Evaluates: MAX77675

MAX77675 Evaluation Kit

General Description

The MAX77675 evaluation kit (EV kit) allows for easy experimentation with the MAX77675 CCM single-inductor, multiple-output (SIMO) regulator, and I^{2}C interface.

The Windows®-based software provides a user-friendly graphical interface as well as a detailed register-based interface to exercise the features of the MAX77675.

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

Features

- Easy to Use
- GUI-Drives I^{2}C Interface
- Assembled and Fully Tested
- On-Board Electronic Loads
- Electronic Loads with Steady-State, Transient, and Random Modes
- On-Board ADC
- Evaluation of Multiple On-Key Options
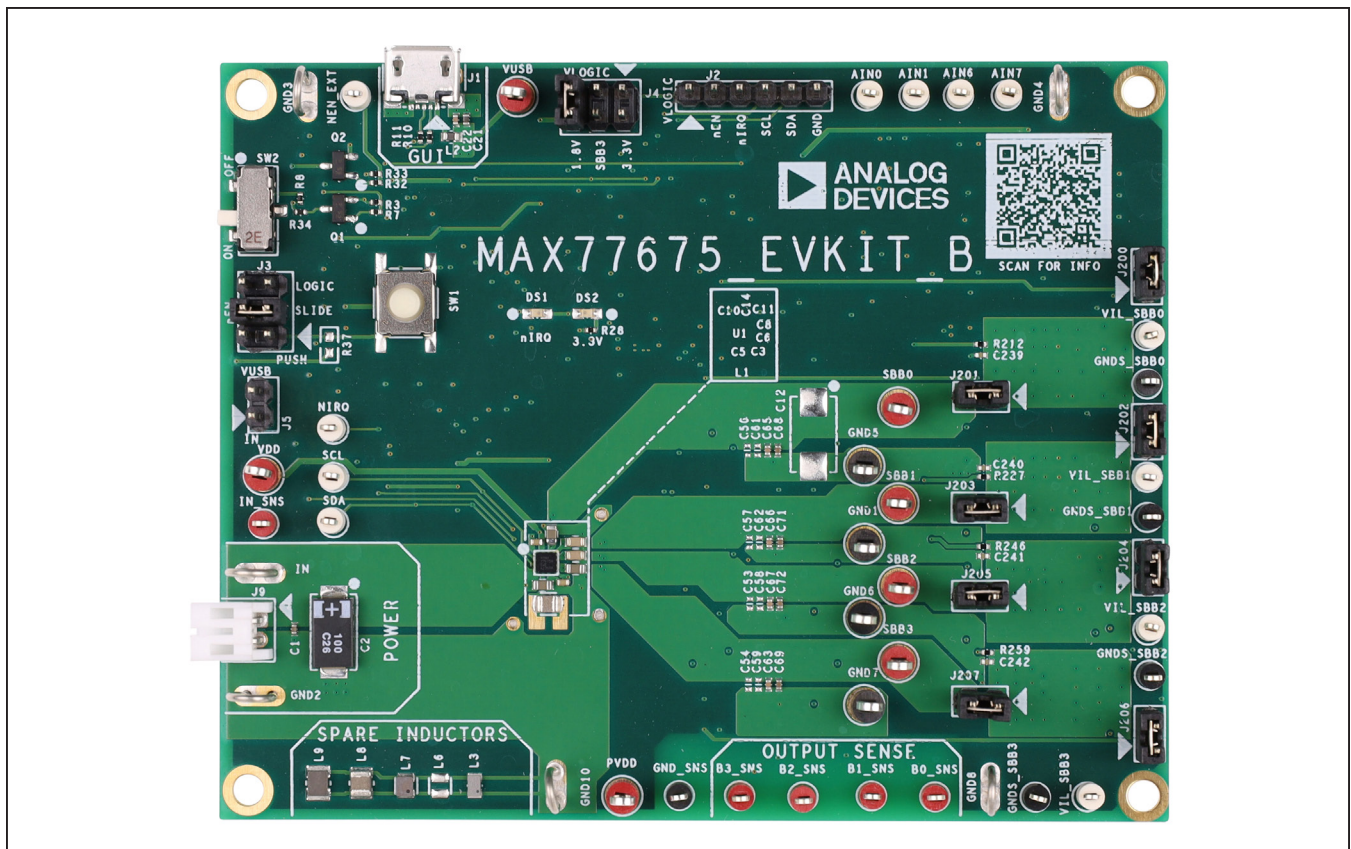- Wide Inductor Pads for Wide Range of Case Codes

Figure 1. MAX77675 EV Kit Photograph

Windows is a registered trademark and registered service mark of Microsoft Corporation.
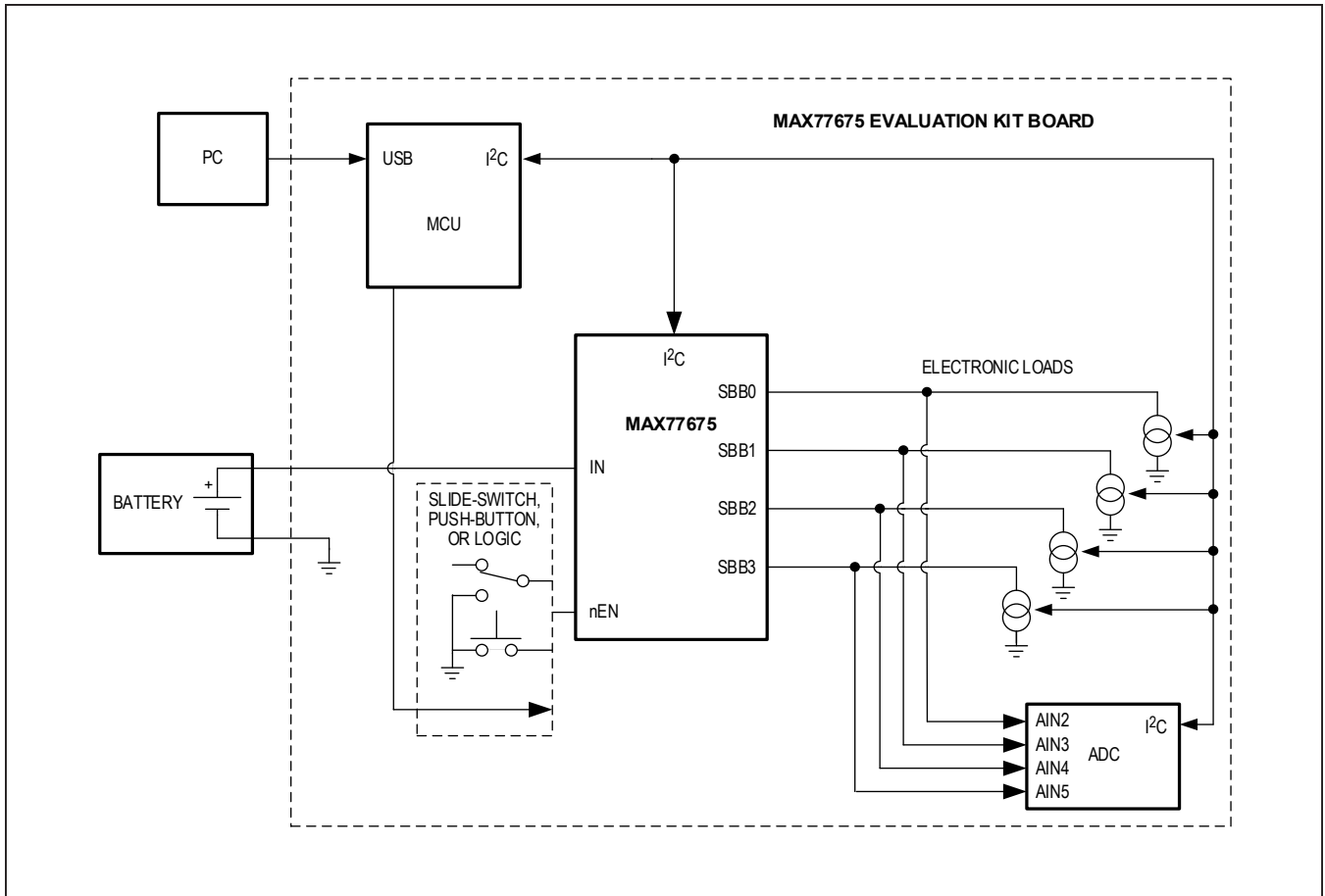
319-100986; Rev 0; 3/23

