

***ADS5500/5541/5542/5520/
5521/5522 14- and 12-Bit Single
Channel ADC EVM***

User's Guide

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Exceeding the specified input range may cause unexpected operation and/or irreversible damage to the EVM. If there are questions concerning the input range, please contact a TI field representative prior to connecting the input power.

Applying loads outside of the specified output range may result in unintended operation and/or possible permanent damage to the EVM. Please consult the EVM User's Guide prior to connecting any load to the EVM output. If there is uncertainty as to the load specification, please contact a TI field representative.

During normal operation, some circuit components may have case temperatures greater than 60°C. The EVM is designed to operate properly with certain components above 60°C as long as the input and output ranges are maintained. These components include but are not limited to linear regulators, switching transistors, pass transistors, and current sense resistors. These types of devices can be identified using the EVM schematic located in the EVM User's Guide. When placing measurement probes near these devices during operation, please be aware that these devices may be very warm to the touch.

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Overview

This user's guide document gives a general overview of the ADS55xx evaluation module (EVM), and provides a general description of the features and functions to be considered while using this module.

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1.1 Purpose

The ADS55xx EVM provides a platform for evaluating the ADS55xx high-speed analog-to-digital converters (ADC) family under various signal, input, and supply conditions. This document should be used in combination with the EVM schematic diagram supplied.

1.2 EVM Basic Functions

Analog input to the ADC is provided via external SMA connectors. The single-ended input the user provides is converted into a differential signal at the input of the device. One input path uses a differential amplifier, while the other input is transformer coupled.

The EVM provides external SMA connectors for input of the ADC clock. The single-ended input the user provides is converted into a differential signal at the input of the device. One input path uses an PECL differential driver, while the other input is transformer coupled. The EVM also allows the user to send a single-ended or true differential clock if desired.

Digital output from the EVM is via a 40-pin connector.

Power connections to the EVM are via banana jack sockets. Separate sockets are provided for the ADC analog and buffer supplies, the external buffer supply, and the differential amplifier supply.

1.3 Power Requirements

The EVM can be powered directly with only a single 3.3-V supply if using the module with transformer coupled input and internal reference mode. ± 5 V is required if using the differential amplifier input. Provision has also been made to allow the EVM to be powered with independent supplies to provide higher performance.

Voltage Limits

Exceeding the maximum input voltages can damage EVM components. Under voltage may cause improper operation of some or all of the EVM components.

The ADS55xx EVM provides a platform for evaluating the analog-to-digital (ADC) devices shown in Table 1–1.

Table 1–1. Device List

| DEVICE | RESOLUTION | SAMPLE RATE |
|---------|-------------------|-------------|
| ADS5500 | 14-bit resolution | 125 MSPS |
| ADS5541 | 14-bit resolution | 105 MSPS |
| ADS5542 | 14-bit resolution | 80 MSPS |
| ADS5520 | 12-bit resolution | 125 MSPS |
| ADS5521 | 12-bit resolution | 105 MSPS |
| ADS5522 | 12-bit resolution | 80 MSPS |

The EVM allows the user to evaluate an ADS55xx ADC under various input signal and supply conditions. This document should be used in combination with device data sheet when evaluating a device.

1.4 ADS55xx EVM Operational Procedure

The ADS55xx EVM provides a flexible means of evaluating the ADS55xx in a number of modes of operation. A basic set-up procedure that can be used as a board confidence check is as follows:

- 1) Verify all jumper settings against the schematic jumper list in the following tables:

Table 1–2. Two-Pin Jumper List

| JUMPER | FUNCTION | INSTALLED | REMOVED | DEFAULT |
|--------|---|-----------------------|------------------------|-----------|
| W3 | Access point for providing SCLK for programming ADC internal registers | Connects Pin 2 to GND | Removes Pin 2 from GND | Installed |
| W6 | Access point for providing SDATA for programming ADC internal registers | Connects Pin 3 to GND | Removes Pin 3 from GND | Installed |
| W7 | Access point for providing SEN for programming ADC internal registers | Connects Pin 4 to GND | Removes Pin 4 from GND | Installed |

Table 1–3. Three-Pin Jumper List

| JUMPER | FUNCTION | LOCATION: PINS 1– 2 | LOCATION: PINS 2–3 | DEFAULT |
|--------|-------------------------------|--|--|---------|
| SJP1 | Common mode voltage from ADC | Provides common mode voltage to Differential Amplifier | Provides common mode voltage to Transformer T2 | 2–3 |
| SJP2 | ECL Driver input power select | Provides +5 VDC | Provides +3.3 VDC | 1–2 |
| W2 | ADC output enable control | ADC output enabled | ADC output disabled | 1–2 |
| SJP6 | Reset polarity select | Used with active low ADC reset | Used with active high ADC reset | 2–3 |

Table 1–4. Five-Pin Jumper List

| JUMPER | FUNCTION | LOCATION | DATA FORMAT | OUTPUT CLOCK POLARITY | DEFAULT |
|--------|--|--|--|--|----------|
| W5 | ADC data format and output clock polarity select | Pins 4–5 Pins 3–5 Pins 2–5 Pins 1–5 | Straight Binary 2s Compliment Straight Binary 2s Compliment | Data valid on rising edge Data valid on rising edge Data valid on falling edge Data valid on falling edge | Pins 4–5 |

-
- 2) Connect supplies to the EVM as follows:
 - 3.3-V ADC output buffer supply to J17 and return to J18.
 - 3.3-V ADC analog supply to J11 and return to J10.
 - 3) Switch power supplies on.
 - 4) Use a function generator with 50- Ω output to input a 80 – 125 MHz, 0-V offset, 1 Vrms sine wave signal into J3. The frequency of the clock must be within the specification for the device speed grade.
 - 5) Use a frequency generator with a 50- Ω output to provide a 10 MHz, 0-V offset, -1 dBFS amplitude sine wave signal into J7. This provides a transformer-coupled differential input signal to the ADC.
 - 6) The digital pattern on the output connector J8 should now represent a sine wave and can be monitored using a logic analyzer.

Circuit Description



This chapter describes the circuit functions of the ADS55xx EVM.

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2.1 Schematic Diagram

The schematic diagram for the EVM is attached to the end of this document.

2.2 Circuit Function

The following paragraphs describe the function of individual circuits. See the appropriate data sheet for device operating characteristics.

2.2.1 Analog Inputs

The EVM can be configured to provide the ADC with either transformer-coupled or differential amplifier inputs from a single-ended source. The inputs are provided via SMA connectors J7 for transformer coupled input, and J1 and J2 for differential amplifier input. To setup for one of these options, the EVM must be configured as follows:

- 1) For a 1:1 transformer-coupled input to the ADC, a single-ended source is connected to J7. R22, and R35 must be removed and R41 and R45 must be installed. SJP1 must have pins 2 and 3 shorted. This is the default configuration for the EVM.
- 2) For a single-ended input into the differential amplifier, a single-ended source is connected to J1. R22 and R35 must be installed, and R41 and R45 must be removed. SJP1 must have pins 1 and 2 shorted. C12, C32, C35, and R40 provide the user with the option to add filters if desired.
- 3) For a differential input into the amplifier, the positive source is connected to J1 and the negative source to J2. R22 and R35 must be installed, and R41 and R45 removed. SJP1 must have pins 1 and 2 shorted. R8 must be replaced with a 54.9- Ω resistor and R19 with a 383- Ω resistor for proper amplifier termination.

2.2.2 Clock Inputs

The EVM provides three methods for inputs for the ADC clock pins. The initial configuration of the EVM provides a transformer coupled clock to the converter.

2.2.2.1 *Transformer-Coupled Differential ADC Clock*

To provide a transformer-coupled differential clock using a single-ended input source, C25 and C40 must be installed and R11, R25, R32, C36, C39, and C49 must be removed. R31 is 0 Ω for proper transformer configuration. This is the default configuration for the EVM.

2.2.2.2 *True Differential ADC Clock*

To provide a true differential ADC clock input, install J4, R11, R25, C25, and C40, replace R31 with a 49.9- Ω resistor, and remove R32, C36, C39, C49, and T3. The positive source should be connected to J3 and the negative source to J4.

2.2.2.3 ECL Differential ADC Clock

To provide an ECL differential clock input, install C36, C39, and C49 and remove C25 and C40. Configure SJP2 to provide either AVDD or +VCC supply to the ECL differential driver supply pin.

2.2.3 Control Inputs

The EVM has three discrete inputs and a 3-pin serial bus to control the operation of the device:

2.2.3.1 Output Enable

With jumper W2 installed between pins 1 and 2, the ADC outputs are enabled. The device outputs are disabled with jumper W2 installed between pins 2 and 3.

2.2.3.2 DFS Control

By adjusting the voltage on the data format and clock polarity select (DFS) pin, the user can set the mode of operation of the device. Test point 10 should be used to monitor this level. Once the appropriate voltage is reached, the ADC automatically sets the corresponding data format and clock polarity setting. Jumper W5 selects the voltage used for this pin. See Table 1–3 for the data format and clock polarity settings determined by the position of the jumper on W5.

2.2.3.3 IREF Control

By adjusting the resistance on pin 31 (IREF), the user can adjust the bias current used by the ADS55xx device. The default value for the EVM is 56.2 k Ω . Care must be taken when changing this value. See the appropriate data sheet for more information.

2.2.4 Power

Power is supplied to the EVM via banana jack sockets. A separate connection is provided for a 3.3-V analog supply (J11 and J10), 3.3-V buffer supply (J17 and J18) supply, \pm 5-V amplifier supply (J14, J13, and J12), and 3.3-V external buffer supply (J19 and J20).

2.2.5 Outputs

The data outputs from the ADC are routed to connector J8. This connector is a standard 40-pin header on a 100-mil grid, and allows easy connection to a logic analyzer. The connector pinout is listed in Table 2–1.

