

# MAX9275/MAX9279 Evaluation Kits

# Evaluate: MAX9275/MAX9279

## General Description

The MAX9275/MAX9279 evaluation kits (EV kit) provide a proven design to evaluate the MAX9275/MAX9279 high-bandwidth gigabit multimedia serial link (GMSL) serializers with spread spectrum and full-duplex control channel, with the use of a standard FAKRA coaxial cable or shielded twisted-pair (STP) cable. The EV kit 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 device. The EV kit comes with a MAX9275 or MAX9279 IC installed, depending on the kit ordered.

For complete GMSL evaluation using a standard FAKRA coax cable, order the MAX9275/MAX9279 coax EV kit with a companion deserializer board, the MAX9276A/MAX9280A coax EV kit. For evaluating with STP cable, also order the MAXCOAX2STP-HSD adapter kit. Only one adapter kit is needed per link, connecting SerDes boards.

## Features

- Accepts 24-Bit or 32-Bit Parallel Video
- Windows XP-, Windows Vista-, and Windows 7-Compatible Software
- USB-PC Connection (Cable Included)
- USB Powered
- Proven PCB Layout
- Fully Assembled and Tested

**Note:** In the following sections, “serializer” refers to the MAX9275/MAX9279 ICs, and “deserializer” refers to the MAX9276A/MAX9280A ICs. The term SerDes refers to serializer(s) and deserialer(s).

This document covers evaluation with either coaxial (coax) or shielded twisted-pair (STP) cables. Evaluation with coax cables is explained in this data sheet.

*[Ordering Information](#) appears at end of data sheet.*

## MAX9275/MAX9279 EV Kit Files

| FILE                      | DESCRIPTION                                |
|---------------------------|--|
| MAXSerDesEV-D_Install.EXE | Installs the EV kit files on your computer |
| MAXSerDesEV-D.EXE         | Application program                        |
| CDM20600.EXE              | Installs the USB device driver             |
| USB_Driver_Help_200.PDF   | USB driver installation help file          |

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## Quick Start

### Required Equipment

- MAX9275 or MAX9279 coax serializer EV kit (USB cable included)
- MAX9276A or MAX9280A deserializer coax EV kit
- 2m Rosenberger FAKRA cable assembly (included in the MAX9276A/MAX9280A coax EV kit)
- Optional: Function generator (needed only if parallel data lacks a pixel clock)
- User-supplied PC with Windows XP, Windows Vista, or Windows 7 and a spare USB port (direct 500mA connection is required; do not use a bus-powered hub)
- 5V DC, 500mA power supply

**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.

### Procedure

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

- 1) Visit [www.maximintegrated.com/evkitsoftware](http://www.maximintegrated.com/evkitsoftware) to download and install the EV kit software, MAXSerDesEV-D (the USB driver is automatically installed).
- 2) Verify that all serializer jumpers are in their default positions, as shown in [Table 1](#) and [Figure 8](#), and deserializer jumpers are set, as shown in [Figure 12](#).
- 3) Connect the power supply's positive terminal to the +5VIN PCB pad and the negative terminal to the nearest GND PCB pad on the deserializer EV kit board (this assumes the USB port is not used for powering the board).
- 4) Connect the FAKRA cable from the serializer EV kit OUT+ connector to the deserializer coax EV kit IN+ connector.
- 5) Connect the USB cable from the PC to the serializer 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 file to verify that the USB driver was successfully installed.
- 6) Verify that LED\_T2 on the deserializer EV kit board lights up, indicating that the microcontroller is powered and enabled.
- 7) Connect the pixel clock or function generator to the H1\_PCLK\_IN header on the serializer board.
- 8) Turn on the power supply and function generator.
- 9) Verify that LED D2 on the deserializer board lights up, indicating that the microcontroller is powered and enabled.
- 10) Verify operation by pulling a DINx line high/low and check corresponding DOUTx to change, tracking the DINx pin.
- 11) Verify that LOCK LED on the deserializer board lights up, indicating that the link has been successfully established. If LOCK LED remains off or ERROR LED is on, double-check *that* the PCLK\_IN signal is clocking data.
- 12) Start the EV kit software by selecting **Start | Programs | Maxim Integrated | MAXSerDesEV-D | MAXSerDesEV-D** from the **Start** menu.
- 13) The EV kit software **Configuration Settings** window is the first window that opens after successful launch. It helps the user to set up the serializer and deserializer boards properly and specify the mode of operation ([Figure 1](#)).
- 14) The GUI automatically searches for slave addresses selectable by the SerDes ADDx pins and identifies the DUTs based on the **Device IDs** read from the DUTs.
- 15) Press the **Identify Devices** button at any time to reidentify devices and display in corresponding table.
- 16) Only **LinkType** and **Device Address** on the **Configuration Settings** window affect the GUI operation. Other items are for user reference only.
- 17) I<sup>2</sup>C-to-I<sup>2</sup>C mode support: To enable I<sup>2</sup>C-to-I<sup>2</sup>C mode, change jumpers JU\_CONF1 and JU\_CONF0 ([Figure 1](#)), and change jumpers JU\_TXSCL from the TX to SCL position and JU\_RXSDA from the RX to SDA position. Press the **Identify Devices** button to verify proper settings. Alternatively, make the changes and select **I2C** from the **Bus** drop-down list before pressing the **Connect** button to start the **GMSL SerDes Evaluation Kit Window** ([Figure 2](#)).
- 18) Press the **Connect** button at the bottom of the screen.
- 19) The **GMSL SerDes Evaluation Kit Window** appears. Green LED indicators indicate that connection to the DUT was successful. If there is a communication problem with the DUTs, the LED indicators turn red.
- 20) Press the **Read all MAX92xx** button in the **Serializer** group box to read all serializer registers.
- 21) Click on the **Deserializer** tab ([Figure 3](#)) and then press **Read all MAX92xx** in the **Deserializer** group box to read all deserializer registers.
- 22) Select any of the other tabs to evaluate other functions of the SerDes.

### Detailed Description of Software

To start the evaluation kit GUI, select [Start | Programs | Maxim Integrated | MAXSerDesEV-D | MAXSerDesEV-D](#).

### Configuration Settings Window

The **Configuration Settings** window (Figure 1) is the first window that opens after program launch. It allows the user to specify evaluation board setup and mode of operation.

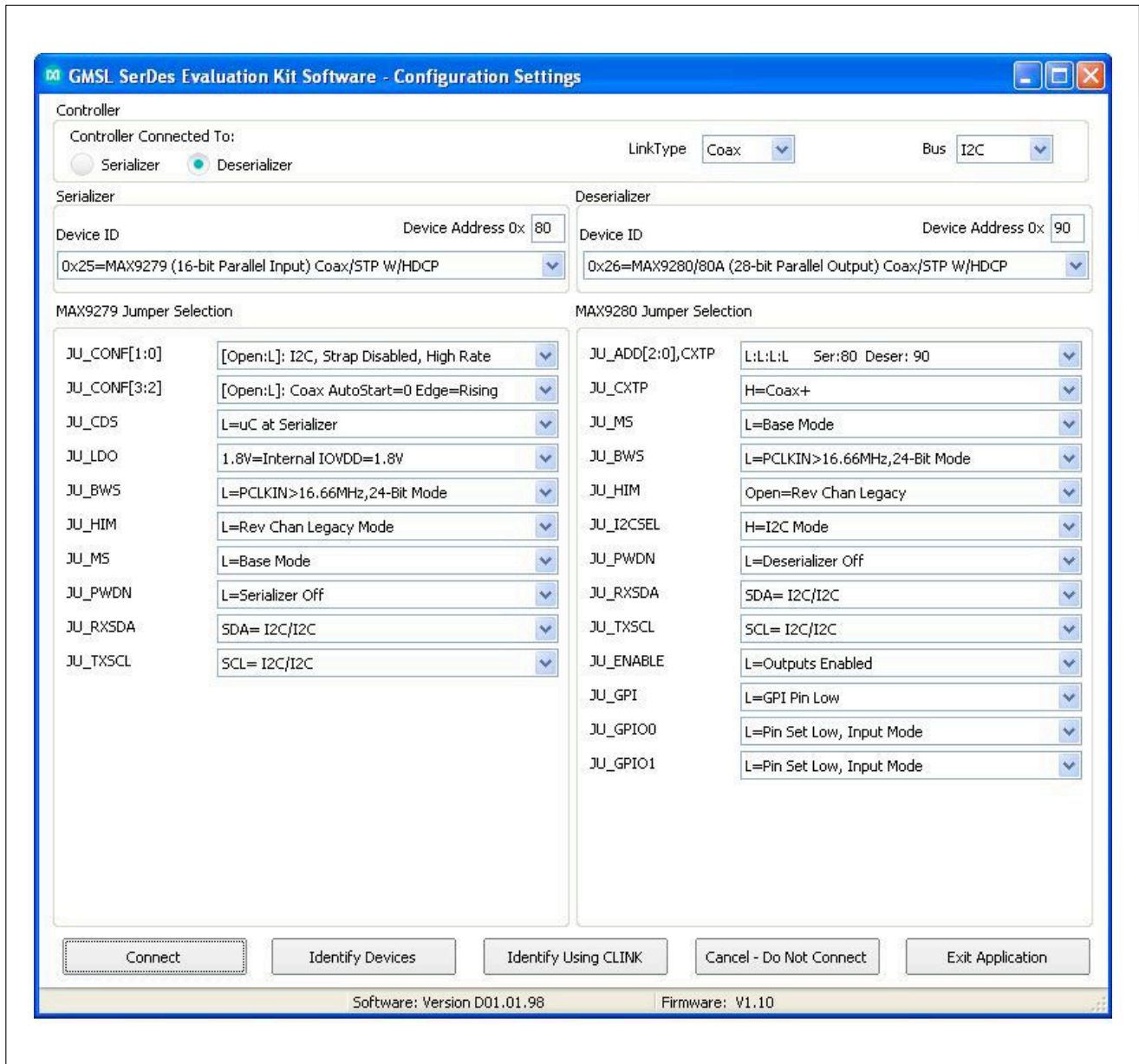


Figure 1. MAXSerDesEV-N EV Kit Software: Configuration Settings Window

### Controller Group Box

In the **Controller** group box, select link type by choosing **Coax** or **STP** from the **LinkType** drop-down list, the **Bus** by choosing **I<sup>2</sup>C** or **UART** from the **Bus** drop-down list, and decide whether serializer or deserializer should connect to the USB controller by clicking on one of the radio buttons. With changes to any of these parameters, selection in the jumper listings below changes automatically, prompting the user to make corresponding changes to the jumper on the EV kit boards.

### Serializer Jumper Selection and Deserializer Jumper Selection

The **MAX9279 Jumper Selection** and **MAX9280/80A Jumper Selection** group boxes list the SerDes jumpers, respectively, on the evaluation boards of the selected **Device IDs** and show the proper shunt positions for the conditions selected in the **Controller** group box.

### Identify Devices Button

The **Identify Devices** button causes the GUI to scan the system and search for slave addresses selectable by the SerDes input address pins. Upon successful communication, identified **Device ID** and corresponding jumper lists are displayed on the **MAX9279 Jumper Selection** and **MAX9280/80A Jumper Selection** group boxes. The user can also manually select a device from the **Device ID** drop-down list and enter a slave address in the **Device Address** edit box. It is good practice to utilize the **Identify Devices** function and verify communication with the DUTs before attempting to **Connect**. [Figure 8](#), [Figure 9](#), [Figure 10](#), [Figure 11](#), and [Figure 12](#) show jumper settings on the MAX9275/MAX9279 PCB for coax or STP cable and UART or I<sup>2</sup>C communication with a USB controller connected to the serializer board. Refer to the MAX9275/MAX9279 IC data sheet for detailed configuration information. See [Table 1](#) for jumper functions and settings.

### Connect Button

The **Connect** button opens up the EV kit window, reads the SerDes registers, and updates the register maps for both. Successful communication is indicated by green LED indicators, and in case of a communication problem, the color turns red.

### Cancel - Do Not Connect Button

The **Cancel - Do Not Connect** button brings up the EV kit window without attempting to connect to the microcontroller of the SerDes. Although there is no communication with the microcontroller, all functions and tabs corresponding to the selected **Device IDs** on the EV kit become active once there.

