

## MAX77752 Evaluation Kit

Evaluates: MAX77752

### General Description

The MAX77752 evaluation kit (EV kit) is a fully assembled and tested printed circuit board (PCB) that demonstrates the highly integrated MAX77752 PMIC. The MAX77752 comprises three buck converters, a low dropout linear regulator, two external regulators enable outputs, two dedicated load switch controllers, and an inrush-current limiter which can be configured as a third load switch controller using OTP.

The EV kit also includes a MAXQ2000 microcontroller command module that provides the I<sup>2</sup>C interface to control power sequence, inrush current, individual output on/off, and setting regulator output voltage.

The MAX77752 evaluation software is provided for easy evaluation.

### Benefits and Features

- USB to I<sup>2</sup>C Converter Allows for Easy Communication
- Level Translator (MAX3395) Allows for Adjusting I<sup>2</sup>C Bus Voltage from 1.8V to 3.3V
- On-Board Electronics Load Allows for Easy Evaluation
  - GUI Allows Static/Dynamic Load Adjustment for Buck Converters, LDO, LSWs, and SYS
  - MOSFET can be Driven by External Function Generator to Evaluate Transient Performance for Each Regulator
- Proven PCB Reference Design and Layout
- Fully Assembled and Tested

*Ordering Information appears at end of data sheet.*

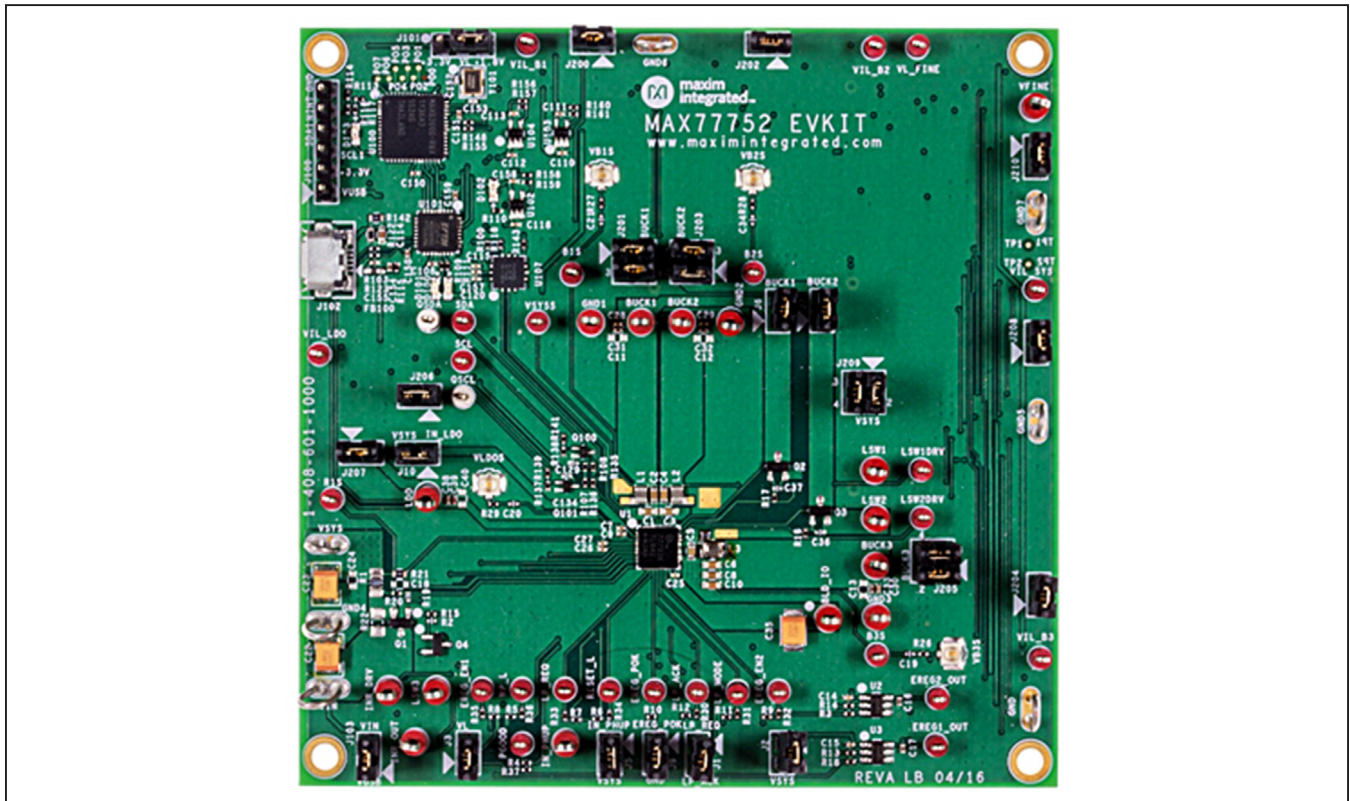


Figure 1. MAX77752 EV Kit Photo

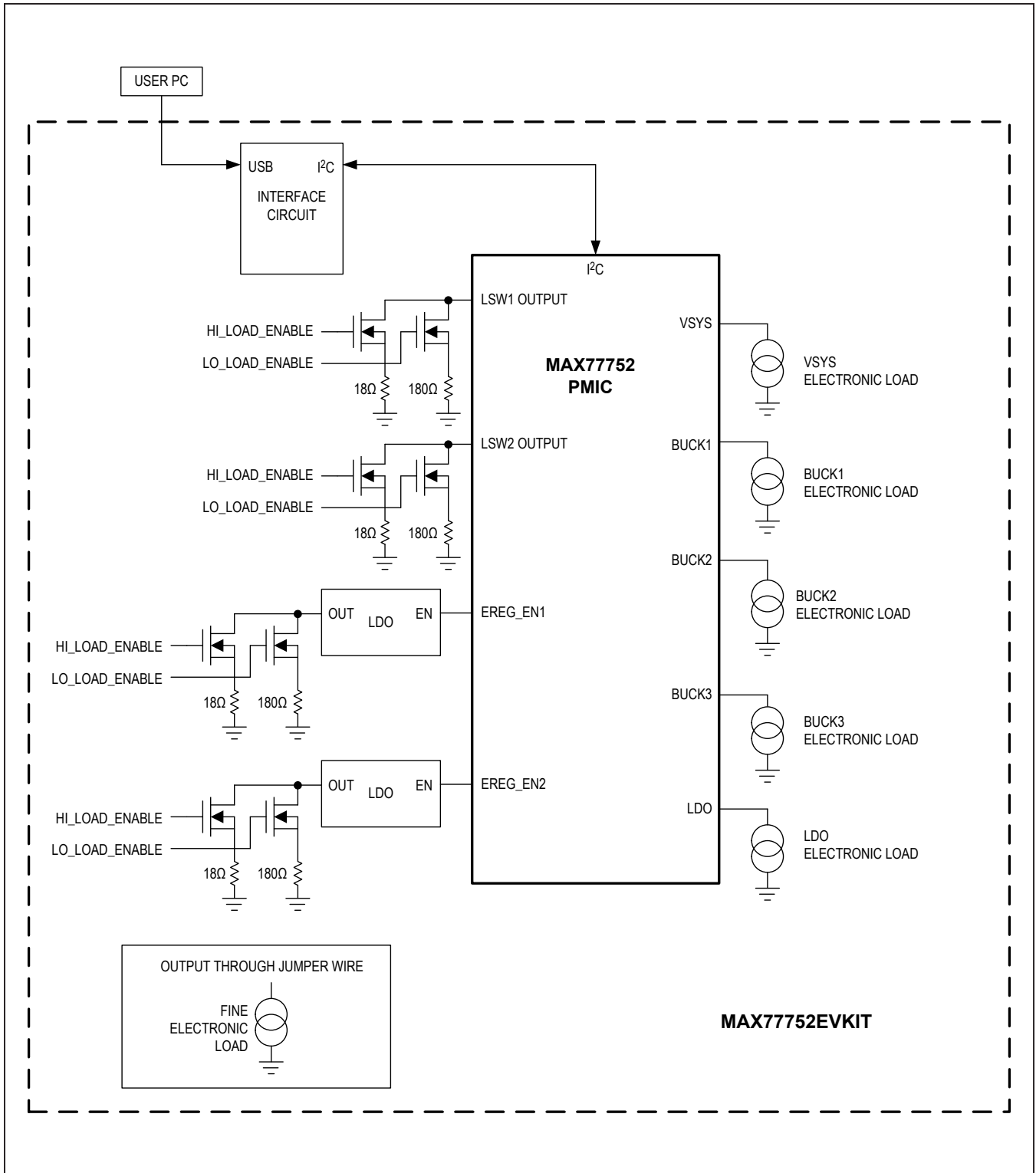


Figure 2. MAX77752 EV Kit Block Diagram

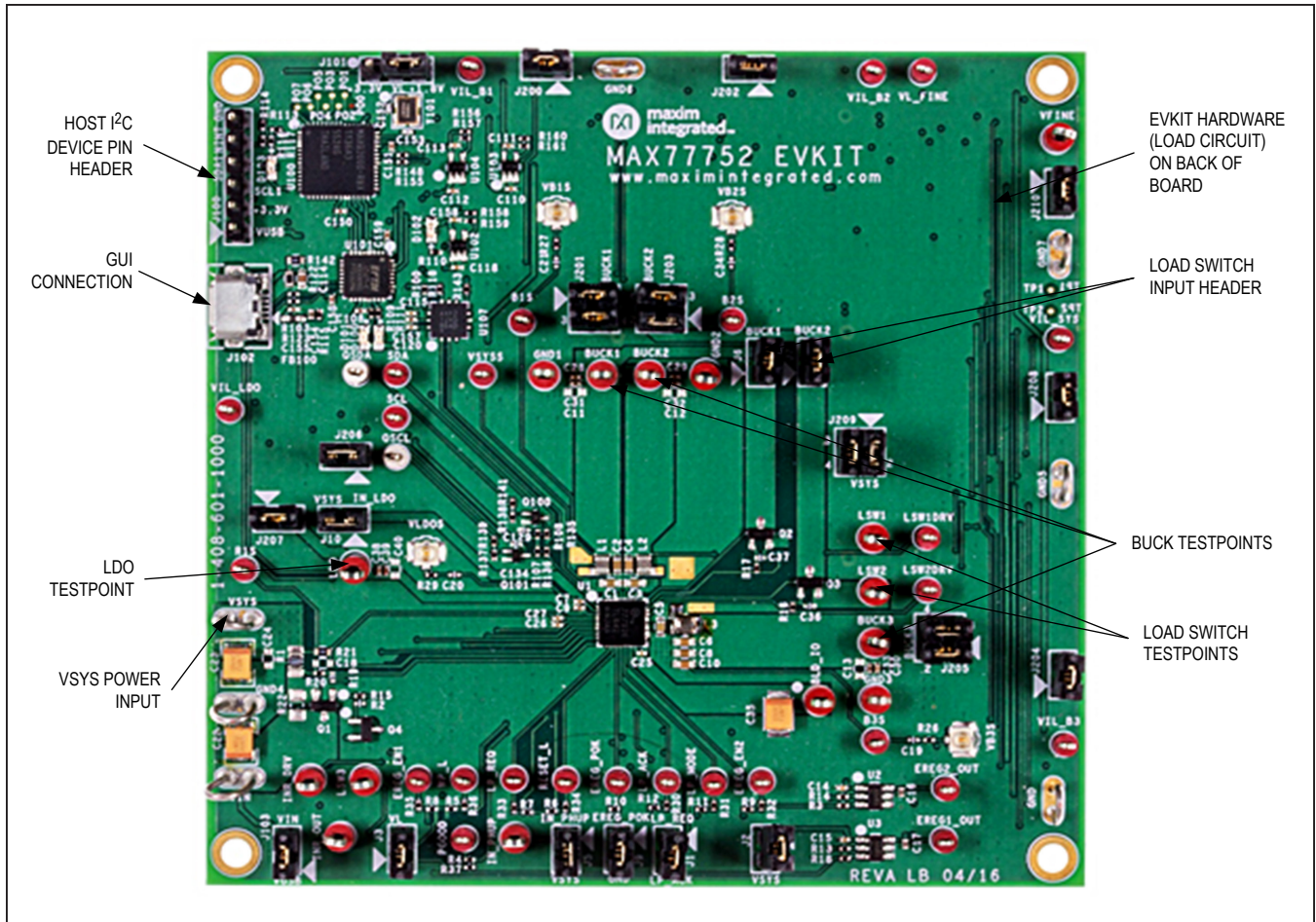


Figure 3: MAX77752 EV Kit Top View

**Table 1. Default Shunt Positions and Jumper Descriptions**

| REFERENCE DESIGNATOR | DEFAULT POSITION | FUNCTION   |
|----------------------|------------------|--|
| J1                   | OPEN             | <b>1-2:</b> Connects LP_REQ to LP_MODE.  |
| J2                   | OPEN             | <b>1-2:</b> Connects VSYS to external regulators.                              |
| J3                   | OPEN             | <b>1-2:</b> Connects VL to GPIO expander pullup resistors.                     |
| J4                   | 2-3              | <b>1-2:</b> Connects LP_MODE to VSYS.<br><b>2-3:</b> Connects LP_MODE to GND.  |
| J5                   | OPEN             | <b>1-2:</b> Connects IN_PHUP to VSYS.  |
| J6                   | OPEN             | <b>1-2:</b> Connects VBUCK1 to Drain of LSW1 MOSFET.                           |
| J7                   | OPEN             | <b>1-2:</b> Connects VBUCK2 to drain of LSW2 MOSFET.                           |
| J9                   | OPEN             | <b>1-2:</b> Connects EREG_POK to GND.  |
| J10                  | 1-2              | <b>1-2:</b> Connects VSYS to IN_LDO.   |
| J101                 | 2-3              | <b>1-2:</b> Connects 3.3V to VL.<br><b>2-3:</b> Connects 1.8V to VL.           |
| J103                 | OPEN             | <b>1-2:</b> Connects VIN to VUSB.  |
| J200                 | 1-2              | <b>1-2, 3-4:</b> Connects the U200 amplifier to the gate of the Q200 load FET. |
| J208                 | 1-2              | <b>1-2, 3-4:</b> Connects the U204 amplifier to the gate of the Q204 load FET. |
| J209                 | 1-2, 3-4         | <b>1-2, 3-4:</b> Connects SYS to drain of the Q204 FET.                        |
| JU201                | 1-2, 3-4         | <b>1-2, 3-4:</b> Connects VBUCK1 to drain of Q200 load FET.                    |
