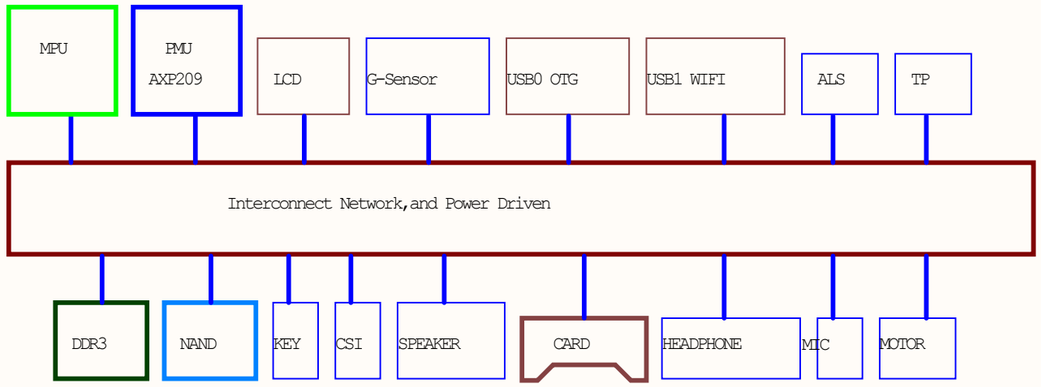
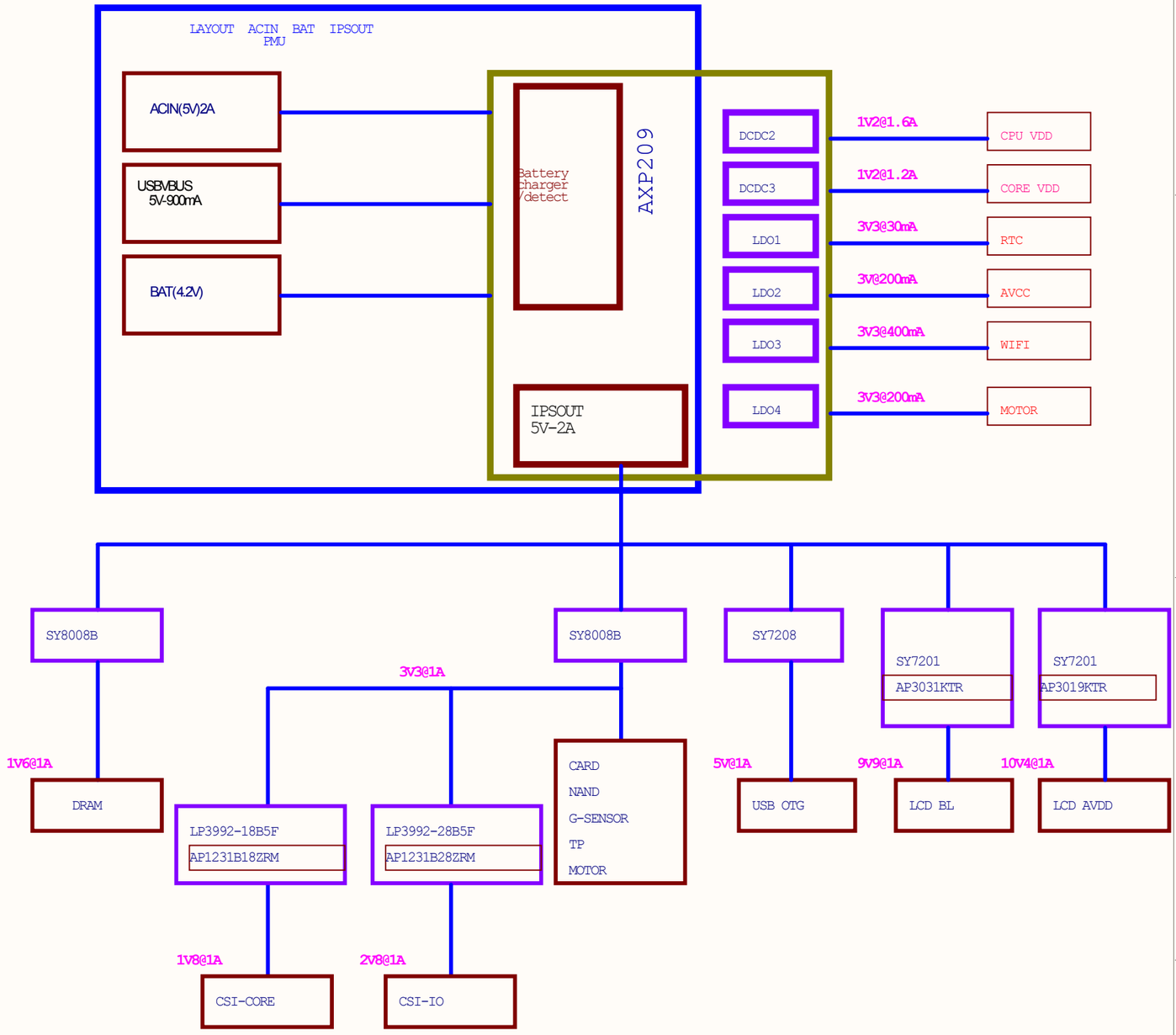
COVER

BLOCK



POWER TREE



GPIO ASSIGNMENT

CPU	Define	Function
PB0	TWI0_SCK	TWI0
PB1	TWI0_SDA	
PB2	PWM0	LCD
PB3	GPIO-IN	SD0-DET-N
PB4	EINT	ALS-INT
PB10	GPIO-OUT	CSI-STY
PB15	TWI1_SCK	TWI1
PB16	TWI1_SDA	
PB17	TWI2_SCK	TWI2
PB18	TWI2_SDA	
PG0	GPIO-OUT	PA-SHDN
PG1	GPIO-OUT	MT-EN
PG2	GPIO-OUT	TP-WAKE-RST
PG3	UART-TX	UART-TX
PG4	UART-RX	UART-RX
PG9	EINT	TP-INT
PG10	GPIO-IN	USB0-IDDET
PG11	GPIO-IN	USB0-VBUSDET
PG12	GPIO-OUT	USB0-DRV

