

MAX32630, MAX32631 Evaluation Kits

General Description

The MAX32630 and MAX32631 evaluation kits (EV kits) provide a convenient platform for evaluating the capabilities of the MAX32630–MAX32632 microcontrollers, respectively. While the MAX32630 EV kit includes a MAX32630 soldered directly to the board, the MAX32631 EV kit features a socketed MAX32631. This version can be used to evaluate the MAX32632, but contact the factory for samples. Each EV kit also provides a complete, functional system ideal for development and debugging applications. Except where stated otherwise, the following sections apply to both EV kits.

EV Kit Contents

- EV kit board with a soldered MAX32630 (MAX32630-EVKIT#)
- EV kit board with a socketed MAX32631 (MAX32631-EVKIT#)
- Olimex® Arm®-USB-TINY-H JTAG debugger with JTAG ribbon cable (for connecting from debugger to EV kit header J1) and USB standard A-to-B cable (for connecting from PC to debugger)
- Two standard-A to Micro-B USB cables (for connecting from a PC or stand-alone USB power supply to EV kit connectors CN1 and CN2)
- MAX32630/MAX32631 EV Kit Quick Start
- Hex Keys for the Socket (MAX32631 EV Kit Only)

Ordering Information

PART	TYPE
MAX32630-EVKIT#	EV Kit with MAX32630 sample
MAX32631-EVKIT#	EV Kit with socket and MAX32631 sample

#Denotes RoHS compliant.

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Evaluate: MAX32630–MAX32632

Benefits and Features

- Easily Load and Debug Code Using the Supplied Olimex Arm-USB-TINY-H JTAG Debugger Connected Through a Standard 20-Pin ARM JTAG Header
- Headers for Accessing the IC's I/O Pins and Analog Front End (AFE) Input Signals
- USB Micro-B Connection to the IC's USB Device Controller
- USB Micro-B Connection to USB-UART Bridge Selectable Between the IC's Internal UART 0 and UART 1
- On-Board Bluetooth® 4.0 BLE Transceiver with Chip Antenna

EV Kit Contents (MAX32630 Pictured)



Getting Started

- 1) While observing safe ESD practices, carefully remove the EV kit board out of its packaging. Quickly inspect the board to ensure that no damage occurred during shipment. Jumpers/shunts were preinstalled prior to testing and packaging. By default, the USB-UART bridge is the source of power for the EV kit board. See [Table 1](#) and [Figure 3](#) for the default settings and descriptions.
- 2) The IC is preprogrammed with a demo program. To power up the board and run the demo, simply connect the Micro-USB cable to the Micro-USB jack found at the top left of the EV kit PCB. The jack is labeled CN1. The other end of the Micro-USB cable can be connected either to a computer or to a USB wall charger to get +5V power. No data is sent over USB in this demo.
- 3) Once power is applied, the demo initiates. The demo displays text and graphics on the OLED display, flashes LED0–LED3, and outputs data to UART0.
- 4) Do not connect any of the additional USB cables or Olimex JTAG adapter until after the tool chain/drivers are installed.

If the demo runs as expected, the next step is to download and run the installer. Refer to the Quick Start. The installer is a small application that allows the user to select which components to download and install including tools, drivers, and documentation. A description of each component and the hard drive size required for each can be seen by clicking on each component.

Detailed Description

This section describes each major function or component on the EV kit. This EV kit is general purpose in nature and provides many user-selectable options that are described in the following sections. Each jumper setting is described and its default setting illustrated.

Board Power

The EV kit's main power supply input is +5V, made available through Micro-USB type-B connector CN1 or CN2. This board is default jumpered for power to be provided by CN1.

Current Monitoring

Jumpers JP15, JP16, JP18, and JP19 provide convenient current monitoring points for VDD12 (JP15), VRTC (JP18), VDDDB (JP19), and VDDA+VDD18 (JP16). VDDIO (JP27) and VDDIOH (JP30) current can be monitored using these source selection jumpers.

Pushbuttons

Pushbuttons (normally open) SW1, SW2, and SW3 can be used to generate a logic 0 signal on their corresponding GPIO port pins. Firmware defines the action taken on switch closure.

Pushbutton SW4 provides a global POR reset function for the IC by asserting the RSTN input.

Pushbutton SW5 controls the PFN1 input of the PMIC. The function of the PFN1 input is configurable, but is preset to reset the PMIC when depressed for at least 12 seconds.

USB

The IC provides an integrated USB2.0 full-speed interface (12Mbps). This interface is accessed through the Micro-USB type-B connector, CN2.

USB-UART Bridge

The EV kit board provides a USB-to-UART bridge chip, FTDI FT230X. This bridge eliminates the requirement for a physical RS-232 COM port. Instead, the IC's UART access is through the Micro-USB type-B connector, CN1. Virtual COM port drivers and guides for installing Windows® drivers are available at the FTDI Chip website. Default parameters are 115,200 baud, 8 bits, no parity, 1 stop bit, no flow control.

The USB-to-UART bridge can be connected to UART 0 or UART 1 of the IC with jumpers JP10 (RX), JP12 (TX), JP13 (CTS), and JP14 (RTS). This interface is the default power source for the EV kit.

LEDs

The EV kit board has four LEDs with series current-limiting resistors. LEDs D1 (red), D2 (green), D3 (red) and D4 (green) are connected to the IC's GPIO pins P3.0, P3.1, P3.2, and P3.3, respectively. LED GPIOs must be configured as open-drain due to 3.3V LED source voltages. A LED illuminates when the appropriate GPIO pin is driven low.

Bluetooth Low-Energy (BLE) Controller

The EV kit board has a low-power Bluetooth controller, EM9301. Communication with the IC is through SPI 2B. This particular SPI port was selected due to the additional flow control signals that it features. The EM9301 controller is Bluetooth specification V4.0 compliant. Refer to the EM Microelectronic EM9301 data sheet for additional details.

Windows is a registered trademark and registered service mark of Microsoft Corporation.

