

General Description

The Maxim Audio Interface 1 (AUDINT1) board provides both an I²C and I²S interface to facilitate the evaluation of compatible Maxim Development (DEV) boards. Maxim DEV boards that are evaluated with the AUDINT1 interface board can require custom GUI software, which is available as a download from Maxim's [evkit-software](#) web page.

The AUDINT1 board and a compatible DEV board are ordered together as an evaluation system (EV system). Ordering information for EV systems is located in the EV system data sheet.

Refer to the appropriate EV system data sheet for quick start and detailed operating instructions.

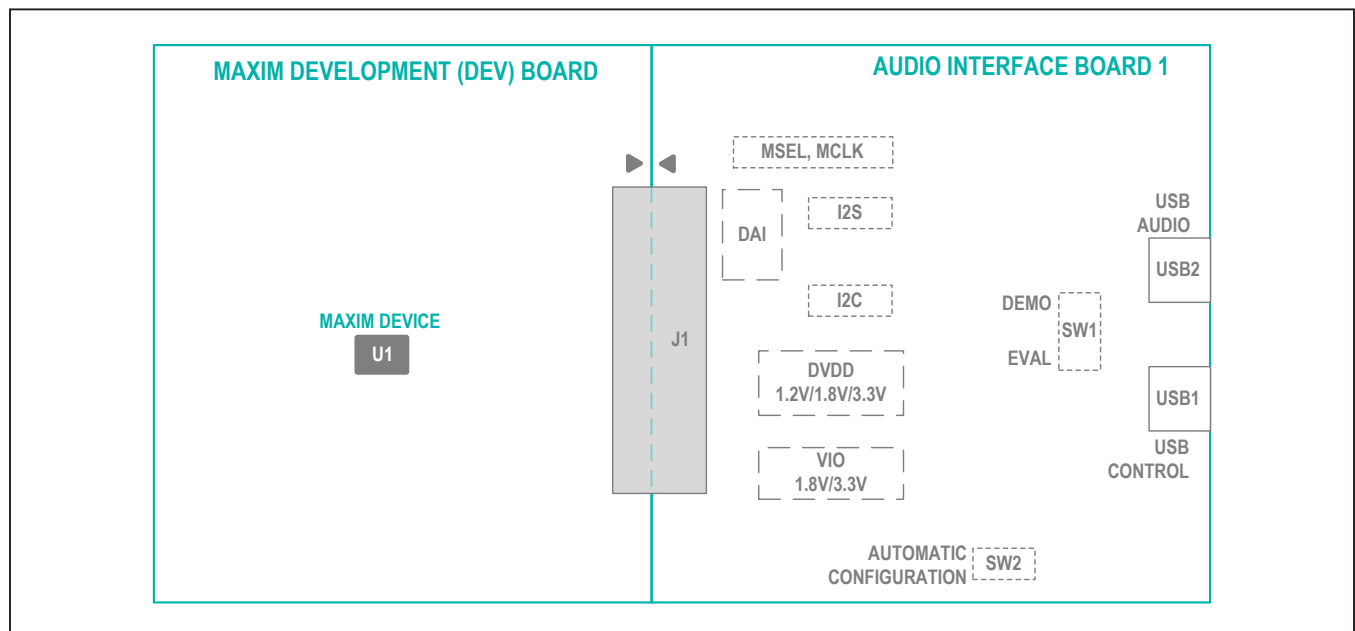
The AUDINT1 board is provided as part of selected Maxim evaluation systems (EV system) to evaluate Maxim parts only. The use of the AUDINT1 board as a development target is not supported. Refer to the MAXQ2000 evaluation kit data sheet for this purpose.

Benefits and Features

- USB Powered (+5V)
- USB-to-I²C (USB CONTROL)
- USB-to-I²S (USB AUDIO)
- On-Board Master Clock Sources
- On-Board LDOs (+1.2V, +1.8V, +3.3V)
- Compatible with Standard FTDI VCP Drivers
- Fully Assembled and Tested

Ordering Information appears at end of data sheet.

Simplified EV System Block Diagram



Quick Start

Required Equipment

- Device-specific DEV board
- Two A-to-mini B USB cables (provided)
- Windows XP®, Windows® 7, or Windows 8 computer with two available USB ports

Note: In the following sections, software-related items are identified by bolding. Text in **bold** refers to items directly from the evaluation software. Text in **bold and underlined** refers to items from the Windows operating system.

Procedure

The AUDINT1 board is fully assembled and tested. Follow these steps to setup the AUDINT1 board for the evaluation of a compatible DEV board:

- 1) Configure the AUDINT1 jumpers and switches based on the needs of the companion DEV board. See [Table 2](#) and [3](#) for jumper configuration options and refer to the DEV board's data sheet for device configuration requirements.
- 2) Before connecting the PC to the AUDINT1 board, install the evaluation software for the device-specific DEV board. This is to ensure that the USB device driver, which is packaged with the evaluation software, gets installed on the host PC. To download the device's evaluation software, go to www.maximintegrated.com/evkitsoftware. Refer to the EV system data sheet for additional details.
- 3) Do not proceed until the evaluation software installation is completed. This ensures that the required virtual COM port (VCP) driver is installed and the PC recognizes the AUDINT1 board as a USB device. If needed, the USB driver can be manually installed by downloading and installing the VCP driver package (release 2.10.00 or newer) directly from the FTDI website.
- 4) Connect a USB cable between the PC and the USB1 port (USB CONTROL) on the AUDINT1 board. Once Windows reports the device is ready to use then the USB driver has been installed successfully. The status of the USB connection can be manually checked by opening Windows' **Device Manager** and expanding the **Universal Serial Bus controllers** item. Right click on the **USB Serial Converter** item and select **Properties**. On the **Details** tab select **Hardware Ids** from the **Property** field and verify that VID_0403 and PID_6001 are shown in the **Value** field.
- 5) Connect a USB cable between the PC and the USB2 port (USB AUDIO) on the AUDINT1 board.
- 6) Open Windows' **Sound** dialog and select the **Playback** tab. A **USB Audio** item should be listed as one of the available playback devices. All audio played through this device is streamed through the AUDINT1 module to the DEV board.
- 7) Connect the AUDINT1 board to the DEV board. Refer to the EV system data sheet for additional quick start steps that might be needed to prepare the EV system for evaluation.

Detailed Description of Software

The AUDINT1 board is a tool that is designed to be used with compatible DEV boards, and as such, does not have its own dedicated GUI software. Refer to the appropriate EV system data sheet for further evaluation details. The EV system data sheet provides details about the associated DEV board and its use with the AUDINT1 board.

Note: A DEV board may not require PC GUI software, as would be the case for a DEV board that only utilizes the audio streaming capability of the AUDINT1 board.

Detailed Description of Hardware

The AUDINT1 board provides both an I²C and I²S interface to facilitate the evaluation of compatible Maxim development (DEV) boards. The AUDINT1 interface board comprises two microcontroller circuits, one for each of the available interfaces.

The multicore microcontroller (U200) provides the USB-to-I²S interface, allowing for audio streaming onto Maxim's I²S-compatible DEV boards. The Maxim MAXQ2000 microcontroller (U100) and the FTDI (U101) device provide the USB-to-I²C interface, providing the communication link between an I²C capable DEV board and its associated PC GUI software. The MAXQ2000 microcontroller provides the I²C interface and the FTDI device provides the USB to serial interface, which is supported by standard FTDI drivers.

The AUDINT1 module operates from USB power (+5V) and does not require any external power supplies. Each of the USB ports (USB1 and USB2) is capable of powering the on-board LDOs that provide power to the connected DEV board. The available LDO output voltages are +1.2V, +1.8V, and +3.3V.

