INGENIC

RD4770_PISCES
Schematic Revision 1.1.1

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INGENIC SEMICONDUCTOR CO.,LTD		
Title: RD4770_PISCES_BOARD		
Size: B	Document Number: COVER SHEET	Rev: V1.1.1
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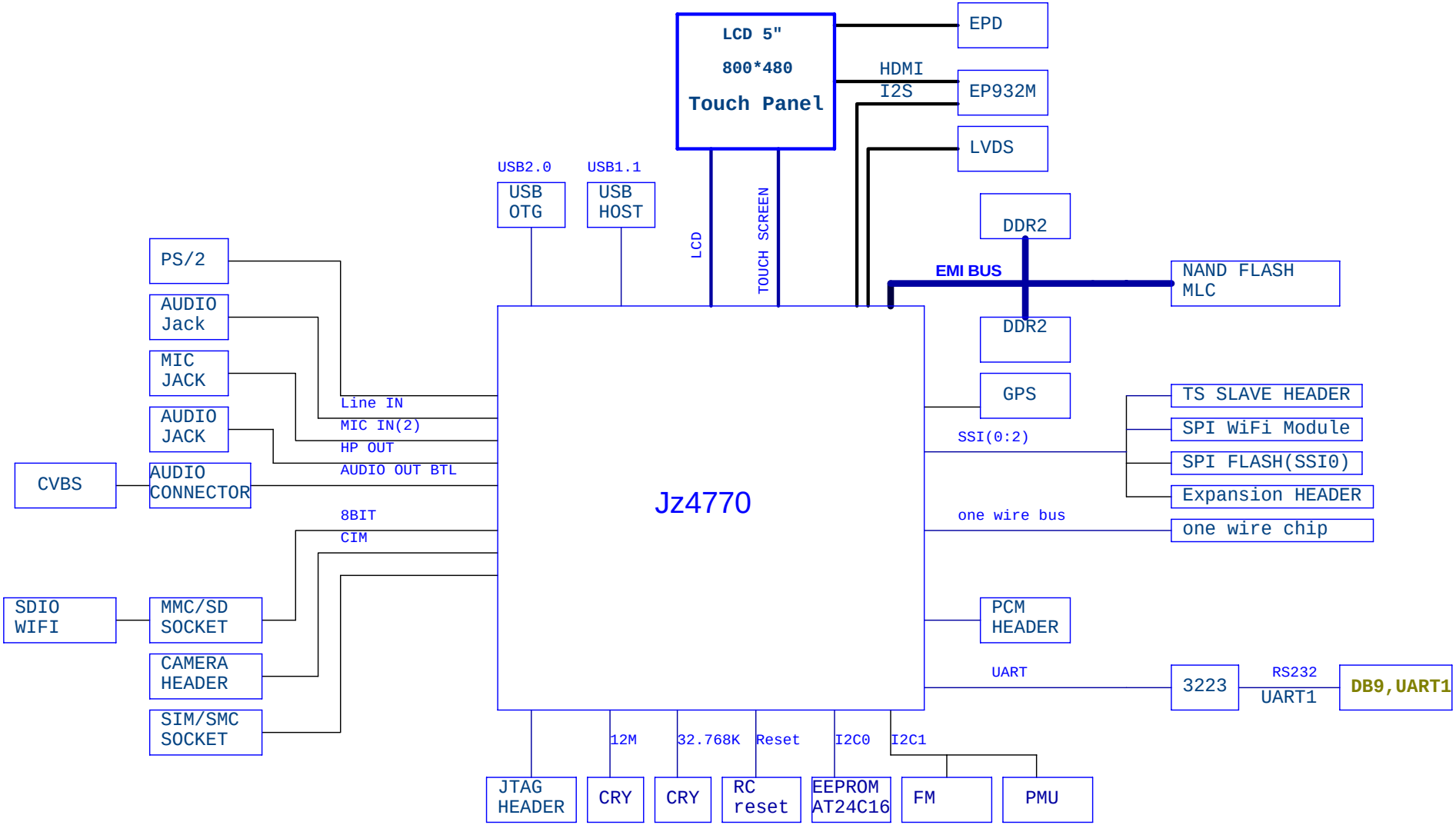

INGENIC SEMICONDUCTOR CO.,LTD		
Title: RD4770_PISCES_BOARD		
Size: B	Document Number: SYSTEM ARCHITECURE	Rev: V1.1.1
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DDR2

U1A

JZ4770_V1.5

DDR2

U2

H5PS1G63EFR-G7C

DDR2

U3

H5PS1G63EFR-G7C

SUGGESTION:

1.R3 R4 is Differential Clock Termination.
place on each side of memory

2.The trance DDR_VREF is 20 mils wide at least.

R7 and R8 can be adjust to 10K/1% when use mDDR

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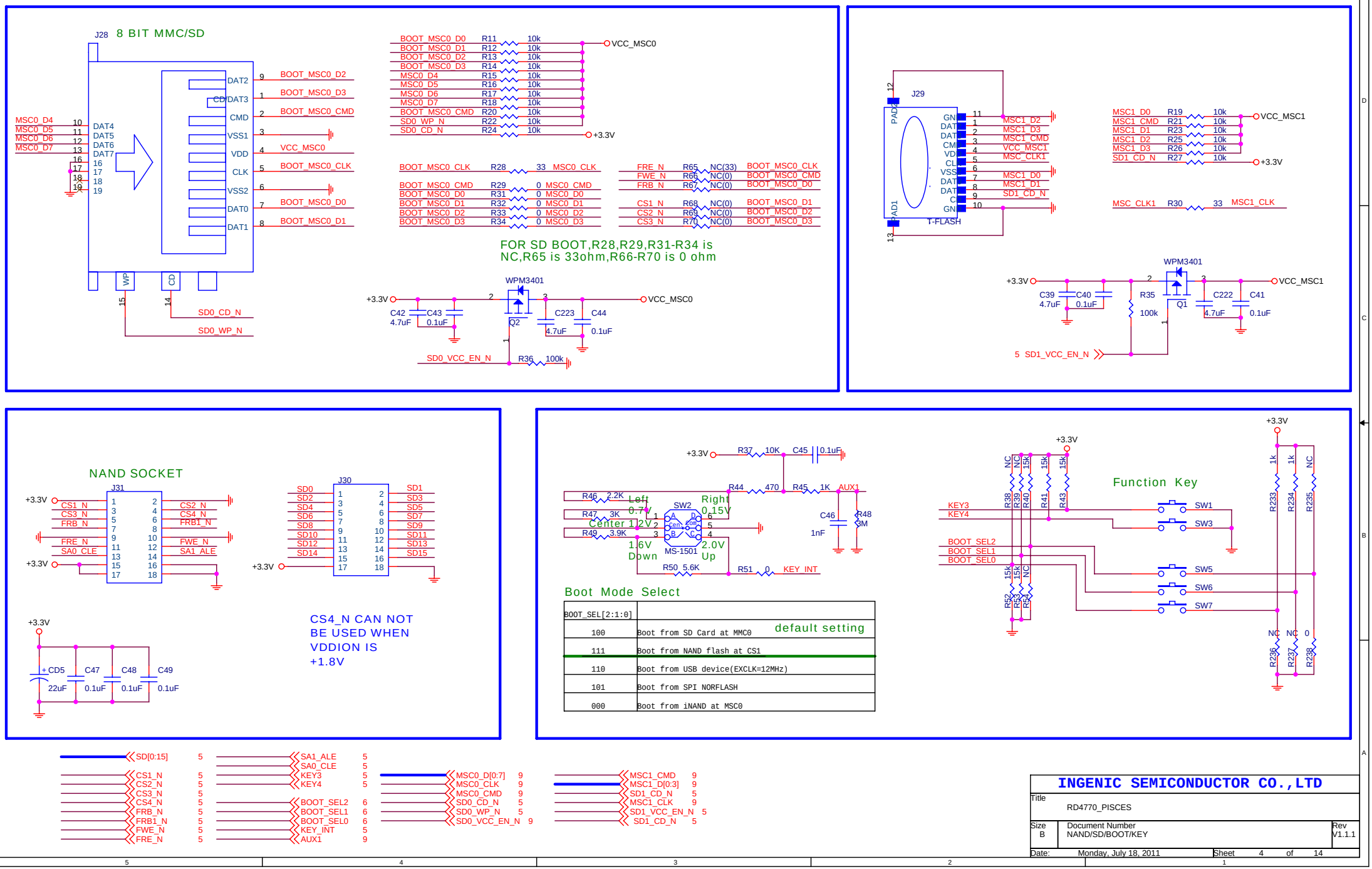

