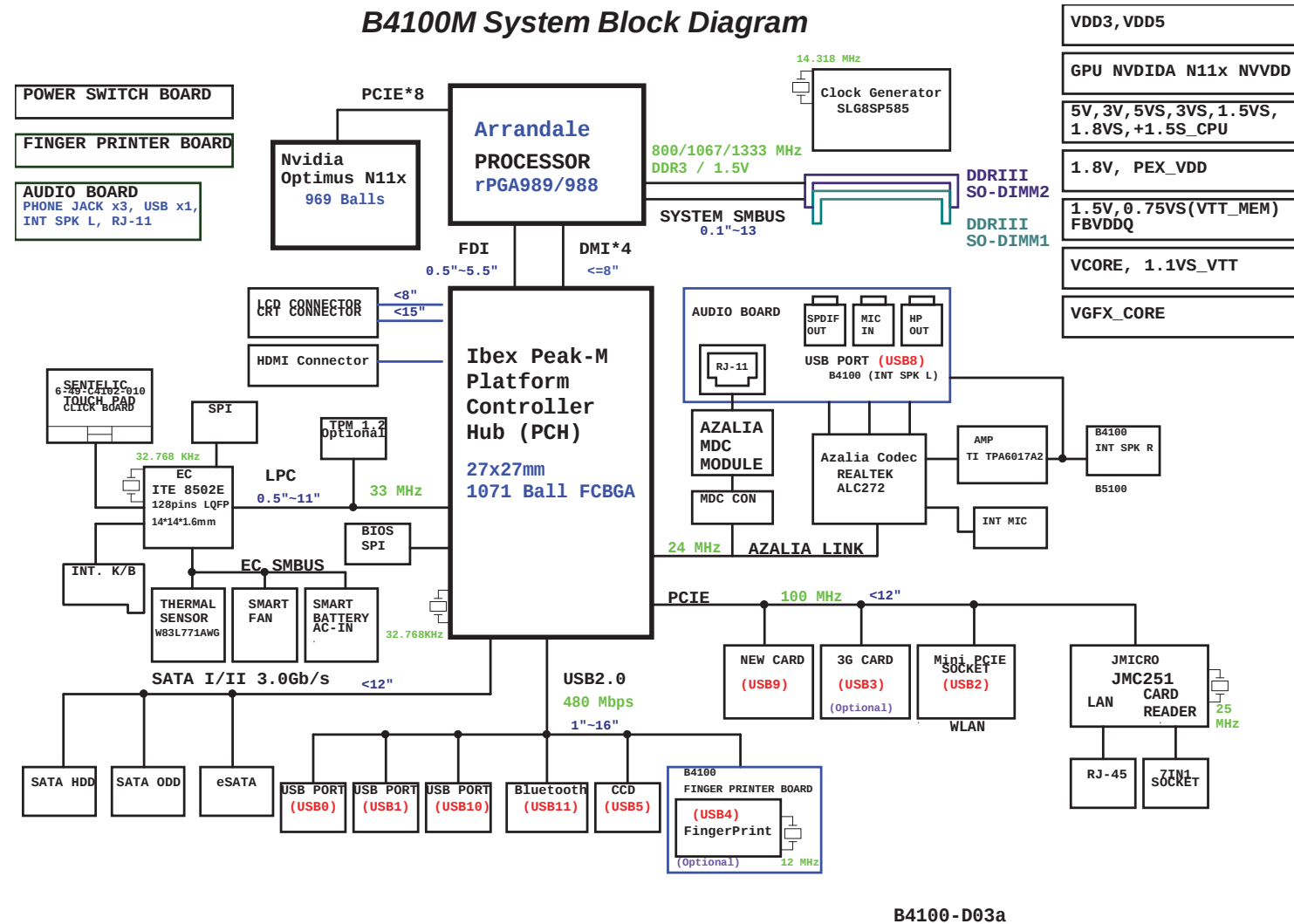
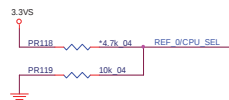


System Block Diagram



Sheet 1 of 49
System Block
Diagram

CLOCK GENERATOR



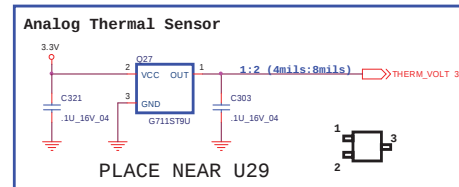
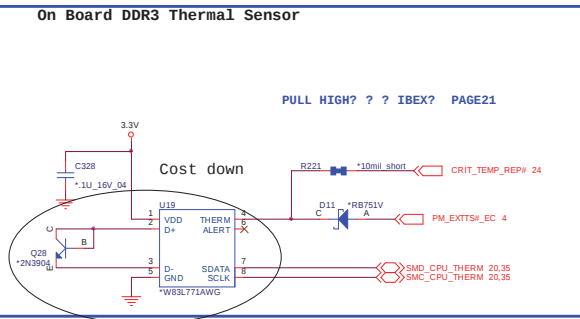
PIN_30	CPU_0	CPU_1
0(default)	133MHz	133MHz
1(0.7V-1.5V)	100MHz	100MHz

EMI Capacitor

—  3.3VS 10,11,12,13,19,20,21,22,23,24,25,26,28,29,30,31,32,34,35,36,41,42,45

— 1.1VS_VTT 4,6,7,19,20,21,24,25,26,38,40,41,42

PROCESSOR 1/7 (DMI, PEG, FDI)

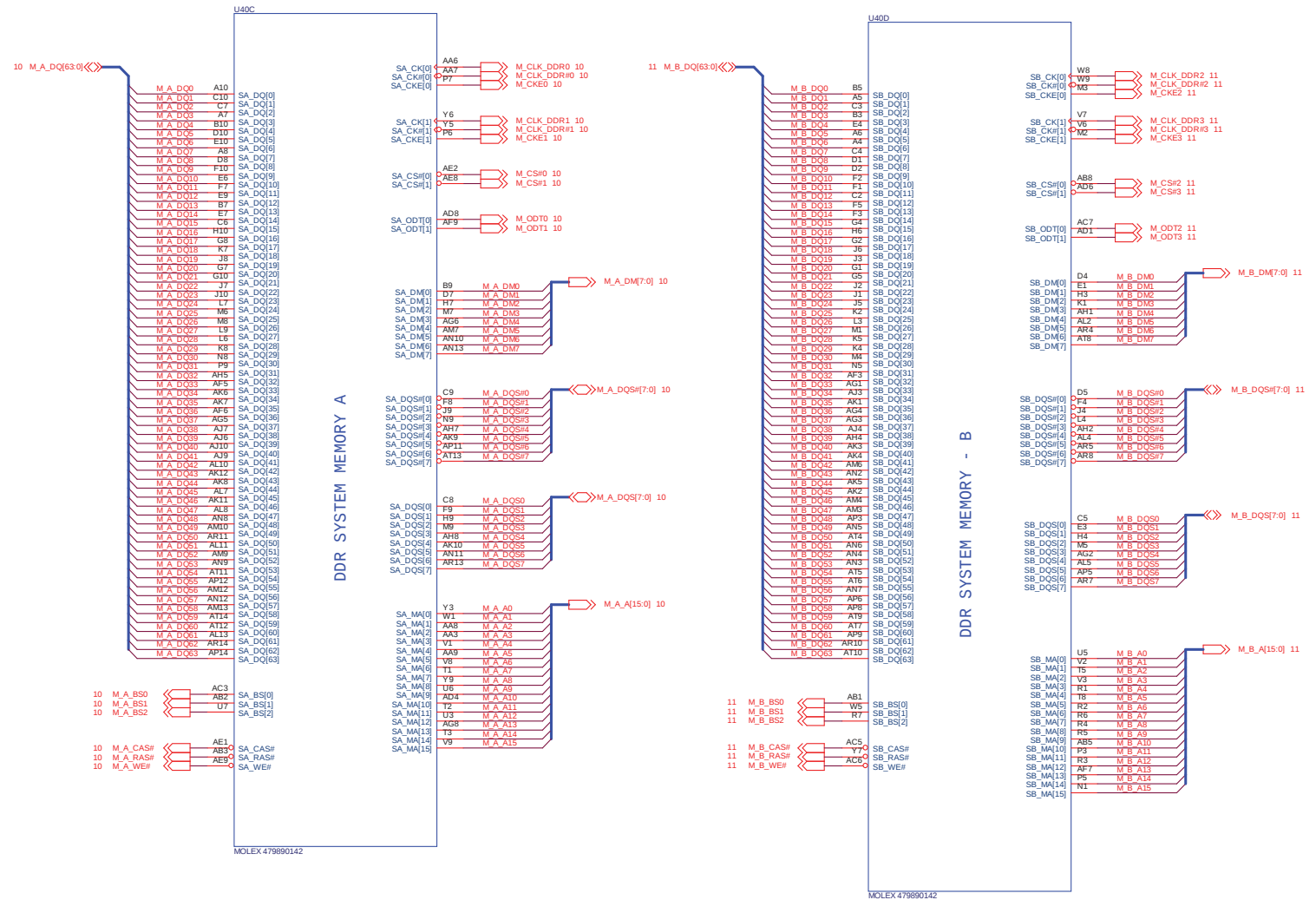


[illegible]

CPU 3/7 (DDR3)

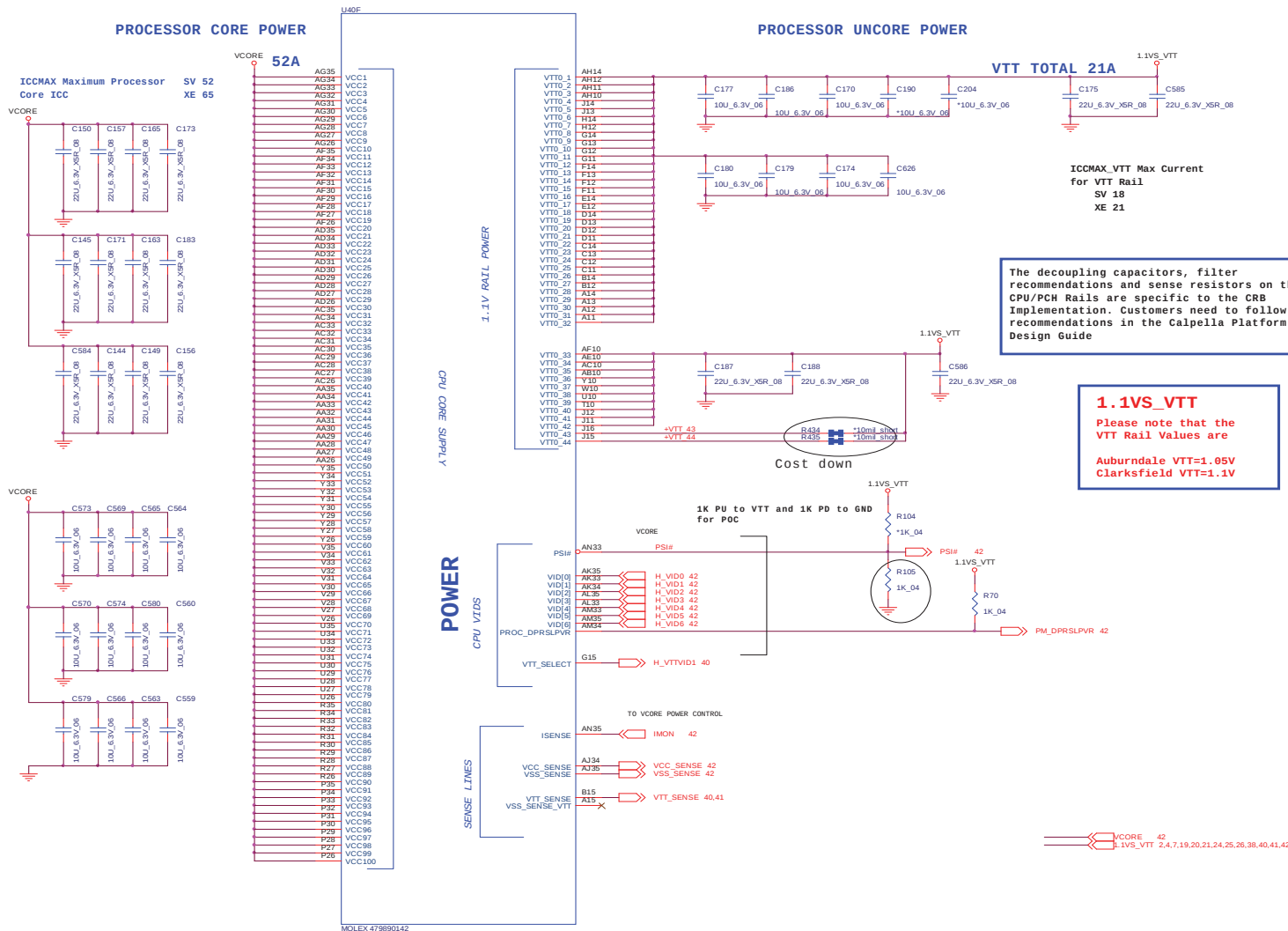
PROCESSOR 3/7 (DDR3)

Sheet 5 of 49
CPU 3/7
(DDR3)



CPU 4/7 (Power)

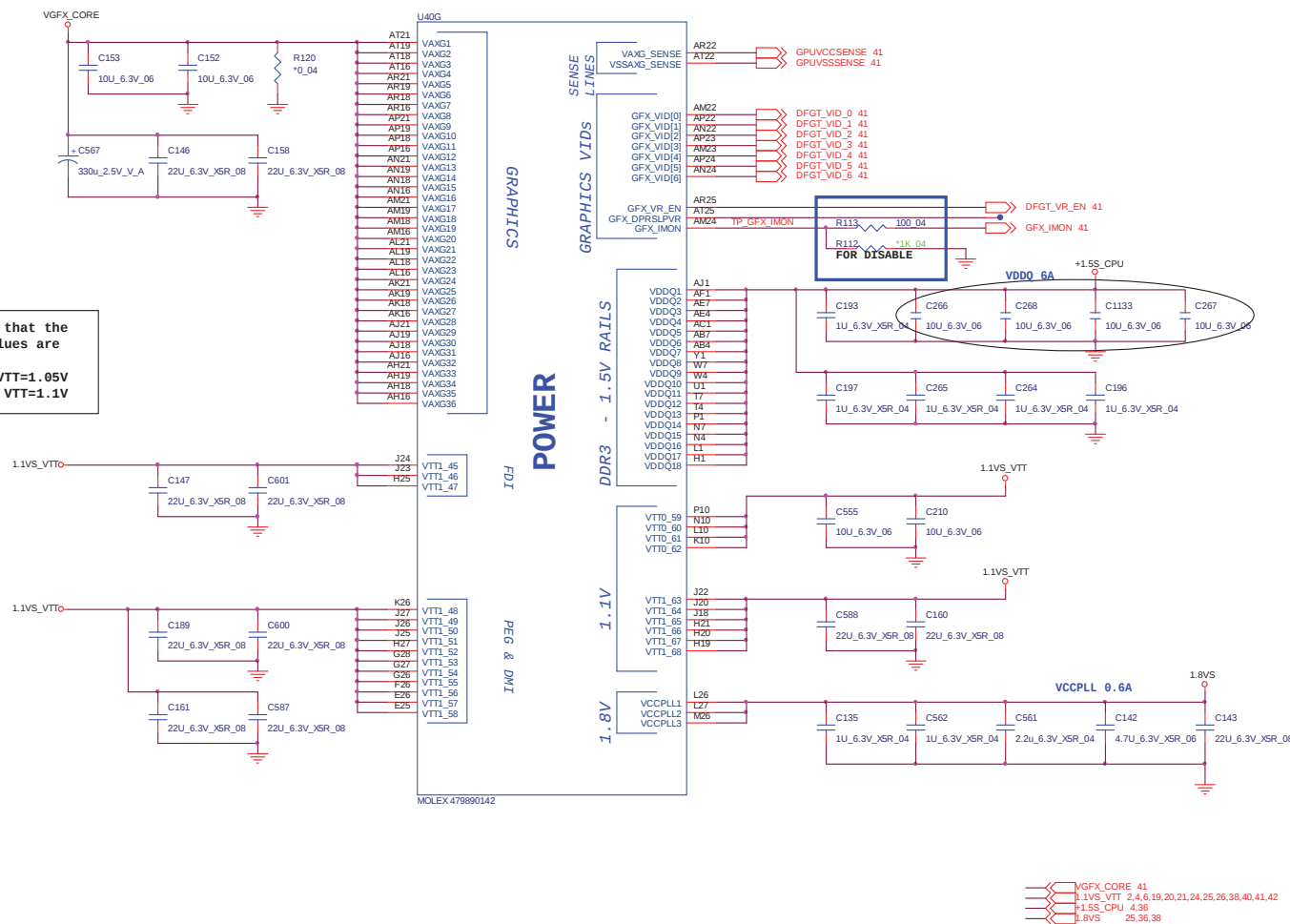
PROCESSOR 4/7 (POWER)



Sheet 6 of 49
CPU 4/7
(Power)

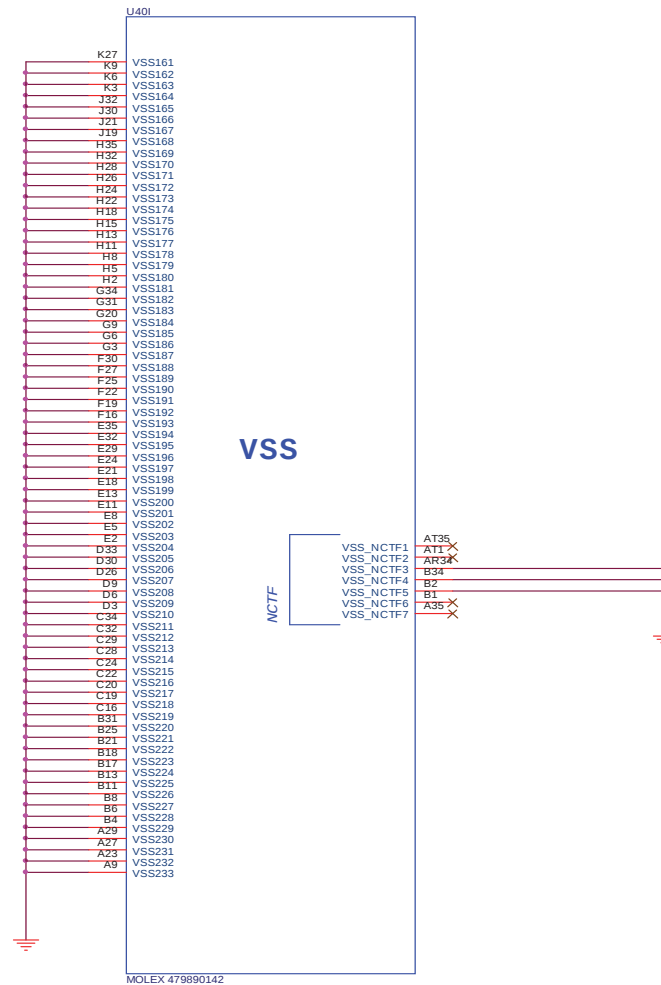
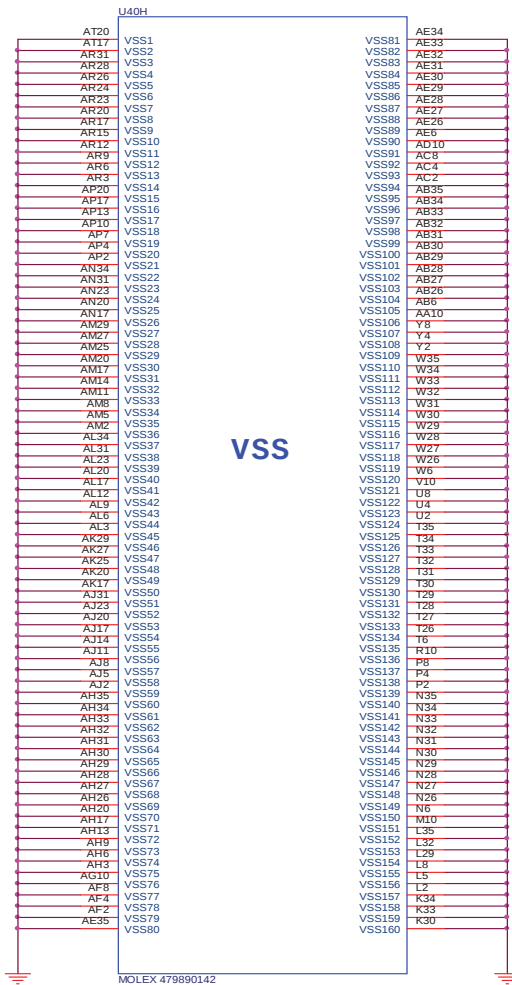
PROCESSOR 5/7 (GRAPHICS POWER)

Auburndale VTT=1.05V
Clarksfield VTT=1.1V



CPU 6/7 (GND)