| JU202                | 1-2              | <b>1-2:</b> Connects the U201 amplifier to the gate of the Q201 load FET.      |
| JU203                | 1-2, 3-4         | <b>1-2, 3-4:</b> Connects VBUCK2 to drain of Q201 load FET.                    |
| JU204                | 1-2              | <b>1-2:</b> Connects the U202 amplifier to the gate of the Q202 load FET.      |
| JU205                | 1-2, 3-4         | <b>1-2, 3-4:</b> Connects VBUCK3 to drain of Q202 load FET.                    |
| JU206                | 1-2              | <b>1-2:</b> Connects the U203 amplifier to the gate of the Q203 load FET.      |
| JU207                | 1-2              | <b>1-2:</b> Connects VLDO to drain of Q203 load FET.                           |

**Table 2. Default Voltages (CID4 = 0x07)**

| REGULATOR | EXPECTED VOLTAGE (V) (OPTION1) |
|-----------|--------------------------------|
| BUCK1     | 1.8                            |
| BUCK2     | 1.35                           |
| BUCK3     | 1.05                           |
| LDO       | 1.8                            |
| LSW1      | 1.35                           |
| LSW2      | OFF                            |

**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**

- MAX77752 EV kit
- Windows®-based PC
- Power supply
- Ammeter
- DVM
- Micro-USB cable
- GUI

**Procedure**

The EV kit is fully assembled and tested. Follow the steps below to verify board operation:

- 1) Install all shunts as recommended in [Table 1](#).
- 2) Connect a disabled 5.0V bench power supply through an ammeter to VIN and GND wire loops. Set the input current limit of the bench supply to 3A. Do not enable the output of the bench supply until prompted.
- 3) Using a jumper wire, connect LSW1 to BUCK2.
- 4) Enable the output of the 5V and 1.8V bench power supply. Quiescent current of the 5V supply should be approximately 370µA (300µA with USB connected).
- 5) Connect a Micro-B USB cable between the EV kit and the PC.
- 6) Wait a few seconds for your computer to install the USB driver. Once the driver is successfully installed, a Window’s pop-up message shows that the “USB Serial Converter” is ready to use.
- 7) Open the MAX77752 GUI.
- 8) In the upper left corner of the GUI, select **Device**. Connect as shown in [Figure 4](#). Once connected, a pop-up window is shown (see [Figure 5](#)). Click on the **Read and close** button.
- 9) Check the LDO, BUCK1 and BUCK2 regulators, and LSW are on by measuring their output (see [Table 2](#).)

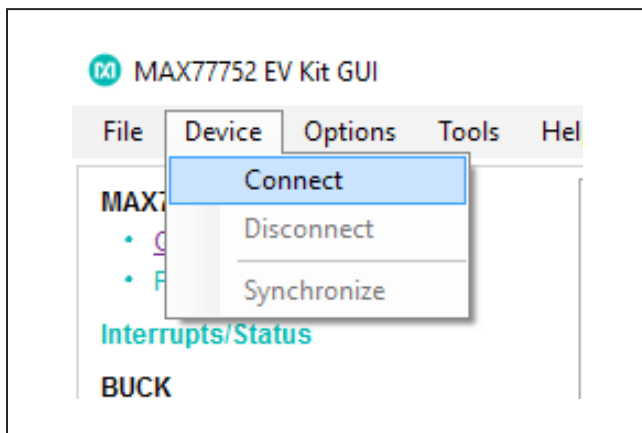


Figure 4. Quick Start: Regulator Check with the ADC

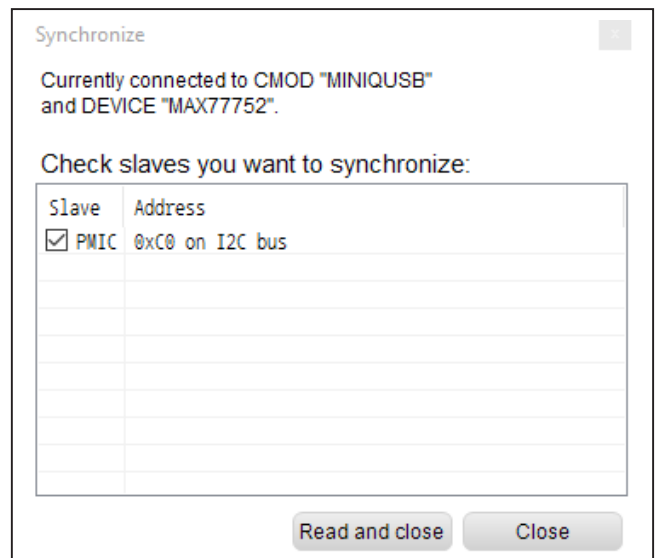


Figure 5. Connecting to the MAX77752 PMIC

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



## EV Kit Features

### Electronic Load

The EV kit comes with six electronic loads that allow the user to easily evaluate each regulator simultaneously. An on-board DAC and op-amp configuration sets the load current through I<sup>2</sup>C via the MAX77752 GUI.

The EV kit also includes resistive loads (18Ω and 180Ω) for the load switches and two external LDO regulators (see Figure 7). This is done by sending a high signal from the GPIO expander to drive the gate of the MOSFET which allows current to flow through the load resistor.

### INRUSH/LSW3 Configuration

When configuring either INRUSH or LSW3, follow the configurations as shown in Table 3.

