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 deseriabler(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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19-7704; Rev 1; 2/16

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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** 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 ID**s 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^2C-to-I^2C mode support: To enable I^2C-to-I^2C 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.

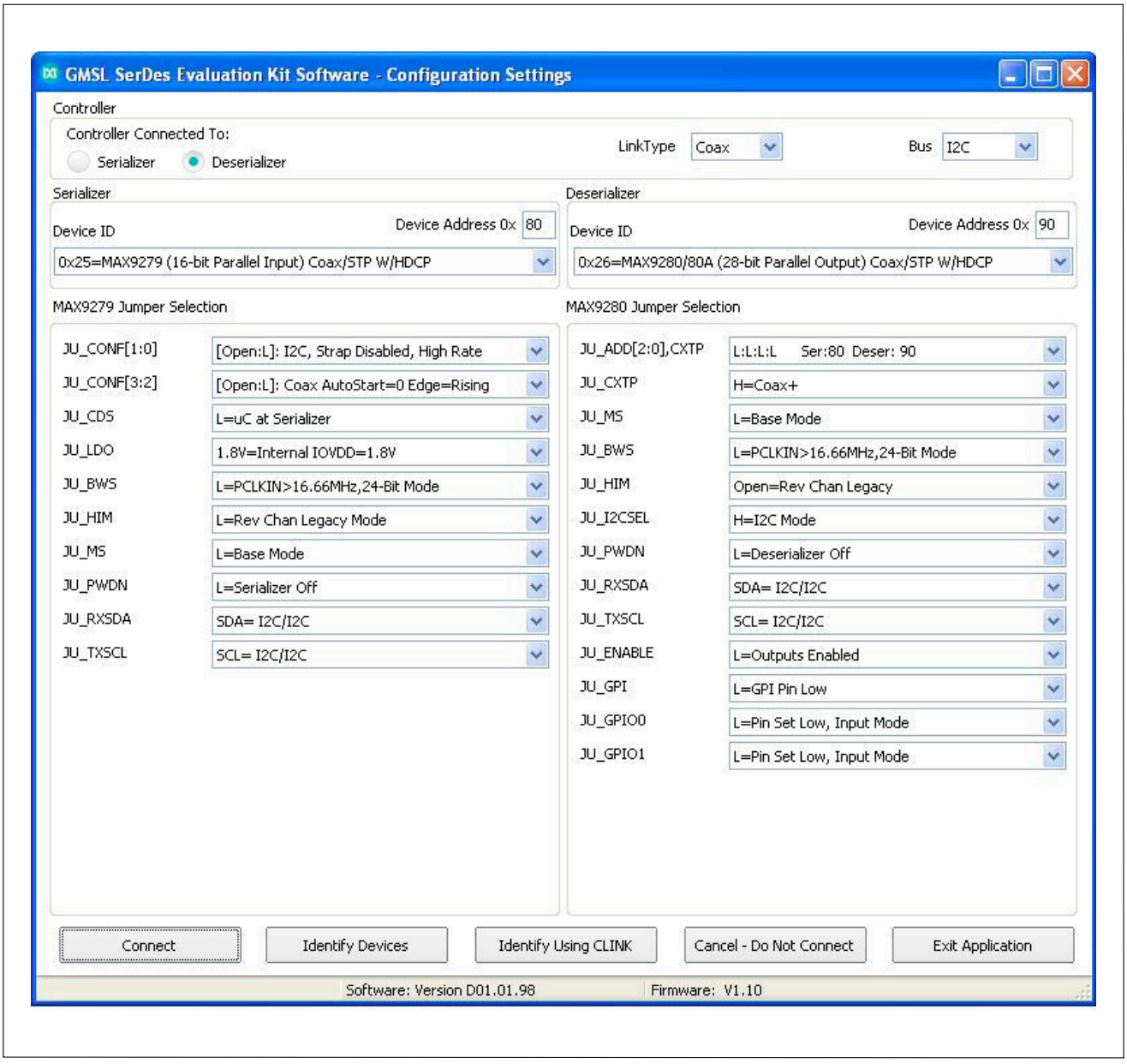

Figure 1. MAXSerDesEV-N EV Kit Software: Configuration Settings Window

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 **I2C** 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 ID**s 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 I2C 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 ID**s 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.

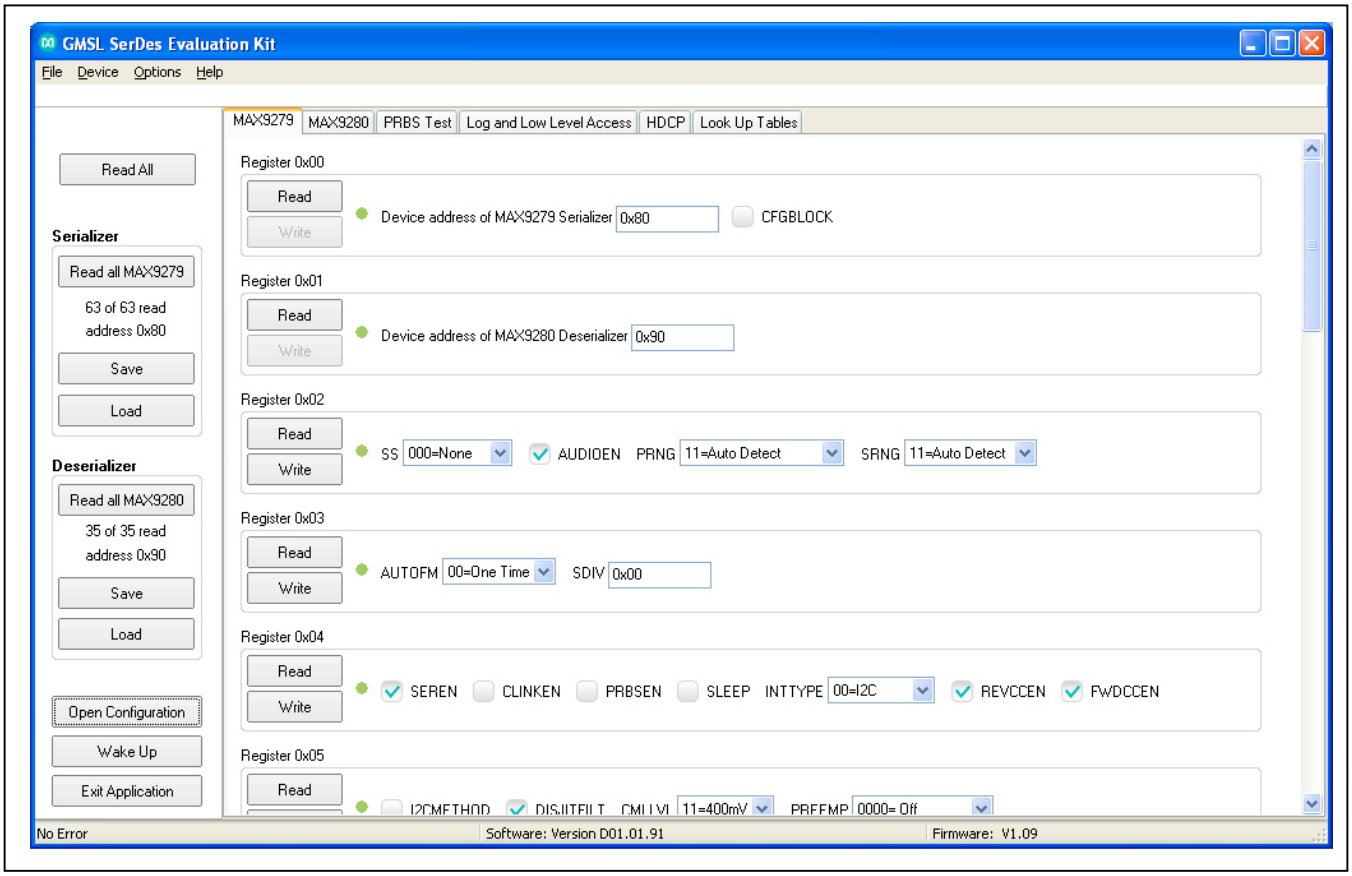

Figure 2. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (MAX9279 Tab)

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.

