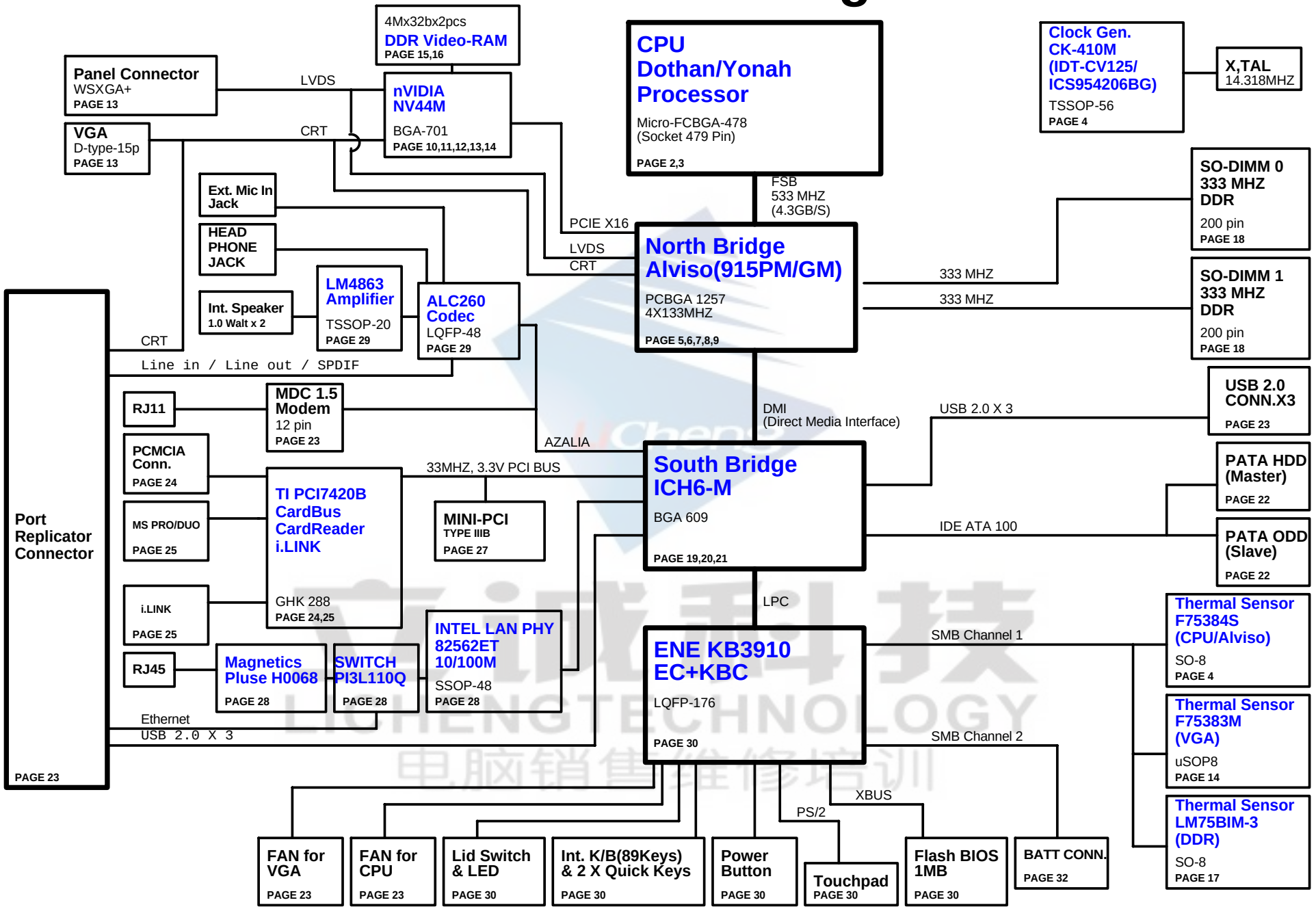
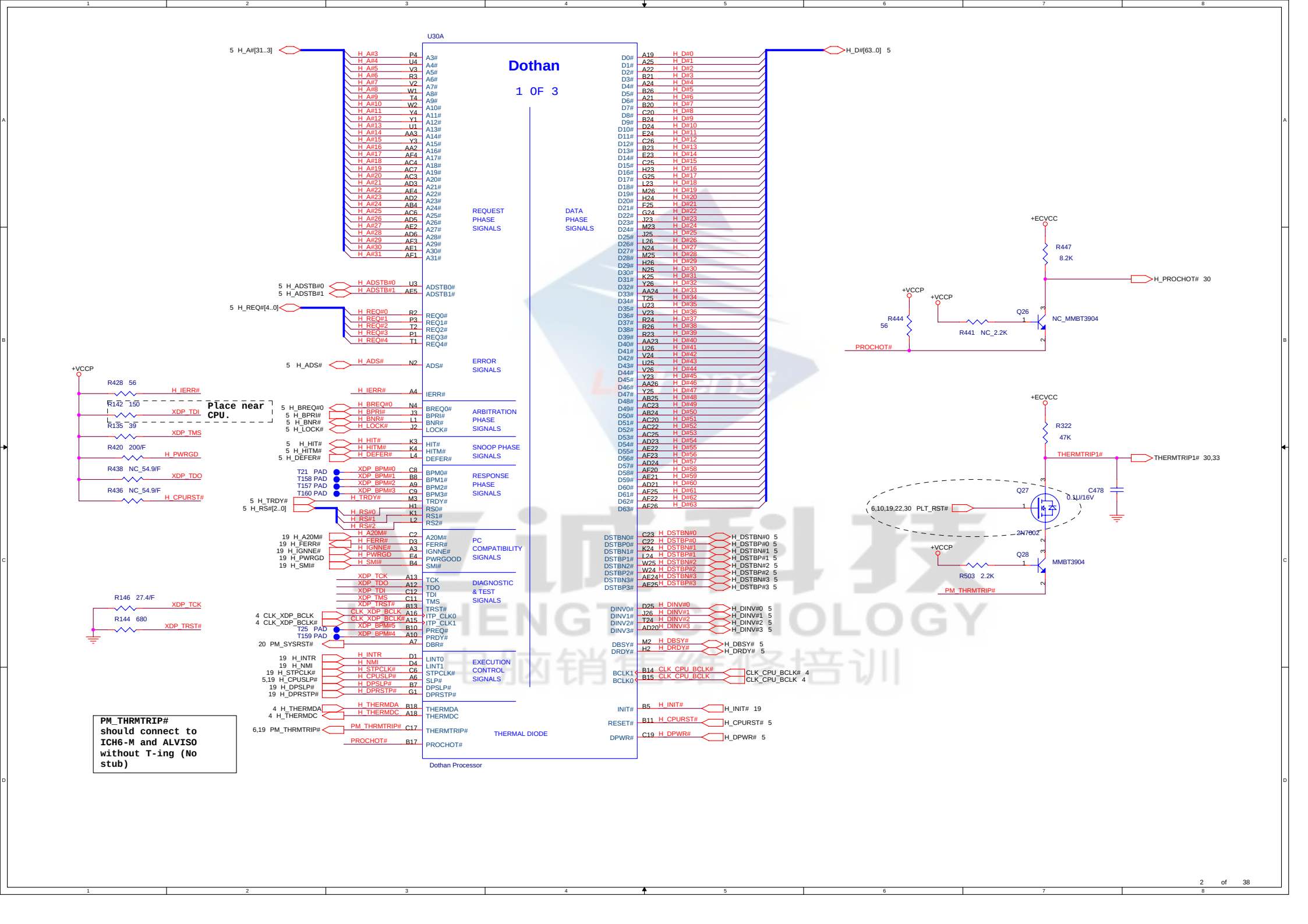
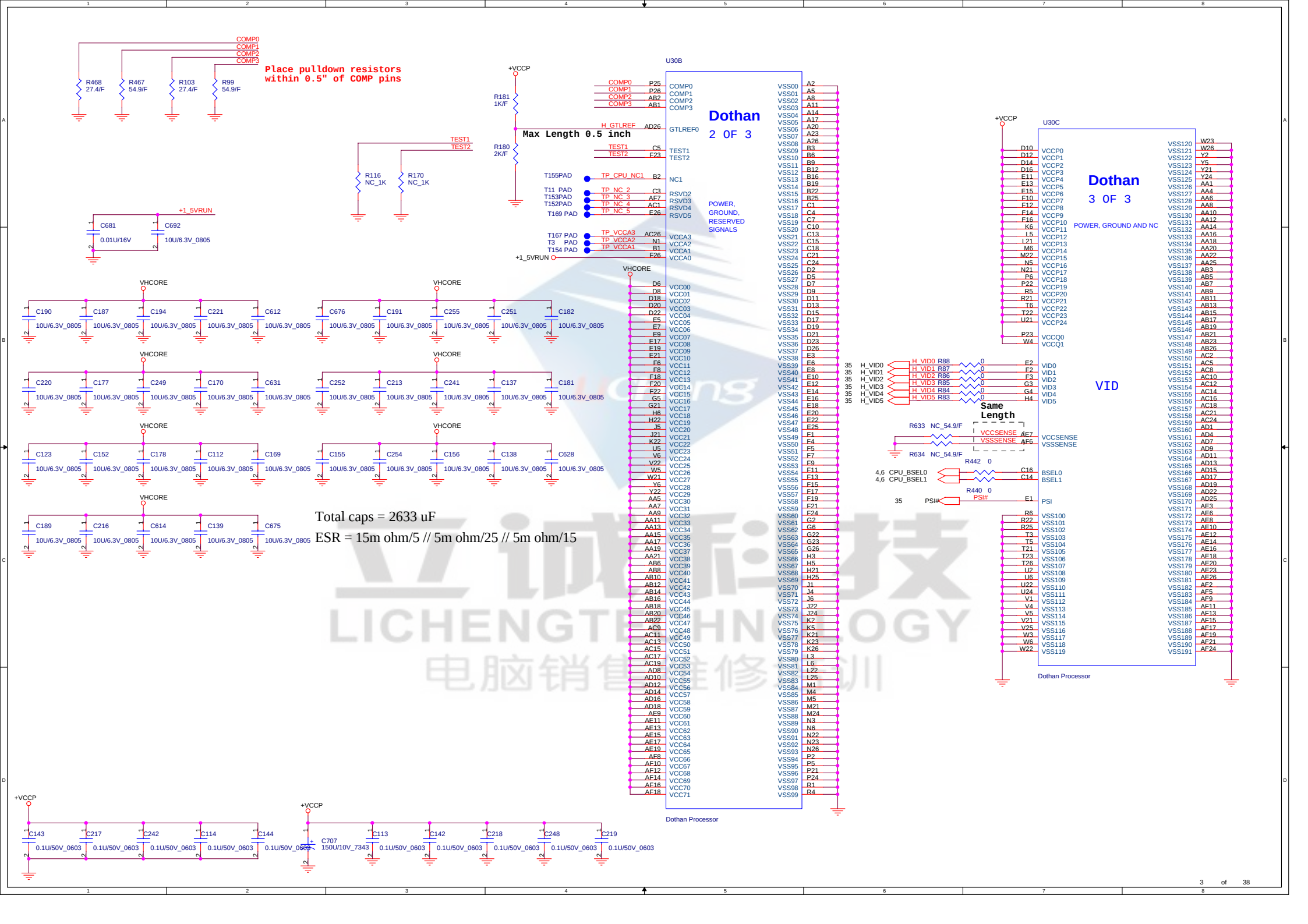
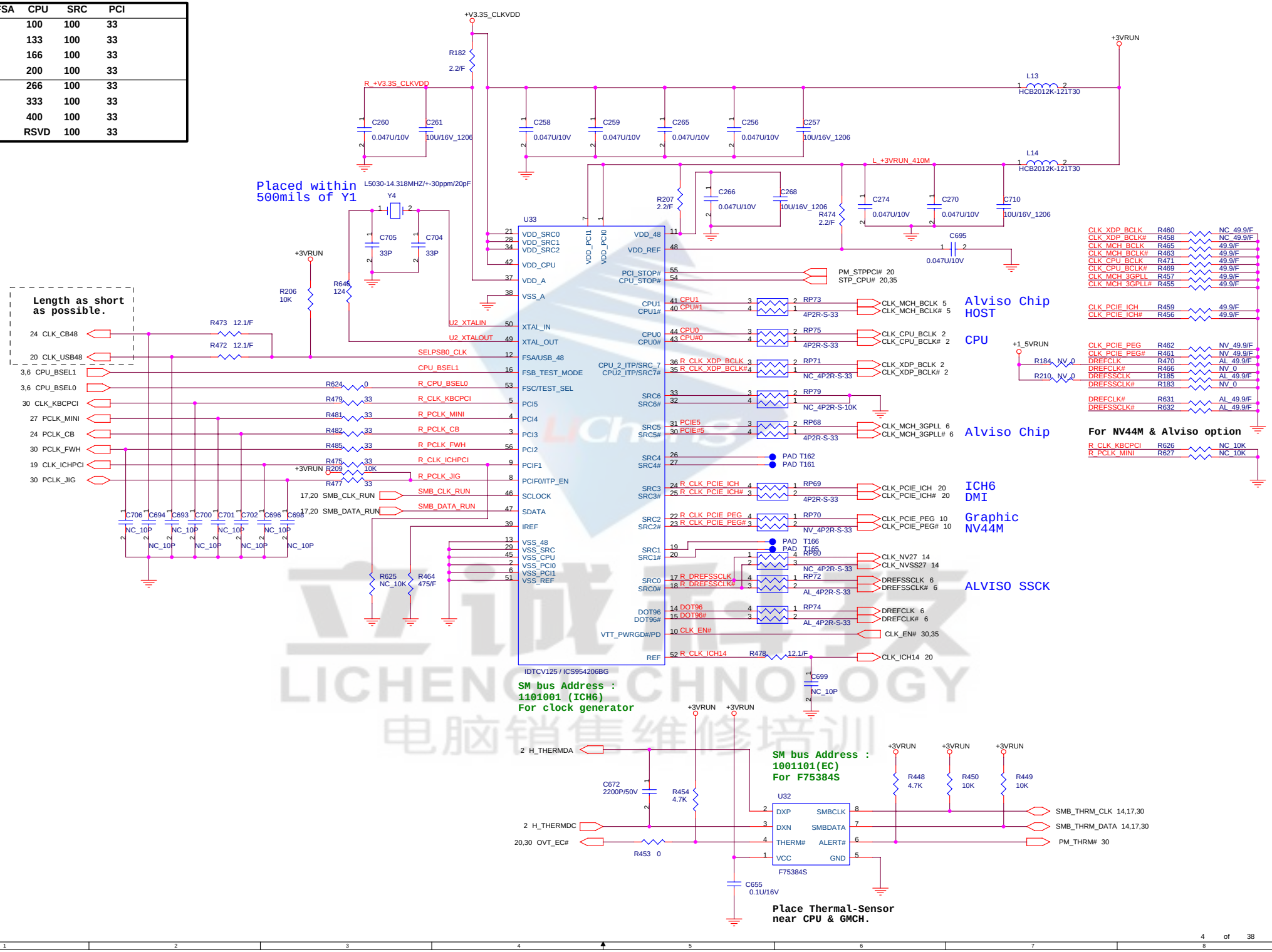
915PM/GM+Gfx Block Diagram

