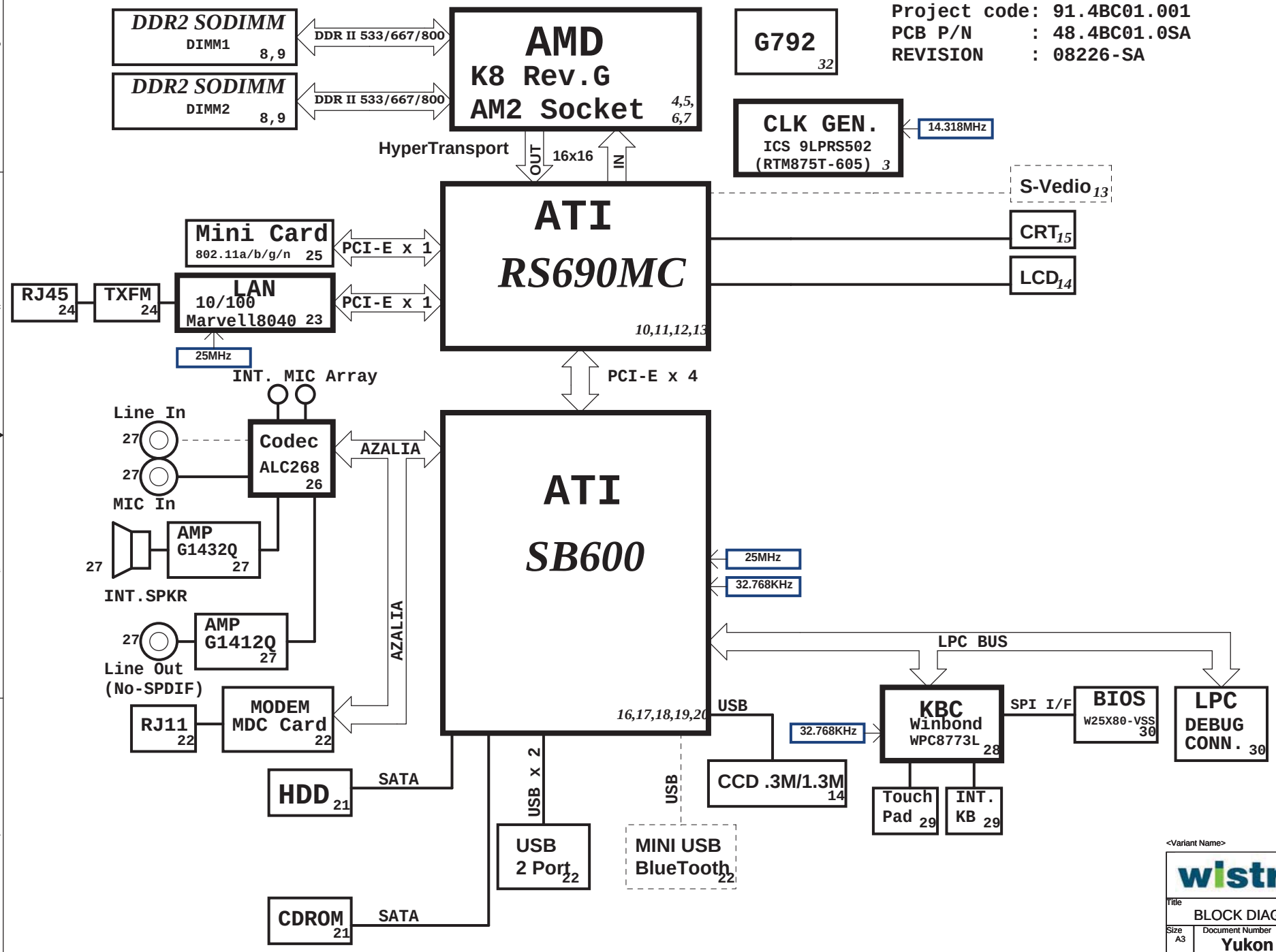
Yukon Block Diagram



Project code: 91.4BC01.001
PCB P/N : 48.4BC01.0SA
REVISION : 08226-SA

PCB Layer Stackup

L1: Signal 1
L2: VCC
L3: Inner Signal 2
L4: Inner Signal 3
L5: GND
L6: Signal 4

CPU V_CORE

INPUT	OUTPUT
DCBATOUT	VCC_CORE_S0

SYSTEM DC/DC

INPUT	OUTPUT
DCBATOUT	1D2V_S0 1D8V_S3

SYSTEM DC/DC

INPUT	OUTPUT
DCBATOUT	5V_S5 3D3V_S5

SYSTEM LDO

INPUT	OUTPUT
1D8V_S3	0D9V_S3

SYSTEM LDO

INPUT	OUTPUT
3D3V_S5 3D3V_S0 3D3V_S0	1D2V_S5 2D5V_S0 1D5V_S0

SYSTEM LDO

INPUT	OUTPUT
DCBATOUT	5V_AUX_S5 3D3V_AUX_S5

Battery Charger

INPUTS	OUTPUTS
AD+ BAT+	DCBATOUT

<Variant Name>

wistron
Wistron Incorporated
21F, 88, Hsin Tai Wu Rd
Hsichih, Taipei

Title: BLOCK DIAGRAM
Size: A3
Document Number: Yukon
Rev: SA
Date: Thursday, July 03, 2008
Sheet 1 of 43

<Core Design>

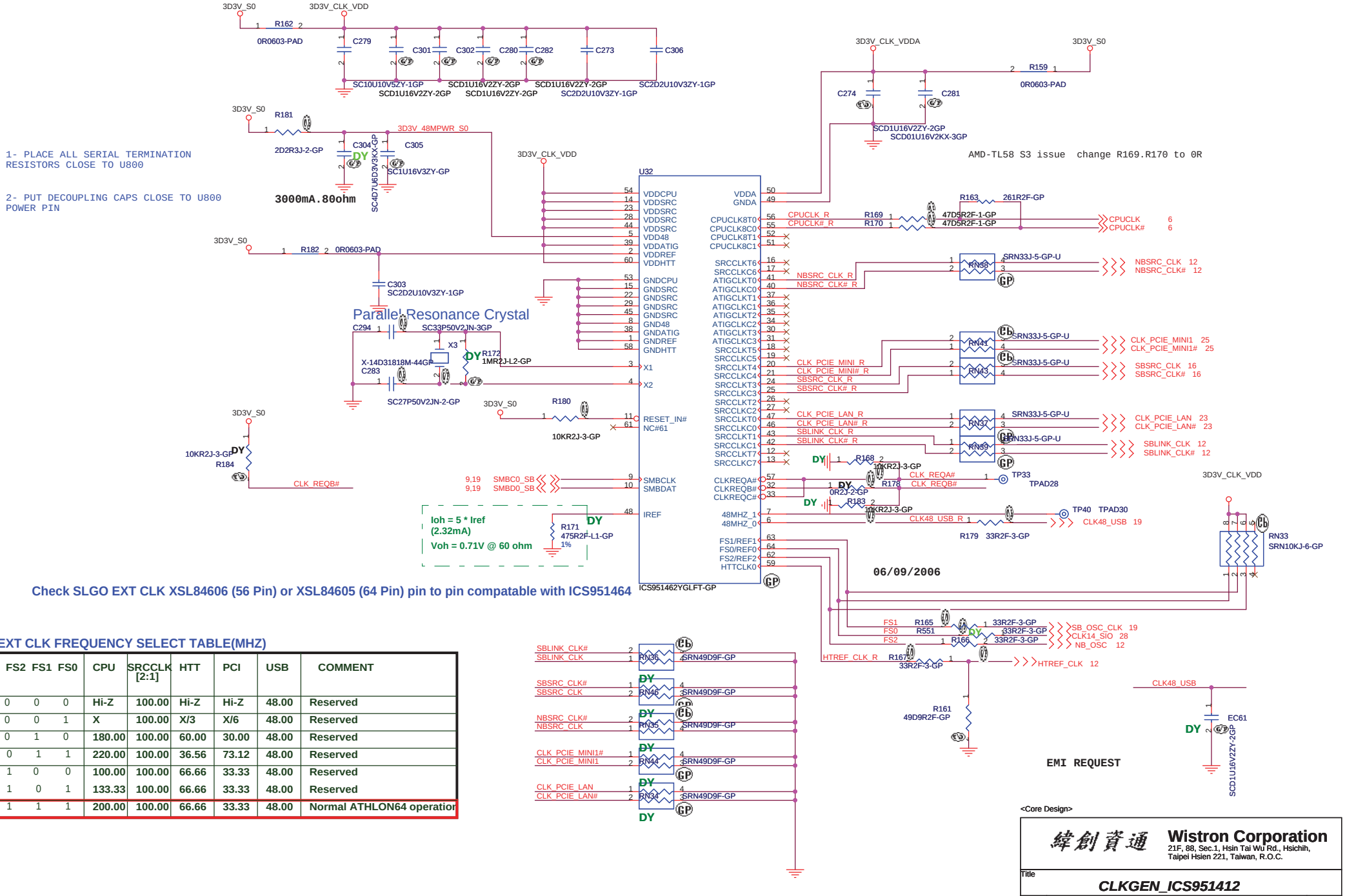
緯創資通

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

Title: **CHANGE HISTORY**

Size	Document Number	Rev
A3	Yukon	SA

Date: Thursday, July 03, 2008 Sheet 2 of 43



EXT CLK FREQUENCY SELECT TABLE(MHZ)

FS2	FS1	FS0	CPU	SRCCLK [2:1]	HTT	PCI	USB	COMMENT
0	0	0	Hi-Z	100.00	Hi-Z	Hi-Z	48.00	Reserved
0	0	1	X	100.00	X/3	X/6	48.00	Reserved
0	1	0	180.00	100.00	60.00	30.00	48.00	Reserved
0	1	1	220.00	100.00	36.56	73.12	48.00	Reserved
1	0	0	100.00	100.00	66.66	33.33	48.00	Reserved
1	0	1	133.33	100.00	66.66	33.33	48.00	Reserved
1	1	1	200.00	100.00	66.66	33.33	48.00	Normal ATHLON64 operation

