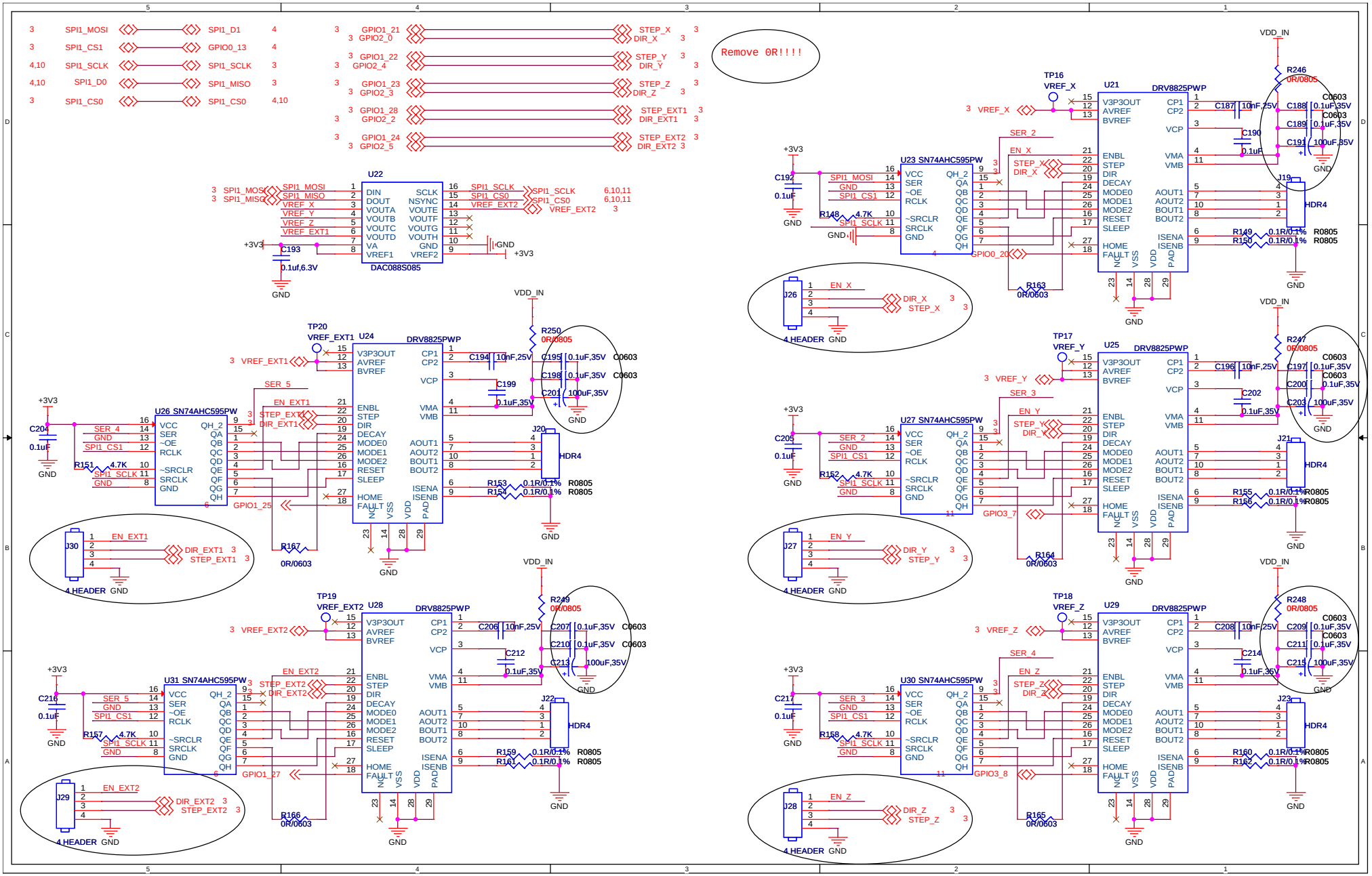
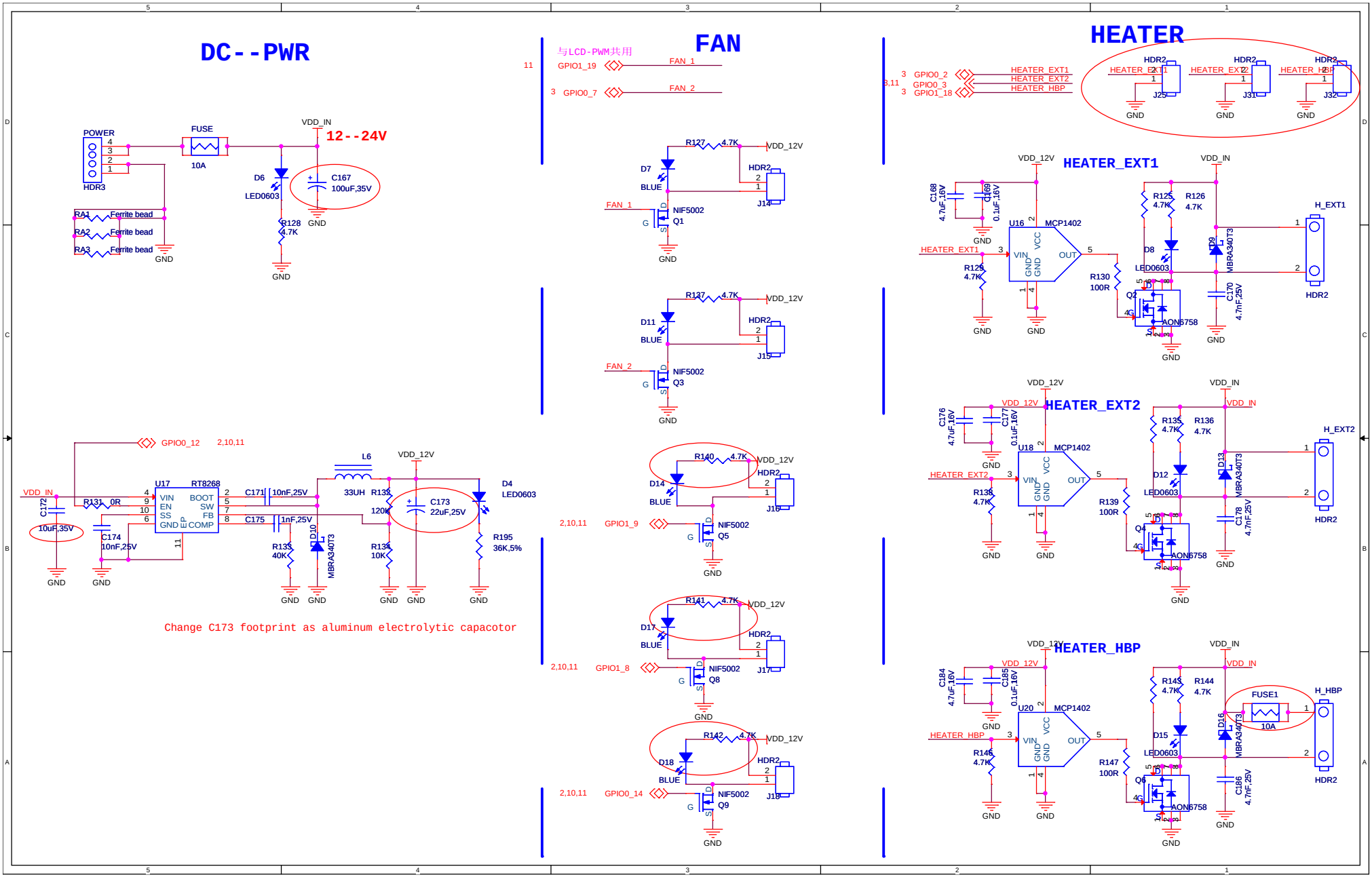
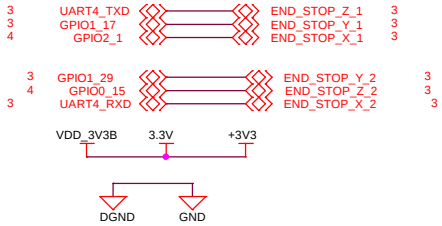
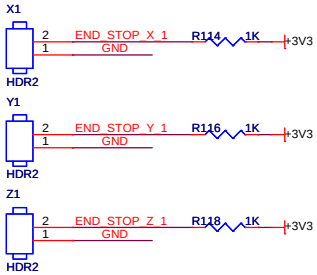
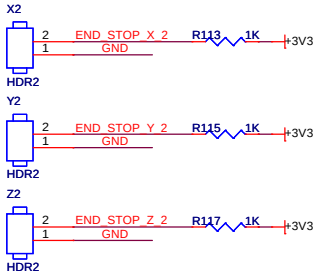

