INGENIC

RD4760_LEPUS BOARD

Schematic Revision 1.3.2

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INGENIC SEMICONDUCTOR CO.,LTD

Title: RD4760_LEPUS

Size: B | Document Number: COVER | Rev: 1.3.2

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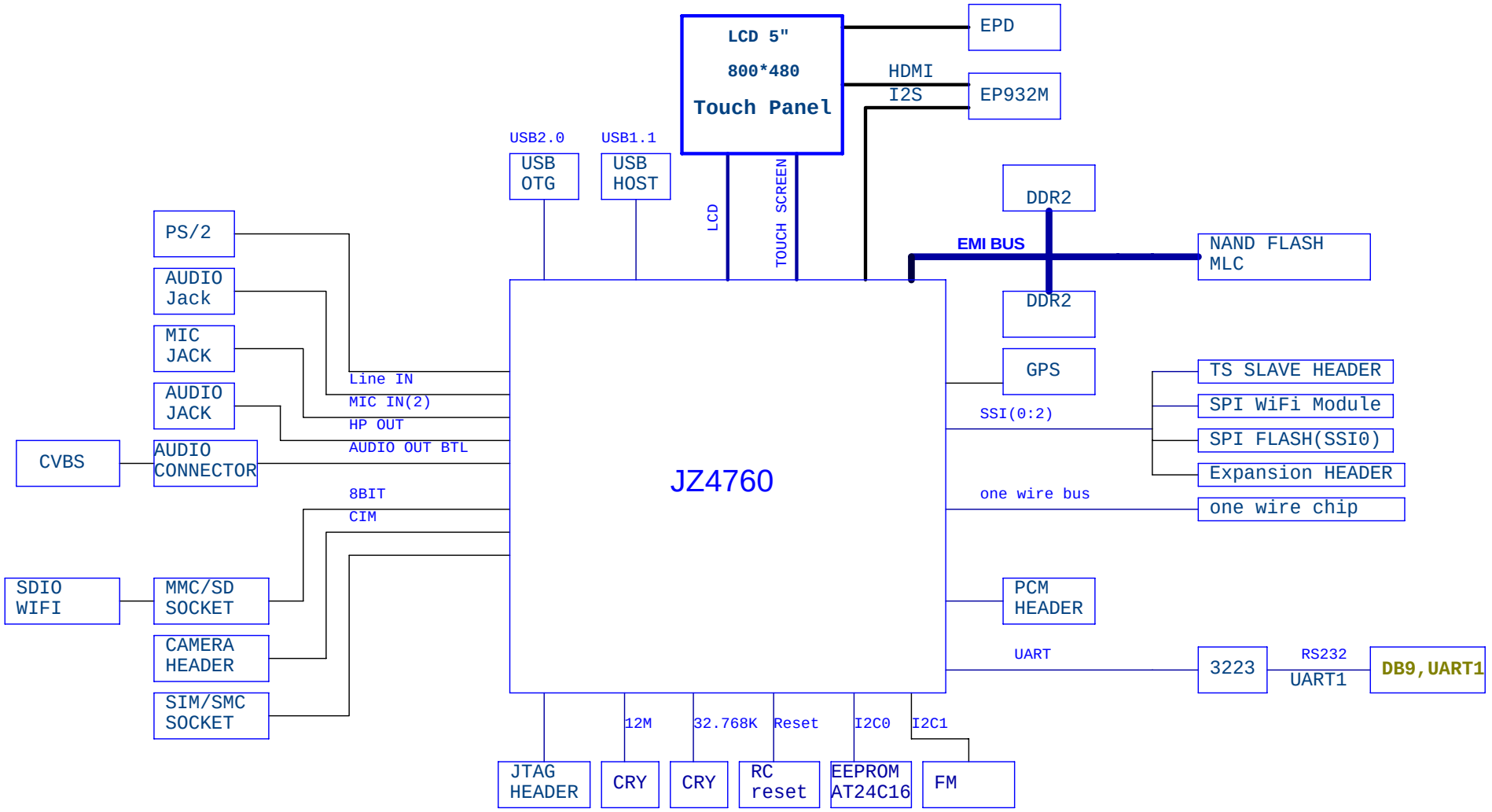

INGENIC Semiconductor Co.,Ltd.

Title: RD4760_LEPUS		
Size: B	Document Number: SYSTEM ARCHITECURE	Rev: 1.3.2
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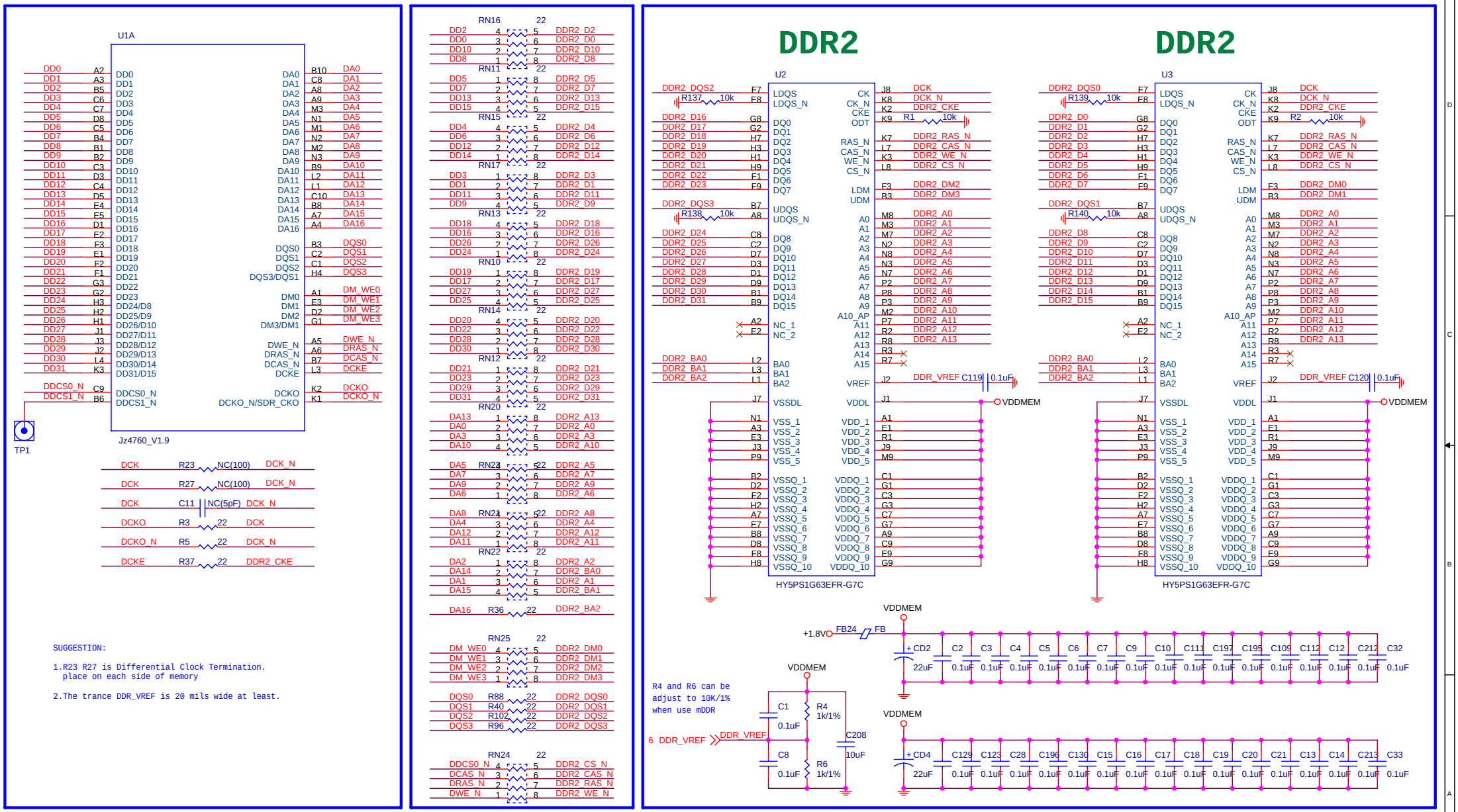

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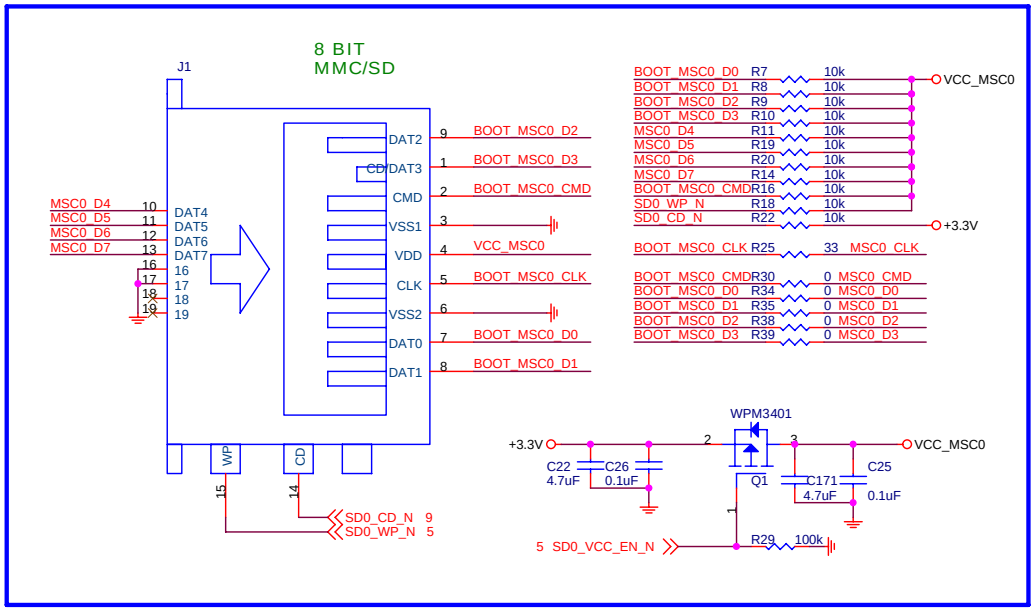

