Click here to ask about the production status of specific part numbers.

MAX77975/MAX77976 Evaluation Kits

Evaluates: MAX77975/MAX77976/ MAX77958

General Description

The MAX77975/MAX77976 evaluation kit (EV kit) is a fully assembled and tested printed circuit board (PCB) that demonstrates the MAX77975/MAX77976 single-cell lithium-ion battery charger.

The MAX77975/MAX77976 is for 1S Li+ battery applications and can operate with a 3.8V to 19V input voltage with a maximum charging current of 3.5/5.5A. The MAX77975/MAX77976 offers a reverse boost as well as fully integrated low power loss switches to provide small solution size and high efficiency. The EV kit demonstrates the performance of the MAX77975/MAX77976 charger and provides the convenience of evaluating full USB Type-C® PD solutions with the MAX77958 USB Type-C PD controller. This combination allows fast charging of the battery through the USB Type-C port as well as reverse powering the USB Type-C port with battery OTG mode.

A Micro-B USB cable is included in the package to serve as the interface from a USB port on a Windows PC to the slave I^2C port on MAX77975/MAX77976. Windows®-based graphical user interface (GUI) software provides a user-friendly interface to exercise the features of the MAX77975/MAX77976.

Benefits and Features

- High-Efficiency Single-Cell Switching Charger
  - Up to 5.5A Charging with MAX77976
  - 91.2% Buck Efficiency at 4A, 12V Input
- +28V Absolute Maximum Input Voltage Rating
- 3.8V to 19V Input Operating Voltage Range
- Reverse Boost with Programmable Output Voltage Options Up to 12V
- Charge Status Output for LED
- Push-Button Input for Exiting from Ship Mode
- External Discharge FET Enable Output
- Dedicated Input for Suspend Mode (SUSPND)
- USB Type-C Standalone Controller Support Customizable Firmware
- USB Type-C Version 1.3 and PD 3.0 Compliant
- Sink/Source/DRP Port Support
- PPS Sink Support
- Fast Role Swap Initial Sink Support
- Integrated V_{CONN} Switch with OCP
- Support Try.Sink
- Support BC1.2 Legacy Charger Detection

***Ordering Information* appears at end of data sheet.**

319-100597; Rev 1; 11/20

maxim integrated™

Quick Start

Follow this procedure to familiarize yourself with the EV kit.

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

Required Equipment

- MAX77975/MAX77976 evaluation package
  - MAX77975/MAX77976EVKIT# Board
  - USB Micro-B cable
  - MAX77975/MAX77976 EV kit software (GUI)
- USB Type-C or PD travel adapter (TA)
- Power supply
- Battery simulator
- Multi-meters
- Windows-based PC
- Oscilloscope to monitor CC pin or other signals

Procedure

The EV kits are fully assembled and tested. Follow the steps below to install the EV kit software, make required hardware connections, and start operation of the kits. The EV kit software can be run without attached hardware. Note that after communication is established, the IC must still be configured correctly for the desired operation mode. Make sure the PC is connected to the internet throughout the process so that the USB driver can be automatically installed.

1) Visit **www.maximintegrated.com/products/MAX77975_MAX77976** under the *Design Resources* tab to download the latest version of the MAX77975/MAX77976 EV kit GUI software. Save the software to a temporary folder and unpack the zip file.
2) Install the EV kit software on your computer by running the **MAX77975_MAX77976GUISetupX.X.X.exe** program inside the temporary folder. The program files are copied, and icons are created in the Windows **Start** menu. The software requires the .NET Framework 4.5 or later. If you are connected to the Internet, Windows automatically updates the .NET framework as needed.
3) The EV kit software launches automatically after installation, or it can be launched by clicking on its icon in the Windows **Start** menu.
4) Make jumper connections based on the default connection options in Table 1. Change it later when evaluating more features. For the SW1 on the EV kit, set the switch location to the RIGHT so that the MAX77975/MAX77976 I^2C lines are connected directly to the MAXUSB communication interface. Later you can switch it to the LEFT so that the MAX77975/MAX77976 I^2C lines are connected to MAX77958 I^2C master.
5) Make connections to the EV kit board following guidance as shown in Figure 1. The two main inputs to apply are the battery and the charging adaptor. For quick start evaluation, it is suggested to use a 5V power supply at the CHGIN input and a battery voltage greater than 3.6V at the BATT input. The optional voltmeter and ammeter location for testing charger efficiency is indicated in Figure 1. When set up properly with both CHGIN = 5V and BATT = 3.8V input, the SYS voltage is regulated above VBATT by default.
6) Connect the EV kit to a USB port on the PC using a USB Micro-B cable.
7) Open the GUI software, click **Device > Connect**. A window pops up showing that a slave address corresponding to MAX77975/MAX77976 and/or MAX77958 has been found. If not, check the connection.
8) Start evaluating the part with the GUI software. Unlock the write protection and adjust the charger mode, the charging input current limit, and the charging current to start evaluating the basic charger features as described in the *Configurations 0-13 Tabs* section. Play with the charger mode and other register settings to evaluate the smart power path and more features. Remove the CHGIN input and use the real travel adaptor to evaluate charging the battery through the USB Type-C port.

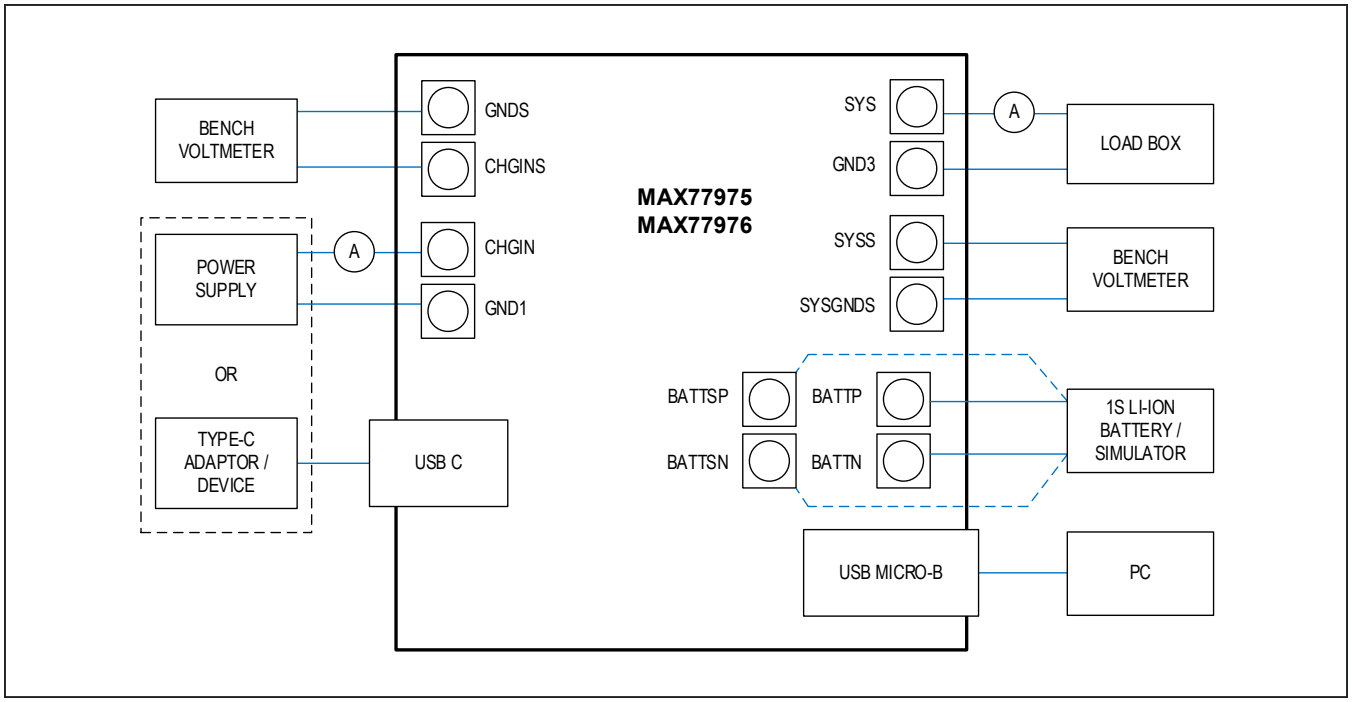


Figure 1. MAX77975/MAX77976 EV Kit Board Connections. The power supply and the USB Type-C adaptor can NOT be applied at the same time.

Table 1. Jumper Connection and Switch Setting Guide

JUMPER	DEFAULT CONNECTION	FEATURE
J20	Open	**Open: No additional capacitor added on SYS.** Bridge N jumpers (N can be 1, 2, 3, 4): Add N x 100µF capacitor on SYS.
J21	Closed	Open: Disconnect BATTSP from BATTN. Allows BATTSP pin to remote sense at battery positive terminal. **Closed: BATTSP sense point is directly at BATTP input terminal on the EV kit.**
J22	Closed	Open: Disconnect BATTSN from BATTN. Allows BATTSN pin to remote sense at battery negative terminal. **Closed: BATTSN sense point is directly at BATTN input terminal on the EV kit.**
J23	Open	**Open: Disable external BATT to SYS FET circuit.** Closed: Enable the external BATT to SYS FET path to further reduce the BATT to SYS on resistance. Need to connect J18 and J29.
J36	Open	**Open: No additional capacitor added on BATT.** Closed: 220µF capacitor added on BATT.

Table 1. Jumper Connection and Switch Setting Guide (continued)

JUMPER	DEFAULT CONNECTION	FEATURE
J5	1-2 (ROOM): Closed 3-4 (NTC): Open 5-6 (POT): Open 7-8 (ENTH): Closed	All Open: Disable thermistor. Only 7-8 Closed: Enable thermistor function, connect pin 1 to the thermistor from the battery pack to measure temperature directly at the battery. **1-2, 7-8 Closed: Enable thermistor function, a fixed 10kΩ pullup and pulldown simulate a constant room temperature.** 3-4, 7-8 Closed: Enable thermistor with temperature measurement from an NTC resistor installed on EV kit. 5-6, 7-8 Closed: Enable thermistor with temperature measurement simulated with a potentiometer R43. Any other configuration: Do not configure.
J18	Open	**Open: Disable external BATT to SYS FET circuit.** Close: Connect 100kΩ pullup for the external BATT to SYS FET circuit. Need to connect J23 and J29.
J29	Open	**Open: Disable external BATT to SYS FET circuit.** Close: Connect QBEXT pin to control external BATT to SYS FET circuit. Need to connect J23 and J18.
J37	Open	**Open: Default operation.** Closed: Force disconnect QBATT.
J13	Open	**Open: Default operation.** Closed: Force SUSPEND = 1 to the charger.
J17	Open	**Open: STAT pin LED indicator is disabled.** Closed: STAT pin LED indicator is enabled.
J7	2-3	Open: Do not configure. 1-2: VIO powered through EXTVIO with 1.8V external power supply. **2-3: VIO powered by USB Micro-B port connected to PC.**
J9	Closed	Open: MAX77958 V_{CONN} is not powered. **Closed: MAX77958 V_{CONN} is powered by SYS.**
J3	Closed	Open: MAX77958 is not connected to VBUS. **Closed: MAX77958 is connected to VBUS.**
J16	Closed	Open: MAX77958 is not powered by SYS. **Closed: MAX77958 is powered by SYS.**
J4	Open	**Open: MAX77958 GPIO4 is not connected to MAX77975/MAX77976 IRQB.** Closed: MAX77958 GPIO4 is connected to MAX77975/MAX77976 IRQB. Also, connect 1-2 on J15 for pullup.
J15	Open	**Open: MAX77975/6 IRQB is not connected.** Close 1-2: MAX77975/6 connects to 100kΩ pullup to VIO Close 3-4: IRQB LED indicator is enabled .
J30	Open	**Open: MAX77958 slave address configured by J31, J32.** Closed: MAX77958 slave address is selected to be 0b0100110. Do not connect J31, J32.

Table 1. Jumper Connection and Switch Setting Guide (continued)

JUMPER	DEFAULT CONNECTION	FEATURE
J31	Open	**Open: MAX77958 slave address configured by J30, J32.** Closed: MAX77958 slave address is selected to be 0b0100111. Do not connect J30, J32.
J32	Closed	Open: MAX77958 slave address configured by J30, J31. **Closed: MAX77958 slave address is selected to 0b0100101 by connecting the GPIO6 to GND. Default for GUI communication. Do not connect J30, J31.**
J33	Open	All MAX77958 GPIO pins at J33 are available to connect externally. Some GPIOs have reserved functionality. Refer to the *MAX77958* data sheet for details.
J34	Closed	Open: MAX77958 VIO1 is not powered. **Closed: MAX77958 VIO1 is powered.**
J35	Closed	Open: MAX77958 VIO2 is not powered. **Closed: MAX77958 VIO2 is powered.**
J8	Open	**Open: CC1 line is not connected to pullup or pulldown. Must open J8 for testing with real USB Type-C adaptor.** Close 1-2: CC1 is connected to RP to simulate a DFP has been connected to CC1. Close 3-4: CC1 is connected to RD to simulate a UFP has been connected to CC1. J11 must be installed.
J10	Open	**Open: CC2 line is not connected to pullup or pulldown. Must open J8 for testing with real USB Type-C adaptor.** Close 1-2: CC2 is connected to RP to simulate a DFP has been connected to CC2. Close 3-4: CC2 is connected to RD to simulate a UFP has been connected to CC2. J11 must be installed.
J12	Open	**Open: CC1 line is not connected to RA. Must open J8 for testing with real USB Type-C adaptor.** Close 1-2: CC1 is connected to RA to simulate a cable when RA is connected. J11 must be installed.
J14	Open	**Open: CC2 line is not connected to RA. Must open J8 for testing with real USB Type-C adaptor.** Close 1-2: CC2 is connected to RA to simulate a cable when RA is connected. J11 must be installed.
J11	Closed	Open: On-board RA and RD are not allowed. **Closed: On-board RA and RD are allowed.**
SW1	1-2	**1-2: MAX77975/MAX77976 I^2C lines are connected to the host directly.** 2-3: MAX77975/MAX77976 I^2C lines are connected to the MAX77958 I^2C master.

*Default Options are in **Bold***

Detailed Description of Hardware

The GUI allows for quick, easy, and thorough evaluation of the MAX77975/MAX77976 and MAX77958. Every control in the GUI corresponds to a register in the MAX77975/MAX77976 and MAX77958. Refer to the *Register Map* section in the *MAX77975/MAX77976* and *MAX77958* data sheets for a complete description.

Software Installation

The MAX77976EVKIT# GUI can be downloaded from Maxim's website at **http://www.maximintegrated.com/products/MAX77976** (under the *Design Resources* tab). Save the EV kit software to a temporary folder and decompress the ZIP file. Run the .EXE file and follow the on-screen instructions to complete the installation.

Windows Driver

After connecting the Micro-USB cable between your PC and the EV kit for the first time, wait for Windows to automatically install the drivers for the USB to I²C Interface.

Establish Communication

When the device is powered up by CHGIN or BATT input, click **Device > Connect** to communicate to the IC. Figure 2 shows the correct detection result. Click **Read and Close** to establish the connection.

Before configuring at any tab, click **Read Once** to make sure all the displayed configurations are in sync with the IC configuration state. Alternatively, click **Start Auto Read** and set corresponding read frequency to keep this page up to date at all times. Follow the guidance on the *MAX77975/MAX77976* IC data sheet for the detailed usage of each register. When trying to write to a register with the write button, disable the Auto Read feature.

