

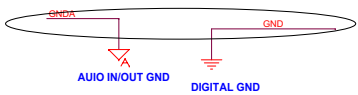
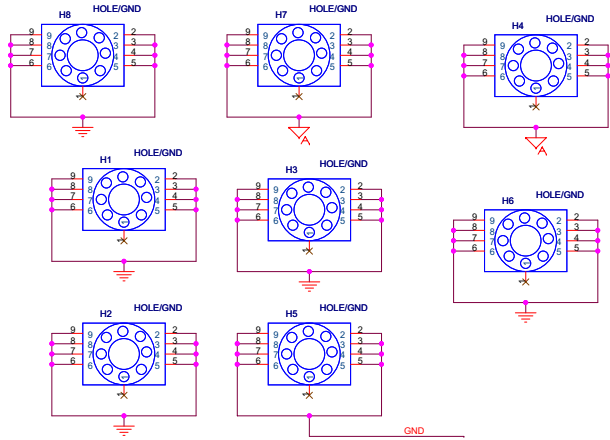
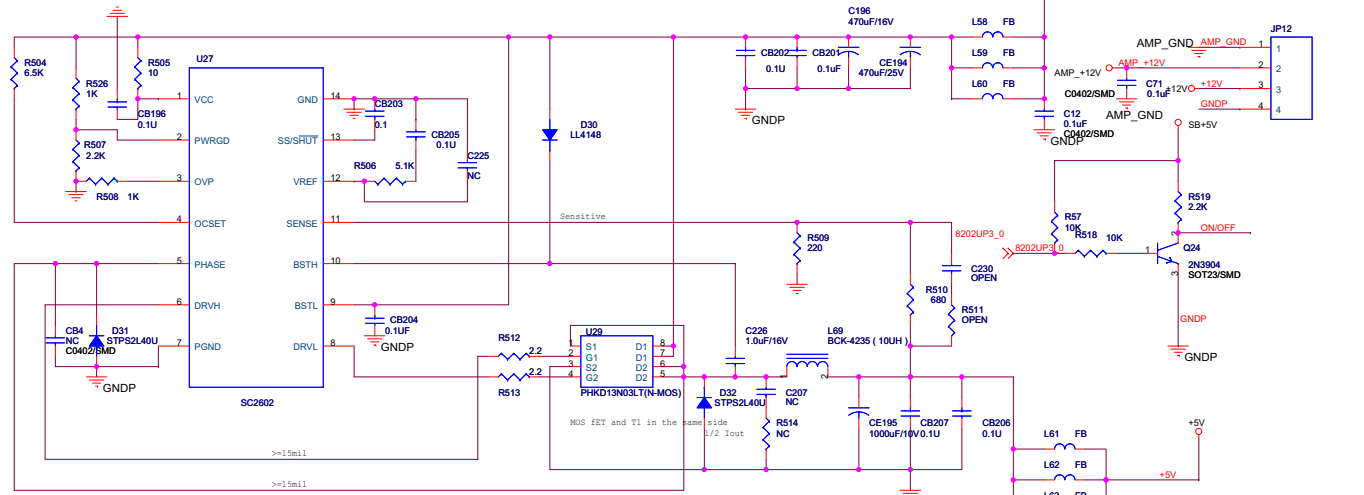
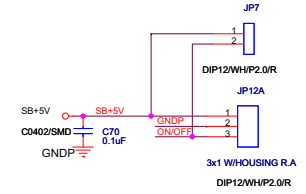
MT8202M1V MT8202E (PBGA388) CRT/LCDTV DEMO/VERIFICATION BOARD 4 LAYERS

"GND Need Very Strong"



1. INDEX / POWER / RESET
2. LDO
3. MT8202E PBGA388
4. MT8202 ANALOG DECOUPLING
5. MT8202 DIGITAL DECOUPLING
6. DDR MEMORY & FLASH
7. HDMI INPUT -SiI9011 / MT8293
8. CCIR656 / MT5351 INTERFACE
9. VGA IN & PC AUDIO IN
10. CS5340 ADC & AV BOARD I/F
11. AUDIO / VIDEO IN CIRCUIT
12. CS4334 / WM8766(8768) ADAC
13. LVDS / CRT / TTL OUT
14. BACK LIGHT / KEYPAD
15. CARD I/F & DEBUG PORT & GPIO LIST

Rev	History	F#	Date
TCL_V1.0	Modified		2005/09/30
TCL_V1.4	Modified		2006/05/25
TCL_V1.5	Modified		2006/08/17



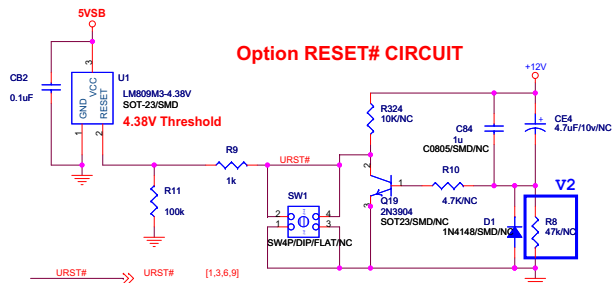
$$V_{in} \cdot R_1 \cdot 200\mu A = V_{in} - R_{ds(on)} \cdot I_{limite}$$

$$R_1 = R_{ds(on)} \cdot \max(I_{limite}) / 200\mu A = 0.023 \cdot 2A \cdot 1.25 / 200\mu A = 184$$

$$R_1 = R_{ds(on)} \cdot \max(I_{limite}) / 200\mu A = 0.023 \cdot 4A \cdot 1.25 / 200\mu A = 368$$

SC1102	BOM	SC1104	BOM	?
R1	184(2A)/368(5A)	D1	LL4148	*1
D1	MBR1130	D2	MBR1130L	*1
D2	MBR5020	Q1A,Q2B	STP40NE	*2
D3	MBRD1035	C1	100uF/16V	*1
Q1A,Q2B	STP40NE	C2,C3,C4	270uF/16V	*3
C1	100uF/16V	C5	?	*1
C2,C3,C4	270uF/16V	C6	1uF	*1
C5	?	C7,C8	1uF	*2
C6	1uF	C9	?	*1
C7,C8	1uF	C10	11,12,13,14 180uF/6V	*5
C9	?	T1	6uH	*1
C10	11,12,13,14 180uF/6V	R6	508 0603	*1
T1	6uH	R7	127 0603	*1
R1	184 0805	R8	?	*1
R2	10 0805	R9	2.2 0603	*1
R3	5.1K 0603	R10	2.2 0603	*1
R4	2K 0603	R11	?	*1
R5	475 0603	R12	?	*1
R6	508 0603	R13	?	*1
R7	127 0603	R14	?	*1
R8	?	R15	?	*1
R9	2.2 0603	R16	?	*1
R10	2.2 0603	R17	?	*1
R11	?	R18	?	*1
R12	?	R19	?	*1
R13	?	R20	?	*1
R14	?	U1	SC1102	*1
R15	?	U2	SC1104	*1
R16	?			
R17	?			
R18	?			
R19	?			
R20	?			

Option RESET# CIRCUIT

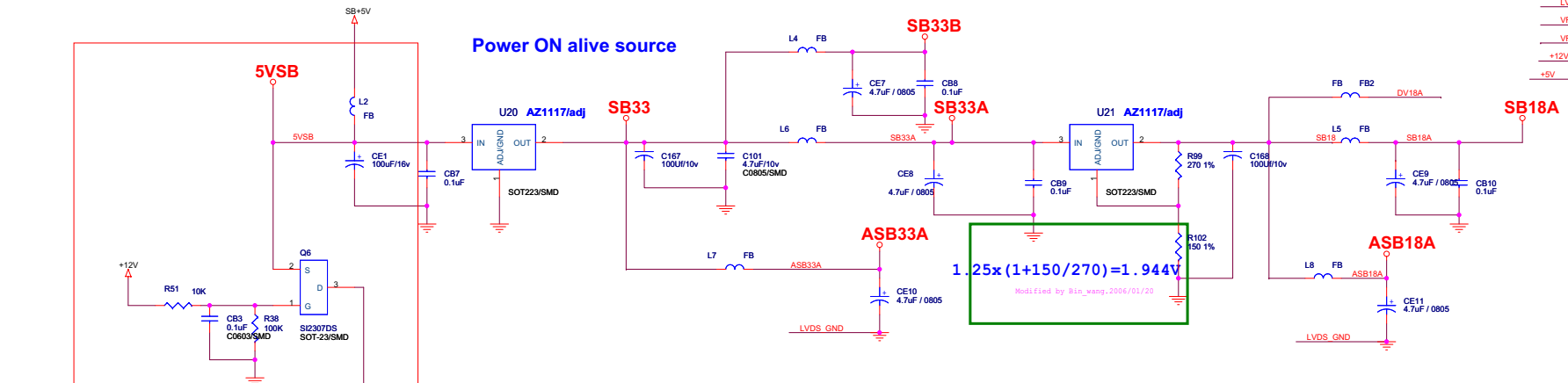


Remark:

The components which did not marked the value in the circuit are all using in SC1104 solution.