Title	RD4770_PISCES
Size B	Document Number NAND/SD/BOOT/KEY
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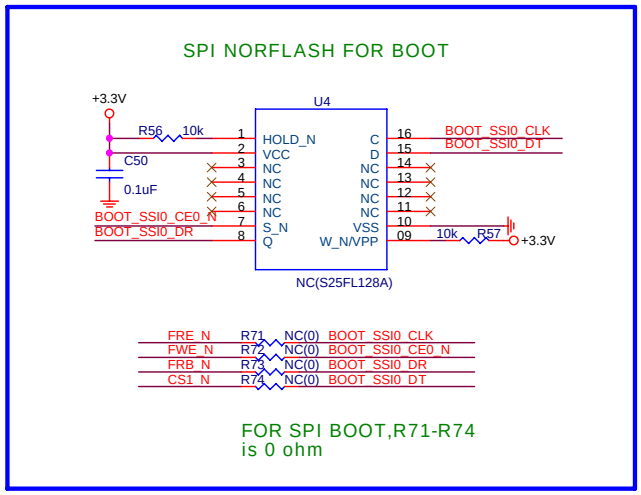
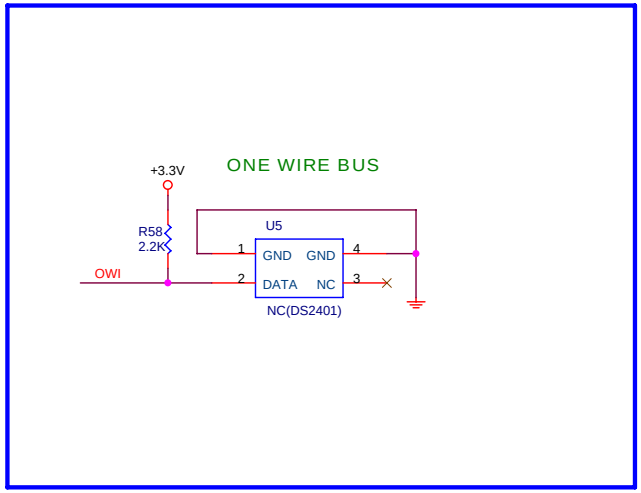
INGENIC SEMICONDUCTOR CO.,LTD





SD[0:15] 4

CS1_N 4
CS2_N 4
CS3_N 4
CS4_N 4
FRB_N 4
FRB1_N 4
FWE_N 4
FRE_N 4
SA1_ALE 4
SA0_CLE 4
SD0_CD_N 4
SD0_WP_N 4
SD1_CD_N 4
KEY_INT 4
USB_DETE 8
SCC_CD_N 12
SCC_RST_N 12
SCC_CLK 12
SCC_DATA 12
LCD_RESET_N 11
GPS_RX_EN 13
GPS_RF_CLK 13
GPS_RF_MAG 13
GPS_RF_SGN 13

UART2_TXD 12
UART2_RXD 12
KEY3 4
KEY4 4

TS_RST_N 12
NET_RESET_N 12
PMU_IRQ_N 7
MII_RXD0 12
MII_RXD1 12
MII_RXD2 12
MII_RXD3 12
MII_RXCLK 12
MII_CRS 12
MII_COL 12
MII_RXDV 12
MII_MDC 12
MII_MDIO 12
TRST_N 12
CPU_TCK 12
CPU_TMS 12
CPU_TDI 12
CPU_TDO 12
EPD_PWR4/HDMI_I2S_SCK 12
SD1_VCC_EN_N 4
SSI0_CLK 11,12

SSI0_DT 11,12
SSI0_DR 12
SSI0_CE0_N 11
SSI0_CE1_N 12
MII_TXD0 12
MII_TXD1 12
MII_TXD2 12
MII_TXD3 12
MII_TXCLK 12
MII_TXEN 12
MII_RXER 12
SHUTDOWN_N 9
AVDEFUSE_EN_N 6

UART2_CTS_N R60 0 KEY3
UART2_RTS_N R61 0 KEY4

SCC_DATA R64 0 TS_RST_N
SCC_RST_N R221 0 SHUTDOWN_N
SCC_CD_N R231 0 AVDEFUSE_EN_N

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Title: RD4770_PISCES		
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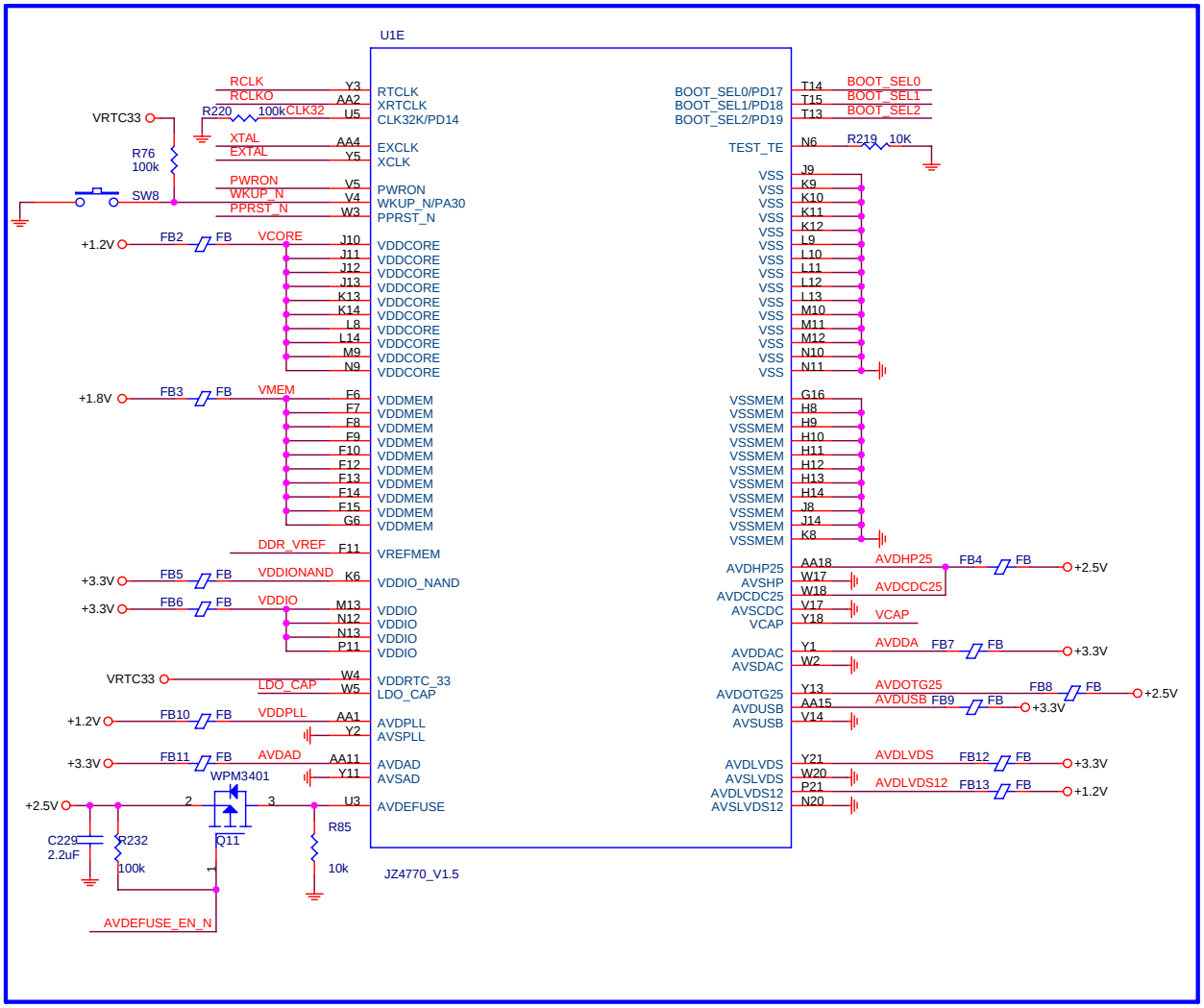

