB introduction - continued

- **2.1.2 EVB name**
  - The ordering name of the Soundbar 6p1 EVB is TLSR9517CBAR56D, and customers submit their orders under this name.
  - The Soundbar 6p1 EVB has serial numbers on the board for version differentiation, the figure below shows the serial number of V1.1. The latest version of the Soundbar 6p1 EVB is V1.1.

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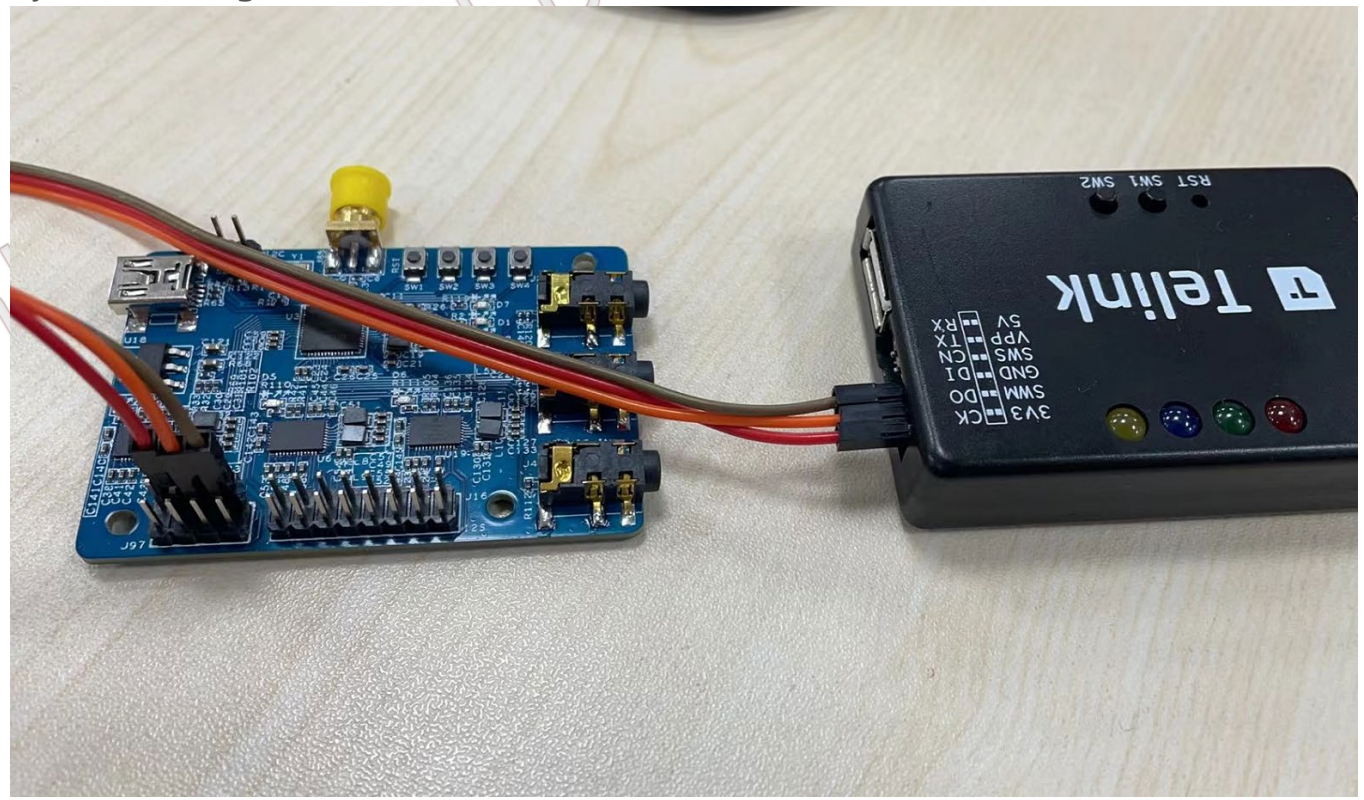
2. EVB introduction - continued

- **2.1.3 Download and Debug interfaces**
  - The Soundbar 6p1 EVB uses SWS for software burning, uses BDT tool with Burning-EVK for burning, with the following hardware connections:
  - PB2/PB3 are used as UTX/URX respectively for Debug or serial communication.

VBUS	VBAT	SWS	GND
GND	GND	PB3	PB2



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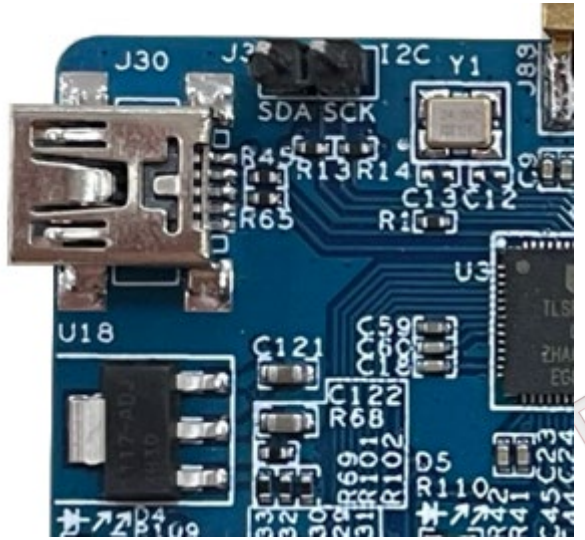
2. EVB introduction - continued

- **2.1.4 Power supply**
  - The Soundbar 6p1 EVB is powered by USB and is converted from 5V to 4.2V by the LDO on the board to power the whole system.