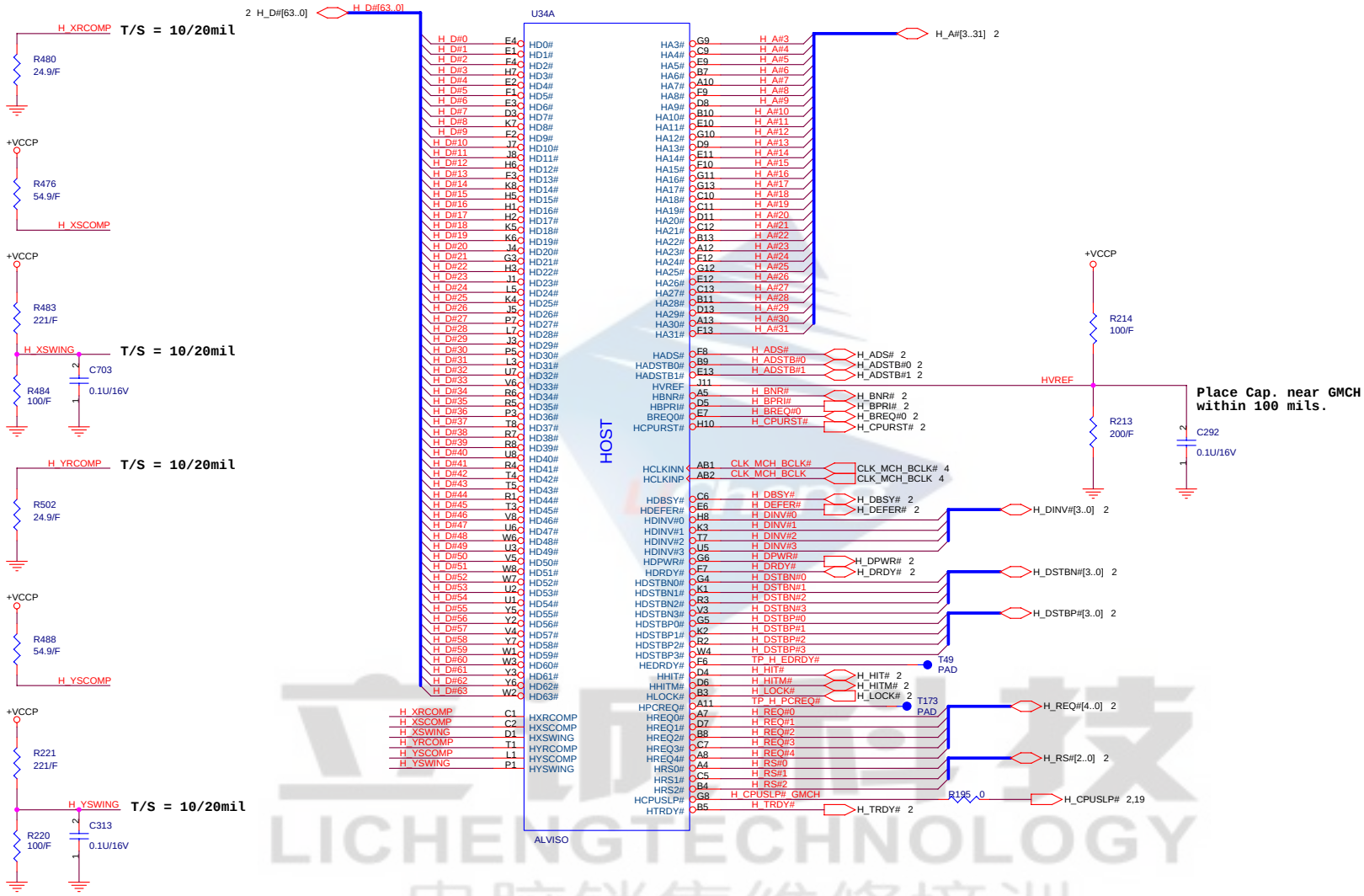


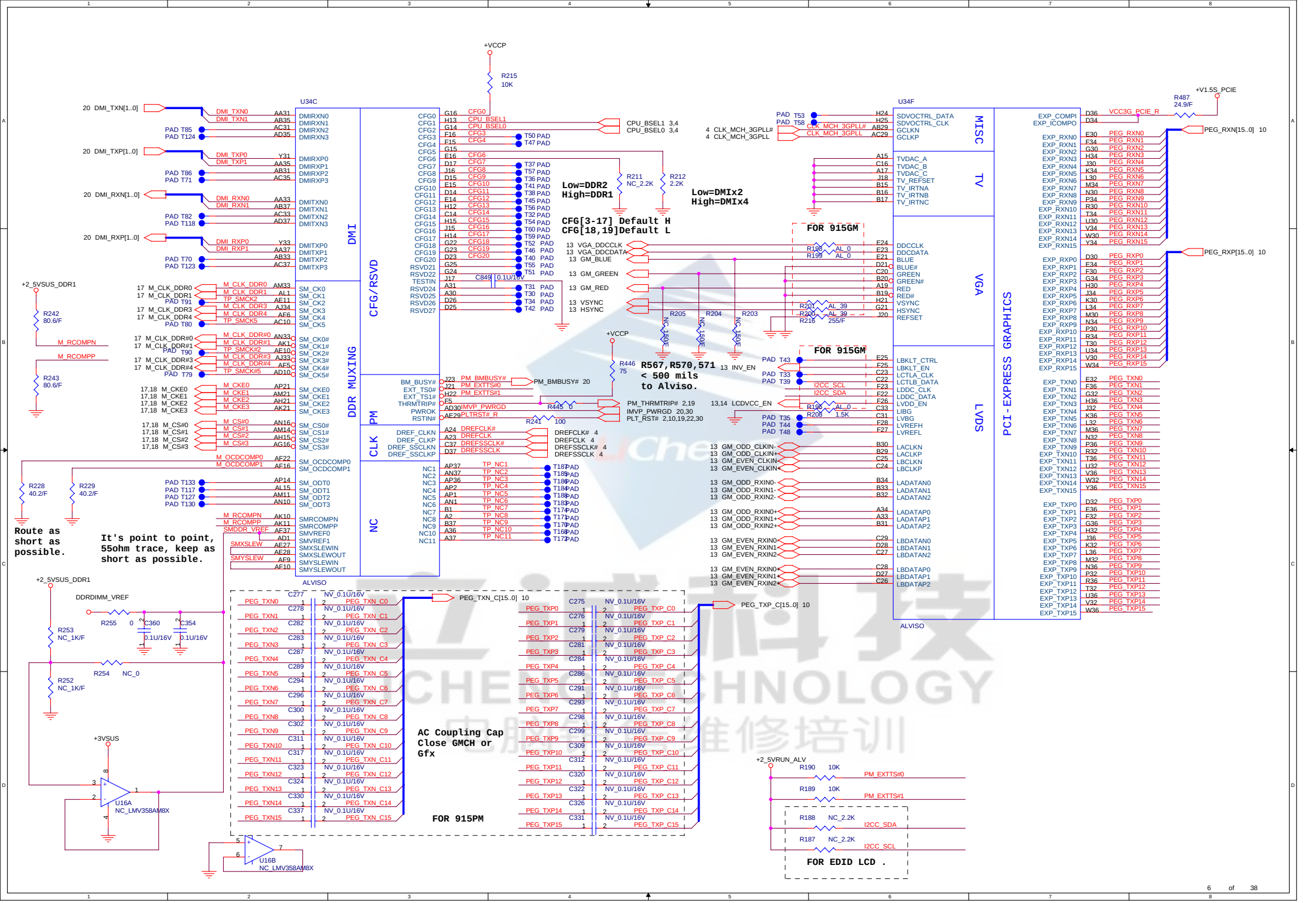

U30A
Dothan
1 OF 3
Dothan Processor
REQUEST PHASE SIGNALS
DATA PHASE SIGNALS
ERROR SIGNALS
ARBITRATION PHASE SIGNALS
SNOOP PHASE SIGNALS
RESPONSE PHASE SIGNALS
PC COMPATIBILITY SIGNALS
DIAGNOSTIC & TEST SIGNALS
EXECUTION CONTROL SIGNALS
THERMAL DIODE
Place near CPU.
PM_THRMTRIP# should connect to ICH6-M and ALVISO without T-ing (No stub)
+ECVCC
+VCCP
+VCCP
R447 8.2K
H_PROCHOT# 30
R444 56
R441 NC_2.2K
Q26 NC_MMBT3904
PROCHOT#
R322 47K
THERMTRIP1#
THERMTRIP1# 30,33
C478 0.1U/16V
Q27 2N7002
6,10,19,22,30 PLT_RST#
Q28 MMBT3904
R503 2.2K
PM_THRMTRIP#
R428 56
R142 150
R135 39
R420 200/F
R438 NC_54.9/F
R436 NC_54.9/F
R146 27.4/F
R144 680
H_IERR#
XDP_TDI
XDP_TMS
H_PWRGD
XDP_TDO
H_CPURST#
XDP_TCK
XDP_TRST#
5 H_A#[31..3]
5 H_ADSTB#0
5 H_ADSTB#1
5 H_REQ#[4..0]
5 H_ADS#
5 H_BREQ#0
5 H_BPRI#
5 H_BNR#
5 H_LOCK#
5 H_HIT#
5 H_HITM#
5 H_DEFER#
5 H_TRDY#
5 H_RS#[2..0]
19 H_A20M#
19 H_FERR#
19 H_IGNNE#
19 H_PWRGD
19 H_SMI#
4 CLK_XDP_BCLK
4 CLK_XDP_BCLK#
20 PM_SYSRST#
19 H_INTR
19 H_NMI
19 H_STPCLK#
5,19 H_CPUSLP#
19 H_DPSLP#
19 H_DPRSTP#
4 H_THERMDA
4 H_THERMDC
6,19 PM_THRMTRIP#
H_D#[63..0] 5
DSTBN0# C23 H_DSTBN#0
DSTBP0# C22 H_DSTBP#0
DSTBN1# K24 H_DSTBN#1
DSTBP1# L24 H_DSTBP#1
DSTBN2# W25 H_DSTBN#2
DSTBP2# W24 H_DSTBP#2
DSTBN3# AE24 H_DSTBN#3
DSTBP3# AE25 H_DSTBP#3
DINV0# D25 H_DINV#0
DINV1# J26 H_DINV#1
DINV2# T24 H_DINV#2
DINV3# AD20 H_DINV#3
DBSY# M2 H_DBSY#
DRDY# H2 H_DRDY#
BCLK1 B14 CLK_CPU_BCLK#
BCLK0 B15 CLK_CPU_BCLK
INIT# B5 H_INIT#
RESET# B11 H_CPURST#
DPWR# C19 H_DPWR#

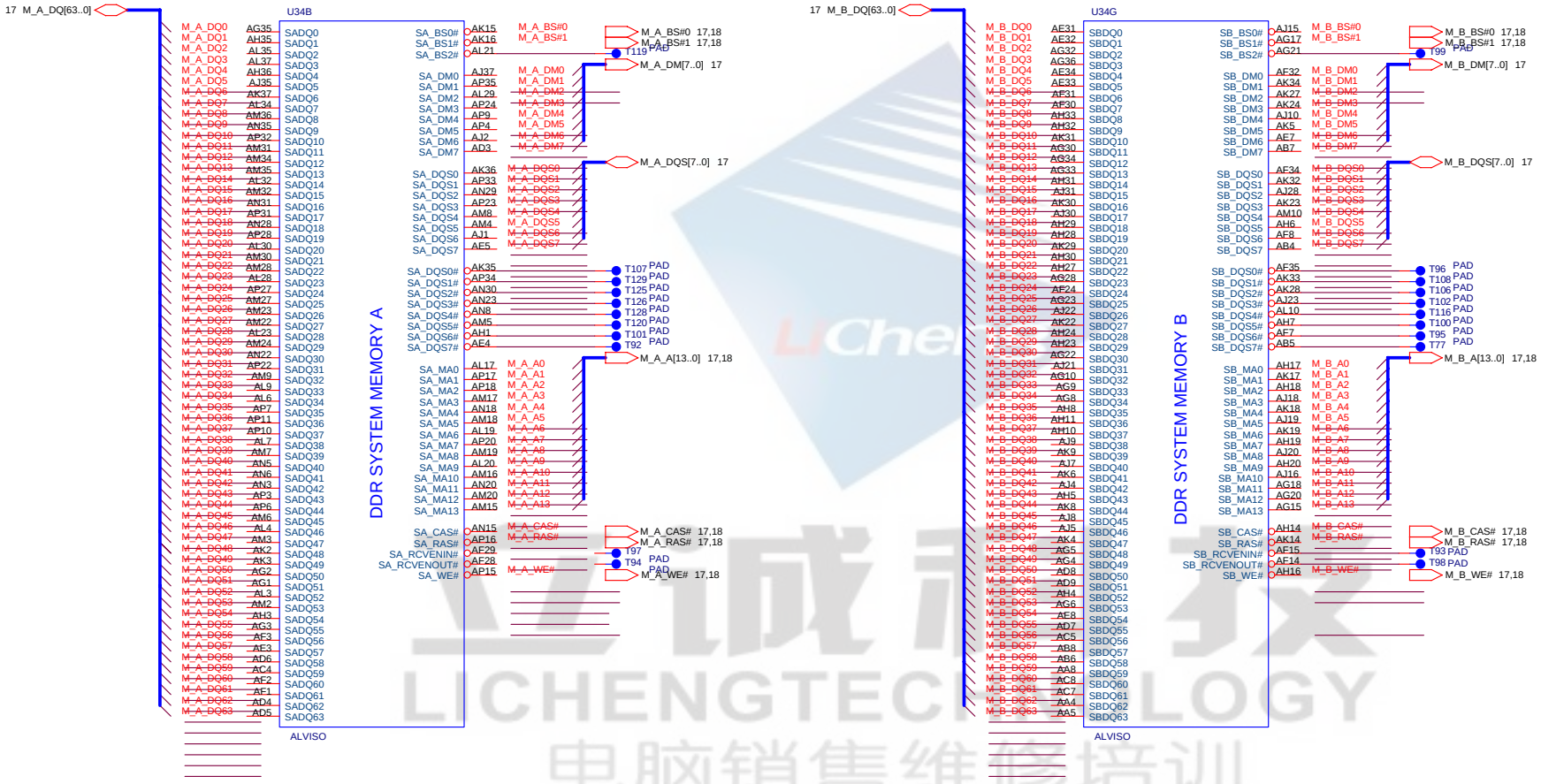


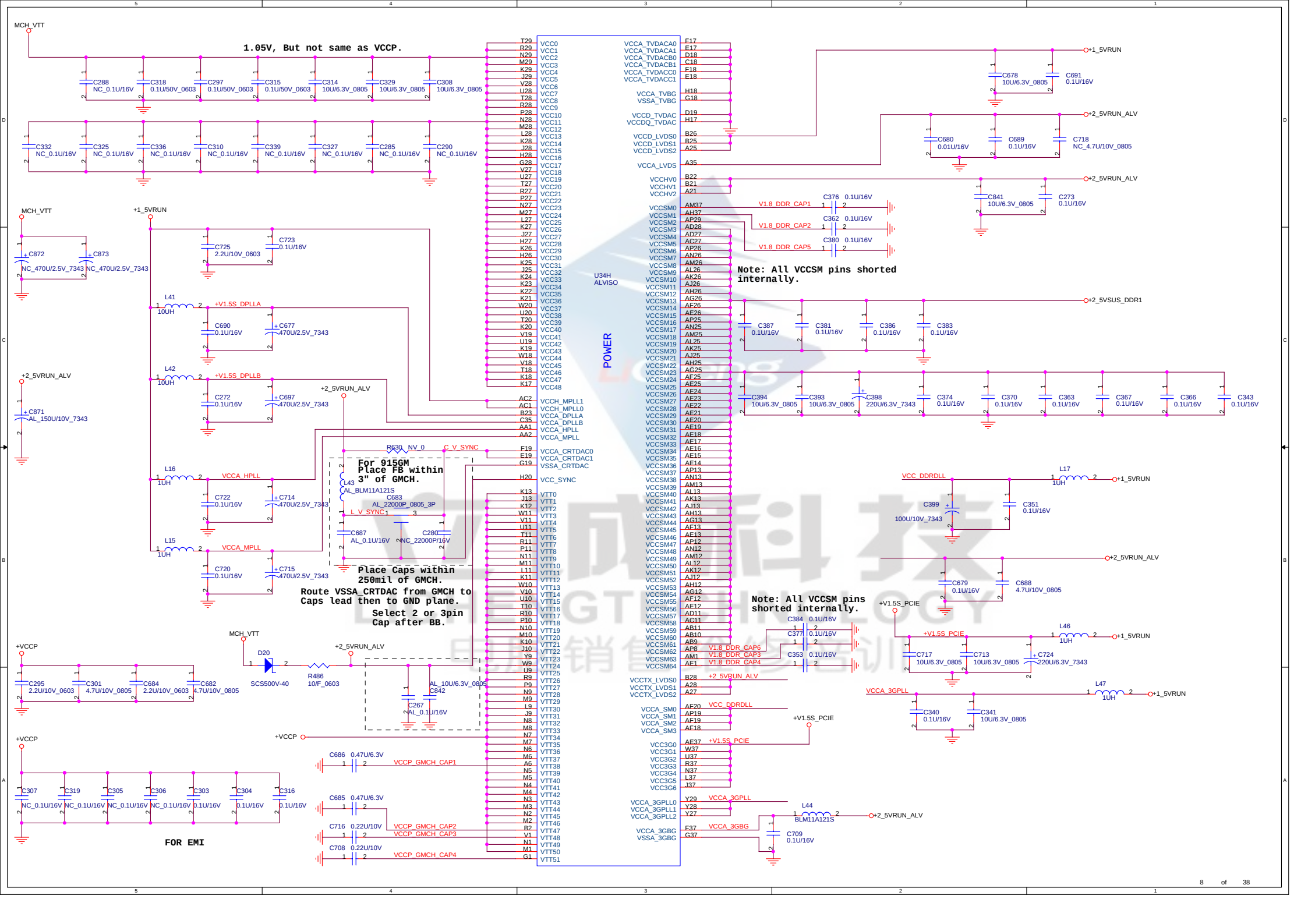
FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	RSVD	100	33

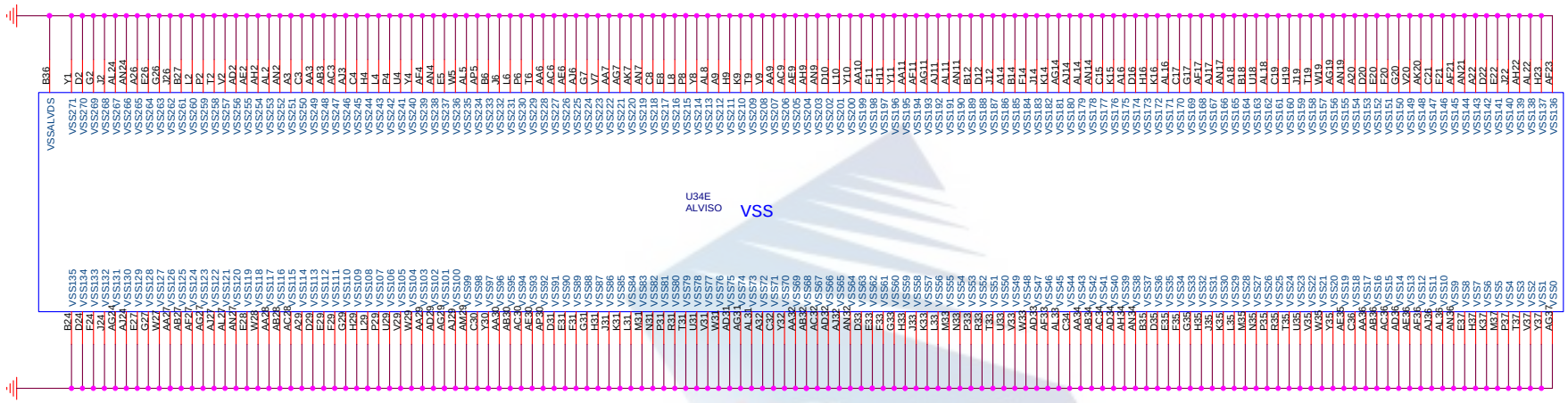


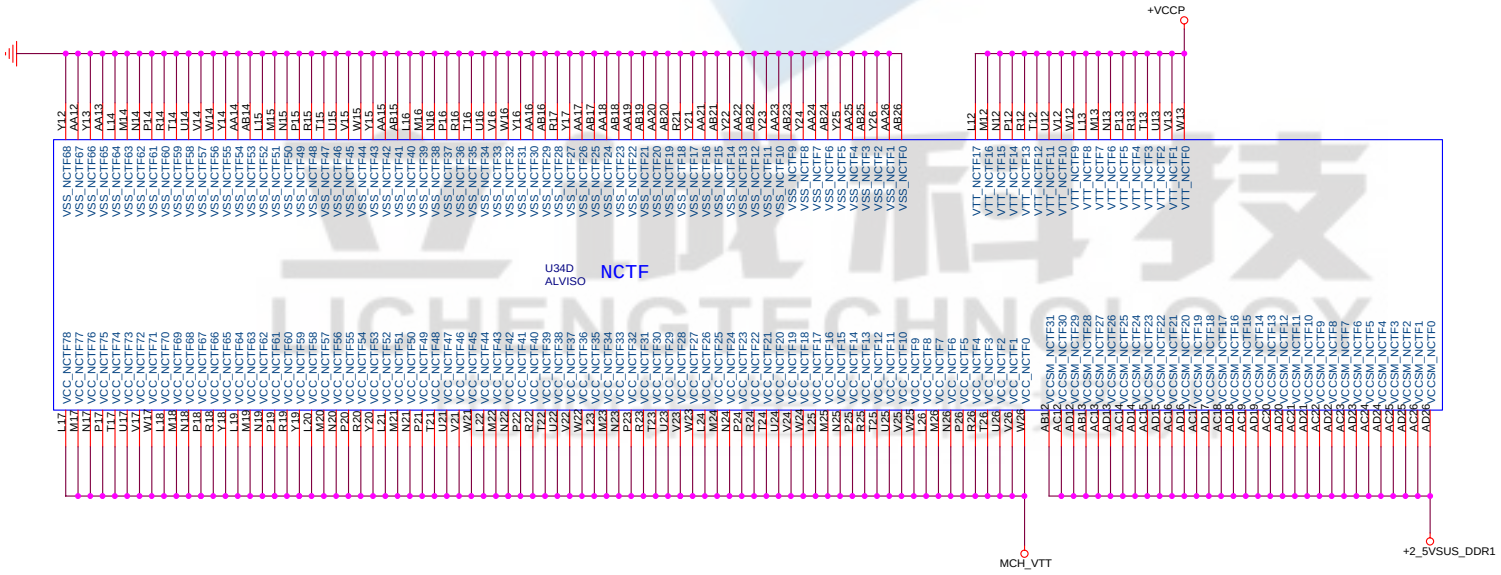


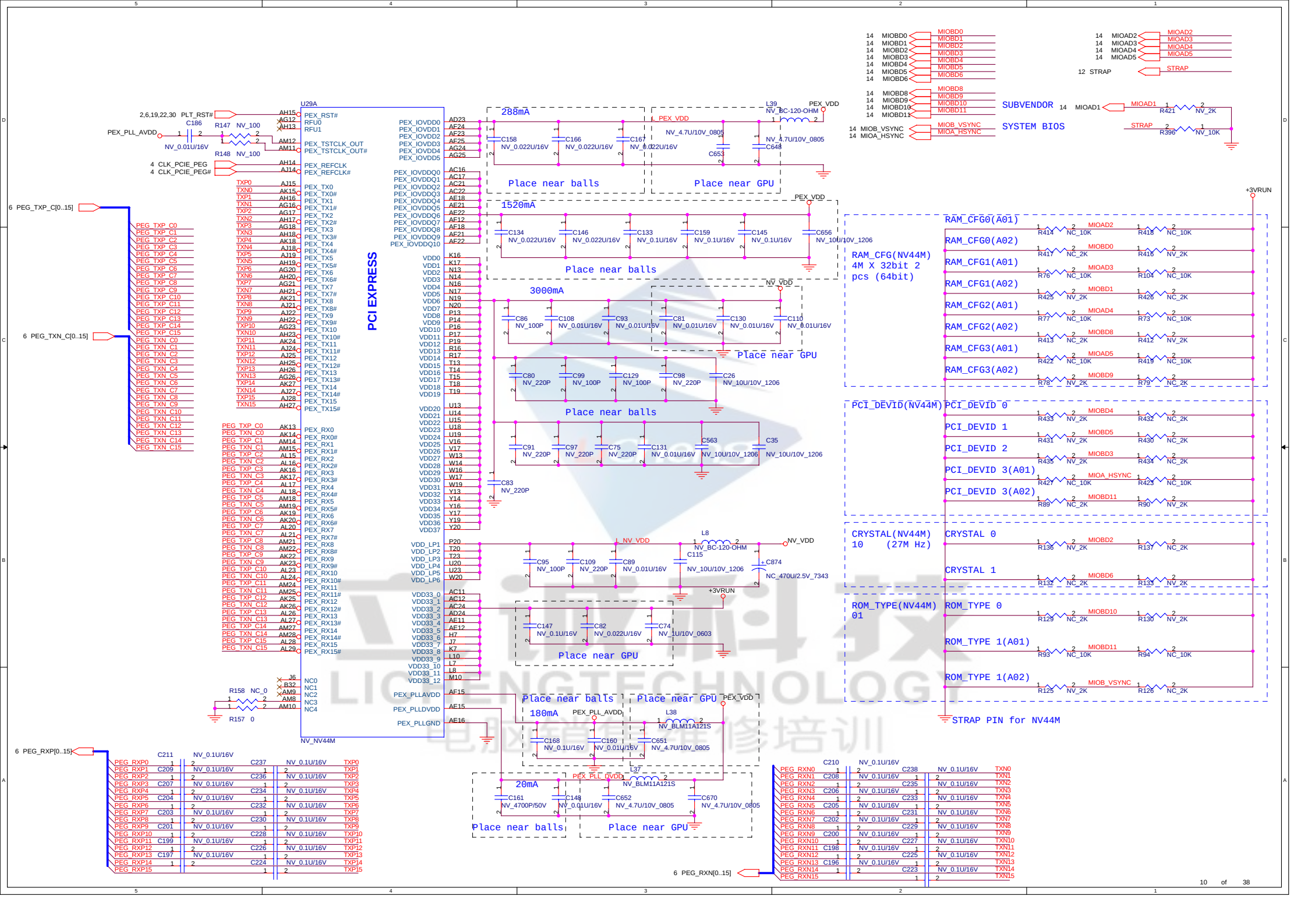

U34C
DMI
CFG/RSVD
DDR MUXING
PM
CLK
NC
U34F
MISC
TV
VGA
LVDS
PCI-EXPRESS GRAPHICS
+VCCP
R215
10K
Low=DDR2
High=DDR1
R211
NC_2.2K
R212
2.2K
Low=DMIx2
High=DMIx4
CFG[3-17] Default H
CFG[18,19]Default L
FOR 915GM
FOR 915GM
R567,R570,571
< 500 mils
to Alviso.
Route as
short as
possible.
It's point to point,
55ohm trace, keep as
short as possible.
AC Coupling Cap
Close GMCH or
Gfx
FOR 915PM
FOR EDID LCD .
ALVISO
ALVISO
+V1.5S_PCIE
+2_5VSUS_DDR1
+3VSUS
+2_5VRUN_ALV
U16A
NC_LMV358AM8X
U16B
NC_LMV358AM8X
DDRDIMM_VREF
PEG_TXN_C[15..0] 10
PEG_TXP_C[15..0] 10
PEG_RXN[15..0] 10
PEG_RXP[15..0] 10