### Evaluation Kit Window

The **Evaluation Kit** window ([Figure 2](#)) provides access to all internal functions of the DUTs by means of reading and writing registers through different tabs, allowing the user to evaluate various functions of the SerDes.

### Serializer Group Box

The **Serializer** group box provides pushbuttons to update the serializer's register map from the DUT using the **Read All ....** button, or update from a previously saved file, **Load** button, or save existing registers values into a file for future reference using the, **Save** button.

### Deserializer Group Box

The **Deserializer** group box provides pushbuttons to update the deserializer's register map from the DUT using the **Read All** button, update from a previously saved file using the **Load** button, or save existing register values into a file for future reference using the **Save** button.

### Open Configuration Button

The **Open Configuration** button returns the user to the **Configuration Settings** window. Use the **Open Configuration** and **Connect** buttons to go back and forth between the **Configuration Settings** window and the **Evaluation Kit** window.

**Read All Button**

The **Read All** button reads both SerDes device registers.

**MAX9279 Tab**

The **MAX9279** tab (Figure 2) lists the serializer's registers and bit maps. **Read** and **Write** buttons in each register group box allows read/write access for each bit (or group of bits) that specify a function or condition, as defined in the

respective serializer IC data sheet. The color of the small LED indicator next to the **Read/Write** buttons indicates the communication status. Red indicates failed communication and green indicates successful communication.

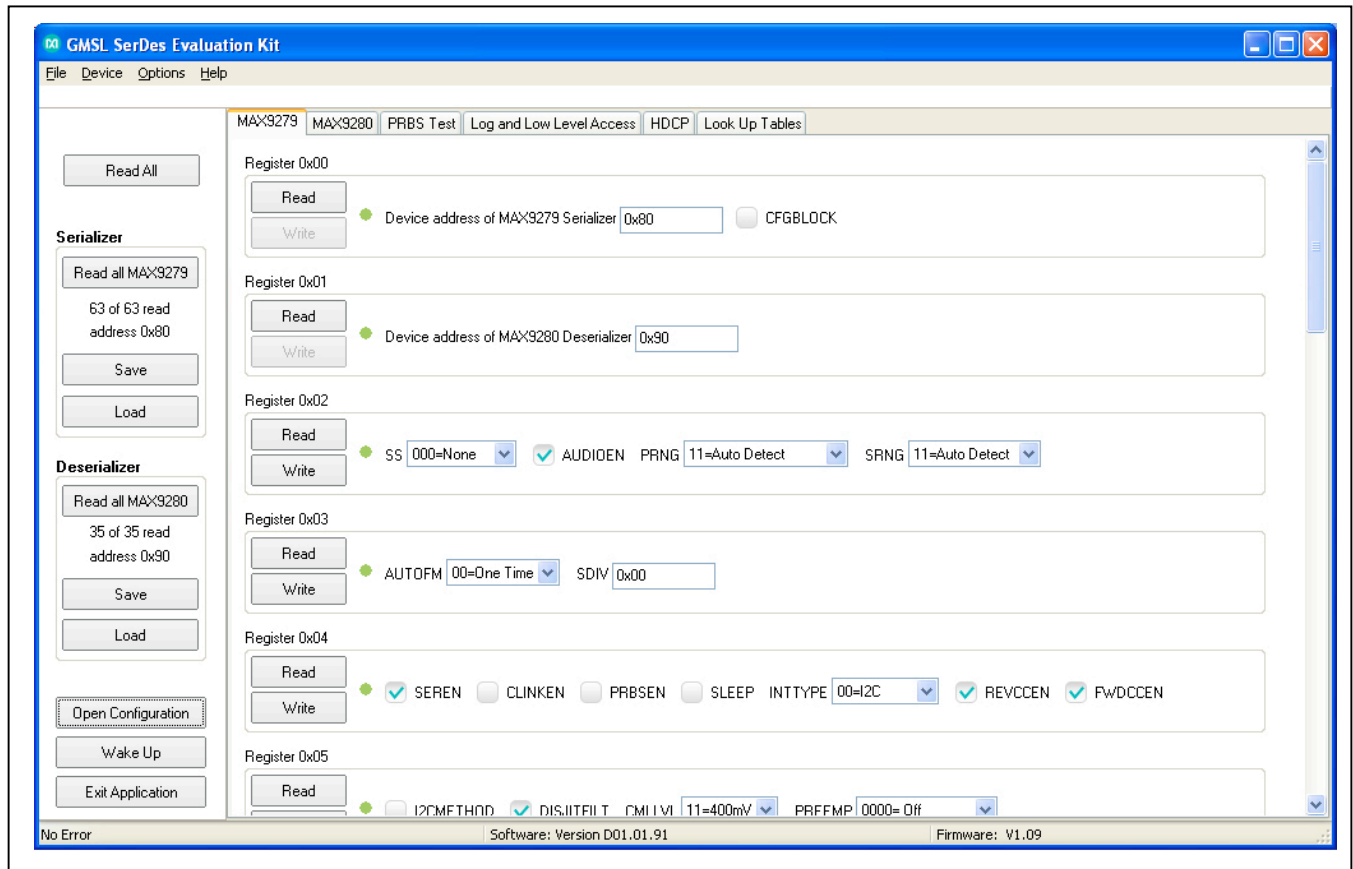


Figure 2. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (MAX9279 Tab)

**MAX9280/80A Tab**

The **MAX9280/80A** tab (Figure 3) lists the deserializer's registers and bitmaps. Read and Write buttons in each register group box allows read/write access for each bit (or group of bits) that specify a function or condition, as

defined in the respective deserializer IC data sheet. The color of the small LED indicator next to the **Read** and **Write** buttons indicates the communication status. Red indicates failed communication and green indicates successful communication.

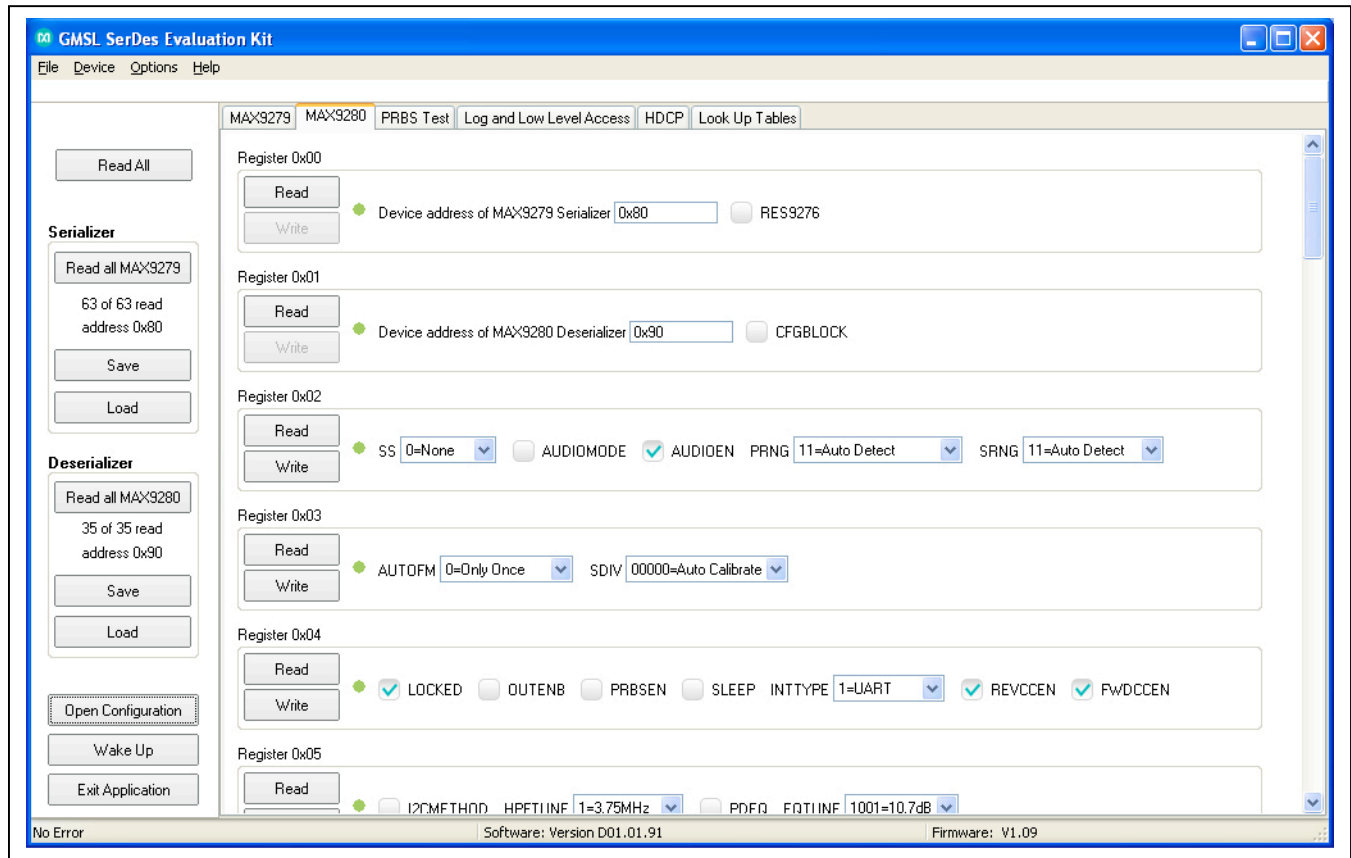


Figure 3. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (MAX9280/80A Tab)

**PRBS Test**

Upon pressing the **Start** button in the **PRBS Test** tab (Figure 4), the SerDes registers are programmed per defined sequence in the IC data sheets to perform a pseudorandom bit sequence (PRBS) error-

rate test. Enter test duration (maximum 32,767s = 9.1hrs) in the **Duration** edit box in the **Bit Error Rate Test** group box and press the **Start** button to start the test. Upon test completion, the number of bit errors read from the PRBSERR register are displayed in the **PRBS Error Counter** box.

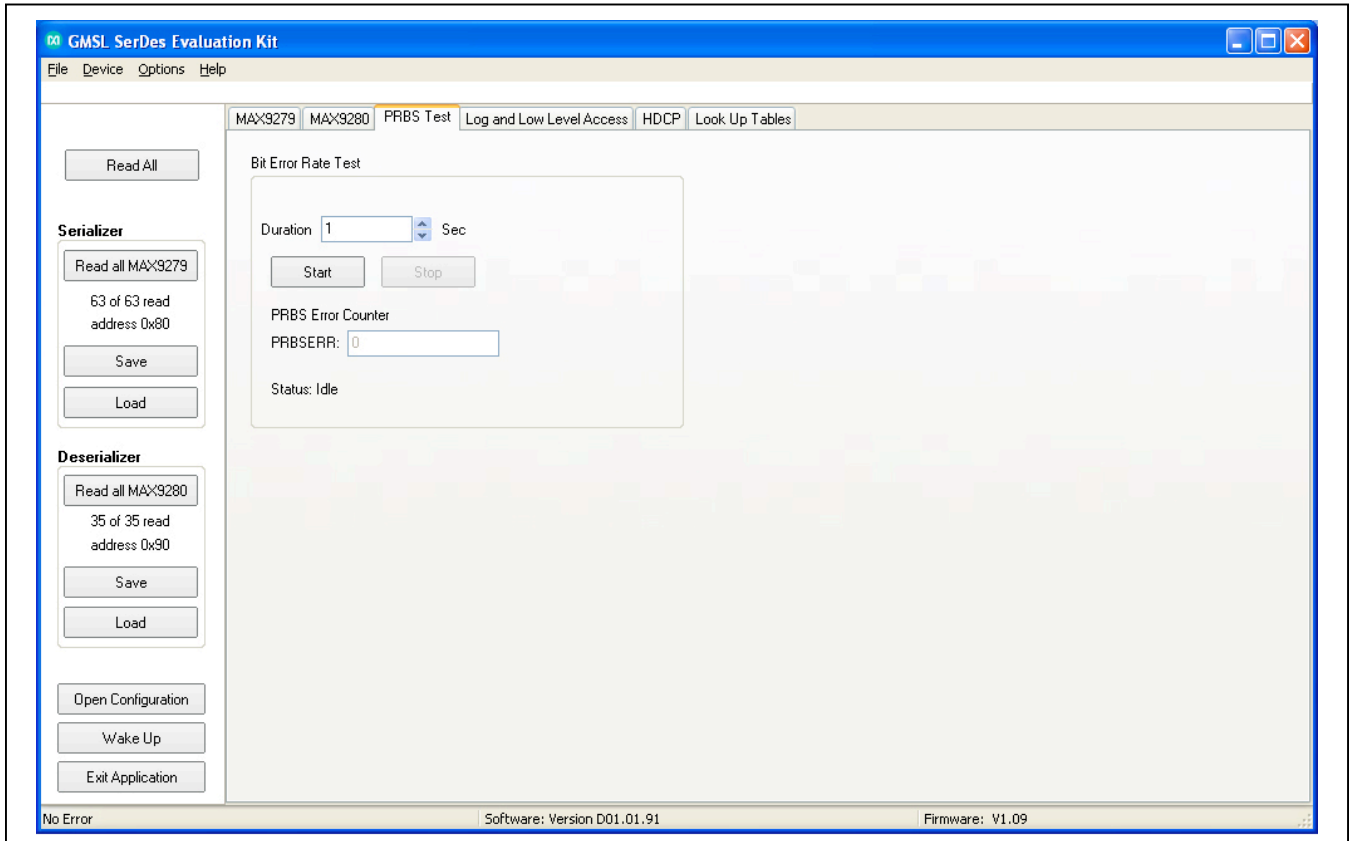


Figure 4. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (PRBS Test Tab)

