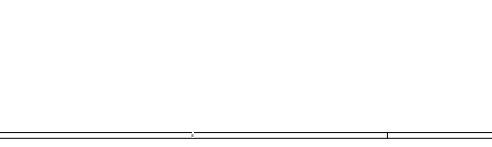
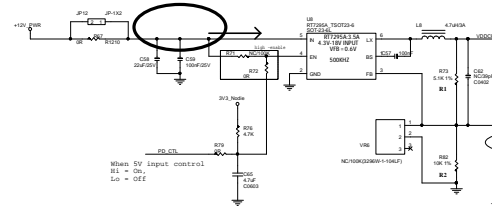
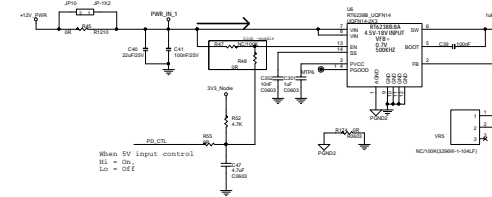
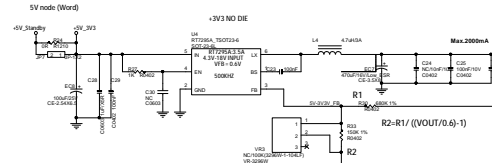
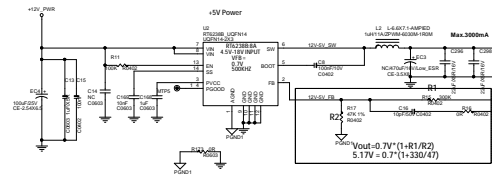
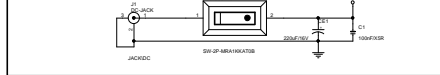


