



# MAX3693 Evaluation Kit

## General Description

The MAX3693 evaluation kit (EV kit) is an assembled, surface-mount demonstration board that provides easy evaluation of the MAX3693 622Mbps serializer with clock synthesis and LVDS inputs.

## Component List

DESIGNATION	QTY	DESCRIPTION
C4–C9, C11, C12, C16–C21	14	0.1 $\mu$ F, 10%, 25V min ceramic capacitors
C13, C22	2	1 $\mu$ F, 10%, 10V min ceramic capacitors X7R type
C14	1	1 $\mu$ F, 10%, 25V min ceramic capacitor
C15	1	33 $\mu$ F, $\pm$ 10%, 10V min tantalum capacitor AVX TAJD336K010
L1–L5	1	56nH inductors Coilcraft 0805CS-560XKBC
R1, R2, R11, C1–C3, C10, JU1, JU2, JU4, JU11–JU15	0	Not installed
R3, R4	2	27 $\Omega$ , 5% resistors
R5, R6	2	220 $\Omega$ , 5% resistors
R7, R8	2	130 $\Omega$ , 5% resistors
R9, R10	2	24 $\Omega$ , 5% resistors
R12	1	20k $\Omega$ , 5% resistor
PCLKI+, PCLKI-, PD0+, PD0-, PD1+, PD1-, PD2+, PD2-, PD3+, PD3-, PCLK0+, PCLK0-	12	SMB connectors (PC-mount)
RCLK+, RCLK-, SD+, SD-	4	SMA connectors (PC-mount)
GND, +3.3V	2	Test points
JU3	1	2x3 pin header
U1	1	MAX3693ECJ (32 TQFP)
	1	MAX3693 PC board
	1	MAX3693 data sheet
	1	Shunt for JU3

## Component Suppliers

SUPPLIER	PHONE	FAX
AVX	803-946-0690	803-626-3123
Coilcraft	847-639-6400	847-639-1469

## Features

- ◆ **Single +3.3V Supply**
- ◆ **Selectable Clock-Reference Frequencies (155.52MHz, 77.76MHz, 51.84MHz, 38.88MHz)**
- ◆ **Fully Assembled and Tested Surface-Mount Board**

## Ordering Information

PART	TEMP. RANGE	IC PACKAGE
MAX3693EVKIT	-40°C to +85°C	32 TQFP

## Detailed Description

The MAX3693 EV kit simplifies evaluation of the MAX3693. The EV kit operates from a single +3.3V supply and includes all the external components necessary to interface with LVDS inputs and 3.3V PECL outputs.

The LVDS inputs (PD<sub>+</sub>, PD<sub>-</sub>, PCLKI<sub>+</sub>, PCLKI<sub>-</sub>, RCLK<sub>+</sub>, RCLK<sub>-</sub>) are internally terminated with 100 $\Omega$  differential input resistance, and therefore do not require external termination. Ensure that LVDS devices driving these inputs are not redundantly terminated. The LVDS outputs (PCLKO<sub>+</sub>, PCLKO<sub>-</sub>) require a differential termination with a 100 $\Omega$  resistor between complementary outputs.

The evaluation kit is designed to directly couple an LVDS reference clock. If the reference clock does not have LVDS-compatible levels:

- 1) Cut the PC board traces shorting capacitors C1 and C2.
- 2) Install 0.1 $\mu$ F capacitors.
- 3) Install 4.99k $\Omega$  resistors for R1 and R2 and tie the centerpoint of R1 and R2 (available at JU1) to V<sub>CC</sub> / 2. Install a 0.1 $\mu$ F capacitor at C3 for additional noise filtering.

The PECL outputs have an attenuation (0.6) and impedance matching network on the EV board that allow 50 $\Omega$  terminations to ground for oscilloscope interfacing. All signal inputs and outputs use coupled 50 $\Omega$  transmission lines. All input signal lines are of equal length to minimize propagation-delay skew. Likewise, all output signal lines are of equal length.

The MAX3693 EV kit allows use of multiple reference clock frequencies with the appropriate setting on JU3. See Table 1 for jumper settings.

