

SUMMARY

NJU26060 is a DSP suitable for audio with a sampling rate converter, two PWM modulators, a digital audio transmitter (DIT) and four GPIOs. The target program is stored in built-in OTP or external EEPROM.

The inputs of this demo board provide with a stereo analog signal and digital signal. This board designs to drive 9-ohm speaker at up to 20W per channel. According to need, this board is able to interface to external devices with the built-in DIT

SPECIFICATION

Table 1 shows specification of NJU26060 Demo Board.

Name		NJU26060 Demo Board	
Board number		APC-005-1	
Dimension		130*105mm	
Board category		Double sided board	
Power supply		DC19V	
Input	Digital		Sampling frequency: 32KHz to 192KHz
	Analog		J6/J7: SHORT 2.0Vrms/Full scale J6/J7: OPEN 1.0Vrms/Full scale
Output	Digital		Sampling frequency: 48KHz
	Headphone (16ohm-load)	0dBFS@1KHz(no-clipped)	31mW
	Speaker BTL 8ohm	0dBFS @1KHz(no-clipped)	15W
		10% THD+N @1KHz	20W
Operating temperature		Room temperature	

Table 1 Board specification

NJU26060 Demo Board

BLOCK DIAGRAM

The block diagram of NJU26060 DEMO board is shown in the figure 1. Because of a built-in SRC, this DSP operates always in master mode.

The digital audio signal outputted from DIR is converted to sampling frequency of 48KHz by SRC. The DSP uses this converted signal, executes signal processing and inputs PWM modulator. The PWM moderator-0 is amplified by TAS 5132 of TI driver and outputted to speakers. The signal of PWM moderator-1 converts to an analog signal by LPF. The converted analog signal is amplified by NJM2768 and outputted to headphone.

The digital input is SDIO and the analog input is SDI1. The ADC in this demo board is NJU3610.

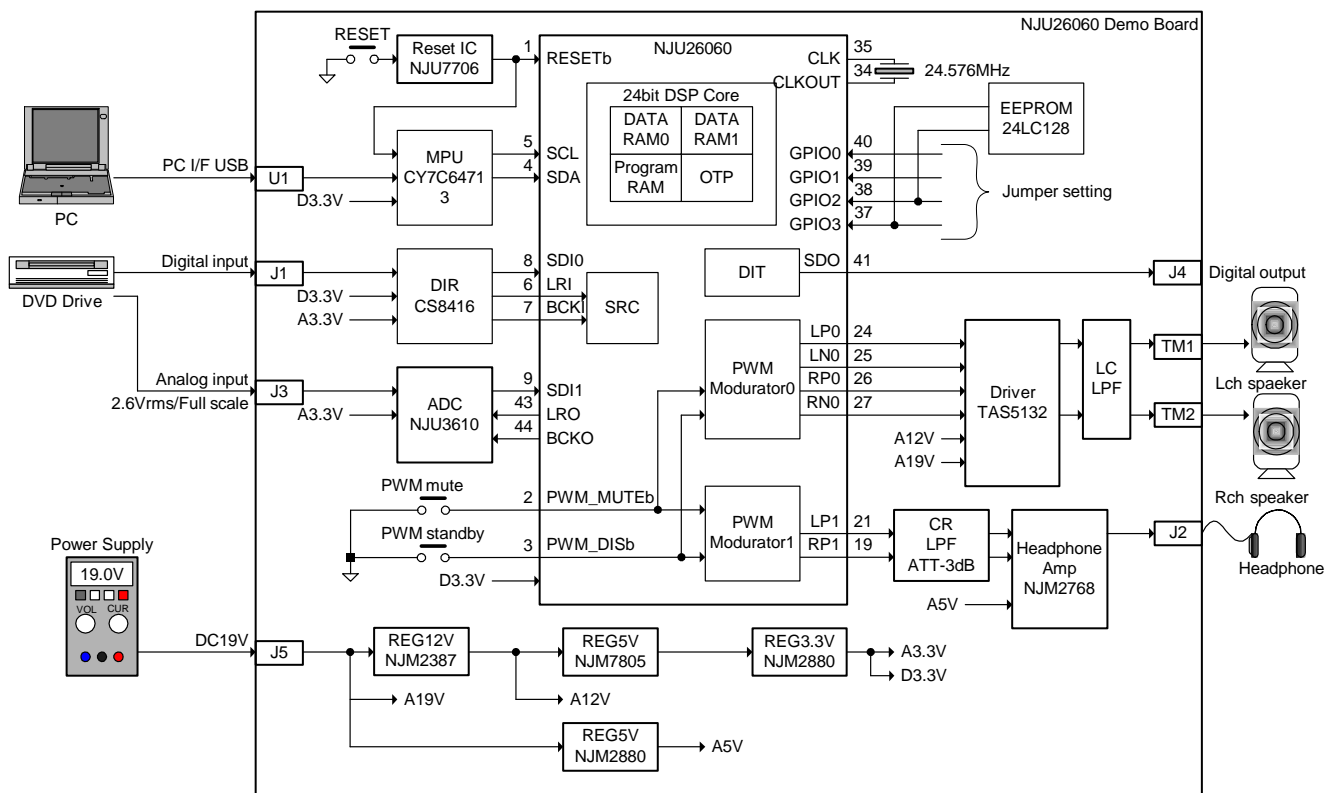


Figure 1 Block Diagram

USAGE of DEMO Board

1. According to execute DSP program, set to jumpers. (J8-J11)
2. Connect to devices.
3. Power on.
4. Execute a GUI..

Jumper setting description

Selection of DSP program

J8 (GPIO)=H: external EEPROM

J8 (GPIO)=L: built-in OTP

This section shows an example used EEPROM.

Symbol	Name	H	L
J8	GPIO0	EEPROM	OTP
J9	GPIO1	No use	No use
J10	GPIO2	EEPROM	No use
J11	GPIO3	EEPROM	No use

Jumper setting of J6/J7

Short: 2Vrms input/Full scale

Open: 1Vrms Input/Full scale

Parts layout

Figure 2 shows the parts layout of NJU26060 Demo Board.