- AV33A >> AV33A [2,3,4]
- DV33B >> DV33B [7,8,9,12,13,14]
- LVDS_GND >> LVDS_GND [3,4,14]
- VFE_GND >> VFE_GND [3,4,10,11]
- VFE_GND1 >> VFE_GND1 [2,4,8,9,10,12]
- +12V >> +12V [1,2,9,10,11,12,14]
- +5V >> +5V [1,2,4,6,8,9,10,11,12,13,14]

Power ON alive source

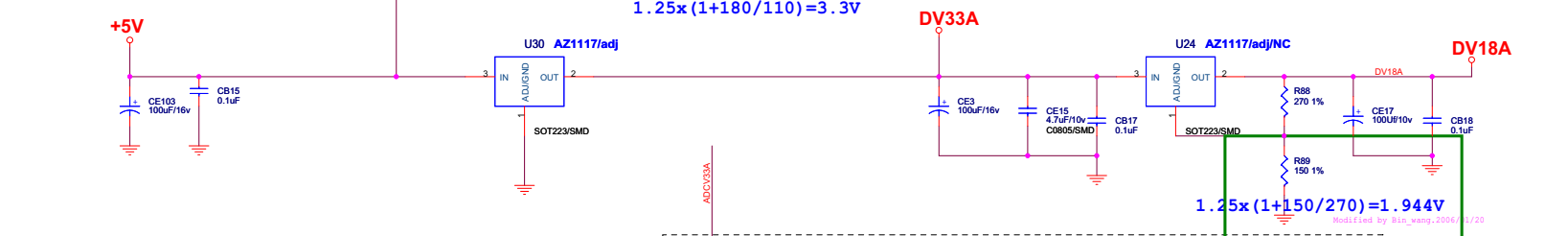


在STANDBY状态下，由SB+5给DV33A、DV18A、AV18A、AV33A提供电源

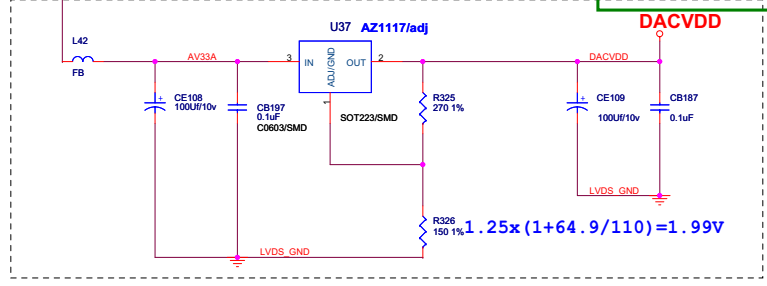
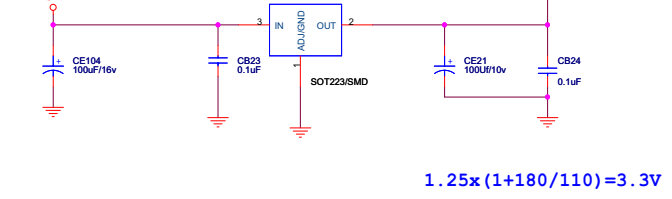
ADCV33A AV33A



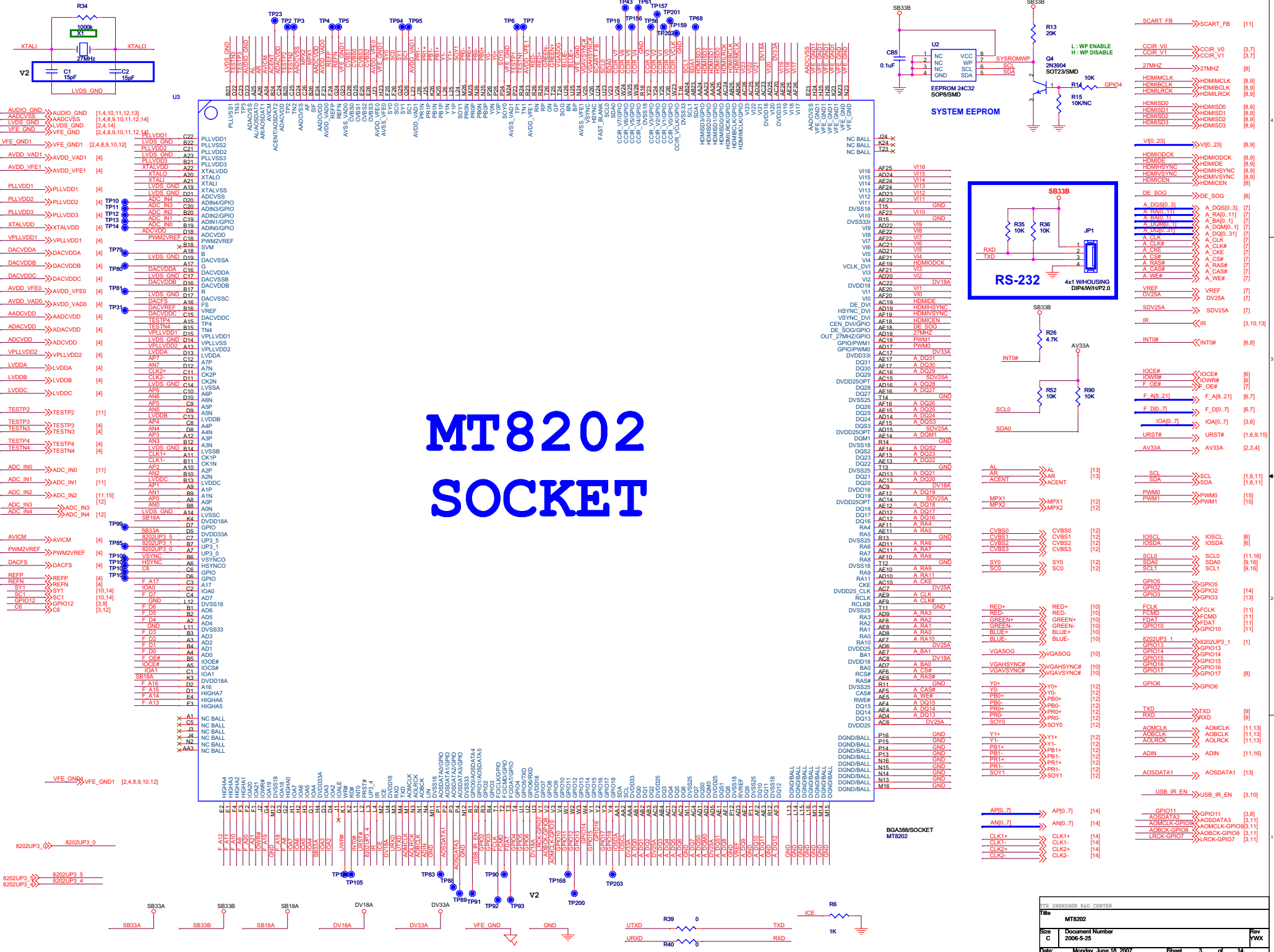
DV33A



DV33B



MT8202 SOCKET



SHENZHEN R&D CENTER			
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C	2006-5-25		
Date:	Monday, June 18, 2007	Sheet	3 of 14

AV33A >> AV33A [2,3,4]
 XTALVDD >> XTALVDD [3]
 ADCVDD >> ADCVDD [3]
 AVICM >> AVICM [3]
 PWM2VREF >> PWM2VREF [3]

DACFS >> DACFS [3]
 LVDDA >> LVDDA [3]
 LVDDB >> LVDDB [3]
 LVDDC >> LVDDC [3]

AVDD_VFE0 >> AVDD_VFE0 [3]
 AVDD_VAD0 >> AVDD_VAD0 [3]
 AACVDD >> AACVDD [3]
 ADACVDD >> ADACVDD [3]
 VPLLVD1 >> VPLLVD1 [3]
 VPLLVD2 >> VPLLVD2 [3]

AVDD_VAD1 >> AVDD_VAD1 [3]
 AVDD_VFE1 >> AVDD_VFE1 [3]
 PLLVD1 >> PLLVD1 [3]
 PLLVD2 >> PLLVD2 [3]
 PLLVD3 >> PLLVD3 [3]

DACVDDA >> DACVDDA [3]
 DACVDDB >> DACVDDB [3]
 DACVDDC >> DACVDDC [3]

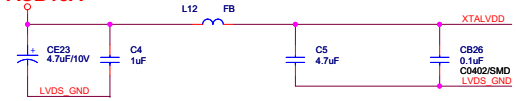
TESTP3 >> TESTP3 [3]
 TESTN3 >> TESTN3 [3]
 TESTP4 >> TESTP4 [3]
 TESTN4 >> TESTN4 [3]

AUDIO_GND >> AUDIO_GND [1,3,10,11,12,13]
 LVDS_GND >> LVDS_GND [2,3,14]
 VFE_GND >> VFE_GND [2,3,10,11]
 AACVSS >> AACVSS [1,3,10,11,12,13]
 VFE_GND1 >> VFE_GND1 [2,3,11,12]
 REFP >> REFP [3]
 REFN >> REFN [3]
 GNDA >> GNDA [1,3,10,11,12,13]

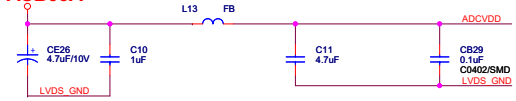
AACVSS >> AACVSS [1,3,8,9,10,11,12,14]
 VFE_GND >> VFE_GND [2,3,8,9,10,11,12,14]
 +5V >> +5V [1,2,4,6,8,9,10,11,12,13,14]

