MAKI Block Diagram

Project code: 91.4U601.001
PCB P/N : 07204-SC
Revision :

PCB STACKUP

L1:	Signal 1
L2:	GND
L3:	Signal 2
L4:	POWER
L5:	Signal 3
L6:	Signal 4
L7:	GND
L8:	Signal 5

SYSTEM DC/DC TPS51120 *29*

INPUTS	OUTPUTS
DCBATOUT	5V_S5(6A)
	3D3V_S5(7A)

SYSTEM&VRAM DC/DC SC411 *30*

INPUTS	OUTPUTS
DCBATOUT	1D05V_S0(9.5A)
	1D8V_S3(8.5A)

TPS51100 *31*

1D8V_S3	DDR_VREF_S0 (1.5A)
	DDR_VREF_S3

APL5913

1D8V_S3	1D5V_S0 (2A) *31*

APL53123

3D3V_S0	2D5V_S0 (300mA)

APL5915 *31*

3D3V_S5	1D25V_S0

MAXIM CHARGER MAX8725 *32*

INPUTS	OUTPUTS
DCBATOUT	CHG_PWR 16.8V 4.0A
	UP+5V 5V 100mA

CPU DC/DC ISL6262 *28*

INPUTS	OUTPUTS
DCBATOUT	VCC_CORE_S0 0~1.3V 47A

VGA NVIDIA ISL6269

INPUTS	OUTPUTS
DCBATOUT	NVVDD_S0 1.2V 25A

CLK GEN. ICS 9LPRS365 *3*
71.09502.00W

Mobile CPU Merom 479 2G/2.33G *4, 5*
2.0G : 71.MEROM.A0U
2.33G : 71.MEROM.B0U

HOST BUS 667/800MHz@1.05V

G792 *17*

DOCK *42* CRT & TV-OUT

HDMI — DOCK HDMI *42*

DVI — DVI *13*

DDR2 533/667 MHz *11* — 533/667MHz

DDR2 533/667 MHz *11* — 533/667MHz

Crestline *6,7,8,9,10*
AGTL+ CPU I/F
DDR Memory I/F
INTEGRATED GRAHPICS
LVDS, CRT I/F
71.CREST.00U

PCI-EG

ATI M76-M *Page.44~50*

VRAM 256M DDR333 *49,50*

LVDS — WWSXGA / WUXGA 15"LCD *13*

X4 DMI 400MHz

C-Link0

ICH8M *14,15,16*
6 PCIe ports
PCI/PCI BRIDGE
ACPI 1.1
3 SATA
1 PATA 66/100
10 USB 2.0/1.1 ports
ETHERNET (10/100/1000MbE)
High Definition Audio
LPC I/F
Serial Peripheral I/F
Matrix Storage Technology(DO)
Active Managemnet Technology(DO)
71.0ICH8.A0U

Codec ALC885S *28* — AZALIA
MIC In x2
INT.SPKR x2
OP AMP G1432Q *29*

PCI-E6 — **LAN** 10/100/1000 INTEL 82566MM *Page.23,24* — TXFM — SYSTEM RJ45

PCI-E3 — **Mini Card** 802.11/a/b/g/n *Page.25*

PCI-E4 /USB 2.0 PORT4 — **Mini Card** 3G card/TV Tuner /NAND *Page.25* — SIM Card

DOCK BASE BARD PCI-Express Repeater/ PI2EQX4401D — PCI-E1 — USB 2.0 PORT3/PORT6

PCI-E5/USB 2.0 PORT2 — **I/O BARD** New card Connect *Page.25* — Power S/W P2231NFC1

I/O BARD Smart Card Reader ST7GEM — USB 2.0 PORT1

LPC BUS

Dock Port
1x DC Jack In
1x RJ-45 Ethernet Port
1x HDMI
1x CRT
4x USB 2.0
1x Audio In
1x Subwoofer
2x SATA for RAID
1x battery
1x ExpressCard/54
1x Audio Out
1x SPDIF in
1x SPDIF out
1x S-Video
1x Mini card

Marvell 88SE6121 SATA/RAID *Page.22* — PCI-E2

DOCK SATA HDD2,3

SATA HDD *19*

CD-ROM *19* — RATA

USB 2.0(PORT9) — **Fingerprint** TCS4B/4C

USB 2.0(POR(0,5) — **USB x 2** *20*

USB 2.0(PORT8) — **Camera**

USB 2.0(PORT7) — **BlueTooth**

SPI I/F — **BIOS** W25X80

KBC Winbond WPC8768L *18*

LPC DEBUG CONN. *27*

TPM SLB 9635 *31*

Keys board *27*

Touch Pad *27*

FIR (only)

<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	Document Number	Rev
Custom	MAKI	SA

Date: Friday, January 18, 2008 Sheet 1 of 51

```
U3371.ICH8M.A0U--> Symbol has not been created in CIS DB !!
U6272.18512.I0U--> Symbol has not been created in CIS DB !!
U6372.18512.I0U--> Symbol has not been created in CIS DB !!
U6471.0M76M.M02--> Symbol has not been created in CIS DB !!
U6571.PM965.00U--> Symbol has not been created in CIS DB !!
U6672.18512.I0U--> Symbol has not been created in CIS DB !!
U6772.18512.I0U--> Symbol has not been created in CIS DB !!


H1934.4B804.001--> Symbol has not been created in CIS DB !!
H2334.4B804.001--> Symbol has not been created in CIS DB !!
H2434.4B804.001--> Symbol has not been created in CIS DB !!
H334.4Z003.001--> Symbol has not been created in CIS DB !!
H434.4Z003.001--> Symbol has not been created in CIS DB !!
H634.4Z003.001--> Symbol has not been created in CIS DB !!
H734.4B804.001--> Symbol has not been created in CIS DB !!
```

CHANGE TO 71.PM965.A0U
CHANGE TO 71.ICH8M.A0U
change 71.0M71M.00U to 71.0M76M.M02

1.net:AD+_DOCK_IN change 20mil
2.crt 5v_s0 net:20mil

13,30,33,34,36,38,39,40,41,42,43 DCBATOUT — DCBATOUT

12,37 DDR_VREF_S0 — DDR_VREF_S0

5,35 VCC_CORE_S0 — VCC_CORE_S0

4,5,6,7,9,10,14,16,27,38,41 1D05V_S0 — 1D05V_S0

5,10,14,15,16,22,25,37,39 1D5V_S0 — 1D5V_S0

3,4,7,10,11,13,14,15,16,17,18,19,20,21,22,25,27,28,29,30,31,34,36,37,39,41,42,43,46,47,48 3D3V_S0 — 3D3V_S0

4,5,6,7,9,10,14,16,27,38,41 1D05V_S0 — 1D05V_S0

7,10,16,37 1D25V_S0 — 1D25V_S0

7,9,10,11,12,30,37,39,41 1D8V_S3 — 1D8V_S3

4,5,6,7,9,10,14,16,27,38,41 1D05V_S0 — 1D05V_S0

5,10,14,15,16,22,25,37,39 1D5V_S0 — 1D5V_S0

3,4,7,10,11,13,14,15,16,17,18,19,20,21,22,25,27,28,29,30,31,34,36,37,39,41,42,43,46,47,48 3D3V_S0 — 3D3V_S0

14,15,16,18,20,23,25,26,30,31,36,38 3D3V_S5 — 3D3V_S5

37,45,46,48 1D1V_S0 — 1D1V_S0

10,30,41,46,47,48,49,50,51 1D8V_S0 — 1D8V_S0

41,43,46,48 VCCGFXCORE — VCCGFXCORE

36 VREG5 — VREG5

14,15,17,18,20,27,36,42 3D3V_AUX_S5 — 3D3V_AUX_S5

36 VREG3 — VREG3

16,17,18,20,25,29,30,36,37,38,39,42,43 5V_S5 — 5V_S5

33,36,41,42 5V_AUX_S5 — 5V_AUX_S5

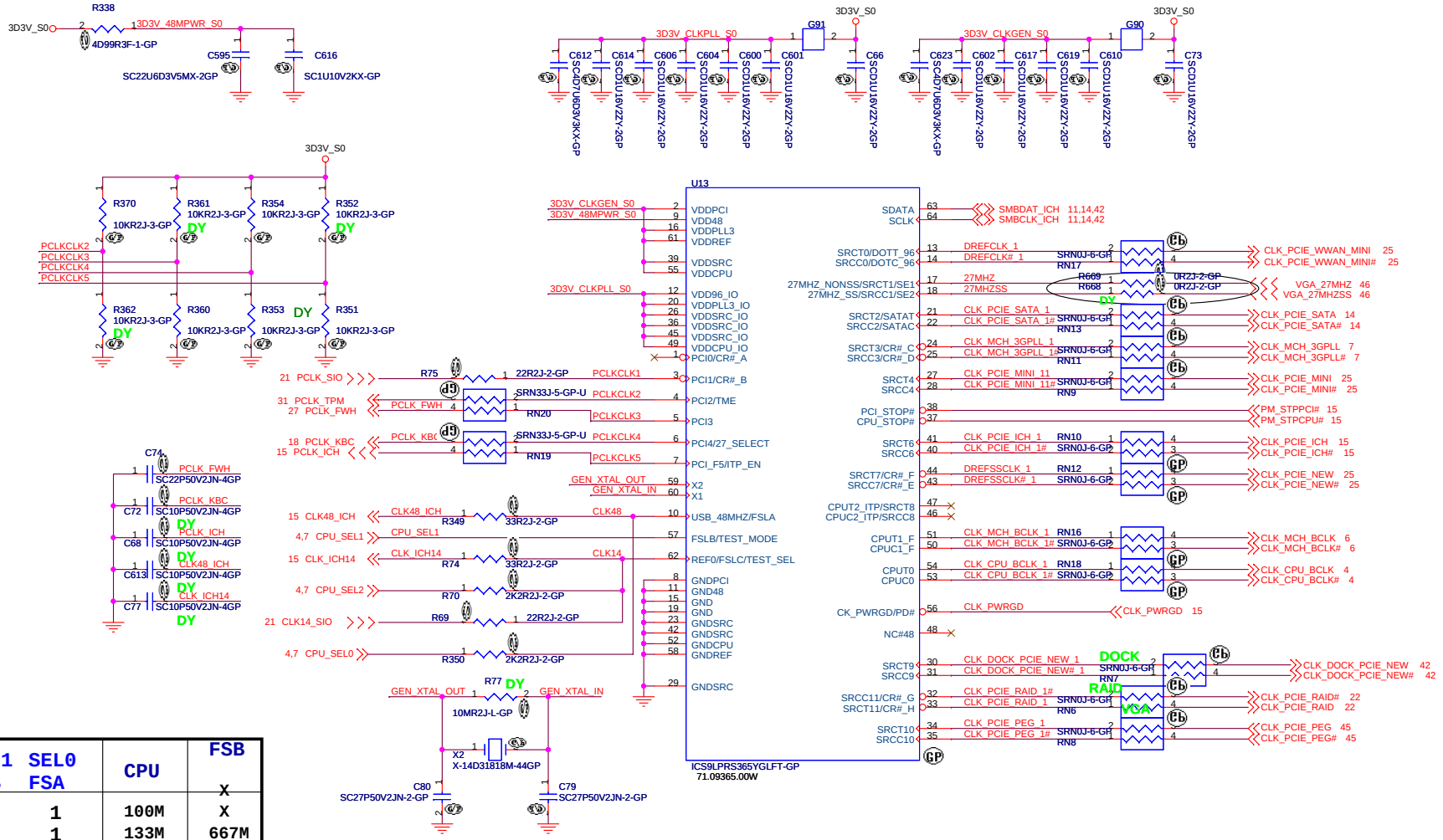
<Variant Name>

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

Title: **Reference**

Size	Document Number	Rev
Custom	MAKI	SA

Date: Friday, January 18, 2008 Sheet 2 of 51



SEL2 FSC	SEL1 FSB	SEL0 FSA	CPU	FSB X
1	0	1	100M	X
0	0	1	133M	667M
0	1	1	166M	800M
0	1	0	200M	

PIN NAME	DESCRIPTION
PCI0/CR#_A	Byte 5, bit 7 0 = PCI0 enabled (default) 1= CR#_A enabled. Byte 5, bit 6 controls whether CR#_A controls SRC0 or SRC2 pair Byte 5, bit 6 0 = CR#_A controls SRC0 pair (default), 1= CR#_A controls SRC2 pair
PCI1/CR#_B	Byte 5, bit 5 0 = PCI1 enabled (default) 1= CR#_B enabled. Byte 5, bit 6 controls whether CR#_B controls SRC1 or SRC4 pair Byte 5, bit 4 0 = CR#_B controls SRC1 pair (default) 1= CR#_B controls SRC4 pair
PCI2/TME	0 = Overclocking of CPU and SRC Allowed 1 = Overclocking of CPU and SRC NOT allowed
PCI3/RC-5_EN	0 = Pin37 as CPU_STOP# , pin 38 as PCI_STOP#. 1 = Pins37,38 as SRC-5 differential pair.
PCI4/27M_SEL	0 = Pin17 as SRC-1, Pin18 as SRC-1#, Pin13 as DOT96, Pin14 as DOT96# 1 = Pin17 as 27MHz, Pin 18 as 27MHz_SS, Pin13 as SRC-0, Pin14 as SRC-0#
PCI_F5/ITP_EN	0 =SRC8/SRC8# 1 = ITP/ITP#

<Variant Name>

緯創資通 Wistron Corporation
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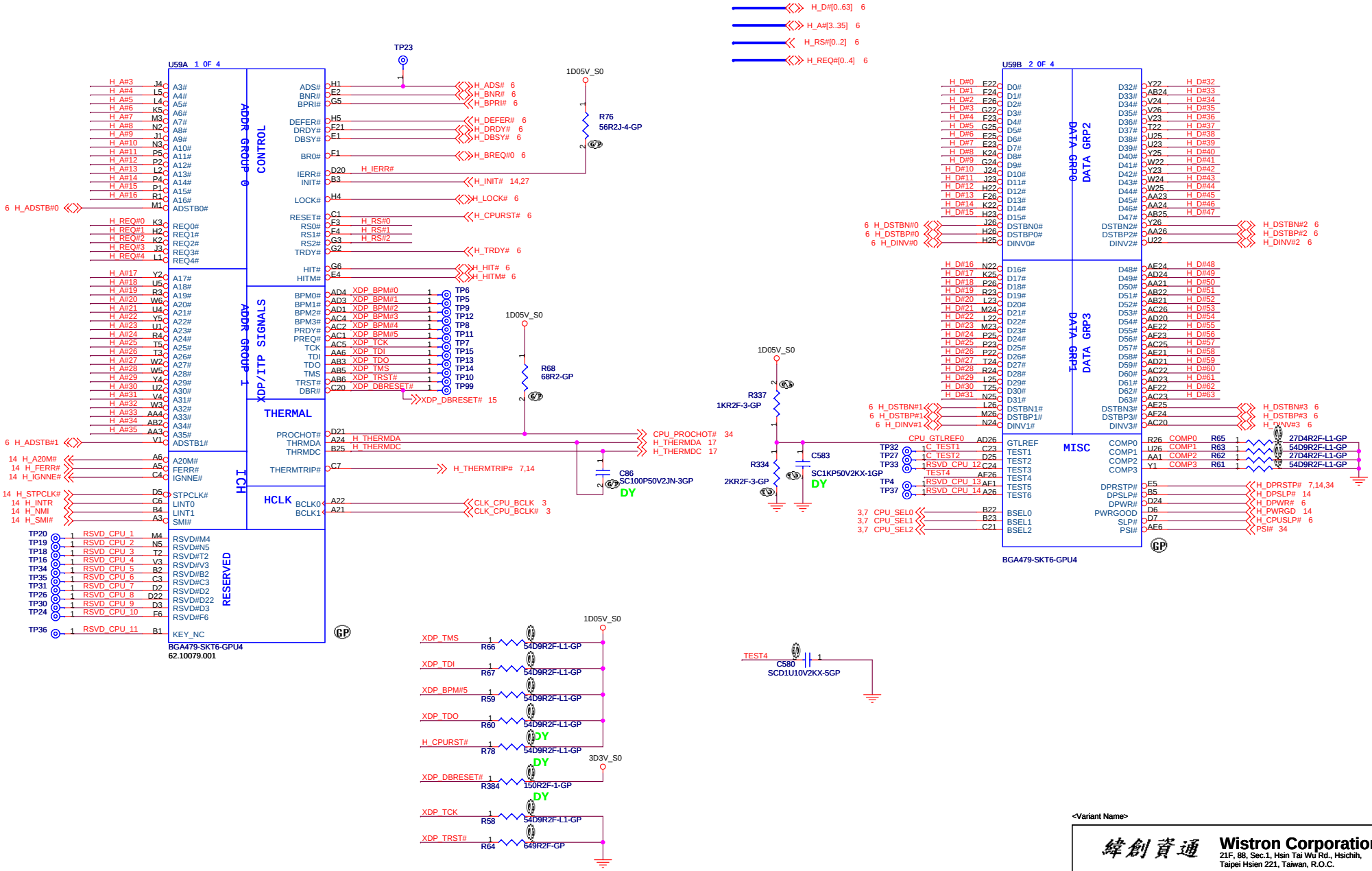
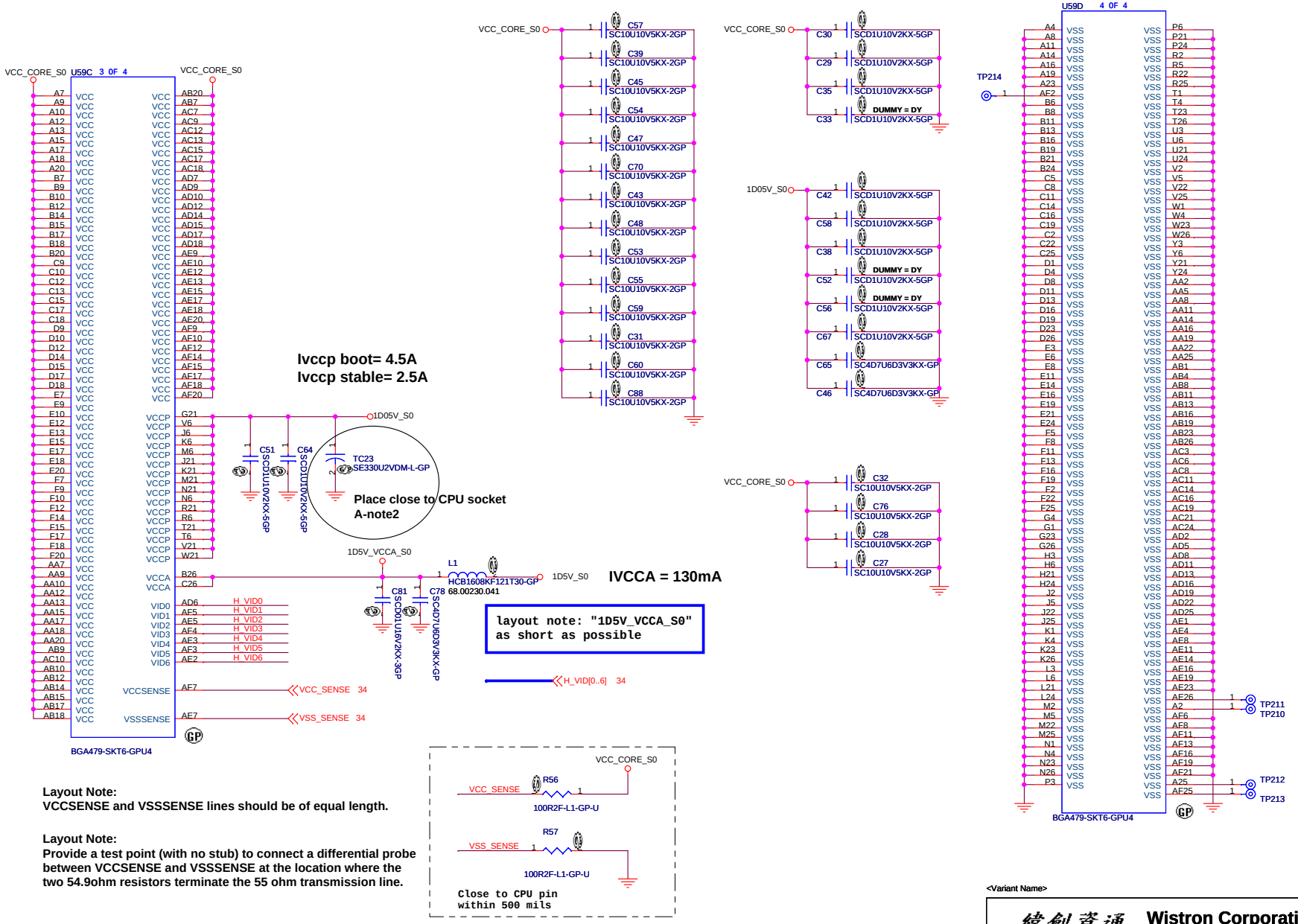
Taipei Hsien 221, Taiwan, R.O.C.

Title: Clock Generator

Size	Document Number	Rev
Custom	MAKI	SA

Date: Friday, January 18, 2008 Sheet 3 of 51


U59A 1 OF 4
ADDR GROUP 0
ADDR GROUP 1
CONTROL
XDP/ITP SIGNALS
THERMAL
TCK
HCLK
RESERVED
BGA479-SKT6-GPU4
62.10079.001
TP23
1D05V_S0
R76
56R2J-4-GP
R68
68R2-GP
C86
SC100P50V2JN-3GP
DY
R337
1KR2F-3-GP
R334
2KR2F-3-GP
C583
SC1KP50V2KX-1GP
C580
SCD1U10V2KX-5GP
R66
R67
R59
R60
R78
R384
R58
R64
54D9R2F-L1-GP
150R2F-1-GP
649R2F-GP
3D3V_S0
U59B 2 OF 4
DATA GRP2
DATA GRP3
MISC
BGA479-SKT6-GPU4
R65
R63
R62
R61
27D4R2F-L1-GP
54D9R2F-L1-GP
<Variant Name>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
CPU (1 of 2) AGTL
Size Custom
Document Number
MAKI
Rev SA
Date: Friday, January 18, 2008
Sheet 4 of 51



Layout Note:
VCCSENSE and VSSSENSE lines should be of equal length.

Layout Note:
Provide a test point (with no stub) to connect a differential probe between VCCSENSE and VSSSENSE at the location where the two 54.9ohm resistors terminate the 55 ohm transmission line.

<Variant Name>

緯創資通 **Wistron Corporation**
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Taipei Hsien 221, Taiwan, R.O.C.

