


WWW.ROSEFIX.COM **E440**
NM-A151 Rev1.0 Schematic

*Intel Haswell Processor with DDRIII + Lynx point PCH
nVIDIA N14P-GV2/ N14M-GL
2013-07-11 Rev 1.0*

| | | | | | | | |
|--|------------------------------|-----------------|------------|--------|-------------------------|-------|---|
| Security Classification | LC Future Center Secret Data | | | Title | Cover Page | |  |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | Size | Document Number | Rev | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Custom | E440 NM-A151 | 1.0 | |
| | | | | Date: | Thursday, July 11, 2013 | Sheet | 1 of 57 |

Voltage Rails (O --> Means ON , X --> Means OFF)

| Power Plane | State | B+ | +3VALW | +5VALW | +1.5V | +5VS +3VS +1.5VS +VCCSA +V1.5S_VCCP +CPU_CORE +VGA_CORE +GFX_CORE +1.8VS +1.05VS +0.75VS +3.3VS_VGA +1.5VS_VGA +1.05VS_VGA |
|--------------------------------|-------|----|--------|--------|-------|---|
| S0 | O | O | O | O | O | O |
| S3 | O | O | O | O | X | X |
| S5 S4/AC Only | O | O | O | X | X | X |
| S5 S4 Battery only | O | X | X | X | X | X |
| S5 S4 AC & Battery don't exist | X | X | X | X | X | X |

| STATE | SIGNAL | SLP_S1# | SLP_S3# | SLP_S4# | SLP_S5# | +VALW | +V | +VS | Clock |
|-----------------------|--------|---------|---------|---------|---------|-------|-----|-----|-------|
| Full ON | | HIGH | HIGH | HIGH | HIGH | ON | ON | ON | ON |
| S1 (Power On Suspend) | | LOW | HIGH | HIGH | HIGH | ON | ON | ON | LOW |
| S3 (Suspend to RAM) | | LOW | LOW | HIGH | HIGH | ON | ON | OFF | OFF |
| S4 (Suspend to Disk) | | LOW | LOW | LOW | HIGH | ON | OFF | OFF | OFF |
| S5 (Soft OFF) | | LOW | LOW | LOW | LOW | ON | OFF | OFF | OFF |

USB Port Table

| USB 2.0 | USB 3.0 | Port | 4 External USB Port |
|---------|---------|------|---------------------|
| | | | Camera |
| | XHCCI | 1 | 0 |
| | | 2 | 1 |
| | | 3 | 2 |
| | | 4 | 3 |
| | EHCI1 | 5 | 4 |
| | | 6 | 5 |
| | | 7 | 6 |
| | | 8 | 7 |
| | | 9 | 8 |
| | | 10 | 9 |
| | | 11 | 10 |
| | | 12 | 11 |
| | | 13 | 12 |
| | EHCI2 | | 13 |
| | | | 14 |

BOM Structure Table

| BOM Structure | BTO Item |
|---------------|-------------------------------------|
| HDMI@ | HDMI part |
| CHG@ | USB charger part |
| NOCHG@ | No USB charger part |
| CMOS@ | CMOS sensor support part |
| 8171@ | QCA8171 LAN part |
| 8171S@ | QCA8171 LAN surge part |
| SURGE@ | QCA8171&8172 LAN surge part |
| X76@ | X76 Level part for VRAM |
| GC6@ | NV CG6 support part |
| NOGC6@ | |
| AOAC@ | AOAC support part |
| KBL@ | K/B Light part |
| ME@ | ME part |
| SLI@ | For SLI function part |
| DS3@ | Deep S3 support part |
| S3@ | For S3 function part |
| GT@ | NV chip part |
| @ | Unpop |
| EDP@ | Support EDP panel function |
| daul@ | Support daul channel panel function |

SMBUS Control Table

| | SOURCE | Main VGA | 2nd VGA | BATT | IT8580E | SODIMM | WLAN WiMAX | Thermal Sensor | PCH | CP Module |
|--------------------------|-------------------|-----------|-----------|-------------|---------|-----------|------------|----------------|--------------|-----------|
| EC_SMB_CK1 EC_SMB_DA1 | IT8580E +3VALW | X | X | V +3VALW | X | X | X | X | X | X |
| EC_SMB_CK2 EC_SMB_DA2 | IT8580E +3VS | V +3VS | V +3VS | X | X | X | X | V +3VS | V +3V_PCH | X |
| PM_SMBCLK PM_SMBDATA | PCH +3V_PCH | X | X | X | X | V +3VS | V +3VS | X | V +3V_PCH | V +3VS |

PCIe PORT LIST

| Port | Device |
|------|-------------|
| 1 | LAN |
| 2 | WLAN |
| 3 | |
| 4 | Card Reader |
| 5 | |
| 6 | |
| 7 | |
| 8 | |

EC SM Bus1 address

| Device | Address |
|---------------|-------------|
| Smart Battery | 0001 011X b |

EC SM Bus2 address

| Device | Address |
|--------------------------|------------|
| Thermal Sensor EMC1403-2 | 1001_101xb |
| Master VGA | 0x9E |
| Slave VGA | 0x9C |

PCH SM Bus address

| Device | Address |
|-----------|------------|
| DDR DIMM0 | 1001 000Xb |
| DDR DIMM2 | 1001 010Xb |



| Security Classification | LC Future Center Secret Data | |
|---|------------------------------|----------------------------|
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF LC FUTURE CENTER DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

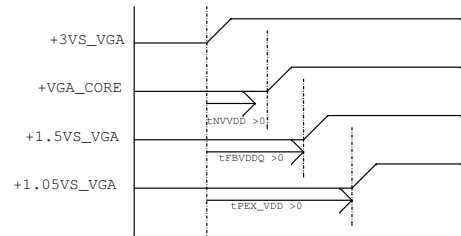
| Title | Notes List |
|-------------------------------|---------------|
| | |
| Date: Thursday, July 11, 2013 | Sheet 3 of 57 |

E440 NW-A151

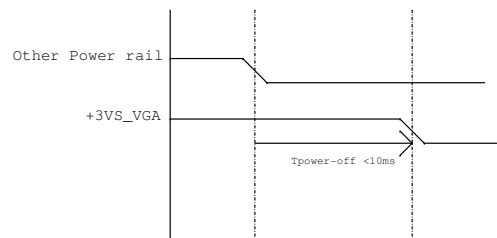
Rev 1.0

VGA and GDDR5 Voltage Rails (N13Px GPIO)

| GPIO | I/O | ACTIVE | Function Description |
|--------|-----|--------|---------------------------------------|
| GPIO0 | OUT | - | GPU VID4 |
| GPIO1 | OUT | - | GPU VID3 |
| GPIO2 | OUT | - | VGA_BL_PWM |
| GPIO3 | OUT | - | VGA_ENVDD |
| GPIO4 | OUT | - | VGA_ENBKL |
| GPIO5 | OUT | - | GPU VID1 |
| GPIO6 | OUT | - | GPU VID2 |
| GPIO7 | OUT | - | DPRSLPVR_VGA |
| GPIO8 | I/O | - | Thermal Catastrophic Over Temperature |
| GPIO9 | OUT | - | GPIO9 |
| GPIO10 | OUT | - | Memory VREF Control |
| GPIO11 | OUT | - | GPU VID0 |
| GPIO12 | IN | | AC Power Detect Input (10K pull High) |
| GPIO13 | OUT | - | GPU VID5 |
| GPIO14 | OUT | - | FB_CLAMP_TOGGLE_REQ# |
| GPIO15 | IN | N/A | (100K pull low) |
| GPIO16 | OUT | - | FRMLCK# |
| GPIO17 | IN | N/A | |
| GPIO18 | IN | - | dGPU_HDMI_HP |
| GPIO19 | IN | - | HPD_IRQ |



1. all power rail ramp up time should be larger than 40us



1. all GPU power rails should be turned off within 10ms
2. Optimus system VDD33 avoids drop down earlier than NVDD and FBVDDQ

Performance Mode P0 TDP at Tj = 102 C* (GDDR5)

| Products | GPU (4) | Mem (1,5) | NVCLK /MCLK | NVVDD | | | FBVDD (1.35V) | | FBVDDQ (GPU+Mem) (1.35V) | | PCI Express (1.05V) (6) | | I/O and PLLVDD (1.8V) | | I/O and PLLVDD (1.05V) | | Other (3.3V) | |
|-----------------------|---------|-----------|-------------|-------|-----|-----|---------------|-----|--------------------------|-----|-------------------------|-----|-----------------------|-----|------------------------|-----|--------------|-----|
| | (W) | (W) | (MHz) | (V) | (A) | (W) | (A) | (W) | (A) | (W) | (mA) | (W) | (mA) | (W) | (mA) | (W) | (mA) | (W) |
| N13X 128bit 1GB GDDR5 | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD | TBD |

| Physical Strapping pin | Power Rail | Logical Strapping Bit3 | Logical Strapping Bit2 | Logical Strapping Bit1 | Logical Strapping Bit0 |
|------------------------|------------|------------------------|------------------------|------------------------|------------------------|
| ROM_SCLK | +3VS_VGA | PCI_DEVID[4] | SUB_VENDOR | SLOT_CLK_CFG | PEX_PLL_EN_TERM |
| ROM_SI | +3VS_VGA | RAM_CFG[3] | RAM_CFG[2] | RAM_CFG[1] | RAM_CFG[0] |
| ROM_SO | +3VS_VGA | FB[1] | FB[0] | SMB_ALT_ADDR | VGA_DEVICE |
| STRAP0 | +3VS_VGA | USER[3] | USER[2] | USER[1] | USER[0] |
| STRAP1 | +3VS_VGA | 3GIO_PAD_CFG_ADR[3] | 3GIO_PAD_CFG_ADR[2] | 3GIO_PAD_CFG_ADR[1] | 3GIO_PAD_CFG_ADR[0] |
| STRAP2 | +3VS_VGA | PCI_DEVID[3] | PCI_DEVID[2] | PCI_DEVID[1] | PCI_DEVID[0] |
| STRAP3 | +3VS_VGA | SOR3_EXPOSED | SOR2_EXPOSED | SOR1_EXPOSED | SOR0_EXPOSED |
| STRAP4 | +3VS_VGA | RESERVED | PCIE_SPEED_CHANGE_GEN3 | PCIE_MAX_SPEED | DP_PLL_VDD33V |

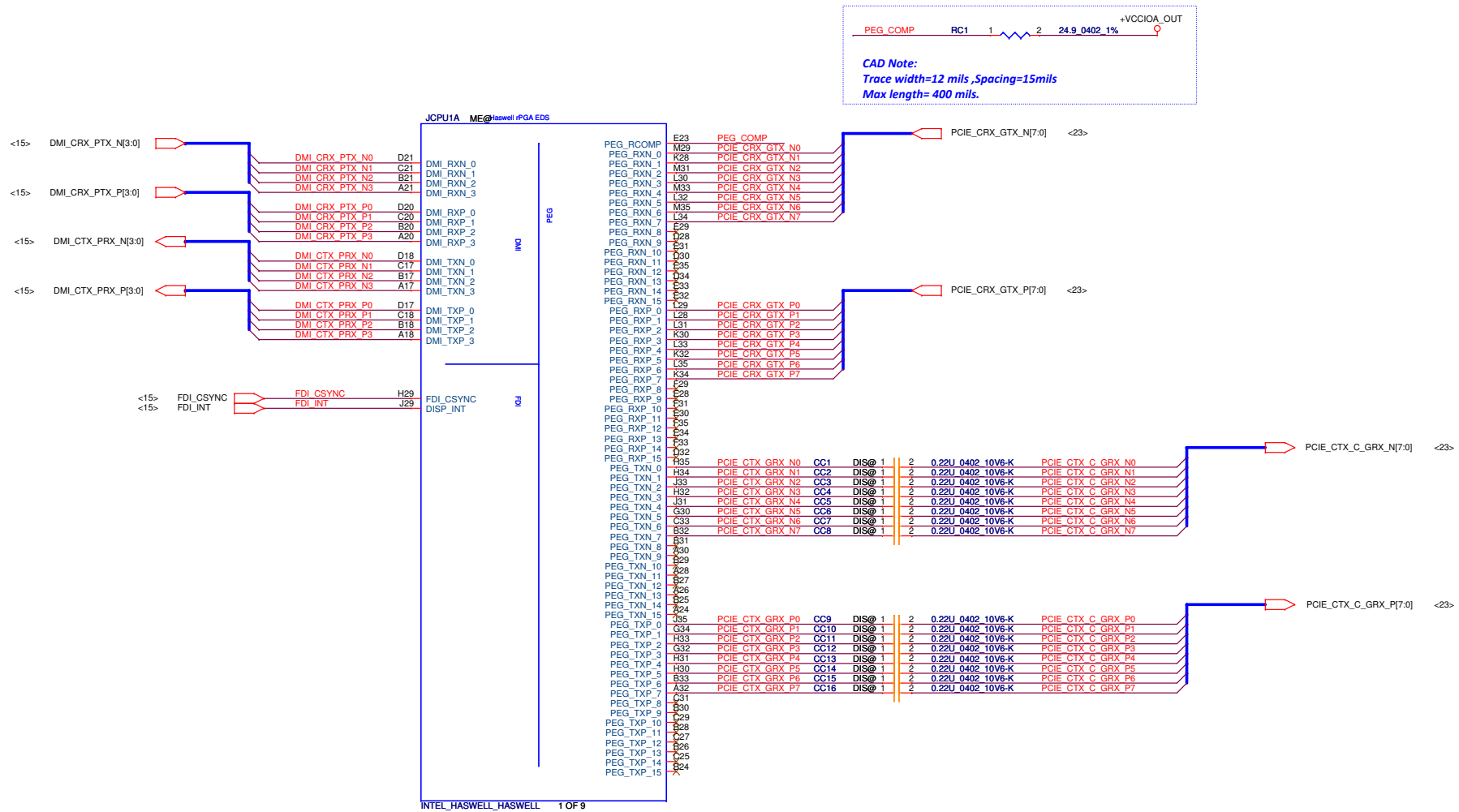
| Device ID | setting | I2C Slave address ID |
|----------------|-----------------------------|----------------------|
| N13P-GT (28nm) | 0x0FDB | |
| | SMB_ALT_ADDR (ROM_SO Bit 1) | 0 0x9E |
| | | 1 0x9C |

| GPU | ROM_SO | ROM_SCLK | STRAP0 | STRAP1 | STRAP2 | STRAP3 | STRAP4 | |
|---------------|--------|----------|--------|--------|--------|--------|--------|--------|
| N13P-GT1 28nm | PU 10K | PU 25K | PU 45K | PD 35K | PD 10K | PU 5K | PD 10K | Master |
| | PU 20K | PU 25K | PU 45K | PD 35K | PD 10K | PD 5K | PD 10K | Slave |

| GPU | N13P-GT | | |
|-------------------|-----------------|--------|--|
| FB Memory (GDDR5) | ROM_SI | | |
| Samsung 2500MHz | K4G10325FG-HC04 | | |
| | 32Mx32 | PD 45K | |
| Hynix 2500MHz | H5GQ1H24BFR-T2C | | |
| | 32Mx32 | PD 35K | |
| Samsung 2500MHz | K4G20325FD-FC04 | | |
| | 64Mx32 | PD 30K | |
| Hynix 2500MHz | H5GQ2H24MFR-T2C | | |
| | 64Mx32 | PD 25K | |

| | | | |
|--|------------------------------|-----------------|-------------------------------|
| Security Classification | LC Future Center Secret Data | | Title |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF P&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | Size Custom |
| | | | Document Number |
| | | | E440-NM-A151 |
| | | | Rev 1.0 |
| | | | Date: Thursday, July 11, 2013 |
| | | | Sheet 4 of 57 |

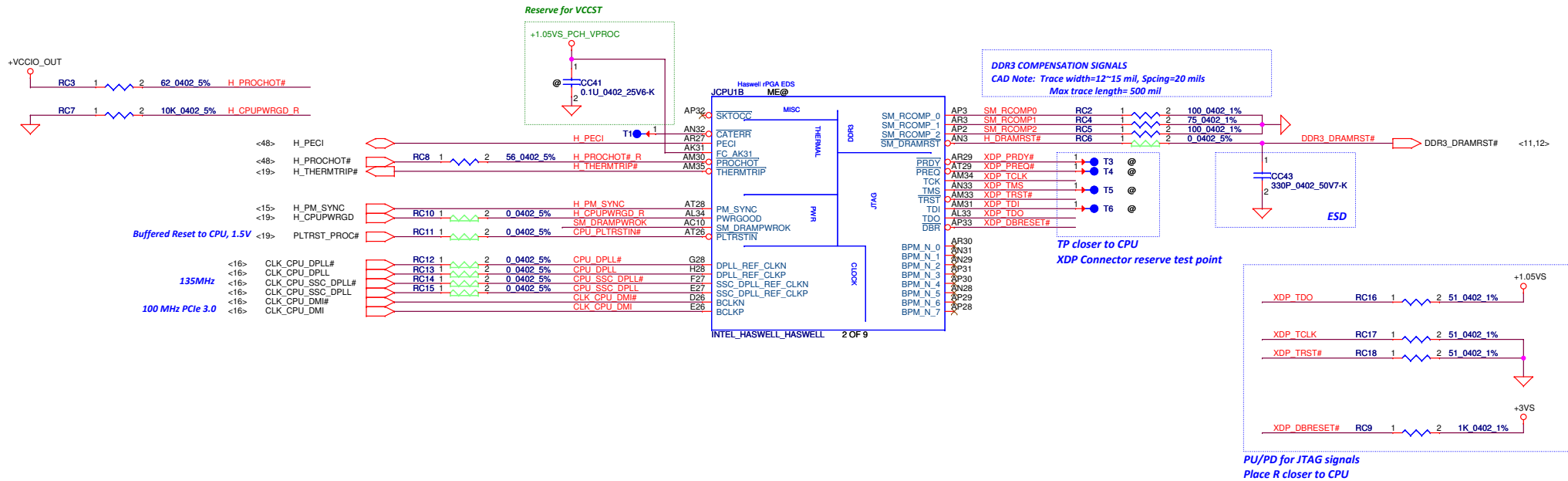




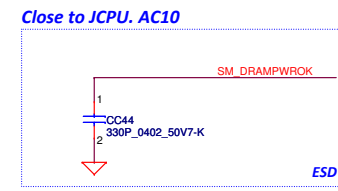
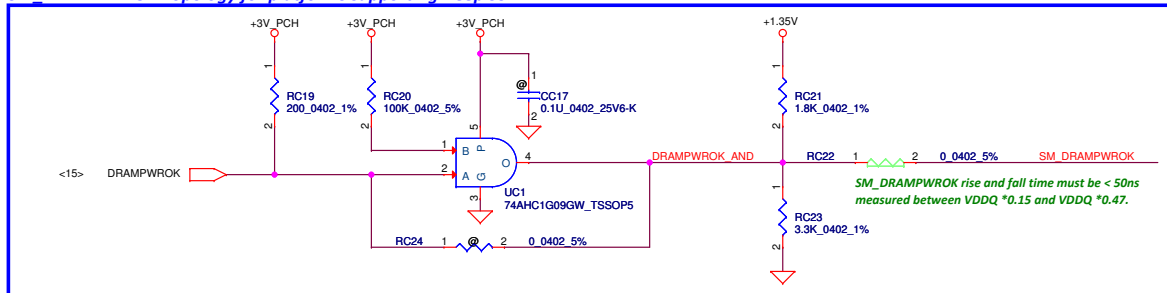
| Security Classification | LC Future Center Secret Data | |
|-------------------------|------------------------------|-----------------|
| Issued Date | 2012/12/05 | Deciphered Date |
| | | 2014/12/05 |

THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.

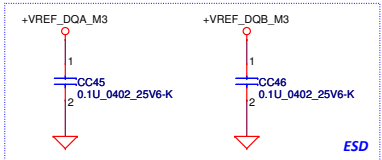
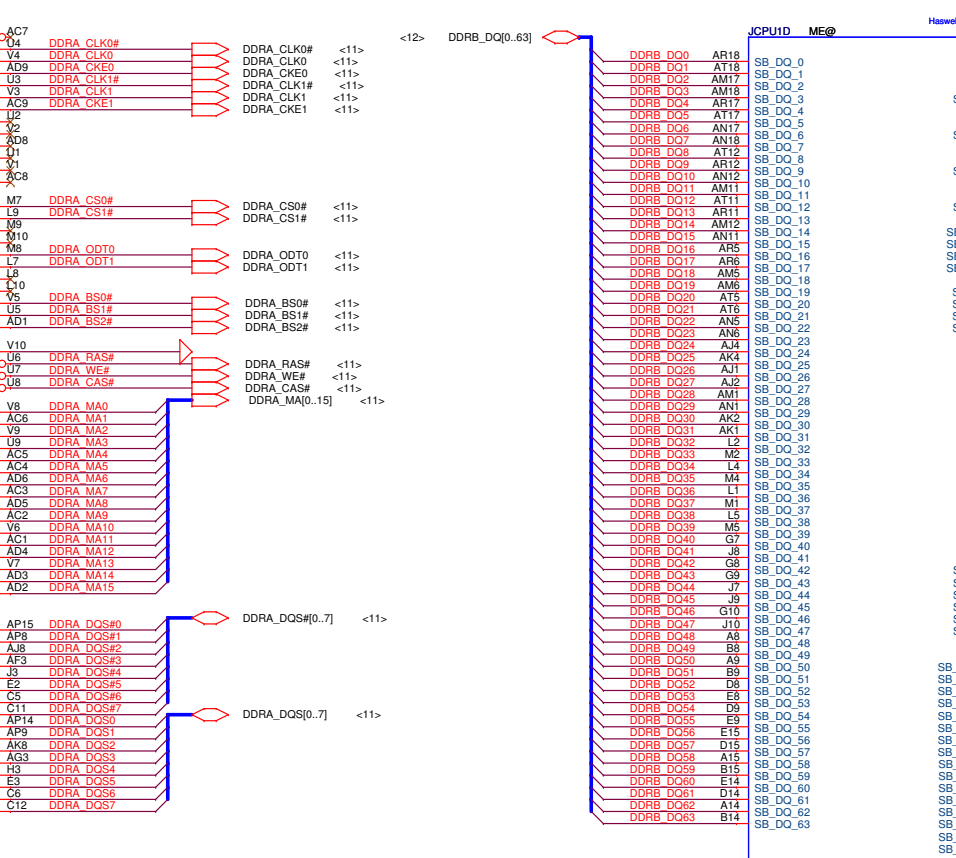
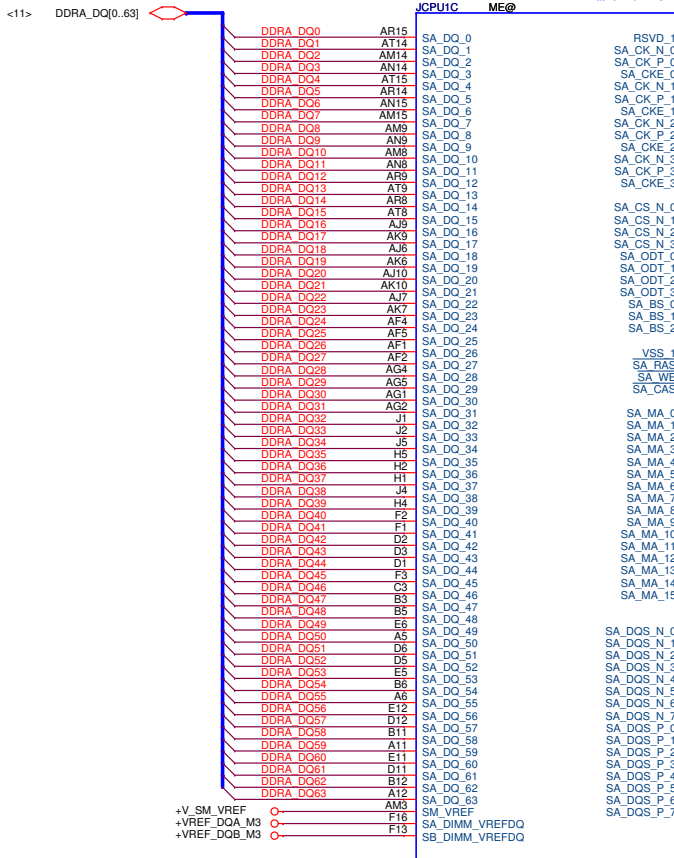
| | | |
|-----------------|-------------------------|---------------------|
| Title | | |
| CPU_DMI/PEG/FDI | | |
| Size | Document Number | E440 NM-A151 |
| Custom | | |
| Date: | Thursday, July 11, 2013 | Rev |
| | | 1.0 |
| | Sheet | 5 of 57 |



SM_DRAMPWROK Topology for platforms supporting Deep S3



| | | | | | |
|--|------------------------------|-----------------|------------|----------------------------------|--|
| Security Classification | LC Future Center Secret Data | | Title | | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | | CPU_JTAG/XDP/CLK |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF P&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size Custom | Document Number E440-NM-A151 |
| | | | | Date: Thursday, July 11, 2013 | Rev 1.0 |
| | | | | Sheet 6 | of 57 |

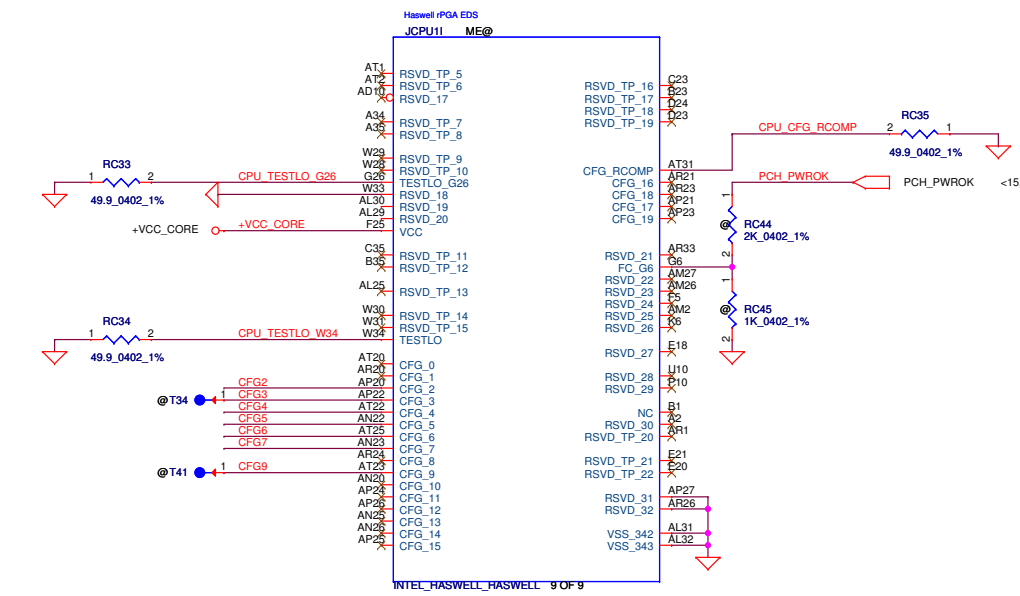
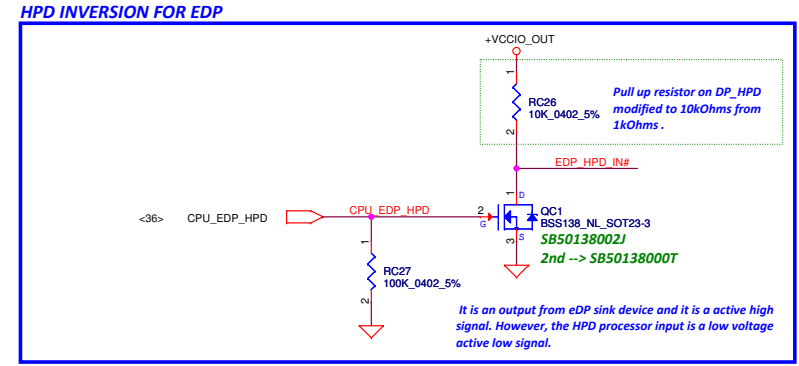
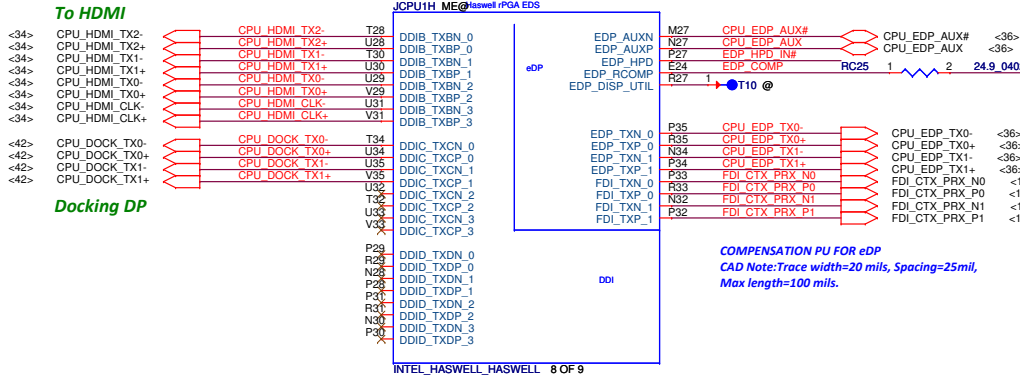


| Security Classification | LC Future Center Secret Data | |
|--|------------------------------|----------------------------|
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

| Title | | Rev | |
|-------------------------------|--|---------------|-----|
| CPU_DDR3 INTERFACE | | Size | 1.0 |
| Document Number | | Custom | |
| Date: Thursday, July 11, 2013 | | Sheet 7 of 57 | |



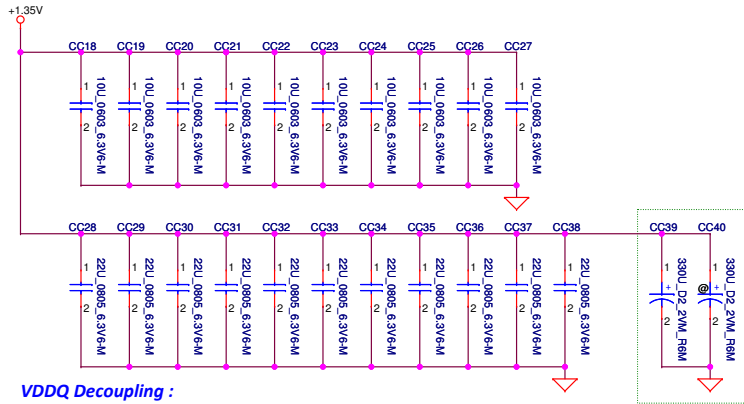
E440 NM-A151



CFG STRAPS For CPU
(CFG[17:0] internal pull high 5 ~15K to VCCIO)

| | | |
|---|---|--|
| PEG Static Lane Reversal - CFG2 is for the 16x | | |
| CFG2 | <ul style="list-style-type: none"> * 1: (Default) Normal Operation; Lane# definition matches socket pin map definition 0: Lane Reversed | |
| Display Port Presence Strap | | |
| CFG4 | <ul style="list-style-type: none"> 1: Disabled 0: Enabled; An external Display Port device is connected to the Embedded Display Port | |
| PCIe Port Bifurcation Straps | | |
| CFG[6:5] | <ul style="list-style-type: none"> 11: Func 1 Disabled, Func 2 Disabled (x16,---,---) * 10: Func 1 Enabled, Func 2 Disabled (x8,x8,---) 01: Func 1 Disabled, Func 2 Enabled 00: Func 1 Enabled, Func 2 Enabled (x8,x4,x4) | |
| PEG DEFER TRAINING | | |
| CFG7 | <ul style="list-style-type: none"> * 1: (Default) PEG Train Immediately Following XXRESETB Deassertion 0: PEG Wait for BIOS for Training | |

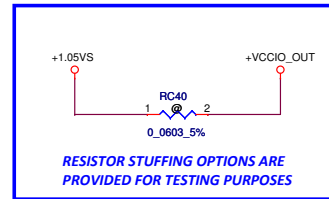
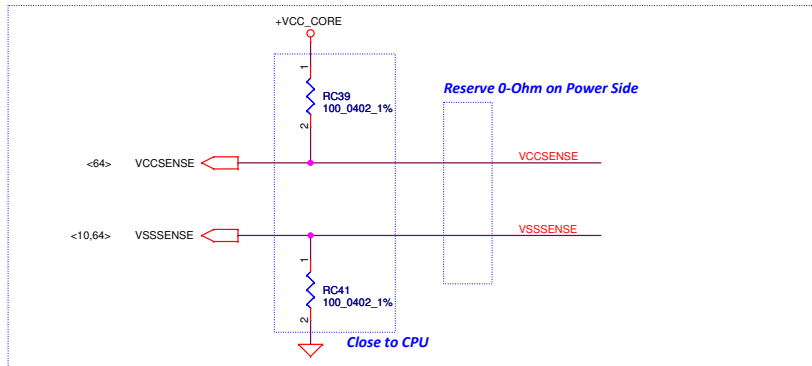
CPU VDDQ DECOUPLING



