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

# MAX20361 Evaluation Kit

# Evaluates: MAX20361

## General Description

The MAX20361 evaluation kit (EV kit) is a fully assembled and tested PCB that evaluates the MAX20361 single/multi-cell solar harvester with maximum power point tracking (MPPT) and harvest counter. The EV kit features a Pmod™ connector, allowing the USB2PMB2 adapter board to provide I²C interface.

The EV kit features an on-board adjustable current source and a monocrystalline solar cell to generate input current to the IC. It also features a supercapacitor and resistor load to evaluate the integrated charger of the MAX20361. The EV kit includes load current monitoring circuitry for convenient sensing of the MAX20361 output current.

The EV kit software controls the USB2PMB2 adapter board over the USB, which generates I²C commands. The EV kit ships with jumpers installed and supply voltages set to typical operating values.

## Features

- USB-Powered Operation
- Proven High-Speed USB PCB Layout
- Pmod I²C Interface
- Flexible Configuration
- On-Board Solar Cell and Current Monitoring
- Windows® 8/Windows 10-Compatible GUI Software
- Fully Assembled and Tested

## Evaluation Kit Contents

- MAX20361 EV kit
- USB2PMB2 adapter board
- USB A to micro-B cable

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

## MAX20361 EV Kit Photo


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

*Pmod is a trademark of Digilent Inc.*

*319-100581; Rev 0; 8/20*

maxim integrated™

## MAX20361 EV Kit Files

| FILE | DESCRIPTION |
|---|---|
| MAX20361EVKit.exe | PC GUI Program |

## Quick Start

### Required Equipment

- MAX20361 EV kit
- USB2PMB2 adapter board
- USB A to micro-B cable
- Windows PC with USB ports
- DC power supply

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

### Procedure

The EV kit is fully assembled and tested. Use the following steps to verify board operations.

**Caution: Do not turn on the power supply until all connections are completed**.

1) Visit www.maximintegrated.com to download the latest version of the EV kit software, MAX20361EVKitSetupVxxx.ZIP located on the MAX20361 EV kit web page. Download the EV kit software to a temporary folder and unzip the ZIP file.
2) Install the EV kit software on your computer by running the MAX20361EVKitSetupVxxx.EXE program inside the temporary folder.
3) Verify that all jumpers are in their default positions, as shown in Table 1.
4) Connect the USB2PMB2 adapter board to J1 Pmod connector on the EV kit.
5) Connect a USB A-to-micro-B cable between the PC and the X1 port on the USB2PMB2. USB driver should be installed automatically.
6) Connect the USB A-to-micro-B cable between the PC and the USB1 port on the EV kit.
7) Start the MAX20361 EV kit tool. The EV kit software main window appears, as shown in Figure 1.
8) Supply 3.8V to the MAX20361 by connecting power to pin 1 of jumper JU11.
9) If the connection is successfully established, the status bar on the bottom displays **Connected**.
10) The EV kit is now ready for additional evaluations.

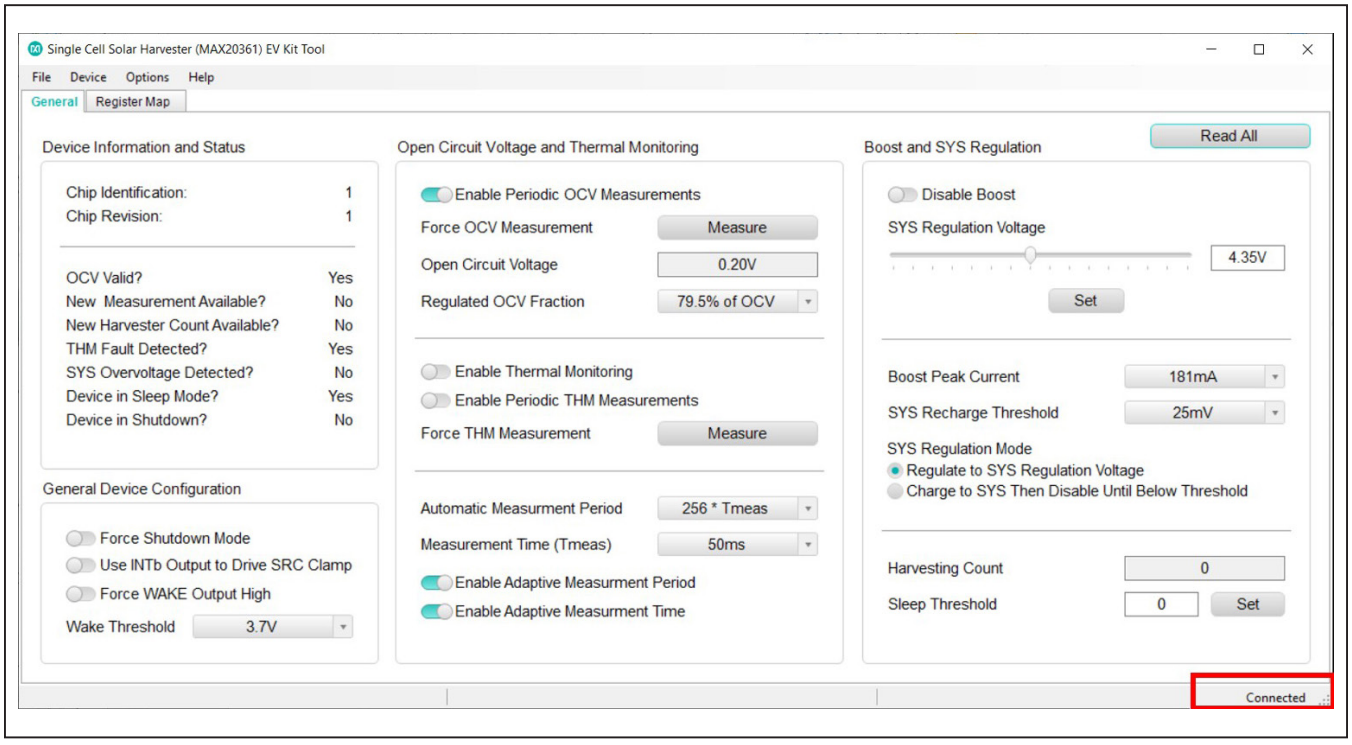



*Figure 1. The Status of the GUI Shows Connected Ready for Further Evaluations*

## Detailed Description of Software

### Software Startup

Upon starting the program, the EV kit software automatically searches for the USB interface circuit and then for the IC device addresses. The EV kit enters the normal operating mode when the connection is established, and addresses are found. If the USB connection is not detected, the status bar displays **Not Connected**. If the USB connection is detected but the MAX20361 is not found, the status bar displays **MAX20361 Not Found**.

The **Read All** button reads all the registers visible on the current tab page. All statuses are polled continuously. The polling feature can be disabled in the **Options** section of the menu bar by selecting **Disable Polling**.

### ToolStrip Menu Bar

The **Toolstrip** menu bar (Figure 2) is located at the top of the GUI window.

This bar comprises **File**, **Device**, **Options**, and **Help** menus; each function is detailed in the following sections.

#### File Menu

The **File** menu contains the option to exit out of the GUI program.

#### Device Menu

The **Device** menu provides the ability to connect or disconnect the EV kit to the GUI. If a board is disconnected while the GUI is open the GUI displays **Not Connected** in the lower right corner. If the device is then plugged back in, the bottom right corner of the GUI displays **Connected**. The **I2C Read/Write** in the **Device** menu allows the user to read from or write to a selected register with a specified slave address.

#### Options Menu

The **Options** menu provides additional setting to access more features offered by the GUI. The **Disable polling** option lets the user read the registers manually instead of getting automatically frequent register updates from the IC.

#### Help Menu

The **Help** menu contains the **About** option, which displays the GUI splash screen indicative of which GUI version is being used.

### Tab Controls

The MAX20361 EV kit software GUI provides a convenient way to test the features of the MAX20361. Each tab contains controls relevant to various blocks of the device. Changing these interactive controls triggers a write operation to the MAX20361 to update the register contents.

#### General Tab

The **General** tab (Figure 3) provides all important information and options to set up the MAX20361 general configurations. The **Device Information and Status** panel provides statuses for several conditions such as the availability of harvester count, fault detection, SYS overvoltage, etc. **Open Circuit Voltage** configuration and **Thermal Monitoring** settings can be found in the middle panel. Configuring the boost regulator and battery charging voltage can be accomplished via settings in the **Boost and SYS Regulation** panel.