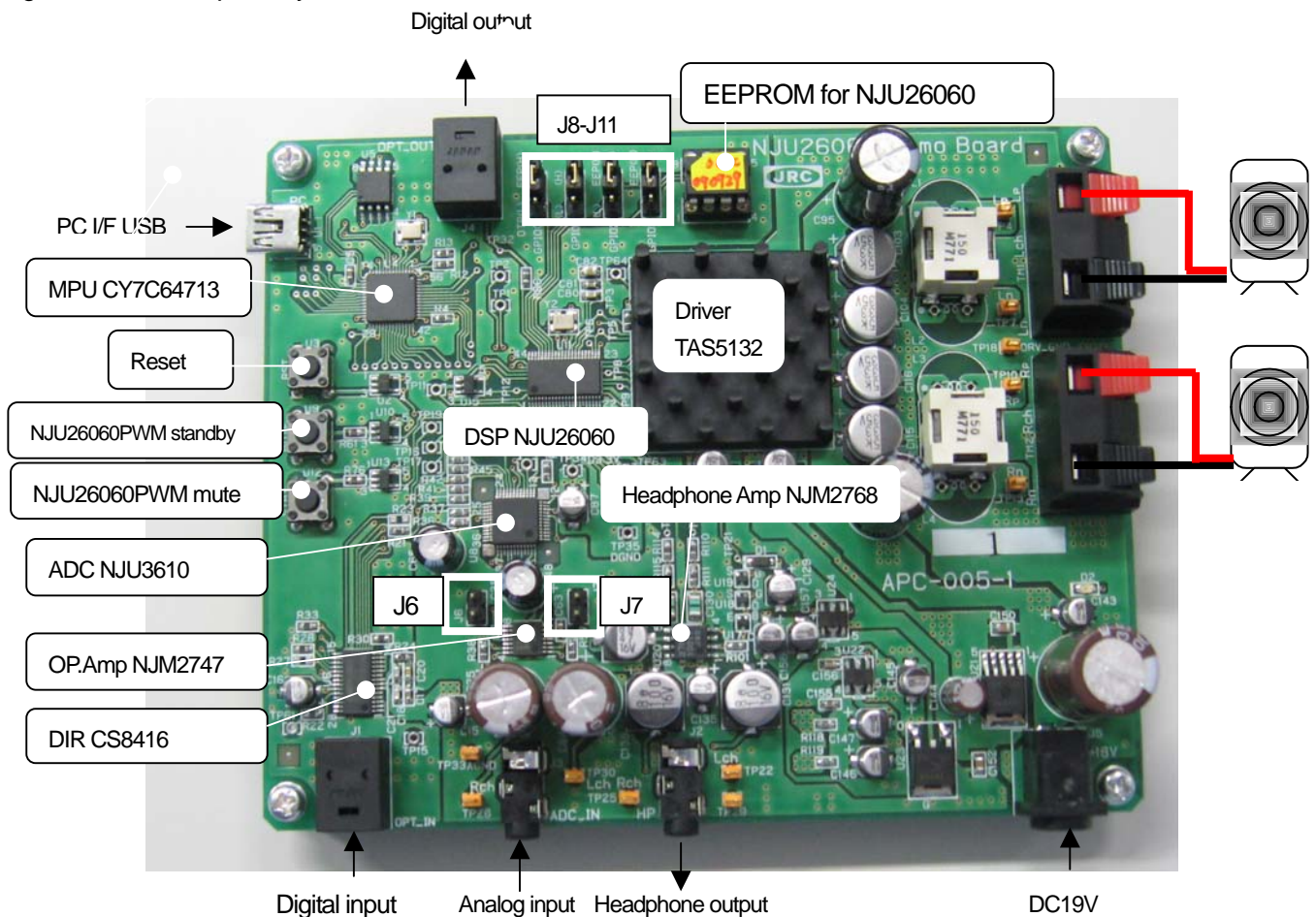


Figure 2 Parts layout

NJU26060 Demo Board

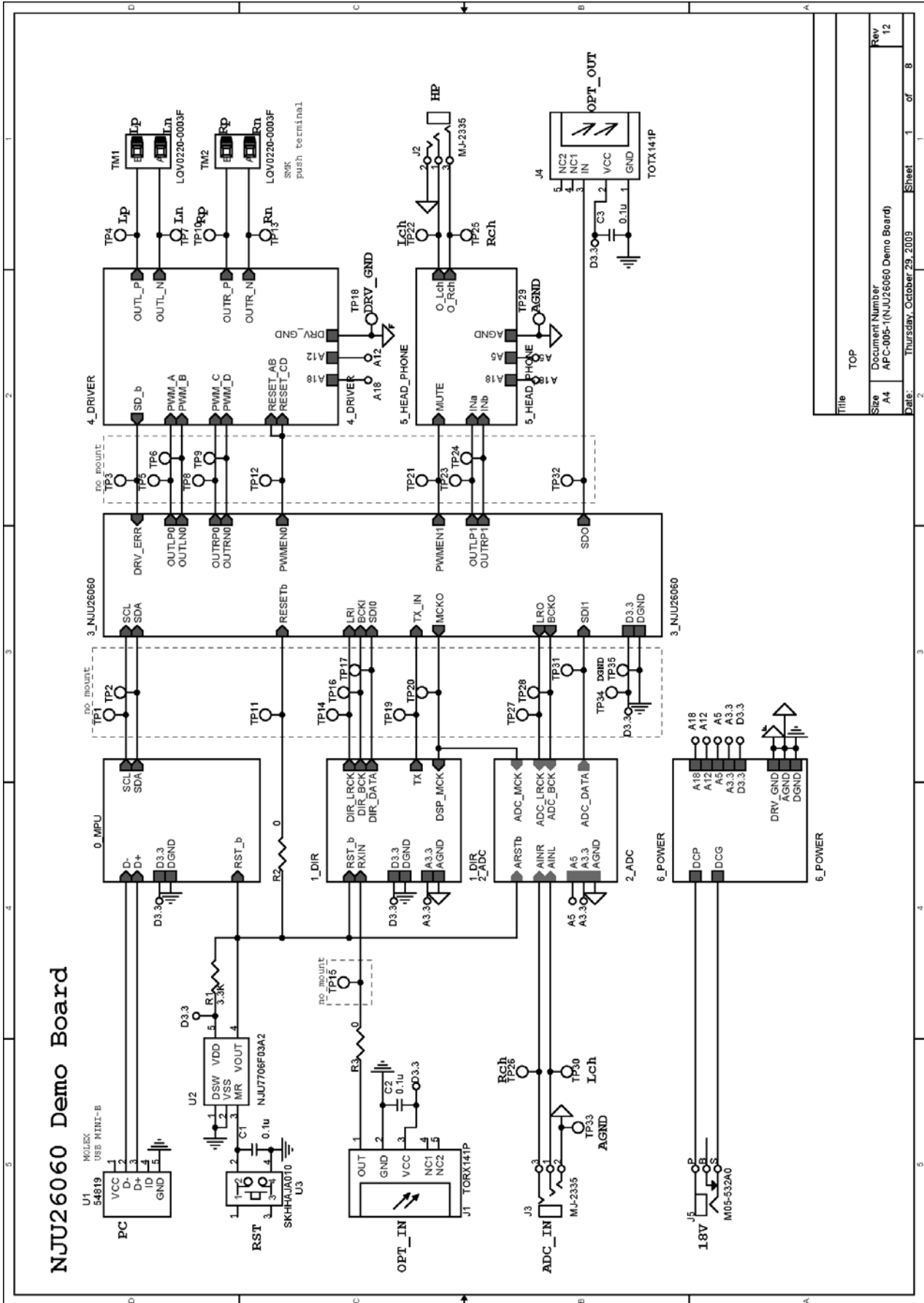
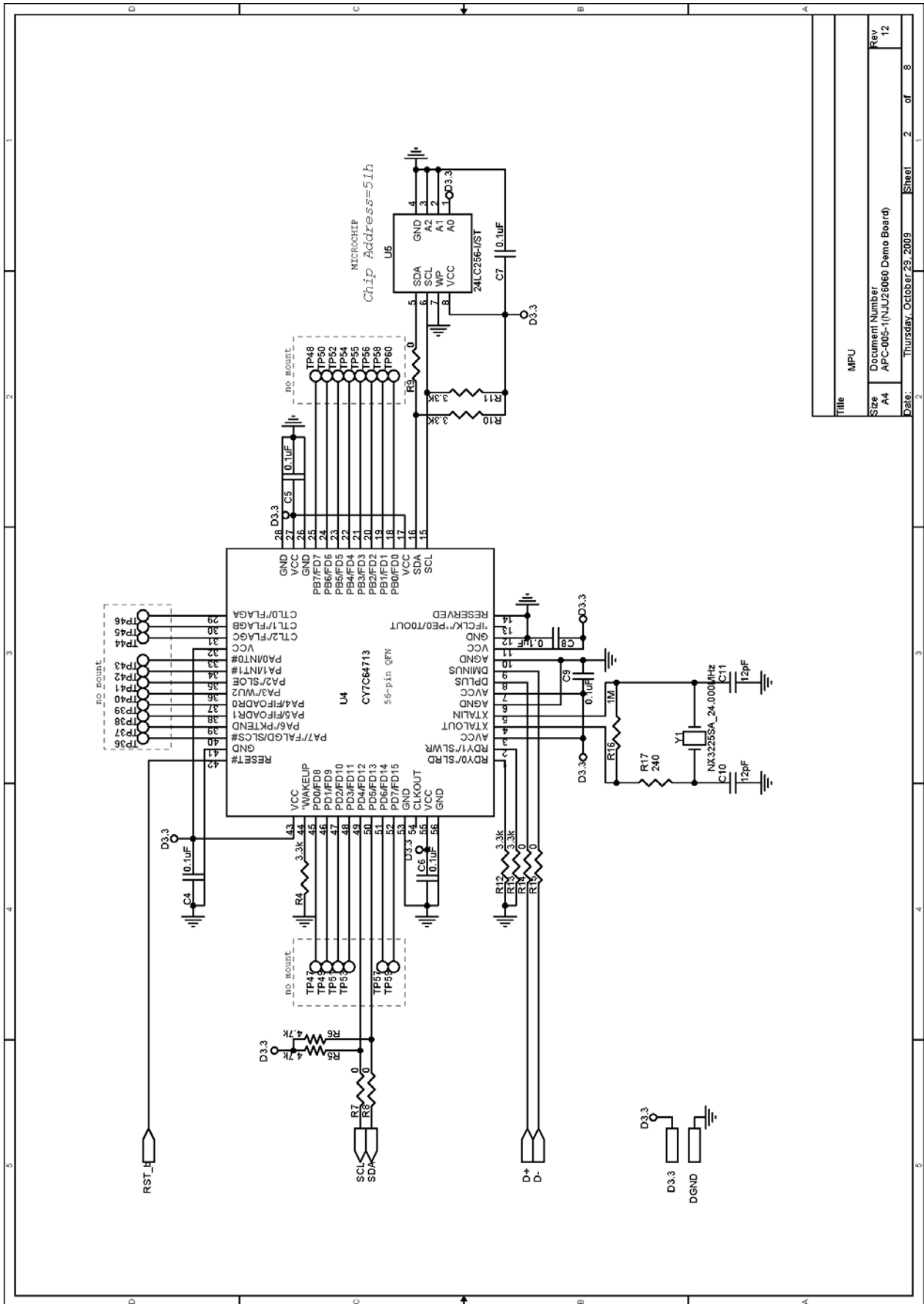


Figure 3 NJU26060 Demo Board (APC-005-1)(1/8) TOP block

NJU26060 Demo Board



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Figure 4 NJU26060 Demo Board (APC-005-1)(2/8) MPU block

