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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

19-6363; Rev 0; 6/12

MAX44005 Evaluation System
Evaluates: MAX44005

General Description

The MAX44005 evaluation system (EV system) includes one MAX44005 evaluation kit (EV kit) and one MAX44005 daughter board. The EV kit is a fully assembled and tested PCB that evaluates the MAX44005 digital RGB color sensor with proximity sensor and temp sensor. The EV system also includes Windows XP®-, Windows Vista®-, and Windows® 7-compatible software that provides a simple graphical user interface (GUI) for exercising the features of the IC. The EV kit comes installed with a MAX44005EDT+ in 6-pin OTDFN package.

The daughter board is an external device-under-test module that also comes with a MAX44005EDT+ installed. The daughter board can be connected to and controlled by the EV kit. The user can also evaluate the IC by connecting a user-supplied controller to the daughter board.

Features

- **USB Powered**
- **Daughter Board Powered by the EV Kit**
- **On-Board Infrared (IR) LED on the EV Kit and Daughter Board**
- **On-Board RGB LED on the EV Kit**
- **Windows XP-, Windows Vista-, and Windows 7-Compatible Software**
- **Block Sampling**
- **Signal Plotting in the EV System Software**
- **RoHS Compliant**
- **Proven PCB Layout**
- **Fully Assembled and Tested**

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

Component Lists

MAX44005 EV Kit

DESIGNATION	QTY	DESCRIPTION
C1–C17	17	47nF ±10%, 16V X7R ceramic capacitors (0603) Murata GRM188R71C473K
C18–C33	16	1nF ±10%, 50V X7R ceramic capacitors (0603) Murata GRM188R71H102K
C34, C52, C101, C102, C103, C113–C116	9	1µF ±10%, 16V X5R ceramic capacitors (0603) Murata GRM188R61C105K
C35, C44, C46, C50, C53–C56, C60, C61, C62, C64, C65, C66, C74, C76, C100, C107, C108, C109, C117	21	0.1µF ±10%, 16V X7R ceramic capacitors (0603) TDK C1608X7R1C104K
C36, C39	2	0.01µF ±10%, 50V X7R ceramic capacitors (0603) Murata GRM188R71H103K
C37	1	10pF ±5%, 50V C0G ceramic capacitor (0603) Murata GRM1885C1H100J
C38	1	15pF ±5%, 50V C0G ceramic capacitor (0603) Murata GRM1885C1H150J
C40, C41	2	39pF ±5%, 50V C0G ceramic capacitors (0603) Murata GRM1885C1H390J
C49, C63, C67, C68, C73, C75, C118	7	10µF ±10%, 25V, X5R ceramic capacitors (1206) Murata GRM31CR61E106K
C47, C48	2	4.7µF ±10%, 25V X5R ceramic capacitors (1206) Murata GRM31CR71E475M
C57	1	0.033µF ±10%, 16V X5R ceramic capacitor (0603) Taiyo Yuden EMK107BJ333KA
C58, C59	2	22pF ±5%, 50V C0G ceramic capacitors (0603) Murata GRM1885C1H220J
C104, C110, C111, C112	4	2.2µF ±10%, 10V X7R ceramic capacitors (0603) Murata GRM188R71A225K

Component Lists (continued)

DESIGNATION	QTY	DESCRIPTION
C105, C106	2	4.7µF ±10%, 6.3V X5R ceramic capacitors (0603) Murata GRM188R60J475K
DGND, GND (x3)	4	Black test points
DVDD, EXT_VCC, VLED	3	Red test points
EXIRLED1, EXIRLED2, EXT_SCL, EXT_SDA, EXT_INTB	5	White test points
IRLED1	1	70mA, 1.6V, 860nm infrared LED diode (MIDLED)
IRLED2	0	Not installed, infrared LED (MIDLED)
J1	1	6-pin (2 x 3) right-angle female header
J2	0	Not installed, 24-pin (2 x 12) dual-row header
J3,	1	USB type-B, right-angle PC-mount receptacle
J4	1	6-pin (2 x 3) right-angle male header
JSPI	0	Not installed, 6-pin single-row header
JTAG1	1	6-pin JTAG header
JTAG2	1	10-pin (2 x 5) dual-row JTAG header
JU1–JU4	0	Not installed, 2-pin headers
JU5	0	Not installed, 3-pin header
JU6, JU7, JU8, JU11	4	2-pin headers
JU10, JU12–JU16	6	3-pin headers
JU17	1	4-pin header
L1	1	Ferrite bead (0603) TDK MMZ1608R301A
LD1, LD2	2	Light dams Maxim EPCB44000LD+
LED1, LED2, LED3	3	Red LEDs (0603)
Q100	1	p-channel FET (SOT223)
R1, R3, R4, R19, R21–R24	8	4.7kΩ ±5% resistors (0603)
R2, R16, R17, R18	4	100Ω ±5% resistors (0603)
R5	1	390Ω ±5% resistor (0603)

DESIGNATION	QTY	DESCRIPTION
R6, R7, R8, R27, R36, R59, R60, R61	8	10kΩ ±5% resistors (0603)
R9, R10, R11	3	200Ω ±5% resistors (0603)
R12, R14, R25, R29	4	10Ω ±5% resistors (0603)
R13	1	150Ω ±5% resistor (0603)
R15	1	56Ω ±5% resistor (0603)
R20, R28	2	680Ω ±5% resistors (0603)
R26, R100	2	1kΩ ±5% resistors (0603)
R30	1	18.7kΩ ±1% resistor (0603)
R31, R43, R44, R46	4	10kΩ ±1% resistors (0603)
R32, R33	2	27Ω ±5% resistors (0603)
R34, R57, R58	3	1.5kΩ ±5% resistors (0603)
R35	1	2.2kΩ ±5% resistor (0603)
R37–R41	0	Not installed, resistors—short (PC trace) (0603)
R42, R45	2	100kΩ ±5% resistors (0603)
R47	1	20kΩ ±1% resistor (0603)
R48	1	470Ω ±5% resistor (0603)
R55	1	49.9kΩ ±1% resistor (0603)
R56	1	40.2kΩ ±1% resistor (0603)
R62	1	5.1kΩ ±5% resistor (0603)
RGBLED	1	RGB LED
S1	1	4-position SMT DIP switch
U1	1	RGB color sensor with proximity sensor and temp sensor (6 OTDFN) Maxim MAX44005EDT+
U2	1	LED driver (49 WLP) Maxim MAX8930EWJ+
U3	0	Not installed, Xilinx serial PROM (20 TSSOP)
U4	0	Not installed, Atmel SPI flash (8 SO)
U6, U7	2	LDOs (16 TSSOP-EP) Maxim MAX1793EUE50+
U8	1	USB UART (32 TQFP)
U9	1	93C46 type 3-wire EEPROM (8 SO)
U10, U15	2	LDOs (6 SOT23) Maxim MAX1983EUT+
U13	1	Spartan 3AN FPGA (144 TQFP) Xilinx XC3S50AN-4TQG144I

Component Lists (continued)

DESIGNATION	QTY	DESCRIPTION
U14	1	Microcontroller (68 QFN-EP*) Maxim MAXQ2000-RAX+
U16, U17	2	Level translators (10 FMAX®) Maxim MAX1840EUB+
U18	1	16Mbit SRAM (48 TSOP)
Y1	1	50MHz oscillator
Y2	1	6MHz crystal Hong Kong X'tals SSL60000N1HK188F0-0
Y3	0	Not installed, crystal (CMR200T)

DESIGNATION	QTY	DESCRIPTION
Y4	1	20MHz crystal
—	4	0.250in x 0.625in 4-40 round nylon spacers
—	4	4-40 x 0.375in nylon machine screws
—	1	USB high-speed A-to-B cables 5ft (1.5m)
—	11	Shunts
—	1	PCB: MAX44005 EVALUATION KIT

**EP = Exposed pad.*

MAX44005 Daughter Board

DESIGNATION	QTY	DESCRIPTION
C1	1	1µF ±10%, 10V X7R ceramic capacitor (0603) Murata GRM188R71A105K
IRLED1	1	70mA, 1.6V, 860nm infrared LED diode (MIDLED)
J1	1	6-pin (2 x 3) female header

DESIGNATION	QTY	DESCRIPTION
U1	1	RGB color sensor with proximity sensor and temp sensor (6 OTDFN) Maxim MAX44005EDT+
—	1	PCB: MAX44005 DAUGHTER BOARD

Component Suppliers

SUPPLIER	PHONE	WEBSITE
Hong Kong X'tals Ltd.	852-35112388	www.hongkongcrystal.com
Murata Electronics North America, Inc.	770-436-1300	www.murata-northamerica.com
Taiyo Yuden	800-348-2496	www.t-yuden.com
TDK Corp.	847-803-6100	www.component.tdk.com

Note: *Indicate that you are using the MAX44005 when contacting these component suppliers.*

MAX44005 EV System Files

FILE	DESCRIPTION
INSTALL.EXE	Installs the EV system files on your computer
MAX44005.EXE	Application program
CDM20600.EXE	Installs the USB device driver
UNINSTALL.EXE	Uninstalls the EV kit software
USB_Driver_Help200.PDF	USB driver installation help file

Quick Start

Required Equipment

- MAX44005 EV kit (USB cable included)
- Windows XP, Windows Vista, or Windows 7 PC with a spare USB port

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

Procedure

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

1) Visit **www.maxim-ic.com/evkitsoftware** to download the latest version of the EV kit software, 44005Rxx.ZIP. Save the EV kit software to a temporary folder and uncompress the ZIP file.
2) Install the EV kit software and USB driver on your computer by running the INSTALL.EXE program inside the temporary folder. The program files are copied to your PC and icons are created in the Windows **Start | Programs** menu. During software installation, some versions of Windows may show a warning message indicating that this software is from an unknown publisher. This is not an error condition and it is safe to proceed with installation. Administrator privileges are required to install the USB device driver on Windows.
3) Verify that all jumpers (JU6, JU7, JU8 and JU10–JU17) are in their default positions, as shown in Table 1.
4) Connect the USB cable from the PC to the EV kit board. A Windows message appears when connecting the EV kit board to the PC for the first time. Each version of Windows has a slightly different message. If you see a Windows message stating **ready to use**, then proceed to the next step. Otherwise, open the USB_Driver_Help_200.PDF document in the Windows **Start | Programs** menu to verify that the USB driver was installed successfully.
5) Start the EV kit software by opening its icon in the **Start | Programs** menu. The EV system software main window appears, as shown in Figure 1.
6) On the **Proximity Sensor Configuration** tab sheet (Figure 4), in the **Transmit Configuration** group box, use the **LED Drive Current (DRV[3:0])** track bar to set the IR LED current to 50mA. Press the adjacent **Set** button.
7) Select **Clear+RGB+IR+PROX** from the **Operating Mode** drop-down list in the top left of the software GUI.
8) In the **Color Map Display** tab sheet (Figure 1), check the **Auto Convert** checkbox in the **Single Conversion** group box to read the ADC values.