#### Register Map Tab

The **Register Map** tab (Figure 4) provides all names and values of MAX20361 registers. The user can click **Read All** on the top right corner to perform a burst read of all registers.

The left table shows the register to be read from or written to. The right table contains descriptions for each register field of the selected 8-bit register. All bits, along with their field names, are displayed at the bottom of the page.

To set a bit, click the bit label. Bold text represents logic 1 and regular text represents logic 0. To configure the changes to the device, click the **Write** button at the bottom right.

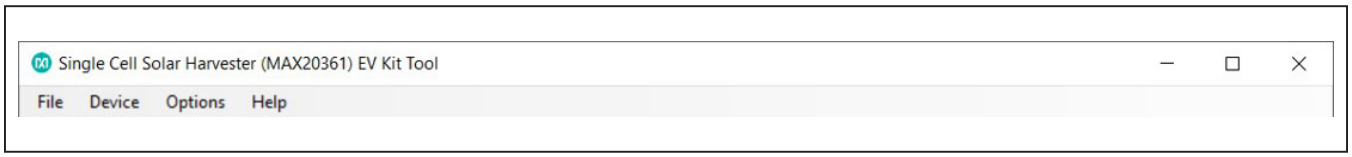



*Figure 2. The ToolStrip Menu Items*

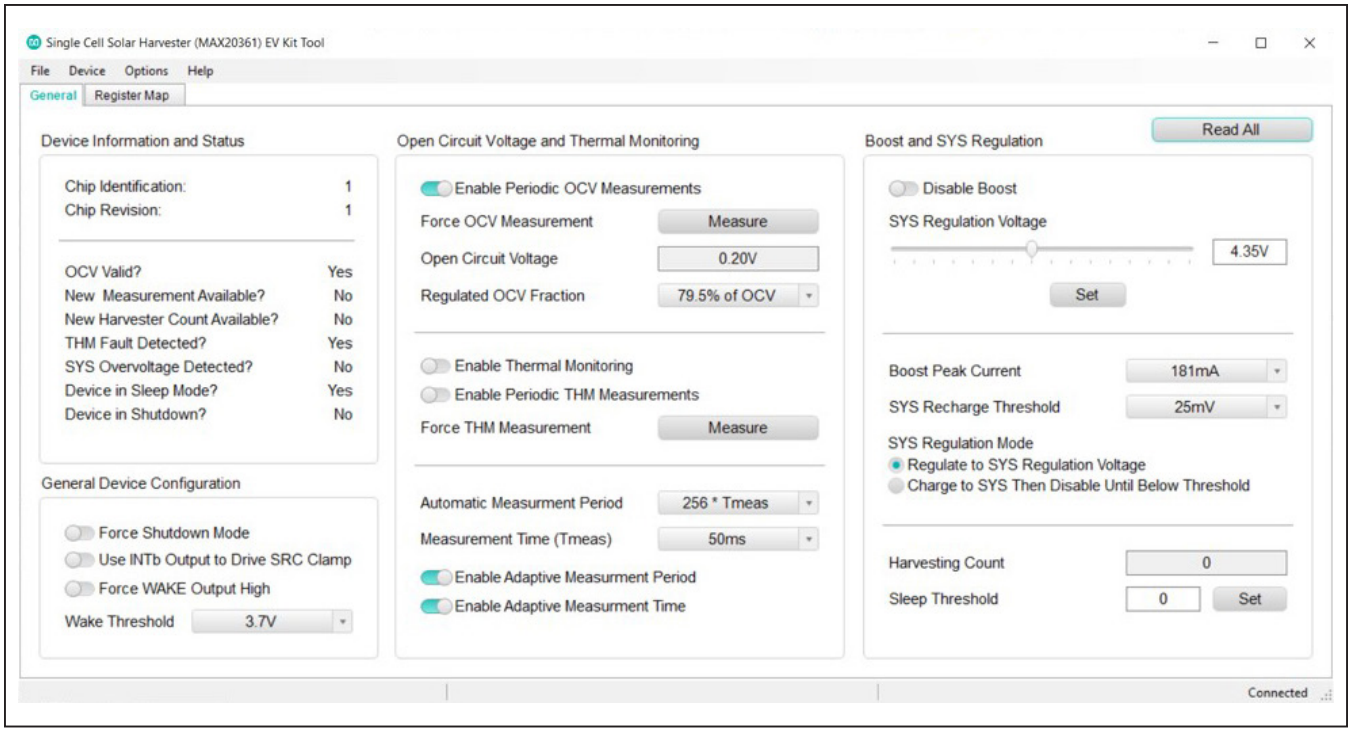



*Figure 3. General Tab*

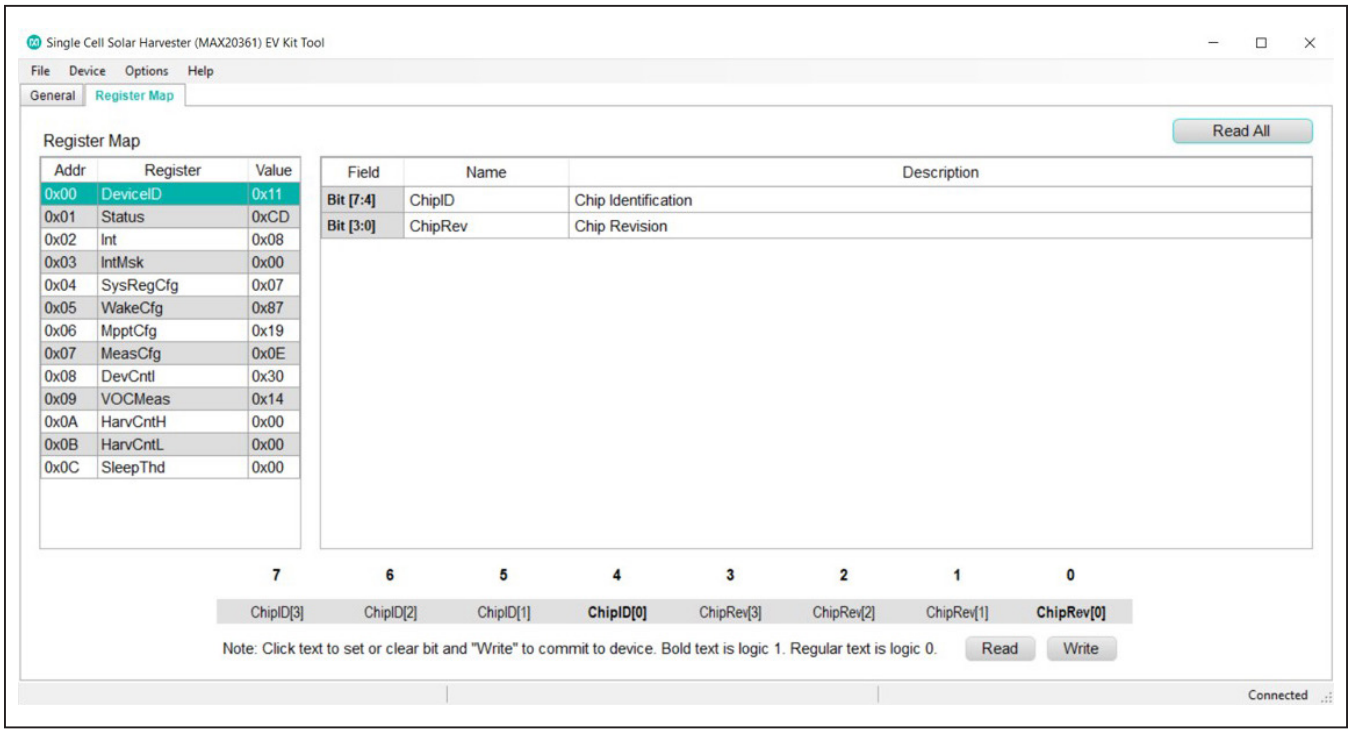



*Figure 4. Register Map Tab*

## Detailed Description of Hardware

The MAX20361 EV kit evaluates the MAX20361 single/multi-cell solar harvester with MPPT and harvest counter, which communicates over the I²C interface. The EV kit demonstrates the IC features such as the boost regulator, integrated charging and protection circuit, open circuit voltage measurement, MPPT, cold-startup, and thermal monitoring. The EV kit uses the IC in a 12-bump (1.63mm x 1.23mm) wafer-level package (WLP) on a proven, four-layer PCB design. The EV kit operates from the USB +5V DC and therefore does not require an external power supply. Alternatively, the EV kit can be powered with an external power supply through the SYS test point TP20.