Evaluates: MAX3693



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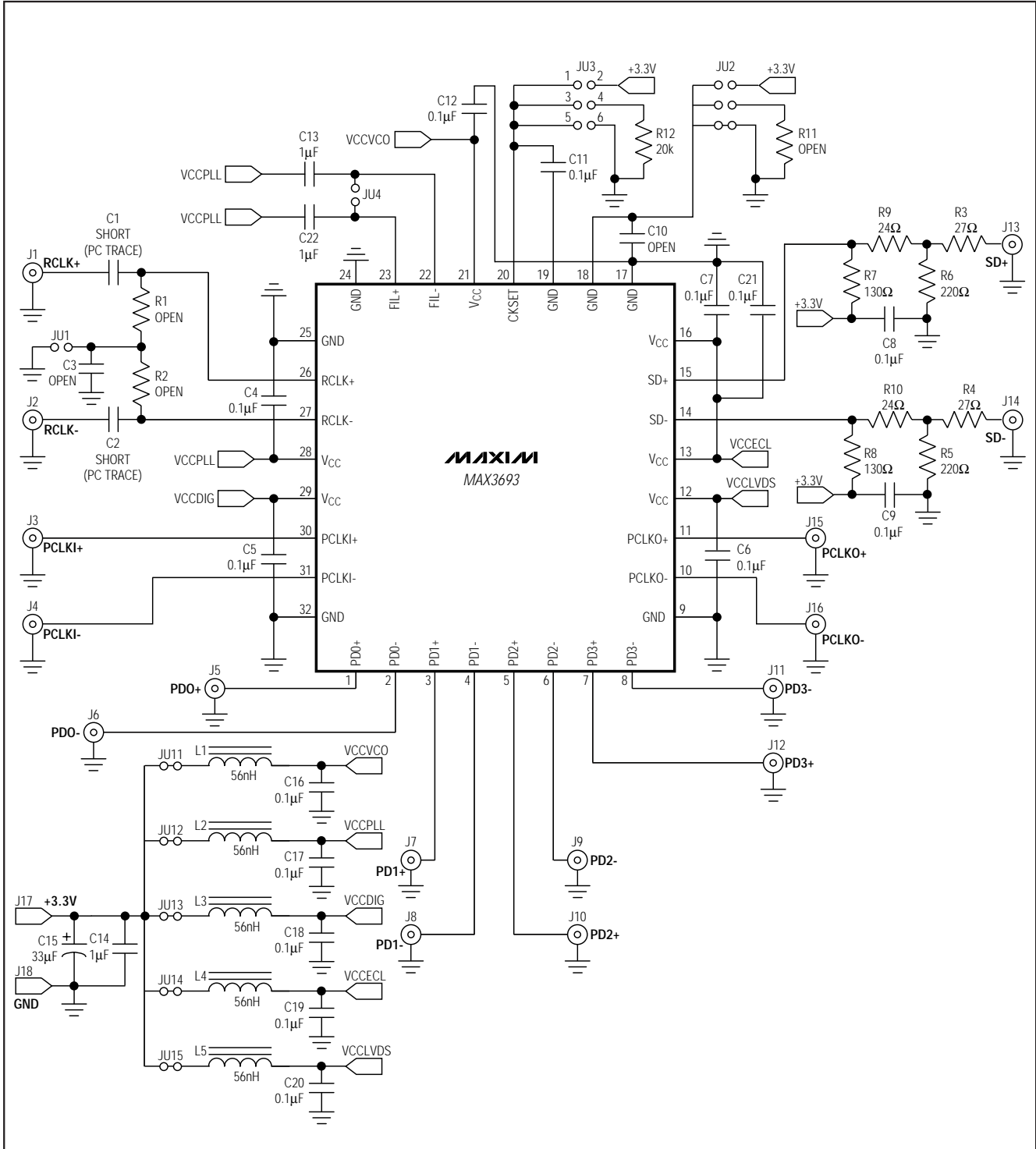


Figure 1. MAX3693 EV Kit Schematic

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**Table 1. Jumper JU3 Functions**