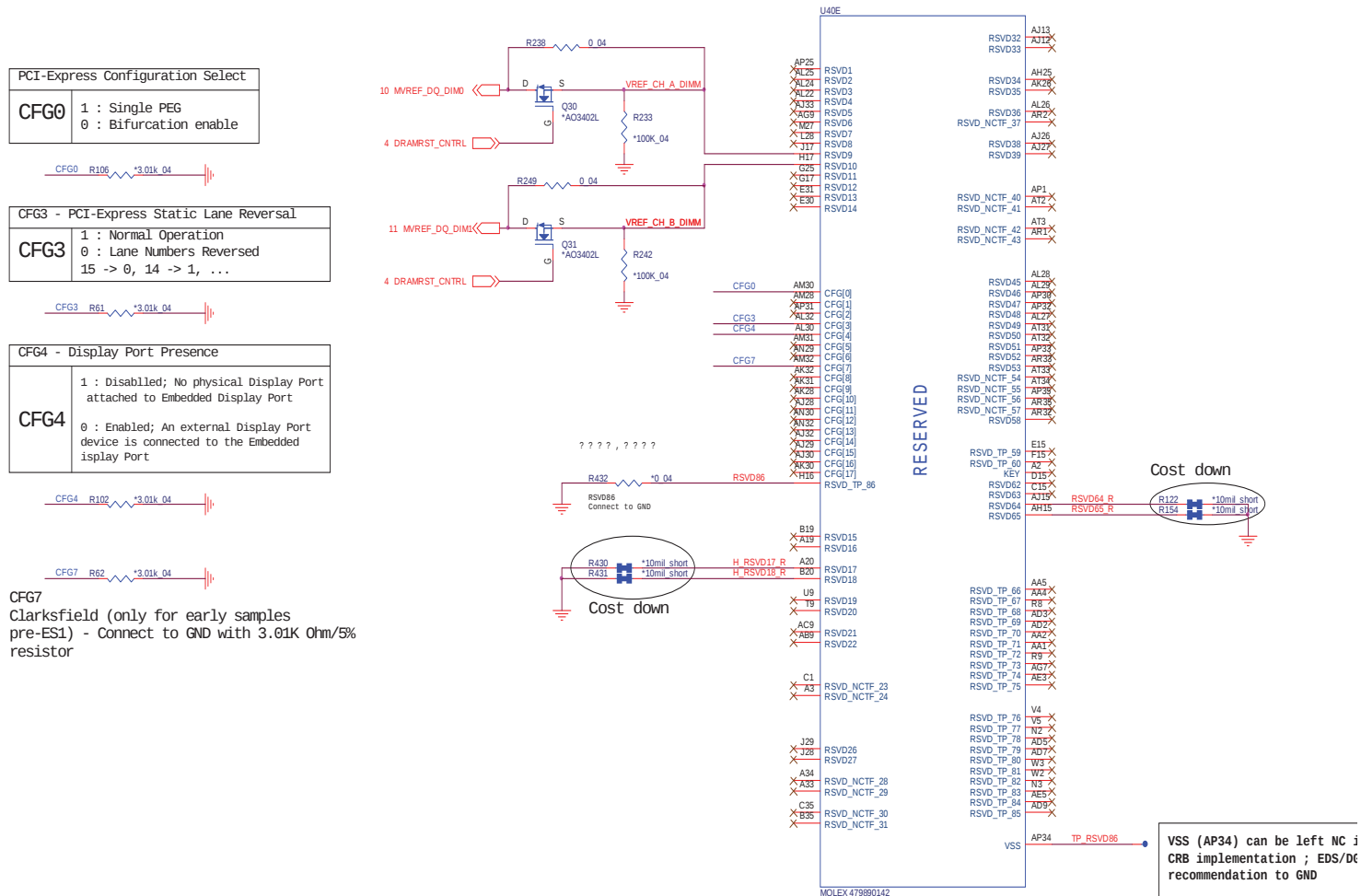
PROCESSOR 6/7 (GND)



Sheet 8 of 49
CPU 6/7 (GND)

CPU 7/7 (RESERVED)

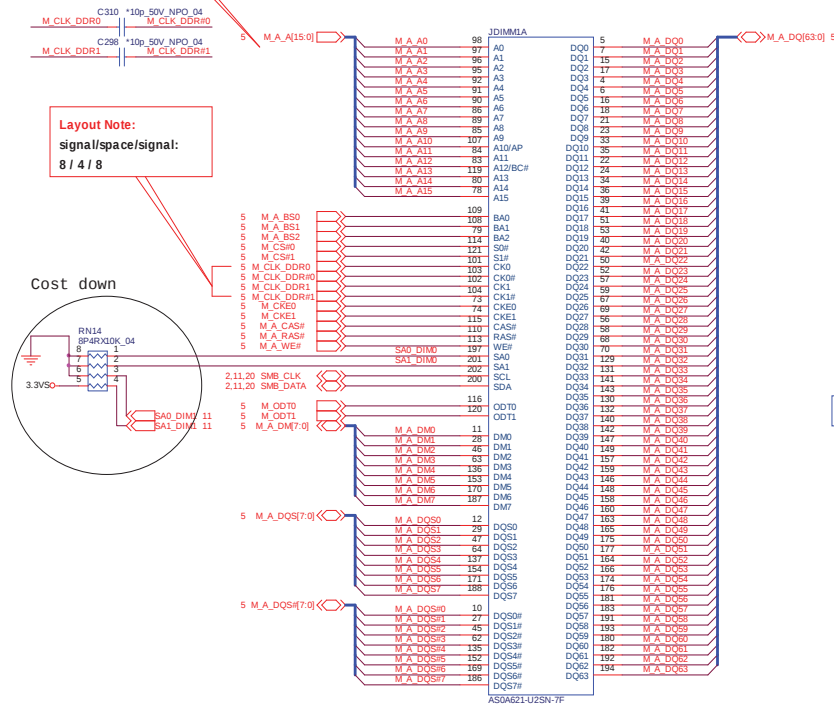
PROCESSOR 7/7 (RESERVED)



