Evaluation Board for CMOS Low Power Dual 2:1 Mux/Demux USB 2.0 (480 Mbps)/USB 1.1 (12 Mbps)

EVAL-ADG772

FEATURES

Full-featured evaluation board for ADG772
On-board USB connectors
No external power supply needed

GENERAL DESCRIPTION

This data sheet describes the evaluation board for the ADG772, which is a low voltage, CMOS device that contains two independently selectable, single-pole, double-throw (SPDT) switches. The ADG772 is designed as a general analog-to-digital switch that can be used for routing both USB 1.1 (12 Mbps) and USB 2.0 (480 Mbps) signals.

Figure 1 shows the EVAL-ADG772 evaluation board. The ADG772 is soldered onto the evaluation board in a tiny 1.3 mm × 1.6 mm ultra thin LFCSP located in the center of the board and is designated as U1. The EVAL-ADG772 can be used without an external power supply; in which case, the USB supply powers the device.

The evaluation kit contains a fully fitted PCB and a CD that contains the ADG772 and the EVAL-ADG772 data sheets. Refer to the ADG772 data sheet for full data on the part. Consult the ADG772 data sheet in conjunction with this data sheet when using the evaluation board.

CONNECTING SIGNALS TO THE BOARD

The board is fitted with three USB connectors that allow the host to switch between two USB devices. All signals applied to the switch can be monitored using the test points provided on the board.

EVALUATION BOARD

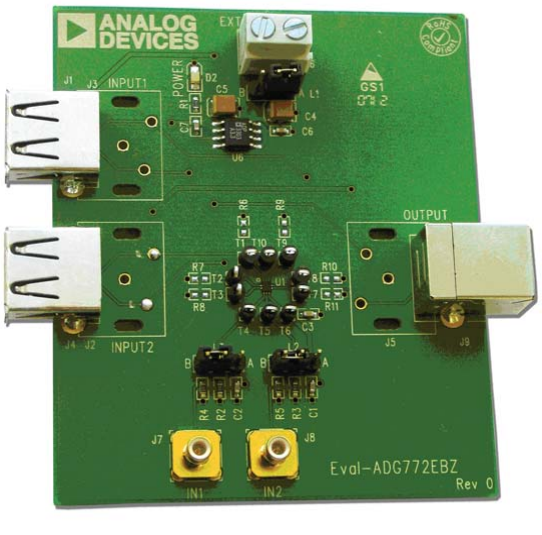


Figure 1.

Rev. 0
Evaluation boards are only intended for device evaluation and not for production purposes. Evaluation boards are supplied "as is" and without warranties of any kind, express, implied, or statutory including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. No license is granted by implication or otherwise under any patents or other intellectual property by application or use of evaluation boards. Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Analog Devices reserves the right to change devices or specifications at any time without notice. Trademarks and registered trademarks are the property of their respective owners. Evaluation boards are not authorized to be used in life support devices or systems.

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 781.329.4700 **www.analog.com**
Fax: 781.461.3113 **©2007 Analog Devices, Inc. All rights reserved.**

TABLE OF CONTENTS

Features 1
General Description 1
Connecting Signals to the Board 1
Evaluation Board 1
Revision History 2
Hardware Description 3
Power Supply 3
Switch Control Connectors 3
Evaluation Board Schematics 4
ADG772 Switch Pins, Test Points, and Connections 5
PCB Drawings 6
Ordering Information 8
Component Listing 8
Ordering Guide 8
ESD Caution 8

