

### FEATURES

**Full-featured evaluation board for the AD7466/AD7467**  
**EVAL-CONTROL-BRD2 compatible**  
**Standalone capability**  
**On-board analog buffering and reference**  
**Various linking options**  
**PC software for control and data analysis when used with**  
**EVAL-CONTROL-BRD2**

### GENERAL DESCRIPTION

This data sheet describes the evaluation board for the AD7466/AD7467. The AD7466/AD7467 are 12- and 10-bit, low power, successive-approximation ADCs. The parts operate from a single 1.6 V to 3.6 V power supply and feature throughput rates up to 200 kSPS. Full data on the AD7466/AD7467 can be found in the [AD7466/AD7467/AD7468](#) data sheet, which is available from Analog Devices, Inc., and should be consulted in conjunction with this data sheet when using the evaluation board.

On-board components include:

- One AD780, a pin-programmable 2.5 V or 3 V ultrahigh precision band gap reference
- One REF191, a 2.048 V precision band gap voltage reference
- One AD8519 single op amp
- One AD713 quad op amp used to buffer the analog input in the bias-up circuit

Because of its standard pinout, the AD780 reference can be swapped for the ADR421, and the REF191 can be swapped for the ADR420 reference. The ADR42x are ultraprecision, low noise voltage references. Likewise, the REF191 can be easily interchanged for another voltage reference from the same REF19x family, always bearing in mind the voltage range of the part. Various link options are explained in detail in Table 2 in the Link Options section.

Interfacing to this board is through a 96-way connector. This 96-way connector is compatible with the EVAL-CONTROL-BRD2, also available from Analog Devices. External sockets are provided for the  $A_{IN}$  input, the  $V_{IN}$  input, the  $V_{BIASED}$  input, and for external supplies.

### FUNCTIONAL BLOCK DIAGRAM

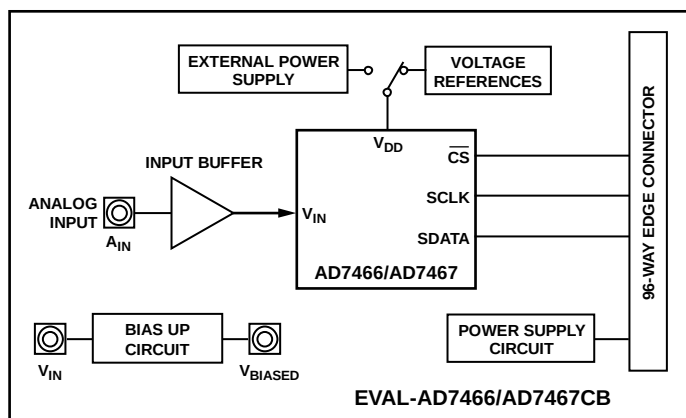


Figure 1.

#### Rev. 0

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REVISION HISTORY

3/07—Revision 0: Initial Version

## EVALUATION BOARD HARDWARE

### POWER SUPPLIES

When using this evaluation board with the EVAL-CONTROL-BRD2, all supplies are provided from the EVAL-CONTROL-BRD2 through the 96-way connector.

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

- EXT\_VDD
- A<sub>GND</sub> (two inputs)
- EXT\_V+ and EXT\_V–
- DV<sub>DD</sub>
- D<sub>GND</sub>

The V<sub>DD</sub> for the AD7466/AD7467 can be supplied either from the EXT\_VDD external supply or from the selected reference chip. EXT\_V+ and EXT\_V– are used to supply the AD780, the REF191, and the AD713 quad op amp. The supply for the

AD8519 is taken from the EXT\_VDD. 0 V is connected to one or both of the A<sub>GND</sub> inputs. The DV<sub>DD</sub> input can be used to supply a separate +5 V for the 7S04 DV<sub>DD</sub> pin. The D<sub>GND</sub> input must be tied to 0 V.

The supplies are decoupled to the relevant ground plane with 10 µF tantalum and 0.1 µF multilayer ceramic capacitors at the pin where they enter the board. The supply pins of the quad op amp and the references are also decoupled to A<sub>GND</sub> with 10 µF tantalum and 0.1 µF ceramic capacitors. The AD7466/AD7467 AV<sub>DD</sub> supply pin is decoupled to A<sub>GND</sub> 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, A<sub>GND</sub> and D<sub>GND</sub>. These are connected at one location close to the AD7466/AD7467.

Table 1 summarizes the different existing sources to supply the components on-board.

**Table 1. Sources to Supply the Components On Board**

| Component                           | AD7466/AD7467<br>(1.6 V to 3.6 V) | AD8519<br>(5 V or ± 5 V) | AD713 | AD780 | REF191 |
|-------------------------------------|-----------------------------------|--------------------------|-------|-------|--------|
| REF191                              | X                                 |                          |       |       |        |
| AD780                               | X                                 |                          |       |       |        |
| AV <sub>DD</sub> (5 V) <sup>1</sup> |                                   | X                        |       |       |        |
| J5 (EXT_VDD)                        | X                                 | X                        |       |       |        |
| J6 (EXT_V–/EXT_V+)                  |                                   | X                        | X     | X     | X      |
| V–/V+ (±12 V) <sup>1</sup>          |                                   | X <sup>2</sup>           | X     | X     | X      |

<sup>1</sup> Supplies from the EVAL-CONTROL-BRD2.

<sup>2</sup> The AD8519 should be replaced by a different op amp for ±12 V operation, for instance, the AD8510.

## LINK OPTIONS

There are 13 link options that must be set for the required operating setup before using the evaluation board. The functions of these options are outlined in Table 2. See the Evaluation Board Schematics and Artwork section for more detail.