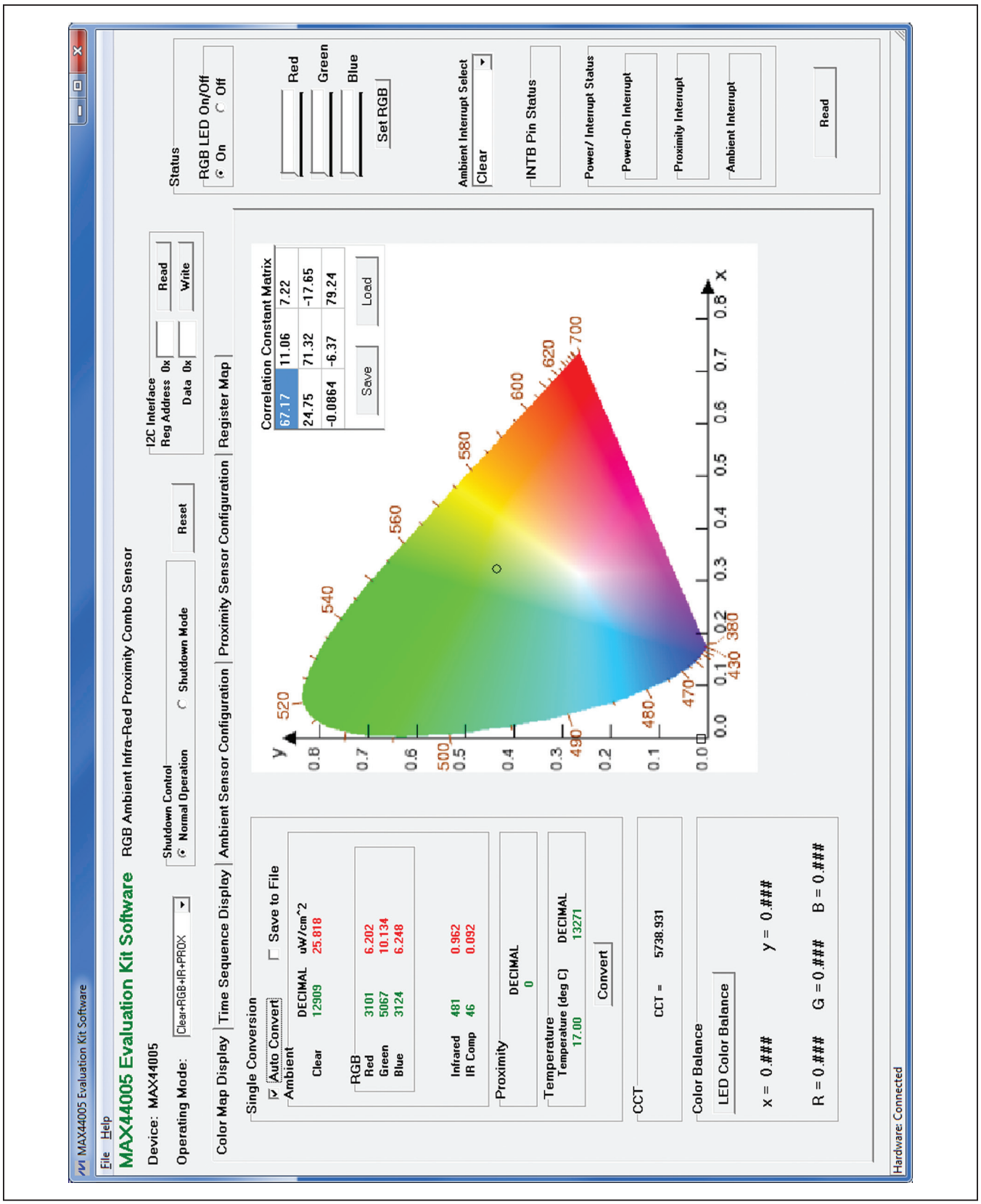

Figure 1. MAX44005 EV Kit Software Main Window (Color Map Display Tab)

Detailed Description of Software

The MAX44005 EV kit software (Figure 1) contains an **I2C Interface** group box, a **Status** group box, and five tab sheets (**Color Map Display**, **Time Sequence Display**, **Ambient Sensor Configuration**, **Proximity Sensor Configuration**, and **Register Map**) to configure the MAX44005 IC and display the ADC data received from the IC.

I²C Interface

In the **I2C Interface** group box, enter the register address in the **Reg Address** edit box and press the **Read** button to read the register. The returned value is shown in the **Data** edit box. To write a data value into a register, enter the register address in the **Reg Address** edit box, enter the data value into the **Data** edit box, and press the **Write** button.

Operating Mode

Use the **Operating Mode** drop-down list to select one of the six operating modes. The operating modes are: **Clear**, **Clear+IR**, **Clear+RGB+IR**, **Clear+IR+PROX**, **Clear+RGB+IR+PROX**, and **PROX only**.

Color Map Display Tab

The **Single Conversion** group box on the **Color Map Display** tab sheet displays the ADC values for a single sample. Press the **Convert** button to update the values in the **Ambient**, **Proximity**, **Temperature**, and **CCT** group boxes. The received RGB ADC values are converted to the chromaticity coordinates (x, y) values using the 3-by-3 **Correlation Constant Matrix** located in the upper-right corner of the chromaticity diagram. The calculated x, y value is plotted on the chromaticity diagram in a circle shape. Overwrite the values in the matrix and press the **Save** button to save the matrix settings. Press the **Load** button to restore the previously saved matrix. See below for the RGB-to-chromaticity coordinate-conversion formulas and CCT calculation formulas.

$$\begin{bmatrix} X \\ Y \\ Z \end{bmatrix} = \begin{bmatrix} 3\,BY\,3 \\ CM \\ MATRIX \end{bmatrix} x \begin{bmatrix} R \\ G \\ B \end{bmatrix}$$

$$x = \frac{x}{x + y + z}$$

$$y = \frac{y}{x + y + z}$$

$$CCT = 449n^3 + 3525n^2 + 6823.3n + 5520.33$$

$$\text{where } n = \frac{x - 0.3320}{0.1858 - y}$$

Check the **Auto Convert** checkbox to automatically and repeatedly do the ADC conversion and update the values in the **Ambient**, **Proximity**, **Temperature**, and **CCT** group boxes. Check the **Save to File** checkbox to save the received data to a file.

To use the **Color Balance** function, the user must first connect the daughter board to the EV kit. See the *MAX44005 Daughter Board* section for details on how to connect the daughter board. The **Color Balance** feature allows the user to select a color on the chromaticity diagram by clicking on the diagram. The selected color is boxed by a square shape. When the **LED Color Balance** button is pressed, the on-board RGB LED then servos to output the selected color. The IC RGB sensor is used to get feedback to determine whether the RGB LED is outputting the right color.

Time Sequence Display Tab

In the **Time Sequence Display** tab sheet (Figure 2), the user can select the desired number of conversions from the **Number of Samples** drop-down list. The rate that the controller reads the ADC data from the IC is selected from the **Read Rate** drop-down list. Press the **Convert Start** button to start sampling from the ADC channel selected from the **Channel Select** drop-down list. After the **Convert Start** button is pressed, the sampled data is plotted on the graph. If the **Save to File** checkbox is checked, the received ADC data is saved to a file after each conversion.

Ambient Sensor Configuration Tab

The **Ambient Sensor Configuration** tab sheet (Figure 3) has all the functions to configure the ambient sensors of the IC.

Check the **Ambient Interrupt Enable** checkbox to enable the detection of ambient interrupt event. Check the **IR Compensation Enable** checkbox to enable the IR compensation. Check the **Temperature Sensor Enable** checkbox to enable the temperature sensor.

In the **Receive Configuration** group box, use the **AMBTIM[2:0]** drop-down list to set the integration time and resolution for the ambient ADC. The **AMBPGA[1:0]** drop-down list sets the gain of the ambient light-sensing measurement.

