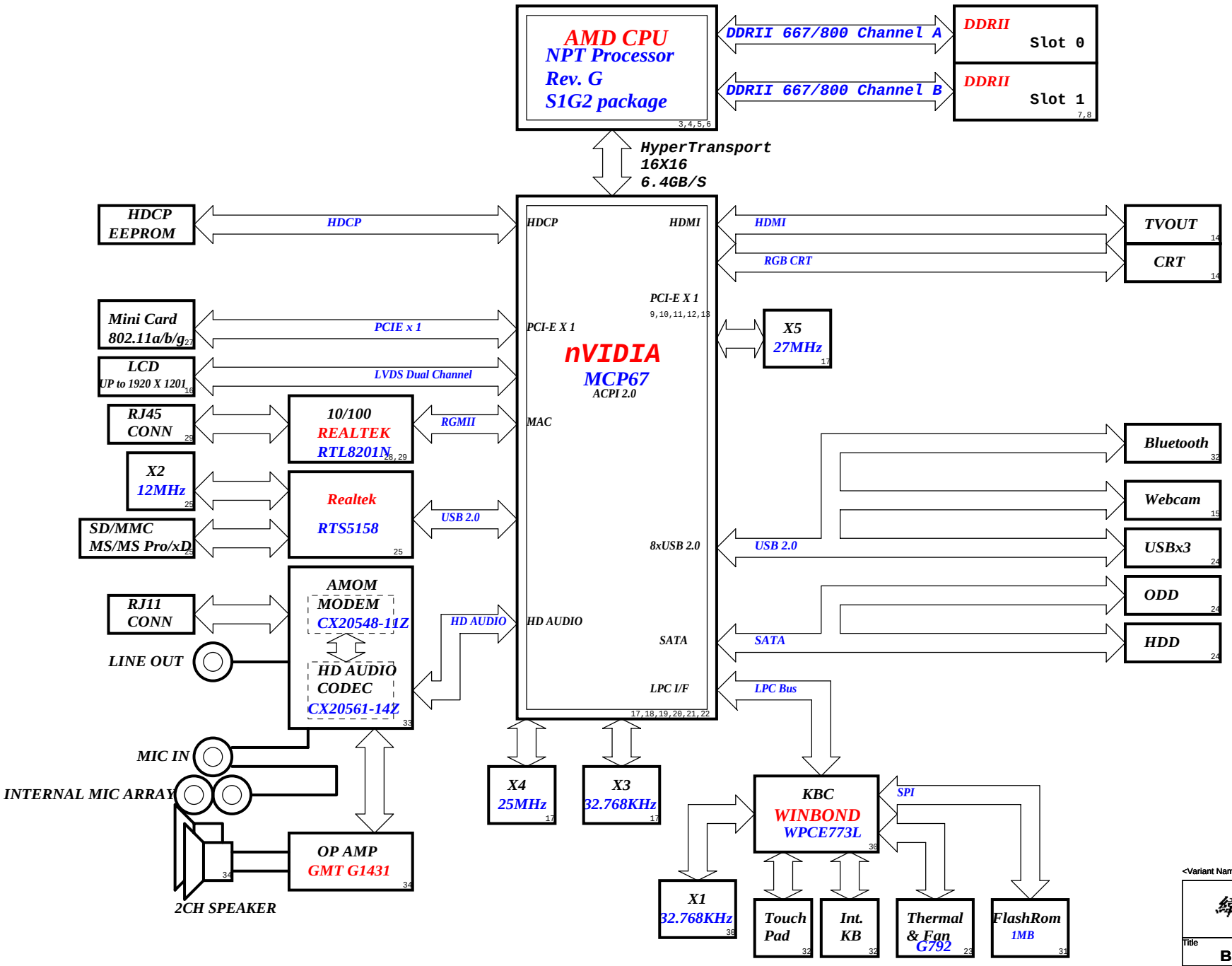
# Astrosphere Block Diagram




| SYSTEM DC/DC TPS51125 | |
|---|---|
| INPUTS | OUTPUTS |
| DCBATOUT | +3VALW<br>+5VALW |

| SYSTEM DC/DC TPS51116 | |
|---|---|
| INPUTS | OUTPUTS |
| DCBATOUT | +1.8V<br>+0.9V |

| SYSTEM DC/DC APL5913 | |
|---|---|
| INPUTS | OUTPUTS |
| +1.8V | +1.2V |

| MAXIM CHARGER MAX8731AETI | |
|---|---|
| INPUTS | OUTPUTS |
| DCBATOUT | BT+<br>18V 3.0A<br>5V 100mA |

| CPU DC/DC ISL6265 | |
|---|---|
| INPUTS | OUTPUTS |
| DCBATOUT | VCC_CORE<br>1.35V<br>35A |

| PCB LAYER |
|---|
| L1:SIGNAL 1 |
| L2:VCC |
| L3:SIGNAL 2 |
| L4:SIGNAL 3 |
| L5:GND |
| L6:SIGNAL 4 |

<Variant Name>


緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.


Title: Block Diagram

Size: A3 | Document Number: Astrosphere | Rev: SA

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## CPU_CORE
## ISL6265

CPU_SVD
CPU_SVC
VCORE_EN
CPU_VDD0_RUN_FB_H
CPU_VDD0_RUN_FB_L
CPU_VDD1_RUN_FB_L
CPU_VDD1_RUN_FB_H
CPU_VDDNB_RUN_FB_H
CPU_VDDNB_RUN_FB_L
DCBATOUT
+5VS

VID Setting
SVD
SVC
Input Signal
ENABLE
Voltage Sense
VSEN0(I / Vcore)
RTN0(I / Vcore)
VSEN1(I / Vcore)
RTN1(I / Vcore)
VSEN_NB(I / Vcore)
RTN_NB(I / Vcore)
Input Power
VIN
VCC

Output Signal
PWRG(OD / 3.3V)
Output Power
+VCC_CORE(0)
+VCC_CORE(1)
+VDD_NB

+3VS
+VCC_CORE0
+VCC_CORE1
+VDDNB

## 5V/3.3V
## TI TPS51125

PWR_S5_EN
DCBATOUT_TPS51125

Input Signal
51125_ENTIP1
51125_ENTIP2
Input Power
VIN

Output Signal
PGOOD1
PGOOD2
Output Power
VO1
VO2

3D3V_PWR
+5VALW (6A)
+3VALW (6A)

## +1.1VS_CHIP
## SC412A

PM_SLP_S3#
+5VALW

Input Signal
EN
Input Power
VCC

Output Signal
PGOOD
Output Power
VO1

+3VALW
+1.1VS_CHIP(9A)

## Charger
## MAX8731A

BT+SENSE
+3VL
AD+

Input Signal
FBSA
FBSB
Input Power
VDD
DCIN

Output Signal
INP
Output Power
VOUT(O)

AD_IA
DCBATOUT

## +1.8V/ +0.9VP
## TPS51116

PM_SLP_S5#
+5VALW
+1.8V_RUN_P

Input Signal
EN
VTTEN
Input Power
VDDP
VTTIN

Output Signal
PGOOD
Output Power
VO1
VTT

+3VALW
+1.8V_RUN_P(12A)
+0.9VP(1.5A)

## +1.0VS SC471A

PM_SLP_S3#
+5VALW

Input Signal
EN
Input Power
VCC

Output Signal
PGOOD
Output Power
VO1

+3VS
+1.0VS (9A)

## +1.5V_VS
## APL5913

PM_SLP_S3#
+1.8V

Input Signal
EN
Input Power
VCC

Output Signal
POK
Output Power
VOUT

+1.5VS(4A)

<Variant Name>

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Title: Power Diagram

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

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CPU VLDT MAX 1.5A

LAYOUT: PLACE CLOSE TO CPU
ALONG HT POWER SHAPE

+1.2VS_HT_CPU

C429 SCD22U16V3ZY-GP
C227 SCD22U16V3ZY-GP
C411 SC180P50V2JN-1GP
C220 SC180P50V2JN-1GP

DY
C260 SC4D7U10V5ZY-3GP
C228 SC4D7U10V5ZY-3GP
C422 SC4D7U10V5ZY-3GP

CPU1A
SKT638_S1G2
SEC 1 OF 6
LDT

D1 V_HT_A1
D2 V_HT_A2
D3 V_HT_A3
D4 V_HT_A4

V_HT_B1 AE2
V_HT_B2 AE3
V_HT_B3 AF4
V_HT_B4 AE5

LDT_RST# B7 RESET*
LDT_PWROK A7 PWROK
LDT_STP# F10 LDTSTOP*

LDTREQ* C6 — LDT_REQ# — LDT_REQ# 9

9 NB0CADOUT[15..0]
9 NB0CADOUTJ[15..0]

| | | |
|---|---|---|
| NB0CADOUT15 | N5 | HT_RXD_P15 |
| NB0CADOUT14 | M3 | HT_RXD_P14 |
| NB0CADOUT13 | L5 | HT_RXD_P13 |
| NB0CADOUT12 | K3 | HT_RXD_P12 |
| NB0CADOUT11 | H3 | HT_RXD_P11 |
| NB0CADOUT10 | G5 | HT_RXD_P10 |
| NB0CADOUT9 | F3 | HT_RXD_P9 |
| NB0CADOUT8 | E5 | HT_RXD_P8 |
| NB0CADOUT7 | N3 | HT_RXD_P7 |
| NB0CADOUT6 | L1 | HT_RXD_P6 |
| NB0CADOUT5 | L3 | HT_RXD_P5 |
| NB0CADOUT4 | J1 | HT_RXD_P4 |
| NB0CADOUT3 | G1 | HT_RXD_P3 |
| NB0CADOUT2 | G3 | HT_RXD_P2 |
| NB0CADOUT1 | E1 | HT_RXD_P1 |
| NB0CADOUT0 | E3 | HT_RXD_P0 |

| | | |
|---|---|---|
| NB0CADOUTJ15 | P5 | HT_RXD_N15 |
| NB0CADOUTJ14 | M4 | HT_RXD_N14 |
| NB0CADOUTJ13 | M5 | HT_RXD_N13 |
| NB0CADOUTJ12 | K4 | HT_RXD_N12 |
| NB0CADOUTJ11 | H4 | HT_RXD_N11 |
| NB0CADOUTJ10 | H5 | HT_RXD_N10 |
| NB0CADOUTJ9 | F4 | HT_RXD_N9 |
| NB0CADOUTJ8 | F5 | HT_RXD_N8 |
| NB0CADOUTJ7 | N2 | HT_RXD_N7 |
| NB0CADOUTJ6 | M1 | HT_RXD_N6 |
| NB0CADOUTJ5 | L2 | HT_RXD_N5 |
| NB0CADOUTJ4 | K1 | HT_RXD_N4 |
| NB0CADOUTJ3 | H1 | HT_RXD_N3 |
| NB0CADOUTJ2 | G2 | HT_RXD_N2 |
| NB0CADOUTJ1 | F1 | HT_RXD_N1 |
| NB0CADOUTJ0 | E2 | HT_RXD_N0 |

| | | |
|---|---|---|
| NB0HTTCLKOUT1 | J5 | HT_RXCLK_P1 |
| NB0HTTCLKOUT0 | J3 | HT_RXCLK_P0 |
| NB0HTTCLKOUTJ1 | K5 | HT_RXCLK_N1 |
| NB0HTTCLKOUTJ0 | J2 | HT_RXCLK_N0 |
| NB0HTTCTLOUT1 | P3 | HT_RXCTL_P1 |
| NB0HTTCTLOUT0 | N1 | HT_RXCTL_P0 |
| NB0HTTCTLOUTJ1 | P4 | HT_RXCTL_N1 |
| NB0HTTCTLOUTJ0 | P1 | HT_RXCTL_N0 |

9 NB0HTTCLKOUT1
9 NB0HTTCLKOUT0
9 NB0HTTCLKOUTJ1
9 NB0HTTCLKOUTJ0
9 NB0HTTCTLOUT1
9 NB0HTTCTLOUT0
9 NB0HTTCTLOUTJ1
9 NB0HTTCTLOUTJ0

| | | |
|---|---|---|
| HT_TXD_P15 | T4 | CPUCADOUT15 |
| HT_TXD_P14 | V5 | CPUCADOUT14 |
| HT_TXD_P13 | V4 | CPUCADOUT13 |
| HT_TXD_P12 | Y5 | CPUCADOUT12 |
| HT_TXD_P11 | AB5 | CPUCADOUT11 |
| HT_TXD_P10 | AB4 | CPUCADOUT10 |
| HT_TXD_P9 | AD5 | CPUCADOUT9 |
| HT_TXD_P8 | AD4 | CPUCADOUT8 |
| HT_TXD_P7 | T1 | CPUCADOUT7 |
| HT_TXD_P6 | U2 | CPUCADOUT6 |
| HT_TXD_P5 | V1 | CPUCADOUT5 |
| HT_TXD_P4 | W2 | CPUCADOUT4 |
| HT_TXD_P3 | AA2 | CPUCADOUT3 |
| HT_TXD_P2 | AB1 | CPUCADOUT2 |
| HT_TXD_P1 | AC2 | CPUCADOUT1 |
| HT_TXD_P0 | AD1 | CPUCADOUT0 |

| | | |
|---|---|---|
| HT_TXD_N15 | T3 | CPUCADOUTJ15 |
| HT_TXD_N14 | U5 | CPUCADOUTJ14 |
| HT_TXD_N13 | V3 | CPUCADOUTJ13 |
| HT_TXD_N12 | W5 | CPUCADOUTJ12 |
| HT_TXD_N11 | AA5 | CPUCADOUTJ11 |
| HT_TXD_N10 | AB3 | CPUCADOUTJ10 |
| HT_TXD_N9 | AC5 | CPUCADOUTJ9 |
| HT_TXD_N8 | AD3 | CPUCADOUTJ8 |
| HT_TXD_N7 | R1 | CPUCADOUTJ7 |
| HT_TXD_N6 | U3 | CPUCADOUTJ6 |
| HT_TXD_N5 | U1 | CPUCADOUTJ5 |
| HT_TXD_N4 | W3 | CPUCADOUTJ4 |
| HT_TXD_N3 | AA3 | CPUCADOUTJ3 |
| HT_TXD_N2 | AA1 | CPUCADOUTJ2 |
| HT_TXD_N1 | AC3 | CPUCADOUTJ1 |
| HT_TXD_N0 | AC1 | CPUCADOUTJ0 |

| | | |
|---|---|---|
| HT_TXCLK_P1 | Y4 | CPUHTTCLKOUT1 |
| HT_TXCLK_P0 | Y1 | CPUHTTCLKOUT0 |
| HT_TXCLK_N1 | Y3 | CPUHTTCLKOUTJ1 |
| HT_TXCLK_N0 | W1 | CPUHTTCLKOUTJ0 |
| HT_TXCTL_P1 | T5 | CPUHTTCTLOUT1 |
| HT_TXCTL_P0 | R2 | CPUHTTCTLOUT0 |
| HT_TXCTL_N1 | R5 | CPUHTTCTLOUTJ1 |
| HT_TXCTL_N0 | R3 | CPUHTTCTLOUTJ0 |

CPUHTTCLKOUT1 9
CPUHTTCLKOUT0 9
CPUHTTCLKOUTJ1 9
CPUHTTCLKOUTJ0 9
CPUHTTCTLOUT1 9
CPUHTTCTLOUT0 9
CPUHTTCTLOUTJ1 9
CPUHTTCTLOUTJ0 9

HTREF1 P6
HTREF0 R6
L0_REF1
L0_REF0
R89 44D2R2F-GP
R90 44D2R2F-GP
+1.2VS_HT_CPU

PLACE WITHIN 1"
5MIL TRACE
10MIL SPACE

SKT-CPU638P-GP-U2

LEAVE NO STUBS

STUFF FOR MCP67

REMOVE FOR HT3/MCP77

PV 0408

RN63 SRN300J-3-GP
LDT_PWROK
LDT_RST#
LDT_REQ# R116 300R2J-4-GP
LDT_STP# R414 300R2J-4-GP
MCP77
+1.8V

U11A
SYS_PWRGD
9 HTCPU_RST#
LDT_RST# 5
SSLVC08APWR-GP
R157 0R0402-PAD

U11B
C243 SC1U10V3KX-3GP
9,36 HTCPU_PWRGD
SYS_PWRGD
LDT_PWROK
SSLVC08APWR-GP
R158 0R0402-PAD

U11C
17,23 SYS_PWRGD
9 HTCPU_STP#
LDT_STP#
SSLVC08APWR-GP
R411 0R0402-PAD

U11D
SSLVC08APWR-GP

<Variant Name>

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Title: CPU(1/4) HT
Size: A3
Document Number: Astrosphere
Rev: SA
Date: Monday, June 09, 2008
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CPU1C

SKT638_S1G2

SEC 3 OF 6
MEMORY_A

7 M_A_DQ[63..0]

| | | |
|---|---|---|
| M_A_DQ63 | AA12 | MA_DATA63 |
| M_A_DQ62 | AB12 | MA_DATA62 |
| M_A_DQ61 | AA14 | MA_DATA61 |
| M_A_DQ60 | AB14 | MA_DATA60 |
| M_A_DQ59 | W11 | MA_DATA59 |
| M_A_DQ58 | Y12 | MA_DATA58 |
| M_A_DQ57 | AD13 | MA_DATA57 |
| M_A_DQ56 | AB13 | MA_DATA56 |
| M_A_DQ55 | AD15 | MA_DATA55 |
| M_A_DQ54 | AB15 | MA_DATA54 |
| M_A_DQ53 | AB17 | MA_DATA53 |
| M_A_DQ52 | Y17 | MA_DATA52 |
| M_A_DQ51 | Y14 | MA_DATA51 |
| M_A_DQ50 | W14 | MA_DATA50 |
| M_A_DQ49 | W16 | MA_DATA49 |
| M_A_DQ48 | AD17 | MA_DATA48 |
| M_A_DQ47 | Y18 | MA_DATA47 |
| M_A_DQ46 | AD19 | MA_DATA46 |
| M_A_DQ45 | AD21 | MA_DATA45 |
| M_A_DQ44 | AB21 | MA_DATA44 |
| M_A_DQ43 | AB18 | MA_DATA43 |
| M_A_DQ42 | AA18 | MA_DATA42 |
| M_A_DQ41 | AA20 | MA_DATA41 |
| M_A_DQ40 | Y20 | MA_DATA40 |
| M_A_DQ39 | AA22 | MA_DATA39 |
| M_A_DQ38 | Y22 | MA_DATA38 |
| M_A_DQ37 | W21 | MA_DATA37 |
| M_A_DQ36 | W22 | MA_DATA36 |
| M_A_DQ35 | AA21 | MA_DATA35 |
| M_A_DQ34 | AB22 | MA_DATA34 |
| M_A_DQ33 | AB24 | MA_DATA33 |
| M_A_DQ32 | Y24 | MA_DATA32 |
| M_A_DQ31 | H22 | MA_DATA31 |
| M_A_DQ30 | H20 | MA_DATA30 |
| M_A_DQ29 | E22 | MA_DATA29 |
| M_A_DQ28 | E21 | MA_DATA28 |
| M_A_DQ27 | J19 | MA_DATA27 |
| M_A_DQ26 | H24 | MA_DATA26 |
| M_A_DQ25 | F22 | MA_DATA25 |
| M_A_DQ24 | E20 | MA_DATA24 |
| M_A_DQ23 | C23 | MA_DATA23 |
| M_A_DQ22 | B22 | MA_DATA22 |
| M_A_DQ21 | F18 | MA_DATA21 |
| M_A_DQ20 | E18 | MA_DATA20 |
| M_A_DQ19 | E20 | MA_DATA19 |
| M_A_DQ18 | D22 | MA_DATA18 |
| M_A_DQ17 | C19 | MA_DATA17 |
| M_A_DQ16 | G18 | MA_DATA16 |
| M_A_DQ15 | G17 | MA_DATA15 |
| M_A_DQ14 | C17 | MA_DATA14 |
| M_A_DQ13 | F14 | MA_DATA13 |
| M_A_DQ12 | E14 | MA_DATA12 |
| M_A_DQ11 | H17 | MA_DATA11 |
| M_A_DQ10 | E17 | MA_DATA10 |
| M_A_DQ9 | E15 | MA_DATA9 |
| M_A_DQ8 | H15 | MA_DATA8 |
| M_A_DQ7 | E13 | MA_DATA7 |
| M_A_DQ6 | C13 | MA_DATA6 |
| M_A_DQ5 | H12 | MA_DATA5 |
| M_A_DQ4 | H11 | MA_DATA4 |
| M_A_DQ3 | G14 | MA_DATA3 |
| M_A_DQ2 | H14 | MA_DATA2 |
| M_A_DQ1 | F12 | MA_DATA1 |
| M_A_DQ0 | G12 | MA_DATA0 |

| | | |
|---|---|---|
| M_A_A15 | K19 | MA_ADD15 |
| M_A_A14 | K24 | MA_ADD14 |
| M_A_A13 | V24 | MA_ADD13 |
| M_A_A12 | K20 | MA_ADD12 |
| M_A_A11 | L22 | MA_ADD11 |
| M_A_A10 | R21 | MA_ADD10 |
| M_A_A9 | K22 | MA_ADD9 |
| M_A_A8 | L19 | MA_ADD8 |
| M_A_A7 | L21 | MA_ADD7 |
| M_A_A6 | M24 | MA_ADD6 |
| M_A_A5 | L20 | MA_ADD5 |
| M_A_A4 | M22 | MA_ADD4 |
| M_A_A3 | M19 | MA_ADD3 |
| M_A_A2 | N22 | MA_ADD2 |
| M_A_A1 | M20 | MA_ADD1 |
| M_A_A0 | N21 | MA_ADD0 |

M_A_A[15..0] 7,8

SKT-CPU638P-GP-U2

| | | |
|---|---|---|
| MA_DM7 | Y13 | M_A_DM7 |
| MA_DM6 | AB16 | M_A_DM6 |
| MA_DM5 | Y19 | M_A_DM5 |
| MA_DM4 | AC24 | M_A_DM4 |
| MA_DM3 | F24 | M_A_DM3 |
| MA_DM2 | E19 | M_A_DM2 |
| MA_DM1 | C15 | M_A_DM1 |
| MA_DM0 | E12 | M_A_DM0 |

M_A_DM[7..0] 7

| | | |
|---|---|---|
| MA_DQS_F7 | W12 | M_A_DQS7 |
| MA_DQS_F6 | Y15 | M_A_DQS6 |
| MA_DQS_F5 | AB19 | M_A_DQS5 |
| MA_DQS_F4 | AD23 | M_A_DQS4 |
| MA_DQS_F3 | G22 | M_A_DQS3 |
| MA_DQS_F2 | C22 | M_A_DQS2 |
| MA_DQS_F1 | G16 | M_A_DQS1 |
| MA_DQS_F0 | G13 | M_A_DQS0 |

M_A_DQS[7..0] 7

| | | |
|---|---|---|
| MA_DQS_N7 | W13 | M_A_DQS#7 |
| MA_DQS_N6 | W15 | M_A_DQS#6 |
| MA_DQS_N5 | AB20 | M_A_DQS#5 |
| MA_DQS_N4 | AC23 | M_A_DQS#4 |
| MA_DQS_N3 | G21 | M_A_DQS#3 |
| MA_DQS_N2 | C21 | M_A_DQS#2 |
| MA_DQS_N1 | G15 | M_A_DQS#1 |
| MA_DQS_N0 | H13 | M_A_DQS#0 |

M_A_DQS#[7..0] 7

CLK5
MA_CLK5_P N19
MA_CLK5_N N20

CLK1
MA_CLK1_P E16 M_A_CLK_DDR1 → M_A_CLK_DDR1 7
MA_CLK1_N F16 M_A_CLK_DDR1# → M_A_CLK_DDR1# 7

CLK7
MA_CLK7_P Y16 M_A_CLK_DDR2 → M_A_CLK_DDR2 7
MA_CLK7_N AA16 M_A_CLK_DDR2# → M_A_CLK_DDR2# 7

CLK4
MA_CLK4_P P19
MA_CLK4_N P20

| | | |
|---|---|---|
| MA_BANK2 | J21 | M_A_BS#2 → M_A_BS#2 7,8 |
| MA_BANK1 | R23 | M_A_BS#1 → M_A_BS#1 7,8 |
| MA_BANK0 | R20 | M_A_BS#0 → M_A_BS#0 7,8 |

| | | |
|---|---|---|
| MA_RAS* | R19 | M_A_RAS# → M_A_RAS# 7,8 |
| MA_CAS* | T22 | M_A_CAS# → M_A_CAS# 7,8 |
| MA_WE* | T24 | M_A_WE# → M_A_WE# 7,8 |

| | | |
|---|---|---|
| MA1_CS1* | V20 | |
| MA1_CS0* | U20 | |
| MA0_CS1* | U19 | M_A_CS1# → M_A_CS1# 7,8 |
| MA0_CS0* | T20 | M_A_CS0# → M_A_CS0# 7,8 |

| | | |
|---|---|---|
| MA_CKE1 | J20 | M_A_CKE1 → M_A_CKE1 7,8 |
| MA_CKE0 | J22 | M_A_CKE0 → M_A_CKE0 7,8 |

| | | |
|---|---|---|
| MA1_ODT1 | V19 | |
| MA1_ODT0 | U21 | |
| MA0_ODT1 | V22 | M_A_ODT1 → M_A_ODT1 7,8 |
| MA0_ODT0 | T19 | M_A_ODT0 → M_A_ODT0 7,8 |

Place near CPU

M_A_CLK_DDR1 — C215 SC1D5P50V2CN-1GP — M_A_CLK_DDR1#
M_B_CLK_DDR1 — C231 SC1D5P50V2CN-1GP — M_B_CLK_DDR1#
M_A_CLK_DDR2 — C97 SC1D5P50V2CN-1GP — M_A_CLK_DDR2#
M_B_CLK_DDR2 — C57 SC1D5P50V2CN-1GP — M_B_CLK_DDR2#