The 26-pin (2x 13) female connector (J1) on the AUDINT1 board connects to its male counterpart on a compatible DEV board. This connector includes connections for I²S, I²C, logic rail voltages, and ground. This connector also provides connections for six of the MAXQ2000's GPIO pins, two of which are used for interrupt (IRQ) monitoring.

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Table 1. USB Power Distribution

I ² S CAPABLE DEV BOARD	I ² C CAPABLE DEV BOARD	USING EVALUATION SOFTWARE	MODE (SW1)	USB CONNECTIONS	FUNCTIONALITY
Yes	Yes	Yes	EVAL*, DEMO	USB1 + USB2	USB audio streaming + I ² C device configuration using evaluation software
Yes	Yes	No	DEMO*	USB2	Automatic I ² C device configuration + USB audio streaming
			EVAL	USB1 + USB2	
No	Yes	Yes	EVAL	USB1	I ² C device configuration using evaluation software
No	Yes	No	EVAL	USB1	Automatic I ² C device configuration
Yes	No	—	EVAL*, DEMO	USB2	USB audio streaming

*Recommended mode of operation.

Table 2. Mode Of Operation

MODE	LOGIC RAILS (+1.8V, +3.3V, +1.2V, 3V3, 2V5)	USB-TO-I ² C CIRCUIT	LOGIC RAILS (VDD18, VDD33, +1.0V)	USB-TO-I ² S CIRCUIT	CLOCK CIRCUITS
EVAL*	USB1		USB2		
DEMO	USB2				

*Default position.

Mode of Operation

The AUDINT1 board can be evaluated in either demonstration (DEMO) mode or evaluation (EVAL) mode. The mode of operation is set by switch SW1, which is located between the two USB ports.

DEMO mode is for situations when a PC is not available or does not have the required evaluation software. EVAL mode is for all other situations, as listed in [Table 1](#). For cases where the DEV board is not I²C capable, either mode can be used with a single USB connection (USB2).

DEMO Mode

In demonstration (DEMO) mode, the AUDINT1 board is intended to be evaluated with one USB connection (USB2). This mode of operation is intended for on-the-fly evaluations, where a PC may not be available or has not been setup with the required evaluation software. To utilize this mode for I²C device configuration, the MAXQ2000 requires customized firmware. The customized firmware contains device-specific instructions that automatically configure the device on power-up and/or on the pressing of the SW2 pushbutton.

Although DEMO mode is only recommended for one specific case (I²S and I²C without software), it can be set for other cases as listed in [Table 1](#). For these other cases, custom MAXQ2000 firmware is not required.

EVAL Mode

In evaluation (EVAL) mode, the AUDINT1 board can be evaluated with one or two USB connections, depending on the needs of the companion DEV board ([Table 1](#)). The main use case for EVAL mode is when the EV system (AUDINT1 board + DEV board) is evaluated with a PC that has been setup with the appropriate device-specific evaluation software.

As shown in [Table 1](#), there are other situations in which the EVAL mode can be utilized. It can be used, and is recommended, when only USB audio streaming is needed. This reduces the load placed on the USB2 port by isolating the unused I²C interface from the USB2 power rail. It can also be used in cases where USB audio streaming is not needed and a PC is not available or has not been setup with the device-specific evaluation software. As in DEMO mode, this case would require customized MAXQ2000 firmware to perform the automatic I²C device configuration (on power-up and/or on the pressing of the SW2 pushbutton).

Power Supply

The AUDINT1 board is powered by a host PC's USB power (+5V) and does not require any external supplies. The power distribution across the board is determined by the mode of operation, which is set by the SW1 switch ([Table 1](#)). In the recommended DEMO mode, only one

Table 3. Connector J1 Pinout

SIGNAL	PIN	PIN	SIGNAL
GND	2	1	MCLK
GPIO3	4	3	BCLK
GPIO4	6	5	LRCLK
GPIO5	8	7	DOUT
GPIO6	10	9	DIN
+3.3V	12	11	Reserved
GND	14	13	DVDD
GND	16	15	VIO
+5V	18	17	SDA
+5V	20	19	SCL
GPIO2	22	21	GPIO1
Reserved	24	23	Reserved
Reserved	26	25	Reserved

USB connection (USB2) is needed to supply the board. In the recommended EVAL modes, one or both of the USB connections (USB1 and USB2) may be needed to power the board. See [Table 2](#) for the USB power distribution in each mode of operation.

MAXAUDINT001 Connector J1

Connector J1 is a 2-pin dual row right-angle header that connects to a compatible development (DEV) type EV kit. Although, it can be used to connect to other board types that have a compatible male connector and appropriate pin mapping. All signal and power nets intended for the device(s) on the DEV board are routed to the J1 connector. See [Table 3](#) for a list of signals and logic-rail voltages available on the J1 connector.

Hardware Configuration

The AUDINT1 board is configured by adjusting the provided jumpers and slide switches. [Table 4](#) and [Table 5](#) describe the jumper and switch configuration options.

Master Clock (MCLK) Selection

The MCLK and MSEL switches are used to route one of the on-board clocks to the master clock output (MCLK) available at connector J1. An external clock can be used by setting the MCLK switch to DISCONNECTED and connecting the external clock to pin 2 of header J3 or pin 1 of connector J1.

See [Table 6](#) to configure the master clock output to one of the available on-board clocks: 11.2896MHz, 12MHz, or 12.288MHz. In order for the on-board clock circuits to work, power needs to be supplied to the USB2 port.

I²S Audio

The AUDINT1 board provides two methods for driving a DEV board's I²S Interface. The first method is through the I²S header (J3) and this provides the most direct connection to the DEV board. The other method involves streaming audio through the USB AUDIO (USB2) port. In both cases, the I²S signal are connected to the DEV board by connecting to the J1 header.

Digital Audio Interface Header J3

Header J3 provides direct access to the I²S interface present on the J1 connector. See [Table 7](#) for individual pin descriptions. This header also allows for the use of an external audio source to drive the DEV board's I²S interface. When using an external audio source, configure the I²S switch with its actuator in the DISCONNECT position to prevent the multicore microcontroller (U200) from also driving the I²S bus.

USB Audio (USB2)

The multicore microcontroller (U200) and USB PHY interface (U202) make up the USB audio circuit that allows audio to be streamed from a PC connected to the USB2 port, onto a connected DEV board. The USB audio circuit

appears as a sound card to the PC and shows up as a **USB Audio** playback device in Windows' **Sound** dialog. Configure the **USB Audio** device as the default playback device (by pressing **Set Default**) to have audio from the PC streamed onto the AUDINT1 board. When audio is being streamed onto the AUDINT1 board, LEDB (located to the left of the XMOS device) turns on.

In order for the audio stream to be routed onto the connected DEV board, the I²S switch needs to be configured in the CONNECTED position (Table 5).

Note: The PCM digital audio signals are routed through a level-translator/buffer (U5 and U7) and a switch (U3) before routing to the J1 connector.

Table 4. Jumper Configuration

HEADER	SHUNT POSITION	DESCRIPTION
DVDD	+1.2V	Provides +1.2V to the digital logic rail on the J1 connector (pin 13)
	+1.8V*	Provides +1.8V to the digital logic rail on the J1 connector (pin 13)
	+3.3V	Provides +3.3V to the digital logic rail on the J1 connector (pin 13)
	GND	Grounds the digital logic rail on the J1 connector (pin 13)
VIO	+1.8V*	Provides +1.8V to the I/O logic rail on the J1 connector (pin 15)
	+3.3V	Provides +3.3V to the I/O logic rail on the J1 connector (pin 15)

*Default position.

