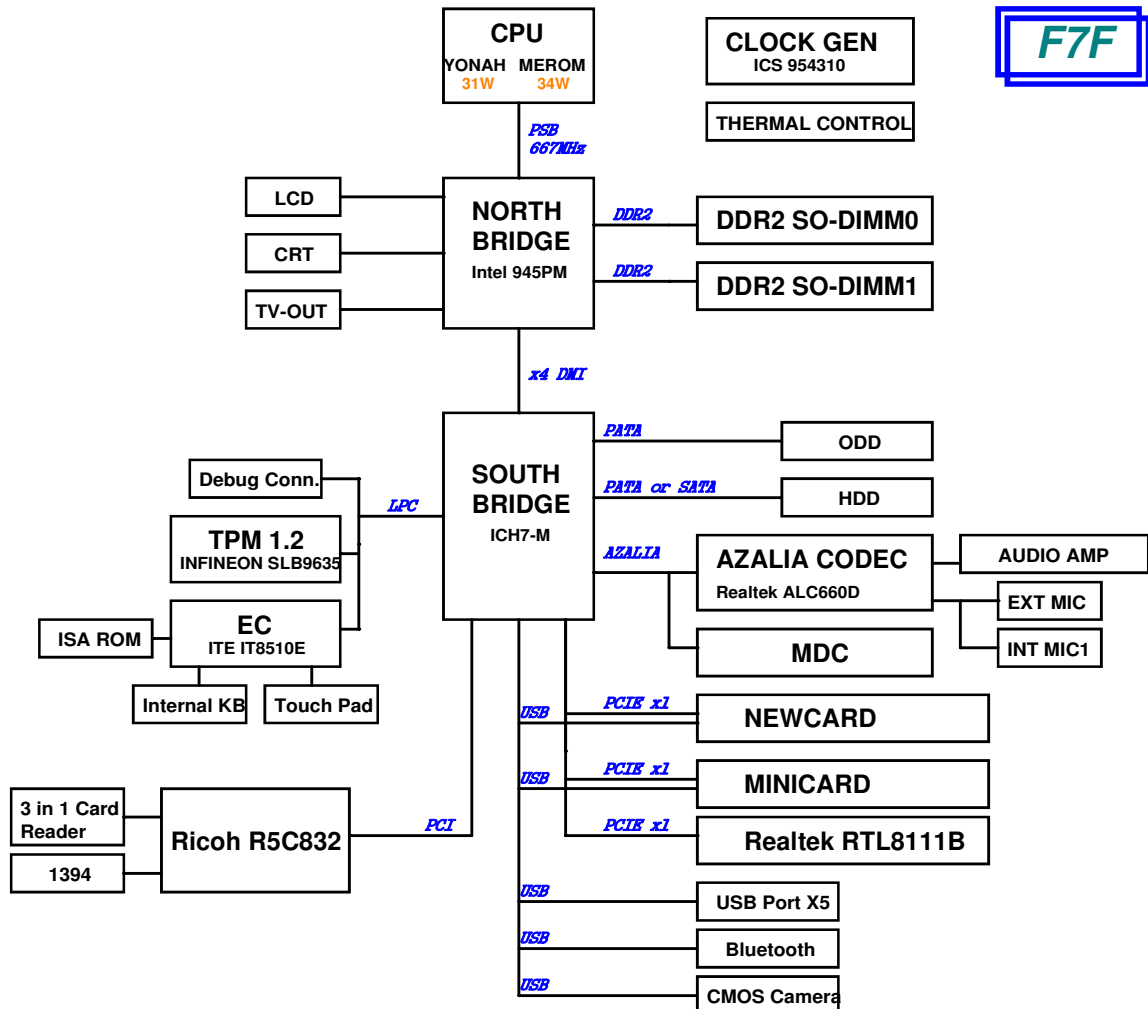


- 01\_Block Diagram
- 02\_System Setting
- 04\_CPU-YONAH (HOST)
- 05\_CPU-YONAH (PWR)
- 07\_NB-945GM (HOST)
- 08\_NB-945GM (DMI & CFG)
- 09\_NB-945GM (GRAPHIC)
- 10\_NB-945GM (DDR2)
- 11\_NB-945GM (PWR)
- 12\_NB-945GM (PWR2)
- 13\_NB-945GM (GND)
- 15\_SB-ICH7M (1)
- 16\_SB-ICH7M (2)
- 17\_SB-ICH7M (3)
- 18\_SB-ICH7M (PWR)
- 20\_DDR2 SO-DIMM0
- 21\_DDR2 SO-DIMM1
- 22\_DDR2 TERMINATION
- 24\_MINI PCI CARD
- 28\_CRT
- 29\_LVDS & INVERTER CONNECTOR
- 31\_TV OUT
- 33\_THER SENSOR & FAN
- 35\_CLOCK GEN-ICS954310
- 37\_Power on & Reset Freq.
- 38\_DISCHARGE
- 40\_LAN-RTL8111B
- 41\_MDC & RJ45+11
- 43\_MINI CARD
- 45\_CARD1394-R5C832(1)
- 46\_CARD1394-R5C832(2)
- 47\_4 in 1 CARD READER
- 48\_NEWCARD
- 52\_CODEC-ALC660
- 53\_AUDIO AMP & JCAK
- 55\_EC-1T8510E
- 56\_Touch Pad & KB
- 58\_USB CONN
- 60\_ISA ROM
- 62\_LED
- 64\_DC & BAT IN
- 66\_Debug CONN.
- 68\_HDD & ODD
- 70\_SREW HOLE
- 72\_TPM
- 76\_BT
- 78\_POWER\_VCORE
- 79\_POWER\_SYSTEM
- 80\_POWER\_I/O\_1.5VS & 1.05VS
- 81\_POWER\_I/O\_DDR & VTT
- 82\_POWER\_I/O\_+3VAAO & +2.5VS
- 83\_POWER\_CHARGER
- 84\_POWER\_DETECT
- 85\_POWER\_PROTECT
- 86\_POWER\_LOAD SWITCH
- 87\_POWER\_FLOWCHART
- 88\_POWER\_SIGNAL
- 89\_History



## EC GPIO SETTING

| Pin | Pin Name          | Signal Name  | Type |
|-----|-------------------|--------------|------|
| 32  | PWM0/GPA0         | /            |      |
| 33  | PWM1/GPA1         | FAN_PWM      | O    |
| 36  | PWM2/GPA2         | /            |      |
| 37  | PWM3/GPA3         | /            |      |
| 38  | PWM4/GPA4         | CHG_LED_UP#  | O    |
| 39  | PWM5/GPA5         | PWR_LED_UP#  | O    |
| 40  | PWM6/GPA6         | /            |      |
| 43  | PWM7/GPA7         | LCD_BACKOFF# | O    |
| 153 | RXD/GPB0          | NUM_LED      | O    |
| 154 | TXD/GPB1          | CAP_LED      | O    |
| 162 | GPB2              | SCRLL_LED    | O    |
| 163 | SMCLK0/GPB3       | SMB0_CLK     | I/O  |
| 164 | SMDAT0GPB4        | SMB0_DAT     | I/O  |
| 5   | GA20/GPB5         | A20GATE      |      |
| 6   | KBRST#/GPB6       | RC_IN#       | O    |
| 165 | GPB7              | /            |      |
| 47  | CLKOUT/GPC0       | /            |      |
| 169 | SMCLK1/GPC1       | SMB1_CLK     | I/O  |
| 170 | SMDAT1/GPC2       | SMB1_DAT     | I/O  |
| 171 | GPC3              | /            |      |
| 172 | TMR10/WUI2/GPC4   | ACIN_OC#     | I    |
| 175 | GPC5              | /            | O    |
| 176 | TMR11/WUI3/GPC6   | BAT_IN_OC#   | I    |
| 1   | CK32KOUT/GPC7     | EC_IDE_RST#  | O    |
| 26  | RI1#/WUI0/GPD0    | SUSB#        | I    |
| 29  | RI2#/WUI1/GPD1    | SUSC#        | I    |
| 30  | LPCRST#/WUI4/GPD2 | BUF_PLT_RST# | I    |
| 31  | ECSC1#/GPD3       | EXT_SC1#     | O    |
| 41  | GPD4              | RF_ON_SW#    | I    |
| 42  | GINT/GPD5         | /            |      |
| 62  | TACH0/GPD6        | FAN0_TACH    | I    |
| 63  | TACH1/GPD7        | GAIN_AMP#_K  | O    |
| 87  | ADC4/GPE0         | COLOREN#     | I    |
| 88  | ADC5/GPE1         | INTERNET#    | I    |
| 89  | ADC6/GPE2         | MARATHON#    | I    |
| 90  | ADC7/GPE3         | DISTP_SW#    | I    |
| 2   | PWRSW/GPE4        | PWR_SW#      | I    |
| 44  | WUI5/GPE5         | /            |      |
| 24  | LPCPD#WUI6/GPE6   | LID_EC#      | I    |
| 25  | CLKRUN#WUI7/GPE7  | BT_ON#       | O    |
| 110 | PS2CLK0/GPF0      | /            |      |
| 111 | PS2DAT0/GPF1      | /            |      |
| 114 | PS2CLK1/GPF2      | /            |      |
| 115 | PS2DAT1/GPF3      | /            |      |
| 116 | PS2CLK2/GPF4      | TP_CLK       | I/O  |
| 117 | PS2DAT2/GPF5      | TP_DAT       | I/O  |
| 118 | PS2CLK3/GPF6      | /            |      |
| 119 | PS2DAT3/GPF7      | INSTANTON#   | I    |
| 113 | FA16/GPG0         | FA16_SWAP    | O    |
| 112 | FA17/GPG1         | FA17         | O    |
| 104 | FA18/GPG2         | FA18         | O    |
| 103 | FA19/GPG3         | /            |      |
| 3   | FA20/GPG4         | THRM_CPU#    | I    |
| 4   | FA21/GPG5         | /            |      |
| 27  | LPC80HL/GPG6      | PMTHERM#     | O    |
| 28  | LPC80LL/GPG7      | AC_APR_UC#   | I    |

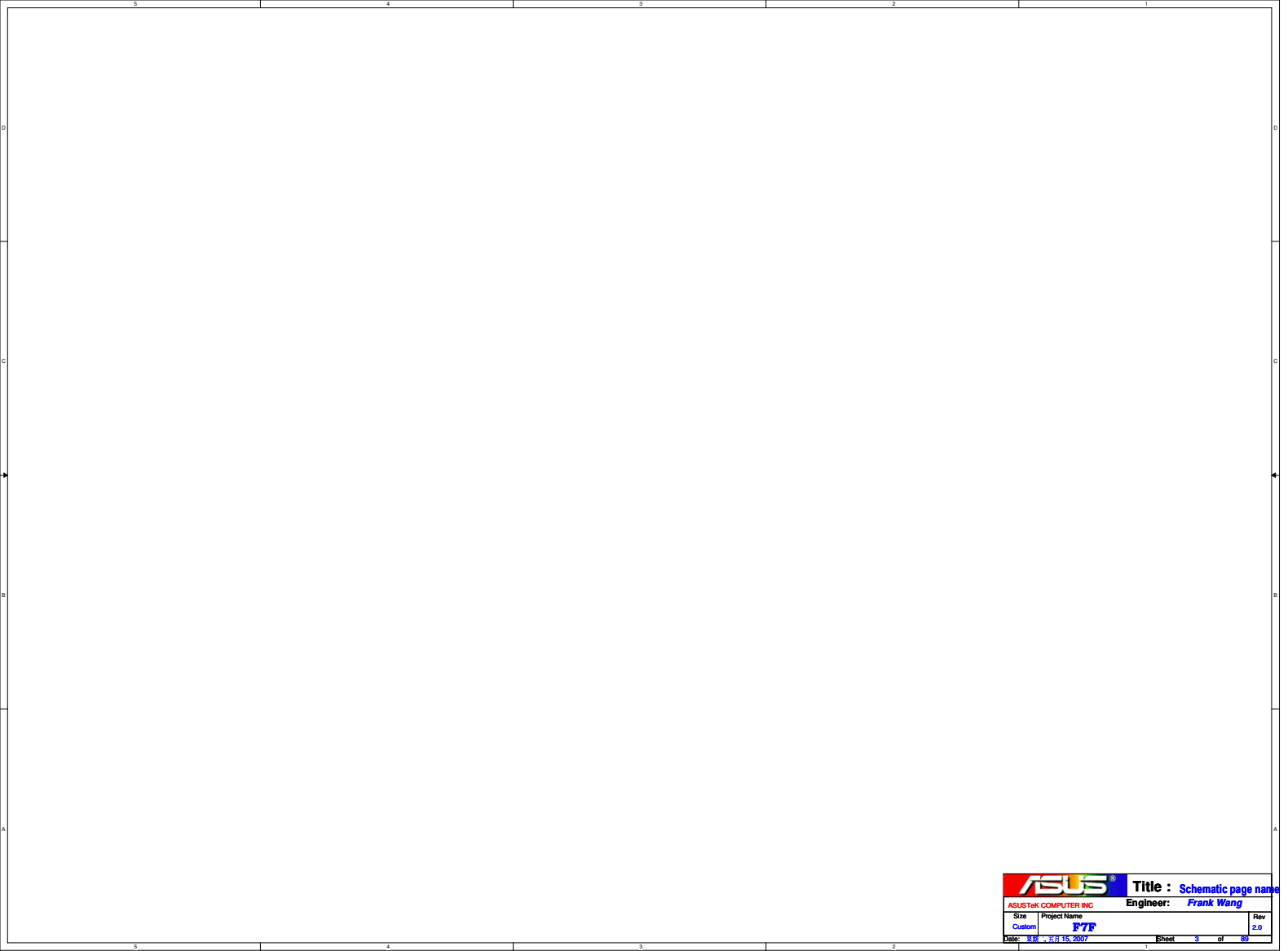
| Pin | Pin Name | Signal Name | Type |
|-----|----------|-------------|------|
| 48  | GPH0     | VSUS_ON     | O    |
| 54  | GPH1     | VSUS_GD#    | O    |
| 55  | GPH2     | CPUPWR_GD#  | O    |
| 69  | GPH3     | PM_PWRBTN#  | O    |
| 70  | GPH4     | SUSC_ON     | O    |
| 75  | GPH5     | SUSB_ON     | O    |
| 76  | GPH6     | CPU_VRON    | O    |
| 105 | GPH7     | PM_RSMRST#  | O    |
| 148 | GPI0     | ICH7_PWROK  | O    |
| 149 | GPI1     | /           | O    |
| 152 | GPI2     | /           |      |
| 155 | GPI3     | CHG_EN#     | O    |
| 156 | GPI4     | PRECHG      | O    |
| 168 | GPI5     | BAT_LL#     | O    |
| 174 | GPI6     | BAT_LEARN   | O    |

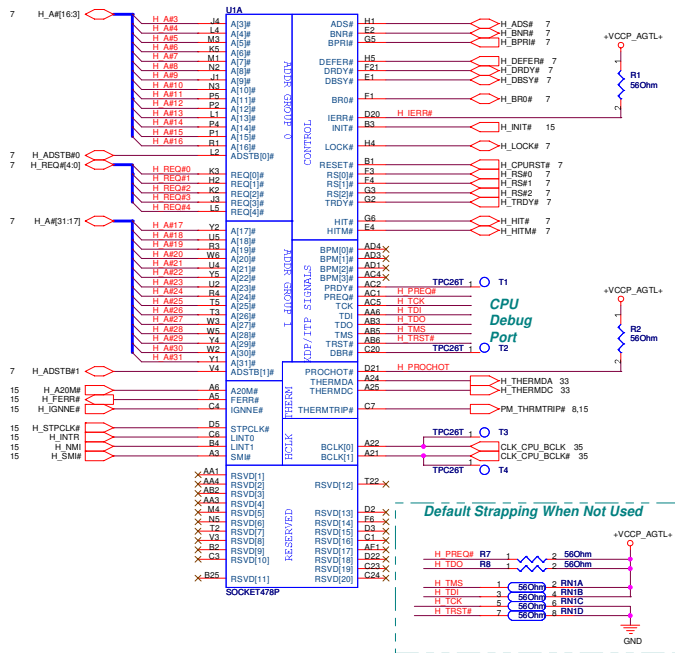
## ICH7-M GPIO SETTING

| Pin  | Pin Name            | Signal Name | Type |
|------|---------------------|-------------|------|
| AB18 | GPI000/BM_BUSY#     | PM_BMBUSY#  | I    |
| C8   | GPI001/REQ5#        | PCI_REQ#5   | I    |
| G8   | GPI002/PIRQE#       | PCI_INTE#   | I    |
| F7   | GPI003/PIROF#       | PCI_INTF#   | I    |
| F8   | GPI004/PIROG#       | PCI_INTG#   | I    |
| G7   | GPI005/PIROH#       | PCI_INTH#   | I    |
| AC21 | GPI006              | BTLED_ON    | O    |
| AC18 | GPI007              | WLAN_LED_EN | O    |
| E21  | GPI008              | EXTSMI#     | I    |
| E20  | GPI009              | /           |      |
| A20  | GPI010              | WLAN_ON#    | O    |
| B23  | SMBALERT#/GPI011    | SMB_ALERT#  | I    |
| F19  | GPI012              | KBC_SC#     | I    |
| E19  | GPI013              | /           |      |
| R4   | GPI014              | /           |      |
| E22  | GPI015              | CB_SD#      | O    |
| AC22 | GPI016              | PM_DPRSLPVR | O    |
| D8   | GPI017/GNT5#        | PCI_GNT#5   | O    |
| AC20 | GPI018/STP_PCI#     | STP_PCI#    | O    |
| AH18 | GPI019/SATA1GP      | TP_LEDON    | O    |
| AF21 | GPI020/STP_CPU#     | STP_CPU#    | O    |
| AE19 | GPI021/SATA0GP      | CPU_SELECT  | O    |
| A13  | GPI022/REQ4#        | PCI_REQ#4   | I    |
| AA5  | LDRQ1#/GPI023       | /           |      |
| R3   | GPI024              | /           |      |
| D20  | GPI025              | /           |      |
| A21  | GPI026/EL_RSVD      | /           |      |
| B21  | GPI027/EL_STATE0    | BT_DET#     | O    |
| E23  | GPI028/EL_STATE1    | /           |      |
| C3   | GPI029/OC#5         | USB_OC#5    | I    |
| A2   | GPI030/OC#6         | NEWCARD_OC# | I    |
| B3   | GPI031/OC#7         | USB_OC#7    | I    |
| AG18 | GPI032/CLKRUN#      | PM_CLKRUN#  | O    |
| AC19 | GPI033/AZ_DOCK_EN#  | /           |      |
| U2   | GPI034/AZ_DOCK_RST# | /           |      |
| AD21 | GPI035              | PANEL_ID0   | I    |
| AH19 | GPI036/SATA2GP      | PANEL_ID1   | I    |
| AE19 | GPI037/SATA3GP      | PCB_ID0     | I    |
| AD20 | GPI038              | PCB_ID1     | I    |
| AE20 | GPI039              | PCB_ID2     | I    |
| A14  | GNT4#/GPI048        | PCI_GNT#4   | O    |
| AG24 | GPI049/CPUPWRGD     | H_PWRGD     | O    |

| PCI Device         | IDSEL# | REQ/GNT# | Interrupts |
|--------------------|--------|----------|------------|
| 10/100 RTL8100CL   | AD16   | 2        | C          |
| R5C832 CARD READER | AD17   | 0        | C          |
| R5C832 1394        | AD17   | 0        | B          |
| R5C841 CARD READER | AD18   | 1        | C          |
| R5C841 1394        | AD18   | 1        | B          |
| Mini PCI Card      | AD19   | 3        | G,H        |

| SM-Bus Device   | SM-Bus Address  |
|-----------------|-----------------|
| Clock Generator | 1101001x ( D2 ) |
| SO-DIMM 0       | 1010000x ( A0 ) |
| SO-DIMM 1       | 1010001x ( A2 ) |
| Thermal Sensor  | 0101110x ( 5C ) |
|                 |                 |
|                 |                 |

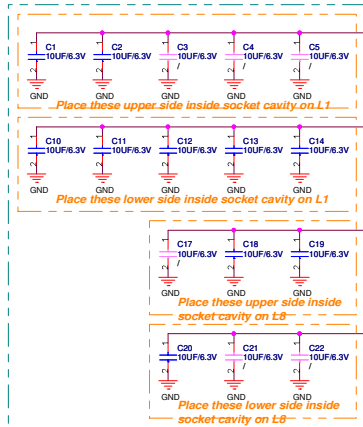




CPU + VCORE  
Bulk-Decoupling  
Capacitors

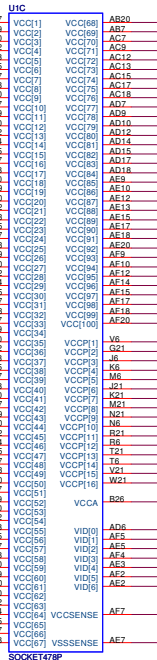


CPU + VCORE  
Mid-Frequency  
Capacitors



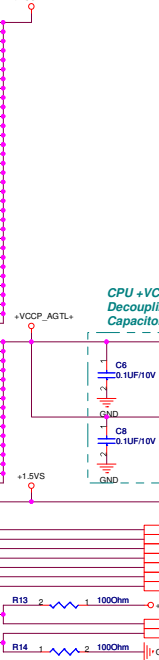
+VCCORE Mid-Frequency Capacitor  
Intel: 22UF \*32  
R1F: 10UF \*16  
+VCCP Decoupling Capacitor  
Intel: 270UF \*1, 0.1UF \*6  
R1F: 220UF \*1, 0.1UF \*4

U1C



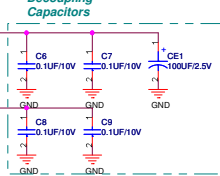
SOCKET479P

AB20

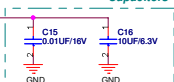


SOCKET479P

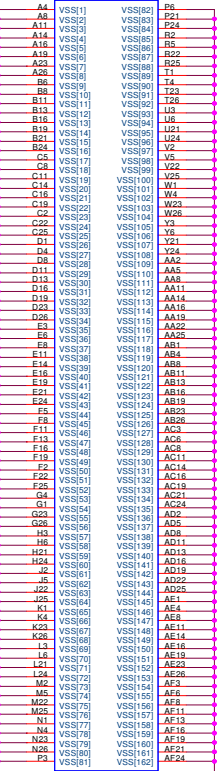
CPU + VCCP  
Decoupling  
Capacitors



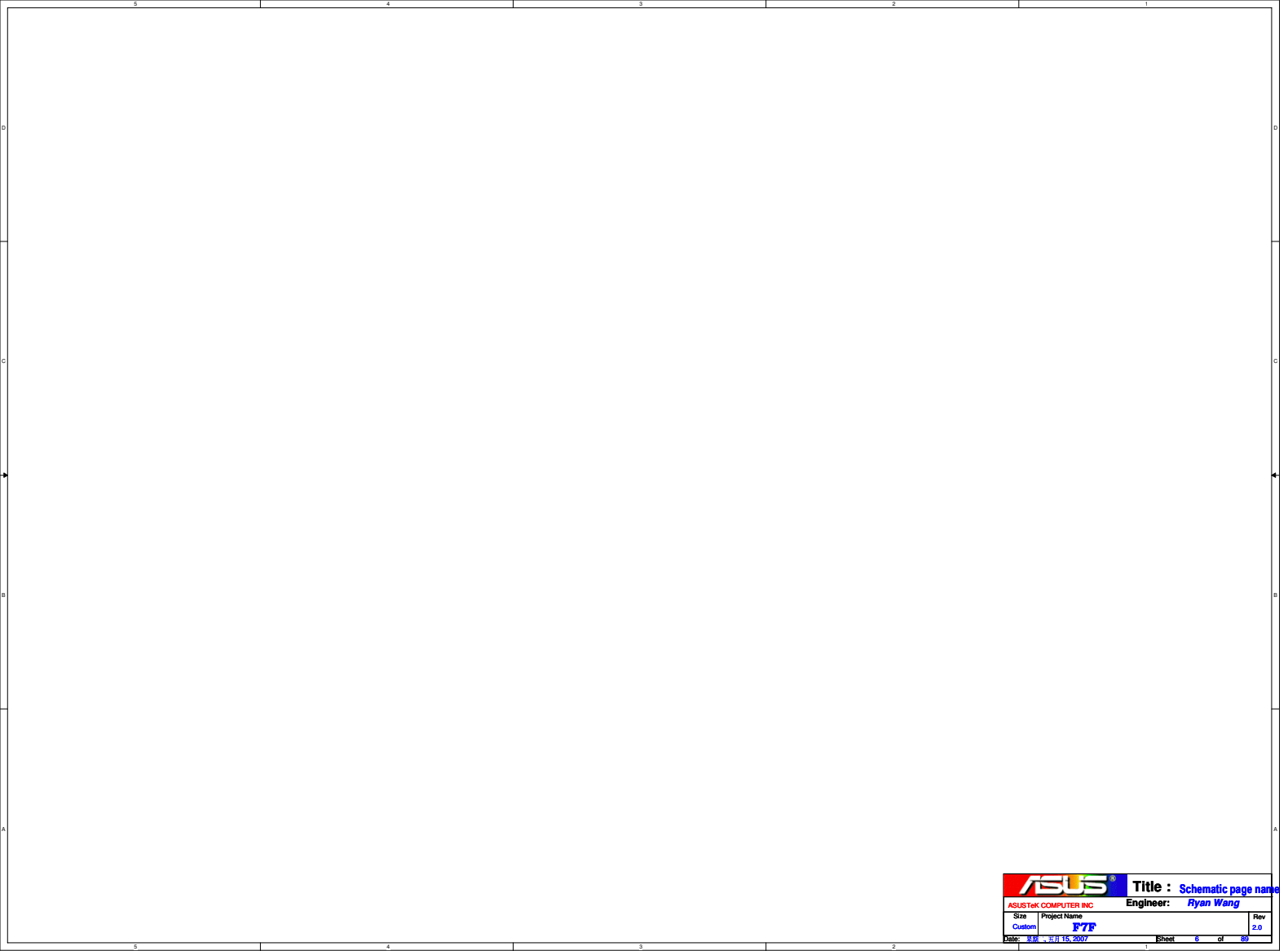
CPU + VCCA  
Decoupling  
Capacitors



U1D



SOCKET479P





# GMCH Strapping

## CFG5 : DMI Strap

0 = DMI x2  
1 = DMI x4 (D)



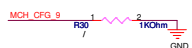
## CFG7 : CPU Strap

0 = DT/Transpotable CPU  
1 = Mobile CPU (D)



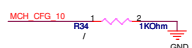
## CFG9 : PCIe Graphic Lane

0 = Reverse Lane  
1 = Normal Operation (D)



## CFG10 : HOST PLL VCO Select

0 = Reserved  
1 = Mobility (D)



## CFG11 : PSB 4x CLK Enable

0 = 4x Enable  
1 = 8x Enable (D)



## CFG13:12 : GMCH Test Mode

00= Partial CLK Gating Disable  
01 = XOR Mode Enable  
10 = All Z Mode Enable  
11 = Normal Operation (D)

## CFG15 : ICH RESET Disable

0 = ICH Reset Disable  
1 = Normal Operation (D)



## CFG16 : FSB Dynamic ODT

0 = Dynamic ODT Disable  
1 = Dynamic ODT Enable (D)



## CFG18 : VCC Select

0 = 1.05V (D)  
1 = 1.5V



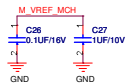
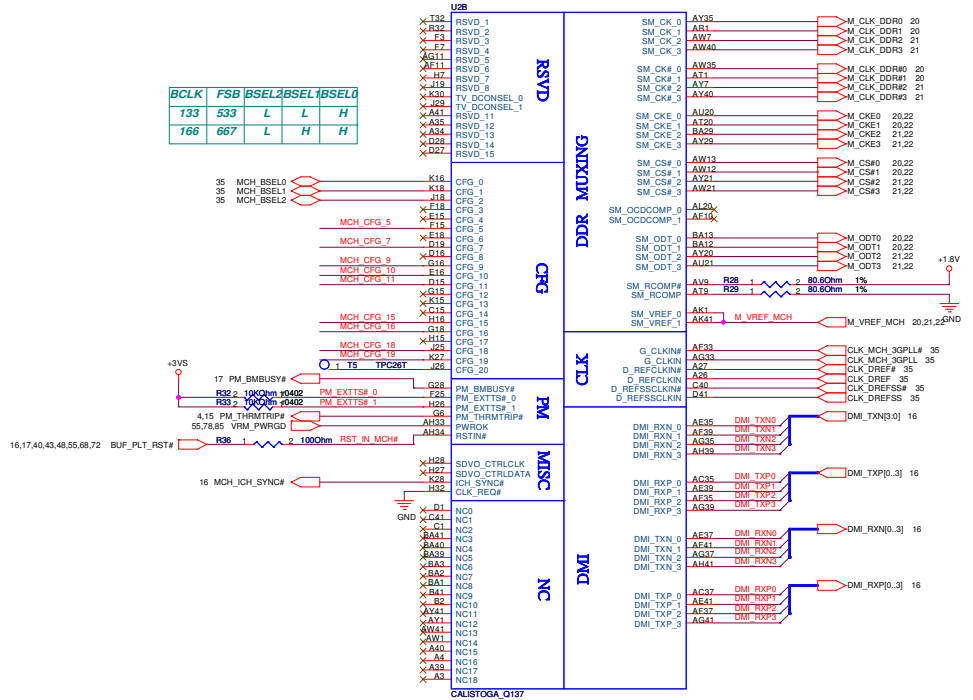
## CFG19 : DMI Lane Reversal