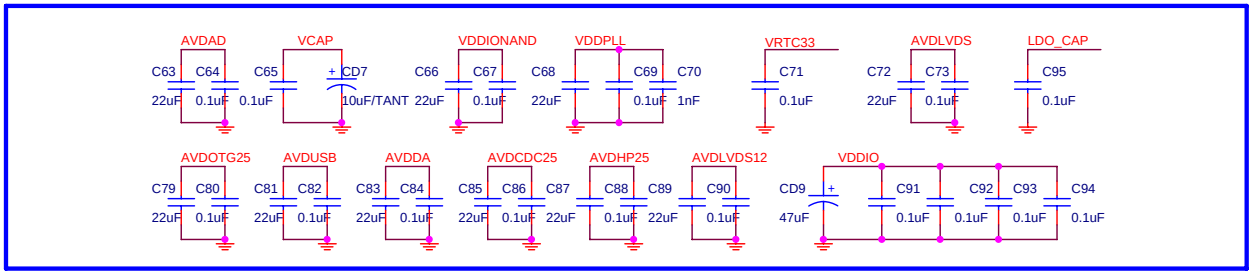

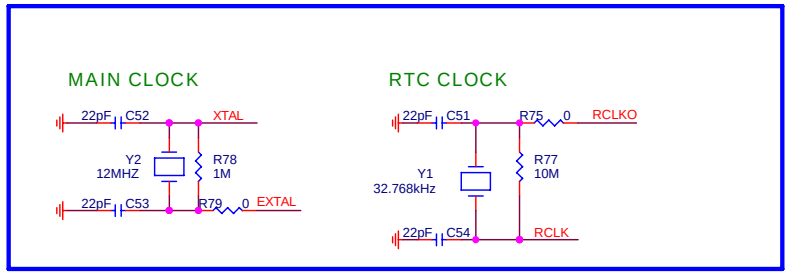

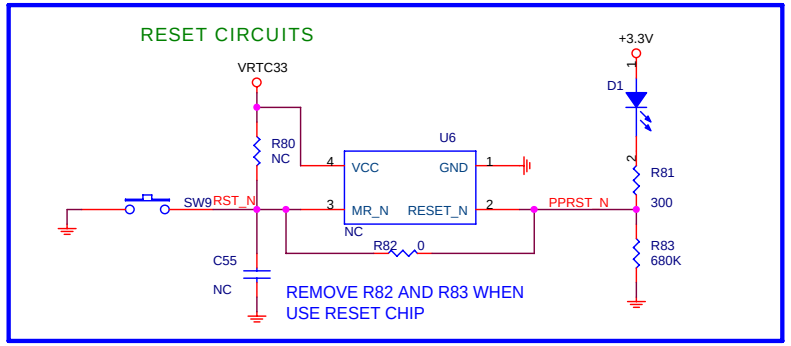

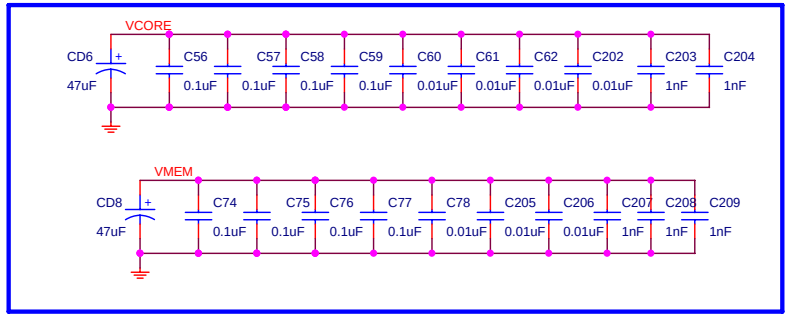

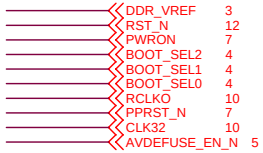

INGENIC SEMICONDUCTOR CO.,LTD		
Title: RD4770_PISCES		
Size: B	Document Number: RESET	Rev: V1.1.1
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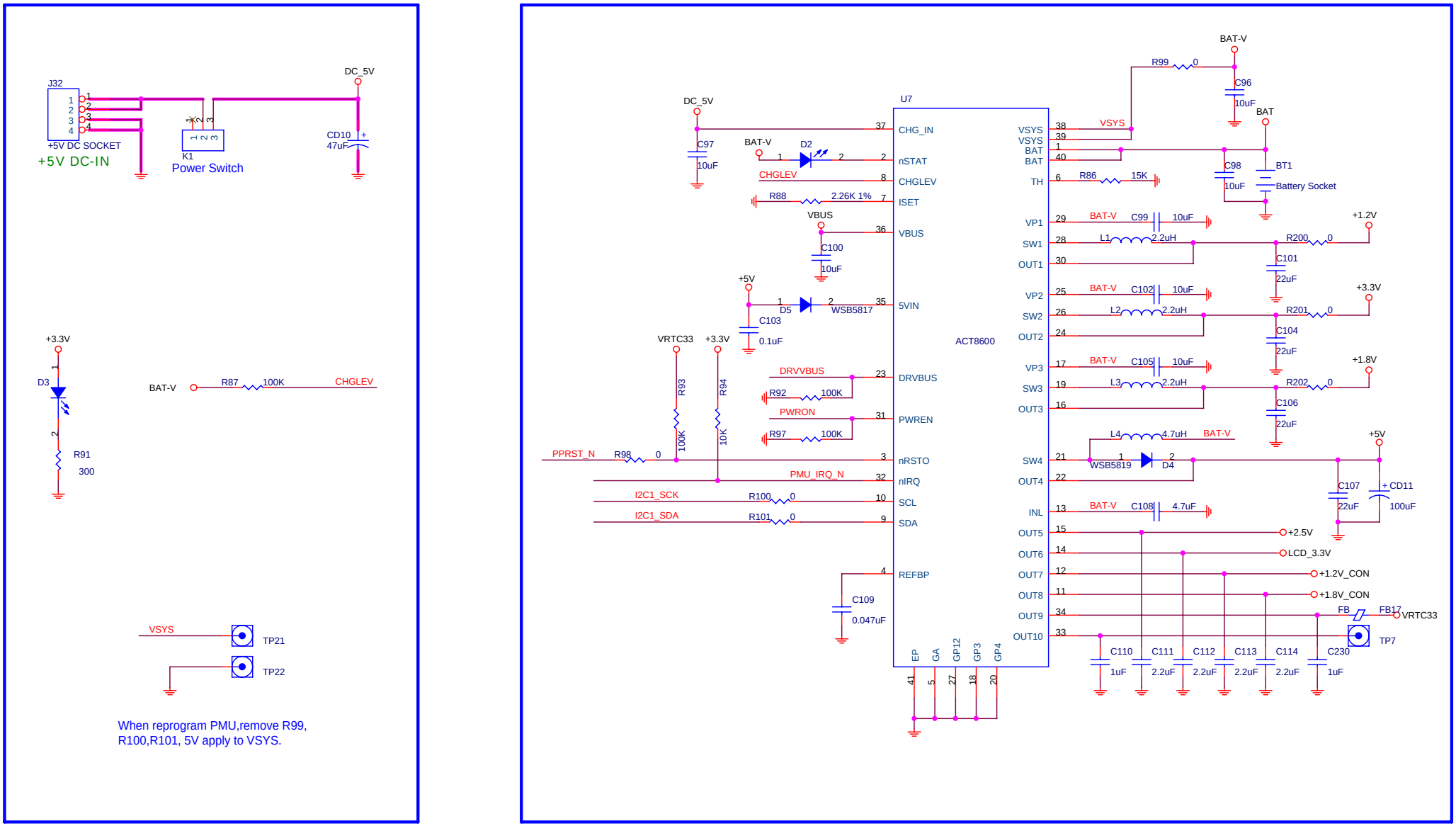