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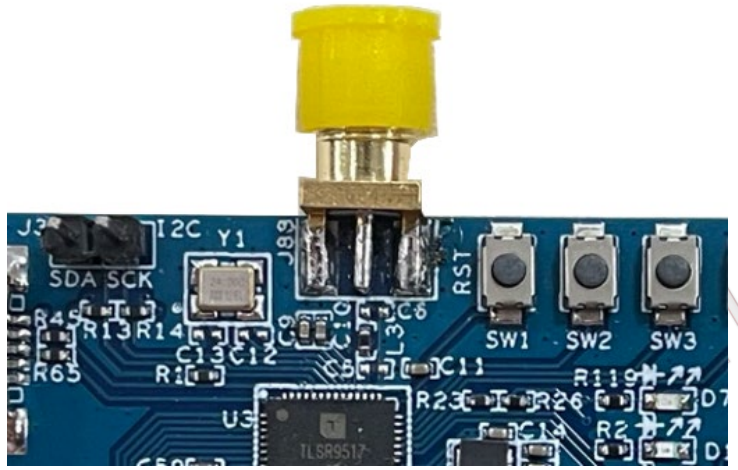
2. EVB introduction - continued

- **2.1.5 RF connector**
  - The RF connector of the Soundbar 6p1 EVB is a 3.5mm SMA connector. Therefor, it supports direct connection to the instrument for RF conducted test as well as the connection of a whip antenna for radiation test.



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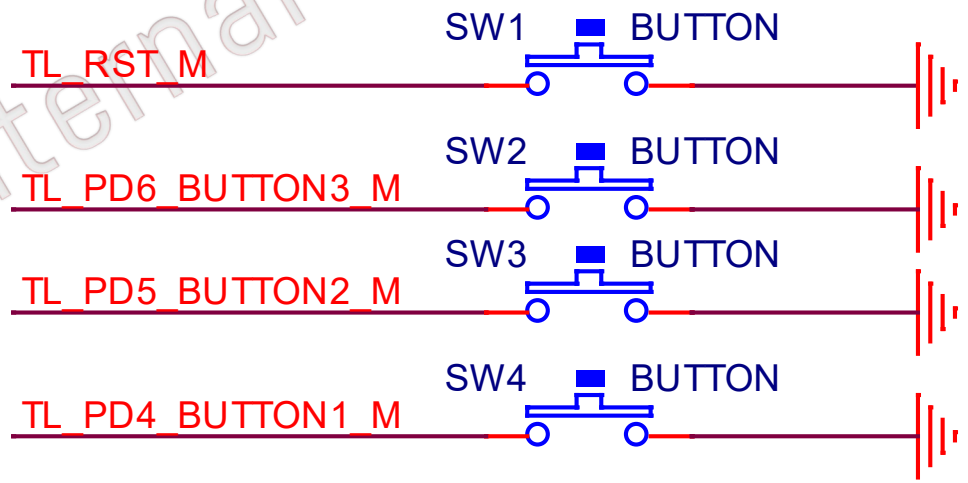
2. EVB introduction - continued

- **2.1.6 Buttons**
  - Considering users may use the reset function during demo development, the EVB is equipped with a reset button SW1;
  - It reserves three IO buttons for UI function design.



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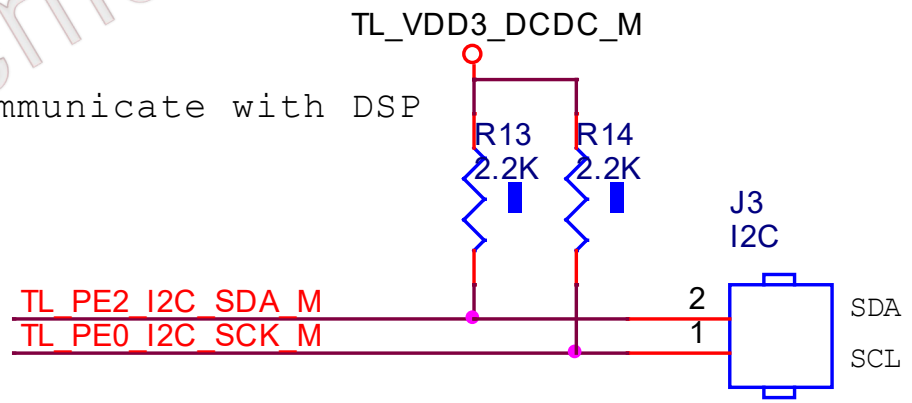
2. EVB introduction - continued

- **2.1.7 I2C interface**
  - The Soundbar 6p1 EVB has a reserved I2C interface to facilitate the interaction of some control information with the external DSP when doing a specific solution.



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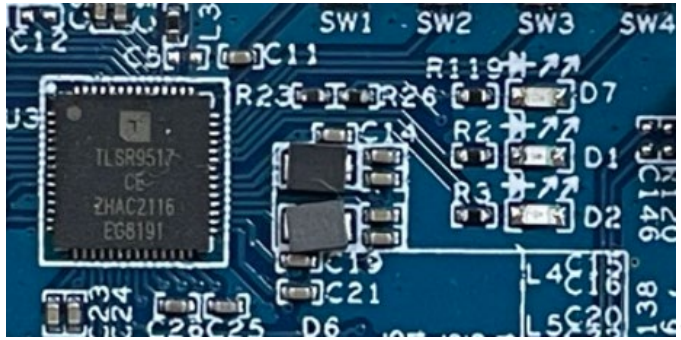
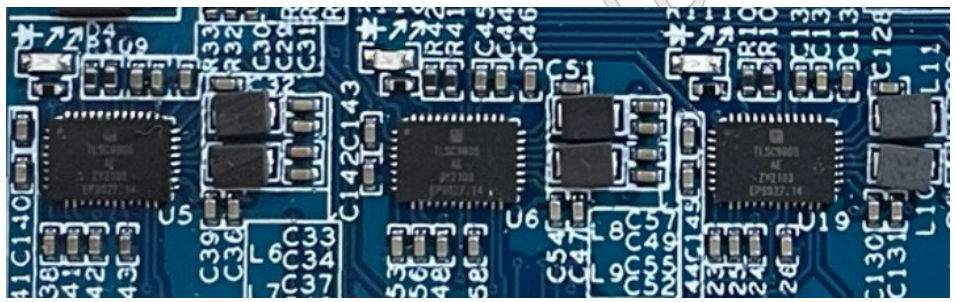
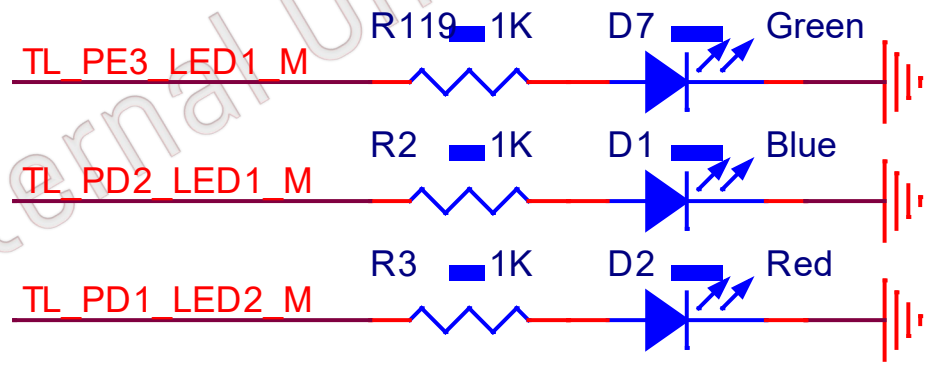
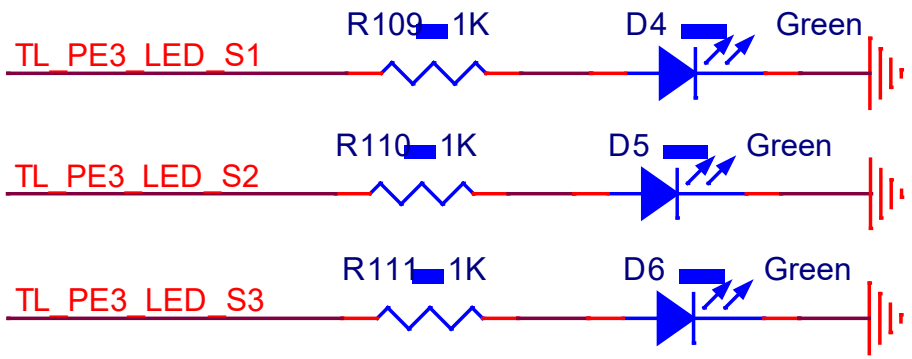
2. EVB introduction - continued