NJU26060 Demo Board

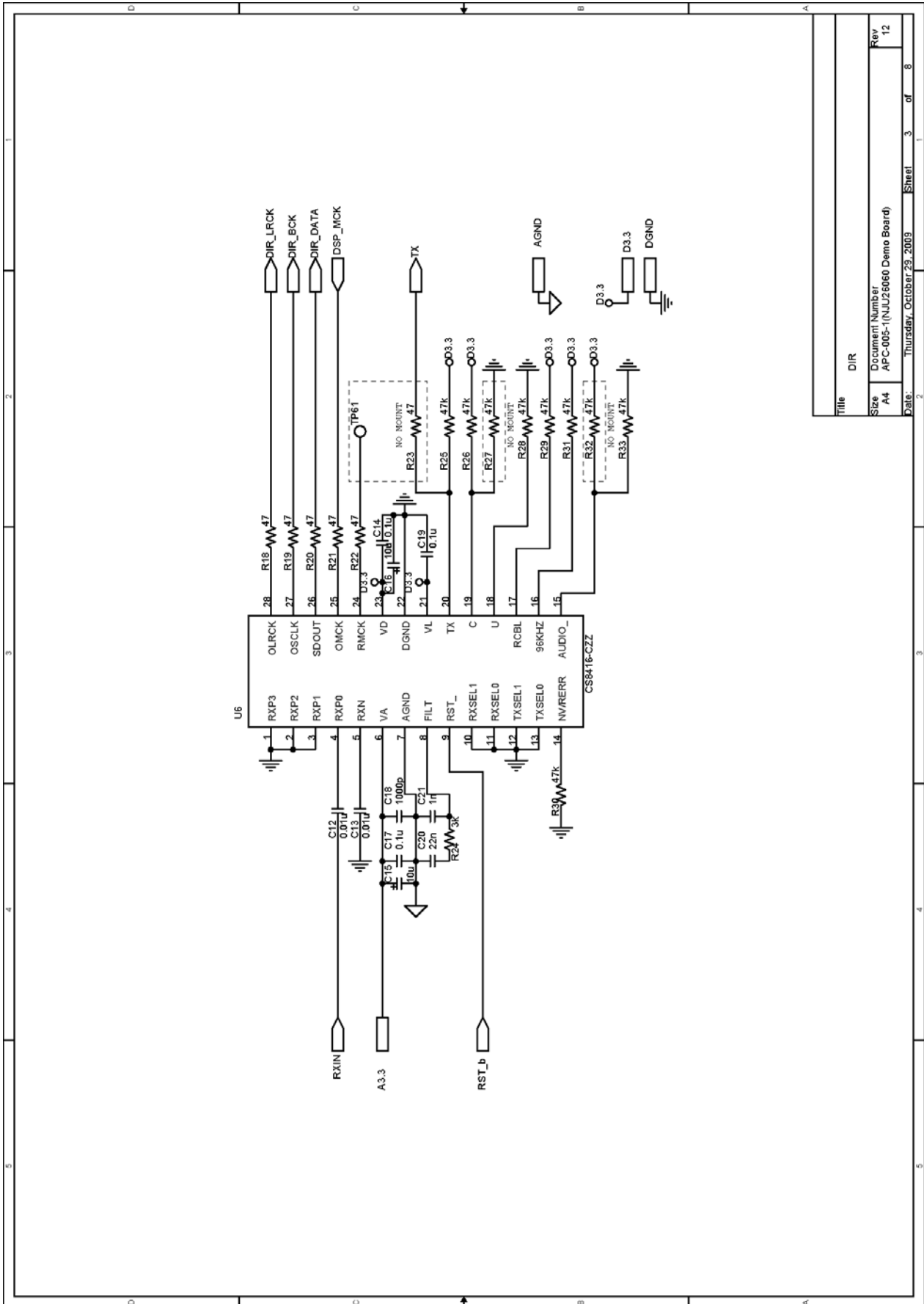


Figure 5 NJU26060 Demo Board (APC-005-1)(3/8) DIR block

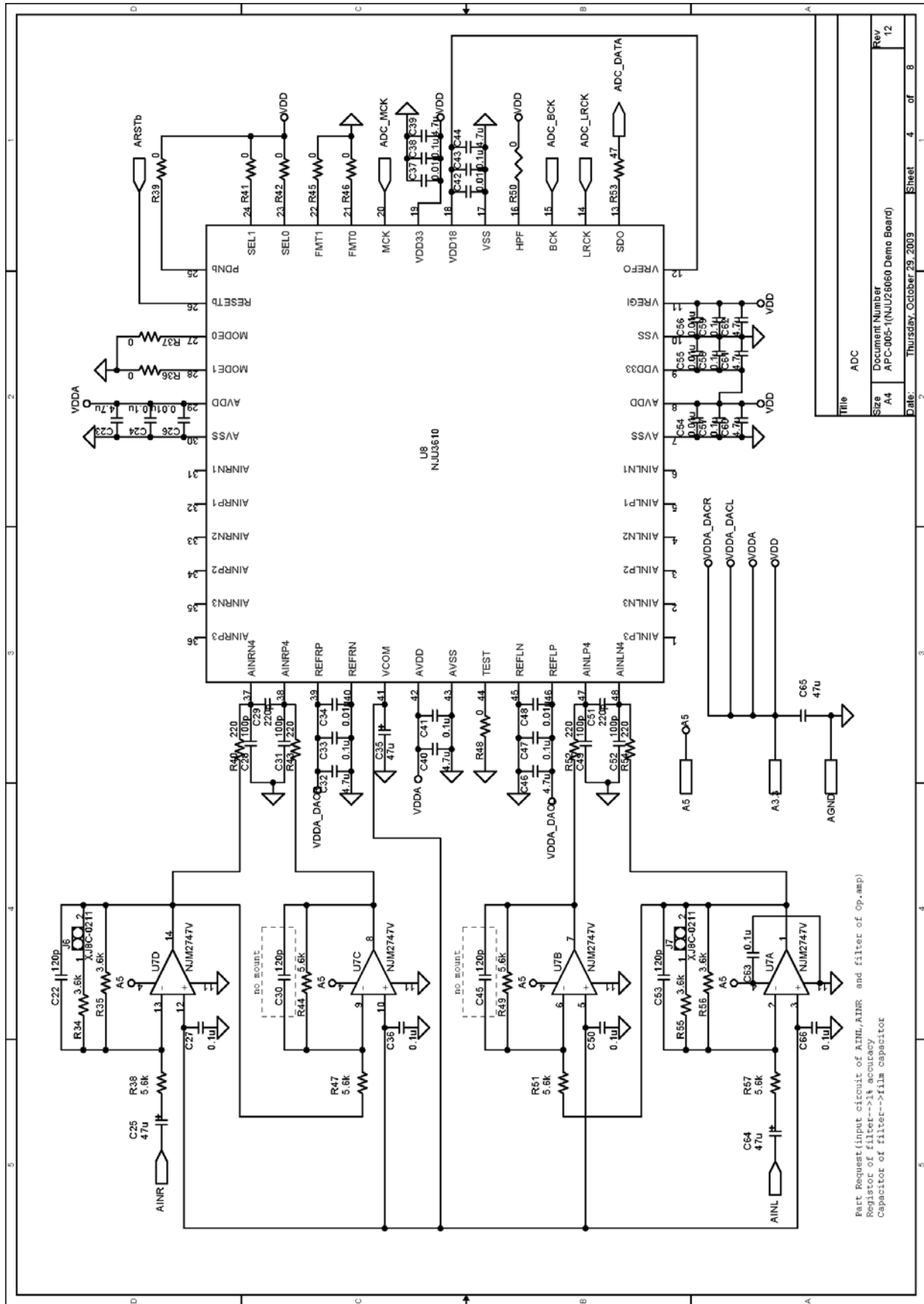
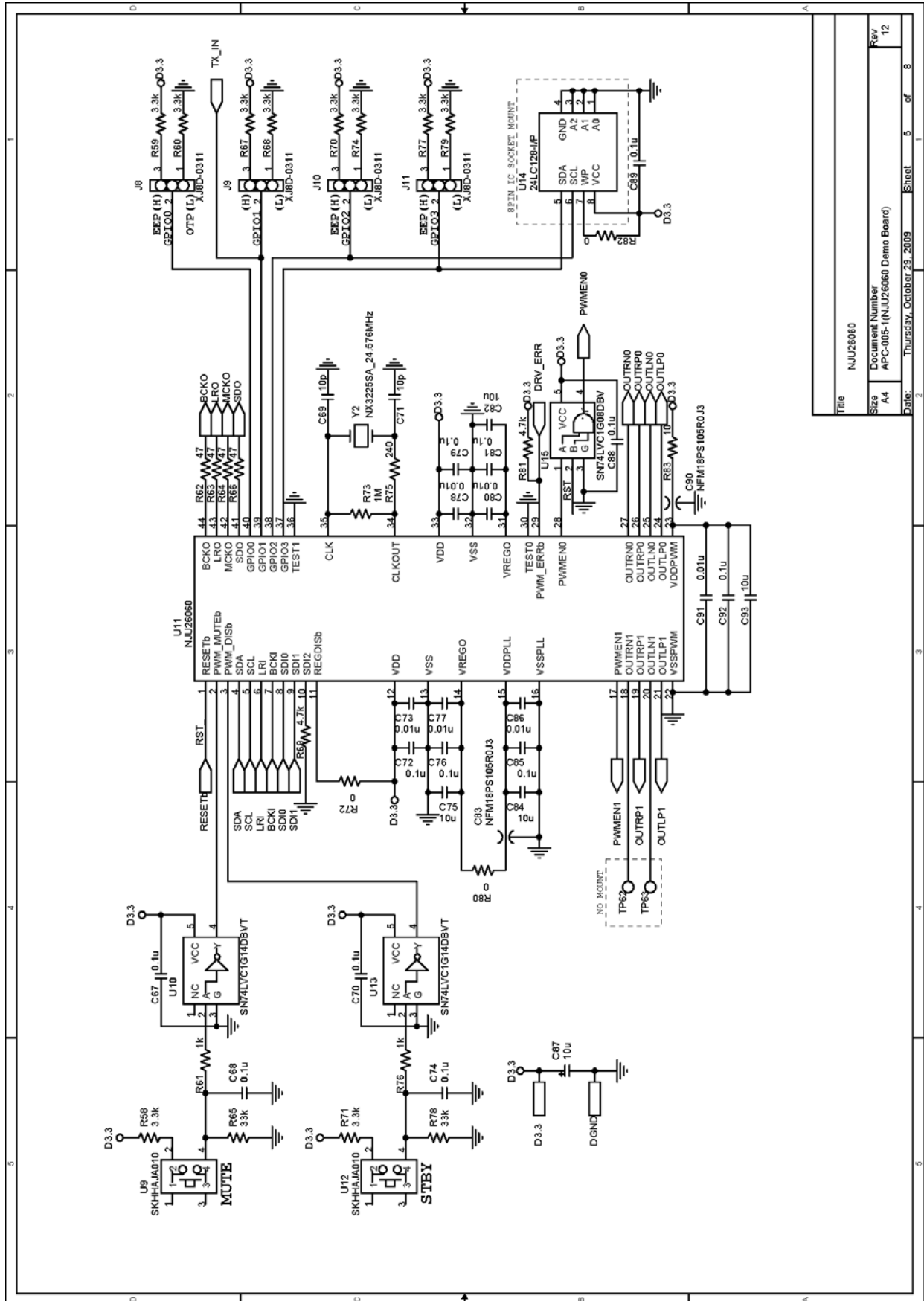