Table 2-1. Output Connector J8

| J8 PIN | DESCRIPTION | J8 PIN | DESCRIPTION |
|--------|------------------|--------|-------------------|
| 1 | DGND | 21 | DGND |
| 2 | Output Clock | 22 | Data Bit 6 |
| 3 | DGND | 23 | DGND |
| 4 | NC | 24 | Data Bit 7 |
| 5 | DGND | 25 | DGND |
| 6 | NC | 26 | Data Bit 8 |
| 7 | DGND | 27 | DGND |
| 8 | NC | 28 | Data Bit 9 |
| 9 | DGND | 29 | DGND |
| 10 | Data Bit 0 (LSB) | 30 | Data Bit 10 |
| 11 | DGND | 31 | DGND |
| 12 | Data Bit 1 | 32 | Data Bit 11 |
| 13 | DGND | 33 | DGND |
| 14 | Data Bit 2 | 34 | Data Bit 12 |
| 15 | DGND | 35 | DGND |
| 16 | Data Bit 3 | 36 | Data Bit 13 (MSB) |
| 17 | DGND | 37 | DGND |
| 18 | Data Bit 4 | 38 | Overflow |
| 19 | DGND | 39 | DGND |
| 20 | Data Bit 5 | 40 | NC |

Physical Description

This chapter describes the physical characteristics and PCB layout of the EVM and lists the components used on the module.

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3.1 PCB Layout

The EVM is constructed on a 6-layer, 4.5-inch x 4.15-inch, 0.062-inch thick PCB using FR-4 material. The individual layers are shown in the following figures.

Figure 3–1. Top Layer

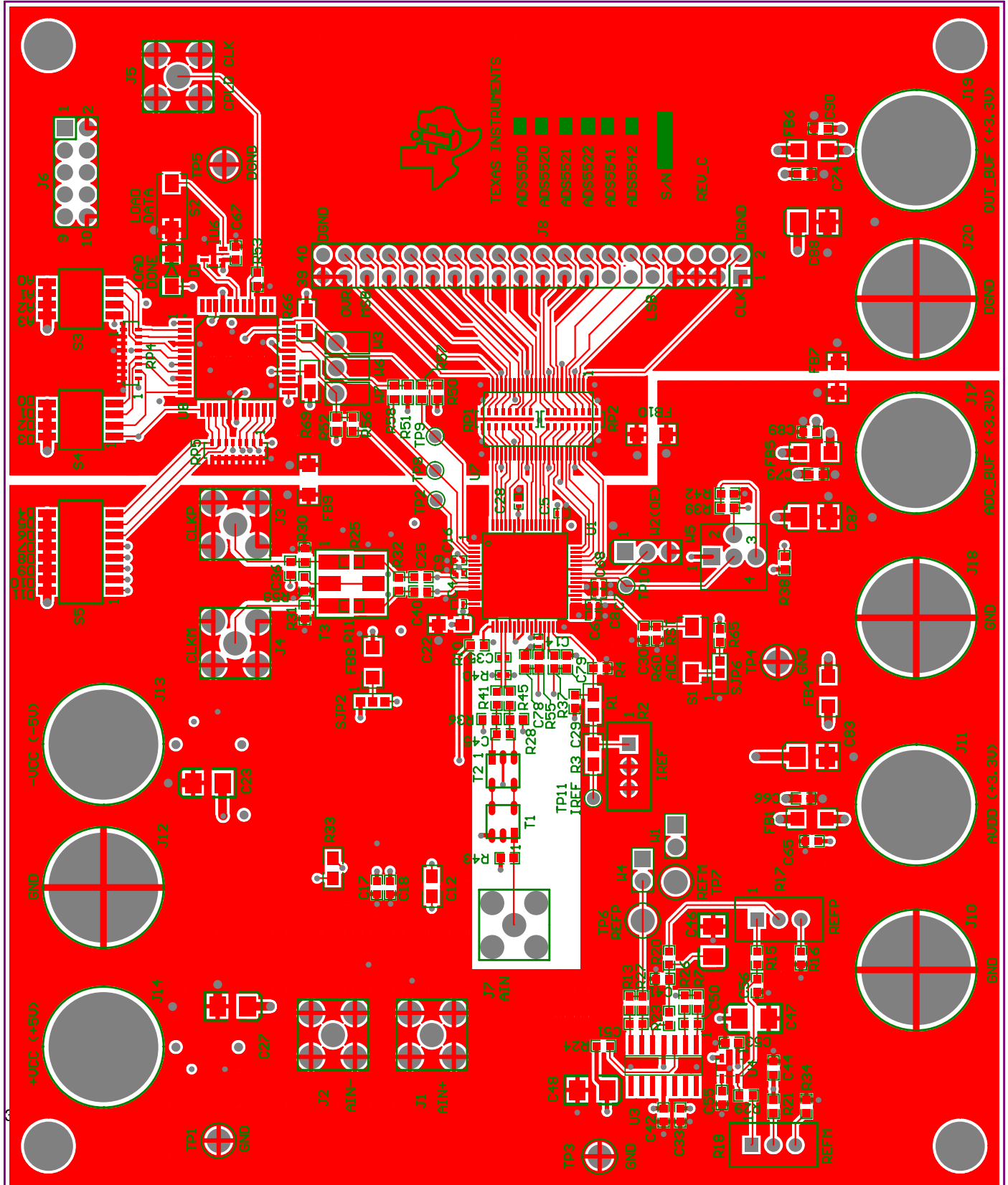
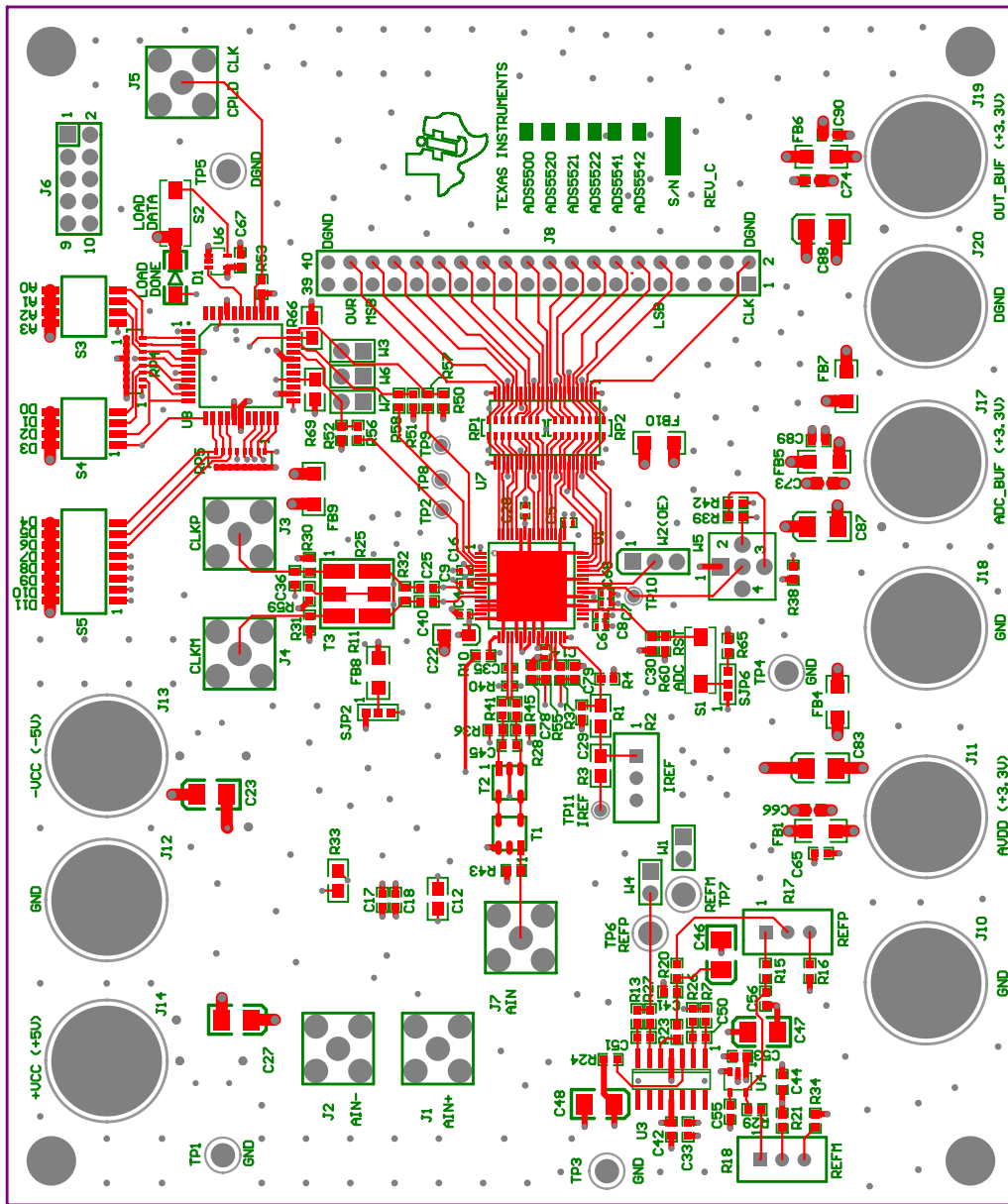
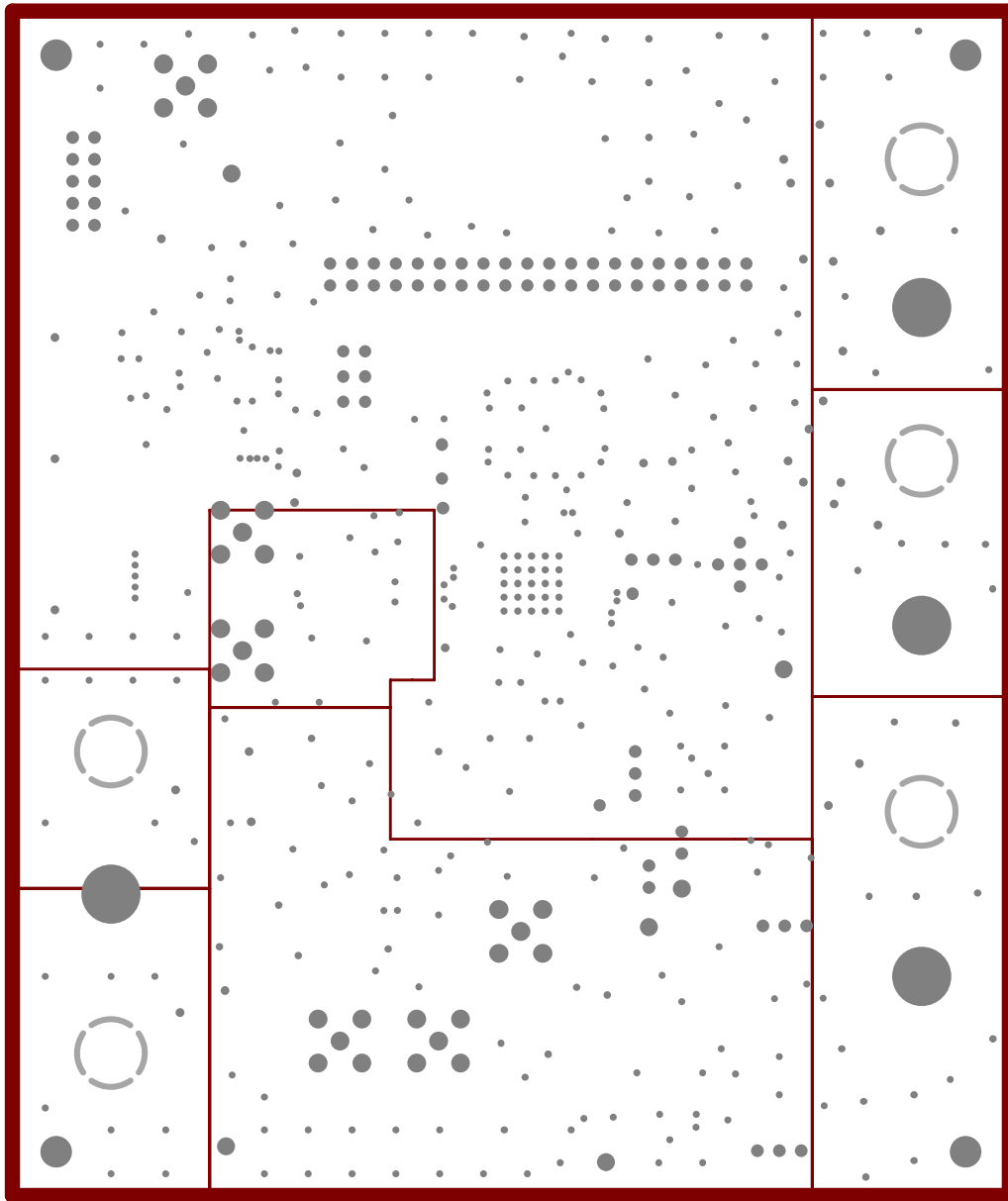


