

Preliminary Technical Data

EVAL-AD7760/AD7762/AD7763EDZ

FEATURES

**Full-featured evaluation board for the
AD7760/AD7762/AD7763
EVAL-CED1Z compatible
On-board 4.096 V reference
Crystal clock oscillator MCLK source
PC software for control and data analysis for
use with EVAL-CED1Z**

EVALUATION BOARD DESCRIPTION

This data sheet describes the evaluation board for the AD7760/AD7762/AD7763 Σ - Δ ADCs. The AD7760 is a 24-bit ADC that combines wide input bandwidth and high speed with the benefits of Σ - Δ conversion with a performance of 100 dB SNR at 2.5 MSPS, making it ideal for high-speed data acquisition.

The AD7762 and AD7763 derivatives are parallel and serial interface versions, respectively, of the AD7760, with maximum output data rates of 625 kSPS.

Complete specifications for the AD7760/AD7762/AD7763 devices are available in the AD7760/AD7762/AD7763 data sheets available from Analog Devices, Inc., and should be consulted in conjunction with this data sheet when using the evaluation board.

The EVAL-AD7760/AD7762/AD7763EDZ includes a 40 MHz crystal oscillator that provides the MCLK for the AD7760/AD7762/AD7763 device. The user can also choose, if required, to drive the AD7760/AD7762/AD7763 with a different clock oscillator, or to insert the 0 Ω link so that the MCLK signal is driven using an external clock source via the SMB connector marked MCLK.

The AD7760/AD7762/AD7763 evaluation board comes with an on-board FPGA device that is used to interface with the EVAL-CED1Z board. The combination of both the FPGA and the EVAL-CED1Z board allied with the EVAL-AD7760/AD7762/AD7763EDZ software allows the user to upload samples taken by the AD7760/AD7762/AD7763 device onto a PC showing the waveform being sampled, as well as allowing the data to be shown in histogram or FFT format. The EVAL-AD7760/AD7762/AD7763EDZ can also be used on a standalone basis (without the FPGA and EVAL-CED1Z); however, in this case the user must provide the required interface signals.

CONTENTS OF EVALUATION KIT

- AD7760/AD7762/AD7763 evaluation board (EVAL-AD7760/AD7762/AD7763EDZ)
- EVAL-AD776xEDZ evaluation software CD—software and drivers

EVALUATION BOARD BLOCK DIAGRAM

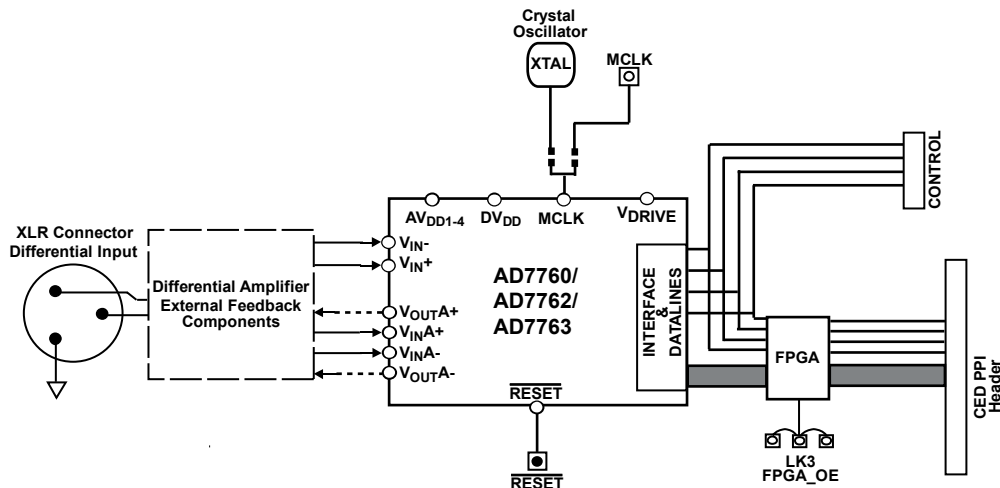


Figure 1.

Rev. PrA

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REVISION HISTORY

08/08—Rev Pr. A –Modified for use with EVAL-CED1Z

HARDWARE DESCRIPTION

POWER SUPPLIES

The EVAL-AD776xEDZ must be powered using a power supply that applies a 7.5 V between the V+ and GND terminals of Connector J2.

This 7.5 V supply is then regulated on board using ADP3334 devices (U9 and U6) to provide the 2.5 V and 5 V signals required by the AD7760/AD7762/AD7763 device. Supplies AV_{DD2} , AV_{DD3} , and AV_{DD4} are the 5 V supplies to the AD7760/AD7762/AD7763 device. The AD7760/AD7762/AD7763 pins AV_{DD1} , V_{DRIVE} , and DV_{DD} are supplied by a voltage of 2.5 V.

A separately regulated 2.5 V supply is used to power all digital functionality on the EVAL-AD7760/AD7762/AD7763EDZ excluding the AD7760/AD7762/AD7763 device. An individually regulated 5 V supply also supplies the crystal oscillator and clock buffer devices on the EVAL-AD7760/AD7762/AD7763EDZ. Setting LK1 to A means that the MCLK buffer is powered by 5 V, enabling the AD7760/AD7762/AD7763 device to be operated using an MCLK signal with an amplitude of 5 V.

DIFFERENTIAL INPUT

The differential input to the AD7760/AD7762/AD7763 device is applied through the connector marked J1. This is an XLR audio standard connector. The differential inputs are routed through the AD7760/AD7762/AD7763 on-board differential amplifier using the external circuit components as detailed in the AD7760/AD7762/AD7763 data sheets.

STANDALONE OPERATION

The EVAL-AD776xEDZ can be used in a standalone manner (that is, without using the EVAL-CED1Z). In this case, however, the user must provide all the required interface communications and be able to provide a means to acquire the output data from the board. In the case where this is desirable, the FPGA can be disabled to allow the data from the AD7760/AD7762/AD7763 device to be taken from Header J9 (marked "DATA").

The FPGA outputs can be set to three-state by putting LK4 in Position A. This means that the output data is routed through Buffers U12 and U13 and is available at Header J9. The enable mechanism for U12 and U13 is set by LK3. See the Link Options section for details.

The output voltage of Buffers U12 and U13 can be set by inputting the desired voltage to Connector J14 (marked "External IO Voltage 2.5 V to 5 V"). The control signals needed for the AD7760/AD7762/AD7763 interface can be attached to Header J10 (marked "Control"). Otherwise, the signals $\overline{RD}/\overline{WR}$, \overline{CS} , and MCLK can be connected to J5, J4, and J8 (SMB connectors), respectively. Note that in the case of the AD7763, the interface signals required for the part are output on J9 (marked "DATA") and the SMB connectors \overline{CS} and $\overline{RD}/\overline{WR}$ become redundant.

DECOUPLING AND LAYOUT RECOMMENDATIONS

The data sheets of the AD7760, AD7762, and AD7763 devices contain specific information about the decoupling and layout recommendations required to achieve the optimum specifications.

The EVAL-AD7760/AD7762/AD7763EDZ adhere to these recommendations completely and are designed as the blueprint for users of the AD7760, AD7762, and AD7763 devices.

The EVAL-AD7760/AD7762/AD7763EDZ are 4-layer boards. One layer is a dedicated ground plane. All supplies to devices on the EVAL-AD7760/AD7762/AD7763EDZ are decoupled to this ground plane. In addition to the PCB's top and bottom layers, there is also a layer for routing power signals. All layers of the board are detailed in the Evaluation Board Schematic and Artwork section.

In addition, the exposed paddle of an AD7760, AD7762, or AD7763 device is connected by multiple vias to this ground plane. The exposed paddle is not connected to any of the ground pins on the AD7760, AD7762, or AD7763 device.

LINK OPTIONS

The link options on the evaluation board should be set for the required operating setup before using the board. The functions of these links are described in Table 1.