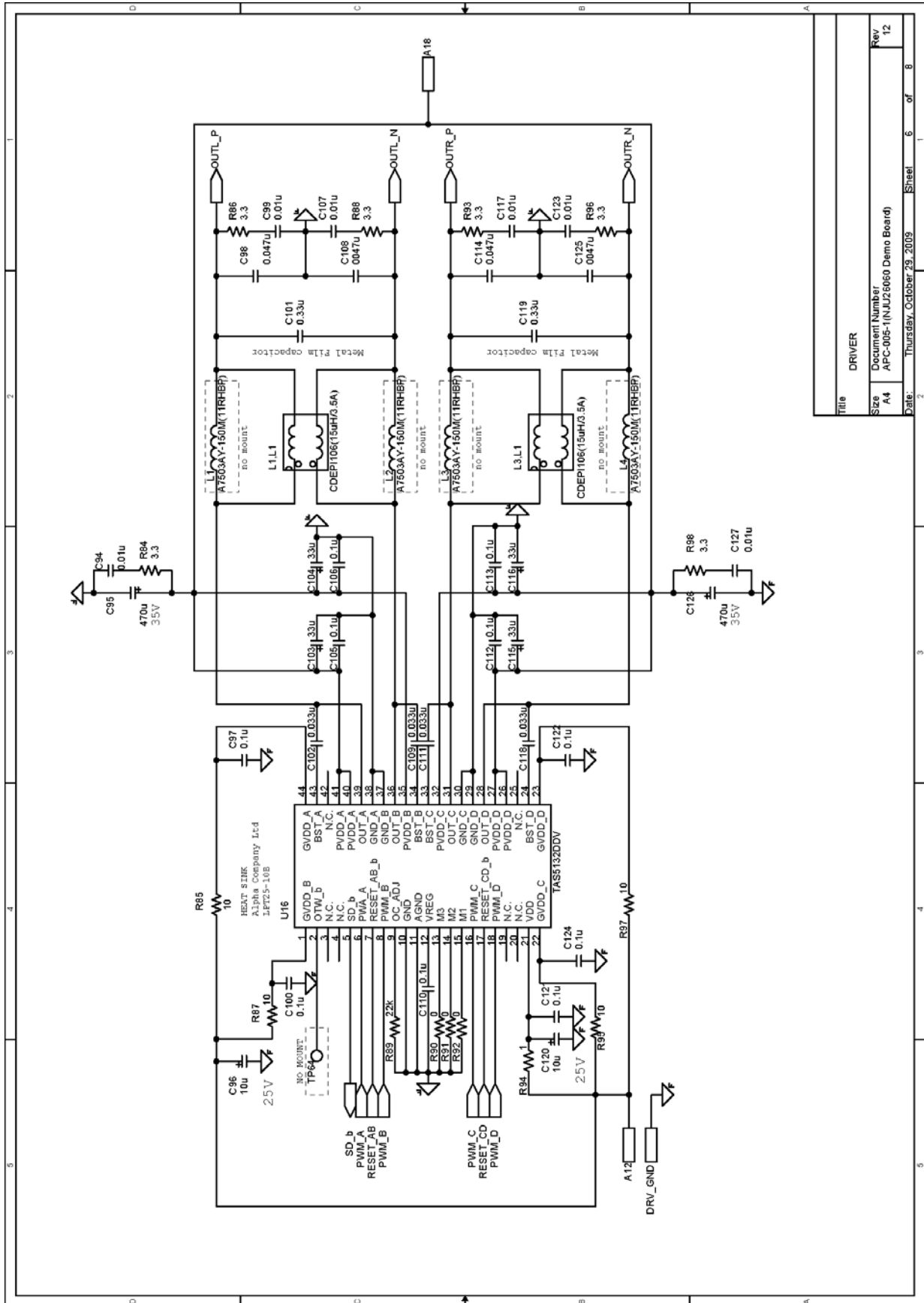
Figure 6 NJU26060 Demo Board (APC-005-1)(4/8) ADC block

