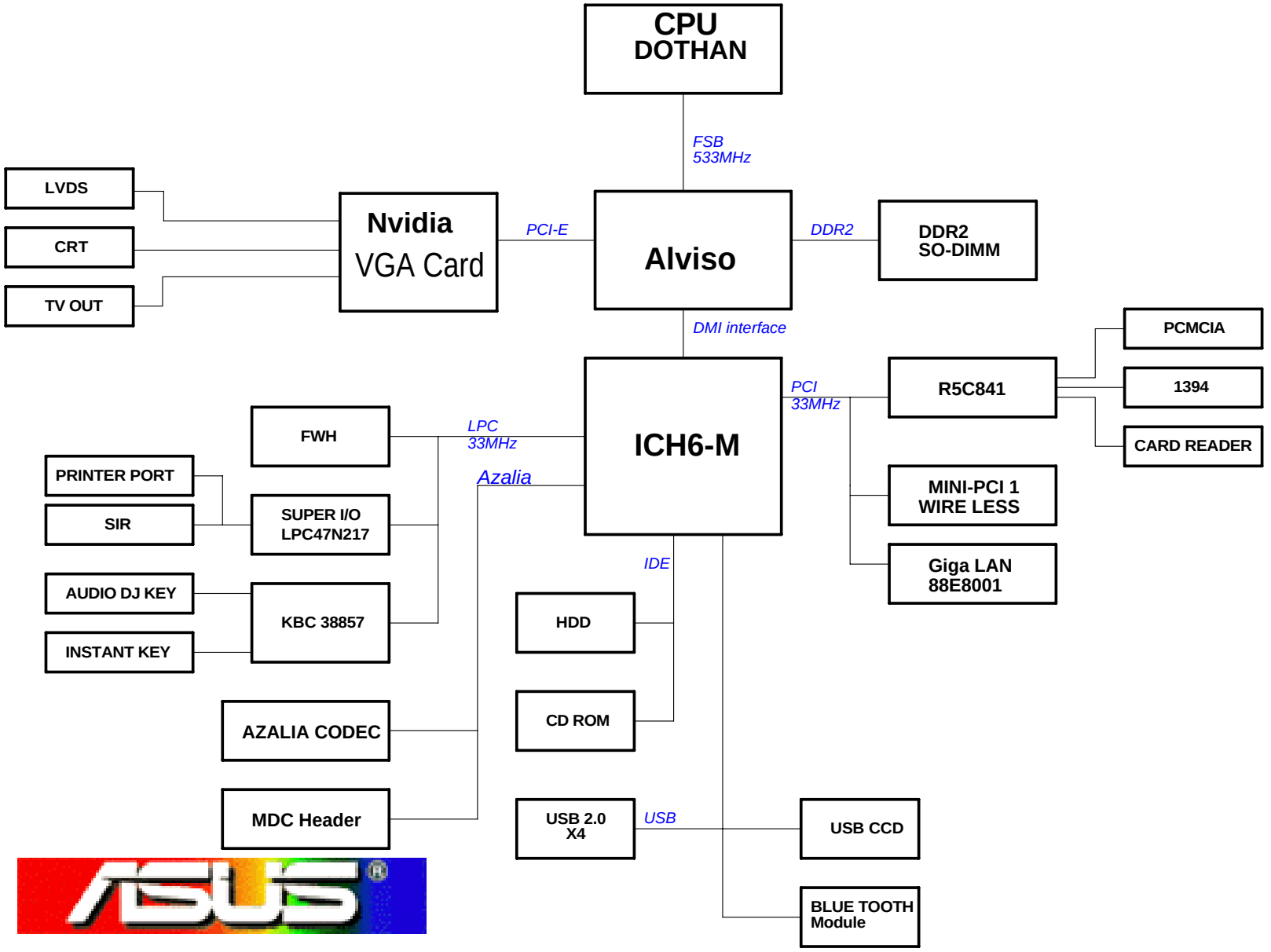
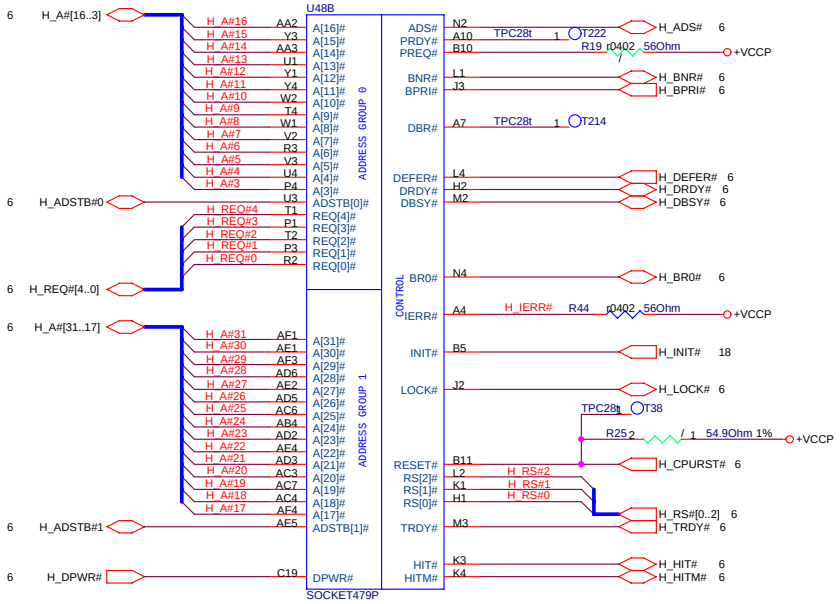
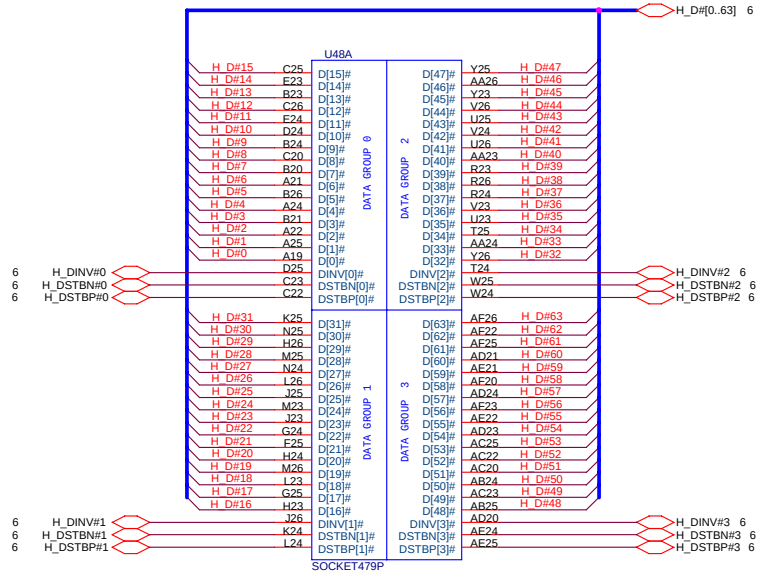
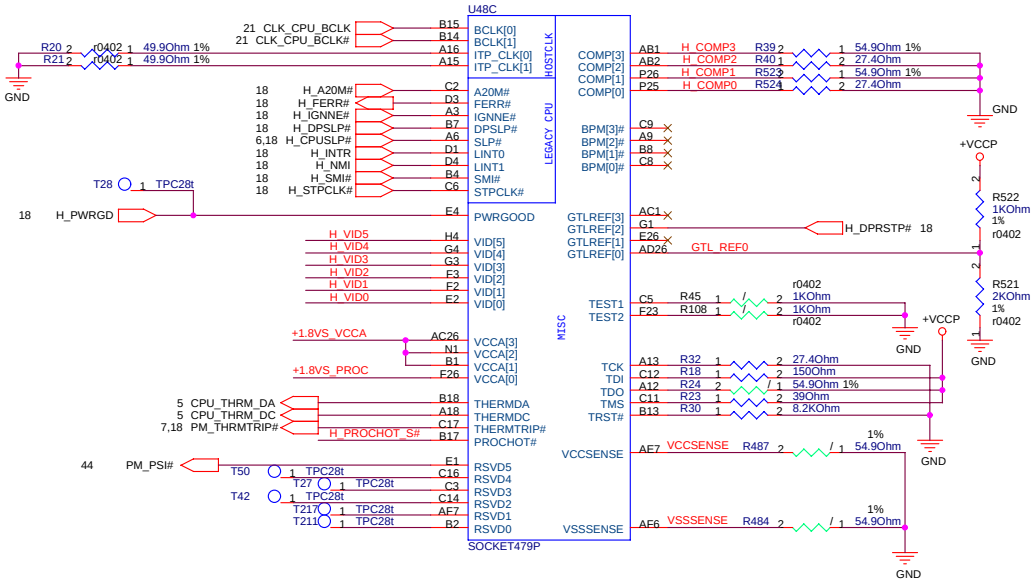

CPU
DOTHAN
FSB
533MHz
LVDS
CRT
TV OUT
Nvidia
VGA Card
PCI-E
Alviso
DDR2
DDR2
SO-DIMM
DMI interface
PCMCIA
1394
CARD READER
R5C841
PCI
33MHz
ICH6-M
FWH
LPC
33MHz
Azalia
PRINTER PORT
SIR
SUPER I/O
LPC47N217
AUDIO DJ KEY
INSTANT KEY
KBC 38857
MINI-PCI 1
WIRE LESS
Giga LAN
88E8001
IDE
HDD
CD ROM
AZALIA CODEC
MDC Header
USB 2.0
X4
USB
USB CCD
BLUE TOOTH
Module

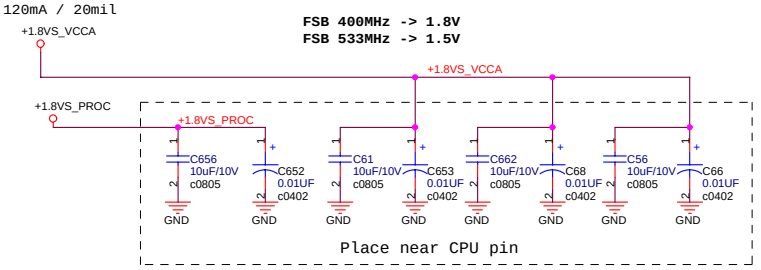


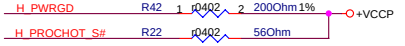




Layout note:
COMP0 and COMP2 need to be Zo=27.4ohm traces.
Best estimate is 18mil wide trace for outer layers and 14mil if on internal layer. See RDDP of Banias.
Traces should be shorter than 0.5". Refer to latest CS layout

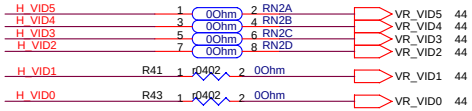
COMP1, COMP3 should be routed as Zo=55ohm traces shorter than 0.5"

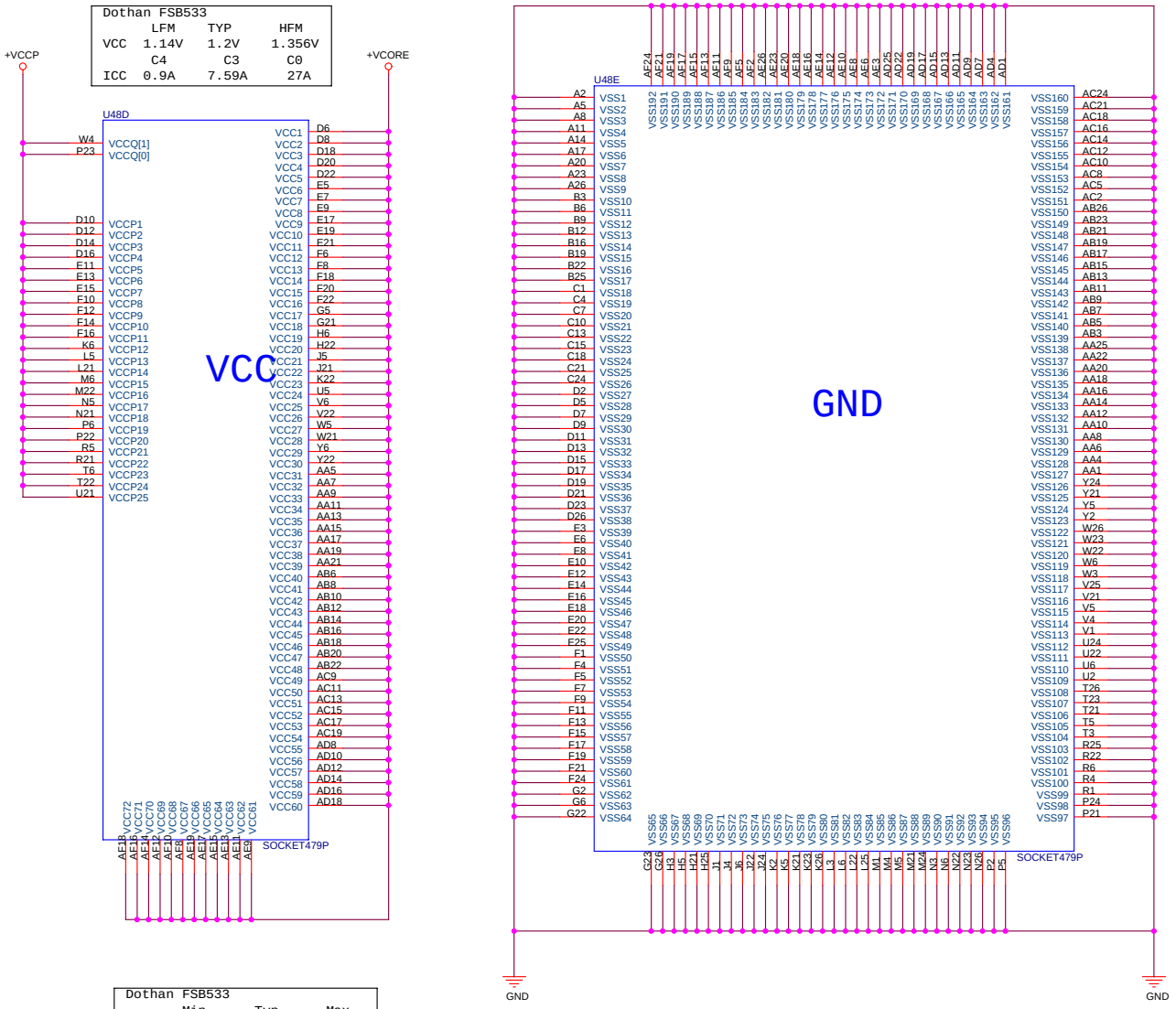




			A-STEP	B-STEP
Bclk	FSB	BSEL1	BSEL0	BSEL0
100	400	0	0	1
133	533	0	1	0

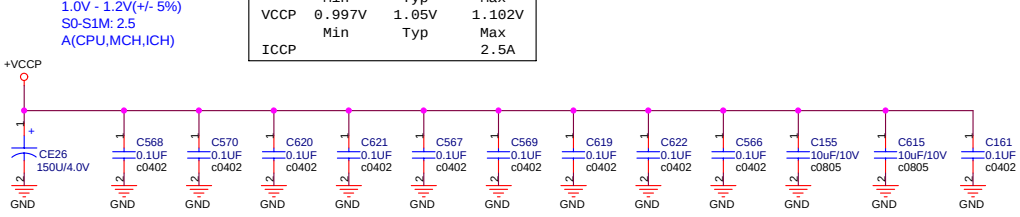
Dothan FSB533			
	Min	Typ	Max
VCCA	1.425V	1.5V	1.575V
	Min	Typ	Max
ICCA			120mA





MOBILE DOTHAN VID TABLE

VID[5..0]	Voltage	VID[5..0]	Voltage
000000	1.708V	100000	1.196V
000001	1.692V	100001	1.180V
000010	1.676V	100010	1.164V
000011	1.660V	100011	1.148V
000100	1.644V	100100	1.132V
000101	1.628V	100101	1.116V
000110	1.612V	100110	1.100V
000111	1.596V	100111	1.084V
001000	1.580V	101000	1.068V
001001	1.564V	101001	1.052V
001010	1.548V	101010	1.036V
001011	1.532V	101011	1.020V
001100	1.516V	101100	1.004V
001101	1.500V	101101	0.988V
001110	1.484V	101110	0.972V
001111	1.468V	101111	0.956V
010000	1.452V	110000	0.940V
010001	1.436V	110001	0.924V
010010	1.420V	110010	0.908V
010011	1.404V	110011	0.892V
010100	1.388V	110100	0.876V
010101	1.372V	110101	0.860V
010110	1.356V	110110	0.844V
010111	1.340V	110111	0.828V
011000	1.324V	111000	0.812V
011001	1.308V	111001	0.796V
011010	1.292V	111010	0.780V
011011	1.276V	111011	0.764V
011100	1.260V	111100	0.748V
011101	1.244V	111101	0.732V
011110	1.228V	111110	0.716V
011111	1.212V	111111	0.700V



+VCCP (CPU) Decoupling Capacitor
(Place near CPU)

Fan Speed Control

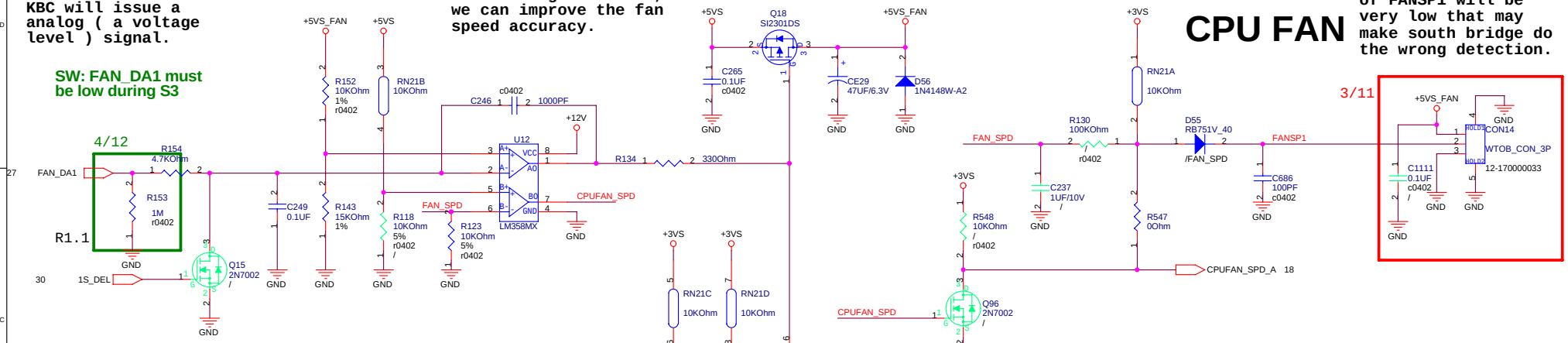
KBC will issue a analog (a voltage level) signal.

SW: FAN_DA1 must be low during S3

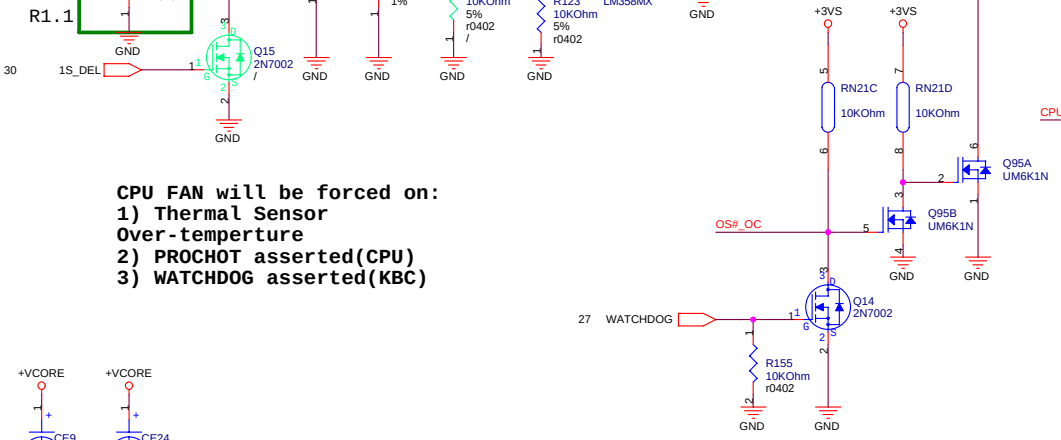
Using a OP AMP and fine-tuning the level, we can improve the fan speed accuracy.

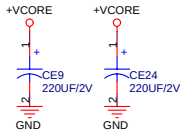
CPU FAN

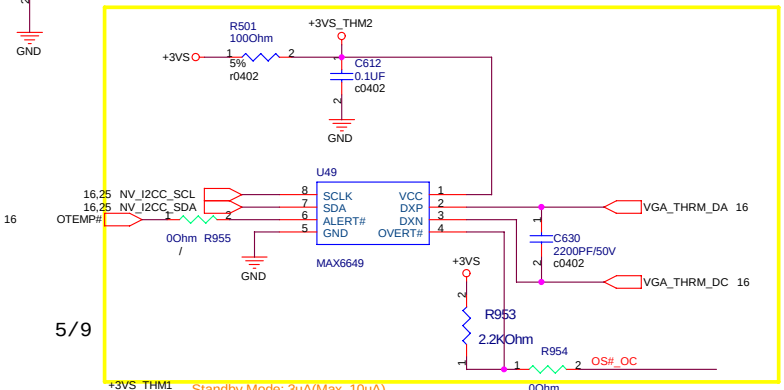
When fan speed is very slow, after RC integrator the level of FANSP1 will be very low that may make south bridge do the wrong detection.



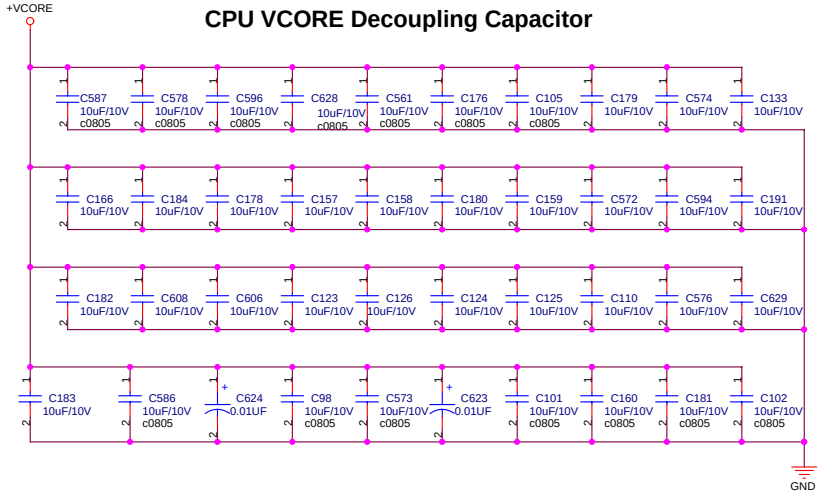
CPU FAN will be forced on:
1) Thermal Sensor Over-temperture
2) PROCHOT asserted(CPU)
3) WATCHDOG asserted(KBC)







CPU VCORE Decoupling Capacitor



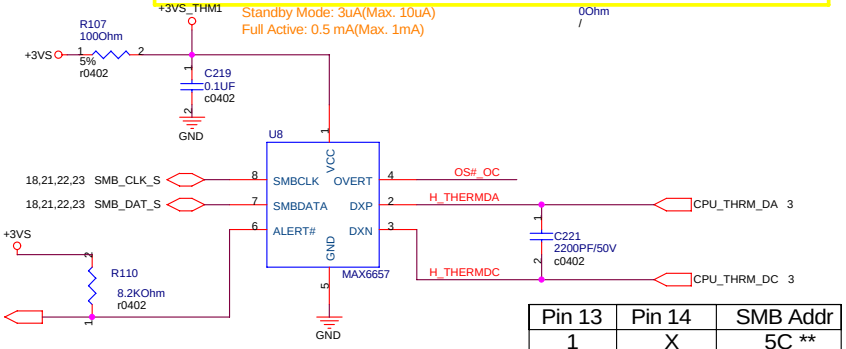
Mid Frequency Decoupling (Place around Processor)

High Frequency Decoupling (Place underneath Processor) using 10uF/6.3V X5R

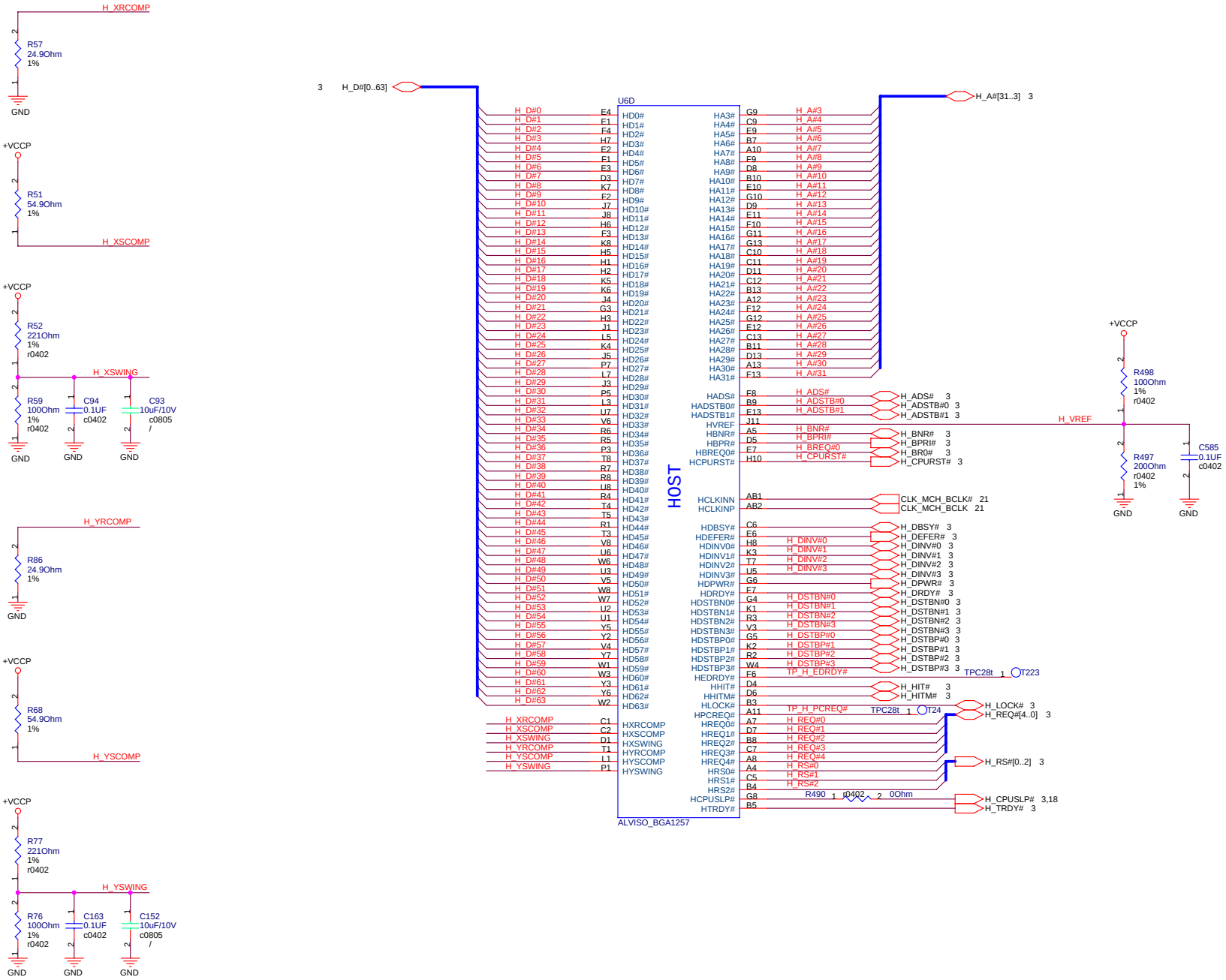
+VCORE Bulk Decoupling

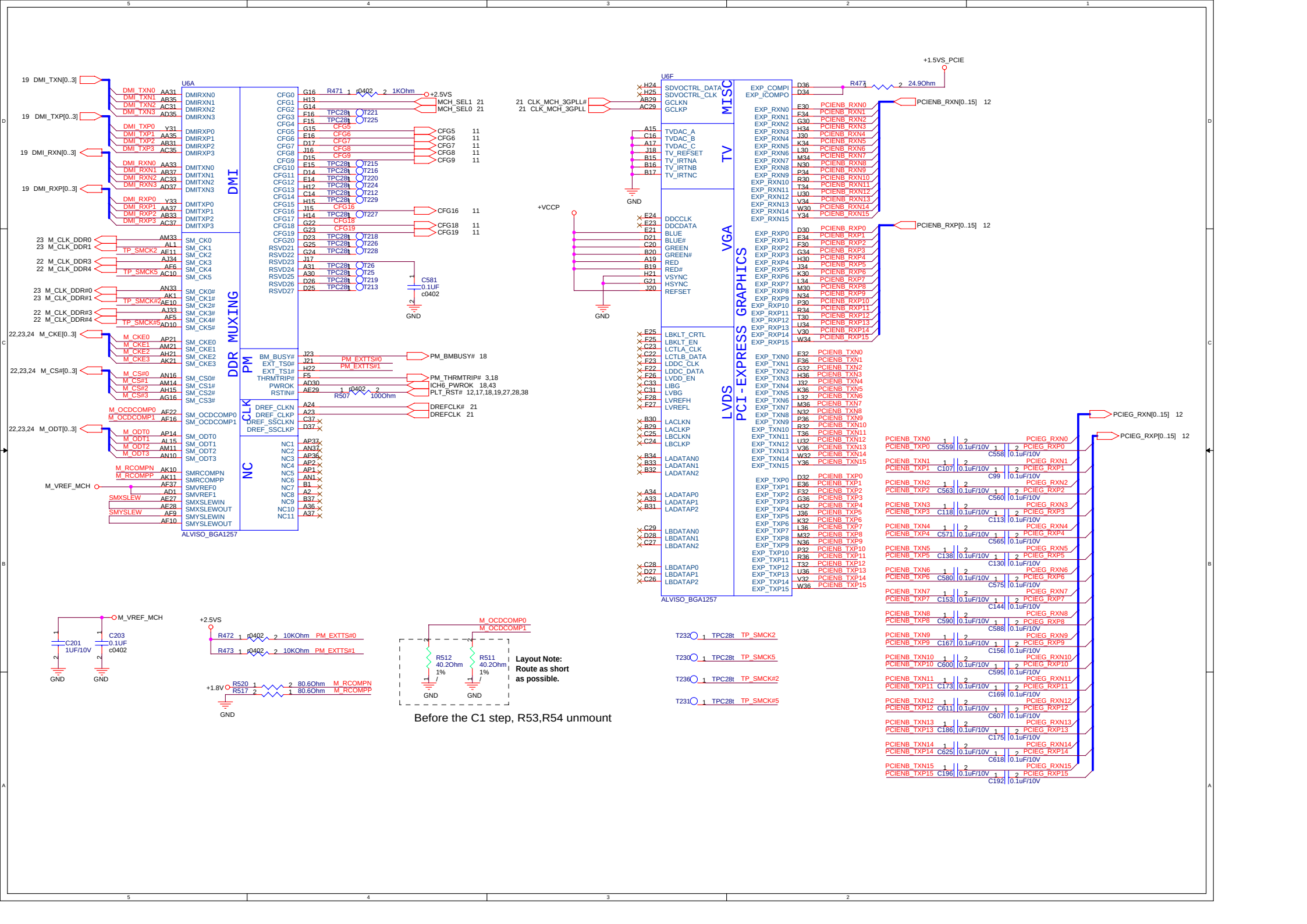
Close to Pin A18 & B18 of CPU

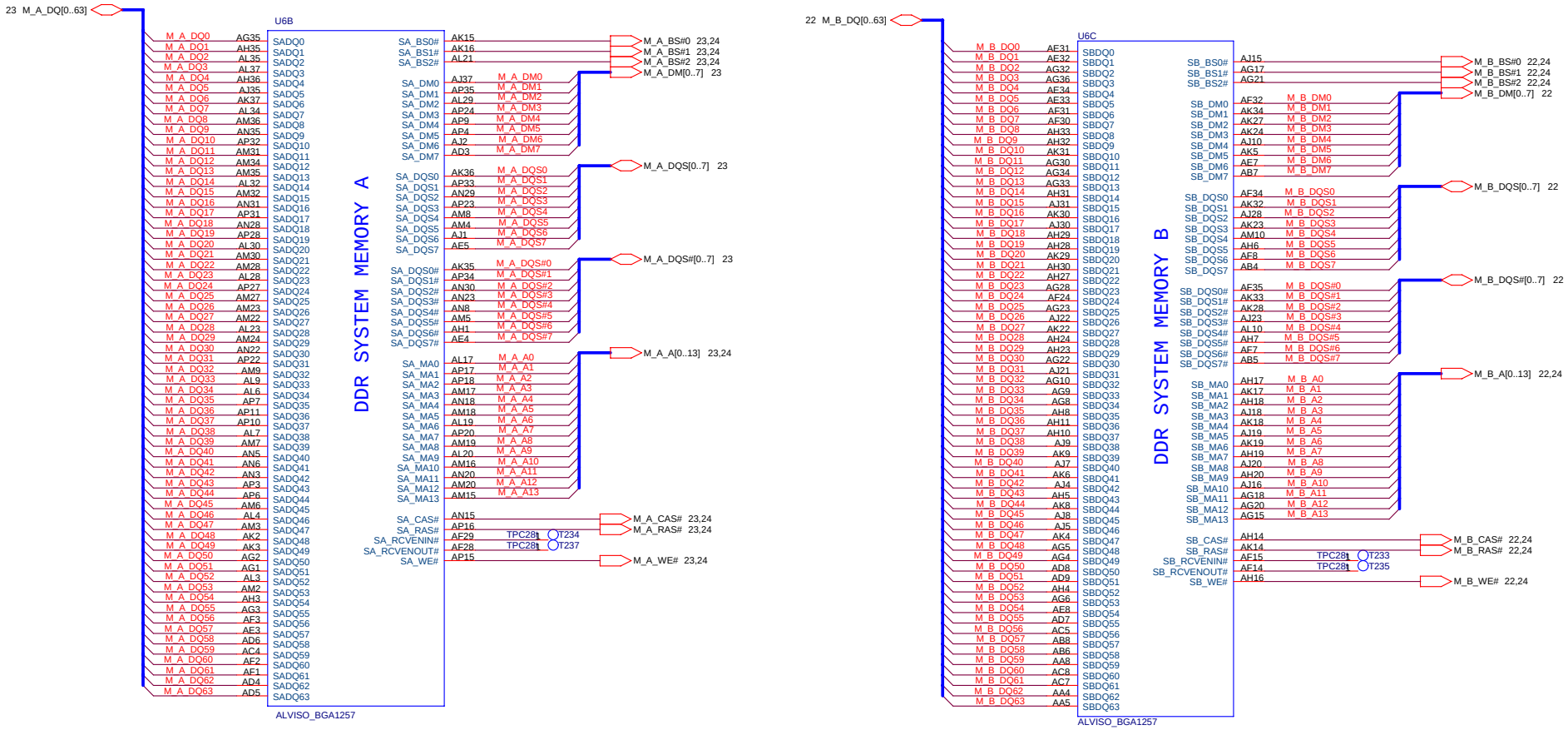
Four 200 uF are located in IMVP4

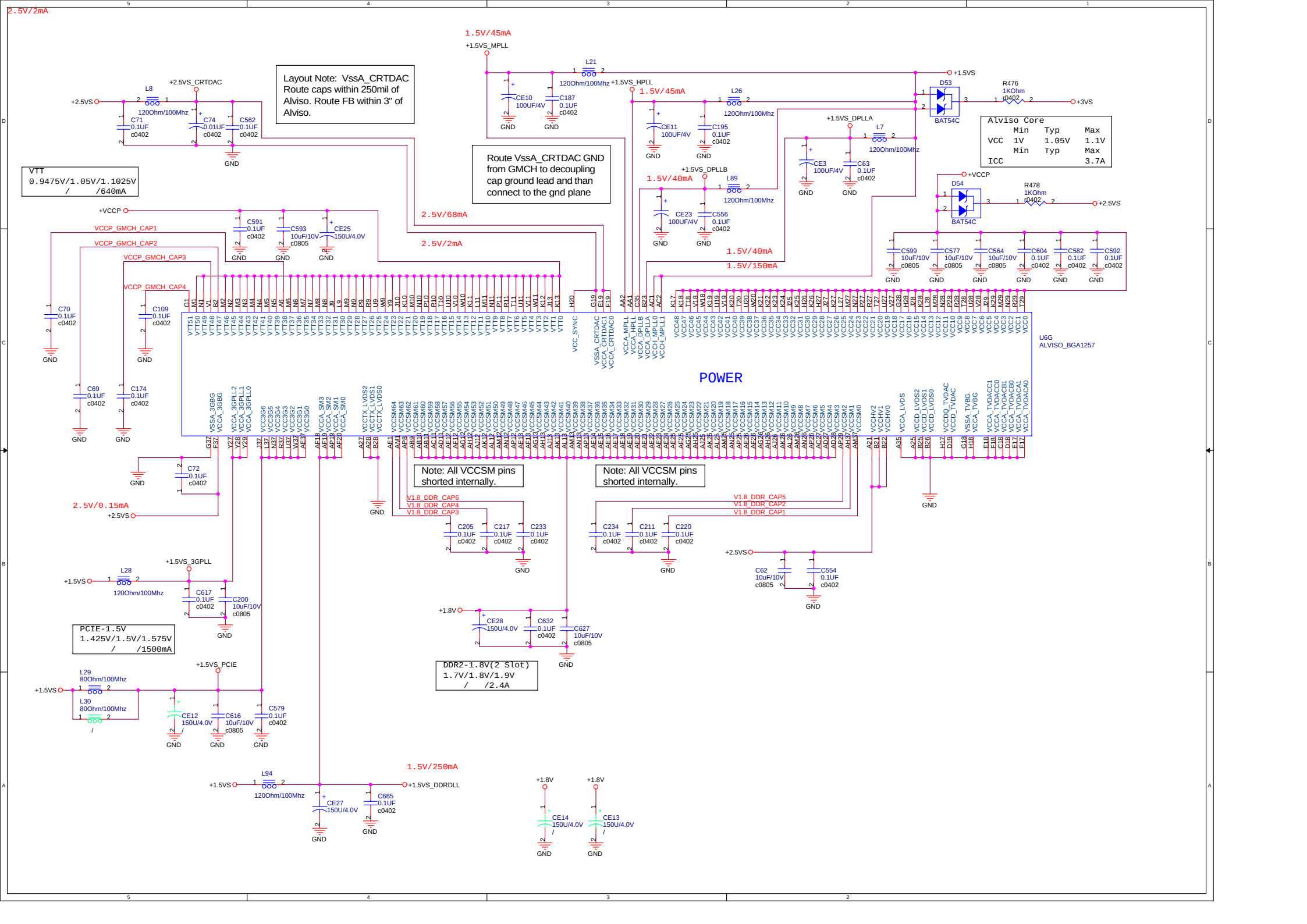


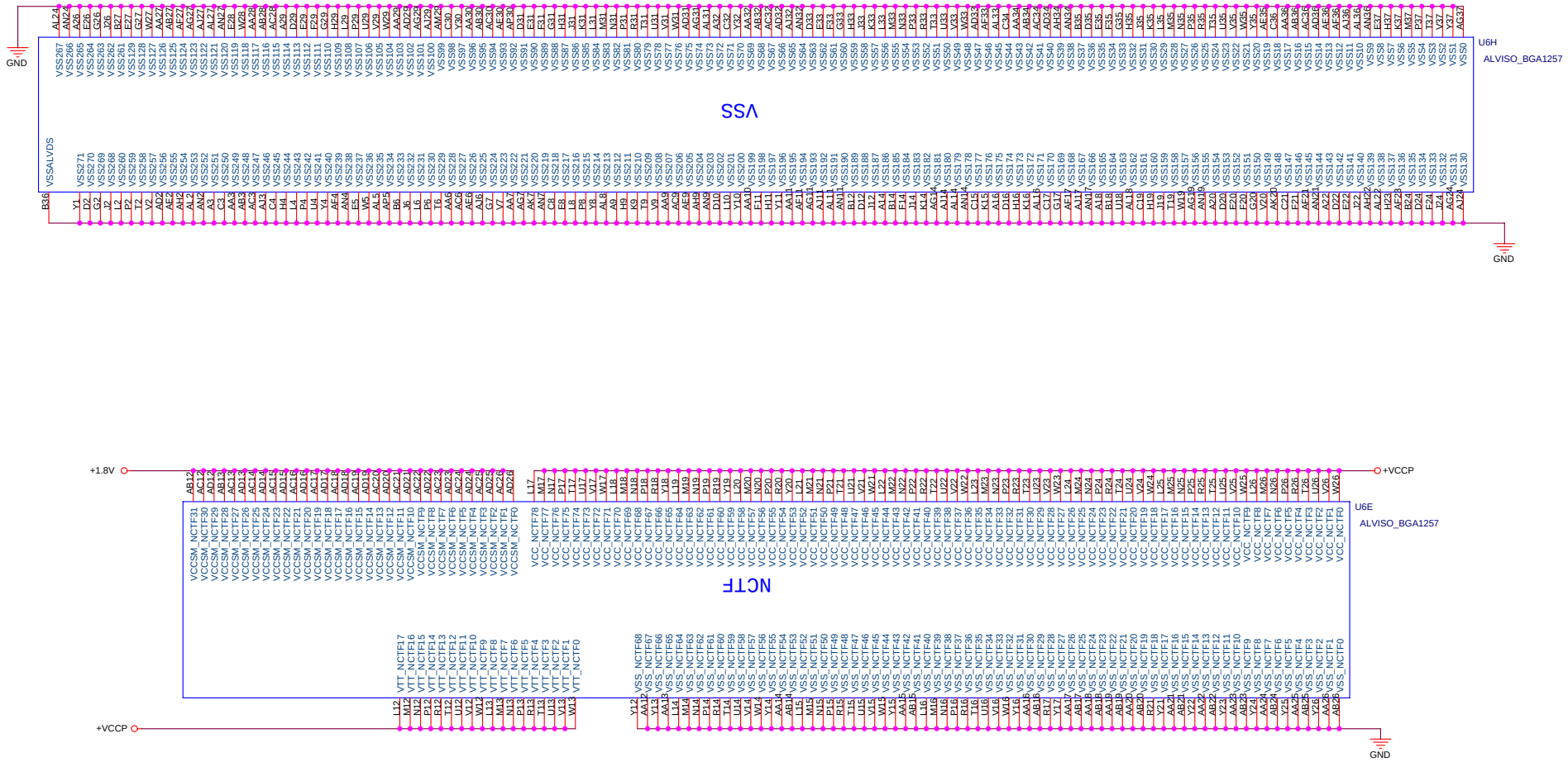
Pin 13	Pin 14	SMB Addr
1	X	5C **
0	1	5A
0	0	58


H_XRCOMP
R57
24.9Ohm
1%
GND
+VCCP
R51
54.9Ohm
1%
H_XSCOMP
+VCCP
R52
221Ohm
1%
r0402
H_XSWING
R59
100Ohm
1%
r0402
C94
0.1UF
c0402
C93
10uF/10V
c0805
/
GND
GND
GND
H_YRCOMP
R86
24.9Ohm
1%
GND
+VCCP
R68
54.9Ohm
1%
H_YSCOMP
+VCCP
R77
221Ohm
1%
r0402
H_YSWING
R76
100Ohm
1%
r0402
C163
0.1UF
c0402
C152
10uF/10V
c0805
/
GND
GND
GND
3
H_D#[0..63]
U6D
HOST
ALVISO_BGA1257
H_D#0 E4 HD0#
H_D#1 F1 HD1#
H_D#2 F4 HD2#
H_D#3 H7 HD3#
H_D#4 E2 HD4#
H_D#5 F1 HD5#
H_D#6 E3 HD6#
H_D#7 D3 HD7#
H_D#8 K7 HD8#
H_D#9 F2 HD9#
H_D#10 J7 HD10#
H_D#11 J8 HD11#
H_D#12 H6 HD12#
H_D#13 F3 HD13#
H_D#14 K8 HD14#
H_D#15 H5 HD15#
H_D#16 H1 HD16#
H_D#17 H2 HD17#
H_D#18 K5 HD18#
H_D#19 K6 HD19#
H_D#20 J4 HD20#
H_D#21 G3 HD21#
H_D#22 H3 HD22#
H_D#23 J1 HD23#
H_D#24 L5 HD24#
H_D#25 K4 HD25#
H_D#26 J5 HD26#
H_D#27 P7 HD27#
H_D#28 L7 HD28#
H_D#29 J3 HD29#
H_D#30 P5 HD30#
H_D#31 L3 HD31#
H_D#32 U7 HD32#
H_D#33 V6 HD33#
H_D#34 R6 HD34#
H_D#35 R5 HD35#
H_D#36 P3 HD36#
H_D#37 T8 HD37#
H_D#38 R7 HD38#
H_D#39 R8 HD39#
H_D#40 U8 HD40#
H_D#41 R4 HD41#
H_D#42 T4 HD42#
H_D#43 T5 HD43#
H_D#44 R1 HD44#
H_D#45 T3 HD45#
H_D#46 V8 HD46#
H_D#47 U6 HD47#
H_D#48 W6 HD48#
H_D#49 U3 HD49#
H_D#50 V5 HD50#
H_D#51 W8 HD51#
H_D#52 W7 HD52#
H_D#53 U2 HD53#
H_D#54 U1 HD54#
H_D#55 Y5 HD55#
H_D#56 Y2 HD56#
H_D#57 V4 HD57#
H_D#58 Y7 HD58#
H_D#59 W1 HD59#
H_D#60 W3 HD60#
H_D#61 Y3 HD61#
H_D#62 Y6 HD62#
H_D#63 W2 HD63#
H_XRCOMP C1 HXRCOMP
H_XSCOMP C2 HXSCOMP
H_XSWING D1 HXSWING
H_YRCOMP T1 HYRCOMP
H_YSCOMP L1 HYSCOMP
H_YSWING P1 HYSWING
HA3# G9 H_A#3
HA4# C9 H_A#4
HA5# E9 H_A#5
HA6# B7 H_A#6
HA7# A10 H_A#7
HA8# F9 H_A#8
HA9# D8 H_A#9
HA10# B10 H_A#10
HA11# E10 H_A#11
HA12# G10 H_A#12
HA13# D9 H_A#13
HA14# E11 H_A#14
HA15# F10 H_A#15
HA16# G11 H_A#16
HA17# G13 H_A#17
HA18# C10 H_A#18
HA19# C11 H_A#19
HA20# D11 H_A#20
HA21# C12 H_A#21
HA22# B13 H_A#22
HA23# A12 H_A#23
HA24# F12 H_A#24
HA25# G12 H_A#25
HA26# E12 H_A#26
HA27# C13 H_A#27
HA28# B11 H_A#28
HA29# D13 H_A#29
HA30# A13 H_A#30
HA31# F13 H_A#31
H_A#[31..3] 3
HADS# F8 H_ADS#
HADSTB0# B9 H_ADSTB#0
HADSTB1# E13 H_ADSTB#1
HVREF J11
HBNR# A5 H_BNR#
HBPR# D5 H_BPRI#
HBREQ0# E7 H_BREQ#0
HCPURST# H10 H_CPURST#
H_ADS# 3
H_ADSTB#0 3
H_ADSTB#1 3
H_BNR# 3
H_BPRI# 3
H_BR0# 3
H_CPURST# 3
H_VREF
+VCCP
R498
100Ohm
1%
r0402
R497
200Ohm
r0402
1%
C585
0.1UF
c0402
GND
GND
HCLKINN AB1
HCLKINP AB2
CLK_MCH_BCLK# 21
CLK_MCH_BCLK 21
HDBSY# C6 H_DBSY# 3
HDEFER# E6 H_DEFER# 3
HDINV0# H8 H_DINV#0 3
HDINV1# K3 H_DINV#1 3
HDINV2# T7 H_DINV#2 3
HDINV3# U5 H_DINV#3 3
HDPWR# G6 H_DPWR# 3
HDRDY# F7 H_DRDY# 3
HDSTBN0# G4 H_DSTBN#0 3
HDSTBN1# K1 H_DSTBN#1 3
HDSTBN2# R3 H_DSTBN#2 3
HDSTBN3# V3 H_DSTBN#3 3
HDSTBP0# G5 H_DSTBP#0 3
HDSTBP1# K2 H_DSTBP#1 3
HDSTBP2# R2 H_DSTBP#2 3
HDSTBP3# W4 H_DSTBP#3 3
HEDRDY# F6 TP_H_EDRDY#
TPC28t 1 T223
HHIT# D4 H_HIT# 3
HHITM# D6 H_HITM# 3
HLOCK# B3 H_LOCK# 3
HPCREQ# A11 TP_H_PCREQ#
TPC28t 1 T24
HREQ0# A7 H_REQ#0
HREQ1# D7 H_REQ#1
HREQ2# B8 H_REQ#2
HREQ3# C7 H_REQ#3
HREQ4# A8 H_REQ#4
H_REQ#[4..0] 3
HRS0# A4 H_RS#0
HRS1# C5 H_RS#1
HRS2# B4 H_RS#2
H_RS#[0..2] 3
HCPUSLP# G8 H_CPUSLP# 3,18
HTRDY# B5 H_TRDY# 3
R490 1 r0402 2 0Ohm


