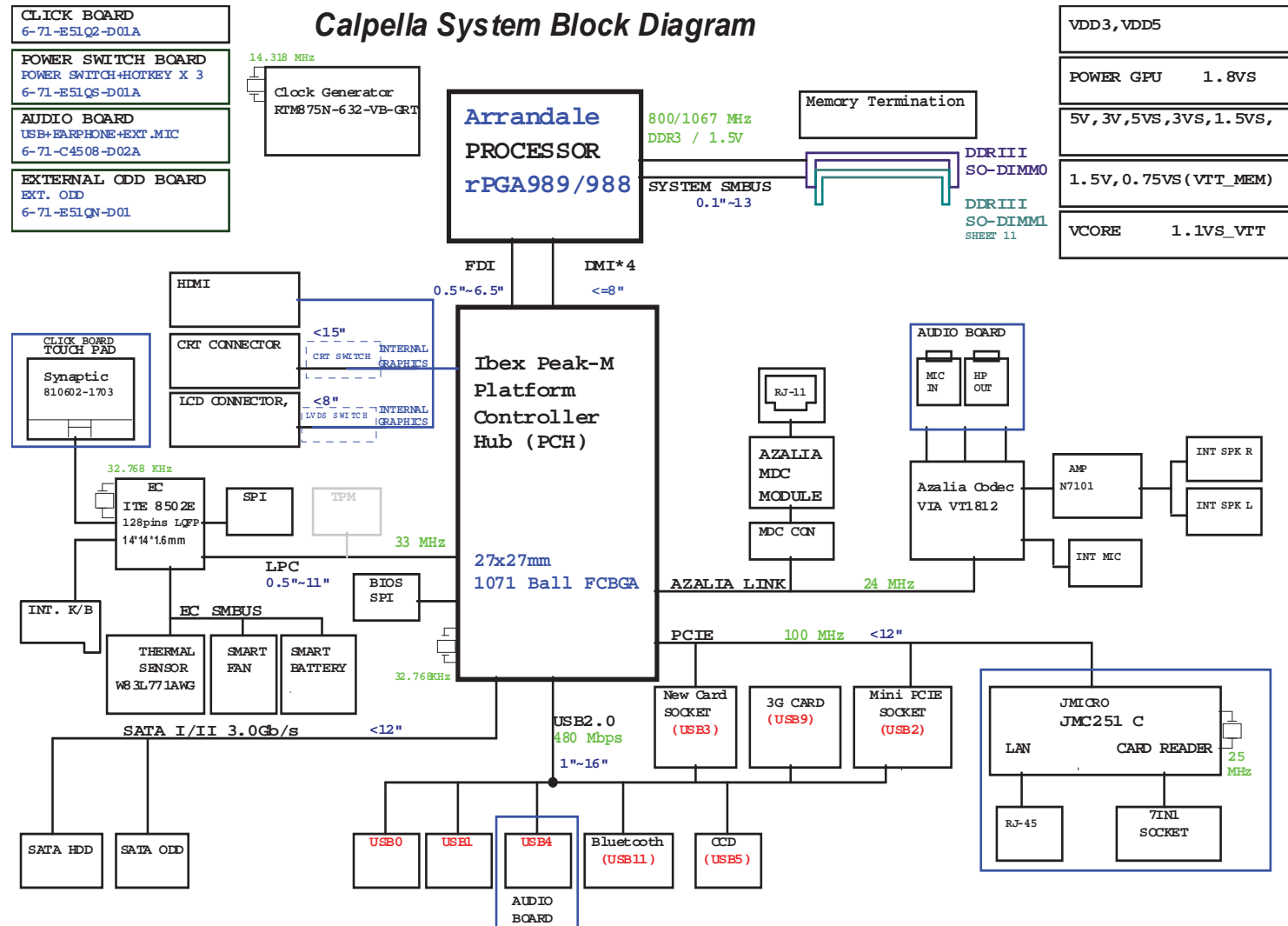


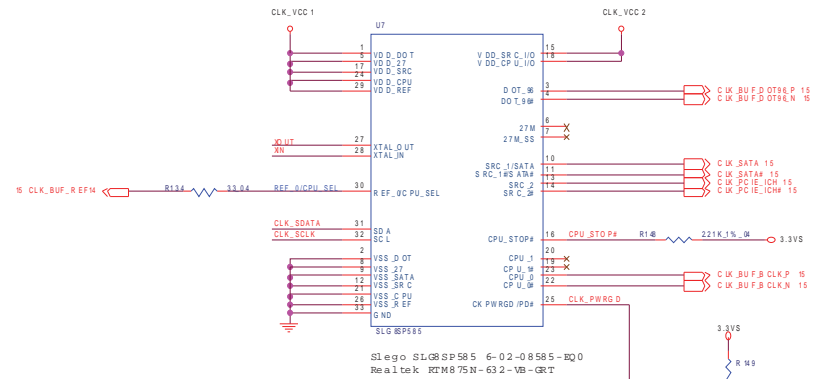
System Block Diagram



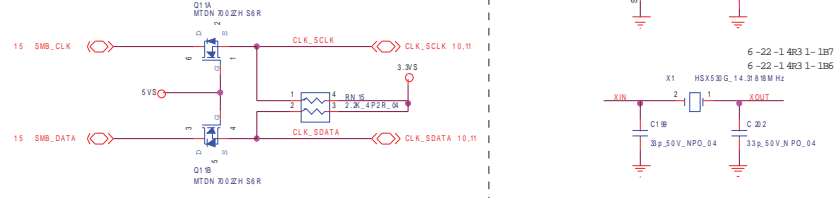
Sheet 1 of 42
System Block
Diagram

Clock Generator

CLOCK GENERATOR



SMBus

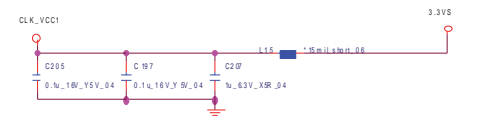


CPU_SEL During CK_PWGD Latch Pin1



PIN_30	CPU_0	CPU_1
0 (default)	13.3MHz	13.3MHz
1 (0.7V-1.5V)	10.0MHz	10.0MHz

CLKGEN POWER

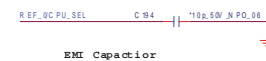


0.1uF near the every power pin



0.1uF near the every power pin

EMI



9/5 13, 0, 2021, 2627, 3031, 3036
33V 3, 4, 10, 14, 15, 16, 18, 19, 20, 21, 22, 24, 25, 26, 30, 31, 33, 34, 35
33V 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 33, 36
11V5_VTT 4, 6, 7, 14, 15, 16, 19, 20, 21, 34, 35, 36

Sheet 2 of 42
Clock Generator

PROCESSOR 1/7 (DMI,PEG,FDI)

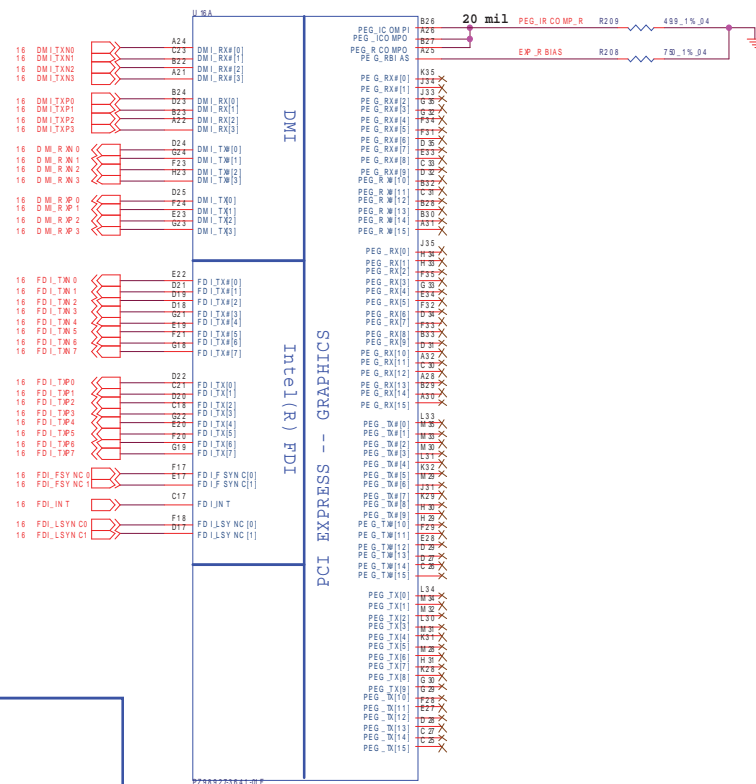
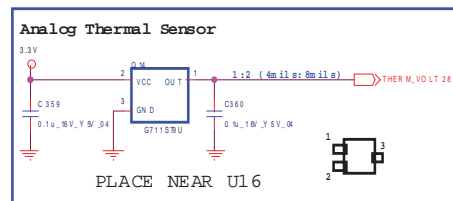
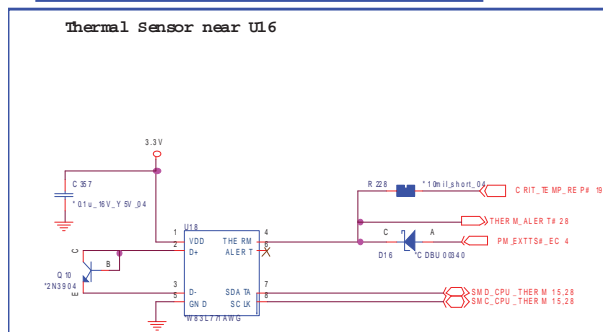
If applies to Aurublade and darkfield discrete graphics designs.

If discrete graphics chips used for Aurublade, VAXO (GEM cone) can be connected to GMD if motherboard only supports discrete graphics and also in a common motherboard design if GFXVR is not stuffed. On the other hand, if the VR is stuffed, VAXO can be left floating in a common motherboard design (GFX VR keeps VAXO from floating).

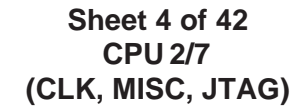
In addition, FDLXRX[1:0] and FDLXRX[7:0] can be left floating on the PCM FDLTX[7:0] and FDLXRX[7:0] can be left floating on the Aurublade.

The OXFNDRM_FET_PSWFC[0], FET_PSWFC[1], FET_LNCRG[0], EXT_LNCRG[1], and FDLTX signals should be tied to GND through X or Y resistors in the common motherboard design case. If the OXFNDRM_FET_PSWFC[0] and FET_PSWFC[1] are left floating, there are no functional impacts but a small amount of power (~15 mW) may be wasted. VAXO_LNCRG and VAXO_LNCRG signals can be left as no connect.

DVFL_PSR_SSCLK and DVFL_PSR_SSCLK can be connected to GND on Aurublade directly if motherboard only supports discrete graphics. In a common motherboard design, there is no need to connect DVFL_PSR_SSCLK even if graphics is disabled by RST01 thus no extra terminal impedance is required.



PROCESSOR 2/7 (CLK,MISC,JTAG)



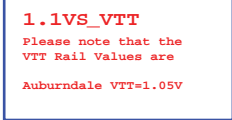
B.Schematic Diagrams

Sheet 5 of 42
CPU 3/7
(DDR3)

DDR SYSTEM MEMORY A

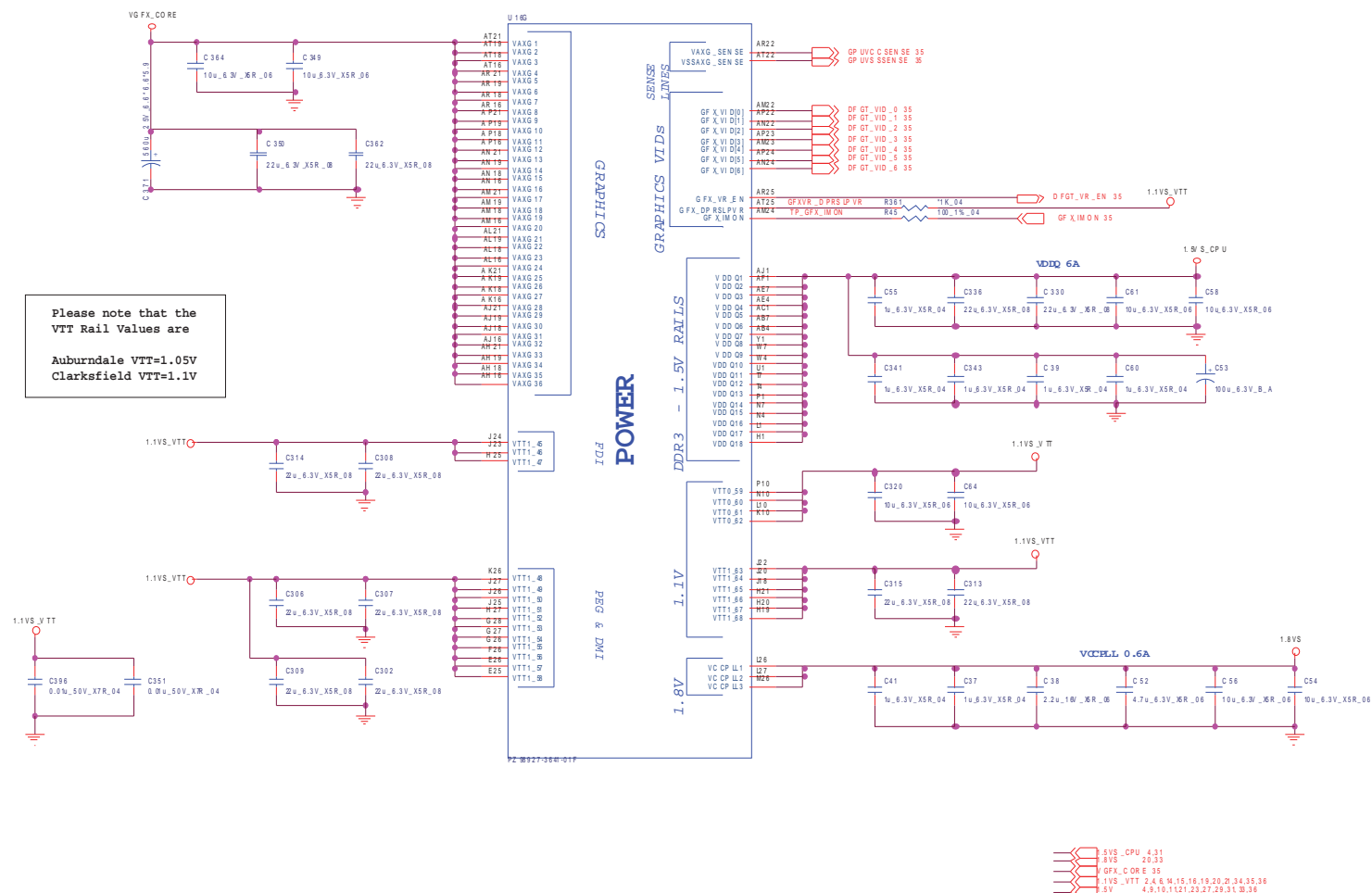


PROCESSOR 4/7 (POWER)