0 = Normal Operation (D)  
1 = Lanes Reversed

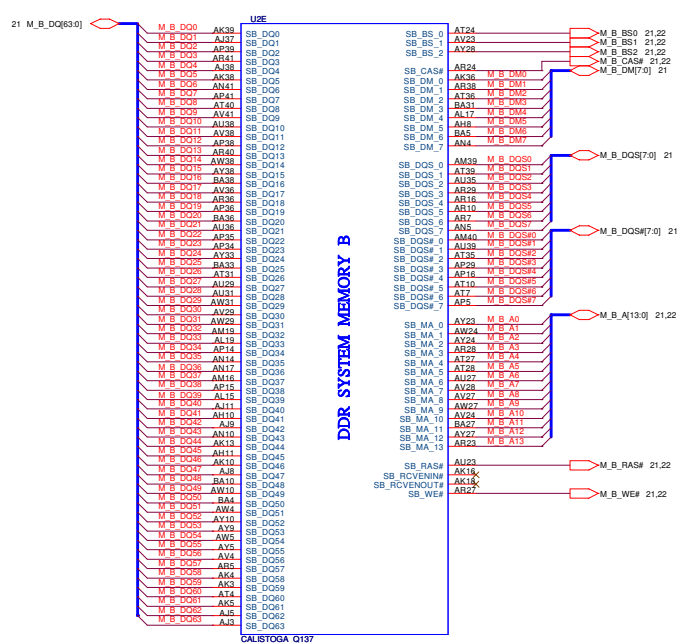
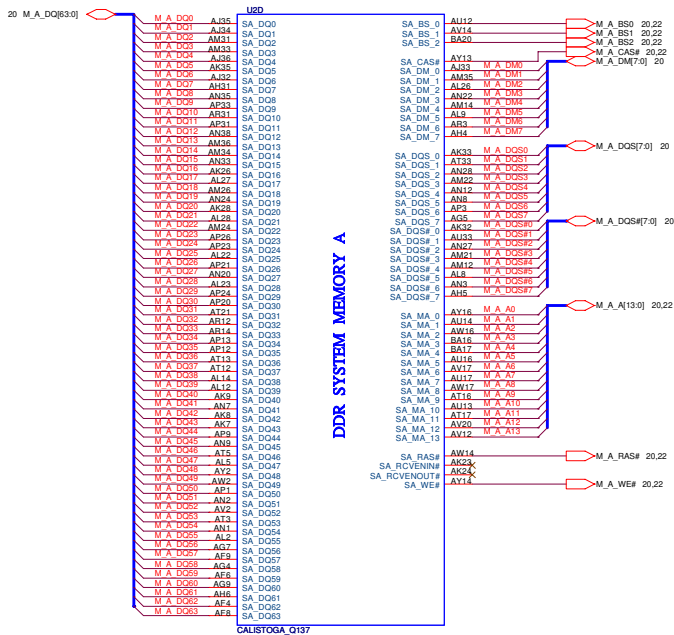


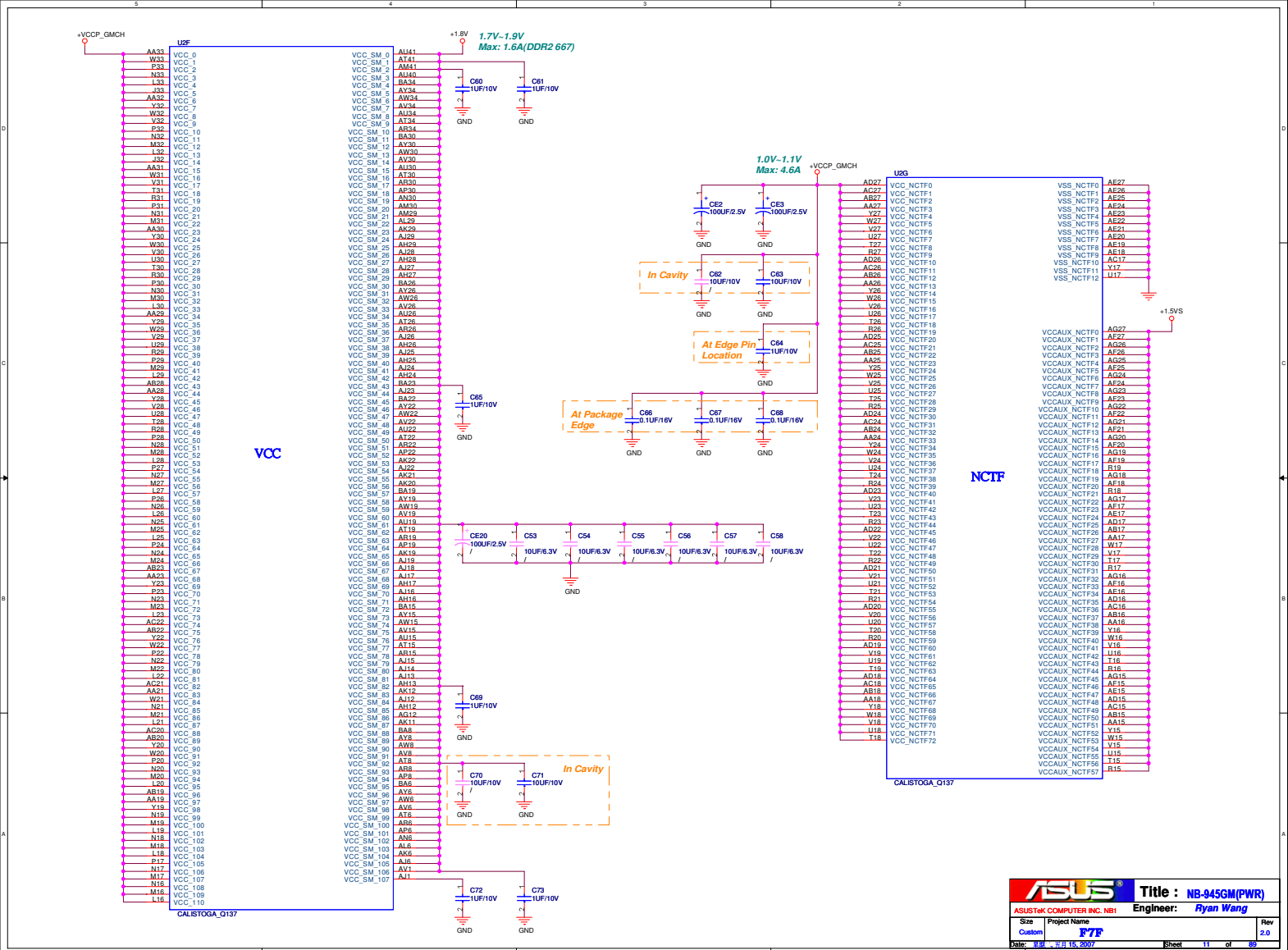
Note: CFG[17:3] have internal pull-up while CFG[20:18] have internal pull-down.

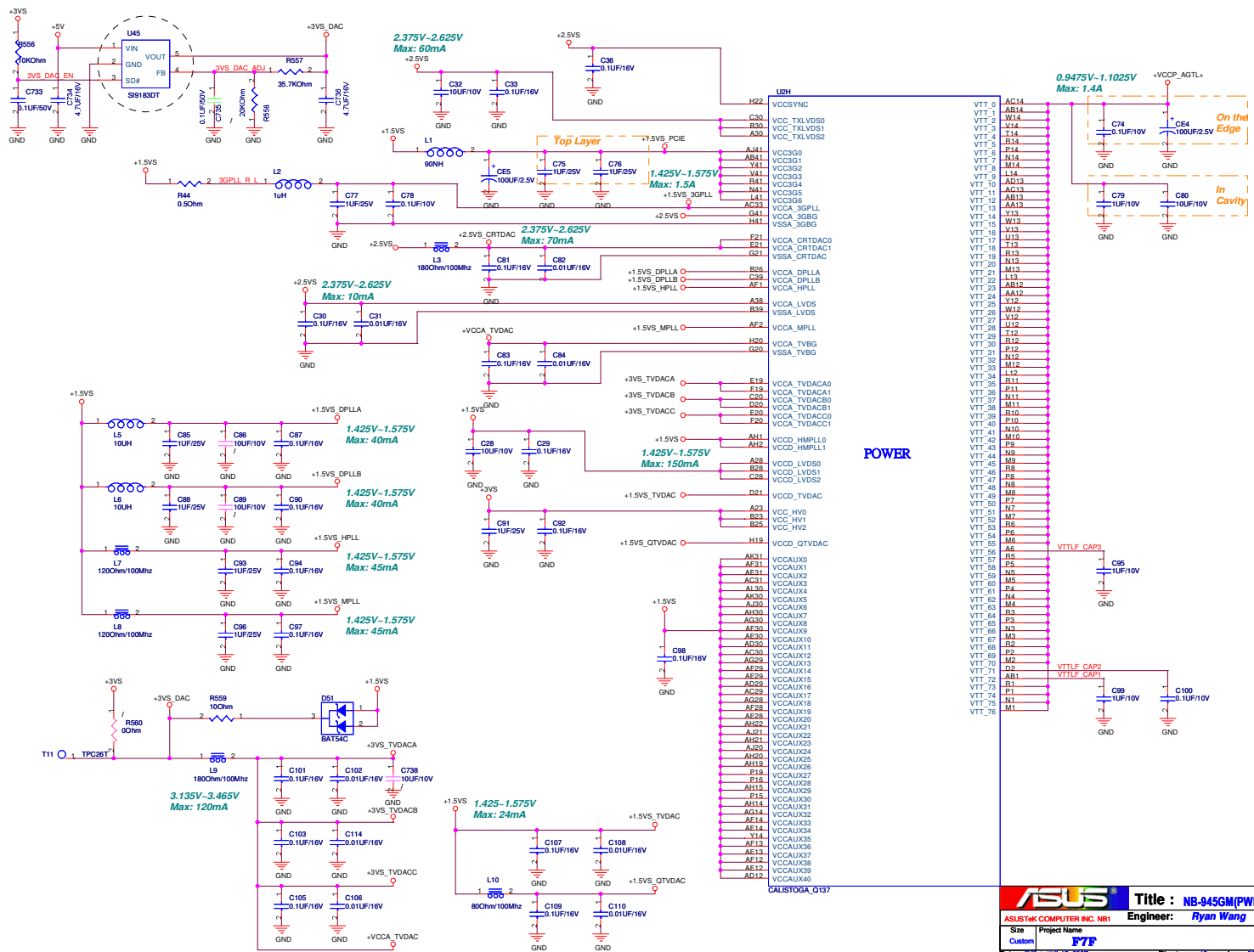
| BCLK | FSB | BSEL2 | BSEL1 | BSEL0 |
|------|-----|-------|-------|-------|
| 133  | 533 | L     | L     | H     |
| 166  | 667 | L     | H     | H     |









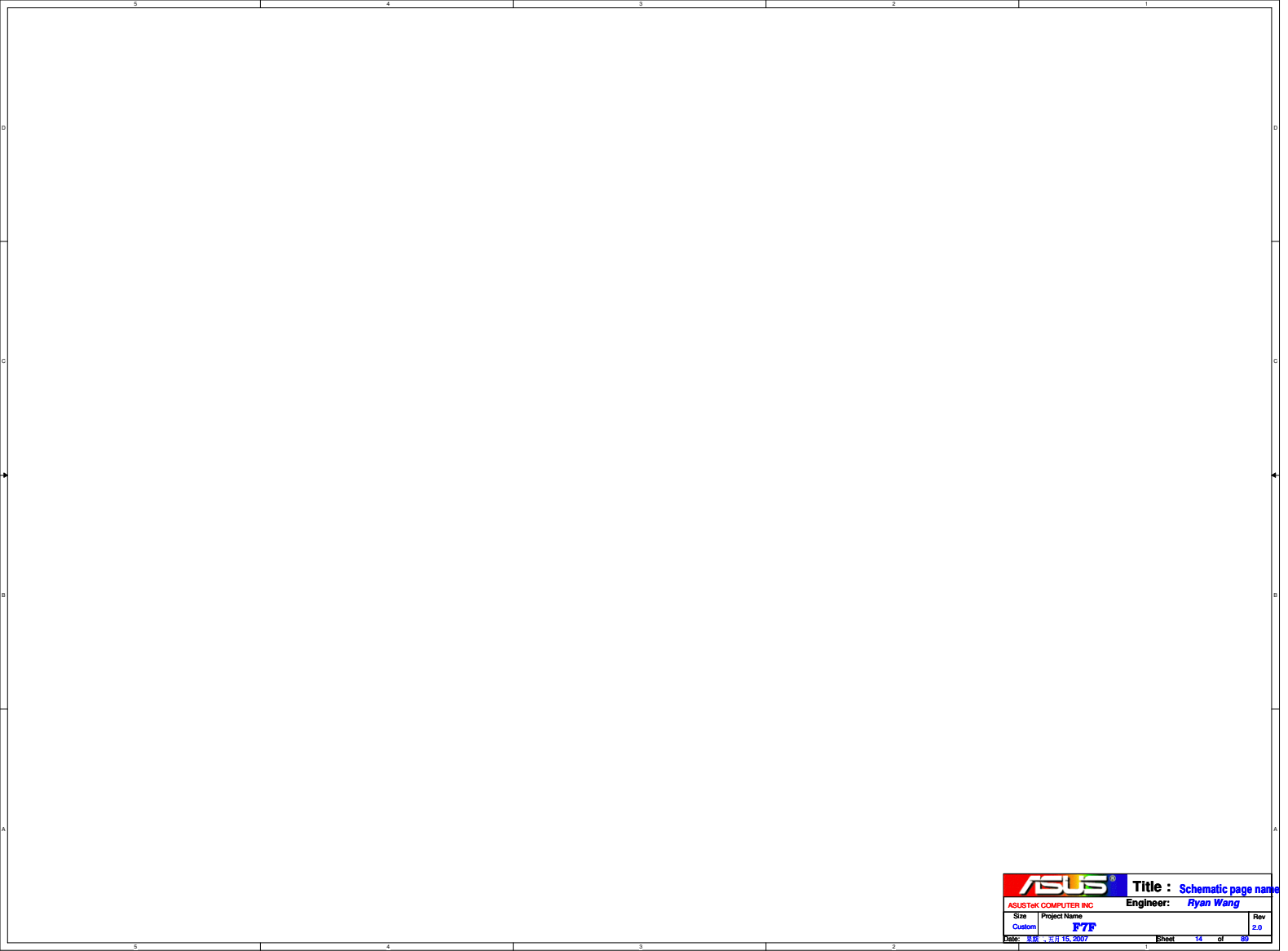


| U21    |        |         |
|--------|--------|---------|
| AC41   | VSS 0  | VSS 97  |
| AM41   | VSS 1  | AG34    |
| W41    | VSS 2  | AF34    |
| F41    | VSS 3  | AM34    |
| P41    | VSS 4  | AC34    |
| M41    | VSS 5  | VSS 100 |
| A41    | VSS 6  | VSS 101 |
| F41    | VSS 7  | VSS 102 |
| AW40   | VSS 8  | AW33    |
| AP40   | VSS 9  | VSS 104 |
| AN40   | VSS 10 | AV33    |
| AK40   | VSS 11 | AP33    |
| AL40   | VSS 12 | AE33    |
| AW40   | VSS 13 | VSS 105 |
| AG40   | VSS 14 | VSS 106 |
| AF40   | VSS 15 | VSS 107 |
| AE40   | VSS 16 | VSS 108 |
| VSS 17 | VSS 17 | VSS 109 |
| AW39   | VSS 18 | VSS 110 |
| VSS 19 | VSS 19 | VSS 111 |
| VSS 20 | VSS 20 | VSS 112 |
| VSS 21 | VSS 21 | VSS 113 |
| VSS 22 | VSS 22 | VSS 114 |
| VSS 23 | VSS 23 | VSS 115 |
| VSS 24 | VSS 24 | VSS 116 |
| AK39   | VSS 25 | VSS 117 |
| AK39   | VSS 26 | VSS 118 |
| VSS 27 | VSS 27 | VSS 119 |
| VSS 28 | VSS 28 | VSS 120 |
| VSS 29 | VSS 29 | VSS 121 |
| VSS 30 | VSS 30 | VSS 122 |
| VSS 31 | VSS 31 | VSS 123 |
| VSS 32 | VSS 32 | VSS 124 |
| VSS 33 | VSS 33 | VSS 125 |
| VSS 34 | VSS 34 | VSS 126 |
| VSS 35 | VSS 35 | VSS 127 |
| VSS 36 | VSS 36 | VSS 128 |
| VSS 37 | VSS 37 | VSS 129 |
| VSS 38 | VSS 38 | VSS 130 |
| VSS 39 | VSS 39 | VSS 131 |
| VSS 40 | VSS 40 | VSS 132 |
| VSS 41 | VSS 41 | VSS 133 |
| VSS 42 | VSS 42 | VSS 134 |
| VSS 43 | VSS 43 | VSS 135 |
| VSS 44 | VSS 44 | VSS 136 |
| VSS 45 | VSS 45 | VSS 137 |
| VSS 46 | VSS 46 | VSS 138 |
| VSS 47 | VSS 47 | VSS 139 |
| VSS 48 | VSS 48 | VSS 140 |
| VSS 49 | VSS 49 | VSS 141 |
| VSS 50 | VSS 50 | VSS 142 |
| VSS 51 | VSS 51 | VSS 143 |
| VSS 52 | VSS 52 | VSS 144 |
| VSS 53 | VSS 53 | VSS 145 |
| VSS 54 | VSS 54 | VSS 146 |
| VSS 55 | VSS 55 | VSS 147 |
| VSS 56 | VSS 56 | VSS 148 |
| VSS 57 | VSS 57 | VSS 149 |
| VSS 58 | VSS 58 | VSS 150 |
| VSS 59 | VSS 59 | VSS 151 |
| VSS 60 | VSS 60 | VSS 152 |
| VSS 61 | VSS 61 | VSS 153 |
| VSS 62 | VSS 62 | VSS 154 |
| VSS 63 | VSS 63 | VSS 155 |
| VSS 64 | VSS 64 | VSS 156 |
| VSS 65 | VSS 65 | VSS 157 |
| VSS 66 | VSS 66 | VSS 158 |
| VSS 67 | VSS 67 | VSS 159 |
| VSS 68 | VSS 68 | VSS 160 |
| VSS 69 | VSS 69 | VSS 161 |
| VSS 70 | VSS 70 | VSS 162 |
| VSS 71 | VSS 71 | VSS 163 |
| VSS 72 | VSS 72 | VSS 164 |
| VSS 73 | VSS 73 | VSS 165 |
| VSS 74 | VSS 74 | VSS 166 |
| VSS 75 | VSS 75 | VSS 167 |
| VSS 76 | VSS 76 | VSS 168 |
| VSS 77 | VSS 77 | VSS 169 |
| VSS 78 | VSS 78 | VSS 170 |
| VSS 79 | VSS 79 | VSS 171 |
| VSS 80 | VSS 80 | VSS 172 |
| VSS 81 | VSS 81 | VSS 173 |
| VSS 82 | VSS 82 | VSS 174 |
| VSS 83 | VSS 83 | VSS 175 |
| VSS 84 | VSS 84 | VSS 176 |
| VSS 85 | VSS 85 | VSS 177 |
| VSS 86 | VSS 86 | VSS 178 |
| VSS 87 | VSS 87 | VSS 179 |
| VSS 88 | VSS 88 | AW23    |
| VSS 89 | VSS 89 |         |
| VSS 90 | VSS 90 |         |
| VSS 91 | VSS 91 |         |
| VSS 92 | VSS 92 |         |
| VSS 93 | VSS 93 |         |
| VSS 94 | VSS 94 |         |
| VSS 95 | VSS 95 |         |
| VSS 96 | VSS 96 |         |

CALISTOGA\_Q137  
 GND

| U21  |         |         |
|------|---------|---------|
| AT23 | VSS 180 | VSS 273 |
| AM23 | VSS 181 | D11     |
| AC23 | VSS 182 | B11     |
| W23  | VSS 183 | VSS 275 |
| K23  | VSS 184 | AV10    |
| F23  | VSS 185 | AP10    |
| P23  | VSS 186 | VSS 276 |
| M23  | VSS 187 | AL10    |
| A23  | VSS 188 | AI10    |
| AW22 | VSS 189 | VSS 280 |
| AK22 | VSS 190 | AG10    |
| AL21 | VSS 191 | VSS 281 |
| AE21 | VSS 192 | VSS 282 |
| AV21 | VSS 193 | VSS 283 |
| AP21 | VSS 194 | VSS 284 |
| AE21 | VSS 195 | VSS 285 |
| AV21 | VSS 196 | VSS 286 |
| AP21 | VSS 197 | VSS 287 |
| AE21 | VSS 198 | VSS 288 |
| AV21 | VSS 199 | VSS 289 |
| AP21 | VSS 200 | VSS 290 |
| AE21 | VSS 201 | VSS 291 |
| AV21 | VSS 202 | VSS 292 |
| AP21 | VSS 203 | VSS 293 |
| AE21 | VSS 204 | VSS 294 |
| AV21 | VSS 205 | VSS 295 |
| AP21 | VSS 206 | VSS 296 |
| AE21 | VSS 207 | VSS 297 |
| AV21 | VSS 208 | VSS 298 |
| AP21 | VSS 209 | VSS 299 |
| AE21 | VSS 210 | VSS 300 |
| AV21 | VSS 211 | VSS 301 |
| AP21 | VSS 212 | VSS 302 |
| AE21 | VSS 213 | VSS 303 |
| AV21 | VSS 214 | VSS 304 |
| AP21 | VSS 215 | VSS 305 |
| AE21 | VSS 216 | VSS 306 |
| AV21 | VSS 217 | VSS 307 |
| AP21 | VSS 218 | VSS 308 |
| AE21 | VSS 219 | VSS 309 |
| AV21 | VSS 220 | VSS 310 |
| AP21 | VSS 221 | VSS 311 |
| AE21 | VSS 222 | VSS 312 |
| AV21 | VSS 223 | VSS 313 |
| AP21 | VSS 224 | VSS 314 |
| AE21 | VSS 225 | VSS 315 |
| AV21 | VSS 226 | VSS 316 |
| AP21 | VSS 227 | VSS 317 |
| AE21 | VSS 228 | VSS 318 |
| AV21 | VSS 229 | VSS 319 |
| AP21 | VSS 230 | VSS 320 |
| AE21 | VSS 231 | VSS 321 |
| AV21 | VSS 232 | VSS 322 |
| AP21 | VSS 233 | VSS 323 |
| AE21 | VSS 234 | VSS 324 |
| AV21 | VSS 235 | VSS 325 |
| AP21 | VSS 236 | VSS 326 |
| AE21 | VSS 237 | VSS 327 |
| AV21 | VSS 238 | VSS 328 |
| AP21 | VSS 239 | VSS 329 |
| AE21 | VSS 240 | VSS 330 |
| AV21 | VSS 241 | VSS 331 |
| AP21 | VSS 242 | VSS 332 |
| AE21 | VSS 243 | VSS 333 |
| AV21 | VSS 244 | VSS 334 |
| AP21 | VSS 245 | VSS 335 |
| AE21 | VSS 246 | VSS 336 |
| AV21 | VSS 247 | VSS 337 |
| AP21 | VSS 248 | VSS 338 |
| AE21 | VSS 249 | VSS 339 |
| AV21 | VSS 250 | VSS 340 |
| AP21 | VSS 251 | VSS 341 |
| AE21 | VSS 252 | VSS 342 |
| AV21 | VSS 253 | VSS 343 |
| AP21 | VSS 254 | VSS 344 |
| AE21 | VSS 255 | VSS 345 |
| AV21 | VSS 256 | VSS 346 |
| AP21 | VSS 257 | VSS 347 |
| AE21 | VSS 258 | VSS 348 |
| AV21 | VSS 259 | VSS 349 |
| AP21 | VSS 260 | VSS 350 |
| AE21 | VSS 261 | VSS 351 |
| AV21 | VSS 262 | VSS 352 |
| AP21 | VSS 263 | VSS 353 |
| AE21 | VSS 264 | VSS 354 |
| AV21 | VSS 265 | VSS 355 |
| AP21 | VSS 266 | VSS 356 |
| AE21 | VSS 267 | VSS 357 |
| AV21 | VSS 268 | VSS 358 |
| AP21 | VSS 269 | VSS 359 |
| AE21 | VSS 270 | VSS 360 |
| AV21 | VSS 271 |         |
| AP21 | VSS 272 |         |

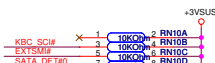
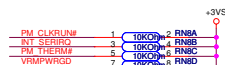
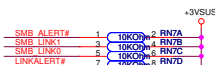
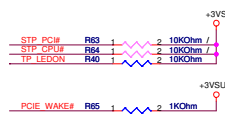
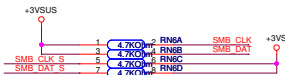
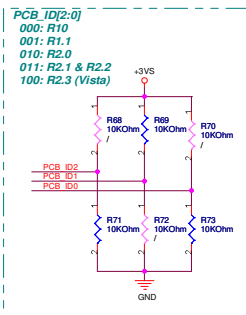
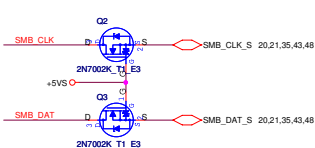
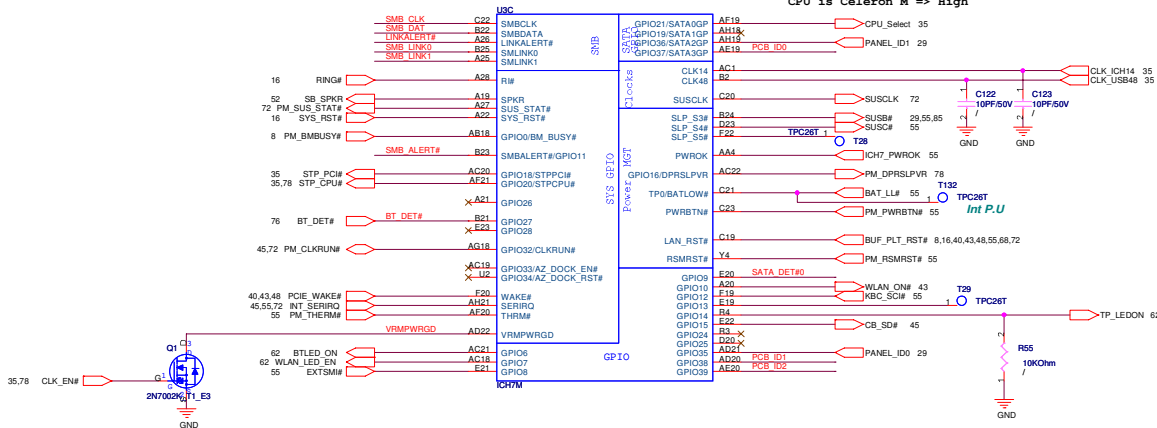
CALISTOGA\_Q137  
 GND



