

MAXIM

MAX3991/MAX3992 Evaluation Kit

General Description

The MAX3991/MAX3992 evaluation kit (EV kit) simplifies evaluation of both receiver (MAX3991) and transmitter (MAX3992) XFP signal conditioning ICs. This EV kit allows testing of all the MAX3991 and MAX3992 features. A single reference clock provides timing for both the MAX3991 and MAX3992. The recovered clock outputs may be enabled for jitter testing.

Features

- ◆ Fully Assembled and Tested
- ◆ Low Loss Dielectric Transmission Lines
- ◆ SMA Connectors for Ease in Lab Testing
- ◆ Single +3.3V Supply Operation

Ordering Information

PART	TEMP RANGE	IC-PACKAGE
MAX3991/MAX3992 EVKIT	0°C to +85°C	24 Thin QFN

Component List

DESIGNATION	QTY	DESCRIPTION
C18, C21 C25-26, C29-32, C35, C40, C43, C51,	12	0.01μF 10% 6.3V Ceramic Capacitor (0201)
C5, C19-20, C22-23, C27-28, C33-34, C38-39, C41-42, C44-45	15	0.01μF 5% 10V Ceramic Capacitor (0402)
C24, C52	2	.047μF 10% 10V Ceramic Capacitor (0402)
C1, C4	2	0.1μF 10% 10V Ceramic Capacitor (0402)
C2-3	2	22μF 5% 10V Min Tantalum Capacitor (B CASE)
R33, R36	2	1kΩ 5% Resistor (0402)
R32, R35	2	10kΩ 5% Resistor (0402)
R11, R20	0	Not Installed
R13, R17, R25, R30	4	4.7kΩ 5% Resistor (0603)
R12, R16, R19, R29	4	511Ω 1% Resistor (0603)
R31, R34	2	20kΩ Variable Resistor BOURNS 3296W-1-203

DESIGNATION	QTY	DESCRIPTION
L5-6	2	0Ω Resistor (0402)
L1	1	4.7μH 10% Inductor Coilcraft 1008LS-472XKBC
D1-4	4	LED RED T1 package
Q1-4	4	NPN Transistor (SOT23) FMMT491A
TP1-5, TP7, TP11-14 J1-2	12	Testpoint
J5-12, J14-19	14	SMA Connectors, Side-mount tab, Digi-Key J502-ND
JU1-2, JU5-6	4	3-Pin Header, 0.1" Spacing
None	4	Shunts
TP6, TP8	0	Not Installed
U6	1	MAX3991ETG (24QFN)
U7	1	MAX3992ETG (24QFN)

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Component Suppliers

SUPPLIER	PHONE	FAX
AVX	803-946-0690	803-626-3123
Coilcraft	847-639-6400	847-639-1469
Murata	814-237-1431	814-238-0490
Zetex	516-543-7100	516-864-7630

Note: Please indicate that you are using the MAX3991/MAX3992 when contacting these component suppliers.

MAX3991 Quick Start

- 1) Connect the data signal to J5 (SDI+) and J6 (SDI-).
- 2) Connect a reference clock at 1/16th or 1/64th the data rate to J18 and J19.
- 3) Connect SDO+ and SDO- to the 50Ω inputs of a high-speed oscilloscope at J9 and J10.
- 4) Connect a +3.3V supply to the VCC terminal J1 and ground to the GND terminal J2. (There is a voltage drop across L1, so verify VCC=3.3V at TP5 or TP7.)
- 5) Set VTH (using R31) to ten times the desired LOS Assert level. (For example 200mV at TP13 will result in a typical assert level of 20mV_{P-P}.) Alternatively, the LOS circuit can be disabled by turning R31 fully clock-wise.*
- 6) Set the FCTL pins (JU1 and JU2) to ground. This will disable SCLKO. Refer to the table below for other control options.