Figure 3-2. Top Layer (NH)



1 SILKSCREEN TOP

Figure 3-4. Layer 3, Split Power Plane #1



3 SPLIT PWR PLANE

Figure 3-5. Layer 4, Split Power Plane #2

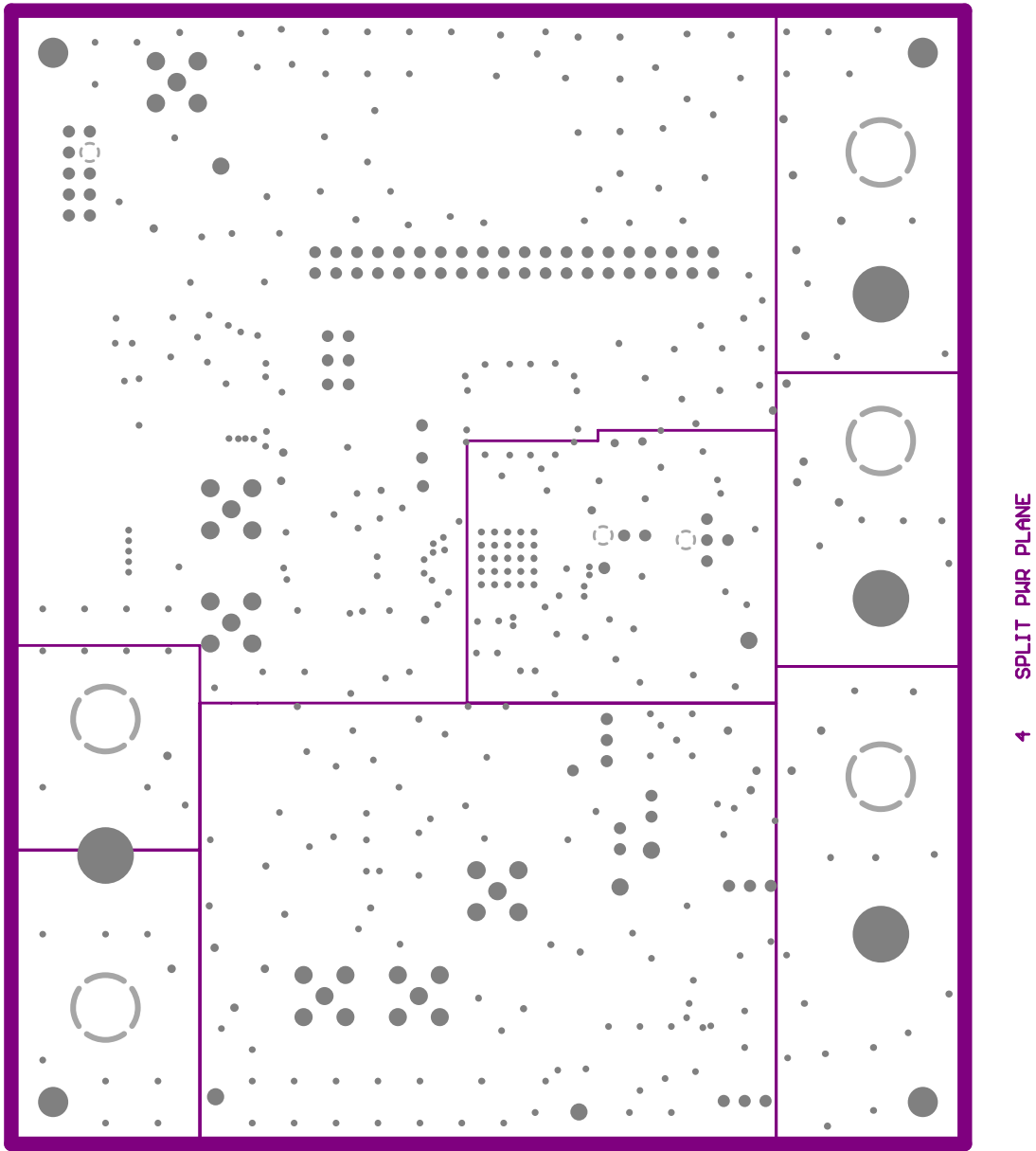
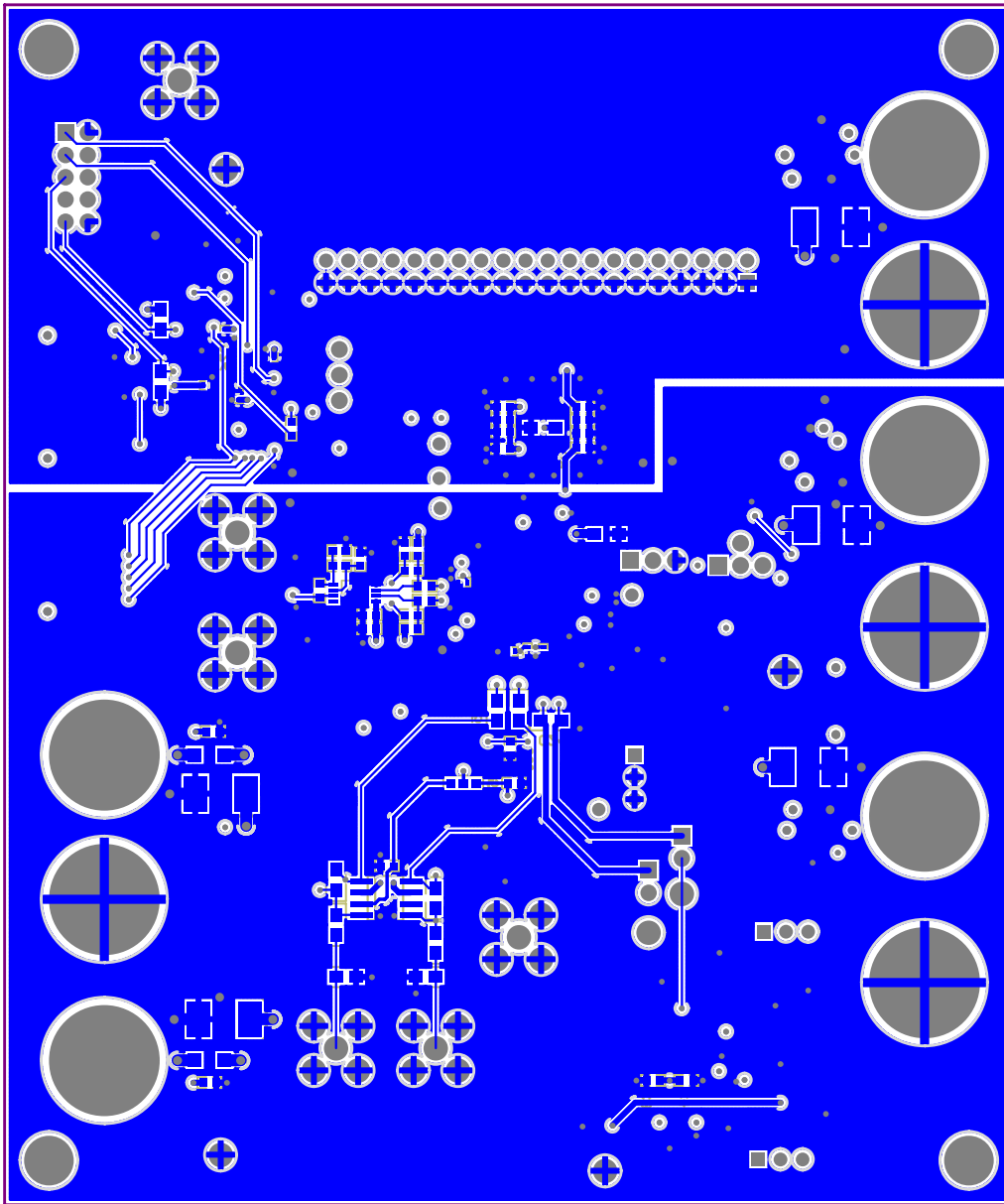


