Evaluation Board for 12-Bit R/D Converter with Reference Oscillator

EVAL-AD2S1200/AD2S1205

FEATURES

Full-featured evaluation board for the AD2S1200 and the AD2S1205
Compatible with the evaluation board controller (EVAL-CONTROL-BRD2)
Standalone capability
Various linking options

GENERAL DESCRIPTION

This data sheet describes the evaluation board for the AD2S1200 and the AD2S1205, which are complete, 12-bit resolution tracking resolver-to-digital converters, integrating an on-board programmable sinusoidal oscillator that provides sine wave excitation for resolvers. Full details about the parts are available in the AD2S1200 and the AD2S1205 data sheets from Analog Devices, Inc., and they should be consulted in conjunction with this data sheet when using the evaluation board.

On-board components include the AD713 quad op amp, the ADM811 voltage monitor, the 74FCT162H245T bidirectional transceiver, and the 74HC573 octal D-type transparent latch.

Various link options are explained in Table 1 and Table 2.

FUNCTIONAL BLOCK DIAGRAM

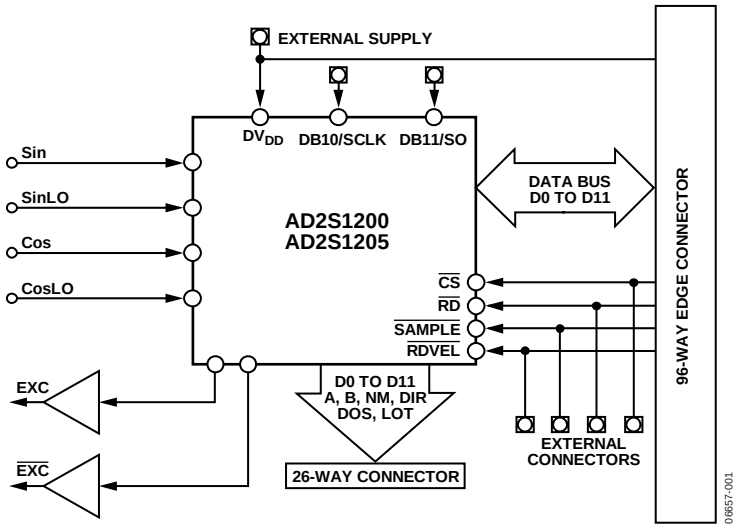

Figure 1.

Rev. C

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

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6/07—Rev. B to Rev. C

Updated Format ..... Universal
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11/06—Rev. A to Rev. B

Added EVAL-AD2S1205 ..... Universal

11/05—Rev. 0 to Rev. A

Added Evaluation Board Schematics and Artwork 10
Added Bill of Materials 14

5/04—Revision 0: Initial Revision

EVALUATION BOARD HARDWARE

POWER SUPPLIES

When using the EVAL-AD2S1200/AD2S1205 with the evaluation board controller, all supplies are provided from the controller board through the 96-way connector.

When using the board as a standalone unit, external supplies must be provided. This evaluation board has the following six power supply inputs:

- AVDD
- DVDD
- +15 V
- −15 V
- AGND
- DGND

If the evaluation board is used in standalone mode, 5 V must be connected to the AVDD input to supply the AD2S1200/AD2S1205 AV_{DD} pin. In addition, 5 V must be connected to the DVDD input to supply the AD2S1200/AD2S1205 DV_{DD} pin, the 74FCT162H245T, and the 74HC573. To supply the regulators that provide power to the AD713 quad op-amp, +15 V and −15 V should be used. Lastly, 0 V is connected to one or both of the AGND inputs and to the DGND input.

The AVDD and DVDD supplies are decoupled to the relevant ground plane with 4.7 µF tantalum and 0.1 µF multilayer ceramic capacitors. The AD713, the 74FCT162H245T, and the 74HC573 are decoupled to the relevant ground plane with 10 µF tantalum and 0.1 µF multilayer ceramic capacitors.

Extensive ground planes are used on this board to minimize the effect of high frequency noise interference. There are two ground planes, AGND and DGND. These are connected at one location close to the AD2S1200/AD2S1205.

LINK OPTIONS

There are 14 link options that must be positioned for the required operating setup before using the evaluation board. The functions of these options are outlined in Table 1.

Table 1. Link Option Functions

Link No.	Function
LK1	This link selects the source of the $\overline{RD}$ input signal for the AD2S1200/AD2S1205. In Position A, the $\overline{RD}$ signal is taken from the externally applied $\overline{RD}$ signal via the J12 SMB socket or the J10 connector. In Position B, the $\overline{RD}$ signal is taken from the evaluation board controller via the 96-way connector. In Position C, the $\overline{RD}$ signal is taken from the S3 push button switch.
LK2	This link selects the source of the $\overline{CS}$ input signal for the AD2S1200/AD2S1205. In Position A, the $\overline{CS}$ signal is taken from the externally applied $\overline{CS}$ signal via the J11 SMB socket or the J10 connector. In Position B, the $\overline{CS}$ signal is taken from the evaluation board controller via the 96-way connector. In Position C, the $\overline{CS}$ signal is taken from the S3 push button switch.
LK3	This link selects the source of the $\overline{SAMPLE}$ input signal for the AD2S1200/AD2S1205. In Position A, the $\overline{SAMPLE}$ signal is taken from the externally applied $\overline{SAMPLE}$ signal via the J9 SMB socket or the J10 connector. In Position B, the $\overline{SAMPLE}$ signal is taken from the evaluation board controller via the 96-way connector. In Position C, the $\overline{SAMPLE}$ signal is taken from the S2 push button switch.
LK4	This link selects the source of the $\overline{RDVEL}$ input signal for the AD2S1200/AD2S1205. In Position A, the $\overline{RDVEL}$ signal is taken from the externally applied $\overline{RDVEL}$ signal via the J4 SMB socket or the J10 connector. In Position B, the $\overline{RDVEL}$ signal is taken from the evaluation board controller via the 96-way connector. In Position C, the $\overline{RDVEL}$ signal is tied to AVDD. In Position D, the $\overline{RDVEL}$ signal is tied to AGND.
LK5	This link connects the externally applied SCLK via the J13 SMB socket to the AD2S1200/AD2S1205.
LK6	This link selects the source of the $\overline{SOE}$ input signal for the AD2S1200/AD2S1205. In Position A, the $\overline{SOE}$ signal is tied to AVDD (parallel mode). In Position B, the $\overline{SOE}$ signal is tied to AGND (serial mode).
LK7	This link selects the frequency of the sinusoidal excitation signals, the EXC and $\overline{EXC}$ pins of AD2S1200/AD2S1205. The frequency of this reference signal is programmable to four standard frequencies (10 kHz, 12 kHz, 15 kHz, or 20 kHz) using the FS1 and FS2 pins. FS1 and FS2 have internal pull-ups so the default frequency is 10 kHz. In Position A, the FS2 signal is tied to AGND. In Position B, the FS1 signal is tied to AGND.