### Software

The graphical user interface (GUI) software allows for quick, easy, and thorough evaluation of the MAX77734. The GUI is designed to have individual tabs for each functional block of the device (Global Resources, Interrupts/Status, LDO, and Load Switches) and one additional tab for controlling EV kit hardware (Load Control).

### Installation

Visit [www.maximintegrated.com/evkitsoftware](http://www.maximintegrated.com/evkitsoftware) to download the latest version of the EV kit software. Save the EV kit software to a temporary folder and unzip 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 the necessary drivers.

### Graphical User Interface (GUI) Details

The GUI drives I<sup>2</sup>C communication with the EVKIT. Every control in the GUI (excluding the Load Control) corresponds directly to a register within the MAX77752. Refer to the register map in the device data sheet for a complete description of the registers. The **Load Control** tab provides additional functionality with the EV kit.

### Load Control Tab

The **Load Control** tab contains controls for setting load on the regulators' output. 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 press the **Enable** button. 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.

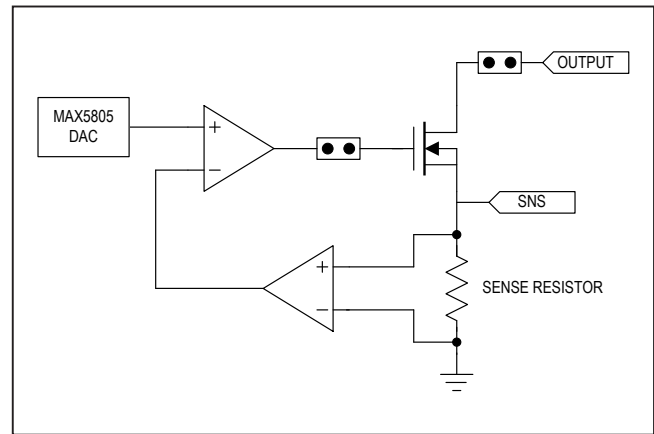


Figure 6. Electronic Load Block Diagram

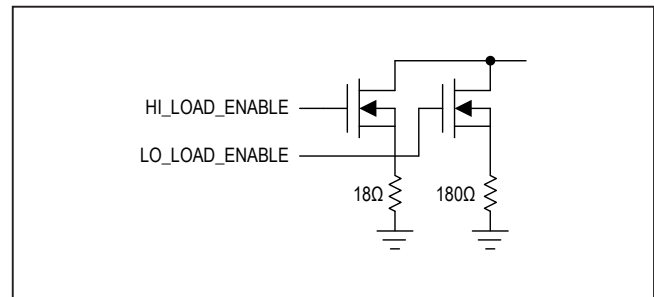


Figure 7. Electronic Load Block Diagram

### Table 3. INRUSH and LSW3 Configuration

| DESIGNATOR | INRUSH | LSW3                    |
|------------|--------|-------------------------|
| R2         | DNI    | 0Ω                      |
| R15        | 0Ω     | DNI                     |
| R19        | DNI    | 0Ω                      |
| R20        | 0Ω     | DNI                     |
| R22        | DNI    | 0Ω (CRCW08050000Z0EAHP) |