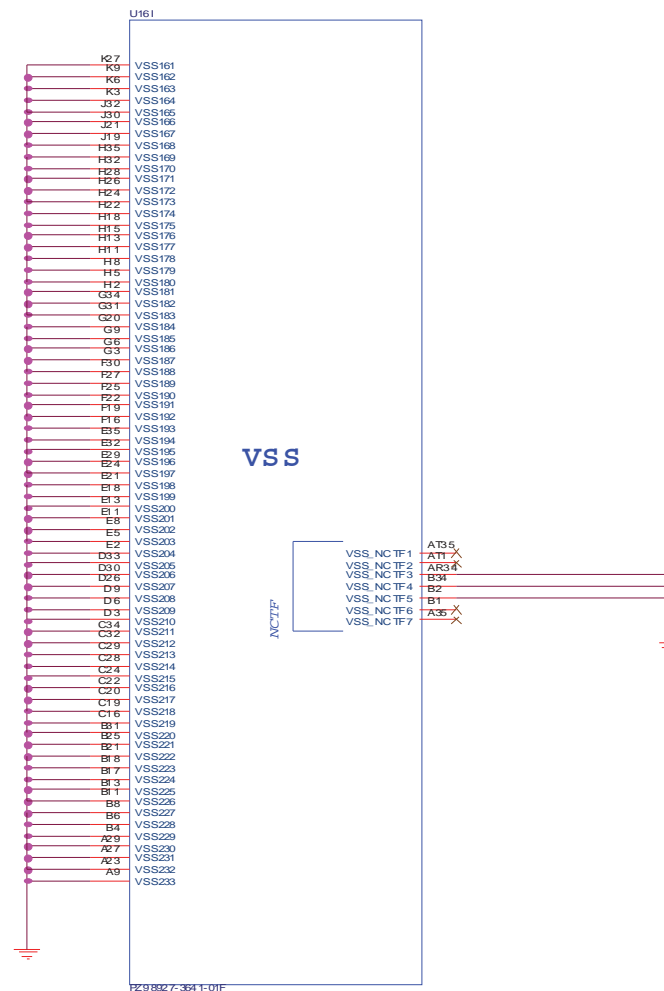
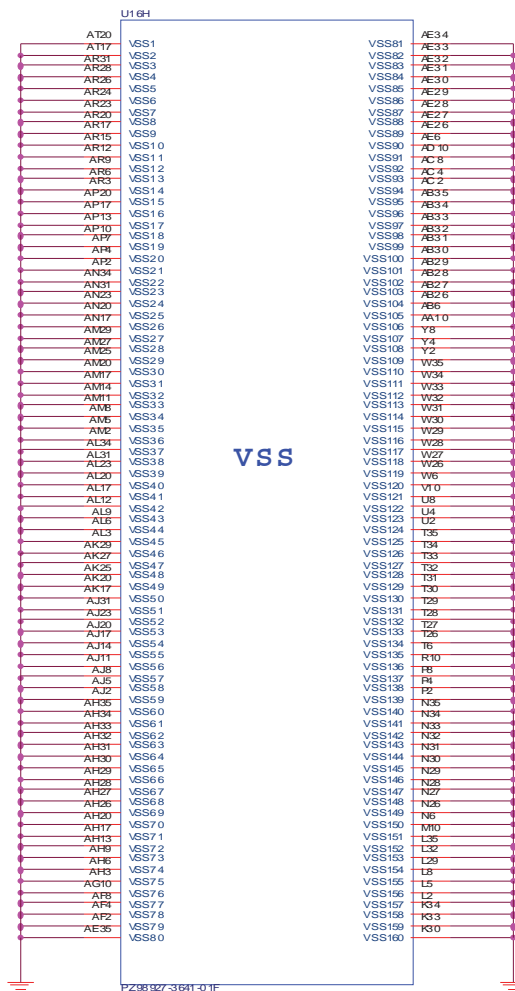
Sheet 6 of 42
CPU 4/7
(Power)

PROCESSOR 5/7 (GRAPHICS POWER)



CPU 6/7 (GND)

PROCESSOR 6/7 (GND)



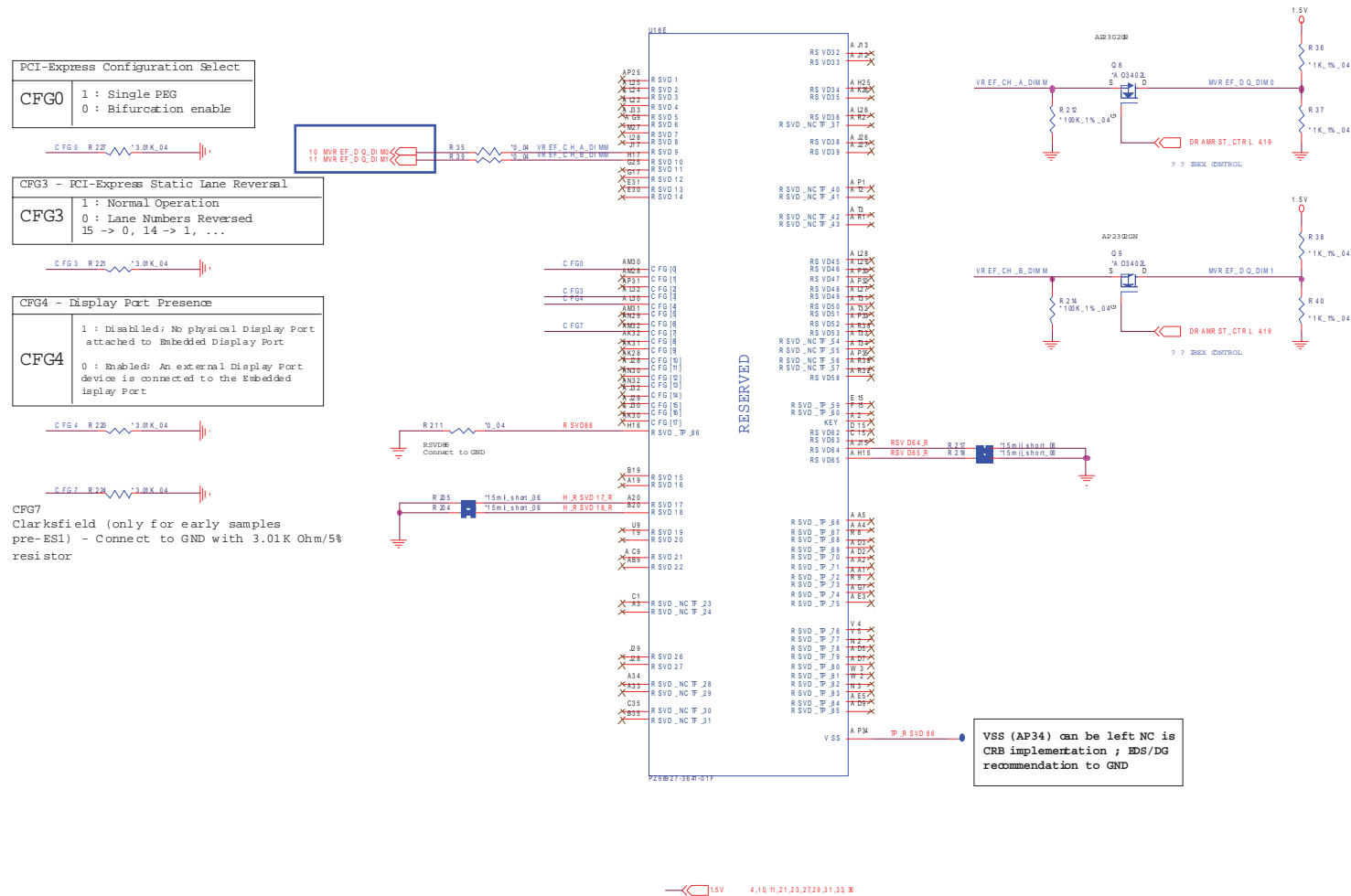
Sheet 8 of 42
CPU 6/7 (GND)

Schematic Diagrams

CPU 7/7 (RESERVED)

PROCESSOR 7/7 (RESERVED)

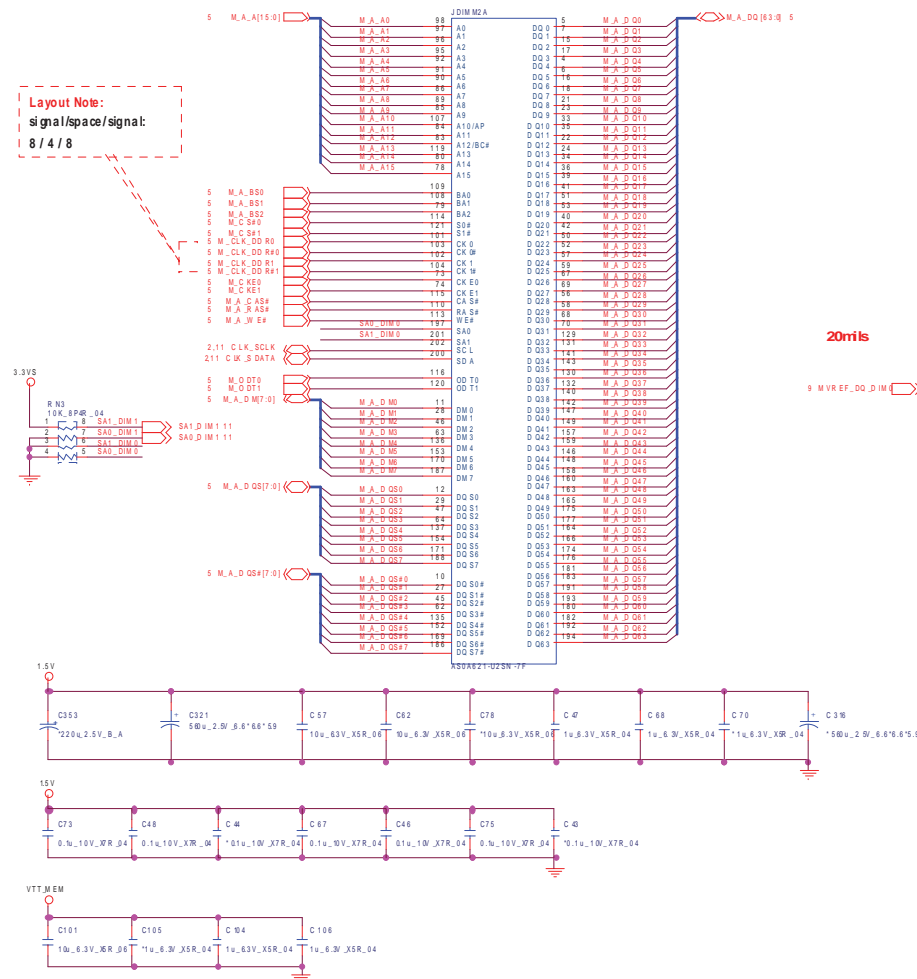
Sheet 9 of 42
CPU 7/7
(RESERVED)