DDR3 SO-DIMM_0

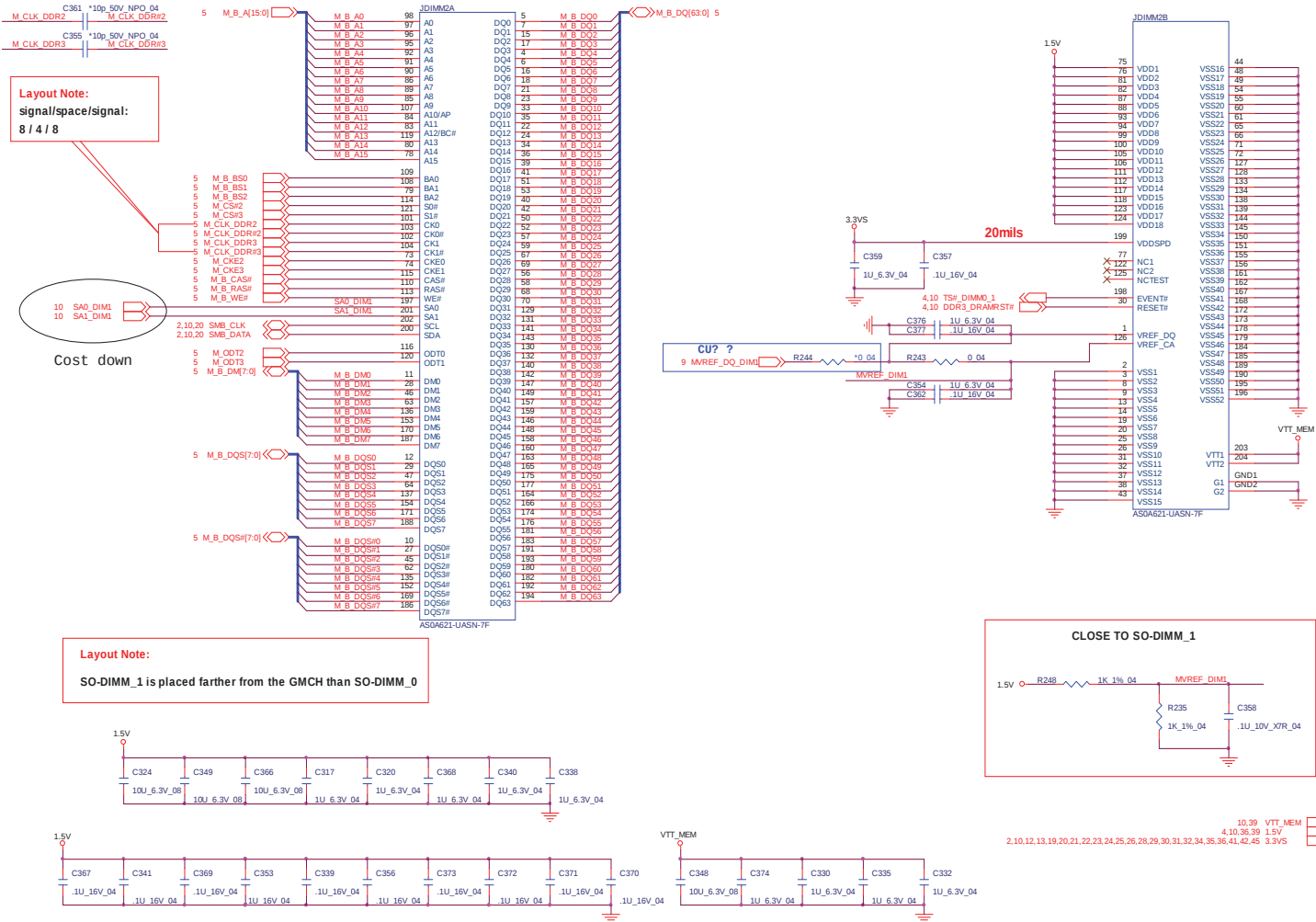
SO-DIMM A

CHANGE TO STANDARD

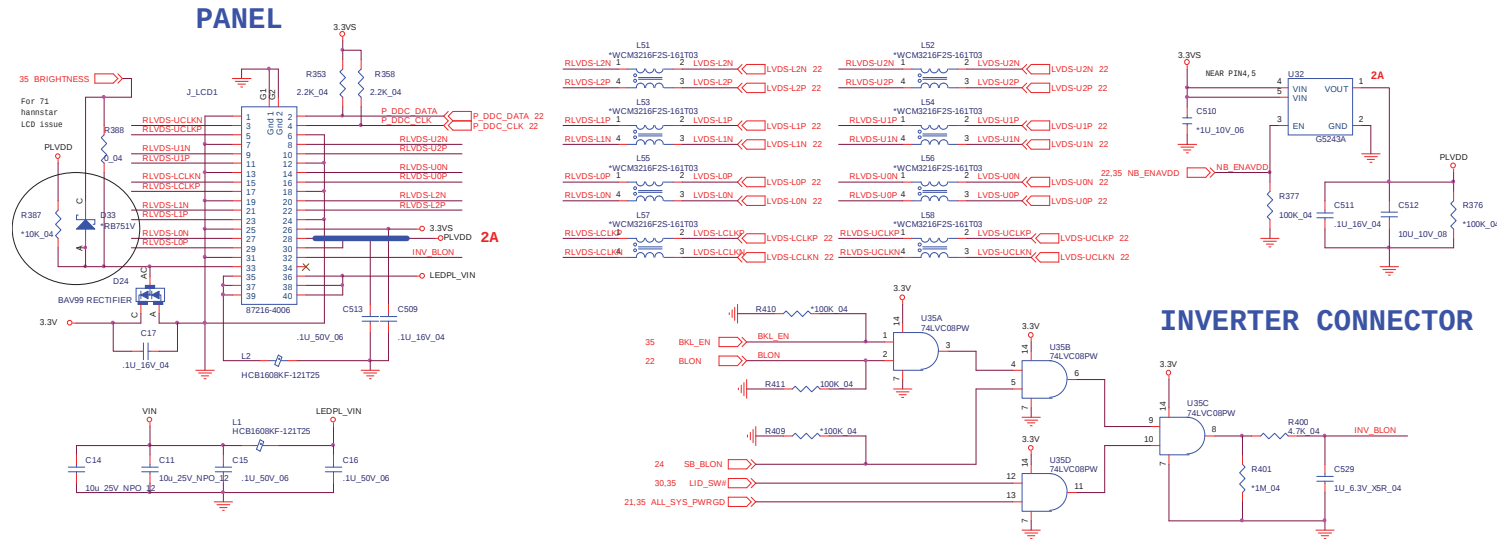


DDR3 SO-DIMM_1

CHANGE TO STANDARD

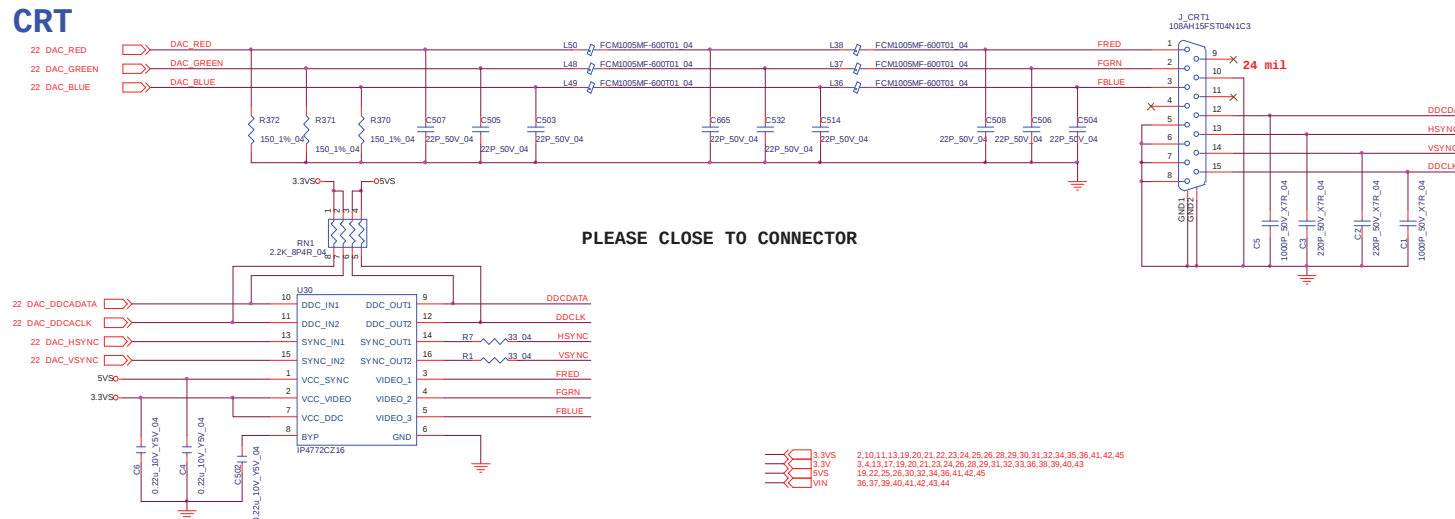


Panel, Inverter, CRT



Sheet 12 of 49
Panel, Inverter,
CRT

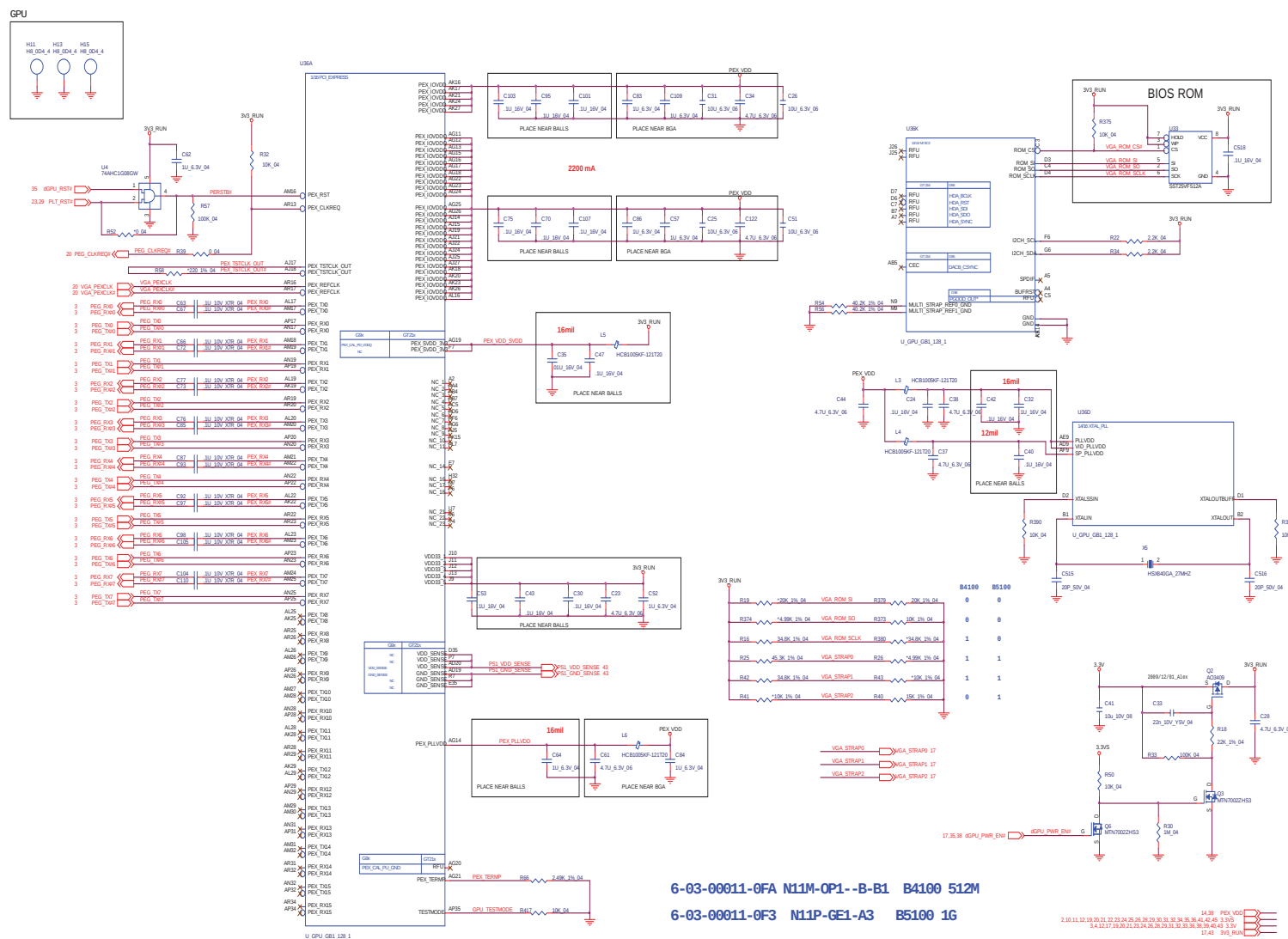
CRT



VGA PCI-E Interface

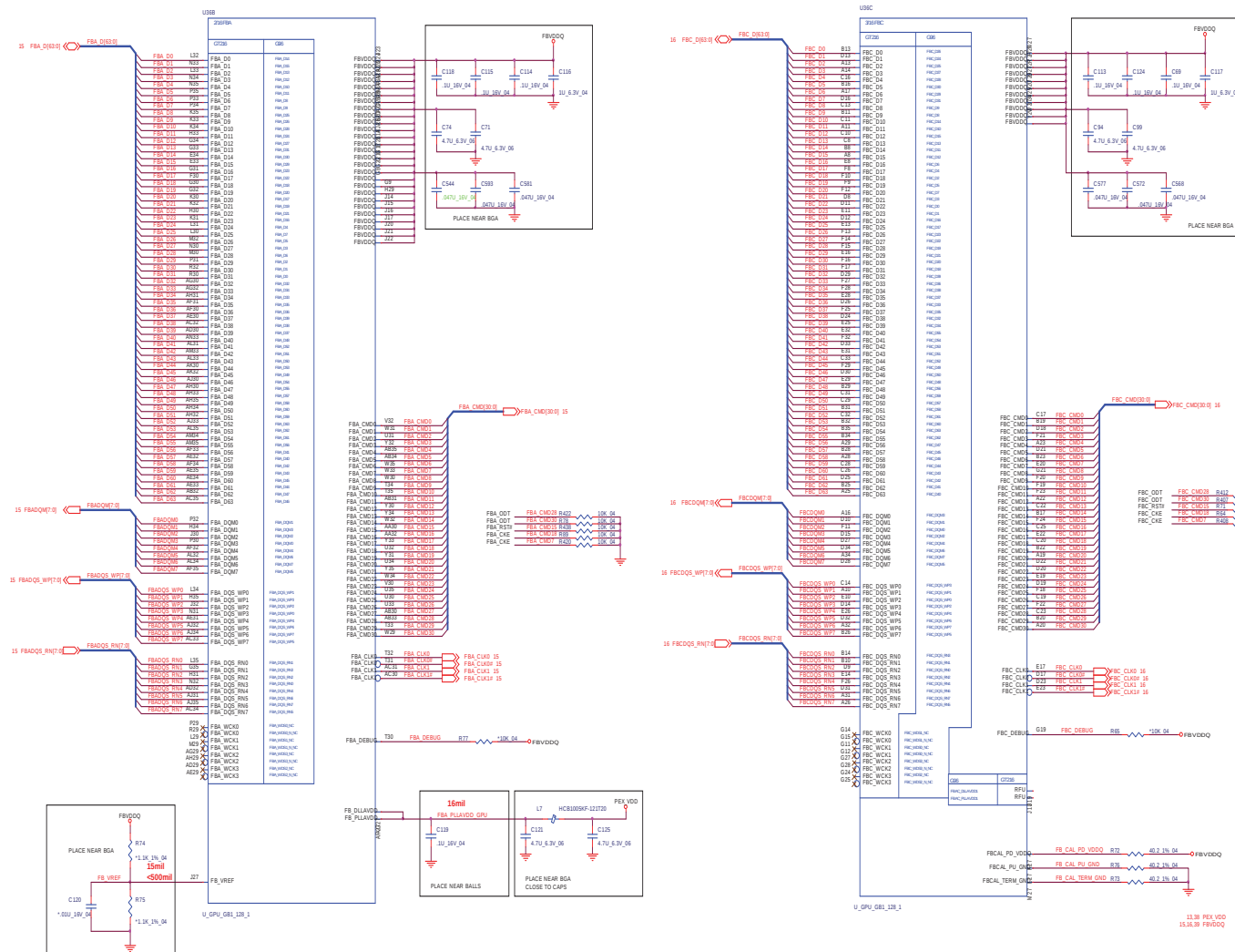
B.Schematic Diagrams

Sheet 13 of 49
VGA PCI-E
Interface



VGA Frame Buffer Interface

Frame Buffer Interface

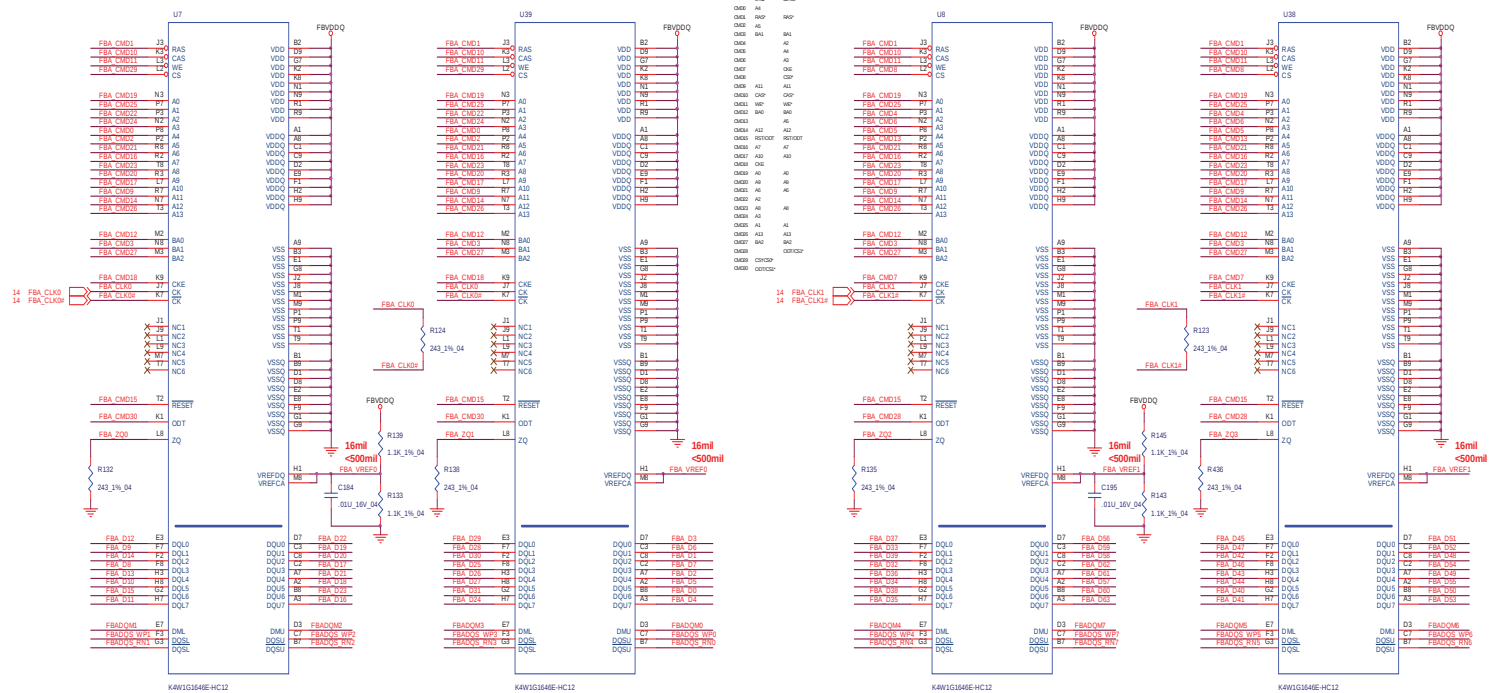
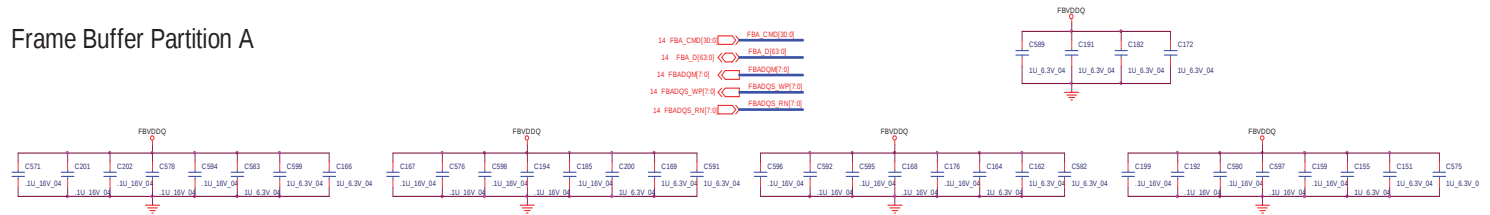


Sheet 14 of 49
VGA Frame Buffer Interface

Schematic Diagrams

VGA Frame Buffer A

Frame Buffer Partition A

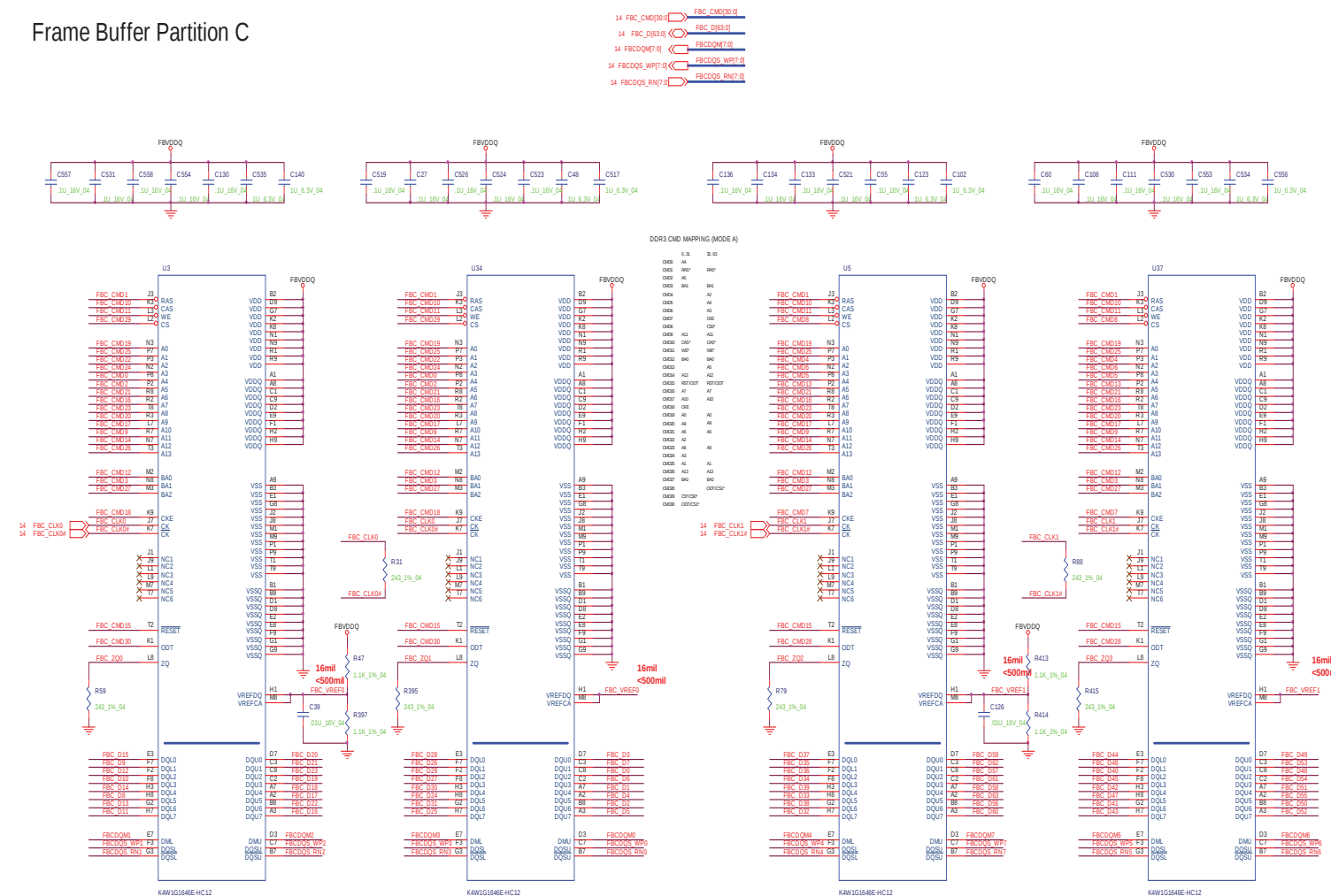


B.Schematic Diagrams

Sheet 15 of 49
VGA Frame Buffer
A

VGA Frame Buffer C

Frame Buffer Partition C

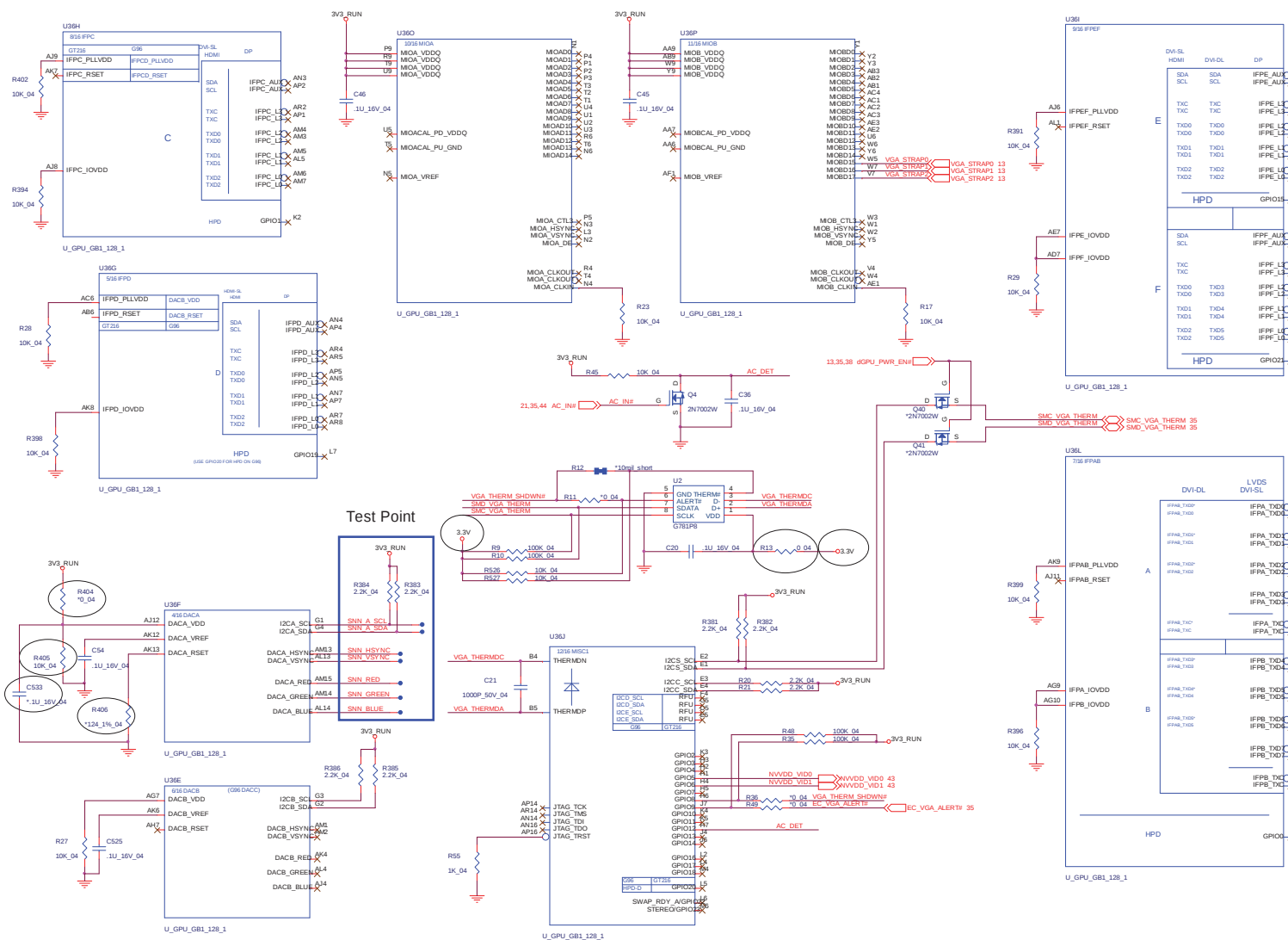


Unstuff for B4100

14,15,19 FBVDD

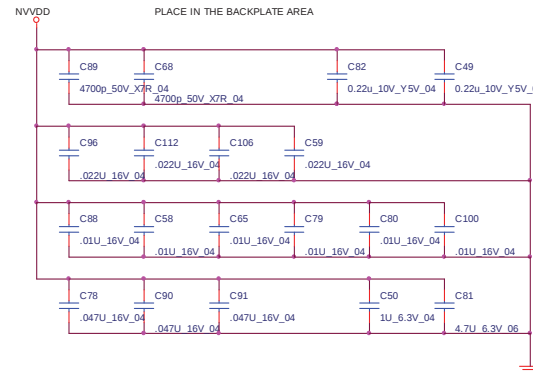
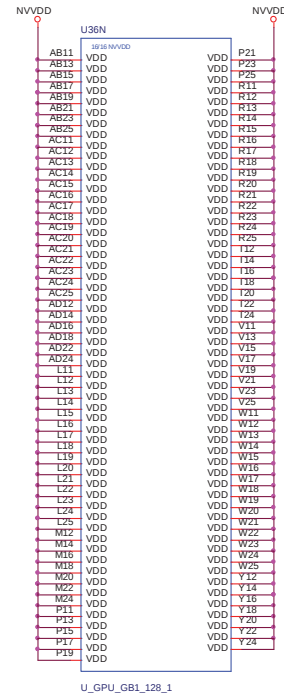
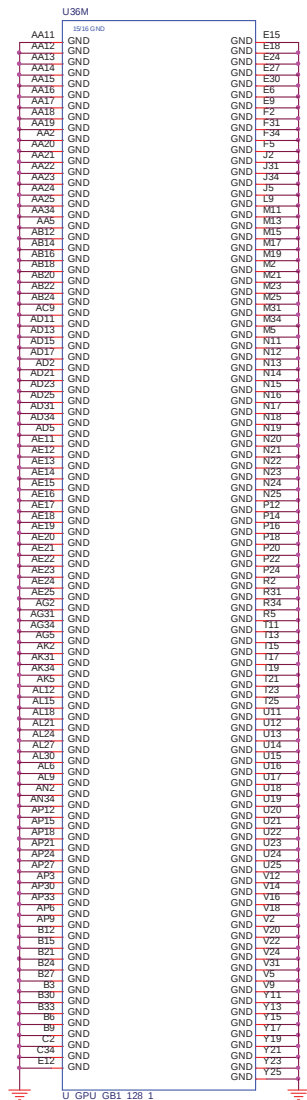
VGA I/O