Link No.	Function
LK8, LK9	These links select the gain of the EXC and $\overline{\text{EXC}}$ amplifier circuits. In Position A, the gain can be set by the user. Gain = R/10 kΩ where R = R1 = R4. In Position B, a gain of 1.8 is applied. In Position C, a unity gain is applied.
LK10	This link is used to select the source of the AVDD supply for the EVAL-AD2S1200/AD2S1205. In Position A, the AVDD supply is sourced from the evaluation board controller via the 96-way connector. In Position B, the AVDD supply is sourced externally via the J6 connector.
LK11	This link is used to select the source of the +15 V supply for the EVAL-AD2S1200/AD2S1205. In Position A, the +15 V supply is sourced from the evaluation board controller via the 96-way connector. In Position B, the +15 V supply is sourced externally via the J8 connector.
LK12	This link is used to select the source of the DVDD supply for the EVAL-AD2S1200/AD2S1205. In Position A, the DVDD supply is sourced from the evaluation board controller via the 96-way connector. In Position B, the DVDD supply is sourced externally via the J7 connector.
LK13	This link is used to select the source of the −15 V supply for the EVAL-AD2S1200/AD2S1205. In Position A, the −15 V supply is sourced from the evaluation board controller via the 96-way connector. In Position B, the −15 V supply is sourced externally via the J8 connector.
LK14	This link is used to select the source of the enable inputs of the 74FCT162H245T. In Position A, the enable inputs are sourced from the $\overline{\text{CS}}$ input to the AD2S1200/AD2S1205. In Position B, the enable inputs are sourced from the inverse of the $\overline{\text{SOE}}$ input to the AD2S1200/AD2S1205.

SETUP CONDITIONS

Care should be taken before applying power and signals to the evaluation board to ensure that all link positions are as per the required operating mode. Table 2 shows the position where all links are set when the evaluation board is packaged.

Table 2. Initial Link Positions

Link No.	Position	Function
LK1	B	$\overline{\text{RD}}$ is supplied from the evaluation board controller.
LK2	B	$\overline{\text{CS}}$ is supplied from the evaluation board controller.
LK3	B	$\overline{\text{SAMPLE}}$ is supplied from the evaluation board controller.
LK4	B	$\overline{\text{RDVEL}}$ is supplied from the evaluation board controller.
LK5	No Connect	
LK6	A	Parallel mode of the AD2S1200/AD2S1205 is selected.
LK7	No Connect	Default reference signal frequency of 10 kHz is selected.
LK8, LK9	B	Gain mode of 1.8 is selected.
LK10	A	AVDD is supplied from the evaluation board controller.
LK11	A	+15 V is supplied from the evaluation board controller.
LK12	A	DVDD is supplied from the evaluation board controller.
LK13	A	−15 V is supplied from the evaluation board controller.
LK14	A	The enable signal for the 74FCT162H245T is sourced from the $\overline{\text{CS}}$ signal to the AD2S1200/AD2S1205.

EVALUATION BOARD INTERFACING

Interfacing to the evaluation board is via a 96-way connector, J1. J1 is used to connect the EVAL-AD2S1200/AD2S1205 to the EVAL-CONTROL BRD2 or another system. The pinout for the J1 connector is shown in Figure 2. Table 3 describes the pins on the 96-way connector used to interface between the EVAL-CONTROL-BRD2 and the EVAL-AD2S1200/AD2S1205. Table 4 gives its pin designations and functions.

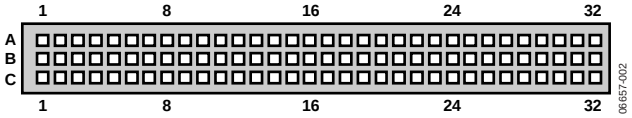

Figure 2. Pin Configuration for the 96-Way Connector, J1

Table 3. 96-Way Connector Pin Description

Pin	Description
D0 to D11	Data Bit 0 to Data Bit 11. Three-state TTL outputs; D11 is the MSB.
$\overline{RD}$	Read. This is an active low logic input connected to the $\overline{RD}$ pin of the AD2S1200/AD2S1205 via LK1. The falling edge of $\overline{RD}$ transfers data to the output buffer.
$\overline{CS}$	Chip Select. This is an active low logic input connected to the $\overline{CS}$ pin of the AD2S1200/AD2S1205 via LK2. The device is enabled when $\overline{CS}$ is held low.
FL0	Flag Out 0. This pin is used to generate the $\overline{SAMPLE}$ pulse to initiate data transfer from the position and velocity integrators to the position and velocity registers.
FL1	Flag Out 1. This pin is used to provide the $\overline{RDVEL}$ signal from the DSP to the AD2S1200/AD2S1205.
AGND	Analog Ground. These lines are connected to the analog ground plane on the evaluation board.
DGND	Digital Ground. These lines are connected to the digital ground plane on the evaluation board.
AVDD	Analog +5 V Supply. These lines are connected to the AVDD supply line on the board via LK10.
DVDD	Digital +5 V Supply. These lines are connected to the DVDD supply line on the board via LK12.
−12 V/−15 V[1]	−12 V/−15 V Supply. This line is connected to the −15 V supply line on the board via LK13.
+12 V/+15 V[1]	+12 V/+15 V Supply. This line is connected to the +15 V supply line on the board via LK11.

[1] The ±12 V/±15 V supplies are set by a hardware link on the EVAL-CONTROL-BRD2. For 15 V operation, LK1 and LK2 on the EVAL-CONTROL-BRD2 should be removed.

Table 4. 96-Way Connector Pin Functions[1]

Pin No.	ROW A	ROW B	ROW C
1			
2		D0	
3		D1	
4	DGND	DGND	DGND
5		D2	
6		D3	
7		D4	
8	DVDD	DVDD	DVDD
9	$\overline{RD}$	D5	
10		D6	$\overline{CS}$
11		D7	
12	DGND	DGND	DGND
13		D8	
14		D9	
15		D10	
16	DGND	DGND	DGND
17		D11	
18			
19			
20	DGND	DGND	DGND
21	AGND	AGND	AGND
22	AGND	AGND	AGND
23	AGND	AGND	AGND
24	AGND	AGND	AGND
25	AGND	AGND	AGND
26	AGND	AGND	AGND
27		AGND	
28		AGND	
29		AGND	
30	−12 V/−15 V	AGND	+12 V/+15 V
31			
32	AVDD	AVDD	AVDD

[1] The unused pins of the 96-way connector are not shown.