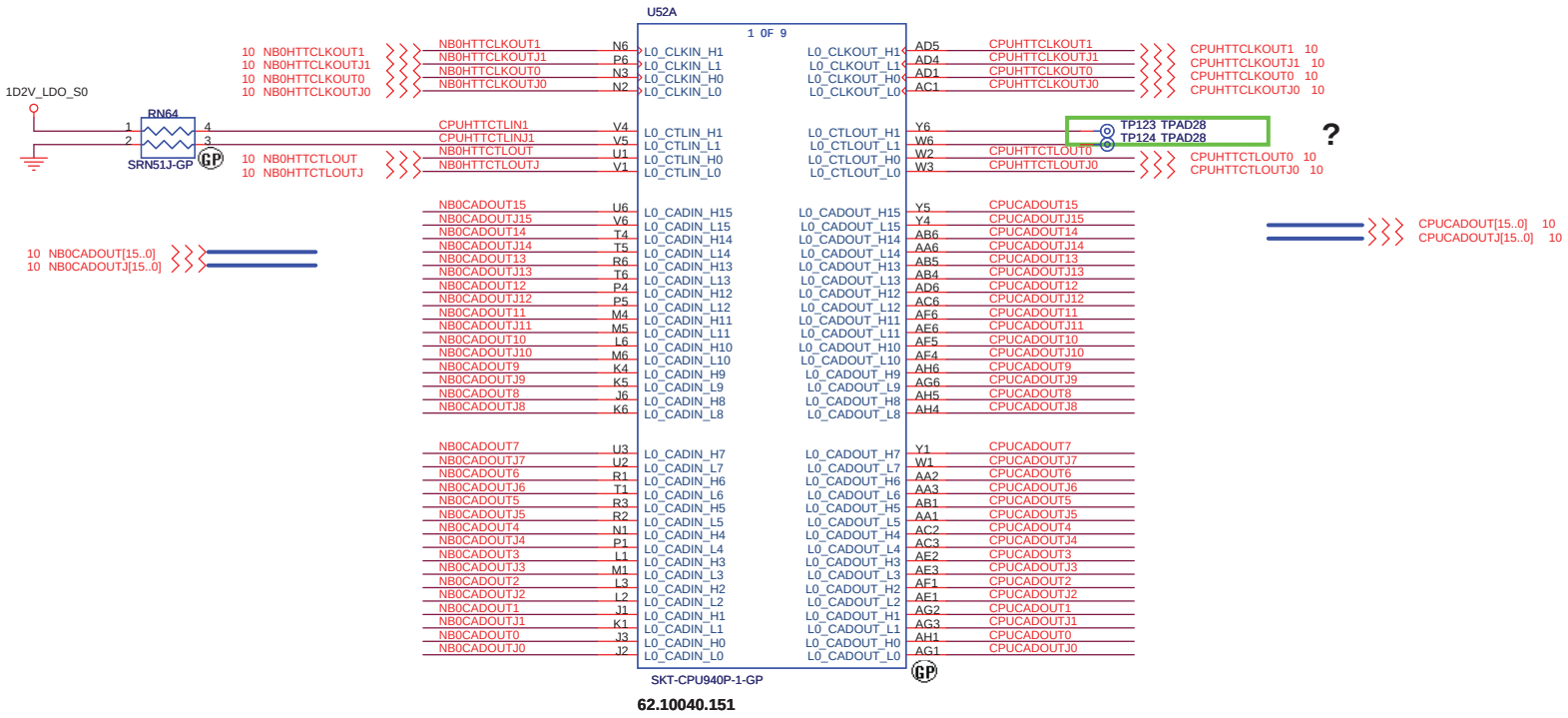
<Core Design>

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

Title: CLKGEN_ICS951412

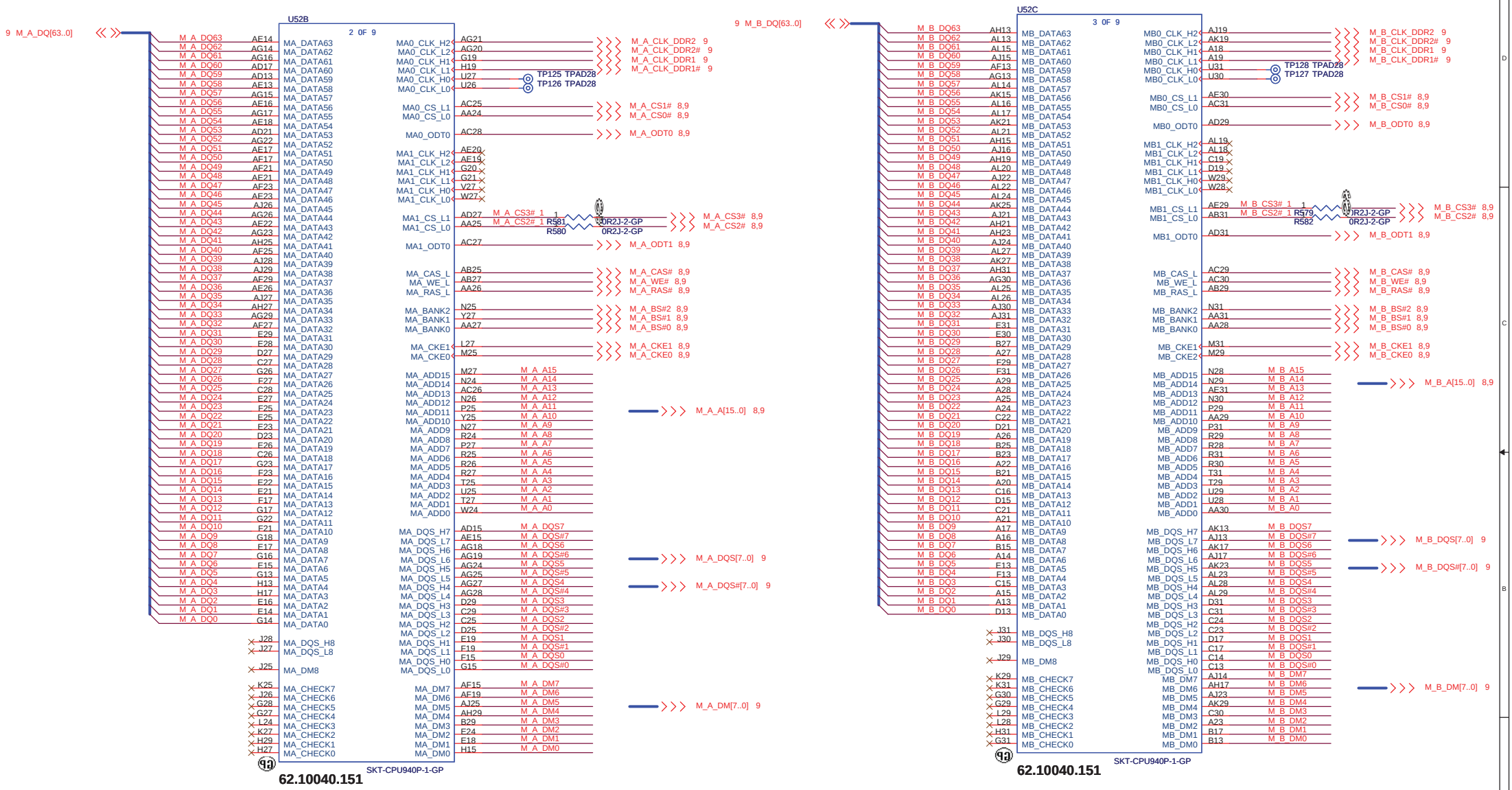
Size: A3 | Document Number: Yukon | Rev: SA

Date: Thursday, July 03, 2008 | Sheet 3 of 43



<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: *CPU(1/4)_HyperTransport I/F*		
Size: A3	Document Number: Yukon	Rev: SA
Date: Thursday, July 03, 2008	Sheet 4 of 43	



<Core Design>

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

Title: CPU(2/4)_DDR

Size	Document Number	Rev
A3	Yukon	SA

Date: Thursday, July 03, 2008 Sheet 5 of 43

LYAOUT:ROUTE VDDA TRACE APPROX.
50mils WIDE(USE 2X25 mil TRACES TO
EXIT BALL FIELD) AND 500 mils LONG.

IF 0 ohm IS NOT GOOD ENOUGH, TRY 68.00082.491

Near To CPU

Remove these resistor when using EVT CPU

LAYOUT: Route FBCLKOUT_H/L differentially impedance 80

VREF_DDR_CLAW

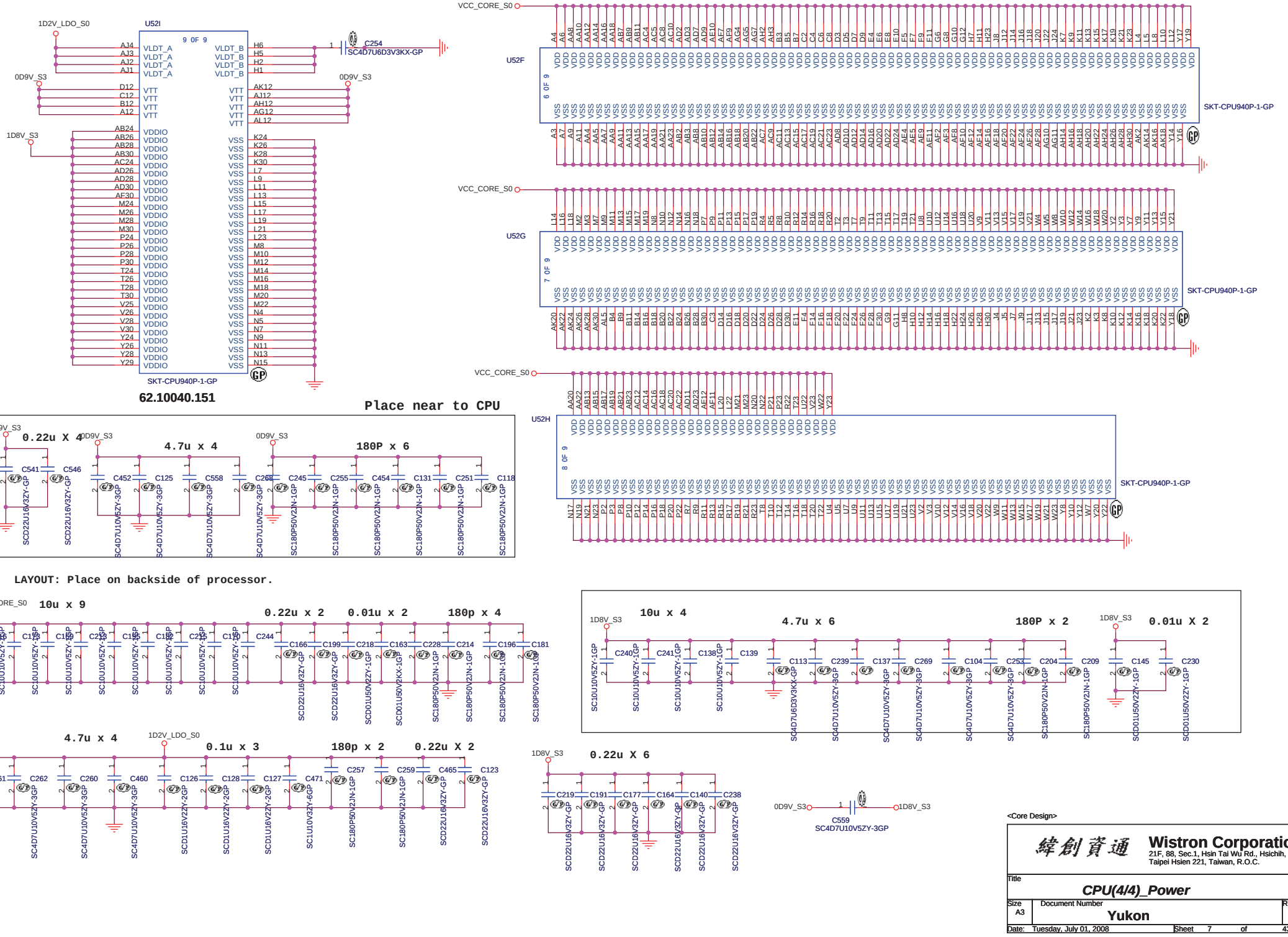
LAYOUT: Locate close to CPU

HDT Connectors

62.10040.151

<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	CPU(3/4)_Control & Debug	
Size A3	Document Number Yukon	Rev SA
Date: Thursday, July 03, 2008	Sheet 6 of 43	