I2C1_SCK	11	DRVVBUS	9
I2C1_SDA	11	PWRON	6
VBUS	8,9	PMU_IRQ_N	5
		PPRST_N	6

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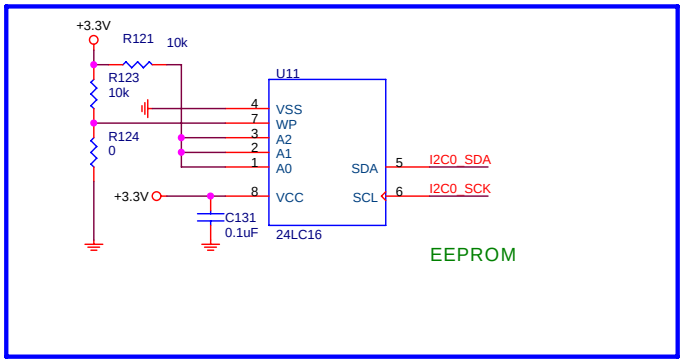

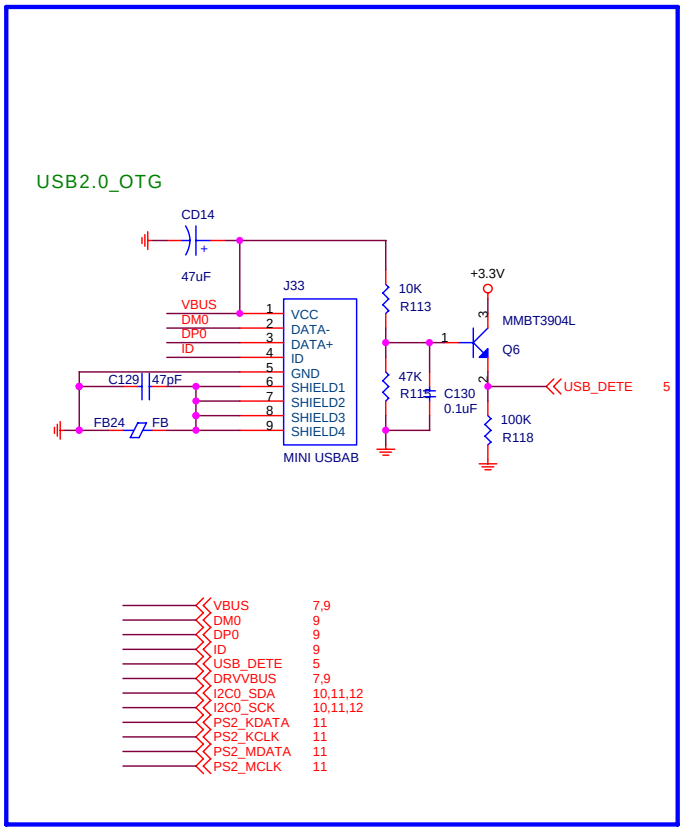

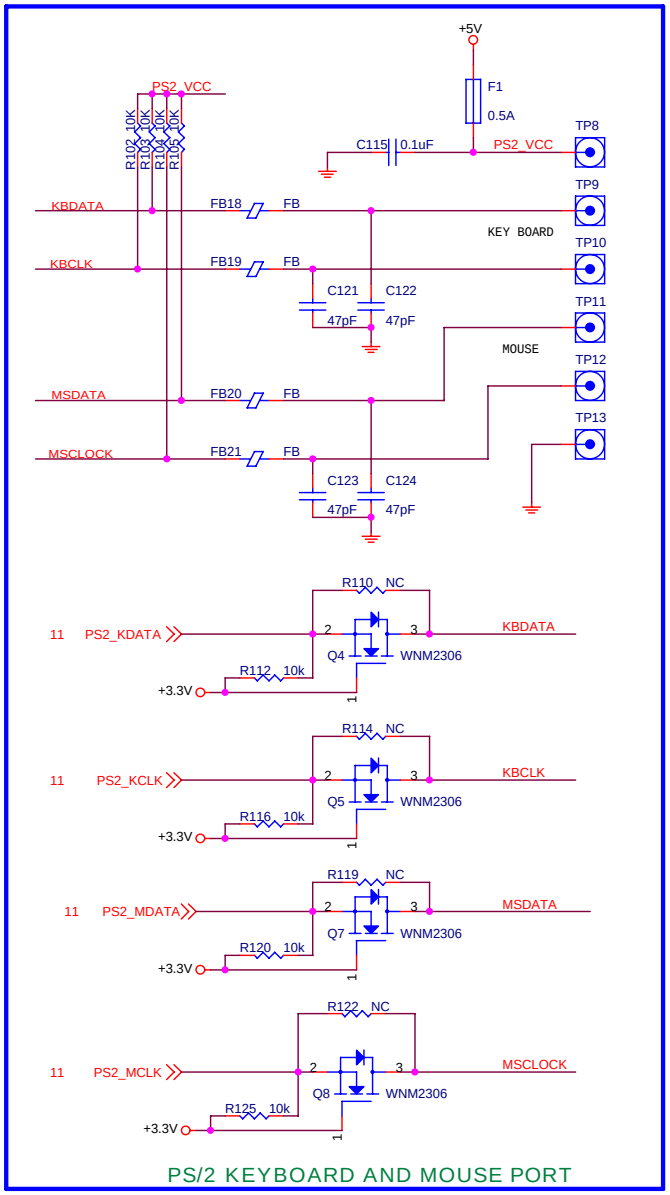

INGENIC SEMICONDUCTOR CO.,LTD		
Title: RD4770_PISCES		
Size: B	Document Number: USB OTG/EEPROM/PS2	Rev: V1.1.1
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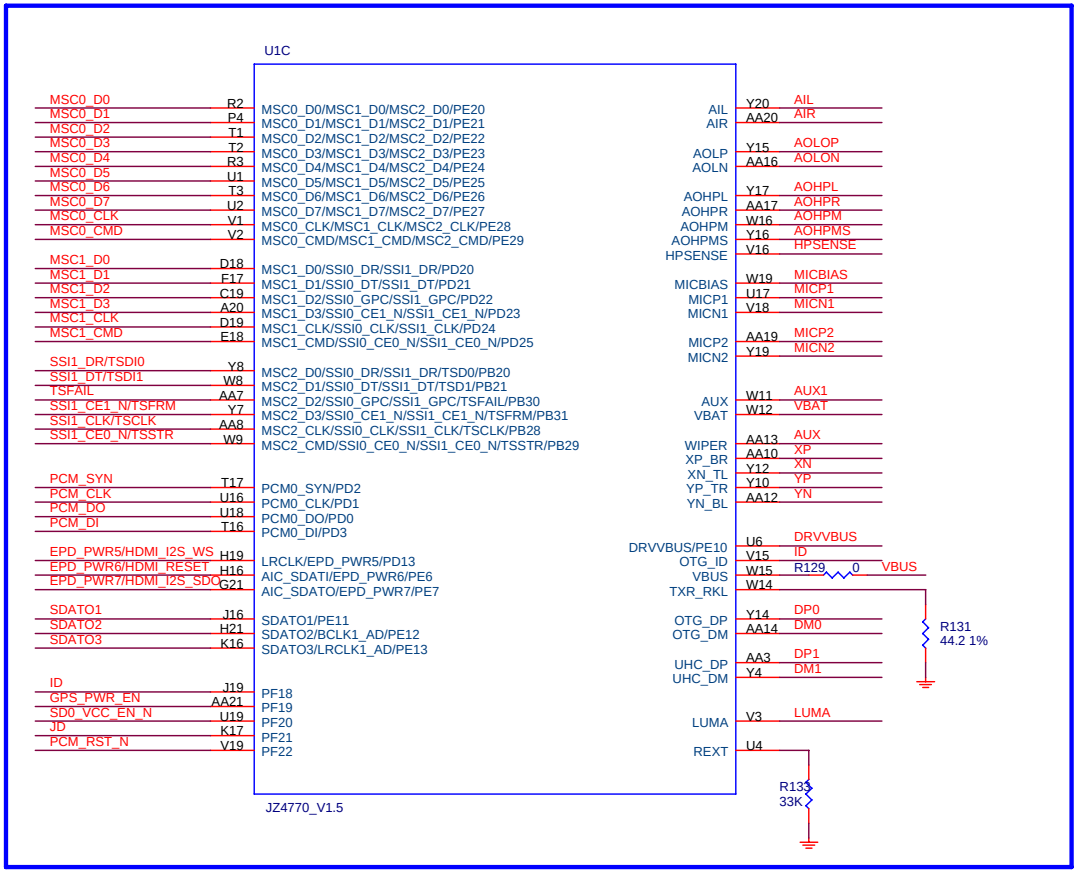