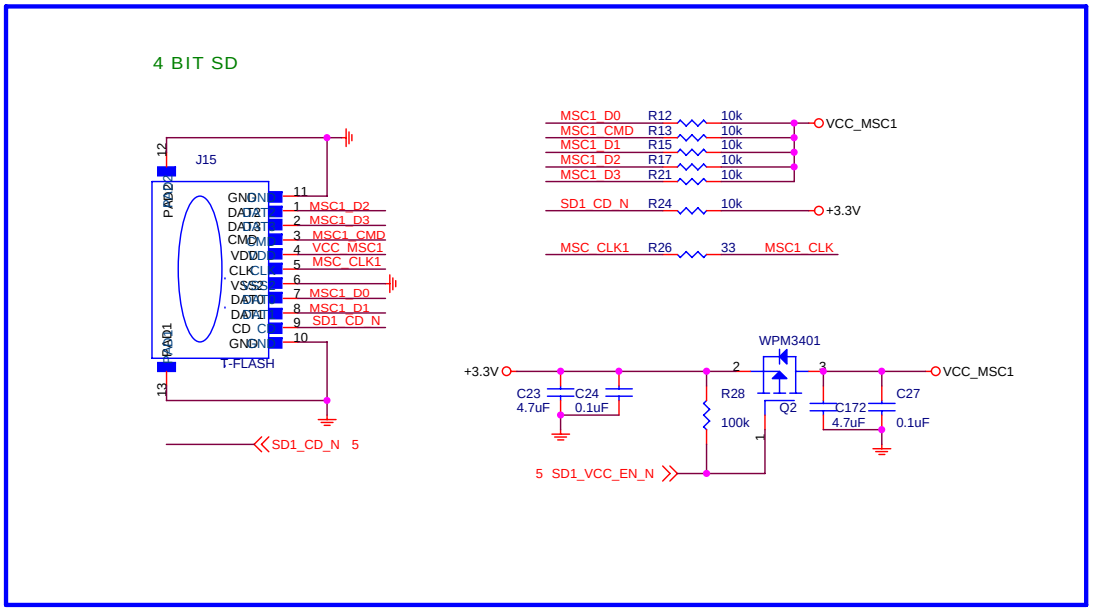

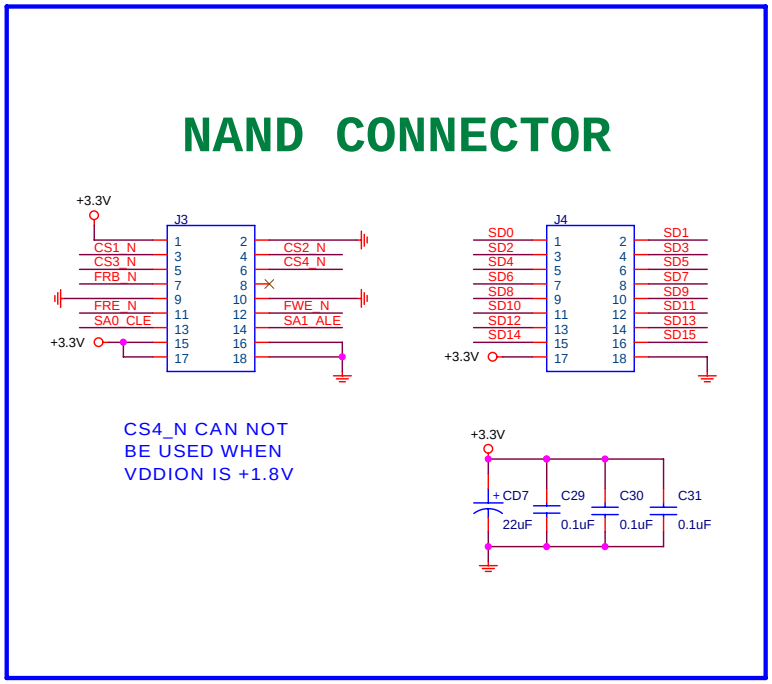

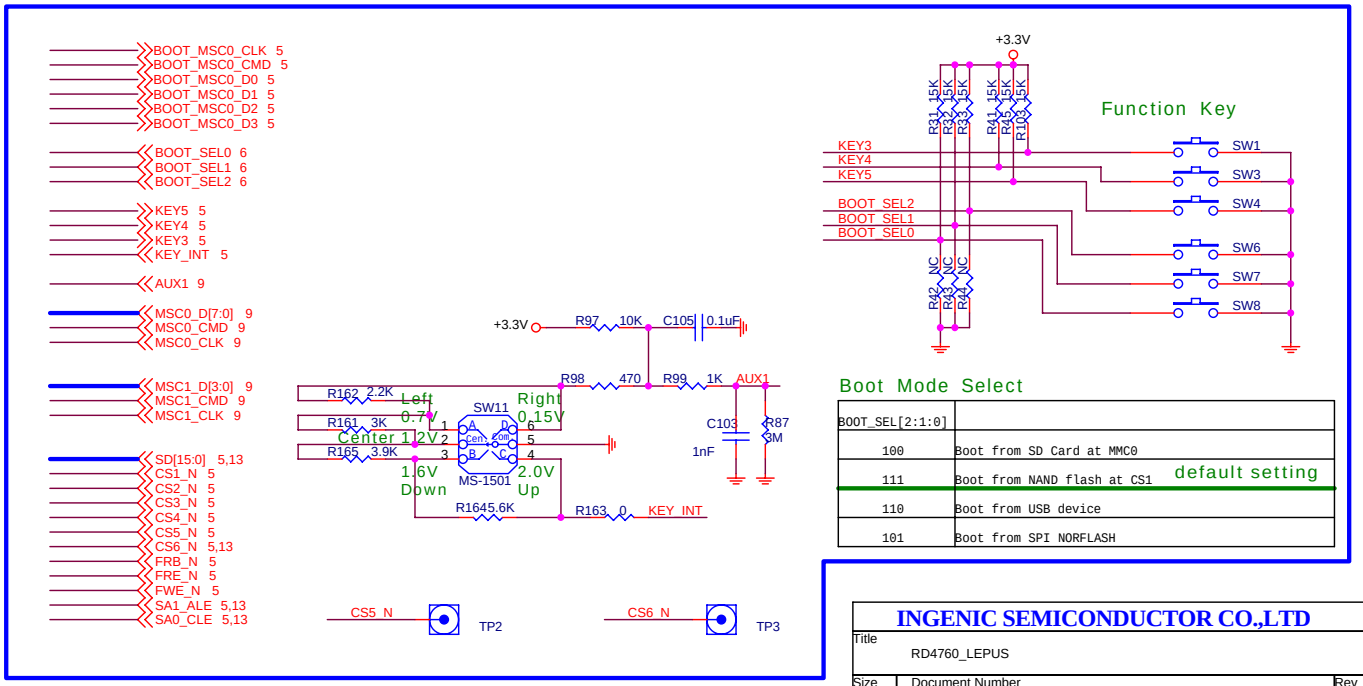

INGENIC SEMICONDUCTOR CO.,LTD	
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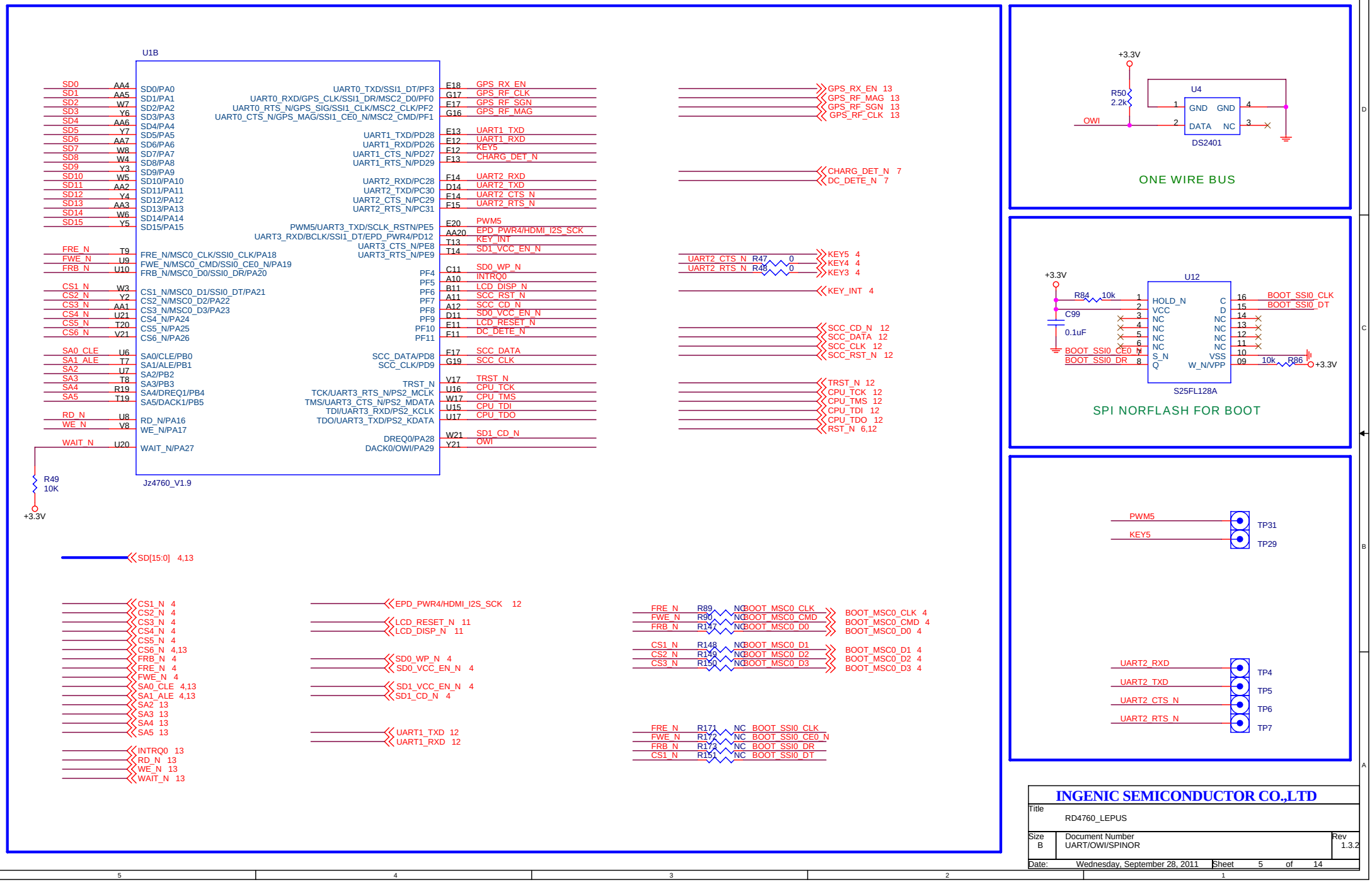