U6A
DMI
DDR MUXING
PM
CLK
NC
ALVISO_BGA1257
U6F
MISC
TV
VGA
LVDS
PCI-EXPRESS GRAPHICS
ALVISO_BGA1257
+1.5VS_PCIE
+2.5VS
+1.8V
+VCCP
GND
Layout Note:
Route as short
as possible.
Before the C1 step, R53,R54 unmount


23 M_A_DQ[0..63]
U6B
DDR SYSTEM MEMORY A
ALVISO_BGA1257
M_A_BS#[0..2] 23,24
M_A_DM[0..7] 23
M_A_DQS[0..7] 23
M_A_DQS#[0..7] 23
M_A_A[0..13] 23,24
M_A_CAS# 23,24
M_A_RAS# 23,24
M_A_WE# 23,24
TPC281 T234
TPC281 T237
22 M_B_DQ[0..63]
U6C
DDR SYSTEM MEMORY B
ALVISO_BGA1257
M_B_BS#[0..2] 22,24
M_B_DM[0..7] 22
M_B_DQS[0..7] 22
M_B_DQS#[0..7] 22
M_B_A[0..13] 22,24
M_B_CAS# 22,24
M_B_RAS# 22,24
M_B_WE# 22,24
TPC281 T233
TPC281 T235

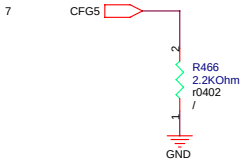

2.5V/2mA
1.5V/45mA
+1.5VS_MPLL
L21
120Ohm/100Mhz
+1.5VS_HPLL
1.5V/45mA
L26
120Ohm/100Mhz
+1.5VS
D53
BAT54C
R476
1KOhm
r0402
+3VS
Alviso Core
Min Typ Max
VCC 1V 1.05V 1.1V
Min Typ Max
ICC 3.7A
Layout Note: VssA_CRTDAC Route caps within 250mil of Alviso. Route FB within 3" of Alviso.
Route VssA_CRTDAC GND from GMCH to decoupling cap ground lead and than connect to the gnd plane
+2.5VS_CRTDAC
L8
120Ohm/100Mhz
C71 0.1UF c0402
C74 0.01UF c0402
C562 0.1UF c0402
+2.5VS
GND
VTT
0.9475V/1.05V/1.1025V
/ /640mA
+1.5VS_DPLLA
L7
120Ohm/100Mhz
CE3 100UF/4V
C63 0.1UF c0402
+1.5VS_DPLLB
1.5V/40mA
L89
120Ohm/100Mhz
CE23 100UF/4V
C556 0.1UF c0402
CE10 100UF/4V
C187 0.1UF c0402
CE11 100UF/4V
C195 0.1UF c0402
+VCCP
D54
BAT54C
R478
1KOhm
r0402
+2.5VS
2.5V/68mA
2.5V/2mA
1.5V/40mA
1.5V/150mA
VCCP_GMCH_CAP1
VCCP_GMCH_CAP2
VCCP_GMCH_CAP3
VCCP_GMCH_CAP4
C591 0.1UF c0402
C593 10uF/10V c0805
CE25 150U/4.0V
C599 10uF/10V c0805
C577 10uF/10V c0805
C564 10uF/10V c0805
C604 0.1UF c0402
C582 0.1UF c0402
C592 0.1UF c0402
C70 0.1UF c0402
C109 0.1UF c0402
C69 0.1UF c0402
C174 0.1UF c0402
U6G
ALVISO_BGA1257
POWER
C72 0.1UF c0402
2.5V/0.15mA
Note: All VCCSM pins shorted internally.
Note: All VCCSM pins shorted internally.
V1.8_DDR_CAP6
V1.8_DDR_CAP4
V1.8_DDR_CAP3
V1.8_DDR_CAP5
V1.8_DDR_CAP2
V1.8_DDR_CAP1
C205 0.1UF c0402
C217 0.1UF c0402
C233 0.1UF c0402
C234 0.1UF c0402
C211 0.1UF c0402
C220 0.1UF c0402
C62 10uF/10V c0805
C554 0.1UF c0402
+1.5VS_3GPLL
L28
120Ohm/100Mhz
C617 0.1UF c0402
C200 10uF/10V c0805
PCIE-1.5V
1.425V/1.5V/1.575V
/ /1500mA
+1.8V
CE28 150U/4.0V
C632 0.1UF c0402
C627 10uF/10V c0805
DDR2-1.8V(2 Slot)
1.7V/1.8V/1.9V
/ /2.4A
+1.5VS_PCIE
L29
80Ohm/100Mhz
L30
80Ohm/100Mhz
CE12 150U/4.0V
C616 10uF/10V c0805
C579 0.1UF c0402
1.5V/250mA
L94
120Ohm/100Mhz
+1.5VS_DDRDLL
CE27 150U/4.0V
C665 0.1UF c0402
+1.8V
CE14 150U/4.0V
+1.8V
CE13 150U/4.0V


U6H
ALVISO_BGA1257
VSS
VSSALVDS
GND
U6E
ALVISO_BGA1257
NCTF
+1.8V
+VCCP
+VCCP
GND

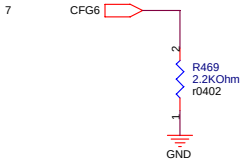
CFG[17..3] have internal pullup resistors.
CFG[19..18] have internal pulldown resistors.
SDVOCRTL_DATA has internal pulldown resistors.

SDVOCRTL_DATA :
LOW = No SDVO device present
(Default)

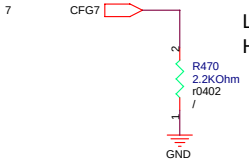
CFG5 : LOW = DMI X 2
HIGH = DMI X 4 (Default)



CFG6 : LOW = DDR2 SDRAM
HIGH = DDR SDRAM (Default)

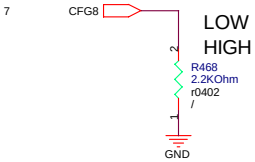


CFG7 : CPU STRAP



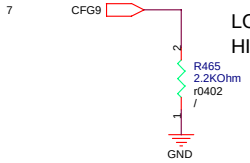
LOW = Mobile Prescott
HIGH = Dothan CPU (Default)

CFG8 : PCI-X POWER Saving



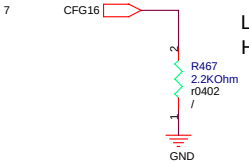
LOW = PCI-X POWER Saving
HIGH (Default)

CFG9 : PCIE GRAPHIC LANE



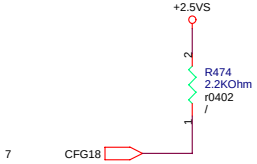
LOW = REVERSE LANE
HIGH = NORMAL OPERATION (Default)

CFG16 : FSB DYNAMIC ODT



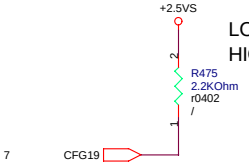
LOW = Dynamic ODT Disabled
HIGH = Dynamic ODT Enabled (Default)

CFG18 : VCC SELECT

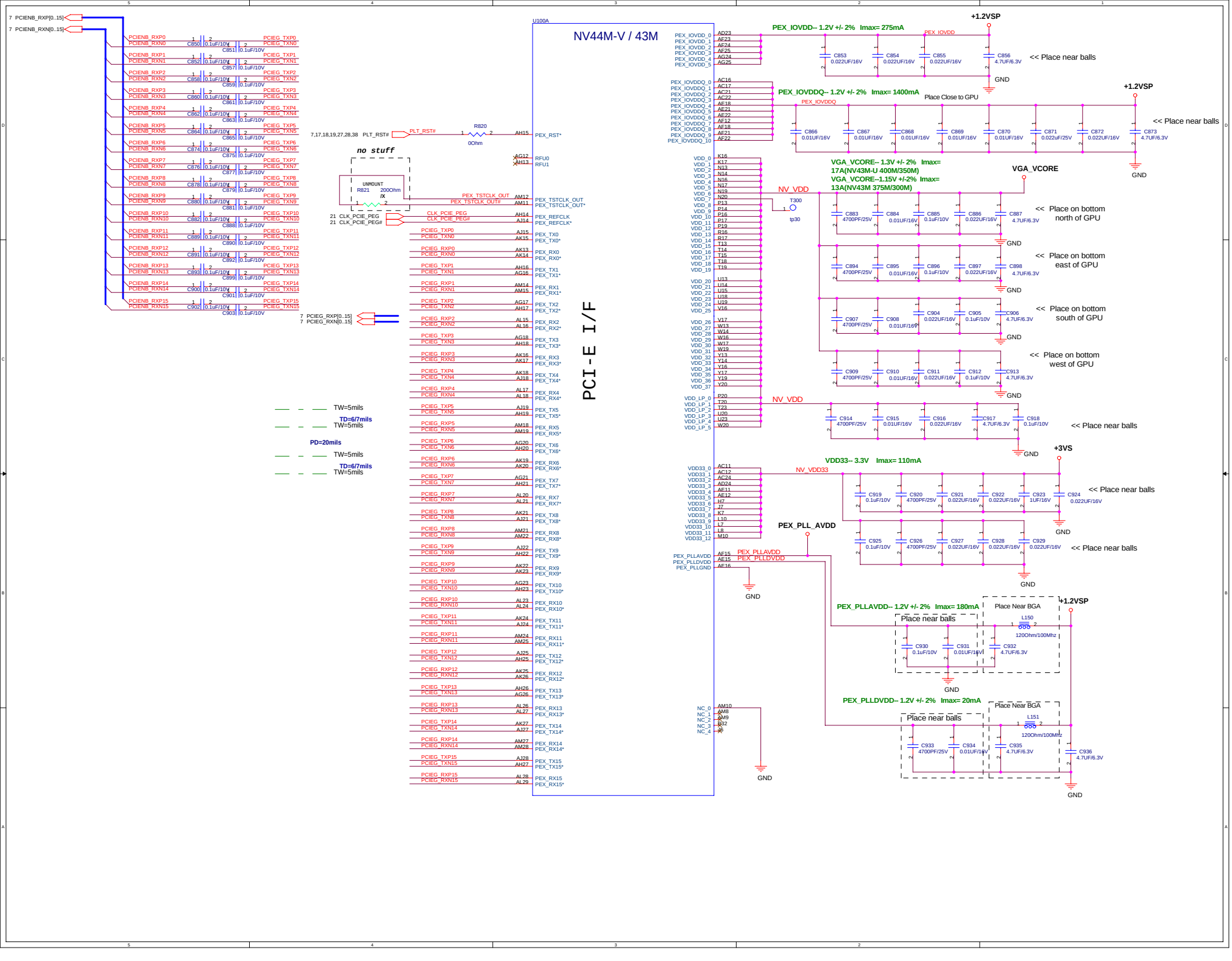


LOW = 1.05V (Default)
HIGH = 1.5V

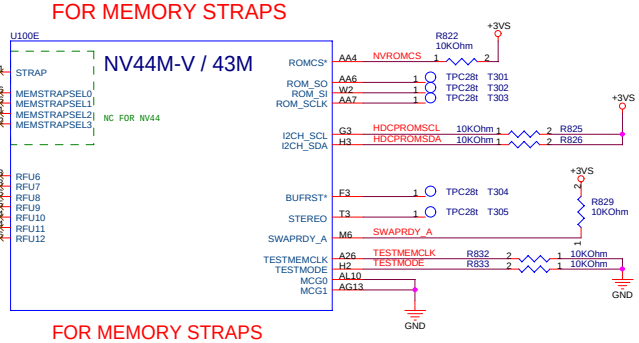
CFG19 : VTT SELECT



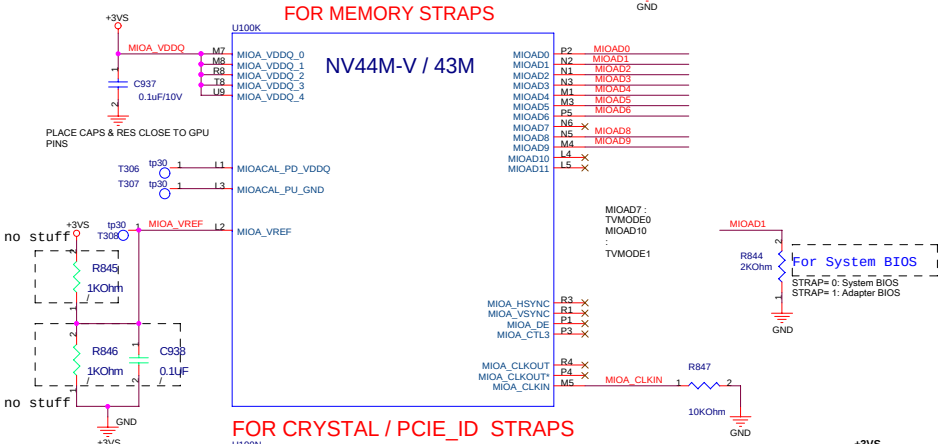
LOW = 1.05V (Default)
HIGH = 1.2V


NV44M-V / 43M
PCI-E I/F
U100A
7 PCIENB_RXP[0..15]
7 PCIENB_RXN[0..15]
PCIENB_RXP0 PCIENB_RXN0 C850 0.1uF/10V C851 0.1uF/10V PCIEG_TXP0 PCIEG_TXN0
PCIENB_RXP1 PCIENB_RXN1 C852 0.1uF/10V C857 0.1uF/10V PCIEG_TXP1 PCIEG_TXN1
PCIENB_RXP2 PCIENB_RXN2 C858 0.1uF/10V C859 0.1uF/10V PCIEG_TXP2 PCIEG_TXN2
PCIENB_RXP3 PCIENB_RXN3 C860 0.1uF/10V C861 0.1uF/10V PCIEG_TXP3 PCIEG_TXN3
PCIENB_RXP4 PCIENB_RXN4 C862 0.1uF/10V C863 0.1uF/10V PCIEG_TXP4 PCIEG_TXN4
PCIENB_RXP5 PCIENB_RXN5 C864 0.1uF/10V C865 0.1uF/10V PCIEG_TXP5 PCIEG_TXN5
PCIENB_RXP6 PCIENB_RXN6 C874 0.1uF/10V C875 0.1uF/10V PCIEG_TXP6 PCIEG_TXN6
PCIENB_RXP7 PCIENB_RXN7 C876 0.1uF/10V C877 0.1uF/10V PCIEG_TXP7 PCIEG_TXN7
PCIENB_RXP8 PCIENB_RXN8 C878 0.1uF/10V C879 0.1uF/10V PCIEG_TXP8 PCIEG_TXN8
PCIENB_RXP9 PCIENB_RXN9 C880 0.1uF/10V C881 0.1uF/10V PCIEG_TXP9 PCIEG_TXN9
PCIENB_RXP10 PCIENB_RXN10 C882 0.1uF/10V C888 0.1uF/10V PCIEG_TXP10 PCIEG_TXN10
PCIENB_RXP11 PCIENB_RXN11 C889 0.1uF/10V C890 0.1uF/10V PCIEG_TXP11 PCIEG_TXN11
PCIENB_RXP12 PCIENB_RXN12 C891 0.1uF/10V C892 0.1uF/10V PCIEG_TXP12 PCIEG_TXN12
PCIENB_RXP13 PCIENB_RXN13 C893 0.1uF/10V C899 0.1uF/10V PCIEG_TXP13 PCIEG_TXN13
PCIENB_RXP14 PCIENB_RXN14 C900 0.1uF/10V C901 0.1uF/10V PCIEG_TXP14 PCIEG_TXN14
PCIENB_RXP15 PCIENB_RXN15 C902 0.1uF/10V C903 0.1uF/10V PCIEG_TXP15 PCIEG_TXN15
7 PCIEG_RXP[0..15]
7 PCIEG_RXN[0..15]
7,17,18,19,27,28,38 PLT_RST#
PLT_RST# R820 0Ohm AH15 PEX_RST*
no stuff
UNMOUNT R821 200Ohm
AG12 RFU0
AH13 RFU1
PEX_TSTCLK_OUT AM12 PEX_TSTCLK_OUT
PEX_TSTCLK_OUT# AM11 PEX_TSTCLK_OUT*
21 CLK_PCIE_PEG
21 CLK_PCIE_PEG#
CLK_PCIE_PEG AH14 PEX_REFCLK
CLK_PCIE_PEG# AJ14 PEX_REFCLK*
PCIEG_TXP0 PCIEG_TXN0 AJ15 AK15 PEX_TX0 PEX_TX0*
PCIEG_RXP0 PCIEG_RXN0 AK13 AK14 PEX_RX0 PEX_RX0*
PCIEG_TXP1 PCIEG_TXN1 AH16 AG16 PEX_TX1 PEX_TX1*
PCIEG_RXP1 PCIEG_RXN1 AM14 AM15 PEX_RX1 PEX_RX1*
PCIEG_TXP2 PCIEG_TXN2 AG17 AH17 PEX_TX2 PEX_TX2*
PCIEG_RXP2 PCIEG_RXN2 AL15 AL16 PEX_RX2 PEX_RX2*
PCIEG_TXP3 PCIEG_TXN3 AG18 AH18 PEX_TX3 PEX_TX3*
PCIEG_RXP3 PCIEG_RXN3 AK16 AK17 PEX_RX3 PEX_RX3*
PCIEG_TXP4 PCIEG_TXN4 AK18 AJ18 PEX_TX4 PEX_TX4*
PCIEG_RXP4 PCIEG_RXN4 AL17 AL18 PEX_RX4 PEX_RX4*
PCIEG_TXP5 PCIEG_TXN5 AJ19 AH19 PEX_TX5 PEX_TX5*
PCIEG_RXP5 PCIEG_RXN5 AM18 AM19 PEX_RX5 PEX_RX5*
PCIEG_TXP6 PCIEG_TXN6 AG20 AH20 PEX_TX6 PEX_TX6*
PCIEG_RXP6 PCIEG_RXN6 AK19 AK20 PEX_RX6 PEX_RX6*
PCIEG_TXP7 PCIEG_TXN7 AG21 AH21 PEX_TX7 PEX_TX7*
PCIEG_RXP7 PCIEG_RXN7 AL20 AL21 PEX_RX7 PEX_RX7*
PCIEG_TXP8 PCIEG_TXN8 AK21 AJ21 PEX_TX8 PEX_TX8*
PCIEG_RXP8 PCIEG_RXN8 AM21 AM22 PEX_RX8 PEX_RX8*
PCIEG_TXP9 PCIEG_TXN9 AJ22 AH22 PEX_TX9 PEX_TX9*
PCIEG_RXP9 PCIEG_RXN9 AK22 AK23 PEX_RX9 PEX_RX9*
PCIEG_TXP10 PCIEG_TXN10 AG23 AH23 PEX_TX10 PEX_TX10*
PCIEG_RXP10 PCIEG_RXN10 AL23 AL24 PEX_RX10 PEX_RX10*
PCIEG_TXP11 PCIEG_TXN11 AK24 AJ24 PEX_TX11 PEX_TX11*
PCIEG_RXP11 PCIEG_RXN11 AM24 AM25 PEX_RX11 PEX_RX11*
PCIEG_TXP12 PCIEG_TXN12 AJ25 AH25 PEX_TX12 PEX_TX12*
PCIEG_RXP12 PCIEG_RXN12 AK25 AK26 PEX_RX12 PEX_RX12*
PCIEG_TXP13 PCIEG_TXN13 AH26 AG26 PEX_TX13 PEX_TX13*
PCIEG_RXP13 PCIEG_RXN13 AL26 AL27 PEX_RX13 PEX_RX13*
PCIEG_TXP14 PCIEG_TXN14 AK27 AJ27 PEX_TX14 PEX_TX14*
PCIEG_RXP14 PCIEG_RXN14 AM27 AM28 PEX_RX14 PEX_RX14*
PCIEG_TXP15 PCIEG_TXN15 AJ28 AH27 PEX_TX15 PEX_TX15*
PCIEG_RXP15 PCIEG_RXN15 AL28 AL29 PEX_RX15 PEX_RX15*
TW=5mils
TD=6/7mils
TW=5mils
PD=20mils
TW=5mils
TD=6/7mils
TW=5mils
PEX_IOVDD_0 AD23
PEX_IOVDD_1 AE23
PEX_IOVDD_2 AE24
PEX_IOVDD_3 AE25
PEX_IOVDD_4 AG24
PEX_IOVDD_5 AG25
PEX_IOVDD-- 1.2V +/- 2% Imax= 275mA
+1.2VSP
PEX_IOVDD
C853 0.022UF/16V C854 0.022UF/16V C855 0.022UF/16V C856 4.7UF/6.3V
<< Place near balls
GND
PEX_IOVDDQ_0 AC16
PEX_IOVDDQ_1 AC17
PEX_IOVDDQ_2 AC21
PEX_IOVDDQ_3 AC22
PEX_IOVDDQ_4 AE18
PEX_IOVDDQ_5 AE21
PEX_IOVDDQ_6 AE22
PEX_IOVDDQ_7 AF12
PEX_IOVDDQ_8 AF18
PEX_IOVDDQ_9 AF21
PEX_IOVDDQ_10 AF22
PEX_IOVDDQ-- 1.2V +/- 2% Imax= 1400mA
Place Close to GPU
+1.2VSP
PEX_IOVDDQ
C866 0.01UF/16V C867 0.01UF/16V C868 0.01UF/16V C869 0.01UF/16V C870 0.01UF/16V C871 0.022uF/25V C872 0.022UF/16V C873 4.7UF/6.3V
<< Place near balls
GND
VDD_0 K16
VDD_1 K17
VDD_2 N13
VDD_3 N14
VDD_4 N16
VDD_5 N17
VDD_6 N19
VDD_7 N20
VDD_8 P13
VDD_9 P14
VDD_10 P16
VDD_11 P17
VDD_12 P19
VDD_13 R16
VDD_14 R17
VDD_15 T13
VDD_16 T14
VDD_17 T15
VDD_18 T18
VDD_19 T19
VGA_VCORE-- 1.3V +/- 2% Imax= 17A(NV43M-U 400M/350M)
VGA_VCORE--1.15V +/-2% Imax= 13A(NV43M 375M/300M)
VGA_VCORE
NV_VDD
T300 tp30
C883 4700PF/25V C884 0.01UF/16V C885 0.1uF/10V C886 0.022UF/16V C887 4.7UF/6.3V
<< Place on bottom north of GPU
GND
C894 4700PF/25V C895 0.01UF/16V C896 0.1uF/10V C897 0.022UF/16V C898 4.7UF/6.3V
<< Place on bottom east of GPU
GND
VDD_20 U13
VDD_21 U14
VDD_22 U15
VDD_23 U18
VDD_24 U19
VDD_25 V16
VDD_26 V17
VDD_27 W13
VDD_28 W14
VDD_29 W16
VDD_30 W17
VDD_31 W19
VDD_32 Y13
VDD_33 Y14
VDD_34 Y16
VDD_35 Y17
VDD_36 Y19
VDD_37 Y20
C907 4700PF/25V C908 0.01UF/16V C904 0.022UF/16V C905 0.1uF/10V C906 4.7UF/6.3V
<< Place on bottom south of GPU
GND
C909 4700PF/25V C910 0.01UF/16V C911 0.022UF/16V C912 0.1uF/10V C913 4.7UF/6.3V
<< Place on bottom west of GPU
GND
VDD_LP_0 P20
VDD_LP_1 T20
VDD_LP_2 T23
VDD_LP_3 U20
VDD_LP_4 U23
VDD_LP_5 W20
NV_VDD
C914 4700PF/25V C915 0.01UF/16V C916 0.022UF/16V C917 4.7UF/6.3V C918 0.1uF/10V
<< Place near balls
GND
VDD33_0 AC11
VDD33_1 AC12
VDD33_2 AC24
VDD33_3 AD24
VDD33_4 AE11
VDD33_5 AE12
VDD33_6 H7
VDD33_7 J7
VDD33_8 K7
VDD33_9 L10
VDD33_10 L7
VDD33_11 L8
VDD33_12 M10
VDD33-- 3.3V Imax= 110mA
+3VS
NV_VDD33
C919 0.1uF/10V C920 4700PF/25V C921 0.022UF/16V C922 0.022UF/16V C923 1UF/16V C924 0.022UF/16V
<< Place near balls
GND
PEX_PLL_AVDD
C925 0.1uF/10V C926 4700PF/25V C927 0.022UF/16V C928 0.022UF/16V C929 0.022UF/16V
<< Place near balls
GND
PEX_PLLAVDD AE15
PEX_PLLDVDD AE15
PEX_PLLGND AE16
PEX_PLLAVDD
PEX_PLLDVDD
GND
PEX_PLLAVDD-- 1.2V +/- 2% Imax= 180mA
+1.2VSP
Place Near BGA
Place near balls
L150 120Ohm/100Mhz
C930 0.1uF/10V C931 0.01UF/16V C932 4.7UF/6.3V
GND
PEX_PLLDVDD-- 1.2V +/- 2% Imax= 20mA
Place Near BGA
Place near balls
L151 120Ohm/100MHz
C933 4700PF/25V C934 0.01UF/16V C935 4.7UF/6.3V C936 4.7UF/6.3V
GND
NC_0 AM10
NC_1 AM8
NC_2 AM9
NC_3 B32
NC_4 J6
GND

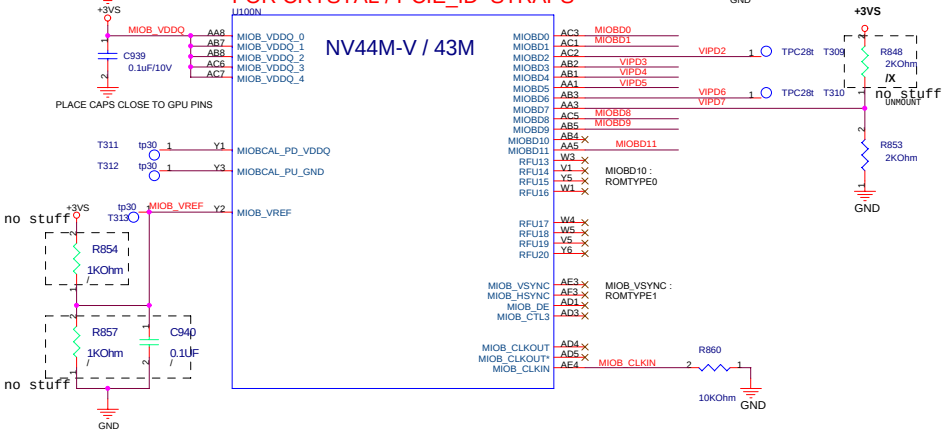
FOR MEMORY STRAPS

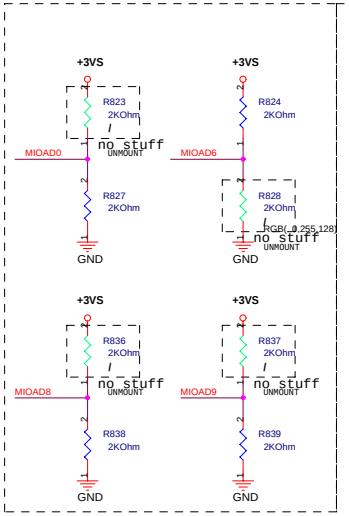


FOR MEMORY STRAPS



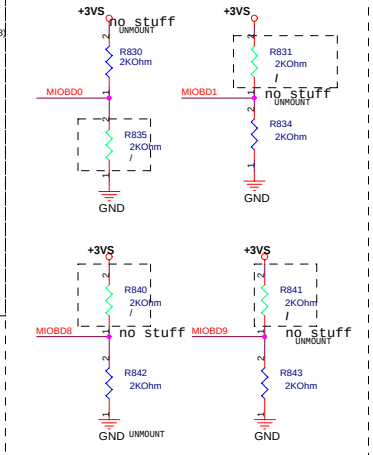
FOR CRYSTAL / PCIE_ID STRAPS





MEM TYPE STRAP

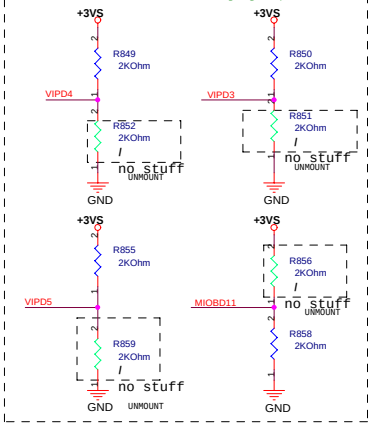
NV44M memory strap setting:
01 (0001) SAMSUNG 8MX32X2 64MB (two VRAM) --> 1.8V
01 (0001) HYNIX 8MX32X2 64MB (two VRAM) --> 1.8V
04 (0100) SAMSUNG 4MX32X2 32MB (two VRAM) --> 1.8V
09 (1001) HYNIX 8MX32X1 32MB (one VRAM) --> 1.8V
0C (1100) SAMSUNG 4Mx32X1 16MB (one VRAM) --> 1.8V
MIOBD0 : RAMCFG0 MIOBD1 : RAMCFG1
MIOBD8 : RAMCFG2 MIOBD9 : RAMCFG3

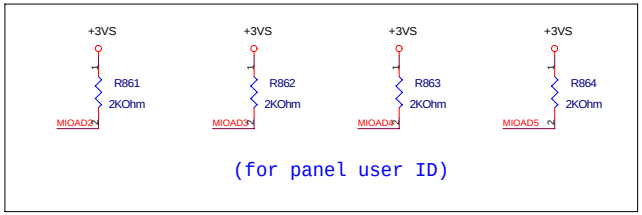


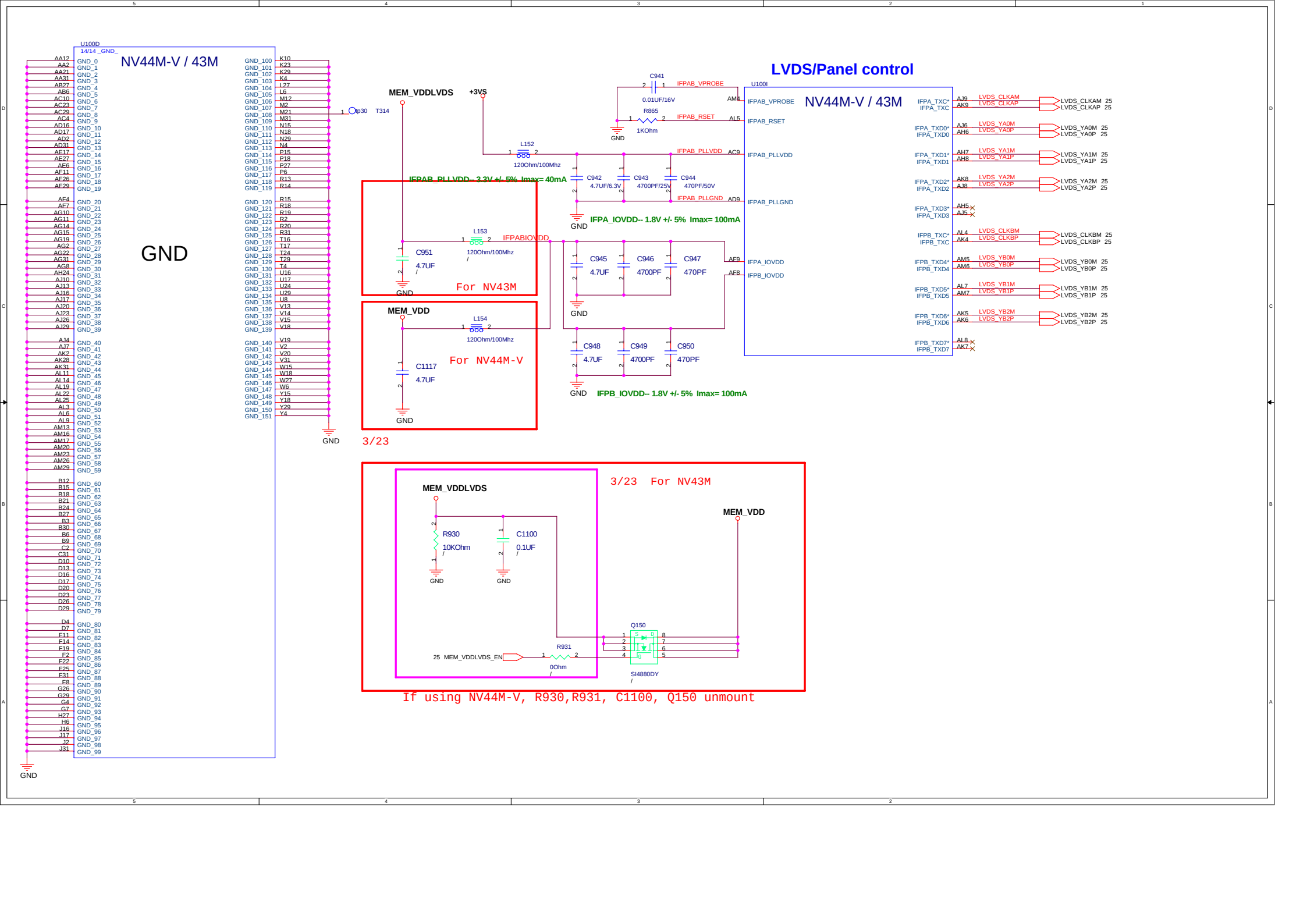
(PCI_DEVICE_ID)

MIOBD4 : PCI_DEVID0 MIOBD3 : PCI_DEVID2
MIOBD5 : PCI_DEVID1 MIOBD11 : PCI_DEVID3

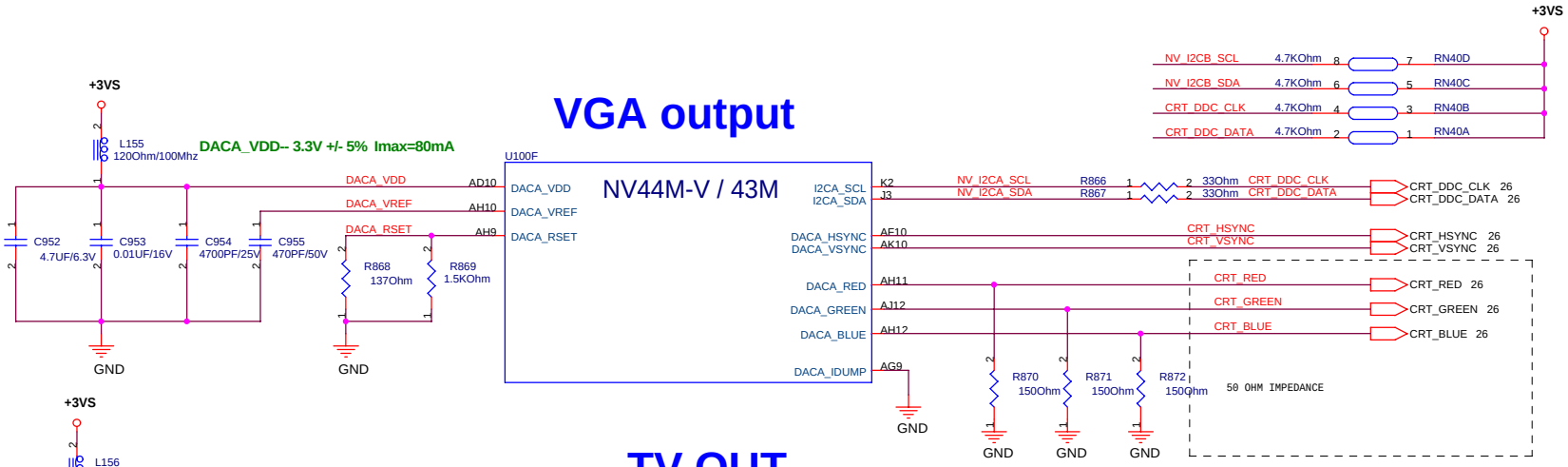
NV43M - ID 0X0148
NV44M - ID 0X0168
NV44M-V- ID 0X0167



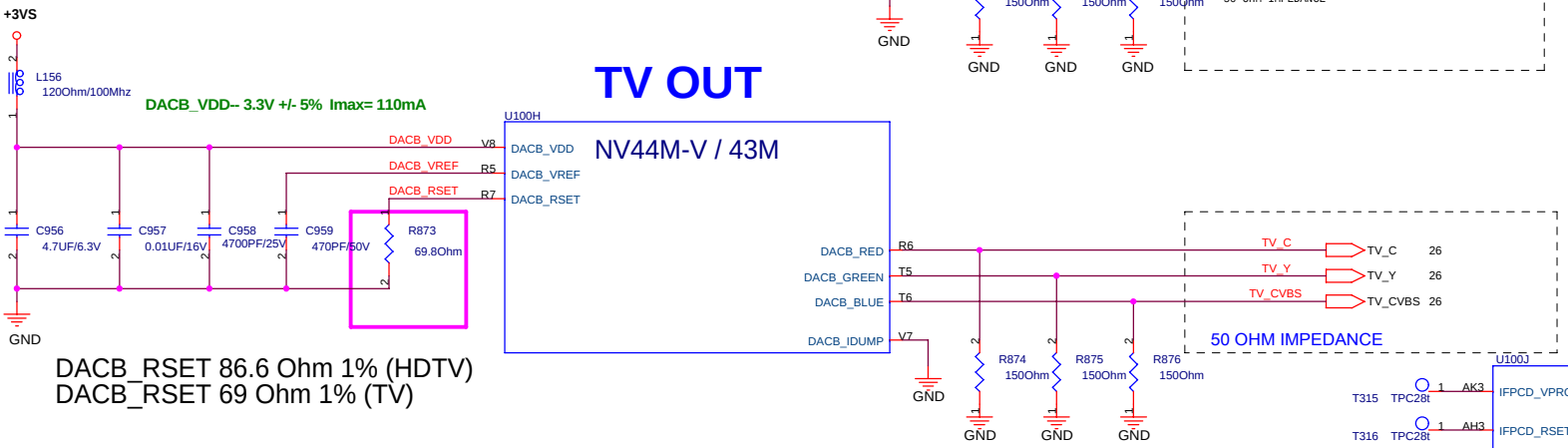



U100D
14/14 _GND_
NV44M-V / 43M
GND
GND_0 GND_1 GND_2 GND_3 GND_4 GND_5 GND_6 GND_7 GND_8 GND_9 GND_10 GND_11 GND_12 GND_13 GND_14 GND_15 GND_16 GND_17 GND_18 GND_19 GND_20 GND_21 GND_22 GND_23 GND_24 GND_25 GND_26 GND_27 GND_28 GND_29 GND_30 GND_31 GND_32 GND_33 GND_34 GND_35 GND_36 GND_37 GND_38 GND_39 GND_40 GND_41 GND_42 GND_43 GND_44 GND_45 GND_46 GND_47 GND_48 GND_49 GND_50 GND_51 GND_52 GND_53 GND_54 GND_55 GND_56 GND_57 GND_58 GND_59 GND_60 GND_61 GND_62 GND_63 GND_64 GND_65 GND_66 GND_67 GND_68 GND_69 GND_70 GND_71 GND_72 GND_73 GND_74 GND_75 GND_76 GND_77 GND_78 GND_79 GND_80 GND_81 GND_82 GND_83 GND_84 GND_85 GND_86 GND_87 GND_88 GND_89 GND_90 GND_91 GND_92 GND_93 GND_94 GND_95 GND_96 GND_97 GND_98 GND_99
GND_100 GND_101 GND_102 GND_103 GND_104 GND_105 GND_106 GND_107 GND_108 GND_109 GND_110 GND_111 GND_112 GND_113 GND_114 GND_115 GND_116 GND_117 GND_118 GND_119 GND_120 GND_121 GND_122 GND_123 GND_124 GND_125 GND_126 GND_127 GND_128 GND_129 GND_130 GND_131 GND_132 GND_133 GND_134 GND_135 GND_136 GND_137 GND_138 GND_139 GND_140 GND_141 GND_142 GND_143 GND_144 GND_145 GND_146 GND_147 GND_148 GND_149 GND_150 GND_151
Tp30 T314
MEM_VDDLVDS
+3VS
C941 0.01UF/16V
IFPAB_VPROBE
R865 1KOhm
IFPAB_RSET
GND
L152 120Ohm/100Mhz
IFPAB_PLLVDD
C942 4.7UF/6.3V
C943 4700PF/25V
C944 470PF/50V
IFPAB_PLLGND
IFPAB_PLLVDD-- 3.3V +/- 5% Imax= 40mA
IFPA_IOVDD-- 1.8V +/- 5% Imax= 100mA
L153 120Ohm/100Mhz
IFPABIOVDD
C951 4.7UF
For NV43M
C945 4.7UF
C946 4700PF
C947 470PF
IFPA_IOVDD
IFPB_IOVDD
MEM_VDD
L154 120Ohm/100Mhz
C1117 4.7UF
For NV44M-V
C948 4.7UF
C949 4700PF
C950 470PF
IFPB_IOVDD-- 1.8V +/- 5% Imax= 100mA
3/23
LVDS/Panel control
U100I
NV44M-V / 43M
IFPA_VPROBE IFPAB_RSET IFPAB_PLLVDD IFPAB_PLLGND IFPA_IOVDD IFPB_IOVDD
IFPA_TXC* IFPA_TXC IFPA_TXD0* IFPA_TXD0 IFPA_TXD1* IFPA_TXD1 IFPA_TXD2* IFPA_TXD2 IFPA_TXD3* IFPA_TXD3 IFPB_TXC* IFPB_TXC IFPB_TXD4* IFPB_TXD4 IFPB_TXD5* IFPB_TXD5 IFPB_TXD6* IFPB_TXD6 IFPB_TXD7* IFPB_TXD7
LVDS_CLKAM LVDS_CLKAP LVDS_YA0M LVDS_YA0P LVDS_YA1M LVDS_YA1P LVDS_YA2M LVDS_YA2P LVDS_CLKBM LVDS_CLKBP LVDS_YB0M LVDS_YB0P LVDS_YB1M LVDS_YB1P LVDS_YB2M LVDS_YB2P
LVDS_CLKAM 25 LVDS_CLKAP 25 LVDS_YA0M 25 LVDS_YA0P 25 LVDS_YA1M 25 LVDS_YA1P 25 LVDS_YA2M 25 LVDS_YA2P 25 LVDS_CLKBM 25 LVDS_CLKBP 25 LVDS_YB0M 25 LVDS_YB0P 25 LVDS_YB1M 25 LVDS_YB1P 25 LVDS_YB2M 25 LVDS_YB2P 25
3/23 For NV43M
MEM_VDDLVDS
MEM_VDD
R930 10KOhm
C1100 0.1UF
Q150 SI4880DY
25 MEM_VDDLVDS_EN
R931 0Ohm
If using NV44M-V, R930,R931, C1100, Q150 unmount