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

<Core Design>

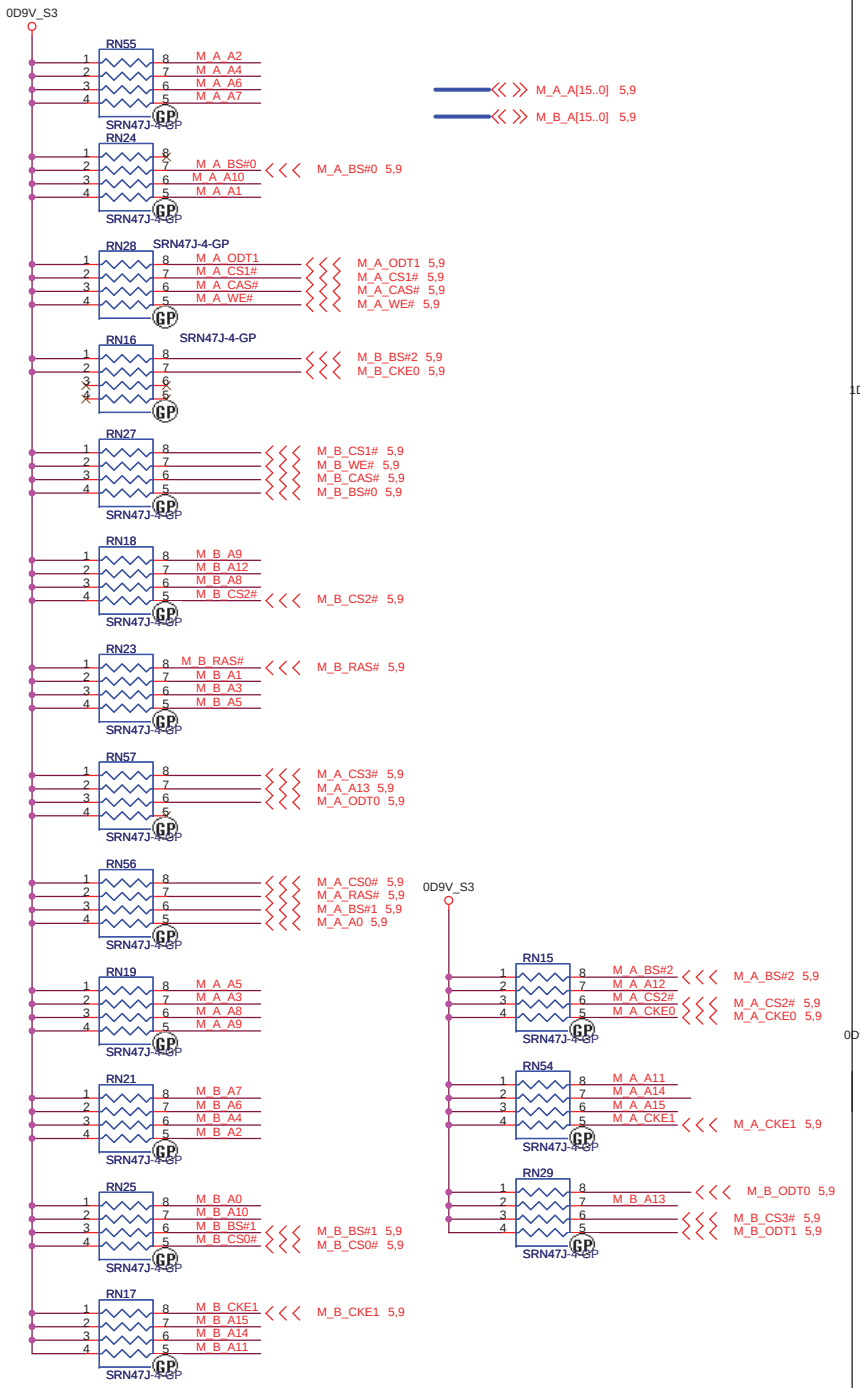
Title: CPU(4/4)_Power

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

Date: Tuesday, July 01, 2008 | Sheet 7 of 43

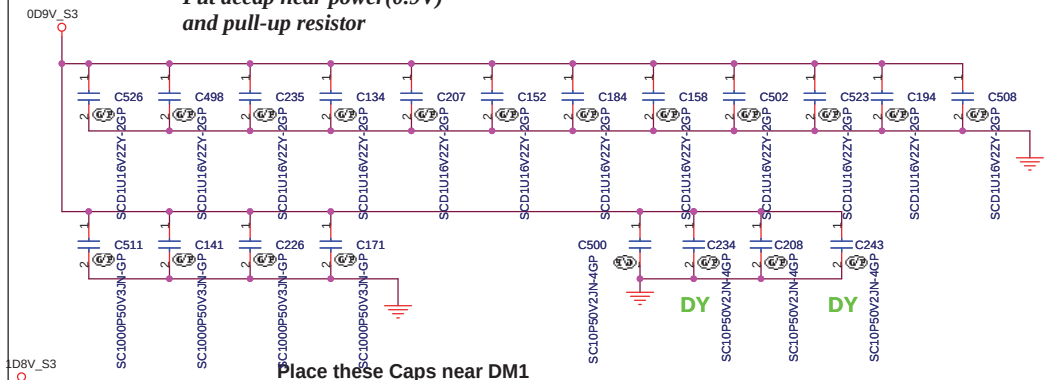
PARALLEL TERMINATION

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

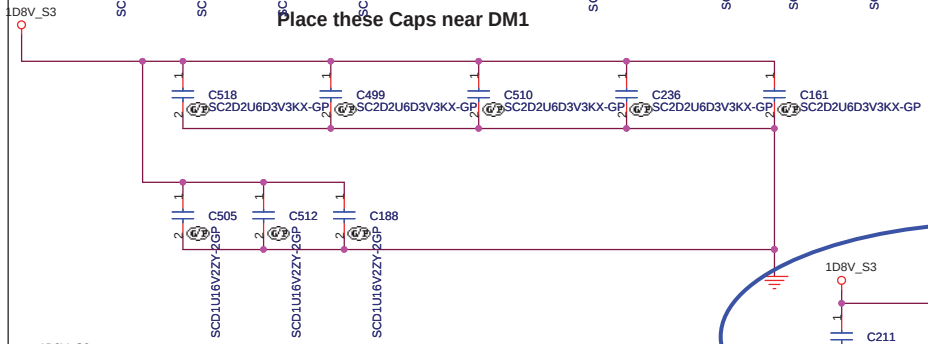


Decoupling Capacitor

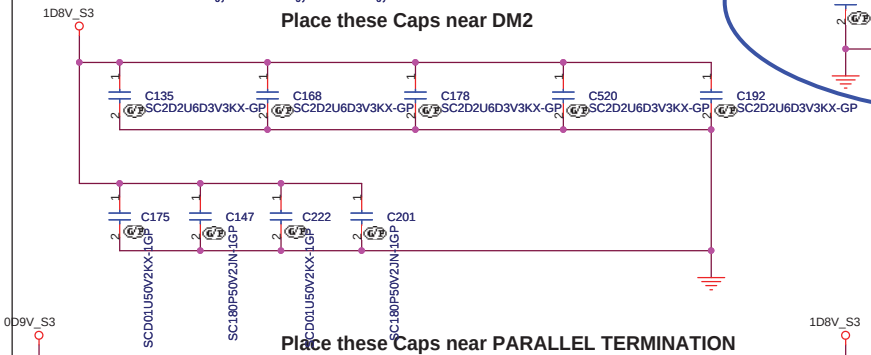
Put decap near power(0.9V) and pull-up resistor

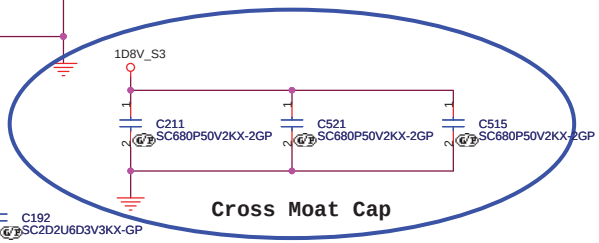


Place these Caps near DM1

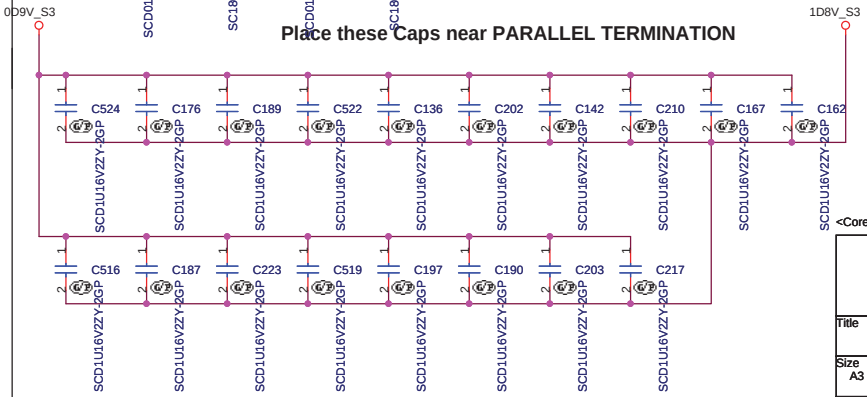


Place these Caps near DM2





Place these Caps near PARALLEL TERMINATION



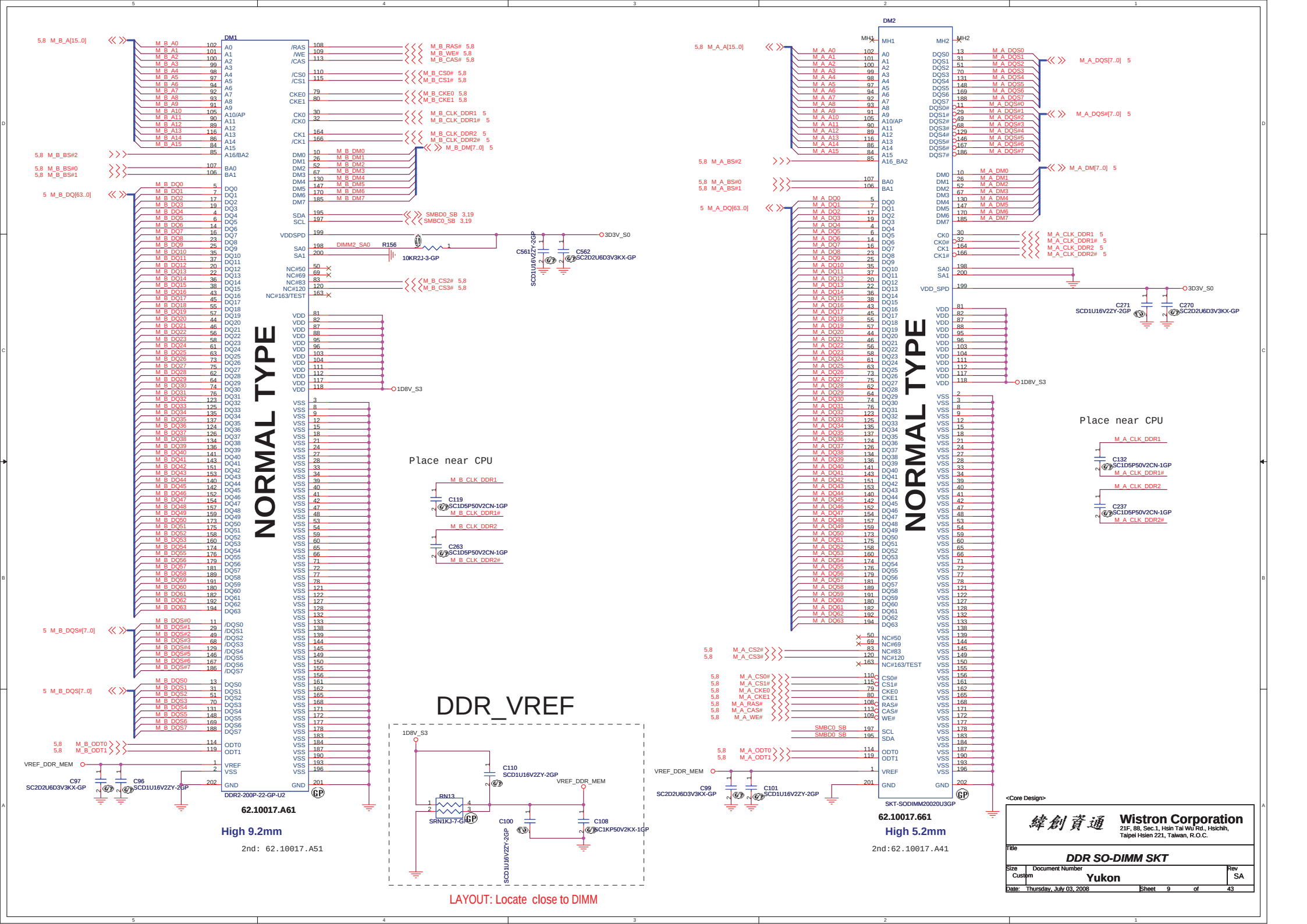
<Core Design>

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

Title: **DDR DAMPING & TERMINATION**

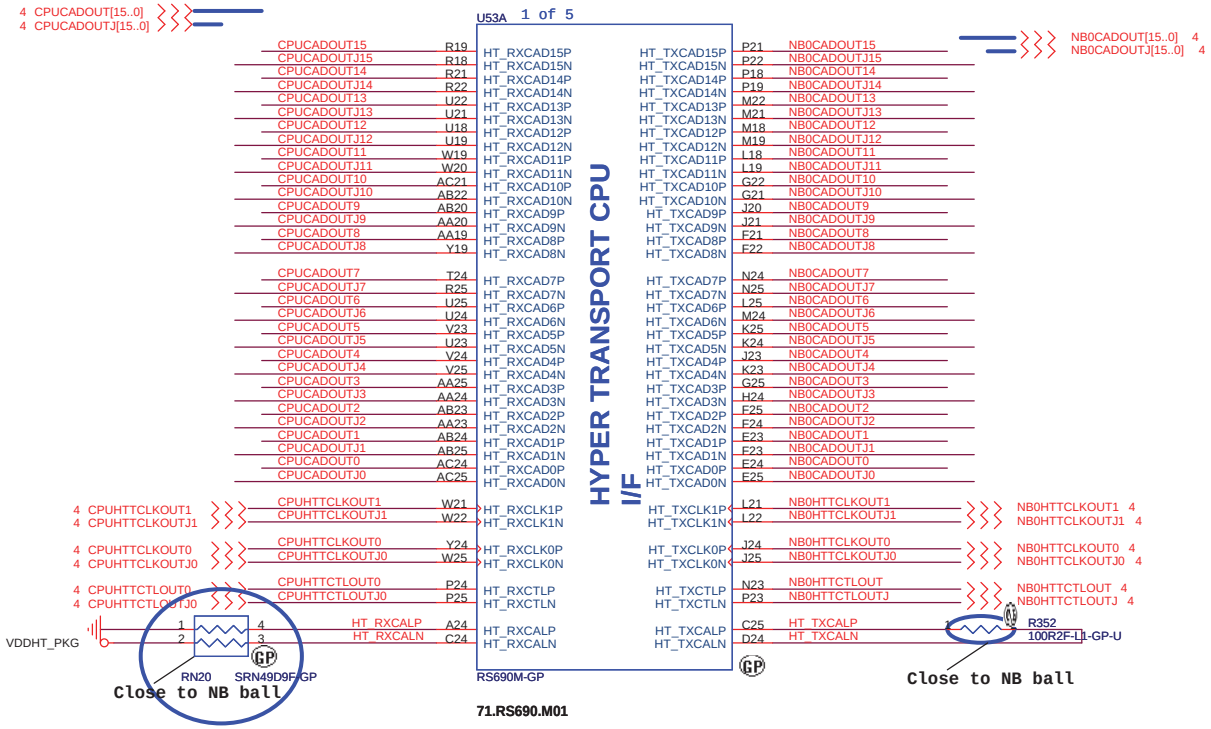
Size	Document Number	Rev
A3	Yukon	SA

Date: Thursday, July 03, 2008 Sheet 8 of 43


DM1
NORMAL TYPE
DDR2-200P-22-GP-U2
62.10017.A61
High 9.2mm
2nd: 62.10017.A51
DM2
NORMAL TYPE
SKT-SODIMM20020U3GP
62.10017.661
High 5.2mm
2nd:62.10017.A41
Place near CPU
DDR_VREF
LAYOUT: Locate close to DIMM
<Core Design>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
DDR SO-DIMM SKT
Yukon
Thursday, July 03, 2008
Sheet 9 of 43

