

# Intel Penryn CPU + Cantiga + ICH9M Chipset

| F30II0 M/B / Sx XXXX |                              |
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| 24                   | EC-IT8512E/BIOS/TP/KB/MMB/HS |
| 25                   | POWER SWITCH                 |
| 26                   | +3.3V_AUX/+5V_AUX (OZ815)    |
| 27                   | +CPU_CORE (MAX8770)          |
| 28                   | +GFX_CORE (OZ827)            |
| 29                   | +1.8V_DDR(OZ811)/+0.9V(LDO)  |
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MADE IN TAIWAN  
BU2-BK120

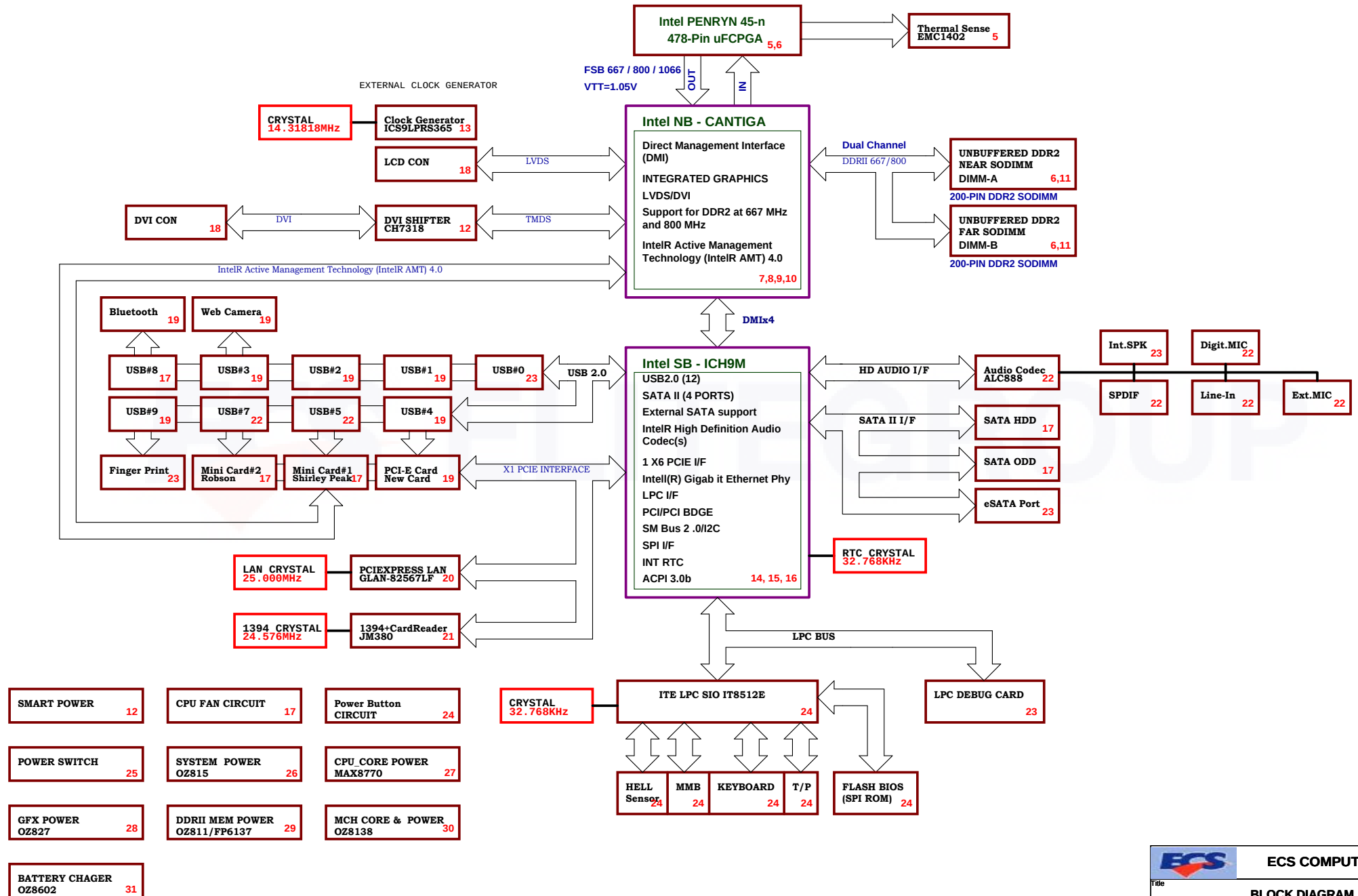
F30II0 M/B and Daughter P/N BD List :

|                              |                                                                      |
|------------------------------|----------------------------------------------------------------------|
| 82GF30000-A0<br>37GF30000-A0 | MAIN BOARD ASSY F30II0 REV.A0<br>PCB Main BD F30II0 REV:A            |
| 80GWF3000-A0<br>35GWF3000-A0 | DCIN+LAN+USB BD FOR F30II0 R:A<br>PCB DCIN+LAN+USB BD FOR F30II0 R:A |
| 80GPF3000-A0<br>35GPF3000-A0 | ODD BB BD FOR F30II0 R:A<br>PCB SATA ODD BB FOR F30II0 REV:A         |
| 80G8F3000-A0<br>35G8F3000-A0 | TOUCHPAD BD FOR F30II0 REV:A0<br>PCB TOUCHPAD BD FOR F30II0 REV:A    |
| 80G4F3000-A0<br>35G4F3000-A0 | LED BD FOR F30II0 REV:A<br>PCB LED BD FOR F30II0 REV:A               |
| 80Gxxxxxx-A0<br>80Gxxxxxx-A0 | SWITCH BD FOR F30II0 REV:A<br>MMB BD FOR F30II0 REV:A                |

F30II0 M/B Power Rail State :

| Signal                  | State | ++V_LDO | ++V_AUX | ++V_DDR | ++VS | ++V | CLK |
|-------------------------|-------|---------|---------|---------|------|-----|-----|
| AC/DC S0/Moff (Full On) |       | ON      | ON      | ON      | ON   | ON  | ON  |
| AC/DC S3/Moff (STR)     |       | ON      | ON      | ON      | ON   | OFF | LOW |
| AC/DC S4/Moff (STD)     |       | ON      | ON      | OFF     | OFF  | OFF | OFF |
| AC S5/Moff (Soft Off)   |       | ON      | ON      | OFF     | OFF  | OFF | OFF |
| DC S5/Moff (Soft Off)   |       | ON      | OFF     | OFF     | OFF  | OFF | OFF |

# SYSTEM BLOCK DIAGRAM



| CPU Intel Penryn<br>POWER RAIL |          | LAPTOP MODE |    |     |     |     |
|--------------------------------|----------|-------------|----|-----|-----|-----|
|                                |          | S0          | S1 | S3  | S4  | S5  |
| VCC                            | VID[6:0] | ON          | ON | OFF | OFF | OFF |
| VCCP                           | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCA                           | +1.5V    | ON          | ON | OFF | OFF | OFF |

| NB Cantiga<br>POWER RAIL |          | LAPTOP MODE |    |     |     |     |
|--------------------------|----------|-------------|----|-----|-----|-----|
|                          |          | S0          | S1 | S3  | S4  | S5  |
| VCC_AXG                  | VID[4:0] | ON          | ON | OFF | OFF | OFF |
| VCC                      | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCC_AXF                  | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCC_PEG                  | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCC_DMI                  | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCA_DPLLA/B             | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCA_HPLL                | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCA_MPLL                | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCA_PEG_PLL             | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCA_SM                  | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCA_SM_CK               | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCD_HPLL                | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCD_PEG_PLL             | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VTT                      | +1.05V   | ON          | ON | OFF | OFF | OFF |
| VCCA_PEG_BG              | +1.5V    | ON          | ON | OFF | OFF | OFF |
| VCCD_TVDAC               | +1.5V    | ON          | ON | OFF | OFF | OFF |
| VCCD_QDAC                | +1.5V    | ON          | ON | OFF | OFF | OFF |
| VCCD_TVDAC               | +1.5V    | ON          | ON | OFF | OFF | OFF |
| VCC_HV                   | +3.3V    | ON          | ON | OFF | OFF | OFF |
| VCCA_CRT_DAC             | +3.3V    | ON          | ON | OFF | OFF | OFF |
| VCCA_DAC_BG              | +3.3V    | ON          | ON | OFF | OFF | OFF |
| VCCA_TV_DAC              | +3.3V    | ON          | ON | OFF | OFF | OFF |

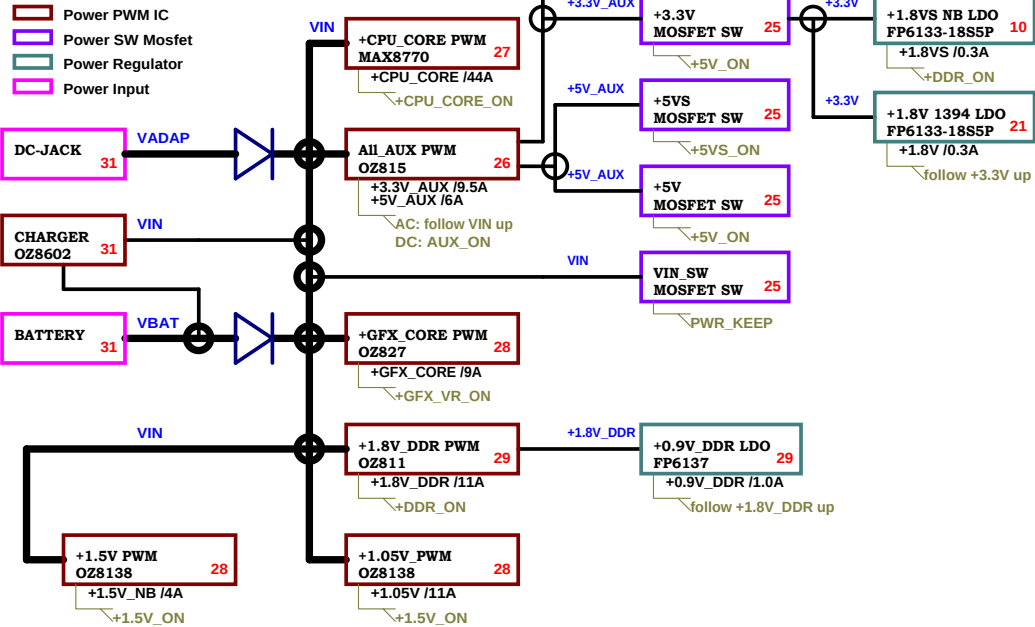
|             |           |    |    |    |     |     |
|-------------|-----------|----|----|----|-----|-----|
| VCC_SM      | +1.8V_DDR | ON | ON | ON | OFF | OFF |
| VCC_SM_CK   | +1.8V_DDR | ON | ON | ON | OFF | OFF |
| VCC_TX_LVDS | +1.8VS    | ON | ON | ON | OFF | OFF |
| VCCA_LVDS   | +1.8VS    | ON | ON | ON | OFF | OFF |
| VCCD_LVDS   | +1.8VS    | ON | ON | ON | OFF | OFF |

| SB ICH9M<br>POWER RAIL |        | LAPTOP MODE |    |     |     |     |
|------------------------|--------|-------------|----|-----|-----|-----|
|                        |        | S0          | S1 | S3  | S4  | S5  |
| V_CPU_IO               | +1.05V | ON          | ON | OFF | OFF | OFF |
| Vcc_DMI                | +1.05V | ON          | ON | OFF | OFF | OFF |
| Vcc1_05                | +1.05V | ON          | ON | OFF | OFF | OFF |
| Vcc1_5_A               | +1.5V  | ON          | ON | OFF | OFF | OFF |
| Vcc1_5_B               | +1.5V  | ON          | ON | OFF | OFF | OFF |
| VccDMIPLL              | +1.5V  | ON          | ON | OFF | OFF | OFF |
| VccGLAN1_5             | +1.5V  | ON          | ON | OFF | OFF | OFF |
| VccGLANPLL             | +1.5V  | ON          | ON | OFF | OFF | OFF |
| VccSATAPLL             | +1.5V  | ON          | ON | OFF | OFF | OFF |
| VccUSBPLL              | +1.5V  | ON          | ON | OFF | OFF | OFF |
| Vcc3_3                 | +3.3V  | ON          | ON | OFF | OFF | OFF |
| VccGLAN3_3             | +3.3V  | ON          | ON | OFF | OFF | OFF |
| VccCL3_3               | +3.3V  | ON          | ON | OFF | OFF | OFF |
| VccLAN3_3              | +3.3V  | ON          | ON | OFF | OFF | OFF |
| VccHDA3_3              | +3.3V  | ON          | ON | OFF | OFF | OFF |
| V5REF                  | +5V    | ON          | ON | OFF | OFF | OFF |
| VccSusHDA3_3           | +3.3VS | ON          | ON | ON  | OFF | OFF |
| VccSus3_3              | +3.3VS | ON          | ON | ON  | OFF | OFF |
| V5REF_Sus              | +5VS   | ON          | ON | ON  | OFF | OFF |
| VccRTC                 | +3.0V  | ON          | ON | ON  | ON  | ON  |

| USB PORTS DEVICES TABLE |                   |                   |                   |                 |                      |                      |                   |                    |                    |                |                  |                  |
|-------------------------|-------------------|-------------------|-------------------|-----------------|----------------------|----------------------|-------------------|--------------------|--------------------|----------------|------------------|------------------|
| USB Ports               | USBP0<br>USBN0    | USBP1<br>USBN1    | USBP2<br>USBN2    | USBP3<br>USBN3  | USBP4<br>USBN4       | USBP5<br>USBN5       | USBP6<br>USBN6    | USBP7<br>USBN7     | USBP8<br>USBN8     | USBP9<br>USBN9 | USBP10<br>USBN10 | USBP11<br>USBN11 |
| Devices                 | M/B eSATA<br>USB0 | DC-IN BD<br>USB_1 | DC-IN BD<br>USB_2 | WEBCAM<br>USB_3 | Mini Card_1<br>USB_4 | Mini Card_2<br>USB_5 | New Card<br>USB_6 | Finger PR<br>USB_7 | Bluetooth<br>USB_8 | N/A            | N/A              | N/A              |

| SYSTEM POWER RAIL |                     | LAPTOP MODE |    |     |     |     |
|-------------------|---------------------|-------------|----|-----|-----|-----|
| Voltage Name      | Control Pin         | S0          | S1 | S3  | S4  | S5  |
| +CPU_CORE         | +CPU_CORE_ON        | ON          | ON | OFF | OFF | OFF |
| +GFX_CORE         | +GFX_VR_ON          | ON          | ON | OFF | OFF | OFF |
| +1.05V            | +1.5V_ON            | ON          | ON | OFF | OFF | OFF |
| +1.5V             | +1.5V_ON            | ON          | ON | OFF | OFF | OFF |
| +1.8V             | follow +3.3V up     | ON          | ON | OFF | OFF | OFF |
| +3.3V             | +5V_ON              | ON          | ON | OFF | OFF | OFF |
| +5V               | +5V_ON              | ON          | ON | OFF | OFF | OFF |
| +0.9V_DDR         | follow +1.8V_DDR up | ON          | ON | ON  | OFF | OFF |
| +1.8V_DDR         | +DDR_ON             | ON          | ON | ON  | OFF | OFF |
| +1.8VS            | follow +1.8V_DDR up | ON          | ON | ON  | OFF | OFF |
| +3.3VS            | +5VS_ON             | ON          | ON | ON  | OFF | OFF |
| +5VS              | +5VS_ON             | ON          | ON | ON  | OFF | OFF |
| VIN_SW            | PWR_KEEP            | ON          | ON | ON  | OFF | OFF |
| +3.3V_AUX         | AC:follow VIN up    | ON          | ON | ON  | ON  | ON  |
| +5V_AUX           | DC:AUX_ON           | ON          | ON | ON  | OFF | OFF |
|                   | AC:follow VIN up    | ON          | ON | ON  | ON  | ON  |
|                   | DC:AUX_ON           | ON          | ON | ON  | OFF | OFF |