**Table 2.**

| Link No. | Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LK1      | Selects a 50 $\Omega$ termination on the analog input buffer circuit, the A <sub>IN</sub> socket.<br>When this link is inserted, the 50 $\Omega$ termination is applied.<br>When this link is removed, the 50 $\Omega$ termination is removed.                                                                                                                                                                                                                                                                                                                         |
| LK2      | Controls the program pin of the AD780 voltage reference.<br>When this link is inserted, the AD780 output voltage is set to 3 V.<br>When this link is removed, the AD780 output voltage is set to 2.5 V.                                                                                                                                                                                                                                                                                                                                                                |
| LK3      | Selects a 50 $\Omega$ termination on the input of the bias-up circuit, the V <sub>IN</sub> socket.<br>When this link is inserted, the 50 $\Omega$ termination is applied.<br>When this link is removed, the 50 $\Omega$ termination is removed.                                                                                                                                                                                                                                                                                                                        |
| LK4      | Connects the output of either the REF191 or the AD780 to the V <sub>DD</sub> pin of the AD7466/AD7467 (if Link 11 is in Position B).<br>In Position A, the AD780 supplies the V <sub>DD</sub> voltage for the AD7466/AD7467.<br>In Position B, the REF191 supplies the V <sub>DD</sub> voltage for the AD7466/AD7467.                                                                                                                                                                                                                                                  |
| LK5      | Sets the dc bias voltage that is applied to the optional bias-up circuit.<br>In Position A, the bias voltage is set to the same level as the voltage that is applied to the AD7466/AD7467 V <sub>DD</sub> pin. In this configuration, a bipolar analog input applied to the V <sub>IN</sub> SMB socket is biased up by the bias circuit and is presented at the V <sub>BIASED</sub> SMB as a unipolar signal biased around V <sub>DD</sub> /2.<br>In Position B, the bias voltage is set to A <sub>GND</sub> . In this configuration, the bias-up circuit is not used. |
| LK6      | Selects the source of the +12 V supply.<br>In Position A, the +12 V is supplied from the EVAL-CONTROL-BRD2 through the 96-way connector.<br>In Position B, the +12 V is supplied from an external source through the power connector, J6 (EXT_V+).                                                                                                                                                                                                                                                                                                                     |
| LK7      | Selects the source of the –12 V supply.<br>In Position A, the –12 V is supplied from the EVAL-CONTROL-BRD2 through the 96-way connector.<br>In Position B, the –12 V is supplied from an external source through the power connector, J6 (EXT_V–).                                                                                                                                                                                                                                                                                                                     |
| LK8      | Controls the transfer of data from the AD7466/AD7467 during a conversion for various frequencies of SCLK.<br>This link should be in Position A for slower SCLK frequencies, giving valid data on the rising edge.<br>This link should be in Position B for fast SCLK frequencies, giving valid data on the falling edge.                                                                                                                                                                                                                                               |
| LK9      | Selects the source of the V <sub>CC</sub> +5 V supply for the 7504.<br>In Position A, V <sub>CC</sub> power is supplied from the same power source supplying the AD7466/AD7467 V <sub>DD</sub> pin.<br>In Position B, V <sub>CC</sub> power must be supplied from an external source via the power connector, J5 (EXT_VDD).                                                                                                                                                                                                                                            |
| LK10     | Connects the input of the V <sub>IN</sub> ADC to the A <sub>IN</sub> input socket or to A <sub>GND</sub> .<br>In Position A, the A <sub>IN</sub> socket is tied to the AD7466/AD7467 V <sub>IN</sub> pin through the AD8519 buffer.<br>In Position B, the V <sub>IN</sub> input is tied to A <sub>GND</sub> .                                                                                                                                                                                                                                                          |
| LK11     | Selects the source of the V <sub>DD</sub> supplied to the AD7466/AD7467.<br>In Position A, the V <sub>DD</sub> must be supplied from an external source via J5 (EXT_VDD).<br>In Position B, the V <sub>DD</sub> is supplied from one of the voltage references, either the AD780 or the REF191.                                                                                                                                                                                                                                                                        |
| LK12     | Selects the power supply source for the AD8519 input buffer.<br>In Position A, the V+ pin in the AD8519 is connected to the AV <sub>DD</sub> line from the EVAL-CONTROL-BRD2.<br>In Position B, the V+ pin in the AD8519 is connected to the EXT_V+ terminal from the external source via J6.<br>In Position C, the V+ pin in the AD8519 is connected to the V+ line from the EVAL-CONTROL-BRD2.<br>In Position D, the V+ pin in the AD8519 is connected to the EXT_VDD terminal via J5.                                                                               |
| LK13     | Selects single- or dual-supply operation for the AD8519 input buffer.<br>In Position A, the V– pin in the AD8519 input buffer is connected to ground (single-supply operation).<br>In Position B, the V– pin in the AD8519 input buffer is connected to the EXT_V– terminal from the external source via J6.<br>In Position C, the V– pin in the AD8519 input buffer is connected to the V– line from the EVAL-CONTROL-BRD2.                                                                                                                                           |

**SETUP CONDITIONS**

Care should be taken before applying power and signals to the evaluation board to ensure that all link positions are set up per the required operating mode. Table 3 shows the position in

which all the links are set when the evaluation board is shipped. The board is compatible with the EVAL-CONTROL-BRD2 when shipped.

**Table 3. Initial Link and Switch Positions**

| Link No. | Position | Function                                                                                                                       |
|----------|----------|--------------------------------------------------------------------------------------------------------------------------------|
| LK1      | Removed  | 50 $\Omega$ termination resistor is not applied to the input of the $V_{IN}$ circuit.                                          |
| LK2      | Removed  | AD780 is set to provide a +2.5 V reference.                                                                                    |
| LK3      | Removed  | 50 $\Omega$ termination resistor is not applied to the input of the bias-up circuit.                                           |
| LK4      | A        | $V_{DD}$ for the AD7466/AD7467 is supplied from the AD780 (see position of Link 11).                                           |
| LK5      | A        | $V_{DD}$ is selected as the dc bias voltage for the bias-up circuit.                                                           |
| LK6      | A        | +12 V is supplied from the EVAL-CONTROL-BRD2 via J4.                                                                           |
| LK7      | A        | –12 V is supplied from the EVAL-CONTROL-BRD2 via J4.                                                                           |
| LK8      | B        | SCLK signal from the EVAL-CONTROL-BRD2 is not inverted (for faster values of SCLK giving valid data on the SCLK falling edge). |
| LK9      | A        | This is not relevant due to the position of LK8 because the 7S04 is not in use.                                                |
| LK10     | A        | $A_{IN}$ SMB is connected to the AD8519 analog input buffer.                                                                   |
| LK11     | B        | $V_{DD}$ for the AD7466/AD7467 is supplied from one of the voltage references.                                                 |
| LK12     | A        | $V+$ pin in the AD8519 analog input buffer is connected to $AV_{DD}$ from the EVAL-CONTROL-BRD2.                               |
| LK13     | A        | $V-$ pin in the AD8519 input buffer is connected to ground for single-supply operation.                                        |

# EVAL-AD7466/AD7467

## INTERFACING THE EVALUATION BOARDS

Interfacing to the evaluation board is accomplished via a 96-way connector, J4, which is used to connect the evaluation board to the EVAL-CONTROL-BRD2 or other system. The pinout for the J4 connector is shown in Figure 2 and its pin designations are given in Table 5.