## Supply Voltage Selection

This section covers the procedure to power the MAX20361 EV kit either from power supply at SYS or cold-startup.

### Supply Voltage from SYS

Follow these steps to power the MAX20361 EV kit with an external power supply voltage:

1) Connect default jumpers according to Table 1 and the setup *Procedure* above.
2) Connect a DC power supply (3.8V) to SYS through pin 1 of JU11 or pin 2 of JU9.
3) If connection is successfully established, the status bar on the bottom displays **Connected**.

## Table 1. Jumper Table (JU1-JU21)

| JUMPER | SHUNT POSITION | DESCRIPTION |
|---|---|---|
| JU1 | 1-2 | Connect the on-board solar cell SC1 to the input of U1 |
| | 3-4 | Connect the external solar cell (if installed) to the input of U1 |
| | 5-6 | Connect the external source (through TP2) to the input of U1 |
| | 7-8 | Connect the output of the on-board current source to the input of U1 |
| JU2 | 1-2* | Connect $\overline{EN}$ of U1 to LED1 |
| | 3-4 | Connect $\overline{EN}$ of U1 to connector S1 |
| JU3 | 1-2* | Connect WAKE of U1 to LED2 |
| | 3-4 | Connect WAKE of U1 to connector S1 |
| JU4 | 1-2* | Pullup SCL of U1 to 3.3V |
| JU5 | 1-2* | Connect input circuitry selected in JU1 to SRC and LX of U1 |
| JU6 | 1-2* | Pullup SDA of U1 to 3.3V |
| JU7 | 1-2* | Connect REF of U1 to the voltage divider circuitry |
| JU8 | 1-2* | Connect THM of U1 to voltage divider formed by pullup resistor R6 and pulldown thermistor R7 |
| JU9 | 1-2 | Connect SYS of U1 to connector S1 |
| JU11 | 1-2 | Connect SYS of U1 to the on-board load circuitry |
| JU12 | 1-2 | Select supercapacitor SC2 as the on-board load |
| JU13 | 1-2 | Select resistor R16 as the on-board load |
| JU14 | 1-2 | Select resistor R15 as the on-board load |
| JU15 | 1-2 | Select resistor R17 to adjust the on-board current source |
| | 3-4 | Select resistor R18 to adjust the on-board current source |
| | 5-6 | Select resistor R19 to adjust the on-board current source |
| | 7-8 | Select resistor R20 to adjust the on-board current source |
| JU16 | 1-2 | Connect the output of on-board current source to ground |
| JU17 | 1-2* | Connect SRC of U1 to the drain of MOSFET Q2 |
| JU18 | 1-2 | Connect $\overline{INT}$ of U1 to the gate of MOSFET Q2 |
| | 2-3* | Connect $\overline{INT}$ of U1 to LED4 |
| JU21 | 1-2* | Connect SYS of U1 to the on-board current monitoring circuitry |

**Default position.*

### Cold-Startup

The cold start feature of the MAX20361 allows the device to start up even if VSYS is below the wake threshold or absent. Refer to the *Cold-Startup* section of the IC datasheet for a complete description.

1) Connect default jumpers according to Table 1 and the setup *Procedure* above. Do not connect any power to SYS, pin 1 of JU11 or pin 2 of JU9.
2) Connect pin 1 and 2 of jumper JU1 to use the on-board solar cell SC1.
3) Put a light source above the solar cell for a few minutes. Mobile phone's flashlight or desk lamp may be used.
4) If connection is successfully established, the status bar on the bottom displays **Connected**.

## On-Board Current Source

This section covers the procedure to use the on-board current source of MAX20361 EV kit.

### Hardware setting

1) Follow the default jumper settings from Table 1 and the setup *Procedure* above.
2) Connect pin 7 and 8 of jumper JU1 to use the on-board current source.
3) Connect pin 3 and 4 of jumper JU15 to select R18 301Ω.
4) Use the potentiometer R21 to adjust the input current to SRC. R21 is used to set the voltage at TP14. Refer to the following formula for the input current:

$$I_{SRC} = \frac{2.85V - V_{TP14}}{R_{17} \text{ or } R_{18} \text{ or } R_{19} \text{ or } R_{20}}$$

The input current in this example is approximately 4.13mA.

5) Connect pin 1 and 2 of jumper JU11 to use the on-board load circuitry.
6) Connect pin 1 and 2 of jumper JU13 to select load resistor R16.

### GUI Program

Follow these steps (see Figure 5) to set up the regulated voltage at SRC (the input side):

1) Toggle to disable the **Periodic OCV Measurements**.
2) Enter 0.91V to the **Open Circuit Voltage** type box and click **Set**. The voltage at SRC should be approximately 0.7V.

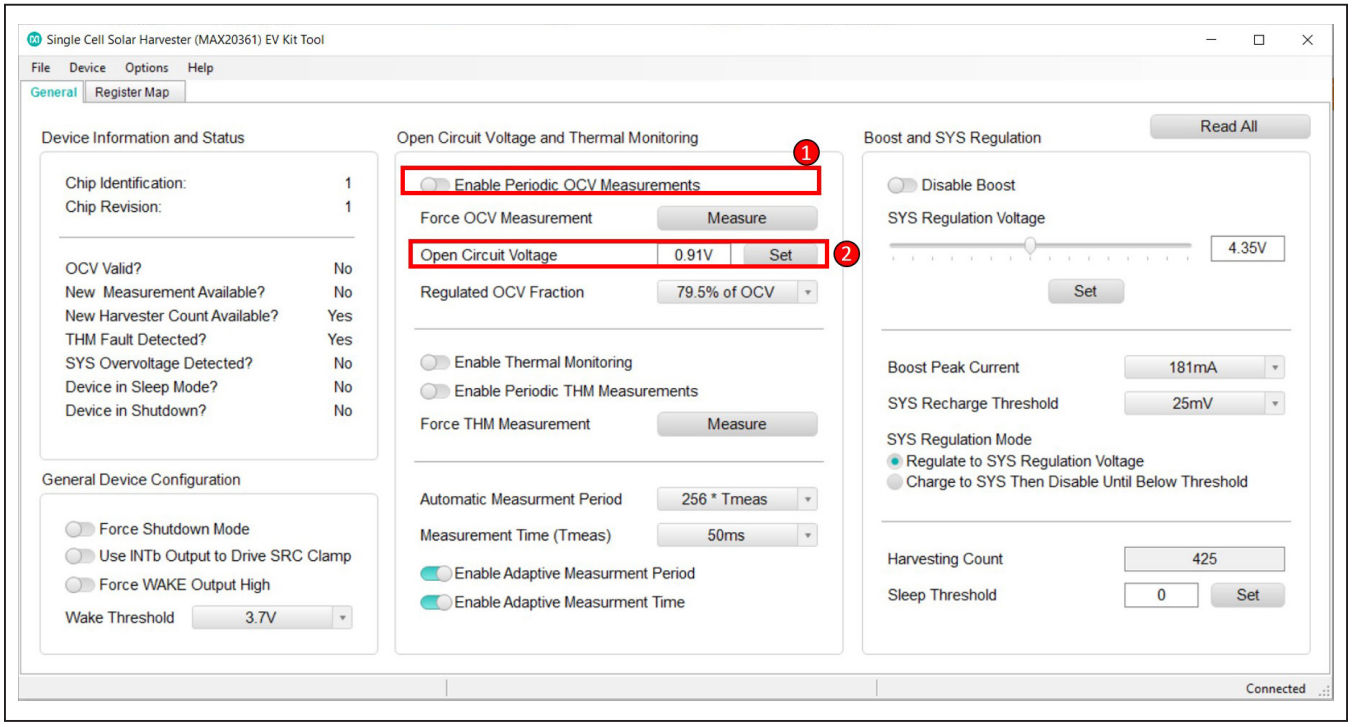



*Figure 5. On-Board Current Source GUI Setup*

## Charging Supercapacitor and Source Clamping

This section covers the procedure to charge the on-board supercapacitor along with source clamping feature.

### Hardware setting

1) Follow the default jumper settings from Table 1 and the setup *Procedure* above.
2) Connect a DC power supply (3.8V) to SYS via pin 2 of JU9.
3) Follow hardware setting of the *On-Board Current Source* above with one exception: connect pin 1 and 2 of JU15.
4) Disconnect pin 1 and 2 of jumper JU13. Connect pin 1 and 2 of jumper JU12 to select the supercapacitor SC2.
5) Connect pin 1 and 2 of jumper JU18 for source clamp circuity.