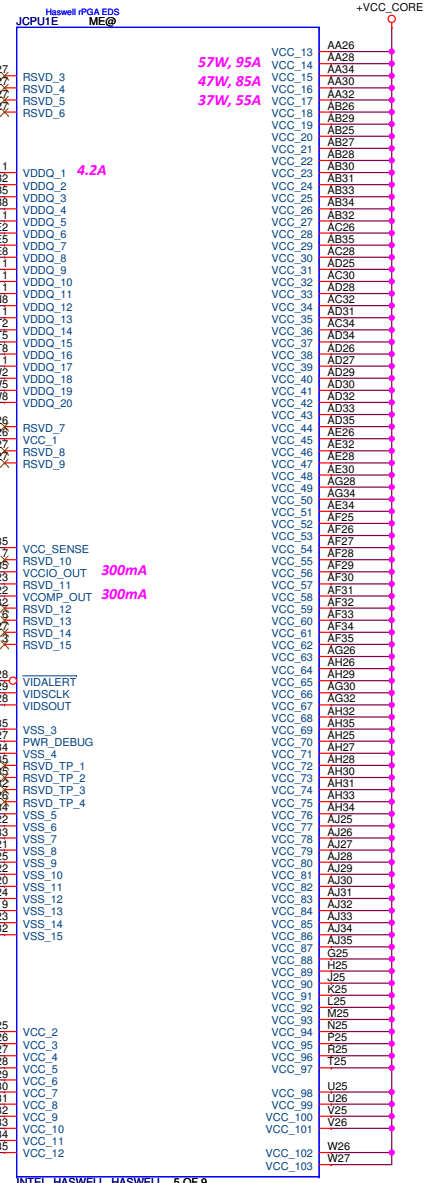
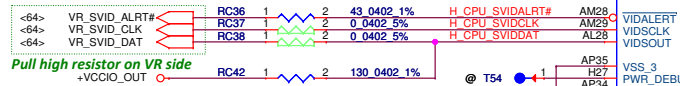
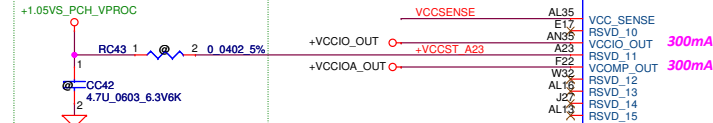
VDDQ Decoupling :

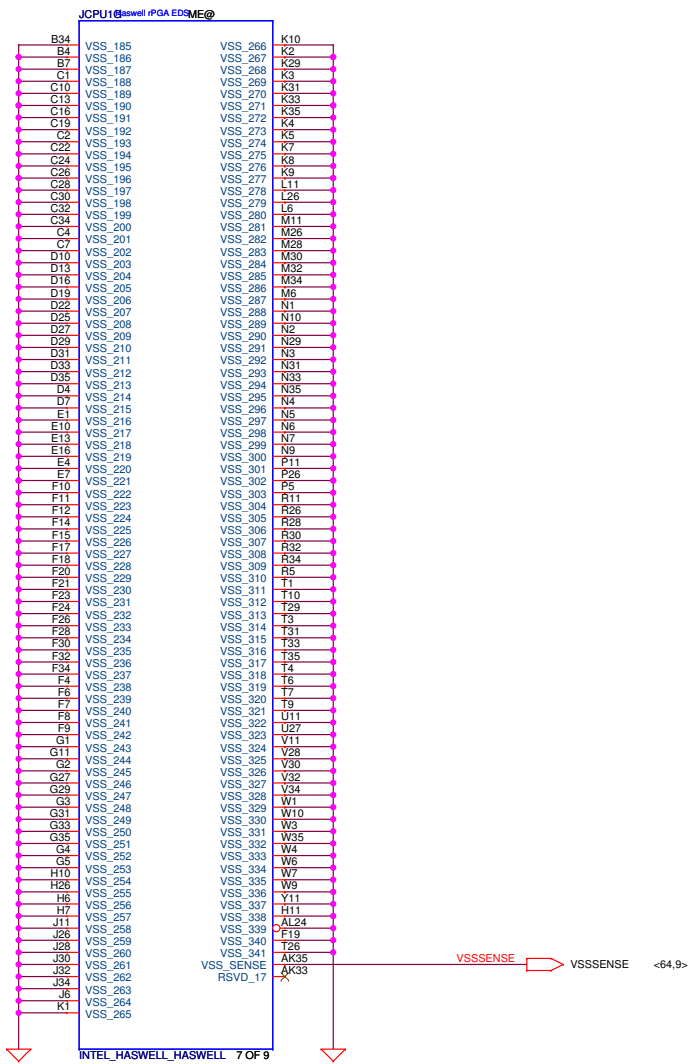
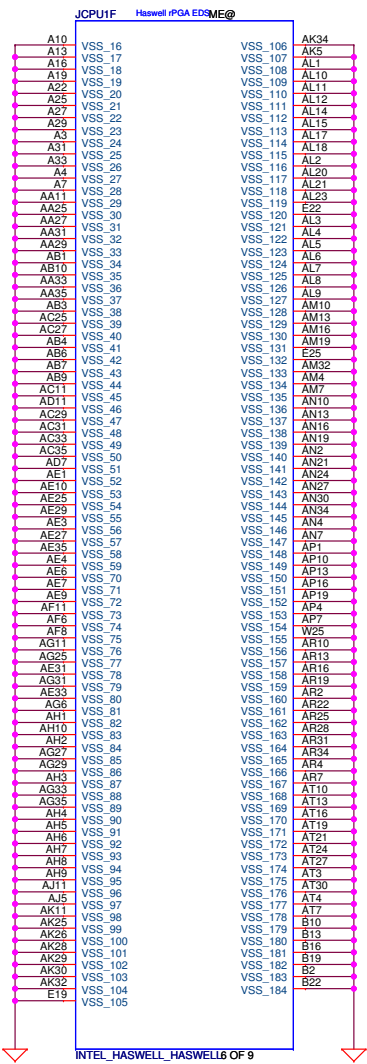
1. MB Bottom Socket Edge --> 2* 330uf, 6mΩ
2. 6x MB Bottom Socket Cavity --> 11* 22 µF (0805), 3mΩ
5x MB Top Socket Cavity
3. 5x MB Bottom Socket Cavity --> 10 x 10 µF (0805), 3mΩ
5x MB Top Socket Cavity

VCC/VSS SENSE



Reserve for VCCST.







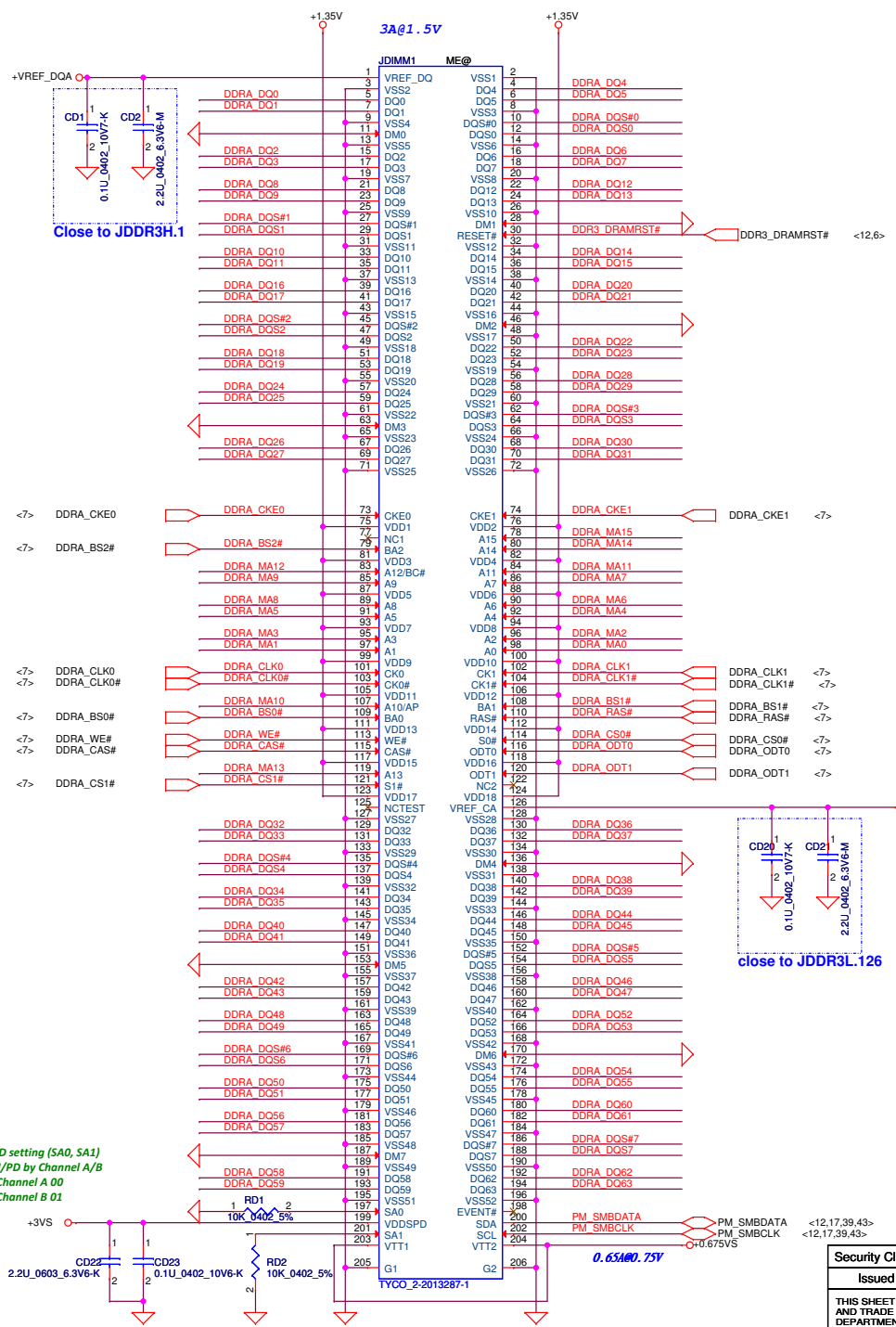


| Security Classification | LC Future Center Secret Data | |
|--|------------------------------|----------------------------|
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF P&E DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

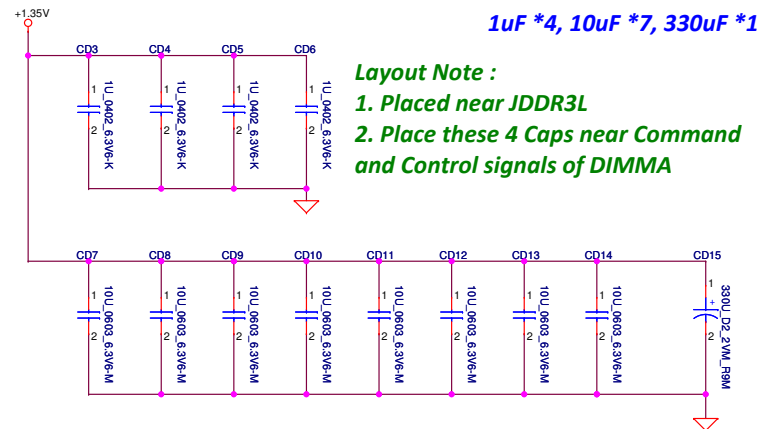
| Title | | |
|-------------------------------|-----------------|---------------------|
| CPU_GND | | |
| Size Custom | Document Number | E440 NM-A151 |
| Date: Thursday, July 11, 2013 | Sheet 10 of 57 | |

DDR3 SO-DIMM A

-  DDRA_DQ[0..63] <7>
-  DDRA_DQS[0..7] <7>
-  DDRA_DQS#[0..7] <7>
-  DDRA_MA[0..15] <7>



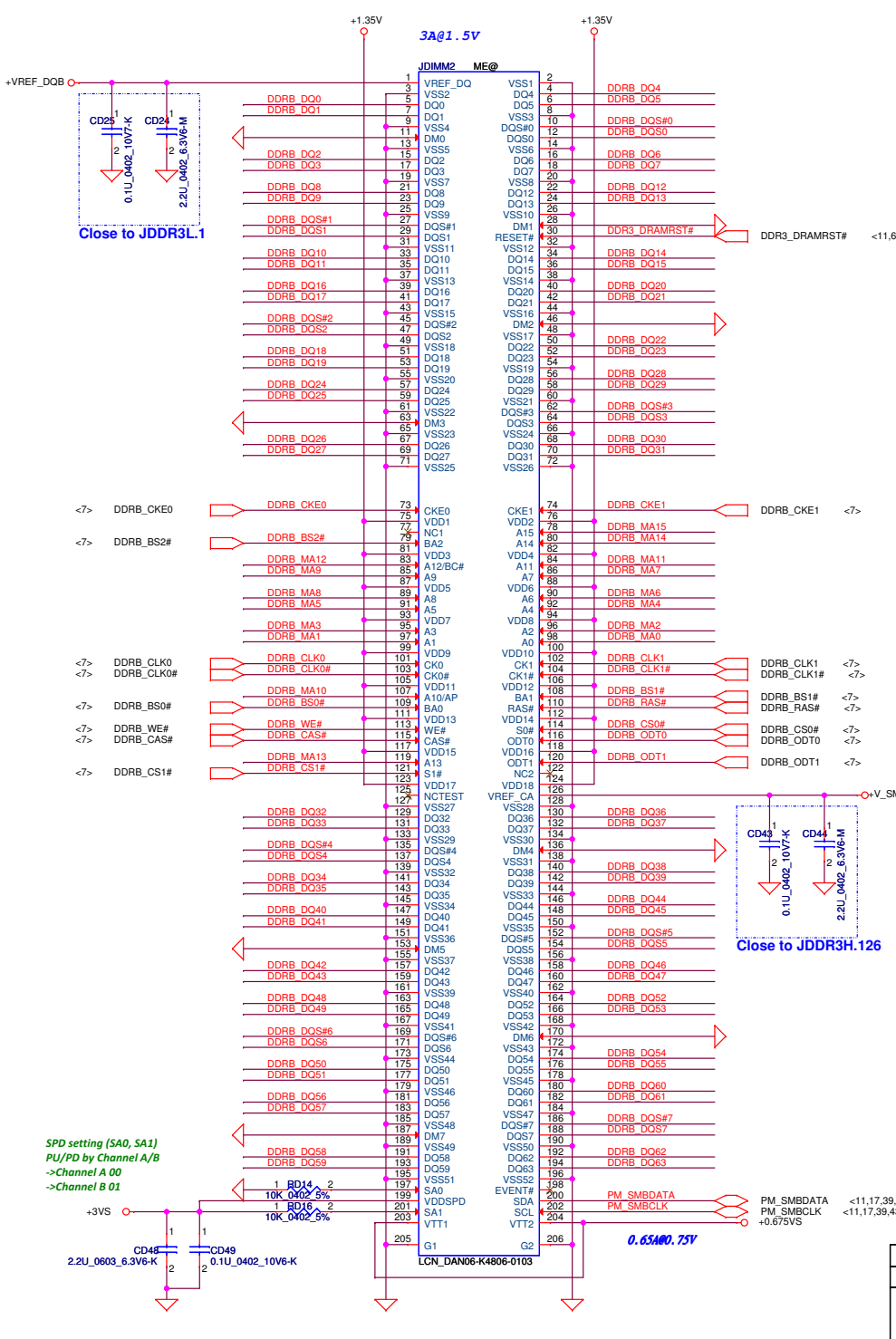
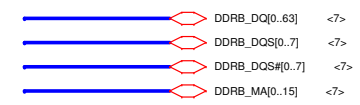
DDR Decoupling



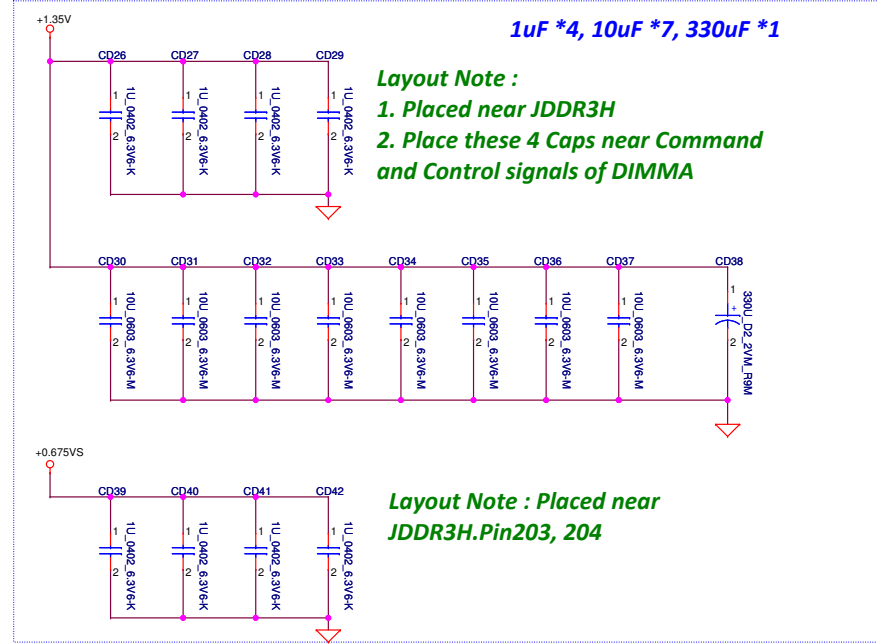
Layout Note : Placed near JDDR3L1.Pin203, 204

| Security Classification | LC Future Center Secret Data | | Title |
|---|------------------------------|-----------------|--|
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | Size: Custom Document Number: E440 NM-A151 Date: Thursday, July 11, 2013 Sheet: 11 of 57 |

DDR3 SO-DIMM B



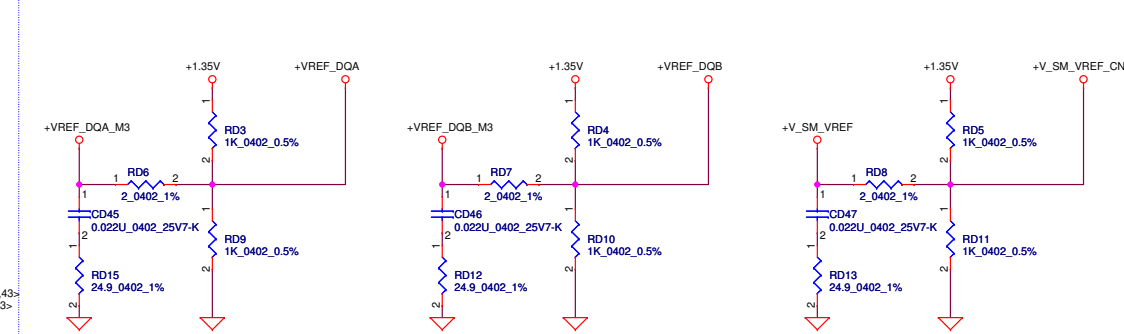
DDR Decoupling



Layout Note :
 1. Placed near JDDR3H
 2. Place these 4 Caps near Command and Control signals of DIMMA

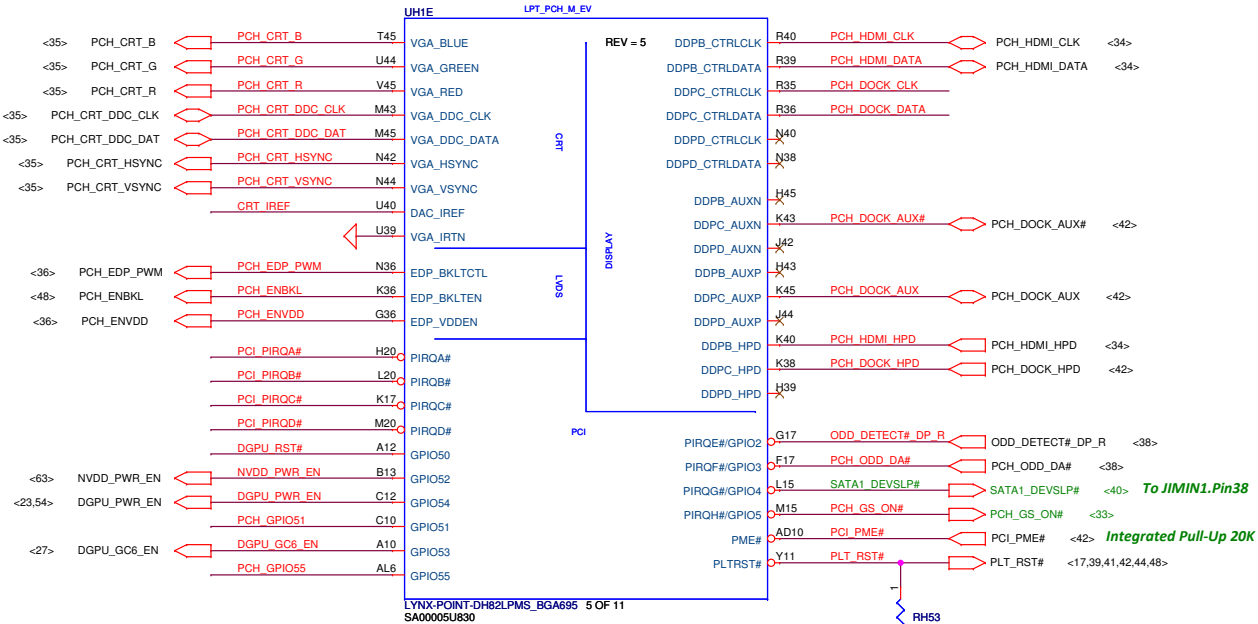
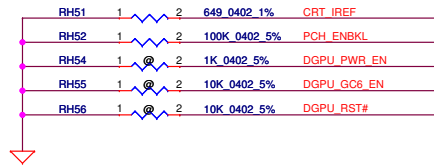
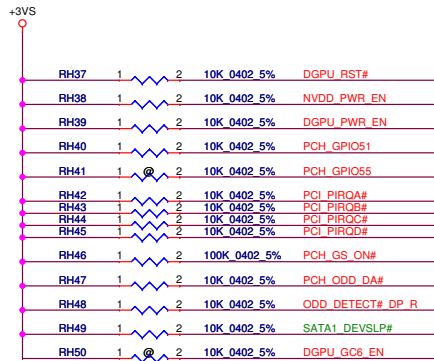
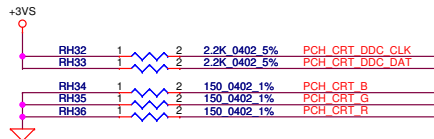
Layout Note : Placed near JDDR3H.Pin203, 204

All VREF traces should have 20 mil trace width

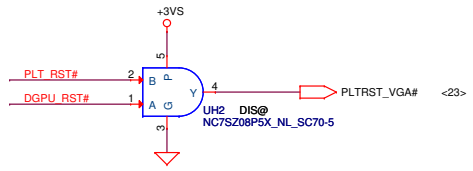


SPD setting (SA0, SA1)
 PU/PD by Channel A/B
 ->Channel A 00
 ->Channel B 01

| Security Classification | | LC Future Center Secret Data | | Title | |
|--|-------------------------|------------------------------|------------|-----------------|-----|
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | DDR3 SO-DIMMB/2 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FC DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | | |
| Size | Document Number | E440 NM-A151 | | Rev | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet | 12 | of | 57 |



+VGA_CORE
+3VS_VGA

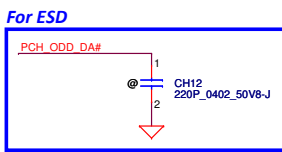


A16 swap override Strap/Top-Block Swap Override jumper

| | |
|-----------|---|
| PCI_GNT3# | Low = A16 swap override/Top-Block Swap Override enabled * **High=Default |
|-----------|---|

Boot BIOS Straps (BBS)

| BBS_BIT1 (GPIO51) | BBS_BIT0 (GPIO19) | Boot BIOS Location |
|-------------------|-------------------|--------------------|
| 0 | 0 | LPC |
| 0 | 1 | Reserved (NAND) |
| 1 | 0 | PCI |
| 1 | 1 | SPI * |

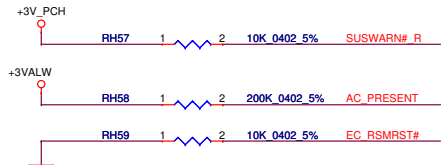


- The signal has a weak internal pull-up, which is disabled after PLTRST# deasserts.
- When sampled : Rising edge of PWROK

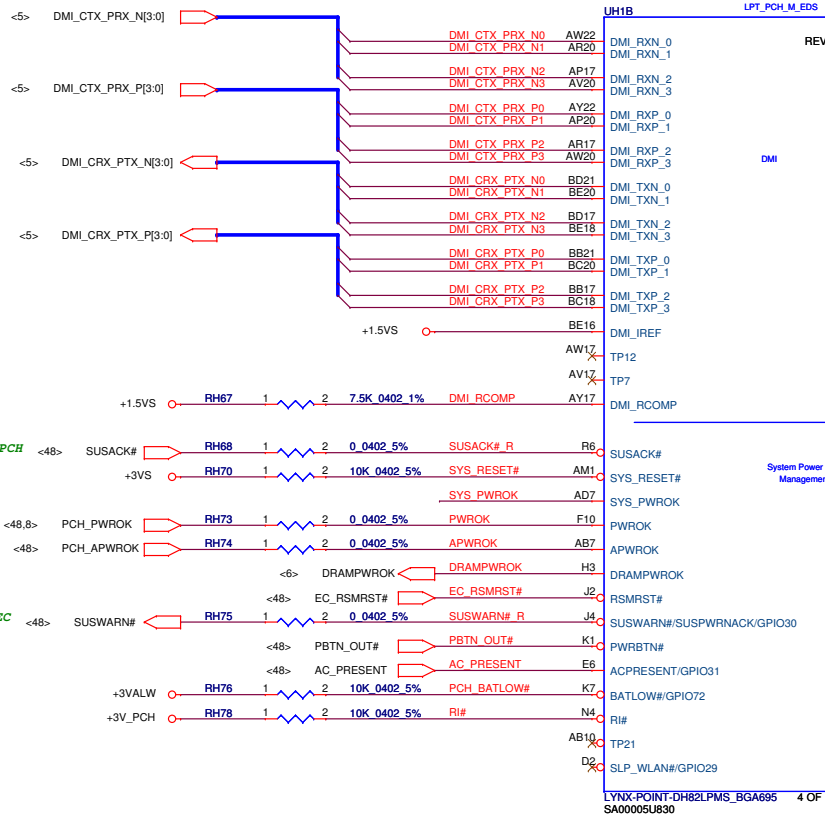
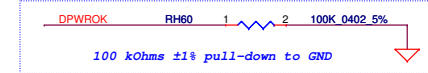
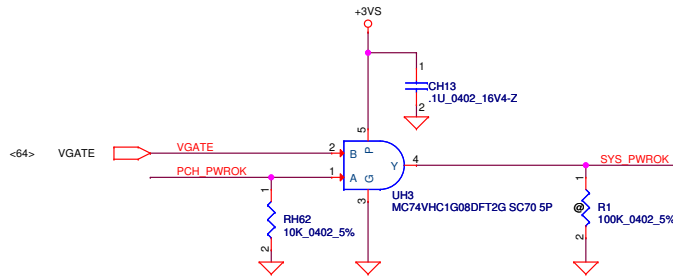
- GPIO51/19 has weak internal pull-up via 20kohm
- The internal pull-up is disabled after PLTRST# deasserts.
- GPIO51 (bit 11) at the rising edge of PWROK SATA1GP/GPIO19 (bit 10) at the rising edge of PWROK.

| Security Classification | LC Future Center Secret Data | | Title |
|---|------------------------------|-----------------|------------|
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PCH DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |

| Size | Document Number | Rev |
|--------|-------------------------|----------------|
| Custom | E440 NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet 14 of 57 |



SUSACK# R RH61 1 @ 2 0.0402 5% SUSWARN# R
 Stuff RH289 if EC does not want to involve in the handshake mechanism for the DeepSX state entry and exit



APWROK may come up earlier than PWROK but no later

APWROK only for A phase



DSWVRMEN must be always pulled high to +RTCVCC
 DSWVRMEN - Internal Deep Sleep 1.05V regulator
 **H : Enable
 L : Disable

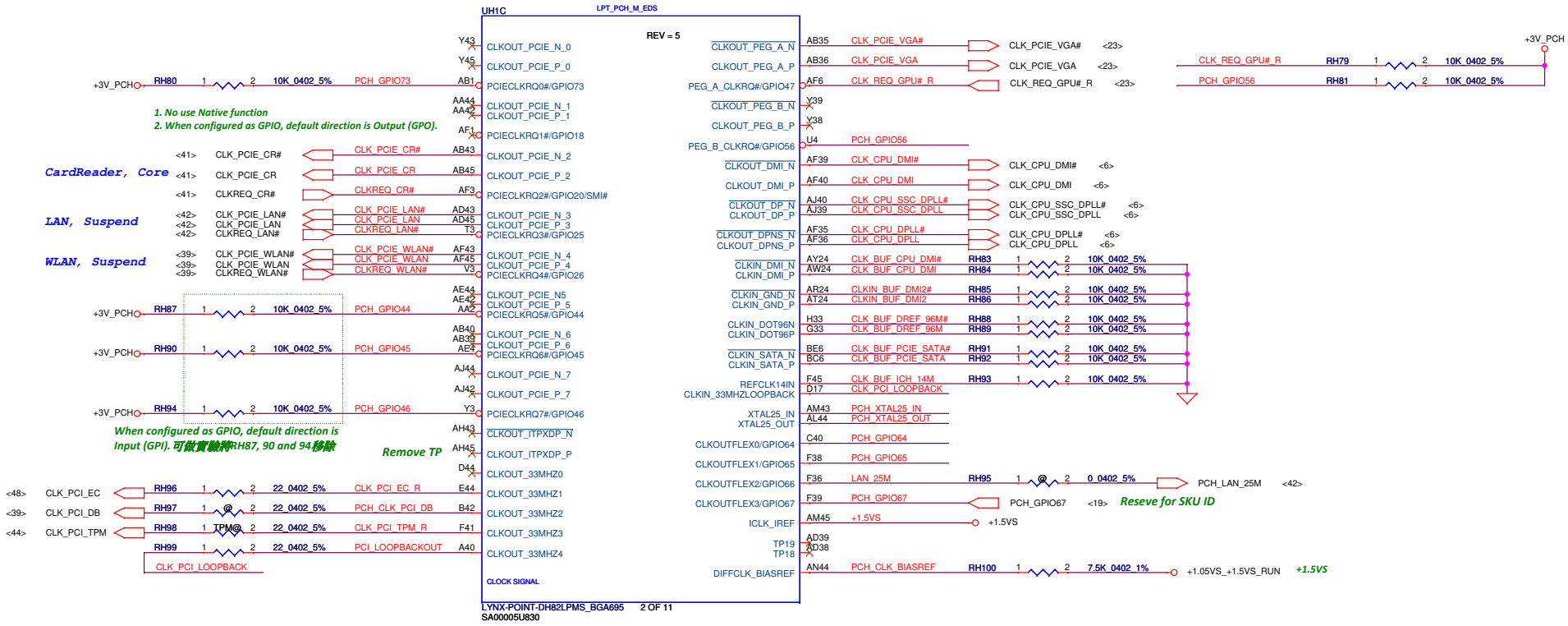
For Deep S3
 EC_DPWROK
 For WLAN WAKE# (Disable)
 WLAN_WAKE#

For Deep S3
 PM_SLP_SUS#
 Can be left NC when IAMT is not support on the platform

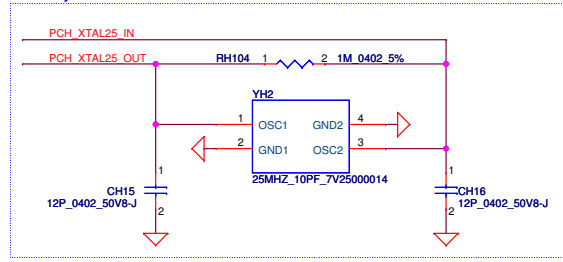
SUSCLK#/GPIO2
 This signal has a weak internal pull-up.
 0 = Disable PLL On-Die voltage regulator.
 * 1 = Enable PLL On-Die voltage regulator.
 NOTES:
 1. The internal pull-up is disabled after RSMRST# deasserts.
 2. This signal is in the Suspend well.

| Security Classification | LC Future Center Secret Data | |
|--|------------------------------|----------------------------|
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

| Title | Size | Document Number | Rev |
|----------------|-------------------------|-----------------|----------|
| PCH_DMI/FDI/PM | Custom | E440 NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet | 15 of 57 |

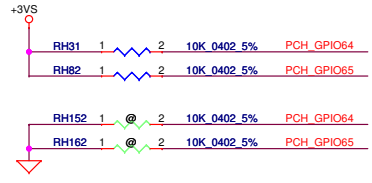


PCH Crystal



Project Phase ID

| Project Phase | PCH_GPIO64 | PCH_GPIO65 |
|---------------|------------|------------|
| SDV, FVT | 0 | 0 |
| SIT2 (R 0.5) | 0 | 1 |
| SIT (R 0.4) | 1 | 0 |
| * SVT | 1 | 1 |



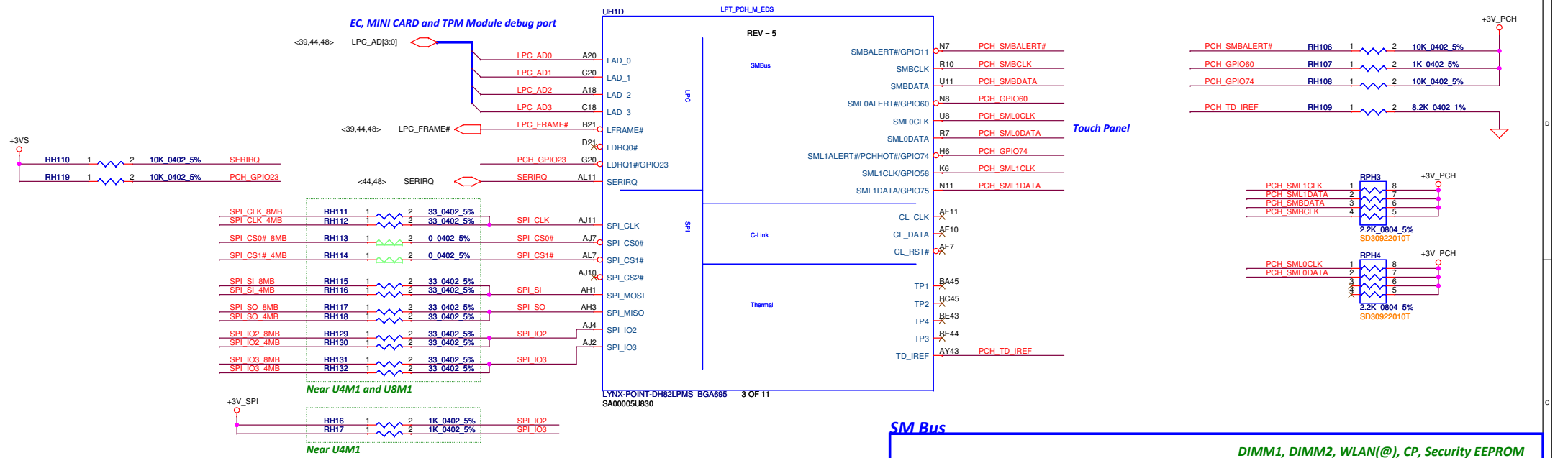
| Security Classification | LC Future Center Secret Data | |
|-------------------------|------------------------------|----------------------------|
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |

THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PCH DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.