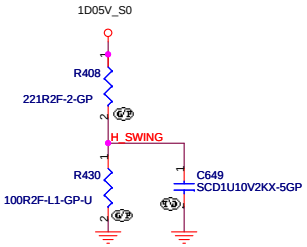
Title: ***CPU (2 of 2) POWER***

Size	Document Number	Rev
Custom	MAKI	SA

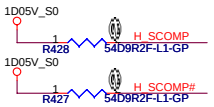
Date: Friday, January 18, 2008 Sheet 5 of 51

H_SWING routing Trace width and Spacing use 10 / 20 mil

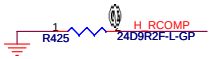
H_SWING Resistors and Capacitors close MCH 500 mil (MAX)



H_SCOMP and H_SCOMP# Resistors and Capacitors close MCH 500 mil (MAX)



H_RCOMP routing Trace width and Spacing use 10 / 20 mil



Place them near to the chip (< 0.5")

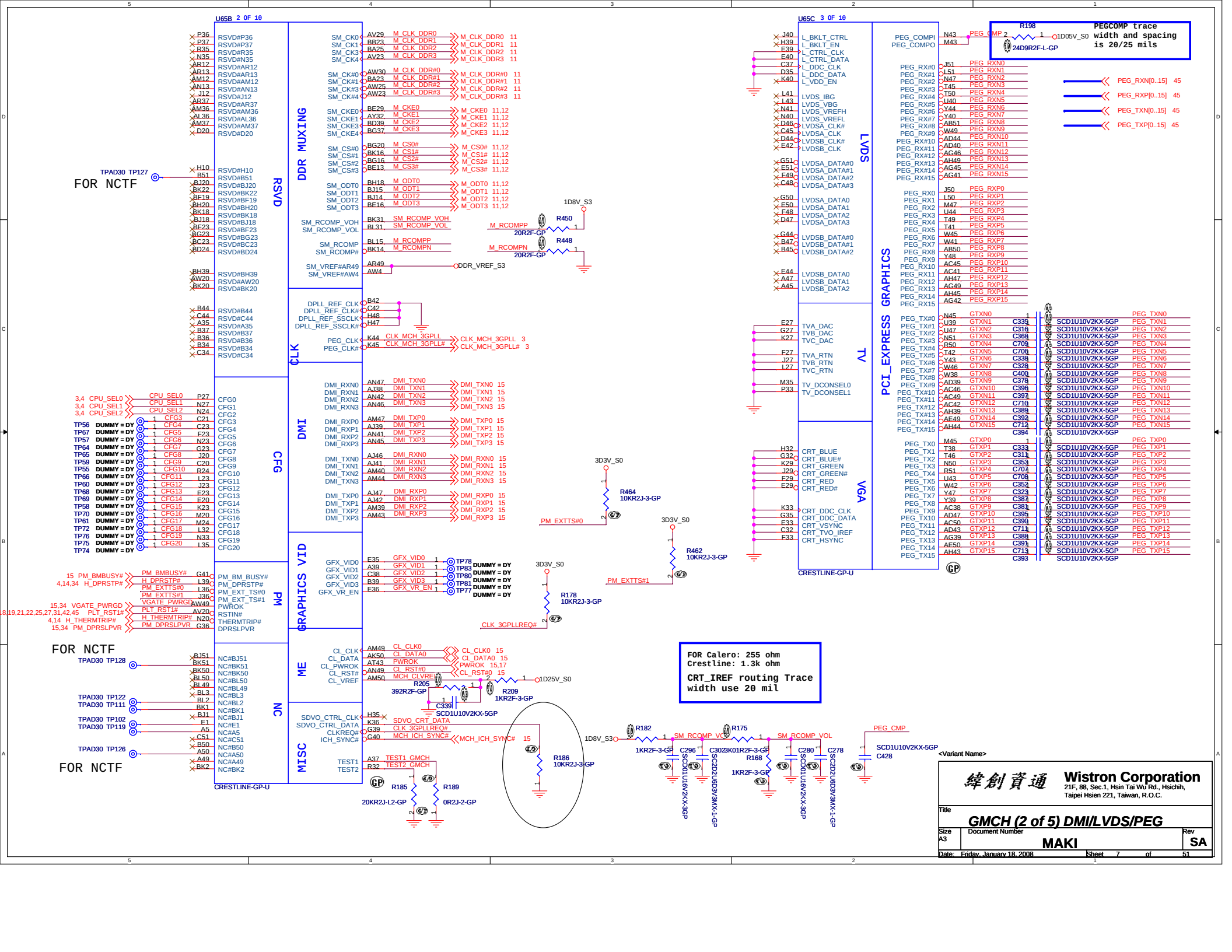
CHANGE TO 71.PM965.00U

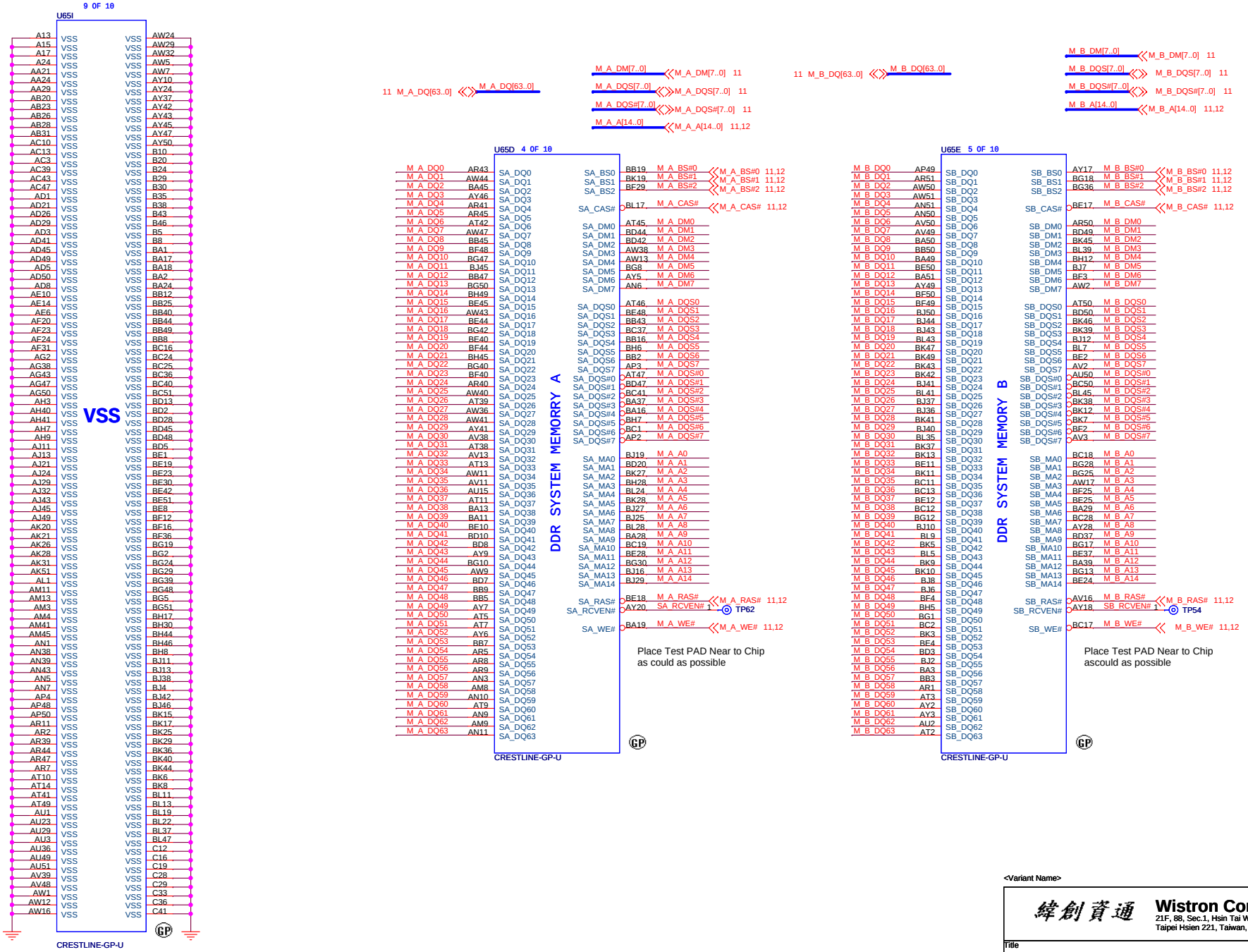
H_REF Decoupling Crestline close Crestline 100 mil

71.CREST.00U

<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	***GMCH (1 of 5) AGTL***	
Size: Custom	Document Number: **MAKI**	Rev: **SA**
Date: Friday, January 18, 2008	Sheet 6 of 51	


U65B 2 OF 10
RSVD
DDR MUXING
CLK
DMI
CFG
GRAPHICS VID
PM
ME
MISC
NC
CRESTLINE-GP-U
U65C 3 OF 10
LVDS
TV
VGA
PCI_EXPRESS GRAPHICS
CRESTLINE-GP-U
FOR NCTF
PEGCOMP trace width and spacing is 20/25 mils
FOR Calero: 255 ohm
Crestline: 1.3k ohm
CRT_IREF routing Trace width use 20 mil
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
GMCH (2 of 5) DMI/LVDS/PEG
MAKI
SA
Friday, January 18, 2008
Sheet 7 of 51



<Variant Name>

緯創資通 **Wistron Corporation**
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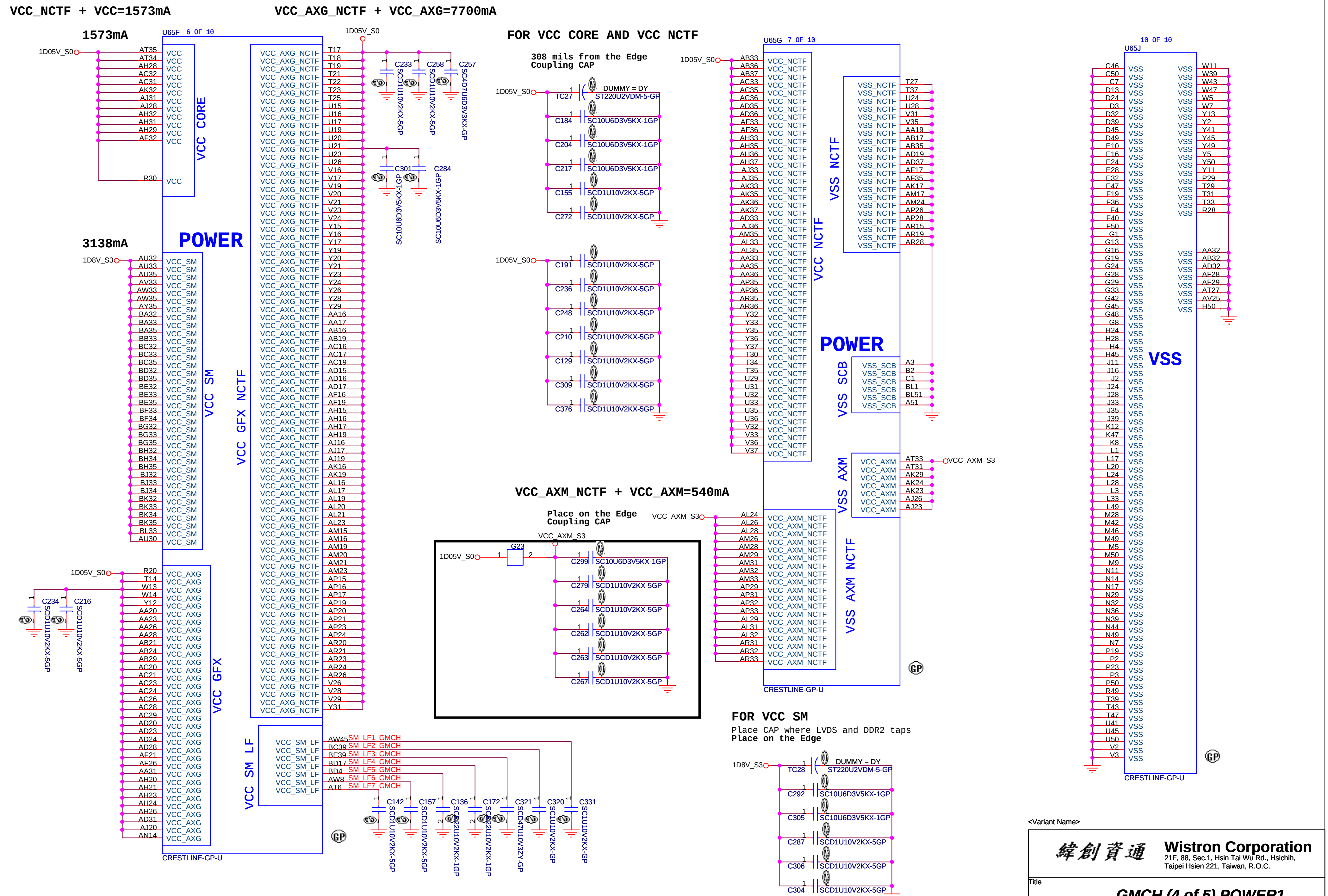
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***GMCH (3 of 5) MEMORY***

Size	Document Number	Rev
Custom	MAKI	SA

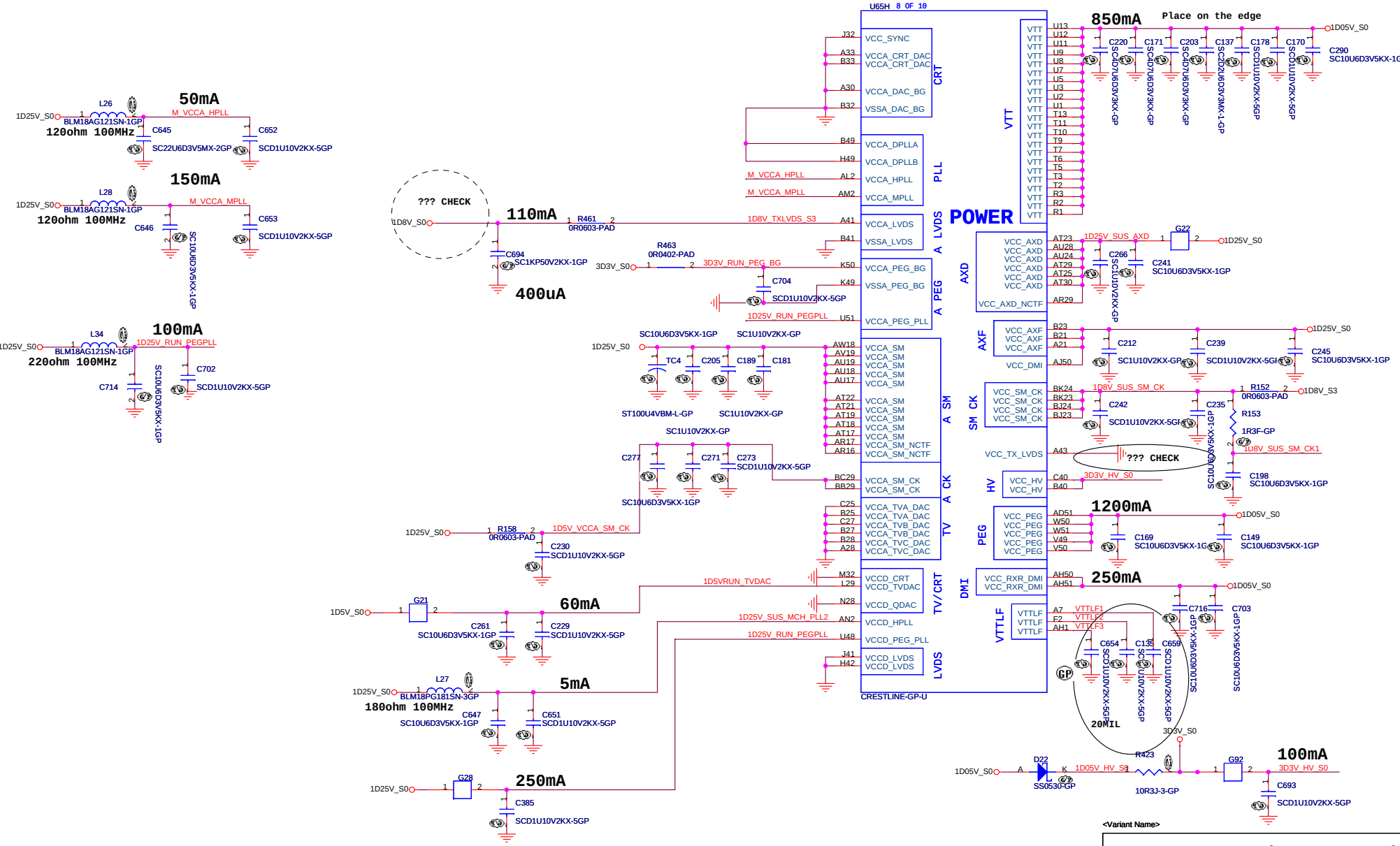
Date: Friday, January 18, 2008 Sheet 8 of 51



<Variant Name>

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

Title	GMCH (4 of 5) POWER1	
Size: Custom	Document Number: MAKI	Rev: SA
Date: Friday, January 18, 2008	Sheet 9 of 51	



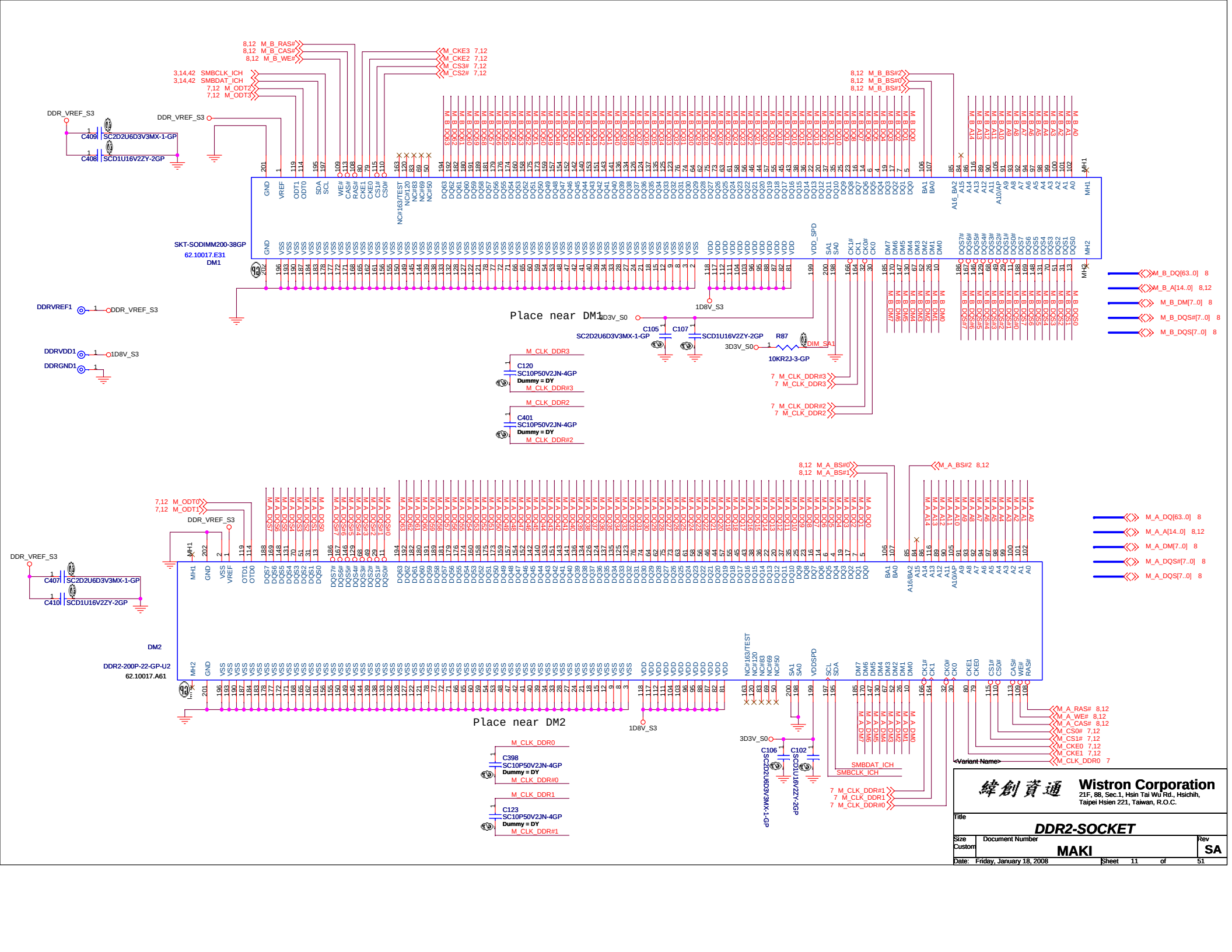
<Variant Name>

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

Title: GMCH (5 of 5) POWER2

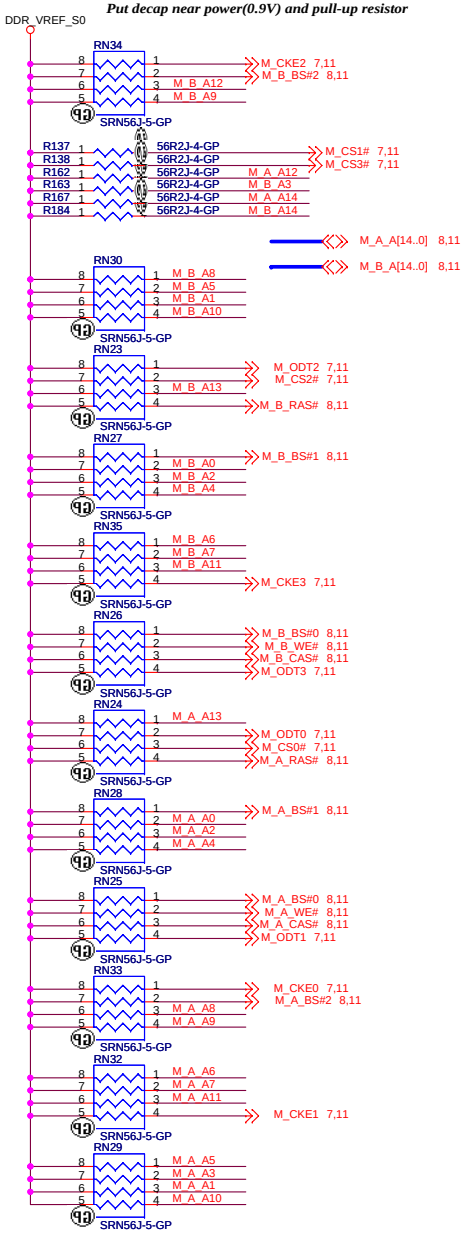
Size	Document Number	Rev
A3	MAKI	SA

Date: Friday, January 18, 2008 Sheet 10 of 51


SKT-SODIMM200-38GP
62.10017.E31
DM1
Place near DM1
DDR2-200P-22-GP-U2
62.10017.A61
DM2
Place near DM2
DDR_VREF_S3
DDRVREF1
DDRVDD1
DDRGND1
1D8V_S0
3D3V_S0
1D8V_S3
C105
C107
SC2D2U6D3V3MX-1-GP
SCD1U16V2ZY-2GP
R87
10KR2J-3-GP
DIM_SA1
C120
C401
C398
C123
SC10P50V2JN-4GP
Dummy = DY
C409
C408
C407
C410
C106
C102
M_B_DQ[63..0] 8
M_B_A[14..0] 8,12
M_B_DM[7..0] 8
M_B_DQS#[7..0] 8
M_B_DQS[7..0] 8
M_A_DQ[63..0] 8
M_A_A[14..0] 8,12
M_A_DM[7..0] 8
M_A_DQS#[7..0] 8
M_A_DQS[7..0] 8
M_CLK_DDR3
M_CLK_DDR2
M_CLK_DDR0
M_CLK_DDR1
SMBDAT_ICH
SMBCLK_ICH
<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-SOCKET
Size
Custom
Document Number
MAKI
Rev
SA
Date: Friday, January 18, 2008
Sheet 11 of 51

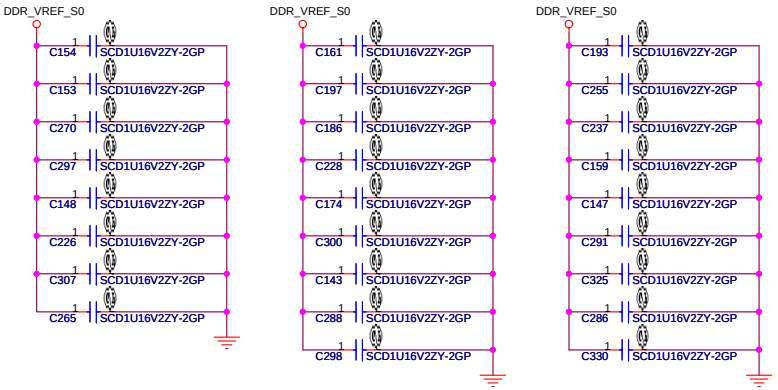
PARALLEL TERMINATION

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

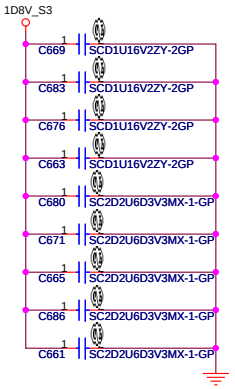


Decoupling Capacitor

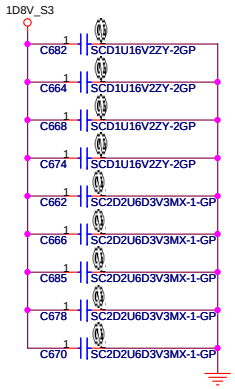
Put decap near power(0.9V) and pull-up resistor