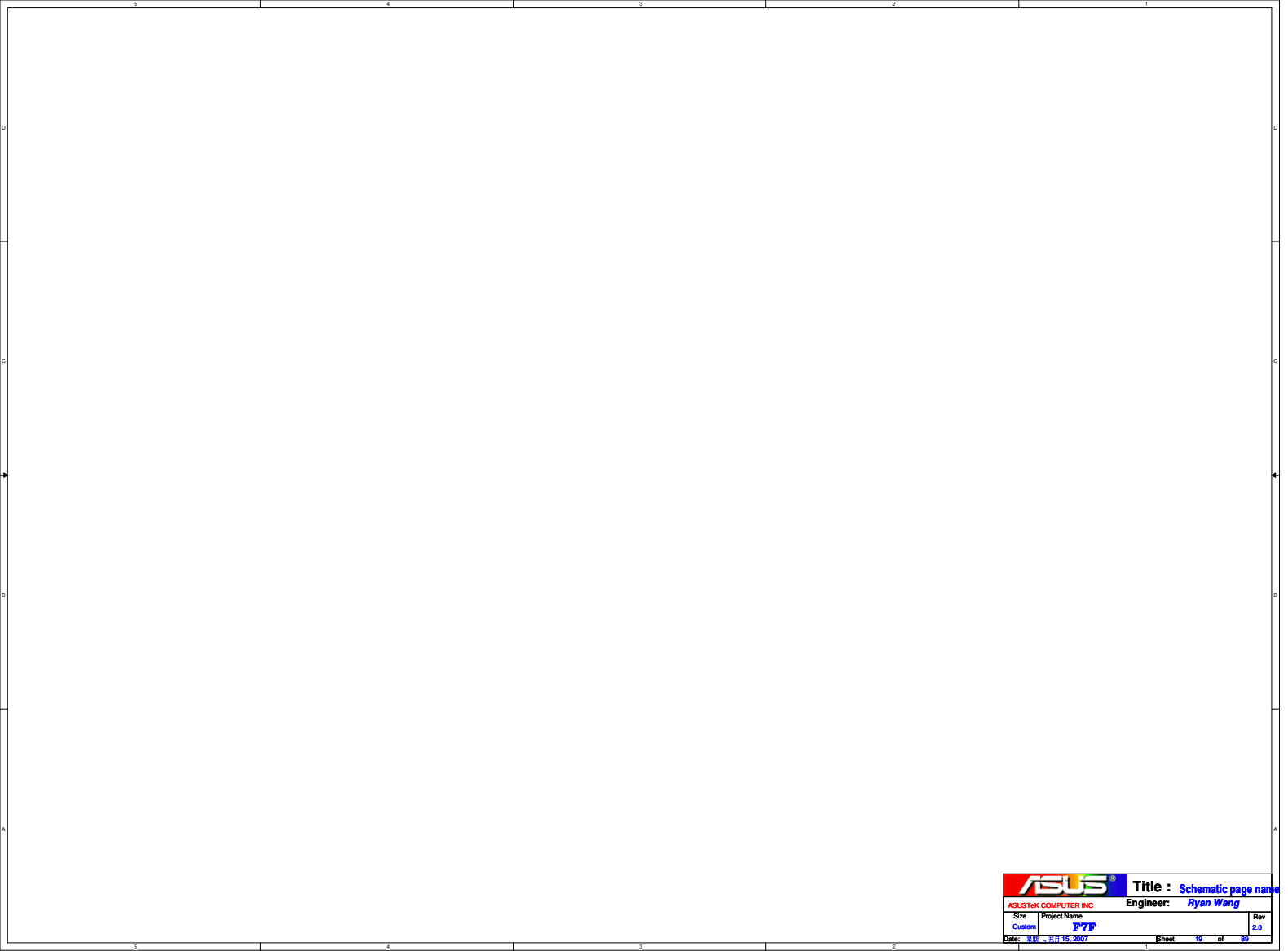




CPU\_Select :  
CPU is Pentium M => Low  
CPU is Celeron M => High



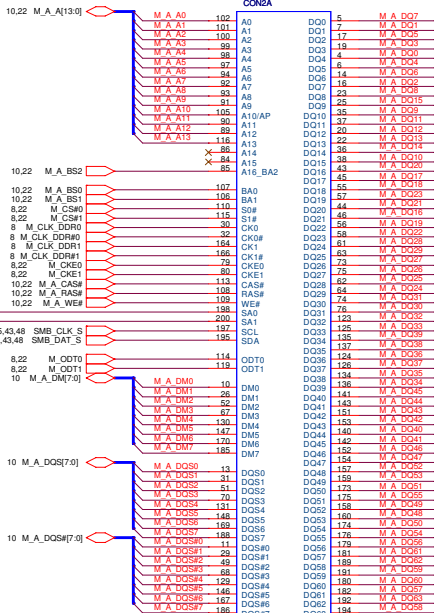




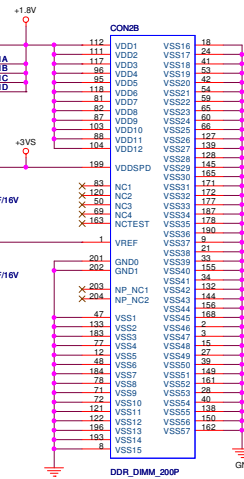
# REV Type

M\_A\_DQ[63:0] 10

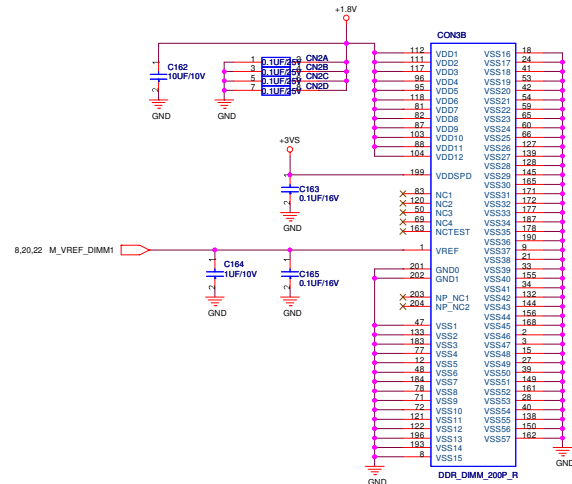
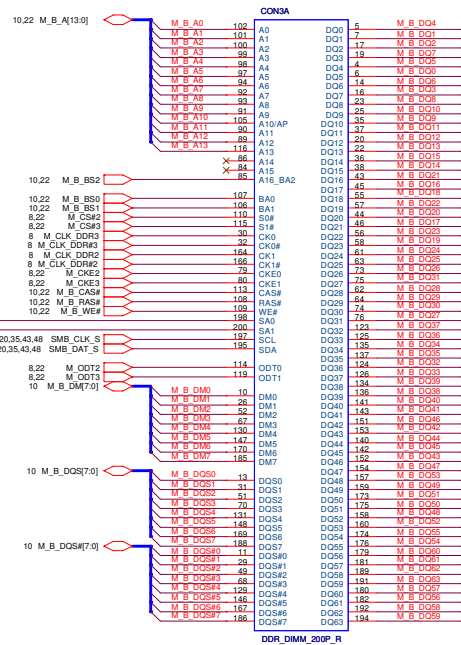
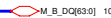
## CON2A

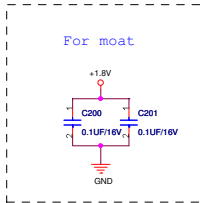
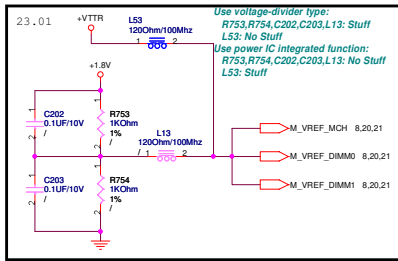


## DDR\_DIMM\_200P



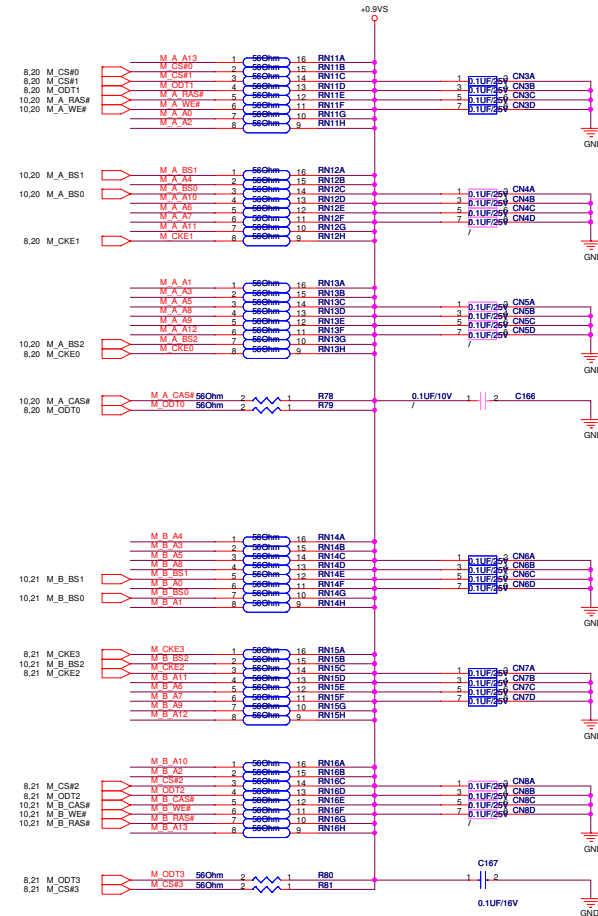
## DDR\_DIMM\_200P

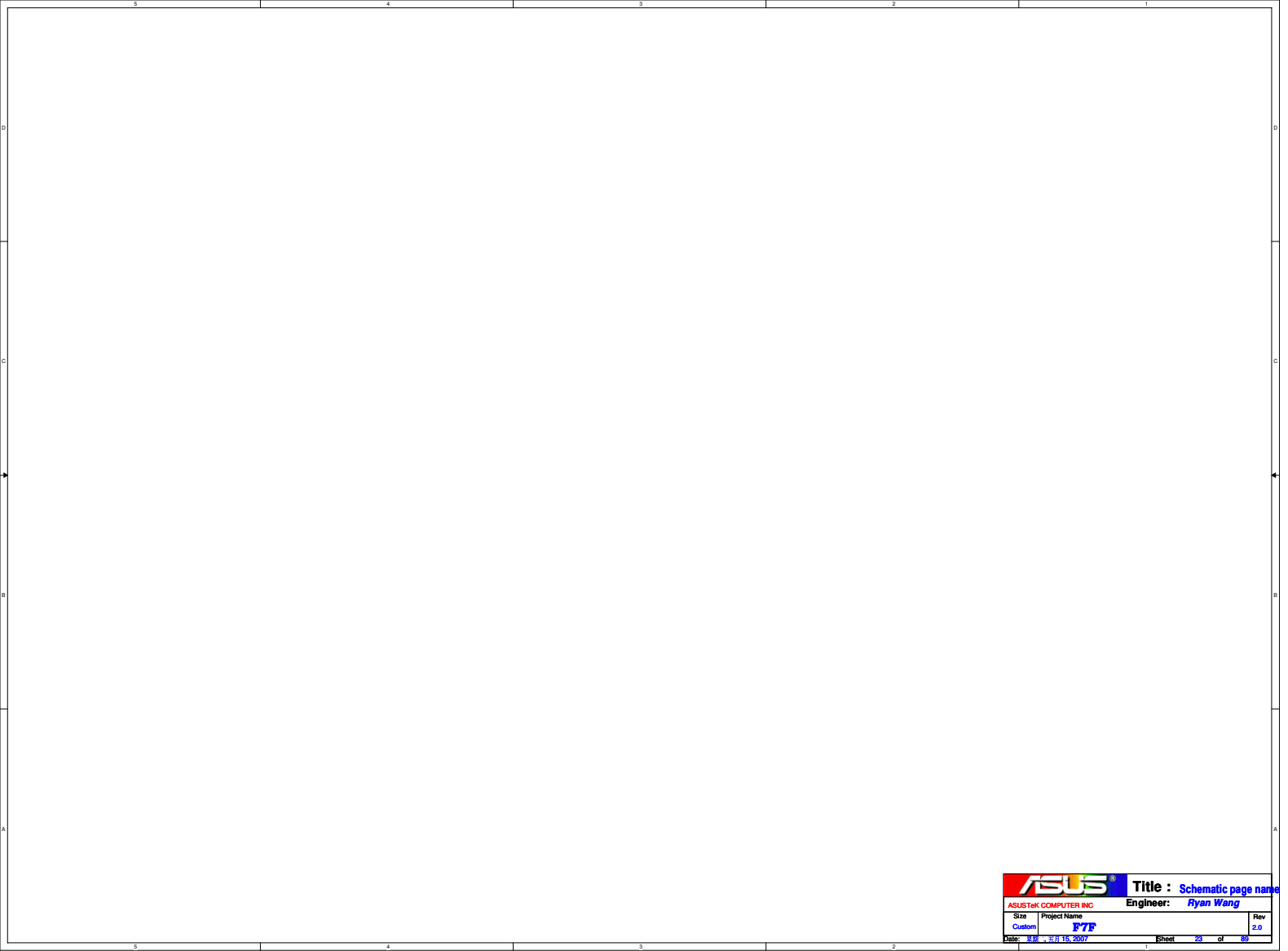


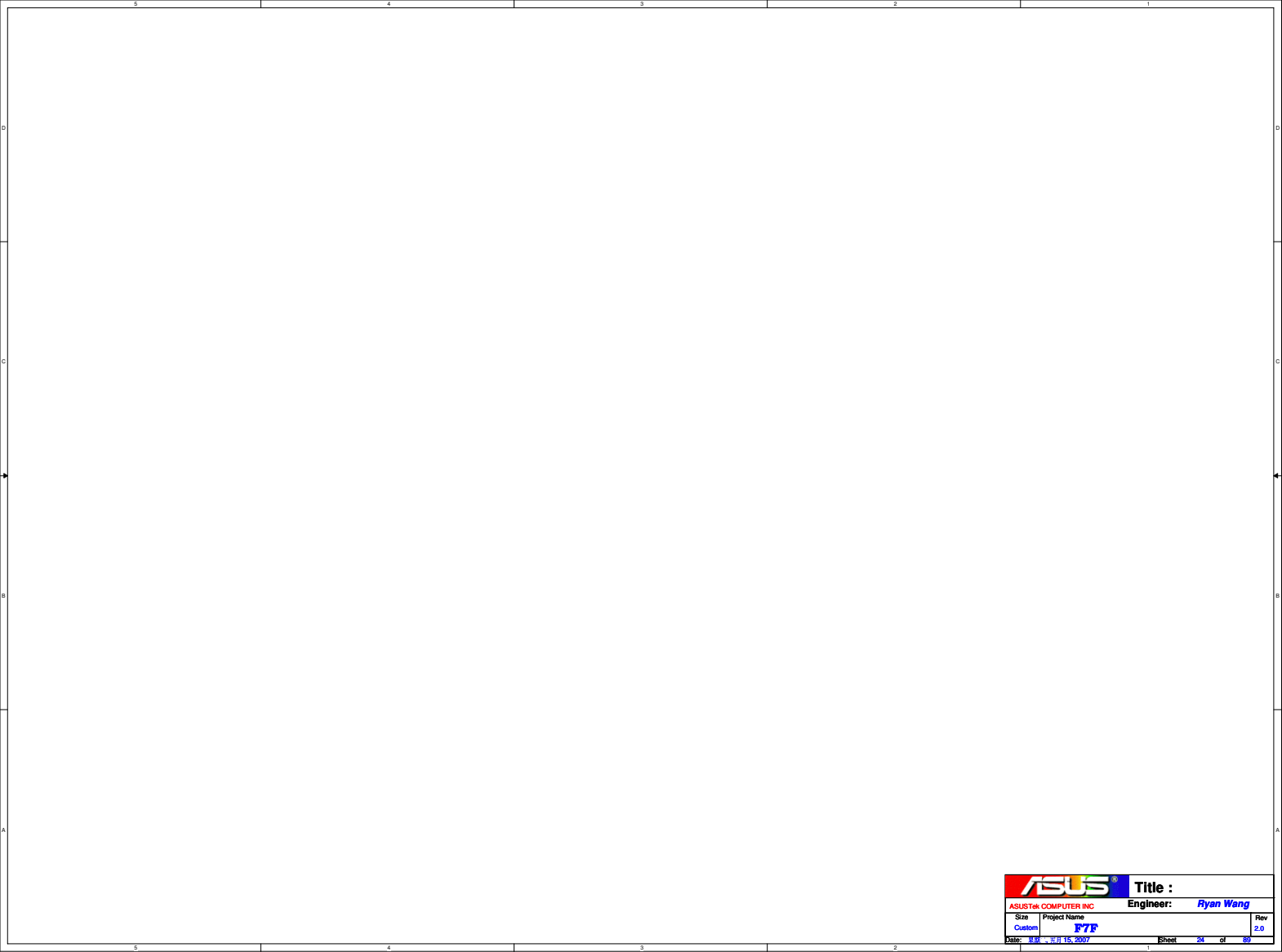


10,20 M\_A\_A13[0]

10,21 M\_B\_A13[0]





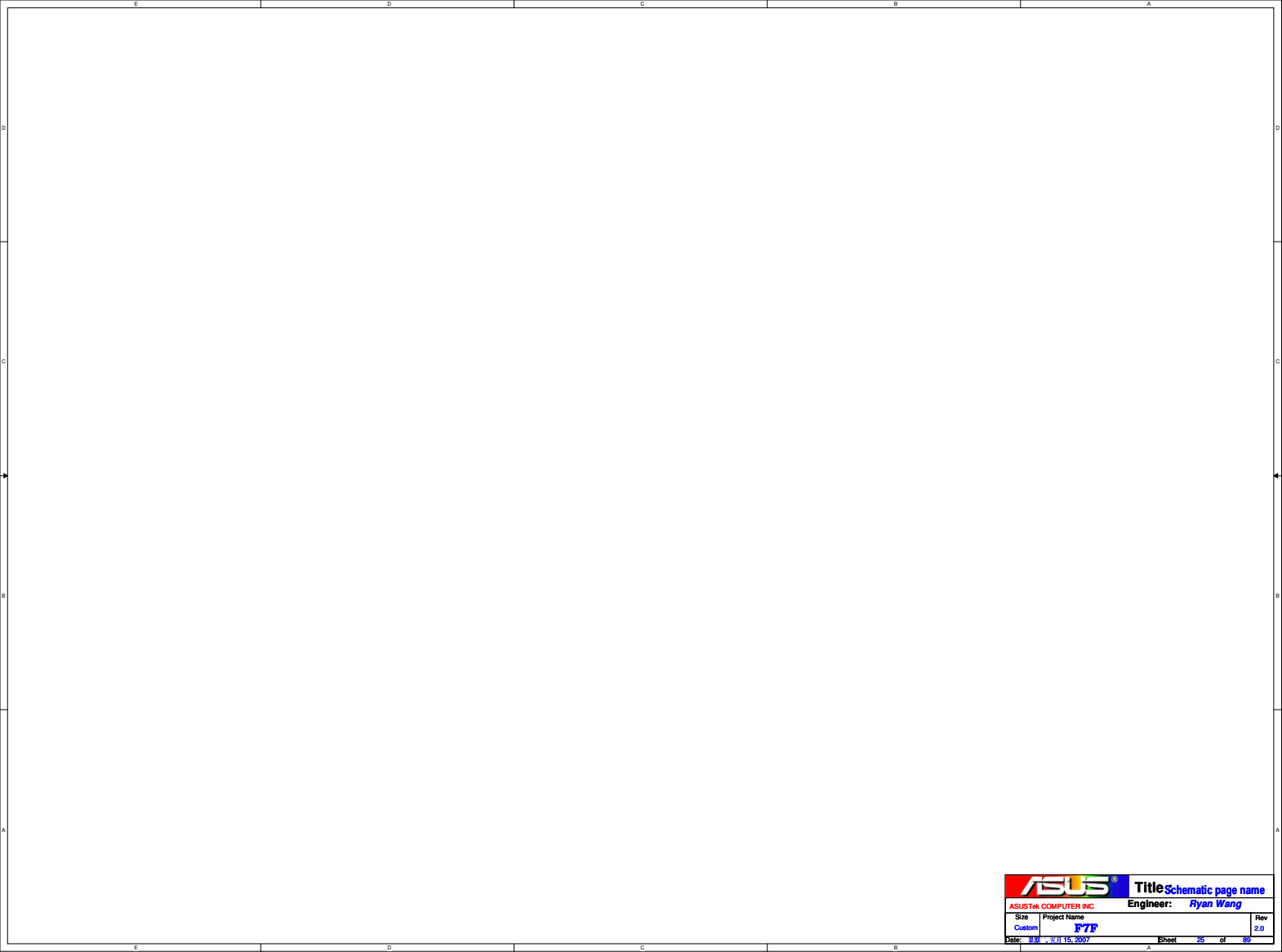


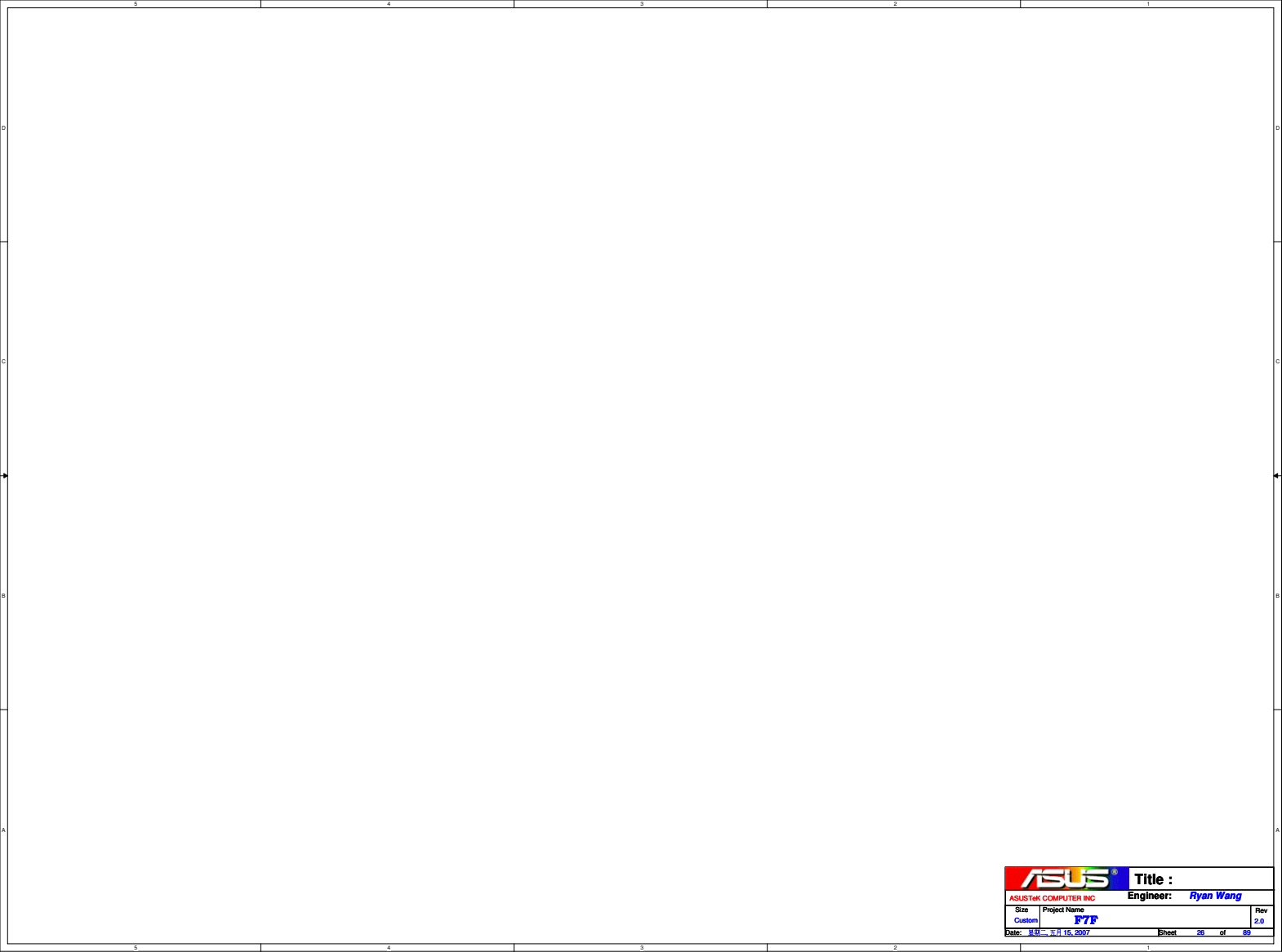
ASUSTek COMPUTER INC

Title :

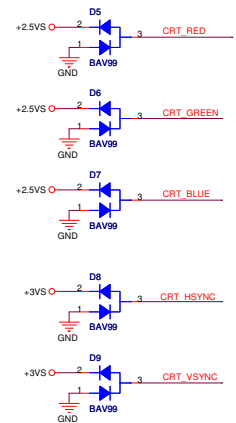
Engineer: *Ryan Wang*

|        |                  |                |
|--------|------------------|----------------|
| Size   | Project Name     | Rev            |
| Custom | <b>FTF</b>       | 2.0            |
| Date:  | 8/8 / 2015, 2007 | Sheet 24 of 89 |



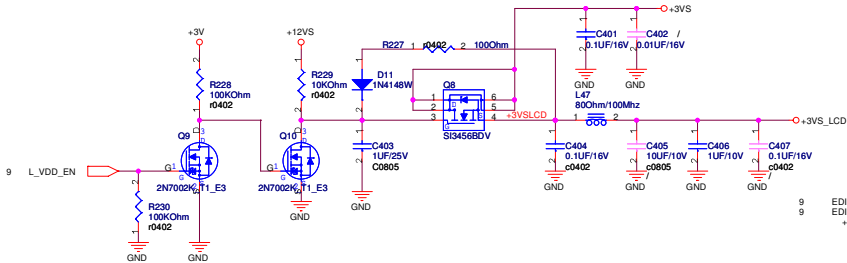






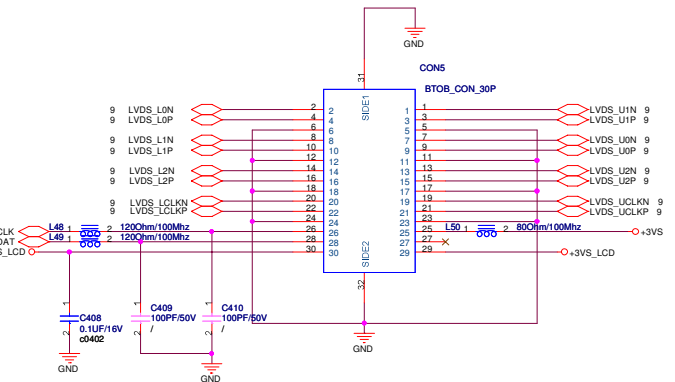
# LCD Backlight Control

## LCD Power



Cable Requirement:  
Impedance: 100 ohm +/- 10%  
Length Mismatch <= 10 mils  
Twisted Pair(Not Ribbon)  
Maximum Length <= 16"

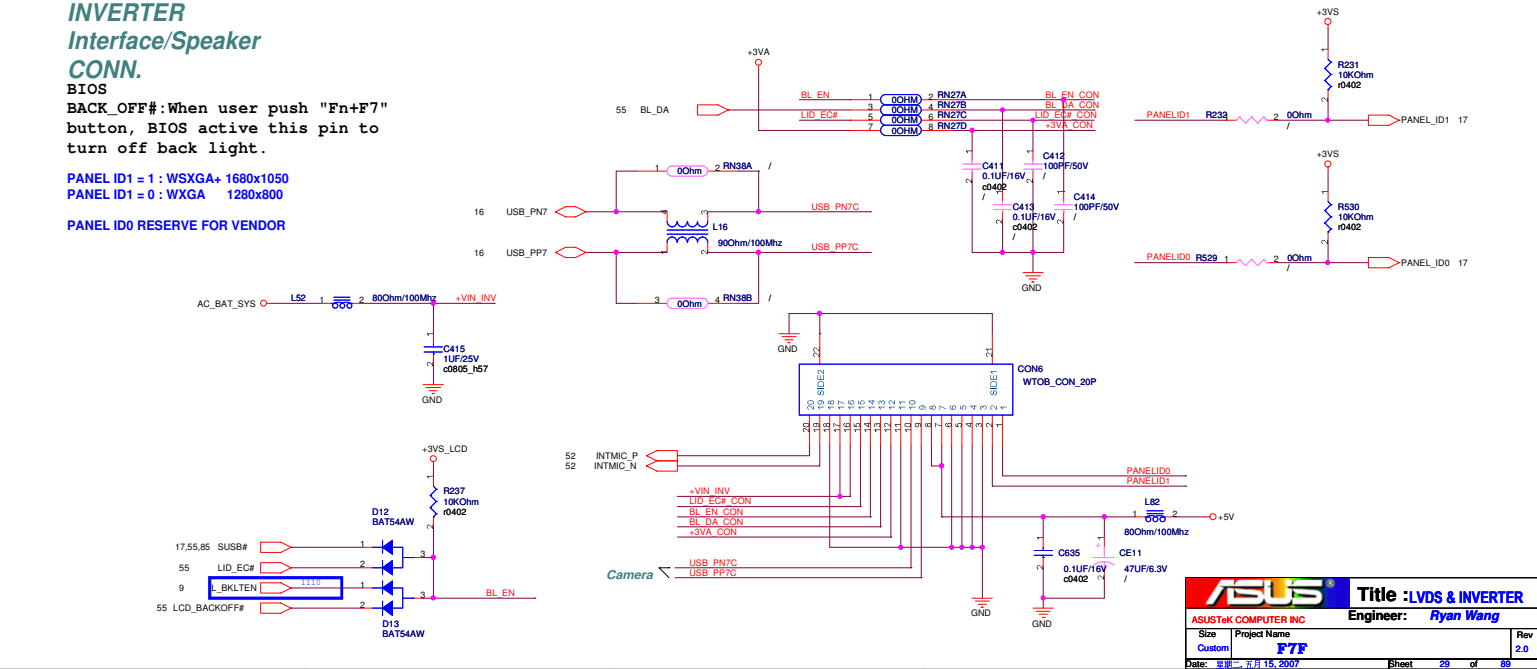
# LCD LVDS Interface

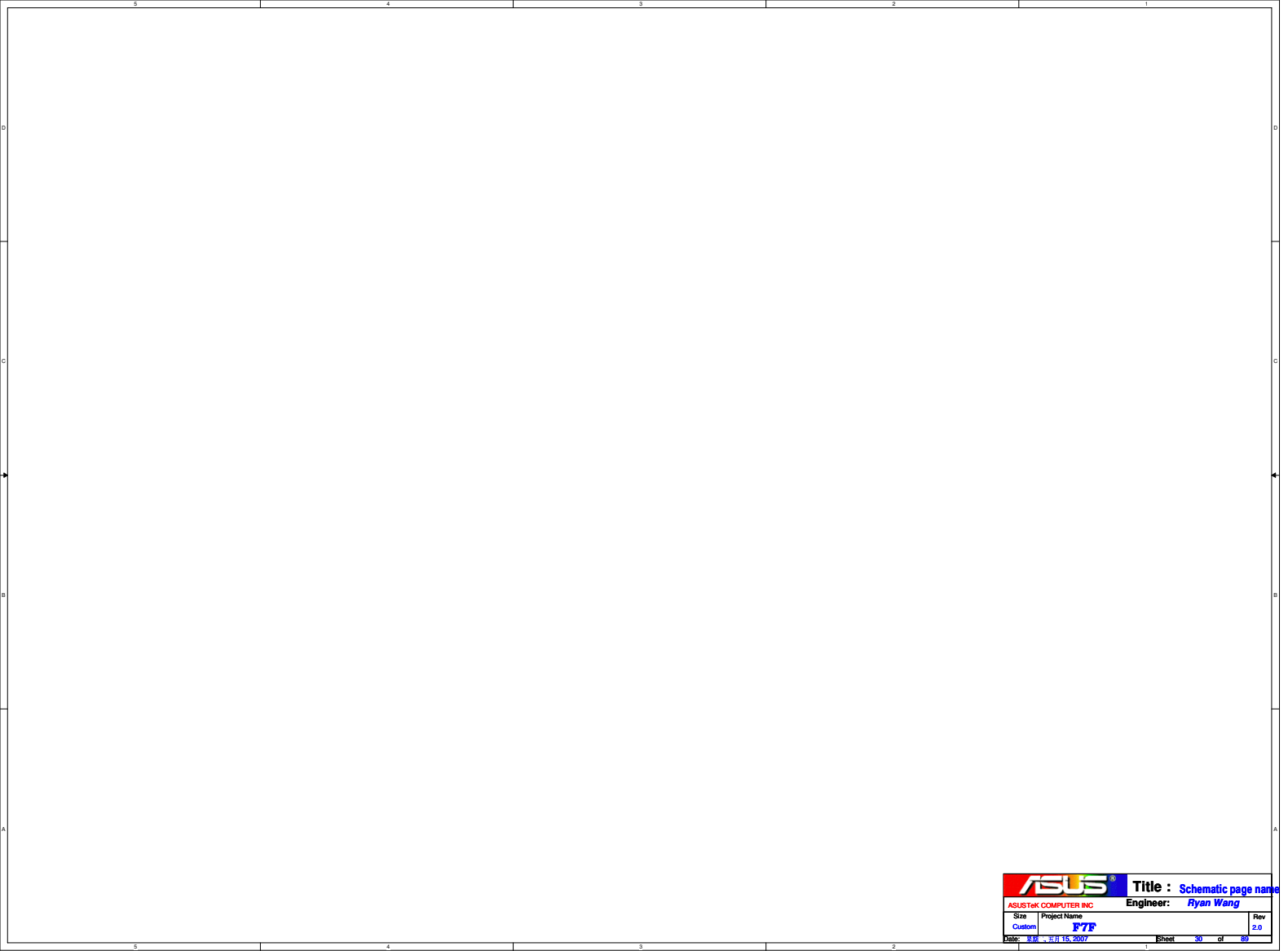


## INVERTER Interface/Speaker CONN.

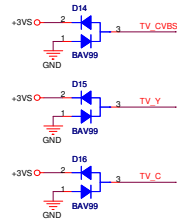
BIOS  
BACK\_OFF#:When user push "Fn+F7"  
button, BIOS active this pin to  
turn off back light.