Table 5. Switch Configuration

SWITCH	ACTUATOR POSITION	DESCRIPTION
I ² C	DISCONNECT	Disconnects the I ² C interface from the J1 connector
	CONNECT*	Connects the I ² C interface to the J1 connector
I ² S	DISCONNECT	Disconnects the I ² S interface from the J1 connector
	CONNECT*	Connects the I ² S interface to the J1 connector
MCLK	DISCONNECT	Disconnects the MCLK clock output from the J1 connector
	CONNECT*	Connects the MCLK clock output to the J1 connector
MSEL	SEL *	Master clock output connected to one of the three on-board clocks (11.2896MHz, 12MHz, 12.288MHz).
	12MHz	Master clock output connected to the on-board 12MHz oscillator
SW1	DEMO	Interface board evaluated in demonstration mode
	EVAL*	Interface board evaluated in evaluation mode

*Default position.

Table 6. Master Clock Configuration

MCLK SWITCH	MSEL SWITCH	CLOCK SOURCE
DISCONNECTED	X	On-board clock is not provided to DEV board. Use this setting if the DEV board does not require a master clock or if an external master clock is used. Connect the external master clock to pin 2 of header J3 or pin 1 of connector J1.
CONNECTED*	SEL	The on-board clock selected by the evaluation software (11.2896MHz, 12MHz, or 12.288MHz).
CONNECTED	12MHz	On-board 12MHz oscillator

*Default position.

X = Don't care

Table 7. DAI Header (J3)

PIN*	DESIGNATOR	SIGNAL
2	M	Master Clock (MCLK)
4	B	Bit Clock (BCLK)
6	L	Left right clock (LRCLK)
8	OUT	Data Out (DOUT)
10	IN	Data In (DIN)

*All odd pins are tied to ground.

USB Control (USB1)

The MAXQ2000 (U100) microcontroller and FTDI USB interface (U101) form the bridge between a DEV board’s I²C-capable devices and its associated evaluation software, running on a Windows XP/Windows 7/Window 8 computer. The AUDINT1 board exposes the MAXQ2000’s I²C and GPIO peripherals.

SMBus/I²C/2-Wire Interface

The MAXQ2000 portion of the AUDINT001 board offers bit-banged I²C at 400kHz (fast mode, default) or 100kHz (standard mode). SCL/SDA pullup resistors are provided on-board. Attainable throughput is limited by the PC and its software. The SMBus/I²C bus runs in bursts at rated speed, but there is some variable dead time between transfers, due to communication overhead. Properly written PC software can minimize this dead time, but cannot completely eliminate it.

GPIO Interface and Pushbutton Programmer

Six of the MAXQ2000’s general-purpose inputs/outputs (GPIOs) are routed to the J1 header, for use by the connected DEV board. Four of the GPIOs (GPIO3–GPIO6) are routed directly to the J1 header through an on-board level translator and can be used as needed. The other two GPIOs (GPIO1 and GPIO2) are also routed through an on-board level translator, but have additional LED and pullup circuitry to facilitate their use for interrupt (IRQ) monitoring.



Figure 2. Playback Device—USB Audio

An additional MAXQ2000 GPIO is connected to a pushbutton (SW2) and is used to implement a future feature: pushbutton programming. When enabled, the pushbutton allows the MAXQ2000 microcontroller to configure the main device on the DEV board without the need for the device’s evaluation software. The pushbutton instructs the microcontroller to write a preprogrammed sequence of data to the device, providing a quick method for configuring the DEV board for evaluation.

Detailed Description of Firmware

The MAXQ2000 firmware was developed using the MAX-IDE assembly language development environment. At this time, the standard MAXQ2000 firmware does not support the pushbutton programming feature.

Component List, Schematics, PCB Layout Diagrams

See the following links for component list, schematics, and PCB layout:

- [MAXAUDINT001 BOM](#)
- [MAXAUDINT001 schematic](#)
- [MAXAUDINT001 PCB](#)

MAXAUDINT001 Required Driver

FILE	DESCRIPTION
2.10.00 WHQL-certified (or newer)	FTDI virtual COM port (VCP) driver package

Ordering Information

PART	TYPE
MAXAUDINT001#	Audio Interface Board

#Denotes RoHS compliant.