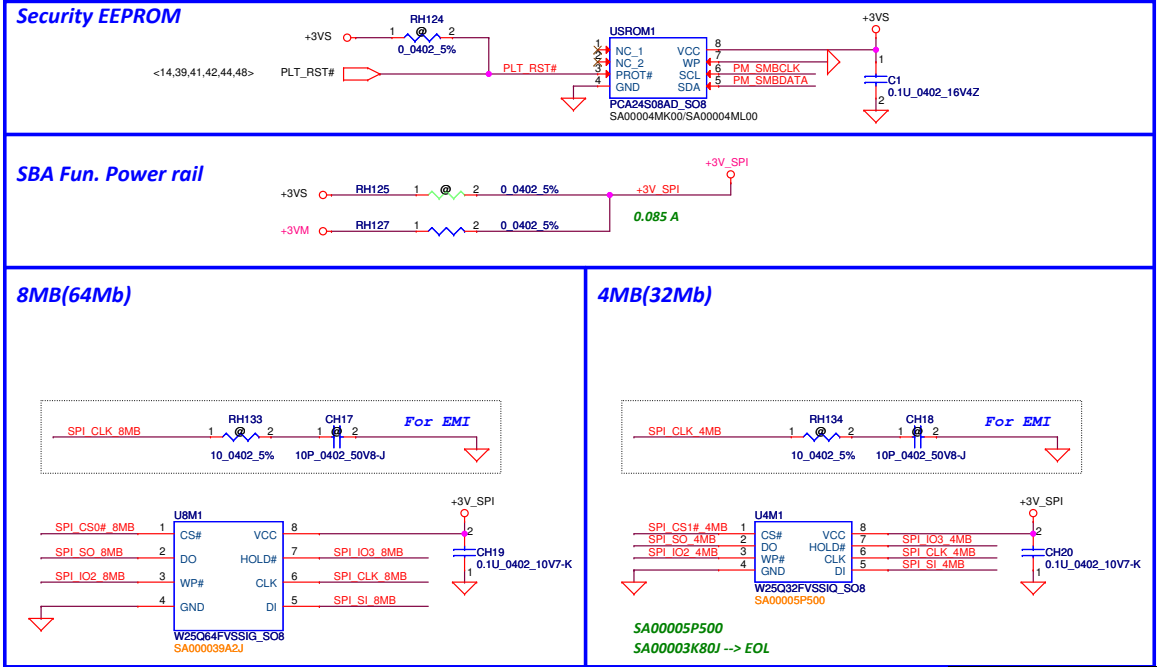
Title
PCH_PCIE/CLK

Size | **Document Number**
Custom | E440 NM-A151

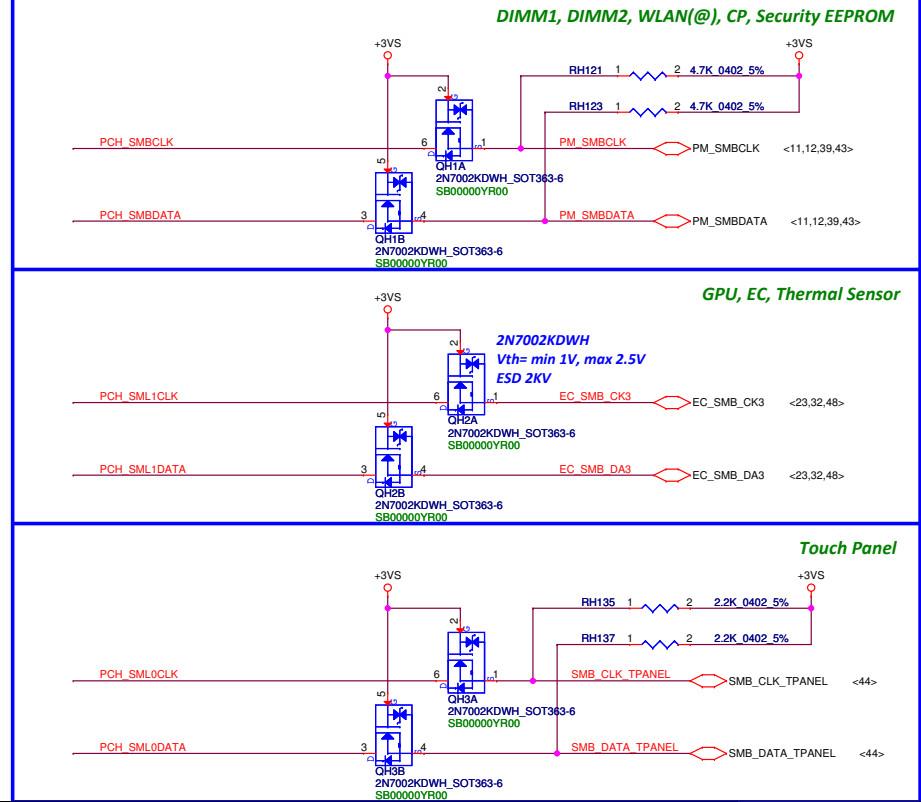
Date: Thursday, July 11, 2013 | **Sheet** 16 of 57 | **Rev** 1.0



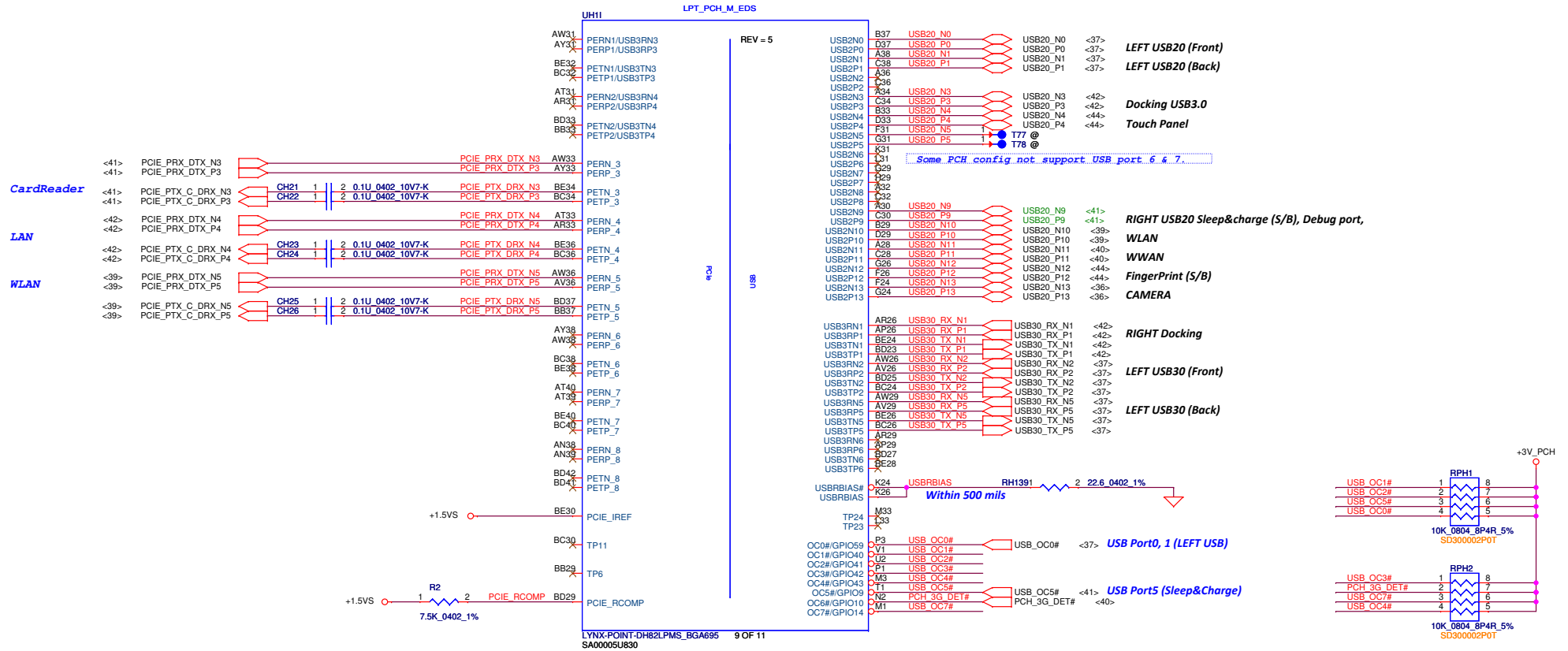
8MB + 4MB SPI ROM, 5MB ME(SBA), Security EEPROM



SM Bus



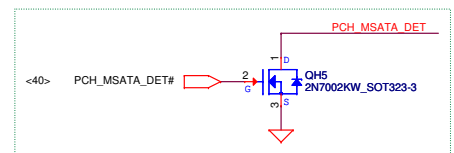
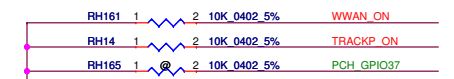
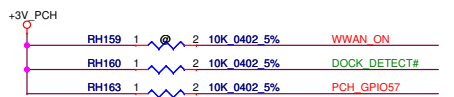
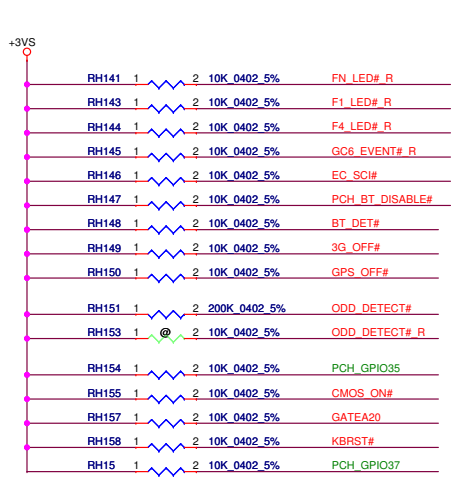
| | | | | |
|--|------------------------------|-----------------|--------------|--------------------|
| Security Classification | LC Future Center Secret Data | | Title | PCH_LPC/SPI/SM BUS |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF LC FUTURE CENTER EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | |
| Size | Custom | Document Number | E440 NM-A151 | |
| Date: | Thursday, July 11, 2013 | Sheet | 17 | of 57 |



USB2.0 :
OC#0-3 --> Port 0-7
OC#4-7 --> Port 8-13

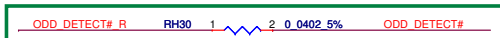
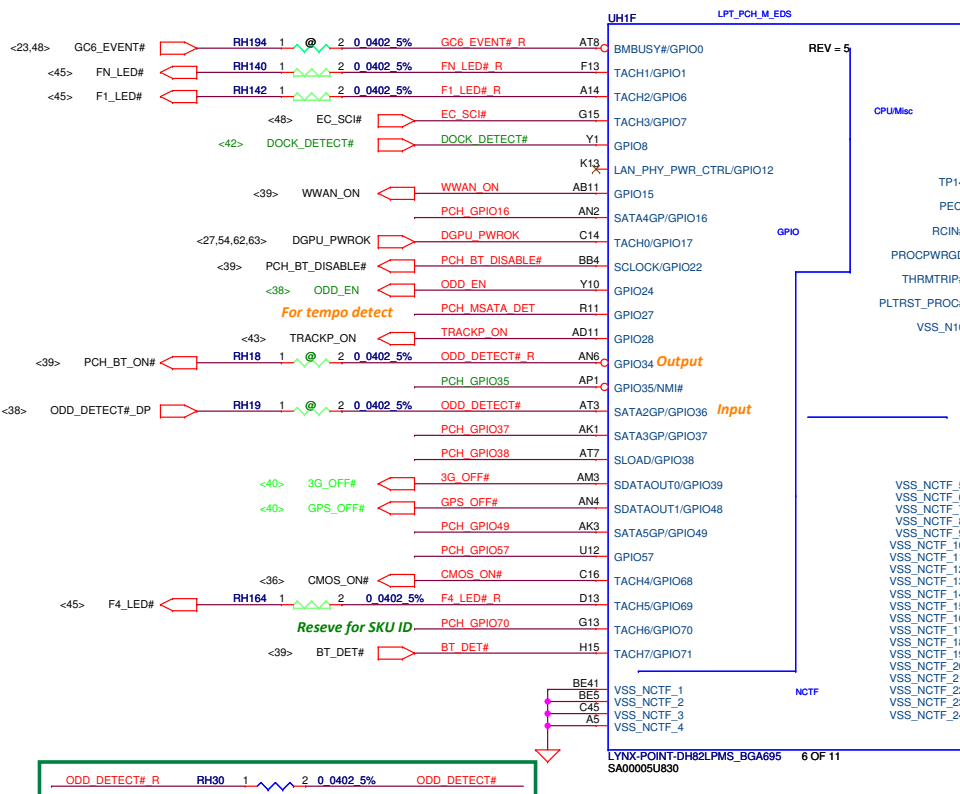
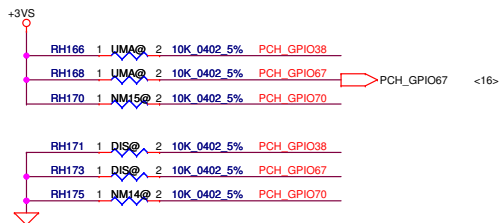
OC[3:0]# should be connected with USB 2.0 ports 0 - 7 and any 4 of USB 3.0 ports 1 - 6.

| USB3.0 | USB2.0 | OC# | Note |
|--------|--------|------|----------------------|
| Port1 | Port3 | X | Docking (Right) |
| Port2 | Port0 | OC0# | LEFT USB (Front) |
| Port5 | Port1 | OC0# | LEFT USB (Back) |
| X | Port9 | OC5# | Sleep&Charge (Right) |



SKU ID

| Function | PCH_GPIO38 | PCH_GPIO67 | PCH_GPIO70 |
|-----------|------------|------------|------------|
| * Optimus | 0 | 0 | |
| Reserve | 0 | 1 | |
| DIS | 1 | 0 | |
| * UMA | 1 | 1 | |
| * 14" | | | 0 |
| * 15" | | | 1 |



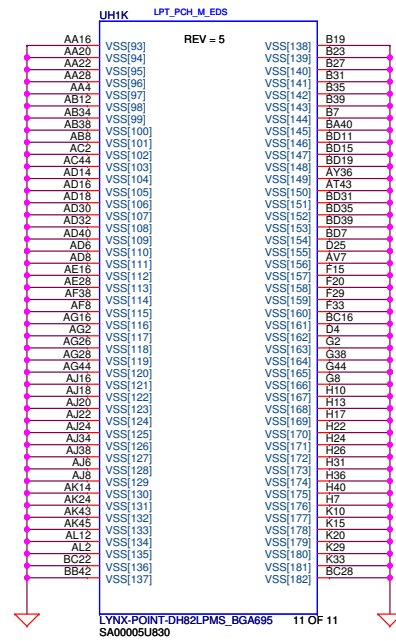
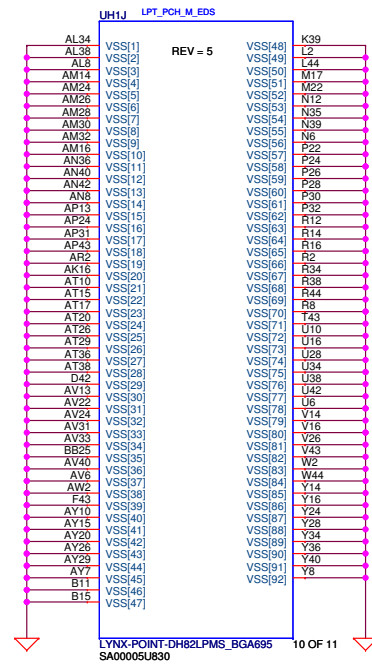
| CONFIG | GPIO16, 49 |
|------------------------|------------|
| * USB X4,PCIEX8,SATAx6 | 11 |
| USB X6,PCIEX8,SATAx4 | 01 |



No use Flexible I/O pin, delete RH172, RH174

| Fixed Signals | | | | Muxed Signals | | Fixed Signals | | | | Muxed Signals | | Fixed Signals | | | | | |
|---------------|--------|--------|--------|---------------|--------|---------------|--------|--------|--------|---------------|--------|---------------|--------|--------|--------|--------|--------|
| USB3 1 | USB3 2 | USB3 5 | USB3 6 | PCIE 1 | PCIE 2 | PCIE 3 | PCIE 4 | PCIE 5 | PCIE 6 | PCIE 7 | PCIE 8 | SATA 4 | SATA 5 | SATA 0 | SATA 1 | SATA 2 | SATA 3 |
| | | | | (00) | (00) | | | | | | | (00) | (00) | | | | |
| | | | | USB3 3 | USB3 4 | | | | | | | PCIE 1 | PCIE 2 | | | | |
| | | | | (01) | (01) | | | | | | | (01) | (01) | | | | |

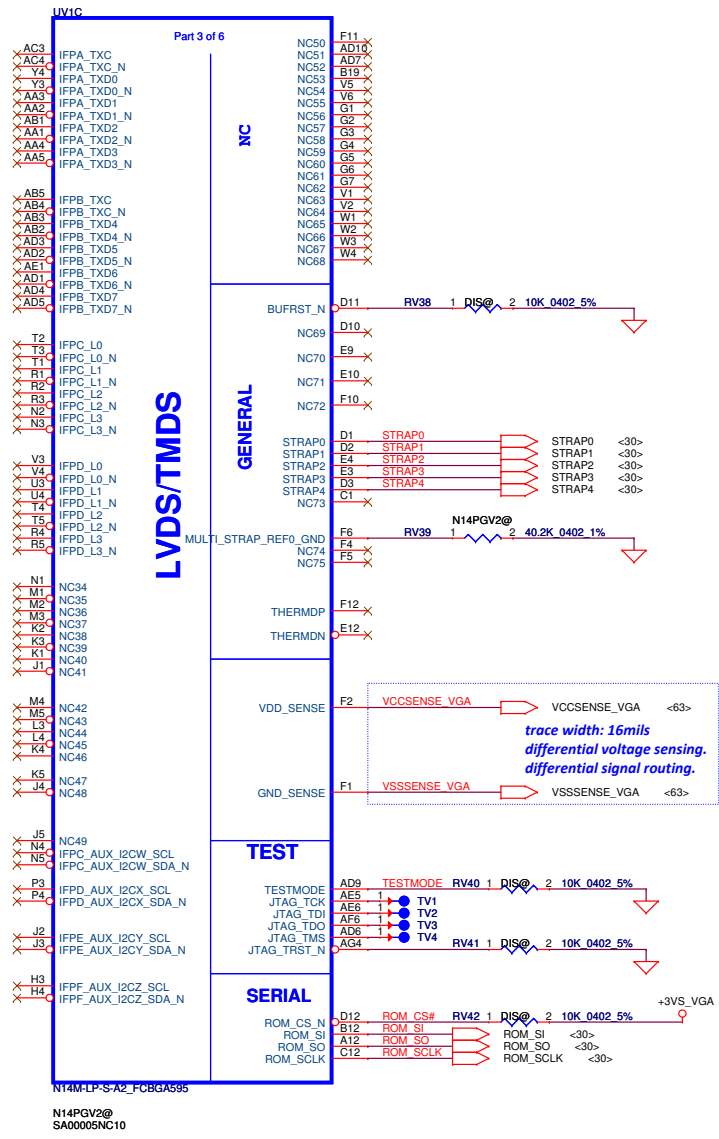
| | | | | |
|---|------------------------------|-----------------|-----------------|-------------------------|
| Security Classification | LC Future Center Secret Data | | Title | PCH_GPIO/CPU-MISC |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PCH DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Rev |
| | | | Size | 1.0 |
| | | | Document Number | E440 NM-A151 |
| | | | Date: | Thursday, July 11, 2013 |
| | | | Sheet | 19 of 57 |



| | | |
|--|------------------------------|----------------------------|
| Security Classification | LC Future Center Secret Data | |
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

| | | |
|--------|-------------------------|----------------|
| Title | PCH_GND | |
| Size | Document Number | Rev |
| Custom | E440 NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet 22 of 57 |

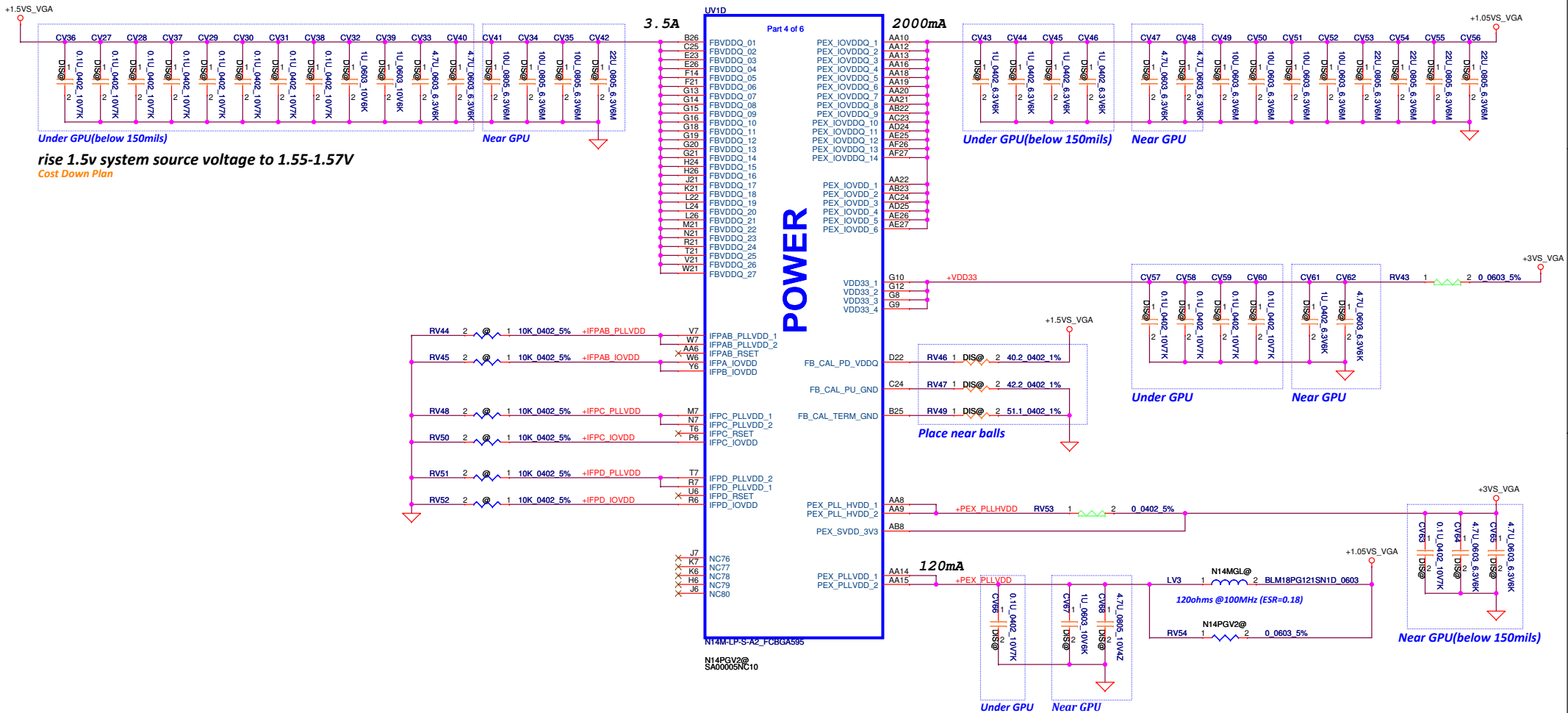




N14M-LP-S-A2_FCBGA595
N14PGV2@
SA00005NC10

| | | | |
|--|------------|------------------------------|------------|
| Security Classification | | LC Future Center Secret Data | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |

| | | |
|--------------------|-------------------------|---------------------|
| Title | | |
| N14P_SPI ROM/SENSE | | |
| Size | Document Number | E440 NW-A151 |
| Custom | | |
| Date: | Thursday, July 11, 2013 | Sheet 24 of 57 |
| Rev | 1.0 | |



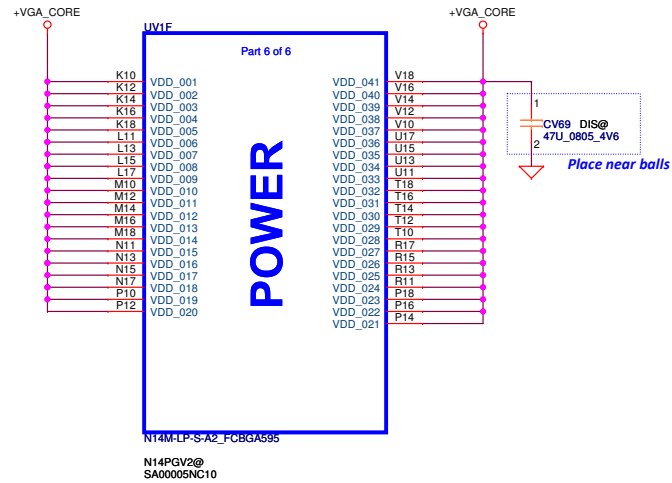
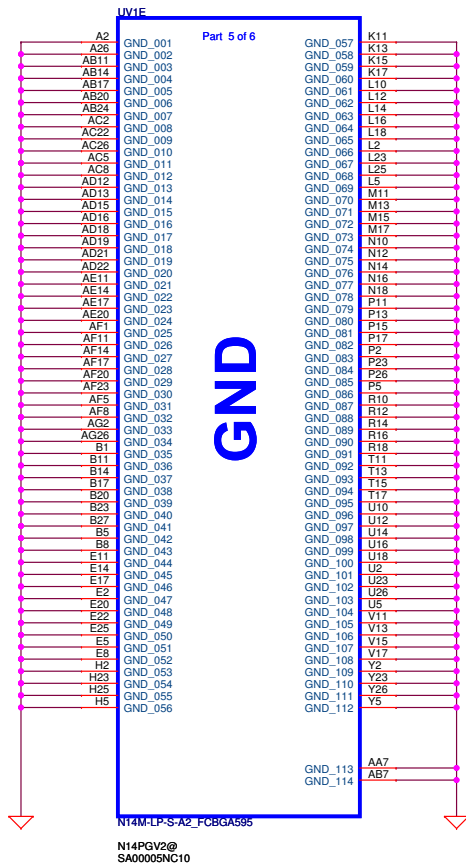
Under GPU (below 150mils)
 rise 1.5v system source voltage to 1.55-1.57V
 Cost Down Plan

POWER

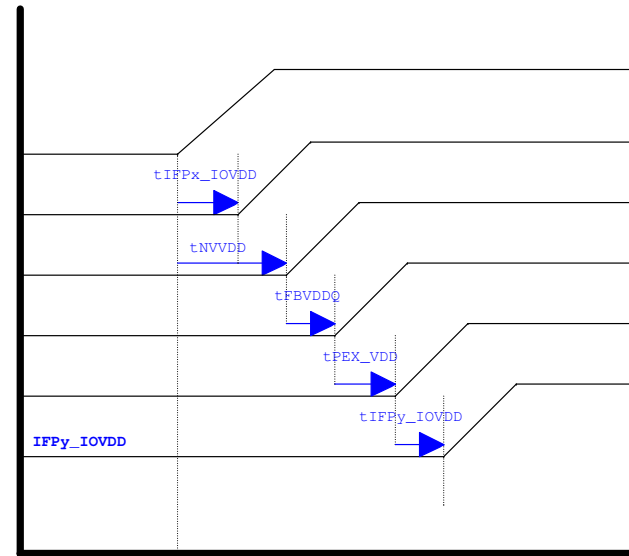
| | |
|------------------|---------|
| CALIBRATION PIN | DDR3 |
| FB_CAL_x_PD_VDDQ | 40.2Ohm |
| FB_CAL_x_PU_GND | 42.2Ohm |
| FB_CAL_xTERM_GND | 51.1Ohm |

| | | |
|---|------------------------------|----------------------------|
| Security Classification | LC Future Center Secret Data | |
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FC DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

| | | |
|--------|-------------------------|----------------|
| Title | N14P_POWER | |
| Size | Document Number | Rev |
| Custom | E440 NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet 25 of 57 |



VDD33 (+3VS_VGA)
 IFPx_IOVDD
 NVVDD (+VGA_CORE)
 FBVDDQ (+1.5VS_VGA)
 PEX_VDD (+1.05VS_VGA)



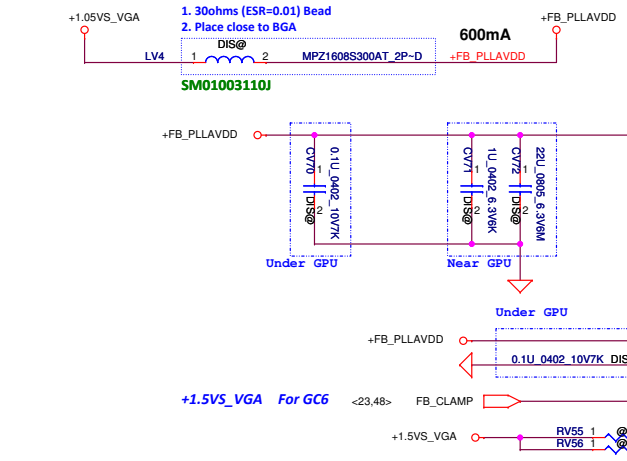
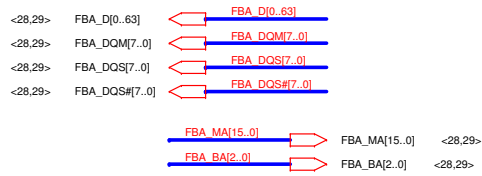
NV Recommended Power On Sequencing Order

X=A and B
 Y=C, D, E and F

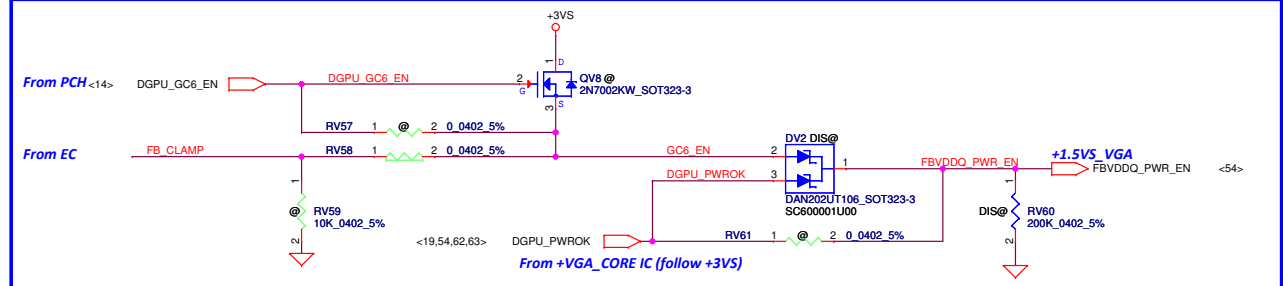
| Security Classification | LC Future Center Secret Data | |
|--|------------------------------|----------------------------|
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF P&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

| Title | Size | Document Number | Rev |
|--------------|-------------------------|-----------------|----------|
| N14P_VDD/GND | Custom | E440-NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet | 26 of 57 |





For GC6 (+1.5V_VGA)