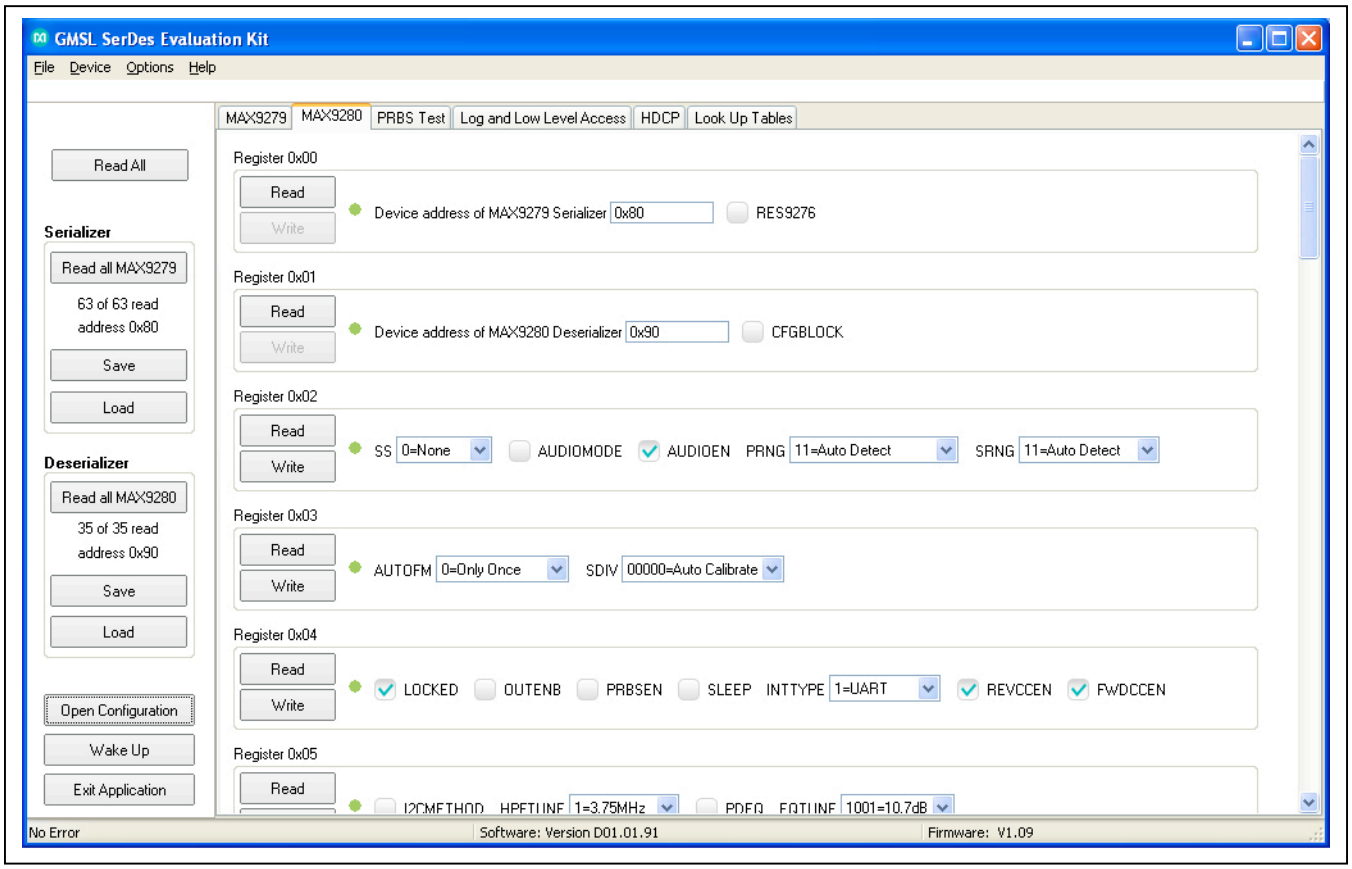

Figure 3. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (MAX9280/80A Tab)

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.

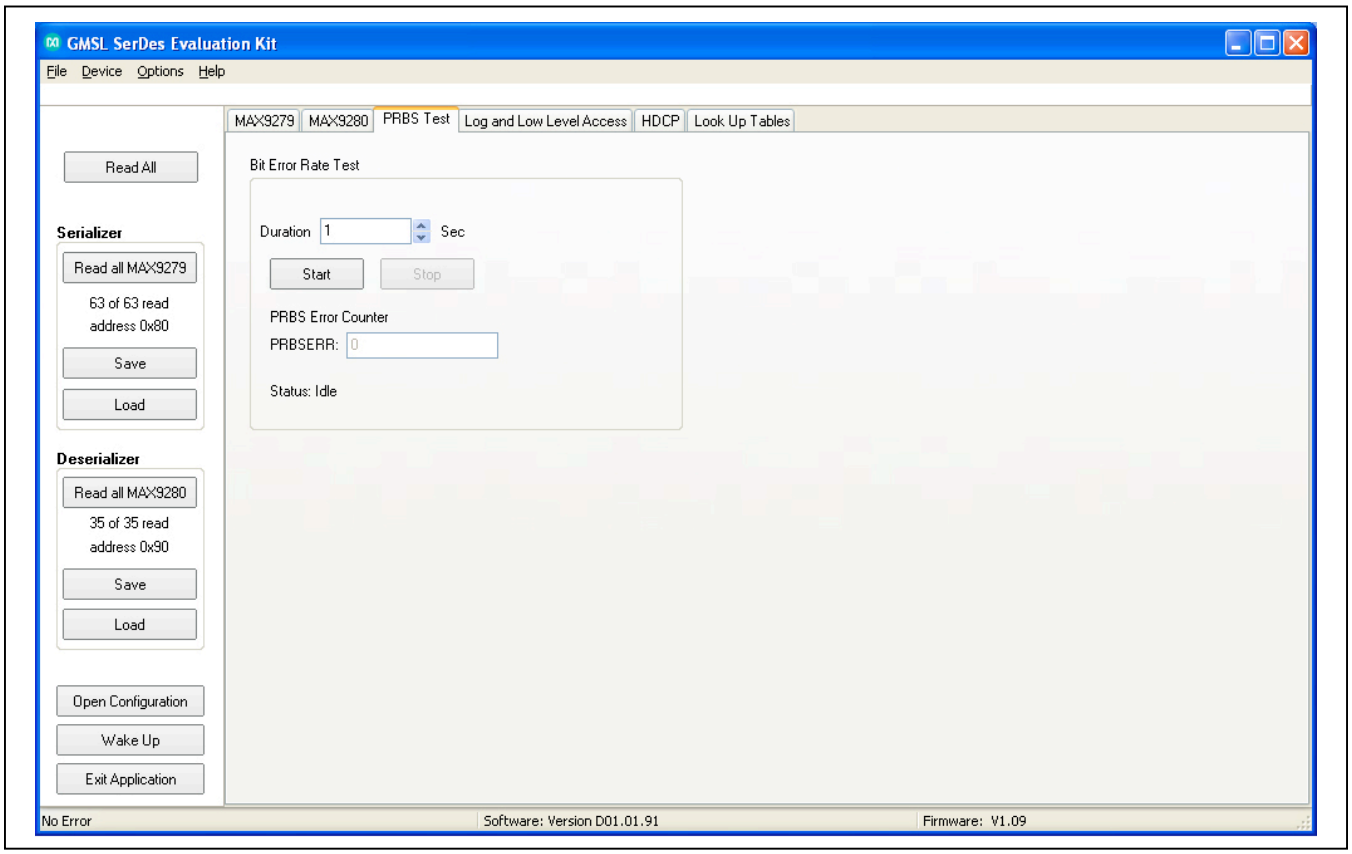

Figure 4. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (PRBS Test Tab)

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.

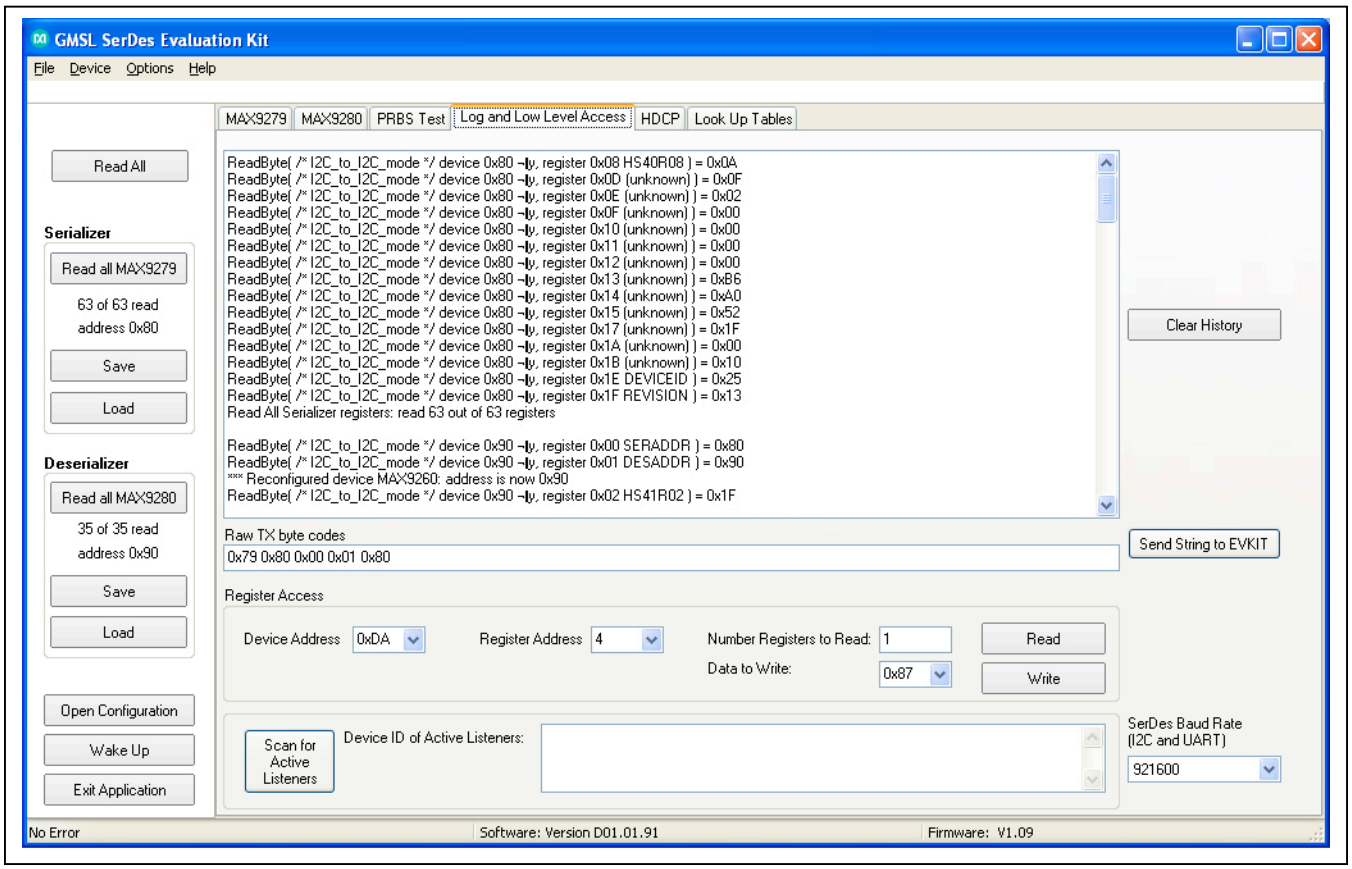

Figure 5. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (Log and Low Level Access Tab)

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.