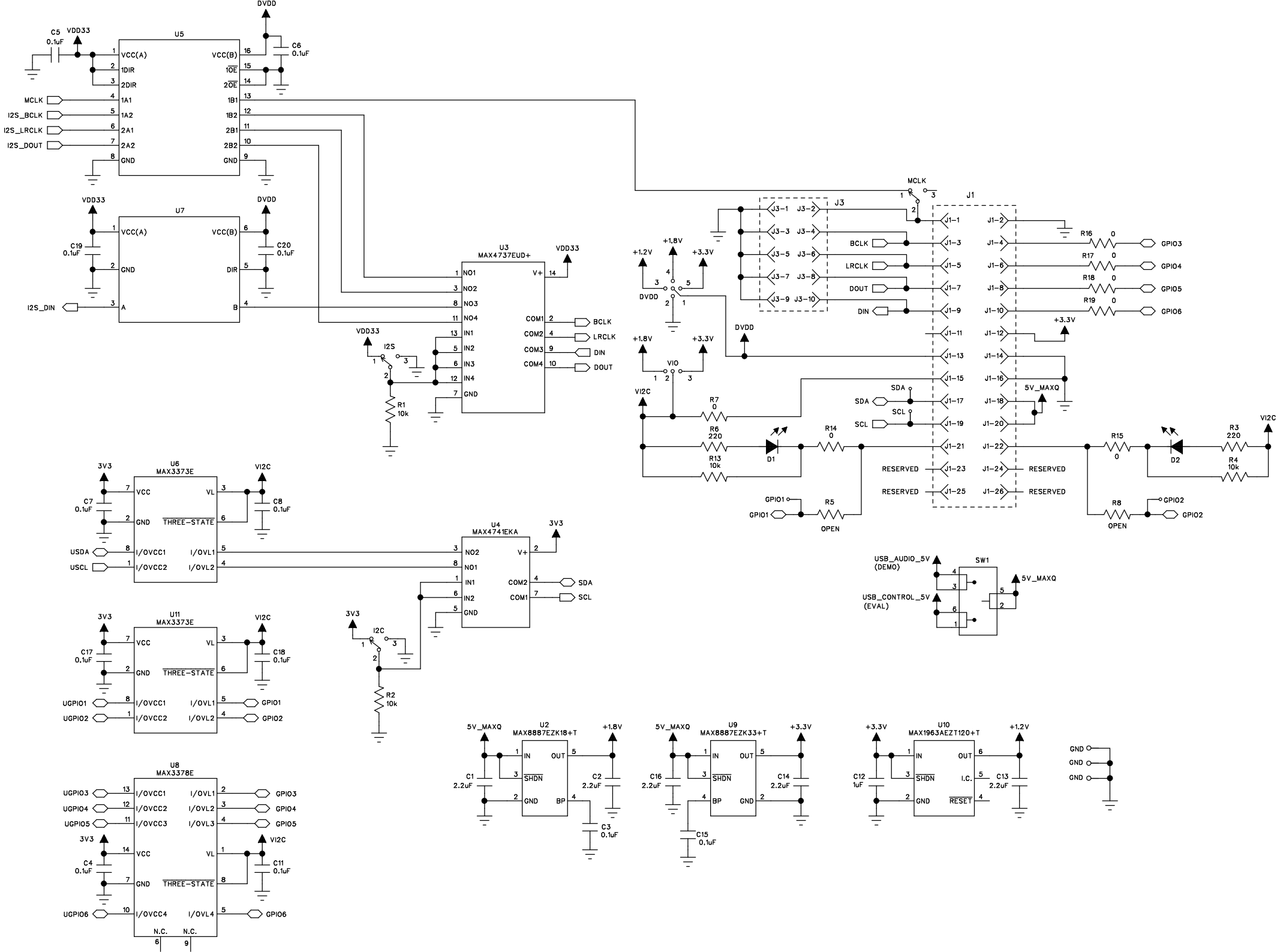
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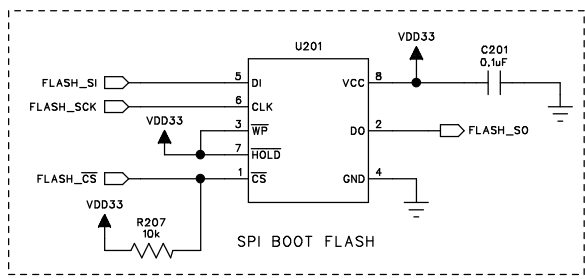
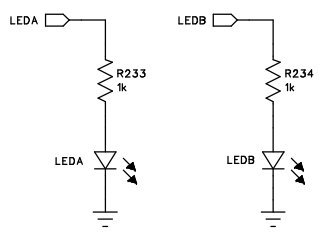
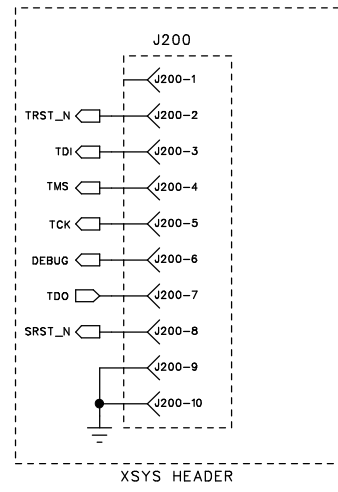
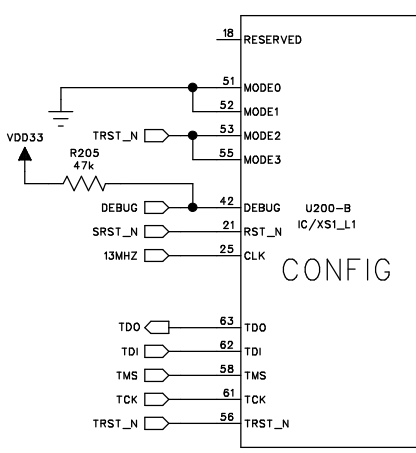
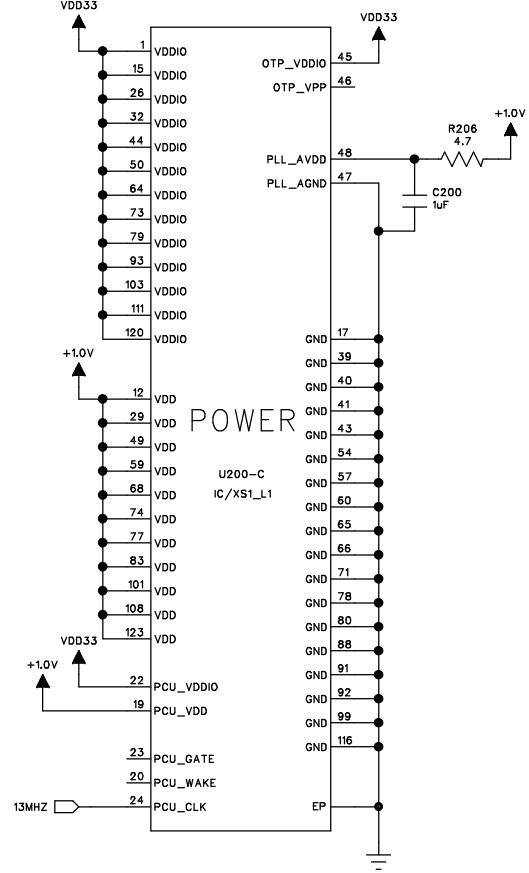
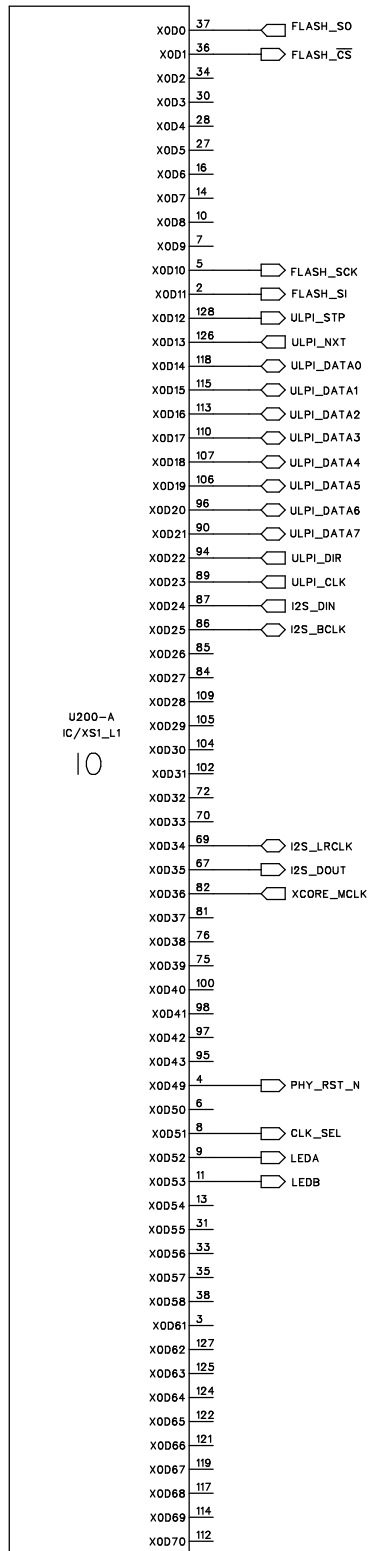
REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
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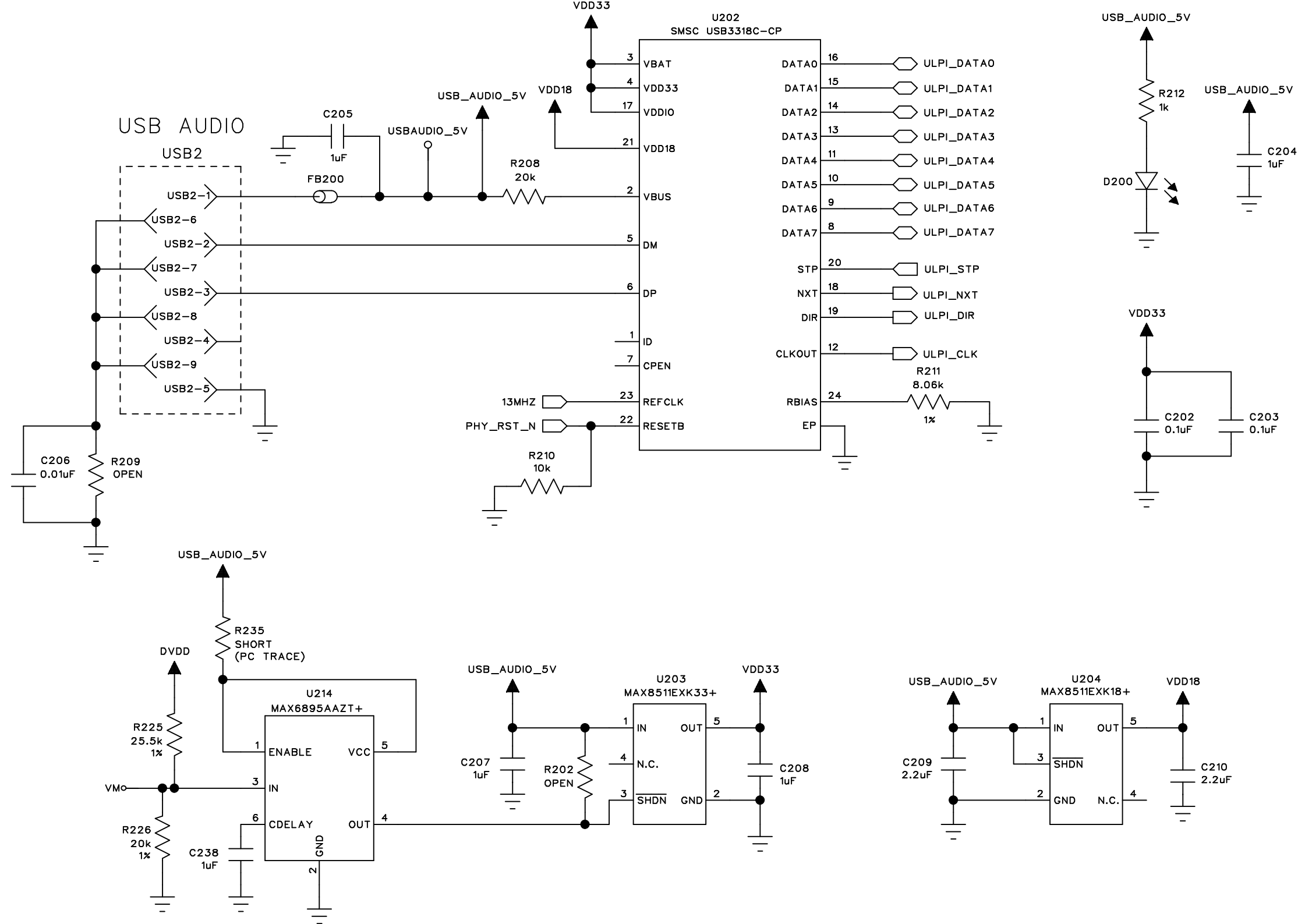
For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim Integrated's website at www.maximintegrated.com.