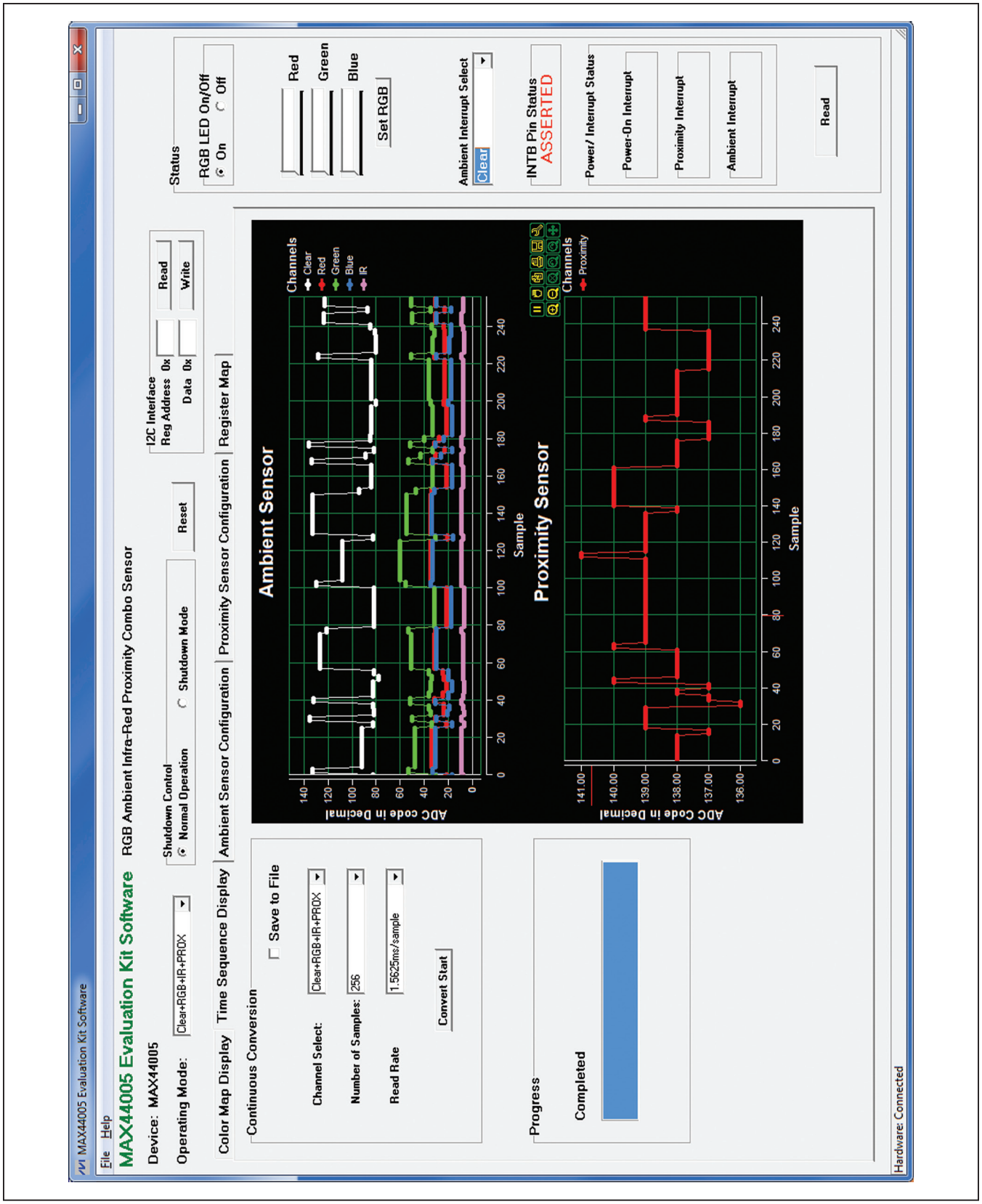

Figure 2. Time Sequence Display Tab

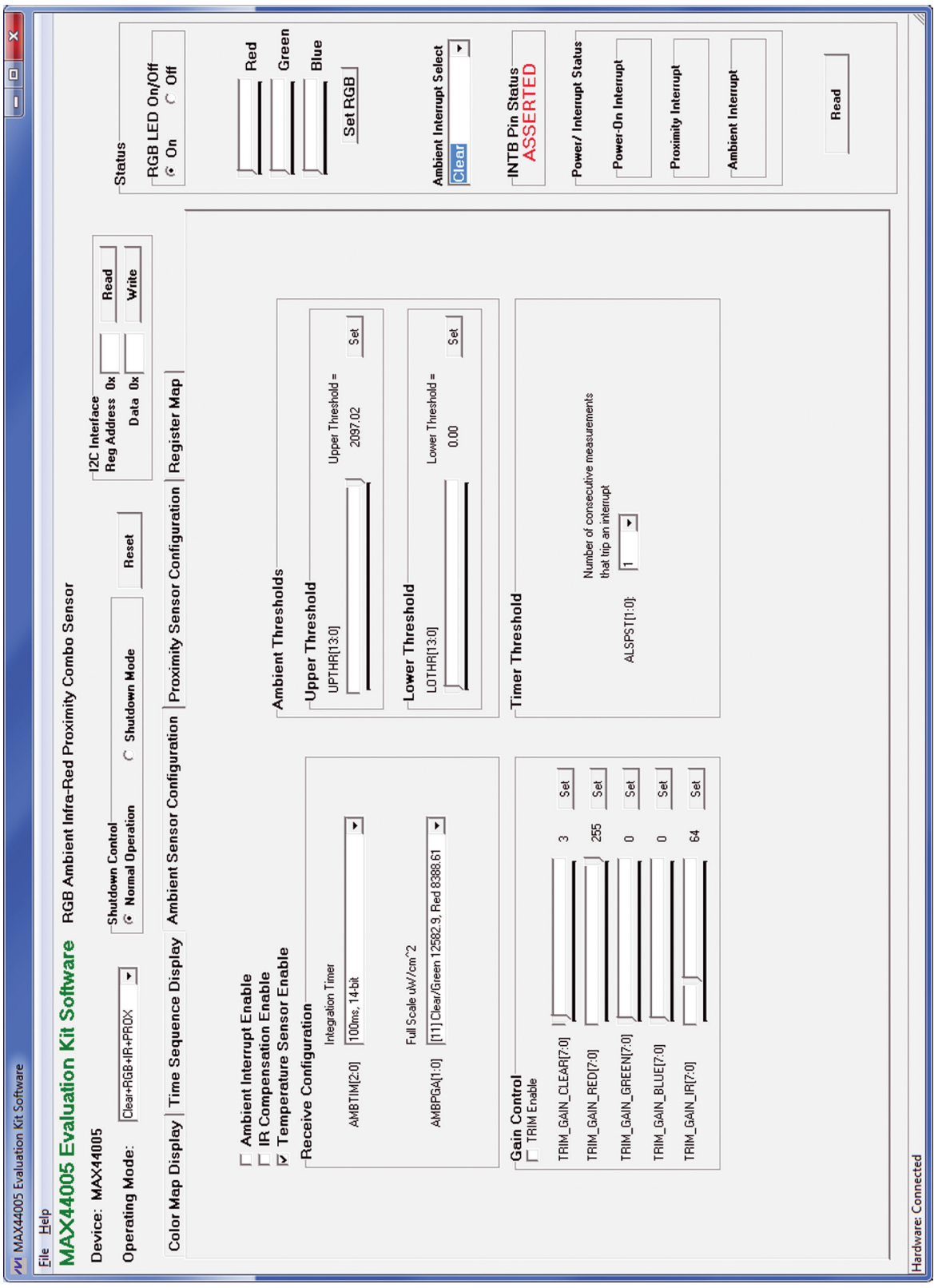

Figure 3. Ambient Sensor Configuration Tab

Use the **Ambient Thresholds** group box to set the upper and lower ambient interrupt threshold. The ambient measurement of the ADC channel that is being compared to the thresholds is selected from the **Ambient Interrupt Select** drop-down list in the **Status** group box. After the **Ambient Interrupt Enable** checkbox is checked, if the ambient measurement is higher than the upper threshold or lower than the lower threshold, the interrupt event is recorded (provided the persist timer condition is met). The interrupt bit is reset only after reading the Interrupt Status register.

In the **Upper Threshold** group box, use the **UPTHR[13:0]** track bar to select the desired upper ambient interrupt threshold. Press the adjacent **Set** button to set the UPTHR register. Similarly, use the LOTHR[13:0] track bar in the Lower Threshold group box to select the desired lower ambient interrupt threshold and press the adjacent **Set** button to set the LOTHR register.

Use the **AMBPST[1:0]** drop-down list in the **Timer Threshold** group box to set the persist value that controls how readily the ambient interrupt logic reacts to a detected event.

In the **Gain Control** group box, check the **TRIM Enable** checkbox to force the part to use the trim value written in the trim gain registers. Use the track bars and the adjacent **Set** buttons to set the trim gain registers for the corresponding ambient ADC channels.

Proximity Sensor Configuration Tab

The **Proximity Sensor Configuration** tab sheet (Figure 4) has all the functions to configure the proximity sensor of the IC.

In the **Receive Configuration** group box, use the **PRXTIM** drop-down list to set the integration time and resolution for the proximity ADC. The **PRXPGA** drop-down list sets the gain of the proximity sensing measurement.

In the **Transmit Configuration** group box, use the **LED Drive Current (DRV[3:0])** track bar to select the desired IRLED drive current. The **IR Proximity LED current** is shown to the right of the track bar. Press the **Set** button to set the DRV register.

Use the **Proximity Thresholds** group box to set the upper and lower proximity interrupt threshold. After the **Proximity Interrupt Enable** checkbox is checked, if the proximity measurement is higher than the upper threshold or lower than the lower threshold, the interrupt event is recorded. The interrupt bit is reset only after reading the Interrupt Status register.

In the **Upper Threshold** group box, use the **PRXUPTHR[9:0]** track bar to select the desired upper proximity interrupt threshold. Press the adjacent **Set** button to set the PRXUPTHR register. Similarly, use the **PRXLOTHR[9:0]** track bar in the **Lower Threshold** group box to select the desired lower proximity interrupt threshold and press the adjacent **Set** button to set the PRXLOTHR register.

Use the **PRXPST[1:0]** drop-down list in the **Timer Threshold** group box to set the persist value that controls how readily the ambient interrupt logic reacts to a detected event.

Status

In the **Status** group box, press the **Read** button to read the status of the interrupt pin, $\overline{INT}$. If the interrupt signal is asserted, the Interrupt Status register (0x00) is read and displayed in the **Power/ Interrupt Status** group box.

The measurement of the ADC channel selected from the **Ambient Interrupt Select** drop-down list is being compared to the ambient interrupt thresholds. When the **Ambient Interrupt Enable** checkbox is checked, if the ambient measurement is higher than the upper threshold or lower than the lower threshold, the interrupt event is recorded (provided the persist timer condition is met).

The **Red**, **Green**, and **Blue** track bars, and the **Set RGB** button are used to manually adjust the brightness of the on-board RGB LED. Use the **RGB LED On/Off** group box to turn on/off the RGB LED.

Register Map

The **Register Map** tab (Figure 5) contains a register map of the IC. The tab is organized from left to right with register names, bit names, register address, edit boxes, **Read** buttons, and **Write** buttons. The bit names are used to display the current state of each bit (bold text = 1). In addition, a register's bits can be individually toggled by single-clicking on the bit's name. The edit boxes are used to display a register's state and are updated after a bit click or **Read** button press. The user can also change the value of the register by entering a value in the edit box and pressing the adjacent **Write** button.