**Log and Low Level Access Tab**

The **Log and Low Level Access** tab (Figure 5) logs all activities between the GUI and DUTs. The **Register Access** group box allows read or write of the specified slave and register addresses. Press the **Send String to**

**EVKIT** button to communicate with devices that are not register-based, such as the MAX7324.

User-supplied devices requiring other interface protocols must use raw TX byte codes to communicate. Note that in bypass mode, raw data passes directly to the user-supplied slave device without modification.

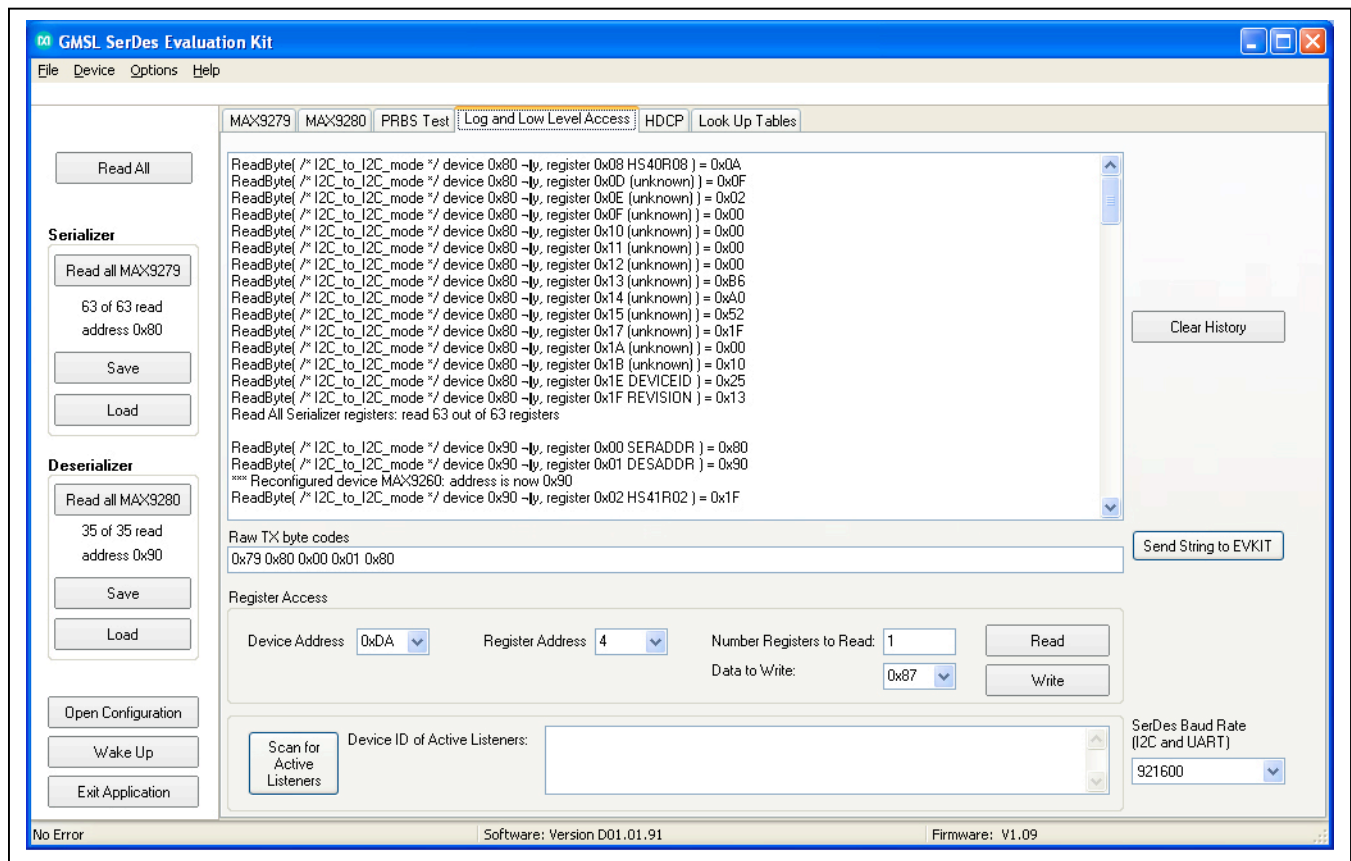


Figure 5. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (Log and Low Level Access Tab)



**HDCP Tab**

The **HDCP** tab (Figure 6) is viewable only for SerDes that support the HDCP function. The HDCP registers of both SerDes are displayed side-by-side with **Read** and

**Write** buttons for each register. **Authenticate** and **Enable Encryption** buttons initiate start of the corresponding function; at the end of the operation, the color of the LED indicator turns green to indicate success of the function or red to indicate failure.

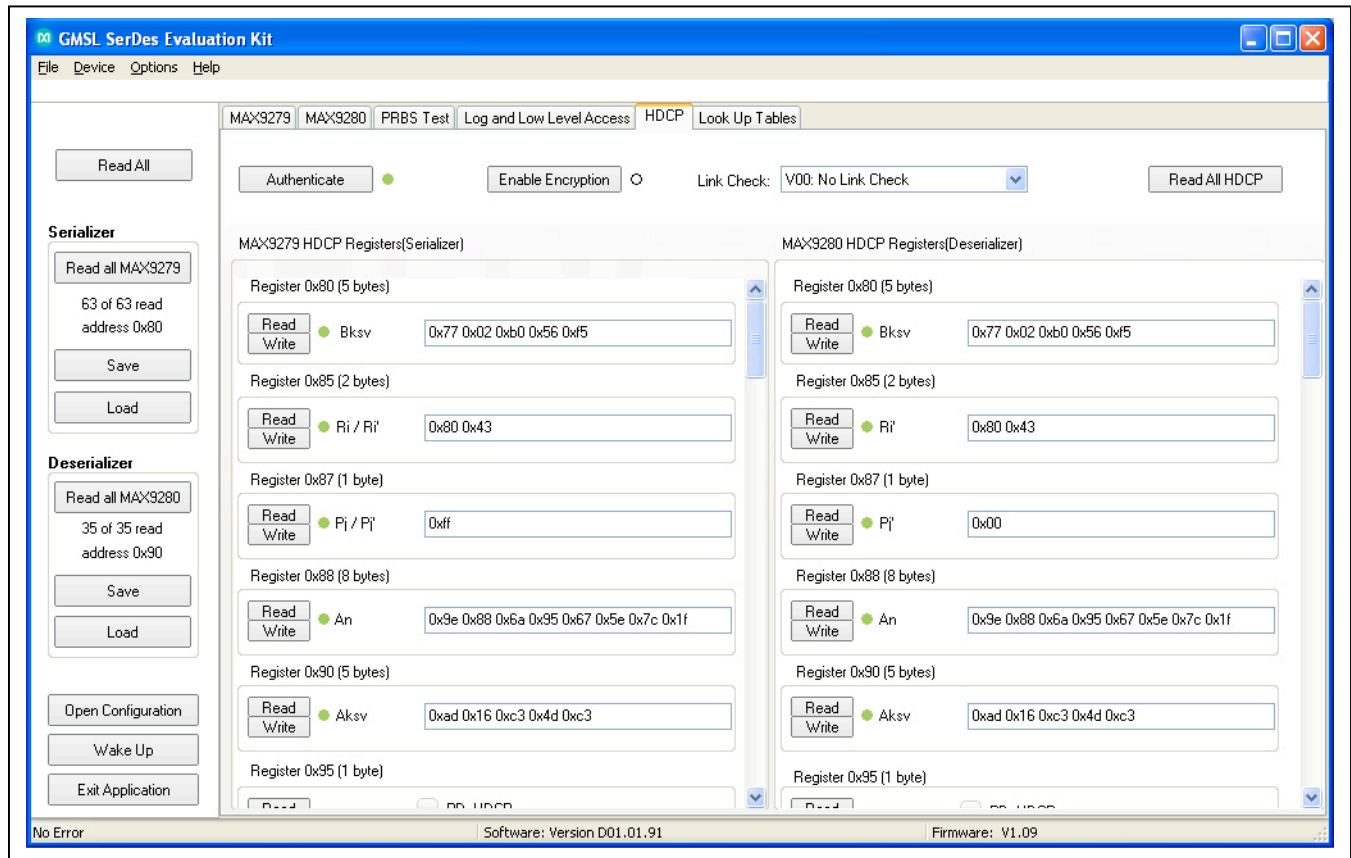


Figure 6. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (HDCP Tab)

**Lookup Tables Tab**

The **Lookup Tables** tab (Figure 7) provides access to the look up tables (LUTs) of the deserializer. Use this tab to program/view/edit LUT settings of the red, green, and blue colors for color translation. LUT content edits can be performed on the entire 256 bytes of all three colors, of

an individual color, or of an individual pixel of any color table. Contents of the **Lookup Tables** can be saved as a .csv file for use as a template, or can be uploaded from an existing file. A sample LUT contents file is provided in the EV kit GUI.