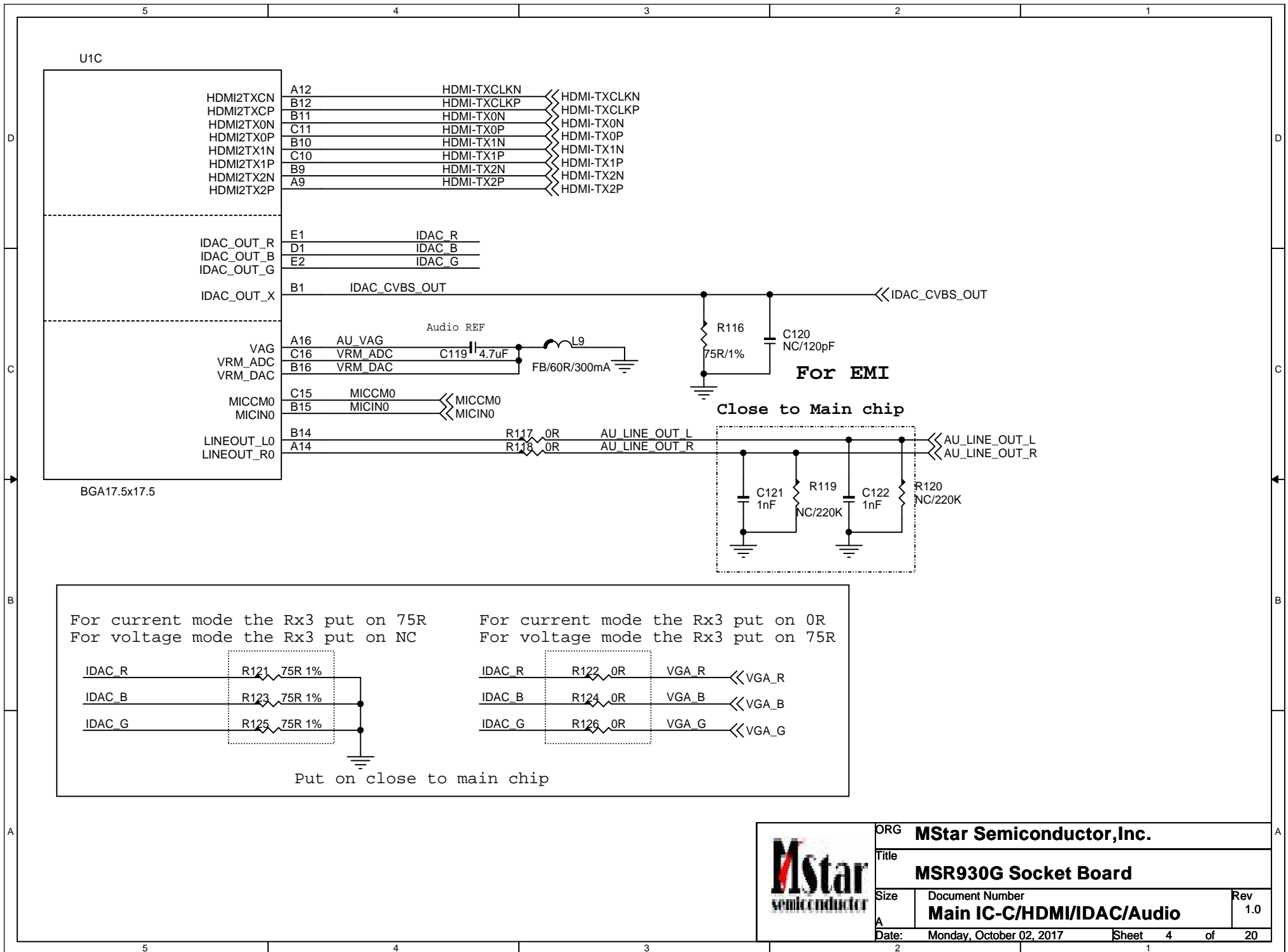
History

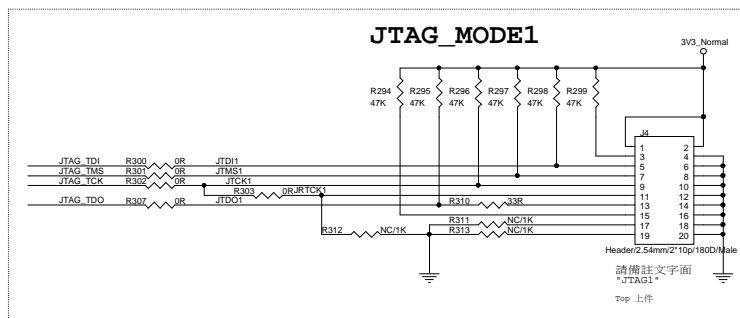
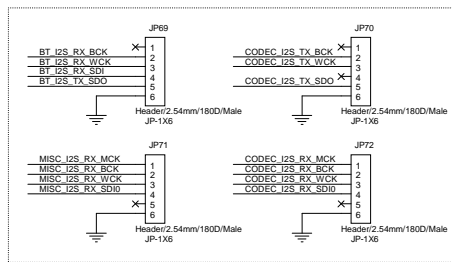
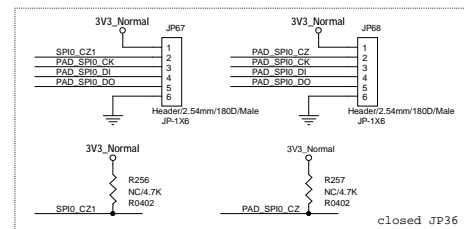
Version	Date	Description
V1.0	2017.06.08	First release
V1.2	2017.08.30	1. Ball out change 2. Change cc controller 3. Change audio amp
V1.3	2017.09.07	1. Modify DH9931 circuit 2. Add external RTC IC
V1.4	2017.09.28	1. Ball out change a. Move DVDD_DDR_RX from Ball.P12 to Ball.R11 b. Remove Ball.K9 and Ball.T11

	ORG	MStar Semiconductor, Inc.		
	Title	MSR930G Socket Board		
	Size	Document Number	Rev	1.0
	Custom	Change History		
Date:	Monday, October 02, 2017		Sheet	1 of 20