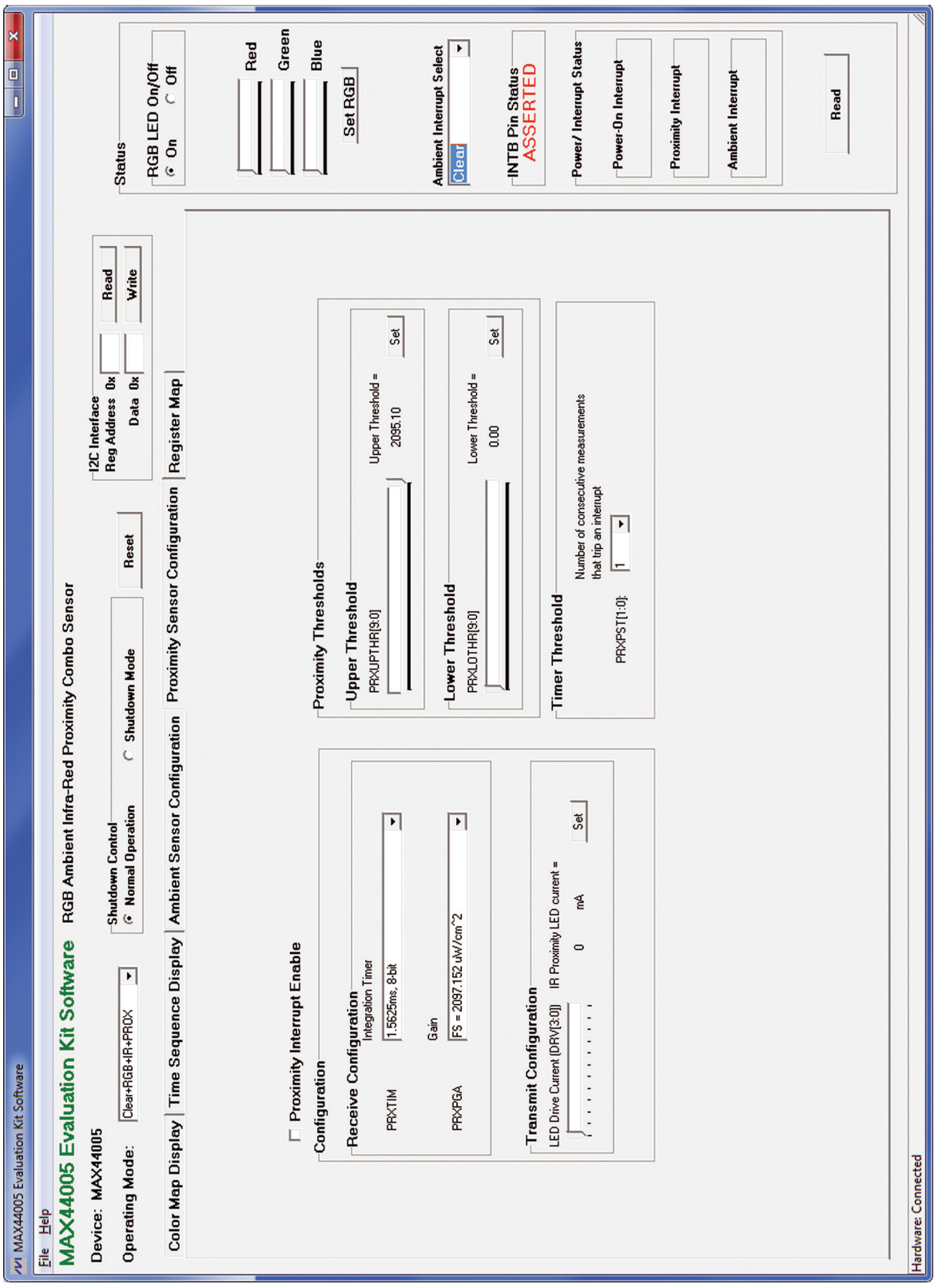

Figure 4. Proximity Sensor Configuration Tab

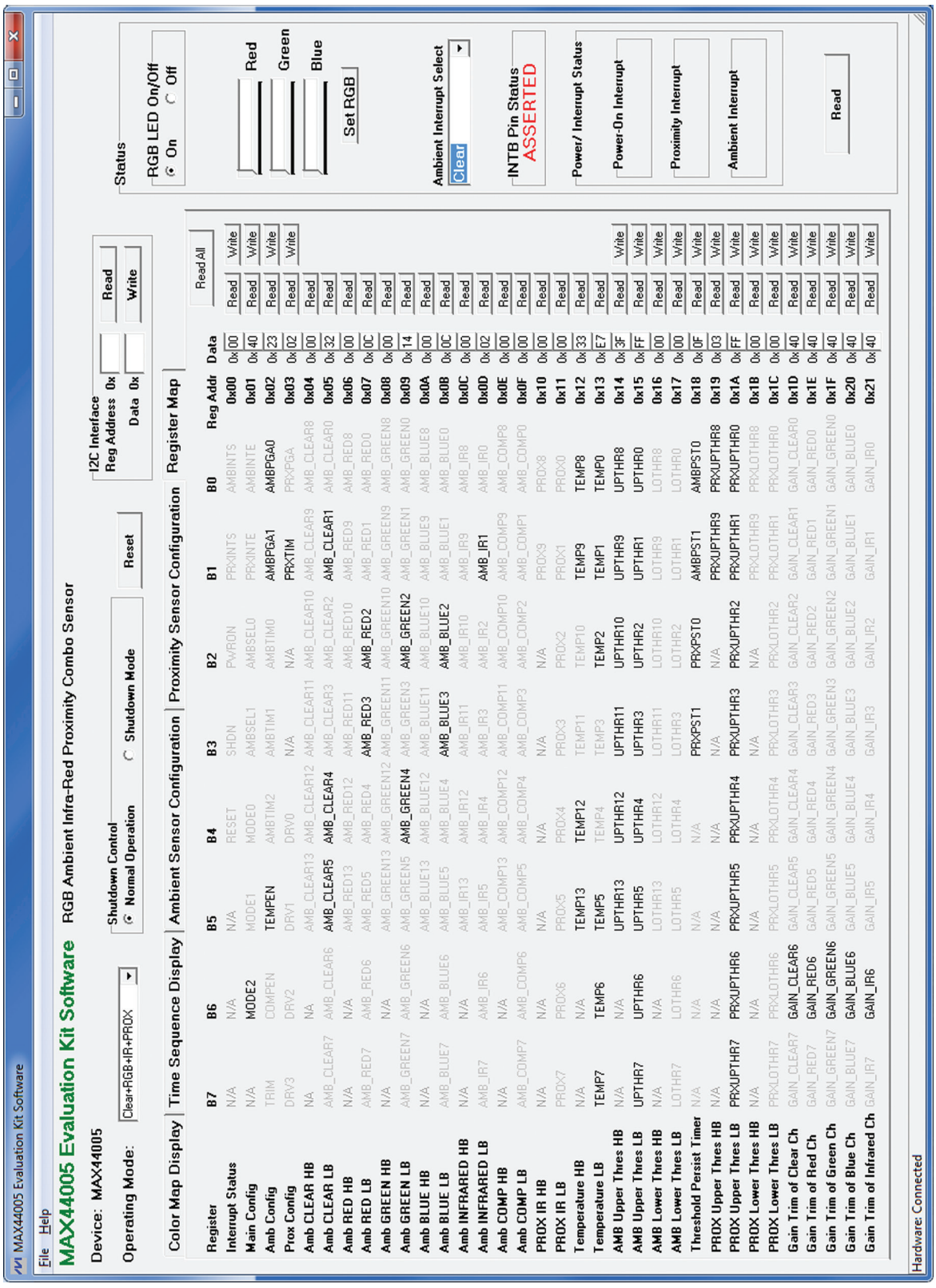

Figure 5. Register Map Tab

Detailed Description of Hardware

The MAX44005 EV system includes one MAX44005 EV kit and one MAX44005 daughter board. The EV kit is a fully assembled and tested PCB that evaluates the MAX44005 digital RGB color sensor with proximity sensor and temp sensor IC. The EV kit comes installed with a MAX44005EDT+ in 6-pin OTDFN package.

The daughter board is an external device-under-test module that also comes with a MAX44005EDT+ installed. The daughter board can be connected to and controlled by the MAX44005 EV kit. The user can also evaluate the IC by connecting a user-supplied controller to the daughter board.

IR LED

The on-board IR LED is installed next to the IC. A light dam board is placed in between the IR LED and the IC to block crosstalk.

To use a user-supplied IR LED, install the user-supplied IR LED on the IRLED2 footprint and place the shunt on jumper JU17 in the 1-4 position.

To use an external IR LED, connect the external IR LED between the EXIRLED1 and EXIRLED2 connectors. Then place the shunt of JU17 to 1-3 position.

Power Supply

By default, the EV kit is USB powered. To use the external power supply connect a 5V supply to the DVDD and DGND connectors, and place the shunt on jumper JU10 in the 2-3 position. The daughter board is powered by the EV kit board.

User-Supplied I²C Interface

To use the IC on the EV kit with the user-supplied I²C interface, install the shunts on jumpers JU12–JU16 to the 2-3 position. Connect the SCL, SDA, $\overline{INT}$, VCC, VLED signals from the external SPI interface to the EXT_SCL, EXT_SDA, EXT_INTB, EXT_VCC, and VLED connectors on the EV kit, respectively.

MAX44005 Daughter Board

To use the daughter board with the EV kit and the EV kit software, remove the shunts on jumpers JU14, JU15, and JU16 to disconnect the IC on the EV kit from the on-board controller (see Table 2). Carefully connect the EV kit and the daughter board by aligning pin 1 (see silkscreen) of connector J1 of the daughter board to pin 1 (see silkscreen) of the right angle header J4 of the EV kit. And press them together. If done correctly, U1 on the daughter board should be facing the RGBLED on the EV kit.

Table 1. Default Jumper Settings (JU6, JU7, JU8, JU10–JU17)

JUMPER	SHUNT POSITION	DESCRIPTION
JU6	1-2*	The on-board LDO (U6) provides 3.6V output to the EV kit
	Pin 1	Disconnects the output of the on-board LDO (U6)
JU7	1-2*	The on-board LDO (U7) provides 2.5V output to the EV kit
	Pin 1	Disconnects the output of the on-board LDO (U7)
JU8	1-2*	The on-board LDO (U10) provides 1.2V output to the EV system
	Pin 1	Disconnects the output of the on-board LDO (U10)
JU10	1-2*	On-board LDOs powered from the USB port
	2-3	Connect an external 5V supply to the DVDD connector
JU11	1-2*	The on-board LDO (U15) provides 1.8V output to the EV system
	Pin 1	Disconnects the output of the on-board LDO (U15)
JU12	1-2*	The on-board 2.5V supply connects to the anode of the IRLED
	2-3	Connect an external supply to the VLED connector
JU13	1-2*	The on-board 1.8V supply connects to VCC pin of the MAX44005
	2-3	Connect an external supply to the EXT_VCC connector
JU14	1-2*	MAX44005 SDA signal connected to on-board microcontroller
	2-3	Connect user-supplied SDA signal to the on-board EXT_SDA pad

Table 1. Default Jumper Settings (JU6, JU7, JU8, JU10–JU17) (Continued)

JUMPER	SHUNT POSITION	DESCRIPTION
JU15	1-2*	MAX44005 SCL signal connected to on-board microcontroller
	2-3	Connect user-supplied SCL signal to the on-board EXT_SCL pad
JU16	1-2*	MAX44005 $\overline{INT}$ signal connected to on-board microcontroller
	2-3	Connect user-supplied /INT signal to the on-board EXT_INTB pad
JU17	1-2*	MAX44005 DRV signal connected to the cathode of the IRLED1
	1-3	MAX44005 DRV signal connected to the EXIRLED2 connector
	1-4	MAX44005 DRV signal connected to the cathode of the IRLED2