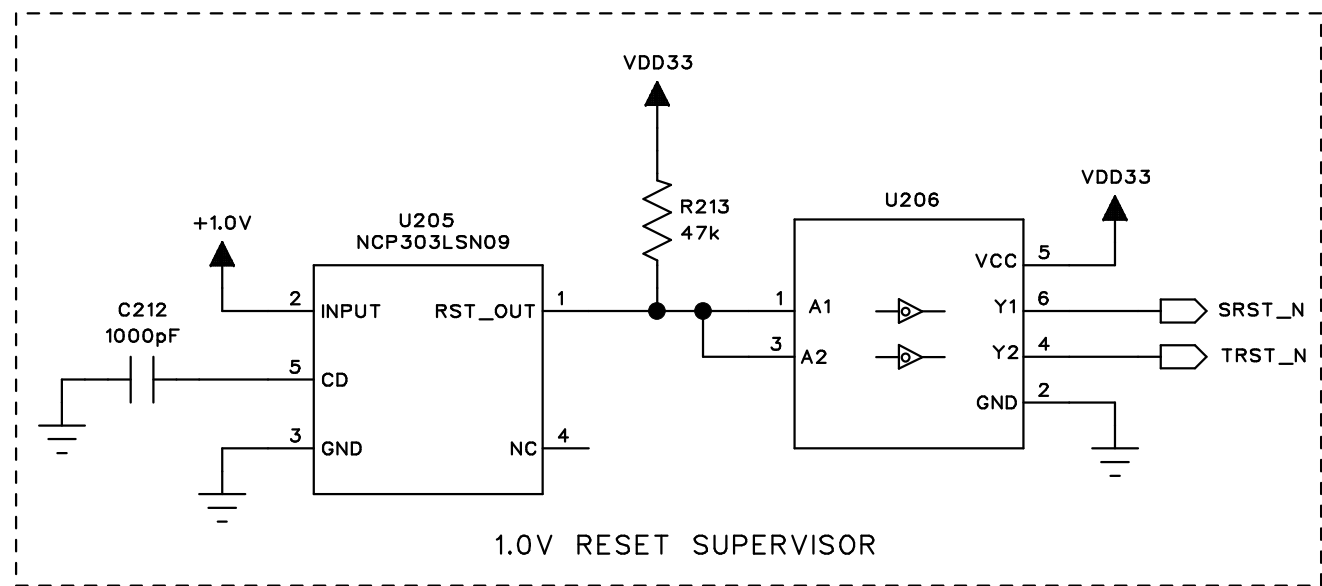
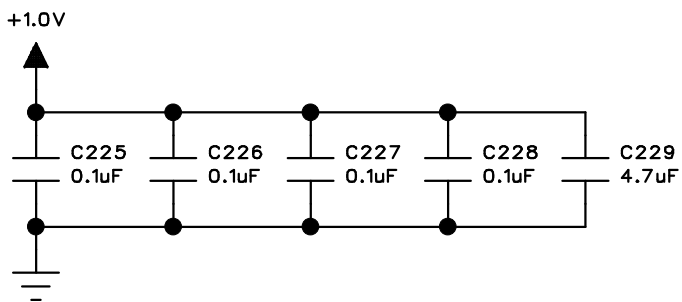
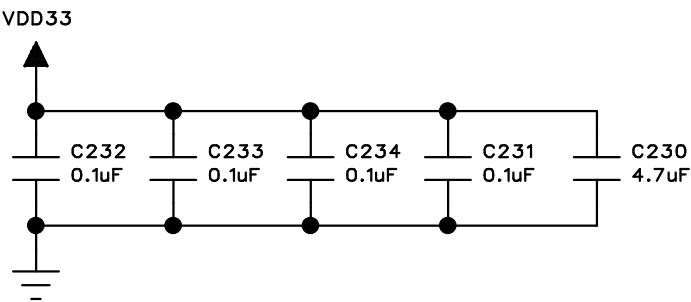
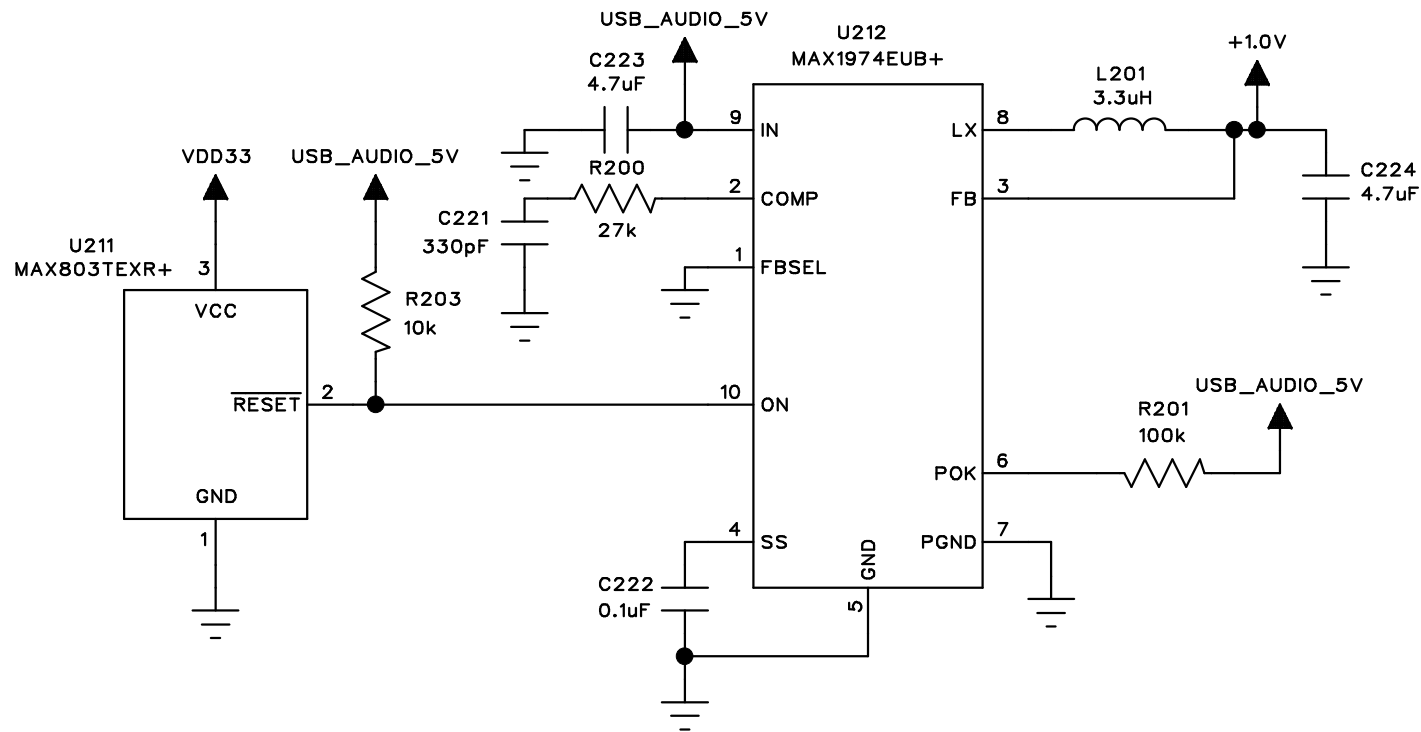
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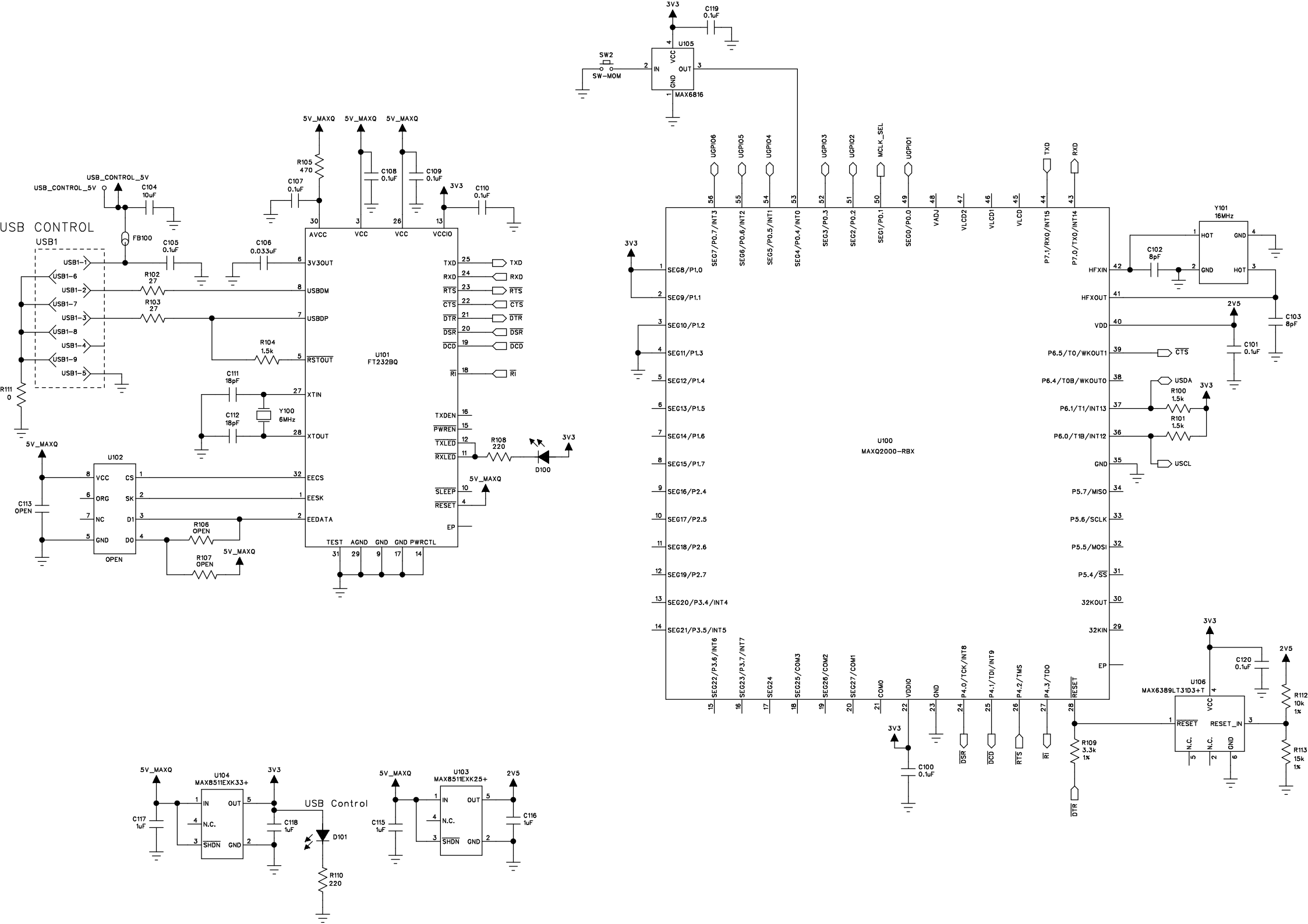
Bill of Materials (BOM) Rev 0: 8/15										
Parent	Item	Component Description	Qty	Primary Part	Alternate Part	Assembly DNI = Do Not Install	Reference Designator	Manufacturer	Manufacturer Part Number	Assembly Comments
#REF1	1	2.2uF ±10%, 6.3V X5R ceramic capacitor (0603)	7				C1, C2, C13, C14, C16, C209, C210	Murata	GRM188R6J225K	
	2	0.1uF ±10%, 16V X7R ceramic capacitor (0402)	35				C3-C8, C11, C15, C17-C20, C100, C101, C105, C107-C110, C119, C201-C203, C218-C220, C222, C225-C228, C231-C234	Murata	GRM155R71C104K	
	3	1uF ±10%, 10V X7R ceramic capacitor (0603)	5				C12, C207, C208, C213, C238	TDK	C1608X7R1A105K	
	4	8pF ±0.5pF, 50V C0H ceramic capacitor (0402)	2				C102, C103	Taiyo Yuden	UMK105CH080DV	
	5	10uF ±20%, 6.3V X5R ceramic capacitor (0805)	1				C104	TDK	C2012X5R0J106M	
	6	0.033uF ±10%, 25V X7R ceramic capacitor (0603)	1				C106	Murata	GRM188R71E333K	
	7	18pF ±5%, 50V C0G ceramic capacitor (0603)	2				C111, C112	TDK	C1608C0G1H180J	
	8	Capacitor (0402)	1			DNI	C113			
	9	1uF ±10%, 6.3V X5R ceramic capacitor (0402)	7				C115-C118, C200, C204, C205	TDK	C1005X5R0J105K	
	10	0.1uF ±10%, 25V X7R ceramic capacitor (0603)	1				C120	TDK	C1608X7R1E104K	
11	0.01uF ±10%, 50V X7R ceramic capacitor (0603)	4				C206, C211, C236, C237	Murata	GRM188R71H103K		
12	1000pF±10%, 50V X7R ceramic capacitor (0603)	1				C212	Murata	GRM188R71H102K		
13	33pF ±5%, 50V C0G ceramic capacitor (0603)	4				C214-C217	Murata	GRM1885C1H330J		
14	330pF ±5% 50V C0G ceramic capacitor (0603)	1				C221	Murata	GRM1885C1H331J		
15	4.7uF ±10%, 10V X5R ceramic capacitor (0805)	2				C223, C224	Murata	GRM219R61A475K		
16	4.7uF ±10%, 6.3V X5R ceramic capacitor (0603)	2				C229, C230	Murata	GRM188R6J475K		
17	Multipurpose test point, 63mil drill (Red)	1			DNI	CLK	Keystone	5010		
18	LED, red, 1.7V, 20mA (0603)	2				D1, D2	Stanley Electric	BR111C-TR		
19	LED, yellow (0603)	1				D100	Lite-On	LTST-C190YKT		
20	LED, green (0603)	4				D101, D200, LEDA, LEDB	Lite-On	LTST-C190GKT		
21	4-way (5-pin) header (0.1in centers)	1				DVDD	Sullins	PEC36SAAN	cut-to-fit	
22	Ferrite bead (0603)	1				FB100	Murata	BLM18PG221SN1		
23	Ferrite bead (0603)	2				FB200, FB201	Murata	BLM18KG331SN1		
24	Multipurpose test point, 63mil drill (Black)	3				GND (x3)	Keystone	5011		
25	Jumper-switch, SPDT, 0.1in centers	4				I2S, I2C, MCLK, MSEL	ITW Pancon	JSC416G0		
