TLV320AIC3256EVM-U Evaluation Module

This user's guide describes the operation, use, features, and characteristics of the TLV320AIC3256EVM-U. This small form factor evaluation module (EVM) is a programmable USB audio device that features the TLV320AIC3256 Audio Codec with miniDSP.

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1 EVM Overview

1.1 Features

- Small form factor EVM for the TLV320AIC3256 Audio Codec
- USB connection to the PC provides power, control, and streaming audio for easy evaluation.
- Easy-to-use AIC3256 Control Software (CS) configures and controls the TLV320AIC3256.

The TLV320AIC3256EVM-U is compatible with Windows™ XP-based personal computers.

1.2 Introduction

The TLV320AIC3256EVM-U is a USB audio device with programmable inputs and outputs, effects, and extensive routing capabilities. It is a simple platform to evaluate the TLV320AIC3256 miniDSP Audio Codec.

2 EVM Description and Getting Started

2.1 TLV320AIC3256EVM-U Hardware Description

The TLV320AIC3256EVM-U has two stereo analog input connectors (Line-In and Mic-In) and two stereo analog output connectors (Line-Out and Headphone-Out) that are routed to the TLV320AIC3256. Digital audio as well as control data communicated between the personal computer (PC) and the EVM are interpreted by the TAS1020B USB Streaming Controller. Control data is communicated to the TLV320AIC3256 via the I²C or SPI protocols; audio data is communicated via the I2S protocol.

An onboard 64KB EEPROM is capable of storing TLV320AIC3256 commands (scripts) as well as the TAS1020B firmware. Two pushbuttons are provided to cycle between scripts along with two LEDs that provide the user feedback regarding the script that is currently loaded. The EEPROM Manager in the AIC3256 CS is used to write new scripts into the EEPROM. Additional information can be found in the EEPROM Manager.

Table 1 summarizes the audio jacks available to connect analog inputs and outputs to the TLV320AIC3256 and the switches.

Table 1. Audio Jacks Available to Connect Analog Inputs and Outputs

Designator	Label	Associated pin	Description
J1	USB INPUT	N/A	USB Mini-B jack
J2	LINE IN	IN1_L/IN1_R	Line input
J3	MIC IN	IN3_L/IN3_R	Electret microphone input. Both stereo and mono types are supported (two or three conductor). 2.2-kΩ pullup resistors to MICBIAS at both the tip and the ring.
J4	LINE OUT	LOL/LOR	Line output. Connect only high-impedance loads to this output (e.g., external Class-D amplifier).
J5	HP OUT	HPL/HPR	Headphone output
SW1	SW2	N/A	RESET switch
SW2	SW2	N/A	Cycles through application scripts loaded in the onboard EEPROM
SW3	SW3	N/A	Cycles through patch scripts loaded in the onboard EEPROM

2.2 Getting Started

Evaluation can start right out of the box:

1. Download and install the AIC3256EVM-U CS from the EVM product folder.
2. Connect the TLV320AIC3256EVM-U to an available USB port.
3. Connect stereo headphones to HP OUT.
4. Open the AIC3256EVM-U CS, and select a typical configuration from the Playback menu.
5. Play audio with any media player.

To adjust playback volume, open Sounds and Audio Devices Properties (see following inset illustration) in the Control Panel, and click the Volume button of the Sound playback section of the Audio tab. Ensure that USB-miniEVM is selected as the default playback and recording device.
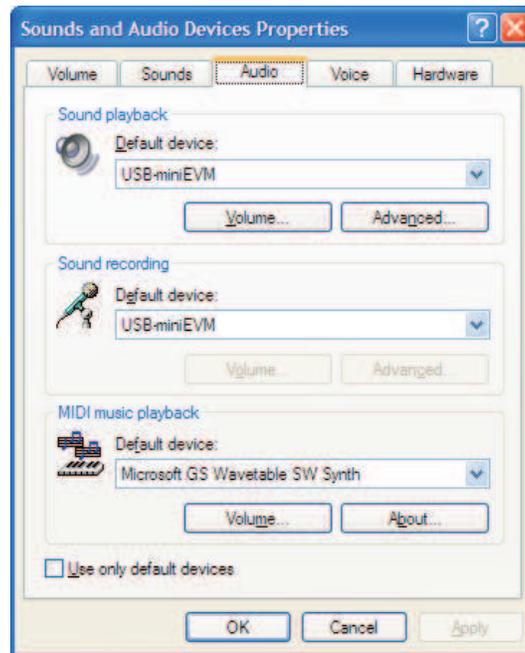
Figure 1. Audio Properties

The following section explains the software installation procedure which allows programming of the audio device.

3   AIC3256EVM-U Control Software

The AIC3256 Control Software (CS) is an intuitive, easy-to-use, powerful tool to learn, evaluate, and control the TLV320AIC3256. This tool was specifically designed to make learning the TLV320AIC3256 software easy. The following sections describe the operation and installation of this software.

> **NOTE:** For configuration of the codec, the TLV320AIC3256 block diagram located in the TLV320AIC3256 data sheet is a good reference to help determine the signal routing.

3.1   AIC3256EVM-U CS Setup

This section provides setup instructions for the AIC3256EVM-U CS.

To install the TLV320AIC3256EVM-U software:

1. Download the latest version of the AIC3256EVM-U Control Software (CS) located in the *TLV320AIC3256EVM-U Product Folder*.
2. Open the self-extracting installation file.
3. Extract the software to a known folder.
4. Install the EVM software by double-clicking the Setup executable, and follow the directions. The user may be prompted to restart their computer.

3.2   AIC3256EVM-U CS Usage

The following sections describe the AIC3256EVM-U CS usage.

3.2.1 Main Panel Window

The Main Panel window, shown in Figure 2, provides easy access to all the features of the AIC3256 CS.
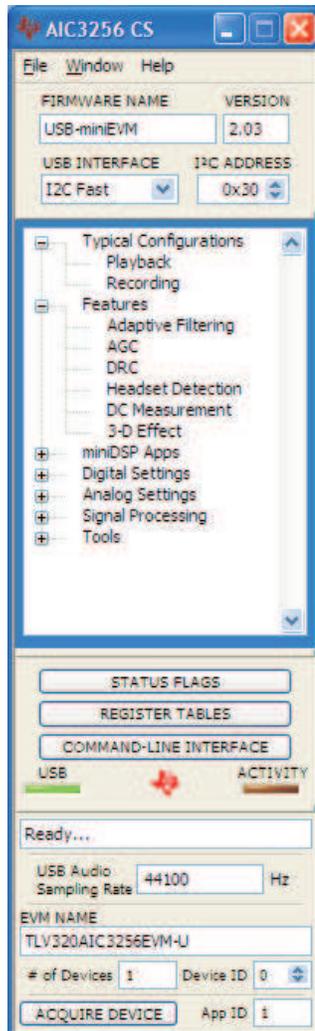

Figure 2. Main Panel Window

The Firmware Name and Version boxes provide information about the firmware loaded into the EVM's EEPROM.