MAX NECKDOWN TO & FROM CAPS IS 500MILS
TRACE FROM CAP TO CPU MUST BE LESS THAN 1200MILS

CPU1D

SKT638_S1G2

SEC 4 OF 6
MEMORY_B

7 M_B_DQ[63..0]

| | | |
|---|---|---|
| M_B_DQ63 | AD11 | MB_DATA63 |
| M_B_DQ62 | AF11 | MB_DATA62 |
| M_B_DQ61 | AF14 | MB_DATA61 |
| M_B_DQ60 | AE14 | MB_DATA60 |
| M_B_DQ59 | Y11 | MB_DATA59 |
| M_B_DQ58 | AB11 | MB_DATA58 |
| M_B_DQ57 | AC12 | MB_DATA57 |
| M_B_DQ56 | AF13 | MB_DATA56 |
| M_B_DQ55 | AF15 | MB_DATA55 |
| M_B_DQ54 | AF16 | MB_DATA54 |
| M_B_DQ53 | AC18 | MB_DATA53 |
| M_B_DQ52 | AF19 | MB_DATA52 |
| M_B_DQ51 | AD14 | MB_DATA51 |
| M_B_DQ50 | AC14 | MB_DATA50 |
| M_B_DQ49 | AE18 | MB_DATA49 |
| M_B_DQ48 | AD18 | MB_DATA48 |
| M_B_DQ47 | AD20 | MB_DATA47 |
| M_B_DQ46 | AC20 | MB_DATA46 |
| M_B_DQ45 | AF23 | MB_DATA45 |
| M_B_DQ44 | AF24 | MB_DATA44 |
| M_B_DQ43 | AF20 | MB_DATA43 |
| M_B_DQ42 | AE20 | MB_DATA42 |
| M_B_DQ41 | AD22 | MB_DATA41 |
| M_B_DQ40 | AC22 | MB_DATA40 |
| M_B_DQ39 | AE25 | MB_DATA39 |
| M_B_DQ38 | AD26 | MB_DATA38 |
| M_B_DQ37 | AA25 | MB_DATA37 |
| M_B_DQ36 | AA26 | MB_DATA36 |
| M_B_DQ35 | AE24 | MB_DATA35 |
| M_B_DQ34 | AD24 | MB_DATA34 |
| M_B_DQ33 | AA23 | MB_DATA33 |
| M_B_DQ32 | AA24 | MB_DATA32 |
| M_B_DQ31 | G24 | MB_DATA31 |
| M_B_DQ30 | G23 | MB_DATA30 |
| M_B_DQ29 | D26 | MB_DATA29 |
| M_B_DQ28 | C26 | MB_DATA28 |
| M_B_DQ27 | G26 | MB_DATA27 |
| M_B_DQ26 | G25 | MB_DATA26 |
| M_B_DQ25 | E24 | MB_DATA25 |
| M_B_DQ24 | E23 | MB_DATA24 |
| M_B_DQ23 | C24 | MB_DATA23 |
| M_B_DQ22 | B24 | MB_DATA22 |
| M_B_DQ21 | C20 | MB_DATA21 |
| M_B_DQ20 | B20 | MB_DATA20 |
| M_B_DQ19 | C25 | MB_DATA19 |
| M_B_DQ18 | D24 | MB_DATA18 |
| M_B_DQ17 | A21 | MB_DATA17 |
| M_B_DQ16 | D20 | MB_DATA16 |
| M_B_DQ15 | D18 | MB_DATA15 |
| M_B_DQ14 | C18 | MB_DATA14 |
| M_B_DQ13 | D14 | MB_DATA13 |
| M_B_DQ12 | C14 | MB_DATA12 |
| M_B_DQ11 | A20 | MB_DATA11 |
| M_B_DQ10 | A19 | MB_DATA10 |
| M_B_DQ9 | A16 | MB_DATA9 |
| M_B_DQ8 | A15 | MB_DATA8 |
| M_B_DQ7 | A13 | MB_DATA7 |
| M_B_DQ6 | D12 | MB_DATA6 |
| M_B_DQ5 | E11 | MB_DATA5 |
| M_B_DQ4 | G11 | MB_DATA4 |
| M_B_DQ3 | B14 | MB_DATA3 |
| M_B_DQ2 | A14 | MB_DATA2 |
| M_B_DQ1 | A11 | MB_DATA1 |
| M_B_DQ0 | C11 | MB_DATA0 |

| | | |
|---|---|---|
| M_B_A15 | J24 | MB_ADD15 |
| M_B_A14 | J23 | MB_ADD14 |
| M_B_A13 | W24 | MB_ADD13 |
| M_B_A12 | L25 | MB_ADD12 |
| M_B_A11 | L26 | MB_ADD11 |
| M_B_A10 | T26 | MB_ADD10 |
| M_B_A9 | K26 | MB_ADD9 |
| M_B_A8 | M26 | MB_ADD8 |
| M_B_A7 | L24 | MB_ADD7 |
| M_B_A6 | N25 | MB_ADD6 |
| M_B_A5 | L23 | MB_ADD5 |
| M_B_A4 | N26 | MB_ADD4 |
| M_B_A3 | N23 | MB_ADD3 |
| M_B_A2 | P26 | MB_ADD2 |
| M_B_A1 | N24 | MB_ADD1 |
| M_B_A0 | P24 | MB_ADD0 |

M_B_A[15..0] 7,8

SKT-CPU638P-GP-U2

| | | |
|---|---|---|
| MB_DM7 | AD12 | M_B_DM7 |
| MB_DM6 | AC16 | M_B_DM6 |
| MB_DM5 | AE22 | M_B_DM5 |
| MB_DM4 | AB26 | M_B_DM4 |
| MB_DM3 | F25 | M_B_DM3 |
| MB_DM2 | A22 | M_B_DM2 |
| MB_DM1 | B16 | M_B_DM1 |
| MB_DM0 | A12 | M_B_DM0 |

M_B_DM[7..0] 7

| | | |
|---|---|---|
| MB_DQS_F7 | AE12 | M_B_DQS7 |
| MB_DQS_F6 | AE16 | M_B_DQS6 |
| MB_DQS_F5 | AE21 | M_B_DQS5 |
| MB_DQS_F4 | AC25 | M_B_DQS4 |
| MB_DQS_F3 | F26 | M_B_DQS3 |
| MB_DQS_F2 | A24 | M_B_DQS2 |
| MB_DQS_F1 | D16 | M_B_DQS1 |
| MB_DQS_F0 | C12 | M_B_DQS0 |

M_B_DQS[7..0] 7

| | | |
|---|---|---|
| MB_DQS_N7 | AE12 | M_B_DQS#7 |
| MB_DQS_N6 | AD16 | M_B_DQS#6 |
| MB_DQS_N5 | AF22 | M_B_DQS#5 |
| MB_DQS_N4 | AC26 | M_B_DQS#4 |
| MB_DQS_N3 | E26 | M_B_DQS#3 |
| MB_DQS_N2 | A23 | M_B_DQS#2 |
| MB_DQS_N1 | C16 | M_B_DQS#1 |
| MB_DQS_N0 | B12 | M_B_DQS#0 |

M_B_DQS#[7..0] 7

CLK5
MB_CLK5_P P22
MB_CLK5_N R22

CLK1
MB_CLK1_P A17 M_B_CLK_DDR1 → M_B_CLK_DDR1 7
MB_CLK1_N A18 M_B_CLK_DDR1# → M_B_CLK_DDR1# 7

CLK7
MB_CLK7_P AF18 M_B_CLK_DDR2 → M_B_CLK_DDR2 7
MB_CLK7_N AF17 M_B_CLK_DDR2# → M_B_CLK_DDR2# 7

CLK4
MB_CLK4_P R26
MB_CLK4_N R25

| | | |
|---|---|---|
| MB_BANK2 | J26 | M_B_BS#2 → M_B_BS#2 7,8 |
| MB_BANK1 | U26 | M_B_BS#1 → M_B_BS#1 7,8 |
| MB_BANK0 | R24 | M_B_BS#0 → M_B_BS#0 7,8 |

| | | |
|---|---|---|
| MB_RAS* | U25 | M_B_RAS# → M_B_RAS# 7,8 |
| MB_CAS* | U24 | M_B_CAS# → M_B_CAS# 7,8 |
| MB_WE* | U23 | M_B_WE# → M_B_WE# 7,8 |

| | | |
|---|---|---|
| MB1_CS1* | U22 | |
| MB0_CS1* | W25 | M_B_CS1# → M_B_CS1# 7,8 |
| MB0_CS0* | V26 | M_B_CS0# → M_B_CS0# 7,8 |

| | | |
|---|---|---|
| MB_CKE1 | H26 | M_B_CKE1 → M_B_CKE1 7,8 |
| MB_CKE0 | J25 | M_B_CKE0 → M_B_CKE0 7,8 |

| | | |
|---|---|---|
| MB1_ODT0 | Y26 | |
| MB0_ODT1 | W23 | M_B_ODT1 → M_B_ODT1 7,8 |
| MB0_ODT0 | W26 | M_B_ODT0 → M_B_ODT0 7,8 |

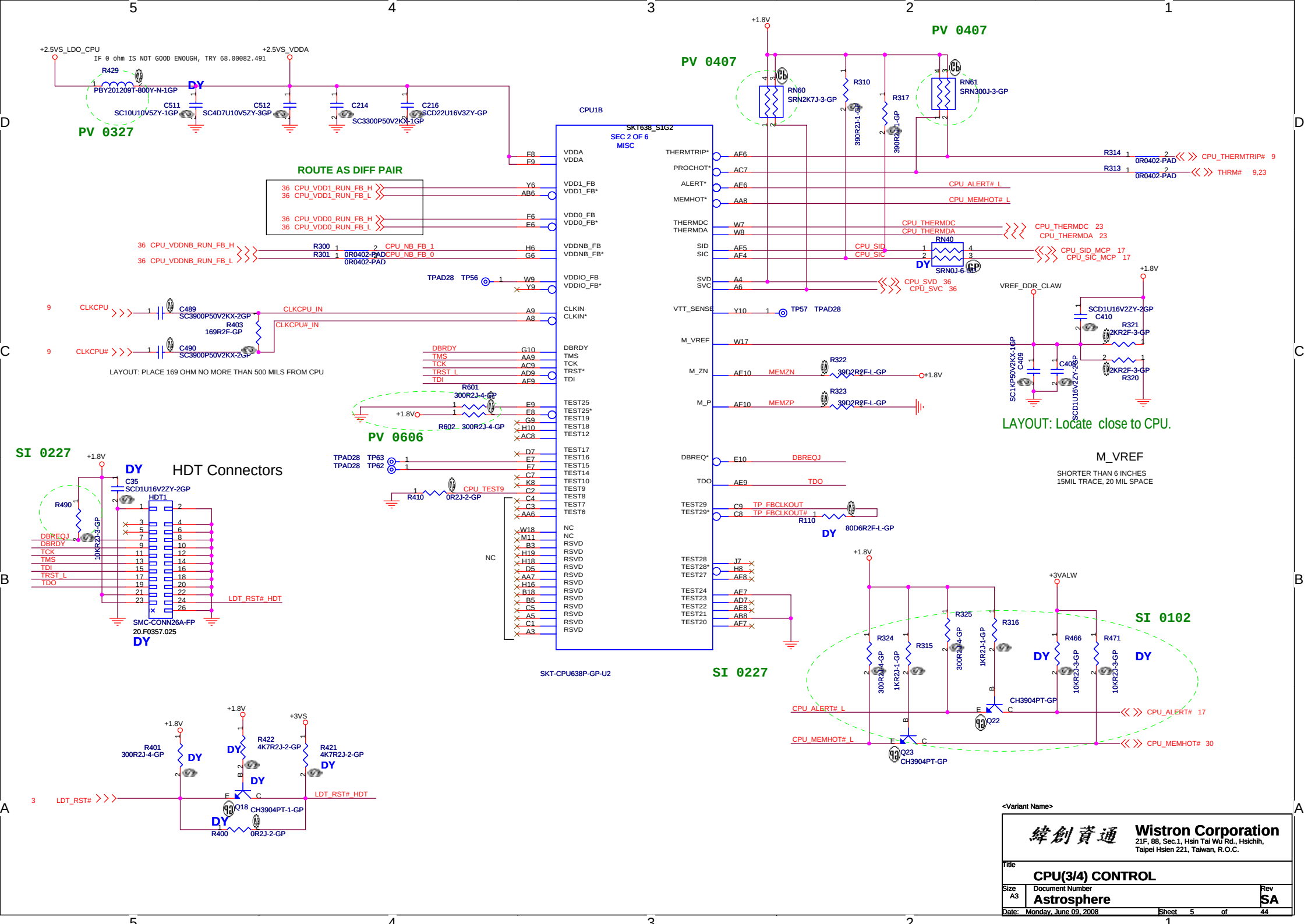
<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: CPU(2/4) DDR II

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

Date: Monday, June 09, 2008 Sheet 4 of 44





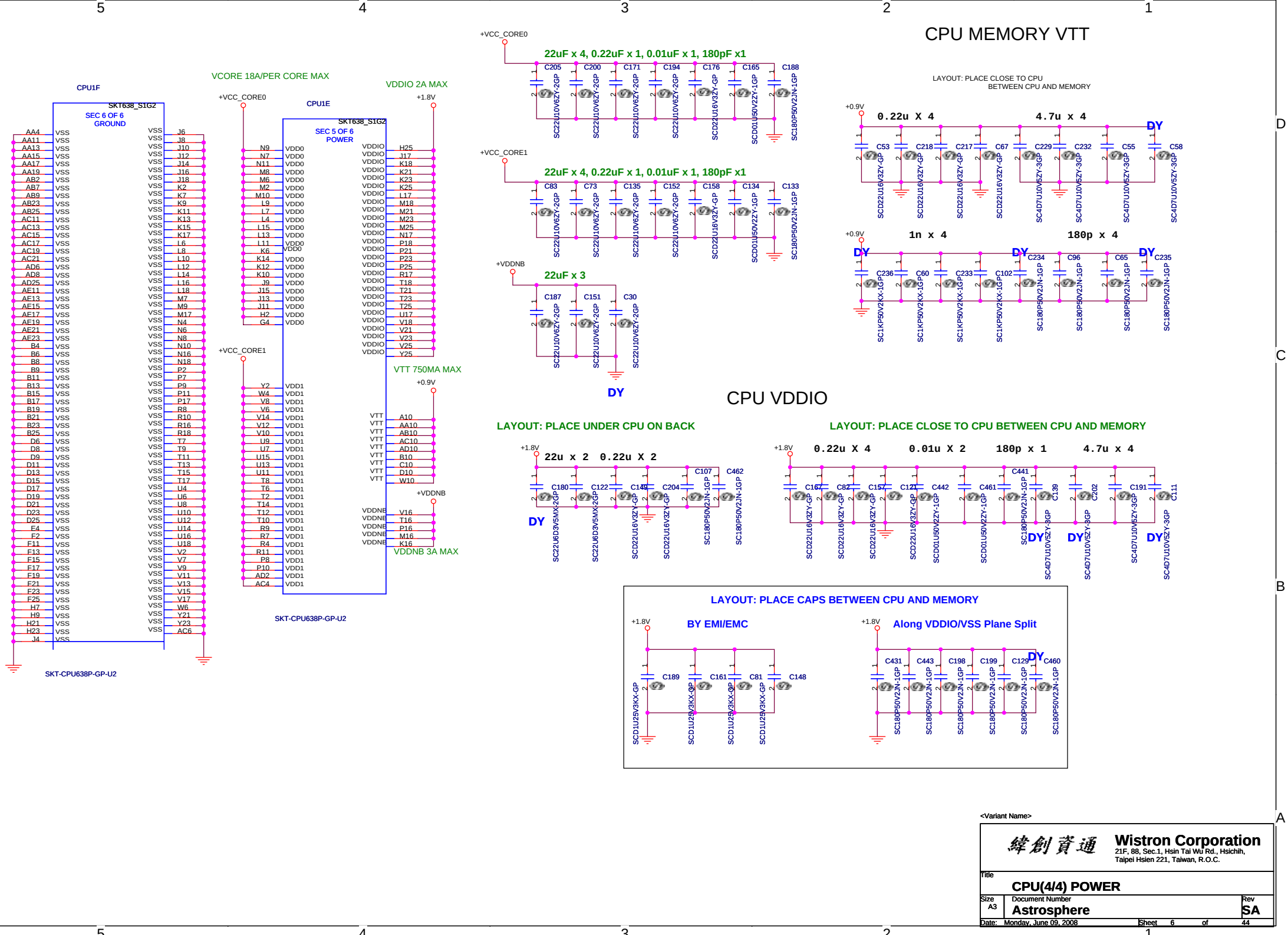
<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.


Title: CPU(3/4) CONTROL

Size: A3 | Document Number: Astrosphere | Rev: SA

Date: Monday, June 09, 2008 | Sheet 5 of 44



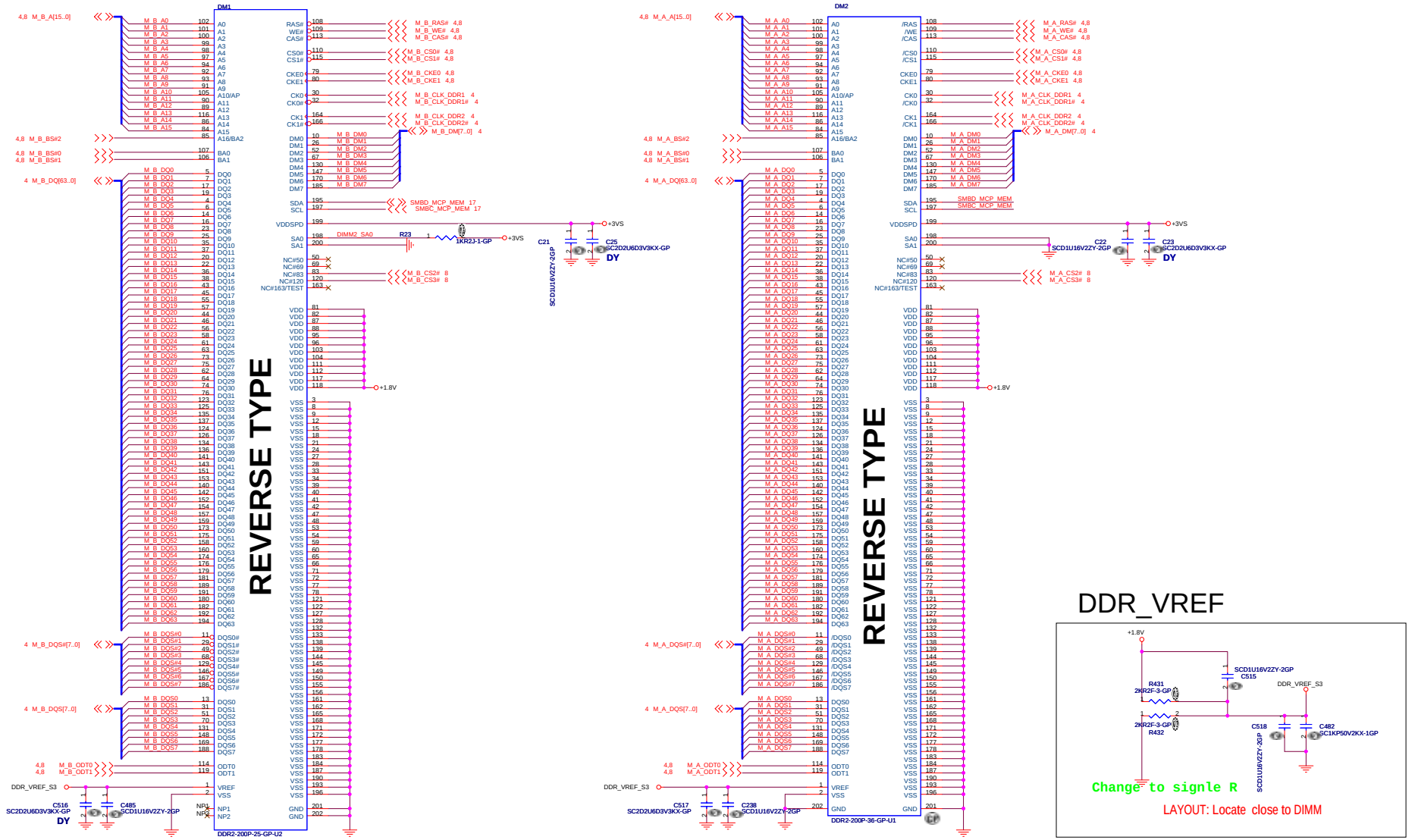

<Variant Name>

Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: CPU(4/4) POWER

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

Date: Monday, June 09, 2008 Sheet 6 of 44





Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

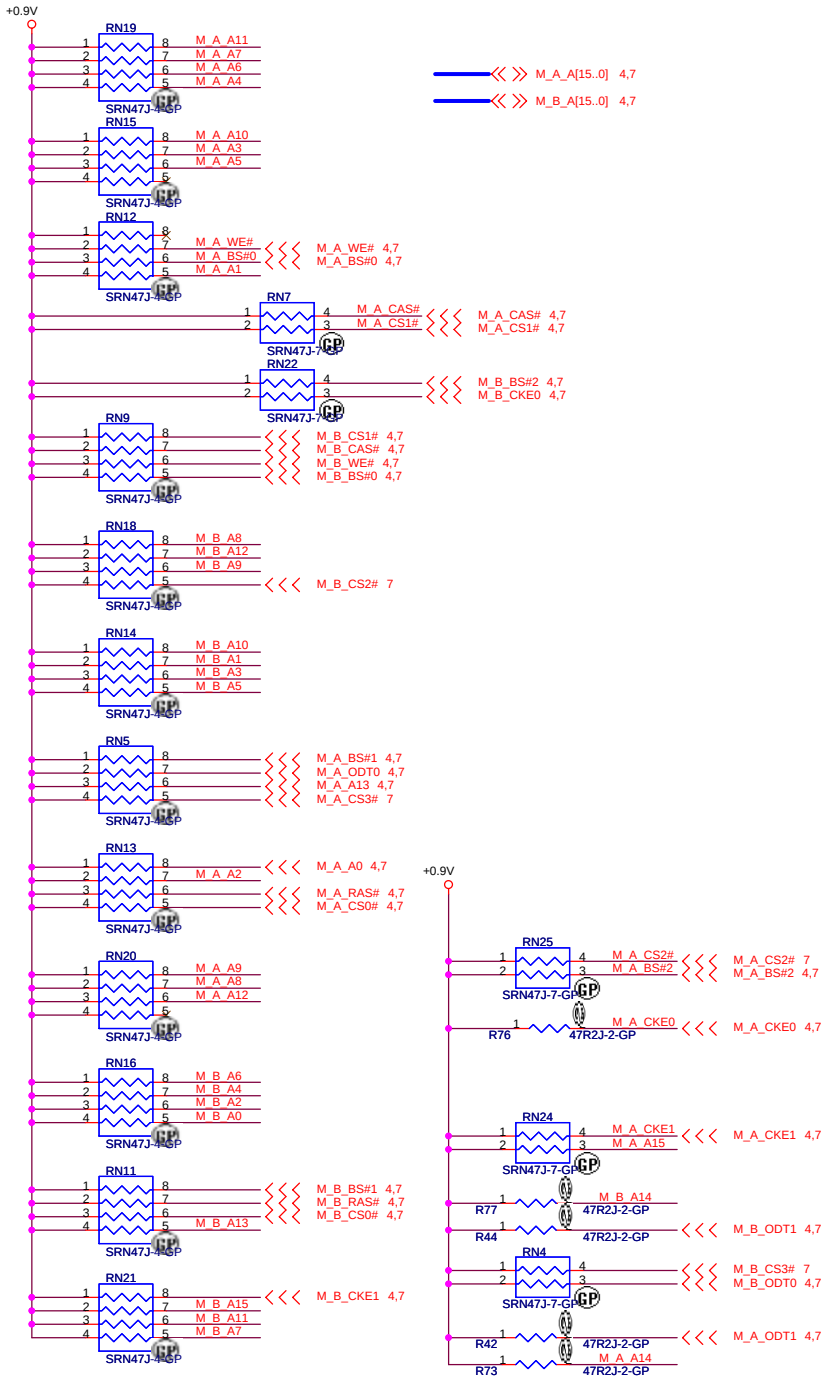

Title: DDR2-SOCKET

Size: A2 | Document Number: Astrosphere | Rev: SA

Date: Monday, June 09, 2008 | Sheet 7 of 44

# PARALLEL TERMINATION

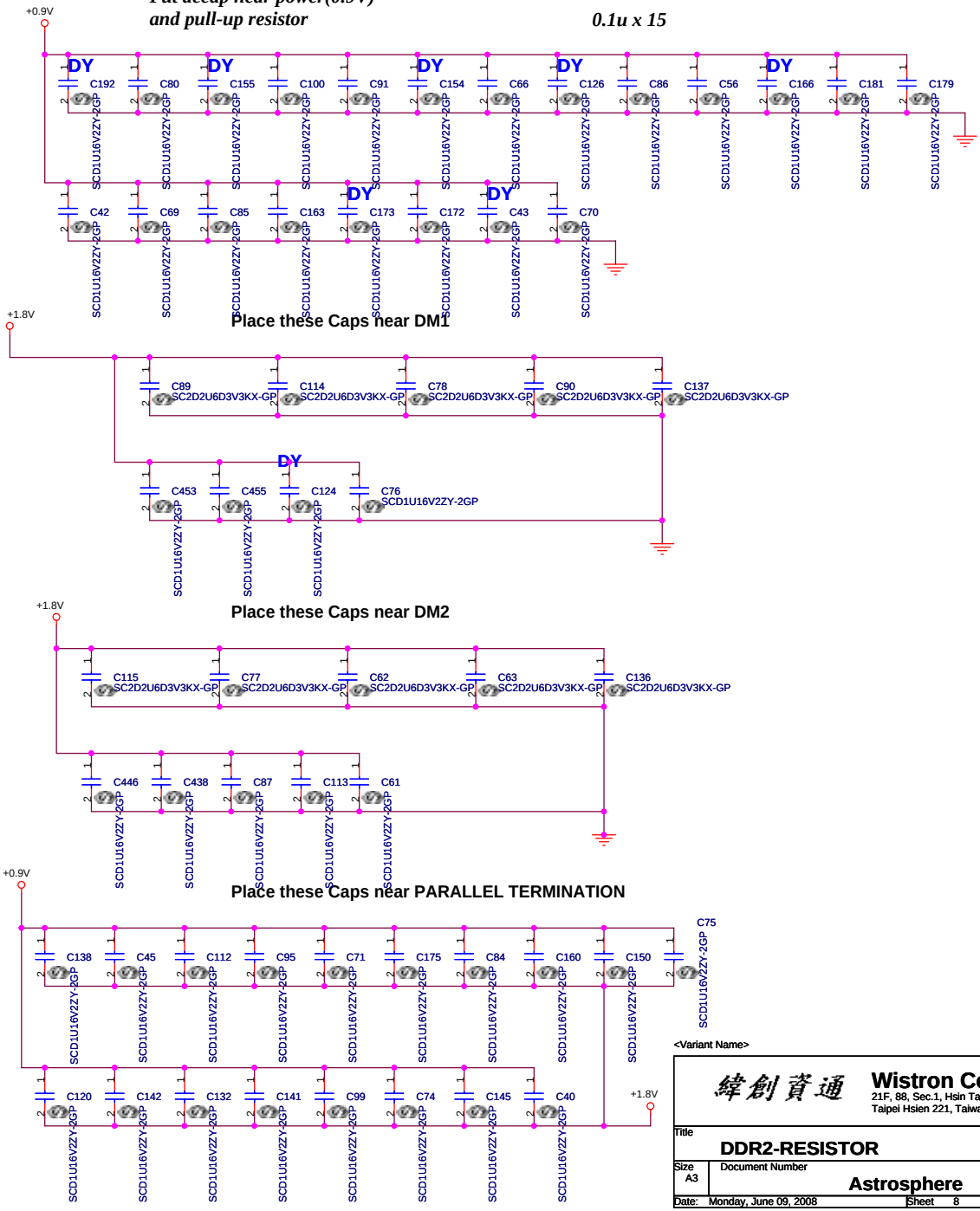
*Put decap near power(0.9V) and pull-up resistor*