NJU26060 Demo Board



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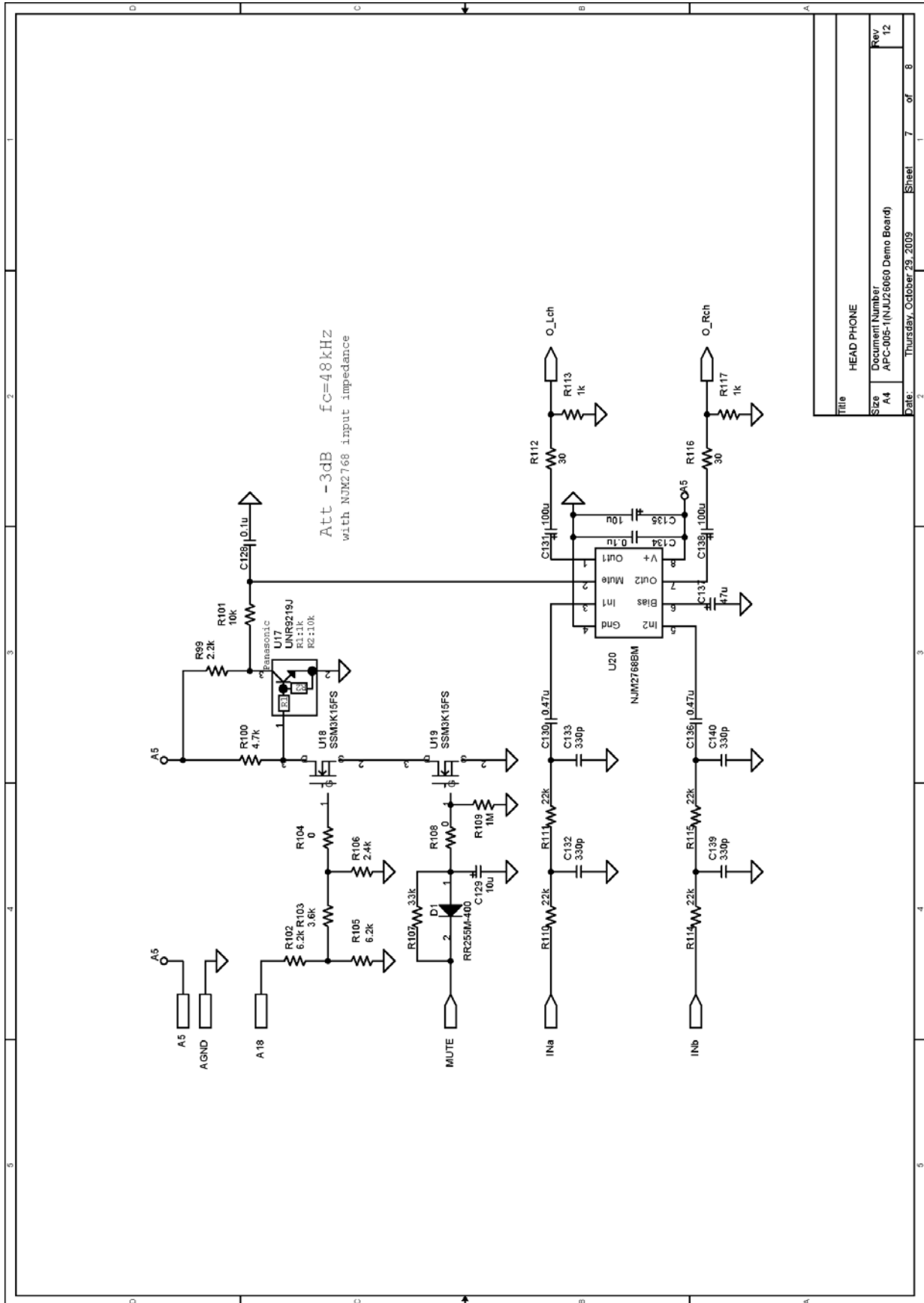
Figure 7 NJU26060 Demo Board (APC-005-1)(5/8) NJU26060 block



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Figure 8 NJU26060 Demo Board (APC-005-1)(6/8) Driver block

NJU26060 Demo Board



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Figure 9 NJU26060 Demo Board (APC-005-1)(7/8) Headphone block