PANEL ID1 = 1 : WSXGA+ 1680x1050  
PANEL ID1 = 0 : WXGA 1280x800  
PANEL ID0 RESERVE FOR VENDOR

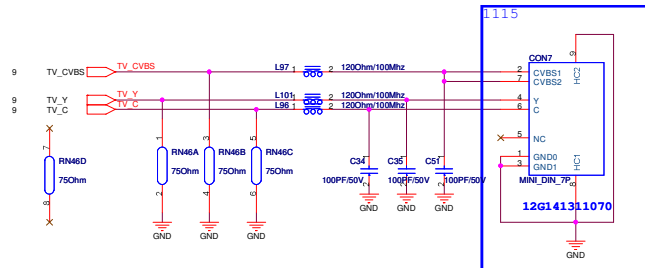


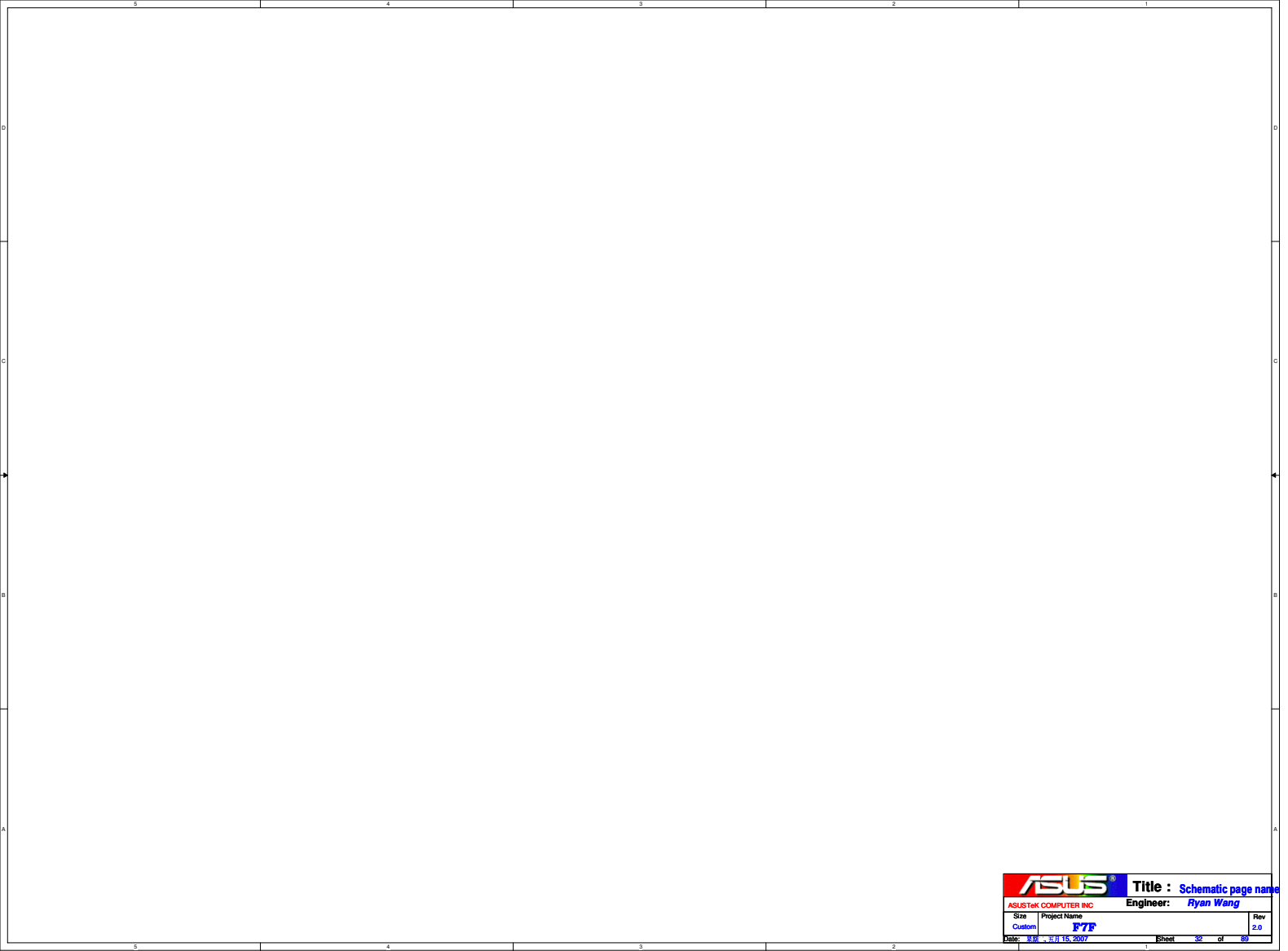


# TV OUT

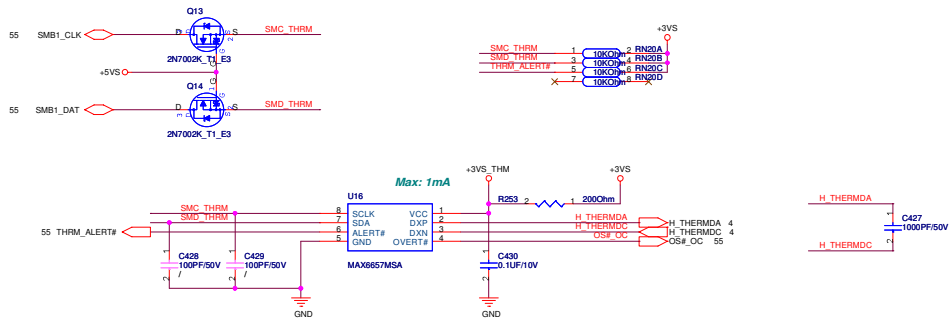


PLACE ESD Diodes near TV port





## Thermal Sensor



Route H\_THERMDA and H\_THERMDC on the same layer

15 mils

=====GND

10 mils

=====H\_THERMDA(10 mils)

10 mils

=====H\_THERMDC(10 mils)

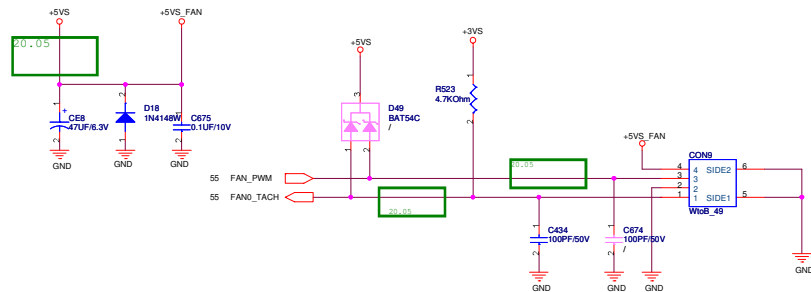
10 mils

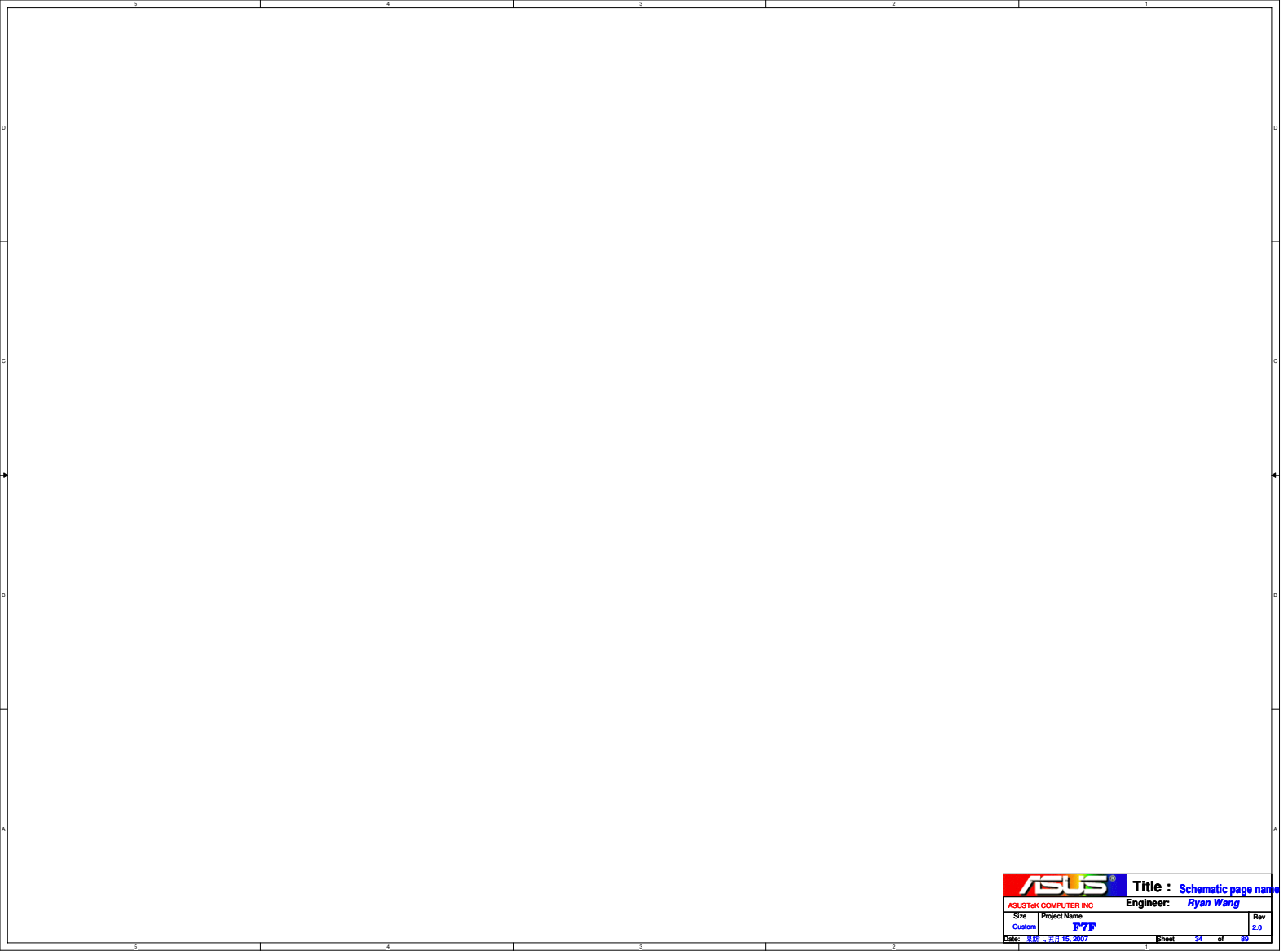
=====GND

15 mils

=====OTHER SIGNALS

Avoid FSB, Power







**Title :** Schematic page name

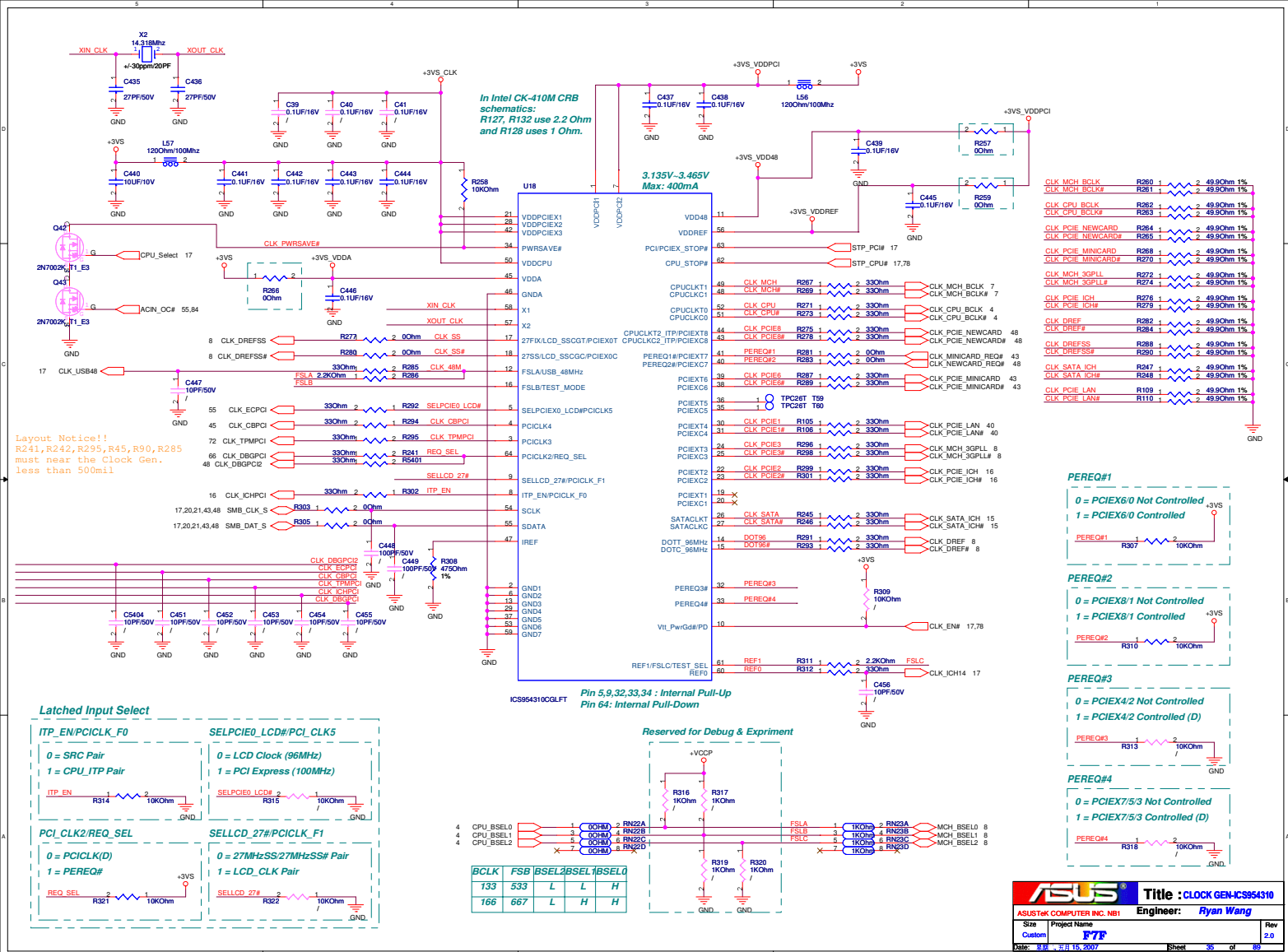
ASUSTeK COMPUTER INC

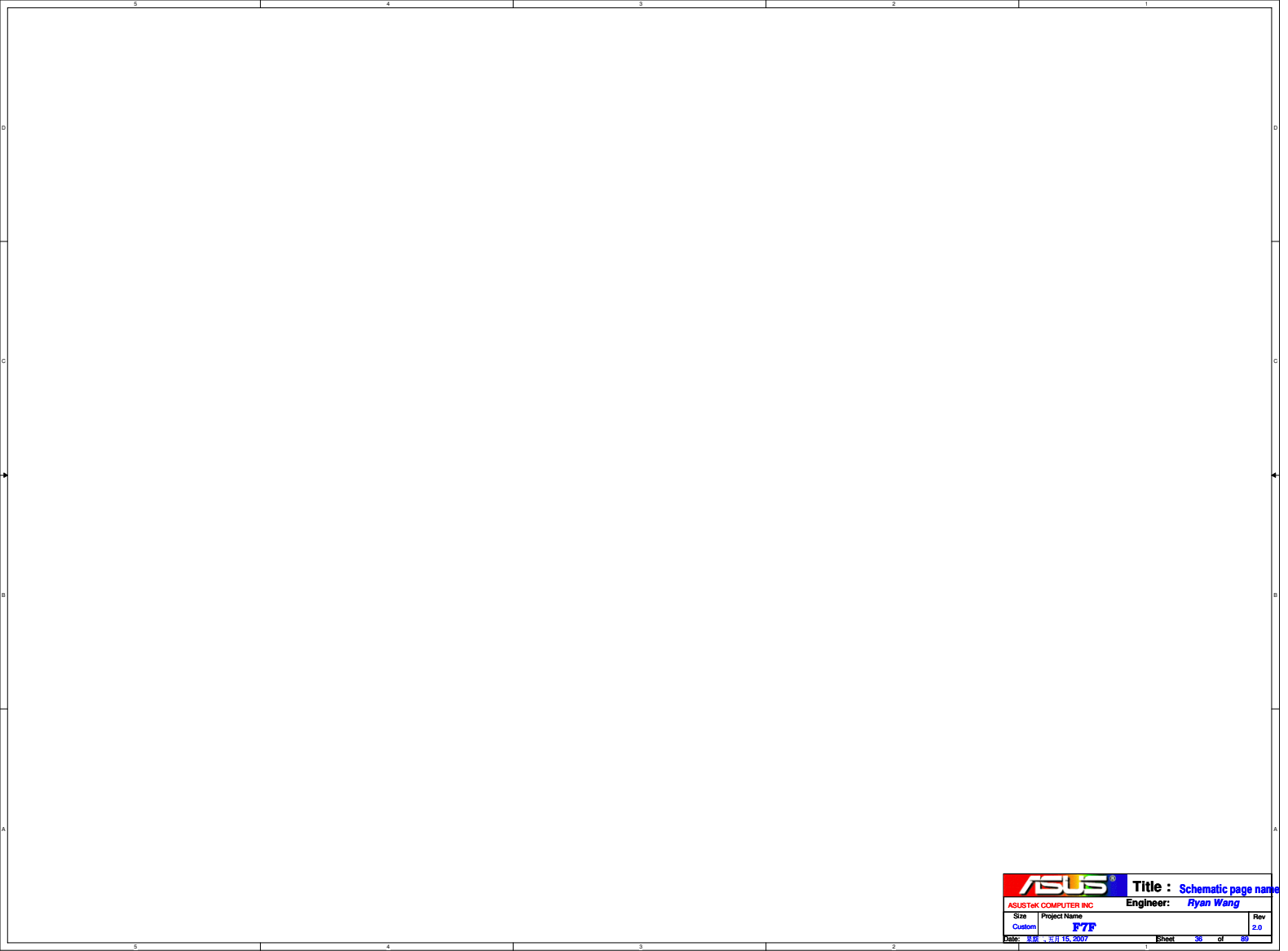
**Engineer:** Ryan Wang

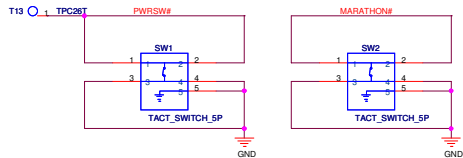
|        |              |     |
|--------|--------------|-----|
| Size   | Project Name | Rev |
| Custom | PTP          | 2.0 |

Date: 8/15/2007

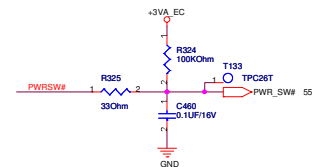
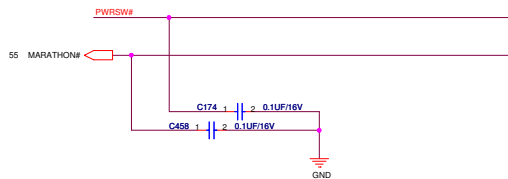
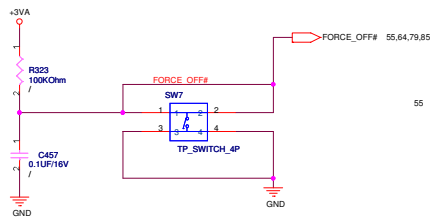
Sheet 54 of 85

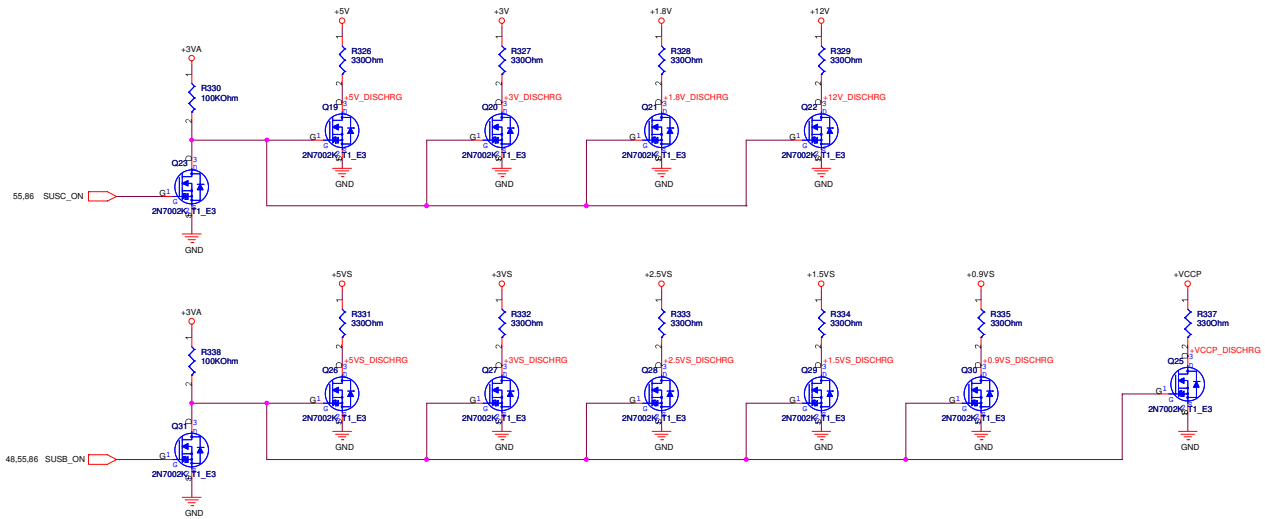


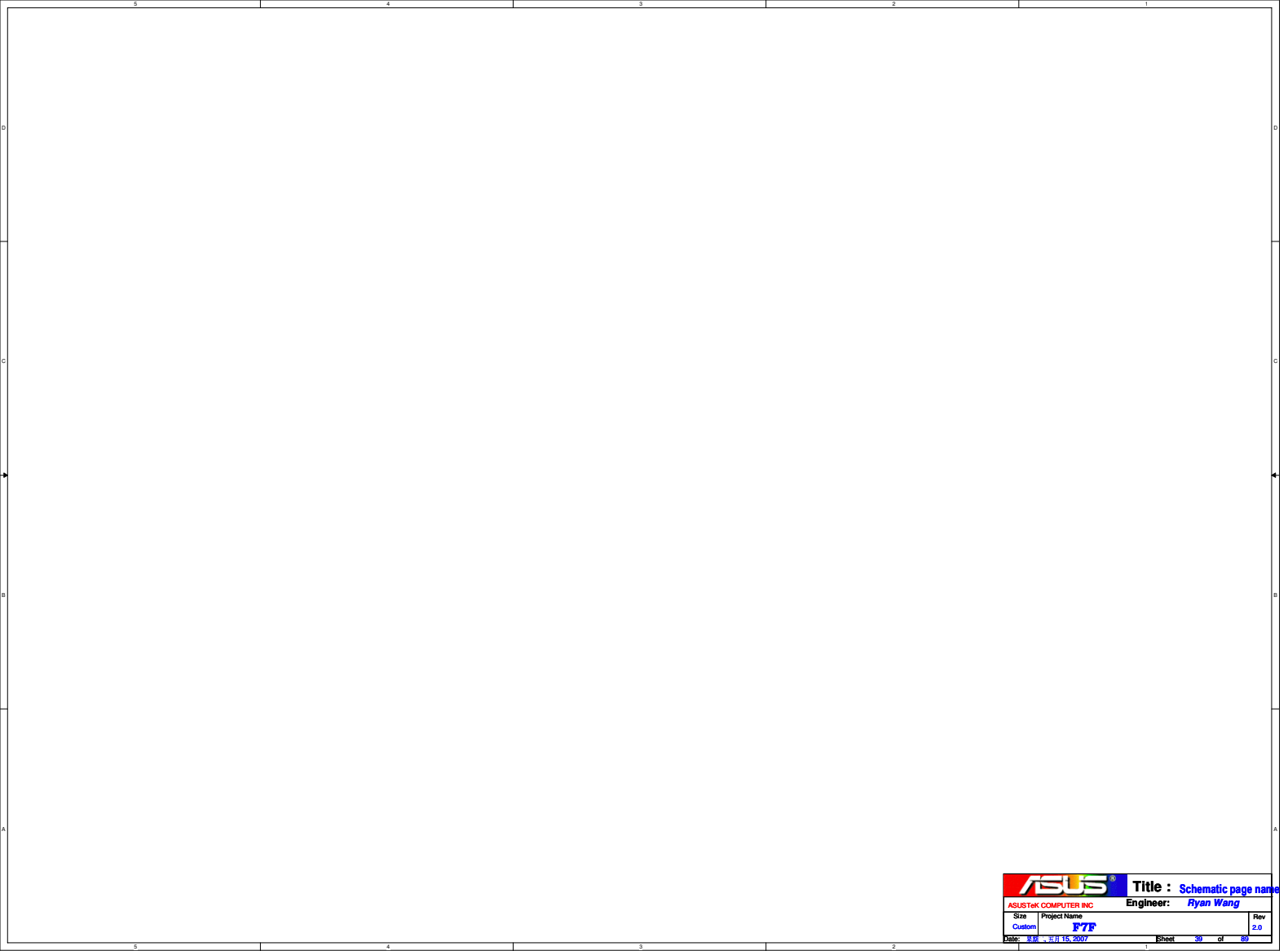


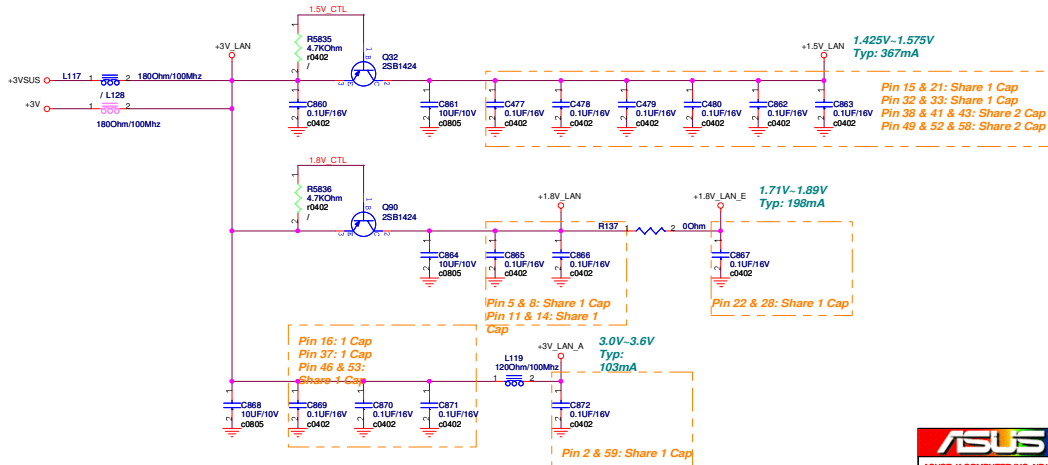
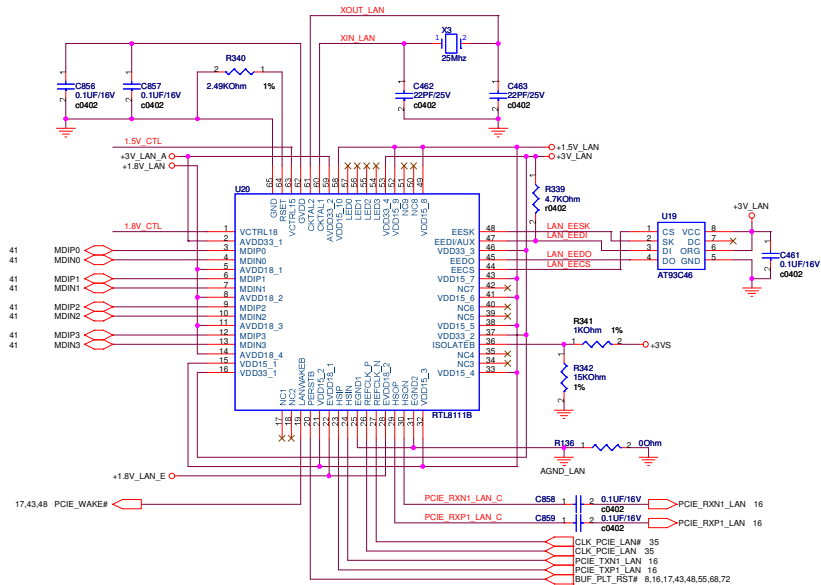