CLAW HAMMER TO NB

NB TO CLAW HAMMER



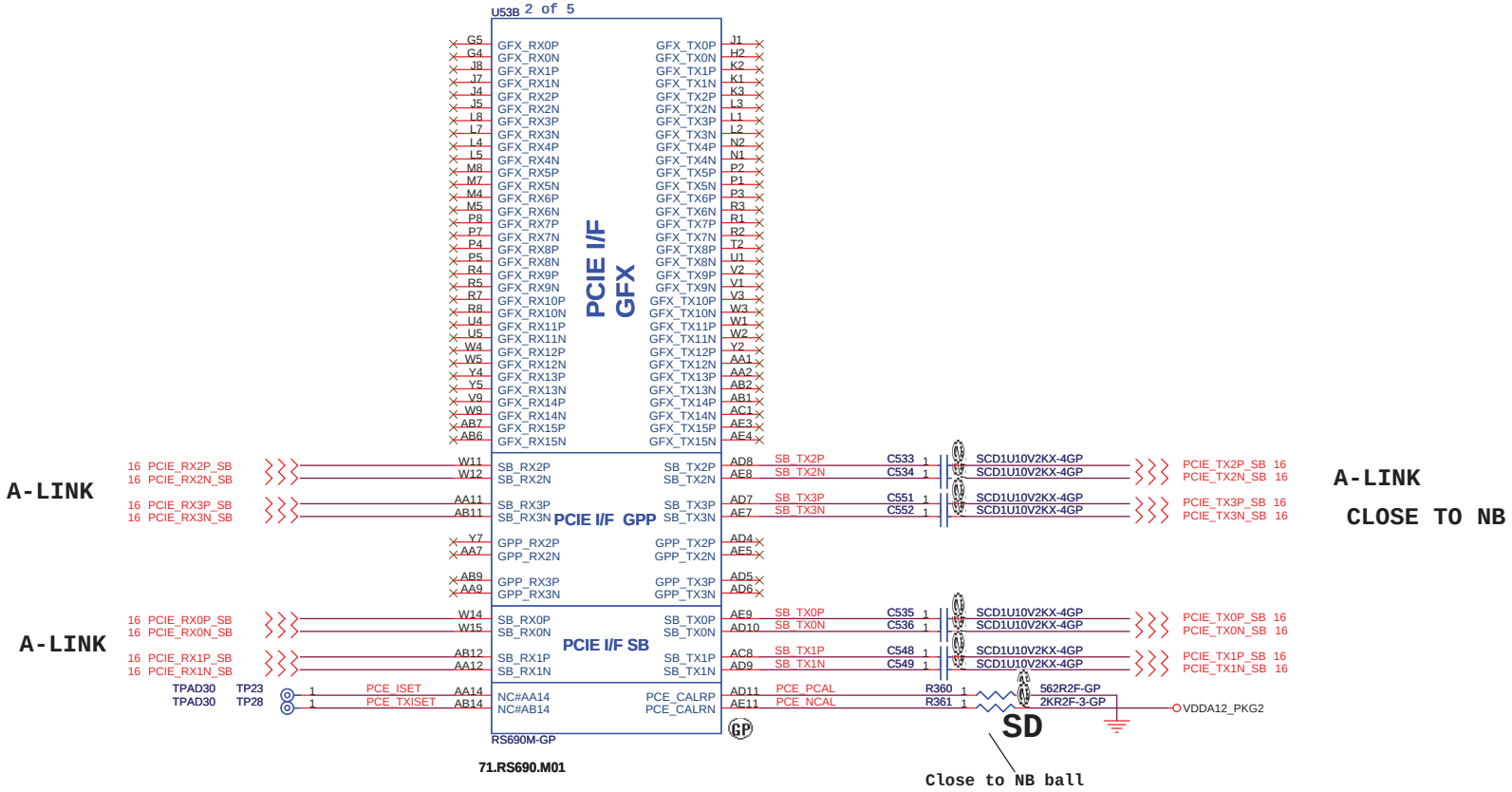
<Core Design>

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

Title: NB-RS690M_HT

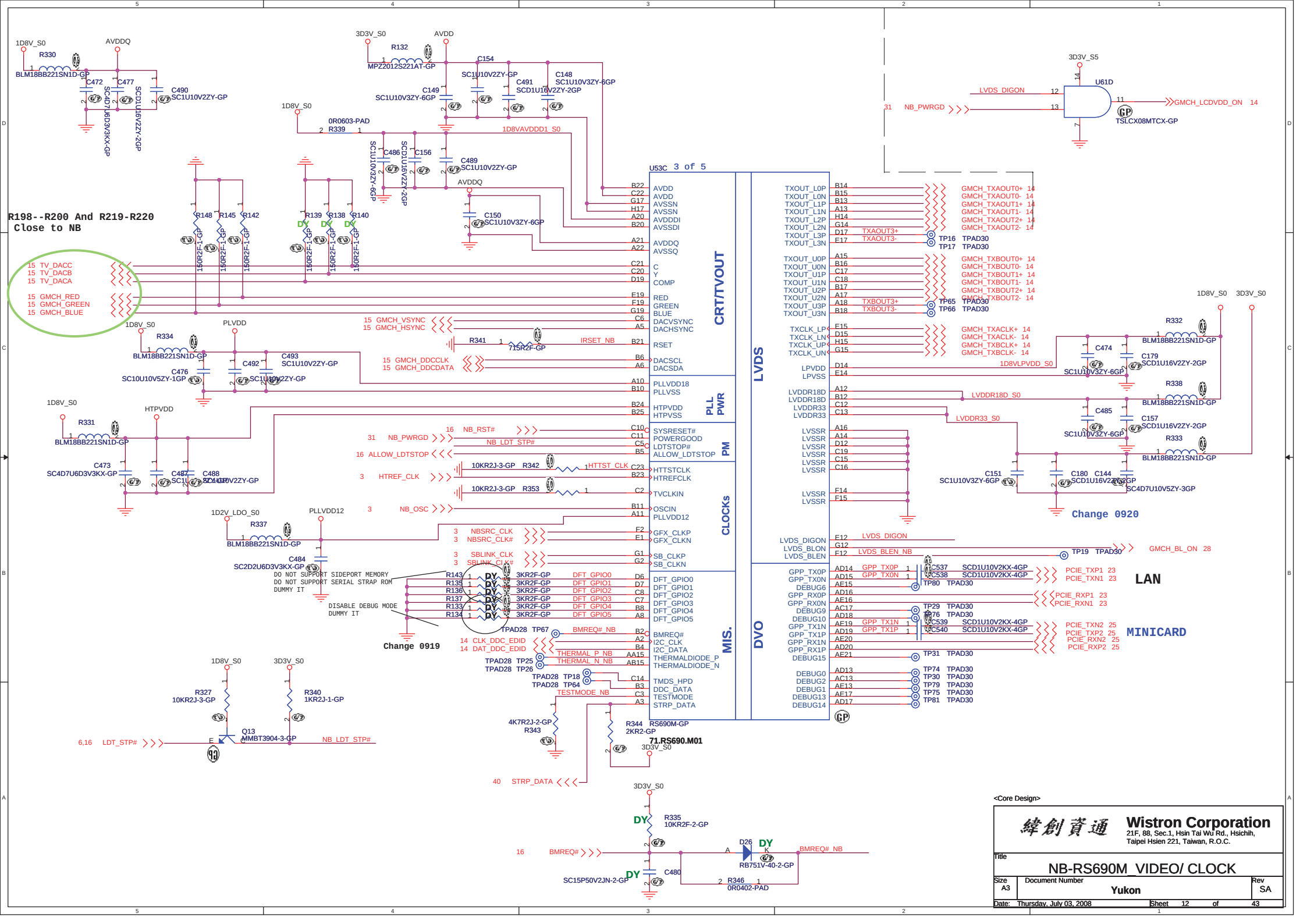
Size	Document Number	Rev
A3	Yukon	SA

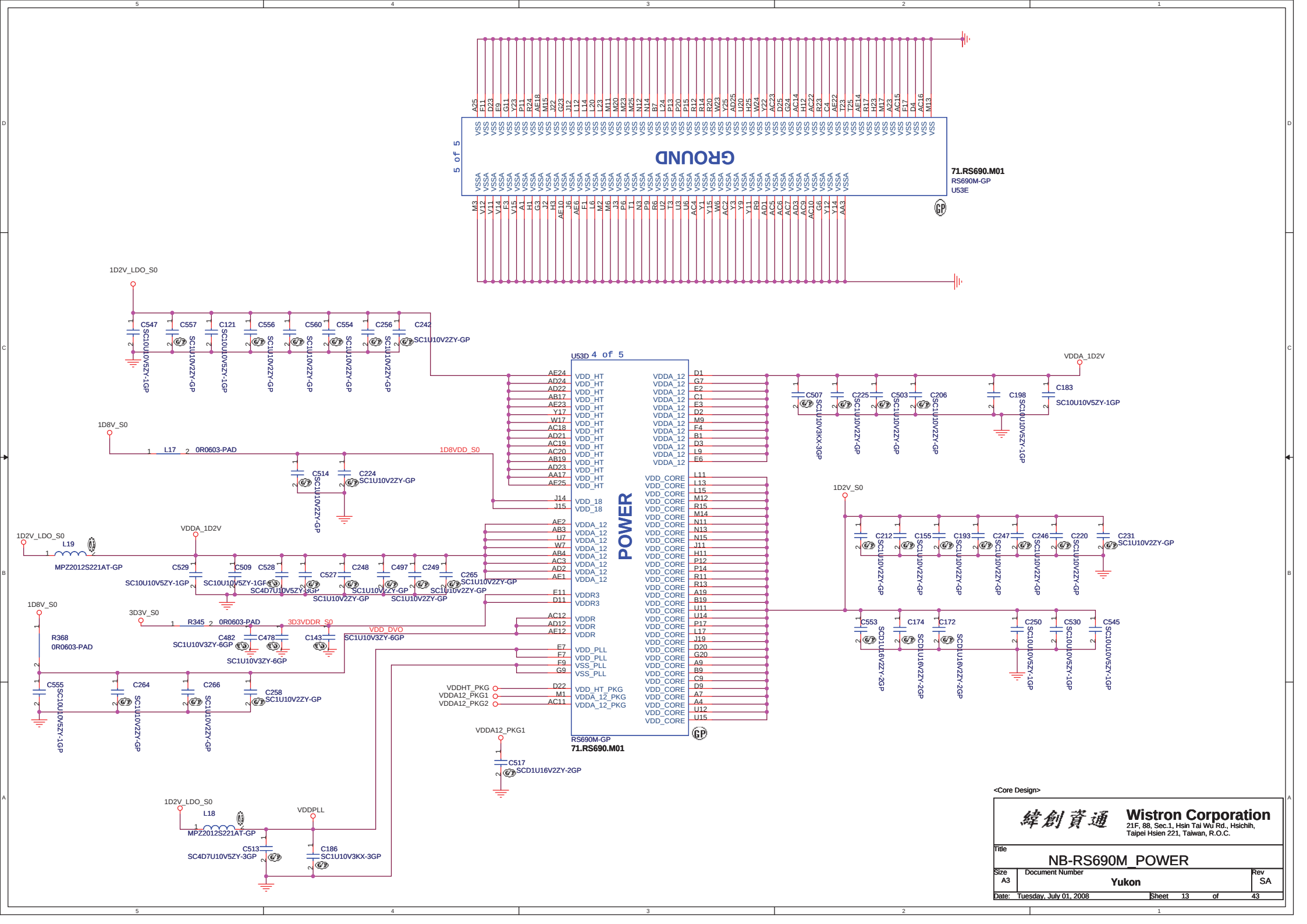
Date: Thursday, July 03, 2008 Sheet 10 of 43