Figure 3–7. Layer 6, Bottom Layer



6 BOTTOM SILKSCREEN

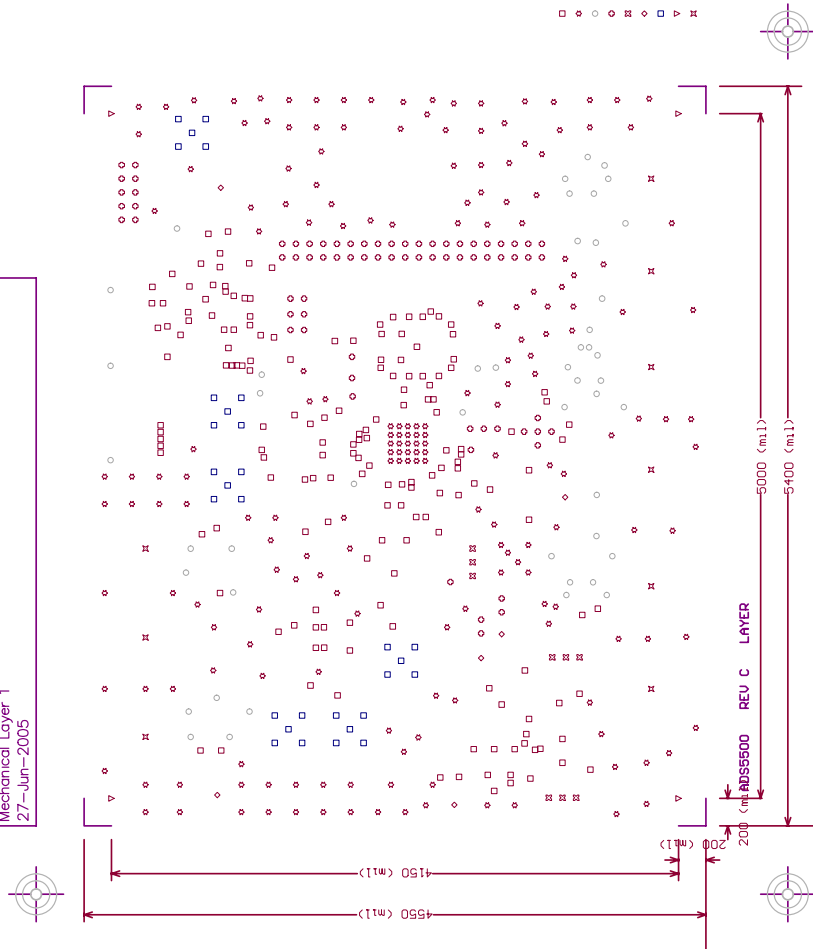
Figure 3-9. Drill Drawing

- Notes:
1. PWB TO BE FABRICATED TO MEET OR EXCEED IPC-6012, CLASS 3 STANDARDS AND WORKMANSHIP SHALL CONFORM TO IPC-A-600, CLASS 3 - CURRENT REVISIONS
 2. BOARD MATERIAL AND CONSTRUCTION TO BE UL APPROVED AND MARKED ON THE FINISHED BOARD.
 3. LAMINATE MATERIAL: COPPER-CLAD FR-4
 4. COPPER WEIGHT: 1oz ON INTERNAL LAYERS, 1.5 oz FINISHED ON EXTERNAL LAYERS.
 5. FINISHED THICKNESS: .062 +/- .010
 6. MIN PLATING THICKNESS IN THROUGH HOLES: .001"
 7. SMOBC / HASL

- 7A- FINISH WHITE-TIN
- 7B- GOLD FINISH-50-100-MICRO-NICKEL
- 7-12-MICRO-INCHES-OF-GOLD
- 7C- 3-TO-7-MICRO-INCHES-OF-IMMERSION-GOLD-OVER-100-MICRO-INCHES-OF-ELECTROLESS-NICKEL
- 7B-36-MICRO-INCHES-OF-SOFT-GOLD-OVER-100-200-MICRO-INCHES-OF-NICKEL-PLATING
- 7E-36-MICRO-INCHES-OF-HARD-GOLD-OVER-100-200-MICRO-INCHES-OF-NICKEL-PLATING-(CARDEDGE-CONNECTOR-ONLY)
8. LPI SOLDERMASK BOTH SIDES USING APPROPRIATE LAYER ARTWORK: COLOR = RED
9. LPI SILKSCREEN AS REQUIRED: COLOR - WHITE
10. VENDOR INFORMATION TO BE INCORPORATED ON BACK SIDE WHENEVER POSSIBLE
11. MINIMUM COPPER CONDUCTOR WIDTH IS: 8 MILS
MINIMUM CONDUCTOR SPACING IS: 6 MILS
12. NUMBER OF FINISHED LAYERS: 6
13. TOP AND BOTTOM LAYERS 8 MIL TRACES TO BE 50 OHM IMPEDANCE

| | | | |
|-----|--------|----------|-----|
| 172 | 12mil | 0.3048mm | PTH |
| 202 | 13mil | 0.3302mm | PTH |
| 47 | 20mil | 0.508mm | PTH |
| 73 | 37mil | 0.9398mm | PTH |
| 9 | 38mil | 0.9652mm | PTH |
| 6 | 62mil | 1.5748mm | PTH |
| 30 | 67mil | 1.7018mm | PTH |
| 4 | 125mil | 3.175mm | PTH |
| 9 | 250mil | 6.35mm | PTH |
| | Total | | |
| | 552 | | |

| | |
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| Y. DEJONCK | J. UENBLE |
| ADS5500 | |
| REV C | SCALE: 0:84 |
| DOCUMENT CONTROL # | |
| Mechanical Layer 1 | |
| 27-Jun-2005 | |



3.2 Parts List

The following pages contain the bill of materials..

3.3 Scehmatics

The following pages contain the schematics.

Bill Of Material For ADS5500 REV C 06-27-2005

| Value | Footprint | QTY | Part Number | Vendor | Digi-Key Number | REF DES | TI SUPPLIED | Not Installed |
|------------------------------------|-----------|-----|----------------|-----------|-----------------|--|-------------|---|
| CAPACITORS | | | | | | | | |
| 47 uF, tantalum, 20%, 10V | 7343 | 5 | ECS-T1AD476R | Panasonic | PCS2476CT-ND | C19 C21 C75 C81 C82 | | |
| 10 uF, 10V, 20% Capacitor | 3528 | 5 | ECS-T1AX106R | Panasonic | PCS2106CT-ND | C23 C27 C83 C87 C88 | | C46 C47 C48 |
| 10 uF, 10V, 10% Capacitor | 3216 | 3 | T491A106K010AS | KEMET | 399-1563-1-ND | C20 C22 C26 | | |
| .1uF,16V, 10% Capacitor | 805 | 0 | ECJ-2VB1C104K | Panasonic | PCC1812CT-ND | | | C24 |
| 6.8pF,50V, +/- .25pF Capacitor | 805 | 2 | 08055A6R8CAT2A | AVX | 478-1302-1-ND | C12 C32 | | |
| 470 pF,100V, 10% Capacitor | 603 | 4 | ECJ-1VB2A471K | Panasonic | PCC1950CT-ND | C57 C59 C61 C63 | | C33 C34 |
| .047uF,16V, 10% Capacitor | 603 | 0 | ECJ-1VB1H473K | Panasonic | PCC2286CT-ND | | | C50 C51 |
| 10 pF, 50V, +/- .5pF Capacitor | 603 | 0 | ECJ-1VC1H100D | Panasonic | PCC100CVCT-ND | | | C45 |
| .01uF, 50V,10% Capacitor | 603 | 4 | ECJ-1VB1C103K | Panasonic | PCC1750CT-ND | C31 C52 C54 C69 | | C55 |
| .1uF,16V, 10% Capacitor | 603 | 19 | ECJ-1VB1C104K | Panasonic | PCC1762CT-ND | C1 C13 C15 C17 C18 C25 C37 C38 C40 C58 C60 C62 C64 C65 C66 C73 C74 C89 C90 | | C29 C30 C36 C39 C41 C42 C43 C44 C49 C67 |
| 1uF, 6.3V,10% Capacitor | 603 | 2 | ECJ-1VB0J105K | Panasonic | PCC1915CT-ND | C78 C79 | | C53 |
| 2.2uF, 6.3V,+/- 80%/-20% Capacitor | 603 | 0 | ECJ-1VF0J225Z | Panasonic | PCC2181CT-ND | | | C56 |
| .1uF,16V, +/- 80%/-20% Capacitor | 402 | 14 | ECJ-0EF1C104Z | Panasonic | PCC1731CT-ND | C2-C11 C14 C16 C28 C68 | | C71 C72 C76 C77 |
| 27 pF, 50V, 5% Capacitor | 402 | 0 | ECU-E1H270JCQ | Panasonic | PCC270CQCT-ND | | | C35 |
| RESISTORS | | | | | | | | |
| 0 ohm resistor, 1/16 W, 1 % | 805 | 1 | ERJ-6ENF0R00V | Panasonic | P0.0CCT-ND | R8 | | |
| 54.9 ohm resistor, 1/16 W, 1 % | 805 | 1 | ERJ-6ENF54R9V | Panasonic | P54.9CCT-ND | R9 | | |
| 383 Ohm resistor, 1/16 W, 1 % | 805 | 1 | ERJ-6ENF3830V | Panasonic | P383CCT-ND | R12 | | |
| 392 Ohm resistor, 1/16 W, 1 % | 805 | 2 | ERJ-6ENF3920V | Panasonic | P392CCT-ND | R14 R33 | | |
| 412 Ohm resistor, 1/16 W, 1 % | 805 | 1 | ERJ-6ENF4120V | Panasonic | P412CCT-ND | R19 | | |
| 1K Ohm resistor, 1/16 W, 1 % | 805 | 0 | ERJ-6ENF1001V | Panasonic | P1.0KCCT-ND | | | R66 R67 R68 R69 |
| 10K Ohm resistor, 1/16 W, 1 % | 805 | 0 | ERJ-6ENF1002V | Panasonic | P10.0KCCT-ND | | | R3 |
| 20K Ohm resistor, 1/16 W, 1 % | 805 | 0 | ERJ-6ENF2002V | Panasonic | P20.0KCCT-ND | | | R1 |