Place these Caps near DM1



Place these Caps near DM2



<Variant Name>

緯創資通 **Wistron Corporation**
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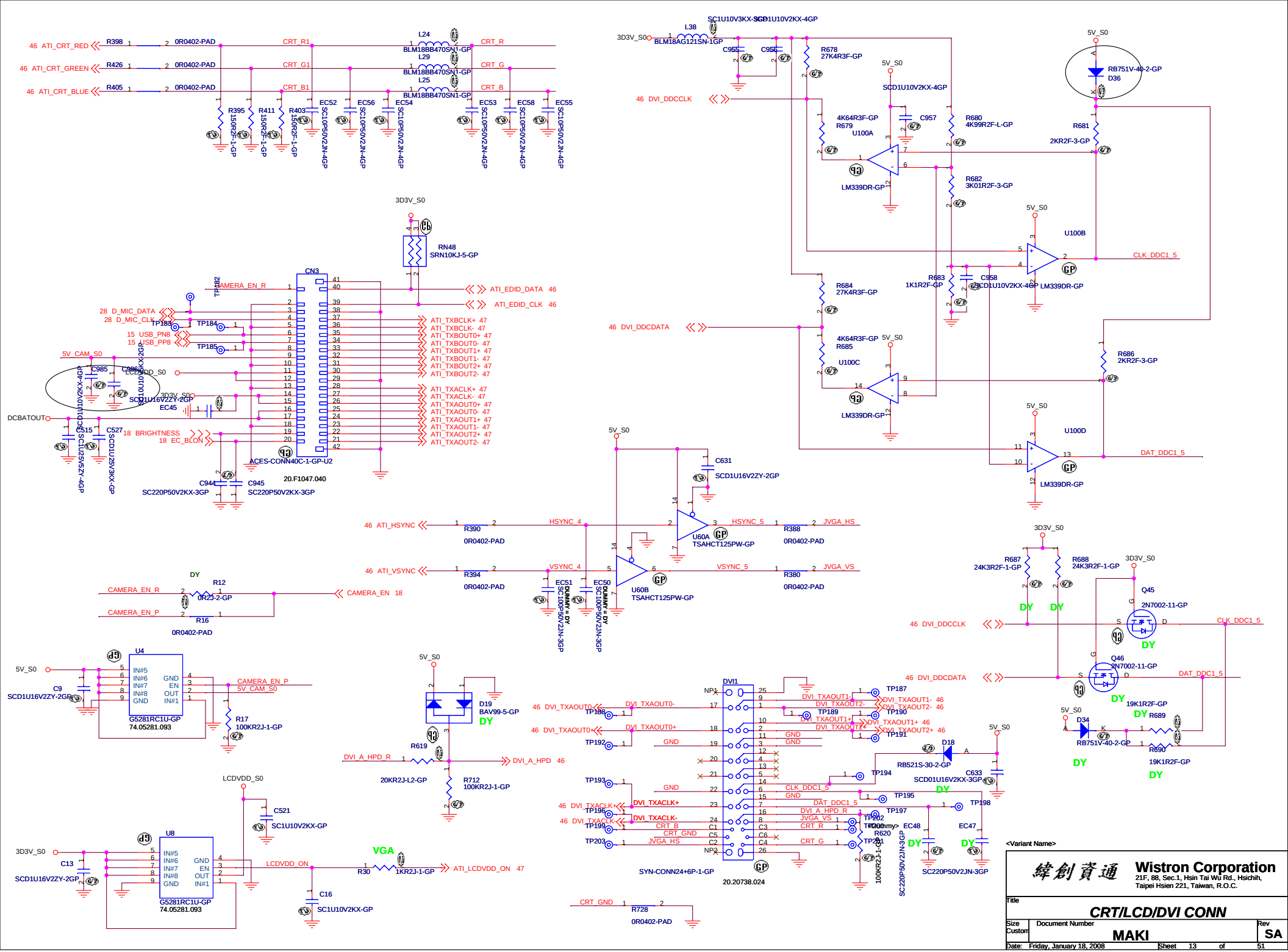
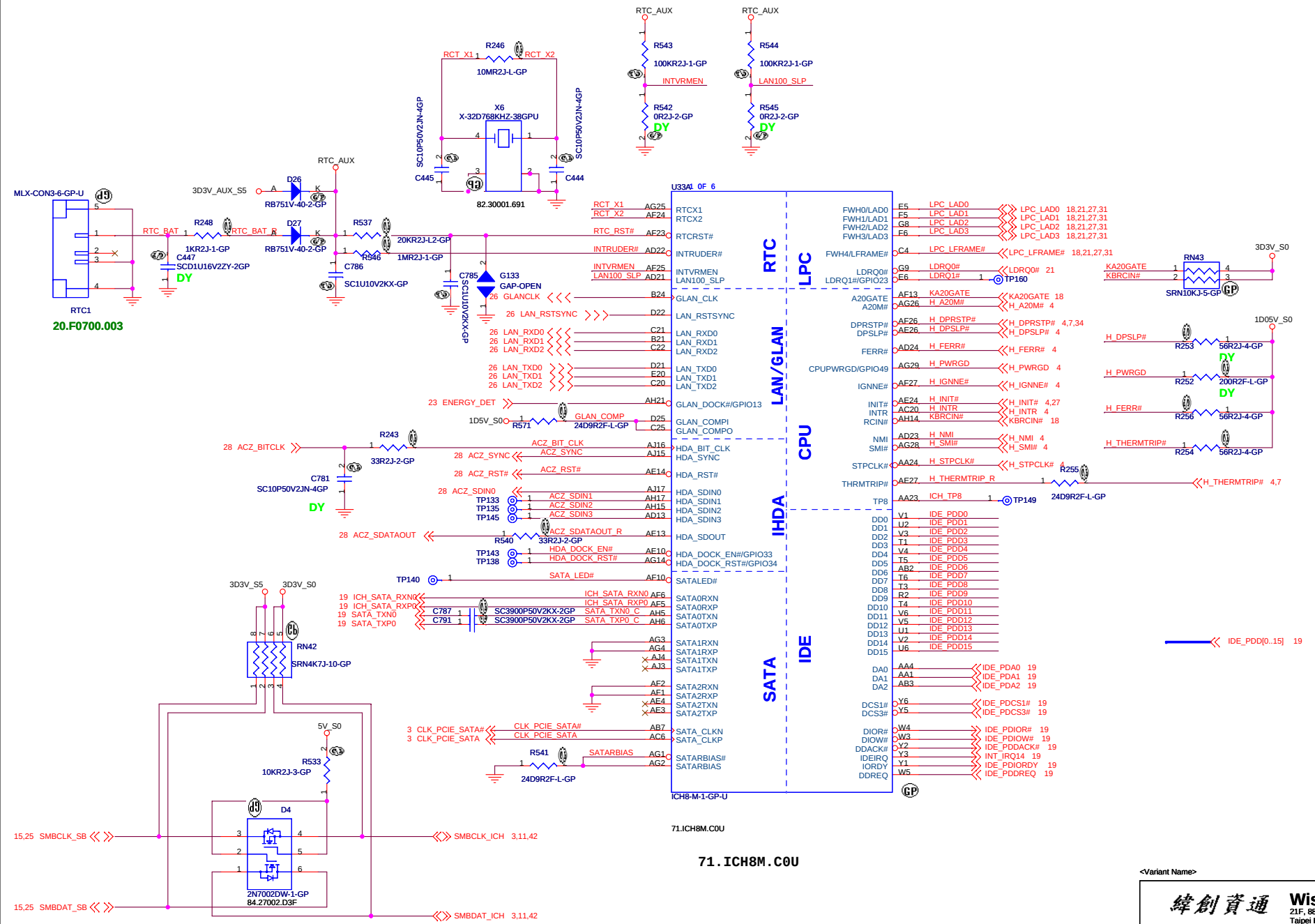
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***DDR2-RESISTOR&CAPACITOR***

Size	Document Number	Rev
Custom	MAKI	SA

Date: Friday, January 18, 2008 Sheet 12 of 51


46 ATI_CRT_RED
46 ATI_CRT_GREEN
46 ATI_CRT_BLUE
R398 0R0402-PAD
R426 0R0402-PAD
R405 0R0402-PAD
CRT_R1
CRT_G1
CRT_B1
L24 BLM18BB470SN1-GP
L29 BLM18BB470SN1-GP
L25 BLM18BB470SN1-GP
CRT_R
CRT_G
CRT_B
R395 150R2F-1-GP
R411 150R2F-1-GP
R403 150R2F-1-GP
EC52 EC56 EC54 EC53 EC58 EC55 SC10P50V2JN-4GP
3D3V_S0
RN48 SRN10KJ-5-GP
CN3
ACES-CONN40C-1-GP-U2
20.F1047.040
TP182 CAMERA_EN_R
ATI_EDID_DATA 46
ATI_EDID_CLK 46
28 D_MIC_DATA
28 D_MIC_CLK
TP183 TP184 TP185
15 USB_PN8
15 USB_PP8
ATI_TXBCLK+ 47
ATI_TXBCLK- 47
ATI_TXBOUT0+ 47
ATI_TXBOUT0- 47
ATI_TXBOUT1+ 47
ATI_TXBOUT1- 47
ATI_TXBOUT2+ 47
ATI_TXBOUT2- 47
ATI_TXACLK+ 47
ATI_TXACLK- 47
ATI_TXAOUT0+ 47
ATI_TXAOUT0- 47
ATI_TXAOUT1+ 47
ATI_TXAOUT1- 47
ATI_TXAOUT2+ 47
ATI_TXAOUT2- 47
5V_CAM_S0
LCDVDD_S0
3D3V_S0
DCBATOUT
18 BRIGHTNESS
18 EC_BLON
C985 C986 SCD1U10V2KX-4GP
SC1U16Y2ZY-2GP
EC45
C515 C527 SCD1U25V5ZY-4GP
SCD1U25V3KX-GP
C944 C945 SC220P50V2KX-3GP
SC1U10V3KX-3GP
L38 BLM18AG121SN-1GP
C955 C956 SCD1U10V2KX-4GP
R678 27K4R3F-GP
5V_S0
RB751V-40-2-GP D36
46 DVI_DDCCLK
4K64R3F-GP R679
U100A
C957
R680 4K99R2F-L-GP
R681 2KR2F-3-GP
LM339DR-GP
R682 3K01R2F-3-GP
U100B
CLK_DDC1_5
R683 1K1R2F-GP
C958 SCD1U10V2KX-4GP
R684 27K4R3F-GP
46 DVI_DDCDATA
4K64R3F-GP R685
U100C
R686 2KR2F-3-GP
U100D
DAT_DDC1_5
5V_S0
C631 SCD1U16V2ZY-2GP
46 ATI_HSYNC
R390 0R0402-PAD
HSYNC_4
U60A TSAHCT125PW-GP
HSYNC_5
R388 0R0402-PAD
JVGA_HS
46 ATI_VSYNC
R394 0R0402-PAD
VSYNC_4
EC51 SC100P50V2JN-3GP DUMMY=DY
EC50 SC100P50V2JN-3GP DUMMY=DY
U60B TSAHCT125PW-GP
VSYNC_5
R380 0R0402-PAD
JVGA_VS
DY
R12 0R2J-2-GP
CAMERA_EN_R
CAMERA_EN_P
CAMERA_EN 18
R16 0R0402-PAD
3D3V_S0
R687 24K3R2F-1-GP
R688 24K3R2F-1-GP
Q45 2N7002-11-GP
46 DVI_DDCCLK
CLK_DDC1_5
Q46 2N7002-11-GP
46 DVI_DDCDATA
DAT_DDC1_5
19K1R2F-GP
R689
D34 RB751V-40-2-GP
R690 19K1R2F-GP
U4
G5281RC1U-GP
74.05281.093
C9 SCD1U16V2ZY-2GP
R17 100KR2J-1-GP
D19 BAV99-5-GP
R619
DVI_A_HPD_R
DVI_A_HPD 46
20KR2J-L2-GP
R712 100KR2J-1-GP
DVI1
SYN-CONN24+6P-1-GP
20.20738.024
46 DVI_TXAOUT0-
46 DVI_TXAOUT0+
46 DVI_TXACLK+
46 DVI_TXACLK-
DVI_TXAOUT0-
DVI_TXAOUT0+
DVI_TXACLK+
DVI_TXACLK-
DVI_TXAOUT1- 46
DVI_TXAOUT2- 46
DVI_TXAOUT1+ 46
DVI_TXAOUT2+ 46
CRT_B
CRT_GND
JVGA_HS
CRT_R
CRT_G
GND
CLK_DDC1_5
DAT_DDC1_5
DVI_A_HPD_R
JVGA_VS
TP187 TP188 TP189 TP190 TP191 TP192 TP193 TP194 TP195 TP196 TP197 TP198 TP199 TP200 TP201 TP202 TP203
D18 RB521S-30-2-GP
C633 SCD01U16V2KX-3GP
EC48 EC47 SC220P50V2JN-3GP
R620 100KR2J-1-GP
LCDVDD_S0
C521 SC1U10V2KX-GP
U8
G5281RC1U-GP
74.05281.093
C13 SCD1U16V2ZY-2GP
LCDVDD_ON
VGA
R30 1KR2J-1-GP
ATI_LCDVDD_ON 47
C16 SC1U10V2KX-GP
CRT_GND
R728 0R0402-PAD
<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/LCD/DVI CONN
Size Custom
Document Number
MAKI
Rev
SA
Date: Friday, January 18, 2008
Sheet 13 of 51



71.ICH8M.C0U

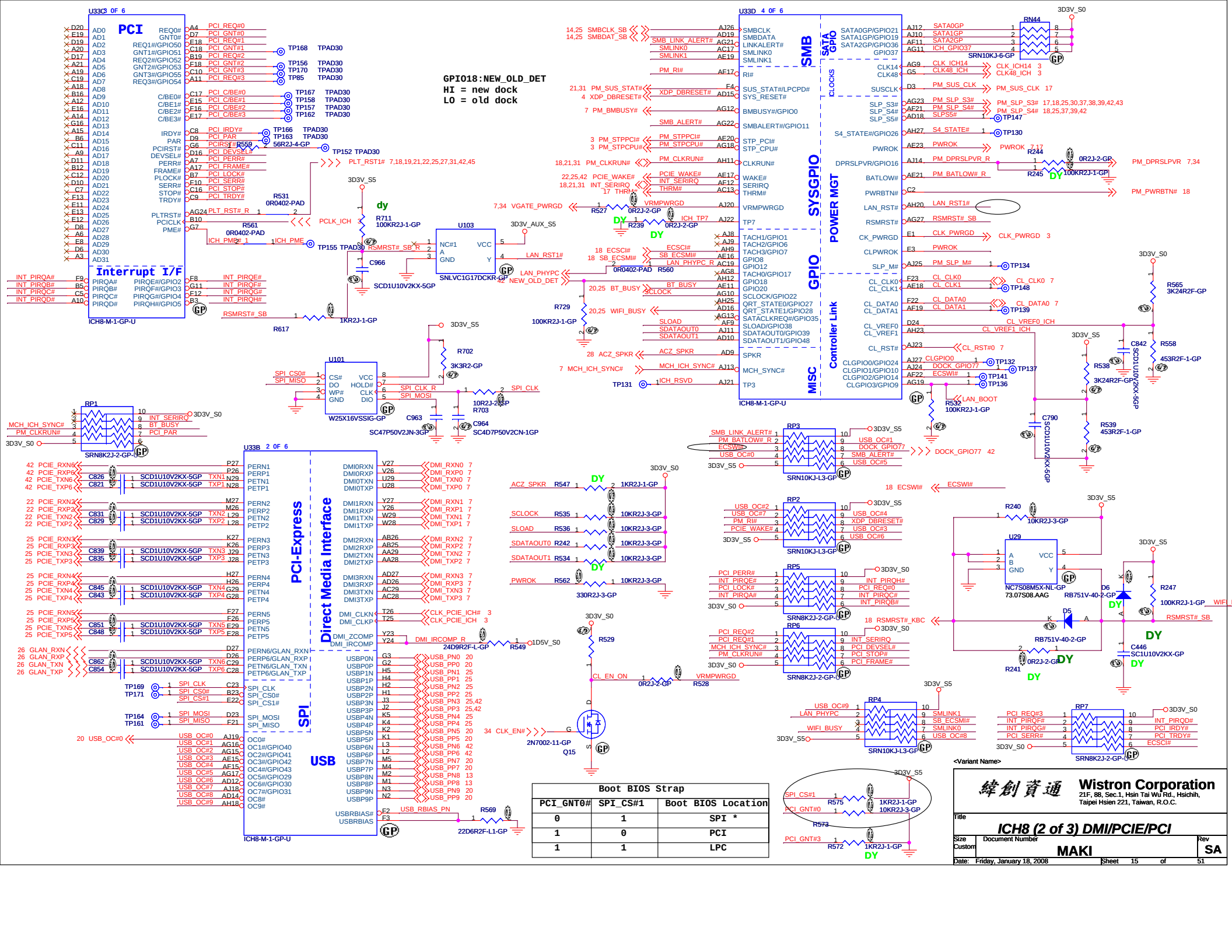
<Variant Name>

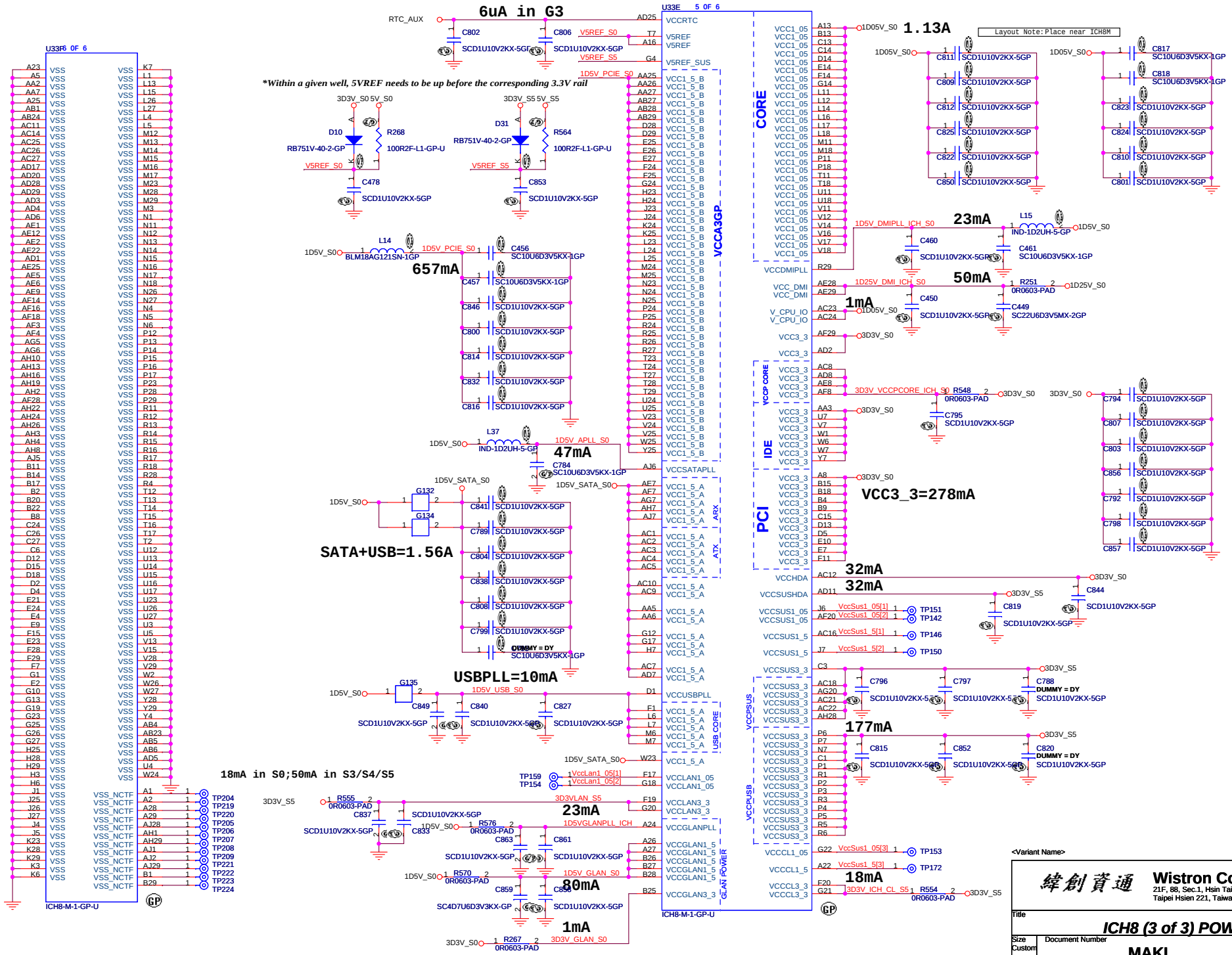
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ICH8 (1 of 3) SATA/IDE/RTC

Size	Document Number	Rev
Custom	MAKI	SA

Date: Friday, January 18, 2008 Sheet 14 of 51


GPIO18:NEW_OLD_DET
HI = new dock
LO = old dock
PCI
Interrupt I/F
ICH8-M-1-GP-U
SMB
SATA GPIO
CLOCKS
SYSGPIO
POWER MGT
GPIO
Controller Link
MISC
PCI-Express
Direct Media Interface
SPI
USB
Boot BIOS Strap
PCI_GNT0# SPI_CS#1 Boot BIOS Location
0 1 SPI *
1 0 PCI
1 1 LPC
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
ICH8 (2 of 3) DMI/PCIE/PCI
MAKI
Date: Friday, January 18, 2008
Sheet 15 of 51

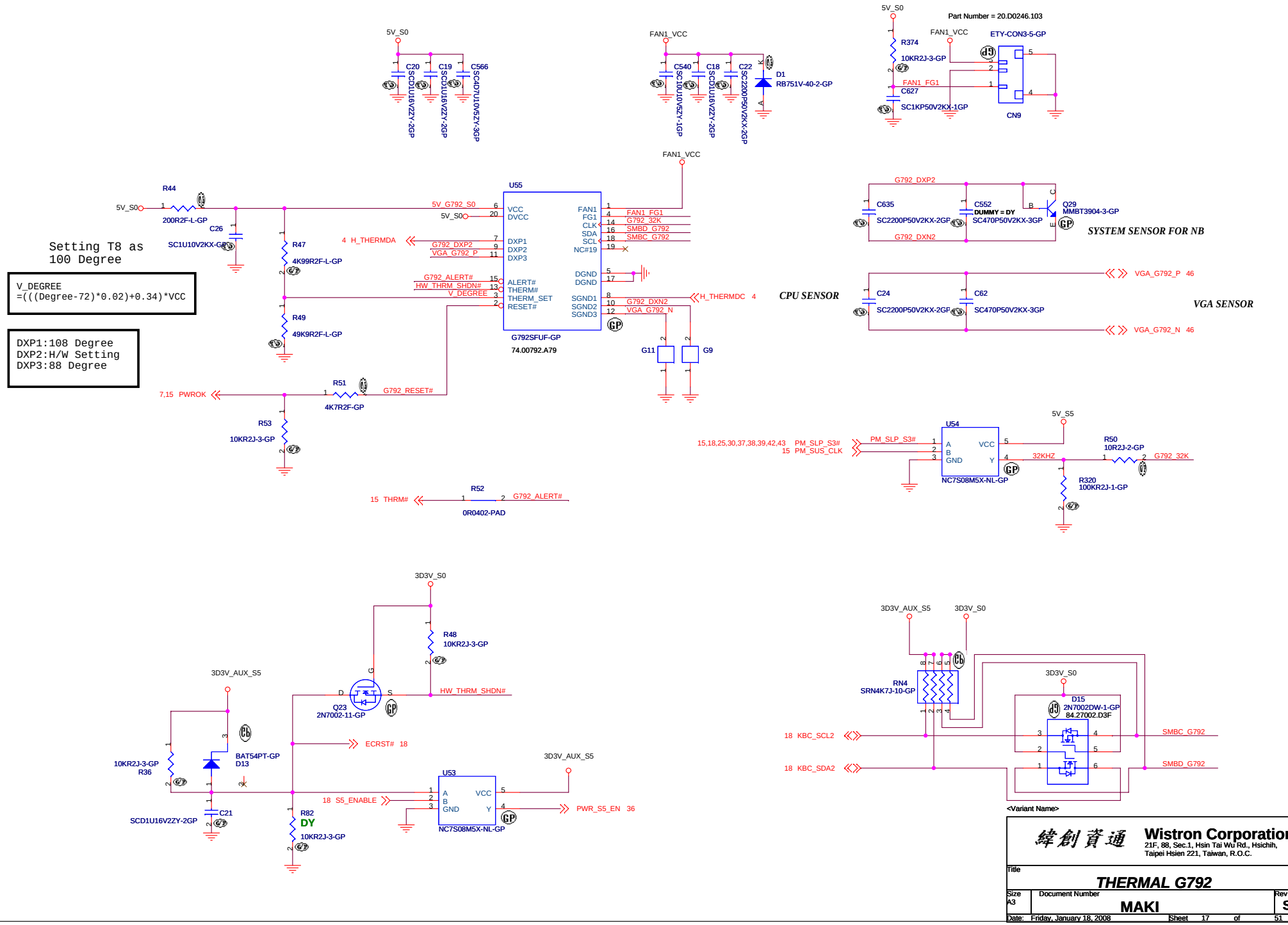


Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ICH8 (3 of 3) POWER

Size: Custom | Document Number: MAKI | Rev: SA

Date: Friday, January 18, 2008 | Sheet 16 of 51

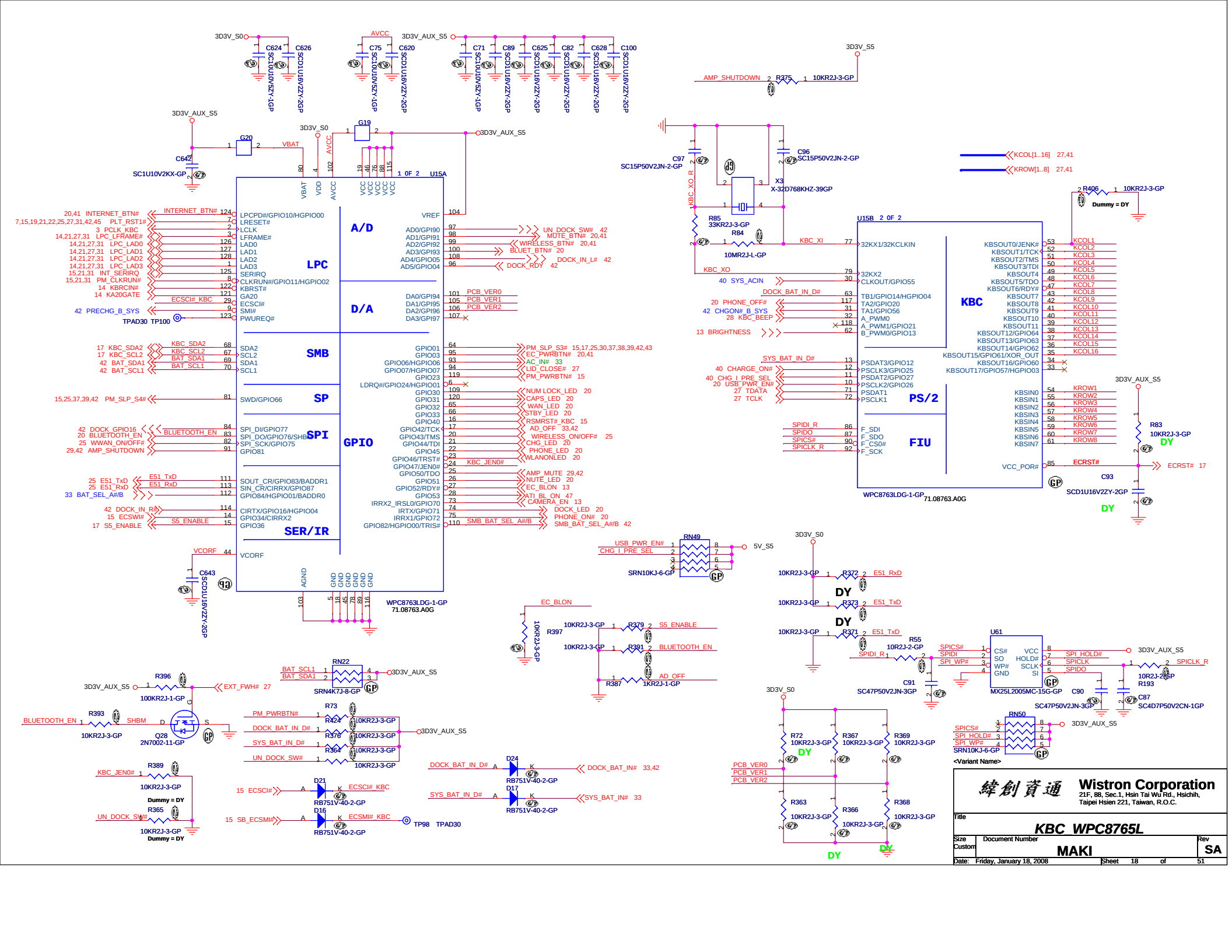


緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **THERMAL G792**

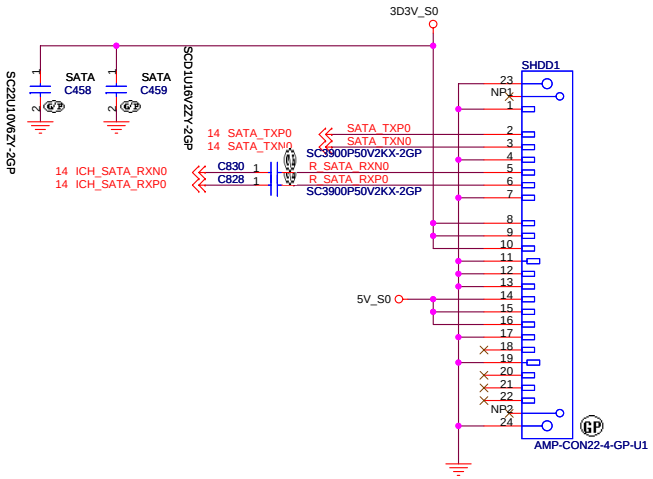
Size	Document Number	Rev
A3	MAKI	SA

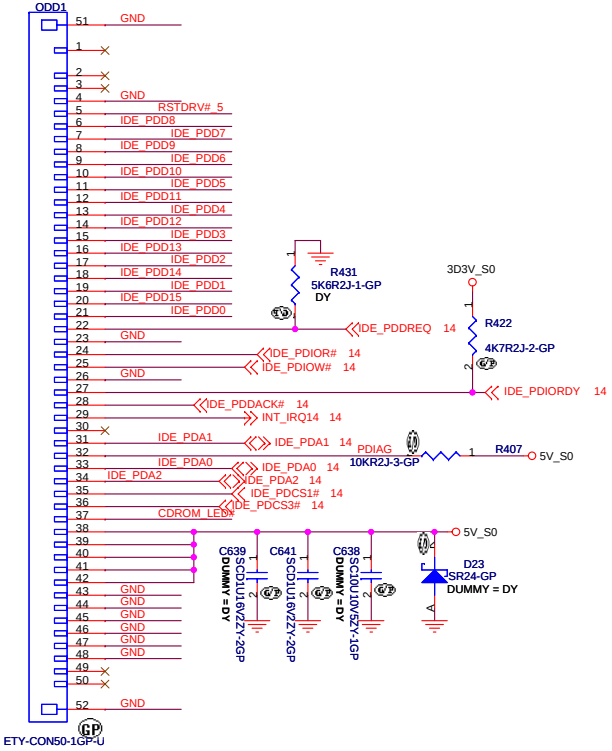
Date: Friday, January 18, 2008 Sheet 17 of 51