**Default position.*

Table 2. Selection Between EV Kit On-Board DUT and Daughter Board DUT

JUMPER	ON-BOARD PART	DAUGHTER BOARD PART
JU14	1-2*	Pin 1
JU15	1-2*	Pin 1
JU16	1-2*	Pin 1

**Default position.*

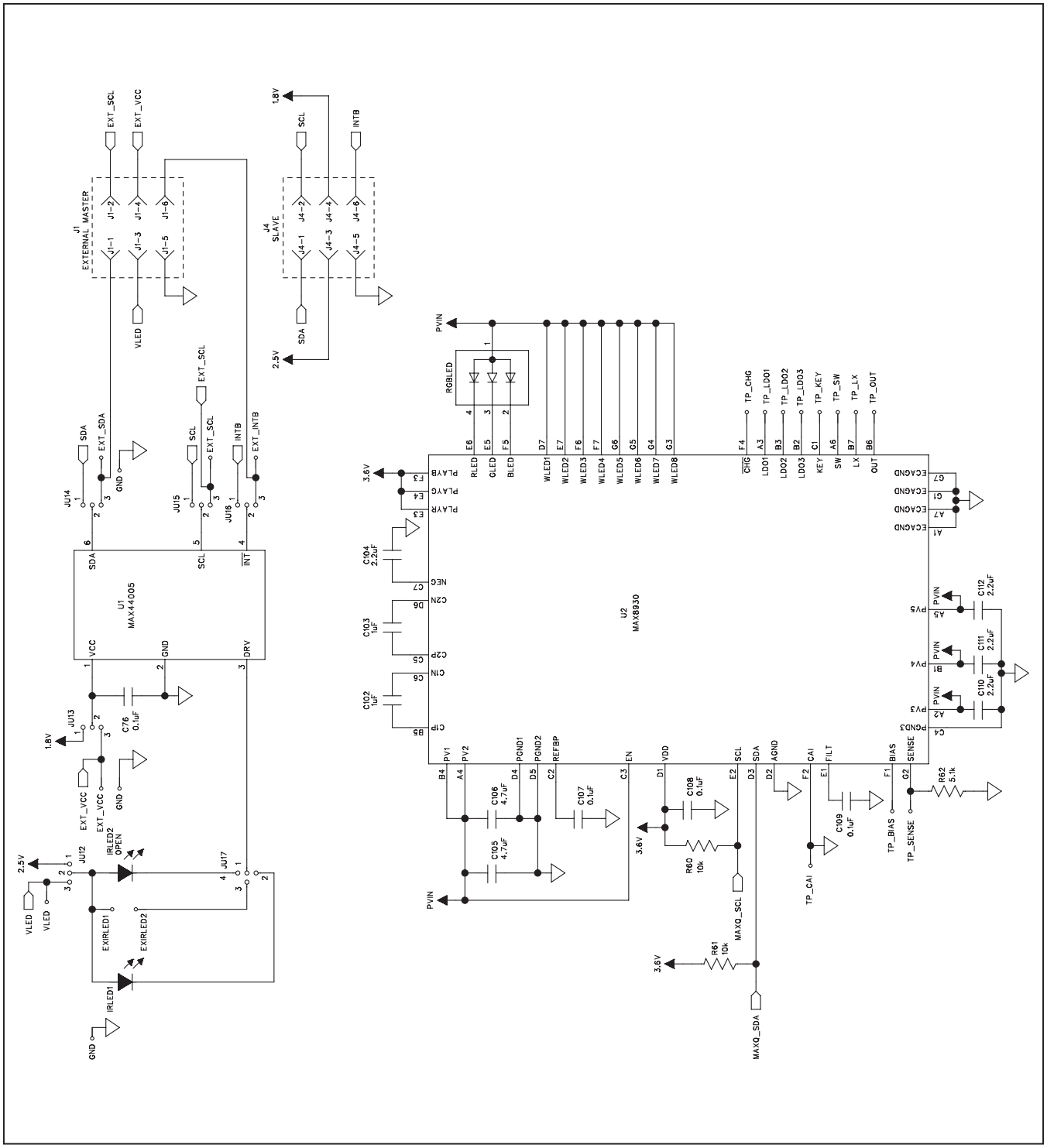

Figure 6a. MAX44005 EV Kit Schematic (Sheet 1 of 5)

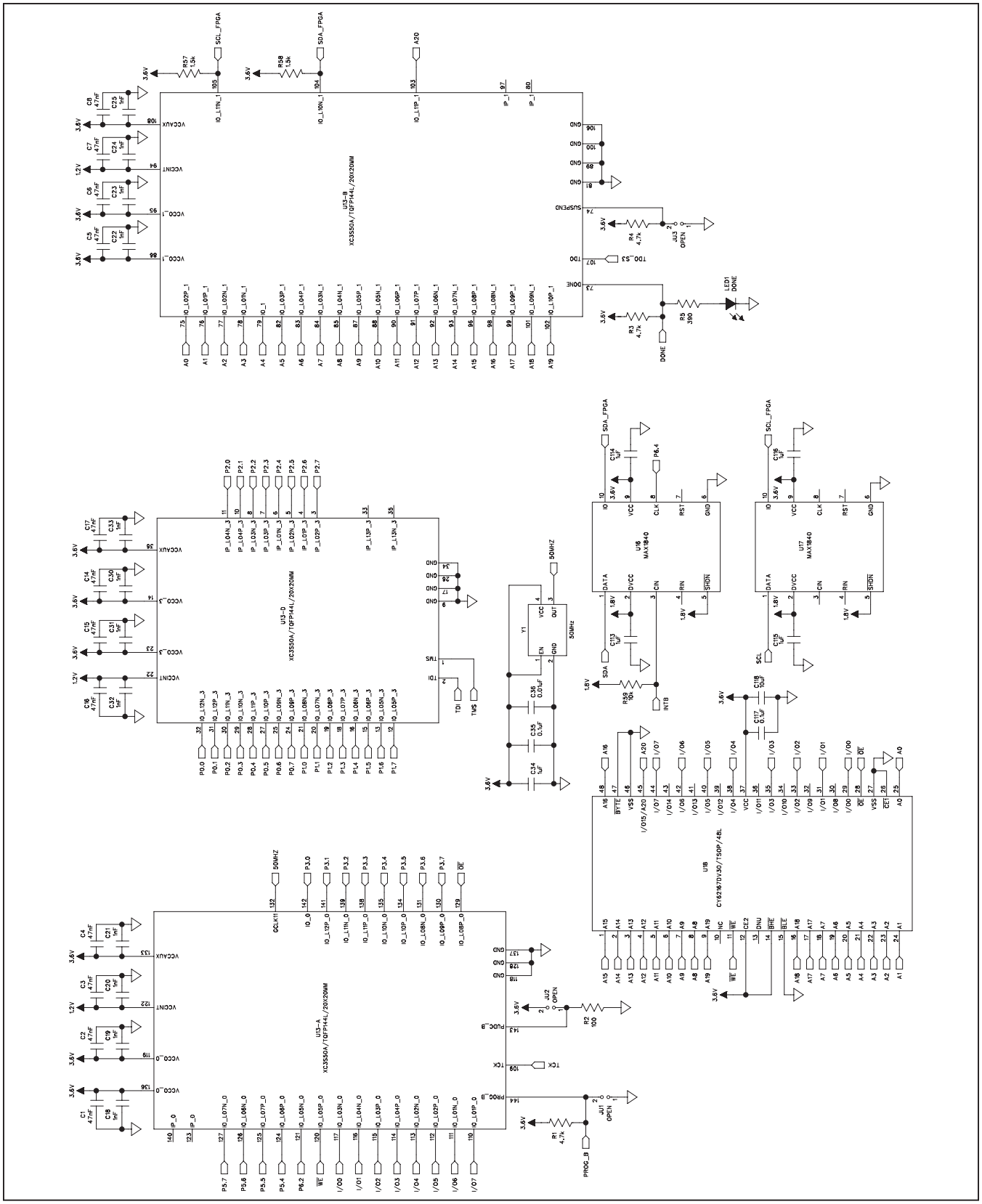

Figure 6b. MAX44005 EV Kit Schematic (Sheet 2 of 5)

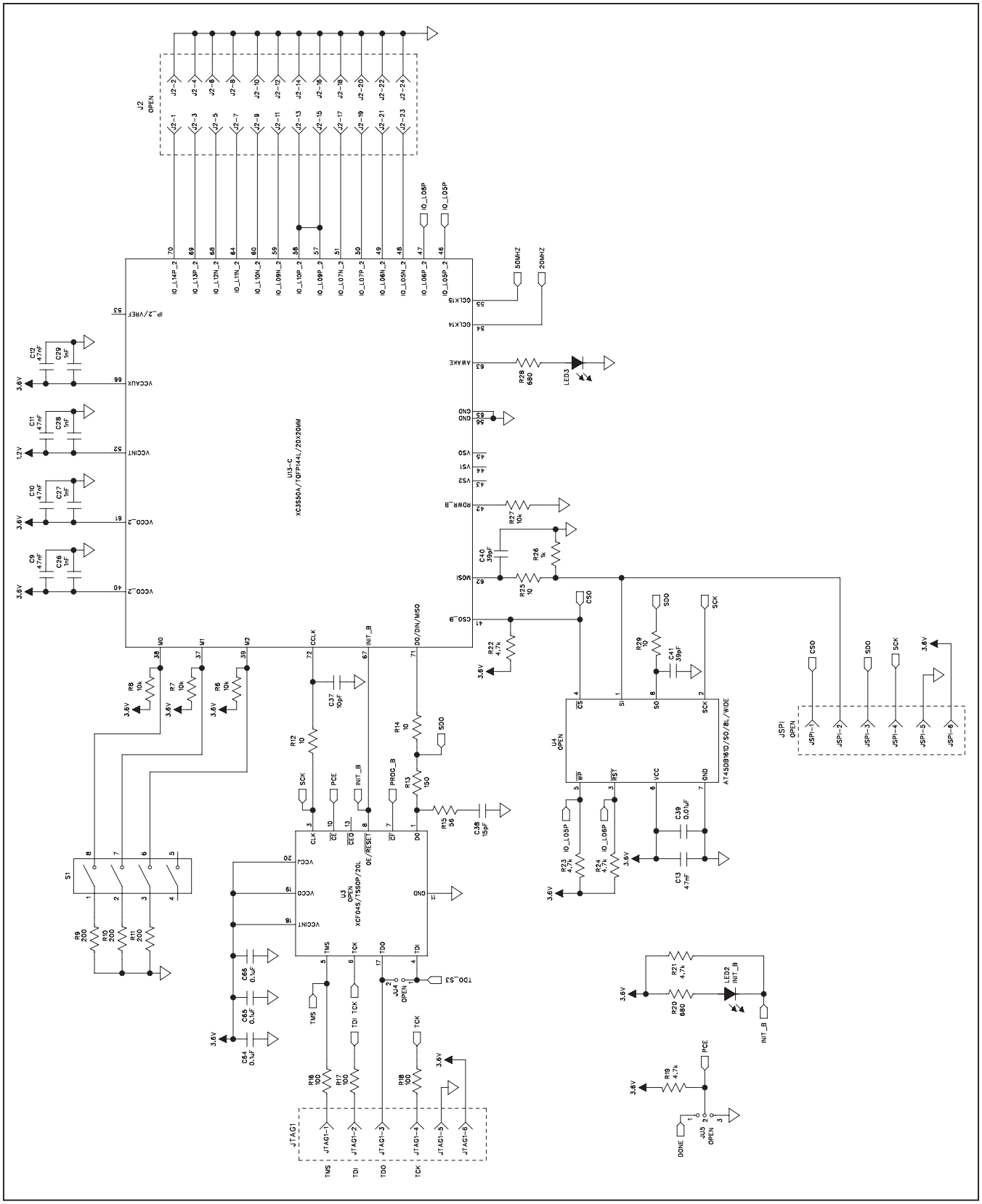

Figure 6c. MAX44005 EV Kit Schematic (Sheet 3 of 5)