SPI1_MOSI
SPI1_CS1
SPI1_SCLK
SPI1_D0
SPI1_CS0
SPI1_D1
GPIO0_13
SPI1_SCLK
SPI1_MISO
SPI1_CS0
GPIO1_21
GPIO2_0
GPIO1_22
GPIO2_4
GPIO1_23
GPIO2_3
GPIO1_28
GPIO2_2
GPIO1_24
GPIO2_5
STEP_X
DIR_X
STEP_Y
DIR_Y
STEP_Z
DIR_Z
STEP_EXT1
DIR_EXT1
STEP_EXT2
DIR_EXT2
Remove 0R!!!!
U22
DAC088S085
DIN
DOUT
VOUTA
VOUTB
VOUTC
VOUTD
VA
VREF1
SCLK
NSYNC
VOUTE
VOUTF
VOUTG
VOUTH
GND
VREF2
VREF_X
VREF_Y
VREF_Z
VREF_EXT1
VREF_EXT2
C193
0.1uf,6.3V
U21
DRV8825PWP
U23 SN74AHC595PW
U24
U25
U26 SN74AHC595PW
U27 SN74AHC595PW
U28
U29
U30 SN74AHC595PW
U31 SN74AHC595PW
TP16
VREF_X
TP17
VREF_Y
TP18
VREF_Z
TP19
VREF_EXT2
TP20
VREF_EXT1
VDD_IN
+3V3
GND
R246
R247
R248
R249
R250
0R/0805
J19
J20
J21
J22
J23
HDR4
J26
J27
J28
J29
J30
4 HEADER
R148
R149
R150
R151
R152
R153
R154
R155
R156
R157
R158
R159
R160
R161
R162
R163
R164
R165
R166
R167
4.7K
0.1R/0.1%
R0805
0R/0603
C187
C188
C189
C190
C191
C192
C194
C195
C196
C197
C198
C199
C200
C201
C202
C203
C204
C205
C206
C207
C208
C209
C210
C211
C212
C213
C214
C215
C216
C217
10nF,25V
0.1uF,35V
100uF,35V
0.1uF
C0603
EN_X
EN_Y
EN_Z
EN_EXT1
EN_EXT2
SER_2
SER_3
SER_4
SER_5
GPIO0_20
GPIO3_7
GPIO3_8
GPIO1_25
GPIO1_27


DC--PWR
POWER
HDR3
FUSE
10A
VDD_IN
12--24V
D6
LED0603
C167
100uF,35V
R128
4.7K
GND
RA1
RA2
RA3
Ferrite bead
U17
RT8268
VIN
EN
SS
GND
BOOT
SW
FB
COMP
C172
10uF,35V
R131
0R
C174
10nF,25V
C171
10nF,25V
C175
1nF,25V
L6
33UH
R133
120K
R134
40K
R135
10K
C173
22uF,25V
D10
MBRA340T3
D4
LED0603
R195
36K,5%
GPIO0_12
2,10,11
Change C173 footprint as aluminum electrolytic capacotor
FAN
与LCD-PWM共用
11
GPIO1_19
FAN_1
3
GPIO0_7
FAN_2
R127
4.7K
D7
BLUE
NIF5002
Q1
J14
R137
D11
Q3
J15
R140
D14
Q5
J16
R141
D17
Q8
J17
R142
D18
Q9
J18
2,10,11
GPIO1_9
GPIO1_8
GPIO0_14
HEATER
3
GPIO0_2
3,11
GPIO0_3
3
GPIO1_18
HEATER_EXT1
HEATER_EXT2
HEATER_HBP
HDR2
J25
J31
J32
HEATER_EXT1
VDD_12V
C168
4.7uF,16V
C169
0.1uF,16V
U16
MCP1402
VCC
VIN
GND
OUT
R125
4.7K
R126
4.7K
R129
4.7K
R130
100R
D8
LED0603
Q2
AON6758
D9
MBRA340T3
C170
4.7nF,25V
H_EXT1
HEATER_EXT2
C176
4.7uF,16V
C177
0.1uF,16V
U18
MCP1402
R135
4.7K
R136
4.7K
R138
4.7K
R139
100R
D12
LED0603
Q4
AON6758
D13
MBRA340T3
C178
4.7nF,25V
H_EXT2
HEATER_HBP
C184
4.7uF,16V
C185
0.1uF,16V
U20
MCP1402
R143
4.7K
R144
4.7K
R146
4.7K
R147
100R
D15
LED0603
Q6
AON6758
D16
MBRA340T3
C186
4.7nF,25V
FUSE1
10A
H_HBP