# Decoupling Capacitor

*Put decap near power(0.9V) and pull-up resistor*

*0.1u x 15*



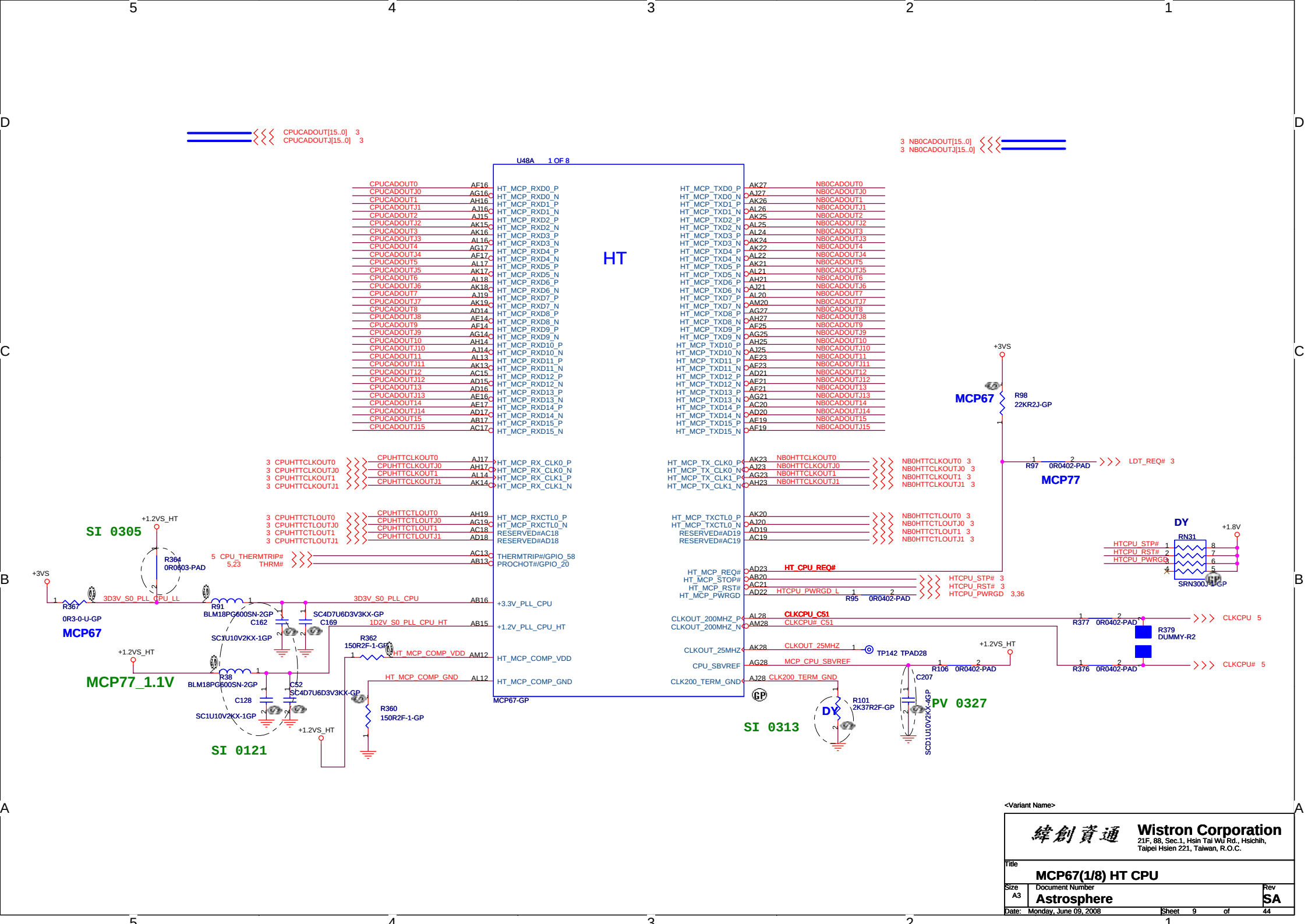

<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: DDR2-RESISTOR

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

Date: Monday, June 09, 2008 Sheet 8 of 44

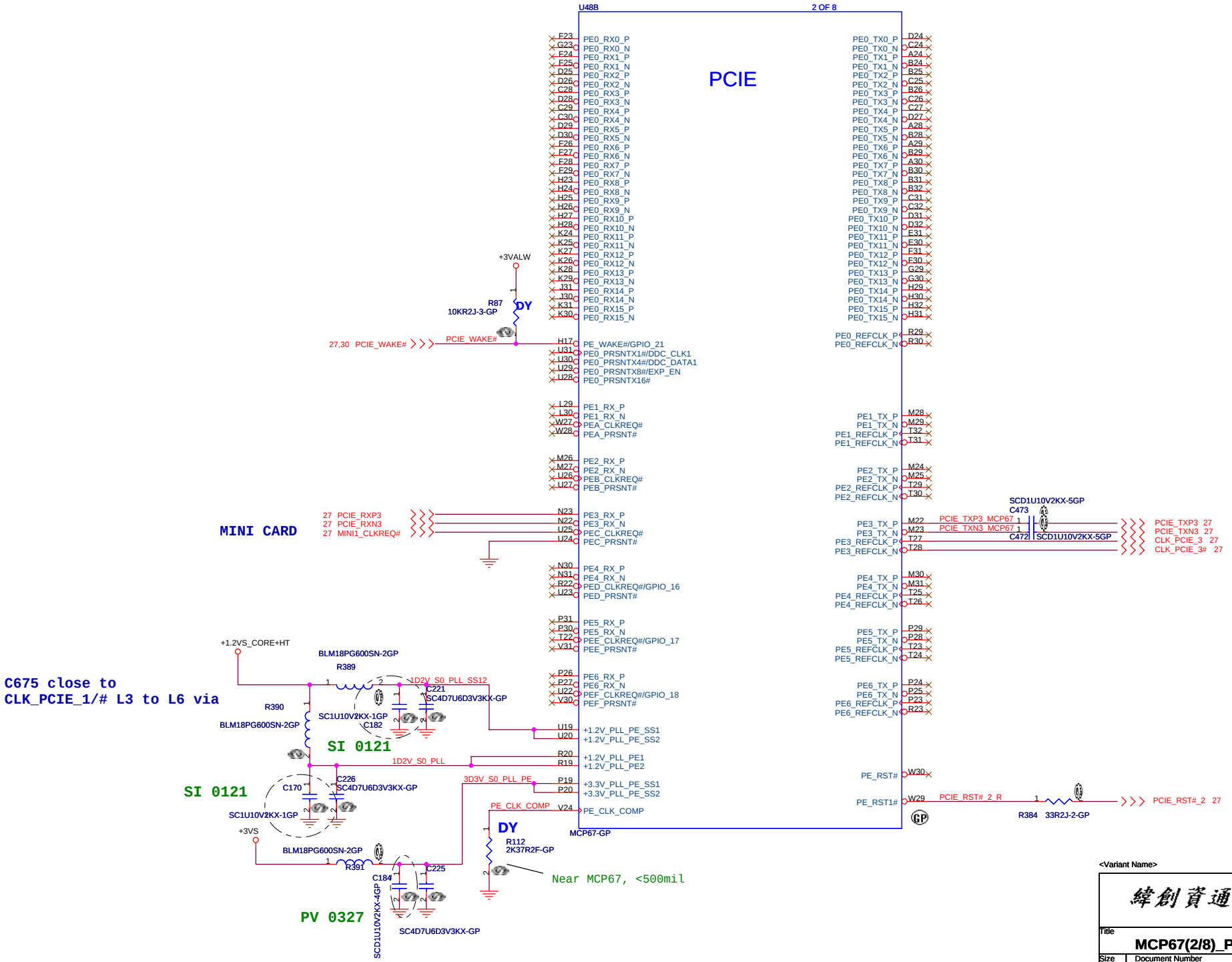




<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.


| | | |
|---|---|---|
| Title | MCP67(1/8) HT CPU | |
| Size A3 | Document Number Astrosphere | Rev SA |
| Date: Monday, June 09, 2008 | Sheet 9 of 44 | |



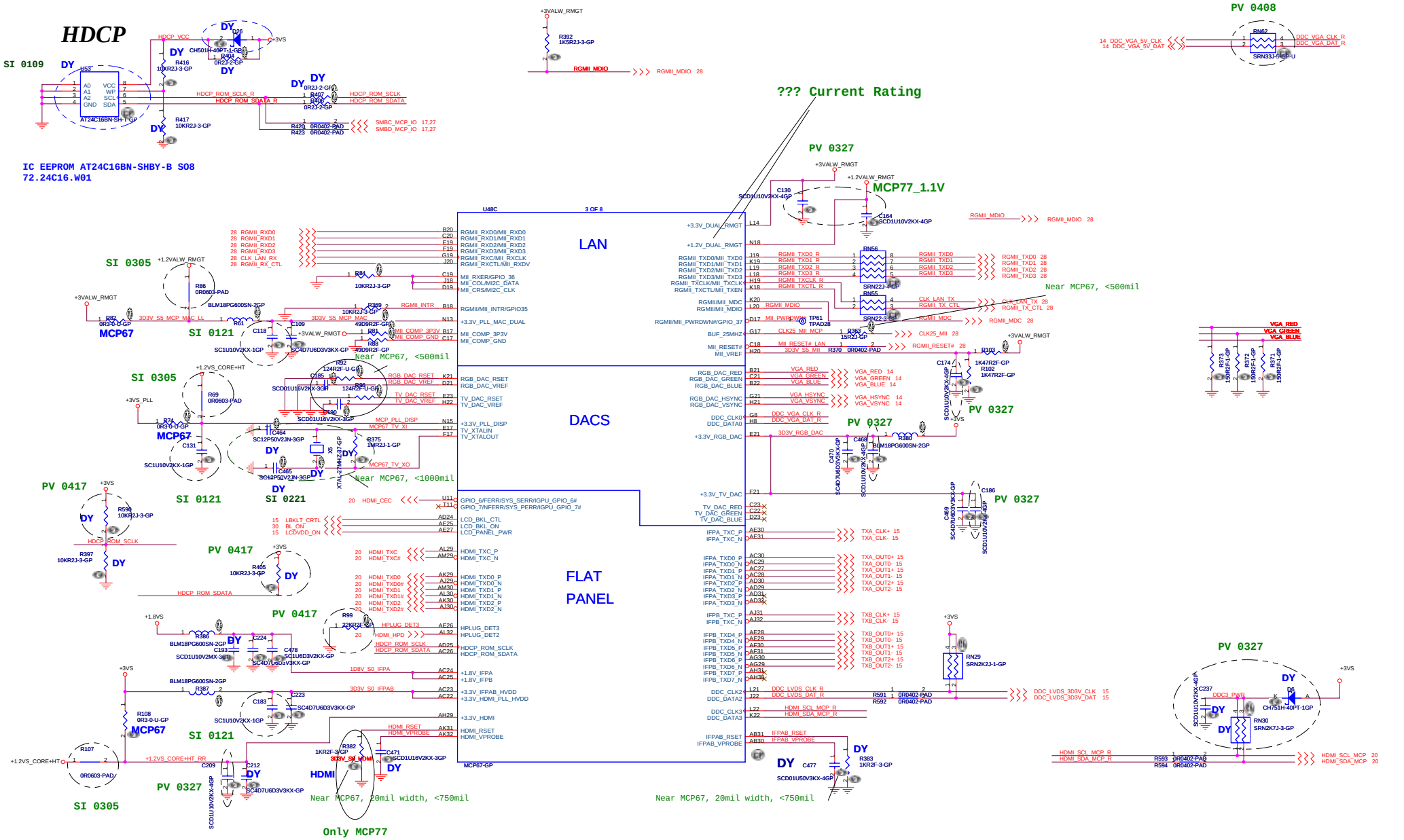

<Variant Name>

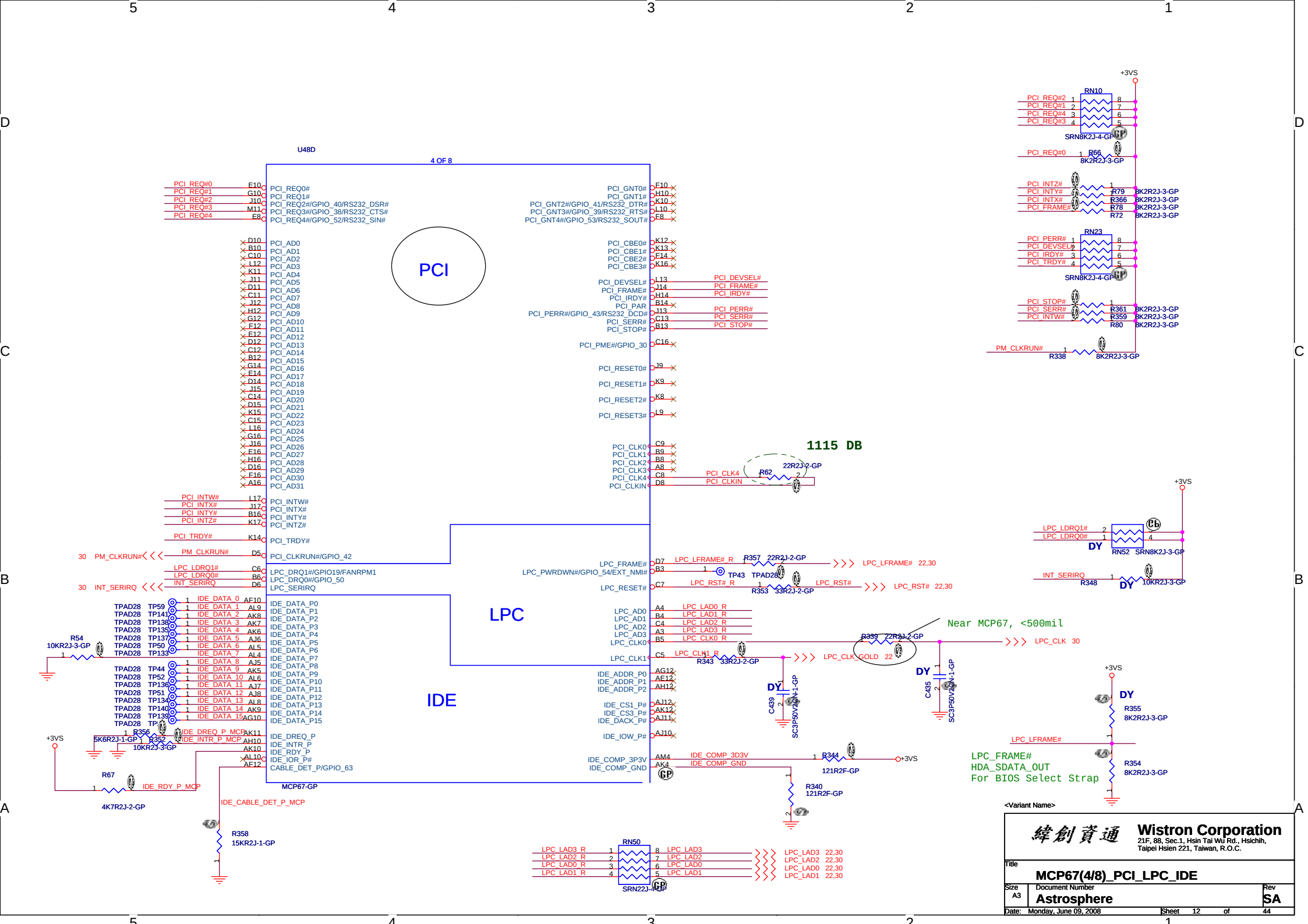
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

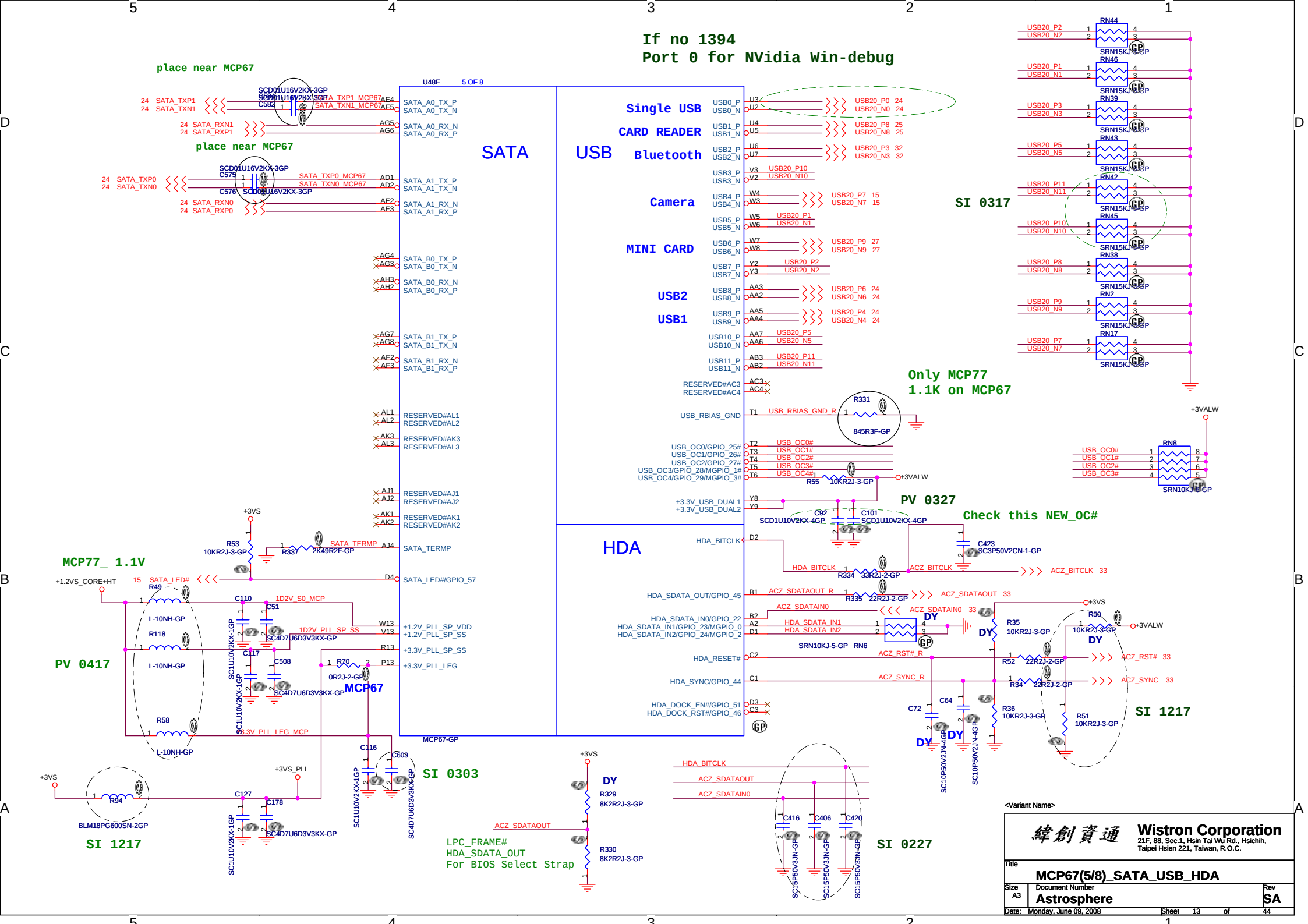
Title: MCP67(2/8)_PCIE

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

Date: Monday, June 09, 2008 Sheet 10 of 44


HDCP
SI 0109
IC EEPROM AT24C16BN-SHBY-B SO8
72.24C16.W01
??? Current Rating
PV 0408
PV 0327
MCP77_1.1V
LAN
DACS
FLAT PANEL
MCP67-GP
Only MCP77
Near MCP67, <500mil
Near MCP67, <1000mil
Near MCP67, 20mil width, <750mil
Near MCP67, <500mil
SI 0305
SI 0121
SI 0221
PV 0417
MCP67
HDMI
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
MCP67(3/8)_LAN_DACS_FLAT PANEL
Astrosphere
Monday, June 09, 2008


U48D
4 OF 8
PCI
LPC
IDE
MCP67-GP
1115 DB
Near MCP67, <500mil
LPC_FRAME#
HDA_SDATA_OUT
For BIOS Select Strap
<Variant Name>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
MCP67(4/8)_PCI_LPC_IDE
Size A3
Document Number
Astrosphere
Rev SA
Date: Monday, June 09, 2008
Sheet 12 of 44


If no 1394
Port 0 for NVidia Win-debug
place near MCP67
place near MCP67
U48E 5 OF 8
SATA
USB
HDA
Single USB
CARD READER
Bluetooth
Camera
MINI CARD
USB2
USB1
SI 0317
Only MCP77
1.1K on MCP67
PV 0327
Check this NEW_OC#
MCP77_ 1.1V
PV 0417
MCP67
SI 1217
SI 0303
SI 0227
LPC_FRAME#
HDA_SDATA_OUT
For BIOS Select Strap
MCP67-GP
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
MCP67(5/8)_SATA_USB_HDA
Astrosphere
Monday, June 09, 2008
13
44

# CRT I/F & CONNECTOR

Layout Note:
Place these resistors close to the CRT-out connector

PV 0327

11 VGA_RED
11 VGA_GREEN
11 VGA_BLUE
L12 GBK160808T-470Y-N-GP
L10 GBK160808T-470Y-N-GP
L9 GBK160808T-470Y-N-GP
CRT_R
CRT_G
CRT_B
C450 SC2P50V2CN-GP
C444 SC2P50V2CN-GP
C436 SC2P50V2CN-GP
C451 SC22P50V2JN-4GP
C445 SC22P50V2JN-4GP
C437 SC22P50V2JN-4GP

VGA_RED
VGA_GREEN
VGA_BLUE
R341 150R2F-1-GP
R346 150R2F-1-GP
R350 150R2F-1-GP

*Layout Note:*
** Must be a ground return path between this ground and the ground on the VGA connector.*
*Pi-filter & 150 Ohm pull-down resistors should be as close as to CRT CONN. RGB will hit 75 Ohm first, pi-filter, then CRT CONN.*

+5VS_CRT
C398 SCD01U16V2KX-3GP
DY
F2 FUSE-1D1A6V-8GP

SI 0102
+5VS
D25 CH501H-40PT-1-GP
+5VS_CRT1
RN49 SRN8K2J-3-GP
C418 SCD1U16V2ZY-2GP

CRT1
CRT_R
CRT_G
CRT_B
DDC_DATA_CON
JVGA_HS
JVGA_VS
DDC_CLK_CON
SYN-CONN15-GP
C403 SC33P50V2JN-3GP DY
C415 SC33P50V2JN-3GP DY
C424 SC22P50V2JN-4GP DY
C430 SC22P50V2JN-4GP DY

D24
+5VS_CRT1
CRT_R
DY
BAV99-7-F-GP

+3VS
RN51 SRN2K7J-3-GP

+5VS_CRT1
D22
DDC_CLK_CON
DDC_DATA_CON
BAV99S-GP DY

+3VS
U46
11 DDC_VGA_5V_DAT
DDC_DATA_CON
DDC_CLK_CON
DDC_VGA_5V_CLK 11
2N7002KDW-GP

PV 0403

*5V @ ext. CRT side*

+5VS_CRT1
C402 SCD1U16V2ZY-2GP
U45
11 VGA_HSYNC
OE# VCC
A
GND Y
74AHCT1G125GW-1-GP
HSYNC_5
U44
11 VGA_VSYNC
VSYNC_5
SRN33J-5-GRU
RN41
JVGA_HS
JVGA_VS

+5VS_CRT1
D23
CRT_B
CRT_G
BAV99S-GP DY

+5VS_CRT1
D21
JVGA_HS
JVGA_VS
BAV99S-GP DY

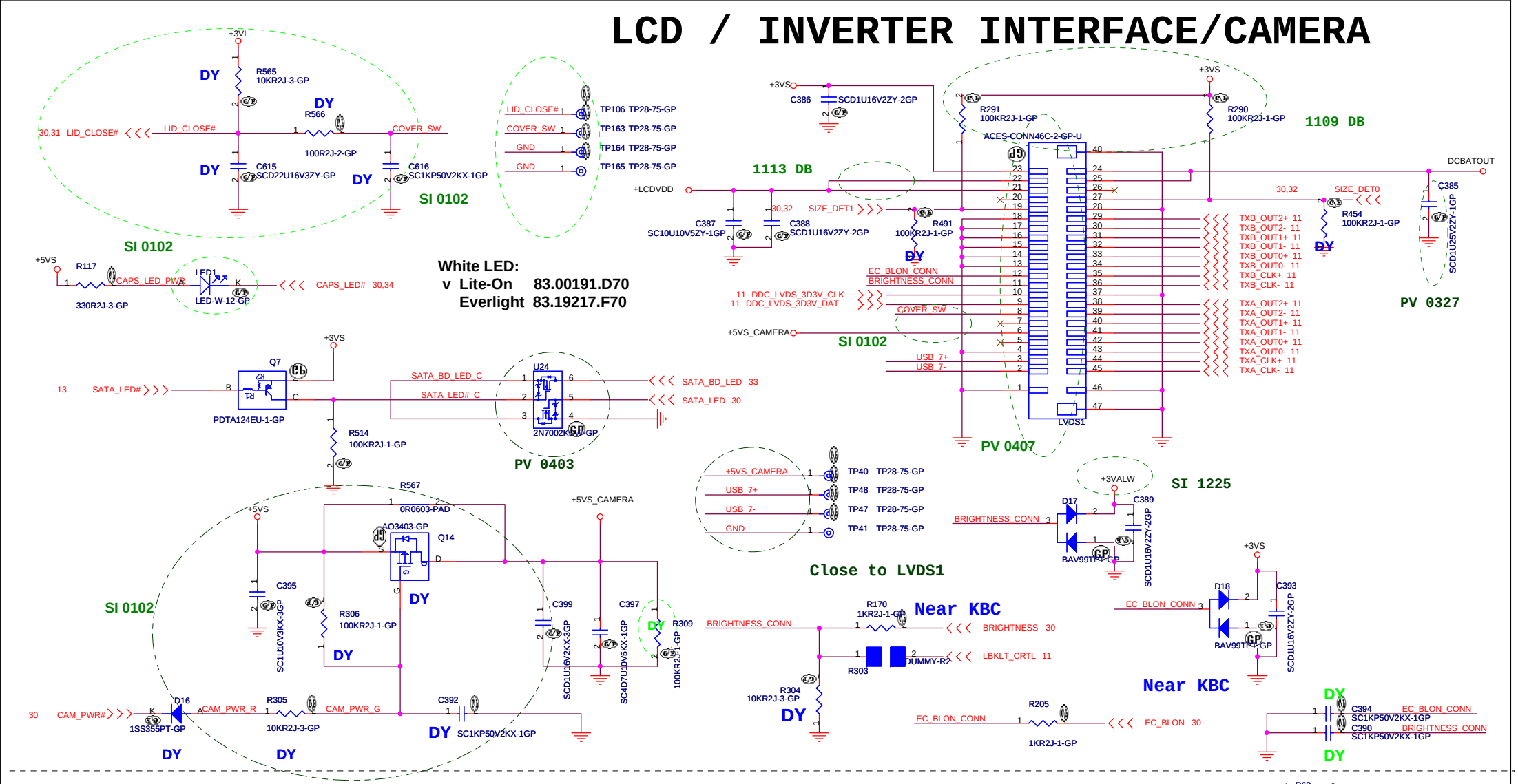
*Hsync & Vsync level shift*

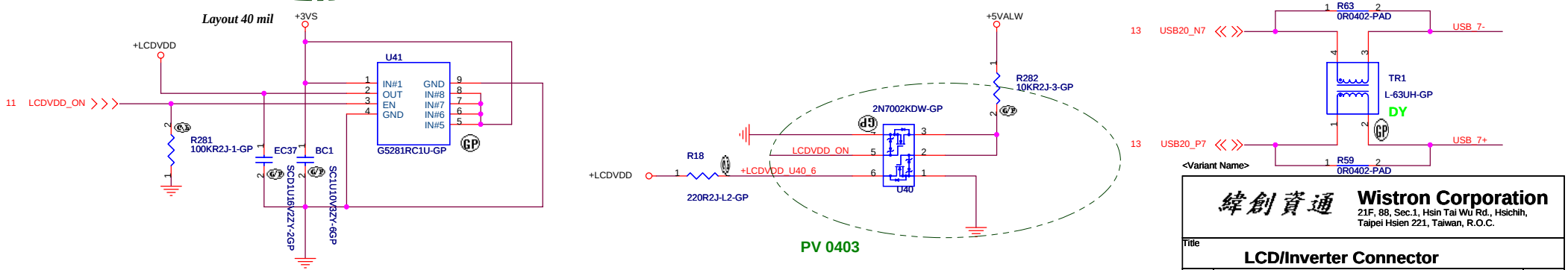
<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

| | | |
|---|---|---|
| Title | CRT/TV CONNECTOR | |
| Size A3 | Document Number Astrosphere | Rev SA |
| Date: Monday, June 09, 2008 | Sheet 14 of 44 | |