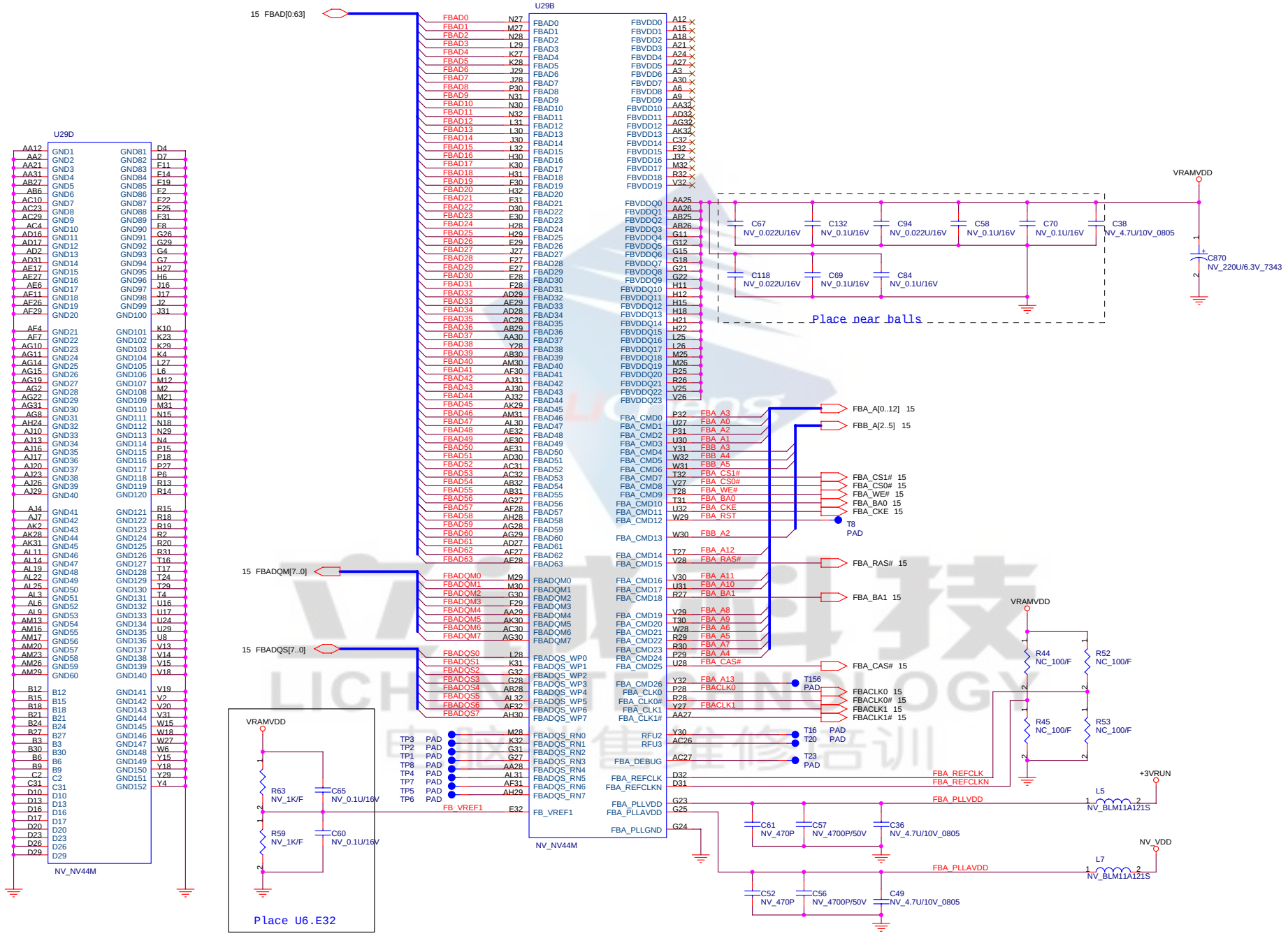


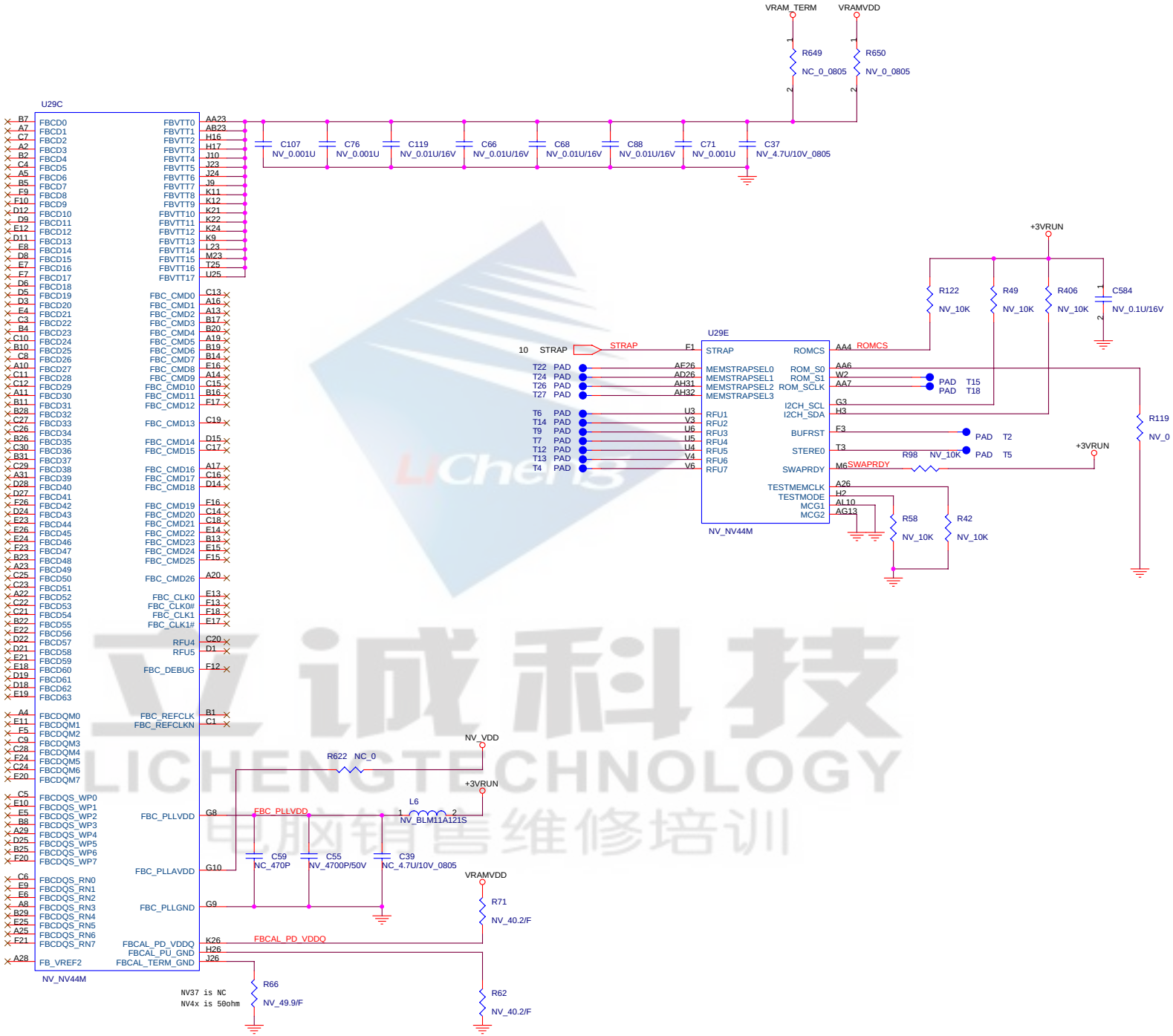

MCH_VTT
1.05V, But not same as VCCP.
C288 NC_0.1U/16V
C318 0.1U/50V_0603
C297 0.1U/50V_0603
C315 0.1U/50V_0603
C314 10U/6.3V_0805
C329 10U/6.3V_0805
C308 10U/6.3V_0805
C332 NC_0.1U/16V
C325 NC_0.1U/16V
C336 NC_0.1U/16V
C310 NC_0.1U/16V
C339 NC_0.1U/16V
C327 NC_0.1U/16V
C285 NC_0.1U/16V
C290 NC_0.1U/16V
U34H
ALVISO
POWER
VCC0 VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 VCC7 VCC8 VCC9 VCC10 VCC11 VCC12 VCC13 VCC14 VCC15 VCC16 VCC17 VCC18 VCC19 VCC20 VCC21 VCC22 VCC23 VCC24 VCC25 VCC26 VCC27 VCC28 VCC29 VCC30 VCC31 VCC32 VCC33 VCC34 VCC35 VCC36 VCC37 VCC38 VCC39 VCC40 VCC41 VCC42 VCC43 VCC44 VCC45 VCC46 VCC47 VCC48
VCCA_TVDACA0 VCCA_TVDACA1 VCCA_TVDACB0 VCCA_TVDACB1 VCCA_TVDACC0 VCCA_TVDACC1
VCCA_TVBG VSSA_TVBG
VCCD_TVDAC VCCDQ_TVDAC
VCCD_LVDS0 VCCD_LVDS1 VCCD_LVDS2
VCCA_LVDS
VCCHV0 VCCHV1 VCCHV2
VCCSM0 VCCSM1 VCCSM2 VCCSM3 VCCSM4 VCCSM5 VCCSM6 VCCSM7 VCCSM8 VCCSM9 VCCSM10 VCCSM11 VCCSM12 VCCSM13 VCCSM14 VCCSM15 VCCSM16 VCCSM17 VCCSM18 VCCSM19 VCCSM20 VCCSM21 VCCSM22 VCCSM23 VCCSM24 VCCSM25 VCCSM26 VCCSM27 VCCSM28 VCCSM29 VCCSM30 VCCSM31 VCCSM32 VCCSM33 VCCSM34 VCCSM35 VCCSM36 VCCSM37 VCCSM38 VCCSM39 VCCSM40 VCCSM41 VCCSM42 VCCSM43 VCCSM44 VCCSM45 VCCSM46 VCCSM47 VCCSM48 VCCSM49 VCCSM50 VCCSM51 VCCSM52 VCCSM53 VCCSM54 VCCSM55 VCCSM56 VCCSM57 VCCSM58 VCCSM59 VCCSM60 VCCSM61 VCCSM62 VCCSM63 VCCSM64
VCCTX_LVDS0 VCCTX_LVDS1 VCCTX_LVDS2
VCCA_SM0 VCCA_SM1 VCCA_SM2 VCCA_SM3
VCC3G0 VCC3G1 VCC3G2 VCC3G3 VCC3G4 VCC3G5 VCC3G6
VCCA_3GPLL0 VCCA_3GPLL1 VCCA_3GPLL2
VCCA_3GBG VSSA_3GBG
VCCH_MPLL1 VCCH_MPLL0 VCCA_DPLLA VCCA_DPLLB VCCA_HPLL VCCA_MPLL
VCCA_CRTDAC0 VCCA_CRTDAC1 VSSA_CRTDAC
VCC_SYNC
VTT0 VTT1 VTT2 VTT3 VTT4 VTT5 VTT6 VTT7 VTT8 VTT9 VTT10 VTT11 VTT12 VTT13 VTT14 VTT15 VTT16 VTT17 VTT18 VTT19 VTT20 VTT21 VTT22 VTT23 VTT24 VTT25 VTT26 VTT27 VTT28 VTT29 VTT30 VTT31 VTT32 VTT33 VTT34 VTT35 VTT36 VTT37 VTT38 VTT39 VTT40 VTT41 VTT42 VTT43 VTT44 VTT45 VTT46 VTT47 VTT48 VTT49 VTT50 VTT51
+1_5VRUN
C678 10U/6.3V_0805
C691 0.1U/16V
+2_5VRUN_ALV
C680 0.01U/16V
C689 0.1U/16V
C718 NC_4.7U/10V_0805
C841 10U/6.3V_0805
C273 0.1U/16V
V1.8_DDR_CAP1
V1.8_DDR_CAP2
V1.8_DDR_CAP5
C376 0.1U/16V
C362 0.1U/16V
C380 0.1U/16V
Note: All VCCSM pins shorted internally.
+2_5VSUS_DDR1
C387 0.1U/16V
C381 0.1U/16V
C386 0.1U/16V
C383 0.1U/16V
C394 10U/6.3V_0805
C393 10U/6.3V_0805
C398 220U/6.3V_7343
C374 0.1U/16V
C370 0.1U/16V
C363 0.1U/16V
C367 0.1U/16V
C366 0.1U/16V
C343 0.1U/16V
MCH_VTT
C872 NC_470U/2.5V_7343
C873 NC_470U/2.5V_7343
+1_5VRUN
C725 2.2U/10V_0603
C723 0.1U/16V
L41 10UH
+V1.5S_DPLLA
C690 0.1U/16V
C677 470U/2.5V_7343
L42 10UH
+V1.5S_DPLLB
C272 0.1U/16V
C697 470U/2.5V_7343
+2_5VRUN_ALV
C871 AL_150U/10V_7343
L16 1UH
VCCA_HPLL
C722 0.1U/16V
C714 470U/2.5V_7343
L15 1UH
VCCA_MPLL
C720 0.1U/16V
C715 470U/2.5V_7343
R630_NV_0
C_V_SYNC
L_V_SYNC
L43 AL_BLM11A121S
C683 AL_22000P_0805_3P
C687 AL_0.1U/16V
C280 NC_22000P/16V
For 915GM Place FB within 3" of GMCH.
Place Caps within 250mil of GMCH.
Route VSSA_CRTDAC from GMCH to Caps lead then to GND plane.
Select 2 or 3pin Cap after BB.
MCH_VTT
D20
SCS500V-40
R486 10/F_0603
+2_5VRUN_ALV
C842 AL_10U/6.3V_0805
C267 AL_0.1U/16V
+VCCP
C295 2.2U/10V_0603
C301 4.7U/10V_0805
C684 2.2U/10V_0603
C682 4.7U/10V_0805
C686 0.47U/6.3V
VCCP_GMCH_CAP1
C685 0.47U/6.3V
C716 0.22U/10V
VCCP_GMCH_CAP2
VCCP_GMCH_CAP3
C708 0.22U/10V
VCCP_GMCH_CAP4
+VCCP
C307 NC_0.1U/16V
C319 NC_0.1U/16V
C305 NC_0.1U/16V
C306 NC_0.1U/16V
C303 0.1U/16V
C304 0.1U/16V
C316 0.1U/16V
FOR EMI
VCC_DDRDLL
L17 1UH
+1_5VRUN
C399 100U/10V_7343
C351 0.1U/16V
+2_5VRUN_ALV
C679 0.1U/16V
C688 4.7U/10V_0805
Note: All VCCSM pins shorted internally.
+V1.5S_PCIE
C384 0.1U/16V
C377 0.1U/16V
C353 0.1U/16V
V1.8_DDR_CAP6
V1.8_DDR_CAP3
V1.8_DDR_CAP4
+2_5VRUN_ALV
VCC_DDRDLL
+V1.5S_PCIE
VCCA_3GPLL
VCCA_3GBG
L44 BLM11A121S
C709 0.1U/16V
+2_5VRUN_ALV
+V1.5S_PCIE
L46 1UH
+1_5VRUN
C717 10U/6.3V_0805
C713 10U/6.3V_0805
C724 220U/6.3V_7343
VCCA_3GPLL
L47 1UH
+1_5VRUN
C340 0.1U/16V
C341 10U/6.3V_0805


VSSALVDS
U34E
ALVISO
VSS


+VCCP
U34D
ALVISO
NCTF
MCH_VTT
+2_5VSUS_DDR1


U29A
PCI EXPRESS
NV_NV44M
PEX_PLL_AVDD
C186
R147 NV_100
NV_0.01U/16V
R148 NV_100
PLT_RST#
CLK_PCIE_PEG
CLK_PCIE_PEG#
PEX_REFCLK
PEX_REFCLK#
PEX_TSTCLK_OUT
PEX_TSTCLK_OUT#
PEX_TX0
PEX_TX1
PEX_TX2
PEX_TX3
PEX_TX4
PEX_TX5
PEX_TX6
PEX_TX7
PEX_TX8
PEX_TX9
PEX_TX10
PEX_TX11
PEX_TX12
PEX_TX13
PEX_TX14
PEX_TX15
PEX_RX0
PEX_RX1
PEX_RX2
PEX_RX3
PEX_RX4
PEX_RX5
PEX_RX6
PEX_RX7
PEX_RX8
PEX_RX9
PEX_RX10
PEX_RX11
PEX_RX12
PEX_RX13
PEX_RX14
PEX_RX15
R158 NC_0
R157 0
PEX_IOVDDQ
PEX_IOVDD
VDD
VDD_LP
VDD33
PEX_PLLAVDD
PEX_PLLDVDD
PEX_PLLGND
288mA
1520mA
3000mA
180mA
20mA
PEX_VDD
NV_VDD
+3VRUN
L39 NV_BC-120-OHM
L8 NV_BC-120-OHM
L38 NV_BLM11A121S
L37 NV_BLM11A121S
Place near balls
Place near GPU
6 PEG_TXP_C[0..15]
6 PEG_TXN_C[0..15]
6 PEG_RXP[0..15]
6 PEG_RXN[0..15]
MIOBD0
MIOBD1
MIOBD2
MIOBD3
MIOBD4
MIOBD5
MIOBD6
MIOBD8
MIOBD9
MIOBD10
MIOBD11
MIOB_VSYNC
MIOA_HSYNC
MIOAD2
MIOAD3
MIOAD4
MIOAD5
STRAP
SUBVENDOR
SYSTEM BIOS
RAM_CFG(NV44M)
4M X 32bit 2
pcs (64bit)
RAM_CFG0(A01)
RAM_CFG0(A02)
RAM_CFG1(A01)
RAM_CFG1(A02)
RAM_CFG2(A01)
RAM_CFG2(A02)
RAM_CFG3(A01)
RAM_CFG3(A02)
PCI_DEVID(NV44M)
PCI_DEVID 0
PCI_DEVID 1
PCI_DEVID 2
PCI_DEVID 3(A01)
PCI_DEVID 3(A02)
CRYSTAL(NV44M)
10 (27M Hz)
CRYSTAL 0
CRYSTAL 1
ROM_TYPE(NV44M)
01
ROM_TYPE 0
ROM_TYPE 1(A01)
ROM_TYPE 1(A02)
STRAP PIN for NV44M