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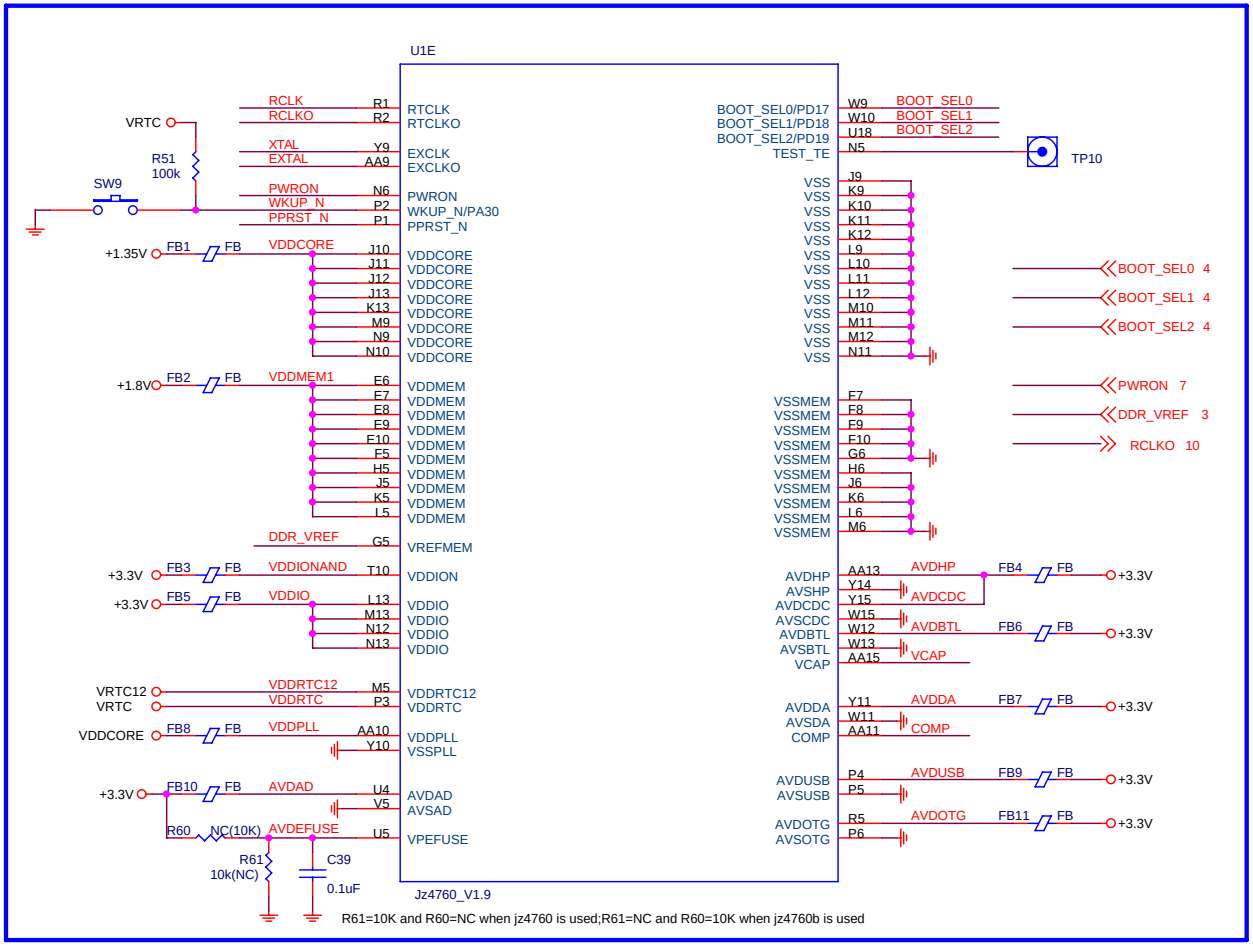

