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MAX77642 Evaluation Kit

Evaluates: MAX77642

General Description

The MAX77642 evaluation kit (EV kit) allows for easy experimentation with various MAX77642 features including the resistor programmability of the SIMO and on-board electronic loads.

The Windows®-based software provides a user-friendly graphical interface to manage the on-board electronic loads.

Ordering Information appears at end of data sheet.

Benefits and Features

- Easy to Use
- GUI-Driven I²C Interface
- Assembled and Fully Tested
- On-Board Electronic Loads
 - Steady-State, Transient, and Random Modes
- Demonstration of End-to-End Analog Multiplexer Implementation
- On-Board ADC

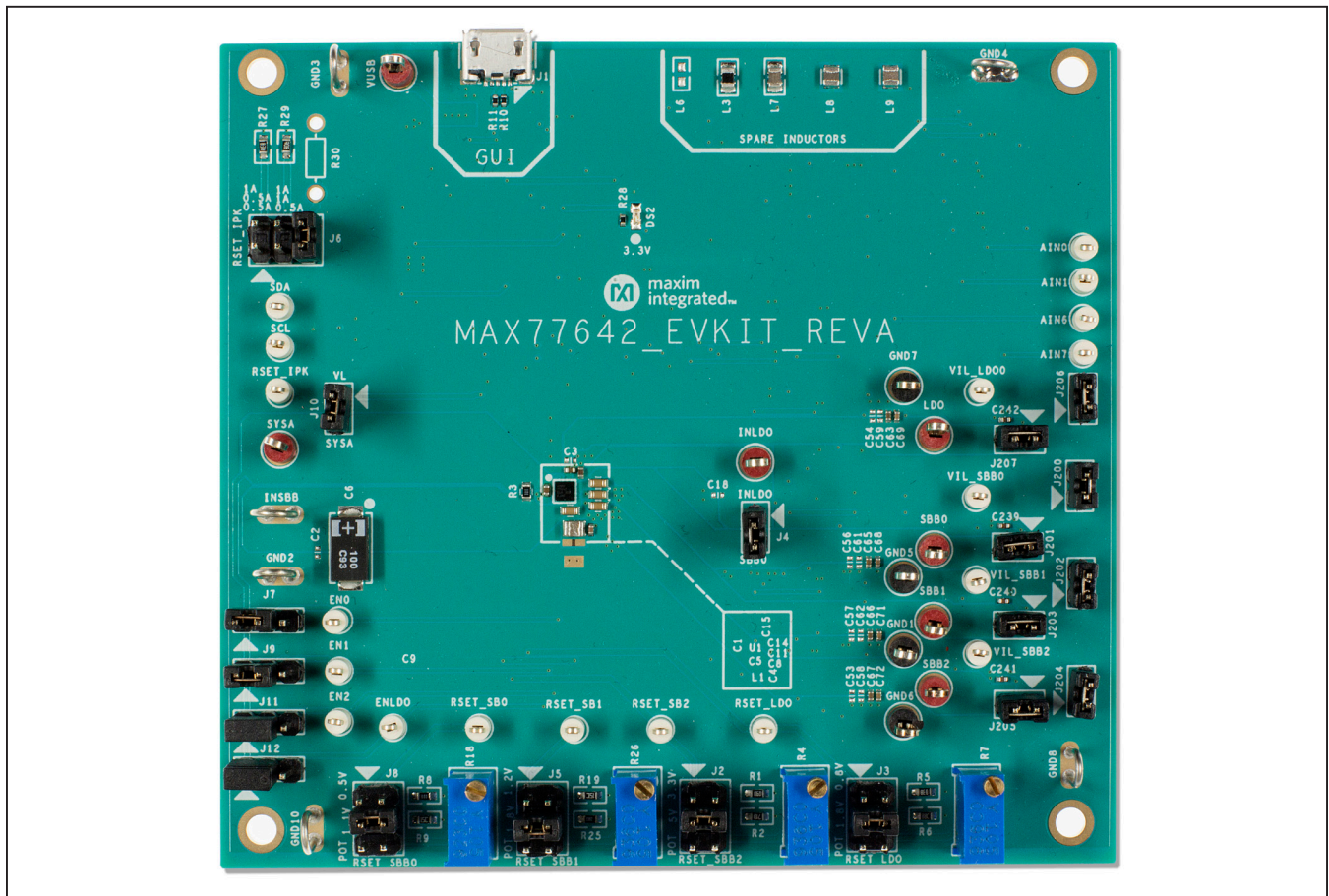


Figure 1. MAX77642 EV Kit Photo

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

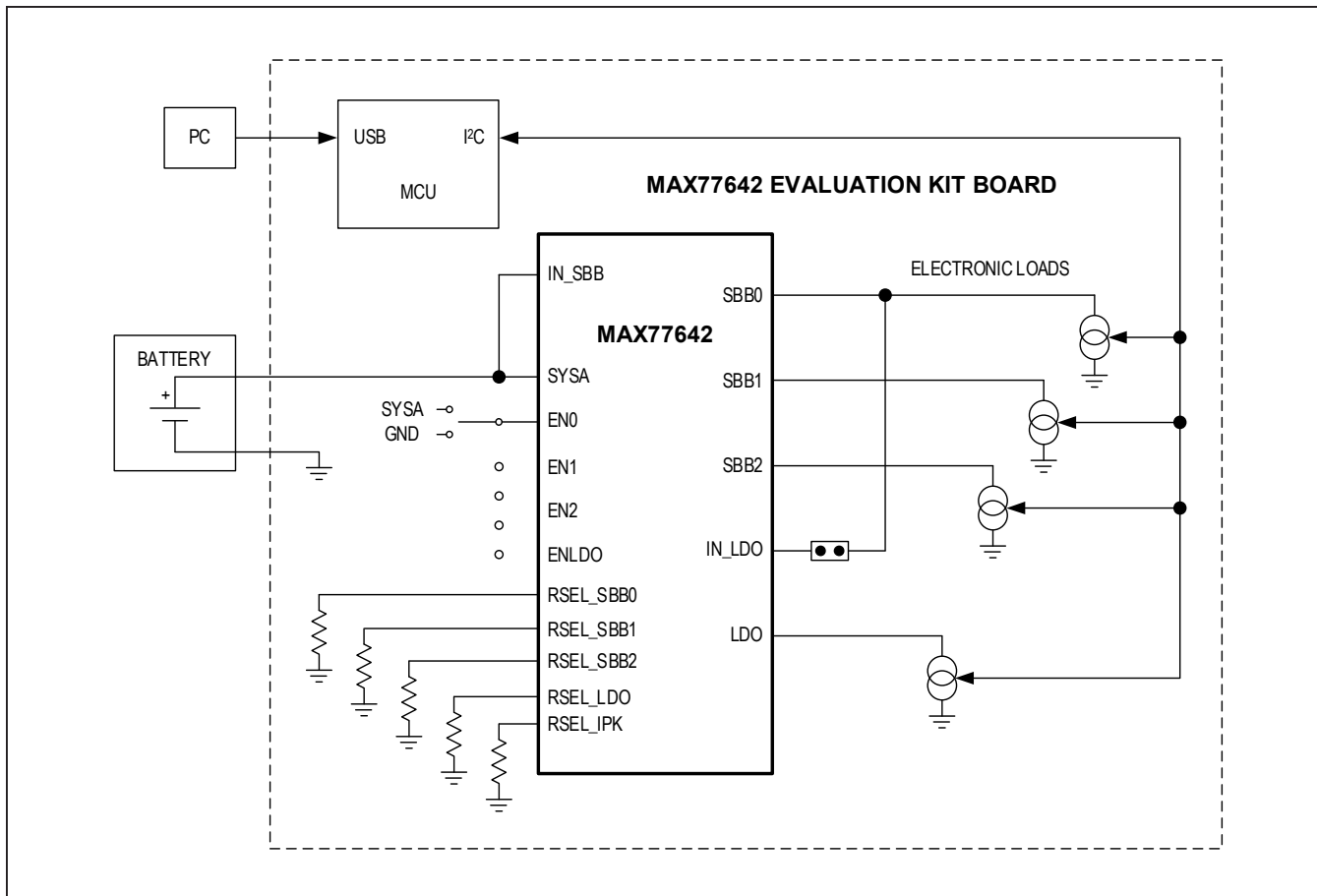


Figure 2. EV Kit Simple Block Diagram

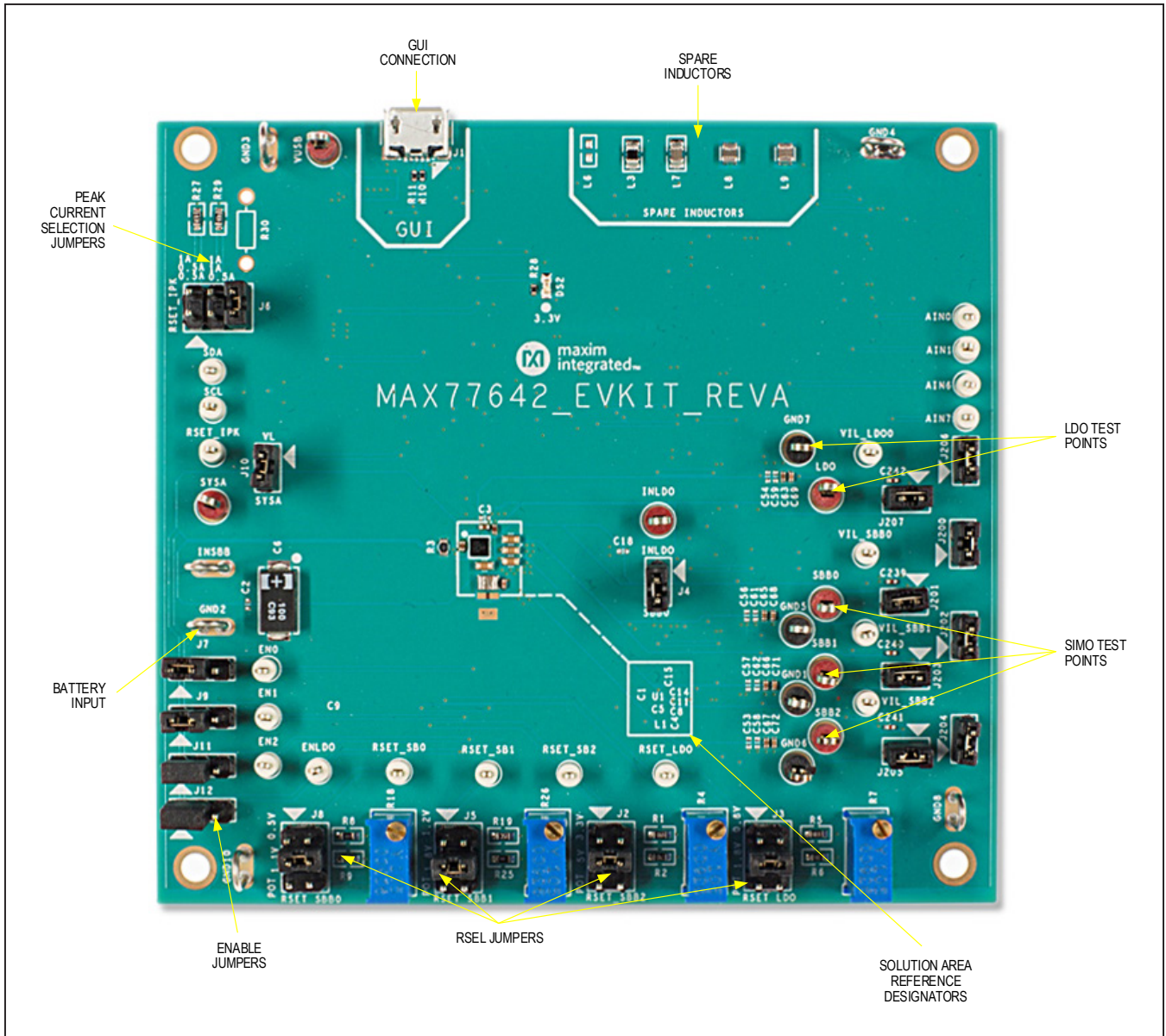


Figure 3. MAX77642 EV Kit Top View

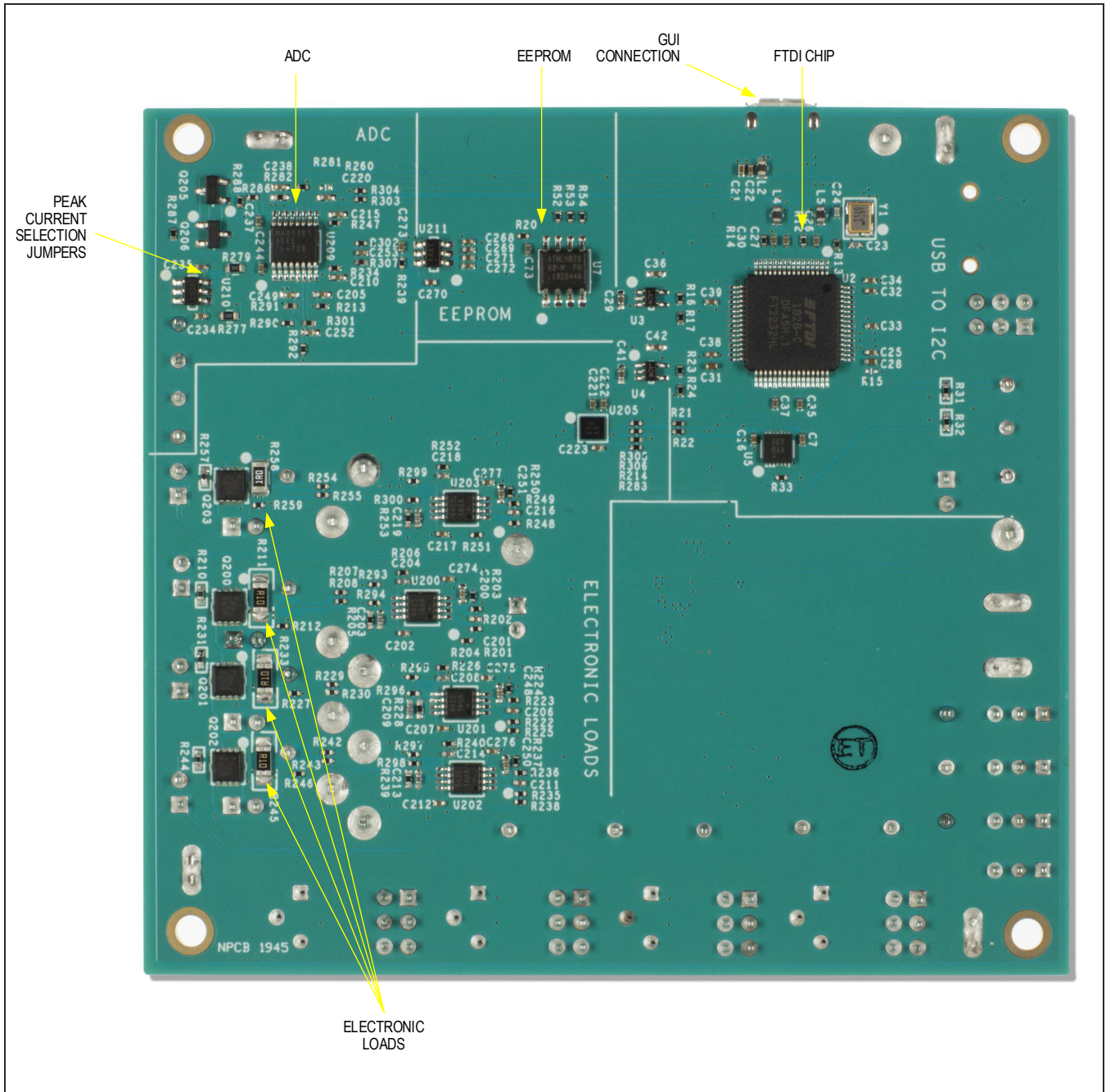


Figure 4. MAX77642 EV Kit Bottom View

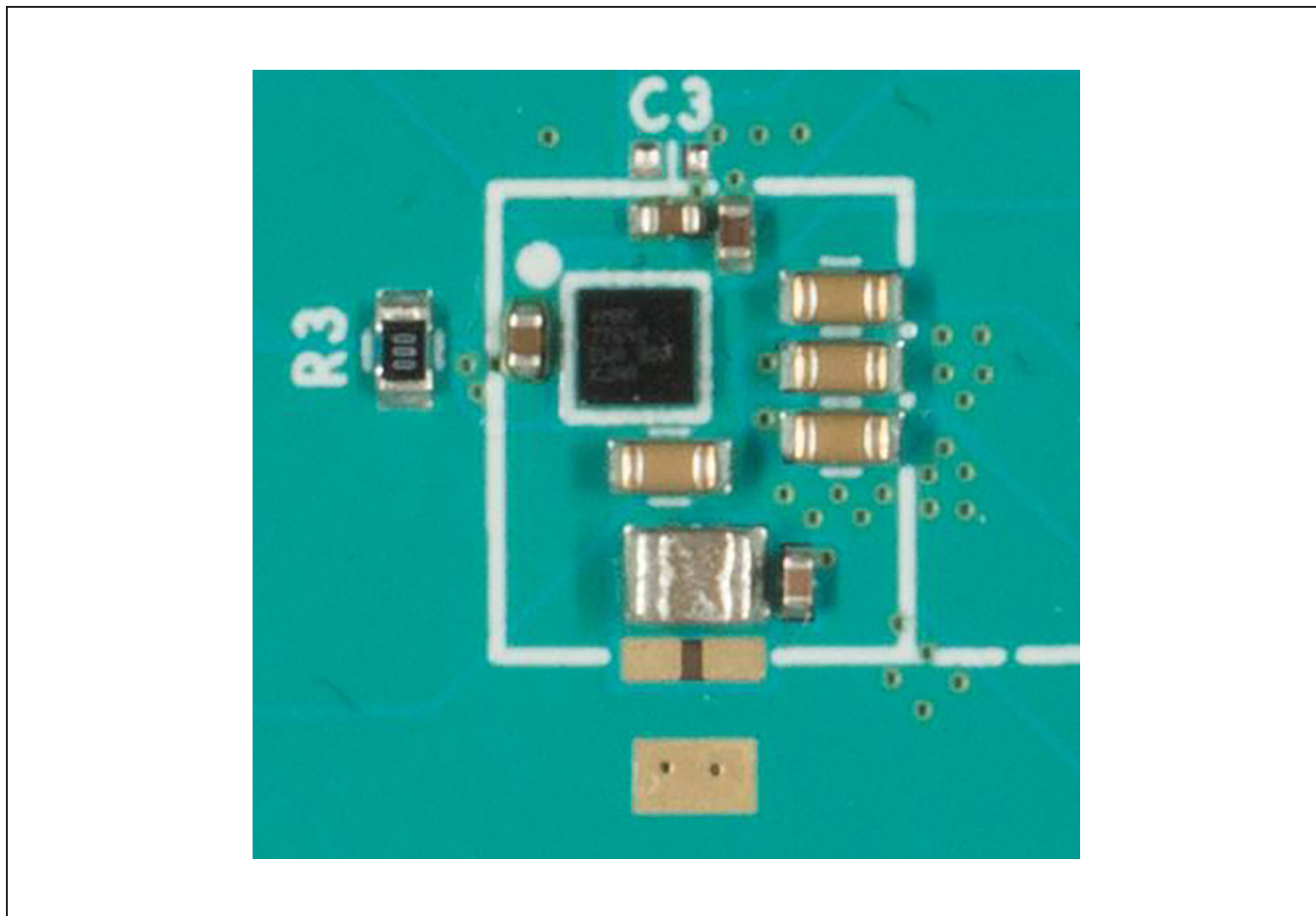


Figure 5. MAX77642 EV Kit Solution Area