U15A
WPC8763LDG-1-GP
71.08763.A0G
A/D
LPC
D/A
SMB
SP
SPI
GPIO
SER/IR
U15B 2 0F 2
KBC
PS/2
FIU
WPC8763LDG-1-GP
71.08763.A0G
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
KBC_WPC8765L
MAKI
Date: Friday, January 18, 2008
Sheet 18 of 51

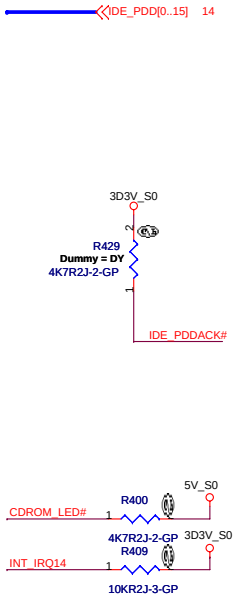
CD-ROM CONNECTOR

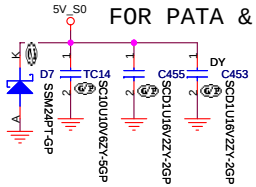
SATA HD Connector

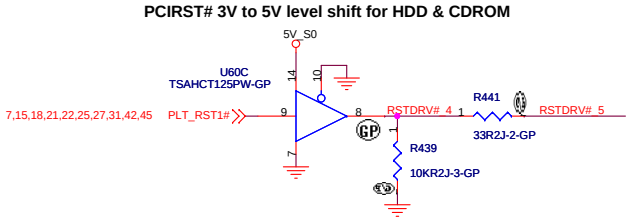




20.K0214.050

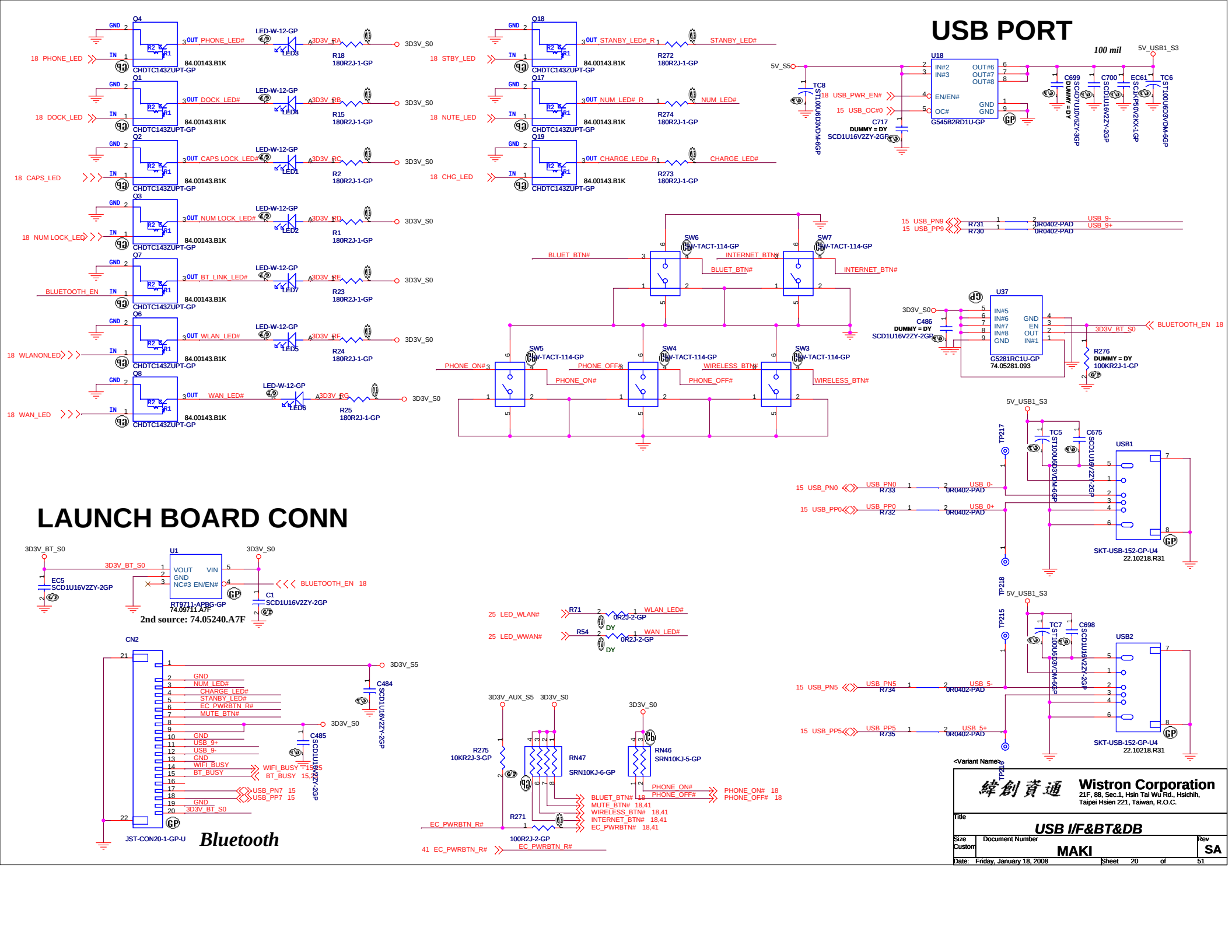






<Variant Name>

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	***HDD/CDROM***	
Size: Custom	Document Number: **MAKI**	Rev: **SA**
Date: Friday, January 18, 2008	Sheet 19 of 51	


USB PORT
LAUNCH BOARD CONN
Bluetooth
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
USB I/F&BT&DB
MAKI
SA
Friday, January 18, 2008
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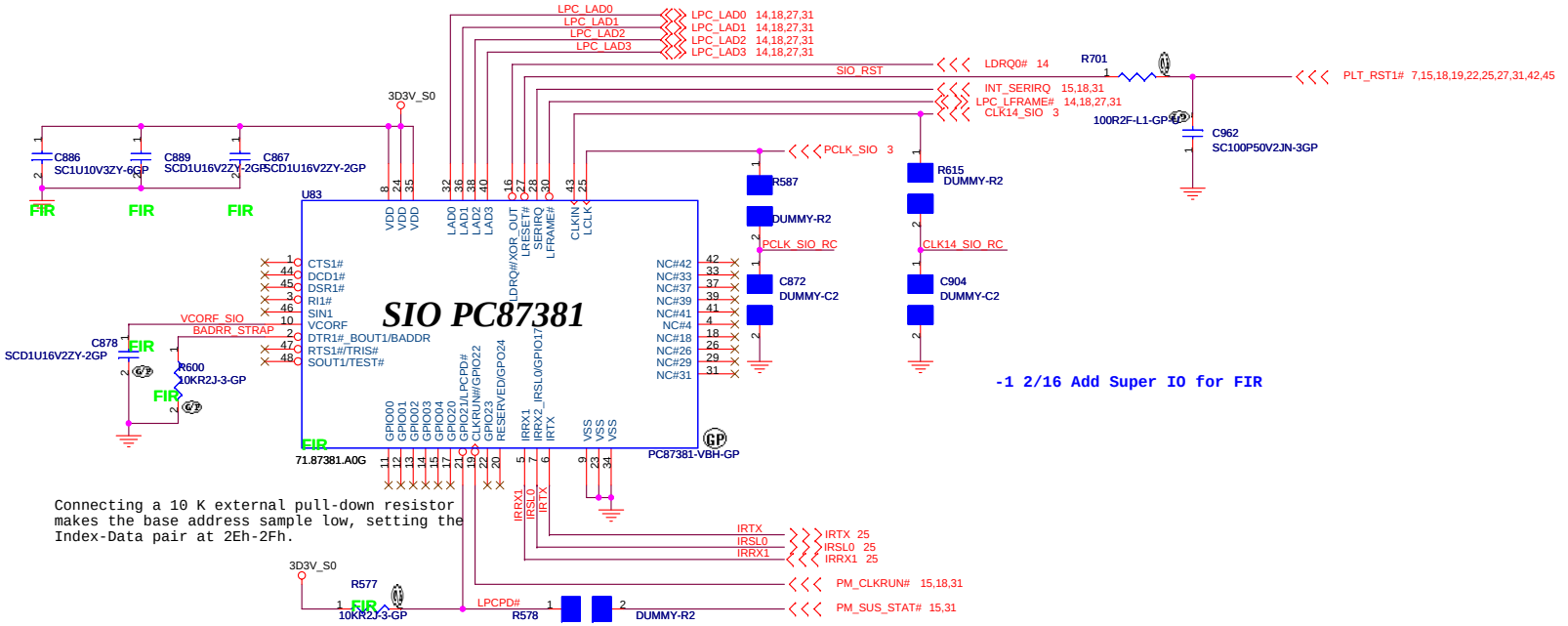


Connecting a 10 K external pull-down resistor makes the base address sample low, setting the Index-Data pair at 2Eh-2Fh.

-1 2/16 Add Super IO for FIR

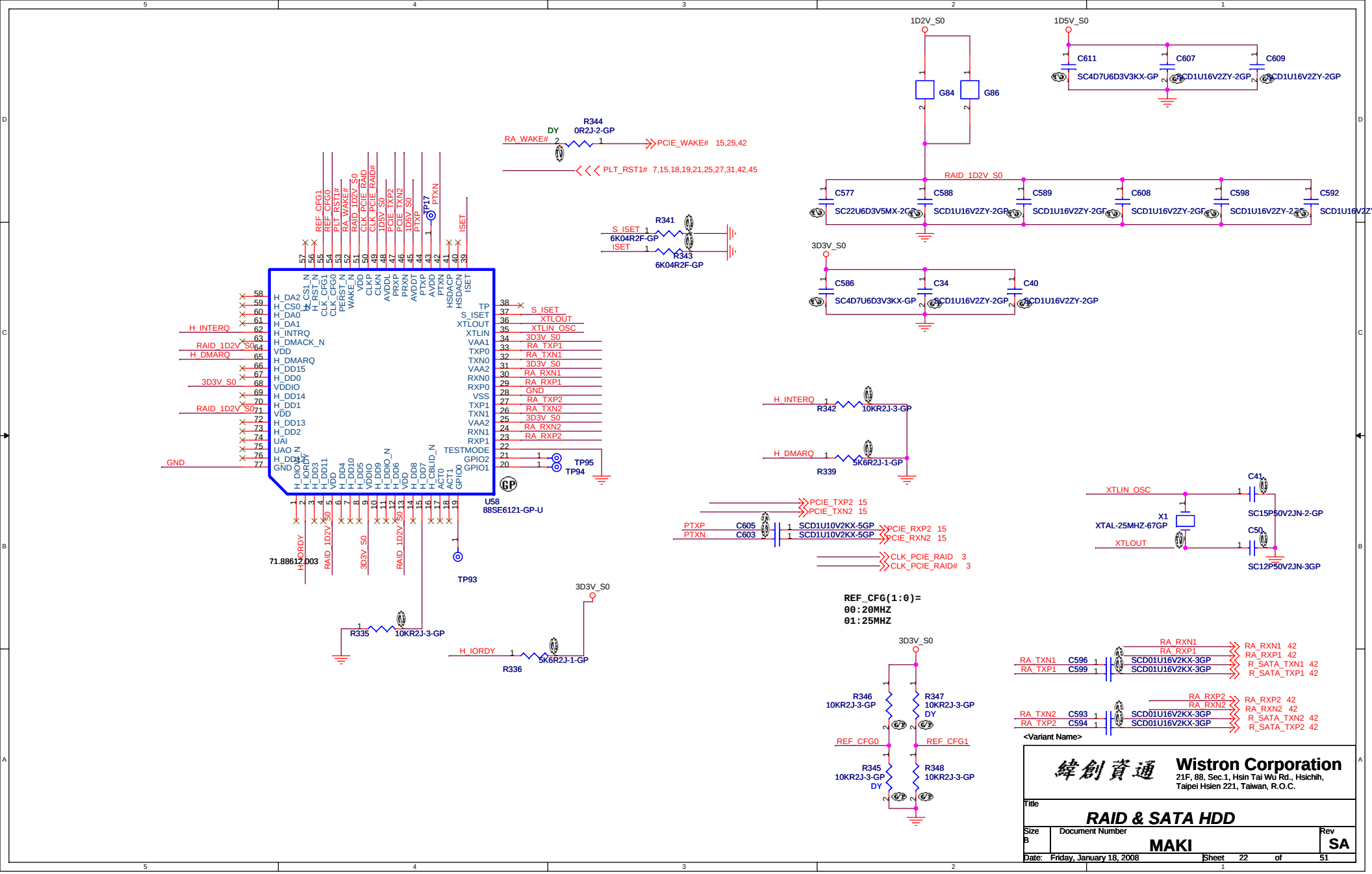
<Variant Name>

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

Title: **USB HUB 2504-JT**

Size	Document Number	Rev
A3	MAKI	SA

Date: Friday, January 18, 2008 Sheet 21 of 51


1D2V_S0
1D5V_S0
G84
G86
C611
C607
C609
SC4D7U6D3V3KX-GP
SCD1U16V2ZY-2GP
RAID_1D2V_S0
C577
C588
C589
C608
C598
C592
SC22U6D3V5MX-2GP
3D3V_S0
C586
C34
C40
R344
0R2J-2-GP
RA_WAKE#
PCIE_WAKE# 15,25,42
PLT_RST1# 7,15,18,19,21,25,27,31,42,45
R341
6K04R2F-GP
R343
S_ISET
ISET
U58
88SE6121-GP-U
71.88612.003
TP93
TP94
TP95
H_INTERQ
H_DMARQ
R342
10KR2J-3-GP
R339
5K6R2J-1-GP
PCIE_TXP2 15
PCIE_TXN2 15
PTXP
PTXN
C605
C603
SCD1U10V2KX-5GP
PCIE_RXP2 15
PCIE_RXN2 15
CLK_PCIE_RAID 3
CLK_PCIE_RAID# 3
XTLIN_OSC
X1
XTAL-25MHZ-67GP
XTLOUT
C41
C50
SC15P50V2JN-2-GP
SC12P50V2JN-3GP
REF_CFG(1:0)=
00:20MHZ
01:25MHZ
R335
10KR2J-3-GP
R336
5K6R2J-1-GP
H_IORDY
R346
10KR2J-3-GP
R347
10KR2J-3-GP
DY
R345
10KR2J-3-GP
R348
10KR2J-3-GP
REF_CFG0
REF_CFG1
RA_TXN1
RA_TXP1
C596
C599
SCD01U16V2KX-3GP
RA_RXN1
RA_RXP1
RA_RXN1 42
RA_RXP1 42
R_SATA_TXN1 42
R_SATA_TXP1 42
RA_TXN2
RA_TXP2
C593
C594
RA_RXP2
RA_RXN2
R_SATA_TXN2 42
R_SATA_TXP2 42
<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
RAID & SATA HDD
Size
B
Document Number
MAKI
Rev
SA
Date: Friday, January 18, 2008
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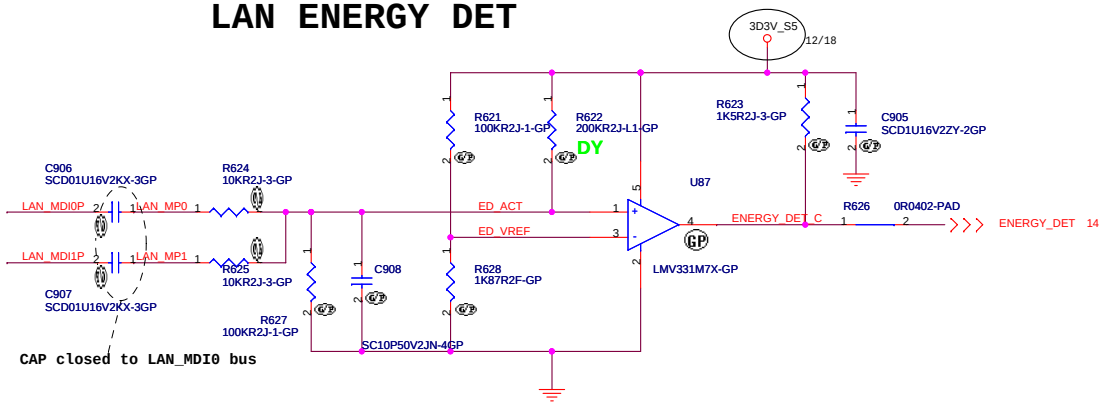
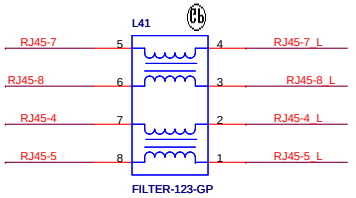
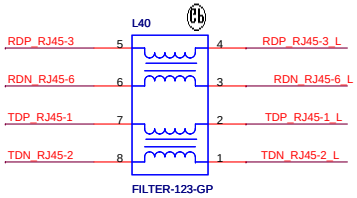
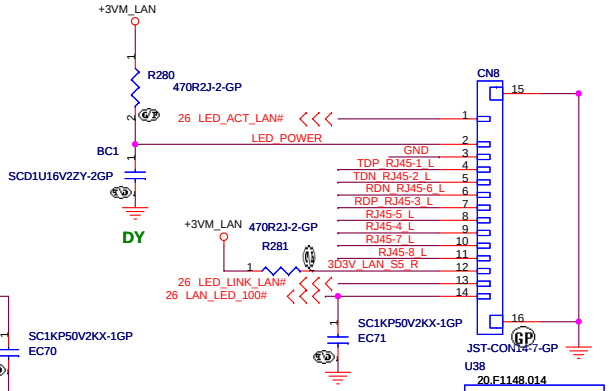
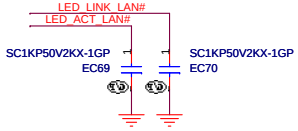
LAN ENERGY DET

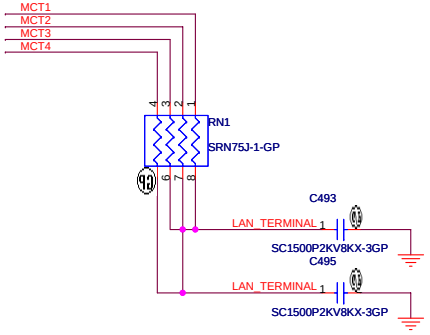


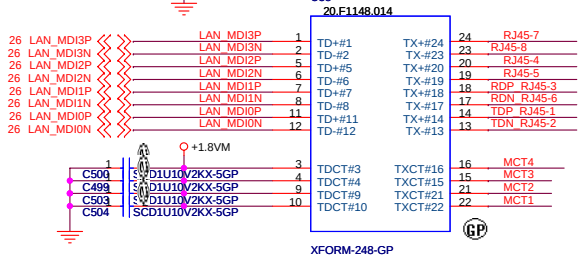












<Variant Name>

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	***LAN RTL8111B***
Size: A3	Document Number: **MAKI**
Rev: **SA**	
Date: Friday, January 18, 2008	Sheet 23 of 51

<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 S/W & RJ45

Size	Document Number	Rev
Custom	**MAKI**	**SA**

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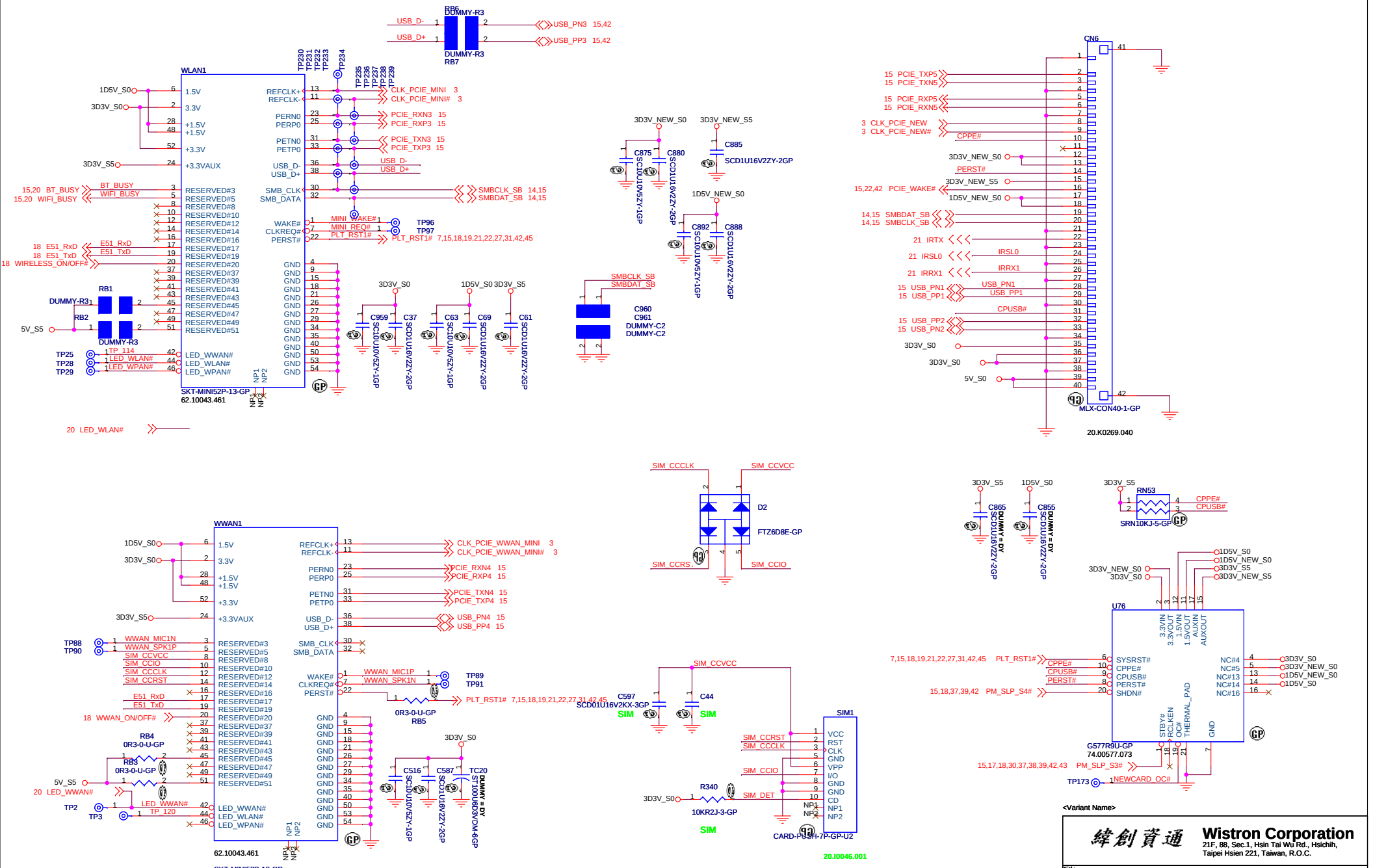