Table 1. Link Options

Link No.	Function	Position Descriptions	Default
LK1	Selects the V_{DD} voltage for Clock Buffers U16 and U2.	Position A selects $V_{DD} = 5\text{ V}$. Achieves maximum performance. Position B selects $V_{DD} = 2.5\text{ V}$	Position A
LK2	Selects the voltage supply to power the FPGA outputs.	Position A – Null. Do not use this position. Position B digital drive voltage for the FPGA is taken from the EVAL-AD776xEDZ DVDD supply.	Position B
LK3	Output enable for Data Buffers U13 and U17	Position A selects the DVDD supply: outputs permanently enabled. Position B \overline{CS} controls the data buffer outputs. Position C Selects GND, outputs disabled.	Position A
LK4	FPGA enable.	Position A connects Pin 43 of the FPGA to GND. This sends all the pins of the FPGA device to three-state so that the FPGA can be bypassed. Position B connects Pin 43 of the FPGA to logic high 2.5 V. The FPGA is now fully operational. This link must be in Position B for the evaluation board to function with the EVAL-CED1Z.	Position B
LK5	Selects the input/output voltage for Data Buffers U13 and U17.	Position A selects DVDD supply from the EVAL-AD776xEDZ. Position B selects External Voltage Connector J14 to provide this voltage.	Position A
R9, R10	A $0\ \Omega$ link must be placed in either R9 or R10 to select the MCLK source for the AD7760/AD7762/AD7763 device.	R9 routes the buffered 40 MHz on-board crystal oscillator to the MCLK pin of the AD7760/AD7762/AD7763 device. R10 allows the user to input an external MCLK signal through the MCLK SMB connector (J8), which is buffered (by U2) and routed to the MCLK pin of the AD7760/AD7762/AD7763 device.	R9

SOFTWARE INSTRUCTIONS FOR FIRST-TIME USE

INSTALLING THE SOFTWARE

The EVAL-AD7760/AD7762/AD7763 evaluation board includes self-installing software on CD ROM, for controlling and evaluating the performance of the AD7760/AD7762/AD7763 when it is operated with the EVAL-CED1Z board. The software is compatible with Windows® 2000/XP®. If the setup file does not run automatically, setup.exe can be run from the CD-ROM.

When the CD is inserted into the PC, an installation program automatically begins. This program installs the evaluation software. The user interface on the PC is a dedicated program written especially for the AD7760/AD7762/AD7763 when operating with the EVAL-CEDZ board.

The software should be installed before the USB cable is connected between the EVAL-CEDZ and the PC. This ensures that the appropriate USB driver files have been properly installed before the EVAL-CEDZ is connected to the PC.

When the software is ran for the first time with the EVAL-CEDZ board connected to the PC, the PC will automatically find the new device and will identify it. Follow the onscreen instructions that appear automatically. This installs the drivers for the CED on the PC. If an error appears on screen when the software is first opened, then the PC is not recognizing the USB device. This error is corrected by

1. Opening the PC's Device Manager. The Device Manager is accessed by right clicking on the My Computer Icon, and selecting Properties. When the System Properties Window opens, select the Hardware tab.
2. Click on Device Manager in the Hardware Tab of the System Properties window.
3. Examine the devices listed under the Universal Serial Bus Controller heading.
4. If an unknown device is listed, right click on this option and select, Update Driver.
5. The New Hardware Wizard will run twice, and under the ADI Development Tools the following hardware is listed:

ADI Converter Evaluation and Development Board (WF)

6. Reboot the PC.

This section describes how the evaluation board, the EVAL-CEDZ and the software should be set up to begin using the complete system.

1. Insert the CD into the appropriate computer drive.

2. The dialog box shown in Figure 2 appears.

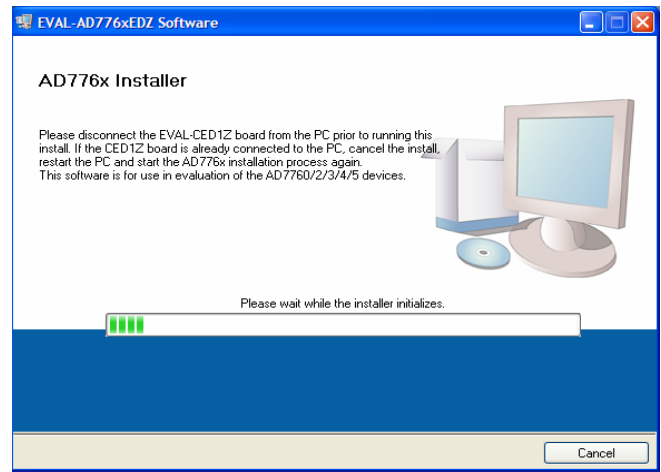


Figure 2. EVAL- AD776xEDZ Setup Dialog Box, Initial Software Install Screen

3. The destination directory can be chosen using the default clicking “Next” as shown in Figure 3). If a different location than the default is preferred, click **Browse** and select the desired location. When ready, click **Next**.



Figure 3. Choose the Destination of the AD776x Software

4. Accept the license agreement by selecting the correct option and clicking “Next” as shown in Figure 4.

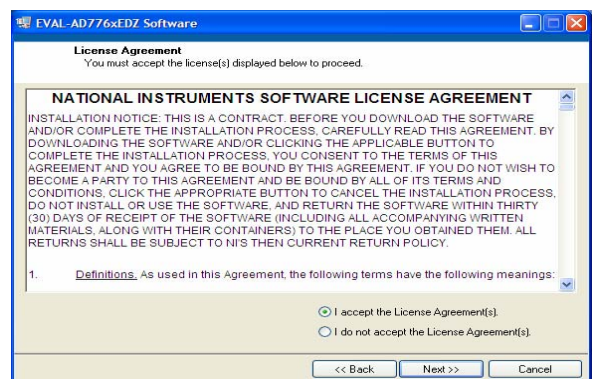


Figure 4. Accept license agreement

- To start the installation, click the “Next” button as shown in Figure 5, this window details the actions of the installation.

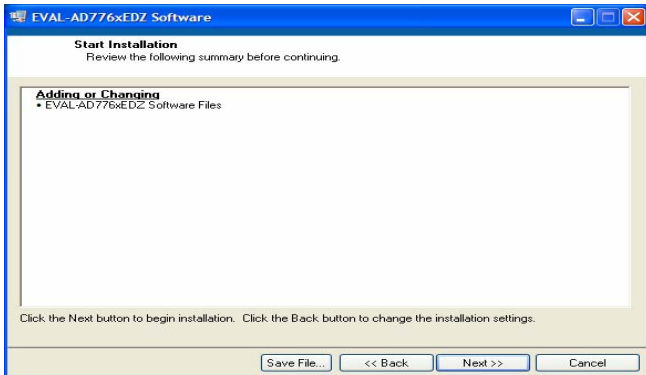


Figure 5. EVAL-AD776xEDZ Install actions

-
-
-
-
-
-
- The software can now be located by following the path that was chosen during installation. If the default location was chosen, the location of the software in the case of the AD7760 is **Start > All Programs > Analog Devices > AD776x > AD7760_2_3_4_5**.

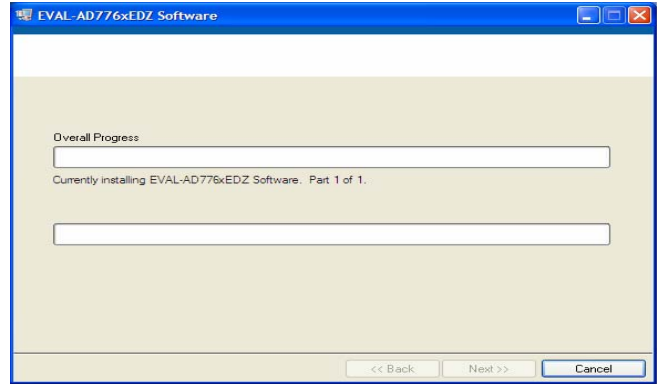


Figure 6. Default Location of AD7760/AD7762/AD7763 Software

- On completion of the installation, the window as shown in Figure 7 is displayed.

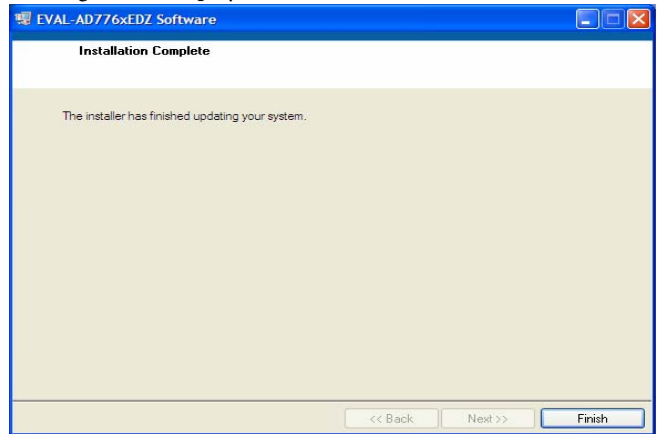


Figure 7. Install Completed

- On completion of the installation it is advised that the user re-starts the PC in order for the software to take full effect.

USING THE EVALUATION SYSTEM

HARDWARE CONNECTIONS

1. Apply power to the EVAL-CED1Z via +7V, 15W power supply provided with the EVAL-CED1Z board. At this stage, the green LED labeled 'Power' on the EVAL-CED1Z should be lighting. This indicates that the EVAL-CED1Z is receiving power. The USB cable can then be connected between the PC and the EVAL-CED1Z.
2. Connect the USB cable between the PC and the EVAL-CED1Z. A green LED positioned beside the USB connector on the EVAL-CEDZ board will light indicating that the USB connection has been established.
3. Power up the EVAL-AD7760/AD7762/AD7763EDZ evaluation board through Connector J2. Connect a wire from the V+ labeled connector to 7.5 V of an external power supply. Also ensure that there is a GND connection between the GND of J2 and the power supply GND connection.
4. Connect the female connector (J13, marked "Blackfin PPI"), which is on the under side of the EVAL-AD7760/AD7762/AD7763EB evaluation board to the PPI header of the EVAL-CED1Z board. The PPI port is highlighted in
5. Start the EVAL-AD7760/AD7762/AD7763EDZ software.