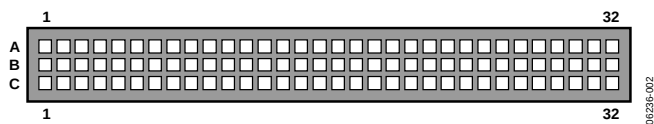


Figure 2. Pin Configuration for the 96-Way Connector, J4

Table 4. 96-Way Connector Pin Description

| Signal           | Description                                                                                                                                                                                             |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DR0              | Data Receive Zero. This input is connected to the SDATA pin of the AD7466/AD7467.                                                                                                                       |
| TFS0/RFS0        | Transmit/Receive Frame Sync Zero. These two outputs are connected to the CS pin of the AD7466/AD7467.                                                                                                   |
| SCLK0            | Serial Clock Zero. This serial clock is connected to the SCLK pin of the AD7466/AD7467 with the option of an inverting buffer.                                                                          |
| DGND             | Digital Ground. These lines are connected to the digital ground plane on the evaluation board. It allows the user to provide the digital supply via the connector along with the other digital signals. |
| AGND             | Analog Ground. These lines are connected to the analog ground plane on the evaluation board.                                                                                                            |
| AV <sub>DD</sub> | Analog +5 V Supply. These lines are connected to the AV <sub>DD</sub> supply line on the board.                                                                                                         |
| +12 V            | +12 V Supply. This line is connected to the +12 V supply line on the board via LK6.                                                                                                                     |
| –12 V            | –12 V Supply. This line is connected to the –12 V supply line on the board via LK7.                                                                                                                     |

Table 5. 96-Way Connector Pin Functions<sup>1</sup>

| Pin | Row A            | Row B            | Row C            |
|-----|------------------|------------------|------------------|
| 1   |                  |                  |                  |
| 2   |                  |                  |                  |
| 3   |                  |                  |                  |
| 4   | DGND             | DGND             | DGND             |
| 5   |                  |                  | DR0              |
| 6   | TFS0             |                  | RFS0             |
| 7   | SCLK0            |                  | SCLK0            |
| 8   |                  |                  |                  |
| 9   |                  |                  |                  |
| 10  |                  |                  |                  |
| 11  |                  |                  |                  |
| 12  | DGND             | DGND             | DGND             |
| 13  |                  |                  |                  |
| 14  |                  |                  |                  |
| 15  |                  |                  |                  |
| 16  | DGND             | DGND             | DGND             |
| 17  |                  |                  |                  |
| 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             | AGND             | AGND             |
| 30  | –12 V            | AGND             | +12 V            |
| 31  |                  |                  |                  |
| 32  | AV <sub>DD</sub> | AV <sub>DD</sub> | AV <sub>DD</sub> |

<sup>1</sup> The unused pins of the 96-way connector are not shown.

## SOCKETS

There are three input sockets relevant to the operation of the AD7466/AD7467 on this evaluation board. The functions of these sockets are outlined in Table 6.

**Table 6. Socket Functions**

| Socket | Function                                                                       |
|--------|--------------------------------------------------------------------------------|
| J1     | Subminiature BNC socket for $A_{IN}$ analog input.                             |
| J2     | Subminiature BNC socket for analog input to bias-up circuit, $V_{IN}$ .        |
| J3     | Subminiature BNC socket for analog output from bias-up circuit, $V_{BIASED}$ . |

## CONNECTORS

There are three connectors on the AD7466/AD7467 evaluation board, as outlined in Table 7.

**Table 7. Connector Functions**

| Connector | Function                                                              |
|-----------|-----------------------------------------------------------------------|
| J4        | 96-way connector used to interface to the EVAL-CONTROL-BRD2.          |
| J5        | External $V_{DD}$ and $A_{GND}$ power connector (EXT_VDD).            |
| J6        | External +12 V, -12 V and $A_{GND}$ power connector (EXT_V+ /EXT_V-). |

## OPERATING WITH THE EVAL-CONTROL-BRD2

The evaluation board operates as a standalone unit or in conjunction with the EVAL-CONTROL-BRD2. The EVAL-CONTROL-BRD2 is available from Analog Devices under the order entry EVAL-CONTROL-BRD2.

When interfacing the EVAL-AD7466/7467 directly to the EVAL-CONTROL-BRD2 via the 96-way connector, all supplies and control signals needed to operate the AD7466/AD7467 are provided by the EVAL-CONTROL-BRD2. Software to communicate between the controller board and AD7466/AD7467 is provided with the AD7466/AD7467 evaluation board kit. This EVAL-CONTROL-BRD2 also operates with all Analog Devices evaluation boards with model numbers ending in the letters CB.

The EVAL-CONTROL-BRD2 is powered from a standard 12 V ac transformer capable of supplying a 1 A current, which is available as an accessory from Analog Devices 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 Digi-Key Corp. (U.S.) and Campbell Collins, Ltd. (U.K.).

Connection between the EVAL-CONTROL-BRD2 and the serial port of a PC is accomplished via a standard printer port cable that is provided as part of the EVAL-CONTROL-BRD2 kit. Refer to the manual accompanying the EVAL-CONTROL-BRD2 for more details on the EVAL-CONTROL-BRD2 kit.

## EVALUATION BOARD SOFTWARE

### INSTALLING THE SOFTWARE

The EVAL-AD7466/AD7467CB evaluation board kit includes a CD-ROM containing software for controlling and evaluating the performance of the AD7466/AD7467 when operated in conjunction with the EVAL-CONTROL-BRD2.

When the CD is inserted into a PC, an installation program automatically begins. This program installs the evaluation software and downloads the data sheet for the AD7466/AD7467 evaluation board as well as the data sheet for the AD7466/AD7467. All literature on the CD is in the Adobe portable documentation format (PDF) and requires Acrobat® Reader® for viewing and printing. The user interface on the PC is a dedicated program written especially for the AD7466/AD7467.