STANDBY ANALOG POWER

ASB18A

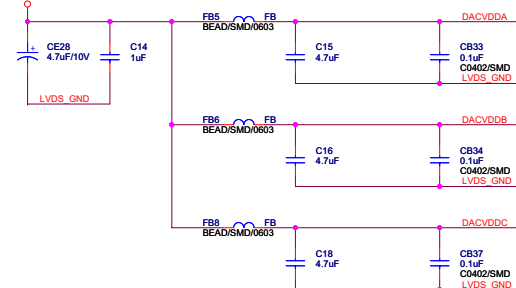


ASB33A



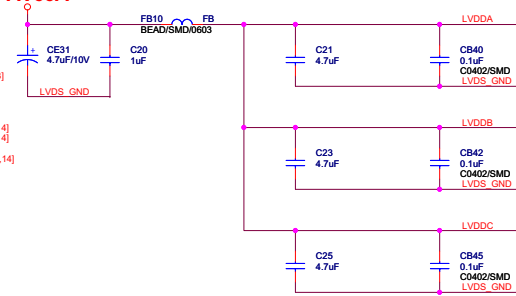
NORMAL VIDEO DAC POWER

DACVDD



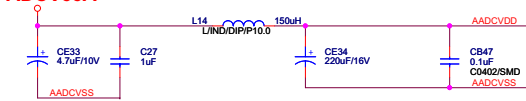
NORMAL VIDEO DAC POWER

AV33A

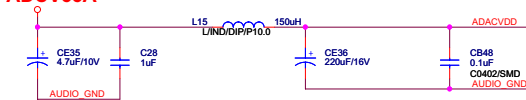


NORMAL AUDIO ADC / DAC POWER

ADC33A

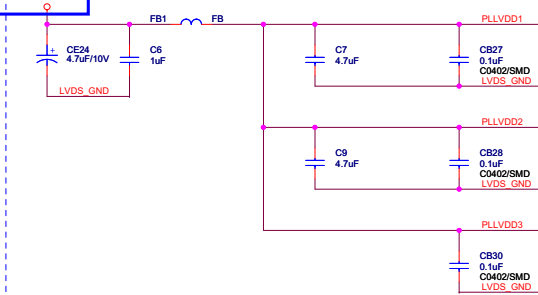


ADC33A

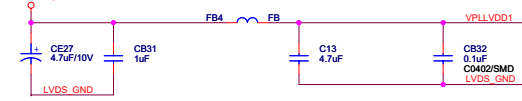


NORMAL ANALOG POWER

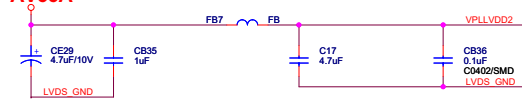
ASB18A



AV18A

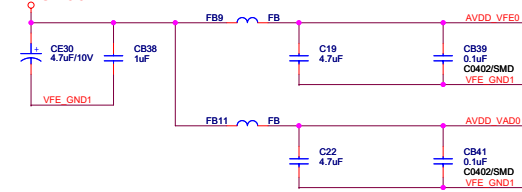


AV33A

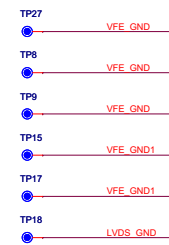
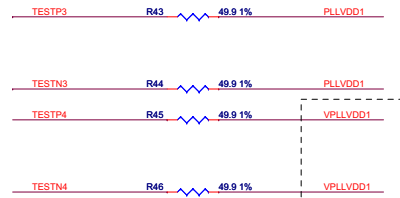
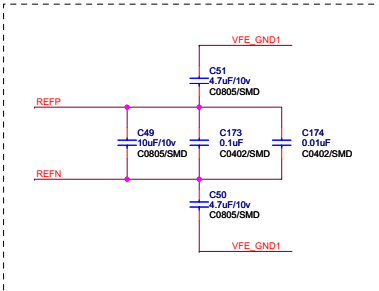
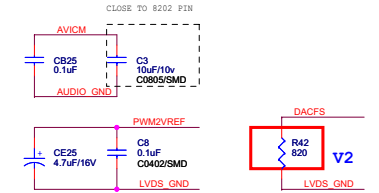
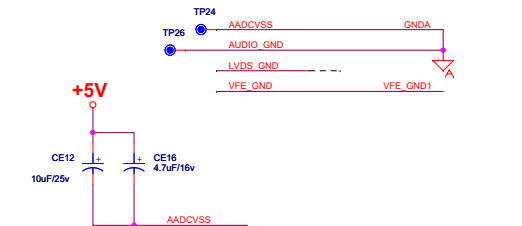
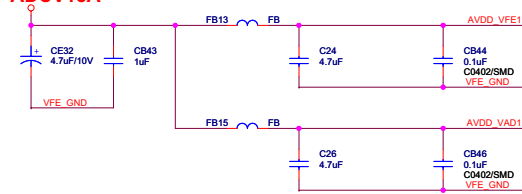


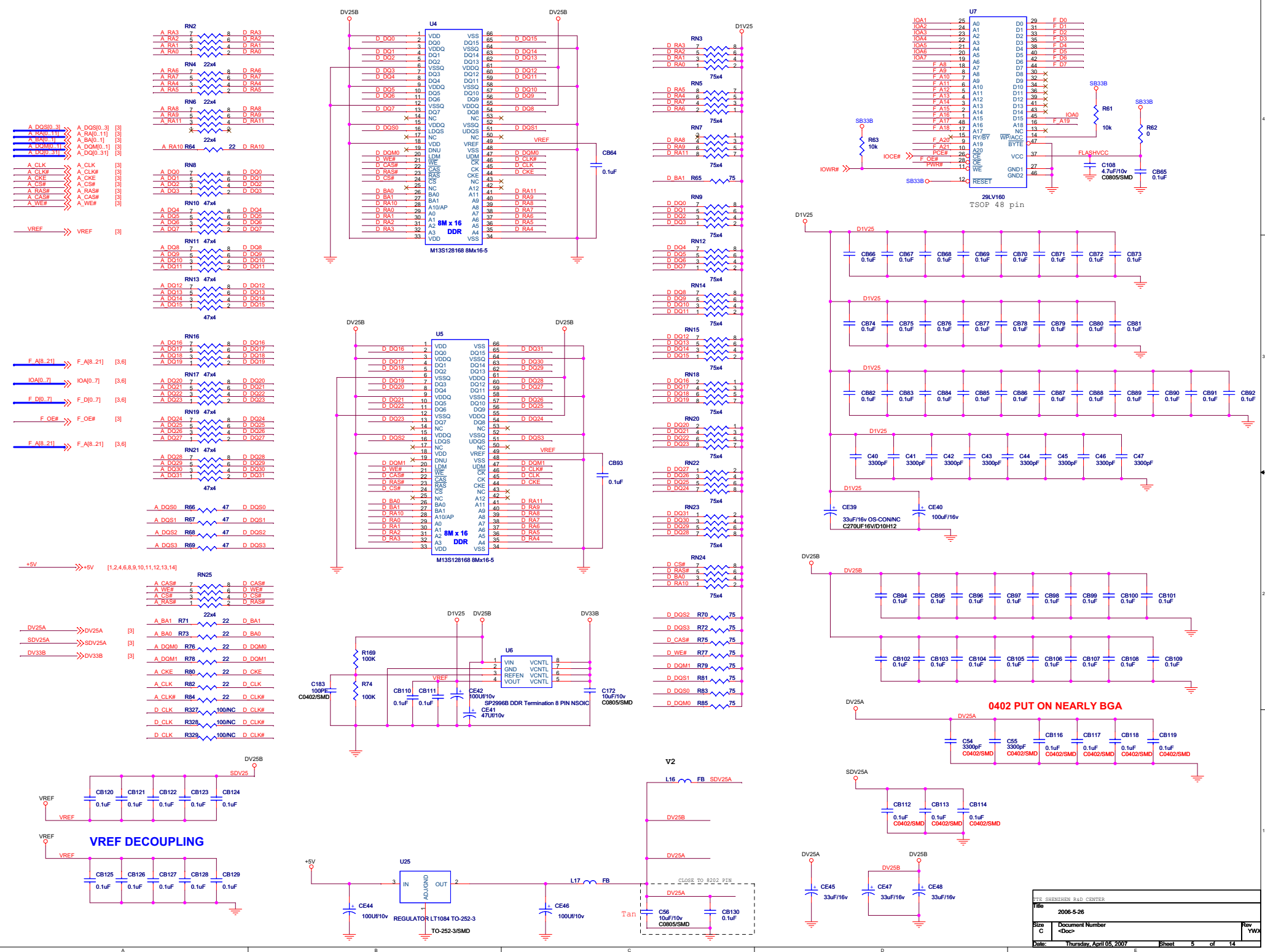
NORMAL VIDEO ADC POWER

ADC33A



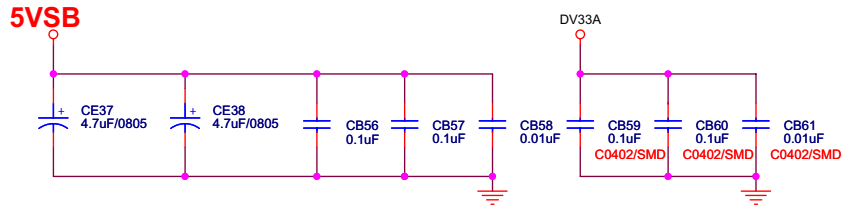
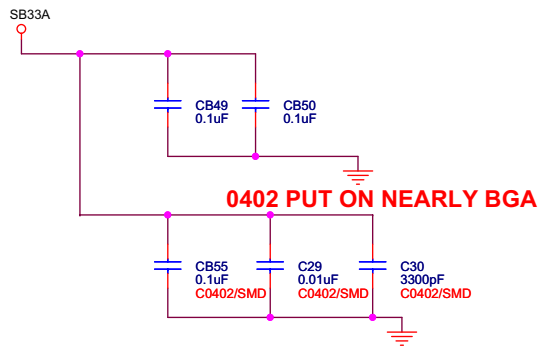
ADC18A