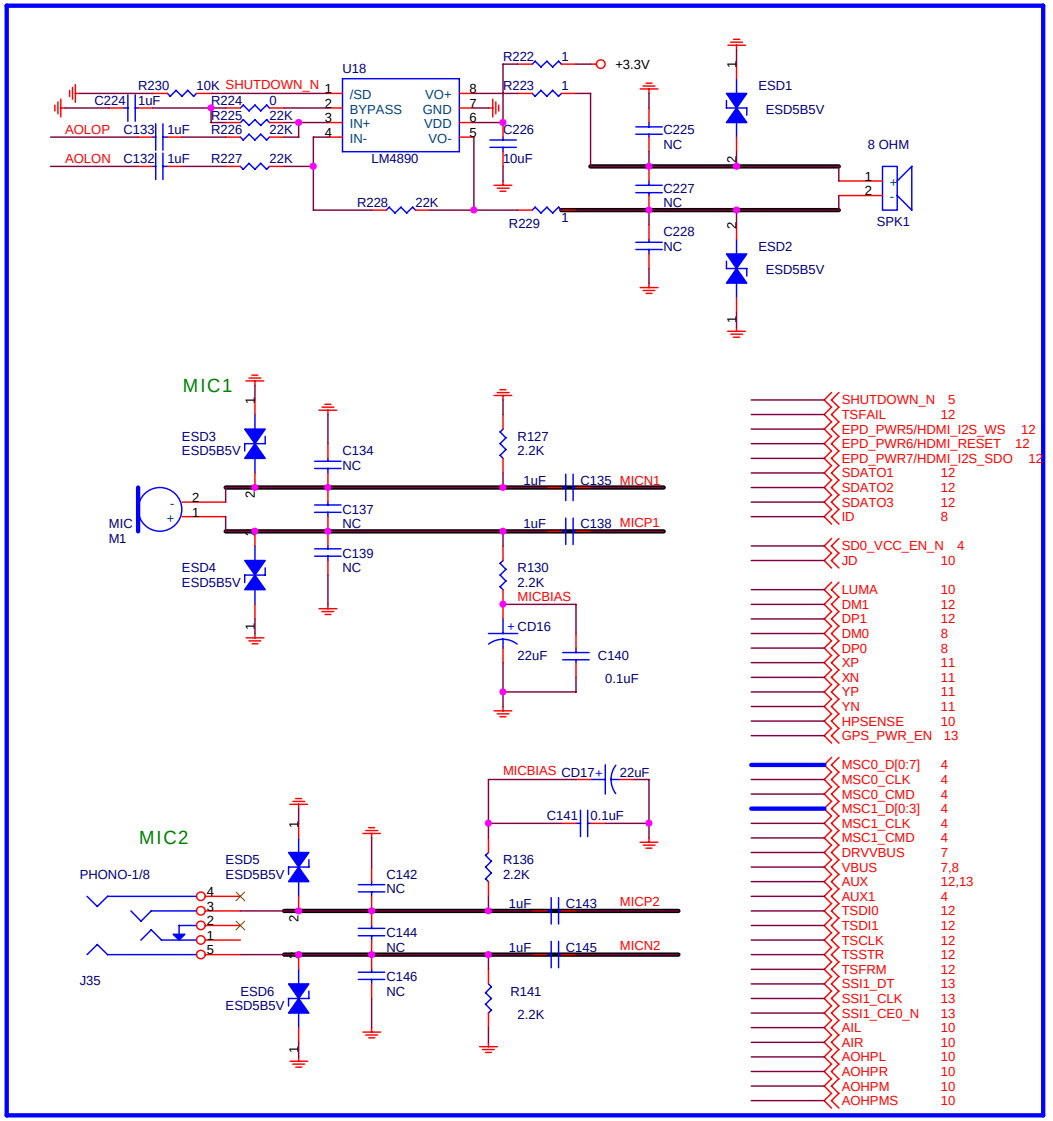

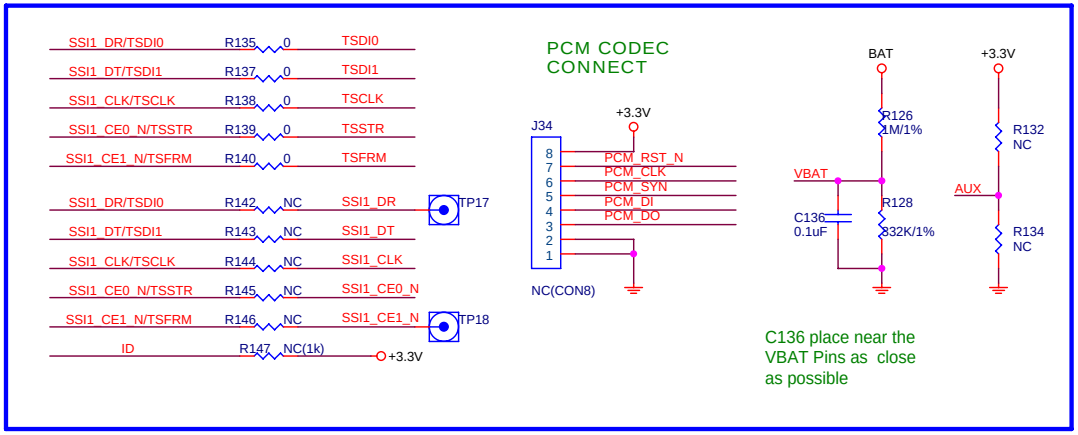

INGENIC SEMICONDUCTOR CO.,LTD			
Title: RD4770_PISCES			
Size: B	Document Number: SPK/MIC/PCM		Rev: V1.1.1
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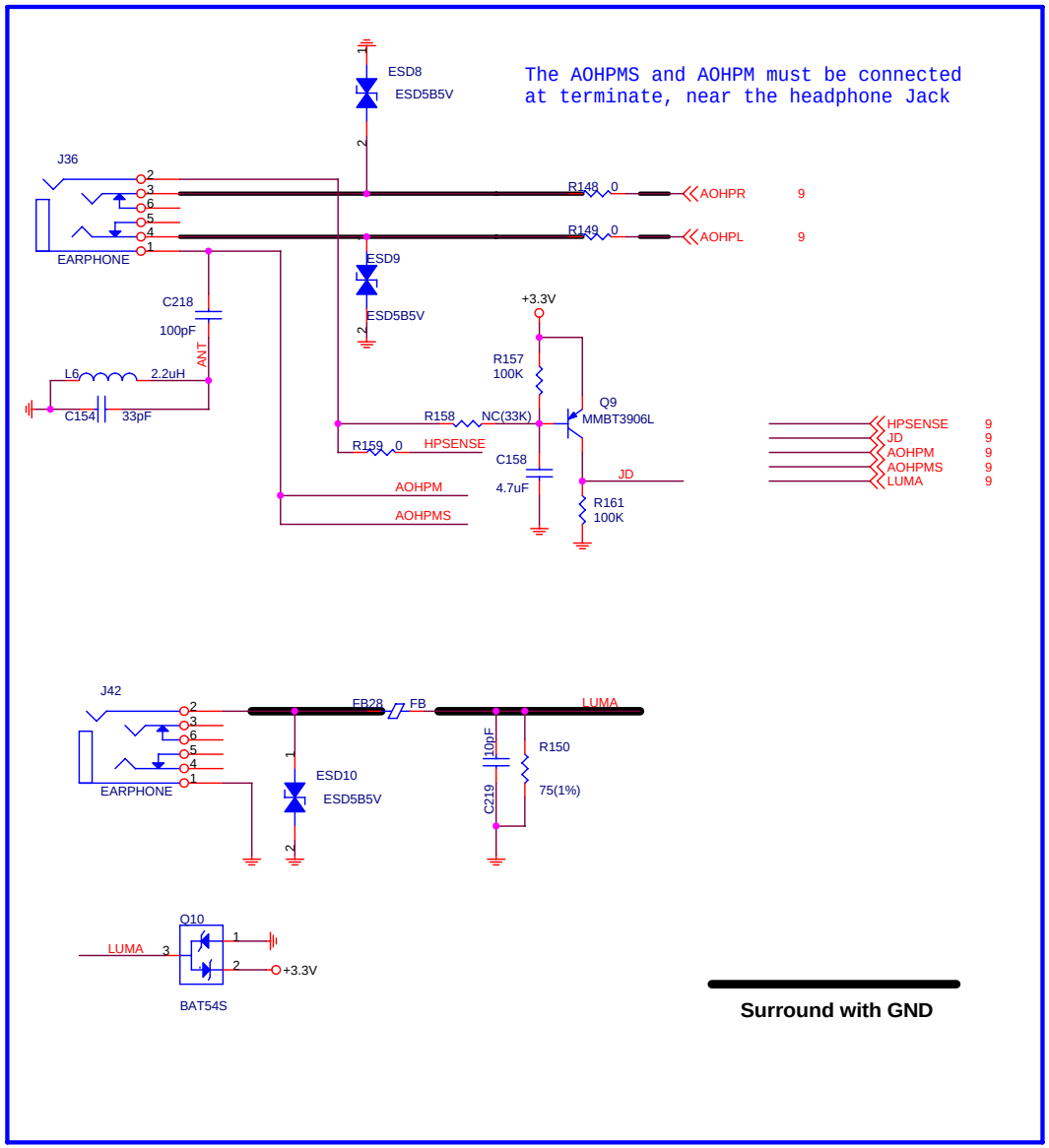