Bill Of Material For ADS5500 REV C 06-27-2005

| Value | Footprint | QTY | Part Number | Vendor | Digi-Key Number | REF DES | TI SUPPLIED | Not Installed |
|--------------------------------|--------------|-----|----------------|-----------|-----------------|---------------------|-------------|---------------------------|
| 0 ohm resistor, 1/16 W, 1 % | 603 | 5 | | Panasonic | P0.0CCT-ND | R31 R56 R57 R58 R59 | | R11 R25 |
| 1 Ohm resistor, 1/16 W, 5 % | 603 | 2 | 9C0603A1 JLHFT | Panasonic | 311-1 GTR-ND | R37 R55 | | |
| 100 ohm resistor, 1/16 W, 1% | 603 | 0 | ERJ-3EKF1000V | Panasonic | P100HCT-ND | | | R23 R24 |
| 113 ohm resistor, 1/16 W, 1% | 603 | 1 | ERJ-3EKF1130V | Panasonic | P113HCT-ND | R64 | | |
| 24.9 ohm resistor, 1/16 W, 1% | 603 | 2 | ERJ-3EKF24R9V | Panasonic | P24.9HCT-ND | R41 R45 | | R22 R35 |
| 36.5 ohm resistor, 1/16 W, 1% | 603 | 2 | ERJ-3EKF36R5V | Panasonic | P36.5HCT-ND | R28 R36 | | R22 R35 |
| 49.9 ohm resistor, 1/16 W, 1% | 603 | 4 | ERJ-3EKF49R9V | Panasonic | P49.9HCT-ND | R10 R30 R47 R48 | | R7 R13 R43 R53 R62 R63 |
| 82.5 ohm resistor, 1/16 W, 1% | 603 | 0 | ERJ-3EKF82R5V | Panasonic | P82.5HCT-ND | | | R54 |
| 200 ohm resistor, 1/16 W, 1% | 603 | 0 | ERJ-3EKF200V | Panasonic | P200HCT-ND | | | R32 |
| 499 ohm resistor, 1/16 W, 1% | 603 | 2 | ERJ-3EKF499V | Panasonic | P499HCT-ND | R44 R46 | | R15 |
| 1K ohm resistor, 1/16 W, 1% | 603 | 3 | ERJ-3EKF1001V | Panasonic | P1.00KHCT-ND | R38 R39 R42 | | |
| 2K ohm resistor, 1/16 W, 1% | 603 | 0 | ERJ-3EKF2001V | Panasonic | P2.00KHCT-ND | | | R26 R27 |
| 2.55K ohm resistor, 1/16 W, 1% | 603 | 0 | ERJ-3EKF2551V | Panasonic | P2.55KHCT-ND | | | R34 |
| 2.87K ohm resistor, 1/16 W, 1% | 603 | 0 | ERJ-3EKF2871V | Panasonic | P2.87KHCT-ND | | | R29 |
| 4.7K ohm resistor, 1/16 W, 1% | 603 | 1 | ERJ-3EKF4701V | Panasonic | P4.7KHCT-ND | R65 | | |
| 5.62K ohm resistor, 1/16 W, 1% | 603 | 0 | ERJ-3EKF5621V | Panasonic | P5.62KHCT-ND | | | R16 |
| 49.9K ohm resistor, 1/16 W, 1% | 603 | 3 | ERJ-3EKF4992V | Panasonic | P49.9KHCT-ND | R50 R51 R52 | | |
| 56.2K ohm resistor, 1/16 W, 1% | 603 | 1 | ERJ-3EKF5622V | Panasonic | P56.2KHCT-ND | R4 | | |
| 10K ohm resistor, 1/16 W, 1% | 603 | 1 | ERJ-3EKF1002V | Panasonic | P10.0KHCT-ND | R60 | | R20 R21 |
| 174 ohm resistor, 1/16 W, 1 % | 402 | 0 | ERJ-2RFK1740X | Panasonic | P174LCT-ND | | | R40 |
| 1K VARIABLE RESISTOR | POT_RES_TH | 0 | CT94W102 | CERMET | CT94W102-ND | | | R17 R18 |
| 100K VARIABLE RESISTOR | POT_RES_TH | 0 | CT94W104 | CERMET | CT94W104-ND | | | R2 |
| 0 ohm R-Pack | CTS-742-8RES | 0 | 742C163000X | CTS | 742C163000X-ND | | | RP1 RP2 |