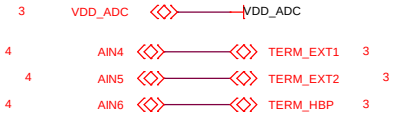
END X,Y,Z

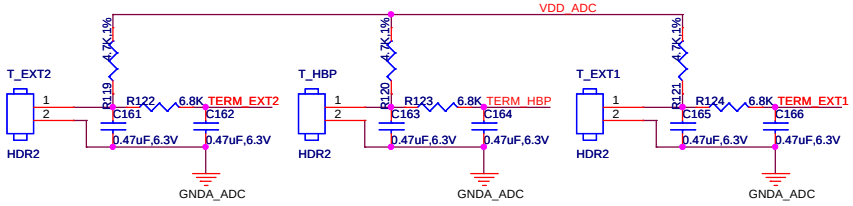


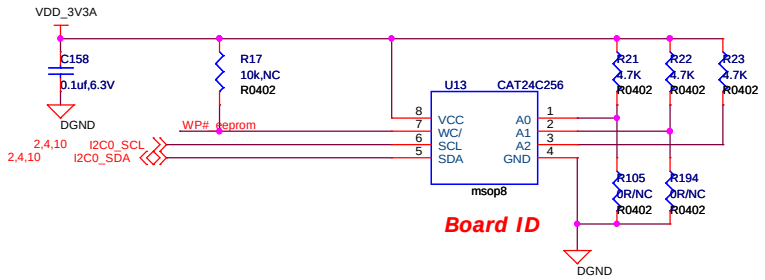




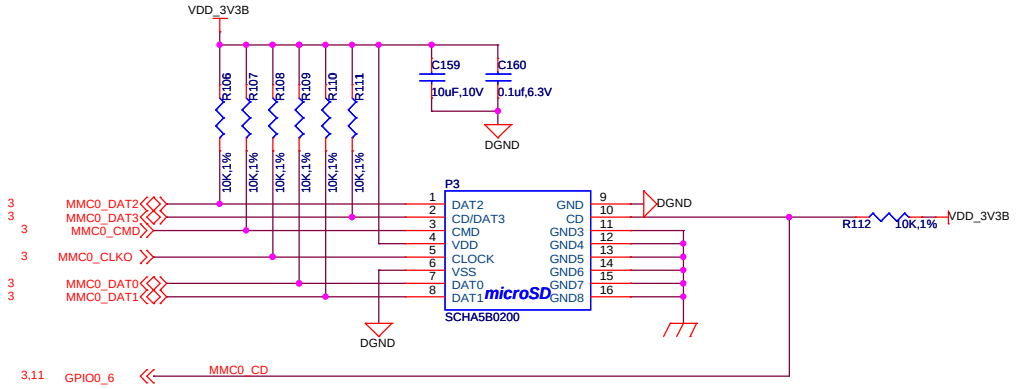
Temp-sensor

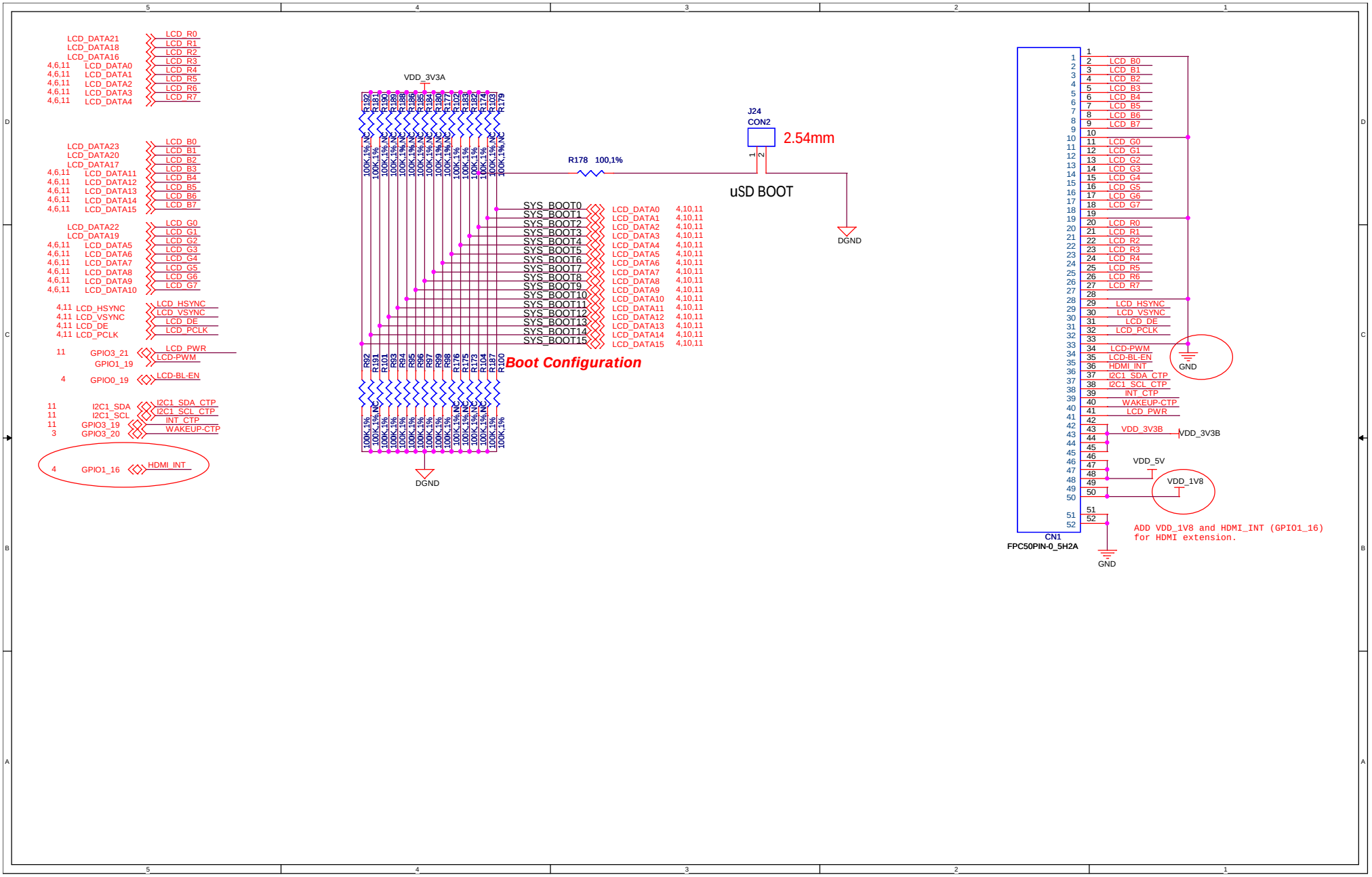


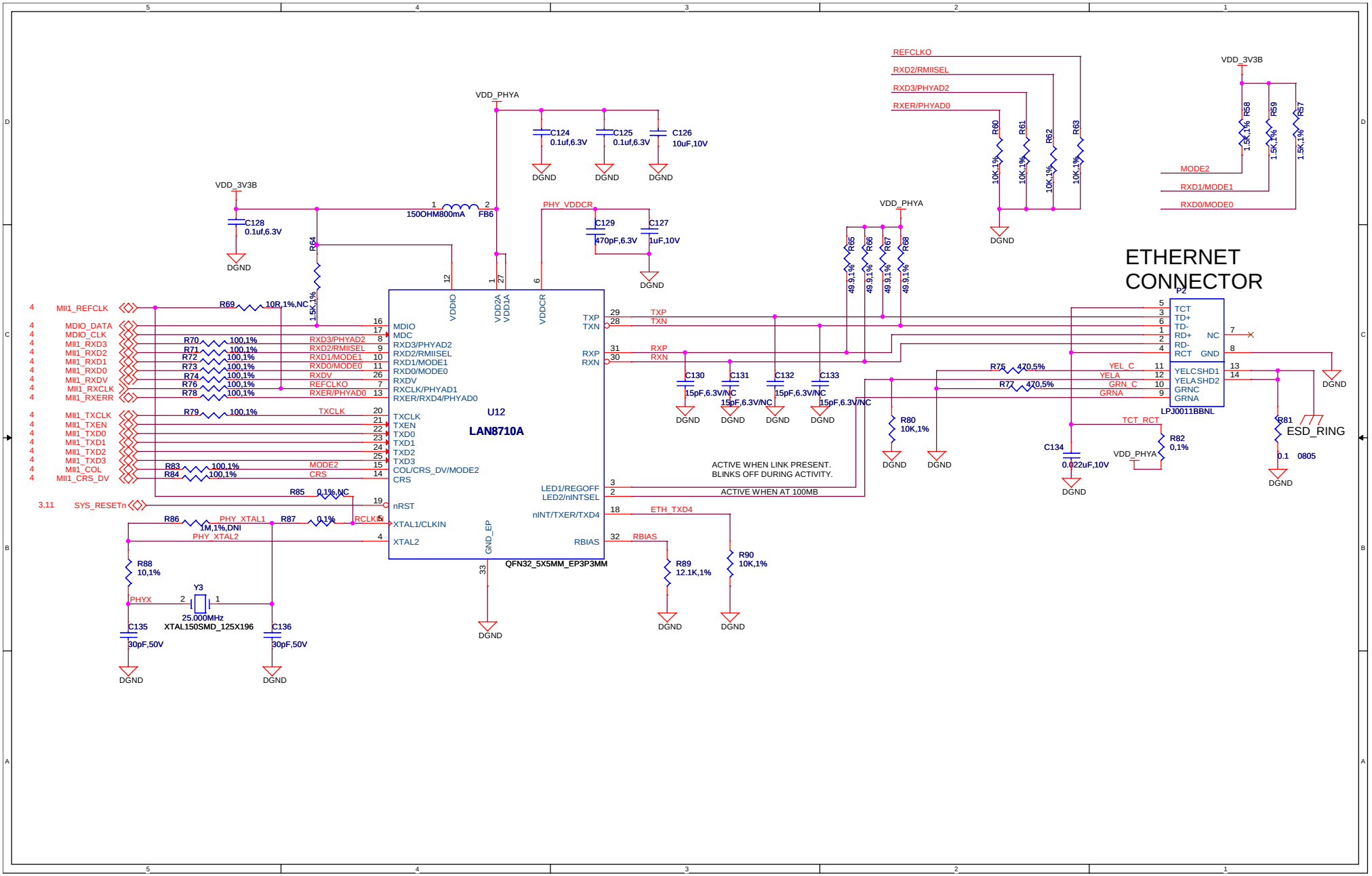


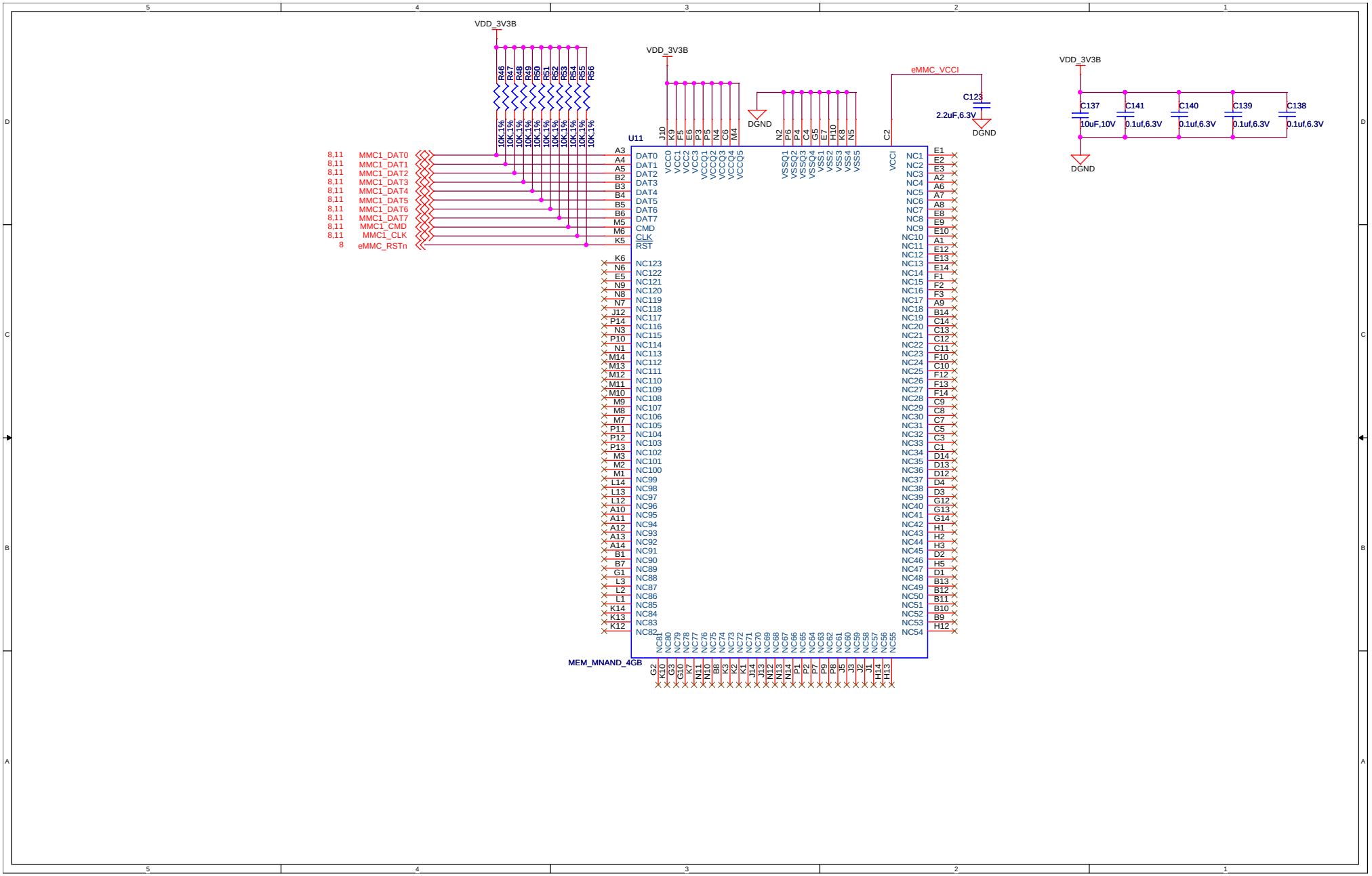


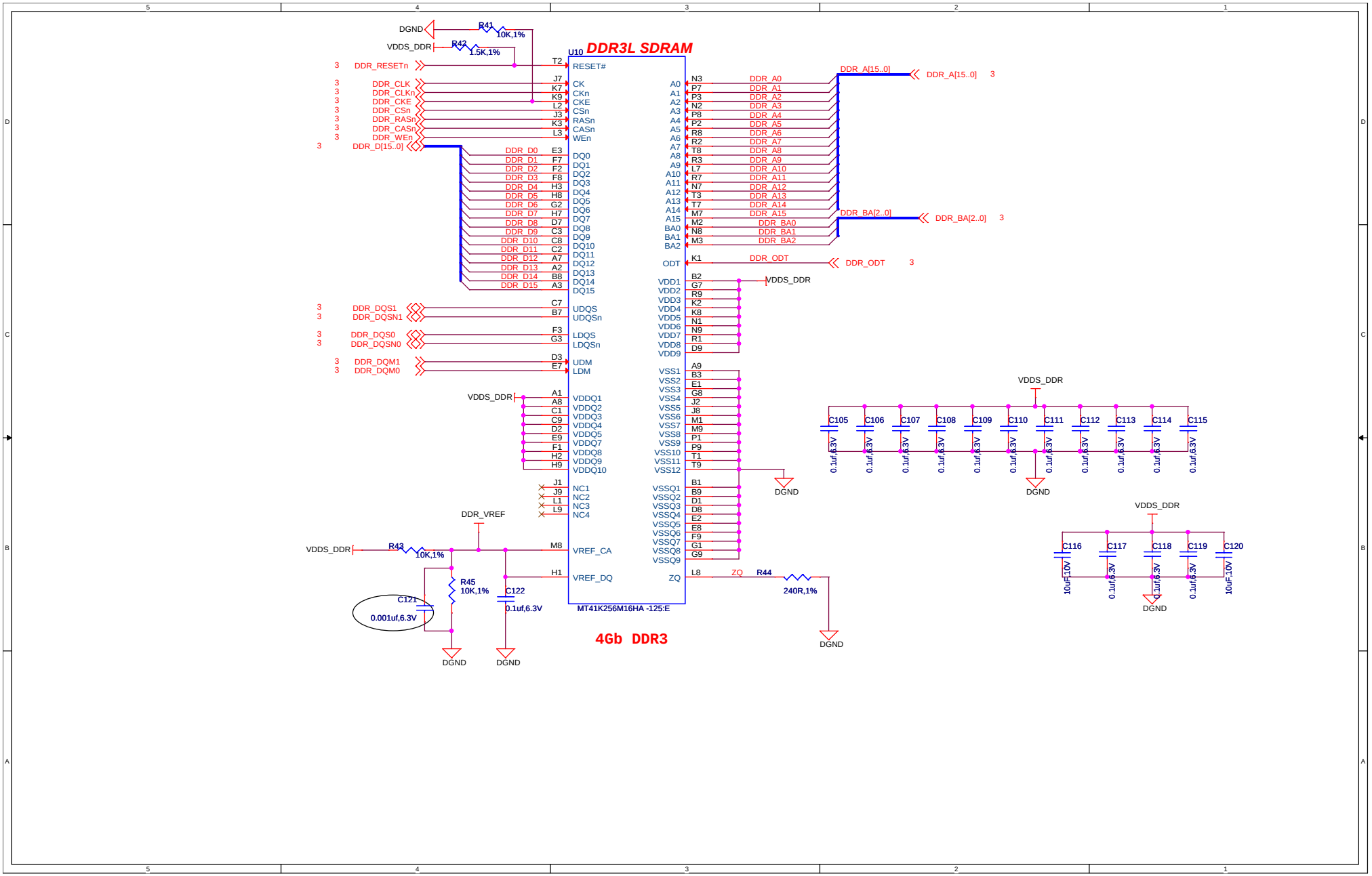
uSD CONNECTOR

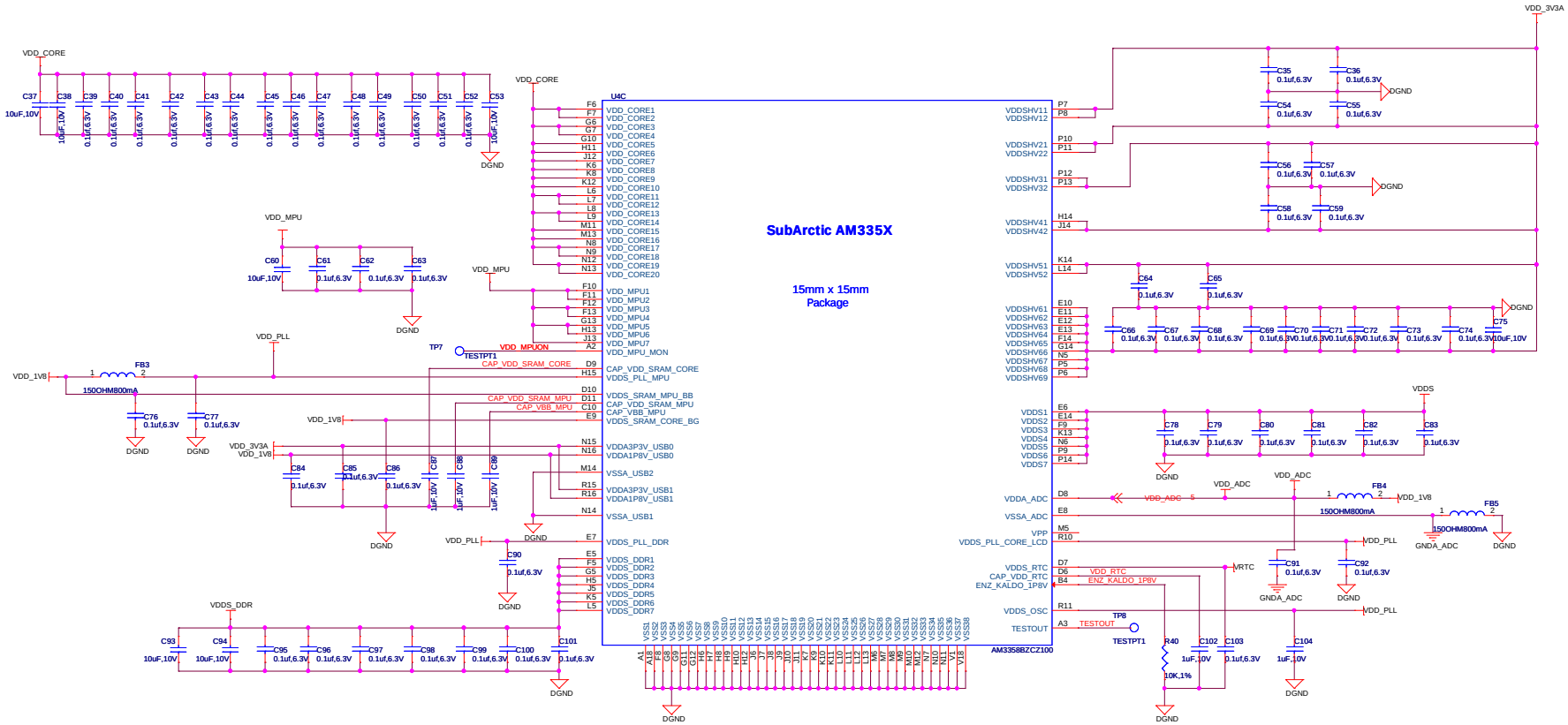


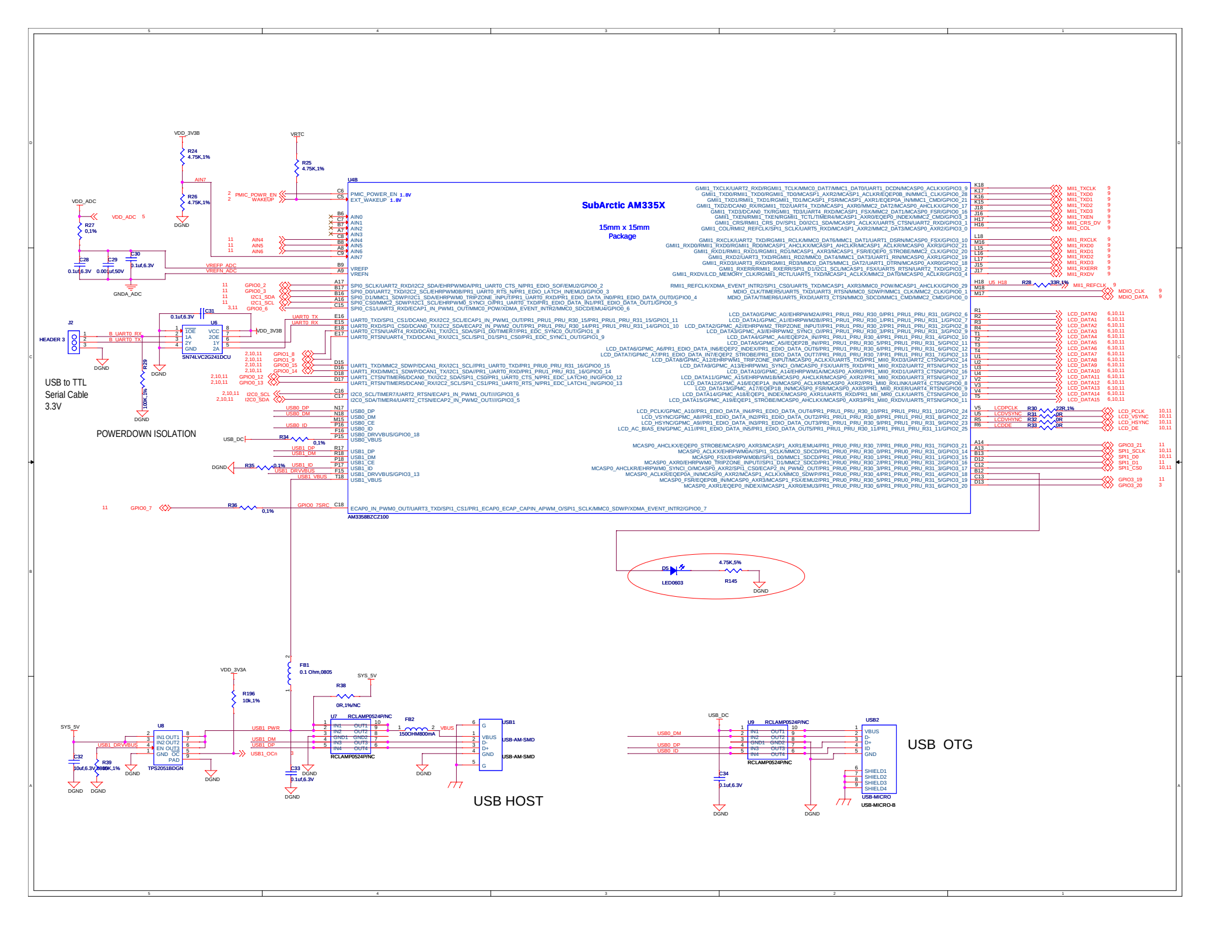

LCD_DATA21
LCD_DATA18
LCD_DATA16
4,6,11 LCD_DATA0
4,6,11 LCD_DATA1
4,6,11 LCD_DATA2
4,6,11 LCD_DATA3
4,6,11 LCD_DATA4
LCD_R0