Additional options for interfacing with the evaluation board are via J5, a 26-way connector, or via J10, an 8-way connector. These connectors are provided to allow the evaluation board to be interfaced with systems other than Analog Devices EVAL-CONTROL-BRD2. The 26-way connector J5 is provided for use in parallel mode. The 8-way connector J10 is provided for use in serial mode. The pin designations for both connectors are shown in Table 5 and Table 6, respectively.

Table 5. Pin Designations for 26-Way Connector J5

Pin No.	ROW A	ROW B
1	D0	D1
2	D2	D3
3	D4	D5
4	D6	D7
5	D8	D9
6	D10	D11
7	DGND	DGND
8	DIR	NM
9	B	A
10	DGND	DGND
11	LOT	DOS
12	DGND	DGND
13	DVDD	DVDD

Table 6. Pin Designations for 8-Way Connector J10

Pin No.	ROW A	ROW B
1	$\overline{RD}$	$\overline{CS}$
2	$\overline{SAMPLE}$	$\overline{RDVEL}$
3	SCLK	SO
4	DGND	DVDD

SOCKETS

There are seven input/output sockets relevant to the operation of the AD2S1200/AD2S1205 on the evaluation board. The functions of these sockets are outlined in Table 7.

Table 7.

Socket	Function
J4	SMB socket for external $\overline{RDVEL}$ input.
J9	SMB socket for external $\overline{SAMPLE}$ input.
J11	SMB socket for external $\overline{CS}$ input.
J12	SMB socket for external $\overline{RD}$ input.
J13	SMB socket for external SCLK input for serial operation.
J14	SMB socket for external CLKIN input.
J15	SMB socket for external SO output for serial operation.

CONNECTORS

There are six connectors on the AD2S1200/AD2S1205 evaluation board as outlined in Table 8.

Table 8.

Connector	Function
J1	96-way connector for parallel interface connections.
J5	External 26-way connector for parallel operation.
J6	External AVDD and AGND power connector.
J7	External DVDD and DGND power connector.
J8	External +15 V, −15 V, and AGND power connector.
J10	External 8-way connector for serial operation.

OPERATING WITH THE EVALUATION BOARD CONTROLLER

The evaluation board can be operated in a standalone mode or operated in conjunction with the evaluation board controller. This evaluation controller board is available from Analog Devices under the order entry EVAL-CONTROL-BRD2. When operated with this control board, all supplies and control signals to operate the AD2S1200/AD2S1205 are provided by the EVAL-CONTROL-BRD2 when it is run under the control of the AD2S1200/05 evaluation software that is provided with the AD2S1200/AD2S1205 evaluation board package. The EVAL-CONTROL-BRD2 also operates with all Analog Devices evaluation boards with the letters CB in their title.

The 96-way connector on the EVAL-AD2S1200/AD2S1205 plugs directly into the 96-way connector on the EVAL-CONTROL-BRD2. No power supplies are required in the system. The EVAL-CONTROL-BRD2 generates all the required supplies for itself and the EVAL-AD2S1200/AD2S1205. The EVAL-CONTROL-BRD2 is powered from a standard 12 V ac transformer capable of supplying 1 A current. Suitable transformers are available from Analog Devices as an accessory under the following part numbers:

- EVAL-110VAC-US (for use in the U.S. or Japan)
- EVAL-220VAC-UK (for use in the U.K.)
- EVAL-220VAC-EU (for use in Europe)

These transformers are also available from other suppliers including Digi-Key (U.S.) and Campbell Collins (U.K.)

Connection between the EVAL-CONTROL-BRD2 and the parallel port of a PC is via an IEEE 1284-compliant cable that is provided as part of the EVAL-CONTROL-BRD2 package. Refer to the manual accompanying the EVAL-CONTROL-BRD2 for more details.