B.Schematic Diagrams



3,4,12,13,19,20,21,23,24,26,28,29,31,32,33,36,38,39,40,43 3.3V
13.43 3V3 RUN

VGA NVVDD Cecoupling



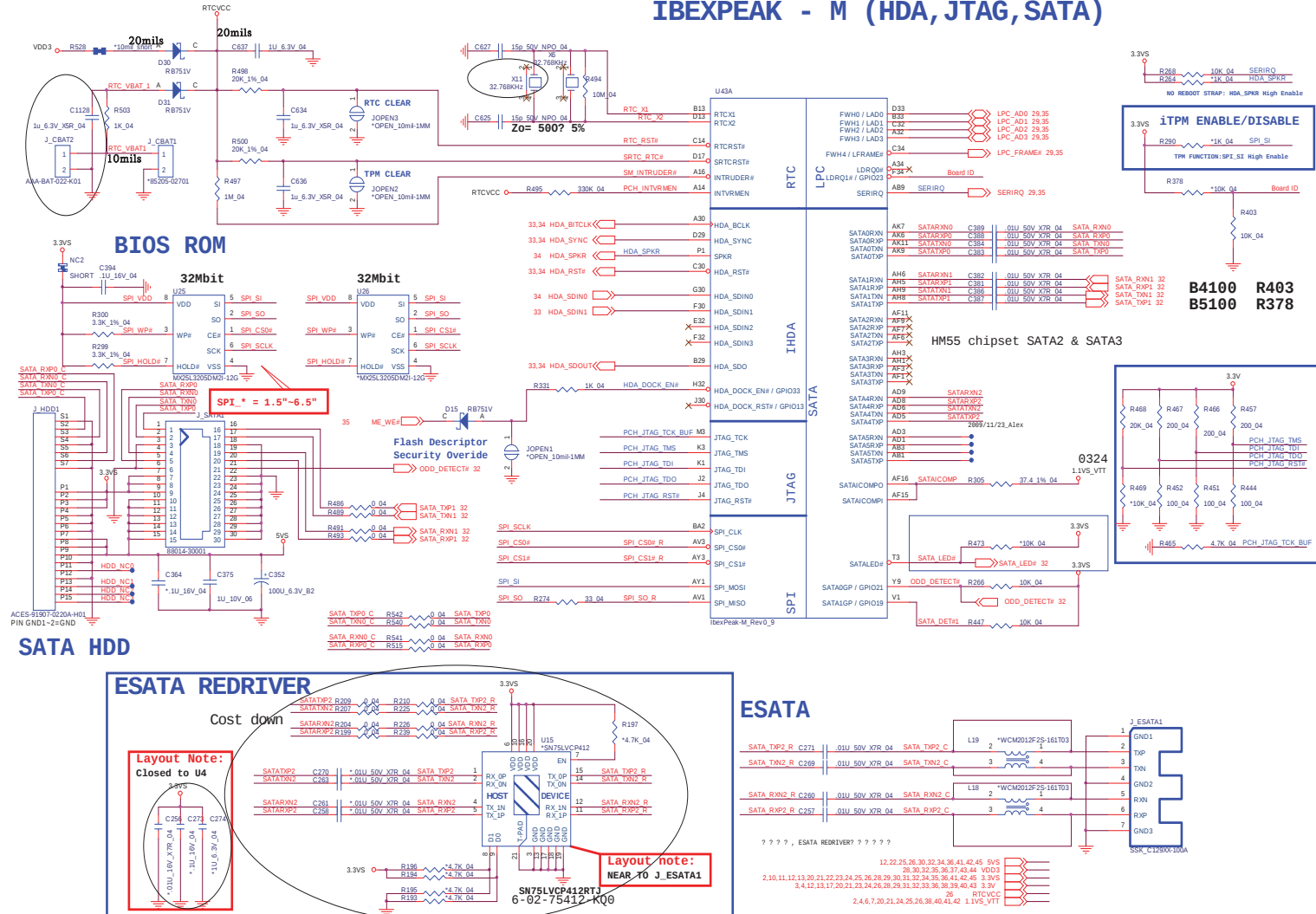
43 NVVDD

Sheet 18 of 49
VGA NVVDD
Cecoupling

IBEXPEAK- M 1/9

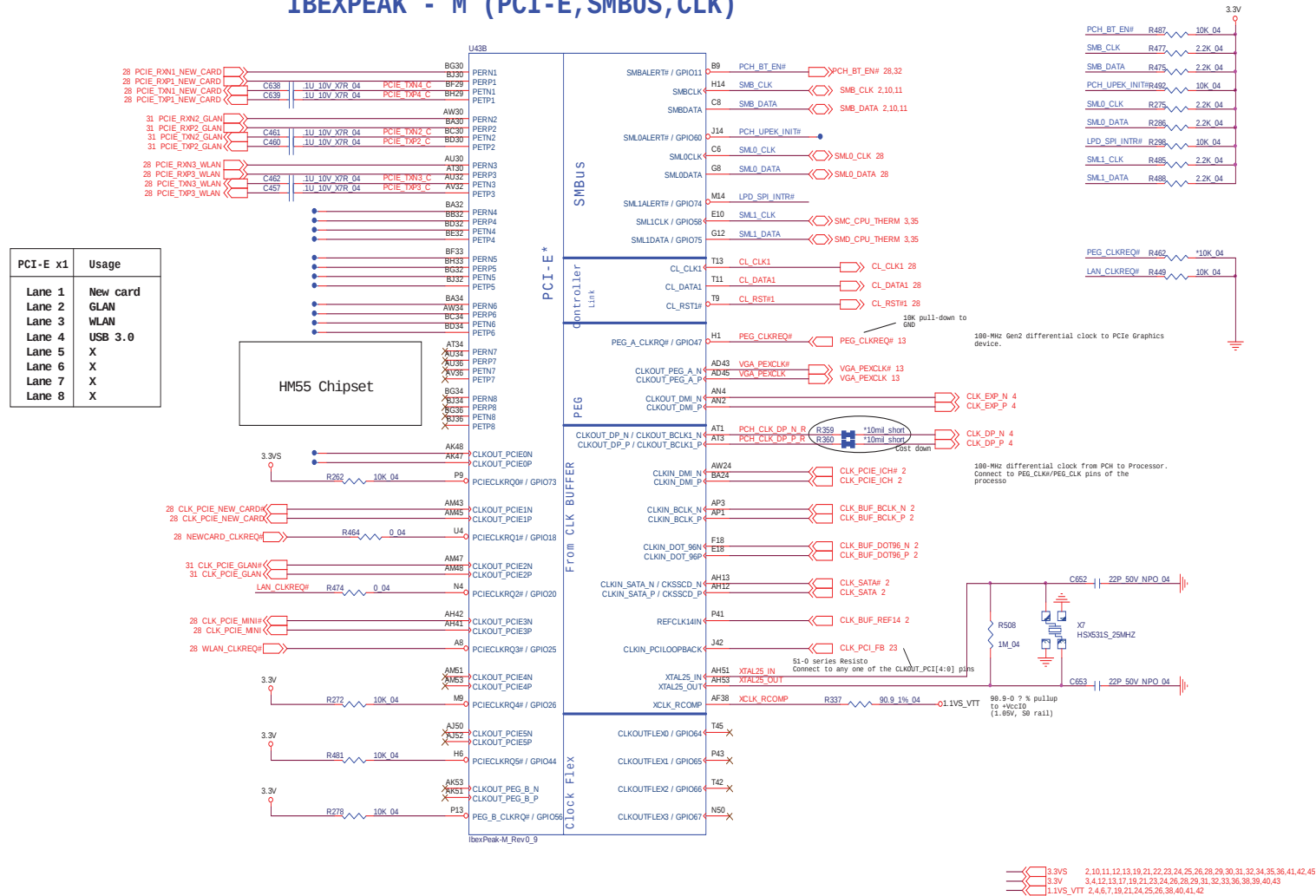
Sheet 19 of 49
IBEXPEAK - M 1/9

IBEXPEAK - M (HDA, JTAG, SATA)



IBEXPEAK - M 2/9

IBEXPEAK - M (PCI-E, SMBUS, CLK)

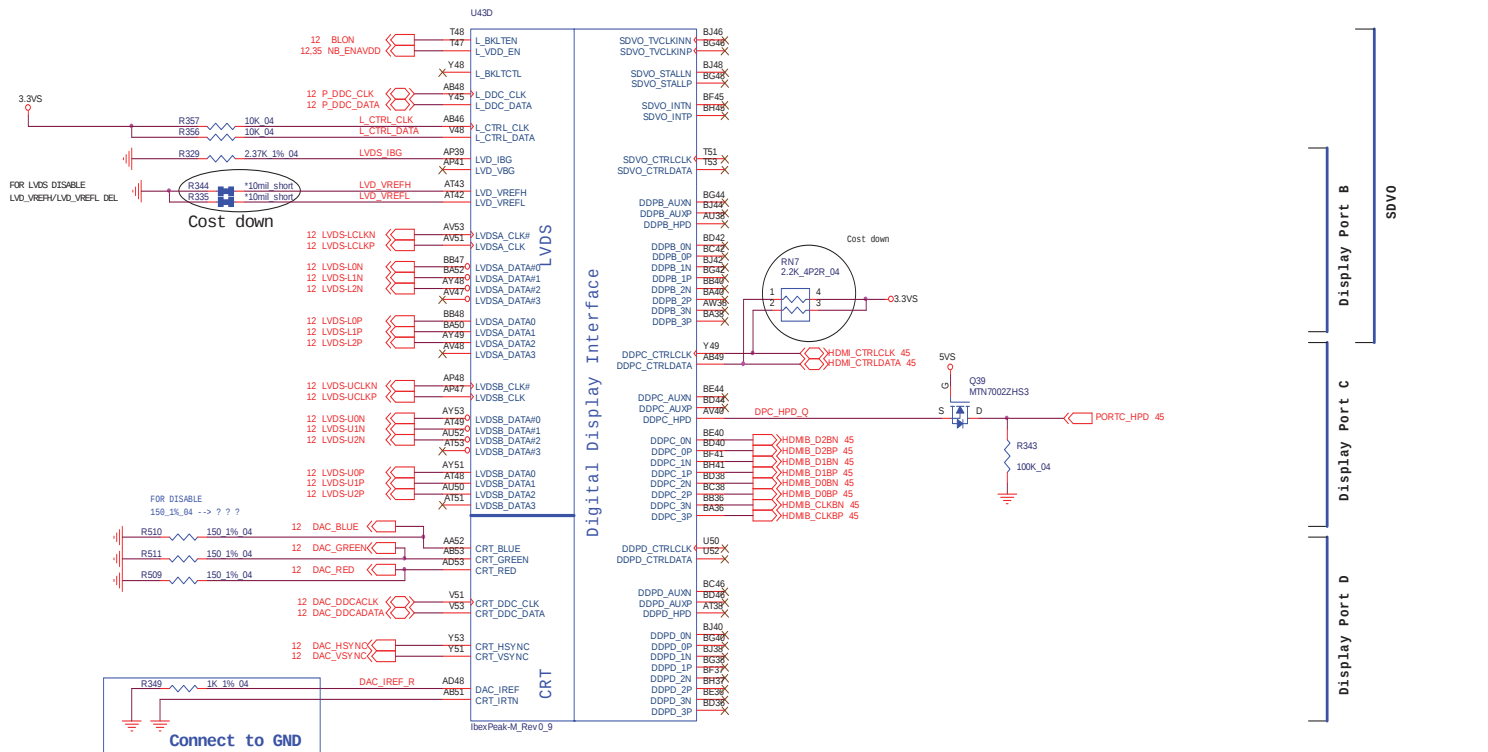


Sheet 20 of 49
IBEXPEAK - M 2/9

IBEXPEAK - M (DMI, FDI, GPIO)

IBEXPEAK - M 4/9

IBEXPEAK - M (LVDS, DDI)



Sheet 22 of 49
IBEXPEAK - M 4/9

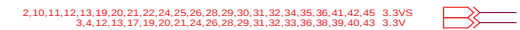
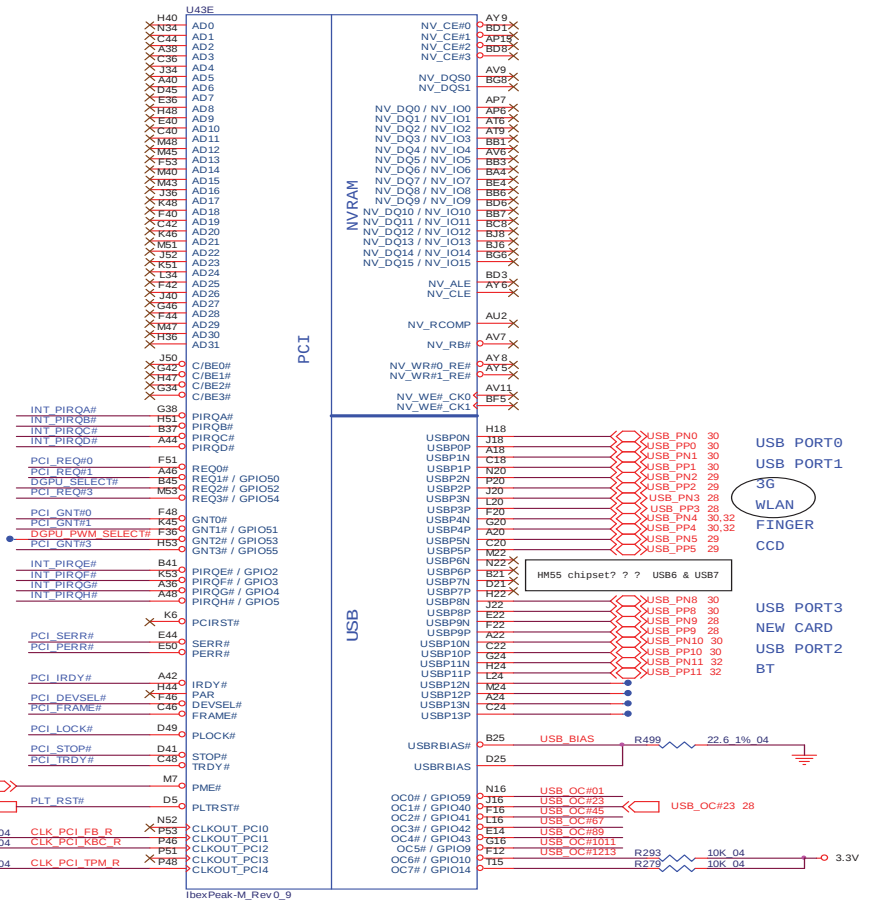
IBEXPEAK - M (PCI, USB, NVRAM)

Understand the RED FONT define



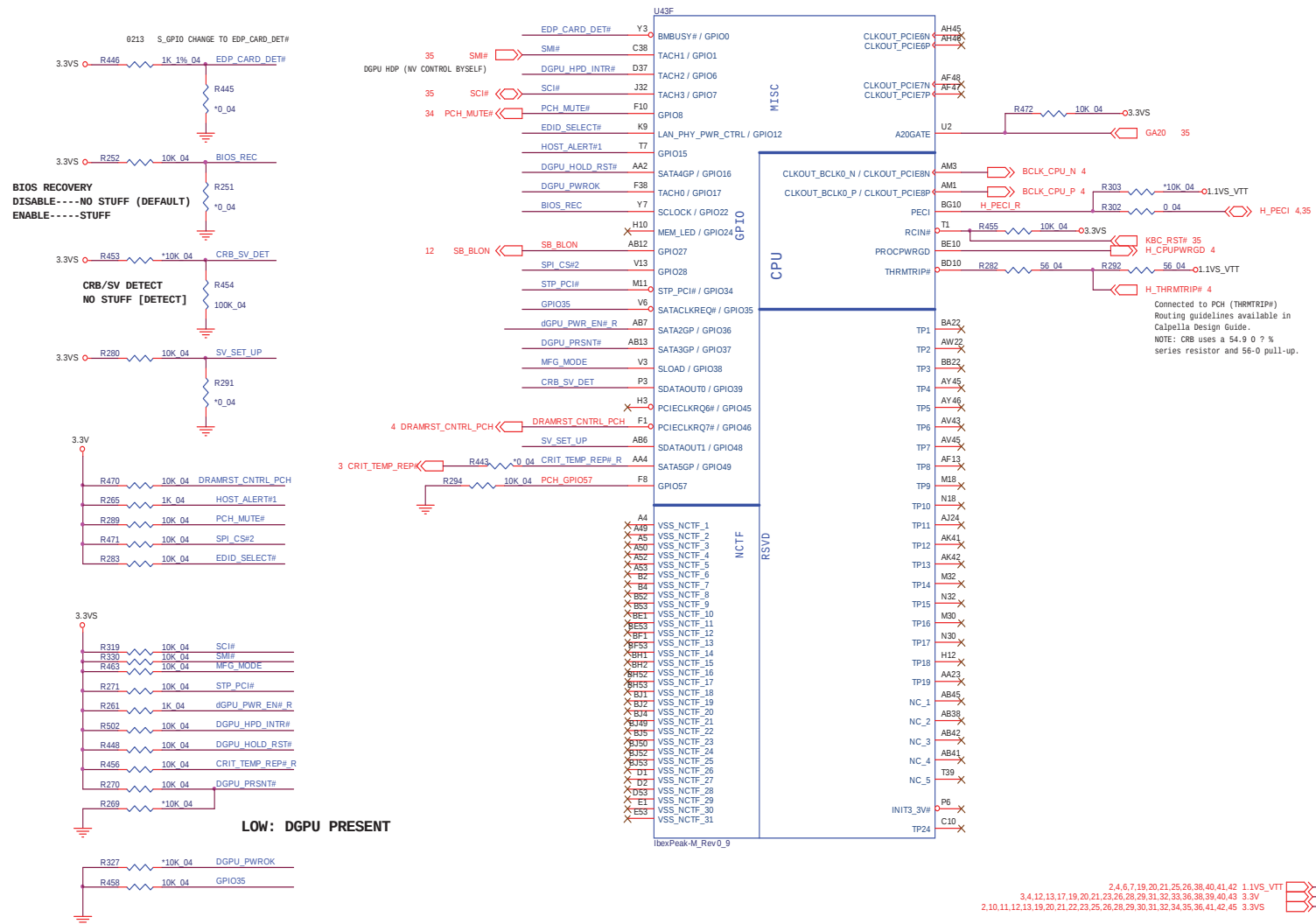
Signal	Pin	Function
3.3V5	4	INT IRQ0
SP4RX8_2K_04	5	PCI IRDY#
SP4RX8_2K_04	6	INT PIORD0
SP4RX8_2K_04	7	PCI FRAME#
SP4RX8_2K_04	8	PCI PERR#
SP4RX8_2K_04	9	PCI LOCK#
SP4RX8_2K_04	10	PCI DEVSEL#
SP4RX8_2K_04	11	PCI SERR#
SP4RX8_2K_04	12	PCI REQ0#
SP4RX8_2K_04	13	PCI IRDY#
SP4RX8_2K_04	14	INT PIORH0
SP4RX8_2K_04	15	PCI REQ0#
SP4RX8_2K_04	16	INT PIORH0
SP4RX8_2K_04	17	INT PIORD1
SP4RX8_2K_04	18	PCI STOP#
SP4RX8_2K_04	19	INT PIORH1
SP4RX8_2K_04	20	PCI REQ1#
SP4RX8_2K_04	21	PCI REQ2#
SP4RX8_2K_04	22	PCI REQ3#
SP4RX8_2K_04	23	PCI REQ4#
SP4RX8_2K_04	24	PCI REQ5#
SP4RX8_2K_04	25	PCI REQ6#
SP4RX8_2K_04	26	PCI REQ7#
SP4RX8_2K_04	27	PCI REQ8#
SP4RX8_2K_04	28	PCI REQ9#
SP4RX8_2K_04	29	PCI REQ10#
SP4RX8_2K_04	30	PCI REQ11#
SP4RX8_2K_04	31	PCI REQ12#
SP4RX8_2K_04	32	PCI REQ13#
SP4RX8_2K_04	33	PCI REQ14#
SP4RX8_2K_04	34	PCI REQ15#
SP4RX8_2K_04	35	PCI REQ16#
SP4RX8_2K_04	36	PCI REQ17#
SP4RX8_2K_04	37	PCI REQ18#
SP4RX8_2K_04	38	PCI REQ19#
SP4RX8_2K_04	39	PCI REQ20#
SP4RX8_2K_04	40	PCI REQ21#
SP4RX8_2K_04	41	PCI REQ22#
SP4RX8_2K_04	42	PCI REQ23#
SP4RX8_2K_04	43	PCI REQ24#
SP4RX8_2K_04	44	PCI REQ25#
SP4RX8_2K_04	45	PCI REQ26#
SP4RX8_2K_04	46	PCI REQ27#
SP4RX8_2K_04	47	PCI REQ28#
SP4RX8_2K_04	48	PCI REQ29#
SP4RX8_2K_04	49	PCI REQ30#
SP4RX8_2K_04	50	PCI REQ31#
SP4RX8_2K_04	51	PCI REQ32#
SP4RX8_2K_04	52	PCI REQ33#
SP4RX8_2K_04	53	PCI REQ34#
SP4RX8_2K_04	54	PCI REQ35#
SP4RX8_2K_04	55	PCI REQ36#
SP4RX8_2K_04	56	PCI REQ37#
SP4RX8_2K_04	57	PCI REQ38#
SP4RX8_2K_04	58	PCI REQ39#
SP4RX8_2K_04	59	PCI REQ40#
SP4RX8_2K_04	60	PCI REQ41#
SP4RX8_2K_04	61	PCI REQ42#
SP4RX8_2K_04	62	PCI REQ43#
SP4RX8_2K_04	63	PCI REQ44#
SP4RX8_2K_04	64	PCI REQ45#
SP4RX8_2K_04	65	PCI REQ46#
SP4RX8_2K_04	66	PCI REQ47#
SP4RX8_2K_04	67	PCI REQ48#
SP4RX8_2K_04	68	PCI REQ49#
SP4RX8_2K_04	69	PCI REQ50#
SP4RX8_2K_04	70	PCI REQ51#
SP4RX8_2K_04	71	PCI REQ52#
SP4RX8_2K_04	72	PCI REQ53#
SP4RX8_2K_04	73	PCI REQ54#
SP4RX8_2K_04	74	PCI REQ55#
SP4RX8_2K_04	75	PCI REQ56#
SP4RX8_2K_04	76	PCI REQ57#
SP4RX8_2K_04	77	PCI REQ58#
SP4RX8_2K_04	78	PCI REQ59#
SP4RX8_2K_04	79	PCI REQ60#
SP4RX8_2K_04	80	PCI REQ61#
SP4RX8_2K_04	81	PCI REQ62#
SP4RX8_2K_04	82	PCI REQ63#
SP4RX8_2K_04	83	PCI REQ64#
SP4RX8_2K_04	84	PCI REQ65#
SP4RX8_2K_04	85	PCI REQ66#
SP4RX8_2K_04	86	PCI REQ67#
SP4RX8_2K_04	87	PCI REQ68#
SP4RX8_2K_04	88	PCI REQ69#
SP4RX8_2K_04	89	PCI REQ70#
SP4RX8_2K_04	90	PCI REQ71#
SP4RX8_2K_04	91	PCI REQ72#
SP4RX8_2K_04	92	PCI REQ73#
SP4RX8_2K_04	93	PCI REQ74#
SP4RX8_2K_04	94	PCI REQ75#
SP4RX8_2K_04	95	PCI REQ76#
SP4RX8_2K_04	96	PCI REQ77#
SP4RX8_2K_04	97	PCI REQ78#
SP4RX8_2K_04	98	PCI REQ79#
SP4RX8_2K_04	99	PCI REQ80#
SP4RX8_2K_04	100	PCI REQ81#
SP4RX8_2K_0		

BACKLIGHT CONTROL FROM IGPU/DGPU



IBEXPEAK - M 6/9

IBEXPEAK - M (GPIO, VSS_NCTF, RSVD)