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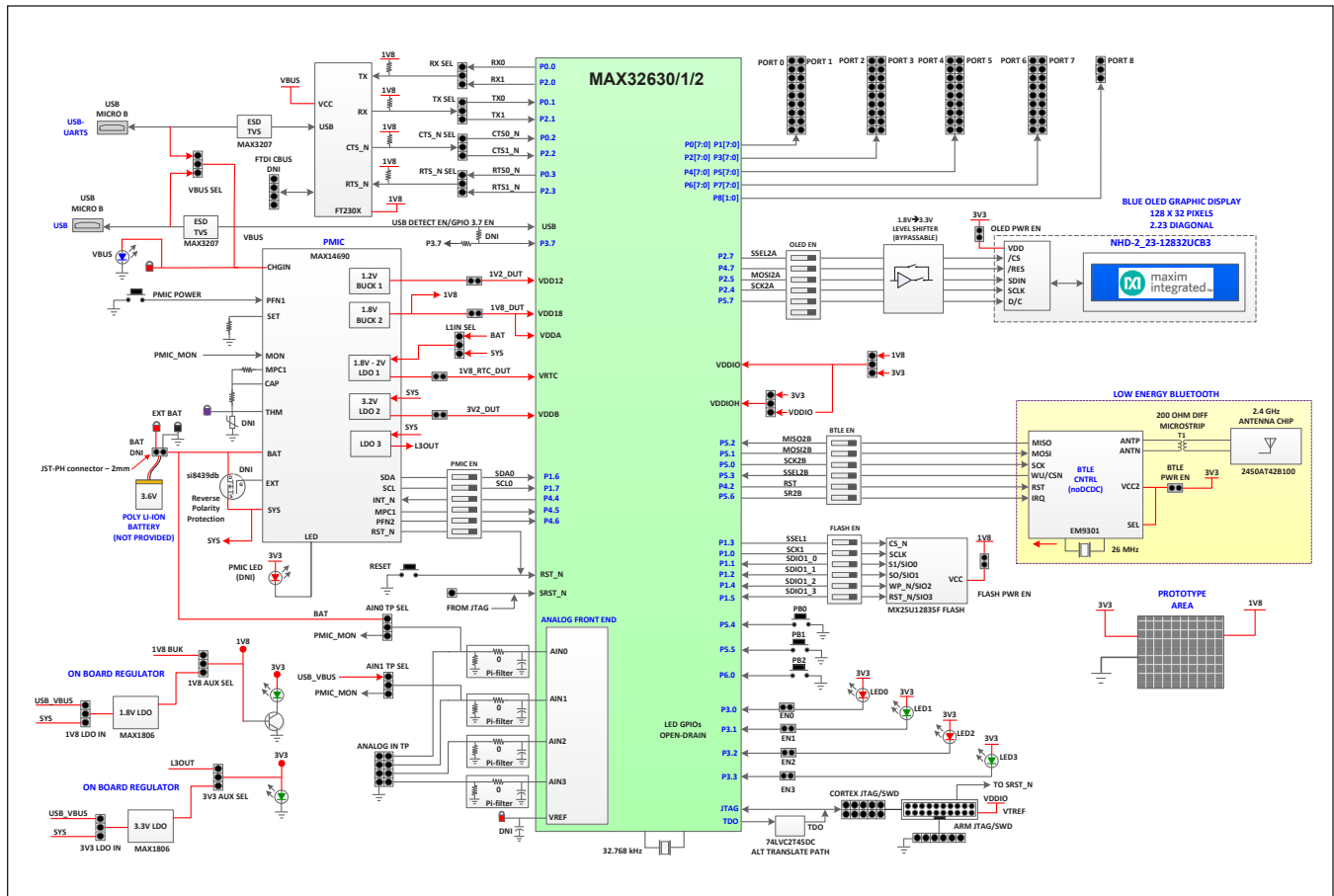


Figure 1. EV Kit Block Diagram

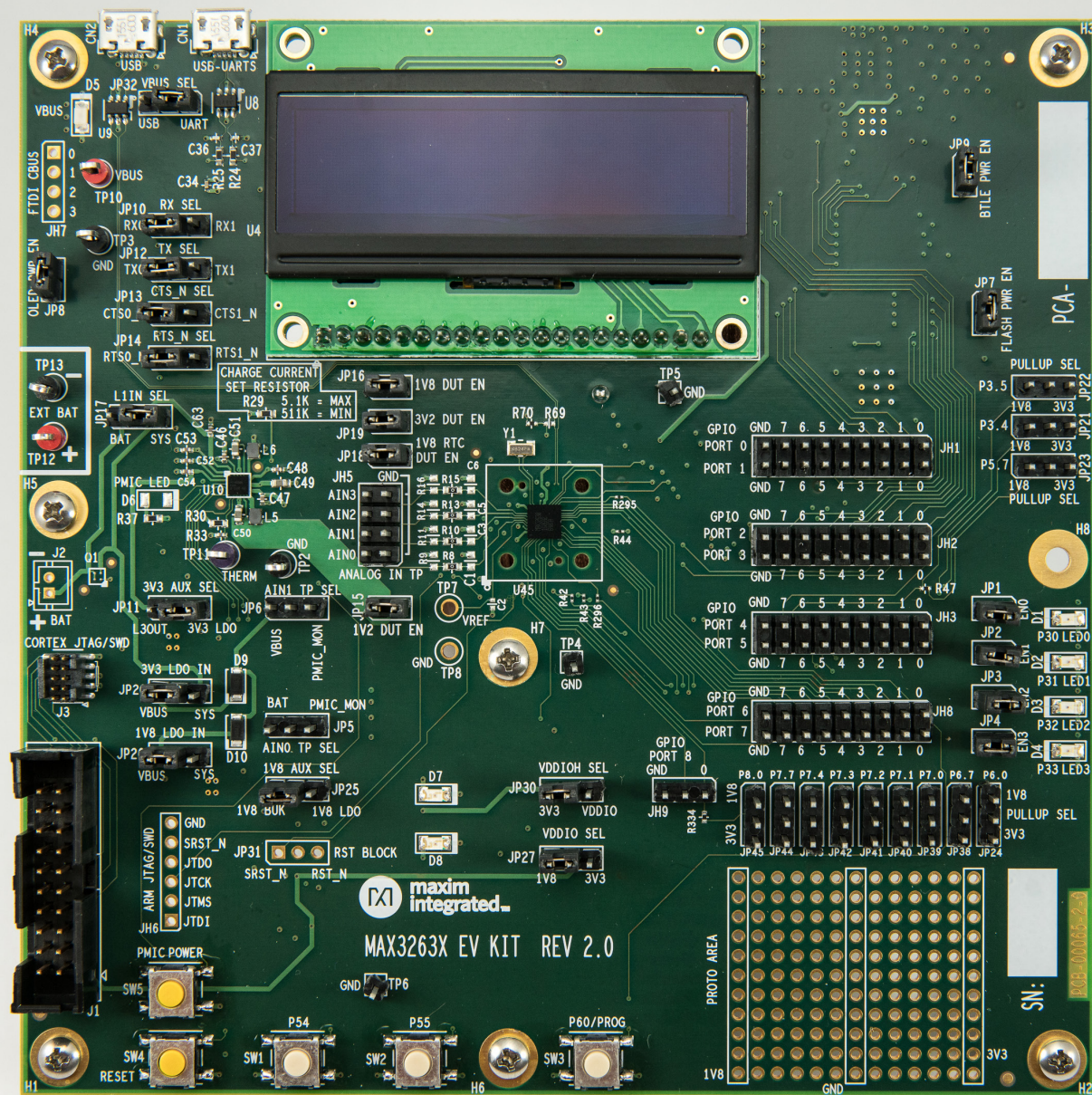


Figure 2. EV Kit Board (MAX32630 EV Kit Pictured)

Clocking

The IC operates from an internal 96MHz relaxation oscillator. The internal oscillator is adequate to run the core digital logic and peripherals. The accuracy of the internal oscillator is not suitable for accurate RTC timekeeping or USB operation. The external 32.768kHz crystal, Y1, provides the RTC with an accurate time base and is also used to calibrate the internal oscillator for the accuracy required for USB operation.