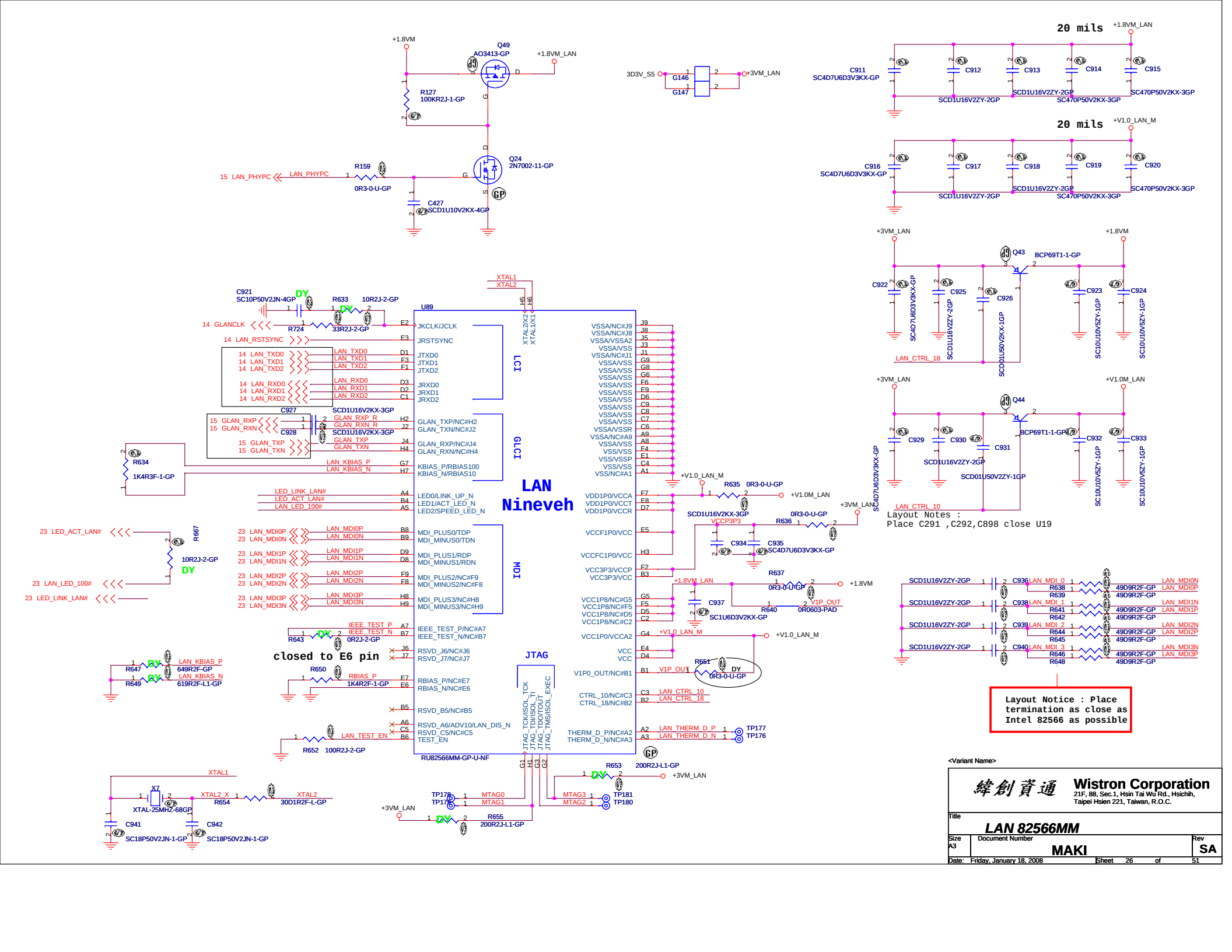
<variant_name>

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/New Card***

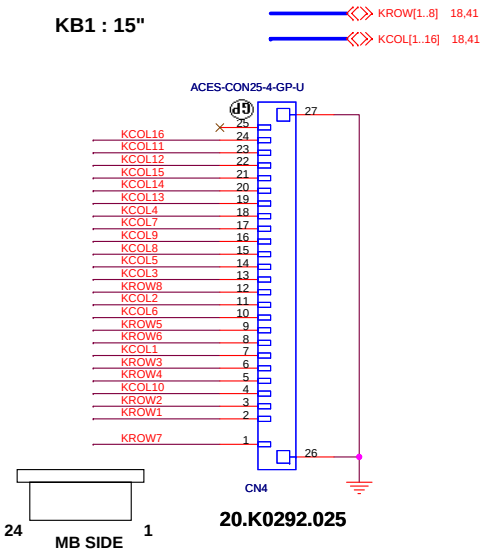
Size	Document Number	Rev
Custom	MAKI	SA

Date: Friday, January 18, 2008 Sheet 25 of 51


LAN
Nineveh
U89
RU82566MM-GP-U-NF
JTAG
LCI
GLCI
MCI
closed to E6 pin
20 mils
20 mils
Layout Notes :
Place C291 ,C292,C898 close U19
Layout Notice : Place termination as close as Intel 82566 as possible
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
LAN 82566MM
MAKI
SA
Friday, January 18, 2008
Sheet 26 of 51

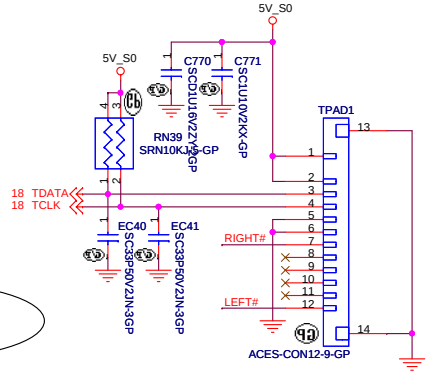
Internal KeyBoard Connector

KB1 : 15"



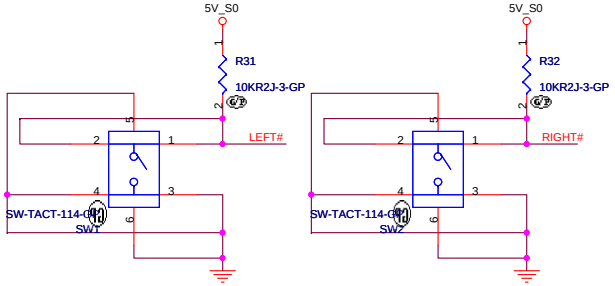
MB PIN DEFINE 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
KB PIN DEFINE 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

TouchPad Connector

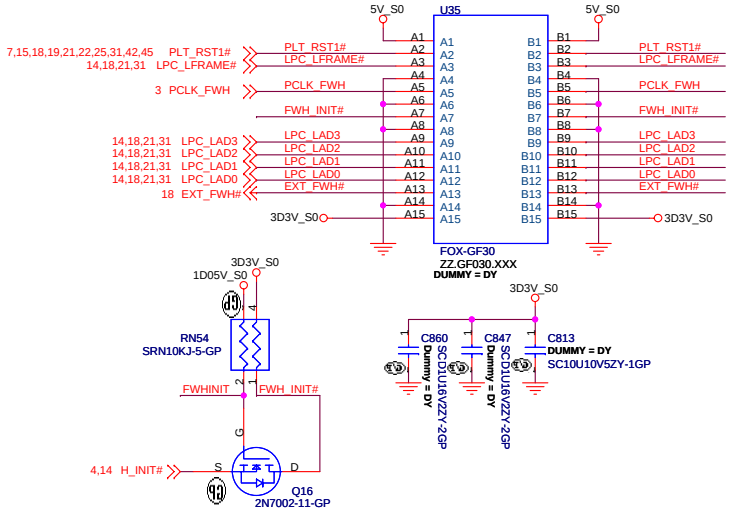


check pin define

15" TOUCHPAD BUTTON SWITCH



GOLDEN FINGER FOR DEBUG BOARD

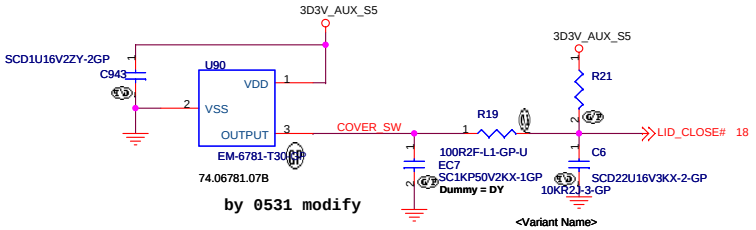


TOP VIEW

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

(BOTTOM VIEW)

COVER SWITCH



<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: KeyBoard/TPAD CONN

Size	Document Number	Rev
Custom	MAKI	SA

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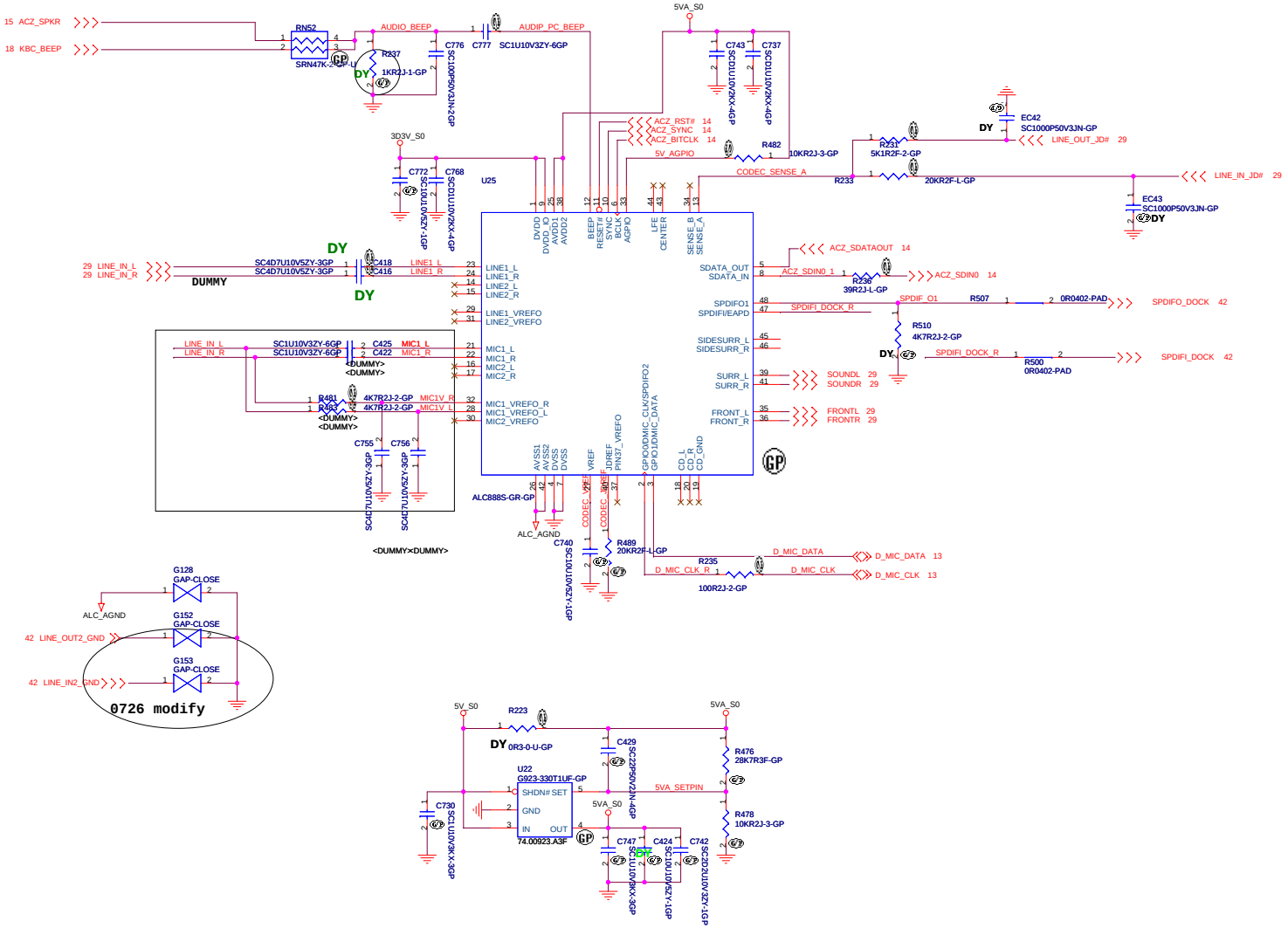

<Variant Name>

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

Title: AUDIO CODEC ALC888S

Size	Document Number	Rev
C	MAKI	SA

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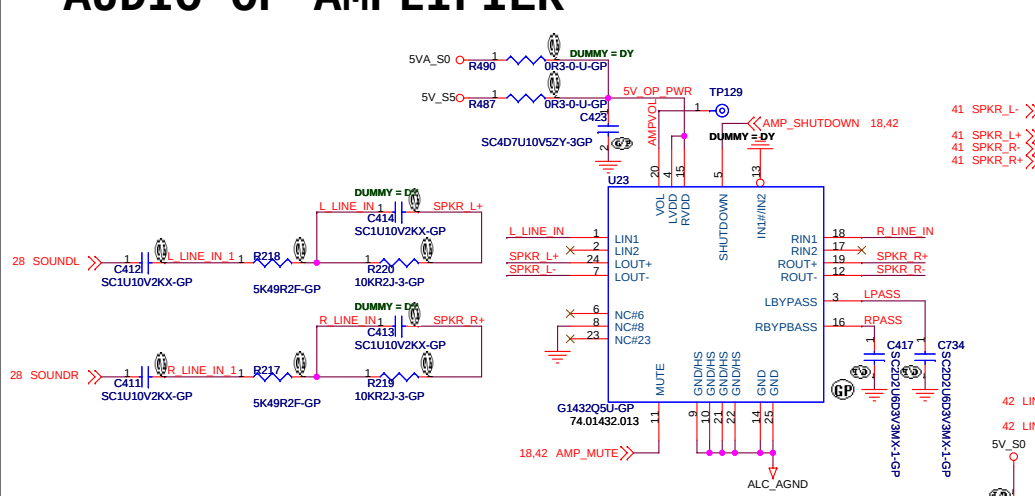
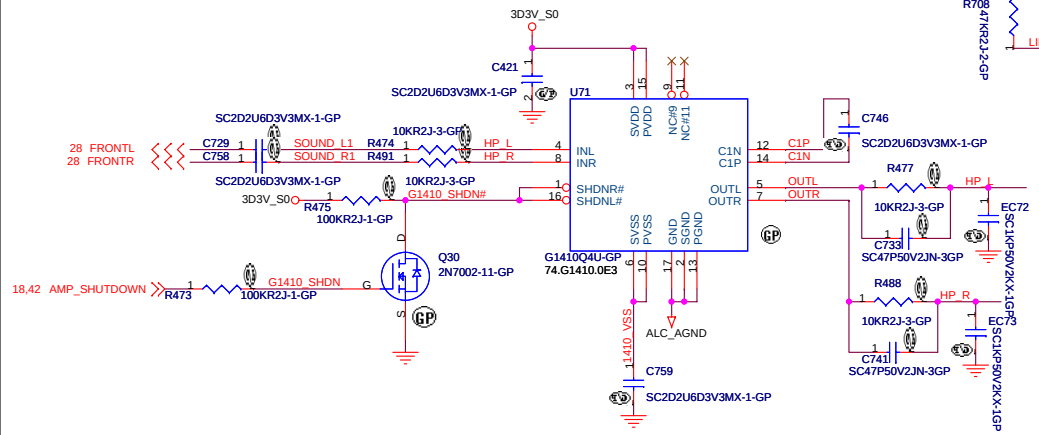
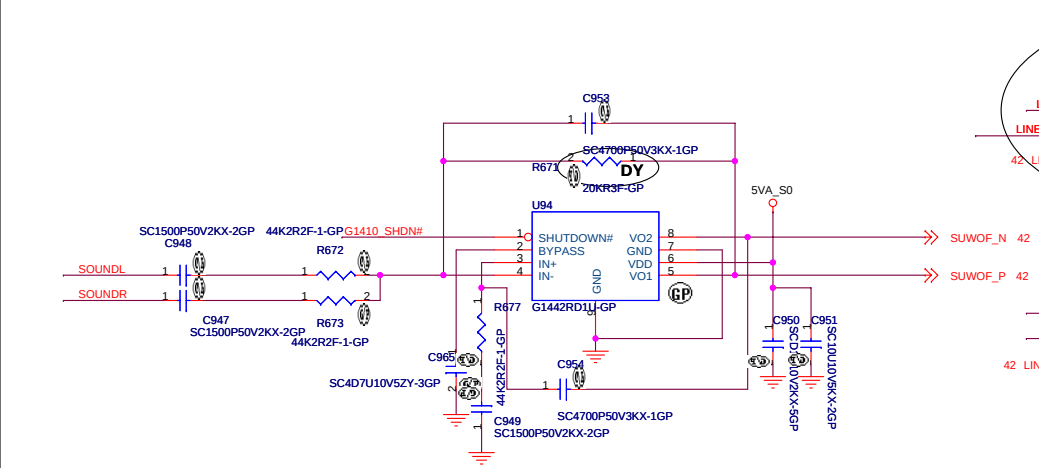
AUDIO OP AMPLIFIER







Internal Speaker

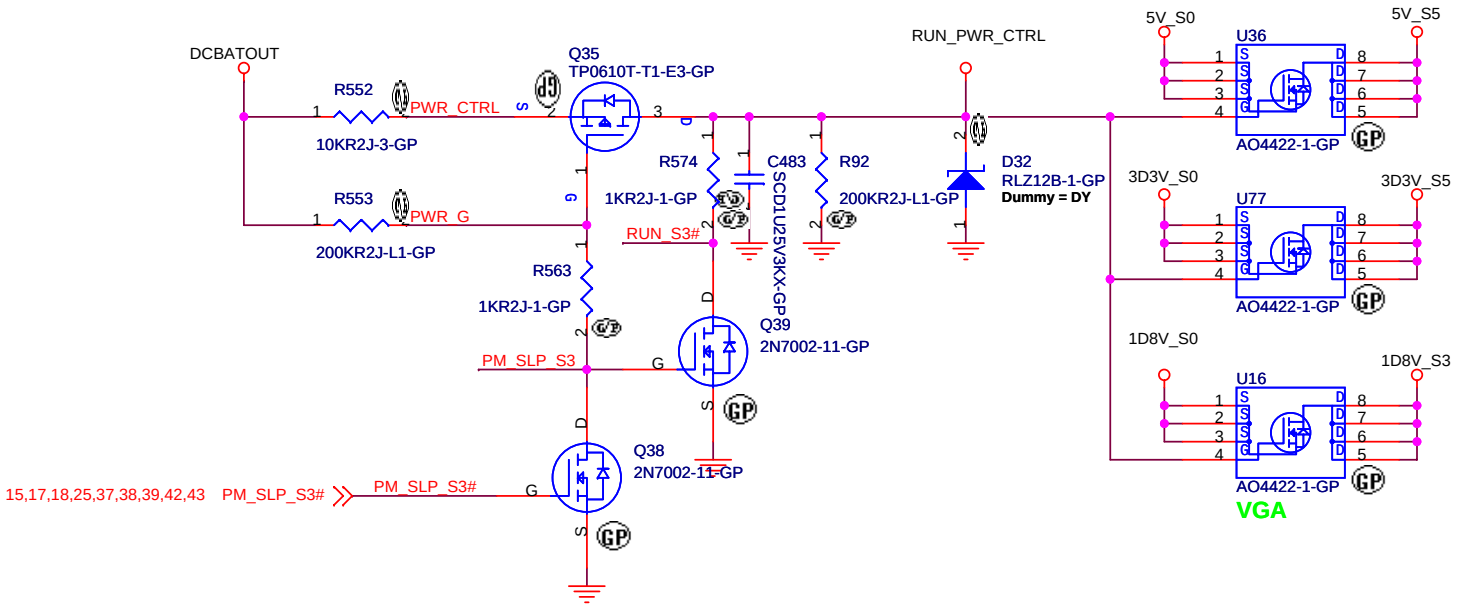
LINE OUT

Lin-In/MIC-In

<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(G1432)& JACK***	
Size: Custom	Document Number: **MAKI**	Rev: **SA**
Date: Friday, January 18, 2008	Sheet 29 of 51	

Run Power



<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: **RUN POWER / CTRL LOGIC**

Size	Document Number	Rev
A4	MAKI	SA

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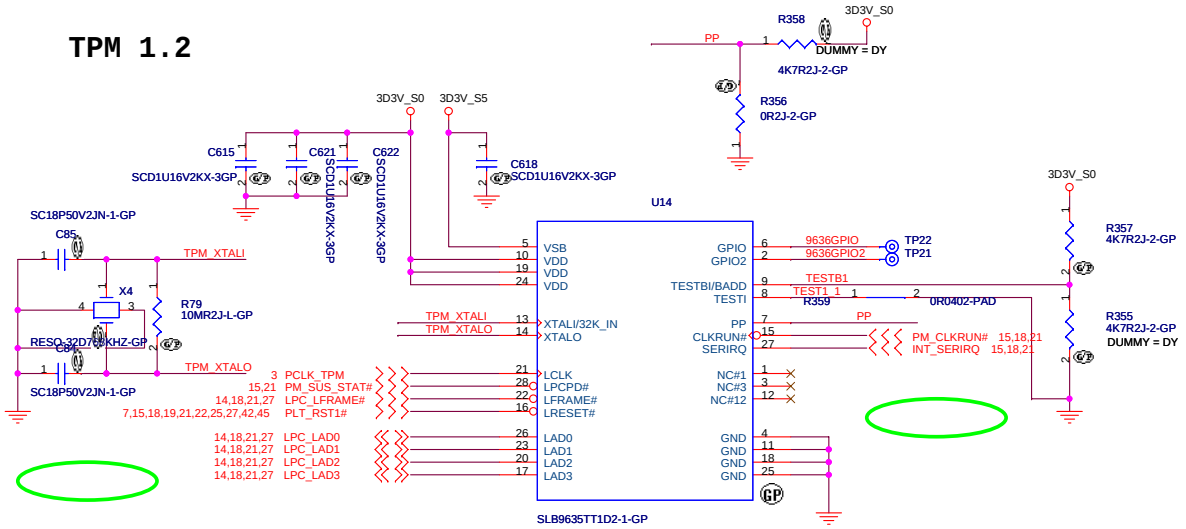
TPM 1.2



<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	***TPM***
Size: Custom	Document Number: **MAKI**
Rev	**SA**
Date: Friday, January 18, 2008	Sheet 31 of 51