# LCD / INVERTER INTERFACE/CAMERA




緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

| | | |
|---|---|---|
| Title | LCD/Inverter Connector | |
| Size: Custom | Document Number: Astrosphere | Rev: SA |
| Date: Monday, June 09, 2008 | Sheet 15 of 44 | |

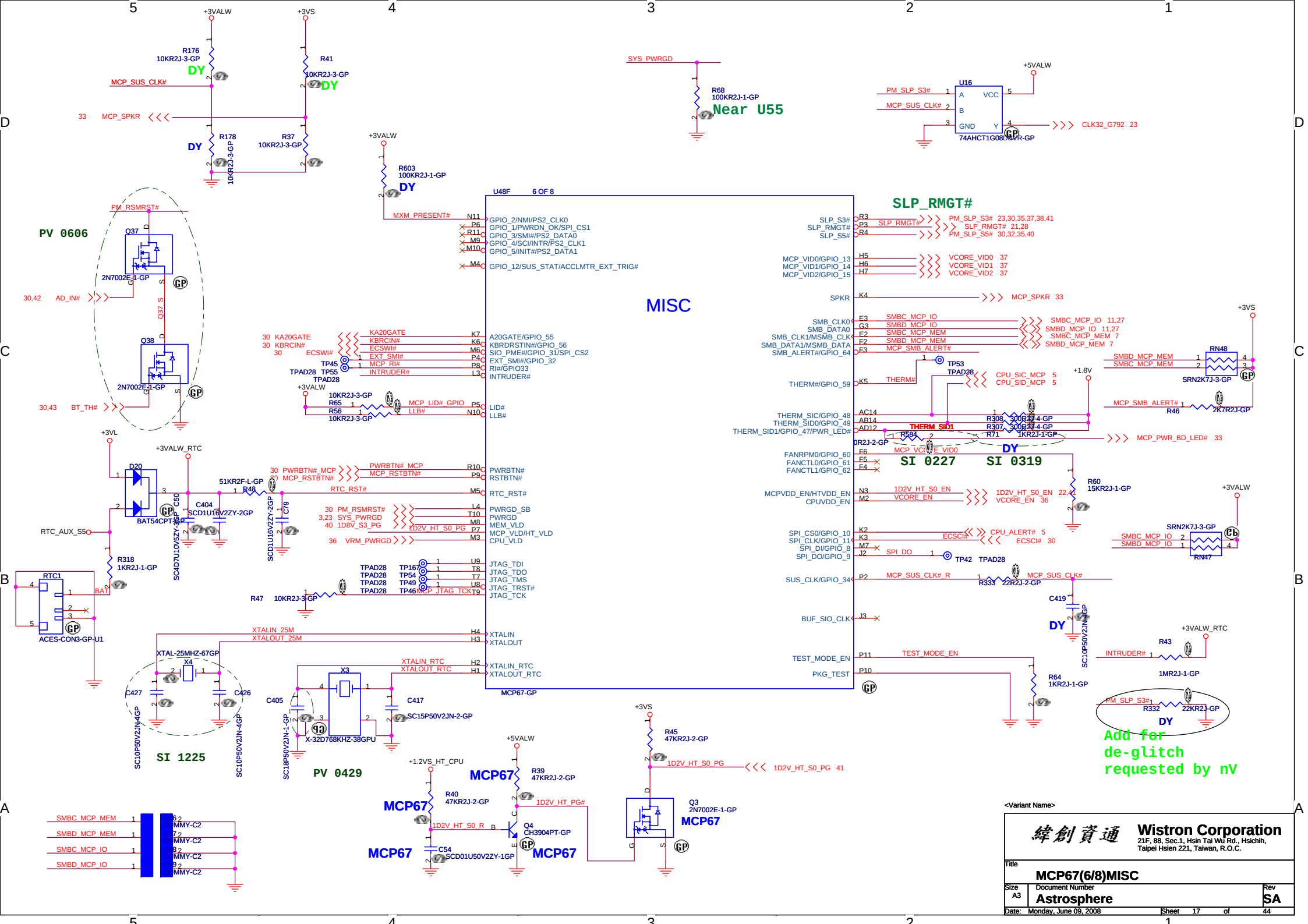
<Variant Name>

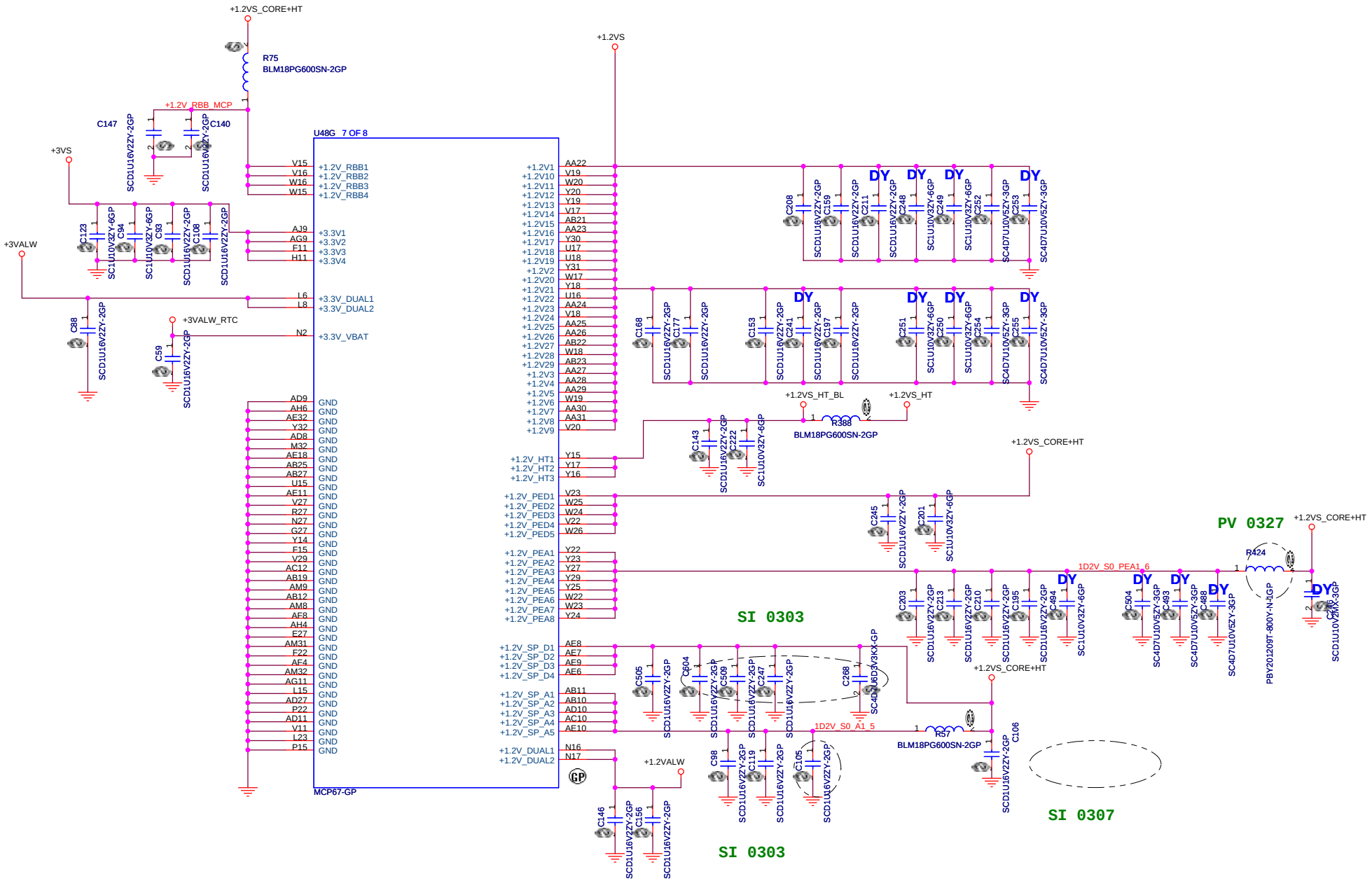
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **Board to board conn/ Docking**

| Size | Document Number | Rev |
|---|---|---|
| A3 | **Astrosphere** | **SA** |

Date: Monday, June 09, 2008 Sheet 16 of 44


MISC
MCP67-GP
U48F 6 OF 8
SLP_RMGT#
PV 0606
PV 0429
SI 1225
SI 0227
SI 0319
DY
Add for de-glitch requested by nV
Near U55
GPIO_2/NMI/PS2_CLK0
GPIO_1/PWRDN_OK/SPI_CS1
GPIO_3/SMI#/PS2_DATA0
GPIO_4/SCI/INTR/PS2_CLK1
GPIO_5/INIT#/PS2_DATA1
GPIO_12/SUS_STAT/ACCLMTR_EXT_TRIG#
A20GATE/GPIO_55
KBRDRSTIN#/GPIO_56
SIO_PME#/GPIO_31/SPI_CS2
EXT_SMI#/GPIO_32
RI#/GPIO33
INTRUDER#
LID#
LLB#
PWRBTN#
RSTBTN#
RTC_RST#
PWRGD_SB
PWRGD
MEM_VLD
MCP_VLD/HT_VLD
CPU_VLD
JTAG_TDI
JTAG_TDO
JTAG_TMS
JTAG_TRST#
JTAG_TCK
XTALIN
XTALOUT
XTALIN_RTC
XTALOUT_RTC
SLP_S3#
SLP_RMGT#
SLP_S5#
MCP_VID0/GPIO_13
MCP_VID1/GPIO_14
MCP_VID2/GPIO_15
SPKR
SMB_CLK0
SMB_DATA0
SMB_CLK1/MSMB_CLK
SMB_DATA1/MSMB_DATA
SMB_ALERT#/GPIO_64
THERM#/GPIO_59
THERM_SIC/GPIO_48
THERM_SID0/GPIO_49
THERM_SID1/GPIO_47/PWR_LED#
FANRPM0/GPIO_60
FANCTL0/GPIO_61
FANCTL1/GPIO_62
MCPVDD_EN/HTVDD_EN
CPUVDD_EN
SPI_CS0/GPIO_10
SPI_CLK/GPIO_11
SPI_DI/GPIO_8
SPI_DO/GPIO_9
SUS_CLK/GPIO_34
BUF_SIO_CLK
TEST_MODE_EN
PKG_TEST
PM_RSMRST#
AD_IN#
BT_TH#
MXM_PRESENT#
KA20GATE
KBRCIN#
ECSWI#
EXT_SMI#
MCP_RI#
INTRUDER#
MCP_LID#_GPIO
LLB#
PWRBTN#_MCP
MCP_RSTBTN#
RTC_RST#
PM_RSMRST#
SYS_PWRGD
1D8V_S3_PG
VRM_PWRGD
MCP_JTAG_TCK
XTALIN_25M
XTALOUT_25M
XTALIN_RTC
XTALOUT_RTC
MCP_SUS_CLK#
MCP_SPKR
SMBC_MCP_IO
SMBD_MCP_IO
SMBC_MCP_MEM
SMBD_MCP_MEM
SMB_MCP_SMB_ALERT#
THERM#
CPU_SIC_MCP
CPU_SID_MCP
THERM_SID1
MCP_VCORE_VID0
MCP_PWR_BD_LED#
1D2V_HT_S0_EN
VCORE_EN
ECSCI#
CPU_ALERT#
SPI_DO
MCP_SUS_CLK#_R
TEST_MODE_EN
INTRUDER#
PM_SLP_S3#
1D2V_HT_S0_PG
1D2V_HT_PG#
1D2V_HT_S0_R
MCP67
PM_SLP_S3# 23,30,35,37,38,41
SLP_RMGT# 21,28
PM_SLP_S5# 30,32,35,40
VCORE_VID0 37
VCORE_VID1 37
VCORE_VID2 37
SMBC_MCP_IO 11,27
SMBD_MCP_IO 11,27
SMBC_MCP_MEM 7
SMBD_MCP_MEM 7
CPU_SIC_MCP 5
CPU_SID_MCP 5
1D2V_HT_S0_EN 22,41
VCORE_EN 36
CLK32_G792 23
1D2V_HT_S0_PG 41
R176 10KR2J-3-GP
R41 10KR2J-3-GP
R178 10KR2J-3-GP
R37 10KR2J-3-GP
R603 100KR2J-1-GP
R68 100KR2J-1-GP
R65 10KR2J-3-GP
R56 10KR2J-3-GP
R47 10KR2J-3-GP
R318 1KR2J-1-GP
R48 51KR2F-L-GP
R584 0R2J-2-GP
R308 300R2F-4-GP
R307 300R2F-4-GP
R71 1KR2J-1-GP
R60 15KR2J-1-GP
R333 22R2J-2-GP
R64 1KR2J-1-GP
R332 22KR2J-GP
R43 1MR2J-1-GP
R46 2K7R2J-GP
R45 47KR2J-2-GP
R39 47KR2J-2-GP
R40 47KR2J-2-GP
RN48 SRN2K7J-3-GP
RN47 SRN2K7J-3-GP
Q37 2N7002E-1-GP
Q38 2N7002E-1-GP
Q3 2N7002E-1-GP
Q4 CH3904PT-GP
D20 BAT54CPT-GP
RTC1 ACES-CON3-GP-U1
X4 XTAL-25MHZ-67GP
X3 X-32D768KHZ-38GPU
C404 SCD1U16V2ZY-2GP
C79 SCD1U16V2ZY-2GP
C50 SC4D7U10V5ZY-3GP
C427 SC10P50V2JN-4GP
C426 SC10P50V2JN-4GP
C405 SC18P50V2JN-1-GP
C417 SC15P50V2JN-2-GP
C54 SCD01U50V2ZY-1GP
C419 SC10P50V2JN-GP
TP53 TPAD28
TP45 TPAD28
TP55 TPAD28
TP42 TPAD28
TP16 TPAD28
TP54 TPAD28
TP49 TPAD28
TP46 TPAD28
U16 74AHCT1G08DBVR-GP
+3VALW
+3VS
+3VL
+3VALW_RTC
+5VALW
+1.8V
+1.2VS_HT_CPU
SMBC_MCP_MEM
SMBD_MCP_MEM
SMBC_MCP_IO
SMBD_MCP_IO
DUMMY-C2
<Variant Name>
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
MCP67(6/8)MISC
Size A3
Document Number
Astrosphere
Rev SA
Date: Monday, June 09, 2008
Sheet 17 of 44





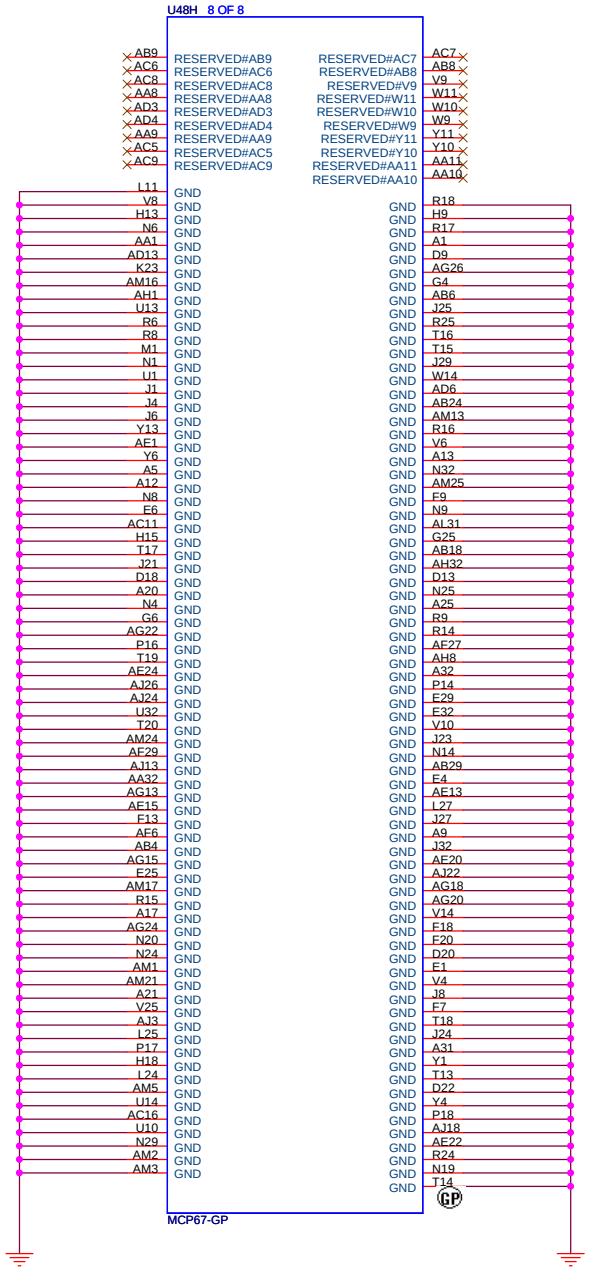
<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.


Title: MCP67(7/8)_POWER

Size: A3 | Document Number: Astrosphere | Rev: SA

Date: Monday, June 09, 2008 | Sheet 18 of 44




<Variant Name>

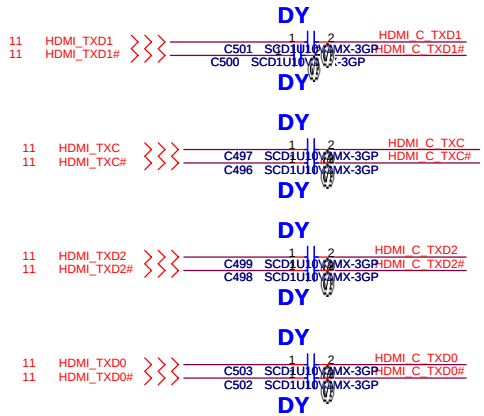
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

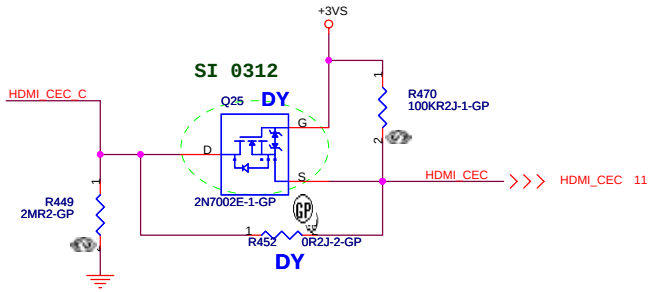
Title: **MCP67(8/8)_GND**

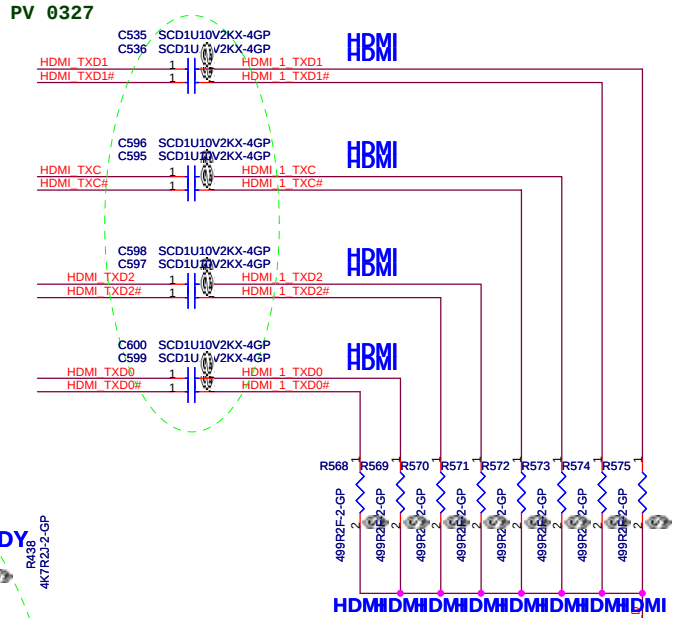
| Size | Document Number | Rev |
|---|---|---|
| A3 | **Astrosphere** | **SA** |