JTAG Connector

The ARM standard 20-pin connector pinout is provided by shrouded header J1. JH6 is provided as an optional debugging access point, it is not populated by default. The Olimex ARM-USB-TINY-H debugger is supplied with the EV kit. Various debugger modules are available for this interface. See the schematic notes for instructions when using other than supplied debugger. JTAG logic levels are set by VDDIO and are 3.3V tolerant. Refer to the IC's data sheet for more detail.

JTAG Serial Wire Debug (SWD) Support

SWD is supported by the IC and this EV kit. The port shares its clock (SWCLK) with JTAG TCK and a bidirectional data pin (SWDIO) is shared with JTAG TMS.

Graphic OLED Display Module

A 128 x 32 pixel graphic OLED display module, NHD-2.23-12832UCB3, is provided on the EV kit board. Communications with the NHD-2.23-12832UCB3 is through SPI 2A.

Power Management IC (PMIC)

The MAX14690 manages the EV kit power rails. It also manages the selection of EV kit power from either VBUS from CN1, CN2 or an (optional) external lithium-ion polymer battery. The MAX14690 can also function as a battery charger. Refer to the MAX14690 IC data sheet for additional information.

GPIO Headers and Port configuration

The IC provides support for both 1.8V and 3.3V peripherals through power rails VDDIO and VDDIOH. GPIO voltages can be programmed on a port-by-port basis, refer to the IC's user's guide for more detail. Multiple pullup options are supported when using special function port modes, with user selectable pullup voltage options to both rail voltages supported through jumper selection.

Prototyping Area

An area for adding customer-specific circuitry is provided. This matrix is on a 0.1in spacing and is usable for solder or wire-wrap construction. Power and ground rails run through the matrix.

Jumper Descriptions

[Table 1](#) details the functions of the configurable jumper headers on the EV kit board. The headers are standard 0.1in spacing, 0.025in posts. Settings in [Table 1](#) marked with an asterisk ("*") indicate default placements. [Figure 3](#) also shows the default placements highlighted in red.

Table 1. Jumper Functions and Default Settings

JUMPER	SIGNAL	SETTINGS	DESCRIPTION
JP1	GPIO3_0	1-2*	Connects GPIO3_0 to LED0
		Open	Disconnects LED0
JP2	GPIO3_1	1-2*	Connects GPIO3_1 to LED1
		Open	Disconnects LED1
JP3	GPIO3_2	1-2*	Connects GPIO3_2 to LED2
		Open	Disconnects LED2
JP4	GPIO3_3	1-2*	Connects GPIO3_3 to LED3
		Open	Disconnects LED3
JP5	AIN0_TP	1-2	Connects AIN0_TP to BAT
		2-3	Connects AIN0_TP to PMIC_MON
JP6	AIN1_TP	1-2	Connects AIN1_TP to VBUS
		2-3	Connects AIN1_TP to PMIC_MON
JP7	1V8	1-2*	Connects FLASH VCC to 1V8 power
		Open	Disconnects FLASH VCC
JP8	3V3	1-2*	Connects OLED display to 3V3 power
		Open	Disconnects OLED display
JP9	3V3	1-2*	Connects BTLE to 3V3 power
		Open	Disconnects BTLE
JP10	TXD of USB-SERIAL IC	1-2*	Connects TXD of USB - Serial IC to P0_0 (UART0A_RX)
		2-3	Connects TXD of USB - Serial IC to P2_0 (UART1A_RX)
JP11	3V3	1-2	Connects PMIC L3OUT to 3V3
		2-3*	Connects LDO OUT to 3V3
JP12	RXD of USB-SERIAL IC	1-2*	Connects RXD of USB - Serial IC to P0_1 (UART0A_TX)
		2-3	Connects RXD of USB - Serial IC to P2_1 (UART1A_TX)
JP13	RTS of USB-SERIAL IC	1-2*	Connects RTS of USB - Serial IC to P0_2 (UART0A_CTS)
		2-3	Connects RTS of USB - Serial IC to P2_2 (UART1A_CTS)
JP14	CTS of USB-SERIAL IC	1-2*	Connects CTS of USB - Serial IC to P0_3 (UART0A_RTS)
		2-3	Connects CTS of USB - Serial IC to P2_3 (UART1A_RTS)
JP15	1V2_DUT	1-2*	Connects VDD12 to the PMIC B1OUT (1V2)
		Open	Disconnects the PMIC B1OUT (1V2)
JP16	1V8_DUT	1-2*	Connects 1V8_DUT to the PMIC B2OUT (1V8)
		Open	Disconnects the PMIC B2OUT (1V8)
JP17	L1IN of PMIC	1-2	Connects L1IN of the PMIC to BAT (battery)
		2-3*	Connects L1IN of the PMIC to SYS
JP18	1V8_RTC_DUT	1-2*	Connects 1V8_RTC_DUT to the PMIC L1OUT (1V8)
		Open	Disconnects the PMIC L1OUT (1V8)
JP19	3V2_DUT	1-2*	Connects 3V2_DUT to the PMIC L2OUT (3V2)
		Open	Disconnects the PMIC L2OUT (3V2)
JP20	IN of the 3V3 LDO	1-2*	Connects IN of the 3V3 on-board LDO to VBUS
		2-3	Connects IN of the 3V3 on-board LDO to SYS
JP21	GPIO3_4	1-2	Connects GPIO3_4 to 1V8 10K pullup
		2-3	Connects GPIO3_4 to 3V3 10K pullup
JP22	GPIO3_5	1-2	Connects GPIO3_5 to 1V8 10K pullup
		2-3	Connects GPIO3_5 to 3V3 10K pullup
JP23	GPIO5_7	1-2	Connects GPIO5_7 to 1V8 10K pullup
		2-3	Connects GPIO5_7 to 3V3 10K pullup
JP24	GPIO6_0	1-2	Connects GPIO6_0 to 1V8 10K pullup
		2-3	Connects GPIO6_0 to 3V3 10K pullup

Table 1. Jumper Functions and Default Settings (continued)