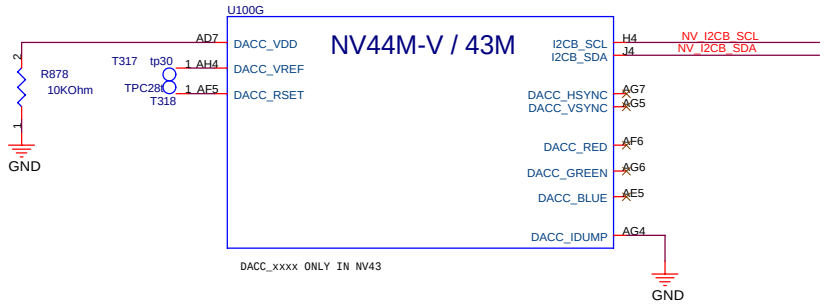
VGA output

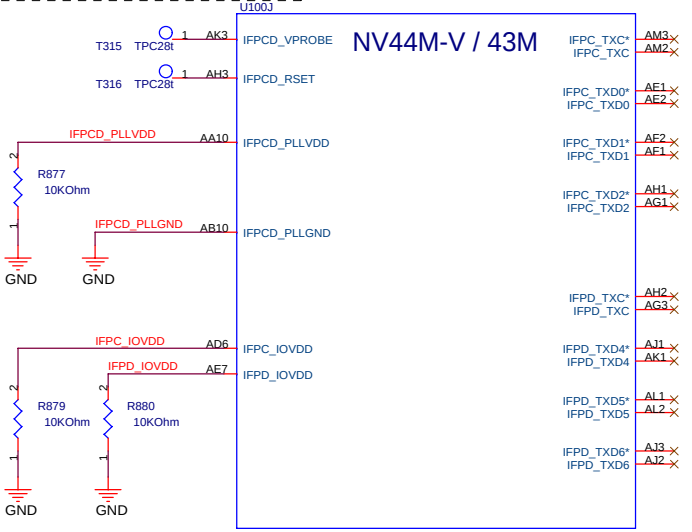


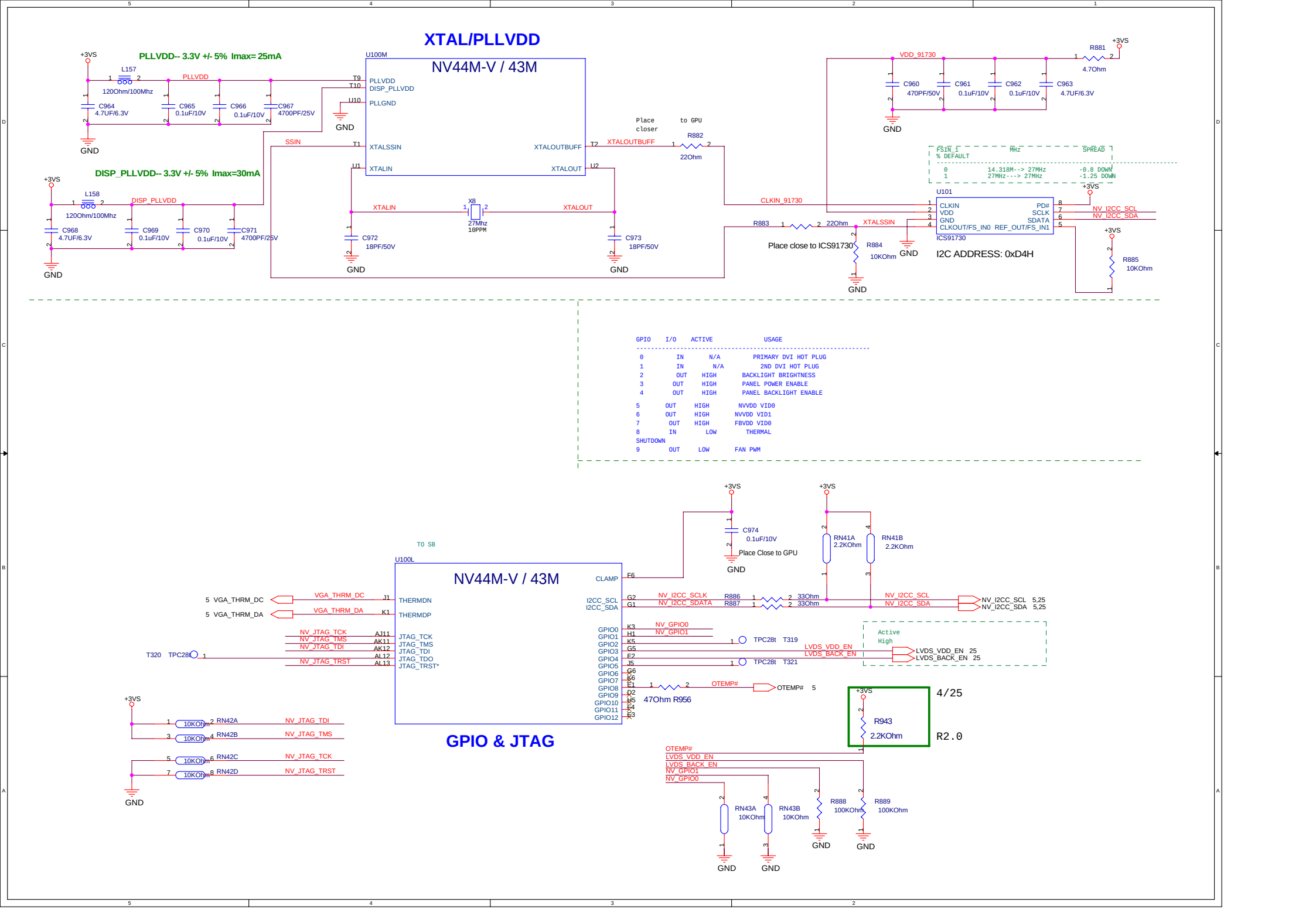
TV OUT



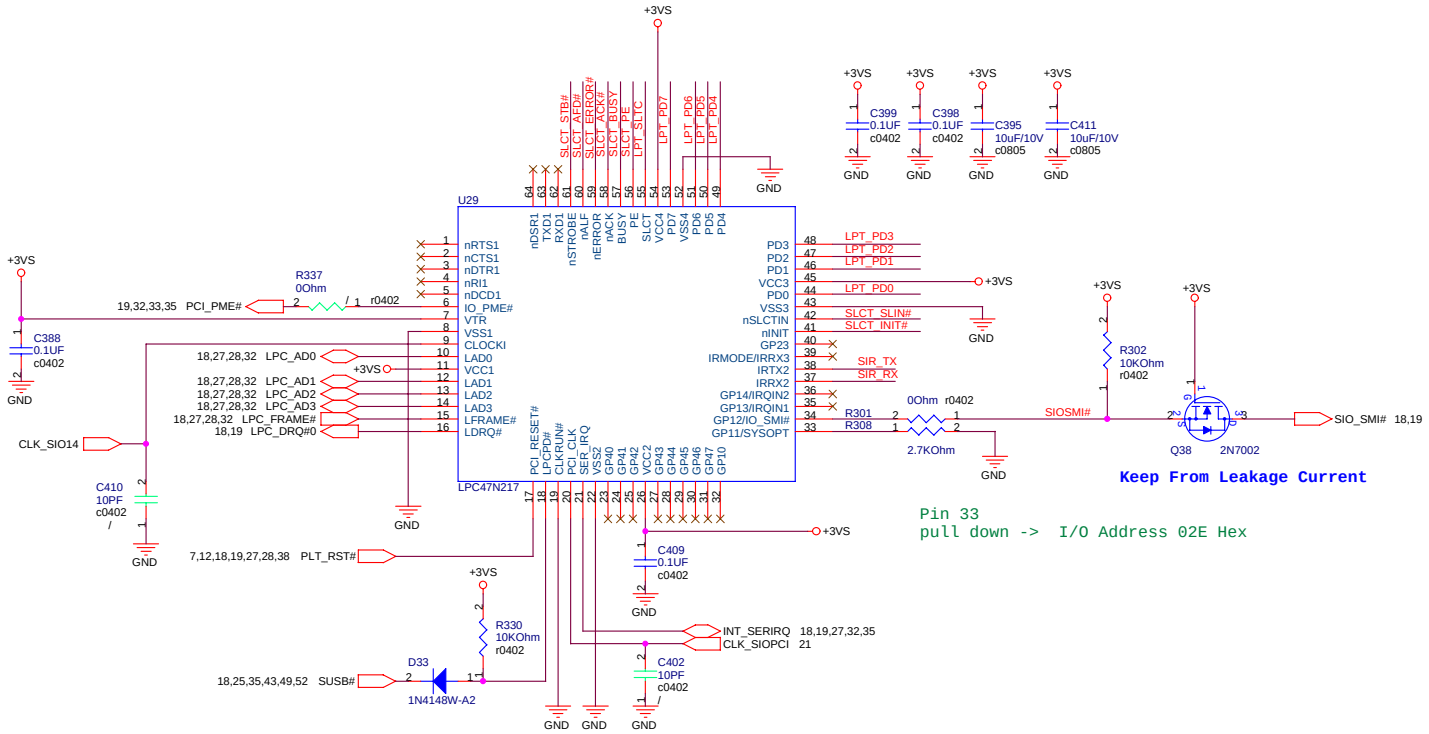
DACB_RSET 86.6 Ohm 1% (HDTV)
DACB_RSET 69 Ohm 1% (TV)

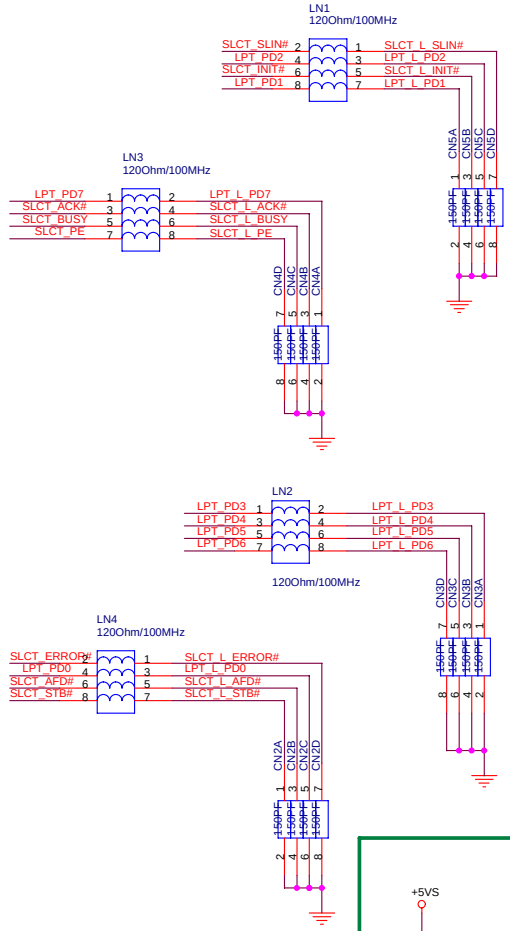




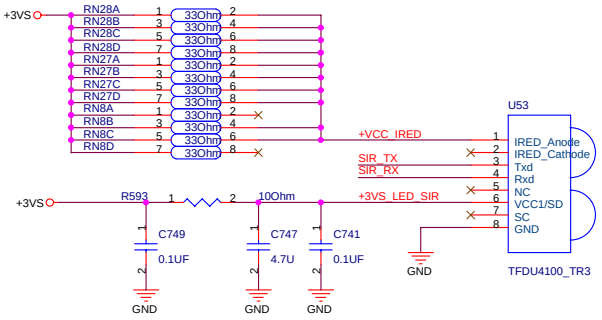

XTAL/PLLVDD
PLLVDD-- 3.3V +/- 5% Imax= 25mA
DISP_PLLVDD-- 3.3V +/- 5% Imax=30mA
U100M
NV44M-V / 43M
PLLVDD
DISP_PLLVDD
PLLGND
XTALSSIN
XTALIN
XTALOUT
XTALOUTBUFF
SSIN
Place closer to GPU
22Ohm
27Mhz
10PPM
CLKIN_91730
U101
ICS91730
CLKIN
VDD
GND
CLKOUT/FS_IN0
REF_OUT/FS_IN1
PD#
SCLK
SDATA
NV_I2CC_SCL
NV_I2CC_SDA
Place close to ICS91730
I2C ADDRESS: 0xD4H
FSIN_1 % DEFAULT
MHz
SPREAD
0 14.318M--> 27MHz -0.8 DOWN
1 27MHz---> 27MHz -1.25 DOWN
GPIO I/O ACTIVE USAGE
0 IN N/A PRIMARY DVI HOT PLUG
1 IN N/A 2ND DVI HOT PLUG
2 OUT HIGH BACKLIGHT BRIGHTNESS
3 OUT HIGH PANEL POWER ENABLE
4 OUT HIGH PANEL BACKLIGHT ENABLE
5 OUT HIGH NVVDD VID0
6 OUT HIGH NVVDD VID1
7 OUT HIGH FBVDD VID0
8 IN LOW THERMAL SHUTDOWN
9 OUT LOW FAN PWM
TO SB
U100L
NV44M-V / 43M
GPIO & JTAG
THERMDN
THERMDP
JTAG_TCK
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_TRST*
CLAMP
I2CC_SCL
I2CC_SDA
GPIO0
GPIO1
GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7
GPIO8
GPIO9
GPIO10
GPIO11
GPIO12
Place Close to GPU
LVDS_VDD_EN
LVDS_BACK_EN
Active High
OTEMP#
47Ohm R956
R943
2.2KOhm
4/25
R2.0

Super I/O

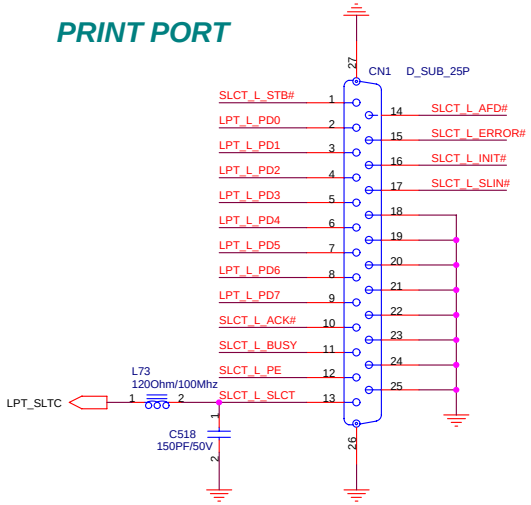


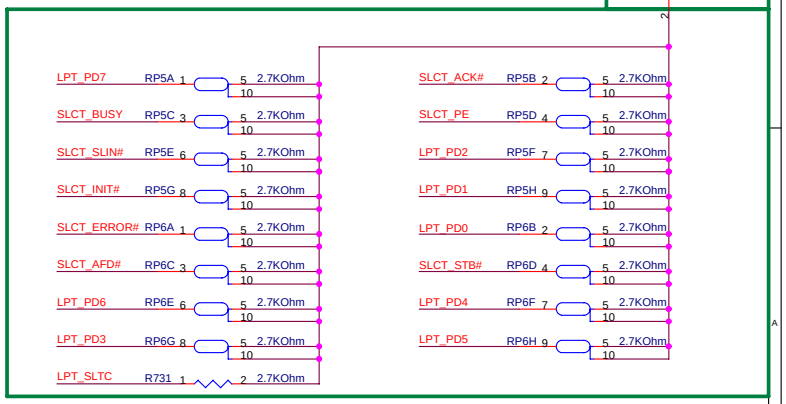


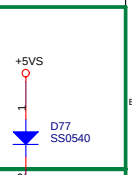
SIR



PRINT PORT







4/15

Unused SATA pin
- Connect RX, RBIAS, CLK to GND
- Leave TX, LED# as NC

U24C

38 IDE_PDD[0..15]
IDE_PDD15 AD13 DD_15
IDE_PDD14 AG15 DD_14
IDE_PDD13 AF15 DD_13
IDE_PDD12 AC13 DD_12
IDE_PDD11 AB13 DD_11
IDE_PDD10 AB12 DD_10
IDE_PDD9 AE13 DD_9
IDE_PDD8 AE13 DD_8
IDE_PDD7 AB11 DD_7
IDE_PDD6 AD11 DD_6
IDE_PDD5 AC11 DD_5
IDE_PDD4 AE14 DD_4
IDE_PDD3 AD12 DD_3
IDE_PDD2 AF14 DD_2
IDE_PDD1 AF15 DD_1
IDE_PDD0 AD14 DD_0

38 IDE_PDDACK# AB15 DDACK#
38 IDE_PDDREQ AB14 DDREQ
38 IDE_PDIOR# AE16 DIOR#
38 IDE_PDIOW# AC14 DIOW#
38 IDE_PIORDY AE16 IORDY
+3VS R268 4.7KOhm r0402

38 IDE_PDA0 AC16 DA0
38 IDE_PDA1 AB17 DA1
38 IDE_PDA2 AC17 DA2

38 IDE_PDCS1# AD16 DCS1#
38 IDE_PDCS3# AE17 DCS3#

R269 8.2KOhm r0402
+3VS
38 INT_IRQ14 AB16 IDEIRQ

SATA_0RXN AE3
SATA_0RXP AD3
SATA_0TXN AG2 TPC28t T97
SATA_0TXP AF2 TPC28t T96
SATA_1RXN AC5 R600 0Ohm r0402
SATA_1RXP AD5
SATA_1TXN AF4 TPC28t T94
SATA_1TXP AG4 TPC28t T93
SATA_2RXN AD7 R596 0Ohm r0402
SATA_2RXP AC7
SATA_2TXN AF6 TPC28t T89
SATA_2TXP AG6 TPC28t T88
SATA_3RXN AC9 R594 0Ohm r0402
SATA_3RXP AD9
SATA_3TXN AF8 TPC28t T87
SATA_3TXP AG8 TPC28t T86
R605 0Ohm r0402
GND

SATA_CLKN AC2
SATA_CLKP AC1

SATARBIAS# AG11
SATARBIAS AF11
R289 0Ohm r0402
R305 0Ohm r0402
GND GND

PLACE WITHIN 500mils of ICH6 ball

SMBCLK Y4
SMBDATA W5
SMB_CLK
SMB_DAT
2.2KOhm RN30A
2.2KOhm RN30B
SMB_CLK_S 2.2KOhm RN30C
SMB_DAT_S 2.2KOhm RN30D
+3VSUS +3VS

LINKALERT# Y5 LINKALERT# 19
SMLINK_0 W4 SM_LINK0 19
SMLINK_1 U6 SM_LINK1 19

SATALED# AC19 TPC28t T251
SATA_0GP/GPI26 AF17 SATA_DET_#0 19
SATA_1GP/GPI29 AE18 PCB_ID2 19
SATA_2GP/GPI30 AF18 PCB_ID0 19
SATA_3GP/GPI31 AG18 PCB_ID1 19
INTRUDER# AA3 R604 1M r0402 +VCC_RTC

RSMRST# Y3 PM_RSMRST# 42

RTCX1 Y1 RTC_X1
RTCX2 Y2 RTC_X2
C394 12PF/50V c0402
X4 32.768KHZ SIDE
R317 10MOhm
C397 12PF/50V c0402
GND

RTCRST# AA2
INTVRMEN AA5 R336 10KOhm +VCC_RTC
R335 0Ohm GND
SPKR F8 SB_SPKR 29

INTERNAL PULL-DOWN
PULL-UP : NO REBOOT

ICH6_M

+5VS
5,21,22,23 SMB_CLK_S SMB_CLK
Q48 2N7002

5,21,22,23 SMB_DAT_S SMB_DAT
Q43 2N7002

+VCC_RTC
R607 20KOhm
JRST1 JRST1 C761 1UF/10V
GND
RTC CMOS CLEAR

U24D

R314 8.2KOhm r0402 +3VSUS CB_SD#

LDRQ_1#/GPIO41 P4
LAD_0/FWH0 P2
LAD_1/FWH1 N3
LAD_2/FWH2 N5
LAD_3/FWH3 N4
LDRQ_0# N6
LFRAME#/FWH4 P3

17,27,28,32 LPC_AD0
17,27,28,32 LPC_AD1
17,27,28,32 LPC_AD2
17,27,28,32 LPC_AD3
17,19 LPC_DRQ#0
17,27,28,32 LPC_FRAME#

29,34 ACZ_BCLK R276 33Ohm C10 ACZ_BIT_CLK
29,30,34 ACZ_RST# R281 33Ohm A10 ACZ_RST#
29 ACZ_SDIN0 F11 ACZ_SDIN_0
34 ACZ_SDIN1 F10 ACZ_SDIN_1
B10 ACZ_SDIN_2
29,34 ACZ_SDOUT R280 33Ohm C9 ACZ_SDOUT
+3VS R283 1KOhm r0402 B9 ACZ_SYNC
29,34 ACZ_SYNC R282 33Ohm E10 CLK14
21 CLK_ICH14
T85 TPC28t

T81 TPC28t
R274 1KOhm r0402
GND
D12 EE_CS
F13 EE_DIN
D11 EE_DOUT
B12 EE_SHCLK

INTERNAL PULL-UP
PULL-DOWN :
RESERVED

F12 LAN_CLK
B11 LAN_RSTSYNC
E12 LAN_RXD_0
E11 LAN_RXD_1
C13 LAN_RXD_2
C12 LAN_TXD_0
C11 LAN_TXD_1
E13 LAN_TXD_2

27 A20GATE AF22 A20GATE
3 H_A20M# AF23 A20M#
3,6 H_CPUSLP# R220 0Ohm r0402 AF27 CPUSLP#
44 PM_DPRSLPVR R230 0Ohm r0402 AE20 DPRSLPVR/TP_1
3 H_DPRSTP# AE24 DPRSLP#/TP_2
3 H_DPSLP# AD27 DPSTP#
3 H_IGNNE# AG26 IGNNE#
28 FWH_INIT# AE22 INIT3_3V#
3 H_INIT# AE27 INIT#
3 H_INTR AG24 INTR
R226 r0402 56Ohm AF24 FERR#
3 H_NMI AE25 NMI
27 RCIN# AD23 RCIN#
17,19,27,32,35 INT_SERIRQ AB20 SERIRQ
3 H_SMI# AG27 SMI#
3 H_STPCLK# AE26 STPCLK#
3,7 PM_THRMTRIP# R232 r0402 56Ohm AE23 THRMTRIP#
R233 75Ohm r0402

+VCCP R229 56Ohm r0402
H_FERR#

* 56 within 1" from the ICH6-M pins
* 75 W pull-up to VCCP within 2" from the series resistor

BMBUSY#/GPI6 AD19 PM_BMBUSY# 7
GPI7 AE19 +3VS
GPI8 R1 EXTSMI# 27
SMBALERT#/GPIO11 W6 LID_ICH# 19,42
GPI12 M2 KB_SCI# 19,27
GPI13 R6 SIO_SMI# 17,19
STP_PCI#/GPO18 AC21 STP_PCI# 19,21
GPIO19 AB21 TPC28t T282
STP_CPU#/GPO20 AD22 STP_CPU# 19,21,44
GPIO21 AD20 BACK_OFF# 25
GPIO23 AD21 FWH_WP# 28
GPIO24 V3 ~~802_LED_EN~~ 19,32,41
GPIO25 P5 PWRLED_1HZ 19,41
GPIO27 R3 BT_ON 39
GPIO28 T3 CB_SD# 35
CLKRUN#/GPIO32 AF19 PM_CLKRUN# 19,27,32,35
GPIO33 AF20 CPUFAN_SPD_A 5
GPIO34 AC18 WLAN_ON# 32
CPUPWRGD/GPIO49 AG25 H_PWRGD 3

R247 8.2KOhm r0402 +3VS
R250 8.2KOhm r0402

MCH_SYNC# AG21 MCH_SYNC# 19
PWRBTN# U1 PM_PWRBTN# 42
RI# T2 RING# RING# 19

SLP_S3# T4 R611 100Ohm r0402 SUSB# 17,25,35,43,49,52
SLP_S4# T5 R599 100Ohm r0402 SUSC# 40,42,52
SLP_S5# T6 TPC28t T252

SUS_STAT#/LPCPD# W3 SUS_STAT# 19
TPC28t T254
SUSCLK V6 SUSCLK
SYS_RESET# U2 R320 10KOhm r0402 R324 0Ohm r0402 ICH6_PWROK +3VSUS
LAN_RST# V5 LAN_RST#
BATLOW# V2 PM_BATLOW# 19
TP_3 U3 R316 10KOhm r0402 GND
TP_3 INTERNAL PULL-UP
PULL-DOWN : PCI
Express Port chain test

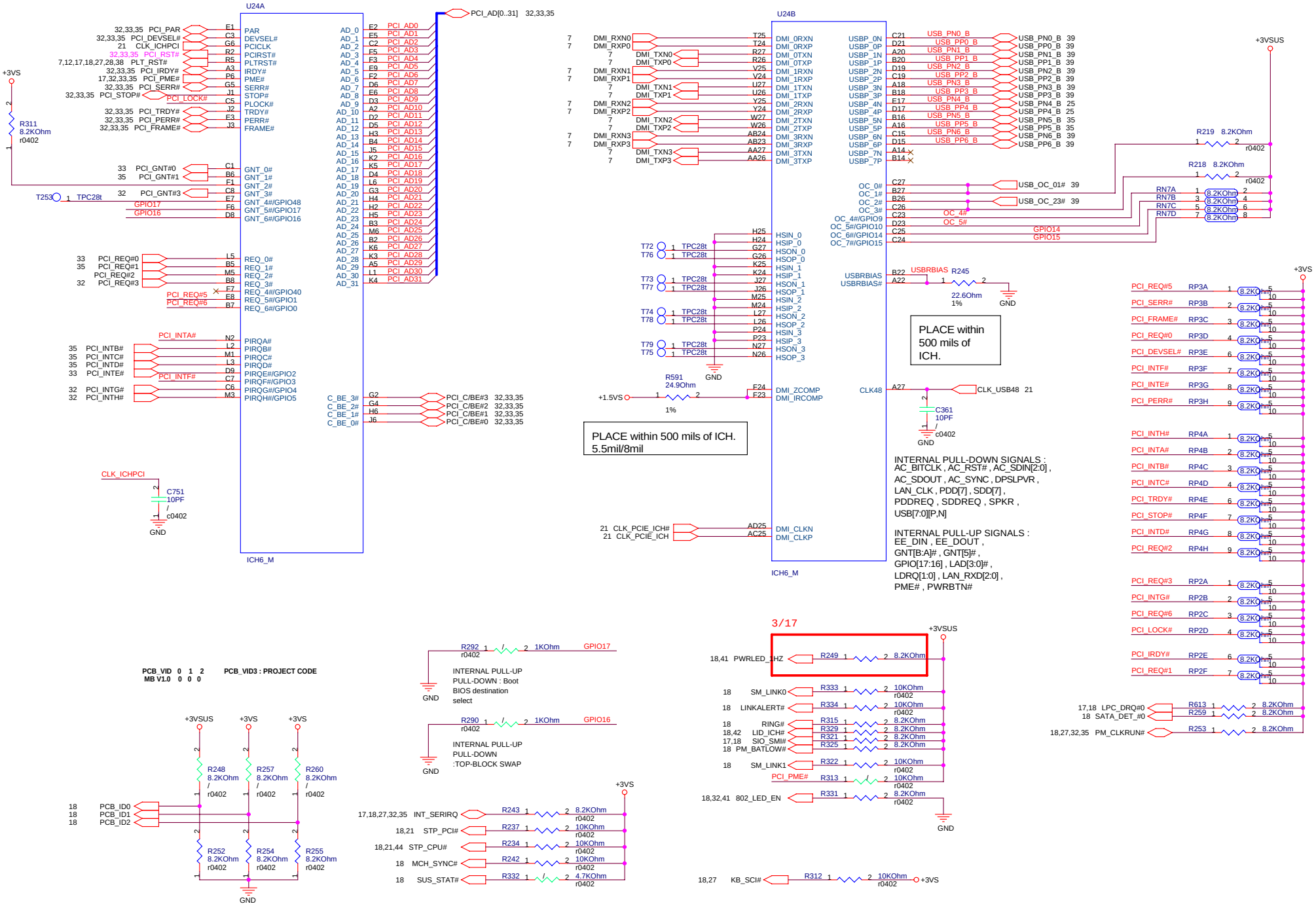
VRMPWRGD AF21 R236 0Ohm r0402 ICH6_PWROK
THRM# AC20 PM_THERM# 5
LAN_RST# PLT_RST# 7,12,17,19,27,28,38
R595 10KOhm r0402 GND

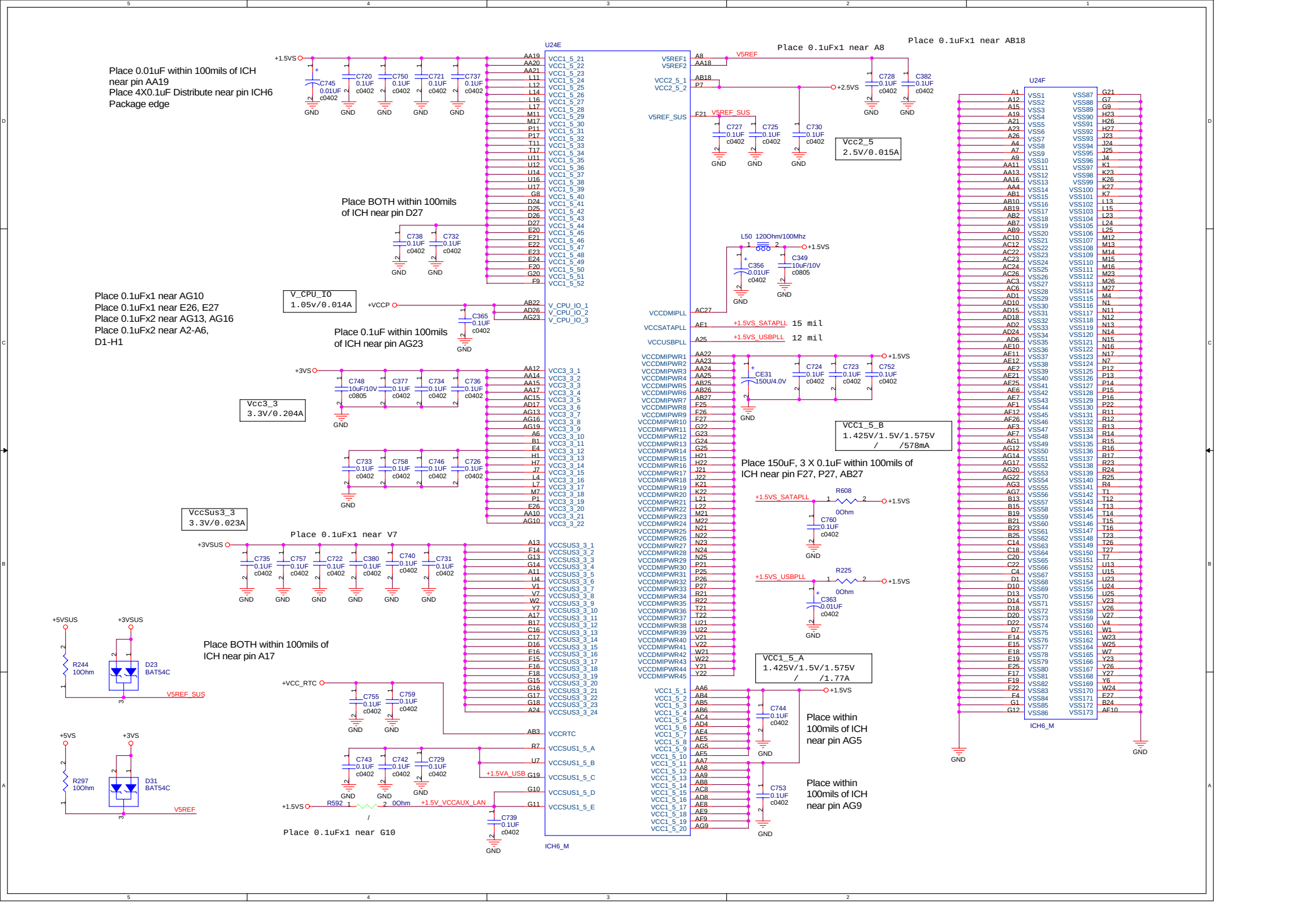
WAKE# U5 R612 1KOhm r0402 +3VSUS
PWROK AA1 ICH6_PWROK ICH6_PWROK 7,43

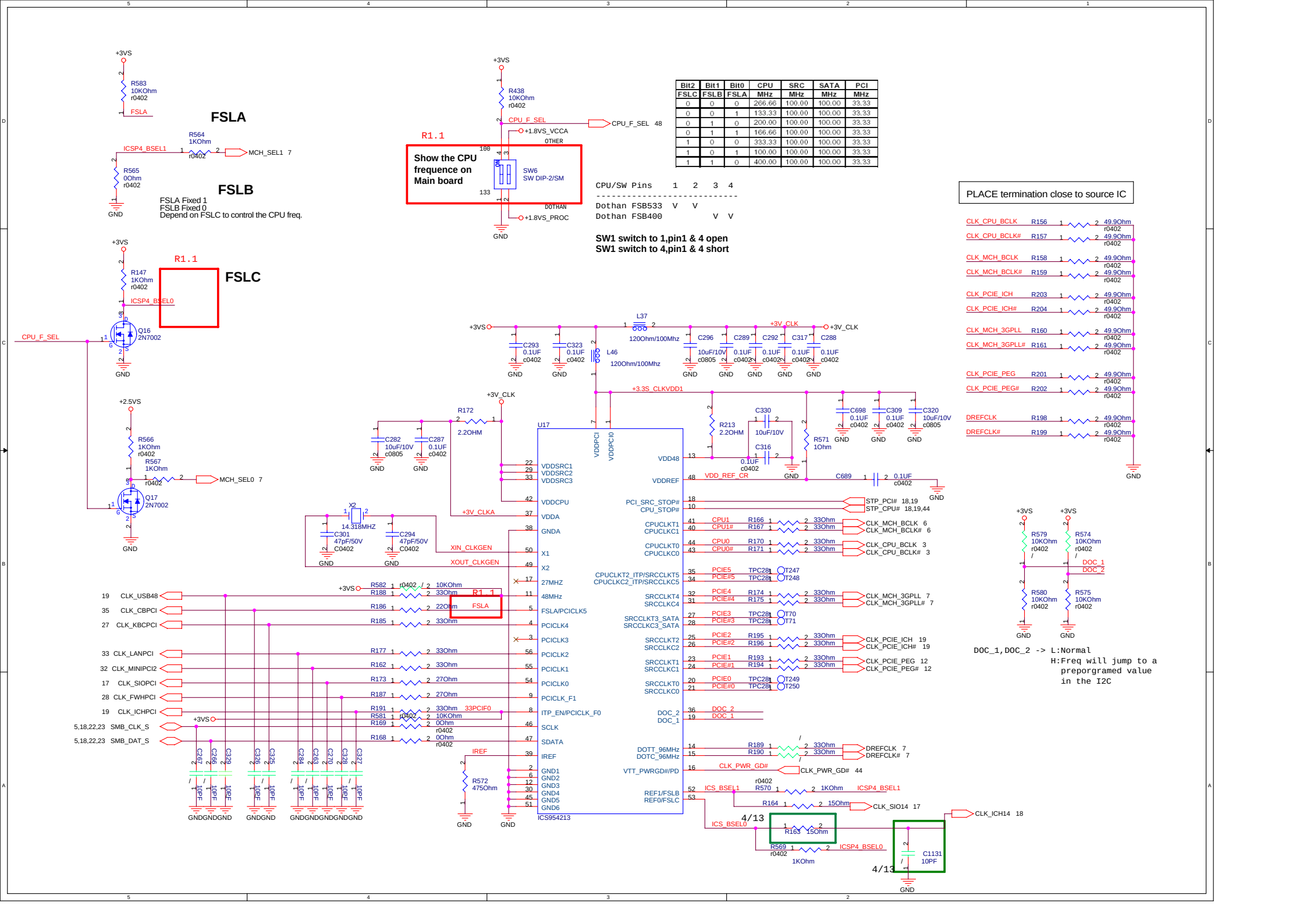
ICH6_M

T280 TPC28t
+RTCBAT
+3VALWAYS
DELAY 18~25ms
D69 RB715F
R668 1KOhm r0402
C817 1UF/10V
BAT1 BATT
GND
T296 TPC28t
+VCC_RTC
GND

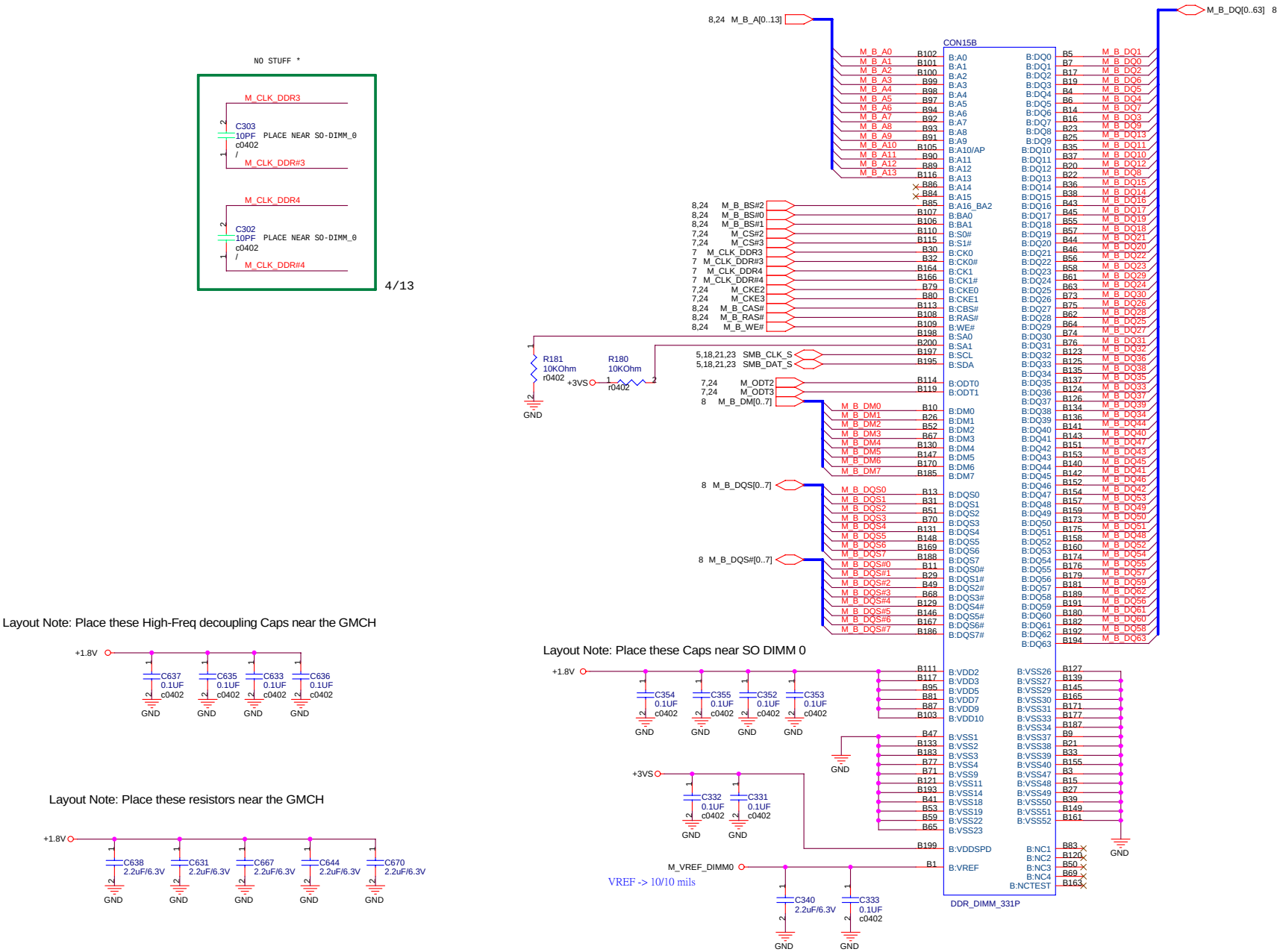
PLT_RST#
ICH6,Alviso/M26/KBC/FWH/HDD




Place 0.01uF within 100mils of ICH near pin AA19
Place 4X0.1uF Distribute near pin ICH6 Package edge
Place BOTH within 100mils of ICH near pin D27
Place 0.1uFx1 near AG10
Place 0.1uFx1 near E26, E27
Place 0.1uFx2 near AG13, AG16
Place 0.1uFx2 near A2-A6, D1-H1
V_CPU_IO 1.05v/0.014A
Place 0.1uF within 100mils of ICH near pin AG23
Vcc3_3 3.3V/0.204A
VccSus3_3 3.3V/0.023A
Place 0.1uFx1 near V7
Place BOTH within 100mils of ICH near pin A17
Place 0.1uFx1 near G10
Place 0.1uFx1 near A8
Vcc2_5 2.5V/0.015A
Place 150uF, 3 X 0.1uF within 100mils of ICH near pin F27, P27, AB27
VCC1_5_B 1.425V/1.5V/1.575V / /578mA
VCC1_5_A 1.425V/1.5V/1.575V / /1.77A
Place within 100mils of ICH near pin AG5
Place within 100mils of ICH near pin AG9
Place 0.1uFx1 near AB18
U24E
U24F
ICH6_M
+1.5VS
+3VS
+5VSUS
+3VSUS
+VCCP
+VCC_RTC
+1.5VA_USB
+1.5V_VCCAUX_LAN
V5REF
V5REF_SUS
+1.5VS_SATAPLL
+1.5VS_USBPLL
+2.5VS
GND
15 mil
12 mil



Bit2	Bit1	Bit0	CPU	SRC	SATA	PCI
FSLC	FSLB	FSLA	MHz	MHz	MHz	MHz
0	0	0	266.66	100.00	100.00	33.33
0	0	1	133.33	100.00	100.00	33.33
0	1	0	200.00	100.00	100.00	33.33
0	1	1	166.66	100.00	100.00	33.33
1	0	0	333.33	100.00	100.00	33.33
1	0	1	100.00	100.00	100.00	33.33
1	1	0	400.00	100.00	100.00	33.33


NO STUFF *
M_CLK_DDR3
C303
10PF PLACE NEAR SO-DIMM_0
c0402
M_CLK_DDR#3
M_CLK_DDR4
C302
10PF PLACE NEAR SO-DIMM_0
c0402
M_CLK_DDR#4
4/13
8,24 M_B_A[0..13]
M_B_DQ[0..63] 8
CON15B
DDR_DIMM_331P
R181 10KOhm r0402
R180 10KOhm r0402
+3VS
GND
5,18,21,23 SMB_CLK_S
5,18,21,23 SMB_DAT_S
Layout Note: Place these High-Freq decoupling Caps near the GMCH
C637 0.1UF c0402
C635 0.1UF c0402
C633 0.1UF c0402
C636 0.1UF c0402
Layout Note: Place these resistors near the GMCH
C638 2.2uF/6.3V
C631 2.2uF/6.3V
C667 2.2uF/6.3V
C644 2.2uF/6.3V
C670 2.2uF/6.3V
Layout Note: Place these Caps near SO DIMM 0
C354 0.1UF c0402
C355 0.1UF c0402
C352 0.1UF c0402
C353 0.1UF c0402
C332 0.1UF c0402
C331 0.1UF c0402
M_VREF_DIMM0
VREF -> 10/10 mils
C340 2.2uF/6.3V
C333 0.1UF c0402
Layout Note: Place these Caps near SO DIMM 0

NO STUFF *

M_CLK_DDR0

C697 10PF PLACE NEAR SO-DIMM_1 c0402 / M_CLK_DDR#0

M_CLK_DDR1

C696 10PF PLACE NEAR SO-DIMM_1 c0402 / M_CLK_DDR#1

4/13

Layout Note: Place these Caps near SO DIMM 1

+1.8V — C357 2.2uF/6.3V — C691 2.2uF/6.3V — C690 2.2uF/6.3V — C358 2.2uF/6.3V — C359 2.2uF/6.3V — GND

SO-DIMM 1 is placed father from the GMCH than SO-DIMM 0

8,24 M_A_A[0..13]

CON15A

M_A_A0 A102 A:A0
M_A_A1 A101 A:A1
M_A_A2 A100 A:A2
M_A_A3 A99 A:A3
M_A_A4 A98 A:A4
M_A_A5 A97 A:A5
M_A_A6 A94 A:A6
M_A_A7 A92 A:A7
M_A_A8 A93 A:A8
M_A_A9 A91 A:A9
M_A_A10 A105 A:A10/AP
M_A_A11 A90 A:A11
M_A_A12 A89 A:A12
M_A_A13 A116 A:A13
A86 A:A14
A84 A:A15
8,24 M_A_BS#2 A85 A:A16_BA2

8,24 M_A_BS#0 A107 A:BA0
8,24 M_A_BS#1 A106 A:BA1
7,24 M_CS#0 A110 A:S0#
7,24 M_CS#1 A115 A:S1#
7 M_CLK_DDR0 A30 A:CK0
7 M_CLK_DDR#0 A32 A:CK0#
7 M_CLK_DDR1 A164 A:CK1
7 M_CLK_DDR#1 A166 A:CK1#
7,24 M_CKE0 A79 A:CKE0
7,24 M_CKE1 A80 A:CKE1
8,24 M_A_CAS# A113 A:CAS#
8,24 M_A_RAS# A108 A:RAS#
8,24 M_A_WE# A109 A:WE#
A198 A:SA0
A200 A:SA1
5,18,21,22 SMB_CLK_S A197 A:SCL
5,18,21,22 SMB_DAT_S A195 A:SDA

R577 10KOhm r0402 — GND
R576 10KOhm r0402 — GND

7,24 M_ODT0 A114 A:ODT0
7,24 M_ODT1 A119 A:ODT1
8 M_A_DM[0..7]

M_A_DM0 A10 A:DM0
M_A_DM1 A26 A:DM1
M_A_DM2 A52 A:DM2
M_A_DM3 A67 A:DM3
M_A_DM4 A130 A:DM4
M_A_DM5 A147 A:DM5
M_A_DM6 A170 A:DM6
M_A_DM7 A185 A:DM7

8 M_A_DQS[0..7]

M_A_DQS0 A13 A:DQS0
M_A_DQS1 A31 A:DQS1
M_A_DQS2 A51 A:DQS2
M_A_DQS3 A70 A:DQS3
M_A_DQS4 A131 A:DQS4
M_A_DQS5 A148 A:DQS5
M_A_DQS6 A169 A:DQS6
M_A_DQS7 A188 A:DQS7

8 M_A_DQS#[0..7]

M_A_DQS#0 A11 A:DQS0#
M_A_DQS#1 A29 A:DQS1#
M_A_DQS#2 A49 A:DQS2#
M_A_DQS#3 A68 A:DQS3#
M_A_DQS#4 A129 A:DQS4#
M_A_DQS#5 A146 A:DQS5#
M_A_DQS#6 A167 A:DQS6#
M_A_DQS#7 A186 A:DQS7#