Date: Monday, June 09, 2008 Sheet 19 of 44

# HDMI Place near MCP67

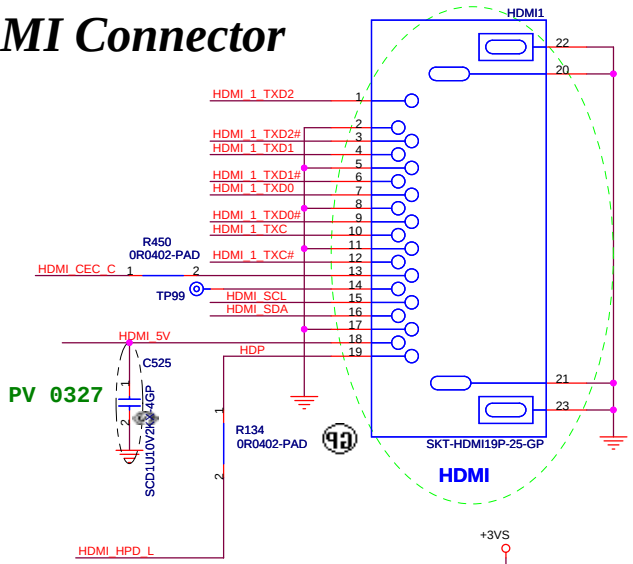


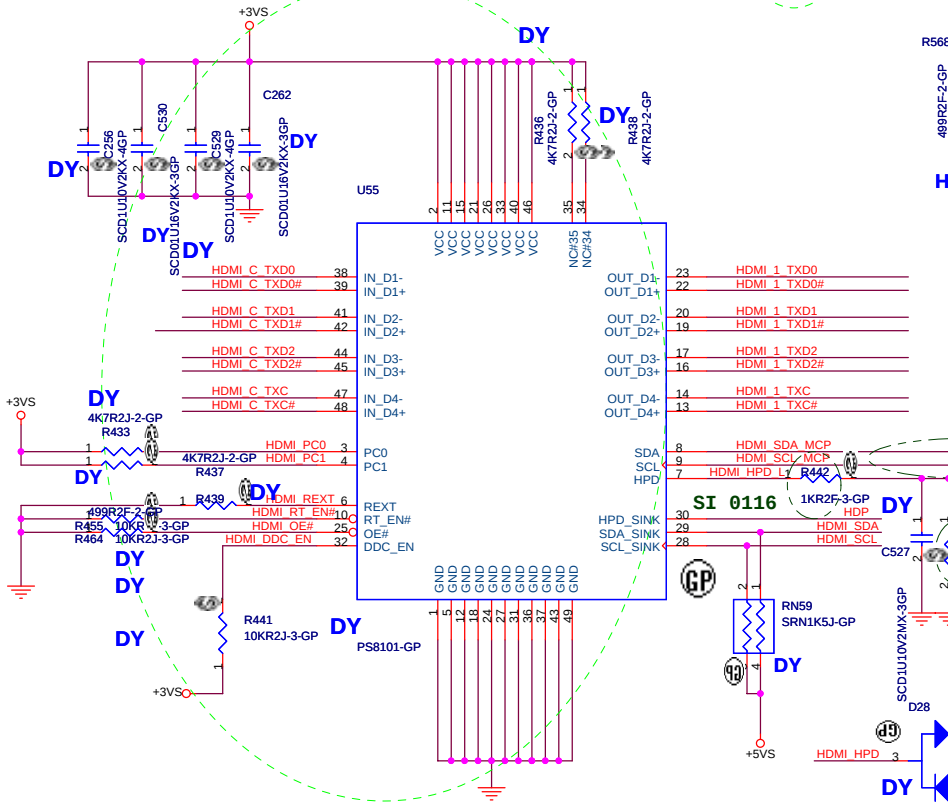



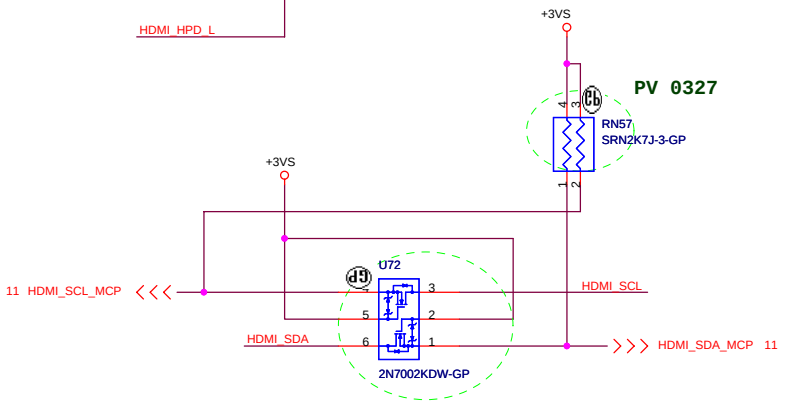



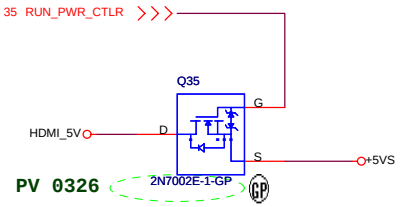

## HDMI Connector

22.10296.061



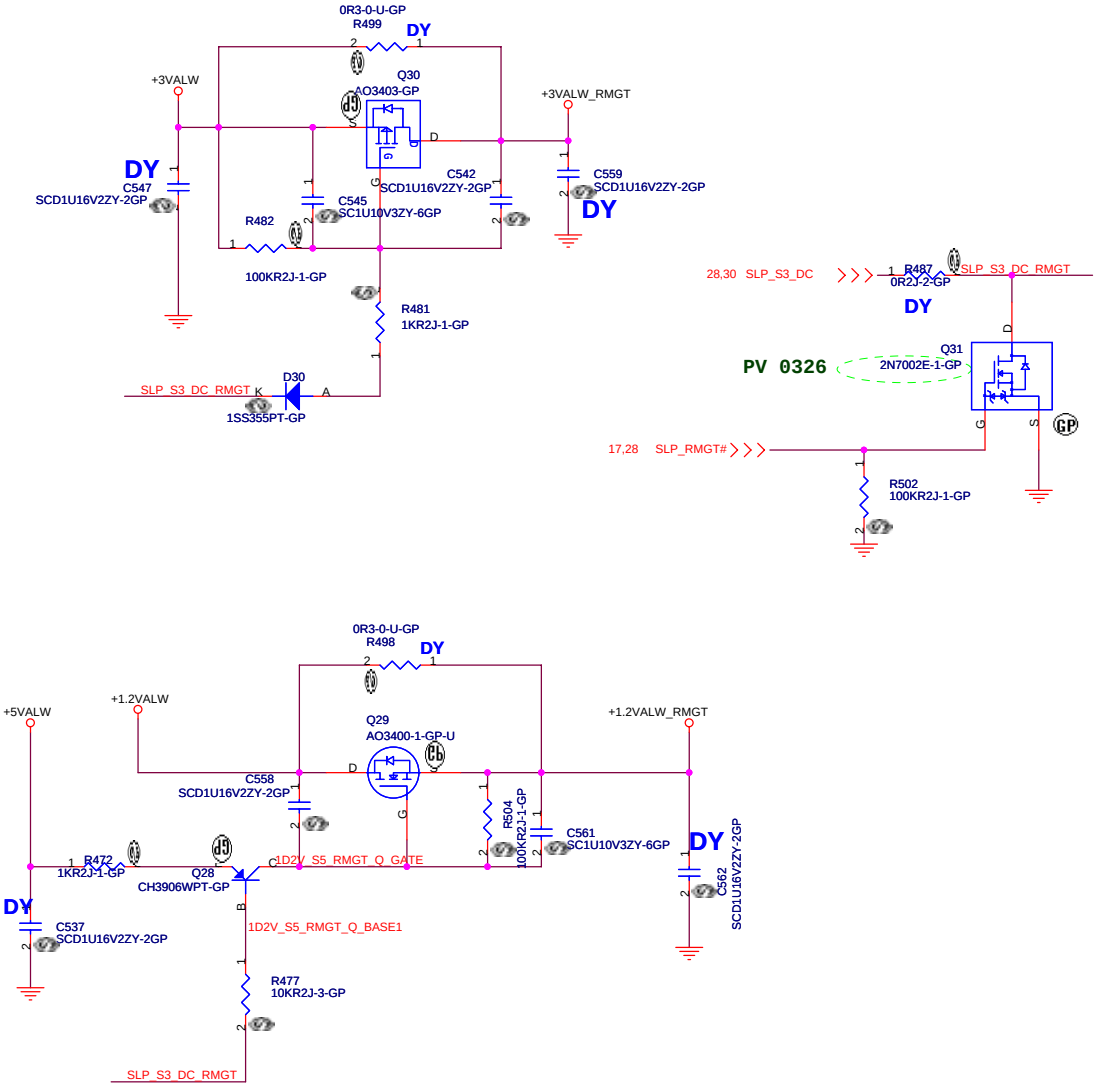




<Variant Name>

| | | |
|---|---|---|
| 緯創資通 | Wistron Corporation<br>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,<br>Taipei Hsien 221, Taiwan, R.O.C. | |
| Title: HDMI | | |
| Size: A3 | Document Number: Astrosphere | Rev: SA |
| Date: Monday, June 09, 2008 | Sheet 20 of 44 | |




<Variant Name>

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

Date: Monday, June 09, 2008 Sheet 21 of 44

MCP67

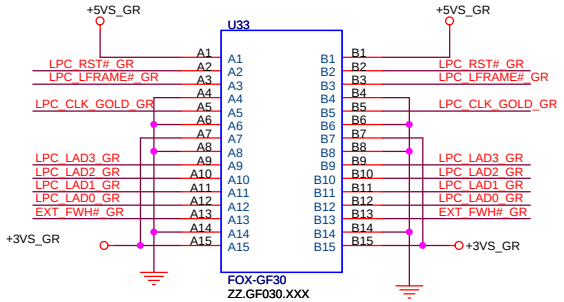
MCP77

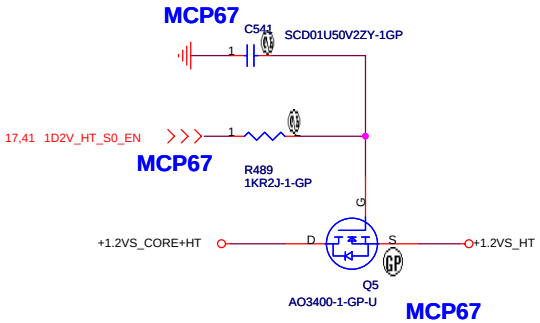
## GOLDEN FINGER FOR DEBUG BOARD

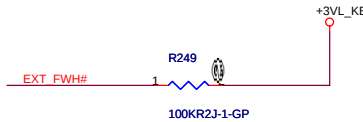
TOP VIEW

| | |
|---|---|
| A15 | (B1) |
| A14 | (B2) |
| ⋮ | ⋮ |
| A2 | (B14) |
| A1 | (B15) |

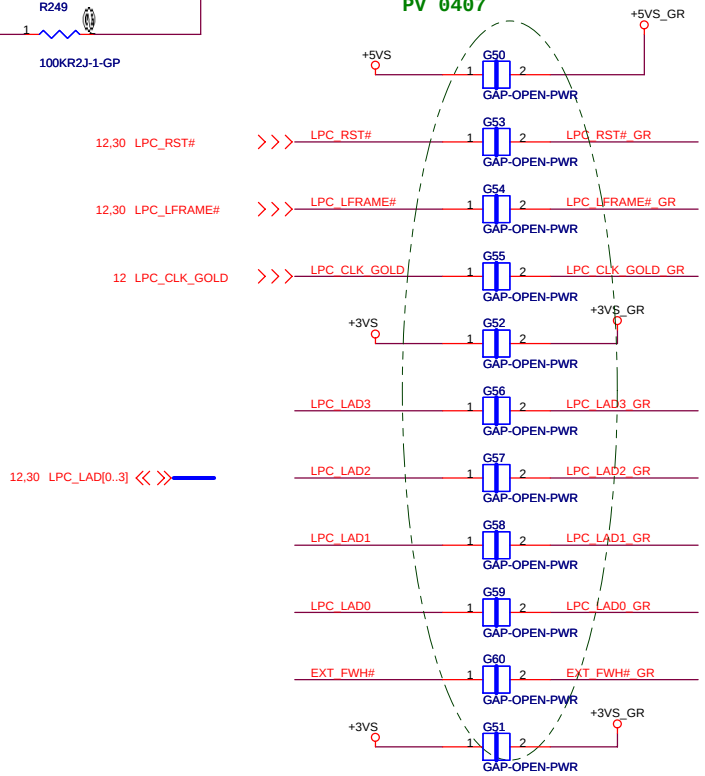
(BOTTOM VIEW)



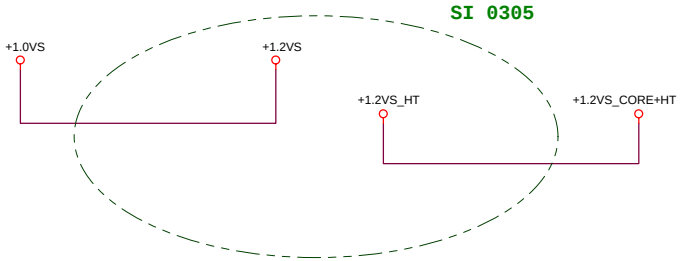




PV 0407




SI 0305




*Put near board edge*

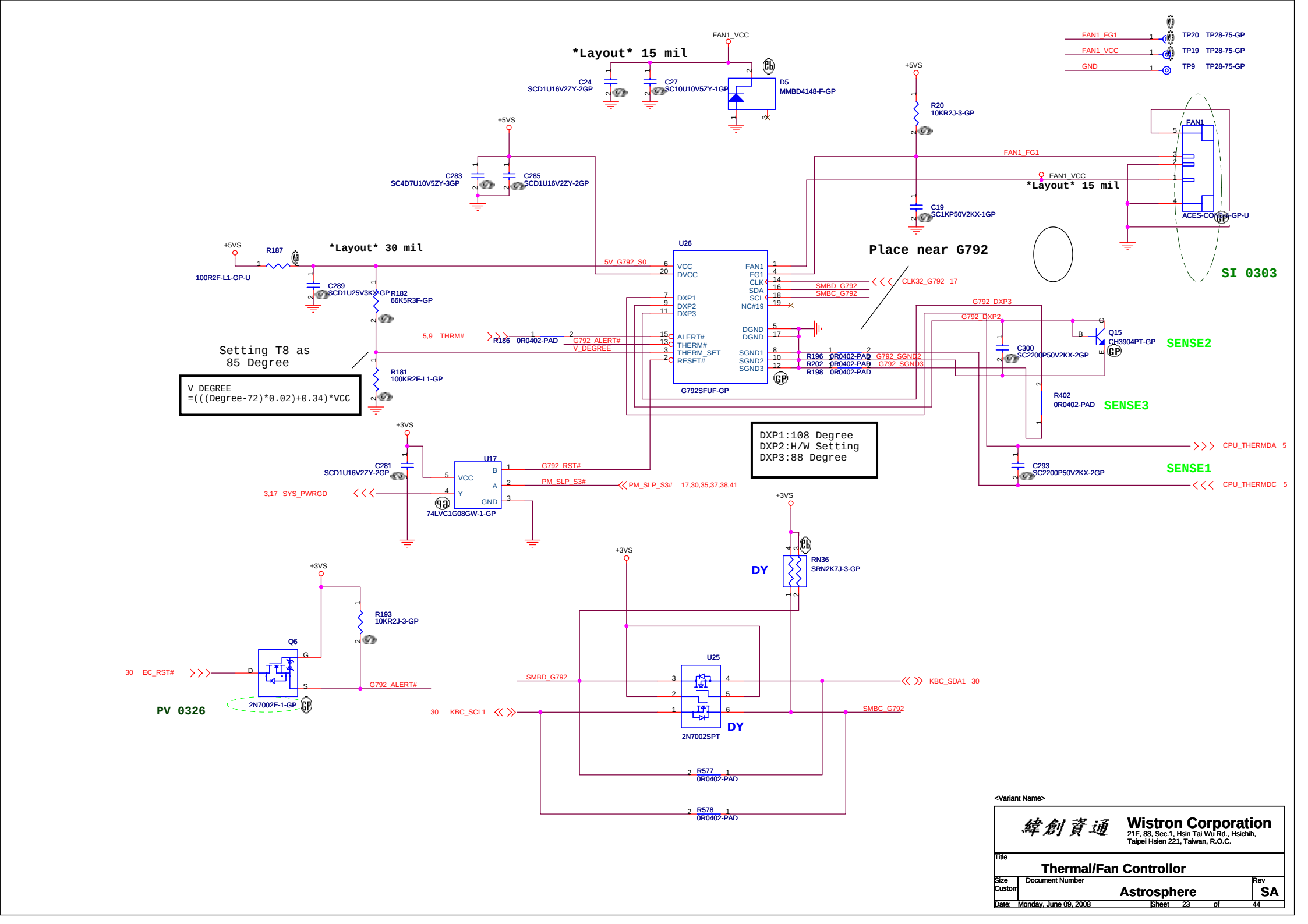
<Variant Name>


緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.


Title: POWER PATH

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

Date: Monday, June 09, 2008 Sheet 22 of 44




<Variant Name>

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

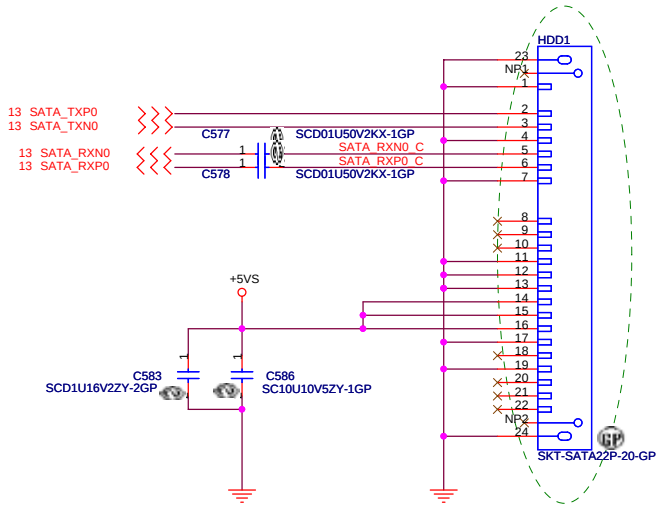
Title: **Thermal/Fan Controllor**

| Size | Document Number | Rev |
|---|---|---|
| Custom | **Astrosphere** | SA |

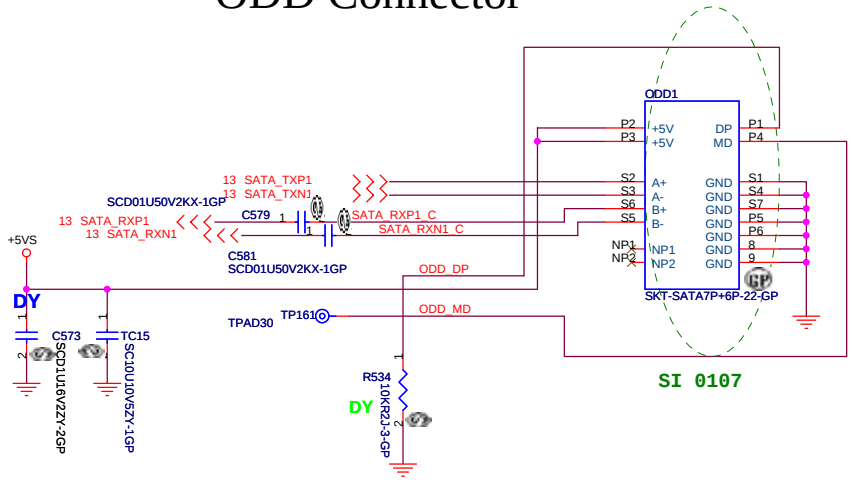
Date: Monday, June 09, 2008 Sheet 23 of 44

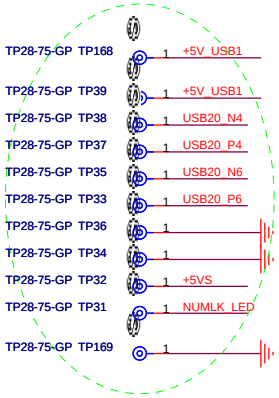
# SATA HD Connector

PV 0407



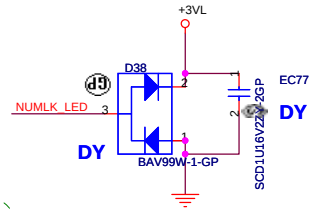

# ODD Connector



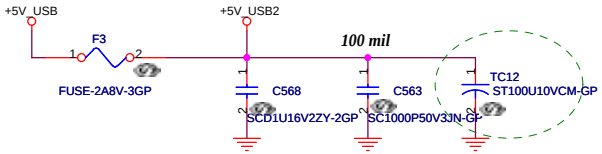



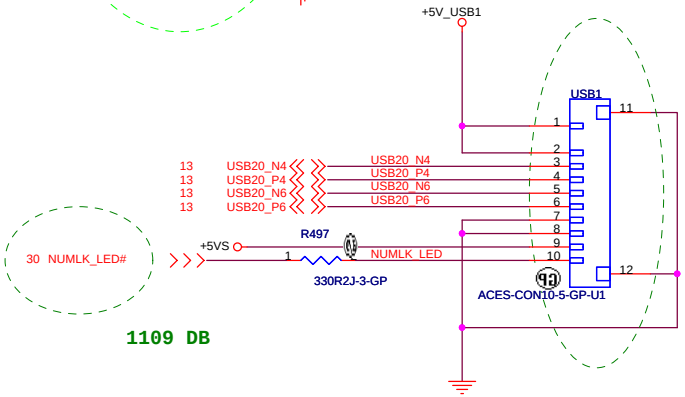

**1115 DB**
**Close to USB1**

# *USB PORT*



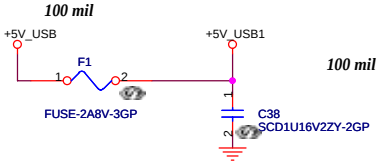

SI 0102

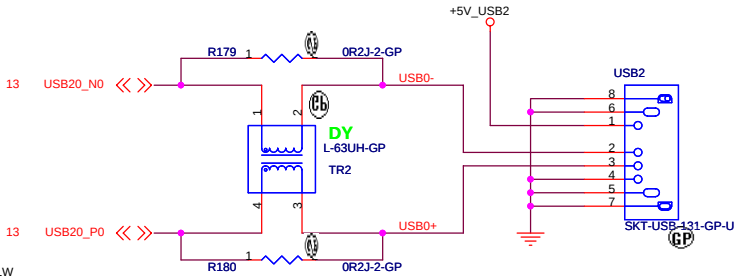


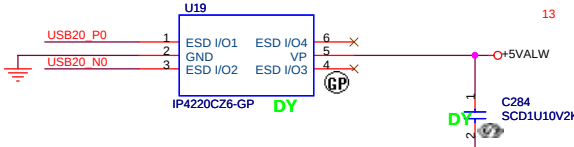



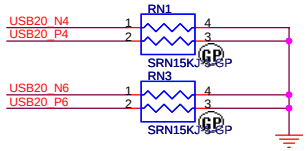

**1109 DB**

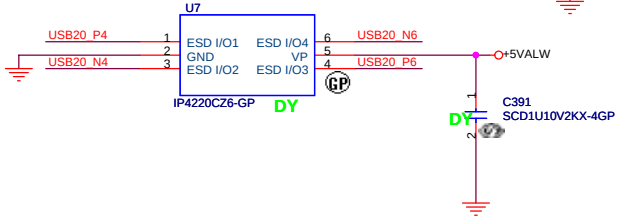
**1112 DB**

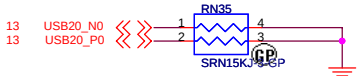


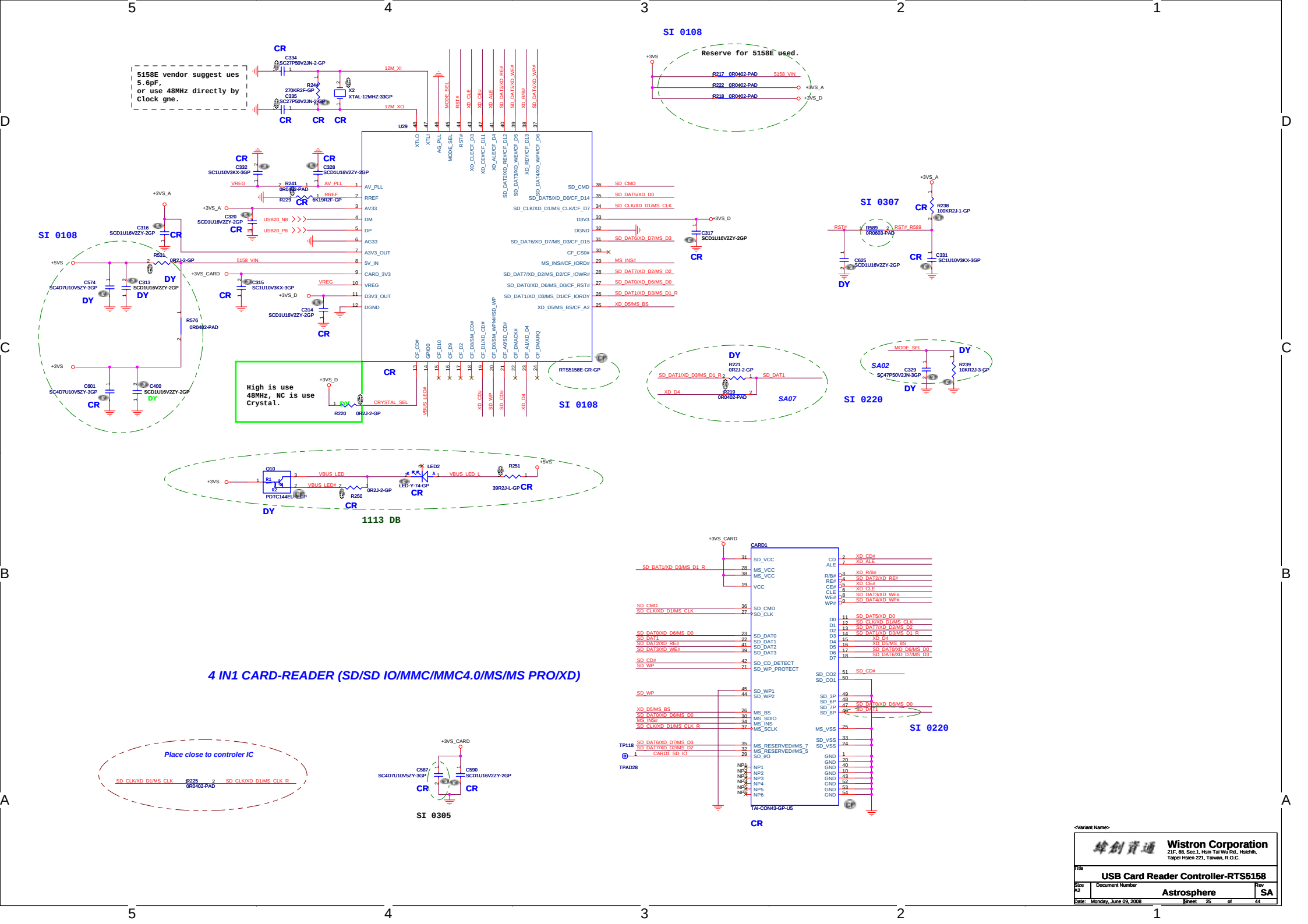




<variant_name>


緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.


| | | |
|---|---|---|
| Title | HD/CDROM | |
| Size A3 | Document Number: Astrosphere | Rev: SA |
| Date: Monday, June 09, 2008 | Sheet 24 of 44 | |


5158E vendor suggest ues 5.6pF, or use 48MHz directly by Clock gne.
Reserve for 5158E used.
SI 0108
SI 0307
SI 0220
SI 0305
High is use 48MHz, NC is use Crystal.
1113 DB
4 IN1 CARD-READER (SD/SD IO/MMC/MMC4.0/MS/MS PRO/XD)
Place close to controler IC
RTS5158E-GR-GP
TAI-CON43-GP-U5
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
USB Card Reader Controller-RTS5158
Astrosphere
Monday, June 09, 2008