The differential input to the AD7760/AD7762/AD7763 device can be connected to the black connector XLR connector (J1) marked "Differential Input." This differential input is routed to the inputs of the AD7760/AD7762/AD7763's on-board differential amplifier. As the software will power up the AD7760/2/3 device it is advisable that users do not apply an analog input until the device is fully powered up.

With the hardware set up, you can now use the software to control the EVAL-CED1Z and the AD7760/AD7762/AD7763 evaluation board. To launch the software, from the **Analog Devices** menu click on the **AD776x** submenu, then click on the **AD7760_2_3_4_5 icon**.

Note: In the case where an Error message appears, click OK and restart the application after checking the connection between the adapter board and the USB port on the PC. Also, check that the USB device is identified by the Device Manager as detailed in the first time use of EVAL-CED1Z paragraph of Installing the Software section.

The differential input to the AD7760/AD7762/AD7763 device can be connected to the black connector XLR connector (J1) marked "Differential Input." This differential input is routed to the inputs of the AD7760/AD7762/AD7763's on-board differential amplifier.

SOFTWARE INSTRUCTIONS FOR NORMAL USE

Once the initial software installation has been completed, follow these instructions for the general setup of the evaluation software each subsequent time the system is used.

Note that the hardware must be powered up as per the Hardware connections section before attempting the following steps.

1. The download default location for the EVAL-AD7760/AD7762/AD7763EDZ evaluation software can be found by clicking **Start > All Programs > Analog Devices > AD776x > AD776x**. If a location other than the default was used, follow the path that was entered during setup.
2. The evaluation software GUI appears.
3. Select the correct AD776x device from the drop down menu in the top left hand corner of the GUI. i.e. AD7760 for AD7760 evaluation etc.
4. To Power up the AD7760/2/3 device under evaluation, first click the Power Mode drop down menu, and select either 'Low Power' or 'Normal Power'. This will automatically prompt the EVAL-CED1Z to write to the AD7760/AD7762/AD7763 registers and power up the AD776x device.
5. Note that the external voltage supply connected to the EVAL-AD7760/AD7762/AD7763EDZ board will show approximately ~240mA in 'Normal Power' mode, and approx ~170mA in 'Low Power mode. Seeing these current draw levels change, when switching between the power modes also verifies that the communications between the EVAL-AD7760/2/3EDZ and EVAL-CED1Z board are operational.
6. The user can specify the power mode, decimation rate, and number of samples to be acquired (typically 65536 samples) by using the drop-down menus on the software front panel circled in red in Figure 8. The software allows the number of samples specified by the user samples to be viewed as a waveform, histogram, or FFT. These options are also circled in Figure 8.



Figure 8. EVAL-AD7760/AD7762/AD7763EDZ Evaluation Software Front Panel Features

7. For the initial operation of the AD7760 and AD7762 versions of the evaluation board, set the **Decimation Rate** to 64 in the front panel of the **AD776x Evaluation Software** dialog box. This is the default decimation rate of the AD7760/AD7762 parts on reset and power-up of the evaluation board.
8. For the initial operation of the AD7763 evaluation board, set the **Decimation Rate** to 32 in the front panel of the **AD776x Evaluation Software** dialog box. This is the default decimation rate of the part on reset and power-up of the evaluation board.
9. Note that for the AD7762 and AD7763 devices only decimation rates: Dec x32, Dec x64, Dec x128, Dec x256 are valid settings.
10. To show samples output by the EVAL-AD7760/AD7762/AD7763EB evaluation board Click **Sample** or **Continuous**. Clicking **Sample** gives one set of samples, the length of which is determined by the **No. Samples** selection on the software front panel. Clicking **Continuous** shows continuously updated samples of the analog input to the device.

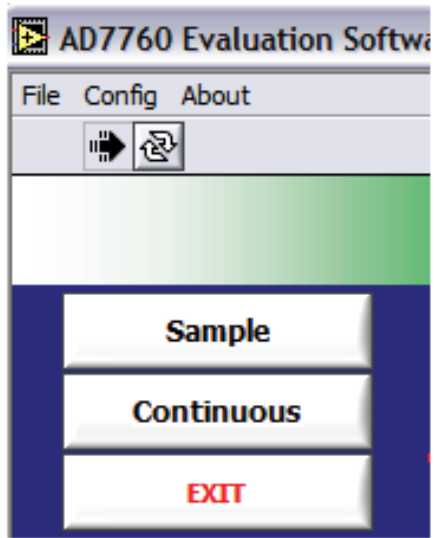


Figure 9. **Sample** and **Continuous** Front Panel Buttons

11. It is important to ensure that the frequency of the $\overline{\text{DRDY}}$ pulse on an oscilloscope (at the SMB connector marked J7) is checked so that it matches the frequency shown in the **Frequency** text box on the software front panel.
12. If at any stage these do not match, reset the AD7760/AD7762/AD7763 evaluation board by pressing the $\overline{\text{RESET}}$ push button on the evaluation board. Then set the software front panel decimation rate to the correct default value: 64 for the AD7760/AD7762 and 32 for the AD7763.

EVAL-AD7763EB PINOUT

The schematic for the EVAL-AD7760/AD7762/AD7763EDZ that is shown in the Evaluation Board Schematic and Artwork section is drawn with reference to the parallel interfaced AD7760 and AD7762 devices. The AD7763 operates with a serial interface, thus Pins 39, 40, 45 to 52, and 54 to 61, which operate as part of the parallel interface control and data bus on the AD7760 and AD7762, have different functionalities for the AD7763. Figure 10 shows the pinout of the AD7763 device. This pinout can be substituted for the AD7760 pinout in the schematic shown in Figure 11 when the EVAL-AD7763EB is being used. All peripheral circuitry to the AD7763, such as the components on the input stage to the op amp and decoupling circuitry, is as per the schematic shown in Figure 11 through Figure 14.