M_A_DQ[0..63] 8

A:DQ0 A5 M_A_DQ0
A:DQ1 A7 M_A_DQ1
A:DQ2 A17 M_A_DQ7
A:DQ3 A19 M_A_DQ2
A:DQ4 A4 M_A_DQ5
A:DQ5 A6 M_A_DQ4
A:DQ6 A14 M_A_DQ3
A:DQ7 A16 M_A_DQ6
A:DQ8 A23 M_A_DQ12
A:DQ9 A25 M_A_DQ13
A:DQ10 A35 M_A_DQ11
A:DQ11 A37 M_A_DQ14
A:DQ12 A20 M_A_DQ9
A:DQ13 A22 M_A_DQ8
A:DQ14 A36 M_A_DQ10
A:DQ15 A38 M_A_DQ15
A:DQ16 A43 M_A_DQ20
A:DQ17 A45 M_A_DQ21
A:DQ18 A55 M_A_DQ23
A:DQ19 A57 M_A_DQ22
A:DQ20 A44 M_A_DQ16
A:DQ21 A46 M_A_DQ17
A:DQ22 A56 M_A_DQ18
A:DQ23 A58 M_A_DQ19
A:DQ24 A61 M_A_DQ29
A:DQ25 A63 M_A_DQ26
A:DQ26 A73 M_A_DQ30
A:DQ27 A75 M_A_DQ28
A:DQ28 A62 M_A_DQ24
A:DQ29 A64 M_A_DQ25
A:DQ30 A74 M_A_DQ31
A:DQ31 A76 M_A_DQ27
A:DQ32 A123 M_A_DQ33
A:DQ33 A125 M_A_DQ32
A:DQ34 A135 M_A_DQ38
A:DQ35 A137 M_A_DQ34
A:DQ36 A124 M_A_DQ36
A:DQ37 A126 M_A_DQ37
A:DQ38 A134 M_A_DQ39
A:DQ39 A136 M_A_DQ35
A:DQ40 A141 M_A_DQ41
A:DQ41 A143 M_A_DQ40
A:DQ42 A151 M_A_DQ42
A:DQ43 A153 M_A_DQ47
A:DQ44 A140 M_A_DQ44
A:DQ45 A142 M_A_DQ45
A:DQ46 A152 M_A_DQ43
A:DQ47 A154 M_A_DQ46
A:DQ48 A157 M_A_DQ53
A:DQ49 A159 M_A_DQ48
A:DQ50 A173 M_A_DQ54
A:DQ51 A175 M_A_DQ55
A:DQ52 A158 M_A_DQ49
A:DQ53 A160 M_A_DQ52
A:DQ54 A174 M_A_DQ51
A:DQ55 A176 M_A_DQ50
A:DQ56 A179 M_A_DQ56
A:DQ57 A181 M_A_DQ62
A:DQ58 A189 M_A_DQ59
A:DQ59 A191 M_A_DQ58
A:DQ60 A180 M_A_DQ61
A:DQ61 A182 M_A_DQ60
A:DQ62 A192 M_A_DQ57
A:DQ63 A194 M_A_DQ63

Layout Note: Place these Caps near SO DIMM 1

+1.8V
C693 0.1UF c0402 — GND
C692 0.1UF c0402 — GND
C694 0.1UF c0402 — GND
C695 0.1UF c0402 — GND

A112 A:VDD1
A96 A:VDD4
A118 A:VDD6
A82 A:VDD8
A88 A:VDD11
A104 A:VDD12

A12 A:VSS5
A48 A:VSS6
A184 A:VSS7
A78 A:VSS8
A72 A:VSS10
A122 A:VSS12
A196 A:VSS13
A8 A:VSS15
A18 A:VSS16
A24 A:VSS17
A42 A:VSS20

GND

+3VS
C700 0.1UF c0402 — GND
C699 0.1UF c0402 — GND

A199 A:VDDSPD

M_VREF_DIMM1 A1 A:VREF

VREF -> 10/10 mils

C322 2.2uF/6.3V — GND
C319 0.1UF c0402 — GND

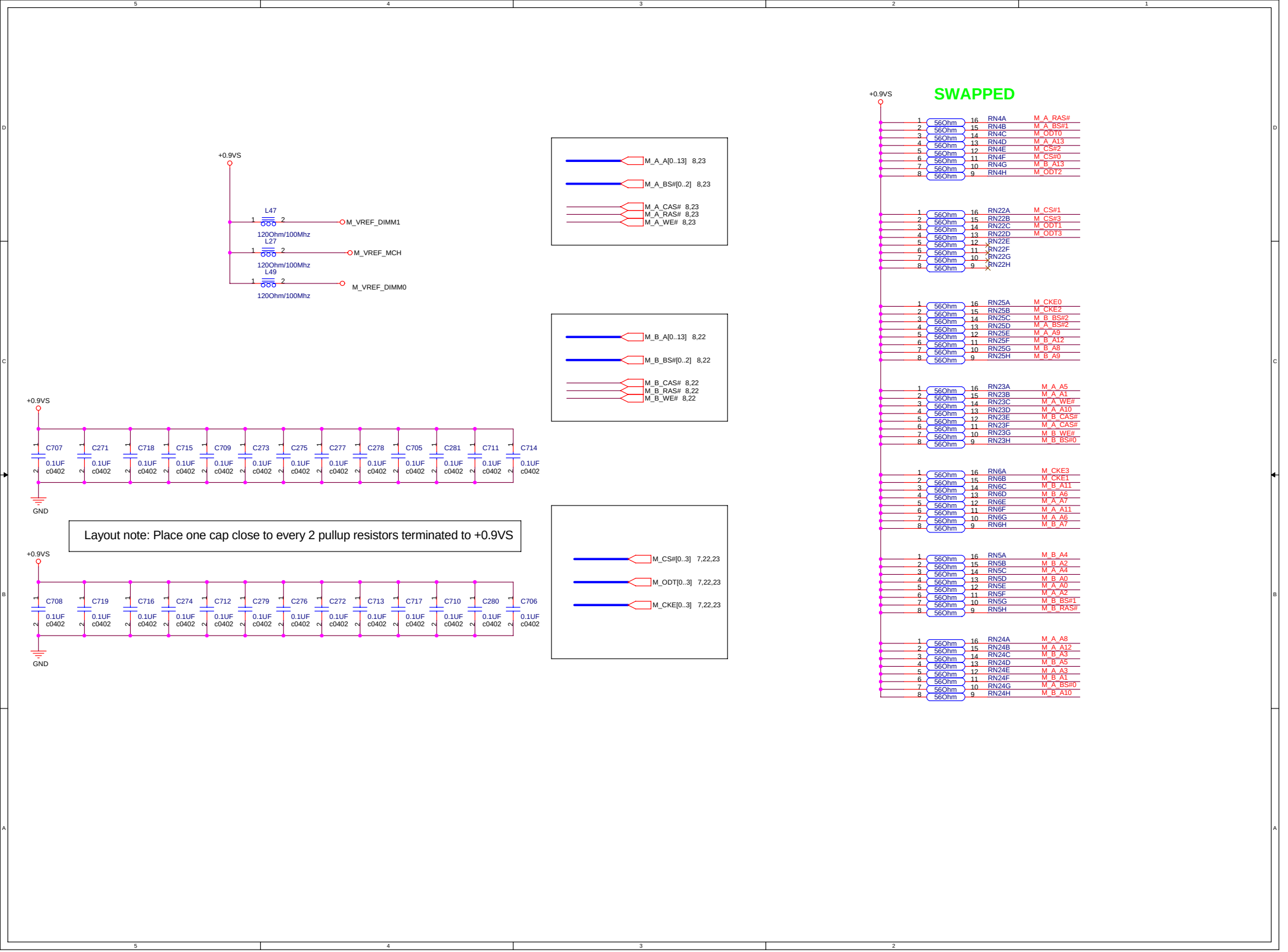
A:VSS21 A54
A:VSS24 A60
A:VSS25 A66
A:VSS28 A128
A:VSS32 A172
A:VSS35 A178
A:VSS36 A190
A:VSS41 A34
A:VSS42 A132
A:VSS43 A144
A:VSS44 A156
A:VSS45 A168
A:VSS46 A2
A:VSS53 A28
A:VSS54 A40
A:VSS55 A138
A:VSS56 A150
A:VSS57 A162

A:NC1 A83
A:NC2 A120
A:NC3 A50
A:NC4 A69
A:NCTEST A163

NP_NC1 201
NP_NC2 202
NP_NC3 203
NP_NC4 204
GND1 205
GND2 206
GND3 208
GND4 207

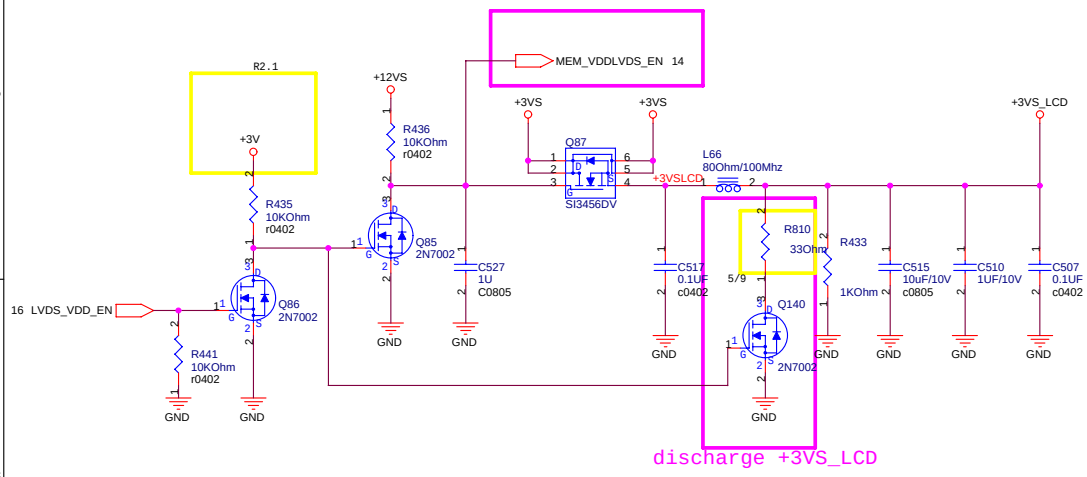
DDR_DIMM1

GND

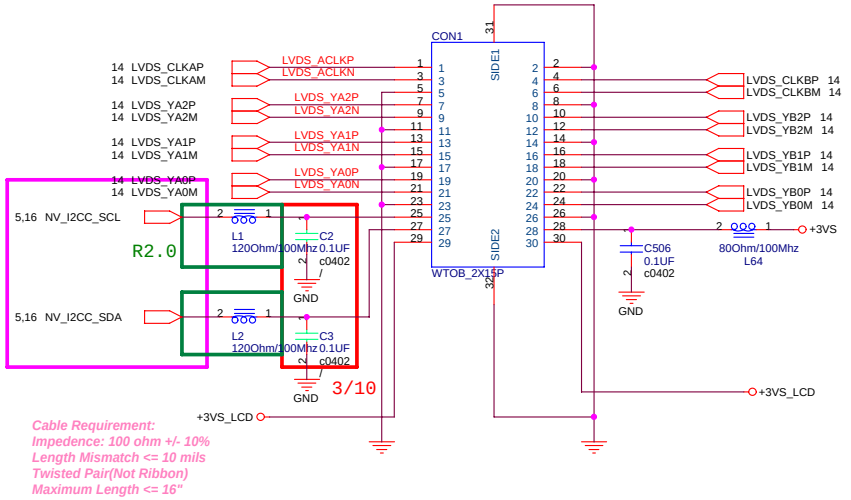

+0.9VS
L47
1
2
120Ohm/100Mhz
M_VREF_DIMM1
L27
120Ohm/100Mhz
M_VREF_MCH
L49
120Ohm/100Mhz
M_VREF_DIMM0
M_A_A[0..13] 8,23
M_A_BS#[0..2] 8,23
M_A_CAS# 8,23
M_A_RAS# 8,23
M_A_WE# 8,23
M_B_A[0..13] 8,22
M_B_BS#[0..2] 8,22
M_B_CAS# 8,22
M_B_RAS# 8,22
M_B_WE# 8,22
M_CS#[0..3] 7,22,23
M_ODT[0..3] 7,22,23
M_CKE[0..3] 7,22,23
C707 C271 C718 C715 C709 C273 C275 C277 C278 C705 C281 C711 C714
C708 C719 C716 C274 C712 C279 C276 C272 C713 C717 C710 C280 C706
0.1UF
c0402
GND
Layout note: Place one cap close to every 2 pullup resistors terminated to +0.9VS
SWAPPED
56Ohm
RN4A M_A_RAS#
RN4B M_A_BS#1
RN4C M_ODT0
RN4D M_A_A13
RN4E M_CS#2
RN4F M_CS#0
RN4G M_B_A13
RN4H M_ODT2
RN22A M_CS#1
RN22B M_CS#3
RN22C M_ODT1
RN22D M_ODT3
RN22E
RN22F
RN22G
RN22H
RN25A M_CKE0
RN25B M_CKE2
RN25C M_B_BS#2
RN25D M_A_BS#2
RN25E M_A_A9
RN25F M_B_A12
RN25G M_B_A8
RN25H M_B_A9
RN23A M_A_A5
RN23B M_A_A1
RN23C M_A_WE#
RN23D M_A_A10
RN23E M_B_CAS#
RN23F M_A_CAS#
RN23G M_B_WE#
RN23H M_B_BS#0
RN6A M_CKE3
RN6B M_CKE1
RN6C M_B_A11
RN6D M_B_A6
RN6E M_A_A7
RN6F M_A_A11
RN6G M_A_A6
RN6H M_B_A7
RN5A M_B_A4
RN5B M_B_A2
RN5C M_A_A4
RN5D M_B_A0
RN5E M_A_A0
RN5F M_A_A2
RN5G M_B_BS#1
RN5H M_B_RAS#
RN24A M_A_A8
RN24B M_A_A12
RN24C M_B_A3
RN24D M_B_A5
RN24E M_A_A3
RN24F M_B_A1
RN24G M_A_BS#0
RN24H M_B_A10

LCD Power

3V-3.6V
Full Active: 410 mA(Max. 500 mA)



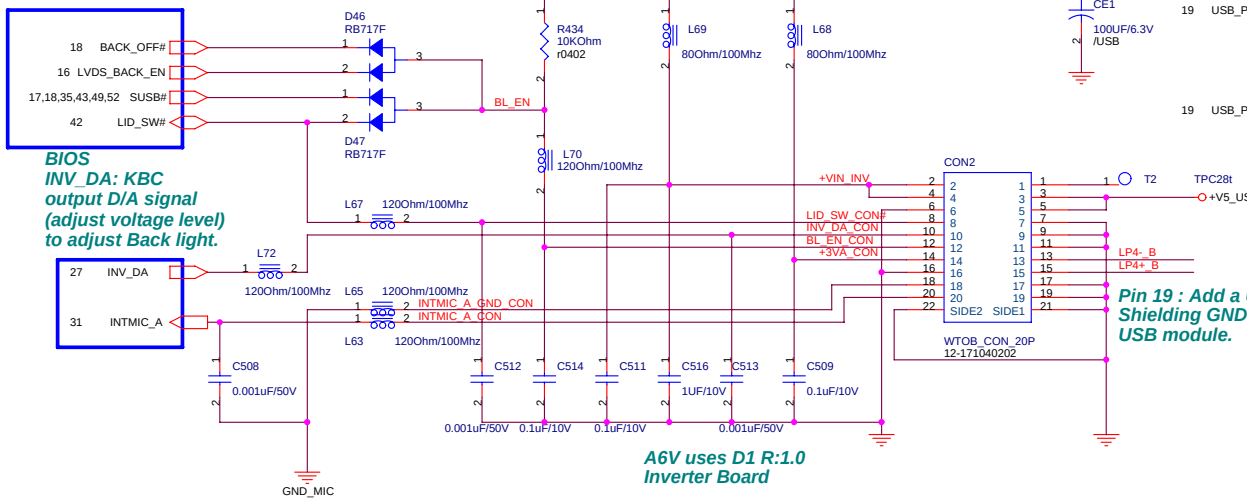
LCD LVDS Interface



Cable Requirement:
Impedence: 100 ohm +/- 10%
Length Mismatch <= 10 mils
Twisted Pair(Not Ribbon)
Maximum Length <= 16"

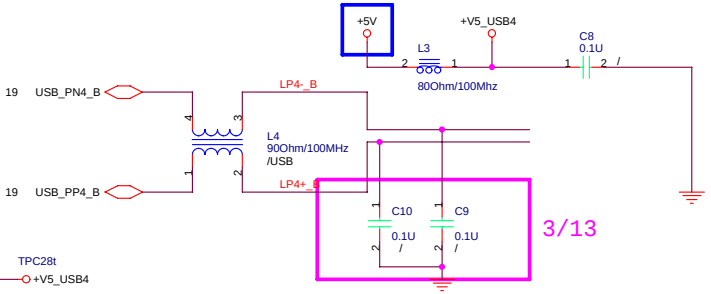
INVERTER Interface

BIOS
BACK_OFF#: When user pushs "Fn+F7" button, BIOS activate this pin to turn off back light.



BIOS
INV_DA: KBC output D/A signal (adjust voltage level) to adjust Back light.

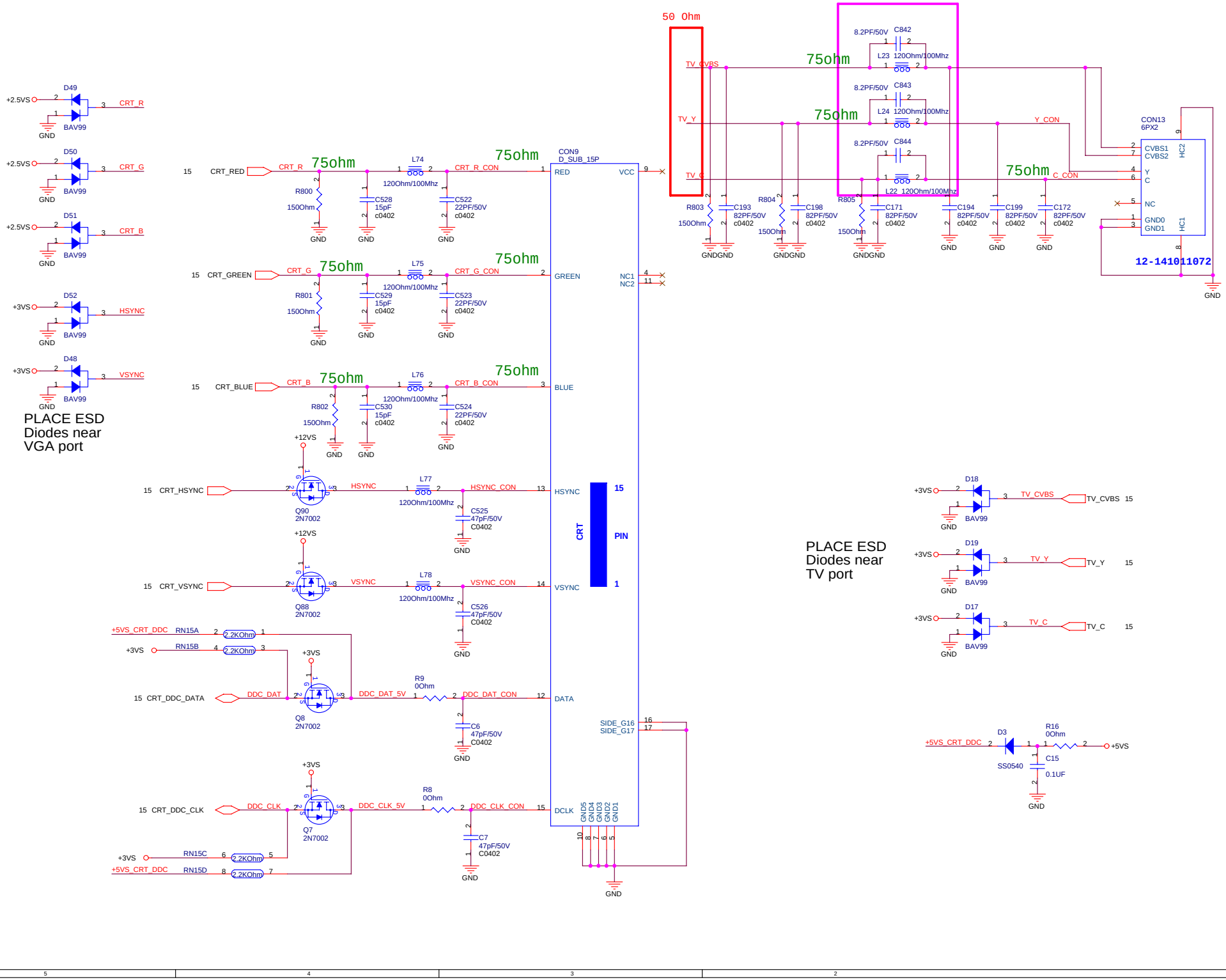
A6V uses D1 R:1.0 Inverter Board

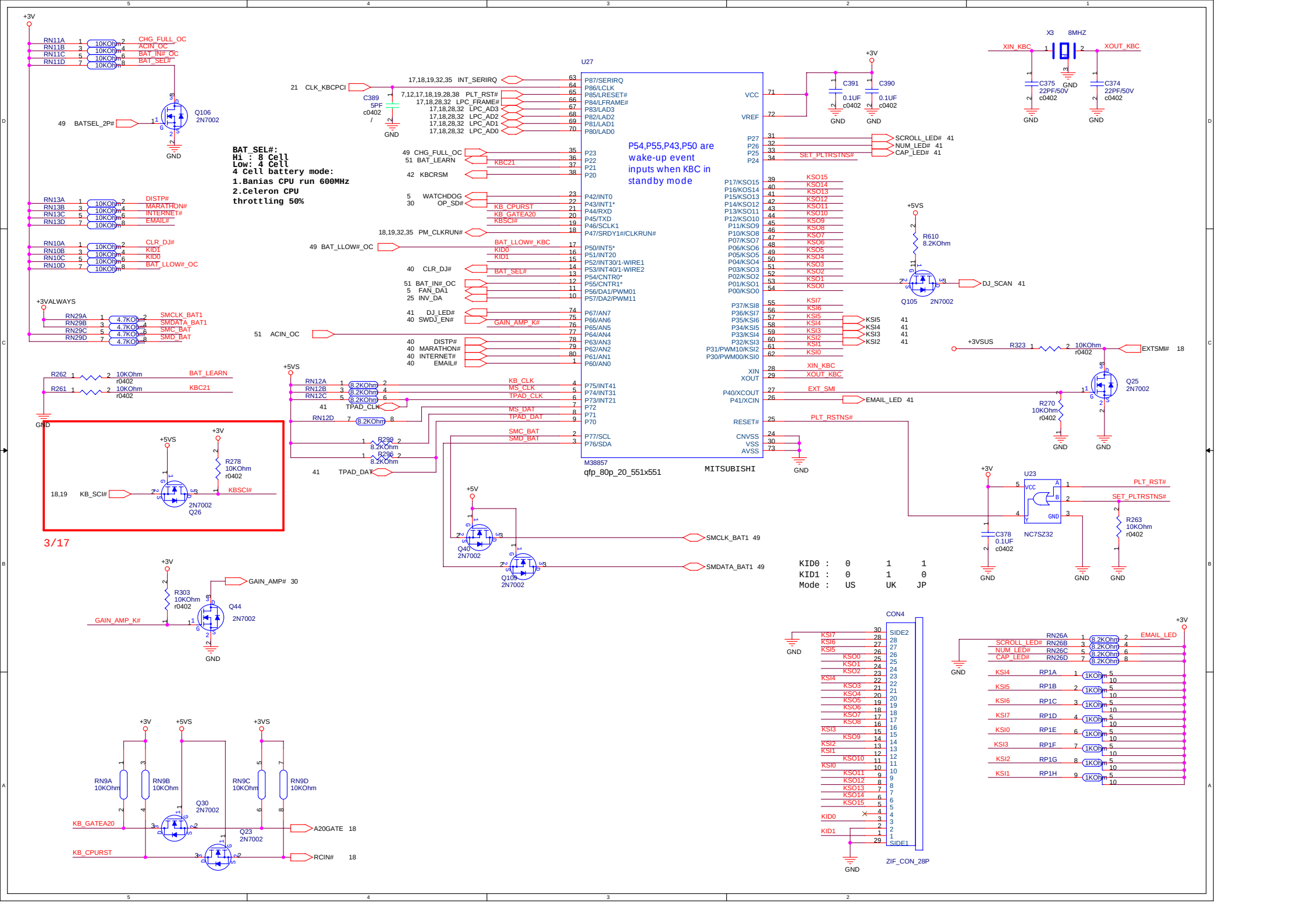


USB PORT 4 for USB CAMERA

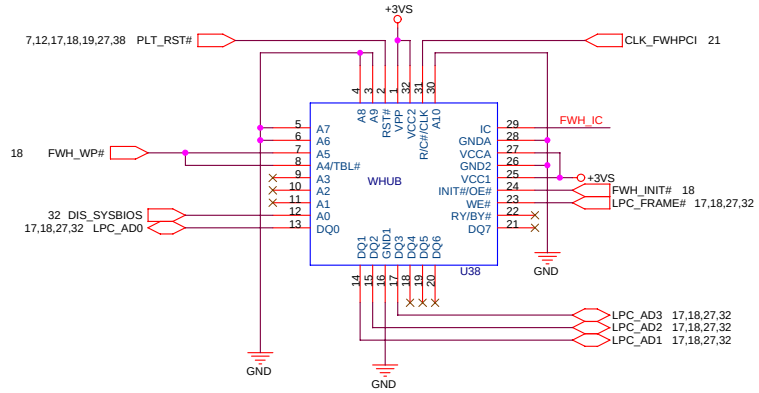
Pin 19 : Add a USB 2.0 Shielding GND cable to USB module.

A6V doesn't support USB WLAN function!

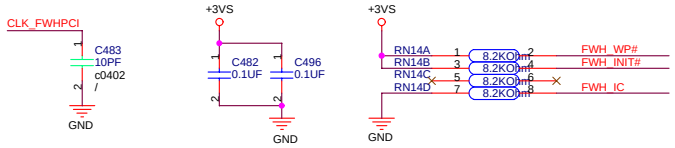

50 Ohm
75ohm
75ohm
75ohm
75ohm
75ohm
75ohm
75ohm
CON9
D_SUB_15P
CON13
6PX2
12-141011072
D49
D50
D51
D52
D48
BAV99
PLACE ESD
Diodes near
VGA port
PLACE ESD
Diodes near
TV port
CRT_R
CRT_G
CRT_B
HSYNC
VSYNC
CRT_RED
CRT_GREEN
CRT_BLUE
CRT_HSYNC
CRT_VSYNC
CRT_DDC_DATA
CRT_DDC_CLK
TV_CVBS
TV_Y
TV_C
Y_CON
C_CON
L74
L75
L76
L77
L78
L23 120Ohm/100Mhz
L24 120Ohm/100Mhz
L22 120Ohm/100Mhz
120Ohm/100Mhz
R800
R801
R802
R803
R804
R805
150Ohm
C528 15pF c0402
C529 15pF c0402
C530 15pF c0402
C522 22PF/50V c0402
C523 22PF/50V c0402
C524 22PF/50V c0402
C525 47pF/50V C0402
C526 47pF/50V C0402
C6 47pF/50V C0402
C7 47pF/50V C0402
C842 8.2PF/50V
C843 8.2PF/50V
C844 8.2PF/50V
C193 82PF/50V c0402
C198 82PF/50V c0402
C171 82PF/50V c0402
C194 82PF/50V c0402
C199 82PF/50V c0402
C172 82PF/50V c0402
Q90 2N7002
Q88 2N7002
Q8 2N7002
Q7 2N7002
R9 0Ohm
R8 0Ohm
R16 0Ohm
C15 0.1UF
SS0540
RN15A 2.2KOhm
RN15B 2.2KOhm
RN15C 2.2KOhm
RN15D 2.2KOhm
+2.5VS
+3VS
+12VS
+5VS
+5VS_CRT_DDC
GND
CRT
PIN
15
1
CVBS1
CVBS2
Y
C
NC
GND0
GND1
HC1
HC2

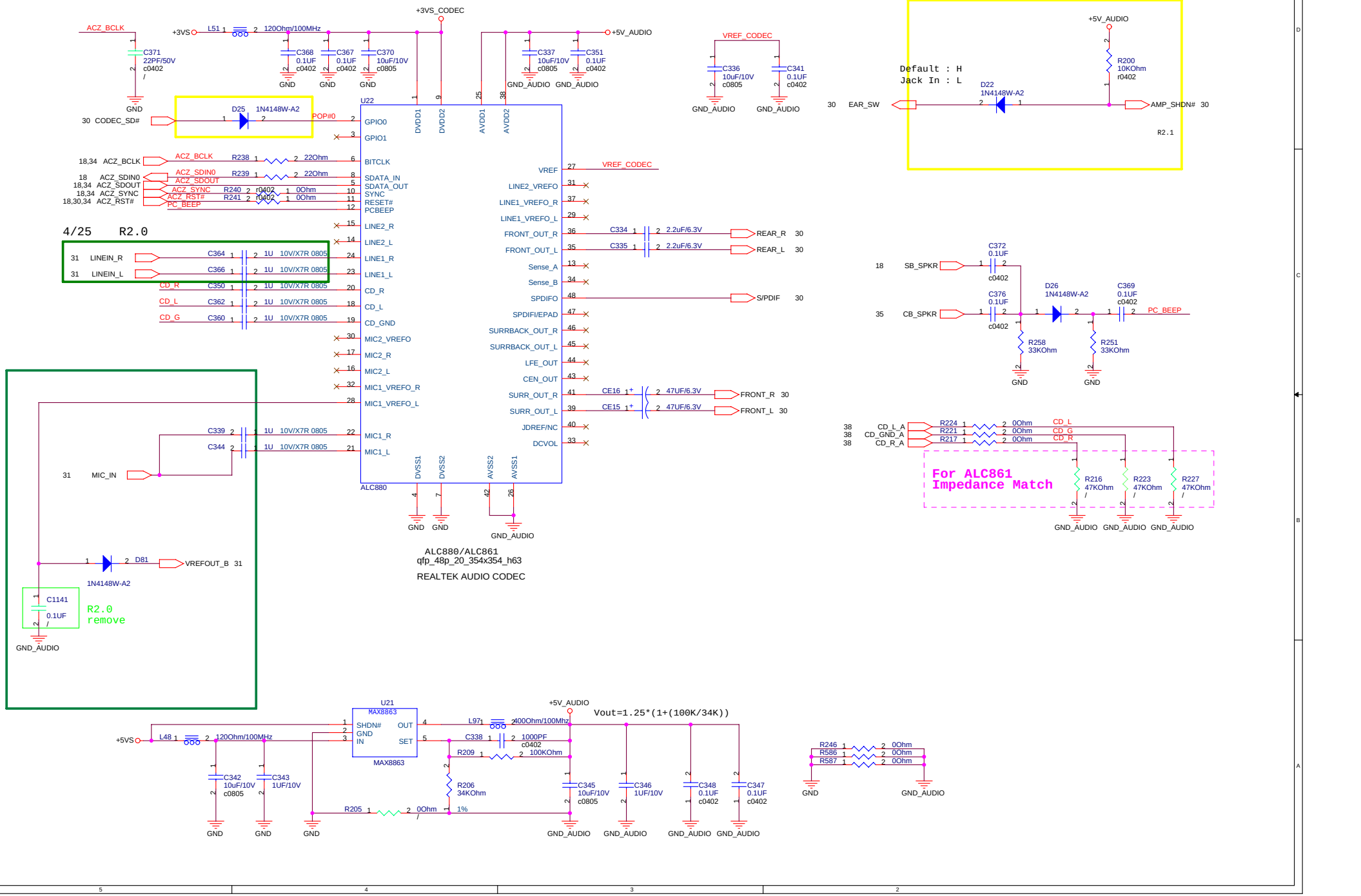

BAT_SEL#:
Hi : 8 Cell
Low: 4 Cell
4 Cell battery mode:
1.Banias CPU run 600MHz
2.Celeron CPU
throttling 50%
P54,P55,P43,P50 are wake-up event inputs when KBC in standby mode
U27
M38857
qfp_80p_20_551x551
MITSUBISHI
X3 8MHZ
KID0 : 0 1 1
KID1 : 0 1 0
Mode : US UK JP
3/17

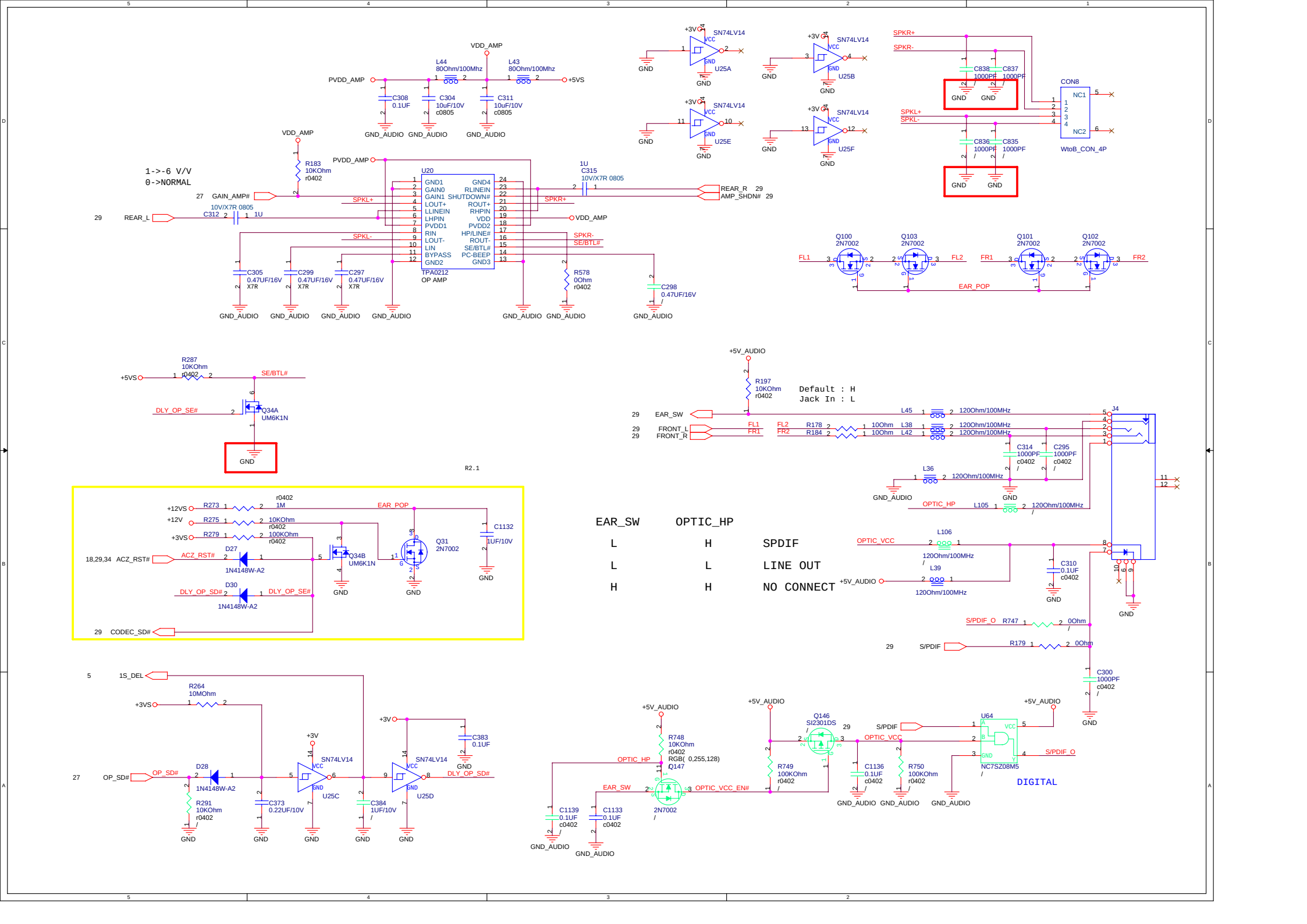
FWH

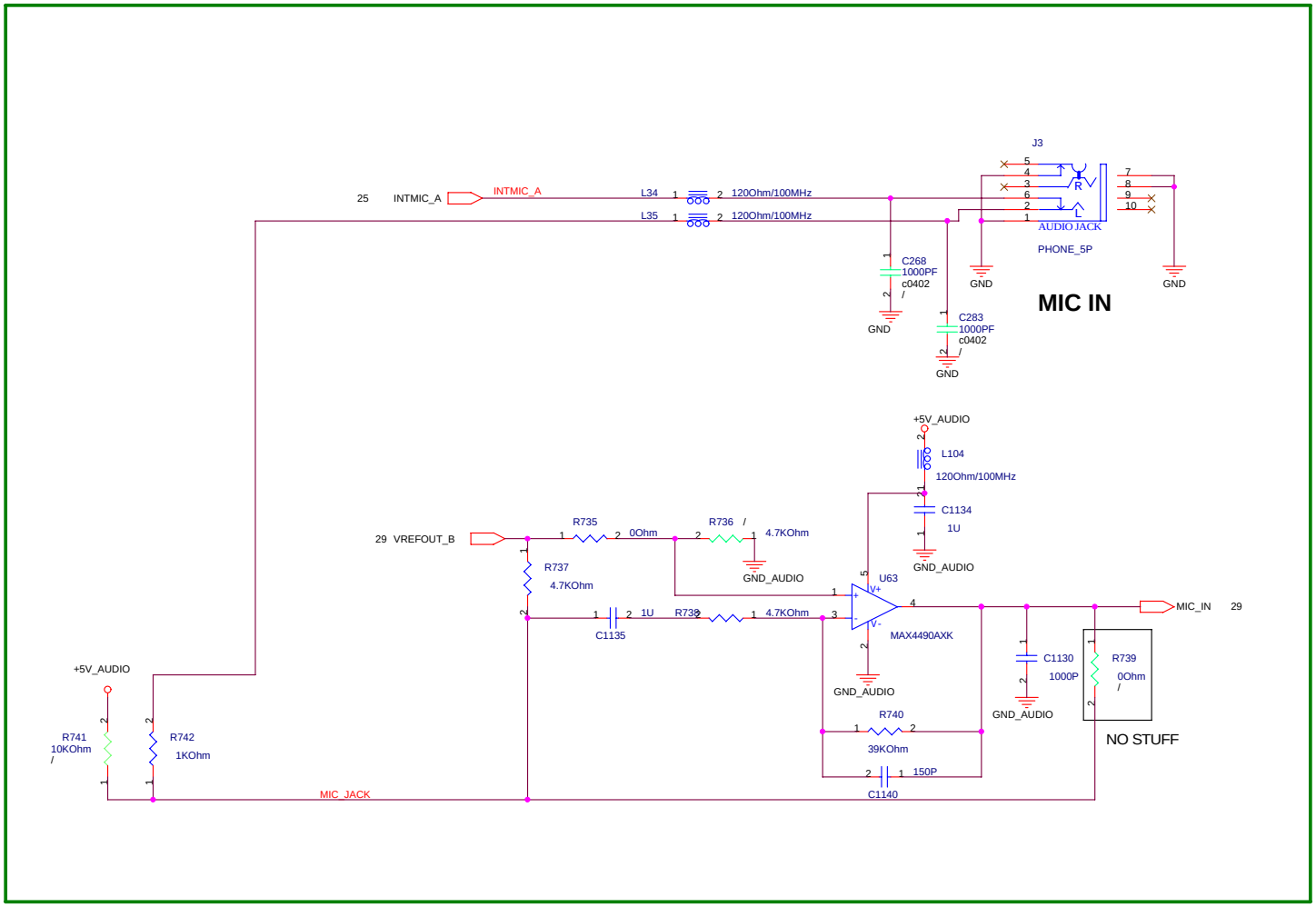


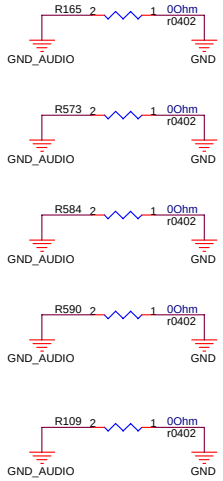
PLCC32 Socket Part Number :
12-043000321
SST FWH/LPC Part Number :
05-001017122(燒)



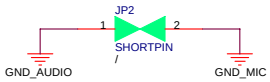

+3VS_CODEC
ACZ_BCLK
+3VS
L51 120Ohm/100MHz
C371 22PF/50V c0402 /
C368 0.1UF c0402
C367 0.1UF c0402
C370 10uF/10V c0805
C337 10uF/10V c0805
C351 0.1UF c0402
+5V_AUDIO
GND
GND_AUDIO
VREF_CODEC
C336 10uF/10V c0805
C341 0.1UF c0402
D25 1N4148W-A2
30 CODEC_SD#
POP#0
U22
GPIO0
GPIO1
DVDD1
DVDD2
AVDD1
AVDD2
18,34 ACZ_BCLK
R238 22Ohm
BITCLK
18 ACZ_SDIN0
18,34 ACZ_SDOUT
18,34 ACZ_SYNC
18,30,34 ACZ_RST#
R239 22Ohm
R240 0Ohm
R241 0Ohm
SDATA_IN
SDATA_OUT
SYNC
RESET#
PCBEEP
PC_BEEP
VREF
VREF_CODEC
LINE2_VREFO
LINE1_VREFO_R
LINE1_VREFO_L
FRONT_OUT_R
FRONT_OUT_L
C334 2.2uF/6.3V
C335 2.2uF/6.3V
REAR_R 30
REAR_L 30
Sense_A
Sense_B
SPDIFO
S/PDIF 30
SPDIFI/EPAD
SURRBACK_OUT_R
SURRBACK_OUT_L
LFE_OUT
CEN_OUT
SURR_OUT_R
SURR_OUT_L
CE16 47UF/6.3V
CE15 47UF/6.3V
FRONT_R 30
FRONT_L 30
JDREF/NC
DCVOL
DVSS1
DVSS2
AVSS2
AVSS1
ALC880
4/25 R2.0
31 LINEIN_R
31 LINEIN_L
C364 1U 10V/X7R 0805
C366 1U 10V/X7R 0805
CD_R
CD_L
CD_G
C350 1U 10V/X7R 0805
C362 1U 10V/X7R 0805
C360 1U 10V/X7R 0805
CD_GND
MIC2_VREFO
MIC2_R
MIC2_L
MIC1_VREFO_R
MIC1_VREFO_L
MIC1_R
MIC1_L
31 MIC_IN
C339 1U 10V/X7R 0805
C344 1U 10V/X7R 0805
D81 1N4148W-A2
VREFOUT_B 31
C1141 0.1UF /
R2.0 remove
ALC880/ALC861
qfp_48p_20_354x354_h63
REALTEK AUDIO CODEC
Default : H
Jack In : L
D22 1N4148W-A2
R200 10KOhm r0402
30 EAR_SW
AMP_SHDN# 30
R2.1
18 SB_SPKR
35 CB_SPKR
C372 0.1UF c0402
C376 0.1UF c0402
D26 1N4148W-A2
C369 0.1UF c0402
PC_BEEP
R258 33KOhm
R251 33KOhm
38 CD_L_A
38 CD_GND_A
38 CD_R_A
R224 0Ohm
R221 0Ohm
R217 0Ohm
CD_L
CD_G
CD_R
For ALC861
Impedance Match
R216 47KOhm /
R223 47KOhm /
R227 47KOhm /
U21
MAX8863
SHDN#
GND
IN
OUT
SET
+5VS
L48 120Ohm/100MHz
L971 600Ohm/100Mhz
C338 1000PF c0402
R209 100KOhm
R206 34KOhm
R205 0Ohm 1%
C342 10uF/10V c0805
C343 1UF/10V
C345 10uF/10V c0805
C346 1UF/10V
C348 0.1UF c0402
C347 0.1UF c0402
Vout=1.25*(1+(100K/34K))
R246 0Ohm
R586 0Ohm
R587 0Ohm

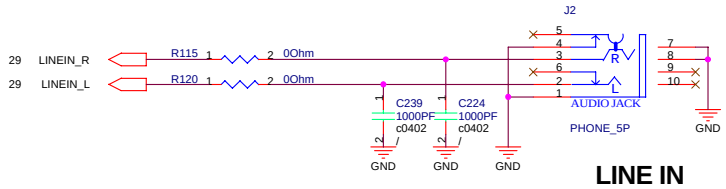

VDD_AMP
L44 80Ohm/100Mhz
L43 80Ohm/100Mhz
PVDD_AMP
+5VS
C308 0.1UF
C304 10uF/10V c0805
C311 10uF/10V c0805
GND_AUDIO
SN74LV14
U25A
U25B
U25E
U25F
GND
SPKR+
SPKR-
SPKL+
SPKL-
C838 1000PF
C837 1000PF
C836 1000PF
C835 1000PF
CON8
NC1
NC2
WtoB_CON_4P
1->-6 V/V
0->NORMAL
R183 10KOhm r0402
GAIN_AMP#
REAR_L
C312 10V/X7R 0805 1U
U20
GND1 GAIN0 GAIN1 LOUT+ LLINEIN LHPIN PVDD1 RIN LOUT- LIN BYPASS GND2
GND4 RLINEIN SHUTDOWN# ROUT+ RHPIN VDD PVDD2 HP/LINE# ROUT- SE/BTL# PC-BEEP GND3
TPA0212
OP AMP
1U C315 10V/X7R 0805
REAR_R
AMP_SHDN#
C305 0.47UF/16V X7R
C299 0.47UF/16V X7R
C297 0.47UF/16V X7R
R578 0Ohm r0402
C298 0.47UF/16V
Q100 2N7002
Q103 2N7002
Q101 2N7002
Q102 2N7002
FL1
FL2
FR1
FR2
EAR_POP
R287 10KOhm r0402
SE/BTL#
DLY_OP_SE#
Q34A UM6K1N
R2.1
+12VS
+12V
+3VS
R273 1M
R275 10KOhm r0402
R279 100KOhm r0402
ACZ_RST#
18,29,34 ACZ_RST#
D27 1N4148W-A2
Q34B UM6K1N
Q31 2N7002
C1132 1UF/10V
DLY_OP_SD#
D30 1N4148W-A2
29 CODEC_SD#
+5V_AUDIO
R197 10KOhm r0402
Default : H
Jack In : L
EAR_SW
FRONT_L
FRONT_R
R178 10Ohm
R184 10Ohm
L45 120Ohm/100MHz
L38 120Ohm/100MHz
L42 120Ohm/100MHz
L36 120Ohm/100MHz
L105 120Ohm/100MHz
J4
C314 1000PF c0402
C295 1000PF c0402
OPTIC_HP
EAR_SW OPTIC_HP
L H SPDIF
L L LINE OUT
H H NO CONNECT
OPTIC_VCC
L106 120Ohm/100MHz
L39 120Ohm/100MHz
C310 0.1UF c0402
S/PDIF_O
R747 0Ohm
S/PDIF
R179 0Ohm
C300 1000PF c0402
5 1S_DEL
R264 10MOhm
27 OP_SD#
D28 1N4148W-A2
R291 10KOhm r0402
C373 0.22UF/10V
C384 1UF/10V
C383 0.1UF
U25C
U25D
R748 10KOhm r0402 RGB(0,255,128) Q147
2N7002
OPTIC_VCC_EN#
R749 100KOhm r0402
R750 100KOhm r0402
C1136 0.1UF c0402
C1139 0.1UF c0402
C1133 0.1UF c0402
Q146 SI2301DS
U64 NC7SZ08M5
DIGITAL