### GUI Program

Follow these steps (see Figure 6) to set up source clamp circuitry while charging the on-board supercapacitor:

1) Toggle the button to enable **Use INTb Output to Drive SRC Clamp**. Remove the DC power supply (3.8V) at SYS via pin 2 of JU9.
2) Toggle to disable the **Periodic OCV Measurements**.
3) Enter 0.91V to the **Open Circuit Voltage** type box and click **Set**. The voltage at SRC should be approximately 0.7V. The voltage at SYS is slowly rising to the **SYS Regulation Voltage** (default at 4.35V).

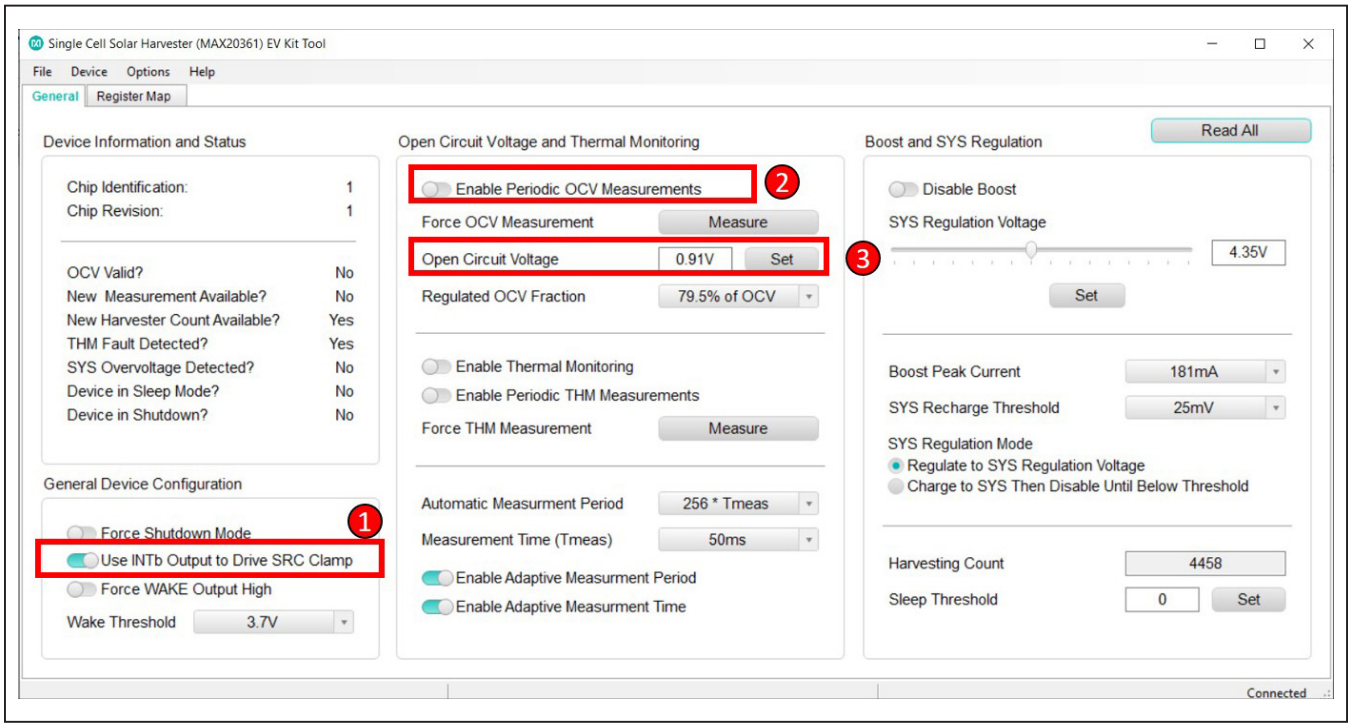



*Figure 6. Charging Supercapacitor and Source Clamp GUI Setup*

## Ordering Information

| PART | TYPE |
|---|---|
| MAX20361EVKIT# | EV Kit |

*#Denotes RoHS compliance.*

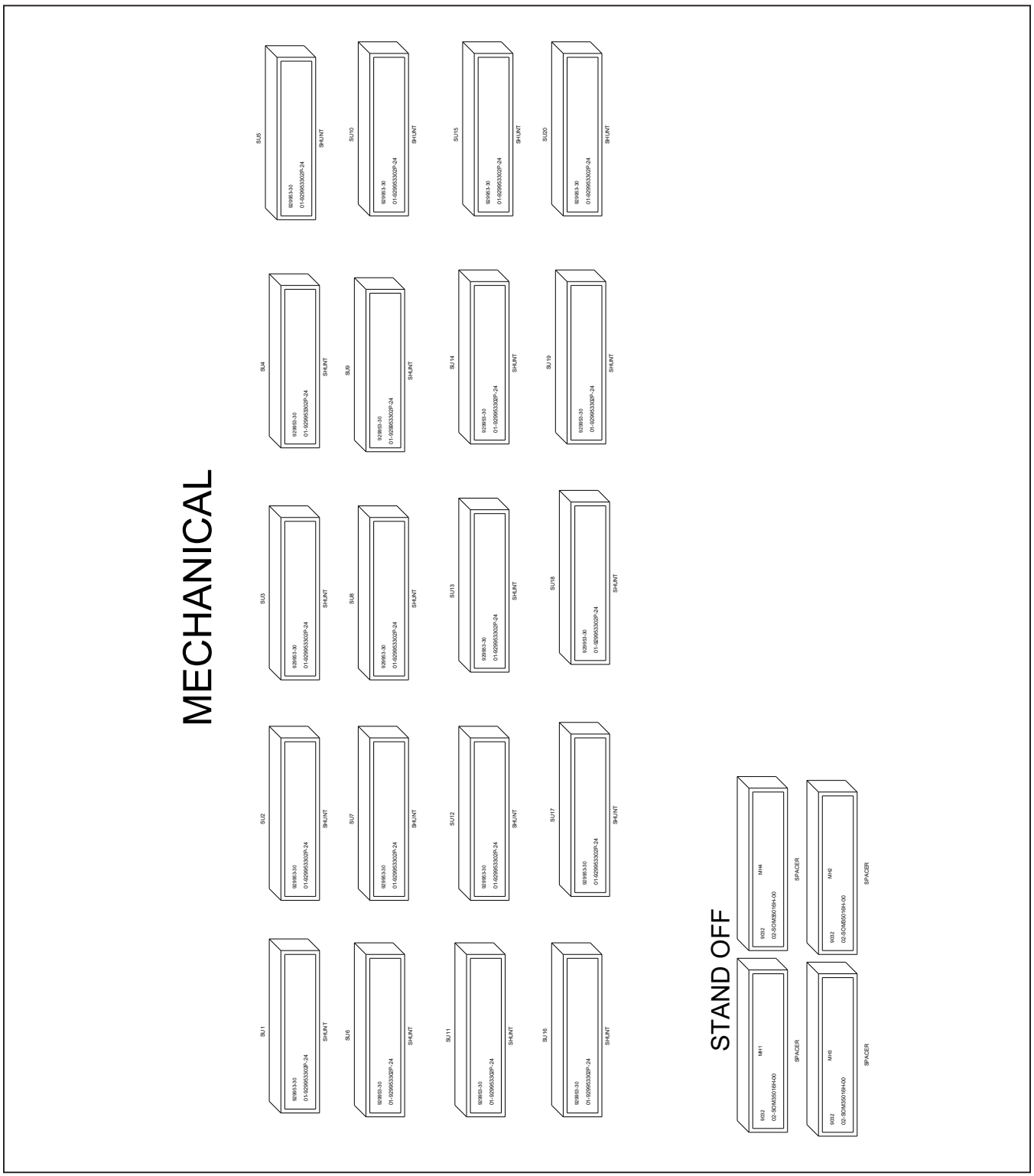
## MAX20361 EV Kit Bill of Materials

| ITEM | QTY | REF DES | MAXINV | MFG PART # | MANUFACTURER | VALUE | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 1 | 7 | C1, C3, C5-C8, C10 | 20-0001U-19A | CL05B105KQ5NQNC; GRM155R70J105KA12 | SAMSUNG ELECTRONICS; MURATA | 1UF | CAPACITOR; SMT (0402); CERAMIC CHIP; 1UF; 6.3V; TOL=10%; TG=-55 DEGC TO +125 DEGC; TC=X7R |
| 2 | 2 | C2, C11 | 20-0010U-B65 | GRM155R60J106ME44; GRM155R60J106ME47; C1005X5R0J106M050BC; CL05A106MQ5NUN; C0402C106M9PAC | MURATA;MURATA; TDK;SAMSUNG ELECTRONICS; KEMET | 10UF | CAPACITOR; SMT (0402); CERAMIC CHIP; 10UF; 6.3V; TOL=20%; TG=-55 DEGC TO +85 DEGC; TC=X5R |
| 3 | 4 | C4, C13, C15, C16 | 20-000U1-19A | GRM155R70J104KA01 | MURATA | 0.1UF | CAPACITOR; SMT (0402); CERAMIC CHIP; 0.1UF; 6.3V; TOL=10%; TG=-55 DEGC TO +125 DEGC; TC=X7R |
| 4 | 1 | C9 | 20-004U7-S6 | GRM21BR71A475KA73; LMK212B7475KG-T; C2012X7R1A475K125AC | MURATA; TAIYO YUDEN; TDK | 4.7UF | CAPACITOR; SMT (0805); CERAMIC CHIP; 4.7UF; 10V; TOL=10%; TG=-55 DEGC TO +125 DEGC; TC=X7R |
| 5 | 1 | C12 | EC111000002734 | CL21B106KPQNNN; LMK212AB7106KG; C0805X106K8RACAUTO; GRM21BR71A106KA73; C2012X7R1A106K125AC | SAMSUNG; TAIYO YUDEN; KEMET;MURATA; TDK | 10UF | CAP; SMT (0805); 10UF; 10%; 10V; X7R;CERAMIC CHIP |
| 6 | 1 | C14 | 20-004U7-Z52 | C1005X5R1A475K050 | TDK | 4.7UF | CAPACITOR; SMT (0402); CERAMIC CHIP; 4.7UF; 10V; TOL=10%; TG=-55 DEGC TO +85 DEGC; TC=X5R |
| 7 | 1 | C17 | 20-000U1-B8 | GRM155R71A104KA01; C1005X7R1A104K050BB; C0402C104K8RAC | MURATA; TDK;KEMET | 0.1UF | CAPACITOR; SMT (0402); CERAMIC CHIP; 0.1UF; 10V; TOL=10%; MODEL=GRM SERIES; TG=-55 DEGC TO +125 DEGC; TC=X7R; NOT RECOMMENDED FOR NEW DESIGN-USE 20-000u1-04A |
| 8 | 4 | D1-D4 | 30-1N4148W7F-00 | 1N4148W-7-F | DIODES INCORPORATED | 1N4148W-7-F | DIODE; SWT; SMT (SOD-123); PIV=100V; IF=0.3A; -65 DEGC TO +150 DEGC |
| 9 | 1 | J1 | 01-PEC06DBAN12P-19 | PEC06DBAN | SULLINS ELECTRONICS CORP. | PEC06DBAN | CONNECTOR; MALE; THROUGH HOLE; .1IN CONTACT CENTER; BREAKAWAY HEADER; RIGHT ANGLE; 12PINS; NOTE: ALTERNATE PIN NUMBERING |
| 10 | 2 | JU1, JU15 | EH111000002472 | TSW-104-07-F-D | SAMTEC | TSW-104-07-F-D | CONNECTOR; MALE; SMT; 0.025 IN SQ POST HEADER; STRAIGHT; 8PINS; 2X4 |