The USB Interface drop-down menu allows the user to select which communication protocol the TAS1020B USB Controller uses to communicate with the TLV320AIC3256.

The TLV320AIC3256 supports I^{2}C Standard, I^{2}C Fast, and 8-bit register SPI. The USB Interface selection is global to all panels, including the Command-Line Interface.

The Panel Selection Tree provides access to typical configurations, features, and other panels that allow the user to control the TLV320AIC3256.

The tree is divided into several categories which contain items that pop up panels. A panel can be opened by double-clicking any item inside a category in the Panel Selection Tree.

Below the Panel Selection Tree are three buttons that pop up the following:

- Status Flags – Allows the user to monitor the TLV320AIC3256 status flags.
- Register Tables – A tool to monitor register pages.
- Command-Line Interface – A tool to execute/generate scripts and monitor register activity.

The USB LED indicates if the EVM is recognized by the software and the ACTIVITY LED illuminates every time a command request is sent.

The dialog box at the bottom of the Main Panel provides feedback of the current status of the software.

If running the software in Windows Vista or Windows 7, right-click the AIC3256EVM-U CS shortcut and select *Properties*. Configure the *Compatibility* tab as shown in Figure 3
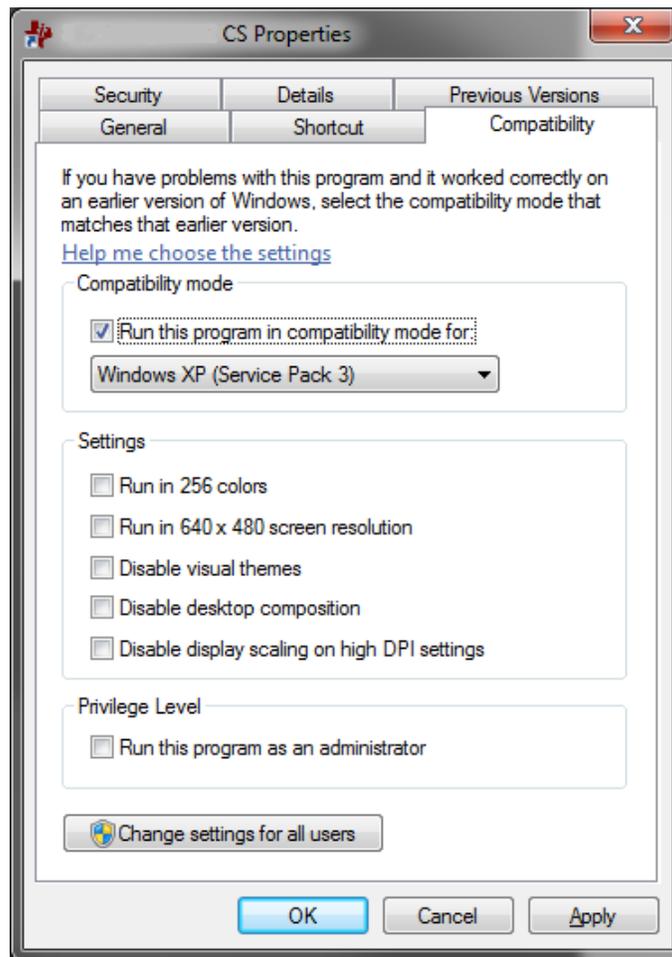
Figure 3. Compatibility Tab

3.2.2 Typical Configurations

This category can help users to quickly become familiar with the TLV320AIC3256. Each of the panels that can be accessed through this menu have controls relevant to the selected configuration; a tab shows the script that is loaded for that particular configuration. Each script includes a brief description of the selected configuration.
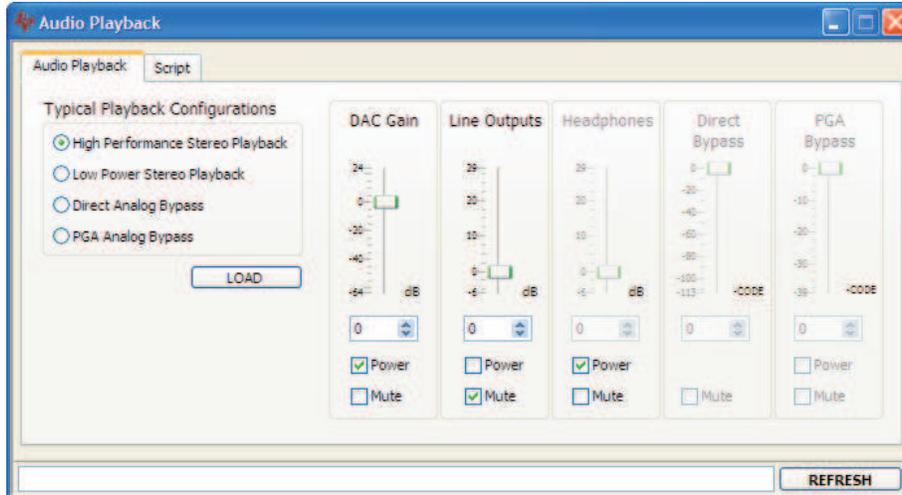
Figure 4. Playback Configurations and Controls
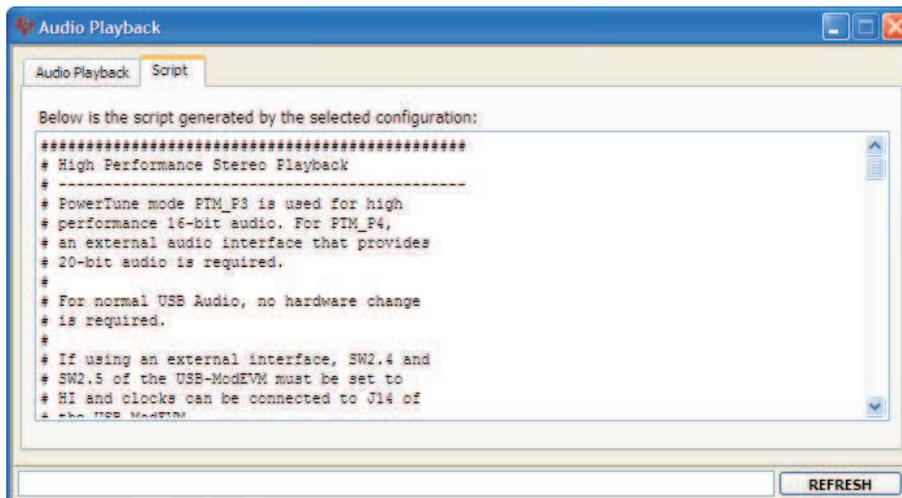
Figure 5. Associated Script and Description