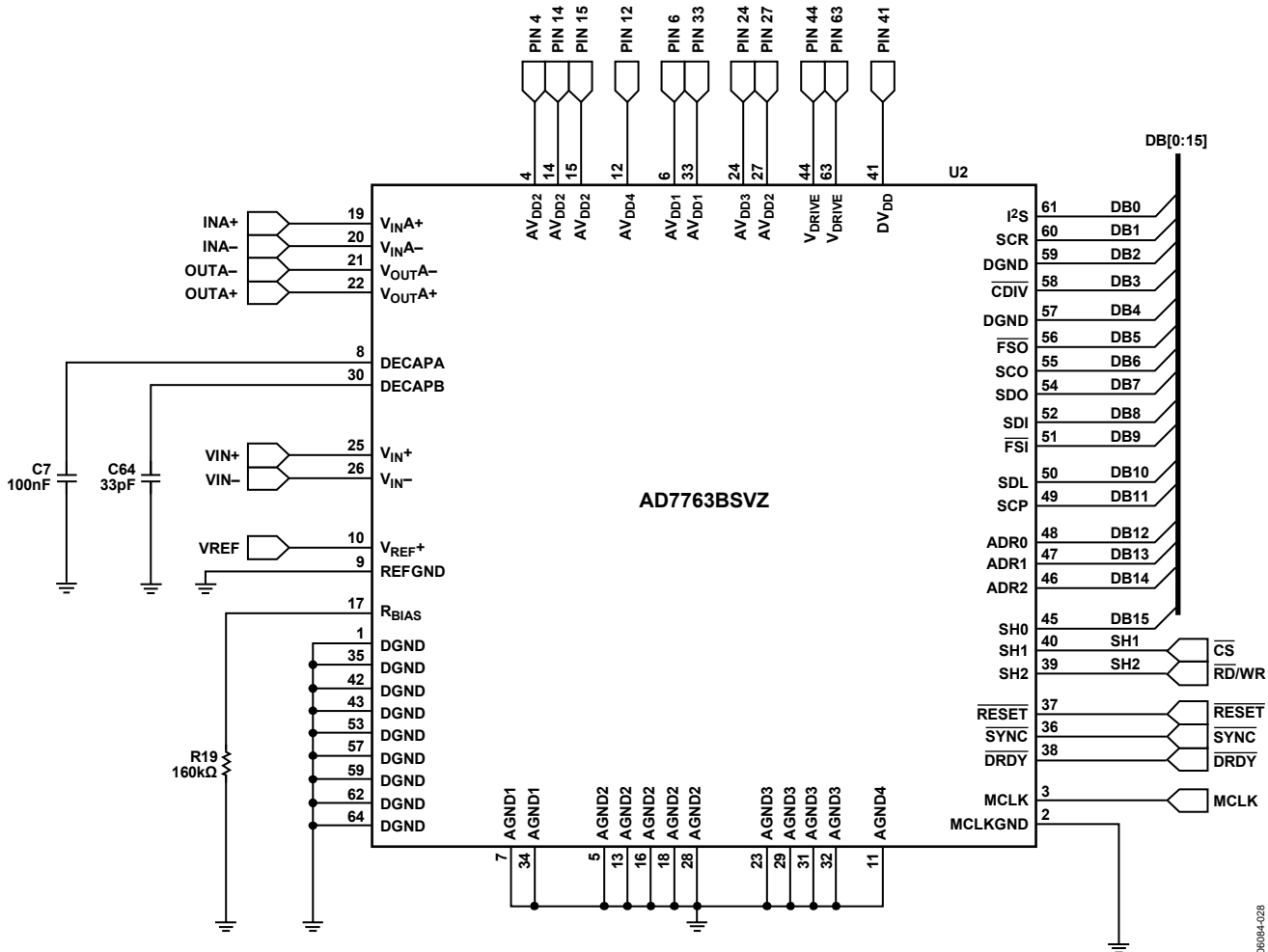


Figure 10. AD7763 Pinout for Use with EVAL-AD7760/AD7762/AD7763EDZ Schematic

EVALUATION BOARD SCHEMATIC AND ARTWORK

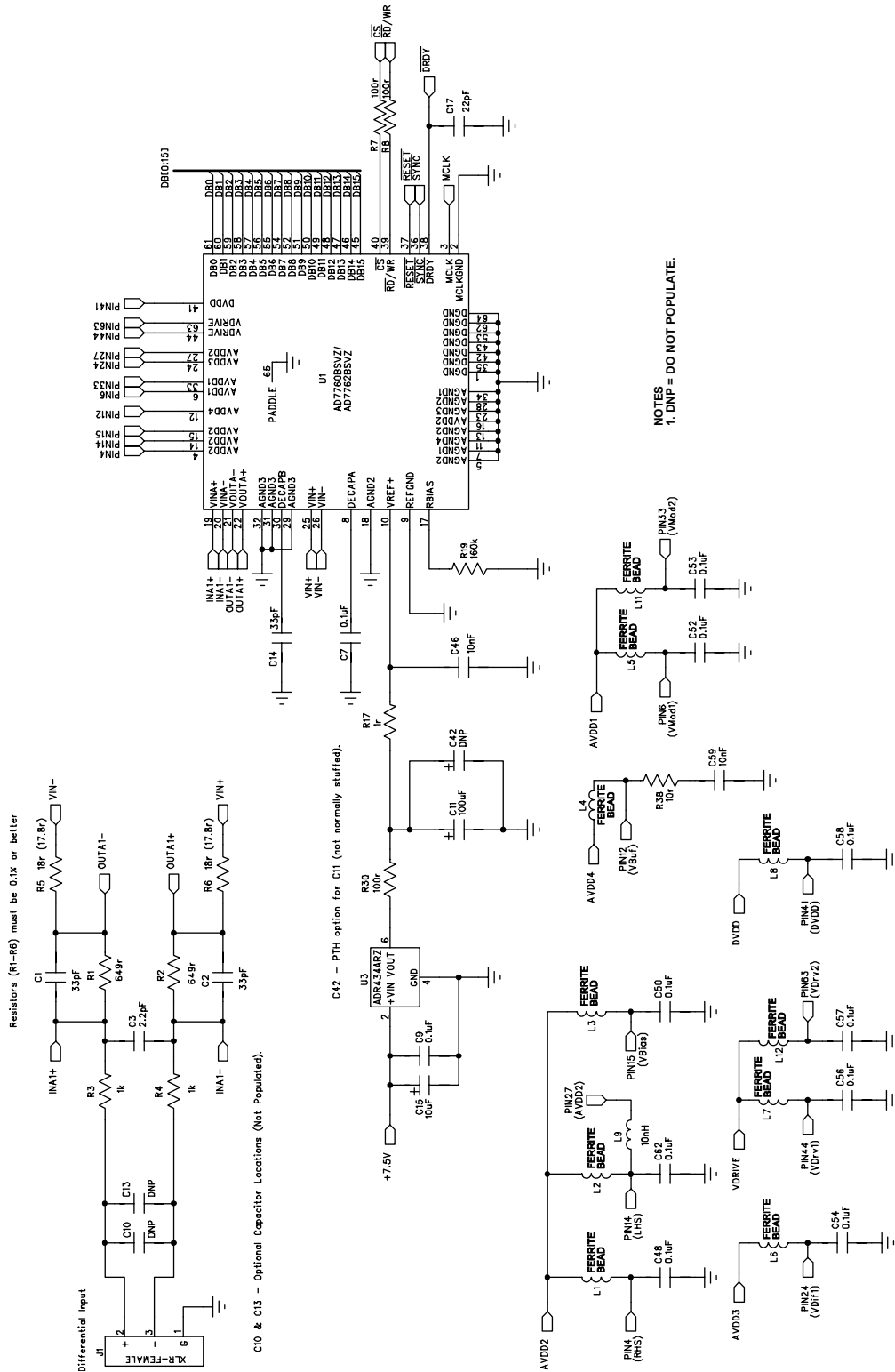


Figure 11. EVAL-AD7760/AD7762/AD7763EDZ Schematic (Analog Section Rev.F) Page 1 of 4