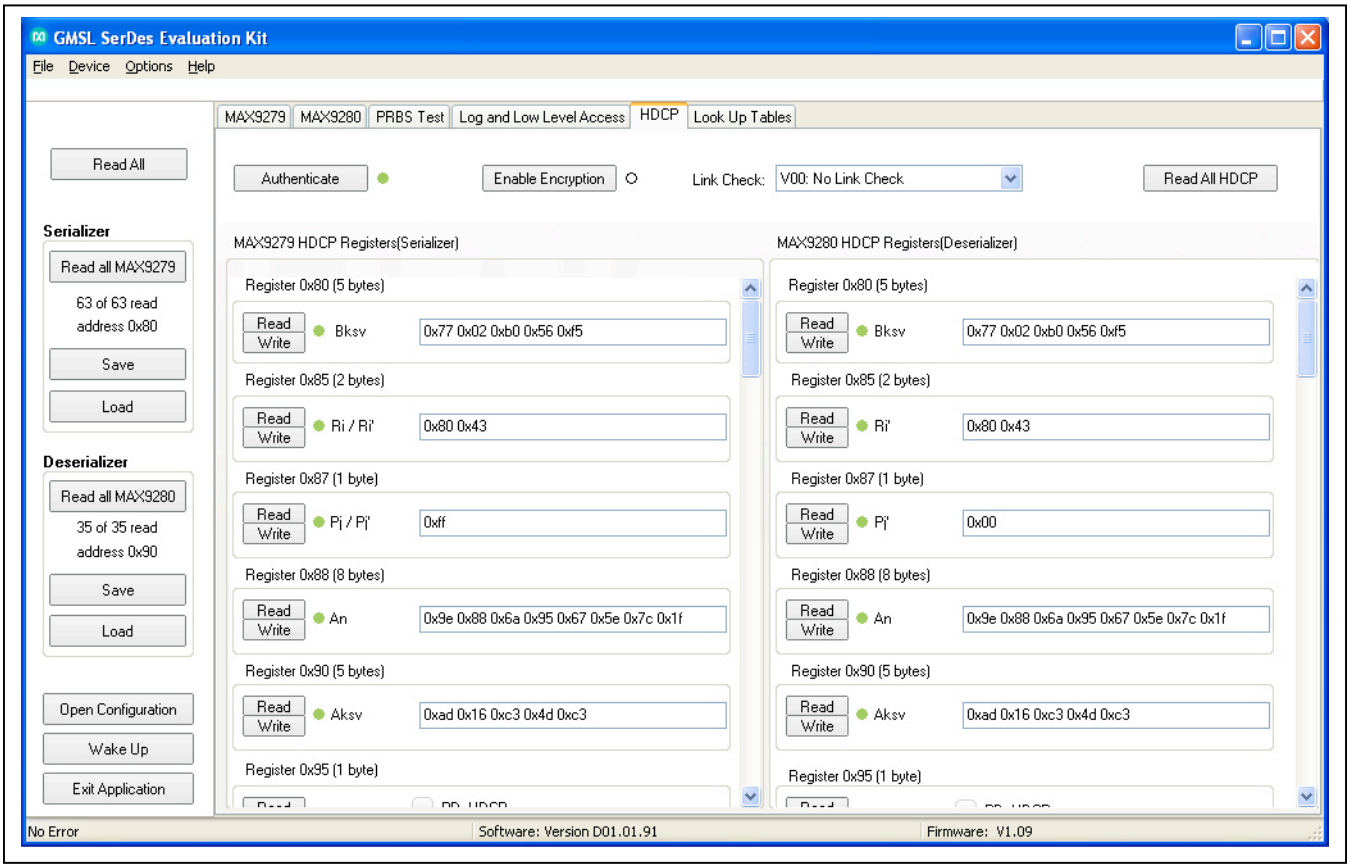

Figure 6. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (HDCP Tab)

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.

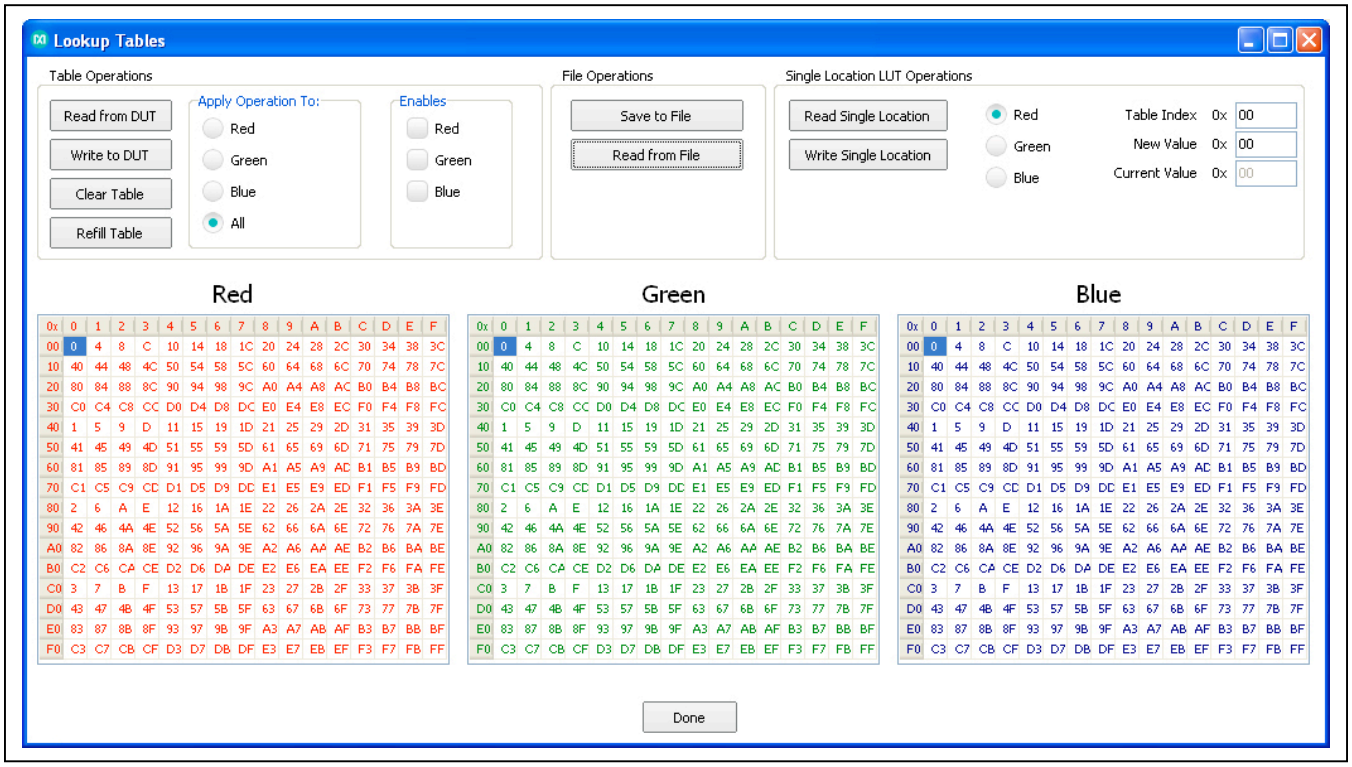

Figure 7. MAXSerDesEV-N EV Kit Software: Evaluation Kit Window (Lookup Tables)