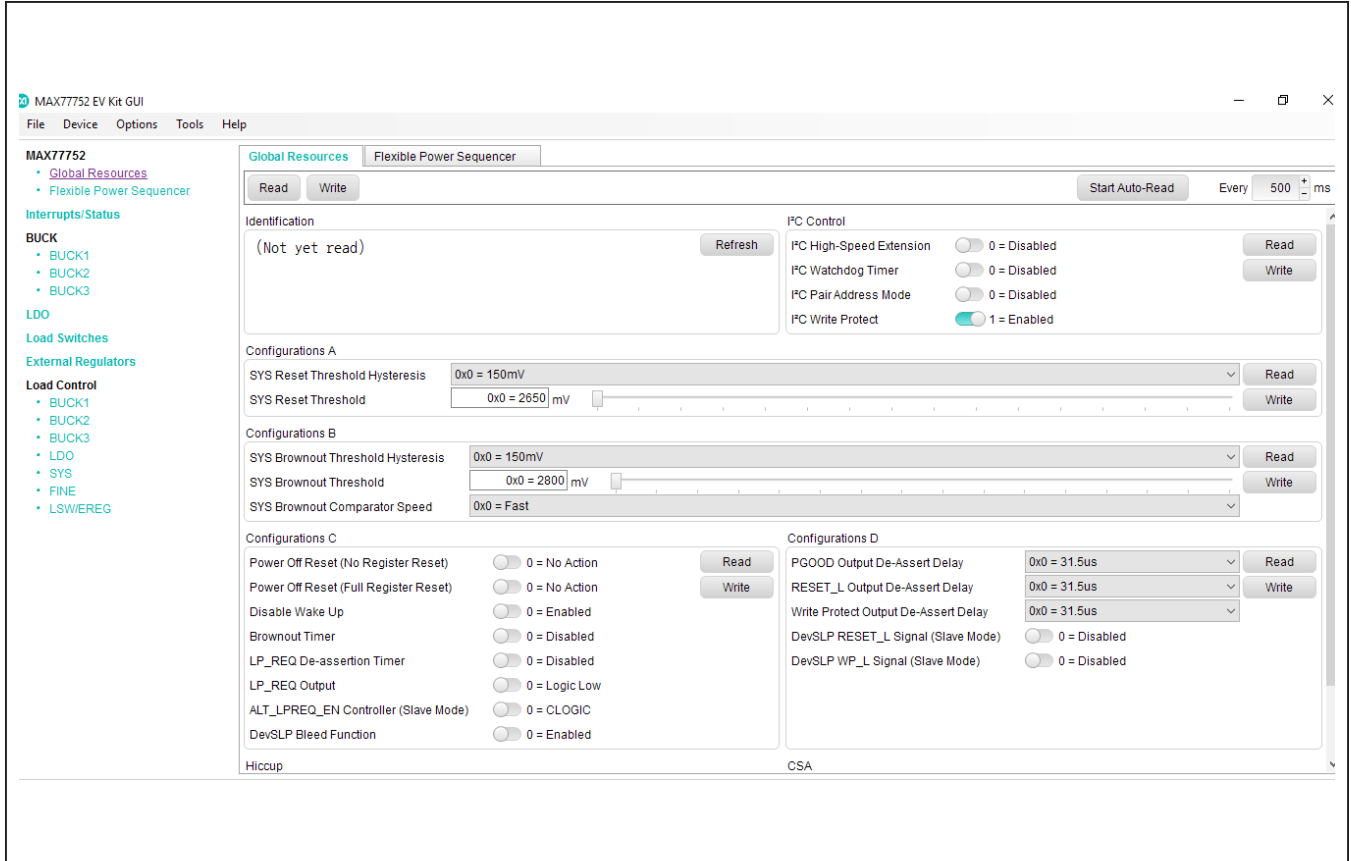


Figure 8. MAX77752 EV Kit GUI Top-Level Interface

MAX77752 EV Kit Bill of Materials

| REF DES  | DNI/DNP | QTY | MFG PART #                            | MANUFACTURER              | VALUE          | DESCRIPTION  |
|--|---------|-----|---------------------------------------|---------------------------|----------------|--|
| B15-B35, R15, SCL, SDA, WP_L, PGOOD, VSYSS, LP_ACK, LP_REQ, VIL_B1-VIL_B3, LP_MODE, LSW1DRV, LSW2DRV, RESET_L, VIL_LDO, VIL_SYS, VL_FINE, EREG_EN1, EREG_EN2, EREG_POK, EREG1_OUT, EREG2_OUT |         | 26  | 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;         |
| LDO, GND1-GND3, LSW1-LSW3, BUCK1-BUCK3, VFINE, BLD_IO, INR_DRV, INR_OUT, IN_PHUP   |         | 15  | 5010                                  | KEYSTONE                  | N/A            | TESTPOINT WITH 1.80MM HOLE DIA, RED, MULTIPURPOSE;   |
| C1, C3, C5   |         | 3   | C1608X5R1A106K                        | TDK                       | 10UF           | CAPACITOR; SMT (0603); CERAMIC CHIP; 10UF; 10V; TOL=10%; MODEL=; TG=-55 DEGC TO +85 DEGC; TC=X5R                         |
| C2, C4, C6, C8, C10  |         | 5   | ANY                                   | ANY                       | 22UF           | CAPACITOR; SMT (0603); CERAMIC CHIP; 22UF; 6.3V; TOL=20%; MODEL=C SERIES; TG=-55 DEGC TO +85 DEGC; TC=X5R; FORMFACTOR    |
| C7, C9   |         | 2   | ANY                                   | ANY                       | 2.2UF          | CAPACITOR; SMT (0402); CERAMIC; 2.2UF; 6.3V; TOL=[10%]; MODEL=C SERIES; TG=-55 DEGC TO +85 DEGC; TC=X5R                  |
| C14, C15   |         | 2   | ANY                                   | ANY                       | 1UF            | CAPACITOR; SMT (0402); CERAMIC CHIP; 1UF; 10V; TOL=10%; MODEL=; TG=-55 DEGC TO +85 DEGC; TC=X5R; FORMFACTOR              |
| C16, C17, C154   |         | 3   | ANY                                   | ANY                       | 4.7UF          | CAPACITOR; SMT (0402); CERAMIC CHIP; 4.7UF; 10V; TOL=20%; MODEL=C SERIES; TG=-55 DEGC TO +85 DEGC; TC=X5R; FORMFACTOR    |
| C22, C23, C35  |         | 3   | TCJB107M006R0070                      | AVX                       | 100UF          | CAPACITOR; SMT (3528); TANTALUM CHIP; 100UF; 6.3V; TOL=20%; MODEL=TCJ SERIES   |
| C25-C27, C110-C113, C115, C118, C120, C158, C248-C250  |         | 14  | C0402C105K8PAC                        | KEMET                     | 1UF            | CAPACITOR; SMT (0402); CERAMIC CHIP; 1UF; 10V; TOL=10%; TG=-55 DEGC TO +85 DEGC; TC=X5R                                  |
| C28-C30, C38   |         | 4   | 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         |
| C31-C33, C39   |         | 4   | ANY                                   | ANY                       | 0.1UF          | CAPACITOR; SMT; 0402; CERAMIC; 0.1uF; 10V; 10%; X5R; -55degC to + 125degC; 0 +/-30PPM/degC; FORMFACTOR ;                 |
| C108, C150, C151, C155-C157, C159, C203, C209, C216, C223, C233, C240  |         | 13  | ANY                                   | ANY                       | 0.1UF          | CAPACITOR; SMT (0402); CERAMIC CHIP; 0.1UF; 50V; TOL=10%; MODEL=C6A SERIES; TG=-55 DEGC TO +125 DEGC; TC=X7R; FORMFACTOR |
| C114   |         | 1   | C0603C474K4RAC; GRM188R71C474K        | KEMET/MURATA              | 0.47UF         | CAPACITOR; SMT; 0603; CERAMIC; 0.47uF; 16V; 10%; X7R; -55degC to + 125degC; 0 +/-15% degC MAX.                           |
| C152, C153   |         | 2   | C0402C0G500-150JNP; GRM1555C1H150JA01 | VENKEL LTD./MURATA        | 15PF           | CAPACITOR; SMT (0402); CERAMIC CHIP; 15PF; 50V; TOL=5%; TG=-55 DEGC TO +125 DEGC; TC=C0G                                 |
| C200, C207, C214, C221, C231, C238   |         | 6   | C1005X5R1H472K050                     | TDK                       | 4700PF         | CAPACITOR; SMT (0402); CERAMIC CHIP; 4700PF; 50V; TOL=10%; TG=-55 DEGC TO +85 DEGC; TC=X5R                               |
| C201, C208, C215, C222, C232, C239   |         | 6   | ANY                                   | ANY                       | 1000PF         | CAPACITOR; SMT (0402); CERAMIC CHIP; 1000PF; 50V; TOL=10%; MODEL=C0G; TG=-55 DEGC TO +125 DEGC; TC=+; FORMFACTOR         |
| C202, C210, C217, C224, C228-C230, C234, C241, C245-C247, C260, C262, C265   |         | 15  | 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   |
| C204, C205, C211, C212, C218, C219, C235, C236, C242, C243   |         | 10  | GRM1555C1E101GA01                     | MURATA                    | 100PF          | CAPACITOR; SMT (0402); CERAMIC CHIP; 100PF; 25V; TOL=2%; MODEL=GRM SERIES; TG=-55 DEGC TO +125 DEGC; TC=C0G              |
| C206, C213, C220, C227, C237, C244, C261, C263, C264   |         | 9   | 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    |
| C225, C226   |         | 2   | C0402C680J5GAC; GRM1555C1H680JA01     | KEMET/MURATA              | 68PF           | CAPACITOR; SMT; 0402; CERAMIC; 68pF; 50V; 5%; C0G; -55degC to + 125degC; 0 +/-30PPM/degC                                 |
| D100, D101   |         | 2   | LTST-C190YKT                          | LITE-ON ELECTRONICS, INC. | LTST-C190YKT   | DIODE; LED; STANDARD; YELLOW; SMT (0603); PIV=5.0V; IF=0.02A; -55 DEGC TO +85 DEGC                                       |
| D102, D103   |         | 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  |
| FB100  |         | 1   | BLM18PG221SN1                         | MURATA                    | 220            | INDUCTOR; SMT (0603); FERRITE-BEAD; 220; TOL=+/-25%; 1.4A; -55 DEGC TO +125 DEGC   |
| GND, VIN, GND4-GND7, VSYSS   |         | 7   | 9020 BUSS                             | WEICO WIRE                | MAXIMPAD       | EVK KIT PARTS; MAXIM PAD; WIRE; NATURAL; SOLID; WEICO WIRE; SOFT DRAWN BUS TYPE-S; 20AWG                                 |
| J1-J3, J5-J7, J10, J103, J200, J202, J204, J206-J208, J210   |         | 15  | 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                                  |
| J4, J9, J101   |         | 3   | PBC03SABN                             | SULLINS                   | PBC03SABN      | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS  |



MAX77752 EV Kit Bill of Materials (continued)

| REF_DES  | DNI/DNP | QTY | MFG PART #  | MANUFACTURER                          | VALUE           | DESCRIPTION   |
|--|---------|-----|---|---------------------------------------|-----------------|---|
| J100   |         | 1   | PBC06SAAN   | SULLINS ELECTRONICS CORP.             | PBC06SAAN       | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 6PINS; -65 DEGC TO +125 DEGC                      |
| J102   |         | 1   | 10103592-0001LF                                   | FCI CONNECT                           | 10103592-0001LF | CONNECTOR; FEMALE; SMT; MICRO USB B-TYPE REVERSE; RIGHT ANGLE; 5PINS                                  |
| J201, J203, J205, J209   |         | 4   | PBC02DABN   | SULLINS ELECTRONIC CORP.              | PBC02DABN       | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 4PINS   |
| L1, L2   |         | 2   | PIFE20161T-1R0MDR                                 | CYNTEC                                | 1UH             | INDUCTOR; SMT; FERRITE BOBBIN CORE; 1UH; TOL=+/-20%; 2.8A; -55 DEGC TO +125 DEGC; FORMFACTOR          |
| L3   |         | 1   | CIGT252010EH1R0M                                  | SAMSUNG ELECTRONICS                   | 1UH             | INDUCTOR; SMT (1008); MAGNETICALLY SHIELDED; 1UH; TOL=+/-20%; 4.3A                                    |
| Q1-Q4, Q205  |         | 5   | DMG3420U  | DIODES INCORPORATED                   | DMG3420U        | TRAN; N-CHANNEL ENHANCEMENT MODE MOSFET; NCH; SOT-23; PD-(0.74W); I-(5.47A); V-(20V)                  |
| Q100, Q101   |         | 2   | FDY300NZ  | FAIRCHILD SEMICONDUCTOR               | FDY300NZ        | TRAN; SINGLE N-CHANNEL 2.5V SPECIFIED POWERTRENCH MOSFET; NCH; SC89; PD-(0.625W); I-(0.6A); V-(20V)   |
| Q200-Q202, Q204  |         | 4   | IRLR8259TRPBF                                     | INTERNATIONAL RECTIFIER               | IRLR8259TRPBF   | TRAN; HEXFET POWER MOSFET; NCH; DPAK; PD-(48W); I-(57A); V-(25V)                                      |
| Q203   |         | 1   | IRFHM8337TRPBF                                    | INTERNATIONAL RECTIFIER               | IRFHM8337TRPBF  | TRAN; HEXFET POWER MOSFET; NCH; PQFN8; PD-(2.8W); I-(18A); V-(30V)                                    |
| Q206-Q209  |         | 4   | FDY3000NZ   | FAIRCHILD SEMICONDUCTOR               | FDY3000NZ       | TRAN; DUAL N-CHANNEL 2.5V SPECIFIED POWERTRENCH MOSFET; NCH; SOT563-6; PD-(0.625W); I-(0.6A); V-(20V) |
| QSCL, QSDA   |         | 2   | 5002  | KEYSTONE                              | N/A             | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER; |
| R1   |         | 1   | WSL0805R0200FEA18                                 | VISHAY DALE                           | 0.02            | RESISTOR; 0805; 0.02 OHM; 1%; 75PPM; 0.25W; THICK FILM  |
| R2, R3, R13-R20, R23-R25, R30, R31, R33, R34, R36-R39  |         | 21  | ERJ-2GE0R00X                                      | PANASONIC                             | 0               | RESISTOR; 0402; 0 OHM; 0%; JUMPER; 0.10W; THICK FILM  |
| R21, R142  |         | 2   | ANY   | ANY                                   | 0               | RESISTOR; 0603; 0 OHM; 0%; JUMPER; 0.10W; THICK FILM; FORMFACTOR                                      |
| R100, R118   |         | 2   | ANY   | ANY                                   | 4.7K            | RESISTOR, 0402, 4.7K OHM, 1%, 100PPM, 0.0625W, THICK FILM; FORMFACTOR                                 |
| R107, R108   |         | 2   | ANY   | ANY                                   | 2.2K            | RESISTOR, 0402, 2.2K OHM, 1%, 100PPM, 0.0625W, THICK FILM; FORMFACTOR                                 |
| R110, R117   |         | 2   | CRCW0402470RFK                                    | VISHAY DALE                           | 470             | RESISTOR, 0402, 470 OHM, 1%, 100PPM, 0.0625W, THICK FILM  |
| R113, R290-R297  |         | 9   | CRCW040210K0FK; RC0402FR-0710K                    | VISHAY DALE; YAGEO PHICOMP            | 10K             | RESISTOR; 0402; 10K; 1%; 100PPM; 0.0625W; THICK FILM  |
| R103, R123, R114, R116   |         | 4   | CRCW040222R0FK                                    | VISHAY DALE                           | 22              | RESISTOR, 0402, 22 OHM, 1%, 100PPM, 0.0625W, THICK FILM   |
| R4-R12, R32, R35, R115, R157, R159, R161, R262, R263, R266, R268                                     |         | 19  | ANY   | ANY                                   | 100K            | RESISTOR; 0402; 100K; 1%; 100PPM; 0.0625W; THICK FILM; FORMFACTOR                                     |
| R122   |         | 1   | ANY   | ANY                                   | 1M              | RESISTOR; 0603; 1M; 1%; 100PPM; 0.10W; THICK FILM; FORMFACTOR   |
| R135, R136, R139, R141, R143, R148, R155, R203, R213, R223, R233, R242, R252, R260, R261, R265, R267 |         | 17  | ANY   | ANY                                   | 0               | RESISTOR; 0402; 0 OHM; 1%; 100PPM; 0.0625W; THICK FILM; FORMFACTOR                                    |
| R26-R29, R137, R138  |         | 6   | ANY   | ANY                                   | 49.9            | RESISTOR; 0402; 49.9 OHM; 1%; 100PPM; 0.0625W; THICK FILM; FORMFACTOR                                 |
| R156   |         | 1   | CRCW0402105KFK                                    | VISHAY DALE                           | 105K            | RESISTOR; 0402; 105K OHM; 1%; 100PPM; 0.063W ; THICK FILM   |
| R158   |         | 1   | CRCW0402169KFK                                    | VISHAY DALE                           | 169K            | RESISTOR; 0402; 169K OHM; 1%; 100PPM; 0.063W; THICK FILM  |
| R160   |         | 1   | CRCW04024752FK; 9C04021A4752FLHF3; CRCW040247K5FK | VISHAY DALE                           | 47.5K           | RESISTOR; 0402; 47.5K; 1%; 100PPM; 0.0625W; THICK FILM  |
| R200, R210, R220, R224, R225, R230, R240, R250   |         | 8   | CRCW040220K0FK                                    | VISHAY DALE                           | 20K             | RESISTOR; 0402; 20K OHM; 1%; 100PPM; 0.063W; THICK FILM   |
| R109, R111, R201, R211, R221, R231, R241, R251, R289   |         | 9   | CRCW0402100RFK; 9C04021A1000FL; RC0402FR-07100RL  | VISHAY DALE; PANASONIC; YAGEO PHYCOMP | 100             | RESISTOR; 0402; 100 OHM; 1%; 100PPM; 0.063W; THICK FILM   |
| R202, R212, R222, R232, R243, R253   |         | 6   | CRCW0402680RFK;RC0402FR-07680RL                   | VISHAY DALE/YAGEO PHICOMP             | 680             | RESISTOR, 0402, 680 OHM, 1%, 100PPM, 0.0625W, THICK FILM  |
| R204, R205, R214, R215, R244, R245   |         | 6   | CRCW04024K75FK                                    | VISHAY DALE                           | 4.75K           | RESISTOR; 0402; 4.75K; 1%; 100PPM; 0.0625W; THICK FILM  |
| R206, R216, R226, R236, R246, R256   |         | 6   | CRCW04021M00FK                                    | VISHAY DALE                           | 1M              | RESISTOR; 0402; 1M; 1%; 100PPM; 0.0625W; THICK FILM   |