## Power Block Diagram



| ICH9-M General Purpose I/O |        |            |                      |
|----------------------------|--------|------------|----------------------|
| Name                       | Type   | Power Well | Description EDS v2.0 |
| GPIO0                      | I/O-I  | Core       | PM_SYNC#             |
| GPIO1                      | I/O-I  | Core       | EC_EXTSC#            |
| GPIO2                      | I/OD-I | Core       | INT_PIRQE#           |
| GPIO3                      | I/OD-I | Core       | INT_PIRQF#           |
| GPIO4                      | I/OD-I | Core       | INT_PIRQG#           |
| GPIO5                      | I/OD-I | Core       | INT_PIRQH#           |
| GPIO6                      | I/O-I  | Core       | EC_EXTSMI#           |
| GPIO7                      | I/O-I  | Core       | N.C                  |
| GPIO8                      | I/O-I  | Sus        | N.C                  |
| GPIO9                      | I/O-N  | Sus        | LAN_WOL_EN           |
| GPIO10                     | I/O-I  | Sus        | SUS_PWR_ACK          |
| GPIO11                     | I/O-N  | Sus        | SMB_ALERT#           |
| GPIO12                     | I/O-O  | Sus        | LANPHY_EN            |
| GPIO13                     | I/O-I  | Sus        | ICH_TM_OFF#          |
| GPIO14                     | I/O-I  | Sus        | AC_PRESENT           |
| GPIO16                     | I/O-N  | Core       | PM DPRSLPVR IPD 20K  |
| GPIO17                     | I/O-I  | Core       | N.C                  |
| GPIO18                     | I/O-O  | Core       | ICH_FP_EN            |
| GPIO19                     | I/O-I  | Core       | SATA_DET#1           |
| GPIO20                     | I/O-O  | Core       | N.C IPD 20K          |
| GPIO21                     | I/O-I  | Core       | SATA_DET#0           |
| GPIO22                     | I/O-I  | Core       | ICH_GPIO22           |
| GPIO23                     | I/O-N  | Core       | LPC_DRQ#1 IPH 20K    |
| GPIO24                     | I/O-O  | Sus        | N.C                  |
| GPIO26                     | I/O-N  | Sus        | SLP_S4_STATE#        |
| GPIO27                     | I/O-O  | Sus        | N.C                  |
| GPIO28                     | I/O-O  | Sus        | ODD_PWR_EN           |
| GPIO29                     | I/O-N  | Sus        | USB_OC#5             |
| GPIO30                     | I/O-N  | Sus        | USB_OC#6             |
| GPIO31                     | I/O-N  | Sus        | USB_OC#7             |
| GPIO33                     | I/O-O  | Core       | HDA_DOCK_EN# IPH 20K |
| GPIO34                     | I/O-O  | Core       | N.C                  |
| GPIO35                     | I/O-O  | Core       | CLK_SATA_OE#         |
| GPIO36                     | I/O-I  | Core       | SATA_DET#4           |
| GPIO37                     | I/O-I  | Core       | SATA_DET#5           |
| GPIO38                     | I/O-I  | Core       | N.C                  |
| GPIO39                     | I/O-I  | Core       | N.C                  |
| GPIO40                     | I/O-N  | Sus        | USB_OC#1             |
| GPIO41                     | I/O-N  | Sus        | USB_OC#2             |
| GPIO42                     | I/O-N  | Sus        | USB_OC#3             |
| GPIO43                     | I/O-N  | Sus        | USB_OC#4             |
| GPIO44                     | I/O-N  | Sus        | USB_OC#8             |
| GPIO45                     | I/O-N  | Sus        | USB_OC#9             |
| GPIO46                     | I/O-N  | Sus        | USB_OC#10            |
| GPIO47                     | I/O-N  | Sus        | USB_OC#11            |
| GPIO48                     | I/O-I  | Core       | N.C                  |
| GPIO49                     | I/O-O  | Core       | N.C                  |
| GPIO50                     | I/O-N  | Core       | PCI_REQ#1 IPH 20K    |
| GPIO51                     | I/O-N  | Core       | N.C IPH 20K          |
| GPIO52                     | I/O-N  | Core       | PCI_REQ#2            |
| GPIO53                     | I/O-N  | Core       | N.C IPH 20K          |
| GPIO54                     | I/O-N  | Core       | PCI_REQ#3            |
| GPIO55                     | I/O-N  | Core       | PCI_GNT#3 IPH 20K    |
| GPIO56                     | I/O-I  | Sus        | ICH_GPIO56           |

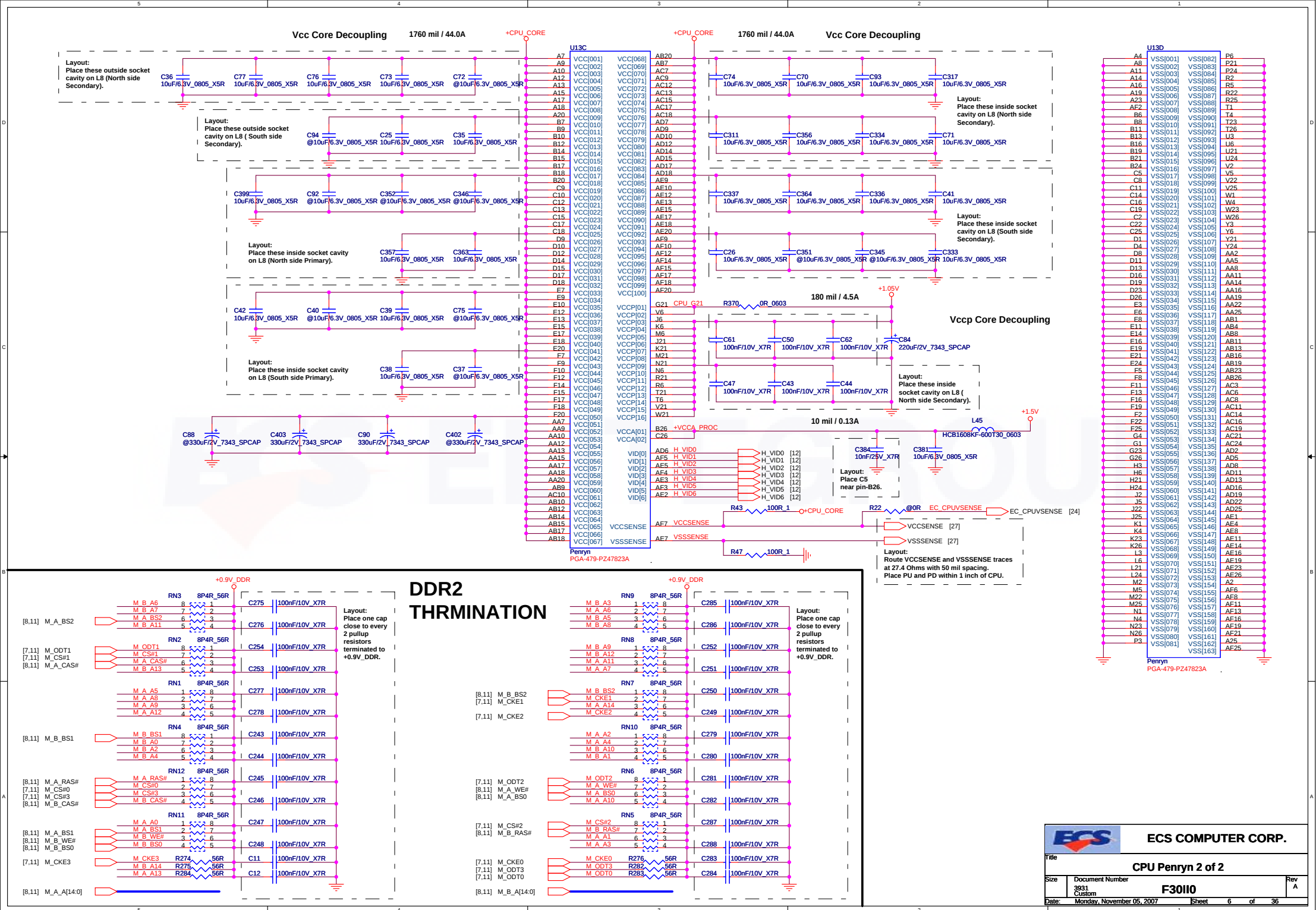
| ICH9-M General Purpose I/O |       |            |                      |
|----------------------------|-------|------------|----------------------|
| Name                       | Type  | Power Well | Description EDS v2.0 |
| GPIO57                     | I/O-I | Sus        | ICH_GPIO57           |
| GPIO58                     | I/O-I | Sus        | SPI_CS#1 IPH 20K     |
| GPIO59                     | I/O-N | Sus        | USB_OC#0             |
| GPIO60                     | I/O-N | Sus        | ICH_GPIO60           |

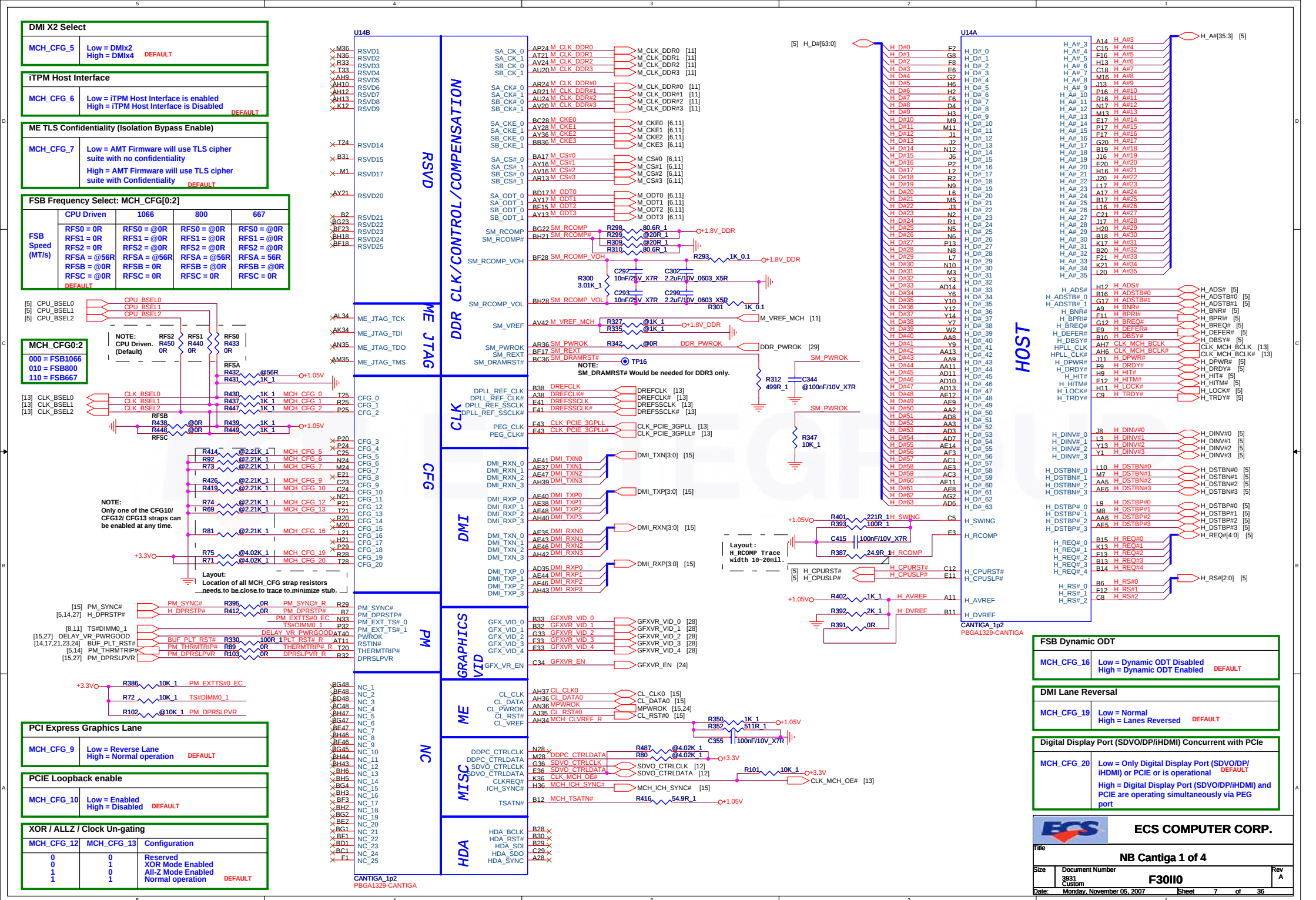
| ITE8512E General Purpose I/O |        |              |                         |
|------------------------------|--------|--------------|-------------------------|
| Name                         | Type   | Default Pull | Description Spec v4.0.1 |
| GPIOA0                       | I/O-I  | Up           | BTL_BEEP                |
| GPIOA1                       | I/O-I  | Up           | RF_OFF#                 |
| GPIOA2                       | I/O-I  | Up           | EC_VID2                 |
| GPIOA3                       | I/O-I  | Up           | EC_VID3                 |
| GPIOA4                       | I/O-I  | Up           | EC_VID4                 |
| GPIOA5                       | I/O-I  | Up           | EC_VID5                 |
| GPIOA6                       | I/O-I  | Up           | SMP_100MV_EN#           |
| GPIOA7                       | I/O-I  | Up           | SMP_50MV_EN#            |
| GPIOB0                       | I/O-I  | Up           | NC_PWRONS               |
| GPIOB1                       | I/O-I  | Up           | BT_EN                   |
| GPIOB2                       | I/O-I  | Dn           | LED_PWR_B               |
| GPIOB3                       | I/O-I  |              | SMB_CLK_BAT             |
| GPIOB4                       | I/O-I  |              | SMB_DATA_BAT            |
| GPIOB5                       | I/O-O  |              | H_A20GATE               |
| GPIOB6                       | I/O-Fn | Up           | H_RCIN#                 |
| GPIOB7                       | I/O-I  | Dn           | MUTE_AMP#               |
| GPIOC0                       | I/O-I  | Dn           | SMARTVOL                |
| GPIOC1                       | I/O-I  |              | SMB_CLK_GEN             |
| GPIOC2                       | I/O-I  |              | SMB_DATA_GEN            |
| GPIOC3                       | I/O-I  | Dn           | SMP2_EN#                |
| GPIOC4                       | I/O-I  | Dn           | PWR_KEEP                |
| GPIOC5                       | I/O-I  | Dn           | EC_SKIP                 |
| GPIOC6                       | I/O-I  | Dn           | PM_PWRBTN#              |
| GPIOC7                       | I/O-I  | Up           | GFXVR_EN                |
| GIOD0                        | I/O-I  | Up           | AC_IN                   |
| GIOD1                        | I/O-I  | Up           | MMB_DE#                 |
| GIOD2                        | I/O-Fn | Up           | BUF_PLT_RST#            |
| GIOD3                        | I/O-I  | Up           | EC_EXTSC#_R             |
| GIOD4                        | I/O-I  | Up           | EC_EXTSMI#_R            |
| GIOD5                        | I/O-I  | Up           | ALL_SYS_PWRGD           |
| GIOD6                        | I/O-I  | Dn           | FAN_SPEED#              |
| GIOD7                        | I/O-I  | Dn           | LED_RF_B                |
| GPIOE0                       | I/O-I  | Dn           | PM_RSMRST#              |
| GPIOE1                       | I/O-I  | Dn           | EC_MPWROK               |
| GPIOE2                       | I/O-I  | Dn           | LED_CHR_B               |
| GPIOE3                       | I/O-I  | Dn           | LED_PWSW_W              |
| GPIOE4                       | I/O-I  | Up           | PWR_SW                  |
| GPIOE5                       | I/O-I  | Dn           | LED_CHR_R               |
| GPIOE6                       | I/O-I  | Dn           | LPCPD#                  |
| GPIOE7                       | I/O-I  | Up           | NC_PWRON                |
| GPIOF0                       | I/O-I  | Up           | EC_PROCHOT              |
| GPIOF1                       | I/O-I  | Up           | WEBCAM_EN               |
| GPIOF2                       | I/O-I  | Up           | PM_LAN_ENABLE           |
| GPIOF3                       | I/O-I  | Up           | +3.3VM_ON               |
| GPIOF4                       | I/O-I  | Up           | PS2_CLK_TP              |
| GPIOF5                       | I/O-I  | Up           | PS2_DATA_TP             |
| GPIOF6                       | I/O-I  | Up           | NC_PERST#               |
| GPIOF7                       | I/O-I  | Up           | NC_CPPE#                |
| GPIOG0                       | I/O-O  | Up           | BKL_EC                  |
| GPIOG1                       | I/O-O  | Dn           | +5V_ON                  |
| GPIOG2                       | I/O-Fn |              | FLFRAME#                |
| GPIOG6                       | I/O-I  |              | LID#                    |