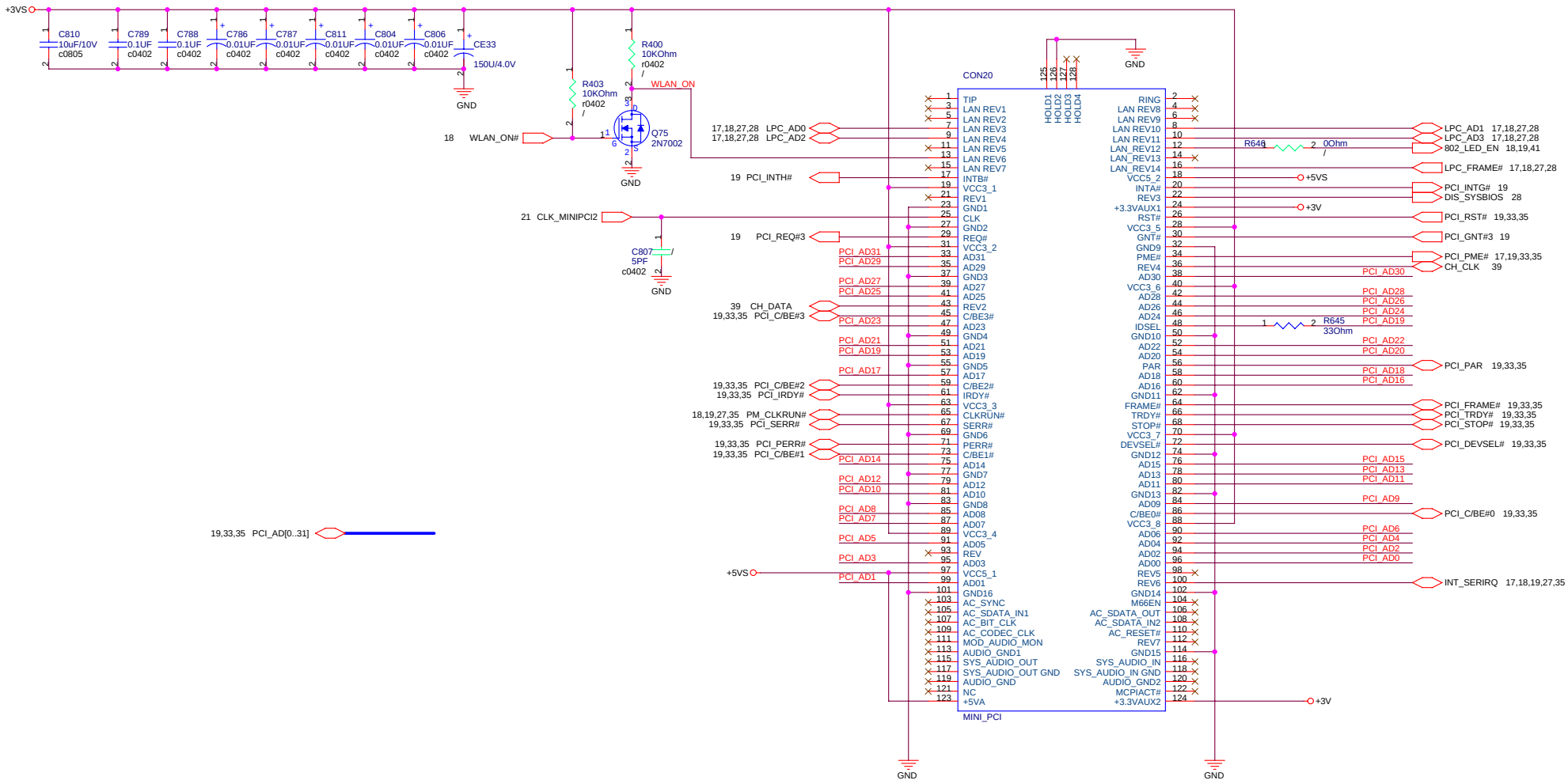


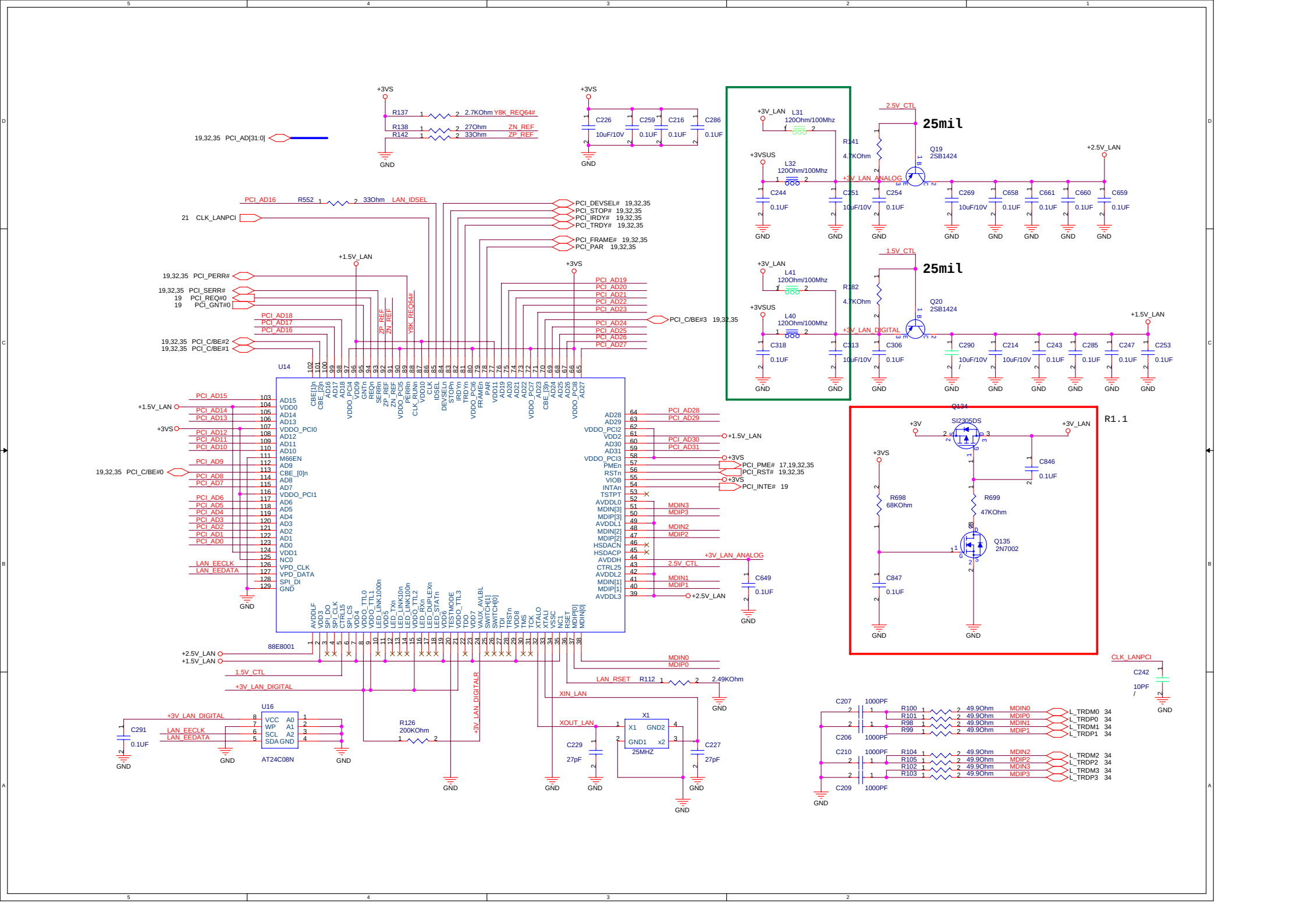


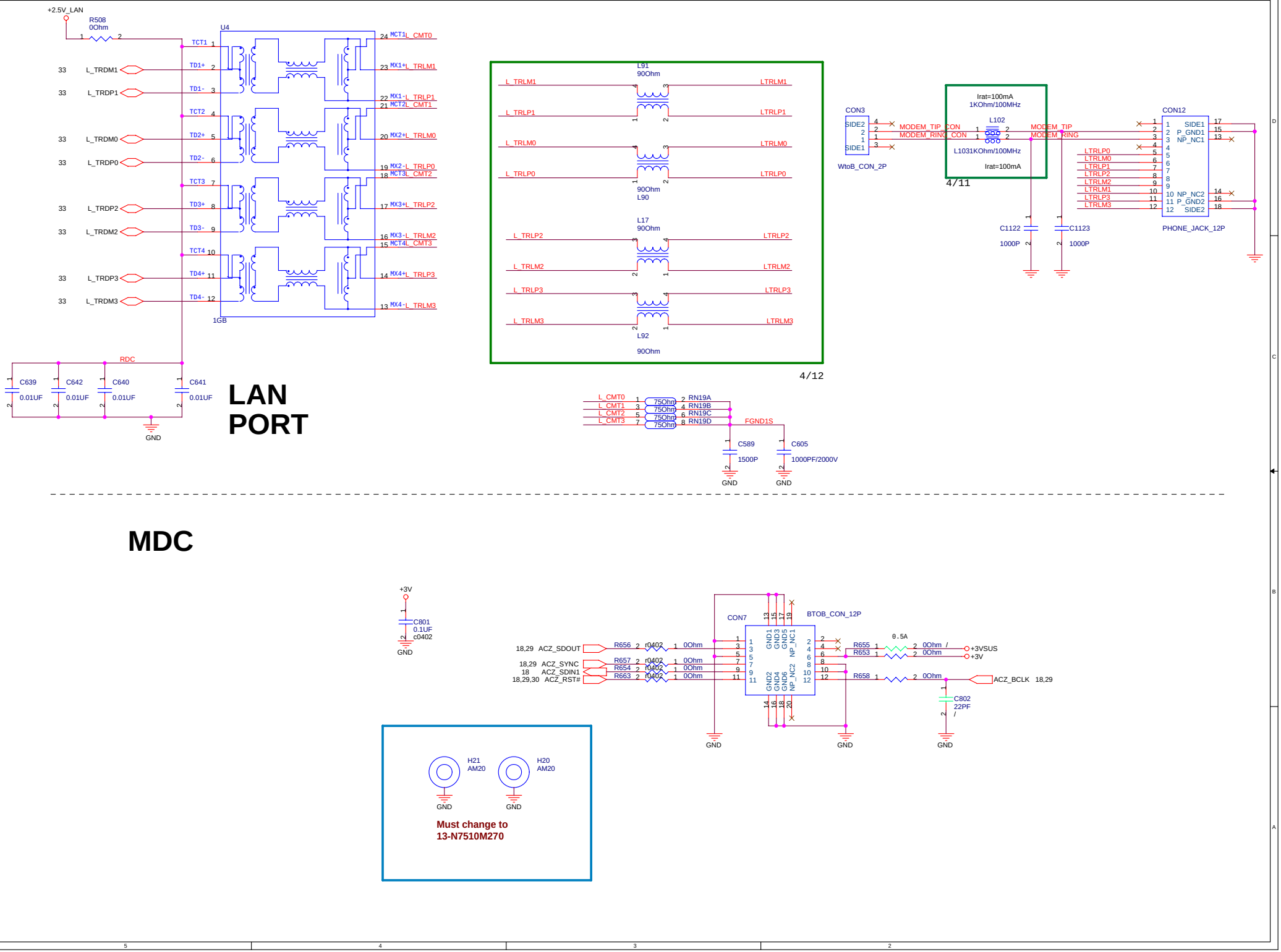
INTMIC_A:GND_AUDIO : W/P/X = 12/5/15mils

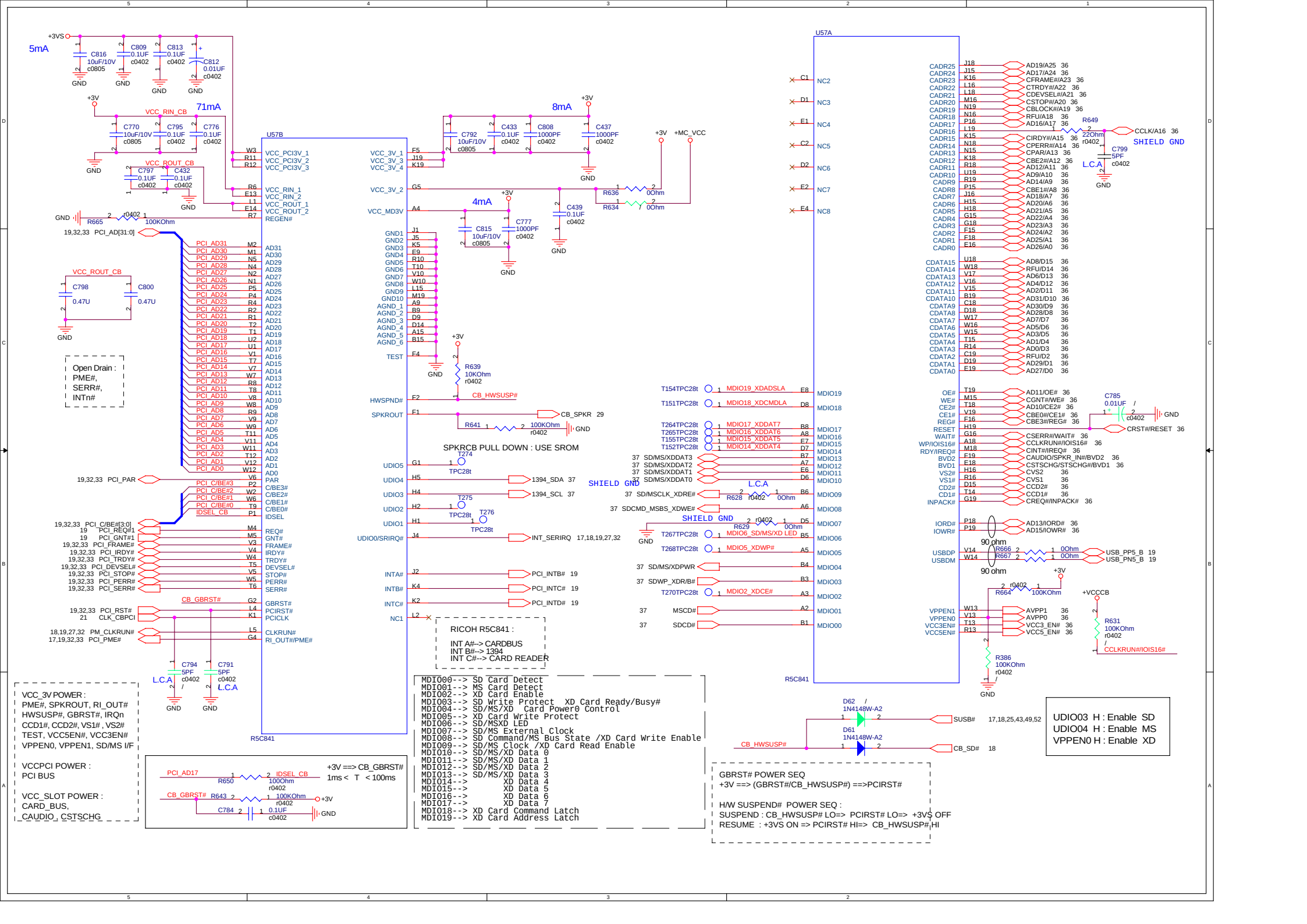


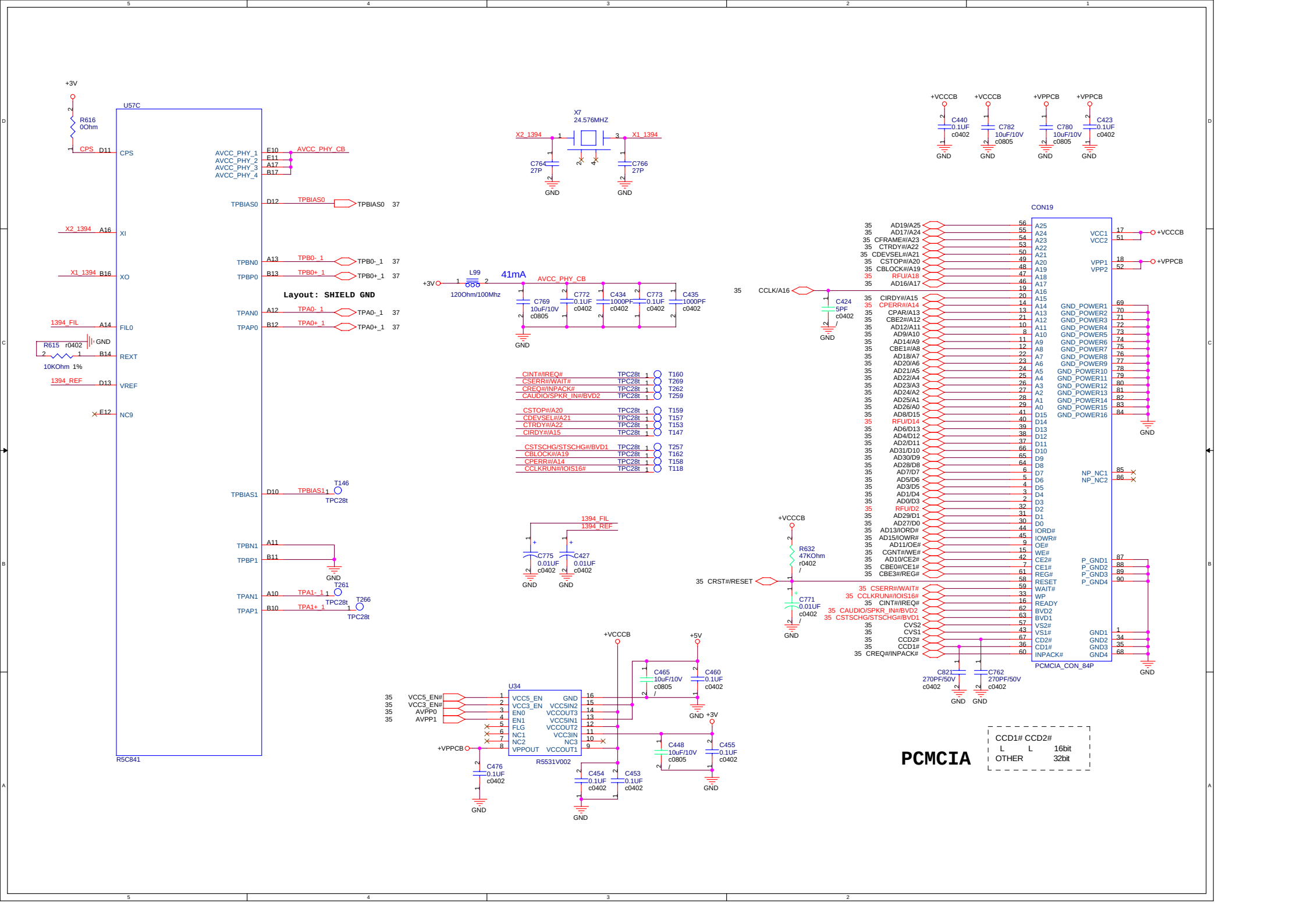


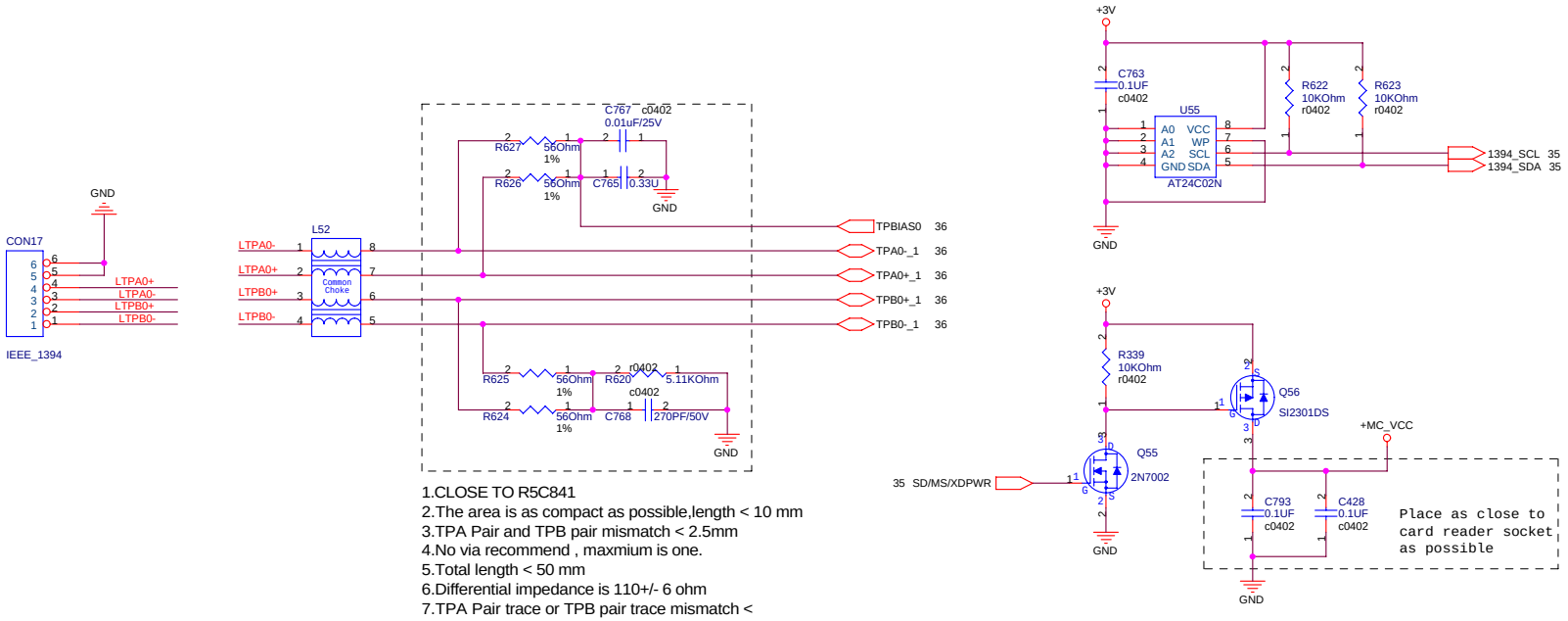

+3VS
C810 10uF/10V c0805
C789 0.1UF c0402
C788 0.1UF c0402
C786 0.01UF c0402
C787 0.01UF c0402
C811 0.01UF c0402
C804 0.01UF c0402
C806 0.01UF c0402
CE33 150U/4.0V
GND
R403 10KOhm r0402 /
R400 10KOhm r0402 /
WLAN_ON
Q75 2N7002
18 WLAN_ON#
GND
21 CLK_MINIPCI2
C807 5PF c0402 /
19 PCI_INTH#
19 PCI_REQ#3
39 CH_DATA
19,33,35 PCI_C/BE#3
19,33,35 PCI_C/BE#2
19,33,35 PCI_IRDY#
18,19,27,35 PM_CLKRUN#
19,33,35 PCI_SERR#
19,33,35 PCI_PERR#
19,33,35 PCI_C/BE#1
19,33,35 PCI_AD[0..31]
+5VS
17,18,27,28 LPC_AD0
17,18,27,28 LPC_AD2
CON20
MINI_PCI
TIP
LAN REV1
LAN REV2
LAN REV3
LAN REV4
LAN REV5
LAN REV6
LAN REV7
INTB#
VCC3_1
REV1
GND1
CLK
GND2
REQ#
VCC3_2
AD31
AD29
GND3
AD27
AD25
REV2
C/BE3#
AD23
GND4
AD21
AD19
GND5
AD17
C/BE2#
IRDY#
VCC3_3
CLKRUN#
SERR#
GND6
PERR#
C/BE1#
AD14
GND7
AD12
AD10
GND8
AD08
AD07
VCC3_4
AD05
REV
AD03
VCC5_1
AD01
GND16
AC_SYNC
AC_SDATA_IN1
AC_BIT_CLK
AC_CODEC_CLK
MOD_AUDIO_MON
AUDIO_GND1
SYS_AUDIO_OUT
SYS_AUDIO_OUT GND
AUDIO_GND
NC
+5VA
HOLD1
HOLD2
HOLD3
HOLD4
RING
LAN REV8
LAN REV9
LAN REV10
LAN REV11
LAN_REV12
LAN_REV13
LAN_REV14
VCC5_2
INTA#
REV3
+3.3VAUX1
RST#
VCC3_5
GNT#
GND9
PME#
REV4
AD30
VCC3_6
AD28
AD26
AD24
IDSEL
GND10
AD22
AD20
PAR
AD18
AD16
GND11
FRAME#
TRDY#
STOP#
VCC3_7
DEVSEL#
GND12
AD15
AD13
AD11
GND13
AD09
C/BE0#
VCC3_8
AD06
AD04
AD02
AD00
REV5
REV6
GND14
M66EN
AC_SDATA_OUT
AC_SDATA_IN2
AC_RESET#
REV7
GND15
SYS_AUDIO_IN
SYS_AUDIO_IN GND
AUDIO_GND2
MCPIACT#
+3.3VAUX2
R646 0Ohm /
R645 33Ohm
+5VS
+3V
LPC_AD1 17,18,27,28
LPC_AD3 17,18,27,28
802_LED_EN 18,19,41
LPC_FRAME# 17,18,27,28
PCI_INTG# 19
DIS_SYSBIOS 28
PCI_RST# 19,33,35
PCI_GNT#3 19
PCI_PME# 17,19,33,35
CH_CLK 39
PCI_AD30
PCI_AD28
PCI_AD26
PCI_AD24
PCI_AD19
PCI_AD22
PCI_AD20
PCI_PAR 19,33,35
PCI_AD18
PCI_AD16
PCI_FRAME# 19,33,35
PCI_TRDY# 19,33,35
PCI_STOP# 19,33,35
PCI_DEVSEL# 19,33,35
PCI_AD15
PCI_AD13
PCI_AD11
PCI_AD9
PCI_C/BE#0 19,33,35
PCI_AD6
PCI_AD4
PCI_AD2
PCI_AD0
INT_SERIRQ 17,18,19,27,35
+3V
PCI_AD31
PCI_AD29
PCI_AD27
PCI_AD25
PCI_AD23
PCI_AD21
PCI_AD19
PCI_AD17
PCI_AD14
PCI_AD12
PCI_AD10
PCI_AD8
PCI_AD7
PCI_AD5
PCI_AD3
PCI_AD1


19,32,35 PCI_AD[31:0]
+3VS
R137 2.7KOhm Y8K_REQ64#
R138 27Ohm ZN_REF
R142 33Ohm ZP_REF
GND
C226 10uF/10V
C259 0.1UF
C216 0.1UF
C286 0.1UF
PCI_AD16
R552 33Ohm LAN_IDSEL
21 CLK_LANPCI
19,32,35 PCI_PERR#
19,32,35 PCI_SERR#
19 PCI_REQ#0
19 PCI_GNT#0
PCI_AD18
PCI_AD17
PCI_AD16
19,32,35 PCI_C/BE#2
19,32,35 PCI_C/BE#1
+1.5V_LAN
ZP_REF
ZN_REF
Y8K_REQ64#
PCI_DEVSEL# 19,32,35
PCI_STOP# 19,32,35
PCI_IRDY# 19,32,35
PCI_TRDY# 19,32,35
PCI_FRAME# 19,32,35
PCI_PAR 19,32,35
PCI_AD19
PCI_AD20
PCI_AD21
PCI_AD22
PCI_AD23
PCI_C/BE#3 19,32,35
PCI_AD24
PCI_AD25
PCI_AD26
PCI_AD27
U14
PCI_AD15
PCI_AD14
PCI_AD13
PCI_AD12
PCI_AD11
PCI_AD10
PCI_AD9
PCI_AD8
PCI_AD7
PCI_AD6
PCI_AD5
PCI_AD4
PCI_AD3
PCI_AD2
PCI_AD1
PCI_AD0
19,32,35 PCI_C/BE#0
LAN_EECLK
LAN_EEDATA
AD15
VDD0
AD14
AD13
VDDO_PCI0
AD12
AD11
AD10
M66EN
AD9
CBE_[0]n
AD8
AD7
VDDO_PCI1
AD6
AD5
AD4
AD3
AD2
AD1
AD0
VDD1
NC0
VPD_CLK
VPD_DATA
SPI_DI
GND
AD28
AD29
VDDO_PCI2
VDD2
AD30
AD31
VDDO_PCI3
PMEn
RSTn
VIOB
INTAn
TSTPT
AVDDL0
MDIN[3]
MDIP[3]
AVDDL1
MDIN[2]
MDIP[2]
HSDACN
HSDACP
AVDDH
CTRL25
AVDDL2
MDIN[1]
MDIP[1]
AVDDL3
PCI_AD28
PCI_AD29
PCI_AD30
PCI_AD31
+1.5V_LAN
+3VS
PCI_PME# 17,19,32,35
PCI_RST# 19,32,35
PCI_INTE# 19
MDIN3
MDIP3
MDIN2
MDIP2
+3V_LAN_ANALOG
2.5V_CTL
MDIN1
MDIP1
+2.5V_LAN
C649 0.1UF
88E8001
+2.5V_LAN
+1.5V_LAN
1.5V_CTL
+3V_LAN_DIGITAL
MDIN0
MDIP0
LAN_RSET R112 2.49KOhm
XIN_LAN
XOUT_LAN
+3V_LAN_DIGITALR
U16
+3V_LAN_DIGITAL
LAN_EECLK
LAN_EEDATA
VCC A0
WP A1
SCL A2
SDA GND
AT24C08N
C291 0.1UF
R126 200KOhm
X1
GND2
GND1 x2
25MHZ
C229 27pF
C227 27pF
+3V_LAN L31 120Ohm/100Mhz
+3VSUS L32 120Ohm/100Mhz
R241 4.7KOhm
2.5V_CTL
25mil
Q19 2SB1424
+3V_LAN_ANALOG
+2.5V_LAN
C244 0.1UF
C251 10uF/10V
C254 0.1UF
C269 10uF/10V
C658 0.1UF
C661 0.1UF
C660 0.1UF
C659 0.1UF
+3V_LAN L41 120Ohm/100Mhz
+3VSUS L40 120Ohm/100Mhz
R382 4.7KOhm
1.5V_CTL
25mil
Q20 2SB1424
+3V_LAN_DIGITAL
+1.5V_LAN
C318 0.1UF
C313 10uF/10V
C306 0.1UF
C290 10uF/10V
C214 10uF/10V
C243 0.1UF
C285 0.1UF
C247 0.1UF
C253 0.1UF
Q134 SI2305DS
+3V
+3V_LAN
C846 0.1UF
R698 68KOhm
R699 47KOhm
Q135 2N7002
C847 0.1UF
R1.1
CLK_LANPCI
C242 10PF
C207 1000PF
C206 1000PF
C210 1000PF
C209 1000PF
R100 49.9Ohm MDIN0 L_TRDM0 34
R101 49.9Ohm MDIP0 L_TRDP0 34
R98 49.9Ohm MDIN1 L_TRDM1 34
R99 49.9Ohm MDIP1 L_TRDP1 34
R104 49.9Ohm MDIN2 L_TRDM2 34
R105 49.9Ohm MDIP2 L_TRDP2 34
R102 49.9Ohm MDIN3 L_TRDM3 34
R103 49.9Ohm MDIP3 L_TRDP3 34

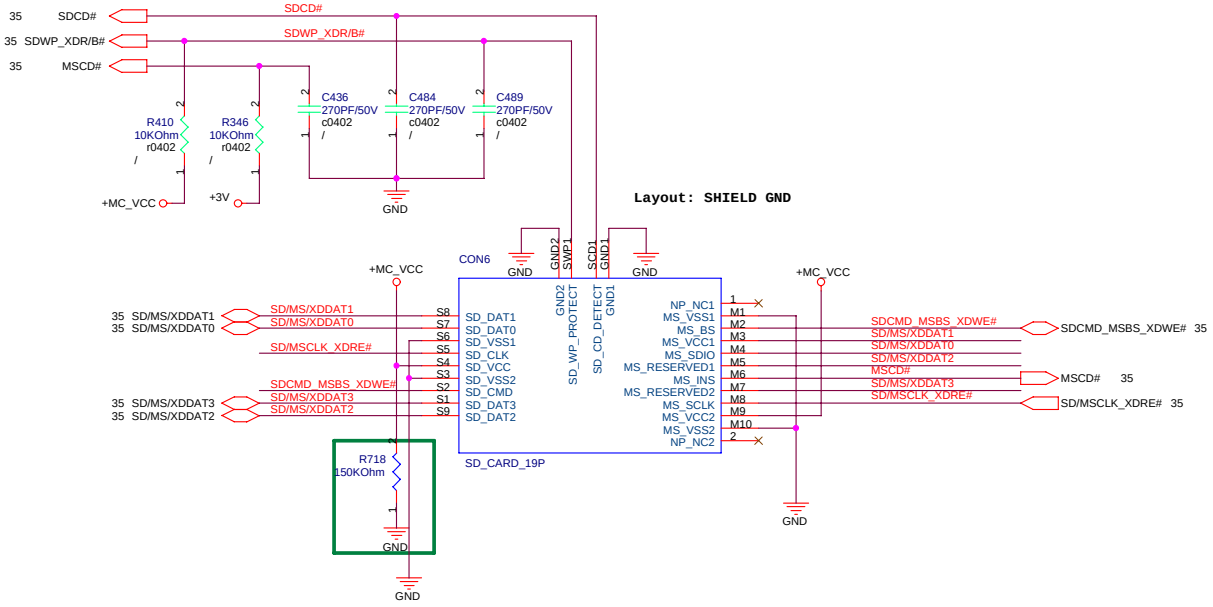

+2.5V_LAN
R508
0Ohm
U4
TCT1
TD1+
TD1-
TCT2
TD2+
TD2-
TCT3
TD3+
TD3-
TCT4
TD4+
TD4-
L_TRDM1
L_TRDP1
L_TRDM0
L_TRDP0
L_TRDP2
L_TRDM2
L_TRDP3
L_TRDM3
33
MCT1L_CMT0
MX1+L_TRLM1
MX1-L_TRLP1
MCT2L_CMT1
MX2+L_TRLM0
MX2-L_TRLP0
MCT3L_CMT2
MX3+L_TRLP2
MX3-L_TRLM2
MCT4L_CMT3
MX4+L_TRLP3
MX4-L_TRLM3
1GB
RDC
C639
C642
C640
C641
0.01UF
GND
LAN
PORT
L91
90Ohm
L_TRLM1
L_TRLP1
L_TRLM0
L_TRLP0
L90
L17
L_TRLP2
L_TRLM2
L_TRLP3
L_TRLM3
L92
LTRLM1
LTRLP1
LTRLM0
LTRLP0
LTRLP2
LTRLM2
LTRLP3
LTRLM3
4/12
CON3
SIDE2
SIDE1
WtoB_CON_2P
MODEM_TIP_CON
MODEM_RING_CON
Irat=100mA
1KOhm/100MHz
L102
L1031KOhm/100MHz
4/11
MODEM_TIP
MODEM_RING
C1122
C1123
1000P
CON12
SIDE1
P_GND1
NP_NC1
NP_NC2
P_GND2
SIDE2
PHONE_JACK_12P
L_CMT0
L_CMT1
L_CMT2
L_CMT3
75Ohm
RN19A
RN19B
RN19C
RN19D
FGND1S
C589
1500P
C605
1000PF/2000V
MDC
+3V
C801
0.1UF
c0402
CON7
BTOB_CON_12P
GND1
GND3
GND5
NP_NC1
GND2
GND4
GND6
NP_NC2
18,29 ACZ_SDOUT
18,29 ACZ_SYNC
18 ACZ_SDIN1
18,29,30 ACZ_RST#
R656
R657
R654
R663
r0402
0Ohm
0.5A
R655
R653
R658
+3VSUS
+3V
ACZ_BCLK 18,29
C802
22PF
H21
AM20
H20
AM20
Must change to
13-N7510M270

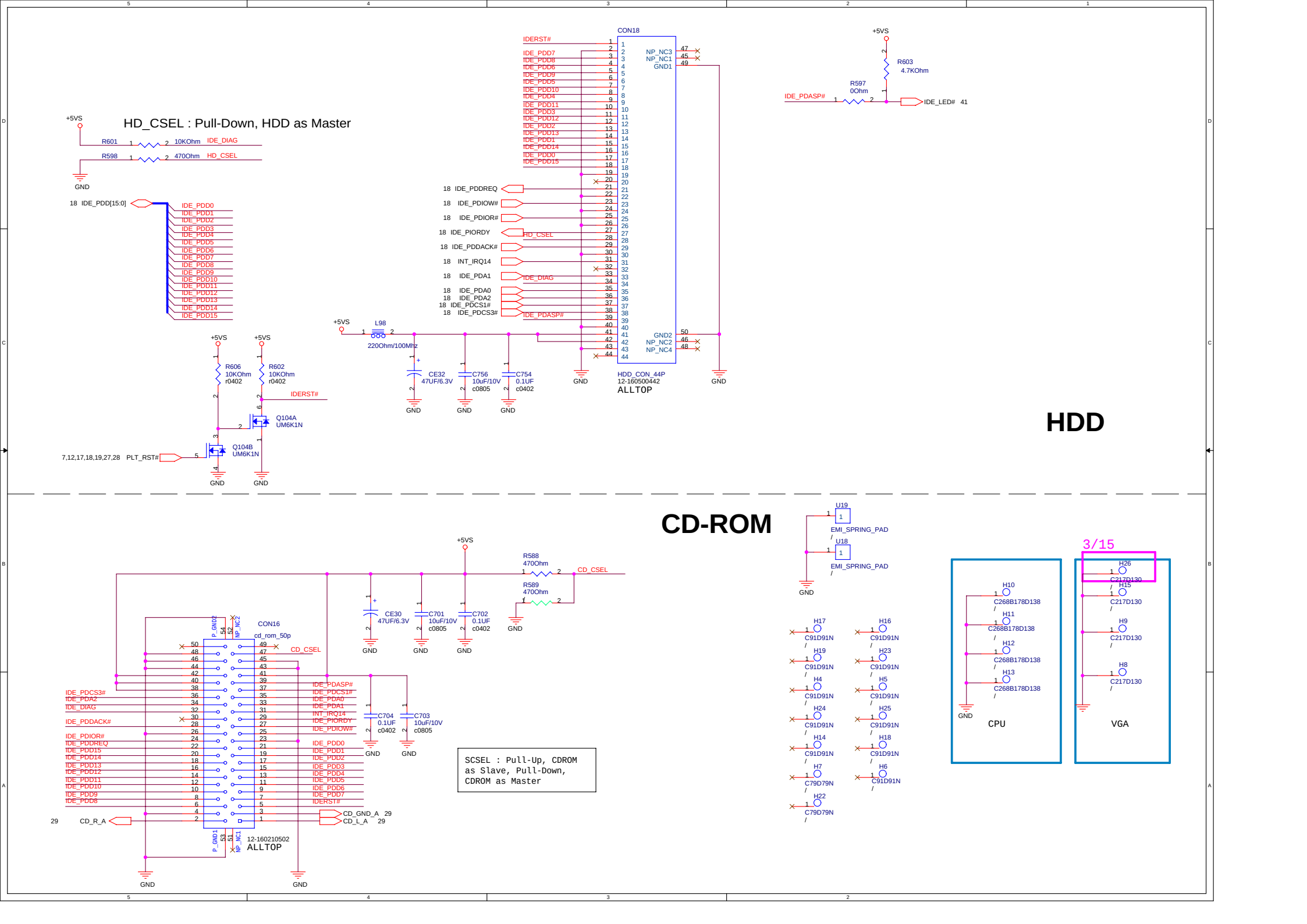

5mA
71mA
8mA
4mA
U57B
U57A
R5C841
Open Drain :
PME#,
SERR#,
INTn#
SPKRCB PULL DOWN : USE SROM
RICOH R5C841 :
INT A#--> CARDBUS
INT B#--> 1394
INT C#--> CARD READER
MDIO00--> SD Card Detect
MDIO01--> MS Card Detect
MDIO02--> XD Card Enable
MDIO03--> SD Write Protect XD Card Ready/Busy#
MDIO04--> SD/MS/XD Card Power0 Control
MDIO05--> XD Card Write Protect
MDIO06--> SD/MSXD LED
MDIO07--> SD/MS External Clock
MDIO08--> SD Command/MS Bus State /XD Card Write Enable
MDIO09--> SD/MS Clock /XD Card Read Enable
MDIO10--> SD/MS/XD Data 0
MDIO11--> SD/MS/XD Data 1
MDIO12--> SD/MS/XD Data 2
MDIO13--> SD/MS/XD Data 3
MDIO14--> XD Data 4
MDIO15--> XD Data 5
MDIO16--> XD Data 6
MDIO17--> XD Data 7
MDIO18--> XD Card Command Latch
MDIO19--> XD Card Address Latch
VCC_3V POWER :
PME#, SPKROUT, RI_OUT#
HWSUSP#, GBRST#, IRQn
CCD1#, CCD2#, VS1# , VS2#
TEST, VCC5EN#, VCC3EN#
VPPEN0, VPPEN1, SD/MS I/F
VCCPCI POWER :
PCI BUS
VCC_SLOT POWER :
CARD_BUS,
CAUDIO , CSTSCHG
+3V ==> CB_GBRST#
1ms < T < 100ms
GBRST# POWER SEQ
+3V ==> (GBRST#/CB_HWSUSP#) ==>PCIRST#
H/W SUSPEND# POWER SEQ :
SUSPEND : CB_HWSUSP# LO=> PCIRST# LO=> +3VS OFF
RESUME : +3VS ON => PCIRST# HI=> CB_HWSUSP#,HI
UDIO03 H : Enable SD
UDIO04 H : Enable MS
VPPEN0 H : Enable XD
SHIELD GND
L.C.A


+3V
R616
0Ohm
CPS D11
U57C
CPS
AVCC_PHY_1 E10
AVCC_PHY_2 E11
AVCC_PHY_3 A17
AVCC_PHY_4 B17
AVCC_PHY_CB
TPBIAS0 D12
TPBIAS0
TPBIAS0 37
X2_1394 A16
XI
TPBN0 A13
TPB0-_1
TPB0-_1 37
X1_1394 B16
XO
TPBP0 B13
TPB0+_1
TPB0+_1 37
Layout: SHIELD GND
TPAN0 A12
TPA0-_1
TPA0-_1 37
1394_FIL A14
FIL0
TPAP0 B12
TPA0+_1
TPA0+_1 37
R615 r0402
GND
10KOhm 1%
REXT B14
1394_REF D13
VREF
E12
NC9
TPBIAS1 D10
TPBIAS1
T146
TPC28t
TPBN1 A11
TPBP1 B11
GND
T261
TPAN1 A10
TPA1-_1
TPC28t
TPAP1 B10
TPA1+_1
T266
TPC28t
R5C841
X7
24.576MHZ
X2_1394
X1_1394
C764
27P
C766
27P
GND
+VCCCB
C440
0.1UF
c0402
C782
10uF/10V
c0805
+VPPCB
C780
10uF/10V
c0805
C423
0.1UF
c0402
L99
120Ohm/100Mhz
41mA
C769
10uF/10V
c0805
C772
0.1UF
c0402
C434
1000PF
c0402
C773
0.1UF
c0402
C435
1000PF
c0402
CINT#/IREQ# TPC28t T160
CSERR#/WAIT# TPC28t T269
CREQ#/INPACK# TPC28t T262
CAUDIO/SPKR_IN#/BVD2 TPC28t T259
CSTOP#/A20 TPC28t T159
CDEVSEL#/A21 TPC28t T157
CTRDY#/A22 TPC28t T153
CIRDY#/A15 TPC28t T147
CSTSCHG/STSCHG#/BVD1 TPC28t T257
CBLOCK#/A19 TPC28t T162
CPERR#/A14 TPC28t T158
CCLKRUN#/IOIS16# TPC28t T118
1394_FIL
1394_REF
C775
0.01UF
c0402
C427
0.01UF
c0402
CON19
CCLK/A16
C424
5PF
c0402
AD19/A25
AD17/A24
CFRAME#/A23
CTRDY#/A22
CDEVSEL#/A21
CSTOP#/A20
CBLOCK#/A19
AD16/A17
CIRDY#/A15
CPERR#/A14
CPAR/A13
CBE2#/A12
AD12/A11
AD9/A10
AD14/A9
CBE1#/A8
AD18/A7
AD20/A6
AD21/A5
AD22/A4
AD23/A3
AD24/A2
AD25/A1
AD26/A0
AD8/D15
RFU/D14
AD6/D13
AD4/D12
AD2/D11
AD31/D10
AD30/D9
AD28/D8
AD7/D7
AD5/D6
AD3/D5
AD1/D4
AD0/D3
RFU/D2
AD29/D1
AD27/D0
AD13/IORD#
AD15/IOWR#
AD11/OE#
CGNT#/WE#
AD10/CE2#
CBE0#/CE1#
CBE3#/REG#
VCC1
VCC2
VPP1
VPP2
GND_POWER1
GND_POWER2
GND_POWER3
GND_POWER4
GND_POWER5
GND_POWER6
GND_POWER7
GND_POWER8
GND_POWER9
GND_POWER10
GND_POWER11
GND_POWER12
GND_POWER13
GND_POWER14
GND_POWER15
GND_POWER16
NP_NC1
NP_NC2
P_GND1
P_GND2
P_GND3
P_GND4
GND1
GND2
GND3
GND4
IORD#
IOWR#
OE#
WE#
CE2#
CE1#
REG#
RESET
WAIT#
WP
READY
BVD2
BVD1
VS2#
VS1#
CD2#
CD1#
INPACK#
PCMCIA_CON_84P
+VCCCB
R632
47KOhm
r0402
CRST#/RESET
C771
0.01UF
c0402
CSERR#/WAIT#
CCLKRUN#/IOIS16#
CINT#/IREQ#
CAUDIO/SPKR_IN#/BVD2
CSTSCHG/STSCHG#/BVD1
CVS2
CVS1
CCD2#
CCD1#
CREQ#/INPACK#
C821
270PF/50V
c0402
C762
270PF/50V
c0402
U34
VCC5_EN#
VCC3_EN#
AVPP0
AVPP1
VCC5_EN
VCC3_EN
EN0
EN1
FLG
NC1
NC2
VPPOUT
GND
VCC5IN2
VCCOUT3
VCC5IN1
VCCOUT2
VCC3IN
NC3
VCCOUT1
R5531V002
+5V
C465
10uF/10V
c0805
C460
0.1UF
c0402
C448
10uF/10V
c0805
C455
0.1UF
c0402
C476
0.1UF
c0402
C454
0.1UF
c0402
C453
0.1UF
c0402
PCMCIA
CCD1# CCD2#
L L 16bit
OTHER 32bit