DDR3 SO-DIMM_0

SO-DIMM A

CHANGE TO STANDARD

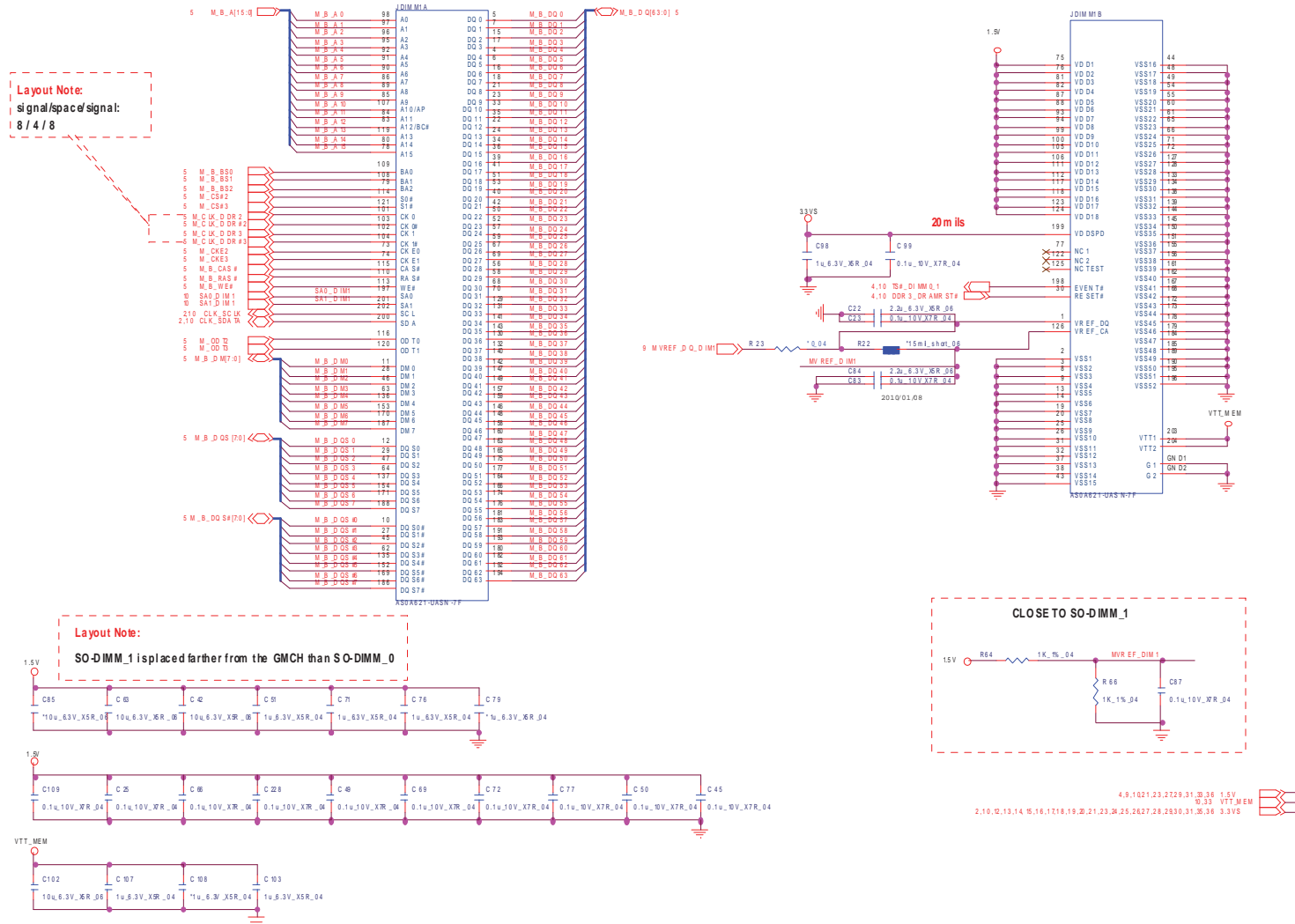


Schematic Diagrams

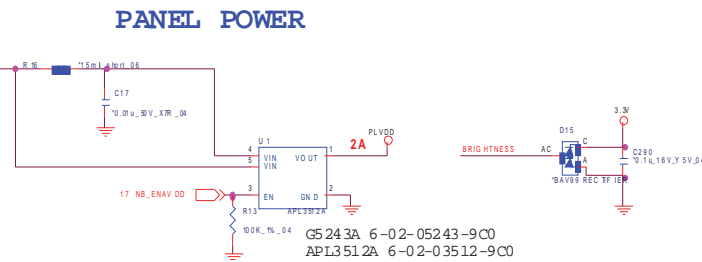
DDR3 SO-DIMM_1

SO-DIMM B

CHANGE TO STANDARD

Sheet 11 of 42
DDR3 SO-DIMM_1<http://hobi-elektronika.net>

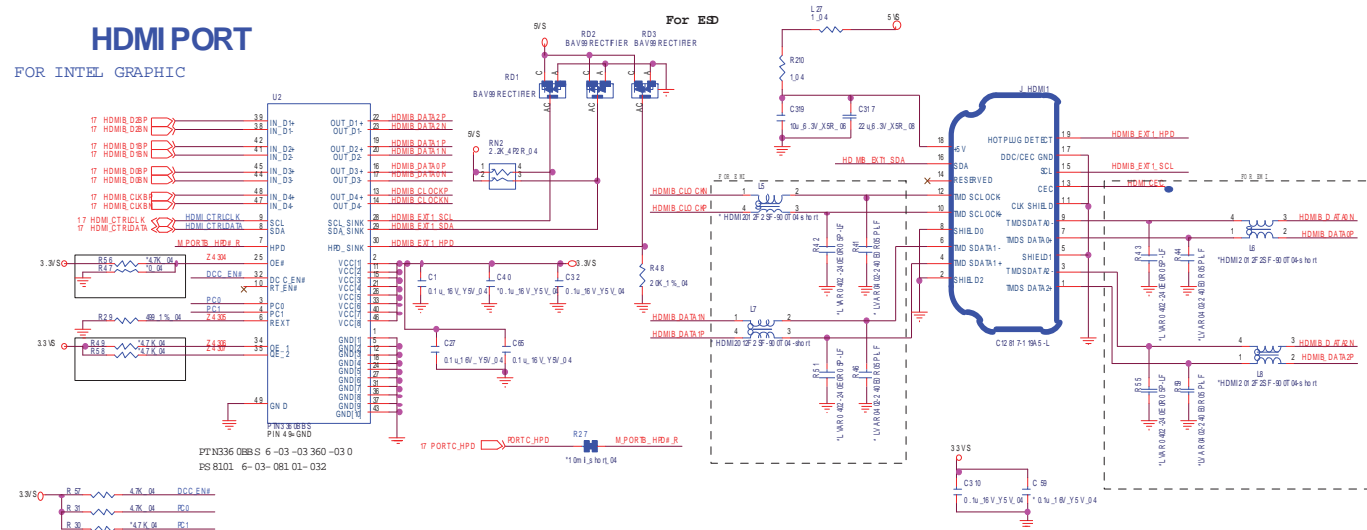
LVDS, Inverter B - 13

[illegible]

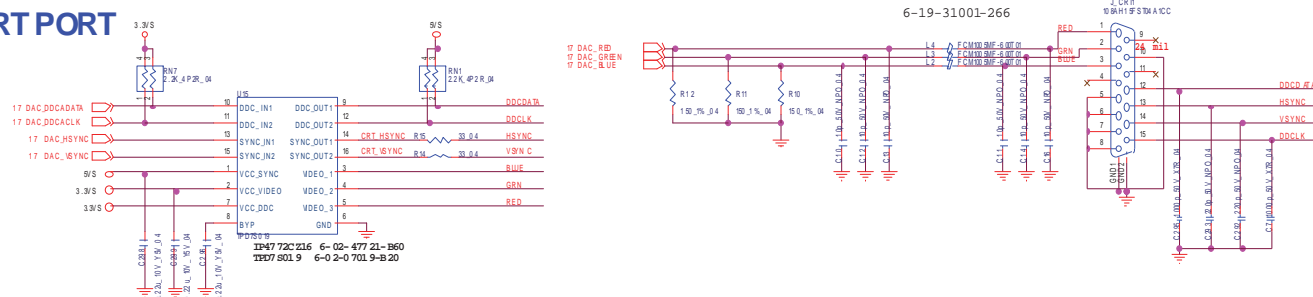
Schematic Diagrams

HDMI, CRT

Sheet 13 of 42
HDMI, CRT

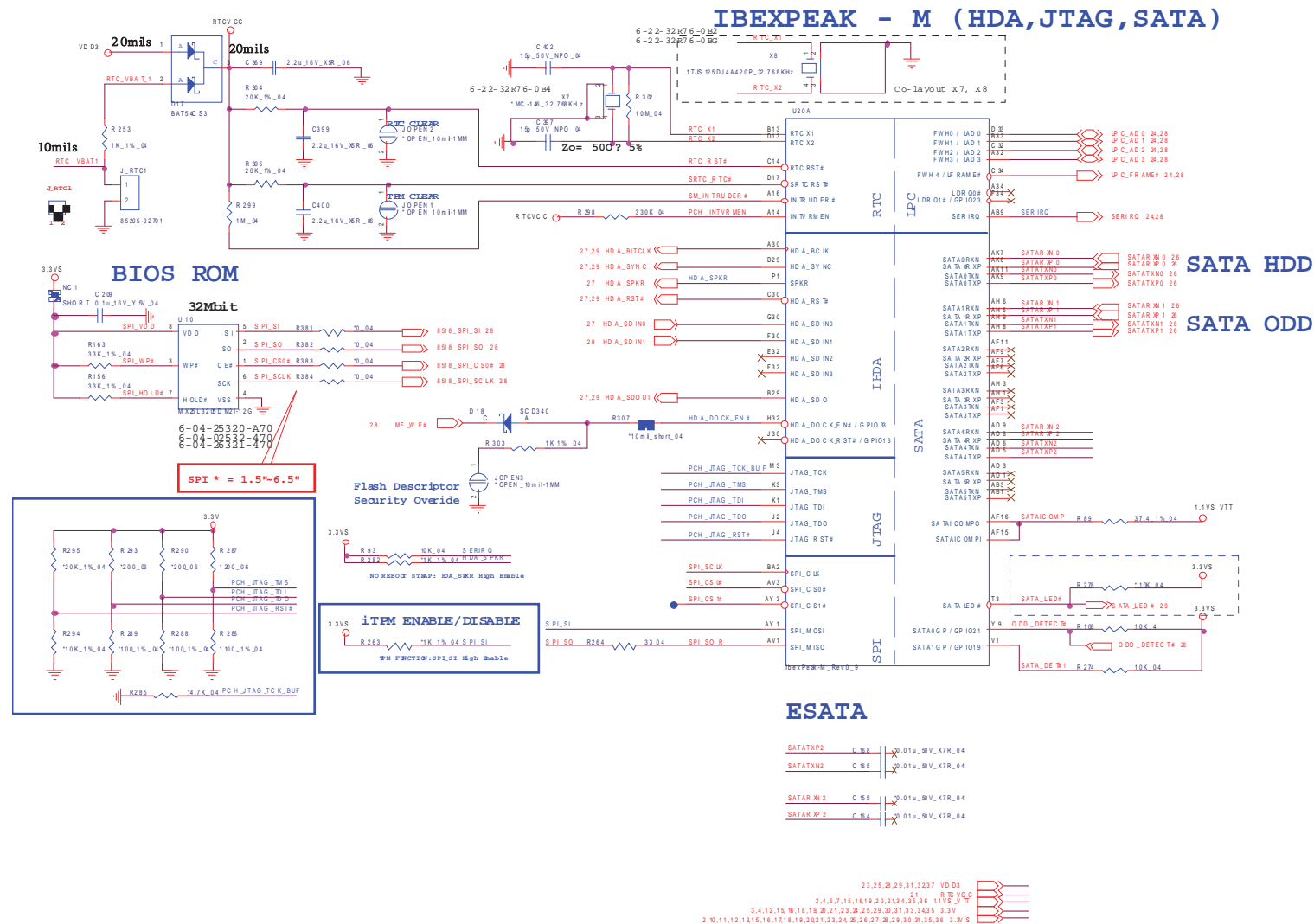


CRT PORT

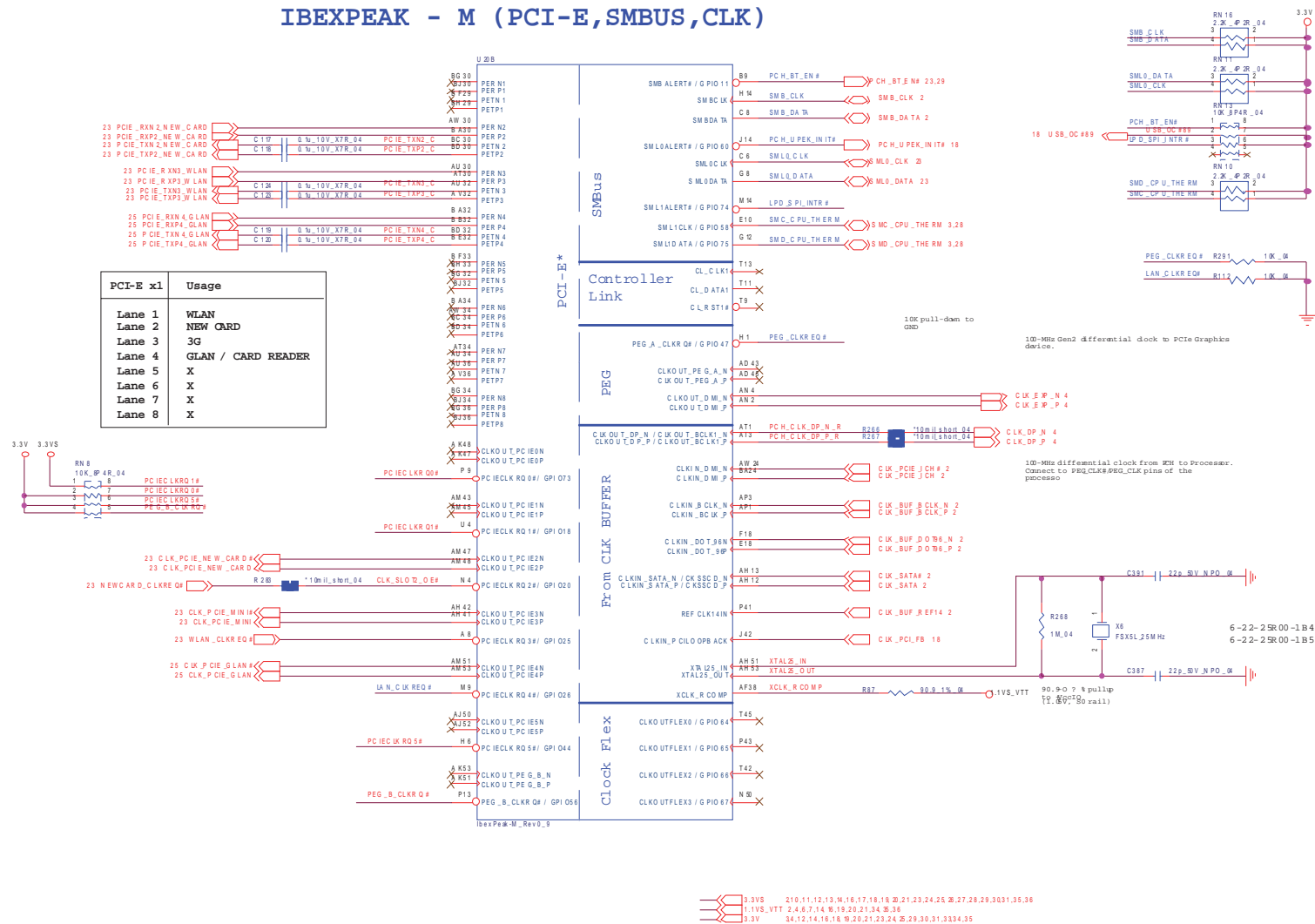


<http://hobi-elektronika.net>

IBEXPEAK- M 1/9



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



IBEXPEAK - M (DMI,FDI,GPIO)

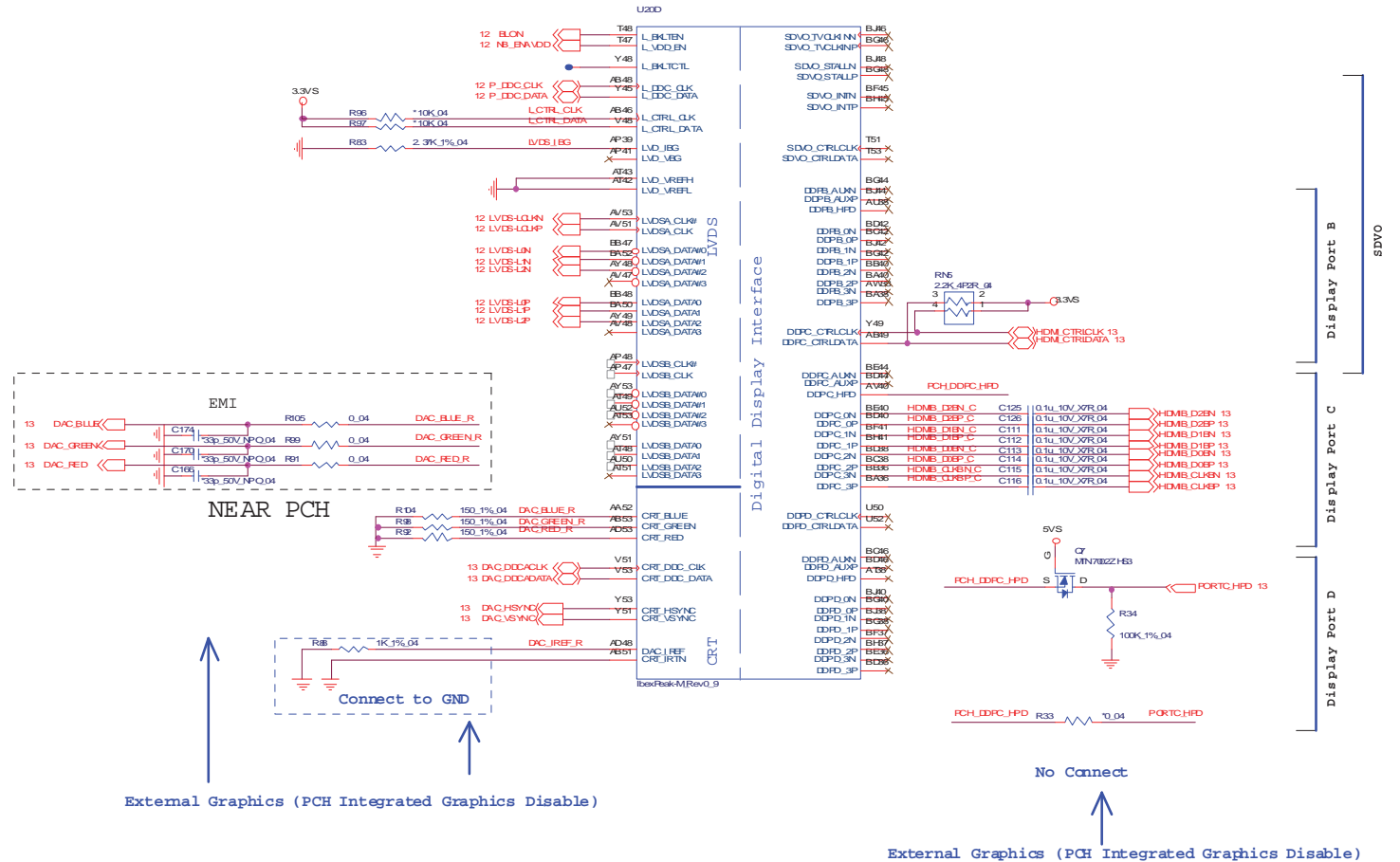


Schematic Diagrams

IBEXPEAK - M 4/9

IBEXPEAK - M (LVDS,DDI)