3.2.3 Control Categories

The Digital Settings, Analog Settings, and Signal Processing categories provide control of many registers and other features of the TLV320AIC3256 . These categories are intended for the advanced user. Hovering the mouse cursor on top of a control displays a tip strip that contains page, register, and bit information. As an example, hovering on top of IN1_R of the Audio Inputs panel, as shown in Figure 6, displays p1_r55_b7-6 which means that this control writes to Page 1/Register 55/Bits D7 to D6.
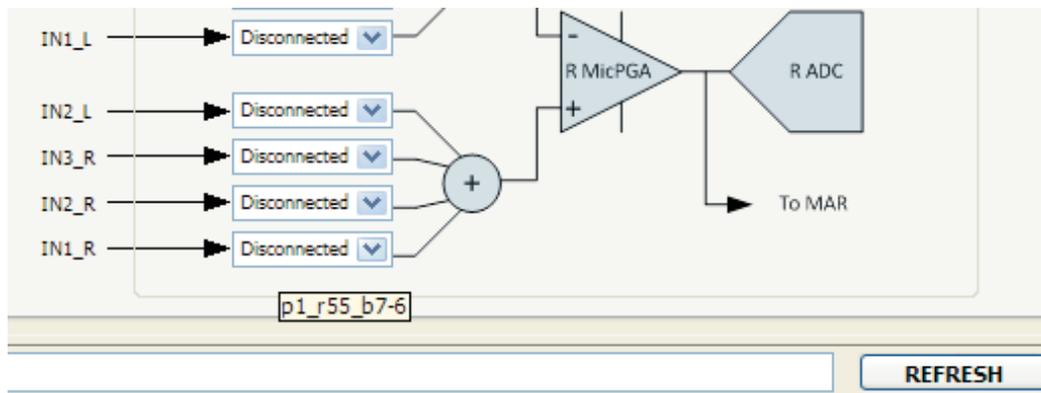
Figure 6. Tip Strip Example

Before changing a control, see the data sheet to ensure that a particular control is compatible with the current state of the codec. As an example, some controls in the Analog Setup panel must be modified in a particular order as described in the data sheet.

All controls update their status with respect to the register contents in the following conditions:

- A panel is opened.
- The Execute Command Buffer button in the Command-Line Interface is pressed (if enabled).
- The Refresh button at the bottom right of a panel is pressed.

3.2.4   Status Flags Panel

The TLV320AIC3256 status flags can be monitored in the Status Flags panel (Figure 7) which is located below the Panel Selection Tree. Pressing the POLL button continuously reads all the registers relevant to each flag and updates those flags accordingly. The rate at which the registers are read can be modified by changing the value in the Polling Interval numeric control. Note that a smaller interval reduces responsiveness of other controls, especially volume sliders, due to bandwidth limitations. By default, the polling interval is 200 ms and can be set to a minimum of 20 ms. The Sticky Flags tab contains indicators whose corresponding register contents clear every time a read is performed to that register. To read all the sticky flags, click the Read Sticky Flags button.
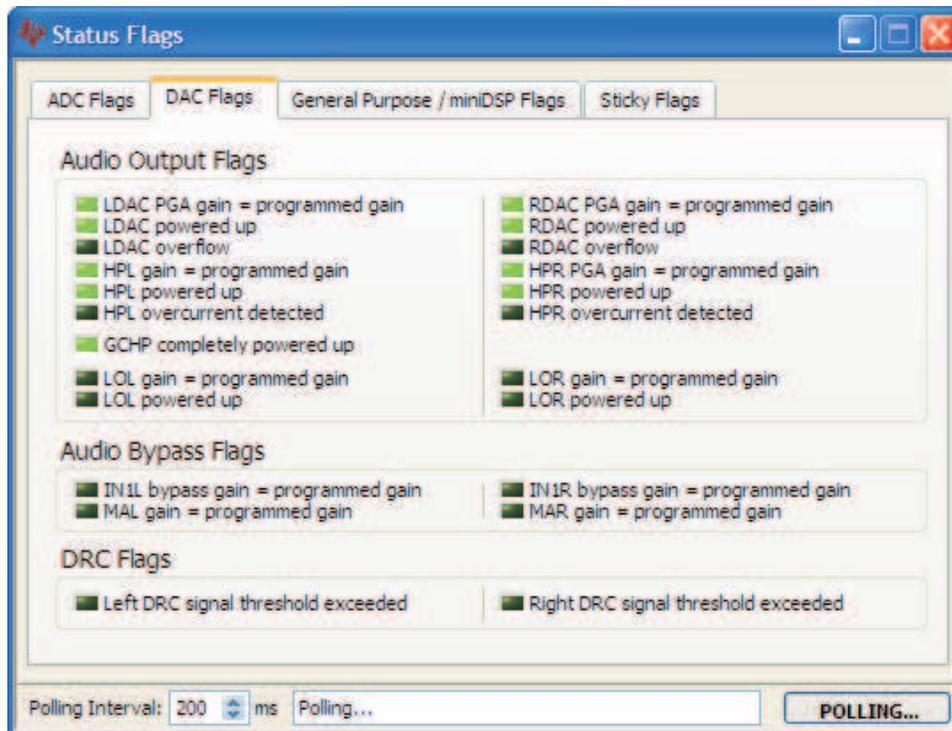
Figure 7. Status Flags Panel

3.2.5 Register Tables Panel

The contents of configuration and coefficient pages of the TLV320AIC3256 can be accessed through the Register Tables panel (Figure 8). The Page Number control changes to the page to be displayed in the register table. The register table contains page information such as the register name, reset value, current value, and a bitmap of the current value. The contents of the selected page can be exported into a spreadsheet by clicking the Dump to Spreadsheet button.
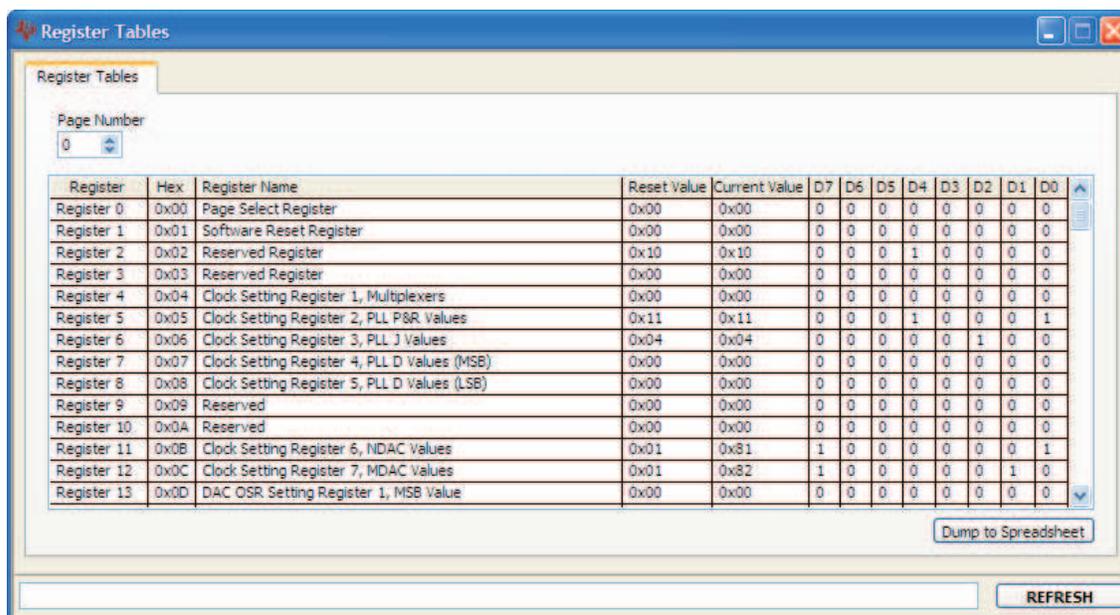
Figure 8. Register Tables Panel