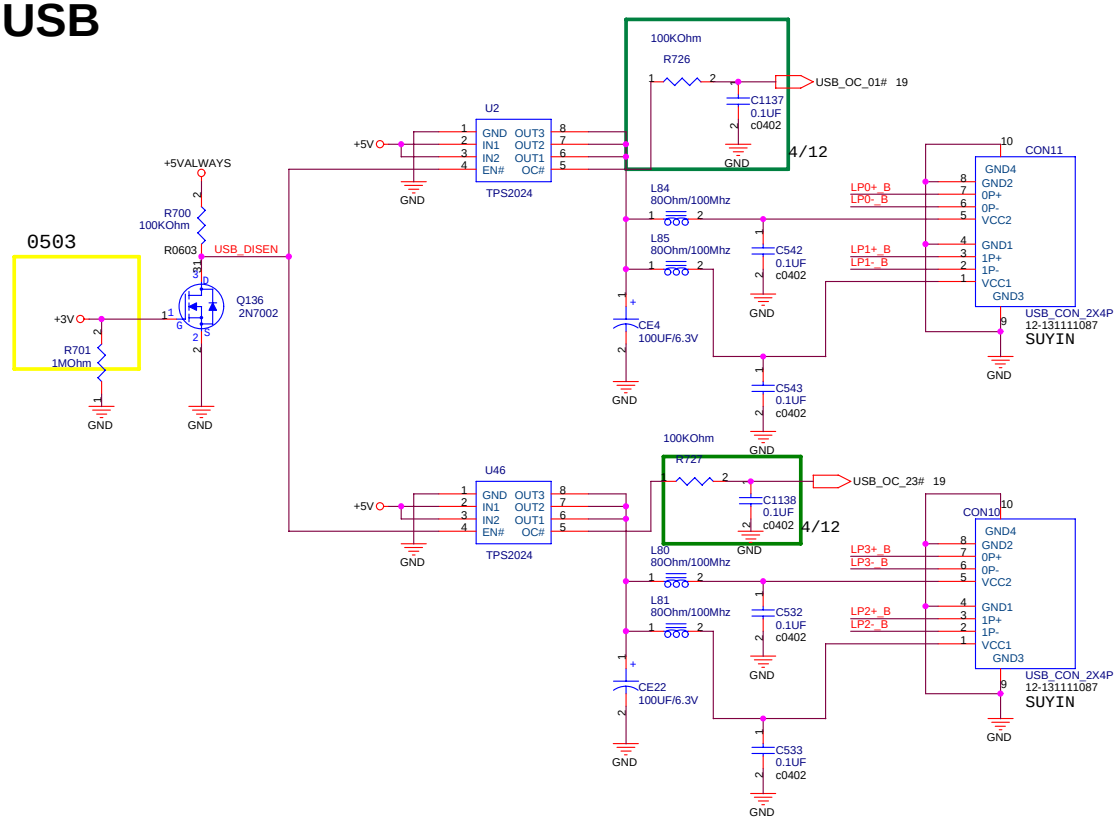


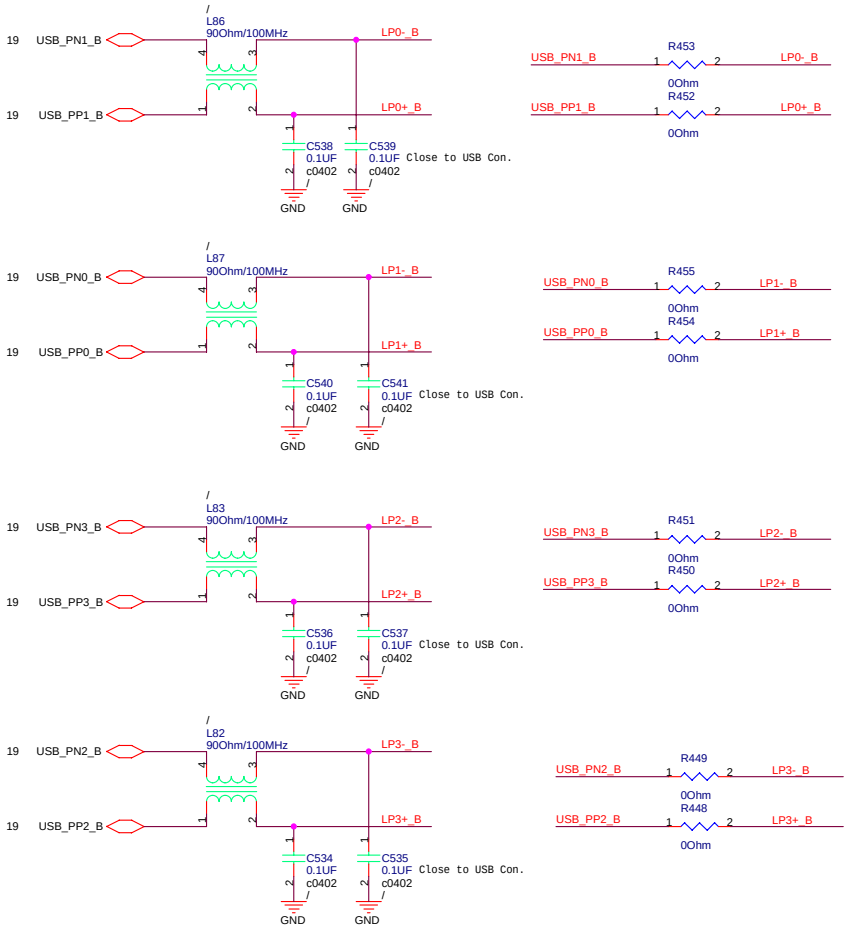
1.CLOSE TO R5C841
2.The area is as compact as possible,length < 10 mm
3.TPA Pair and TPB pair mismatch < 2.5mm
4.No via recommend , maxmium is one.
5.Total length < 50 mm
6.Differential impedance is 110+/- 6 ohm
7.TPA Pair trace or TPB pair trace mismatch < 1.25mm



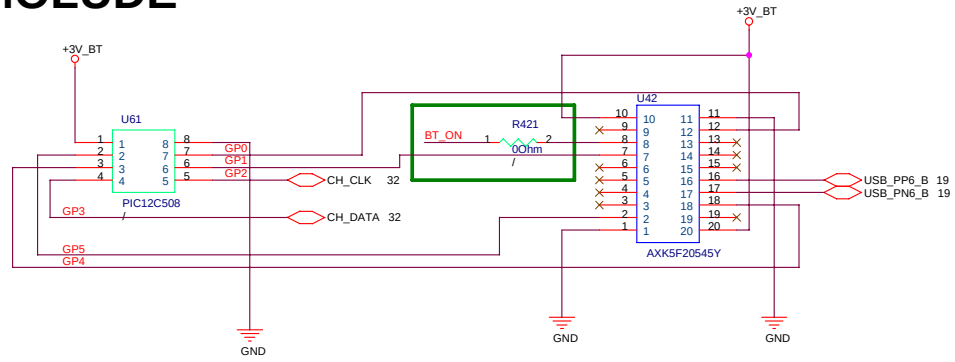

HD_CSEL : Pull-Down, HDD as Master
+5VS
R601 10KOhm IDE_DIAG
R598 470Ohm HD_CSEL
GND
18 IDE_PDD[15:0]
IDE_PDD0
IDE_PDD1
IDE_PDD2
IDE_PDD3
IDE_PDD4
IDE_PDD5
IDE_PDD6
IDE_PDD7
IDE_PDD8
IDE_PDD9
IDE_PDD10
IDE_PDD11
IDE_PDD12
IDE_PDD13
IDE_PDD14
IDE_PDD15
R606 10KOhm r0402
R602 10KOhm r0402
IDERST#
Q104A UM6K1N
Q104B UM6K1N
7,12,17,18,19,27,28 PLT_RST#
CON18
IDERST#
IDE_PDD7
IDE_PDD8
IDE_PDD6
IDE_PDD9
IDE_PDD5
IDE_PDD10
IDE_PDD4
IDE_PDD11
IDE_PDD3
IDE_PDD12
IDE_PDD2
IDE_PDD13
IDE_PDD1
IDE_PDD14
IDE_PDD0
IDE_PDD15
NP_NC3
NP_NC1
GND1
GND2
NP_NC2
NP_NC4
18 IDE_PDDREQ
18 IDE_PDIOW#
18 IDE_PDIOR#
18 IDE_PIORDY
HD_CSEL
18 IDE_PDDACK#
18 INT_IRQ14
18 IDE_PDA1
IDE_DIAG
18 IDE_PDA0
18 IDE_PDA2
18 IDE_PDCS1#
18 IDE_PDCS3#
IDE_PDASP#
L98 220Ohm/100Mhz
CE32 47UF/6.3V
C756 10uF/10V c0805
C754 0.1UF c0402
HDD_CON_44P
12-160500442
ALLTOP
R603 4.7KOhm
R597 0Ohm
IDE_PDASP#
IDE_LED# 41
HDD
CD-ROM
R588 470Ohm
R589 470Ohm
CD_CSEL
CE30 47UF/6.3V
C701 10uF/10V c0805
C702 0.1UF c0402
CON16
cd_rom_50p
P_GND2
NP_NC2
P_GND1
NP_NC1
IDE_PDCS3#
IDE_PDA2
IDE_DIAG
IDE_PDDACK#
IDE_PDIOR#
IDE_PDDREQ
IDE_PDD15
IDE_PDD14
IDE_PDD13
IDE_PDD12
IDE_PDD11
IDE_PDD10
IDE_PDD9
IDE_PDD8
IDE_PDASP#
IDE_PDCS1#
IDE_PDA0
IDE_PDA1
INT_IRQ14
IDE_PIORDY
IDE_PDIOW#
IDE_PDD0
IDE_PDD1
IDE_PDD2
IDE_PDD3
IDE_PDD4
IDE_PDD5
IDE_PDD6
IDE_PDD7
IDERST#
CD_GND_A 29
CD_L_A 29
29 CD_R_A
C704 0.1UF c0402
C703 10uF/10V c0805
12-160210502
ALLTOP
SCSEL : Pull-Up, CDROM as Slave, Pull-Down, CDROM as Master
U19 EMI_SPRING_PAD
U18 EMI_SPRING_PAD
H17 C91D91N
H16 C91D91N
H19 C91D91N
H23 C91D91N
H4 C91D91N
H5 C91D91N
H24 C91D91N
H25 C91D91N
H14 C91D91N
H18 C91D91N
H7 C79D79N
H6 C91D91N
H22 C79D79N
3/15
H10 C268B178D138
H11 C268B178D138
H12 C268B178D138
H13 C268B178D138
CPU
H26 C217D130
H15 C217D130
H9 C217D130
H8 C217D130
VGA

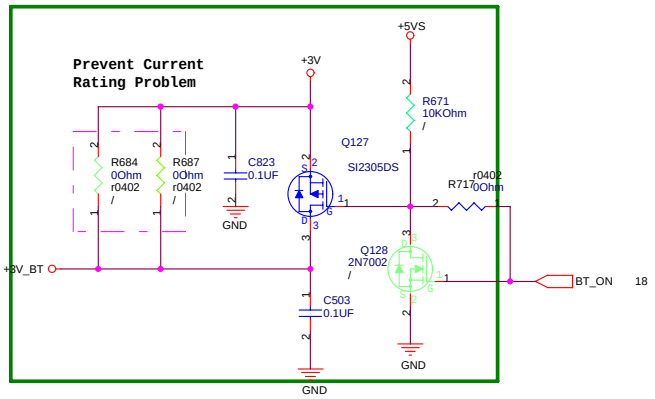
USB



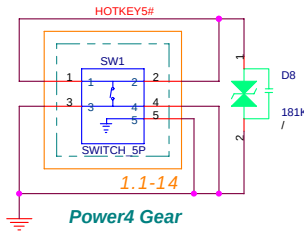


BLUE TOOTH MOLUDE

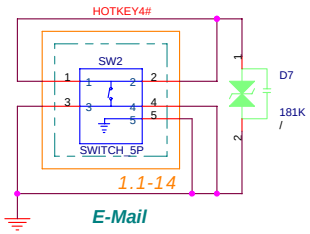




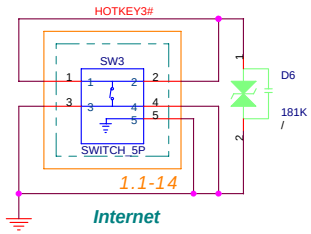
FUNCTION KEY



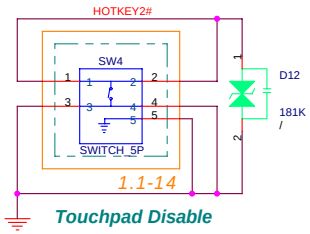
Power4 Gear



E-Mail

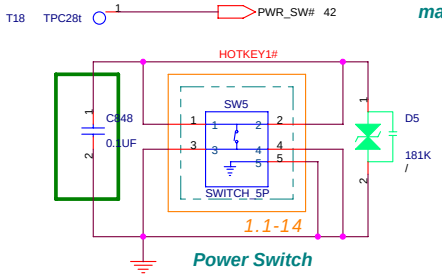


Internet

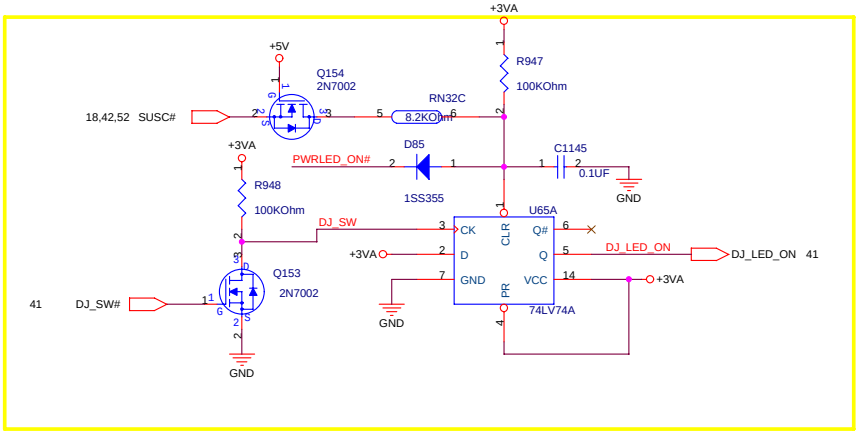


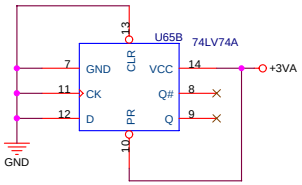
Touchpad Disable

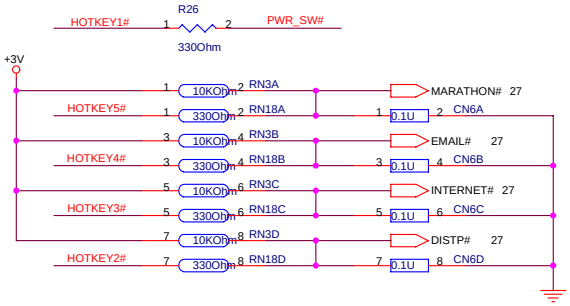
Uses 5-pin switch to improve ESD margin.



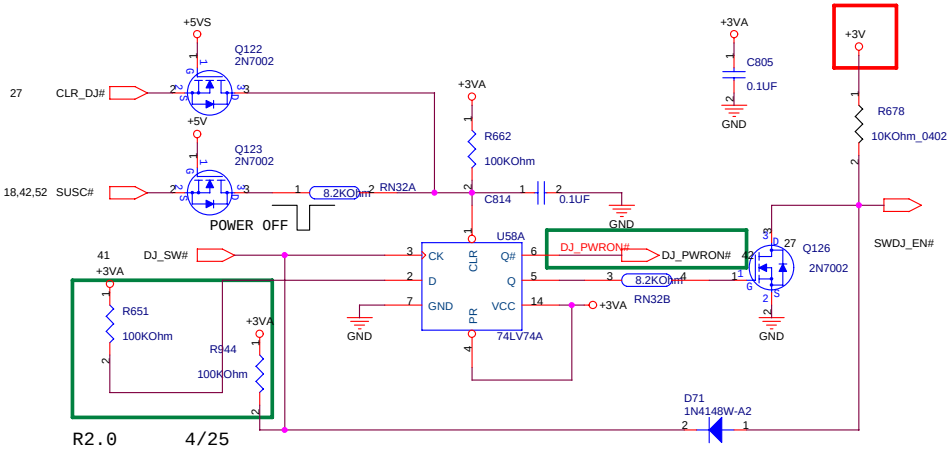
Power Switch



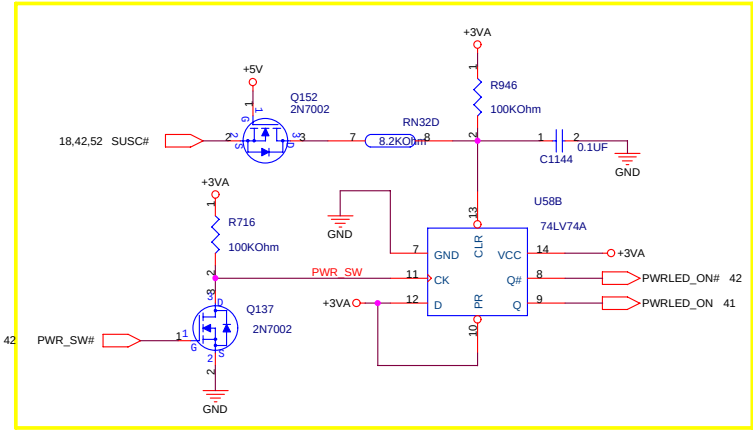


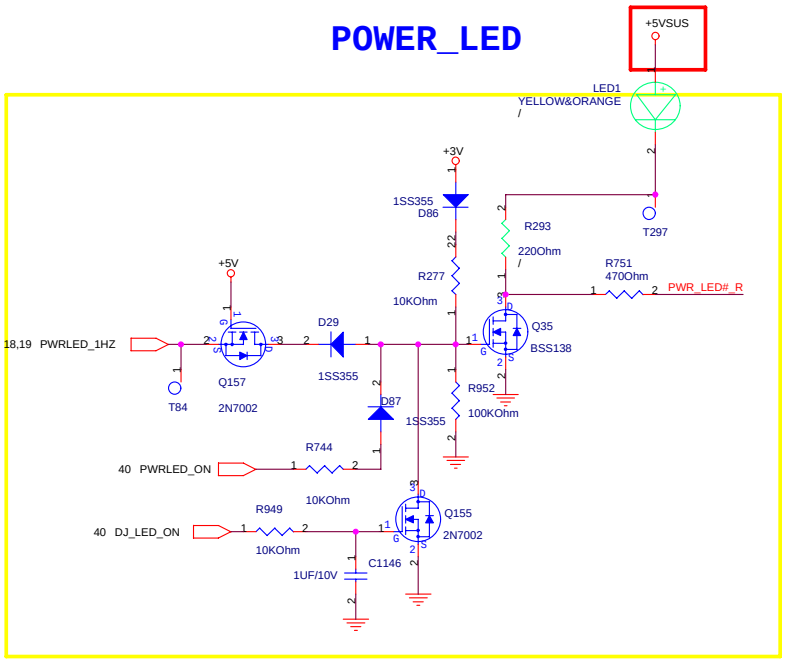


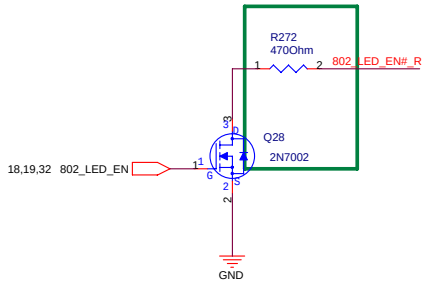
5/4

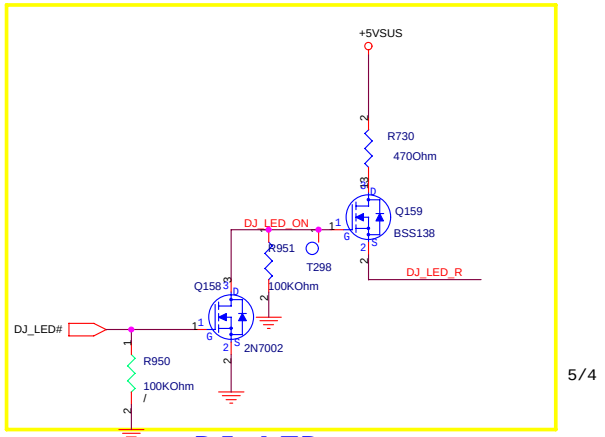


5/4

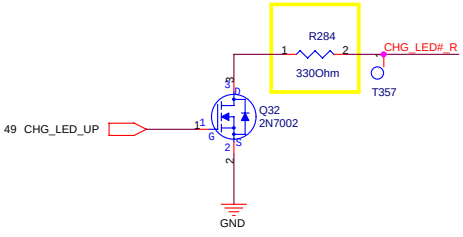


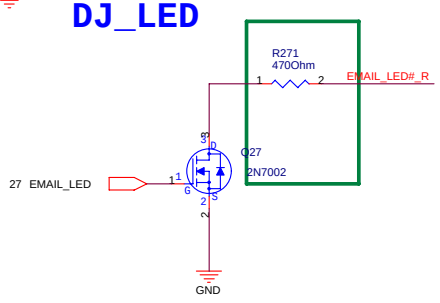

POWER_LED
+5VSUS
LED1
YELLOW&ORANGE
/
+3V
1SS355
D86
R293
220Ohm
/
T297
R751
470Ohm
PWR_LED#_R
R277
10KOhm
+5V
D29
Q35
BSS138
18,19 PWRLED_1HZ
Q157
2N7002
T84
1SS355
D87
1SS355
R952
100KOhm
R744
40 PWRLED_ON
10KOhm
R949
40 DJ_LED_ON
10KOhm
Q155
2N7002
C1146
1UF/10V
R2.0


R272
470Ohm
802_LED_EN#_R
Q28
2N7002
18,19,32 802_LED_EN
GND
802_LED

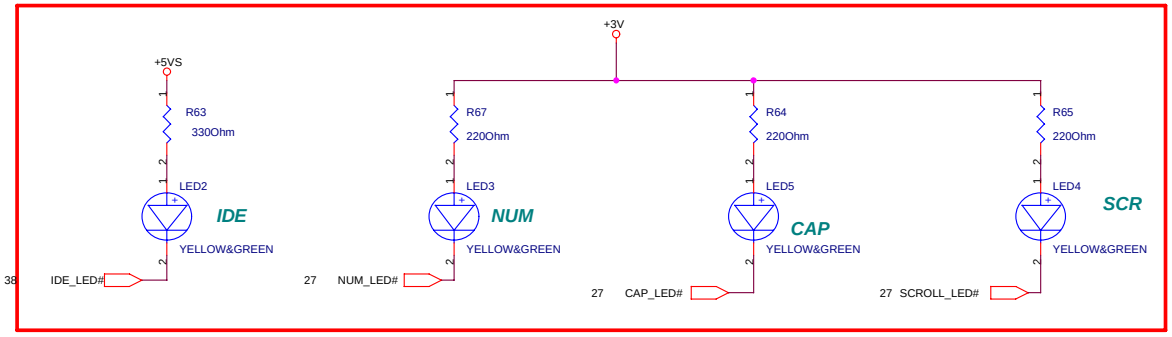

+5VSUS
R730
470Ohm
Q159
BSS138
DJ_LED_ON
R951
T298
DJ_LED_R
Q158
100KOhm
2N7002
27 DJ_LED#
R950
100KOhm
/
DJ_LED
5/4

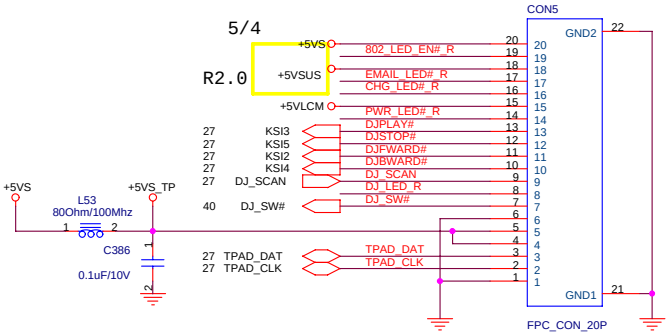
5/3 R2.0

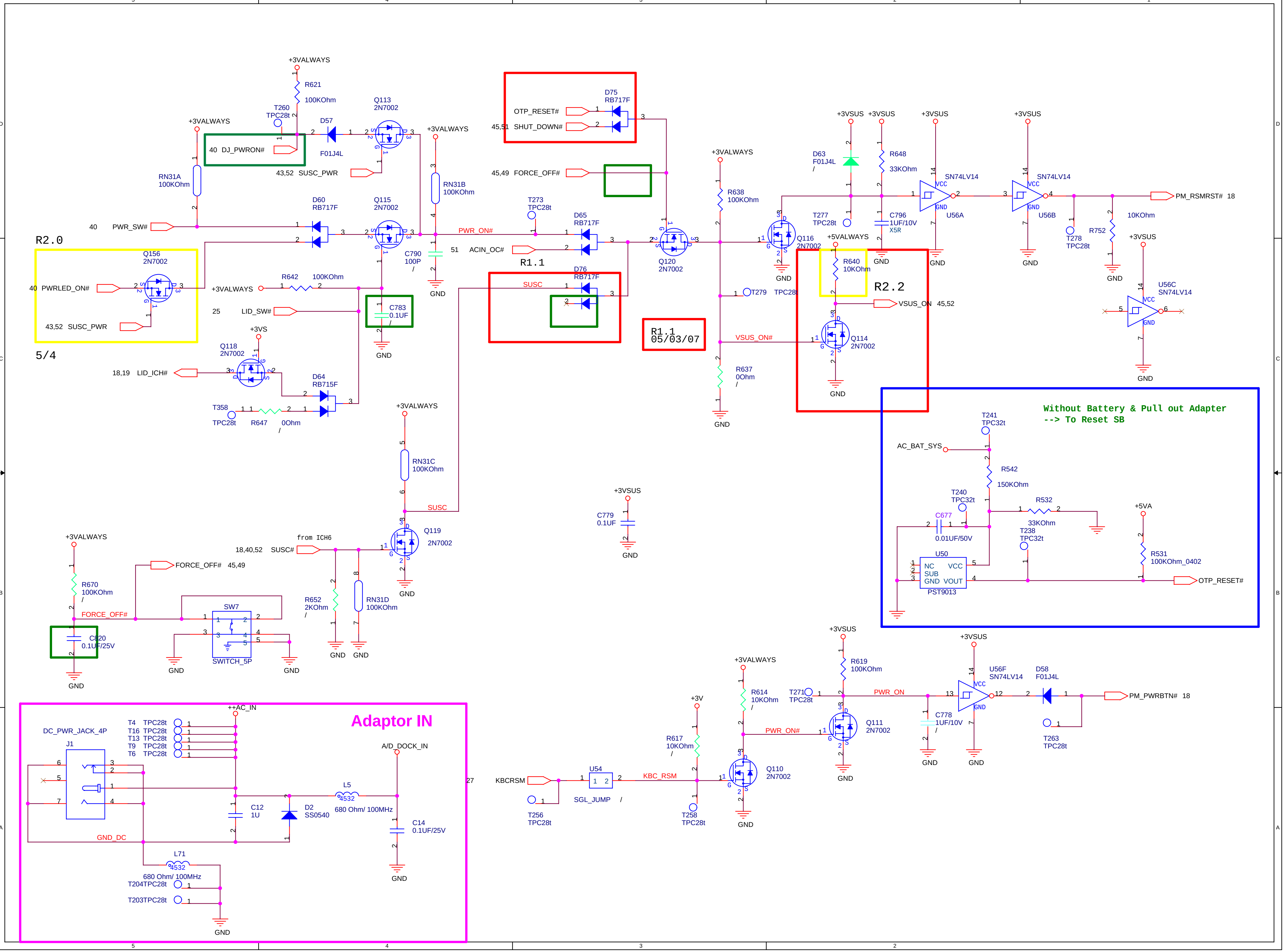

R284
330Ohm
CHG_LED#_R
T357
Q32
2N7002
49 CHG_LED_UP
GND
CHG_LED


R271
470Ohm
EMAIL_LED#_R
Q27
2N7002
27 EMAIL_LED
GND
EMAIL_LED

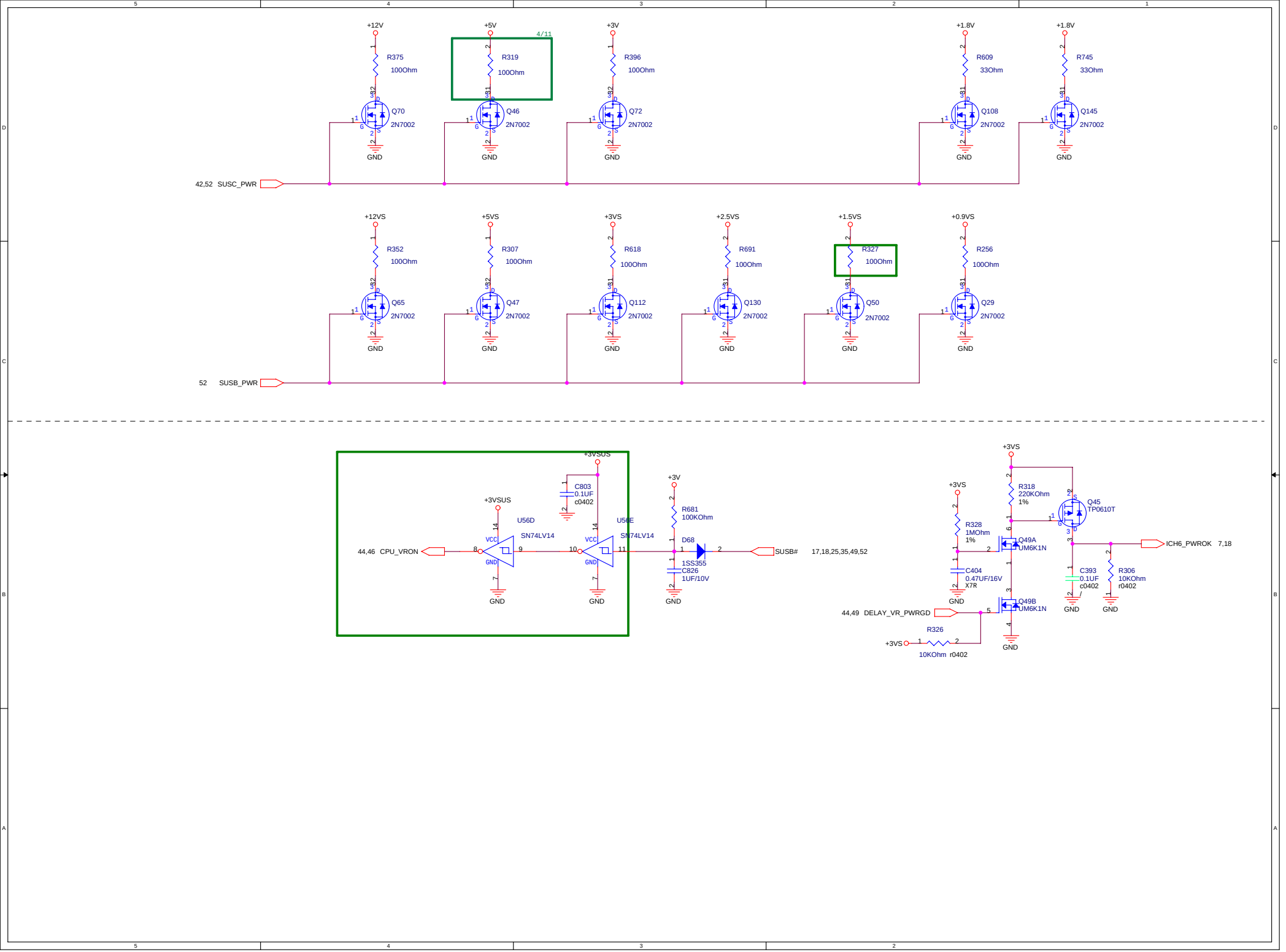
R1.1

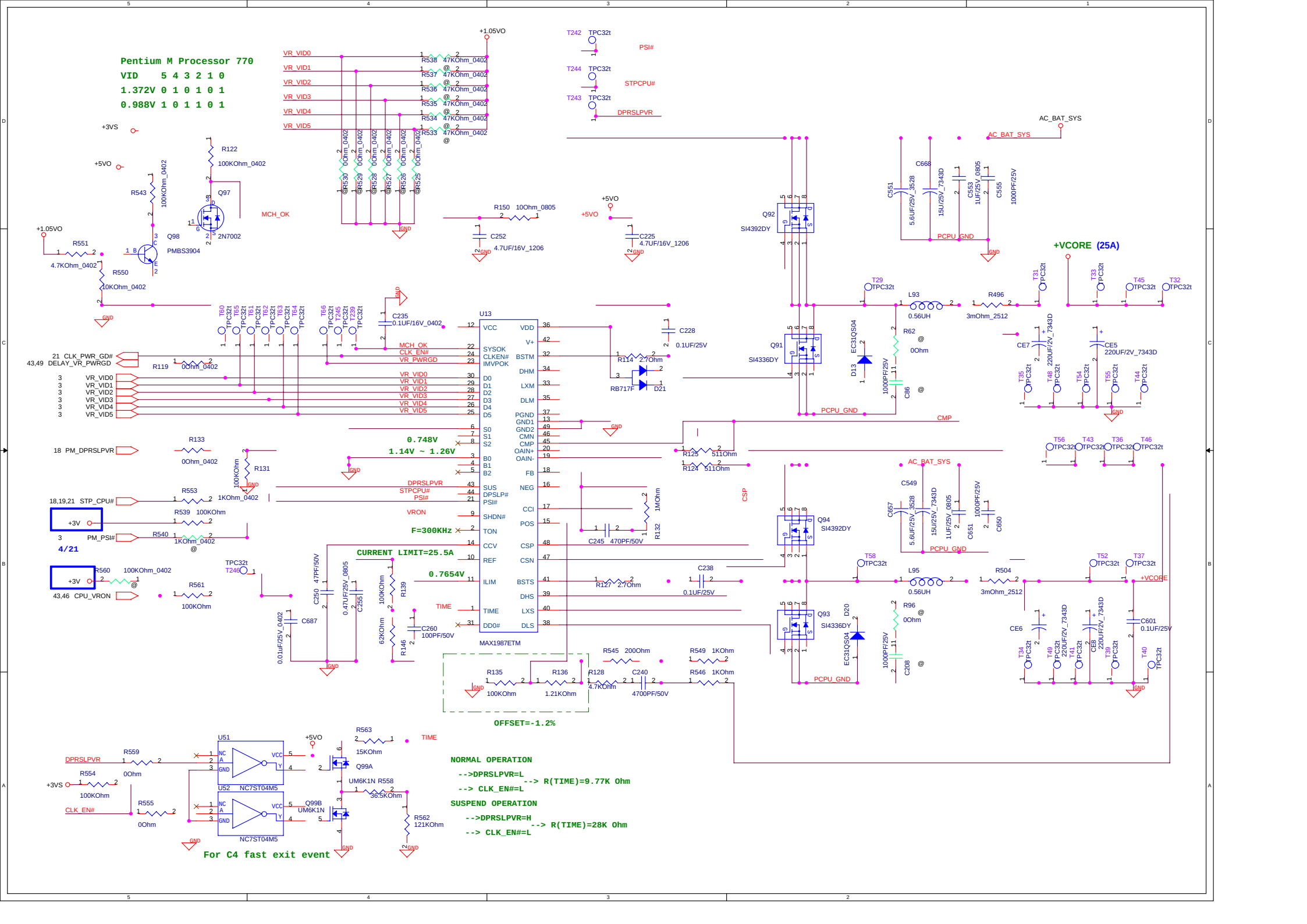

+3V
+5VS
R63
330Ohm
LED2
IDE
YELLOW&GREEN
38 IDE_LED#
R67
220Ohm
LED3
NUM
YELLOW&GREEN
27 NUM_LED#
R64
220Ohm
LED5
CAP
YELLOW&GREEN
27 CAP_LED#
R65
220Ohm
LED4
SCR
YELLOW&GREEN
27 SCROLL_LED#

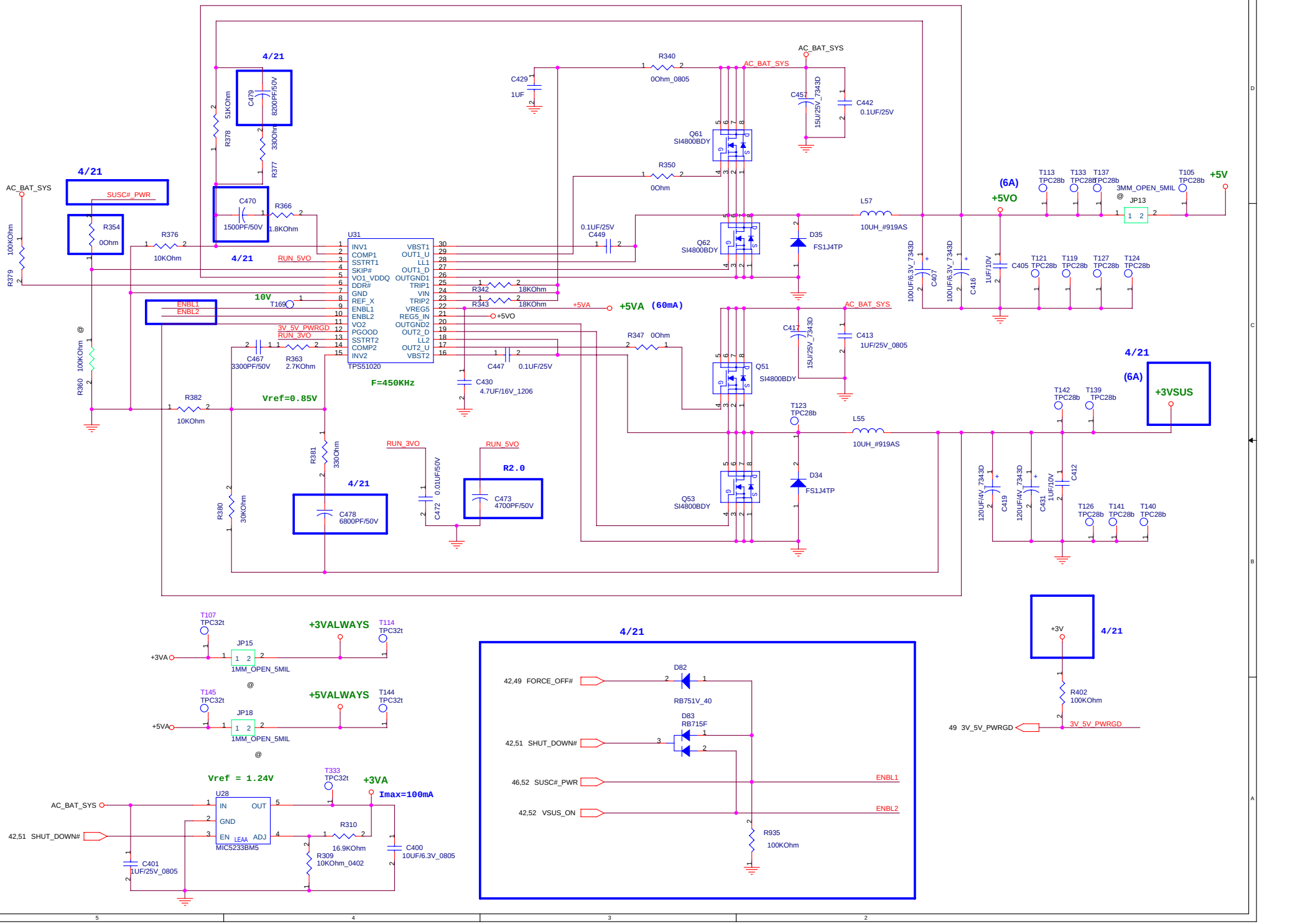

5/4
R2.0
+5VS
+5VSUS
+5VLCM
27 KSI3
27 KSI5
27 KSI2
27 KSI4
27 DJ_SCAN
40 DJ_SW#
802_LED_EN#_R
EMAIL_LED#_R
CHG_LED#_R
PWR_LED#_R
DJPLAY#
DJSTOP#
DJFWARD#
DJBWARD#
DJ_SCAN
DJ_LED_R
DJ_SW#
CON5
GND2
GND1
FPC_CON_20P
+5VS
+5VS_TP
L53
80Ohm/100Mhz
C386
0.1uF/10V
27 TPAD_DAT
27 TPAD_CLK
TPAD_DAT
TPAD_CLK