SHUNT LOCATION	REFERENCE CLOCK FREQUENCY (MHz)	CKSET PIN
1-2	155.52	Connected to Vcc
3-4	51.84	Connected through 20kΩ resistor to GND
5-6	38.88	Connected to GND
Open	77.76	Floating

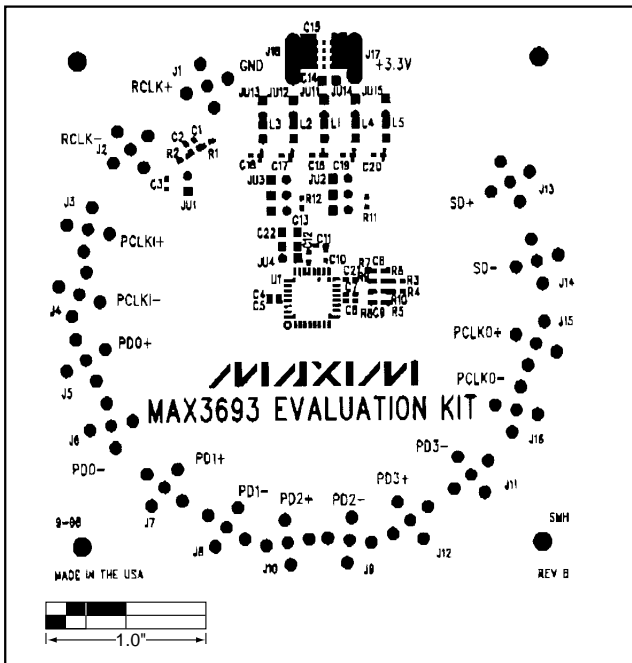
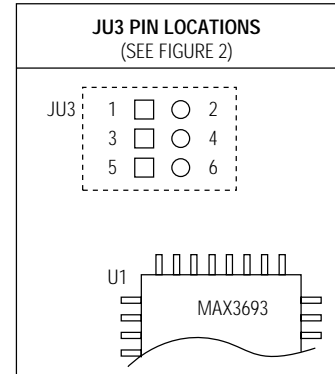