UV1B

Part 2 of 6

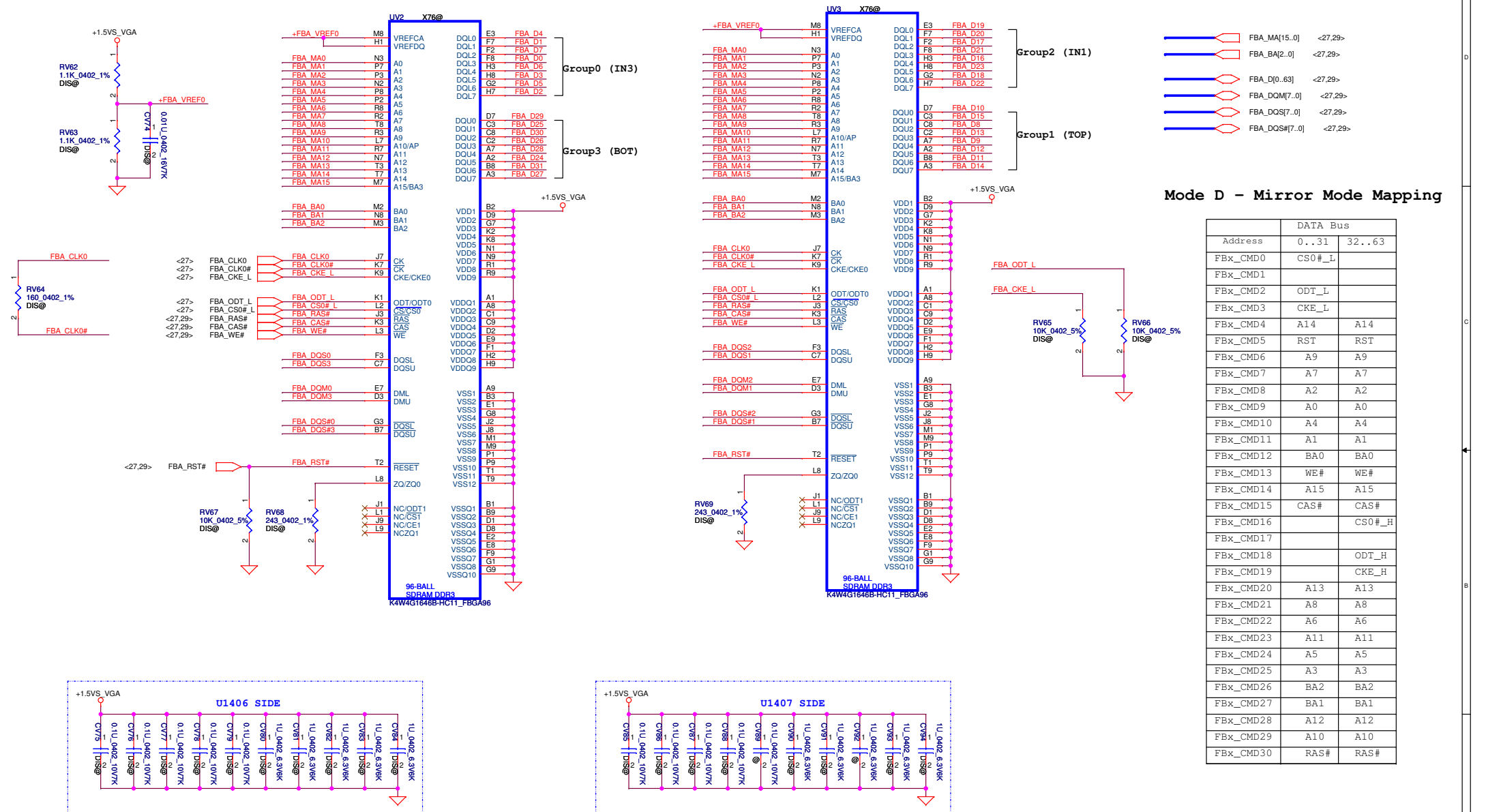
| | | | | | | |
|---------|------|---------|-----|------------|------------|---------|
| FBA_D0 | E18 | FBA_D00 | C27 | FBA_CS0#_L | FBA_CS0#_L | <28> |
| FBA_D1 | F18 | FBA_D01 | C28 | FBA_ODT_L | FBA_ODT_L | <28> |
| FBA_D2 | E16 | FBA_D02 | E24 | FBA_CKE_L | FBA_CKE_L | <28> |
| FBA_D3 | F17 | FBA_D03 | F24 | FBA_RST# | FBA_RST# | <28,29> |
| FBA_D4 | D21 | FBA_D04 | D27 | FBA_MA14 | | |
| FBA_D5 | D21 | FBA_D05 | D26 | FBA_MA9 | | |
| FBA_D6 | F20 | FBA_D06 | F25 | FBA_MA7 | | |
| FBA_D7 | E21 | FBA_D07 | F26 | FBA_MA4 | | |
| FBA_D8 | E18 | FBA_D08 | F23 | FBA_MA0 | | |
| FBA_D9 | D15 | FBA_D09 | G22 | FBA_MA4 | | |
| FBA_D10 | F15 | FBA_D10 | G23 | FBA_MA1 | | |
| FBA_D11 | F13 | FBA_D11 | G24 | FBA_BA0 | | |
| FBA_D12 | C13 | FBA_D12 | F27 | FBA_WE# | FBA_WE# | <28,29> |
| FBA_D13 | E13 | FBA_D13 | G25 | FBA_CAS# | FBA_CAS# | <28,29> |
| FBA_D14 | D13 | FBA_D14 | G27 | FBA_CS0#_H | FBA_CS0#_H | <29> |
| FBA_D15 | D13 | FBA_D15 | G26 | FBA_CKE_H | FBA_CKE_H | <29> |
| FBA_D16 | B15 | FBA_D16 | M24 | FBA_CAS# | FBA_CAS# | <29> |
| FBA_D17 | C16 | FBA_D17 | M23 | FBA_CS0#_H | FBA_CS0#_H | <29> |
| FBA_D18 | A13 | FBA_D18 | K24 | FBA_ODT_H | | |
| FBA_D19 | A15 | FBA_D19 | K23 | FBA_CKE_H | | |
| FBA_D20 | B18 | FBA_D20 | M27 | FBA_MA13 | | |
| FBA_D21 | A18 | FBA_D21 | M26 | FBA_MA8 | | |
| FBA_D22 | A19 | FBA_D22 | M25 | FBA_MA6 | | |
| FBA_D23 | C19 | FBA_D23 | K26 | FBA_MA11 | | |
| FBA_D24 | B24 | FBA_D24 | K22 | FBA_MA5 | | |
| FBA_D25 | C23 | FBA_D25 | J23 | FBA_MA3 | | |
| FBA_D26 | A25 | FBA_D26 | J25 | FBA_BA2 | | |
| FBA_D27 | A24 | FBA_D27 | J24 | FBA_BA1 | | |
| FBA_D28 | A21 | FBA_D28 | K27 | FBA_MA12 | | |
| FBA_D29 | B21 | FBA_D29 | K25 | FBA_MA10 | | |
| FBA_D30 | C20 | FBA_D30 | J27 | FBA_RAS# | FBA_RAS# | <28,29> |
| FBA_D31 | C21 | FBA_D31 | J26 | | | |
| FBA_D32 | R22 | FBA_D32 | | | | |
| FBA_D33 | F24 | FBA_D33 | | | | |
| FBA_D34 | T22 | FBA_D34 | | | | |
| FBA_D35 | R23 | FBA_D35 | | | | |
| FBA_D36 | N25 | FBA_D36 | | | | |
| FBA_D37 | N26 | FBA_D37 | | | | |
| FBA_D38 | N23 | FBA_D38 | | | | |
| FBA_D39 | N24 | FBA_D39 | | | | |
| FBA_D40 | V23 | FBA_D40 | | | | |
| FBA_D41 | V22 | FBA_D41 | | | | |
| FBA_D42 | T23 | FBA_D42 | | | | |
| FBA_D43 | U22 | FBA_D43 | | | | |
| FBA_D44 | Y24 | FBA_D44 | | | | |
| FBA_D45 | AA24 | FBA_D45 | | | | |
| FBA_D46 | Y22 | FBA_D46 | | | | |
| FBA_D47 | AA23 | FBA_D47 | | | | |
| FBA_D48 | AB27 | FBA_D48 | | | | |
| FBA_D49 | AB25 | FBA_D49 | | | | |
| FBA_D50 | AD26 | FBA_D50 | | | | |
| FBA_D51 | AD25 | FBA_D51 | | | | |
| FBA_D52 | AA27 | FBA_D52 | | | | |
| FBA_D53 | AA26 | FBA_D53 | | | | |
| FBA_D54 | W26 | FBA_D54 | | | | |
| FBA_D55 | Y25 | FBA_D55 | | | | |
| FBA_D56 | R26 | FBA_D56 | | | | |
| FBA_D57 | T25 | FBA_D57 | | | | |
| FBA_D58 | N27 | FBA_D58 | | | | |
| FBA_D59 | F22 | FBA_D59 | | | | |
| FBA_D60 | V26 | FBA_D60 | | | | |
| FBA_D61 | V27 | FBA_D61 | | | | |
| FBA_D62 | W27 | FBA_D62 | | | | |
| FBA_D63 | W25 | FBA_D63 | | | | |

MEMORY INTERFACE A

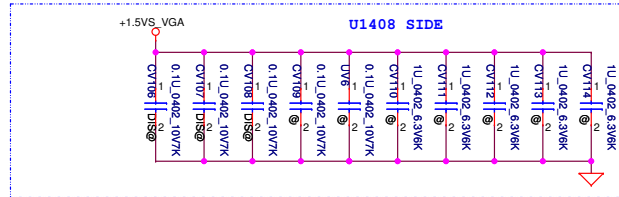
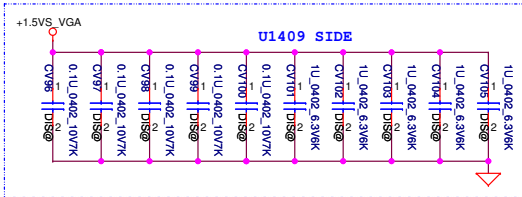
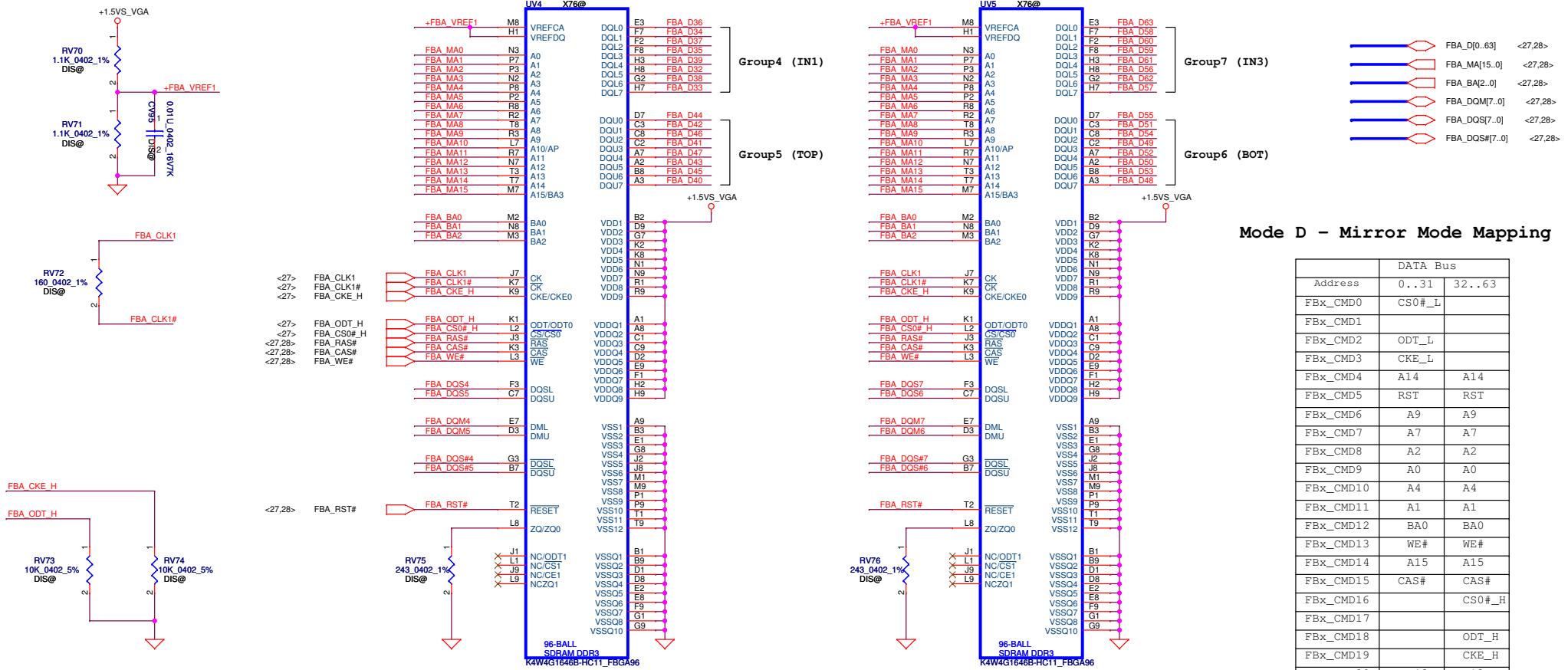
Mode D - Mirror Mode Mapping

| Address | DATA Bus | |
|-----------|----------|--------|
| FBx_CMD0 | 0..31 | 32..63 |
| FBx_CMD1 | CS0#_L | |
| FBx_CMD2 | ODT_L | |
| FBx_CMD3 | CKE_L | |
| FBx_CMD4 | A14 | A14 |
| FBx_CMD5 | RST | RST |
| FBx_CMD6 | A9 | A9 |
| FBx_CMD7 | A7 | A7 |
| FBx_CMD8 | A2 | A2 |
| FBx_CMD9 | A0 | A0 |
| FBx_CMD10 | A4 | A4 |
| FBx_CMD11 | A1 | A1 |
| FBx_CMD12 | BA0 | BA0 |
| FBx_CMD13 | WE# | WE# |
| FBx_CMD14 | A15 | A15 |
| FBx_CMD15 | CAS# | CAS# |
| FBx_CMD16 | | CS0#_H |
| FBx_CMD17 | | |
| FBx_CMD18 | | ODT_H |
| FBx_CMD19 | | CKE_H |
| FBx_CMD20 | A13 | A13 |
| FBx_CMD21 | A8 | A8 |
| FBx_CMD22 | A6 | A6 |
| FBx_CMD23 | A11 | A11 |
| FBx_CMD24 | A5 | A5 |
| FBx_CMD25 | A3 | A3 |
| FBx_CMD26 | BA2 | BA2 |
| FBx_CMD27 | BA1 | BA1 |
| FBx_CMD28 | A12 | A12 |
| FBx_CMD29 | A10 | A10 |
| FBx_CMD30 | RAS# | RAS# |

Memory Partition A - Lower 32 bits



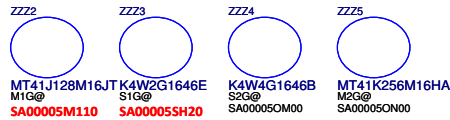
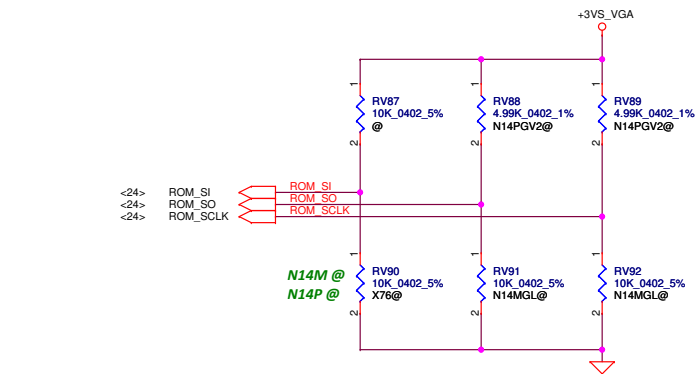
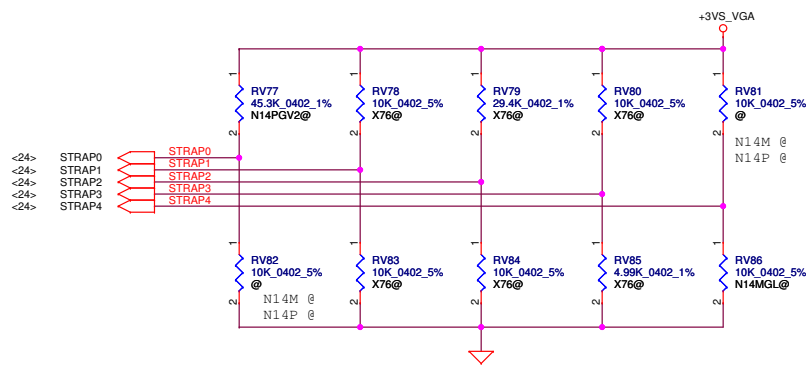
Memory Partition A - Upper 32 bits



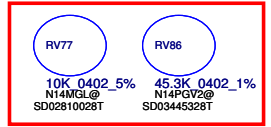
| Security Classification | LC Future Center Secret Data | |
|-------------------------|------------------------------|-----------------|
| Issued Date | 2012/12/05 | Deciphered Date |
| | | 2014/12/05 |

THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.

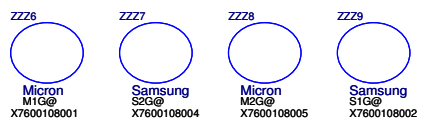
| Title | | |
|-------------------|-------------------------|---------------------|
| N14P_DDR3-A UPPER | | |
| Size | Document Number | E440 NM-A151 |
| Custom | | |
| Date: | Thursday, July 11, 2013 | Rev 1.0 |
| | Sheet 29 | of 57 |



For N14P-GV2 QS Sample
 ROM_SO change from PU 10K to PU 5K
 ROM_SCLK change from PD 15K to PU 5K
 STRAP1 change from PD 5K to PD 45K
 STRAP2 change from PU 30K to PD 15K
 STRAP4 change from PD 5K to PD 45K



Load BOM時，要改成RV86, RV77



| Physical Strapping pin | Power Rail | Logical Strapping Bit3 | Logical Strapping Bit2 | Logical Strapping Bit1 | Logical Strapping Bit0 |
|------------------------|------------|------------------------|------------------------|------------------------|------------------------|
| ROM_SCLK | +3VS_VGA | PCI_DEVID[4] | SUB_VENDOR | PCI_DEVID[5] | PEX_PLL_EN_TERM |
| ROM_SI | +3VS_VGA | RAM_CFG[3] | RAM_CFG[2] | RAM_CFG[1] | RAM_CFG[0] |
| ROM_SO | +3VS_VGA | FB[1] | FB[0] | SMB_ALT_ADDR | VGA_DEVICE |
| STRAP0 | +3VS_VGA | USER[3] | USER[2] | USER[1] | USER[0] |
| STRAP1 | +3VS_VGA | 3GIO_PADCFG[3] | 3GIO_PADCFG[2] | 3GIO_PADCFG[1] | 3GIO_PADCFG[0] |
| STRAP2 | +3VS_VGA | PCI_DEVID[3] | PCI_DEVID[2] | PCI_DEVID[1] | PCI_DEVID[0] |
| STRAP3 | +3VS_VGA | SOR3_EXPOSED | SOR2_EXPOSED | SOR1_EXPOSED | SOR0_EXPOSED |
| STRAP4 | +3VS_VGA | RESERVED | PCIE_SPEED_CHANGE_GEN3 | PCIE_MAX_SPEED | DP_PLL_VDD33V |

| Resistor Values | Pull-up to +3VS_VGA | Pull-down to Gnd |
|-----------------|---------------------|------------------|
| 5K | 1000 | 0000 |
| 10K | 1001 | 0001 |
| 15K | 1010 | 0010 |
| 20K | 1011 | 0011 |
| 25K | 1100 | 0100 |
| 30K | 1101 | 0101 |
| 35K | 1110 | 0110 |
| 45K | 1111 | 0111 |

| SUB_VENDOR | |
|------------|-------------------------------|
| 0 | No VBIOS ROM |
| 1 | BIOS ROM is present (Default) |

| 3GIO_PADCFG[3:0] | |
|------------------|------------------------|
| 0110 | Gen1/Gen2 support only |
| 0000 | Gen3 support |

| FB[1:0] | |
|---------|-----------------|
| 0 | Reserved |
| 1 | Reserved |
| 2 | 256MB (Default) |
| 3 | Reserved |

| SMBUS_ALT_ADDR | |
|----------------|------------------------|
| 0 | 0x9E (Default) |
| 1 | 0x9C (Multi-GPU usage) |

| VGA_DEVICE | |
|------------|-----------------------------|
| 0 | 3D Device (Class Code 302h) |
| 1 | VGA Device (Default) |

| PCIE_MAX_SPEED | |
|----------------|-------------------------------|
| 0 | Limit booting to PCIe Gen1 |
| 1 | Allow booting to PCIe Gen 2/3 |

| PEX_PLL_EN_TERM | |
|-----------------|-------------------|
| 0 | Disable (Default) |
| 1 | Enable |

| USER Straps | |
|-------------|------------------|
| User [3:0] | |
| 1000-1100 | Customer defined |

| PCIE_SPEED_CHANGE_GEN3 | |
|------------------------|-----------------------------|
| 0 | Disable PCIe Gen3 operation |
| 1 | Enable PCIe Gen3 operation |

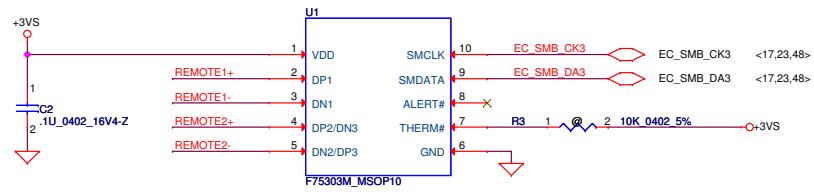
| DP_PLL_VDD33V | |
|---------------|----------|
| 0 | Reserved |
| 1 | Default |

| GPU | FB Memory GDDR3 | | ROM_SO | ROM_SCLK | ROM_SI | STRAP0 | STRAP1 | STRAP2 | STRAP3 | STRAP4 | |
|--------------------|--|--------------------|---|--------------|--------|--------|--------|--------|--------|--------|--|
| | <i>S2G, X76~04 SA00005OM00</i> <i>M2G, X76~05 SA00005ON00</i> | Samsung 1000MHz | K4W2G1646E-BC1A | PU 5K | | | | | | | |
| 128Mx16 | | | PD 45K | | | | | | | | |
| Micron 1000MHz | | MT41J128M16JT-093G | PD 30K | | | | | | | | |
| | | 128Mx16 | PU 45.3K PD 45.3K PD 15K PD 5K PD 45.3K | | | | | | | | |
| *Samsung 900MHz | | K4W4G1646B-HC11 | PD 20K | | | | | | | | |
| 256Mx16 | | PD 10K | | | | | | | | | |
| *Micron 900MHz | MT41K256M16HA-107G | | | | | | | | | | |
| 256Mx16 | | | | | | | | | | | |

| GPU | FB Memory GDDR3 | | ROM_SO | ROM_SCLK | ROM_SI | STRAP0 | STRAP1 | STRAP2 | STRAP3 | STRAP4 | |
|--------------------|--|-----------------------------|------------------------------------|---------------|--------|--------|--------|--------|--------|--------|--|
| | <i>S1G, X76~02 SA00005SH20</i> <i>M1G, X76~01 SA00005M110</i> | *Samsung 1000MHz | K4W2G1646E-BC1A | PD 10K | | | | | | | |
| 128Mx16 | | | PU 10K PD 10K PU 10K PD 10K | | | | | | | | |
| Hynix 1000MHz | | H5TQ2G63DFR-N0C | PD 10K PU 10K PU 10K PD 10K | | | | | | | | |
| | | 128Mx16 | PU 10K PD 10K PD 10K PD 10K PD 10K | | | | | | | | |
| *Micron 1000MHz | | MT41J128M16JT-093G | | | | | | | | | |
| 128Mx16 | | | | | | | | | | | |
| Samsung 900MHz | K4W4G1646B-HC11 | PU 10K PU 10K PU 10K PU 10K | | | | | | | | | |
| 256Mx16 | | | | | | | | | | | |
| Hynix 900MHz | H5TQ4G63MFR-11C | PU 10K PU 10K PD 10K PD 10K | | | | | | | | | |
| 256Mx16 | | | | | | | | | | | |
| Micron 900MHz | MT41K256M16HA-107G | PD 10K PD 10K PU 10K PU 10K | | | | | | | | | |
| 256Mx16 | | | | | | | | | | | |

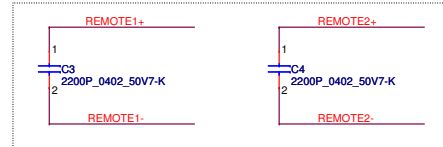
Thermal Sensor

**Thermal Sensor
placed near by VRAM**

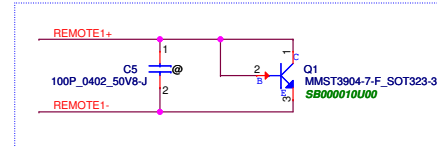


Address 1001_101xb
Internal pull up 1.2K to 1.5V
R for initial thermal shutdown temp

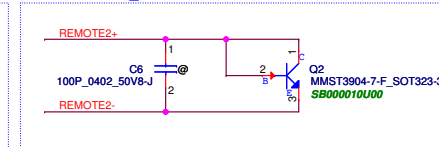
Close to U2



Close to BOTTOM DDR3



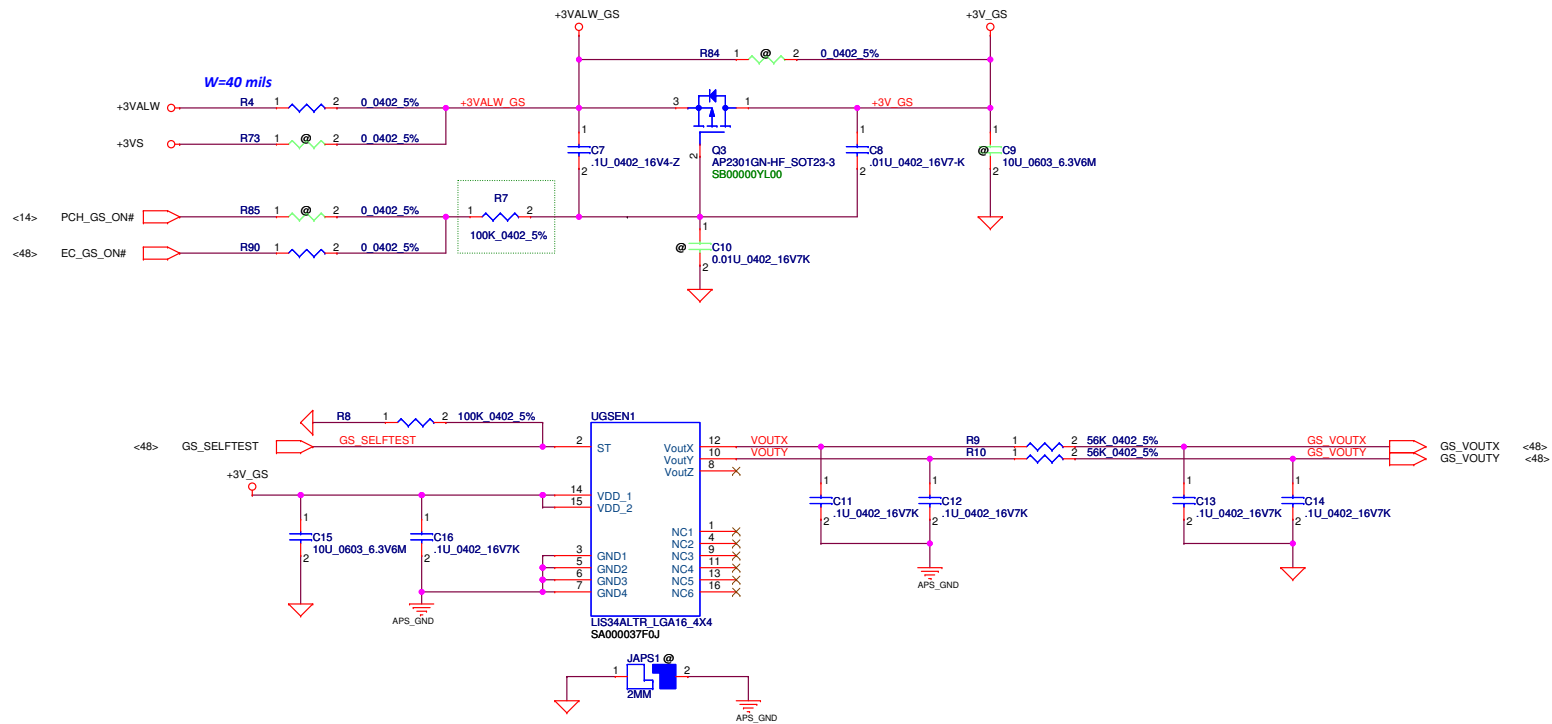
Close to +CPU_CORE



REMOTE2+/-:
Trace width/space:10/10 mil
Trace length:<8"

| | | | | |
|--|------------------------------|-----------------|----------------------------------|--|
| Security Classification | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | Size Custom | Document Number E440 NW-A151 |
| | | | Date: Thursday, July 11, 2013 | Rev 1.0 |
| | | | Sheet 32 | of 57 |

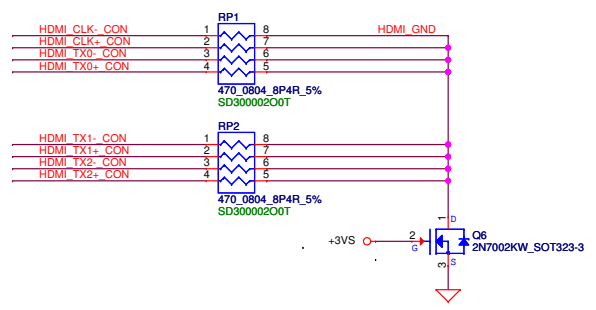
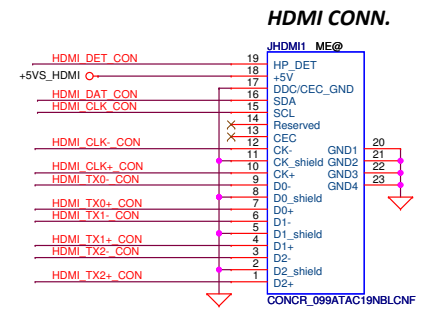
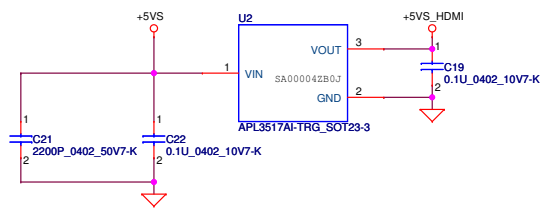
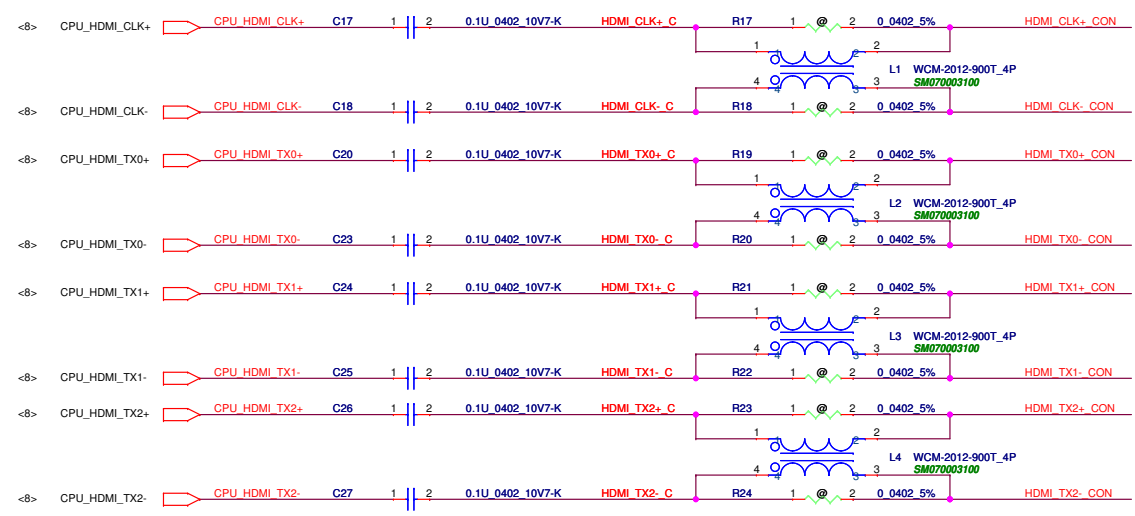
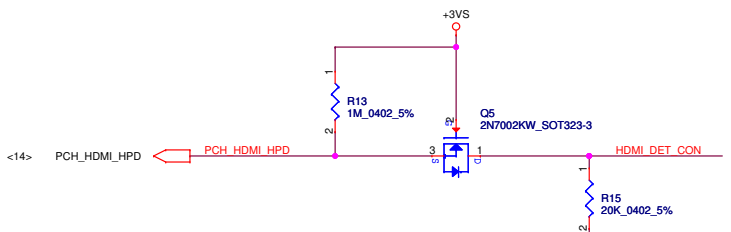
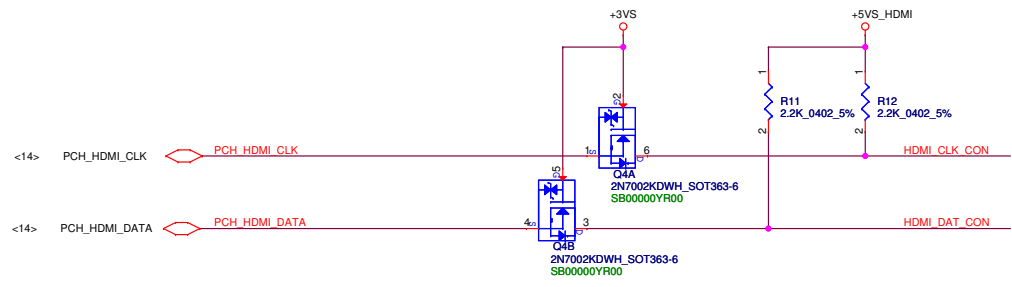
APS G-Sensor



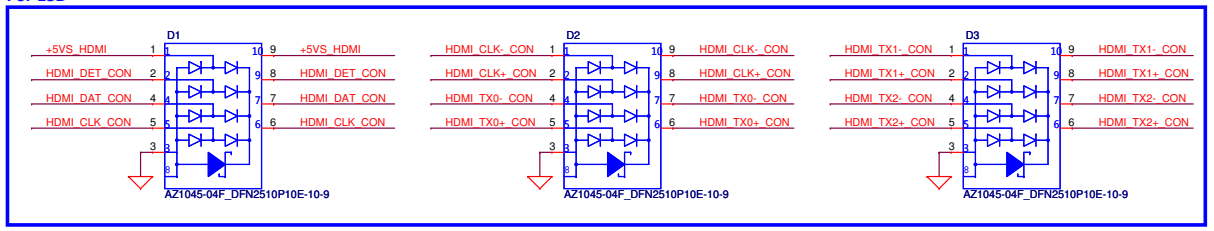
| | | |
|--|------------------------------|----------------------------|
| Security Classification | LC Future Center Secret Data | |
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

| | | | |
|-----------------|-------------------------|-------|---|
| Title | APS G-SENSOR | |  |
| Document Number | E440 NW-A151 | | |
| Date | Thursday, July 11, 2013 | Sheet | 33 of 57 |

Rev 1.0



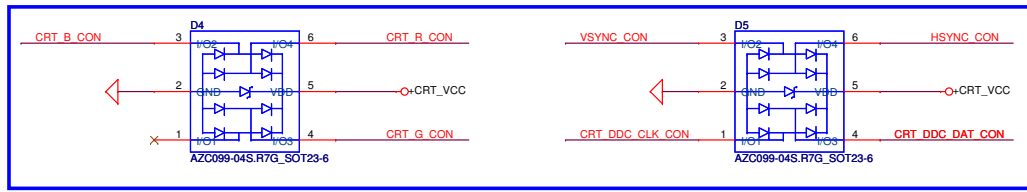
For ESD



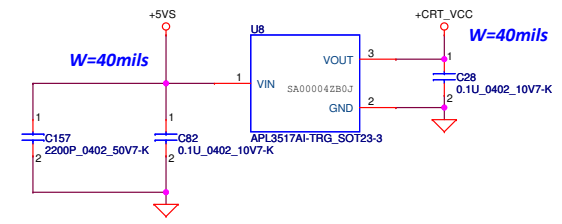
| | | | |
|--|------------------------------|-----------------|------------|
| Security Classification | LC Future Center Secret Data | | Title |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |

HDMI CONN.