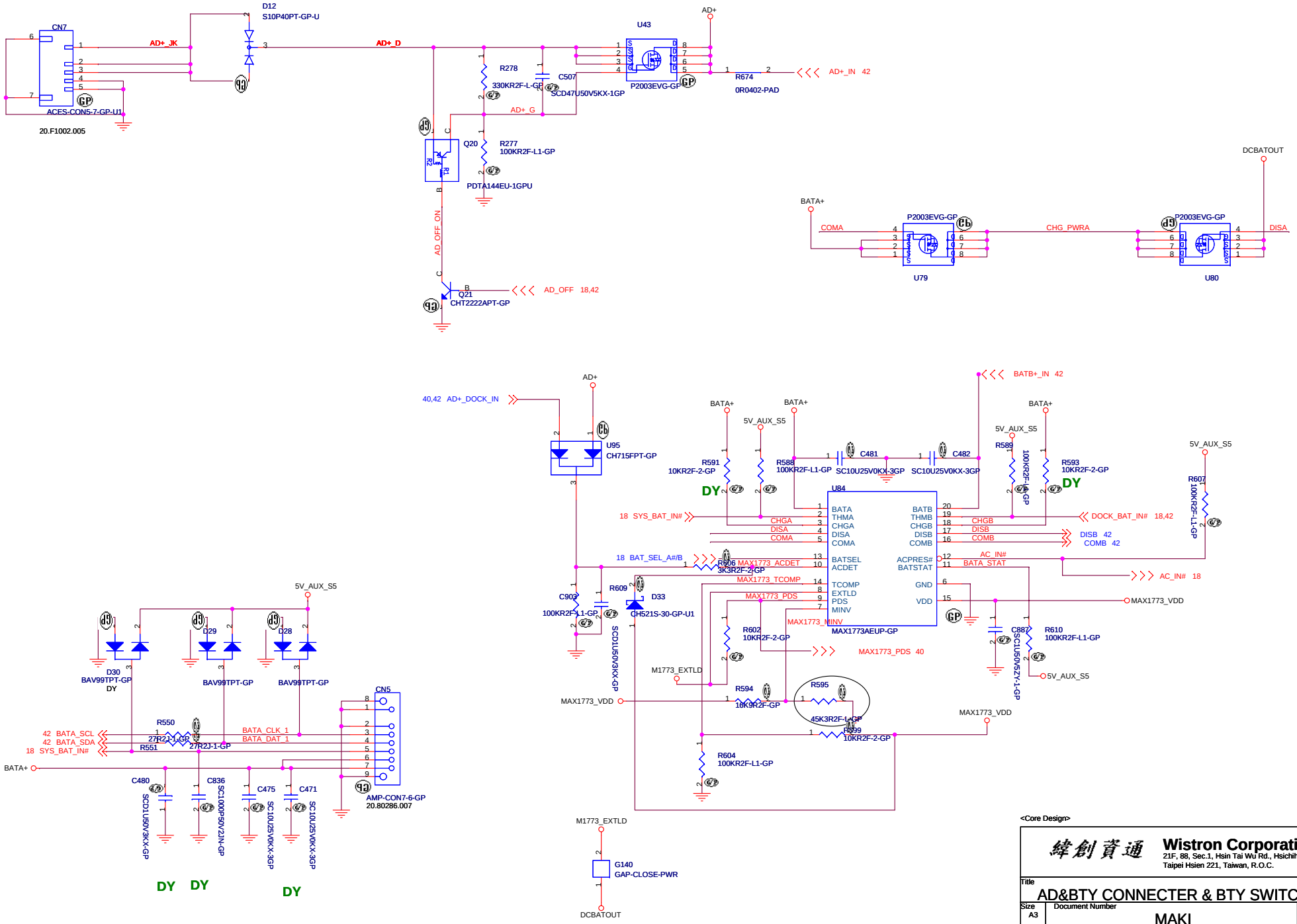
<Variant Name>

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

Title
Power Block Diagram

Size	Document Number	Rev
Custom	**MAKI**	**SA**

Date: Friday, January 18, 2008 Sheet 32 of 51



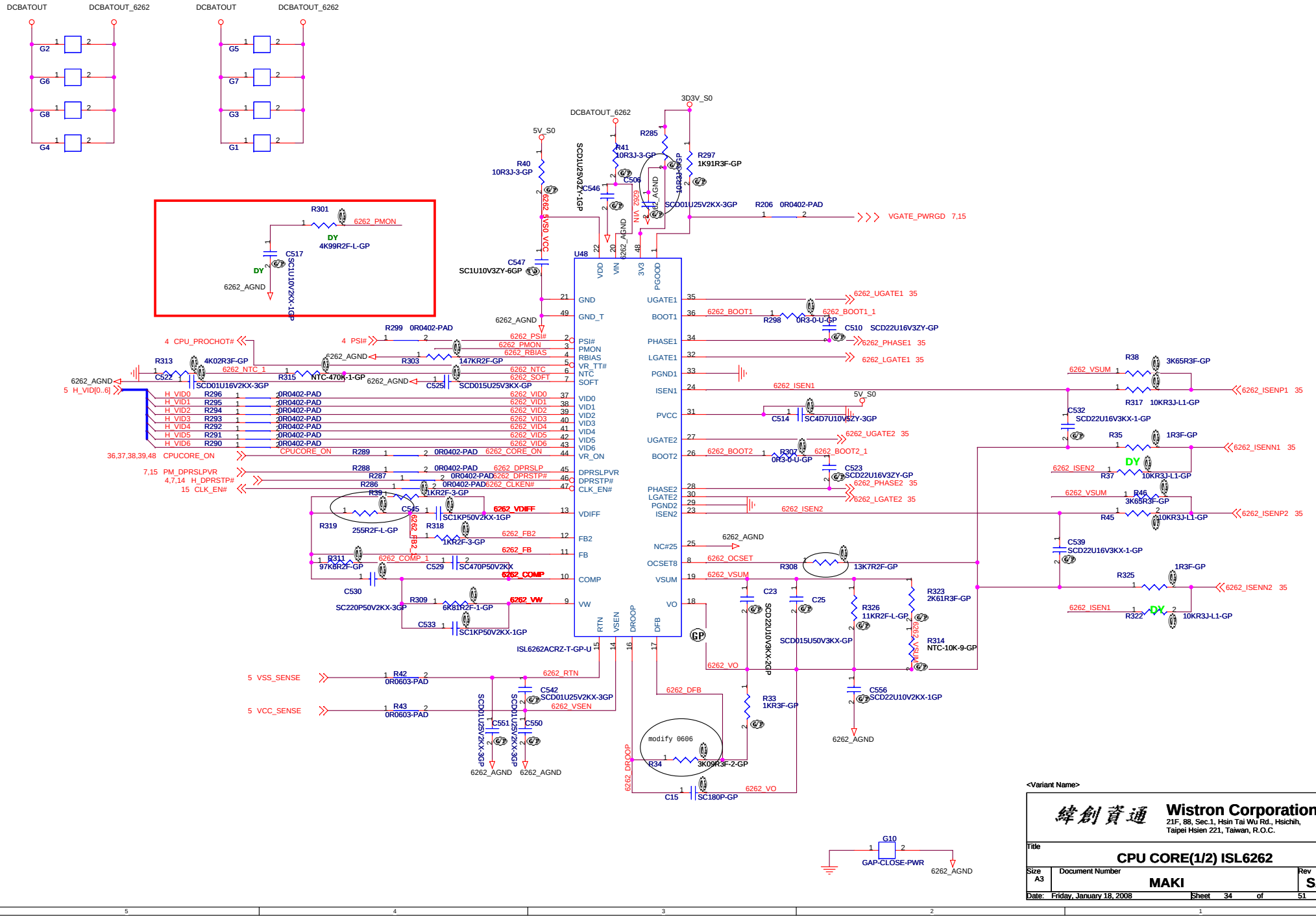
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

<Core Design>

Title: AD&BTY CONNECTER & BTY SWITCH

Size	Document Number	Rev
A3	MAKI	SA

Date: Friday, January 18, 2008 Sheet 33 of 51



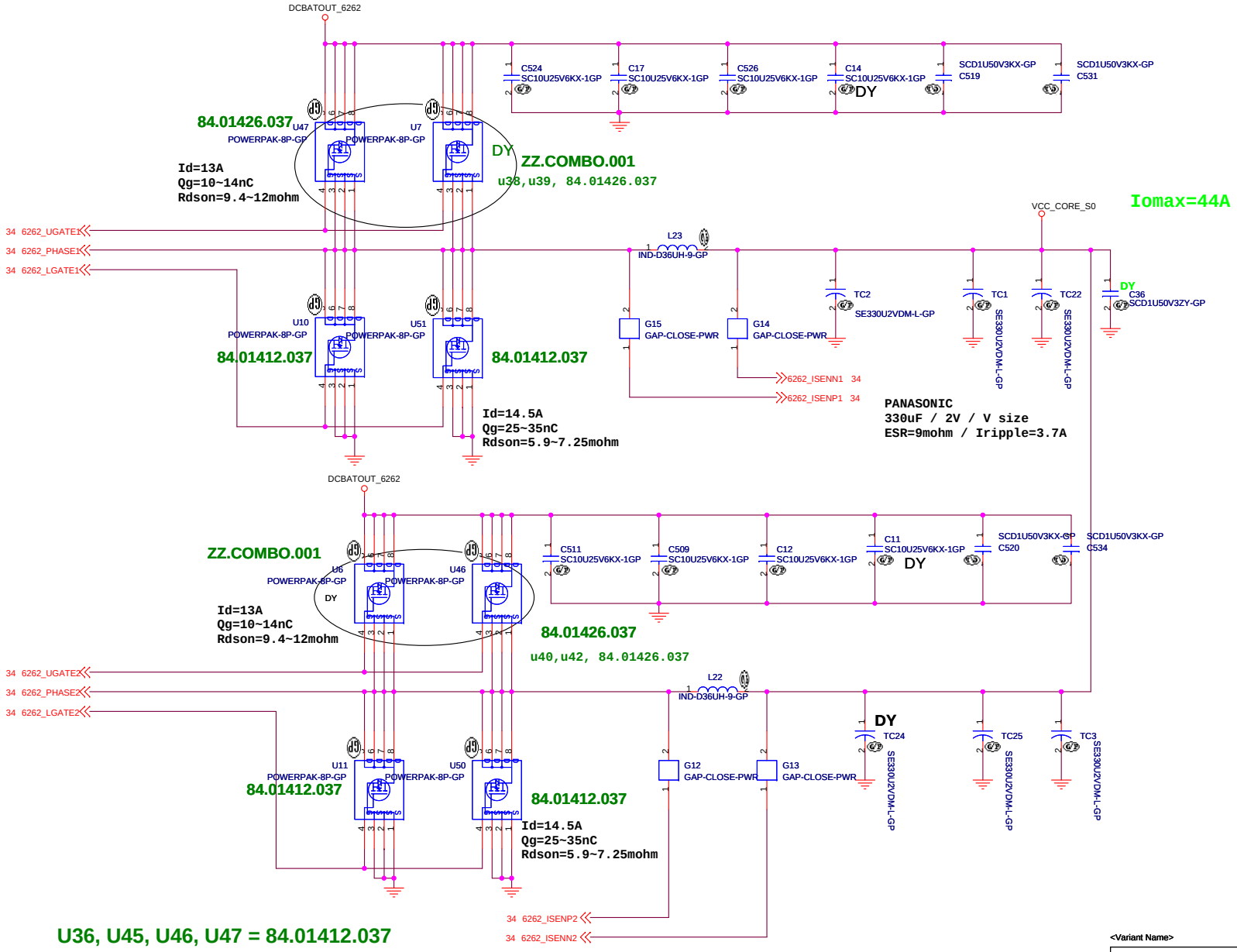
<Variant Name>

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

Title: **CPU CORE(1/2) ISL6262**

Size	Document Number	Rev
A3	MAKI	SA

Date: Friday, January 18, 2008 Sheet 34 of 51



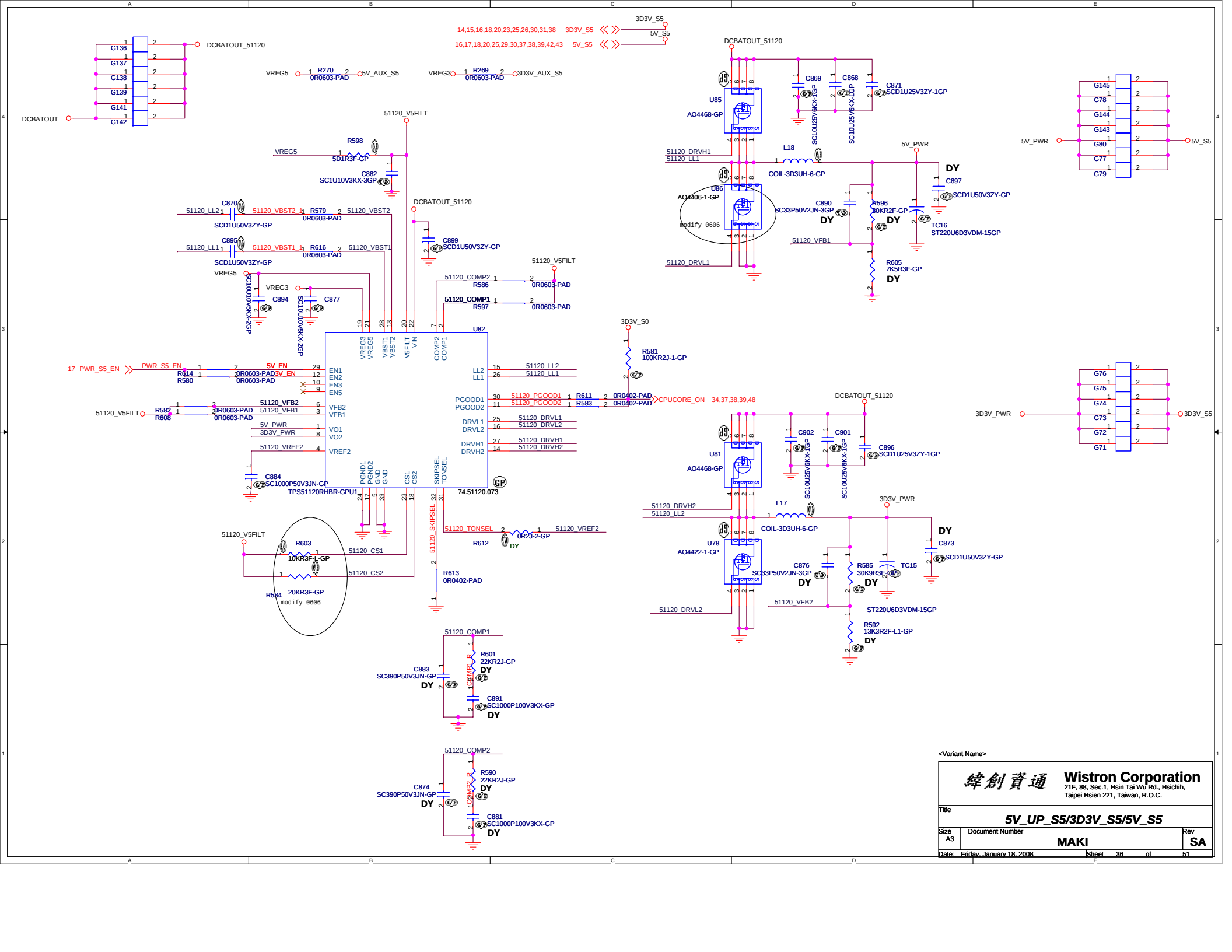
<Variant Name>

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

Title: **CPU CORE(2/2) ISL6262**

Size	Document Number	Rev
A3	MAKI	SA

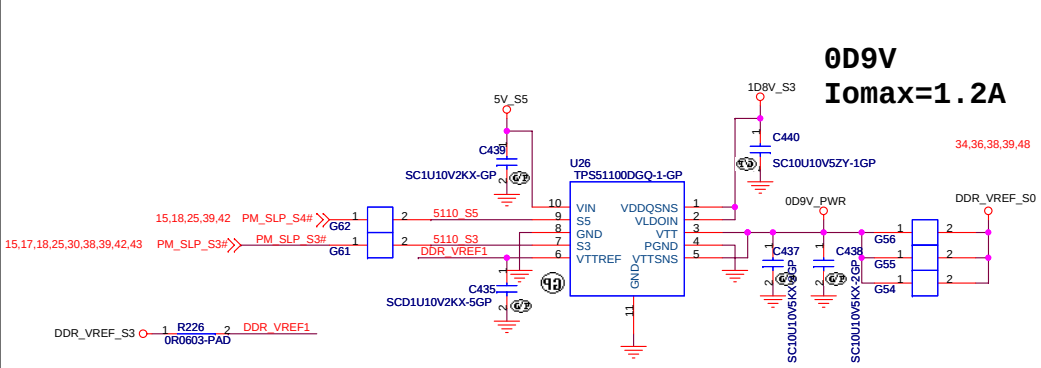
Date: Friday, January 18, 2008 Sheet 35 of 51

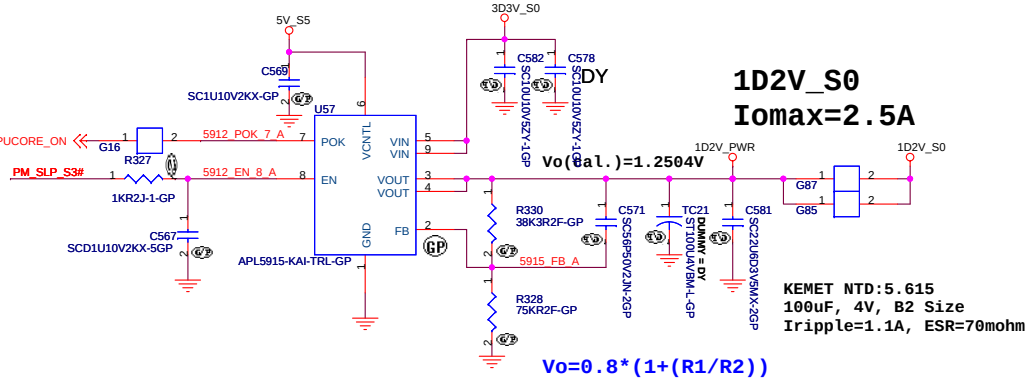


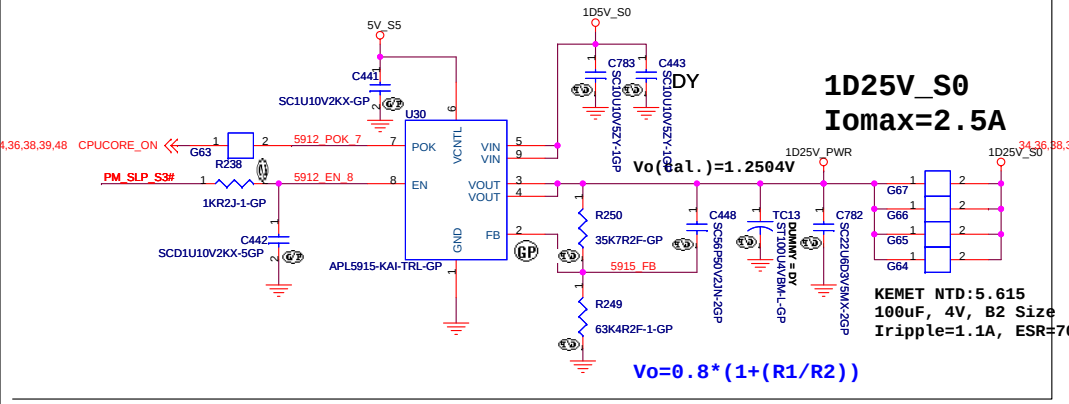
<Variant Name>

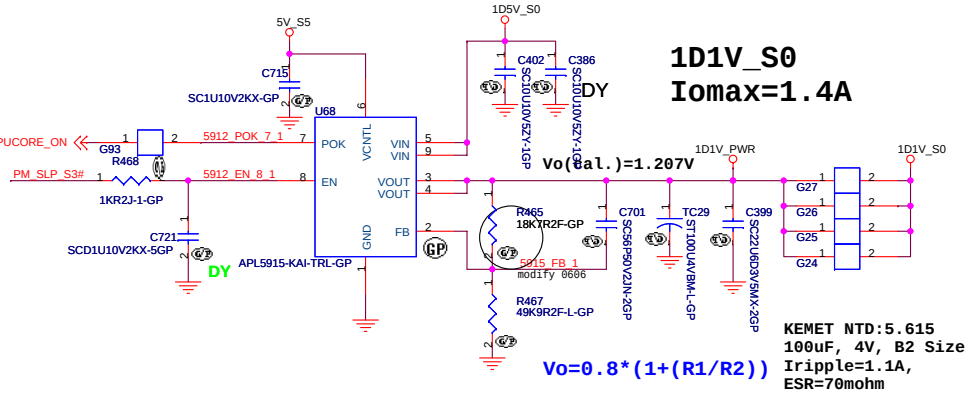
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	5V_UP_S5/3D3V_S5/5V_S5	
Size A3	Document Number MAKI	Rev SA
Date: Friday, January 18, 2008	Sheet 36 of 51	