<Variant Name>

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

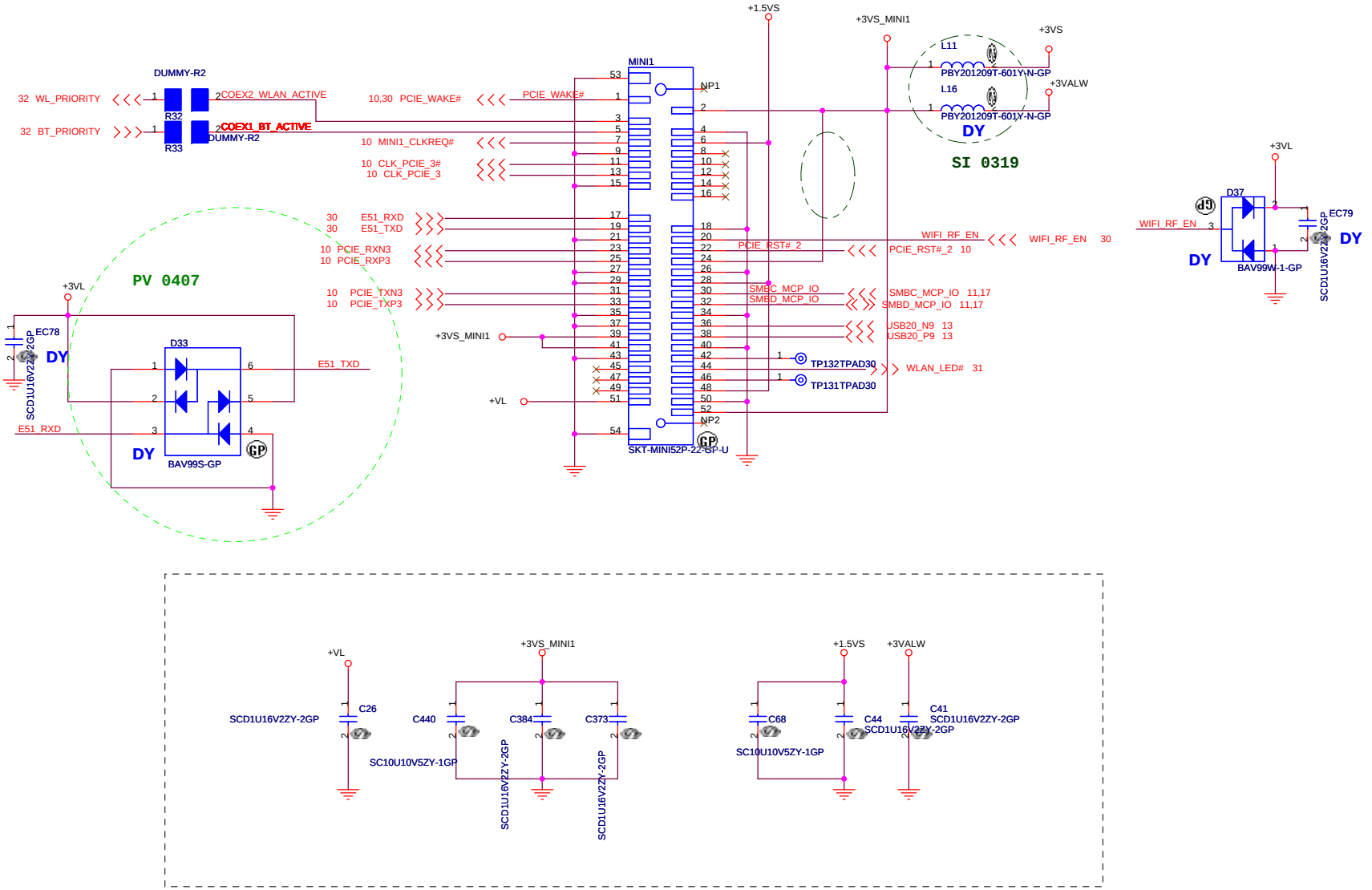
Title
**R5C832/IEEE1394/SD**

| Size | Document Number | Rev |
|---|---|---|
| A3 | **Astrosphere** | **SA** |

Date: Monday, June 09, 2008 Sheet 26 of 44

# Mini Card Connector 1

Wireless Card



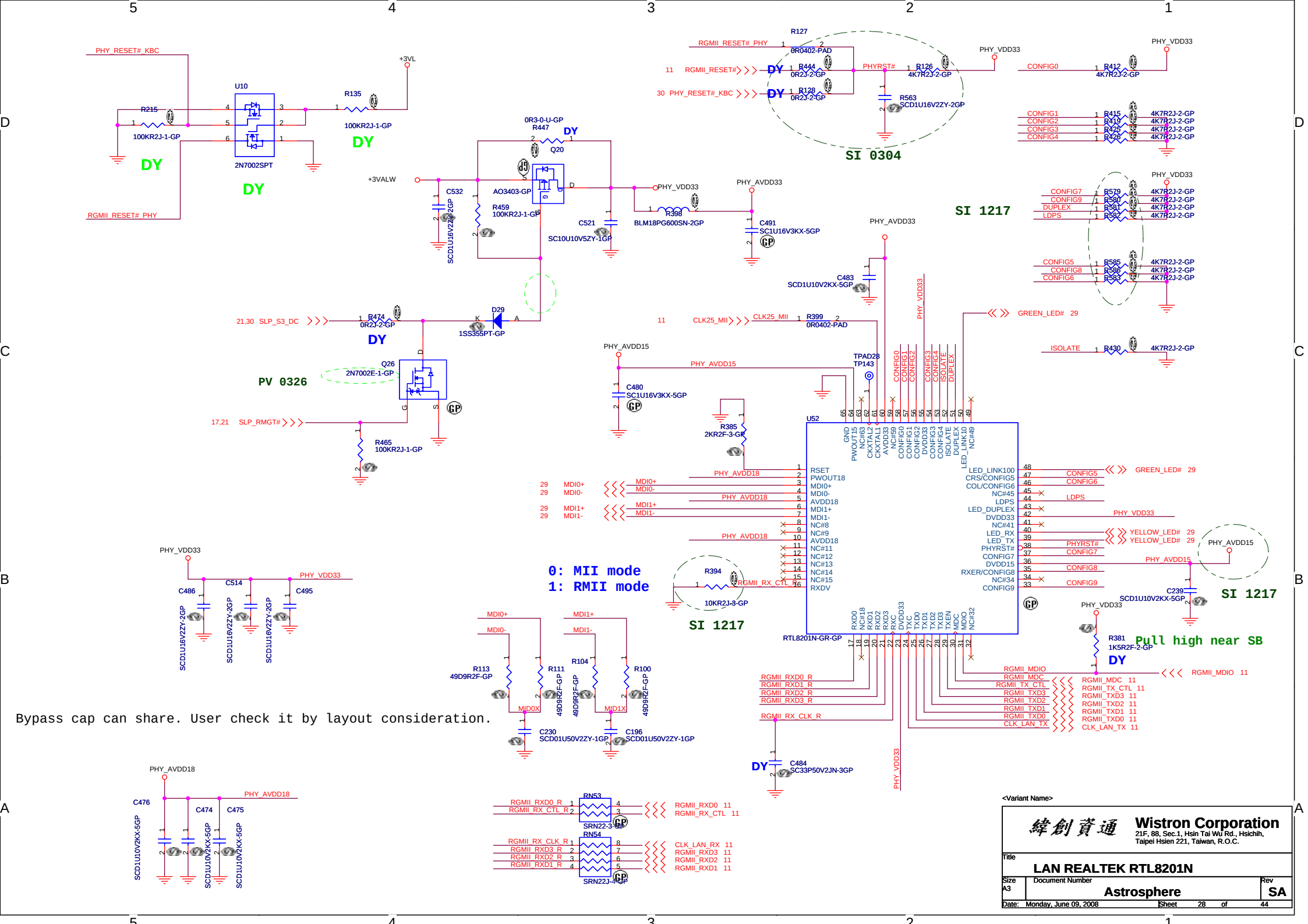




<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

| | | |
|---|---|---|
| Title | MINI CARD CONN . | |
| Size A3 | Document Number Astrosphere | Rev SA |
| Date: Monday, June 09, 2008 | Sheet 27 of 44 | |




Bypass cap can share. User check it by layout consideration.

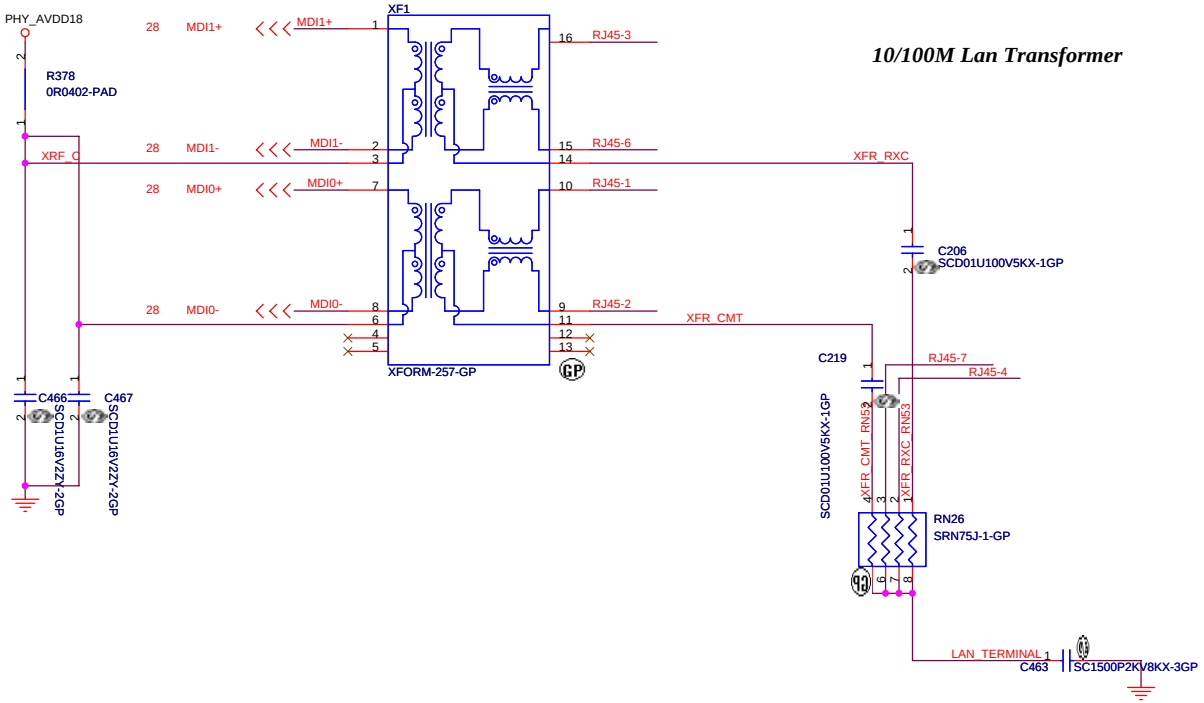
<Variant Name>

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **LAN REALTEK RTL8201N**

| Size | Document Number | Rev |
|---|---|---|
| A3 | **Astrosphere** | SA |

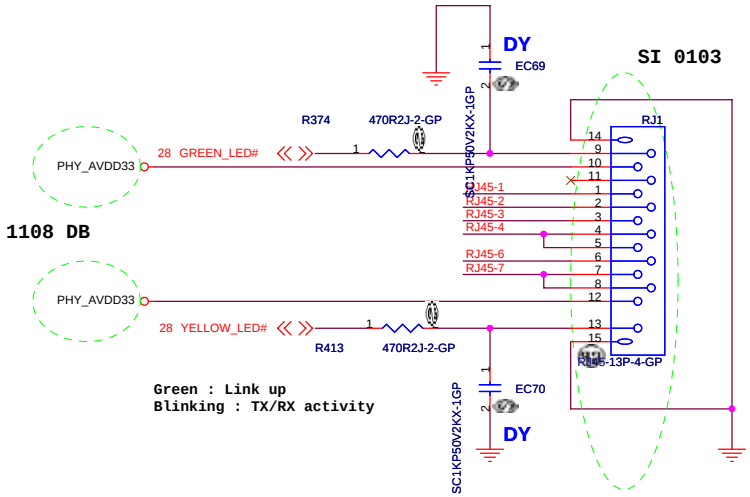
Date: Monday, June 09, 2008 Sheet 28 of 44




*10/100M Lan Transformer*

*1.route on bottom as differential pairs.*
*2.Tx+/Tx- are pairs. Rx+/Rx- are pairs.*
*3.No vias, No 90 degree bends.*
*4.pairs must be equal lengths.*
*5.6mil trace width,12mil separation.*
*6.36mil between pairs and any other trace.*
*7.Must not cross ground moat,except RJ-45 moat.*

PIN A1 : GREEN
PIN A3 : ORANGE
PIN B2 : YELLOW



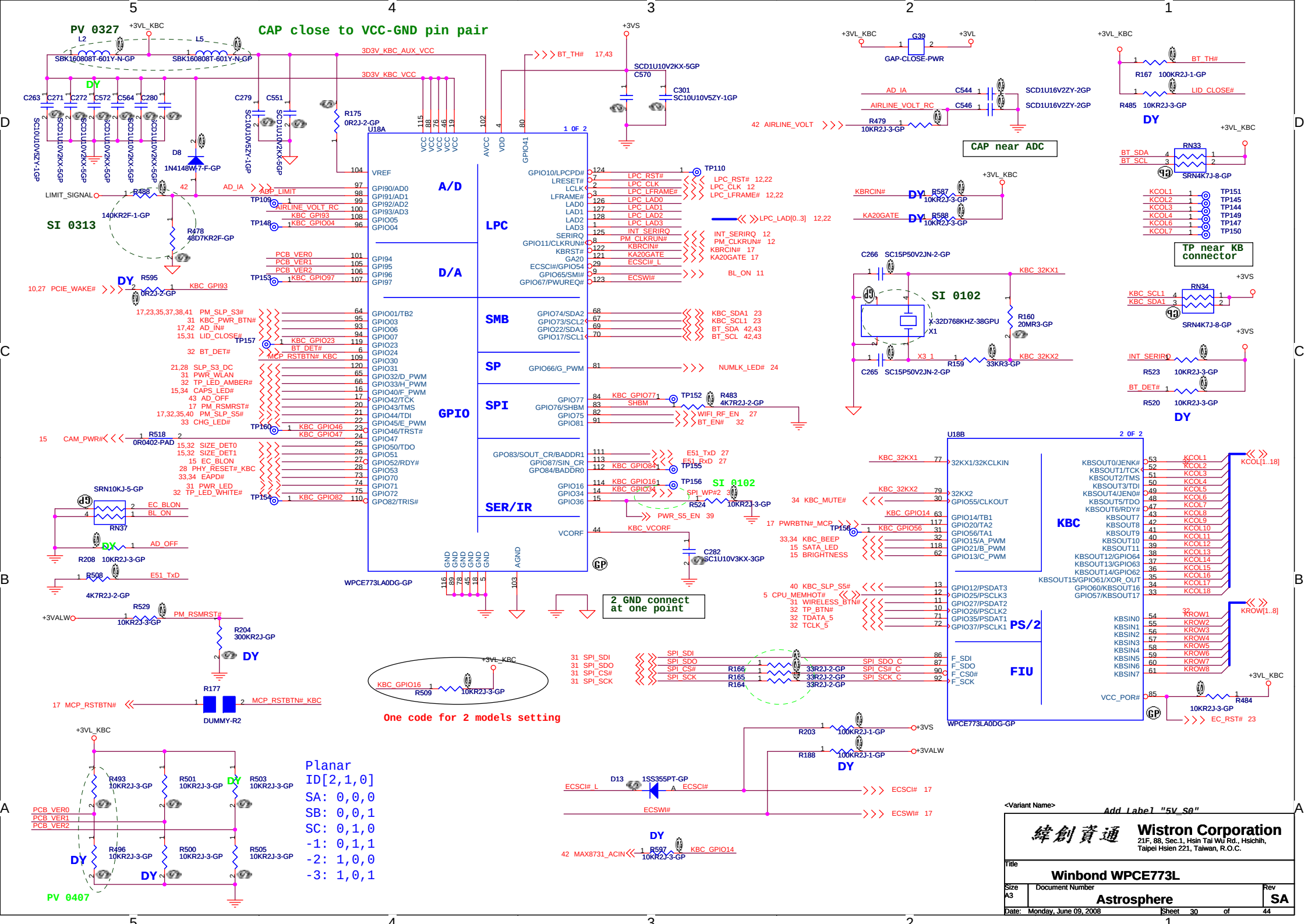

Green : Link up
Blinking : TX/RX activity

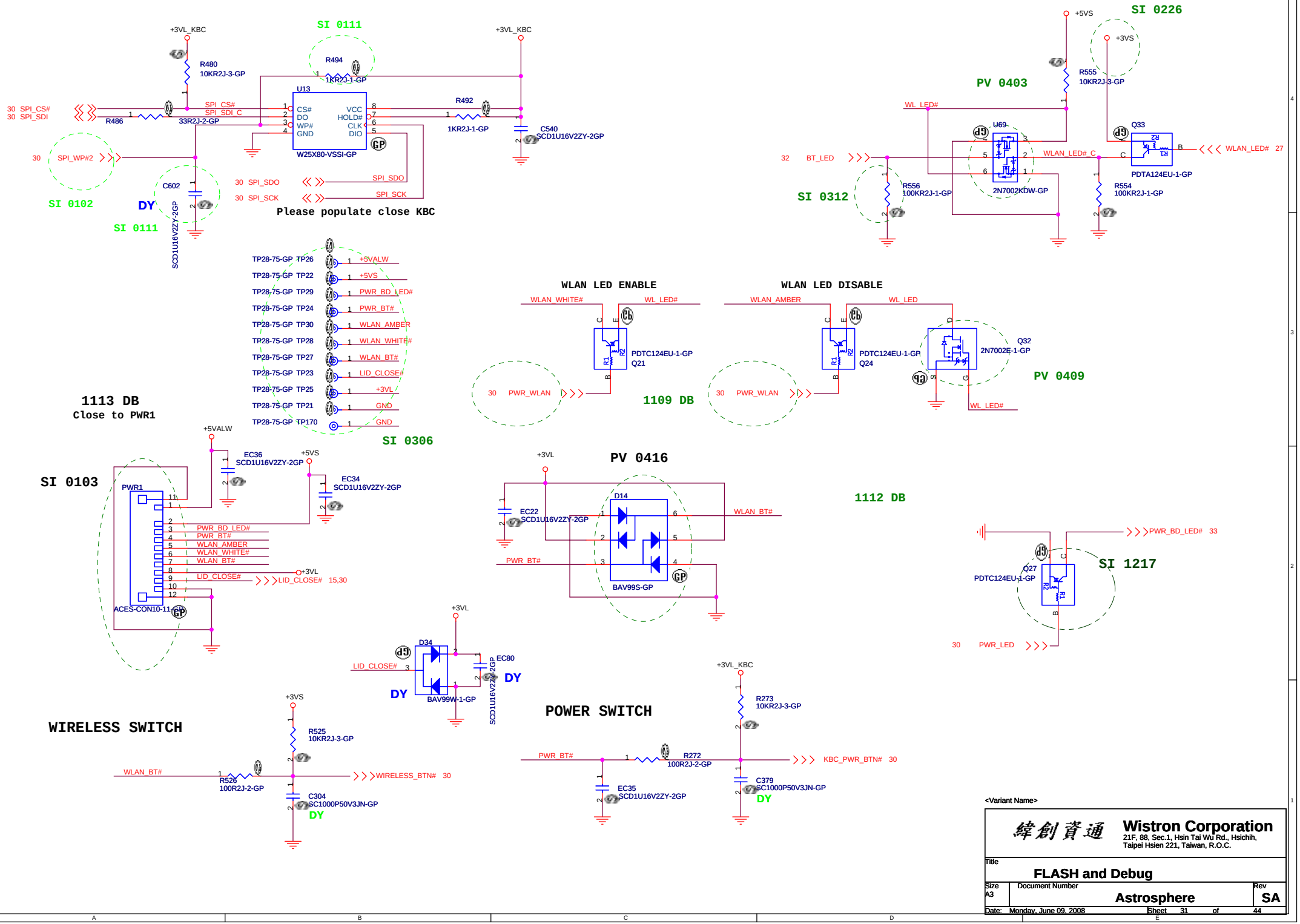
**Remark:**
**Add trace width to 20mils for RJ1 pin4, 5 and pin 7, 8.**

<Variant Name>

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

| | | |
|---|---|---|
| Title: **LAN CONN** | | |
| Size: A3 | Document Number: **Astrosphere** | Rev: **SA** |
| Date: Monday, June 09, 2008 | Sheet 29 of 44 | |


PV 0327
CAP close to VCC-GND pin pair
SI 0313
SI 0102
CAP near ADC
TP near KB connector
2 GND connect at one point
One code for 2 models setting
PV 0407
U18A
1 OF 2
U18B
2 OF 2
WPCE773LA0DG-GP
A/D
LPC
D/A
SMB
SP
SPI
GPIO
SER/IR
KBC
PS/2
FIU
Planar
ID[2,1,0]
SA: 0,0,0
SB: 0,0,1
SC: 0,1,0
-1: 0,1,1
-2: 1,0,0
-3: 1,1,1
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Winbond WPCE773L
Astrosphere
Add Label "5V_S0"
Monday, June 09, 2008
30
44




<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: FLASH and Debug

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

Date: Monday, June 09, 2008 Sheet 31 of 44

## Internal KeyBoard Connector

30 KROW[1..8]
30 KCOL[1..18]

Keyboard matrix ( from vendor )

| | US | Eur | Jap |
|---|---|---|---|
| MATRIXID1# | 0 | 1 | 0 |
| MATRIXID2# | 0 | 0 | 1 |

**1114 DB**
**Close to KB1**

KB1 — ACES-CON26-2GP

KROW2 TP97 TP28-75-GP
KROW8 TP81 TP28-75-GP
KROW7 TP96 TP28-75-GP
KCOL10 TP80 TP28-75-GP
KROW5 TP95 TP28-75-GP
KROW6 TP79 TP28-75-GP
KCOL1 TP94 TP28-75-GP
KROW3 TP78 TP28-75-GP
KROW4 TP93 TP28-75-GP
KCOL6 TP77 TP28-75-GP
KCOL2 TP92 TP28-75-GP
KROW1 TP76 TP28-75-GP
KCOL3 TP91 TP28-75-GP
KCOL5 TP75 TP28-75-GP
KCOL8 TP90 TP28-75-GP
KCOL9 TP74 TP28-75-GP
KCOL7 TP89 TP28-75-GP
KCOL4 TP73 TP28-75-GP
KCOL13 TP88 TP28-75-GP
KCOL14 TP72 TP28-75-GP
KCOL15 TP87 TP28-75-GP
KCOL12 TP71 TP28-75-GP
KCOL11 TP86 TP28-75-GP
KCOL16 TP70 TP28-75-GP
KCOL17 TP85 TP28-75-GP
KCOL18 TP69 TP28-75-GP

GND TP83 TP28-75-GP
GND TP82 TP28-75-GP

SI 0310

17,30,35,40 PM_SLP_S5#

R209 0R0603-PAD
Q9 AO3403-GP
R216 100KR2J-1-GP
R210 100KR2J-1-GP
R214 10KR2J-3-GP
C310 SCD1U10V3KX-3GP
C312 SCD1U16V2KX-3GP
C309 SCD1U16V2KX-3GP
Q8 2N7002W-7-GP
TP_SLP_S5
TP_SLP_S5_C
+5VALW
+5V_TP
DY

**1113 DB**

D9 BAV99W-1-GP — TP_ON/OFF — EC81 SCD1U16V2ZY-2GP

**1108 DB**

EC41 SCD1U16V2ZY-2GP
D7 BAV99S-GP
TDATA_5
TCLK_5

**PV 0407**

EC82 SCD1U16V2ZY-2GP
D27 BAV99S-GP
TP_LED_WHITE#
TP_LED_AMBER#

**PV 0407**

EC83 SCD1U16V2ZY-2GP
D32 BAV99S-GP
SIZE_DET1 15,30
SIZE_DET0 15,30

RC1 SRC100P50V-2-GP — KCOL16 KCOL11 KCOL12 KCOL15
RC5 SRC100P50V-2-GP — KROW3 KCOL1 KROW6 KROW5
RC6 SRC100P50V-2-GP — KCOL10 KROW7 KROW8 KROW2
for EMI
RC2 SRC100P50V-2-GP — KCOL14 KCOL13 KCOL4 KCOL7
RC3 SRC100P50V-2-GP — KCOL9 KCOL8 KCOL5 KCOL3
RC4 SRC100P50V-2-GP — KROW1 KCOL2 KCOL6 KROW4

MAX 150mA
Q11 AO3403-GP
R253 100KR2J-1-GP
R252 10KR2J-3-GP
C358 SC1U10V3ZY-6GP
C357 SC1U10V3ZY-6GP
C356 SC4D7U10V5KX-1GP
C359 SCD1U16V2ZY-2GP
D15 1SS355PT-GP
BT_EN# G
BT_EN# R
BT_EN# 30
+3VS
+3VS_BT

**1108 DB**

TouchPad Connector

+5V_TP
RN32 SRN10KJ-11-GP-U
C242 SC1U10V3ZY-6GP
C259 SCD1U16V2ZY-2GP
C513 SC33P50V2JN-3GP
C520 SC33P50V2JN-3GP
ACES-CON10-11-GP
TPAD1
EC42 SCD1U16V2ZY-2GP
TDATA_5 30
TCLK_5 30
TP_LED_AMBER# 30
TP_LED_WHITE# 30
TP_ON/OFF
+5VS
R434 10KR2J-3-GP
100KR2J-2-GP
R435
TP_BTN# 30
C244 SC1000P50V3JN-GP
D39 BAV99W-1-GP
EC85 SCD1U16V2ZY-2GP
+3VL

SI 0103

TP28-75-GP TP101
TP28-75-GP TP100
TP28-75-GP TP64 +5VS
TP28-75-GP TP102 TP_ON/OFF
TP28-75-GP TP105 TP_LED_WHITE#
TP28-75-GP TP103 TP_LED_AMBER#
TP28-75-GP TP66
TP28-75-GP TP68 TCLK_5
TP28-75-GP TP65 TDATA_5
TP28-75-GP TP104 +5V_TP

**1113 DB**
**Close to TPAD1**

## BT

+3VS_BT
EC32 SCD1U16V2ZY-2GP
BT1 ETY-CON8-11-GP
USB20_P3 13
USB20_N3 13
BT_LED 31
WL_PRIORITY 27
BT_PRIORITY 27
BT_DET# 30
BT_PRIORITY
WL_PRIORITY
BT_LED
EC29 SCD1U16V2ZY-2GP
EC30 SCD1U16V2ZY-2GP
EC31 SCD1U16V2ZY-2GP