EVALUATION BOARD SOFTWARE

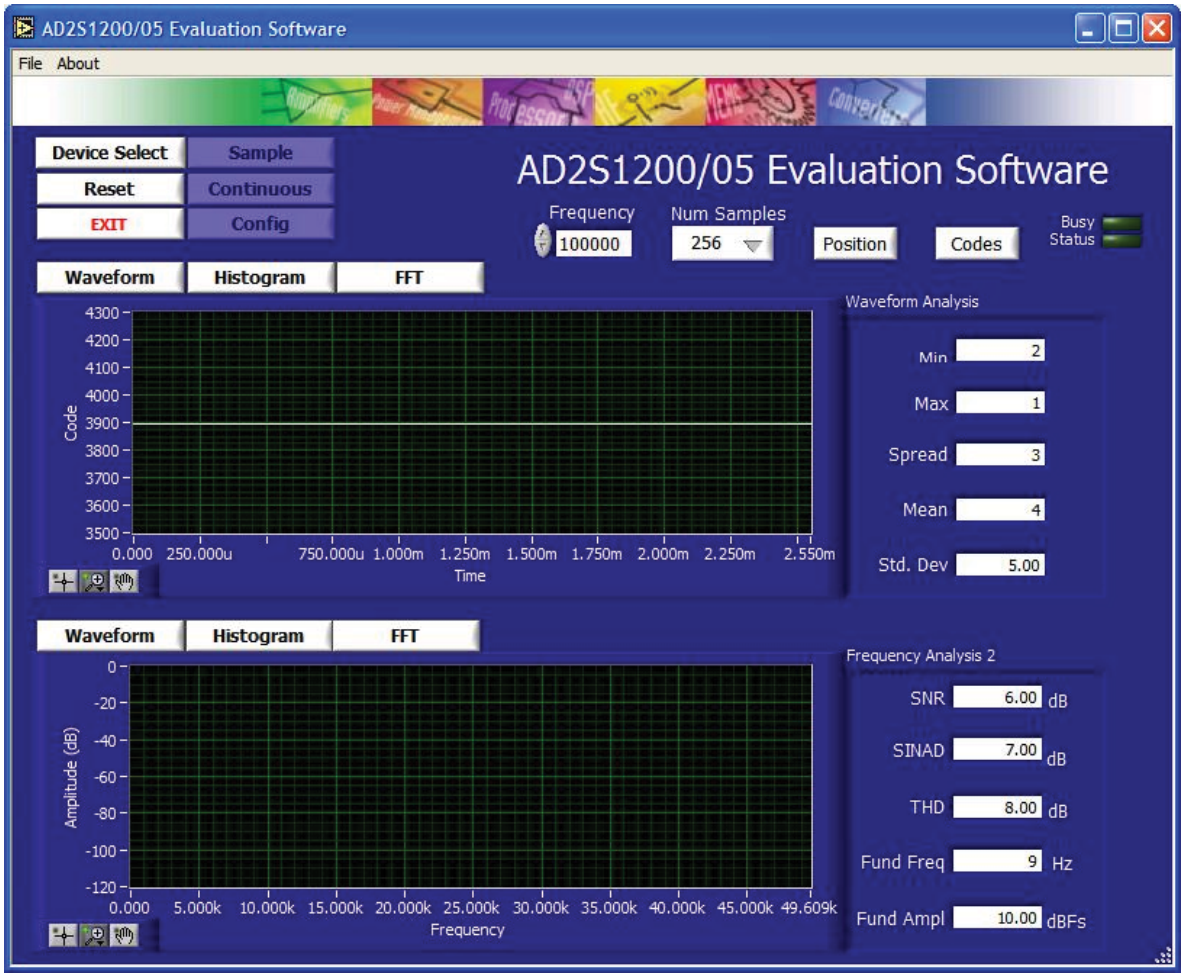

Figure 3. AD2S1200/05 Evaluation Software, Main Window

INSTALLING THE SOFTWARE

The EVAL-AD2S1200/AD2S1205 kit includes a CD-ROM containing software that controls and evaluates the performance of the AD2S1200/AD2S1205 when operated with the EVAL-CONTROL-BRD2.

When the CD is inserted into a PC, an installation program automatically begins. This program installs the evaluation software. All literature included on the CD is in Adobe® portable documentation format (PDF), which requires Adobe Reader® to be viewed or printed. The user interface on the PC is a dedicated program written especially for the AD2S1200/AD2S1205 when operated with the EVAL-CONTROL BRD2.

SOFTWARE DESCRIPTION

The Main Window

The AD2S1200/05 evaluation software has two main windows. The main window shown in Figure 3 is the window that appears when the software is loaded. The primary function of this window is to allow you to read a predetermined number of samples from the evaluation board and display them in both the time and frequency domain.

This window can be divided into three sections.

Upper Third

The upper third of the window contains the control buttons, menu bar, busy status, and selection windows. The control buttons allow users to perform the following tasks:

- Take samples (**Sample**)
- **Reset** the board
- **EXIT** the program
- Click **Device Select** to open the **Load Configuration** window (see Figure 4) and to load a configuration file.

The menu bar consists of the **File** and **About** drop down menus. The options available from the **File** menu include the following:

- **Load Raw Data**. Selecting this option allows you to load data that had been saved by the software during a previous session.
- **Save Raw Data**. Selecting this option allows you to save the current set of sample data points. The data can be reloaded to the EVAL-CONTROL-BRD2 later or it can be used by other programs for further analysis.

- **Save Binary Data**. Selecting this option allows you to save the current set of sample data points. The data is saved in binary format as a text file. This method can be useful for examining code flicker and looking for stuck bits
- **Exit**. Click this button to quit the program.

The **About** drop down menu provides information about the version of the software.

The **Busy Status** indicates when the evaluation board is busy.

The **Frequency** and **Num Samples** buttons allow you to change the sampling frequency and the number of samples to upload (see Figure 3).

The **Position/Velocity** button determines whether the position or velocity data is uploaded from the AD2S1200/AD2S1205.

The **Codes/Degrees** and **Codes/rps** buttons determine whether the position and velocity data is displayed in degrees and rps units or as a decimal code.

Middle Third

The middle third of the window is a digital storage oscilloscope (DSO) that allows you to display a **Waveform**, a **Histogram**, or an **FFT**. When samples are uploaded from the EVAL-CONTROL-BRD2, they are displayed here (see Figure 3). At the bottom left of the graph are the zoom options. These allow you to zoom in and out to get a closer look at a sample, if required. The right-hand side of the middle section contains information about the samples taken, such as minimum (**Min**)/maximum (**Max**) position or velocity, the **Spread**, the **Mean**, and the standard deviation (**Std. Dev**).

Lower Third

The lower third of the window is also a digital storage oscilloscope (DSO) that allows you to display a **Waveform**, a **Histogram**, or an **FFT**. The FFT (the default option) is typically used when you are concerned with examining the RDC performance in the frequency domain, while the **Histogram** gives an indication of the RDC performance in response to static inputs. The displayed option can be changed by clicking the **Waveform**, **Histogram**, or **FFT** buttons. The right-hand side of the lower section contains information about the samples taken; for example, ac specifications (see Figure 3).

Load Configuration Window

The **Load Configuration** window allows you to load the required configuration file for the evaluation board (see Figure 4). The configuration file gives the software detailed information about the AD2S1200/AD2S1205 evaluation board and the part connected to the EVAL-CONTROL-BRD2, such as the number of bits (**Num Bits**), the maximum sampling rate (**Max Sample Frequency**), the output coding, the maximum tracking rate, and the power supply requirements.

The configuration file also tells the software the name of the DSP program file that it should download to the EVAL-CONTROL-BRD2.

Figure 4. AD2S1200/05 Evaluation Software, Load Configuration Window

SETTING UP THE EVAL-CONTOL-BRD2

This section describes how the evaluation board, the EVAL-CONTROL-BRD2, and the software should be set up for you to begin using the complete system.

The EVAL-CONTROL-BRD2 and evaluation board should be connected together (via the 96-way connector). The power should be applied to the EVAL-CONTROL-BRD2 via a 12 V ac transformer. At this stage, the red LED on the EVAL-CONTROL-BRD2 should be flashing, which indicates that it is functional and ready to receive instructions. The software should be loaded before the printer port cable is connected between the EVAL-CONTROL-BRD2 and the PC. This ensures that the printer port is initialized properly. The printer port can then be connected between the PC and the EVAL-CONTROL-BRD2.

Running the Software

With the hardware set up, you are now in a position to use the software to control the EVAL-CONTROL-BRD2 and the AD2S1200/AD2S1205 evaluation board.

When the software is run, click the **Device Select** control button. This displays the **Load Configuration** Window (as shown in Figure 4).

The **Select a Configuration File:** list located on the top left of the **Load Configuration** window shows the available configuration files. The configuration files are text-based files that contain information about the particular evaluation board to be tested. The file covers the **Part Name**, number of samples to be taken (**Num Samples**), number of bits (**Num Bits**), default and maximum sampling frequency (**Sample Frequency** and **Max Sample Frequency**), power supply settings (**AVDD**, **DVDD**, **±15V**, **Bus**), and **Data Format**.