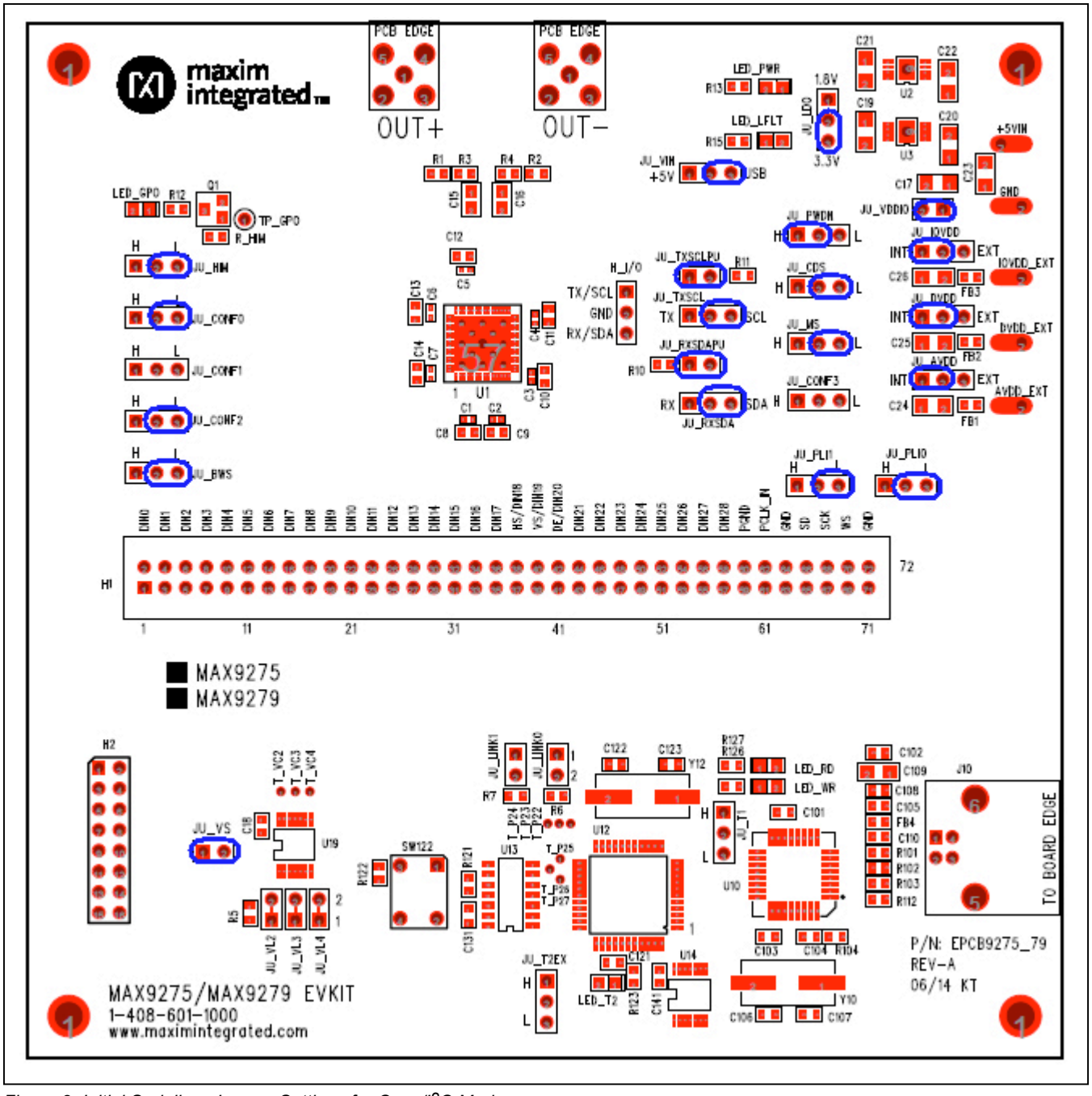

Figure 8. Initial Serializer Jumper Settings for Coax/I²C Mode

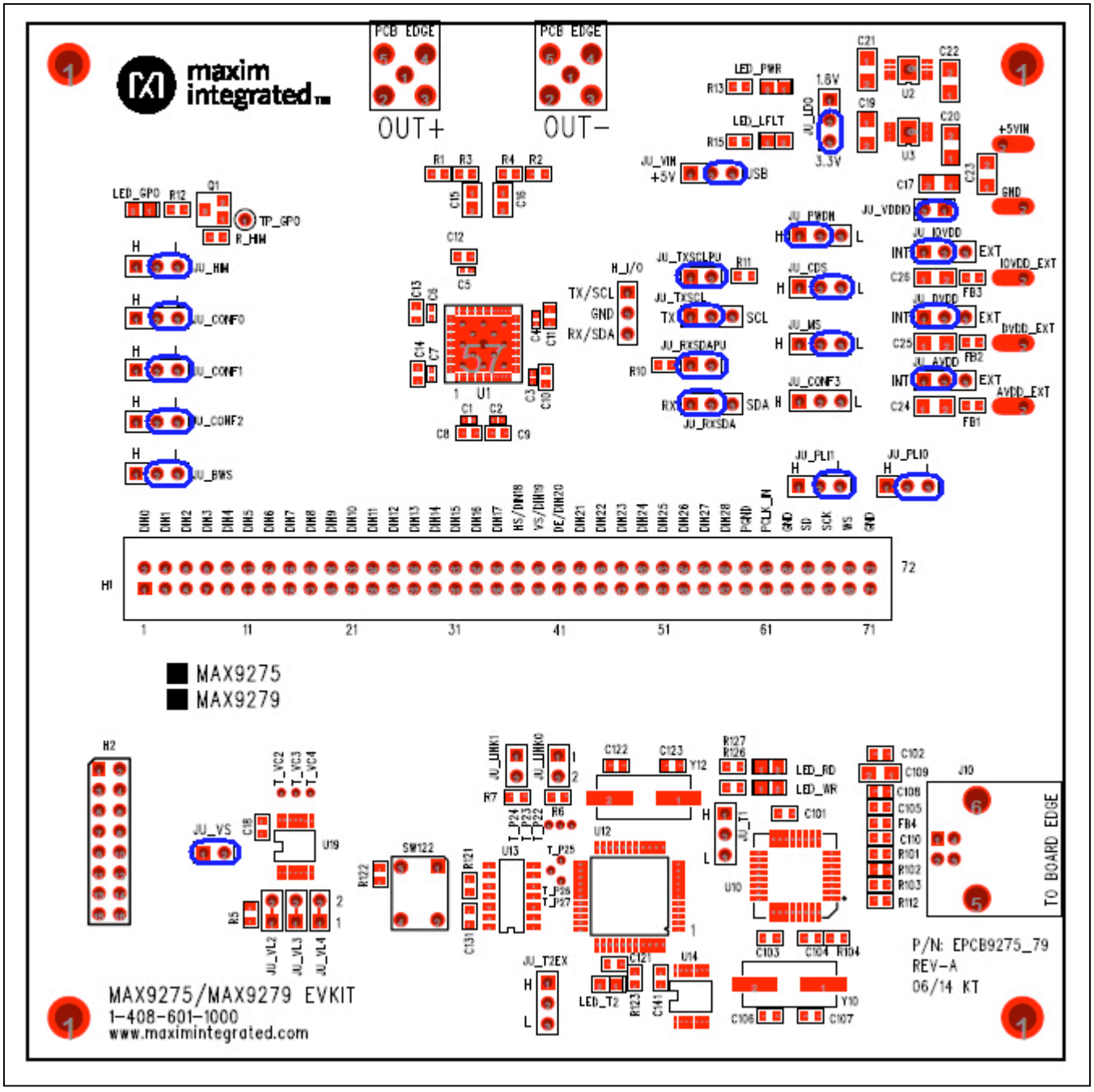

Figure 9. Serializer Jumper Settings for Coax/UART Mode

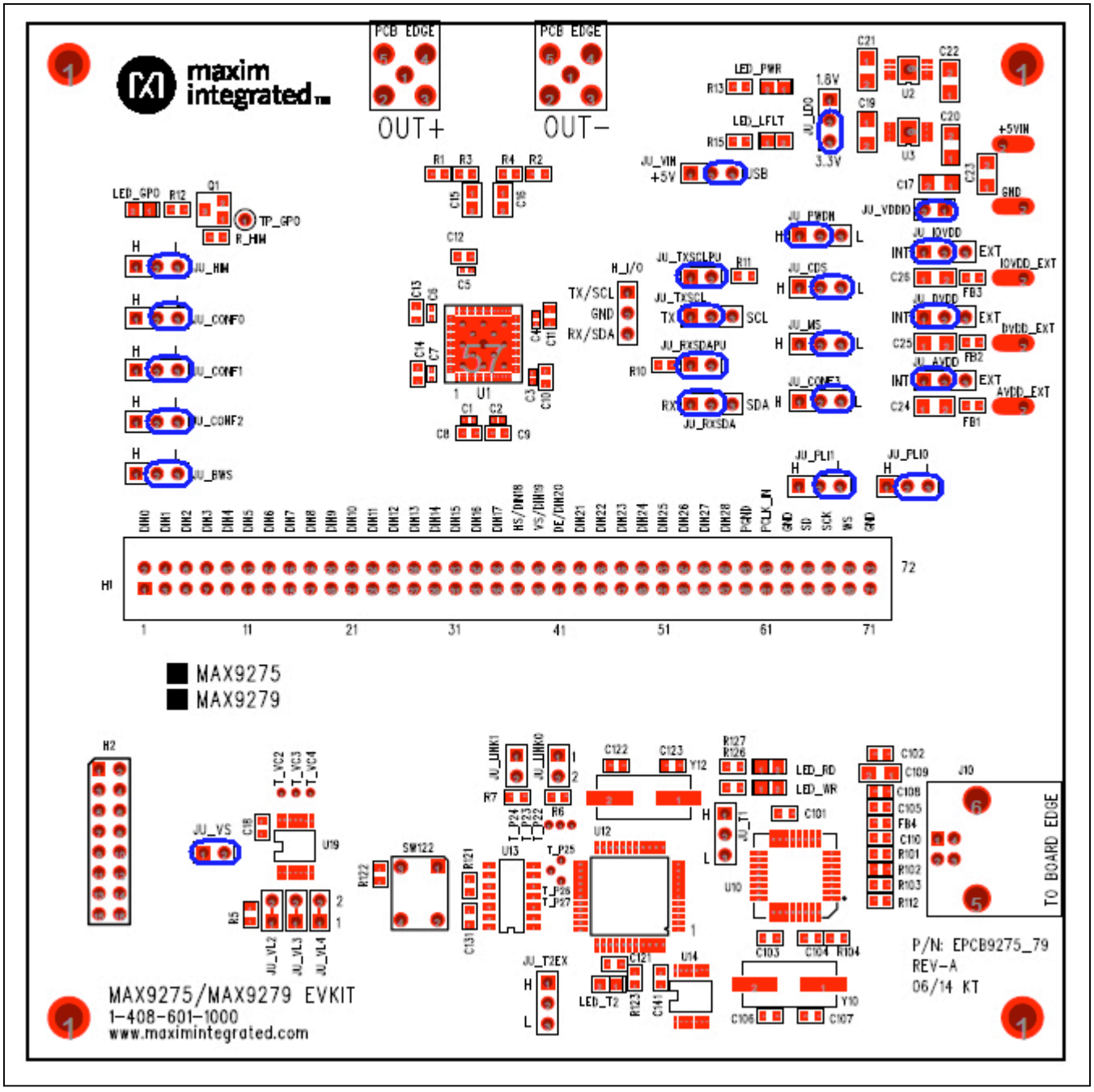

Figure 10. Serializer Jumper Settings for STP/UART Mode

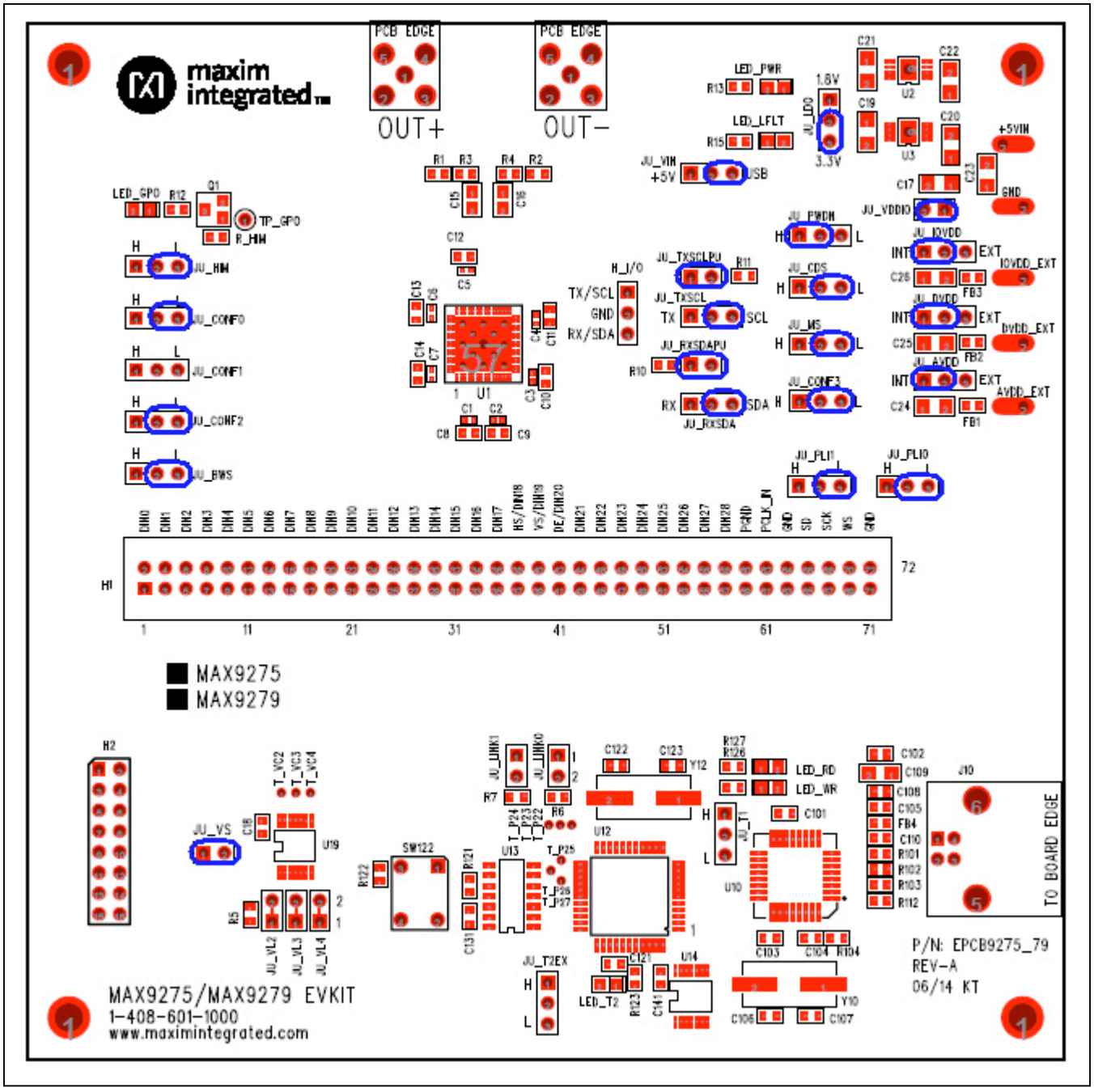

Figure 11. Serializer Jumper Settings for STP/I²C Mode

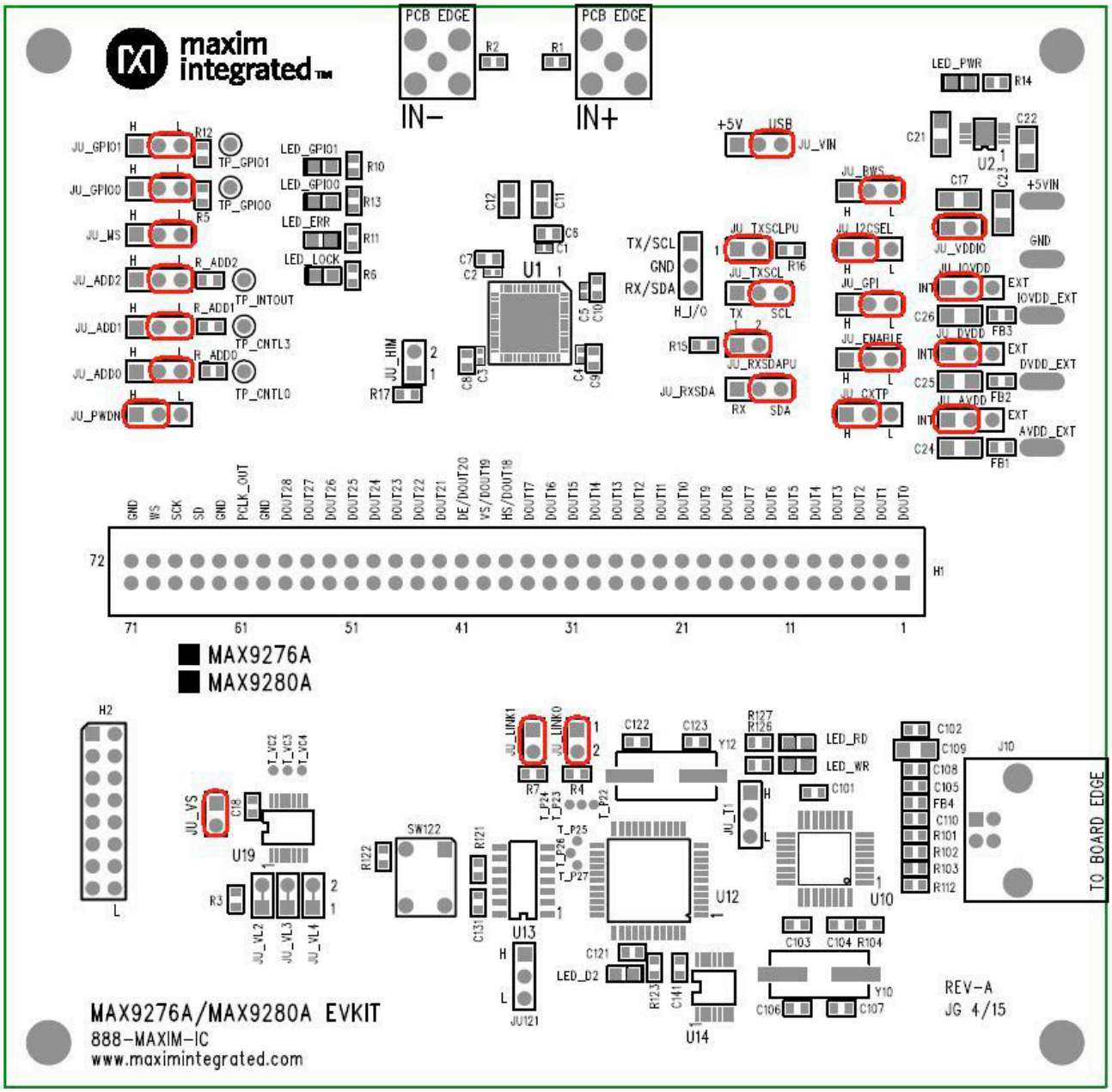

Figure 12. Initial Deserialzer Jumper Settings for Coax/I²C Mode

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 I2C 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 I2C 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-bt 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-I²C mode (do not install if controller is on the deserializer side)
		SDA	I²C-to-I²C 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-I²C mode (do not install if controller is on the deserializer side)
		SCL	I²C-to-I²C 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_{VDDIO}