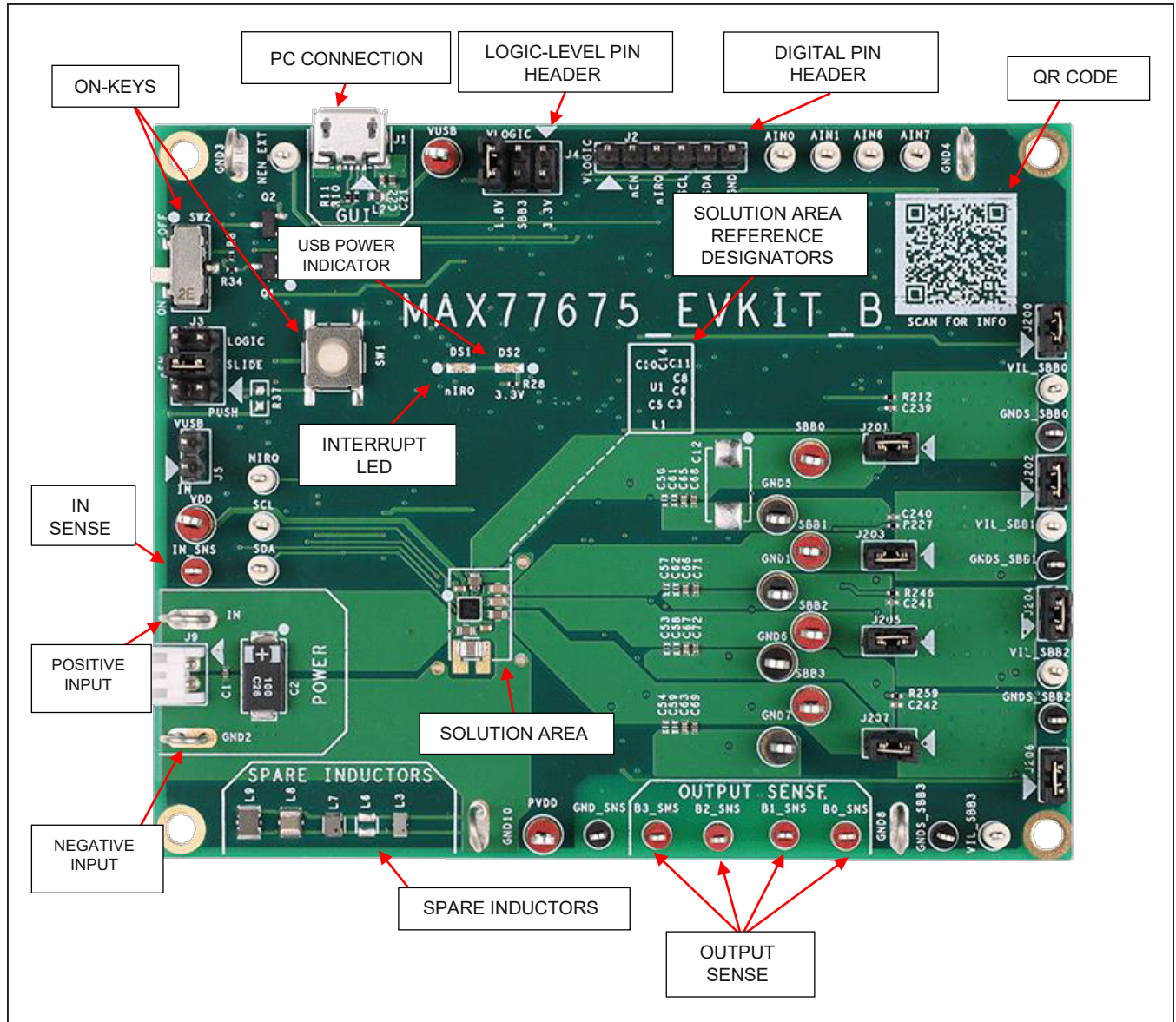Figure 2. EV Kit Simplified Block Diagram
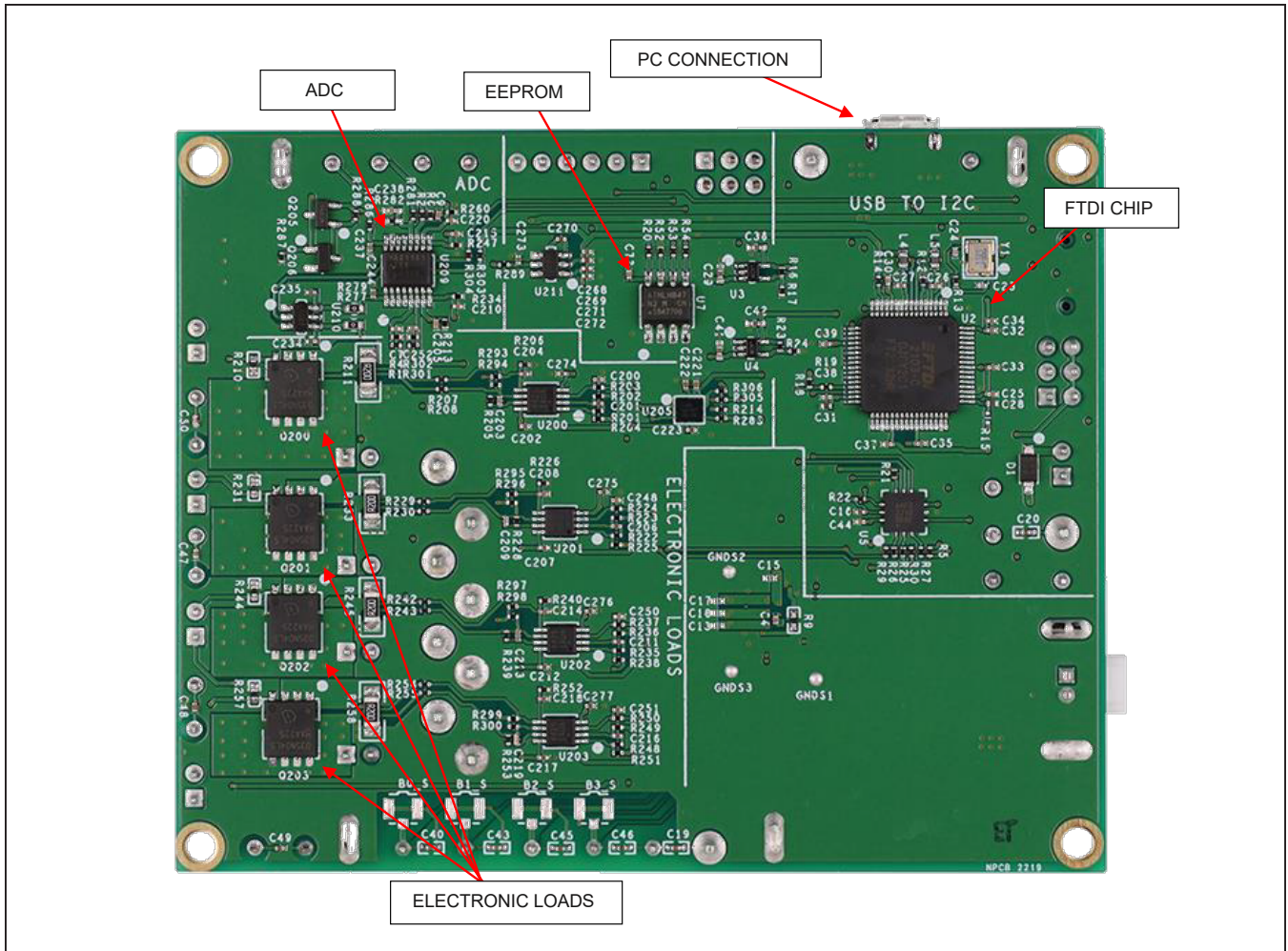
Figure 3. MAX77675 EV Kit Top View

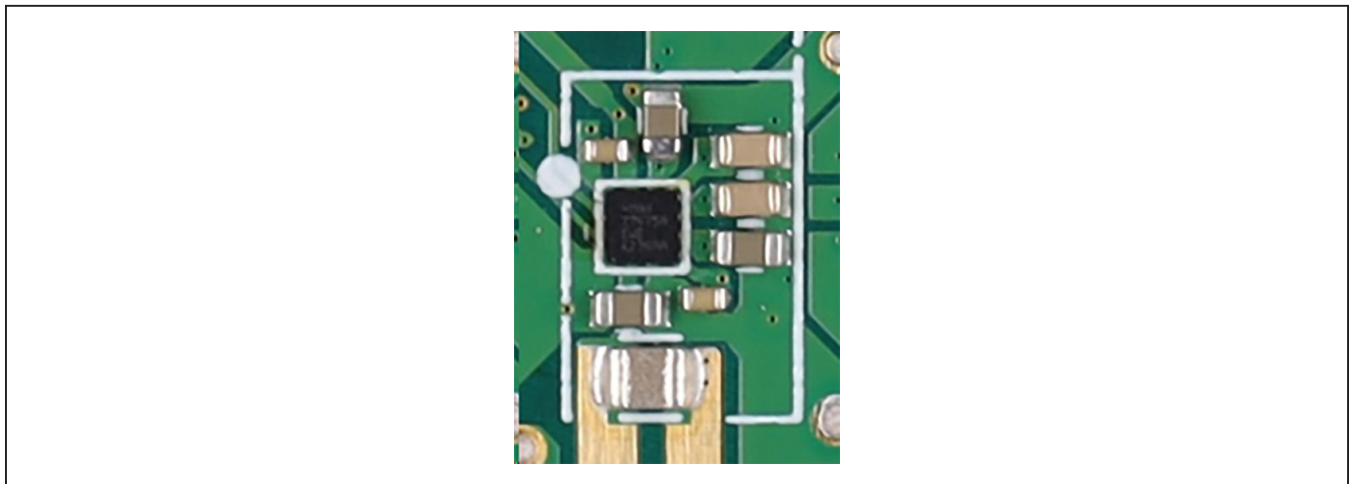*Figure 4. MAX77675 EV Kit Bottom View*

Figure 5. MAX77675 EV Kit Solution Area

Quick Start

Perform the following 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

- MAX77675 EV kit
- MAX77675 EV kit GUI
- Windows-based PC
- Power supply
- DVM
- Micro-USB cable

Procedure

1) Install the GUI software. Visit the product webpage at **http://www.analog.com/MAX77675evkit** and navigate to Design Resources to download the latest version of the EV kit software. Run the downloaded program to install the EV kit GUI on the computer.

2) Install EV kit shunts according to Table 1.

3) Connect a Micro-B USB cable between the EV kit USB port labeled "GUI" and your Windows-based PC.

4) Apply a 3.7V supply (set for a 100mA current limit) across the IN and GND2 terminals of the EV kit. Turn the supply on.

5) Open the GUI and select **Device→Connect** in the upper-left corner. Wait for a **CONNECTED_DE-VICE_LIST** window to pop up, and then press the **Connect** button.

6) On the **ADC/AMUX** tab of the GUI, click the **Read** buttons next to **VSBB0**, **VSBB1**, **VSBB2**, and **VSBB3**. For the MAX77675A, 1.8V, 1.1V, 0.7V, and 3.3V should appear, respectively (Figure 6).

7) This concludes the Quick Start procedure. Users are encouraged to explore the device and its register settings with the GUI. During general device evaluation, set the ammeter range to at least 1A to minimize the impact of its series resistance.

For more information on the GUI, see the *Software* section.