NJU26060 Demo Board

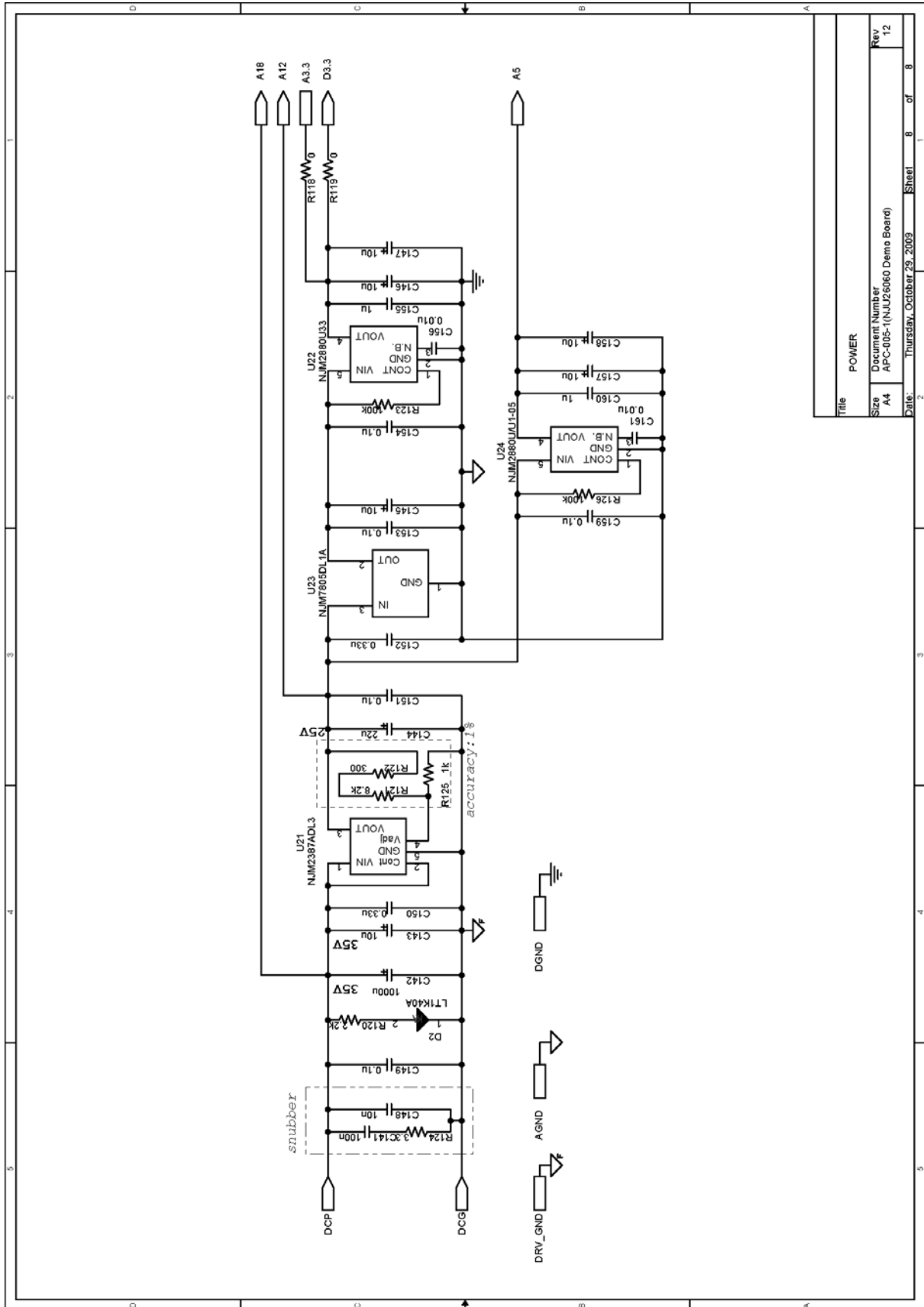


Figure 10 NJU26060 Demo Board (APC-005-1)(8/8) Power block

NJU26060 Demo Board

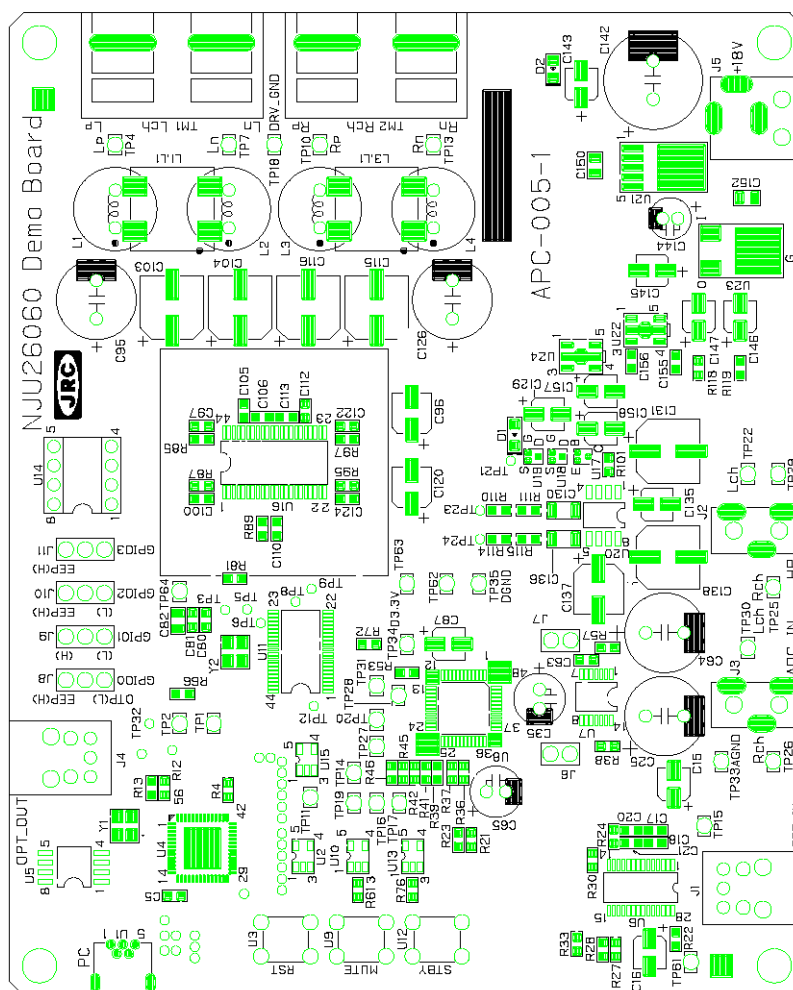


Figure 11 NJU26060 Demo Board (APC-005-1) component side silk

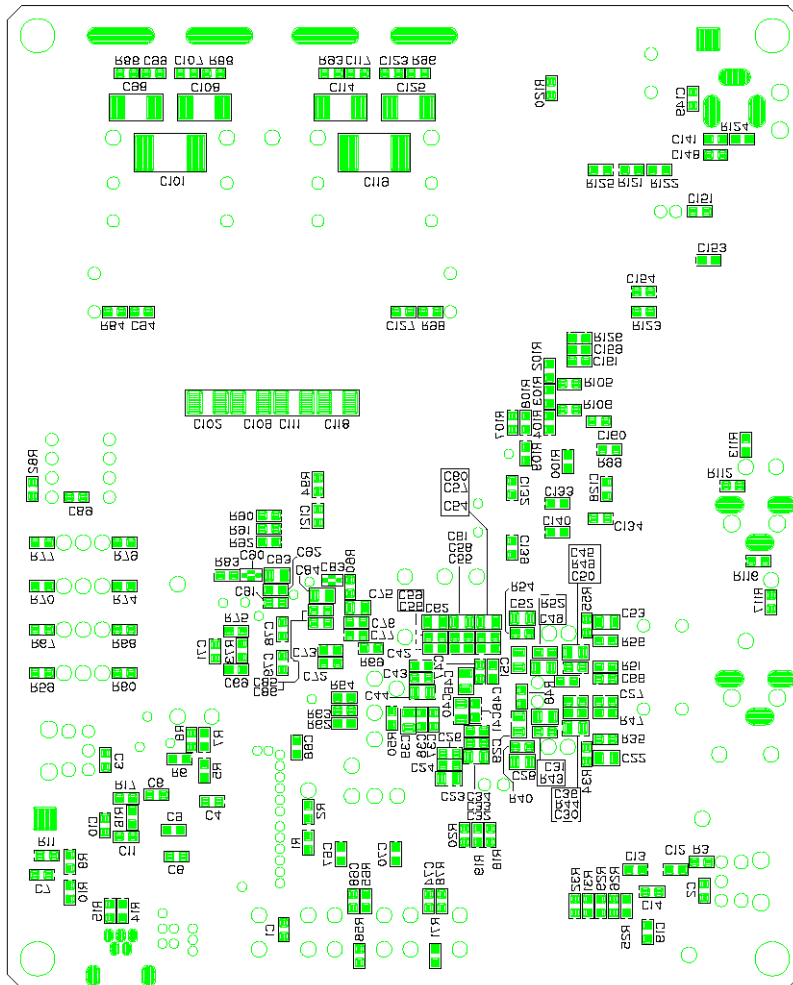


Figure 12 NJU26060 Demo Board (APC-005-1) Backside silk