| ITE8512E General Purpose I/O |        |              |                         |
|------------------------------|--------|--------------|-------------------------|
| Name                         | Type   | Default Pull | Description Spec v4.0.1 |
| GPIOH0                       | I/O-I  | Dn           | +CPU_CORE_ON            |
| GPIOH1                       | I/O-I  | Dn           | +GFX_VR_ON              |
| GPIOH2                       | I/O-I  | Dn           | EC_USB2                 |
| GPIOH3                       | I/O-I  | Dn           | EC_USB1                 |
| GPIOH4                       | I/O-I  | Dn           | +5VS_ON                 |
| GPIOH5                       | I/O-I  | Dn           | +DDR_ON                 |
| GPIOH6                       | I/O-I  | Dn           | +1.5V_ON                |
| GPIOI0                       | I-ADC  |              | BATT_TEMP               |
| GPIOI1                       | I-ADC  |              | ADAPTOR_I               |
| GPIOI2                       | I-ADC  |              | SUS_PWR_ACK             |
| GPIOI3                       | I-ADC  |              | EC_CPUISENSE            |
| GPIOI4                       | I-ADC  |              | PM_SLP_S4#              |
| GPIOI5                       | I-ADC  |              | PM_SLP_S3#              |
| GPIOI6                       | I-ADC  |              | PM_SLP_M#               |
| GPIOI7                       | I-ADC  |              | EC_CPUVSENSE            |
| GPIOJ0                       | I/O-DA |              | EC_BRIGHTNESS           |
| GPIOJ1                       | I/O-DA |              | CHG_I                   |
| GPIOJ2                       | I/O-DA |              | FAN_CTRL0               |
| GPIOJ3                       | I/O-DA |              | CHG_ON                  |
| GPIOJ4                       | I/O-DA |              | AC_PRESENT              |
| GPIOJ5                       | I/O-DA |              | CHG_V                   |

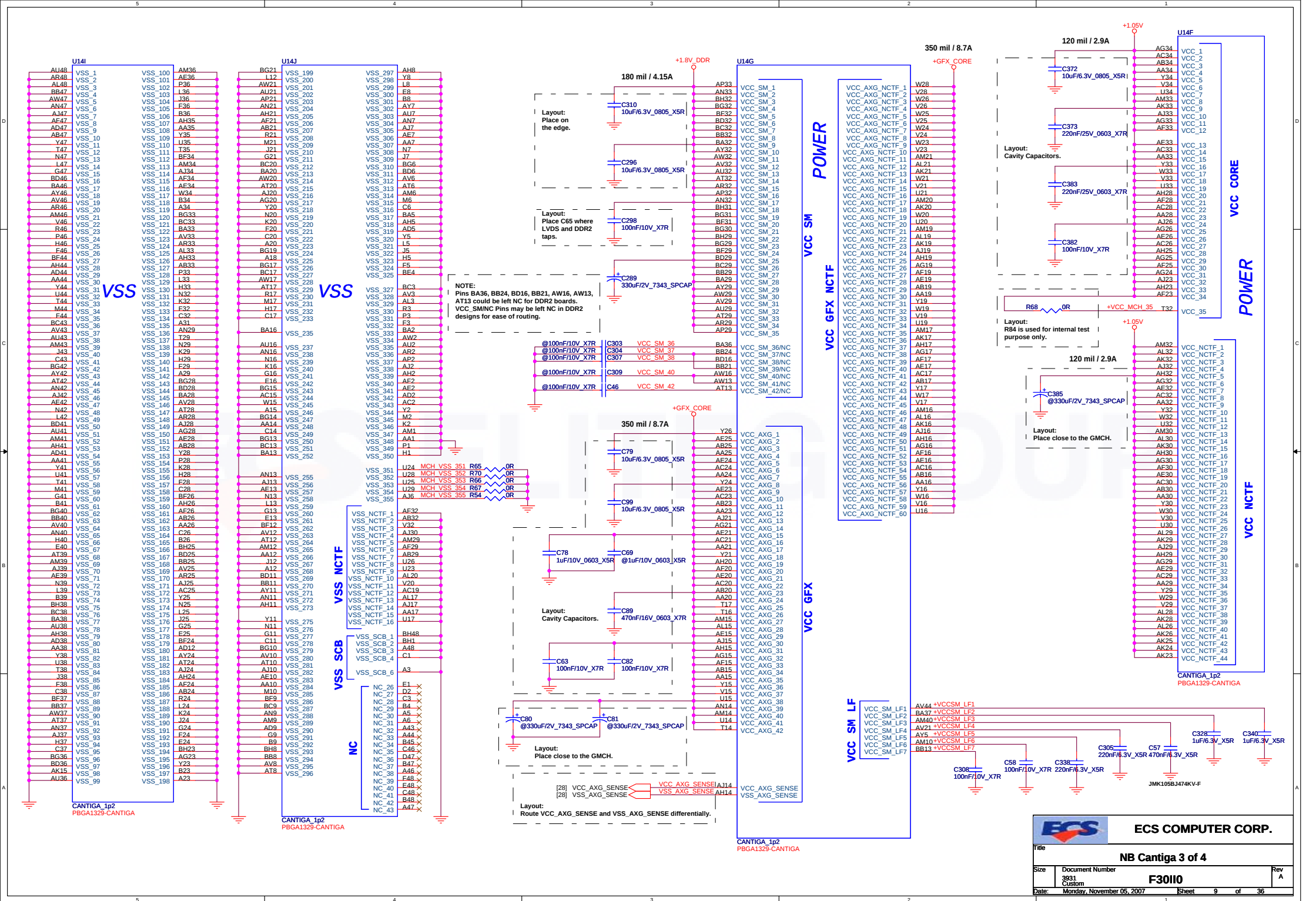
|                                                                                       |                           |                           |         |
|---------------------------------------------------------------------------------------|---------------------------|---------------------------|---------|
|  |                           | <b>ECS COMPUTER CORP.</b> |         |
| Title                                                                                 |                           | GPIO                      |         |
| Size                                                                                  | Document Number           | Rev                       |         |
|                                                                                       | 3931 Custom               | A                         |         |
| Date:                                                                                 | Monday, November 05, 2007 | Sheet                     | 4 of 36 |