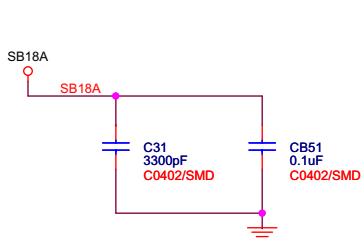


MT8202 DIGITAL POWER & DECOUPLING

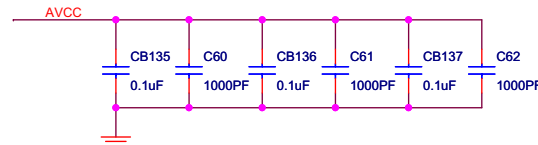
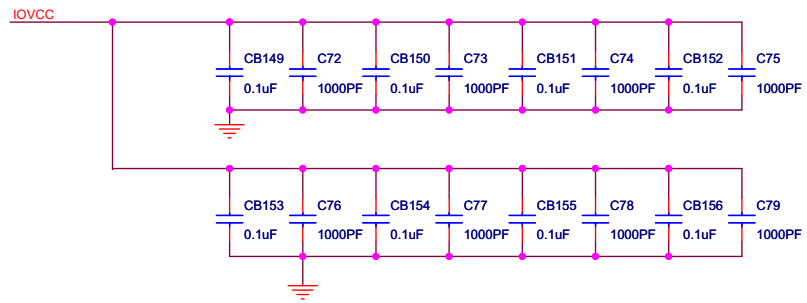
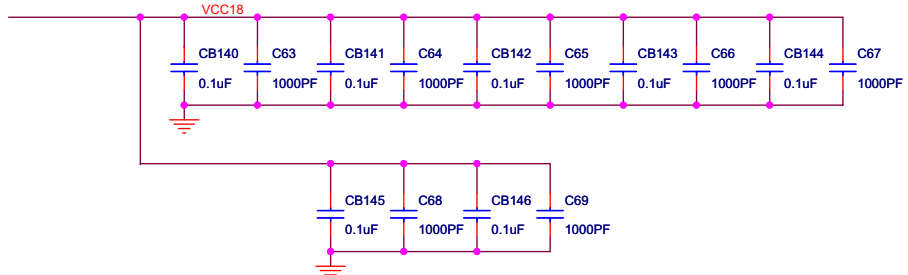
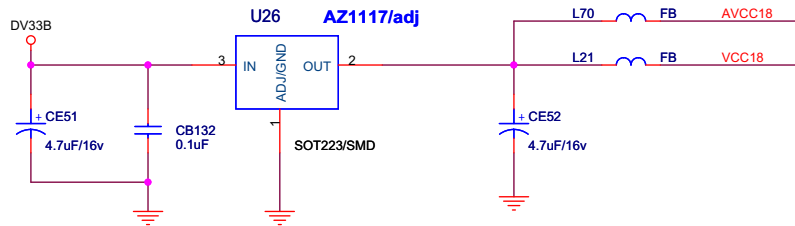
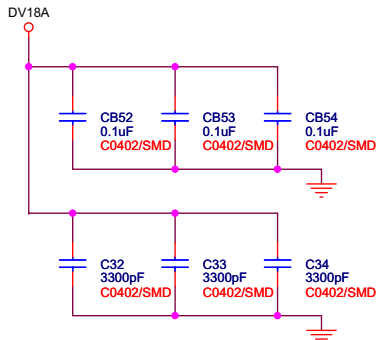
AVCC18 → AVCC18 [6, 7]



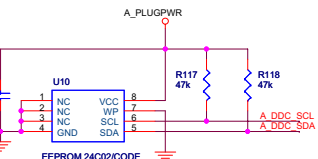
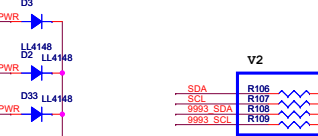
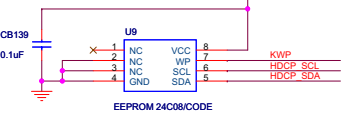
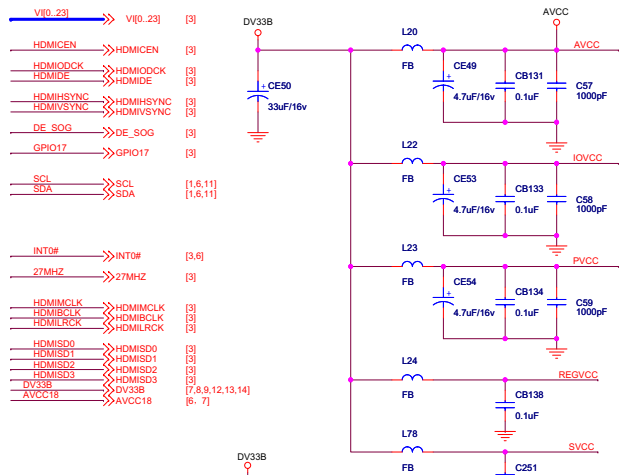
0402 PUT ON NEARLY BGA



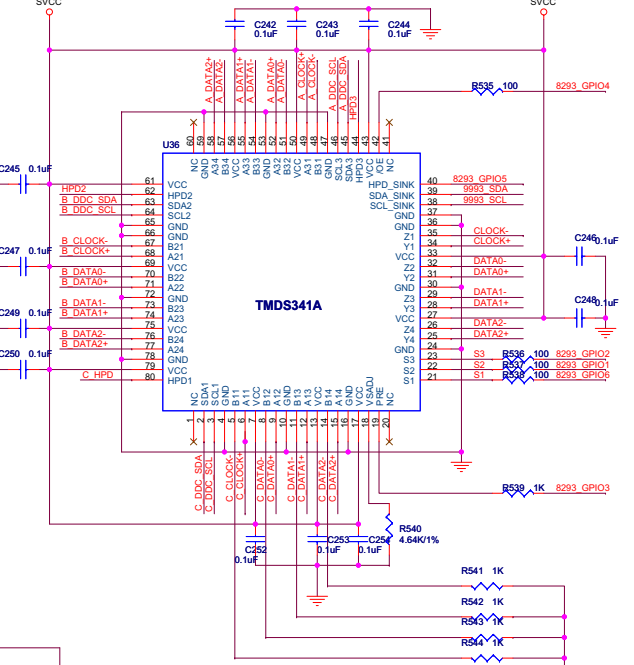
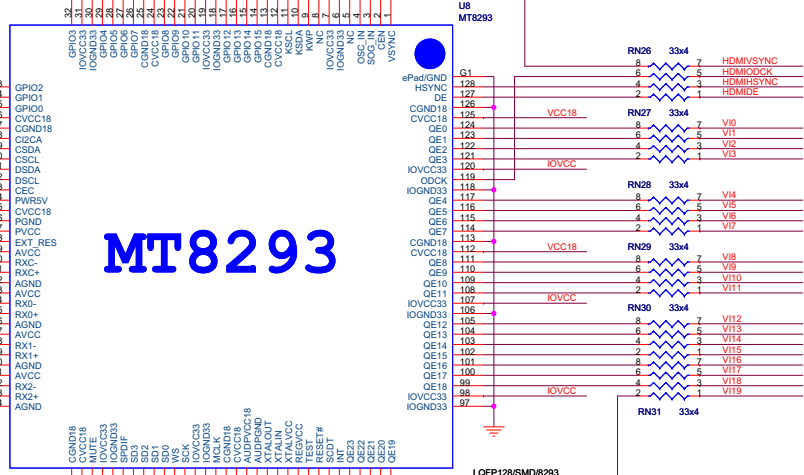
0402 PUT ON NEARLY BGA



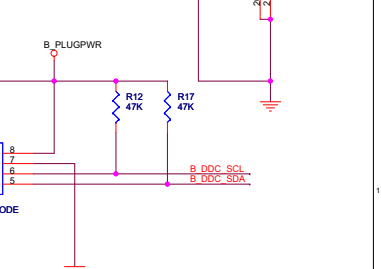
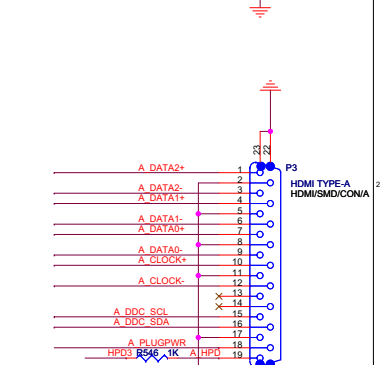
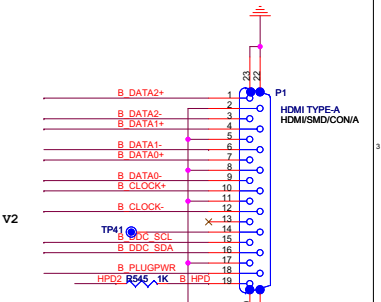
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Size B	Document Number	Rev
	2005-5-26	YWX
Date:	Thursday, March 01, 2007	Sheet 6 of 14



MT8293

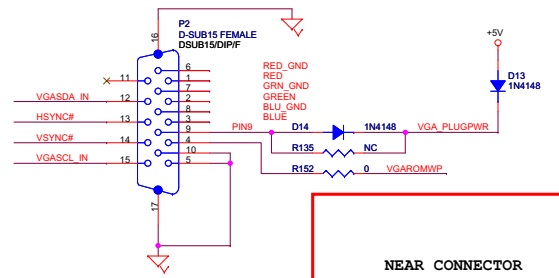


Pin	Signal	Pin	Signal
1	C HPD	12	C PLUGPWR
2	C DDC SCL	13	C DDC SDA
3	GND	14	GND
4	GND	15	GND
5	C CLOCK	16	C CLOCK+
6	C DATA-	17	C DATA+
7	C DATA1-	18	C DATA1+
8	C DATA2-	19	C DATA2+
9	GND	20	GND
10	GND	21	GND