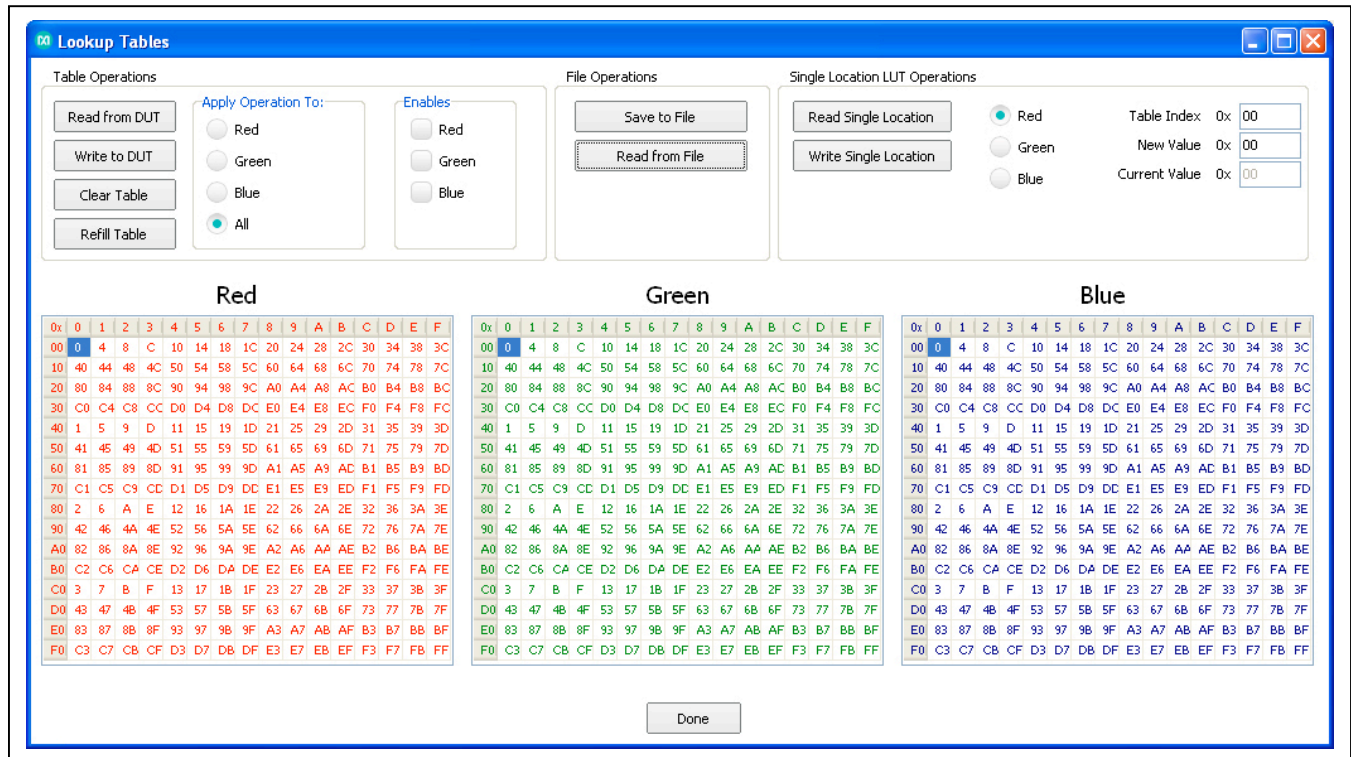


Figure 7. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (Lookup Tables)

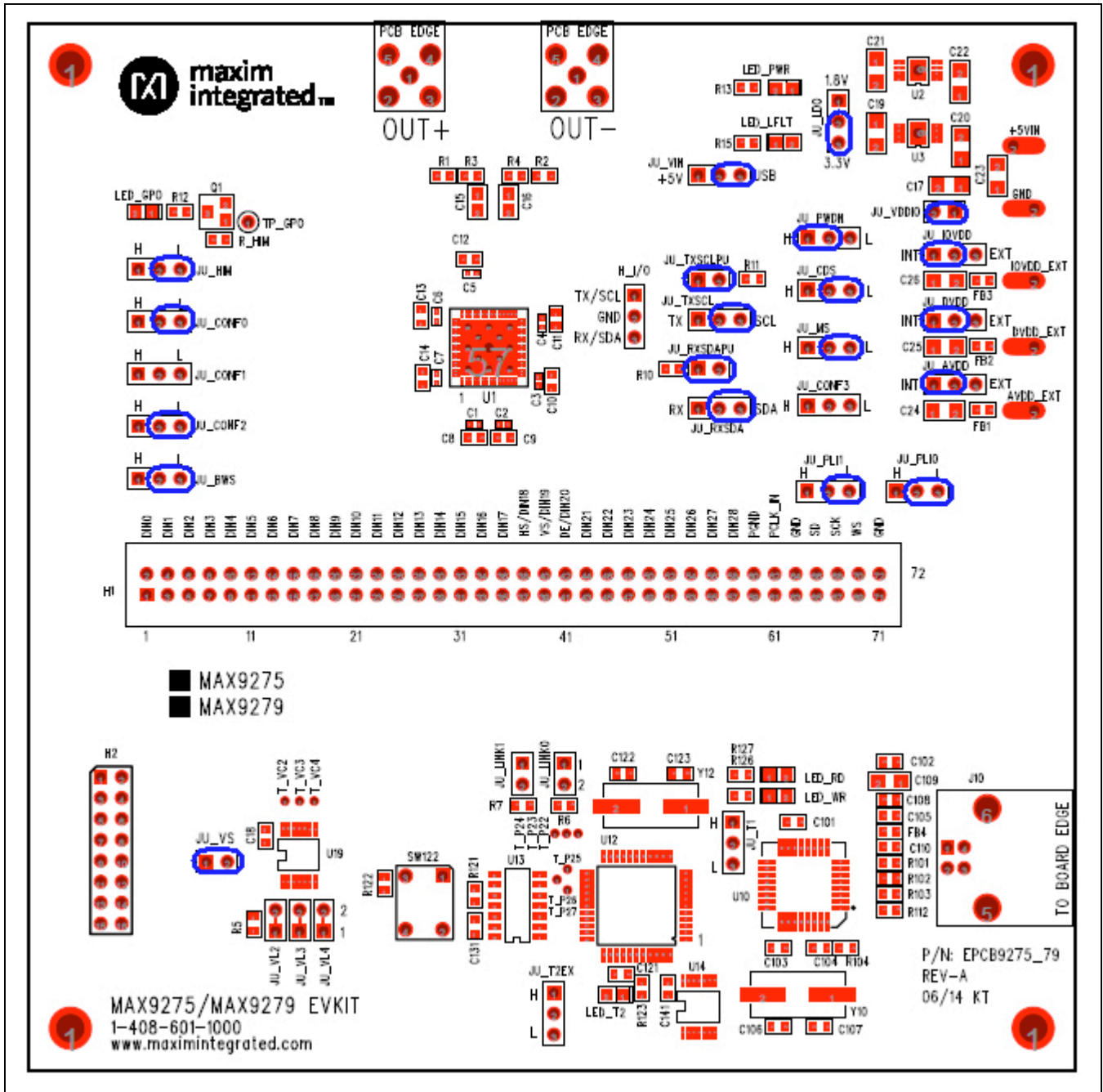


Figure 8. Initial Serializer Jumper Settings for Coax/I<sup>2</sup>C Mode



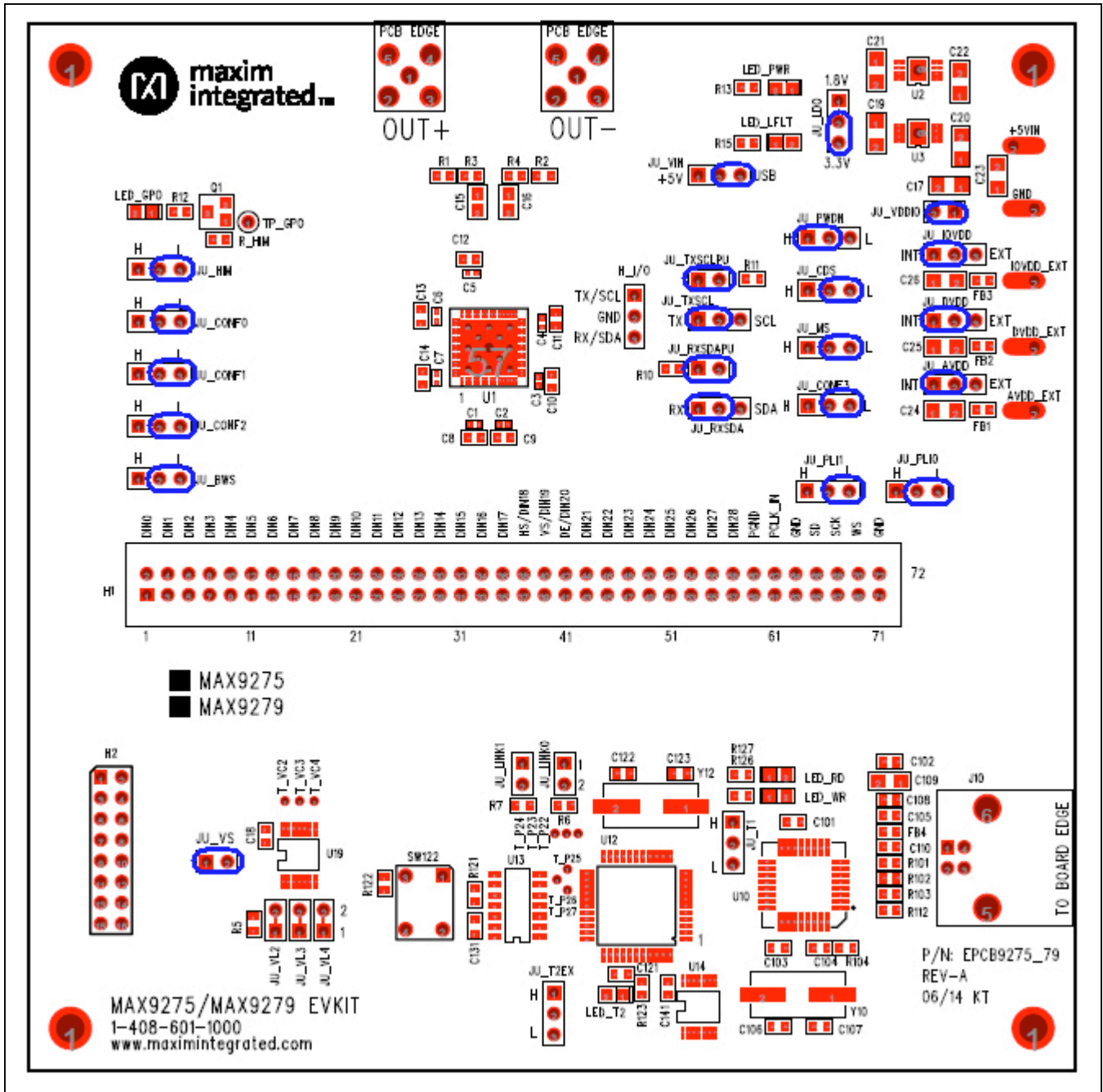


Figure 10. Serializer Jumper Settings for STP/UART Mode

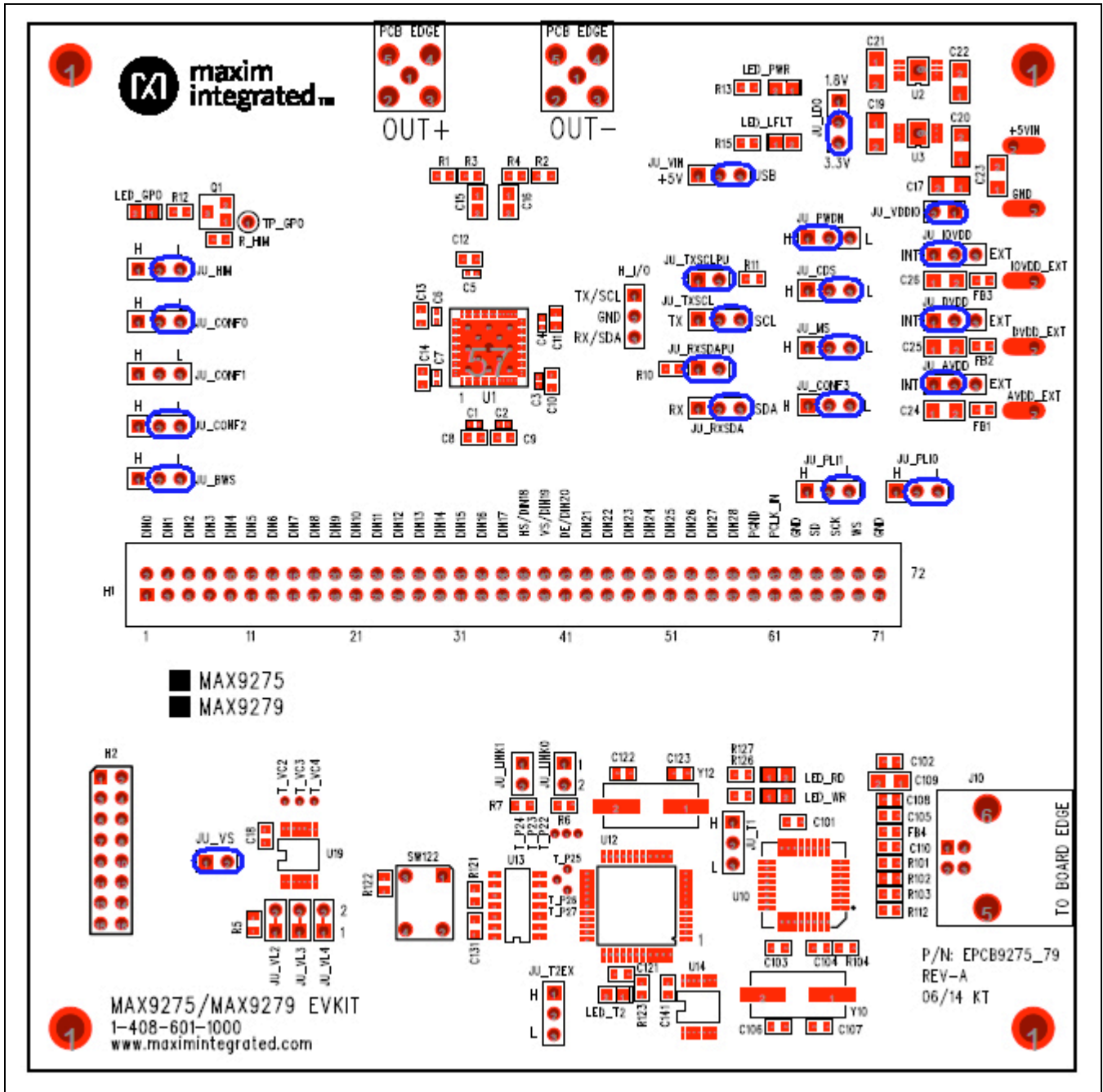


Figure 11. Serializer Jumper Settings for STP/I2C Mode



## Detailed Description of Hardware

The MAX9275/MAX9279 coax EV kits provide a proven layout for the MAX9275/MAX9279 GMSL serializers with the use of a standard FAKRA coax cable. On-board level translators and easy-to-use USB-PC connection are included on the EV kit.