PMU	Define	Function
GPIO0	GPIO-OUT	LCD-PWR
GPIO1	GPIO-OUT	LCD-BL-EN
GPIO2	GPIO-OUT	CSI-PWR-EN
GPIO3	GPIO-OUT	CSI-RST

REVISION HISTORY

Revision	Description	Date	Drawn	Checked	Approved

Title

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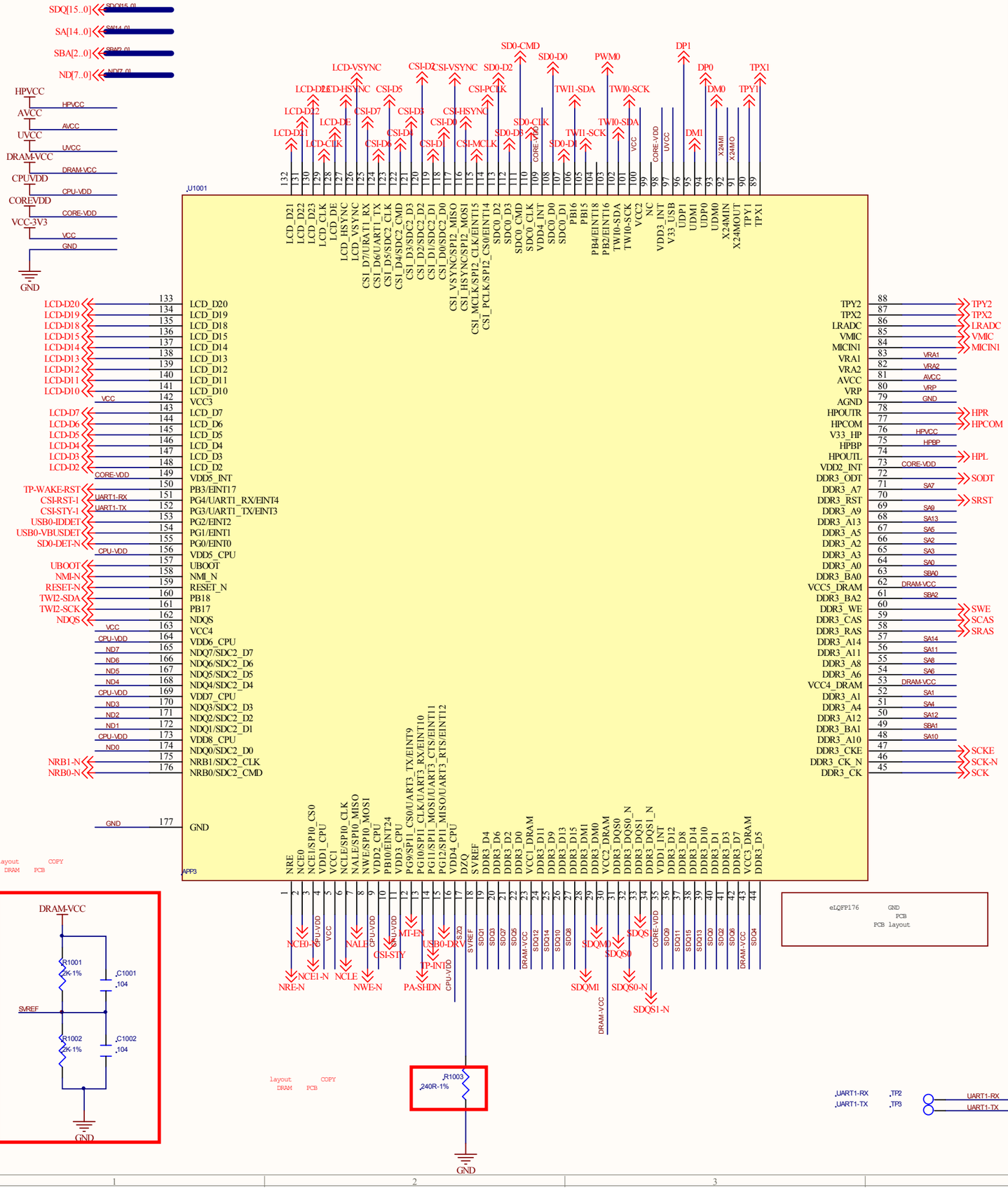
Date: | Sheet 6 of 8

CPU


SDQ[15..0]
SA[14..0]
SBA[2..0]
ND[7..0]
HPVCC
AVCC
UVCC
DRAM-VCC
CPUVDD
CORE-VDD
VCC-3V3
GND
U1001
LCD_D21
LCD_D22
LCD_D23
LCD_CLK
LCD_DE
LCD_HSYNC
LCD_VSYNC
CSI_D7/UART1_RX
CSI_D6/UART1_TX
CSI_D5/SDC2_CLK
CSI_D4/SDC2_CMD
CSI_D3/SDC2_D3
CSI_D2/SDC2_D2
CSI_D1/SDC2_D1
CSI_D0/SDC2_D0
CSI_VSYNC/SPI2_MISO
CSI_HSYNC/SPI2_MOSI
CSI_MCLK/SPI2_CLK/EINT15
CSI_PCLK/SPI2_CS0/EINT14
SD0_D2
SD0_D3
SD0_CMD
SDC0_CLK
VDD4_INT
SDC0_D0
SDC0_D1
PB16
PB15
PB4/EINT18
PB2/EINT16
TW10-SCK
VCC2
NC
VDD3_INT
V33_USB
UDP1
UDM1
UDP0
UDM0
X24MIN
X24MOUT
TPY1
TPX1
LCD-D20
LCD-D19
LCD-D18
LCD-D15
LCD-D14
LCD-D13
LCD-D12
LCD-D11
LCD-D10
VCC
LCD-D7
LCD-D6
LCD-D5
LCD-D4
LCD-D3
LCD-D2
CORE-VDD
TP-WAKE-RST
CSI-RST-1
CSI-STY-1
USB0-IDDET
USB0-VBUSDET
SD0-DET-N
CPU-VDD
UBOOT
NMI-N
RESET-N
TWI2-SDA
TWI2-SCK
NDQS
NRB1-N
NRB0-N
GND
LCD_D20
LCD_D19
LCD_D18
LCD_D15
LCD_D14
LCD_D13
LCD_D12
LCD_D11
LCD_D10
VCC3
LCD_D7
LCD_D6
LCD_D5
LCD_D4
LCD_D3
LCD_D2
VDD5_INT
PB3/EINT17
PG4/UART1_RX/EINT4
PG3/UART1_TX/EINT3
PG2/EINT12
PG1/EINT1
PG0/EINT10
VDD5_CPU
UBOOT
NMI_N
RESET_N
PB18
PB17
NDQS
VCC4
VDD6_CPU
NDQ7/SDC2_D7
NDQ6/SDC2_D6
NDQ5/SDC2_D5
NDQ4/SDC2_D4
VDD7_CPU
NDQ3/SDC2_D3
NDQ2/SDC2_D2
NDQ1/SDC2_D1
VDD8_CPU
NDQ0/SDC2_D0
NRB1/SDC2_CLK
NRB0/SDC2_CMD
GND
APP3
TPY2
TPX2
LRADC
VMIC
MICIN1
VRA1
VRA2
AVCC
VRP
AGND
HPOUTR
HPCOM
V33_HP
HPBP
HPOUTL
VDD2_INT
DDR3_ODT
DDR3_A7
DDR3_RST
DDR3_A9
DDR3_A13
DDR3_A5
DDR3_A2
DDR3_A3
DDR3_A0
DDR3_BA0
VCC5_DRAM
DDR3_BA2
DDR3_WE
DDR3_CAS
DDR3_RAS
DDR3_A14
DDR3_A11
DDR3_A8
DDR3_A6
VCC4_DRAM
DDR3_A1
DDR3_A4
DDR3_A12
DDR3_BA1
DDR3_A10
DDR3_CKE
DDR3_CK_N
DDR3_CK
HPR
HPCOM
HPL
SODT
SRST
SWE
SCAS
SRAS
SCKE
SCK-N
SCK
NRE
NCE0
NCE1/SPI0_CS0
VDD1_CPU
VCC1
NCLE/SPI0_CLK
NALE/SPI0_MISO
NWE/SPI0_MOSI
VDD2_CPU
PB10/EINT24
VDD3_CPU
PG9/SPI1_CS0/UART3_TX/EINT9
PG10/SPI1_CLK/UART3_RX/EINT10
PG11/SPI1_MOSI/UART3_CTS/EINT11
PG12/SPI1_MISO/UART3_RTS/EINT12
VDD4_CPU
DZO
SVREF
DDR3_D4
DDR3_D6
DDR3_D2
DDR3_D0
VCC1_DRAM
DDR3_D11
DDR3_D9
DDR3_D13
DDR3_D15
DDR3_DM1
DDR3_DM0
VCC2_DRAM
DDR3_DQS0
DDR3_DQS0_N
DDR3_DQS1
DDR3_DQS1_N
VDD1_INT
DDR3_D12
DDR3_D8
DDR3_D14
DDR3_D10
DDR3_D1
DDR3_D3
DDR3_D7
VCC3_DRAM
DDR3_D5
NCE0-N
NCE1-N
NRE-N
NCLE
NWE-N
MT-EN
CSI-STY
PA-SHDN
USB0-DRV
TP-INT
SDQM0
SDQM1
SDQS0
SDQS0-N
SDQS1-N
R1003
240R-1%
eLQFP176
GND
PCB
PCB layout
layout
COPY
DRAM
PCB
DRAM-VCC
R1001
2K-1%
C1001
.104
SVREF
R1002
2K-1%
C1002
.104
UART1-RX
UART1-TX
TP2
TP3
DRAM
SVREF
C2
.104
DRAM-VCC
C3
4.7uF
C4
.1uF
C5
.1uF
C6
.104
C7
.104
CRYSTAL
C1
18pF
X24MI
X24MO
GND
Y1
24M
X3
24M
C8
18pF
LAYOUT
AUDIO-TP
RESET-N
LRADC
C14
.102
C15
.104
VCC-3V3
HPVCC
C18
.104
VRP
C10
.10uF
C11
.104
TPX2
TPX1
TP781
TP782
VRA2
C12
4.7uF
C13
.104
R1
200K-1%
TPY2
TPY1
TP783
TP784
VRA1
C9
.1uF
MICM
R2
0R
HPBP
C16
.10uF
C17
.104
USB
GPIO
C23
4.7uF
C24
.104
C25
4.7uF
C26
.1uF
C27
.1uF
C28
.104
CPU
CORE
CPUVDD
C29
4.7uF
C30
.1uF
C31
.1uF
C32
.1uF
C33
.104
C34
.104
C35
.104
C36
.104
COREVDD
C37
4.7uF
C38
.1uF
C39
.1uF
C40
.104
C41
.104
RTC
RTCVDD
C42
.104
X2
NC/32.768
NMI-N
C43
NC
32.768KHZ
Y2
U2
OSCI
OSCO
nINT
GND
VDD
CLKO
SCL
SDA
PCF8563/AT8563
TP1
RTC-CLK
TWI1-SCK
TWI1-SDA
TWI-PULLUP
R5
R6
R7
R8
R9
R10
2K-1%
TWI0-SDA
TWI0-SCK
TWI1-SDA
TWI1-SCK
TWI2-SDA
TWI2-SCK
Title
APP3_PAD_DDR3
Size
A
DocumentNumber
CPU
Rev
.?
Date:
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6
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of
.8