AD7760 Decoupling

06084-018

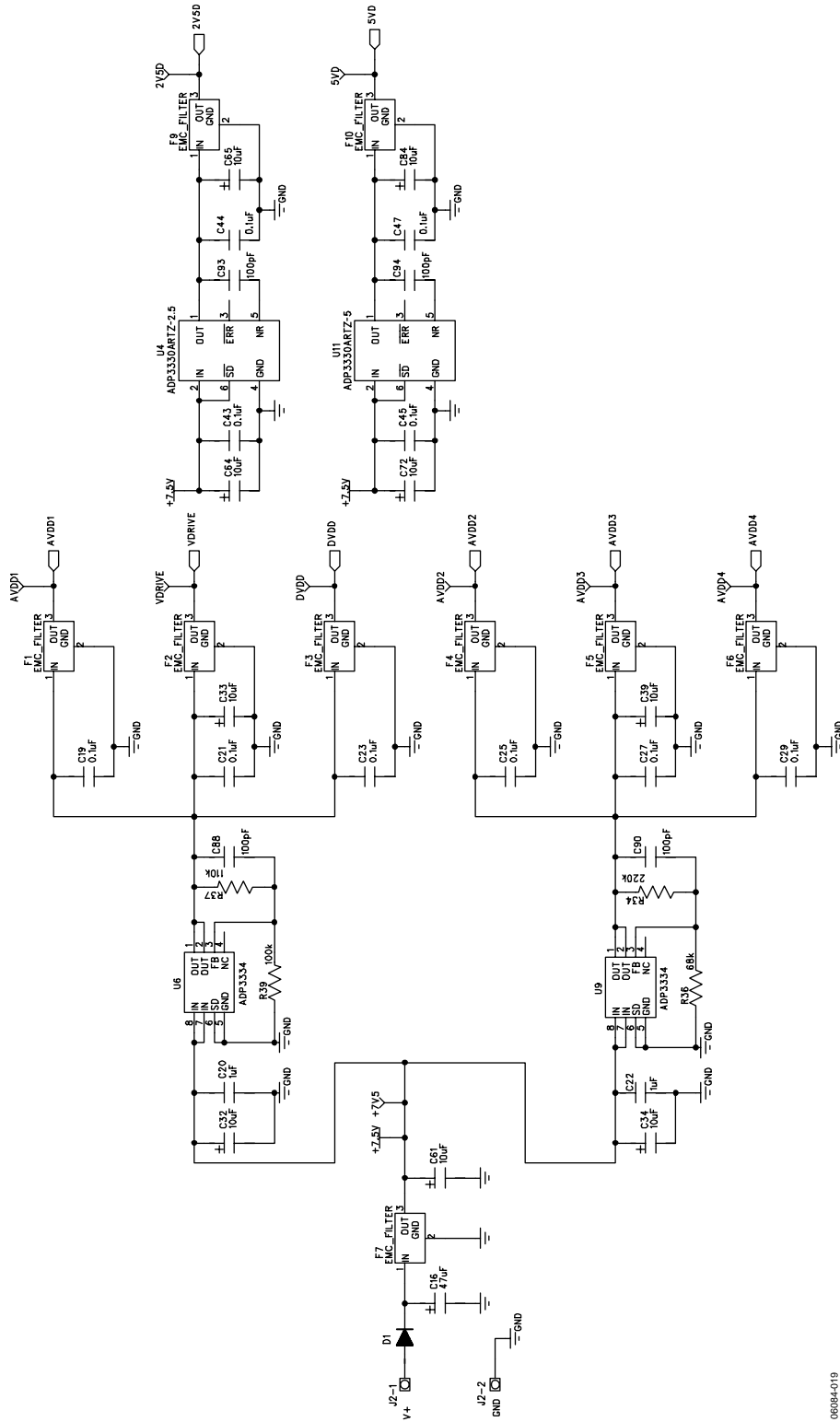
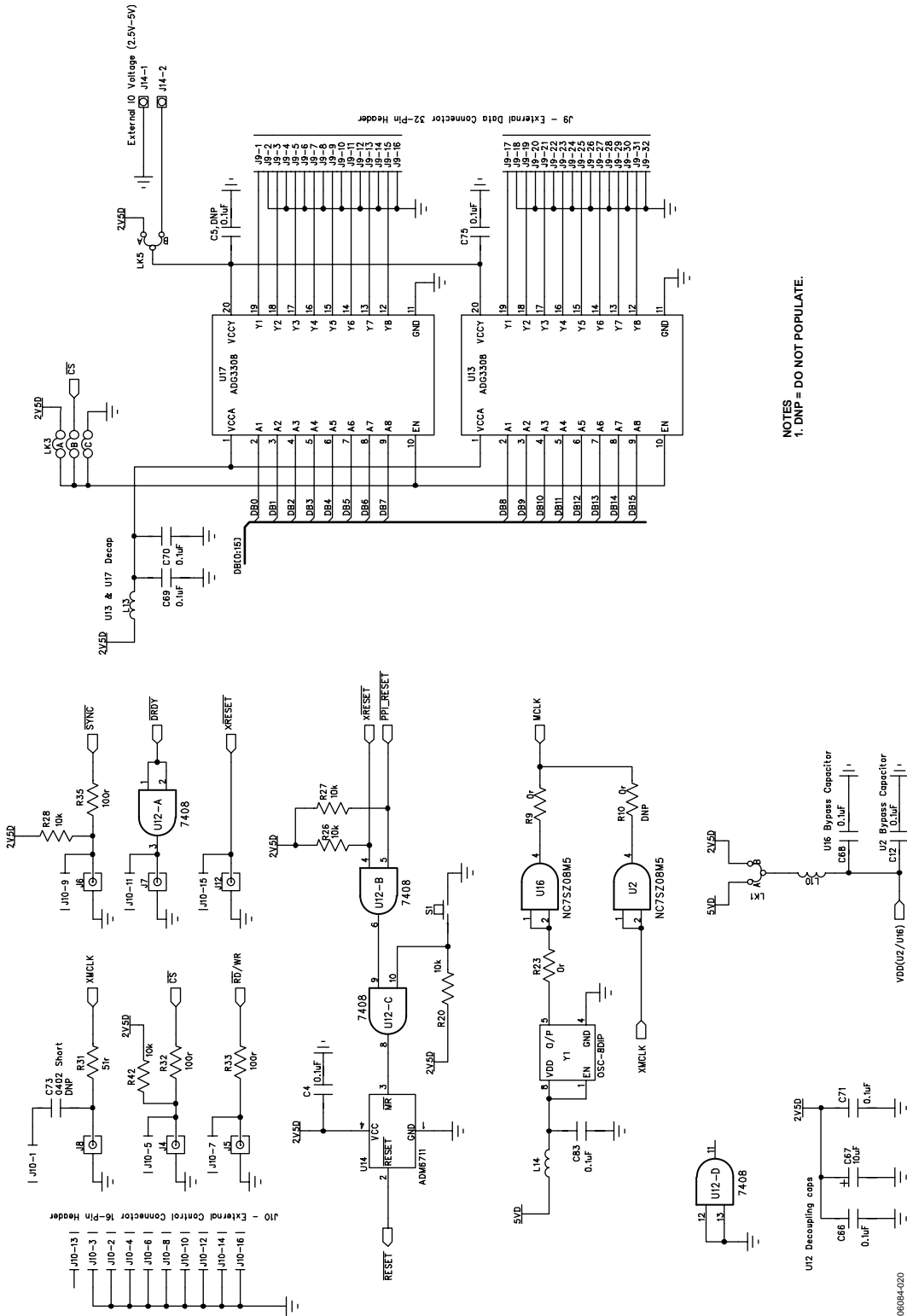


Figure 12. EVAL-AD7760/AD7762/AD7763EDZ Schematic (Power Supply Section Rev F) Page 2 of 4

06984-019



NOTES
1. DNP = DO NOT POPULATE.

Figure 13. EVAL-AD7760/AD7762/AD7763EDZ Schematic (Digital Section Rev F) Page 3 of 4