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	I²C (1)	Disabled	High rate
L	Low	H	Mid	I²C	Disabled	Low rate
H	High	L	Mid	I²C	Enabled	High rate
Open	Mid	Open	High	I²C	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 ($\overline{\text{AUTOS}}$)	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
MAX9275COAXEVKIT#	EV Kit
MAX9279COAXEVKIT#	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 *Ordering Information* 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.

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Part Report for max9275_79_evkit_a.pcb on 6/19/2014 7:12:11 AM

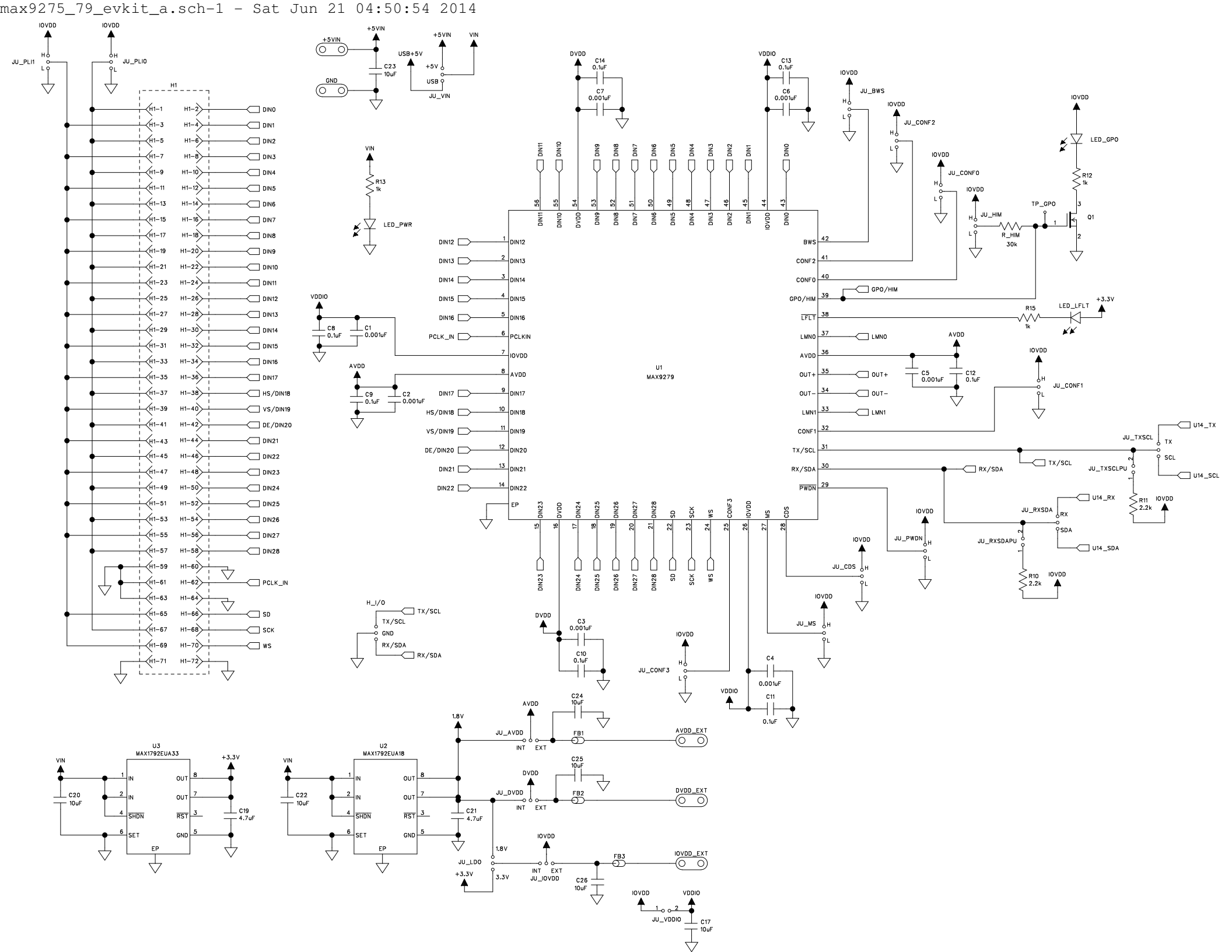
Name	Part Type	PCB Decal	Value	Tolerance	Voltage
+5VIN	MAXIMPAD	INPUT\OUTPUT			
AVDD_EXT	MAXIMPAD	INPUT\OUTPUT			
C1	CAP\CER\SM	CC0402	0.001uF		
C2	CAP\CER\SM	CC0402	0.001uF		
C3	CAP\CER\SM	CC0402	0.001uF		
C4	CAP\CER\SM	CC0402	0.001uF		
C5	CAP\CER\SM	CC0402	0.001uF		
C6	CAP\CER\SM	CC0402	0.001uF		
C7	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		