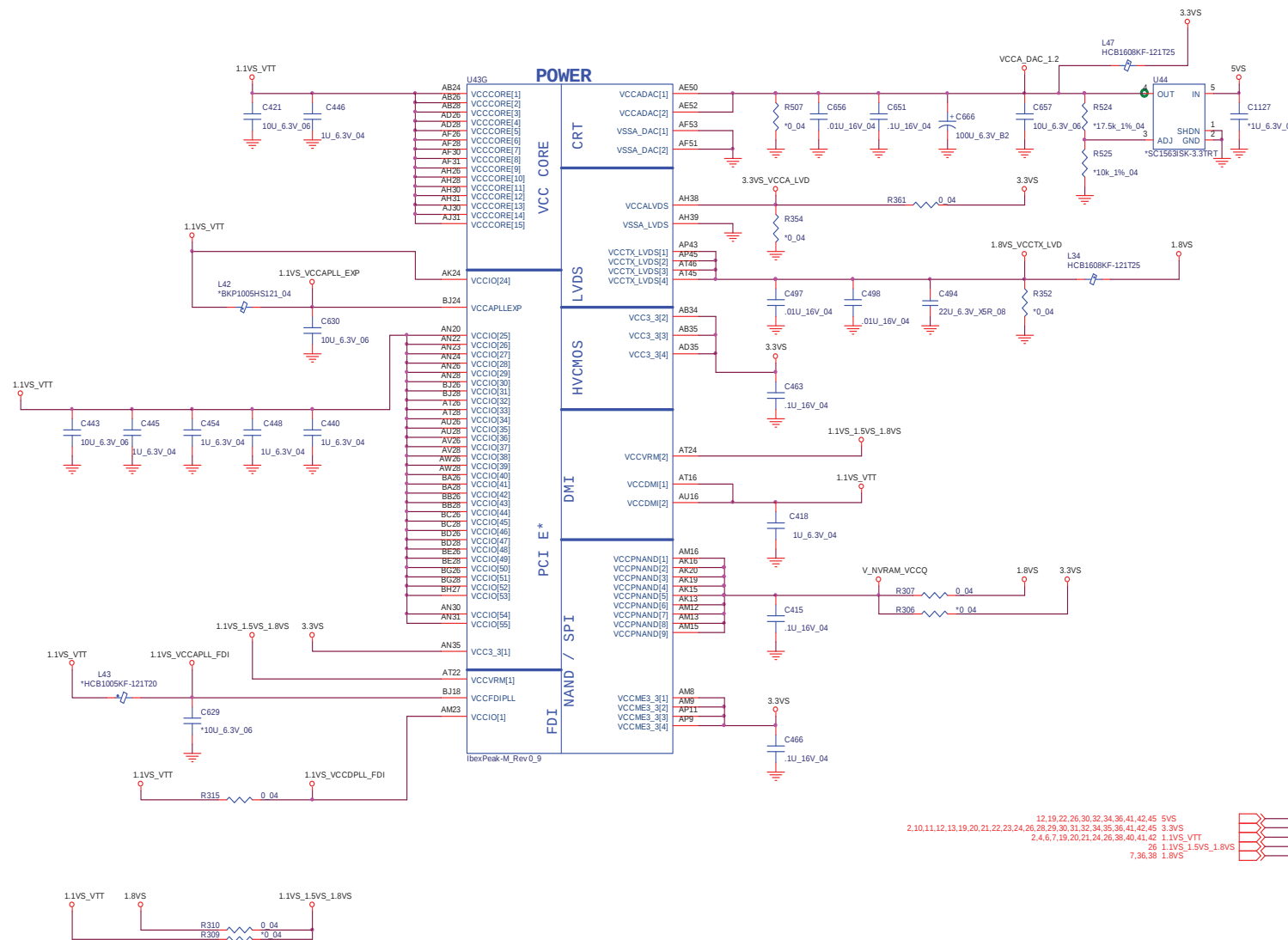


Sheet 24 of 49
 IBEXPEAK - M 6/9

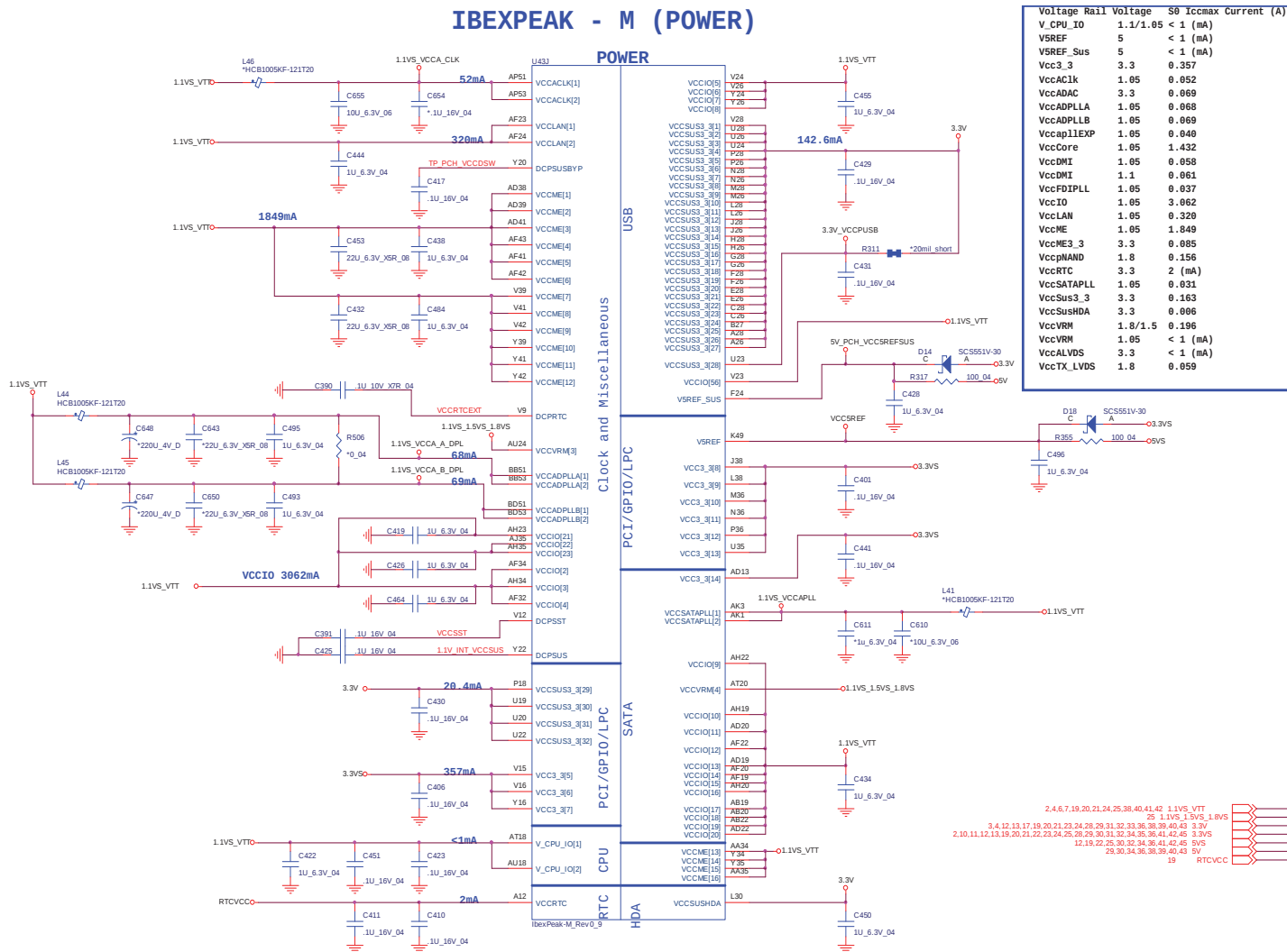
IBEXPEAK - M 7/9

IBEXPEAK - M (POWER)

Sheet 25 of 49
IBEXPEAK - M 7/9



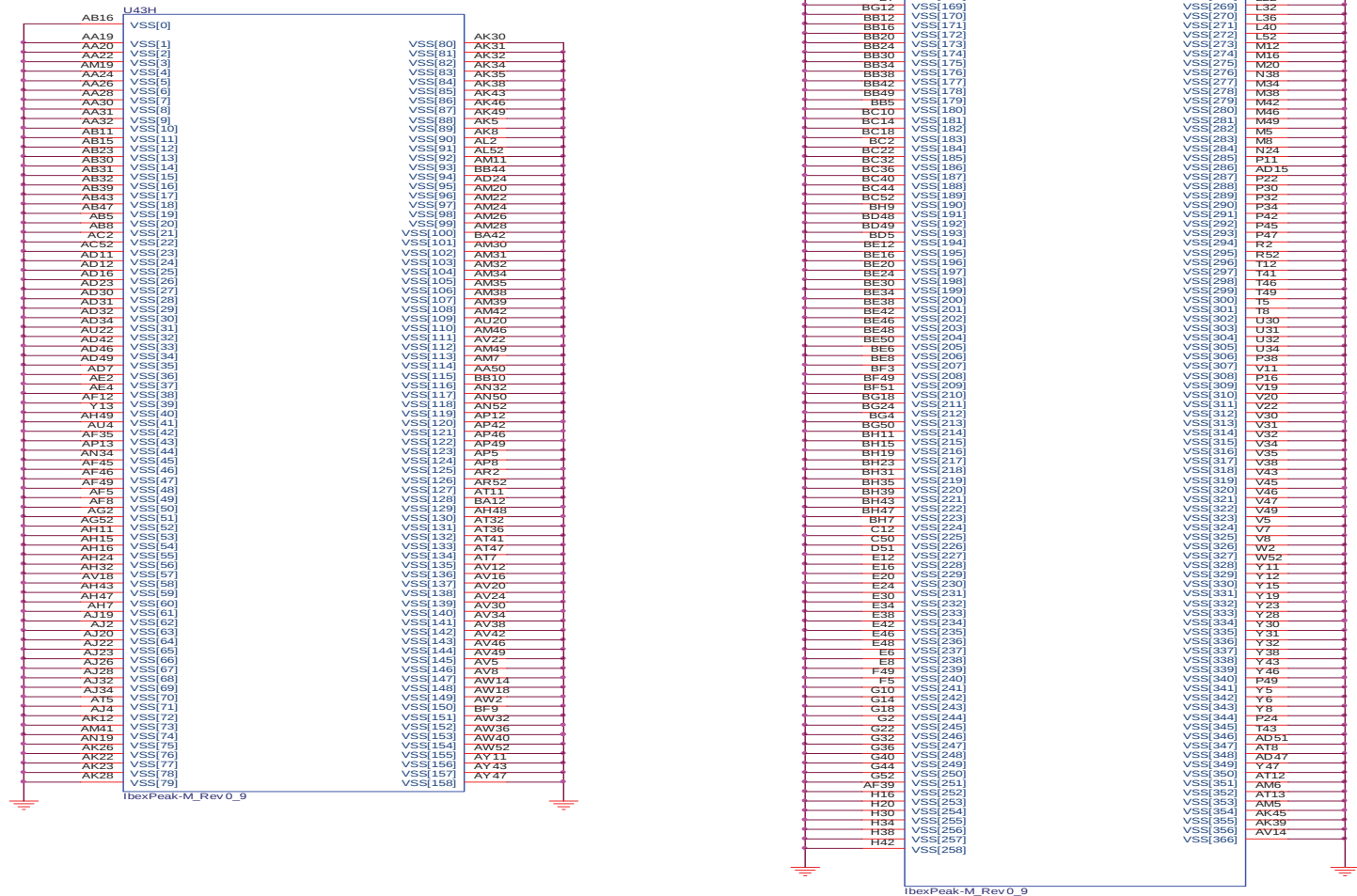
IBEXPEAK - M 8/9



Sheet 26 of 49
IBEXPEAK - M 8/9

B.Schematic Diagrams

IBEXPEAK - M (GND)



NEW CARD

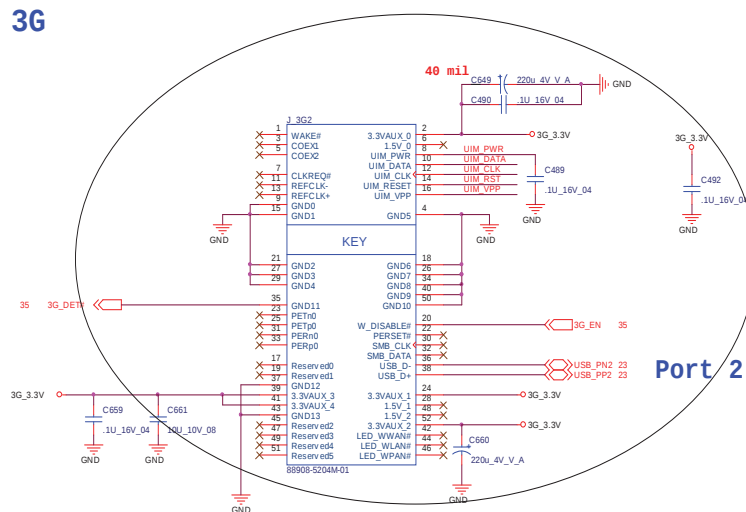


Port 3

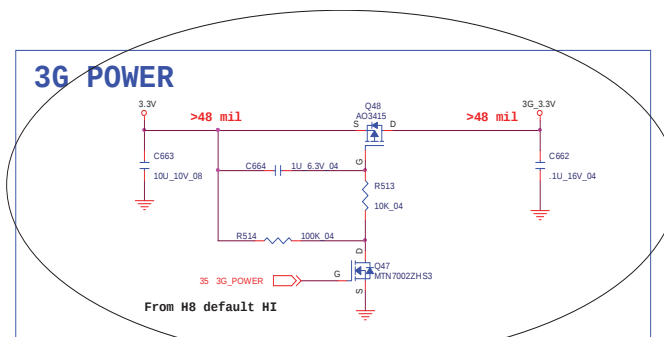
Pin	Signal	Notes
1	WLAN1_5VS	3.3V
2	WLAN1_5VS	3.3V
3	WLAN1_5VS	3.3V
4	WLAN1_5VS	3.3V
5	WLAN1_5VS	3.3V
6	WLAN1_5VS	3.3V
7	WLAN1_5VS	3.3V
8	WLAN1_5VS	3.3V
9	WLAN1_5VS	3.3V
10	WLAN1_5VS	3.3V
11	WLAN1_5VS	3.3V
12	WLAN1_5VS	3.3V
13	WLAN1_5VS	3.3V
14	WLAN1_5VS	3.3V
15	WLAN1_5VS	3.3V
16	WLAN1_5VS	3.3V
17	WLAN1_5VS	3.3V
18	WLAN1_5VS	3.3V
19	WLAN1_5VS	3.3V
20	WLAN1_5VS	3.3V
21	WLAN1_5VS	3.3V
22	WLAN1_5VS	3.3V
23	WLAN1_5VS	3.3V
24	WLAN1_5VS	3.3V
25	WLAN1_5VS	3.3V
26	WLAN1_5VS	3.3V
27	WLAN1_5VS	3.3V
28	WLAN1_5	

3G, CCD, TPM

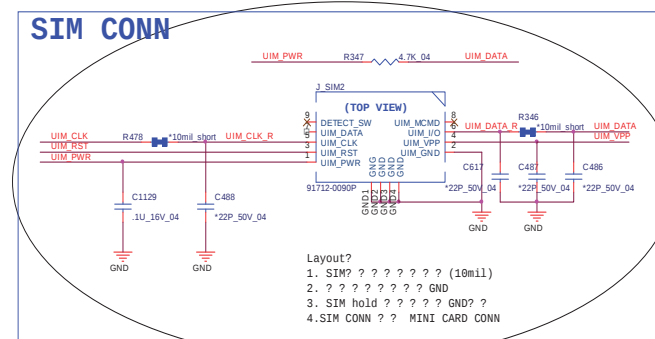
3G



Port 2



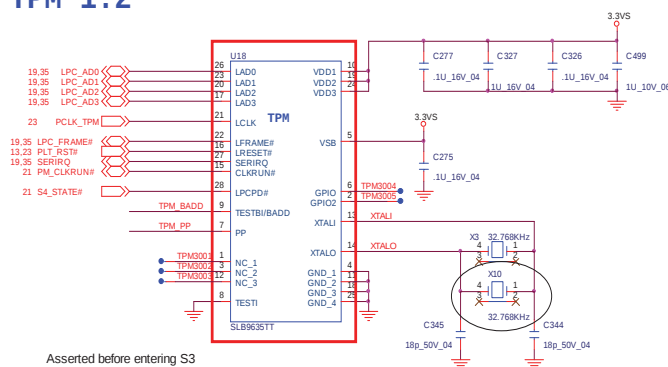
From H8 default H1



Layout?

1. SIM? ? ? ? ? ? ? ? (10mil)
2. ? ? ? ? ? ? ? ? GND
3. SIM hold ? ? ? ? ? GND? ?
4. SIM CONN ? ? MINI CARD CONN

TPM 1.2

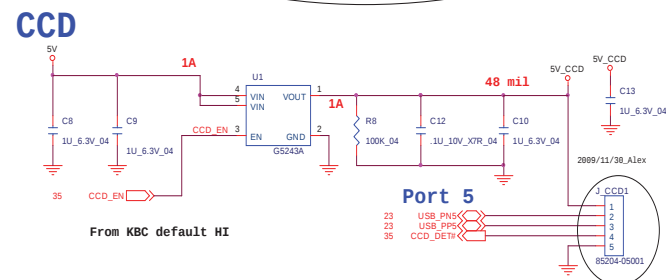


Asserted before entering S3

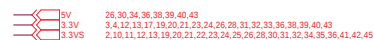
LPC reset timing:

LPCPD# inactive to LRST# inactive 32~96us

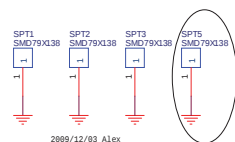
TPM_PP	HI: ACCESS LOW: NORMAL (Internal PD)
TPM_BADD	HI: 4E/ 4F H LOW: 2E/ 2F H



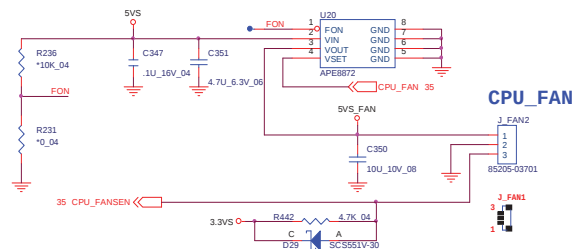
From KBC default HI



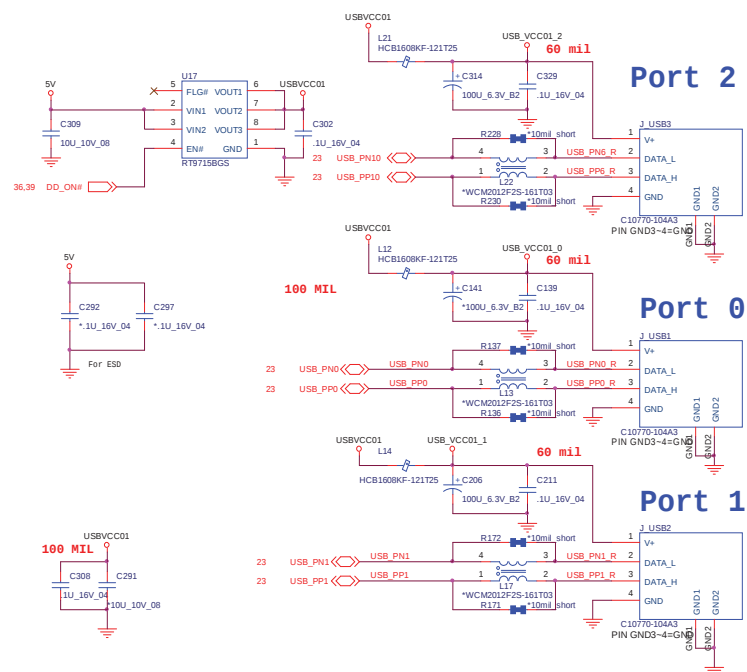
USB, Fan, TP, FP, Multi-Conn



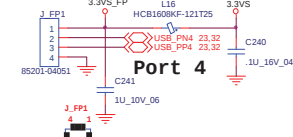
CPU FAN CONTROL



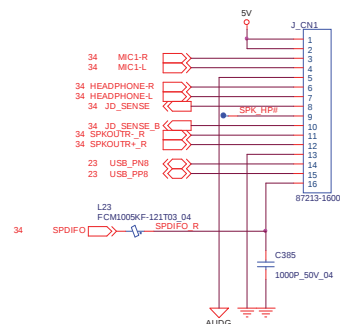
USB PORT



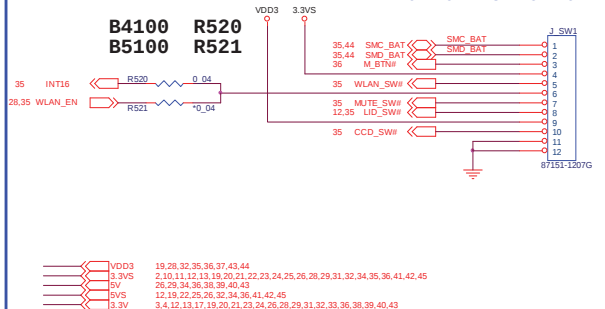
FP CONN



FOR PHONE JACK BOARD



FOR POWER SWITCH BOARD

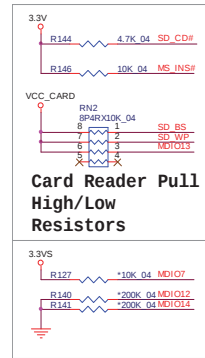


Sheet 30 of 49
USB, Fan, TP, FP,
Multi-Conn

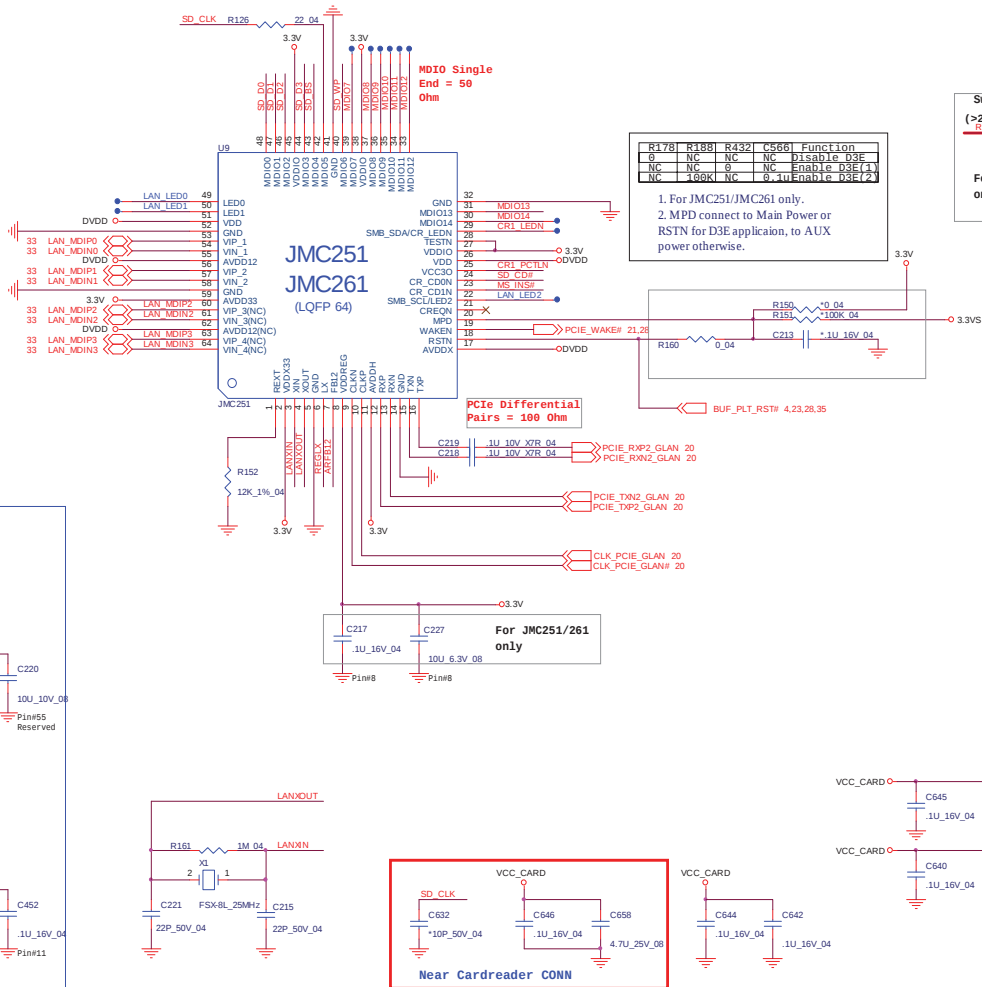
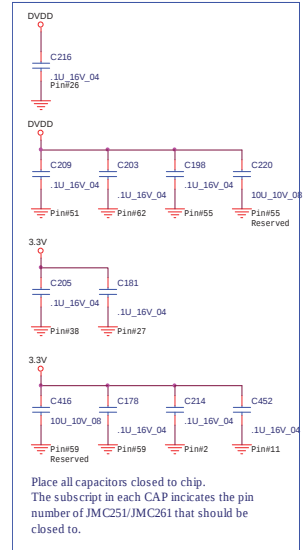
Schematic Diagrams