JUMPER	SIGNAL	SETTINGS	DESCRIPTION
JP25	1V8	1-2*	Connects 1V8 to PMIC 1V8_BUK (1V8)
		2-3	Connects 1V8 to 1V8 on-board LDO
JP26	IN of the 1V8 LDO	1-2*	Connects IN of the 1V8 on-board LDO to VBUS
		2-3	Connects IN of the 1V8 on-board LDO to SYS
JP27	VDDIO	1-2*	Connects VDDIO to 1V8
		2-3	Connects VDDIO to 3V3
JP30	VDDIOH	1-2*	Connects VDDIOH to 3V3
		2-3	Connects VDDIOH to VDDIO
JP32	USB_VBUS	1-2*	Connects USB_VBUS to USB-UARTS (CN1)
		2-3	Connects USB_VBUS to USB (CN2)
JP38	GPIO6_7	1-2	Connects GPIO6_7 to 1V8 10K pullup
		2-3	Connects GPIO6_7 to 3V3 10K pullup
JP39	GPIO7_0	1-2	Connects GPIO7_0 to 1V8 10K pullup
		2-3	Connects GPIO7_0 to 3V3 10K pullup
JP40	GPIO7_1	1-2	Connects GPIO7_1 to 1V8 10K pullup
		2-3	Connects GPIO7_1 to 3V3 10K pullup
JP41	GPIO7_2	1-2	Connects GPIO7_2 to 1V8 10K pullup
		2-3	Connects GPIO7_2 to 3V3 10K pullup
JP42	GPIO7_3	1-2	Connects GPIO7_3 to 1V8 10K pullup
		2-3	Connects GPIO7_3 to 3V3 10K pullup
JP43	GPIO7_4	1-2	Connects GPIO7_4 to 1V8 10K pullup
		2-3	Connects GPIO7_4 to 3V3 10K pullup
JP44	GPIO7_7	1-2	Connects GPIO7_7 to 1V8 10K pullup
		2-3	Connects GPIO7_7 to 3V3 10K pullup
JP45	GPIO8_0	1-2	Connects GPIO8_0 to 1V8 10K pullup
		2-3	Connects GPIO8_0 to 3V3 10K pullup

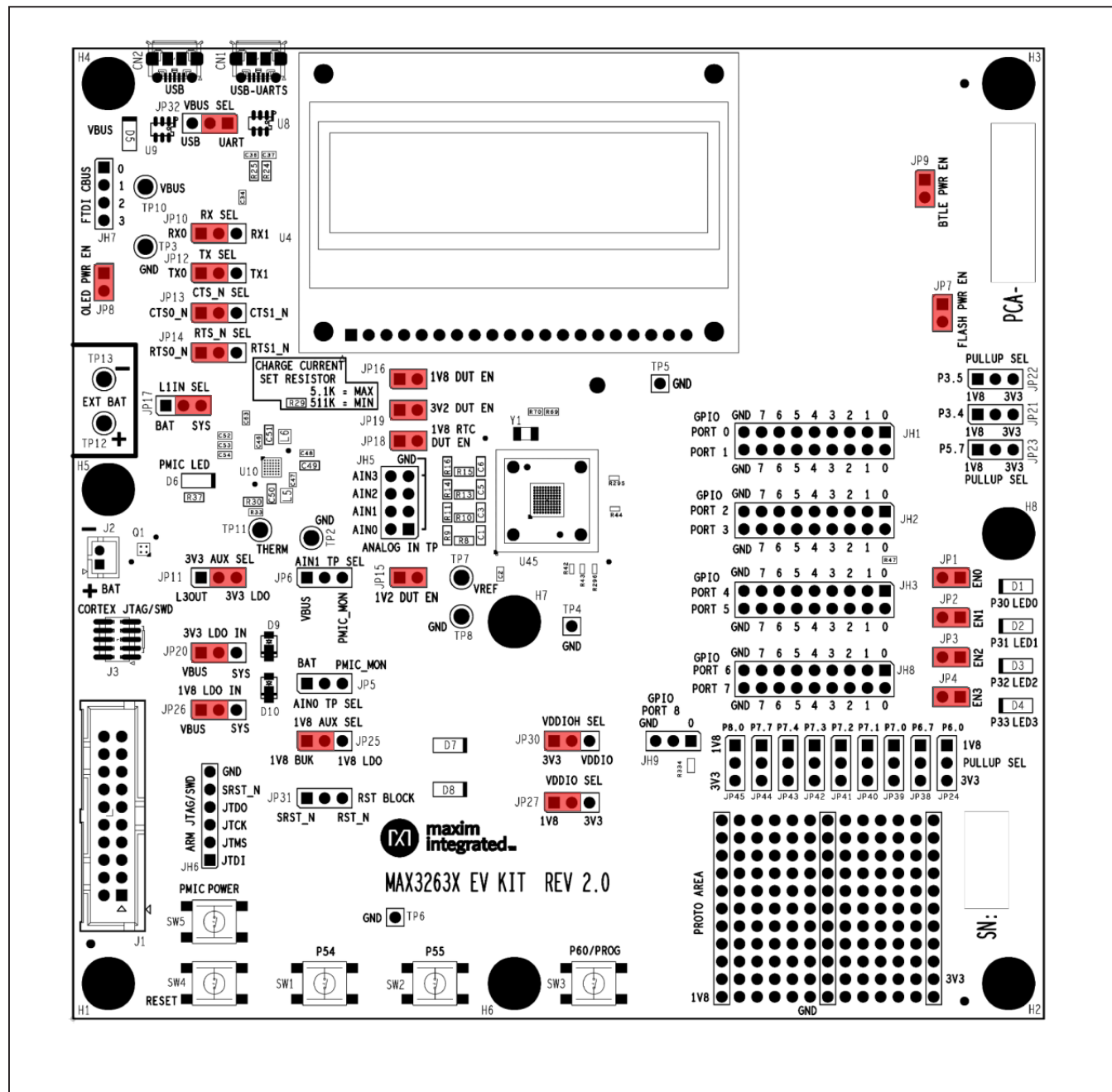


Figure 3. Default Jumper Placement (Applies to Both MAX32630 and MAX32631 EV Kits)

Additional Resources

- MAX32630/MAX32631 EV Kit Quick Start
- MAX32630/MAX32631 EV kit data sheet (this document)
- MAX32630/MAX32631 EV kit schematic*
- MAX32630/MAX32631/MAX32632 data sheet
- MAX32630/MAX32631 User's Guide
- Getting started with Eclipse using the Maxim ARM® Cortex® Toolchain (see note)
- MAX326XX SDK: Firmware User's Guide (see note)
- Example projects and app notes describing them*
(contact factory for MAX32632 secure documentation)

Note: Additional information resides in the installer. Once this component is installed, the information can then be found in the Windows **Start** Menu under **Maxim Integrated**, or it can be found by exploring the installation directory. It is recommended to visit www.maximintegrated.com to check whether updates have been made to any of the documents.

Technical Support

For technical support, go to:

<http://support.maximintegrated.com/micro>.