## SHUT\_DOWN#

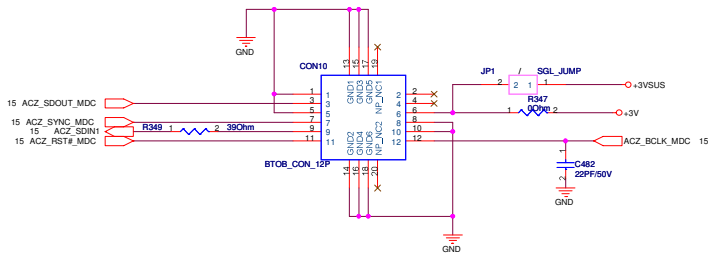






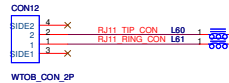
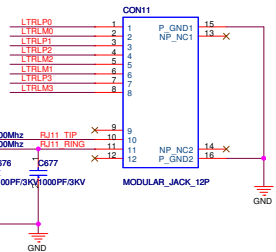
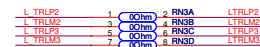
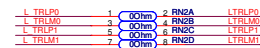
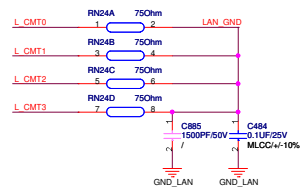
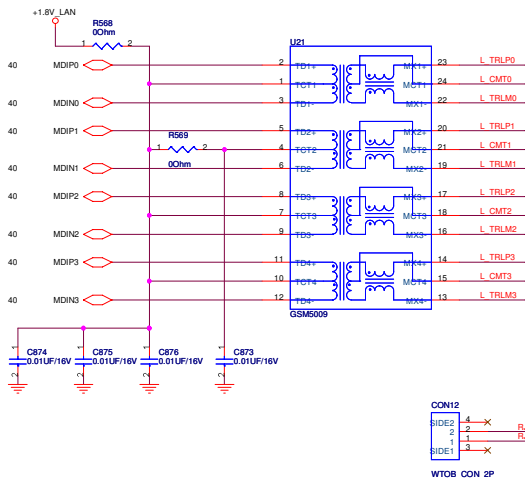


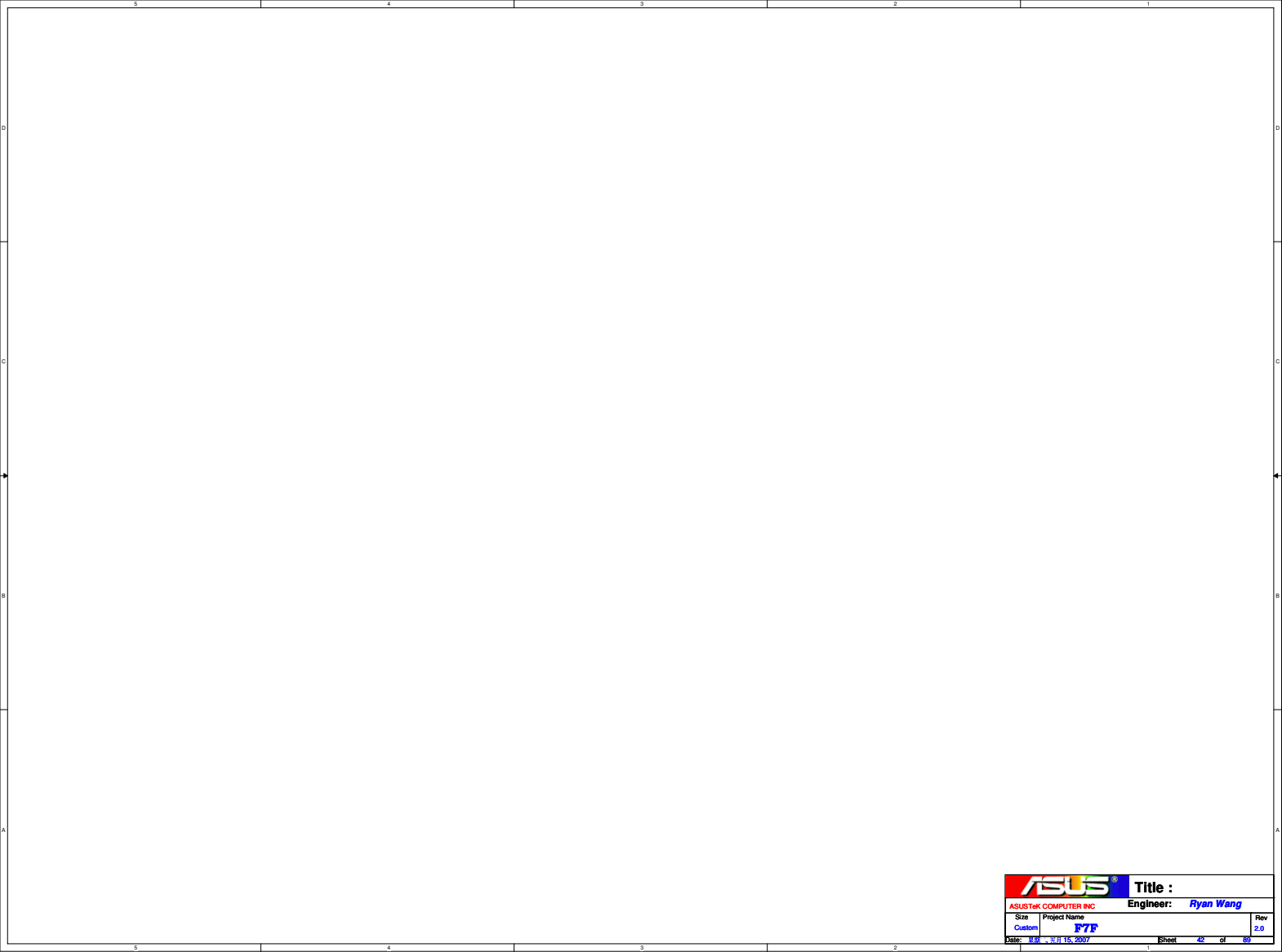
## MDC CONN.



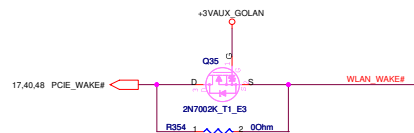
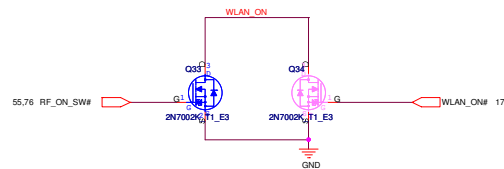
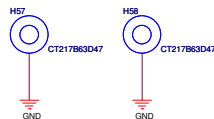
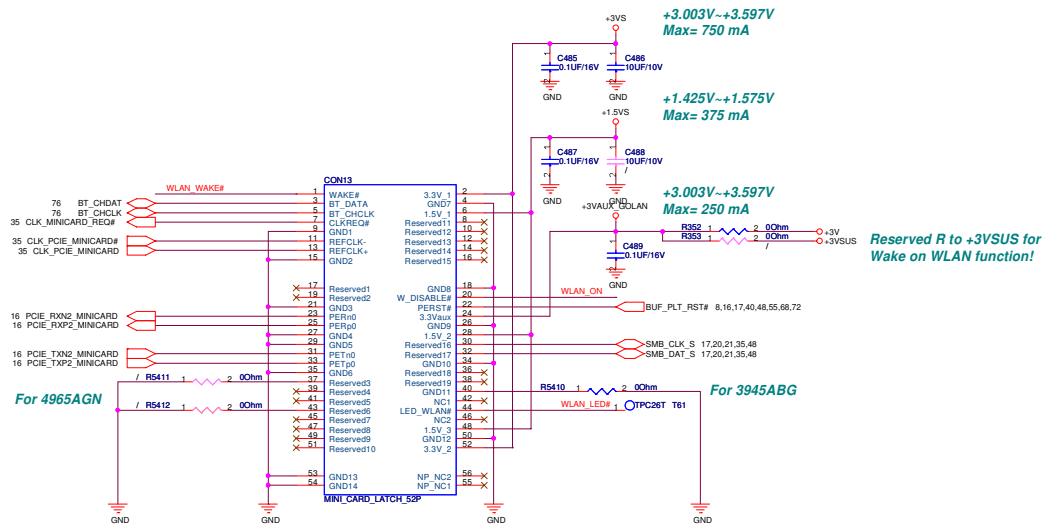
Change to 13GN7510M270-1

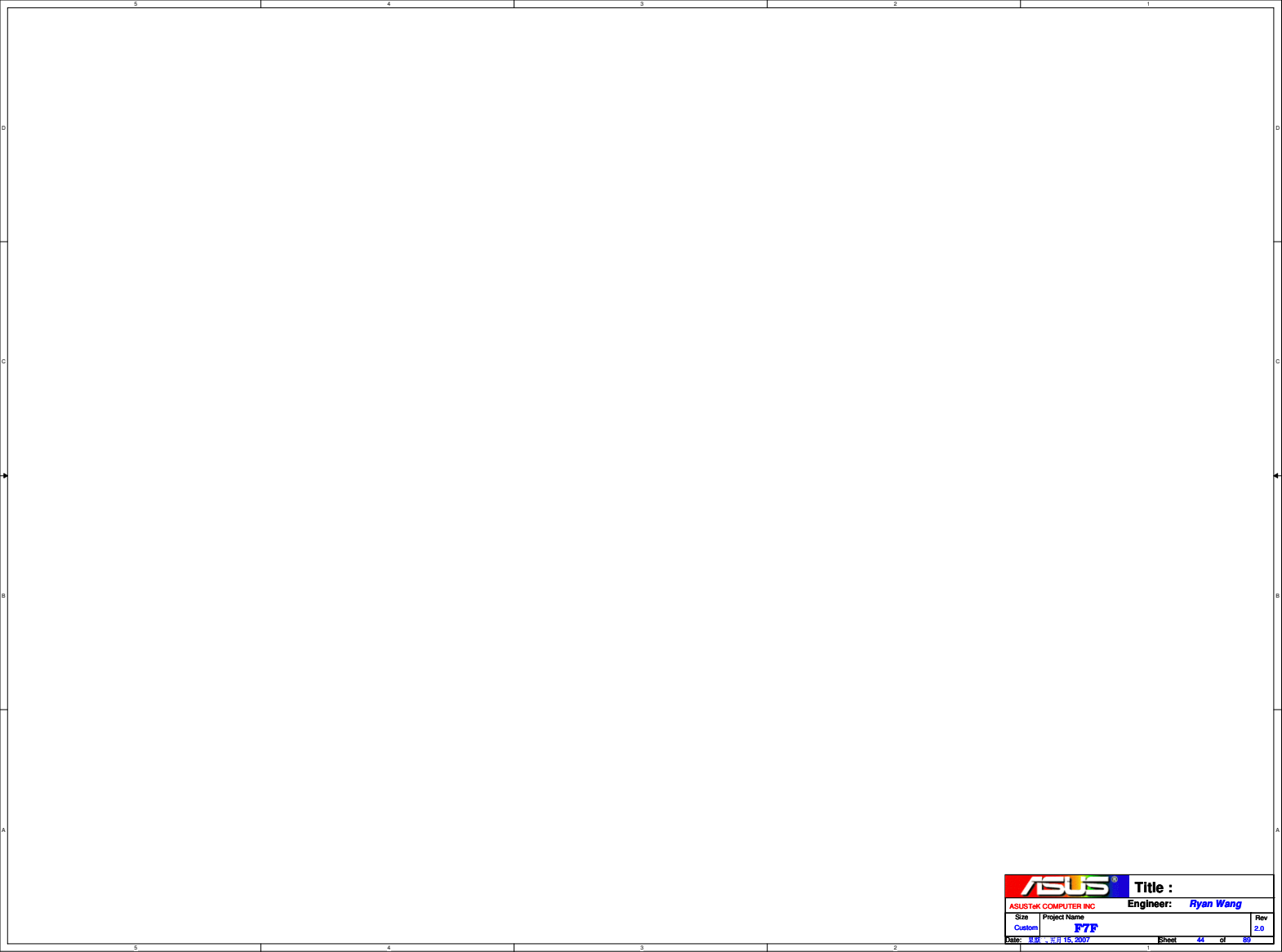
## LAN CONN.



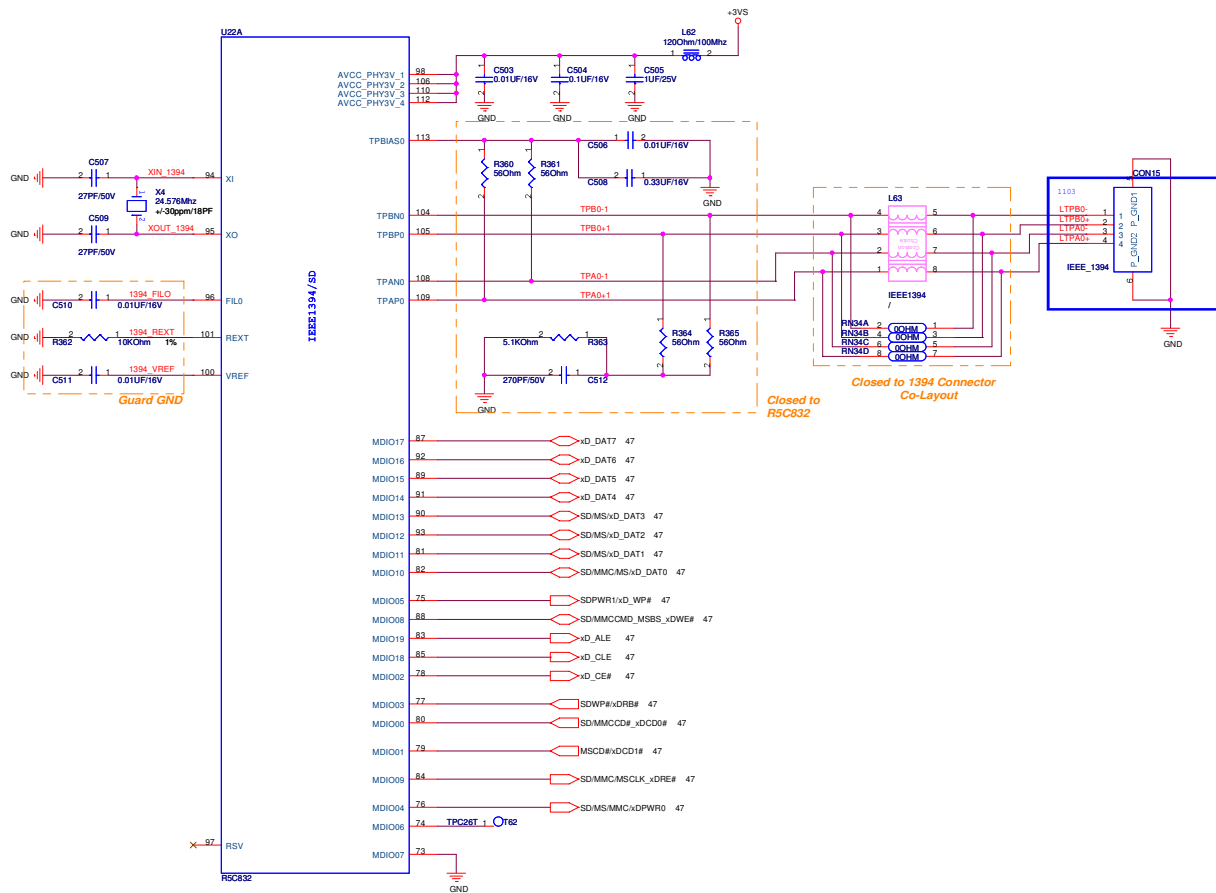


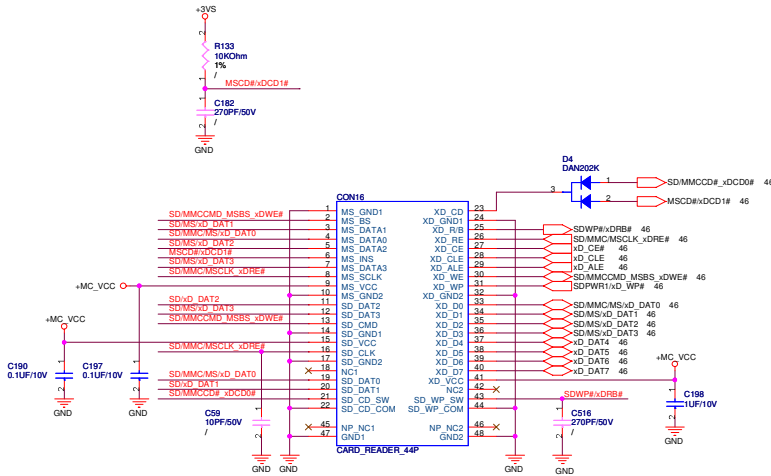
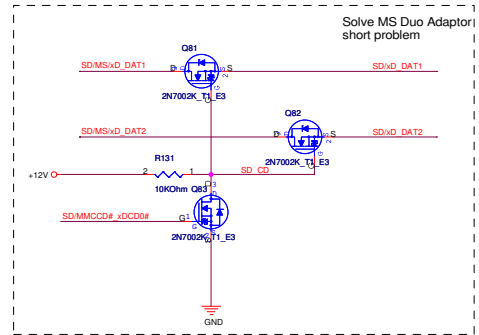
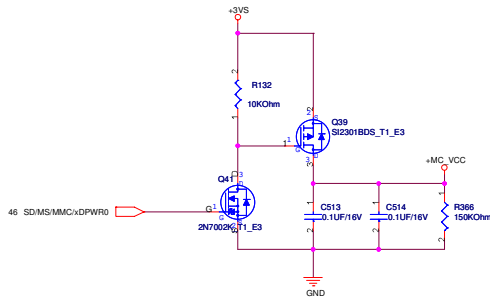
|                                                                                       |                  |                                   |                |
|---------------------------------------------------------------------------------------|------------------|-----------------------------------|----------------|
|  |                  | <b>Title :</b>                    |                |
| ASUSTek COMPUTER INC                                                                  |                  | <b>Engineer:</b> <i>Ryan Wang</i> |                |
| Size                                                                                  | Project Name     |                                   | Rev            |
| Custom                                                                                | FTF              |                                   | 2.0            |
| Date:                                                                                 | 8/8 / 2015, 2007 |                                   | Sheet 42 of 89 |

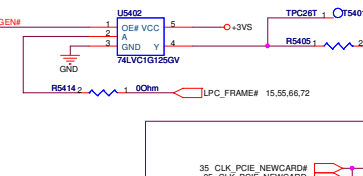
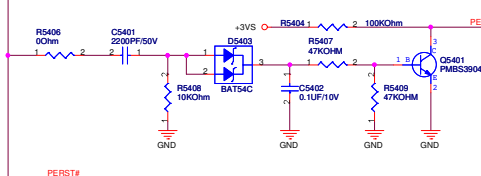
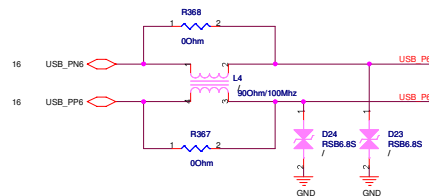
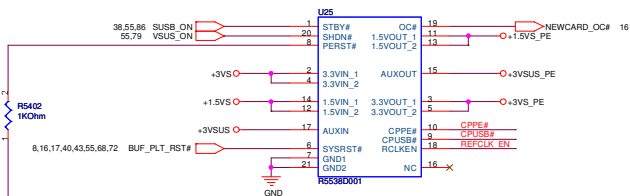






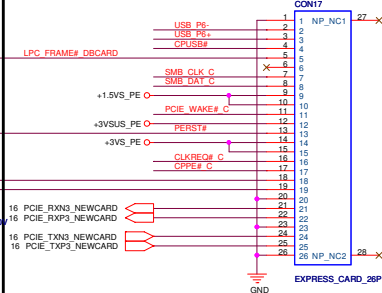




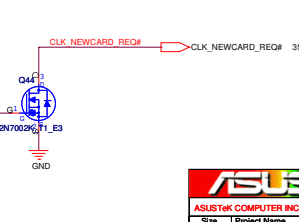
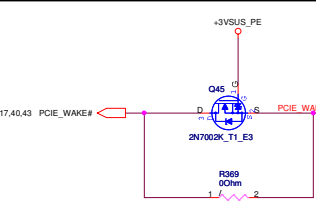
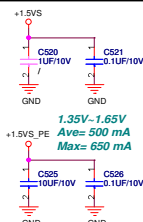
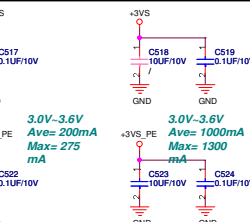
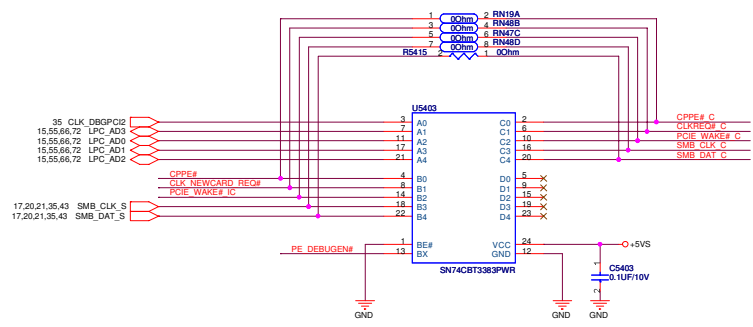
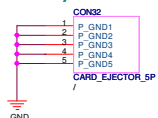


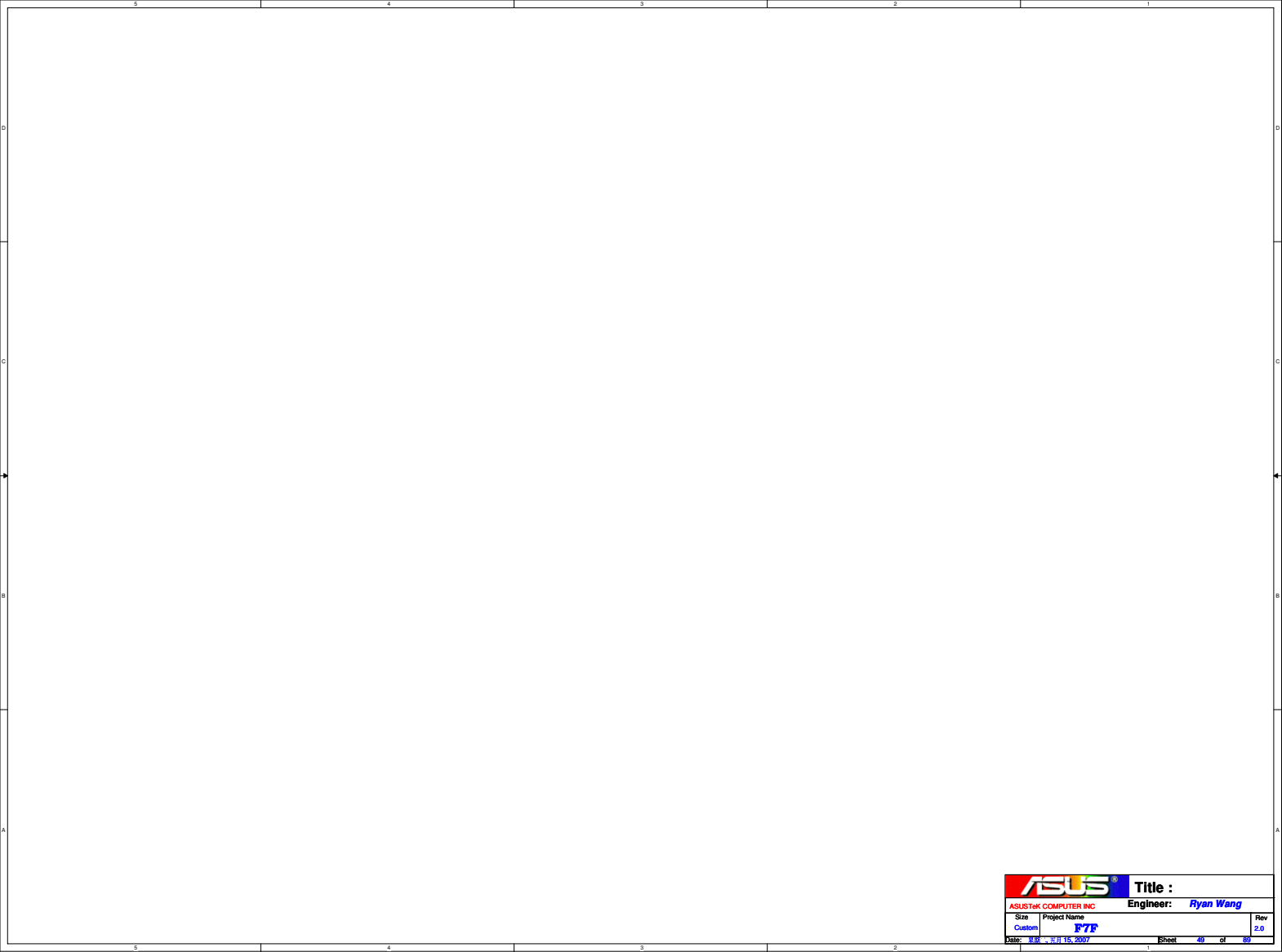
!! ExpressCard Standard 1.0:  
Change Pin7 from RESERVED to SMBCLK  
Change Pin8 from SMBCLK to SMBDATA  
Change Pin9 from SMBDATA to +1.5V

NewCard Header

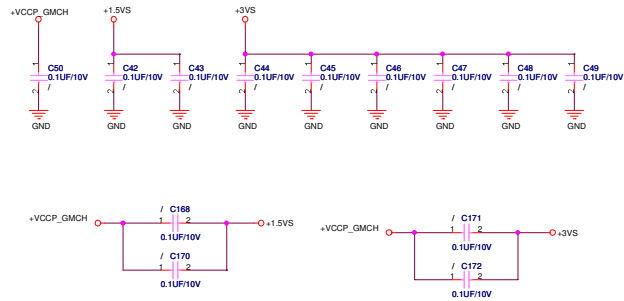


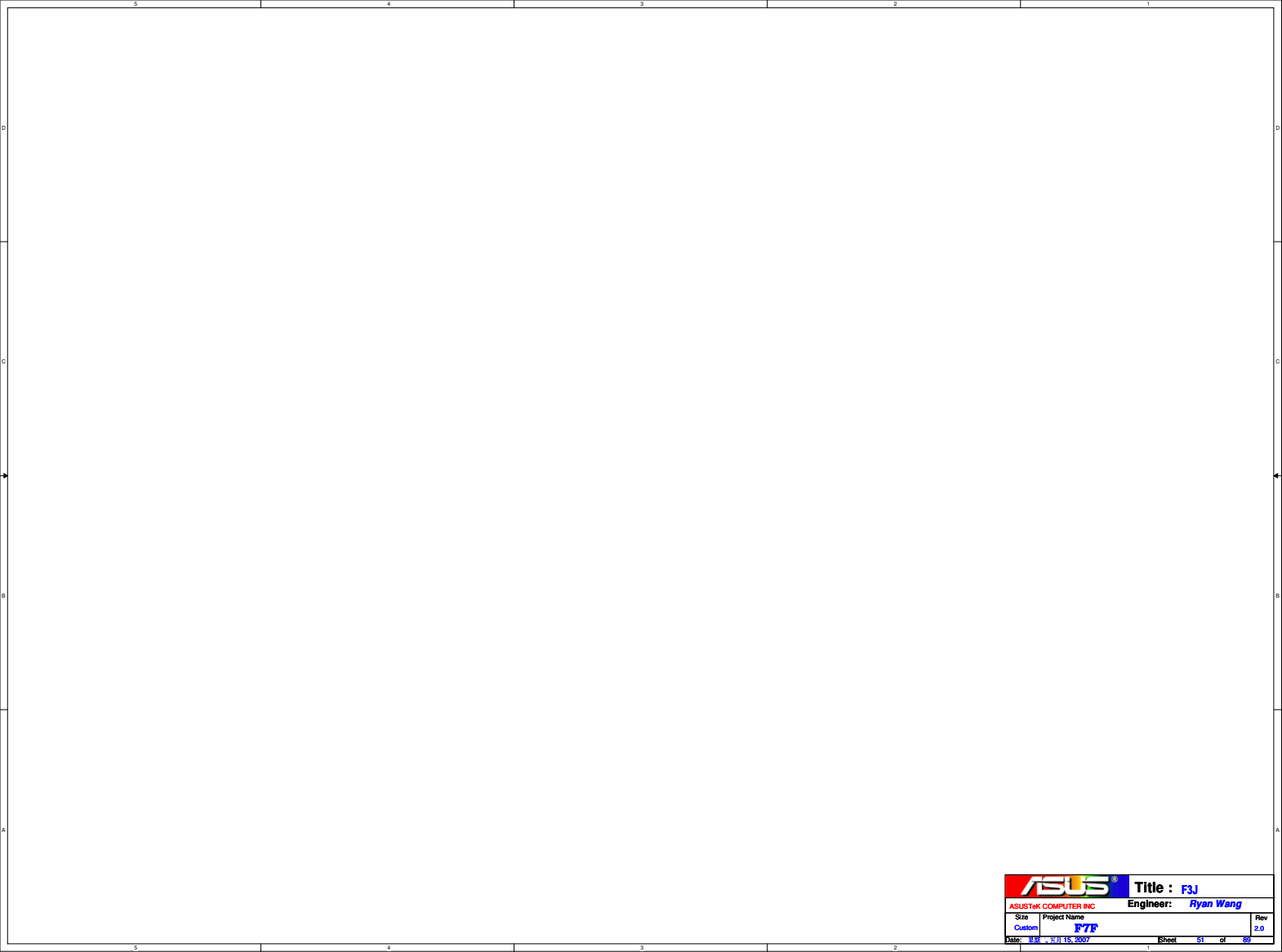
NewCard Ejector





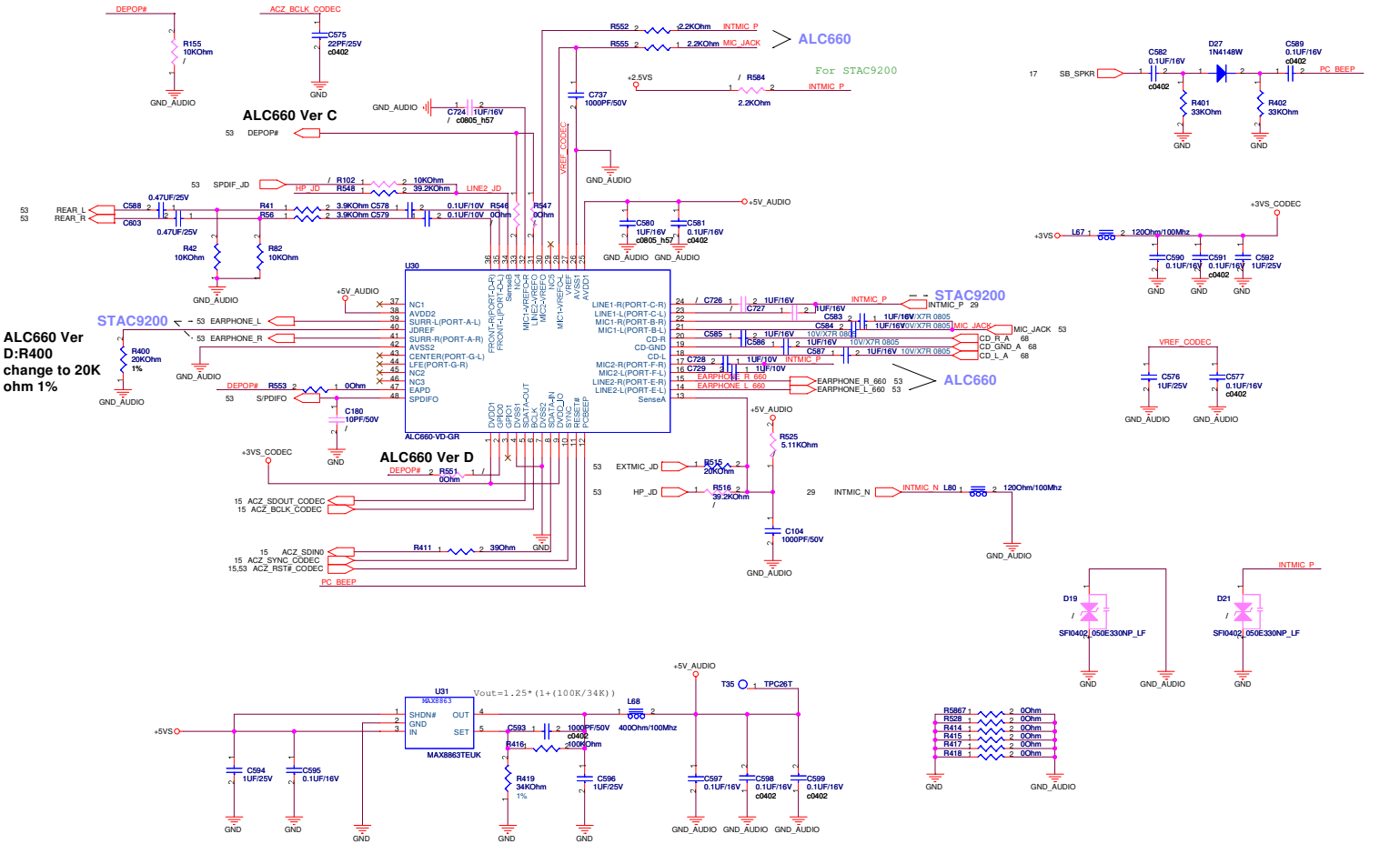
|                                                                                       |                         |                            |                              |
|---------------------------------------------------------------------------------------|-------------------------|----------------------------|------------------------------|
|  |                         | Title :                    |                              |
| ASUSTek COMPUTER INC                                                                  |                         | Engineer: <i>Ryan Wang</i> |                              |
| Size                                                                                  | Project Name            |                            | Rev                          |
| Custom                                                                                | <i>FTF</i>              |                            | 2.0                          |
| Date:                                                                                 | <i>8/8 / 2015, 2007</i> |                            | Sheet <i>49</i> of <i>89</i> |