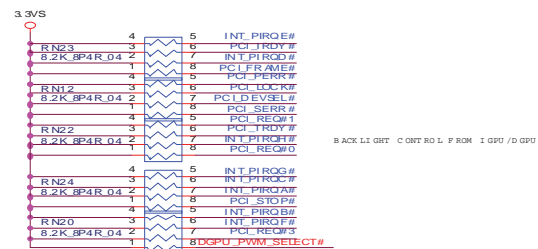
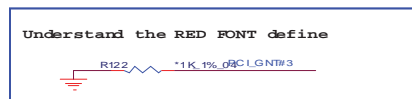
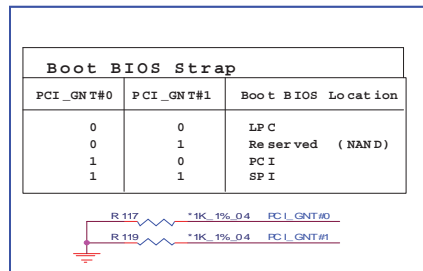
Sheet 17 of 42
IBEXPEAK - M 4/9



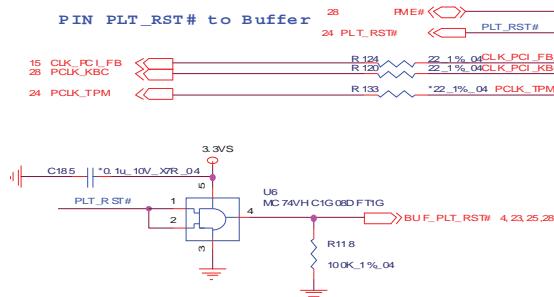
2,10,11,12,13,14 5,16,18,19,20,21,23,24,25,26,27,28,29,30,31,35,36 3,3V5
2,13,20,21,26,27,30,31,35,36 5V5

<http://hobi-elektronika.net>

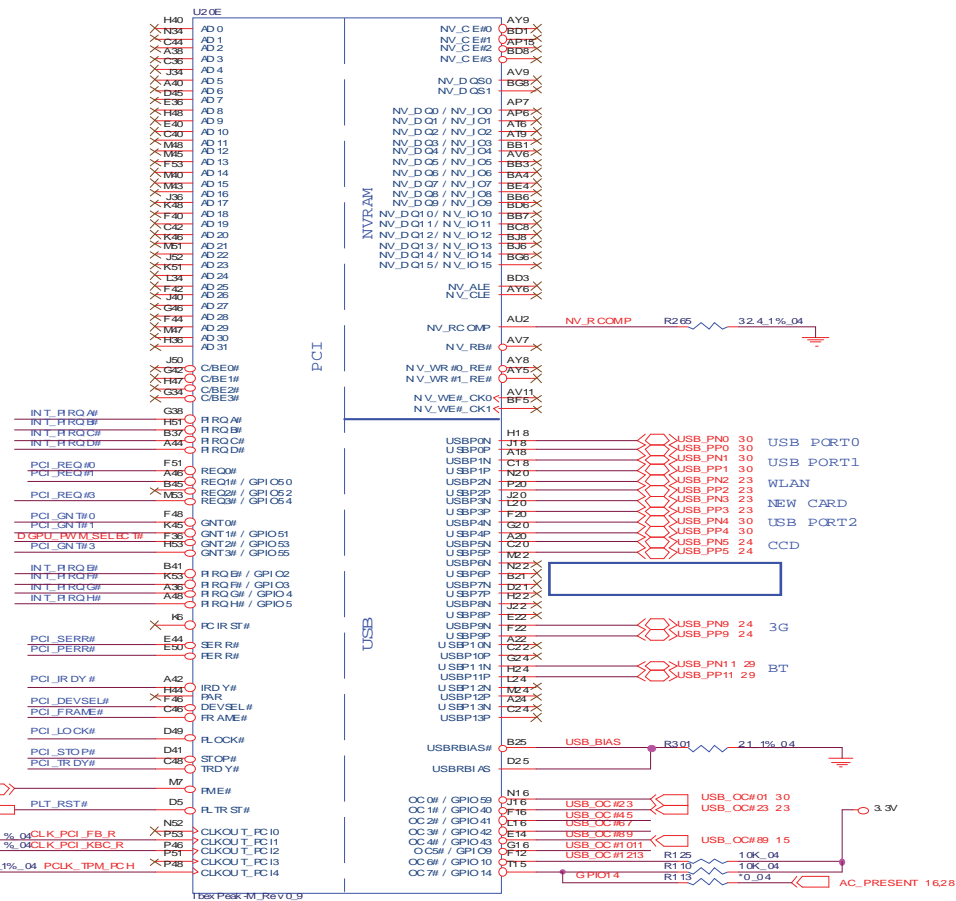
IBEXPEAK - M 5/9



PIN PLT_RST# to Buffer

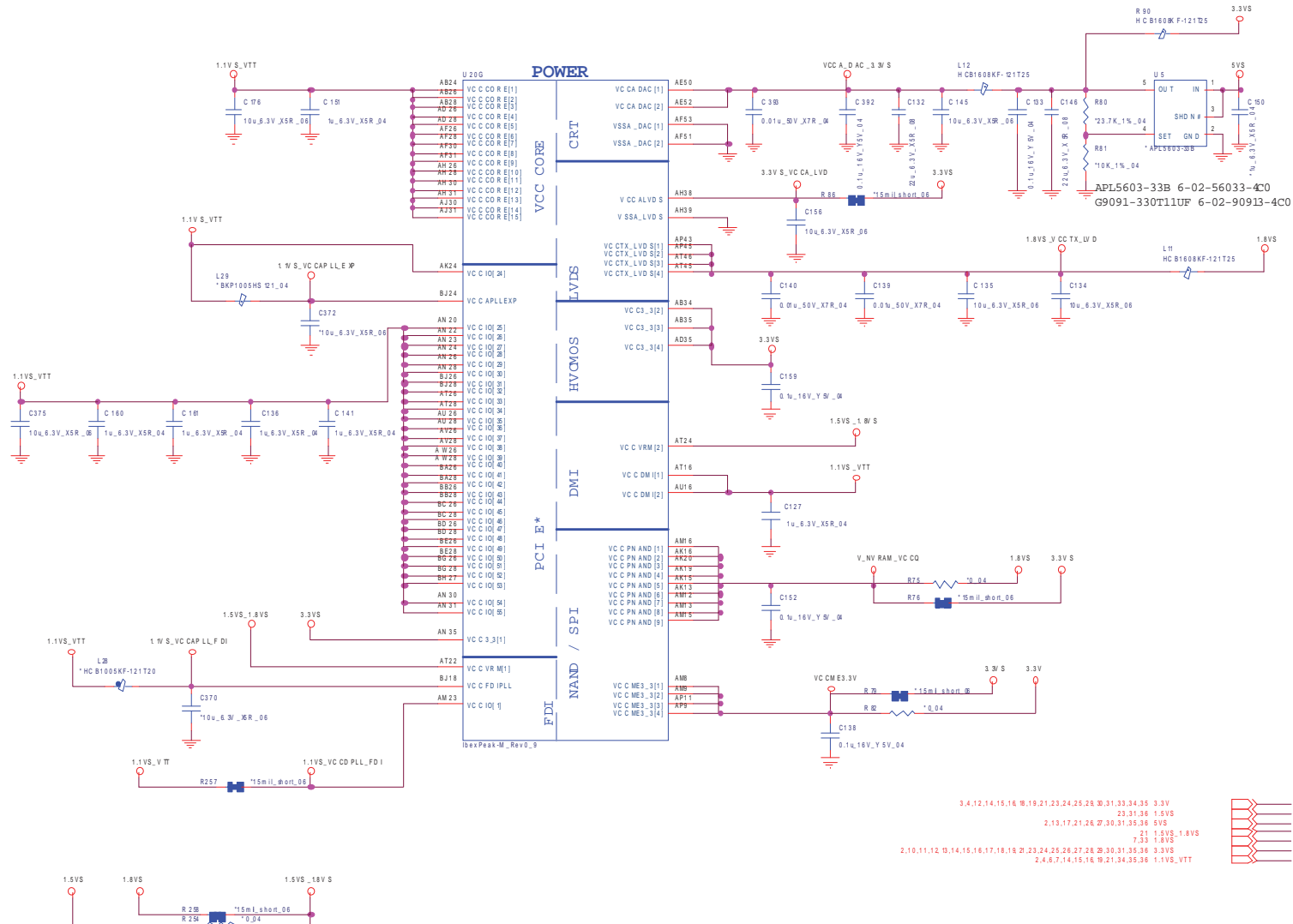


IBEXPEAK - M (PCI,USB,NVRAM)

Sheet 18 of 42
IBEXPEAK - M 5/9

IBEXPEAK - M 7/9

IBEXPEAK - M (POWER)

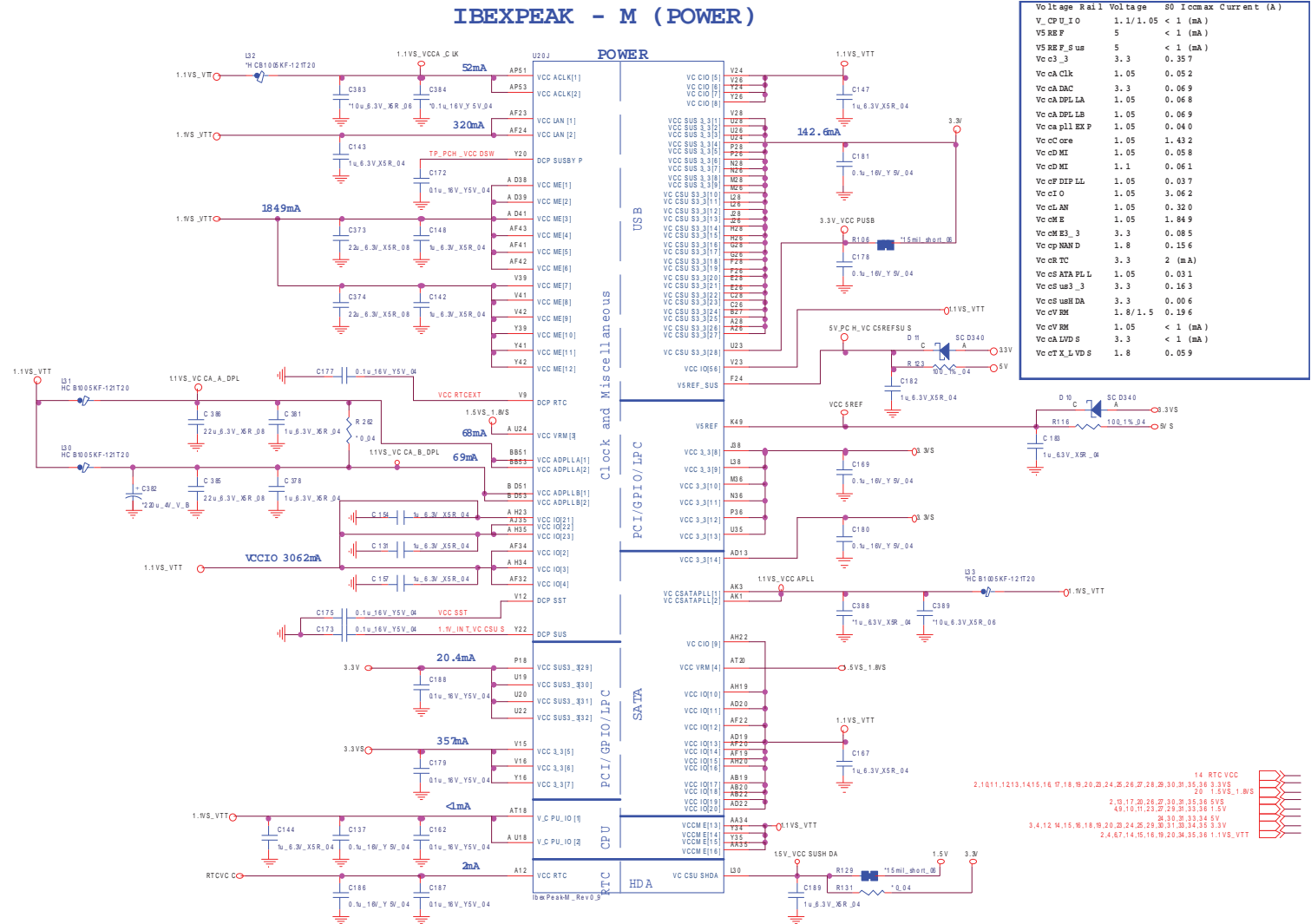


Sheet 20 of 42
IBEXPEAK - M 7/9

Schematic Diagrams

IBEXPEAK - M 8/9

Sheet 21 of 42
IBEXPEAK - M 8/9

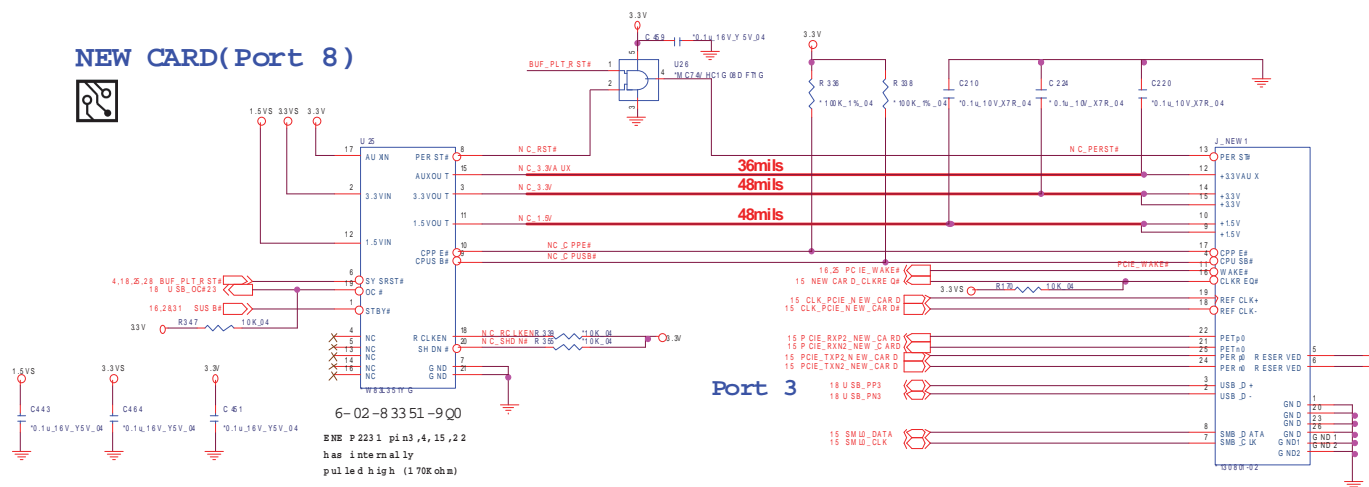


IBEXPEAK - M 9/9

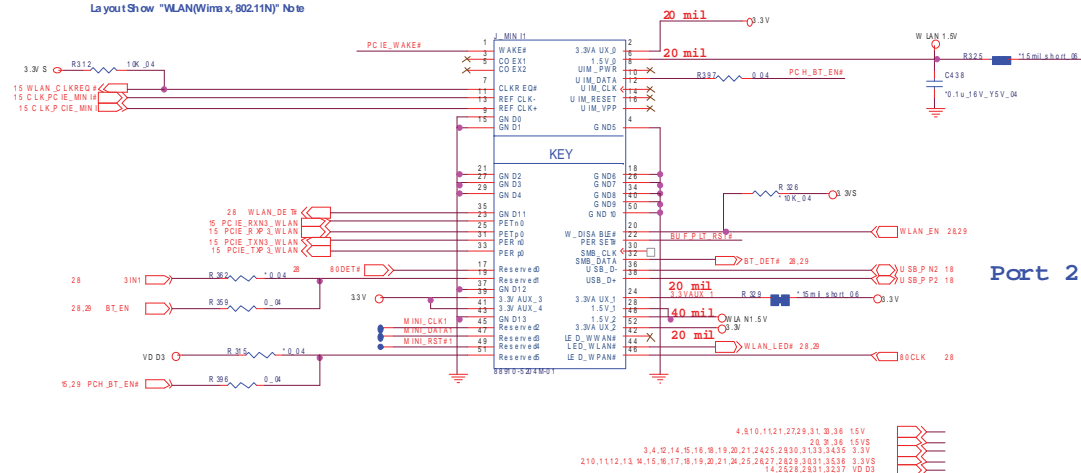
IBEXPEAK - M (GND)