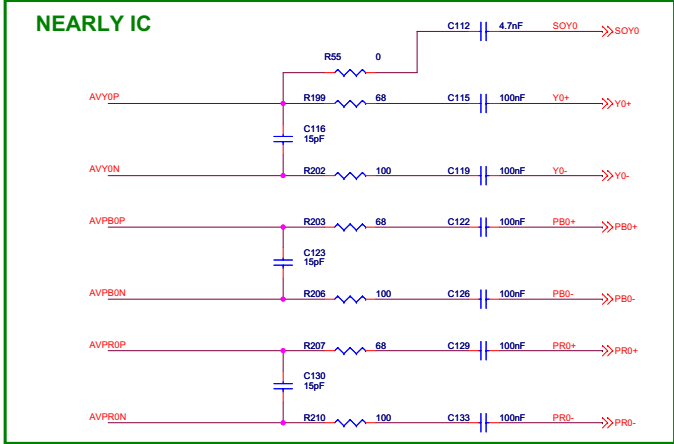
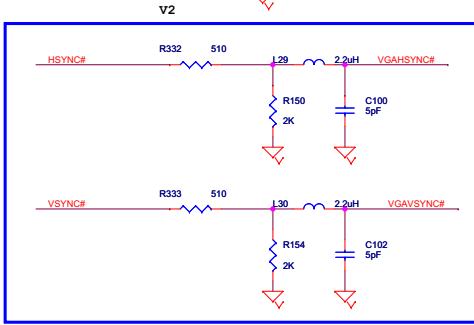
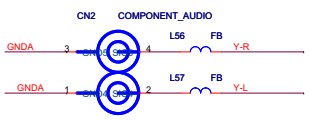
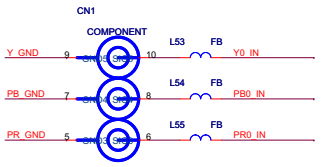
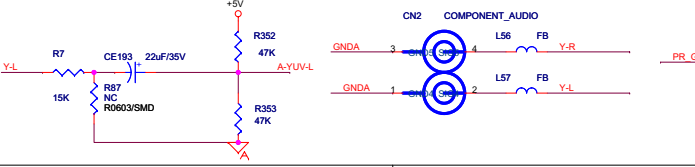
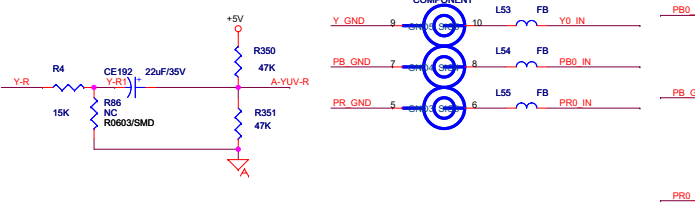
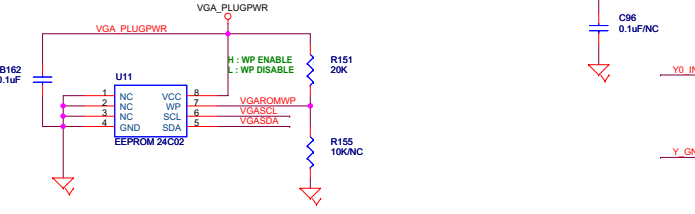
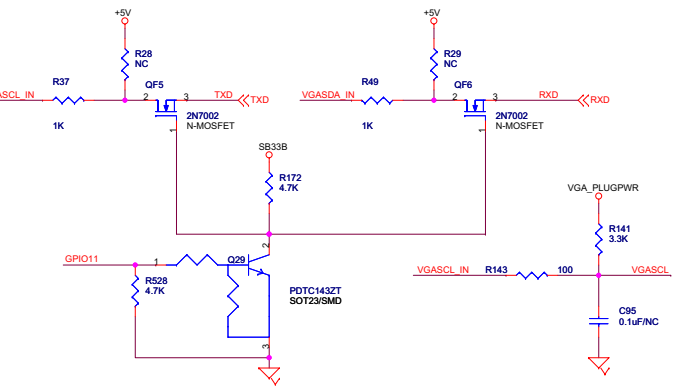
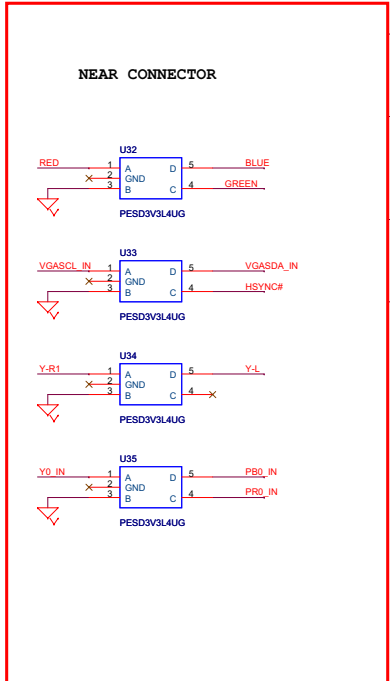
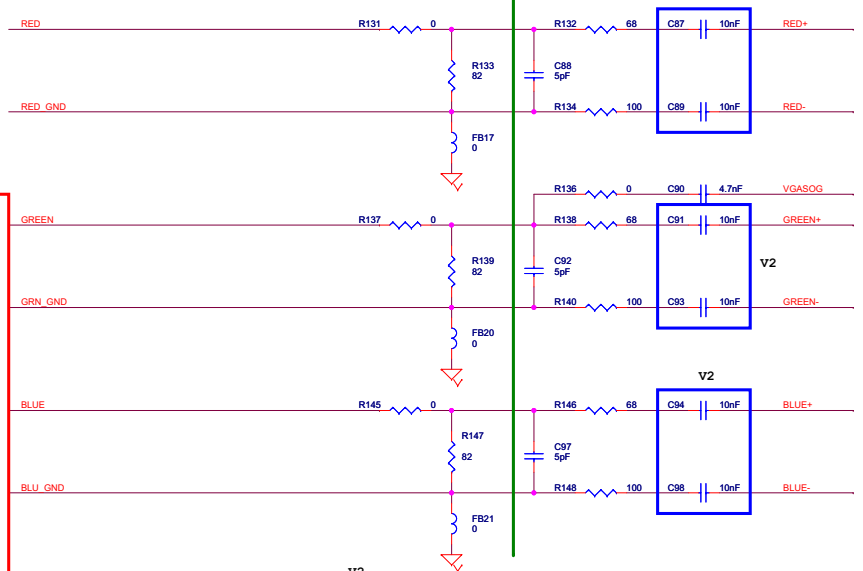


VGA IN

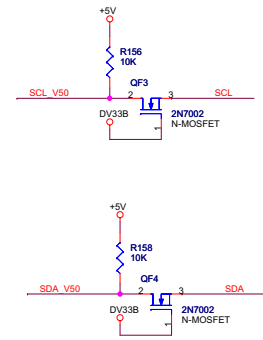
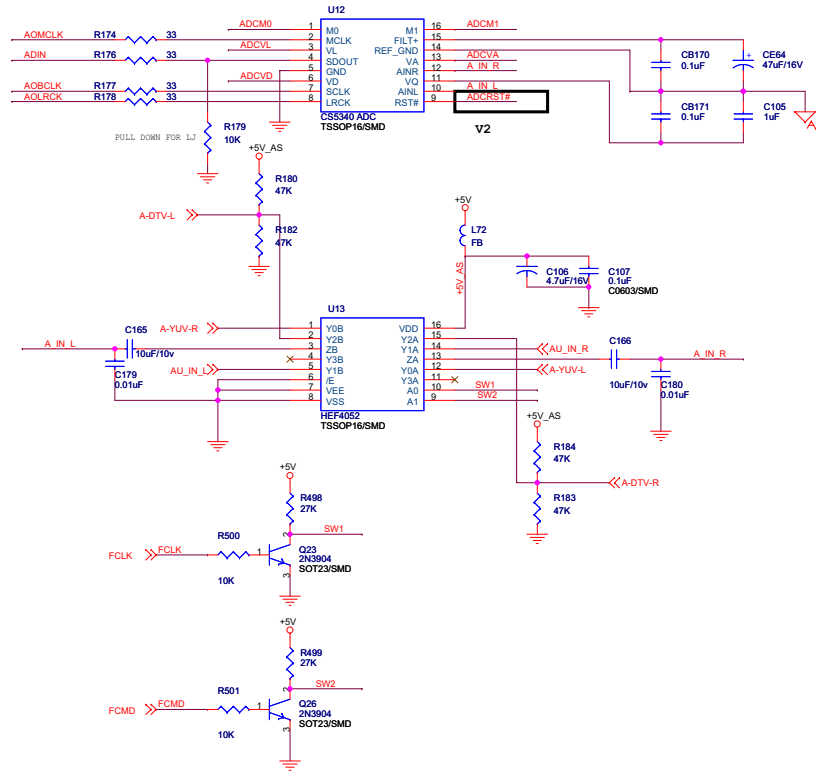
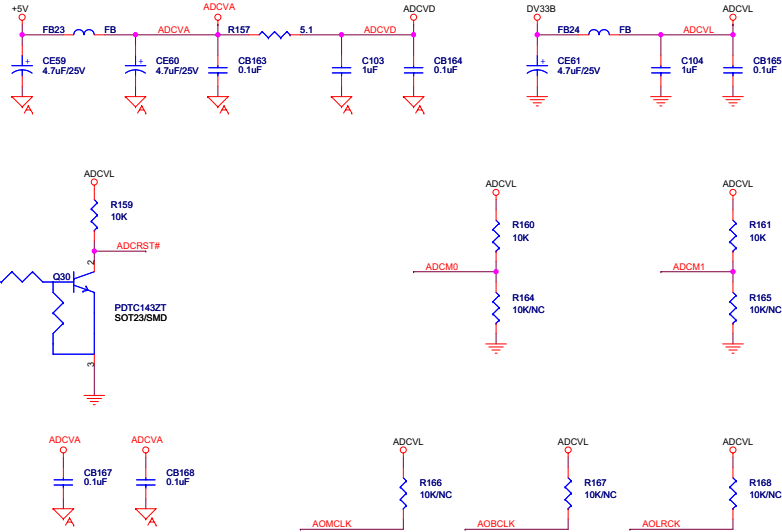
- RED+ → RED+ [3]
- RED- → RED- [3]
- GREEN+ → GREEN+ [3]
- GREEN- → GREEN- [3]
- BLUE+ → BLUE+ [3]
- BLUE- → BLUE- [3]
- VGASOG → VGASOG [3]
- VGASOGL → VGASOGL [3]
- VGASOGR → VGASOGR [3]
- VGASOGB → VGASOGB [3]
- VGASOGL → VGASOGL [3]
- VGASOGR → VGASOGR [3]
- VGASOGB → VGASOGB [3]
- GPIO11 → GPIO11 [3,8]
- VFE_GND → VFE_GND [2,3,4,9,10,11,12,14]
- GND → GND [1,3,4,11,12,13]
- +5V → +5V [1,2,4,6,8,9,10,11,12,13,14]
- A-YUV-R → A-YUV-R [10]
- A-YUV-L → A-YUV-L [10]
- DV33B → DV33B [7,8,9,12,13,14]