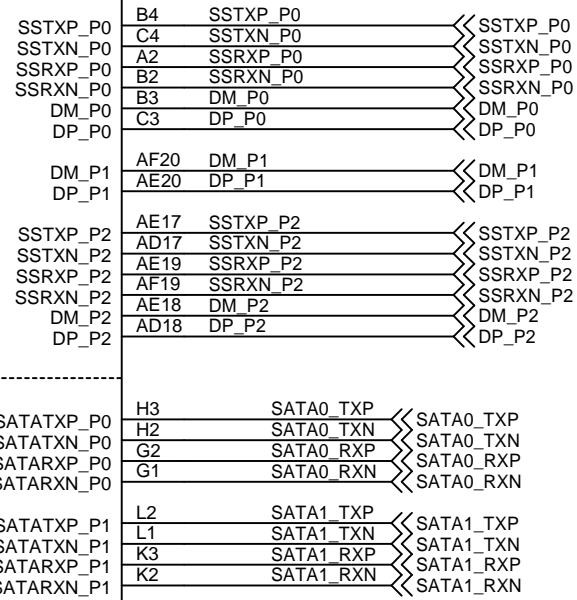
+12V DC-POWER Input






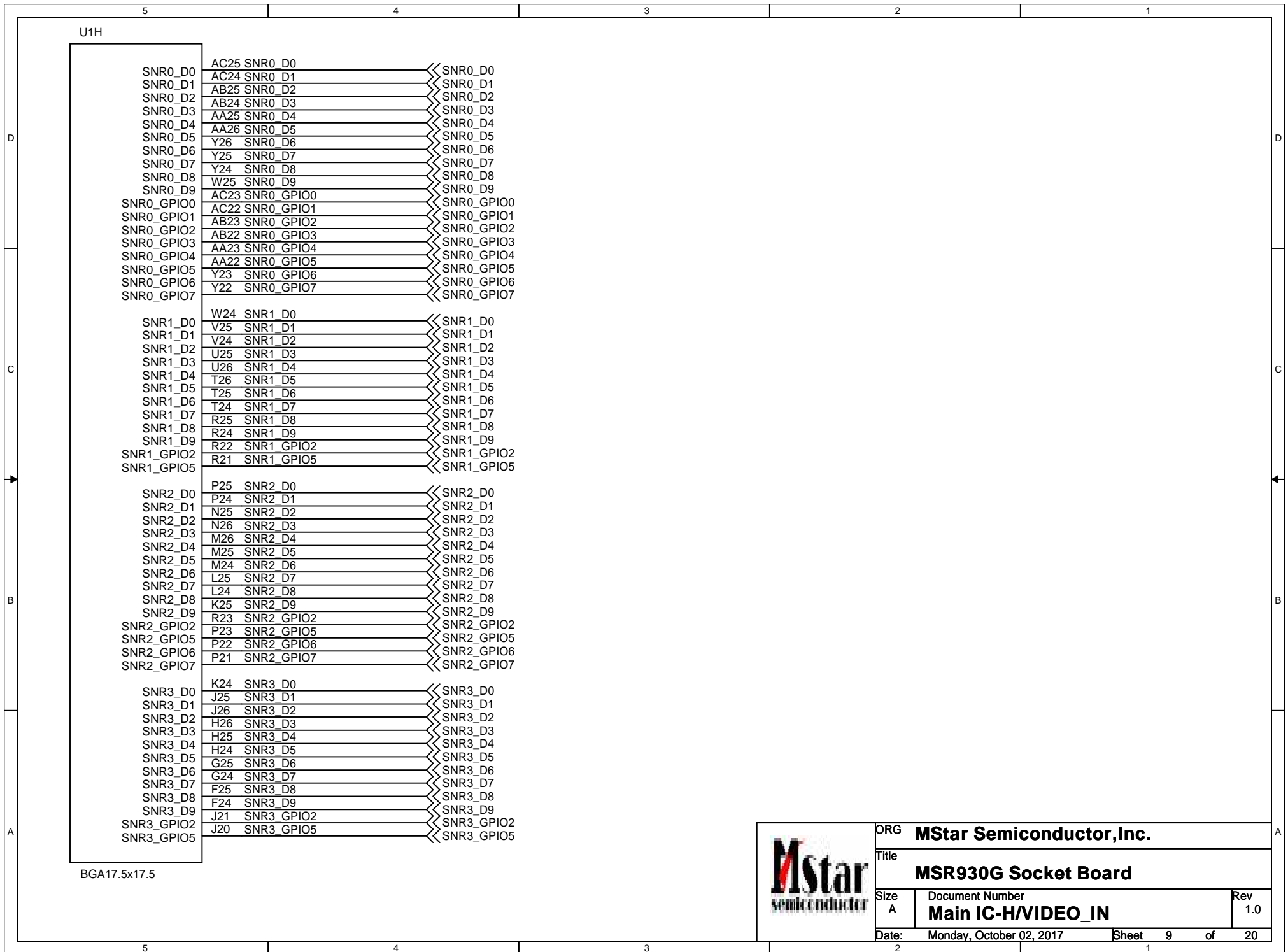


U1F

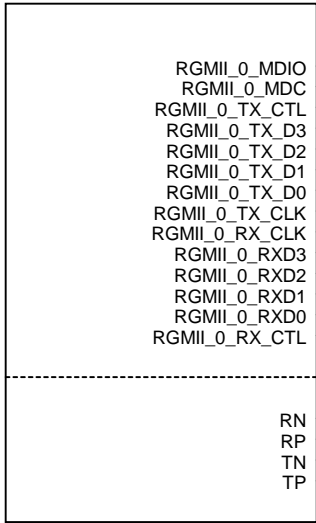


BGA17.5x17.5


	ORG MStar Semiconductor, Inc.		
	Title MSR930G Socket Board		
	Size A	Document Number Main IC-F/USB/SATA	Rev 1.0
	Date: Monday, October 02, 2017	Sheet 7 of 20	



U11



BGA17.5x17.5

	ORG MStar Semiconductor, Inc.		
	Title MSR930G Socket Board		
	Size A	Document Number Main IC-I/GMAC/ePHY	Rev 1.0
	Date: Monday, October 02, 2017	Sheet 10 of 20	

**P0 - USB3.0 Host
USB2.0 OTG**

USB3.0 to USB2.0 Converter (C135) components:

- C135: 100nF
- C136: 100nF
- EC10: 100nF/16V

USB3.0 Host (USB3-A90D) components:

- VBUS
- D+
- D-
- GND
- STDA_SSRX+
- STDA_SSRX-
- GND_DM+IN
- STDA_SSTX+
- STDA_SSTX-
- SHELL

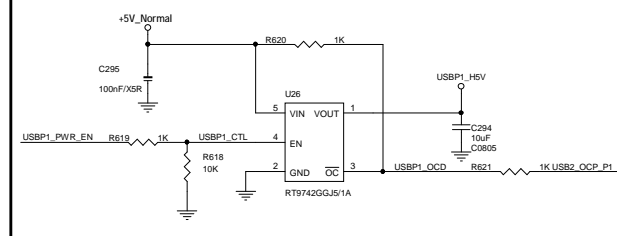
USB2.0 OTG (USB2-A90D) components:

- DM P0
- DP P0
- SSRXN P0
- SSRXP P0
- SSTXN P0
- SSTXP P0

Other components:

- R316, R317, R318, R319: Resistors
- C137, C138: 100nF capacitors
- D30: NCLXES15AAA1-1000.05pF

USB Differential trace. Impedance is 90ohm.

[illegible]

SSTXP_P0	SSTXP_P0
SSTXN_P0	SSTXN_P0
SSRXP_P0	SSRXP_P0
SSRXN_P0	SSRXN_P0
DM_P0	DM_P0
DP_P0	DP_P0
DM_P1	DM_P1
DP_P1	DP_P1
SSTXP_P2	SSTXP_P2
SSTXN_P2	SSTXN_P2
SSRXP_P2	SSRXP_P2
SSRXN_P2	SSRXN_P2
DM_P2	DM_P2
DP_P2	DP_P2
USBP0_PWR_EN	USBP0_PWR_EN
USBP1_PWR_EN	USBP1_PWR_EN
USBP2_PWR_EN	USBP2_PWR_EN
USB3_OCP_P0	USB3_OCP_P0
USB2_OCP_P1	USB2_OCP_P1
USB3_OCP_P2	USB2_OCP_P2

AUDIO OP

Hi = On,
Lo = OFF

5V_Normal

Q47
AC3403-P

AUXAMPB_5V

Audio_Amp_EN

R337 10K

AMP_PWR_EN

Q48
N7002

N-MOSFET

R338 10K

LINEOUT_L0

LINEOUT_L0.1

R335 NC20K R0402

LINEOUT_R0

LINEOUT_R0.1

R348 NC20K R0402

U16
SGM4996YMS8G

AMP_CLASSB_EN_L

AMP_INL+

AMP_INL-

AMP_VOL+

AMP_VOL-

suggest speaker = 4 ohm (1.3W/2)

AUXAMPB_5V

JP78

R339 20K R0402

R340 20K R0402

R341 20K R0402

R342 20K R0402

R343 10K

R344 20K R0402

R345 20K R0402

R346 20K R0402

R347 20K R0402

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R538 20K R0402

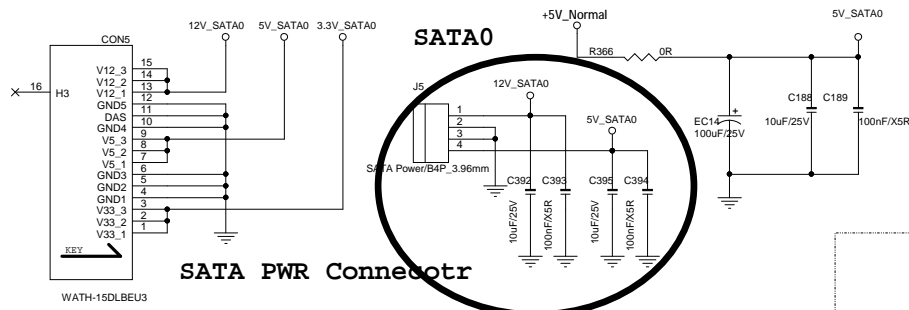
R539 20K R0402

The schematic shows the microphone input circuit. A J6 RCA2P-50 JACK is connected to a JP-1X2 connector. The signal path includes resistors R356 (2K), R357 (2K), and R349 (6R). Capacitors C166 (10u/10V), C171 (2.2uF), C175 (2.2uF), and C177 (NC) are used for coupling and filtering. The circuit is powered by AVDD_AUD_BIAS and AVDD_ALU33.