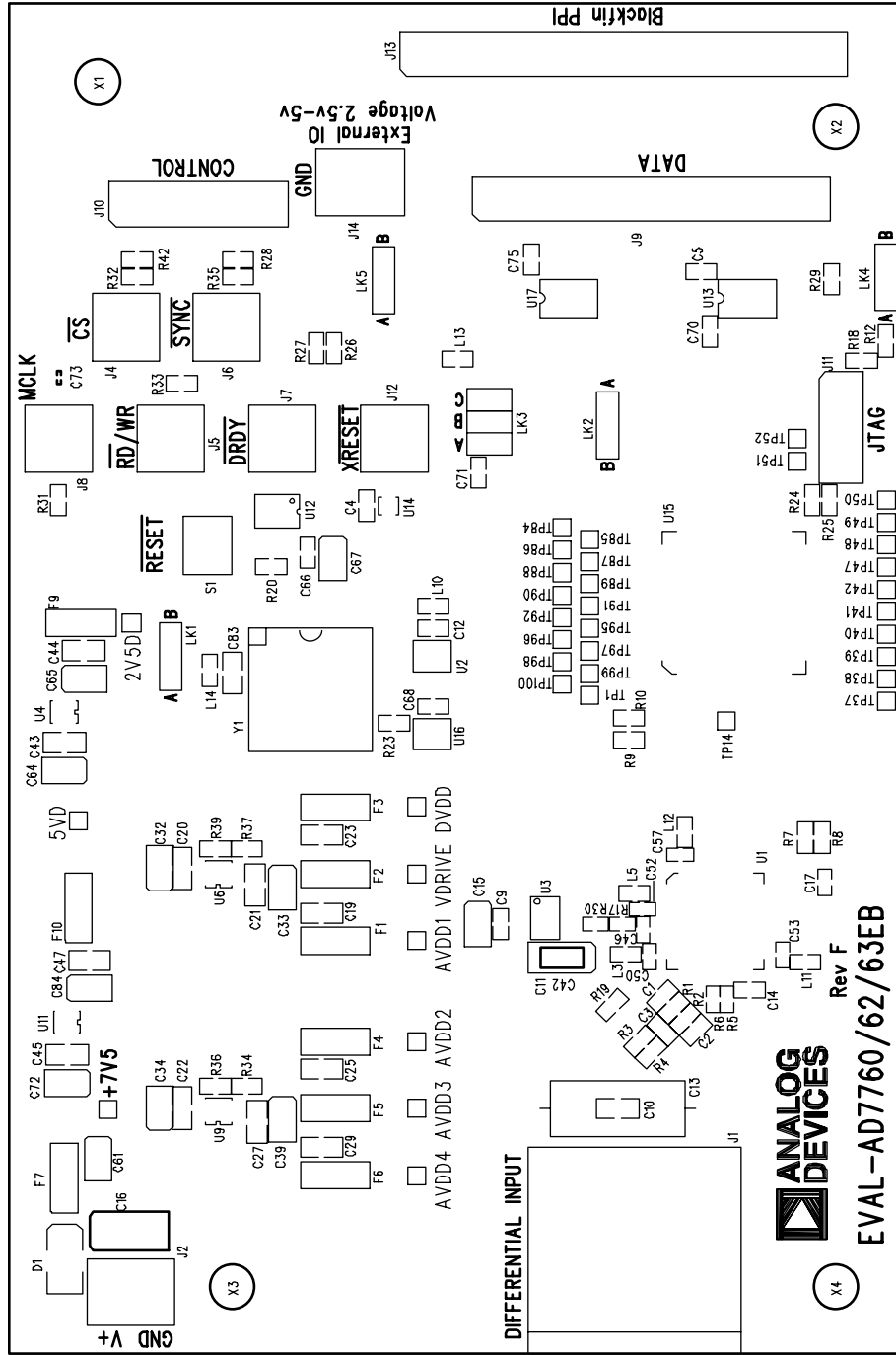


Figure 15. EVAL-AD7760/AD7762/AD7763EDZ Component Side Top Silkscreen Artwork

06084-022

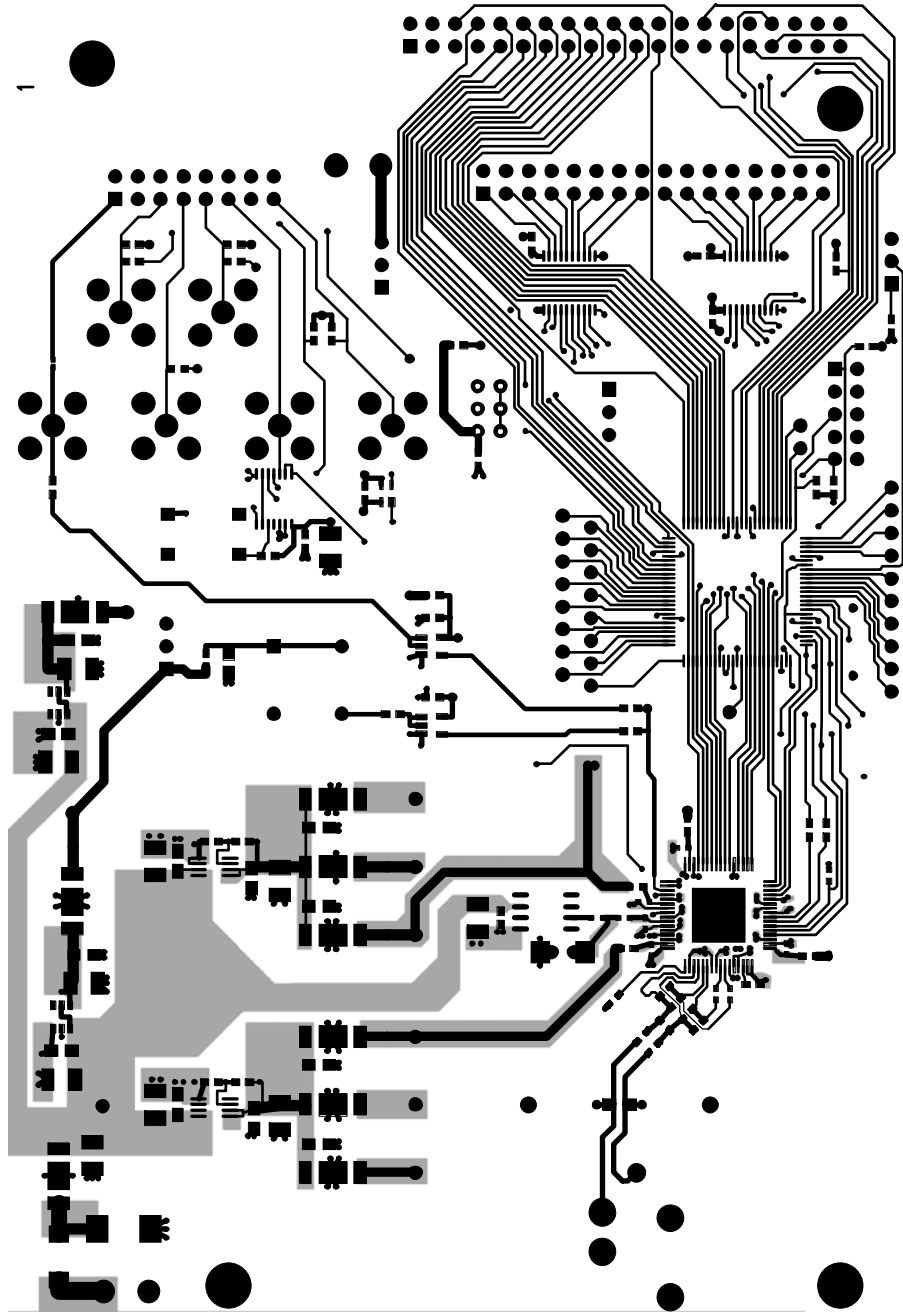


Figure 16. EVAL-AD7760/AD7762/AD7763EDZ Component Side Layer 1 Artwork

06084-023

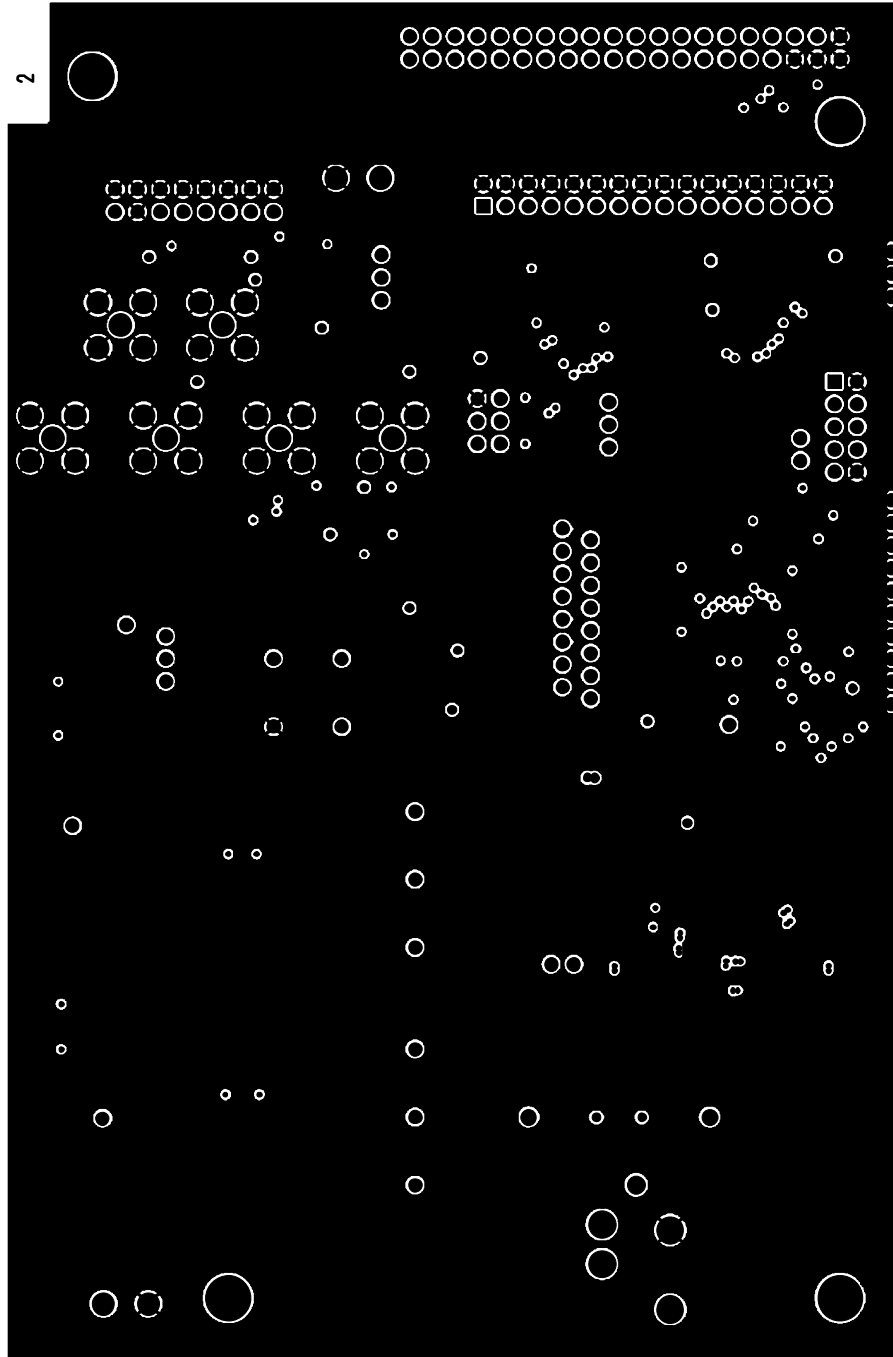


Figure 17. EVAL-AD7760/AD7762/AD7763EDZ Ground Plane Layer 2 Artwork

06084-024

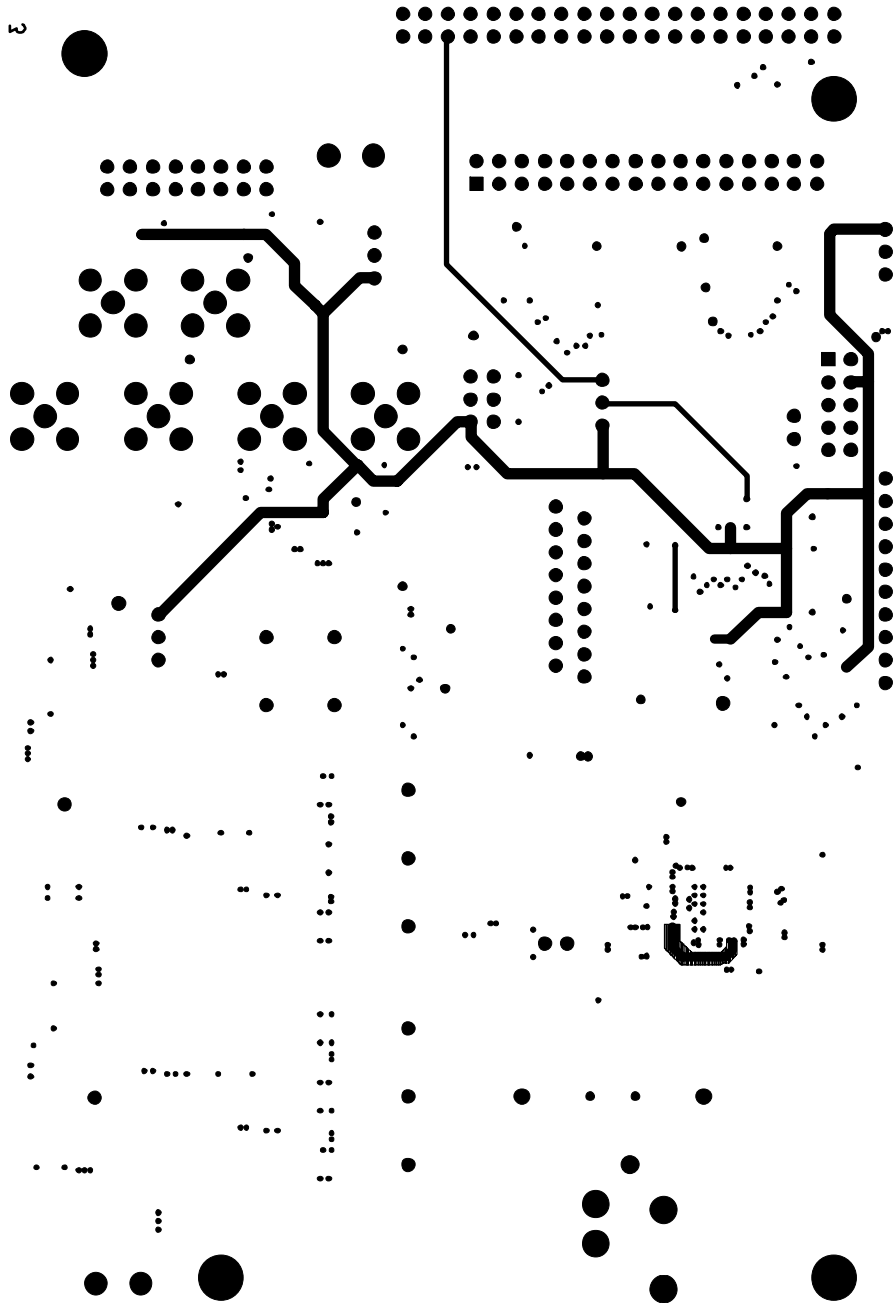