The EV kit board's layout is divided into three principal sections:

- 1) Power-supply circuitry: On-board LDO regulators U2 and U3 power the AVDD, DVDD, and IOVDD supplies from +5VIN.
- 2) MAX9275/MAX9279 and support components.
- 3) Microcontrollers (U12, U10) and support components.

### On-Board-Supplied Interface

The EV kit board provides a UART and I<sup>2</sup>C interface (through U12 and U14) intended to operate while both SerDes boards are powered up and locked.

### User-Supplied Interface

To use the EV kit with a user-supplied interface, remove shunts from the JU\_TXSCL header and apply a TX/SCL signal to the middle pin of the JU\_TXSCL header. Also, remove shunts from the JU\_RXSDA header and apply an RX/SDA signal to the middle pin of the JU\_RXSDA header.

Refer to the MAX9275/MAX9279 and MAX9276A/MAX9280A IC data sheets for details regarding UART protocol for base mode, write-data format, read-data format, selecting base mode or bypass mode, and selecting a UART or I<sup>2</sup>C slave device.

### User-Supplied Power Supply

The EV kit draws power from the USB port by default. Jumper JU\_VIN selects between the 5V USB supply or the +5VIN user-supplied power to power up U1 and its supporting circuitry.

To provide different power supplies to AVDD, DVDD, and IOVDD, move shunts on the JU\_AVDD, JU\_DVDD, and JU\_IOVDD headers from the INT to EXT positions and apply external user-supplied power at the AVDD\_EXT, DVDD\_EXT, and IOVDD\_EXT terminals, respectively.

## Detailed Description of Firmware

The DS89C450 microcontroller (U12) runs custom firmware that ensures that no breaks occur within register read/write commands. The firmware records 9-bit even-parity data received from the USB interface while RTS is set, and plays back the 9-bit data with 1.5 stop bits timing when RTS is cleared. Data received from the SerDes is immediately relayed to the USB.



Table 1. Jumper Descriptions

| JUMPER   | SIGNAL  | SHUNT POSITION | FUNCTION   |
|----------|---------|----------------|--|
| JU_AVDD  | AVDD    | INT*           | AVDD supplied internally                         |
|          |         | EXT            | AVDD supplied through the AVDD_EXT terminal      |
| JU_BWS   | BWS     | L*             | PCLKIN > 12.5MHz, 32-bit mode                    |
|          |         | H              | PCLKIN > 12.5MHz, 32-bit mode                    |
|          |         | Open           | PCLKIN > 33.33MHz 27-bit high bandwidth          |
| JU_CDS   | CDS     | L*             | μC is connected at the serializer side           |
|          |         | H              | μC is connected at the deserializer side         |
| JU_CONF0 | CONF0   | L*             | (See Table 2)                                    |
|          |         | H              | (See Table 2)                                    |
|          |         | Open           | (See Table 2)                                    |
| JU_CONF1 | CONF1   | L              | (See Table 2)                                    |
|          |         | H              | (See Table 2)                                    |
|          |         | Open*          | (See Table 2)                                    |
| JU_CONF2 | CONF2   | L              | (See Table 3)                                    |
|          |         | H              | (See Table 3)                                    |
|          |         | Open*          | (See Table 3)                                    |
| JU_CONF3 | CONF3   | L              | (See Table 3)                                    |
|          |         | H              | (See Table 3)                                    |
|          |         | Open*          | (See Table 3)                                    |
| JU_DVDD  | DVDD    | INT*           | DVDD supplied internally                         |
|          |         | EXT            | DVDD supplied through the AVDD_EXT terminal      |
| JU_HIM   | GPO/HIM | L*             | Reverse channel in legacy mode                   |
|          |         | H              | Reverse channel in high-immunity mode            |
| JU_IOVDD | IOVDD   | INT*           | IOVDD supplied internally                        |
|          |         | EXT            | IOVDD supplied through the AVDD_EXT terminal     |
| JU_LDO   | LDO     | 3.3V*          | Internal IOVDD = 3.3V                            |
|          |         | 1.8V           | Internal IOVDD = 1.8V                            |
| JU_LINK0 | LINK0   | —              | Reserved for factory diagnostics test            |
| JU_LINK1 | LINK1   | —              | Reserved for factory diagnostics test            |
| JU_MS    | MS      | L*             | Base mode  |
|          |         | H              | Bypass mode                                      |
| JU_PLI0  | PLI0    | L*             | Pins 1, 5, and 9 on header H1 connected to GND   |
|          |         | H              | Pins 1, 5, and 9 on header H1 connected to VDDIO |
|          |         | Open           | Pins 1, 5, and 9 on header H1 open               |
| JU_PLI1  | PLI1    | L*             | Pin 3, 7, and 11 on header H1 connected to GND   |
|          |         | H              | Pin 3, 7, and 11 on header H1 connected to VDDIO |
|          |         | Open           | Pin 3, 7, and 11 on header H1 open               |

**Table 1. Jumper Descriptions (continued)**

| JUMPER     | SIGNAL | SHUNT POSITION | FUNCTION   |
|------------|--------|----------------|--|
| JU_PWDN    | PWDN   | L              | Serializer is powered on   |
|            |        | H*             | Serializer is powered off  |
| JU_RXSDA   | RXSDA  | RX*            | UART-to-UART or UART-to-I <sup>2</sup> C mode (do not install if controller is on the deserializer side) |
|            |        | SDA            | I <sup>2</sup> C-to-I <sup>2</sup> C mode (do not install if controller is on the deserializer side)     |
| JU_RXSDAPU | RXSDA  | Short*         | RX/SDA pulled up to IOVDD  |
|            |        | Open           | RX/SDA pulled up to IOVDD externally   |
| JU_T1      | USB_RI | L              | U1-11 to GND (factory use only)  |
|            |        | H              | U1-11 to USB+5V (factory use only)   |
| JU_T2EX    | T2EX   | Open*          | U1-11 open (factory use only)  |
|            |        | L              | U1-41 to GND (factory use only)  |
|            |        | H              | U1-41 to USB+5V (factory use only)   |
|            |        | Open*          | U1-41 open (factory use only)  |
| JU_TXSCL   | TXSCL  | TX*            | UART-to-UART or UART-to-I <sup>2</sup> C mode (do not install if controller is on the deserializer side) |
|            |        | SCL            | I <sup>2</sup> C-to-I <sup>2</sup> C mode (do not install if controller is on the deserializer side)     |
| JU_VDDIO   | VDDIO  | Short*         | VDDIO applied to U1  |
|            |        | Open           | Connect ammeter to measure I <sub>VDDIO</sub>  |
| JU_VIN     | VIN    | USB            | 5V supplied from the USB port  |
|            |        | +5V*           | 5V supplied from the external supply applied on the +5V terminal   |
| JU_VS      | VS     | Short*         | VS/DIN19 (reserved for factory diagnostics test)   |
|            |        | Open           |  |

\*Default position.

**Table 2. Jumper Settings (JU\_CONF1, JU\_CONF0)**

| JU_CONF1 SHUNT POSITION | CONF1 | JU_CONF0 SHUNT POSITION | CONF0   | CONTROL CHANNEL (I2CSEL) | SPREAD ENABLE (SSEN) | DATA-RATE SELECT (DRS) |
|-------------------------|-------|-------------------------|---------|--------------------------|----------------------|------------------------|
| L*                      | Low   | L*                      | Low     | UART (0)                 | Disabled (0)         | High rate (0)          |
| L                       | Low   | Open                    | High    | UART                     | Disabled             | Low rate (1)           |
| H                       | High  | H                       | Low     | UART                     | Enabled (1)          | High rate              |
| H                       | High  | L                       | High    | UART                     | Enabled              | Low rate               |
| Open                    | Open  | Open                    | Low/Mid | I <sup>2</sup> C (1)     | Disabled             | High rate              |
| L                       | Low   | H                       | Mid     | I <sup>2</sup> C         | Disabled             | Low rate               |
| H                       | High  | L                       | Mid     | I <sup>2</sup> C         | Enabled              | High rate              |
| Open                    | Mid   | Open                    | High    | I <sup>2</sup> C         | Enabled              | Low rate               |

\*Default position.

**Table 3. Jumper Settings (JU\_CONF3, JU\_CONF2)**

| JU_CONF3 SHUNT POSITION | CONF3 | JU_CONF2 SHUNT POSITION | CONF2    | OUT± OUTPUT TYPE (CX/TP) | AUTOSTART (AUTOS) | PCLKIN LATCH EDGE (ES) |
|-------------------------|-------|-------------------------|----------|--------------------------|-------------------|------------------------|
| L                       | Low   | L                       | Low      | STP (0)                  | Autostart (0)     | Rising (0)             |
| L                       | Low   | Open                    | High     | STP                      | Autostart         | Falling (1)            |
| H                       | High  | H                       | Low      | STP                      | No autostart (1)  | Rising                 |
| H                       | High  | L                       | High     | STP                      | No autostart      | Falling                |
| Open*                   | Open  | Open*                   | Low/Open | Coax (1)                 | Autostart         | Rising                 |
| L                       | Low   | H                       | Open     | Coax                     | Autostart         | Falling                |
| H                       | High  | L                       | Open     | Coax                     | No autostart      | Rising                 |
| Open                    | Open  | Open                    | High     | Coax                     | No autostart      | Falling                |

\*Default position.

## Component List, Schematics, and PCB Layout Diagrams

Click on the links below for component information, schematics, and PCB layout diagrams:

- [MAX9275/MAX9279 EV Kit BOM](#)
- [MAX9275/MAX9279 EV Kit Schematics](#)
- [MAX9275/MAX9279 EV Kit PCB Layout](#)

## Ordering Information

| PART                      | TYPE        |
|---------------------------|-------------|
| <b>MAX9275</b> COAXEVKIT# | EV Kit      |
| <b>MAX9279</b> COAXEVKIT# | EV Kit      |
| MAXCOAX2STP-HSD#          | Adapter Kit |

#Denotes RoHS compliant.

**Note:** The MAX9275 and MAX9279 serializer coax EV kits are usually ordered with a companion deserializer board:

- MAX9276A EV kit (MAX9276ACOAXEVKIT#), or
- MAX9280A EV kit (MAX9280ACOAXEVKIT#)

## Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION  | PAGES CHANGED |
|-----------------|---------------|--|---------------|
| 0               | 7/15          | Initial release  | —             |
| 1               | 2/16          | Removed MAX9276A and MAX9280A from <i>Ordering Information</i> table | 19            |

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim Integrated's website at [www.maximintegrated.com](http://www.maximintegrated.com).