REVISION HISTORY

9/07—Revision 0: Initial Version

HARDWARE DESCRIPTION

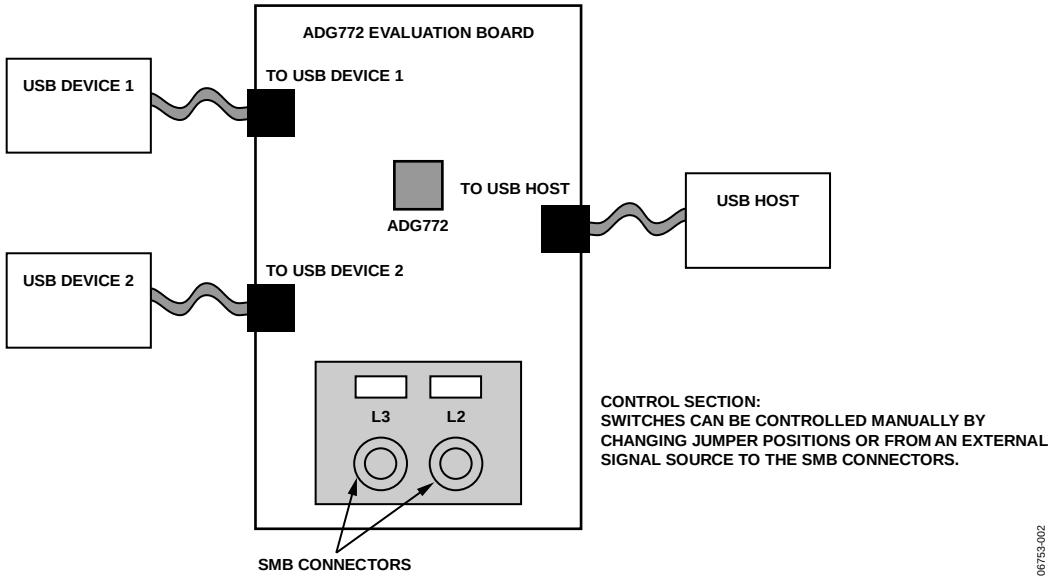


Figure 2. Evaluation Board Application

The ADG772 evaluation kit contains a fully fitted PCB and a CD that contains the ADG772 and the EVAL-ADG772 data sheets.

The evaluation board allows the user to connect the host to the ADG772. The ADG772 then allows the host to switch between two USB devices connected to the evaluation board by using the on-board jumpers or by applying the correct control signals to the appropriate connectors.

The following sections describe in detail the function of the connectors and links.

POWER SUPPLY

For convenience, a regulator supplies the ADG772 with a 3.3 V supply. If an external power supply is used, a supply range of 3.3 V to 12 V can be connected to J6.

The EVAL-ADG772 can also be powered from the USB port from the PC. No additional power supply is required in this case.

Ensure L1 is set to Position A to use the USB voltage supply and set to Position B to use an external supply.

SWITCH CONTROL CONNECTORS

The ADG772 device offers a standard CMOS/LVTTL parallel interface consisting of two IN inputs. The input pins of the ADG772, IN1 and IN2, control the switch state and operation modes. The evaluation board allows users to control the signals required to set the logic levels applied to these pins by using links L2 and L3 as described in Table 1 or by applying external signals to the SMB connectors, IN1 and IN2, respectively, as described in Table 2.

To control the ADG772 using the SMB connectors, L2 and L3 must be set to Position B. Note that there are 51 Ω termination resistors to GND at the IN1 and IN2 SMB connectors.

Table 1. Control via Link L2/Link L3

	Switch Status	
L2 and L3 Position	**USB Device 1 Status**	**USB Device 2 Status**
A	Inactive	Active
B	Active	Inactive

Table 2. Control via SMB Connector Settings

L2 and L3 Position	Switch Status—USB Device Status
B	SMB High = USB Device 2 Active SMB Low = USB Device 1 Active