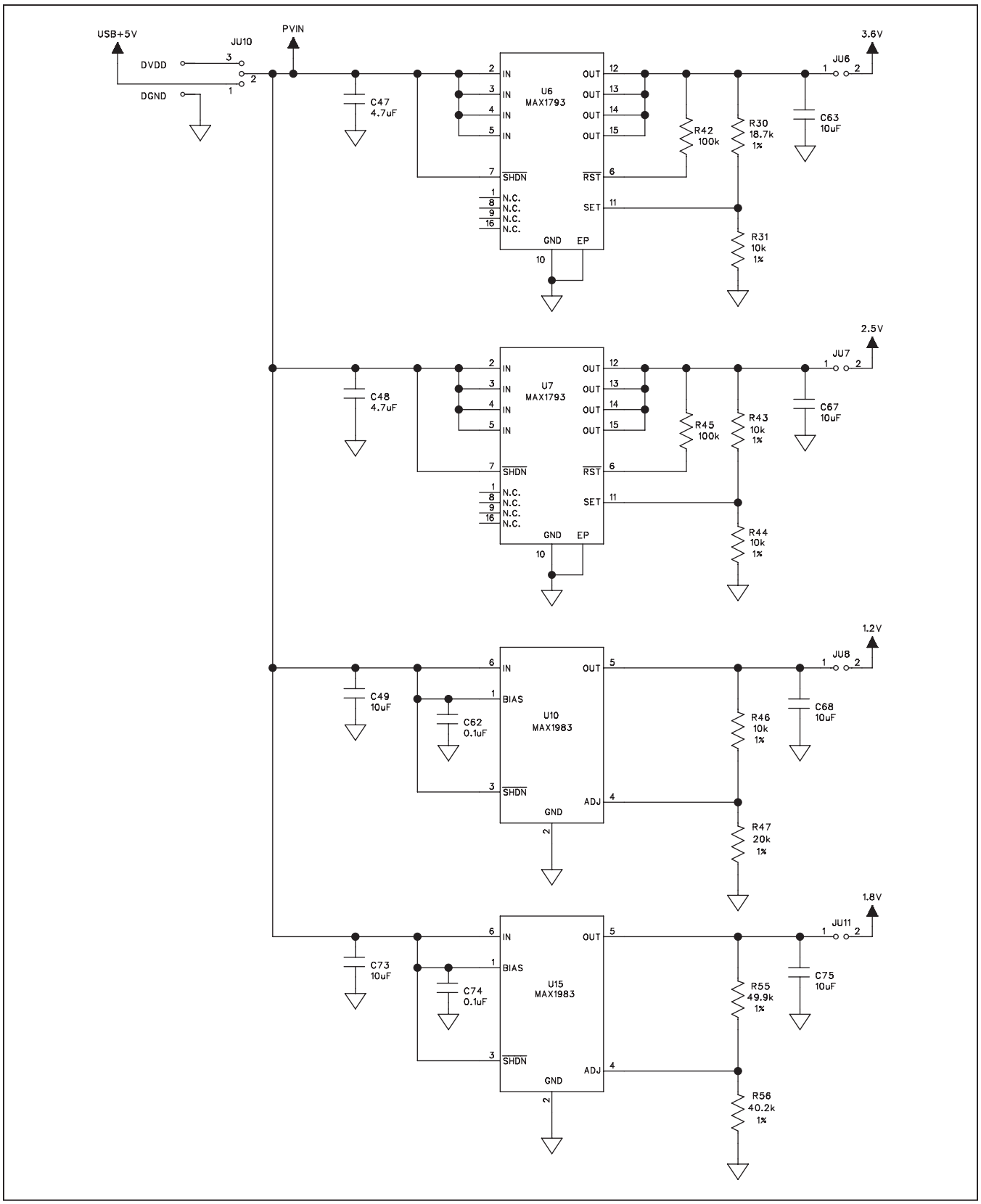

Figure 6d. MAX44005 EV Kit Schematic (Sheet 4 of 5)

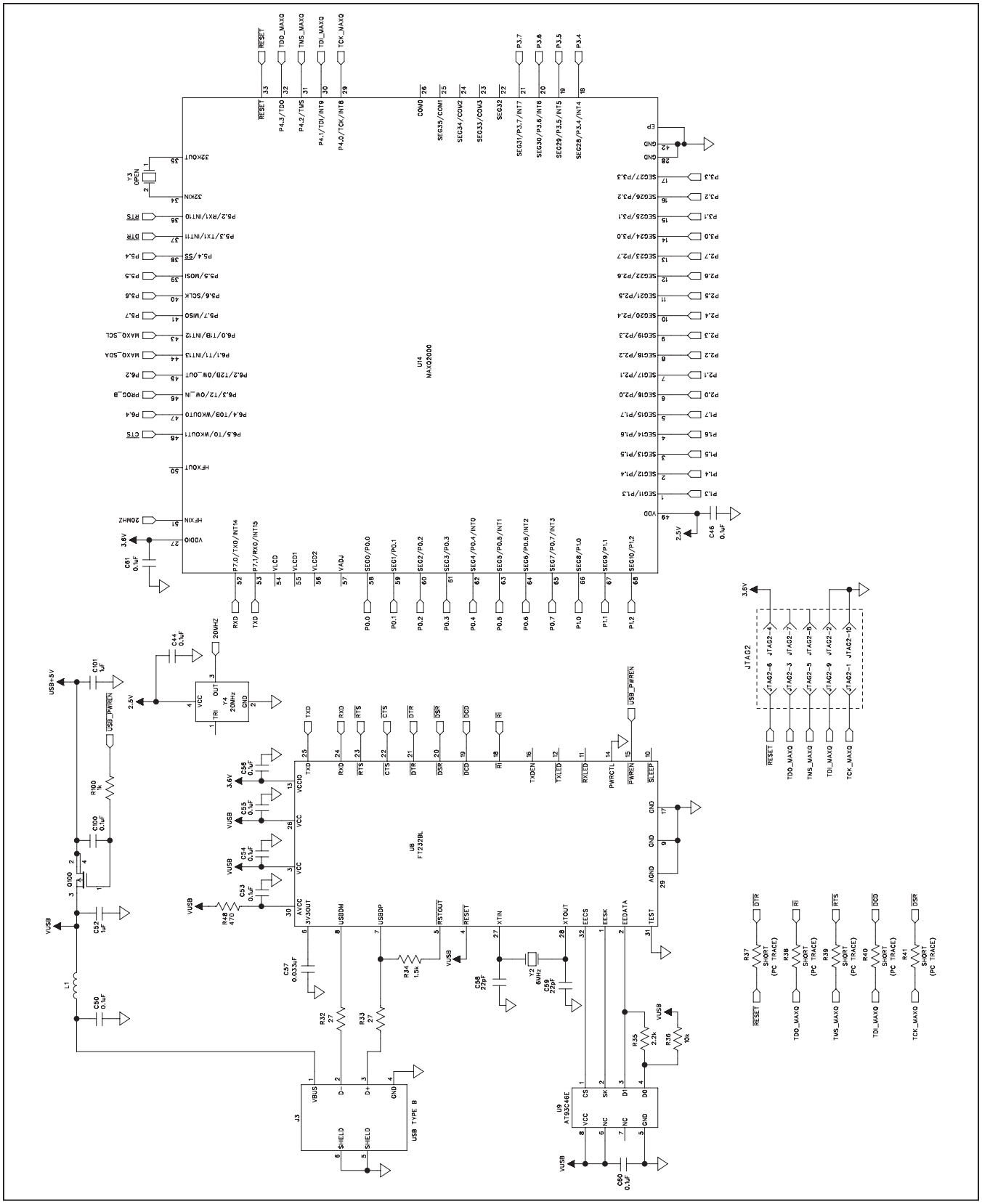

Figure 6e. MAX44005 EV Kit Schematic (Sheet 5 of 5)