| 11 | 2 | JU2, JU3 | 01-67996104HLF4P-19 | 67996-104HLF | FCI CONNECT | 67996-104HLF | CONNECTOR; MALE; SMT; FCI BERGSTIK UNSHROUDED BREAKAWAY HEADER; STRAIGHT; 4PINS |
| 12 | 13 | JU4-JU9, JU11-JU14, JU16, JU17, JU21 | 01-PCC02SAAN2P-21 | PCC02SAAN | SULLINS | PCC02SAAN | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT THROUGH; 2PINS; -65 DEGC TO +125 DEGC |
| 13 | 1 | JU18 | 01-PBC03SABN3P-21 | PBC03SABN | SULLINS | PBC03SABN | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS |
| 14 | 1 | L1 | EL111000002015 | DFE201612E-4R7M | MURATA | 4.7UH | INDUCTOR; SMT (0806); METAL; 4.7UH; 20%; 1.20A |
| 15 | 1 | LED1 | ED111000004434 | KS DELPS1.22-TIVH-68-H3Q4 | OSRAM | KS DELPS1.22-TIVH-68-H3Q4 | DIODE; LED; SUPER RED; SMT; VF=2.2V; IF=0.02A |
| 16 | 2 | LED2, LED3 | ED111000004432 | KP DELPS1.FP-UGVI-34-Z555 | OSRAM | KP DELPS1.FP-UGVI-34-Z555 | DIODE; LED; PURE GREEN; SMT; VF=2.9V; IF=0.01A |
| 17 | 1 | LED4 | 30-LSL29KG1J21Z-00 | LS L29K-G1J2-1-Z | OSRAM | LS L29K-G1J2-1-Z | DIODE; LED; SMART; RED; SMT (0603); PIV=1.8V; IF=0.02A; -40 DEGC TO +100 DEGC |
| 18 | 4 | MH1-MH4 | 02-SOM35016H-00 | 9032 | KEYSTONE | 9032 | MACHINE FABRICATED; ROUND-THRU HOLE SPACER; NO THREAD; M3.5; 5/8IN; NYLON |
| 19 | 1 | Q1 | 90-MMBT2907A-16 | MMBT2907A | FAIRCHILD SEMICONDUCTOR | MMBT2907A | TRAN; SMALL SIGNAL TRANSISTOR; PNP; SOT-23; PD-(0.35W); IC-(-0.6A); VCEO-(-60V) |
| 20 | 1 | Q2 | EQ111000004398 | DMN2230U | DIODES INCORPORATED | DMN2230U | TRAN; NCH; ENHANCEMENT MODE MOSFET; SOT-23; PD-(0.6W); I-(2A); V-(20V) |
| 21 | 3 | R1, R2, R9 | 80-0001K-23 | CRCW04021K00FK; RC0402FR-071KL; MCR01MZPF1001 | VISHAY DALE; YAGEO PHICOMP; ROHM SEMI | 1K | RESISTOR; 0402; 1K; 1%; 100PPM; 0.0625W; THICK FILM |
| 22 | 2 | R4, R5 | 80-004K7-23 | CRCW04024K70FK; MCR01MZPF4701 | VISHAY DALE; ROHM SEMICONDUCTOR | 4.7K | RESISTOR, 0402, 4.7K OHM, 1%, 100PPM, 0.0625W, THICK FILM |
| 23 | 1 | R6 | 80-0022K-23 | CRCW040222K0FK | VISHAY DALE | 22K | RESISTOR, 0402, 22K OHM, 1%, 100PPM, 0.0625W, THICK FILM |
| 24 | 1 | R7 | ER111000004407 | 64WR200KLF | TT ELECTRONICS | 200K | RES; THROUGH HOLE; 200K; 10%; +/-100PPM/DEGC; 0.25W |
| 25 | 1 | R8 | 80-002K2-23 | CRCW04022K20FK; RC0402FR-072K2L | VISHAY DALE; YAGEO PHICOMP | 2.2K | RESISTOR, 0402, 2.2K OHM, 1%, 100PPM, 0.0625W, THICK FILM |
| 26 | 3 | R11, R12, R22 | 80-0100K-BA37 | ERJ-PA2F1003 | PANASONIC | 100K | RESISTOR; 0402; 100K OHM; 1%; 100PPM; 0.2W; THICK FILM |
| 27 | 1 | R13 | 80-063K4-AA18 | CRCW040263K4FK | VISHAY DALE | 63.4K | RESISTOR; 0402; 63.4K OHM; 1%; 100PPM; 0.063W; THICK FILM |
| 28 | 1 | R14 | 80-049K9-18 | CRCW040249K9FK; 9C04021A4992FLHF3 | VISHAY DALE; YAGEO | 49.9K | RESISTOR; 0402; 49.9K; 1%; 100PPM; 0.0625W; THICK FILM |
| 29 | 2 | R15, R24 | 80-0010K-23 | CRCW040210K0FK; RC0402FR-0710KL | VISHAY DALE; YAGEO PHICOMP | 10K | RESISTOR; 0402; 10K; 1%; 100PPM; 0.0625W; THICK FILM |
| 30 | 1 | R16 | 80-049R9-S3 | RCL122549R9FK | VISHAY DRALORIC | 49.9 | RESISTOR; 1225; 49.9 OHM; 1%; 100PPM; 2.0W; THICK FILM |
| 31 | 1 | R17 | 80-030R1-24 | CRCW060330R1FK | VISHAY DALE | 30.1 | RESISTOR; 0603; 30.1 OHM; 1%; 100PPM; 0.10W; THICK FILM |