Figure 2. MAX3693 EV Kit Component Placement Guide—Component Side

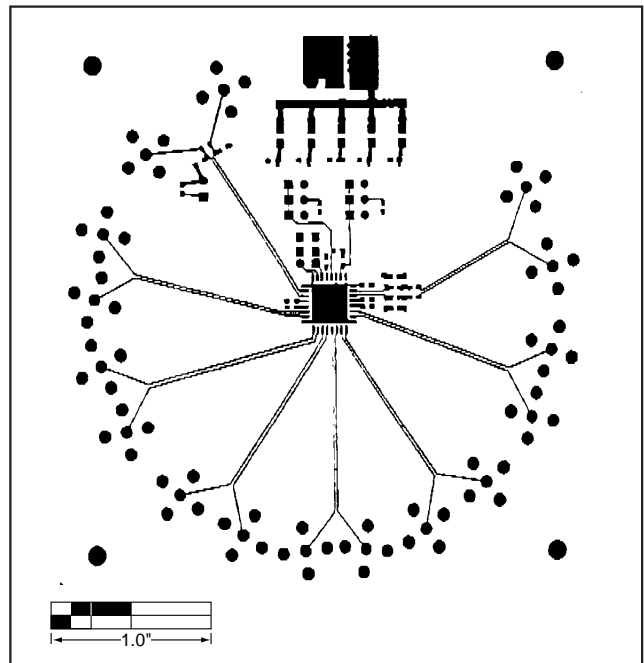


Figure 3. MAX3693 EV Kit PC Board Layout—Component Side

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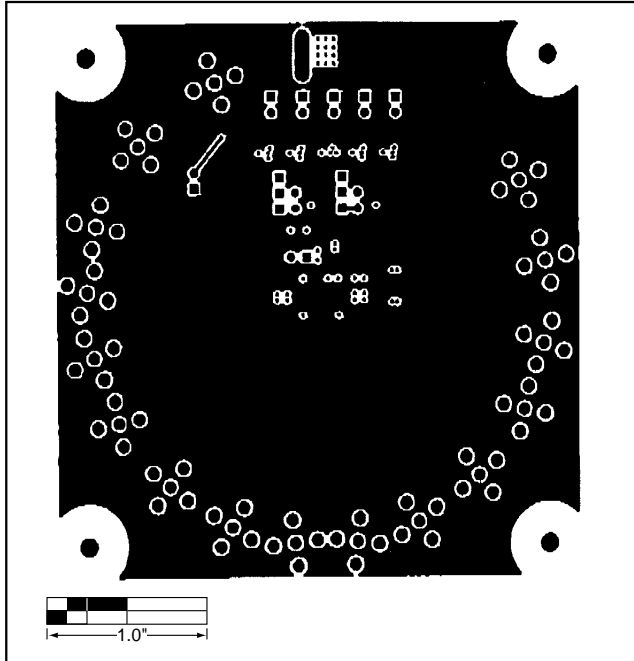


Figure 4. MAX3693 EV Kit PC Board Layout—Solder Side

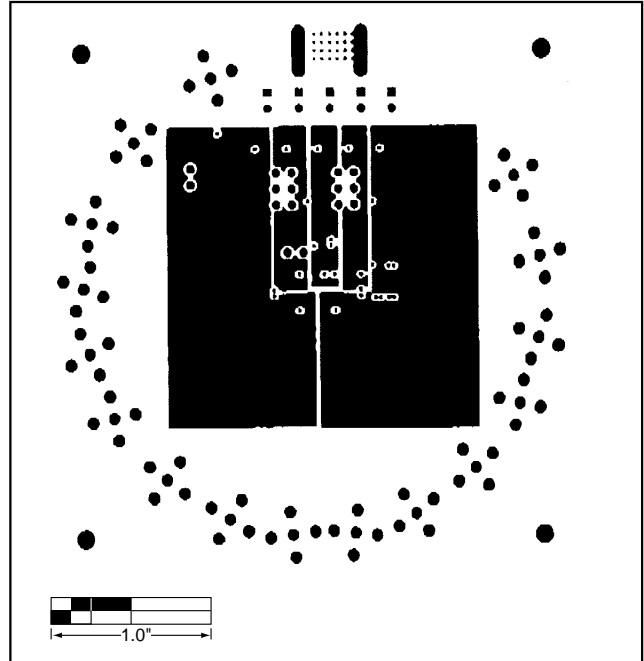


Figure 5. MAX3693 EV Kit PC Board Layout—Power Plane

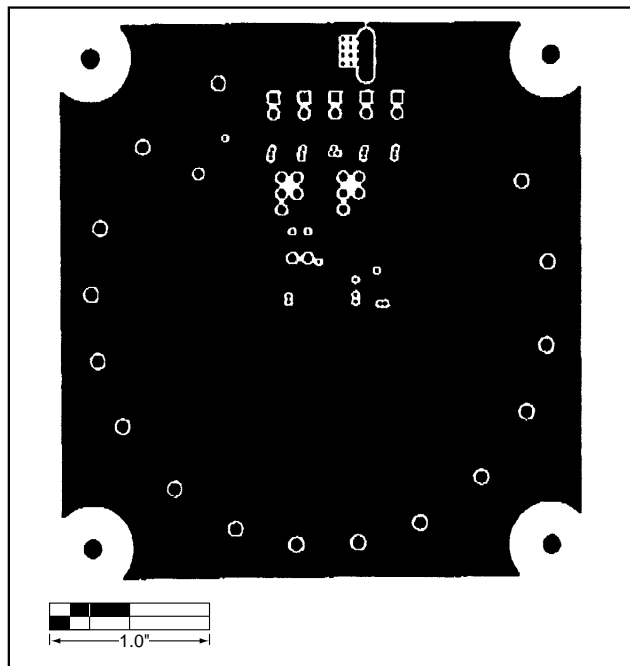


Figure 6. MAX3693 EV Kit PC Board Layout—GND Plane

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