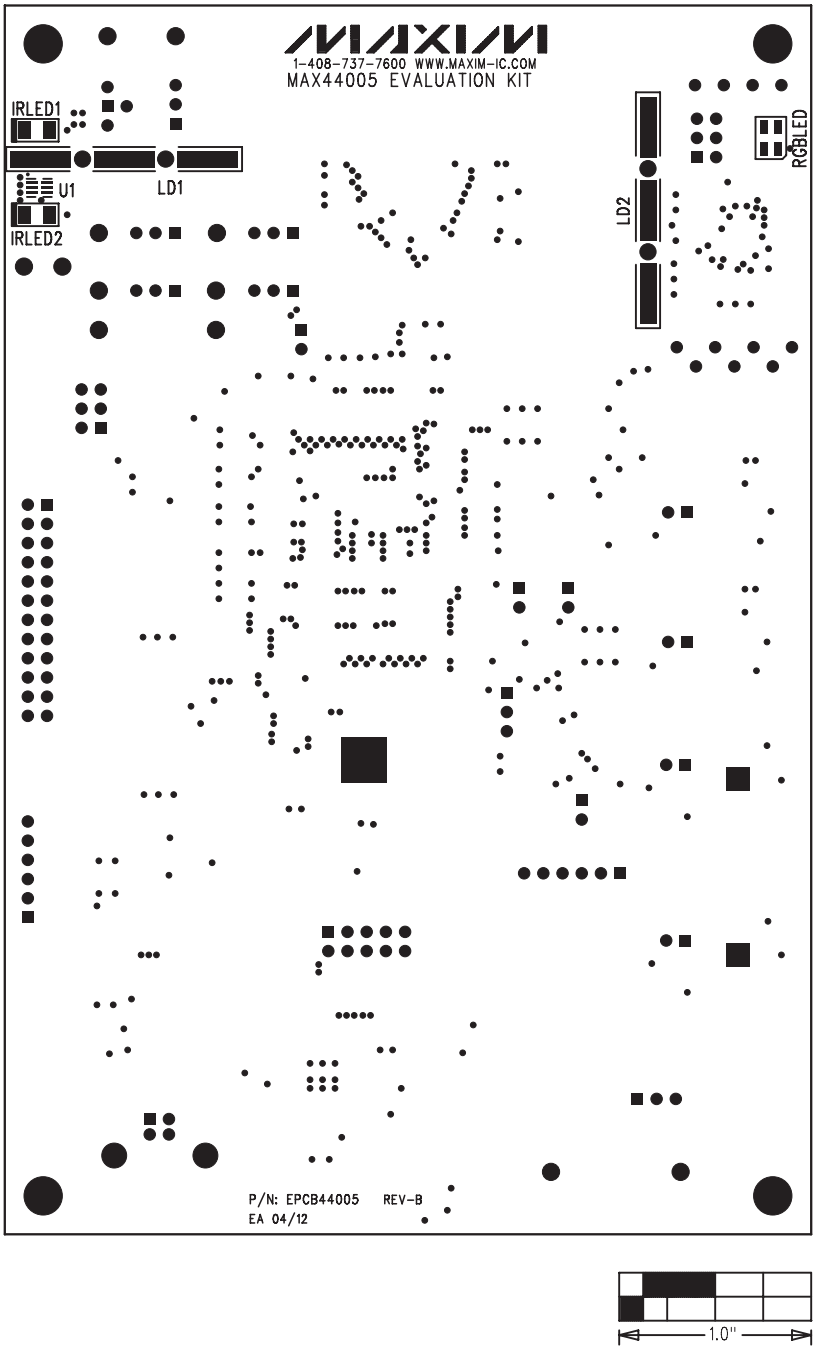

Figure 7. MAX44005 EV Kit Component Placement Guide—Component Side

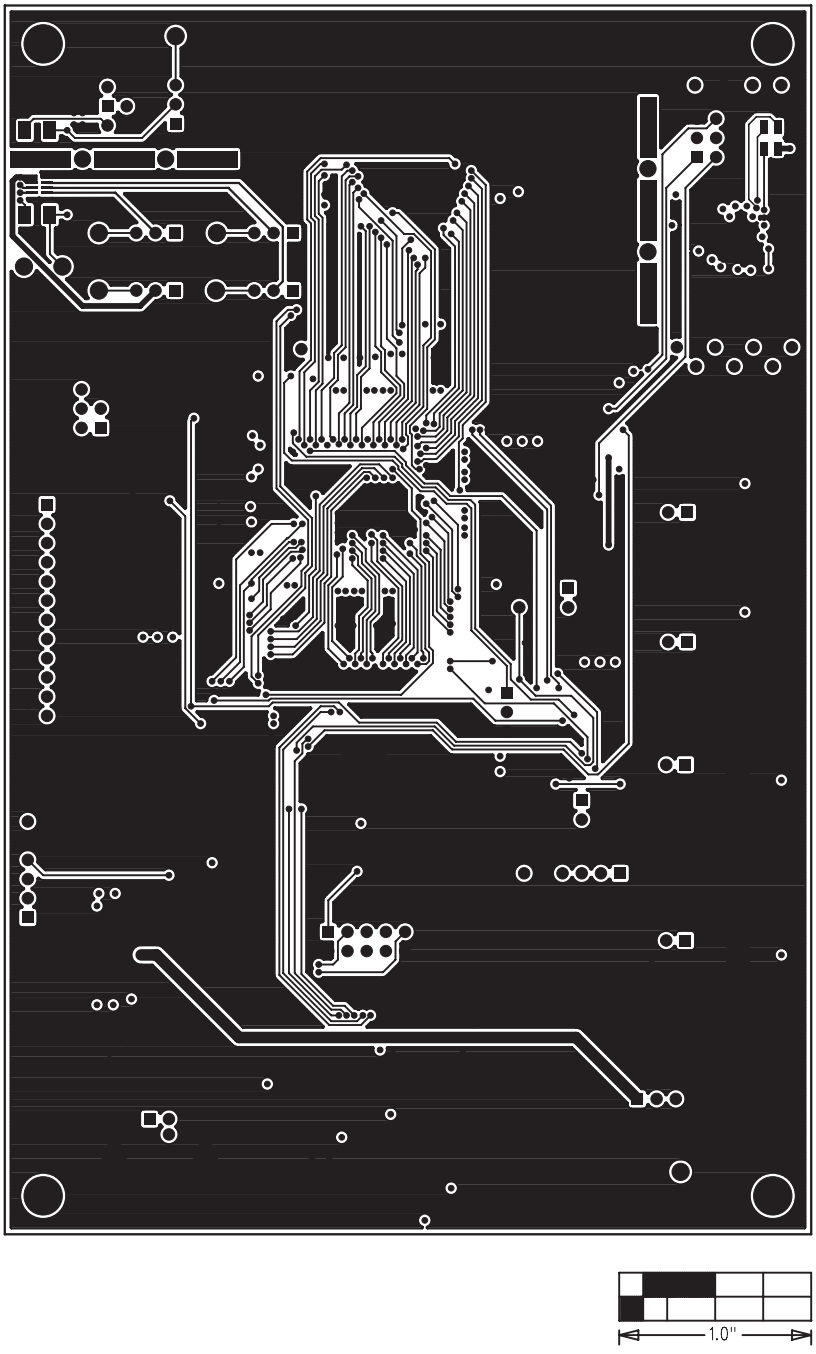

Figure 8. MAX44005 EV Kit PCB Layout—Component Side

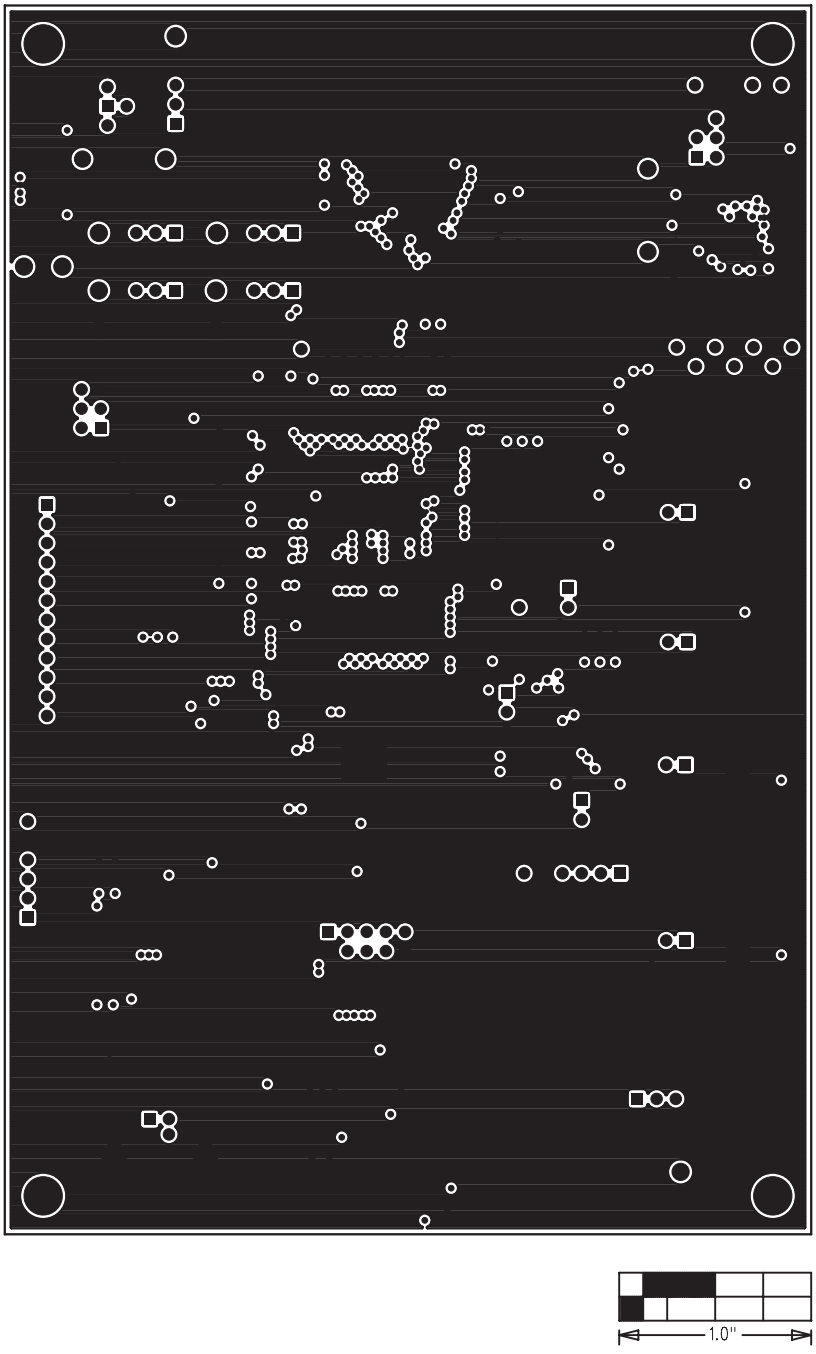

Figure 9. MAX44005 EV Kit PCB Layout—Layer 2

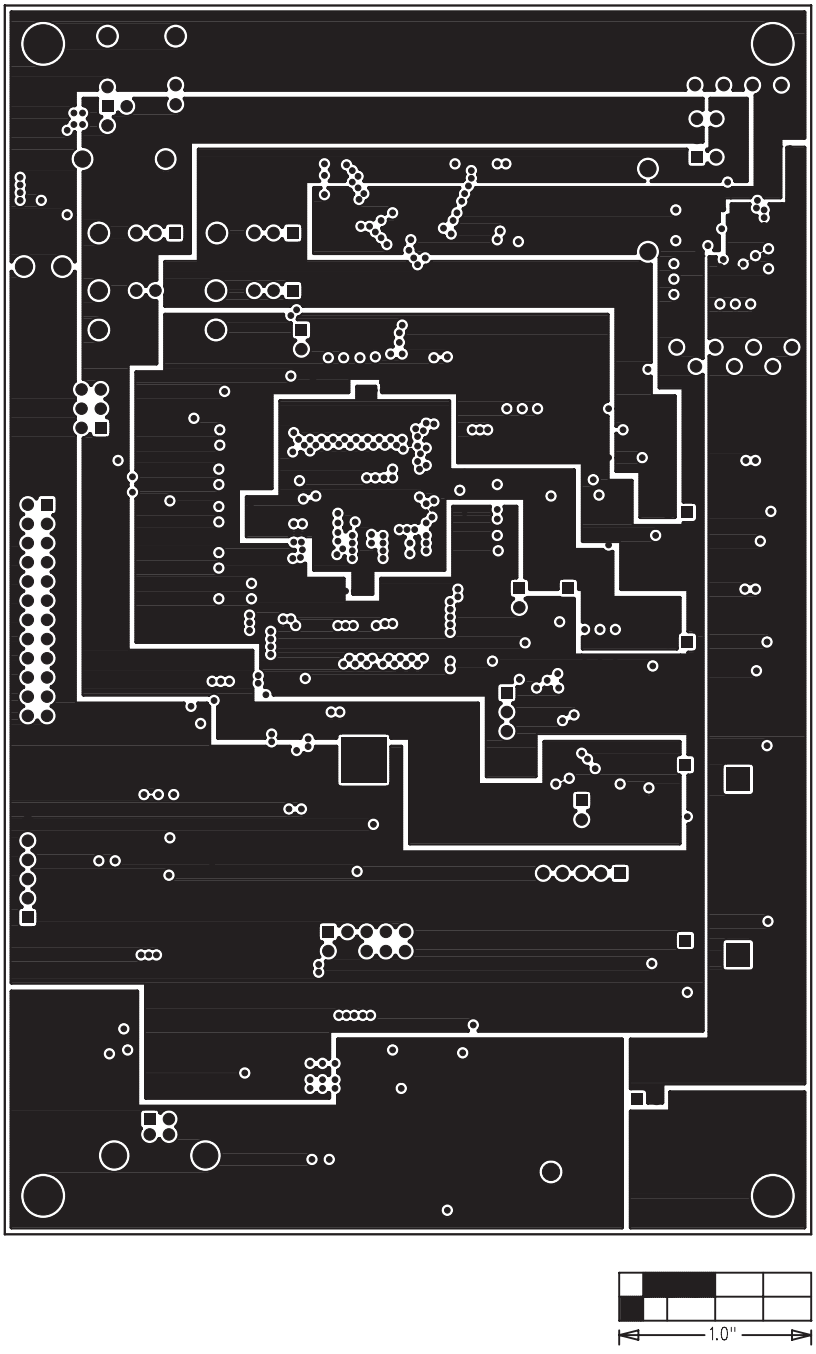