The configuration file also contains the names of the DSP code (*.prg) that is to be downloaded to the EVAL-CONTROL-BRD2. You should select the relevant configuration file and click **OK**. The EVAL-CONTROL-BRD2 is reset, and the DSP program is downloaded. When the download is complete, the power supply settings indicated in the configuration file are set, and you may hear some of the relays clicking. The selection windows (for example, **Num Samples** and **Sample Frequency**) are then set to the default values specified by the configuration file. However, you are free to change these at will.

Taking Samples

When you click **Sample**, the software instructs the EVAL-CONTROL-BRD2 to take the required number of samples at the required frequency from the evaluation board.

The samples taken are then uploaded and displayed. An FFT and histogram are also calculated and displayed. If you click **Continuous**, the software repeats the process indefinitely until you click **Stop**.

Software Configuration Files

Software configuration files give the EVAL-CONTROL-BRD2 software information on how the software and hardware should perform. They contain information such as the name of the DSP program to download, the default and maximum sample frequencies, the number of samples to take, and the power supply settings to use. A typical software configuration file (*.cfg) follows.

```
[EVAL-CONTROL BOARD]
partname:AD2S1200/AD2S1205
programname:AD2S1200_05.PRG

samplefrequency:100000
maxsamplefrequency:450000
samples:256

+/-15V:on
dvdd:5:on
avdd:5:on
bus:on
;options 2scomp, binary
dataformat:binary
numberofbits:12
Degreespan:360
Maxtrackingrate:1000
[endofconfig]
```