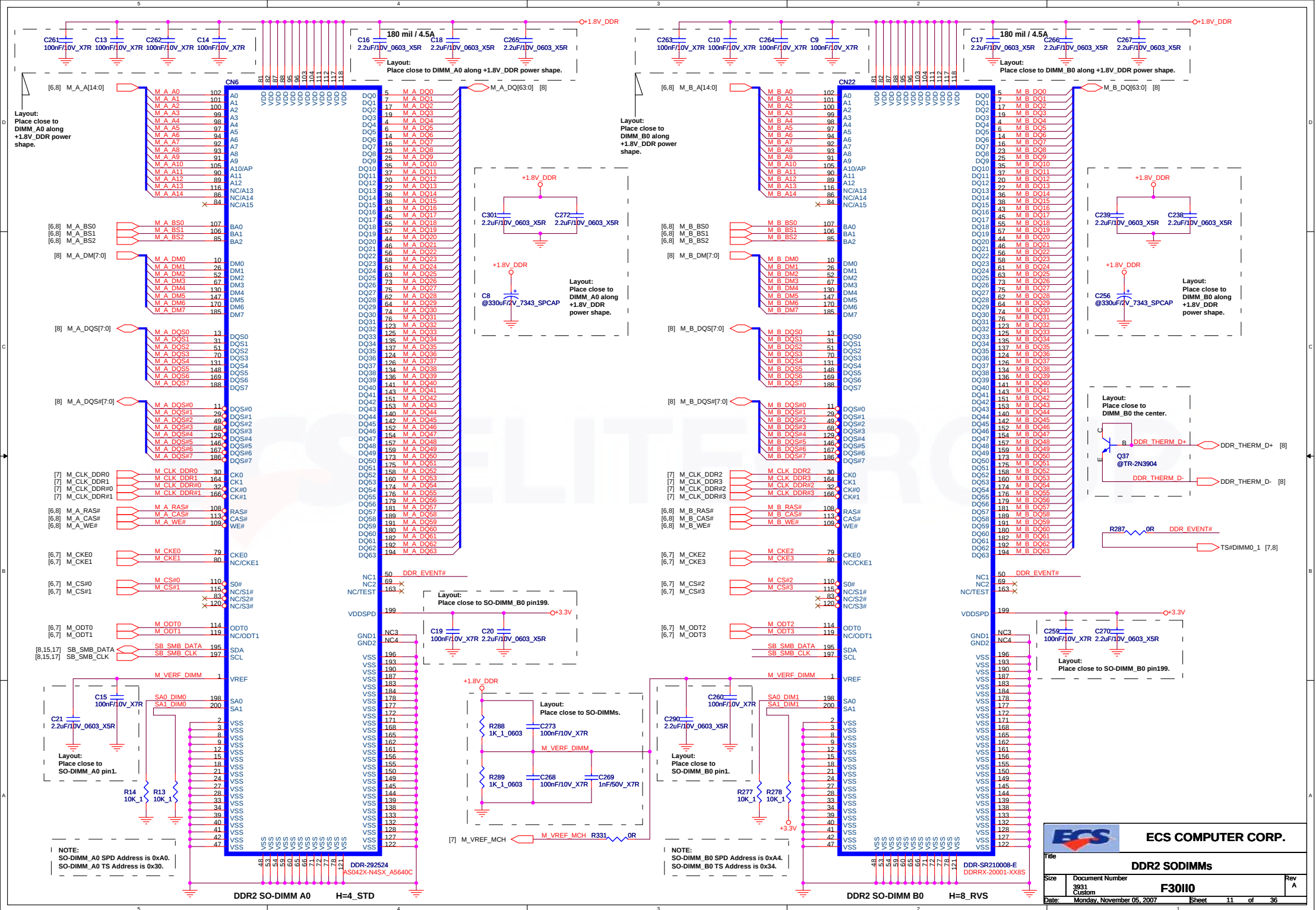




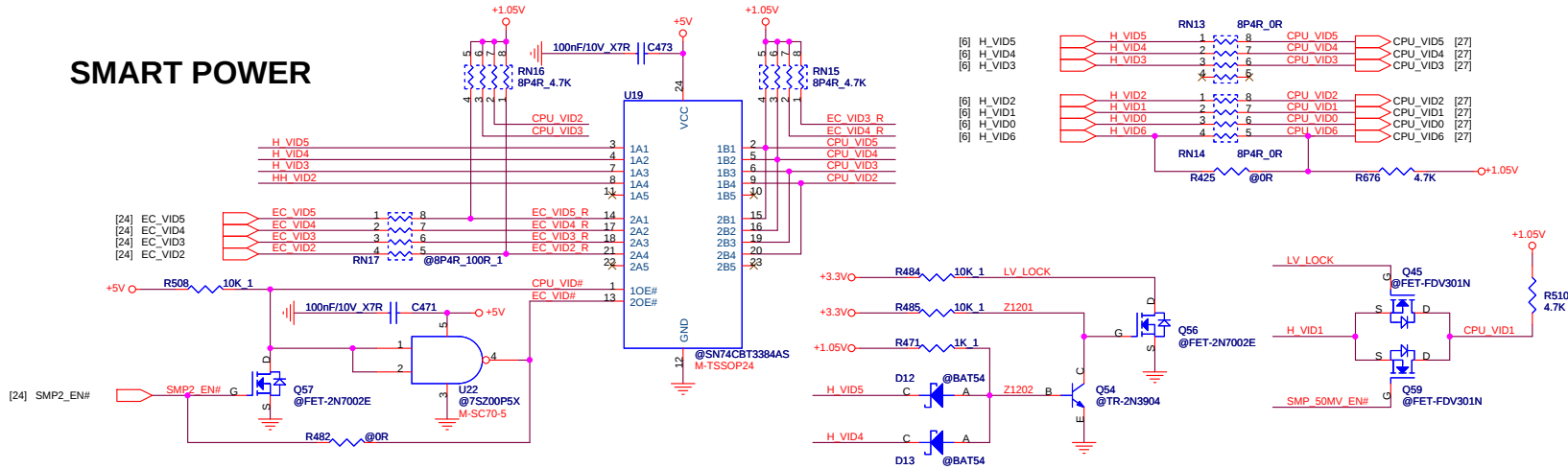




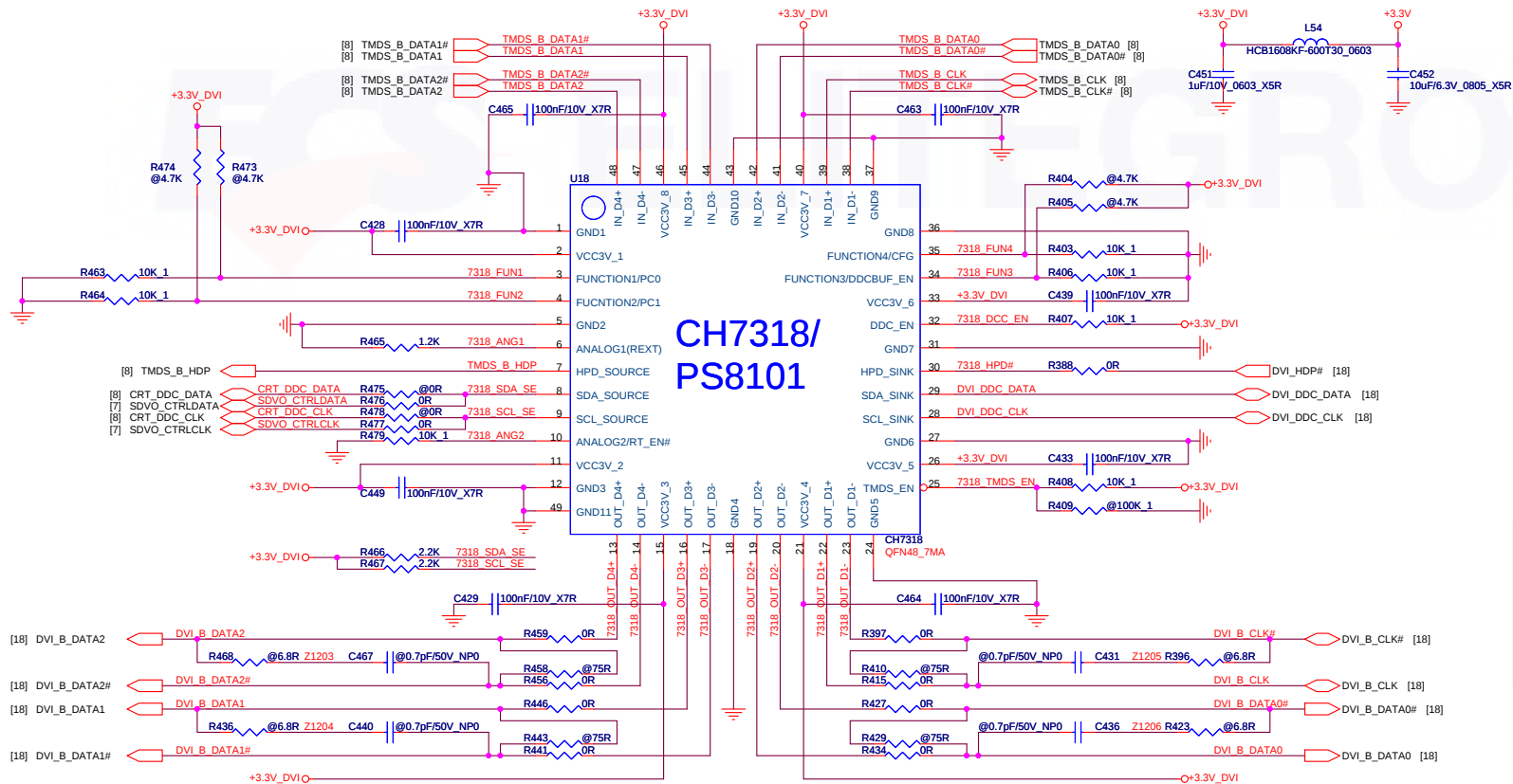




## SMART POWER



## DVI SHIFTER

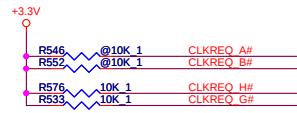


| Pin | CH7318          | PS8101           |
|-----|-----------------|------------------|
| 3   | Pull-Low 10K_1  | Note 1           |
| 4   | Pull-Low 10K_1  | Note 1           |
| 6   | Pull-Low 1.2K   | Pull-Low 499R_1  |
| 10  | Pull-Low 10K_1  | NC               |
| 32  | Pull-High 10K_1 | Pull-High 4.7K_1 |
| 34  | Pull-Low 10K_1  | Note 2           |
| 35  | Pull-Low 10K_1  | Note 2           |

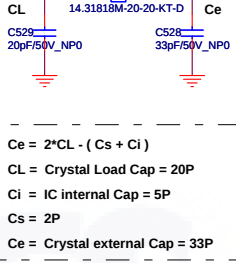
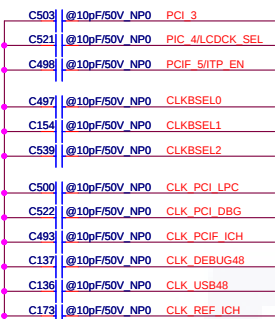
| Note 1 - PS8101 Equalization |          |             |
|------------------------------|----------|-------------|
| PC0, PC1 [Pin3/4]            | 1.65Gbps | Comment     |
| 0 0                          | 8 dB     |             |
| 0 1                          | 12 dB    |             |
| 1 0                          | 4 dB     | Recommended |
| 1 1                          | 0 dB     |             |

| Note 2 - PS8101 DDCBUF_EN / CFG Pin 34/35 |                                                                                                                                     |  |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--|
| DDCBUF_EN                                 | High = DDC Active Buffer Enable (7318_SDA/SCL_SE Pull-High 1.5K)<br>Low = DDC Active Buffer Disable (7318_SDA/SCL_SE Pull-High 47K) |  |
| CFG                                       | High = Low-level input vol <0.44v<br>Low-level output vol 0.66v<br>Low = Low-level input vol <0.40v<br>Low-level output vol 0.60v   |  |

| PS8101 DDC Buffering Config Table  |                    |                   |
|------------------------------------|--------------------|-------------------|
| DDC_EN, DDCBUF_EN,OE# Pin 32/34/25 | DDC Passive Buffer | DDC Active Buffer |
| 1,0,x                              | ON                 | OFF               |
| 1,1,0                              | OFF                | ON                |
| 1,1,1                              | OFF                | OFF               |
| 0,x,x                              | OFF                | OFF               |



Reserved FOR EMI

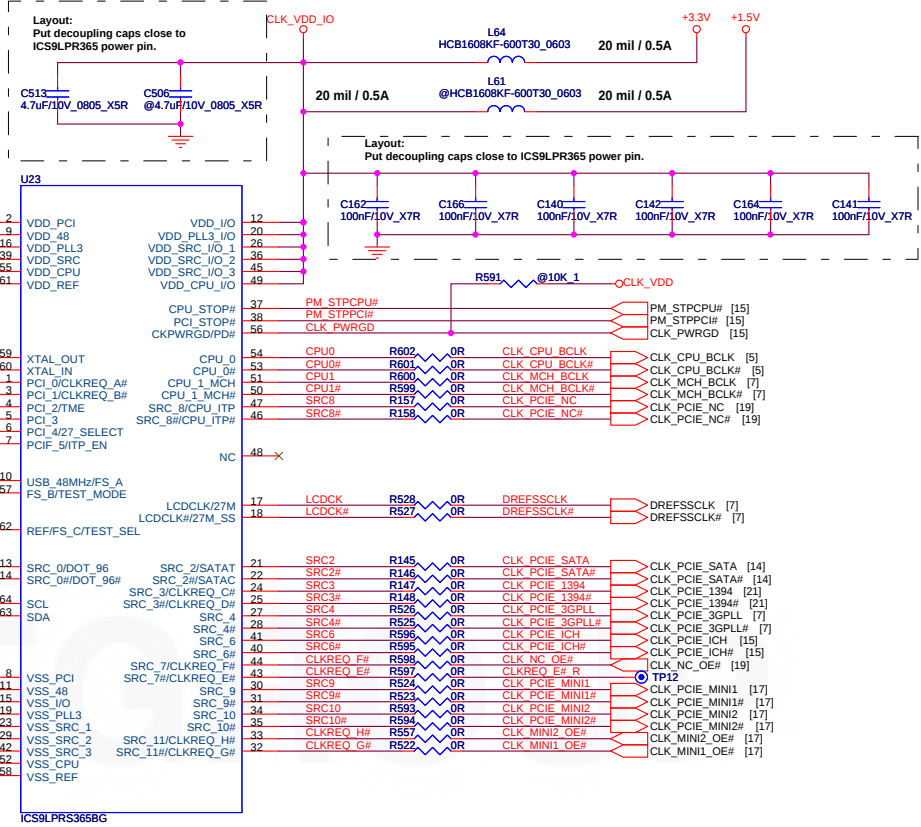


$C_e = 2 \cdot CL \cdot (C_s + C_i)$   
 $CL = \text{Crystal Load Cap} = 20P$   
 $C_i = \text{IC internal Cap} = 5P$   
 $C_s = 2P$   
 $C_e = \text{Crystal external Cap} = 33P$

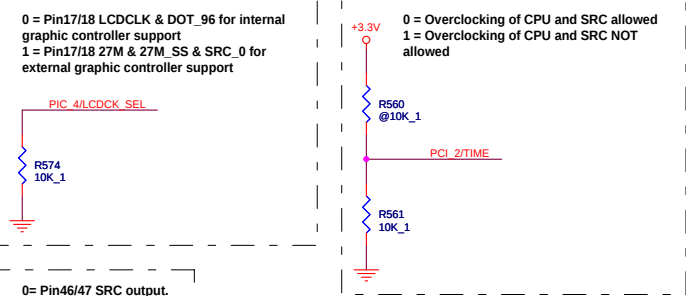


| CPU, MCH Frequency Selection Table |               |               |                             | SRC<br>MHz | PCI<br>MHz | REF<br>MHz | USB<br>MHz | DOT<br>MHz |
|------------------------------------|---------------|---------------|-----------------------------|------------|------------|------------|------------|------------|
| FSLC<br>BSEL2                      | FSLB<br>BSEL1 | FSLA<br>BSEL0 | Host Clock<br>Frequency MHz |            |            |            |            |            |
| 1                                  | 0             | 1             | 100                         |            |            |            |            |            |
| 0                                  | 0             | 1             | 133                         |            |            |            |            |            |
| 0                                  | 1             | 1             | 166                         |            |            |            |            |            |
| 0                                  | 1             | 0             | 200                         |            |            |            |            |            |
| 0                                  | 0             | 0             | 266                         |            |            |            |            |            |
| 1                                  | 0             | 0             | 333                         | 100        | 33.3       | 14.318     | 48         | 96         |
| 1                                  | 1             | 0             | 400                         |            |            |            |            |            |
| 1                                  | 1             | 1             | Reserved                    |            |            |            |            |            |

| CPU / SRC / Function / REQ# Table |                  |                 |                |               |                  |                  |                   |                 |      |                   |                   |
|-----------------------------------|------------------|-----------------|----------------|---------------|------------------|------------------|-------------------|-----------------|------|-------------------|-------------------|
| SRC                               | CPU_0            | CPU_1           | SRC0/DOT_96    | SRC1/LCDCLK   | SRC2/SATAT       | SRC3             | SRC4              | SRC6            | SRC7 | SRC8              | SRC10             |
| CLK_REQ#                          | NC               | NC              | NC             | NC            | CR#_A            | NC               | CR#_B             | NC              | NC   | CR#_F             | CR#_H             |
| Function                          | CPU CLK_CPU_BCLK | NB CLK_MCH_BCLK | NB DREFCLK_CLK | NB DREFSS_CLK | SB CLK_PCIE_SATA | SB CLK_PCIE_1394 | NB CLK_PCIE_3GPLL | SB CLK_PCIE_ICH | NC   | SB CLK_PCIE_MINI1 | SB CLK_PCIE_MINI2 |



Reserved for ICS9LPRS365



**ECS COMPUTER CORP.**

**CLOCK GENERATOR**

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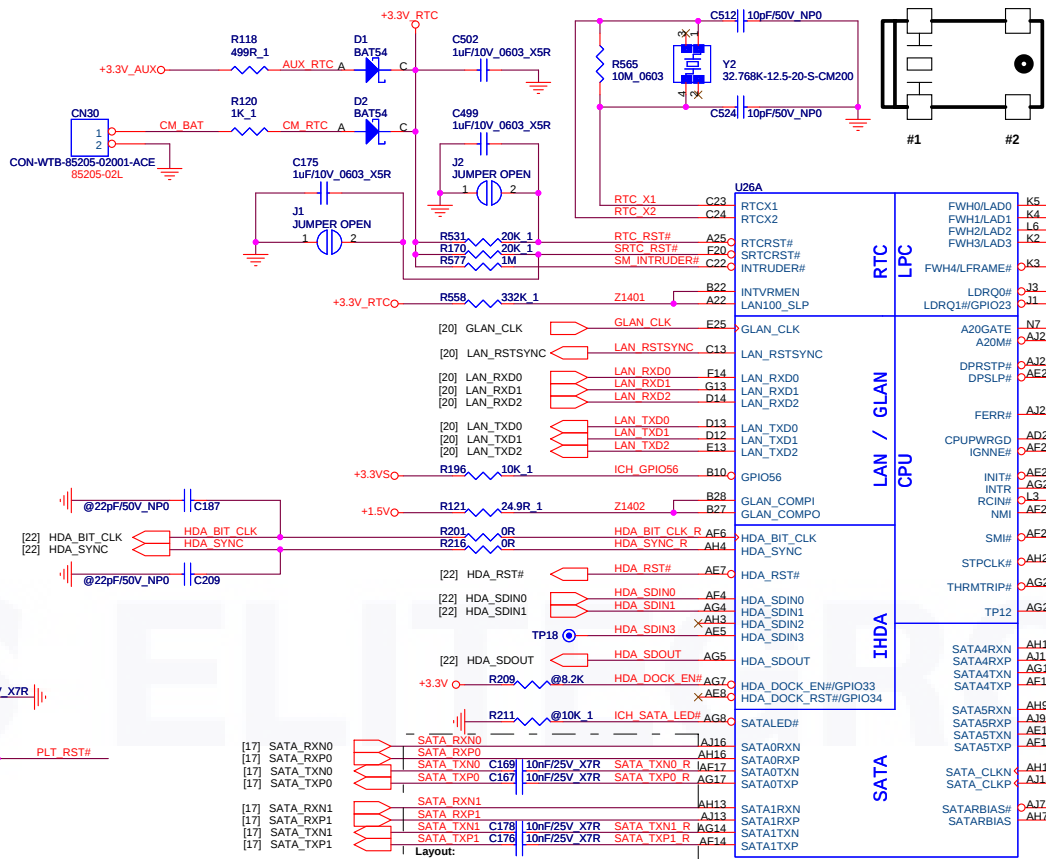
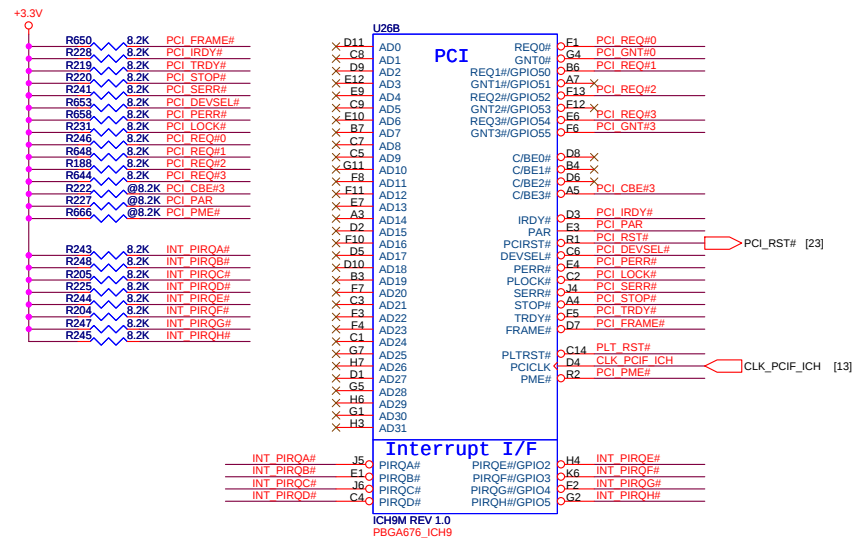
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| XOR Chain Entrance Strap - to be updated |            |                            |
|------------------------------------------|------------|----------------------------|
| ICH9_TP3                                 | HDA_SDOOUT | Description                |
| 0                                        | 0          | RSVD                       |
| 0                                        | 1          | Enter XOR Chain            |
| 1                                        | 0          | Normal Operation           |
| 1                                        | 1          | Set PCIe port config bit 1 |

NOTE:  
Buffer to reduce loading on PLT\_RST#.

[7,17,21,23,24] BUF\_PLT\_RST#



Layout:  
Distance between the ICH9-M and cap on the "P" signal should be identical distance between the ICH9-M and cap on the "N" signal for same pair.