- **2.1.8 LED**
  - The Soundbar 6p1 EVB is equipped with 3 LEDs for the master chip for UI design.
  - In addition, one LED is reserved for each slave chip to facilitate the indication of different states.









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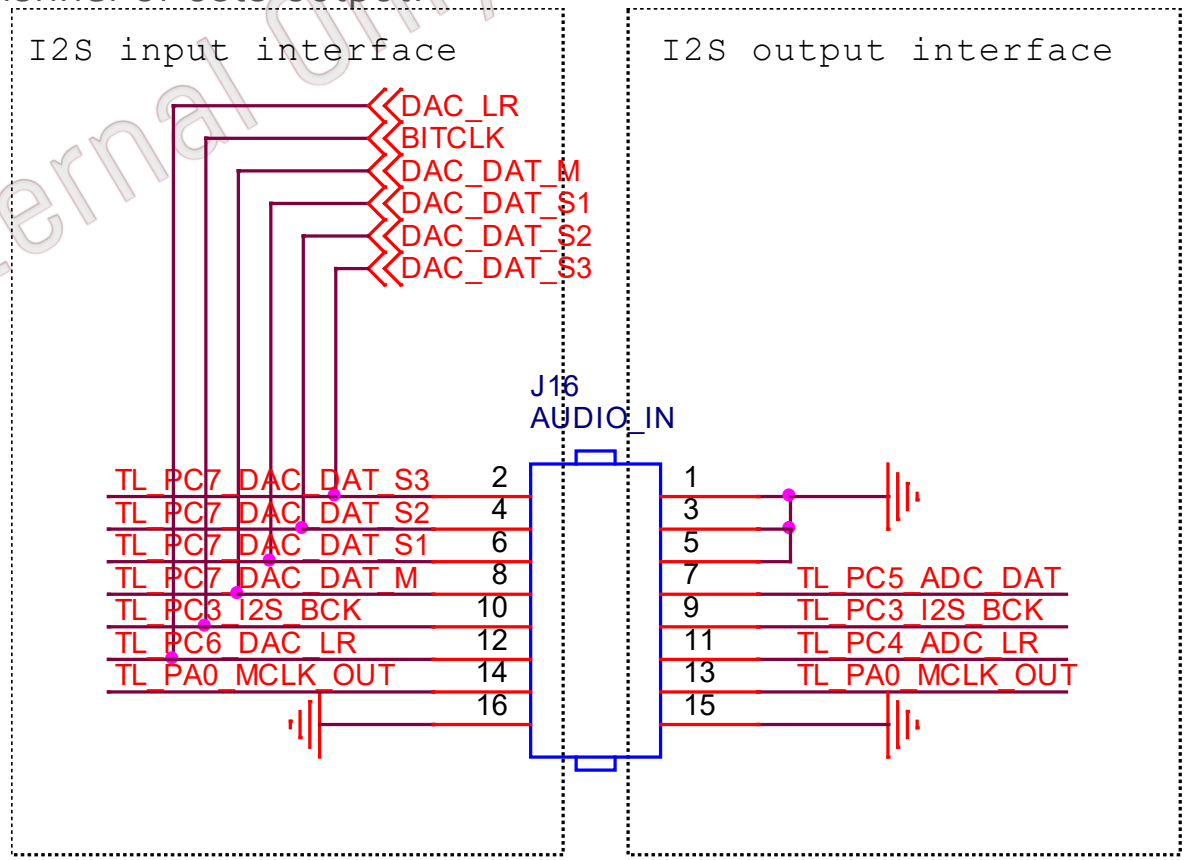
2. EVB introduction - continued

- **2.1.9 I2S in/out interface**
  - The soundbar 6p1 EVB has I2S in/out interface, the input interface supports four channels of data input;
  - The I2S output interface is used as RX and has one channel of data output.