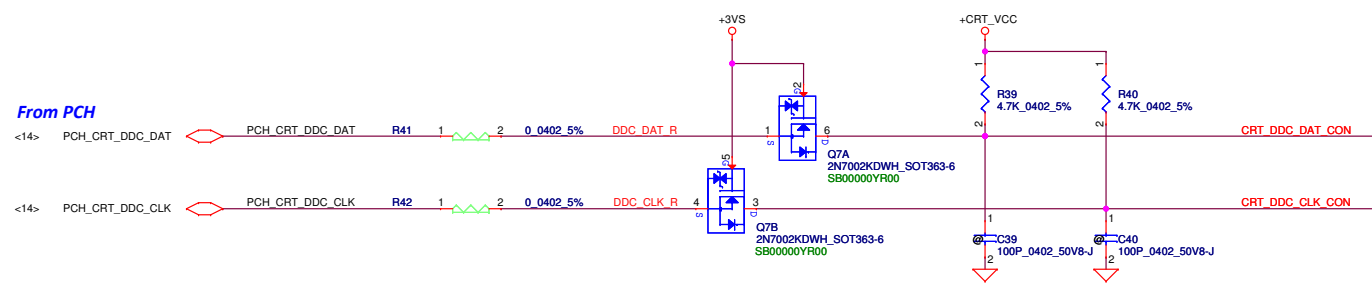
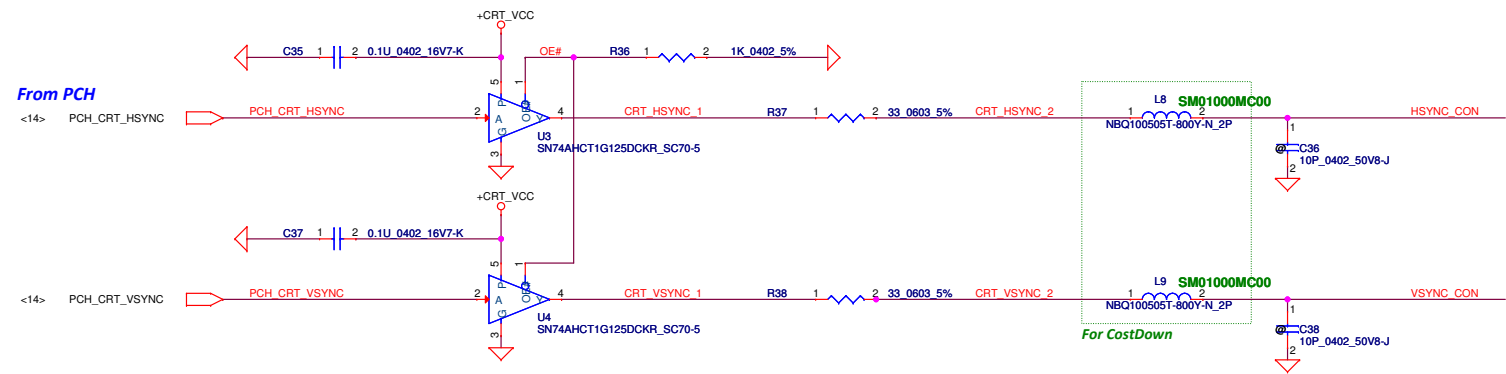
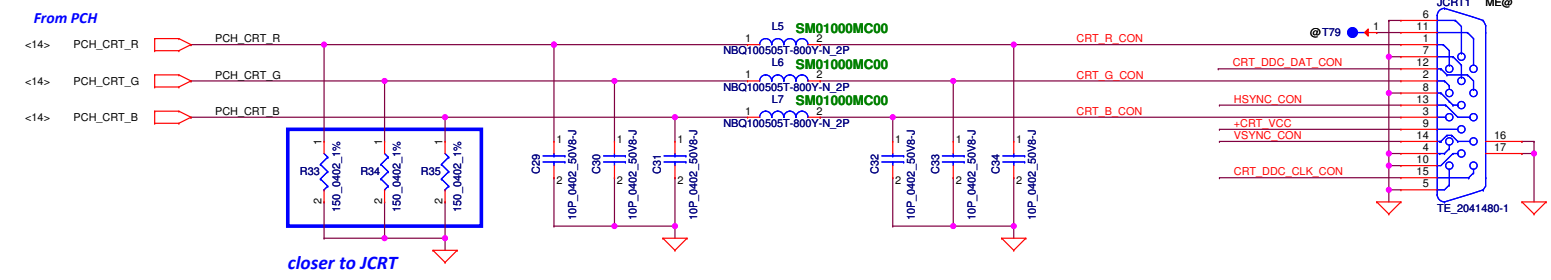
 Size Custom | Document Number **E440 NM-A151** | Rev 1.0
 Date: Thursday, July 11, 2013 | Sheet 34 of 57



closer to JCRT

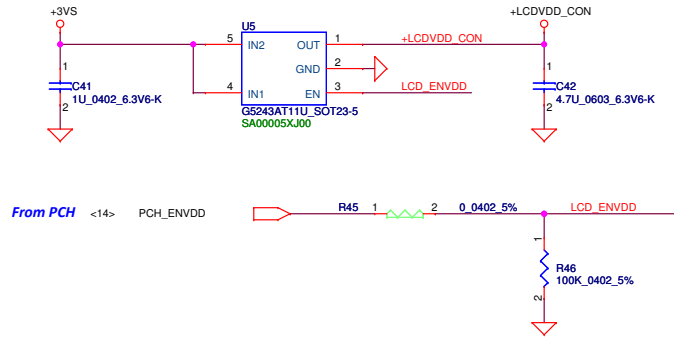


CRT Connector

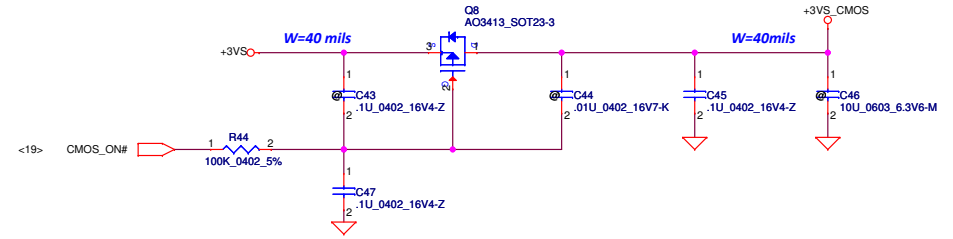


| | | | | |
|--|------------------------------|-----------------|------------|--|
| Security Classification | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size Custom Document Number E440 NW-A151 Date: Thursday, July 11, 2013 Sheet 35 of 57 |

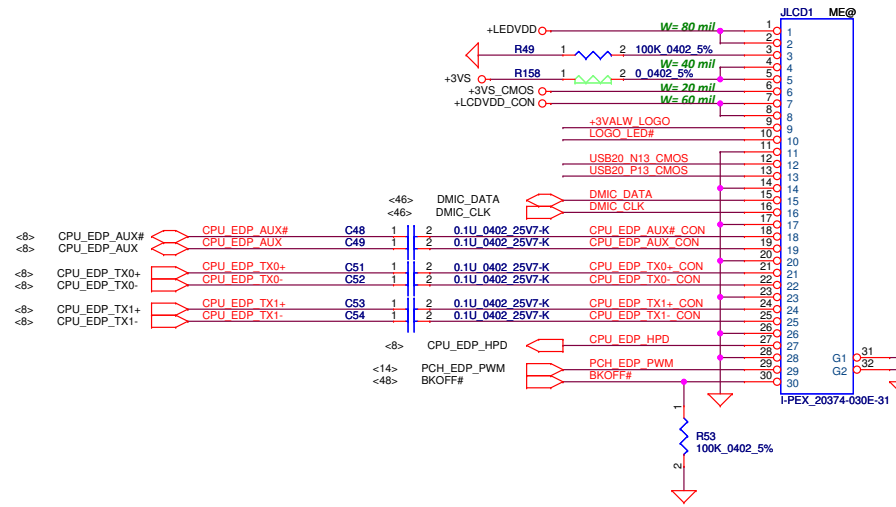
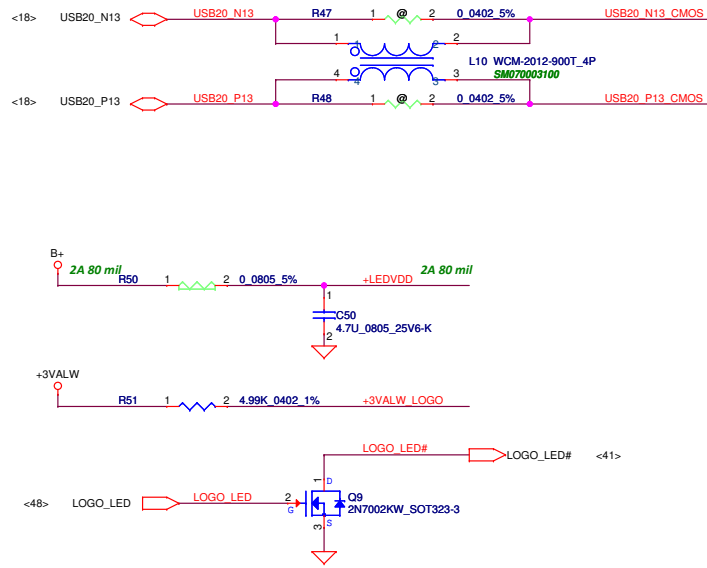
LCDVDD Circuit



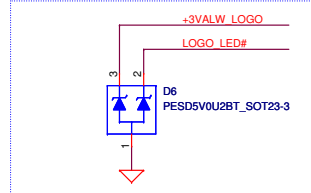
CMOS Camera



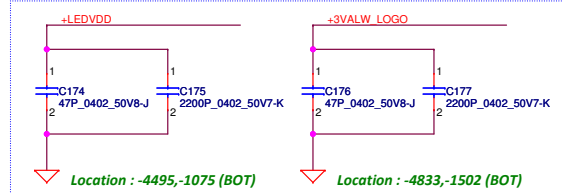
CMOS USB Port10



ESD request

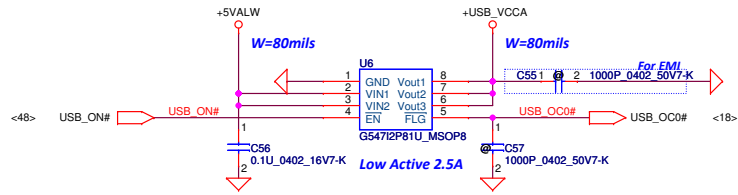


EMI

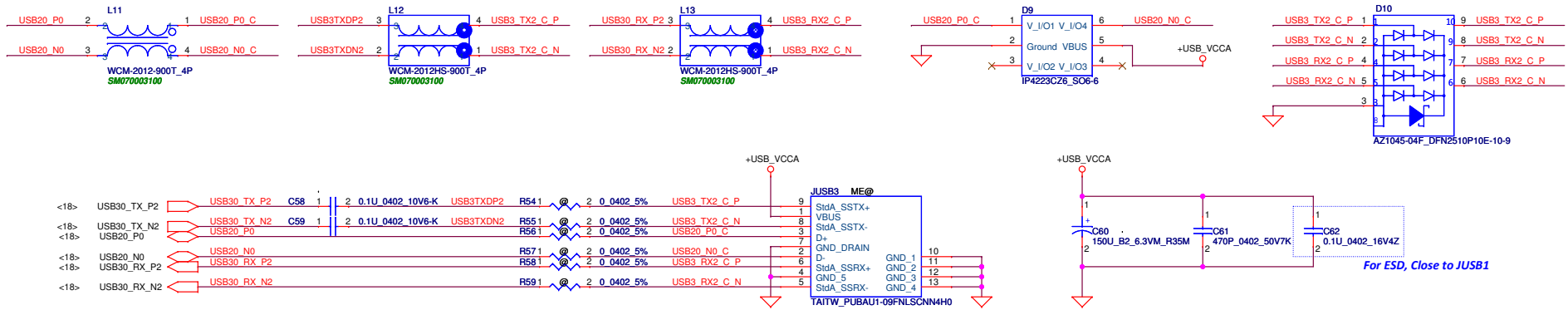


| Security Classification | LC Future Center Secret Data | |
|--|------------------------------|-----------------|
| Issued Date | 2012/12/05 | Deciphered Date |
| | | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PCH DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

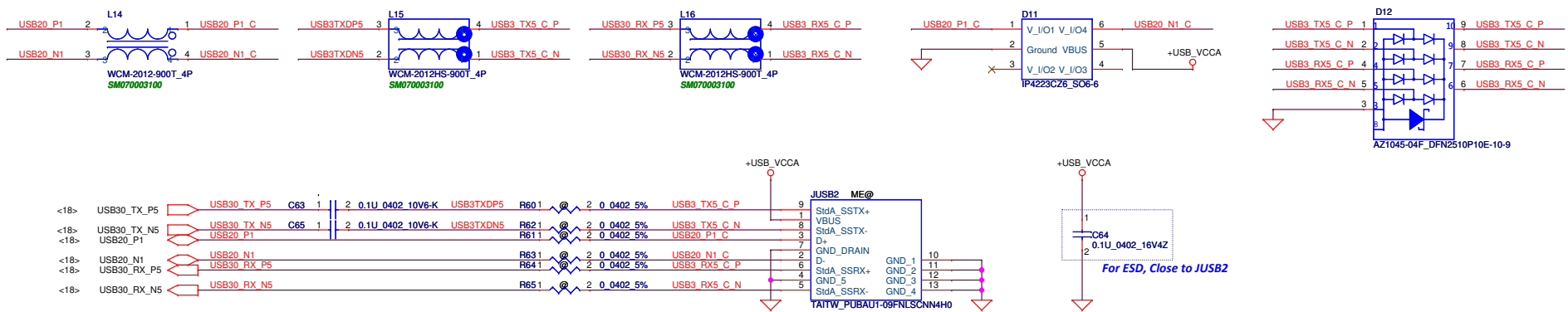
| Title | LCD/CMOS CONN. | |
|--------|-------------------------|----------------|
| Size | Document Number | Rev |
| Custom | E440 NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet 36 of 57 |



USB30 Front



USB30 Back

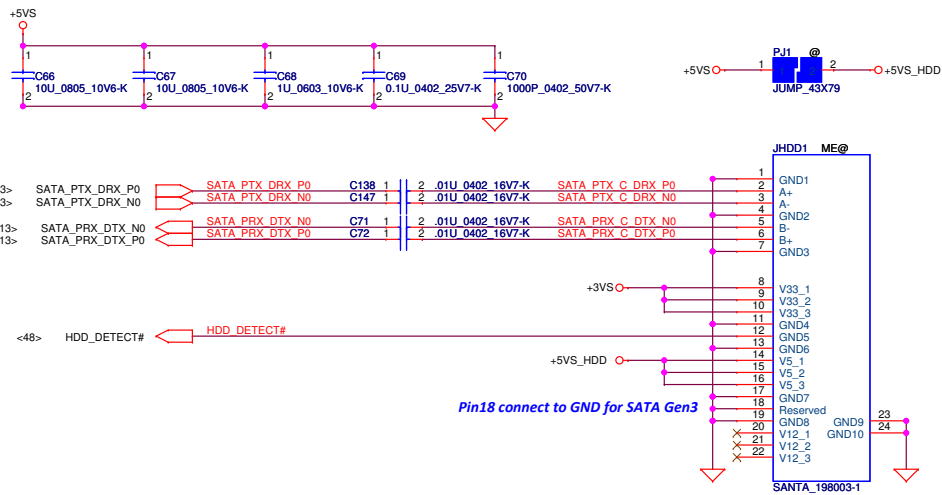


| Security Classification | LC Future Center Secret Data | |
|---|------------------------------|-----------------|
| Issued Date | 2012/12/05 | Deciphered Date |
| | | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

| Title | Size | Document Number | Rev |
|-------------------------|-------------------------|---------------------|----------|
| USB30 PORT CONN. | Custom | E440 NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet | 37 of 57 |

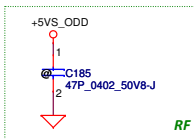
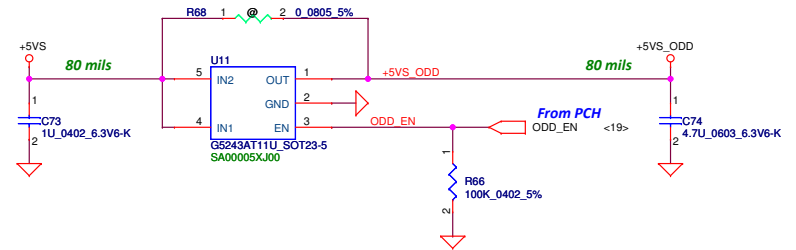
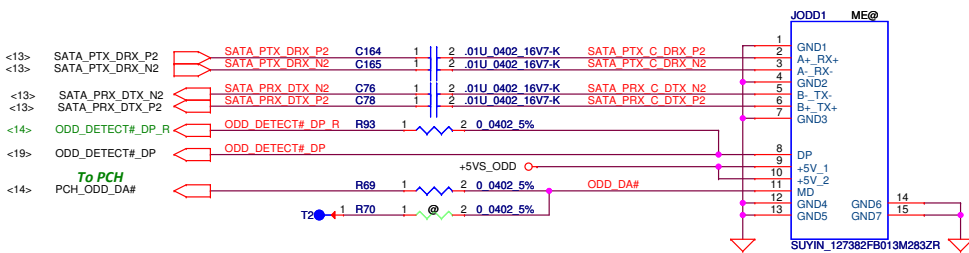


SATA HDD CONN.



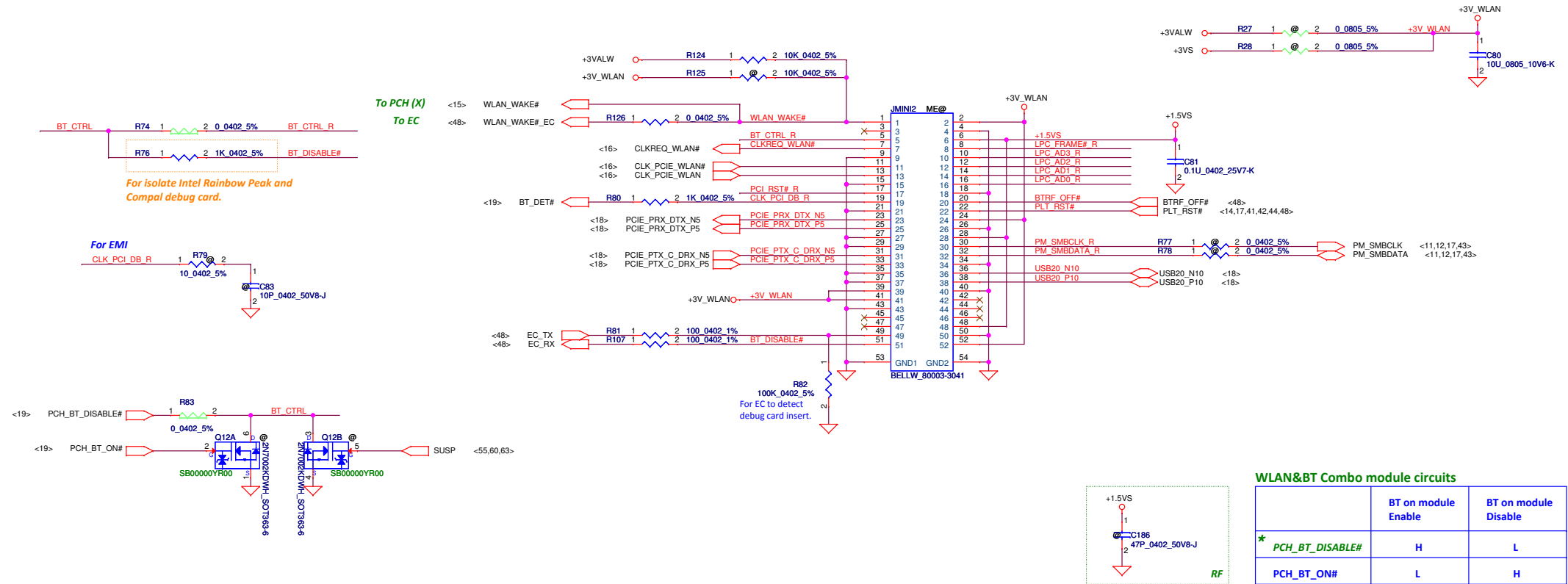
SATA ODD CONN & ODD Power Control

+5VS TO +5VS_ODD



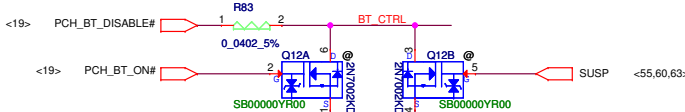
| | | | | | |
|---|------------------------------|-----------------|------------|-------------------------|----------------|
| Security Classification | LC Future Center Secret Data | | Title | SATA HDD/ODD CONN. | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | | |
| <small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PCH DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</small> | | | | | |
| Size | Document Number | Date | | Thursday, July 11, 2013 | Sheet 38 of 57 |
| Custom | E440 NM-A151 | Rev | | 1.0 | |

Mini-Express Card(WLAN/WiMAX)



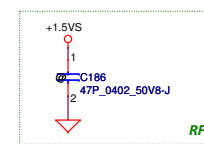
For isolate Intel Rainbow Peak and Compal debug card.

For EMI



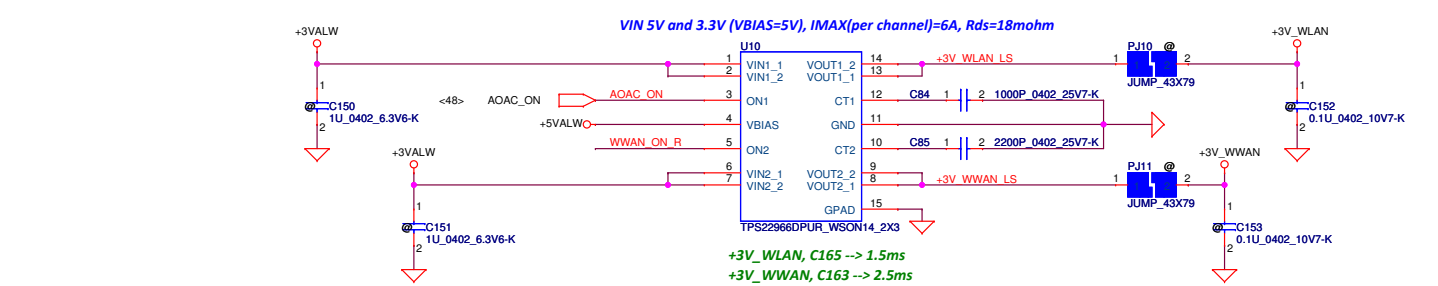
WLAN&BT Combo module circuits

| | BT on module Enable | BT on module Disable |
|-------------------|---------------------|----------------------|
| * PCH_BT_DISABLE# | H | L |
| PCH_BT_ON# | L | H |



Load Switch

- +3VALW To +3V_WLAN
 - +3VALW To +3V_WWAN
- softstart (RC) will check on EVT PCB
 - if AOAC enable +3V_WLAN always ON
 - if AOAC disable +3V_WLAN is same as +3VS

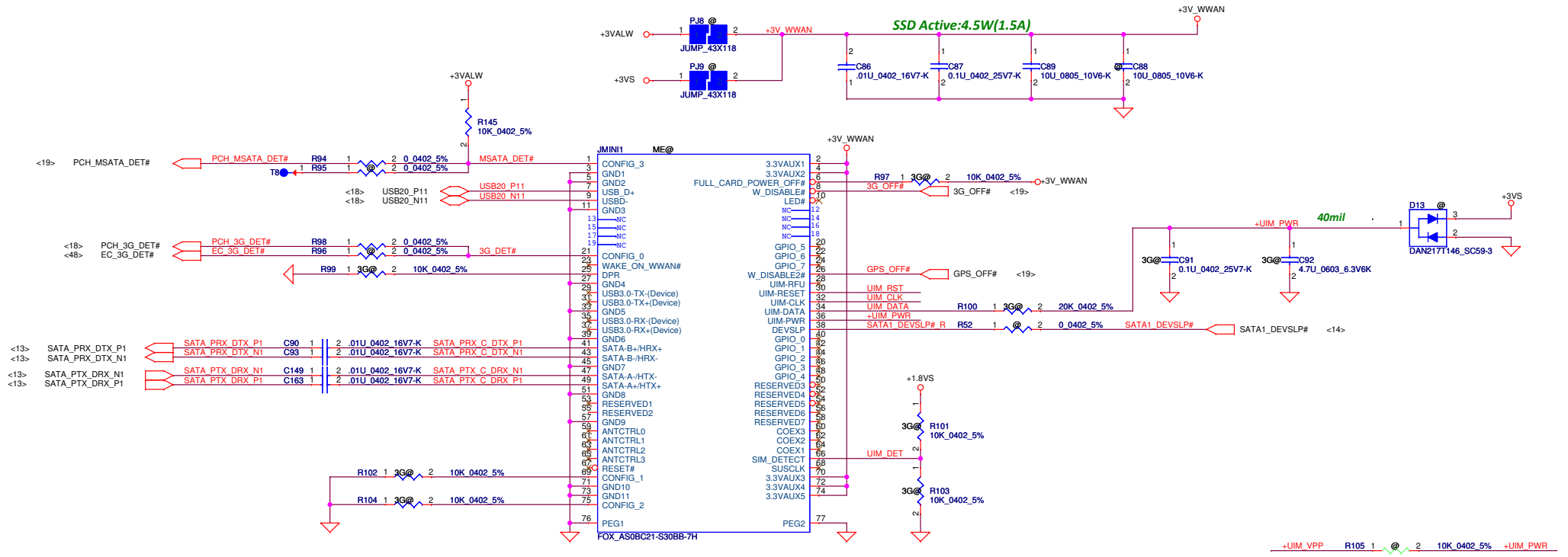


Reserve for SW mini-pcie debug card.
Series resistors closed to KBC side.

| | | | | | | | |
|--------------|------|---|---|---|-----------|------------|------------|
| LPC_FRAME# R | R86 | 1 | @ | 2 | 0.0402_5% | LPC_FRAME# | <17,44,48> |
| LPC_AD3 R | R87 | 1 | @ | 2 | 0.0402_5% | LPC_AD3 | <17,44,48> |
| LPC_AD2 R | R88 | 1 | @ | 2 | 0.0402_5% | LPC_AD2 | <17,44,48> |
| LPC_AD1 R | R89 | 1 | @ | 2 | 0.0402_5% | LPC_AD1 | <17,44,48> |
| LPC_AD0 R | R91 | 1 | @ | 2 | 0.0402_5% | LPC_AD0 | <17,44,48> |
| PCI_RST# R | R92 | 1 | @ | 2 | 0.0402_5% | PLT_RST# | <17,44,48> |
| CLK_PCI_DB R | R106 | 1 | @ | 2 | 0.0402_5% | CLK_PCI_DB | <16> |

| Security Classification | LC Future Center Secret Data | | Title |
|---|------------------------------|-----------------|--|
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | Size: Custom Document Number: E440 NM-A151 Date: Thursday, July 11, 2013 Sheet: 39 of 57 |

NGFF(SSD) & SIM CARD CONN.