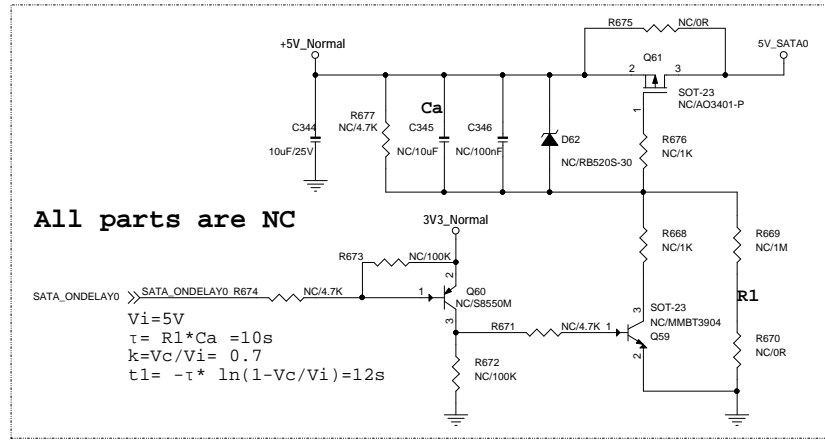
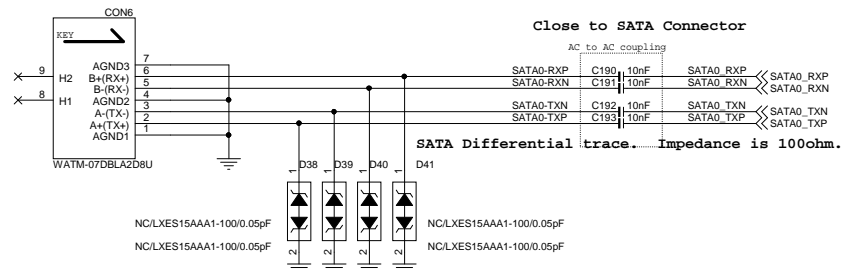
CVBS IDAC Output Filter

CVBS IDAC Output Filter

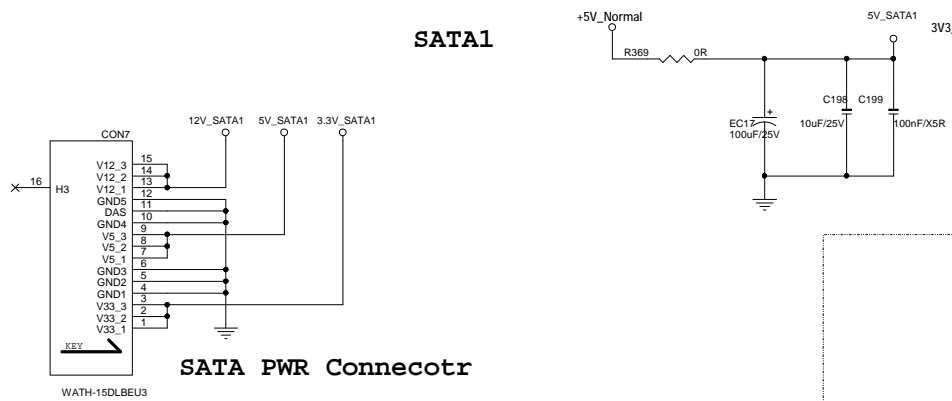
Diagram illustrating the CVBS IDAC Output Filter circuit. The input signal `IDAC_CVBS_OUT` is connected to a Pi-type filter. The filter consists of an inductor `L11` (0.39uH/150mA) in series with two capacitors, `C158` (47pF) and `C161` (47pF), which are connected to ground. The output of the filter is connected to a series resistor `ES03` and then to a jack connector `J17` (RCA2P-500JACK) pin 2, which is also connected to ground. The output signal is labeled `AVOUT-V`.



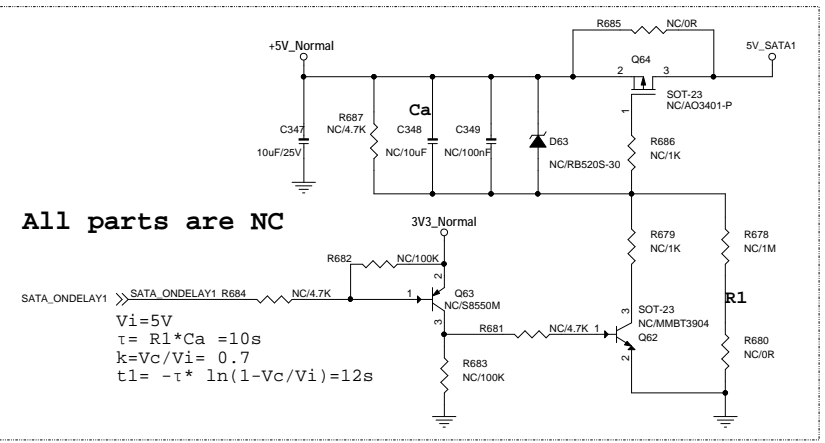
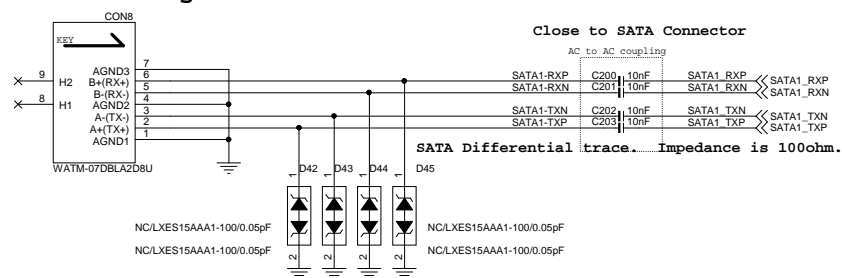
SATA Signal Connector