MAX77642 EV Kit Files

FILE	DESCRIPTION
MAX77642_SOLDERDOWN_EVKIT_REVB_BOM_2019-10-31.xlsx	BOM
MAX77642_SOLDERDOWN_EVKIT_REVB_SCH_2019-10-31.pdf	Schematic
MAX77642_SOLDERDOWN_EVKIT_REVB_PCB_2019-10-31.pdf	Layout

Quick Start

Follow this procedure to become familiar with the EV kit.

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

Required Equipment

- MAX77642 EV Kit
- MAX77642 EV Kit GUI
- Windows-Based PC
- Power Supply
- Ammeter
- DVM
- Micro-USB Cable

Procedure

- 1) Install the GUI software. Visit the product webpage at <http://www.maximintegrated.com/MAX77642evkit> 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 extract the files from the ZIP file.
- 2) Install EV kit shunts according to [Table 1](#).
- 3) Connect a Micro-B USB cable between the EV kit USB port labelled “GUI” and the Windows-based PC.
- 4) Apply a 3.7V supply (set for 100mA current limit) through an ammeter (set for 10mA range) across the V_{BATT} 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 DEVICE LIST** window to pop up, and then press the **Connect** button.
- 6) Measure the voltages on SBB0, SBB1, SBB2, and LDO with a DMM.

