

TWR-AUDIO-SGTL Tower Module

Hardware Errata and Changes

Rev. 0.3

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Revision History

Revision	Date	Changes
0	January 30, 2012	Initial Release
0.1	February 20, 2012	Updated with correct schematics revision number and capacitor changes
0.2	April 5, 2012	New PCB photo with correct labels
0.3	Aug 2, 2012	Added errata item for swapped audio channels

Introduction

This document provides a list of the known errata for the TWR-AUDIO-SGTL Tower Module.

Hardware Revision Identification

The Freescale Tower hardware design components each have a unique identifier in the format of AAA-XXXXX where AAA is a document identifier and XXXX is a numerical identifier. The possible document identifiers (AAA) are:

- 700 – The entire printed wiring assembly (PWA) design
- LAY – Layout source (Allegro)
- NET – Netlist (OrCad/Allegro)
- GRB – Gerber files
- ODB – ODB++ files
- FAB – Fabrication document
- UNI – UniCAM file
- CEN – placement file
- BOM – Bill of Materials
- SCH – Schematic source (OrCad)
- SPF – Schematic PDF

The numerical identifier for the TWR-AUDIO-SGTL is 26816. On the PCB you will find one printed label with the 700-26816 (complete assembly) revision number and another with the SCH-26816 (schematic) revision number. Use these labels to help identify the revision of your Tower Module.

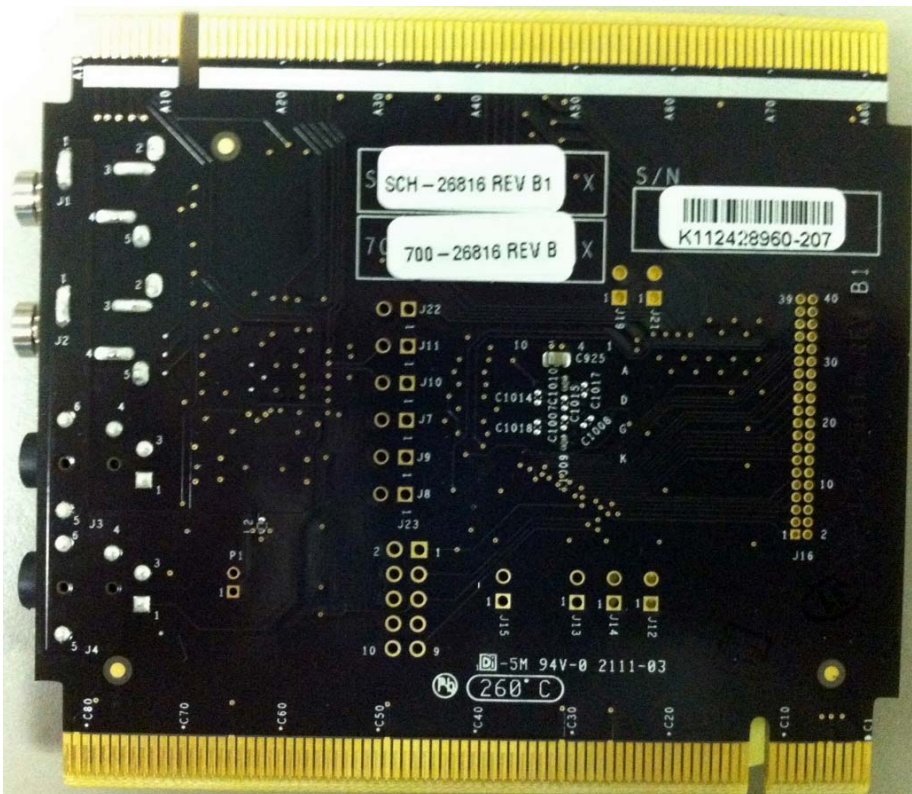


Figure 1. Hardware Revision Identification

Hardware Errata Summary

The following table summarizes the list of known errata and the affected schematic revisions. An “X” in the revision column indicates that the revision is affected by the errata.

Table 1. Hardware Errata Summary (by Schematic Revision)

Errata ID	Errata Title	Rev A	Rev B	Rev B1
TWR-AUDIO-SGTL_01	Incorrect Component Values	X	X	
TWR-AUDIO-SGTL_02	Lack of Power for Oscillator	X	X	
TWR-AUDIO-SGTL_03	Incorrect Capacitor EIA Class	X	X	
TWR-AUDIO-SGTL_04	Swapped audio channels	X	X	X

Hardware Change Summary

The changes to each revision of the schematic are described in the following sections.

Table 2. Hardware Change Summary (by Schematic Revision)

Revision	Release Date	Changes
A	16-Sep-10	Initial release
B	5-Apr-11	Text description changes only; no functional changes
B1	20-Feb-12	<ol style="list-style-type: none"> 1. Component changes. See TWR-AUDIO-SGTL_01 2. Lack of power for oscillator. See TWR-AUDIO-SGTL_02 3. Change ceramic capacitors to X7R. See TWR-AUDIO-SGTL_03

TWR-AUDIO-SGTL_01 Incorrect Component Values

Description

The following components have been changed to correct problems and to install a 24.576MHz quartz oscillator.