POWER

POWER LINE:Width>=60mil

IPSOUT
CORE VDD
AVCC
CPU VDD
WIFI-3V3
RTC VDD
VCC-3V3

U3
AXP209

TS
PS1
PS2
ACIN2
ACIN1
VBUS
GPIO3
GPIO2
THERMAL
CHGLED/GPO
BACKUP
VINT
BIAS
AGND
VREF
APS
GPIO0/LDO
GPIO1
EXTEN
PWRON
N_OE
N_VBUSEN
IRQ
SCK
SDA
BAT2
BAT1
BATSENSE
CHSENSE
LX1
PGND1
VIN1
LX2
DCDC2
PGND2
VIN2
LX3
DCDC3
PGND3
VIN3
LDO24IN
LDO1
LDO2
LDO3
LDO3IN
LDO4
PWROK
LDO1SET
DC3SET

R11 100R
C51 10uF
C64 1uF
R19 200K-1%
C66 1uF
C71 4.7uF
R15 10K
R135 1R
R138 1R
C55 10uF
C73 10uF
R20 47K
D1 IN5819
R21 47K
C75 1uF
L1 4.7uH-DCR<0.1R-1.5A
R12 0.03R
C48 1uF
C48 4.7uF
C49 4.7uF
C50 4.7uF
L2 4.7uH-DCR<0.1R-1.5A
C52 10uF
C54 22uF
C53 102
L4 4.7uH-DCR<0.1R-1.5A
C59 22uF
C60 102
C61 4.7uF
C63 1uF
C65 4.7uF
C67 4.7uF
C72 4.7uF
TP7 DC3-SET
J1 CON3
TP4 DRAM-VCC
DRAM-VCC
C47 47pF
R13 150K-1%
R14 100K-1%
U4 TCS4160
L3 4.7uH-DCR<0.1R-1.5A
C58 10uF
C56 22uF
C57 104
Vout = 0.6*(1+RA/RB)
TP5 VCC-3V3
C62 47pF
R17 442K-1%
R18 100K-1%
U5 TCS4160
L5 4.7uH-DCR<0.1R-1.5A
C68 10uF
C69 22uF
C70 104
Vout = 0.6*(1+RA/RB)
DC701 DC-IN-5V-2a
TP703 ACIN_5V
ESD701 ULCE0512A015FR
OD1 5819
OL1 2.2uH-DCR<0.1R-2A
OU1 TCS9208
OR1 100K-1%
OR2 13K
C74 10uF
C76 10uF
TP6 VCC-5V

USB0-DRV
NMI-N
TWI0-SCK
TWI0-SDA
CSI-RST
CSI-PWR-EN
LCD-PWR
LCD-BL-EN
POWER-SW
RESET-N
CHGLED
EXTEN

Title			
Size: A	Document Number: POWER		Rev: ?
Date:		Sheet 6 of 8	

MEMORY

DDR3

layout: DRAM PCB COPY

SDQ[15..0] SDQ[15..0]
SA[14..0] SA[14..0]
SBA[2..0] SBA[2..0]
SRST
SODT
SCK SCK
SCK-N SCK-N
SDQM0 SDQM0
SDQM1 SDQM1
SWE SWE
SRAS SRAS
SCAS SCAS
SCKE SCKE
SDQS0 SDQS0
SDQS0-N SDQS0-N
SDQS1 SDQS1
SDQS1-N SDQS1-N

SCK 24R R1101 DSCK
NC C1101
SCK-N 24R R1102 SCK-N

SBA0 R1103 24R BA0
SBA1 R1104 24R BA1
SBA2 R1105 24R BA2

SCAS R1106 24R CAS
SRAS R1107 24R RAS

SCKE R1116 24R CKE

SWE R1117 24R WE

SA0 R1108 24R A0
SA1 R1109 24R A1
SA2 R1118 24R A2
SA3 R1110 24R A3
SA4 R1115 24R A4
SA5 R1111 24R A5
SA6 R1112 24R A6
SA7 R1113 24R A7
SA8 R1114 24R A8
SA9 R1119 24R A9
SA10 R1122 24R A10
SA11 R1123 24R A11
SA12 R1124 24R A12
SA13 R1127 24R A13
SA14 R1130 24R A14

DRAM-VCC
R1131 2K-1% C1116 .104
DRAM-REF
R1132 2K-1% C1117 .104
GND

SDQ5 SDQ7 SDQ3 SDQ1 RN1101 24R*4 DQ5 DQ7 DQ3 DQ1
SDQ4 SDQ6 SDQ2 SDQ0 RN1102 24R*4 DQ4 DQ6 DQ2 DQ0
SDQ8 SDQ10 SDQ14 SDQ12 RN1103 24R*4 DQ8 DQ10 DQ14 DQ12
SDQ13 SDQ15 SDQ11 SDQ9 RN1104 24R*4 DQ13 DQ15 DQ11 DQ9

CARD

VCC-3V3
SC1 4.7uF
R23 R22 R24 R25 R26 R27 47K
GND

SD0-D2
SD0-D3
SD0-CMD
SD0-CLK R1137 24R
SD0-D0
SD0-D1
SD0-DET-N

TF1
DAT2 DAT3 CMD VDD CLK VSS2 DAT0 DAT1 CD#
1 2 3 4 5 6 7 8 9 10 11 12 13
MICROSD/TF_SLOT

TP8 SD0-CLK
TP9 SD0-D3

C107 ESDCLCE0512A015FR
C108 ESDCLCE0512A015FR
C109 ESDCLCE0512A015FR
C110 ESDCLCE0512A015FR
C111 ESDCLCE0512A015FR
C112 ESDCLCE0512A015FR
C113 ESDCLCE0512A015FR
GND