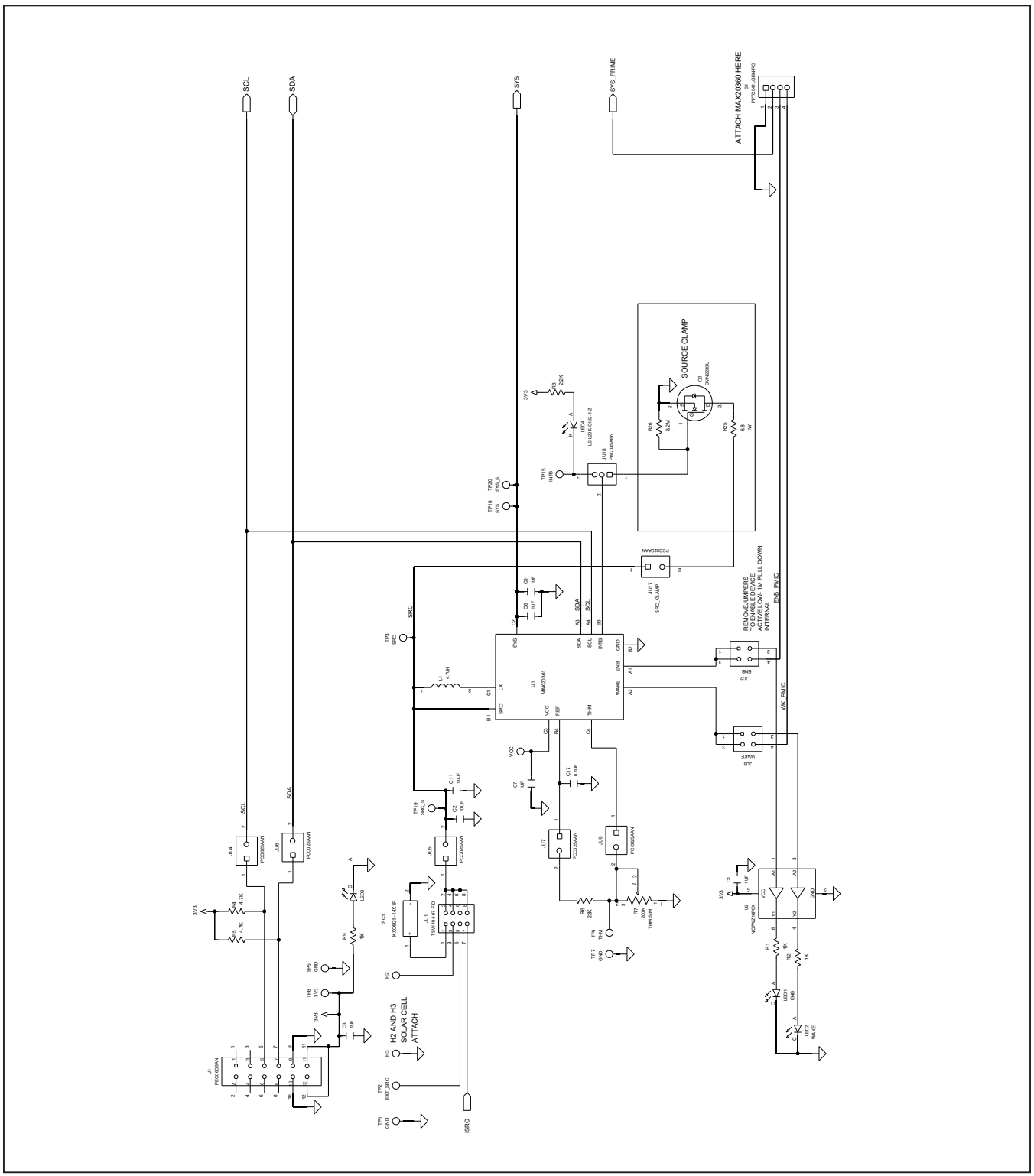
## MAX20361 EV Kit Bill of Materials (continued)

| ITEM | QTY | REF DES | MAXINV | MFG PART # | MANUFACTURER | VALUE | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 32 | 1 | R18 | 80-0301R-19 | CRCW0603301RFK | VISHAY DALE | 301 | RESISTOR; 0603; 301 OHM; 1%; 100PPM; 0.10W; THICK FILM |
| 33 | 1 | R19 | 80-03K01-23 | CRCW04023K01FK | VISHAY DALE | 3.01K | RESISTOR; 0402; 3.01 K OHM; 1%; 100PPM; 0.063W; THICK FILM |
| 34 | 1 | R20 | 80-09K09-AA23 | ERJ-2RKF9091 | PANASONIC | 9.09K | RESISTOR; 0402; 9.09K OHM; 1%; 100PPM; 0.1W; THICK FILM |
| 35 | 1 | R21 | ER0531 | 64WR50KLF | TT ELECTRONICS | 50K | RES; THROUGH HOLE; 50K; 10%; +/-100PPM/DEGC; 0.25W |
| 36 | 1 | R23 | 80-022R1-AA23 | ERJ-2RKF22R1 | PANASONIC | 22.1 | RES; SMT (0402); 22.1; 1%; +/-100PPM/DEGC; 0.10W |
| 37 | 1 | R25 | 80-006R8-CA55 | CRCW20106R80FKEFHP | VISHAY DRALORIC | 6.8 | RESISTOR; 2010; 6.8 OHM; 1%; 100PPM; 1W; THICK FILM |
| 38 | 1 | R26 | 80-008M2-23 | CR0402-16W-825JT | VENKEL LTD. | 8.2M | RESISTOR, 0402, 8.2M OHM, 5%, 100PPM, 0.0625W, THICK FILM |
| 39 | 1 | R29 | 80-0001R-U27 | CRT0805-CY-001RELF | BOURNS | 1 | RESISTOR, 0805, 1OHM, 0.25%, 25PPM, 0.10W, THICK FILM |
| 40 | 1 | R30 | ER111000004703 | CRCW04024R99FN | VISHAY | 4.99 | RES; SMT (0402); 4.99; 1%; +/-200PPM/DEGK; 0.063W |
| 41 | 1 | S1 | EH111000002454 | PPTC041LGBN-RC | SULLINS ELECTRONICS CORP | PPTC041LGBN-RC | CONNECTOR; FEMALE; THROUGH HOLE; RIGHT ANGLE; 4PINS |
| 42 | 1 | SC1 | EQ111000004410 | KXOB25-14X1F | IXYS CORPORATION | KXOB25-14X1F | IC; SNSR; IXOLAR HIGH EFFICIENCY SOLARBIT; SMT |
| 43 | 1 | SC2 | EC111000004409 | KR-5R5V224-R | EATON POWERING BUSINESS WORLDWIDE | 0.22F | CAP; THROUGH HOLE-RADIAL LEAD; 0.22F; -20% TO +80%; 5.5V; ELECTRIC DOUBLE LAYER CAPACITOR |
| 44 | 20 | SU1-SU20 | 01-929953302P-24 | 929953-30 | 3M ELECTRONIC SOLUTIONS DIVISION | 929953-30 | CONNECTOR; FEMALE; THROUGH HOLE; 929 SERIES; SHUNT CONNECTOR; STRAIGHT; 2PINS |
| 45 | 3 | TP1, TP5, TP7 | 02-TPMINI5001-00 | 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; RECOMMENDED FOR BOARD THICKNESS=0.062IN; NOT FOR COLD TEST |
| 46 | 4 | TP2, TP3, TP6, TP19 | 02-TPMINI5000-00 | 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; RECOMMENDED FOR BOARD THICKNESS=0.062IN; NOT FOR COLD TEST |
| 47 | 3 | TP4, TP14, TP16 | 02-TPMINI5003-00 | 5003 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; ORANGE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; RECOMMENDED FOR BOARD THICKNESS=0.062IN; NOT FOR COLD TEST |
| 48 | 2 | TP8, TP13 | 02-TPMINI5116-00 | 5116 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; GREEN; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; RECOMMENDED FOR BOARD THICKNESS=0.062IN; NOT FOR COLD TEST |
| 49 | 4 | TP9-TP12 | 02-TPMINI5011-00 | 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; RECOMMENDED FOR BOARD THICKNESS=0.062IN; NOT FOR COLD TEST |
| 50 | 1 | TP15 | 02-TPMINI5119-00 | 5119 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; PURPLE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; RECOMMENDED FOR BOARD THICKNESS=0.062IN; NOT FOR COLD TEST |
| 51 | 3 | TP18, TP20, VCC | 02-TPMINI5002-00 | 5002 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER; NOT FOR COLD TEST |
| 52 | 1 | U1 | 00-SAMPLE-01 | MAX20361AEWC+ | MAXIM | MAX20361AEWC+ | EVKIT PART - IC; MAX20361; SINGLE CELL SOLAR HARVESTER; WLP12 |
| 53 | 1 | U2 | 10-NC7WZ16P6X-X | NC7WZ16P6X | FAIRCHILD SEMICONDUCTOR | NC7WZ16P6X | IC; BUF; TINY LOGIC; UHS DUAL BUFFER; SC70-6 |
| 54 | 1 | U3 | 10-MAX8880EUT-U | MAX8880EUT+ | MAXIM | MAX8880EUT+ | IC; VREG; ULTRA-LOW-IQ LOW-DROPOUT LINEAR REGULATOR WITH POK; SOT23-6 |
| 55 | 1 | U4 | 10-MAX4245AXT-X | MAX4245AXT+ | MAXIM | MAX4245AXT+ | IC; OPAMP; ULTRA-SMALL; RAIL-TO-RAIL I/O WITH DISABLE; SINGLE SUPPLY; LOW-POWER OP AMP; GAIN=110DB; SC70-6 |
| 56 | 1 | U5 | 10-MAX4372HEUK-U | MAX4372HEUK+ | MAXIM | MAX4372HEUK+ | IC; AMP; LOW-COST; MICROPOWER; HIGH-SIDE CURRENT-SENSE AMPLIFIER WITH VOLTAGE OUTPUT; SOT23-5 |
| 57 | 1 | U6 | 10-MAX11613EUA-U | MAX11613EUA+ | MAXIM | MAX11613EUA+ | IC; ADC; LOW-POWER; 4-CHANNEL; I2C; 12-BIT ADC; UMAX8 |
| 58 | 1 | PCB | EPCB20361 | MAX20361 | MAXIM | PCB | PCB:MAX20361 |
| TOTAL | 127 | | | | | | |
| | | | | | | | |
| DO NOT PURCHASE(DNP) | | | | | | | |
| ITEM | QTY | REF DES | MAXINV | MFG PART # | MANUFACTURER | VALUE | DESCRIPTION |
| TOTAL | 0 | | | | | | |
| | | | | | | | |
| PACKOUT (These are purchased parts but not assembled on PCB and will be shipped with PCB) | | | | | | | |
| ITEM | QTY | REF DES | MAXINV | MFG PART # | MANUFACTURER | VALUE | DESCRIPTION |
| TOTAL | 0 | | | | | | |