SATA1



SATA Signal Connector



HDMI TX

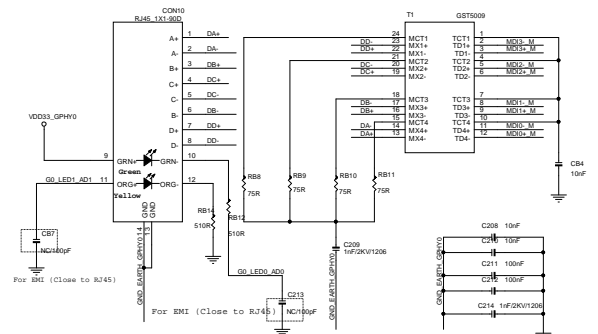
Length trace mismatch between differential pair (Between D+D-, CLK+CLK-) > 20mil
close to connector

HDMI TX CEC

HDMI TX Hot-Plug Control

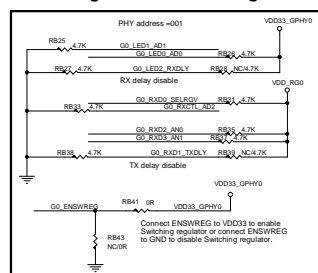
The diagram illustrates the hot-plug control circuit for the HDMI TX. It shows the HDMI-TX-HPDIN signal line connected to a 47K resistor (R381), which is then connected to ground. A break symbol indicates the signal line continues to the right.

RJ45 & Transformer & CMC

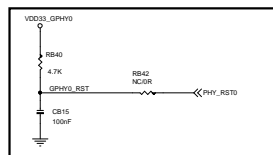


```
LED0    blinking when transmitting or receiving
LED1    link up
```

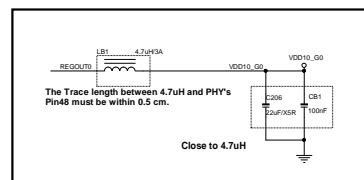
Configuration Setting



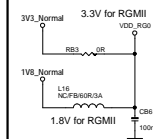
PHY Reset



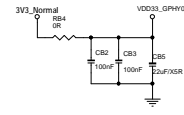
1.05V Power (internal Buck)



RGMII Power

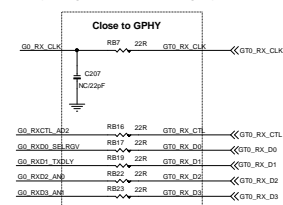


3.3V Power

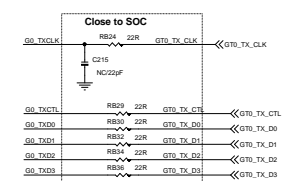


RGMII Rx (PHY to MAC)

Equal length within 200mil for RX group

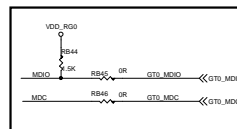


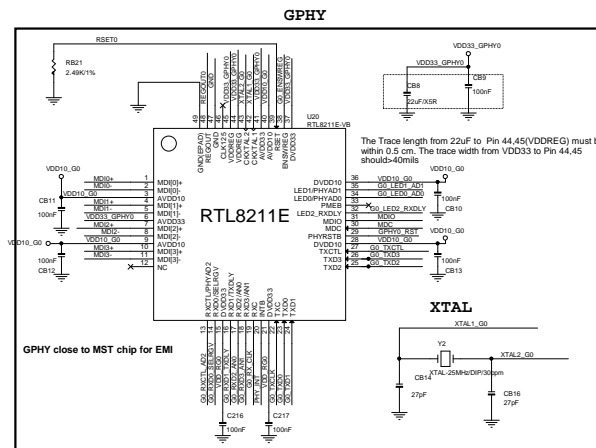
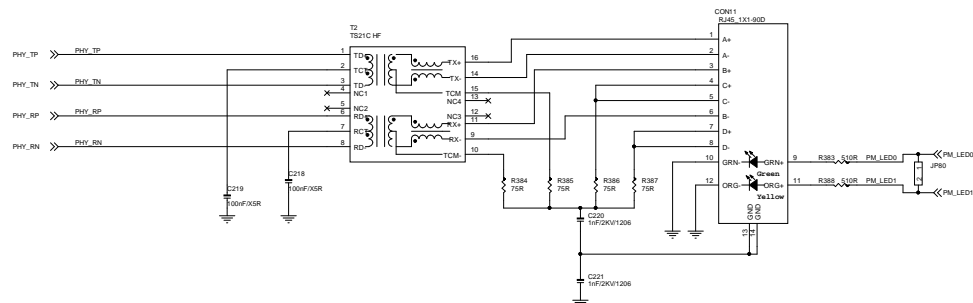
RGMII Tx (MAC to PHY)