MAX77752 EV Kit Bill of Materials (continued)

| REF DES  | DNI/DNP | QTY | MFG PART #                        | MANUFACTURER                        | VALUE         | DESCRIPTION   |
|--|---------|-----|-----------------------------------|-------------------------------------|---------------|---|
| R207, R208, R217, R218, R227, R228, R237, R238, R247, R248, R257, R258 |         | 12  | ANY                               | ANY                                 | 1K            | RESISTOR; 0402; 1K; 1%; 100PPM; 0.0625W; THICK FILM; FORMFACTOR   |
| R209, R219, R249   |         | 3   | CRA2512-FZ-R100ELF                | BOURNS                              | 0.1           | RESISTOR; 2512; 0.1 OHM; 1%; 75PPM; 3W; METAL FILM  |
| R229   |         | 1   | WSL2512R0200F                     | N/A                                 | 0.02          | RESISTOR; 2512; 0.02 OHM; 1%; 75PPM; 1.0W; THICK FILM   |
| R234, R235   |         | 2   | CR0402-16W-3161FT; CRCW04023K16FK | VENKEL LTD./VISHAY DALE             | 3.16K         | RESISTOR; 0402; 3.16K OHM; 1%; 100PPM; 0.063W; THICK FILM   |
| R239, R259   |         | 2   | CSR1206FT1R00                     | STACKPOLE ELECTRONICS INC.          | 1             | RESISTOR; 1206; 1 OHM; 1%; 100PPM; 0.5W; THICK FILM   |
| R254, R255   |         | 2   | CRCW040276K8FK                    | VISHAY DALE                         | 76.8K         | RESISTOR; 0402; 76.8K OHM; 1%; 100PPM; 0.063W; THICK FILM   |
| R269, R271, R273, R287, R288   |         | 5   | CRCW060318R0FK                    | VISHAY DALE                         | 18            | RESISTOR, 0603, 18 OHM, 1%, 100PPM, 0.10W, THICK FILM   |
| R270, R272, R274   |         | 3   | CRCW060318R0FK                    | VISHAY DALE                         | 180           | RESISTOR, 0603, 180 OHM, 1%, 100PPM, 0.10W, THICK FILM  |
| R275, R277, R279, R281, R283, R285                                     |         | 6   | ERJ-2RKF4703X                     | PANASONIC                           | 470K          | RESISTOR, 0402, 470K OHM, 1%, 100PPM, 0.0625W, THICK FILM   |
| R276, R278, R280, R282, R284, R286                                     |         | 6   | CRCW0402649KFK                    | VISHAY DALE                         | 649K          | RESISTOR; 0402; 649K OHM; 1%; 100PPM; 0.063W; THICK FILM  |
| U1   |         | 1   | MAX77752                          | MAXIM                               | MAX77752      | EVKIT PART; IC; OUTLINE DRAWING: 21-0140; PACKAGE CODE: T4055-1C; TQFN40-EP; CID4 = 0x07                          |
| U2, U3   |         | 2   | MAX1818EUT18+                     | MAXIM                               | MAX1818EUT18+ | IC; VREG; 0.5A LOW-DROPOUT LINEAR REGULATOR; SOT23-6  |
| U100   |         | 1   | MAXQ2000-RBX+                     | MAXIM                               | MAXQ2000-RBX+ | IC; CTRL; LOW-POWER LCD MICROCONTROLLER; TQFN56-EP 8X8  |
| U101   |         | 1   | FT232RQ                           | FUTURE TECHNOLOGY DEVICES INTL LTD. | FT232RQ       | IC; INFC; UART INTERFACE IC USB TO SERIAL; QFN32-EP 5X5   |
| U102-U104  |         | 3   | MAX8512EXK                        | MAXIM                               | MAX8512EXK    | IC, VREG, Ultra-Low-Noise, High PSRR, Adjustable Vout, SC70-5   |
| U107   |         | 1   | MAX3395EETC                       | MAXIM                               | MAX3395EETC   | IC; TRANS; 15KV ESD-PROTECTED HIGH-DRIVE CURRENT QUAD-LEVEL TRANSLATOR WITH SPEED-UP CIRCUITRY; TQFN12 4X4        |
| U200-U205  |         | 6   | MAX44251AUA+                      | MAXIM                               | MAX44251AUA+  | IC; OPAMP; ULTRA-PRECISION; LOW-NOISE OP AMP; UMAX8   |
| U206, U207   |         | 2   | MAX5815AAUD+                      | MAXIM                               | MAX5815AAUD+  | IC; DAC; ULTRA-SMALL; QUAD-CHANNEL; 12-BIT BUFFERED OUTPUT DAC WITH INTERNAL REFERENCE AND I2C INTERFACE; TSSOP14 |
| U208, U210   |         | 2   | SX1502I087TRT                     | SEMTECH                             | SX1502I087TRT | IC; XPND; 8-CHANNEL LOW VOLTAGE GPIO EXPANDER; UTQFN20-EP 3X3   |
| U209   |         | 1   | MAX1697UEUT+                      | MAXIM                               | MAX1697UEUT+  | IC; INV; INVERTING CHARGE PUMP WITH SHUTDOWN; SOT23-6   |
| VB1S-VB3S, VLDOS   |         | 4   | 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                                |
| Y101   |         | 1   | CX32255B16000D0FLJZZ              | KYOCERA-KINSEKI                     | 16MHZ         | CRYSTAL; SMT (3225) 3.2X2.5; 8PF; 16MHZ; +/-10PPM; +/-15PPM   |
| PCB  |         | 1   | MAX77752_REV B                    | MAXIM                               | PCB           | PCB:MAX77752_REV B  |
| R22  | DNP     | 0   | CRCW08050000Z0EAHP                | VISHAY DRALORIC                     | 0             | RESISTOR; 0805; 0 OHM; 0%; JUMPER; 0.5W; THICK FILM   |
| C11-C13, C18, C24, C40   | DNP     | 0   | N/A                               | N/A                                 | OPEN          | CAPACITOR; SMT (0603); OPEN; FORMFACTOR   |
| C19-C21, C34, C36, C37, C129, C134                                     | DNP     | 0   | N/A                               | N/A                                 | OPEN          | CAPACITOR; SMT (0402); OPEN; FORMFACTOR   |