Table 1. Default Shunt Positions and Jumper Descriptions

REFERENCE DESIGNATOR	DEFAULT POSITION	FUNCTION
J3	3-4	1-2: Connects nEN to SW1 (Push-button) 3-4: Connects nEN to SW2 (Slide-switch) 5-6: Connects nEN to GUI (Logic).
J4	5-6	1-2: Connects VLOGIC to 3.3V 3-4: Connects VLOGIC to SBB0 5-6: Connects VLOGIC to 1.8V
J5	OPEN	1-2: Connects 5V from GUI USB to device IN pin
J201	1-2	1-2: Connects SBB0 to the on-board electronic load and ADC
J203	1-2	1-2: Connects SBB1 to the on-board electronic load and ADC
J205	1-2	1-2: Connects SBB2 to the on-board electronic load and ADC
J207	1-2	1-2: Connects SBB3 to the on-board electronic load and ADC
J200	1-2	1-2: Connects the gate of the Q200 load FET to the U200 amplifier
J202	1-2	1-2: Connects the gate of the Q201 load FET to the U201 amplifier
J204	1-2	1-2: Connects the gate of the Q202 load FET to the U202 amplifier
J206	1-2	1-2: Connects the gate of the Q203 load FET to the U203 amplifier

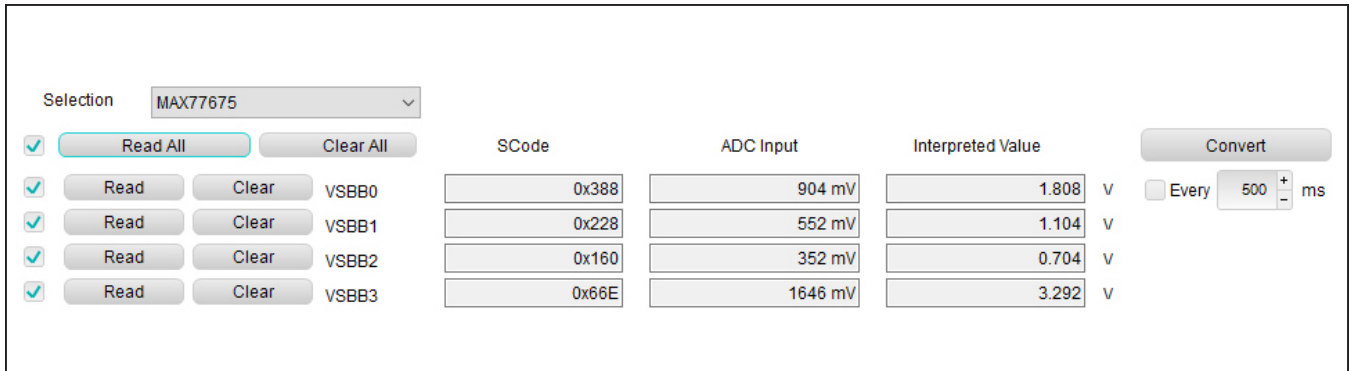| Selection	MAX77675						
✓	Read All	Clear All	SCode	ADC Input	Interpreted Value		Convert
✓	Read	Clear	VSBB0	0x388	904 mV	1.808 V	Every 500 ms
✓	Read	Clear	VSBB1	0x228	552 mV	1.104 V	
✓	Read	Clear	VSBB2	0x160	352 mV	0.704 V	
✓	Read	Clear	VSBB3	0x66E	1646 mV	3.292 V	

Figure 6. Quick Start: Regulator Check with the ADC

EV Kit Features

On-Key Options

For applications that require the IC to be enabled with a user-interactable switch or electrical signal, the EV kit comes with three options: push-button (momentary), slide-switch (persistent), and logic (electrical). The active-low enable pin (nEN) has an internal pullup resistor. Select which type of on-key to use with jumper J3. Refer to the MAX77675 data sheet for more information on configuring the nEN pin.

When jumper J3 is installed to position 5–6, the "GUI Output to nEN" control in the **Global Resources** tab can be used to manually apply a HIGH or LOW signal to nEN.

Electronic Load

The EV kit comes with an electronic load that allows the user to evaluate the SIMO load current capabilities. On-board circuits set the load current through I2C. J201, J203, J205, and J207 connect the load to the output of the SBB0, SBB1, SBB2, and SBB3, respectively. There are two options to exercise load transient response. In the **Load Control** tab of the GUI offers load transient controls. If faster rise and fall times are required, remove J200 (for SBB0), J202 (for SBB1), J204 (for SBB2), or J206 (for SBB3) and connect a signal generator to the gate of the load MOSFET (pin 2 of the respective header). Drive the gate with a signal between 1V (off) and 3V (fully on) to apply transients to the output of the SIMO or LDO. Note that there are 0.2Ω sense resistors with test points (called VIL_SBB0, VIL_SBB1, VIL_SBB2, and VIL_SBB3) for a 1:5 conversion of load current to voltage. See the *Software* section to learn how to set the load current from the GUI.

On-Board ADC (MAX11614)

An on-board ADC is available to convert the output voltages of SBB0, SBB1, SBB2, and SBB3. Test points AIN0, AIN1, AIN6, and AIN7 are also measured. The GUI does the appropriate conversions. See the *Software* section for how to read these values from the GUI.

Software

The graphical user interface (GUI) software allows for convenient, quick, and thorough evaluation of the MAX77675.

The GUI has individual tabs for each functional block of the device (global resources, interrupts/status, power sequencing, SIMO) and two additional tabs for controlling EV kit hardware (load control and ADC). In addition, the FPS Configuration tab contains a plot of the power-up and power-down sequences. See Figure 8 and Figure 9 for screenshots of the GUI upon opening.
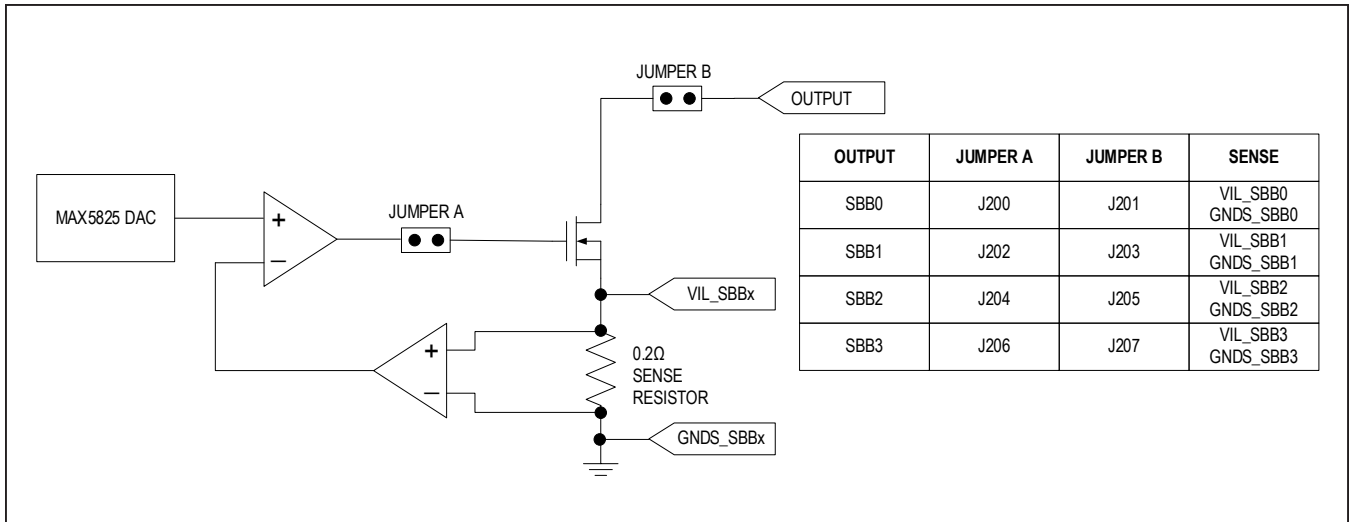
Figure 7. Electronic Load Block Diagram

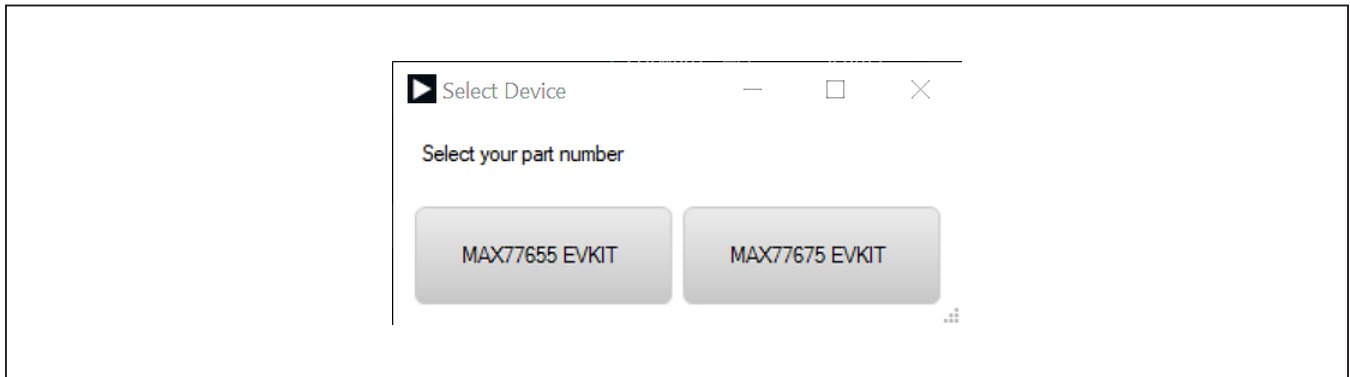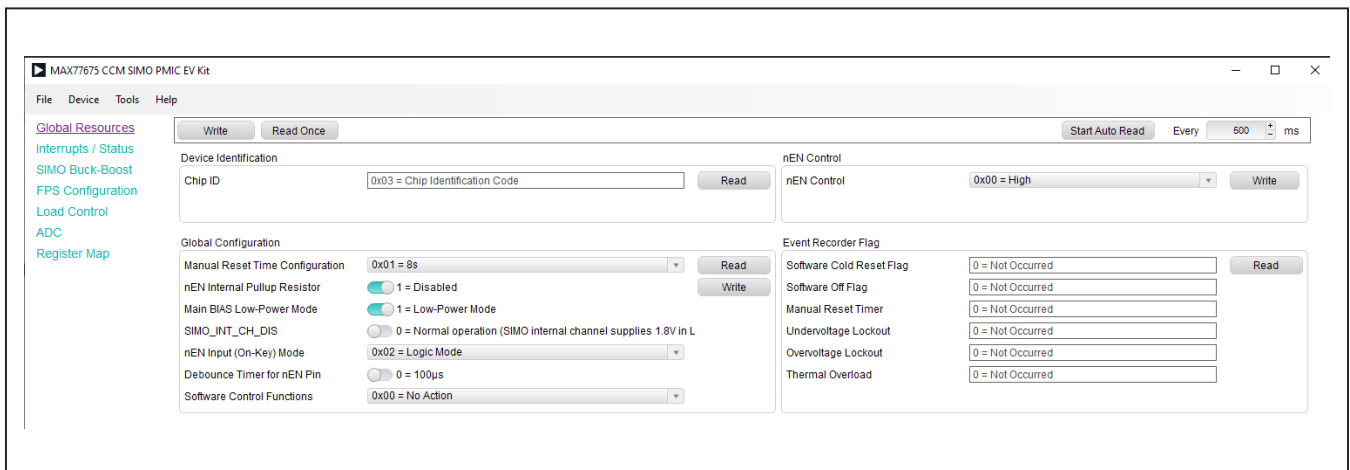*Figure 8. MAX77655/75 EV Kit Selection*

Figure 9. MAX77675 EV Kit GUI

Installation

Visit the product webpage at http://www.analog.com/max77675evkit and navigate to Design Resources to download the latest version of the EV kit software. Save the EV kit software to a temporary folder and decompress the ZIP file.