*Maxim Integrated cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a Maxim Integrated product. No circuit patent licenses are implied. Maxim Integrated reserves the right to change the circuitry and specifications without notice at any time.*

Part Report for max9275\_79\_evkit\_a.pcb on 6/19/2014 7:12:11 AM

| Name     | Part Type   | PCB Decal    | Value   | Tolerance | Voltage |
|----------|-------------|--------------|---------|-----------|---------|
| +5VIN    | MAXIMPAD    | INPUT\OUTPUT |         |           |         |
| AVDD_EXT | MAXIMPAD    | INPUT\OUTPUT |         |           |         |
| C1       | CAP\CER\SM  | CC0402       | 0.001uF |           |         |
| C2       | CAP\CER\SM  | CC0402       | 0.001uF |           |         |
| C3       | CAP\CER\SM  | CC0402       | 0.001uF |           |         |
| C4       | CAP\CER\SM  | CC0402       | 0.001uF |           |         |
| C5       | CAP\CER\SM  | CC0402       | 0.001uF |           |         |
| C6       | CAP\CER\SM  | CC0402       | 0.001uF |           |         |
| C7       | CAP\CER\SM  | CC0402       | 0.001uF |           |         |
| C8       | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |
| C9       | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |
| C10      | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |
| C11      | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |
| C12      | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |
| C13      | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |
| C14      | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |
| C15      | CAP\CER\SM  | CC0805       | 0.22uF  |           | 50V     |
| C16      | CAP\CER\SM  | CC0805       | 0.22uF  |           | 50V     |
| C17      | CAP\CER\MED | CC1206       | 10uF    |           |         |
| C18      | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |
| C19      | CAP\CER\MED | CC1206       | 4.7uF   |           |         |
| C20      | CAP\CER\MED | CC1206       | 10uF    |           |         |
| C21      | CAP\CER\MED | CC1206       | 4.7uF   |           |         |
| C22      | CAP\CER\MED | CC1206       | 10uF    |           |         |
| C23      | CAP\CER\MED | CC1206       | 10uF    |           |         |
| C24      | CAP\CER\MED | CC1206       | 10uF    |           |         |
| C25      | CAP\CER\MED | CC1206       | 10uF    |           |         |
| C26      | CAP\CER\MED | CC1206       | 10uF    |           |         |
| C101     | CAP\CER\SM  | CC0603       | 0.1uF   |           |         |

|           |                        |                        |         |
|-----------|------------------------|------------------------|---------|
| C102      | CAP\CER\SM             | CC0603                 | 0.1uF   |
| C103      | CAP\CER\SM             | CC0603                 | 0.1uF   |
| C104      | CAP\CER\SM             | CC0603                 | 0.1uF   |
| C105      | CAP\CER\SM             | CC0603                 | 0.1uF   |
| C106      | CAP\CER\SM             | CC0603                 | 22pF    |
| C107      | CAP\CER\SM             | CC0603                 | 22pF    |
| C108      | CAP\CER\SM             | CC0603                 | 1uF     |
| C109      | CAP\CER\MED            | CC1206                 | 10uF    |
| C110      | CAP\CER\SM             | CC0603                 | 0.033uF |
| C121      | CAP\CER\SM             | CC0603                 | 0.1uF   |
| C122      | CAP\CER\SM             | CC0603                 | 22pF    |
| C123      | CAP\CER\SM             | CC0603                 | 22pF    |
| C131      | CAP\CER\SM             | CC0603                 | 0.1uF   |
| C141      | CAP\CER\SM             | CC0603                 | 0.1uF   |
| DVDD_EXT  | MAXIMPAD               | INPUT\OUTPUT           |         |
| FB1       | FERRITE                | CC0603                 |         |
| FB2       | FERRITE                | CC0603                 |         |
| FB3       | FERRITE                | CC0603                 |         |
| FB4       | FERRITE                | CC0603                 |         |
| GND       | MAXIMPAD               | INPUT\OUTPUT           |         |
| H1        | HEADER\2X36-H-MIRRORED | HEADER\2X36-H-MIRRORED |         |
| H2        | HEADER2X8              | HEADER2X8              |         |
| H_I/O     | JUMPER2\SIP3           | SIP\3P                 |         |
| IOVDD_EXT | MAXIMPAD               | INPUT\OUTPUT           |         |
| J10       | CONN_USB-B             | CON-USB-B              |         |
| JU_AVDD   | JUMPER2\SIP3           | SIP\3P                 |         |
| JU_BWS    | JUMPER2\SIP3           | SIP\3P                 |         |
| JU_CDS    | JUMPER2\SIP3           | SIP\3P                 |         |
| JU_CONF0  | JUMPER2\SIP3           | SIP\3P                 |         |
| JU_CONF1  | JUMPER2\SIP3           | SIP\3P                 |         |
| JU_CONF2  | JUMPER2\SIP3           | SIP\3P                 |         |
| JU_CONF3  | JUMPER2\SIP3           | SIP\3P                 |         |

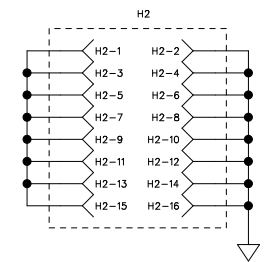
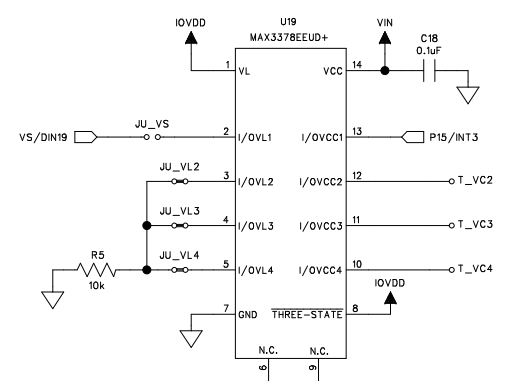
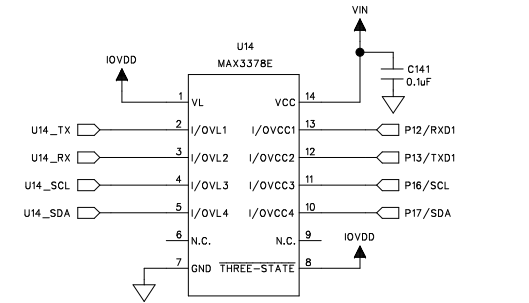
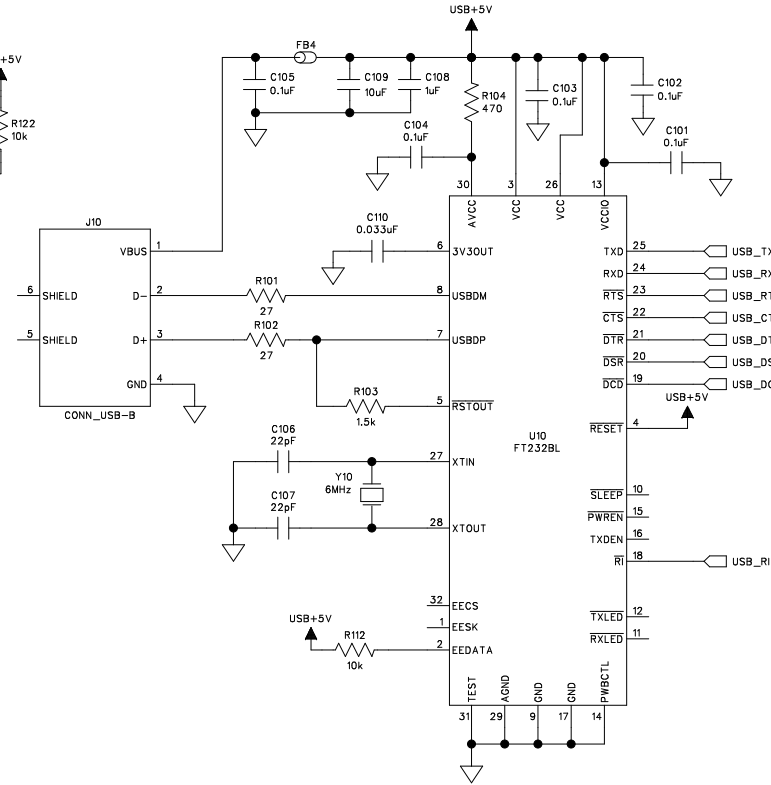
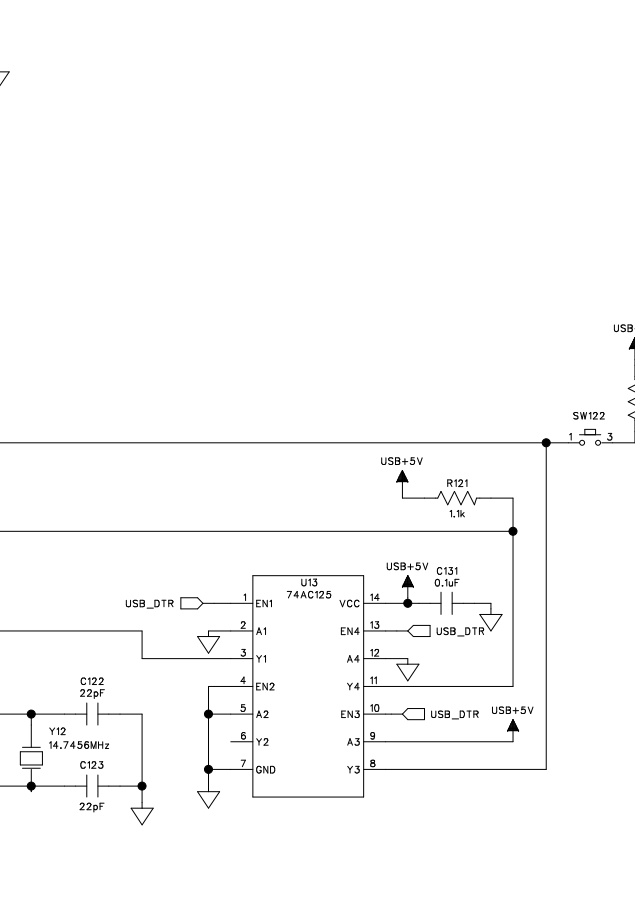
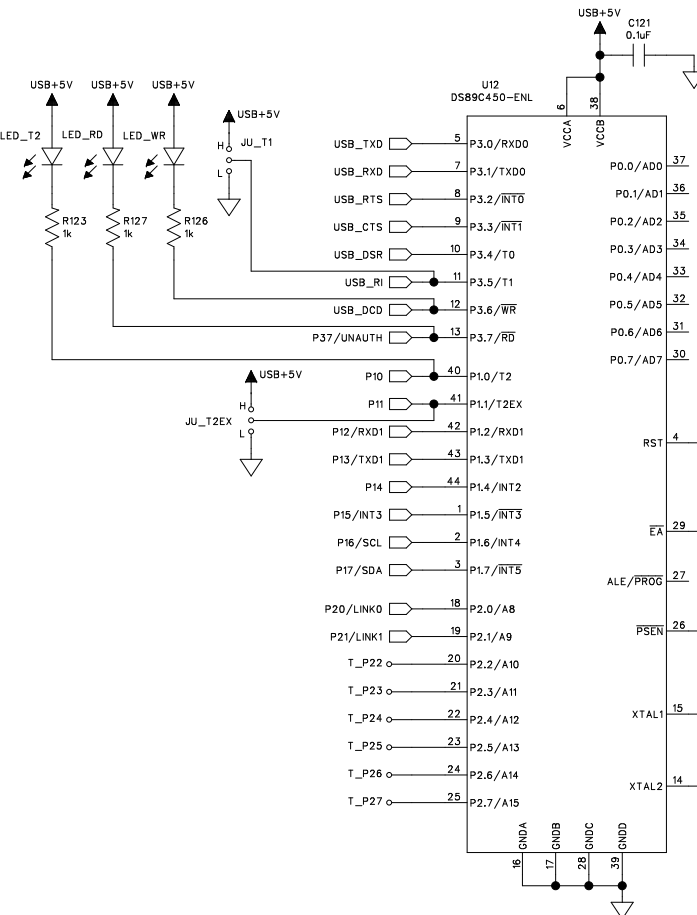
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|------------|--|--|
| JU_DVDD    | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_HIM     | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_IOVDD   | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_LDO     | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_LINK0   | JUMPER                                   | SIP\2P                                   |
| JU_LINK1   | JUMPER                                   | SIP\2P                                   |
| JU_MS      | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_PLI0    | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_PLI1    | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_PWDN    | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_RXSDA   | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_RXSDAPU | JUMPER                                   | SIP\2P                                   |
| JU_T1      | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_T2EX    | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_TXSCL   | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_TXSCLPU | JUMPER                                   | SIP\2P                                   |
| JU_VDDIO   | JUMPER                                   | SIP\2P                                   |
| JU_VIN     | JUMPER2\SIP3                             | SIP\3P                                   |
| JU_VL2     | CUTHERE                                  | CUTHERE                                  |
| JU_VL3     | CUTHERE                                  | CUTHERE                                  |
| JU_VL4     | CUTHERE                                  | CUTHERE                                  |
| JU_VS      | JUMPER                                   | SIP\2P                                   |
| LED_GPO    | LED-0805                                 | LED-0805                                 |
| LED_LFLT   | LED-0805                                 | LED-0805                                 |
| LED_PWR    | LED-0805                                 | LED-0805                                 |
| LED_RD     | LED-0805                                 | LED-0805                                 |
| LED_T2     | LED-0805                                 | LED-0805                                 |
| LED_WR     | LED-0805                                 | LED-0805                                 |
| OUT+       | CON/ROSENBERGER/59SAX-400A5-Y/RT-FAKRA-M | CON/ROSENBERGER/59SAX-400A5-Y/RT-FAKRA-M |
| OUT-       | CON/ROSENBERGER/59SAX-400A5-Y/RT-FAKRA-M | CON/ROSENBERGER/59SAX-400A5-Y/RT-FAKRA-M |