JMC 251 Card Reader

JMC251



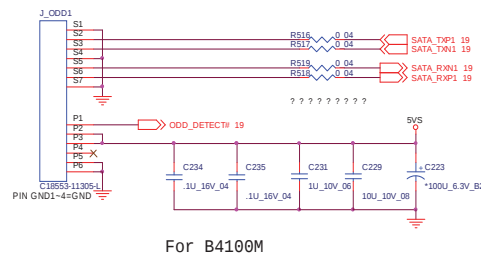
Sheet 31 of 49
JMC 251 Card
Reader



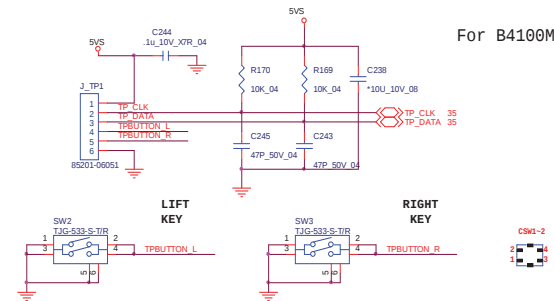
3,4,12,13,17,19,20,21,23,24,26,28,29,32,33,36,38,39,40,43 3.3V
2,10,11,12,13,19,20,21,22,23,24,25,26,28,29,30,32,34,35,36,41,42,45 3.3VS

SATA ODD, LED, Hotkey, LID SW

SATA ODD

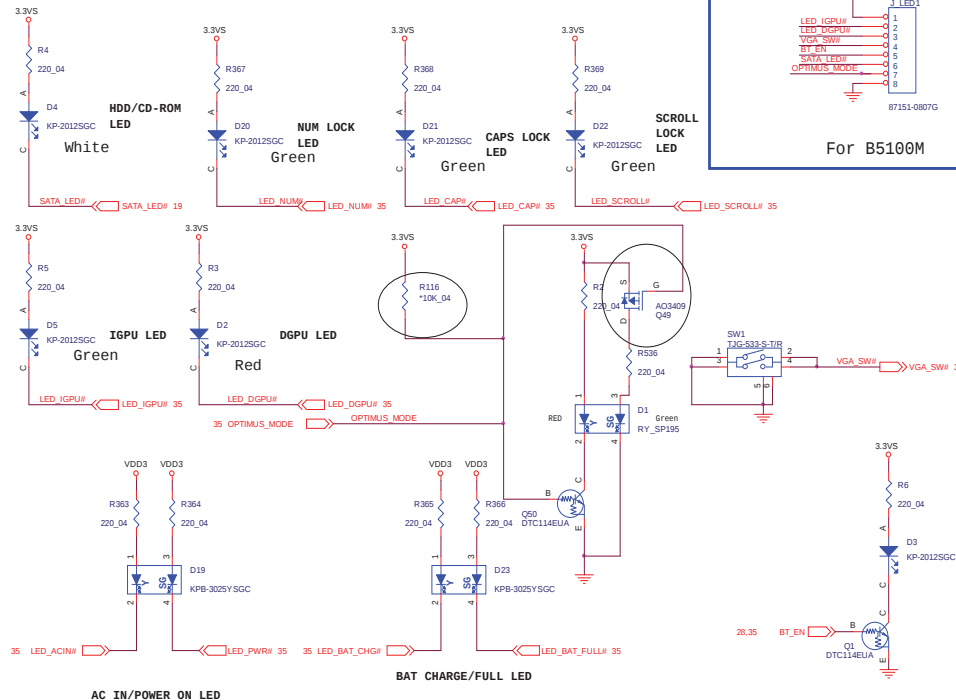


For B5100M



LED

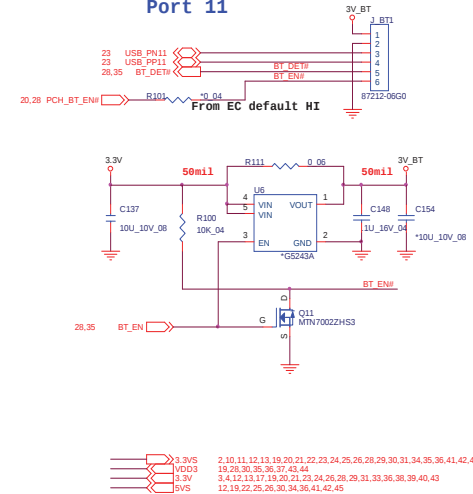
For B4100M



For B5100M

Bluetooth

Port 11

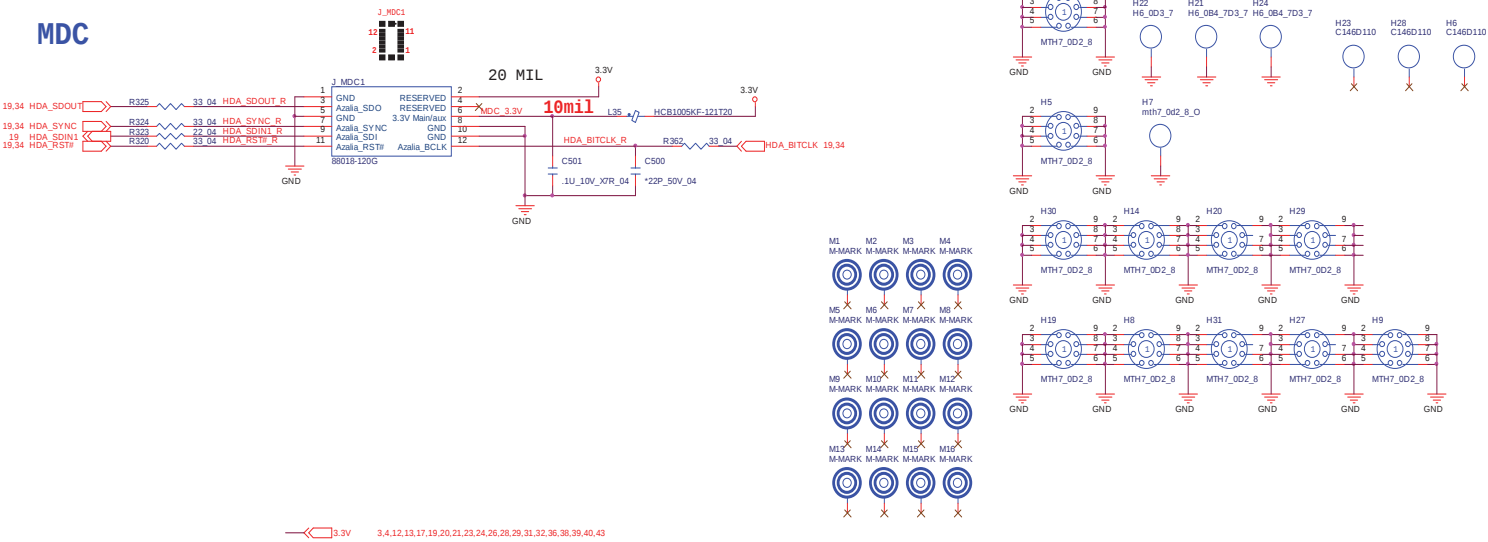
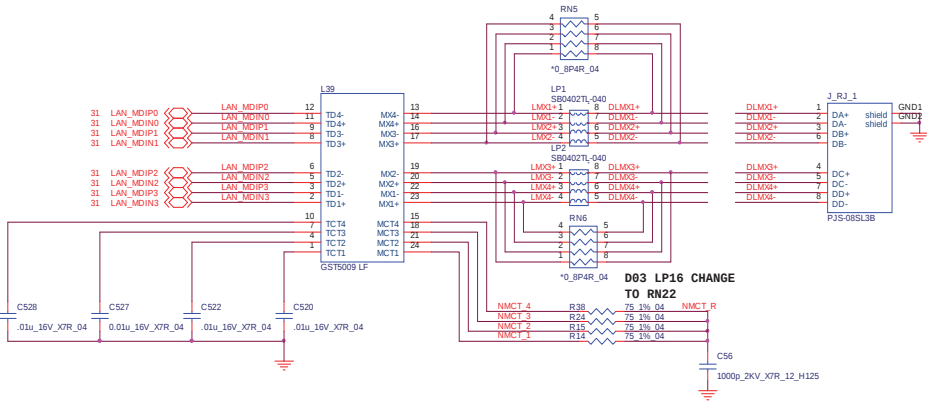


Sheet 32 of 49
SATA ODD, LED,
Hotkey, LID SW

Schematic Diagrams

RJ45, Modem

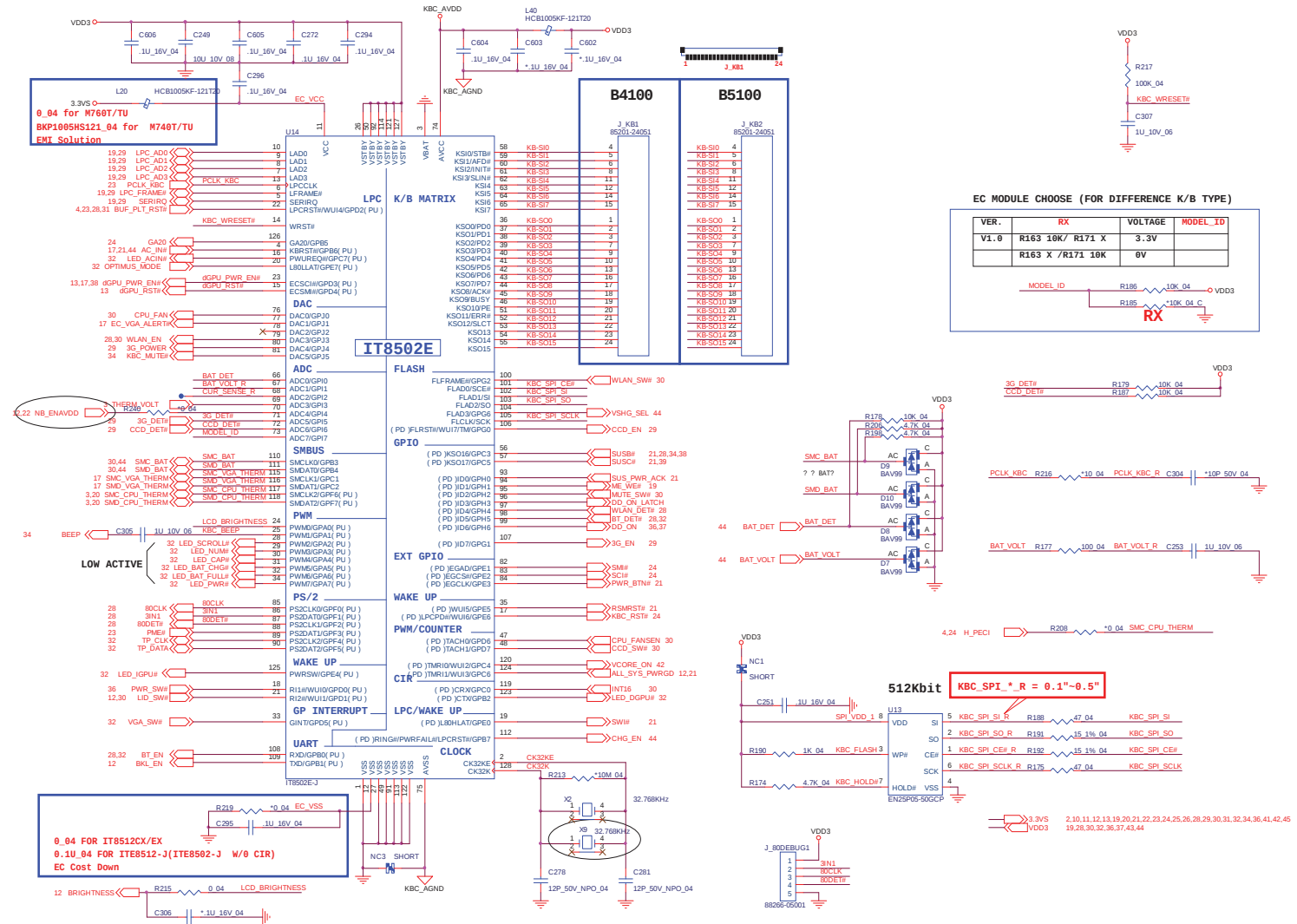
Sheet 33 of 49
RJ45, Modem



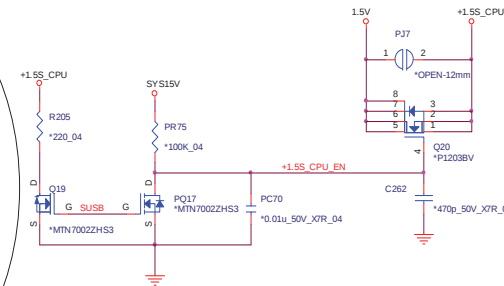
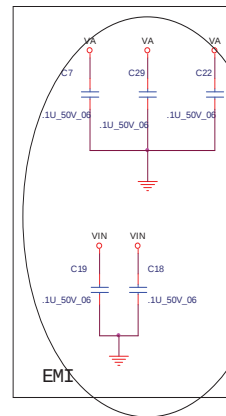
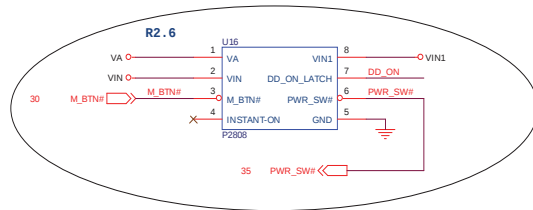
CODEC (ALC272-GR)



KBC-ITE IT8502E

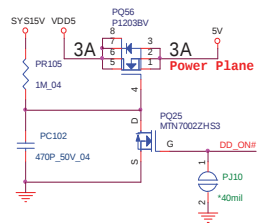
Sheet 35 of 49
KBC-ITE IT8502E

5VS, 3.3VS, 1.5VS, VIN1

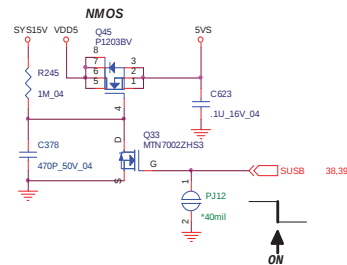


Sheet 36 of 49
5VS, 3.3VS, 1.5VS,
VIN1

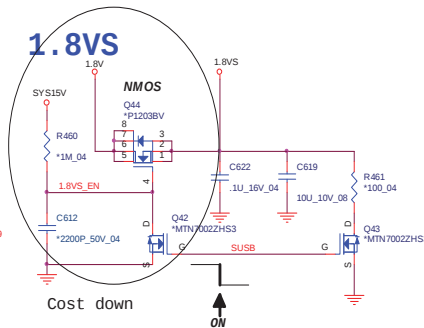
5V



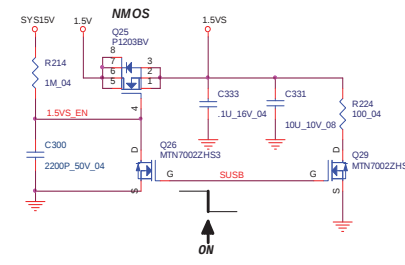
5VS



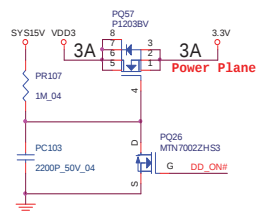
1.8VS



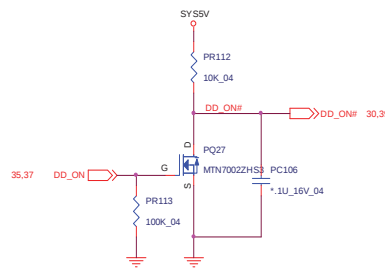
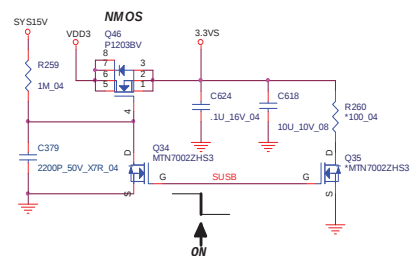
1.5VS