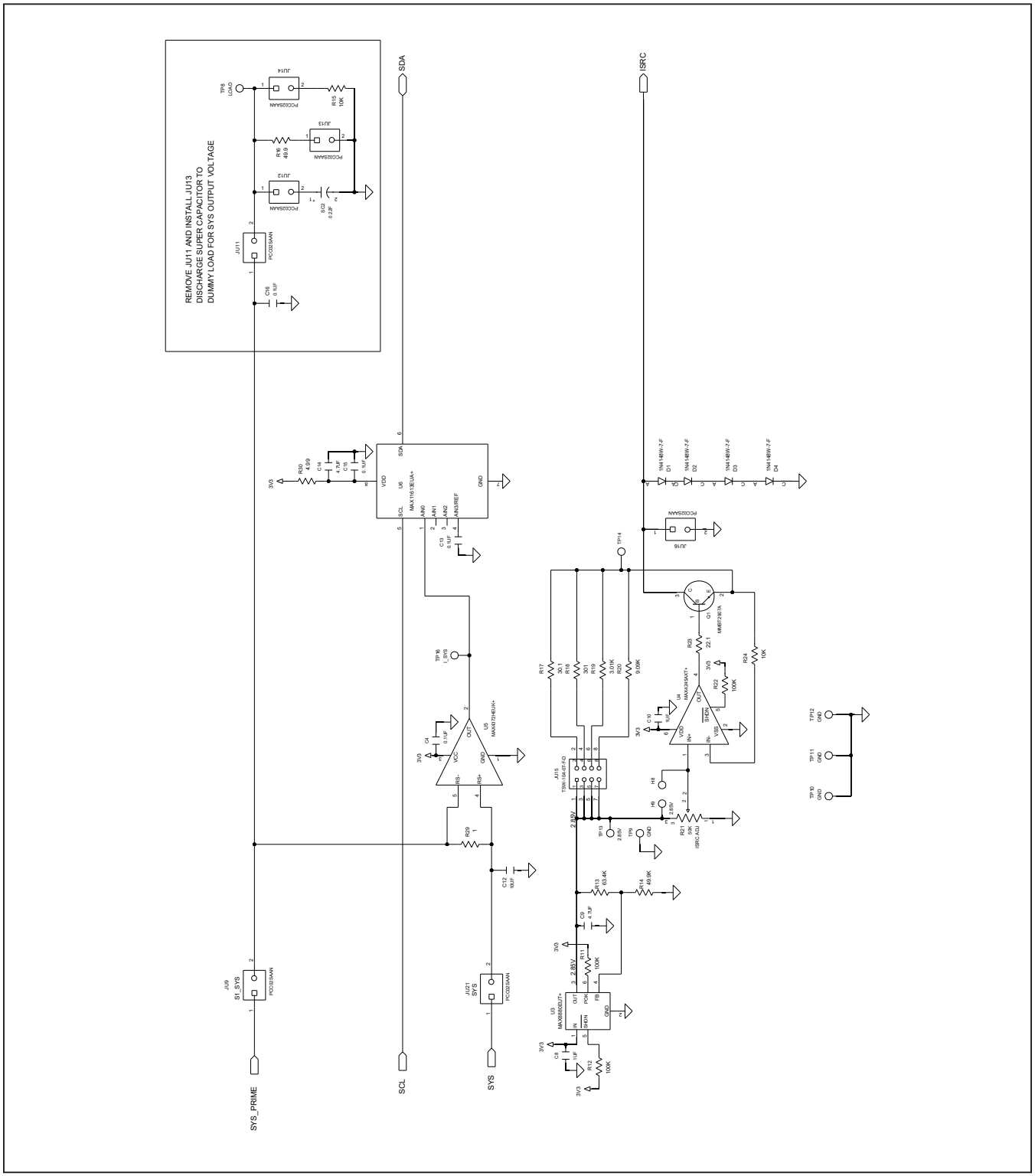
## MAX20361 EV Kit Schematics



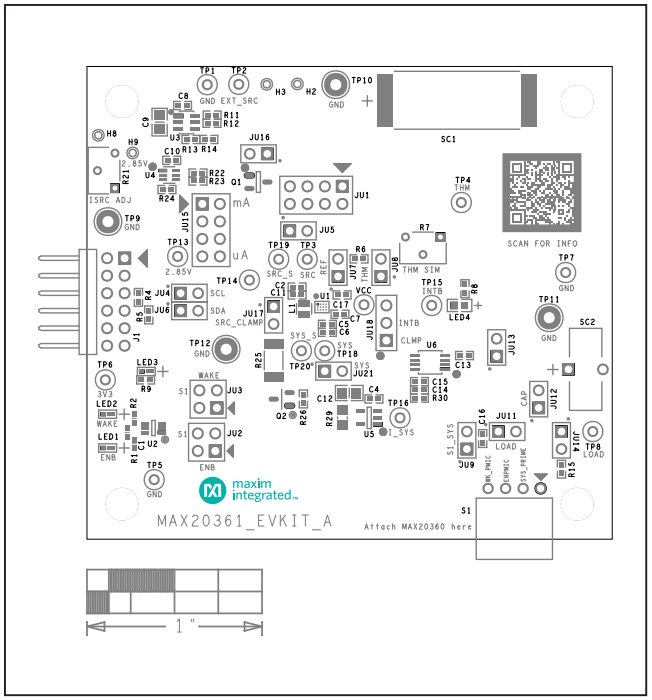
## MAX20361 EV Kit Schematics (continued)