U29D
NV_NV44M
U29B
NV_NV44M
15 FBAD[0:63]
15 FBADQM[7..0]
15 FBADQS[7..0]
FBAD0
FBAD1
FBAD2
FBAD3
FBAD4
FBAD5
FBAD6
FBAD7
FBAD8
FBAD9
FBAD10
FBAD11
FBAD12
FBAD13
FBAD14
FBAD15
FBAD16
FBAD17
FBAD18
FBAD19
FBAD20
FBAD21
FBAD22
FBAD23
FBAD24
FBAD25
FBAD26
FBAD27
FBAD28
FBAD29
FBAD30
FBAD31
FBAD32
FBAD33
FBAD34
FBAD35
FBAD36
FBAD37
FBAD38
FBAD39
FBAD40
FBAD41
FBAD42
FBAD43
FBAD44
FBAD45
FBAD46
FBAD47
FBAD48
FBAD49
FBAD50
FBAD51
FBAD52
FBAD53
FBAD54
FBAD55
FBAD56
FBAD57
FBAD58
FBAD59
FBAD60
FBAD61
FBAD62
FBAD63
FBADQM0
FBADQM1
FBADQM2
FBADQM3
FBADQM4
FBADQM5
FBADQM6
FBADQM7
FBADQS0
FBADQS1
FBADQS2
FBADQS3
FBADQS4
FBADQS5
FBADQS6
FBADQS7
FBADQS_RN0
FBADQS_RN1
FBADQS_RN2
FBADQS_RN3
FBADQS_RN4
FBADQS_RN5
FBADQS_RN6
FBADQS_RN7
FBADQS_WP0
FBADQS_WP1
FBADQS_WP2
FBADQS_WP3
FBADQS_WP4
FBADQS_WP5
FBADQS_WP6
FBADQS_WP7
FB_VREF1
FBVDDQ0
FBVDDQ1
FBVDDQ2
FBVDDQ3
FBVDDQ4
FBVDDQ5
FBVDDQ6
FBVDDQ7
FBVDDQ8
FBVDDQ9
FBVDDQ10
FBVDDQ11
FBVDDQ12
FBVDDQ13
FBVDDQ14
FBVDDQ15
FBVDDQ16
FBVDDQ17
FBVDDQ18
FBVDDQ19
FBVDDQ20
FBVDDQ21
FBVDDQ22
FBVDDQ23
FBVDD0
FBVDD1
FBVDD2
FBVDD3
FBVDD4
FBVDD5
FBVDD6
FBVDD7
FBVDD8
FBVDD9
FBVDD10
FBVDD11
FBVDD12
FBVDD13
FBVDD14
FBVDD15
FBVDD16
FBVDD17
FBVDD18
FBVDD19
FBA_CMD0
FBA_CMD1
FBA_CMD2
FBA_CMD3
FBA_CMD4
FBA_CMD5
FBA_CMD6
FBA_CMD7
FBA_CMD8
FBA_CMD9
FBA_CMD10
FBA_CMD11
FBA_CMD12
FBA_CMD13
FBA_CMD14
FBA_CMD15
FBA_CMD16
FBA_CMD17
FBA_CMD18
FBA_CMD19
FBA_CMD20
FBA_CMD21
FBA_CMD22
FBA_CMD23
FBA_CMD24
FBA_CMD25
FBA_CMD26
FBA_CLK0
FBA_CLK0#
FBA_CLK1
FBA_CLK1#
RFU2
RFU3
FBA_DEBUG
FBA_REFCLK
FBA_REFCLKN
FB_VREF1
FBA_PLLVDD
FBA_PLLAVDD
FBA_PLLGND
FBA_A3
FBA_A0
FBA_A2
FBA_A1
FBB_A3
FBB_A4
FBB_A5
FBA_CS1#
FBA_CS0#
FBA_WE#
FBA_BA0
FBA_CKE
FBA_RST
FBB_A2
FBA_A12
FBA_RAS#
FBA_A11
FBA_A10
FBA_BA1
FBA_A8
FBA_A9
FBA_A6
FBA_A5
FBA_A7
FBA_A4
FBA_CAS#
FBA_A13
FBACLK0
FBACLK1
FBA_A[0..12] 15
FBB_A[2..5] 15
FBA_CS1# 15
FBA_CS0# 15
FBA_WE# 15
FBA_BA0 15
FBA_CKE 15
T8 PAD
FBA_RAS# 15
FBA_BA1 15
FBA_CAS# 15
T156 PAD
FBACLK0 15
FBACLK0# 15
FBACLK1 15
FBACLK1# 15
T16 PAD
T20 PAD
T23 PAD
FBA_REFCLK
FBA_REFCLKN
FBA_PLLVDD
FBA_PLLAVDD
VRAMVDD
+3VRUN
NV_VDD
C67 NV_0.022U/16V
C132 NV_0.1U/16V
C94 NV_0.022U/16V
C58 NV_0.1U/16V
C70 NV_0.1U/16V
C38 NV_4.7U/10V_0805
C118 NV_0.022U/16V
C69 NV_0.1U/16V
C84 NV_0.1U/16V
C870 NV_220U/6.3V_7343
Place near balls
R44 NC_100/F
R52 NC_100/F
R45 NC_100/F
R53 NC_100/F
L5 NV_BLM11A121S
L7 NV_BLM11A121S
C61 NV_470P
C57 NV_4700P/50V
C36 NV_4.7U/10V_0805
C52 NV_470P
C56 NV_4700P/50V
C49 NV_4.7U/10V_0805
R63 NV_1K/F
C65 NV_0.1U/16V
R59 NV_1K/F
C60 NV_0.1U/16V
TP3 PAD
TP2 PAD
TP1 PAD
TP8 PAD
TP4 PAD
TP7 PAD
TP5 PAD
TP6 PAD
Place U6.E32



LVDS CONNECTOR

FOXCONN_GS12401_1011

H : NOTEBOOK
L : PORT REPLICATOR

RGB ANALOG SWITCH

CRT CON

For 915PM

For 915GM

CLOSE

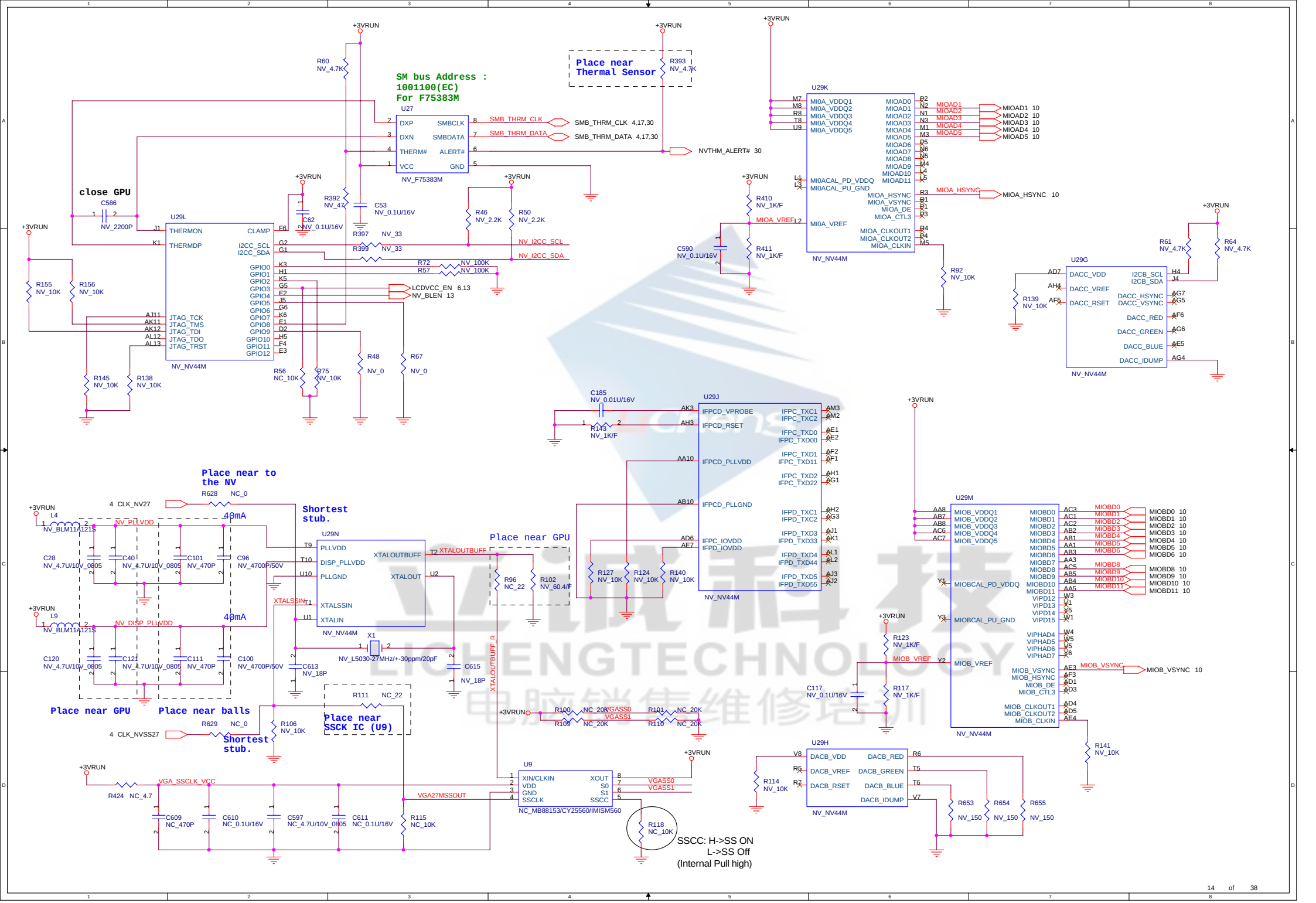
NEAR GPU

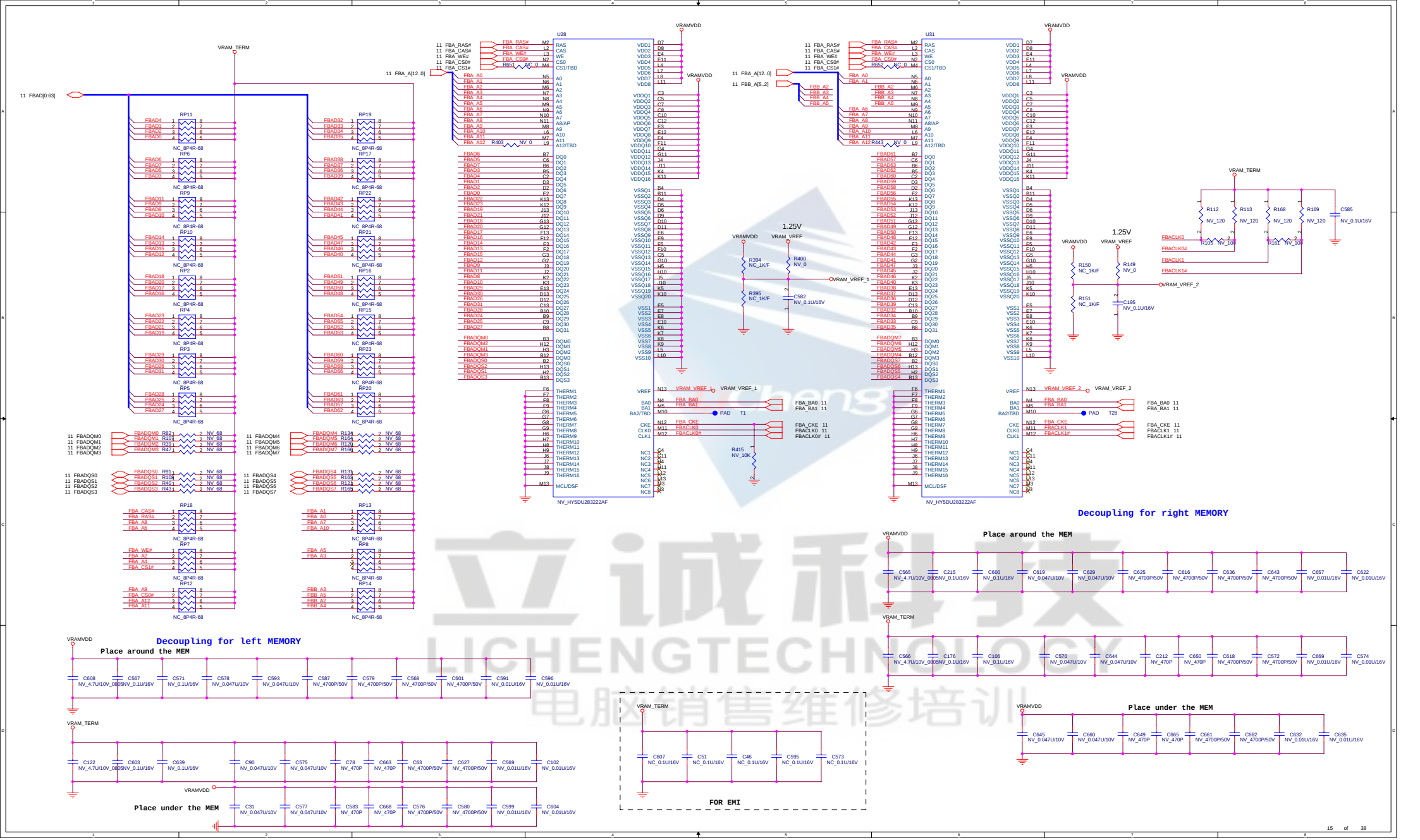
NEAR BALL

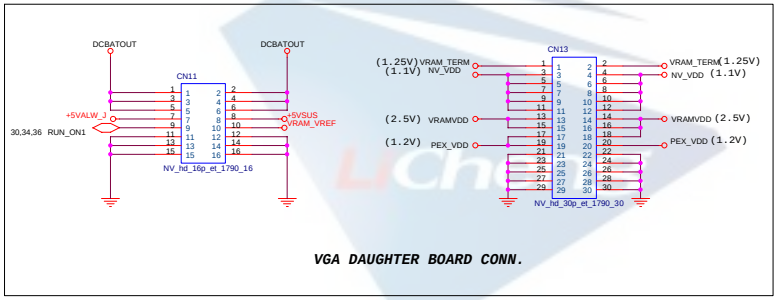
Close CRT connector .

R235,R237,R241 <1000 mils to JVGA1.

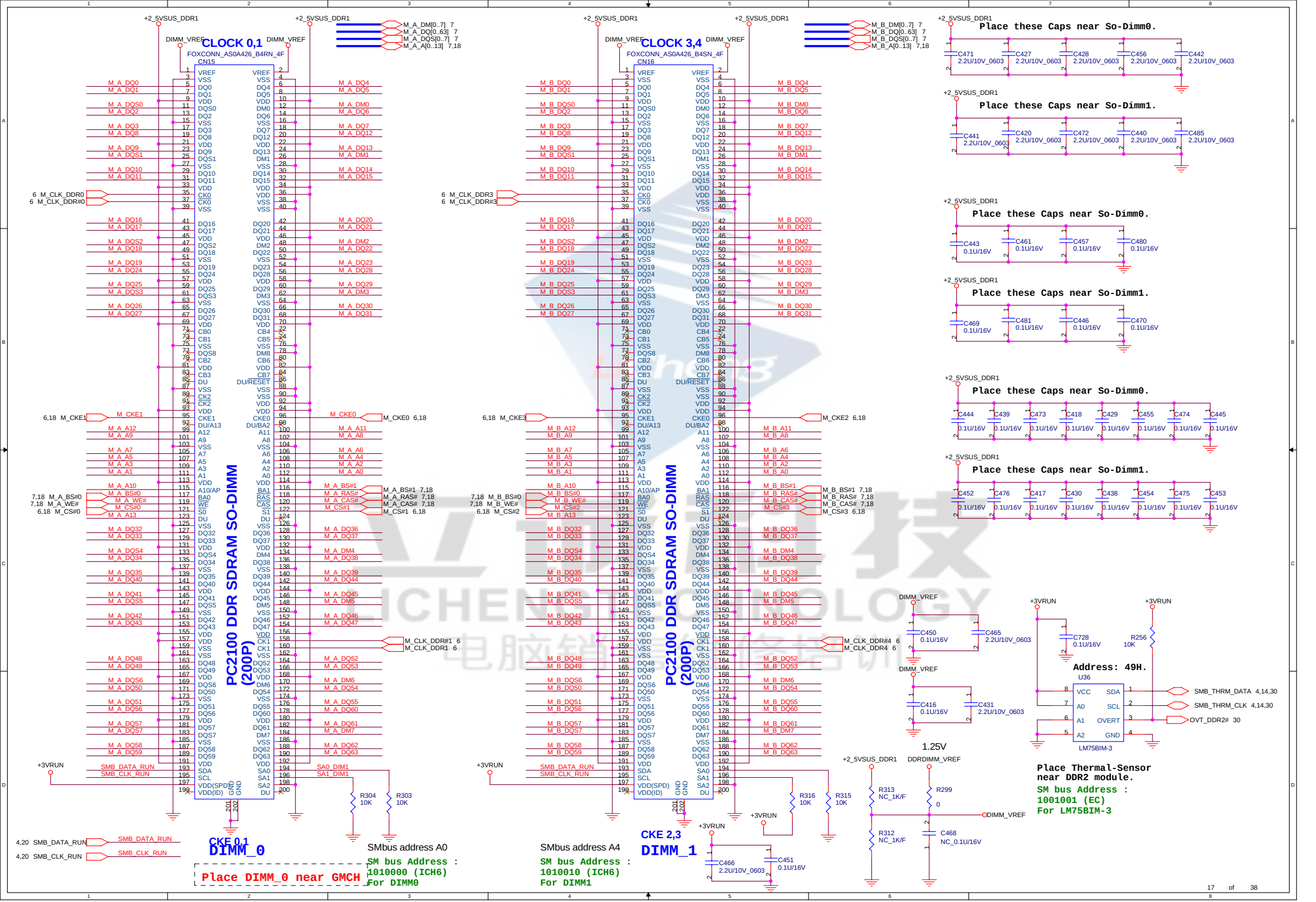
L30,L32,L33 <500mils to JVGA1.


SM bus Address :
1001100(EC)
For F75383M
Place near
Thermal Sensor
close GPU
U27
NV_F75383M
SMB_THRM_CLK
SMB_THRM_DATA
NVTHM_ALERT# 30
U29L
NV_NV44M
U29K
U29G
U29J
U29M
U29N
U9
U29H
Place near to
the NV
Shortest
stub.
Place near GPU
Place near balls
Place near
SSCK IC (U9)
40mA
SSCC: H->SS ON
L->SS Off
(Internal Pull high)





VGA DAUGHTER BOARD CONN.


CLOCK 0,1
FOXCONN_AS0A426_B4RN_4F
CN15
PC2100 DDR SDRAM SO-DIMM (200P)
DIMM_0
CKE 0,1
Place DIMM_0 near GMCH
SMbus address A0
SM bus Address : 1010000 (ICH6) For DIMM0
CLOCK 3,4
FOXCONN_AS0A426_B4SN_4F
CN16
DIMM_1
CKE 2,3
SMbus address A4
SM bus Address : 1010010 (ICH6) For DIMM1
Place these Caps near So-Dimm0.
Place these Caps near So-Dimm1.
Address: 49H.
LM75BIM-3
Place Thermal-Sensor near DDR2 module.
SM bus Address : 1001001 (EC) For LM75BIM-3
1.25V

M_A_A[0..13] 7,17

M_B_A[0..13] 7,17

SMDDR_VTERM

C484 0.1U/16V C482 0.1U/16V C462 0.1U/16V C483 0.1U/16V C435 0.1U/16V C460 0.1U/16V C426 0.1U/16V C424 0.1U/16V C464 0.1U/16V C423 0.1U/16V C437 0.1U/16V C434 0.1U/16V C425 0.1U/16V

Layout note: Place 1 cap close to every 1 R-pack terminated to SMDDR_VTERM.

SMDDR_VTERM

C436 0.1U/16V C433 0.1U/16V C479 0.1U/16V C421 0.1U/16V C486 0.1U/16V C463 0.1U/16V C487 0.1U/16V C422 0.1U/16V C458 0.1U/16V C459 0.1U/16V C432 0.1U/16V

Layout note: Place 1 cap close to every 1 R-pack terminated to SMDDR_VTERM.