NOTE:  
SST, PECI, PWM[2:0] are called TP in the ICH9M symbol since they are not supported on Montevina Mobile Platform. TACH[3:0] pins also are not supported on the Montevina Platform.

| A16 swap override Strap / Top-Block Swap Override jumper |                                                                                          |         |
|----------------------------------------------------------|------------------------------------------------------------------------------------------|---------|
| PCI_GNT#3                                                | Low = A16 swap override/Top-Block Swap Override enabled.<br>High = Default. (Jumper 1-X) | DEFAULT |
| 0                                                        |                                                                                          |         |
| 1                                                        |                                                                                          |         |

NOTE:  
GNT#0 and SPI\_CS#1 have a weak internal pull up 20K.

| Boot BIOS Strap |          |                    |
|-----------------|----------|--------------------|
| PCI_GNT#0       | SPI_CS#1 | Boot BIOS Location |
| 0               | 0        | SPI                |
| 1               | 1        | PCI                |
|                 |          | LPC DEFAULT        |

**ECS COMPUTER CORP.**

Title: **SB ICH9M 1 of 3**

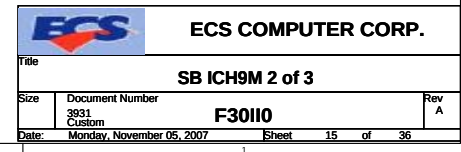
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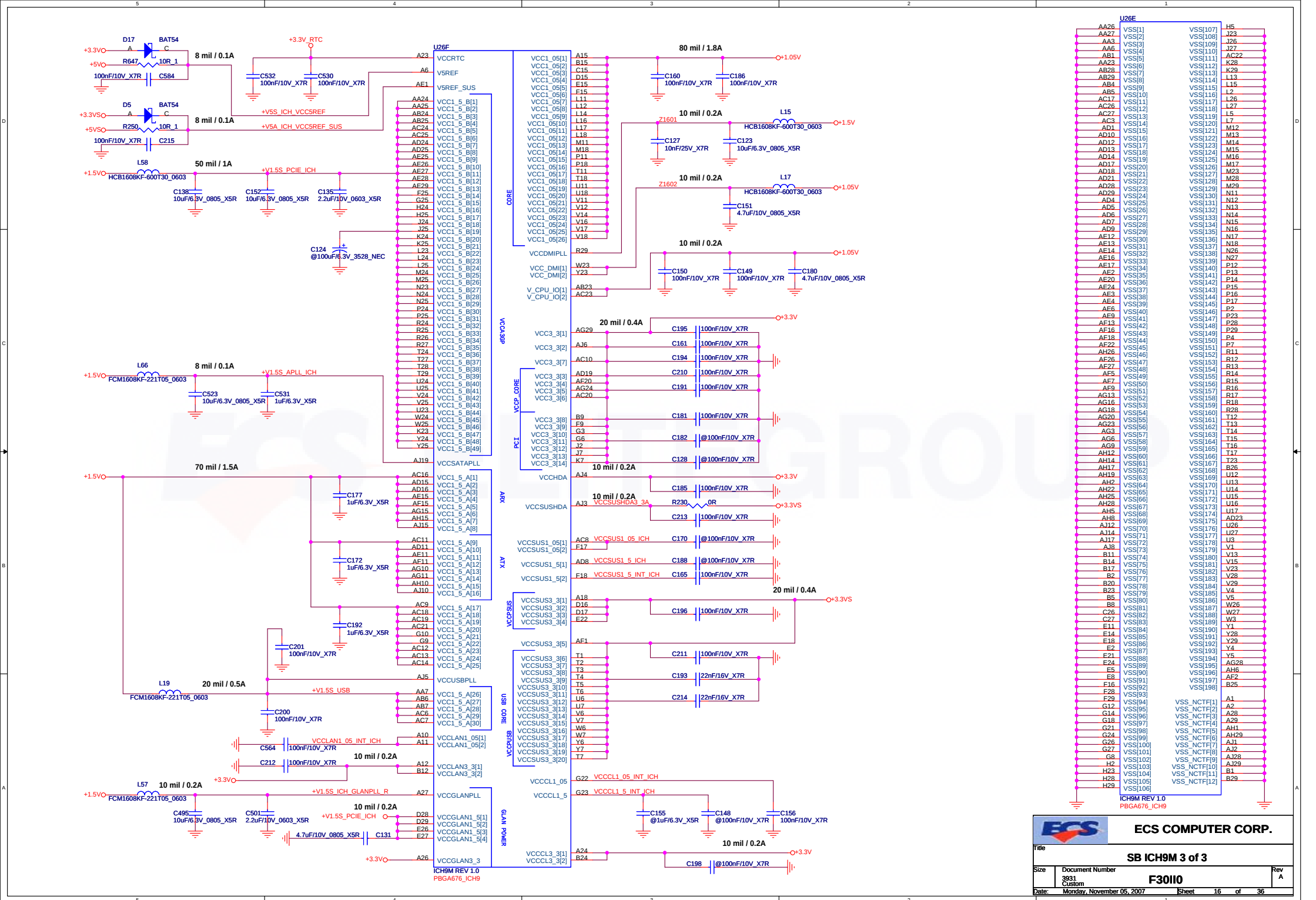
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Document Number: **F30110**

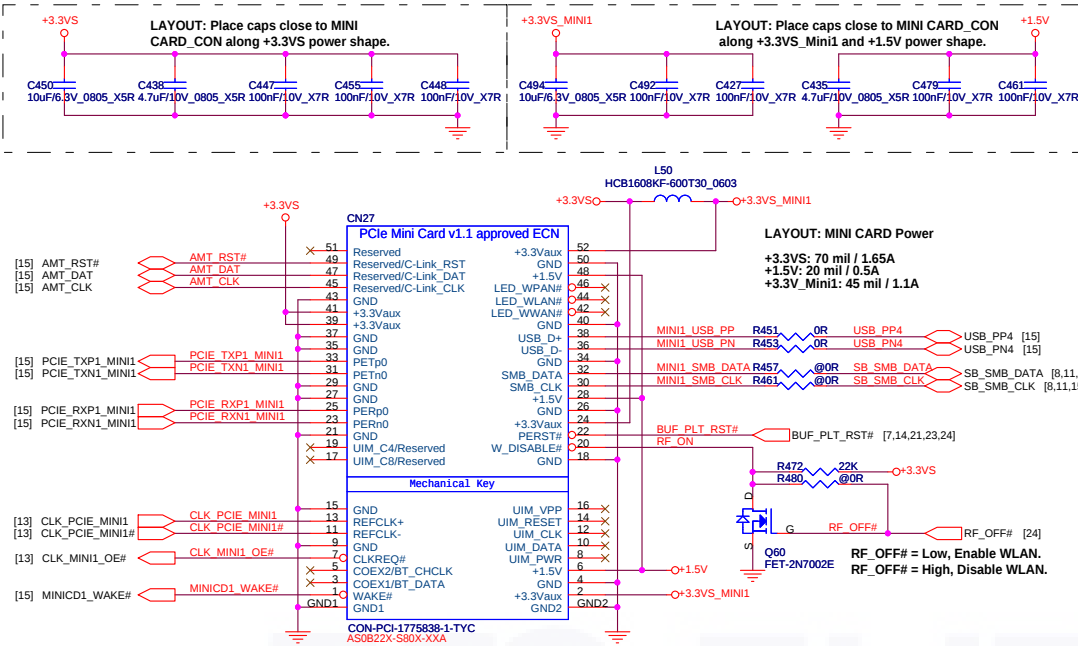
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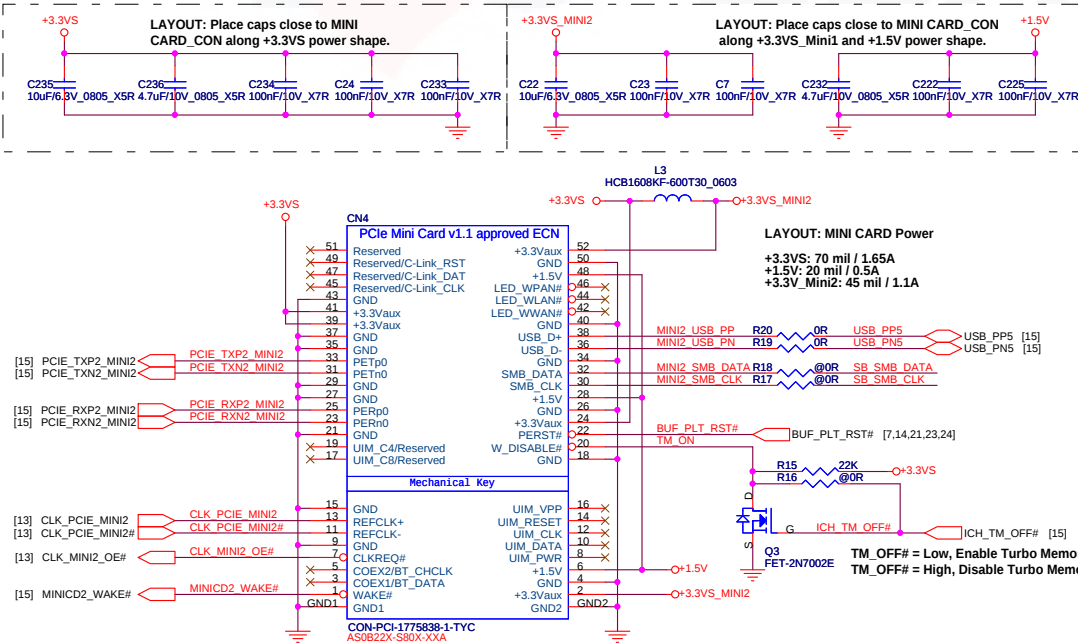




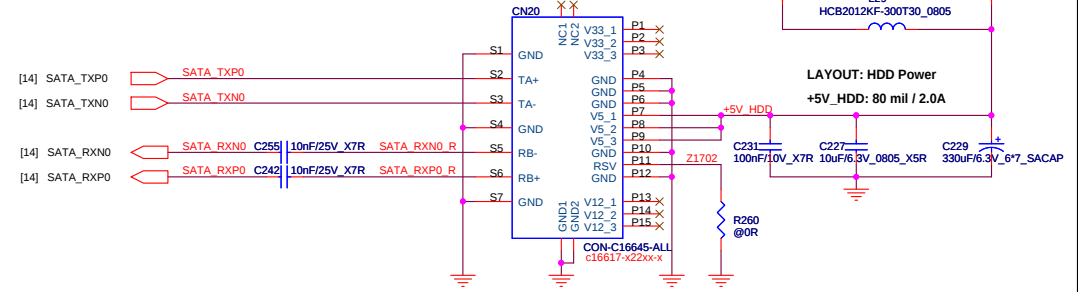
## MINI CARD\_WLAN



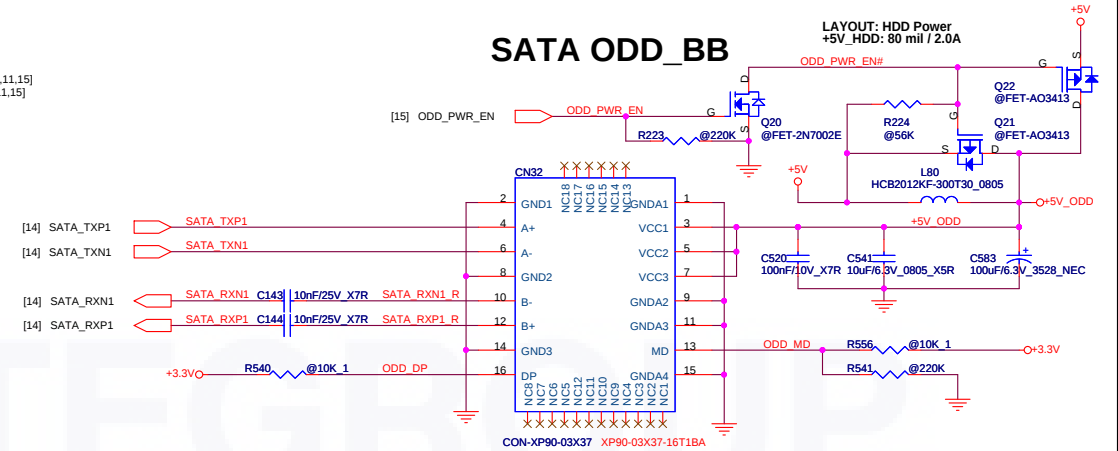
## MINI CARD\_Turbo Memory



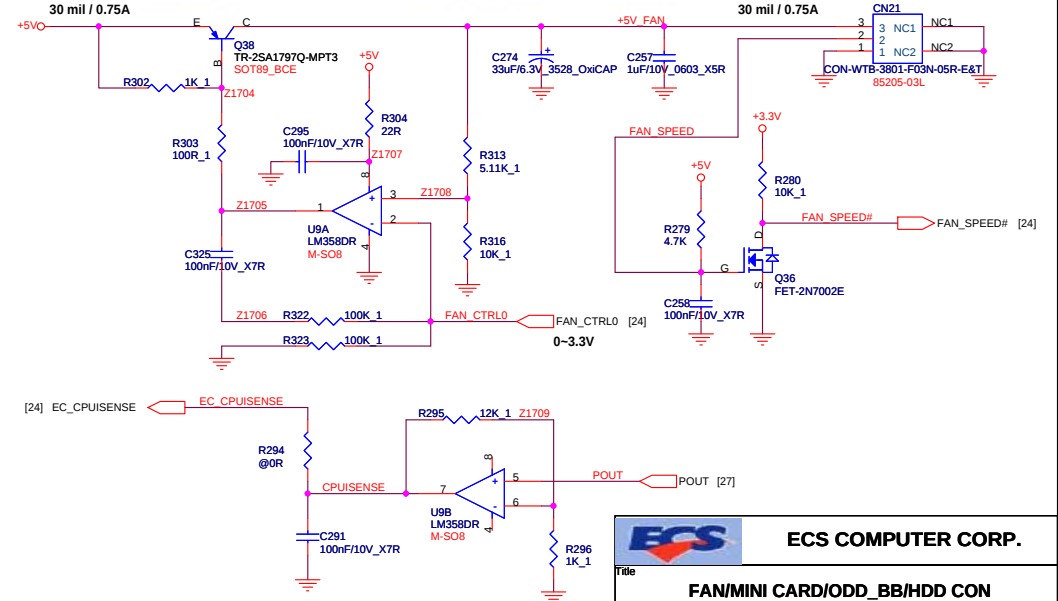
## SATA HDD



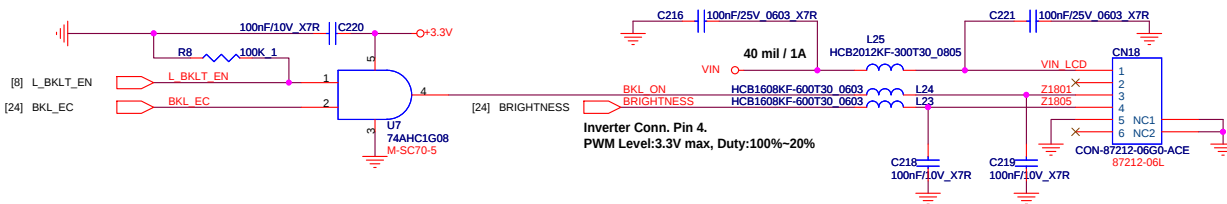
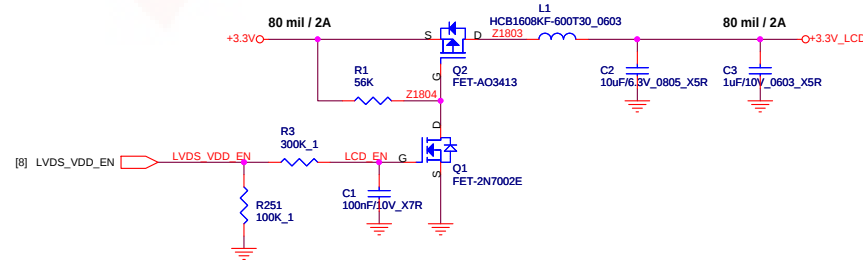
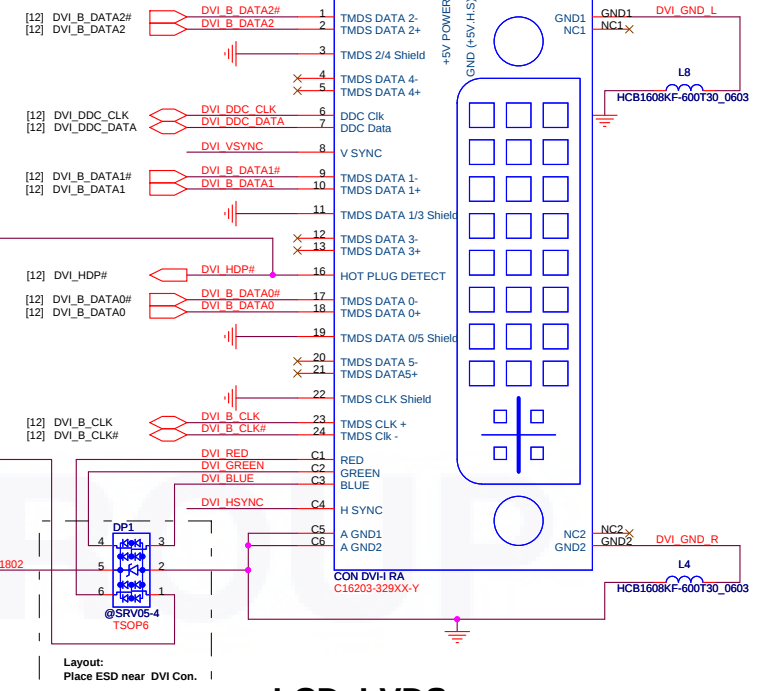
## SATA ODD\_BB