MAX3992 Quick Start

- 1) Connect the data signal to J16 (SDI-) and J17 (SDI+).
- 2) Connect a reference clock at 1/16th or 1/64th the data rate to J18 and J19.
- 3) Connect SDO+ and SDO- to the 50Ω inputs of a high-speed oscilloscope at J11 and J12.
- 4) Connect a +3.3V supply to the VCC terminal J1 and ground to the GND terminal J2. (There is a voltage drop across L1, so verify VCC=3.3V at TP5 or TP7.)
- 5) Disable the LOS detector by turning R34 fully clock-wise.*
- 7) SET the FCTL pins (JU1 and JU2) to ground. This will disable SCLKO. Refer to the table below for other control options.

* Note: The VTH control voltage is valid from 150mV to 500mV. Setting VTH > 2V will disable the LOS detector.

Adjustments and Control Descriptions

COMPONENT	NAME	FUNCTION		
		FCTL1	FCTL2	MODE
JU1, JU2	FUNCTIONAL CONTROL	GND	GND	Normal Operation, Serial Clock Disabled
		VCC	GND	Standby - Power Down Mode
		GND	VCC	Normal Operation, Serial Clock Disabled (MAX3992 only.) Serial Clock and Serial Output Disabled (MAX3991 only.)
		VCC	VCC	Serial Clock Enabled for Jitter Testing
JU5, JU6	POL	Polarity Control, Set to VCC or Leave Open for Standard Polarity		
R31, R34	VTH	Apply the Desired Threshold for Loss of Signal		
D1, D4	LOL	Loss of Lock Indicator. The LED will Light During Loss of Lock.		
D2, D3	LOS	Loss of Signal Indicator. The LED will Light During Loss of Signal.		

Evaluates: MAX3991/MAX3992

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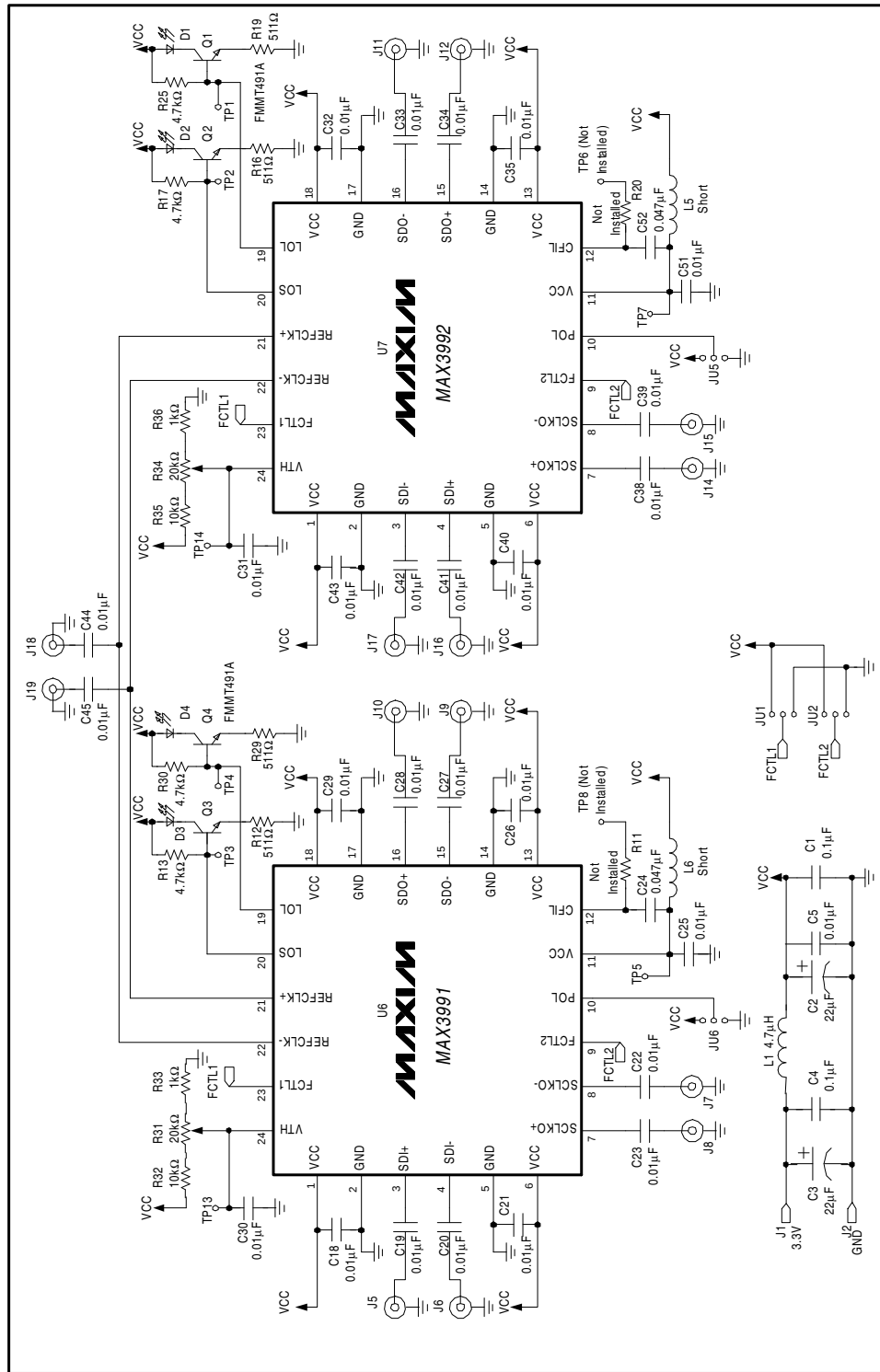