Component	Revision B Value	Revision B1 Value
R1	10k Ohm	0 Ohm
R2	10k Ohm	0 Ohm
R3	10k Ohm	0 Ohm
R4	10k Ohm	0 Ohm
C14	0.1 uF DNP	0.1 uF
R18	10k Ohm DNP	10k Ohm
Y1	12.288 MHz DNP	24.576 MHz Ecliptek Corporation EH15 00 SJ TS – 24.576
R19	0 Ohm	0 Ohm DNP
R43	0 Ohm	0 Ohm DNP

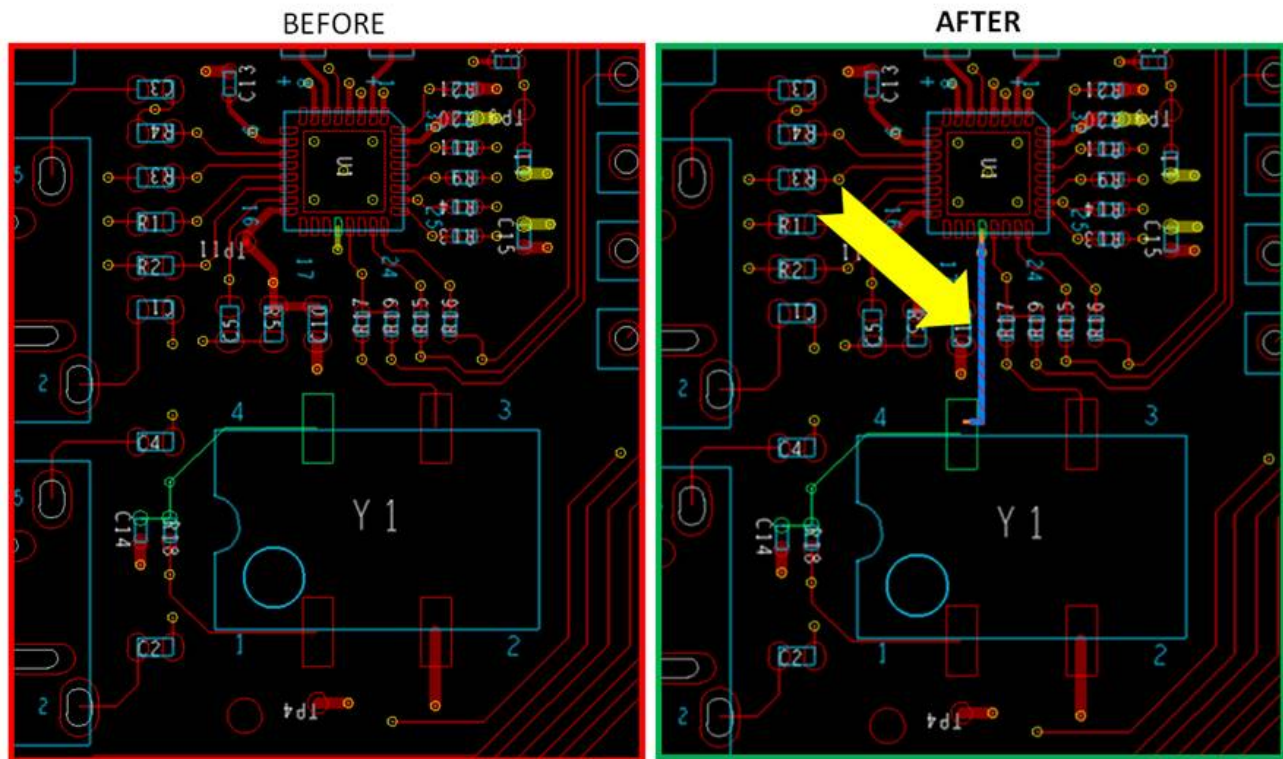
TWR-AUDIO-SGTL_02 Lack of Power for Oscillator

Description

There is no power connected to the power pin of the crystal oscillator (pin4 of Y1).

Workaround

Add wire as shown below.



CONNECT JUMPER CABLE FROM Y1/PIN4 TO U1/PIN20 (Net+3V3)

TWR-AUDIO-SGTL_03 Incorrect Capacitor EIA Class

Description

Change ceramic capacitors to X7R.

Status

Starting with revision B1 of the schematics, capacitors C1-C5, C10, C13-C16, C36, C37 and C925 changed from X5R to X7R parts.

TWR-AUDIO-SGTL_04 Swapped Audio Channels

Description

The Right and Left audio channels at the Line In and Line Out connectors are swapped. The audio channels in the Headphone output are wired correctly.

The Line In and Line Out jacks in TWR-AUDIO-SGTL Rev A, Rev B and Rev B1 modules are wired as follows:

- Sleeve: analog ground
- Ring: Left audio channel
- Tip: Right audio channel

The correct electrical connections for unbalanced audio over a 3.5mm TRS jack are as follows:

- Sleeve: analog ground
- Ring: Right audio channel
- Tip: Left audio channel

Workaround

Use an external adaptor to swap the channels.