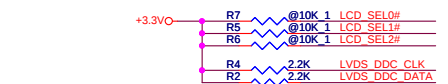
## CPU FAN



|                                     |                           |        |          |
|-------------------------------------|---------------------------|--------|----------|
| <b>ECS COMPUTER CORP.</b>           |                           |        |          |
| <b>FAN/MINI CARD/ODD_BB/HDD CON</b> |                           |        |          |
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| LCD_SEL2# | LCD_SEL1# | LCD_SEL0# |           |
|-----------|-----------|-----------|-----------|
| L         | L         | L         | reserved  |
| L         | L         | H         | 1024X768  |
| L         | H         | L         | 1400X1050 |
| L         | H         | H         | 1280X800  |
| H         | L         | L         | reserved  |
| H         | L         | H         | 1680X1050 |
| H         | H         | L         | 1920X1200 |
| H         | H         | H         | 1440X900  |



|       |                                   |  |  |             |    |    |          |
|-------|-----------------------------------|--|--|-------------|----|----|----------|
| Title |                                   |  |  | DVI/LCD CON |    |    |          |
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NEW CARD POWER

EXT\_USB

Web Camera

NEW CARD

USB Dongle (Bluetooth)

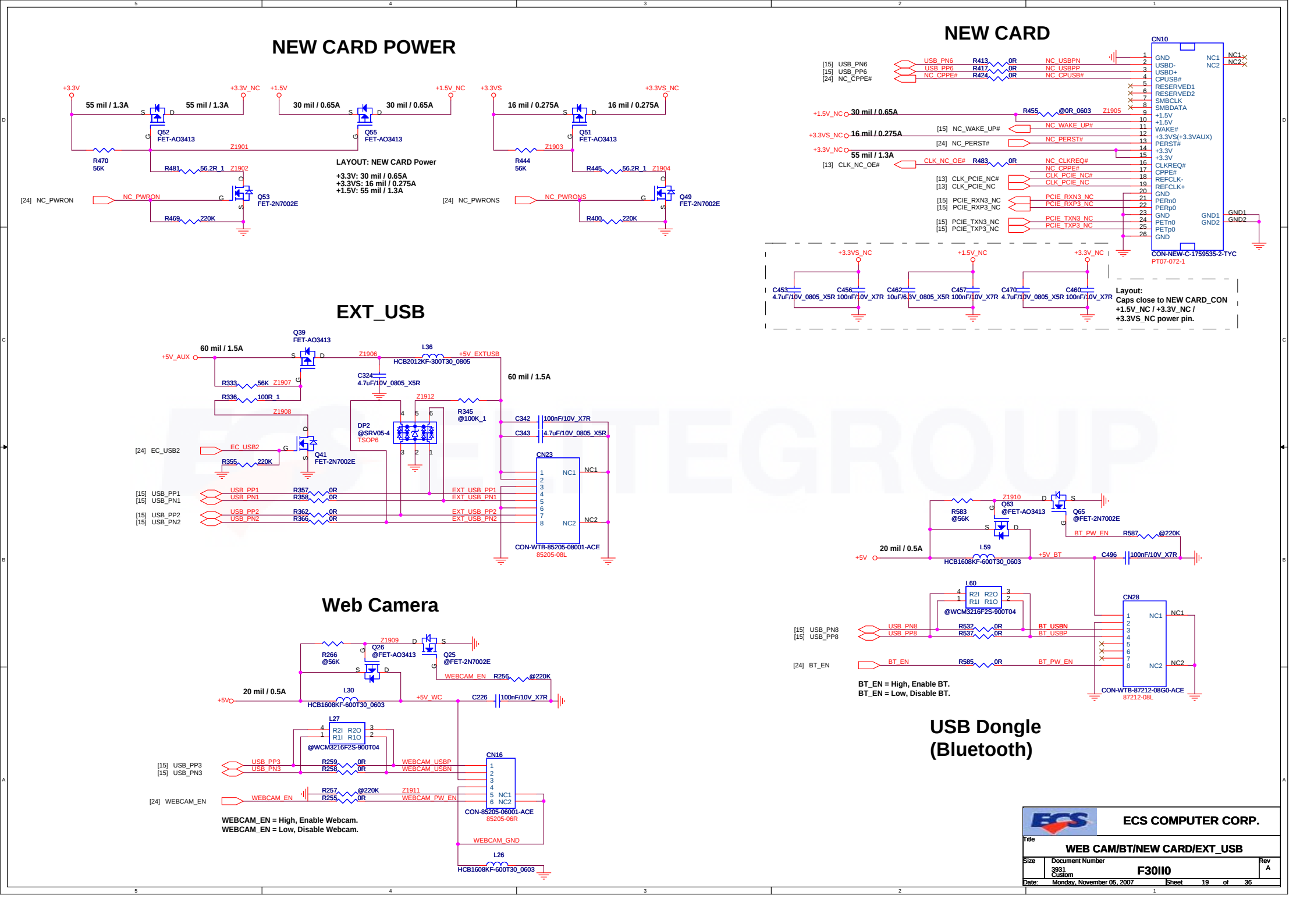
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NEW CARD POWER

NEW CARD

EXT\_USB

Web Camera

USB Dongle (Bluetooth)

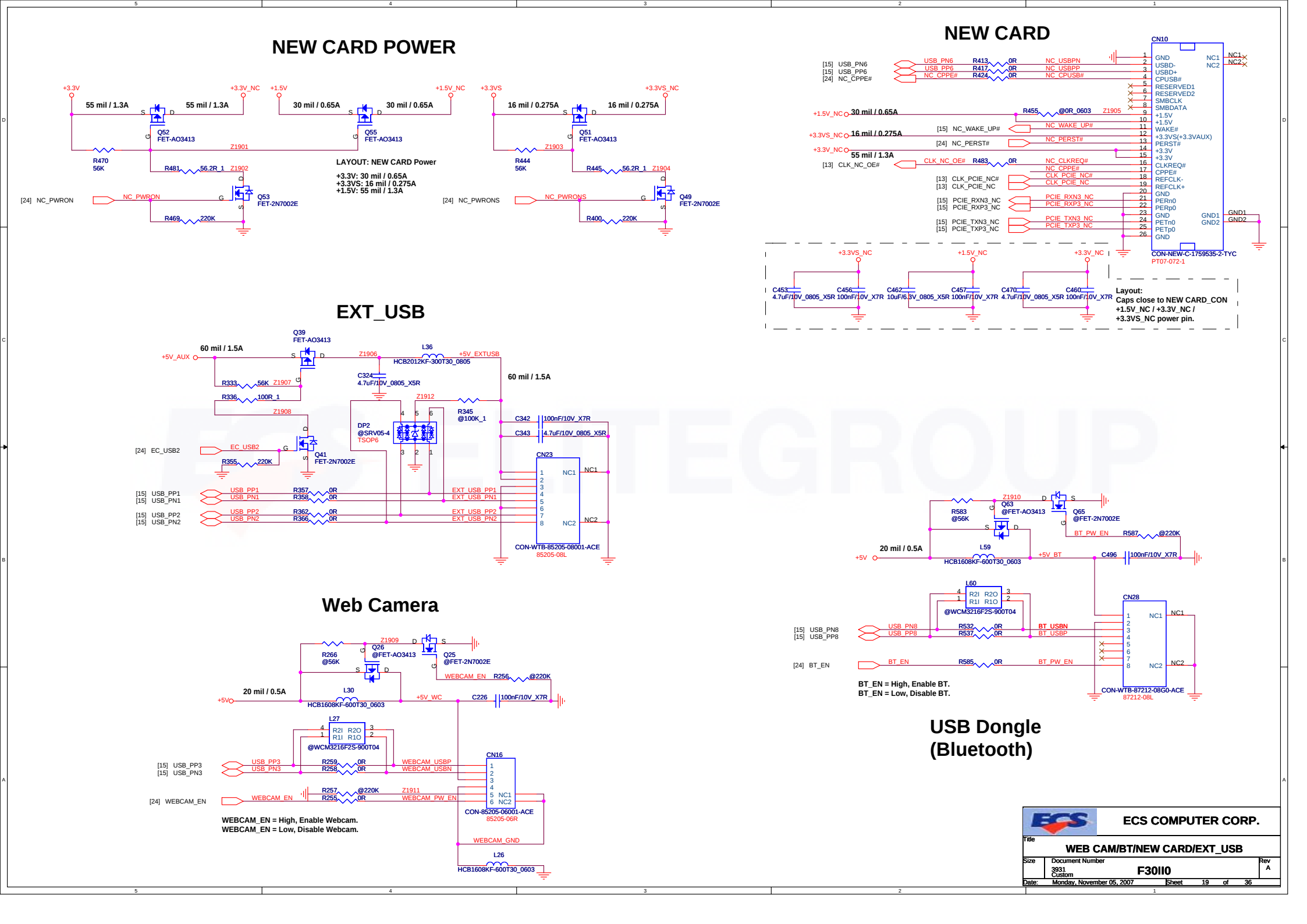
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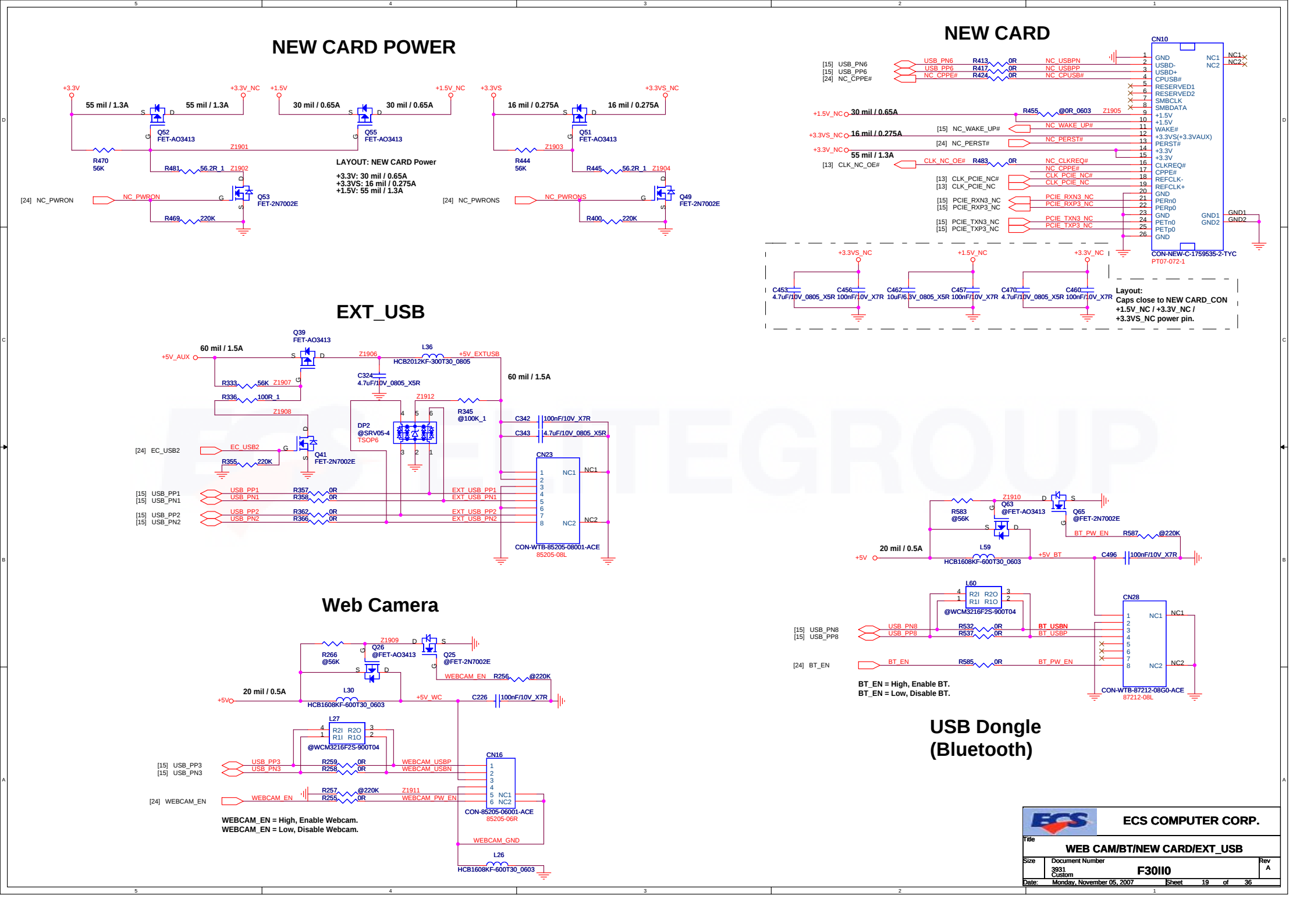
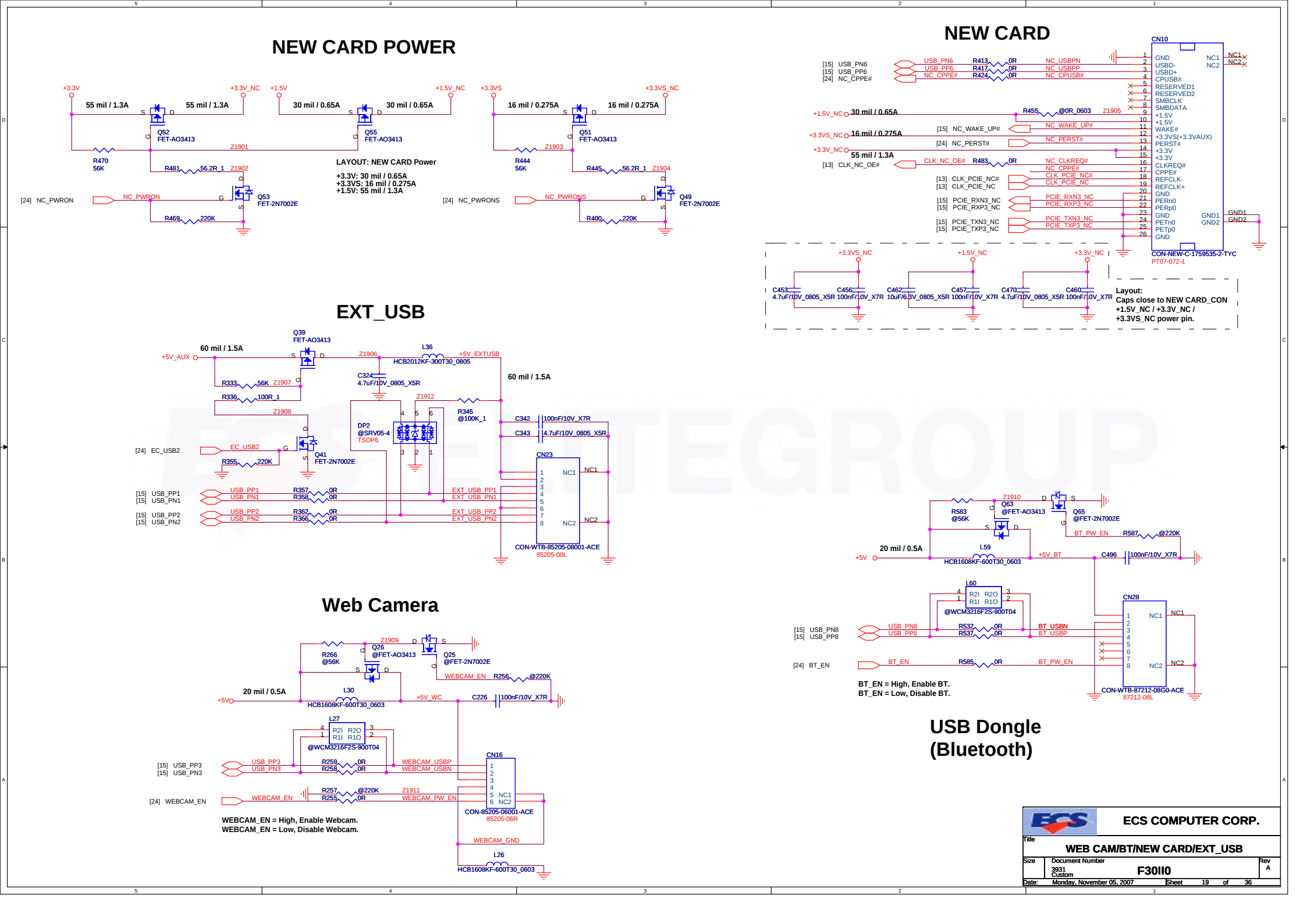
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NEW CARD POWER