### SETTING UP THE EVALUATION CONTROL BOARD

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

1. Connect the EVAL-CONTROL-BRD2 and evaluation board together (via the 96-way connector).
2. Apply power to the EVAL-CONTROL-BRD2 using the appropriate 12 V ac transformer (EVAL-110VAC-US, EVAL-220VAC-UK, or the EVAL-220VAC-EU).
3. At this stage, the red LED should be flashing, which indicates that the EVAL-CONTROL-BRD2 is functional and ready to receive instructions.

Note that the software should be installed and loaded before the printer port cable is connected between the EVAL-CONTROL-BRD2 and the PC. This ensures that the printer port initializes properly. The printer port cable can then be connected between the PC and the EVAL-CONTROL-BRD2.

### CONFIGURING THE BOARDS

For the AD7466 evaluation board and EVAL-CONTROL-BRD2 to communicate with the software, the required configuration files must be loaded from the **Setup Menu** (see Figure 3).

The configuration files, supplied by Analog Devices with the evaluation board, are text-based files that contain information about the AD7466/AD7467 evaluation board and the part connected to the EVAL-CONTROL-BRD2. The information covers the part name, the number of bits, number of samples to be taken, output coding, default and maximum sampling frequency, maximum analog input, and power supply settings. The configuration file also contains the name of the DSP program file to be downloaded to the EVAL-CONTROL-BRD2.

To load the required configuration files, follow these steps:

1. Open the AD7466/AD7467 evaluation software.
2. Open the **File** menu and select **Setup**. This displays the setup menu dialog box (see Figure 3).
3. In the **Select a Configuration File** list box, select the relevant configuration file. When using the AD7466, click the **ad7466.cfg** file. When using the AD7467, click the **ad7467.cfg** file.
4. Click the **Load** button. This resets the EVAL-CONTROL-BRD2 and downloads the DSP program. 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. Drop-down list boxes such as **Select No. Of Samples** and **Select Sample Frequency** have been set to the default values specified by the configuration file. You are free to change these at will.
5. When all settings are set, click the **Close** button to return to the main window.

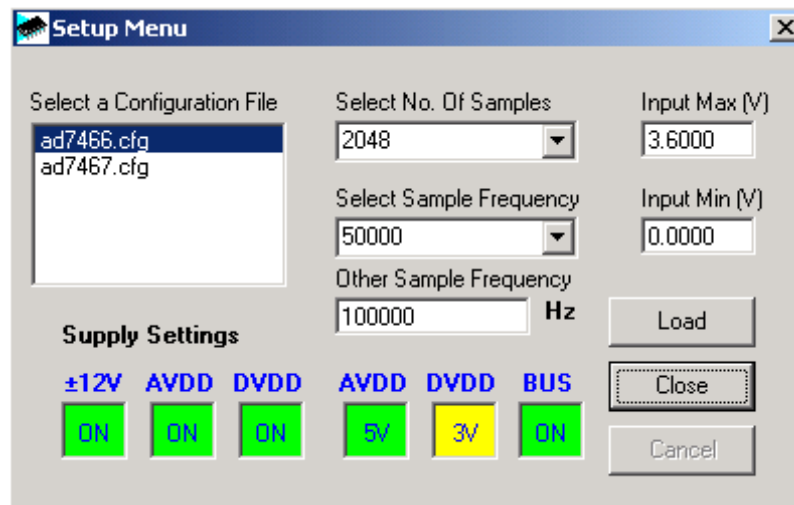


Figure 3. The Setup Menu



### Typical Configuration File

A typical software configuration file (\*.cfg) is shown here.

```
EVAL-CONTROL BOARD
partname:AD7466
programname:ad7466.PRG

samplefrequency:100000
maxsamplefrequency:165000
samples:2048
```

```
+/-15V:on
dvdd:3:on
avdd:5:on
bus:on
;options 2scomp, binary
dataformat:binary
numberofbits:12
inputVmax:3.6
inputVmin:0
[endofconfig]
```

### USING 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 AD7466/AD7467 evaluation board.

The main window in Figure 4 appears when the software is loaded. The main 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 section discusses the content of the main window as they are illustrated in Figure 4.