This concludes the Quick Start procedure. During general device evaluation, set the ammeter range to greater than or equal to 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
J2	3-4	1-2: Connects RSEL_SBB2 to 0kΩ which programs SBB2 to 0.5V. 3-4: Connects RSEL_SBB2 to 14kΩ which programs SBB2 to 1.2V. 5-6: Connects RSEL_SBB2 to the on-board potentiometer to program SBB2's output voltage. Refer to the “SIMO Output Voltage Configuration” section of the <i>MAX77642/MAX77643 data sheet</i> for more information.
J3	3-4	1-2: Connects RSEL_LDO to 7.15kΩ which programs the LDO to 0.8V. 3-4: Connects RSEL_LDO to 80.6kΩ which programs the LDO to 1.8V. 5-6: Connects RSEL_LDO to the on-board potentiometer to program the LDO's output voltage. Refer to the “LDO Output Voltage Configuration” section of the <i>MAX77642/MAX77643 data sheet</i> for more information.
J4	1-2	1-2: Connects INLDO to SBB0.
J5	3-4	1-2: Connects RSEL_SBB1 to 14kΩ which programs SBB1 to 1.2V. 3-4: Connects RSEL_SBB1 to 28kΩ which programs SBB1 to 1.8V. 5-6: Connects RSEL_SBB1 to the on-board potentiometer to program SBB1's output voltage. Refer to the “SIMO Output Voltage Configuration” section of the <i>MAX77642/MAX77643 data sheet</i> for more information.

Table 1. Default Shunt Positions and Jumper Descriptions (continued)

REFERENCE DESIGNATOR	DEFAULT POSITION	FUNCTION
J6	1-2	1-2: Connects RSET_IPK to 7.15kΩ. 3-4: Connects RSET_IPK to 8.45kΩ. 5-6: Connects RSET_IPK to an open-through-hole radial lead for through-hole resistors. Refer to the “Peak Current Configuration” section in the <i>MAX77642/MAX77643 data sheet</i> for more information on how to set the peak current limit of the SIMO.
J7	1-2	1-2: Connects EN0 to SYSA, enabling SBB0. 2-3: Connects EN0 to GND, disabling SBB0.
J8	1-2	1-2: Connects RSEL_SBB0 to 113kΩ which programs SBB1 to 3.0V. 3-4: Connects RSEL_SBB0 to 536kΩ which programs SBB1 to 4.4V. 5-6: Connects RSEL_SBB0 to the on-board potentiometer to program SBB0’s output voltage. Refer to the “SIMO Output Voltage Configuration” section of the <i>MAX77642/MAX77643 data sheet</i> for more information.
J9	1-2	1-2: Connects EN1 to SYSA, enabling SBB1. 2-3: Connects EN1 to GND, disabling SBB1.
J10	1-2	1-2: Connects SYSA to the VL side of the on-board level shifter
J11	1-2	1-2: Connects EN2 to SYSA, enabling SBB2. 2-3: Connects EN2 to GND, disabling SBB2.
J12	1-2	1-2: Connects ENLDO to SYSA, enabling the LDO. 2-3: Connects ENLDO to GND, disabling the LDO.
J201	1-2	1-2: Connects SBB0 to the onboard electronic load and ADC.
J203	1-2	1-2: Connects SBB1 to the onboard electronic load and ADC.
J205	1-2	1-2: Connects SBB2 to the onboard electronic load and ADC.
J207	1-2	1-2: Connects LDO0 to the onboard 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.

Detailed Description of Hardware (or Software)

Enable Key Options

The MAX77642 features individual hardware enable pins for each of the SIMO outputs and the LDO. These enable pins can be connected to SYSA (to enable the corresponding resource) or GND (to disable the corresponding resource) through jumpers in J7, J9, J11, and J12.

Programming the Output Voltages

The SIMO's and LDO's output voltages are programmed by connecting resistors from their corresponding RSEL pins to ground. The EV kit features pre-selected resistors which can be tied to RSEL pins through jumpers J2, J3, J5, and J8. Additionally, on-board potentiometers can be used to program the entire output voltage range. Refer to the *SIMO Output Voltage Configuration* and *LDO Output Voltage Configuration* sections of the MAX77642/MAX77643 data sheet for more information.

Programming the Inductor Peak Current

The SIMO's inductor peak current is programmed by connecting resistors from RSEL_IPK to ground. Several preselected resistors are placed on the EV kit and can be tied to the RSEL_IPK pin through the jumper J6. A through-hole resistor can be placed in R30 for additional options. See the *Inductor Peak Current Setting* section of the MAX77642/MAX77643 data sheet for more information.

Electronic Load

The EV kit comes with an electronic load allowing the user to evaluate the SIMO and LDO load current capabilities. On-board circuits set the load current through the I²C interface. J201, J203, J205, J207 are used to connect the load to the output of the SBB0, SBB1, SBB2, and LDO respectively. To exercise the load transient response, remove J200 (for SBB0), J202 (for SBB1), J204 (for SBB2), and J206 (for LDO), 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 0.1Ω sense resistors with test points (called VIL_SBB0, VIL_SBB1, and VIL_SBB2) and a 1Ω sense resistor with a test point (called VIL_LDO) for a 10:1 and 1:1 conversion of load current to voltage. See the [Software](#) section to learn how to set the load current from the GUI.

Software

The graphical user interface (GUI) software allows for convenient, quick, and thorough evaluation of the MAX77642.

When the EV kit software detects that a MAX77642 EV kit is connected, only the "Load Control" portion of the GUI can be accessed.

Installation

Visit the product webpage at www.maximintegrated.com/MAX77642evkit and navigate to Design Resources to download the latest version of the EVKit software. Save the EVKit 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 Details (GUI)

The GUI drives I²C communication with the EV kit. Every control in the GUI (excluding the **Load Control** and ADC/AMUX tabs) corresponds directly to a register within the MAX77642. Hover your cursor over control names for a description of that register. Refer to the *IC data sheet* for the complete register map.

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 Maxim and do not need to be altered.

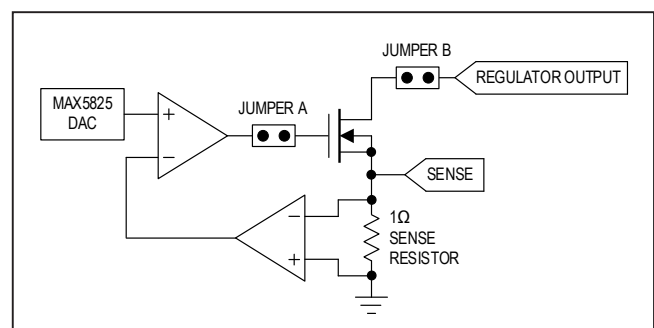


Figure 6. Electronic Load Block Diagram

Ordering Information

PART	IC	TYPE
MAX77642EVKIT#	MAX77642ANA+	EV Kit

#Denotes RoHS compliant.

MAX77642 EV Kit Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION	COMMENTS
1	AIN0, AIN1, AIN6, AIN7, EN0-EN2, ENLDO, RSET_IPK, RSET_LDO, RSET_SB0-RSET_SB2, SCL, SDA, VIL_LDO0, VIL_SBB0-VIL_SBB2	-	19	5002	KEYSTONE	N/A	TEST POINT, PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;	
2	C1, C9, C16, C29, C36, C41, C42, C239-C242, C269-C271	-	14	C0402C105K8PAC; C0402KRX5R6BB105	KEMET;YAGEO	1UF	CAP; SMT (0402); 1UF; 10%; 10V; X5R; CERAMIC	
3	C4	-	1	C0402C103K5RAC; GRM155R71H103K050BE; C1005X7R1H103K050BE; CL05B103K85NNN; UMK105B7103KV	KEMET;MURATA;TDK;SAMSUNG ELECTRONIC;TAIYO YUDEN	0.01UF	CAP; SMT (0402); 0.01UF; 10%; 50V; X7R; CERAMIC	
4	C5, C8, C11, C14	-	4	C1608X5R1A226M080AC; GRM188R61A226ME15	TDK;MURATA	22UF	CAP; SMT (0603); 22UF; 20%; 10V; X5R; CERAMIC	
5	C6	-	1	16TQC100MYF	PANASONIC	100UF	CAP; SMT (7343); 100UF; 20%; 16V; TANTALUM	
6	C7, C22, C25-C27, C30, C32-C35, C37-C39, C63, C65-C67, C73, C202, C207, C212, C217, C221-C223, C234, C235, C237, C244, C268, C272-C277	-	36	GRM155R71E104KE14; C1005X7R1E104K050BB; TMK105B7104KVH; CGJ2B3X7R1E104K050BB	MURATA;TDK;TAIYO YUDEN;TDK	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 25V; X7R; CERAMIC	
7	C15	-	1	GRM155R61C225KE44	MURATA	2.2UF	CAP; SMT (0402); 2.2UF; 10%; 16V; X5R; CERAMIC	
8	C21, C28, C31	-	3	C1005X5R1A475K050	TDK	4.7UF	CAP; SMT (0402); 4.7UF; 10%; 10V; X5R; CERAMIC	
9	C23, C24	-	2	GRM0335C1H270JA01	MURATA	27PF	CAP; SMT (0201); 27PF; 5%; 50V; COG; CERAMIC	
10	C68, C69, C71, C72	-	4	CL05B103K85NNN	SAMSUNG ELECTRONICS	0.01UF	CAP; SMT (0402); 0.01UF; 10%; 10V; X7R; CERAMIC	
11	C200, C205, C210, C215, C220, C238, C248-C253	-	12	C0402C472K5RAC; GRM155R71H472KA01; C1005X7R1H472K050BA	KEMET;MURATA;TDK	4700PF	CAP; SMT (0402); 4700PF; 10%; 50V; X7R; CERAMIC;	
12	C201, C206, C211, C216	-	4	C0402H102J5GAC	KEMET	1000PF	CAP; SMT (0402); 1000PF; 5%; 50V; COG; CERAMIC	
13	C203, C204, C208, C209, C213, C214, C218, C219	-	8	C0402C180J5GAC; GRM1555C1H180JA01; C1005COG1H180J50BA	KEMET;MURATA;TDK	18PF	CAP; SMT (0402); 18PF; 5%; 50V; COG; CERAMIC	
14	DS2	-	1	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	
15	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;	
16	GND2-GND4, GND8, GND10, INSB8	-	6	9020 BUSS	WEICO WIRE	MAXIMPAD	EVK KIT PARTS; MAXIM PAD; WIRE; NATURAL; SOLID; WEICO WIRE; SOFT DRAWN BUS TYPE-S; 20AWG	
17	INLDO, LDO, SBB0-SBB2, SYSA, 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;	
18	J1	-	1	10118193-0001LF	FCI CONNECT	10118193-0001LF	CONNECTOR; FEMALE; SMT; MICRO USB B TYPE RECEPTACLE; RIGHT ANGLE; 5PINS	
19	J2, J3, J5, J6, J8	-	5	TSW-103-07-L-D	SAMTEC	TSW-103-07-L-D	CONNECTOR; MALE; THROUGH HOLE; THROUGH HOLE 0.025 POST HEADER; STRAIGHT; 6PINS	
20	J4, J10, J200-J207	-	10	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	
21	J7, J9, J11, J12	-	4	PEC03SAAN	SULLINS ELECTRONICS CORP.	PEC03SAAN	EVKIT PART-CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS; -65 DEGC TO +125 DEGC;	
22	L1	-	1	DFE201612E-1R5M	MURATA	1.5UH	INDUCTOR; SMT (0806); METAL; 1.5UH; 20%; 2.30A	
23	L2, L4, L5	-	3	BLM18AG601SN1	MURATA	600	INDUCTOR; SMT (0603); FERRITE-BEAD; 600; TOL=+/-; 0.5A	
24	L3	-	1	DFE201210S-2R2M=P2	MURATA	2.2UH	EVKIT PART-INDUCTOR; SMT (0805); MAGNETICALLY SHIELDED; 2.2UH; TOL=+/-20%; 1.8A	
25	L7	-	1	DFE201210U-1R5M=P2	TOKO	1.5UH	INDUCTOR; SMT (0805); METAL ALLOY CHIP; 1.5UH; TOL=+/-20%; 1.8A	
26	L8	-	1	DFE201612E-1R0M	MURATA	1UH	INDUCTOR; SMT (0806); WIREWOUND CHIP; 1UH; TOL=+/-20%; 2.9A	
27	L9	-	1	DFE201612E-2R2M	MURATA	2.2UH	INDUCTOR; SMT (0806); WIREWOUND CHIP; 2.2UH; TOL=+/-20%; 1.8A	
28	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	
29	Q200-Q203	-	4	IRFHM8337TRPBF	INTERNATIONAL RECTIFIER	IRFHM8337TRPBF	TRAN; HEXFET POWER MOSFET; NCH; PQFN8; PD-(2.8W); I-(18A); V-(30V)	
30	Q205	-	1	FDN360P	FAIRCHILD SEMICONDUCTOR	FDN360P	TRANSISTOR; MOSFET P-CHANNEL; SUPERSOT-3; PD=0.5W; ID=2.0A; VDSS=30V; VGSS=+/-20V	
31	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	
32	R1	-	1	CRCW06030000ZS; MCR03EZPJ000; ERJ-3GEYOR00; CR0603AJ-000ELF	VISHAY;ROHM SEMICONDUCTOR;PANASONIC;BOURNS	0	RES; SMT (0603); 0; JUMPER; JUMPER; 0.1000W	
33	R2, R19	-	2	ERJ-3EKF1402; CRCW060314K0FK	PANASONIC;VISHAY	14K	RES; SMT (0603); 14K; 1%; +/-100PPM/DEGC; 0.1000W	
34	R3, R277, R279	-	3	CRCW06030000Z0	VISHAY DALE	0	RES; SMT (0603); 0; JUMPER; JUMPER; 0.1000W	
35	R4, R7, R18, R26	-	4	3296Y-1-105LF	BOURNS	1M	RES; THROUGH HOLE-RADIAL LEAD; 1M; 10%; +/-100PPM/DEGC; 0.5W	
36	R5, R27	-	2	ERJ-3EKF1751	PANASONIC	7.15K	RES; SMT (0603); 7.15K; 1%; +/-100PPM/DEGC; 0.1000W	
37	R6	-	1	CRCW060380K6FK; ERJ-3EKF8062; RC0603FR-0780K6L	VISHAY;PANASONIC;YAGEO	80.6K	RES; SMT (0603); 80.6K; 1%; +/-100PPM/DEGC; 0.1000W	