NEARLY VGA CON



AUDIO ADC

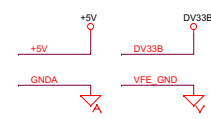
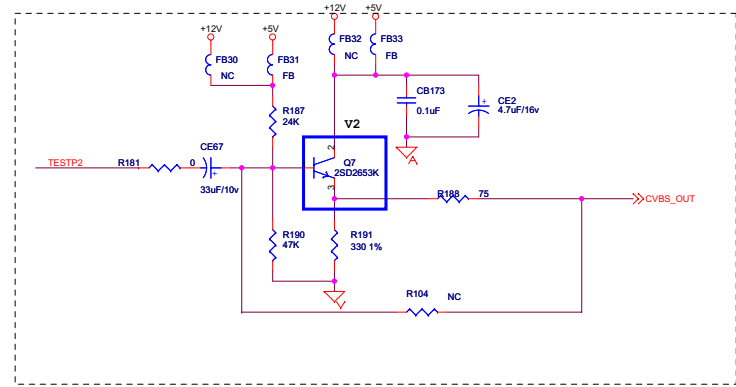


SCL	>>> SCL	[1,6,8,9]
SDA	>>> SDA	[1,6,8,9]
SCL_V50	>>> SCL_V50	[1,6,8,9]
SDA_V50	>>> SDA_V50	[1,6,8,9]
+12V	>>> +12V	[1,2,9,10,11,12,14]
_VFE_GND	>>> VFE_GND	[2,3,4,8,10,11,12,14]
TESTP2	>>> TESTP2	[3]
_VFE_GND1	>>> VFE_GND1	[2,3,4,8,10,12]

AUDIO ADC

AOMCLK	>>> AOMCLK	[3,13]
AOBCLK	>>> AOBCLK	[3,13]
AOLRCK	>>> AOLRCK	[3,13]
ADIN	>>> ADIN	[3]
+5V	>>> +5V	[1,2,4,6,8,9,10,11,12,13,14]
CVBS_OUT	>>> CVBS_OUT	[9,14]
DV33B	>>> DV33B	[7,8,9,12,13,14]
GPIO12	>>> GPIO12	[3,9]

BYPASS VIDEO OUTPUT



THIS PAGE NEARLY IC

CVBS0	CVBS0	[3]
CVBS1	CVBS1	[3]
CVBS2	CVBS2	[3]
CVBS3	CVBS3	[3]

SY0	SY0	[3]
SC0	SC0	[3]

Y1+	Y1+	[3]
Y1-	Y1-	[3]
PB1+	PB1+	[3]
PB1-	PB1-	[3]
PR1+	PR1+	[3]
PR1-	PR1-	[3]
SOY1	SOY1	[3]

TO MT8202

AVCVBS0	AVCVBS0	[11]
AVCVBS1	AVCVBS1	[11]
AVCVBS2	AVCVBS2	[11]
AVCVBS3	AVCVBS3	[11]

AVSY0	AVSY0	[11]
AVSC0	AVSC0	[11]

AVPBIN	AVPBIN	[11]
AVYIN	AVYIN	[11]
AVPRIN	AVPRIN	[11]

FROM AV BOARD

USB_IR_EN	USB_IR_EN	[3,10]
IR	IR	[3,10,13]

VFE_GND1	VFE_GND1	[2,3,4,11]
R	R	[2,3,4,11]
G	G	[2,3,4,11]
B	B	[2,3,4,11]

SCL0	SCL0	[3,10]
SDA0	SDA0	[3,10]

SCL	SCL	[1,6,8,11]
SDA	SDA	[1,6,8,11]

AVCVBS1/AVSY1_IN	AVCVBS1/AVSY1_IN	[10,14]
AVCVBS1/AVSY1	AVCVBS1/AVSY1	[10,14]

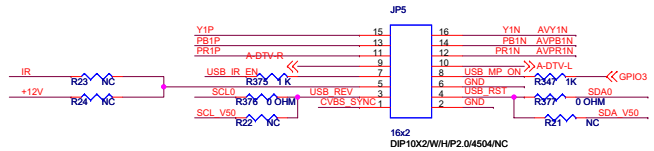
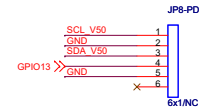
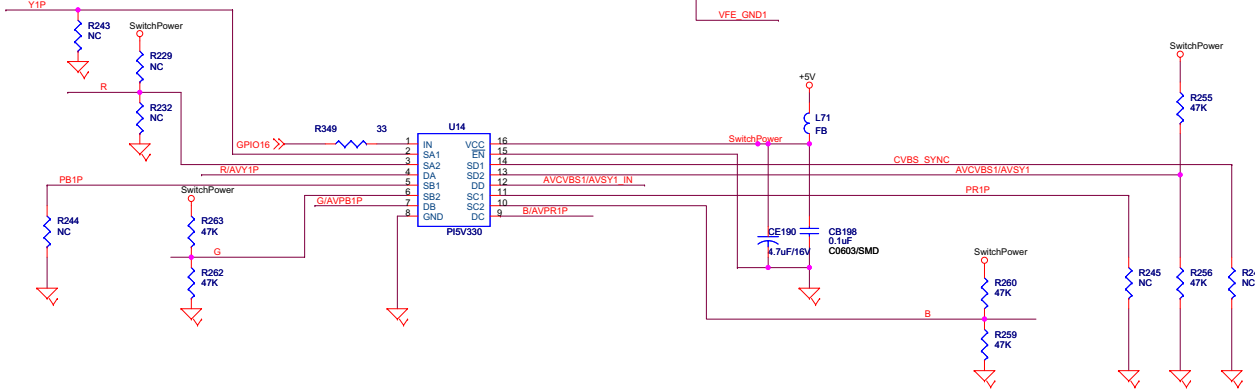
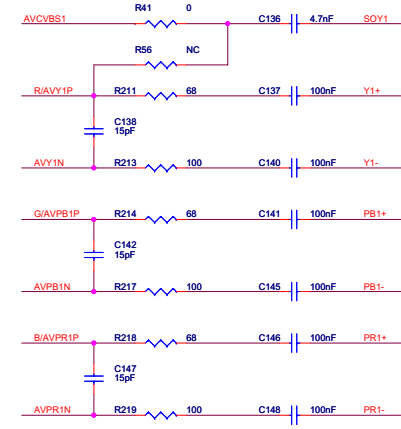
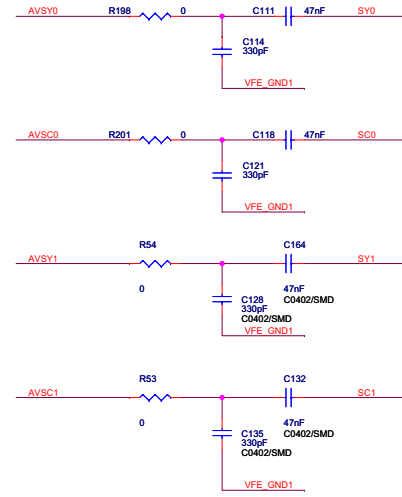
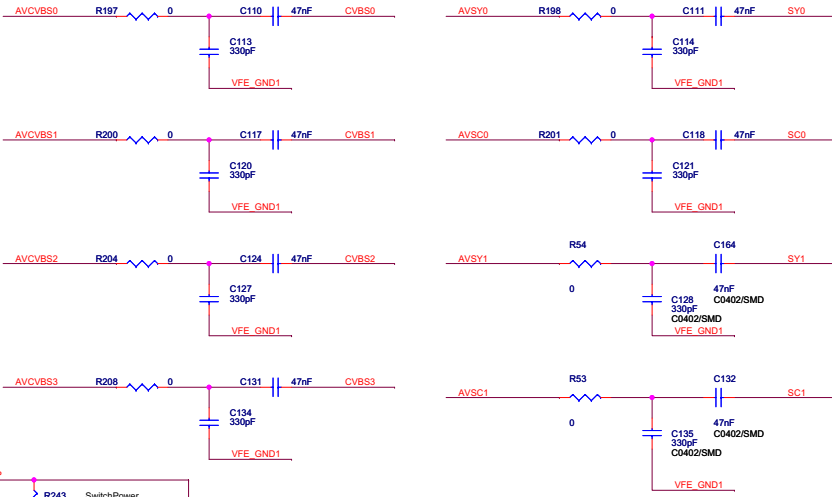
SCL_V50	SCL_V50	[1,6,8,9]
SDA_V50	SDA_V50	[1,6,8,9]

AADCSS	AADCSS	[1,3,8,9,10,11,12,14]
VFE_GND	VFE_GND	[2,3,4,8,10,11,12,14]