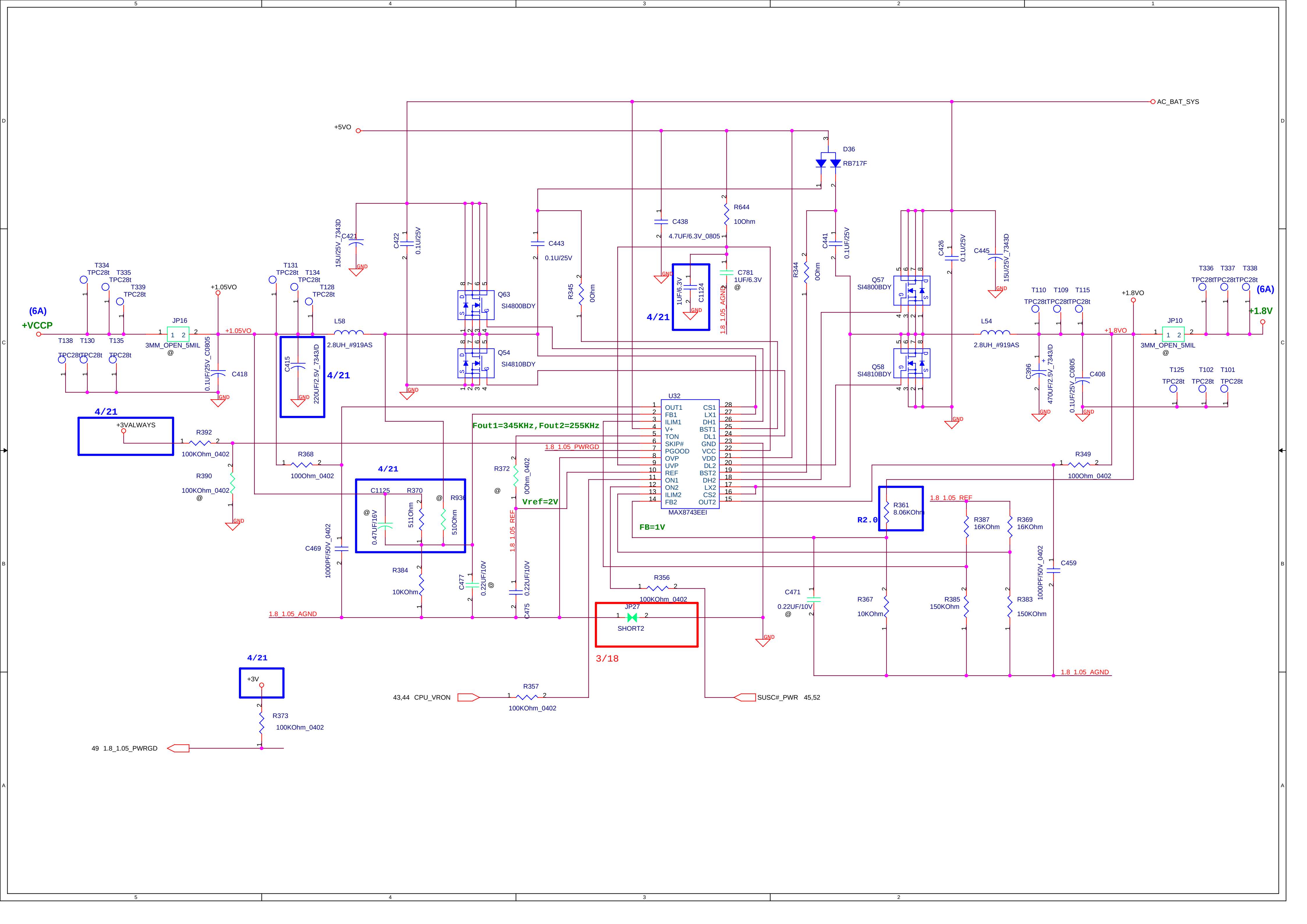


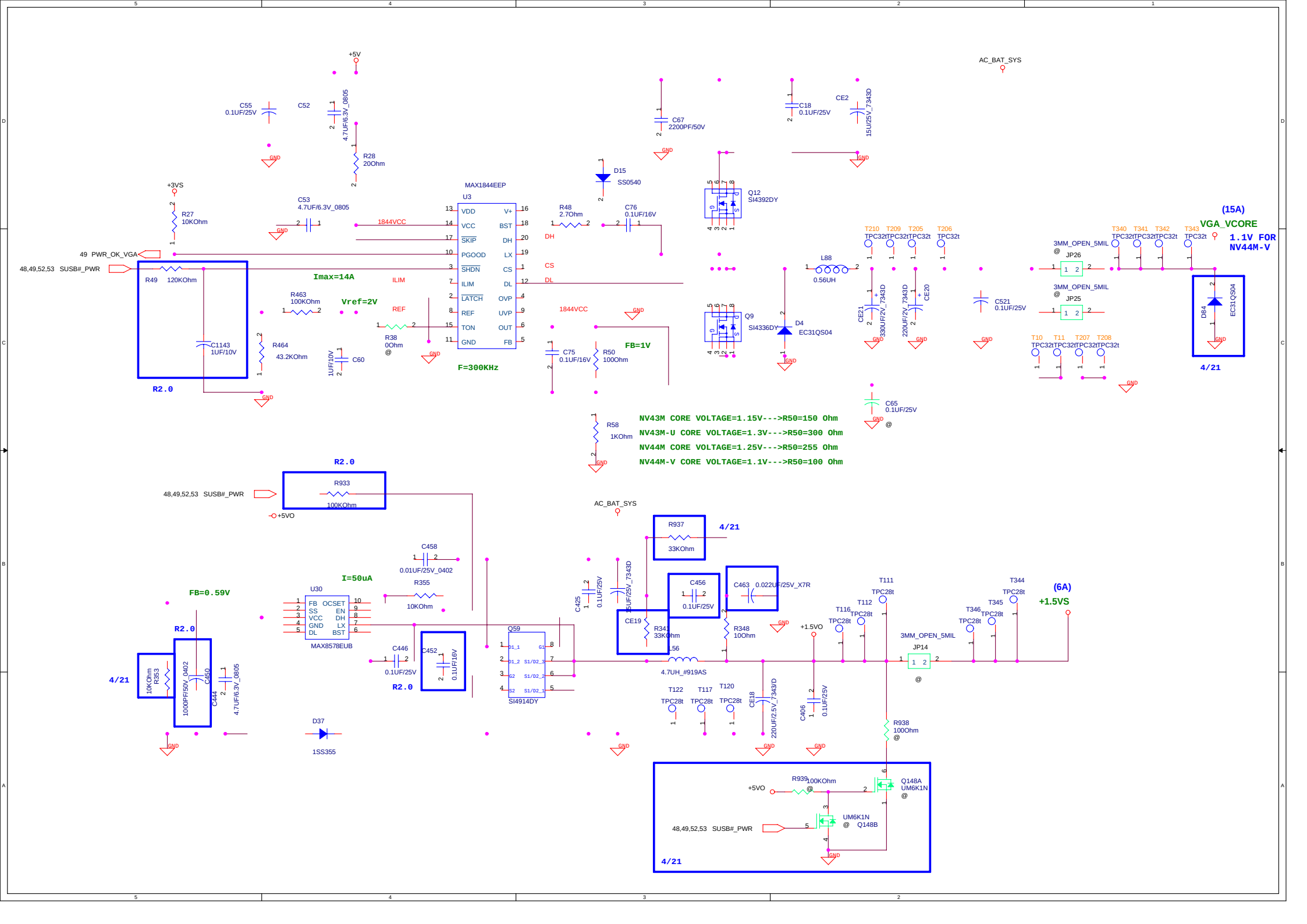
+3VALWAYS
R621
100KOhm
T260
TPC28t
D57
F01J4L
Q113
2N7002
40 DJ_PWRON#
43,52 SUSC_PWR
RN31A
100KOhm
RN31B
100KOhm
D60
RB717F
Q115
2N7002
40 PWR_SW#
PWR_ON#
C790
100P
51 ACIN_OC#
R2.0
Q156
2N7002
40 PWRLED_ON#
43,52 SUSC_PWR
5/4
R642
100KOhm
25 LID_SW#
C783
0.1UF
+3VS
Q118
2N7002
18,19 LID_ICH#
D64
RB715F
T358
TPC28t
R647
0Ohm
OTP_RESET#
45,51 SHUT_DOWN#
D75
RB717F
45,49 FORCE_OFF#
T273
TPC28t
D65
RB717F
R1.1
D76
RB717F
SUSC
Q120
2N7002
R1.1
05/03/07
R638
100KOhm
T279 TPC28t
VSUS_ON#
R637
0Ohm
+3VSUS
D63
F01J4L
R648
33KOhm
T277
TPC28t
C796
1UF/10V
X5R
Q116
2N7002
+5VALWAYS
R640
10KOhm
R2.2
VSUS_ON 45,52
Q114
2N7002
SN74LV14
U56A
U56B
PM_RSMRST# 18
10KOhm
R752
T278
TPC28t
U56C
SN74LV14
Without Battery & Pull out Adapter
--> To Reset SB
T241
TPC32t
AC_BAT_SYS
R542
150KOhm
T240
TPC32t
R532
33KOhm
C677
0.01UF/50V
T238
TPC32t
+5VA
R531
100KOhm_0402
U50
NC VCC
SUB
GND VOUT
PST9013
OTP_RESET#
RN31C
100KOhm
Q119
2N7002
18,40,52 SUSC#
from ICH6
R652
2KOhm
RN31D
100KOhm
FORCE_OFF# 45,49
R670
100KOhm
SW7
SWITCH_5P
C820
0.1UF/25V
+3VSUS
C779
0.1UF
GND
Adaptor IN
++AC_IN
DC_PWR_JACK_4P
J1
T4 TPC28t
T16 TPC28t
T13 TPC28t
T9 TPC28t
T6 TPC28t
A/D_DOCK_IN
L5
4532
680 Ohm/ 100MHz
C12
1U
D2
SS0540
C14
0.1UF/25V
GND_DC
L71
4532
680 Ohm/ 100MHz
T204TPC28t
T203TPC28t
27
KBCRSM
U54
SGL_JUMP
T256
TPC28t
+3V
R617
10KOhm
KBC_RSM
T258
TPC28t
R614
10KOhm
PWR_ON#
Q110
2N7002
T271
TPC28t
R619
100KOhm
PWR_ON
Q111
2N7002
C778
1UF/10V
U56F
SN74LV14
D58
F01J4L
PM_PWRBTN# 18
T263
TPC28t

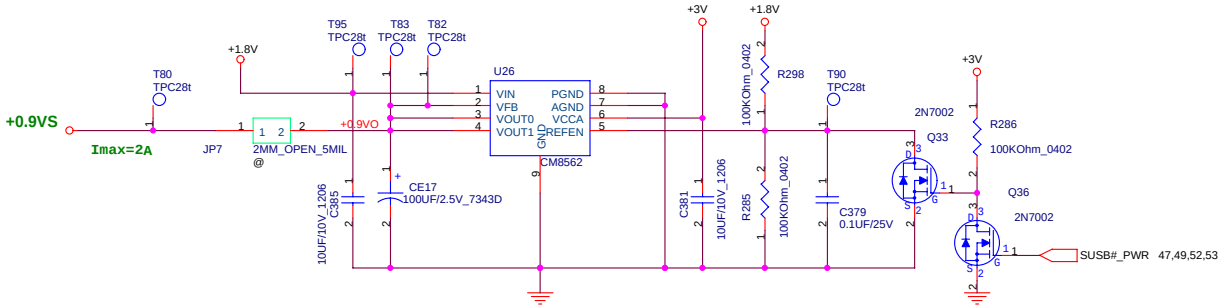

+12V
+5V
4/11
+3V
+1.8V
+1.8V
R375
100Ohm
R319
100Ohm
R396
100Ohm
R609
33Ohm
R745
33Ohm
Q70
2N7002
Q46
2N7002
Q72
2N7002
Q108
2N7002
Q145
2N7002
GND
42,52 SUSC_PWR
+12VS
+5VS
+3VS
+2.5VS
+1.5VS
+0.9VS
R352
100Ohm
R307
100Ohm
R618
100Ohm
R691
100Ohm
R327
100Ohm
R256
100Ohm
Q65
2N7002
Q47
2N7002
Q112
2N7002
Q130
2N7002
Q50
2N7002
Q29
2N7002
52 SUSB_PWR
+3VSUS
C803
0.1UF
c0402
U56D
U56E
SN74LV14
VCC
GND
44,46 CPU_VRON
R681
100KOhm
D68
1SS355
C826
1UF/10V
SUSB#
17,18,25,35,49,52
R318
220KOhm
1%
Q45
TP0610T
R328
1MOhm
1%
Q49A
UM6K1N
Q49B
UM6K1N
C404
0.47UF/16V
X7R
C393
0.1UF
c0402
R306
10KOhm
r0402
ICH6_PWROK 7,18
44,49 DELAY_VR_PWRGD
R326
10KOhm r0402

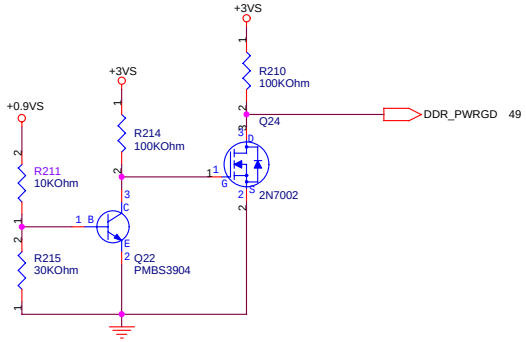

Pentium M Processor 770
VID 5 4 3 2 1 0
1.372V 0 1 0 1 0 1
0.988V 1 0 1 1 0 1
MAX1987ETM
0.748V
1.14V ~ 1.26V
F=300KHz
CURRENT LIMIT=25.5A
0.7654V
4/21
OFFSET=-1.2%
NORMAL OPERATION
-->DPRSLPVR=L
--> R(TIME)=9.77K Ohm
--> CLK_EN#=L
SUSPEND OPERATION
-->DPRSLPVR=H
--> R(TIME)=28K Ohm
--> CLK_EN#=L
For C4 fast exit event
+VCORE (25A)
NC7ST04M5
SI4392DY
SI4336DY
PMBS3904
2N7002
MCH_OK
PCPU_GND
CMP
CSP
VRON
TIME

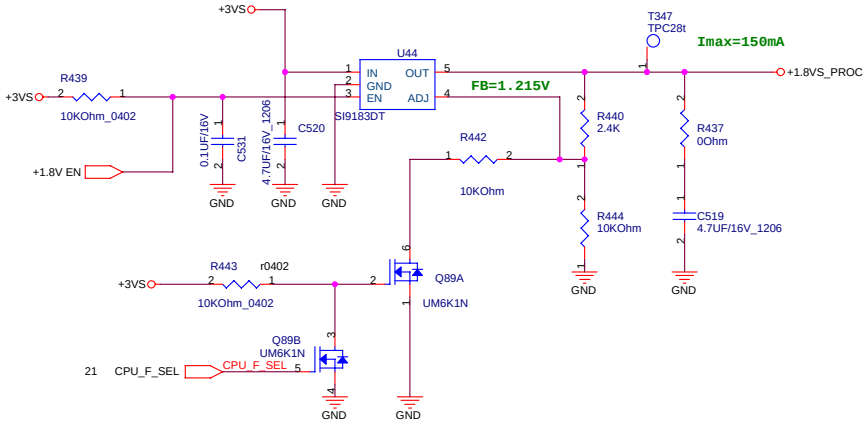

4/21
AC_BAT_SYS
SUSC#_PWR
R354
0Ohm
100KOhm
R379
R376
10KOhm
RUN_5VO
C470
1500PF/50V
R366
1.8KOhm
R378
51KOhm
C479
8200PF/50V
330Ohm
R377
U31
INV1
COMP1
SSTRT1
SKIP#
VO1_VDDQ
DDR#
GND
REF_X
ENBL1
ENBL2
VO2
PGOOD
SSTRT2
COMP2
INV2
VBST1
OUT1_U
LL1
OUT1_D
OUTGND1
TRIP1
VIN
TRIP2
VREG5
REG5_IN
OUTGND2
OUT2_D
LL2
OUT2_U
VBST2
TPS51020
F=450KHz
ENBL1
ENBL2
10V
T169
3V_5V_PWRGD
RUN_3VO
C467
3300PF/50V
R363
2.7KOhm
R360
100KOhm
R382
10KOhm
Vref=0.85V
C430
4.7UF/16V_1206
C447
0.1UF/25V
R342
18KOhm
R343
18KOhm
+5VA
+5VO
+5VA (60mA)
C429
1UF
R340
0Ohm_0805
C457
15U/25V_7343D
C442
0.1UF/25V
Q61
SI4800BDY
R350
0Ohm
0.1UF/25V
C449
Q62
SI4800BDY
D35
FS1J4TP
L57
10UH_#919AS
(6A)
+5VO
T113 TPC28b
T133 TPC28b
T137 TPC28b
3MM_OPEN_5MIL
JP13
T105 TPC28b
+5V
100UF/6.3V_7343D
C407
100UF/6.3V_7343D
C416
1UF/10V
C405
T121 TPC28b
T119 TPC28b
T127 TPC28b
T124 TPC28b
R347
0Ohm
C417
15U/25V_7343D
C413
1UF/25V_0805
Q51
SI4800BDY
4/21
(6A)
+3VSUS
T142 TPC28b
T139 TPC28b
T123 TPC28b
L55
10UH_#919AS
D34
FS1J4TP
Q53
SI4800BDY
120UF/4V_7343D
C419
120UF/4V_7343D
C431
1UF/10V
C412
T126 TPC28b
T141 TPC28b
T140 TPC28b
R381
330Ohm
R380
30KOhm
RUN_3VO
C472
0.01UF/50V
RUN_5VO
R2.0
C473
4700PF/50V
4/21
C478
6800PF/50V
T107 TPC32t
+3VALWAYS
T114 TPC32t
+3VA
JP15
1MM_OPEN_5MIL
@
T145 TPC32t
+5VALWAYS
T144 TPC32t
+5VA
JP18
1MM_OPEN_5MIL
@
Vref = 1.24V
T333 TPC32t
+3VA
Imax=100mA
U28
IN
OUT
GND
EN
LEAA
ADJ
MIC5233BM5
AC_BAT_SYS
42,51 SHUT_DOWN#
R310
16.9KOhm
R309
10KOhm_0402
C400
10UF/6.3V_0805
C401
1UF/25V_0805
4/21
42,49 FORCE_OFF#
D82
RB751V_40
D83
RB715F
42,51 SHUT_DOWN#
46,52 SUSC#_PWR
42,52 VSUS_ON
ENBL1
ENBL2
R935
100KOhm
+3V
4/21
R402
100KOhm
49 3V_5V_PWRGD
3V_5V_PWRGD


AC_BAT_SYS
+5VO
D36
RB717F
R644
10Ohm
C438
4.7UF/6.3V_0805
C781
1UF/6.3V
C1124
1UF/6.3V
4/21
R344
0Ohm
C441
0.1UF/25V
C426
0.1U/25V
C445
15U/25V_7343D
Q57
SI4800BDY
Q58
SI4810BDY
L54
2.8UH_#919AS
+1.8VO
JP10
3MM_OPEN_5MIL
(6A)
+1.8V
C396
470UF/2.5V_7343/D
C408
0.1UF/25V_C0805
C421
15U/25V_7343D
C422
0.1U/25V
C443
0.1U/25V
R345
0Ohm
Q63
SI4800BDY
Q54
SI4810BDY
L58
2.8UH_#919AS
+1.05VO
JP16
3MM_OPEN_5MIL
(6A)
+VCCP
C418
0.1UF/25V_C0805
C415
220UF/2.5V_7343/D
4/21
+3VALWAYS
R392
100KOhm_0402
R390
100KOhm_0402
R368
100Ohm_0402
U32
MAX8743EEI
OUT1 FB1 ILIM1 V+ TON SKIP# PGOOD OVP UVP REF ON1 ON2 ILIM2 FB2
CS1 LX1 DH1 BST1 DL1 GND VCC VDD DL2 BST2 DH2 LX2 CS2 OUT2
Fout1=345KHz,Fout2=255KHz
1.8_1.05_PWRGD
Vref=2V
FB=1V
C1125
0.47UF/16V
R370
511Ohm
R936
510Ohm
R384
10KOhm
C469
1000PF/50V_0402
C477
0.22UF/10V
R372
0Ohm_0402
C475
0.22UF/10V
1.8_1.05_REF
1.8_1.05_AGND
R356
100KOhm_0402
JP27
SHORT2
3/18
C471
0.22UF/10V
R361
8.06KOhm
R2.0
R349
100Ohm_0402
R387
16KOhm
R369
16KOhm
R367
10KOhm
R385
150KOhm
R383
150KOhm
C459
1000PF/50V_0402
4/21
+3V
R373
100KOhm_0402
49 1.8_1.05_PWRGD
43,44 CPU_VRON
R357
100KOhm_0402
SUSC#_PWR 45,52


+5V
C55 0.1UF/25V
C52
4.7UF/6.3V_0805
R28 20Ohm
GND
+3VS
R27 10KOhm
C53 4.7UF/6.3V_0805
MAX1844EEP
U3
VDD
VCC
SKIP
PGOOD
SHDN
ILIM
LATCH
REF
TON
GND
V+
BST
DH
LX
CS
DL
OVP
UVP
OUT
FB
1844VCC
49 PWR_OK_VGA
48,49,52,53 SUSB#_PWR
R49 120KOhm
Imax=14A
ILIM
R463 100KOhm
Vref=2V
REF
R38 0Ohm @
R464 43.2KOhm
C1143 1UF/10V
1UF/10V
C60
F=300KHz
R48 2.7Ohm
C76 0.1UF/16V
DH
CS
DL
C75 0.1UF/16V
R50 100Ohm
FB=1V
D15 SS0540
C67 2200PF/50V
Q12 SI4392DY
Q9 SI4336DY
D4 EC31QS04
L88 0.56UH
C18 0.1UF/25V
CE2 15U/25V_7343D
AC_BAT_SYS
T210 T209 T205 T206 TPC32t
CE21 330UF/2V_7343D
220UF/2V_7343D
CE20
C521 0.1UF/25V
C65 0.1UF/25V
@
3MM_OPEN_5MIL
JP26
JP25
T340 T341 T342 T343 TPC32t
T10 T11 T207 T208 TPC32t
(15A)
VGA_VCORE
1.1V FOR NV44M-V
D84 EC31QS04
4/21
R2.0
R58 1KOhm
NV43M CORE VOLTAGE=1.15V--->R50=150 Ohm
NV43M-U CORE VOLTAGE=1.3V--->R50=300 Ohm
NV44M CORE VOLTAGE=1.25V--->R50=255 Ohm
NV44M-V CORE VOLTAGE=1.1V--->R50=100 Ohm
48,49,52,53 SUSB#_PWR
R933 100KOhm
+5VO
I=50uA
FB=0.59V
U30
MAX8578EUB
FB
SS
VCC
GND
DL
OCSET
EN
DH
LX
BST
R355 10KOhm
C458 0.01UF/25V_0402
C446 0.1UF/25V
C452 0.1UF/16V
Q59
SI4914DY
D37
1SS355
10KOhm R353
1000PF/50V_0402
C450
C444 4.7UF/6.3V_0805
R937 33KOhm
C456 0.1UF/25V
C463 0.022UF/25V_X7R
CE19 150UF/25V_7343D
R341 33KOhm
R348 10Ohm
4.7UH_#919AS
C425 0.1UF/25V
CE18 220UF/2.5V_7343D
C406 0.1UF/25V
T111 T112 T116 T117 T120 T122 T344 T345 T346 TPC28t
3MM_OPEN_5MIL
JP14
(6A)
+1.5VS
+1.5VO
R938 100Ohm
@
R939 100KOhm
Q148A UM6K1N
Q148B UM6K1N
4/21

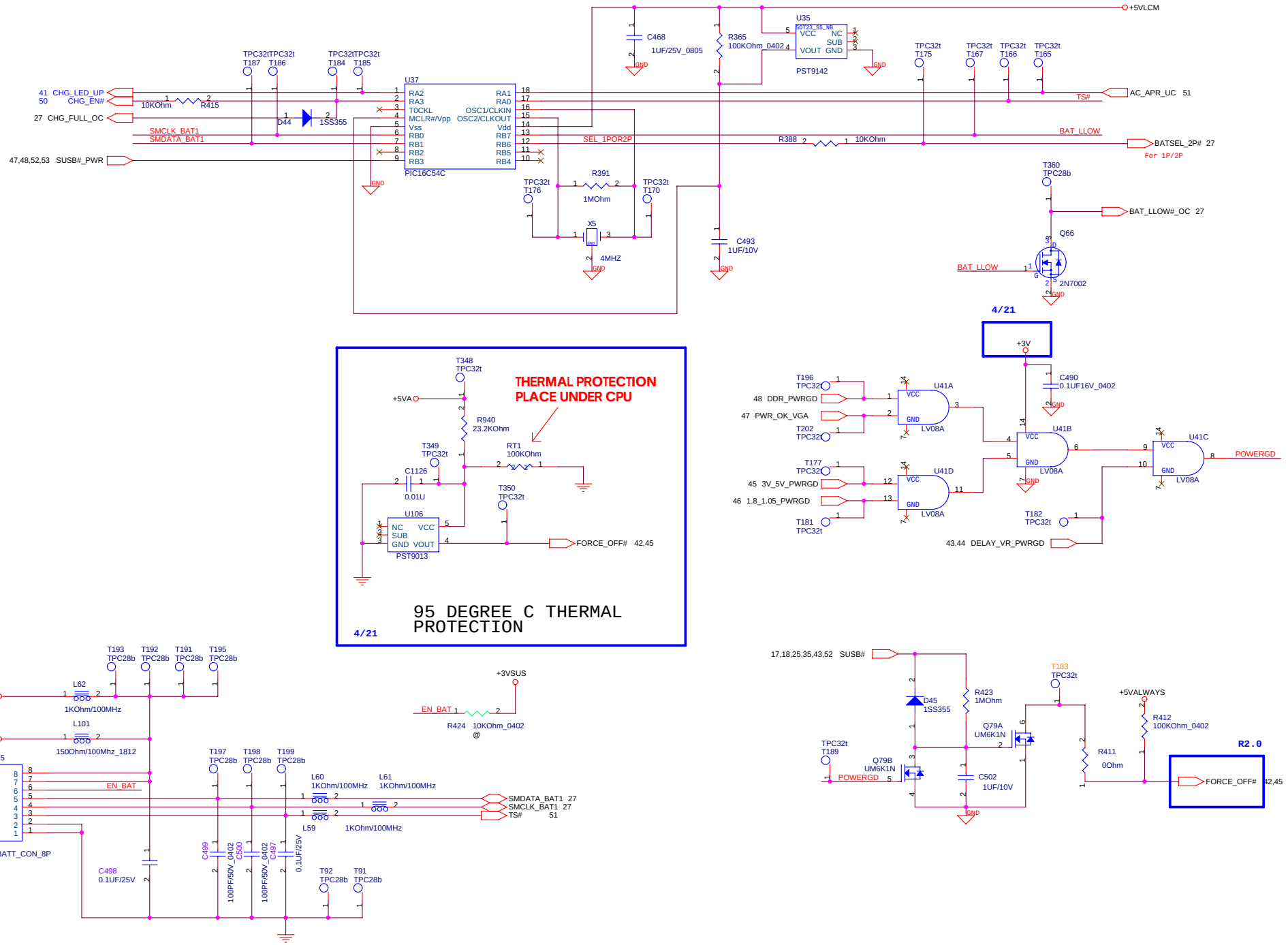


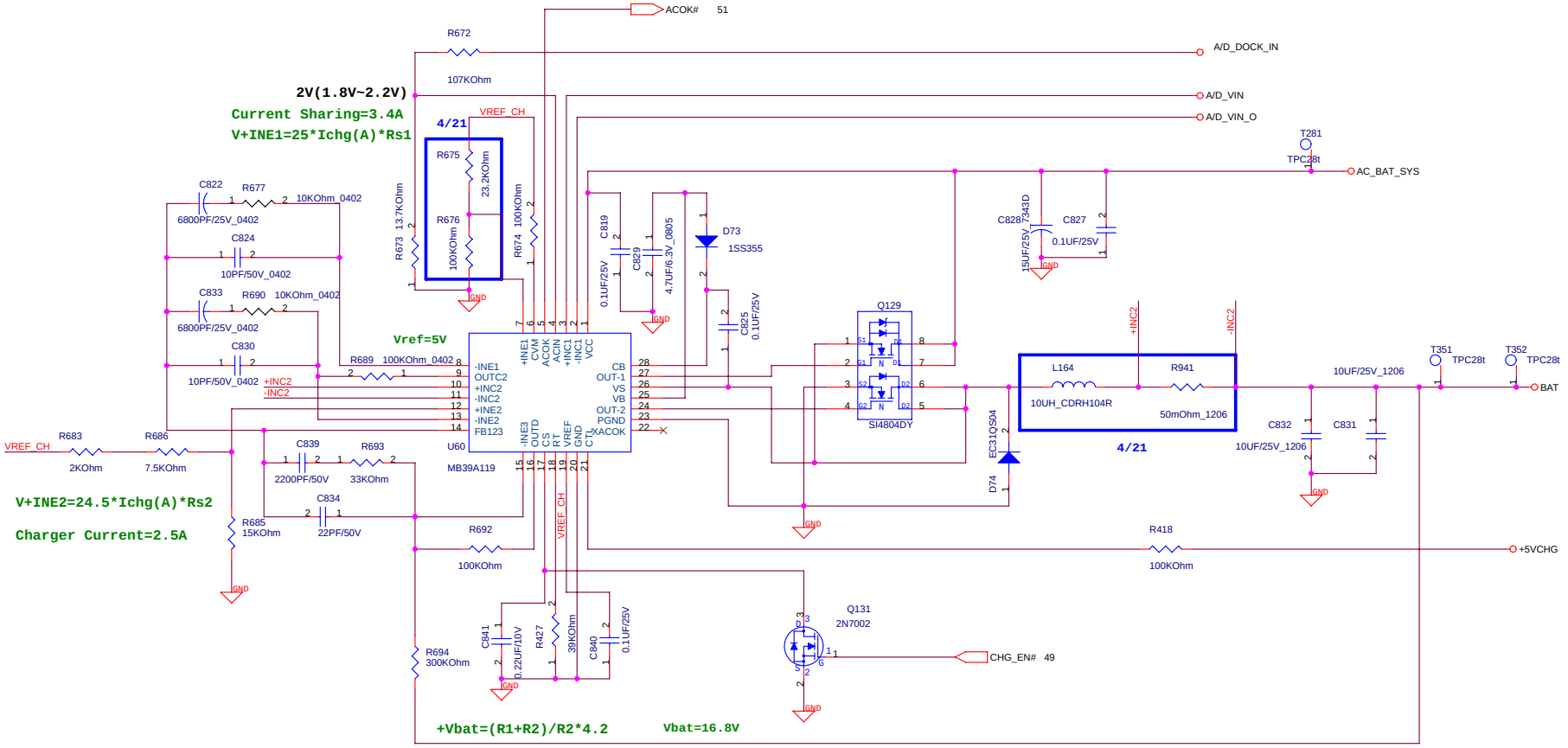


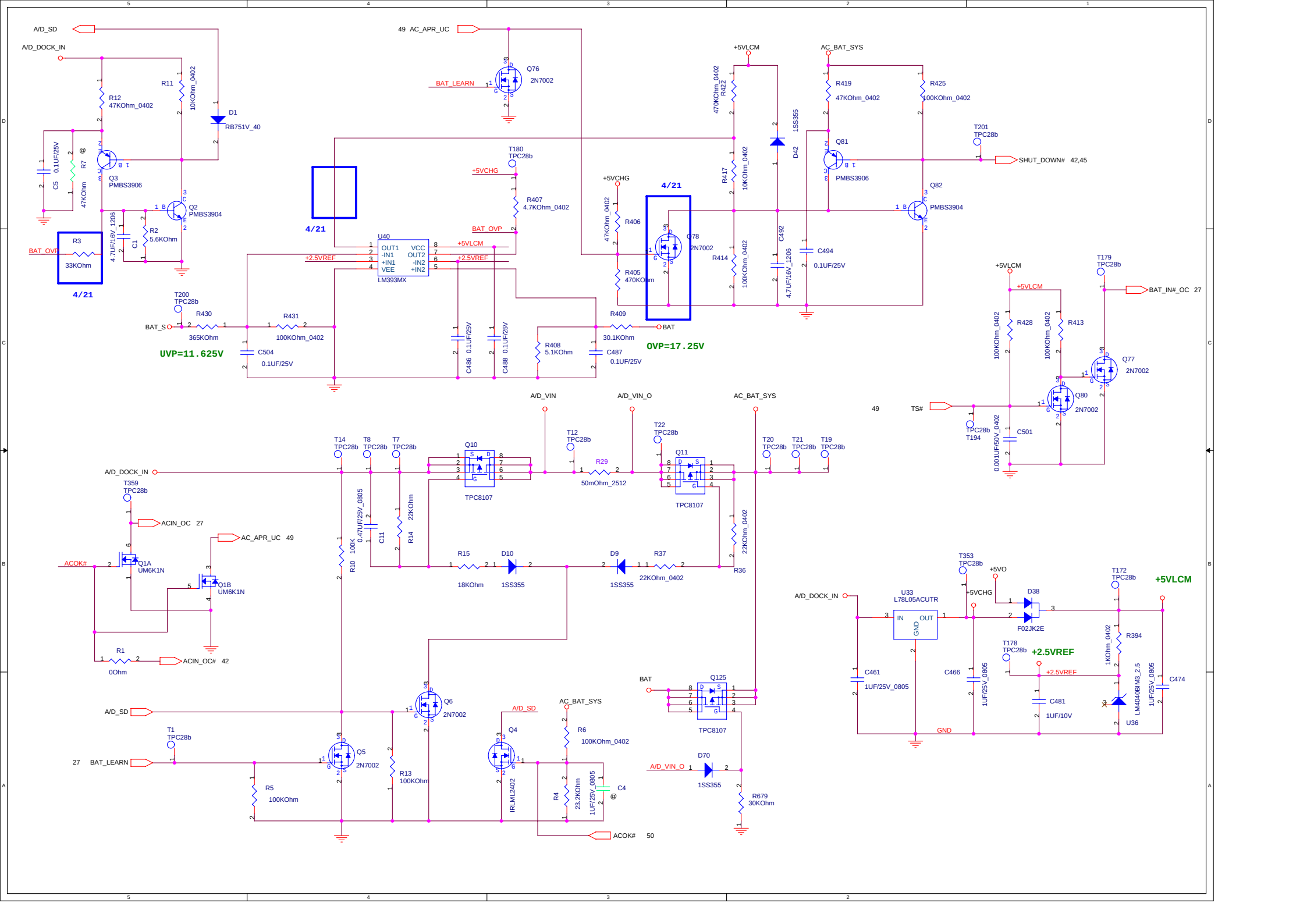


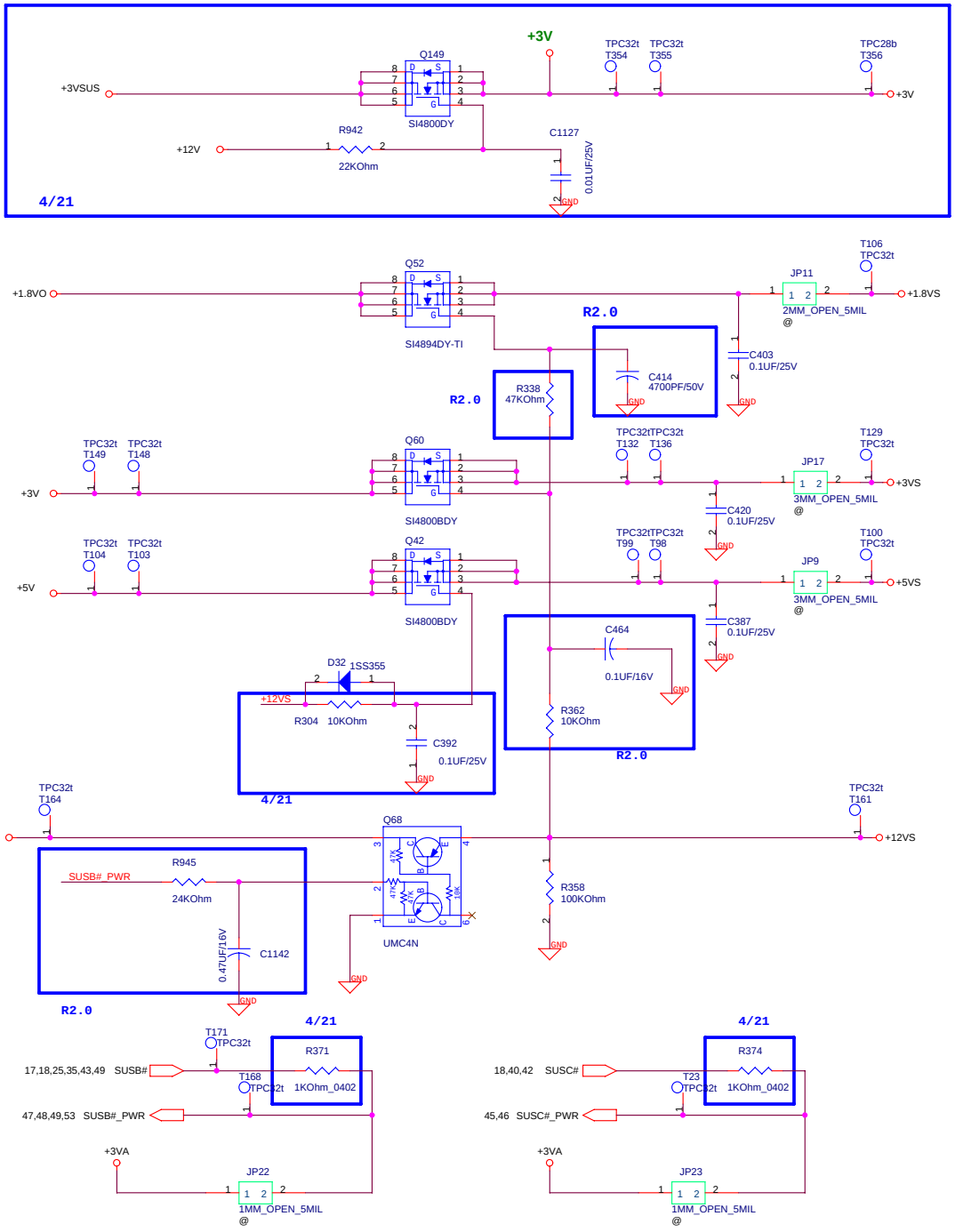
CPU_F_SEL-->H, OUT=1.5V (FSB=533MHz)

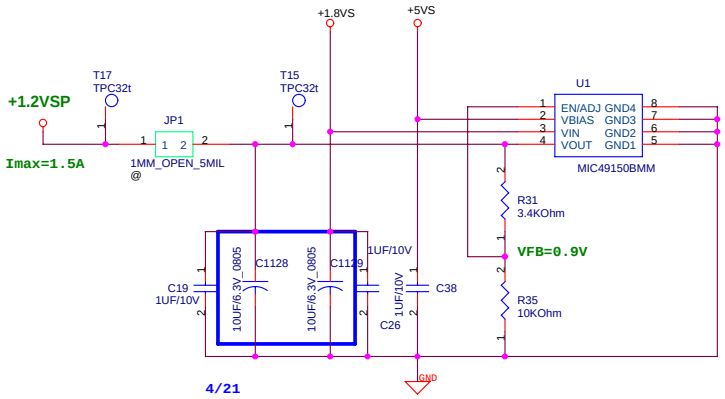
CPU_F_SEL-->L, OUT=1.8V (FSB=400MHz)

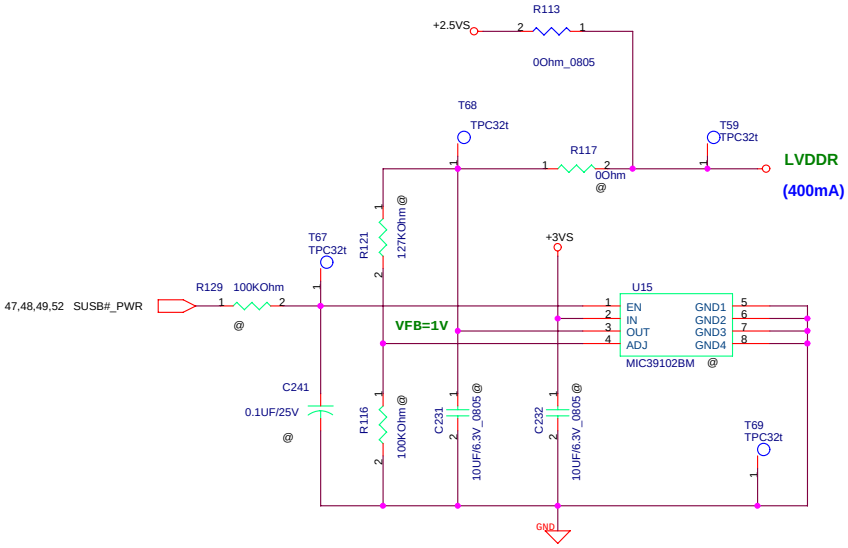

+5VLCM
C468
1UF/25V_0805
R365
100KOhm_0402
U35
PST9142
TPC32t T175
TPC32t T167
TPC32t T166
TPC32t T165
TS#
AC_APR_UC 51
41 CHG_LED_UP
50 CHG_EN#
10KOhm
R415
27 CHG_FULL_OC
D44
1SS355
SMCLK_BAT1
SMDATA_BAT1
47,48,52,53 SUSB#_PWR
U37
PIC16C54C
SEL_1POR2P
R388
10KOhm
BAT_LLOW
BATSEL_2P# 27
For 1P/2P
R391
1MOhm
X5
4MHZ
C493
1UF/10V
T360
TPC28b
BAT_LLOW#_OC 27
Q66
2N7002
BAT_LLOW
4/21
+3V
C490
0.1UF16V_0402
T196
48 DDR_PWRGD
T202
47 PWR_OK_VGA
U41A
U41B
U41C
U41D
LV08A
POWERGD
T177
45 3V_5V_PWRGD
T181
46 1.8_1.05_PWRGD
T182
43,44 DELAY_VR_PWRGD
T348
+5VA
R940
23.2KOhm
RT1
100KOhm
T349
C1126
0.01U
T350
U106
PST9013
FORCE_OFF# 42,45
THERMAL PROTECTION
PLACE UNDER CPU
95 DEGREE C THERMAL PROTECTION
4/21
BAT_S
L62
1KOhm/100MHz
BAT
L101
150Ohm/100Mhz_1812
J5
BATT_CON_8P
EN_BAT
C498
0.1UF/25V
C499
100PF/50V_0402
C500
100PF/50V_0402
C497
0.1UF/25V
T92
T91
L60
L61
L59
1KOhm/100MHz
SMDATA_BAT1 27
SMCLK_BAT1 27
TS# 51
+3VSUS
EN_BAT
R424
10KOhm_0402
@
17,18,25,35,43,52 SUSB#
D45
1SS355
R423
1MOhm
Q79A
UM6K1N
Q79B
UM6K1N
T183
TPC32t T189
POWERGD
C502
1UF/10V
R411
0Ohm
+5VALWAYS
R412
100KOhm_0402
R2.0
FORCE_OFF# 42,45


ACOK# 51
R672
107KOhm
A/D_DOCK_IN
A/D_VIN
A/D_VIN_O
2V(1.8V~2.2V)
Current Sharing=3.4A
V+INE1=25*Ichg(A)*Rs1
4/21
VREF_CH
R675
23.2KOhm
R676
100KOhm
R673 13.7KOhm
R674 100KOhm
C822
R677
10KOhm_0402
6800PF/25V_0402
C824
10PF/50V_0402
C833
R690
10KOhm_0402
6800PF/25V_0402
C830
10PF/50V_0402
+INC2
-INC2
Vref=5V
R689 100KOhm_0402
-INE1
OUTC2
+INC2
-INC2
+INE2
-INE2
FB123
+INE1
CVM
ACOK
ACIN
+INC1
-INC1
VCC
CB
OUT-1
VS
VB
OUT-2
PGND
XACOK
-INE3
OUTD
CS
RT
VREF
GND
CTL
U60
MB39A119
C819
0.1UF/25V
C829
4.7UF/6.3V_0805
D73
1SS355
C825
0.1UF/25V
T281
TPC28t
AC_BAT_SYS
C828
15UF/25V_7343D
C827
0.1UF/25V
Q129
SI4804DY
L164
10UH_CDRH104R
R941
50mOhm_1206
+INC2
-INC2
10UF/25V_1206
C832
C831
10UF/25V_1206
T351
TPC28t
T352
TPC28t
BAT
EC31QS04
D74
4/21
VREF_CH
R683
2KOhm
R686
7.5KOhm
C839
2200PF/50V
R693
33KOhm
C834
22PF/50V
V+INE2=24.5*Ichg(A)*Rs2
Charger Current=2.5A
R685
15KOhm
R692
100KOhm
R418
100KOhm
+5VCHG
R694
300KOhm
C841
0.22UF/10V
R427
39KOhm
C840
0.1UF/25V
Q131
2N7002
CHG_EN# 49
+Vbat=(R1+R2)/R2*4.2
Vbat=16.8V
GND

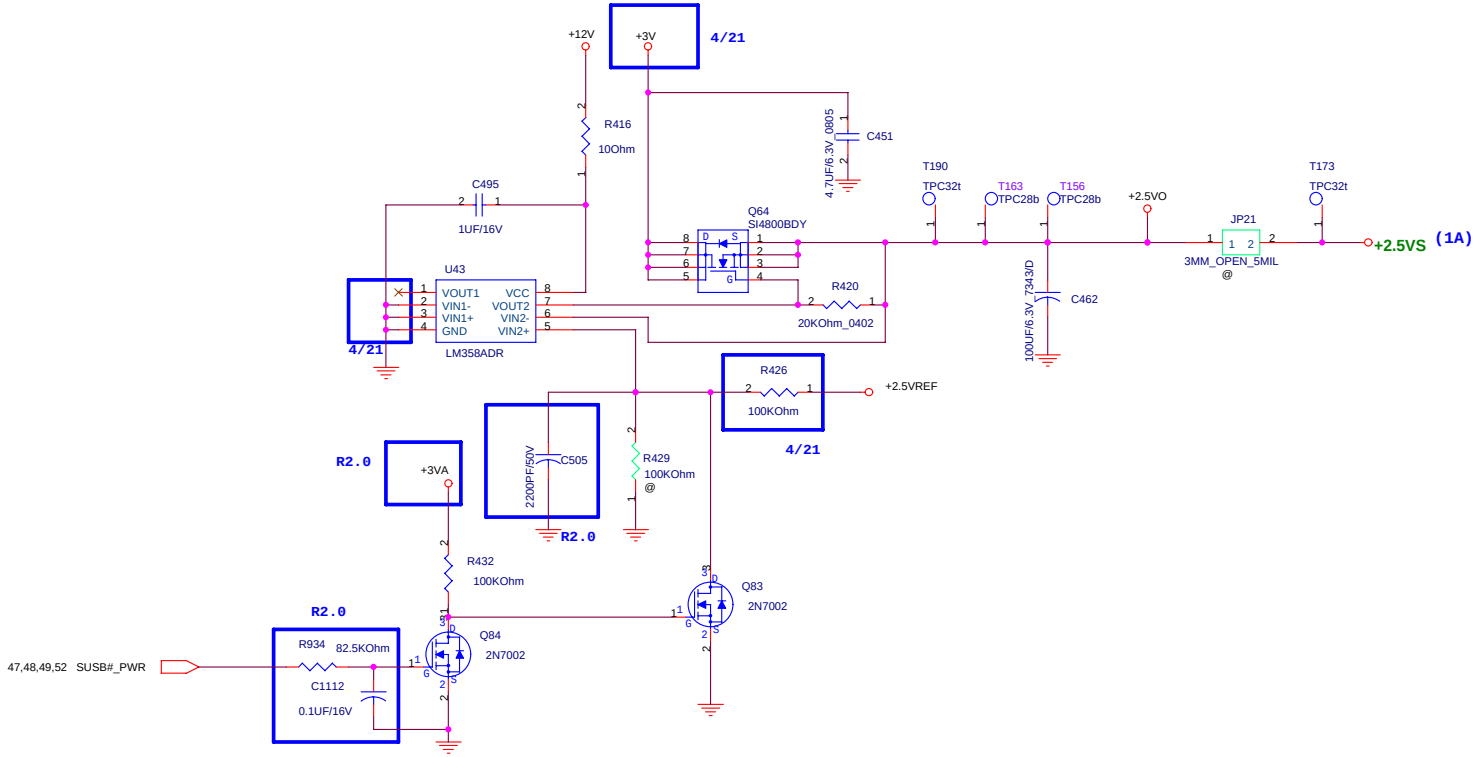

A/D_SD
A/D_DOCK_IN
R12 47KOhm_0402
R11 10KOhm_0402
D1 RB751V_40
C5 0.1UF/25V
R7 @ 47KOhm
Q3 PMBS3906
Q2 PMBS3904
R2 5.6KOhm
C1 4.7UF/16V_1206
R3 33KOhm
BAT_OVP
4/21
49 AC_APR_UC
BAT_LEARN
Q76 2N7002
+5VLCM
AC_BAT_SYS
470KOhm_0402 R422
R419 47KOhm_0402
R425 100KOhm_0402
1SS355 D42
Q81 PMBS3906
Q82 PMBS3904
T201 TPC28b
SHUT_DOWN# 42,45
T180 TPC28b
+5VCHG
R407 4.7KOhm_0402
BAT_OVP
U40 LM393MX
OUT1 -IN1 +IN1 VEE VCC OUT2 -IN2 +IN2
+2.5VREF
+5VLCM
R406 47KOhm_0402
R405 470KOhm
Q78 2N7002
R417 10KOhm_0402
R414 100KOhm_0402
C492 4.7UF/16V_1206
C494 0.1UF/25V
T200 TPC28b
BAT_S
R430 365KOhm
R431 100KOhm_0402
C504 0.1UF/25V
C486 0.1UF/25V
C488 0.1UF/25V
R408 5.1KOhm
C487 0.1UF/25V
R409 30.1KOhm
BAT
UVP=11.625V
OVP=17.25V
T179 TPC28b
BAT_IN#_OC 27
R428 100KOhm_0402
R413 100KOhm_0402
Q77 2N7002
Q80 2N7002
49 TS#
T194 TPC28b
C501 0.001UF/50V_0402
A/D_VIN
A/D_VIN_O
AC_BAT_SYS
T14 TPC28b
T8 TPC28b
T7 TPC28b
T12 TPC28b
T22 TPC28b
T20 TPC28b
T21 TPC28b
T19 TPC28b
Q10 TPC8107
Q11 TPC8107
R29 50mOhm_2512
T359 TPC28b
ACIN_OC 27
AC_APR_UC 49
ACOK#
Q1A UM6K1N
Q1B UM6K1N
R1 0Ohm
ACIN_OC# 42
R10 100K
C11 0.47UF/25V_0805
R14 22KOhm
R15 18KOhm
D10 1SS355
D9 1SS355
R37 22KOhm_0402
R36 22KOhm_0402
Q6 2N7002
Q5 2N7002
Q4 IRLML2402
T1 TPC28b
27 BAT_LEARN
R5 100KOhm
R13 100KOhm
R6 100KOhm_0402
R4 23.2KOhm
C4 @
1UF/25V_0805
ACOK# 50
Q125 TPC8107
D70 1SS355
R679 30KOhm
A/D_VIN_O
BAT
T353 TPC28b
+5VO
U33 L78L05ACUTR
IN OUT GND
+5VCHG
D38 F02JK2E
C461 1UF/25V_0805
C466 1UF/25V_0805
T178 TPC28b
+2.5VREF
C481 1UF/10V
T172 TPC28b
+5VLCM
R394 1KOhm_0402
LM4040BIM3_2.5 U36
C474 1UF/25V_0805
GND