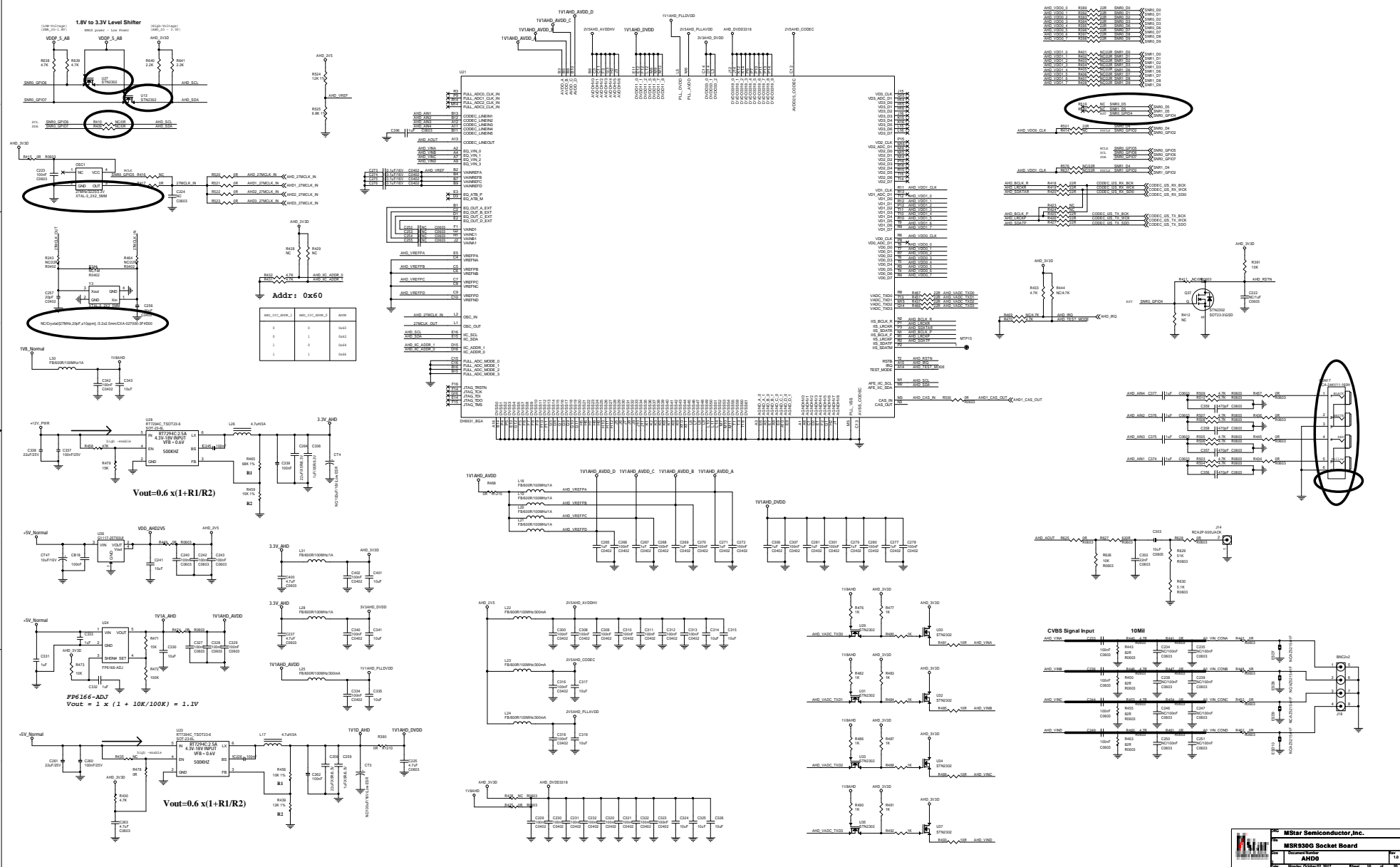


Equal length within 200mil for TX group

MDC/MDIO



PHY_INT // PHY_INT

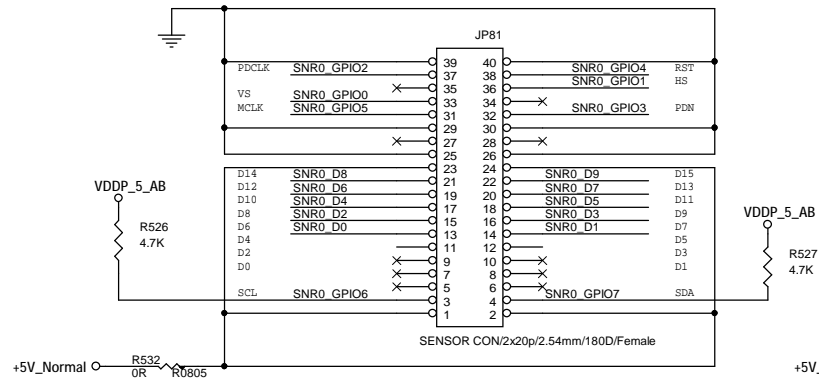




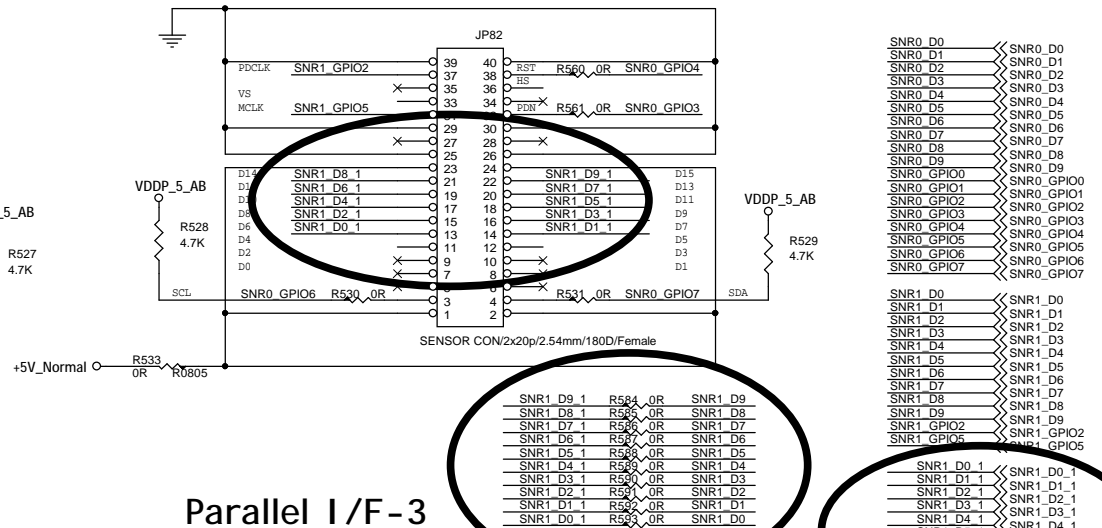