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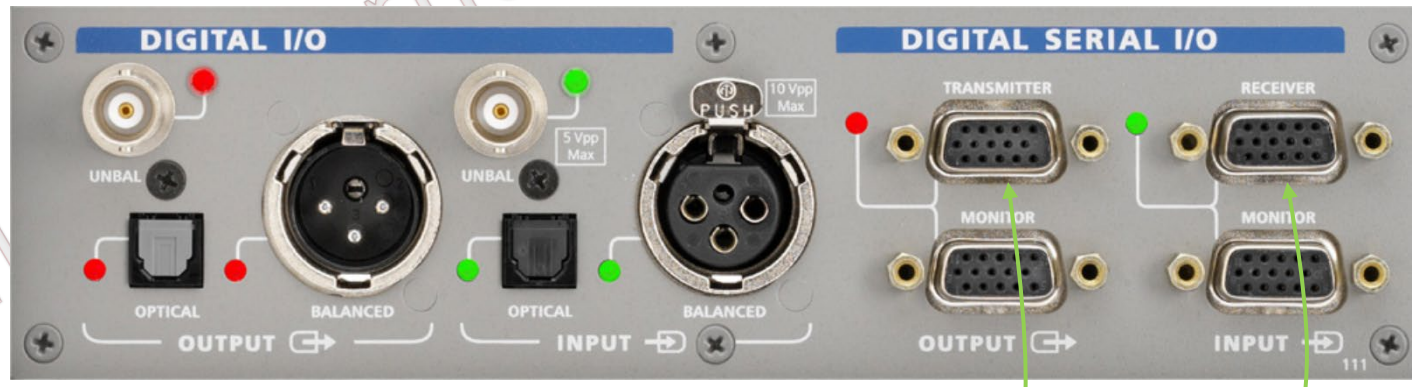
2. EVB introduction - continued

- **2.1.9 I2S in/out interface**
  - The Soundbar 6p1 EVB is generally used in I2S in/out mode for audio metrics test, and is connected to the AP test instrument as below:
  - The detailed test method are described in I2S in / I2S out section of "AP525 Audio Metrics Test Methods".



I2S OUT

I2S IN

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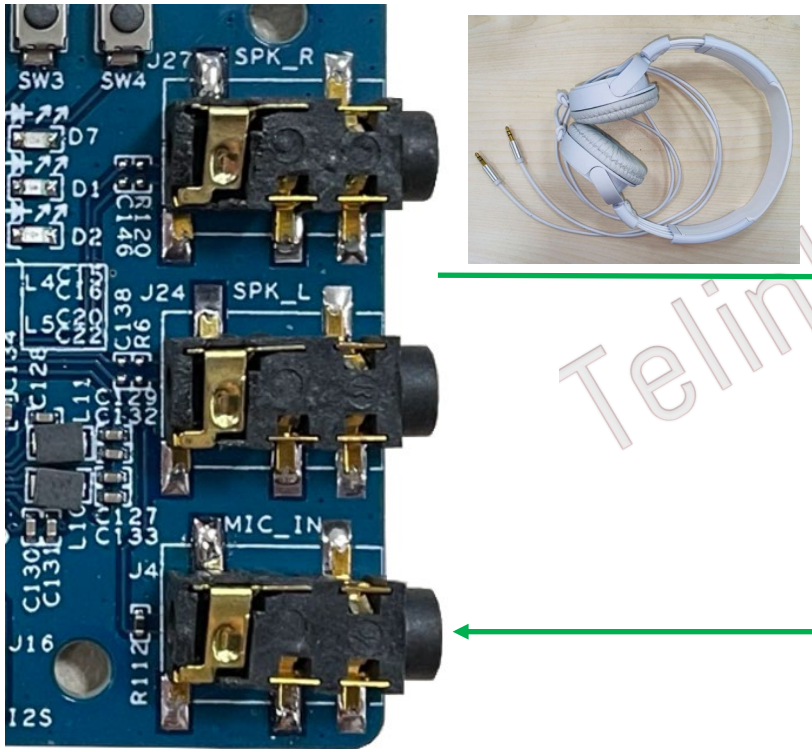
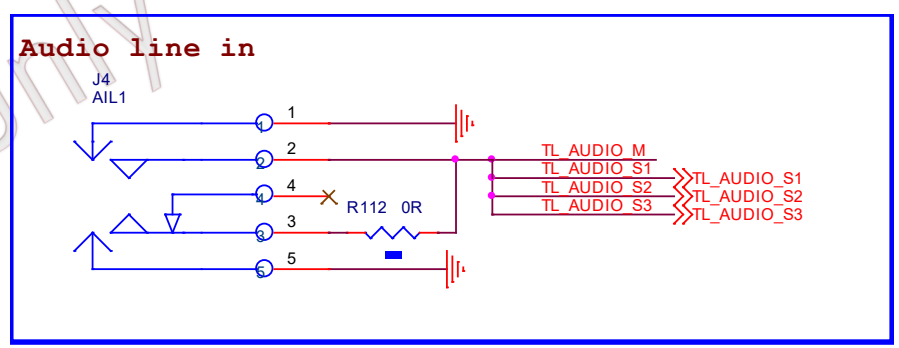
2. EVB introduction - continued

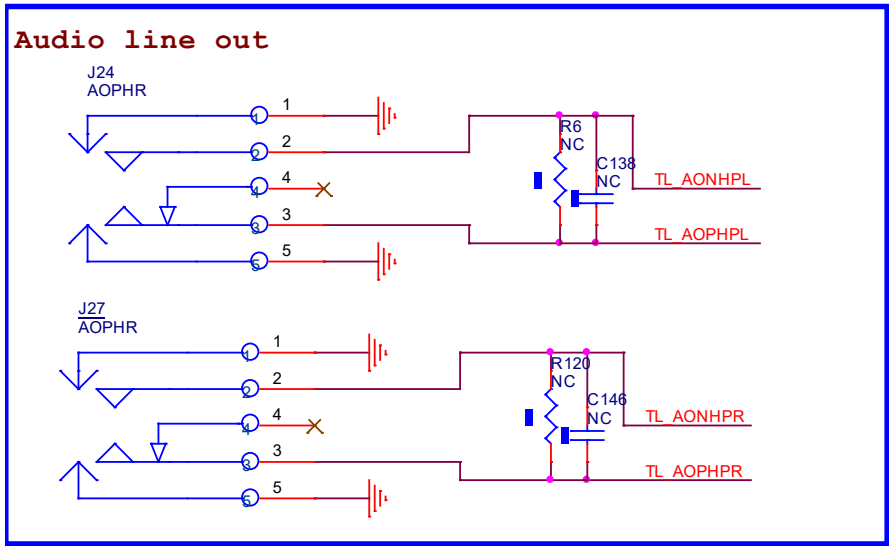
- **2.1.10 Audio in/out interface**
  - The Soundbar 6p1 EVB has one channel of line-in microphone input and two channels of left right audio output for Solution demonstration;
  - This connection is only for audio demo, not for audio metrics test.