6,17 M_CKE0 — M_A_A11, M_A_A6 — RP35 — 4P2R-S-56
7,17 M_A_BS#1 — M_A_A8, M_A_A0 — RP36, RP38 — 4P2R-S-56
SMDDR_VTERM

6,17 M_CKE1 — M_A_A12, M_A_A9, M_A_A7, M_A_A5, M_A_A1 — RP34, RP29, RP30 — 4P2R-S-56
SMDDR_VTERM

7,17 M_A_BS#0
7,17 M_A_WE# — M_A_A3, M_A_A10, M_A_A2, M_A_A4 — RP31, RP32, RP37 — 4P2R-S-56
SMDDR_VTERM

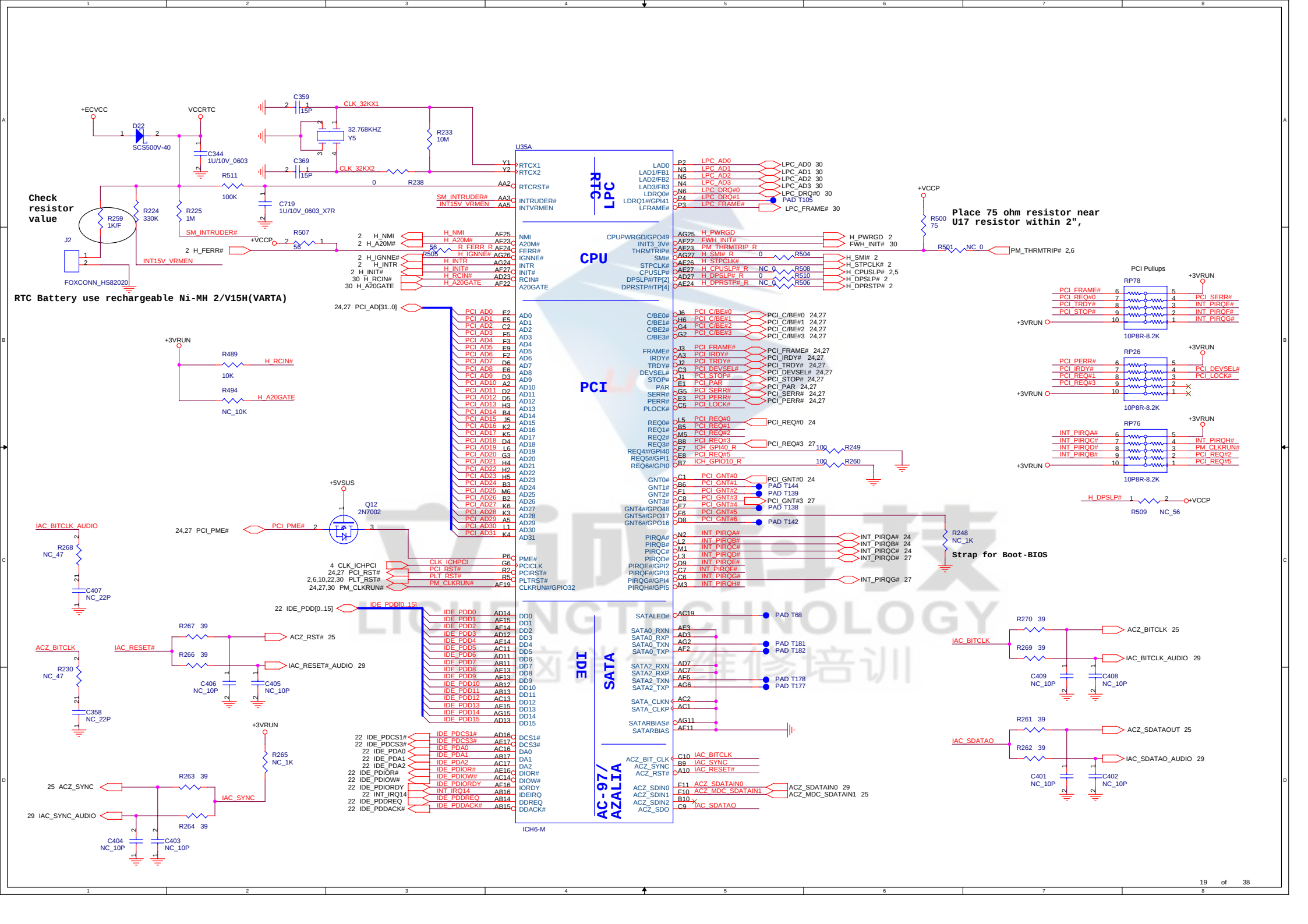
7,17 M_A_CAS#
7,17 M_A_RAS# — RP39 — 4P2R-S-56
6,17 M_CS#3 — R317 56
6,17 M_CS#1 — R301 56
6,17 M_CS#0 — M_A_A13 — RP33 — 4P2R-S-56
SMDDR_VTERM

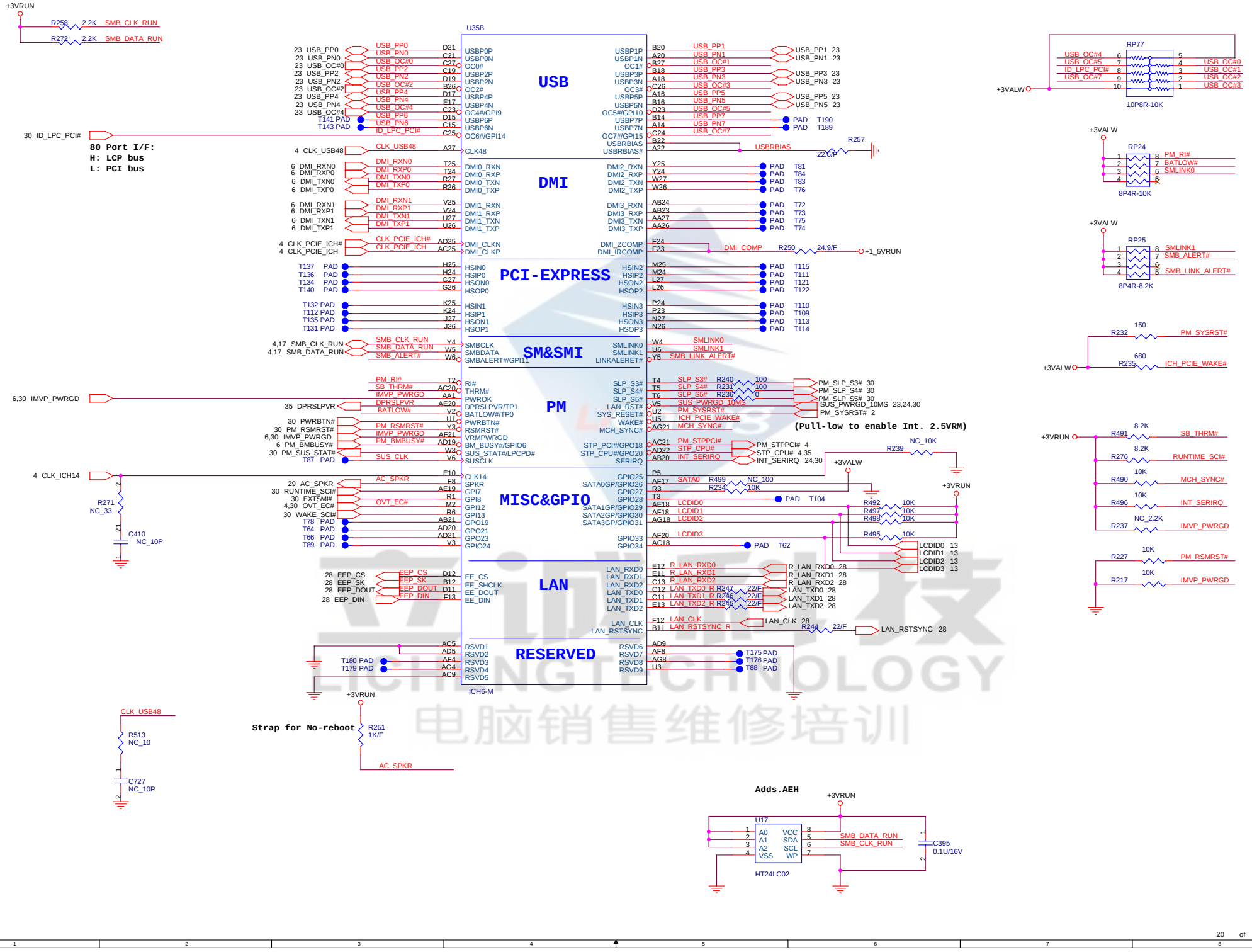
7,17 M_B_BS#1 — M_B_A0, M_B_A12, M_B_A5, M_B_A9 — RP49, RP40, RP41 — 4P2R-S-56
6,17 M_CKE3
SMDDR_VTERM

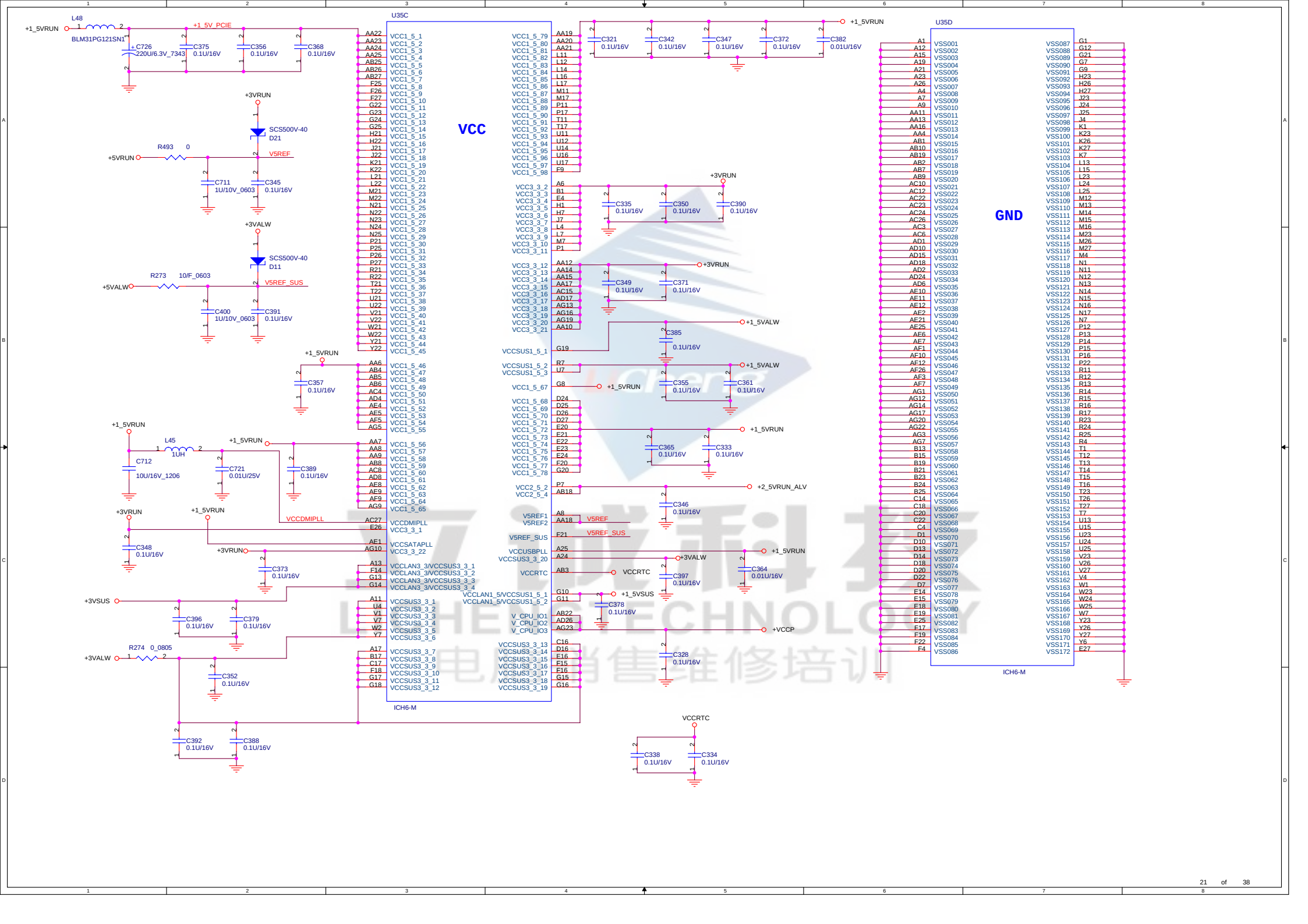
M_B_A3, M_B_A7, M_B_A10, M_B_A1 — RP42, RP43 — 4P2R-S-56
7,17 M_B_WE#
7,17 M_B_BS#0
6,17 M_CKE2 — RP44 — 4P2R-S-56
M_B_A11 — RP46 — 4P2R-S-56
SMDDR_VTERM

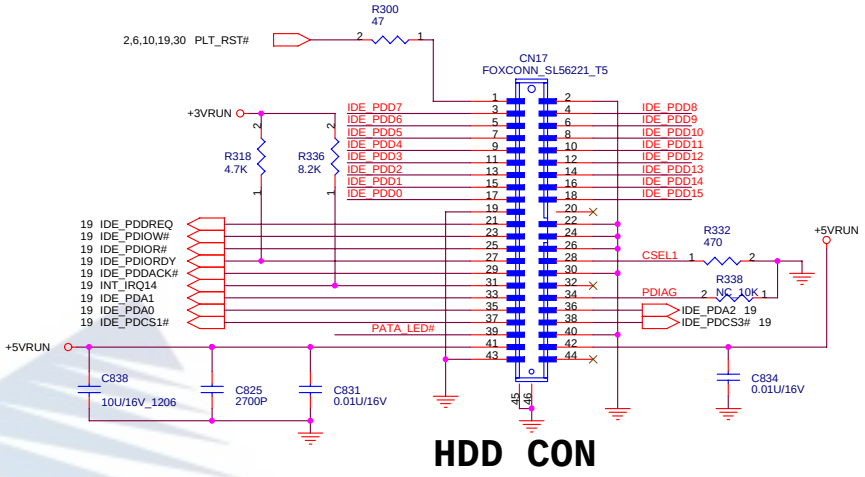
M_B_A8, M_B_A6, M_B_A4, M_B_A2 — RP47, RP48 — 4P2R-S-56
SMDDR_VTERM

6,17 M_CS#2
7,17 M_B_RAS#
7,17 M_B_CAS# — M_B_A13 — RP45, RP50 — 4P2R-S-56
SMDDR_VTERM

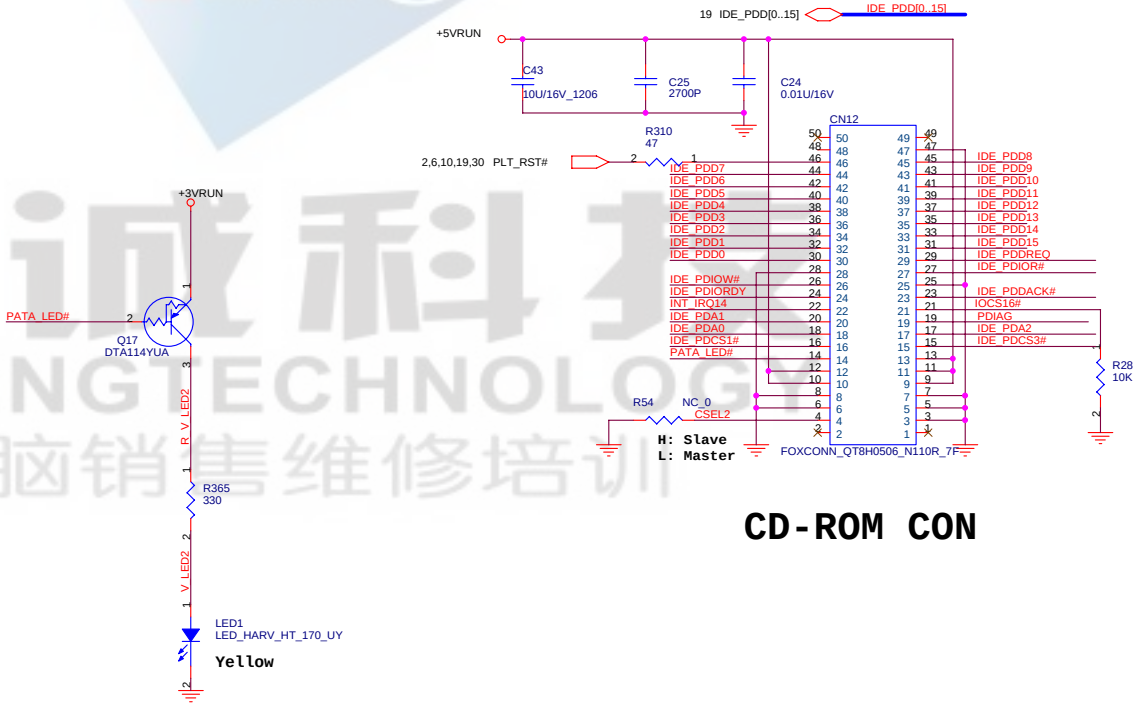

Check resistor value
RTC Battery use rechargeable Ni-MH 2/V15H(VARTA)
Place 75 ohm resistor near U17 resistor within 2",
Strap for Boot-BIOS
U35A
ICH6-M
RTC
LPC
CPU
PCI
IDE
SATA
AC-97/ AZALIA
PCI Pullups
RP78
RP26
RP76
10P8R-8.2K
+ECVCC
VCCRTC
+VCCP
+3VRUN
+5VSUS
FOXCONN_HS82020
SCS500V-40
2N7002
32.768KHZ
CLK_32KX1
CLK_32KX2
INT15V_VRMEN
SM_INTRUDER#
H_RCIN#
H_A20GATE
PCI_PME#
IAC_BITCLK_AUDIO
IAC_RESET#
ACZ_BITCLK
IAC_SYNC
IDE_PDD[0..15]
PAD T68
PAD T105
PAD T144
PAD T139
PAD T138
PAD T142
PAD T181
PAD T182
PAD T178
PAD T177
ACZ_SDATAIN0
ACZ_MDC_SDATAIN1
IAC_SDATAO
PM_THRMTRIP# 2,6
H_DPSLP#
19 of 38


U35B
USB
DMI
PCI-EXPRESS
SM&SMI
PM
MISC&GPIO
LAN
RESERVED
ICH6-M
80 Port I/F:
H: LCP bus
L: PCI bus
Strap for No-reboot
(Pull-low to enable Int. 2.5VRM)
Adds.AEH
HT24LC02
10P8R-10K
8P4R-10K
8P4R-8.2K
+3VRUN
+3VALW
+1_5VRUN