SI 0319

D35 BAV99W-1-GP
EC84 SCD1U16V2ZY-2GP
BT_DET#

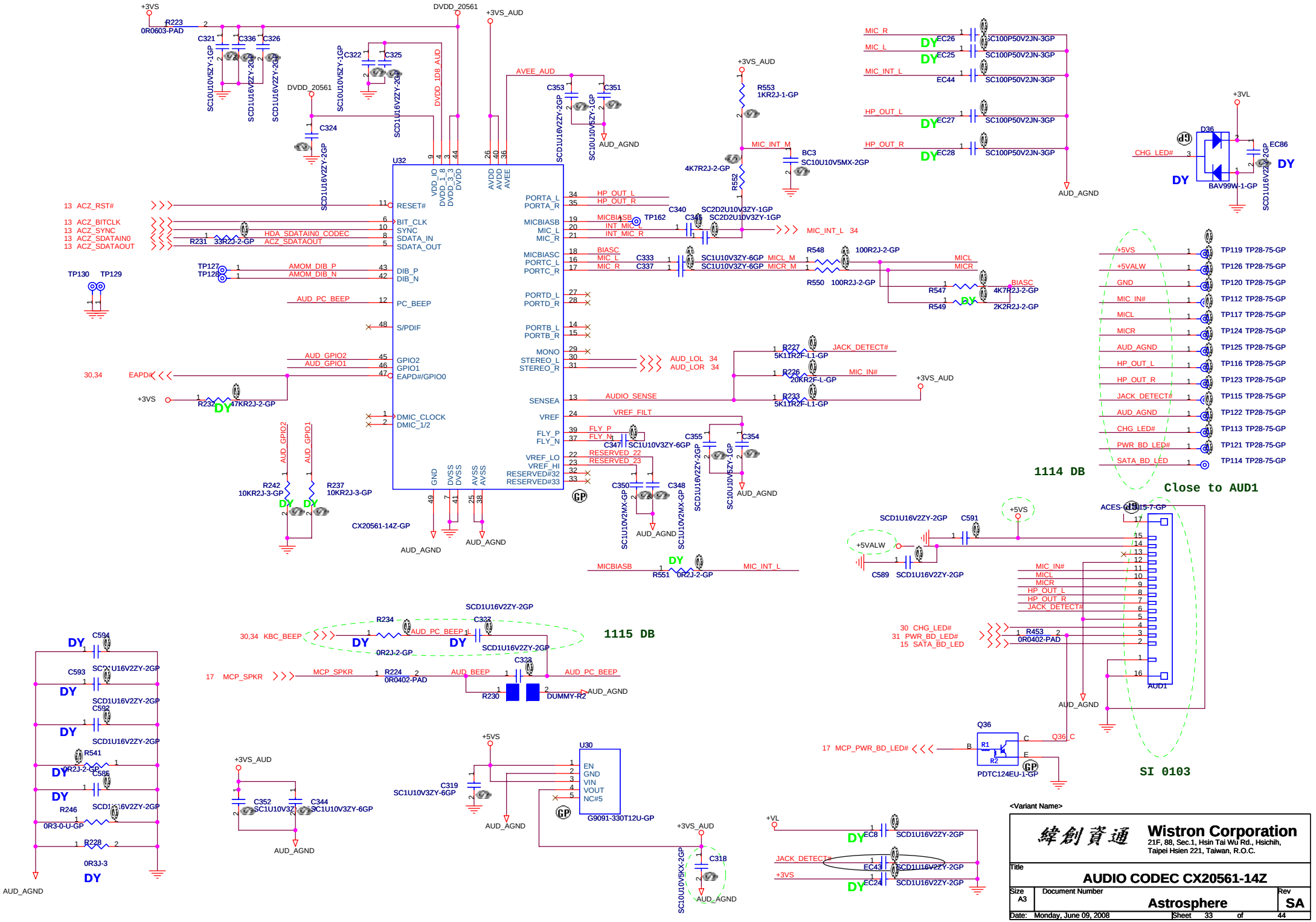
SI 0102
Close to BT1

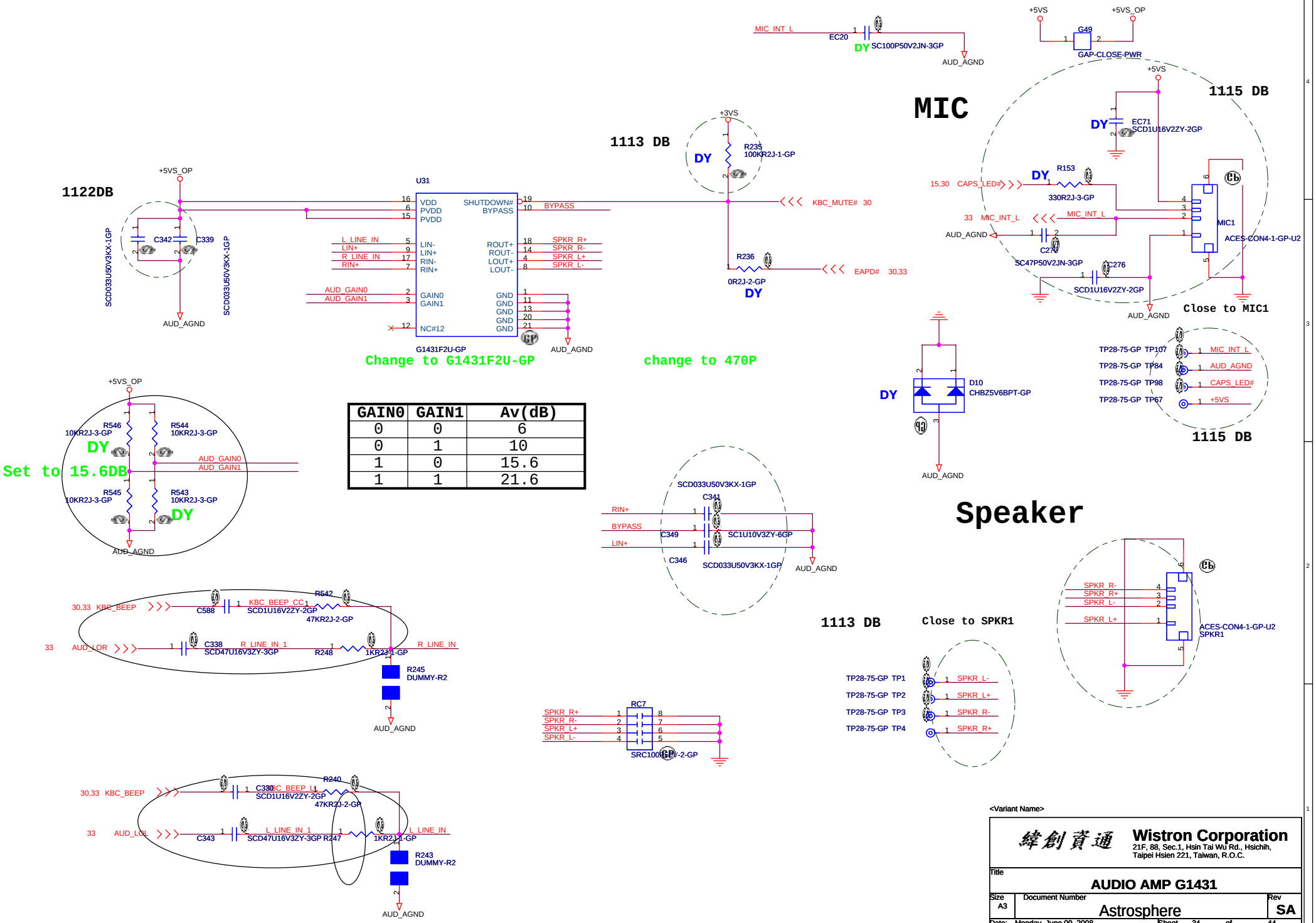
+3VS_BT TP176 TP28-75-GP
GND TP174 TP28-75-GP
USB20_P3 TP173 TP28-75-GP
USB20_N3 TP175 TP28-75-GP
BT_LED TP172 TP28-75-GP
WL_PRIORITY TP178 TP28-75-GP
BT_PRIORITY TP177 TP28-75-GP
BT_DET# TP179 TP28-75-GP

<Variant Name>

Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: KeyBoard-CONN
Size: A2
Document Number: Astrosphere
Rev: SA
Date: Monday, June 09, 2008
Sheet 32 of 44


U32
CX20561-14Z-GP
1114 DB
Close to AUD1
1115 DB
SI 0103
U30
G9091-330T12U-GP
Q36
PDTC124EU-1-GP
AUD1
ACES-CH15-7-GP
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
AUDIO CODEC CX20561-14Z
Astrosphere
Monday, June 09, 2008




<Variant Name>

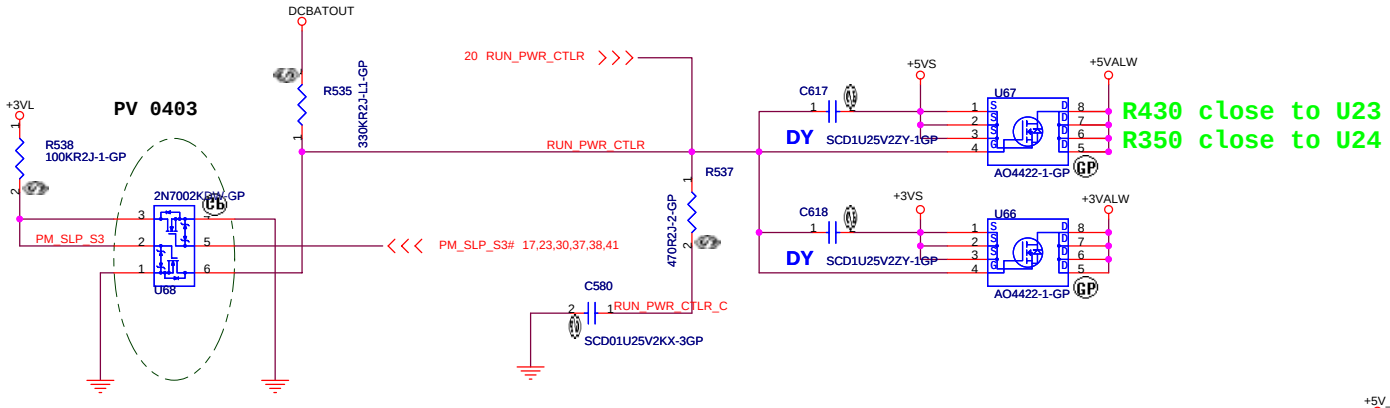
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: AUDIO AMP G1431

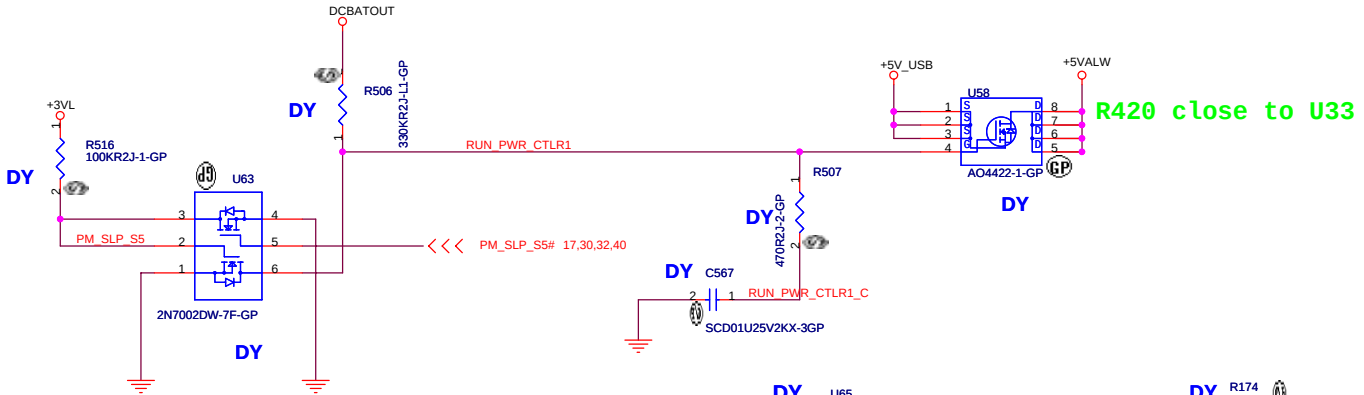
| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

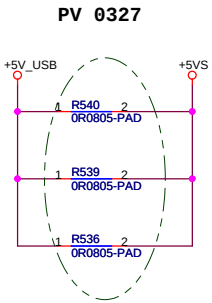
Date: Monday, June 09, 2008 Sheet 34 of 44

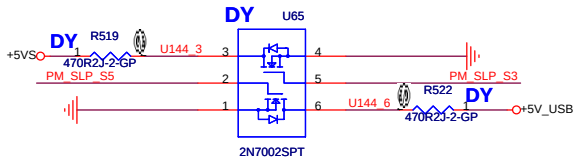
## Run Power

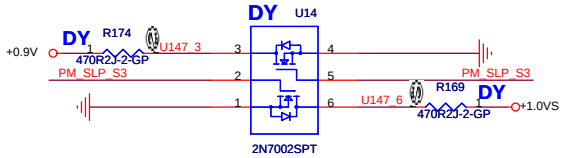


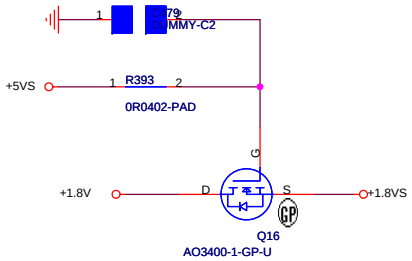

## Run Power

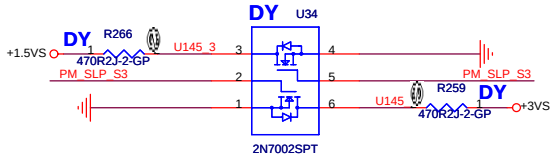


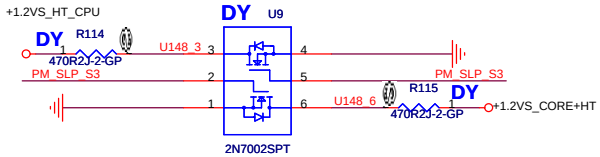



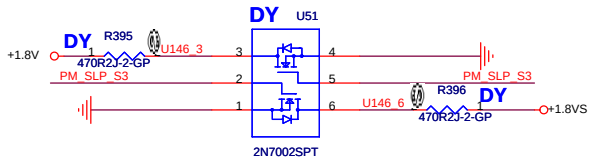



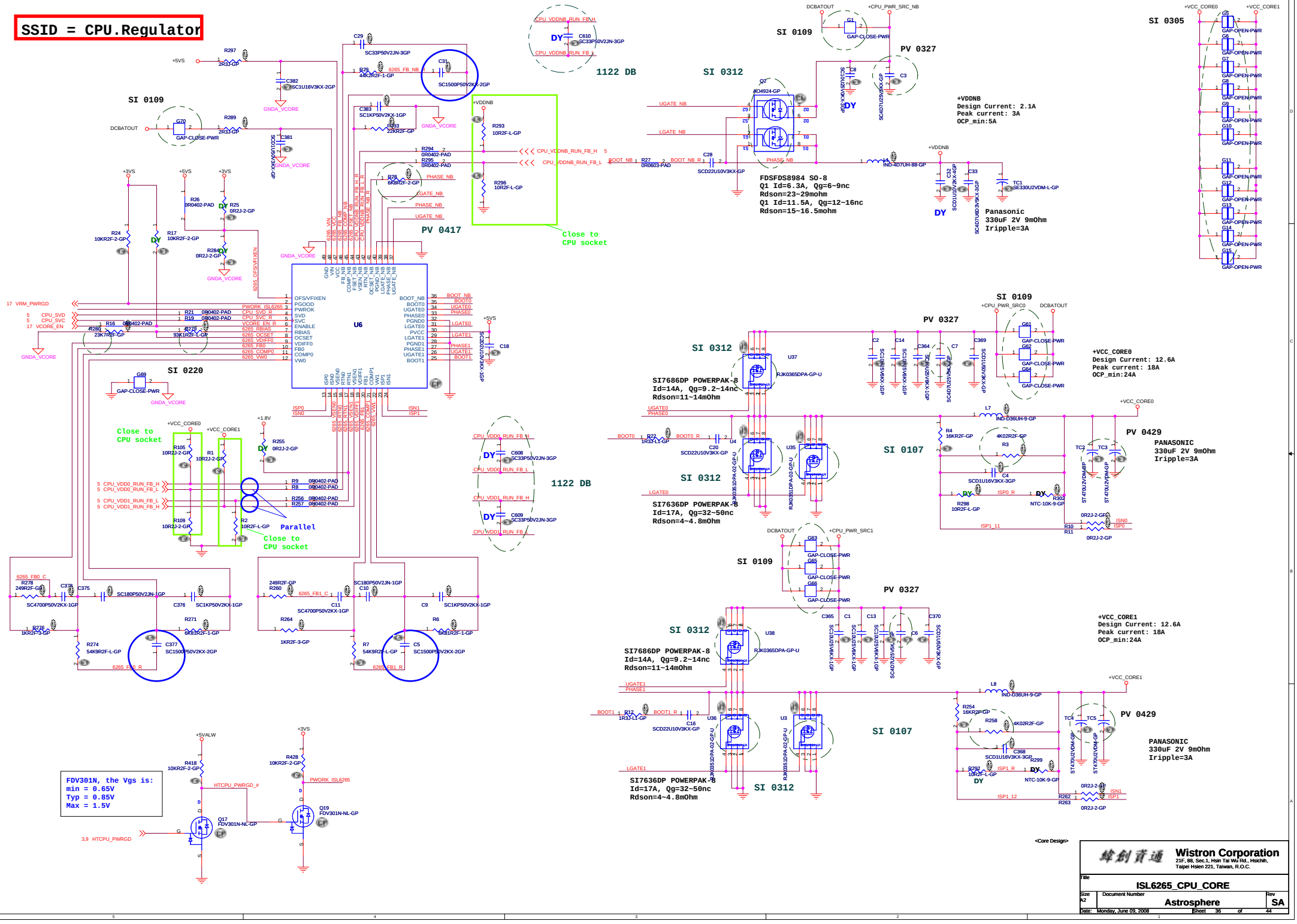




<Variant Name>

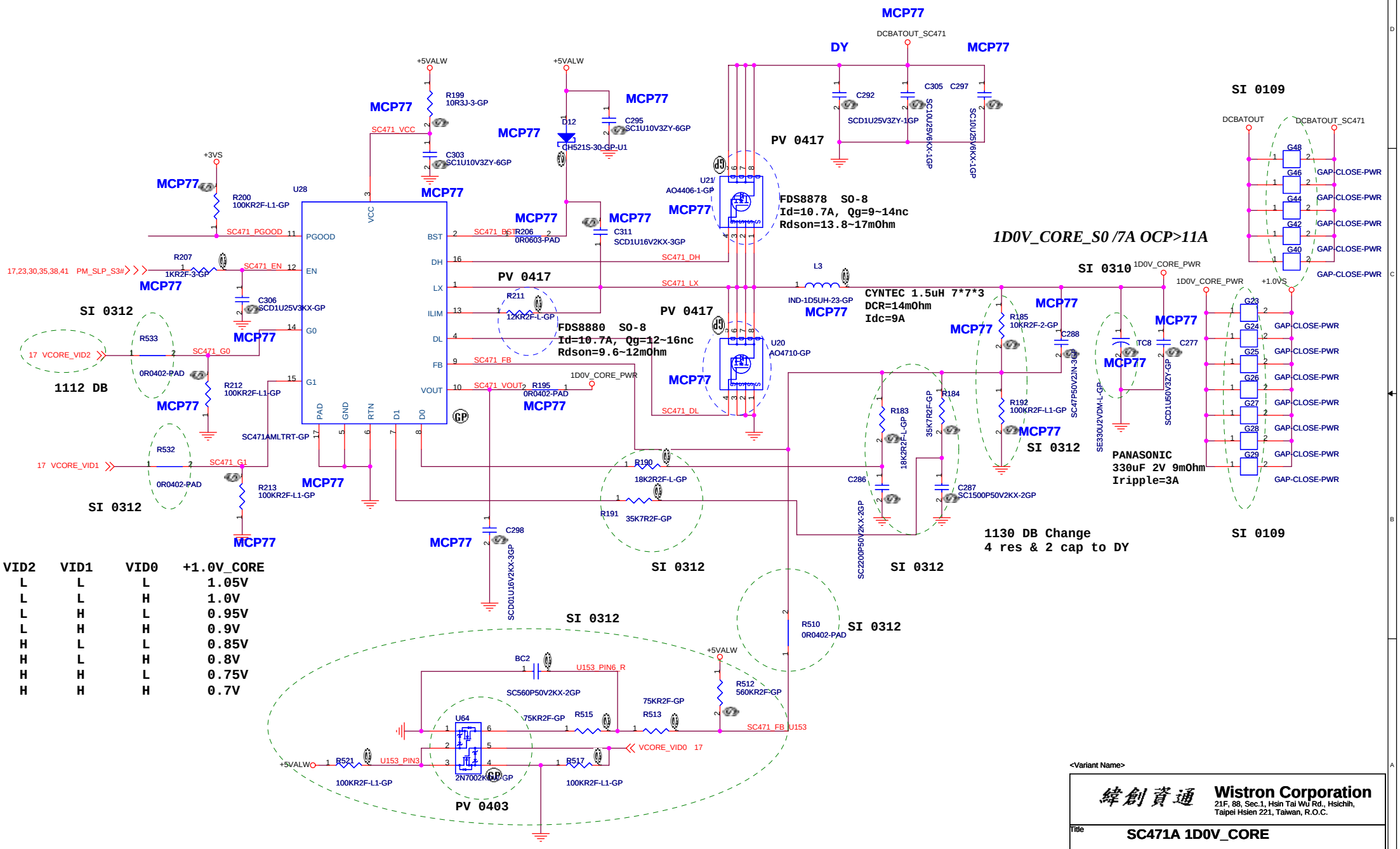
| | |
|---|---|
| 緯創資通 | **Wistron Corporation**<br>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,<br>Taipei Hsien 221, Taiwan, R.O.C. |
| Title | **PWRPLANE&RESETLOGIC** |
| Size A3 | Document Number: **Astrosphere** Rev: **SA** |
| Date: Monday, June 09, 2008 | Sheet 35 of 44 |

**SSID = CPU.Regulator**




<Core Design>

| | | |
|---|---|---|
| 緯創資通 Wistron Corporation | | |
| 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | | |
| Title: ISL6265_CPU_CORE | | |
| Size: A2 | Document Number: Astrosphere | Rev: SA |
| Date: Monday, June 09, 2008 | Sheet 36 of 44 | |

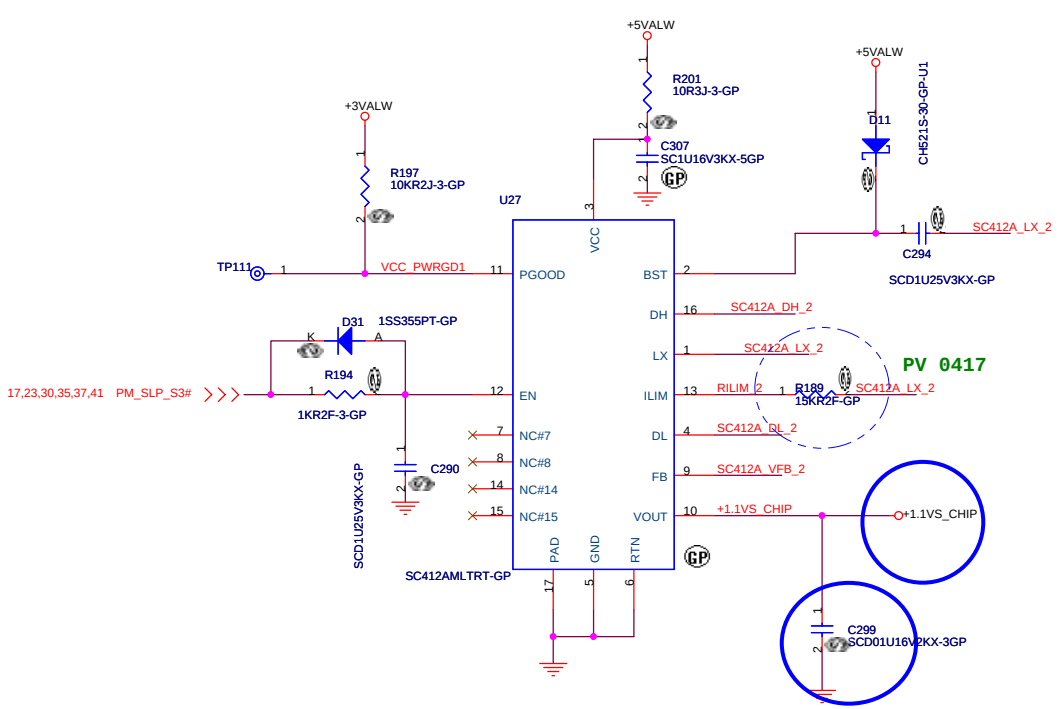


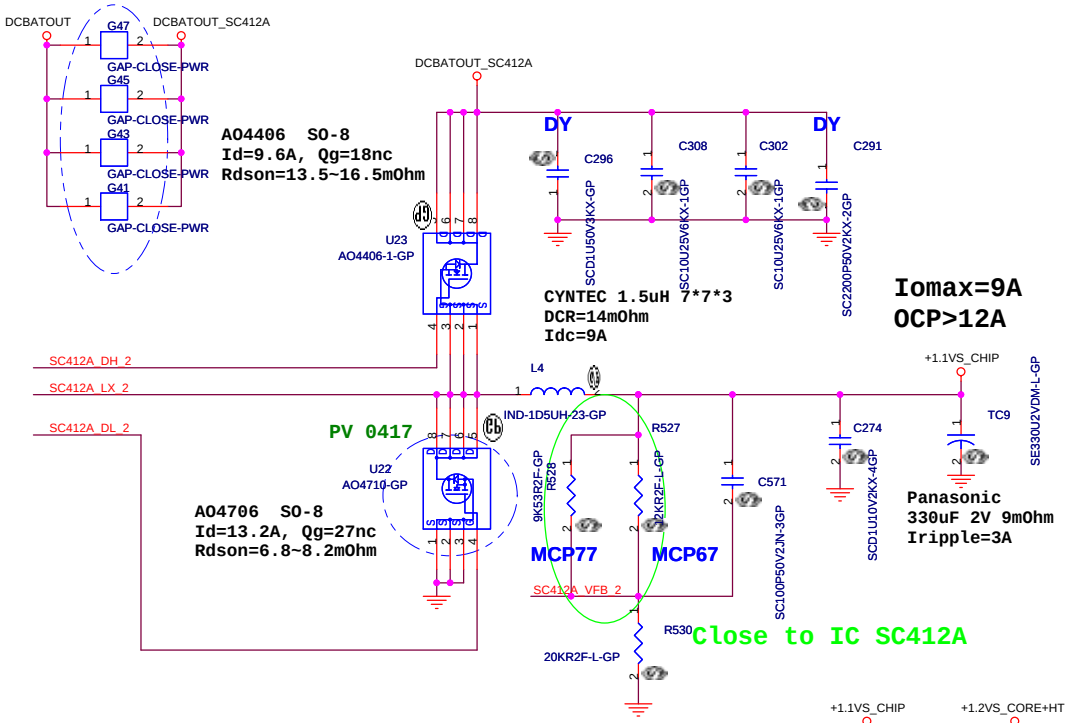

<Variant Name>

Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

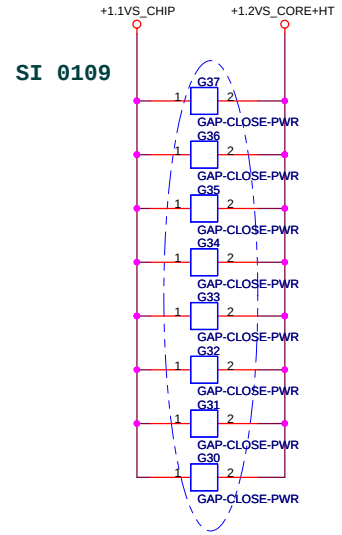
| | | |
|---|---|---|
| Title | SC471A 1D0V_CORE | |
| Size A3 | Document Number: Astrosphere | Rev SA |
| Date: Monday, June 09, 2008 | Sheet 37 of 44 | |