NJU26060 Demo Board

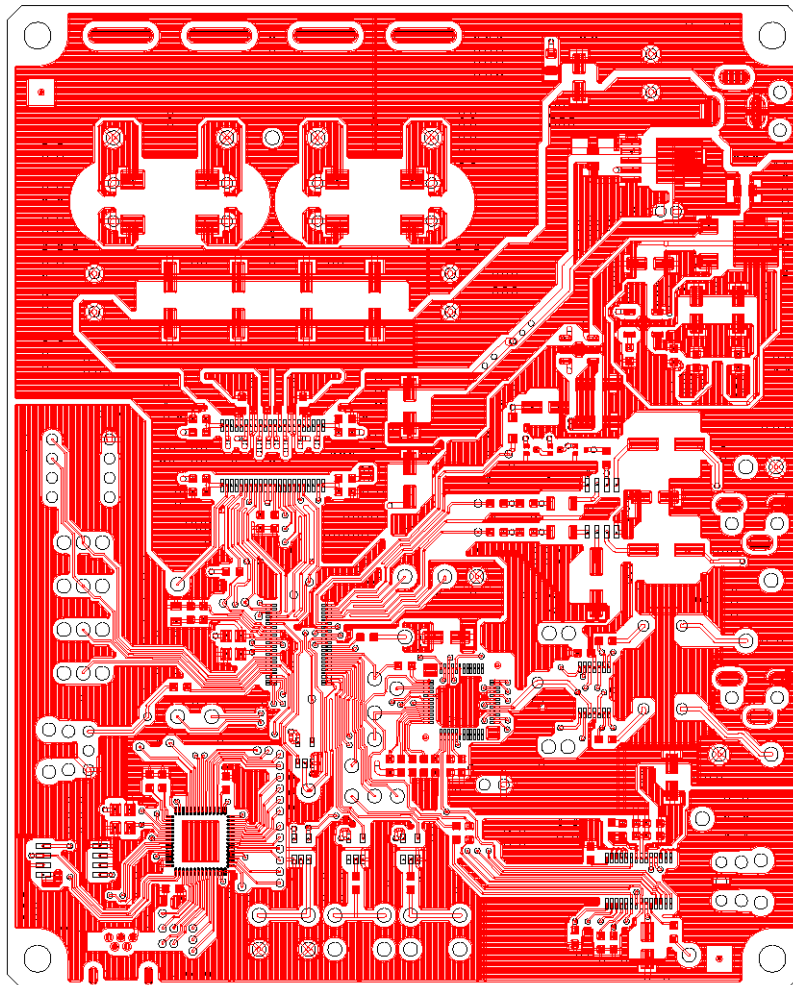


Figure 13 NJU26060 Demo Board (APC-005-1) component side pattern

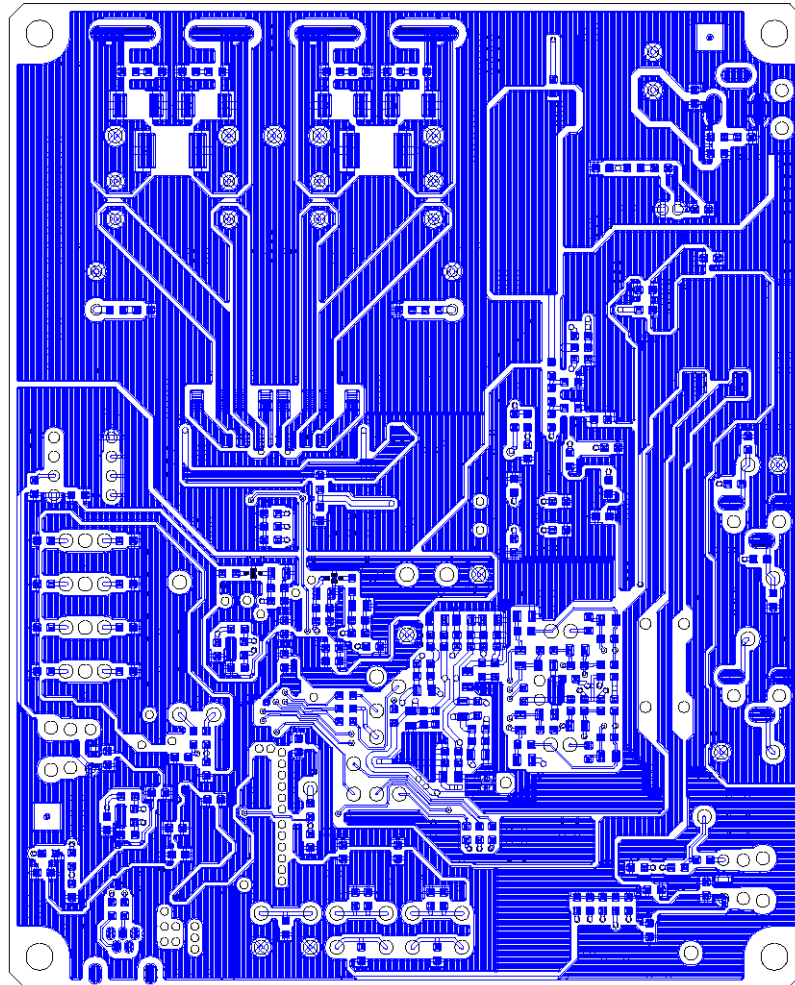


Figure 14 NJU26060 Demo Board (APC-005-1) backside pattern

NJU26060 Demo Board

MEMO

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