NEW CARD

EXT\_USB

Web Camera

USB Dongle (Bluetooth)

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EXT\_USB

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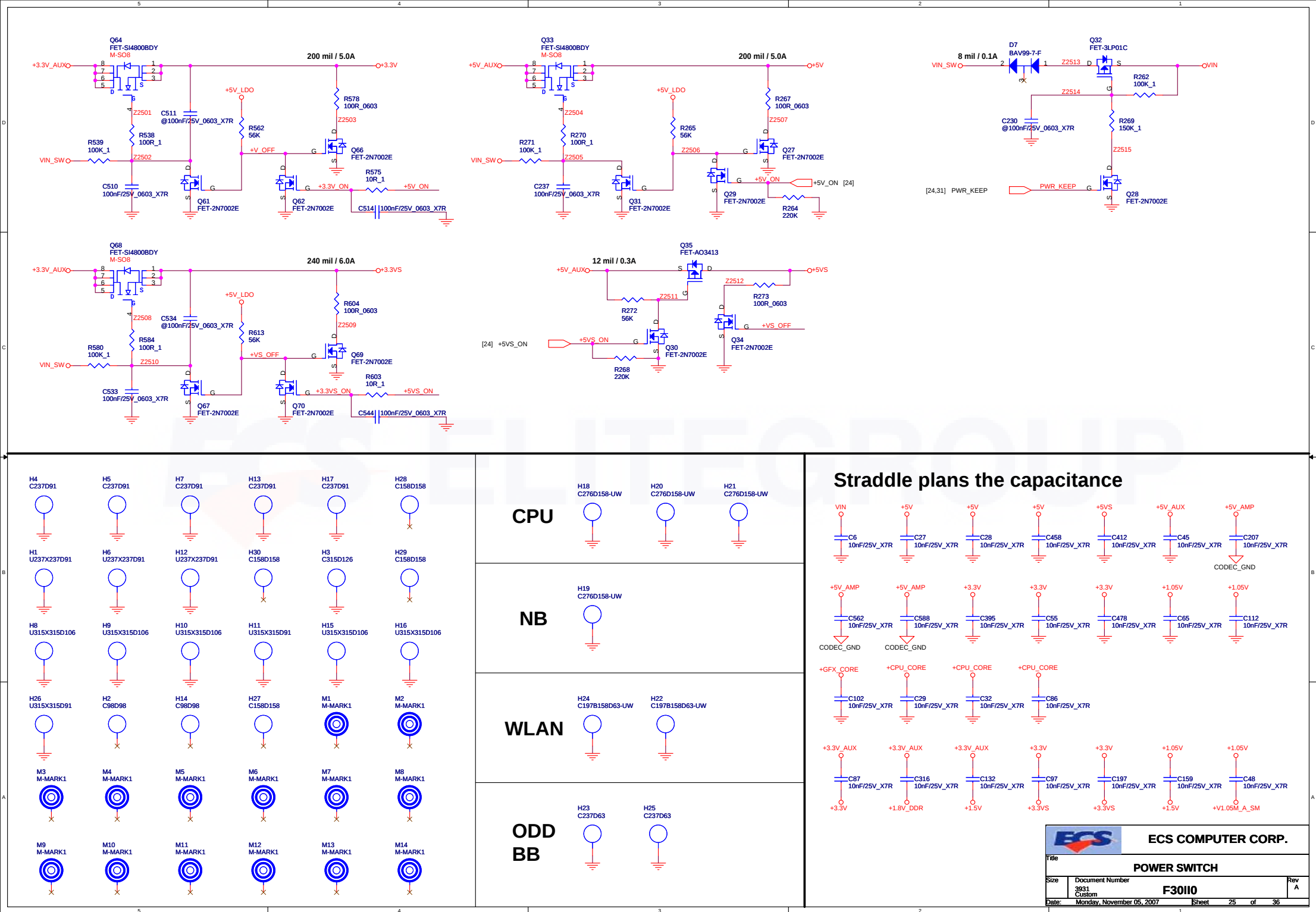
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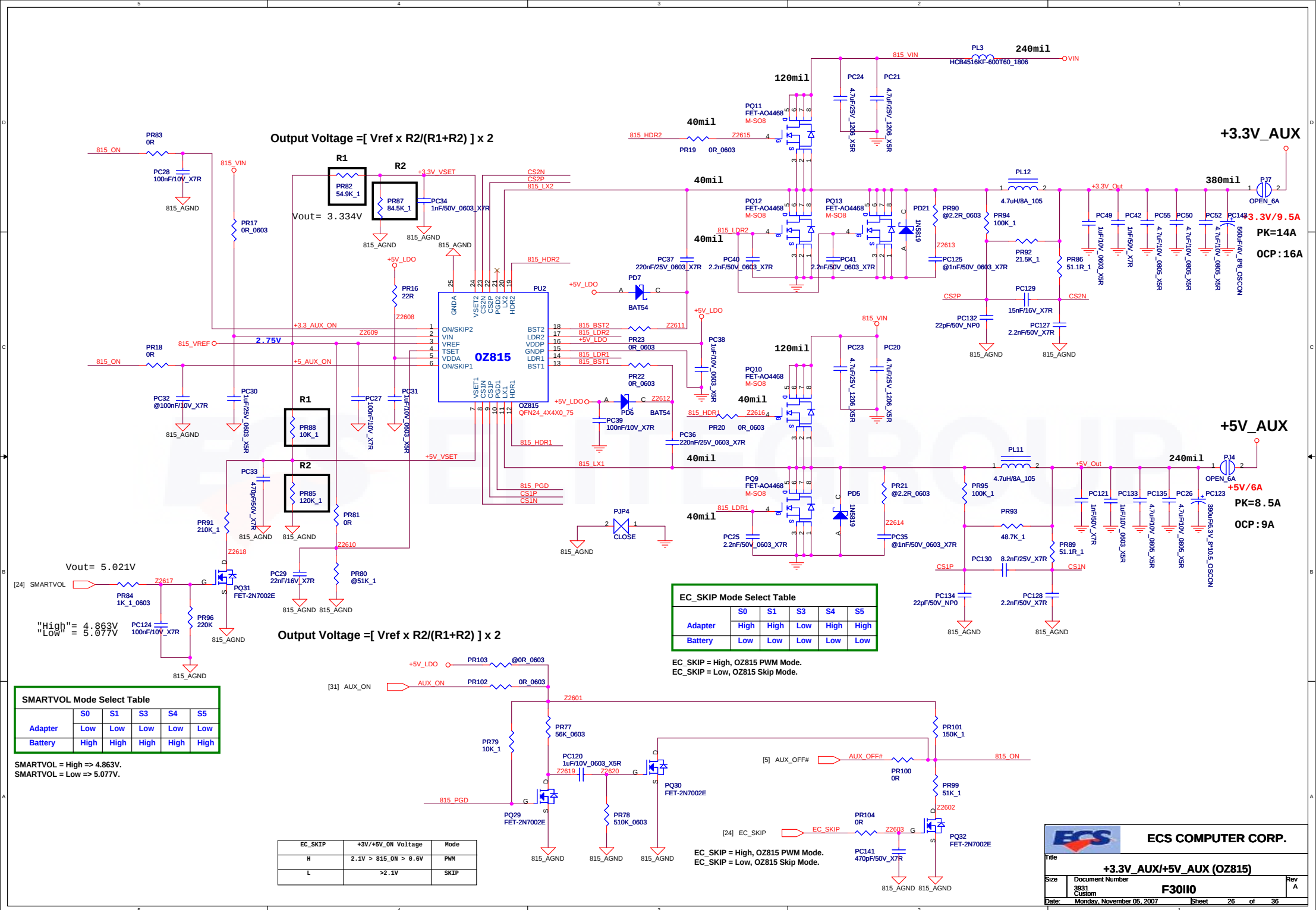
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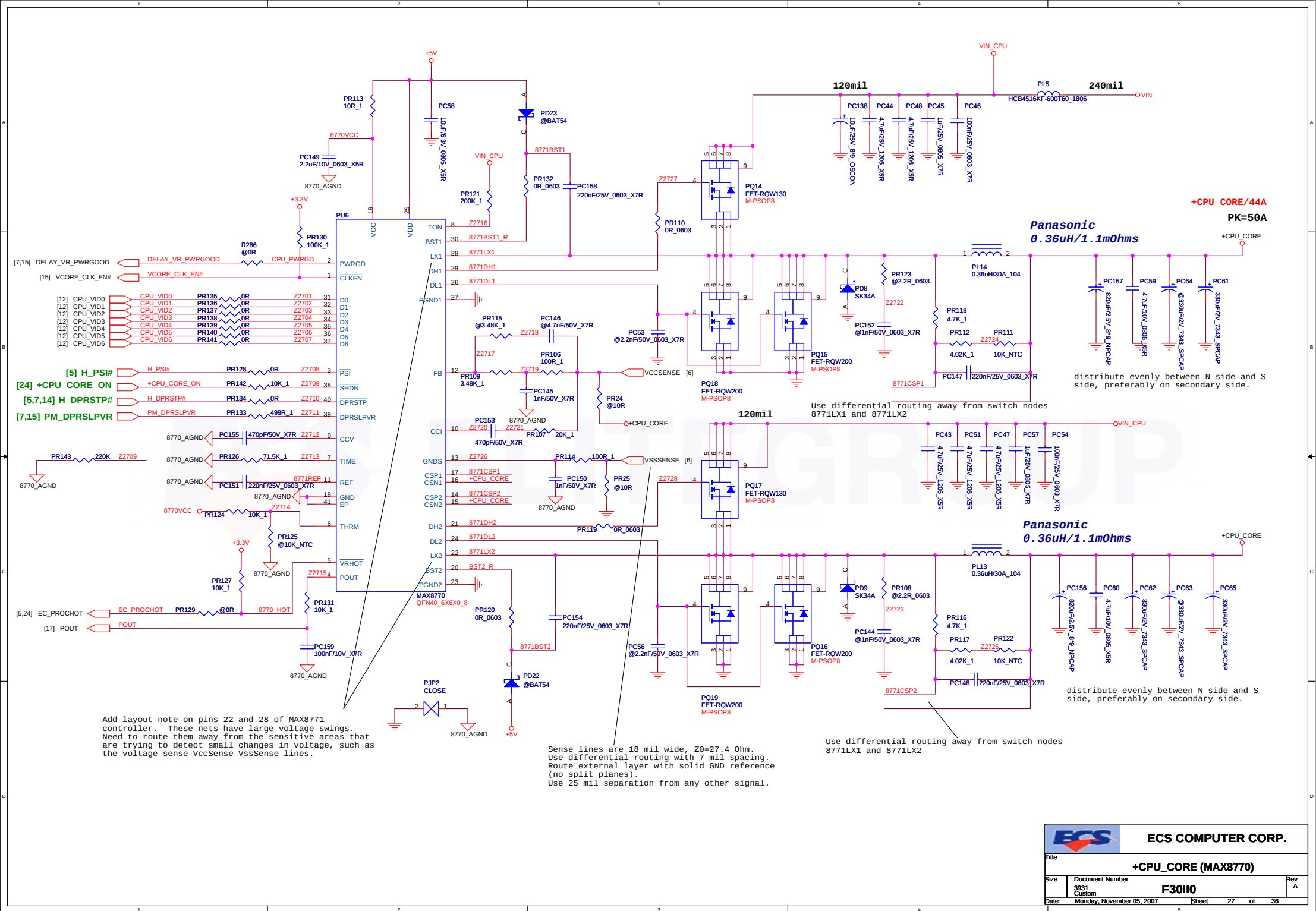
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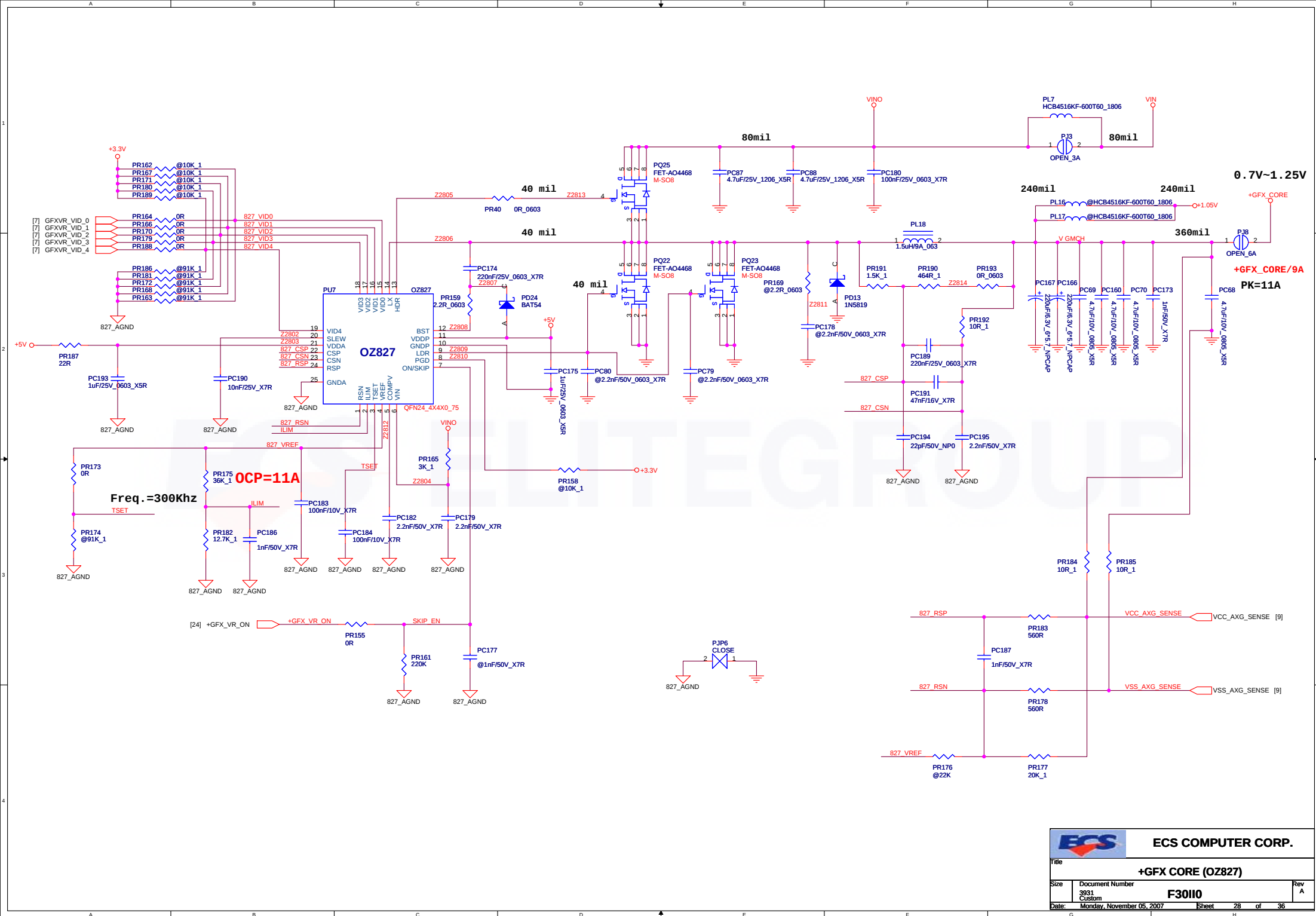
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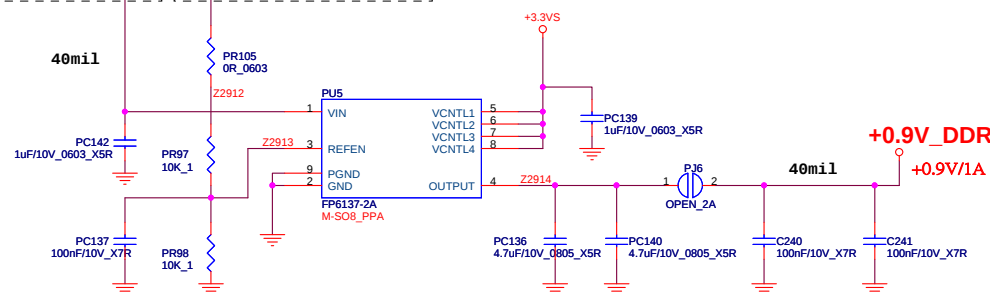
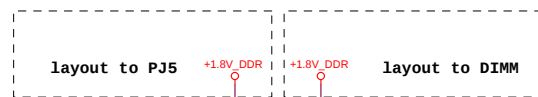
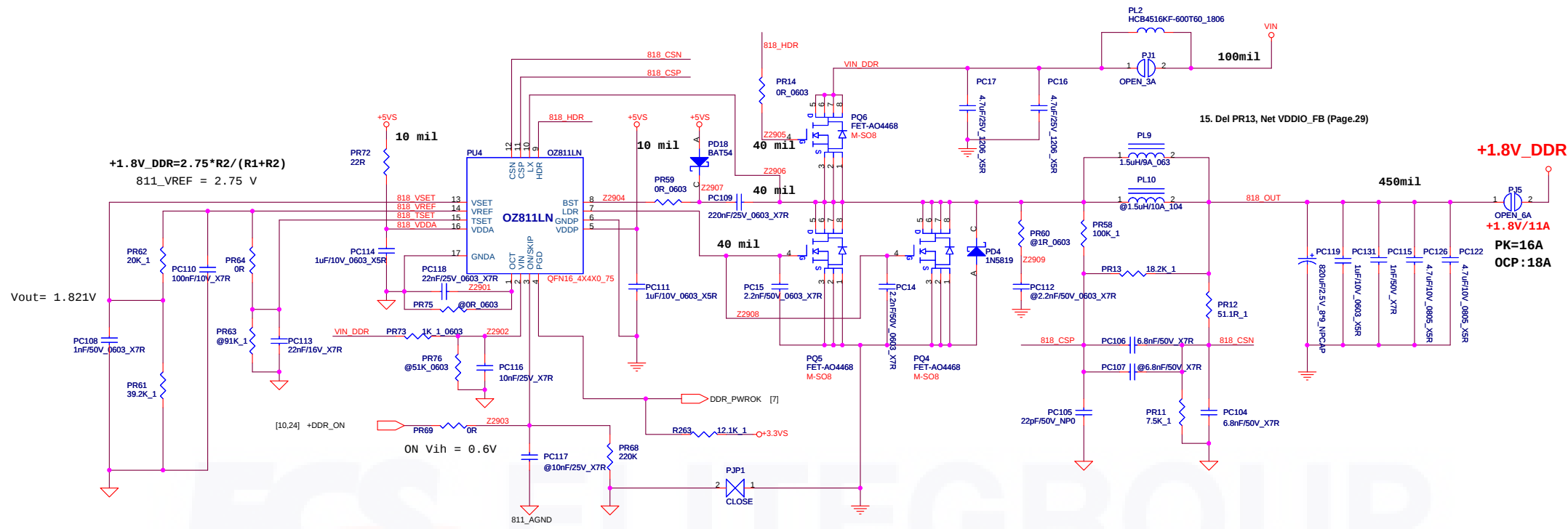