Figure 18. EVAL-AD7760/AD7762/AD7763EDZ Power Plane Layer 2 Artwork

06084-025

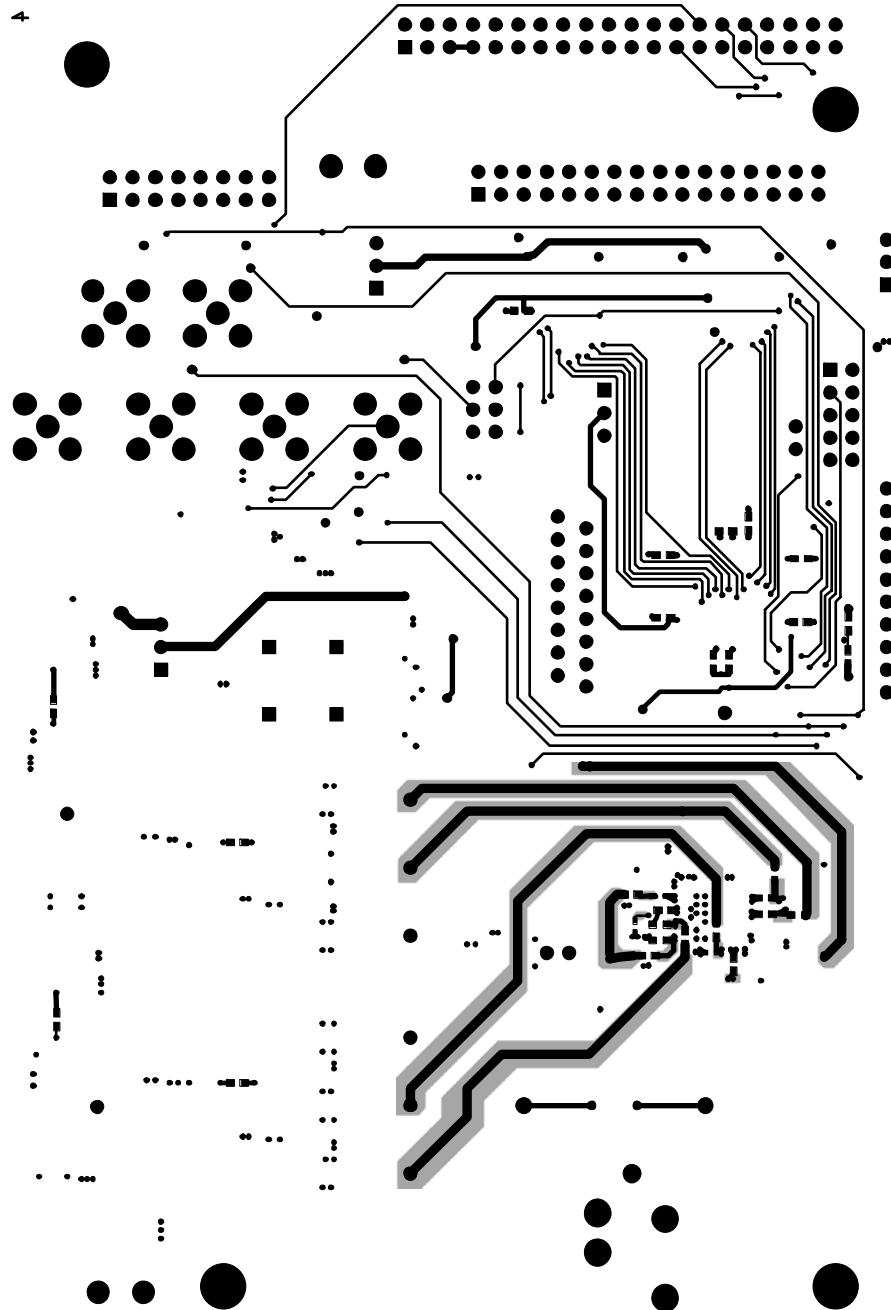
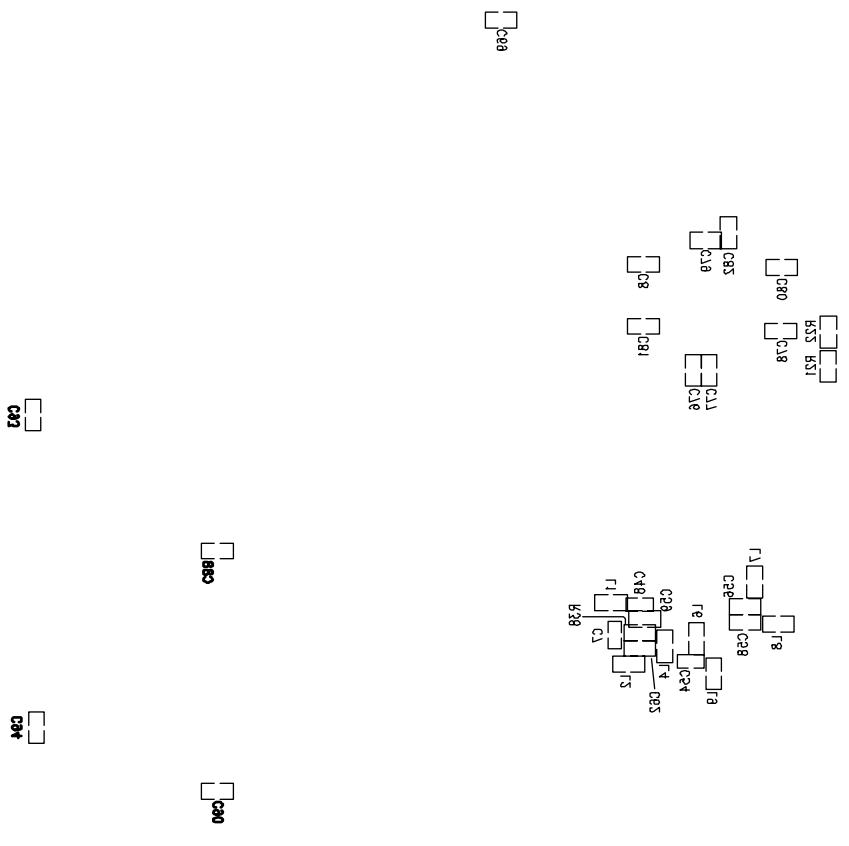


Figure 19. EVAL-AD7760/AD7762/AD7763EDZ Solder Side Layer 4 Artwork

06984-026



06064-027

Figure 20. EVAL-AD7760/AD7762/AD7763EDZ Component Side Bottom Silkscreen Artwork

ORDERING INFORMATION

BILL OF MATERIALS

Table 2.