EVALUATION BOARD SCHEMATICS

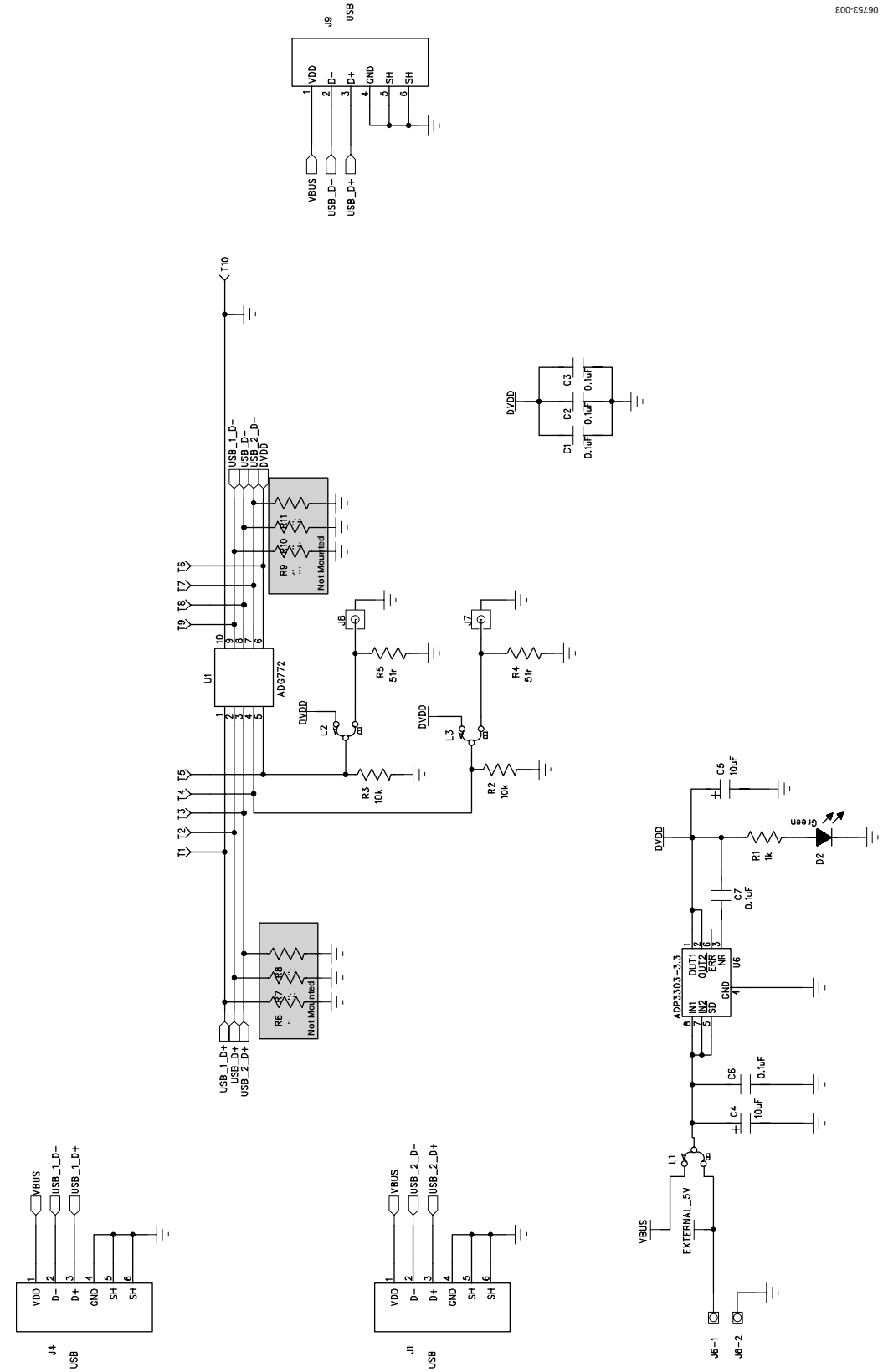


Figure 3. Evaluation Board Schematic

ADG772 SWITCH PINS, TEST POINTS, AND CONNECTIONS

Table 3.

Connector Name	Board Pin Mnemonic	Pin Number	ADG772 Mnemonic	Test Point
J1	USB 2.0 D+	3	S1B	T3
	USB 2.0 D–	2	S2B	T7
J4	USB 2.0 D+	3	S1A	T1
	USB 2.0 D–	2	S2A	T9
J6-1	External 5V	1	VDD	T6
J6-2	GND	2	GND	T10
J9	USB 2.0 D+	3	D1	T2
	USB 2.0 D–	2	D2	T8