MAX77642 EV Kit Bill of Materials (continued)

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION	COMMENTS
38	R8	-	1	ERJ-3EKF1133	PANASONIC	113K	RES; SMT (0603); 113K; 1%; +/-100PPM/DEGC; 0.1000W	
39	R9	-	1	ERJ-3EKF5363	PANASONIC	536K	RES; SMT (0603); 536K; 1%; +/-100PPM/DEGC; 0.1000W	
40	R10, R11	-	2	ERJ-2RKF27R0X; RC0402FR-0727RL; CRCW040227R0FK	PANASONIC;YAGEO PHICOMP;VISHAY DALE	27	RES; SMT (0402); 27; 1%; +/-100PPM/DEGC; 0.0630W	
41	R12	-	1	ERJ-2RKF1202	PANASONIC	12K	RES; SMT (0402); 12K; 1%; +/-100PPM/DEGC; 0.1000W	
42	R13, R210, R231, R244, R257, R291, R301, R307	-	8	CRCW04021M00FK	VISHAY DALE	1M	RES; SMT (0402); 1M; 1%; +/-100PPM/DEGC; 0.0630W	
43	R14, R207, R208, R229, R230, R242, R243, R254, R255	-	9	ERJ-2RKF1001	PANASONIC	1K	RES; SMT (0402); 1K; 1%; +/-100PPM/DEGC; 0.1000W	
44	R16	-	1	CRCW04024752FK; 9C04021A4752FLHF3; CRCW040247K5FK	VISHAY DALE;YAGEO;VISHAY DALE	47.5K	RES; SMT (0402); 47.5K; 1%; +/-100PPM/DEGC; 0.0630W	
45	R20, R33, R52-R54, R204, R225, R238, R251, R259, R286, R290, R292, R302-R306	-	18	ERJ-2GE0R00	PANASONIC	0	RES; SMT (0402); 0, JUMPER, JUMPER; 0.1000W	
46	R21, R22	-	2	ERJ-2GEJ472	PANASONIC	4.7K	RES; SMT (0402); 4.7K; 5%; +/-200PPM/DEGC; 0.1000W	
47	R23	-	1	CRCW0402169KFK	VISHAY DALE	169K	RES; SMT (0402); 169K; 1%; +/-100PPM/DEGC; 0.0630W	
48	R25	-	1	CRCW060328K0FK	VISHAY	28K	RES; SMT (0603); 28K; 1%; +/-100PPM/DEGC; 0.1000W	
49	R28	-	1	CRCW0402470RFK	VISHAY DALE	470	RES; SMT (0402); 470; 1%; +/-100PPM/DEGC; 0.0630W	
50	R29	-	1	RC0603FR-078K45L	YAGEO PHYCOMP	8.45K	RES; SMT (0603); 8.45K; 1%; +/-100PPM/DEGC; 0.1000W	
51	R31, R32	-	2	CRCW04022K20FK; RC0402FR-072K2L	VISHAY DALE;YAGEO PHICOMP	2.2K	RES; SMT (0402); 2.2K; 1%; +/-100PPM/DEGC; 0.0630W	
52	R201, R222, R235, R248, R289	-	5	9C04021A1000FL; RC0402FR-07100RL	PANASONIC;YAGEO PHYCOMP	100	RES; SMT (0402); 100; 1%; +/-100PPM/DEGC; 0.0630W	
53	R202, R223, R236, R249	-	4	CRCW0402680RFK; RC0402FR-07680RL	VISHAY DALE;YAGEO PHICOMP	680	RES; SMT (0402); 680; 1%; +/-100PPM/DEGC; 0.0630W	
54	R203, R205, R206, R224, R226, R228, R237, R239, R240, R250, R252, R253	-	12	ERJ-2RKF2002	PANASONIC	20K	RES; SMT (0402); 20K; 1%; +/-100PPM/DEGC; 0.1000W	
55	R211, R233, R245	-	3	CRL1206-JW-R100ELF	BOURNS	0.1	RES; SMT (1206); 0.1; 1%; +/-200PPM/DEGC; 0.2500W	
56	R212, R213, R227, R234, R246, R247	-	6	CRCW0402787KFK	VISHAY DALE	787K	RES; SMT (0402); 787K; 1%; +/-100PPM/DEGC; 0.0630W	
57	R17, R24, R214, R283	-	4	ANY	ANY	100K	RESISTOR; 0402; 100K; 1%; 100PPM; 0.0625W; THICK FILM, FORMFACTOR	
58	R258	-	1	CSR1206FT1R00	STACKPOLE ELECTRONICS INC.	1	RES; SMT (1206); 1; 1%; +/-100PPM/DEGC; 0.5000W	
59	R281, R282, R287, R288	-	4	CRCW040210K0FK; RC0402FR-0710KRL	VISHAY DALE;YAGEO PHICOMP	10K	RES; SMT (0402); 10K; 1%; +/-100PPM/DEGC; 0.0630W	
60	R293, R295, R297, R299	-	4	ERJ-2RKF4703	PANASONIC	470K	RES; SMT (0402); 470K; 1%; +/-100PPM/DEGC; 0.0630W	
61	R294, R296, R298, R300	-	4	CRCW0402649KFK	VISHAY DALE	649K	RES; SMT (0402); 649K; 1%; +/-100PPM/DEGC; 0.0630W	
62	SU1-SU19	-	19	S1100-B;SX1100-B; STC02SYAN	KYCON;KYCON;SULLINS ELECTRONICS CORP.	SX1100-B	TEST POINT, JUMPER, STR; TOTAL LENGTH=0.24IN; BLACK; INSULATION=PBT;PHOSPHOR BRONZE CONTACT=GOLD PLATED	
63	U1	-	1	MAX77642ANA+	MAXIM	MAX77642ANA+	EVKIT PART - IC; PMIC; ULTRA-LOW POWER PMIC FEATURING HIGHLY EFFICIENCY; SINGLE-INDUCTOR, 3-OUTPUT BUCK-BOOST; 1-LDO; WLP25; PACKAGE OUTLINE DRAWING: 21-100480; PACKAGE CODE: N252B2+1	
64	U2	-	1	FT2232HL	FUTURE TECHNOLOGY DEVICES INTL. LTD.	FT2232HL	IC, MMRY; DUAL HIGH SPEED USB TO MULTIPURPOSE UART/FIFO; LQFP84	
65	U3, U4	-	2	MAX8512EXK+	MAXIM	MAX8512EXK	IC, VREG, Ultra-Low-Noise, High PSRR, Adjustable Vout, SC70-5	
66	U5	-	1	MAX14611ETD+	MAXIM	MAX14611ETD+	IC, TRANS; QUAD BIDIRECTIONAL LOW-VOLTAGE LOGIC LEVEL TRANSLATOR; TDFN14-EP	
67	U7	-	1	AT24CS02-SSHM	MICROCHIP	AT24CS02-SSHM	IC, EPROM; I2C-COMPATIBLE TWO-WIRE SERIAL EEPROM; 150MIL; NSOIC8	
68	U200-U203	-	4	MAX44251AUA+	MAXIM	MAX44251AUA+	IC, OPAMP; ULTRA-PRECISION, LOW-NOISE OP AMP; UMAX8	
69	U205	-	1	MAX5825AWP+	MAXIM	MAX5825AWP+	IC, DAC; ULTRA-SMALL; OCTAL CHANNEL; 12-BIT BUFFERED OUTPUT DAC WITH INTERNAL REFERENCE AND I2C INTERFACE; WLP20	
70	U209	-	1	MAX11614EEE+	MAXIM	MAX11614EEE+	IC, ADC; LOW-POWER, 8-CHANNEL, I2C; 12-BIT ADC IN ULTRA-SMALL PACKAGE; QSOP16	
71	U210	-	1	MAX6071AAUT41+	MAXIM	MAX6071AAUT41+	IC, VREF; LOW NOISE; HIGH-PRECISION SERIES VOLTAGE REFERENCE; SOT23-6	
72	U211	-	1	MAX1697UEUT+	MAXIM	MAX1697UEUT+	IC, INV; INVERTING CHARGE PUMP WITH SHUTDOWN; SOT23-6	
73	Y1	-	1	7M-12.000MAAJ	TXC CORPORATION	12MHZ	CRYSTAL; SMT; 18PF; 12MHZ; +/-30PPM; +/-30PPM	
74	PCB	-	1	MAX77642	MAXIM	PCB	PCB:MAX77642	
75	R30	DNI	2	0667-0-15-01-30-27-10-0	MILL-MAX	N/A	PIN RECEPTACLE; PIN DIA=0.025IN; TOTAL LENGTH=0.161IN; BOARD HOLE=0.057IN; GOLD OVER NICKEL PLATE FINISH	
76	L6	DNP	0	MLP1608VR47D	TDK	0.47UH	INDUCTOR; SMT (0603); SHIELDED; 0.47UH; TOL=+/-0.3nH; 0.8A	
77	C2, C3, C18, C53, C54, C56-C59, C61, C62	DNP	0	N/A	N/A	OPEN	CAPACITOR; SMT (0402); OPEN; FORMFACTOR	
78	R15, R260	DNP	0	N/A	N/A	OPEN	RESISTOR; 0402; OPEN; FORMFACTOR	
79	R30	DNP	0	N/A	N/A	OPEN	RES; THROUGH HOLE-RADIAL LEAD; OPEN; N/A; N/A; N/A	
TOTAL			308					