Windows Drivers

Upon connection of a Micro-USB cable between your PC and the EV kit for the first time, wait a few minutes for Windows to automatically install drivers.

Graphical User Interface (GUI) Details

The GUI drives I^2C communication with the EV kit. Every control in the GUI (excluding GUI Output to nEN, the **Load Control** tab, and the **ADC** tab) corresponds directly to a register within the MAX77675. Hover your cursor over control names for a description of that register. The complete register map is available in the **Register Map** tab of the GUI and the IC data sheet.

Load Control Tab

The **Load Control** tab contains controls for load currents on the regulator outputs. The GUI is capable of setting steady-state, transient, and random load currents. To set a load current, use the slider bar or text field to input a value (mA) and check the **Enable** box. Shuffle through the modes to exercise different load conditions.

The offset and gain values are set by Analog Devices and do not need to be altered.

ADC Tab

The **ADC** tab allows users to convert important voltage and current signals to digital readings. To read a signal, click the **Read** button and examine the **Value** column.

Tips

Testing Custom Power-Up Sequences

To test custom power-up sequences, send the device to standby state by setting the "Software Control Functions" control to "Software Standby" in the **Global Resources** tab. All channels on the power sequence should power down.

Then, use the "SBBx Enable Control for SIMO" controls in either the SIMO Buck-Boost or **FPS Configuration** tab.

Finally, exit standby state and trigger the power sequence using one of the following methods:
- Send a "Software Exit Standby" command using the "Software Control Functions" control.
- Press the on-board on-key or toggle the slide switch if using either push-button or slide-switch mode.

Measuring Quiescent Current

The on-board electronic load and voltage dividers for the ADCs may affect quiescent current measurements while the device is in low-power mode. Remove jumpers J201, J203, J205, and J207 before making quiescent current measurements in low-power mode.

For stable, accurate measurements, set the input current ammeter to 100NPLC and monitor the average reading.

If no settings are changed on the MAX77675 EV kit, the quiescent current after applying power to IN is about 300nA. After waking up the device, quiescent current is about 4.3µA.

Applying Fast Line Transients

A large bulk capacitor (C2) is located at the power input connection points to attenuate any ringing on the input voltage due to long cables between the board and the supply. Before applying fast line transients, remove this capacitor.

Ordering Information

PART	IC	TYPE
MAX77675EVKIT#	MAX77675AEWE+	EV kit

#Denotes RoHS compliance.

MAX77675 EV Kit Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
SOLUTION AREA							
1	C3, C10	-	2	GRM155R61A106ME44; GRM155R61A106ME11; 0402ZD106MAT2A; CL05A106MP5NUNC	MURATA;MURATA; AVX;SAMSUNG	10UF	CAP; SMT (0402); 10UF; 20%; 10V; X5R; CERAMIC
2	C4	-	1	C0402C103K5RAC; GRM155R71H103KA88; C1005X7R1H103K050BE; CL05B103KB5NNN; UMK105B7103KV	KEMET;MURATA;TDK; SAMSUNG ELECTRONIC; TAIYO YUDEN	0.01UF	CAP; SMT (0402); 0.01UF; 10%; 50V; X7R; CERAMIC
4	C5, C6, C14	-	2	C1608X5R1A226M080AC; GRM188R61A226ME15; CL10A226MPCNUBE; CL10A226MPMNUB	TDK;MURATA; SAMSUNG; SAMSUNG ELECTRO-MECHANICS	22UF	CAP; SMT (0603); 22UF; 20%; 10V; X5R; CERAMIC
5	C8, C11	-	2	GRM188R60J476ME15	MURATA	47UF	CAP; SMT (0603); 47UF; 20%; 6.3V; X5R; CERAMIC
6	L1	-	1	DFE201610E-1R5M=P2	MURATA	1.5UH	INDUCTOR; SMT (0806); MAGNETICALLY SHIELDED; 1.5UH; TOL=+/-20%; 2.1A
7	U1	-	1	MAX77675AEWE+	MAXIM	MAX77675	EVKIT PART - IC; MAX77675; LOW IQ SIMO PMIC WITH 0.5V TO 5.5V OUTPUTS DELIVERING UP TO 700MA TOTAL OUTPUT CURRENT; PACKAGE OUTLINE DRAWING: 21-100374
EVALUATION							
1	AIN0, AIN1, AIN6, AIN7, NEN_EXT, NIRQ, SCL, SDA, VIL_SBB0-VIL_SBB3	-	12	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;
2	B0_SNS, B1_SNS-B3_SNS, IN_SNS	-	5	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;
3	C1, C234, C235	-	3	GRM155R61C104KA88	MURATA	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 16V; X5R; CERAMIC
4	C2	-	1	16TQC100MYF	PANASONIC	100UF	CAP; SMT (7343); 100UF; 20%; 16V; TANTALUM
5	C19, C20, C40, C43, C45-C50	-	10	C0402C103K5RAC; GRM155R71H103KA88; C1005X7R1H103K050BE; CL05B103KB5NNN; UMK105B7103KV	KEMET;MURATA; TDK;SAMSUNG ELECTRONIC; TAIYO YUDEN	0.01UF	CAP; SMT (0402); 0.01UF; 10%; 50V; X7R; CERAMIC
6	C7, C9, C200, C205, C210, C215,C220, C238, C248, C250-C252	-	12	C0402C472J5RAC	KEMET	4700PF	CAP; SMT (0402); 4700PF; 5%; 50V; X7R; CERAMIC
7	C16, C29, C36, C41, C42	-	5	C0402C105K8PAC; CC0402KRX5R6BB105	KEMET;YAGEO	1UF	CAP; SMT (0402); 1UF; 10%; 10V; X5R; CERAMIC
8	C21, C28, C31	-	3	C1005X5R1A475K050	TDK	4.7UF	CAP; SMT (0402); 4.7UF; 10%; 10V; X5R; CERAMIC
9	C22, C25-C27, C30, C32-C35, C37-C39,C44, C73	-	14	GRM155R71A104JA01	MURATA	0.1UF	CAP; SMT (0402); 0.1UF; 5%; 10V; X7R; CERAMIC
10	C23, C24	-	2	C0402C0G500270JNP; GRM1555C1H270JA01	VENKEL LTD.;MURATA	27PF	CAP; SMT (0402); 27PF; 5%; 50V; C0G; CERAMIC
11	C63, C65-C67	-	4	ANY	ANY	0.1UF	CAPACITOR; SMT; 0402; CERAMIC; 0.1uF; 10V; 10%; X5R; -55degC to + 125degC; 0 +/-30PPM/degC; FORMFACTOR ;
12	C68, C69, C71, C72, C201, C206, C211, C216	-	8	ANY	ANY	0.01UF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.01UF; 10V; TOL=10%; MODEL=C0402C SERIES; TG=-55 DEGC TO +125 DEGC; TC=X7R
13	C202, C207, C212, C217, C221-C223, C237, C244, C268, C272-C277	-	16	ANY	ANY	0.1UF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.1UF; 25V; TOL=10%; MODEL=C SERIES; TG=-55 DEGC TO +125 DEGC; TC=X7R; FORMFACTOR
14	C203, C204, C208, C209, C213, C214, C218, C219	-	8	GRM155R71H102JA01; GCM155R71H102JA37	MURATA;MURATA	1000PF	CAP; SMT (0402); 1000PF; 5%; 50V; X7R; CERAMIC
15	C239-C242	-	4	ANY	ANY	1UF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1UF; 6.3V; TOL=20%; MODEL=C SERIES; TG=-55 DEGC TO +85 DEGC; TC=X5R; FORMFACTOR
16	C269-C271	-	3	ANY	ANY	1UF	CAPACITOR; SMT (0402); CERAMIC CHIP; 1UF; 16V; TOL=10%; MODEL=C SERIES; TG=-55 DEGC TO +85 DEGC; TC=X5R; FORMFACTOR
17	D1	-	1	B0530W-7-F	DIODES INCORPORATED	B0530W	DIODE; SCH; SMT (SOD-123); PIV=30V; IF=0.5A
18	DS1, DS2	-	2	LTST-C190CKT	LITE-ON ELECTRONICS INC.	LTST-C190CKT	DIODE; LED; STANDARD; RED; SMT (0603); PIV=5.0V; IF=0.04A; -55 DEGC TO +85 DEGC
19	GND1, GND5-GND7	-	4	5011	KEYSTONE	N/A	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
20	GND2-GND4, GND8, GND10, IN	-	6	9020 BUSS	WEICO WIRE	MAXIMPAD	EVK KIT PARTS; MAXIM PAD; WIRE; NATURAL; SOLID; WEICO WIRE; SOFT DRAWN BUS TYPE-S; 20AWG

MAX77675 EV Kit Bill of Materials (continued)