3.3V

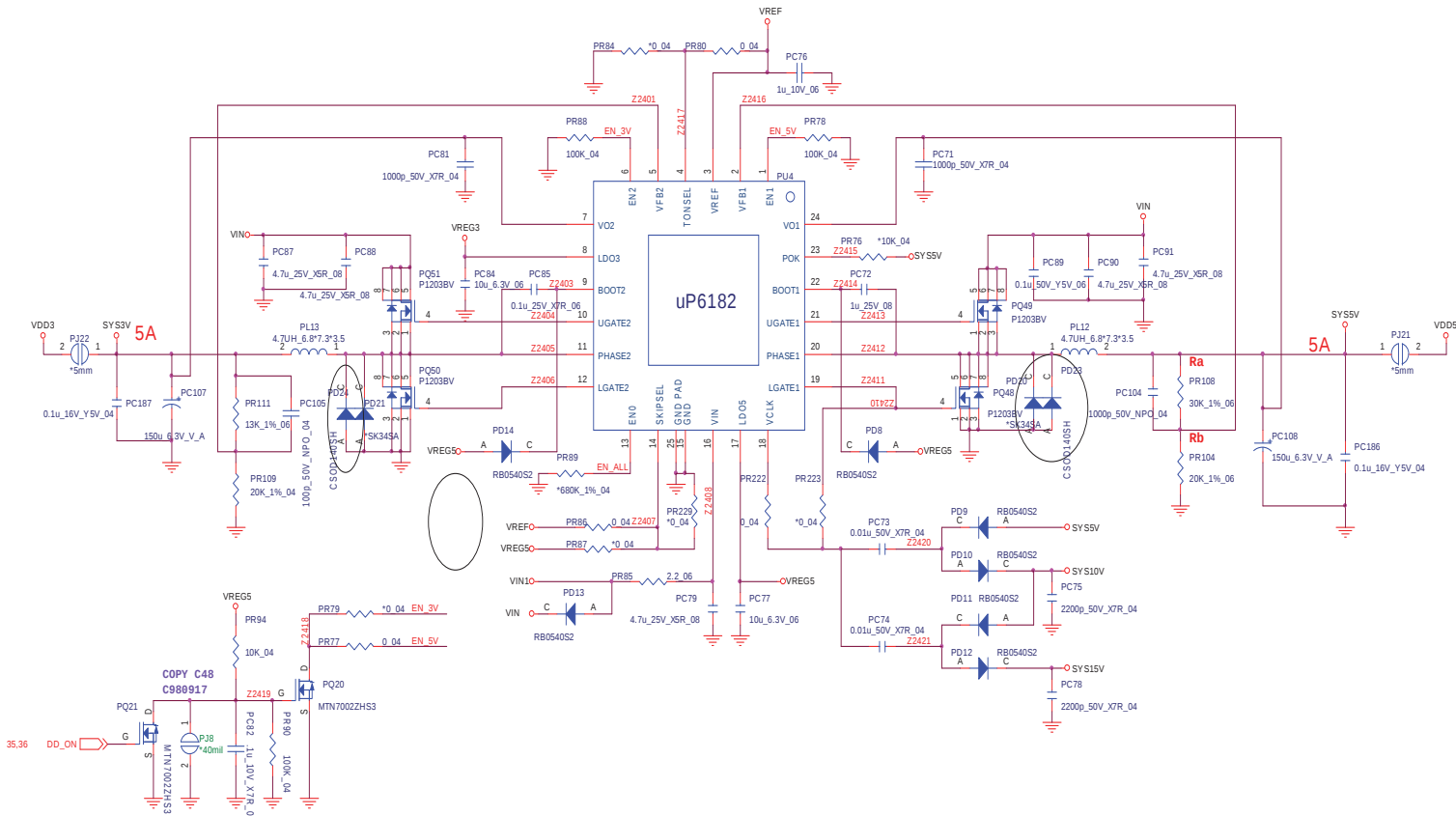


3.3VS



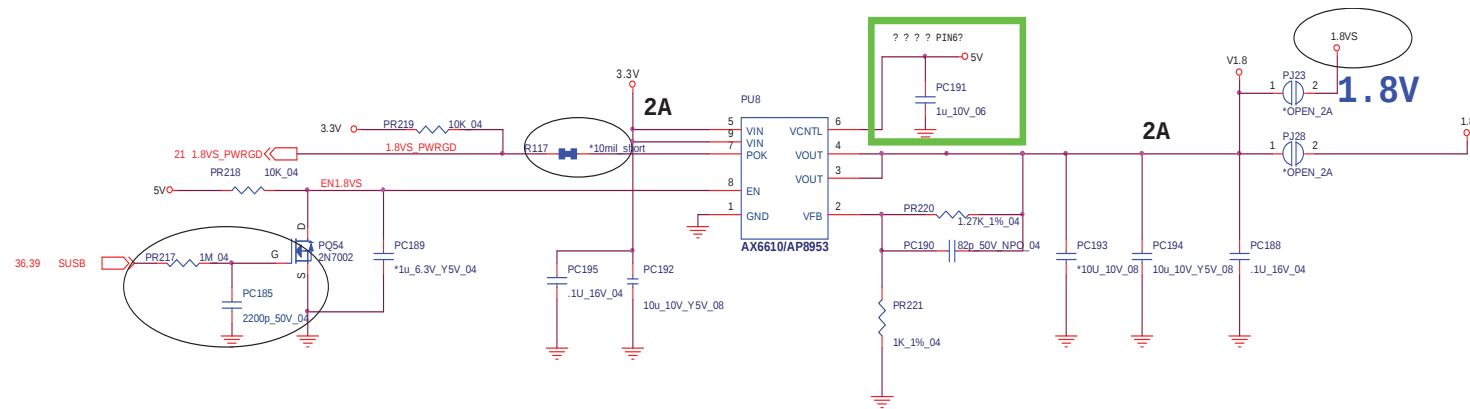
VIN1	37
VIN	12, 37, 39, 40, 41, 42, 43, 44
VA	44
SYS15V	37, 38, 39
SYS5V	37, 38
VDD5	37
5V	25, 29, 30, 34, 38, 39, 40, 43
5VS	12, 19, 22, 25, 26, 30, 32, 34, 41, 42, 45
VDD3	19, 26, 30, 32, 35, 37, 43, 44
3.3V	3, 4, 12, 13, 17, 19, 20, 21, 23, 24, 26, 28, 29, 31, 32, 33, 38, 39, 40, 43
3.3VS	2, 10, 11, 12, 13, 18, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 34, 35, 41, 42, 45
+1.5S_CPU	4, 7
1.5V	4, 10, 11, 39
1.5VS	28
1.8V	38
1.8VS	7, 25, 38

VDD3, VDD5

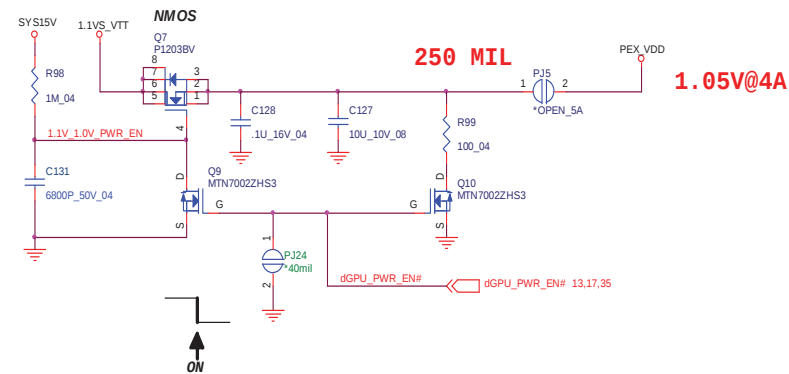
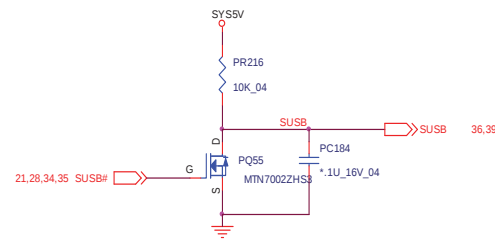


VIN	12,36,39,40,41,42,43,44
SYS15V	36,38,39
VIN1	36
VDD5	36
VDD3	19,28,30,32,35,36,43,44
SYS5V	36,38

Power 1.8V, PEX_VDD

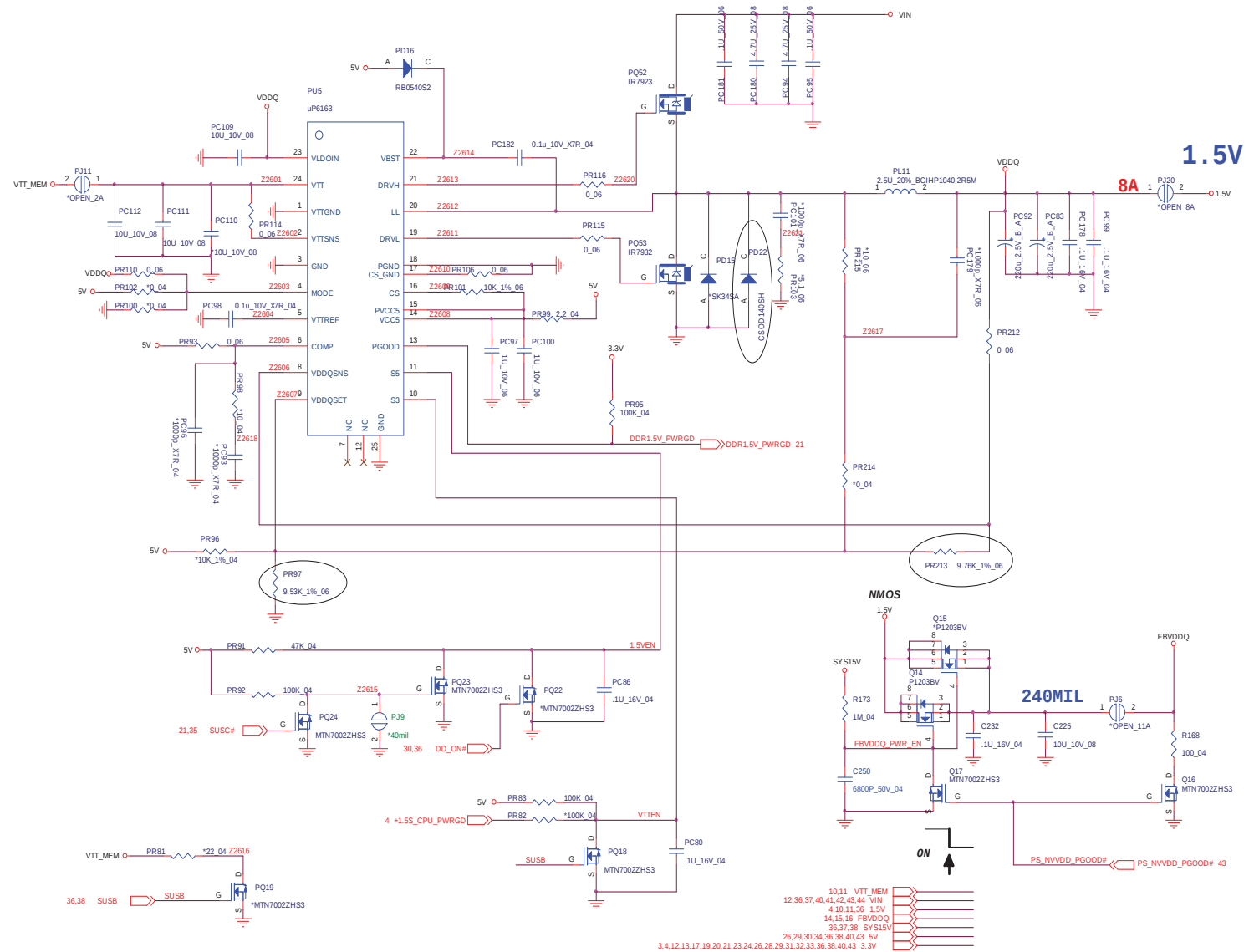


Sheet 38 of 49
Power 1.8V,
PEX_VDD



3,4,12,13,17,19,20,21,23,24,26,28,29,31,32,33,36,39,40,43	3.3V
36,37,39	SYS15V
36,37	SYSSV
12,36,37,39,40,41,42,43,44	VIN
13,14	PEX_VDD
2,4,6,7,19,20,21,24,25,26,40,41,42	1.1VS_VTT
26,29,30,34,36,39,40,43	5V
36	1.8V
7,25,36	1.8VS

Power 1.5V/0.75V

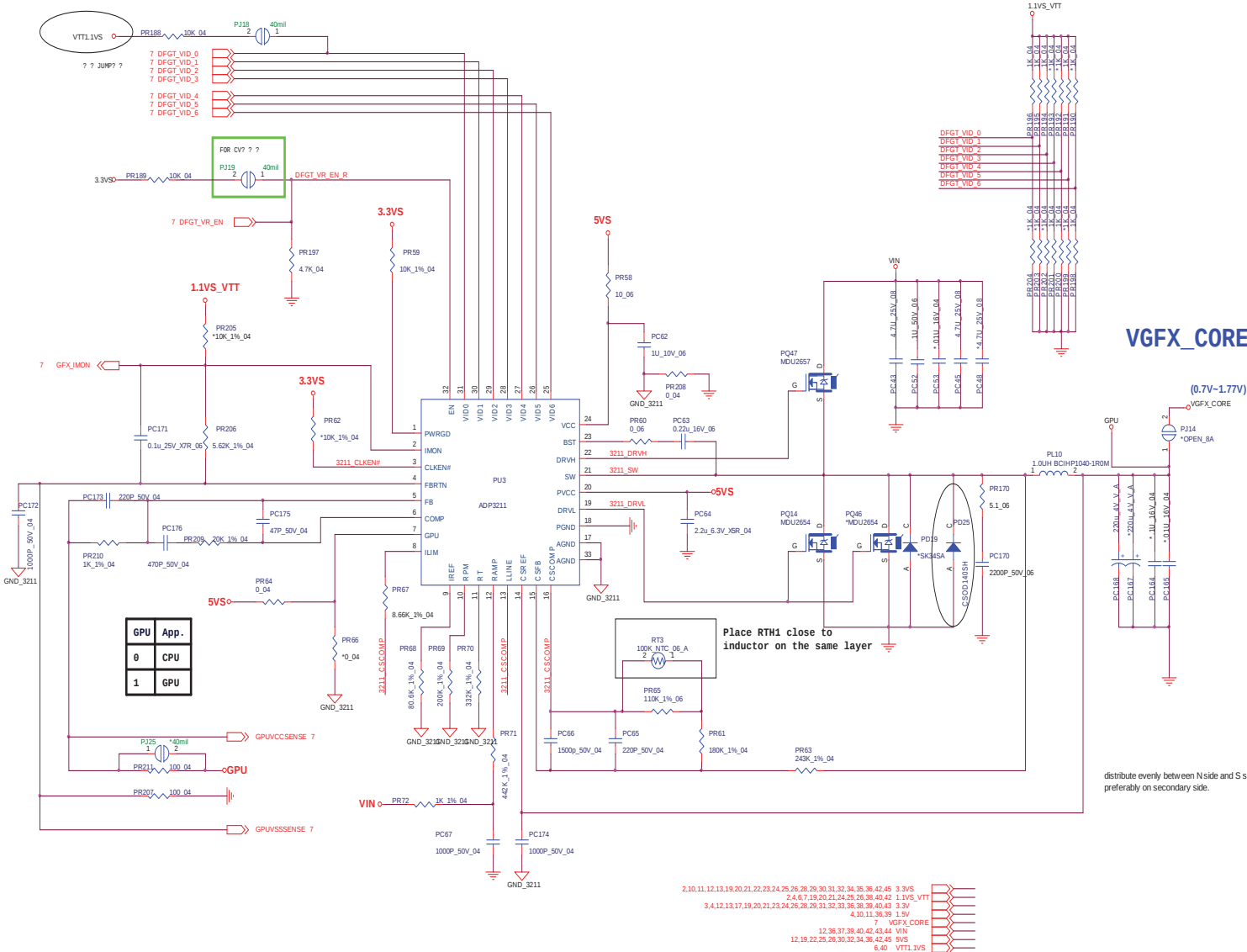


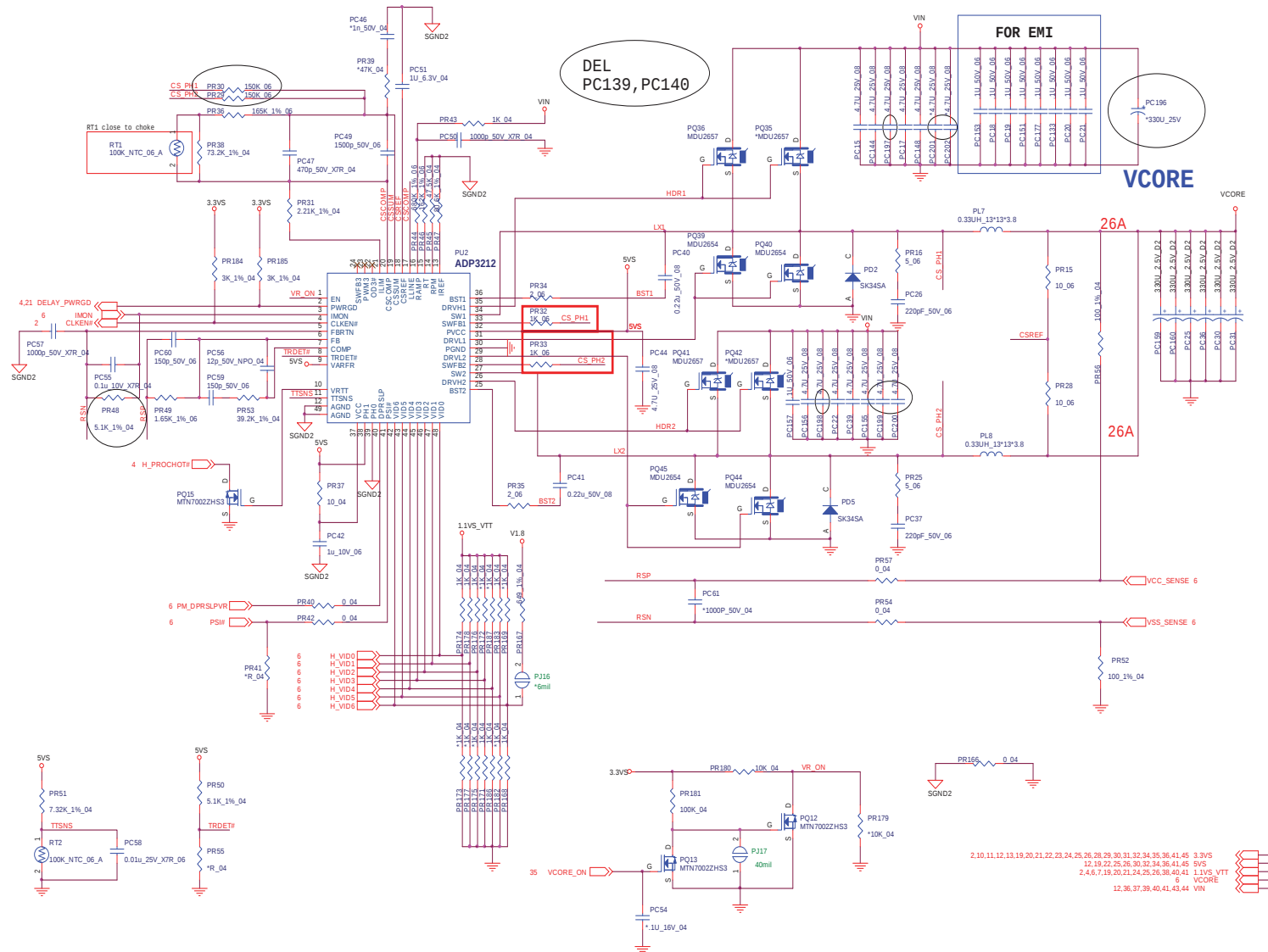
Sheet 39 of 49
Power 1.5V/0.75V

[illegible]

Sheet 40 of 49
Power 1.1VS_VTT

Power VGFX_Core





Sheet 42 of 49
V-Core

B.Schematic Diagrams

Power VGA NVVDD

NVIDIA N11P-GE1

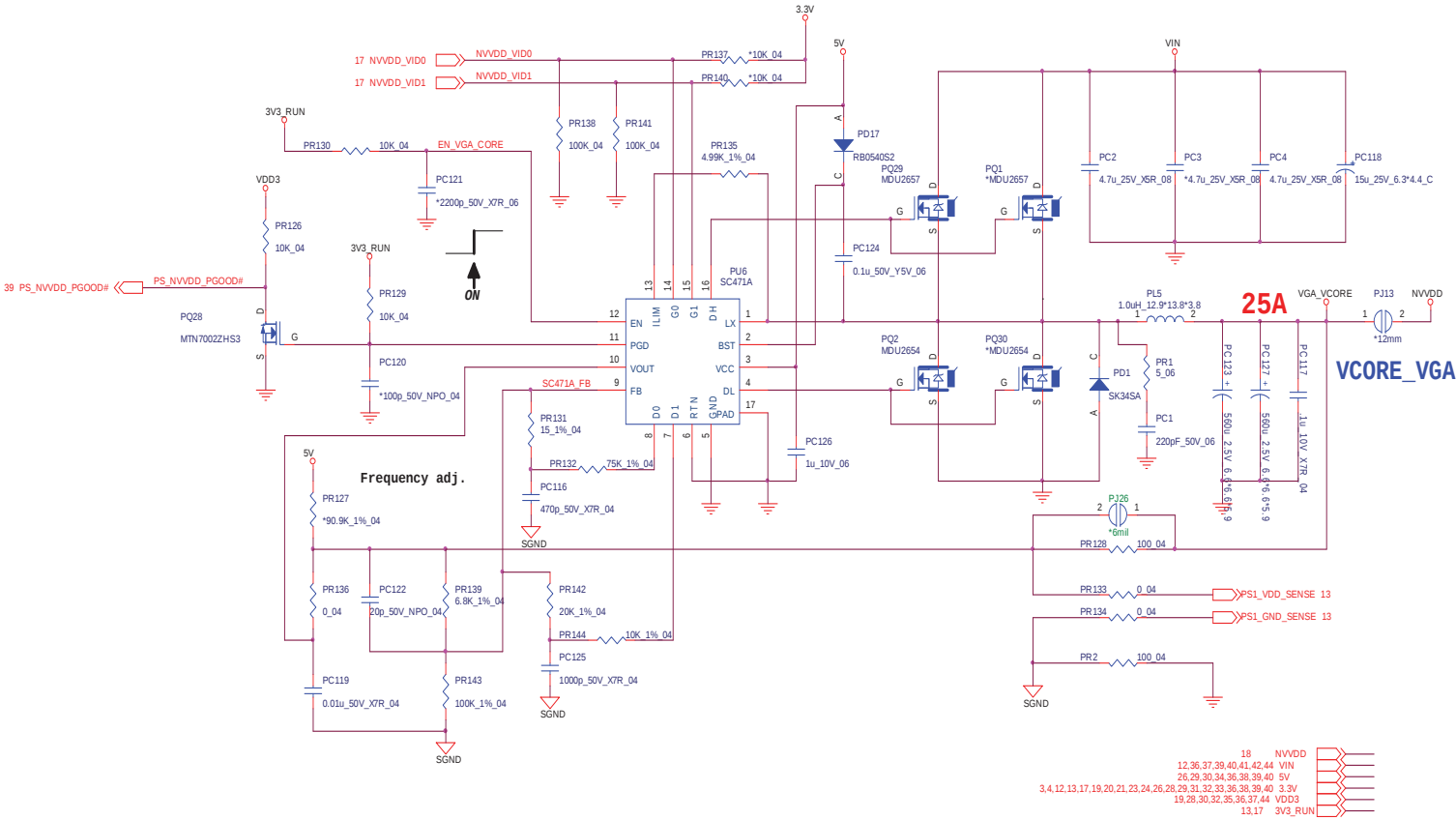
	0.95V	0.90V	0.85V	0.80V
GPI05_NVVDD_VID0	0	1	0	1
GPI06_NVVDD_VID1	0	0	1	1