3.2.6 Command-Line Interface Panel

The Command-Line Interface panel provides a means to communicate with the TLV320AIC3256 using a simple scripting language (described in Section 7). The TAS1020B USB Controller handles all communication between the PC and the TLV320AIC3256. A script is loaded into the command buffer, either by loading a script file using the File menu or by pasting text from the clipboard using the Ctrl-V key combination (Figure 9). When the command buffer is executed, the return data packets which result from each individual command are displayed in the Command History control. This control is an array (with a maximum size of 100 elements) that contains information about each command as well as status. The Interface box displays the interface used for a particular command in the Command History array. The Command box displays the type of command executed (e.g., write, read) for a particular interface. The Flag Retries box displays the number of read iterations performed by a Wait for Flag command (see Section 7 for details). The Register Data array displays the register number and data bytes that correspond to a particular command. The Information tab provides additional information related to the Command History as well as additional settings. The Syntax and Examples tabs provide useful information related to the scripting language.

The File menu provides some options for working with scripts. The first option, Open Script File..., loads a command file script into the command buffer. This script then can be executed by pressing the Execute Command Buffer button. The contents of the Command Buffer can be saved using the Save Script File... option.

Both the Command Buffer and Command History can be cleared by clicking their corresponding Clear buttons
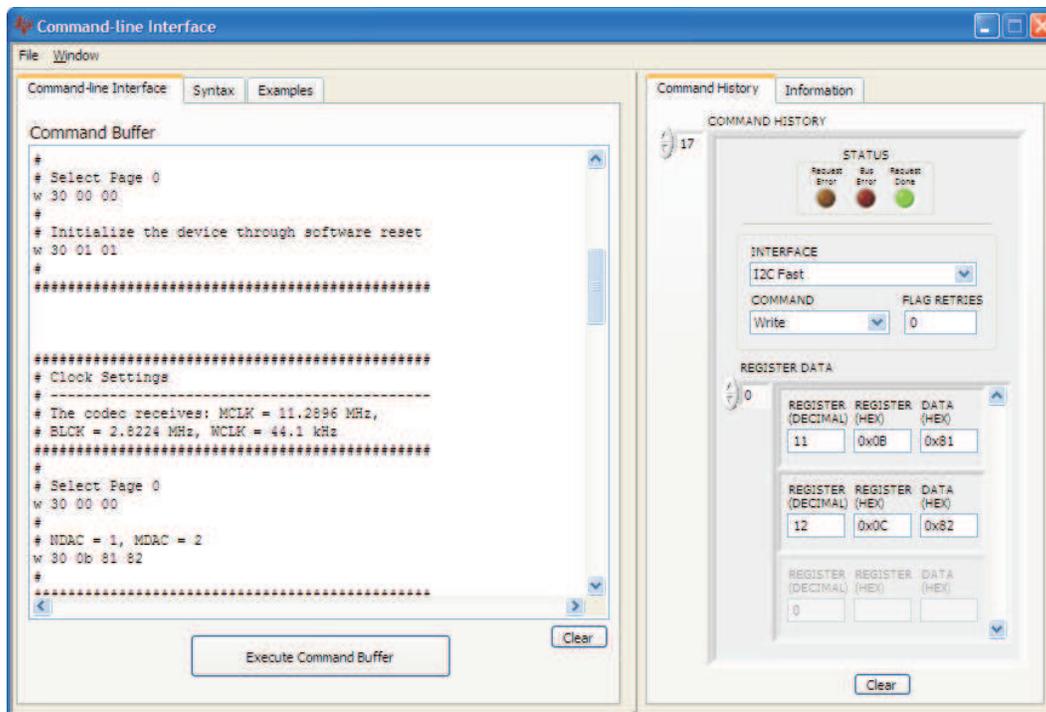
Figure 9. Command Line Interface Panel

4   TLV320AIC3256EVM-U Schematic

The schematic diagram for the TLV320AIC3256EVM-U is provided as a reference.