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
21	GNDS_SBB0-GNDS_SBB3, GND_SNS	-	5	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;
22	J1	-	1	10118193-0001LF	FCI CONNECT	10118193-0001LF	CONNECTOR; FEMALE; SMT; MICRO USB B TYPE RECEPTACLE; RIGHT ANGLE; 5PINS
23	J2	-	1	PBC06SAAN	SULLINS ELECTRONICS CORP.	PBC06SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 6PINS; -65 DEGC TO +125 DEGC
24	J3, J4	-	2	PBC03DAAN	SULLINS ELECTRONICS CORP.	PBC03DAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 6PINS; -65 DEGC TO +125 DEGC
25	J5, J200-J207	-	9	TSW-102-07-T-S	SAMTEC	TSW-102-07-T-S	CONNECTOR; THROUGH HOLE; TSW SERIES; SINGLE ROW; STRAIGHT; 2PINS; -55 DEGC TO +105 DEGC
26	J9	-	1	S2B-PH-K-S(LF)(SN)	JST MANUFACTURING	S2B-PH-K-S(LF)(SN)	CONNECTOR; MALE; THROUGH HOLE; 2.0MM PITCH; DISCONNECTABLE CRIMP STYLE CONNECTOR; SIDE ENTRY TYPE; RIGHT ANGLE; 2PINS
27	L2, L4, L5	-	3	BLM18AG601SN1	MURATA	600	INDUCTOR; SMT (0603); FERRITE-BEAD; 600; TOL=+/-; 0.5A
28	L3	-	1	HTEG2012FE-1R5MDR	CYNTEC	1.5UH	INDUCTOR; SMT (0805); FERRITE; 1.5UH; 20%; 1.6A
29	L7	-	1	HMLQ20161T-1R0MDR	CYNTEC	1UH	INDUCTOR; SMT (0806); COMPOSITE; 1UH; 20%; 3.9A
30	L8	-	1	DFE252012F-2R2M	MURATA	2.2UH	INDUCTOR; SMT (1008); SHIELDED; 2.2UH; 20%; 2.3A
31	L9	-	1	MAMK2520H2R2M	TAIYO YUDEN	2.2UH	INDUCTOR; SMT (1008); WIREWOUND; 2.2UH; 20%; 2.2A
32	MISC1	-	1	AK67421-2	ASSMANN	AK67421-2	CABLE; MALE; USB; USB2.0 MICRO CONNECTION CABLE; USB B MICRO MALE TO USB A MALE; 2000 MILLIMETERS; 5PINS-4PINS
33	PVDD, SBB0-SBB3, VDD, VUSB	-	7	5010	KEYSTONE	N/A	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; RED; PHOSPHOR BRONZE WIRE SIL;
34	Q1, Q2	-	2	BSS138	ON SEMICONDUCTOR	BSS138	TRAN; LOGIC LEVEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR; NCH; SOT-23; PD-(0.36W); I-(0.22A); V-(50V); -55 DEGC TO +150 DEGC
35	Q200-Q203	-	4	IPC100N04S5L1R1ATMA1	INFINEON	IPC100N04S5L1R1ATMA1	TRAN; OPTIMOS 5 POWER-TRANSISTOR; NCH; PG-TDSON-8-34; PD-(150W); I-(100A); V-(40V)
36	Q205	-	1	FDN360P	ON SEMICONDUCTOR	FDN360P	TRANSISTOR, MOSFET P-CHANNEL, SUPERSOT-3, PD=0.5W, ID=-2.0A, VDSS=-30V,VGSS=+/-20V
37	Q206	-	1	2N7002;2N7002; 2N7002;2N7002	DIODES INCORPORATED; ST MICROELECTRONICS; ON SEMICONDUCTOR; MICRO COMMERCIAL COMPONENTS	2N7002	TRAN; ; NCH; SOT-23; PD-(0.33W); IC-(0.5A); VCEO-(60V); -55 DEGC TO +150 DEGC
38	R1, R286, R302-R306	-	7	ANY	ANY	0	RESISTOR; 0402; 0 OHM; 1%; 100PPM; 0.0625W; THICK FILM; FORMFACTOR
39	R2, R6	-	2	ERJ-2GEJ103	PANASONIC	10K	RES; SMT (0402); 10K; 5%; +/-200PPM/DEGC; 0.1000W
40	R3, R8, R33	-	3	CRCW040210M0FK	VISHAY DALE	10M	RES; SMT (0402); 10M; 1%; +/-100PPM/DEGC; 0.0630W
41	R4, R13, R210, R231, R244, R257, R301	-	7	CRCW04021M00FK	VISHAY DALE	1M	RES; SMT (0402); 1M; 1%; +/-100PPM/DEGC; 0.0630W
42	R5, R17, R24, R214, R283	-	5	ANY	ANY	100K	RESISTOR; 0402; 100K; 1%; 100PPM; 0.0625W; THICK FILM; FORMFACTOR
43	R7, R32	-	2	CRCW04021R00FK	VISHAY DALE	1	RES; SMT (0402); 1; 1%; +/-100PPM/DEGC; 0.0630W
44	R9, R19, R20, R29, R30, R34, R52-R54	-	9	ERJ-2GE0R00	PANASONIC	0	RES; SMT (0402); 0; JUMPER; JUMPER; 0.1000W
45	R10, R11	-	2	RC0402FR-0727RL	YAGEO	27	RES; SMT (0402); 27; 1%; +/-100PPM/DEGC; 0.0630W
46	R12	-	1	CRCW040212K0FK; MCR01MZPF1202	VISHAY DALE; ROHM SEMICONDUCTOR	12K	RES; SMT (0402); 12K; 1%; +/-100PPM/DEGC; 0.0630W
47	R14, R207, R208, R229, R230, R242, R243, R254, R255	-	9	ANY	ANY	1K	RESISTOR; 0402; 1K; 1%; 100PPM; 0.0625W; THICK FILM; FORMFACTOR
48	R16	-	1	CRCW04024752FK; 9C04021A4752FLHF3; CRCW040247K5FK	VISHAY DALE; YAGEO;VISHAY DALE	47.5K	RES; SMT (0402); 47.5K; 1%; +/-100PPM/DEGC; 0.0630W
49	R18	-	1	RC0402FR-07150RL	YAGEO	150	RES; SMT (0402); 150; 1%; +/-100PPM/DEGC; 0.0630W
50	R21, R22	-	2	CRCW04024K70FK; MCR01MZPF4701	VISHAY DALE; ROHM SEMICONDUCTOR	4.7K	RES; SMT (0402); 4.7K; 1%; +/-100PPM/DEGC; 0.0630W

## MAX77675 EV Kit Bill of Materials (continued)

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
51	R23	-	1	CRCW0402169KFK	VISHAY DALE	169K	RES; SMT (0402); 169K; 1%; +/-100PPM/DEGK; 0.0630W
52	R25, R26	-	2	RC0402FR-072K2L	YAGEO	2.2K	RES; SMT (0402); 2.2K; 1%; +/-100PPM/DEGC; 0.0630W
53	R27	-	1	CRCW040222R0FK	VISHAY DALE	22	RES; SMT (0402); 22; 1%; +/-100PPM/DEGC; 0.0630W
54	R28	-	1	CRCW0402470RFK	VISHAY DALE	470	RES; SMT (0402); 470; 1%; +/-100PPM/DEGC; 0.0630W
55	R201, R222, R235, R248, R289	-	5	9C04021A1000FL; RC0402FR-07100RL	PANASONIC; YAGEO PHYCOMP	100	RES; SMT (0402); 100; 1%; +/-100PPM/DEGC; 0.0630W
56	R202, R223, R236, R249	-	4	RC0402FR-07680RL	YAGEO	680	RES; SMT (0402); 680; 1%; +/-100PPM/DEGC; 0.0630W
57	R203, R224, R237, R250	-	4	CRCW040220K0FK	VISHAY DALE	20K	RES; SMT (0402); 20K; 1%; +/-100PPM/DEGC; 0.0630W
58	R204, R225, R238, R251	-	4	CRCW040210R0JN	VISHAY DALE	10	RES; SMT (0402); 10; 5%; +/-200PPM/DEGK; 0.0630W
59	R205, R206, R226, R228, R239, R240, R252, R253, R281, R282, R287, R288	-	12	RC0402FR-0710KL; CR0402-FX-1002GLF	YAGEO;BOURNS	10K	RES; SMT (0402); 10K; 1%; +/-100PPM/DEGC; 0.0630W
60	R211, R233, R245, R258	-	4	LRC-LR1206LF-01-R200-F	TT ELECTRONICS	0.2	RES; SMT (1206); 0.2; 1%; +/-100PPM/DEGC; 0.5000W
61	R212, R213, R227, R234, R246, R247,R259, R260	-	8	CRCW0402787KFK	VISHAY DALE	787K	RES; SMT (0402); 787K; 1%; +/-100PPM/DEGC; 0.0630W
62	R277, R279	-	2	ANY	ANY	0	RESISTOR; 0603; 0 OHM; 0%; JUMPER; 0.10W; THICK FILM; FORMFACTOR
63	R293, R295, R297, R299	-	4	ERJ-2RKF4703	PANASONIC	470K	RES; SMT (0402); 470K; 1%; +/-100PPM/DEGC; 0.0630W
64	R294, R296, R298, R300	-	4	CRCW0402649KFK	VISHAY DALE	649K	RES; SMT (0402); 649K; 1%; +/-100PPM/DEGC; 0.0630W
65	SW1	-	1	EVQ-Q2K03W	PANASONIC	EVQ-Q2K03W	SWITCH; SPST; SMT; 15V; 0.02A; LIGHT TOUCH SWITCH; RCOIL= OHM; RINSULATION= OHM; PANASONIC
66	SW2	-	1	CL-SB-12B-11	NIDEC COPAL ELECTRONICS CORP	CL-SB-12B-11	SWITCH; SPDT; SMT; 12V; 0.2A; CL-SB SERIES; SLIDE SWITCH; RCOIL=0.05 OHM; RINSULATION=100M OHM
67	U2	-	1	FT2232HL	FUTURE TECHNOLOGY DEVICES INTL LTD.	FT2232HL	IC; MMRY; DUAL HIGH SPEED USB TO MULTIPURPOSE UART/FIFO; LQFP64
68	U3, U4	-	2	MAX8512EXK+	MAXIM	MAX8512EXK	IC, VREG, Ultra-Low-Noise, High PSRR, Adjustable Vout, SC70-5
69	U5	-	1	MAX3395EETC+	MAXIM	MAX3395EETC	IC; TRANS; 15KV ESD-PROTECTED HIGH-DRIVE CURRENT QUAD-LEVEL TRANSLATOR WITH SPEED-UP CIRCUITRY; TQFN12 4X4
70	U7	-	1	AT24CS02-SSHM	MICROCHIP	AT24CS02-SSHM	IC; EPROM; I2C-COMPATIBLE TWO-WIRE SERIAL EEPROM; 150MIL; NSOIC8
71	U200-U203	-	4	MAX44251AUA+	MAXIM	MAX44251AUA+	IC; OPAMP; ULTRA-PRECISION; LOW-NOISE OP AMP; UMAX8
72	U205	-	1	MAX5825AWP+	MAXIM	MAX5825AWP+T	IC; DAC; ULTRA-SMALL; OCTAL CHANNEL; 12-BIT BUFFERED OUTPUT DAC WITH INTERNAL REFERENCE AND I2C INTERFACE; WLP20
73	U209	-	1	MAX11614EEE+	MAXIM	MAX11614EEE+	IC; ADC; LOW-POWER; 8-CHANNEL; I2C; 12-BIT ADC IN ULTRA-SMALL PACKAGE; QSOP16
74	U210	-	1	MAX6071AAUT41+	MAXIM	MAX6071AAUT41+	IC; VREF; LOW NOISE; HIGH-PRECISION SERIES VOLTAGE REFERENCE; SOT23-6
75	U211	-	1	MAX1697UEUT+	MAXIM	MAX1697UEUT+	IC; INV; INVERTING CHARGE PUMP WITH SHUTDOWN; SOT23-6
76	Y1	-	1	7M-12.000MAAJ	TXC CORPORATION	12MHZ	CRYSTAL; SMT; 12MHZ; 18PF; TOL = +/-30PPM; STABILITY = +/-30PPM
77	PCB	-	1	MAX77675	MAXIM	PCB	PCB:MAX77675
78	EV_KIT_BOX1	-	10	NPC02SXON-RC	SULLINS ELECTRONICS CORP.		CONNECTOR; FEMALE; MINI SHUNT; 0.100IN CC; OPEN TOP; JUMPER; STRAIGHT; 2PINS
79	B0_S, B1_S-B3_S	DNP	0	U.FL-R-SMT-1	HIROSE ELECTRIC CO LTD.	U.FL-R-SMT-1	CONNECTOR; MALE; SMT; ULTRA SMALL SURFACE MOUNT COAXIAL CONNECTOR; STRAIGHT; 2PINS
80	C12	DNP	0	TPSD107K020R0085	AVX	100UF	CAP; SMT (7343); 100UF; 10%; 20V; TANTALUM
81	L6	DNP	0	DFE201610E-1R5M=P2	MURATA	1.5UH	INDUCTOR; SMT (0806); MAGNETICALLY SHIELDED; 1.5UH; TOL=+/-20%; 2.1A
82	C13, C15, C17, C18, C53, C54, C56-C59, C61, C62	DNP	0	N/A	N/A	OPEN	CAPACITOR; SMT (0402); OPEN; FORMFACTOR
83	R15	DNP	0	N/A	N/A	OPEN	RESISTOR; 0402; OPEN; FORMFACTOR
84	R37	DNP	0	N/A	N/A	OPEN	RESISTOR; 0603; OPEN; FORMFACTOR