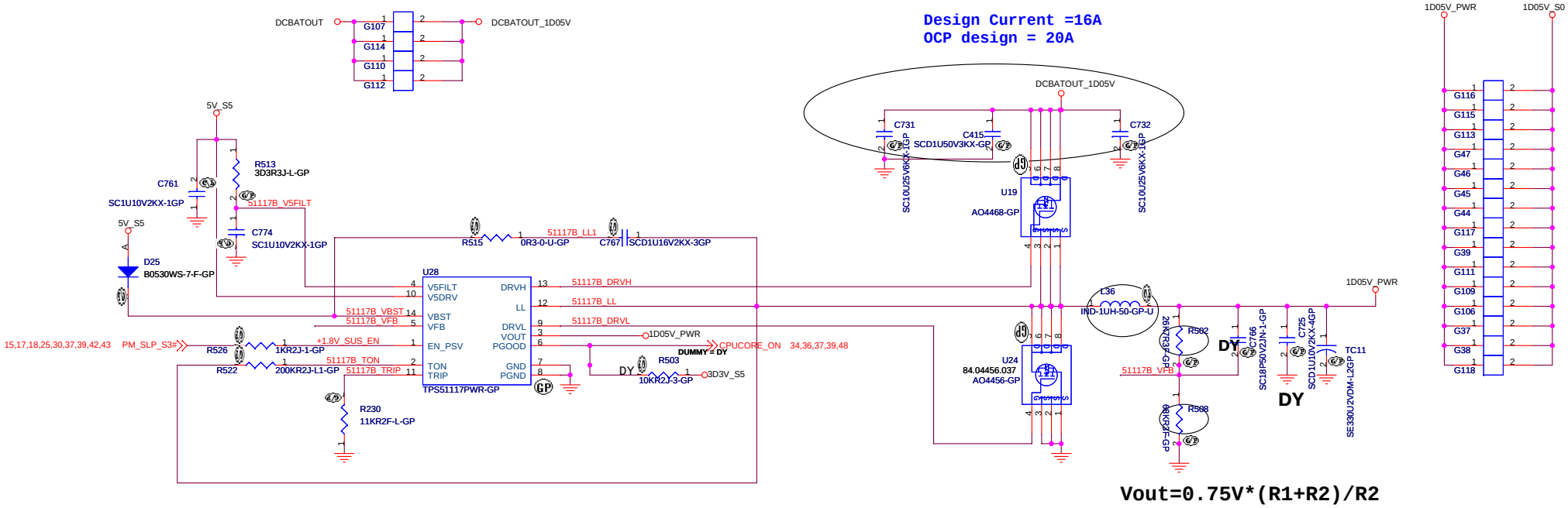
<Variant Name>

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

Title: SC411 1D05V/1D8V

Size	Document Number	Rev
Custom	MAKI	SA

Date: Friday, January 18, 2008 Sheet 37 of 51



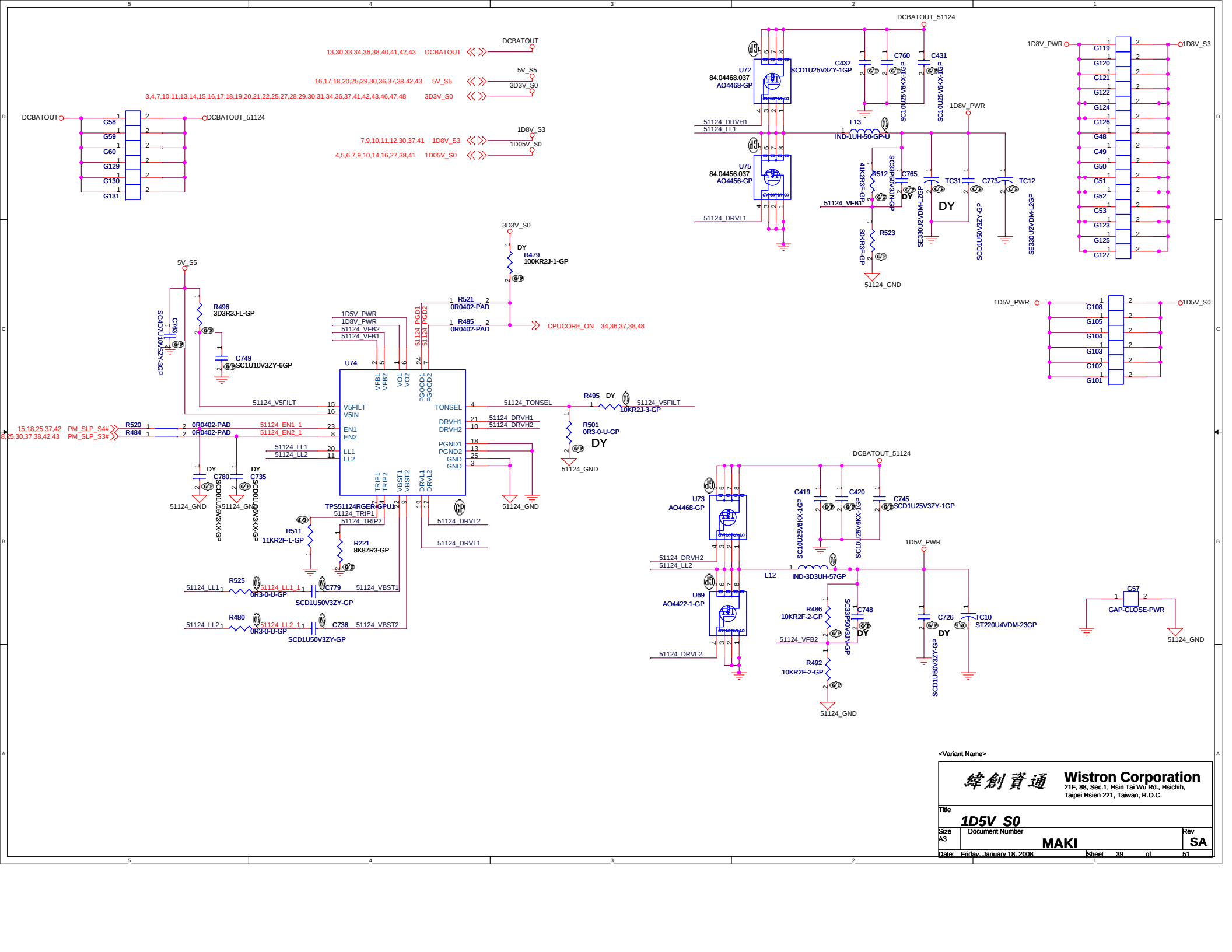
<Variant Name>

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

Title: 0D9V/1D25V/1D2V

Size: Custom | Document Number: MAKI | Rev: SA

Date: Friday, January 18, 2008 | Sheet 38 of 51



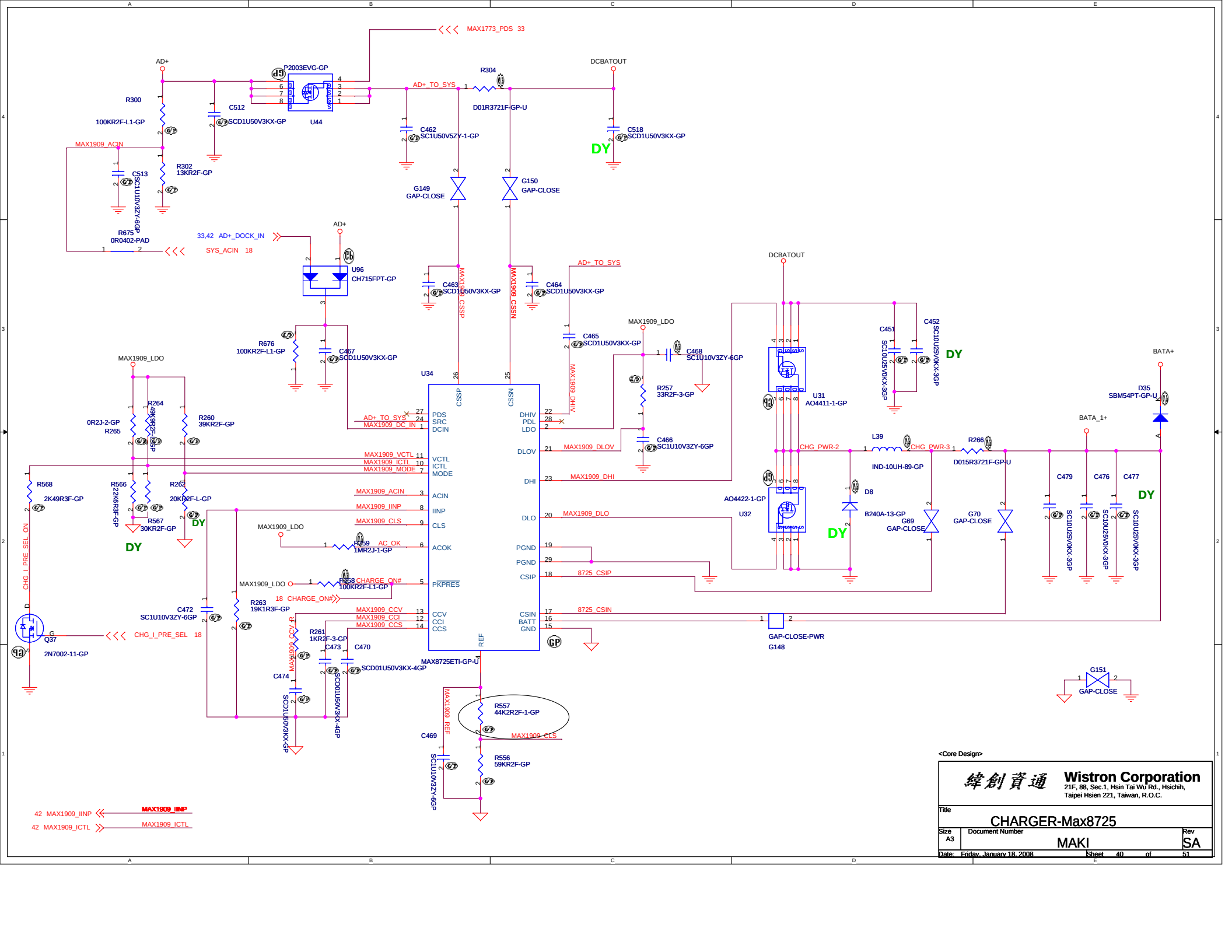
<Variant Name>

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

Title: **1D5V_S0**

Size	Document Number	Rev
A3	MAKI	SA

Date: Friday, January 18, 2008 Sheet 39 of 51



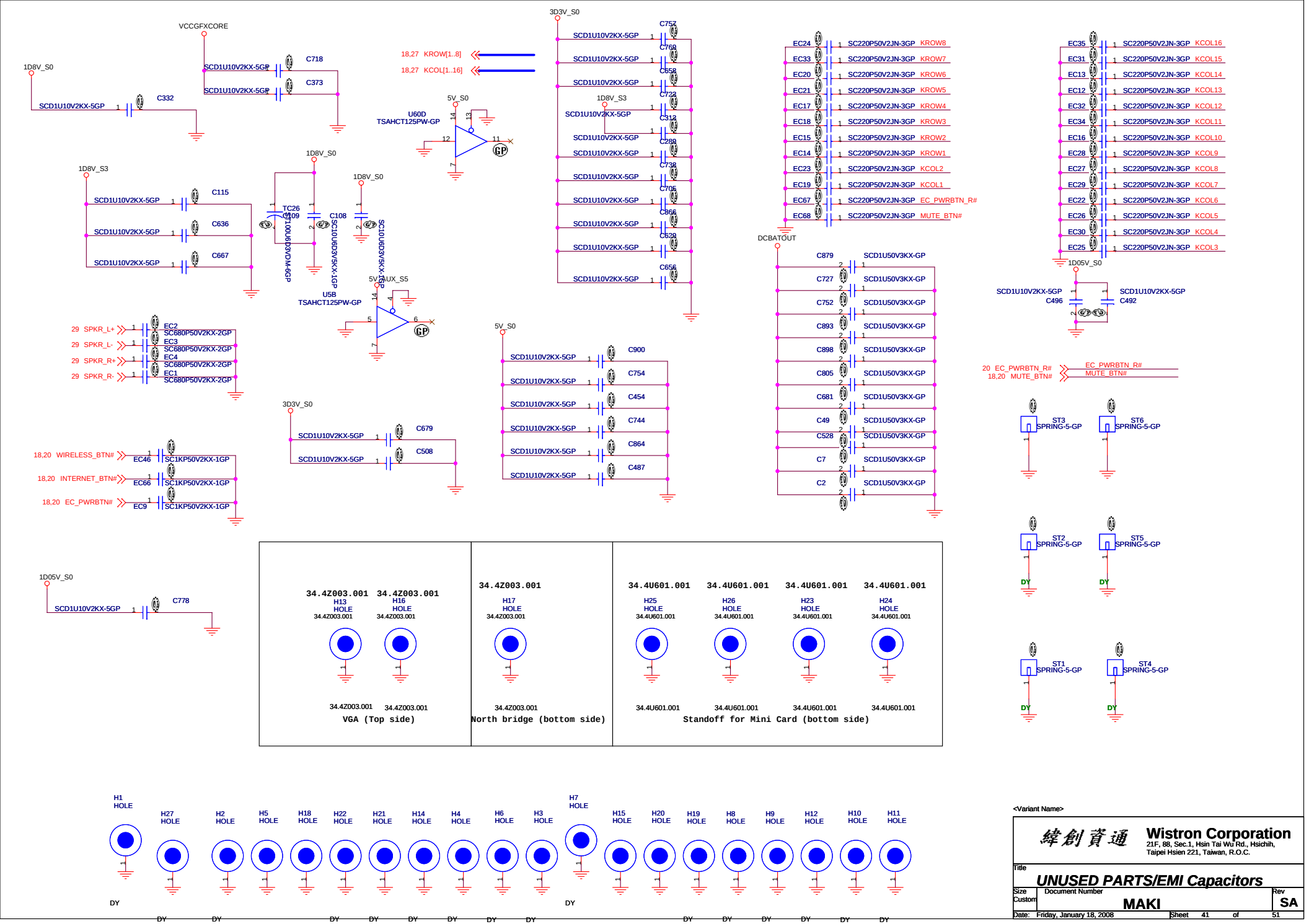
<Core Design>

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

Title: CHARGER-Max8725

Size	Document Number	Rev
A3	MAKI	SA

Date: Friday, January 18, 2008 Sheet 40 of 51



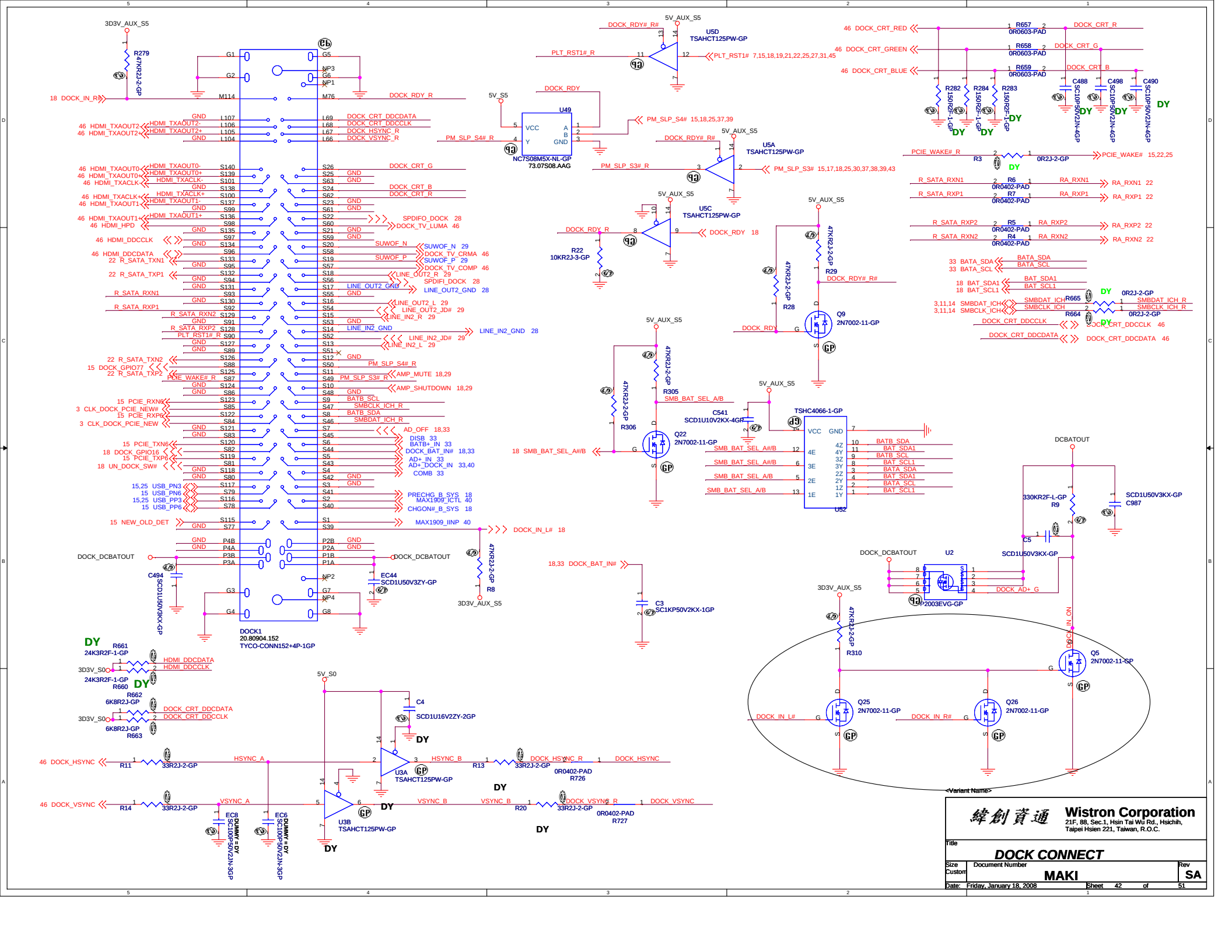
<Variant Name>

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

Title: UNUSED PARTS/EMI Capacitors

Size	Document Number	Rev
Custom	MAKI	SA

Date: Friday, January 18, 2008 Sheet 41 of 51


3D3V_AUX_S5
R279
47KR2J-2-GP
18 DOCK_IN_R#
DOCK1
20.80904.152
TYCO-CONN152+4P-1GP
DOCK_DCBATOUT
C494
SCD1U50V3KX-GP
EC44
SCD1U50V3ZY-GP
R8
47KR2J-2-GP
3D3V_AUX_S5
DOCK_IN_L# 18
18,33 DOCK_BAT_IN#
C3
SC1KP50V2KX-1GP
DOCK_RDY# R#
U5D
TSAHCT125PW-GP
PLT_RST1# R
PLT_RST1# 7,15,18,19,21,22,25,27,31,45
5V_S5
DOCK_RDY
U49
NC7S08M5X-NL-GP
73.07S08.AAG
PM_SLP_S4# R
PM_SLP_S4# 15,18,25,37,39
U5A
TSAHCT125PW-GP
PM_SLP_S3# R
PM_SLP_S3# 15,17,18,25,30,37,38,39,43
U5C
TSAHCT125PW-GP
DOCK_RDY_R
DOCK_RDY 18
R22
10KR2J-3-GP
R29
R28
Q9
2N7002-11-GP
DOCK_RDY# R#
DOCK_RDY
R305
R306
Q22
2N7002-11-GP
SMB_BAT_SEL_A/B
18 SMB_BAT_SEL_A#/B
C541
SCD1U10V2KX-4GP
TSHC4066-1-GP
U52
SMB_BAT_SEL_A#/B
SMB_BAT_SEL_A/B
BATB_SDA
BAT_SDA1
BATB_SCL
BAT_SCL1
BATA_SDA
BAT_SDA1
BATA_SCL
BAT_SCL1
46 DOCK_CRT_RED
46 DOCK_CRT_GREEN
46 DOCK_CRT_BLUE
R657
R658
R659
0R0603-PAD
DOCK_CRT_R
DOCK_CRT_G
DOCK_CRT_B
R282
R284
R283
150R2F-1-GP
C488
C498
C490
SC10P50V2JN-4GP
PCIE_WAKE# R
R3
0R2J-2-GP
PCIE_WAKE# 15,22,25
R_SATA_RXN1
R_SATA_RXP1
R_SATA_RXP2
R_SATA_RXN2
R6
R7
R5
R4
0R0402-PAD
RA_RXN1
RA_RXP1
RA_RXP2
RA_RXN2
RA_RXN1 22
RA_RXP1 22
RA_RXP2 22
RA_RXN2 22
33 BATA_SDA
33 BATA_SCL
BATA_SDA
BATA_SCL
18 BAT_SDA1
18 BAT_SCL1
BAT_SDA1
BAT_SCL1
3,11,14 SMBDAT_ICH
3,11,14 SMBCLK_ICH
R665
R664
SMBDAT_ICH_R
SMBCLK_ICH_R
DOCK_CRT_DDCCLK
DOCK_CRT_DDCDATA
DOCK_CRT_DDCCLK 46
DOCK_CRT_DDCDATA 46
DCBATOUT
330KR2F-L-GP
R9
SCD1U50V3KX-GP
C987
C5
U2
SP2003EVG-GP
DOCK_AD+_G
R310
Q5
2N7002-11-GP
Q25
2N7002-11-GP
Q26
2N7002-11-GP
DOCK_IN_L#
DOCK_IN_R#
DOCK_IN_ON
R661
24K3R2F-1-GP
HDMI_DDCDATA
HDMI_DDCCLK
R660
R662
6K8R2J-GP
DOCK_CRT_DDCDATA
DOCK_CRT_DDCCLK
R663
5V_S0
C4
SCD1U16V2ZY-2GP
U3A
TSAHCT125PW-GP
U3B
TSAHCT125PW-GP
46 DOCK_HSYNC
46 DOCK_VSYNC
R11
R13
R14
R20
33R2J-2-GP
HSYNC_A
HSYNC_B
VSYNC_A
VSYNC_B
DOCK_HSYNC_R
DOCK_VSYNC_R
0R0402-PAD
R726
R727
DOCK_HSYNC
DOCK_VSYNC
EC8
EC6
SC100P50V2JN-3GP
DUMMY-DY
DY
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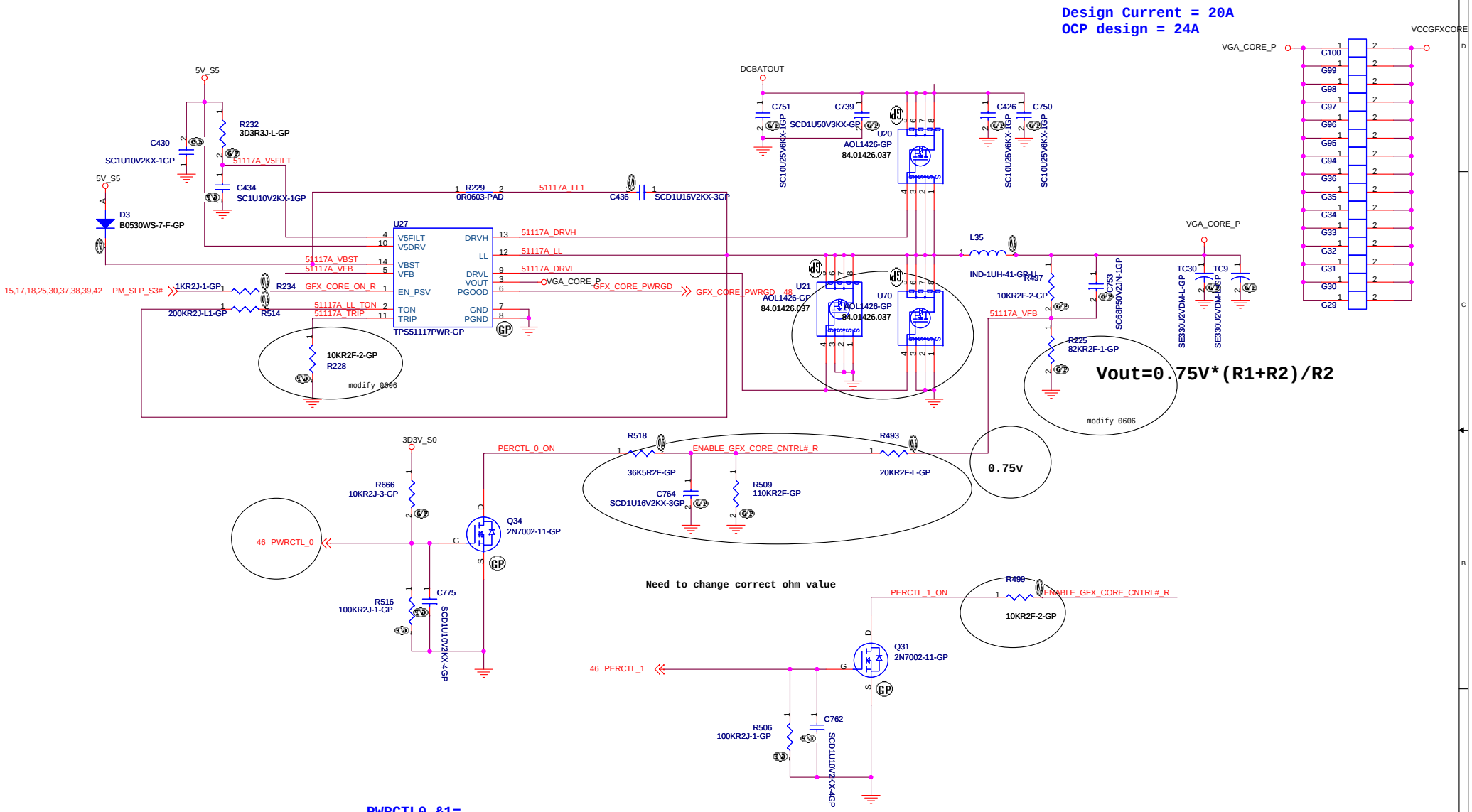
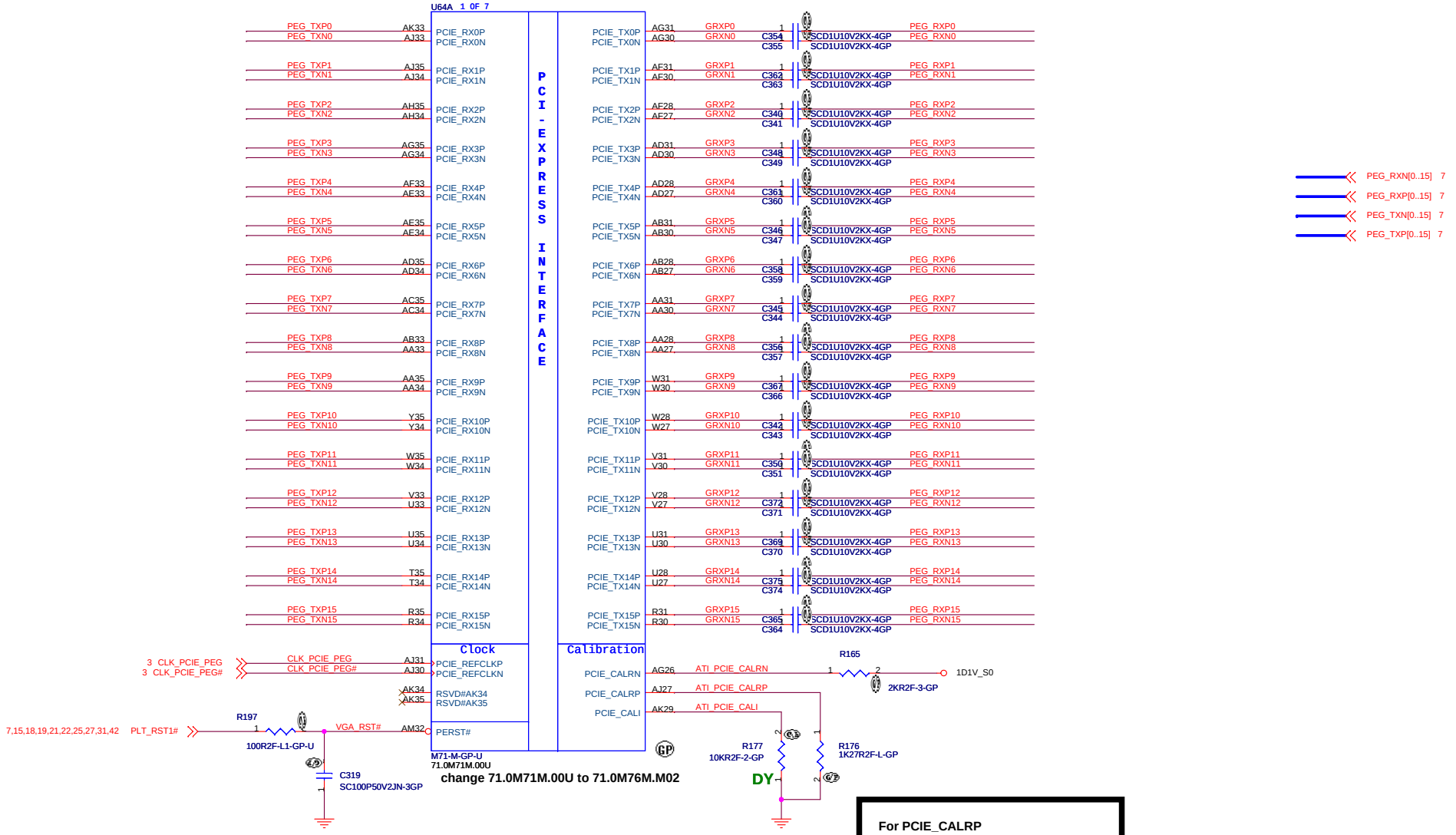
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
DOCK CONNECT
Size
Custom
Document Number
MAKI
Rev
SA
Date: Friday, January 18, 2008
Sheet 42 of 51


Design Current = 20A
OCP design = 24A
Vout=0.75V*(R1+R2)/R2
0.75v
Need to change correct ohm value
PWRCTL0 &1=
00 =>V0=0.9
DEF 10 =>Vo=1V
01 => Vo=1.1V
5V_S5
DCBATOUT
VGA_CORE_P
VCCGFXCORE
3D3V_S0
U27
TPS51117PWR-GP
U20
U21
U70
AOL1426-GP
84.01426.037
L35
IND-1UH-41-GP-U
R232
3D3R3J-L-GP
C430
SC1U10V2KX-1GP
C434
SC1U10V2KX-1GP
D3
B0530WS-7-F-GP
R229
0R0603-PAD
C436
SCD1U16V2KX-3GP
C751
C739
SCD1U50V3KX-GP
C426
C750
SC10U25V6KX-1GP
R497
10KR2F-2-GP
R225
82KR2F-1-GP
C753
SC68P50V2JN-1GP
TC30
TC9
SE330U2VDM-L-GP
SE330U2VDM-GP
R228
10KR2F-2-GP
modify 0606
R234
1KR2J-1-GP
R514
200KR2J-L1-GP
R518
36K5R2F-GP
R493
20KR2F-L-GP
C764
SCD1U16V2KX-3GP
R509
110KR2F-GP
R666
10KR2J-3-GP
Q34
2N7002-11-GP
R516
100KR2J-1-GP
C775
SCD1U10V2KX-4GP
R499
10KR2F-2-GP
Q31
2N7002-11-GP
R506
100KR2J-1-GP
C762
SCD1U10V2KX-4GP
PERCTL_0_ON
PERCTL_1_ON
ENABLE_GFX_CORE_CNTRL#_R
46 PWRCTL_0
46 PERCTL_1
51117A_V5FILT
51117A_LL1
51117A_VBST
51117A_VFB
51117A_LL_TON
51117A_TRIP
51117A_DRVH
51117A_LL
51117A_DRVL
GFX_CORE_ON_R
GFX_CORE_PWRGD
15,17,18,25,30,37,38,39,42
PM_SLP_S3#
<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
DC/DC NVVDD_S0(TPS51117)
Size A3
Document Number
MAKI
Rev SA
Date: Friday, January 18, 2008
Sheet 43 of 51