NOTE: DNP—DO NOT PROCURE

Ordering Information

| PART           | TYPE   |
|----------------|--------|
| MAX77752EVKIT# | EV Kit |

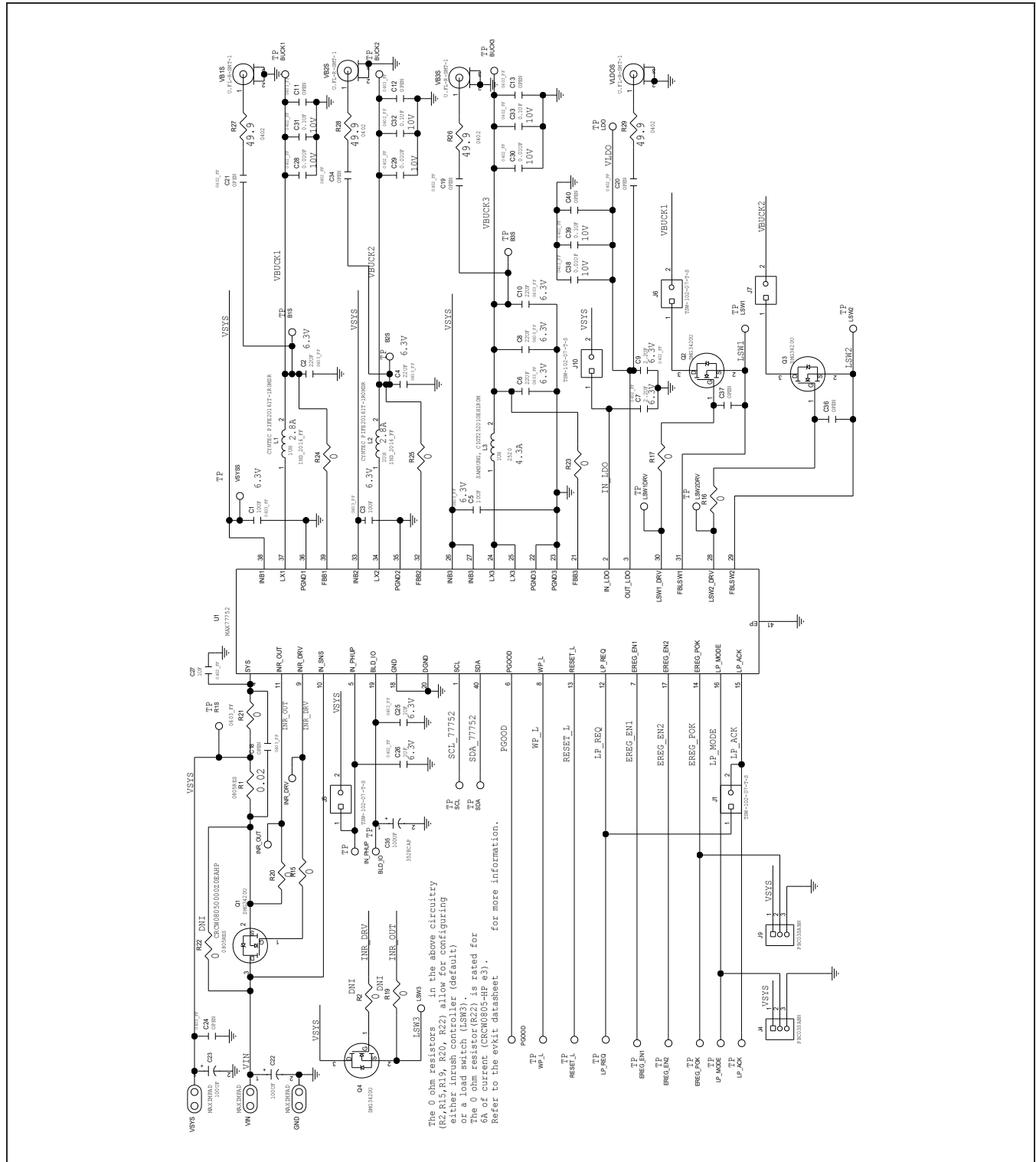
#Denotes RoHS compliant.

MAX77752 EV Kit Schematic

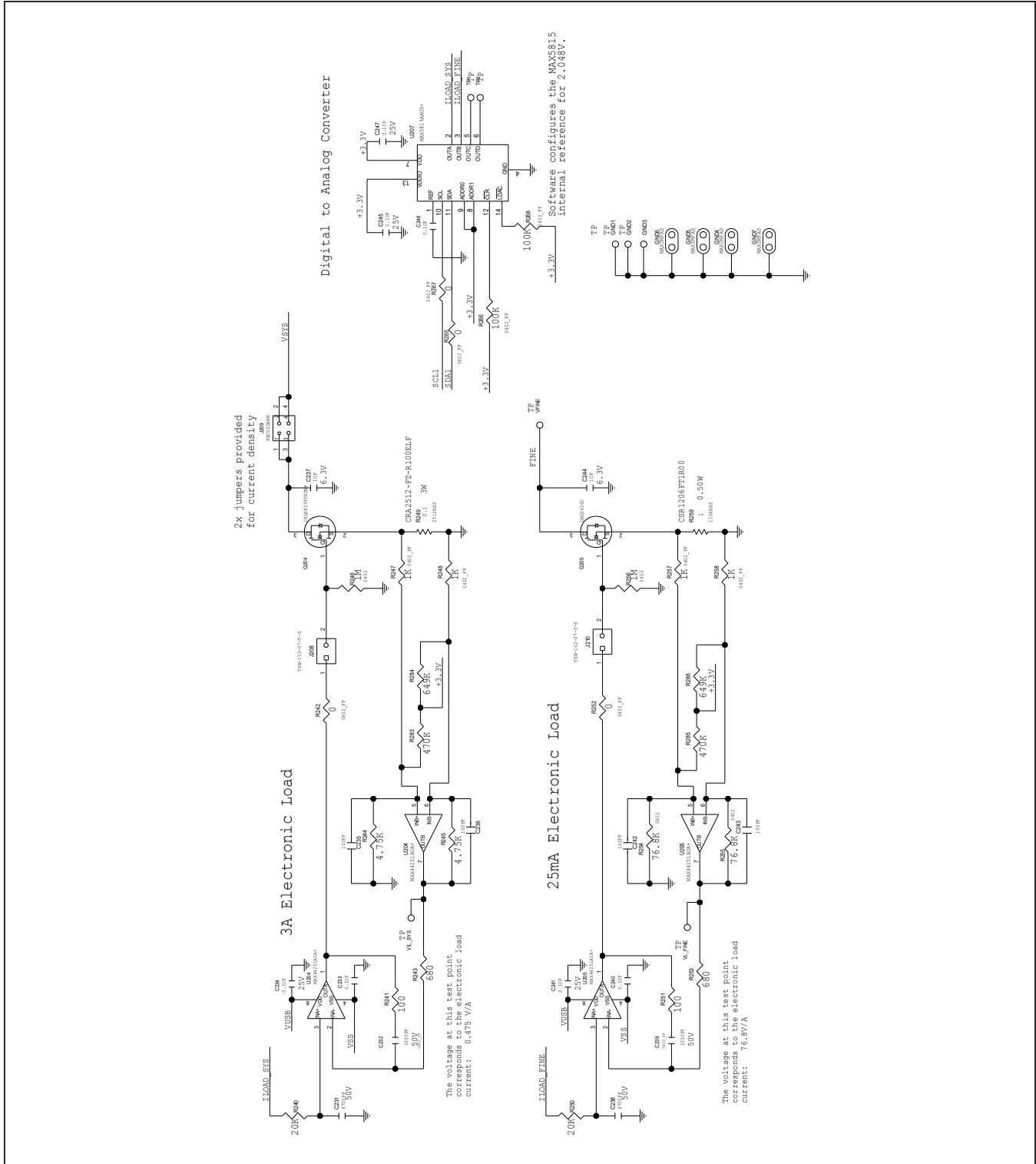
| Part Number                  | Pin Strap            | 7-bit              | 8-bit Write         | 8-bit Read          |
|------------------------------|----------------------|--------------------|---------------------|---------------------|
| MAX77752<br>PMIC<br>OPTION A | OTP_I2C_ADDR[0]=0b00 | 0x60<br>0b110 0000 | 0xC0<br>0b1100 0000 | 0xC1<br>0b1100 0001 |
| MAX77752<br>PMIC<br>OPTION B | OTP_I2C_ADDR[1]=0b01 | 0x61<br>0b110 0001 | 0xC2<br>0b1100 0010 | 0xC3<br>0b1100 0011 |
| MAX77752<br>PMIC<br>OPTION C | OTP_I2C_ADDR[1]=0b10 | 0x62<br>0b110 0010 | 0xC4<br>0b1100 0100 | 0xC5<br>0b1100 0101 |
| MAX77752<br>PMIC<br>OPTION D | OTP_I2C_ADDR[1]=0b11 | 0x63<br>0b110 0011 | 0xC6<br>0b1100 0110 | 0xC7<br>0b1100 0111 |
| MAX5815 *<br>(DAC) U207      | ADDR1=ADDR0=+3.3V    | 0x10<br>0b001 0000 | 0x20<br>0b0010 0000 | 0x21<br>0b0010 0001 |
| MAX5815 *<br>(DAC) U205      | ADDR1=ADDR0=GND      | 0x1F<br>0b001 1111 | 0x3E<br>0b0011 1110 | 0x3F<br>0b0011 1111 |
| SX1502 U210<br>GPIO EXPANDER | ADDR=GND             | 0x20<br>0b010 0000 | 0x40<br>0b0100 0000 | 0x41<br>0b0100 0001 |
| SX1502 U208<br>GPIO EXPANDER | ADDR=3.3V            | 0x21<br>0b010 0001 | 0x42<br>0b0100 0010 | 0x43<br>0b0100 0011 |