Sheet 22 of 42
IBEXPEAK - M 9/9

Sheet 23 of 42
New Card, Mini PCIE



La yout Show "WLAN(Wirless 802.11N)" Note

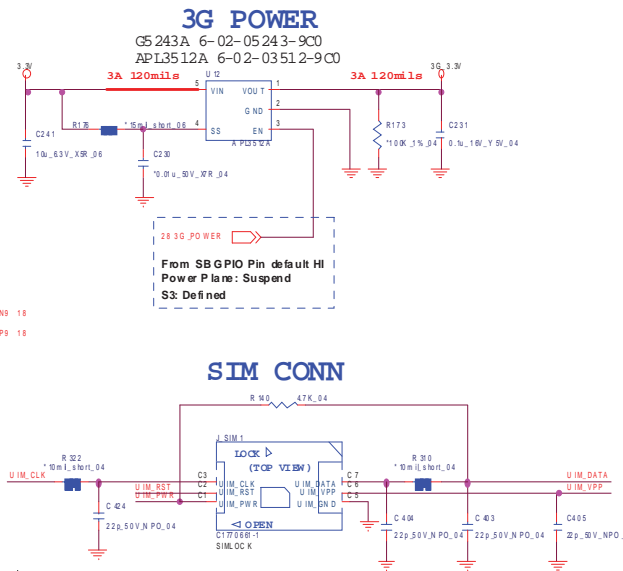
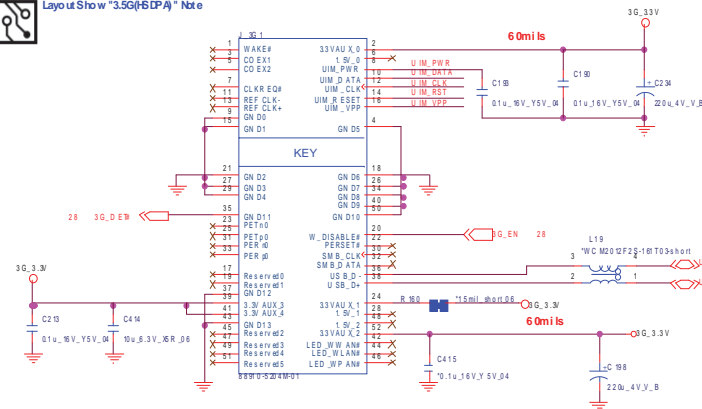


3G, CCD, TPM

MINI CARD 3G(Port 6)



Layout Show "3G/CCD/TPM" Note



Sheet 24 of 42
3G, CCD, TPM

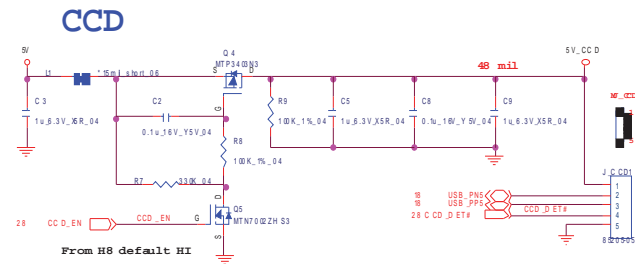
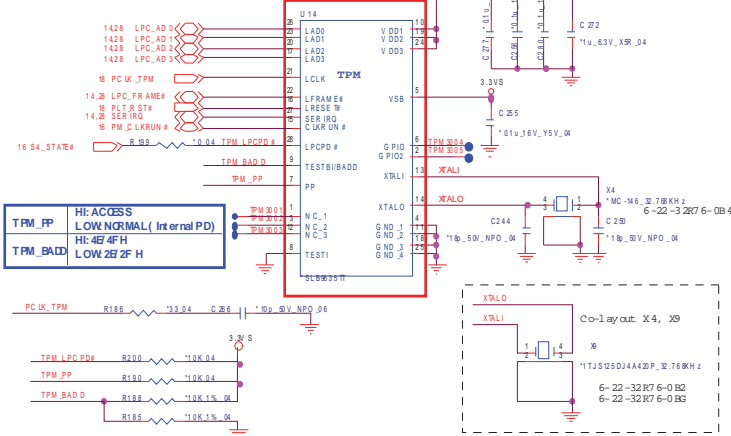
B.Schematic Diagrams

TPM 1.2

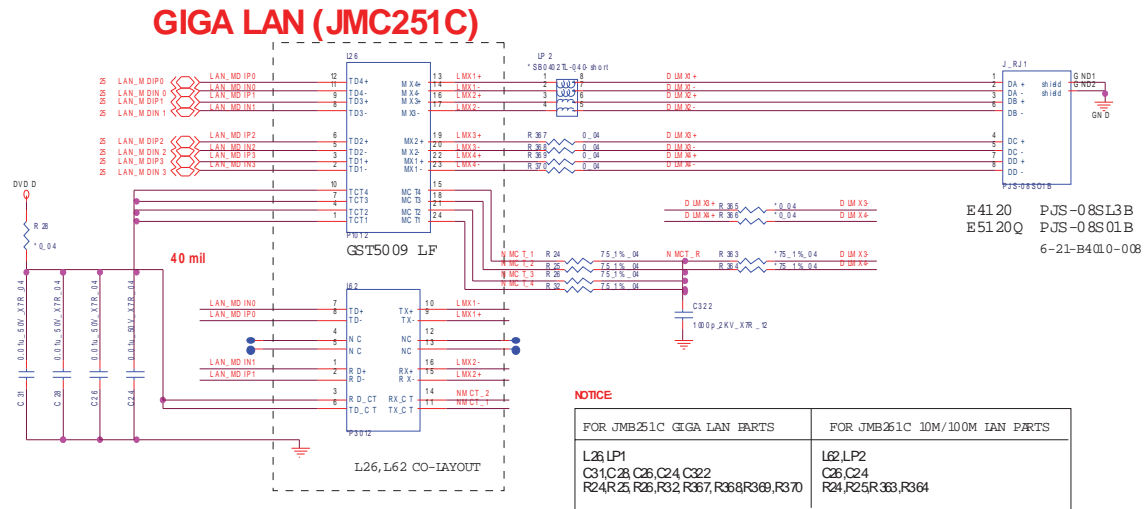
Assesed before entering S3

LPC reset timing:

LPCPD# inactive to LRS# inactive 32-96ns

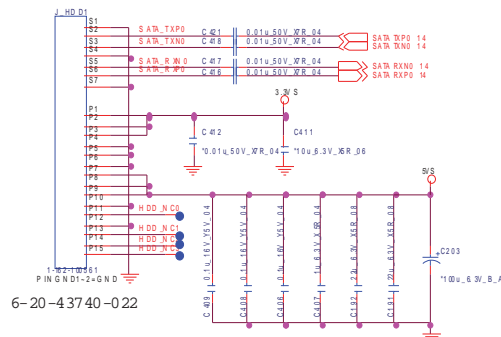


LAN (JMC251C), SATA HDD, ODD

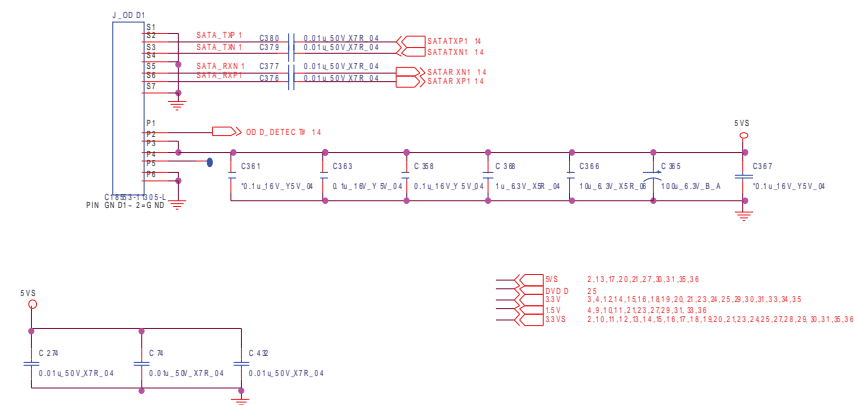


Sheet 26 of 42
LAN (JMC251C),
SATA HDD, ODD

SATA HDD

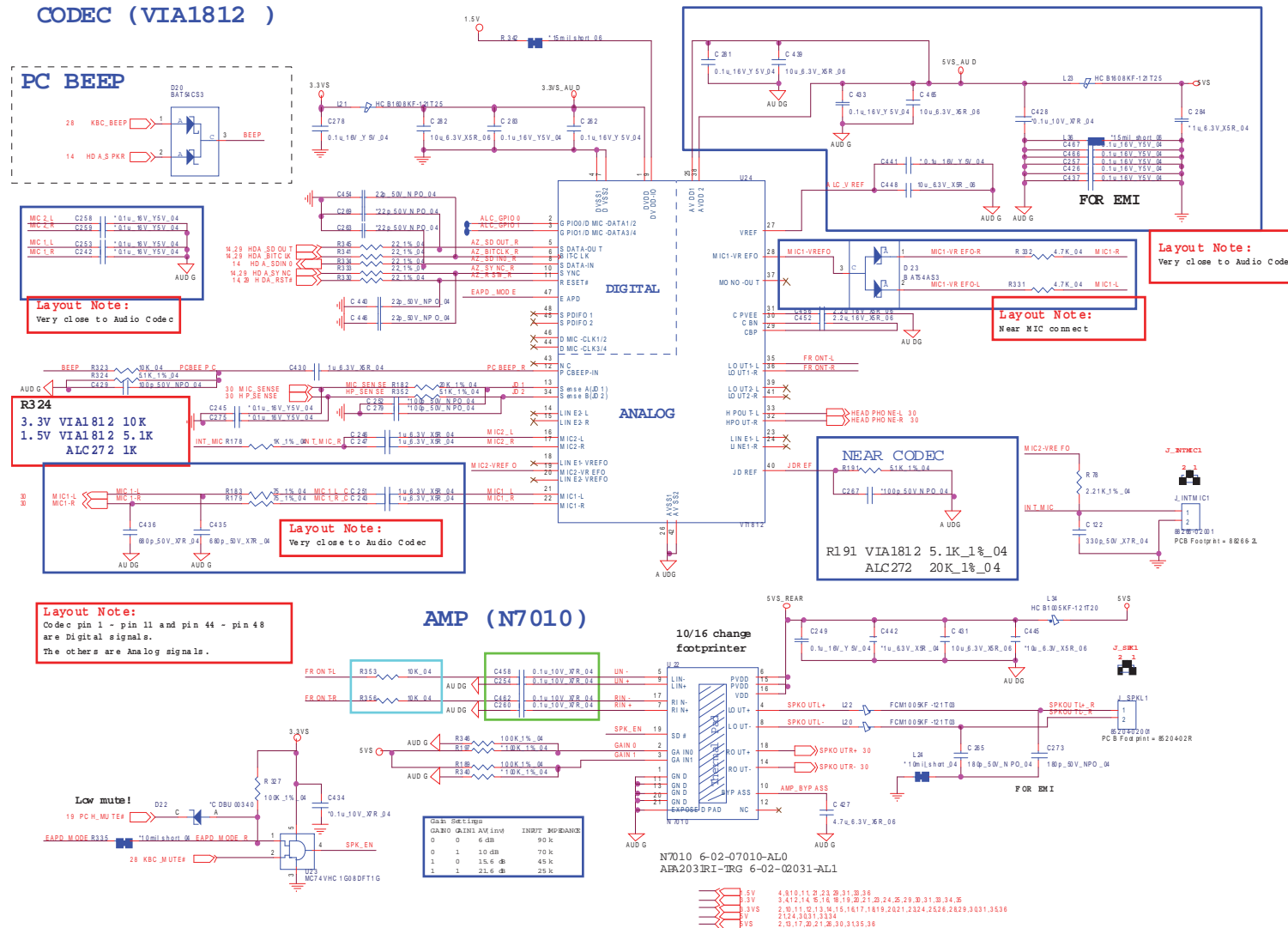


SATA ODD

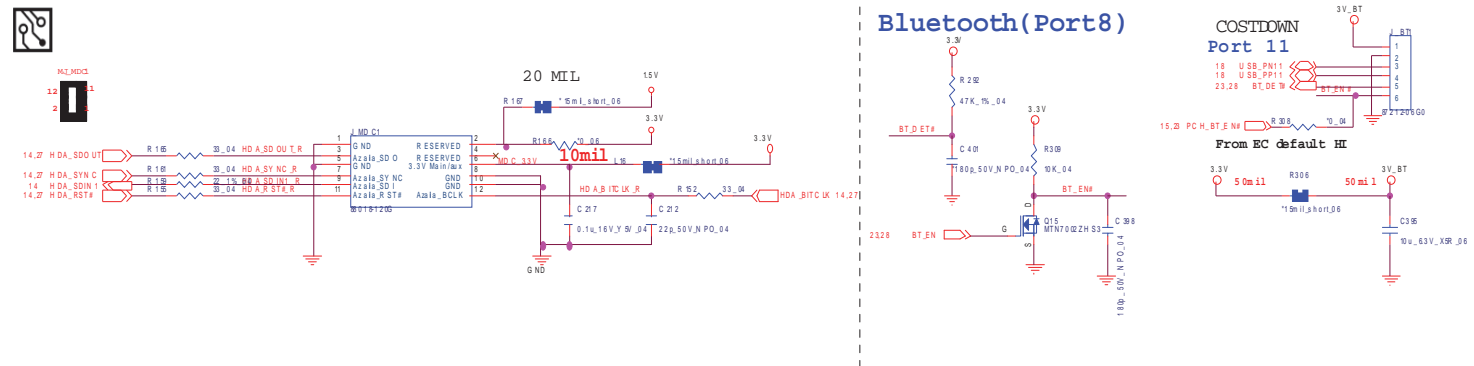


<http://hobi-elektronika.net>

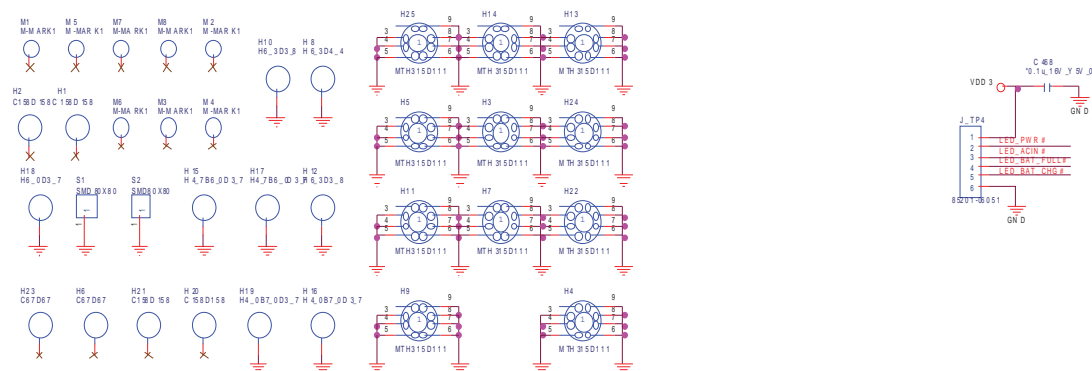
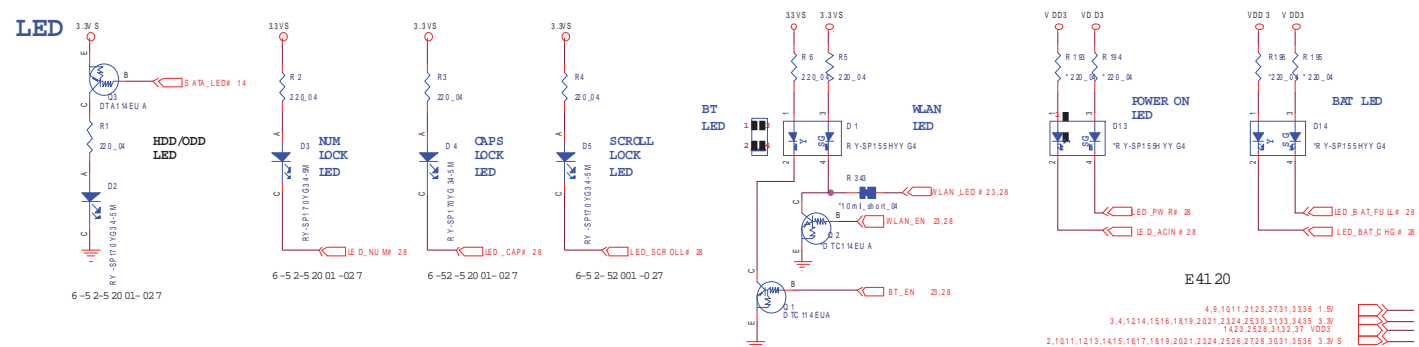
CODEC (VIA1812)



LED, MDC, BT

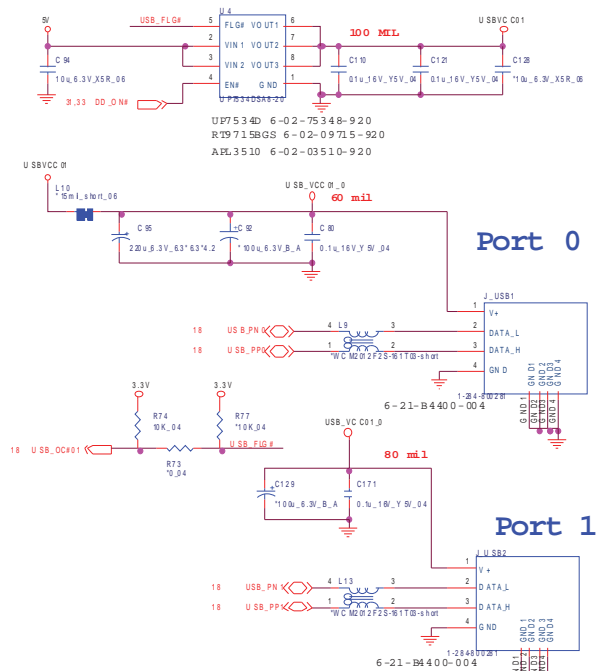


Sheet 29 of 42
LED, MDC, BT

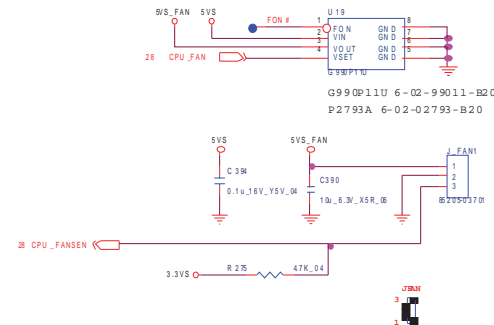


USB, Fan, TP, Multi-Conn

USB PORT*2(Port 0,Port1)

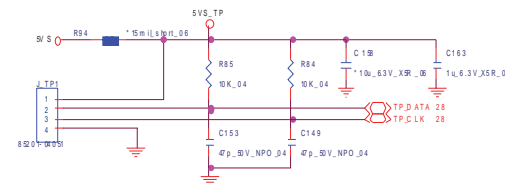


FAN CONTROL



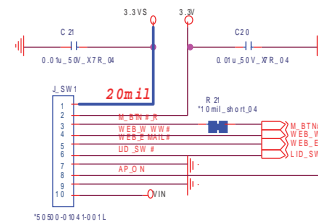
CLICK CONN.

FOR CLICK BOARD

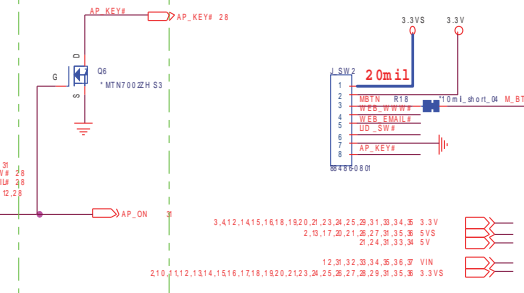


POWER SWITCH CONN.

FOR POWER SWITCH BOARD

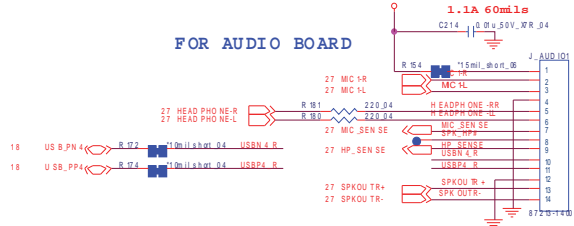


CLOSE TO J_SW1



Audio/B CONN.(Port 2)

FOR AUDIO BOARD

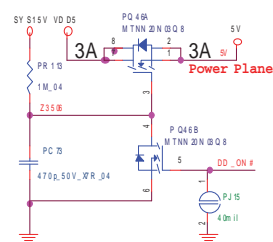


If system has APON function, uses J_SW1
If system has no APON function, uses J_SW2

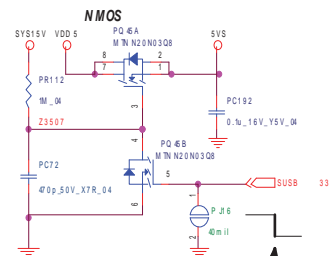
Sheet 30 of 42
USB, Fan, TP,
Multi-Conn

B.Schematic Diagrams

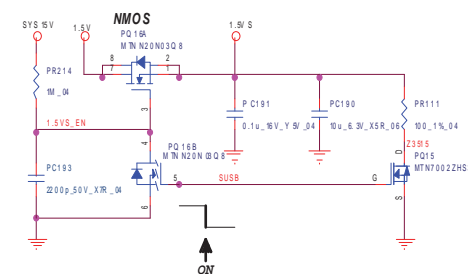
5V



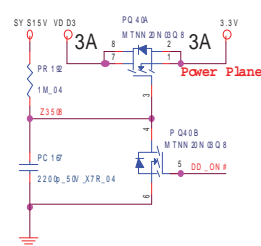
5VS



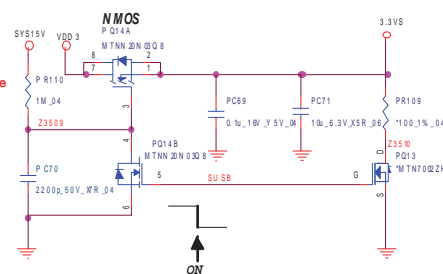
1.5VS



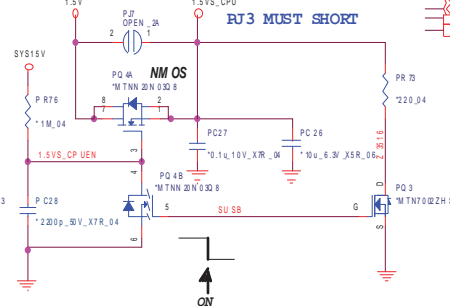
3.3V



3.3VS



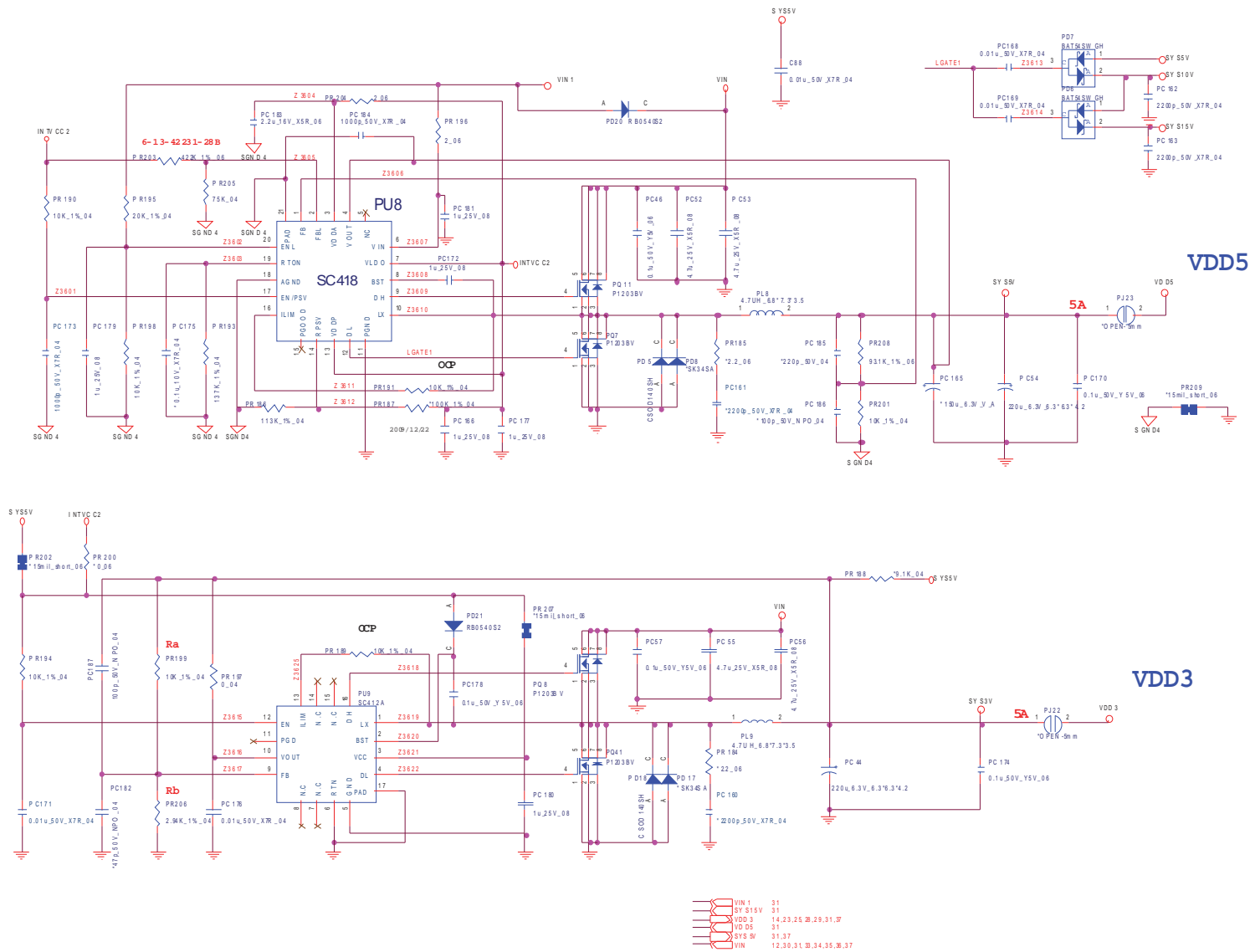
1.5VS_CPU



1A	37
1.SVS_CPU	4.7
1.5V	4.8,10,11,21,2327,29,36
1.SVS	20.2336
SV SW	32.37
SV	21,240,33,34
2.3V	2,4,12,14,15,1618,19,20,21,23,24,25,28,30,33,435
2IN 1	32
2IN	12,3032,33,3435,36,37
VD D5	
VD D3	14,2325,28,2832,37
VD S	2,10,11,12,13,14,15,1617,18,1920,21,22,24,25,27,2829,30,36
SV SW	32
SV S	2,13,17,20,21,27,27,3035,36