NAND

VCC-3V3
R28 R29 0K
NRB1-N NRB0-N
NRE-N NCE0-N NCE1-N
NCLE NALE NWE-N
NWP-N
ND[7..0] NDQS

U7 NAND FLASH X8
RES# NC2 NC3 RB4# RB3# RB2# RB1# RE# CE1# CE2# NC4 VCC1 VSS1 CE3# CE4# CLE ALE WE# WP# NC5 NC6 NC7 NC8 NC9
NC22 NC21 NC20 NC19 IO7 IO6 IO5 IO4 NC18 NC17 VSS3 VCC2 VSS2 NC16 NC15 NC14 IO3 IO2 IO1 IO0 NC13 NC12 NC11 NC10
1–24 / 48–25
ND7 ND6 ND5 ND4 VPS ND3 ND2 ND1 ND0
VCC-3V3 GND VPS

U6 NAND FLASH X8
RES# NC2 NC3 RB4# RB3# RB2# RB1# RE# CE1# CE2# NC4 VCC1 VSS1 CE3# CE4# CLE ALE WE# WP# NC5 NC6 NC7 NC8 NC9
NC22 NC21 NC20 NC19 IO7 IO6 IO5 IO4 NC18 NC17 VSS3 VCC2 VSS2 NC16 NC15 NC14 IO3 IO2 IO1 IO0 NC13 NC12 NC11 NC10
1–24 / 48–25
NRB1-N NRE-N NCE1-N NCLE NALE NWE-N NWP-N
ND7 ND6 ND5 ND4 VPS ND3 ND2 ND1 ND0
VCC-3V3 GND
NAND FLASH datasheet

DRAM-VCC
C1104 C1105 C1106 C1107 C1108 C1109 .104
GND

DRAM-REF
C1102 C1103 .104
GND

U1101
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10/AP A11 A12/BC# A13 A14
K4 L8 L4 K3 L9 L3 M9 M3 N9 M4 H8 M8 K8 N4 N8
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7
B4 C8 C3 C9 E4 E9 D3 E8
DQ5 DQ0 DQ7 DQ2 DQ1 DQ4 DQ3 DQ6
SDQM0 R1120 24R DM/TDQS NF/TDQS
SDQS0 R1125 24R DQS0 DQS
SDQS0-N R1128 24R DQS0-N DQS
SODT ODT
BA0 BA1 BA2
CAS RAS
CS
DSCK DSCK-N CK CK
CKE
WE
SRST RESET
DRAM-REF VREFDQ VREFCA
ZQ R1133 240R-1%
NC1 NC2 NC3 NC4 NC5 NC6 NC7 NC8 NC9 NC10
VDD1 VDD2 VDD3 VDD4 VDD5 VDD6 VDD7 VDD8 VDD9 VDDQ1 VDDQ2 VDDQ3 VDDQ4 VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 VSS8 VSS9 VSS10 VSS11 VSS12 VSSQ1 VSSQ2 VSSQ3 VSSQ4 VSSQ5
A3 A10 D8 G3 G9 K2 K10 M2 M10 B10 C2 E3 E10 A2 A9 B2 D9 F3 F9 J2 J10 L2 L10 N2 N10 B3 B9 C10 D2 D10
DDR3_8BITS-PBC
DRAM-VCC GND

U1102
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10/AP A11 A12/BC# A13 A14
K4 L8 L4 K3 L9 L3 M9 M3 N9 M4 H8 M8 K8 N4 N8
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7
B4 C8 C3 C9 E4 E9 D3 E8
DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15
SDQM1 R1121 24R DM/TDQS NF/TDQS
SDQS1 R1126 24R DQS1 DQS
SDQS1-N R1129 24R DQS1-N DQS
SODT ODT
BA0 BA1 BA2
CAS RAS
CS
DSCK DSCK-N CK CK
CKE
WE
SRST RESET
DRAM-REF VREFDQ VREFCA
ZQ R1134 240R-1%
NC1 NC2 NC3 NC4 NC5 NC6 NC7 NC8 NC9 NC10
VDD1 VDD2 VDD3 VDD4 VDD5 VDD6 VDD7 VDD8 VDD9 VDDQ1 VDDQ2 VDDQ3 VDDQ4 VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 VSS8 VSS9 VSS10 VSS11 VSS12 VSSQ1 VSSQ2 VSSQ3 VSSQ4 VSSQ5
A3 A10 D8 G3 G9 K2 K10 M2 M10 B10 C2 E3 E10 A2 A9 B2 D9 F3 F9 J2 J10 L2 L10 N2 N10 B3 B9 C10 D2 D10
DDR3_8BITS-PBC
DRAM-VCC GND

VCC-3V3
C78 C79 .104
C105 C106 .104
GND

VCC-3V3
NSR1 10K
NWP-N
C104 .104
GND

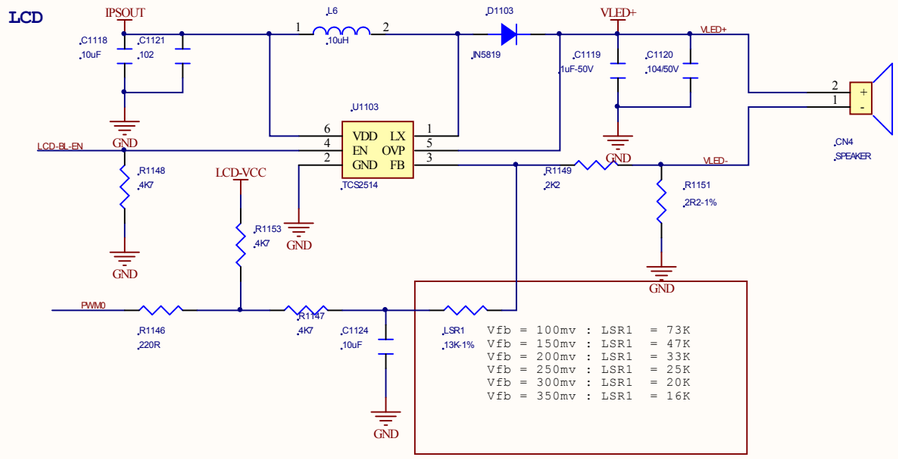
VCC-3V3
NSR2 0R
VPS
NSR3 NC-0R
GND

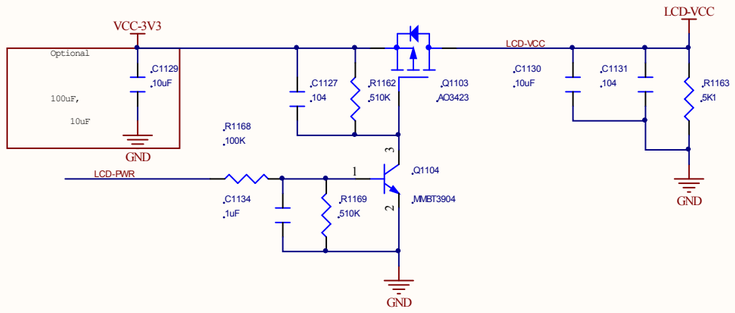
U20 toggle nand
OA1 OE1 OA9 A2 E8 A8 C6 C4 M5 K5 G2 J2 L2 N4 N6 L8 J8 G8 OC1 E2 G6 D5 D3 D7
N/U1 N/U2 N/U3 N/U4 N/U5 N/U6 N/U7 N/U8 N/U9 N/U10 N/U11 N/U12 N/U13 N/U14 N/U15 N/U16 N/U17 N/U18 N/U19 N/U20 N/U21 N/U22 N/U23 N/U24
VCCQ1 VCCQ2 VCCQ3 VCCQ4 VCCQ5 VCCQ6 VCC1 VCC2 VSSQ1 VSSQ2 VSSQ3 VSSQ4 VSSQ5 VSSQ6 VSS1 VSS2
OD1 OF1 OB9 OG9 N8 N2 B7 M7 OB1 OG1 OD9 OF9 F7 L4 B3 M3
RE RE CLE WP WE CE ALE R/B VREF VPP DQS DQS
B5 C8 A4 F3 E4 A6 C2 E6 OC9 OE9 H5 F5
NWP-N NRB0-N
ND0 ND1 ND2 ND3 ND4 ND5 ND6 ND7 DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7
G4 H3 J4 K3 L6 K7 J6 H7
VCC-3V3 GND
NRE-N NCLE NWE-N NCE0-N NALE NDQS
1 NAND