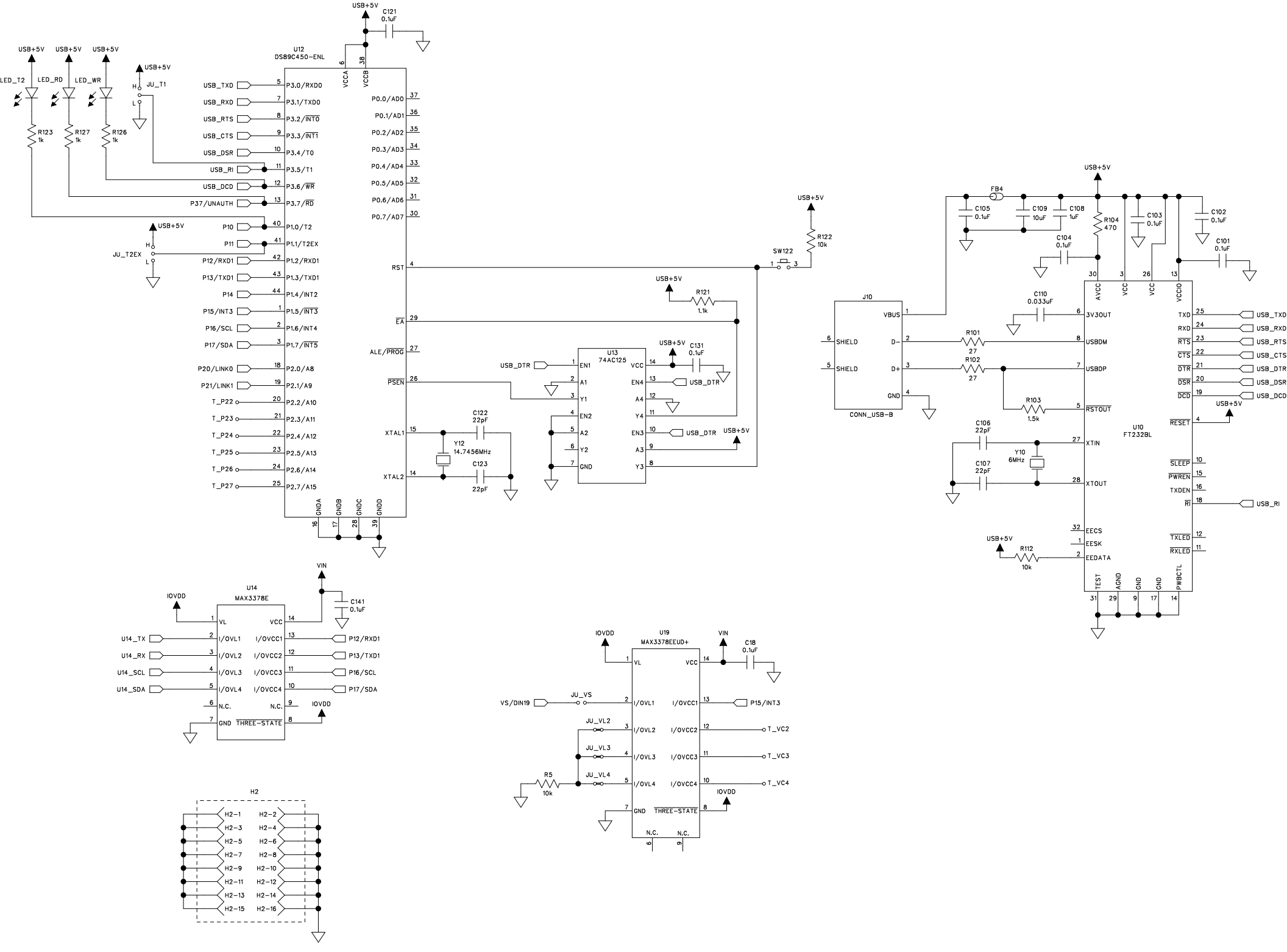
C102	CAP\CER\SM	CC0603	0.1uF
C103	CAP\CER\SM	CC0603	0.1uF
C104	CAP\CER\SM	CC0603	0.1uF
C105	CAP\CER\SM	CC0603	0.1uF
C106	CAP\CER\SM	CC0603	22pF
C107	CAP\CER\SM	CC0603	22pF
C108	CAP\CER\SM	CC0603	1uF
C109	CAP\CER\MED	CC1206	10uF
C110	CAP\CER\SM	CC0603	0.033uF
C121	CAP\CER\SM	CC0603	0.1uF
C122	CAP\CER\SM	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	

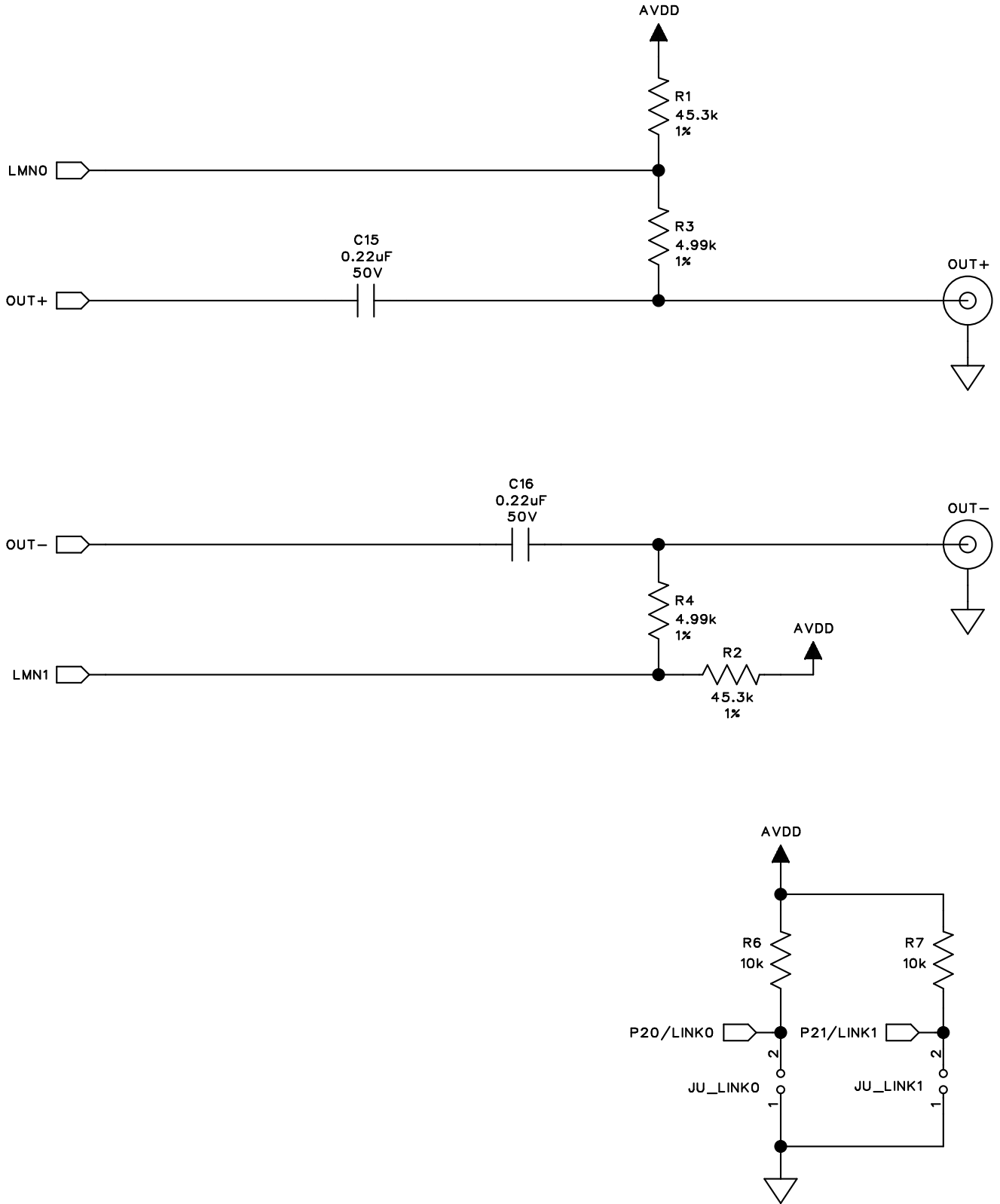
JU_DVDD	JUMPER2\SIP3	SIP\3P
JU_HIM	JUMPER2\SIP3	SIP\3P
JU_IOVDD	JUMPER2\SIP3	SIP\3P
JU_LDO	JUMPER2\SIP3	SIP\3P
JU_LINK0	JUMPER	SIP\2P
JU_LINK1	JUMPER	SIP\2P
JU_MS	JUMPER2\SIP3	SIP\3P
JU_PLI0	JUMPER2\SIP3	SIP\3P
JU_PLI1	JUMPER2\SIP3	SIP\3P
JU_PWDN	JUMPER2\SIP3	SIP\3P
JU_RXSDA	JUMPER2\SIP3	SIP\3P
JU_RXSDAPU	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