Earphone

Audio in





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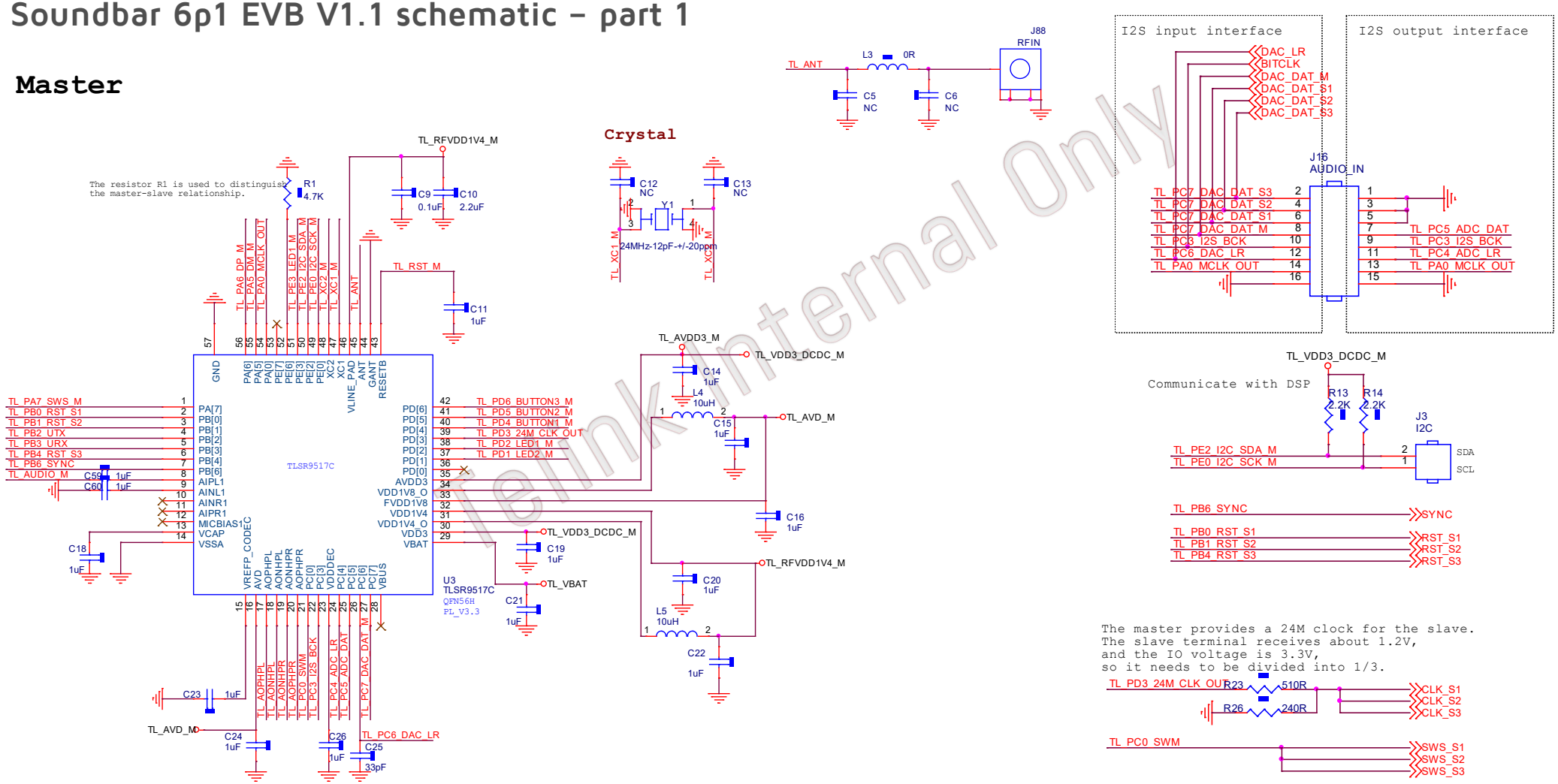
3. Appendix