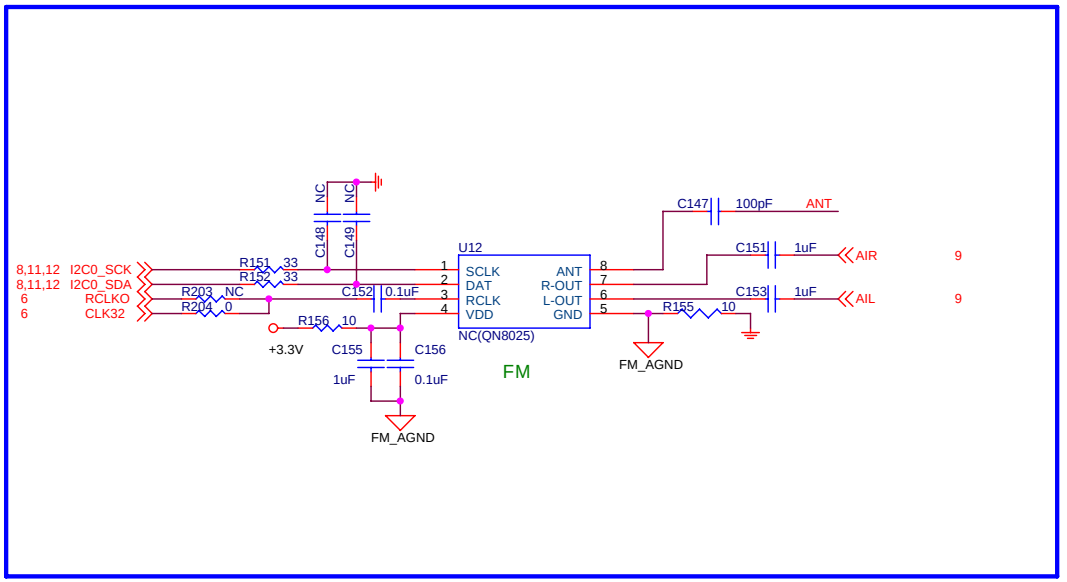

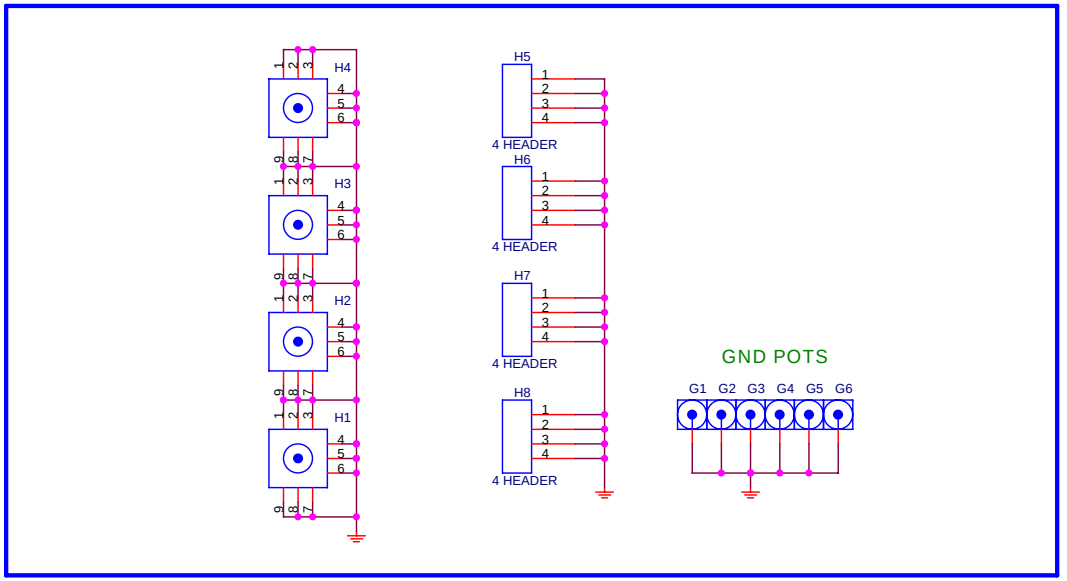

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Title: RD4770_PISCES		
Size: B	Document Number: AUDIO/VIDEO	Rev: V1.1.1
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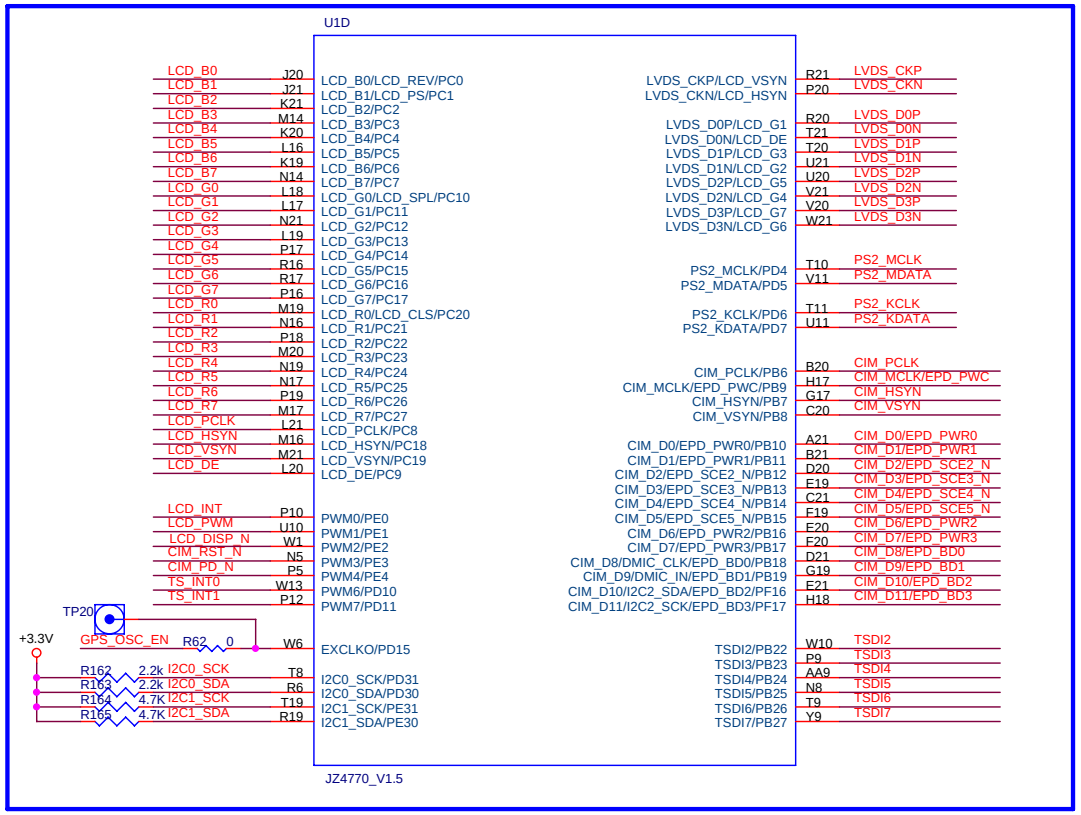