LCD_R1
LCD_R2
LCD_R3
LCD_R4
LCD_R5
LCD_R6
LCD_R7
LCD_DATA23
LCD_DATA20
LCD_DATA17
4,6,11 LCD_DATA11
4,6,11 LCD_DATA12
4,6,11 LCD_DATA13
4,6,11 LCD_DATA14
4,6,11 LCD_DATA15
LCD_B0
LCD_B1
LCD_B2
LCD_B3
LCD_B4
LCD_B5
LCD_B6
LCD_B7
LCD_DATA22
LCD_DATA19
4,6,11 LCD_DATA5
4,6,11 LCD_DATA6
4,6,11 LCD_DATA7
4,6,11 LCD_DATA8
4,6,11 LCD_DATA9
4,6,11 LCD_DATA10
LCD_G0
LCD_G1
LCD_G2
LCD_G3
LCD_G4
LCD_G5
LCD_G6
LCD_G7
4,11 LCD_HSYNC
4,11 LCD_VSYNC
4,11 LCD_DE
4,11 LCD_PCLK
LCD_HSYNC
LCD_VSYNC
LCD_DE
LCD_PCLK
11 GPIO3_21
GPIO1_19
LCD_PWR
LCD-PWM
4 GPIO0_19
LCD-BL-EN
11 I2C1_SDA
11 I2C1_SCL
11 GPIO3_19