PCB DRAWINGS

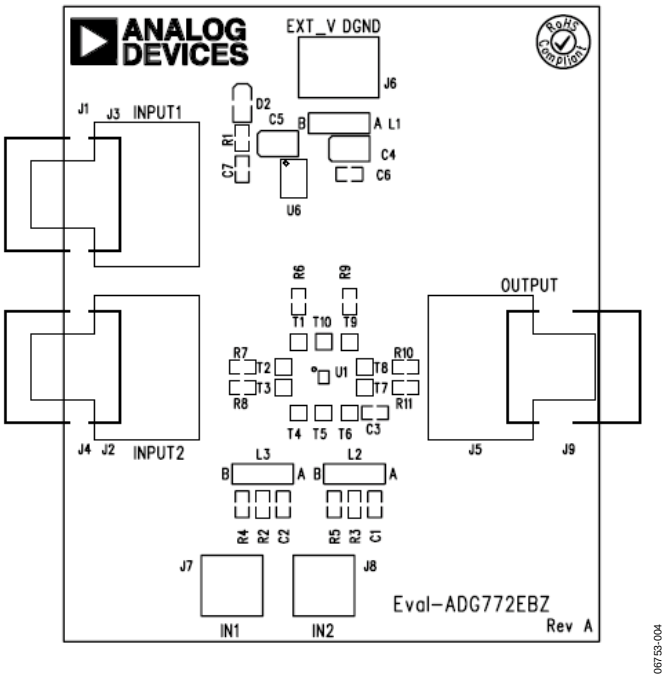


Figure 4. Silkscreen Image of the Board

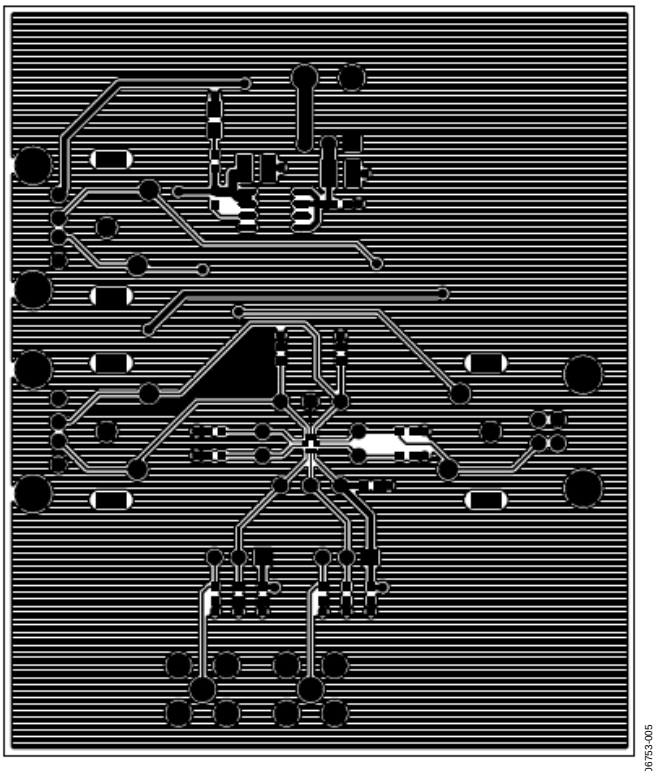


Figure 5. PCB Drawing Layer 1 (Top Layer of the Board)

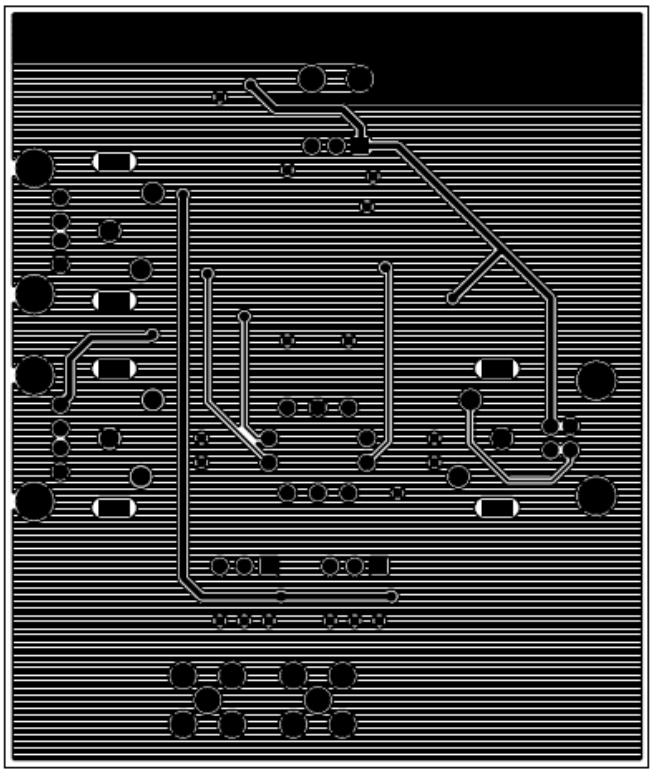


Figure 6. PCB Drawing Layer 2 (Bottom Layer)

ORDERING INFORMATION

COMPONENT LISTING

Table 4.

Reference Designator	Description	Value	Supplier Number
C1 to C3, C6, C7	Capacitor	0.1 µF	FEC 9406140
C4, C5	Capacitor+	10 µF	FEC 1190117
D2	LED		FEC 852 9906
J1, J4	USB		FEC 107-6663
J6	CON\POWER		FEC 151-785
J7, J8	SMB		FEC 1019324
J9	USB		FEC 109-7897
L1 to L3	JUMPER2\SIP3		FEC 3291698 and FEC 150411
R1	Resistor	1 kΩ	FEC 1160322
R2, R3	Resistor	10 kΩ	FEC 1160359
R4, R5	Resistor	51 Ω	FEC 9331336
T1 to T10	Test point		FEC 8731128
U1	ADG772		ADG772
U6	ADP3303-3.3		ADP3303ARZ-3.3

ORDERING GUIDE

Model	Description
EVAL-ADG772EBZ[1]	Evaluation Board

[1] Z = RoHS Compliant Part.

ESD CAUTION



ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

©2007 Analog Devices, Inc. All rights reserved. Trademarks and registered trademarks are the property of their respective owners.
EB06753-0-9/07(0)