EVALUATION BOARD SCHEMATICS AND ARTWORK

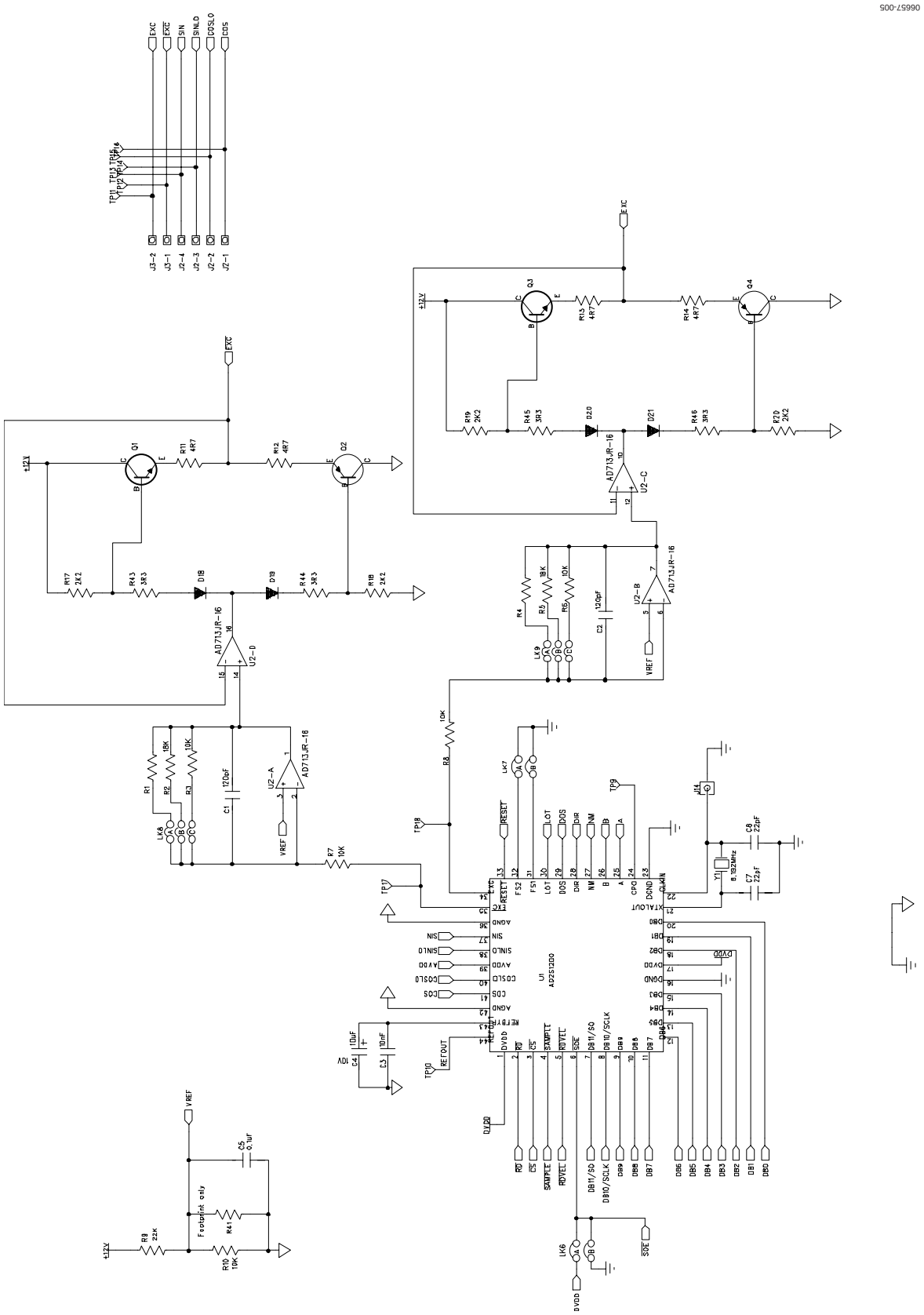

Figure 5. EVAL-AD2S1200/AD2S1205 Schematic—Page 1

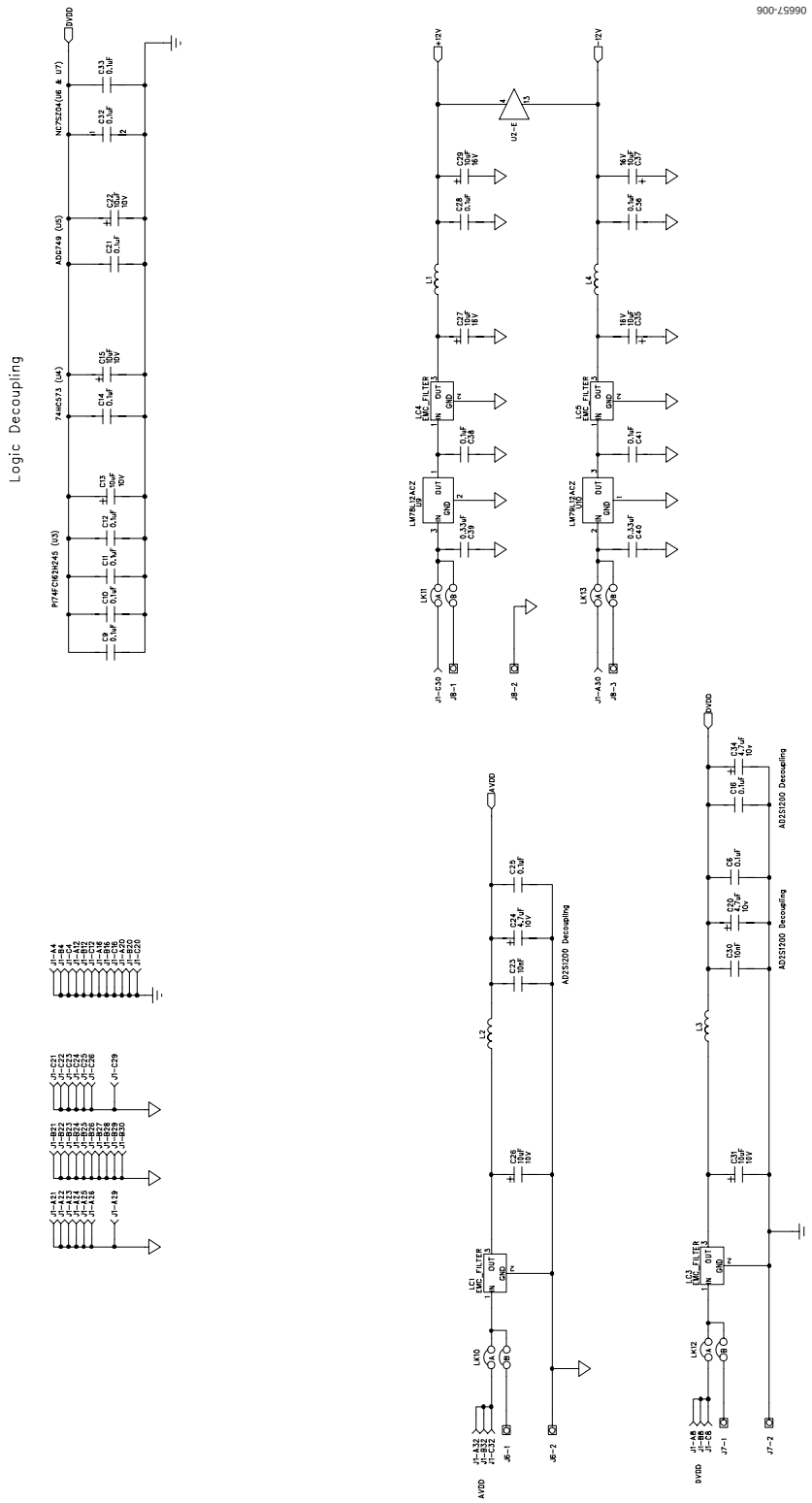

Figure 6. EVAL-AD2S1200/AD2S1205 Schematic—Page 2

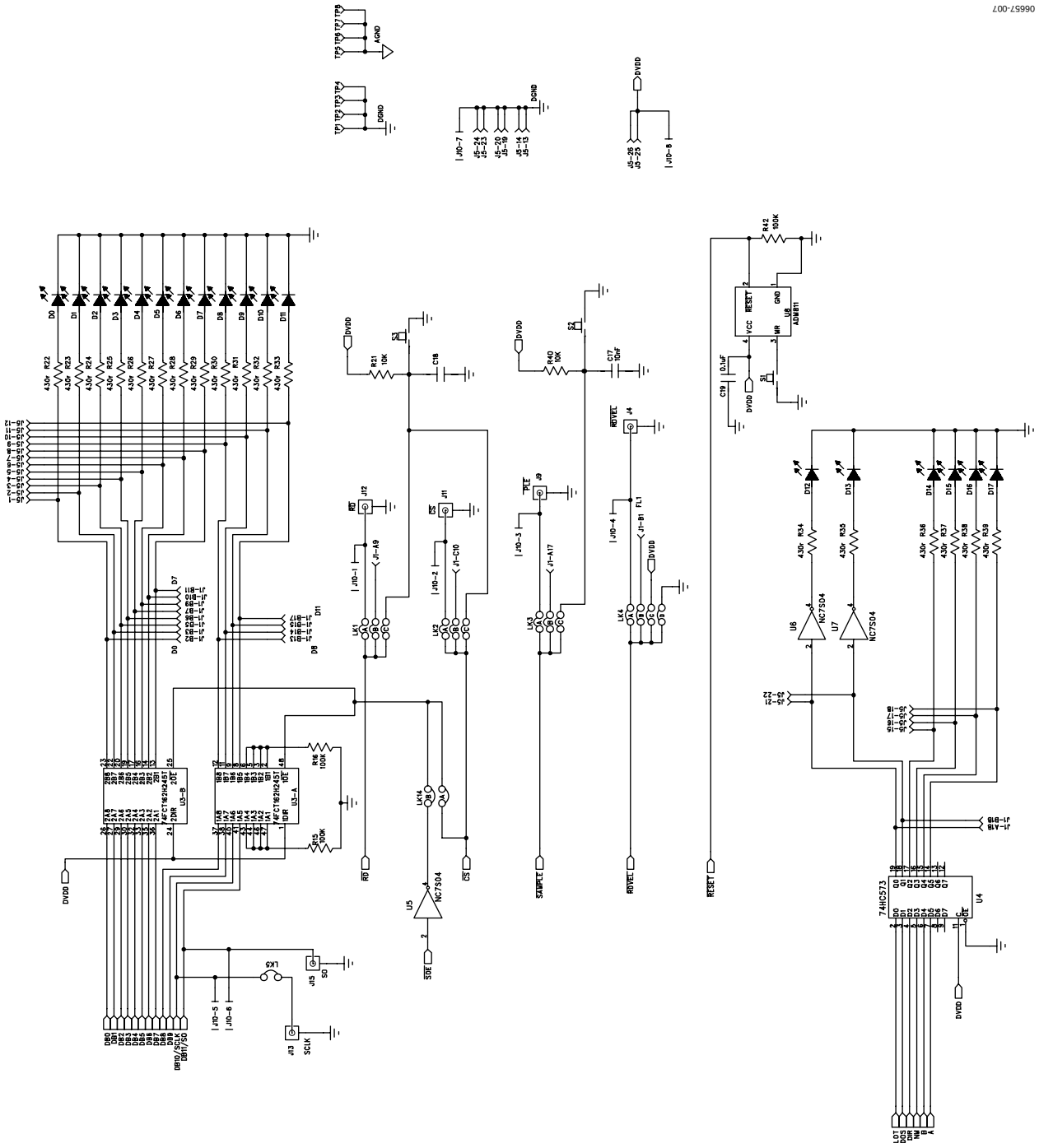

Figure 7. EVAL-AD2S1200/AD2S1205 Schematic—Page 3

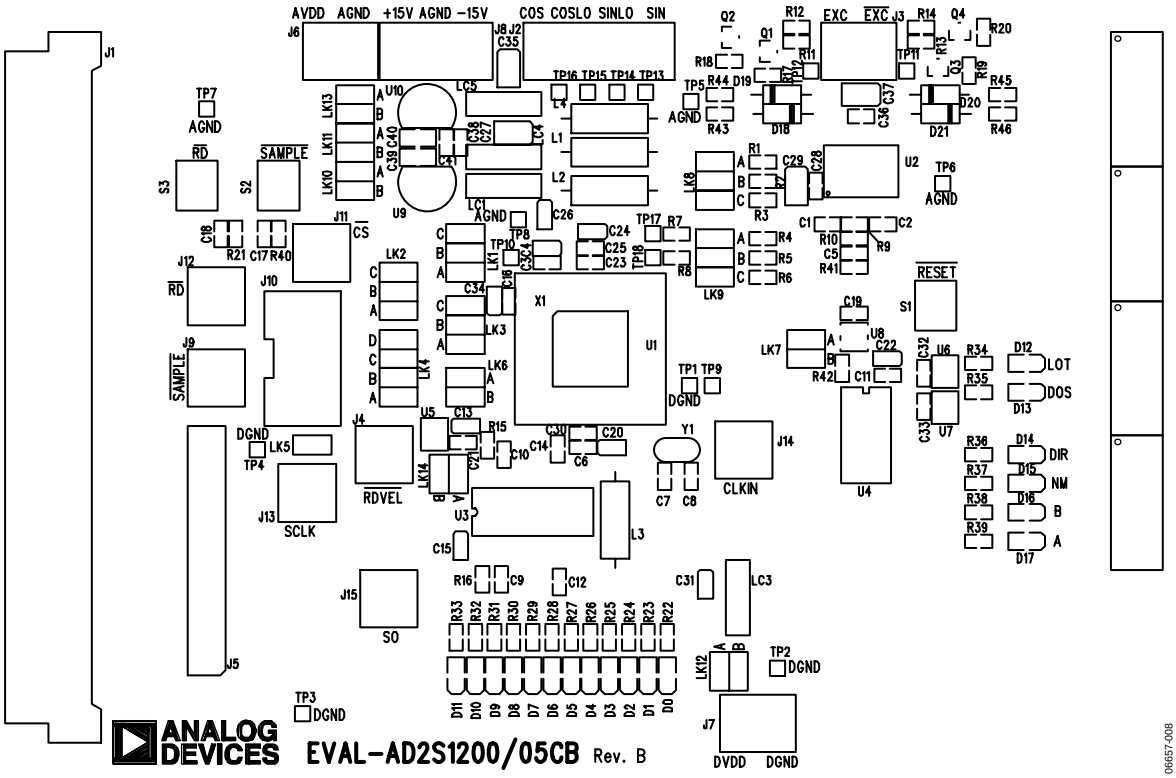

Figure 8. Silkscreen Image

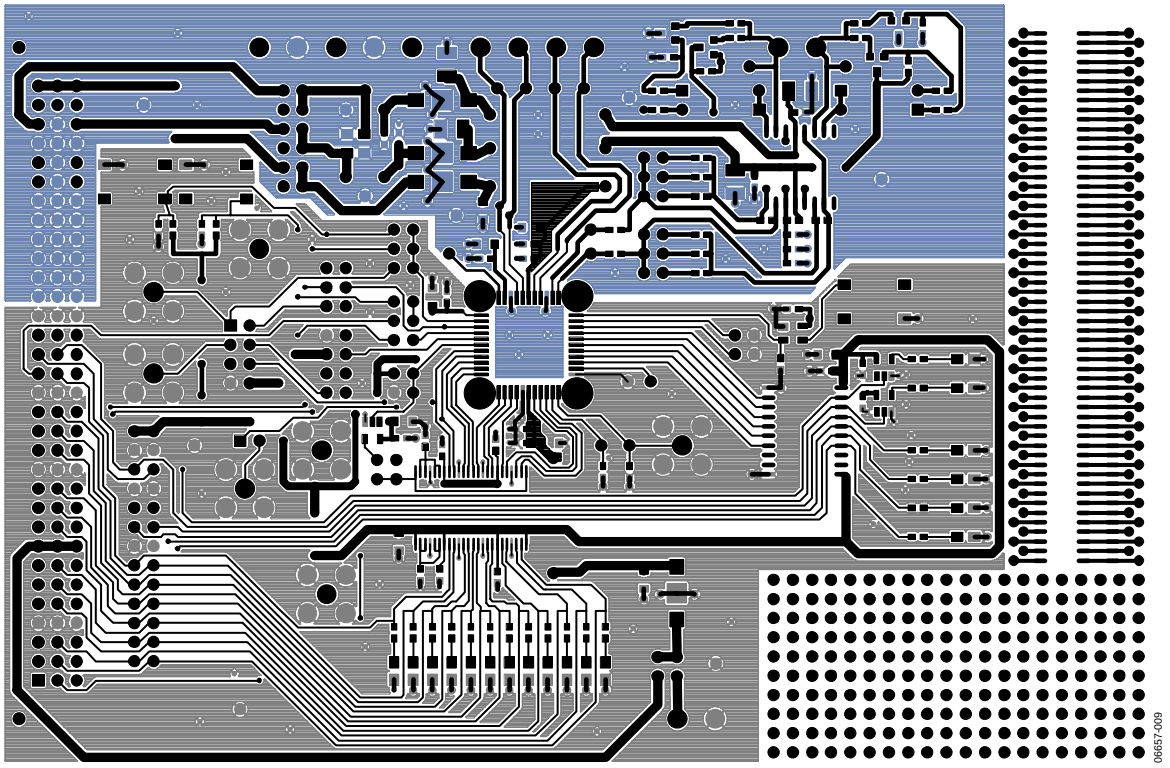

Figure 9. Component Side

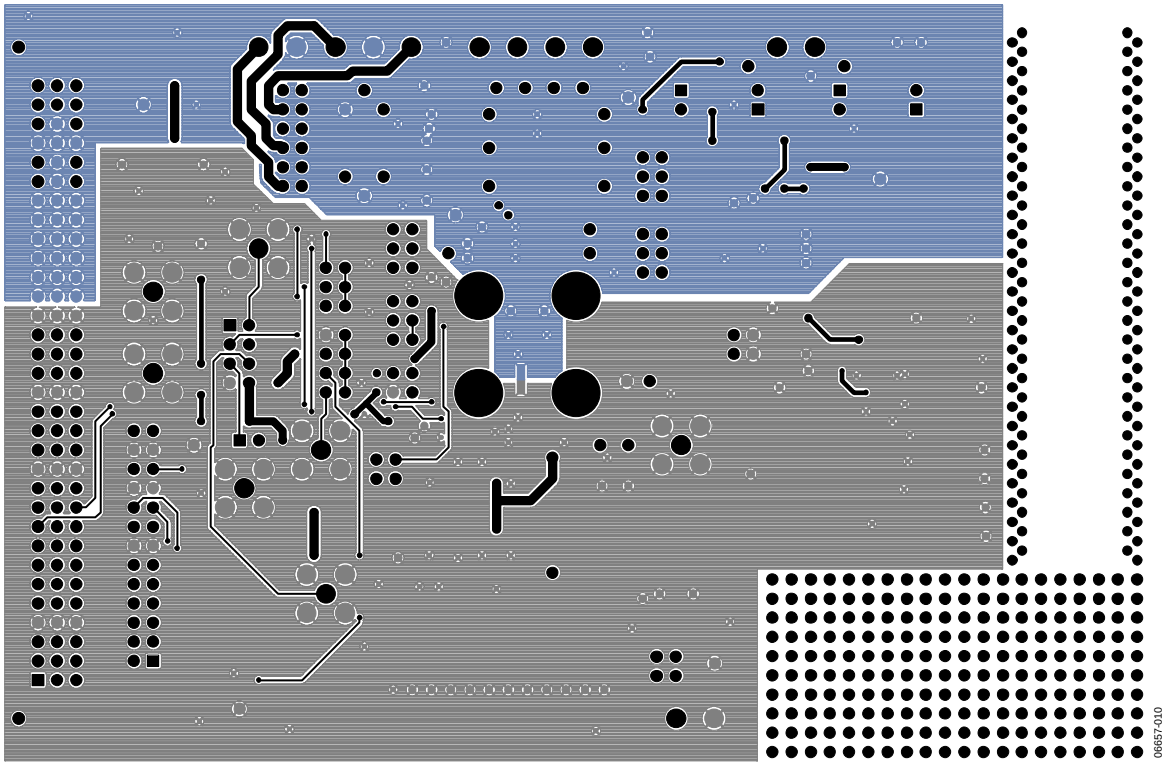

Figure 10. Solder Side

ORDERING INFORMATION

BILL OF MATERIALS

Table 9.

Quantity	Part Description	Reference Designator	Stock Code[1, 2]
1	12-Bit R/D Converter	U1	AD2S1200YSTZ or AD2S1205YSTZ
1	AD713	U2	AD713JRZ
1	74FCT162H245T	U3	PI74FCT162H245TPVE
1	74HC573	U4	FEC 958-9384
3	NC7SZ04	U5, U6, U7	FEC 101-3809
1	ADM811	U8	ADM811MARTZ
1	LM78L12ACZ +12 V Regulator	U9	FEC 949-0272
1	LM79L12ACZ −12 V Regulator	U10	FEC 949-0396
1	8.192 MHz Quartz Crystal	Y1	FEC 950-9453
2	120 pF Ceramic Capacitor SMD0603	C1, C2	FEC 722-091
5	10 nF Ceramic Capacitor SMD0603	C3, C17, C18, C23, C30	FEC 753-622