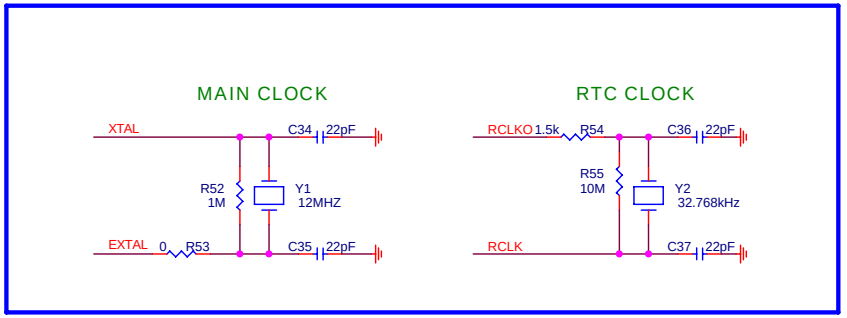

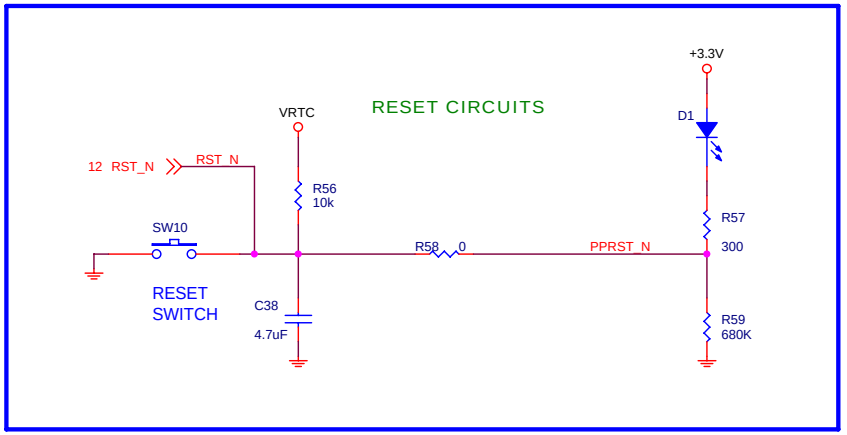

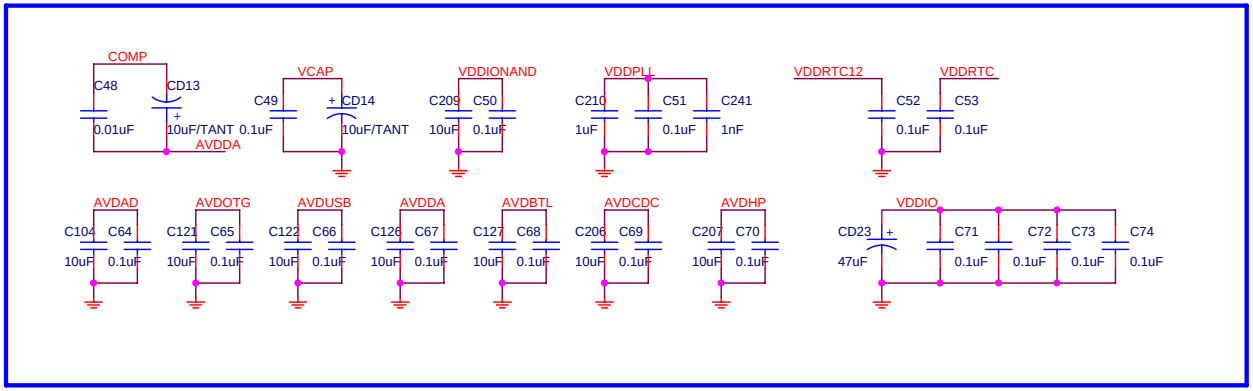

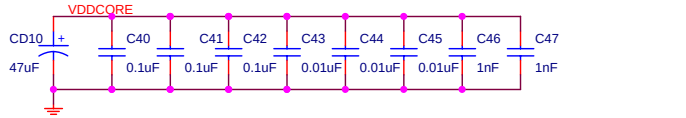

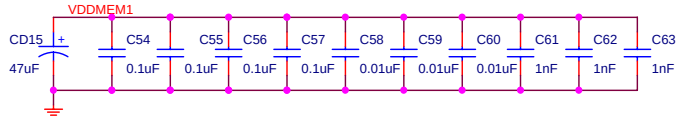

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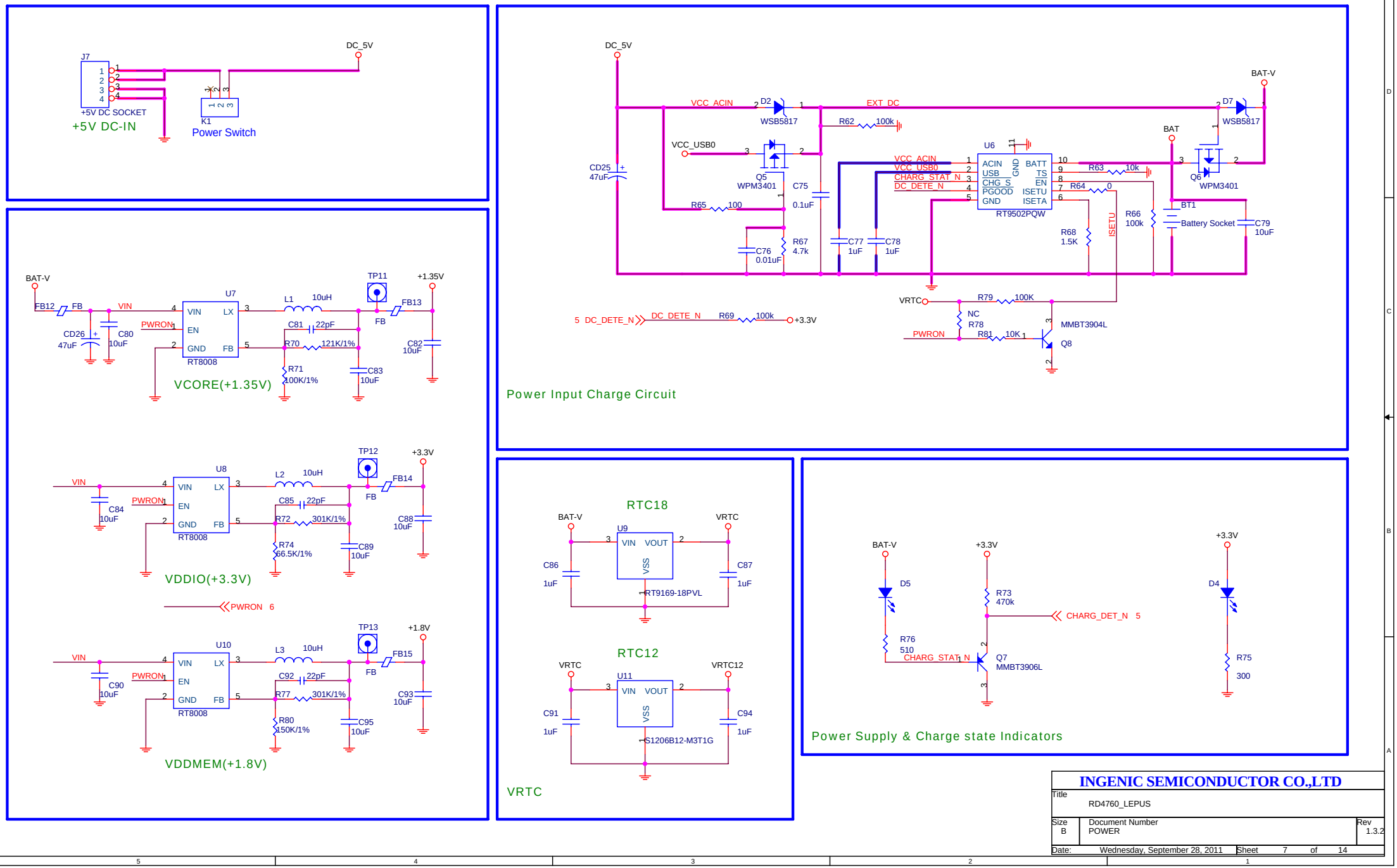

INGENIC SEMICONDUCTOR CO.,LTD		
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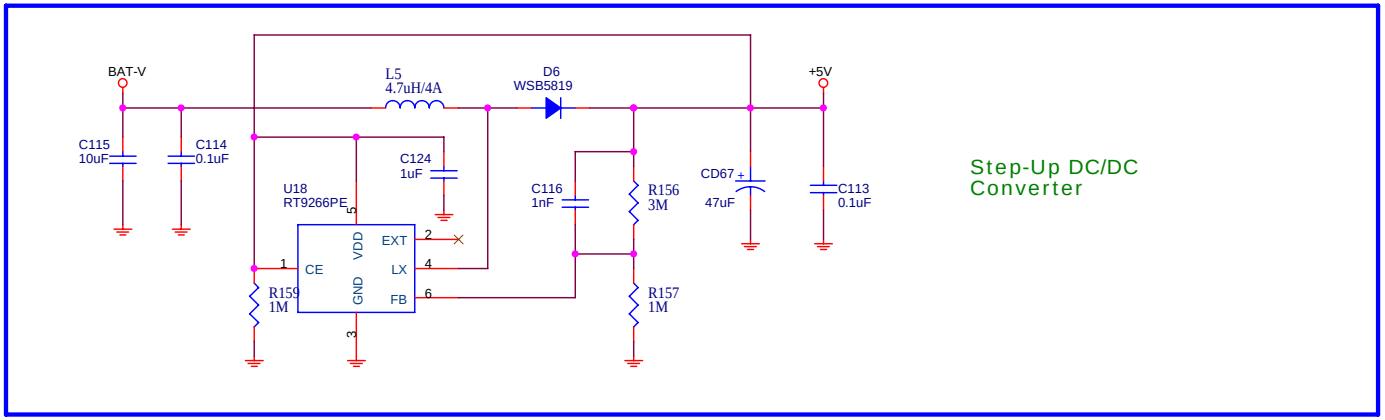