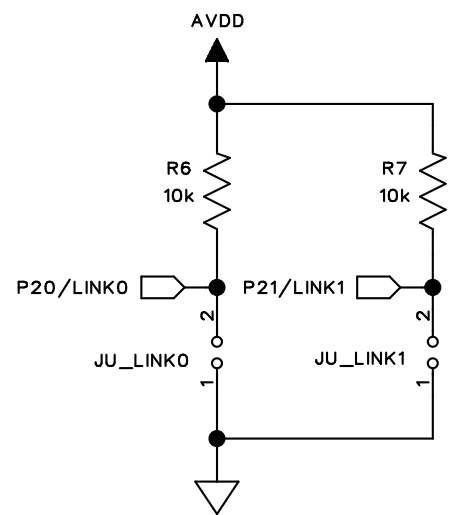
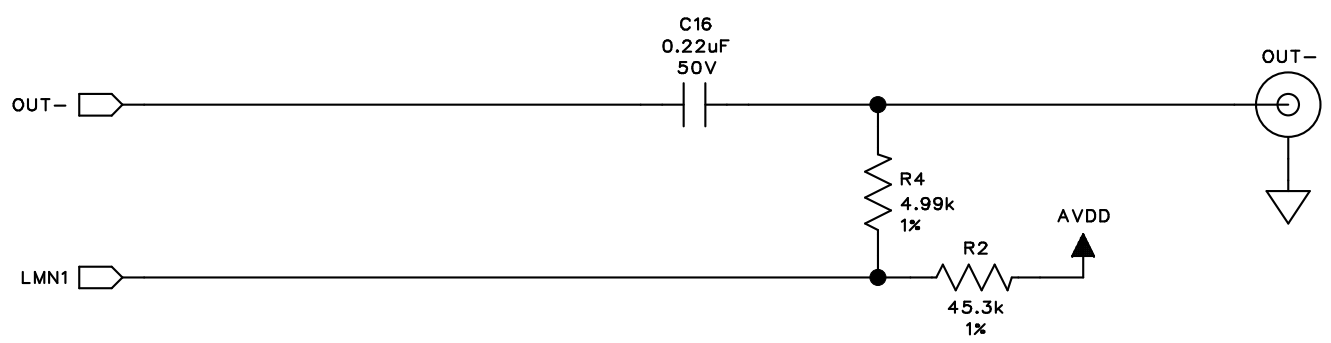
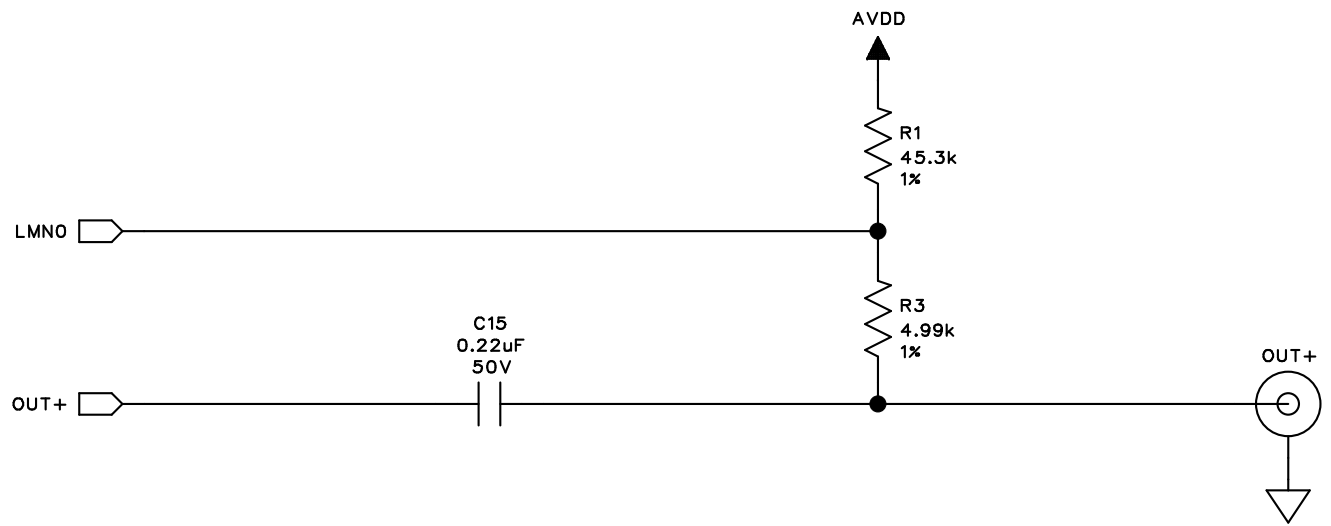
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|--------|-------------------|------------------|--------|----|
| Q1     | FET-N-S-SOT23     | SOT23            | 2N7002 |    |
| R1     | RES\SMD\SM        | CC0603           | 45.3k  | 1% |
| R2     | RES\SMD\SM        | CC0603           | 45.3k  | 1% |
| R3     | RES\SMD\SM        | CC0603           | 4.99k  | 1% |
| R4     | RES\SMD\SM        | CC0603           | 4.99k  | 1% |
| R5     | RES\0603          | CC0603           | 10k    |    |
| R6     | RES\0603          | CC0603           | 10k    |    |
| R7     | RES\0603          | CC0603           | 10k    |    |
| R10    | RES\SMD\SM        | CC0603           | 2.2k   |    |
| R11    | RES\SMD\SM        | CC0603           | 2.2k   |    |
| R12    | RES\SMD\SM        | CC0603           | 1k     |    |
| R13    | RES\SMD\SM        | CC0603           | 1k     |    |
| R15    | RES\SMD\SM        | CC0603           | 1k     |    |
| R101   | RES\SMD\SM        | CC0603           | 27     |    |
| R102   | RES\SMD\SM        | CC0603           | 27     |    |
| R103   | RES\SMD\SM        | CC0603           | 1.5k   |    |
| R104   | RES\SMD\SM        | CC0603           | 470    |    |
| R112   | RES\SMD\SM        | CC0603           | 10k    |    |
| R121   | RES\SMD\SM        | CC0603           | 1.1k   |    |
| R122   | RES\SMD\SM        | CC0603           | 10k    |    |
| R123   | RES\SMD\SM        | CC0603           | 1k     |    |
| R126   | RES\SMD\SM        | CC0603           | 1k     |    |
| R127   | RES\SMD\SM        | CC0603           | 1k     |    |
| R_HIM  | RES\SMD\SM        | CC0603           | 30k    |    |
| SW122  | SW-OMRON-B3F-1000 | SW-B3F-1000      |        |    |
| TP_GPO | TESTPOINT-PC5000  | TESTPOINT-PC5000 |        |    |
| T_P22  | TESTPOINT_VIA     | TESTPOINT_VIA    |        |    |
| T_P23  | TESTPOINT_VIA     | TESTPOINT_VIA    |        |    |
| T_P24  | TESTPOINT_VIA     | TESTPOINT_VIA    |        |    |
| T_P25  | TESTPOINT_VIA     | TESTPOINT_VIA    |        |    |
| T_P26  | TESTPOINT_VIA     | TESTPOINT_VIA    |        |    |
| T_P27  | TESTPOINT_VIA     | TESTPOINT_VIA    |        |    |




|       |                           |                           |          |
|-------|---------------------------|---------------------------|----------|
| T_VC2 | TESTPOINT_VIA             | TESTPOINT_VIA             |          |
| T_VC3 | TESTPOINT_VIA             | TESTPOINT_VIA             |          |
| T_VC4 | TESTPOINT_VIA             | TESTPOINT_VIA             |          |
| U1    | MAX9279                   | QFN8X8-56L                |          |
| U2    | MAX1792                   | MICROMAX\8L\EP            |          |
| U3    | MAX1792                   | MICROMAX\8L\EP            |          |
| U10   | FT232BL-SONG              | TQFP_7X7X.8_32L           |          |
| U12   | DS89C450-ENL              | TQFP-44L                  |          |
| U13   | 74AC125                   | SOIC-14L                  |          |
| U14   | MAX3378E                  | TSSOP-14L                 |          |
| U19   | MAX3378EEUD+              | TSSOP-14L                 |          |
| X1    | LOGO_MAXIM_INTEGRATED_ALL | LOGO_MAXIM_INTEGRATED_MED |          |
| X2    | MTHOLE                    | MTHOLE                    |          |
| X3    | MTHOLE                    | MTHOLE                    |          |
| X4    | MTHOLE                    | MTHOLE                    |          |
| X5    | MTHOLE                    | MTHOLE                    |          |
| Y10   | XTAL/HCM49                | XTAL\HCM49                | 6MHz     |
|       |                           |                           | 14.7456M |
| Y12   | XTAL/HCM49                | XTAL\HCM49                | Hz       |