6	10 µF Tantalum Capacitor, 10 V	C4, C13, C15, C22, C26, C31,	FEC 197-130
4	10 µF Tantalum Capacitor, 16 V	C27, C29, C35, C37	FEC 197-427
17	0.1 µF Ceramic Capacitor SMD0603	C5, C6, C9 to C12, C14, C16, C19, C21, C25, C28, C32, C33, C36, C38, C41	FEC 753-567
2	22 pF Ceramic Capacitor SMD0603	C7, C8	FEC 722-005
3	4.7 µF Tantalum Capacitor	C20, C24, C34	FEC 498-658
2	0.33 µF Ceramic Capacitor SMD0805	C39, C40	FEC 318-8875
18	Red SMD 0805 Chip LED	D0 to D17	FEC 102-1302
4	1N4148 Small Signal Diode	D18 to D21	FEC 108-1177
1	96 Pin 90° DIN41612 Plug	J1	FEC 109-6832
1	4-Pin Terminal Block	J2	FEC 101-786
3	2-Pin Terminal Block	J3, J6, J7	FEC 151-789
7	Gold 50 SMB Jack	J4, J9, J11 to J15	FEC 111-1349
1	26-Pin (2 × 13) Connector	J5	FEC 102-2244
1	3-Pin Terminal Block	J8	FEC 388-1866
1	8-Pin (2 × 4) Connector	J10	FEC 102-2233
4	Ferrite Beads	L1 to L4	FEC 926-5236
4	Surface-Mount EMC Filters	LC1, LC3 to LC5	FEC 952-8202
5	3-Way Jumper (3 × 2)	LK1 to LK3, LK8, LK9	FEC 102-2231, FEC 109-7975
1	4-Way Jumper (4 × 2)	LK4	FEC 102-2233, FEC 109-7975