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Evaluate: MAX32630–MAX32632

Bill of Materials

QTY	PART	VALUE	BOM DESCRIPTION	MANUFACTURER PN	MANUFACTURER
1	ANT1	2450AT42B100E	ANTENNA CHIP 2.4GHZ	2450AT42B100E	Johanson Technology Inc
8	BMP1,BMP2,BMP3,BMP4,BMP5,BMP6,BMP7,BMP8	RB Bump	BUMPER RECESSED #4 SCREW BLACK	720	Keystone Electronics
9	C1,C3,C5,C6,C64,R9,R11,R14,R16	DNI	DNI		
1	C2	100nF	CAP CER 0.1UF 10V 10% X5R 0402	GRM155R61A104KA01D	Murata
17	C7,C8,C9,C10,C11,C46,C47,C48,C52,C53,C54,C56,C62,C63,C144,C146,C163	1uF	CAP CER 1UF 6.3V 10% X5R 0402	C1005X5R0J105K050BB	TDK Corporation
2	C12,C33	4.7nF	CAP CER 4700PF 25V 10% X7R 0402	GRM155R71E472KA01D	Murata
12	C13,C14,C17,C24,C34,C39,C58,C60,C61,C162,C164,C165	100nF	CAP CER 0.1UF 10V 10% X5R 0402	GRM155R61A104KA01D	Murata
1	C15	4.7nF	CAP CER 4700PF 25V 10% X7R 0402	GRM155R71E472KA01D	Murata
2	C16,C31	1uF	CAP CER 1uF 16V 10% X7R 0603	GCM188R71C105KA64D	Murata
2	C22,C23	15pF	CAP CER 15PF 50V 5% NP0 0402	GRM1555C1H150JA01D	Murata
1	C25	47uF	CAP CER 47uF 6.3V 20% X5R 1206	C3216X5R0J476M	TDK Corporation
2	C30,C32	100pF	CAP CER 100PF 50V 5% NP0 0402	C1005C0G1H101J050BA	TDK Corporation
2	C35,C44	10nF	CAP CER 10nF 25V 10% X7R 0603	GRM188R71E103KA01D	Murata
2	C36,C37	47pF	CAP CER 47PF 50V 1% NP0 0402	C1005C0G1H470F050BA	TDK Corporation
1	C38	4.7uF	CAP CER 4.7uF 10V 10% X5R 0603	C0603C475K8PACTU	Kemet
3	C40,C42,C45	100nF	CAP CER 0.1UF 25V 10% X8R 0603	C1608X8R1E104K080AA	TDK Corporation
1	C41	100nF	CAP CER 0.1uF 16V 10% X7R 0603	C0603C104K4RACTU	Kemet
1	C43	1uF	CAP CER 1UF 35V 10% X5R 0603	GMK107BJ105KA-T	Taiyo Yuden
3	C49,C50,C51	22uF	CAP CER 22UF 4V 20% X5R 0603	AMK107BJ226MA-T	Taiyo Yuden
2	C55,C161	22uF	CAP CER 22uF 6.3V 20% X5R 1206	C3216X5R0J226M/0.85	TDK Corporation
2	C57,C160	10uF	CAP CER 10UF 6.3V 20% X5R 0603	CL10A106MQ8NNNC	Samsung Electro-Mechanics America, Inc
1	C159	30pF	CAP CER 30pF 50V 5% NP0 0603	C0603C300J5GACTU	Kemet
2	CN1,CN2	MICRO USB R/A	CONN RCPT MICRO USB R/A SMD	105017-0001	Molex
2	D1,D3	RED	LED 660NM RED WTR CLR 1206 SMD	SML-LX1206SRC-TR	Lumex Opto
4	D2,D4,D7,D8	GRN	LED 565NM WTR CLR GREEN 1206 SMD	SML-LX1206GC-TR	Lumex Opto
1	D5	BLUE	LED 469NM BLUE DIFF 1206 SMD	HSMR-C150	Avago Technologies US Inc.
1	D6	RED	LED 660NM RED WTR CLR 1206 SMD	SML-LX1206SRC-TR	Lumex Opto
2	D9,D10	DFLS230L-7	DIODE SCHOTTKY 30V 2A POWERDI123	DFLS230L-7	Diodes Inc
1	H1	DNI	DNI MTG 125DRL 300PAD		
1	H2	DNI	DNI MTG 125DRL 300PAD		
1	H3	DNI	DNI MTG 125DRL 300PAD		
1	H4	DNI	DNI MTG 125DRL 300PAD		
1	H5	DNI	DNI MTG 125DRL 300PAD		
1	H6	DNI	DNI MTG 125DRL 300PAD		
1	H7	DNI	DNI MTG 125DRL 300PAD		
1	H8	DNI	DNI MTG 125DRL 300PAD		
1	HDR1	20P 1x20	CONN HEADER .100 SINGL STR 20POS	PEC20SAAN	Sullins
1	J1	20P 10x2	CONN HEADER LOPRO STR 20POS GOLD	5103308-5	TE Connectivity
1	J2	2POS 2MM	CONN HEADER PH TOP 2POS 2MM	B2B-PH-K-S(LF)(SN)	JST Sales America Inc
1	J3	10P CORTEX DEBUG	CONN HEADER 10POS DUAL .05" SMD	FTSH-105-01-F-DV-K	Samtec
4	JH1,JH2,JH3,JH8	18P 2x9	CONN HEADER .100 DUAL STR 18POS	PEC09DAAN	Sullins
1	JH5	8P 2x4	CONN HEADER .100 DUAL STR 8POS	PEC04DAAN	Sullins
1	JH6	6P 1x6	CONN HEADER .100 SINGL STR 6POS	PEC06SAAN	Sullins
1	JH7	4P 1x4	CONN HEADER .100 SINGL STR 4POS	PEC04SAAN	Sullins
27	JH9,JP5,JP6,JP10,JP11,JP12,JP13,JP14,JP17,JP20,JP21,JP22,JP23,JP24,JP25,JP26,JP27,JP30,JP32,JP38,JP39,JP40,JP41,JP42,JP43,JP44,JP45	3P 3x1	CONN HEADER .100 SINGL STR 3POS	PEC03SAAN	Sullins
11	JP1,JP2,JP3,JP4,JP7,JP8,JP9,JP15,JP16,JP18,JP19	JUMPER	CONN HEADER .100 SINGL STR 2POS (2x1)	PEC02SAAN	Sullins
1	JP31	3P 3x1	CONN HEADER .100 SINGL STR 3POS	PEC03SAAN	Sullins
1	L1	3.3nH	INDUCTOR MULTILAYER 3.3NH 0402	MLK1005S3N3ST000	TDK Corporation
1	L2	1.5nH	INDUCTOR MULTILAYER 1.5NH 0402	MLK1005S1N5ST000	TDK Corporation
2	L3,L4	HZ1206C202R-10	FERRITE CHIP SIGNAL 2000 OHM SMD	HZ1206C202R-10	Laird-Signal Integrity Products
2	L5,L6	2.2uH	INDUCTOR POWER 2.2UH 1.05A SMD	VLS201610ET-2R2M	TDK Corporation
1	L7	BLM21PG221SN1D	FERRITE CHIP 220 OHM 0805	BLM21PG221SN1D	Murata Electronics North America
8	MS1,MS2,MS3,MS4,MS5,MS6,MS7,MS8	Screw Steel	MACHINE SCREW PAN PHILLIPS 4-40	PMSSS 440 0025 PH	B&F Fastener Supply
8	MST1,MST2,MST3,MST4,MST5,MST6,MST7,MST8	STANDOFF	HEX STANDOFF 4-40 ALUMINUM 5/8"	1808	Keystone Electronics
1	PCB1	PCB			
1	PROTO1	DNI	Proto Type Area 11x13 (0.1" LS)		
1	Q1	SI8439DB-T1-E1	MOSFET P-CH 8V MICROFOOT	SI8439DB-T1-E1	Vishay Siliconix
1	Q2	MMBT2222ALT1G	TRANS GP SS NPN 40V SOT23	MMBT2222ALT1G	ON Semi