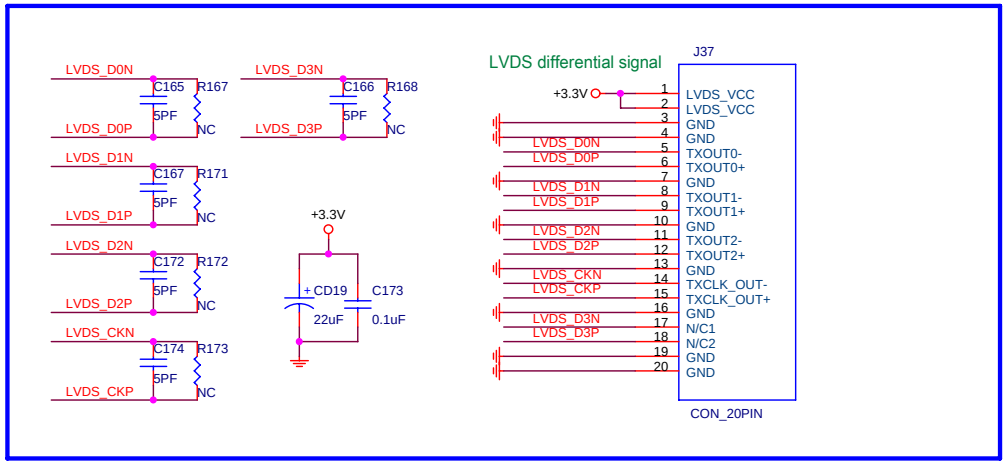

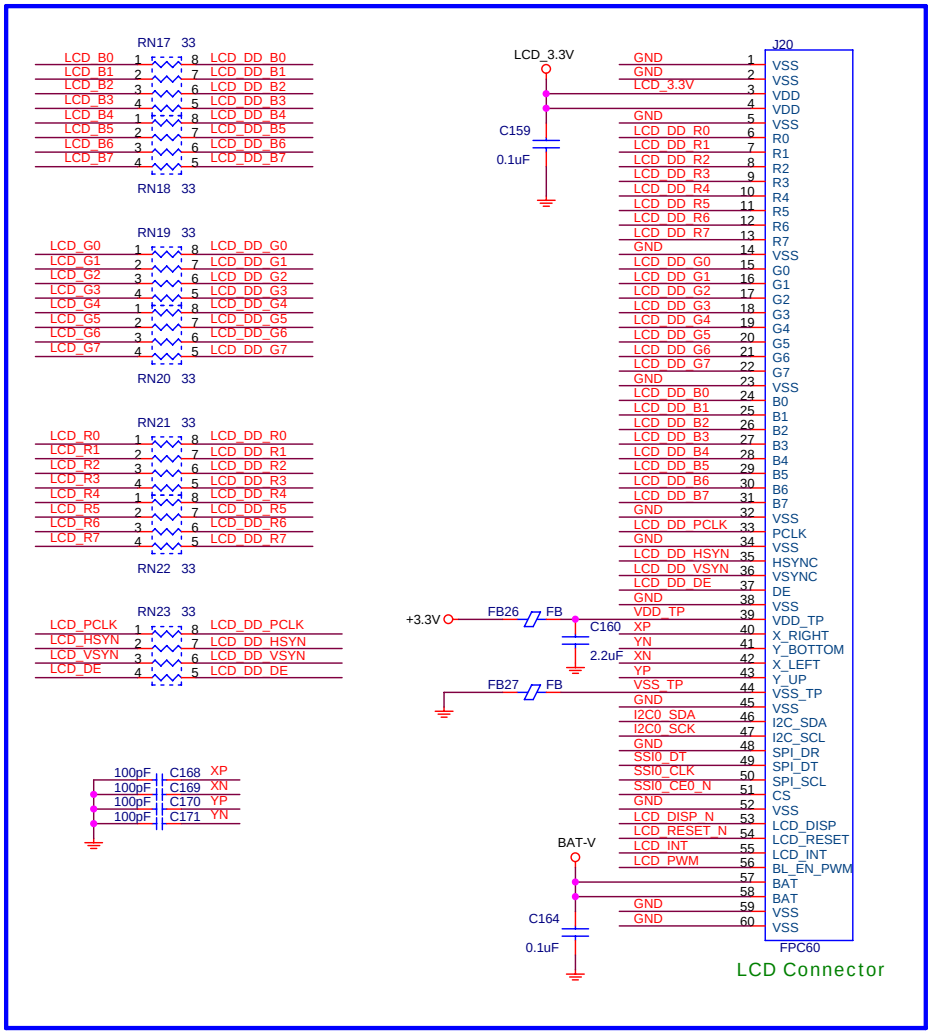

CIM_RST_N 12
CIM_PD_N 12
TS_INT0 12
TS_INT1 12
I2C0_SCK 8,10,12
I2C0_SDA 8,10,12
I2C1_SCK 7
I2C1_SDA 7
TSDI2 12
TSDI3 12
TSDI4 12
TSDI5 12
TSDI6 12
TSDI7 12
PS2_MCLK 8
PS2_MDATA 8
PS2_KCLK 8
PS2_KDATA 8
LCD_RESET_N 5
GPS_OSC_EN 13

CIM_PCLK 12
CIM_MCLK/EPD_PWC 12
CIM_HSYN 12
CIM_VSYN 12
CIM_D0/EPD_PWR0 12
CIM_D1/EPD_PWR1 12
CIM_D2/EPD_SCE2_N 12
CIM_D3/EPD_SCE3_N 12
CIM_D4/EPD_SCE4_N 12
CIM_D5/EPD_SCE5_N 12
CIM_D6/EPD_PWR2 12
CIM_D7/EPD_PWR3 12
CIM_D8/EPD_BD0 12
CIM_D9/EPD_BD1 12
CIM_D10/EPD_BD2 12
CIM_D11/EPD_BD3 12
XP 9
XN 9
YP 9
YN 9

SSI0_DT 5,12
SSI0_CLK 5,12
SSI0_CE0_N 5

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Title	RD4770_PISCES	
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Camera Interface Connector