AIC3256_RHB_USB_EVM_REVA
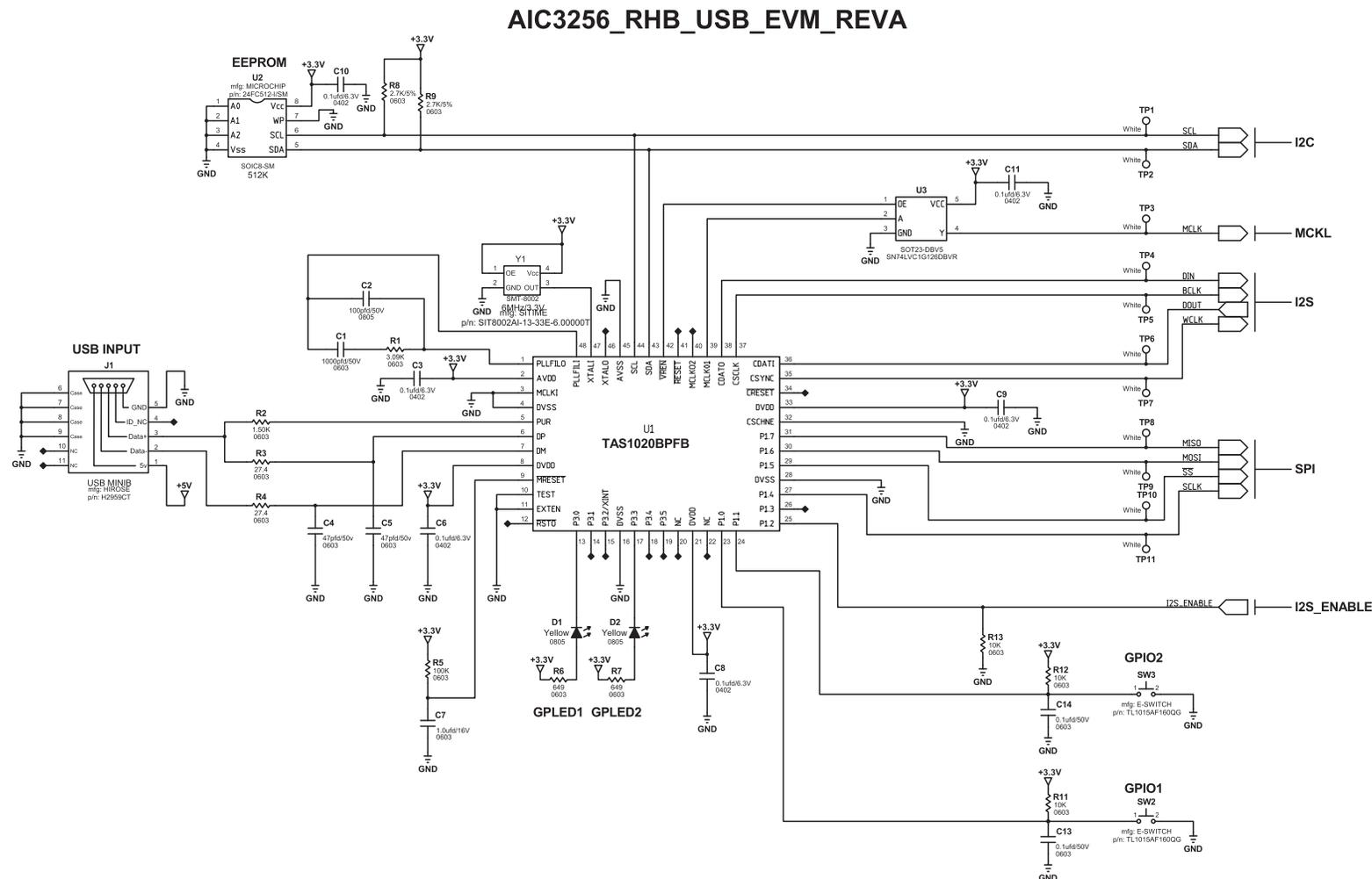
Figure 10. Schematic, Sheet 1 of 3

AIC3256_RHB_USB_EVM_REVA

Figure 11. Schematic, Sheet 2 of 3
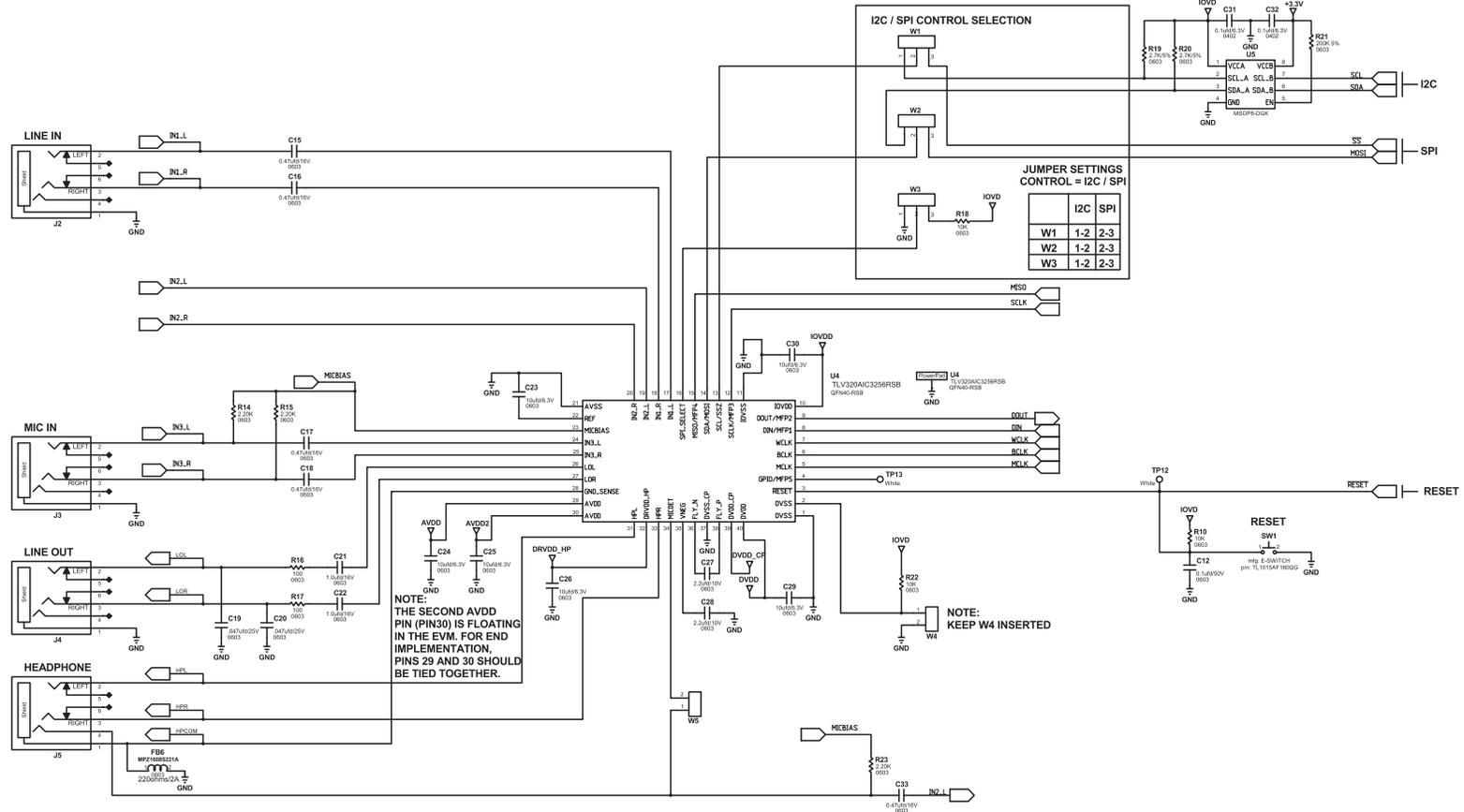
AIC3256_RHB_USB_EVM_REVA
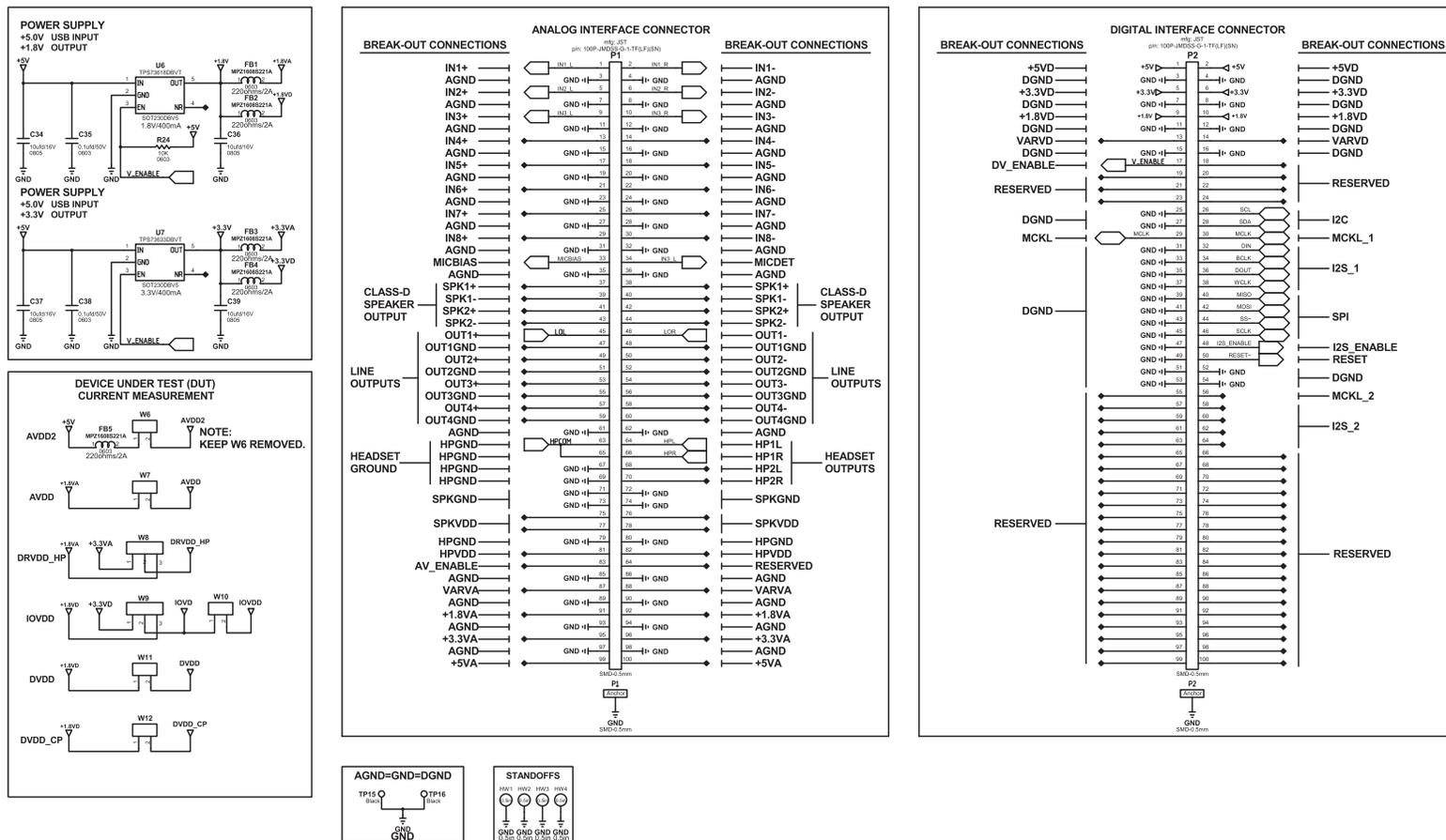
Figure 12. Schematic, Sheet 3 of 3