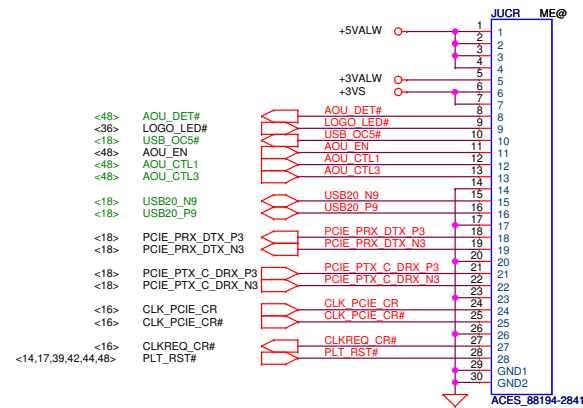
Only for 15"


1. PCH_MSATA_DET# --> +3V_PCH
EC_MSATA_DET# --> +3VL
2. PCH_3G_DET# --> +3VS
EC_3G_DET# --> +3VL
需小心EC漏電到PCH
3. EC don't have GPIO pin for DET# pin as below
 - a. PCH_3G_DET#
 - b. PCH_MSATA_DET#

| NGFF Detect Desc. | | |
|-------------------|------------|---------|
| | MSATA_DET# | 3G_DET# |
| No Card | 1 | 1 |
| WWAN CARD | 1 | 0 |
| SSD CARD | 0 | 0 |

| | | | | |
|--|------------------------------|-----------------|------------|--|
| Security Classification | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R... DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size Custom Document Number E440 NM-A151 Date: Thursday, July 11, 2013 Sheet 40 of 57 |

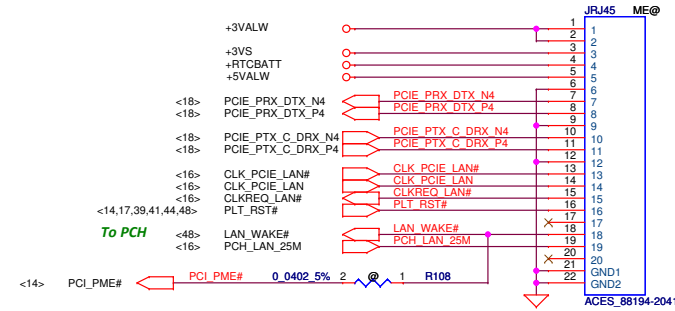
USB2.0, CR & LOGO Board



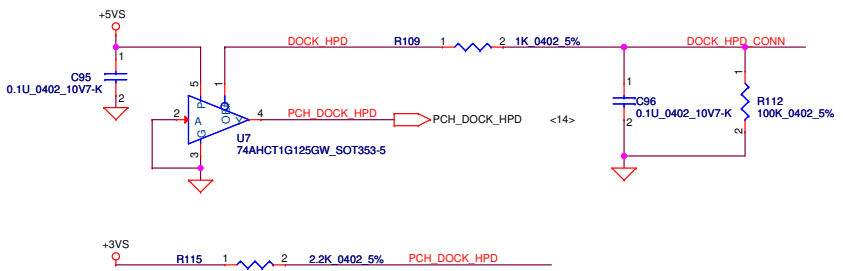
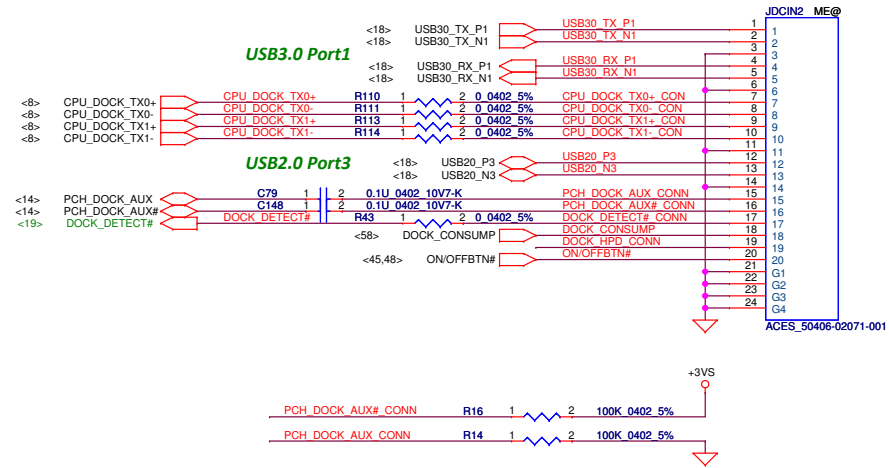
| | | | | | |
|---|------------------------------|-----------------|------------|---|--|
| Security Classification | LC Future Center Secret Data | | Title |  | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | | PCIe-CR/USB-Charge CONN. Size: Custom Document Number: E440 NM-A151 Date: Thursday, July 11, 2013 Sheet: 41 of 57 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | | |
| | | | | Rev | 1.0 |

**LAN (Port4)
USB3.0/2.0 (Port1/3)
DP(DDIC)**

LAN CONN. (FFC)



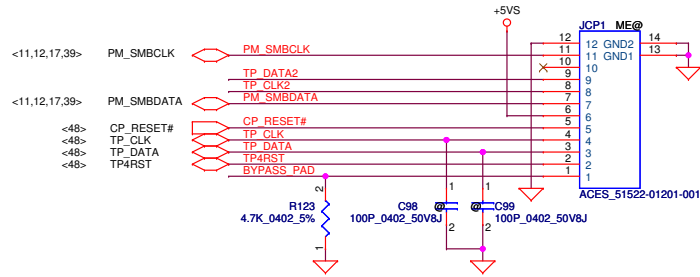
DCIN CONN. (Coaxial)



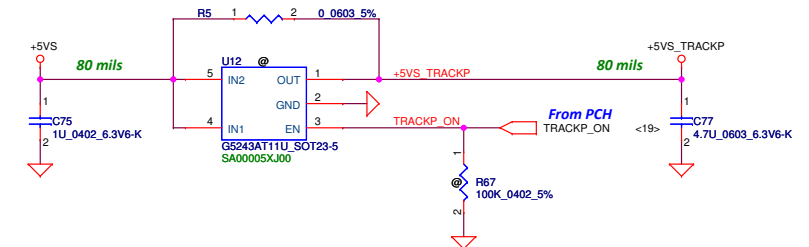
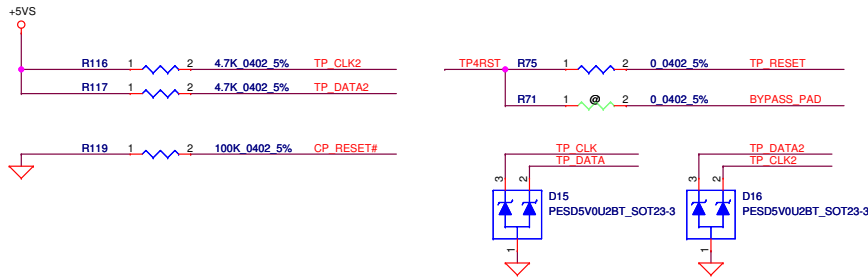
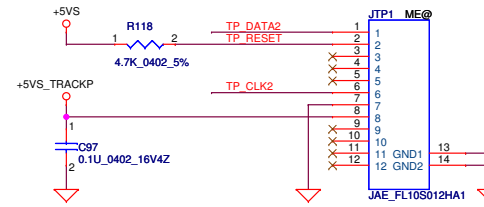
| | | | | | | | | | |
|---|--|------------|--|------------------------------|--|------------|--|---------------------------|--|
| Security Classification | | | | LC Future Center Secret Data | | | | Title | |
| Issued Date | | 2012/12/05 | | Deciphered Date | | 2014/12/05 | | PCIE-RJ45/RTC/Docking CON | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FUTURE CENTER DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | | | | | | |
| Date: Thursday, July 11, 2013 | | | | | | | | Sheet 42 of 57 | |

Size: Custom
 Document Number: **E440 NM-A151**
 Rev: 1.0
 Date: Thursday, July 11, 2013 | Sheet 42 of 57

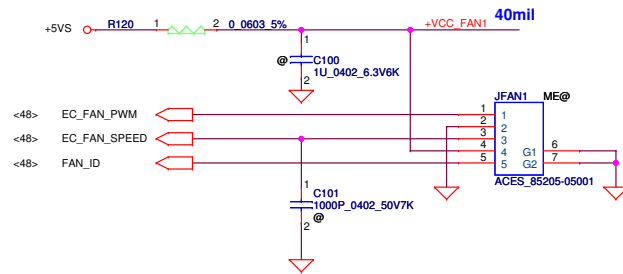
Click Pad



Track point



FAN CONN.

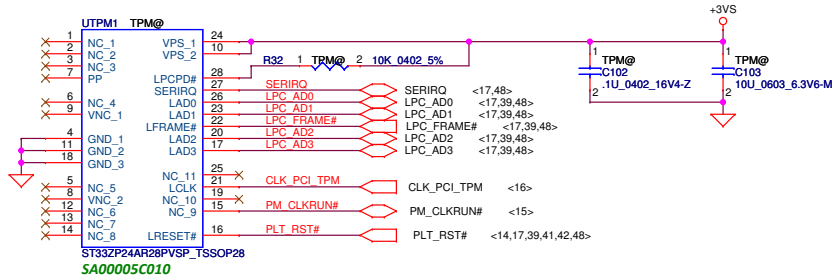


| | | |
|--|------------------------------|----------------------------|
| Security Classification | LC Future Center Secret Data | |
| Issued Date | 2012/12/05 | Deciphered Date 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | |

| | | |
|--------|-------------------------|----------------|
| Title | CP/TP/FAN CONN. | |
| Size | Document Number | Rev |
| Custom | E440 NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet 43 of 57 |



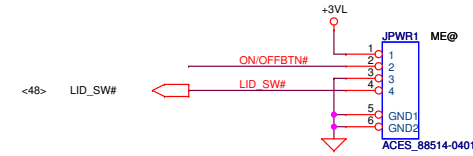
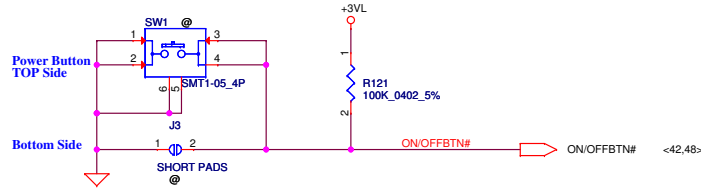
TPM IC



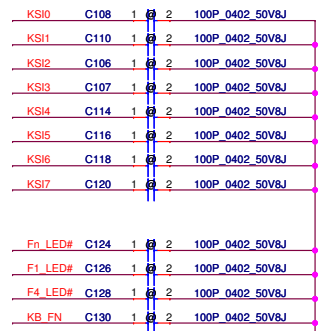
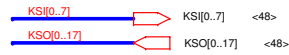
PWR BTN/LID SW CONN.

1. Power Button/B link to Function/B Conn. 10pin
2. Lid Switch

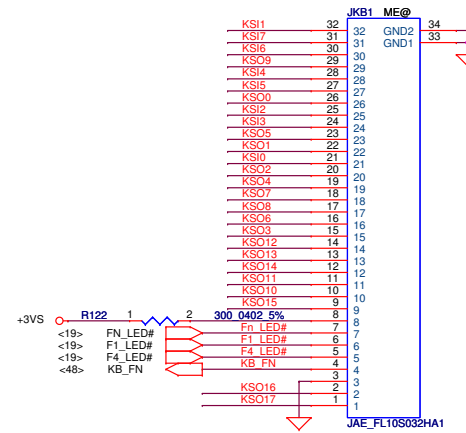
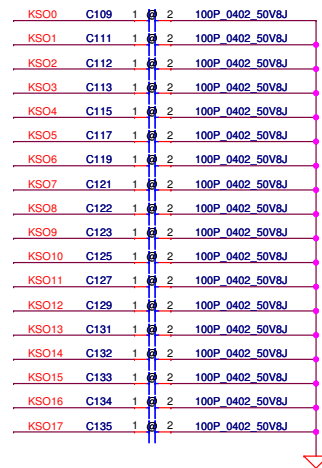
ON/OFF switch



KeyBoard CONN.(14")

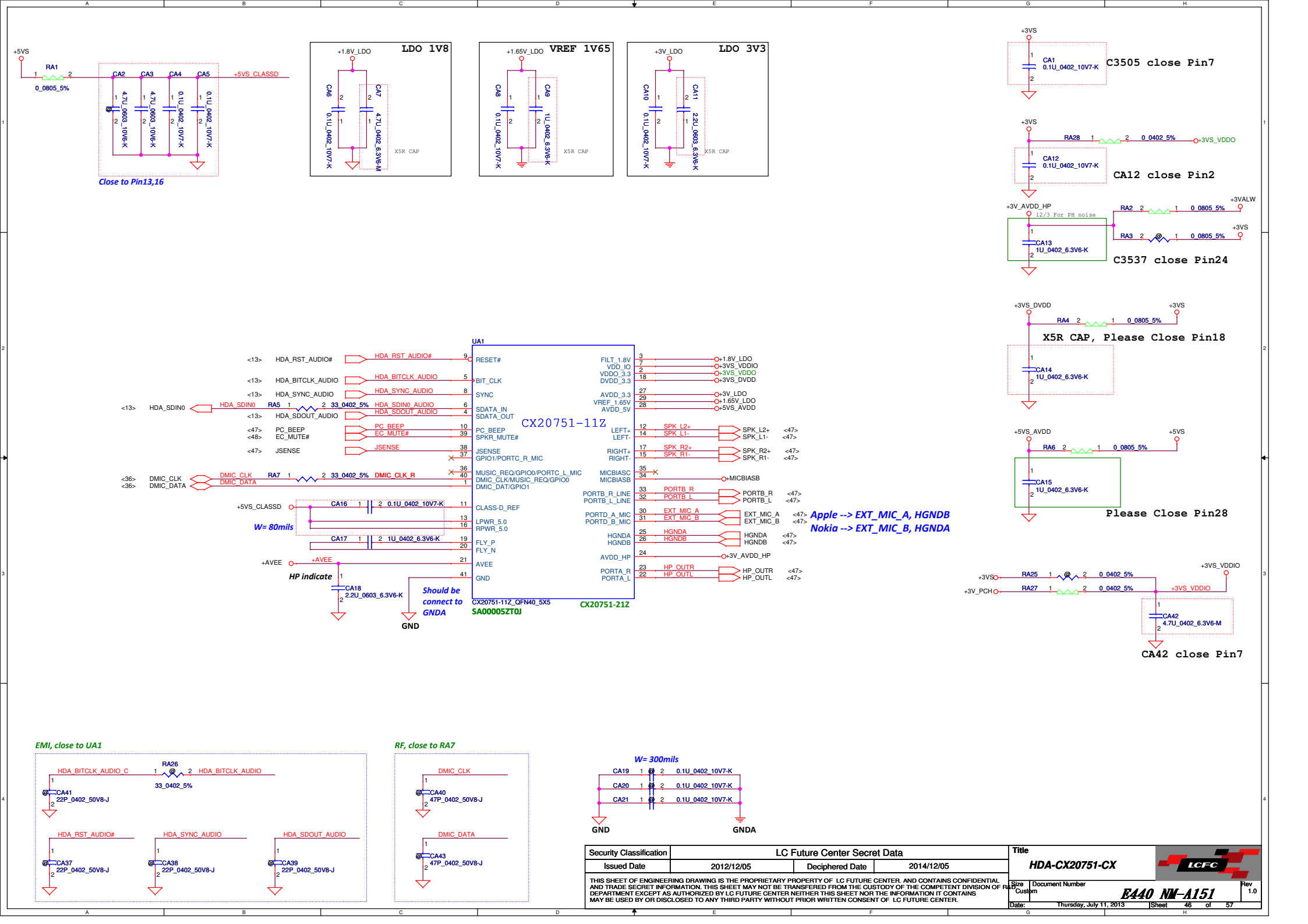


CONN PIN define need double check



| Security Classification | LC Future Center Secret Data | | Title |
|--|------------------------------|-----------------|------------|
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |

| Size | Document Number | Rev |
|--------|-------------------------|----------------|
| Custom | E440 NM-A151 | 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet 45 of 57 |



Close to Pin13,16

LDO 1V8

VREF 1V65

LDO 3V3

C3505 close Pin7

CA12 close Pin2

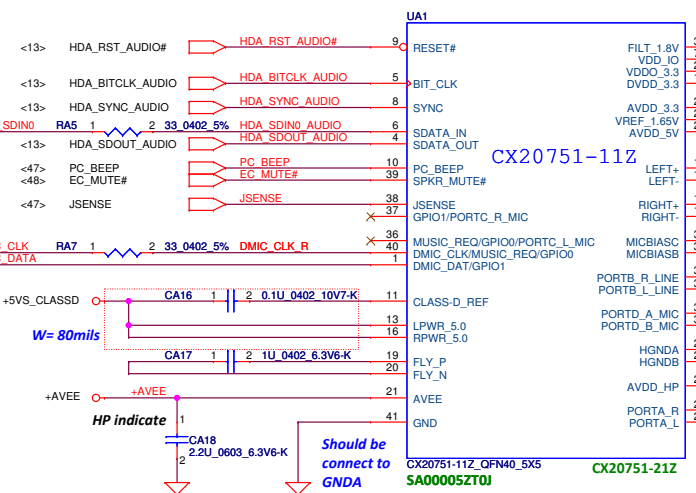
C3537 close Pin24

X5R CAP, Please Close Pin18

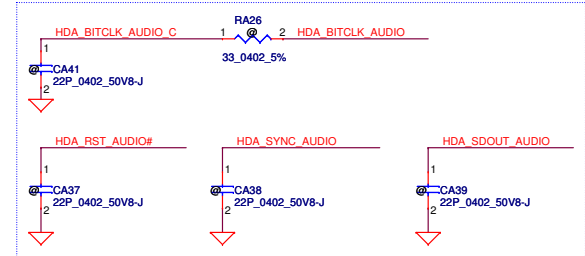
Please Close Pin28

CA42 close Pin7

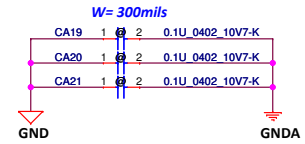
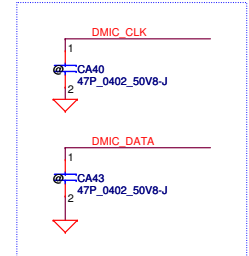
Apple --> EXT_MIC_A, HGND B
 Nokia --> EXT_MIC_B, HGND A



EMI, close to UA1

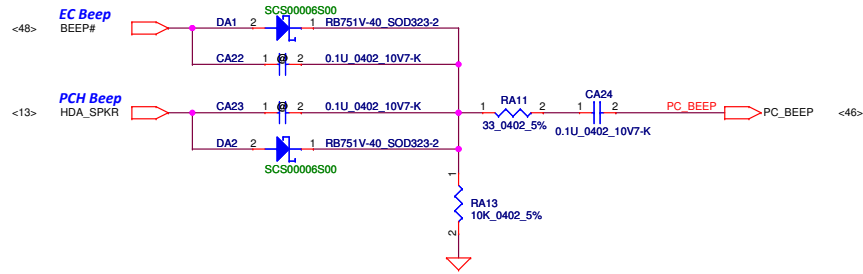


RF, close to RA7

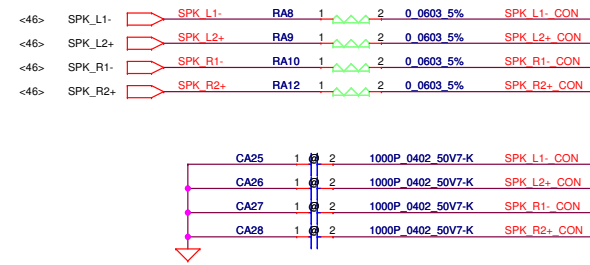


| Security Classification | LC Future Center Secret Data | | Title |
|---|------------------------------|-----------------|------------|
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |
| Size | Document Number | Rev | |
| Custom | E440 NM-A151 | 1.0 | |
| Date: | Thursday, July 11, 2013 | Sheet | 46 of 57 |

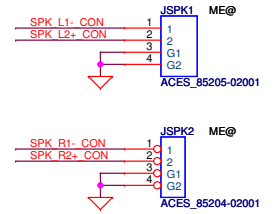
PC BEEP



Speaker OUT

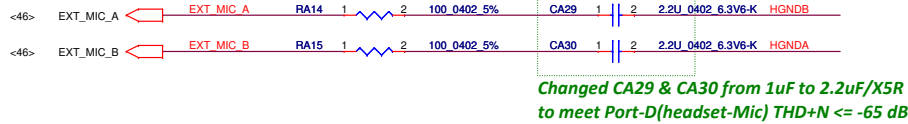


SPK CONN.

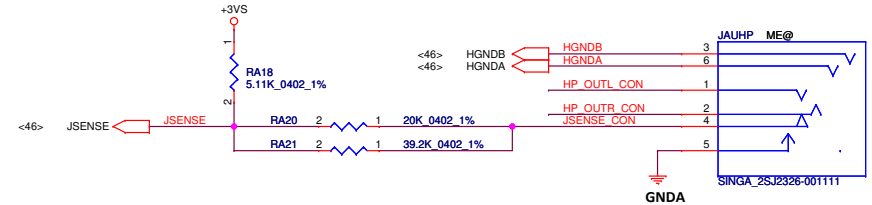


EXT. MIC/LINE IN

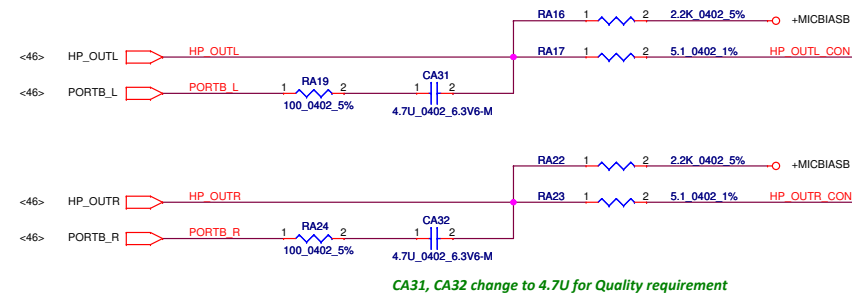
Apple --> EXT_MIC_A, HGNCB
Nokia --> EXT_MIC_B, HGNCB



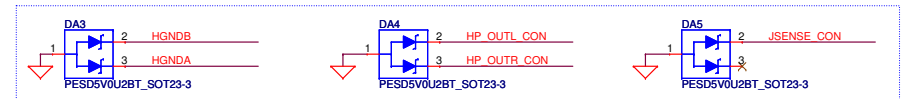
Audio Jack



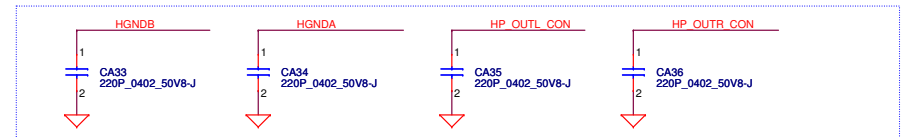
HeadPhone/LINE OUT



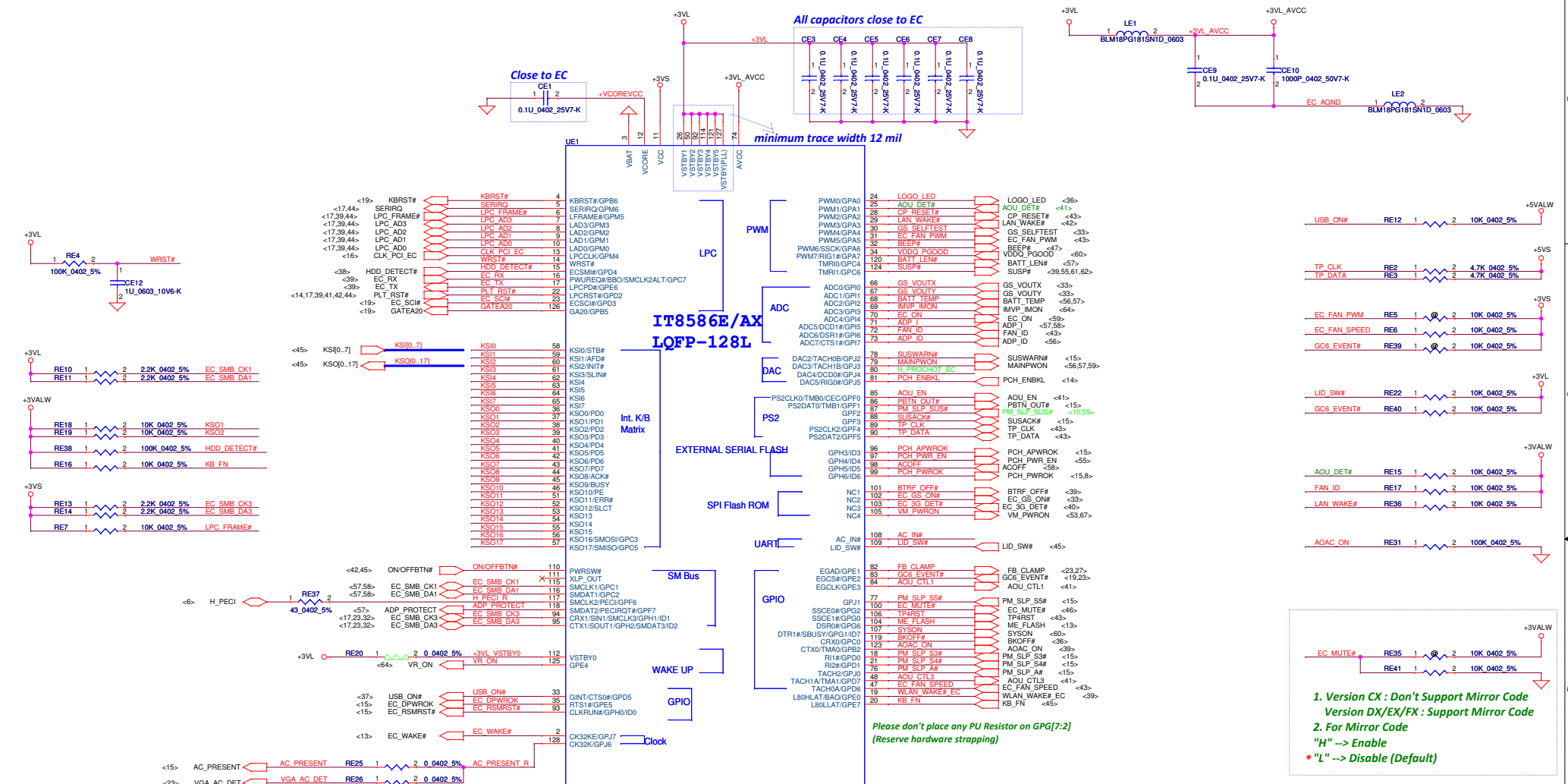
ESD Diode, close to JAUHP



EMI, close to JAUHP

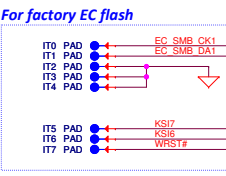
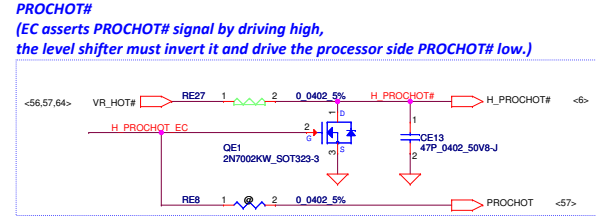
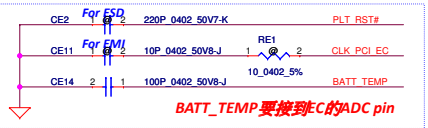
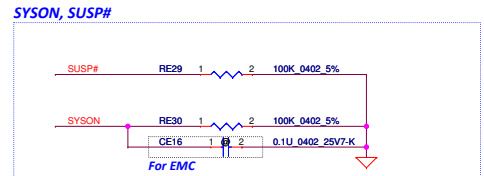
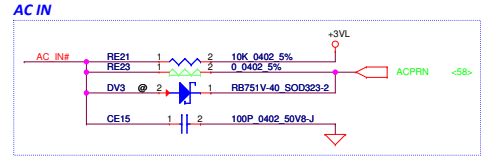


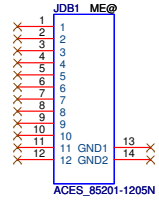
| | | | | | |
|--|-------------------------|------------------------------|--------------|-------------------------|---------|
| Security Classification | | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | HDA-HP/EXT MIC/SPK CONN | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF P&E DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | | |
| Size | Custom | Document Number | E440 NM-A151 | | Rev 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet | 47 | of | 57 |




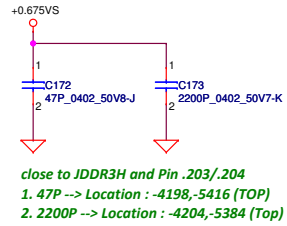
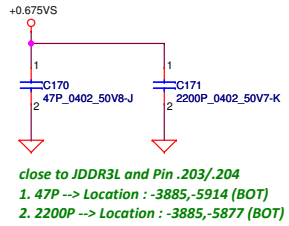
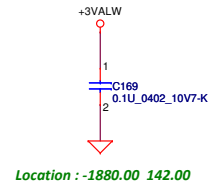
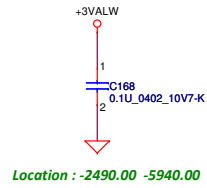
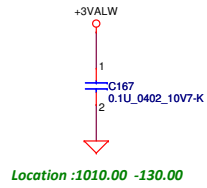
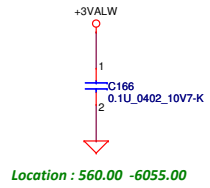
1. Version CX : Don't Support Mirror Code
 Version DX/EX/FX : Support Mirror Code
 For Mirror Code "H" --> Enable
 * "L" --> Disable (Default)


Please don't place any PU Resistor on GPG[7:2]
 (Reserve hardware strapping)

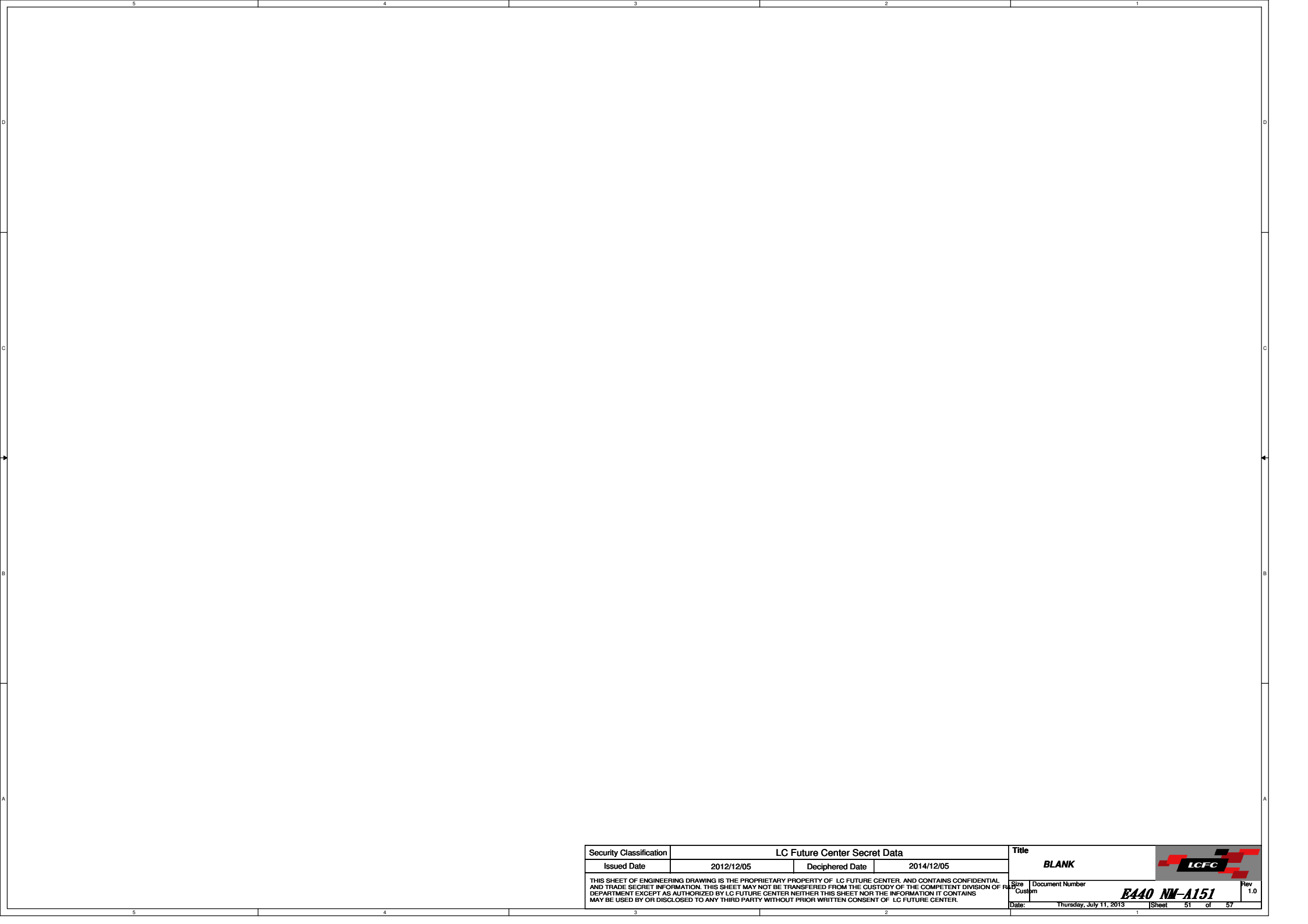





| | | | | |
|--|------------------------------|-----------------|----------------------------------|---|
| Security Classification | LC Future Center Secret Data | | Title |  |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | Size Custom | Document Number E440 NW-A151 |
| | | | Date: Thursday, July 11, 2013 | Rev 1.0 |
| | | | Sheet 49 of 57 | |

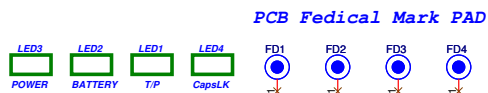
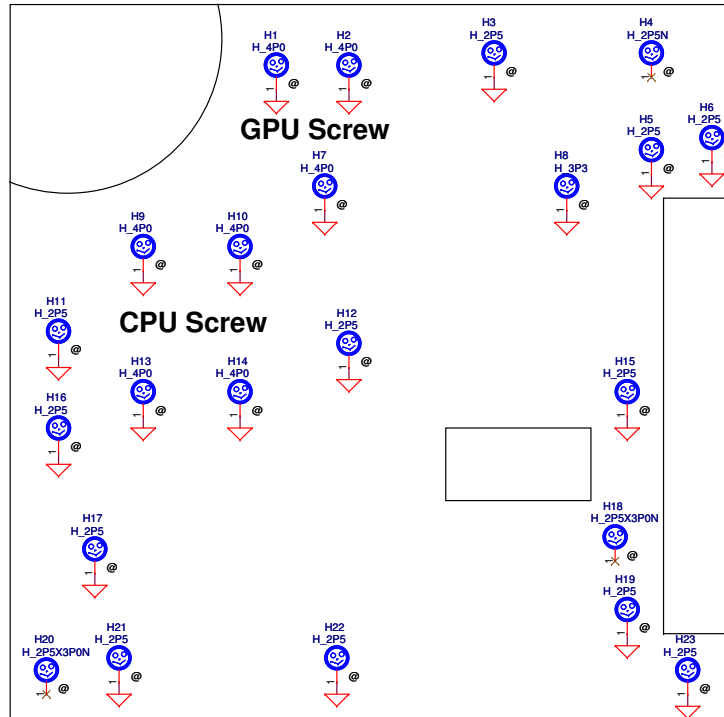


| | | | | | |
|--|------------------------------|-----------------|------------|---|--|
| Security Classification | LC Future Center Secret Data | | Title |  | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | | BLANK |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size Custom | Document Number E440 NW-A151 |
| | | | | Date: Thursday, July 11, 2013 | Rev 1.0 |
| | | | | Sheet 50 of 57 | |



| | | | | | |
|--|------------------------------|-----------------|------------|----------------------------------|---|
| Security Classification | LC Future Center Secret Data | | | Title |  |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | BLANK | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size Custom | Document Number E440 NM-A151 |
| | | | | Date: Thursday, July 11, 2013 | Rev 1.0 |
| | | | | Sheet 51 of 57 | |