Bill Of Material For ADS5500 REV C 06-27-2005

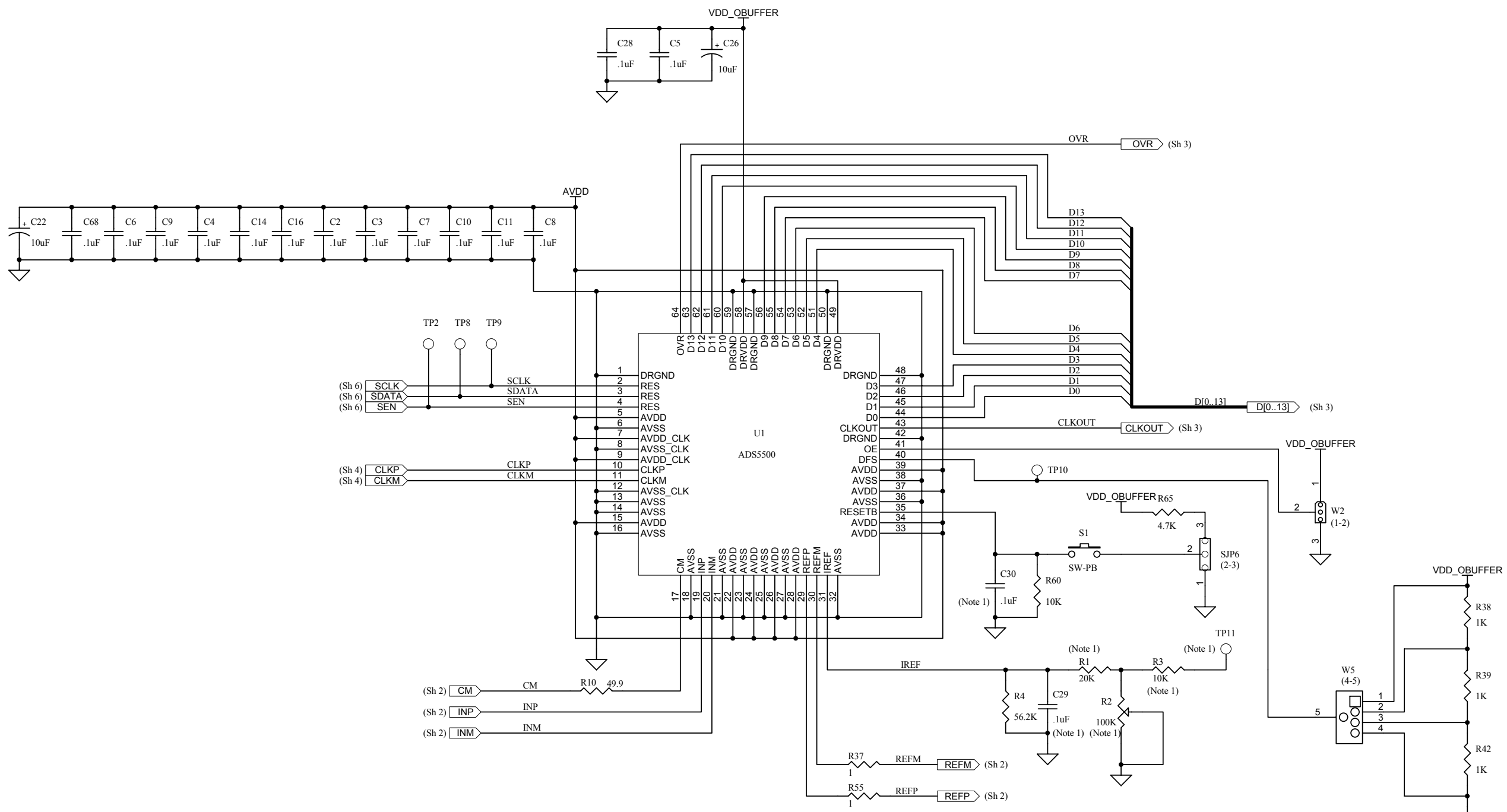
| Value | Footprint | QTY | Part Number | Vendor | Digi-Key Number | REF DES | TI SUPPLIED | Not Installed |
|---|--------------------|-----|-----------------|------------------|-------------------|------------------------------|-------------|---------------|
| 100K ohm R-Pack | CTS-742-4RES | 0 | 742C163100KJCT | CTS | 742C163100KJCT-ND | | | RP4 RP5 |
| CONNECTORS, JUMPERS, HEADERS, FERRITE BEADS, TRANSFORMERS, ICS | | | | | | | | |
| Ferrite Bead | 1206 | 4 | EXC-ML32A680U | | P10437CT-ND | FB1 FB2 FB3 FB5 FB6 FB8 FB10 | | FB4 FB7 FB9 |
| Transformer | TC4-1W_TRANSFORMER | 2 | TC4-1W | Mini-Circuits | | T1 T2 | | |
| Transformer | MC-CD542 | 1 | ADT4-1WT | Mini-Circuits | | T3 | | |
| SMA connectors | SMA_Jack | 4 | 901-144-8RFX | AMP | ARFX1231-ND | J1 J2 J3 J7 | | J4 J5 |
| Black test point | Test_point | 4 | 5011K-ND | Keystone | 5011K-ND | TP1 TP3 TP4 TP5 | | |
| RED test point | Test_point | 0 | 5010K-ND | Keystone | 5010K-ND | | | TP6 TP7 |
| RED test point | Test_point2 | 4 | 5000K-ND | Keystone | 5000K-ND | TP2 TP8 TP9 TP10 | | TP11 |
| 2POS_header | 2pos_jumper | 3 | HTSW-150-07-L-S | Samtec | | W3 W6 W7 | | W1 W4 |
| 3POS_header | 3pos_jumper | 1 | HTSW-150-07-L-S | Samtec | | W2 | | |
| 3 Circuit Jumpers | SJP3 | 3 | | | | SJP1 SJP2 SJP6 | | |
| 5 Circuit Jumpers | 5POS_JUMPER_TH | 1 | | | | W5 | | |
| SWITCH | EVQ-PJ | 1 | EVQ-PJX04M | Panasonic | P8050SCT-ND | S1 | | S2 |
| SWITCH 4 POSITION | SWITCH_4POS_SMT | 0 | DHS4S | APEM | | | | S3 S4 |
| SWITCH 8 POSITION | SWITCH_8POS_SMT | 0 | DHS8S | APEM | | | | S5 |
| 40 pin IDC Connector | 20X2X.1 | 1 | HTSW-120-07-L-D | Samtec | N/A | J8 | | |
| 10 pin IDC Connector | 5X2X.1 | 0 | HTSW-120-07-L-D | Samtec | | | | J6 |
| Red Banana Jacks | BANANA_JACK | 5 | ST-351A | ALLIED | | J11 J13 J14 J17 J19 | | |
| Black Banana Jacks | BANANA_JACK | 4 | ST351B | ALLIED | | J10 J12 J18 J20 | | |
| GREEN LED | LED-1206 | 0 | CMD15-21VGC/TR8 | Panasonic | L62205CT-ND | | | D1 |
| ADS5500IPAP | 64-HTQFP(PAP) | 1 | ADS5500IPAP | TI | | U1 | YES | |
| THS4503ID | 8-SOP(D) | 1 | THS4503ID | TI | 296-12938-5-ND | U2 | YES | |
| OPA4227UA | 14-SOP(D) | 0 | OPA4227UA | TI | OPA4227UA-ND | | | U3 |
| TPS79225DBVR | 5-SOT(DBV) | 0 | TPS79225DBVR | TI | 296-11869-2-ND | | | U4 |
| MC10EP16DT | 8-TSSOP(DGK) | 1 | MC10EP16DT | ON Semiconductor | MC10EP16DTOS-ND | U5 | | |

Bill Of Material For ADS5500 REV C 06-27-2005

| Value | Footprint | QTY | Part Number | Vendor | Digi-Key Number | REF DES | TI SUPPLIED | Not Installed |
|-----------------------------------|---------------|-----|------------------|--------|-----------------|---------|-------------|---------------|
| TPS3801J25DCKR | 5-SOT(DCK) | 0 | TPS3801J25DCKR | TI | 296-3326-2-ND | | | U6 |
| SN74AVC16244DGGR | 48-TSSOP(DGG) | 1 | SN74AVC16244DGGR | TI | 296-9783-1-ND | | YES | |
| EPM7032BTC44 | 44-TQFP(PGT) | 0 | EPM7032BTC44-3 | ALTERA | | | | U8 |
| SCREWS | 4-40 screw | 4 | | | | | | |
| Plastic Stand Off Hex (1/4 x .5") | 4-40 screw | 4 | 1902CK-ND | allied | 1902CK-ND | | | |
| | | | | | | | | |

SURFACE MOUNT JUMPER LOCATION: SJP6 2-3; SJP1 2-3; SJP2 1-2;

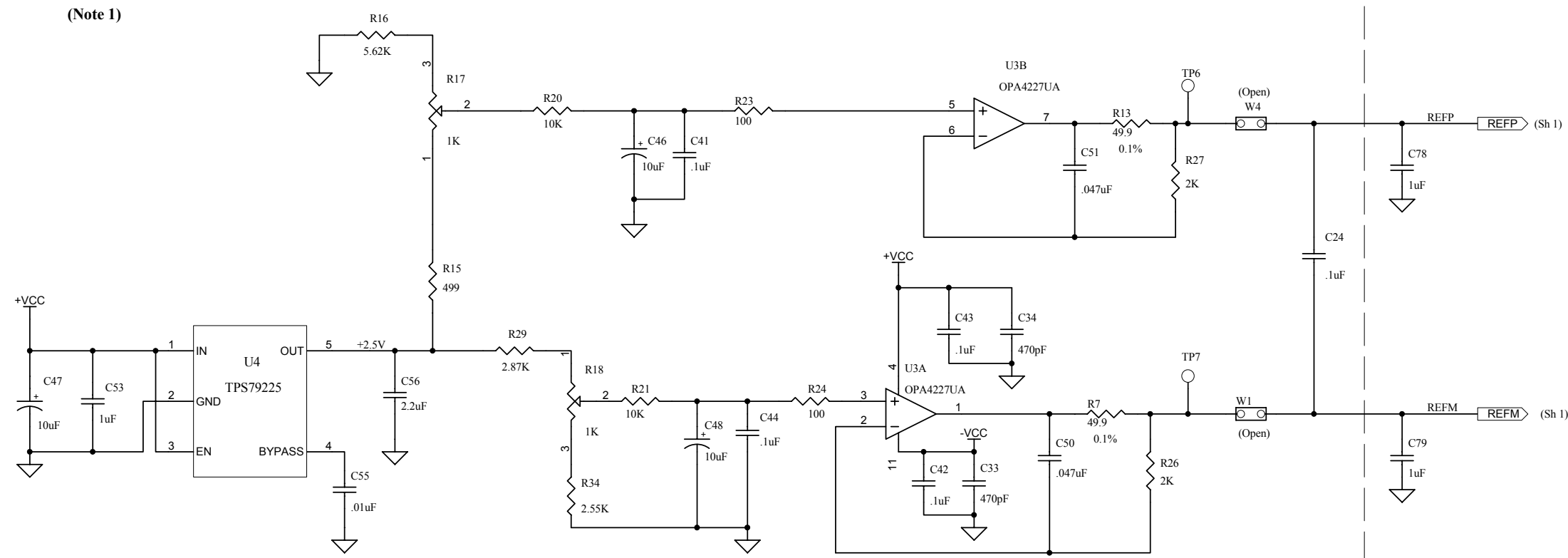
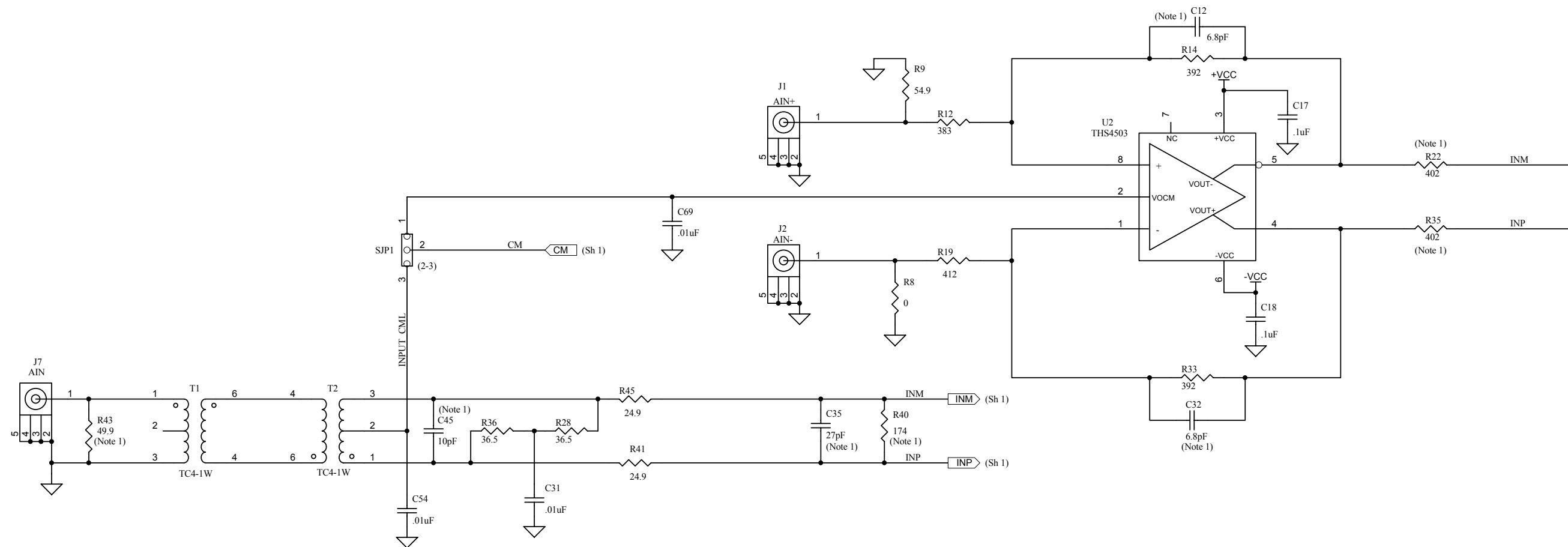
JUMPER SHUNT LOCATION: W2 PINS 1-2, W5 PINS 4-5, W1, W3, W4, W6, W7 DO NOT INSTALL;