3 GPIO3_20
I2C1_SDA_CTP
I2C1_SCL_CTP
INT_CTP
WAKEUP-CTP
4 GPIO1_16
HDMI_INT
VDD_3V3A
R192 R181 R190 R189 R188 R186 R185 R184 R180 R177 R102 R183 R182 R174 R103 R179
100K,1% 100K,1%,NC
R92 R91 R101 R93 R94 R95 R96 R97 R99 R98 R176 R175 R173 R104 R187 R100
DGND
R178 100,1%
J24
CON2
2.54mm
uSD BOOT
DGND
SYS_BOOT0
SYS_BOOT1
SYS_BOOT2
SYS_BOOT3
SYS_BOOT4
SYS_BOOT5
SYS_BOOT6
SYS_BOOT7
SYS_BOOT8
SYS_BOOT9
SYS_BOOT10
SYS_BOOT11
SYS_BOOT12
SYS_BOOT13
SYS_BOOT14
SYS_BOOT15
LCD_DATA0 4,10,11
LCD_DATA1 4,10,11
LCD_DATA2 4,10,11
LCD_DATA3 4,10,11
LCD_DATA4 4,10,11
LCD_DATA5 4,10,11
LCD_DATA6 4,10,11
LCD_DATA7 4,10,11
LCD_DATA8 4,10,11
LCD_DATA9 4,10,11
LCD_DATA10 4,10,11
LCD_DATA11 4,10,11
LCD_DATA12 4,10,11
LCD_DATA13 4,10,11
LCD_DATA14 4,10,11
LCD_DATA15 4,10,11
Boot Configuration
CN1
FPC50PIN-0_5H2A
LCD_B0
LCD_B1
LCD_B2
LCD_B3
LCD_B4
LCD_B5
LCD_B6
LCD_B7
LCD_G0
LCD_G1
LCD_G2
LCD_G3
LCD_G4
LCD_G5
LCD_G6
LCD_G7
LCD_R0
LCD_R1
LCD_R2
LCD_R3
LCD_R4
LCD_R5
LCD_R6
LCD_R7
LCD_HSYNC
LCD_VSYNC
LCD_DE
LCD_PCLK
LCD-PWM
LCD-BL-EN
HDMI_INT
I2C1_SDA_CTP
I2C1_SCL_CTP
INT_CTP
WAKEUP-CTP
LCD_PWR
VDD_3V3B
VDD_3V3B
VDD_5V
VDD_1V8
GND
GND
ADD VDD_1V8 and HDMI_INT (GPIO1_16)
for HDMI extension.