SI 0109



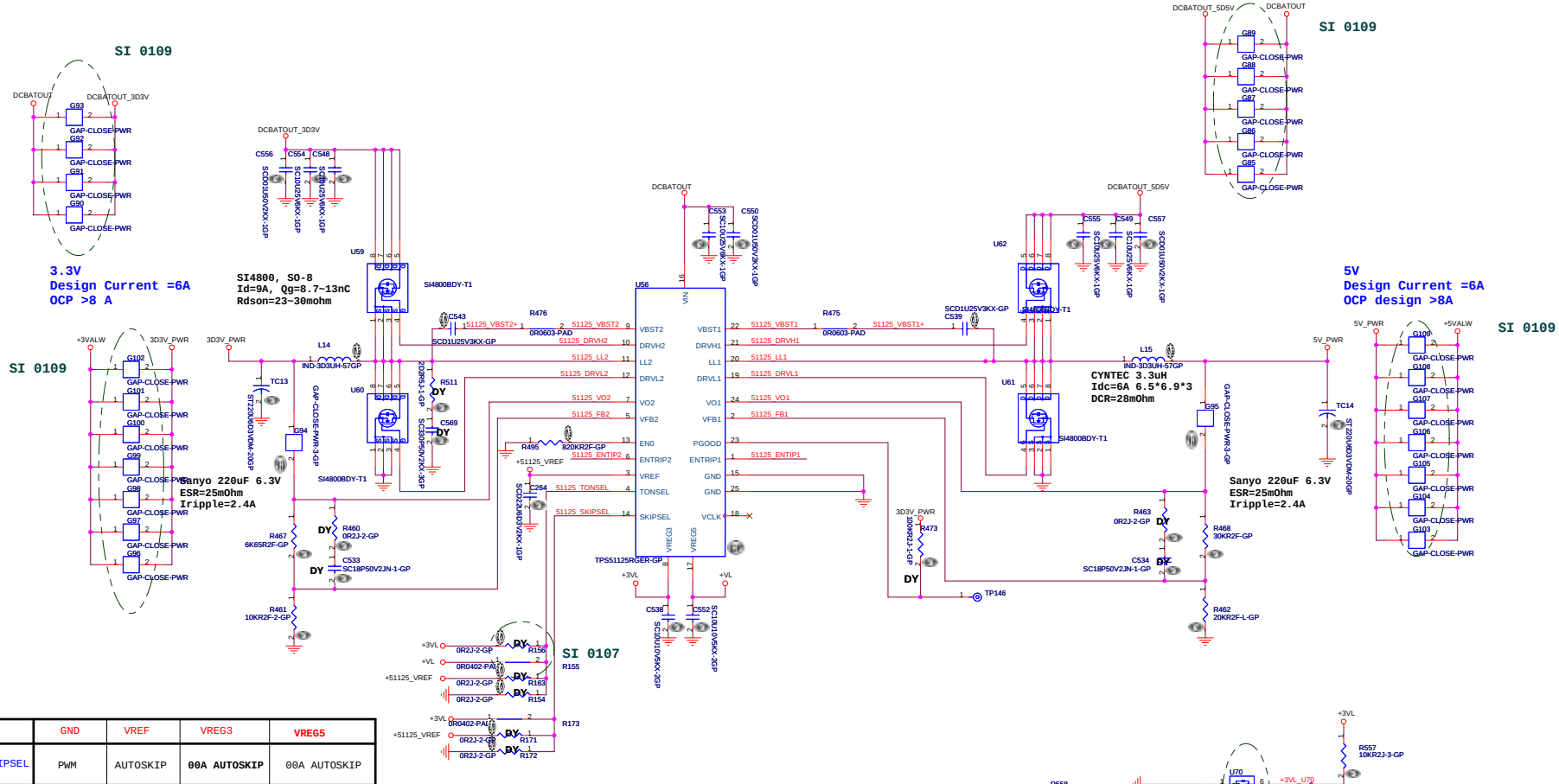

**MCP67: 1.2V (R425/R426) = (12K/20K)**
**MCP77: 1.1V (R425/R426) = (9.53K/20K)**




<Variant Name>

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

| | | |
|---|---|---|
| Title | SC412A 1D1V_CORE | |
| Size A3 | Document Number: Astrosphere | Rev SA |
| Date: Monday, June 09, 2008 | Sheet 38 of 44 | |




| | GND | VREF | VREG3 | VREG5 |
|---|---|---|---|---|
| SKIPSEL | PWM | AUTOSKIP | **00A AUTOSKIP** | 00A AUTOSKIP |
| **TONSEL** | 200k/CH1<br>250k/CH2 | 245k/CH1<br>305k/CH2 | **300k/CH1**<br>**375k/CH2** | 365k/CH1<br>460k/CH2 |

<Core Design>

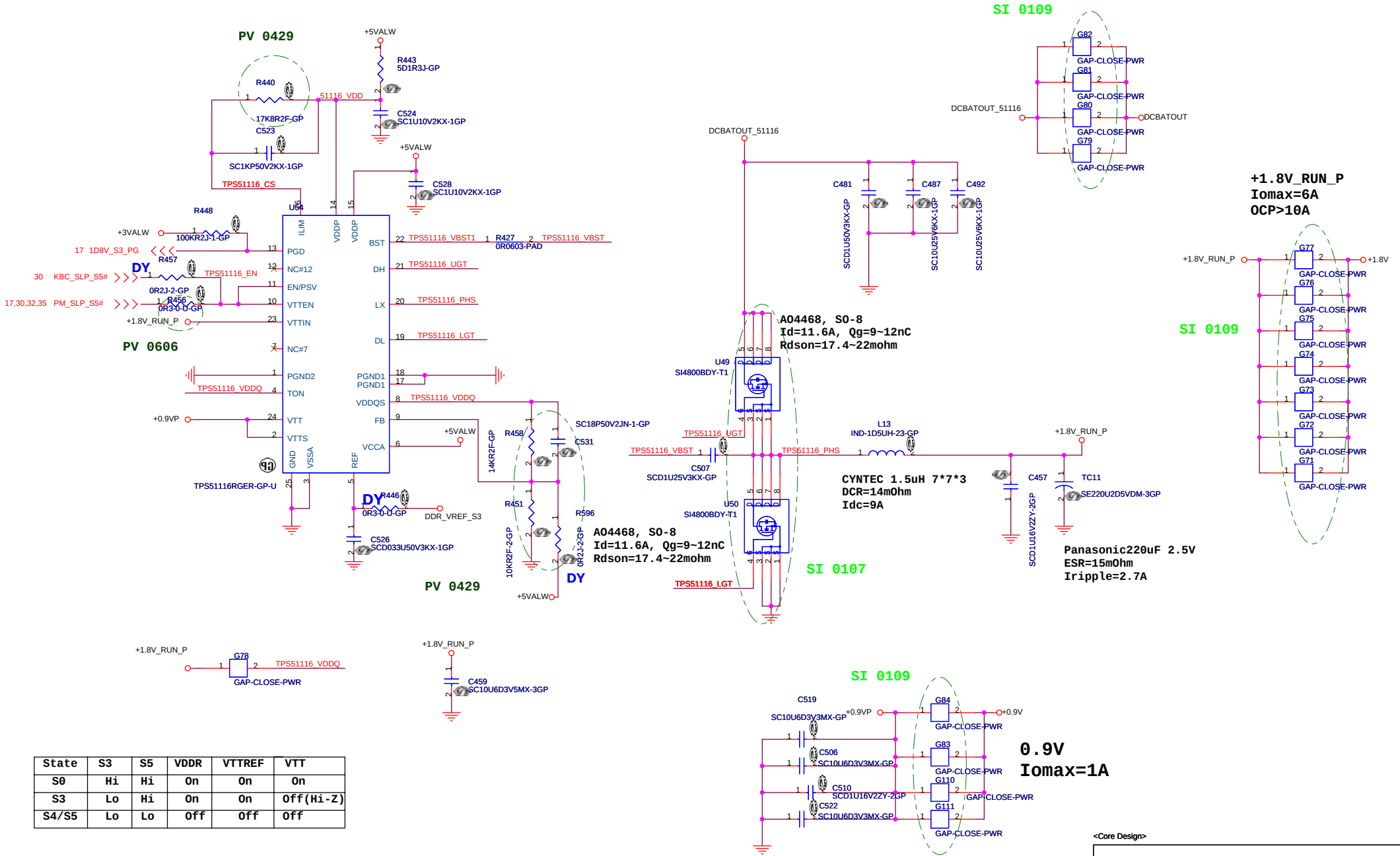
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: TPS51125 +5VALW +3VALW

Size: A2 | Document Number: Astrosphere | Rev: SA

Date: Monday, June 09, 2008 | Sheet 39 of 44

# TI TPS51116 for 1D8V and 0D9V




| State | S3 | S5 | VDDR | VTTREF | VTT |
|---|---|---|---|---|---|
| S0 | Hi | Hi | On | On | On |
| S3 | Lo | Hi | On | On | Off(Hi-Z) |
| S4/S5 | Lo | Lo | Off | Off | Off |

<Core Design>

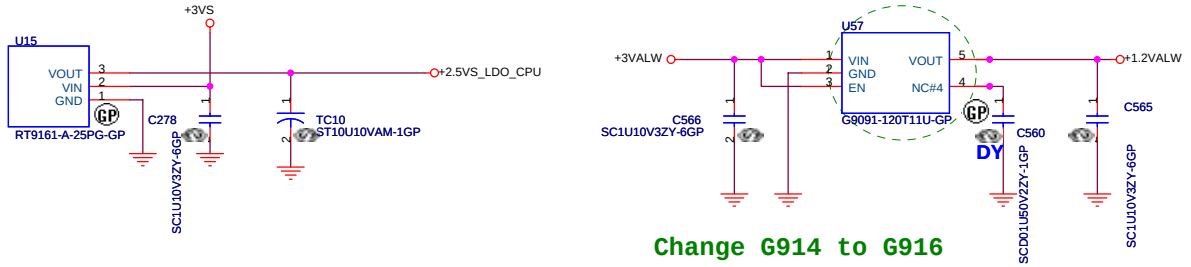
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **TPS51116 1D8V/0D9V**

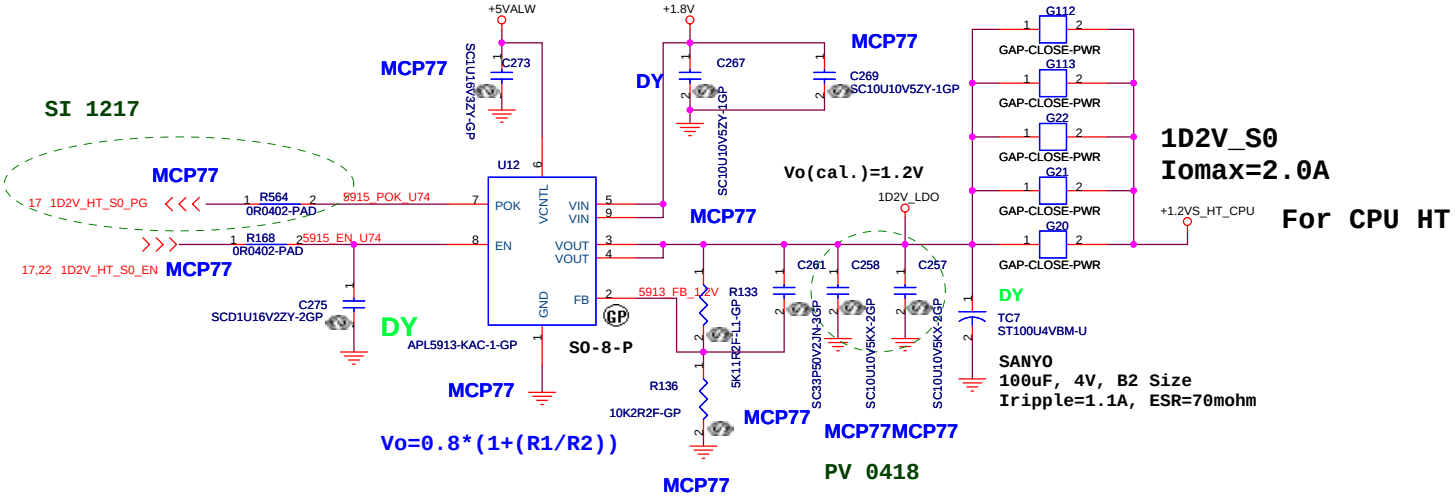
Size: A3 | Document Number: **Astrosphere** | Rev: **SA**

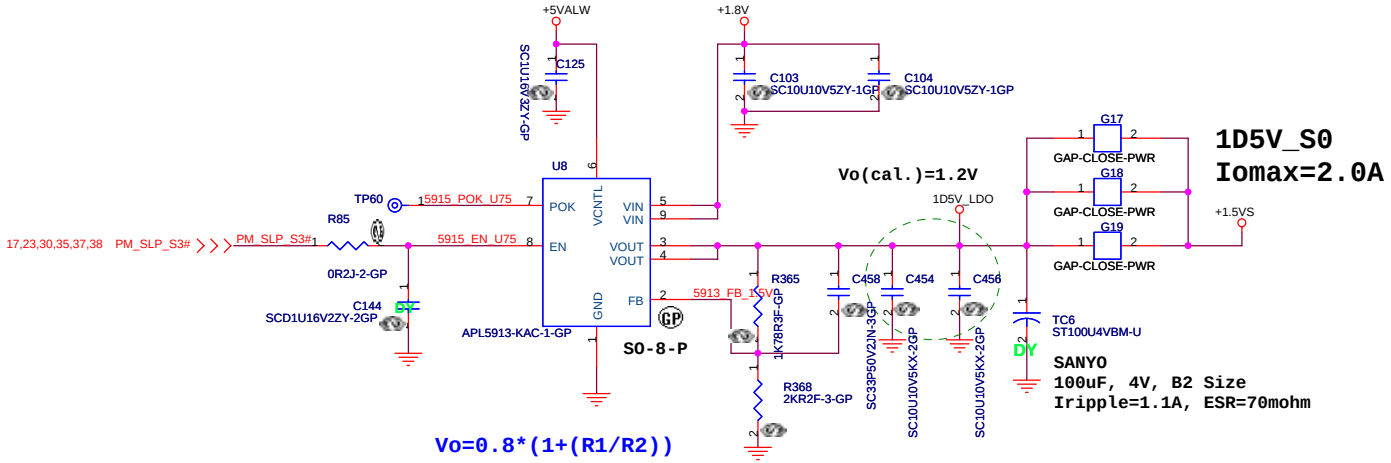
Date: Monday, June 09, 2008 | Sheet 40 of 44

SI 0109




Change G914 to G916



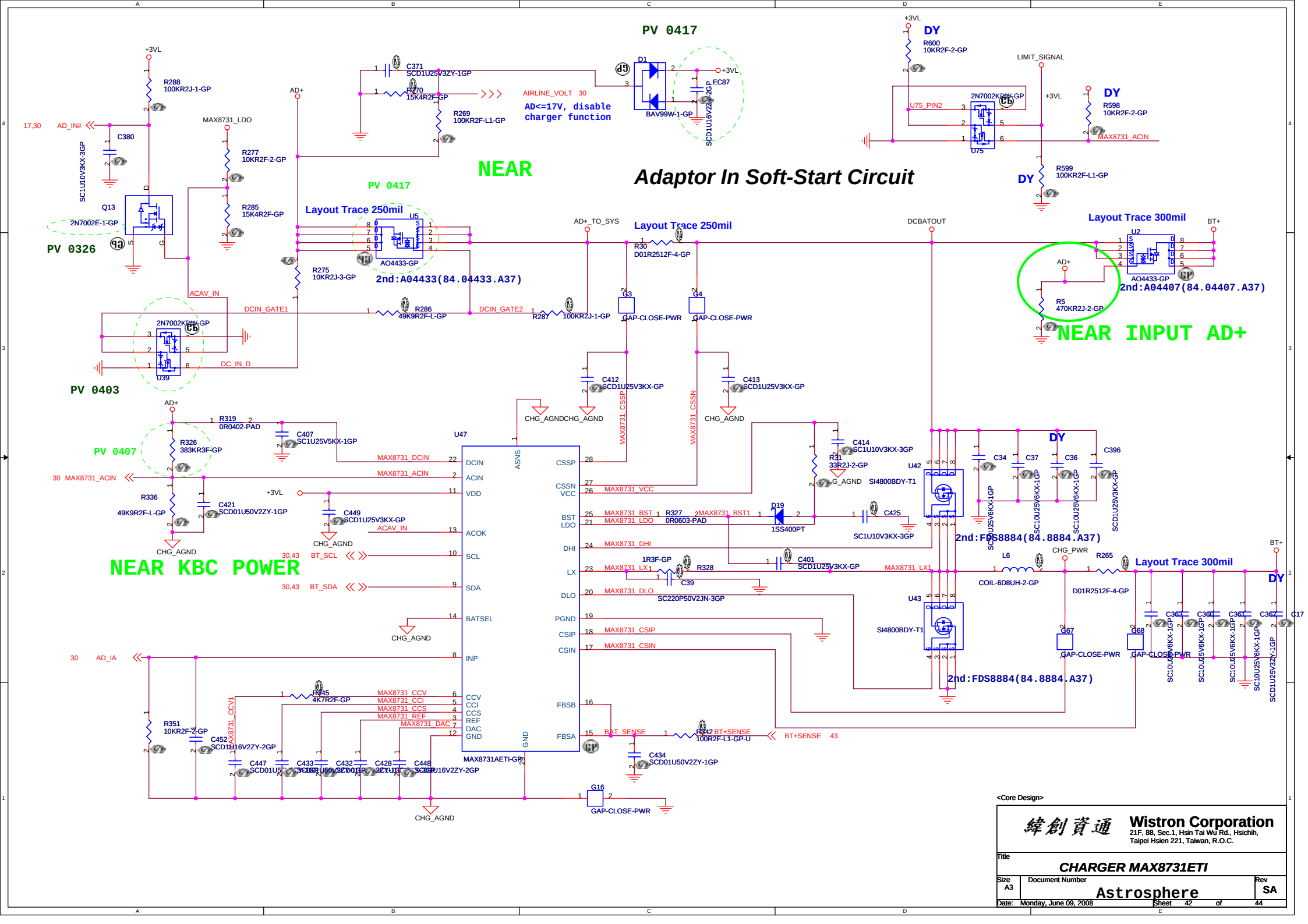

<Variant Name>


緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

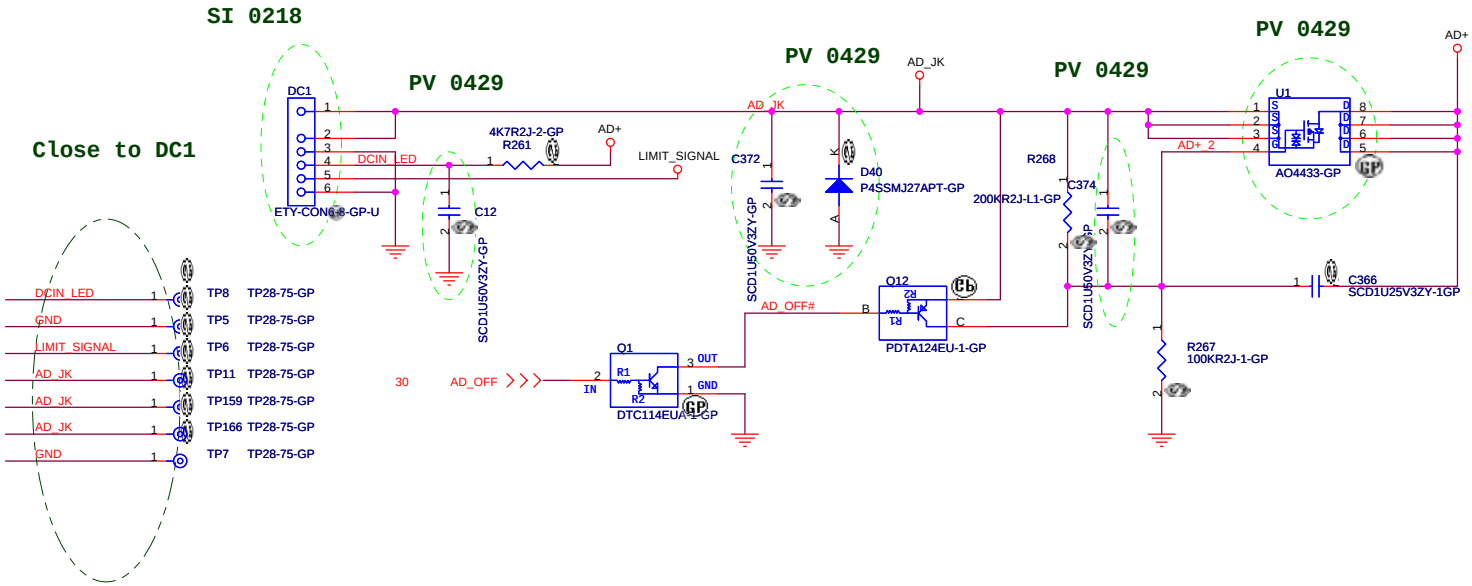

Title: *1D5V/2D5V/3D3V/5V_AUX*

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

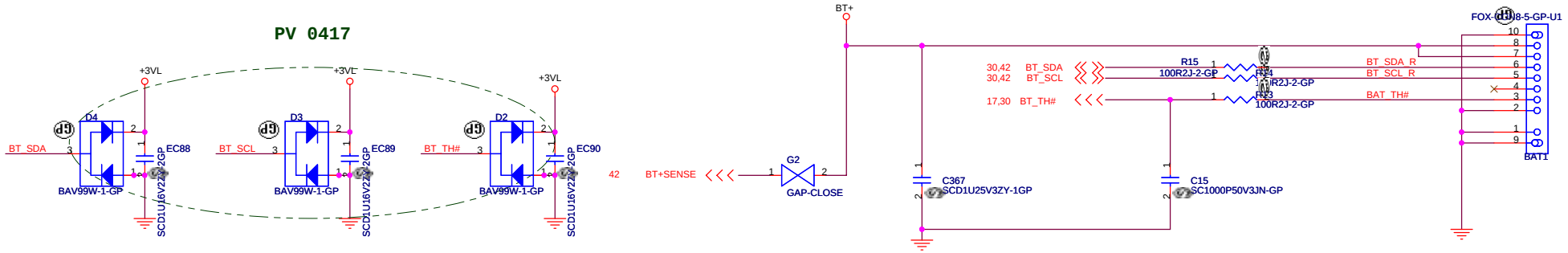
Date: Monday, June 09, 2008 Sheet 41 of 44

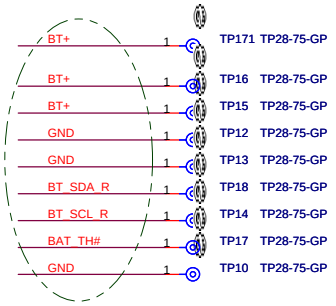

PV 0417
Adaptor In Soft-Start Circuit
NEAR
AIRLINE_VOLT 30
AD<=17V, disable charger function
PV 0417
Layout Trace 250mil
2nd:A04433(84.04433.A37)
PV 0326
PV 0403
PV 0407
NEAR KBC POWER
Layout Trace 250mil
Layout Trace 300mil
2nd:A04407(84.04407.A37)
NEAR INPUT AD+
2nd:FDS8884(84.8884.A37)
2nd:FDS8884(84.8884.A37)
MAX8731AETI-GP
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
CHARGER MAX8731ETI
Astrosphere
Monday, June 09, 2008

# Adaptor in to generate DCBATOUT




## BATTERY CONNECTOR



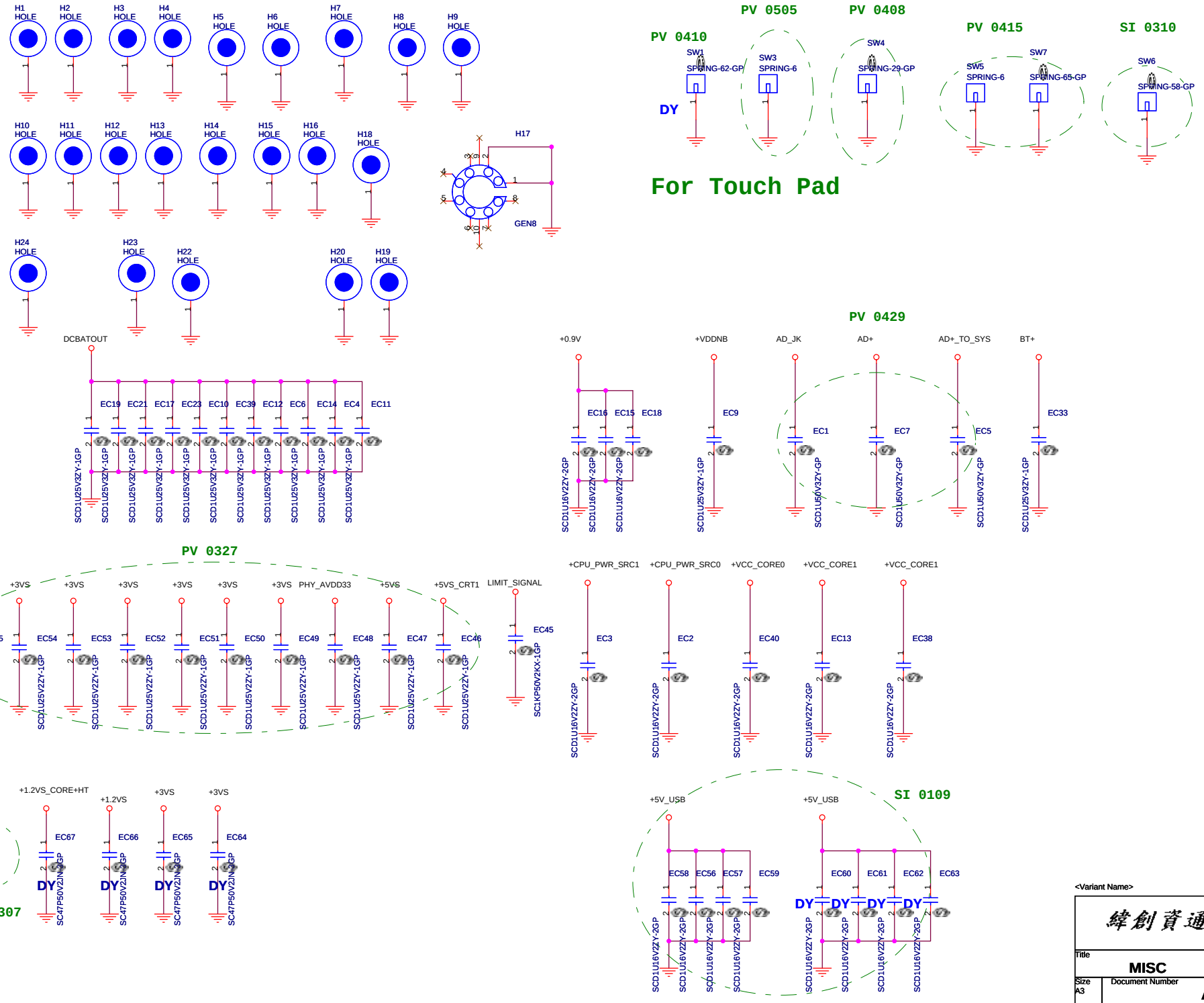

<Core Design>

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **AD/BATT CONN**

| Size | Document Number | Rev |
|---|---|---|
| A3 | Astrosphere | SA |

Date: Monday, June 09, 2008 Sheet 43 of 44




<Variant Name>

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

| | | |
|---|---|---|
| Title | MISC | |
| Size A3 | Document Number: Astrosphere | Rev SA |
| Date: Monday, June 09, 2008 | Sheet 44 of 44 | |