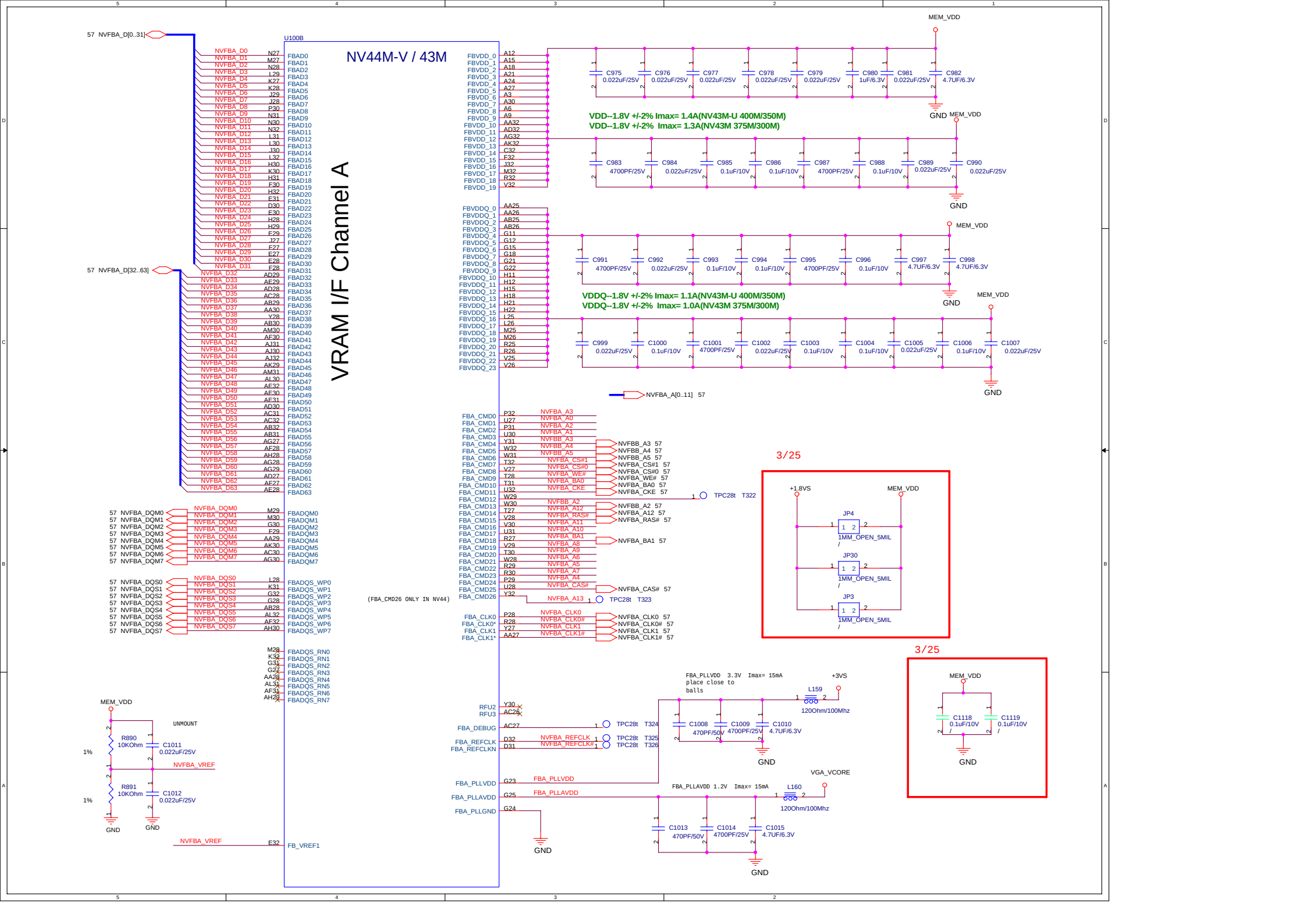

+3V
Q149
+3VSUS
SI4800DY
TPC32t T354
TPC32t T355
TPC28b T356
+3V
R942
22KOhm
+12V
C1127
0.01UF/25V
4/21
T150
TPC32t
+5VSUS (10mA)
+5VA
Q151
42,45 VSUS_ON
UMC4N
4/21
Q52
T106 TPC32t
+1.8VO
SI4894DY-TI
JP11
2MM_OPEN_5MIL
@
+1.8VS
R2.0
C403
0.1UF/25V
C414
4700PF/50V
R338
47KOhm
R2.0
Q60
TPC32t T149
TPC32t T148
+3V
SI4800BDY
TPC32t T132
TPC32t T136
JP17
3MM_OPEN_5MIL
@
T129 TPC32t
+3VS
C420
0.1UF/25V
Q42
TPC32t T104
TPC32t T103
+5V
SI4800BDY
TPC32t T99
TPC32t T98
JP9
3MM_OPEN_5MIL
@
T100 TPC32t
+5VS
C387
0.1UF/25V
C464
0.1UF/16V
D32 1SS355
+12VS
R304 10KOhm
C392
0.1UF/25V
R362
10KOhm
R2.0
4/21
TPC32t T164
+12V
Q68
UMC4N
TPC32t T161
+12VS
R945
SUSB#_PWR
24KOhm
C1142
0.47UF/16V
R2.0
R358
100KOhm
4/21
T171 TPC32t
17,18,25,35,43,49 SUSB#
T168 TPC32t
47,48,49,53 SUSB#_PWR
R371
1KOhm_0402
+3VA
JP22
1MM_OPEN_5MIL
@
4/21
18,40,42 SUSC#
T23 TPC32t
45,46 SUSC#_PWR
R374
1KOhm_0402
+3VA
JP23
1MM_OPEN_5MIL
@
AC_BAT_SYS
C491
0.1UF/25V
U39
IN
OUT
GND
EN
LEAA
ADJ
MIC5233BM5
FB=1.24V
SUSC#_PWR
R932 100KOhm
T174 TPC32t
+12V
Imax=100mA
R395
845KOhm
R393
95.3KOhm
C480
1UF/25V_0805
+3VA
R398
100KOhm
R401
100KOhm
43 SUSB_PWR
42,43 SUSC_PWR
Q71B
UM6K1N
SUSB#_PWR
Q74A
UM6K1N
SUSC#_PWR
GND

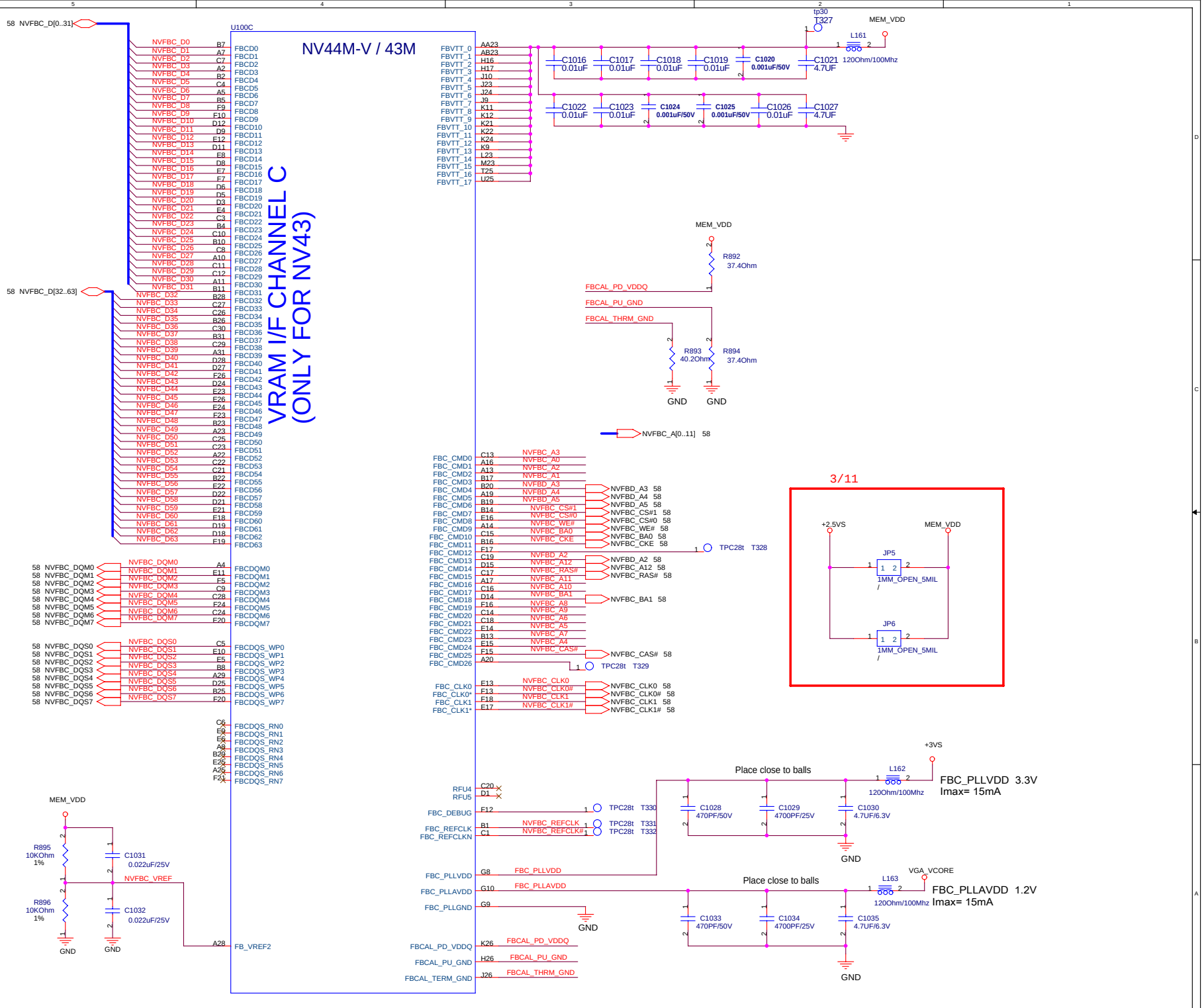

+1.8VS
+5VS
T17
TPC32t
T15
TPC32t
+1.2VSP
JP1
Imax=1.5A
1MM_OPEN_5MIL
@
U1
EN/ADJ GND4
VBIAS GND3
VIN GND2
VOUT GND1
MIC49150BMM
R31
3.4KOhm
VFB=0.9V
R35
10KOhm
C1128
C1129
10UF/6.3V_0805
1UF/10V
C19
1UF/10V
C26
1UF/10V
C38
GND
4/21

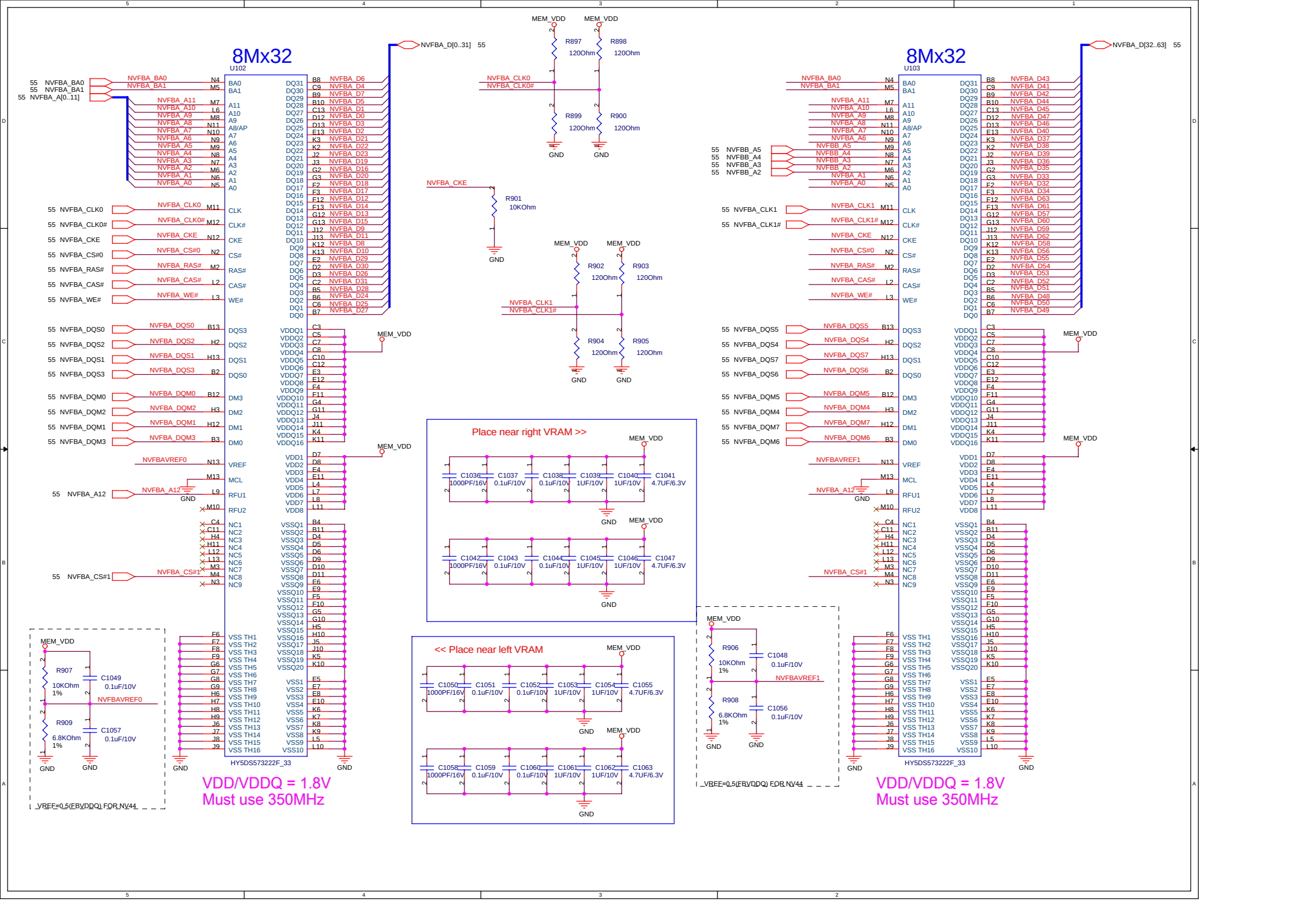

+2.5VS
R113
0Ohm_0805
T68
TPC32t
T59
TPC32t
R117
0Ohm
@
LVDDR
(400mA)
T67
TPC32t
R121
127KOhm @
+3VS
47,48,49,52 SUSB#_PWR
R129 100KOhm
@
VFB=1V
U15
EN GND1
IN GND2
OUT GND3
ADJ GND4
MIC39102BM @
C241
0.1UF/25V
@
R116
100KOhm @
C231
10UF/6.3V_0805 @
C232
10UF/6.3V_0805 @
T69
TPC32t
GND

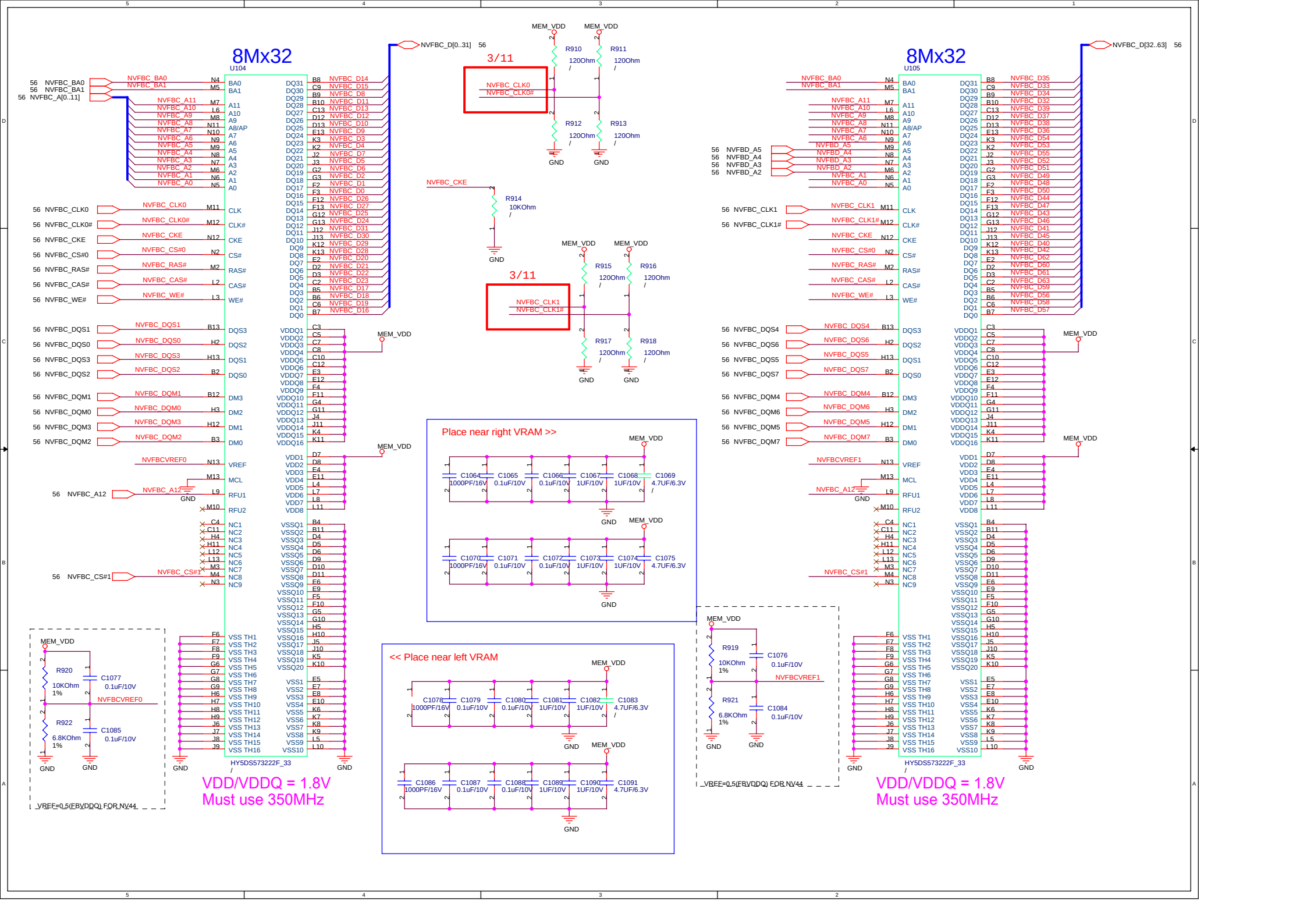
VGA PART


+12V
+3V
4/21
R416
10Ohm
C495
1UF/16V
C451
4.7UF/6.3V_0805
T190
TPC32t
T163
TPC28b
T156
TPC28b
+2.5VO
T173
TPC32t
Q64
SI4800BDY
JP21
3MM_OPEN_5MIL
@
+2.5VS (1A)
U43
VOUT1 VCC
VIN1- VOUT2
VIN1+ VIN2-
GND VIN2+
LM358ADR
4/21
R420
20KOhm_0402
C462
100UF/6.3V_7343D
R426
100KOhm
+2.5VREF
4/21
R2.0
+3VA
C505
2200PF/50V
R2.0
R429
100KOhm
@
R432
100KOhm
Q83
2N7002
R2.0
R934 82.5KOhm
Q84
2N7002
47,48,49,52 SUSB#_PWR
C1112
0.1UF/16V


NV44M-V / 43M
VRAM I/F Channel A
U100B
57 NVFBA_D[0..31]
57 NVFBA_D[32..63]
NVFBA_D0 N27 FBAD0
NVFBA_D1 M27 FBAD1
NVFBA_D2 N28 FBAD2
NVFBA_D3 L29 FBAD3
NVFBA_D4 K27 FBAD4
NVFBA_D5 K28 FBAD5
NVFBA_D6 J29 FBAD6
NVFBA_D7 J28 FBAD7
NVFBA_D8 P30 FBAD8
NVFBA_D9 N31 FBAD9
NVFBA_D10 N30 FBAD10
NVFBA_D11 N32 FBAD11
NVFBA_D12 L31 FBAD12
NVFBA_D13 L30 FBAD13
NVFBA_D14 J30 FBAD14
NVFBA_D15 L32 FBAD15
NVFBA_D16 H30 FBAD16
NVFBA_D17 K30 FBAD17
NVFBA_D18 H31 FBAD18
NVFBA_D19 E30 FBAD19
NVFBA_D20 H32 FBAD20
NVFBA_D21 E31 FBAD21
NVFBA_D22 D30 FBAD22
NVFBA_D23 E30 FBAD23
NVFBA_D24 H28 FBAD24
NVFBA_D25 H29 FBAD25
NVFBA_D26 E29 FBAD26
NVFBA_D27 J27 FBAD27
NVFBA_D28 F27 FBAD28
NVFBA_D29 E27 FBAD29
NVFBA_D30 E28 FBAD30
NVFBA_D31 F28 FBAD31
NVFBA_D32 AD29 FBAD32
NVFBA_D33 AE29 FBAD33
NVFBA_D34 AD28 FBAD34
NVFBA_D35 AC28 FBAD35
NVFBA_D36 AB29 FBAD36
NVFBA_D37 AA30 FBAD37
NVFBA_D38 Y28 FBAD38
NVFBA_D39 AB30 FBAD39
NVFBA_D40 AM30 FBAD40
NVFBA_D41 AF30 FBAD41
NVFBA_D42 AJ31 FBAD42
NVFBA_D43 AJ30 FBAD43
NVFBA_D44 AJ32 FBAD44
NVFBA_D45 AK29 FBAD45
NVFBA_D46 AM31 FBAD46
NVFBA_D47 AL30 FBAD47
NVFBA_D48 AE32 FBAD48
NVFBA_D49 AE30 FBAD49
NVFBA_D50 AE31 FBAD50
NVFBA_D51 AD30 FBAD51
NVFBA_D52 AC31 FBAD52
NVFBA_D53 AC32 FBAD53
NVFBA_D54 AB32 FBAD54
NVFBA_D55 AB31 FBAD55
NVFBA_D56 AG27 FBAD56
NVFBA_D57 AE28 FBAD57
NVFBA_D58 AH28 FBAD58
NVFBA_D59 AG28 FBAD59
NVFBA_D60 AG29 FBAD60
NVFBA_D61 AD27 FBAD61
NVFBA_D62 AE27 FBAD62
NVFBA_D63 AE28 FBAD63
57 NVFBA_DQM0 NVFBA_DQM0 M29 FBADQM0
57 NVFBA_DQM1 NVFBA_DQM1 M30 FBADQM1
57 NVFBA_DQM2 NVFBA_DQM2 G30 FBADQM2
57 NVFBA_DQM3 NVFBA_DQM3 F29 FBADQM3
57 NVFBA_DQM4 NVFBA_DQM4 AA29 FBADQM4
57 NVFBA_DQM5 NVFBA_DQM5 AK30 FBADQM5
57 NVFBA_DQM6 NVFBA_DQM6 AC30 FBADQM6
57 NVFBA_DQM7 NVFBA_DQM7 AG30 FBADQM7
57 NVFBA_DQS0 NVFBA_DQS0 L28 FBADQS_WP0
57 NVFBA_DQS1 NVFBA_DQS1 K31 FBADQS_WP1
57 NVFBA_DQS2 NVFBA_DQS2 G32 FBADQS_WP2
57 NVFBA_DQS3 NVFBA_DQS3 G28 FBADQS_WP3
57 NVFBA_DQS4 NVFBA_DQS4 AB28 FBADQS_WP4
57 NVFBA_DQS5 NVFBA_DQS5 AL32 FBADQS_WP5
57 NVFBA_DQS6 NVFBA_DQS6 AE32 FBADQS_WP6
57 NVFBA_DQS7 NVFBA_DQS7 AH30 FBADQS_WP7
M28 FBADQS_RN0
K32 FBADQS_RN1
G31 FBADQS_RN2
G27 FBADQS_RN3
AA28 FBADQS_RN4
AL31 FBADQS_RN5
AF31 FBADQS_RN6
AH29 FBADQS_RN7
MEM_VDD
UNMOUNT
R890 10KOhm 1% C1011 0.022uF/25V
NVFBA_VREF
R891 10KOhm 1% C1012 0.022uF/25V
GND
NVFBA_VREF E32 FB_VREF1
FBVDD_0 A12
FBVDD_1 A15
FBVDD_2 A18
FBVDD_3 A21
FBVDD_4 A24
FBVDD_5 A27
FBVDD_6 A3
FBVDD_7 A30
FBVDD_8 A6
FBVDD_9 A9
FBVDD_10 AA32
FBVDD_11 AD32
FBVDD_12 AG32
FBVDD_13 AK32
FBVDD_14 C32
FBVDD_15 F32
FBVDD_16 J32
FBVDD_17 M32
FBVDD_18 R32
FBVDD_19 V32
C975 0.022uF/25V
C976 0.022uF/25V
C977 0.022uF/25V
C978 0.022uF/25V
C979 0.022uF/25V
C980 1uF/6.3V
C981 0.022uF/25V
C982 4.7UF/6.3V
VDD--1.8V +/-2% Imax= 1.4A(NV43M-U 400M/350M)
VDD--1.8V +/-2% Imax= 1.3A(NV43M 375M/300M)
C983 4700PF/25V
C984 0.022uF/25V
C985 0.1uF/10V
C986 0.1uF/10V
C987 4700PF/25V
C988 0.1uF/10V
C989 0.022uF/25V
C990 0.022uF/25V
FBVDDQ_0 AA25
FBVDDQ_1 AA26
FBVDDQ_2 AB25
FBVDDQ_3 AB26
FBVDDQ_4 G11
FBVDDQ_5 G12
FBVDDQ_6 G15
FBVDDQ_7 G18
FBVDDQ_8 G21
FBVDDQ_9 G22
FBVDDQ_10 H11
FBVDDQ_11 H12
FBVDDQ_12 H15
FBVDDQ_13 H18
FBVDDQ_14 H21
FBVDDQ_15 H22
FBVDDQ_16 L25
FBVDDQ_17 L26
FBVDDQ_18 M25
FBVDDQ_19 M26
FBVDDQ_20 R25
FBVDDQ_21 R26
FBVDDQ_22 V25
FBVDDQ_23 V26
C991 4700PF/25V
C992 0.022uF/25V
C993 0.1uF/10V
C994 0.1uF/10V
C995 4700PF/25V
C996 0.1uF/10V
C997 4.7UF/6.3V
C998 4.7UF/6.3V
VDDQ--1.8V +/-2% Imax= 1.1A(NV43M-U 400M/350M)
VDDQ--1.8V +/-2% Imax= 1.0A(NV43M 375M/300M)
C999 0.022uF/25V
C1000 0.1uF/10V
C1001 4700PF/25V
C1002 0.022uF/25V
C1003 0.1uF/10V
C1004 0.1uF/10V
C1005 0.022uF/25V
C1006 0.1uF/10V
C1007 0.022uF/25V
NVFBA_A[0..11] 57
FBA_CMD0 P32 NVFBA_A3
FBA_CMD1 U27 NVFBA_A0
FBA_CMD2 P31 NVFBA_A2
FBA_CMD3 U30 NVFBA_A1
FBA_CMD4 Y31 NVFBB_A3 NVFBB_A3 57
FBA_CMD5 W32 NVFBB_A4 NVFBB_A4 57
FBA_CMD6 W31 NVFBB_A5 NVFBB_A5 57
FBA_CMD7 T32 NVFBA_CS#1 NVFBA_CS#1 57
FBA_CMD8 V27 NVFBA_CS#0 NVFBA_CS#0 57
FBA_CMD9 T28 NVFBA_WE# NVFBA_WE# 57
FBA_CMD10 T31 NVFBA_BA0 NVFBA_BA0 57
FBA_CMD11 U32 NVFBA_CKE NVFBA_CKE 57
FBA_CMD12 W29 1 TPC28t T322
FBA_CMD13 W30 NVFBB_A2 NVFBB_A2 57
FBA_CMD14 T27 NVFBA_A12 NVFBA_A12 57
FBA_CMD15 V28 NVFBA_RAS# NVFBA_RAS# 57
FBA_CMD16 V30 NVFBA_A11
FBA_CMD17 U31 NVFBA_A10
FBA_CMD18 R27 NVFBA_BA1 NVFBA_BA1 57
FBA_CMD19 V29 NVFBA_A8
FBA_CMD20 T30 NVFBA_A9
FBA_CMD21 W28 NVFBA_A6
FBA_CMD22 R29 NVFBA_A5
FBA_CMD23 R30 NVFBA_A7
FBA_CMD24 P29 NVFBA_A4
FBA_CMD25 U28 NVFBA_CAS# NVFBA_CAS# 57
FBA_CMD26 Y32 NVFBA_A13 1 TPC28t T323
(FBA_CMD26 ONLY IN NV44)
FBA_CLK0 P28 NVFBA_CLK0 NVFBA_CLK0 57
FBA_CLK0* R28 NVFBA_CLK0# NVFBA_CLK0# 57
FBA_CLK1 Y27 NVFBA_CLK1 NVFBA_CLK1 57
FBA_CLK1* AA27 NVFBA_CLK1# NVFBA_CLK1# 57
3/25
+1.8VS
MEM_VDD
JP4 1 2 1MM_OPEN_5MIL /
JP30 1 2 1MM_OPEN_5MIL /
JP3 1 2 1MM_OPEN_5MIL /
RFU2 Y30
RFU3 AC26
FBA_DEBUG AC27 1 TPC28t T324
FBA_REFCLK D32 NVFBA_REFCLK 1 TPC28t T325
FBA_REFCLKN D31 NVFBA_REFCLK# 1 TPC28t T326
FBA_PLLVDD_3.3V Imax= 15mA place close to balls
+3VS
L159 120Ohm/100Mhz
C1008 470PF/50V
C1009 4700PF/25V
C1010 4.7UF/6.3V
GND
FBA_PLLVDD G23 FBA_PLLVDD
FBA_PLLAVDD G25 FBA_PLLAVDD
FBA_PLLGND G24
FBA_PLLAVDD 1.2V Imax= 15mA
VGA_VCORE
L160 120Ohm/100Mhz
C1013 470PF/50V
C1014 4700PF/25V
C1015 4.7UF/6.3V
3/25
C1118 0.1uF/10V /
C1119 0.1uF/10V /


U100C
NV44M-V / 43M
VRAM I/F CHANNEL C
(ONLY FOR NV43)
58 NVFBC_D[0..31]
58 NVFBC_D[32..63]
NVFBC_D0 B7 FBCD0
NVFBC_D1 A7 FBCD1
NVFBC_D2 C7 FBCD2
NVFBC_D3 A2 FBCD3
NVFBC_D4 B2 FBCD4
NVFBC_D5 C4 FBCD5
NVFBC_D6 A5 FBCD6
NVFBC_D7 B5 FBCD7
NVFBC_D8 F9 FBCD8
NVFBC_D9 F10 FBCD9
NVFBC_D10 D12 FBCD10
NVFBC_D11 D9 FBCD11
NVFBC_D12 E12 FBCD12
NVFBC_D13 D11 FBCD13
NVFBC_D14 E8 FBCD14
NVFBC_D15 D8 FBCD15
NVFBC_D16 E7 FBCD16
NVFBC_D17 E7 FBCD17
NVFBC_D18 D6 FBCD18
NVFBC_D19 D5 FBCD19
NVFBC_D20 D3 FBCD20
NVFBC_D21 E4 FBCD21
NVFBC_D22 C3 FBCD22
NVFBC_D23 B4 FBCD23
NVFBC_D24 C10 FBCD24
NVFBC_D25 B10 FBCD25
NVFBC_D26 C9 FBCD26
NVFBC_D27 A10 FBCD27
NVFBC_D28 C11 FBCD28
NVFBC_D29 C12 FBCD29
NVFBC_D30 A11 FBCD30
NVFBC_D31 B11 FBCD31
NVFBC_D32 B28 FBCD32
NVFBC_D33 C27 FBCD33
NVFBC_D34 C26 FBCD34
NVFBC_D35 B26 FBCD35
NVFBC_D36 C30 FBCD36
NVFBC_D37 B31 FBCD37
NVFBC_D38 C29 FBCD38
NVFBC_D39 A31 FBCD39
NVFBC_D40 D28 FBCD40
NVFBC_D41 D27 FBCD41
NVFBC_D42 F26 FBCD42
NVFBC_D43 D24 FBCD43
NVFBC_D44 E23 FBCD44
NVFBC_D45 E26 FBCD45
NVFBC_D46 E24 FBCD46
NVFBC_D47 F23 FBCD47
NVFBC_D48 B23 FBCD48
NVFBC_D49 A23 FBCD49
NVFBC_D50 C25 FBCD50
NVFBC_D51 C23 FBCD51
NVFBC_D52 A22 FBCD52
NVFBC_D53 C22 FBCD53
NVFBC_D54 C21 FBCD54
NVFBC_D55 B22 FBCD55
NVFBC_D56 E22 FBCD56
NVFBC_D57 D22 FBCD57
NVFBC_D58 D21 FBCD58
NVFBC_D59 E21 FBCD59
NVFBC_D60 E18 FBCD60
NVFBC_D61 D19 FBCD61
NVFBC_D62 D18 FBCD62
NVFBC_D63 E19 FBCD63
58 NVFBC_DQM0 NVFBC_DQM0 A4 FBCDQM0
58 NVFBC_DQM1 NVFBC_DQM1 E11 FBCDQM1
58 NVFBC_DQM2 NVFBC_DQM2 E5 FBCDQM2
58 NVFBC_DQM3 NVFBC_DQM3 C9 FBCDQM3
58 NVFBC_DQM4 NVFBC_DQM4 C28 FBCDQM4
58 NVFBC_DQM5 NVFBC_DQM5 F24 FBCDQM5
58 NVFBC_DQM6 NVFBC_DQM6 C24 FBCDQM6
58 NVFBC_DQM7 NVFBC_DQM7 E20 FBCDQM7
58 NVFBC_DQS0 NVFBC_DQS0 C5 FBCDQS_WP0
58 NVFBC_DQS1 NVFBC_DQS1 E10 FBCDQS_WP1
58 NVFBC_DQS2 NVFBC_DQS2 E5 FBCDQS_WP2
58 NVFBC_DQS3 NVFBC_DQS3 B8 FBCDQS_WP3
58 NVFBC_DQS4 NVFBC_DQS4 A29 FBCDQS_WP4
58 NVFBC_DQS5 NVFBC_DQS5 D25 FBCDQS_WP5
58 NVFBC_DQS6 NVFBC_DQS6 B25 FBCDQS_WP6
58 NVFBC_DQS7 NVFBC_DQS7 F20 FBCDQS_WP7
C6 FBCDQS_RN0
E9 FBCDQS_RN1
E6 FBCDQS_RN2
A9 FBCDQS_RN3
B29 FBCDQS_RN4
E25 FBCDQS_RN5
A25 FBCDQS_RN6
F21 FBCDQS_RN7
MEM_VDD
R895 10KOhm 1%
C1031 0.022uF/25V
NVFBC_VREF
R896 10KOhm 1%
C1032 0.022uF/25V
GND
GND
A28 FB_VREF2
FBVTT_0 AA23
FBVTT_1 AB23
FBVTT_2 H16
FBVTT_3 H17
FBVTT_4 J10
FBVTT_5 J23
FBVTT_6 J24
FBVTT_7 J9
FBVTT_8 K11
FBVTT_9 K12
FBVTT_10 K21
FBVTT_11 K22
FBVTT_12 K24
FBVTT_13 K9
FBVTT_14 L23
FBVTT_15 M23
FBVTT_16 T25
FBVTT_17 U25
C1016 0.01uF
C1017 0.01uF
C1018 0.01uF
C1019 0.01uF
C1020 0.001uF/50V
C1021 4.7UF
C1022 0.01uF
C1023 0.01uF
C1024 0.001uF/50V
C1025 0.001uF/50V
C1026 0.01uF
C1027 4.7UF
tp30
T327
MEM_VDD
L161 120Ohm/100Mhz
MEM_VDD
R892 37.4Ohm
FBCAL_PD_VDDQ
FBCAL_PU_GND
FBCAL_THRM_GND
R893 40.2Ohm
R894 37.4Ohm
GND
GND
NVFBC_A[0..11] 58
FBC_CMD0 C13 NVFBC_A3
FBC_CMD1 A16 NVFBC_A0
FBC_CMD2 A13 NVFBC_A2
FBC_CMD3 B17 NVFBC_A1
FBC_CMD4 B20 NVFBD_A3
FBC_CMD5 A19 NVFBD_A4
FBC_CMD6 B19 NVFBD_A5
FBC_CMD7 B14 NVFBC_CS#1
FBC_CMD8 E16 NVFBC_CS#0
FBC_CMD9 A14 NVFBC_WE#
FBC_CMD10 C15 NVFBC_BA0
FBC_CMD11 B16 NVFBC_CKE
FBC_CMD12 F17
FBC_CMD13 C19 NVFBD_A2
FBC_CMD14 D15 NVFBC_A12
FBC_CMD15 C17 NVFBC_RAS#
FBC_CMD16 A17 NVFBC_A11
FBC_CMD17 C16 NVFBC_A10
FBC_CMD18 D14 NVFBC_BA1
FBC_CMD19 F16 NVFBC_A8
FBC_CMD20 C14 NVFBC_A9
FBC_CMD21 C18 NVFBC_A6
FBC_CMD22 E14 NVFBC_A5
FBC_CMD23 B13 NVFBC_A7
FBC_CMD24 E15 NVFBC_A4
FBC_CMD25 F15 NVFBC_CAS#
FBC_CMD26 A20
NVFBD_A3 58
NVFBD_A4 58
NVFBD_A5 58
NVFBC_CS#1 58
NVFBC_CS#0 58
NVFBC_WE# 58
NVFBC_BA0 58
NVFBC_CKE 58
TPC28t T328
NVFBD_A2 58
NVFBC_A12 58
NVFBC_RAS# 58
NVFBC_BA1 58
NVFBC_CAS# 58
TPC28t T329
FBC_CLK0 E13 NVFBC_CLK0
FBC_CLK0* F13 NVFBC_CLK0#
FBC_CLK1 F18 NVFBC_CLK1
FBC_CLK1* E17 NVFBC_CLK1#
NVFBC_CLK0 58
NVFBC_CLK0# 58
NVFBC_CLK1 58
NVFBC_CLK1# 58
3/11
+2.5VS
MEM_VDD
JP5
1MM_OPEN_5MIL
JP6
1MM_OPEN_5MIL
RFU4 C20
RFU5 D1
FBC_DEBUG F12
TPC28t T330
FBC_REFCLK B1 NVFBC_REFCLK
FBC_REFCLKN C1 NVFBC_REFCLK#
TPC28t T331
TPC28t T332
FBC_PLLVDD G8 FBC_PLLVDD
FBC_PLLAVDD G10 FBC_PLLAVDD
FBC_PLLGND G9
GND
FBCAL_PD_VDDQ K26 FBCAL_PD_VDDQ
FBCAL_PU_GND H26 FBCAL_PU_GND
FBCAL_TERM_GND J26 FBCAL_THRM_GND
Place close to balls
C1028 470PF/50V
C1029 4700PF/25V
C1030 4.7UF/6.3V
GND
+3VS
L162 120Ohm/100Mhz
FBC_PLLVDD 3.3V
Imax= 15mA
Place close to balls
C1033 470PF/50V
C1034 4700PF/25V
C1035 4.7UF/6.3V
GND
VGA_VCORE
L163 120Ohm/100Mhz
FBC_PLLAVDD 1.2V
Imax= 15mA


8Mx32
U102
NVFBA_D[0..31] 55
55 NVFBA_BA0
55 NVFBA_BA1
55 NVFBA_A[0..11]
55 NVFBA_CLK0
55 NVFBA_CLK0#
55 NVFBA_CKE
55 NVFBA_CS#0
55 NVFBA_RAS#
55 NVFBA_CAS#
55 NVFBA_WE#
55 NVFBA_DQS0
55 NVFBA_DQS2
55 NVFBA_DQS1
55 NVFBA_DQS3
55 NVFBA_DQM0
55 NVFBA_DQM2
55 NVFBA_DQM1
55 NVFBA_DQM3
55 NVFBA_A12
55 NVFBA_CS#1
MEM_VDD
GND
R897 120Ohm
R898 120Ohm
R899 120Ohm
R900 120Ohm
R901 10KOhm
R902 120Ohm
R903 120Ohm
R904 120Ohm
R905 120Ohm
Place near right VRAM >>
C1036 1000PF/16V
C1037 0.1uF/10V
C1038 0.1uF/10V
C1039 1UF/10V
C1040 1UF/10V
C1041 4.7UF/6.3V
C1042 1000PF/16V
C1043 0.1uF/10V
C1044 0.1uF/10V
C1045 1UF/10V
C1046 1UF/10V
C1047 4.7UF/6.3V
<< Place near left VRAM
C1050 1000PF/16V
C1051 0.1uF/10V
C1052 0.1uF/10V
C1053 1UF/10V
C1054 1UF/10V
C1055 4.7UF/6.3V
C1058 1000PF/16V
C1059 0.1uF/10V
C1060 0.1uF/10V
C1061 1UF/10V
C1062 1UF/10V
C1063 4.7UF/6.3V
R907 10KOhm 1%
C1049 0.1uF/10V
NVFBAVREF0
R909 6.8KOhm 1%
C1057 0.1uF/10V
VREF=0.5(FBVDDQ) FOR NV44
R906 10KOhm 1%
C1048 0.1uF/10V
NVFBAVREF1
R908 6.8KOhm 1%
C1056 0.1uF/10V
VREF=0.5(FBVDDQ) FOR NV44
HY5DS573222F_33
VDD/VDDQ = 1.8V
Must use 350MHz
8Mx32
U103
NVFBA_D[32..63] 55
55 NVFBB_A5
55 NVFBB_A4
55 NVFBB_A3
55 NVFBB_A2
55 NVFBA_CLK1
55 NVFBA_CLK1#
55 NVFBA_DQS5
55 NVFBA_DQS4
55 NVFBA_DQS7
55 NVFBA_DQS6
55 NVFBA_DQM5
55 NVFBA_DQM4
55 NVFBA_DQM7
55 NVFBA_DQM6
HY5DS573222F_33
VDD/VDDQ = 1.8V
Must use 350MHz


8Mx32
U104
8Mx32
U105
3/11
3/11
Place near right VRAM >>
<< Place near left VRAM
NVFBC_D[0..31] 56
NVFBC_D[32..63] 56
NVFBC_BA0
NVFBC_BA1
NVFBC_A[0..11]
NVFBC_CLK0
NVFBC_CLK0#
NVFBC_CKE
NVFBC_CS#0
NVFBC_RAS#
NVFBC_CAS#
NVFBC_WE#
NVFBC_DQS1
NVFBC_DQS0
NVFBC_DQS3
NVFBC_DQS2
NVFBC_DQM1
NVFBC_DQM0
NVFBC_DQM3
NVFBC_DQM2
NVFBCVREF0
NVFBC_A12
NVFBC_CS#1
NVFBC_CLK1
NVFBC_CLK1#
NVFBD_A5
NVFBD_A4
NVFBD_A3
NVFBD_A2
NVFBC_DQS4
NVFBC_DQS6
NVFBC_DQS5
NVFBC_DQS7
NVFBC_DQM4
NVFBC_DQM6
NVFBC_DQM5
NVFBC_DQM7
NVFBCVREF1
MEM_VDD
GND
R910 120Ohm
R911 120Ohm
R912 120Ohm
R913 120Ohm
R914 10KOhm
R915 120Ohm
R916 120Ohm
R917 120Ohm
R918 120Ohm
R919 10KOhm 1%
R920 10KOhm 1%
R921 6.8KOhm 1%
R922 6.8KOhm 1%
C1064 1000PF/16V
C1065 0.1uF/10V
C1066 0.1uF/10V
C1067 1UF/10V
C1068 1UF/10V
C1069 4.7UF/6.3V
C1070 1000PF/16V
C1071 0.1uF/10V
C1072 0.1uF/10V
C1073 1UF/10V
C1074 1UF/10V
C1075 4.7UF/6.3V
C1076 0.1uF/10V
C1077 0.1uF/10V
C1078 1000PF/16V
C1079 0.1uF/10V
C1080 0.1uF/10V
C1081 1UF/10V
C1082 1UF/10V
C1083 4.7UF/6.3V
C1084 0.1uF/10V
C1085 0.1uF/10V
C1086 1000PF/16V
C1087 0.1uF/10V
C1088 0.1uF/10V
C1089 1UF/10V
C1090 1UF/10V
C1091 4.7UF/6.3V
HY5DS573222F_33
VREF=0.5(FBVDDQ) FOR NV44
VREF=0.5(FBVDDQ) FOR NV44
VDD/VDDQ = 1.8V
Must use 350MHz
VDD/VDDQ = 1.8V
Must use 350MHz