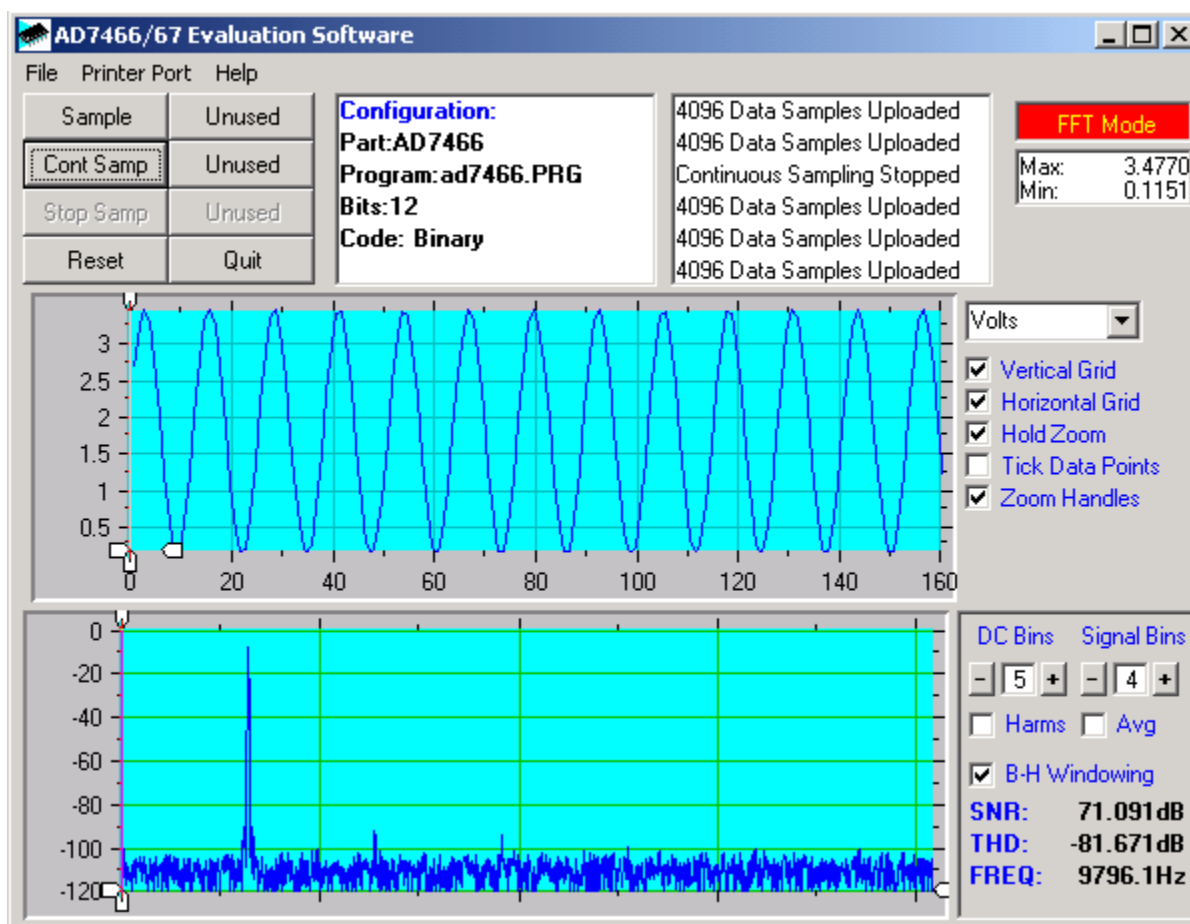


Figure 4. AD7466/AD7467 Evaluation Software, Main Window

## Menu Bar

The menu bar allows you to enter the setup menu, select which printer port to be used to control the EVAL-CONTROL-BRD2, load and save data, and get information about the software.

### File Menu

The options available from this menu include the following:

- **Setup Menu.** Selecting this option displays the Setup Menu. See Figure 3 and the Configuring the Boards section for a detailed description of this menu.
- **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 software at a later date or 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.
- **Save FFT Data.** Selecting this option allows you to save the current set of FFT data points. FFT data cannot be reloaded into the EVAL-CONTROL-BRD2 software but can be loaded into other software packages for further analysis.
- **Exit.** Quits the program.

### Printer Port

This menu item allows you to select which printer port to use for communication with the EVAL-CONTROL-BRD2.

- **LPT1.** This option selects 0x378 as the printer port address. This is the default option.
- **LPT2.** This option selects 0x278 as the printer port address.
- **PRN.** This option selects 0x3BC as the printer port address.

### Help

This menu item gives information about the current revision of software for the particular evaluation board being used.

## Control Buttons

The control buttons allow you to take samples, reset the part, and quit the program.

### Sample Button

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 AD7466/AD7467 evaluation board runs up to 200 kSPS so you can choose the sampling frequency up to this rate, and may choose the number of samples to be taken. The samples are uploaded and displayed. An FFT and histogram are also calculated and displayed.

If you click **Cont Samp**, the software repeats the process indefinitely until you click the **Stop Samp** button. When the software is continuously sampling data, the other control buttons are disabled.

### Reset Button

Clicking the **Reset** button causes the EVAL-CONTROL-BRD2 to perform a reset function. When this happens, the power supplies are turned off and the program in DSP memory is lost. Repeat the setup instructions to download another program if required.

### Quit Button

Clicking the **Quit** button exits the software. The program running on the Evaluation Control Board is not terminated.

### Status Boxes

These boxes indicate the setup of the evaluation board/device, number of samples taken, and display any information/error messages that are generated.

### Digital Storage Oscilloscope (DSO)

Samples uploaded from the EVAL-CONTROL-BRD2 are displayed here. The samples can be displayed as either integer values or as voltages. Once the samples are displayed, clicking any point on the graph displays the sample number and the value of the point directly beneath the cursor. Along the axis of the graph are the zoom handles. These allow you to zoom in and out to get a closer look at a particular sample if required. When another set of samples is taken, the graph attempts to display all values collected unless the **Hold Zoom** check box is selected. If the **Hold Zoom** box is selected, the graph keeps the same axis settings as the previous set of data samples. Additional check boxes are provided to give you control over the vertical grids, the horizontal grids, and data points.