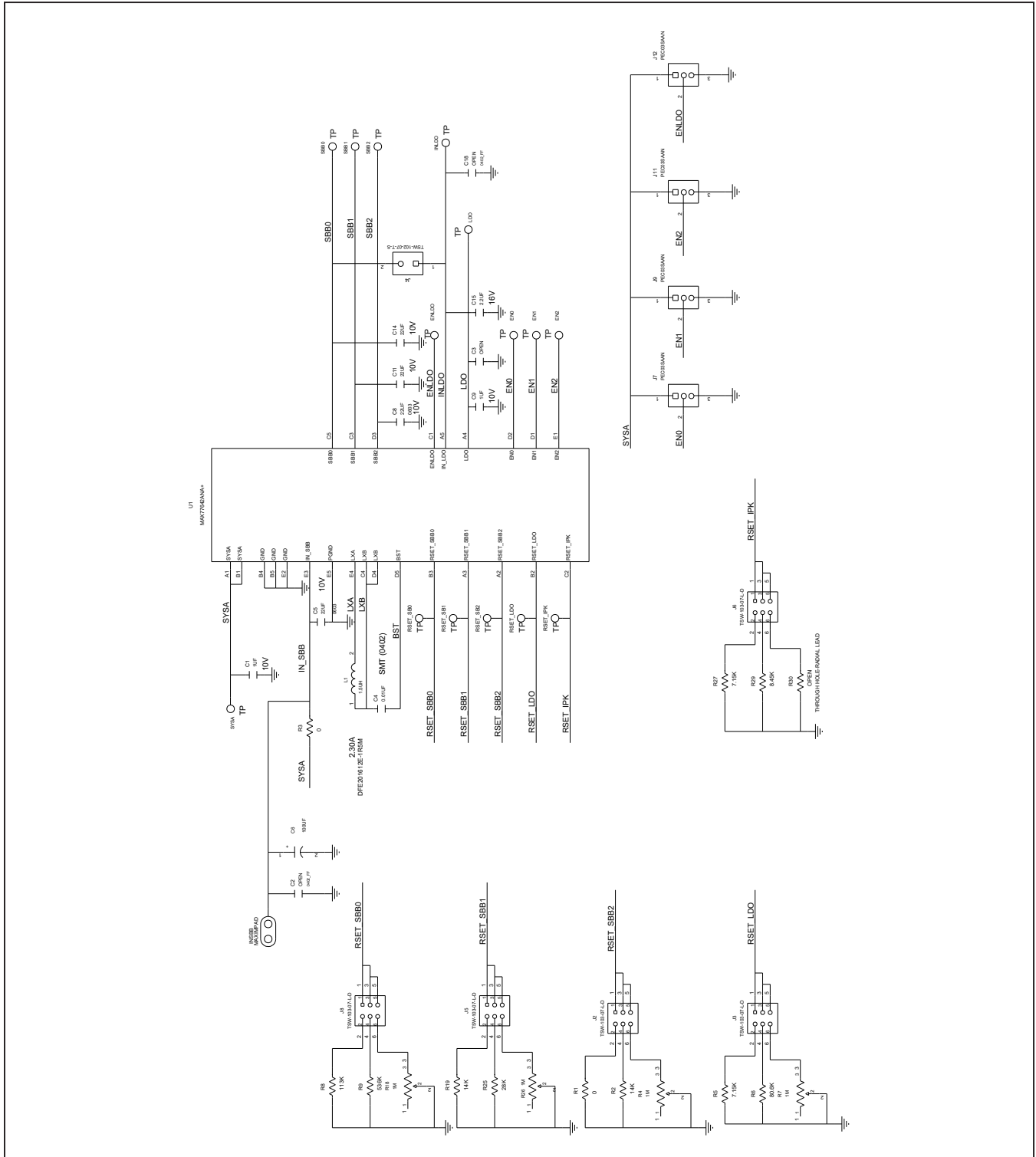
MAX77642 EV Schematic Diagrams

Part Number	Configuration	7-bit	8-bit Write	8-bit Read
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

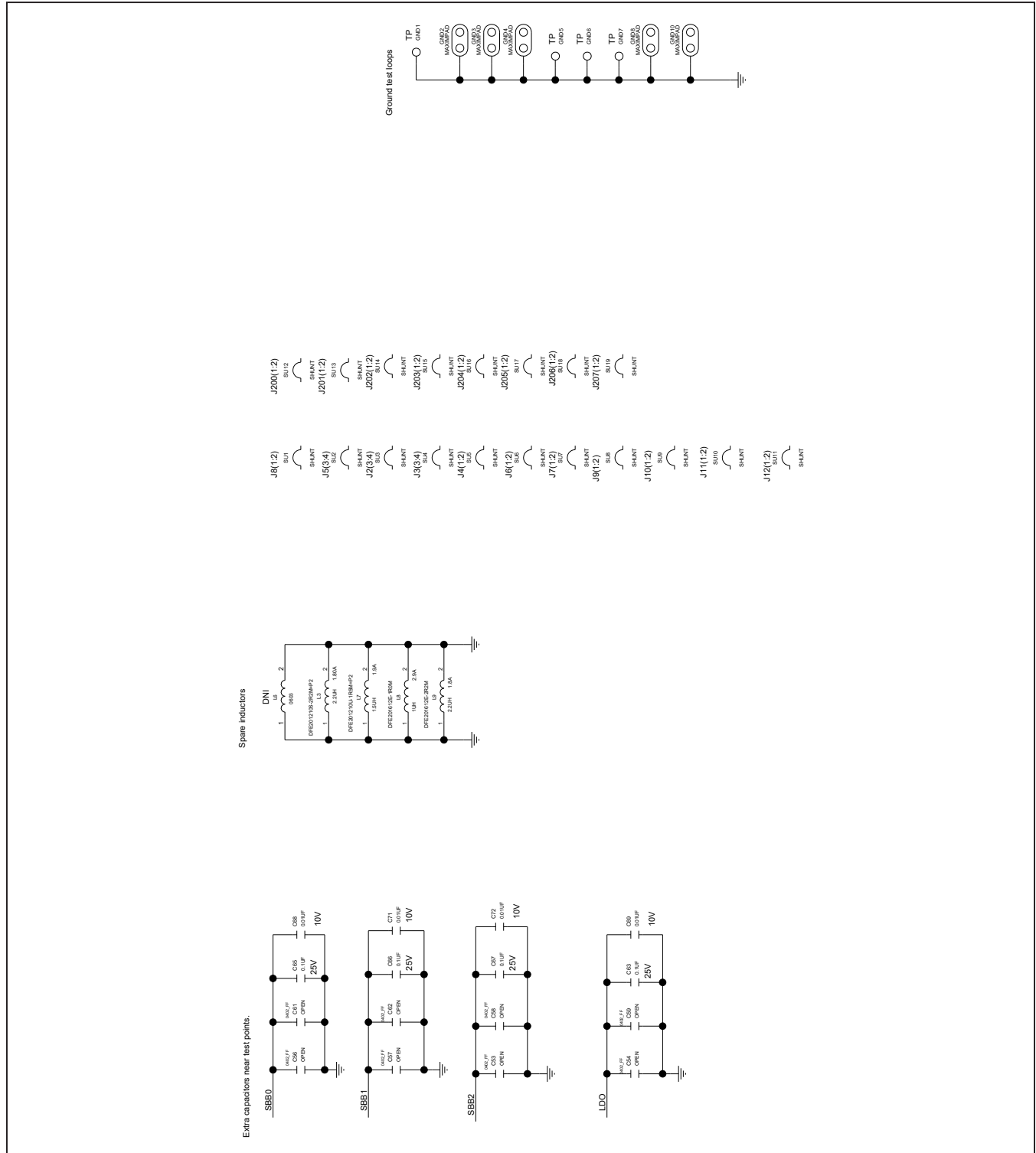
*MAX5825 ALSO RESPONDS TO AN I2C BROADCAST ADDRESS 0b0010 1000