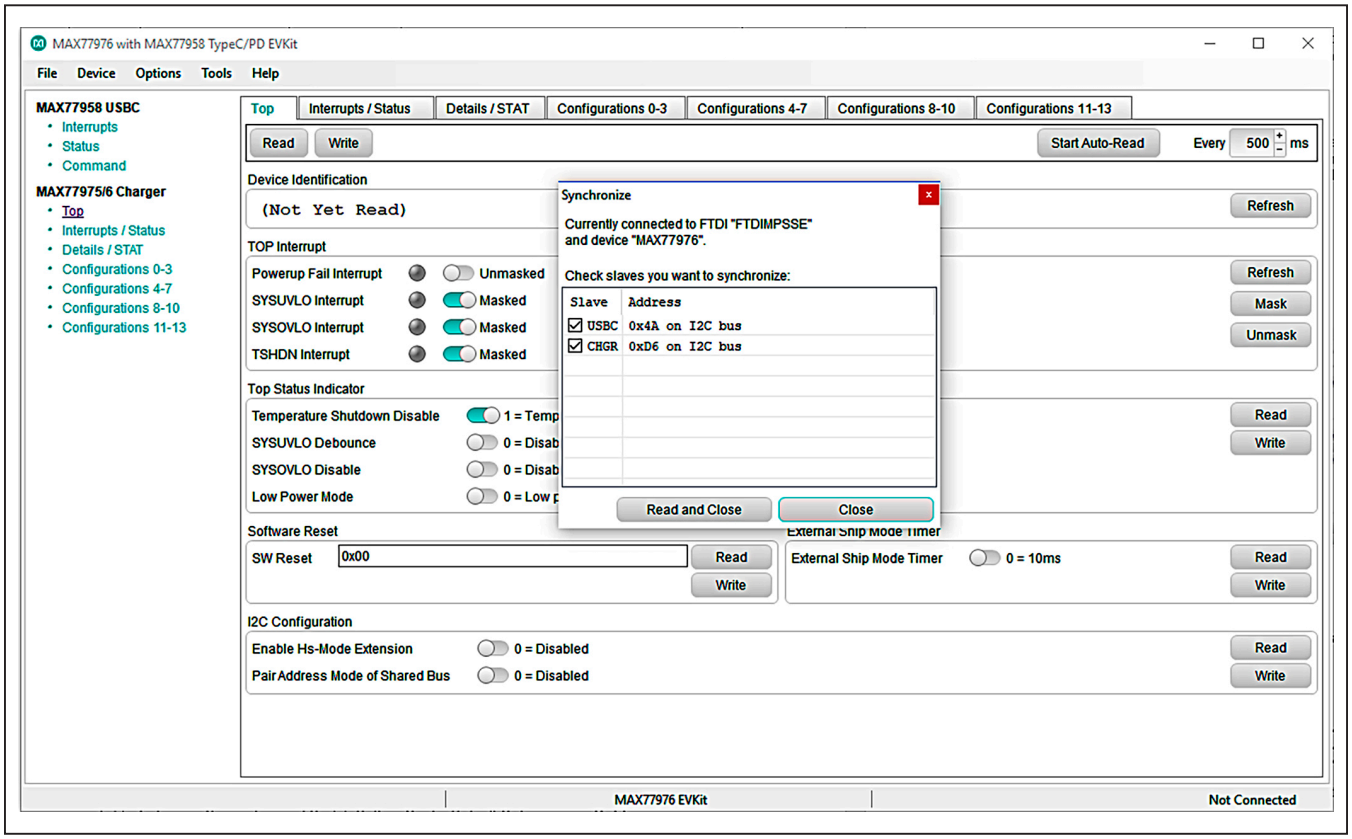


Figure 2. Device > Connect Resulting Window

Top Tab

The **Top** tab displays the top-level configuration settings for the IC. Figure 3 shows the format of the **Top** tab. Information is grouped by function and each is detailed separately. The masked top interrupt is not reflected on the IRQB pin, while the unmasked interrupt is reflected on the IRQB pin. The *Top Status Indicator* section includes controls for the top-level settings. The software reset command is 0xA5.

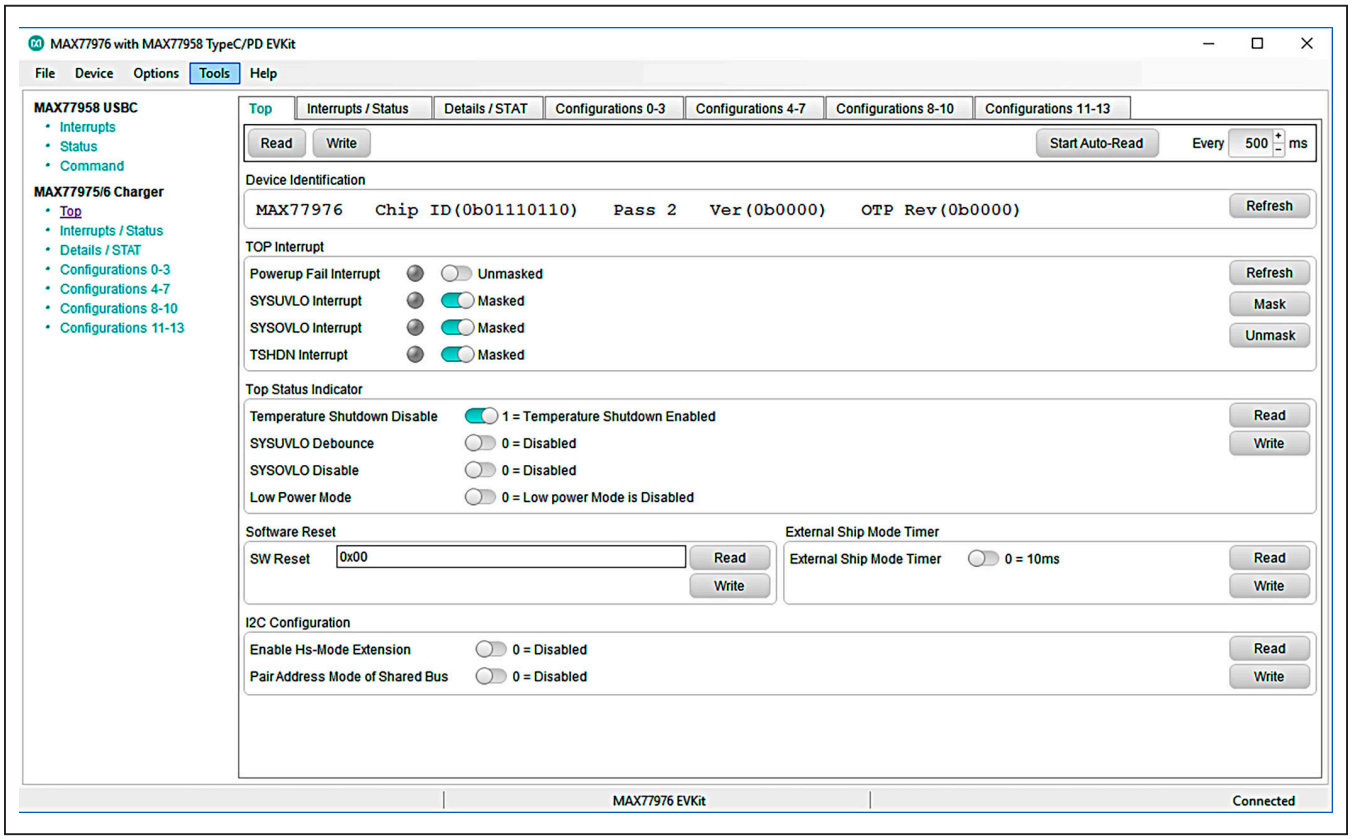


Figure 3. MAX77975/MAX77976 Top Tab

Interrupts/Status Tab

The **Interrupts/Status** tab displays the charger interrupt setting and status for the IC. Figure 4 shows the format of the **Interrupts/Status** tab. The masked charger interrupt is not reflected on the IRQB pin, while the unmasked interrupt is reflected on the IRQB pin.

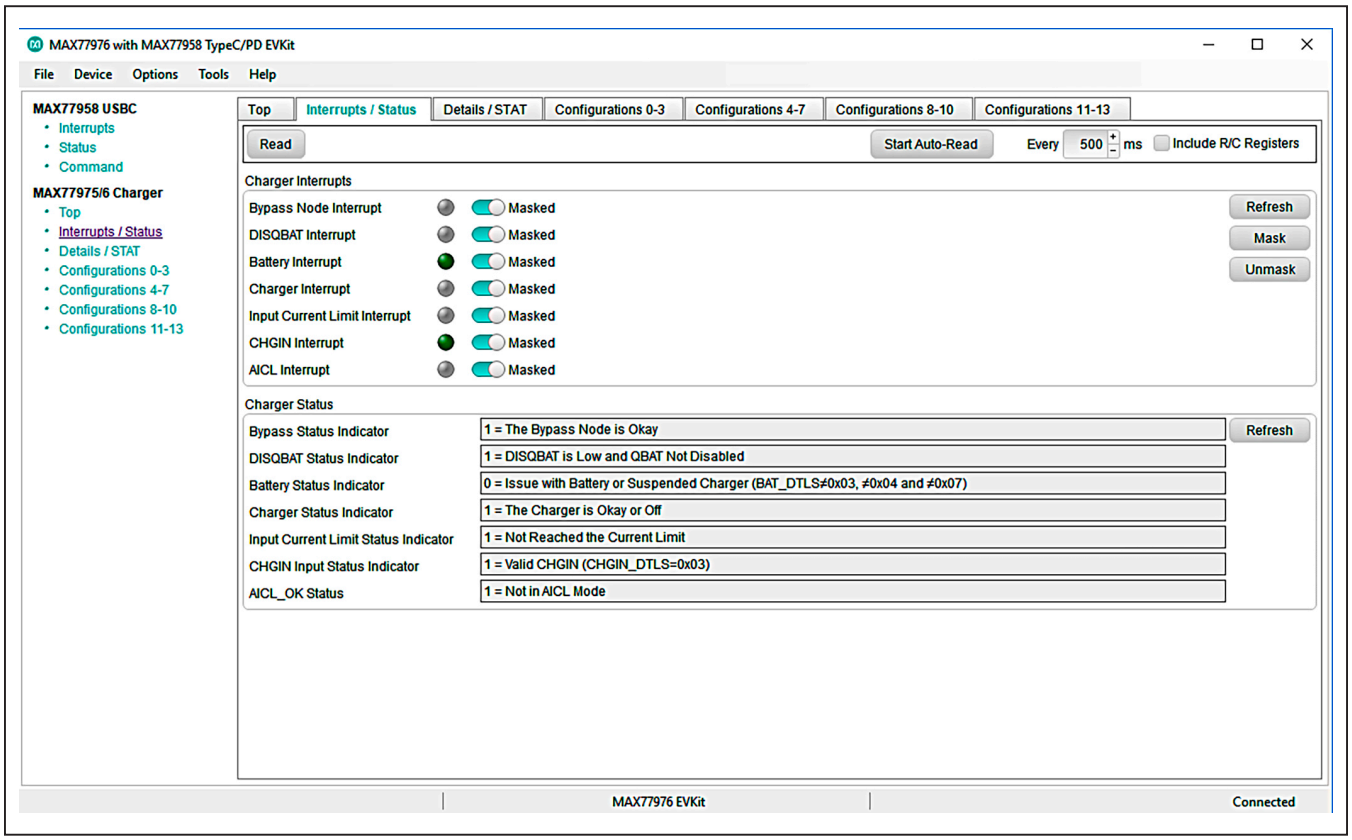


Figure 4. MAX77975/MAX77976 Interrupt and Status

Details/STAT Tab

The **Details/STAT** tab displays the charger detailed status. Figure 5 shows the format of the **Details/STAT** tab. The detailed status of the charger helps diagnose the state of the charger operation. Also, the detailed charger status is the basis of the interrupt status. Refer to the description of the CHG_DTLS00/01/02 register in the data sheet for more details. The tab also controls the STAT LED behavior.

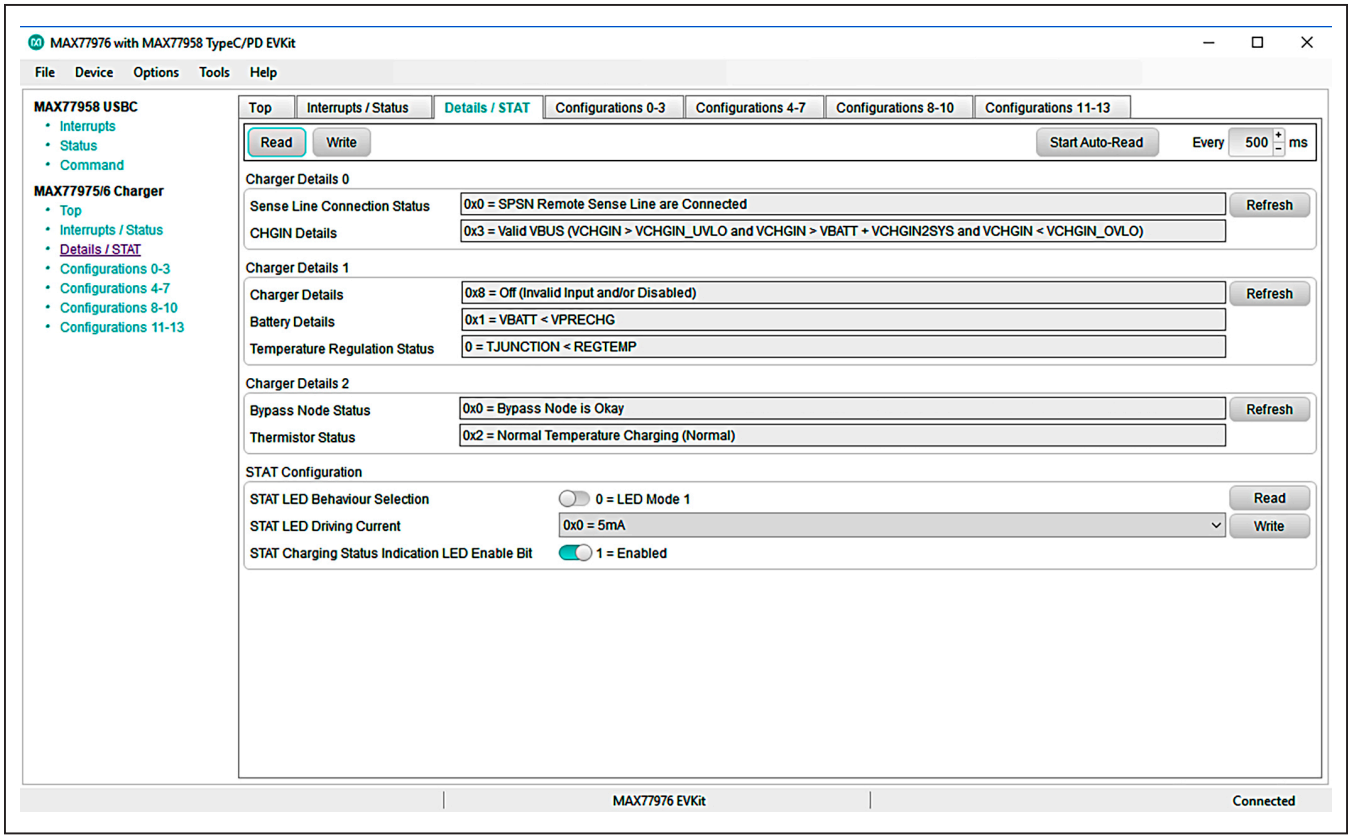


Figure 5. MAX77975/MAX77976 Details and STAT

Configurations 0-13 Tabs

The **Configurations 0-13 tabs** display the charger configuration settings corresponding to registers CHG_CFG_00-13. Figure 6 shows the format of the **Configurations 0-3** tab as an example. Notice that the Configuration 1, 2, 3, 4, and 7 registers are locked by register Configuration 6. To unlock, set the **Charger Settings Protection** field of Configuration 6 to **Unlock 0x3** state, then click the **Write** button. Click **Read** to make sure the change is in place. After the unlock, all configuration registers can be configured. To get started charging a battery with the desired current setting, set **Chgin Input Current Limit** in Configuration 9, then set **Fast Charging Current** in Configuration 2, then set **Mode = 5** in Configuration 0 to switch from buck-only mode to charging mode.