<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	NB-RS690M_MEM/PCIE_LINK I/F
Size: A3	Document Number: Yukon
Rev: SA	
Date: Thursday, July 03, 2008	Sheet 11 of 43


R198--R200 And R219-R220
Close to NB
U53C 3 of 5
CRT/TVOUT
PLL PWR
PM
CLOCKs
MIS.
LVDS
DVO
Change 0919
Change 0920
LAN
MINICARD
71.RS690.M01
U61D
TSLCX08MTCX-GP
<Core Design>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
NB-RS690M_VIDEO/ CLOCK
Size A3
Document Number
Yukon
Rev SA
Date: Thursday, July 03, 2008
Sheet 12 of 43



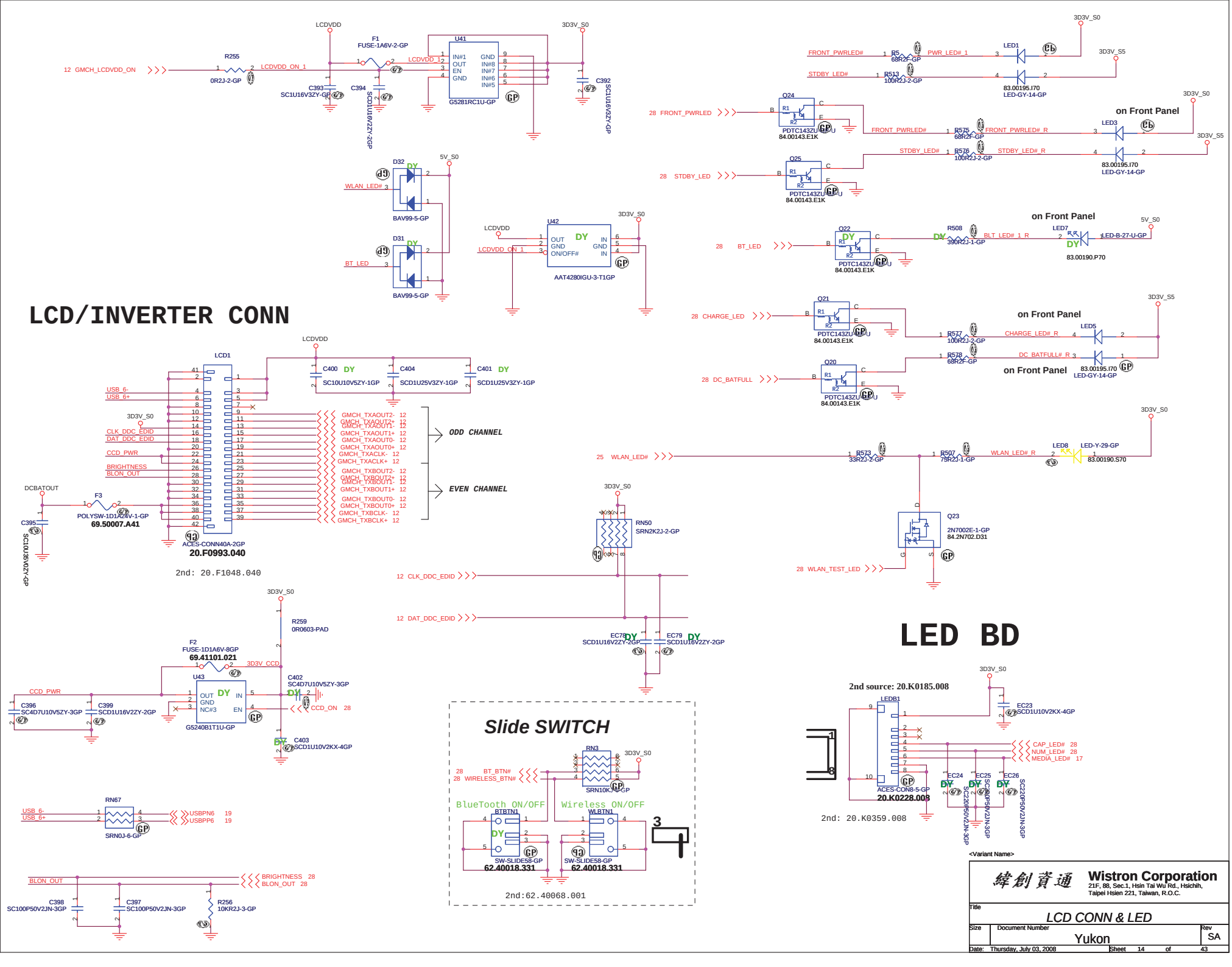
<Core Design>

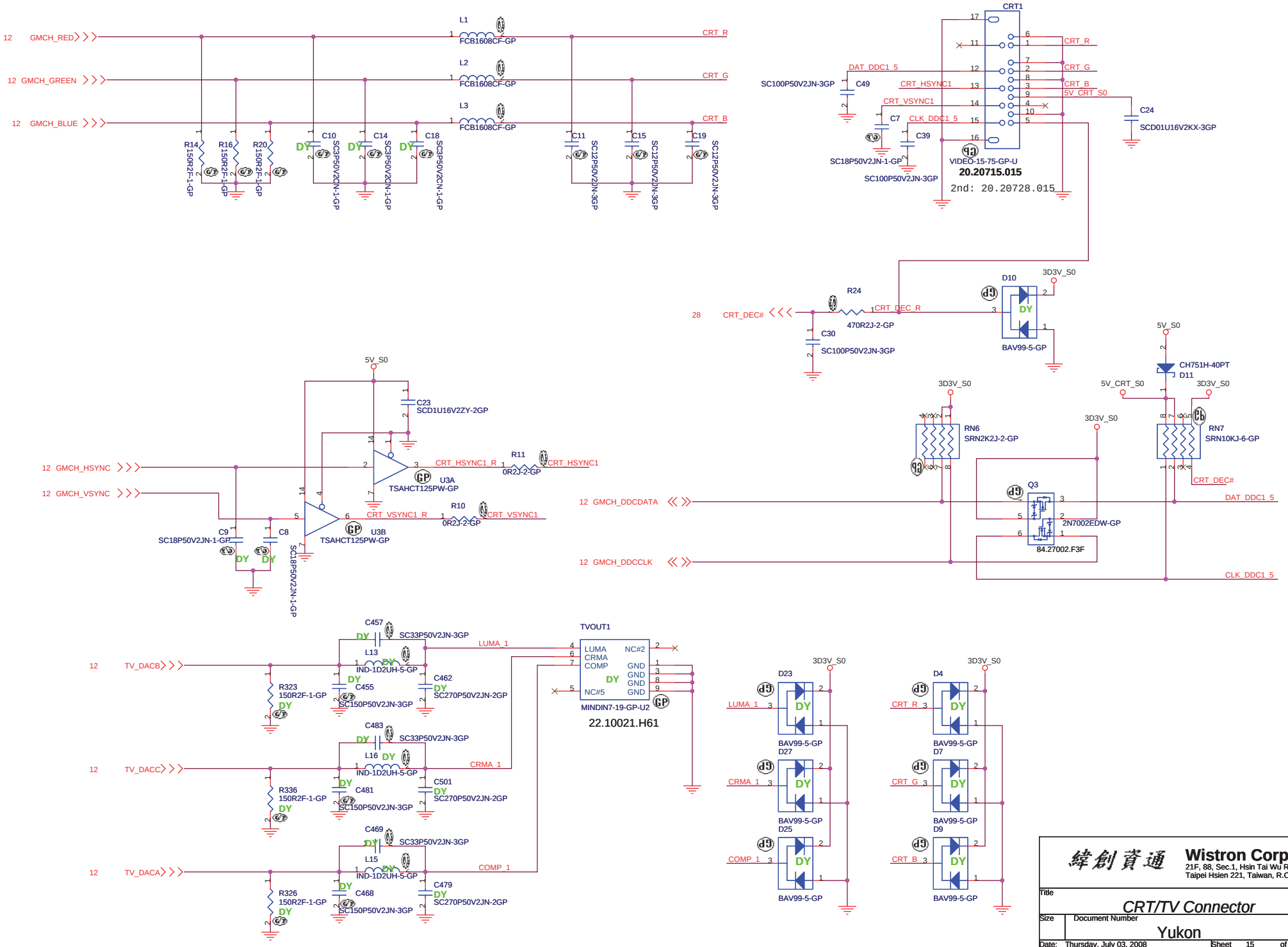
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: NB-RS690M_POWER

Size	Document Number	Rev
A3	Yukon	SA

Date: Tuesday, July 01, 2008 Sheet 13 of 43


LCD/INVERTER CONN
LED BD
Slide SWITCH
LCDVDD
3D3V_S0
5V_S0
3D3V_S5
on Front Panel
ODD CHANNEL
EVEN CHANNEL
2nd: 20.F1048.040
2nd source: 20.K0185.008
2nd: 20.K0359.008
2nd:62.40068.001
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
LCD CONN & LED
Yukon
Date: Thursday, July 03, 2008
Sheet 14 of 43



Company	Wistron Corporation
Address	21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	CRT/TV Connector
Size	
Document Number	Yukon
Rev	SA
Date	Thursday, July 03, 2008
Sheet	15 of 43

Place these components close to U13
and use groud guard for 32K_X1 and 32K_X2.

SB600 asserts PLTRST# to reset
devices on the platform.

U57A 1 of 4

SB600-GP

71.SB600.00U

62.70001.011

2nd source: 20.D0198.103

<Core Design>

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

Title: SB600 PCI/CPU/LPC/RTC (1 of 5)

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

Date: Thursday, July 03, 2008 | Sheet 16 of 43

PLACE SATA AC DECOUPLING
CAPS CLOSE TO SB460

U57B 2 of 4

SATA_TXP0 SATA_TXN0 SATA_RXN0 SATA_RXP0 SATA_TXP1 SATA_TXN1 SATA_RXN1 SATA_RXP1

C586 C587 C590 C593 C710 C712 C713 C711 — SCD01U50V2KX-1GP

SATA_TXP0_SB SATA_TXN0_SB SATA_RXN0_SB SATA_RXP0_SB SATA_TXP1_SB SATA_TXN1_SB SATA_RXN1_SB SATA_RXP1_SB

SATA_TX0+ SATA_TX0- SATA_RX0- SATA_RX0+ SATA_TX1+ SATA_TX1- SATA_RX1- SATA_RX1+ SATA_TX2+ SATA_TX2- SATA_RX2- SATA_RX2+ SATA_TX3+ SATA_TX3- SATA_RX3- SATA_RX3+ SATA_CAL SATA_X1 SATA_X2 SATA_ACT#/GPIO67

SERIAL ATA

SATA

R397 1KR2F-3-GP

3D3V_S0

R191 10KR2J-3-GP

SATA_CAL SATA_X1 SATA_X2

14 MEDIA_LED#

PLLVDD_ATA XTLVDD_ATA AVDD_SATA

PLLVDD_SATA XTLVDD_SATA AVDD_SATA

SERIAL ATA POWER

AVSS_SATA

SATA

SATA_X1 SATA_X2

R381 1MR2J-L2-GP XTAL-25MHZ-67GP

C582 SC12P50V2JN-3GP C576 SC10P50V2JN-4GP

According to PA_IXP600AD9
Change C936 and C937 from 27P to 10P.