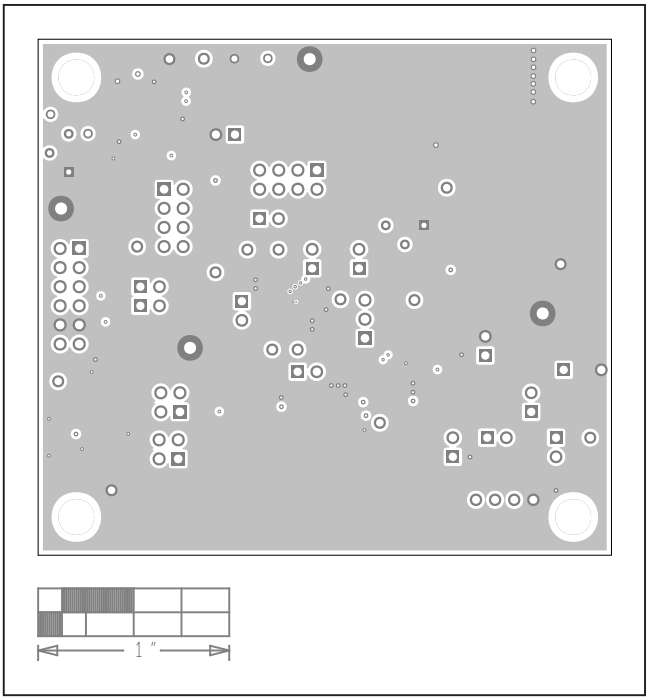
## MAX20361 EV Kit Schematics (continued)



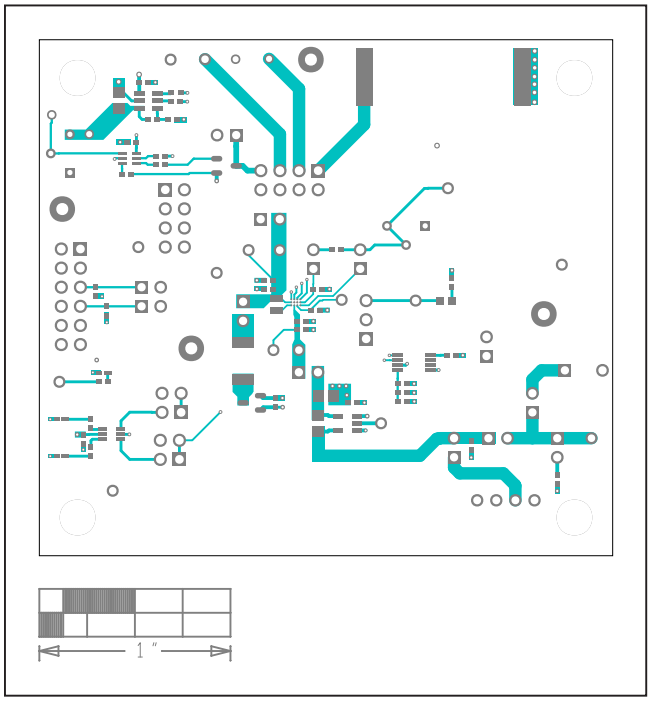
## MAX20361 EV Kit PCB Layouts



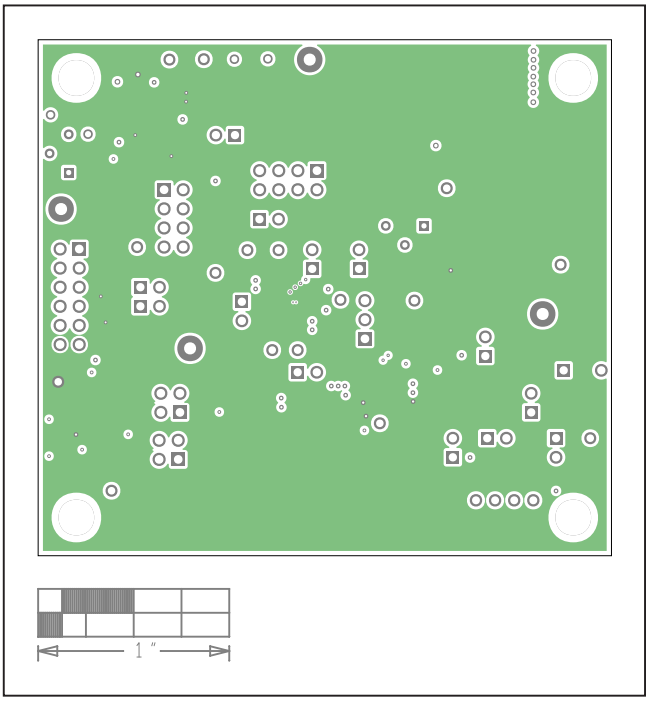

*MAX20361 EV Kit Component Placement Guide—Top Silkscreen*




*MAX20361 EV Kit PCB Layout—Internal Layer2*

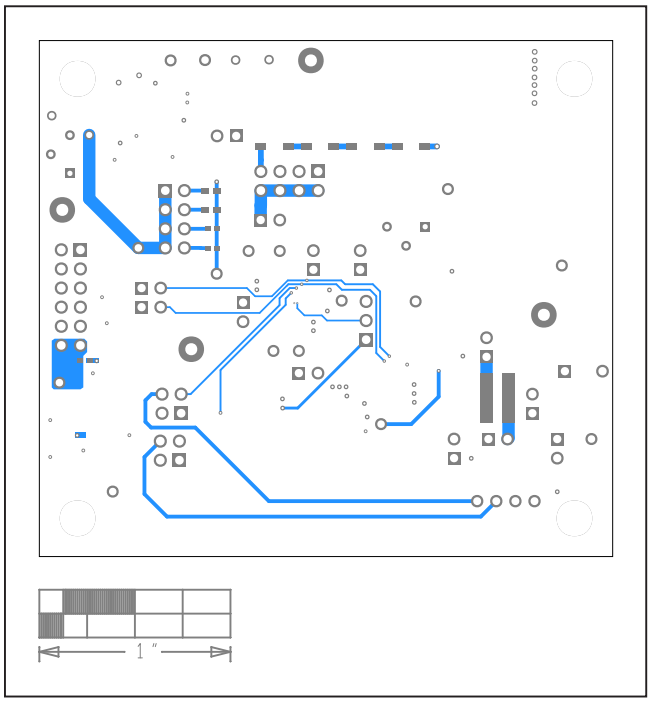



*MAX20361 EV Kit PCB Layout—Top Layer*

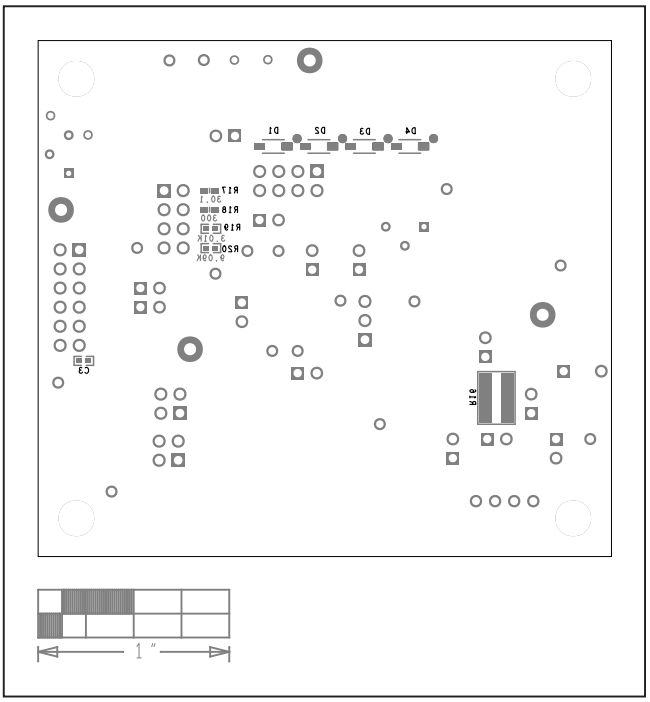



*MAX20361 EV Kit PCB Layout—Internal Layer3*

## MAX20361 EV Kit PCB Layouts (continued)




*MAX20361 EV Kit PCB Layout—Bottom Layer*




*MAX20361 EV Kit PCB Layout—Bottom Components*

## Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION | PAGES CHANGED |
|---|---|---|---|
| 0 | 8/20 | Initial release | — |

For pricing, delivery, and ordering information, please visit Maxim Integrated's online storefront at https://www.maximintegrated.com/en/storefront/storefront.html.

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