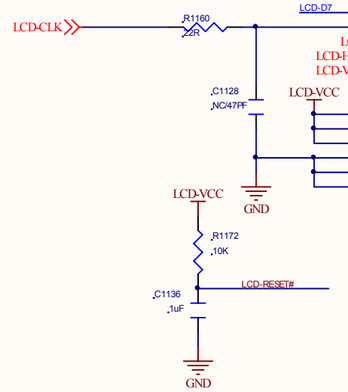
U15 toggle nand
OA1 OE1 OA9 A2 E8 A8 C6 C4 M5 K5 G2 J2 L2 N4 N6 L8 J8 G8 OC1 E2 G6 D5 D3 D7
N/U1 N/U2 N/U3 N/U4 N/U5 N/U6 N/U7 N/U8 N/U9 N/U10 N/U11 N/U12 N/U13 N/U14 N/U15 N/U16 N/U17 N/U18 N/U19 N/U20 N/U21 N/U22 N/U23 N/U24
VCCQ1 VCCQ2 VCCQ3 VCCQ4 VCCQ5 VCCQ6 VCC1 VCC2 VSSQ1 VSSQ2 VSSQ3 VSSQ4 VSSQ5 VSSQ6 VSS1 VSS2
OD1 OF1 OB9 OG9 N8 N2 B7 M7 OB1 OG1 OD9 OF9 F7 L4 B3 M3
RE RE CLE WP WE CE ALE R/B VREF VPP DQS DQS
B5 C8 A4 F3 E4 A6 C2 E6 OC9 OE9 H5 F5
NWP-N NRB1-N
ND0 ND1 ND2 ND3 ND4 ND5 ND6 ND7 DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7
G4 H3 J4 K3 L6 K7 J6 H7
VCC-3V3 GND
NRE-N NCLE NWE-N NCE1-N NALE NDQS
NAND

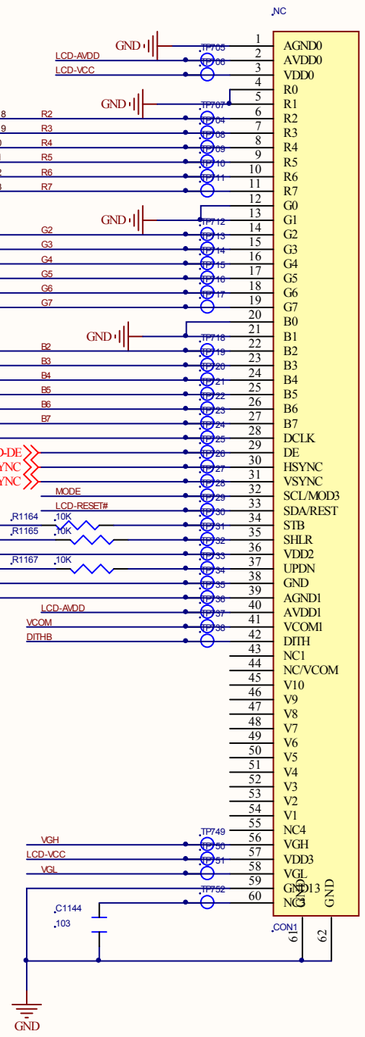
LCD7"INNONUX

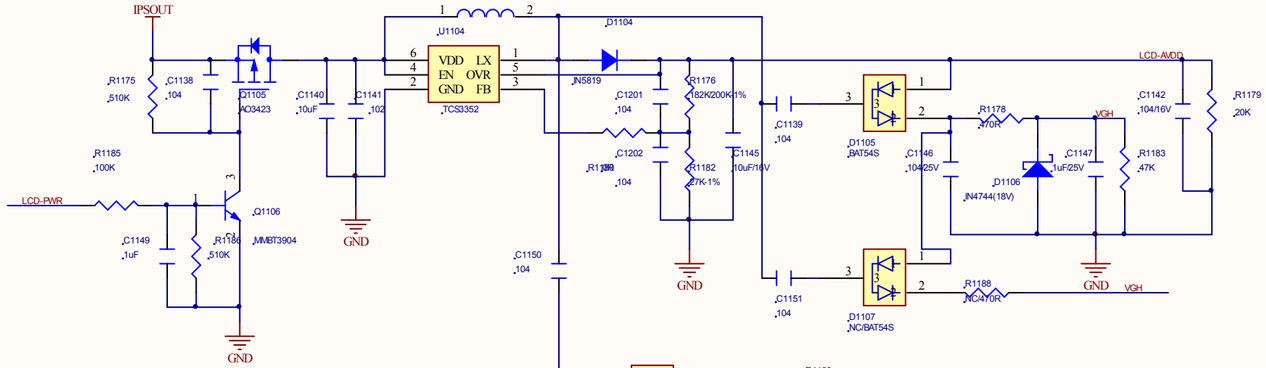
LCD

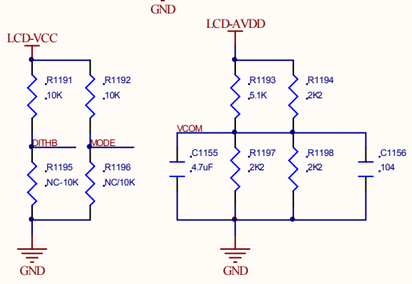


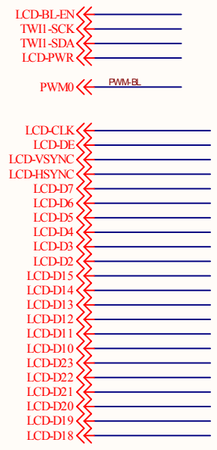












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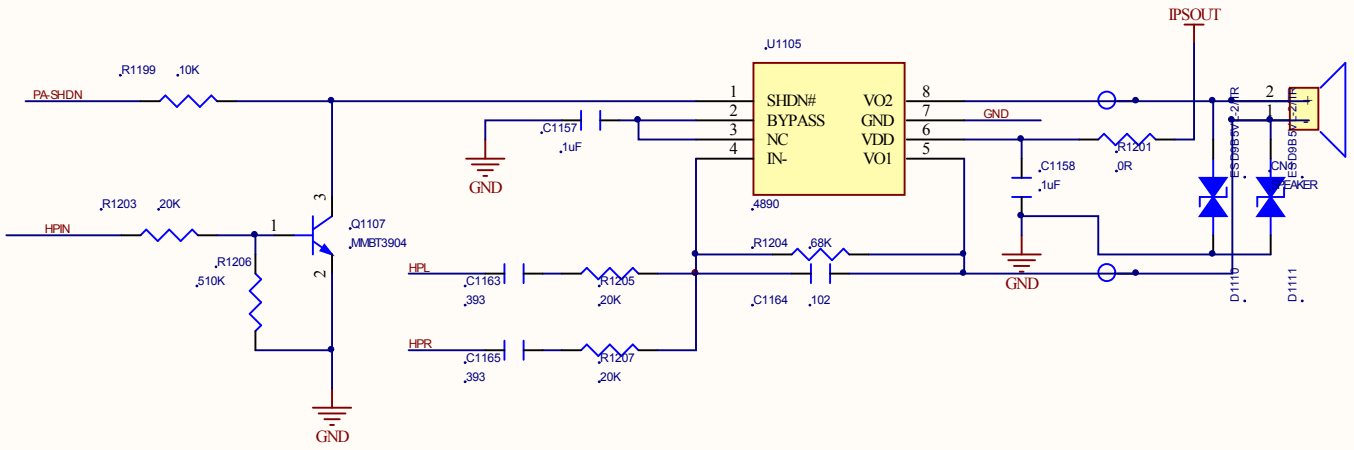