26	26-pin (2x13) dual row receptacle, 0.1in centers	1				J1	Samtec	SSW-113-02-S-D-RA		
27	10-pin (2x5) dual row header, 0.1in centers	1				J3	Sullins	PEC36DAAN	cut-to-fit	
28	10-pin header 0.1in centers	1				J200	Sullins	PEC36SAAN	cut-to-fit	
29	3.3uH, 1.1A power inductor	1				L201	Sumida	CDRH3D16NP-3R3NC		
30	N-channel enhancement mode FET (SOT-23)	3				Q200-Q202	Fairchild	BSS138		
31	10k ohms ±5% resistor (0402)	2				R1, R2				
32	220 ohms ±5% resistor (0603)	4				R3, R6, R108, R110				
33	10k ohms ±5% resistor (0402)	2				R4, R13				
34	Resistor (0402)	6			DNI	R5, R8, R16-R19				
35	0 ohms ±5% resistor (0402)	8				R7, R14, R15, R111, R214, R215, R227, R228				
36	1.5k ohms ±5% resistor (0402)	2				R100, R101				
37	27 ohms ±5% resistor (0603)	2				R102, R103				
38	1.5k ohms ±5% resistor (0603)	1				R104				
39	470 ohms ±5% resistor (0603)	2				R105, R222				
40	Resistor (0603)	5			DNI	R106, R107, R202, R209, R216				
41	3.3k ohms ±1% resistor (0603)	1				R109				
42	10k ohms ±1% resistor (0603)	2				R112				
43	15k ohms ±1% resistor (0603)	1				R113				
44	27k ohm ±5% resistor (0603)	1				R200				
45	100k ohm ±5% resistor (0603)	1				R201				
46	10k ohms ±5% resistor (0603)	6				R203, R204, R207, R210, R217, R220				
47	47k ohms ±5% resistor (0603)	2				R205, R213				
48	4.7 ohms ±5% resistor (0603)	1				R206				
49	20k ohms ±5% resistor (0603)	1				R208				
50	8.06k ohms ±1% resistor (0603)	1				R211				
51	1k ohms ±5% resistor (0603)	4				R212, R219, R233, R234				
52	2.2M ohms ±5% resistor (0603)	2				R218, R221				
53	33 ohm ±5% resistor (0603)	2				R223, R224				
54	25.5k ohm ±1% resistor (0603)	1				R225				
55	20k ohm ±1% resistor (0603)	1				R226				
56	Resistor (0402)	1			DNI	R235			PC-SHORT	
57	Miniature test point (Yellow)	4			DNI	SCL, SDA, GPIO1, GPIO2	Keystone	5004		
58	DPDT, Slide Switch	1				SW1	C&K Components	SS-22D0205-G2		
59	Tactile Switch	1				SW2	E-Switch	TL3302AF260QJ		
60	1.8V Low Noise Linear Regulator (5 SOT23)	1				U2	MAXIM	MAX8887EZK18+	Topmark: ADPX	
61	Low-Voltage Quad SPST Analog Switches (14 TSSOP)	1				U3	MAXIM	MAX4737EUD+		
62	Low-Voltage Dual SPST Analog Switches (8 SOT23-8)	1				U4	MAXIM	MAX4741EKA+		
63	4-bit dual supply translating transceiver (TSSOP16)	1				U5	NXP	74AVC4T245PW		
64	Dual Low-Voltage Level Translator (8 SOT23-8)	2				U6, U11	MAXIM	MAX3373EEKA+		
65	Single-bit dual-supply voltage level translator (SOT363)	1				U7	NXP	74AVC1T45GW		
66	Quad Low-Voltage Level Translator (14 TSSOP)	1				U8	MAXIM	MAX3378EEUD+		
67	+3.3V Low-Dropout, 300mA linear regulator (SOT23)	1				U9	MAXIM	MAX8887EZK33+		
68	+1.2V, 300mA LDO Regulator (SOT23-6)	1				U10	MAXIM	MAX1963AET120+		