3.1 Soundbar 6p1 EVB V1.1 schematic – part 1



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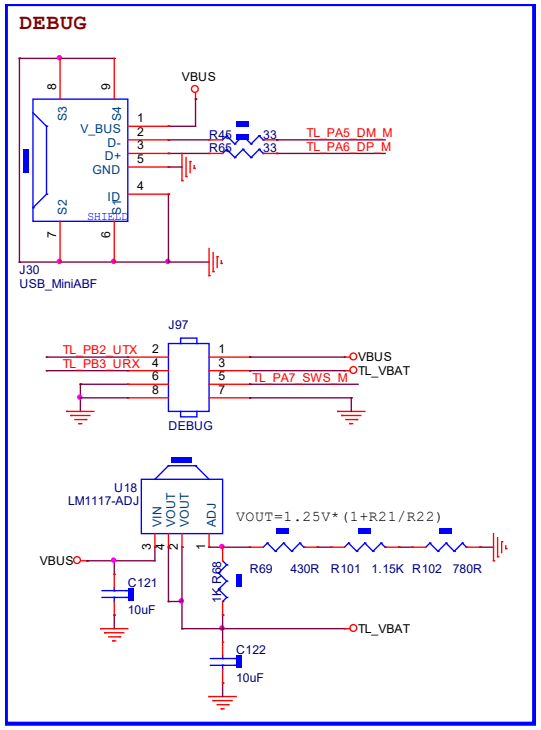
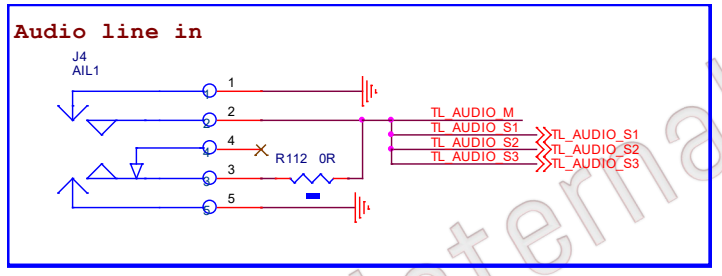
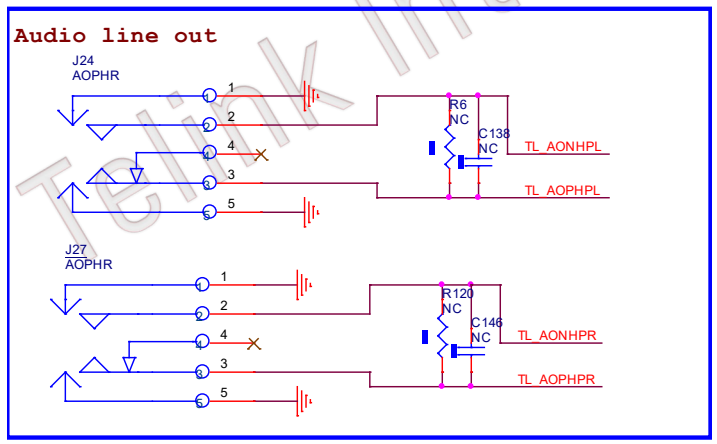
3. Appendix – continued

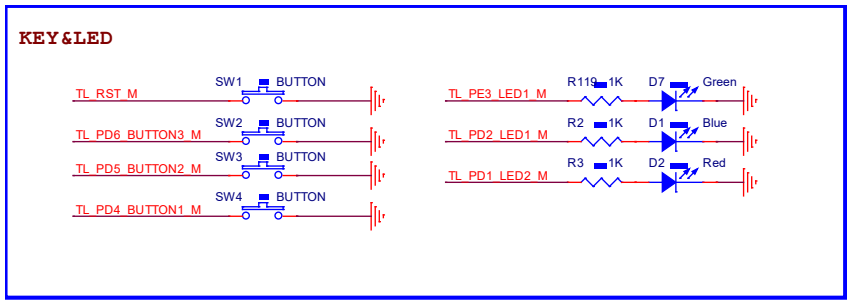
- 3.1 Soundbar 6p1 EVB V1.1 schematic – part 2

Master









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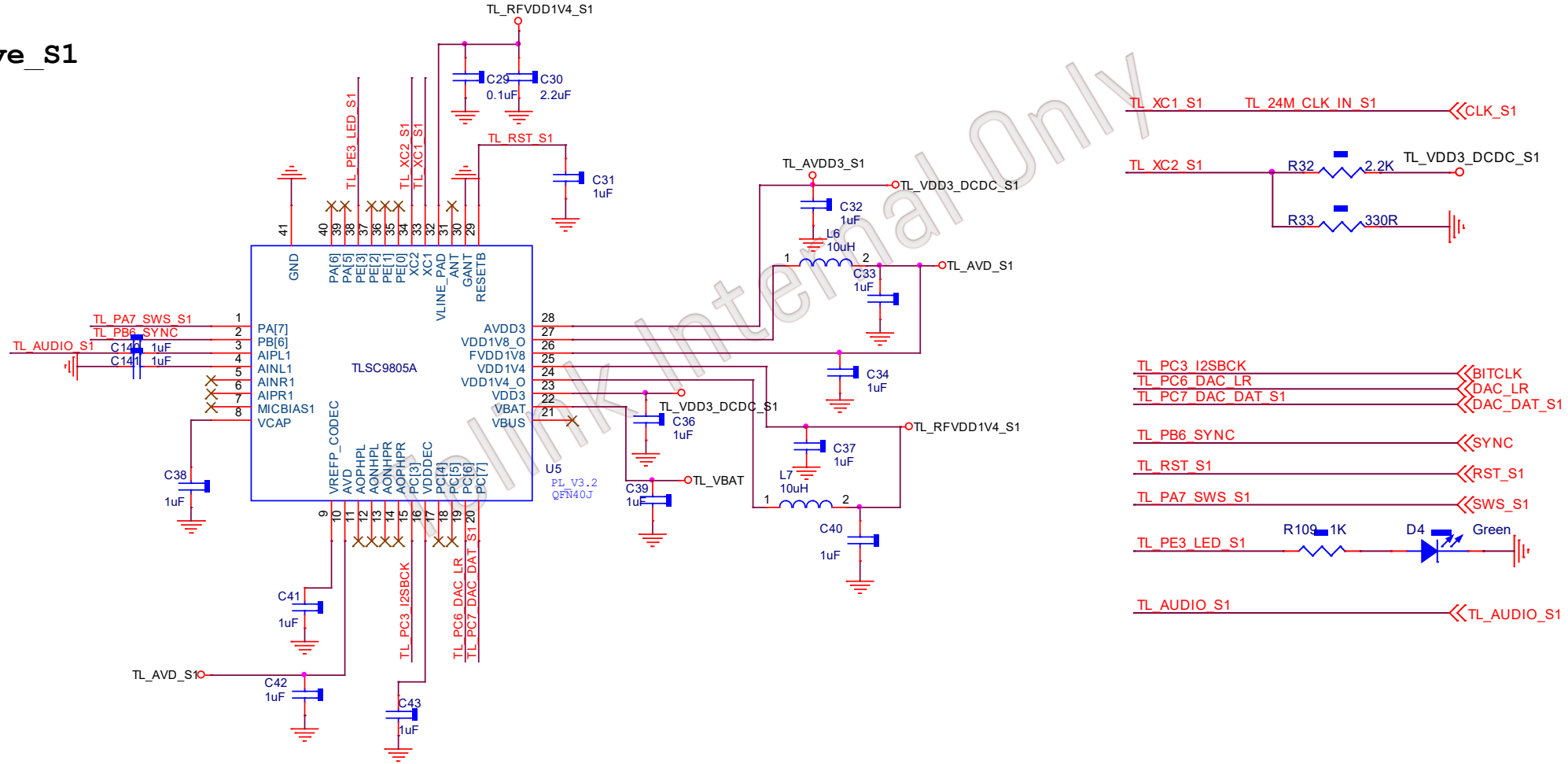
3. Appendix – continued