Test with MAX77958 and USB Type-C Port Interface

CC Detection Test

1) Connect a USB Type-C adapter to the EV kit and see whether the MAX77958 detects SINK and configures input current limit correctly.
2) Connect a USB Type-C cable from a Type-C dual-role port (source preferred) device to see whether the MAX77958 detects CC Pin State Machine Detection and configures input current limit correctly.

USB Power Delivery Test

1) Source capability request function test.
2) Connect USB power delivery AC adapter to the EV kit.
3) Use a volt-meter to monitor the voltage on VBUS.
4) Go to **Command > Get SrcCap(0x31)**, click on **Write** to execute the command, the MAX77958 sends this command over the CC pin to the TA, and the TA provides a list of available source capabilities.
5) Review the source capabilities and make a note of the desired PDO.
6) Go to **SrcCap Request (0x32)**, set the value of the PDO, and press the **Write** button to change the BUS voltage.

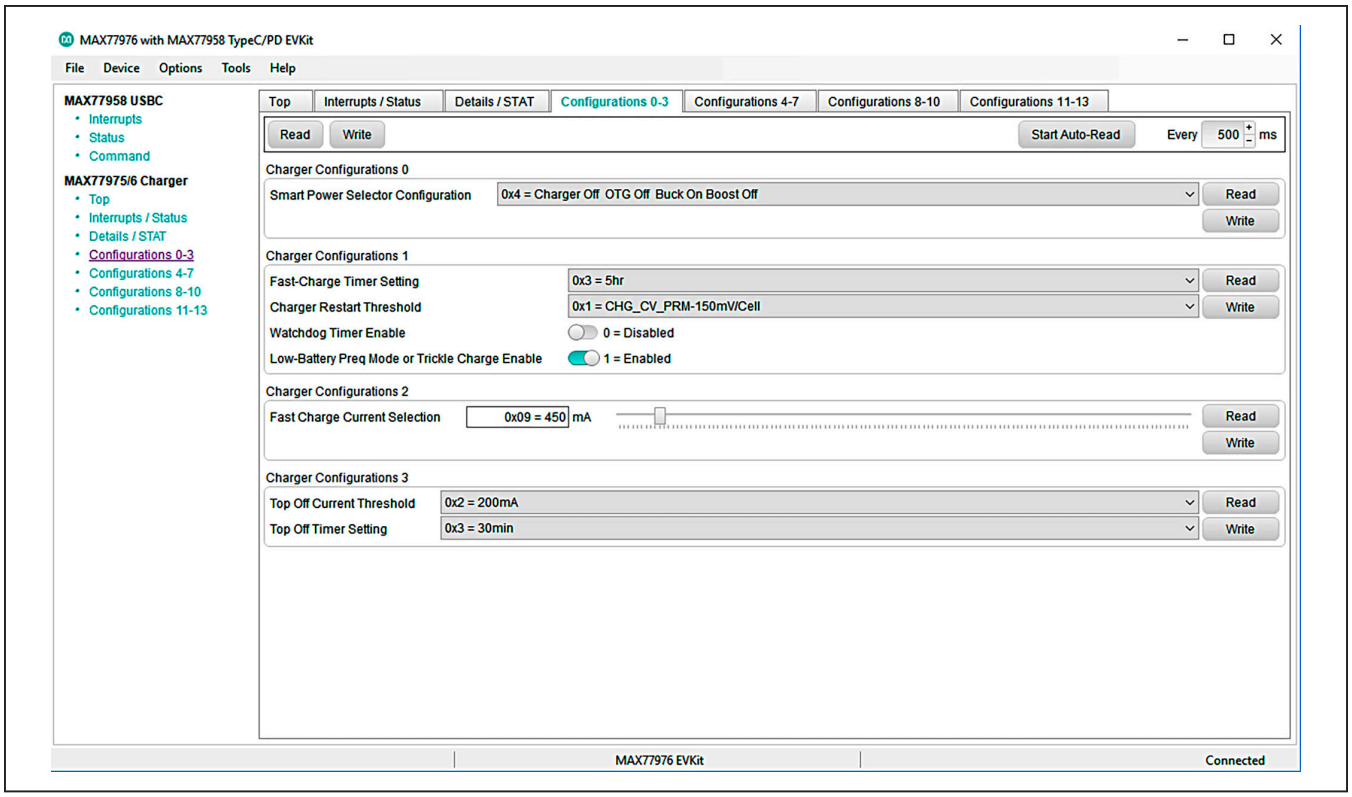


Figure 6. MAX77975/MAX77976 Configurations

BC1.2 Charger Type Detection

1) Plug in the USB Type-A to Type-C cable from a BC1.2 adapter or other legacy port, check the Charger Detection Status under the **BC Status** tab of the MAX77958 GUI, to see if the USBC detects the correct charger type.

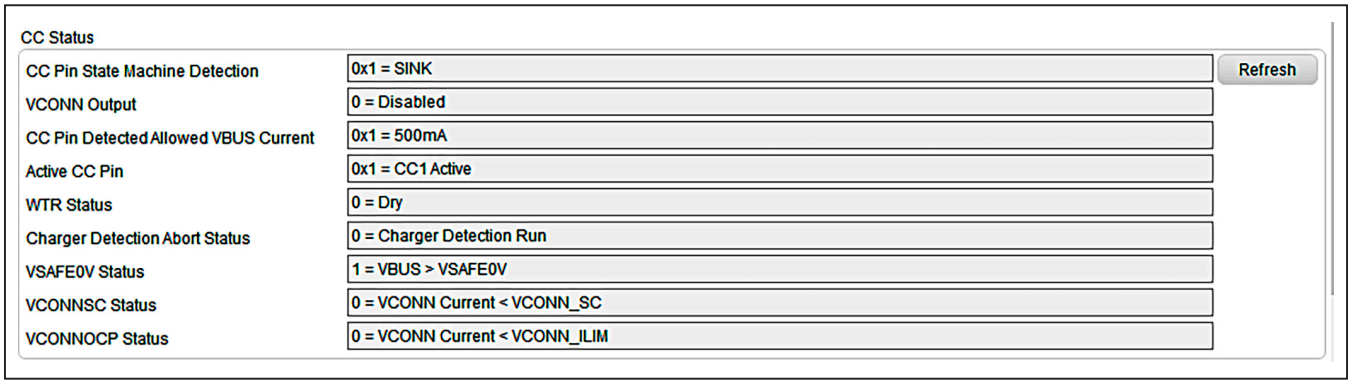


Figure 7. CC Status after Connecting the USB Type-C Connector of EV Kit to a Travel Adapter (TA).

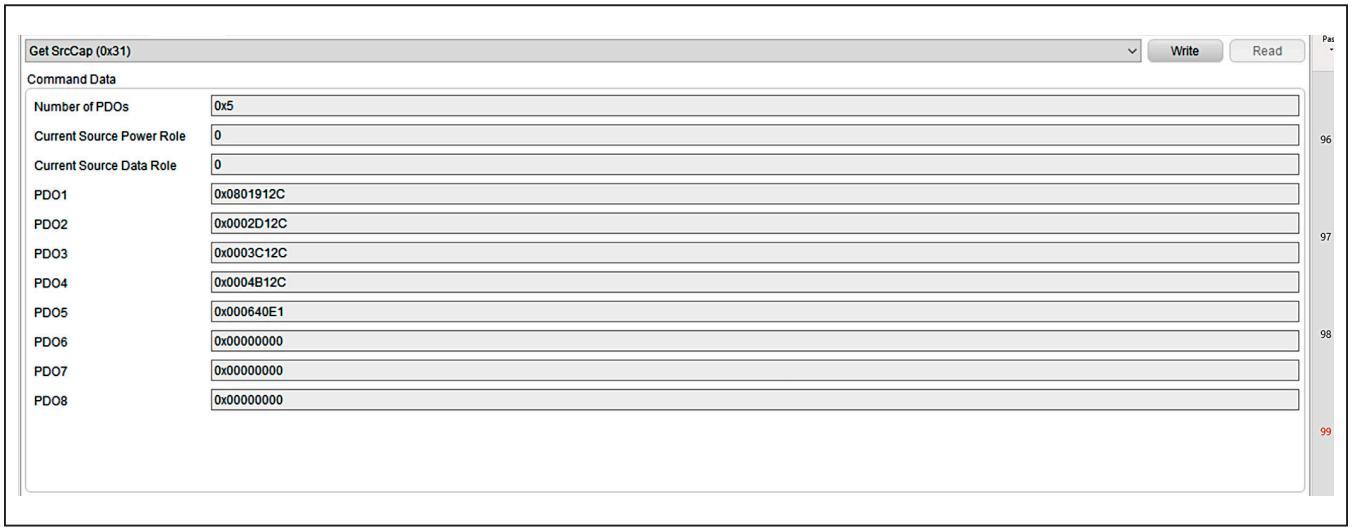


Figure 8. Get Source Capability (Get SrcCap) Under the Command Section

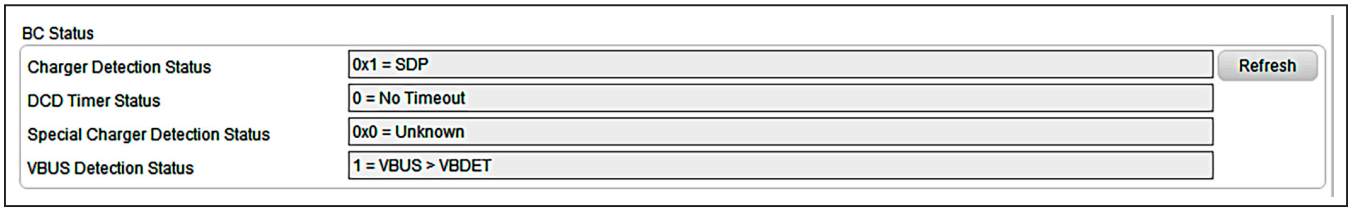


Figure 9. BC Status after Connecting the USB Type-C Connector of EV Kit to SDP

Detailed Description of Firmware for MAX77958

The firmware of MAX77958 consists of two main parts: the core firmware and customization script.

The core firmware is compliant with the USB Type-C 1.3 and PD 3.0 specifications. The customization script is based on the application system, giving more flexibility for system design. It is based on the customization script update, which can achieve functions such as GPIO matrix control, charger configuration initialization, etc. Future USB Type-C and PD specification changes can be accommodated by updating the MAX77958 core firmware. See the *Core Firmware Update* section of this data sheet.

See the *MAX77958 Customization Script Block Update* section and the **MAX77958 Customization Script and OPCode Command Guide** for details about the customization script.

MAX77958 Customization Script Block Update

The customization script defines the application-specific behavior of the MAX77958. An example is setting the input current limit of the charger when USB device detection is completed.

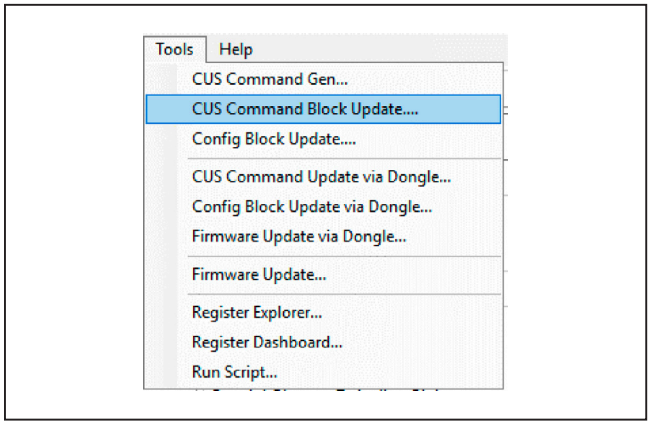


Figure 10. MAX77975/MAX77976 EV Kit GUI Customization Script Block Update

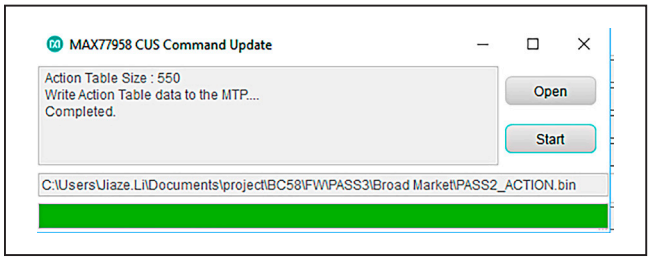


Figure 11. Customization Script Update Process Complete

1) Follow the initial test setup to connect the GUI with the MAX77975/MAX77976 EV kit.
2) Connect 3.8V to BATT, do not disconnect the EV kit from the PC during the customization script block update.
3) Click on **Tools** in the menu bar and then go to **CUS Command Block Update**.
4) Click on the **Open** button in the pop-up window to load the latest customization script, and then click on **Start** to activate the customization script update.
5) Figure 11 shows the customization script update process complete.

Core Firmware Update

1) Follow the initial test setup to connect the GUI with the MAX77975/MAX77976 EV kit.
2) Connect 3.8V to BATT and do not disconnect the EV kit from the PC during the firmware update.
3) Click on **Tools** in the menu bar and then go to **Firmware Update**.
4) Click on the **Open** button in the pop-up window to load the latest firmware. In the file select window, click on the **.bin** file, and then select **Start** to activate the firmware update.
5) Figure 13 shows the firmware update process complete.

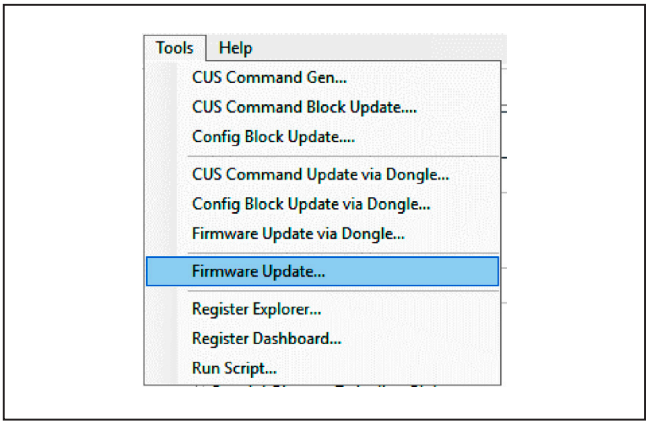


Figure 12. MAX77975/MAX77976 EV Kit GUI Firmware Update

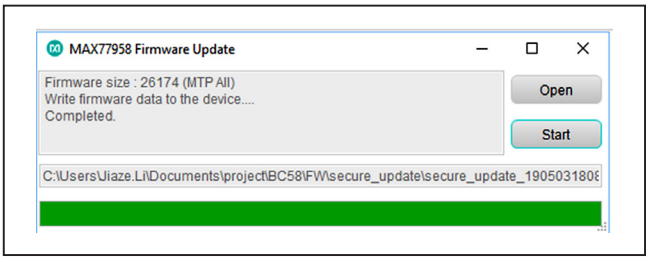


Figure 13. Firmware Update Process Complete

Script Automation

A Python-based script system is embedded in the GUI software to allow automating or configuring multiple registers sequentially with ease. To evaluate through Python-based commands, click **Tools > Run Script File**. A Script window pops up, as shown in Figure 14. The first tab consists of a script editor and an embedded Python terminal interface. The second tab provides a Python I/O console. The help button provides a coding tutorial for this script window. Click the **Run** button to execute the script. The script feature helps with testing out a sequence of the configuration automatically.