69	MICROCONTROLLER (56 TQFN)	1				U100	MAXIM	MAXQ2000-RBX+		
70	USB to serial UART interface (TQFN5x5-32L)	1				U101	FTDI	FT232RL		
71	EEPROM, 93C46 Type 3-Wire (SOIC-8)	1			DNI	U102	Atmel	AT93C46EN-SH-B		
72	2.5V Low Noise Linear Regulator (5 SC70)	1				U103	MAXIM	MAX8511EXK25+	Topmark: ADV	
73	3.3V Low Noise Linear Regulator (5 SC70)	2				U104, U203	MAXIM	MAX8511EXK33+	Topmark: AEI	
74	Single CMOS Switch Debouncer (4 SOT143)	1				U105	MAXIM	MAX6816EUS+		
75	Single Low-Power uP Reset Circuit (6 uDFN)	1				U106	MAXIM	MAX6389LT31D3+		
76	XMOS Processor (128 TQFP)	1				U200	XMOS	X51-L01A-TQ128-C5		
77	SPI flash memory, 2Mb (SOIC-8)	1				U201	Winbond	W25X20CLSNIG		
78	USB 2.0 Transceiver, ULPI (QFN 24)	1				U202	SMSC	USB3318C-CP		
79	1.8V Low Noise Linear Regulator (5 SC70)	1				U204	MAXIM	MAX8511EXK18+		
80	Voltage detector (SOT23-5)	1				U205	On Semiconductor	NCP303L SN09T1G		
81	TinyLogic UHS dual buffer (SC70-6)	1				U206	Fairchild	NC7W207P6X		
82	Dual logic buffer (SC70-6)	2				U207, U210	Fairchild	NC7W217P6X		
83	Dual unbuffered inverter (SC70-6)	1				U208	Fairchild	NC7W2U04P6X		
84	2-input multiplexer (SC70-6)	3				U209, U213, U215	Fairchild	NC7SZ157P6X		
85	Microprocessor reset circuit (SC70-3)	1				U211	MAXIM	MAX803TEXR+		
86	1A, Step-Down Regulator (uMAX)	1				U212	MAXIM	MAX1974EUB+		
87	Low-power sequencing/supervisory circuit (6 SOT23)	1				U214	MAXIM	MAX6895AAZT+		
88	Clock Divider (8-pin SOIC)	1				U216	Integrated Device Technology	ICS542MLFT		
89	Multipurpose test point (Red)	2				USB CONTROL 5V, USBAUDIO 5V	Keystone	5010		
90	USB Mini AB Receptacle	2				USB1, USB2	Hirose Electric	UX60A-MB-5ST		
91	3-pin header (0.1in centers)	1				VIO	Sullins	PEC36SAAN		
92	Miniature test point (Red)	1			DNI	VM	Keystone	5000		
93	6MHz crystal	1				Y100	Hong Kong X'tals	SSL60000N1HK188F0-0		
94	CRYSTAL, 16MHz (3.2mm x 2.5mm)	1				Y101	Kyocera	CX3225SB16000D0FLJZ		
95	Crystal, 24.576MHz (6.0mm x 3.3mm)	1				Y200	Abracon Corp.	ABM7-24.576MHZ-D-2-Y-T		
96	Crystal, 11.2896MHz (6.0mm x 3.3mm)	1				Y201	Abracon Corp.	ABM7-11.2896MHZ-D-2-Y-T		
97	13Mhz Clock Oscillator (2.5mm x 2.0mm)	1				Y202	ECS Inc	ECS-2033-130-BN		
98	12Mhz Clock Oscillator (2.5mm x 2.0mm)	1				Y203	ECS Inc	ECS-2033-120-AU		
99	Shunt, 2 position, 0.1 center	2					Kycon	SK1100-B	See Assembly Notes Tab	
100	PCB	1				AUDIO INTERFACE BOARD 1	EPCBAUDINT1			
101	Aluminum standoff, hex, 4-40 thread, 0.187" OD, 0.5"L	4					Keystone	2203		
102	Machine screw, philips, 4-40, 3/8" length	4					B&F Fastener Supply	PMSS54400038PH		
PACK-OUT	1	CABLE, USB high-speed A-to-mini B	2					Assmann Electric	AK672M/2-2-R	