\* MAX5815 also responds to an I2C broadcast address 0b0001000

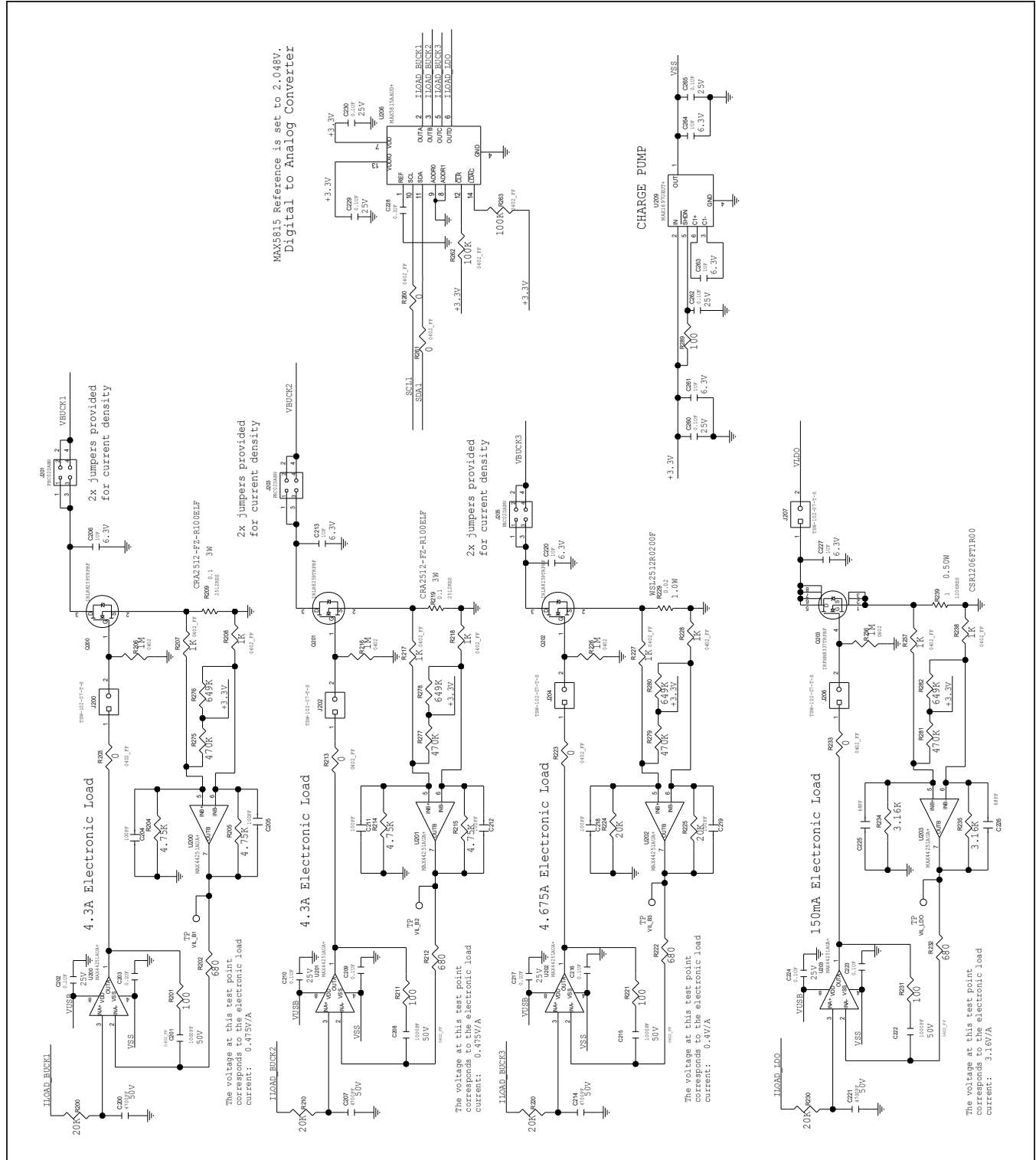
MAX77752 EV Kit Schematic (continued)



MAX77752 EV Kit Schematic (continued)

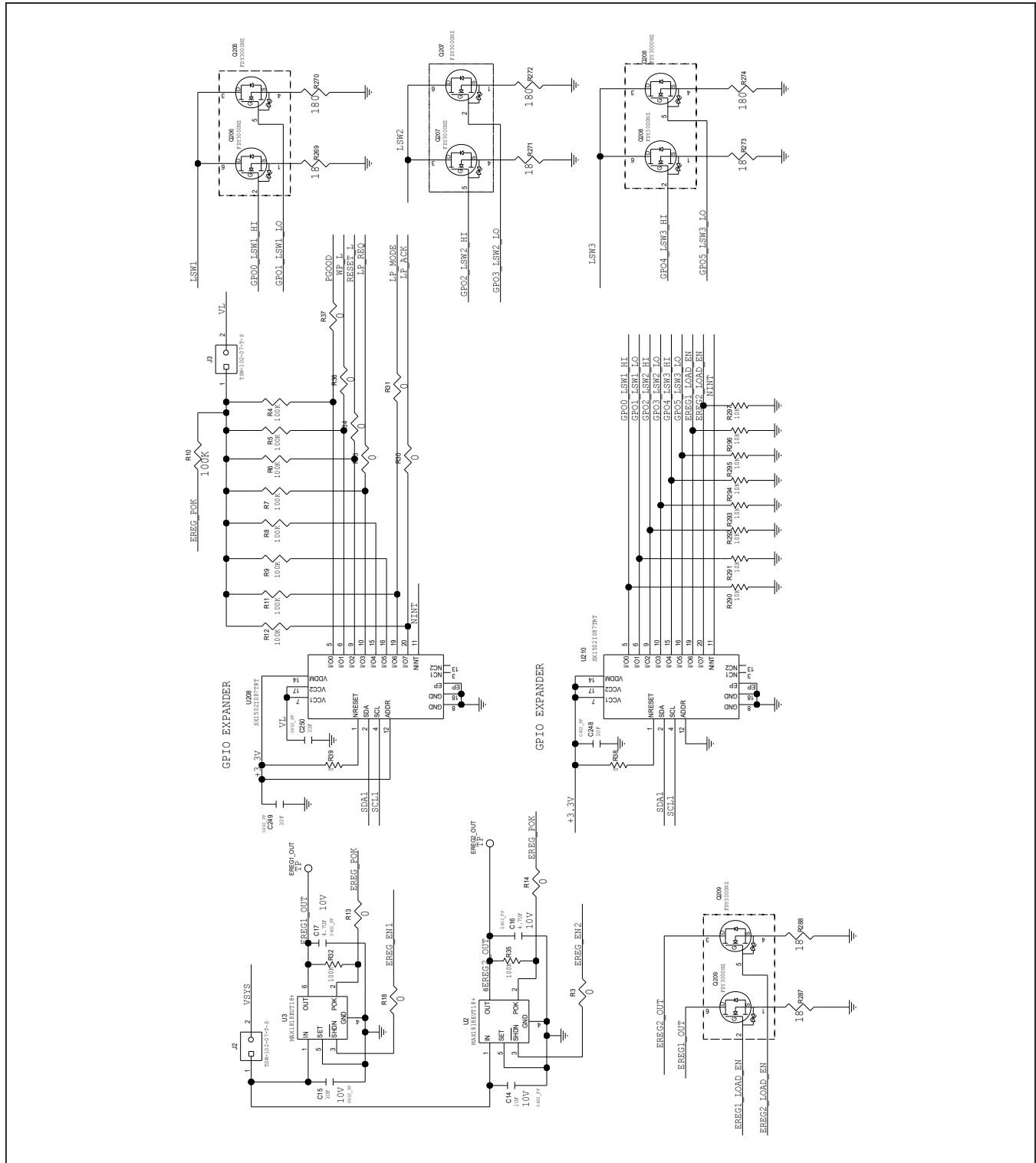


MAX77752 EV Kit Schematic (continued)