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Evaluate: MAX32630–MAX32632

Bill of Materials (continued)

QTY	PART	VALUE	BOM DESCRIPTION	MANUFACTURER PN	MANUFACTURER
3	R1,R2,R3	100	RES 100 OHM 1/10W 1% 0603 SMD	ERJ-3EKF1000V	Panasonic
3	R4,R6,R37	470	RES 470 OHM 1/10W 1% 0603 SMD	ERJ-3EKF4700V	Panasonic
4	R5,R7,R38,R325	332	RES 332 OHM 1/10W 1% 0603 SMD	ERJ-3EKF3320V	Panasonic
4	R8,R10,R13,R15	0	RES 0.0 OHM 1/10W JUMP 0603 SMD	ERJ-3GEY0R00V	Panasonic
4	R17,R19,R21,R50	215K	RES 215K OHM 1/10W 1% 0603 SMD	ERJ-3EKF2153V	Panasonic
1	R20	27K	RES 27K OHM 1/10W 1% 0402 SMD	ERJ-2RKF2702X	Panasonic
4	R23,R26,R27,R28	10K	RES 10K OHM 1/10W 1% 0603 SMD	ERJ-3EKF1002V	Panasonic
2	R24,R25	27	RES 27 OHM 1/10W 1% 0603 SMD	ERJ-3EKF27R0V	Panasonic
1	R29	511K	RES 511K OHM 1/10W 1% 0603 SMD	ERJ-3EKF5113V	Panasonic
1	R30	100K	RES 100K OHM 1/10W 1% 0603 SMD	ERJ-3EKF1003V	Panasonic
2	R31,R326	2.7K	RES 2.7K OHM 1/10W 1% 0603 SMD	ERJ-3EKF2701V	Panasonic
18	R32,R34,R35,R39,R41,R47,R48,R49,R57,R322,R327,R328,R329,R330,R331,R332,R333,R334	10K	RES 10K OHM 1/10W 1% 0402 SMD	ERJ-2RKF1002X	Panasonic
1	R33	100K	THERMISTOR 100K OHM NTC 0402 SMD	NCP15WF104F03RC	Murata Electronics North America
1	R36	4.7K	RES 4.7K OHM 1/10W 1% 0402 SMD	ERJ-2RKF4701X	Panasonic
6	R42,R43,R44,R45,R295,R296	0	RES 0.0 OHM 1/20W JUMP 0201 SMD	ERJ-1GN0R00C	Panasonic
8	R53,R58,R59,R60,R61,R62,R68,R69	0	RES 0.0 OHM 1/10W JUMP 0402 SMD	ERJ-2GE0R00X	Panasonic
7	R54,R63,R64,R65,R66,R67,R70	0	RES 0.0 OHM 1/10W JUMP 0402 SMD	ERJ-2GE0R00X	Panasonic
1	R71	1M	RES SMD 1M OHM 5% 1/8W 0805	ERJ-6GEYJ105V	Panasonic
1	R319	62	RES 62 OHM 1/10W 1% 0402 SMD	ERJ-2RKF62R0X	Panasonic
3	SW1,SW2,SW3	B3S-1000	SWITCH TACTILE SPST-NO 0.05A 24V	B3S-1000	Omron Electronics
2	SW4,SW5	B3S-1002 BY OMZ	SWITCH TACTILE SPST-NO 0.05A 24V	B3S-1002 BY OMZ	Omron Electronics
4	SW6,SW7,SW8,SW9	DIP SW 6POS SMT	SWITCH DIP 6POS HALF PITCH SMD	TDA06H05B1R	C&K Components
1	T1	2450BL15B200	BALUN 2.4GHZ WIFI/BLUETOOTH	2450BL15B200E	Johanson Technology Inc
4	TP1,TP2,TP3,TP13	BLK	TEST POINT PC MULTI PURPOSE BLK	5011	Keystone Electronics
3	TP4,TP5,TP6	1P	CONN HEADER .100 SINGL STR 1POS	PEC01SAAN	Sullins
1	TP7	RED	TEST POINT PC MULTI PURPOSE RED	5010	Keystone Electronics
1	TP8	BLK	TEST POINT PC MULTI PURPOSE BLK	5011	Keystone Electronics
2	TP10,TP12	RED	TEST POINT PC MULTI PURPOSE RED	5010	Keystone Electronics
1	TP11	PRPL	TEST POINT PC MULTI PURPOSE PRPL	5129	Keystone Electronics
1	U2	MX25U12835FZ2I-10G	IC FLASH 128MBIT 104MHZ 8WSON	MX25U12835FZ2I-10G	Macronix International
1	U4	NHD-2.23-12832UCB3	LCD OLED GRAPHIC 128 X 32 BLUE	NHD-2.23-12832UCB3	Newhaven Display Intl
1	U6	EM9301V02LF24D+	BLE Controller without DCDC	EM9301V02LF24D+	EM Microelectronic
1	U7	FT230XS-R	IC USB SERIAL BASIC UART 16SSOP	FT230XS-R	FTDI
2	U8,U9	MAX3207EAUT+T	ESD PROT DIFF SOT23-6	MAX3207EAUT+T	Maxim Integrated
1	U10	MAX14690NEWX+	MAX14690 36P WLP	MAX14690	Maxim Integrated
1	U11	MAX1806EUA33+	IC REG LDO 3.3V/ADJ 0.5A 8UMAX	MAX1806EUA33+	Maxim Integrated
1	U15	74LVC2T45DC	TXRX TRANSLATING 3ST 8VSSOP	74LVC2T45DC,125	NXP Semiconductors
1	U45 (Exclusive to the MAX32630 EV Kit Bill of Materials)	MAX32630IWG+	MAX32630IWG	MAX32630IWG+	Maxim Integrated
1	U45 (Exclusive to the MAX32631 EV Kit Bill of Materials)	MAX32631IWG+	MAX32631IWG	MAX32631IWG+	Maxim Integrated
1	U46	MAX1806EUA18+	Low Dropout Linear Regulator	MAX1806EUA18+	Maxim Integrated
1	U49	74LVC8T245PW,118	TXRX 8BIT TRANSLATING 24TSSOP	74LVC8T245PW,118	NXP Semiconductors
1	XU1 (Exclusive to the MAX32631 EV Kit Bill of Materials)	C14733	100P WLP SKT C14733	C14733	Ironwood Electronics, INC.
1	Y1	32.768kHz	CRYSTAL 32.768KHZ 6.0PF SMD	ABS07-32.768KHZ-6-T	Abracon Corp
1	Y2	26MHz	CRYSTAL 26MHZ 10PF SMD	ABM8-26.000MHZ-10-1-U-T	Abracon Corporation