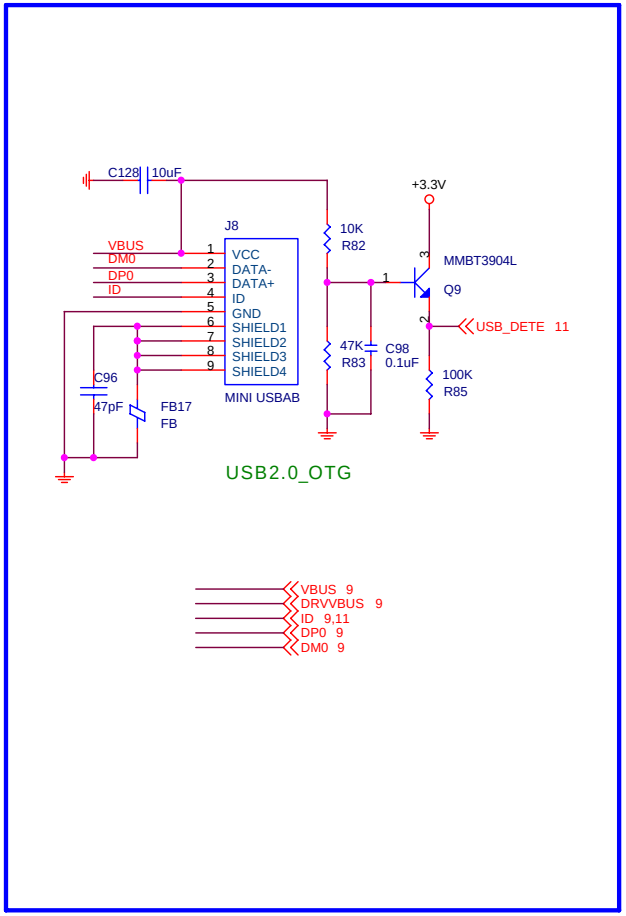

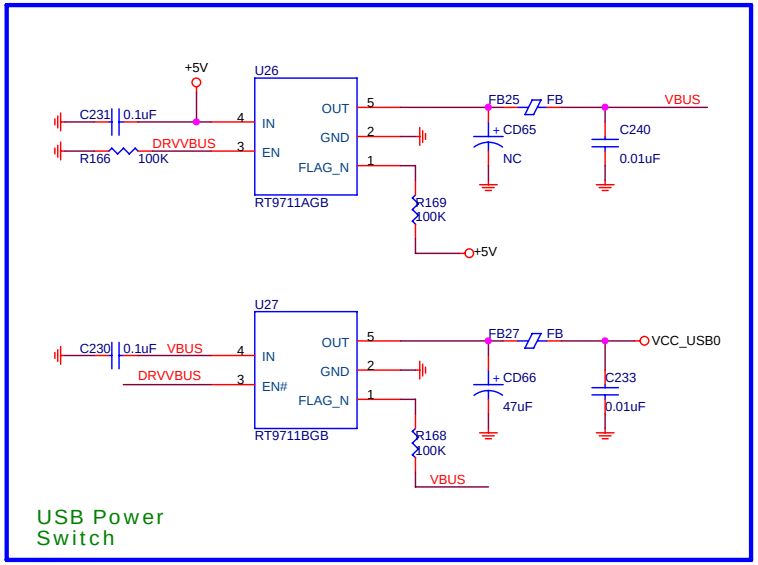

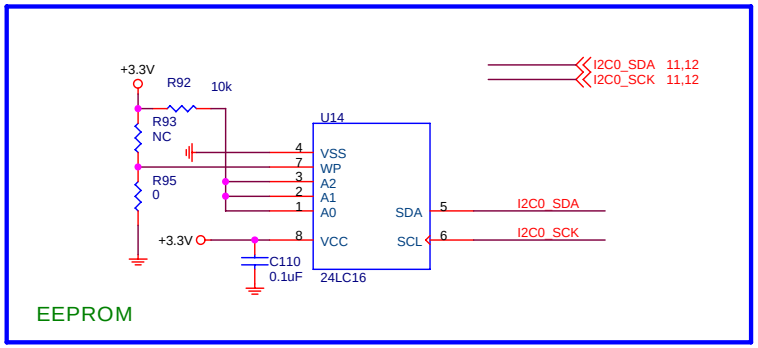

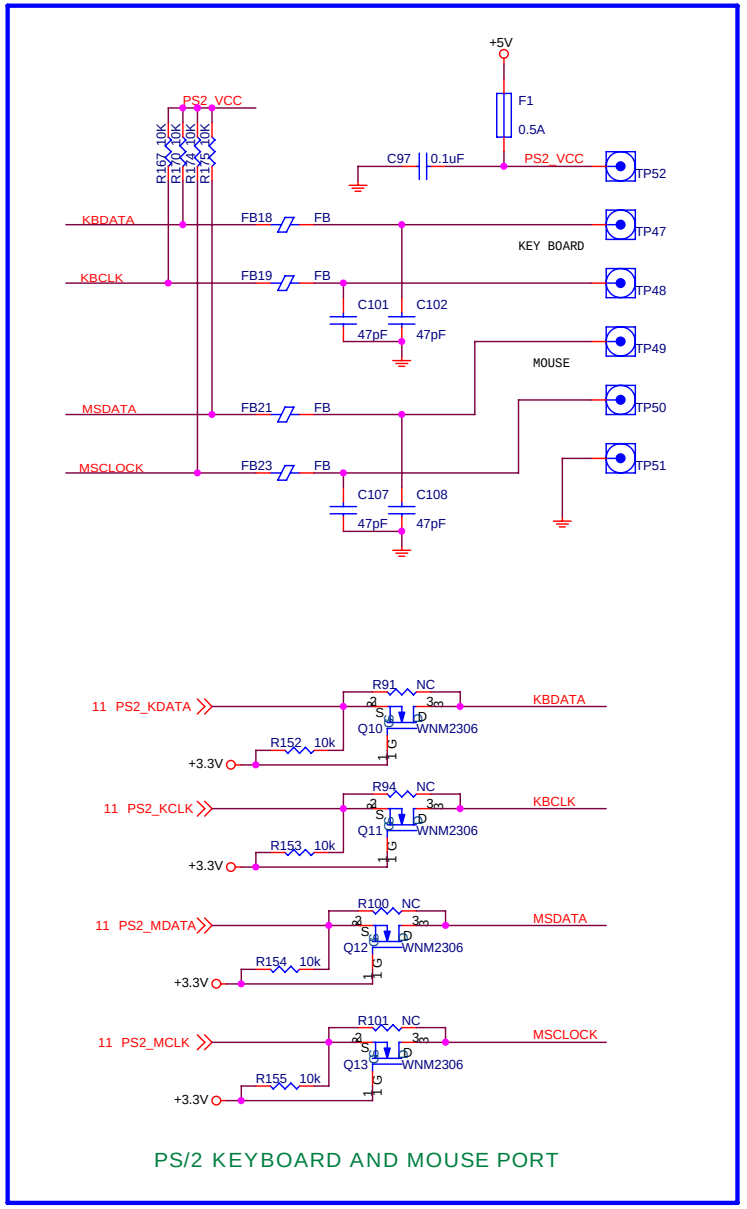

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Size B	Document Number USB OTG/EEPROM/PS2	Rev 1.3.2
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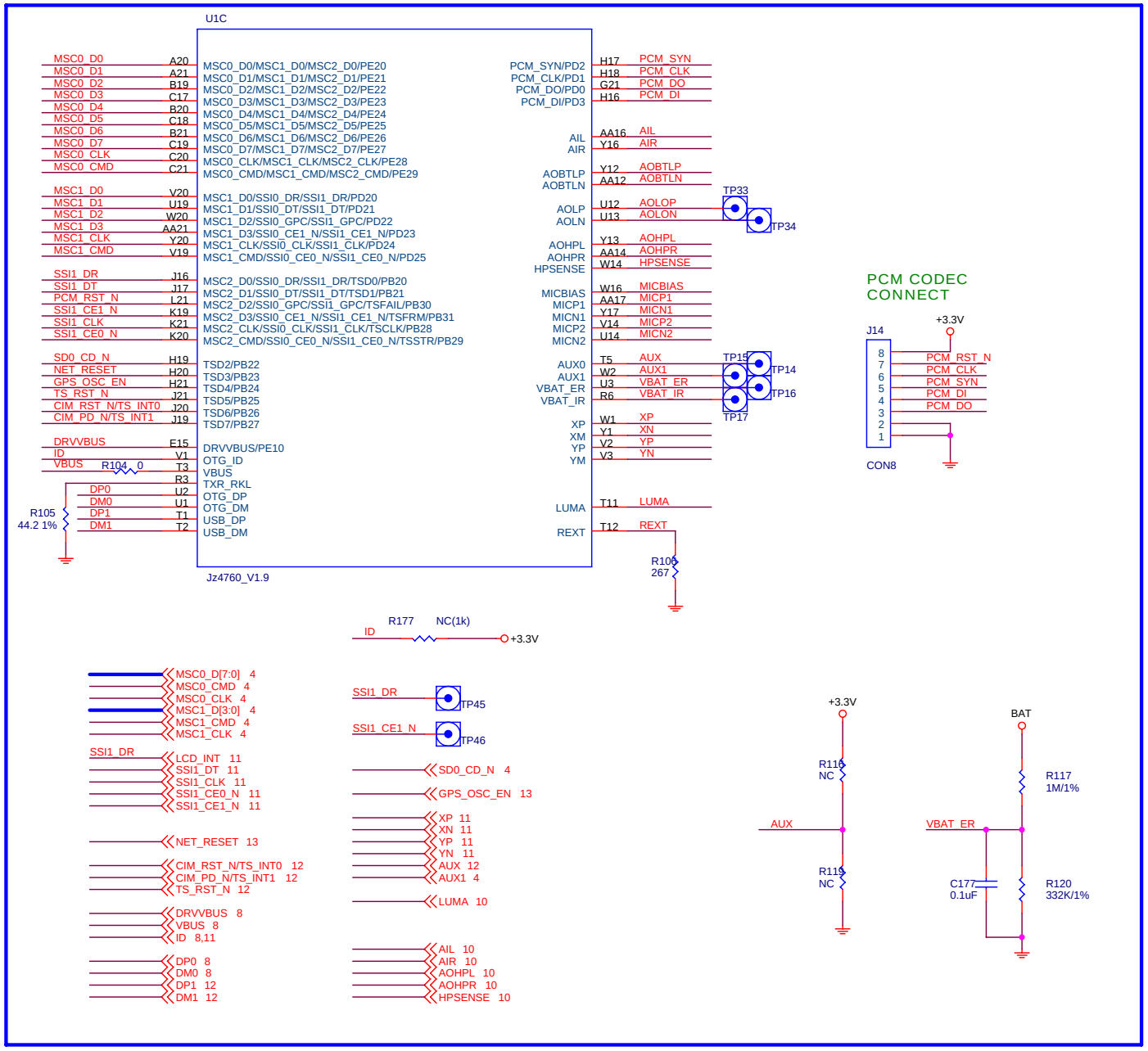

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Title: RD4760_LEPUS		
Size: B	Document Number: SPK/MIC/PCM	Rev: 1.3.2
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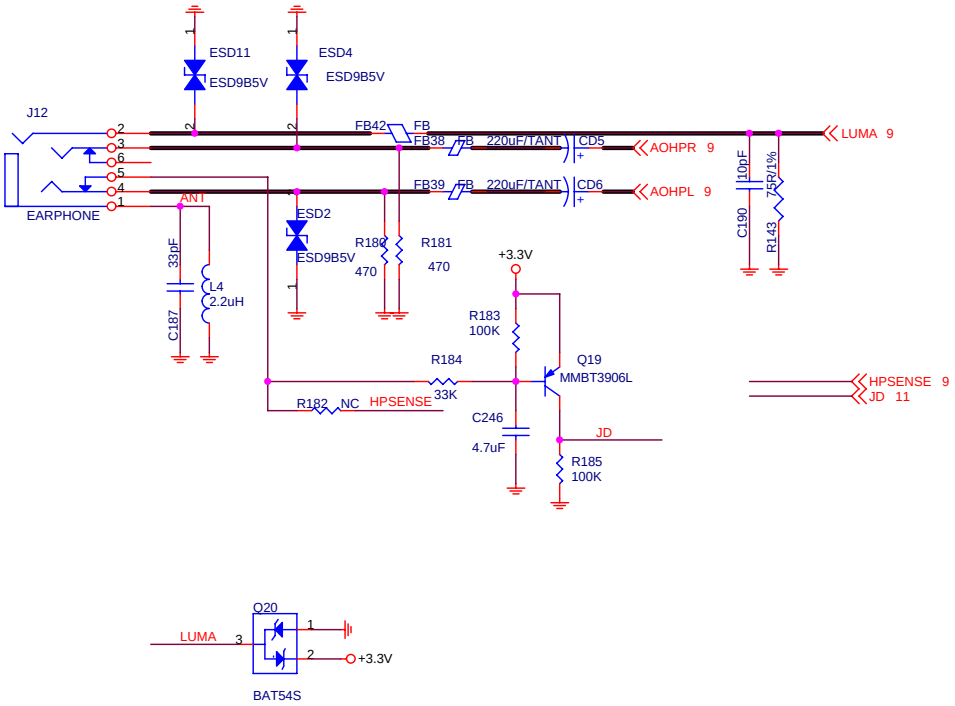
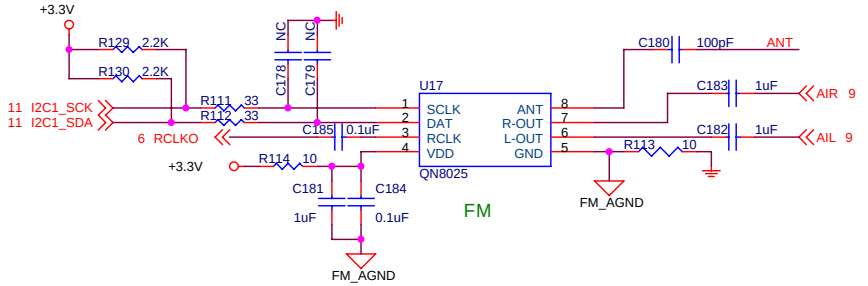