- 3.1 Soundbar 6p1 EVB V1.1 schematic – part 3

Slave_S1



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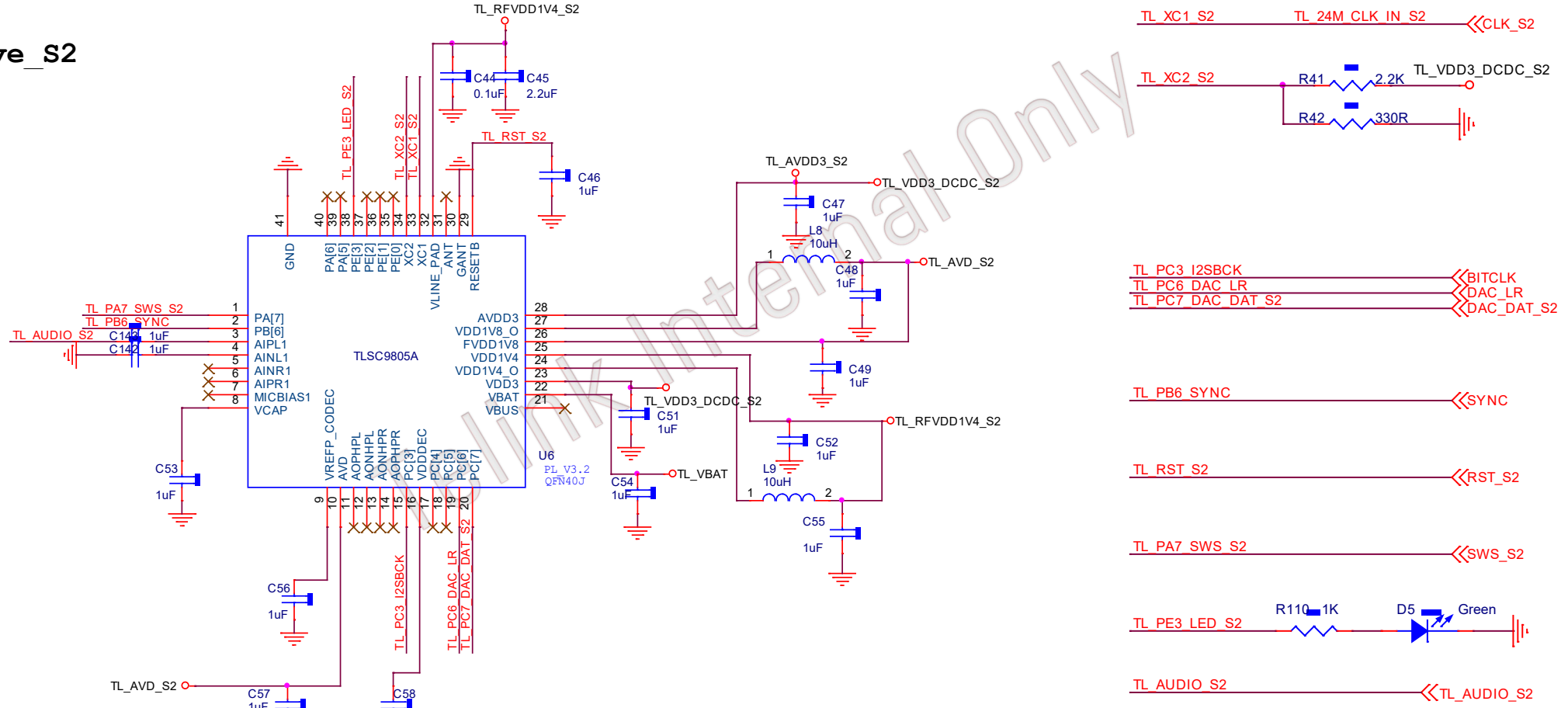
3. Appendix – continued