5   TLV320AIC3256EVM-U Bill of Materials

Table 2. Bill of Materials for TLV320AIC3256_RSB_USB_EVM_REVA

			TI-SEMICONDUCTORS				
Item	QTY	REF DES	Description	Vendor	Vendor Part NO.	MANU	MANU Part NO.
1	1	U4	POWER TUNED CODEC HEADPHONE AMPS MINIDSP QFN40-RSB ROHS	TEXAS INSTRUMENTS	TLV320AIC3256RSB	TEXAS INSTRUMENTS	TLV320AIC3256RSB
2	1	U1	USB STREAMING CONTROLLER TQFP48-PFB ROHS	DIGI-KEY	296-13041-5	TEXAS INSTRUMENTS	TAS1020BPFB
3	1	U3	SINGLE BUS BUFFER GATE WITH 3-STATE OUTPUT SOT23-DBV5 ROHS	DIGI-KEY	296-11605-1	TEXAS INSTRUMENTS	SN74LVC1G126DBVR
4	1	U6	VOLT REG 1.8V 400MA LDO CAP FREE NMOS SOT23-DBV5 ROHS	DIGI-KEY	296-15816-1	TEXAS INSTRUMENTS	TPS73618DBVT
5	1	U7	VOLT REG 3.3V 400MA LDO CAP FREE NMOS SOT23-DBV5 ROHS	DIGI-KEY	296-15819-1	TEXAS INSTRUMENTS	TPS73633DBVT
6	1	U5	IC LVL-TRANSL I2C BUS REP,MSOP8-DGK,ROHS	DIGI-KEY	296-24730-1	TEXAS INSTRUMENTS	PCA9517DGKR
			SEMICONDUCTORS				
Item	QTY	REF DES	Description	Vendor	Vendor Part NO.	MANU	MANU Part NO.
7	1	U2	512K I2C SERIAL EEPROM SOIC8-SM ROHS	DIGI-KEY	24FC512-I/SM	MICROCHIP	24FC512-I/SM
8	2	D1,D2	LED, YELLOW 2.0V SMD0805 ROHS	DIGI-KEY	67-1554-1	LUMEX OPTO	SML-LXT0805YW-TR
9	1	Y1	OSCILLATOR SMT 6MHz 3.3V OUT-ENABLE ROHS	MOUSER	788-8002AI133E-6.0T	SITIME	SIT8002AI-13-33E-6.00000T
			CAPACITORS				
Item	QTY	REF DES	Description	Vendor	Vendor Part NO.	MANU	MANU Part NO.
10	2	C4,C5	CAP SMD0603 CERM 47PFD 50V 5% NPO ROHS	DIGI-KEY	PCC470ACVCT	PANASONIC	ECJ-1VC1H470J
11	1	C7	CAP SMD0603 CERM 1.0UFD 16V 5% X7R ROHS	DIGI-KEY	445-1604-1	TDK	C1608X7R1C105K
12	8	C3,C6,C8,C9,C10, C11,C31,C32	CAP SMD0402 CERM 0.1UFD 6.3V 10% X5R ROHS	DIGI-KEY	445-1266-1	TDK CORP	C1005X5R0J104K
13	5	C12,C13,C14,C35, C38	CAP SMD0603 CERM 0.1UFD 50V 10% X7R ROHS	DIGI-KEY	445-1314-1	TDK	C1608X7R1H104K
14	6	C23,C24,C25,C26, C29,C30	CAP SMD0603 CERM 10UFD 6.3V 20% X5R ROHS	DIGI-KEY	PCC2395CT	PANASONIC	ECJ-1VB0J106M
15	5	C15,C16,C17,C18, C33	CAP SMD0603 CERM 0.47UFD 16V 10% X5R ROHS	DIGI-KEY	478-1248-1	AVX	0603YD474KAT2A
16	2	C19,C20	CAP SMD0603 CERM 047UFD 25V 10% X7R ROHS	DIGI-KEY	PCC1771CT	PANASONIC	ECJ-1VB1E473K
17	2	C21,C22	CAP SMD0603 CERM 1.0UFD 16V 10% X5R ROHS	DIGI-KEY	PCC2224CT	PANASONIC	ECJ-1VB1C105K
18	4	C34,C36,C37,C39	CAP SMD0805 CERM 10UFD 16V 10% X5R ROHS	DIGI-KEY	490-3886-1	MURATA	GRM21BR61C106KE15L
19	2	C27,C28	CAP SMD0603 CERM 2.2UFD 10V 10% X7R ROHS	DIGI-KEY	490-4520-1	MURATA	GRM188R71A225KE15D