HEADPHONE & CVBS

Surround with GND



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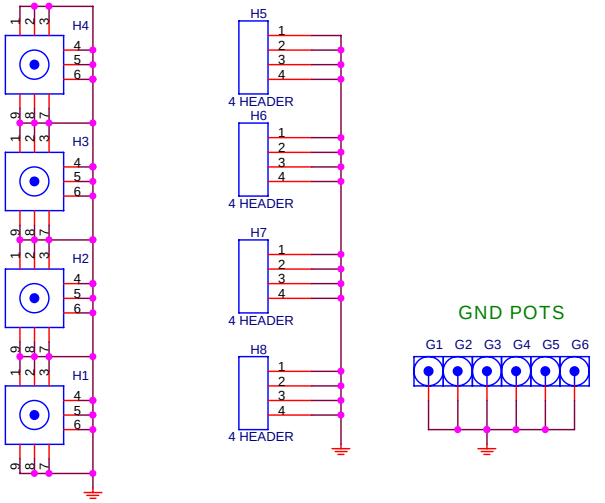

INGENIC SEMICONDUCTOR CO.,LTD		
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Size: B	Document Number: AUDIO/VIDEO	Rev: 1.3.2
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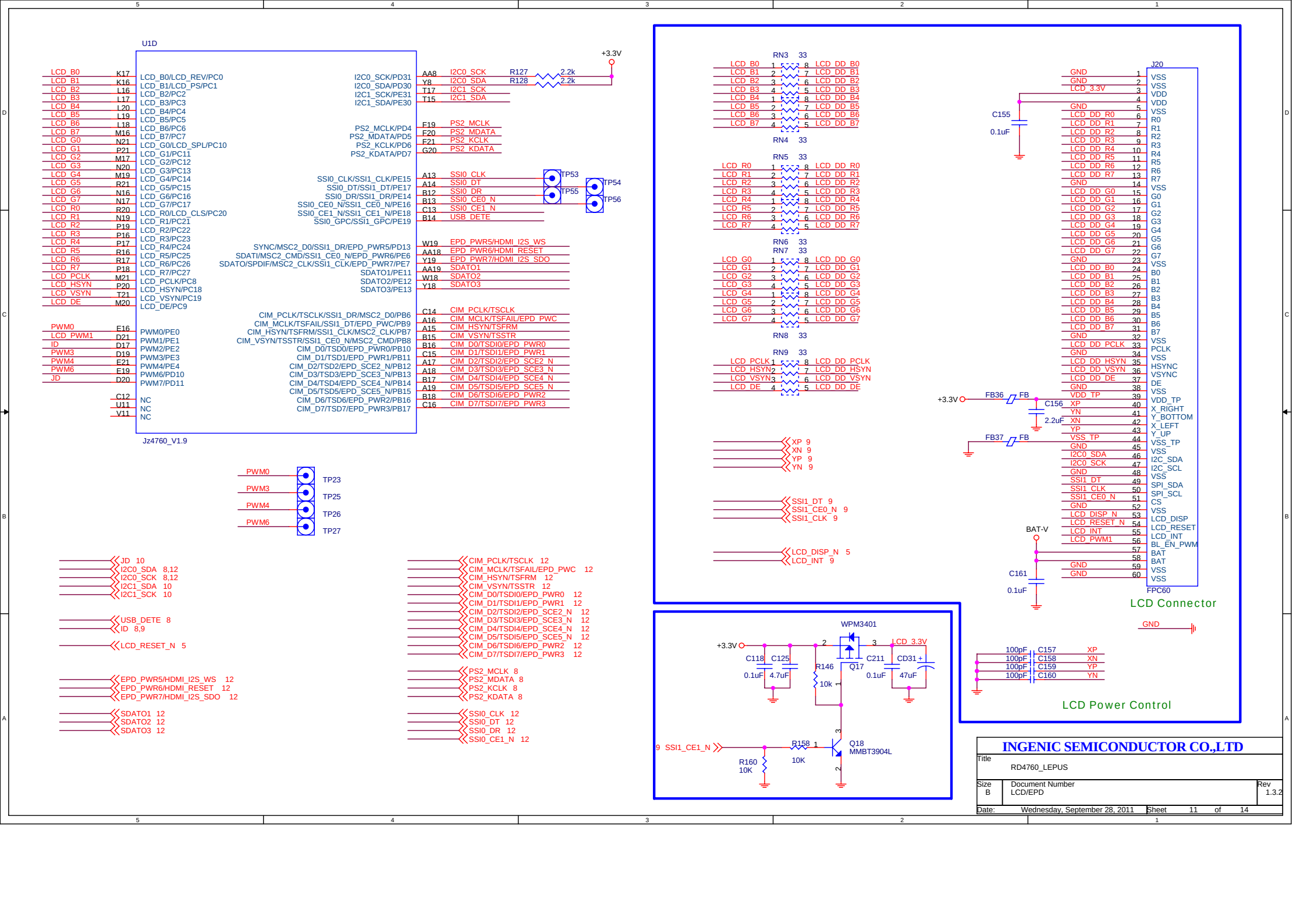
U1D
LCD_B0 K17 LCD_B0/LCD_REV/PC0
LCD_B1 K16 LCD_B1/LCD_PS/PC1
LCD_B2 L16 LCD_B2/PC2
LCD_B3 L17 LCD_B3/PC3
LCD_B4 L20 LCD_B4/PC4
LCD_B5 L19 LCD_B5/PC5
LCD_B6 L18 LCD_B6/PC6
LCD_B7 M16 LCD_B7/PC7
LCD_G0 N21 LCD_G0/LCD_SPL/PC10
LCD_G1 P21 LCD_G1/PC11
LCD_G2 M17 LCD_G2/PC12
LCD_G3 N20 LCD_G3/PC13
LCD_G4 M19 LCD_G4/PC14
LCD_G5 R21 LCD_G5/PC15
LCD_G6 N16 LCD_G6/PC16
LCD_G7 N17 LCD_G7/PC17
LCD_R0 R20 LCD_R0/LCD_CLS/PC20
LCD_R1 N19 LCD_R1/PC21
LCD_R2 P19 LCD_R2/PC22
LCD_R3 P16 LCD_R3/PC23
LCD_R4 P17 LCD_R4/PC24
LCD_R5 R16 LCD_R5/PC25
LCD_R6 R17 LCD_R6/PC26
LCD_R7 P18 LCD_R7/PC27
LCD_PCLK M21 LCD_PCLK/PC8
LCD_HSYN P20 LCD_HSYN/PC18
LCD_VSYN T21 LCD_VSYN/PC19
LCD_DE M20 LCD_DE/PC9
PWM0 E16 PWM0/PE0
LCD_PWM1 D21 PWM1/PE1
ID D17 PWM2/PE2
PWM3 D19 PWM3/PE3
PWM4 E21 PWM4/PE4
PWM6 E19 PWM6/PD10
JD D20 PWM7/PD11
C12 NC
U11 NC
V11 NC
I2C0_SCK/PD31 AA8 I2C0_SCK
I2C0_SDA/PD30 Y8 I2C0_SDA
I2C1_SCK/PE31 T17 I2C1_SCK
I2C1_SDA/PE30 T15 I2C1_SDA
PS2_MCLK/PD4 F19 PS2_MCLK
PS2_MDATA/PD5 F20 PS2_MDATA
PS2_KCLK/PD6 F21 PS2_KCLK
PS2_KDATA/PD7 G20 PS2_KDATA
SSI0_CLK/SSI1_CLK/PE15 A13 SSI0_CLK
SSI0_DT/SSI1_DT/PE17 A14 SSI0_DT
SSI0_DR/SSI1_DR/PE14 B12 SSI0_DR
SSI0_CE0_N/SSI1_CE0_N/PE16 B13 SSI0_CE0_N
SSI0_CE1_N/SSI1_CE1_N/PE18 C13 SSI0_CE1_N
SSI0_GPC/SSI1_GPC/PE19 B14 USB_DETE
SYNC/MSC2_D0/SSI1_DR/EPD_PWR5/PD13 W19 EPD_PWR5/HDMI_I2S_WS
SDATI/MSC2_CMD/SSI1_CE0_N/EPD_PWR6/PE6 AA18 EPD_PWR6/HDMI_RESET
SDATO/SPDIF/MSC2_CLK/SSI1_CLK/EPD_PWR7/PE7 Y19 EPD_PWR7/HDMI_I2S_SDO
SDATO1/PE11 AA19 SDATO1
SDATO2/PE12 W18 SDATO2
SDATO3/PE13 Y18 SDATO3
CIM_PCLK/TSCLK/SSI1_DR/MSC2_D0/PB6 C14 CIM_PCLK/TSCLK
CIM_MCLK/TSFAIL/SSI1_DT/EPD_PWC/PB9 A16 CIM_MCLK/TSFAIL/EPD_PWC
CIM_HSYN/TSFRM/SSI1_CLK/MSC2_CLK/PB7 A15 CIM_HSYN/TSFRM
CIM_VSYN/TSSTR/SSI1_CE0_N/MSC2_CMD/PB8 B15 CIM_VSYN/TSSTR
CIM_D0/TSDI0/EPD_PWR0/PB10 B16 CIM_D0/TSDI0/EPD_PWR0
CIM_D1/TSD1/EPD_PWR1/PB11 C15 CIM_D1/TSDI1/EPD_PWR1
CIM_D2/TSD2/EPD_SCE2_N/PB12 A17 CIM_D2/TSDI2/EPD_SCE2_N
CIM_D3/TSD3/EPD_SCE3_N/PB13 A18 CIM_D3/TSDI3/EPD_SCE3_N
CIM_D4/TSD4/EPD_SCE4_N/PB14 B17 CIM_D4/TSDI4/EPD_SCE4_N
CIM_D5/TSD5/EPD_SCE5_N/PB15 A19 CIM_D5/TSDI5/EPD_SCE5_N