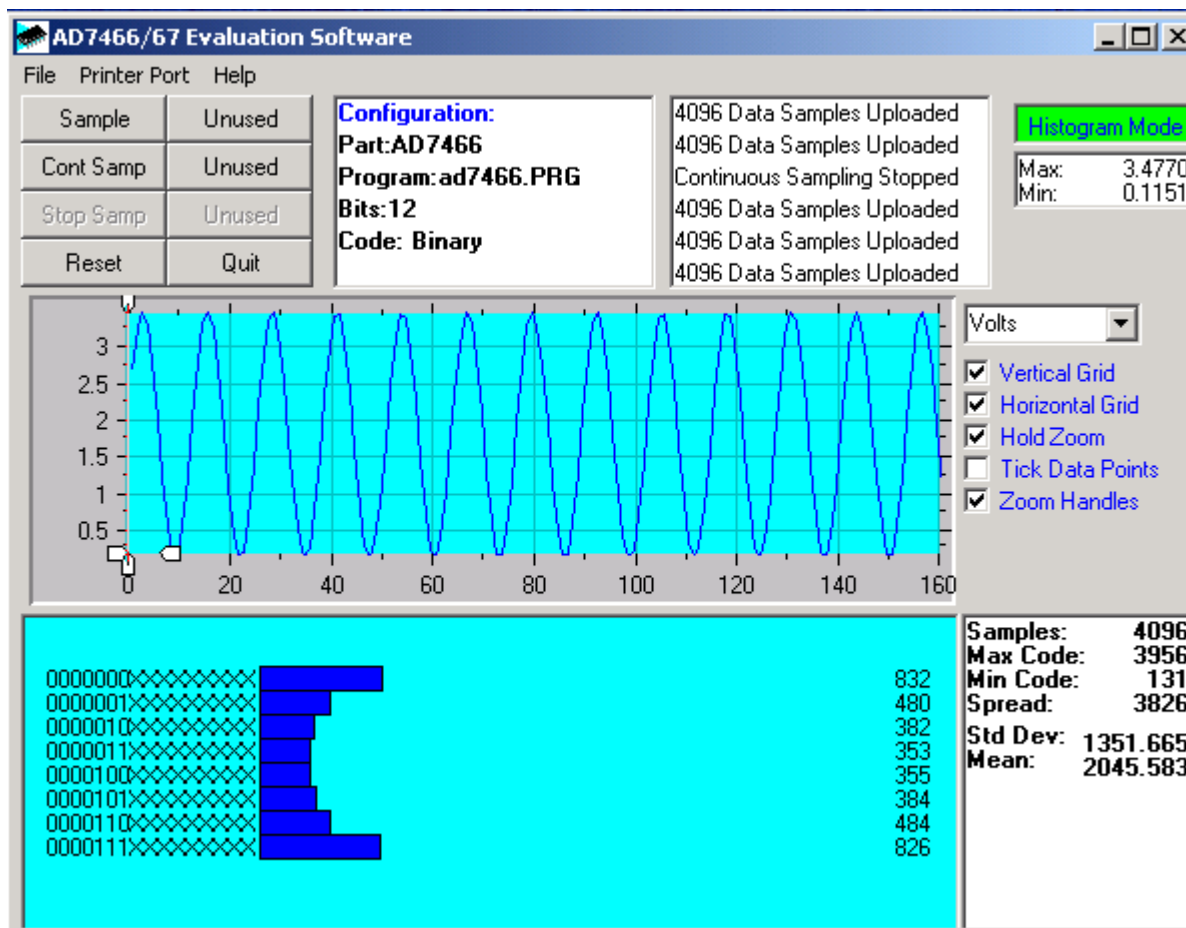


Figure 5. AD7466/AD7467 Evaluation Software, Main Window, Histogram Mode

### Fast Fourier Transform/Histogram

The lower section of the screen shows either a Fast Fourier Transform (FFT) of the data or a histogram that shows the number of occurrences of each particular code read back. The FFT (the default option) is typically used if you are concerned with examining the ADC performance in the frequency

domain, while the histogram gives an indication of the ADC performance to dc signals. The option displayed can be changed by clicking the **FFT Mode/Histogram Mode** button in the top right of the window. Figure 5 shows the main window when the histogram mode option is selected.