Optional Tools

For I2C-communication debugging, more tools are available at **Options > CMOD Advanced UI**. With the proper test set-up procedure described in this document, these tools do not need to be used to evaluate the MAX77975/MAX77976. However, other slave devices can be tested with the I2C debugging tools and the GUI software when connected to the MAX77975/MAX77976 with the SDA and SCL pins. If successful, you can automate multiple slave devices through the script window.

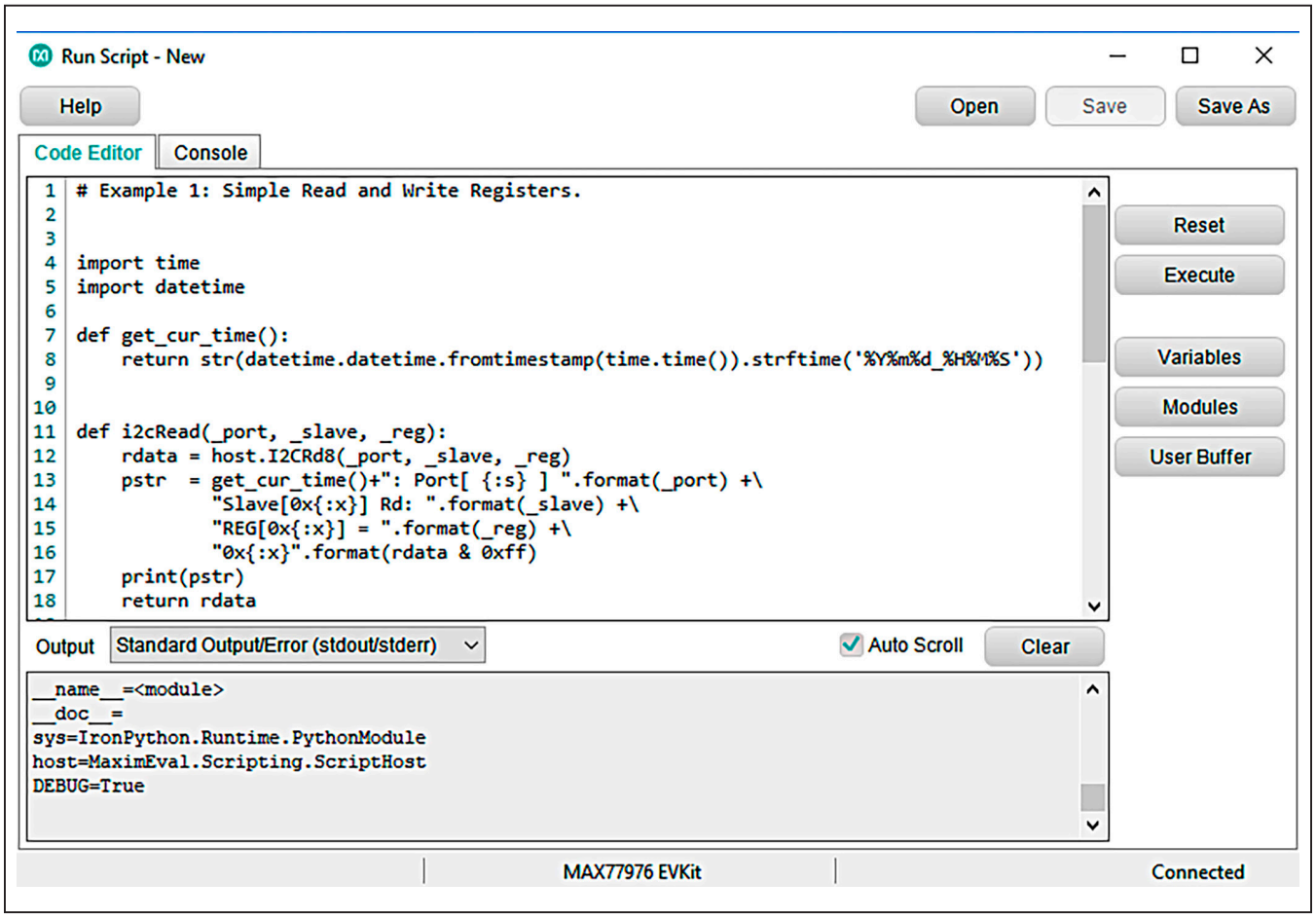


Figure 14. MAX77975/6 Script Window

Table 2. USB Acronyms

ACRONYM	DESCRIPTION
BC1.2	Battery Charging 1.2
CC	Configuration Channel
CDP	Charging Downstream Port
DCP	Dedicated Charging Port
DFP	Downstream Facing Port
MAXUSB	USB to I^2C translator
MTP	Multiple Time Programmable
OVP	Over Voltage Protection
PD	Power Delivery
PDO	Power Data Object
PPS	Programmable Power Supply
SDP	Standard Downstream Port
UFP	Upstream Facing Port
VDM	Vendor Defined Message

Ordering Information

PART	EVALUATES	TYPE
MAX77975EVKIT#	MAX77975, MAX77958	EV Kit
MAX77976EVKIT#	MAX77976, MAX77958	EV Kit

#Denotes RoHS compliant.

MAX77975 EV Kit Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	AVL1, BATSN, BATSP, BATTS, BYPS, CC1, CC2, CHGINS, DN, DN1, DP, DP2, INTB1, SBU1, SBU2, SCL1, SDA1, SYS1, SYSS, VDD1P1, VDD1P8, VIO, VIO1, VIO2	—	24	5000	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; RED; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
2	BATTN, BATTN1, BATTP, BATTP1, BYP, CHGIN, GND1-GND5, GND7, SYS	—	13	9020 BUSS	WEICO WIRE	MAXIMPAD	EVK KIT PARTS; MAXIM PAD; WIRE; NATURAL; SOLID; WEICO WIRE; SOFT DRAWN BUS TYPE-S; 20AWG
3	C1, C15, C18-C21, C23-C29, C36	—	14	GRM155R71A104JA01	MURATA	0.1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.1µF; 10V; TOL = 5%; TG = -55°C TO +125°C; TC = X7R
4	C2	—	1	C1608X5R1V225K080AC; GRM188R6YA225KA12	TDK; MURATA	2.2µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 2.2µF; 35V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
5	C3, C4, C16, C17, C30-C32	—	7	C0402C105K8PAC; CC0402KRX5R6BB105	KEMET; YAGEO	1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1µF; 10V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
6	C5, C33, C50, C54, C55	—	5	CL05A105KO5NNN	SAMSUNG	1µF	CAP; SMT (0402); 1µF; 10%; 16V; X5R; CERAMIC CHIP
7	C6, C10	—	2	C2012X5R1V106K125AC	TDK	10µF	CAPACITOR; SMT (0805); CERAMIC CHIP; 10µF; 35V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
8	C7	—	1	CGA2B3X7R1H104K050BB; C1005X7R1H104K050BB; GRM155R71H104KE14; GCM155R71H104KE02; C1005X7R1H104K050BE; UMK105B7104KV-FR; CGA2B3X7R1H104K050BE	TDK;TDK; MURATA;MURATA; TDK;TAIYO YUDEN; TDK	0.1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.1µF; 50V; TOL = 10%; TG = -55°C TO +125°C; TC = X7R
9	C8, C34	—	2	CL10A226MO7JZNC	SAMSUNG ELECTRONICS	22µF	CAP; SMT (0603); 22µF; 20%; 16V; X5R; CERAMIC CHIP
10	C9	—	1	GRM188R61C106MA73	MURATA	10µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 10µF; 16V; TOL = 20%; MODEL = GRM SERIES; TG = -55°C TO +85°C; TC = X5R
11	C11, C14, C43, C44	—	4	C0402C0G500270JNP; GRM1555C1H270JA01	VENKEL LTD.; MURATA	27PF	CAPACITOR; SMT; 0402; CERAMIC; 27pF; 50V; 5%; C0G; -55°C to + 125°C; 0 ±30PPM/°C
12	C12, C13, C22	—	3	ZRB15XR61A475ME01; CL05A475MP5NRN; GRM155R61A475MEAA; C1005X5R1A475M050BC	MURATA; SAMSUNG; MURATA;TDK	4.7µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 4.7µF; 10V; TOL = 20%; TG = -55°C TO +85°C; TC = X5R
13	C35	—	1	C0402C103K5RAC; GRM155R71H103KA88; C1005X7R1H103K050BE; CL05B103KB5NNN; UMK105B7103KV	KEMET; MURATA;TDK; SAMSUNG ELECTRONIC; TAIYO YUDEN	0.01µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.01µF; 50V; TOL = 10%; TG = -55°C TO +125°C; TC = X7R
14	C37-C40	—	4	EMK325ABJ107MM	TAIYO YUDEN	100µF	CAPACITOR; SMT (1210); CERAMIC CHIP; 100µF; 16V; TOL = 20%; TG = -55°C TO +85°C; TC = X5R
15	C41	—	1	GRM32ER60J227ME05	MURATA	220µF	CAP; SMT (1210); 220µF; 20%; 6.3V; X5R; CERAMIC CHIP
16	C42	DNI	1	EEE-FK1V101P	PANASONIC	100µF	CAPACITOR; SMT (CASE_F); ALUMINUM-ELECTROLYTIC; 100µF; 35V; TOL = 20%; TG = -55°C TO +105°C; AUTO
17	C46	—	1	GRM188R71A225KE15; CL10B225KP8NNN; C1608X7R1A225K080AC; C0603C225K8RAC	MURATA; SAMSUNG; TDK;KEMET	2.2µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 2.2µF; 10V; TOL = 10%; TG = -55°C TO +125°C; TC = X7R
18	C47, C51	—	2	ANY	ANY	1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1µF; 6.3V; TOL = 10%; MODEL = ; TG = -55°C TO +85°C; TC = X5R;

MAX77975 EV Kit Bill of Materials (continued)

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
19	C52	—	1	C1005X5R1V105K050BC	TDK	1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1µF; 35V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
20	D1	—	1	PTVS20VS1UR	NEXPERIA	20V	DIODE; TVS; SMT (SOD-123W); VRM = 20V; IPP = 12.3A
21	D3	—	1	SD2114S040S8R0	AVX	SD2114S040S8R0	DIODE; SCH; SMB (DO-214AA); PIV = 40V; IF = 8A
22	D8, D9	—	2	PESD4V0W1BSF	NEXPERIA	4V	EVKIT PART-DIODE; TVS; SMT (SOD962-2); VRM = ±4V; IPP = N/A
23	DISQBAT, EXTSM, IRQB, IRQB53, QBEXT, SCL, SDA, STAT, SUSPND	—	9	5002	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;
24	DS1-DS3	—	3	LTST-C190CKT	LITE-ON ELECTRONICS INC.	LTST-C190CKT	DIODE; LED; STANDARD; RED; SMT (0603); PIV = 5.0V; IF = 0.04A; -55°C TO +85°C
25	EXTVIO, PVDD, VDD	—	3	5010	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.125IN; TOTAL LENGTH = 0.445IN; BOARD HOLE = 0.063IN; RED; PHOSPHOR BRONZE WIRE SIL;
26	GNDS, PGNDS, SYSGNDS	—	3	5001	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
27	J1	—	1	10118193-0001LF	FCI CONNECT	10118193-0001LF	CONNECTOR; FEMALE; SMT; MICRO USB B TYPE RECEPTACLE; RIGHT ANGLE; 5PINS
28	J2	—	1	12401832E402A	AMPHENOL	12401832E402A	CONNECTOR; FEMALE; SMT; USB TYPE C CONNECTOR; RIGHT ANGLE; DUAL ROW; 24PINS
29	J3, J4, J9, J11, J12, J14, J16, J30-J32, J34, J35	—	12	TSW-102-07-T-S	SAMTEC	TSW-102-07-T-S	CONNECTOR; THROUGH HOLE; TSW SERIES; SINGLE ROW; STRAIGHT; 2PINS; -55°C TO +105°C
30	J5, J20	—	2	PBC04DAAN	SULLINS ELECTRONICS CORP.	PBC04DAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 8PINS; -65°C TO +125°C
31	J7, J8, J10	—	3	PEC03SAAN	SULLINS ELECTRONICS CORP.	PEC03SAAN	EVKIT PART-CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS; -65°C TO +125°C;
32	J13, J17, J18, J21, J22, J29, J36, J37	—	8	PBC02SAAN	SULLINS ELECTRONICS CORP.	PBC02SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 2PINS
33	J15, J23	—	2	PBC02DAAN	SULLINS ELECTRONICS CORP.	PBC02DAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 4PINS
34	J33	—	1	PBC09SAAN	SULLINS ELECTRONICS CORP.	PBC09SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 9PINS; -65°C TO +125°C
35	L1	—	1	IHLP2020BZER1R0M11	VISHAY DALE	1µH	INDUCTOR; SMT; IHLP SERIES; 1µH; TOL = ±20%; 7A; -55°C TO +125°C
36	L2-L4	—	3	BLM18AG601SN1	MURATA	600	INDUCTOR; SMT (0603); FERRITE-BEAD; 600; TOL = ±; 0.5A
37	MH1-MH4	—	4	9032	KEYSTONE	9032	MACHINE FABRICATED; ROUND-THRU HOLE SPACER; NO THREAD; M3.5; 5/8IN; NYLON
38	MISC1	—	1	AK67421-1-R	ASSMANN	AK67421-1-R	CONNECTOR; MALE; USB; USB2.0 MICRO CONNECTION CABLE; USB B MICRO MALE TO USB A MALE; STRAIGHT; 5PINS-4PINS
39	Q1, Q2	—	2	AON6512	ALPHA & OMEGA SEMICONDUCTOR	AON6512	TRAN; N-CHANNEL ALPHAMOS; NCH; DFN8-EP; PD-(83W); I-(150A); V-(30V)
40	R1, R7, R14-R16, R18, R22, R32-R34, R44	—	11	ERJ-2GE0R00	PANASONIC	0	RESISTOR; 0402; 0Ω; 0%; JUMPER; 0.10W; THICK FILM

MAX77975 EV Kit Bill of Materials (continued)