CIM_D6/TSD6/EPD_PWR2/PB16 B18 CIM_D6/TSDI6/EPD_PWR2
CIM_D7/TSD7/EPD_PWR3/PB17 C16 CIM_D7/TSDI7/EPD_PWR3
Jz4760_V1.9
+3.3V
R127 2.2k
R128 2.2k
TP53
TP54
TP55
TP56
PWM0 TP23
PWM3 TP25
PWM4 TP26
PWM6 TP27
JD 10
I2C0_SDA 8,12
I2C0_SCK 8,12
I2C1_SDA 10
I2C1_SCK 10
USB_DETE 8
ID 8,9
LCD_RESET_N 5
EPD_PWR5/HDMI_I2S_WS 12
EPD_PWR6/HDMI_RESET 12
EPD_PWR7/HDMI_I2S_SDO 12
SDATO1 12
SDATO2 12
SDATO3 12
CIM_PCLK/TSCLK 12
CIM_MCLK/TSFAIL/EPD_PWC 12
CIM_HSYN/TSFRM 12
CIM_VSYN/TSSTR 12
CIM_D0/TSDI0/EPD_PWR0 12
CIM_D1/TSDI1/EPD_PWR1 12
CIM_D2/TSDI2/EPD_SCE2_N 12
CIM_D3/TSDI3/EPD_SCE3_N 12
CIM_D4/TSDI4/EPD_SCE4_N 12
CIM_D5/TSDI5/EPD_SCE5_N 12
CIM_D6/TSDI6/EPD_PWR2 12
CIM_D7/TSDI7/EPD_PWR3 12
PS2_MCLK 8
PS2_MDATA 8
PS2_KCLK 8
PS2_KDATA 8
SSI0_CLK 12
SSI0_DT 12
SSI0_DR 12
SSI0_CE1_N 12
RN3 33
RN4 33
RN5 33
RN6 33
RN7 33
RN8 33
RN9 33
LCD_B0 LCD_DD_B0
LCD_B1 LCD_DD_B1
LCD_B2 LCD_DD_B2
LCD_B3 LCD_DD_B3
LCD_B4 LCD_DD_B4
LCD_B5 LCD_DD_B5
LCD_B6 LCD_DD_B6
LCD_B7 LCD_DD_B7
LCD_R0 LCD_DD_R0
LCD_R1 LCD_DD_R1
LCD_R2 LCD_DD_R2
LCD_R3 LCD_DD_R3
LCD_R4 LCD_DD_R4
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LCD_R6 LCD_DD_R6
LCD_R7 LCD_DD_R7
LCD_G0 LCD_DD_G0
LCD_G1 LCD_DD_G1
LCD_G2 LCD_DD_G2
LCD_G3 LCD_DD_G3
LCD_G4 LCD_DD_G4
LCD_G5 LCD_DD_G5
LCD_G6 LCD_DD_G6
LCD_G7 LCD_DD_G7
LCD_PCLK LCD_DD_PCLK
LCD_HSYN LCD_DD_HSYN
LCD_VSYN LCD_DD_VSYN
LCD_DE LCD_DD_DE
XP 9
XN 9
YP 9
YN 9
SSI1_DT 9
SSI1_CE0_N 9
SSI1_CLK 9
LCD_DISP_N 5
LCD_INT 9
J20
FPC60
GND
LCD_3.3V
LCD_DD_R0
LCD_DD_R1
LCD_DD_R2
LCD_DD_R3
LCD_DD_R4
LCD_DD_R5
LCD_DD_R6
LCD_DD_R7
LCD_DD_G0
LCD_DD_G1
LCD_DD_G2
LCD_DD_G3
LCD_DD_G4
LCD_DD_G5
LCD_DD_G6
LCD_DD_G7
LCD_DD_B0
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LCD_DD_B2
LCD_DD_B3
LCD_DD_B4
LCD_DD_B5
LCD_DD_B6
LCD_DD_B7
LCD_DD_PCLK
LCD_DD_HSYN
LCD_DD_VSYN
LCD_DE
VDD_TP
XP
YN
XN
YP
VSS_TP
I2C0_SDA
I2C0_SCK
SSI1_DT
SSI1_CLK
SSI1_CE0_N
LCD_DISP_N
LCD_RESET_N
LCD_INT
LCD_PWM1
C155 0.1uF
C156 2.2uF
C161 0.1uF
FB36
FB37
FB
+3.3V
BAT-V
LCD Connector
C157 100pF XP
C158 100pF XN
C159 100pF YP
C160 100pF YN
LCD Power Control
WPM3401
Q17
Q18
MMBT3904L
C118 0.1uF
C125 4.7uF
C211 0.1uF
CD31 47uF
R146 10k
R158 10K
R160 10K
CD_3.3V
SSI1_CE1_N 9
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Title RD4760_LEPUS
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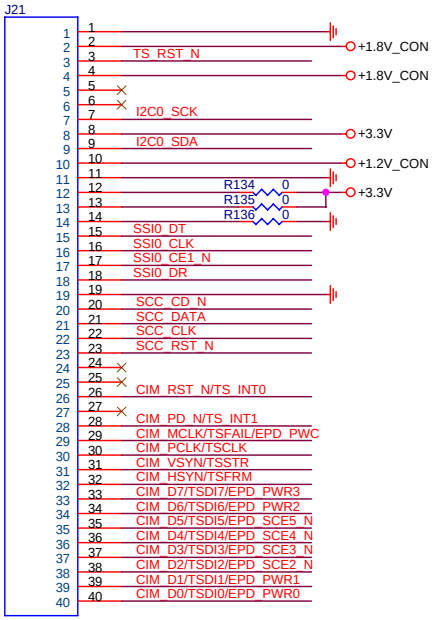
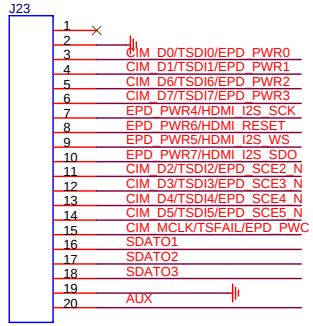
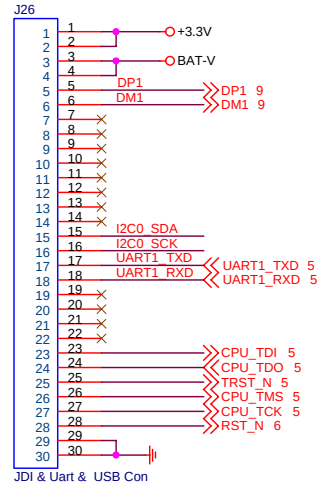
TS/Camera Interface Connector