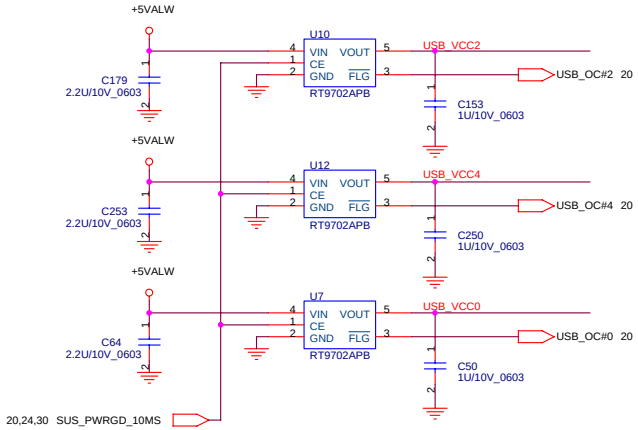


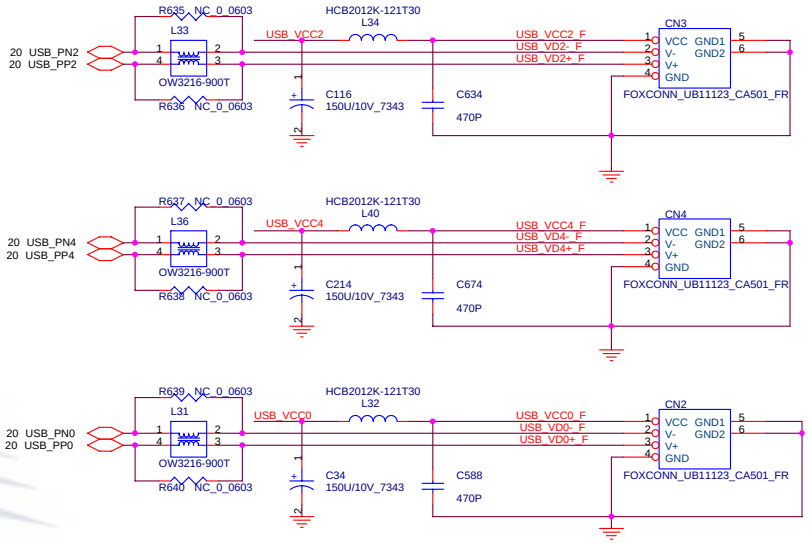


HDD CON

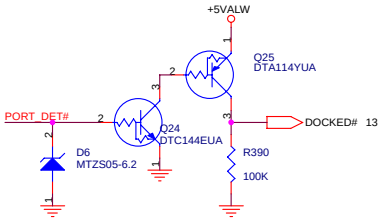


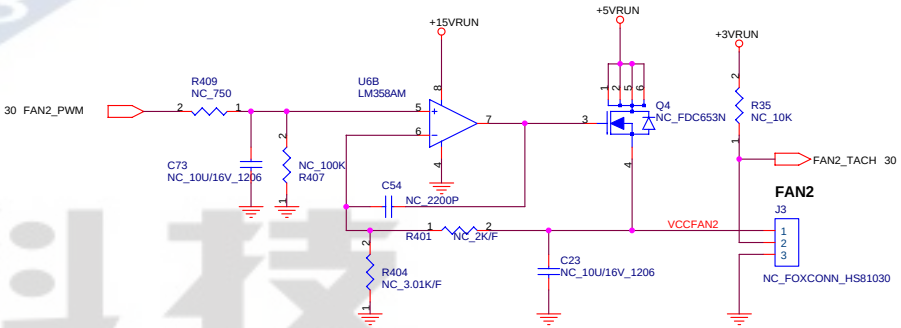
CD-ROM CON

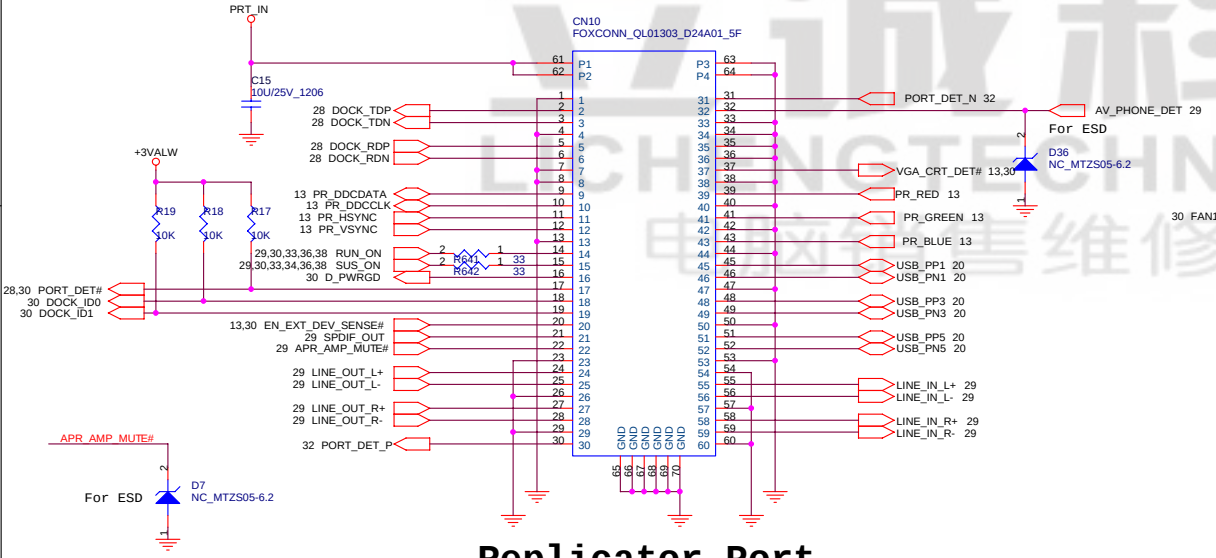




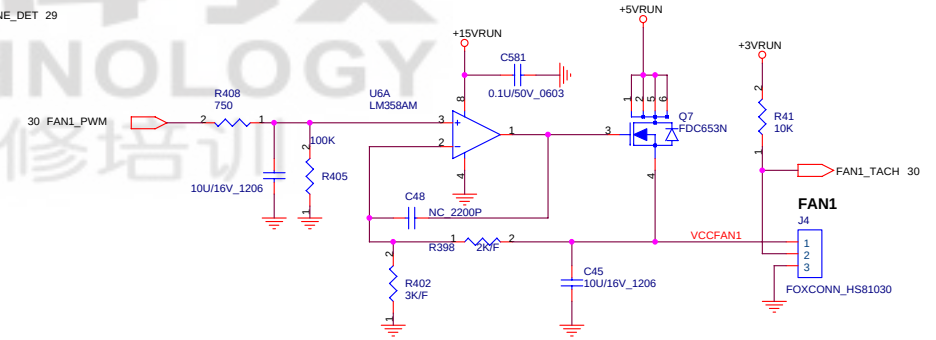
USB2.0 X 3



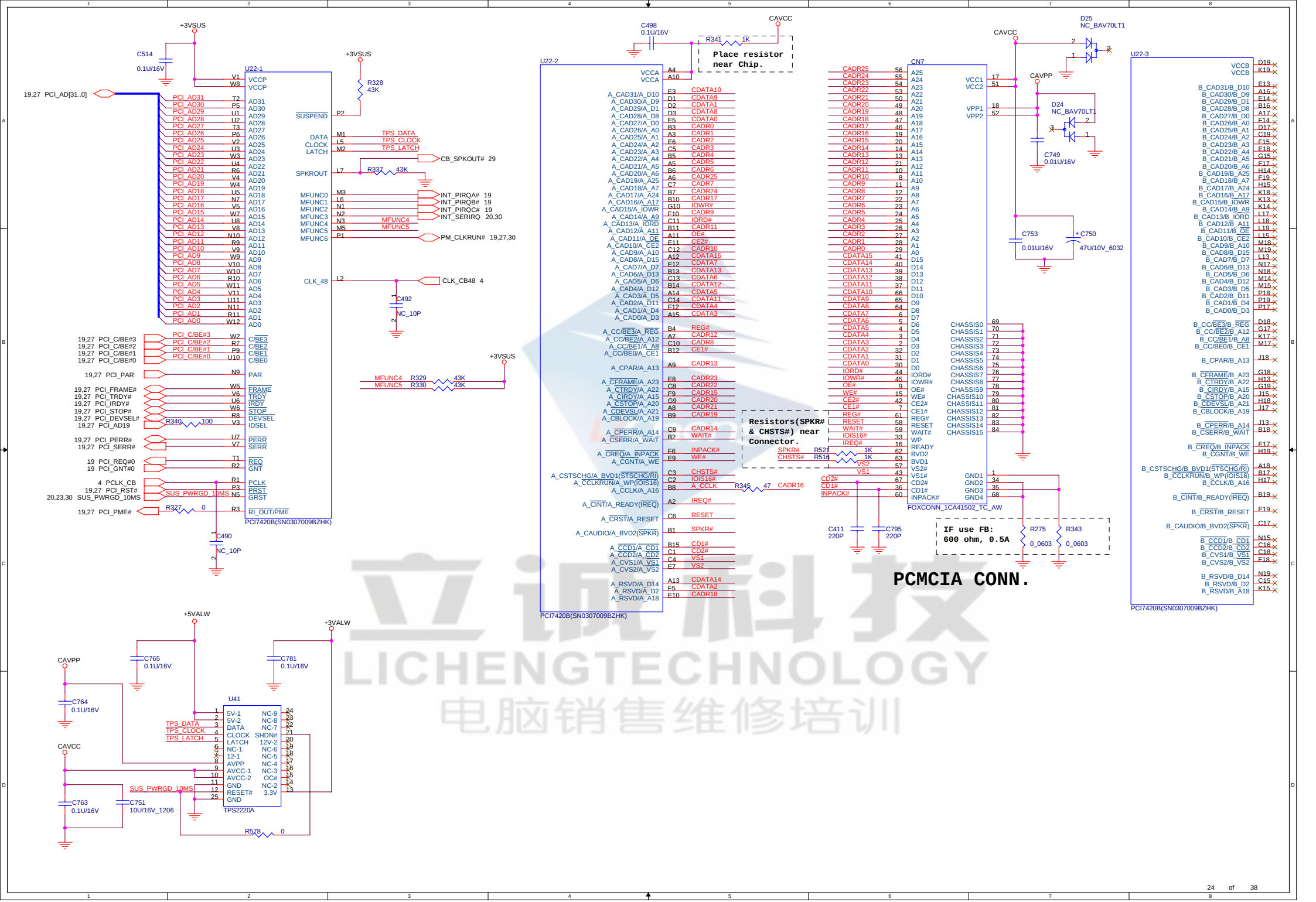


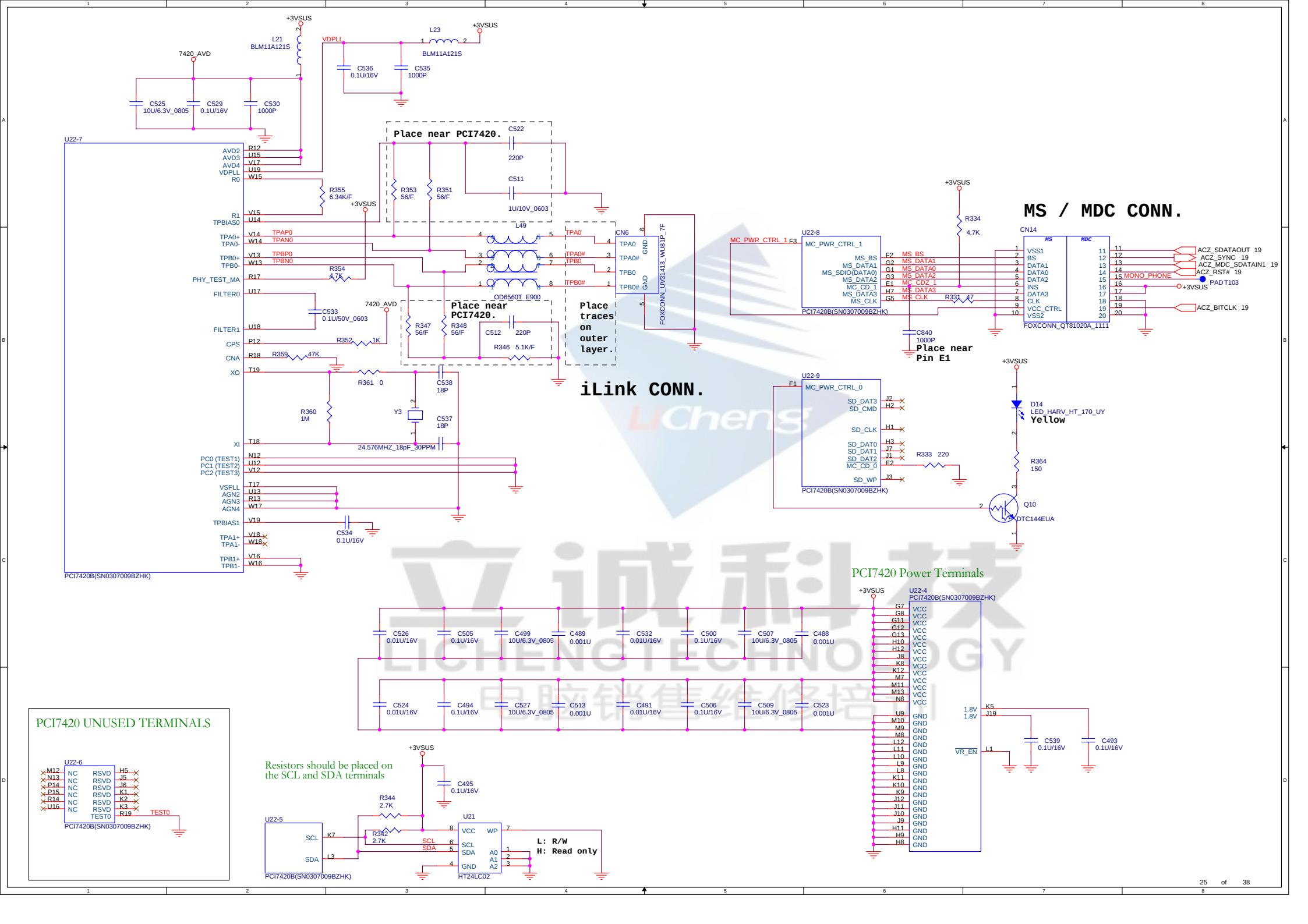


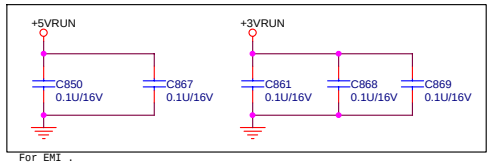
Replicator Port

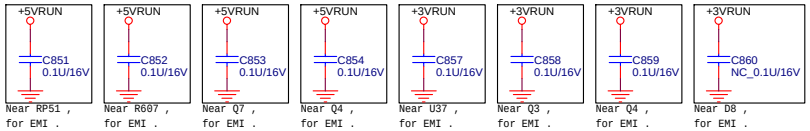


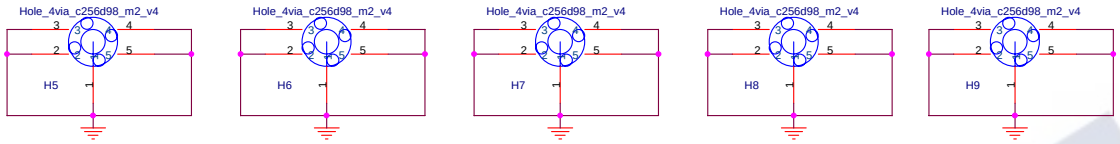
FAN

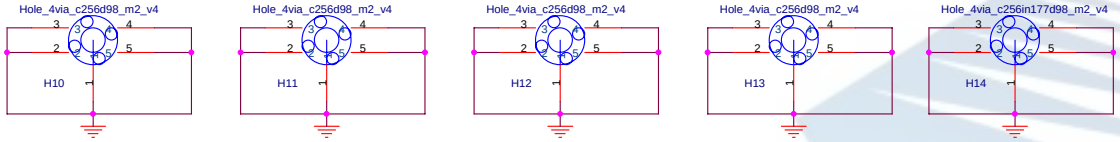


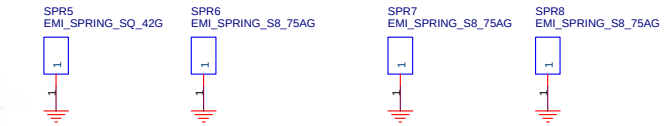

Place near PCI7420.
Place near PCI7420.
Place traces on outer layer.
iLink CONN.
MS / MDC CONN.
Place near Pin E1
PCI7420 Power Terminals
PCI7420 UNUSED TERMINALS
Resistors should be placed on the SCL and SDA terminals
L: R/W
H: Read only
Yellow
PCI7420B(SN0307009BZHK)
FOXCONN_UV31413_WU81P_7F
FOXCONN_QT81020A_1111
OD6560T_E900
HT24LC02
DTC144EUA
24.576MHZ_18pF_30PPM