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
41	R2, R42	—	2	CRCW060310K0FK; ERJ-3EKF1002	VISHAY DALE; PANASONIC	10K	RESISTOR; 0603; 10K; 1%; 100PPM; 0.10W; THICK FILM
42	R4, R6	—	2	ERJ-2RKF6493	PANASONIC	649K	RESISTOR; 0402; 649KΩ; 1%; 100PPM; 0.1W; THICK FILM
43	R5, R64	—	2	ERJ-2RKF1203	PANASONIC	120K	RESISTOR; 0402; 120KΩ; 1%; 100PPM; 0.1W; THICK FILM
44	R8	—	1	CRCW040212K0FK; MCR01MZPF1202	VISHAY DALE; ROHM SEMICONDUCTOR	12K	RESISTOR, 0402, 12KΩ, 1%, 100PPM, 0.0625W, THICK FILM
45	R9, R13	—	2	ERJ-2RKF27R0X; RC0402FR-0727RL; CRCW040227R0FK	PANASONIC; YAGEO PHICOMP; VISHAY DALE	27	RESISTOR, 0402, 27Ω, 1%, 100PPM, 0.0625W, THICK FILM
46	R10	—	1	CRCW04021M00FK	VISHAY DALE	1M	RESISTOR; 0402; 1M; 1%; 100PPM; 0.0625W; THICK FILM
47	R11, R36, R37, R45	—	4	CRCW04021K00FK; RC0402FR-071KL; MCR01MZPF1001	VISHAY DALE; YAGEO PHICOMP; ROHM SEMI	1K	RESISTOR; 0402; 1K; 1%; 100PPM; 0.0625W; THICK FILM
48	R12, R21	—	2	CRCW04022K20JN	VISHAY DALE	2.2K	RESISTOR; 0402; 2.2KΩ; 5%; 200PPM; 0.063W; METAL FILM
49	R17	—	1	CRCW04024752FK; 9C04021A4752FLHF3; CRCW040247K5FK	VISHAY DALE; YAGEO; VISHAY DALE	47.5K	RESISTOR; 0402; 47.5K; 1%; 100PPM; 0.0625W; THICK FILM
50	R19, R20, R23, R31, R41	—	5	CRCW0402100KFK; RC0402FR-07100KL	VISHAY;YAGEO	100K	RESISTOR; 0402; 100K; 1%; 100PPM; 0.0625W; THICK FILM
51	R24, R38	—	2	CRCW040210R0FK; 9C04021A10R0FL	VISHAY DALE;YAGEO	10	RESISTOR; 0402; 10Ω; 1%; 100PPM; 0.0625W; THICK FILM
52	R25, R29	—	2	ERJ-2RKF5602	PANASONIC	56K	RESISTOR, 0402, 56KΩ, 1%, 100PPM, 0.0625W, THICK FILM
53	R26, R48	—	2	CRCW0402200KFK; RF73H1ELTP2003	VISHAY DALE; KOA SPEER ELECTRONICS	200K	RESISTOR; 0402; 200K; 1%; 100PPM; 0.0625W; THICK FILM
54	R27, R28	—	2	CRCW04024K70FK; MCR01MZPF4701	VISHAY DALE; ROHM SEMICONDUCTOR	4.7K	RESISTOR, 0402, 4.7KΩ, 1%, 100PPM, 0.0625W, THICK FILM
55	R30	—	1	CRCW0402169KFK	VISHAY DALE	169K	RESISTOR; 0402; 169KΩ; 1%; 100PPM; 0.063W; THICK FILM
56	R35	—	1	CRCW0402470RFK	VISHAY DALE	470	RESISTOR, 0402, 470Ω, 1%, 100PPM, 0.0625W, THICK FILM
57	R39, R40	—	2	CRCW04025K10FK	VISHAY DALE	5.1K	RESISTOR; 0402; 5.1K; 1%; 100PPM; 0.0625W; THICK FILM
58	R43	—	1	3296Y-1-104LF	BOURNS	100K	RESISTOR; THROUGH HOLE-RADIAL LEAD; 3296 SERIES; 100KΩ; 10%; 100PPM; 0.5W
59	R49, R50, R59, R60	—	4	CRCW06030000Z0EAHP	VISHAY DRALORIC	0	RESISTOR; 0603; 0Ω; 0%; JUMPER; 0.25W; THICK FILM
60	R51, R52	—	2	CRCW04021R00FK	VISHAY DALE	1	RESISTOR, 0402, 1Ω, 1%, 100PPM, 0.0625W, THICK FILM

MAX77975 EV Kit Bill of Materials (continued)

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
61	R55, R57	—	2	CRCW04022K20FK; RC0402FR-072K2L	VISHAY DALE; YAGEO PHICOMP	2.2K	RESISTOR, 0402, 2.2KΩ, 1%, 100PPM, 0.0625W, THICK FILM
62	R66, R67	—	2	CRCW0402330KFK	VISHAY DALE	330K	RESISTOR, 0402, 330KΩ, 1%, 100PPM, 0.0625W, THICK FILM
63	RT1	—	1	NTCG163JF103F	TDK	10K	THERMISTOR; SMT (0603); THICK FILM (NICKEL PLATED); 10K; TOL = ±1%
64	SW1	—	1	CL-SB-22C-02	COPAL ELECTRONICS INC.	CL-SB-22C-02	SWITCH; DPDT; THROUGH HOLE; 12V; 0.2A; ON-ON; RCOIL = 0.05Ω; RINSULATION = 10MΩ; COPAL ELECTRONICS INC.; -40°C TO +85°C
65	SW2	—	1	EVQ-Q2K03W	PANASONIC	EVQ-Q2K03W	SWITCH; SPST; SMT; 15V; 0.02A; LIGHT TOUCH SWITCH; RCOIL = Ω; RINSULATION = Ω; PANASONIC
66	U1	—	1	MAX77975	MAXIM	MAX77975	EVKIT PART - IC; MAX77975; 19V INPUT; 5.5A BUCK CHARGER FOR 1S LI-ION BATTERY; PACK; PACKAGE OUTLINE DRAWING 21-100411; LAND PATTERN DRAWING: 90-100145; PACKAGE CODE: F234A4F-1 FCQFN32
67	U2	—	1	FT2232HL	FUTURE TECHNOLOGY DEVICES INTL LTD.	FT2232HL	IC; MMRY; DUAL HIGH SPEED USB TO MULTIPURPOSE UART/FIFO; LQFP64
68	U3	—	1	TCK402G	TOSHIBA	TCK402G	IC; ASW; CMOS LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC; WLCSP6
69	U4	—	1	MAX14611ETD+	MAXIM	MAX14611ETD+	IC; TRANS; QUAD BIDIRECTIONAL LOW-VOLTAGE LOGIC LEVEL TRANSLATOR; TDFN14-EP
70	U5, U6	—	2	MAX8512EXK+	MAXIM	MAX8512EXK	IC, VREG, Ultra-Low-Noise, High PSRR, Adjustable Vout, SC70-5
71	U7	—	1	MAX77958EWV+T	MAXIM	MAX77958EWV+T	EVKIT PART - IC; USB TYPE-C AND USB PD CONTROLLER; WLP30; 0.5MM PITCH; PACKAGE OUTLINE: 21-0069; PACKAGE CODE: W302A3+2
72	Y1	—	1	7M-12.000MAAJ	TXC CORPORATION	12MHZ	CRYSTAL; SMT; 18PF; 12MHZ; ±30PPM; ±30PPM
73	PCB	—	1	MAX77976	MAXIM	PCB	PCB:MAX77976
74	D2	DNP	0	ESD9X3.3ST5G	ON SEMICONDUCTOR	3.3V	DIODE; TVS; SMT (SOD-923); VRM = 3.3V; IPP = 9.8A
75	R3	DNP	0	N/A	N/A	OPEN	RESISTOR; 0402; OPEN; FORMFACTOR
TOTAL			**219**				

MAX77976 EV Kit Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	AVL1, BATSN, BATSP, BATTS, BYPS, CC1, CC2, CHGINS, DN, DN1, DP, DP2, INTB1, SBU1, SBU2, SCL1, SDA1, SYS1, SYSS, VDD1P1, VDD1P8, VIO, VIO1, VIO2	—	24	5000	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; RED; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
2	BATTN, BATTN1, BATTP, BATTP1, BYP, CHGIN, GND1-GND5, GND7, SYS	—	13	9020 BUSS	WEICO WIRE	MAXIMPAD	EVK KIT PARTS; MAXIM PAD; WIRE; NATURAL; SOLID; WEICO WIRE; SOFT DRAWN BUS TYPE-S; 20AWG
3	C1, C15, C18-C21, C23-C29, C36	—	14	GRM155R71A104JA01	MURATA	0.1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.1µF; 10V; TOL = 5%; TG = -55°C TO +125°C; TC = X7R
4	C2	—	1	C1608X5R1V225K080AC; GRM188R6YA225KA12	TDK;MURATA	2.2µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 2.2µF; 35V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
5	C3, C4, C16, C17, C30-C32	—	7	C0402C105K8PAC; CC0402KRX5R6BB105	KEMET;YAGEO	1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1µF; 10V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
6	C5, C33, C50, C54, C55	—	5	CL05A105KO5NNN	SAMSUNG	1µF	CAP; SMT (0402); 1µF; 10%; 16V; X5R; CERAMIC CHIP
7	C6, C10	—	2	C2012X5R1V106K125AC	TDK	10µF	CAPACITOR; SMT (0805); CERAMIC CHIP; 10µF; 35V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
8	C7	—	1	CGA2B3X7R1H104K050BB; C1005X7R1H104K050BB; GRM155R71H104KE14; GCM155R71H104KE02; C1005X7R1H104K050BE; UMK105B7104KV-FR; CGA2B3X7R1H104K050BE	TDK;TDK; MURATA; MURATA;TDK; TAIYO YUDEN; TDK	0.1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.1µF; 50V; TOL = 10%; TG = -55°C TO +125°C; TC = X7R
9	C8, C34	—	2	CL10A226MO7JZNC	SAMSUNG ELECTRONICS	22µF	CAP; SMT (0603); 22µF; 20%; 16V; X5R; CERAMIC CHIP
10	C9	—	1	GRM188R61C106MA73	MURATA	10µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 10µF; 16V; TOL = 20%; MODEL = GRM SERIES; TG = -55°C TO +85°C; TC = X5R
11	C11, C14, C43, C44	—	4	C0402C0G500270JNP; GRM1555C1H270JA01	VENKEL LTD.; MURATA	27PF	CAPACITOR; SMT; 0402; CERAMIC; 27pF; 50V; 5%; C0G; -55°C to + 125°C; 0 ±30PPM/°C
12	C12, C13, C22	—	3	ZRB15XR61A475ME01; CL05A475MP5NRN; GRM155R61A475MEAA; C1005X5R1A475M050BC	MURATA; SAMSUNG; MURATA;TDK	4.7µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 4.7µF; 10V; TOL = 20%; TG = -55°C TO +85°C; TC = X5R
13	C35	—	1	C0402C103K5RAC; GRM155R71H103KA88; C1005X7R1H103K050BE; CL05B103KB5NNN; UMK105B7103KV	KEMET; MURATA;TDK; SAMSUNG ELECTRONIC; TAIYO YUDEN	0.01µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.01µF; 50V; TOL = 10%; TG = -55°C TO +125°C; TC = X7R
14	C37-C40	—	4	EMK325ABJ107MM	TAIYO YUDEN	100µF	CAPACITOR; SMT (1210); CERAMIC CHIP; 100µF; 16V; TOL = 20%; TG = -55°C TO +85°C; TC = X5R
15	C41	—	1	GRM32ER60J227ME05	MURATA	220µF	CAP; SMT (1210); 220UF; 20%; 6.3V; X5R; CERAMIC CHIP
16	C42	DNI	1	EEE-FK1V101P	PANASONIC	100µF	CAPACITOR; SMT (CASE_F); ALUMINUM-ELECTROLYTIC; 100µF; 35V; TOL = 20%; TG = -55°C TO +105°C; AUTO
17	C46	—	1	GRM188R71A225KE15; CL10B225KP8NNN; C1608X7R1A225K080AC; C0603C225K8RAC	MURATA; SAMSUNG;TDK; KEMET	2.2µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 2.2µF; 10V; TOL = 10%; TG = -55°C TO +125°C; TC = X7R
18	C47, C51	—	2	ANY	ANY	1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1µF; 6.3V; TOL = 10%; MODEL = ; TG = -55°C TO +85°C; TC = X5R;
19	C52	—	1	C1005X5R1V105K050BC	TDK	1µF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1µF; 35V; TOL = 10%; TG = -55°C TO +85°C; TC = X5R
20	D1	—	1	PTVS20VS1UR	NEXPERIA	20V	DIODE; TVS; SMT (SOD-123W); VRM = 20V; IPP = 12.3A

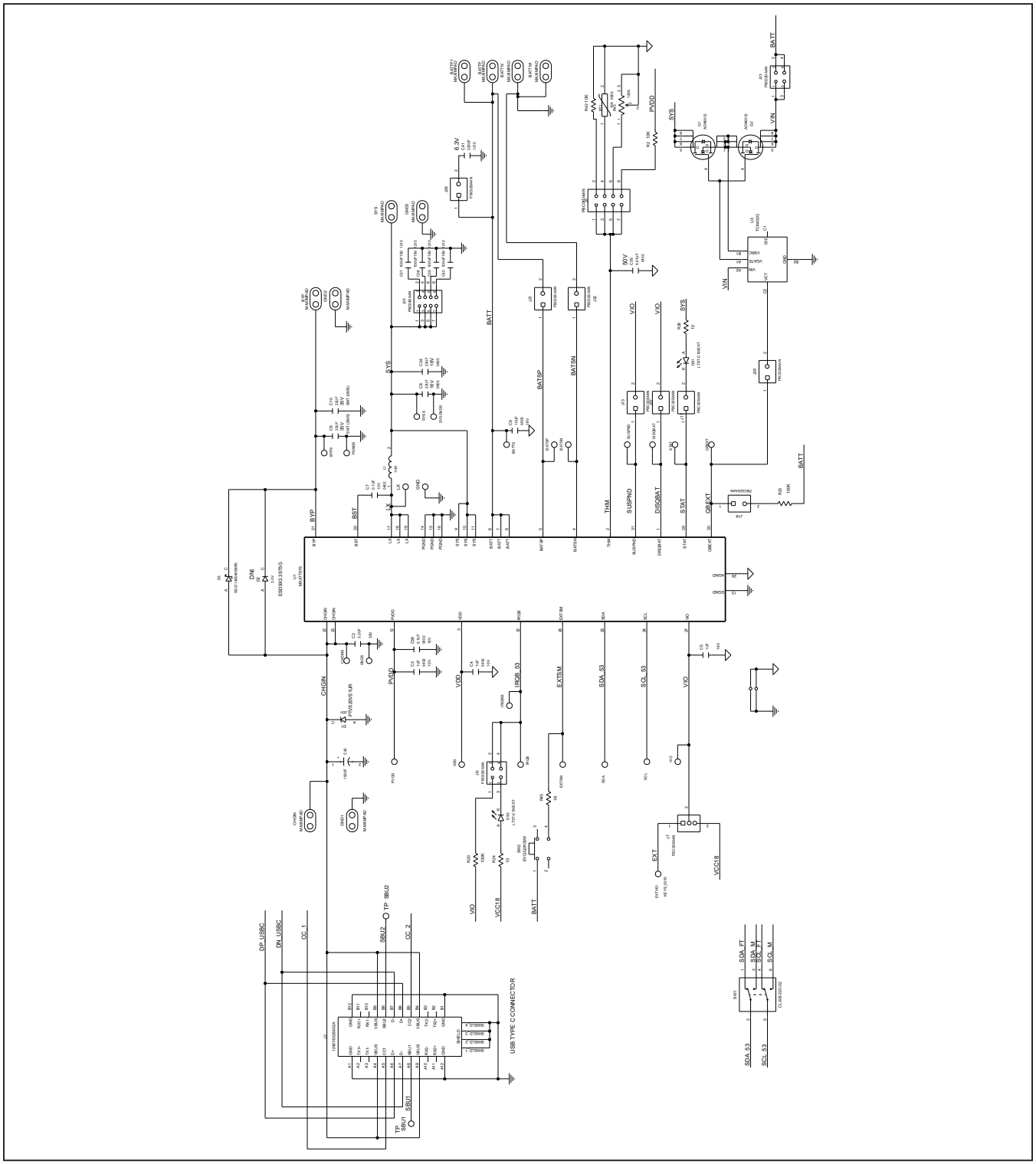
MAX77976 EV Kit Bill of Materials (continued)