IDE_IORDY IDE_IRQ IDE_A0 IDE_A1 IDE_A2 IDE_DACK# IDE_DRQ IDE_IOR# IDE_IOW# IDE_CS1# IDE_CS3#

IDE_D0/GPIO15 IDE_D1/GPIO16 IDE_D2/GPIO17 IDE_D3/GPIO18 IDE_D4/GPIO19 IDE_D5/GPIO20 IDE_D6/GPIO21 IDE_D7/GPIO22 IDE_D8/GPIO23 IDE_D9/GPIO24 IDE_D10/GPIO25 IDE_D11/GPIO26 IDE_D12/GPIO27 IDE_D13/GPIO28 IDE_D14/GPIO29 IDE_D15/GPIO30

ATA 66/100

SPI_DI/GPIO12 SPI_DO/GPIO11 SPI_CLK/GPIO47 SPI_HOLD#/GPIO31 SPI_CS#/GPIO32 LAN_RST#/GPIO13 ROM_RST#/GPIO14

TP54 TP45 TP50 TP101 TP46 TP41 TP47 TPAD30

SPI ROM

FANOUT0/GPIO3 FANOUT1/GPIO48 FANOUT2/GPIO49 FANIN0/GPIO50 FANIN1/GPIO51 FANIN2/GPIO52 TEMP_COMM TEMPIN0/GPIO61 TEMPIN1/GPIO62 TEMPIN2/GPIO63 TEMPIN3/TALERT#/GPIO64 VIN0/GPIO53 VIN1/GPIO54 VIN2/GPIO55 VIN3/GPIO56 VIN4/GPIO57 VIN5/GPIO58 VIN6/GPIO59 VIN7/GPIO60

ALERT# 6,32 PSW_CLR# UMA_DIS CLK_ID FP_ID TP143 TP144 TPAD30

HW MONITOR

AVDD AVSS

REMOVE FP_DETECT TO KBC

3D3V_S0 R519 10KR2J-3-GP PSW_CLR# G41 GAP-OPEN

3D3V_S0 R197 10KR2J-3-GP RTL CLK_ID R206 10KR2J-3-GP ICS

AVDD_HWM 3D3V_S0 R432 0R3-0-U-GP C613 SCD1U16V2ZY-2GP C614 SC2D2U6D3V3KX-GP DY

SB600-GP

71.SB600.00U

SATA

3D3V_S0 XTLVDD_ATA 1D2V_LDO_S0 PLLVDD_ATA 1D2V_LDO_S0 AVDD_SATA

R187 0R0603-PAD EC117 C318 SC2D2U6D3V3KX-GP

R193 0R0603-PAD EC118 C320 SC2D2U6D3V3KX-GP

R177 0R0603-PAD EC114 C311 C307 EC63 EC65 EC62 EC60 EC64 DY

SCD1U16V2ZY-2GP SC10U6D3V5KX-1GP SC10U16D3V5KX-1GP

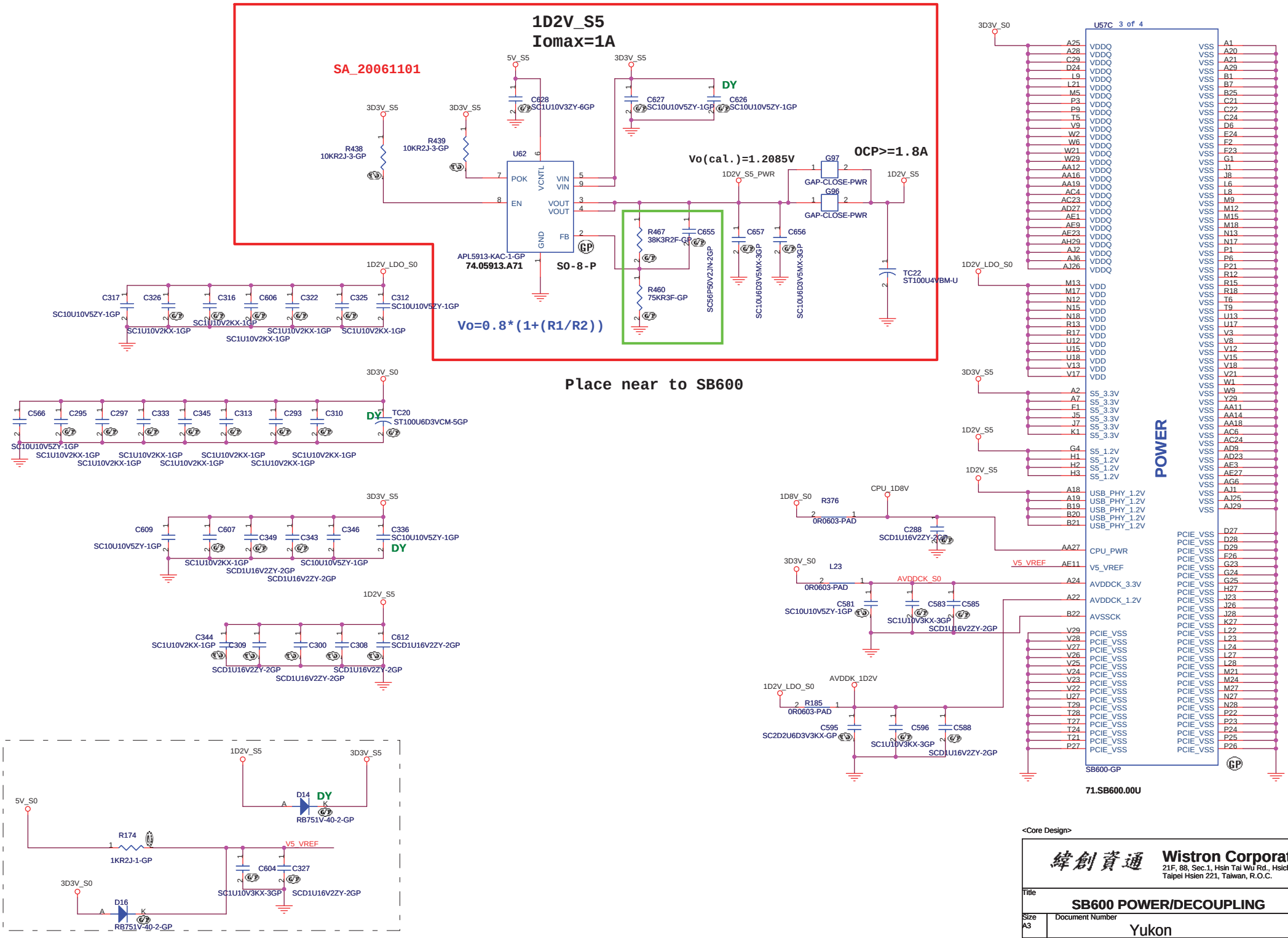
<Core Design>

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

Title: SB600 ACPI/GPIO/SATA/IDE (2 of 5)

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

Date: Thursday, July 03, 2008 | Sheet 17 of 43



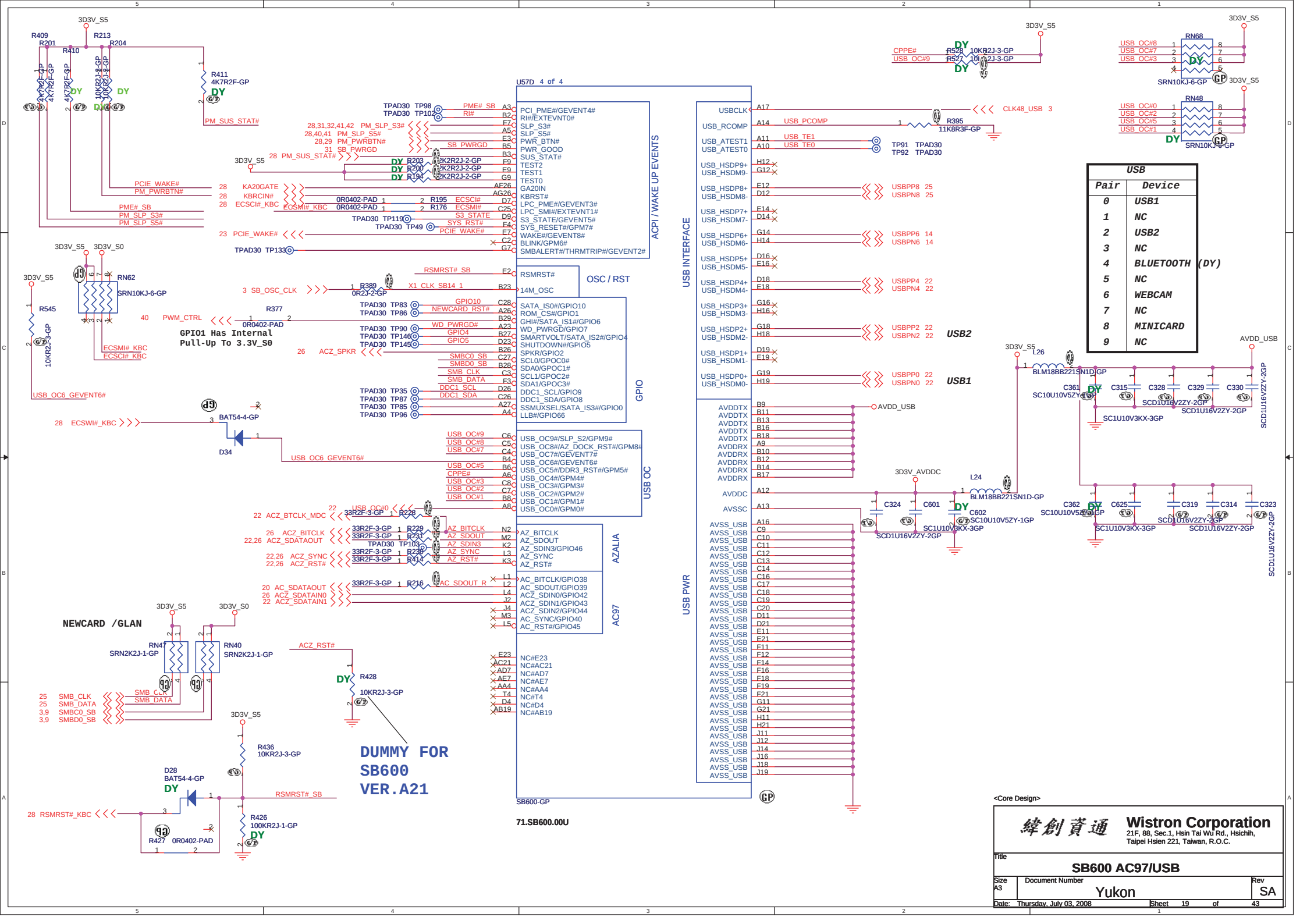
<Core Design>

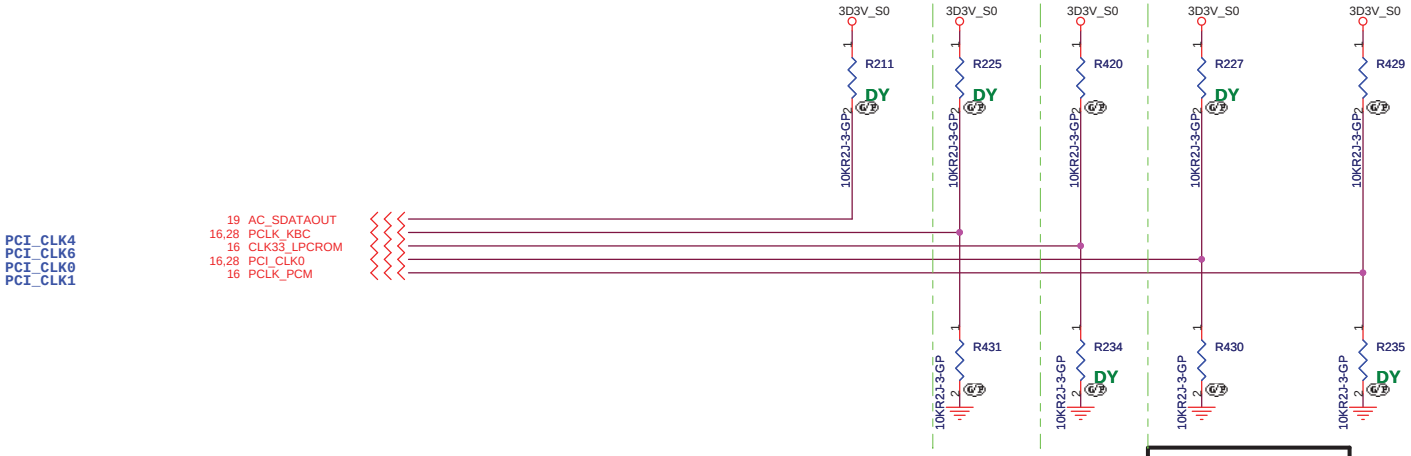
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: SB600 POWER/DECOUPLING