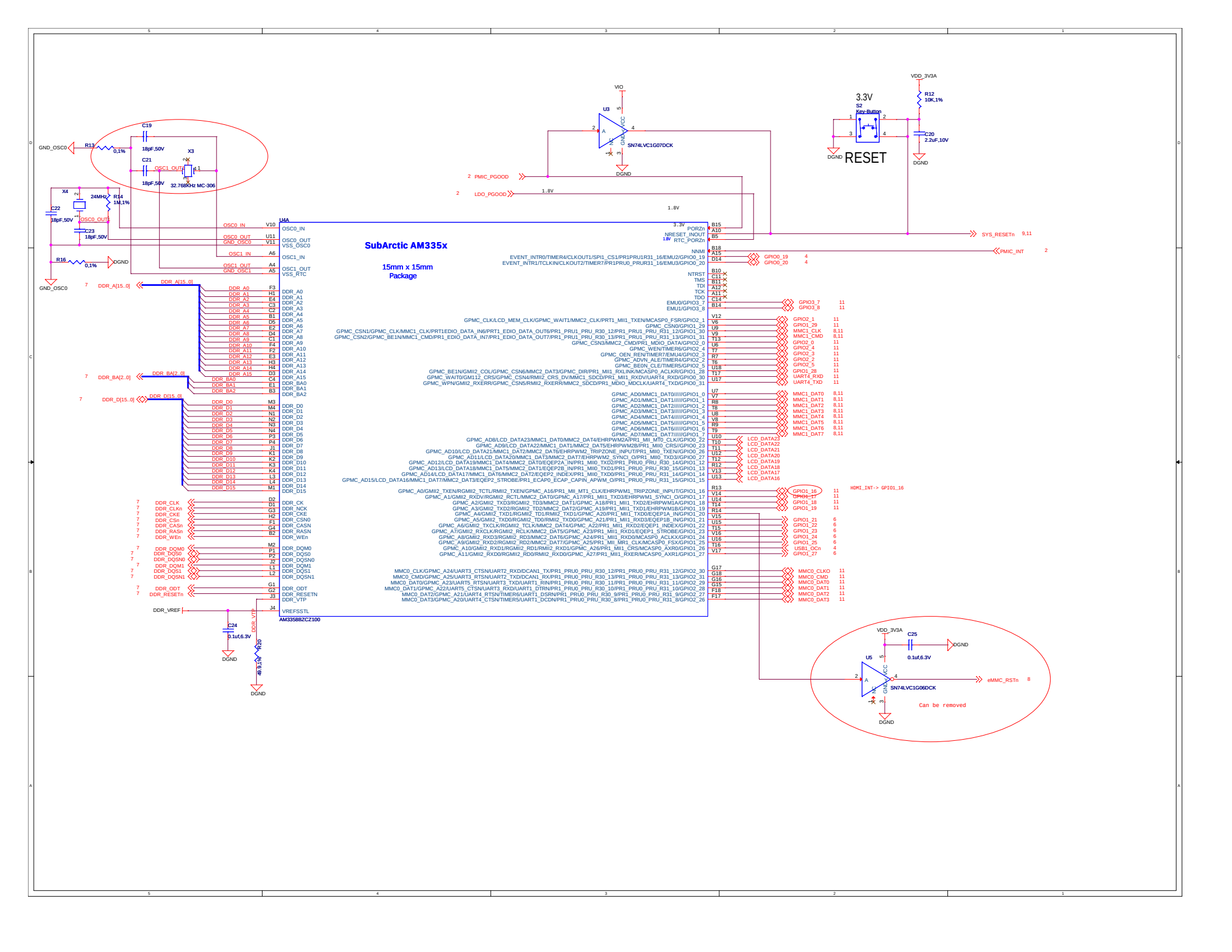

ETHERNET CONNECTOR
U12
LAN8710A
QFN32_5X5MM_EP3P3MM
LPJ0011BBNL
P2
ESD_RING
VDD_PHYA
VDD_3V3B
DGND
MII1_REFCLK
MDIO_DATA
MDIO_CLK
MII1_RXD3
MII1_RXD2
MII1_RXD1
MII1_RXD0
MII1_RXDV
MII1_RXCLK
MII1_RXERR
MII1_TXCLK
MII1_TXEN
MII1_TXD0
MII1_TXD1
MII1_TXD2
MII1_TXD3
MII1_COL
MII1_CRS_DV
SYS_RESETn
PHY_XTAL1
PHY_XTAL2
PHYX
MDIO
MDC
RXD3/PHYAD2
RXD2/RMIISEL
RXD1/MODE1
RXD0/MODE0
RXDV
RXCLK/PHYAD1
RXER/RXD4/PHYAD0
TXCLK
TXEN
TXD0
TXD1
TXD2
TXD3
COL/CRS_DV/MODE2
CRS
nRST
XTAL1/CLKIN
XTAL2
VDDIO
VDD2A
VDD1A
VDDCR
GND_EP
TXP
TXN
RXP
RXN
LED1/REGOFF
LED2/nINTSEL
nINT/TXER/TXD4
RBIAS
REFCLKO
RXD2/RMIISEL
RXD3/PHYAD2
RXER/PHYAD0
MODE2
RXD1/MODE1
RXD0/MODE0
ACTIVE WHEN LINK PRESENT.
BLINKS OFF DURING ACTIVITY.
ACTIVE WHEN AT 100MB
TCT
TD+
TD-
RD+
RD-
RCT
NC
GND
YEL_C
YELA
GRN_C
GRNA
YELCSHD1
YELASHD2
GRNC
GRNA
TCT_RCT
R64 1.5K,1%
R69 10R,1%,NC
R70 100,1%
R71 100,1%
R72 100,1%
R73 100,1%
R74 100,1%
R76 100,1%
R78 100,1%
R79 100,1%
R83 100,1%
R84 100,1%
R85 0,1% NC
R86 1M,1%,DNI
R87 0,1%
R88 10,1%
R89 12.1K,1%
R90 10K,1%
R60 10K,1%
R61 10K,1%
R62 10K,1%
R63 10K,1%
R65 49.9,1%
R66 49.9,1%
R67 49.9,1%
R68 49.9,1%
R58 1.5K,1%
R59 1.5K,1%
R57 1.5K,1%
R75 470,5%
R77 470,5%
R80 10K,1%
R81 0.1 0805
R82 0,1%
C124 0.1uf,6.3V
C125 0.1uf,6.3V
C126 10uF,10V
C128 0.1uf,6.3V
C129 470pF,6.3V
C127 1uF,10V
C130 15pF,6.3V/NC
C131 15pF,6.3V/NC
C132 15pF,6.3V/NC
C133 15pF,6.3V/NC
C134 0.022uF,10V
C135 30pF,50V
C136 30pF,50V
Y3 25.000MHz XTAL150SMD_125X196
FB6 150OHM800mA