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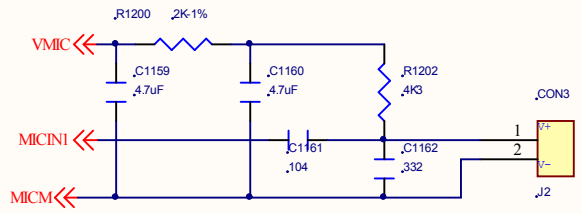

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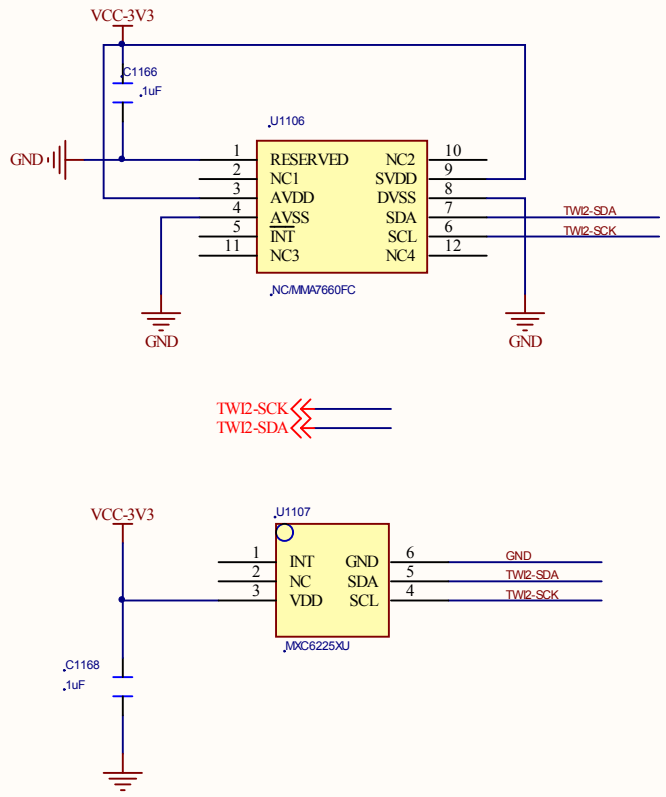

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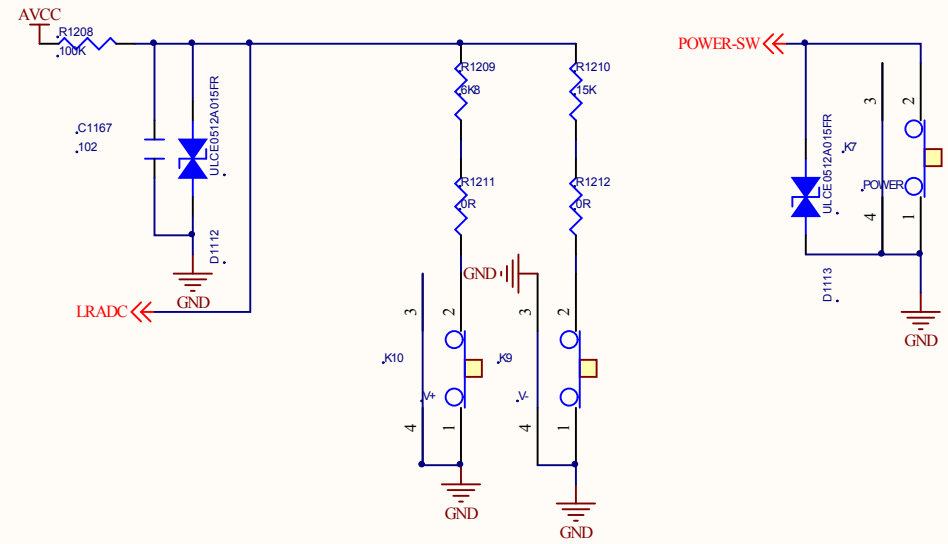

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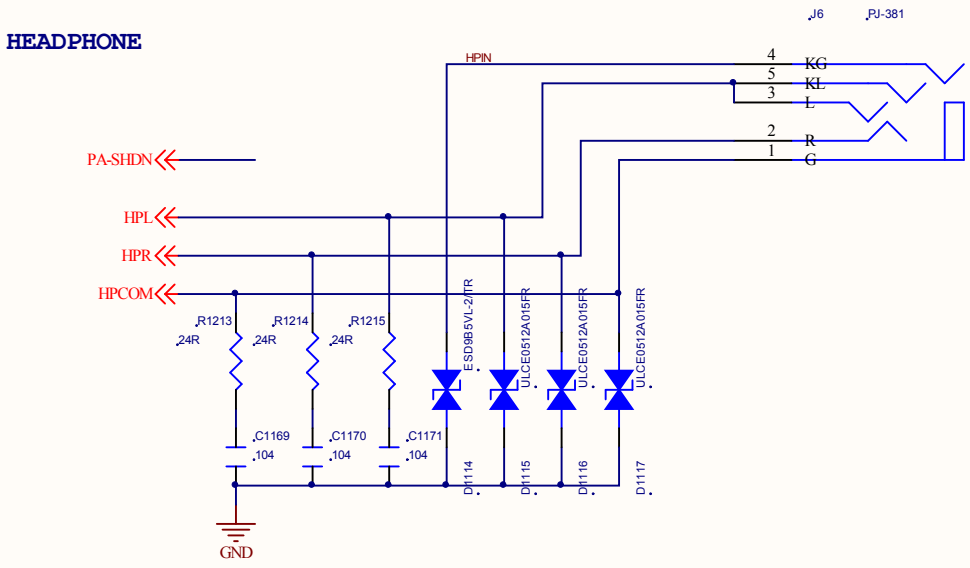

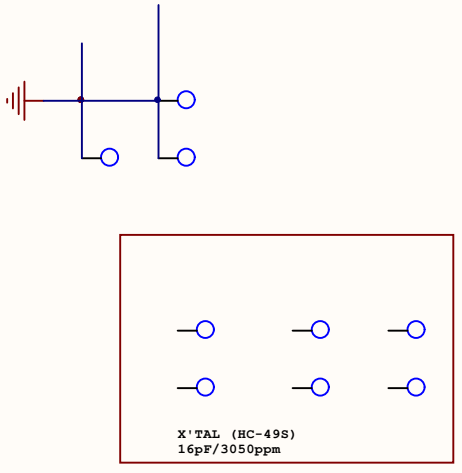

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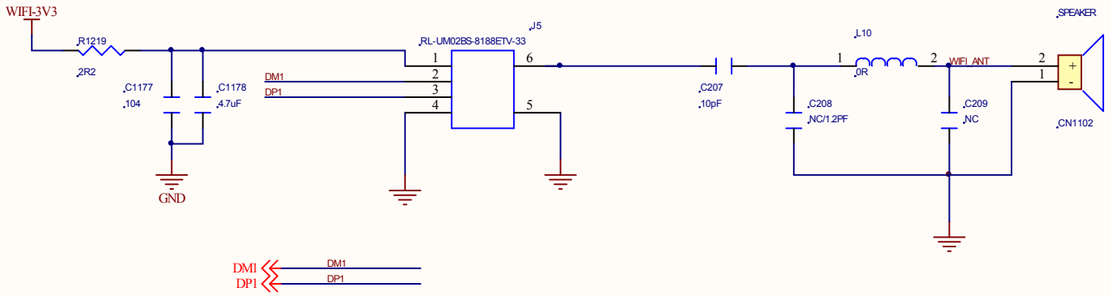