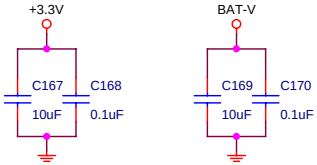


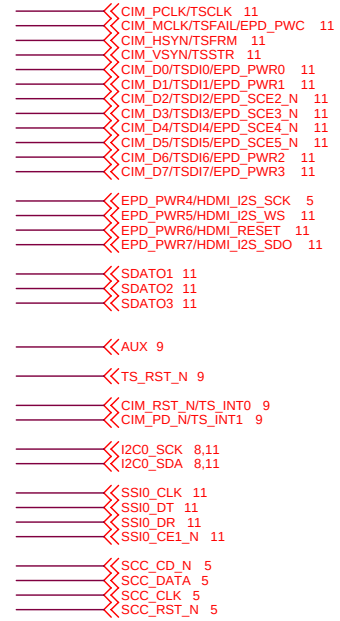
EPD/HDMI Connector

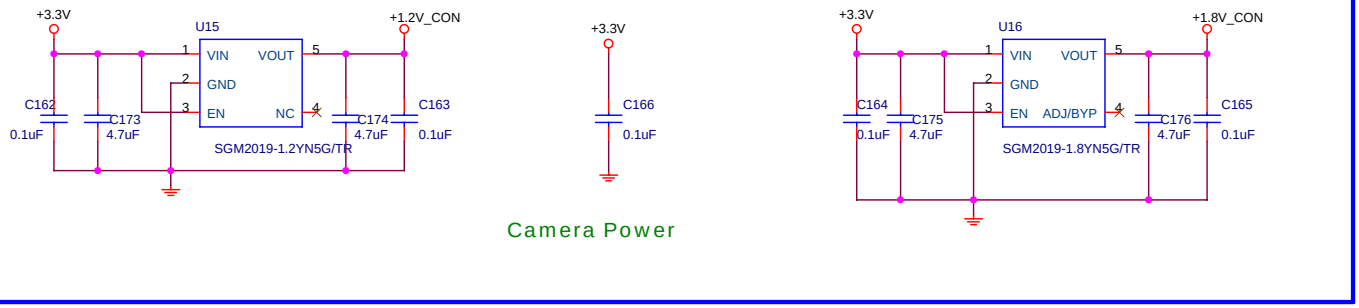


JDI & Uart & USB HOST









Camera Power

INGENIC SEMICONDUCTOR CO.,LTD

Title	RD4760_LEPUS	
Size B	Document Number TS/CAMERA/EPD/JDI/SCC	Rev 1.3.2
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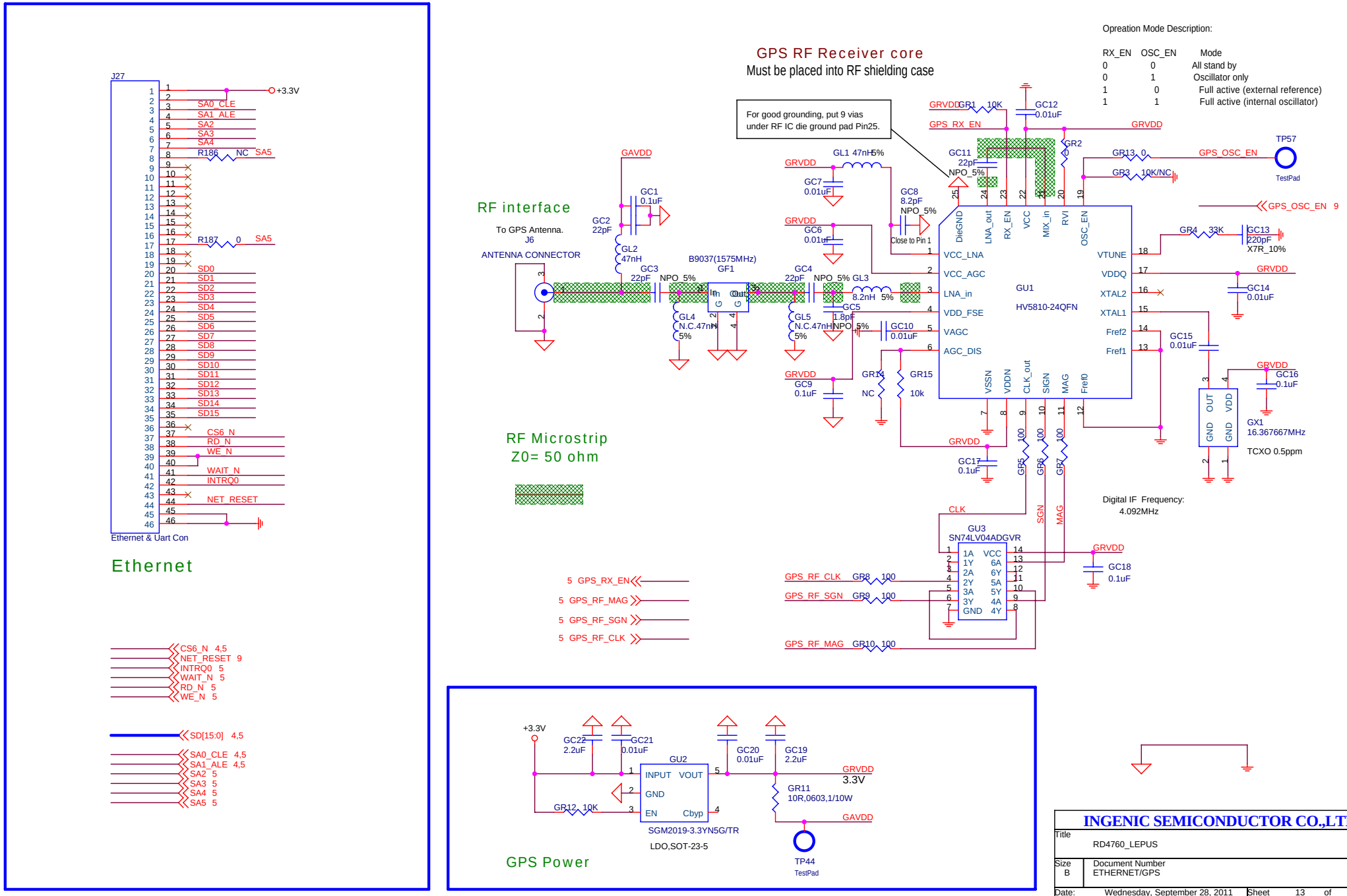
Ethernet
Ethernet & Uart Con
J27
+3.3V
SA0_CLE
SA1_ALE
SA2
SA3
SA4
R186 NC SA5
R187 0 SA5
SD0
SD1
SD2
SD3
SD4
SD5
SD6
SD7
SD8
SD9
SD10
SD11
SD12
SD13
SD14
SD15
CS6_N
RD_N
WE_N
WAIT_N
INTRQ0
NET_RESET
CS6_N 4,5
NET_RESET 9
INTRQ0 5
WAIT_N 5
RD_N 5
WE_N 5
SD[15:0] 4,5
SA0_CLE 4,5
SA1_ALE 4,5
SA2 5
SA3 5
SA4 5
SA5 5
GPS RF Receiver core
Must be placed into RF shielding case
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
To GPS Antenna.
J6
ANTENNA CONNECTOR
GAVDD
GC1 0.1uF
GC2 22pF
GL2 47nH
GC3 22pF NPO_5%
B9037(1575MHz)
GF1
GL4 N.C.47nH 5%
GRVDD
GC7 0.01uF
GL1 47nH 5%
GC6 0.01uF
GC8 8.2pF NPO_5%
Close to Pin 1
GC4 22pF NPO_5%
GL3 8.2nH 5%
GC5 1.8pF
GL5 N.C.47nH 5%
GC10 0.01uF
GC9 0.1uF
GR14 NC
GR15 10k
GU1
HV5810-24QFN
VCC_LNA
VCC_AGC
LNA_in
VDD_FSE
VAGC
AGC_DIS
DieGND
LNA_out
RX_EN
VCC
MIX_in
RVI
OSC_EN
VTUNE
VDDQ
XTAL2
XTAL1
Fref2
Fref1
VSSN
VDDN
CLK_out
SIGN
MAG
Fref0
GR5 100
GR6 100
GR7 100
GC17 0.1uF
GRVDD
GC11 22pF NPO_5%
GC12 0.01uF
GR1 10K
GPS_RX_EN
GR2 0
GR13 0
GR3 10K/NC
GPS_OSC_EN
TP57
TestPad
GPS_OSC_EN 9
GR4 33K
GC13 220pF X7R_10%
GC14 0.01uF
GC15 0.01uF
GC16 0.1uF
GX1
16.367667MHz
TCXO 0.5ppm
OUT
VDD
GND
GND
RF Microstrip
Z0= 50 ohm
Digital IF Frequency:
4.092MHz
CLK
SGN
MAG
GU3
SN74LV04ADGVR
1A VCC
1Y 6A
2A 6Y
2Y 5A
3A 5Y
3Y 4A
GND 4Y
GC18 0.1uF
5 GPS_RX_EN
5 GPS_RF_MAG
5 GPS_RF_SGN
5 GPS_RF_CLK
GPS_RF_CLK GR8 100
GPS_RF_SGN GR9 100
GPS_RF_MAG GR10 100
+3.3V
GC22 2.2uF
GC21 0.01uF
GU2
INPUT VOUT
GND
EN Cbyp
SGM2019-3.3YN5G/TR
LDO,SOT-23-5
GR12 10K
GC20 0.01uF
GC19 2.2uF
GR11 10R,0603,1/10W
GRVDD
3.3V
GAVDD
TP44
TestPad
GPS Power
INGENIC SEMICONDUCTOR CO.,LTD
Title
RD4760_LEPUS
Size B
Document Number
ETHERNET/GPS
Rev 1.3.2
Date: Wednesday, September 28, 2011
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Data	Revision	Change
Apr.20 2010	Rev1.0	1. First released Revision
May.21 2010	Rev1.1	1. Change jz4760_V1.6 to jz4760_V1.8 2. Remove reset chip IMP811 on PAGE6 3. Delete net name PWM0 on PAGE7 4. Change VRTC chip U9 from RT9169-33PVL to RT9169-18PVL on PAGE7 5. Change pullup signal on net CHARG_STAT_N from VRTC33 to BAT-V on PAGE7 6. Change U27 from RT9179AGB to RT9179BGB and controll is DRVVBUS on PAGE8 7. Add 1Kohm ID pullup resistance to +3.3V on PAGE9 8. Add C242~C245 for MIC1,MIC2 on PAGE9 9. Adjust C131~C142 to NC on PAGE9 10. Remove U19,R176,C117 on PAGE8 11. Change 8bit and 4bit SD/MMC card pullup resistance to 10Kohm on PAGE4 12. Change left and right channel of J12 on PAGE10 13. Change C204,C205 to R178,R179 on PAGE9 14. Remove C198~C203 on PAGE9 15. Remove C132,C136,C140 on PAGE9 16. Remove C134,C138,C142 on PAGE9 17. Change C193,C194 to R180,R181 on PAGE10 18. Change C143,C144 from 0.1uF to 1nF on PAGE10 19. Add GR14,GR15 for GU1 on PAGE14
Jun.24 2010	Rev1.1.1	1. Change R23 R27 to NC on PAGE3 2. Change net on SW11 from aux to aux1 on PAGE4 3. Change GF1 to BF9037 on PAGE14 4. Add insert detection net JD and adjust net HPSENSE on PAGE10 5. Adjust c43~c45 c58~c60 to 0.01uF and c46~c47 c61~c63 to 1nF on PAGE6
Jul.15 2010	Rev1.1.2	1. Change jz4760_V1.8 to jz4760_V1.9 2. Delete net CHROMA_U and CHROMA_V on PAGE 10 3. Delete VGA output circuit
Jul.23 2010	Rev1.2	1. Change D6 from MBR0520 to WSB5819 on PAGE08 2. Adjust LUMA output to AUDIO JACK 12 and delete J24 on PAGE10 3. Add insert detection circuit on PAGE10
Oct.29 2010	Rev1.2.1	1. Adjust R59 to 680K,R117 to 1M,R120 to 332K and R78,R93 to NC for power loose on PGAE6 and PAGE9
Nov.5 2010	Rev1.3	1. Delete two test point TP8 TP9 and add SA0 SA4 and SA5 for ethernet test on PAGE5 2. Add R186,R187 for ethernet test on PAGE13 and adjust R70 to 121K on PAGE7
Dec.15 2010	Rev1.3.1	1. Adjust R29 to 100K ohm on PAGE04 2. Adjust +1.2V to +1.35V on PAGE06 and PAGE07 3. Adjust DDR2 module name to H5PS1G63EFR-G7C on PAGE03 4. Add note of AVDEFUSE on PAGE06 5. Adjust C11 to NC and add note for mDDR on PAGE03 6. Adjust U11 to S1206B on PAGE07
Sep.28 2011	Rev1.3.2	1. Change FB1 to R188 on PAGE06 2. Change FB13 to R189 on PAGE07

Title	RD4760_LEPUS	
Size B	Document Number REVISION HISTORY	Rev 1.3.2
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