- 3.1 Soundbar 6p1 EVB V1.1 schematic – part 4



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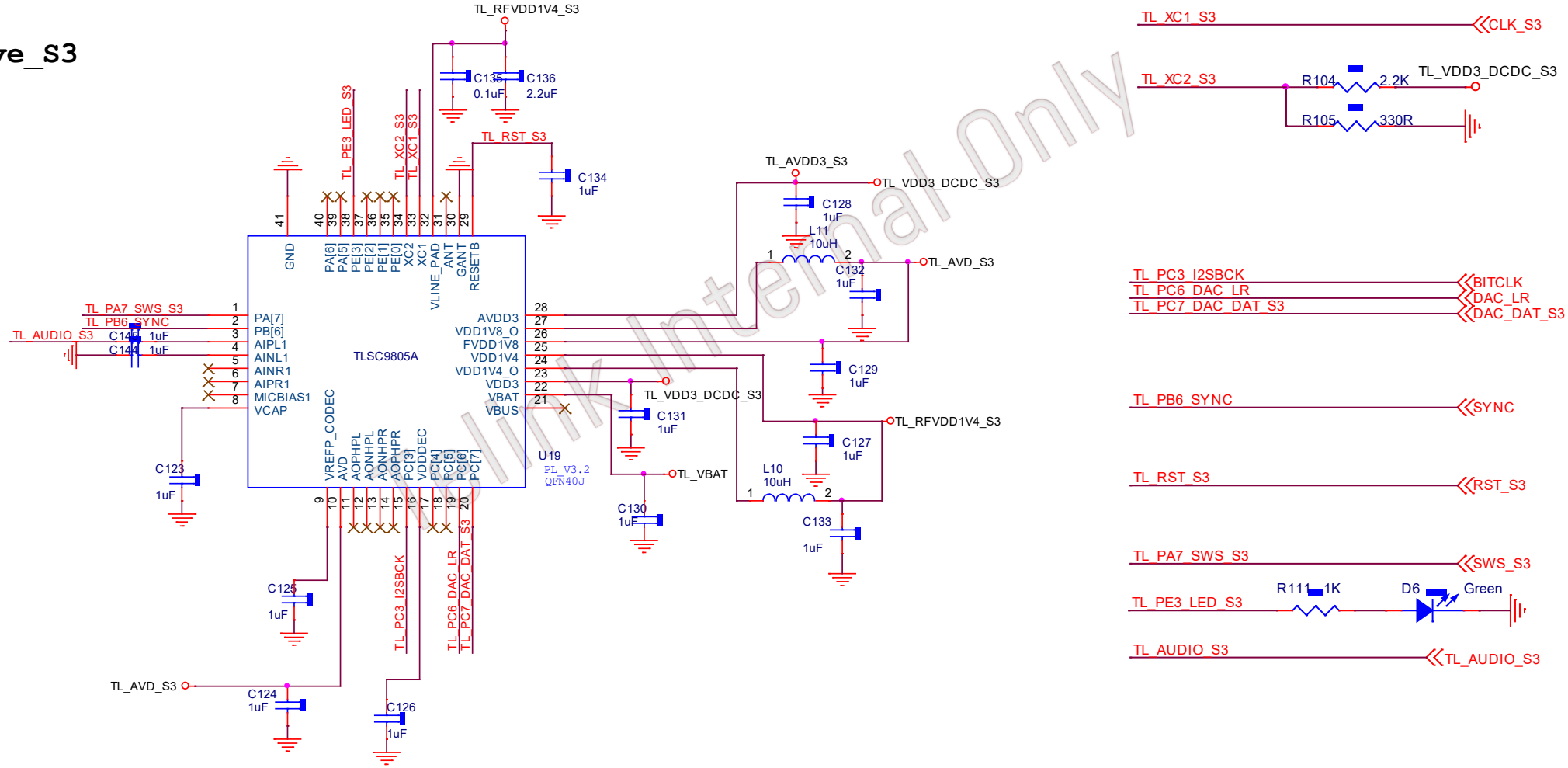
3. Appendix – continued

- 3.1 Soundbar 6p1 EVB V1.1 schematic – part 5

Slave_S3



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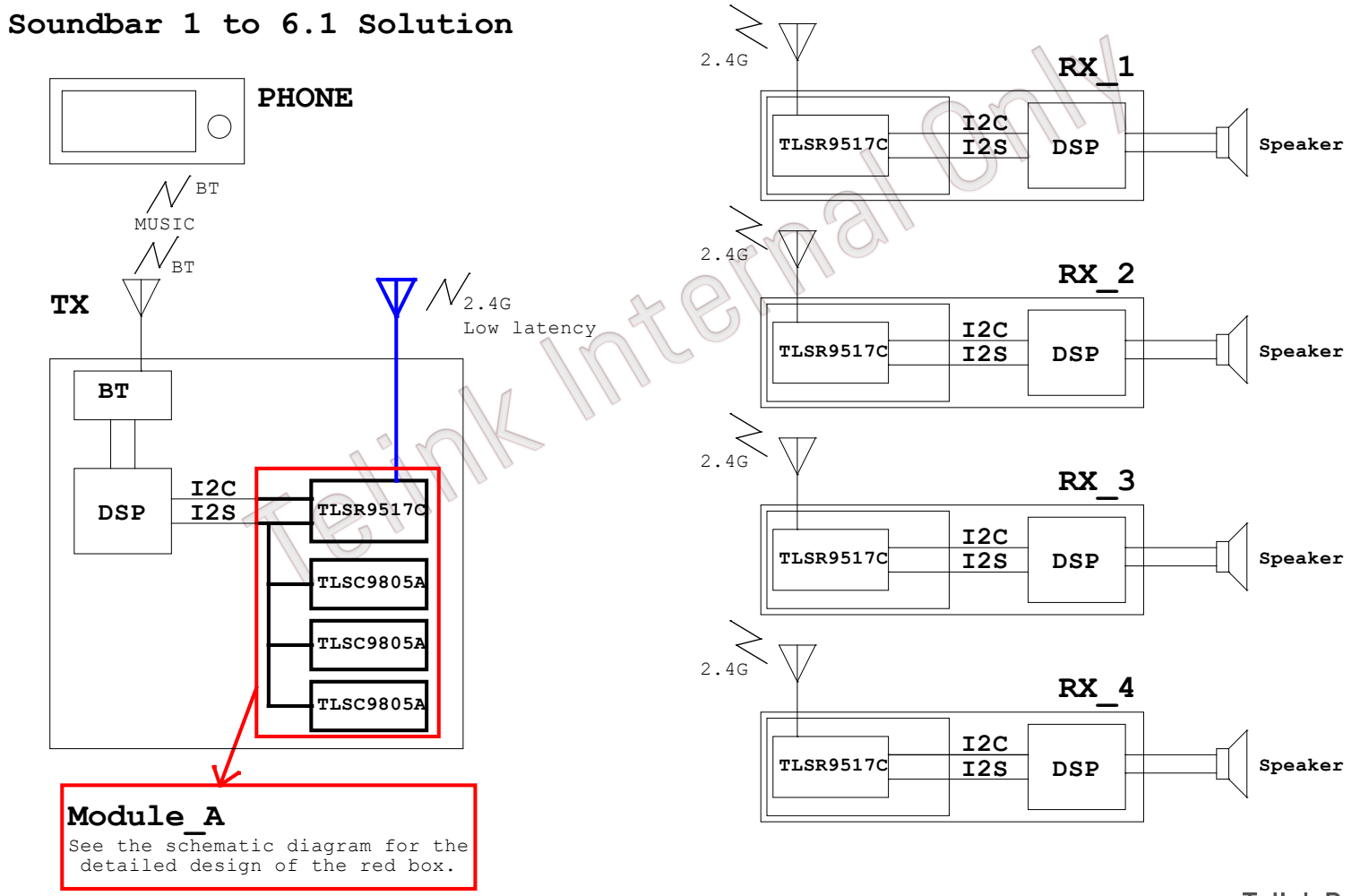
3. Appendix – continued

- 3.2 Soundbar 6p1 Solution



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