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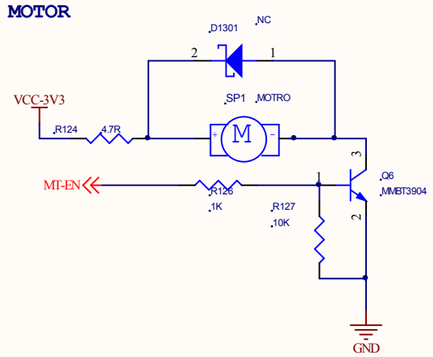

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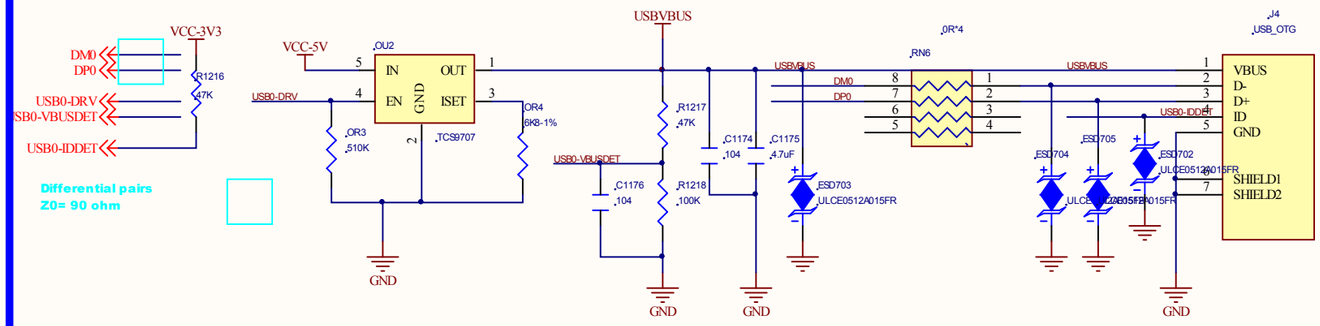

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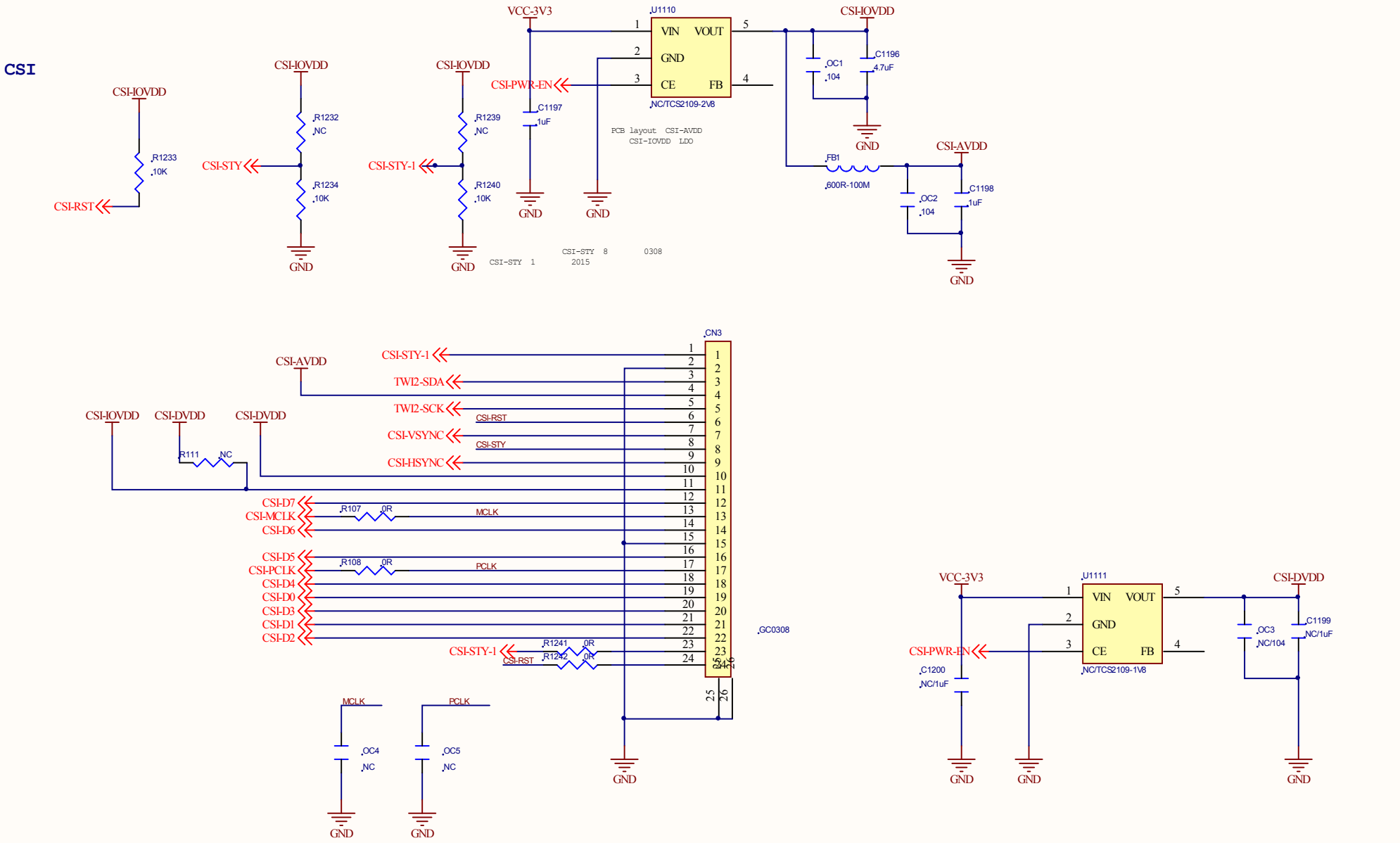

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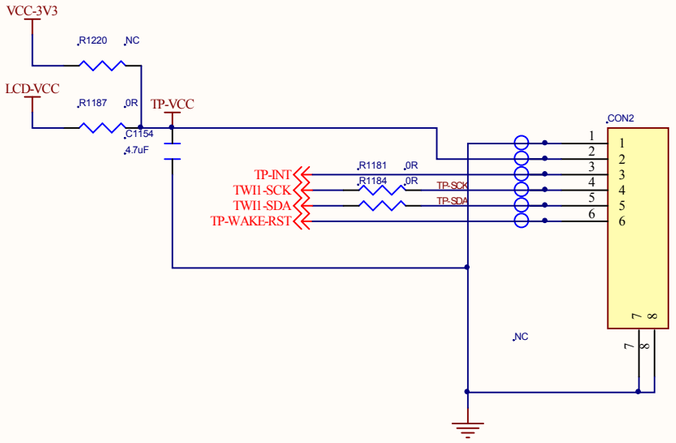