Qty	Part Type	Reference Designator	Manufacturer	Supplier/No.
1	24-bit Σ - Δ ADC parallel interface (64-lead TQFP_EP)	U1	Analog Devices, Inc.	AD7760BSVZ
	24-bit Σ - Δ ADC parallel interface (64-lead TQFP_EP)			AD7762BSVZ
	24-bit Σ - Δ ADC serial interface (64-lead TQFP_EP)			AD7763BSVZ
2	UHS 2-input AND gate (5-pin SOT-23-5) (NC7SZ08M5)	U2, U16	Fairchild Semiconductor	FEC 1013807
1	XFET [®] voltage reference (8-lead SOIC)	U3	Analog Devices, Inc.	ADR434ARZ
1	anyCAP [®] low dropout regulator (6-lead SOT-23-6)	U4	Analog Devices, Inc.	ADP3330ARTZ-2.5
2	anyCAP low dropout regulator (8-lead MSOP)	U6, U9	Analog Devices, Inc.	ADP3334ARMZ
1	anyCAP low dropout regulator (6-lead SOT-23-6)	U11	Analog Devices, Inc.	ADP3330ARTZ-5
1	Quad two-input AND gate (SN74LVC08APWR)	U12	Texas Instruments Incorporated	FEC 1102978
2	Bidirectional logic level translator (20-lead TSSOP)	U13, U17	Analog Devices, Inc.	ADG3308BRUZ
1	Microprocessor supervisory circuit (4-lead SC70)	U14	Analog Devices, Inc.	ADM6711ZAKSZ
1	MAX II CPLDs	U15	Altera Corporation	EPM240T100C3N
1	40 MHz crystal oscillator (MXO45HS-40.0000)	Y1	CTS Corporation	Digi-Key CTX175-ND
3	33 pF 50 V NPO multilayer ceramic Capacitor 0603	C1, C2, C14	AVX Corporation	FEC 498555
1	2.2 pF 50 V NPO multilayer ceramic Capacitor 0603	C3	Phycomp	FEC 721888
20	0.1 μ F 16 V X7R multilayer ceramic Capacitor 0603	C4, C8, C9, C12, C56, C58, C62, C66, C68, C69, C70, C71, C75, C76, C77, C78, C79, C80, C81, C82	Multicomp	FEC 9406140
7	0.1 μ F 16 V Y5 V multilayer ceramic Capacitor 0402	C7, C48, C50, C52, C53, C54, C57	Phycomp	FEC 3019482
1	100 μ F 10 V tantalum Capacitor CAP\TAJ_C	C11	AVX Corporation	FEC 197180
1	33 pF 50 V NPO multilayer ceramic Capacitor 0402	C14	AVX Corporation	FEC 498555
7	10 μ F 20 V tantalum Capacitor TAJ_B	C15, C61, C64, C65, C67, C72, C84	AVX Corporation	FEC 197427
1	47 μ F 20 V tantalum Capacitor TAJ_D	C16	AVX Corporation	FEC 197464
1	22 pF 50 V C0G multilayer ceramic Capacitor 0402	C17	Murata Manufacturing Co., Ltd.	FEC 8819629
10	0.1 μ F 50 V X7R multilayer ceramic Capacitor 0805	C19, C21, C23, C25, C27, C29, C43, C44, C45, C47	Multicomp	FEC 9406387
2	1 μ F 16 V X7R multilayer ceramic Capacitor 0805	C20, C22	Murata Manufacturing Co., Ltd.	FEC 9527710
4	10 μ F 20 V tantalum Capacitor CAP\TAJ_B	C32, C33, C34, C39	AVX Corporation	FEC 197427
5	0.1 μ F 50 V X7R multilayer ceramic Capacitor 0805	C43, C44, C45, C47, C83	Multicomp	FEC 9406387
1	10 nF 16 V X7R multilayer ceramic Capacitor 0402	C46	AVX Corporation	FEC 578149
6	0.1 μ F 16 V Y5V multilayer ceramic Capacitor 0402	C48, C50, C52, C53, C54, C57	Phycomp	FEC 3019482

Qty	Part Type	Reference Designator	Manufacturer	Supplier/No.
16	0.1 μF 16V X7R multilayer ceramic Capacitor 0603	C56, C58, C62, C66, C68, C69, C70, C71, C75, C76, C77, C78, C79, C80, C81, C82	Multicomp	FEC 9406140
1	10 nF 25 V X7R multilayer ceramic Capacitor 0603	C59	AVX Corporation	FEC 499146
4	100 pF 50 V NPO multilayer ceramic Capacitor 0603	C88, C90, C93, C94	Multicomp	FEC 9406115
1	Diode-S2M 2 A rectifier Diode DO-214AA	D1	Vishay Semiconductors	FEC 9843876
9	EMC Filter 1 nF 3-terminal capacitor	F1, F2, F3, F4, F5, F6, F7, F9, F10	Murata Manufacturing Co., Ltd.	FEC 9528202
1	Female XLR. audio connector (NC3FAH1-1)	J1	Neutrik AG	FEC 724518
1	CON/POWER—two-way terminal block (CTB5000/2)	J2, J14	Camden Electronics, Ltd.	FEC 151789
6	50 Ω SMB jack	J4, J5, J6, J7, J8, J12	Radiall	FEC 4194512
1	32-pin (2 × 16) header (0.1" pitch)	J9	Harwin, Plc.	FEC 1022244
1	16-pin (2 × 8) header (0.1" pitch)	J10	Harwin, Plc.	FEC 1022240
1	10-pin (2 × 5) header (0.1" pitch)	J11	Harwin, Plc.	FEC 1022235
1	40-pin (2 × 20) PC104 stackthrough header	J13	Harwin, Plc.	FEC 359907
13	Ferrite bead inductor (0603)	L1, L2, L3, L4, L5, L6, L7, L8, L10, L11, L12, L13, L14	Würth Electronics, Inc.	74279266LF
1	10 nH inductor (0603) (B82496-C)	L9	EPCOS AG	FEC 3877024
4	3-pin SIL header (with shorting block)	LK1, LK2, LK4, LK5	Harwin, Plc.	FEC 1022248, FEC 148029
1	6-pin (3 × 2) 0.1" header (with shorting block)	LK3	Harwin, Plc.	FEC 1022230, FEC 148029
2	649 Ω precision SMD resistor (0.1%) 0603	R1, R2	Tyco Electronics	RN73C1J649RBTG
2	1 kΩ precision SMD resistor (0.1%) 0603	R3, R4	Tyco Electronics	RN73C1J1K0BTG
2	18 Ω (17.8 Ω) precision SMD resistor (0.1%) 0603	R5, R6	Tyco Electronics	RN73C1J17R8BTG
5	100 Ω SMD resistor (1%) 0603	R7, R8, R32, R33, R35	Multicomp	FEC 9330364
3	0 Ω SMD resistor	R9, R22, R23	Multicomp	FEC 9331662
10	10 kΩ SMD resistor (1%) 0603	R12, R18, R20, R24, R25, R26, R27, R28, R29, R42	Multicomp	FEC 9330399
1	1 Ω SMD resistor (1%) 0603	R17	Phycomp	FEC 9238123
1	160 kΩ SMD resistor (1%) 0603	R19	Multicomp	FEC 9330682
2	100 kΩ SMD resistor (1%) 0603	R21, R39	Multicomp	FEC 9330402
1	100 Ω SMD resistor (1%) 0402	R30	Phycomp	FEC 9239111
1	51 Ω SMD resistor (1%) 0603	R31	Multicomp	FEC 9331336
1	220 kΩ SMD resistor (1%) 0603	R34	Multicomp	FEC 9330836
1	68 kΩ SMD resistor (1%) 0603	R36	Multicomp	FEC 9331468
1	110 kΩ SMD resistor (1%) 0603	R37	Multicomp	FEC 9330461
1	10 Ω SMD resistor (1%) 0603	R38	Multicomp	FEC 9330429
1	SMD push button switch (B3S-1000)	S1	OMRON Corporation	FEC 177807

ORDERING GUIDE

Model	Description
EVAL-AD7760EB	Evaluation Kit
EVAL-AD7762EB	Evaluation Kit
EVAL-AD7763EB	Evaluation Kit
EVAL-CED1Z	Converter Evaluation and Development (CED) Board

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.

NOTES