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

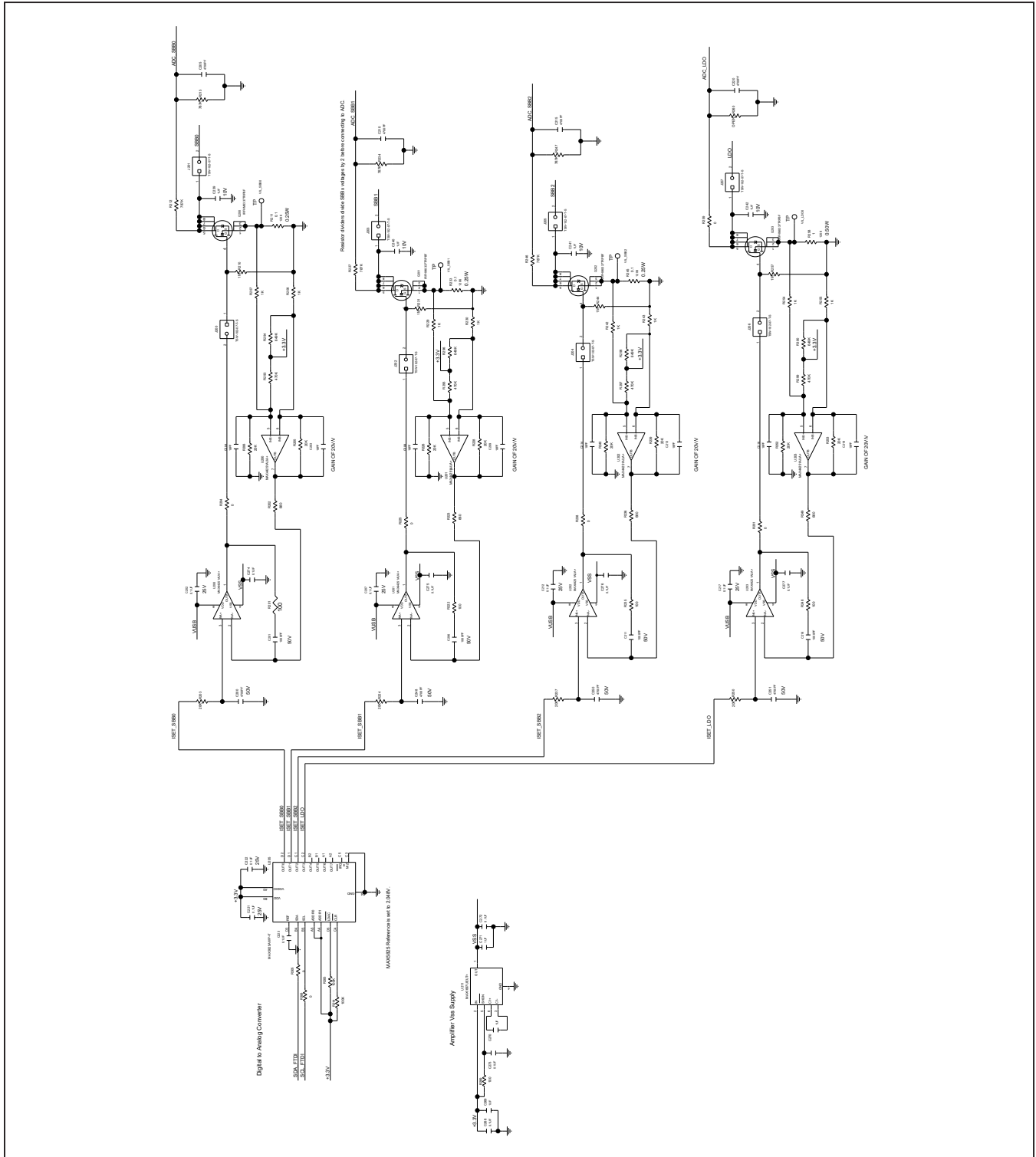
MAX77642 EV Kit Schematic Diagrams (continued)



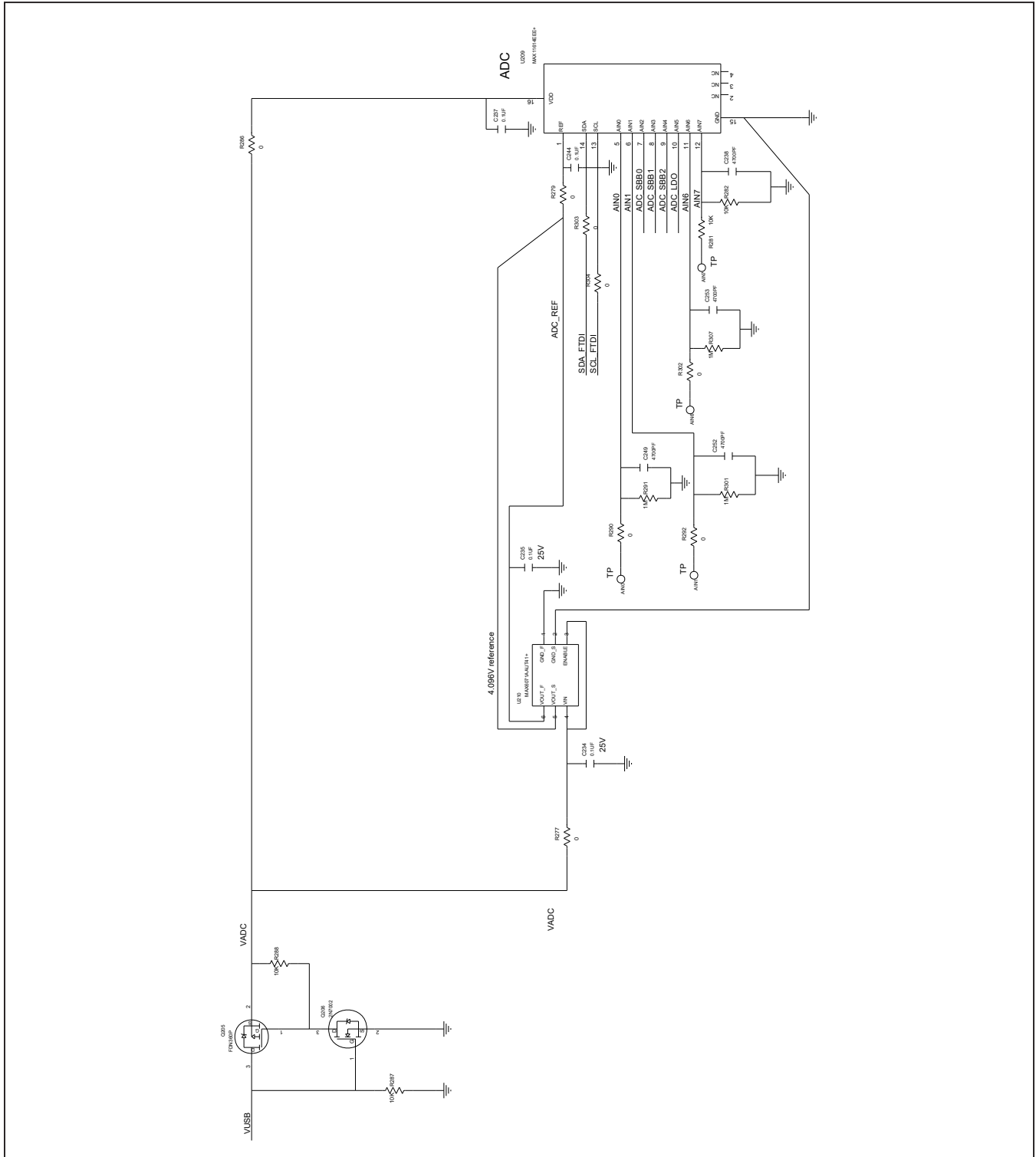
MAX77642 EV Kit Schematic Diagrams (continued)



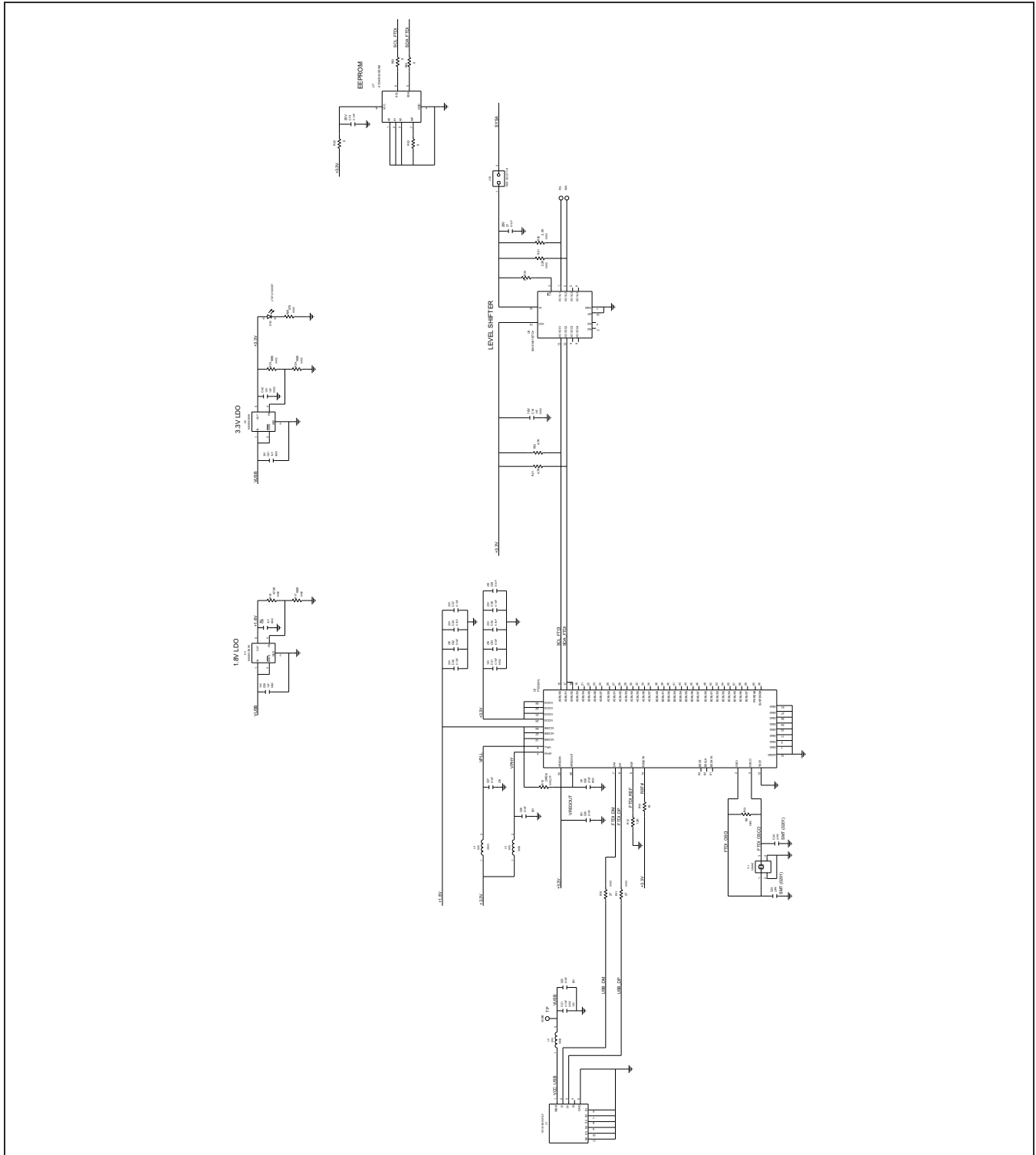
MAX77642 EV Kit Schematic Diagrams (continued)