## EVALUATION BOARD SCHEMATICS AND ARTWORK

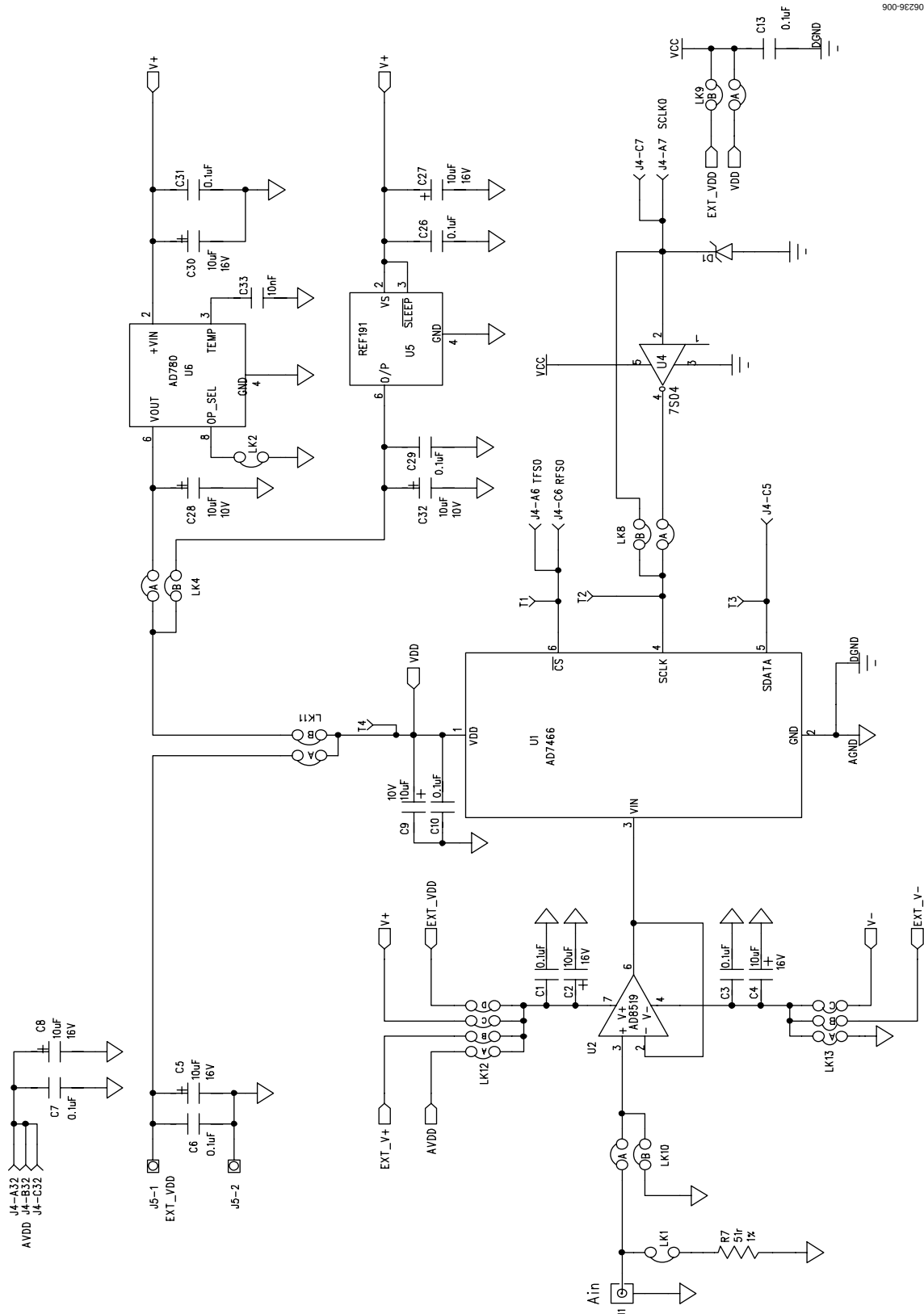


Figure 6. AD7466/AD7467 Evaluation Board Circuit Diagram 1

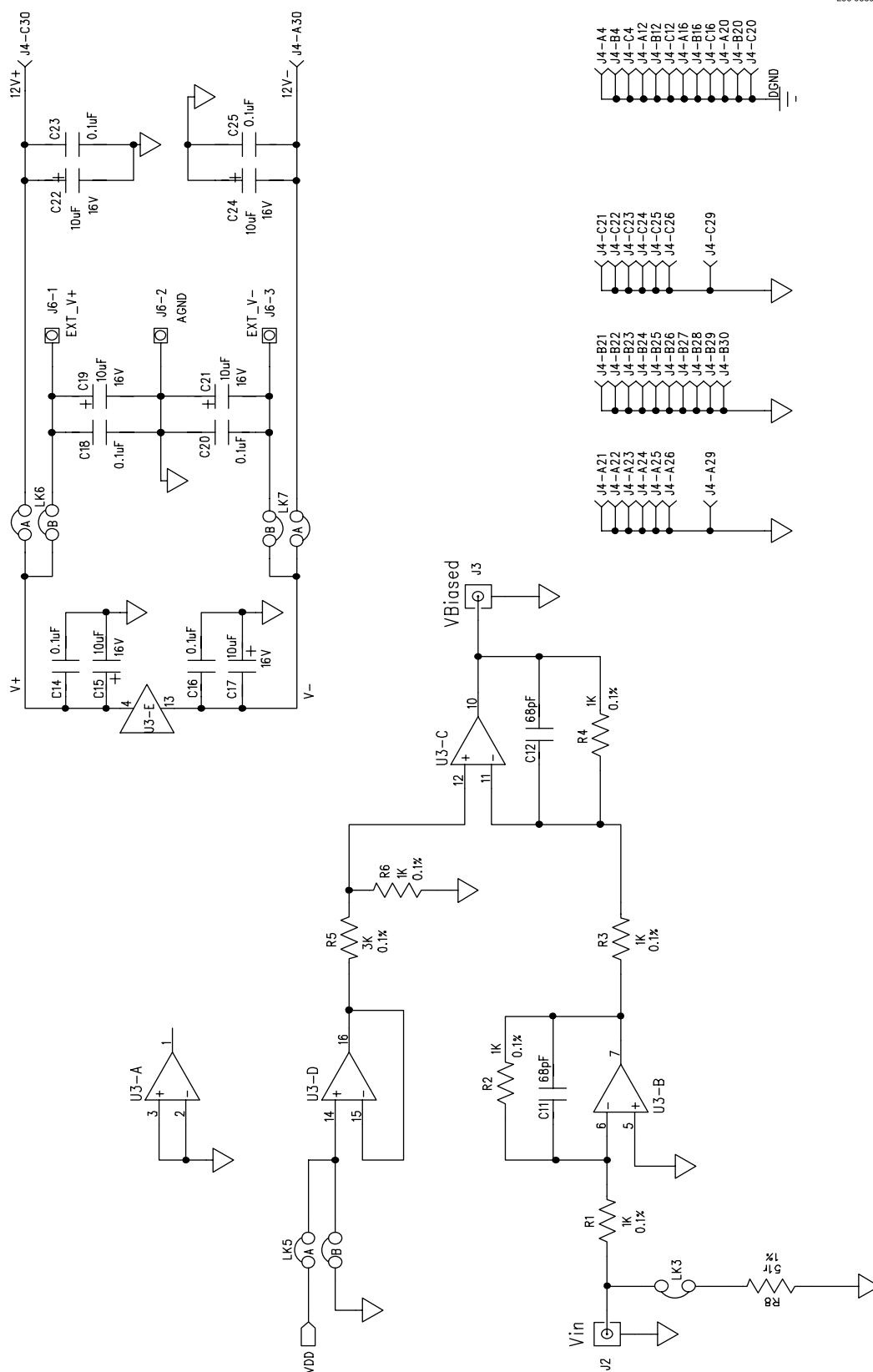


Figure 7. AD7466/AD7467 Evaluation Board Circuit Diagram 2

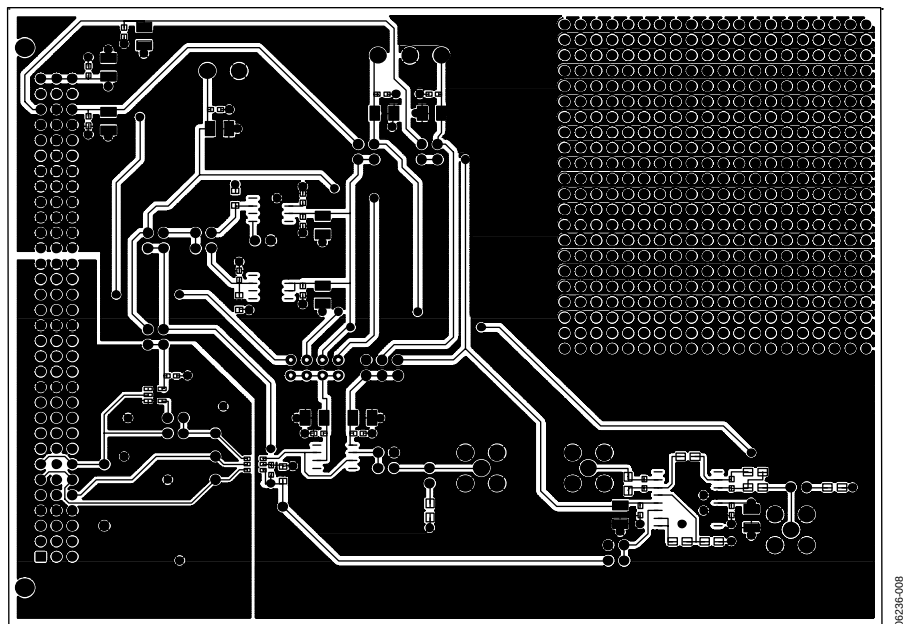


Figure 8. Component Side Artwork

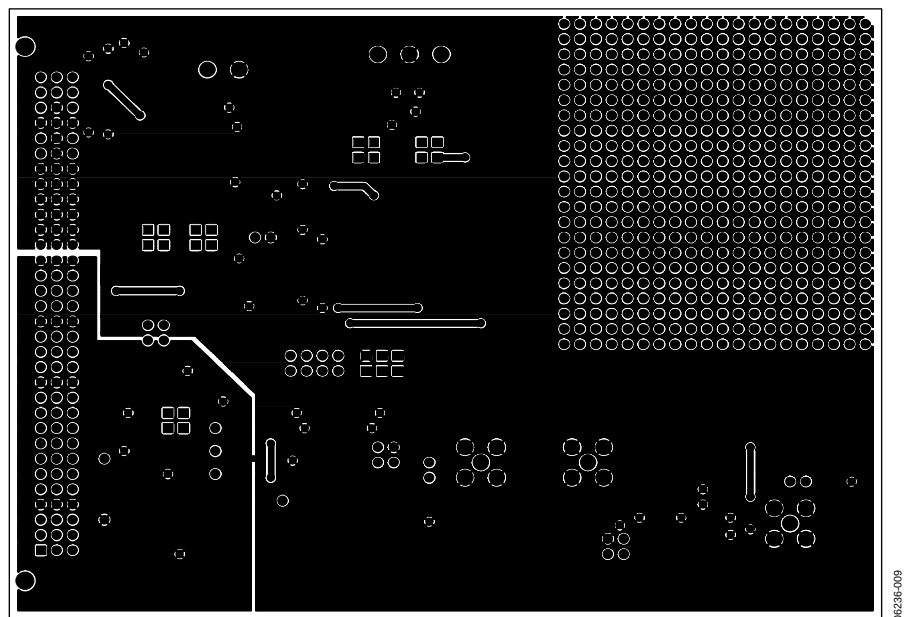


Figure 9. Solder Side Artwork

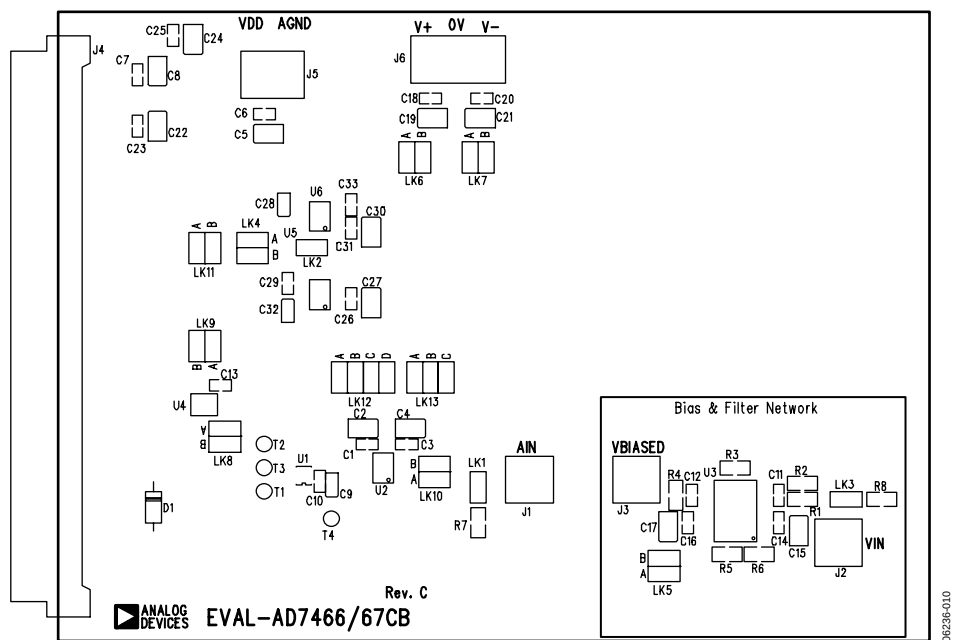


Figure 10. AD7466/AD7467 Evaluation Board Component Placement Drawing

# EVAL-AD7466/AD7467

## ORDERING INFORMATION

### BILL OF MATERIALS

Table 8. Components Listing

| Qty | Reference Designator                                                  | Description                     | Supplier/No.                       |
|-----|-----------------------------------------------------------------------|---------------------------------|------------------------------------|
| 1   | U1                                                                    | AD7466/AD7467                   | Analog Devices AD7466BRT/AD7467BRT |
| 1   | U2                                                                    | AD8519                          | Analog Devices AD8519ART           |
| 1   | U3                                                                    | AD713                           | Analog Devices AD713JR             |
| 1   | U4                                                                    | 7S04                            | FEC <sup>1</sup> 685-914           |
| 1   | U5                                                                    | REF191                          | Analog Devices REF191ES            |
| 1   | U6                                                                    | AD780                           | Analog Devices AD780AR             |
| 5   | R1 to R4, R6                                                          | 1 k $\Omega$ , 0.25 W 0.1% 0805 | FEC 554-005                        |
| 1   | R5                                                                    | 3 k $\Omega$ , 0.25 W 0.1% 0805 | FEC 554-467                        |
| 2   | R7, R8                                                                | 51 $\Omega$ , 0.25 W 1% 0805    | FEC 321-7905                       |
| 2   | C11, C12                                                              | 68 pF, ceramic 0603             | FEC 722-066                        |
| 1   | C33                                                                   | 10 nF                           | FEC 753-622                        |
| 3   | C9, C28, C32                                                          | 10 $\mu$ F, 10 V                | FEC 197-130                        |