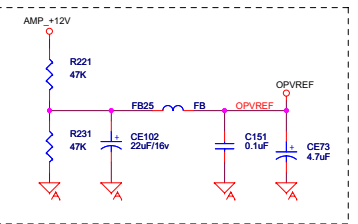
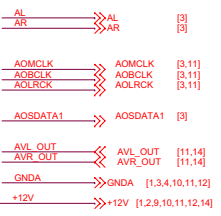
VFE_GND1	VFE_GND1	[2,3,4,8,9,12]
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+12V	+12V	[1,2,9,10,11,12,14]
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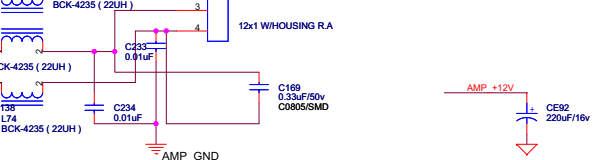
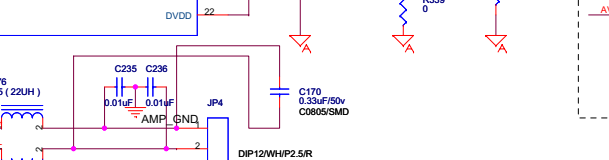
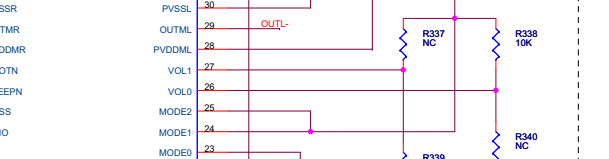
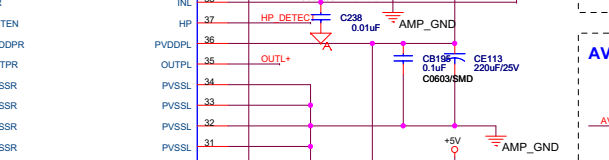
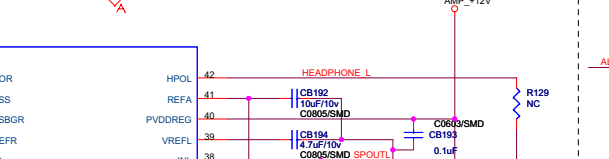
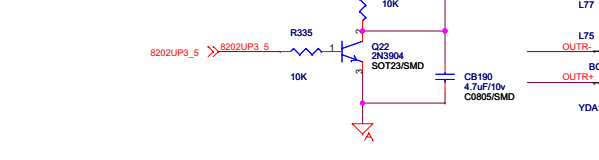
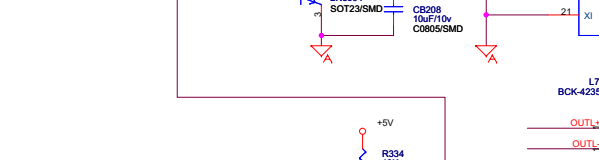
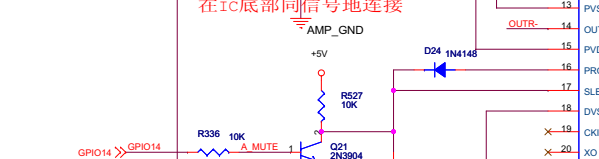
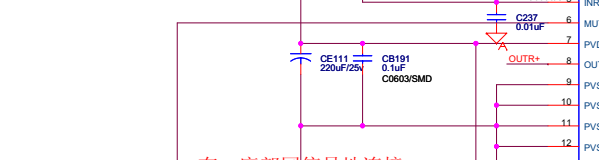
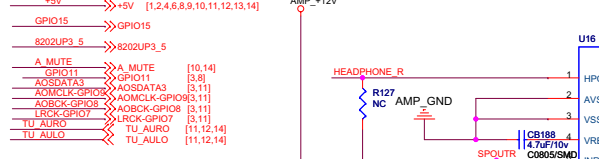
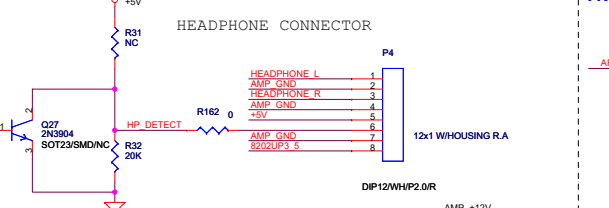
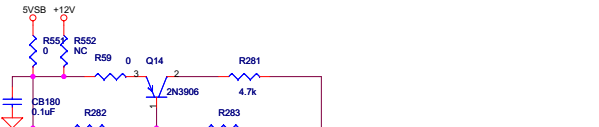
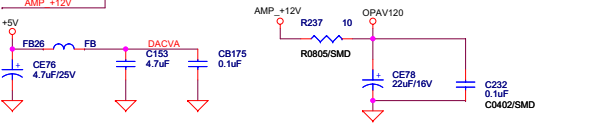
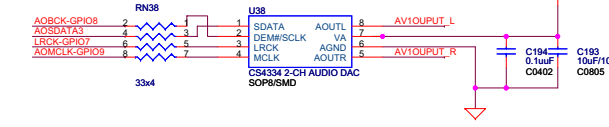
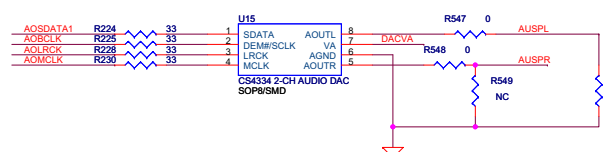
+5V	+5V	[1,2,4,6,8,9,10,11,12,13,14]
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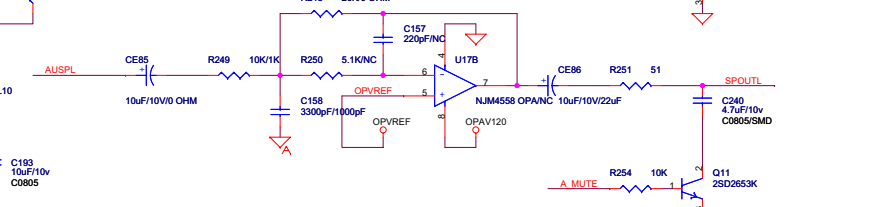
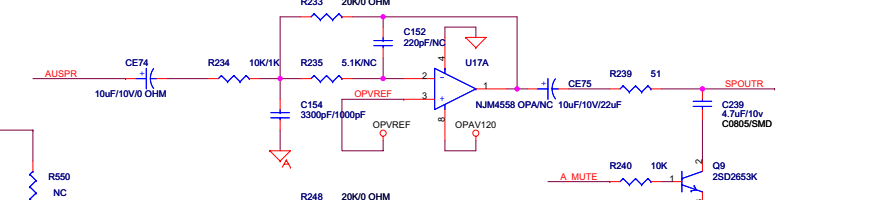
AVCVBS3	AVCVBS3	[10,14]
AVSY0	AVSY0	[10,14]
AVSY1	AVSY1	[10,14]
AVSC1	AVSC1	[10,14]
SY1	SY1	[10,14]
SC1	SC1	[10,14]



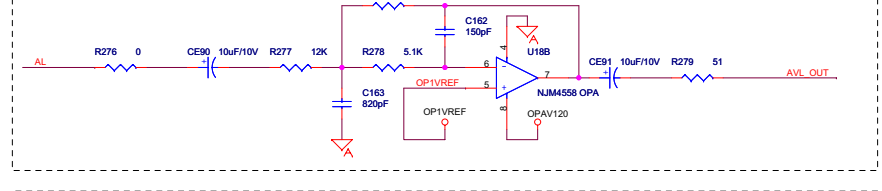
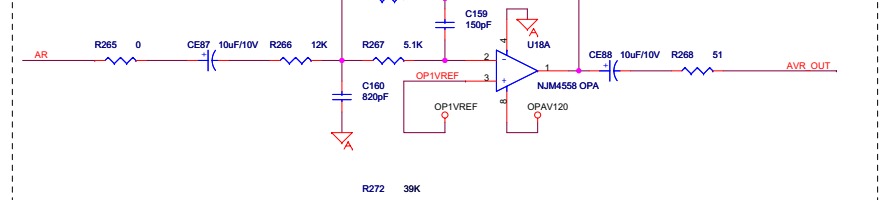
CS4334 AUDIO DAC SPEAKER/HEADPHONE OUT



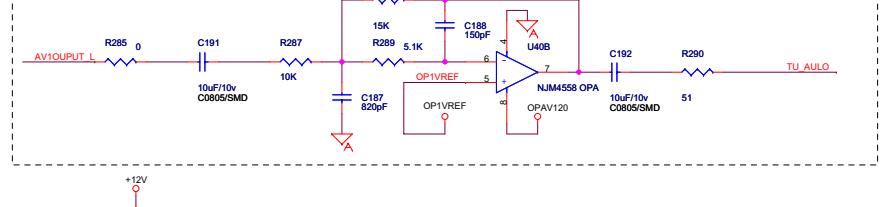
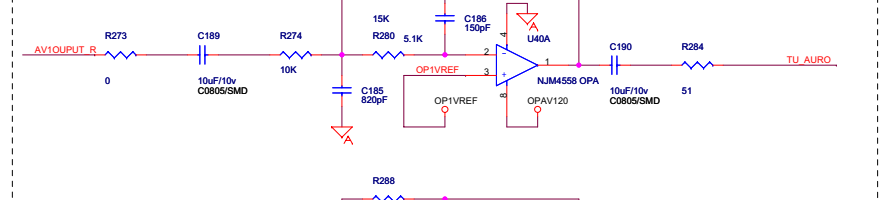
SPEAKER/HEADPHONE OUTPUT