J38

1		
2		+1.8V_CON
3		
4		+1.8V_CON
5		
6	CIM_D11/EPD_BD3	
7	I2C0_SCK	
8		+3.3V
9	I2C0_SDA	
10		+1.2V_CON
11		
12	R174 0	+3.3V
13	R175 0	
14	R176 0	
15		
16		
17		
18		
19		
20	SCC_CD_N	
21	SCC_DATA	
22	SCC_CLK	
23	SCC_RST_N	
24	CIM_D8/EPD_BD0	
25	CIM_D9/EPD_BD1	
26	CIM_RST_N	
27	CIM_D10/EPD_BD2	
28	CIM_PD_N	
29	CIM_MCLK/EPD_PWC	
30	CIM_PCLK	
31	CIM_VSYN	
32	CIM_HSYN	
33	CIM_D7/EPD_PWR3	
34	CIM_D6/EPD_PWR2	
35	CIM_D5/EPD_SCE5_N	
36	CIM_D4/EPD_SCE4_N	
37	CIM_D3/EPD_SCE3_N	
38	CIM_D2/EPD_SCE2_N	
39	CIM_D1/EPD_PWR1	
40	CIM_D0/EPD_PWR0	

TS Interface Connector

J40

1		
2		+1.8V_CON
3	TS_RST_N	
4		+1.8V_CON
5		
6		
7	I2C0_SCK	
8		+3.3V
9	I2C0_SDA	
10		+1.2V_CON
11		
12	R177 0	+3.3V
13	R178 0	
14	R179 0	
15	SSI0_DT	
16	SSI0_CLK	
17	SSI0_CE1_N	
18	SSI0_DR	
19		
20		
21		
22		
23		
24		
25		
26	TS_INT0	
27		
28	TS_INT1	
29	TSFAIL	
30	TSCLK	
31	TSSTR	
32	TSFRM	
33	TSDI7	
34	TSDI6	
35	TSDI5	
36	TSDI4	
37	TSDI3	
38	TSDI2	
39	TSDI1	
40	TSDI0	

+1.2V_CON: C213 10uF, C214 10uF, C180 0.1uF, C215 0.1uF

+1.8V_CON: C210 10uF, C211 10uF, C182 0.1uF, C212 0.1uF

+3.3V: C220 10uF, C216 10uF, C217 0.1uF, C221 0.1uF

J26

1		BAT-V
2		
3		
4		
5		+3.3V
6		
7	DP1	9
8	MII_RXCLK	5
9	DM1	9
10	MII_RXD0	5
11		
12	MII_RXD1	5
13		
14	MII_RXD2	5
15	NET_RESET_N	5
16	MII_RXD3	5
17	MII_RXER	5
18	MII_MDIO	5
19	MII_RXDV	5
20	MII_CRS	5
21	MII_TXD3	5
22	MII_COL	5
23	MII_TXD2	5
24	MII_MDC	5
25	MII_TXD1	5
26	MII_TXCLK	5
27	MII_TXD0	5
28	MII_TXEN	5
29		
30		

Ethernet & USB Con

J27

1		+3.3V	
2			
3			
4			
5	I2C0_SCK	TRST_N	5
6			
7		CPU_TDI	5
8	I2C0_SDA		
9		CPU_TDO	5
10			
11		CPU_TMS	5
12			
13		CPU_TCK	5
14			
15		RST_N	6
16			
17			
18	UART2_RXD	UART2_RXD	5
19	UART2_TXD	UART2_TXD	5
20			

JDI & Uart Con

+3.3V: C175 10uF, C176 0.1uF

BAT-V: C177 10uF, C178 0.1uF

J23

1		
2		
3	CIM_D0/EPD_PWR0	
4	CIM_D1/EPD_PWR1	
5	CIM_D6/EPD_PWR2	
6	CIM_D7/EPD_PWR3	
7	EPD_PWR4/HDMI_I2S_SCK	
8	EPD_PWR6/HDMI_RESET	
9	EPD_PWR5/HDMI_I2S_WS	
10	EPD_PWR7/HDMI_I2S_SDO	
11	CIM_D2/EPD_SCE2_N	
12	CIM_D3/EPD_SCE3_N	
13	CIM_D4/EPD_SCE4_N	
14	CIM_D5/EPD_SCE5_N	
15	CIM_MCLK/EPD_PWC	
16	SDATO1	
17	SDATO2	
18	SDATO3	
19		
20	AUX	
21	CIM_D8/EPD_BD0	
22	CIM_D9/EPD_BD1	
23	CIM_D10/EPD_BD2	
24	CIM_D11/EPD_BD3	

EPD/HDMI Connector

CIM_D11/EPD_BD3	11
I2C0_SCK	8,10,11
I2C0_SDA	8,10,11
SCC_CD_N	5
SCC_DATA	5
SCC_CLK	5
SCC_RST_N	5
CIM_D8/EPD_BD0	11
CIM_D9/EPD_BD1	11
CIM_RST_N	11
CIM_D10/EPD_BD2	11
CIM_PD_N	11
CIM_MCLK/EPD_PWC	11
CIM_PCLK	11
CIM_VSYN	11
CIM_HSYN	11
CIM_D7/EPD_PWR3	11
CIM_D6/EPD_PWR2	11
CIM_D5/EPD_SCE5_N	11
CIM_D4/EPD_SCE4_N	11
CIM_D3/EPD_SCE3_N	11

TS_RST_N	5
SSI0_DT	5,11
SSI0_CLK	5,11
EPD_PWR4/HDMI_I2S_SCK	5
EPD_PWR6/HDMI_RESET	9
EPD_PWR5/HDMI_I2S_WS	9
EPD_PWR7/HDMI_I2S_SDO	9
SDATO1	9
SDATO2	9
SDATO3	9
AUX	9,13
TSDI0	9
TSDI1	9
CIM_D2/EPD_SCE2_N	11
CIM_D1/EPD_PWR1	11
CIM_D0/EPD_PWR0	11

TSCLK	9
TSSTR	9
TSFRM	9
TSFAIL	9
TSDI2	11
TSDI3	11
TSDI4	11
TSDI5	11
TSDI6	11
TSDI7	11
SSI0_CE1_N	5
SSI0_DR	5
TS_INT0	11
TS_INT1	11

INGENIC SEMICONDUCTOR CO.,LTD

Title	RD4770_PISCES	
Size B	Document Number TS/CAMERA/EPD/JDI/ETHERNET	Rev V1.1.1
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GPS RF Receiver core

Must be placed into RF shielding case

RF Microstrip
Z0= 50 ohm

For good grounding, put 9 vias under RF IC die ground pad Pin25.

Opreation Mode Description:

RX_EN	OSC_EN	Mode
0	0	All stand by
0	1	Oscillator only
1	0	Full active (external reference)
1	1	Full active (internal oscillator)

RF interface

J41 To GPS Antenna.

ANTENNA CONNECTOR

U16 BGA715L7

B9444(1575MHz) SAW1 (EPCOS)

U15 HV5820/B-24QFN

Y3 16.367667MHz TCXO 0.5ppm

Digital IF Frequency: 4.092MHz

5820:Default
5820B:R195&R196&R197 NC,R192&R193&R194 0R,R186&R187&R188 10K

GPS Power

U17 SGM2019-3.3YN5G/TR

BAT-V, L10 100nH, C198 2.2uF, C199 0.01uF, C200 0.01uF, C201 2.2uF, GRVDD 3.3V, L11 100nH, GRVCC, TP16, GPS_PWR_EN, R199 10K

GPS_RX_EN 5
GPS_OSC_EN 11
GPS_RF_MAG 5
GPS_RF_SGN 5
GPS_RF_CLK 5
GPS_PWR_EN 9

AUX 9,12
SSI1_DT 9
SSI1_CLK 9
SSI1_CE0_N 9

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Data	Revision	Change
MAY.04 2011	Rev1.0	1. First released Revision
MAY.24 2011	Rev1.1	1.PAGE04: Delete R42,SW4. 2.PAGE04: Add R233-R238 for boot. 3.PAGE04: Change R36 from 10K to 100K . 4.PAGE05: Delete R63,R55. 5.PAGE06: R80,C55 NC. 6.PAGE07:Change PMU OUT2 and OUT3 . 7.PAGE07: Delete R90 and Q3,R98 is 0 8.PAGE07: Change R88 from 2.87K to 2.26K. 9.PAGE11: R167,R168,R171,R172,R173 NC.
July.4 2011	Rev1.1.1	1.PAGE04: R38,R39,R236,R237 NC;R52,R53 15K;R232,R233 1K.

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