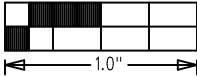
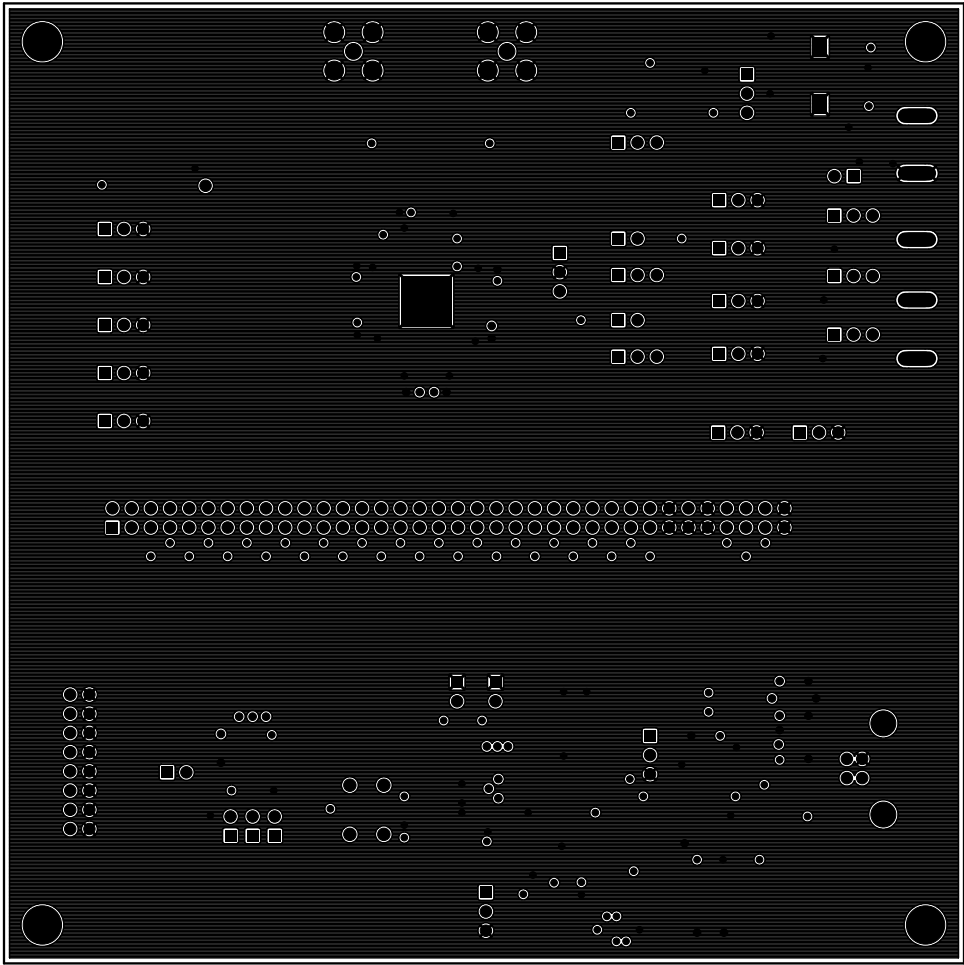





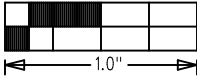
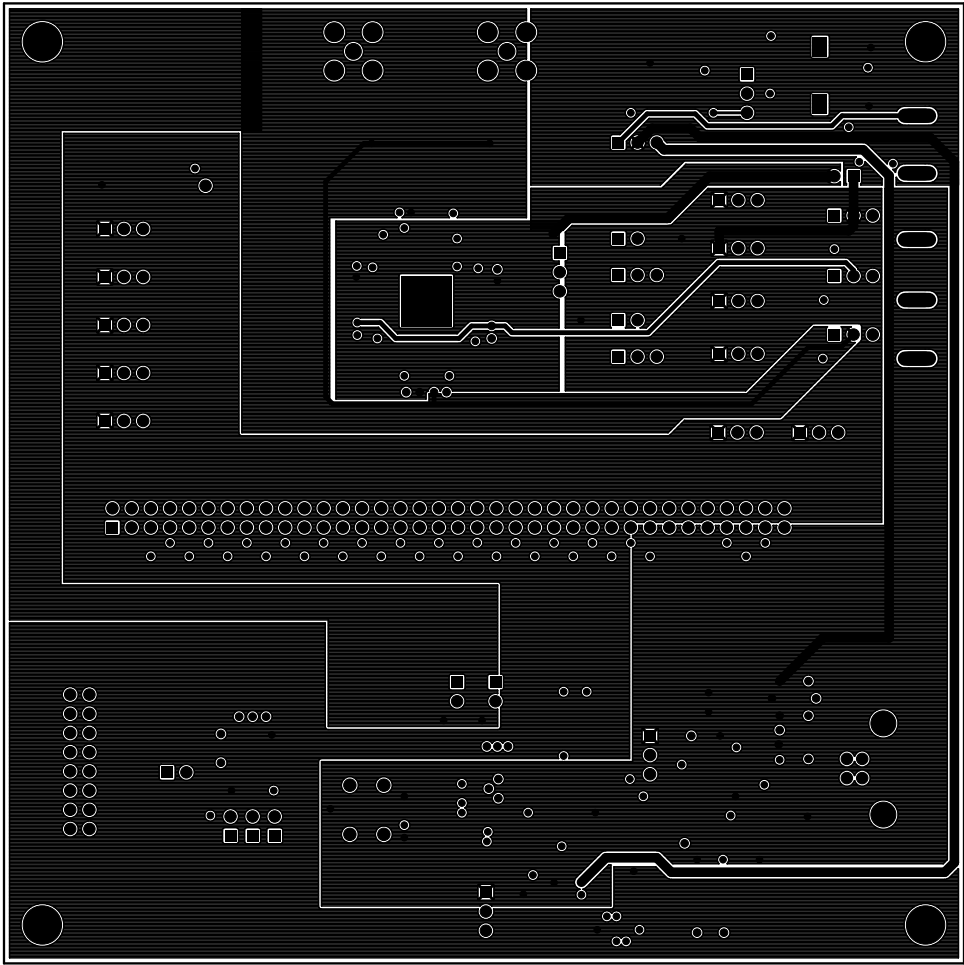





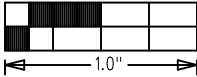
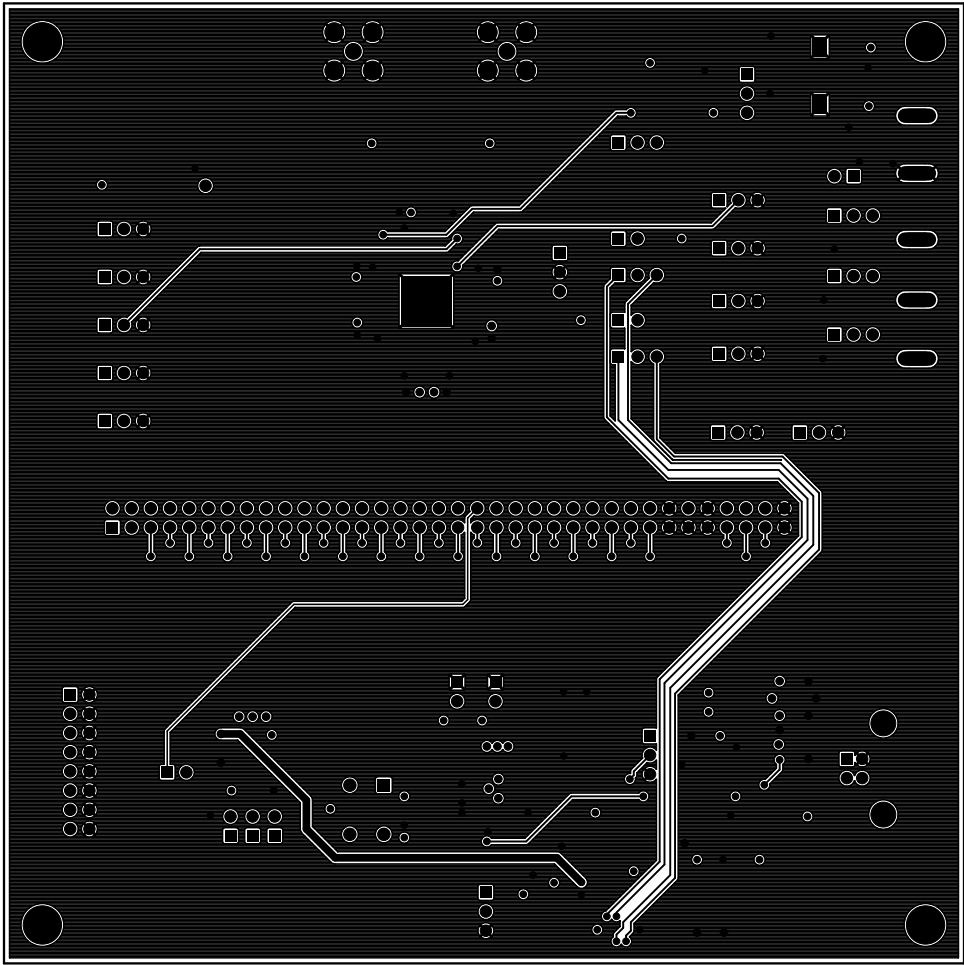
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|--|-------------------------|
| MAX9275/MAX9279 EVKIT  |                         |
| P/N: EPCB9275_79   | REV<br>A                |
|  <b>maxim<br/>integrated™</b> |                         |
| LAYER  | LAYER 2 GND             |
| DATE:  | ALL UNITS ARE IN 0.001" |




|  |                         |
|--|-------------------------|
| MAX9275/MAX9279 EVKIT  |                         |
| P/N: EPCB9275_79   | REV<br>A                |
|  <b>maxim<br/>integrated™</b> |                         |
| LAYER  | LAYER 3 PWR             |
| DATE:  | ALL UNITS ARE IN 0.001" |

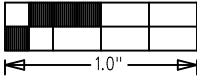
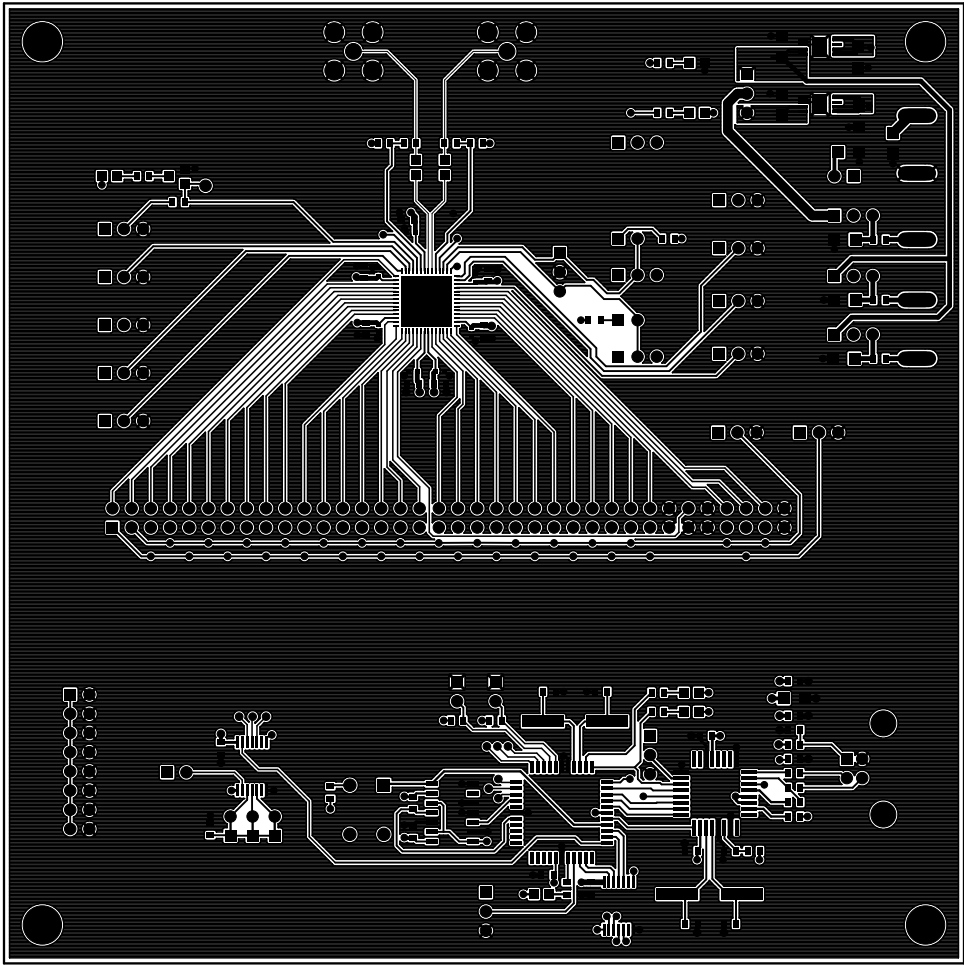


|  |                         |
|--|-------------------------|
| MAX9275/MAX9279 EVKIT  |                         |
| P/N: EPCB9275_79   | REV<br>A                |
|  <b>maxim<br/>integrated™</b> |                         |
| LAYER  | SOLDER SIDE             |
| DATE:  | ALL UNITS ARE IN 0.001" |





|  |                         |
|--|-------------------------|
| MAX9275/MAX9279 EVKIT  |                         |
| P/N: EPCB9275_79   | REV<br>A                |
|  <b>maxim<br/>integrated™</b> |                         |
| LAYER  | COMPONENT SIDE          |
| DATE:  | ALL UNITS ARE IN 0.001" |



Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

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- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

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- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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