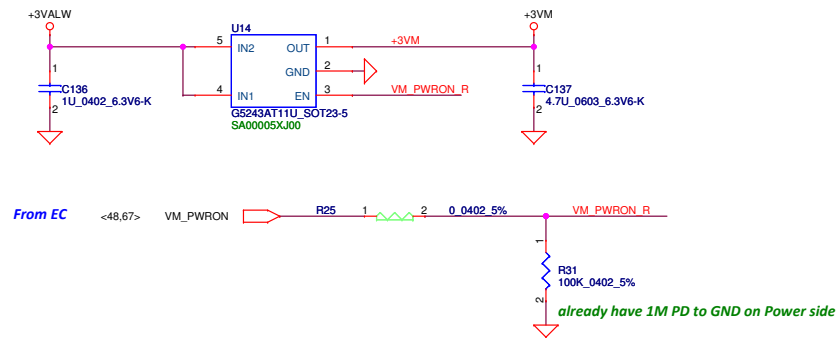
Screw Hole




| | | | | | |
|--|------------------------------|-----------------|------------|----------------|--|
| Security Classification | LC Future Center Secret Data | | | Title | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | LED | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size Custom | Document Number E440 NM-A151 |
| Date: | Thursday, July 11, 2013 | Sheet | 52 | of | 57 |

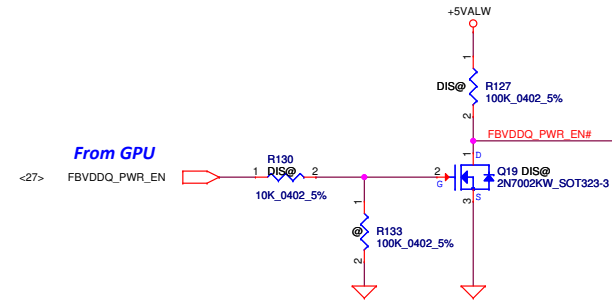
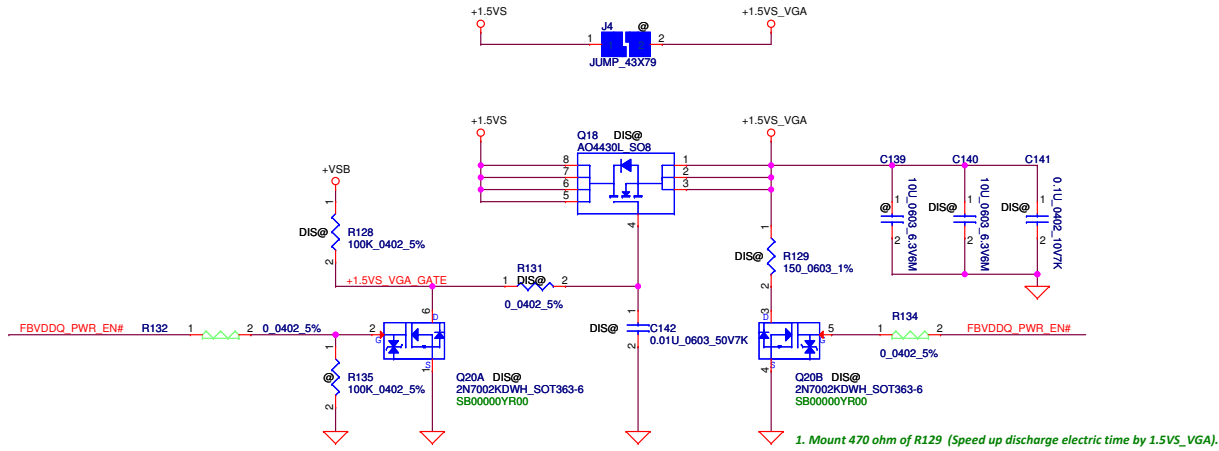
+3VALW to +3VM

FOR SBA Function POWER(always mount)

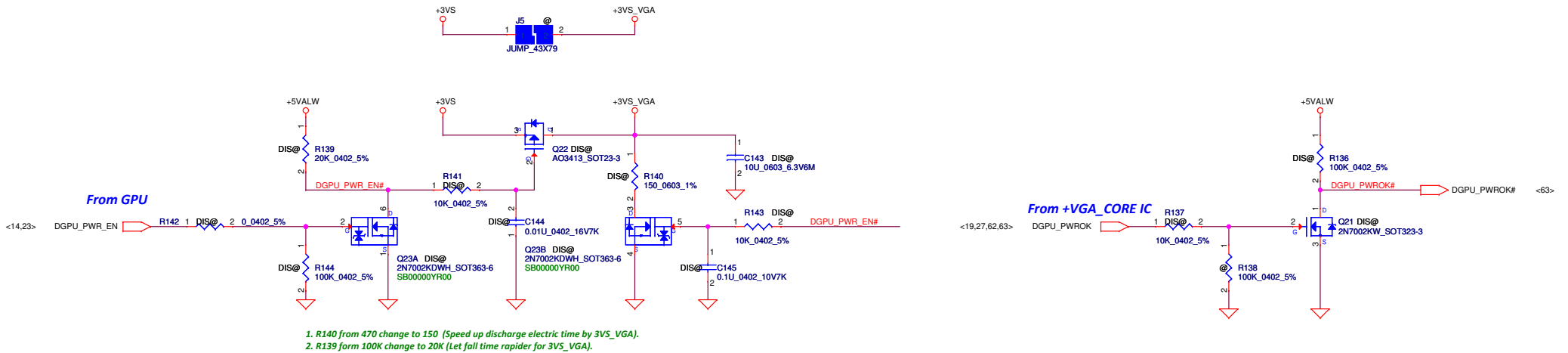


| | | | |
|---|------------------------------|-----------------|---|
| Security Classification | LC Future Center Secret Data | | Title |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | ONOFF SW/ PWR-B CONN/ ISPD  |
| Size | Document Number | Rev | |
| Custom | JITR1_LA-4141 E540 NM-A161 | 1.0 | |
| Date: | Thursday, July 11, 2013 | Sheet | 53 of 57 |

+1.5V to +1.5VS_VGA



+3VS to +3VS_VGA



Power Up -->

+3VS_VGA (En:DGPU_PWR_EN)

+VGA_CORE (En:NVDD_PWR_EN, POK:DGPU_PWROK)

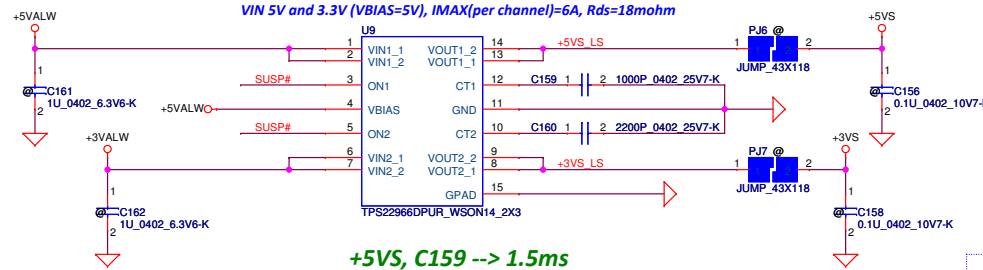
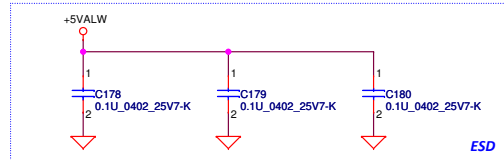
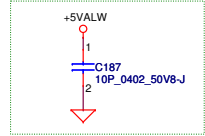
+1.5VS_VGA (En:FBVDDQ_PWR_EN# = FB_CLAMP and DGPU_PWROK)

+1.05VS_VGA (En:DGPU_PWROK#)

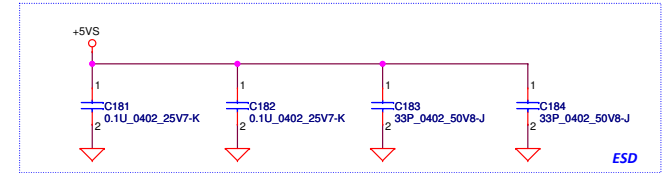
| | | | |
|---|------------------------------|-----------------|--|
| Security Classification | LC Future Center Secret Data | | Title |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | Size Custom |
| | | | Document Number E440 NM-A151 |
| | | | Rev 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet | 54 of 57 |

Load Switch
+5VALW To +5VS
+3VALW To +3VS

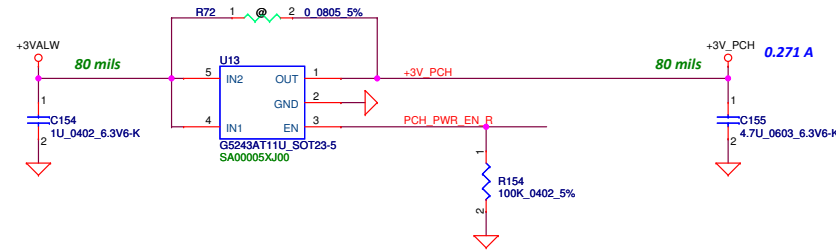
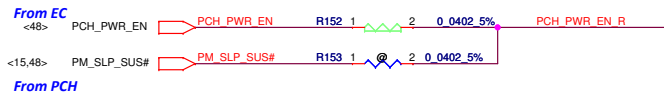
CPI, 14" only



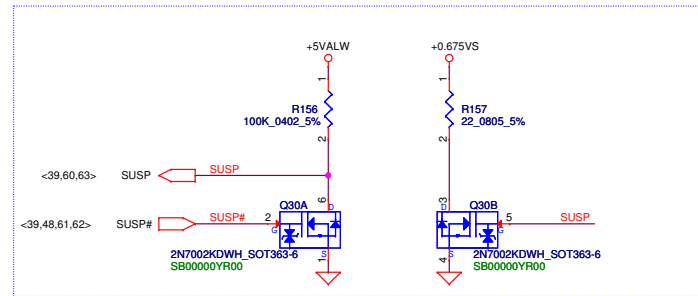
+5VS, C159 --> 1.5ms
+3VS, C160 --> 2.5ms



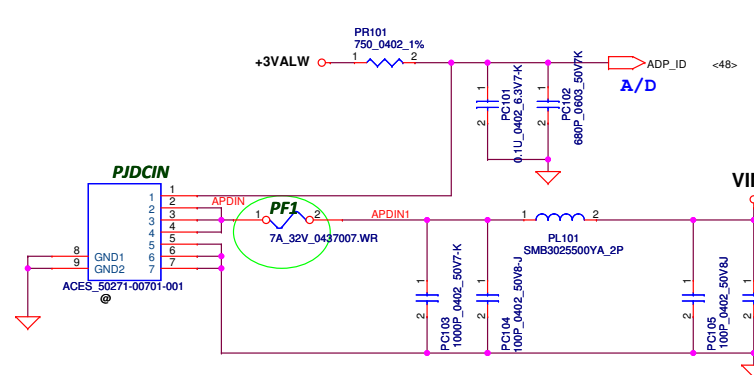
+3VALW To +3V_PCH



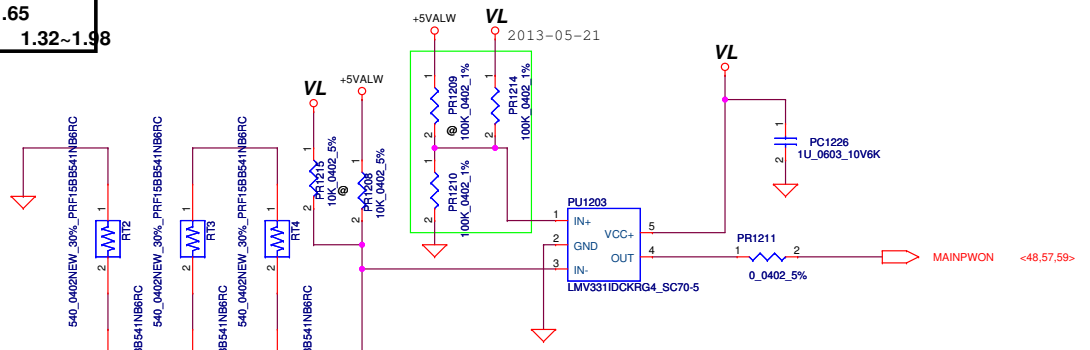
For DisCharge



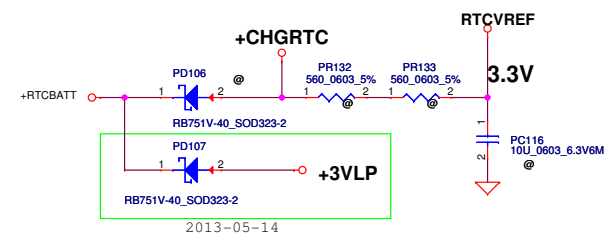
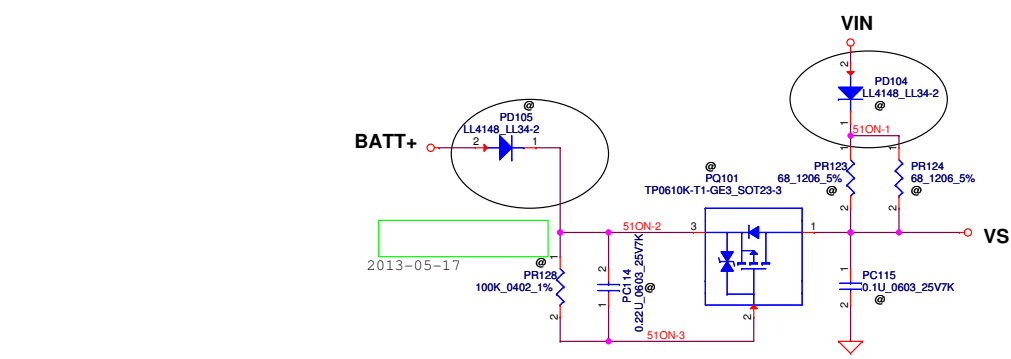
| | | | | |
|--|------------------------------|-------------------------|------------|----------|
| Security Classification | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF P&E DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | |
| Size | Document Number | Date: | | Rev |
| Custom | E440 NM-A151 | Thursday, July 11, 2013 | | 1.0 |
| | | | Sheet | 55 of 57 |



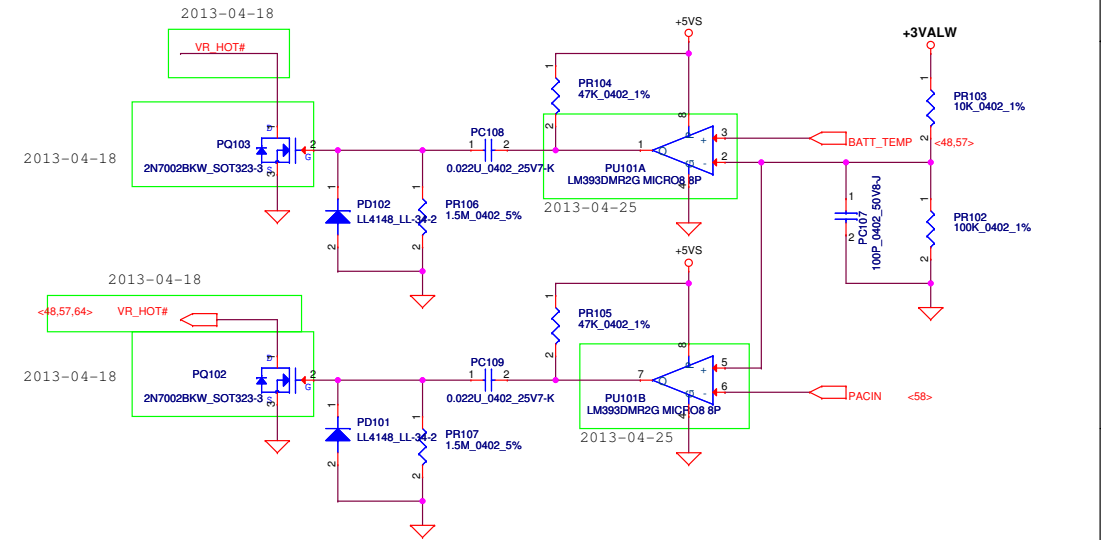
| AC Adapter | 90W | 65W |
|-------------------|-------|-----------|
| R(K ohm) | open | 10 |
| ADP_ID(V) | 3.3 | 1.65 |
| Detection voltage | >2.64 | 1.32~1.98 |



Thermal protect
 RT2 place to closed PQ401 with PU401
 RT3 place to closed PQ402 with PU401
 RT4 place to closed PQ501 with PU501
 RT5 place to closed PQ312 with PU301
 RT7 place to closed PQ804 with PU801
 RT8 place to closed PQ1001 with PU901



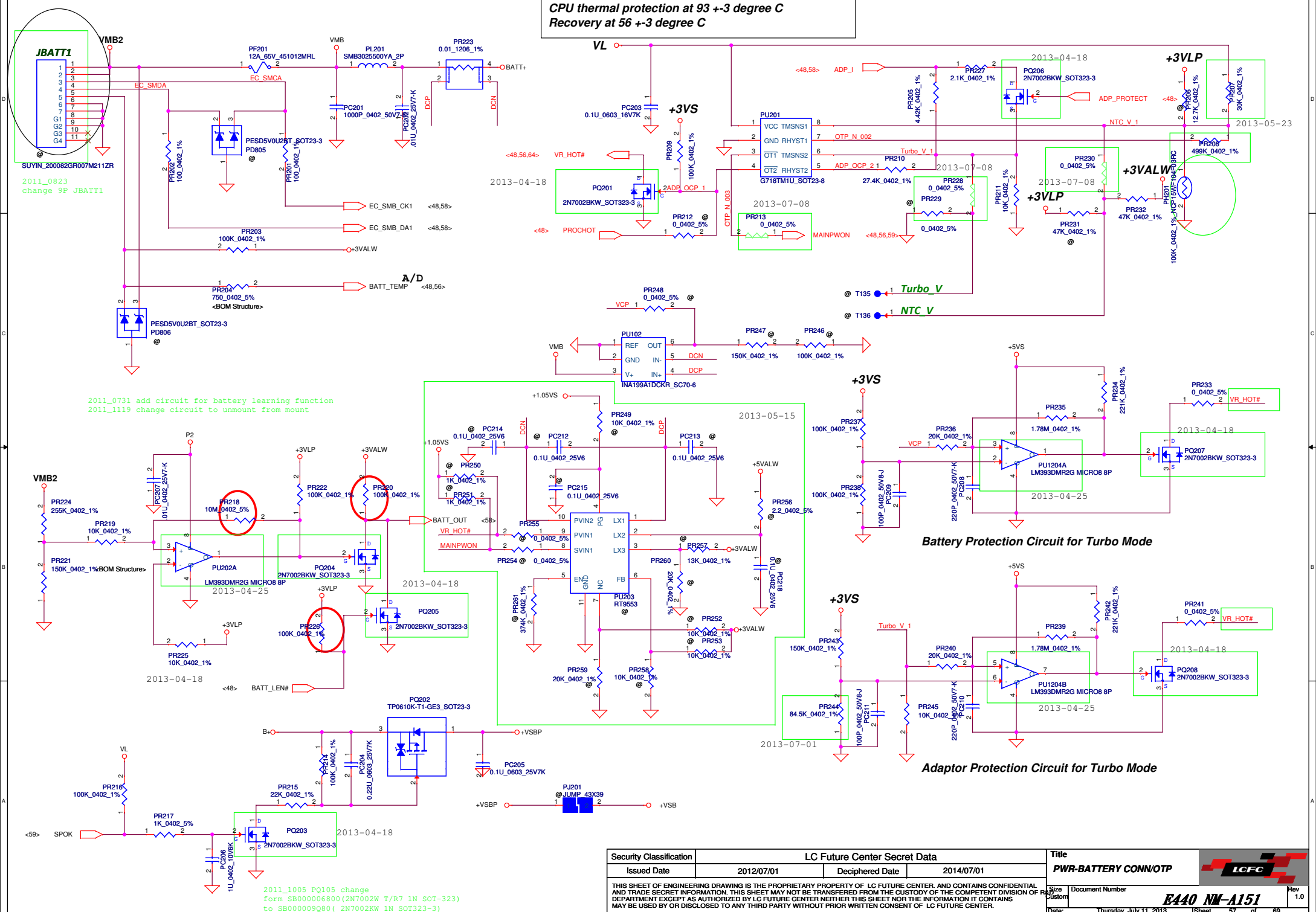
RTC Battery



| Security Classification | LC Future Center Secret Data | | Title |
|--|------------------------------|-------------------------|------------|
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF P&E DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |
| Size | Document Number | Date | Rev |
| Custom | E440 NW-A151 | Thursday, July 11, 2013 | 1.0 |



**PH1 under CPU bottom side :
CPU thermal protection at 93 +/-3 degree C
Recovery at 56 +/-3 degree C**



2011_0823 change 9P JBATT1
2011_0731 add circuit for battery learning function
2011_1119 change circuit to unmount from mount

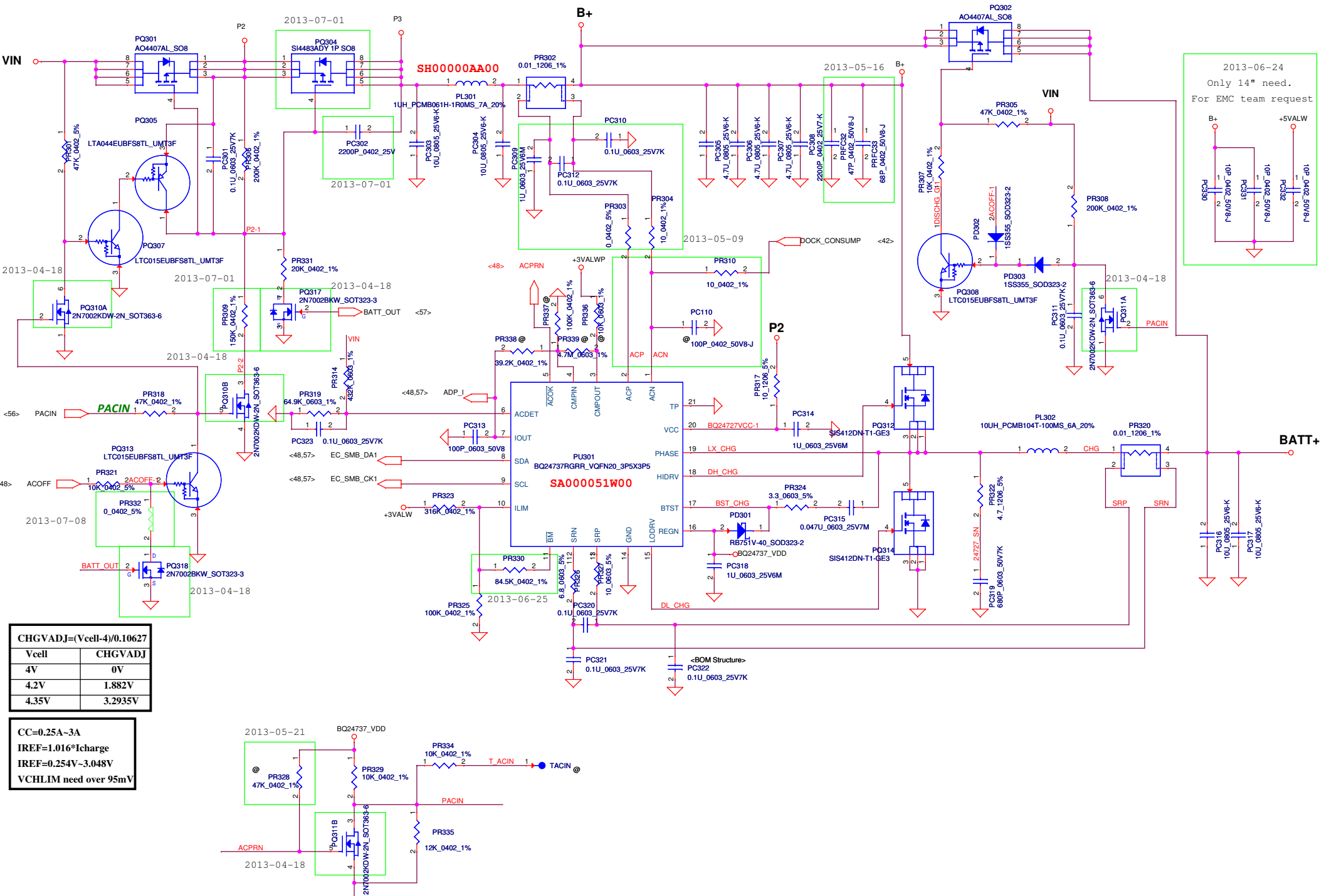
Battery Protection Circuit for Turbo Mode

Adaptor Protection Circuit for Turbo Mode

2011_1005 PQ105 change form SB000006800 (2N7002W T/R7 1N SOT-323) to SB000009080 (2N7002KW 1N SOT323-3)

| Security Classification | LC Future Center Secret Data | | Title |
|---|------------------------------|-----------------|------------|
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PFC DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |
| Size Custom | Document Number | E440 NM-A151 | |
| Date: | Thursday, July 11, 2013 | Sheet | 37 of 69 |

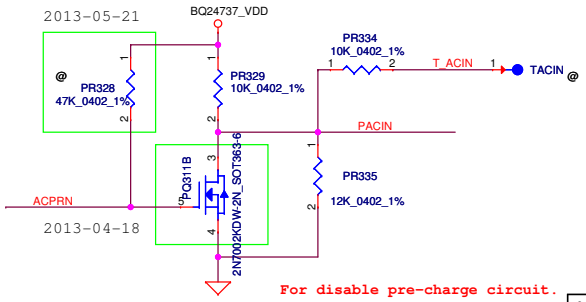




CHGVADJ=(Vcell-4)/0.10627

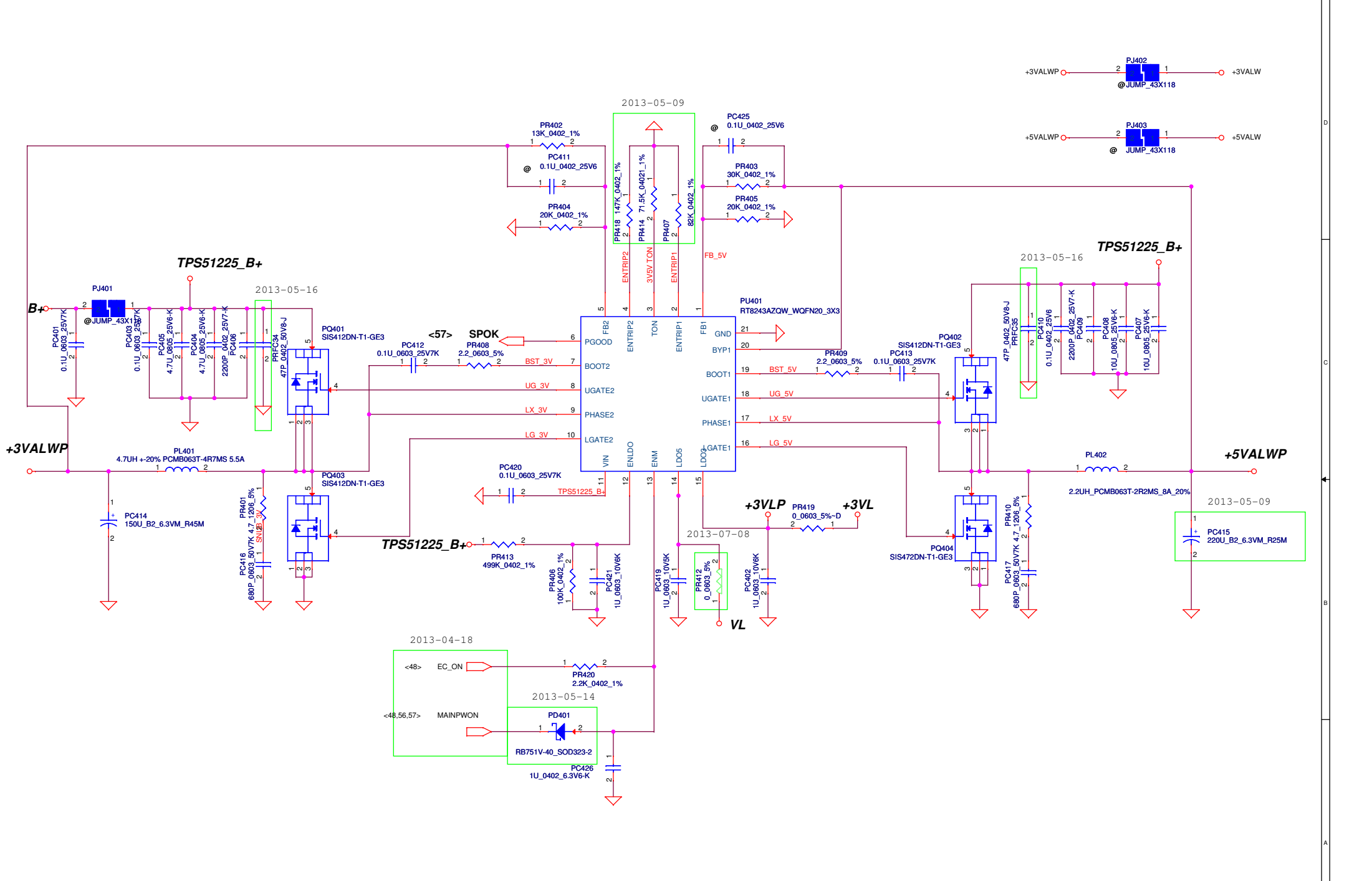
| Vcell | CHGVADJ |
|-------|---------|
| 4V | 0V |
| 4.2V | 1.882V |
| 4.35V | 3.2935V |

CC=0.25A~3A
 IREF=1.016*Icharge
 IREF=0.254V~3.048V
 VCHLIM need over 95mV




| Security Classification | | LC Future Center Secret Data | |
|---|------------|------------------------------|------------|
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |

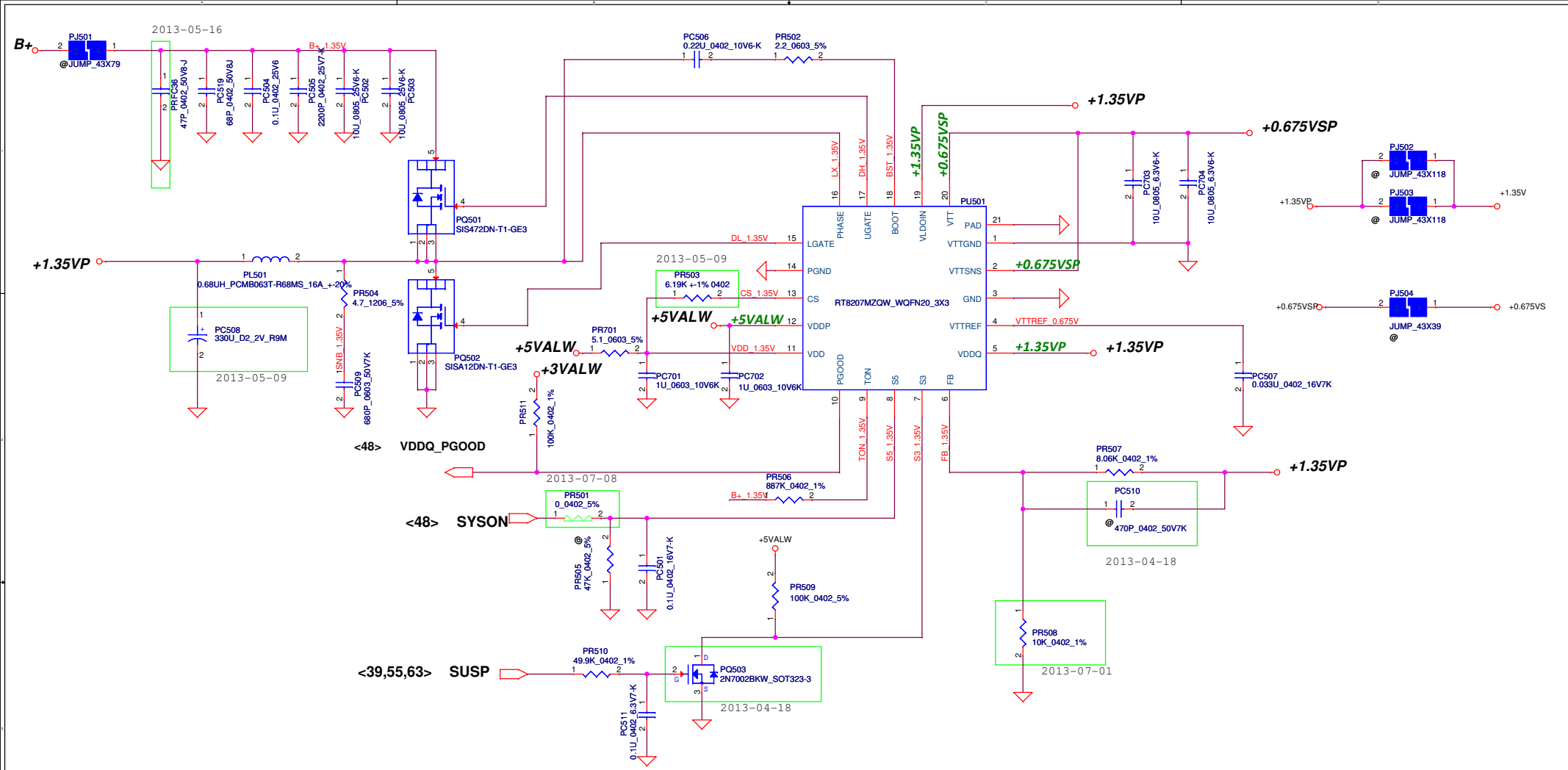
| | | |
|---------------------|-------------------------|---------------------|
| Title | | |
| PWR-CHARGER-BQ24737 | | |
| Size | Document Number | E440 NM-A151 |
| Custom | | |
| Date: | Thursday, July 11, 2013 | Sheet 58 of 69 |