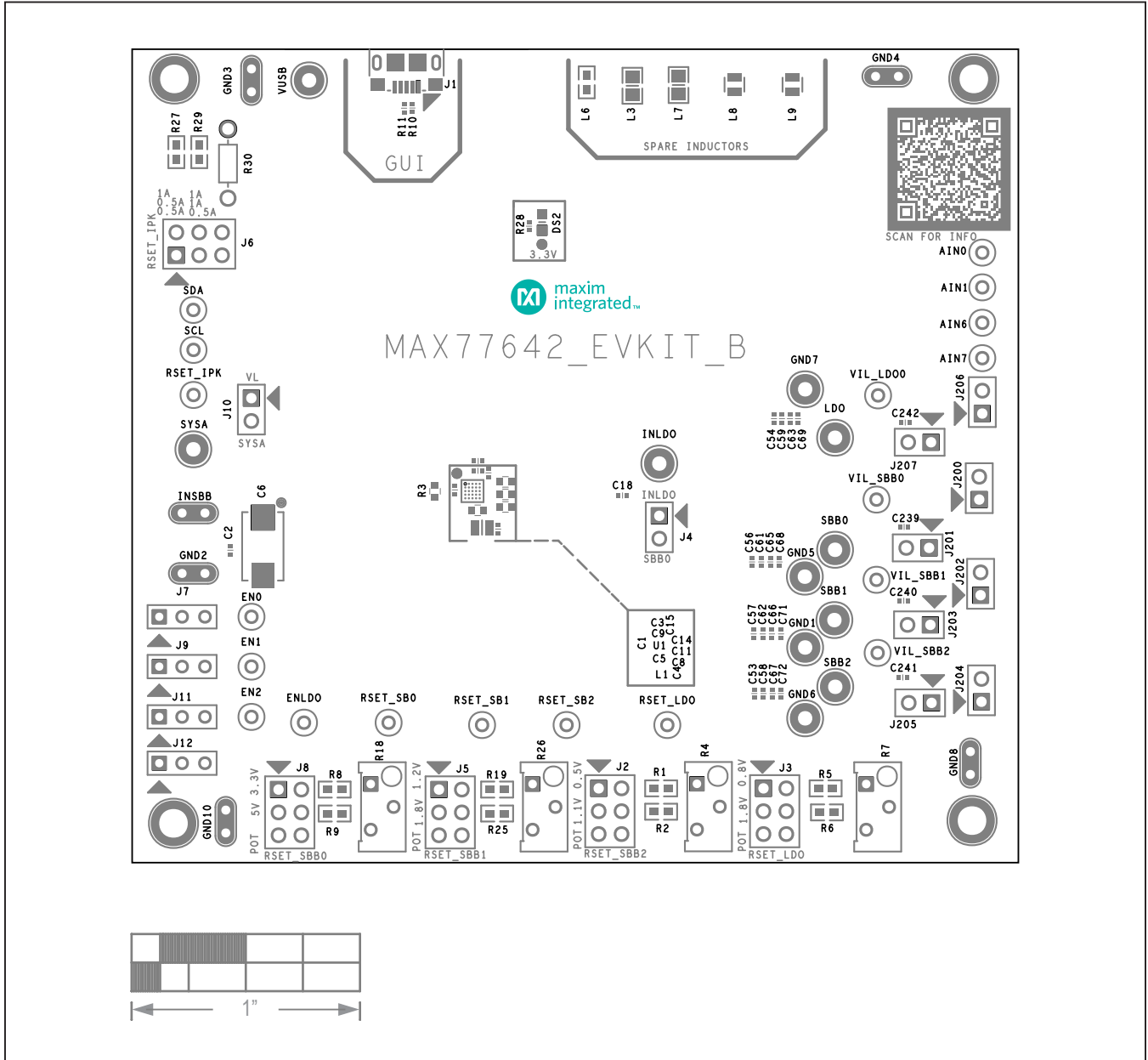
MAX77642 EV Kit Schematic Diagrams (continued)



MAX77642 EV Kit Schematic Diagrams (continued)

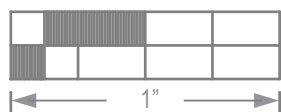
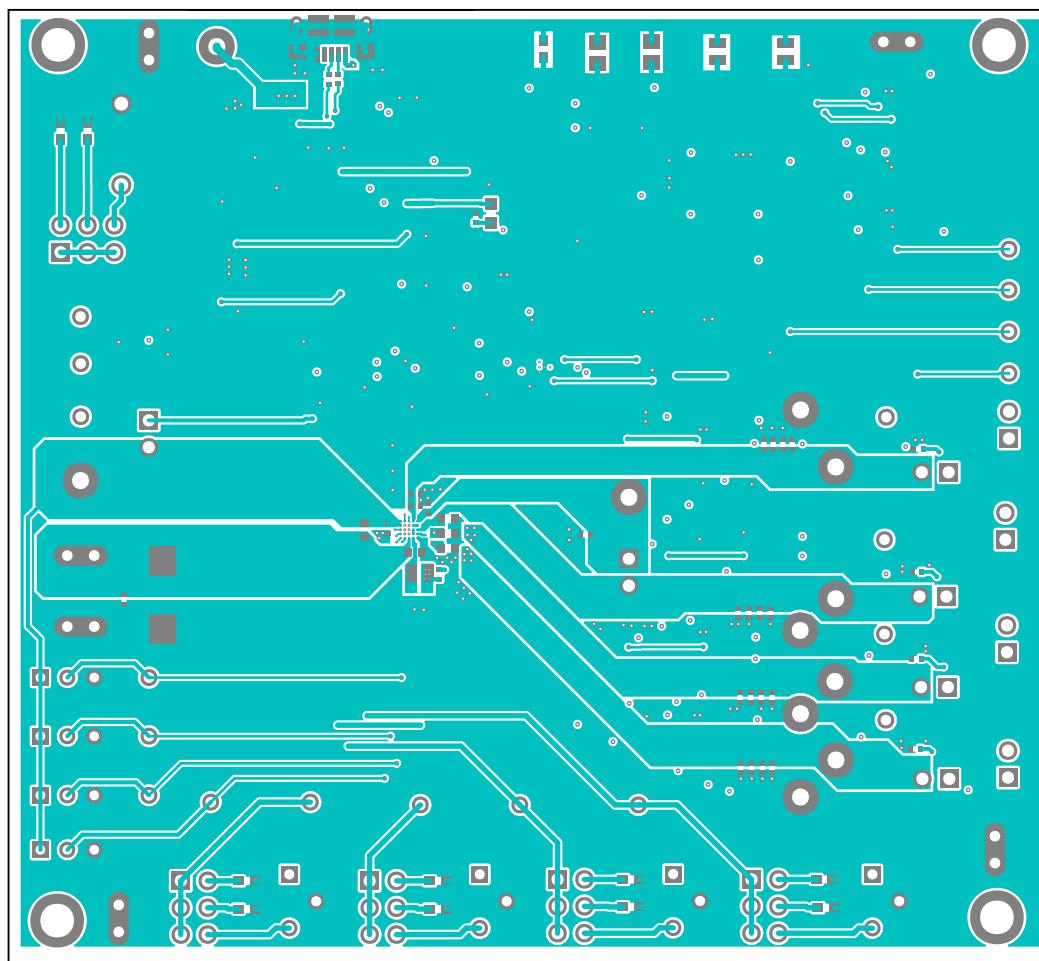


MAX77642 EV Kit PCB Layout Diagrams



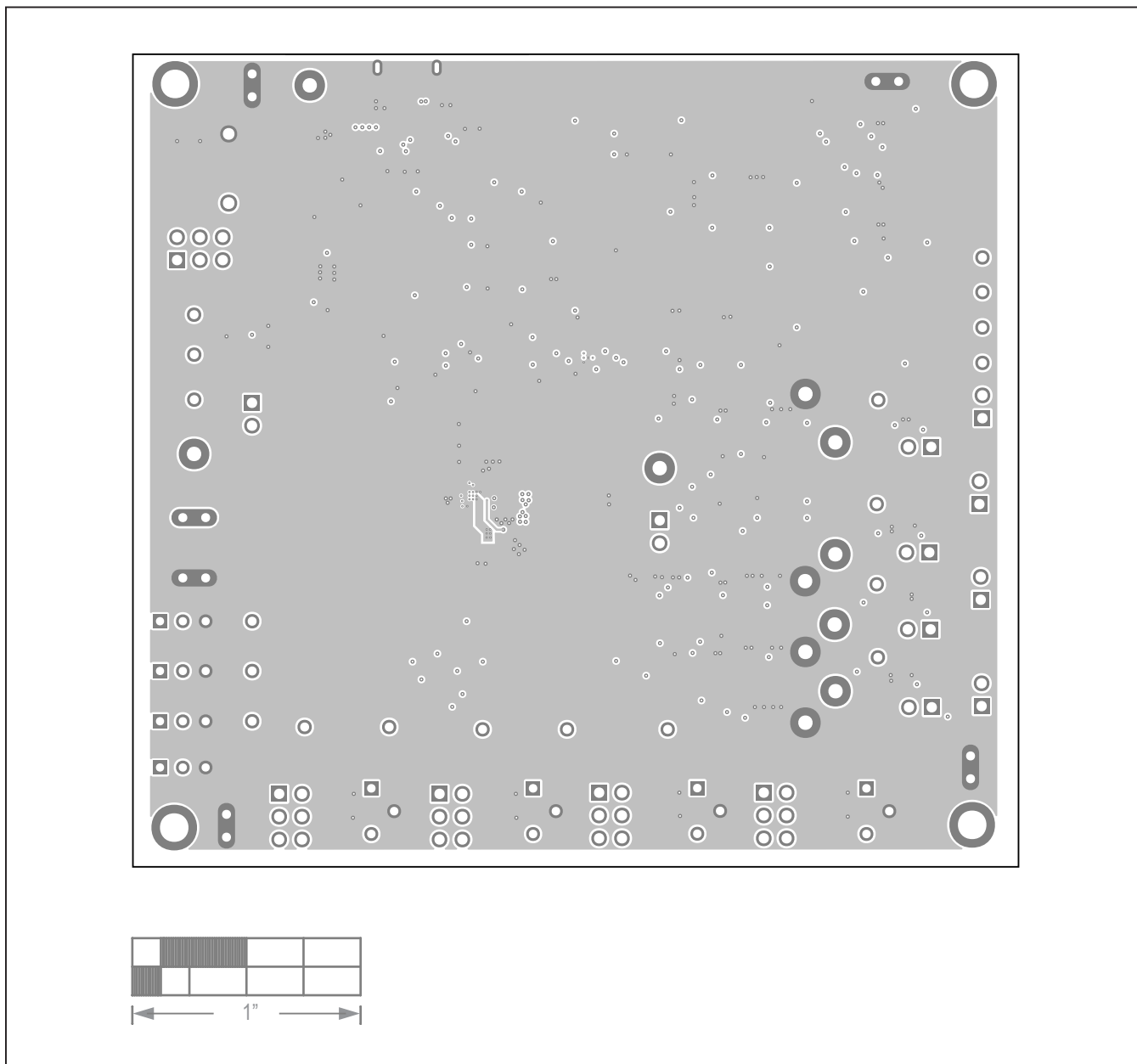
MAX77642 EV Kit PCB Layout — Top Silkscreen

MAX77642 EV Kit PCB Layout Diagrams (continued)