| 15  | C1, C3, C6, C7, C10, C13, C14, C16, C18, C20, C23, C25, C26, C29, C31 | 0.1 $\mu$ F, ceramic            | FEC 753-567                        |
| 12  | C2, C4, C5, C8, C15, C17, C19, C21, C22, C24, C27, C30                | 10 $\mu$ F, 16 V, tantalum      | FEC 498-737                        |
| 1   | D1                                                                    | SD103C Schottky diode           | SD103CDITB-ND                      |
| 3   | J1, J2, J3                                                            | 50 $\Omega$ , gold-plated SMB   | FEC 310-682                        |
| 1   | J4                                                                    | 96-pin, 90° DIN41612 plug       | FEC 104-986                        |
| 1   | J5                                                                    | 2-pin power connector           | FEC 151-785                        |
| 1   | J6                                                                    | 3-pin power connector           | FEC 151-786                        |
| 3   | LK1, LK2, LK3                                                         | 2-way jumper (2 $\times$ 1)     | FEC 511-705                        |
| 8   | LK4 to LK11                                                           | 2-way jumper (2 $\times$ 2)     | FEC 511-791                        |
| 1   | LK13                                                                  | 2-way jumper (2 $\times$ 3)     | FEC 511-780                        |
| 1   | LK12                                                                  | 2-way jumper (2 $\times$ 4)     | FEC 511-781                        |
| 13  | LK1 to LK13                                                           | Shorting links                  | FEC 528-456                        |
| 4   | T1, T2, T3, T4                                                        | White test point                | FEC 240-333                        |
| 4   | Each corner                                                           | Rubber stick-on feet            | FEC 651-813                        |
| 1   |                                                                       | EVAL-AD7466/AD7467              | PCB                                |

<sup>1</sup> Farnell Electronic Components.

### ORDERING GUIDE

| Model         | Description             |
|---------------|-------------------------|
| EVAL-AD7466CB | AD7466 Evaluation Board |
| EVAL-AD7467CB | AD7467 Evaluation Board |

### ESD CAUTION

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>ESD (electrostatic discharge) sensitive device.</b><br>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. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|