Figure 1. MAX3991/MAX3992 EV Kit Schematic

MAX3991/MAX3992 Evaluation Kit

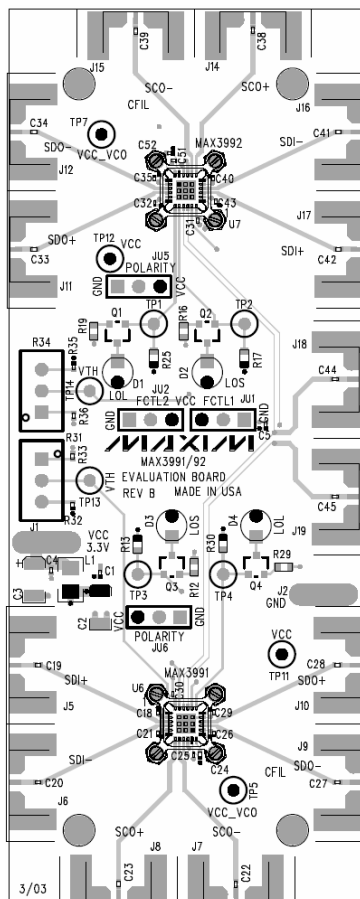


Figure 2. MAX3991/MAX3992 EV Kit PC Component Placement Guide—Component Side

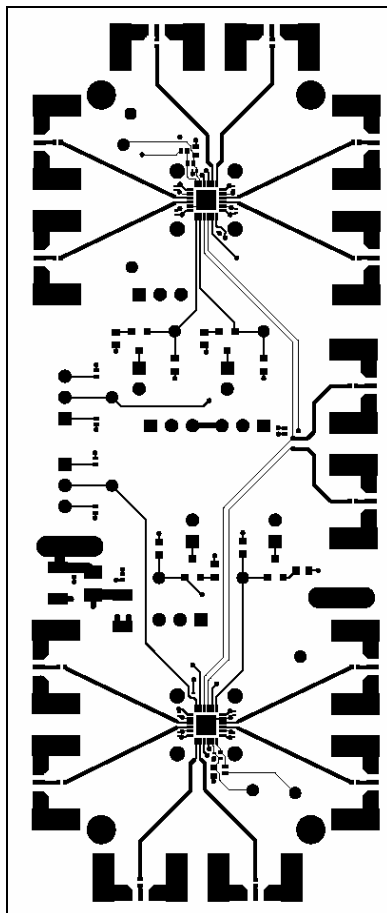


Figure 3. MAX3991/MAX3992 EV Kit PC Board Layout—Component Side

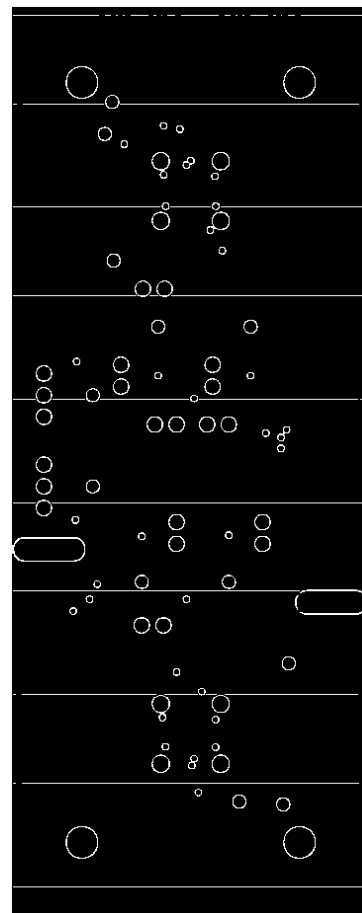