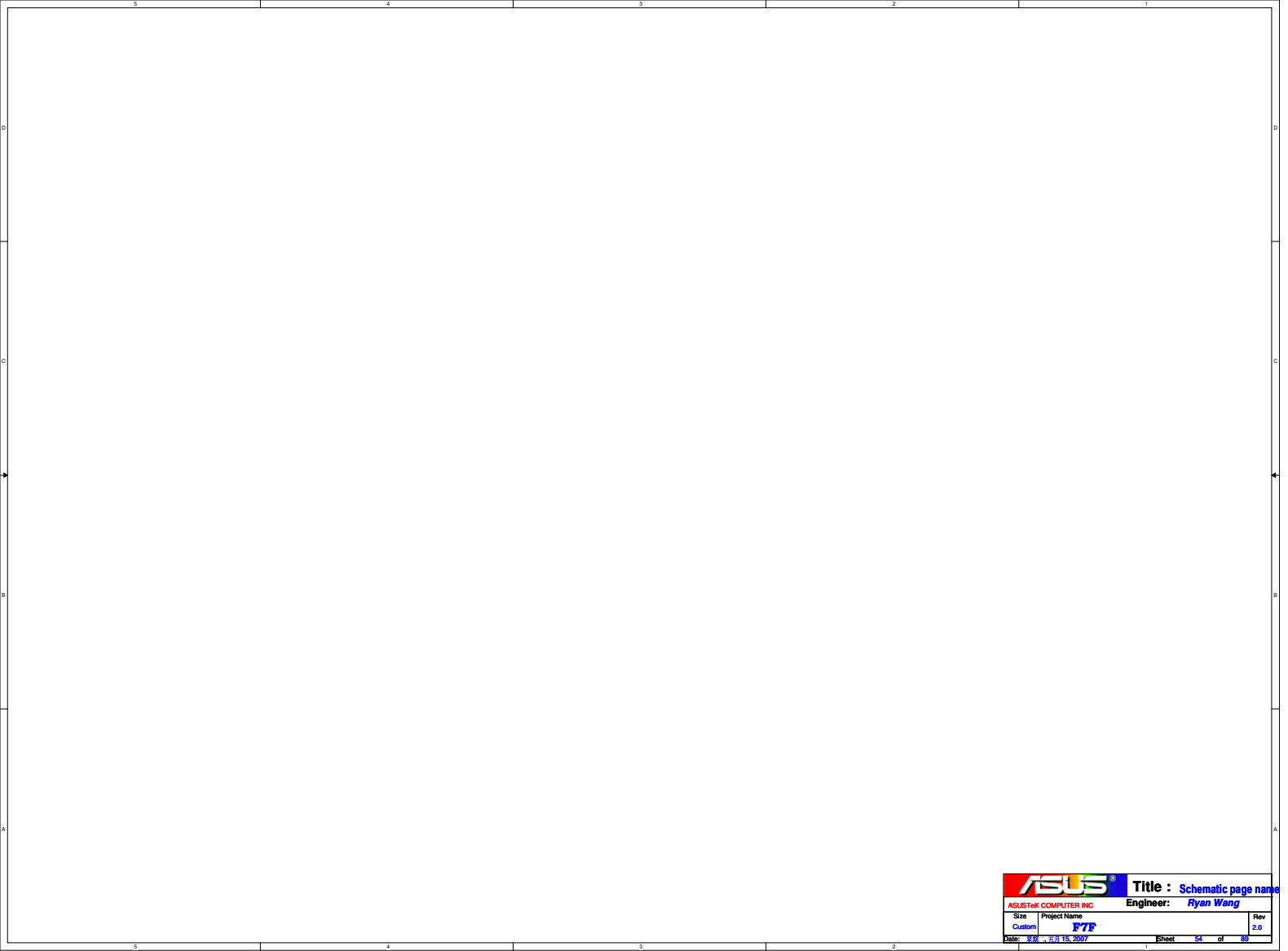


|                                                                                       |                  |                            |                |
|---------------------------------------------------------------------------------------|------------------|----------------------------|----------------|
|  |                  | <b>Title :</b> F3J         |                |
| ASUSTek COMPUTER INC                                                                  |                  | <b>Engineer:</b> Ryan Wang |                |
| Size                                                                                  | Project Name     |                            | Rev            |
| Custom                                                                                | F3J              |                            | 2.0            |
| Date:                                                                                 | 8/8 / 2015, 2007 |                            | Sheet 51 of 89 |

ALC660 Ver D:R400  
change to 20K  
ohm 1%

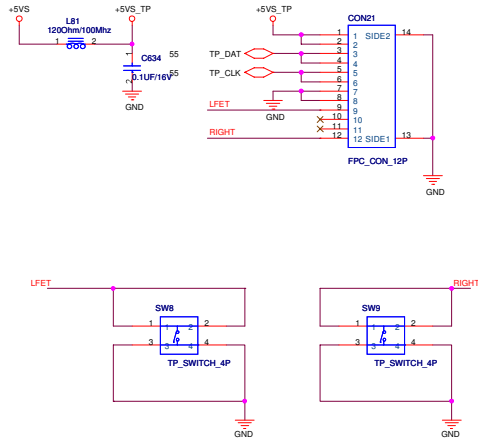




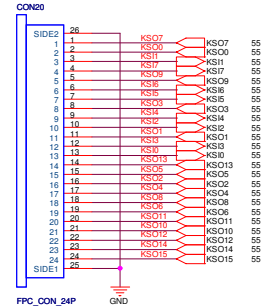


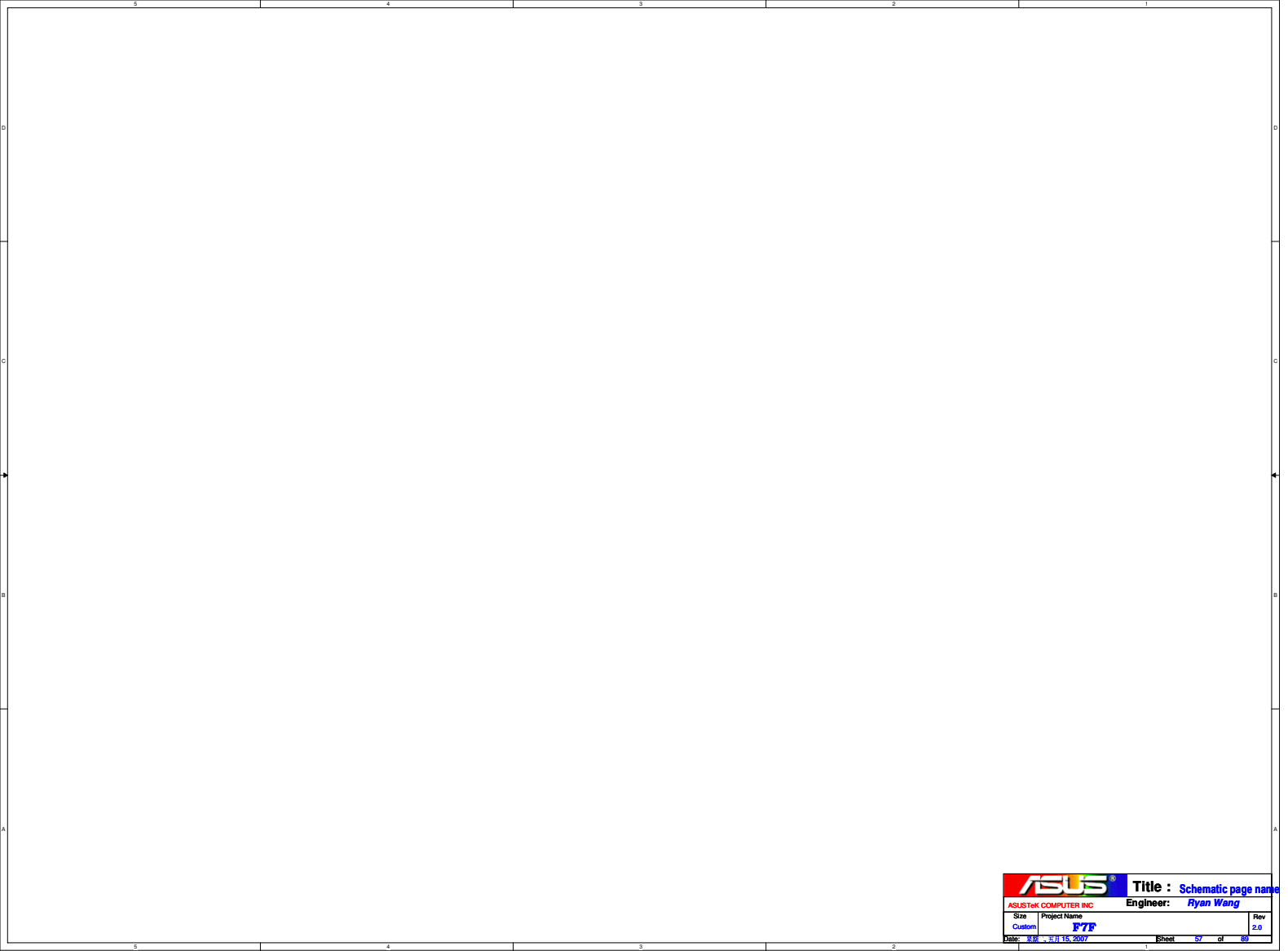


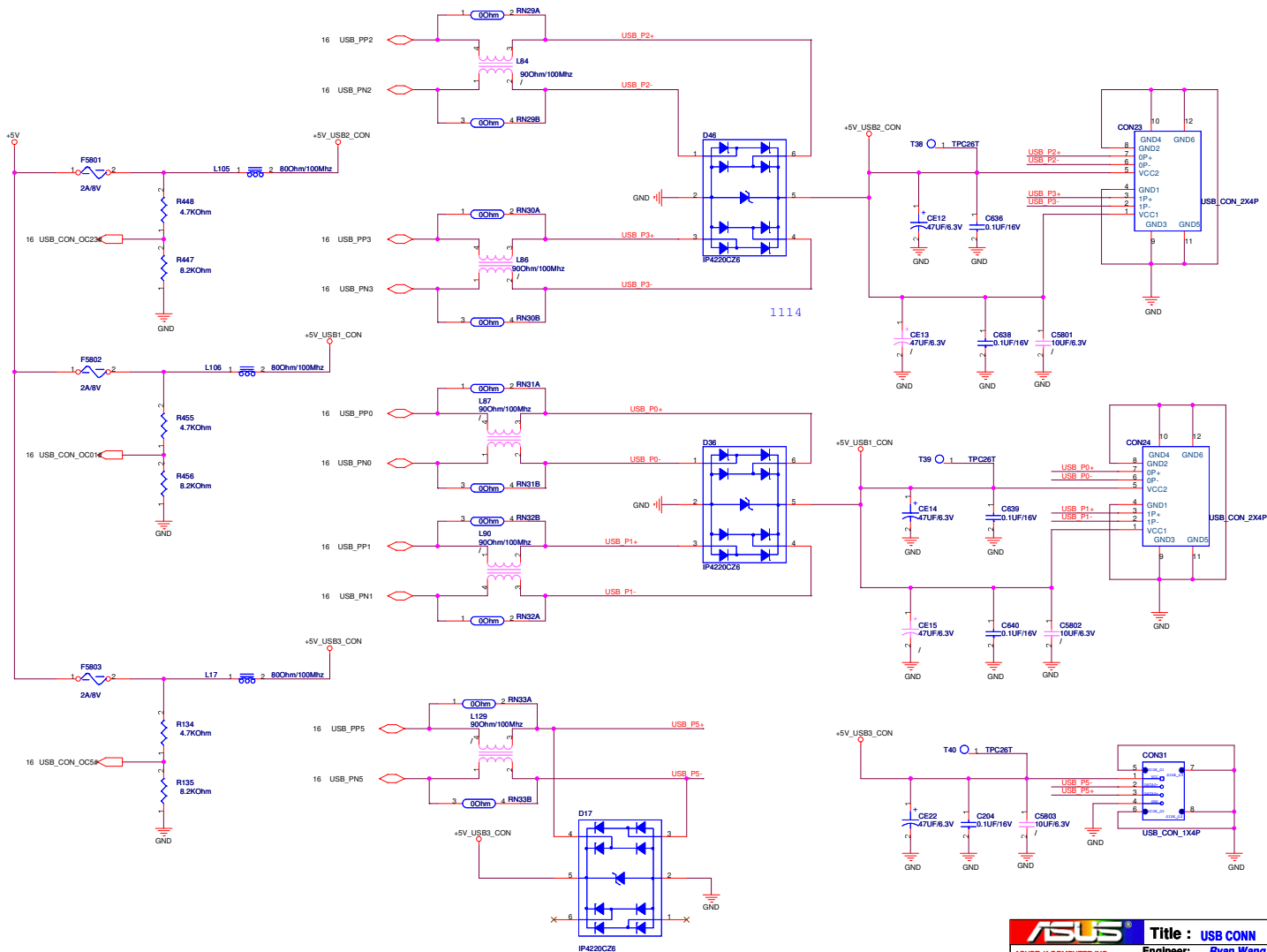
## For Touch-Pad

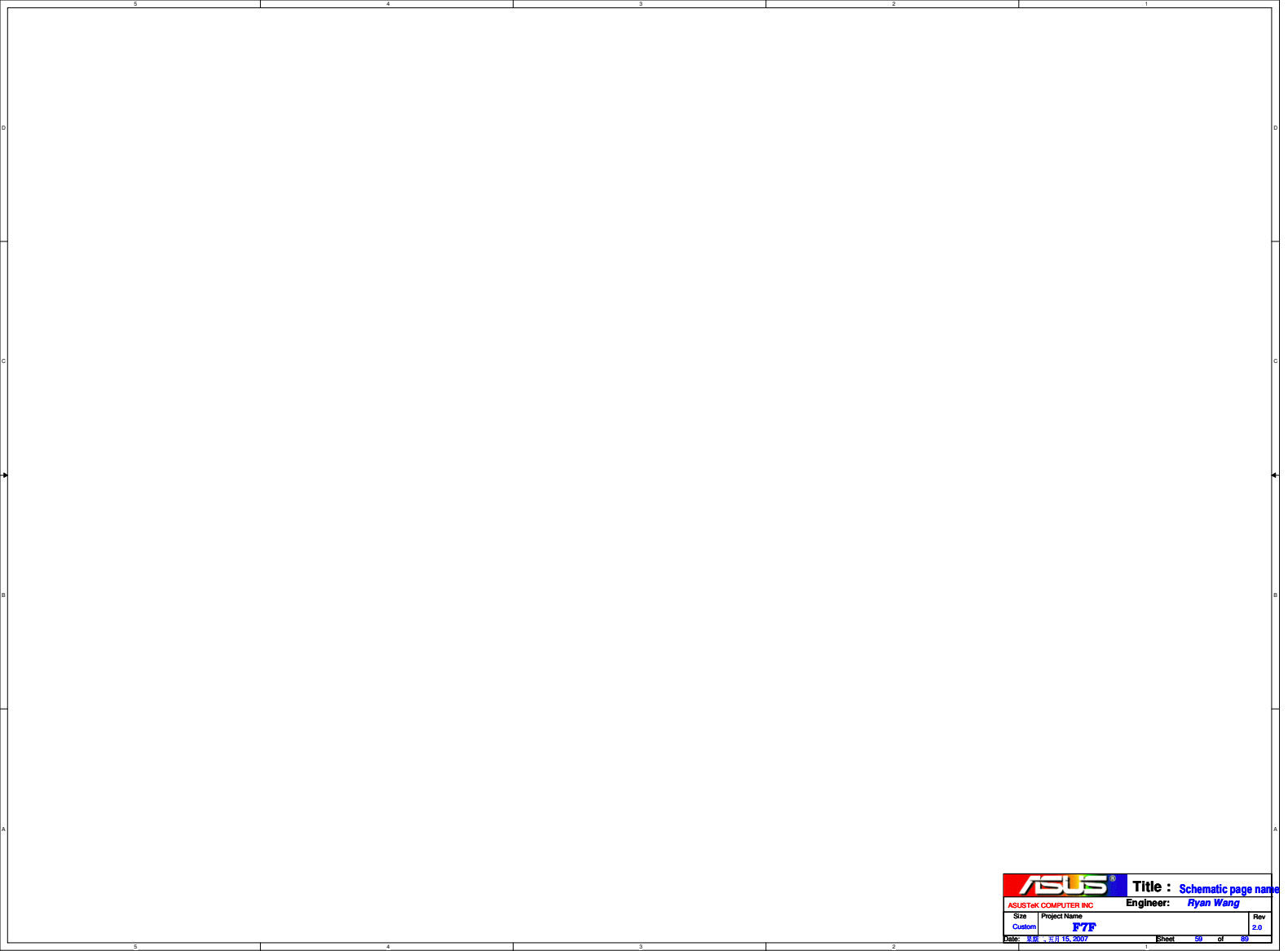


## For Keyboard(24Pin) None KID







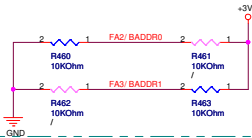


ISA ROM

EC Hardware Strapping

FA2/ BADDR0 & FA3/ BADDR1

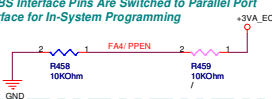
00: PNPCNG Access Register Pair Are 002Eh and 002Fh  
10: PNPCNG Access Register Pair Are 004Eh and 004Fh  
01: PNPCNG Access Register Pair Are Determined by  
EC Domain Registers SWCBALR and SWCBAHR.  
11: Reserved



Note: Sampled at VSTBY Power Up Reset

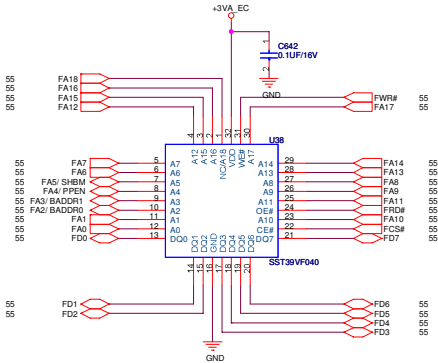
FA4/ PPEN

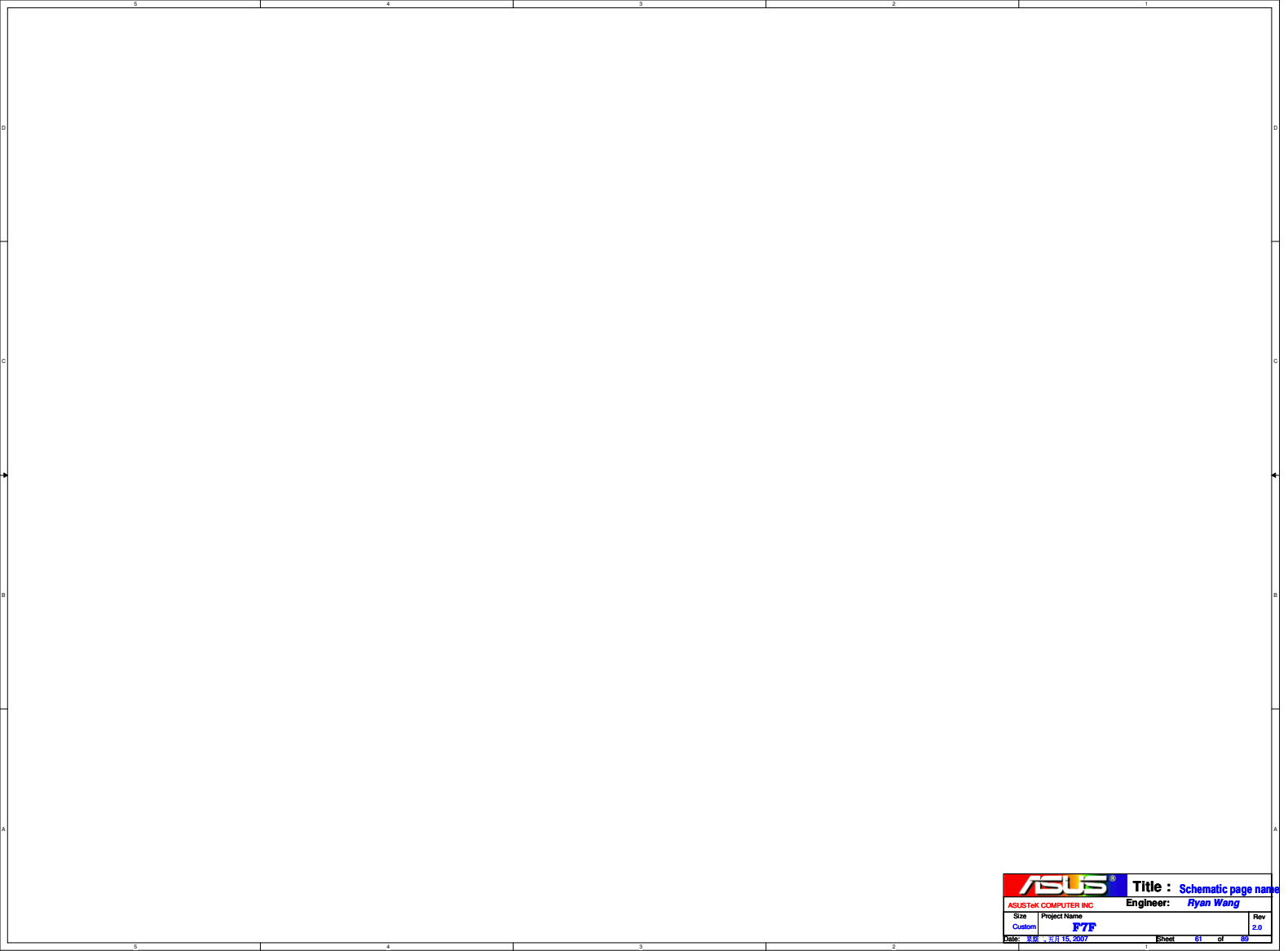
0: Normal  
1: KBS Interface Pins Are Switched to Parallel Port  
Interface for In-System Programming



FA5/ SHBM

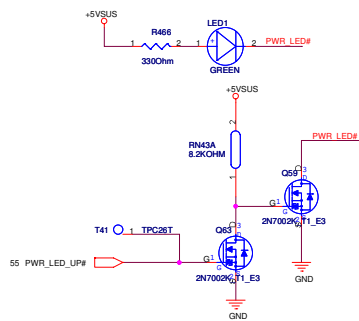
0: Disable Shared Memory with Host BIOS  
1: Enable Shared Memory with Host BIOS