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
21	D3	—	1	SD2114S040S8R0	AVX	SD2114S040S8R0	DIODE; SCH; SMB (DO-214AA); PIV = 40V; IF = 8A
22	D8, D9	—	2	PESD4V0W1BSF	NEXPERIA	4V	EVKIT PART-DIODE; TVS; SMT (SOD962-2); VRM = ±4V; IPP = N/A
23	DISQBAT, EXTSM, IRQB, IRQB53, QBEXT, SCL, SDA, STAT, SUSPND	—	9	5002	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;
24	DS1-DS3	—	3	LTST-C190CKT	LITE-ON ELECTRONICS INC.	LTST-C190CKT	DIODE; LED; STANDARD; RED; SMT (0603); PIV = 5.0V; IF = 0.04A; -55°C TO +85°C
25	EXTVIO, PVDD, VDD	—	3	5010	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.125IN; TOTAL LENGTH = 0.445IN; BOARD HOLE = 0.063IN; RED; PHOSPHOR BRONZE WIRE SIL;
26	GNDS, PGNDS, SYSGNDS	—	3	5001	KEYSTONE	N/A	TEST POINT; PIN DIA = 0.1IN; TOTAL LENGTH = 0.3IN; BOARD HOLE = 0.04IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
27	J1	—	1	10118193-0001LF	FCI CONNECT	10118193-0001LF	CONNECTOR; FEMALE; SMT; MICRO USB B TYPE RECEPTACLE; RIGHT ANGLE; 5PINS
28	J2	—	1	12401832E402A	AMPHENOL	12401832E402A	CONNECTOR; FEMALE; SMT; USB TYPE C CONNECTOR; RIGHT ANGLE; DUAL ROW; 24PINS
29	J3, J4, J9, J11, J12, J14, J16, J30-J32, J34, J35	—	12	TSW-102-07-T-S	SAMTEC	TSW-102-07-T-S	CONNECTOR; THROUGH HOLE; TSW SERIES; SINGLE ROW; STRAIGHT; 2PINS; -55°C TO +105°C
30	J5, J20	—	2	PBC04DAAN	SULLINS ELECTRONICS CORP.	PBC04DAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 8PINS; -65°C TO +125°C
31	J7, J8, J10	—	3	PEC03SAAN	SULLINS ELECTRONICS CORP.	PEC03SAAN	EVKIT PART-CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS; -65°C TO +125°C;
32	J13, J17, J18, J21, J22, J29, J36, J37	—	8	PBC02SAAN	SULLINS ELECTRONICS CORP.	PBC02SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 2PINS
33	J15, J23	—	2	PBC02DAAN	SULLINS ELECTRONICS CORP.	PBC02DAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 4PINS
34	J33	—	1	PBC09SAAN	SULLINS ELECTRONICS CORP.	PBC09SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 9PINS; -65°C TO +125°C
35	L1	—	1	IHLP2020BZER1R0M11	VISHAY DALE	1UH	INDUCTOR; SMT; IHLP SERIES; 1µH; TOL = ±20%; 7A; -55°C TO +125°C
36	L2-L4	—	3	BLM18AG601SN1	MURATA	600	INDUCTOR; SMT (0603); FERRITE-BEAD; 600; TOL = ±; 0.5A
37	MH1-MH4	—	4	9032	KEYSTONE	9032	MACHINE FABRICATED; ROUND-THRU HOLE SPACER; NO THREAD; M3.5; 5/8IN; NYLON
38	MISC1	—	1	AK67421-1-R	ASSMANN	AK67421-1-R	CONNECTOR; MALE; USB; USB2.0 MICRO CONNECTION CABLE; USB B MICRO MALE TO USB A MALE; STRAIGHT; 5PINS-4PINS
39	Q1, Q2	—	2	AON6512	ALPHA & OMEGA SEMICONDUCTOR	AON6512	TRAN; N-CHANNEL ALPHAMOS; NCH; DFN8-EP; PD-(83W); I-(150A); V-(30V)
40	R1, R7, R14-R16, R18, R22, R32-R34, R44	—	11	ERJ-2GE0R00	PANASONIC	0	RESISTOR; 0402; 0Ω; 0%; JUMPER; 0.10W; THICK FILM
41	R2, R42	—	2	CRCW060310K0FK; ERJ-3EKF1002	VISHAY DALE; PANASONIC	10K	RESISTOR; 0603; 10K; 1%; 100PPM; 0.10W; THICK FILM
42	R4, R6	—	2	ERJ-2RKF6493	PANASONIC	649K	RESISTOR; 0402; 649KΩ; 1%; 100PPM; 0.1W; THICK FILM
43	R5, R64	—	2	ERJ-2RKF1203	PANASONIC	120K	RESISTOR; 0402; 120KΩ; 1%; 100PPM; 0.1W; THICK FILM
44	R8	—	1	CRCW040212K0FK; MCR01MZPF1202	VISHAY DALE; ROHM SEMICONDUCTOR	12K	RESISTOR, 0402, 12KΩ, 1%, 100PPM, 0.0625W, THICK FILM
45	R9, R13	—	2	ERJ-2RKF27R0X; RC0402FR-0727RL; CRCW040227R0FK	PANASONIC; YAGEO PHICOMP; VISHAY DALE	27	RESISTOR, 0402, 27Ω, 1%, 100PPM, 0.0625W, THICK FILM

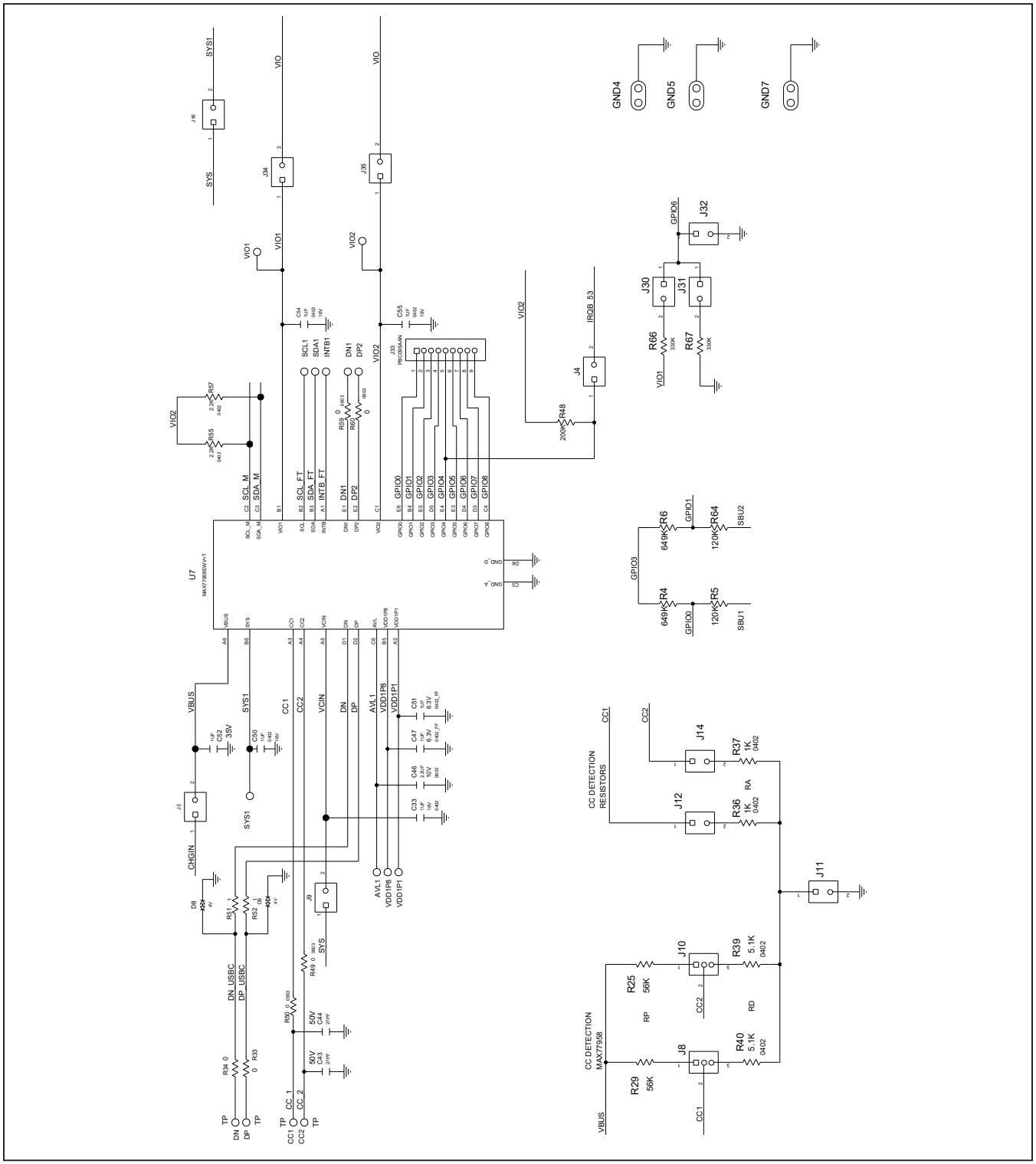
MAX77976 EV Kit Bill of Materials (continued)

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
46	R10	—	1	CRCW04021M00FK	VISHAY DALE	1M	RESISTOR; 0402; 1M; 1%; 100PPM; 0.0625W; THICK FILM
47	R11, R36, R37, R45	—	4	CRCW04021K00FK; RC0402FR-071KL; MCR01MZPF1001	VISHAY DALE; YAGEO PHICOMP; ROHM SEMI	1K	RESISTOR; 0402; 1K; 1%; 100PPM; 0.0625W; THICK FILM
48	R12, R21	—	2	CRCW04022K20JN	VISHAY DALE	2.2K	RESISTOR; 0402; 2.2KΩ; 5%; 200PPM; 0.063W; METAL FILM
49	R17	—	1	CRCW04024752FK; 9C04021A4752FLHF3; CRCW040247K5FK	VISHAY DALE; YAGEO; VISHAY DALE	47.5K	RESISTOR; 0402; 47.5K; 1%; 100PPM; 0.0625W; THICK FILM
50	R19, R20, R23, R31, R41	—	5	CRCW0402100KFK; RC0402FR-07100KL	VISHAY;YAGEO	100K	RESISTOR; 0402; 100K; 1%; 100PPM; 0.0625W; THICK FILM
51	R24, R38	—	2	CRCW040210R0FK; 9C04021A10R0FL	VISHAY DALE;YAGEO	10	RESISTOR; 0402; 10Ω; 1%; 100PPM; 0.0625W; THICK FILM
52	R25, R29	—	2	ERJ-2RKF5602	PANASONIC	56K	RESISTOR, 0402, 56KΩ, 1%, 100PPM, 0.0625W, THICK FILM
53	R26, R48	—	2	CRCW0402200KFK; RF73H1ELTP2003	VISHAY DALE; KOA SPEER ELECTRONICS	200K	RESISTOR; 0402; 200K; 1%; 100PPM; 0.0625W; THICK FILM
54	R27, R28	—	2	CRCW04024K70FK; MCR01MZPF4701	VISHAY DALE; ROHM SEMICONDUCTOR	4.7K	RESISTOR, 0402, 4.7KΩ, 1%, 100PPM, 0.0625W, THICK FILM
55	R30	—	1	CRCW0402169KFK	VISHAY DALE	169K	RESISTOR; 0402; 169KΩ; 1%; 100PPM; 0.063W; THICK FILM
56	R35	—	1	CRCW0402470RFK	VISHAY DALE	470	RESISTOR, 0402, 470Ω, 1%, 100PPM, 0.0625W, THICK FILM
57	R39, R40	—	2	CRCW04025K10FK	VISHAY DALE	5.1K	RESISTOR; 0402; 5.1K; 1%; 100PPM; 0.0625W; THICK FILM
58	R43	—	1	3296Y-1-104LF	BOURNS	100K	RESISTOR; THROUGH HOLE-RADIAL LEAD; 3296 SERIES; 100KΩ; 10%; 100PPM; 0.5W
59	R49, R50, R59, R60	—	4	CRCW06030000Z0EAHP	VISHAY DRALORIC	0	RESISTOR; 0603; 0Ω; 0%; JUMPER; 0.25W; THICK FILM
60	R51, R52	—	2	CRCW04021R00FK	VISHAY DALE	1	RESISTOR, 0402, 1Ω, 1%, 100PPM, 0.0625W, THICK FILM
61	R55, R57	—	2	CRCW04022K20FK; RC0402FR-072K2L	VISHAY DALE; YAGEO PHICOMP	2.2K	RESISTOR, 0402, 2.2KΩ, 1%, 100PPM, 0.0625W, THICK FILM
62	R66, R67	—	2	CRCW0402330KFK	VISHAY DALE	330K	RESISTOR, 0402, 330KΩ, 1%, 100PPM, 0.0625W, THICK FILM
63	RT1	—	1	NTCG163JF103F	TDK	10K	THERMISTOR; SMT (0603); THICK FILM (NICKEL PLATED); 10K; TOL = ±1%
64	SW1	—	1	CL-SB-22C-02	COPAL ELECTRONICS INC.	CL-SB-22C-02	SWITCH; DPDT; THROUGH HOLE; 12V; 0.2A; ON-ON; RCOIL = 0.05Ω; RINSULATION = 10MΩ; COPAL ELECTRONICS INC.; -40°C TO +85°C
65	SW2	—	1	EVQ-Q2K03W	PANASONIC	EVQ-Q2K03W	SWITCH; SPST; SMT; 15V; 0.02A; LIGHT TOUCH SWITCH; RCOIL = Ω; RINSULATION = Ω; PANASONIC
66	U1	—	1	MAX77976	MAXIM	MAX77976	EVKIT PART - IC; MAX77976; 19V INPUT; 5.5A BUCK CHARGER FOR 1S LI-ION BATTERY; PACK; PACKAGE OUTLINE DRAWING 21-100411; LAND PATTERN DRAWING: 90-100145; PACKAGE CODE: F234A4F-1 FCQFN32
67	U2	—	1	FT2232HL	FUTURE TECHNOLOGY DEVICES INTL LTD.	FT2232HL	IC; MMRY; DUAL HIGH SPEED USB TO MULTIPURPOSE UART/FIFO; LQFP64
68	U3	—	1	TCK402G	TOSHIBA	TCK402G	IC; ASW; CMOS LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC; WLCSP6
69	U4	—	1	MAX14611ETD+	MAXIM	MAX14611ETD+	IC; TRANS; QUAD BIDIRECTIONAL LOW-VOLTAGE LOGIC LEVEL TRANSLATOR; TDFN14-EP
70	U5, U6	—	2	MAX8512EXK+	MAXIM	MAX8512EXK	IC, VREG, Ultra-Low-Noise, High PSRR, Adjustable Vout, SC70-5
71	U7	—	1	MAX77958EWV+T	MAXIM	MAX77958EWV+T	EVKIT PART - IC; USB TYPE-C AND USB PD CONTROLLER; WLP30; 0.5MM PITCH; PACKAGE OUTLINE: 21-0069; PACKAGE CODE: W302A3+2
72	Y1	—	1	7M-12.000MAAJ	TXC CORPORATION	12MHZ	CRYSTAL; SMT; 18PF; 12MHZ; ±30PPM; ±30PPM
73	PCB	—	1	MAX77976	MAXIM	PCB	PCB:MAX77976
74	D2	DNP	0	ESD9X3.3ST5G	ON SEMICONDUCTOR	3.3V	DIODE; TVS; SMT (SOD-923); VRM = 3.3V; IPP = 9.8A
75	R3	DNP	0	N/A	N/A	OPEN	RESISTOR; 0402; OPEN; FORMFACTOR
TOTAL			219				