MAX32630, MAX32631
Evaluation Kits

Evaluate: MAX32630–MAX32632

EV Kit Schematics (1 of 6)

NOTES:

MS1 Screw Steel

MS2 Screw Steel

BMP1 FB Bump

BMP2 FB Bump

MS3 Screw Steel

MS4 Screw Steel

BMP3 FB Bump

BMP4 FB Bump

MS5 Screw Steel

MS6 Screw Steel

BMP5 FB Bump

BMP6 FB Bump

MS7 Screw Steel

MS8 Screw Steel

BMP7 FB Bump

BMP8 FB Bump

MT1 STANDOFF

MT2 STANDOFF

H1 1 DNI

H2 1 DNI

MT3 STANDOFF

MT4 STANDOFF

H3 1 DNI

H4 1 DNI

MT5 STANDOFF

MT6 STANDOFF

H5 1 DNI

H6 1 DNI

MT7 STANDOFF

MT8 STANDOFF

H7 1 DNI

H8 1 DNI

PCB1
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File
MAX3263X EV Kit - Rev History & Notes

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Date
Tuesday, February 07, 2017

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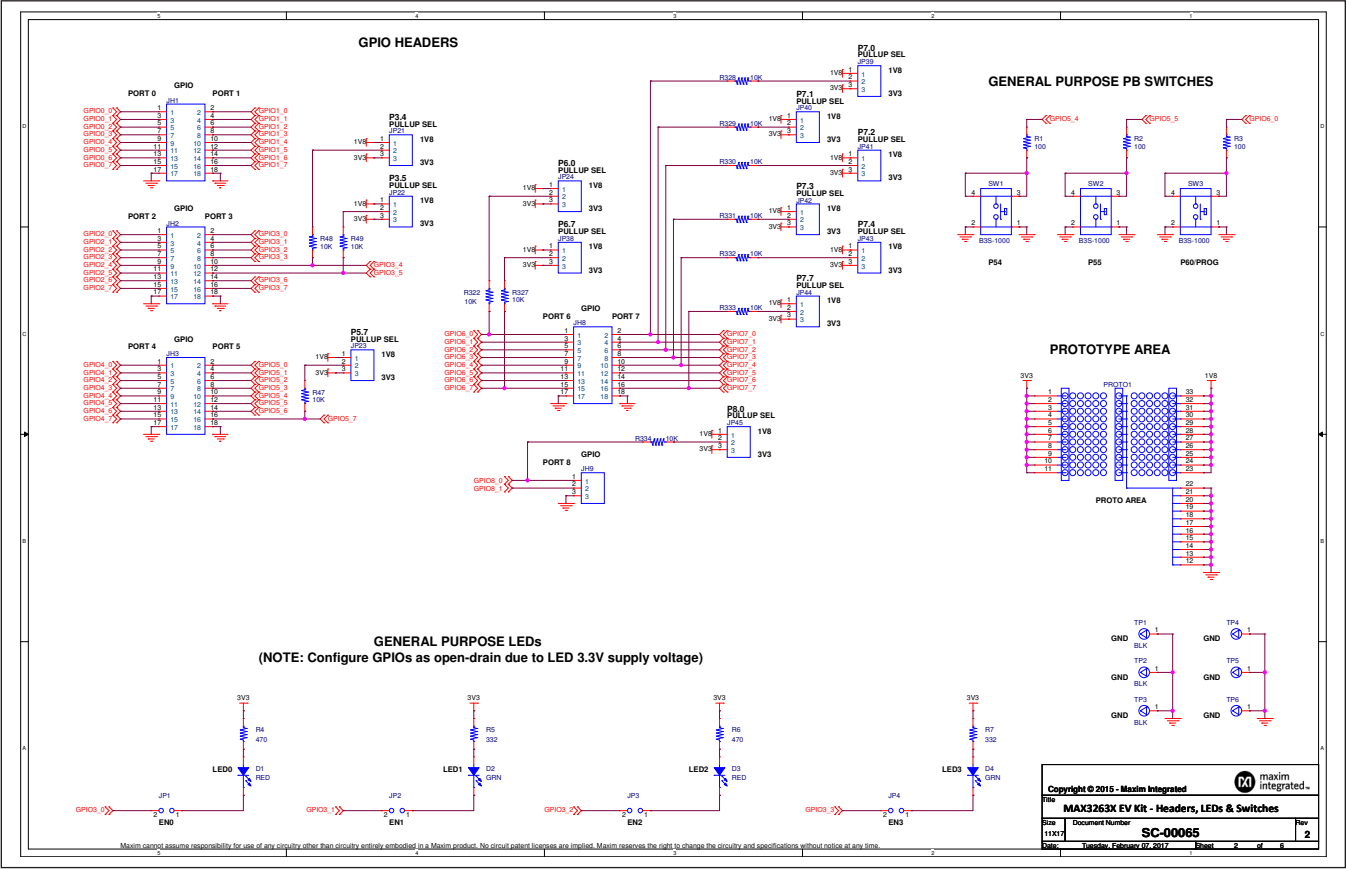
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MAX32630, MAX32631

Evaluation Kits

Evaluate: MAX32630–MAX32632

EV Kit Schematics (2 of 6)



Evaluate: MAX32630–MAX32632

The schematic diagram illustrates the internal connections of the MAX32630 EV kit. Key components and sections include:

- Analog In TP:** Shows connections for various test points (TP) and pins, including AN0, AN1, AN2, AN3, and AN4.
- Place Close to Pad:** Indicates specific placement for components like VREF, TP3, and TP4.
- Remove GPIO 3.7 Enable Resistor and Install USB Detect Enable:** Provides instructions on removing the resistor and installing the USB detect enable circuit.
- GPIO 3.7 Enable:** Shows the connection for the GPIO 3.7 enable resistor.
- USB Detect Enable:** Details the USB detect enable circuit, including the USB_DP and USB_DM pins.
- Cortex JTAG/SWD:** Shows the connections for the Cortex JTAG/SWD interface, including VCC, GND, TCK, TDI, TDO, and TMS.
- ARM JTAG/SWD:** Shows the connections for the ARM JTAG/SWD interface, including VDD, GND, TCK, TDI, TDO, and TMS.
- TDO Level Shifter:** Provides a circuit for the TDO level shifter, including the TDO pin and the level shifter circuit.
- MAX32630WLP SKT C14733:** Shows the connection for the MAX32630WLP SKT C14733 component.

The diagram is labeled with 'MAX32630' and 'MAX32630WLP SKT C14733'.

Evaluate: MAX32630–MAX32632

The schematic diagram illustrates the connections for the MAX3263X EV Kit, specifically for the Blue Graphic OLED Display and Bluetooth Low Energy module. The kit is powered by a 3V3 supply.