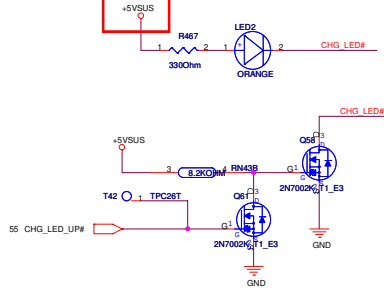
# For LED

## For POWER LED

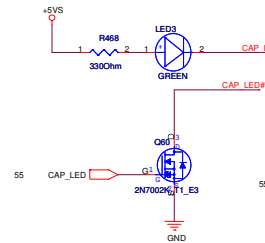


## For BATTERY LED

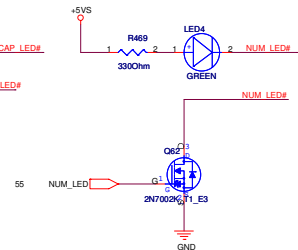
2/13 change



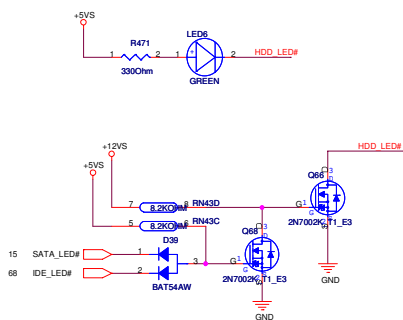
## for Cap. Lock



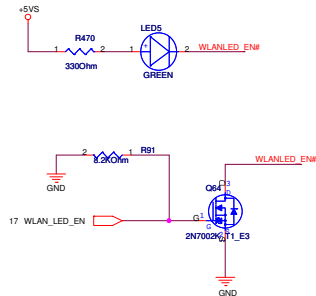
## for Num Lock



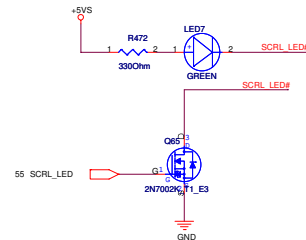
## For SATA/IDE LED



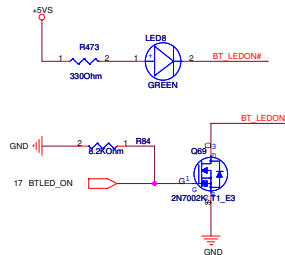
## For WireLess LED



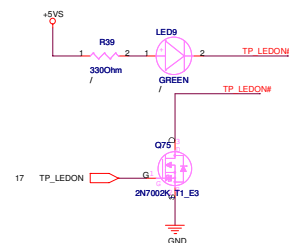
## for Scroll Lock

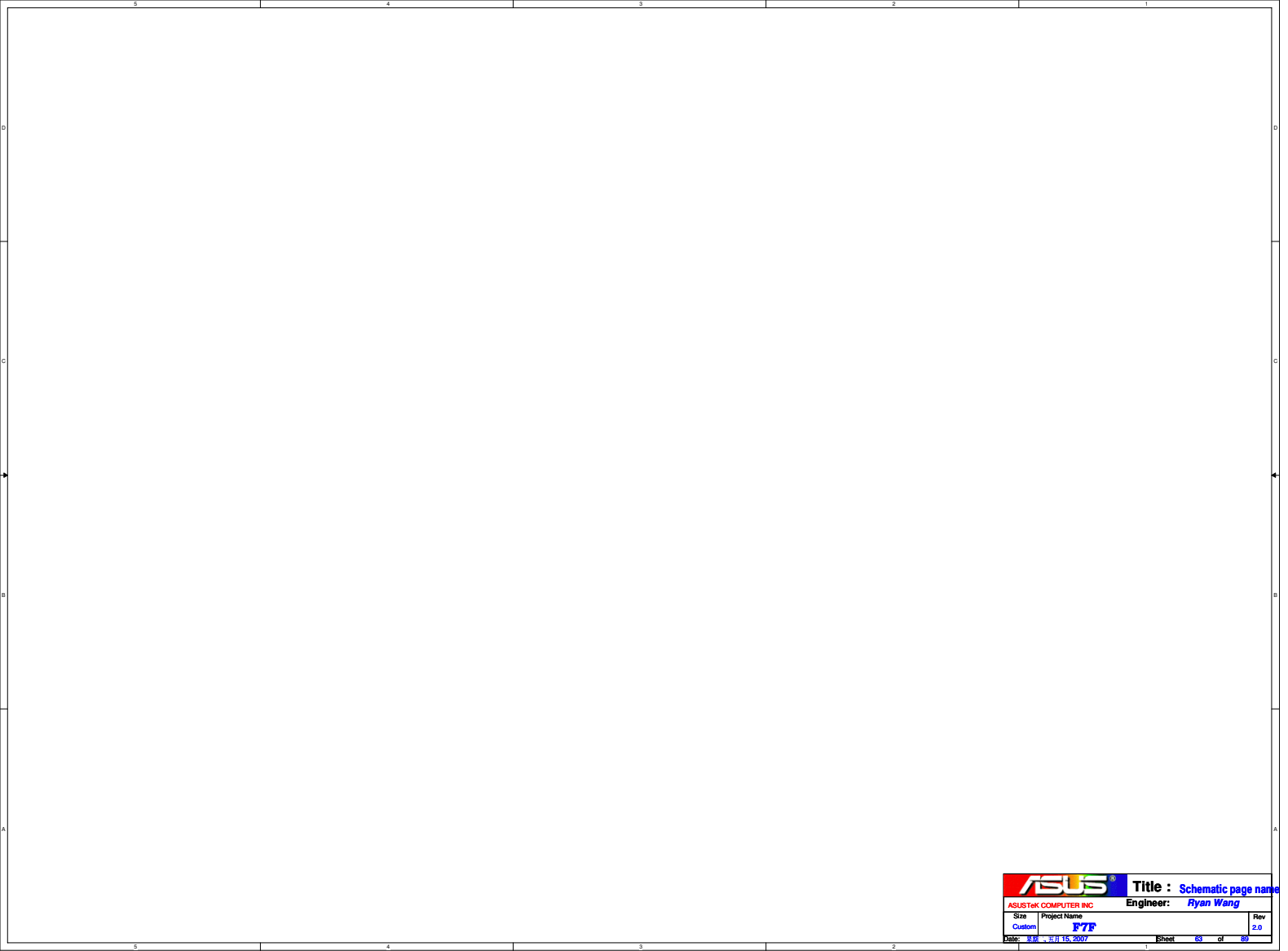


## For BT LED

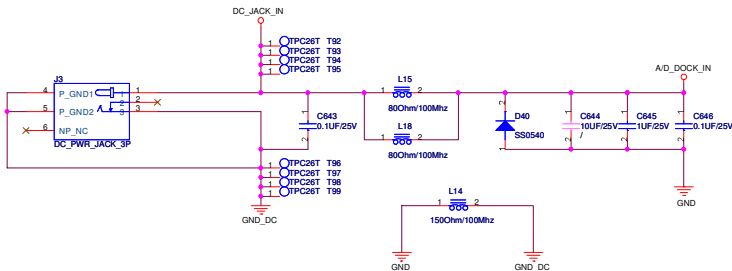


## for Touch Pad

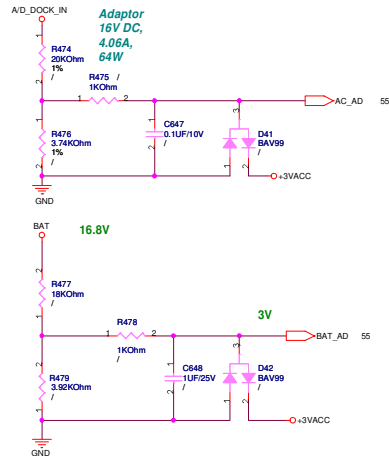
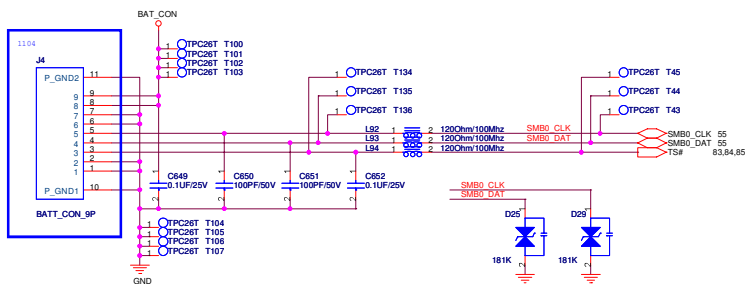




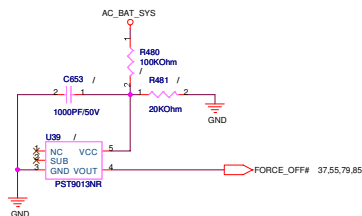
## DC IN

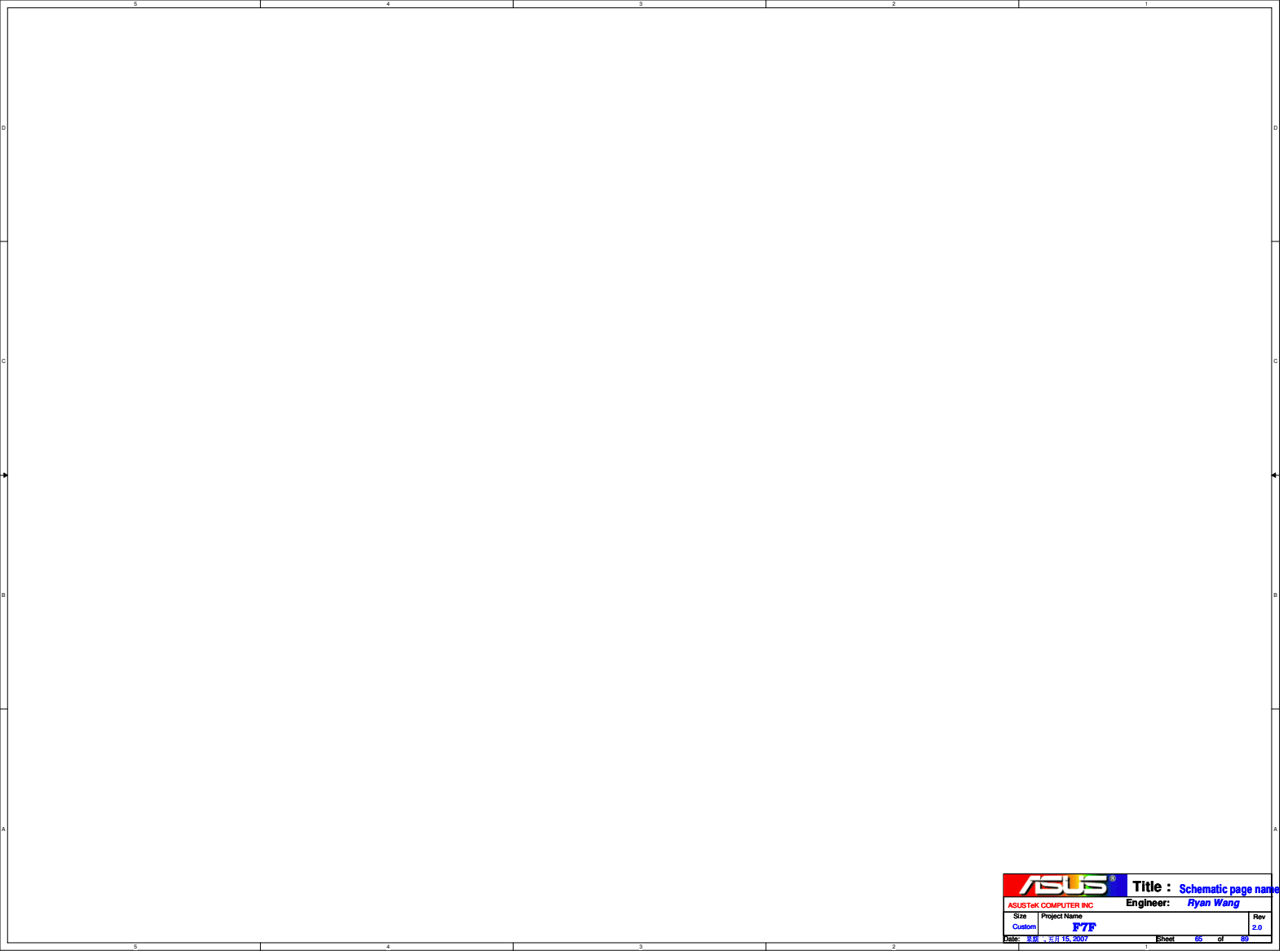


## BAT IN

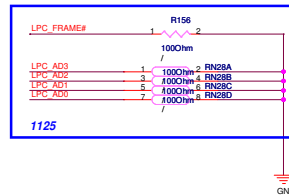
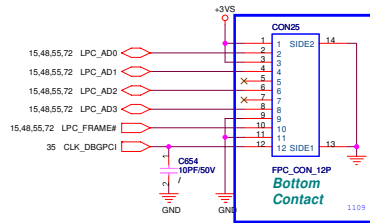


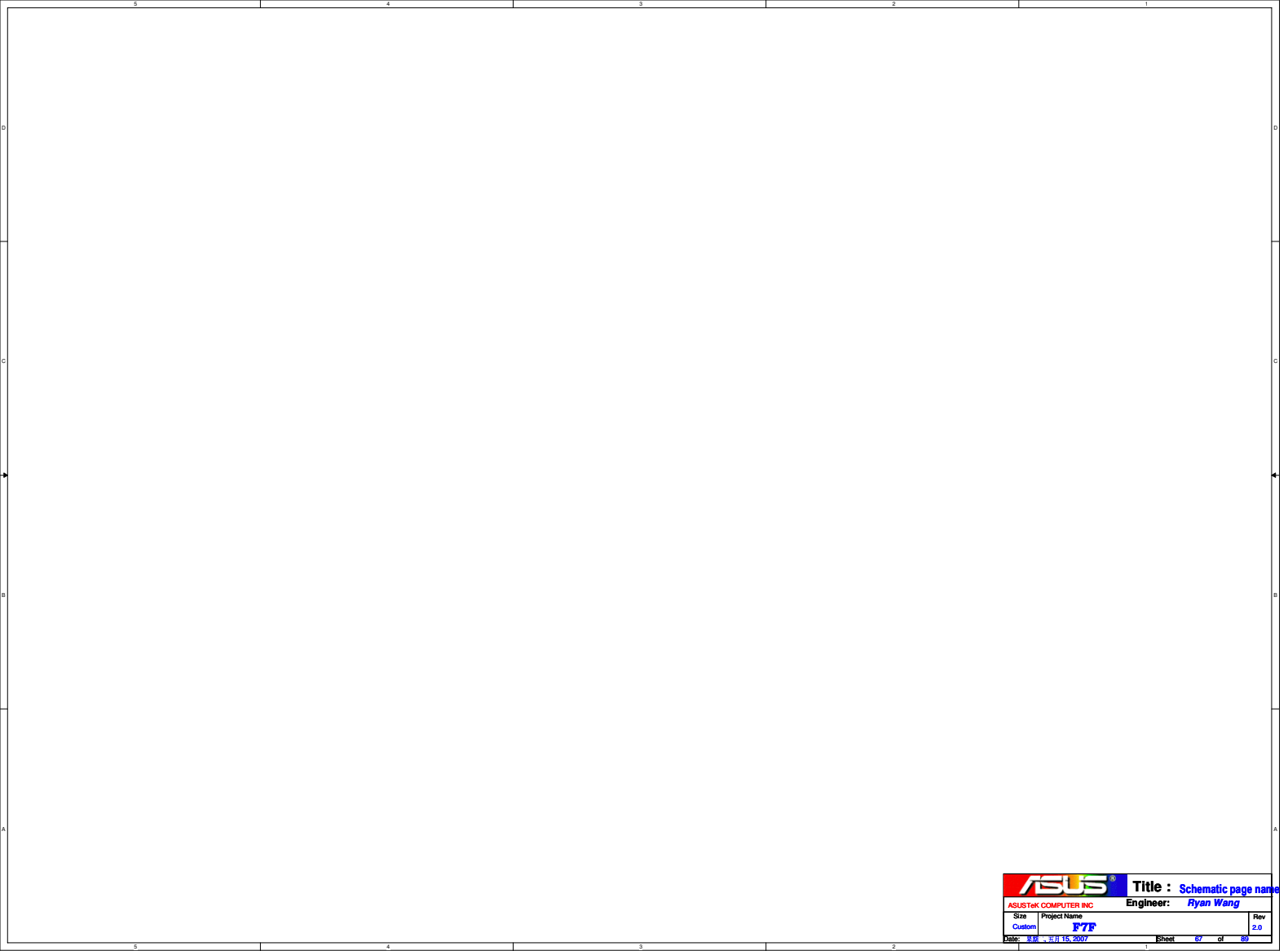
## Without Battery & Pull out Adapter



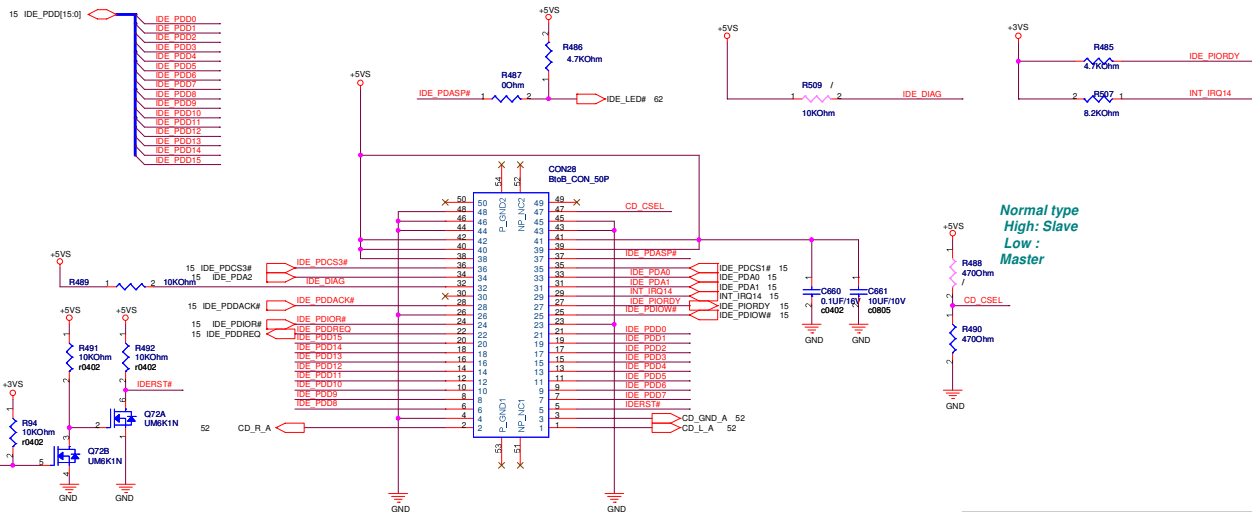


# For Debug

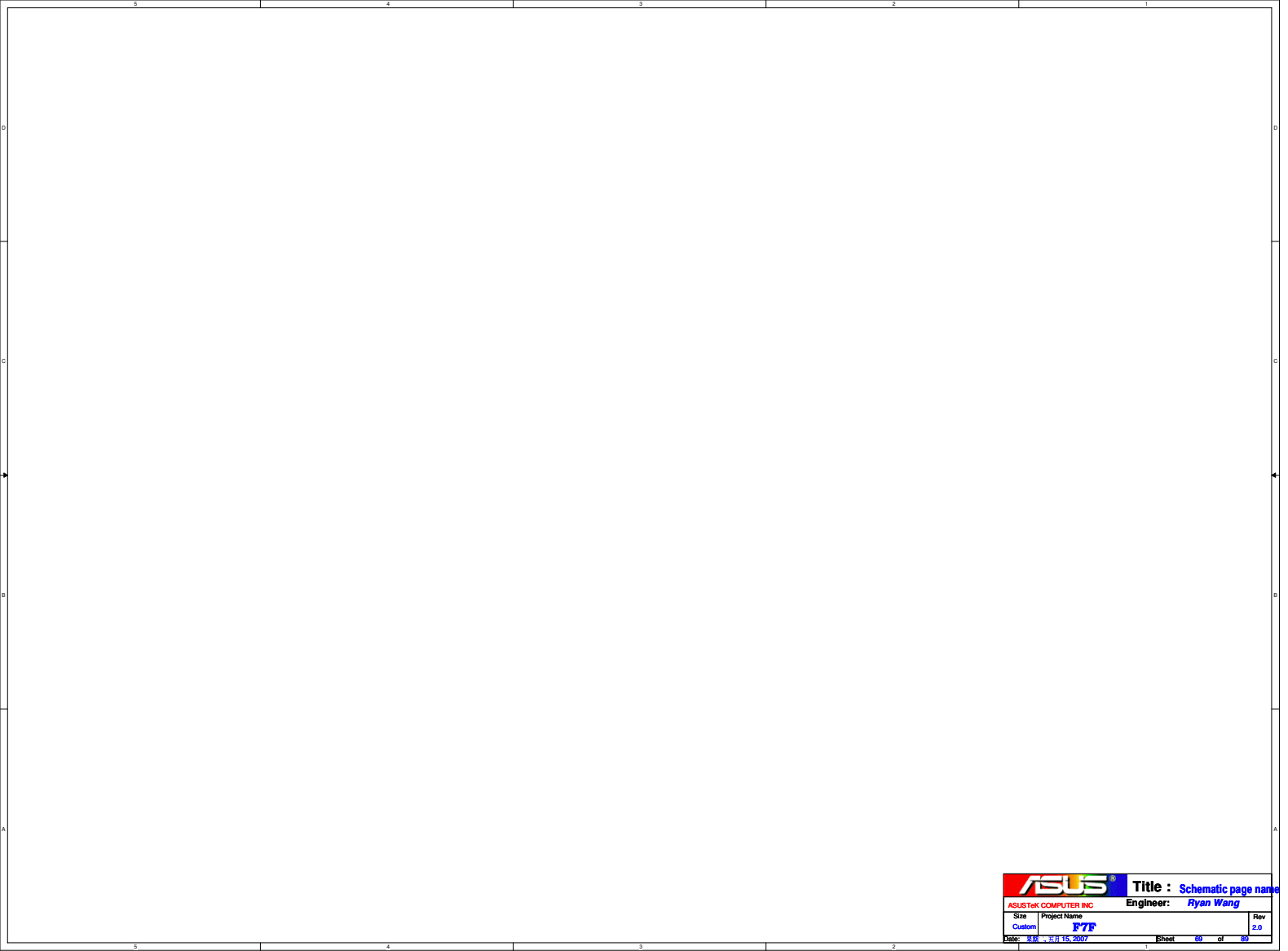


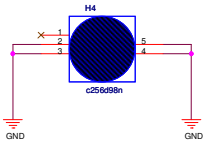
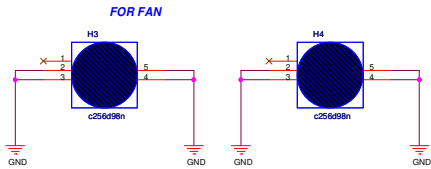
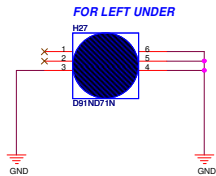


**ODD**

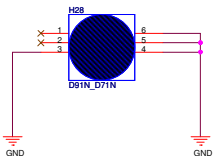


Normal type  
High: Slave  
Low :  
Master

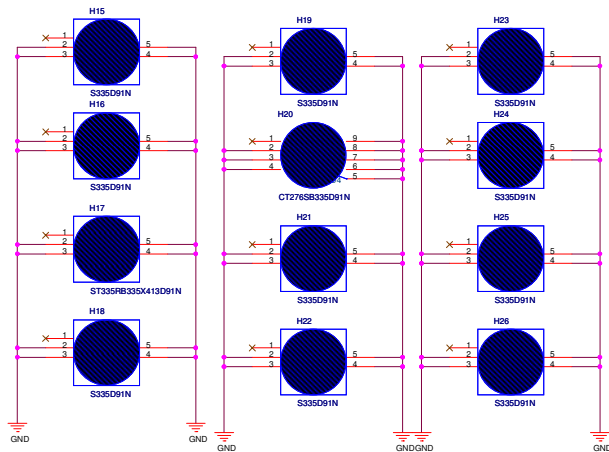
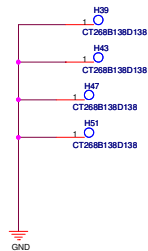




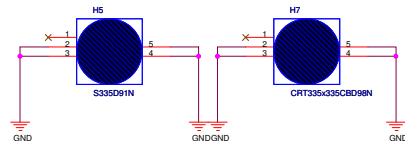
**FOR RIGHT UP**

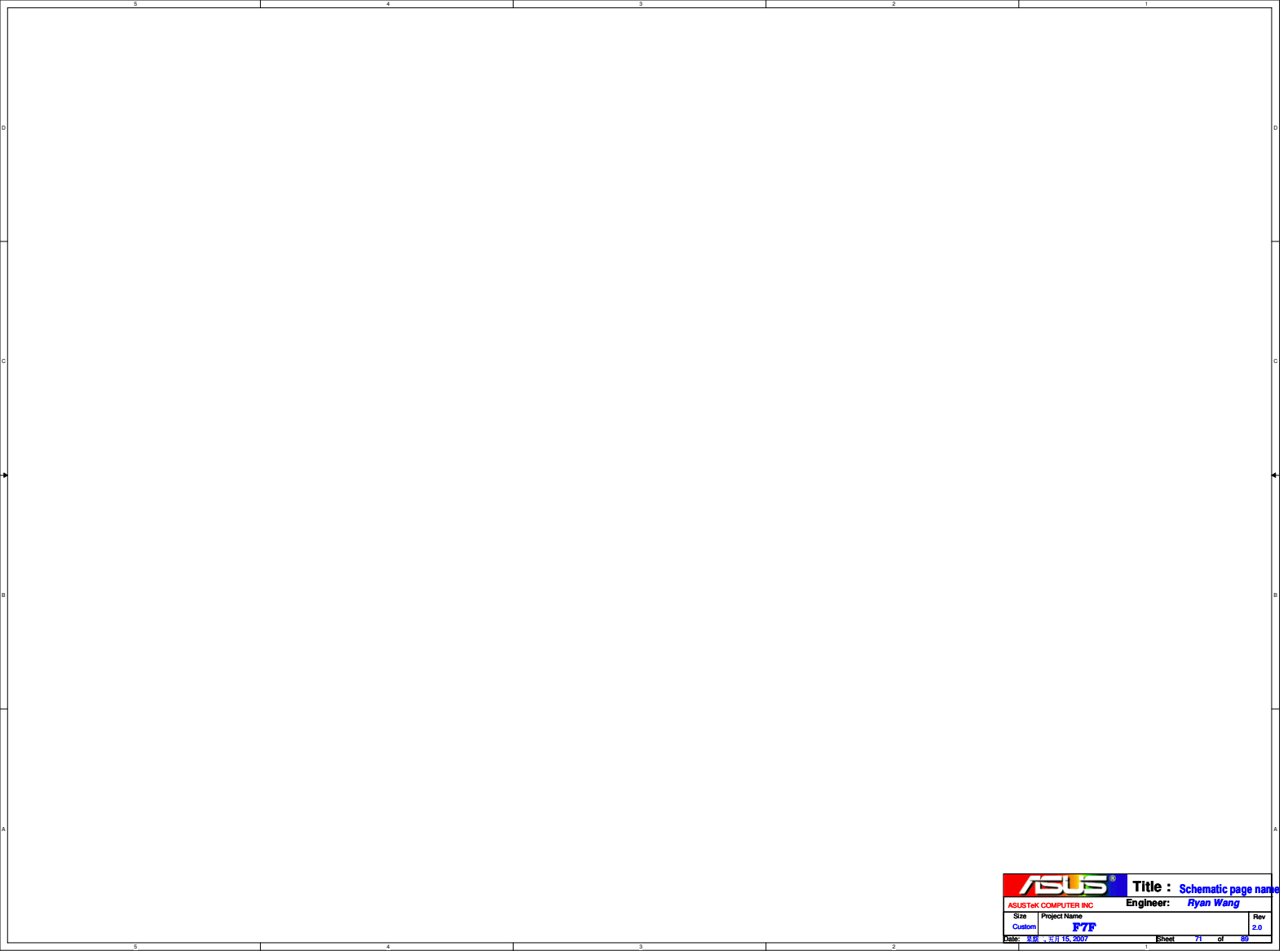


**FOR CPU**



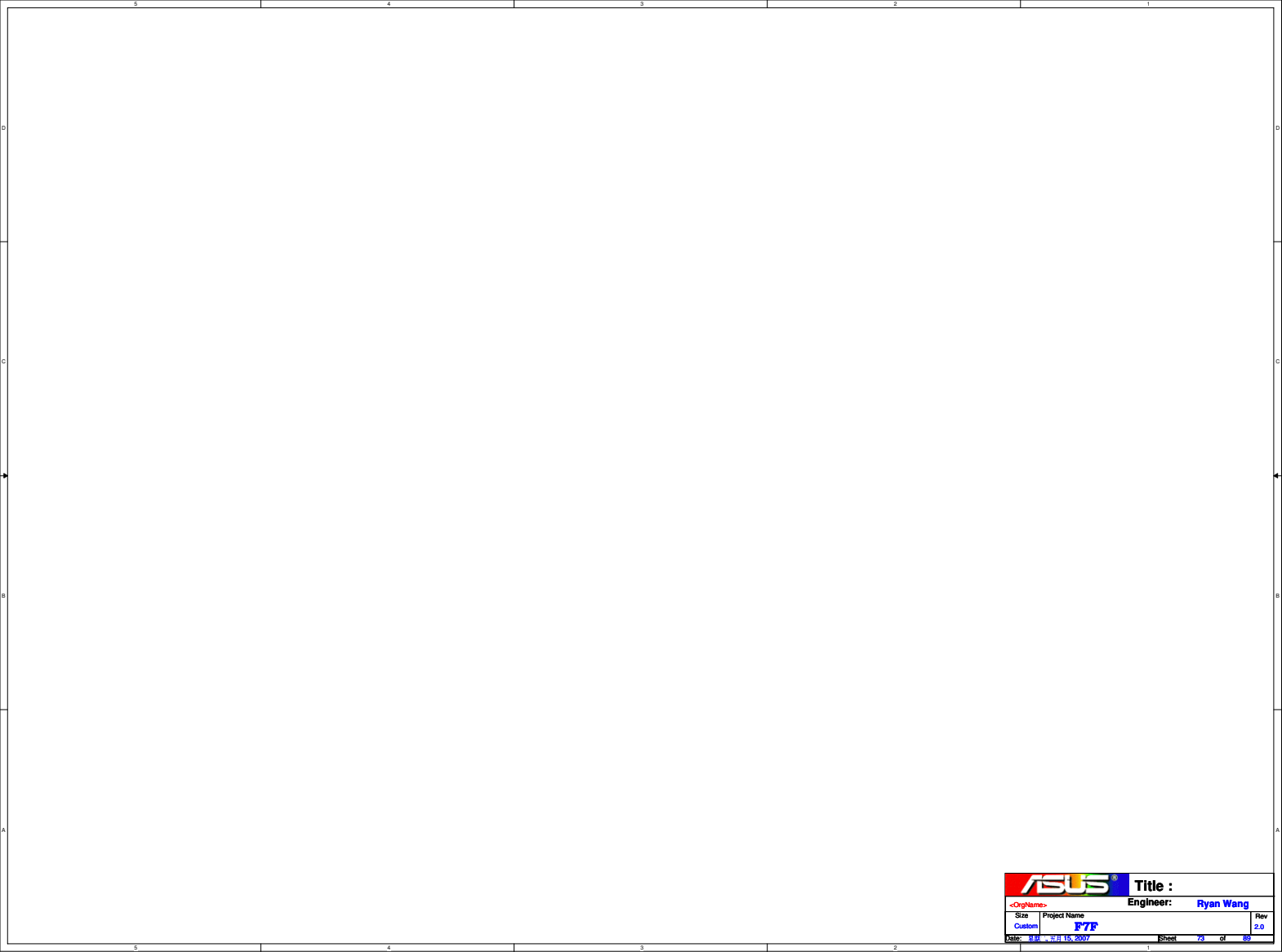
**FOR SCREW HOLE**





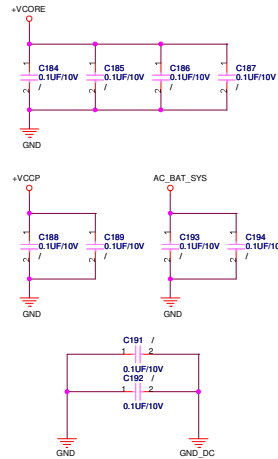
15,48,55,66 LPC\_AD0

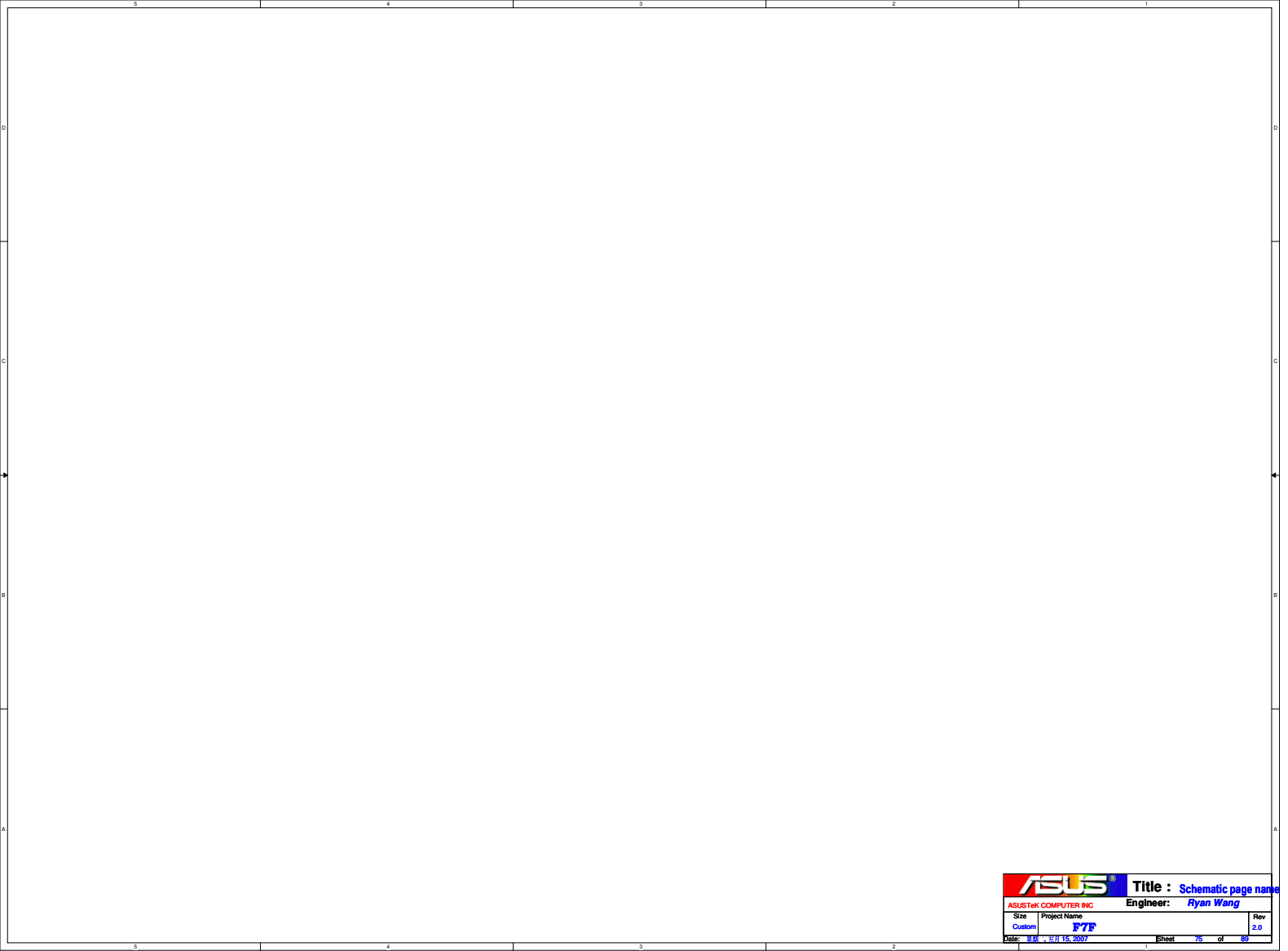


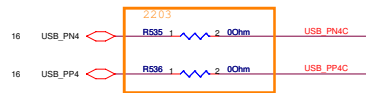


|                                                                                       |              |                     |  |
|---------------------------------------------------------------------------------------|--------------|---------------------|--|
|  |              | Title :             |  |
| <OrgName>                                                                             |              | Engineer: Ryan Wang |  |
| Size                                                                                  | Project Name | Rev                 |  |
| Custom                                                                                | PTF          | 2.0                 |  |
| Date: 8/8/2007                                                                        | Sheet 79     | of 89               |  |