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		

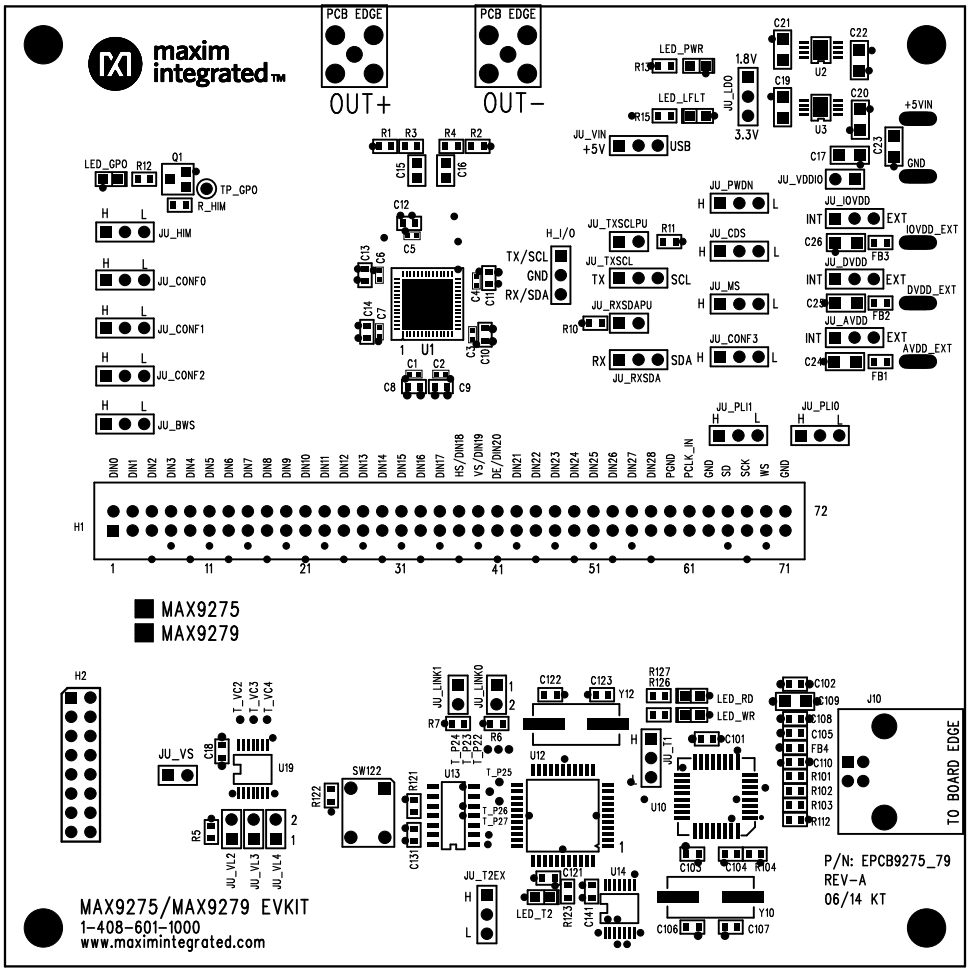
T_VC2	TESTPOINT_VIA	TESTPOINT_VIA	
T_VC3	TESTPOINT_VIA	TESTPOINT_VIA	
T_VC4	TESTPOINT_VIA	TESTPOINT_VIA	
U1	MAX9279	QFN8X8-56L	
U2	MAX1792	MICROMAX\8L\EP	
U3	MAX1792	MICROMAX\8L\EP	
U10	FT232BL-SONG	TQFP_7X7X.8_32L	
U12	DS89C450-ENL	TQFP-44L	
U13	74AC125	SOIC-14L	
U14	MAX3378E	TSSOP-14L	
U19	MAX3378EEUD+	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
Y12	XTAL/HCM49	XTAL\HCM49	14.7456MHz


IOVDD
JU_PLI1
JU_PLI0
H1
DIN0
DIN1
DIN2
DIN3
DIN4
DIN5
DIN6
DIN7
DIN8
DIN9
DIN10
DIN11
DIN12
DIN13
DIN14
DIN15
DIN16
DIN17
HS/DIN18
VS/DIN19
DE/DIN20
DIN21
DIN22
DIN23
DIN24
DIN25
DIN26
DIN27
DIN28
PCLK_IN
SD
SCK
WS
+5VIN
GND
C23
10uF
USB+5V
+5V
USB
JU_VIN
VIN
R13
1k
LED_PWR
DVDD
C14
0.1uF
C7
0.001uF
VDDIO
C13
0.1uF
C6
0.001uF
JU_BWS
JU_CONF2
JU_CONF0
JU_HIM
R_HIM
30k
TP_GPO
Q1
LED_GPO
R12
1k
U1
MAX9279
BWS
CONF2
CONF0
GPO/HIM
LFLT
LMN0
AVDD
OUT+
OUT-
LMN1
CONF1
TX/SCL
RX/SDA
PWDN
CDS
MS
CONF3
R15
1k
LED_LFLT
+3.3V
C5
0.001uF
C12
0.1uF
JU_CONF1
C8
0.1uF
C1
0.001uF
C9
0.1uF
C2
0.001uF
PCLKIN
EP
H_I/O
GND
U14_TX
U14_SCL
U14_RX
U14_SDA
JU_TXSCL
JU_TXSCLPU
R11
2.2k
JU_RXSDA
JU_RXSDAPU
R10
2.2k
JU_PWDN
JU_CDS
JU_MS
JU_CONF3
C3
0.001uF
C10
0.1uF
C4
0.001uF
C11
0.1uF
U3
MAX1792EUA33
C20
10uF
C19
4.7uF
U2
MAX1792EUA18
C22
10uF
C21
4.7uF
1.8V
JU_AVDD
INT
EXT
FB1
AVDD_EXT
C24
10uF
JU_DVDD
FB2
DVDD_EXT
C25
10uF
JU_LDO
3.3V
JU_IOVDD
FB3
IOVDD_EXT
C26
10uF
JU_VDDIO
C17
10uF
SHDN
RST
SET
IN
OUT


U12
DS89C450-ENL
USB+5V
C121
0.1uF
LED_T2
LED_RD
LED_WR
R123
1k
R127
1k
R126
1k
JU_T1
JU_T2EX
USB_TXD
USB_RXD
USB_RTS
USB_CTS
USB_DSR
USB_RI
USB_DCD
P37/UNAUTH
P10
P11
P12/RXD1
P13/TXD1
P14
P15/INT3
P16/SCL
P17/SDA
P20/LINK0
P21/LINK1
T_P22
T_P23
T_P24
T_P25
T_P26
T_P27
RST
EA
ALE/PROG
PSEN
XTAL1
XTAL2
R122
10k
SW122
R121
1.1k
U13
74AC125
USB_DTR
C131
0.1uF
C122
22pF
Y12
14.7456MHz
C123
22pF
J10
CONN_USB-B
FB4
C105
0.1uF
C109
10uF
C108
1uF
C104
0.1uF
R104
470
C103
0.1uF
C102
0.1uF
C101
0.1uF
C110
0.033uF
R101
27
R102
27
R103
1.5k
C106
22pF
C107
22pF
Y10
6MHz
U10
FT232BL
R112
10k
U14
MAX3378E
VIN
C141
0.1uF
IOVDD
U14_TX
U14_RX
U14_SCL
U14_SDA
U19
MAX3378EEUD+
C18
0.1uF
VS/DIN19
JU_VS
JU_VL2
JU_VL3
JU_VL4
R5
10k
H2

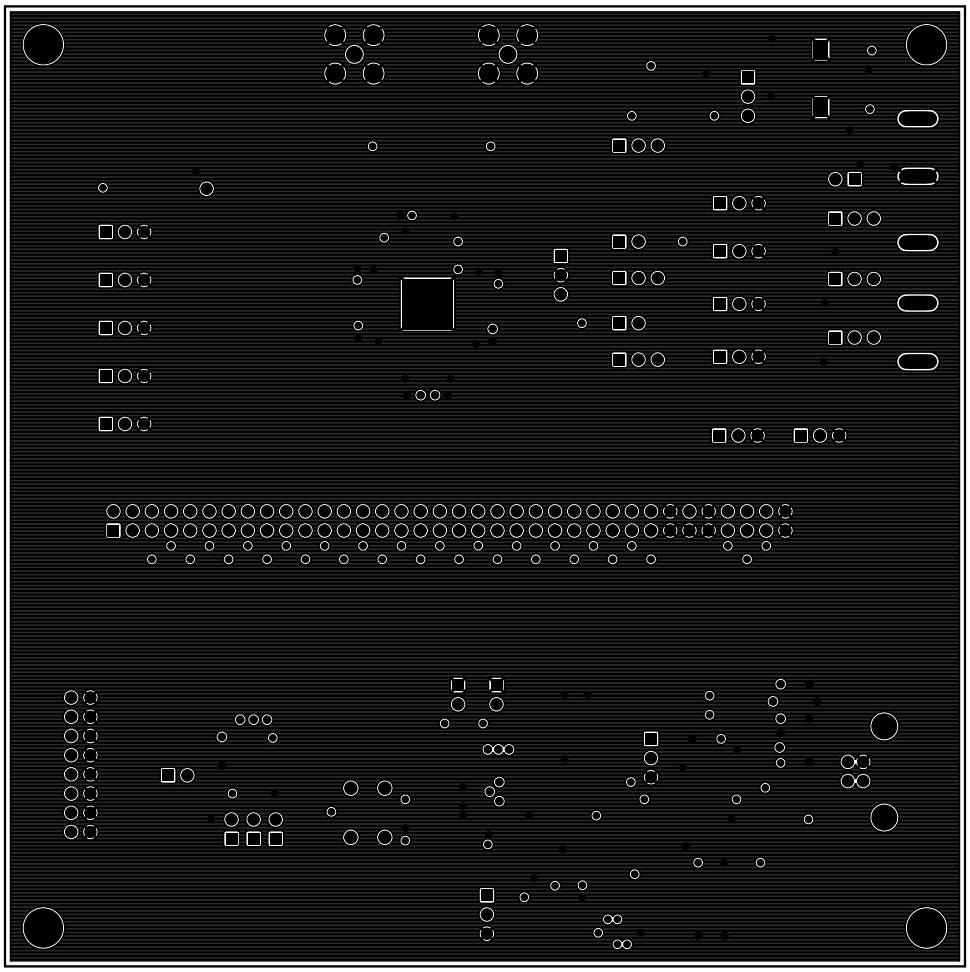

AVDD
R1
45.3k
1%
LMN0
R3
4.99k
1%
C15
0.22uF
50V
OUT+
OUT+
C16
0.22uF
50V
OUT−
OUT−
R4
4.99k
1%
AVDD
R2
45.3k
1%
LMN1
AVDD
R6
10k
R7
10k
P20/LINK0
P21/LINK1
2
2
JU_LINK0
JU_LINK1
1
1