Figure 10. MAX44005 EV Kit PCB Layout—Layer 3

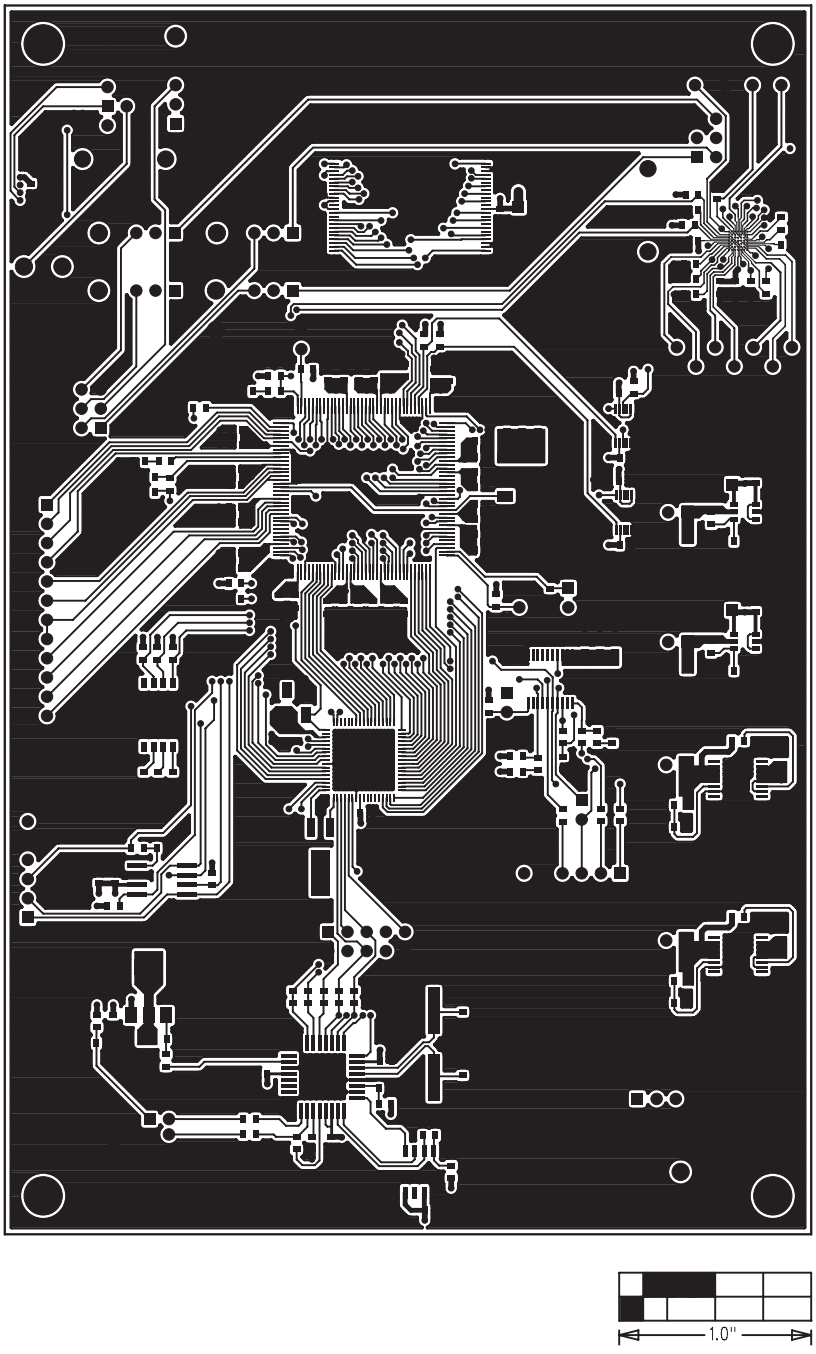

Figure 11. MAX44005 EV Kit PCB Layout—Bottom Side

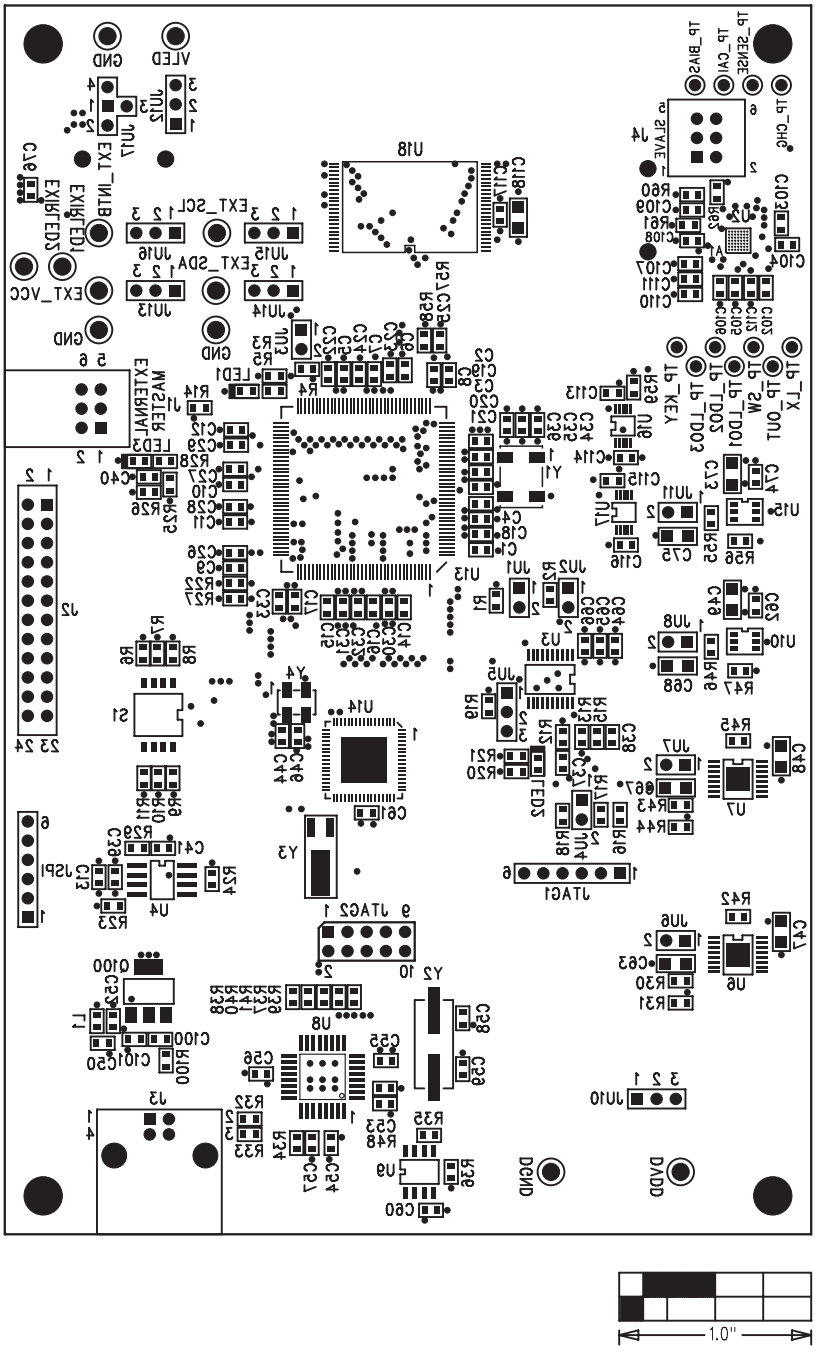

Figure 12. MAX44005 EV Kit Component Placement Guide—Bottom

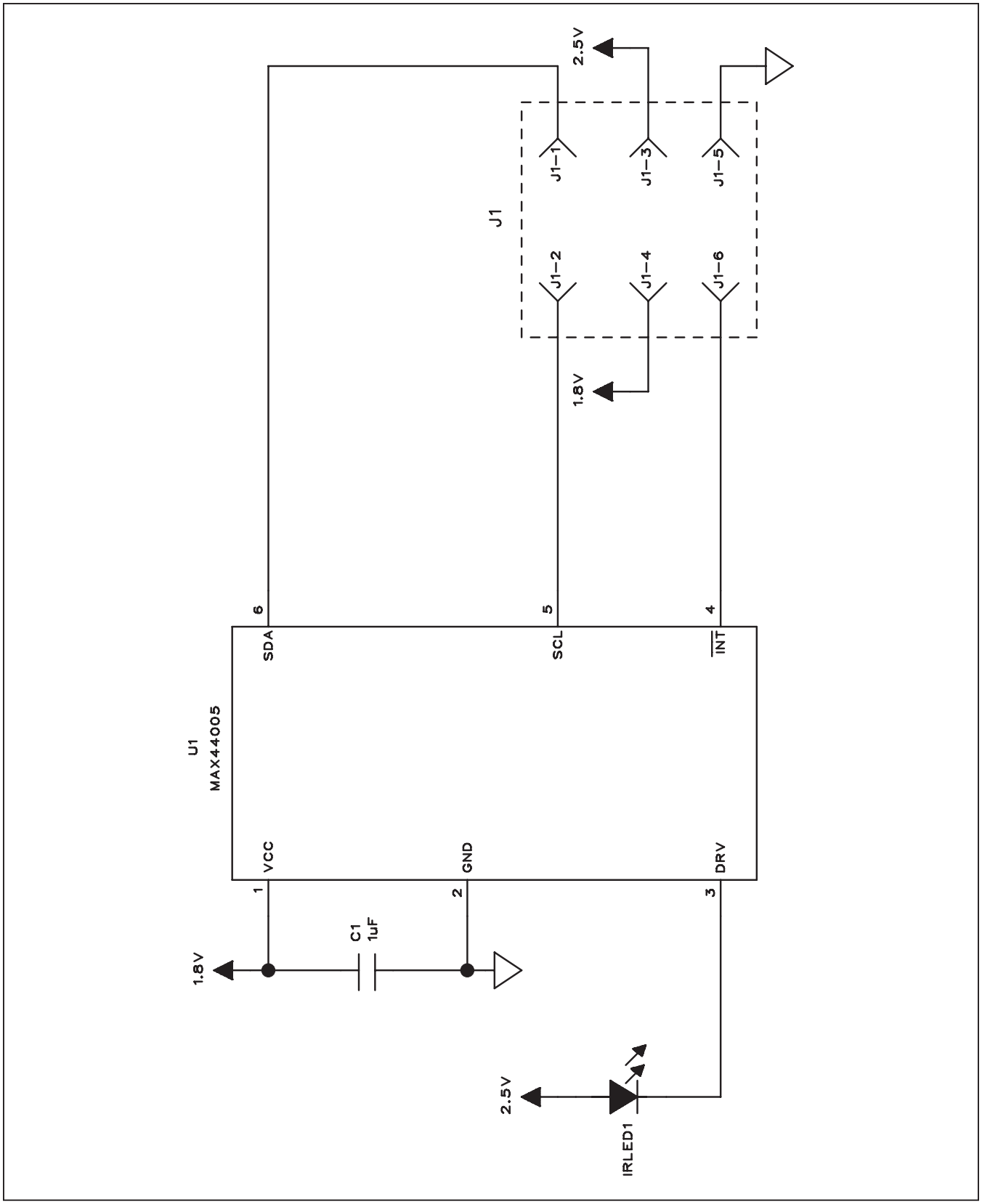

Figure 13. MAX44005 Daughter Board Schematic