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Power 3.3V/5V

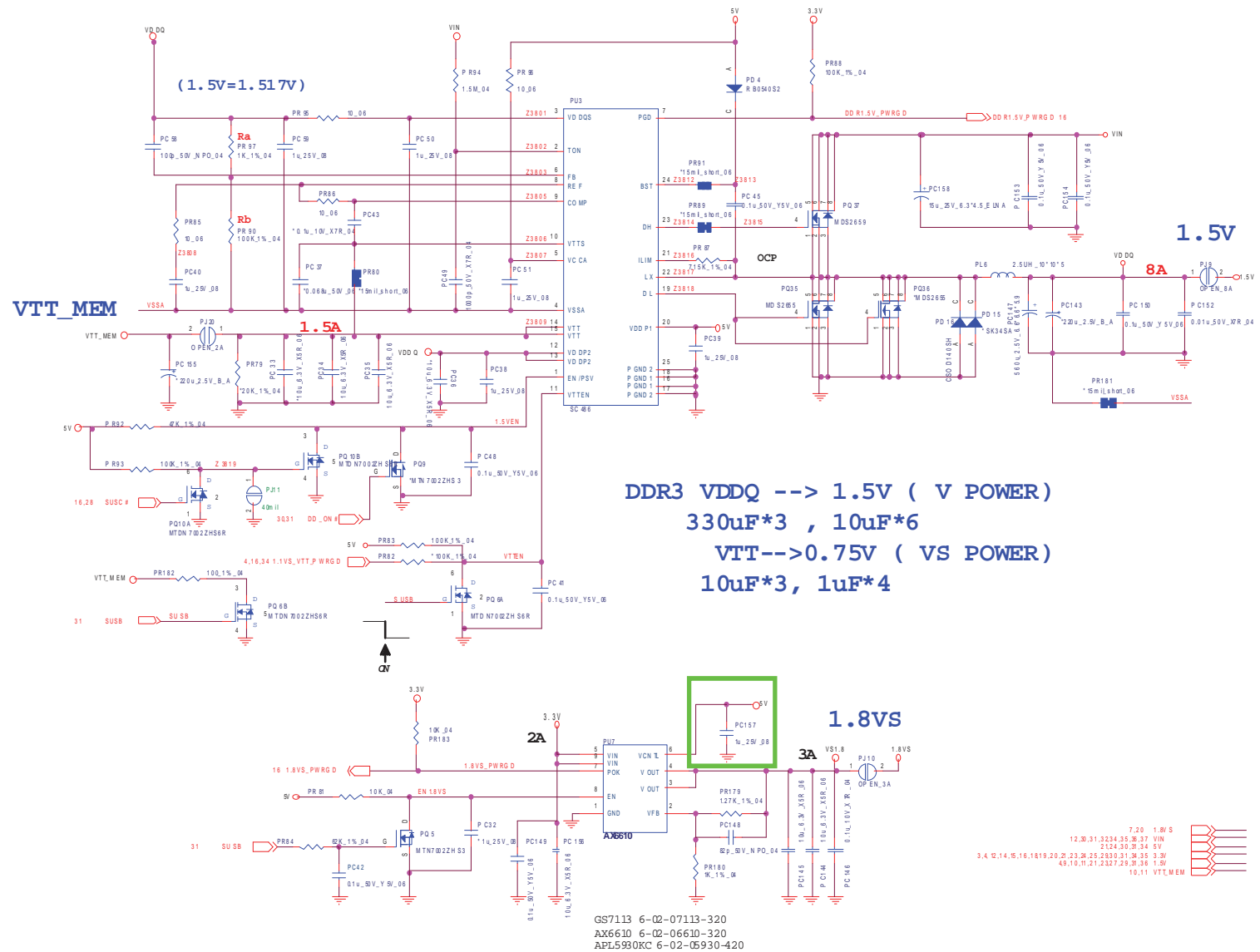


<http://hobi-elektronika.net>

Schematic Diagrams

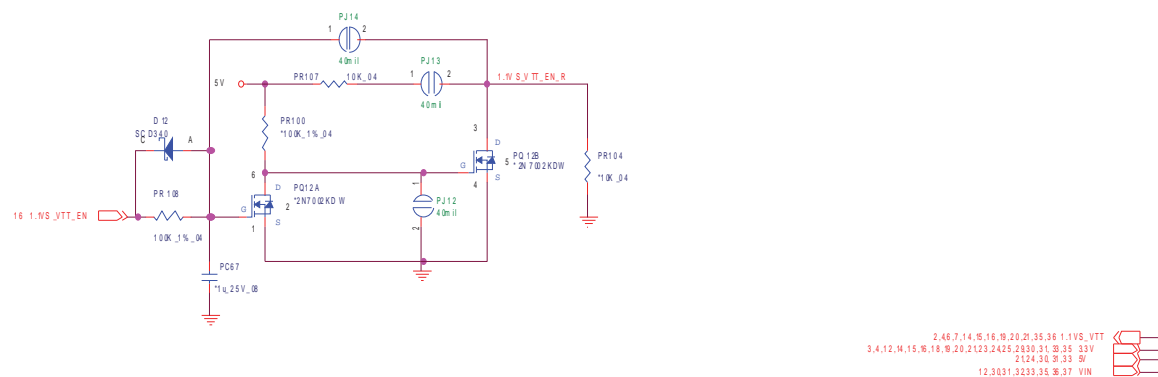
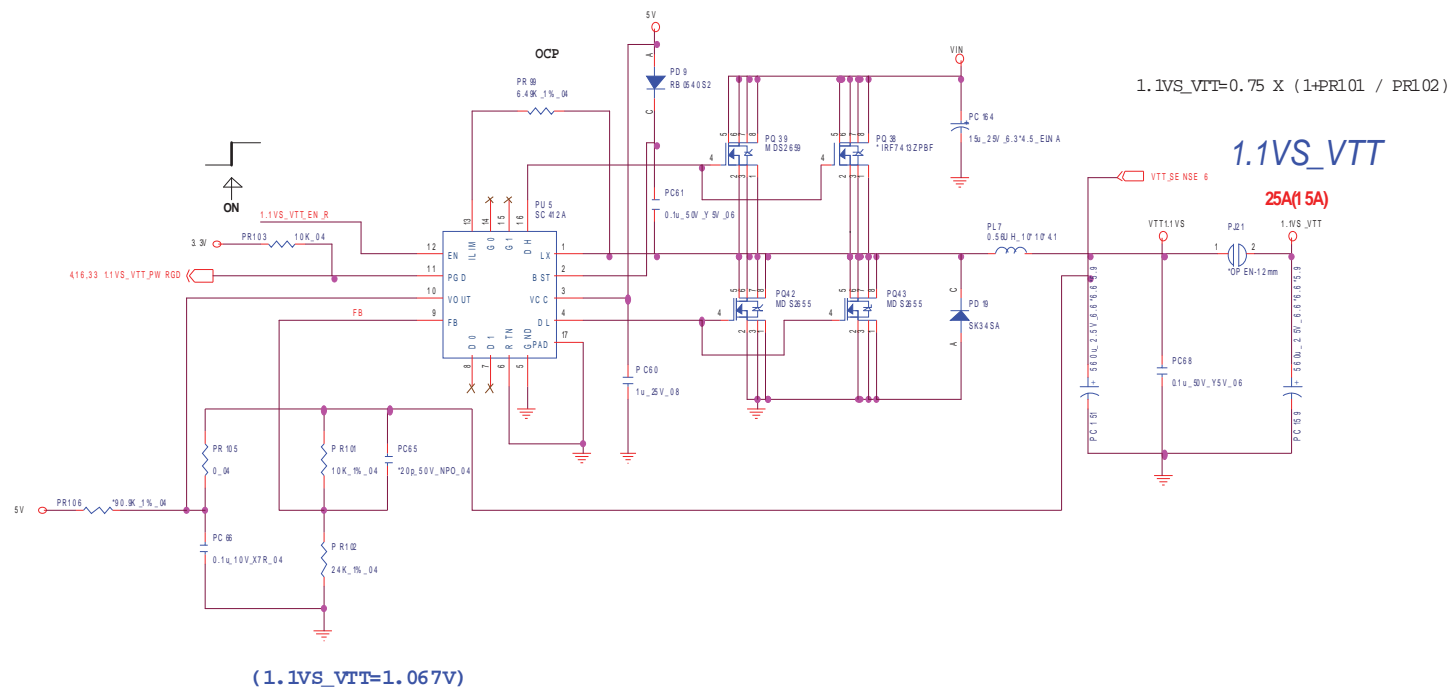
Power 1.5V/0.75V, 1.8VS