AUDIO INTERFACE BOARD 1

P/N: EPCBAUDINT1

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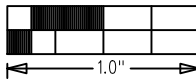
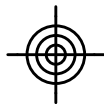
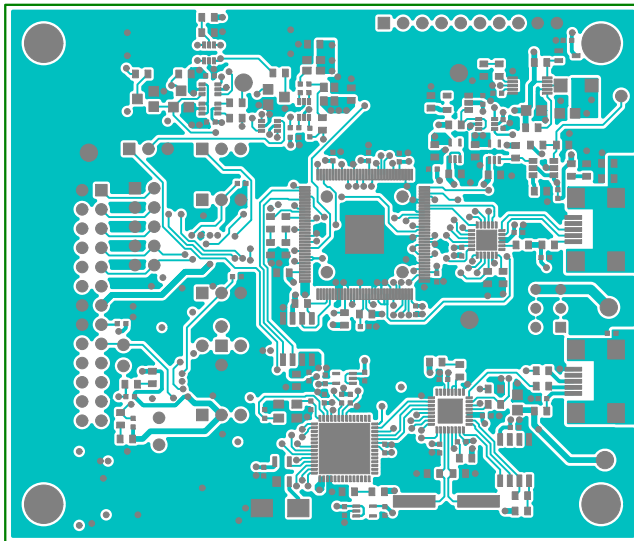
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LAYER

COMPONENT SIDE

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AUDIO INTERFACE BOARD 1

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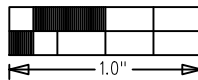
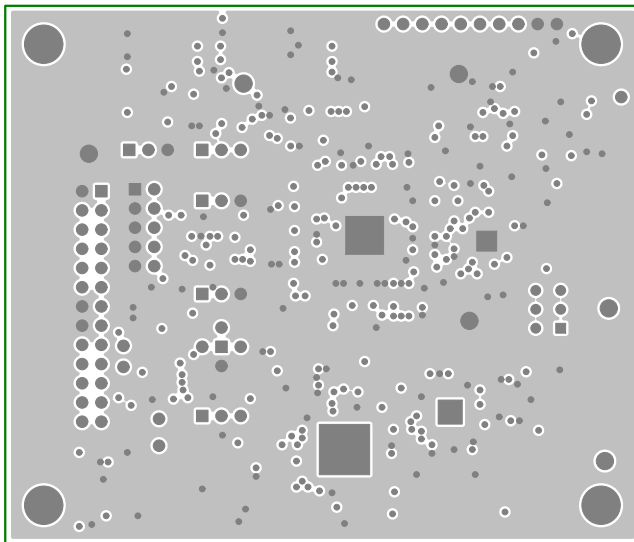
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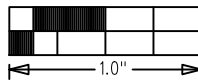
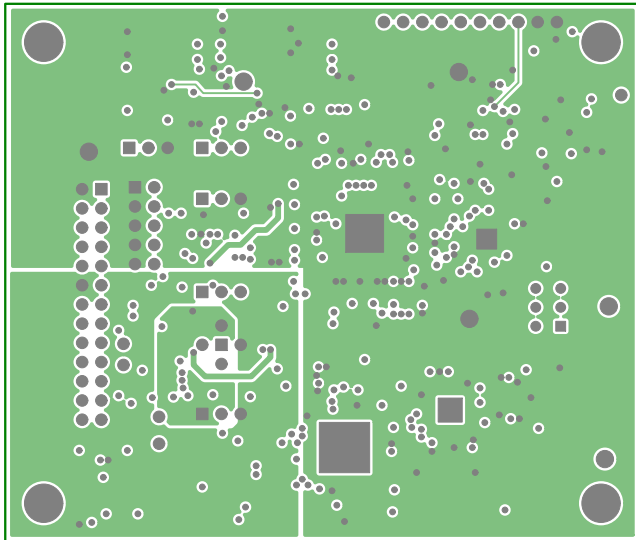
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AUDIO INTERFACE BOARD 1

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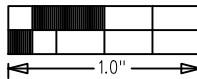
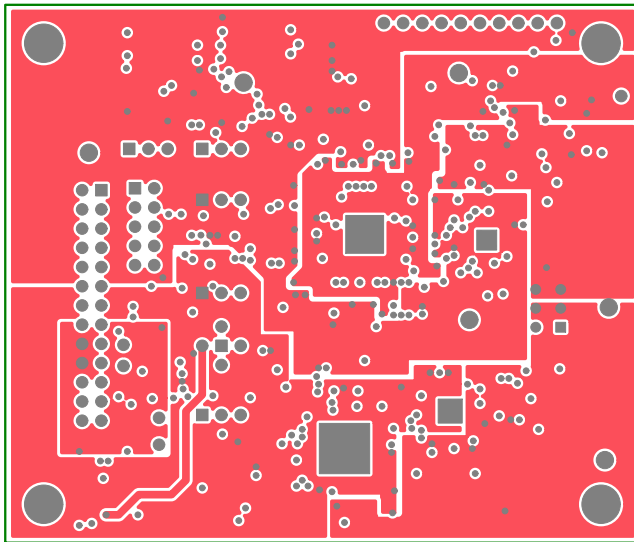
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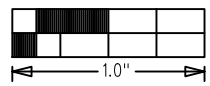
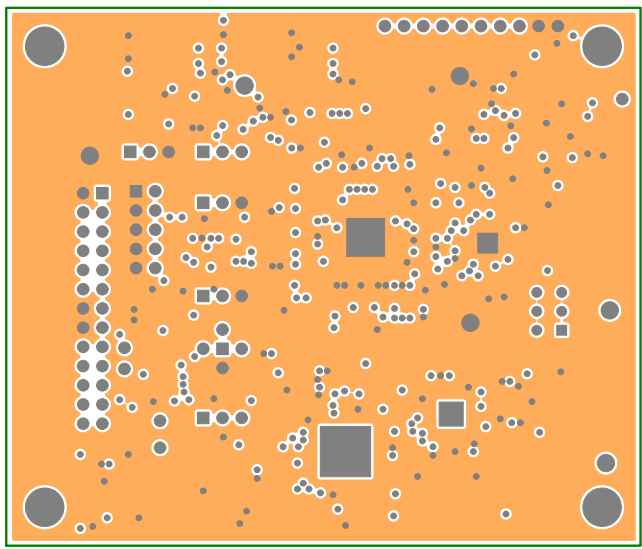
LAYER 4 PWR


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