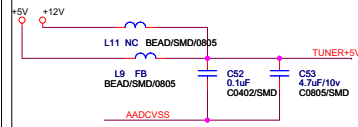
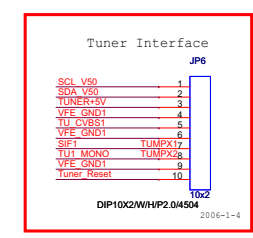
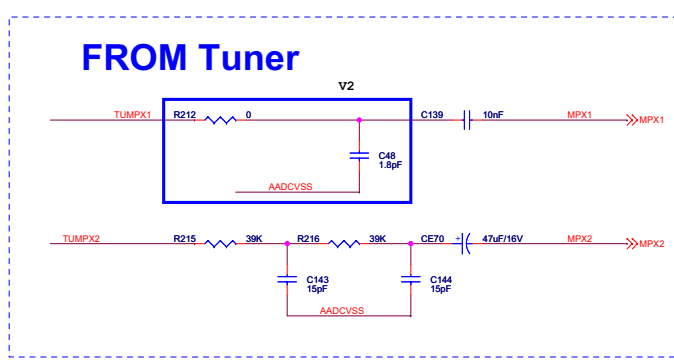
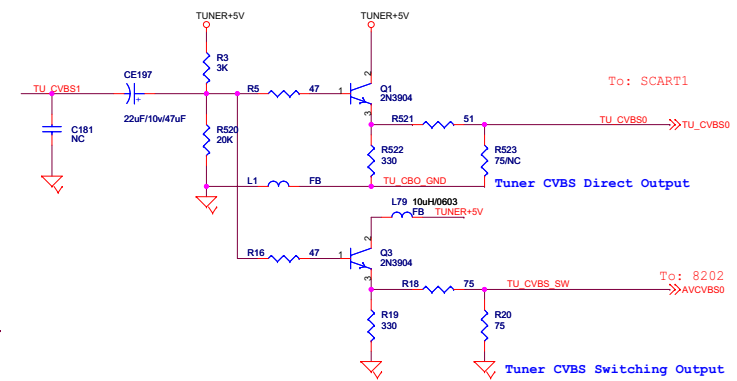
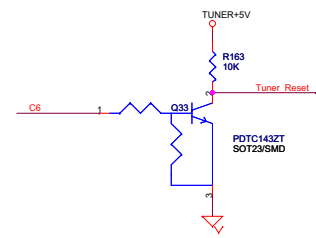
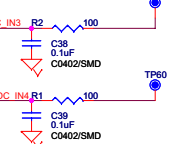
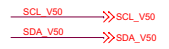
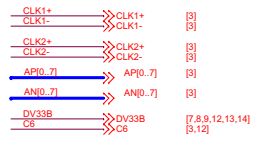
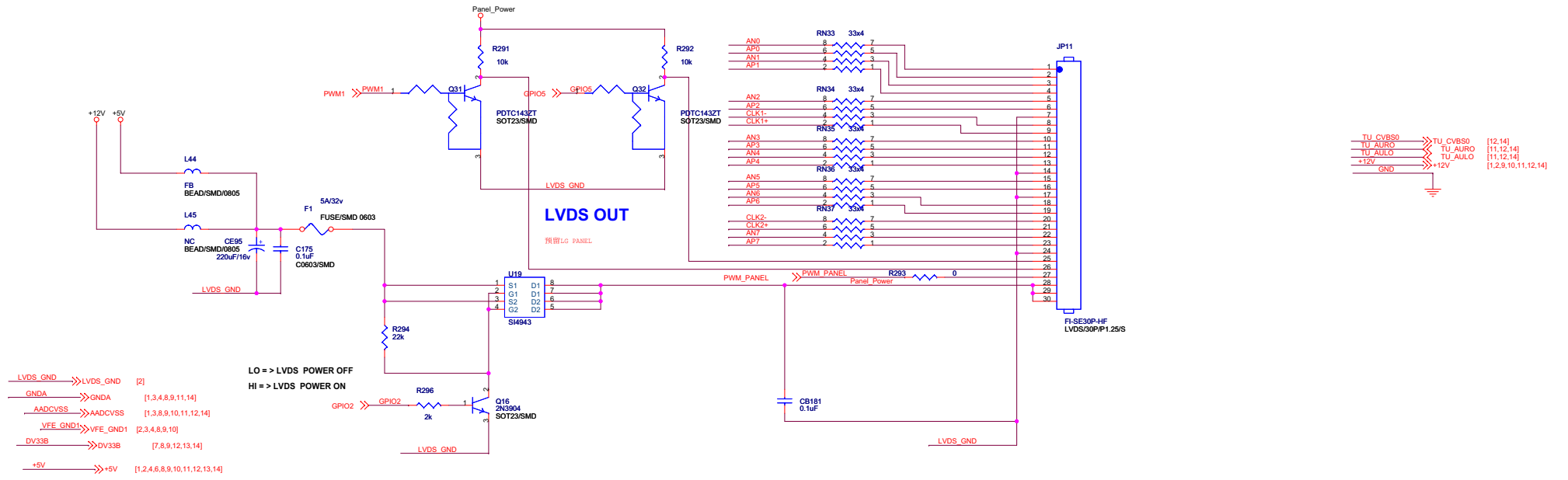
AV2 BYPASS AUDIO OUTPUT



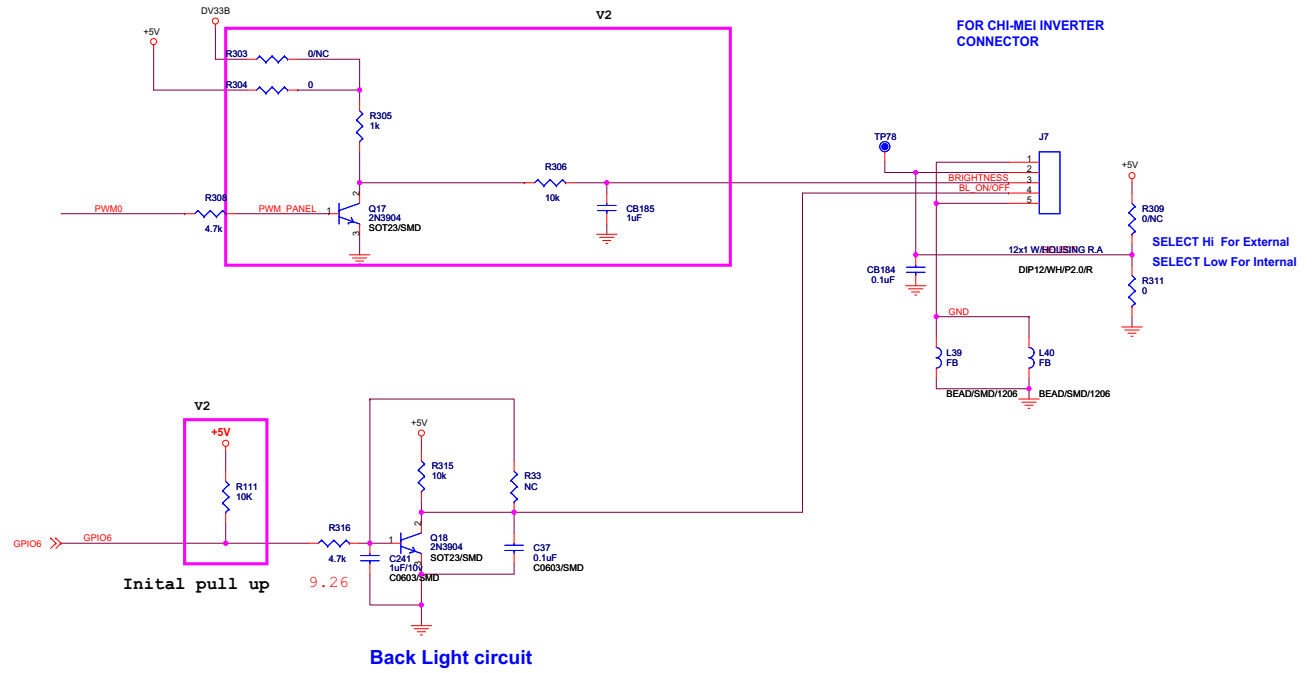
AV1 BYPASS AUDIO OUTPUT



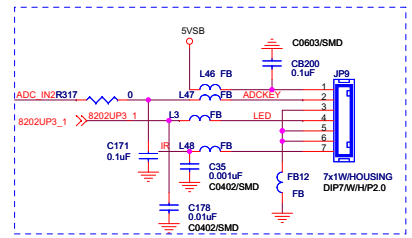
在IC底部同信号地连接

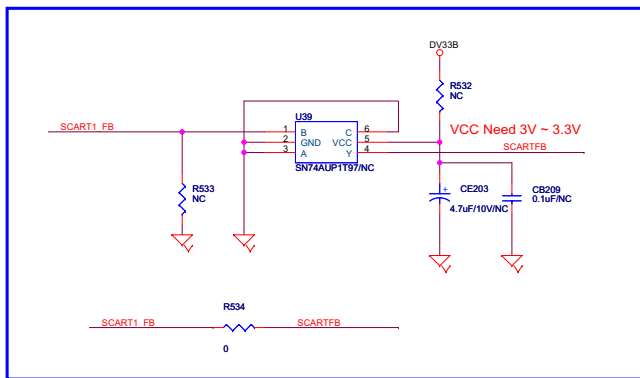
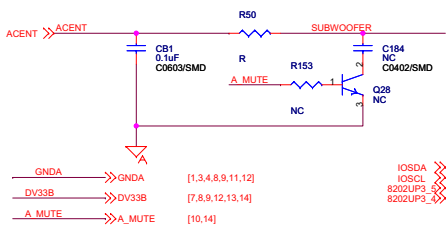
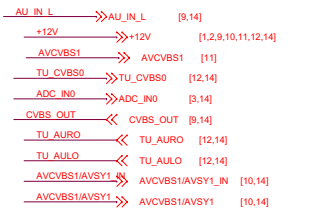


- ADC_IN2 >>> ADC_IN2 [3,11]
- IR >>> IR [3,10,13]
- PWM0 >>> PWM0 [3]
- PWM1 >>> PWM1 [3]
- PWM_PANEL >>> PWM_PANEL
- DV33B >>> DV33B [7,8,9,12,13,14]
- +5V >>> +5V [1,2,4,6,8,9,10,11,12,13,14]



ADC KEYPAD 8 KEY





- GPIO DECIPTION**
ERO3/GPIO : LVDS GPIO
ERO2/UP3_5 : SDA
ERO1/UP3_1 : LED1
ERO0/UP3_0 : MAIN POWER SWITCH
DE/GPIO : LVDS GPIO
VCLK/GPIO : LVDS GPIO
UP3_4 : SCL
AOSDATA5/GPIO1 : AUDIO AMPLIFIER CONTROL
GPIO2 : LVDS POWER SW
GPIO3 : DTV_CE
GPIO4 : EEPROM WRITE PROTECT
GPIO5/TXD :TO PANEL ENABLE
GPIO6/RXD : BACK LIGHT ON/OFF
GPIO7 : SWITCH HEF4052
GPIO8 : SWITCH HEF4052
GPIO9 : SWITCH AV BOARD HEF4052
GPIO10 :SWITCH AV BOARD HEF4052
GPIO11 : +12V POWER CONTROL
GPIO12 : NONE USE
GPIO13 : FOR PDP CONTROL
GPIO14 : AUDIO AMP SLEEP
GPIO15 : AUDIO AMP MUTE
GPIO16 : RGB/YUV SWITCH
GPIO17 : HDMI SCDT
GPIO18 : HDMI CABLE DETECT
SDA : SDA (TTL MODE)
SCL : SCL (TTL MODE)
GPIO/PWM0 : DIMMING
GPIO/PWM1 :TO PANEL EXTERNAL PWM
OUT_27Mhz/GPIO : 27Mhz TO MT8293
DE_SOG/GPIO : HDMI RESET
CEN_DVI/GPIO : HDMI_CEN
SDA0 : EXTERNAL DTV TXD
SCL0 : EXTERNAL DTV RXD
SDA1 : TVB_CE
SCL1 : SCARTSEL
ADCIN0 : SCART
ADCIN1 : SCART
ADCIN2 : ADCKEY
ADCIN3 : TUNER1
ADCIN4 : TUNER2
P1: NO USE
P2: NO USE
P3: NO USE
P4: NO USE
R1: NO USE
R2: FOR USB