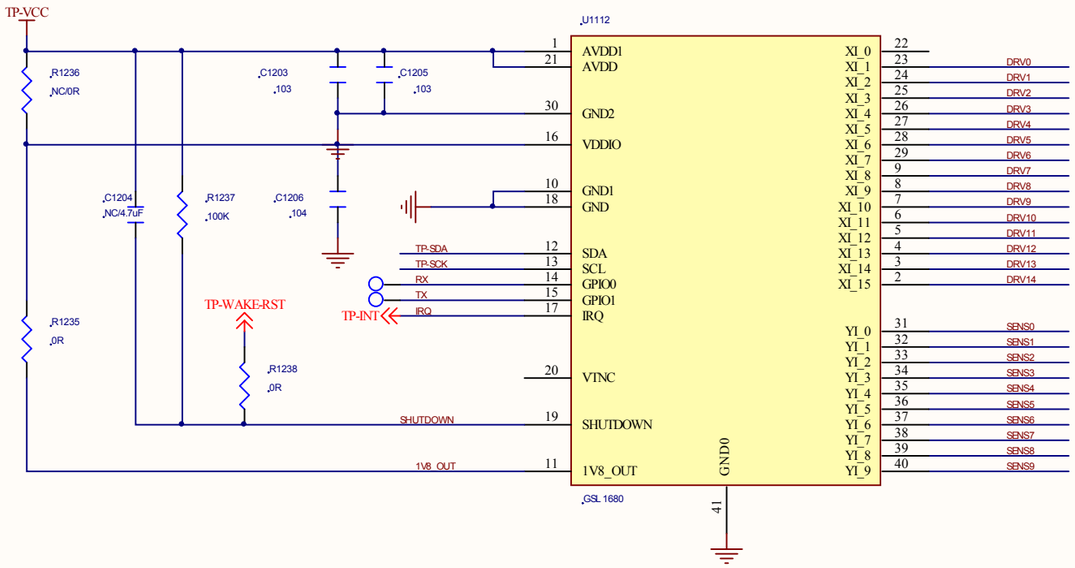

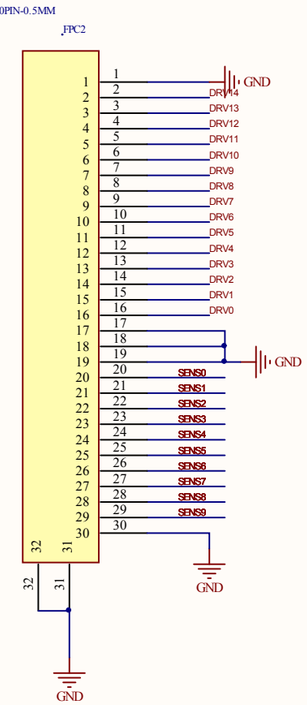

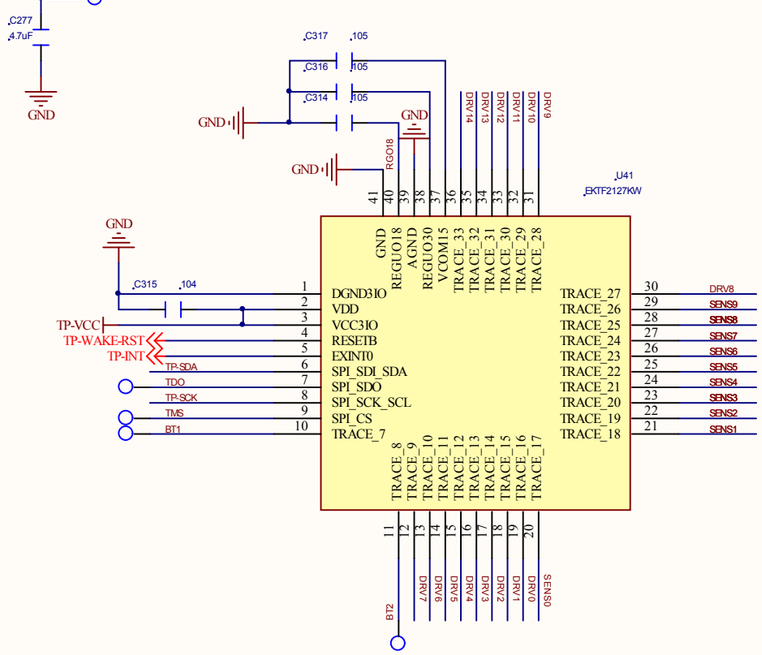

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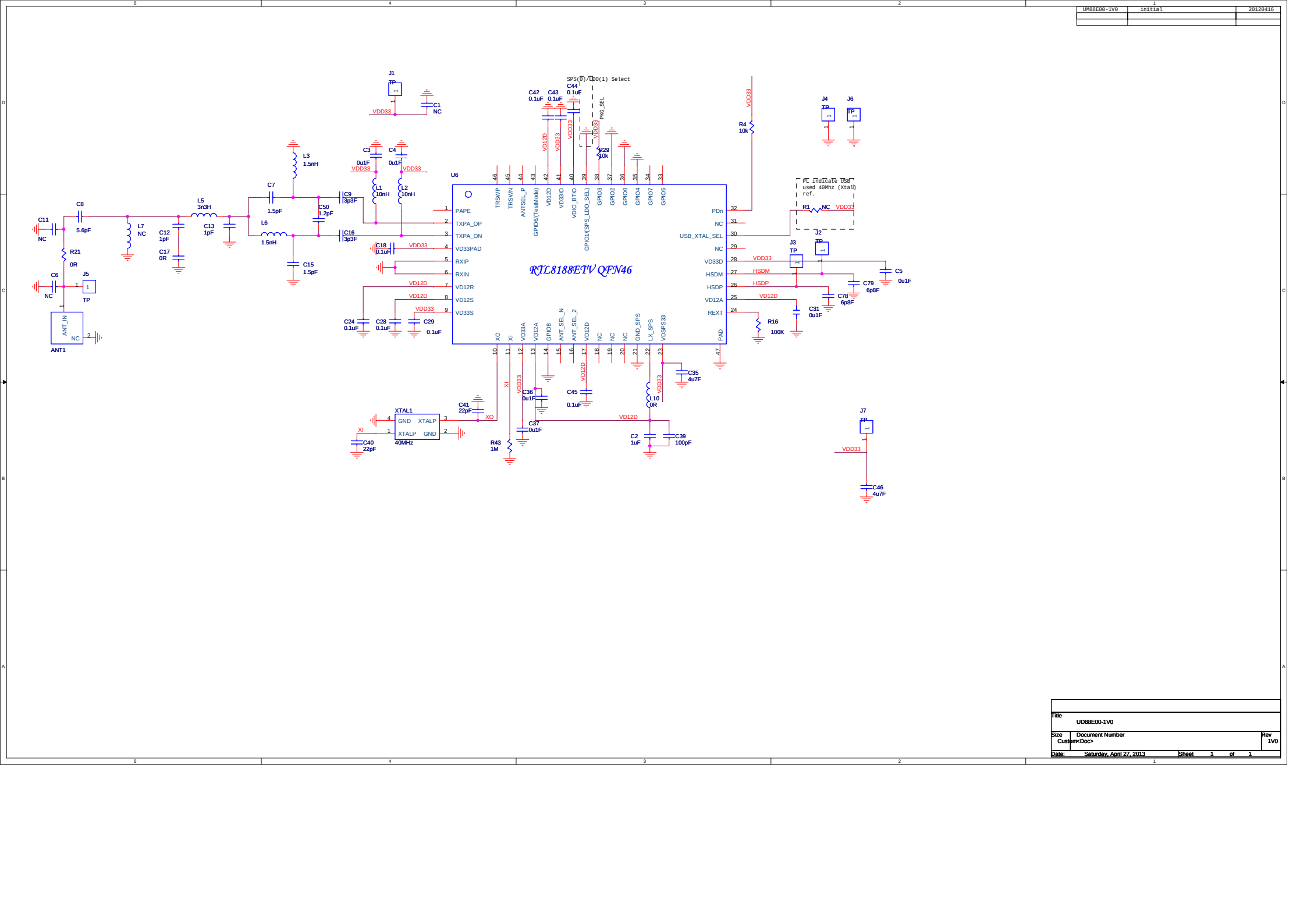
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