MAX77675 EV Kit Schematic Diagram

Part Number	Configuration	7-bit	8-bit Write	8-bit Read
MAX77675 (PMIC)	ADDR[1:0] OTP Bitfield	0x40,0x44,0x48 OR 0x52 0b100 xxx0	0x80,0x88,0x90 OR 0xA4 0b100x xx00	0x81,0x89,0x91 OR 0xA5 0b100x xx01
MAX77675 (PMIC)	Internal Test mode	0x49 0b100 1001	0x92 0b1001 0010	0x93 0b1001 0011
MAX11614 (ADC)	N/A	0x33 0b011 0011	0x66 0b0110 0110	0x67 0b0110 0111
MAX5825 (DAC)	ADDR1=ADDR0=VDDIO	0x1F 0b001 1111	0x3E 0b0011 1110 * 0x10 * 0b0010 1000	0x3F 0b0011 1111
AT24CS02 (EEPROM)	A0=A1=A2=GND	0x50 ** 0b101 0000	0b1010 0000	0b1010 0001

*MAX5825 ALSO RESPONDS TO AN I2C BROADCAST ADDRESS 0b0010 1000

**AT24CS02 ALSO RESPONDS TO 0b1011 0001 FOR READING THE SERIAL NUMBER

MAX77675 EV Kit Schematic Diagram (continued)
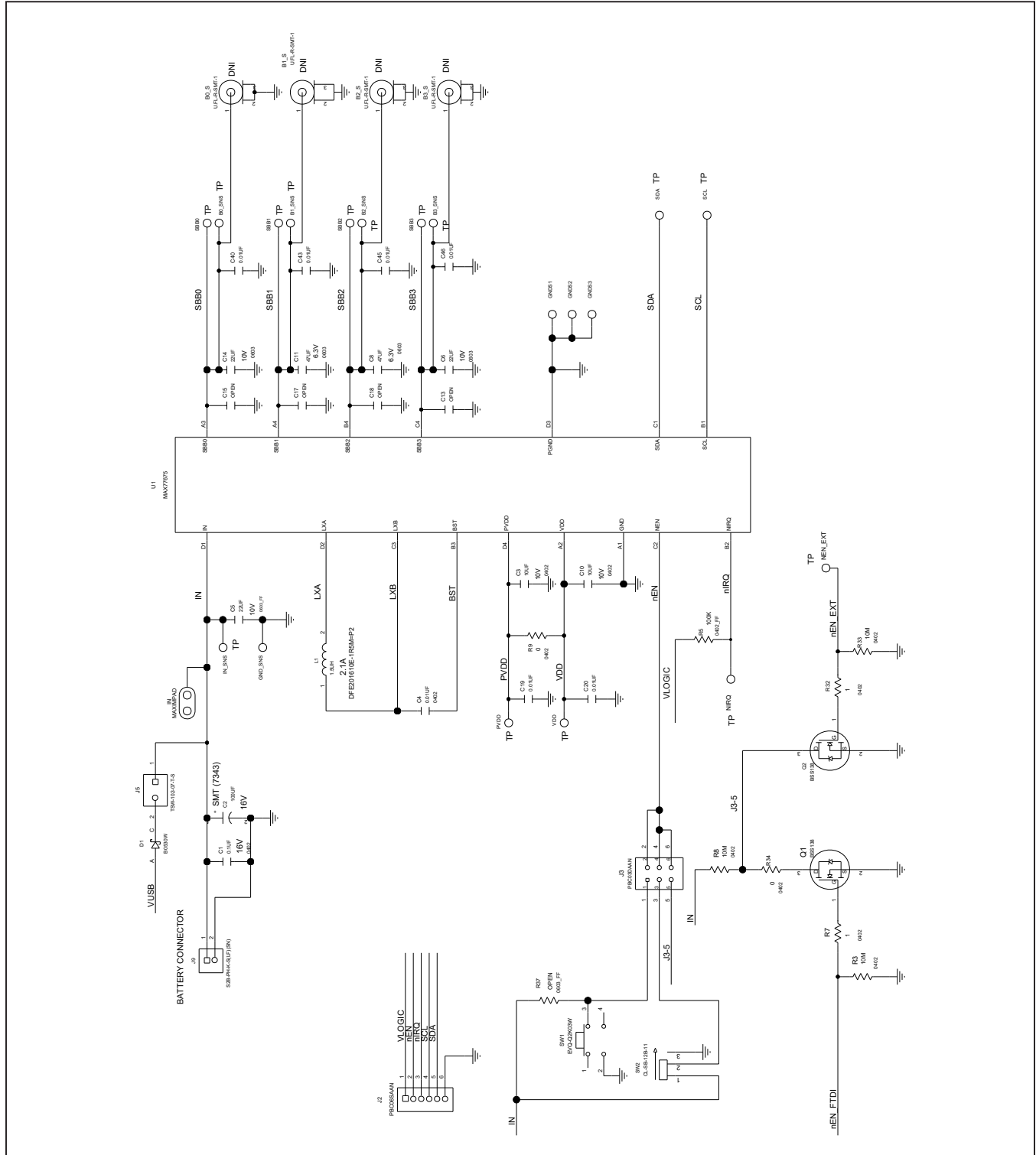
MAX77675 EV Kit Schematic Diagram (continued)
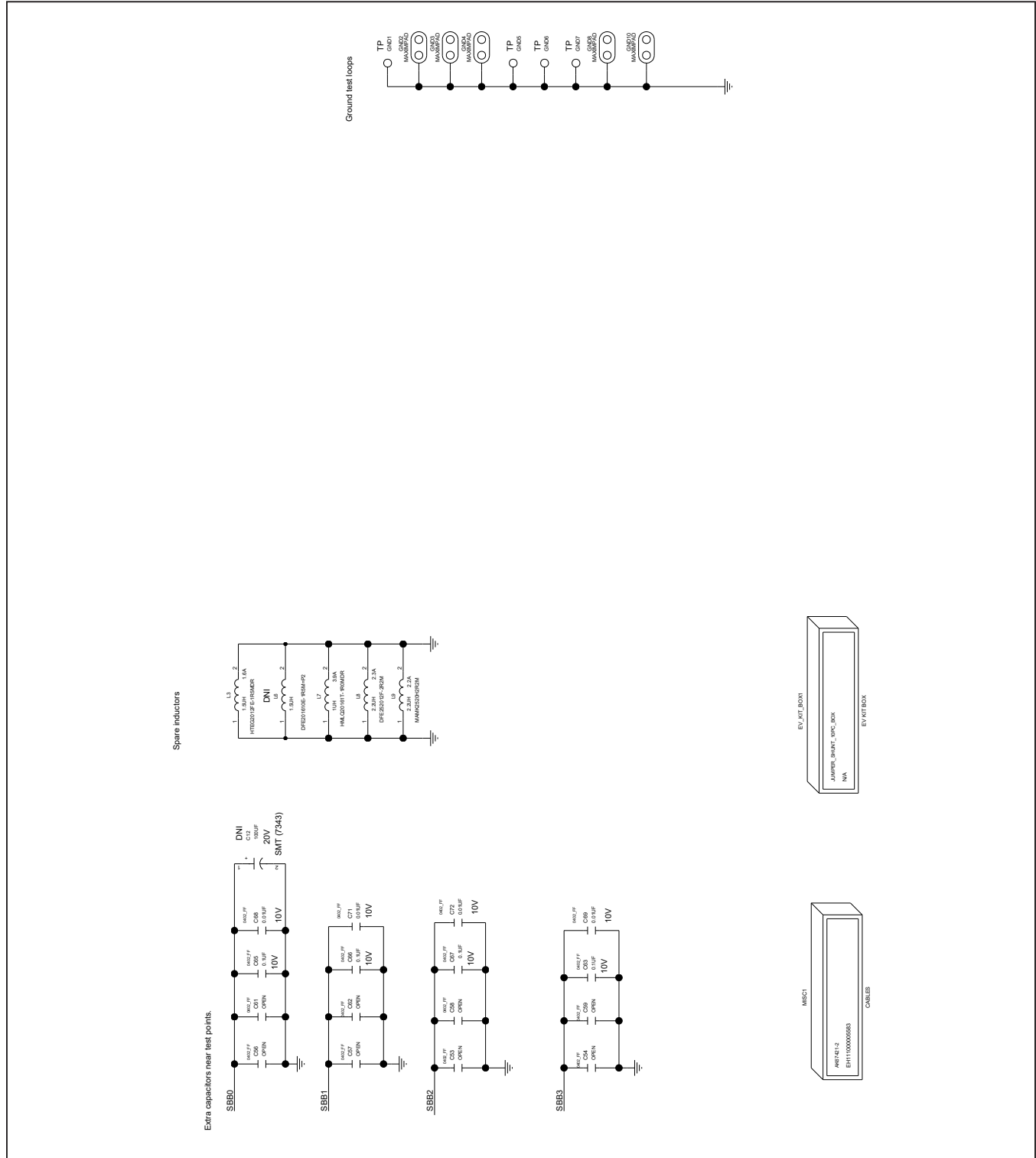
MAX77675 EV Kit Schematic Diagram (continued)
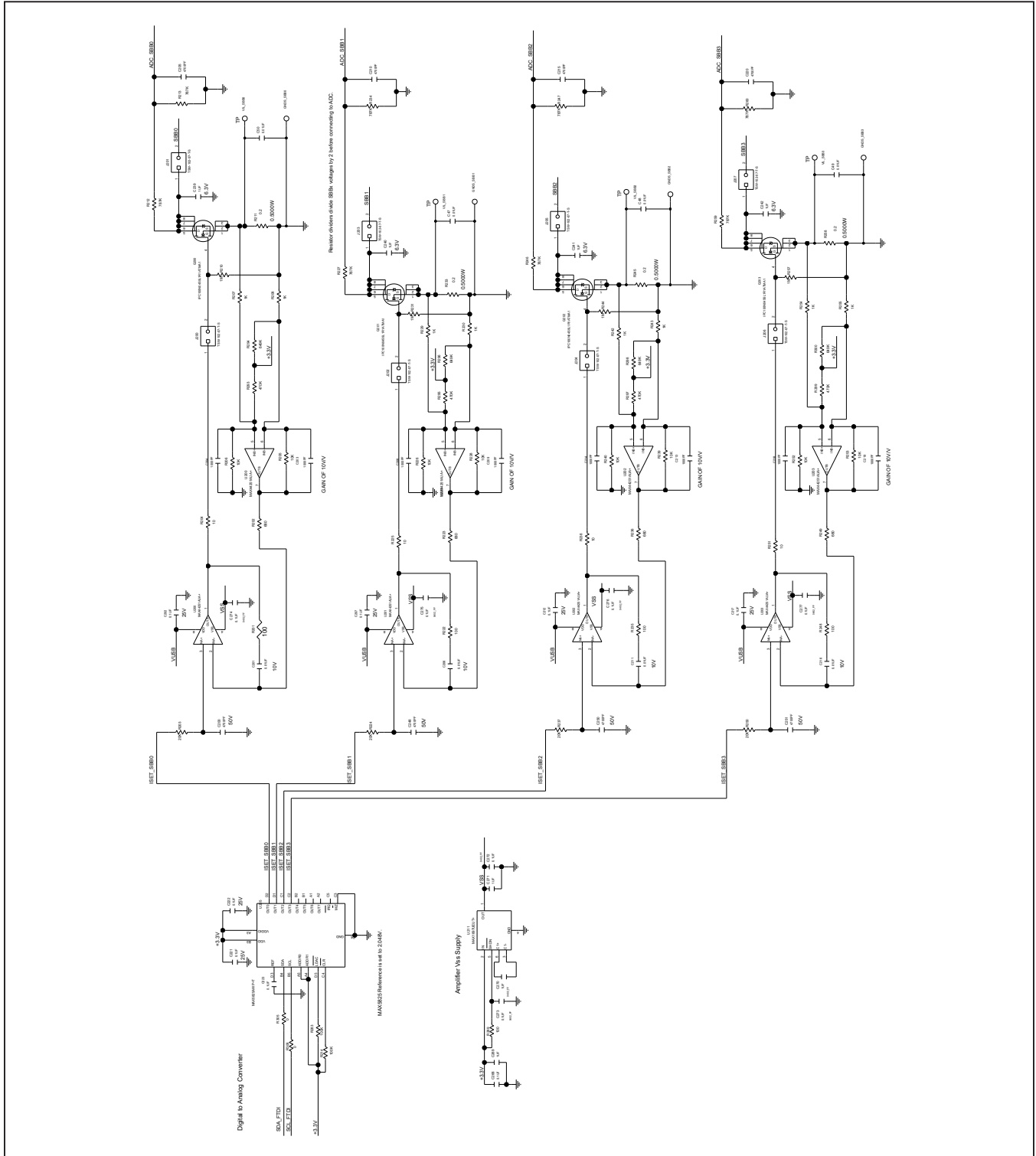
MAX77675 EV Kit Schematic Diagram (continued)
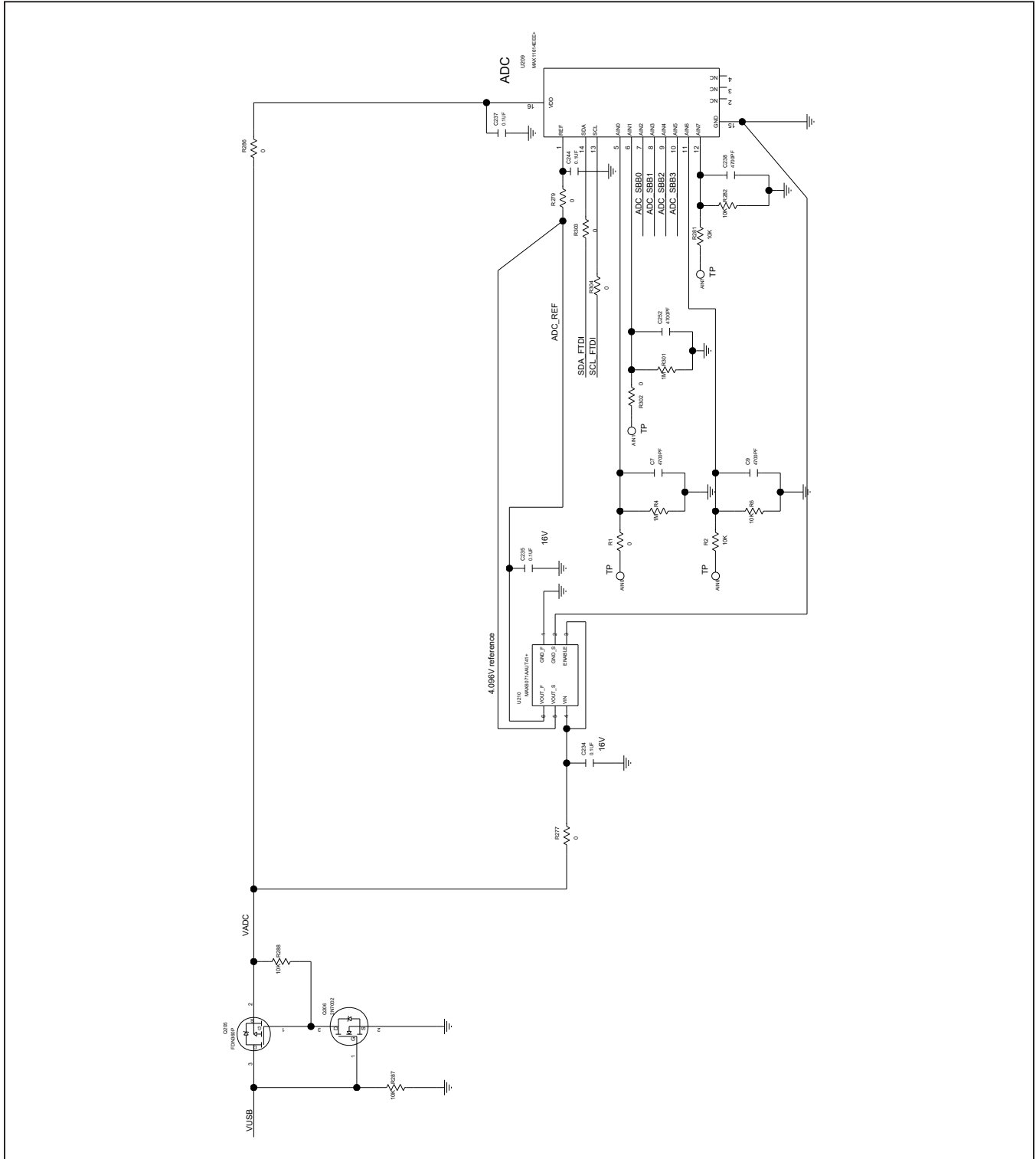
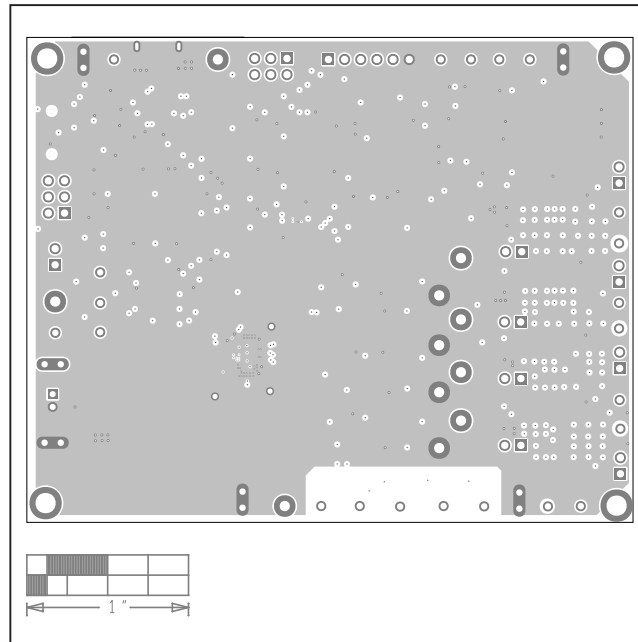## MAX77675 EV Kit Schematic Diagram (continued)
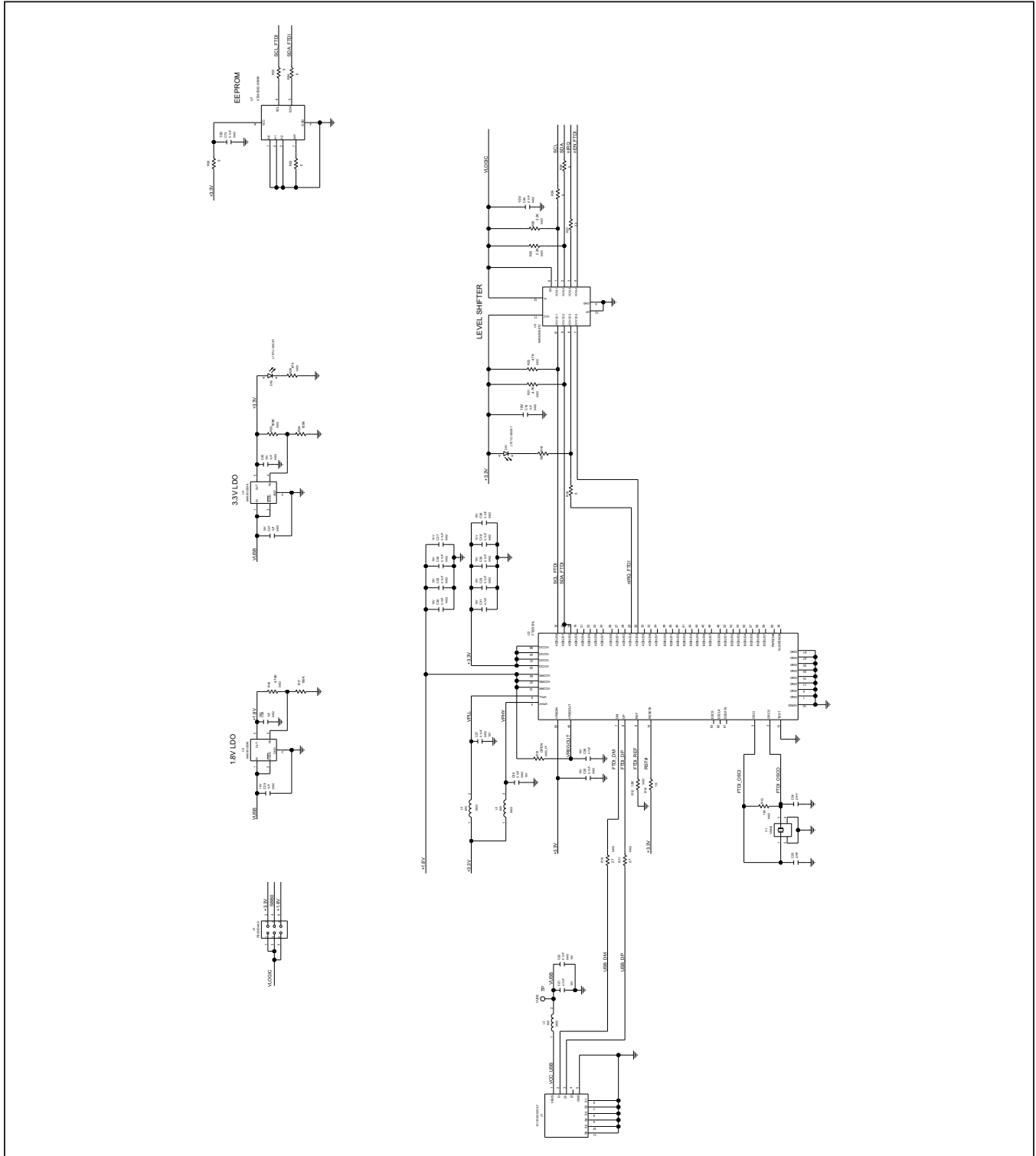
MAX77675 EV Kit PCB Layout Diagrams
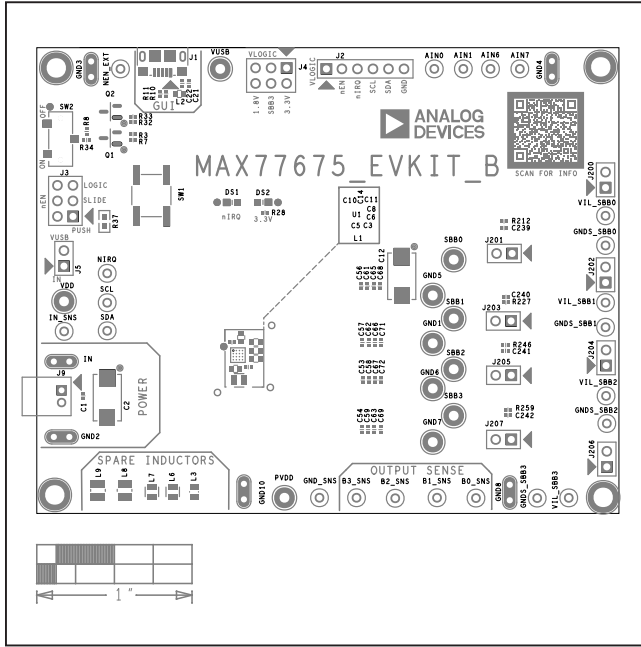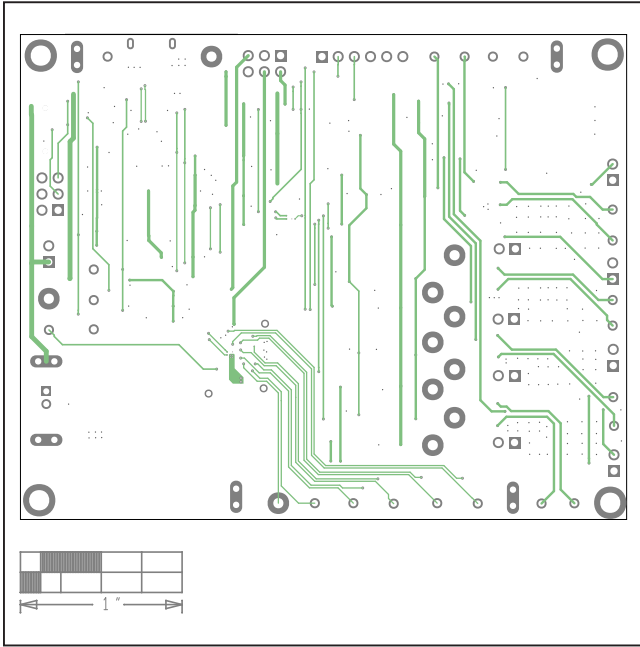