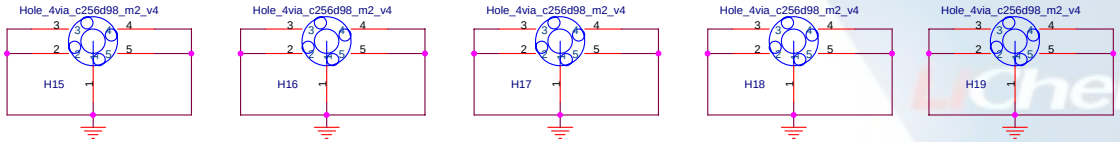


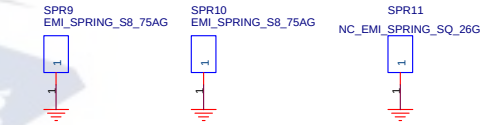


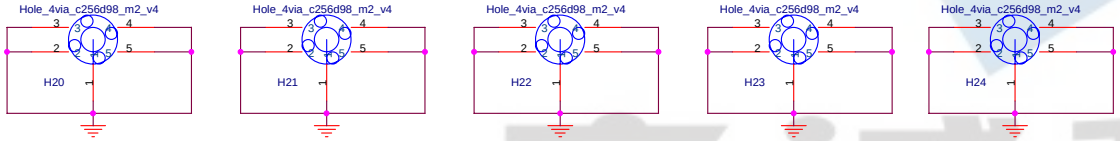


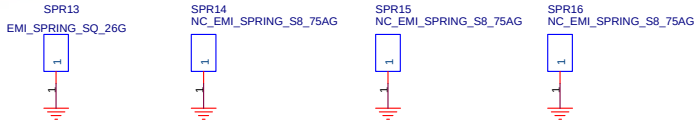


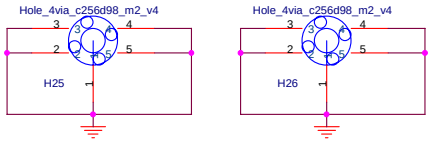


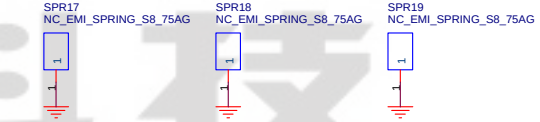


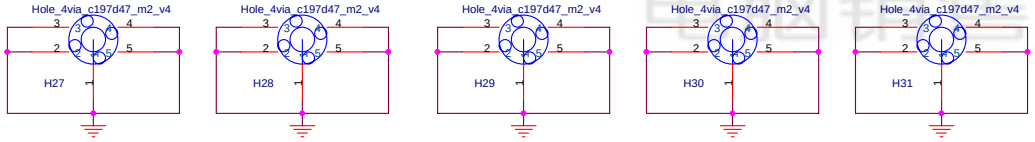


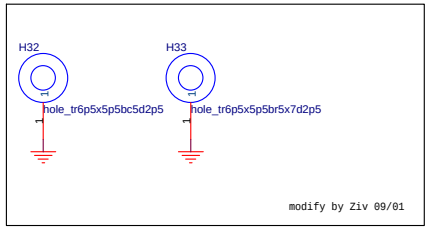


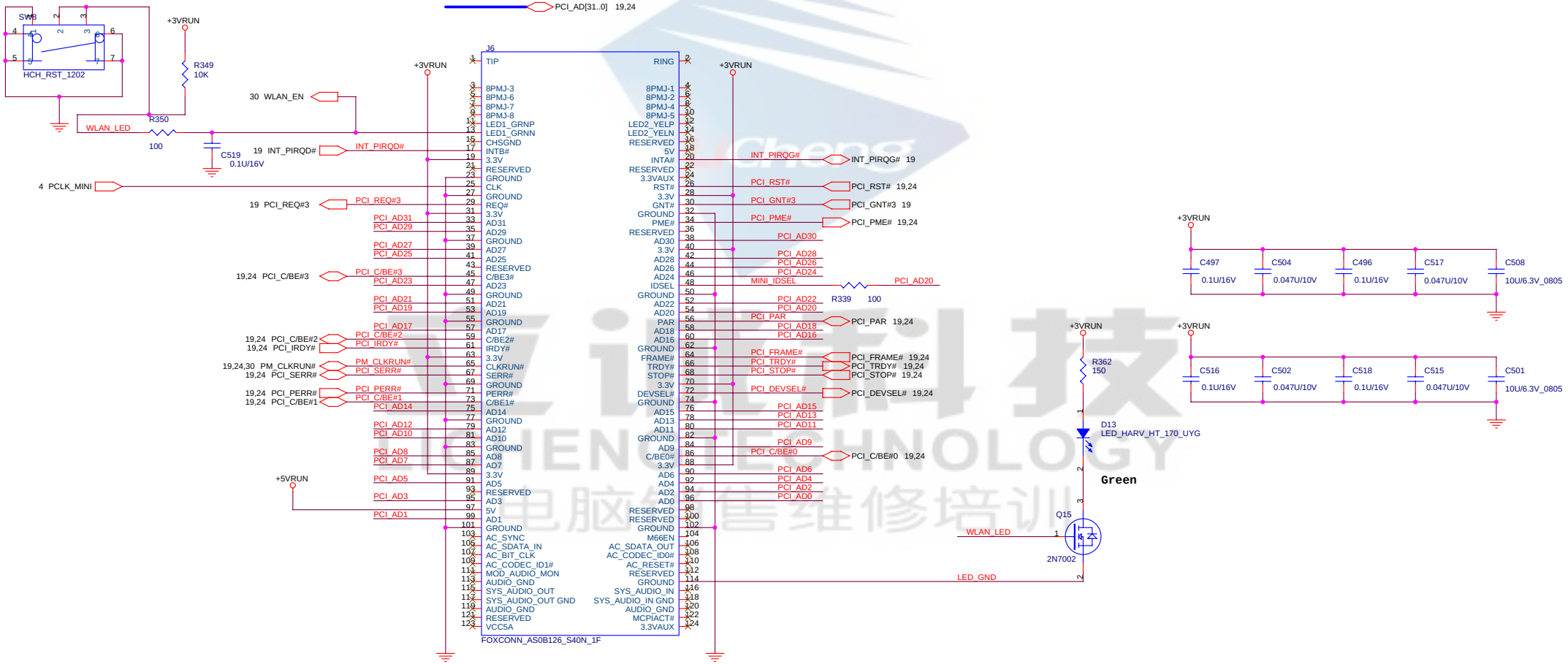






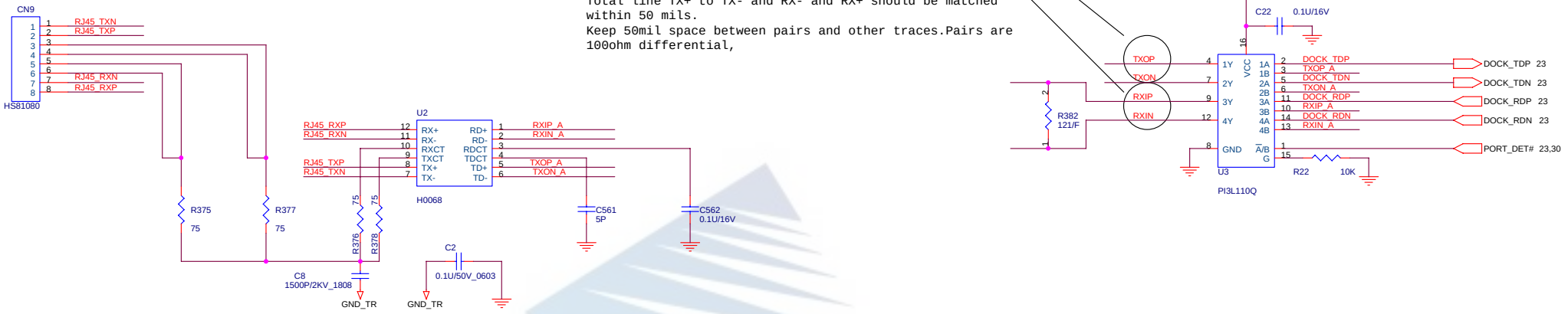




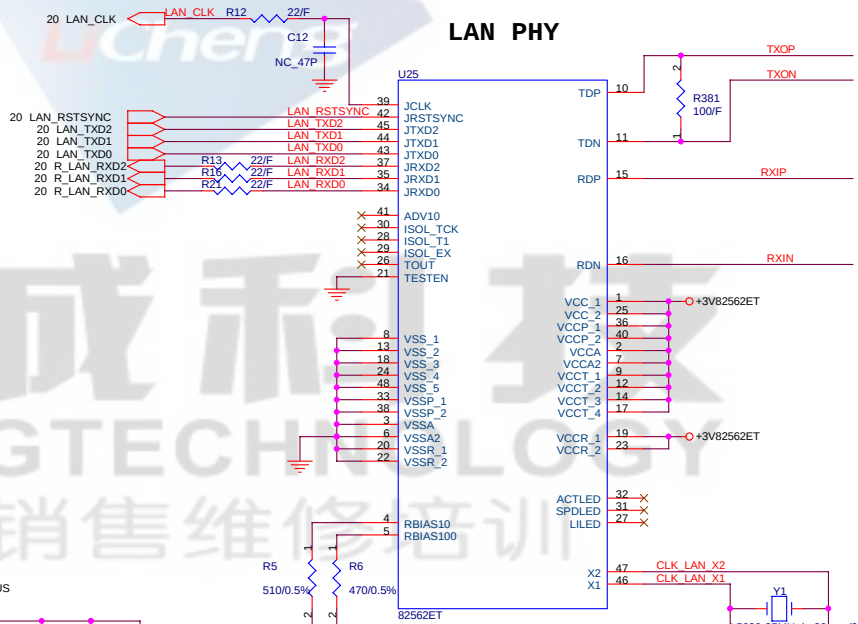

SW8
HCH_RST_1202
+3VRUN
R349
10K
R350
100
WLAN_LED
C519
0.1U/16V
30 WLAN_EN
19 INT_PIRQD#
4 PCLK_MINI
19 PCI_REQ#3
19,24 PCI_C/BE#3
19,24 PCI_C/BE#2
19,24 PCI_IRDY#
19,24,30 PM_CLKRUN#
19,24 PCI_SERR#
19,24 PCI_PERR#
19,24 PCI_C/BE#1
+5VRUN
PCI_AD[31..0] 19,24
J6
TIP
RING
8PMJ-3
8PMJ-6
8PMJ-7
8PMJ-8
LED1_GRNP
LED1_GRNN
CHSGND
INTB#
3.3V
RESERVED
GROUND
CLK
GROUND
REQ#
3.3V
AD31
AD29
GROUND
AD27
AD25
RESERVED
C/BE3#
AD23
GROUND
AD21
AD19
GROUND
AD17
C/BE2#
IRDY#
3.3V
CLKRUN#
SERR#
GROUND
PERR#
C/BE1#
AD14
GROUND
AD12
AD10
GROUND
AD8
AD7
3.3V
AD5
RESERVED
AD3
5V
AD1
GROUND
AC_SYNC
AC_SDATA_IN
AC_BIT_CLK
AC_CODEC_ID1#
MOD_AUDIO_MON
AUDIO_GND
SYS_AUDIO_OUT
SYS_AUDIO_OUT GND
AUDIO_GND
RESERVED
VCC5A
8PMJ-1
8PMJ-2
8PMJ-4
8PMJ-5
LED2_YELP
LED2_YELN
RESERVED
5V
INTA#
RESERVED
3.3VAUX
RST#
3.3V
GNT#
GROUND
PME#
RESERVED
AD30
3.3V
AD28
AD26
AD24
IDSEL
GROUND
AD22
AD20
PAR
AD18
AD16
GROUND
FRAME#
TRDY#
STOP#
3.3V
DEVSEL#
GROUND
AD15
AD13
AD11
GROUND
AD9
C/BE#0
3.3V
AD6
AD4
AD2
AD0
RESERVED
RESERVED
GROUND
M66EN
AC_SDATA_OUT
AC_CODEC_ID0#
AC_RESET#
RESERVED
GROUND
SYS_AUDIO_IN
SYS_AUDIO_IN GND
AUDIO_GND
MCPIACT#
3.3VAUX
FOXCONN_AS0B126_S40N_1F
INT_PIRQD#
PCI_REQ#3
PCI_AD31
PCI_AD29
PCI_AD27
PCI_AD25
PCI_C/BE#3
PCI_AD23
PCI_AD21
PCI_AD19
PCI_AD17
PCI_C/BE#2
PCI_IRDY#
PM_CLKRUN#
PCI_SERR#
PCI_PERR#
PCI_C/BE#1
PCI_AD14
PCI_AD12
PCI_AD10
PCI_AD8
PCI_AD7
PCI_AD5
PCI_AD3
PCI_AD1
INT_PIRQG#
PCI_RST#
PCI_GNT#3
PCI_PME#
PCI_AD30
PCI_AD28
PCI_AD26
PCI_AD24
MINI_IDSEL
PCI_AD22
PCI_AD20
PCI_PAR
PCI_AD18
PCI_AD16
PCI_FRAME#
PCI_TRDY#
PCI_STOP#
PCI_DEVSEL#
PCI_AD15
PCI_AD13
PCI_AD11
PCI_AD9
PCI_C/BE#0
PCI_AD6
PCI_AD4
PCI_AD2
PCI_AD0
INT_PIRQG# 19
PCI_RST# 19,24
PCI_GNT#3 19
PCI_PME# 19,24
R339 100
PCI_PAR 19,24
PCI_FRAME# 19,24
PCI_TRDY# 19,24
PCI_STOP# 19,24
PCI_DEVSEL# 19,24
PCI_C/BE#0 19,24
R362
150
D13
LED_HARV_HT_170_UYG
Green
Q15
2N7002
WLAN_LED
LED_GND
C497
0.1U/16V
C504
0.047U/10V
C496
0.1U/16V
C517
0.047U/10V
C508
10U/6.3V_0805
C516
0.1U/16V
C502
0.047U/10V
C518
0.1U/16V
C515
0.047U/10V
C501
10U/6.3V_0805

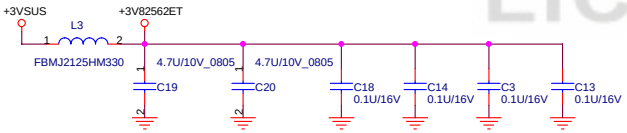
Match trace length

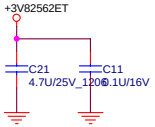
LAYOUT NOTES:
Match total length of chip side Rx and Tx pair traces +/-50mil
Match length of cable side Rx and Tx pair traces +/- 50 mil
Total line TX+ to TX- and RX- and RX+ should be matched within 50 mils.
Keep 50mil space between pairs and other traces.Pairs are 100ohm differential,

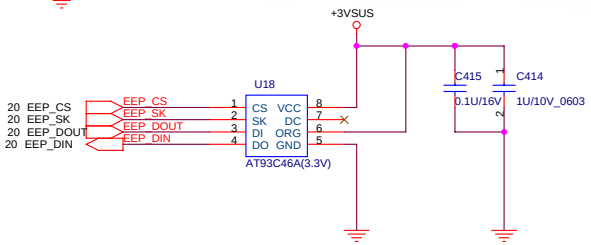


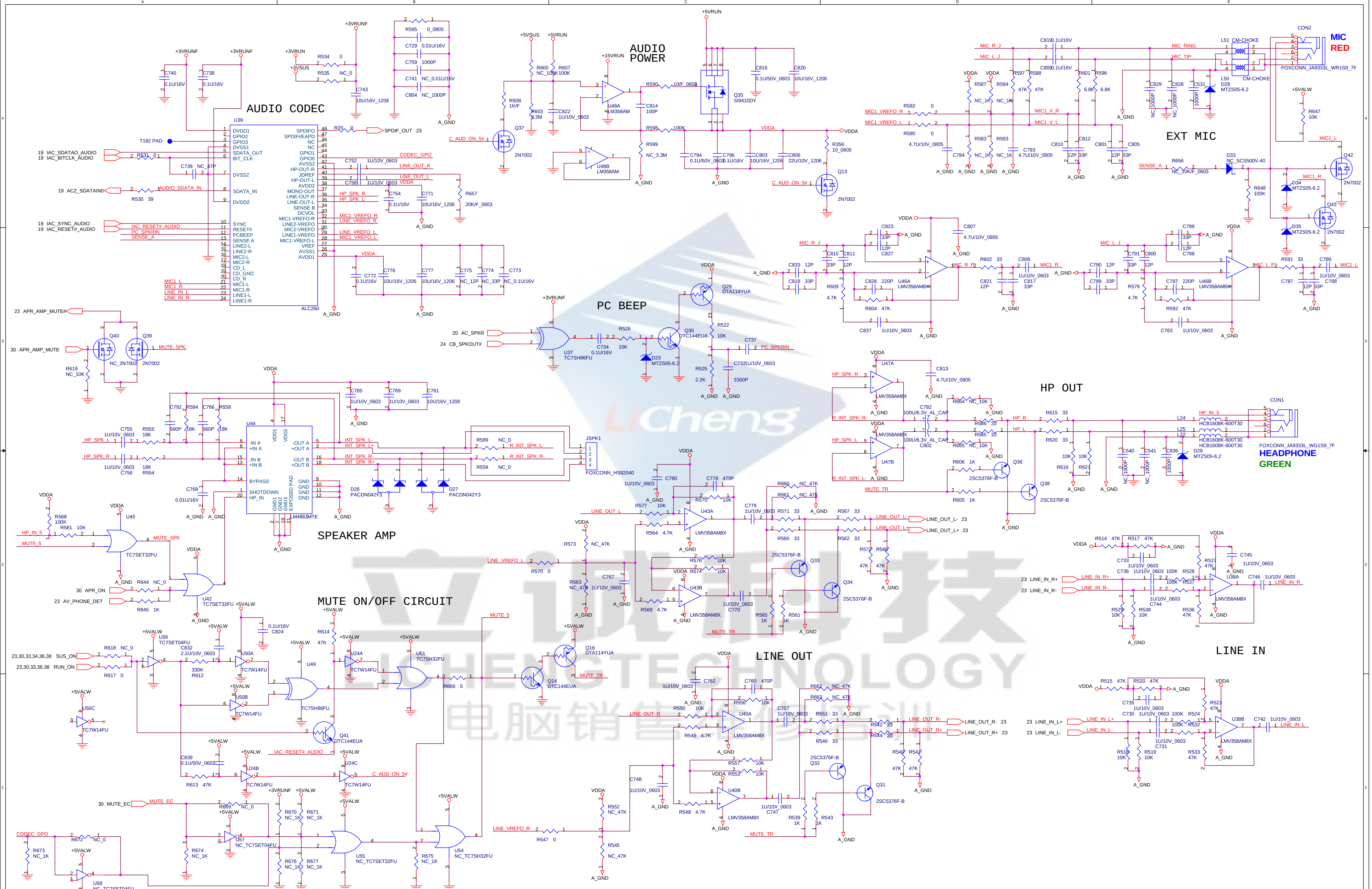
LAN PHY










AUDIO CODEC
AUDIO POWER
EXT MIC
MIC
RED
PC BEEP
HP OUT
HEADPHONE
GREEN
SPEAKER AMP
MUTE ON/OFF CIRCUIT
LINE OUT
LINE IN
ALC260
FOXCONN_JA9333L_WR1S9_7F
FOXCONN_JA9333L_WG1S9_7F
FOXCONN_HS82040
LM4863MTE
LICHENG TECHNOLOGY
立诚科技

Consider short FB after BB test.

Always pull-high, even if not PS2 connector !

JIG-120

FOR EMI

FOR DEBUG

X BUS CONN.