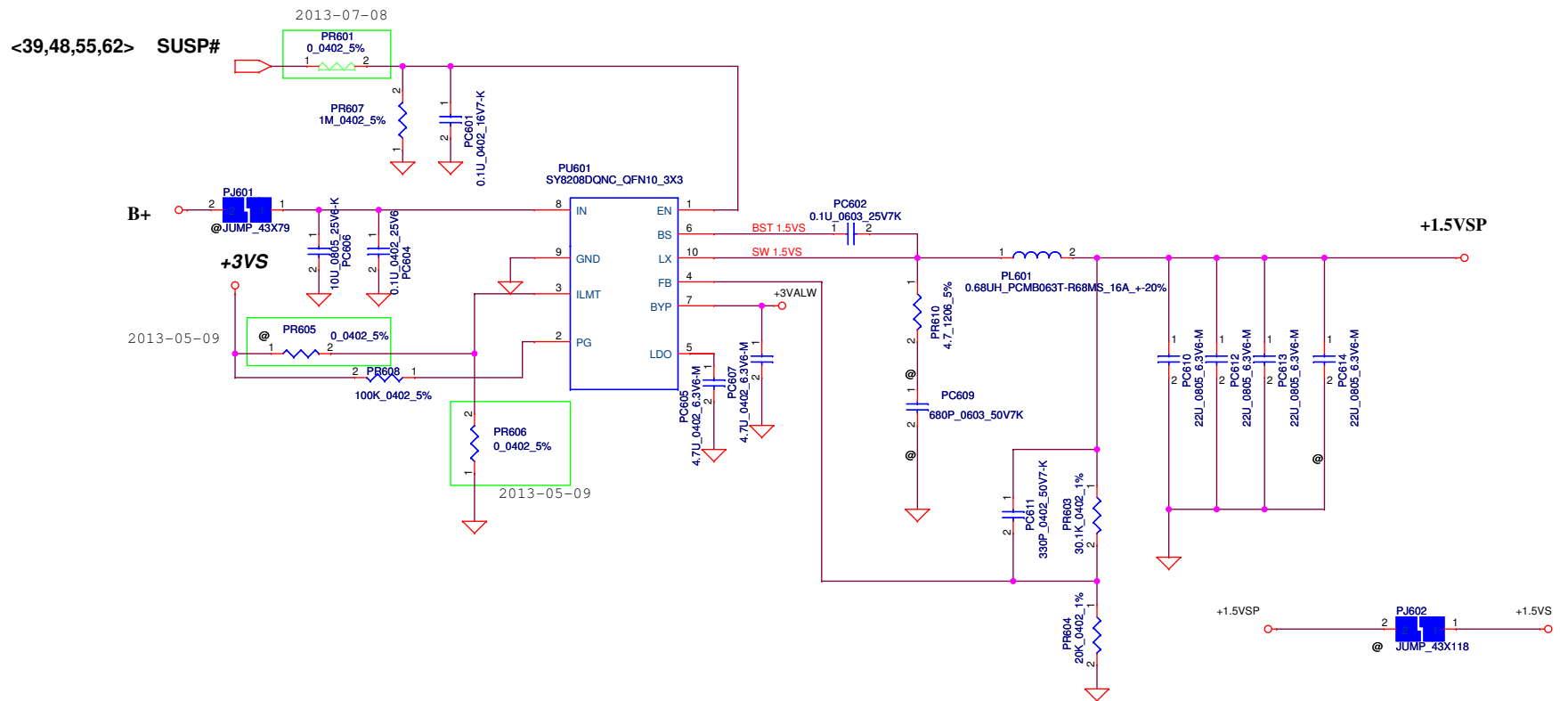


| | | | |
|---|------------|------------------------------|------------|
| Security Classification | | LC Future Center Secret Data | |
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |

| | | |
|-------------------|-------------------------|---|
| Title | |  |
| PWR-3VALWP/5VALWP | | |
| Size | Document Number | E440 NM-A151 |
| Custom | | |
| Date: | Thursday, July 11, 2013 | Sheet 59 of 69 |

Rev 1.0





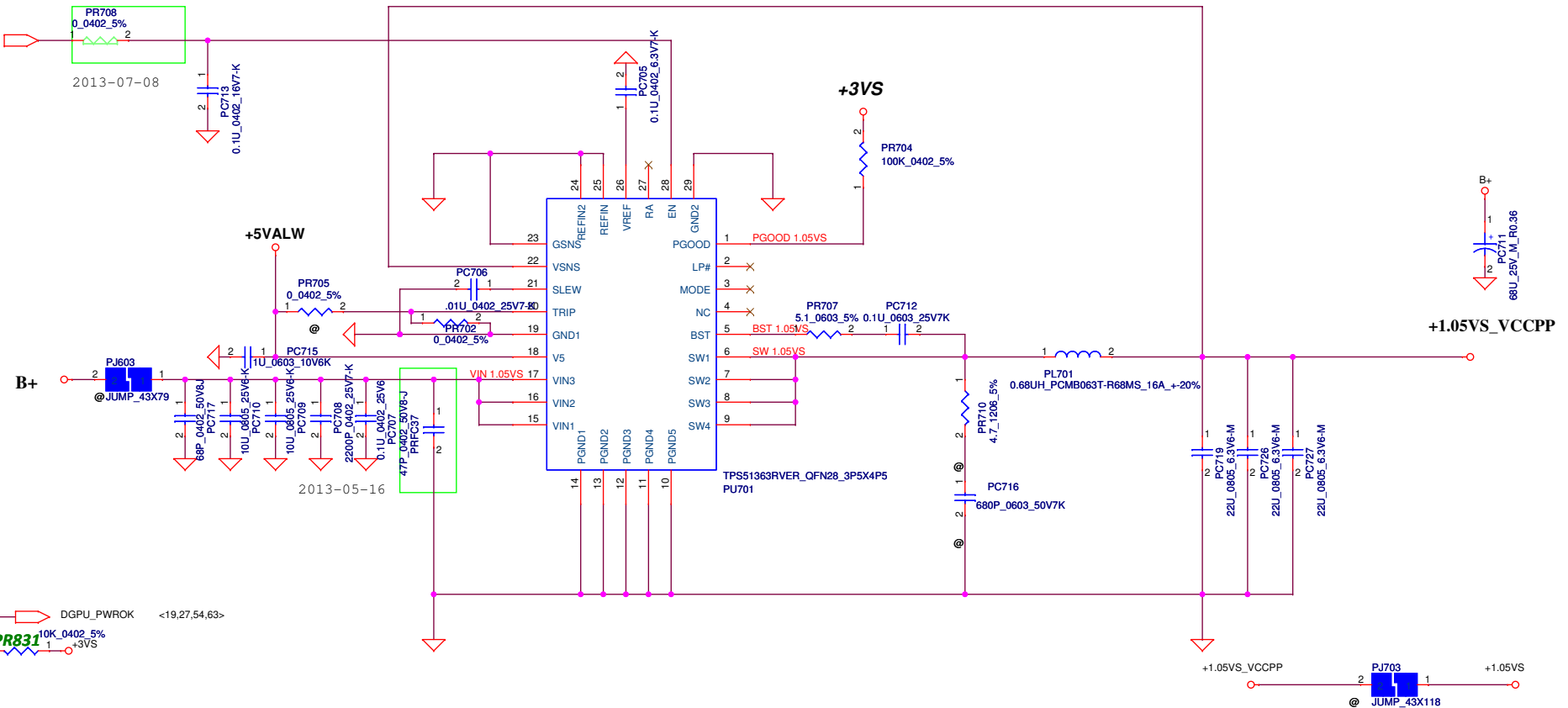
| | | | | | |
|---|-------------------------|------------------------------|--------------|-------------|-----|
| Security Classification | | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 | PWR-+1.5VSP | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | | |
| Size | Custom | Document Number | E440 NM-A151 | | Rev |
| Date: | Thursday, July 11, 2013 | Sheet | 61 | of | 69 |



<39,48,55,61> SUSP#

PR708
0.0402_5%

2013-07-08



B+

+5VALW

+3VS

+1.05VS_VCCPP

DGPU_PWROK <19,27,54,63>
PR831 10K_0402_5%
+3VS

+1.05VS_VCCPP
PJ703
JUMP_43X118

+5VALW

PU702

PL702
1UH_PH041H-1R0MS_3.8A_20%

+1.8VSP

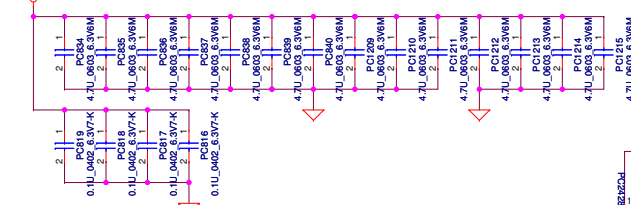
+1.8VSP
PJ704
JUMP_43X39

PR703
0.0402_5%
SUSP#

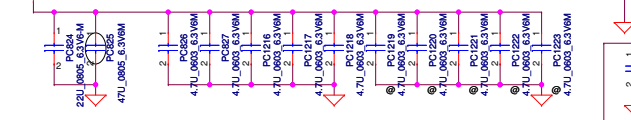
2013-07-08

| | | | | | |
|---|-------------------------|------------------------------|--------------|---------------------------|---------|
| Security Classification | | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 | PWR-+1.05VS_VCCPP/+1.8VSP | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | | |
| Size | Custom | Document Number | E440 NM-A151 | | Rev 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet | 62 | of | 69 |

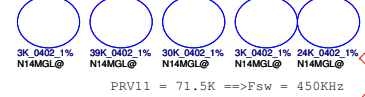
+VGA_CORE Under VGA Core GB4-128 package



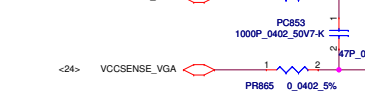
+VGA_CORE Near VGA Core



PR834 PR833 PR844 PR846



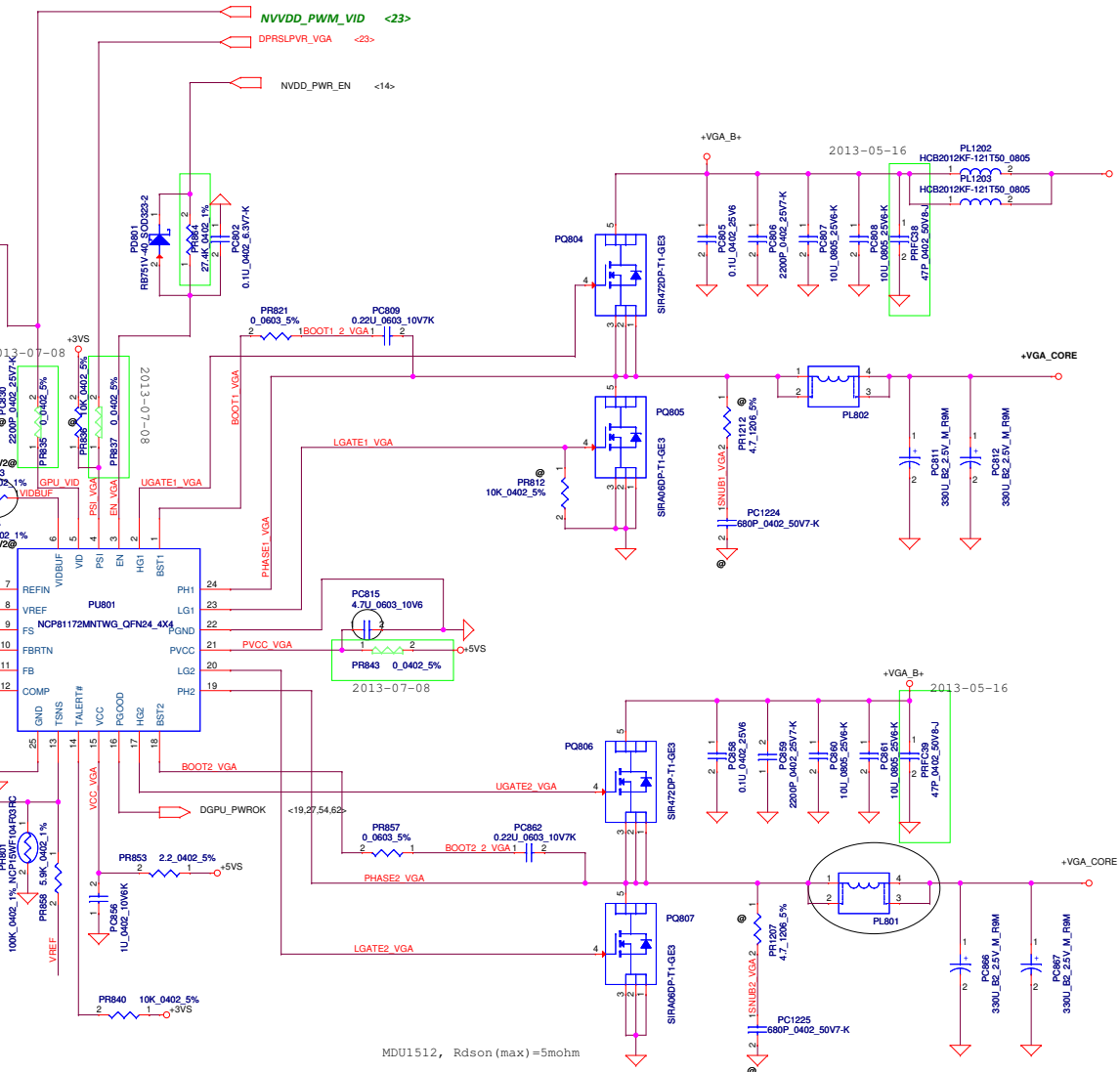
PRV11 = 71.5K ==> Fsw = 450KHz



Thermistor near MOSFET trigger point 97 degree C.

N14P-GT 35W
Ipeak=50A
Imax=35A
Iocp=64.8A
Fsw=450KHz
bulk cap 330uF 9m *4

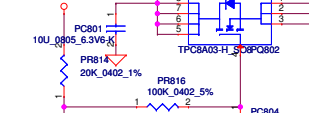
N14P-GS 25W
Ipeak=36A
Imax=25A
Iocp=64.8A
Fsw=450KHz
bulk cap 330uF 9m *3



MDU1512, Rds(on) = 5mohm

2011_1007
N13M-CB1
VID: 0110100
0.85V

+5VALW
+1.05VS
+1.05VS_VGA



<54> DGPU_PWROK# <39,55,60> SUSP

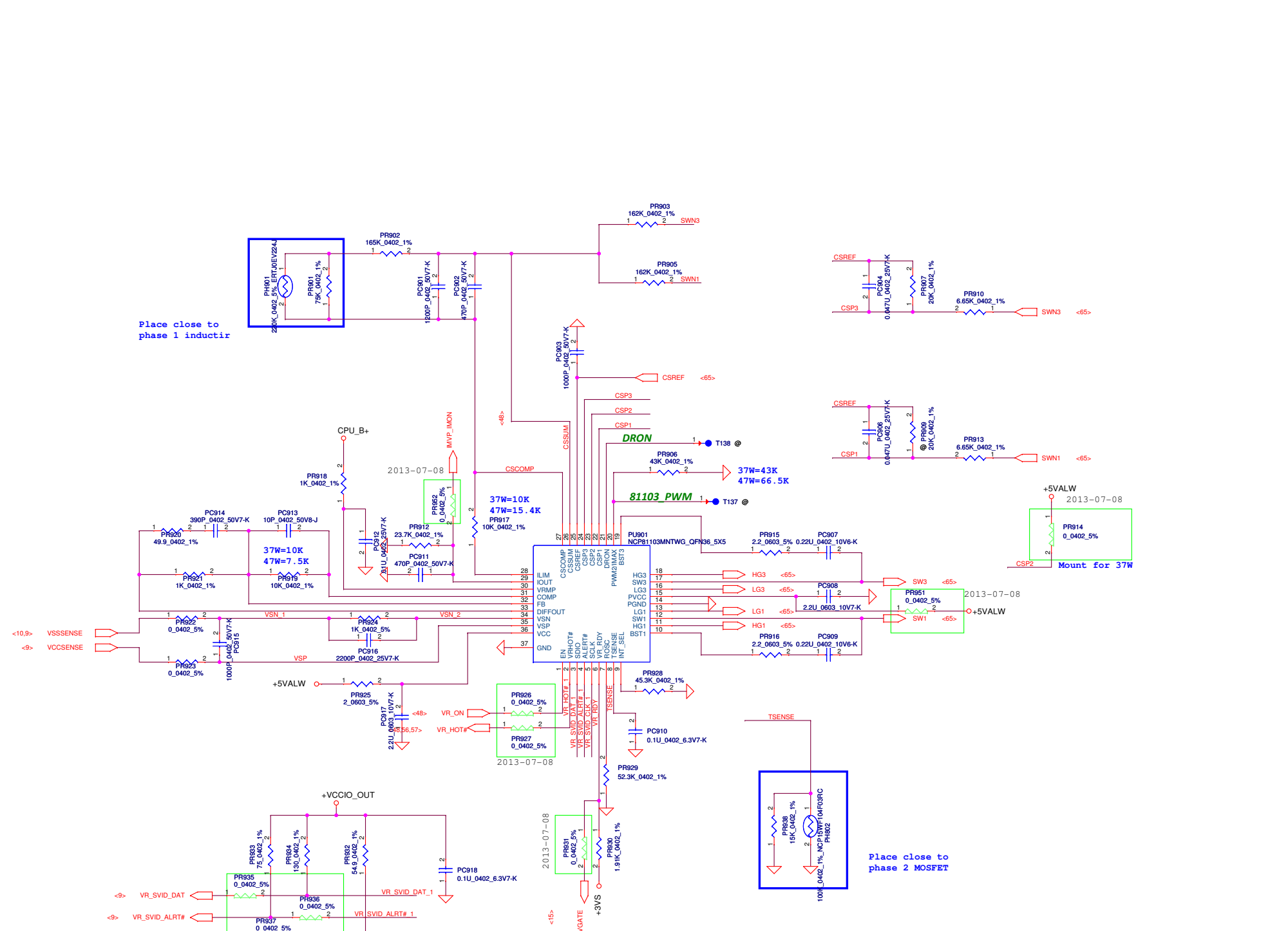
2011_0727 PR816 modify 10K to 100K.

PR813, PQ803 and PR815 --> "Stuff"

DGPU_PWROK# SUSP

2013-05-21 Confirm with HW

| | | | |
|--|------------------------------|-----------------|--|
| Security Classification | LC Future Center Secret Data | | Title |
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 |
| THIS SHEET OF ENGINEERING DRAWINGS IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF FUTURE CENTER. DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | Document Number |
| | | | E440 NM-A151 |
| | | | Rev 1.0 |
| | | | Date: Thursday, July 11, 2013 (Sheet 63 of 69) |




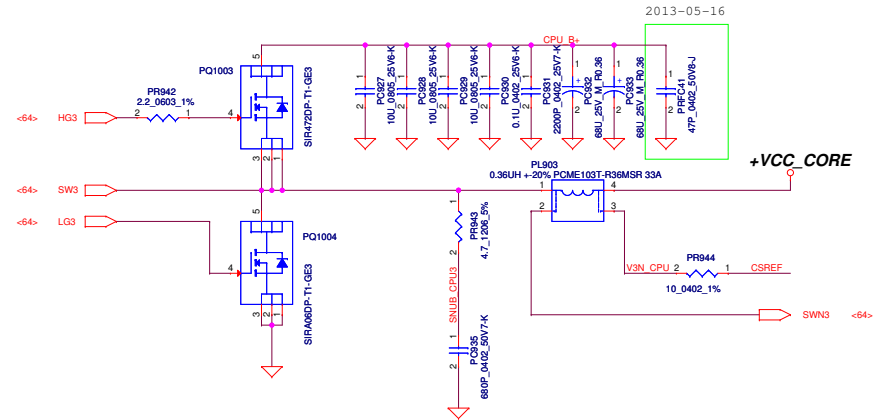
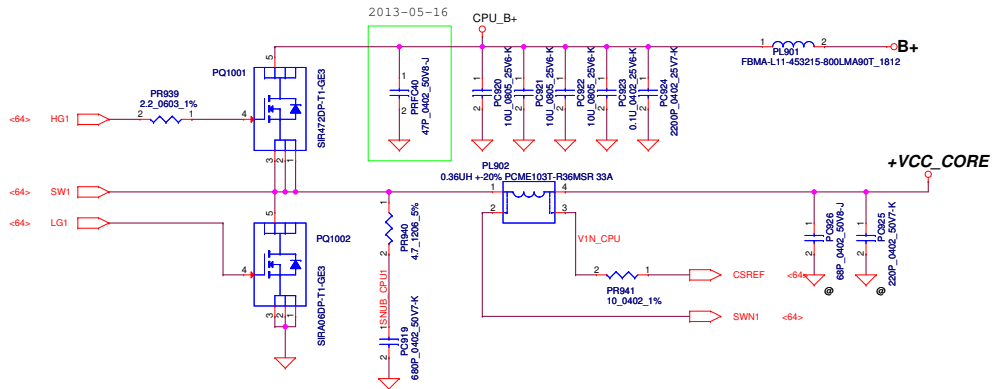
Place close to phase 1 inductor

Mount for 37W

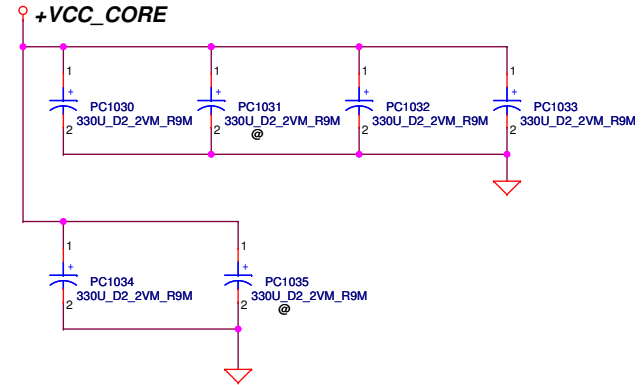
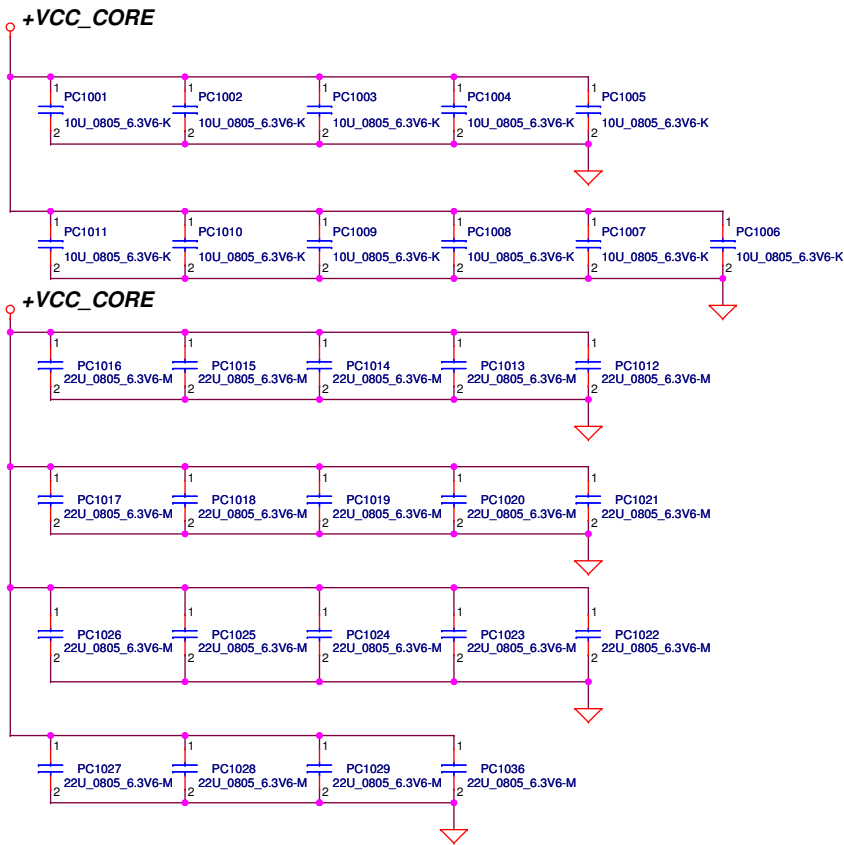
Place close to phase 2 MOSFET


| | | | |
|--|------------|------------------------------|------------|
| Security Classification | | LC Future Center Secret Data | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| <small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</small> | | | |

| | | |
|----------------|-------------------------|---|
| Title | |  |
| CPU_CORE | | |
| Size | Document Number | E440 NW-A151 Rev 1.0 |
| Date: | Thursday, July 11, 2013 | |
| Sheet 64 of 69 | | |

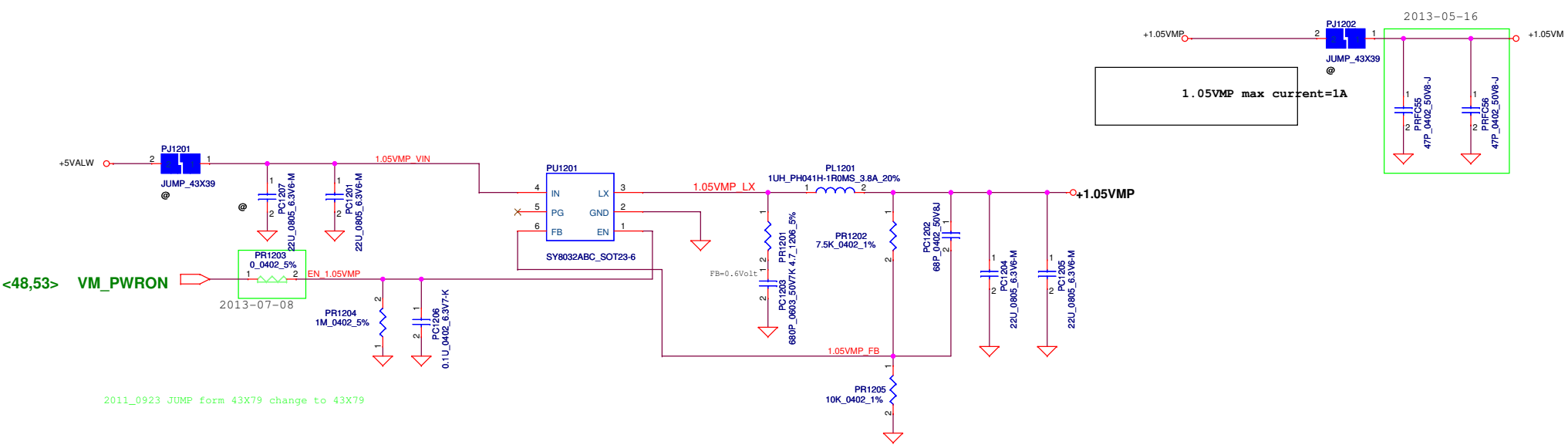


| | | | |
|---|------------------------------|-----------------|------------|
| Security Classification | LC Future Center Secret Data | | Title |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | |
| Document Number | E440 NM-A151 | | Rev 1.0 |
| Date: | Thursday, July 11, 2013 | Sheet | 65 of 69 |



| | | | | |
|---|------------------------------|-----------------|-------------------------------|---|
| Security Classification | LC Future Center Secret Data | | Title |  |
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size Custom |
| | | | Document Number | Rev 1.0 |
| | | | Date: Thursday, July 11, 2013 | Sheet 66 of 69 |

E440 NM-A151



<48,53> VM_PWRON

2013-07-08

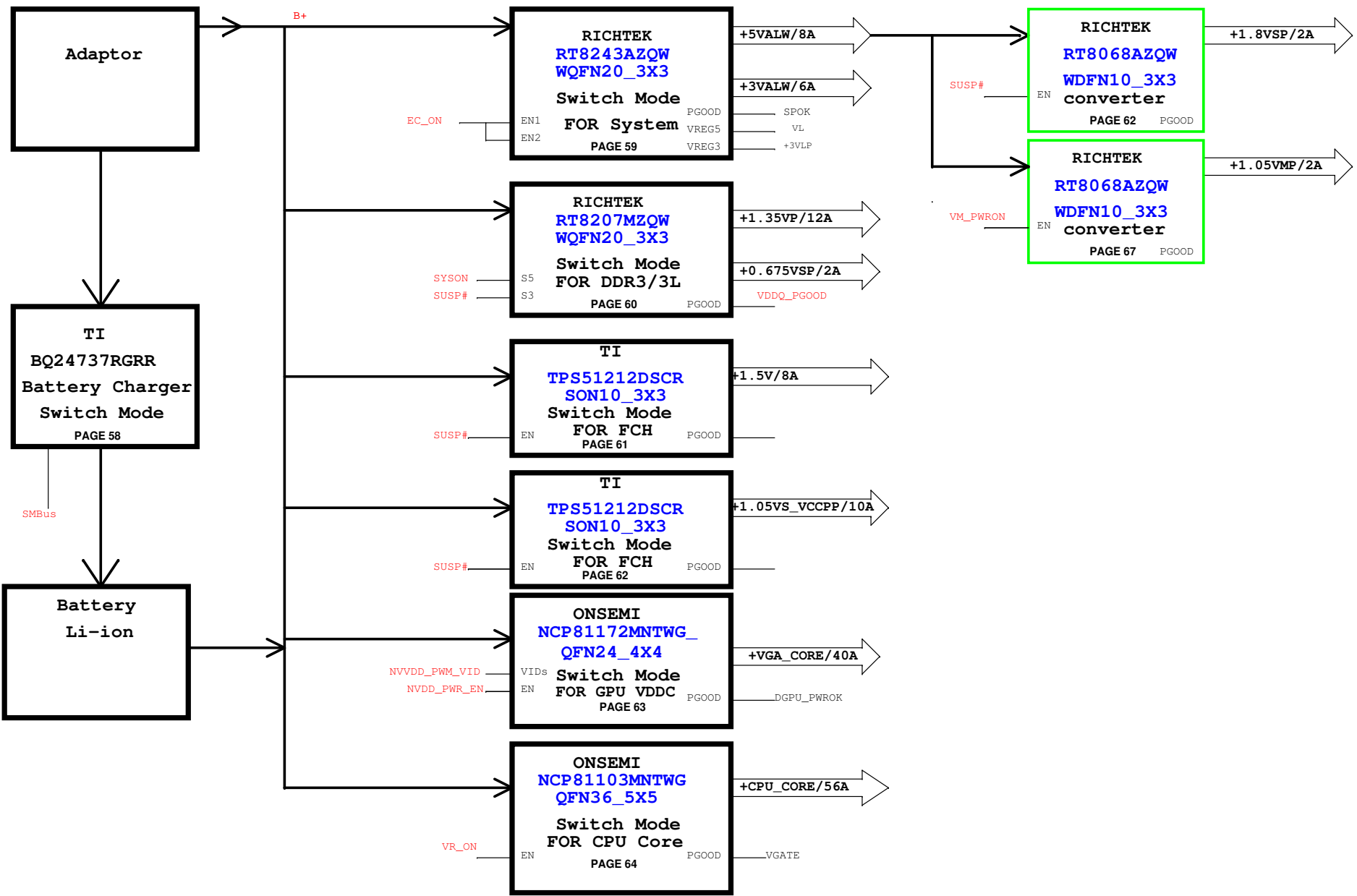
2011_0923 JUMP Form 43X79 change to 43X79

| | | | | | |
|---|------------|------------------------------|------------|----------------------------------|---------------------------------|
| Security Classification | | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/07/01 | Deciphered Date | 2014/07/01 | PWR-+1.05VMP | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size A3 | Document Number E440 NM-A151 |
| | | | | Date: Thursday, July 11, 2013 | Rev 1.0 |
| | | | | Sheet 67 | of 69 |

POWER PIR (Product Improve Record)

AILE1 NM-A151 SCHEMATIC CHANGE LIST
 REVISION CHANGE: 0.1
 GERBER-OUT DATE: 2013/01/16

NO DATE PAGE MODIFICATION LIST PURPOSE



| | | | | |
|--|------------------------------|-----------------|------------|-------------------------------|
| Security Classification | LC Future Center Secret Data | | Title | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF PIR DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER. | | | | Size Custom |
| | | | | Document Number |
| | | | | E440 NM-A151 |
| | | | | Rev 1.0 |
| | | | | Date: Thursday, July 11, 2013 |
| | | | | Sheet 68 of 69 |

HW PIR (Product Improve Record)

AILE1 NM-A151 SCHEMATIC CHANGE LIST
 REVISION CHANGE: 0.1
 GERBER-OUT DATE: 2013/01/16

| NO | DATE | PAGE | | MODIFICATION LIST | PURPOSE |
|-----|-------|------|-----|---|----------------------|
| 01) | 03/14 | 10 | R64 | Change R64 BOM structure from "@" to "DS3@" | For Deep S3 Function |

| | | | | | | | |
|--|--------------------|-----------------|------------|-----------|-------------------------|--------------------------|----------|
| Security Classification | Compal Secret Data | | | Title | | Compal Electronics, Inc. | |
| Issued Date | 2012/12/05 | Deciphered Date | 2014/12/05 | PIR (PWR) | | Document Number | Rev |
| THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF COMPAL ELECTRONICS, INC. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE CUSTOMER DEPARTMENT EXCEPT AS AUTHORIZED BY COMPAL ELECTRONICS, INC. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF COMPAL ELECTRONICS, INC. | | | | Custom | Y490-LA8691P | 1.0 | |
| | | | | Date: | Thursday, July 11, 2013 | Sheet | 69 of 69 |