MAX77675 EV Kit PCB Layout—Silkscreen Top
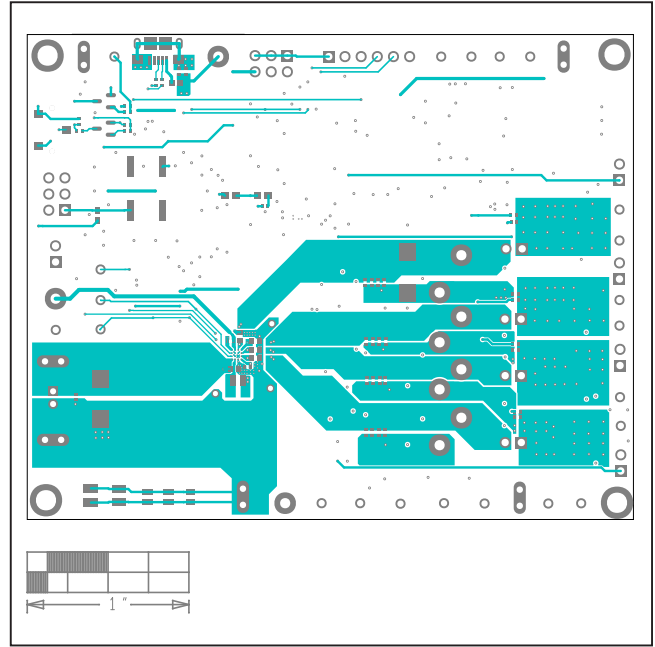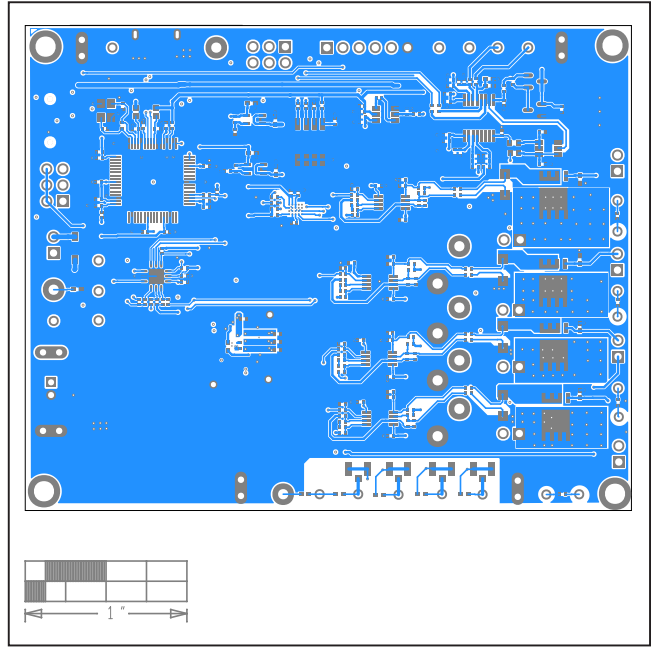

MAX77675 EV Kit PCB Layout—Top
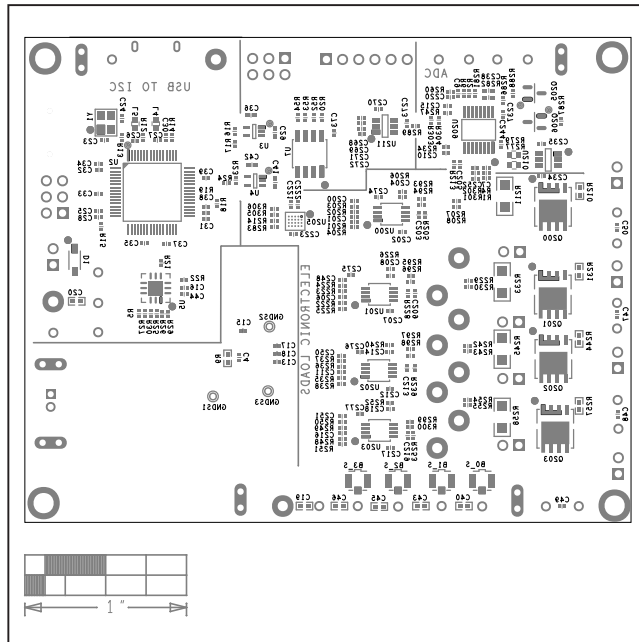

MAX77675 EV Kit PCB Layout—Internal 2

MAX77675 EV Kit PCB Layout Diagrams (continued)

MAX77675 EV Kit PCB Layout—Internal 3

MAX77675 EV Kit PCB Layout—Bottom

MAX77675 EV Kit PCB Layout—Silkscreen Bottom

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	3/23	Initial release	—