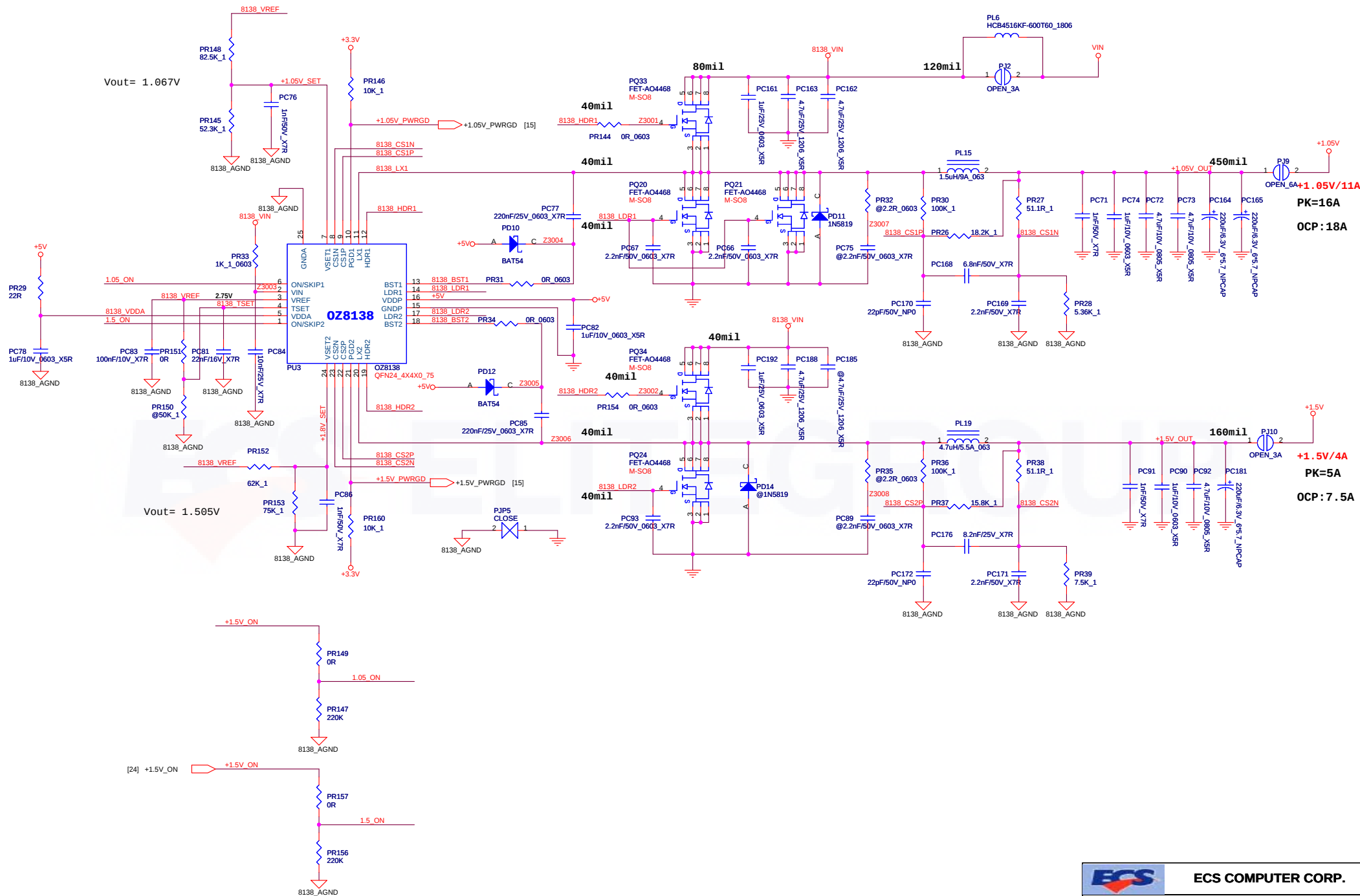


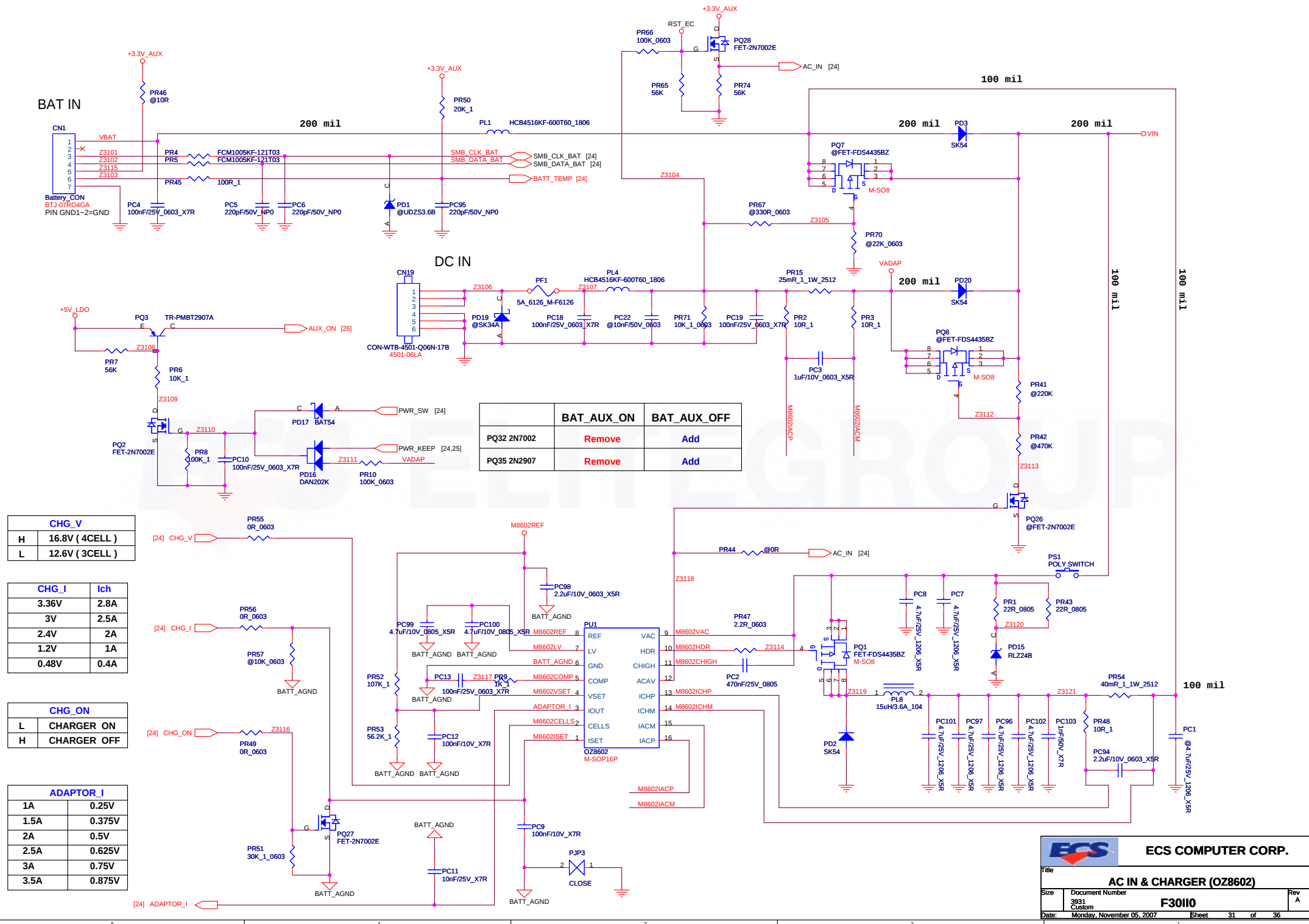




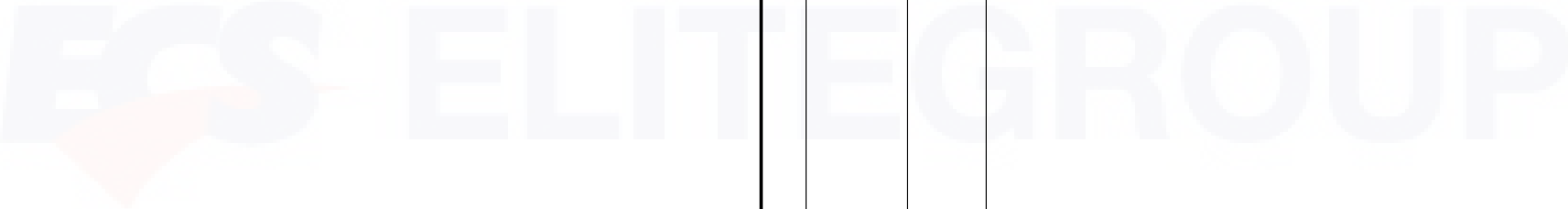








| Sch Rev. | PCB Rev.     | Data       | REVISION DESCRIPTION | Sch Rev. | PCB Rev. | Data |  |
|----------|--------------|------------|----------------------|----------|----------|------|--|
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