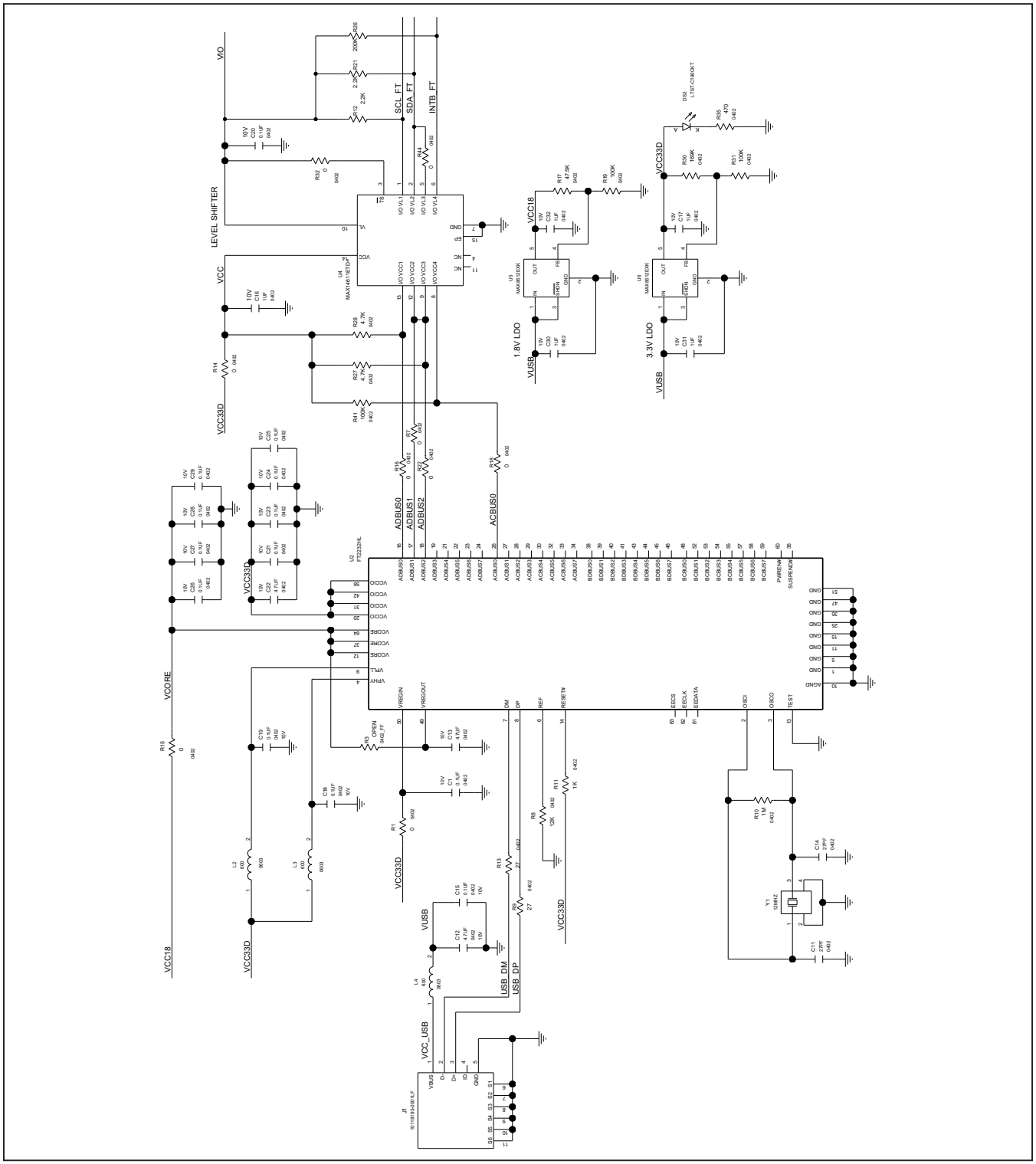
MAX77975/MAX77976 EV Kit Schematic



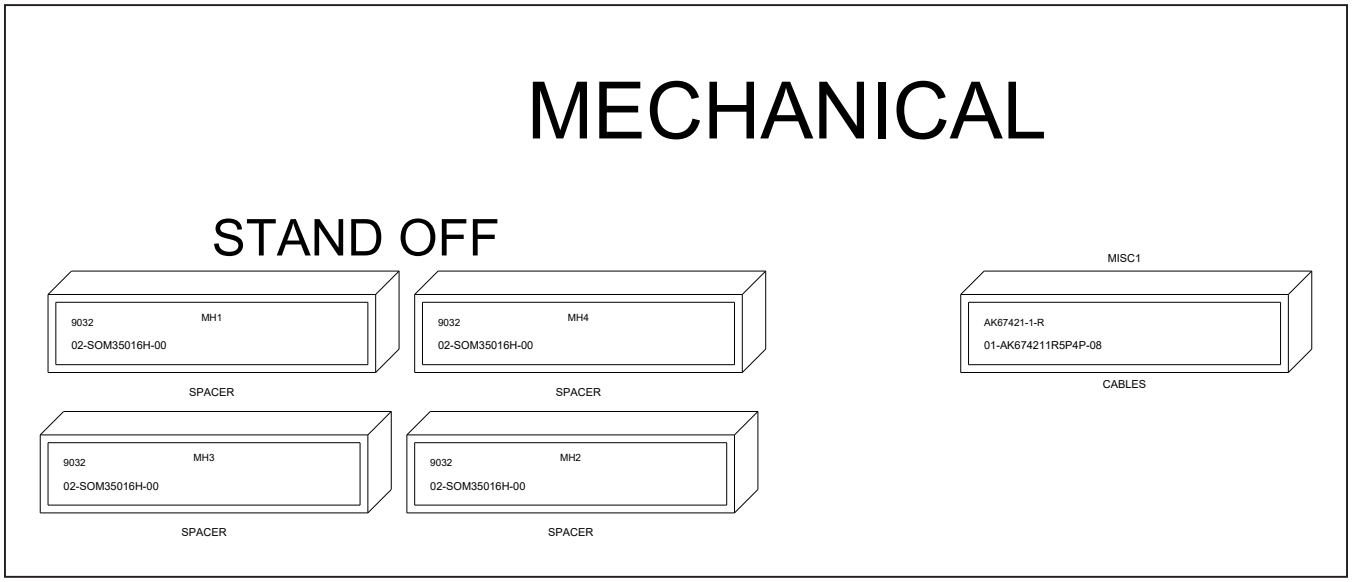
MAX77975/MAX77976 EV Kit Schematic (continued)



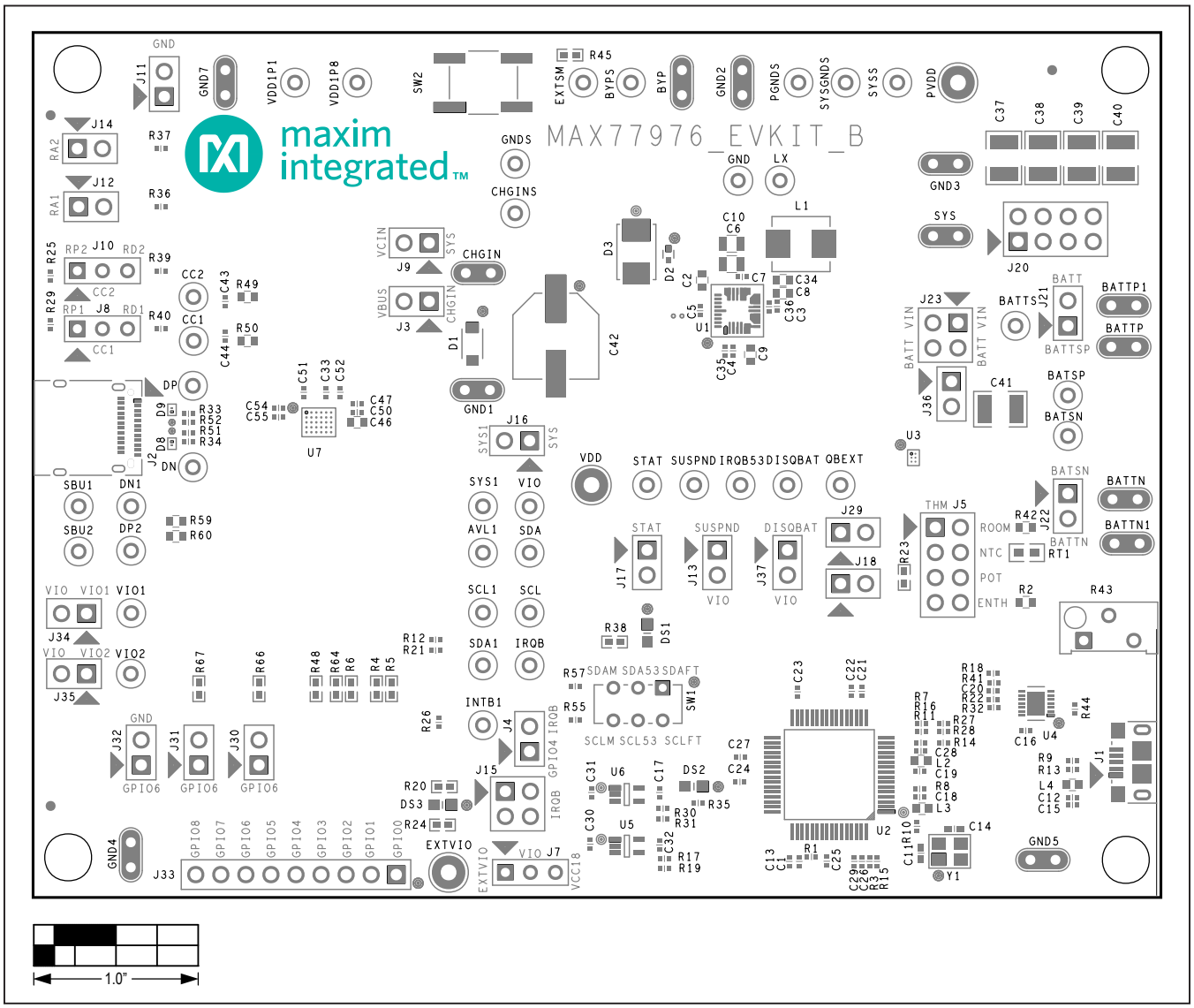
MAX77975/MAX77976 EV Kit Schematic (continued)



MAX77975/MAX77976 EV Kit Schematic (continued)