Size	Document Number	Rev
A3	Yukon	SA

Date: Wednesday, July 02, 2008 Sheet 18 of 43

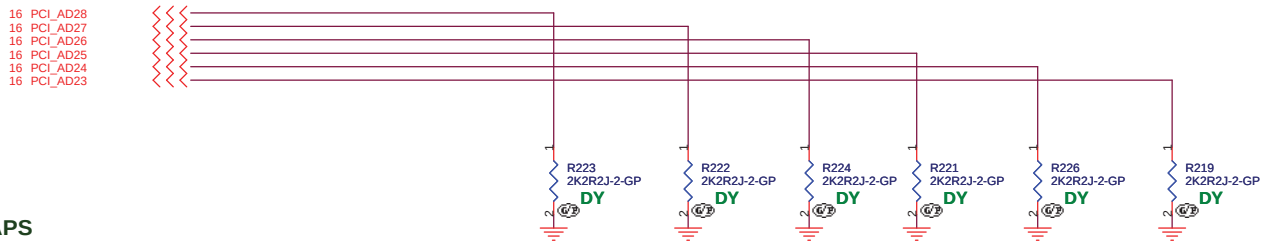

U57D 4 of 4
ACPI / WAKE UP EVENTS
USB INTERFACE
OSC / RST
GPIO
USB OC
AZALIA
AC97
USB PWR
SB600-GP
71.SB600.00U
USB
Pair Device
0 USB1
1 NC
2 USB2
3 NC
4 BLUETOOTH (DY)
5 NC
6 WEBCAM
7 NC
8 MINICARD
9 NC
USB2
USB1
NEWCARD /GLAN
GPIO1 Has Internal Pull-Up To 3.3V_S0
DUMMY FOR SB600 VER.A21
<Core Design>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title
SB600 AC97/USB
Size A3
Document Number
Yukon
Rev SA
Date: Thursday, July 03, 2008
Sheet 19 of 43



REQUIRED SYSTEM STRAPS

	SB600				
	AC_SDOUT	PCI_CLK4	PCI_CLK6	PCI_CLK0	PCI_CLK1
PULL HIGH	USE DEBUG STRAPS	USE INT. PLL48	CPU IF=K8 DEFAULT	ROM TYPE: H, H = PCI ROM H, L = SPI ROM L, H = LPC ROM DEFAULT L, L = FWH ROM	
PULL LOW	IGNORE DEBUG STRAPS DEFAULT	USE EXT. 48MHZ DEFAULT	CPU IF=P4		

SB600 HAS 15K INTERNAL PU FOR PCI_AD[23..28]



DEBUG STRAPS

		PCI_AD31	PCI_AD30	PCI_AD29	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
STRAP HIGH		RESERVED	RESERVED	RESERVED	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	BOOT FAIL TIMER DISABLE DEFAULT
STRAP LOW					USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	BOOT FAIL TIMER ENABLE

<Core Design>

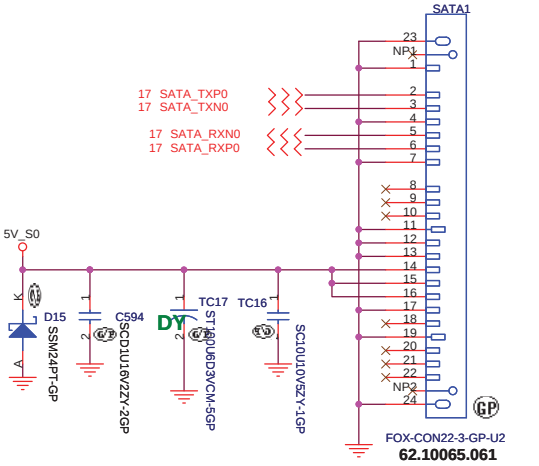
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: SB600 STRAPPING PIN

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

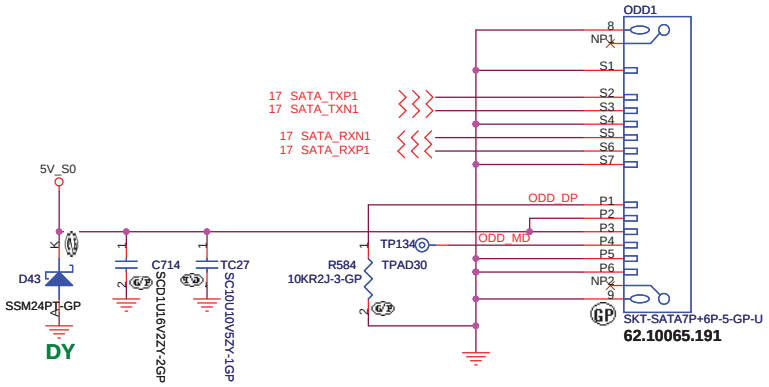
Date: Thursday, July 03, 2008 | Sheet 20 of 43

SATA HD Connector



2nd: 62.10065.091

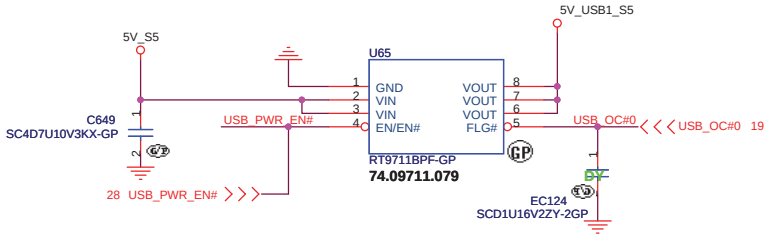
SATA ODD Connector

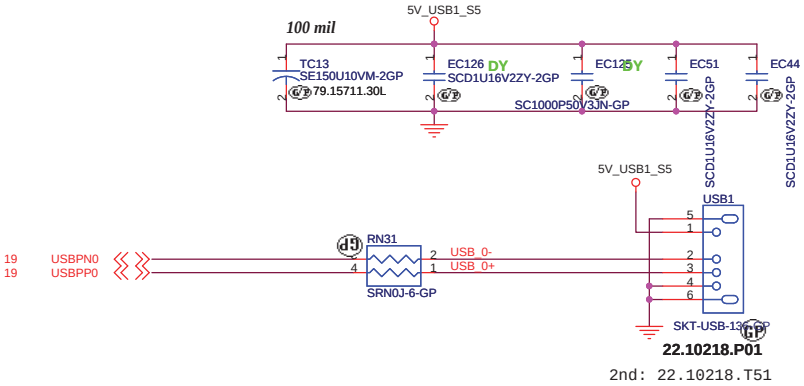


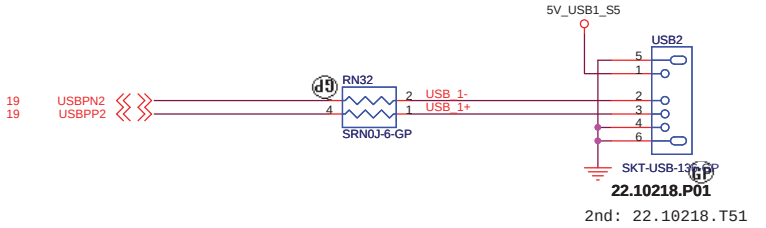
bom1

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

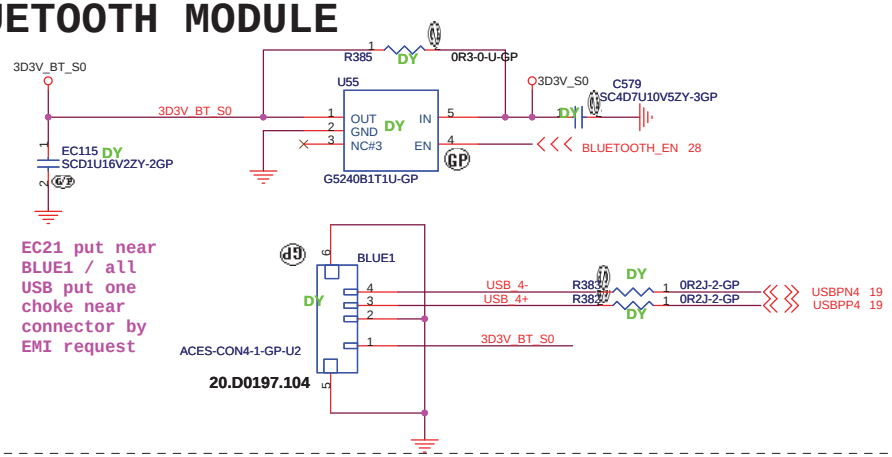
Title		
HDD and CDROM		
Size	Document Number	Rev
	Yukon	SA
Date: Thursday, July 03, 2008	Sheet 21 of 43	



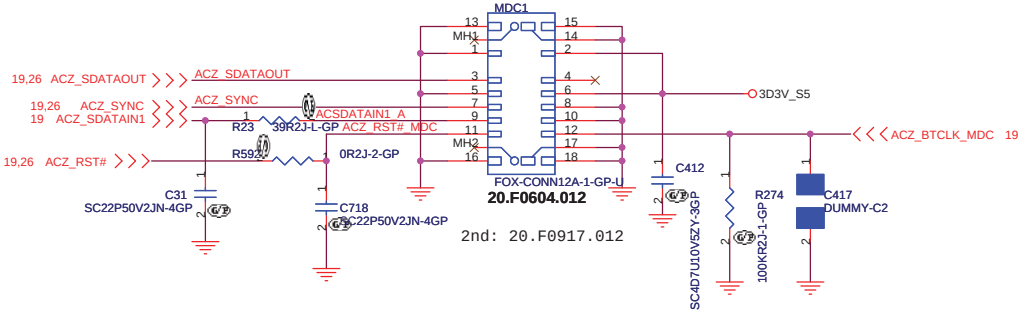


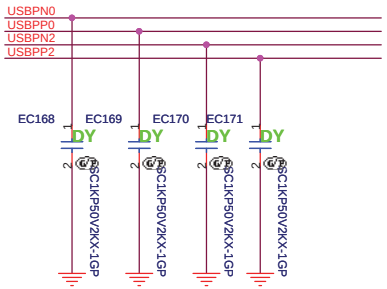


BLUETOOTH MODULE



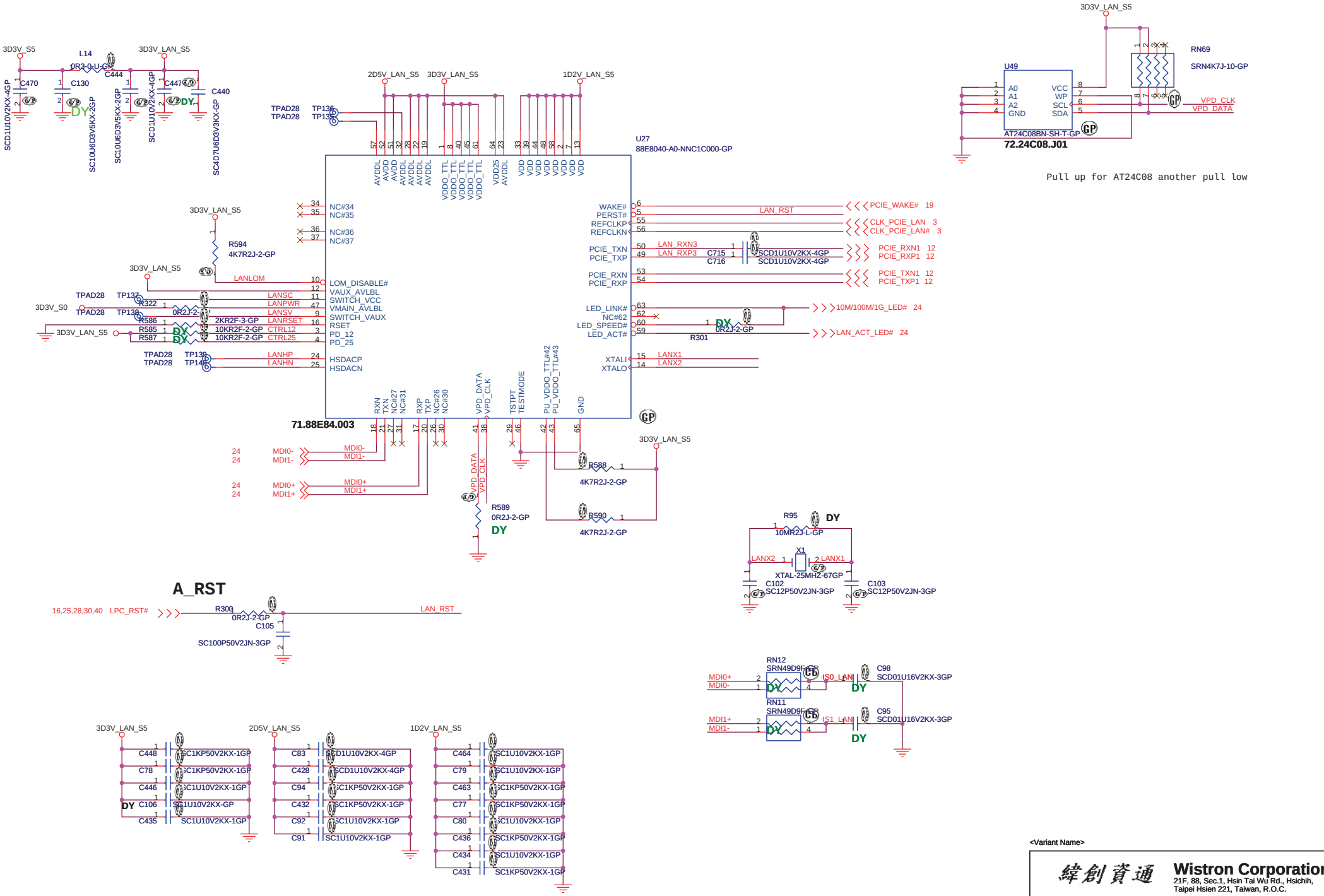
MDC 1.5 CONN





bom1

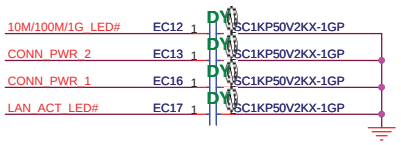
緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	***USB / MDC / BLUETOOTH***	
Size	Document Number **Yukon**	Rev SA
Date: Thursday, July 03, 2008	Sheet 22 of 43	