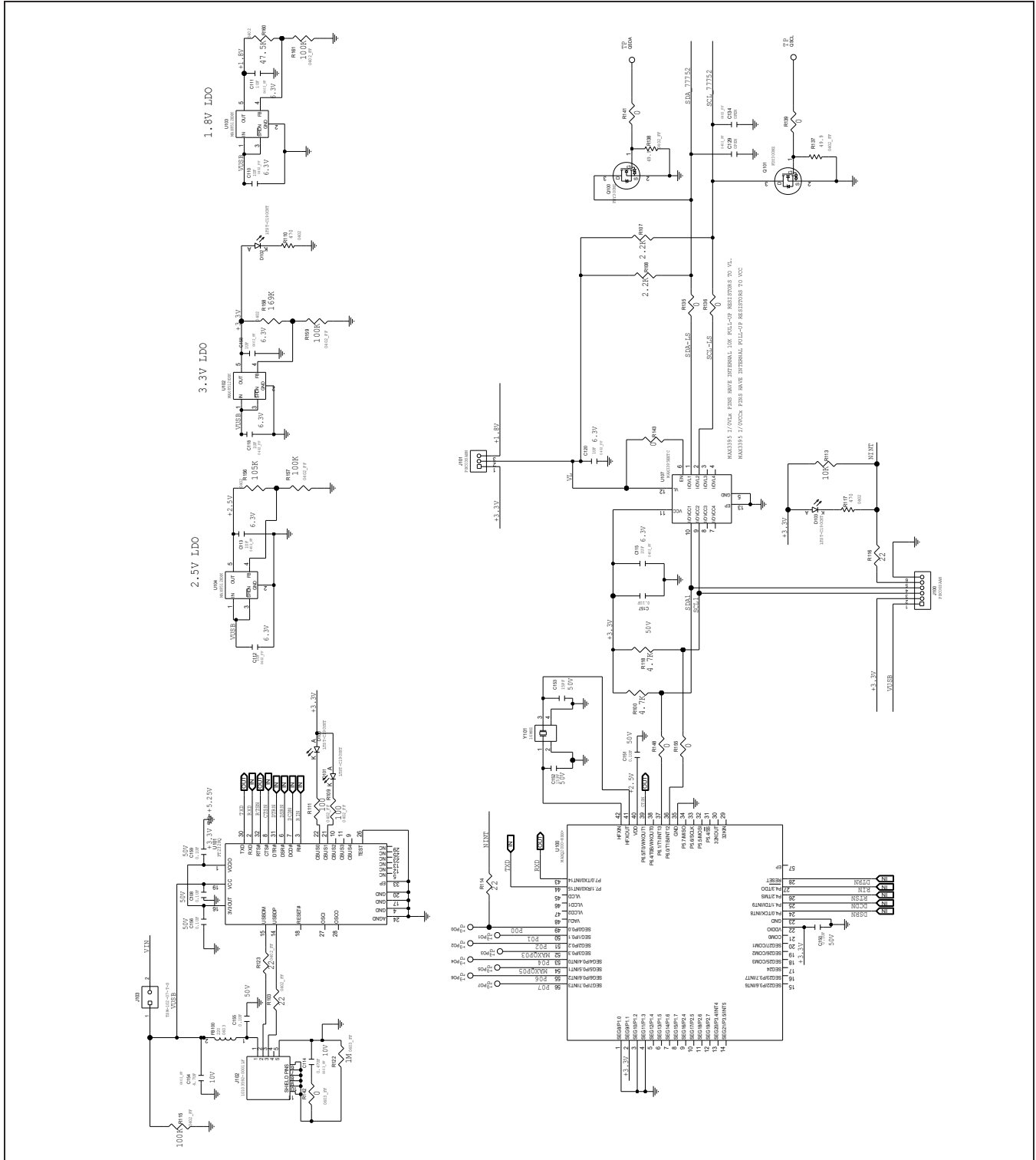




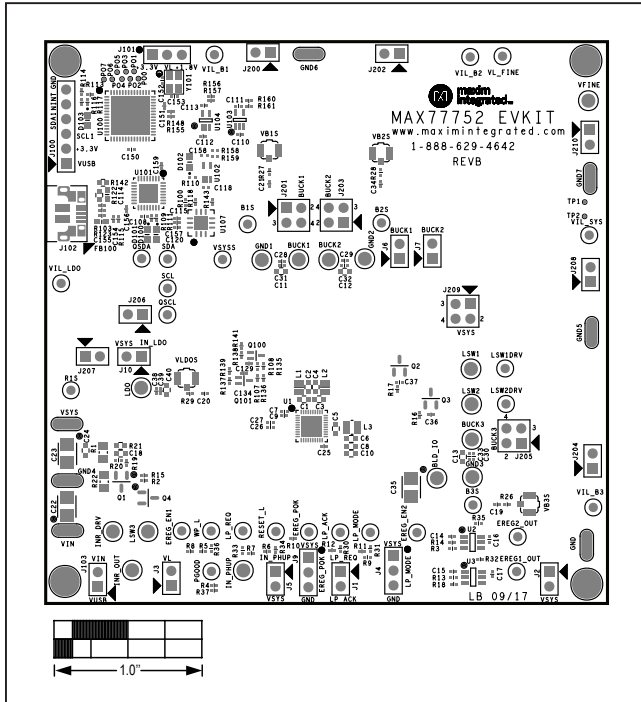
MAX77752 EV Kit Schematic (continued)



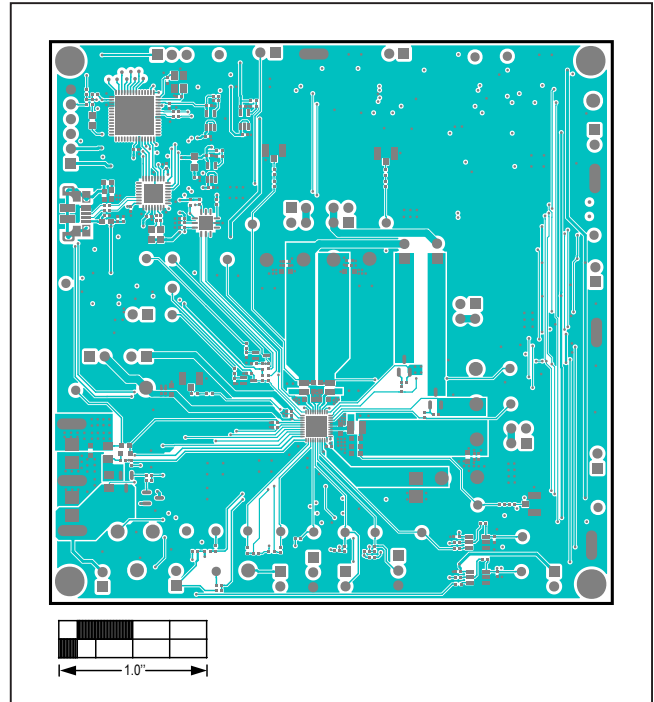
MAX77752 EV Kit Schematic (continued)



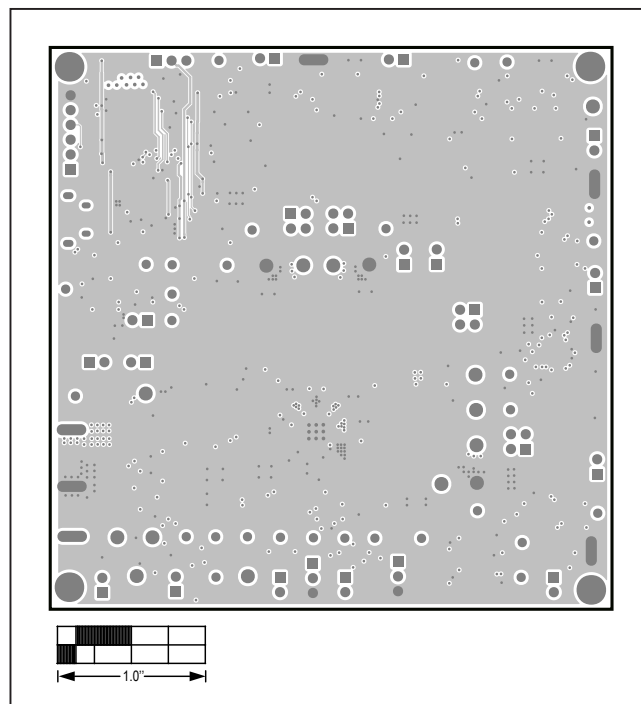
MAX77752 EV Kit PCB Layouts



MAX77752 EV Kit Component Placement Guide—  
Top Silkscreen

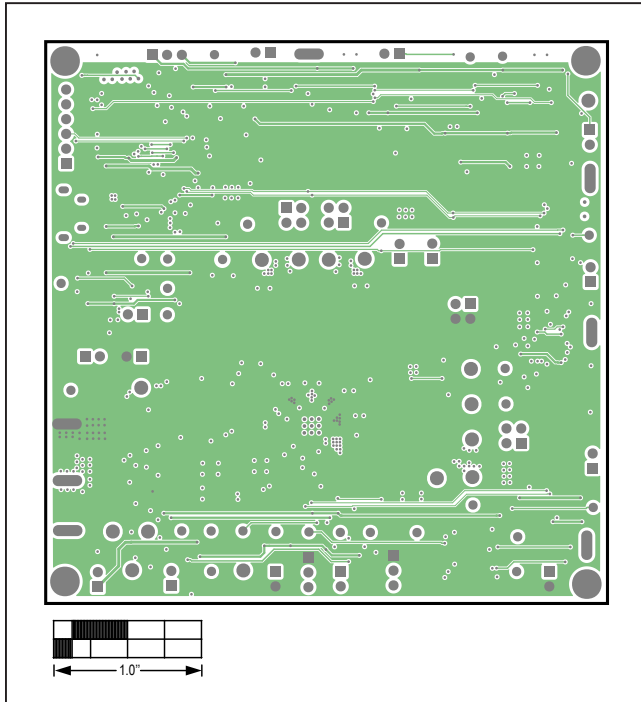


MAX77752 EV Kit PCB Layout—Top Layer

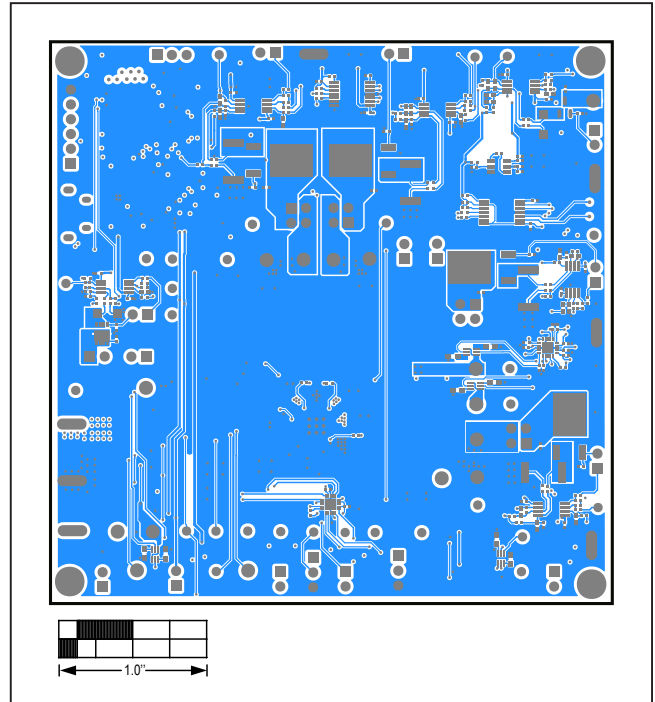


MAX77752 EV Kit PCB Layout—Internal Layer 2

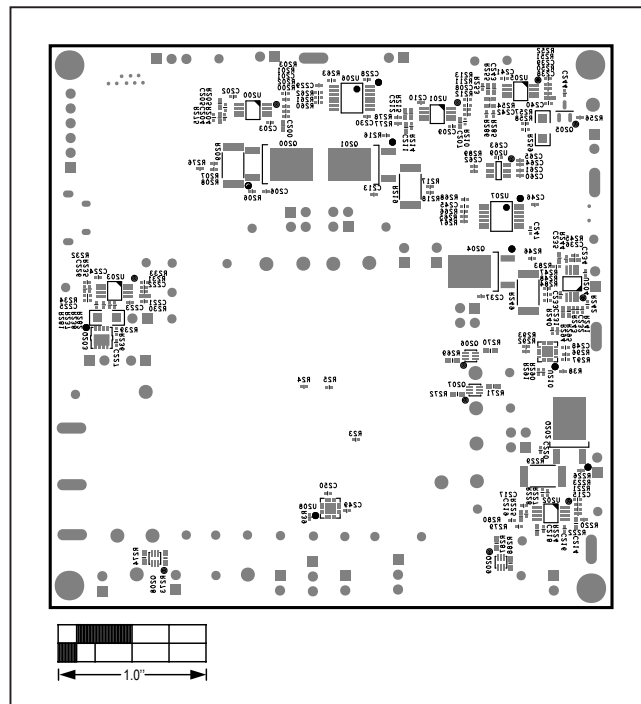
MAX77752 EV Kit PCB Layouts (continued)



MAX77752 EV Kit PCB Layout—Internal Layer 3



MAX77752 EV Kit PCB Layout—Bottom Layer



MAX77752 EV Kit Component Placement Guide—  
Bottom Silkscreen

## Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION     | PAGES CHANGED |
|-----------------|---------------|-----------------|---------------|
| 0               | 10/17         | Initial release | —             |

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