Sheet 33 of 42
Power 1.5V/0.75V,
1.8VS

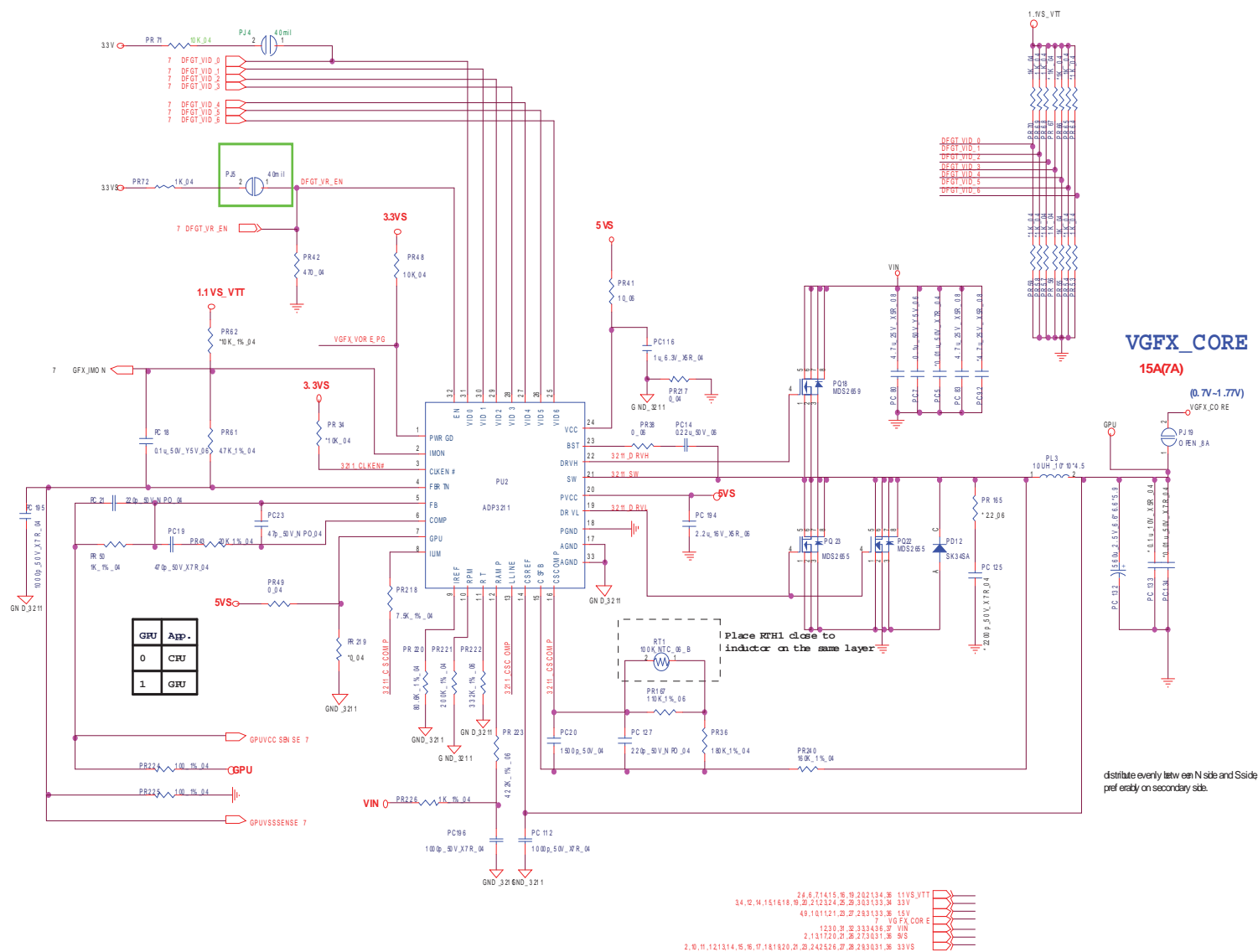


<http://hobi-elektronika.net>

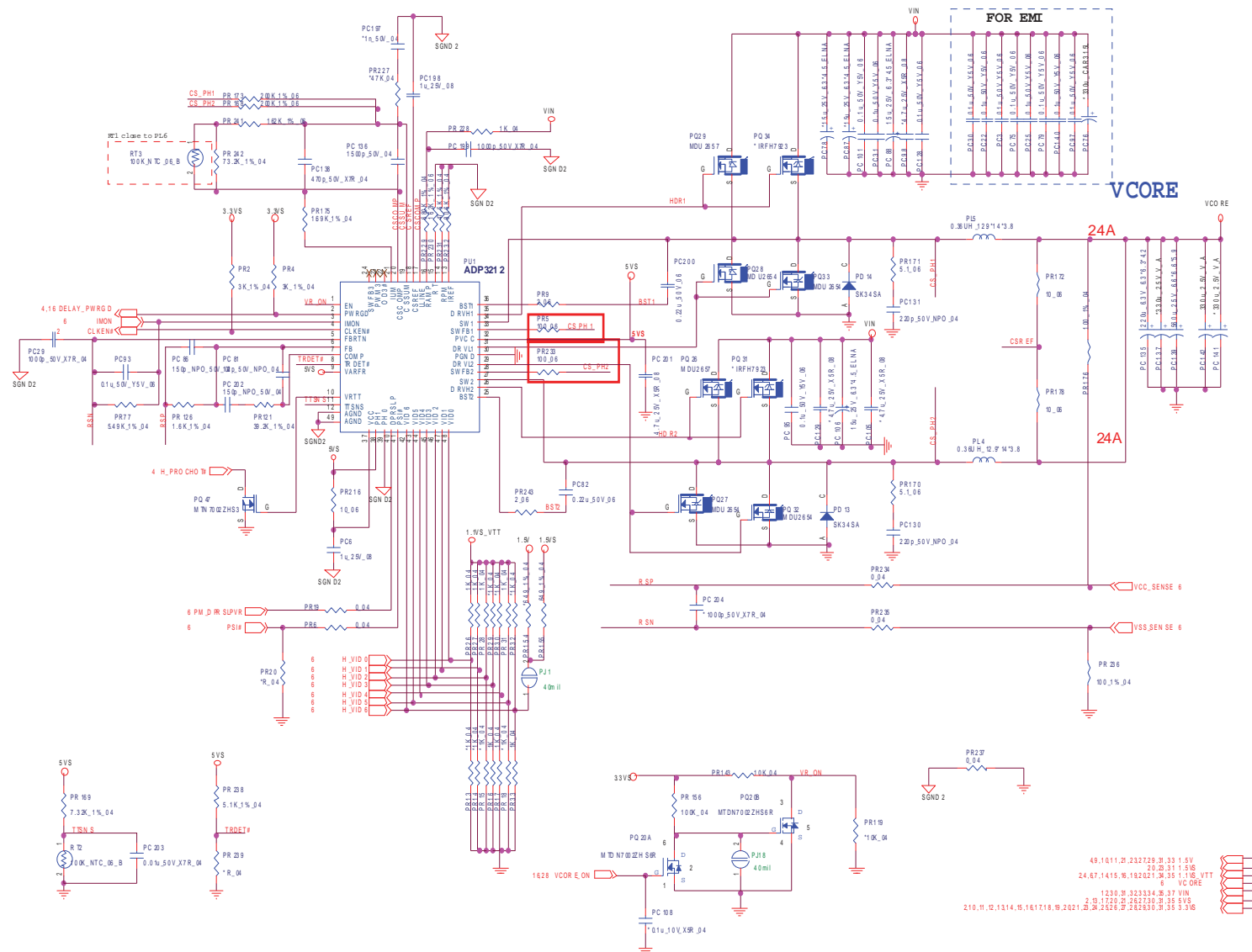
Power 1.1VS_VTT



Sheet 35 of 42
Power VGFX_Core



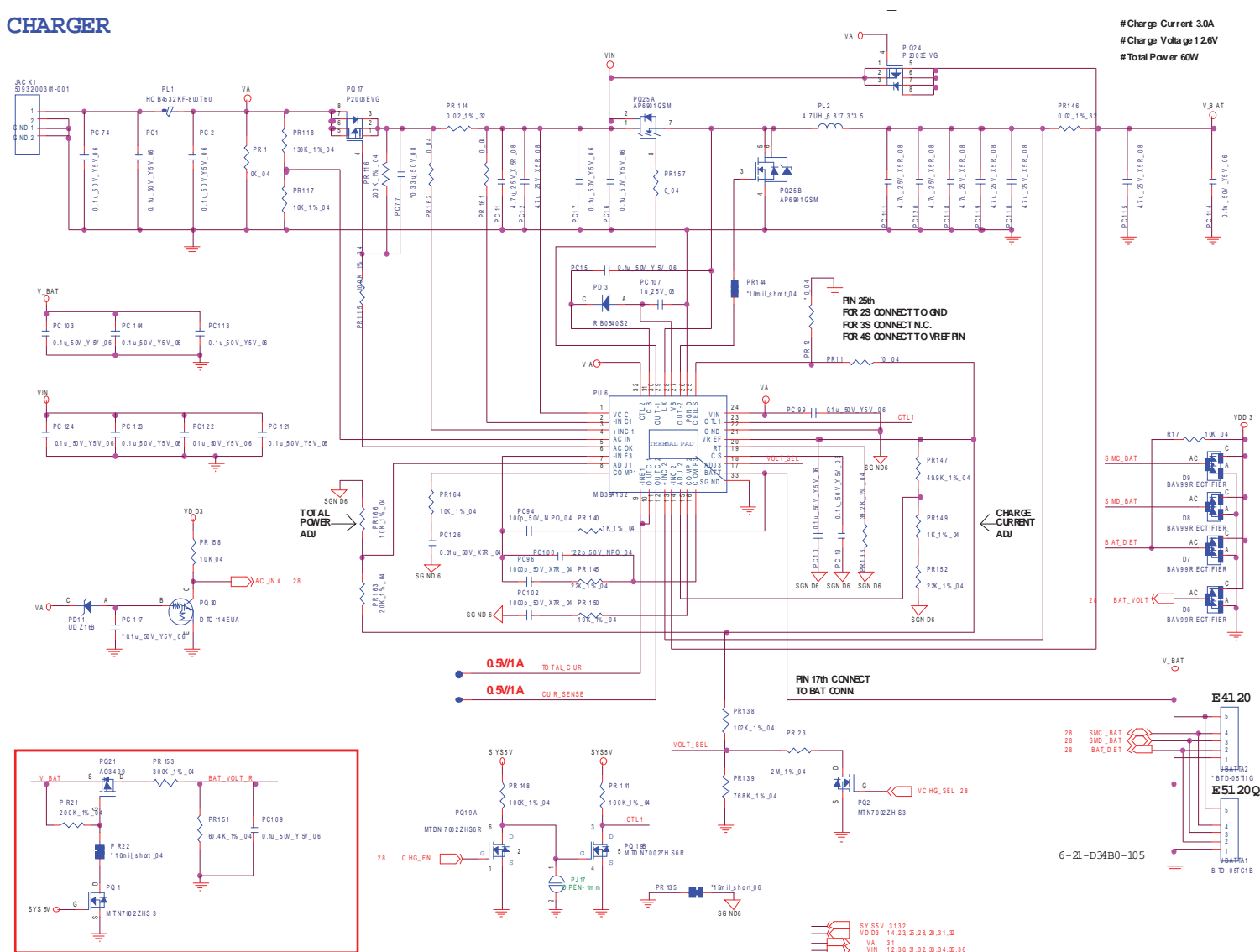
V-Core


<http://hobi-elektronika.net>

Sheet 36 of 42
V-Core

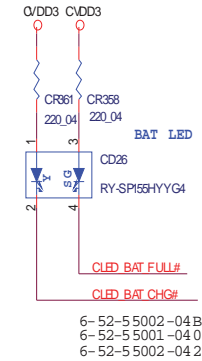
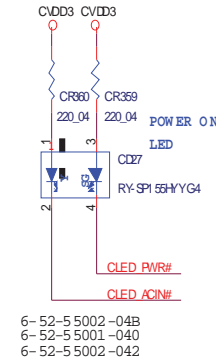
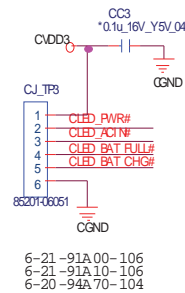
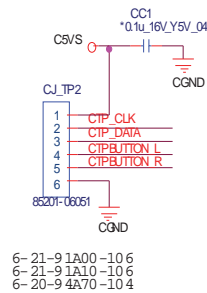
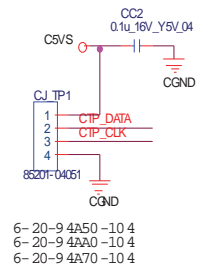
CHARGER

Charge Current 3.0A
Charge Voltage 12.6V
Total Power 60W



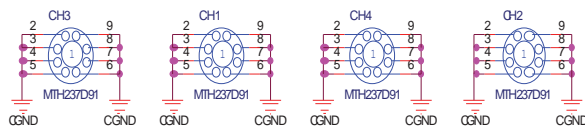
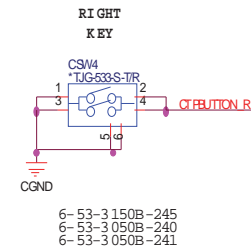
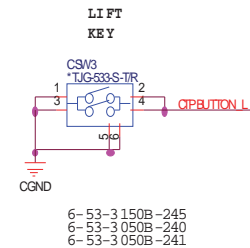
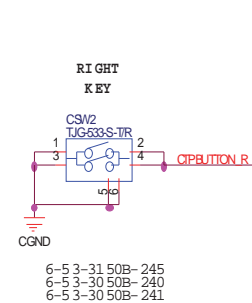
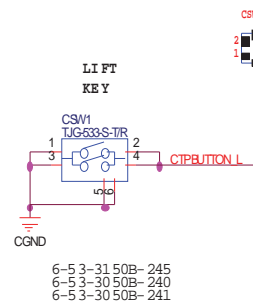
Click Board

CLICK BOARD



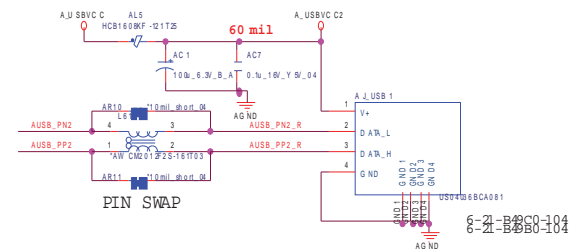
E5120Q

Sheet 38 of 42
Click Board



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USB PORT

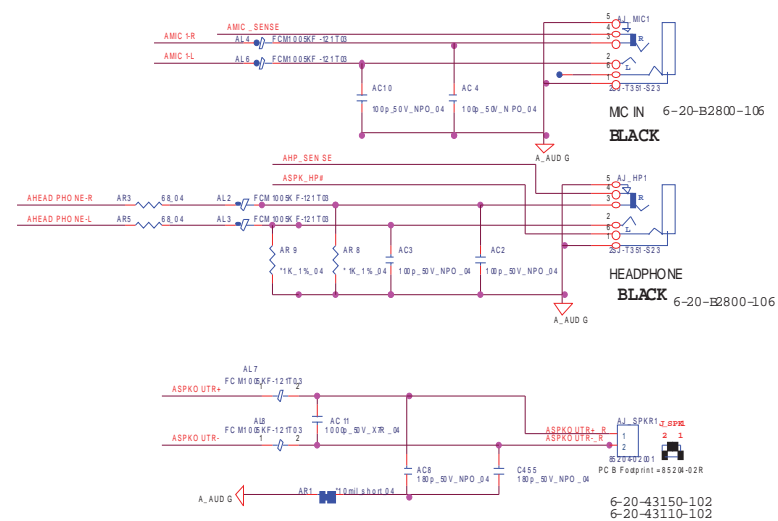
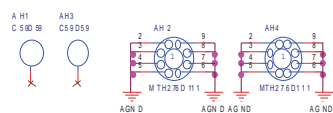
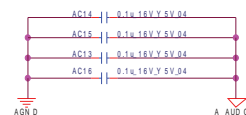


AUDIO JACK

Pin 14 connection diagram for the 6-20-5300-114 module. The diagram shows a 14-pin connector with pins 1 through 14. The connections are as follows:

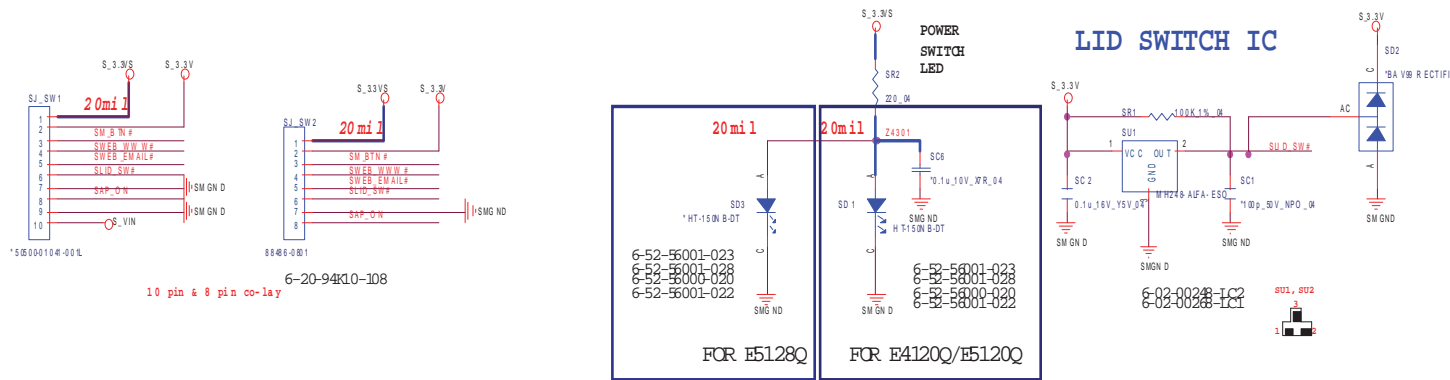
- Pin 1: A_MIC1-R
- Pin 2: A_MIC1-L
- Pin 3: A_HEAD_PHONE-R
- Pin 4: A_HEAD_PHONE-L
- Pin 5: A_MIC_SENSE
- Pin 6: A_SPK1_TYP
- Pin 7: A_HP_SENSE
- Pin 8: A_USB_P1N2
- Pin 9: A_USB_PP2
- Pin 10: A_SPK0U-R
- Pin 11: A_SPK0U-L
- Pin 12: A_AU_D0G
- Pin 13: A_AGND
- Pin 14: A_AU_DIO1

A 5V supply is connected to pin 1. A ground symbol is connected to pin 13.



Power Switch & LED Board

POWER SW & LED & HOT KEY



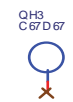
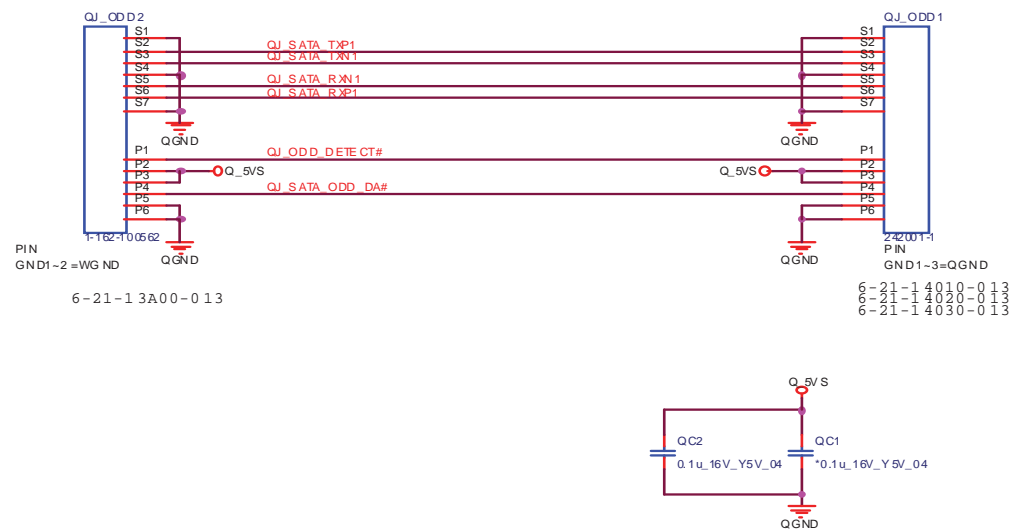
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Power Switch &
LED Board

Schematic Diagrams

External ODD Board

ODD BOARD FOR E5120Q

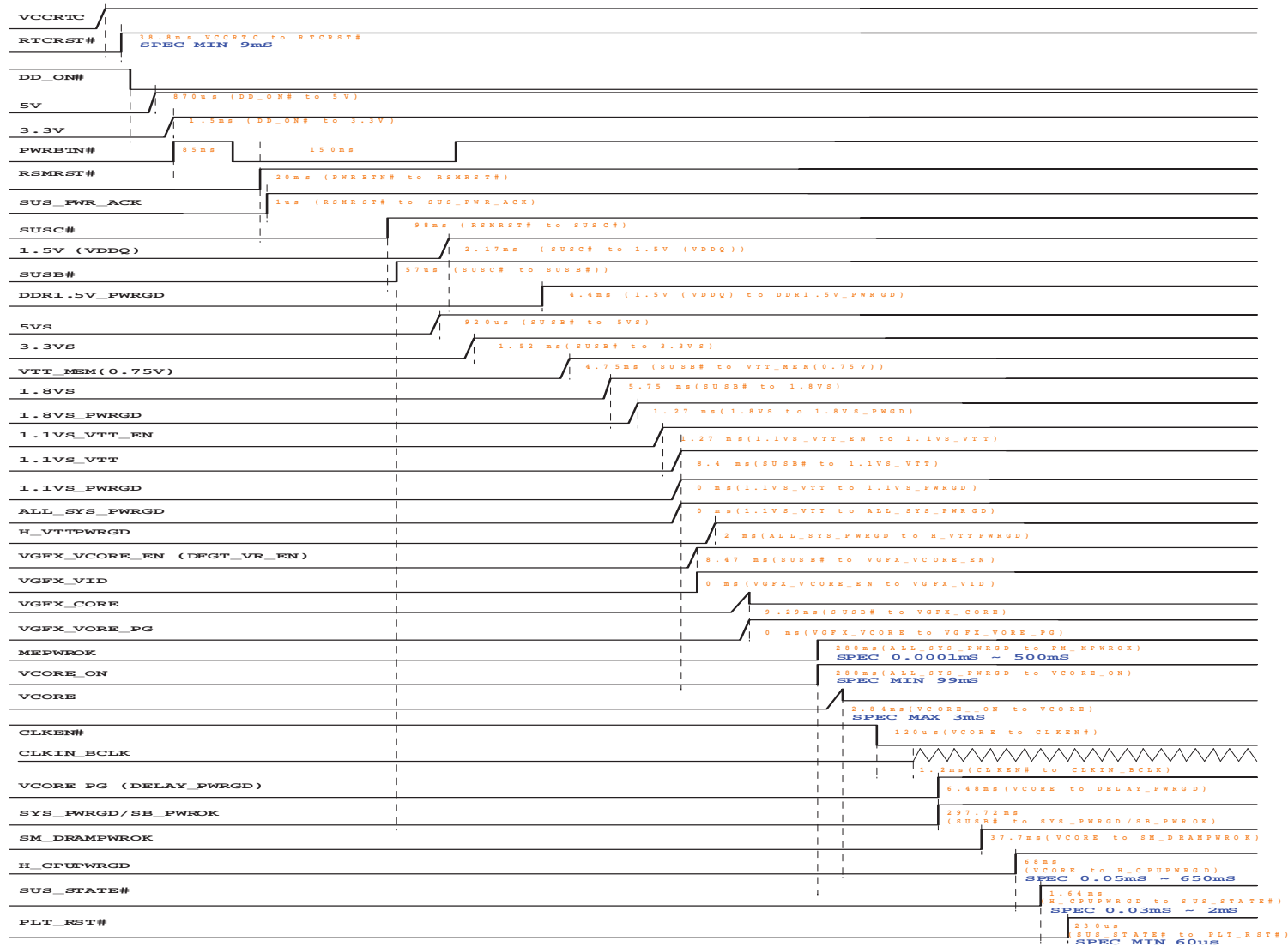
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External ODD
Board



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Sequence

E5120Q D02 POWER SEQUENCE


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Sequence

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.

<http://hobi-elektronika.net>



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.