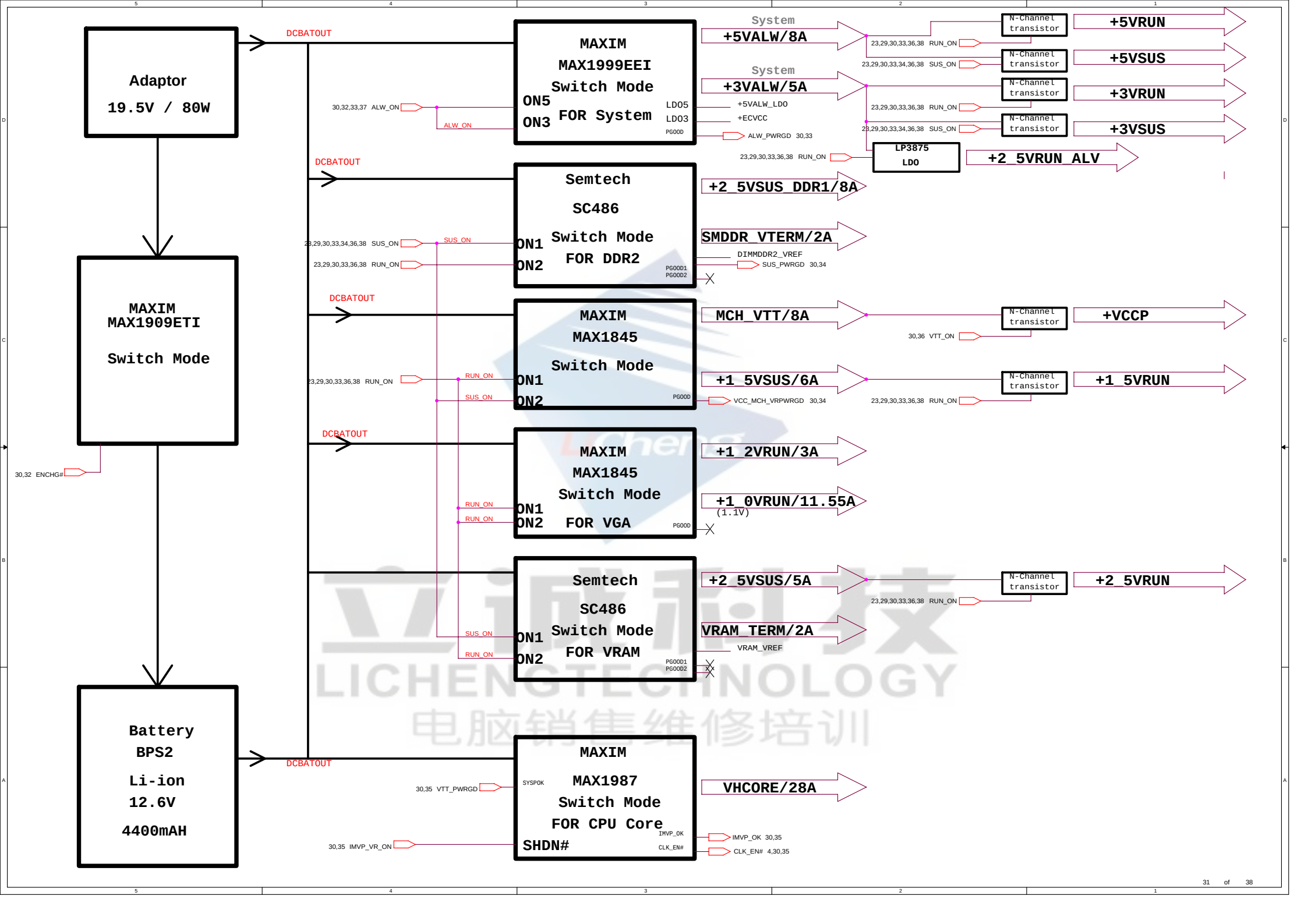
Green/Amber

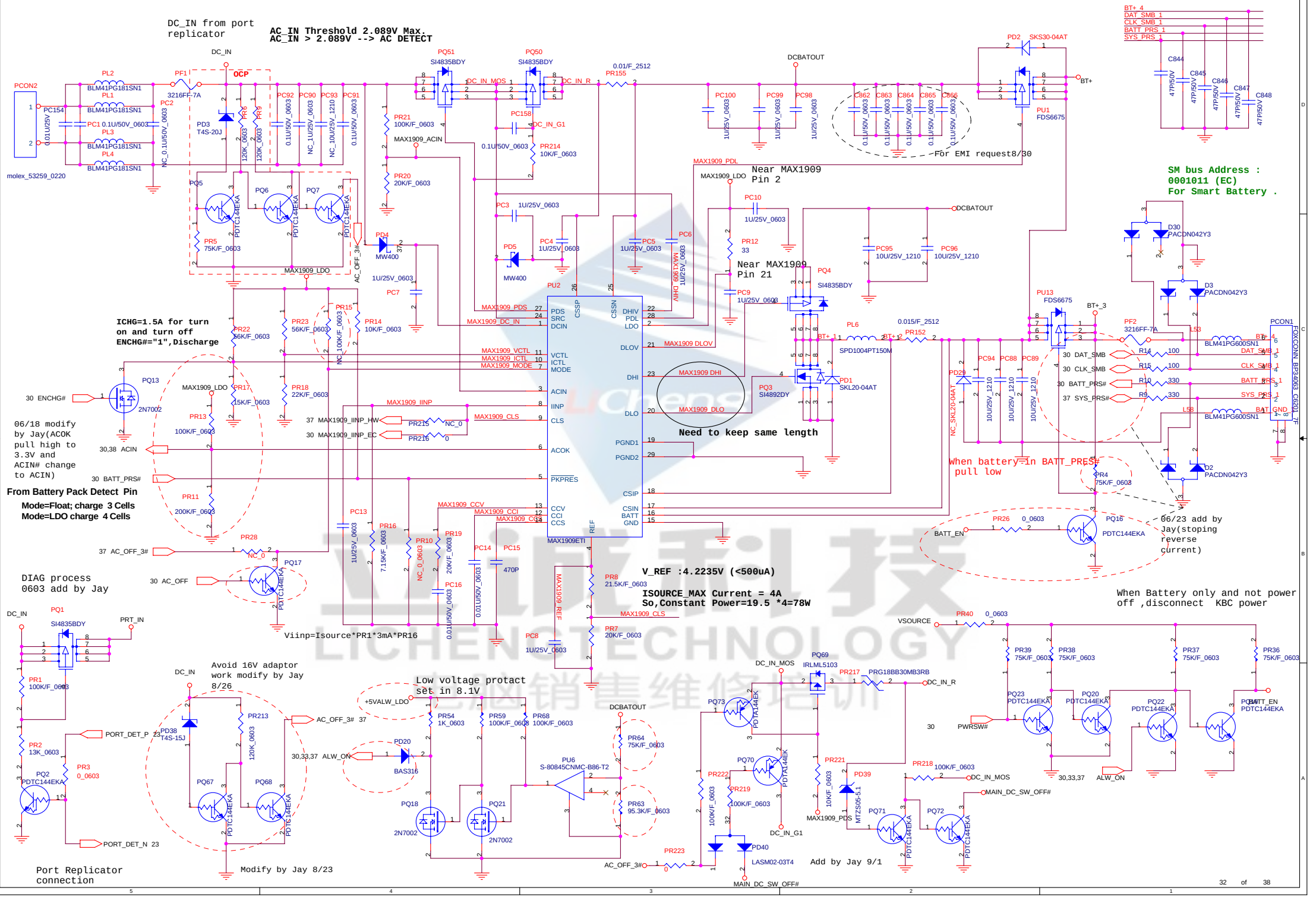
CLOSE TO CHIP

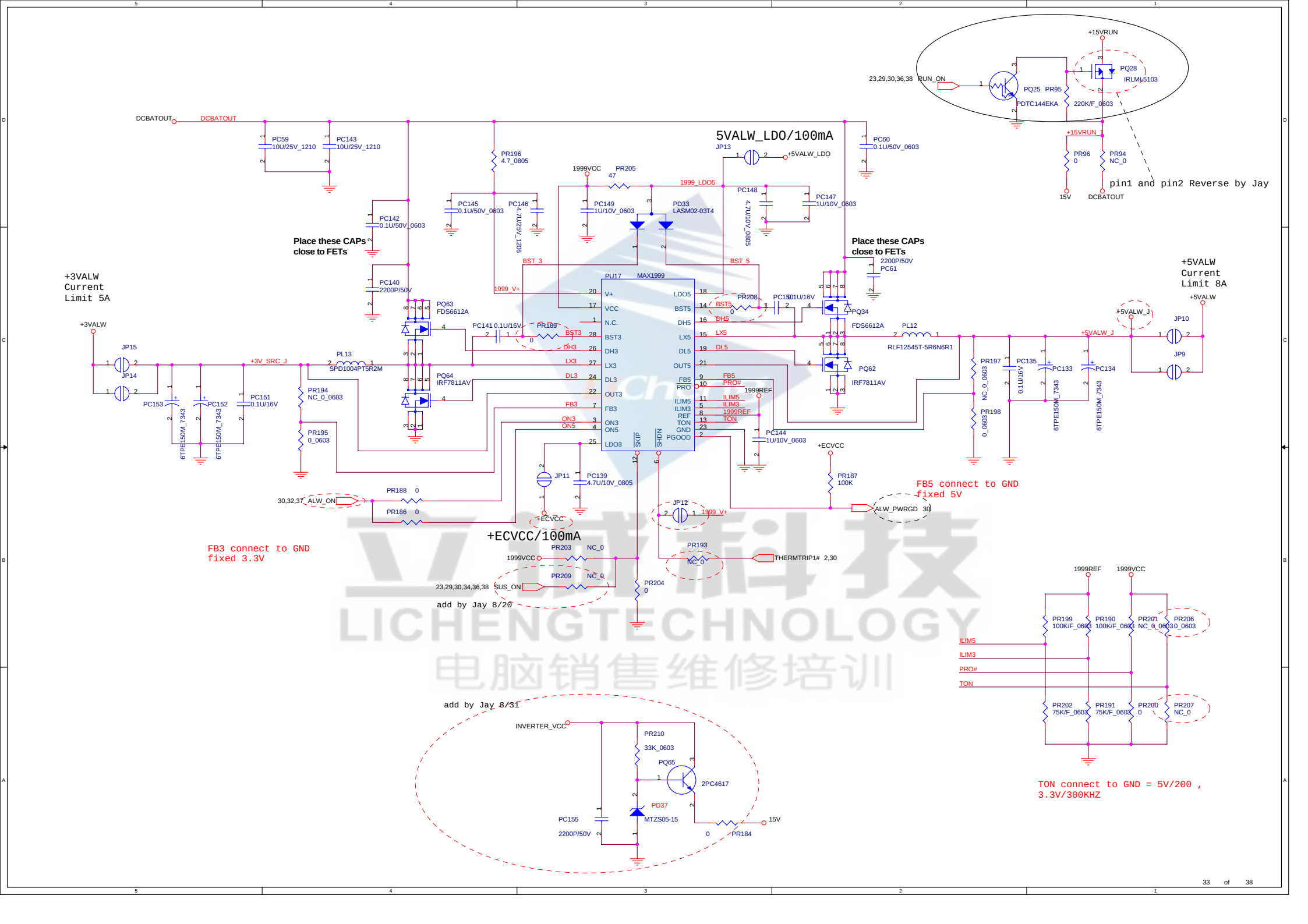
FOR EMI

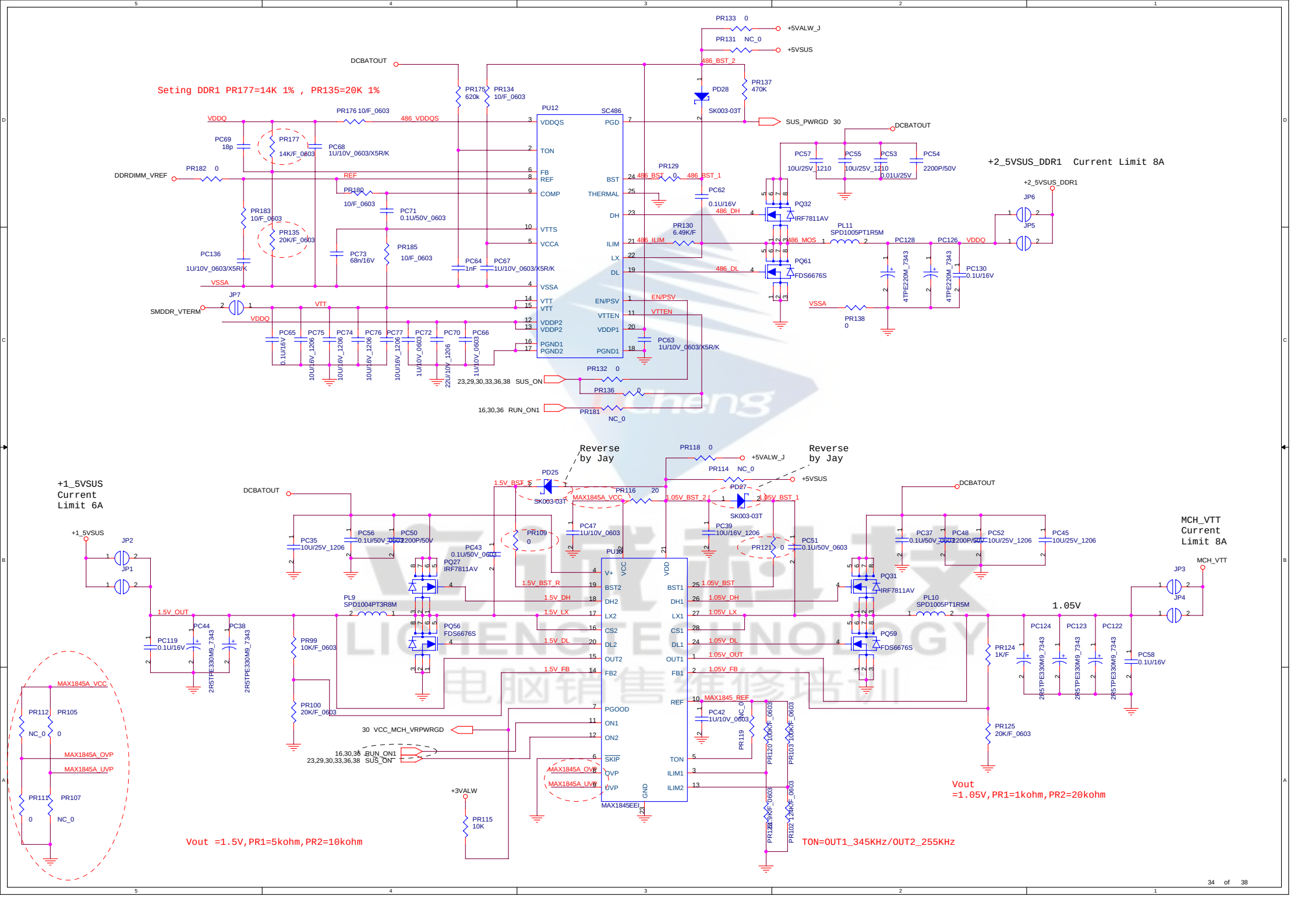
FOR ALPS TOUCH PAD

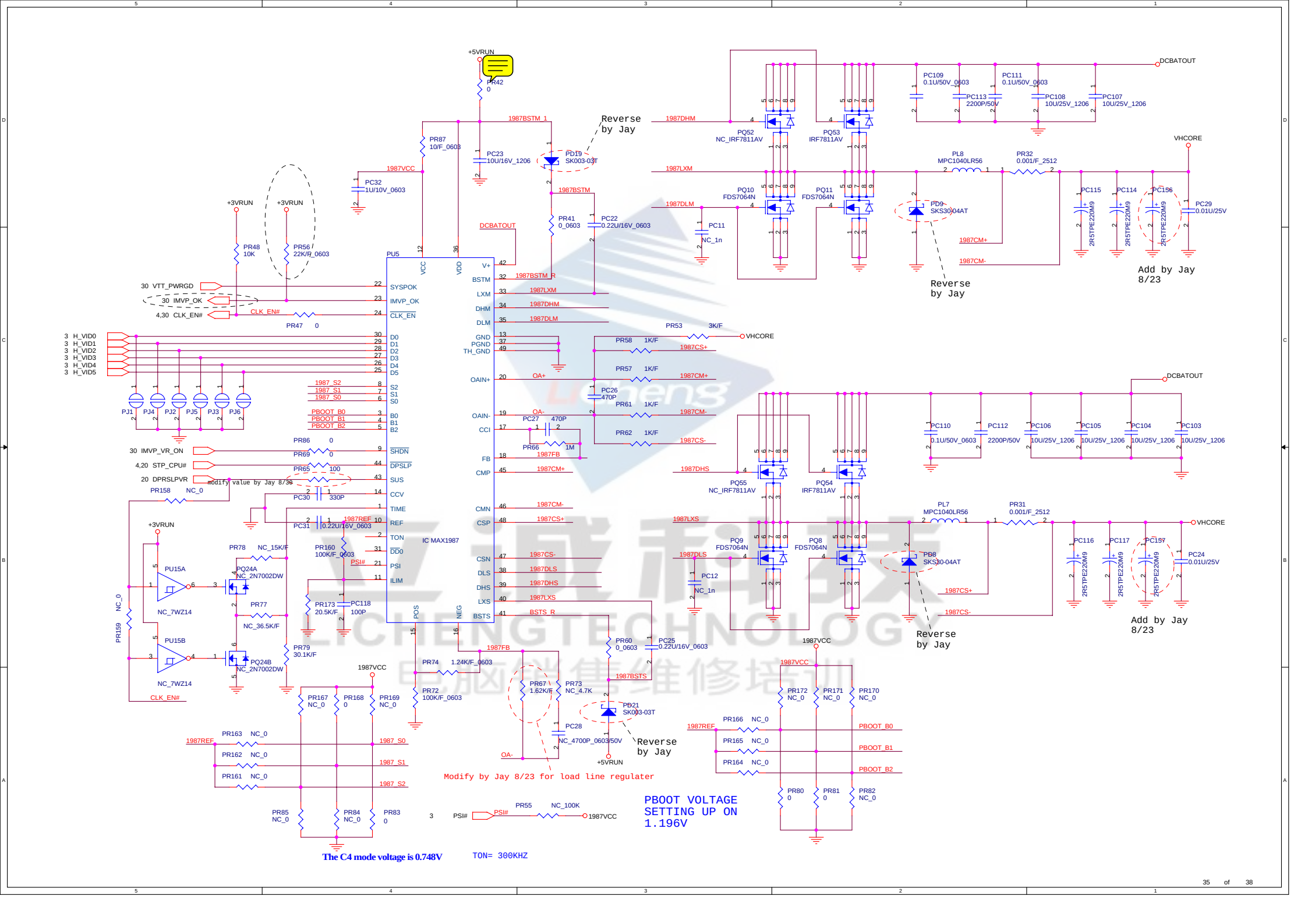
Touch Pad




DC_IN from port replicator
AC_IN Threshold 2.089V Max.
AC_IN > 2.089V --> AC DETECT
DC_IN
OCP
PCON2
molex_53259_0220
PF1
3216FF-7A
PD3
T4S-20J
PQ51
SI4835BDY
PQ50
SI4835BDY
DC_IN_MOS
DC_IN_R
0.01/F_2512
PR155
DCBATOUT
PD2
SKS30-04AT
BT+
PU1
FDS6675
For EMI request8/30
BT+_4
DAT_SMB_1
CLK_SMB_1
BATT_PRS_1
SYS_PRS_1
SM bus Address :
0001011 (EC)
For Smart Battery .
MAX1909_PDL
MAX1909_LDO
Near MAX1909
Pin 2
Near MAX1909
Pin 21
PU2
MAX1909_PDS
MAX1909_DC_IN
MAX1909_VCTL
MAX1909_ICTL
MAX1909_MODE
MAX1909_IINP
MAX1909_CLS
MAX1909_CCV
MAX1909_CCI
MAX1909_CCS
MAX1909ETI
MAX1909_REF
MAX1909_DLOV
MAX1909_DHI
MAX1909_DLO
PDS
SRC
DCIN
VCTL
ICTL
MODE
ACIN
IINP
CLS
ACOK
PKPRES
CCV
CCI
CCS
REF
CSSP
CSSN
DHIV
PDL
LDO
DLOV
DHI
DLO
PGND1
PGND2
CSIP
CSIN
BATT
GND
ICHG=1.5A for turn on and turn off
ENCHG#="1",Discharge
30 ENCHG#
PQ13
2N7002
06/18 modify by Jay(ACOK pull high to 3.3V and ACIN# change to ACIN)
30,38 ACIN
30 BATT_PRS#
From Battery Pack Detect Pin
Mode=Float; charge 3 Cells
Mode=LDO charge 4 Cells
37 AC_OFF_3#
30 AC_OFF
PQ17
DIAG process
0603 add by Jay
Viinp=Isource*PR1*3mA*PR16
Need to keep same length
V_REF :4.2235V (<500uA)
ISOURCE_MAX Current = 4A
So,Constant Power=19.5 *4=78W
When battery in BATT_PRES# pull low
06/23 add by Jay(stoping reverse current)
When Battery only and not power off ,disconnect KBC power
PQ16
PDTC144EKA
BATT_EN
PR4
75K/F_0603
PF2
3216FF-7A
PCON1
FOXCONN_BP34063_C6201_7F
30 DAT_SMB
30 CLK_SMB
30 BATT_PRS#
37 SYS_PRS#
BAT_GND
PQ1
SI4835BDY
PRT_IN
PORT_DET_P 23
PORT_DET_N 23
Port Replicator connection
Avoid 16V adaptor work modify by Jay 8/26
Modify by Jay 8/23
Low voltage protact set in 8.1V
+5VALW_LDO
30,33,37 ALW_ON
PU6
S-80845CNMC-B86-T2
PQ69
IRLML5103
PRG18BB30MB3RB
PQ73
PQ70
PQ71
PQ72
PD39
MTZS05-5.1
PD40
LASM02-03T4
MAIN_DC_SW_OFF#
Add by Jay 9/1
VSOURCE
PWRSW#
PQ23
PQ20
PQ22
PQ24
PDTC144EKA
32 of 38




Seting DDR1 PR177=14K 1% , PR135=20K 1%
+2_5VSUS_DDR1 Current Limit 8A
+1_5VSUS Current Limit 6A
MCH_VTT Current Limit 8A
Reverse by Jay
Reverse by Jay
1.05V
Vout =1.5V,PR1=5kohm,PR2=10kohm
Vout =1.05V,PR1=1kohm,PR2=20kohm
TON=OUT1_345KHz/OUT2_255KHz
MAX1845EEI
DCBATOUT
+5VALW_J
+5VSUS
SUS_PWRGD 30
SUS_ON
RUN_ON1
VCC_MCH_VRPWRGD
+3VALW
DDRDIMM_VREF
SMDDR_VTERM
+1_5VSUS
+2_5VSUS_DDR1
MCH_VTT
VDDQ
VSSA
VTT
1.5V_OUT
1.05V_OUT
MAX1845A_VCC
MAX1845A_OVP
MAX1845A_UVP
MAX1845_REF
1.5V_BST_R
1.5V_DH
1.5V_LX
1.5V_DL
1.5V_FB
1.05V_BST
1.05V_DH
1.05V_LX
1.05V_DL
1.05V_FB
486_VDDQS
486_BST_2
486_BST
486_BST_1
486_DH
486_ILIM
486_MOS
486_DL
EN/PSV
VTTEN
PU12
PU13
PU14
PD28
PD25
PD27
PQ32
PQ61
PQ31
PQ59
PQ27
PQ56
PL11
PL10
PL9
JP1
JP2
JP3
JP4
JP5
JP6
JP7
SK003-03T
IRF7811AV
FDS6676S
SPD1005PT1R5M
SPD1004PT3R8M
4TPE220M_7343
2R5TPE330M9_7343
PR133 0
PR131 NC_0
PR175 620k
PR134 10/F_0603
PR137 470K
PR176 10/F_0603
PR177 14K/F_0603
PR135 20K/F_0603
PR180 10/F_0603
PR183 10/F_0603
PR182 0
PR129
PR130 6.49K/F
PR132 0
PR136 0
PR181 NC_0
PR138 0
PR118 0
PR114 NC_0
PR116 20
PR121 0
PR109 0
PR99 10K/F_0603
PR100 20K/F_0603
PR115 10K
PR119
PR120 100K/F_0603
PR103 100K/F_0603
PR102 124K/F_0603
PR124 1K/F
PR125 20K/F_0603
PR112
PR105
PR111
PR107
PC69 18p
PC68 1U/10V_0603/X5R/K
PC71 0.1U/50V_0603
PC73 68n/16V
PC64 1nF
PC67 1U/10V_0603/X5R/K
PC136 1U/10V_0603/X5R/K
PC62 0.1U/16V
PC63 1U/10V_0603/X5R/K
PC65 0.1U/16V
PC75 10U/16V_1206
PC74 10U/16V_1206
PC76 10U/16V_1206
PC77 10U/16V_1206
PC72 1U/10V_0603
PC70 22U/10V_1206
PC66 1U/10V_0603
PC57 10U/25V_1210
PC55 10U/25V_1210
PC53 0.01U/25V
PC54 2200P/50V
PC128
PC126
PC130 0.1U/16V
PC35 10U/25V_1206
PC56 0.1U/50V_0603
PC50 2200P/50V
PC43 0.1U/50V_0603
PC47 1U/10V_0603
PC39 10U/16V_1206
PC51 0.1U/50V_0603
PC37 0.1U/50V_0603
PC48 2200P/50V
PC52 10U/25V_1206
PC45 10U/25V_1206
PC119 0.1U/16V
PC44
PC38
PC124
PC123
PC122
PC58 0.1U/16V
PC42 1U/10V_0603
NC_0
0
MAX1845A_VCC
MAX1845A_OVP
MAX1845A_UVP
MAX1845_REF
VDDQ
VSSA
VTT
VCC
VDD
GND
TON
SKIP
PGOOD
ON1
ON2
OVP
UVP
ILIM1
ILIM2
BST1
DH1
LX1
DL1
FB1
CS1
BST2
DH2
LX2
DL2
FB2
CS2
V+
OUT1
OUT2
REF
VDDQS
TON
FB
REF
COMP
VTTS
VCCA
VSSA
VTT
VTT
VDDP2
VDDP2
PGND1
PGND2
PGD
BST
THERMAL
DH
ILIM
LX
DL
EN/PSV
VTTEN
VDDP1
PGND1


+5VRUN
PR42 0
1987BSTM_1
Reverse by Jay
PD19 SK003-03T
PR87 10/F_0603
PC23 10U/16V_1206
1987VCC
PC32 1U/10V_0603
1987BSTM
PR41 0_0603
PC22 0.22U/16V_0603
DCBATOUT
PU5
VCC
VDD
V+
BSTM
LXM
DHM
DLM
GND
PGND
TH_GND
OAIN+
OAIN-
CCI
FB
CMP
CMN
CSP
CSN
DLS
DHS
LXS
BSTS
POS
NEG
SYSPOK
IMVP_OK
CLK_EN
D0
D1
D2
D3
D4
D5
S2
S1
S0
B0
B1
B2
SHDN
DPSLP
SUS
CCV
TIME
REF
TON
DD0
PSI
ILIM
IC MAX1987
1987DHM
1987LXM
1987DLM
PQ52 NC_IRF7811AV
PQ53 IRF7811AV
PQ10 FDS7064N
PQ11 FDS7064N
PC11 NC_1n
PD9 SKS30-04AT
PL8 MPC1040LR56
PR32 0.001/F_2512
PC109 0.1U/50V_0603
PC111 0.1U/50V_0603
PC113 2200P/50V
PC108 10U/25V_1206
PC107 10U/25V_1206
PC115
PC114
PC116
2R5TPE220M9
PC29 0.01U/25V
PC24 0.01U/25V
1987CM+
1987CM-
Add by Jay 8/23
VHCORE
PR53 3K/F
PR58 1K/F
PR57 1K/F
PR61 1K/F
PR62 1K/F
1987CS+
1987CM+
1987CM-
1987CS-
PC26 470P
PC27 470P
PR66 1M
1987FB
OA+
OA-
1987DHS
PQ55 NC_IRF7811AV
PQ54 IRF7811AV
PQ9 FDS7064N
PQ8 FDS7064N
PC12 NC_1n
PD8 SKS30-04AT
PL7 MPC1040LR56
PR31 0.001/F_2512
PC110 0.1U/50V_0603
PC112 2200P/50V
PC106 10U/25V_1206
PC105 10U/25V_1206
PC104 10U/25V_1206
PC103 10U/25V_1206
PC117
PC118
PC157
1987LXS
1987DLS
1987CS+
1987CS-
Reverse by Jay
Add by Jay 8/23
PR60 0_0603
PC25 0.22U/16V_0603
1987BSTS
PR67 1.62K/F
PR73 NC_4.7K
PD21 SK003-03T
PC28 NC_4700P_0603/50V
Reverse by Jay
+5VRUN
Modify by Jay 8/23 for load line regulater
PR74 1.24K/F_0603
PR72 100K/F_0603
PR55 NC_100K
PSI#
1987VCC
PBOOT VOLTAGE SETTING UP ON 1.196V
PR172 NC_0
PR171 NC_0
PR170 NC_0
PR166 NC_0
PR165 NC_0
PR164 NC_0
PBOOT_B0
PBOOT_B1
PBOOT_B2
PR80 0
PR81 0
PR82 NC_0
+3VRUN
PR48 10K
PR56 22K/R_0603
PR47 0
30 VTT_PWRGD
30 IMVP_OK
4,30 CLK_EN#
3 H_VID0
3 H_VID1
3 H_VID2
3 H_VID3
3 H_VID4
3 H_VID5
PJ1 PJ4 PJ2 PJ5 PJ3 PJ6
1987_S2
1987_S1
1987_S0
PBOOT_B0
PBOOT_B1
PBOOT_B2
PR86 0
PR69 0
PR65 100
modify value by Jay 8/30
30 IMVP_VR_ON
4,20 STP_CPU#
20 DPRSLPVR
PR158 NC_0
PC30 330P
PC31 0.22U/16V_0603
1987REF
PR78 NC_15K/F
PR160 100K/F_0603
PSI#
PR173 20.5K/F
PC118 100P
PR77 NC_36.5K/F
PR79 30.1K/F
PU15A
PU15B
NC_7WZ14
PQ24A NC_2N7002DW
PQ24B NC_2N7002DW
PR159 NC_0
CLK_EN#
PR167 NC_0
PR168 0
PR169 NC_0
PR163 NC_0
PR162 NC_0
PR161 NC_0
1987_S0
1987_S1
1987_S2
PR85 NC_0
PR84 NC_0
PR83 0
The C4 mode voltage is 0.748V
TON= 300KHZ