NVIDIA N11M-0P1

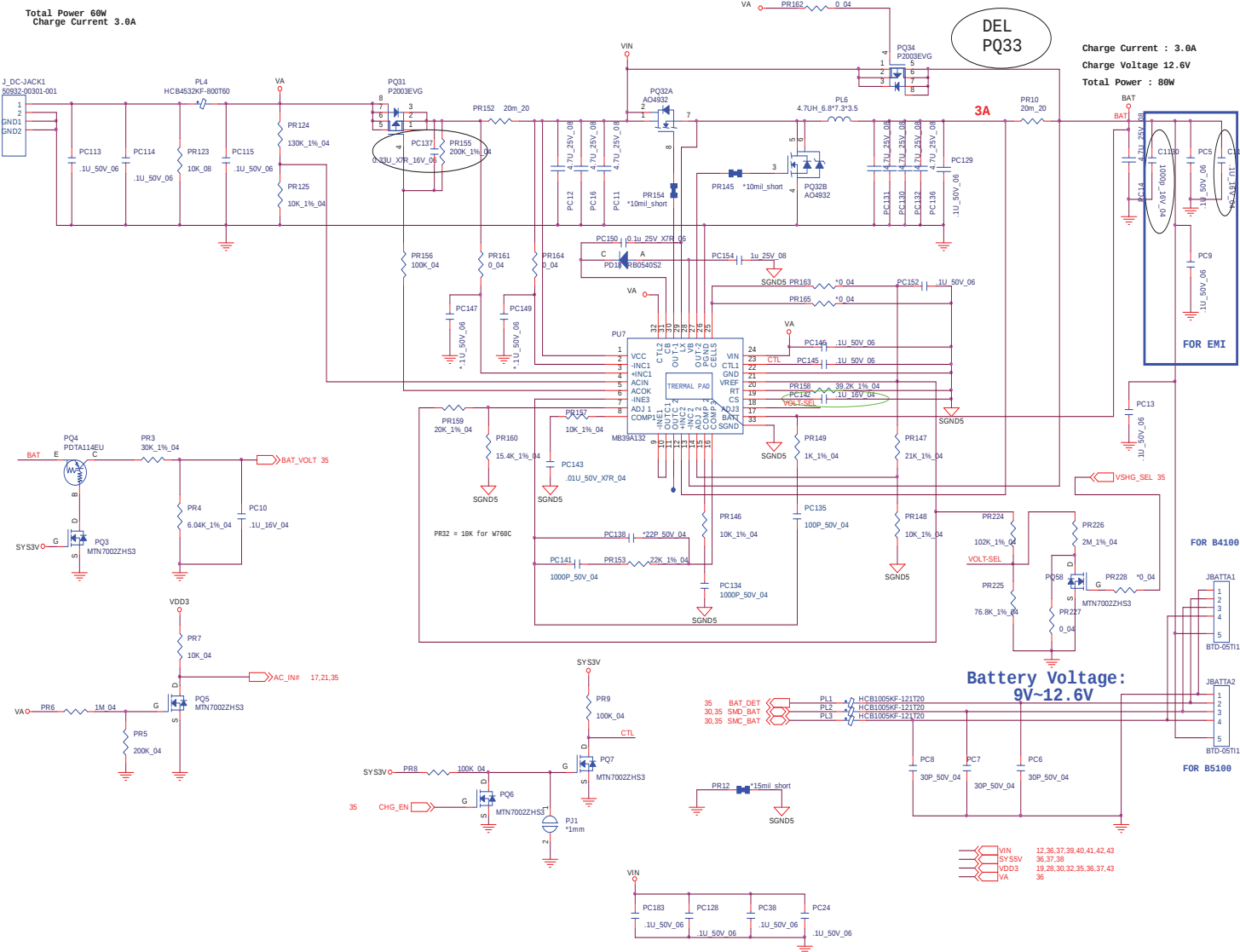
	1.83V	0.95V	0.85V	0.80V
GPI05_NVVDD_VID0	0	1	0	1
GPI06_NVVDD_VID1	0	0	1	1

	PR131	PR132	PR139	PR142	PR143	PR144
B4100 N11M-0P1	15K_1%	75K_1%	6.8K_1%	20K_1%	100K_1%	10K_1%
B5100 N11P-GE1	10K_1%	20K_1%	2K_1%	4.99K_1%	30K_1%	10K_1%

Sheet 43 of 49
Power VGA NVVDD



AC_IN, Charger

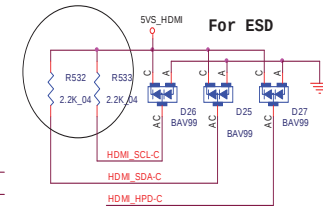
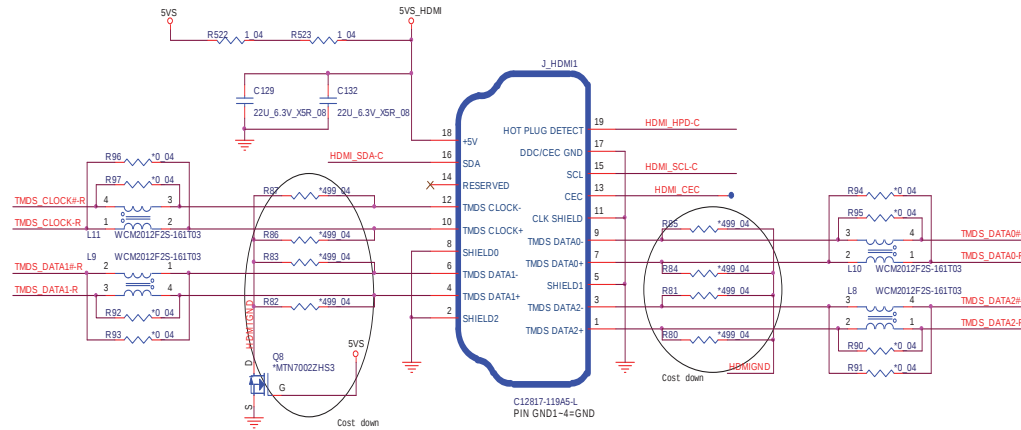


Sheet 44 of 49
AC_IN, Charger

HDMI

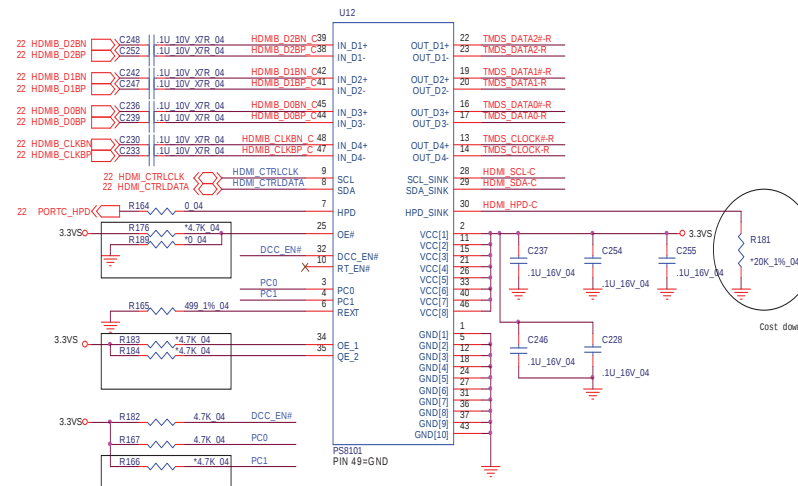
HDMI CONNECTOR

2009/11/28_Alex



Sheet 45 of 49
HDMI

FOR INTEL GRAPHIC

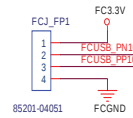


3.3VS 2,10,11,12,13,19,20,21,22,23,24,25,26,28,29,30,31,32,34,35,36,41,42
5VS 12,19,22,25,26,30,32,34,36,41,42

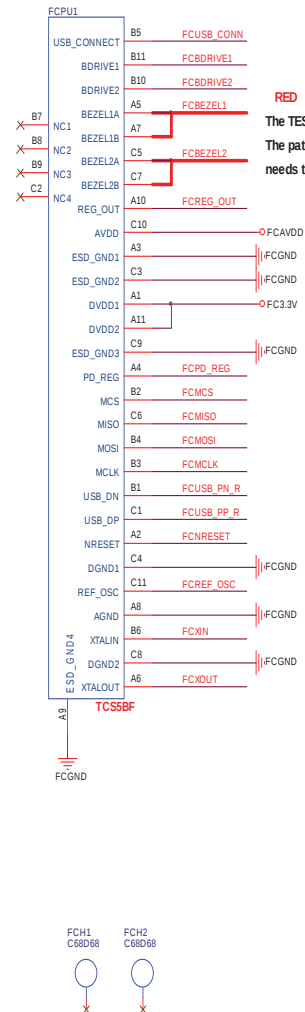
RJ-11



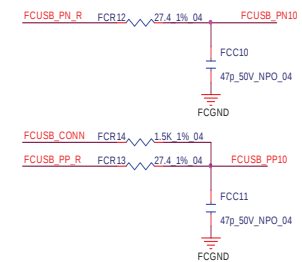
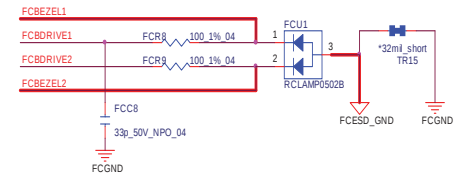
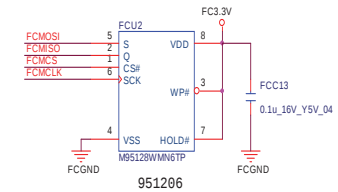
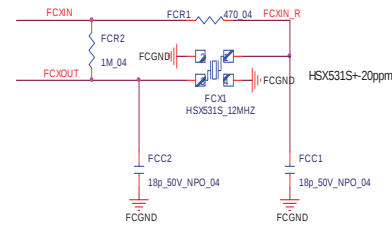
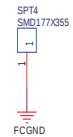
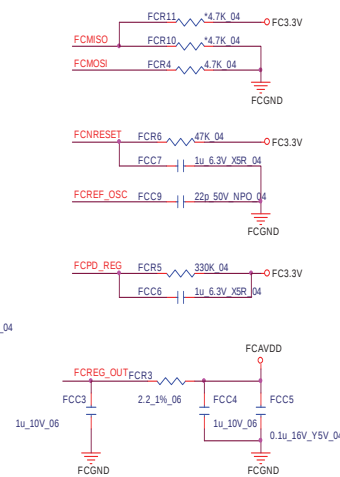
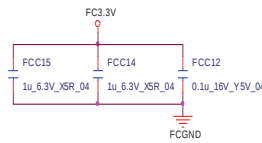
B4100 Fingerprint Board



B4100M ONLY

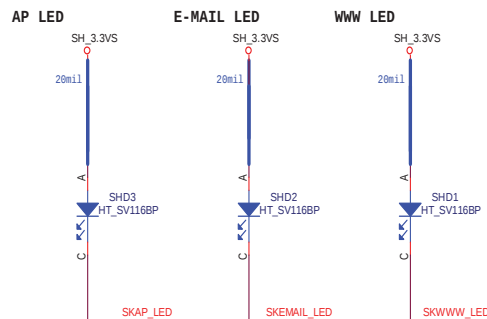
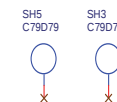
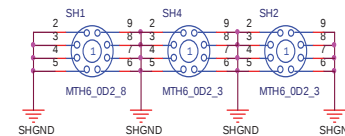
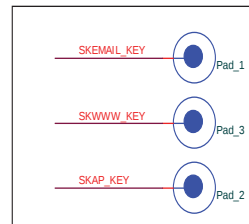
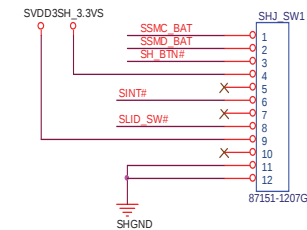
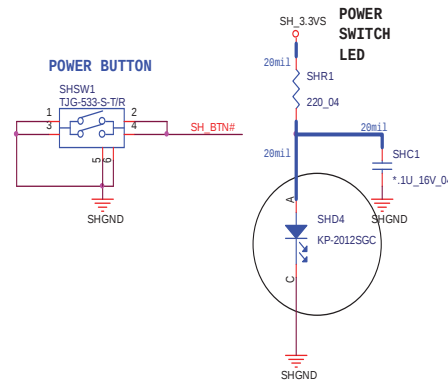
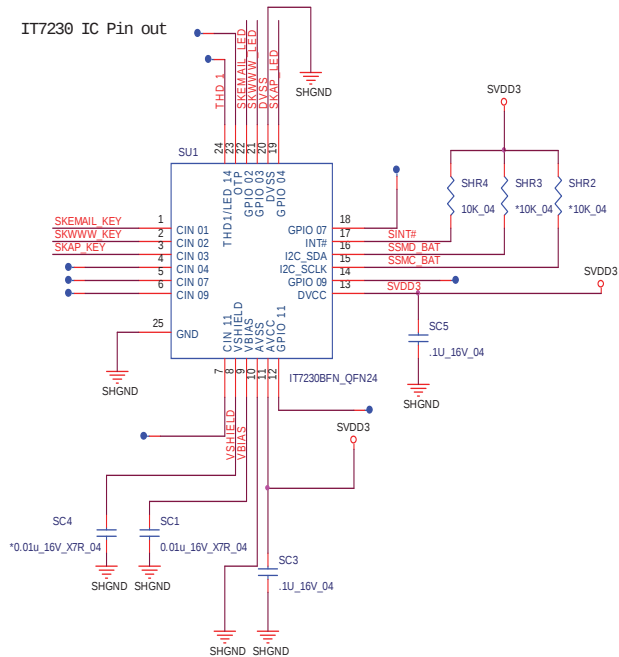


RED
The TESD_GND trace has to be wide (> 20mil)
The path be marked in
needs to be design to be short and at low impedance.



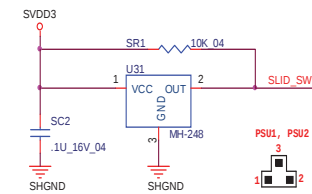
B4100 Power Switch Board

POWER SW & POWER LED



B4100M ONLY

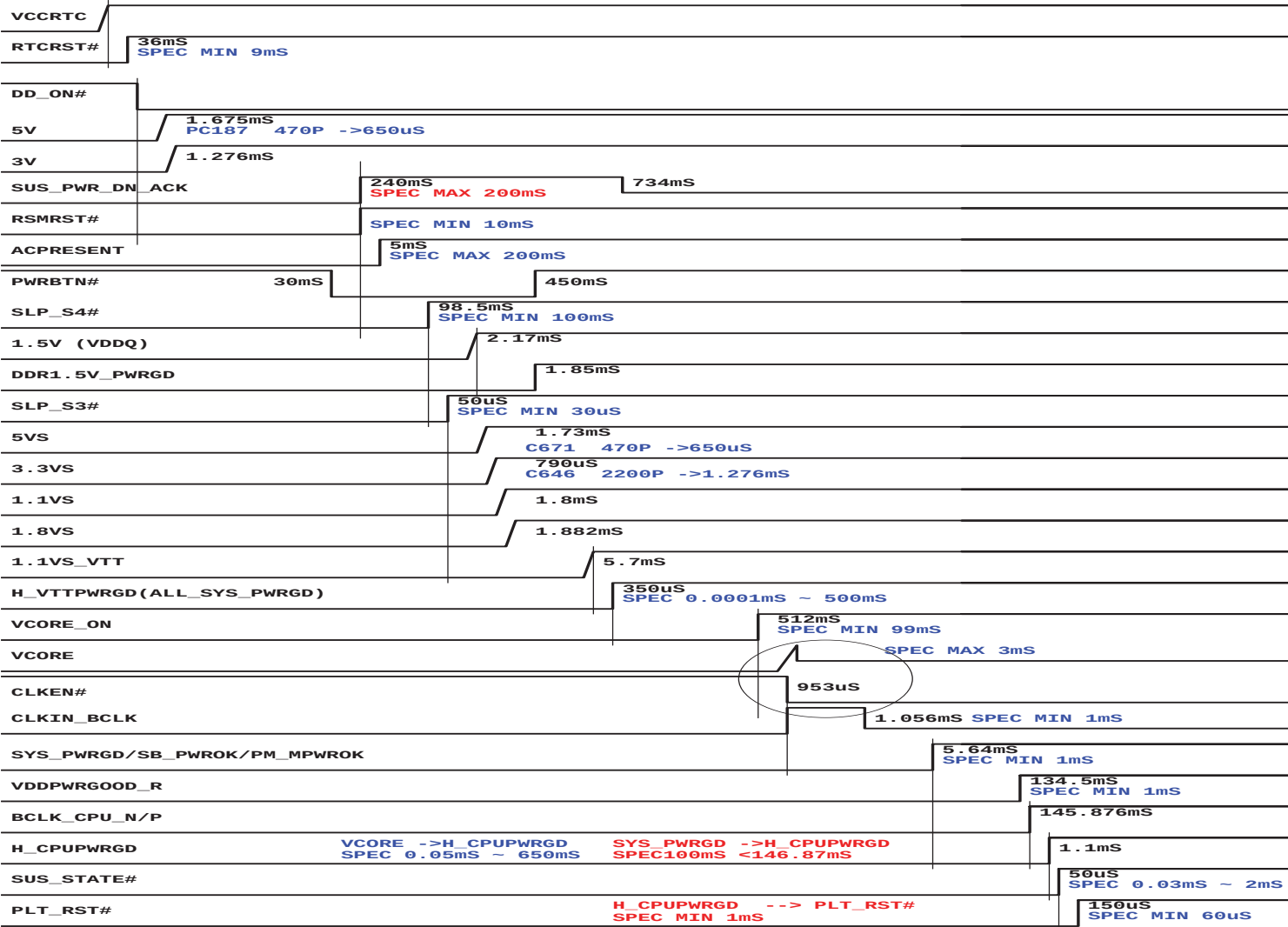
LID SWITCH IC



Sheet 48 of 49
B4100 Power
Switch Board

Sequence

B 4 1 0 0 D 0 1 P O W E R S E Q U E N C E



Sheet 49 of 49
Sequence

B.Schematic Diagrams

Appendix C: Updating the FLASH ROM BIOS

To update the FLASH ROM BIOS you must:

- Download the BIOS update from the web site.
- Unzip the files onto a bootable CD/DVD/USB Flash Drive.
- Reboot your computer from an external CD/DVD/USB Flash Drive.
- Use the flash tools to update the flash BIOS using the commands indicated below.
- Restart the computer booting from the HDD and press **F2** at startup enter the BIOS.
- Load setup defaults from the BIOS and save the default settings and exit the BIOS to restart the computer.
- After rebooting the computer you may restart the computer again and make any required changes to the default BIOS settings.

Download the BIOS

1. Go to www.clevo.com.tw and point to **E-Services** and click **E-Channel**.
2. Use your user ID and password to access the appropriate download area (BIOS), and download the latest BIOS files (the BIOS file will be contained in a batch file that may be run directly once unzipped) for your computer model (see sidebar for important information on BIOS versions).

Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive

1. Insert a bootable CD/DVD/USB flash drive into the CD/DVD drive/USB port of the computer containing the downloaded files.
2. Use a tool such as Winzip or Winrar to unzip all the BIOS files and refresh tools to your bootable CD/DVD/USB flash drive (you may need to create a bootable CD/DVD with the files using a 3rd party software).

Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the “+” and “-” keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.



BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are **V1.01.XX or higher** as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore **you may not downgrade your BIOS to an older version** after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

BIOS Update

Use the flash tools to update the BIOS

1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message “**Starting MS-DOS**”. You will then be prompted to give “**Y**” or “**N**” responses to the programs being loaded by DOS. Choose “**N**” for any memory management programs.
2. You should now be at the DOS prompt e.g: DISK C:\> (C is the designated drive letter for the CD/DVD drive/USB flash drive).
3. **Type the following command** at the DOS prompt:

C:\> Flash.bat

4. The utility will then proceed to flash the BIOS.
5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F9**) and select “**Yes**” to confirm the selection.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.