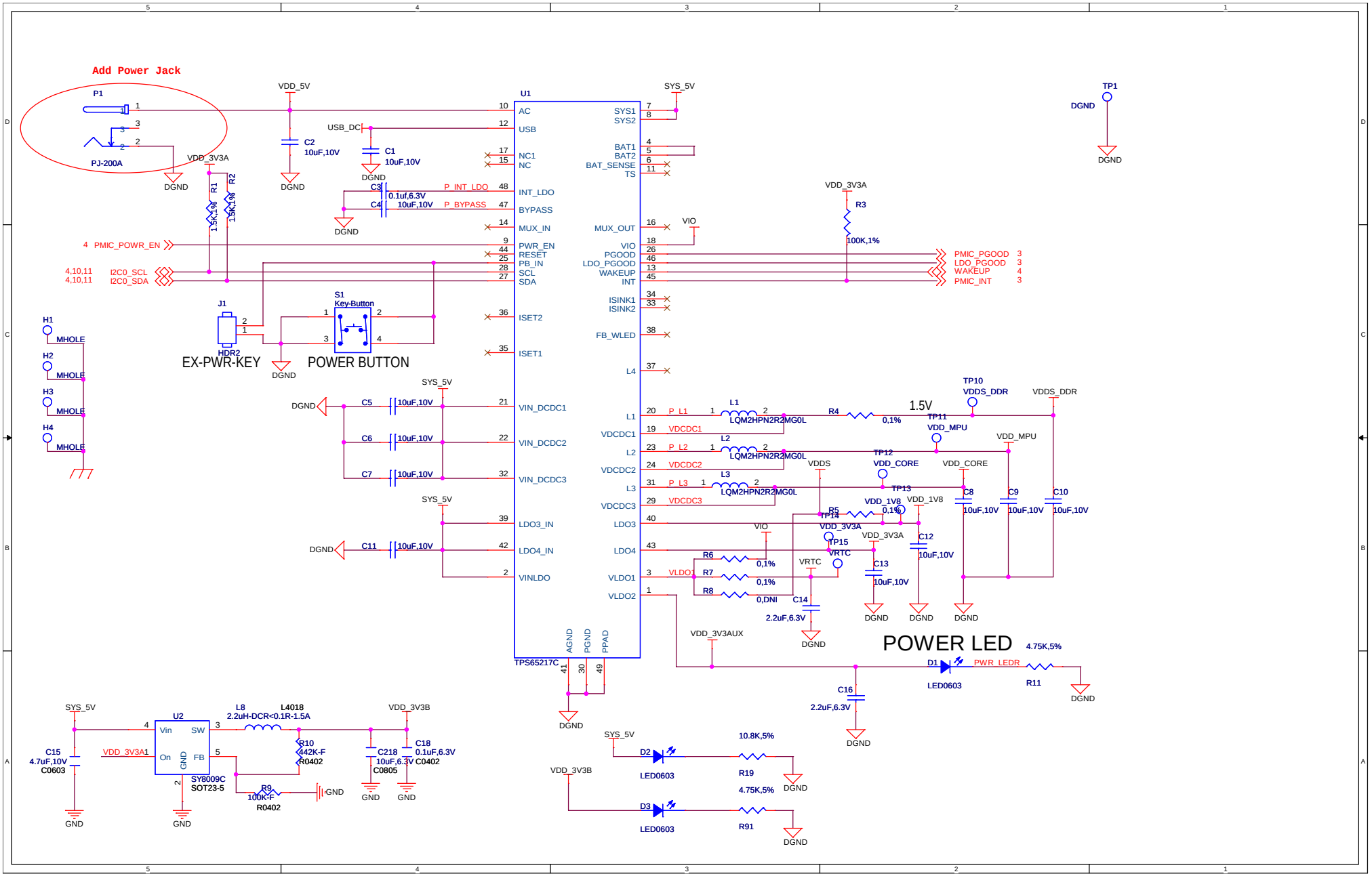

VDD_3V3B
R46 R47 R48 R49 R50 R51 R52 R53 R54 R55 R56
10K,1%
8,11 MMC1_DAT0
8,11 MMC1_DAT1
8,11 MMC1_DAT2
8,11 MMC1_DAT3
8,11 MMC1_DAT4
8,11 MMC1_DAT5
8,11 MMC1_DAT6
8,11 MMC1_DAT7
8,11 MMC1_CMD
8,11 MMC1_CLK
8 eMMC_RSTn
U11
MEM_MNAND_4GB
DAT0 DAT1 DAT2 DAT3 DAT4 DAT5 DAT6 DAT7 CMD CLK RST
VCC0 VCC1 VCC2 VCC3 VCCQ1 VCCQ2 VCCQ3 VCCQ4 VCCQ5
VSSQ1 VSSQ2 VSSQ3 VSSQ4 VSS1 VSS2 VSS3 VSS4 VSS5
VCCI
DGND
eMMC_VCCI
C123
2.2uF,6.3V
C137 10uF,10V
C141 0.1uf,6.3V
C140 0.1uf,6.3V
C139 0.1uf,6.3V
C138 0.1uf,6.3V


DDR3L SDRAM
U10
MT41K256M16HA -125:E
4Gb DDR3
R41
10K,1%
R42
1.5K,1%
R43
10K,1%
R44
240R,1%
R45
10K,1%
C121
0.001uf,6.3V
C122
0.1uf,6.3V
DDR_VREF
VDDS_DDR
DGND
DDR_RESETn
DDR_CLK
DDR_CLKn
DDR_CKE
DDR_CSn
DDR_RASn
DDR_CASn
DDR_WEn
DDR_D[15..0]
DDR_DQS1
DDR_DQSN1
DDR_DQS0
DDR_DQSN0
DDR_DQM1
DDR_DQM0
DDR_A[15..0]
DDR_BA[2..0]
DDR_ODT
RESET#
CK
CKn
CKE
CSn
RASn
CASn
WEn
UDQS
UDQSn
LDQS
LDQSn
UDM
LDM
ZQ
C105
C106
C107
C108
C109
C110
C111
C112
C113
C114
C115
C116
C117
C118
C119
C120
0.1uf,6.3V
10uF,10V


SubArctic AM335X
15mm x 15mm
Package
U4C
AM3358BZCZ100
VDD_CORE
VDD_MPU
VDD_PLL
VDD_1V8
VDD_3V3A
VDDS
VDDS_DDR
DGND
GNDA_ADC
VDD_ADC
VRTC
VDD_RTC
ENZ_KALDO_1P8V
TESTOUT
CAP_VDD_SRAM_CORE
CAP_VDD_SRAM_MPU
CAP_VBB_MPU
VDD_MPUON
150OHM800mA
10K,1%


SubArctic AM335X
15mm x 15mm
Package
AM3358BZCZ100
USB to TTL
Serial Cable
3.3V
POWERDOWN ISOLATION
USB HOST
USB OTG
SN74LVC2G241DCU
TPS2051BDGN
RCLAMP0524P/NC
LED0603


SubArctic AM335x
15mm x 15mm
Package
U4A
AM3358BZCZ100
U3
SN74LVC1G07DCK
U5
SN74LVC1G06DCK
S2
Key-Button
RESET
3.3V
VDD_3V3A
VIO
DGND
GND_OSC0
24MHz
32.768KHz MC-306
1.8V
SYS_RESETn
PMIC_INT
eMMC_RSTn
HDMI_INT-> GPIO1_16
Can be removed


Add Power Jack
P1
PJ-200A
VDD_5V
VDD_3V3A
DGND
C2
10uF,10V
C1
10uF,10V
USB_DC
R1
1.5K,1%
R2
1.5K,1%
C3
0.1uf,6.3V
C4
10uF,10V
P_INT_LDO
P_BYPASS
4 PMIC_POWR_EN
4,10,11 I2C0_SCL
4,10,11 I2C0_SDA
J1
HDR2
EX-PWR-KEY
S1
Key-Button
POWER BUTTON
H1
H2
H3
H4
MHOLE
U1
AC
USB
NC1
NC
INT_LDO
BYPASS
MUX_IN
PWR_EN
RESET
PB_IN
SCL
SDA
ISET2
ISET1
VIN_DCDC1
VIN_DCDC2
VIN_DCDC3
LDO3_IN
LDO4_IN
VINLDO
SYS1
SYS2
BAT1
BAT2
BAT_SENSE
TS
MUX_OUT
VIO
PGOOD
LDO_PGOOD
WAKEUP
INT
ISINK1
ISINK2
FB_WLED
L4
L1
VDCDC1
L2
VDCDC2
L3
VDCDC3
LDO3
LDO4
VLDO1
VLDO2
AGND
PGND
PPAD
TPS65217C
SYS_5V
C5
C6
C7
C11
10uF,10V
P_L1
P_L2
P_L3
VDCDC1
VDCDC2
VDCDC3
VLDO1
L1
L2
L3
LQM2HPN2R2MG0L
R4
0,1%
1.5V
TP10
VDDS_DDR
TP11
VDD_MPU
TP12
VDD_CORE
TP13
VDD_1V8
TP14
VDD_3V3A
TP15
VRTC
R5
R6
R7
R8
0,DNI
C8
C9
C10
C12
C13
C14
2.2uF,6.3V
VDD_3V3AUX
C16
POWER LED
D1
LED0603
PWR_LEDR
4.75K,5%
R11
R3
100K,1%
PMIC_PGOOD
LDO_PGOOD
WAKEUP
PMIC_INT
TP1
U2
SY8009C
SOT23-5
L8
L4018
2.2uH-DCR<0.1R-1.5A
R10
442K-F
R0402
R9
100K-F
C15
4.7uF,10V
C0603
C218
10uF,6.3V
C0805
C18
0.1uF,6.3V
C0402
VDD_3V3B
D2
D3
R19
10.8K,5%
R91
4.75K,5%

PAGE NO.	SCHEMATIC PAGE
1	Power management of CPU system
2	Processor 1/3
3	Processor 2/3, uart port
4	Processor 2/3
5	DDR3 memory
6	eMMC FLASH
7	10/100 Ethernet
8	ID and SD card
9	Lcd and tp interface
10	Temperature and endstop
11	Heater Fans and DC Power input
12	Stepper driver

REV	Description	DATE	BY
A2A	Initial production Release.	11/19/2014	FastBot
A3A	1. Change the power input circuit, add 5V power socket. 2. Add stepper and heater control signal broken out. 3. Chage the max withstand voltage of the stepper power input capacitance from 25V to 35V. 4. Add 0R into the power input of the stepper driver. 4. Add FUSE for HBP	4/14/2015	FastBot