Blue Graphic OLED Display (128 X 32 PIXELS):

- Power:** VDD (pin 1) and VDDIO (pin 23) are connected to 3V3. VCCB (pin 24) and VCCA (pin 1) are connected to 3V3. GND (pins 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 26, 27, 28, 29, 30, 31) is connected to ground.
- Control:** OE_N (pin 3) is connected to 3V3. OE_P (pin 4) is connected to 3V3. OE_N (pin 5) is connected to 3V3. OE_P (pin 6) is connected to 3V3. OE_N (pin 7) is connected to 3V3. OE_P (pin 8) is connected to 3V3. OE_N (pin 9) is connected to 3V3. OE_P (pin 10) is connected to 3V3. OE_N (pin 11) is connected to 3V3. OE_P (pin 12) is connected to 3V3. OE_N (pin 13) is connected to 3V3. OE_P (pin 14) is connected to 3V3. OE_N (pin 15) is connected to 3V3. OE_P (pin 16) is connected to 3V3. OE_N (pin 17) is connected to 3V3. OE_P (pin 18) is connected to 3V3. OE_N (pin 19) is connected to 3V3. OE_P (pin 20) is connected to 3V3. OE_N (pin 21) is connected to 3V3. OE_P (pin 22) is connected to 3V3. OE_N (pin 23) is connected to 3V3. OE_P (pin 24) is connected to 3V3. OE_N (pin 25) is connected to 3V3. OE_P (pin 26) is connected to 3V3. OE_N (pin 27) is connected to 3V3. OE_P (pin 28) is connected to 3V3. OE_N (pin 29) is connected to 3V3. OE_P (pin 30) is connected to 3V3. OE_N (pin 31) is connected to 3V3.
- Display Data:** D0 (pin 1) to D31 (pin 32) are connected to the DP 32V BPS SMT connector.
- Capacitors:** C165 (1000pF), C164 (1000pF), C16 (1uF), C17 (1000pF), R17 (215K), R57 (10K).

Bluetooth Low Energy:

- Power:** BTLE_3V3 (pin 1) is connected to 3V3. BTLE_PWR_EN (pin 2) is connected to 3V3. BTLE_3V3 (pin 3) is connected to 3V3. BTLE_3V3 (pin 4) is connected to 3V3. BTLE_3V3 (pin 5) is connected to 3V3. BTLE_3V3 (pin 6) is connected to 3V3. BTLE_3V3 (pin 7) is connected to 3V3. BTLE_3V3 (pin 8) is connected to 3V3. BTLE_3V3 (pin 9) is connected to 3V3. BTLE_3V3 (pin 10) is connected to 3V3. BTLE_3V3 (pin 11) is connected to 3V3. BTLE_3V3 (pin 12) is connected to 3V3. BTLE_3V3 (pin 13) is connected to 3V3. BTLE_3V3 (pin 14) is connected to 3V3. BTLE_3V3 (pin 15) is connected to 3V3. BTLE_3V3 (pin 16) is connected to 3V3. BTLE_3V3 (pin 17) is connected to 3V3. BTLE_3V3 (pin 18) is connected to 3V3. BTLE_3V3 (pin 19) is connected to 3V3. BTLE_3V3 (pin 20) is connected to 3V3. BTLE_3V3 (pin 21) is connected to 3V3. BTLE_3V3 (pin 22) is connected to 3V3. BTLE_3V3 (pin 23) is connected to 3V3. BTLE_3V3 (pin 24) is connected to 3V3. BTLE_3V3 (pin 25) is connected to 3V3. BTLE_3V3 (pin 26) is connected to 3V3. BTLE_3V3 (pin 27) is connected to 3V3. BTLE_3V3 (pin 28) is connected to 3V3. BTLE_3V3 (pin 29) is connected to 3V3. BTLE_3V3 (pin 30) is connected to 3V3. BTLE_3V3 (pin 31) is connected to 3V3. BTLE_3V3 (pin 32) is connected to 3V3.
- Control:** BTLE_EN (pin 1) to BTLE_3V3 (pin 32) are connected to the DP 32V BPS SMT connector.
- Capacitors:** C22 (15pF), C23 (15pF), C24 (1000pF), C25 (1000pF), C26 (1000pF), C27 (1000pF), C28 (1000pF), C29 (1000pF), C30 (1000pF), C31 (1uF), C32 (1000pF), C33 (4.7uF).

MAX3263X EV Kit - OLED Display & LE Bluetooth

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EV Kit Schematics (5 of 6)

Evaluate: MAX32630–MAX32632



Evaluate: MAX32630–MAX32632

The schematic diagram illustrates the power management architecture of the MAX3263X EV Kit. It features a USB power input section with a diode (D1) and a 4.7k resistor (R36) connected to the PMIC EN pin. The PMIC (MAX14690N) is configured with various pins for power management, including CHGIN, CHGIN_2, MON, SCL, SDA, INT#, RST#, SYS1, SYS2, SYS3, and SYS4. The PMIC is connected to a 1.8V LDO (MAX1805E) and a 3.3V LDO (MAX1805E) for auxiliary board power. The 1.8V LDO is configured with a 100k resistor (R18) and a 100nF capacitor (C18). The 3.3V LDO is configured with a 100k resistor (R19) and a 100nF capacitor (C19). The 3V LDO is configured with a 100k resistor (R20) and a 100nF capacitor (C20). The PMIC is also connected to a 1.8V AUX BOARD POWER section, which includes a 1.8V LDO (MAX1805E) and a 3.3V LDO (MAX1805E). The 1.8V LDO is configured with a 100k resistor (R18) and a 100nF capacitor (C18). The 3.3V LDO is configured with a 100k resistor (R19) and a 100nF capacitor (C19). The 3V LDO is configured with a 100k resistor (R20) and a 100nF capacitor (C20). The PMIC is also connected to a VDDIO and VDDIOH select section, which includes a 1.8V LDO (MAX1805E) and a 3.3V LDO (MAX1805E). The 1.8V LDO is configured with a 100k resistor (R18) and a 100nF capacitor (C18). The 3.3V LDO is configured with a 100k resistor (R19) and a 100nF capacitor (C19). The 3V LDO is configured with a 100k resistor (R20) and a 100nF capacitor (C20).

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	1/16	Initial release	—
1	3/17	Updated <i>EV Kit Contents, Benefits and Features</i> , first page photo, <i>Getting Started, Detailed Description, Pushbuttons, USB, USB-ART Bridge, LEDs, Bluetooth Low-Energy (BLE) Controller</i> , Figure 1, Figure 2, <i>Clocking, JTAG Connector, JTAG, Serial Wire Debug (SWD) Support, Power Management IC (PMIC), GPIO Headers and Port Configuration</i> , Table 1, Figure 3, <i>Ordering Information, MAX3263x Bill of Materials</i> , and <i>MAX3263x Schematics</i>	1–17
2	9/17	Added MAX32632 to data sheet	1–18

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