# For EMI unmount





[illegible]

*For Side SW*

3V\_A\_EC

RA93 10KOhm

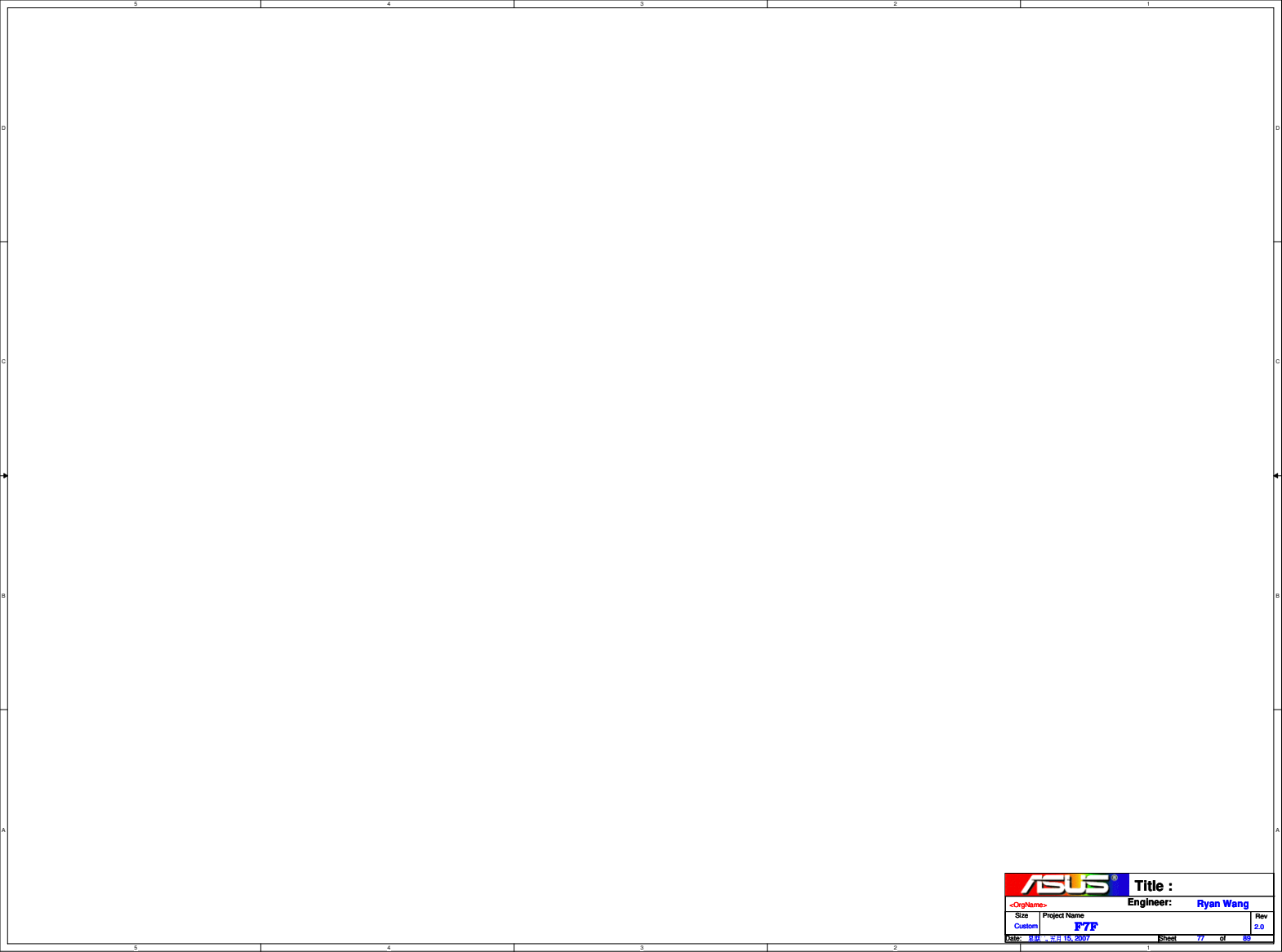
RA94 330Ohm

CA95 0.1UF16V

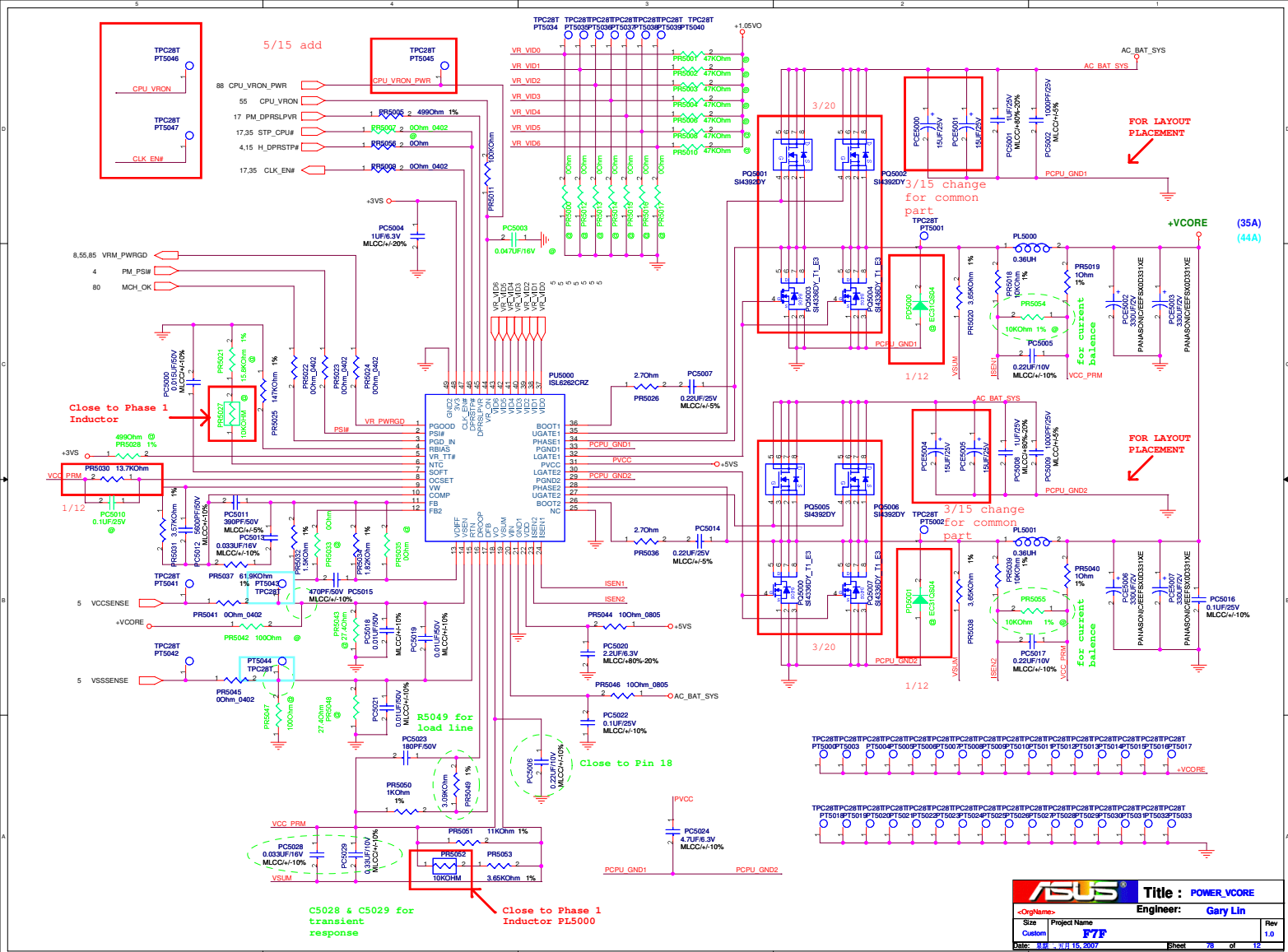
SW10 SLIDE\_SWITCH\_6P

RF\_ON\_SW

GND



|                                                                                       |              |                     |       |
|---------------------------------------------------------------------------------------|--------------|---------------------|-------|
|  |              | Title :             |       |
| <OrgName>                                                                             |              | Engineer: Ryan Wang |       |
| Size                                                                                  | Project Name |                     | Rev   |
| Custom                                                                                | PTF          |                     | 2.0   |
| Date: 8/8/2007                                                                        | Sheet        | 77                  | of 80 |









TPC28T PT5406

+3VA

TPC28T PT5407

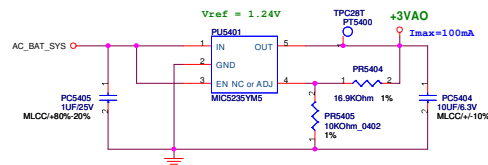
+3VAO

PJP5400

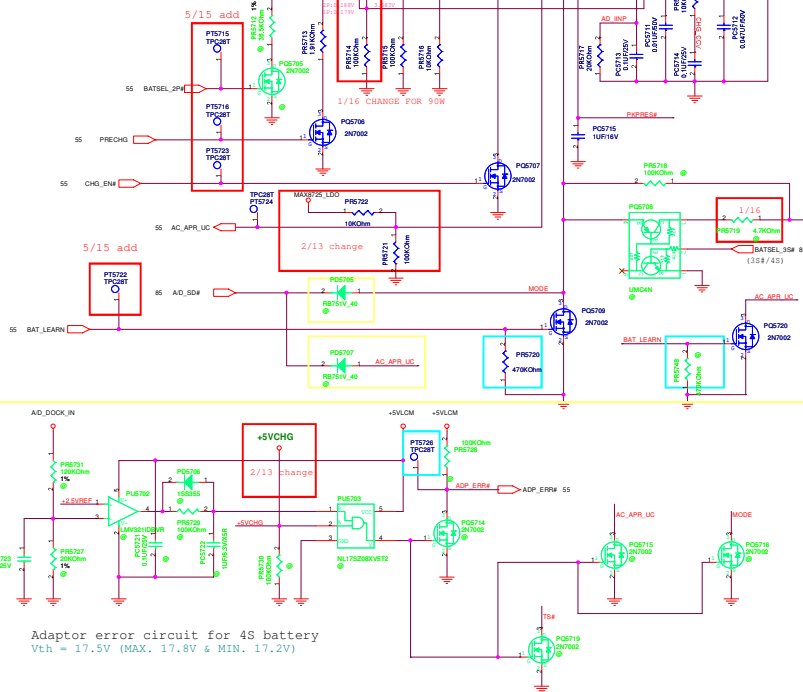
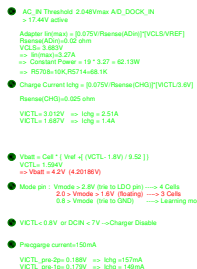
1 2

1MM OPEN 5MIL

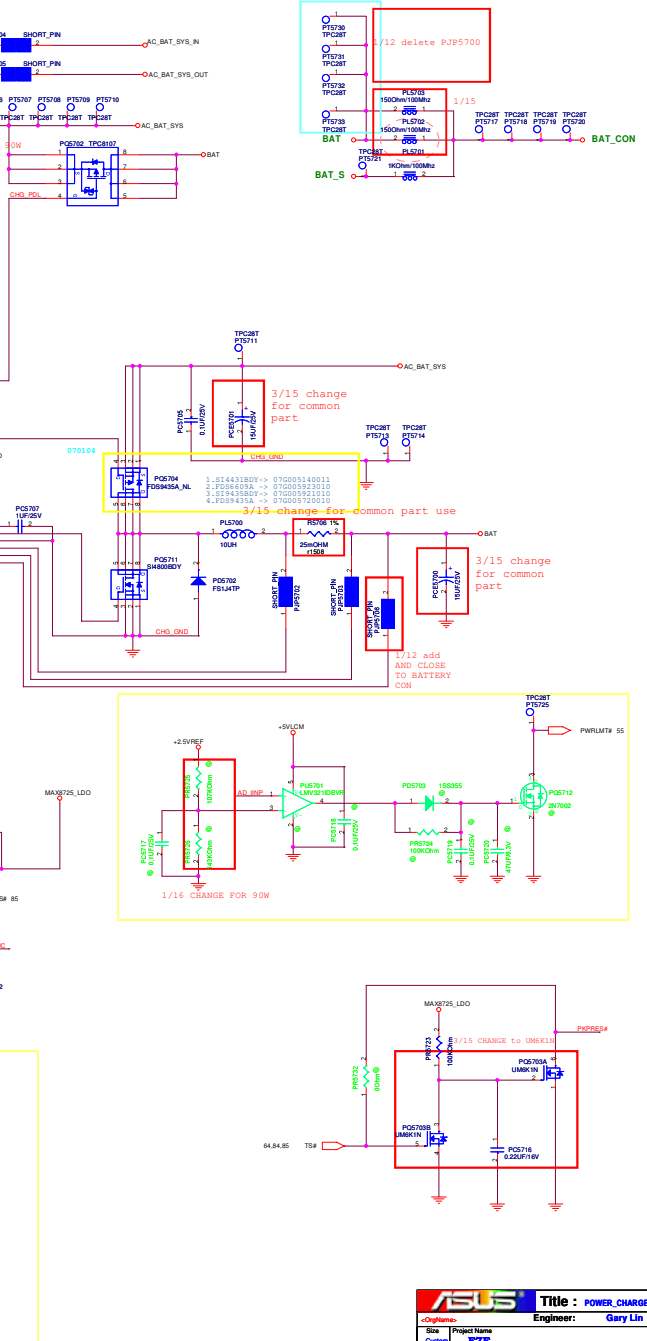
+3V

[illegible]

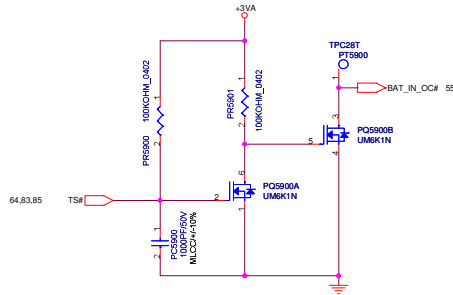
## POWER PATH & BAT\_LEARN



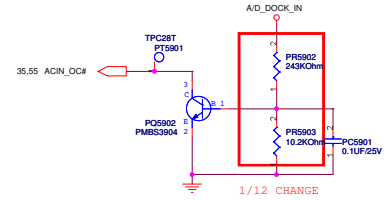
Adaptor error circuit for 4S battery  
 $V_{th} = 17.5V$  (MAX. 17.8V & MIN. 17.2V)



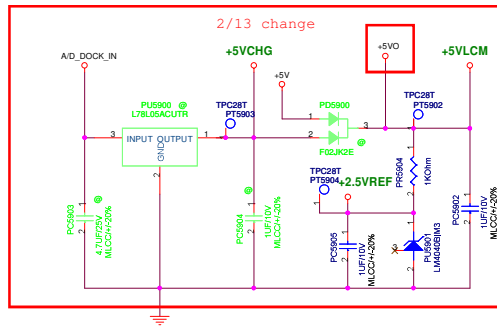
## BATTERY IN DETECT



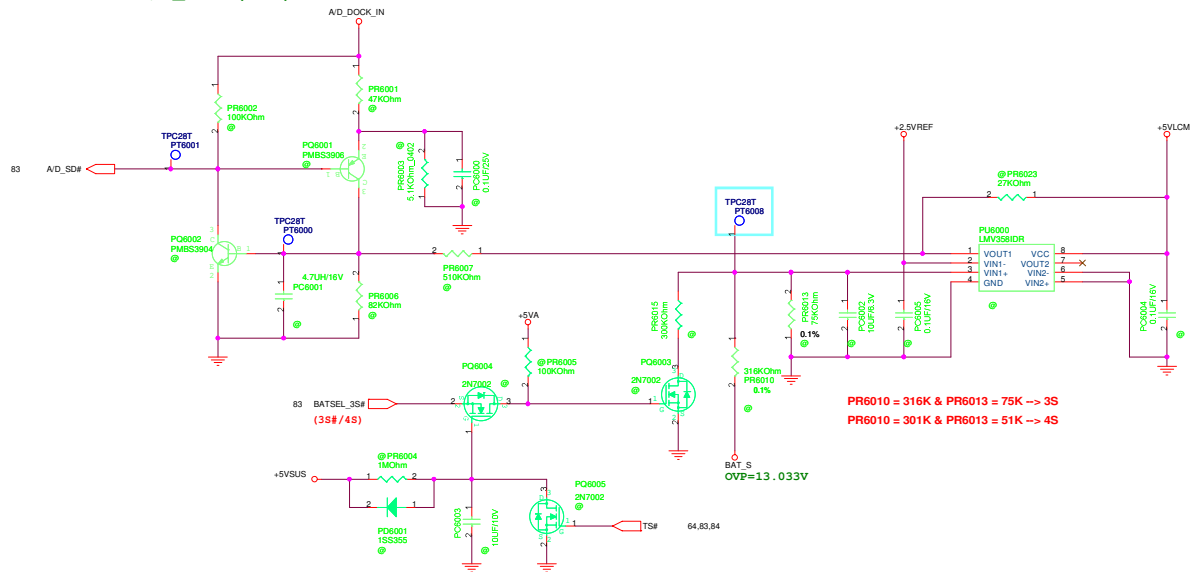
## ADAPTER IN DETECT



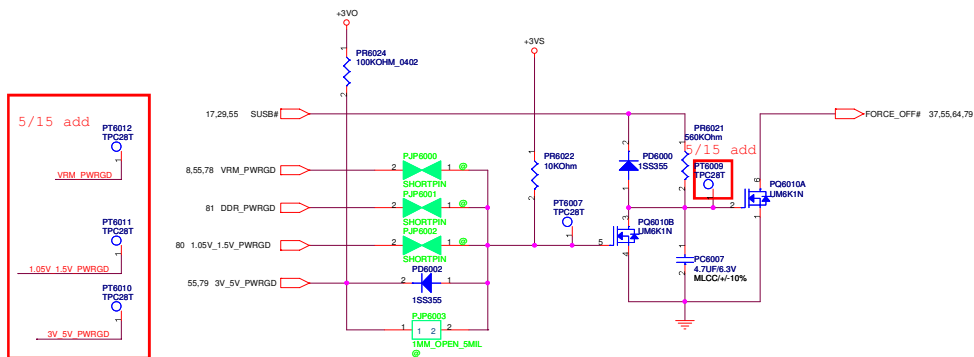
## +5VLCM, +5VCHG & +2.5VREF



BATTERY A/D\_SD# (OVP)



## POWER GOOD DETECTOR



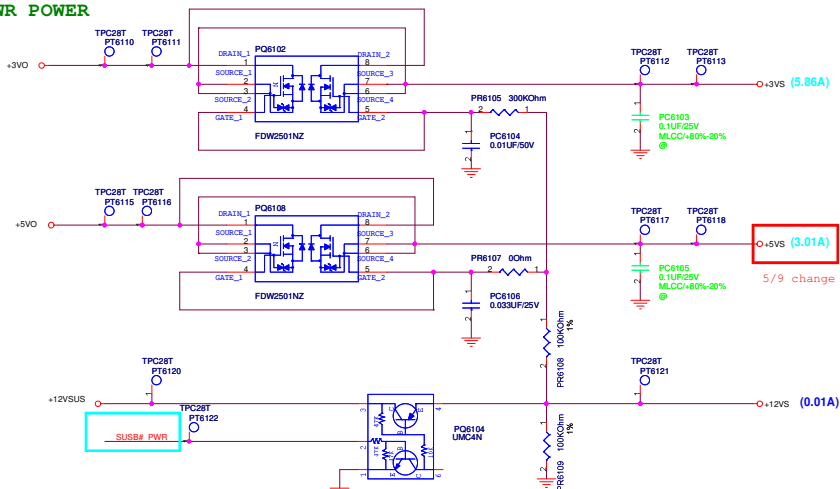
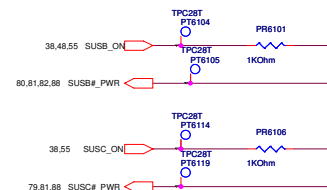
TPC28T PT6003 1 VRM PWRGD

TPC28T PT6004 1 DDR PWRGD

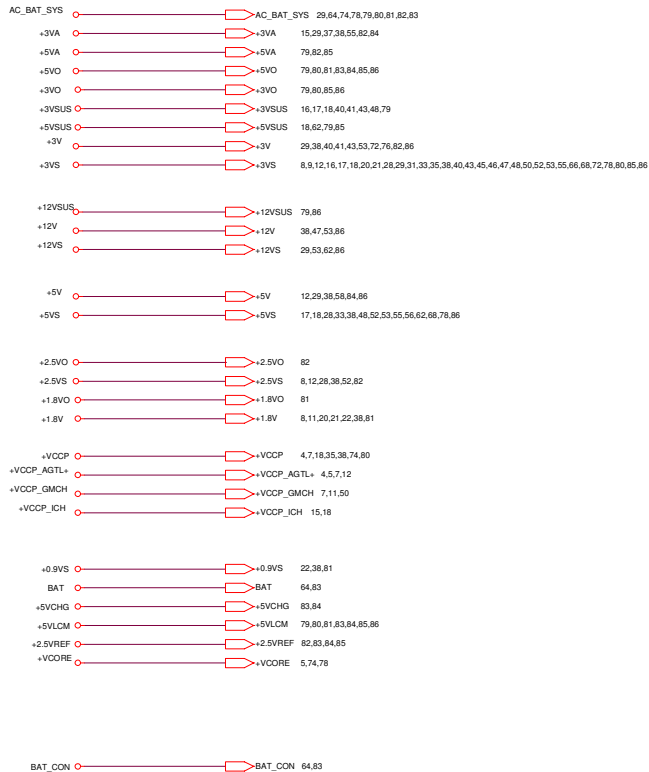
TPC28T PT6005 1 3V 5V PWRGD

TPC28T PT6006 1 1.05V 1.5V PWRGD

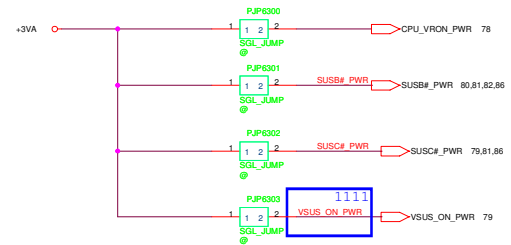
## USB#\_PWR POWER







FOR POWER TEST



| Rev | Date       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.0 | 11/28/2005 | 1. Initial release.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.1 | 01/13/2006 | 1. For RF Switch disable, BT can't detect by Wireless console issue, add BT detect pin. Page 17,74.<br>2. Change C676,C677 Package size. Page 41.<br>3. Fix 1394 connector pin reverse issue. Page 46.<br>4. Fix Battery connector ping reverse issue. Page 64.<br>5. Add Capacity CE20, C53, C54, C55, C56, C57, C58, for 3DMark screen become to one color and hang issue. Page 11.<br>6. Change L51 Package size. Page 29.<br>7. Change X1 & X6 for cost down. Page 15,55.<br>8. Remove Fan 3 pin design circuit. Page 33,55.<br>9. Fix debug connector pin reverse issue. Page 66.<br>10. Fix LID Switch can't disable backlight issue, change NB BL_EN net name to BKLTEN. Page 9,29.<br>11. Fix VSUS_ON_PWR and SUSC#PWR Net connect issue. Page 88.<br>12. Remove Cardbus PME signal for R5C832. Page 45.<br>13. Add AC Adaptor Voltage Error Signal to EC, and EC will show the abnormal by LED. Page 55.<br>14. Remove L107,D37,CE17,CE18 for cost down. Page 58.<br>15. Change Connector CON15,J2,CON11,CON17,CON27,CON22&CON7&CON8,J3&J4. Page 28,53,41,48,68,31,22,64.<br>16. Modify Audio schematic Change C578,C579 to 0.47UF and remove R403,R404,R405,R398,R399,R408,R409,R410,C603,C604. Page 52,53.<br>17. Change R351 to 22 ohm. Page 15.<br>18. Add C59 for EMI. Page 47.<br>19. Charger circuit add component. Page 83.<br>20. Change TPLED_ON GPIO pin from GPIO19 to GPIO14 and R55 10K ohm pull low. Page 17.<br>21. Depop circuit remove OP_SD# control function. Page 53,55.<br>22. Add Mic. Pre-amplifier circuit. Page 52.<br>23. Change CE9,CE10 position for pop noise. Page 53.<br>24. Add buffer U5 for HSYNC and VSYNC of CRT signal. Page 9,28.<br>25. Add RN28,R156 near debug connector to be LPC terminal resistor. Page 66.<br>26. Change R233,R234,R235,R236 to L107,L108,L109,L110 for EMI. Page 53. |
| 2.0 |            | 1. Colay Audio circuit for STAC9200 and ALC660. Remove Mic. Pre-Amplifier circuit. Page 52,53.<br>2. Modify minicard latch connector to nut.(H57,H58) Page 43.<br>3. Change SATA Connector. Page 68.<br>4. Add +3V LDO circuit for TV_DAC Power. Page 12.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Rev | Date       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |            | 5. Remove R96,R97,R524 for Fan circuit. Page 33.<br>6.Add some test point for factory request.<br>7.Change BT_ON# from SB GPIO to EC GPIOE7. Page 17,55.<br>8.Add MOS for EC leakage of electricity issue.Page 55.<br>9.Change BT logic power from +3VS to +3V for WHQL S3 test .Page 76.<br>10.For Lan -ve test issue,add terminal resistor near the transformer .Page 41.<br>11.For ACZ RST will let Sigmatel codec GPIO0 high issue, add C177 to deplay depop time to avoid pop from speaker .Page 53. |
| 2.1 | 04/24/2006 | 1.Change internal Mic. bias voltage from +5V_AUDIO to +2.5VS. Page 52.<br>2.Add D52,D53 to protect EC. Page 55.<br>3.Add C178,C179 for new card clock. Page 48.<br>4.Add H1,H2 for Fan. Page 70.<br>5.Remove RN2,RN3 for Vcore VID. ESD Request. Page 5.<br>6.Add R87 for moat issue. Page 53.                                                                                                                                                                                                            |
| 2.2 | 05/25/2006 | 1.Change CarBus R5C841 1394 Pull High from TPB to TPA. Page 50.<br>2.Add U46,C742,C743,R572,R573,R574 LDO circuit for internal Mic. Pull high +2VS. Add R575,C745 for +<br>3.Remove L17,L64,L84,L86,L87,L90 Co-Lay circuit. Page 76,48,58.                                                                                                                                                                                                                                                                |
| 2.3 | 07/24/2006 | 1.Change DDR2 VREF Voltage from 0.9VS to 0.9V. Add L53,PR5317 from Power IC and R753,R754,C202,C203 from 1.8V. Page 22,81.<br>2.Change C59 connect from MS_DAT0 to MSCLK. Page 47.<br>3.Add R88,R89 for VISTA cost down with 100uF. Page 53.<br>4.For EMI Request, add C180 to SPDIF signal and near the codec. Page 52.                                                                                                                                                                                  |