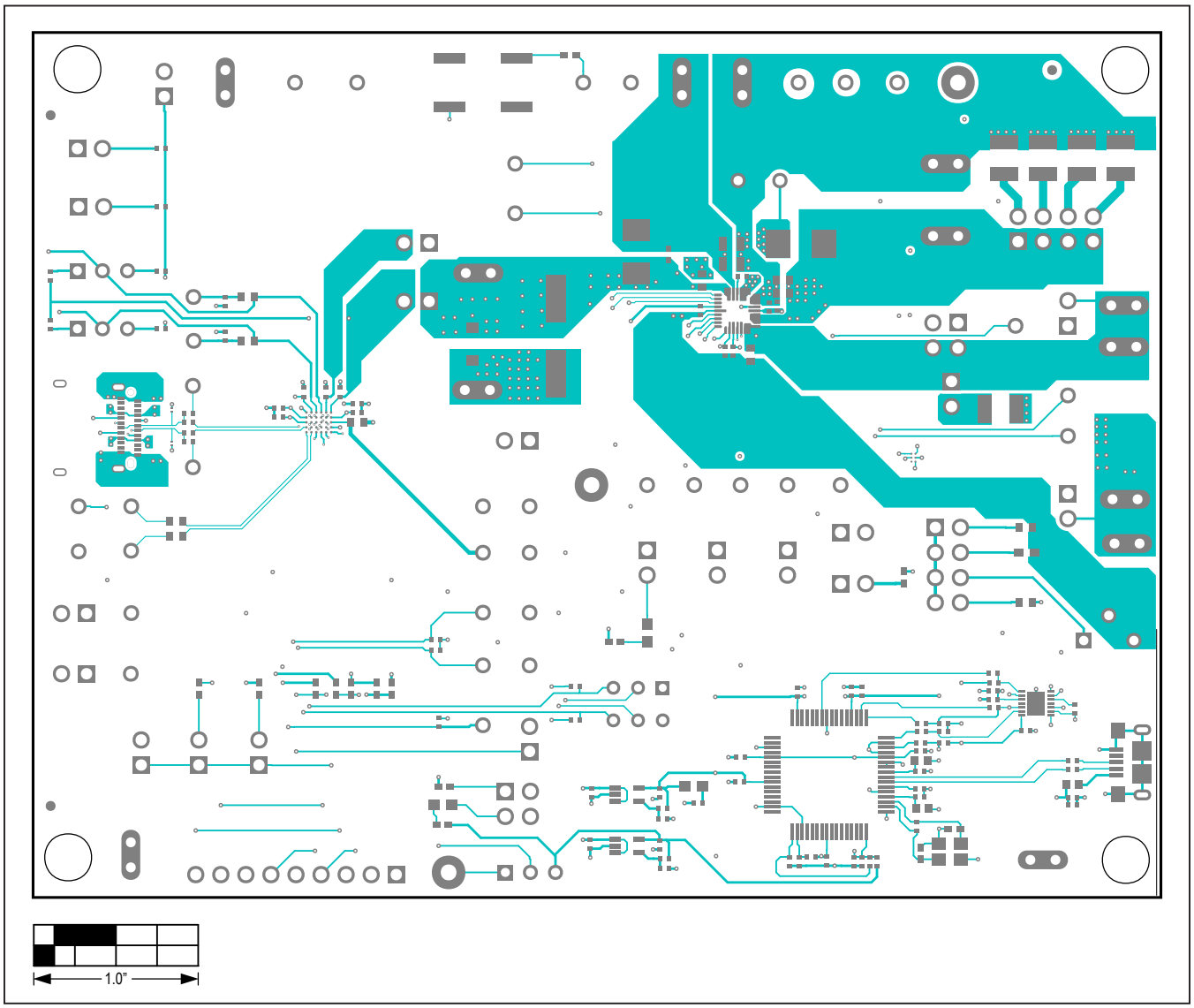


MAX77975/MAX77976 EV Kit PCB Layout



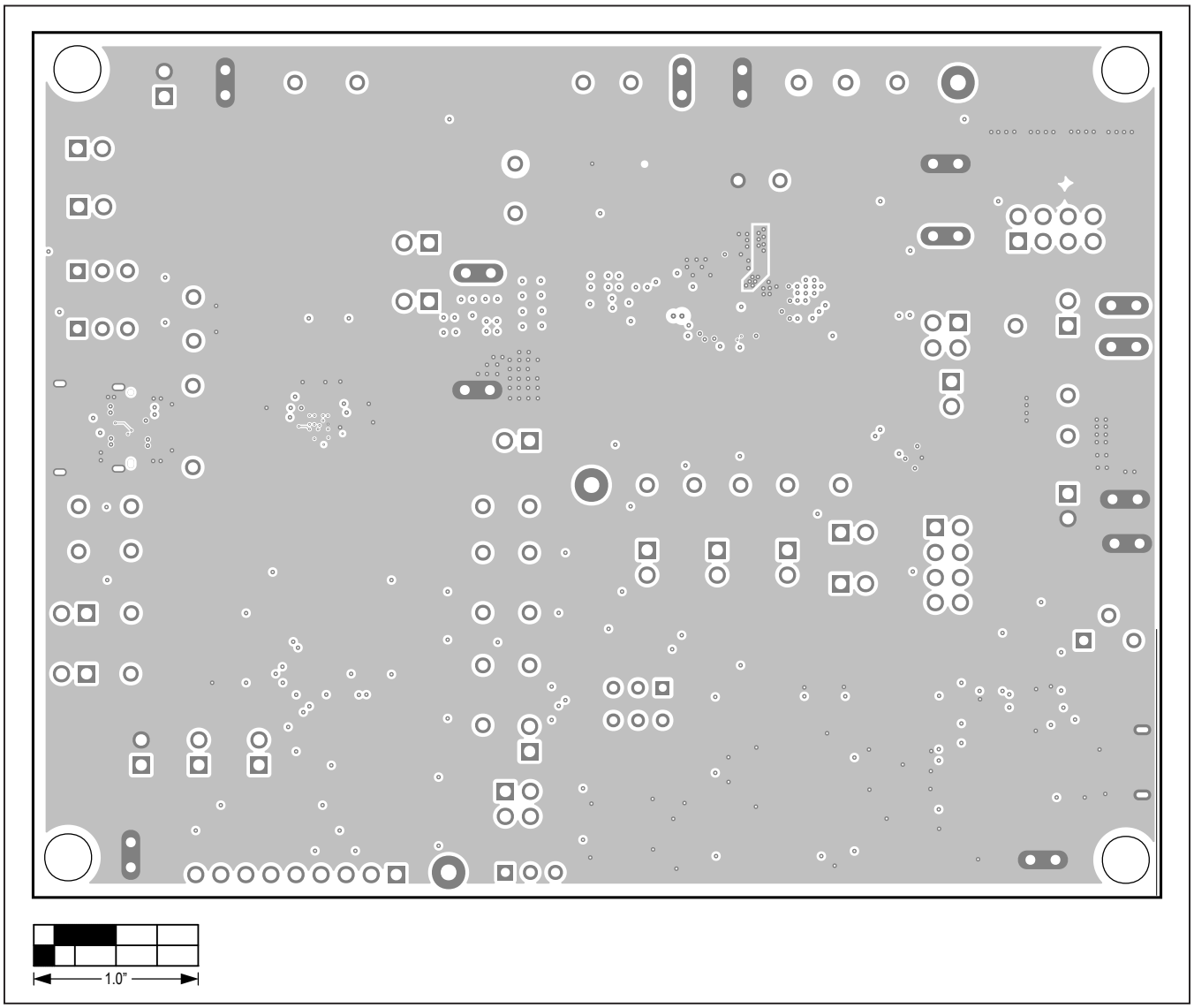
MAX77975/MAX77976 EV Kit Component Placement Guide—Top Silkscreen

MAX77975/MAX77976 EV Kit PCB Layout (continued)



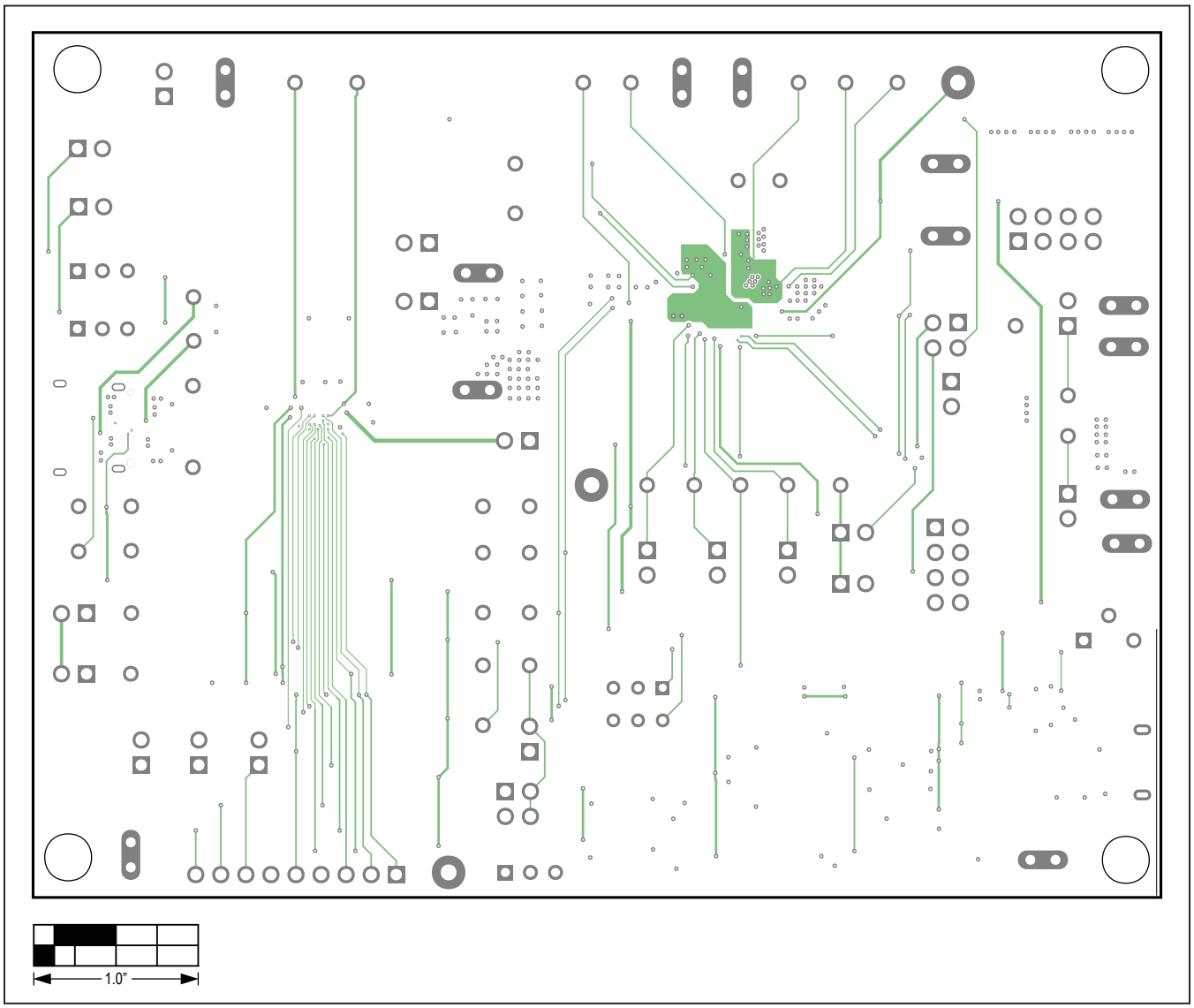
MAX77975/MAX77976 EV Kit PCB Layout—Top View

MAX77975/MAX77976 EV Kit PCB Layout (continued)



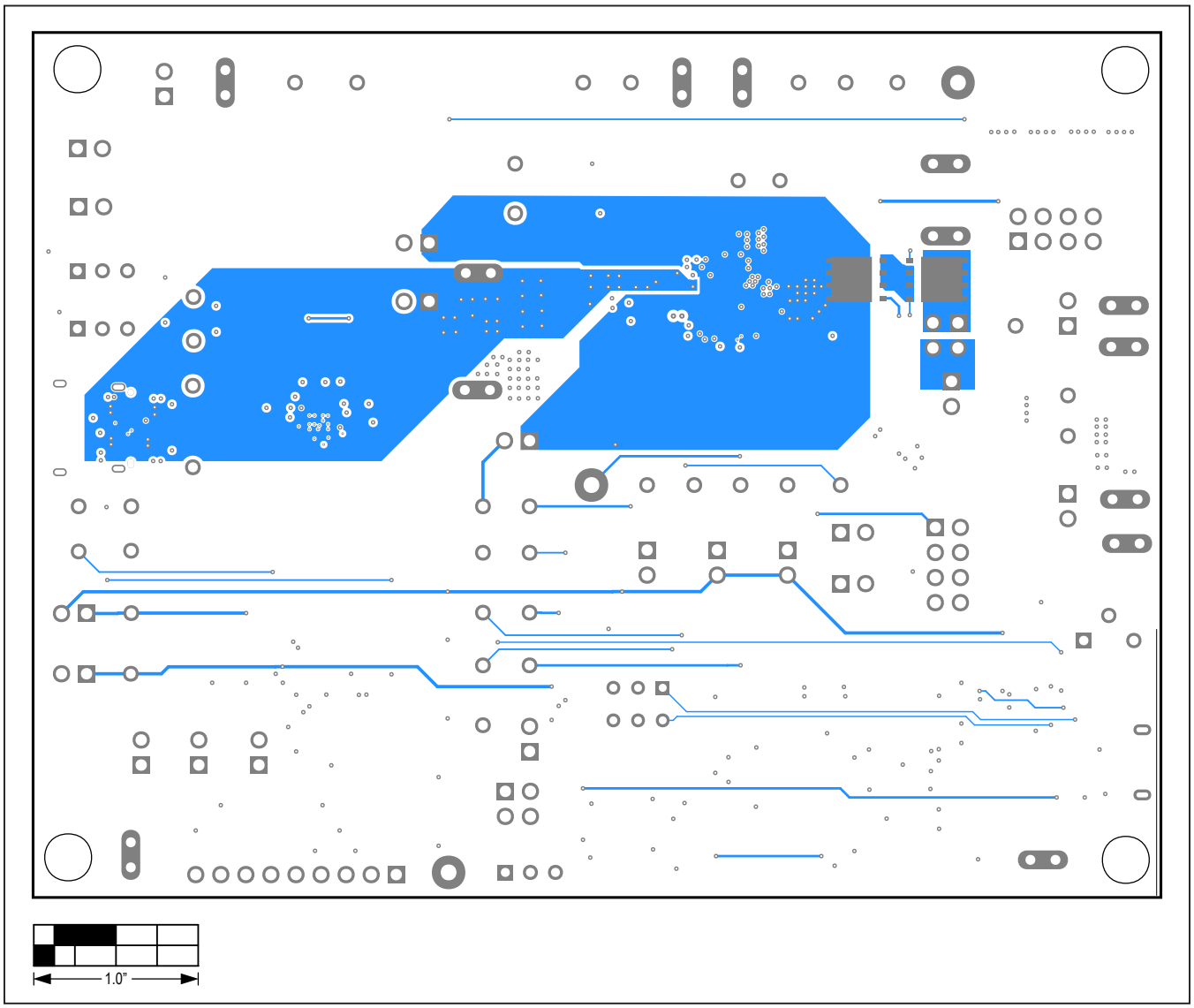
MAX77975/MAX77976 EV Kit PCB Layout—Layer 2

MAX77975/MAX77976 EV Kit PCB Layout (continued)



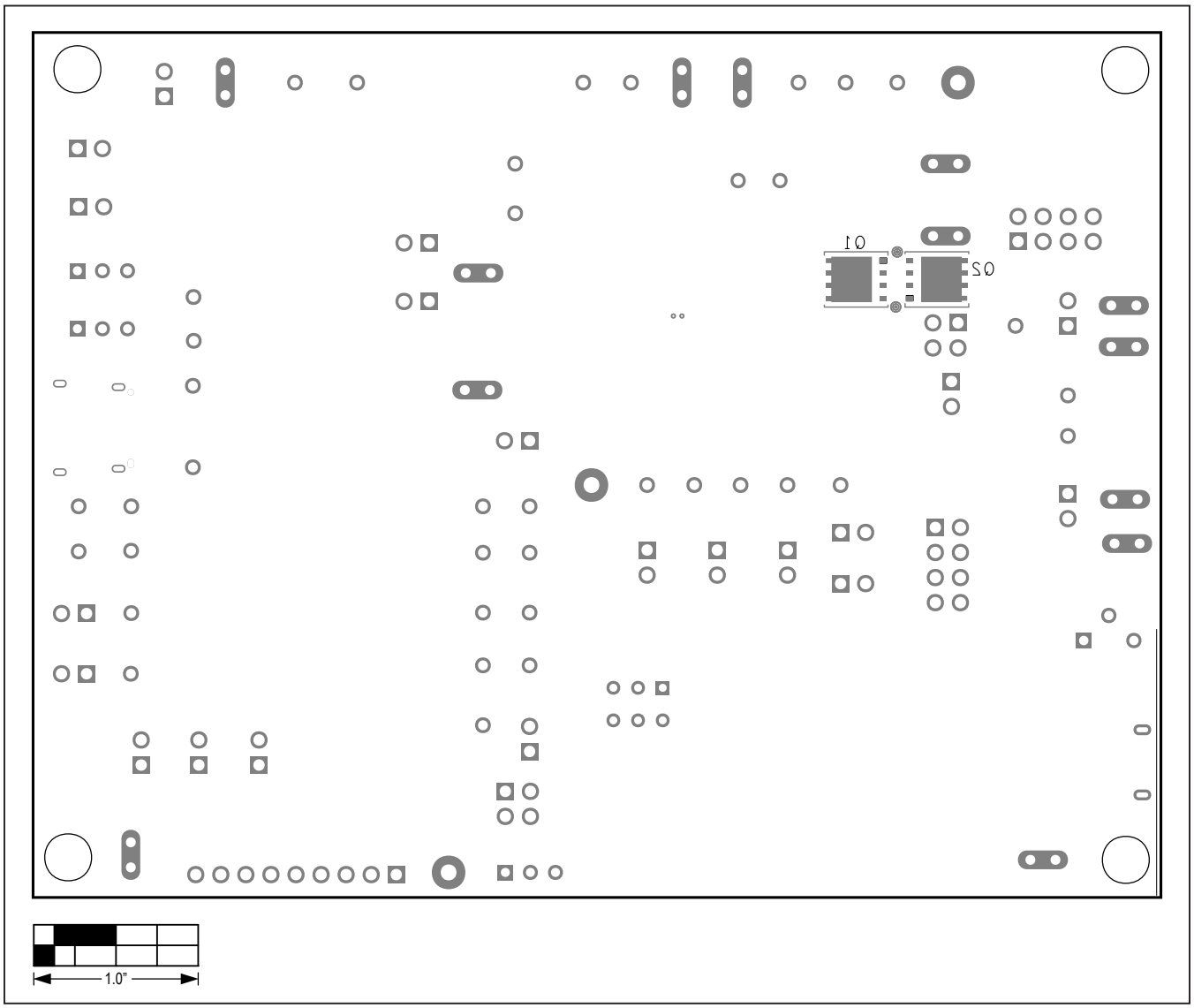
MAX77975/MAX77976 EV Kit PCB Layout—Layer 3

MAX77975/MAX77976 EV Kit PCB Layout (continued)



MAX77975/MAX77976 EV Kit PCB Layout—Bottom View

MAX77975/MAX77976 EV Kit PCB Layout (continued)



MAX77975/MAX77976 EV Kit PCB Layout—Bottom Silkscreen

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	9/20	Initial release	—
1	11/20	Updated *Ordering Information* table	14

Mouser Electronics

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