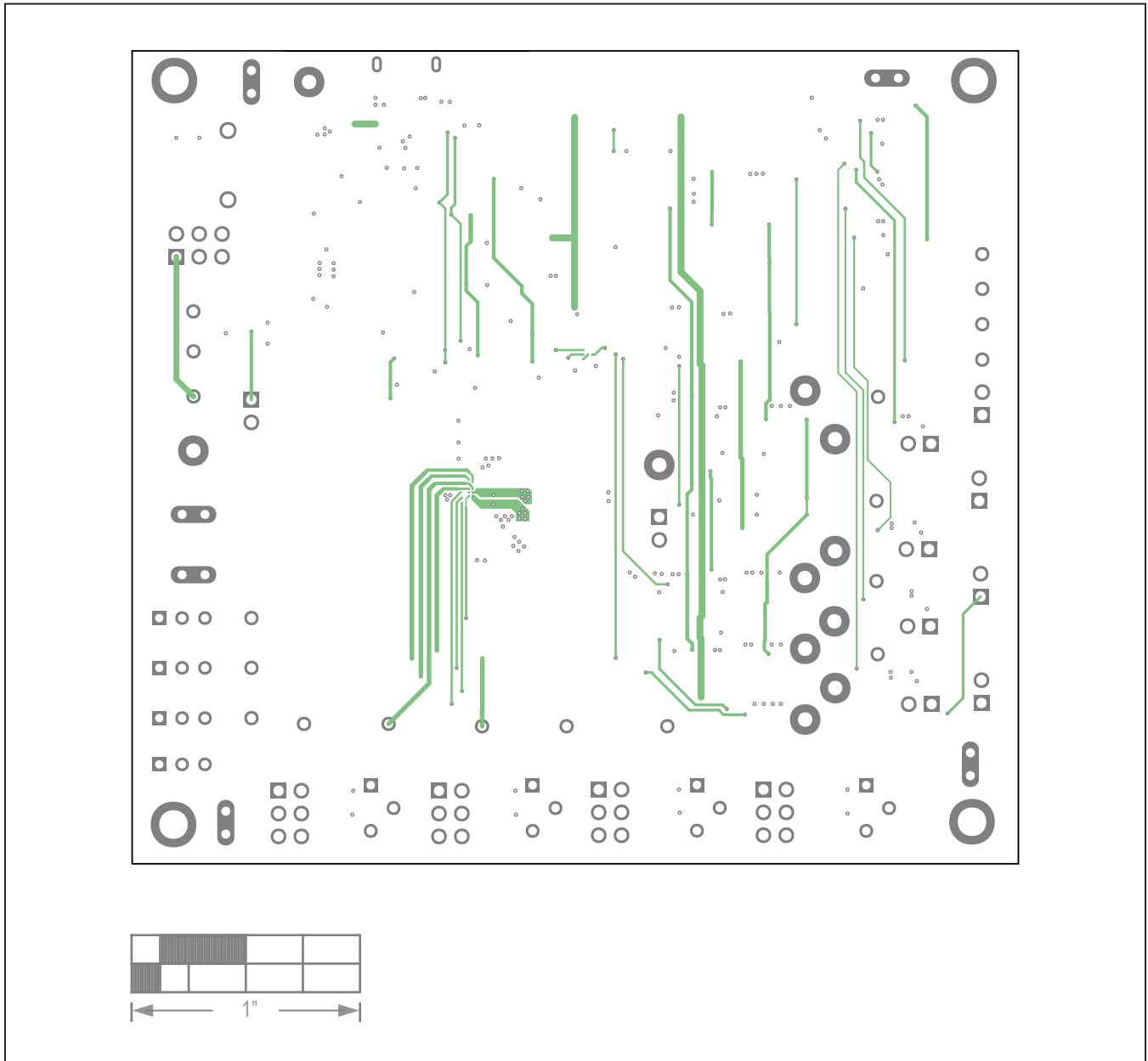
MAX77642 EV Kit PCB Layout — Top View

MAX77642 EV Kit PCB Layout Diagrams (continued)



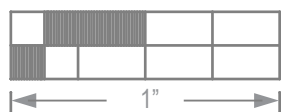
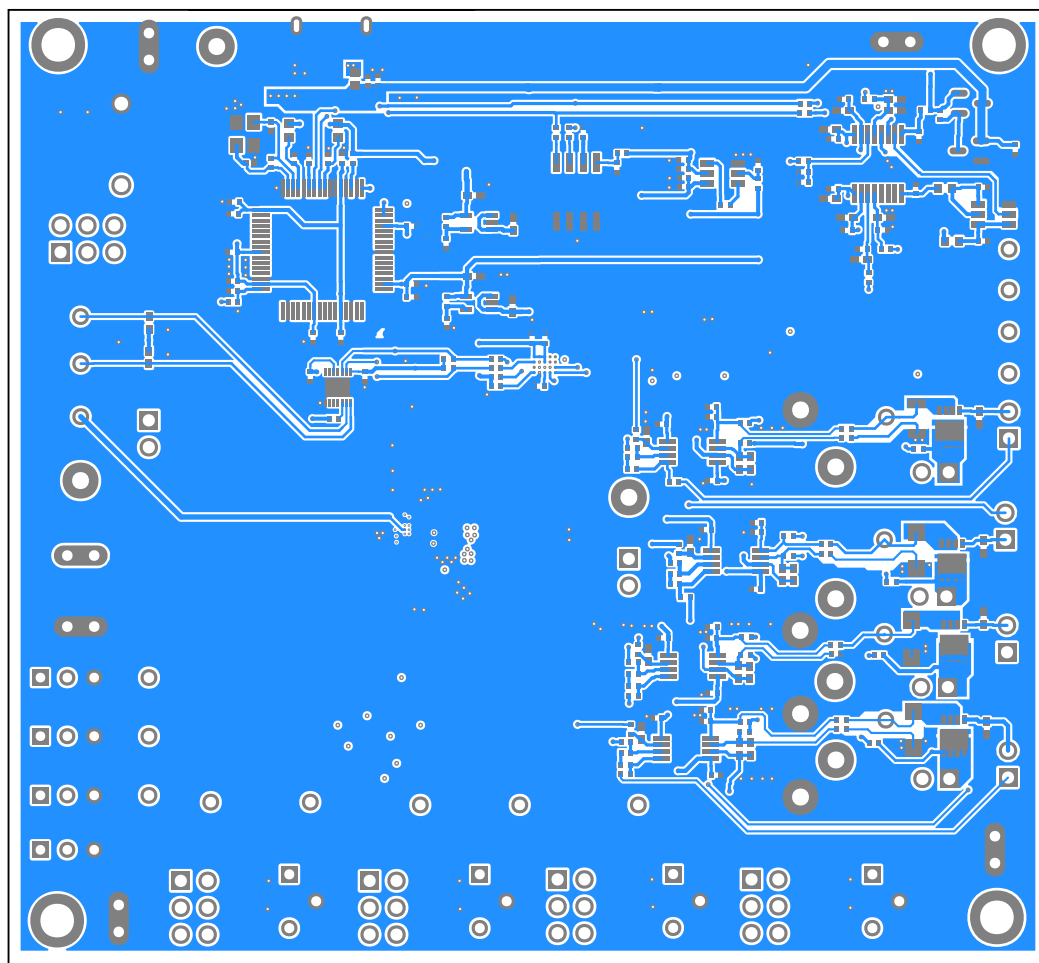
MAX77642 EV Kit PCB Layout — Internal Layer 2

MAX77642 EV Kit PCB Layout Diagrams (continued)



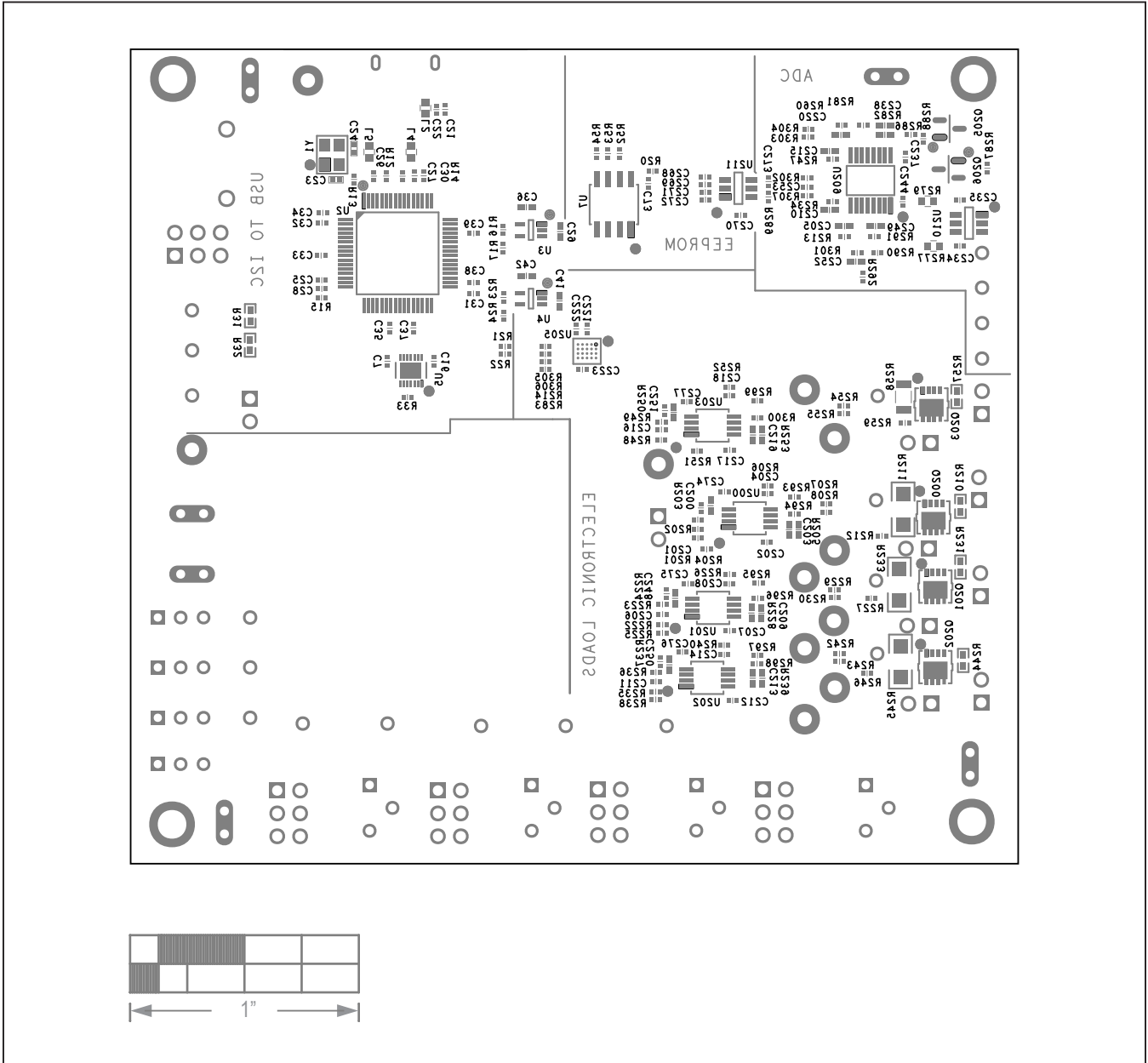
MAX77642 EV Kit PCB Layout — Internal Layer 3

MAX77642 EV Kit PCB Layout Diagrams (continued)



MAX77642 EV Kit PCB Layout — Bottom View

MAX77642 EV Kit PCB Layout Diagrams (continued)



MAX77642 EV Kit PCB Layout — Bottom Silkscreen

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	11/20	Initial release	—

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