Note 1. Part not installed

TEXAS INSTRUMENTS
 12500 TI Boulevard, Dallas, Texas 75243
 Title: **ADS5500**

| | | | |
|----------------------|-------|-------------------|----------------|
| Engineer: J. VENABLE | SIZE: | DATE: 27-Jun-2005 | REV: C |
| Drawn By: Y. DEWONCK | FILE: | | SHEET: 1 OF: 6 |



Note 1. Part not installed



12500 TI Boulevard, Dallas, Texas 75243

Title: **ADS5500**

| | | |
|----------------------|--------------------|----------------------|
| Engineer: J. VENABLE | DOCUMENT CONTROL # | REV: C |
| Drawn By: Y. DEWONCK | DATE: 27-Jun-2005 | SIZE: SHEET: 2 OF: 6 |
| FILE: | | |

D

C

B

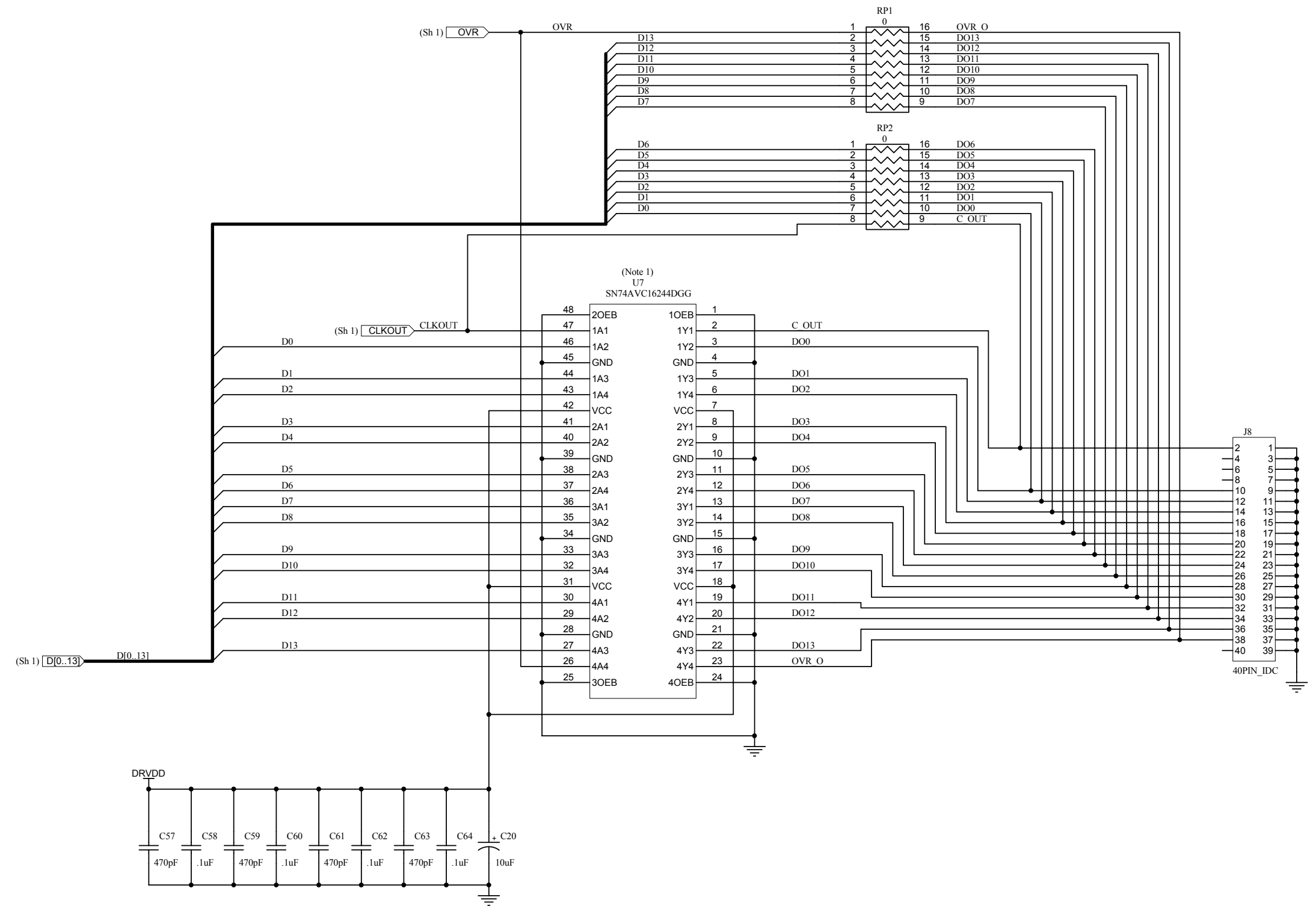
A

D

C

B

A

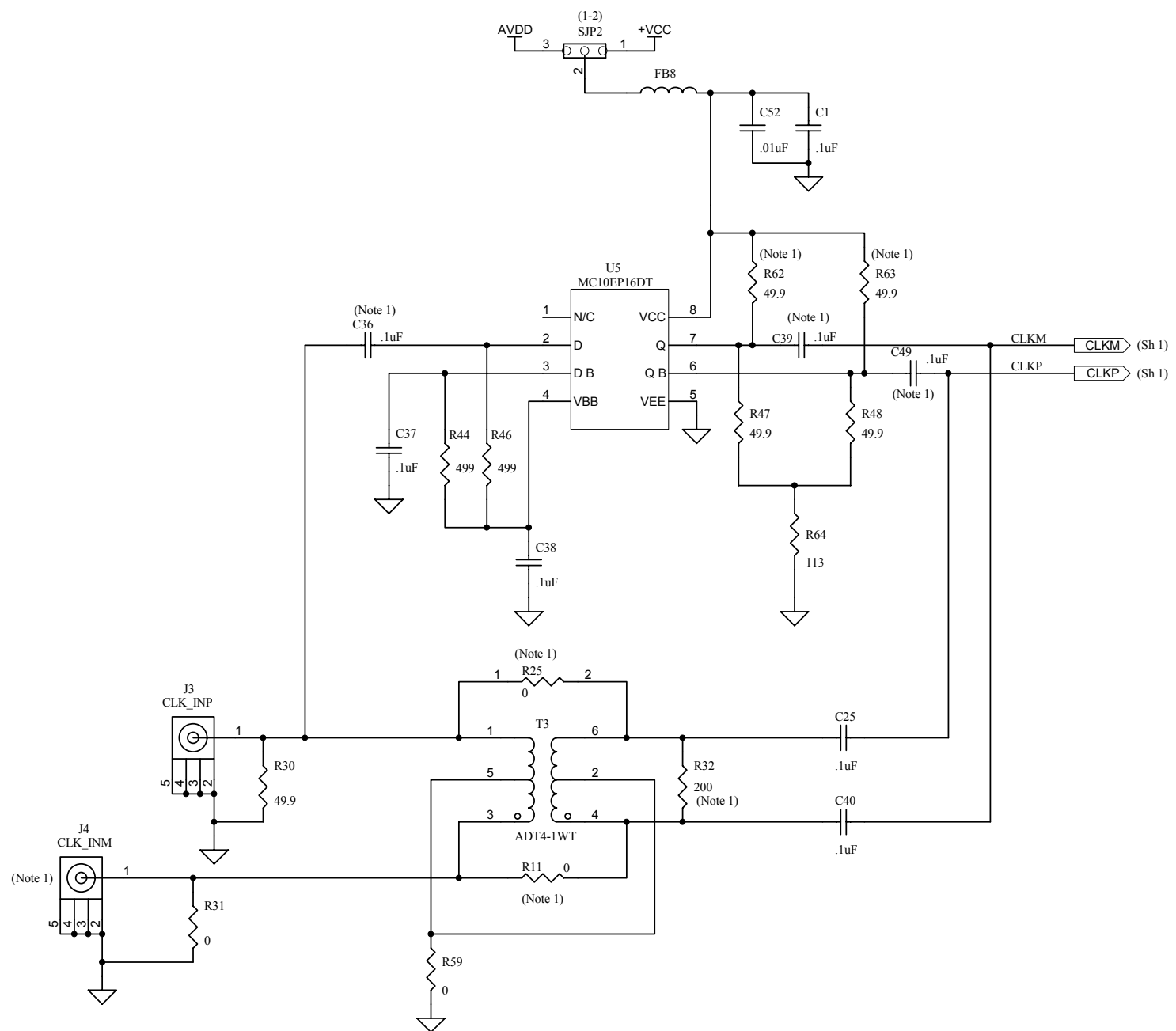


Note 1. Part not installed

TEXAS INSTRUMENTS
 12500 TI Boulevard, Dallas, Texas 75243

Title: **ADS5500**

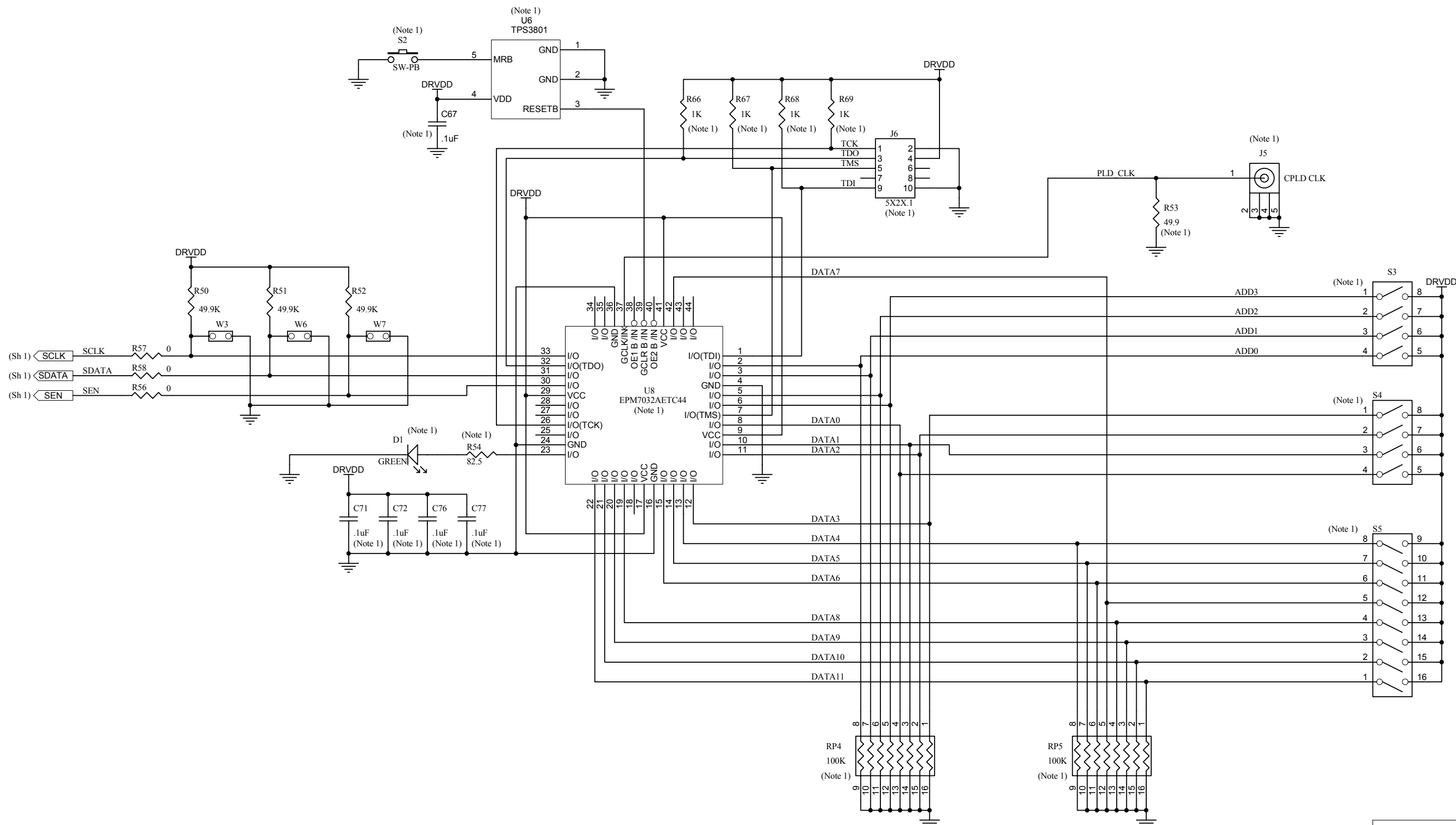
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| Engineer: J. VENABLE | DOCUMENTCONTROL # | REV: C |
| Drawn By: Y. DEWONCK | DATE: 27-Jun-2005 | SIZE: |
| FILE: | SHEET: 3 | OF: 6 |



Note 1. Part not installed