1	1-Way Jumper (1 × 2)	LK5	FEC 102-2247, FEC 109-7975
7	2-Way Jumper (2 × 2)	LK6 to LK7, LK10 to LK14	FEC 102-2233, FEC 109-7975
2	BC846B NPN Small Signal Transistor	Q1, Q3	FEC 108-1229
2	BC536B PNP Small Signal Transistor	Q2, Q4	FEC 108-1243
2	18 kΩ SMD0805 Resistor	R2, R5	FEC 933-0720
7	10 kΩ SMD0805 Resistor	R3, R6 to R8, R10, R21, R40	FEC 933-0399
1	22 kΩ SMD0805 Resistor	R9	FEC 933-0828
4	4.7 Ω SMD0805 Resistor	R11 to R14	FEC 933-1280
3	100 kΩ SMD0805 Resistor	R15 to R16, R42	FEC 933-0402
4	2.2 kΩ SMD0805 Resistor	R17 to R20	FEC 933-0810
18	430 Ω SMD0805 Resistor	R22 to R39	FEC 933-1182
4	3.3 Ω SMD0805 Resistor	R43 to R46	FEC 933-1069
3	SMD Push Button Switch	S1 to S3	FEC 177-807
18	Testpoints	TP1 to TP18	FEC 873-1144 (Pack)
4	Stick-on Feet	Each Corner	FEC 148-922

[1] FEC = Farnell.
[2] P = Pericom Semiconductor Corporation.

ORDERING GUIDE

Model	Description
EVAL-AD2S1200CBZ[1]	AD2S1200 Evaluation Board
EVAL-AD2S1205CBZ[1]	AD2S1205 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.

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