Table 2. Bill of Materials for TLV320AIC3256_RSB_USB_EVM_REVA (continued)

| 20 | 1 | C1 | CAP SMD0603 CERM 1000PFD 50V 5% COG ROHS | DIGI-KEY | 445-1293-1 | TDK CORP. | C1608C0G1H102J |
| 21 | 1 | C2 | CAP SMD0805 CERM 100PFD 50V 5% C0G ROHS | DIGI-KEY | 490-1615-1 | MURATA | GRM2165C1H101JA01D |

RESISTORS							
Item	**QTY**	**REF DES**	**Description**	**Vendor**	**Vendor Part NO.**	**MANU**	**MANU Part NO.**
22	1	R2	RESISTOR SMD0603 1.50K OHM 1% THICK FILM 1/10W ROHS	DIGI-KEY	P1.50KHCT	PANASONIC	ERJ-3EKF1501V
23	1	R5	RESISTOR SMD0603 100K OHM 1% THICK FILM 1/10W ROHS	DIGI-KEY	P100KHCT	PANASONIC	ERJ-3EKF1003V
24	7	R10,R11,R12,R13, R18,R22,R24	RESISTOR SMD0603 10K 5% 1/10W ROHS	DIGI-KEY	P10KGCT	PANASONIC	ERJ-3GEYJ103V
25	2	R6,R7	RESISTOR SMD0603 THICK FILM 649 OHMS 1% 1/10W ROHS	DIGI-KEY	311-649HRCT	YAGEO	RC0603FR-07649RL
26	2	R3,R4	RESISTOR SMD0603 27.4 OHMS 1% 1/10W ROHS	DIGI-KEY	P27.4HCT	PANASONIC	ERJ-3EKF27R4V
27	4	R8,R9,R19,R20	RESISTOR SMD0603 2.7K OHMS 5% 1/10W ROHS	DIGI-KEY	P2.7KGCT	PANASONIC	ERJ-3GEYJ272V
28	2	R16,R17	RESISTOR SMD0603 100 OHM 1/10W 1% ROHS	DIGI-KEY	541-100HCT	VISHAY	CRCW0603100RFKEA
29	1	R1	RESISTOR SMD0603 3.09K OHM 1% THICK FILM 1/10W ROHS	DIGI-KEY	P3.09KHCT	PANASONIC	ERJ-3EKF3091V
30	1	R21	RESISTOR SMD0603 200K OHMS 5% 1/10W ROHS	DIGI-KEY	P200KGCT	PANASONIC	ERJ-3GEYJ204V
31	3	R14,R15,R23	RESISTOR SMD0603 2.20K OHMS 1% THICK FILM 1/10W ROHS	DIGI-KEY	P2.20KHCT	PANASONIC	ERJ-3EKF2201V

FERRITES, INDUCTORS, CHOKES, COILS AND TRANSFORMERS							
Item	**QTY**	**REF DES**	**Description**	**Vendor**	**Vendor Part NO.**	**MANU**	**MANU Part NO.**
32	6	FB1,FB2,FB3,FB4, FB5,FB6	FERRITE CHIP, 220 OHMS 2A 100MHZ SMD 0603 ROHS	DIGI-KEY	445-1565-1	TDK	MPZ1608S221A

HEADERS AND JACKS							
Item	**QTY**	**REF DES**	**Description**	**Vendor**	**Vendor Part NO.**	**MANU**	**MANU Part NO.**
33	7	W4,W5,W6,W7,W10,W11,W12	HEADER 2 PIN, PCB 2.0MM ROHS	DIGI-KEY	2663S-02	NORCOMP	26630201RP2
34	5	W1,W2,W3,W8,W9	HEADER 3 PIN, PCB 2.0MM ROHS	DIGI-KEY	2663S-03	NORCOMP	26630301RP2
35	2	P1,P2	PLUG SMD 2x50 FEMALE JMDSERIES 0.5MM LS GOLD ROHS	DIGI-KEY	455-1880-1	JST	100P-JMDSS-G-1-TF(LF)(SN)
36	1	J1	JACK USB MINIB SMT-RA 5PIN ROHS	DIGI-KEY	H2959CT	HIROSE	UX60-MB-5ST
37	4	J2,J3,J4,J5	JACK AUDIO MINI(3.5MM ,4-COND PCB-RA ROHS	DIGI-KEY	CP-43516SJCT	CUI STACK	SJ-43516-SMT

SOCKETS, SOCKET PINS AND TERMINAL BLOCKS							
Item	**QTY**	**REF DES**	**Description**	**Vendor**	**Vendor Part NO.**	**MANU**	**MANU Part NO.**

Table 2. Bill of Materials for TLV320AIC3256_RSB_USB_EVM_REVA (continued)

ITEM	QTY	REF DESIGNATORS	DESCRIPTION	VENDOR	VENDOR PART NUM	MANU	MANU PART NUM
TESTPOINTS AND SWITCHES
38	13	TP1,TP2,TP3,TP4,TP5,TP6,TP7,TP8,TP9,TP10,TP11,TP12,TP13	PC TESTPOINT, WHITE, ROHS	DIGI-KEY	5002K	KEYSTONE ELECTRONICS	5002
39	2	TP15,TP16	PC TESTPOINT, BLACK, ROHS	DIGI-KEY	5001K	KEYSTONE ELECTRONICS	5001
40	3	SW1,SW2,SW3	SWITCH, MOM, 160G SMT 4X3MM ROHS	DIGI-KEY	EG4344CT	E-SWITCH	TL1015AF160QG