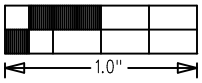
MAX9275/MAX9279 EVKIT	
P/N: EPCB9275_79	REV A
maxim integrated™	
LAYER: TOP SILKSCREEN	
DATE:	ALL UNITS ARE IN 0.001"



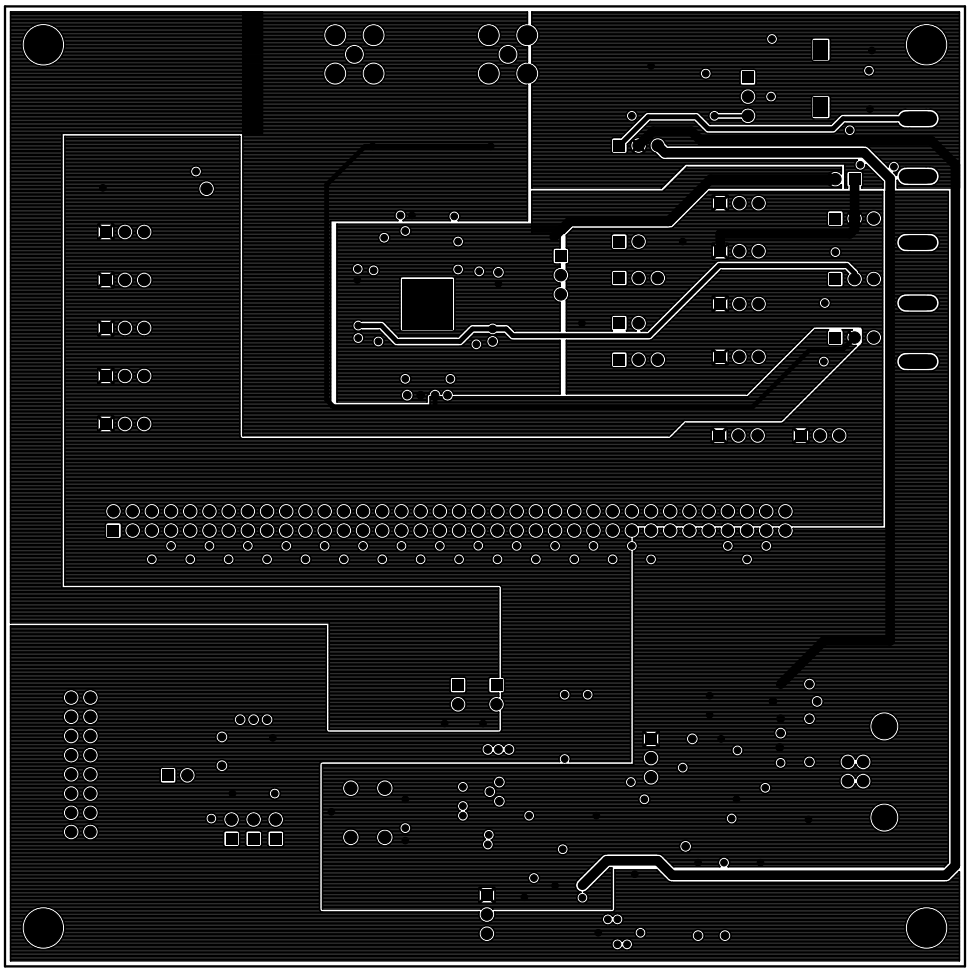
1.0"

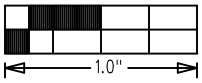
MAX9275/MAX9279 EVKIT	
P/N: EPCB9275_79	REV A
maxim integrated™	
LAYER: LAYER 2 GND	
DATE:	ALL UNITS ARE IN 0.001"



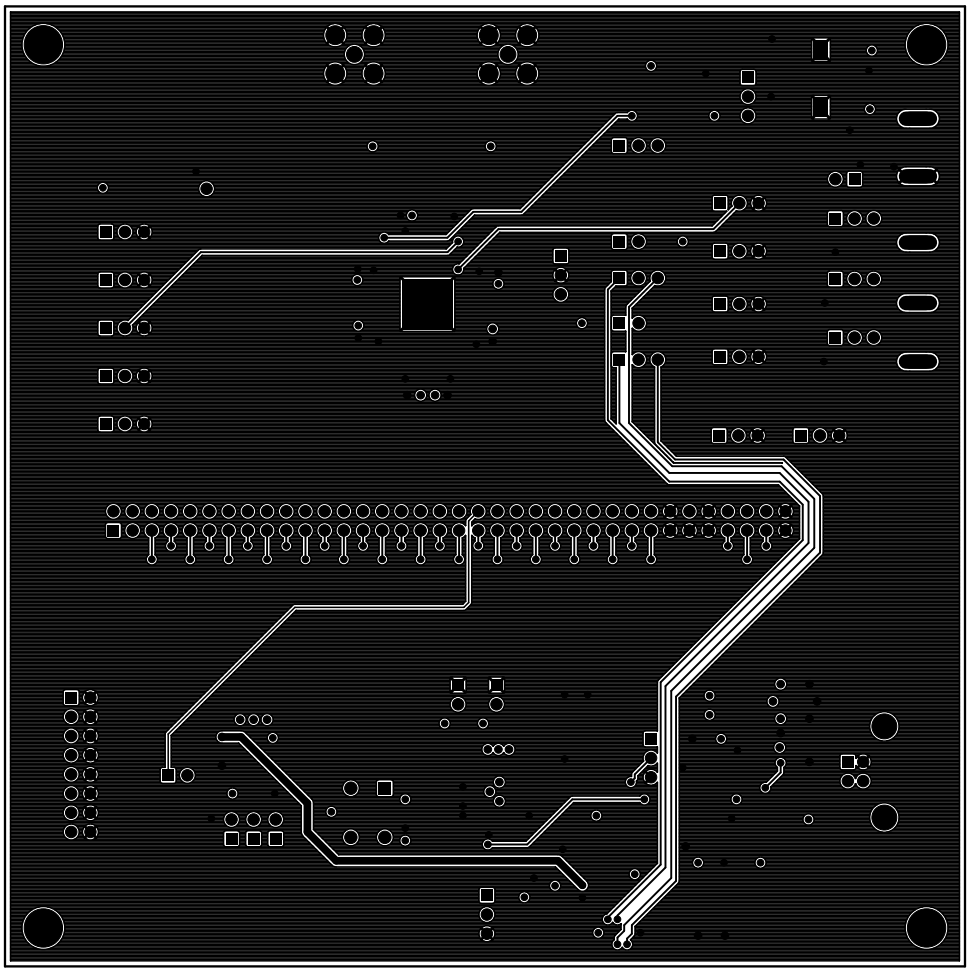


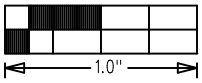
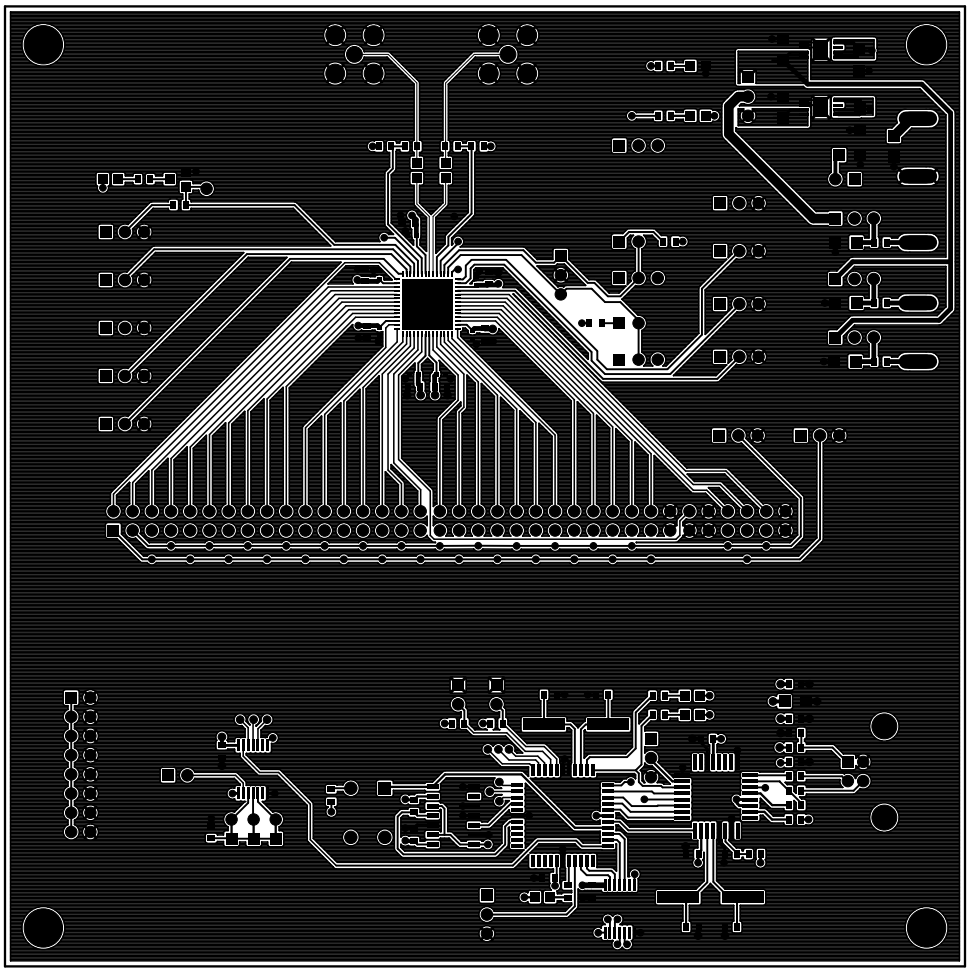
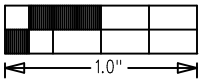
MAX9275/MAX9279 EVKIT	
P/N: EPCB9275_79	REV A
maxim integrated™	
LAYER: LAYER 3 PWR	
DATE:	ALL UNITS ARE IN 0.001"





MAX9275/MAX9279 EVKIT	
P/N: EPCB9275_79	REV A
maxim integrated™	
LAYER SOLDER SIDE	
DATE:	ALL UNITS ARE IN 0.001"





MAX9275/MAX9279 EVKIT	
P/N: EPCB9275_79	REV A
maxim integrated™	
LAYER COMPONENT SIDE	
DATE:	ALL UNITS ARE IN 0.001"