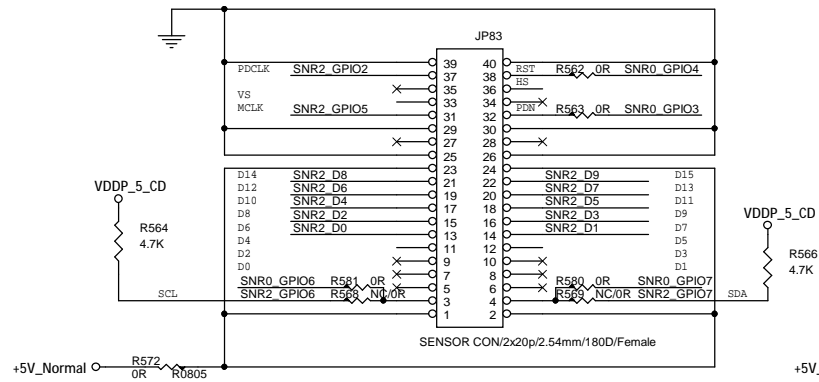
Parallel I/F-0



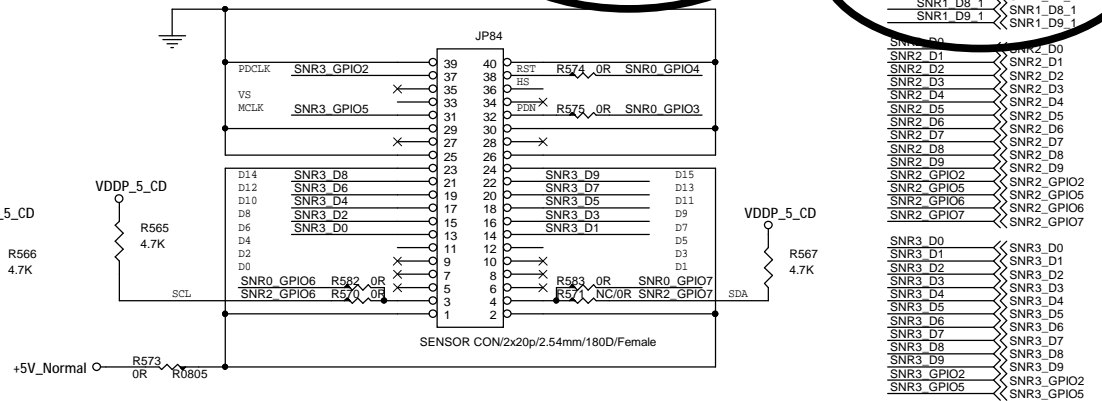
Parallel I/F-1



Parallel I/F-2



Parallel I/F-3



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