71.0M71M.00U

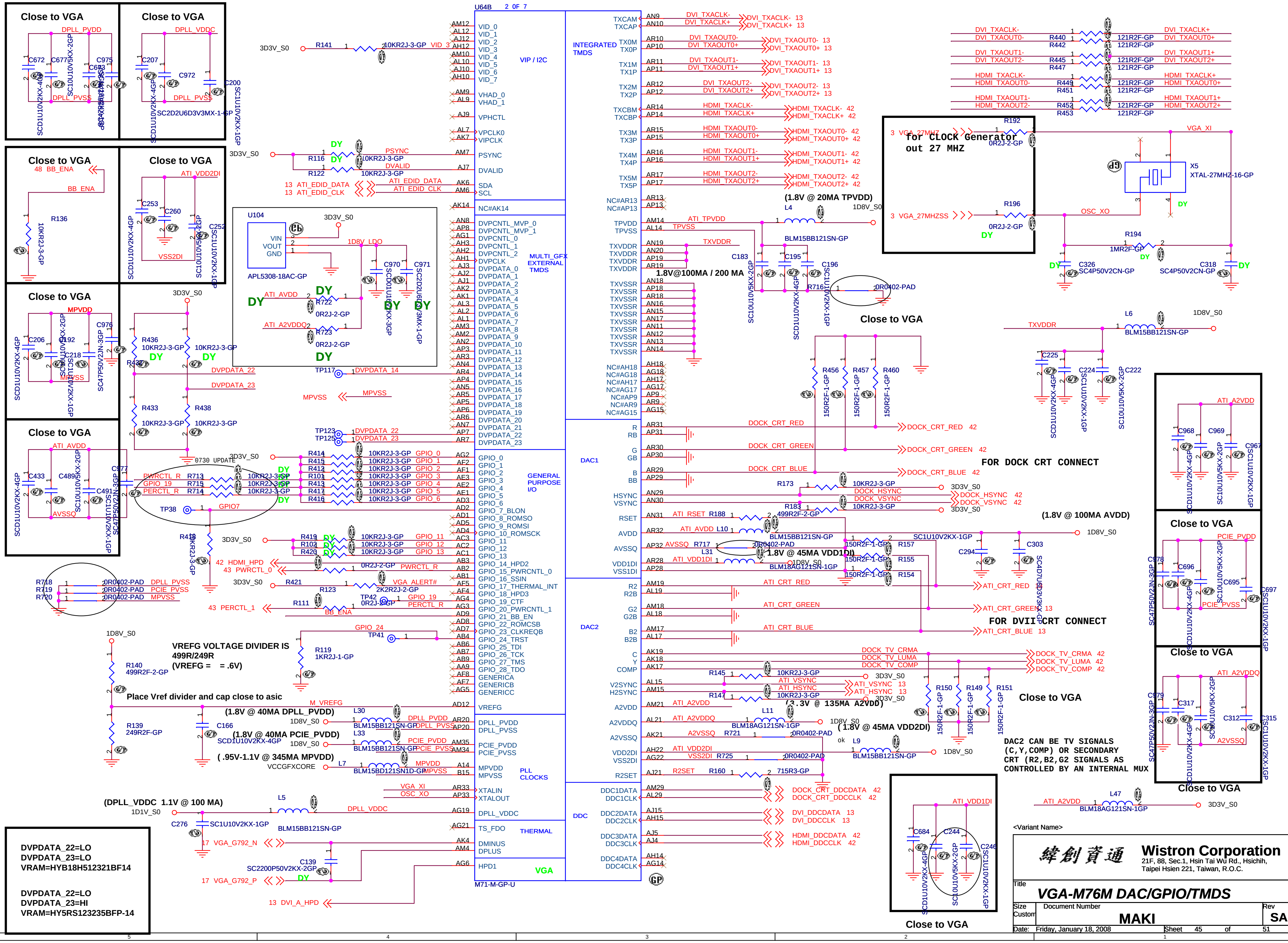
<Variant Name>

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

Title: VGA-M71M PCIE

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

Date: Friday, January 18, 2008 | Sheet 44 of 51



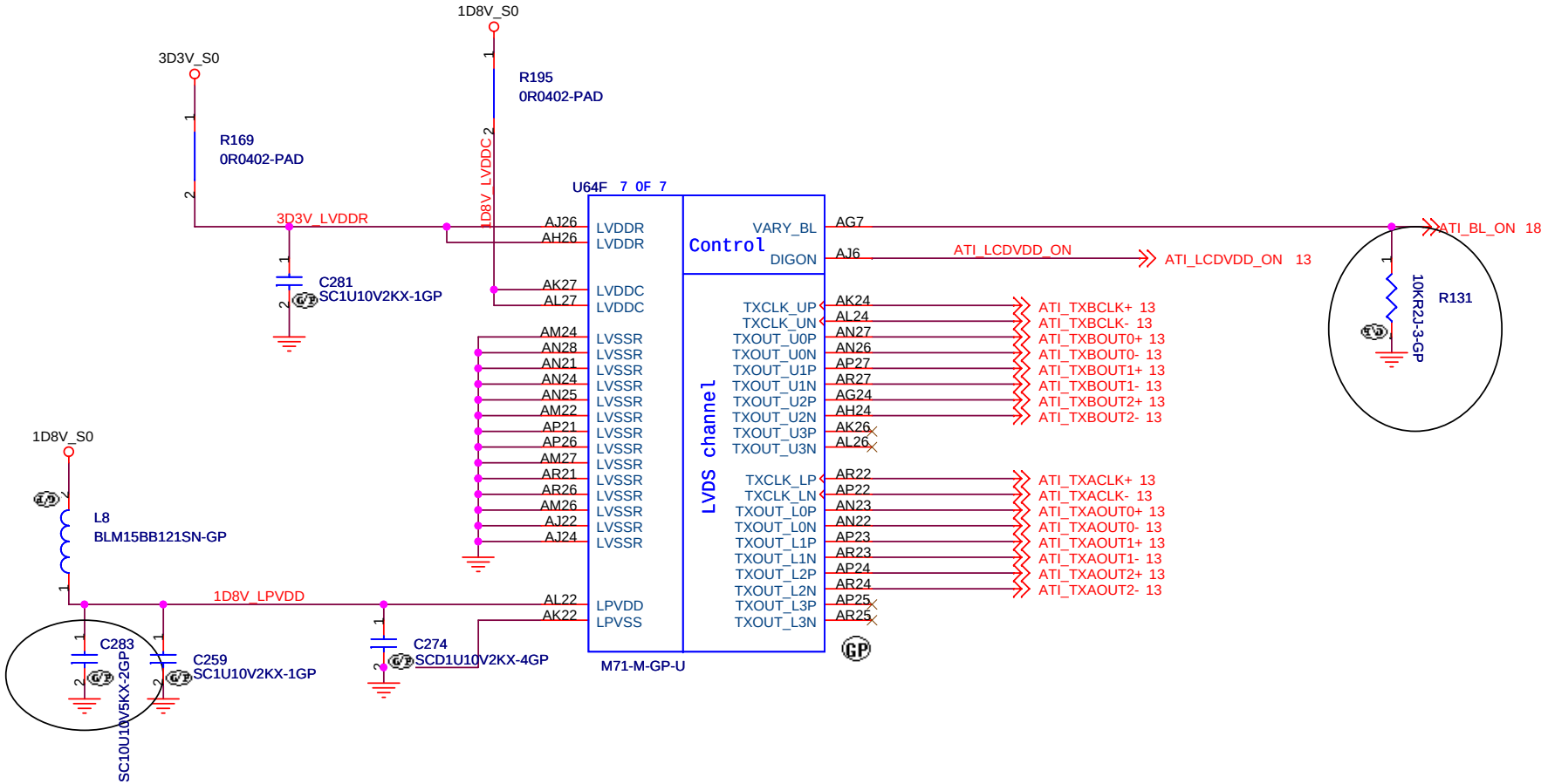
DVPDATA_22=LO
DVPDATA_23=LO
VRAM=HYB18H512321BF14

DVPDATA_22=LO
DVPDATA_23=HI
VRAM=HY5RS123235BFP-14

<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	VGA-M76M DAC/GPIO/TMDS	
Size Custom	Document Number: MAKI	Rev: SA
Date: Friday, January 18, 2008	Sheet 45 of 51	



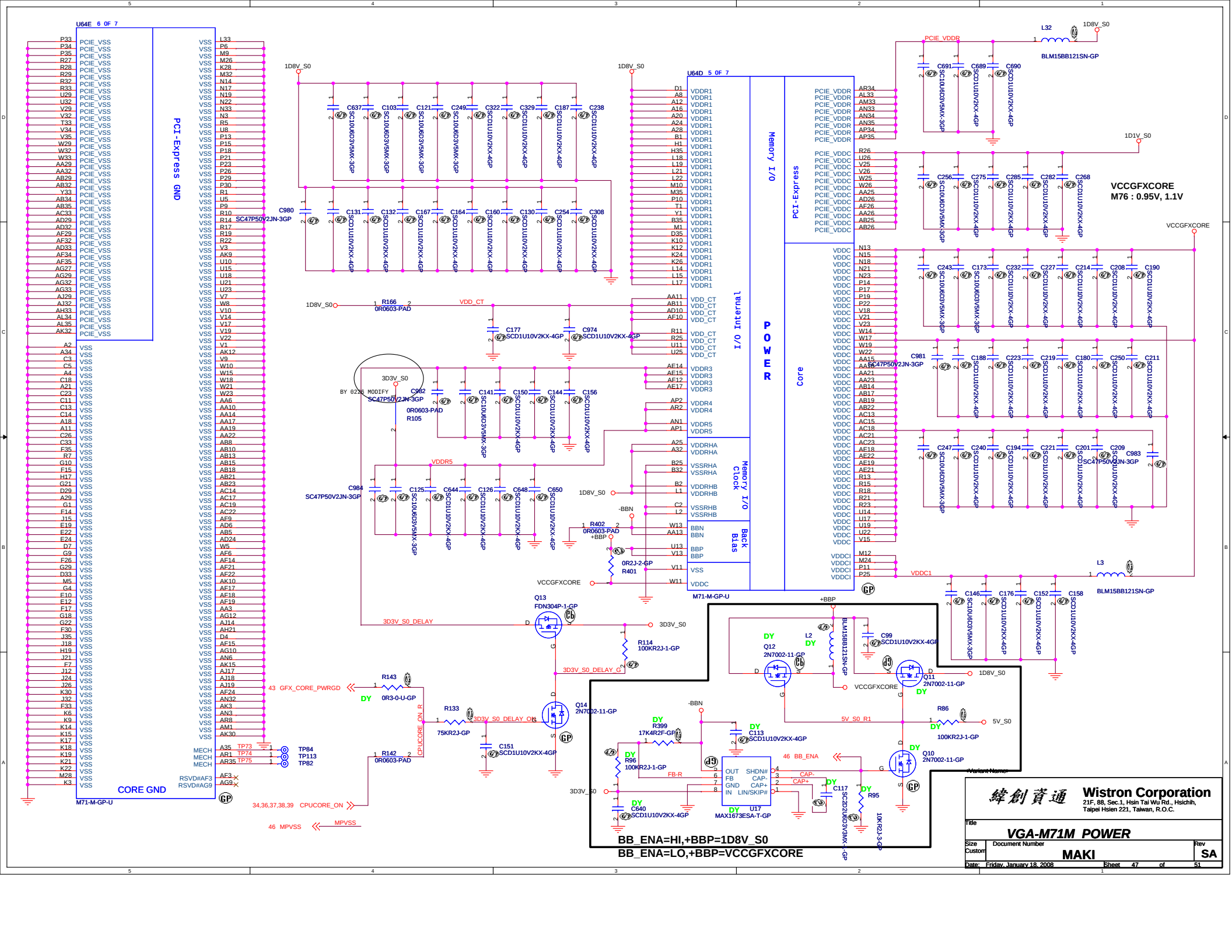
<Variant Name>

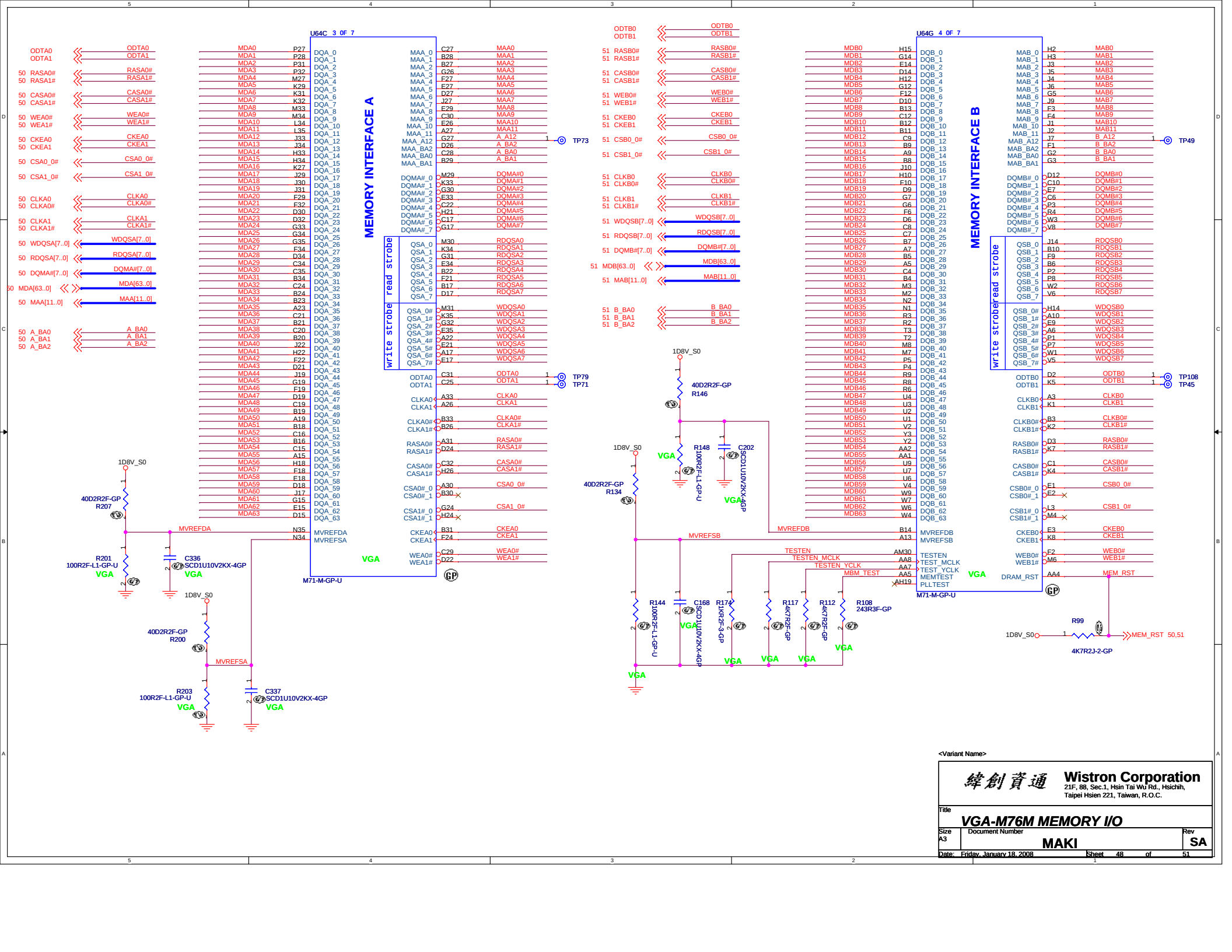
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***VGA-M71M LVDS***

Size	Document Number	Rev
A4	MAKI	SA

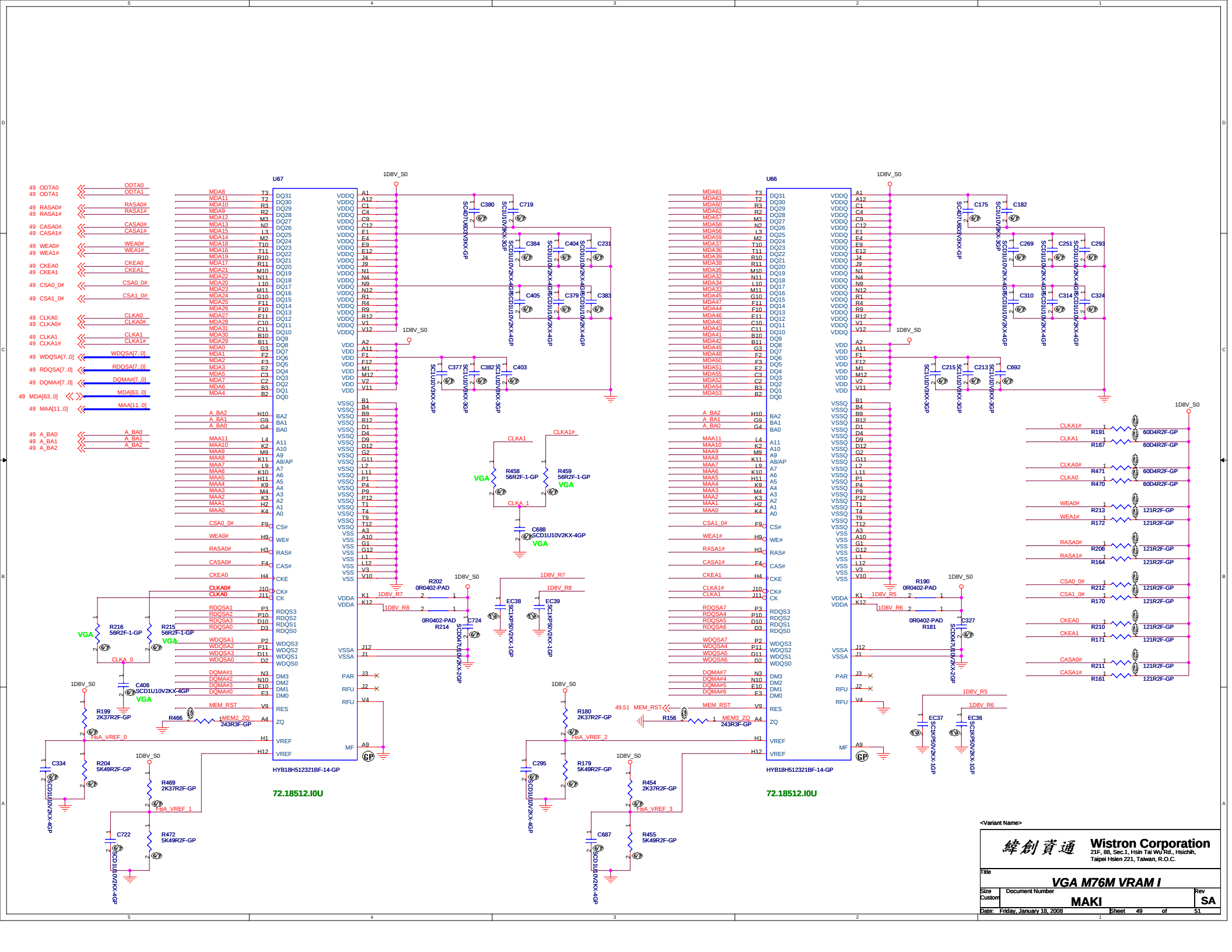
Date: Friday, January 18, 2008 Sheet 46 of 51

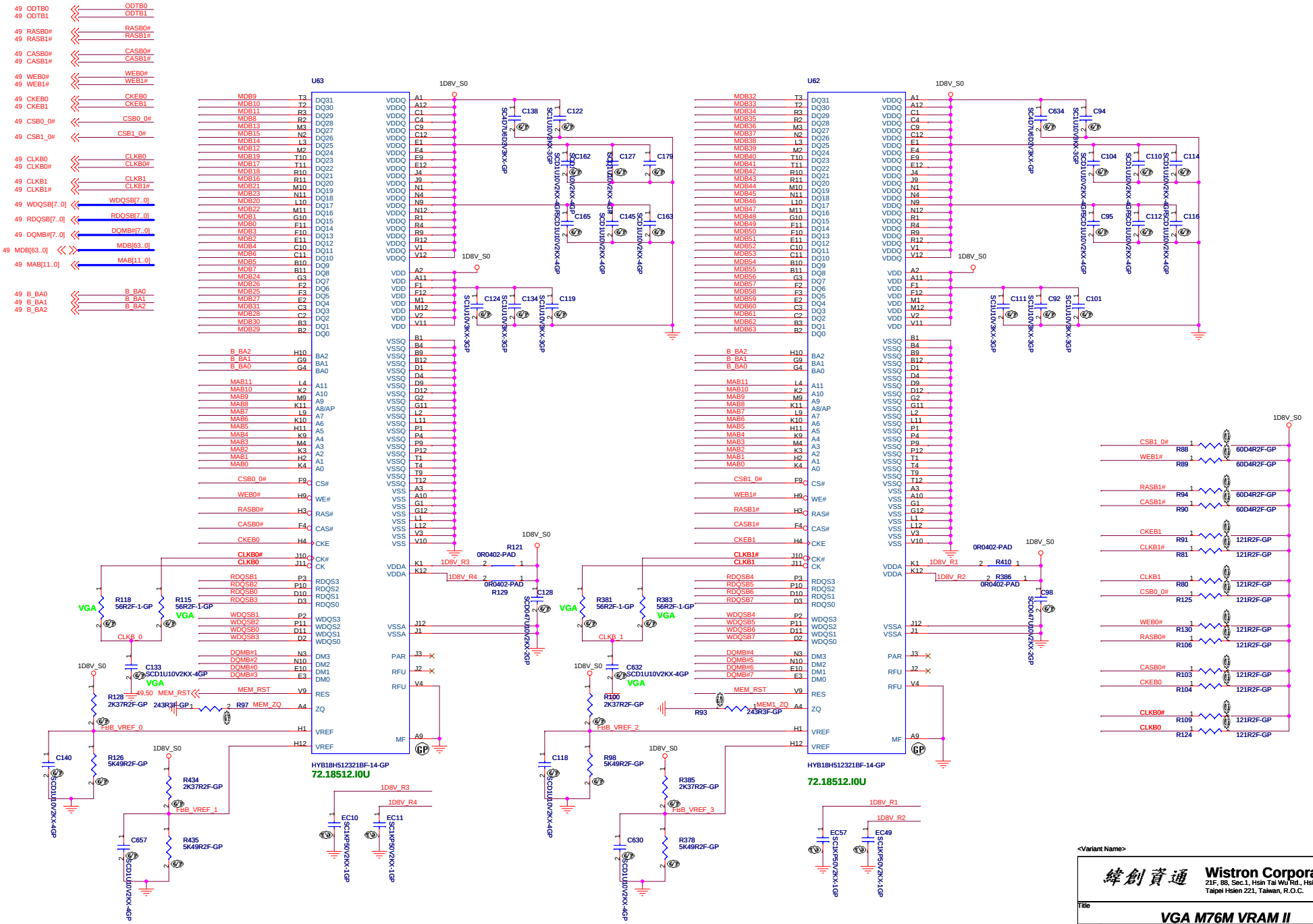

U64E 6 OF 7
PCI-Express GND
CORE GND
M71-M-GP-U
U64D 5 OF 7
Memory I/O
PCI-Express
POWER
Core
I/O Internal
Memory I/O Clock
Back Bias
M71-M-GP-U
VCCGFXCORE
M76 : 0.95V, 1.1V
1D8V_S0
1D1V_S0
3D3V_S0
VDD_CT
VDDR5
VCCGFXCORE
+BBP
-BBN
3D3V_S0_DELAY
3D3V_S0_DELAY_G
3D3V_S0_DELAY_ON
CPUCORE_ON
MPVSS
GFX_CORE_PWRGD
5V_S0_R1
BB_ENA
FB-R
BB_ENA=HI,+BBP=1D8V_S0
BB_ENA=LO,+BBP=VCCGFXCORE
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
VGA-M71M POWER
Size
Custom
Document Number
MAKI
Rev
SA
Date: Friday, January 18, 2008
Sheet 47 of 51



<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	***VGA-M76M MEMORY I/O***
Size: A3	Document Number: **MAKI** — Rev: **SA**
Date: Friday, January 18, 2008	Sheet 48 of 51


U67
U66
HYB18H512321BF-14-GP
72.18512.I0U
1D8V_S0
VGA
<Variant Name>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
VGA M76M VRAM I
Size
Custom
Document Number
MAKI
Rev
SA
Date: Friday, January 18, 2008
Sheet 49 of 51


U63
U62
HYB18H512321BF-14-GP
72.18512.I0U
1D8V_S0
VGA
MEM_RST
MEM_ZQ
MEM1_ZQ
FBB_VREF_0
FBB_VREF_1
FBB_VREF_2
FBB_VREF_3
CLKB_0
CLKB_1
0R0402-PAD
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
VGA M76M VRAM II
Size
Custom
Document Number
MAKI
Rev
SA
Date: Friday, January 18, 2008
Sheet 50 of 51

History

==========

2006/11/17
1. Schematic drawing start..
2006/12/12
1. Change to project name to C45/C46
2007/01/08
1. LAB gerber out

BOM Change (LAB)

==========

2006/12/29
1. VGA Change to M72, VRAM 128MB, but verify M71 (71.0M71M.M02) and M72(71.0M72M.M01) in LAB
2. 965GM (71.GM965.00U)
3. 965PM (71.PM965.00U)
4. RTS5158 (71.08111.A03)
5. ME stand off 34.4G901.001 (H23, H25, H9, H11) for MINI Card
6. ME stand off 34.4B601.001 (H26, H27) for MODEM
7. ME stand off 87.00055.120 (H4) for LVDS
8. ICH8-M (71.ICH8M.A0U)

<Variant Name>

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