Figure 4. MAX3991/MAX3992 EV Kit PC Board Layout—Ground Plane

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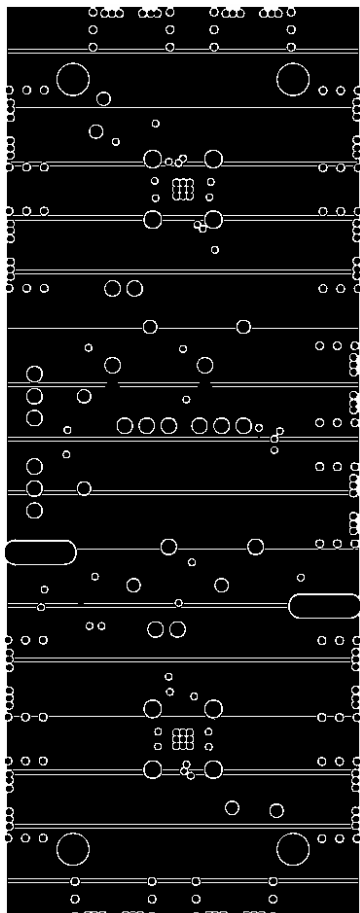


Figure 5. MAX3991/MAX3992 PC Board Layout—Power Plane

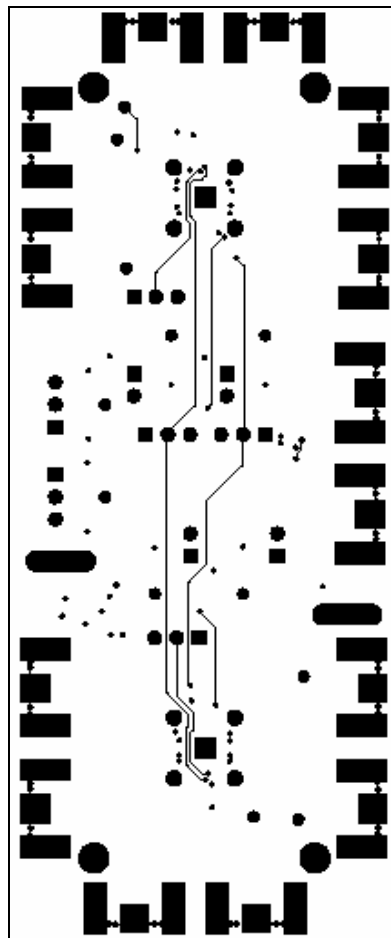


Figure 6 MAX3991/MAX3992 EV Kit PC Board Layout—Solder Side

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