TEXAS INSTRUMENTS
 12500 TI Boulevard, Dallas, Texas 75243
 Title: **ADS5500**

| | | |
|----------------------|-------------------|----------------------|
| Engineer: J. VENABLE | DOCUMENTCONTROL # | REV: C |
| Drawn By: Y. DEWONCK | DATE: 27-Jun-2005 | SIZE: SHEET: 4 OF: 6 |

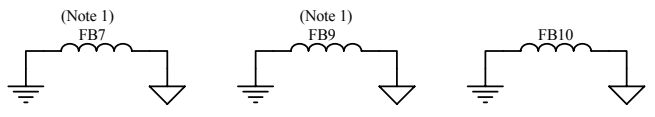
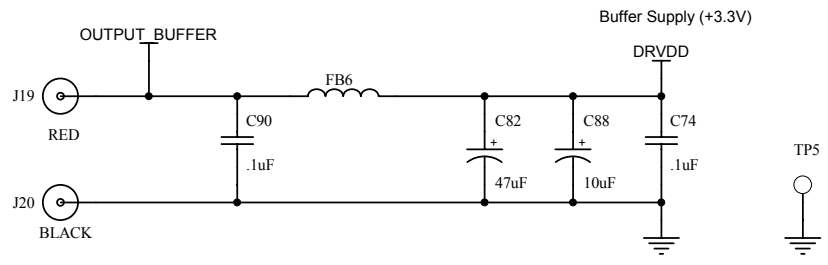
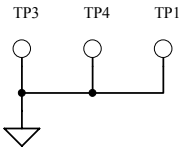
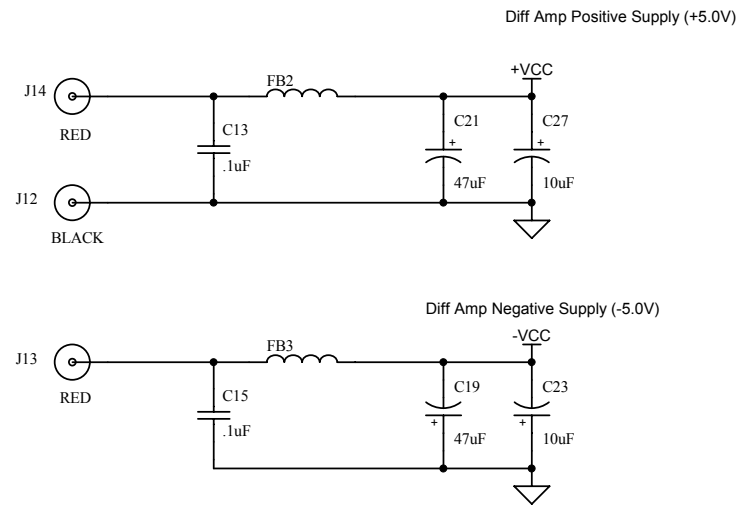
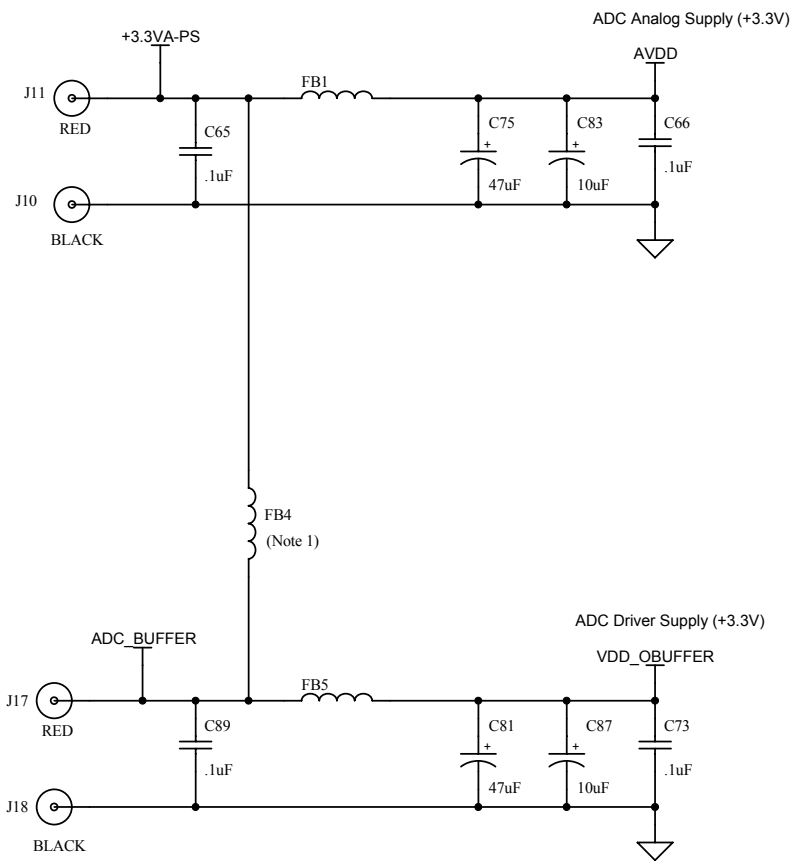


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 12500 TI Boulevard, Dallas, Texas 75243

Title: **ADS5500**

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|----------------------|-------------------|----------------|
| Engineer: J. VENABLE | DATE: 27-Jun-2005 | REV: C |
| Drawn By: Y. DEWONCK | SIZE: | SHEET: 5 OF: 6 |
| FILE: | | |



Note 1. Part not installed

TEXAS INSTRUMENTS
 12500 TI Boulevard, Dallas, Texas 75243
 Title: **ADS5500**
 DOCUMENT CONTROL # _____ REV: C
 Engineer: J. VENABLE
 Drawn By: Y. DEWONCK
 DATE: 27-Jun-2005 SIZE: _____ SHEET: 6 OF: 6