Item	QTY	REF DES	Description	Vendor	Vendor Part NO.	MANU	MANU Part NO.
NON-INSULATED WIRE GROUND LOOPS
BEND THE WIRE LENGTHS INTO A 'U' SHAPE AND SOLDER TO THE BOARD. LEAVE A GAP OF AROUND 0.1 INCHES BETWEEN THE BOARD AND THE WIRE.
			Bus Wire (18-22 Gauge)	N/A	N/A	N/A	N/A

Item	QTY	REF DES	Description	Vendor	Vendor Part NO.	MANU	MANU Part NO.
SHUNTS
1001		AS NEEDED	SHUNT, BLACK AU FLASH 2mmLS	DIGI-KEY	SP2-001E	NORCOMP INC.	810-002-SP2L001

6 Default Jumper Positions

Table 3. TLV320AIC3256EVM-U Rev. A Default Jumper Positions

Jumper	Default Position	Description
W1	1-2	Selects between SCL and /SS lines
W2	1-2	Selects between SDA and MOSI lines
W3	1-2	Sets SPI_SELECT pin level to ground or IOVDD level
W4	Inserted	Reserved.
W5	Inserted	Connects MICDET to J5.4
W6	Removed	Reserved
W7	Inserted	Provides a means to measure AVDD Current
W8	2-3	Provides a means to measure DRVDD_HP Current and selects between 3.3V/1.8V
W9	1-2	Selects between 3.3V/1.8V for IOVDD Current
W10	Inserted	Provides a means to measure IOVDD Current
W11	Inserted	Provides a means to measure DVDD Current
W12	Inserted	Provides a means to measure DVDD_CP Current

7   Writing Scripts

A script is simply a text file that contains data to send to the serial control buses.

Each line in a script file is one command. No provision is made for extending lines beyond one line, except for the > command. A line is terminated by a carriage return.

The first character of a line is the command. Commands are:

> **l** Set interface bus to use
> **r** Read from the serial control bus
> **w** Write to the serial control bus
> **>** Extend repeated write commands to lines below a **w**
> **#** Comment
> **b** Break
> **d** Delay
> **f** Wait for Flag

The first command, **l**, sets the interface to use for the commands to follow. This command must be followed by one of the following parameters:

i2cstd	Standard mode I^{2}C bus
i2cfast	Fast mode I^{2}C bus
spi8	SPI bus with 8-bit register addressing
spi16	SPI bus with 16-bit register addressing

For example, if a fast mode I^{2}C bus is to be used, the script begins with:

> **l i2cfast**

A double-quoted string of characters following the **b** command can be added to provide information to the user about each breakpoint. When the script is executed, the software's command handler halts as soon as a breakpoint is detected and displays the string of characters within the double quotes.

The Wait for Flag command, **f**, reads a specified register and verifies if the bitmap provided with the command matches the data being read. If the data does not match, the command handler retries for up to 200 times. This feature is useful when switching buffers in parts that support the adaptive filtering mode. The command f syntax follows:

```
f [i2c address] [register] [D7][D6][D5][D4][D3][D2][D1][D0]

where 'i2c address' and 'register' are in hexadecimal format
and 'D7' through 'D0' are in binary format with values of 0,
1 or X for don't care.8
```

Anything following a comment command **#** is ignored by the parser, provided that it is on the same line.

The delay command **d** allows the user to specify a time, in milliseconds, that the script pauses before proceeding. Note: The delay time is entered in decimal format.

A series of byte values follows either a read or write command. Each byte value is expressed in hexadecimal, and each byte must be separated by a space. Commands are interpreted and sent to the TAS1020B by the program.

The first byte following an **r** (read) or **w** (write) command is the I^{2}C slave address of the device (if I^{2}C is used) or the first data byte to write. (If SPI is used, note that SPI interfaces are not standardized on protocols, so the meaning of this byte varies with the device being addressed on the SPI bus.) The second byte is the starting register address that data will be written to (again, with I^{2}C; SPI varies. Following these two bytes are data, if writing; if reading, the third byte value is the number of bytes to read, (expressed in hexadecimal).

For example, to write the values 0xAA 0x55 to an I^{2}C device with a slave address of 0x30, starting at a register address of 0x03, the user writes:

```
#example script
I i2cfast
w 30 03 AA 55
r 30 03 02e
```

This script begins with a comment, specifies that a fast I²C bus is used, then writes *0xAA 0x55* to the I²C slave device at address 0x30, writing the values into registers 0x03 and 0x04. The script then reads back two bytes from the same device starting at register address 0x03. Note that the slave device value does not change. It is unnecessary to set the R/$\overline{W}$ bit for I²C devices in the script; the read or write commands does that.

If extensive repeated write commands are sent and commenting is desired for a group of bytes, the **>** command can be used to extend the bytes to other lines that follow. A usage example for the **>** command follows:

```
#example script for '>' command
I i2cfast
# Write AA and BB to registers 3 and 4, respectively
w 30 03 AA BB
# Write CC, DD, EE and FF to registers 5, 6, 7 and 8, respectively
> CC DD EE FF
# Place a commented breakpoint
b "AA BB CC DD EE FF was written, starting at register 3"
# Read back all six registers, starting at register 3
r 30 03 06b
```

The following example demonstrates usage of the Wait for Flag command, **f**:

```
#example script for 'wait for flag' command
I i2cfast
# Switch to Page 44
w 30 00 2C
# Switch buffer
w 30 01 05
# Wait for bit D0 to clear. 'x' denotes a don't care.
f 30 01 xxxxxxx0
```

Any text editor can be used to write these scripts; jEdit is an editor that is highly recommended for general usage. For more information, go to: http://www.jedit.org.

Once the script is written, it can be used in the command window by running the program, and then selecting *Open Script File*... from the File menu. Locate the script and open it. The script then is displayed in the command buffer. The user also can edit the script once it is in the buffer and save it by selecting *Save Script File*... from the File menu.

Once the script is in the command buffer, it can be executed by pressing the *Execute Command Buffer* button. If breakpoints are in the script, the script executes to that point, and the user is presented with a dialog box with a button to press to continue executing the script. When ready to proceed, the user pushes that button and the script continues.

8   Related Documentation

1. TLV320AIC3256EVM-U Software (SLOC213)

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During normal operation, some circuit components may have case temperatures greater than 85° C. The EVM is designed to operate properly with certain components above 85° C as long as the input and output ranges are maintained. These components include but are not limited to linear regulators, switching transistors, pass transistors, and current sense resistors. These types of devices can be identified using the EVM schematic located in the EVM User's Guide. When placing measurement probes near these devices during operation, please be aware that these devices may be very warm to the touch.

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