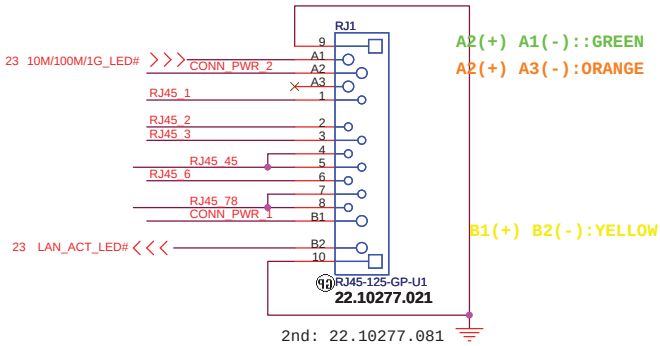


<Variant Name>

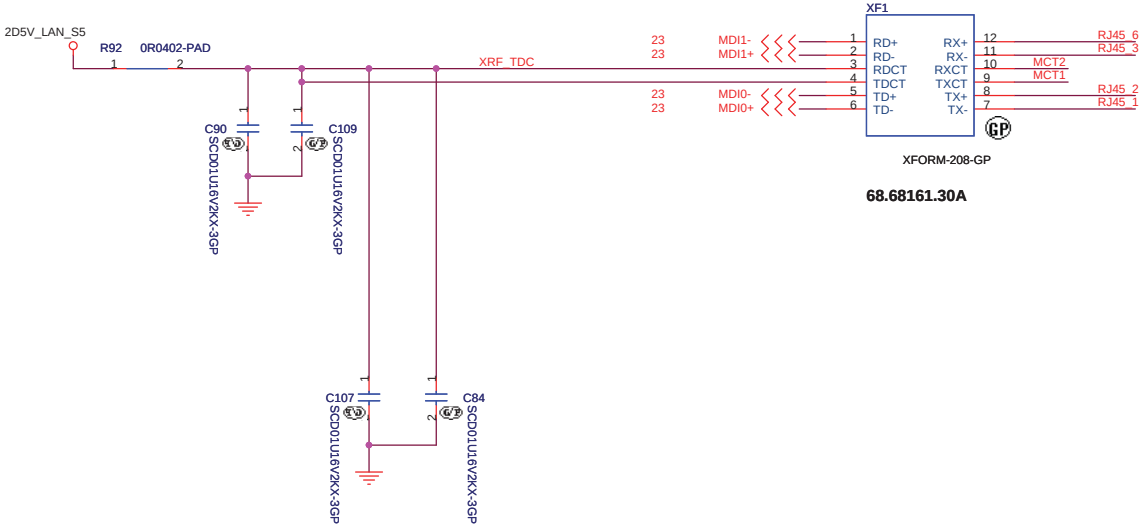
緯創資通 Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title: MARVELL 88E8040		
Size: A3	Document Number: Yukon	Rev: SA
Date: Thursday, July 03, 2008	Sheet 23 of 43	

LAN Connector





10/100 Lan Transformer

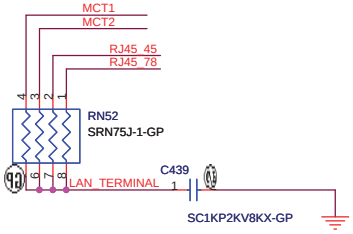


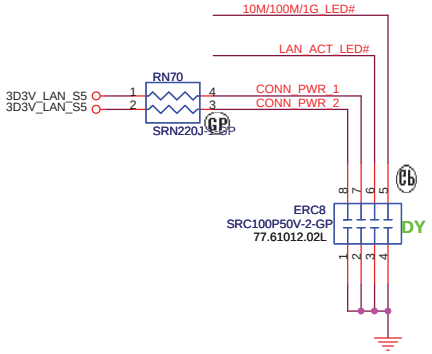
1.route on bottom as differential pairs.
2.Tx+/Tx- are pairs. Rx+/Rx- are pairs.
3.No vias, No 90 degree bends.
4.pairs must be equal lengths.
5.6mil trace width,12mil separation.
6.36mil between pairs and any other trace.
7.Must not cross ground moat,except RJ-45 moat.

RJ11 signal must leave the other signal or power plane 100mil.

DOC_TIP,DOC_RING,TIP,RING:
W/S : 10/100 @ Surface layers
10/20 @ Inner layers

10/100 LAN Transformer	RJ45 PIN
TD+ --> TX+	RJ45-1
TD- --> TX-	RJ45-2
RD+ --> RX+	RJ45-3
RD- --> RX-	RJ45-6





<Variant Name>

緯創資通 **Wistron Corporation**
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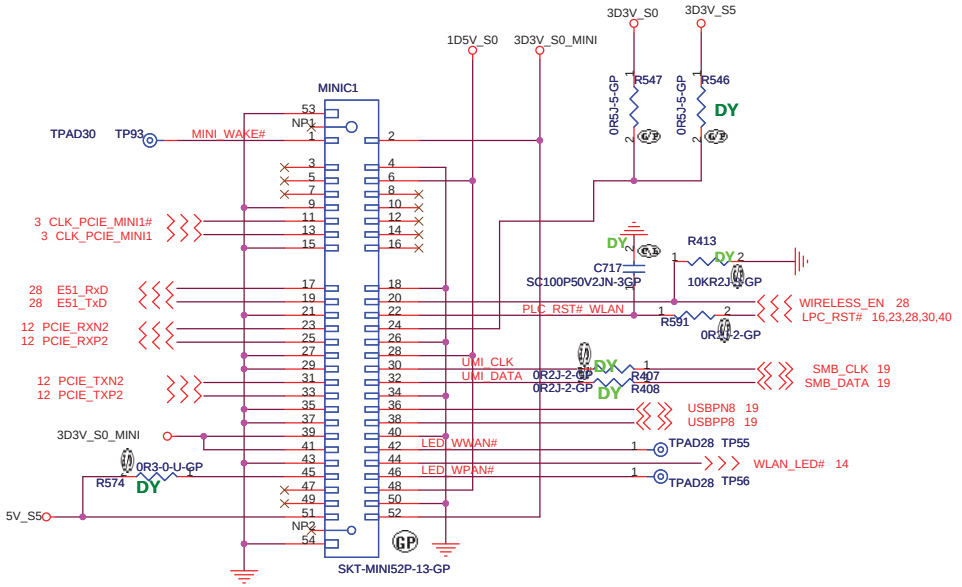
Title: **LAN Connector**

Size	Document Number	Rev
A3	Yukon	SA

Date: Thursday, July 03, 2008 Sheet 24 of 43

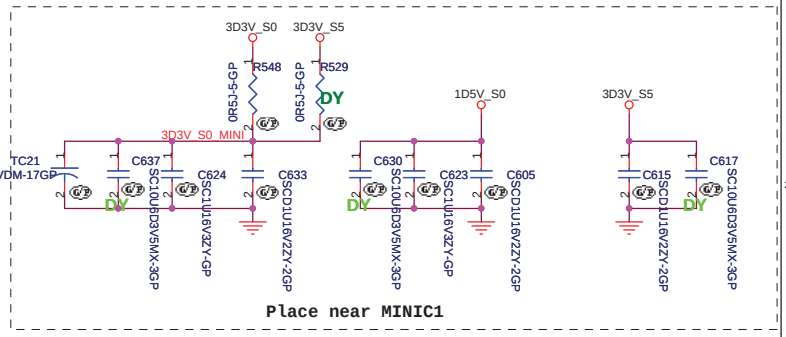
Mini Card Connector

NEWCARD Connector



62.10043.461

2nd:20.F1049.052

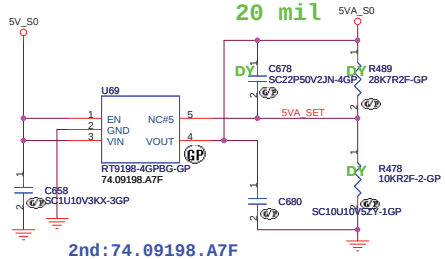


bom1

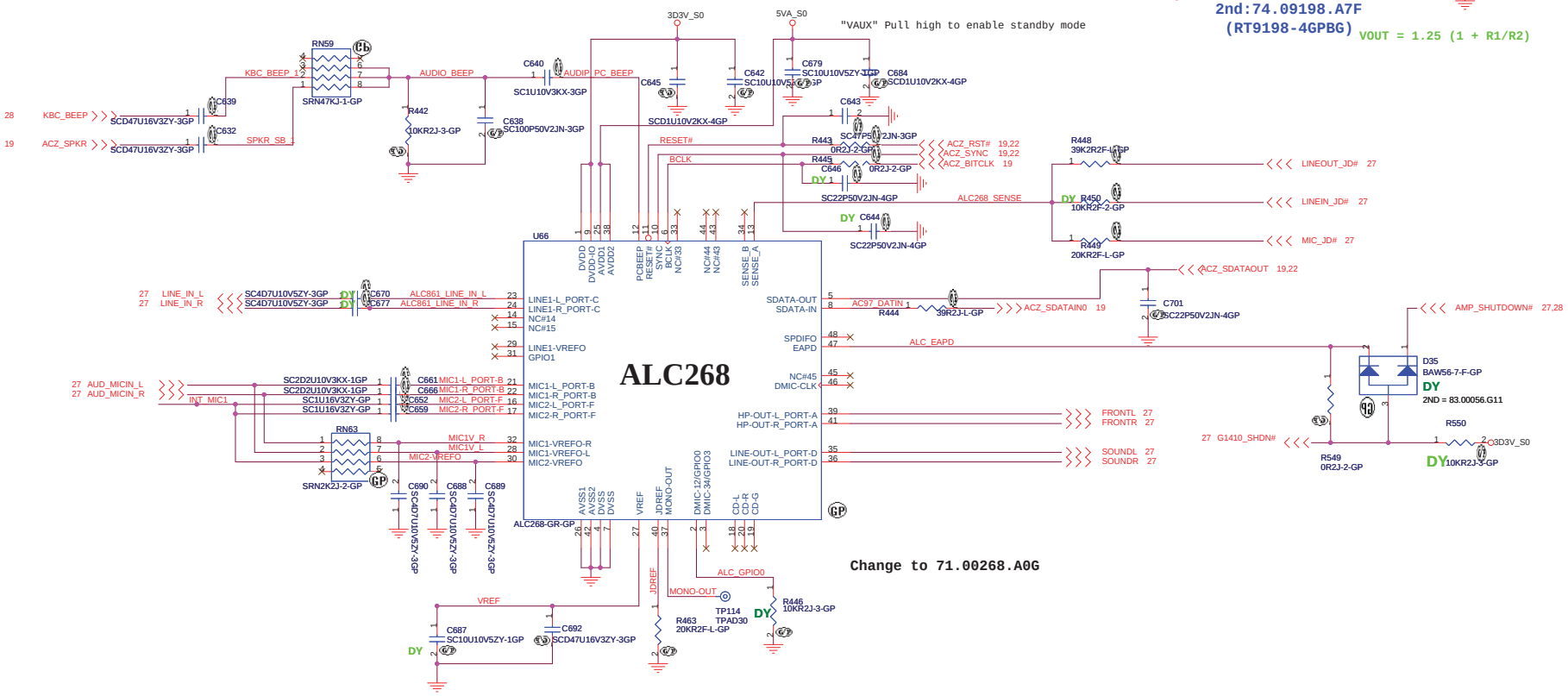
緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	***MINI CARD / NEW CARD***	
Size	Document Number **Yukon**	Rev SA
Date: Thursday, July 03, 2008	Sheet 25 of 43	

POWER GENERATE

Layout
20 mil

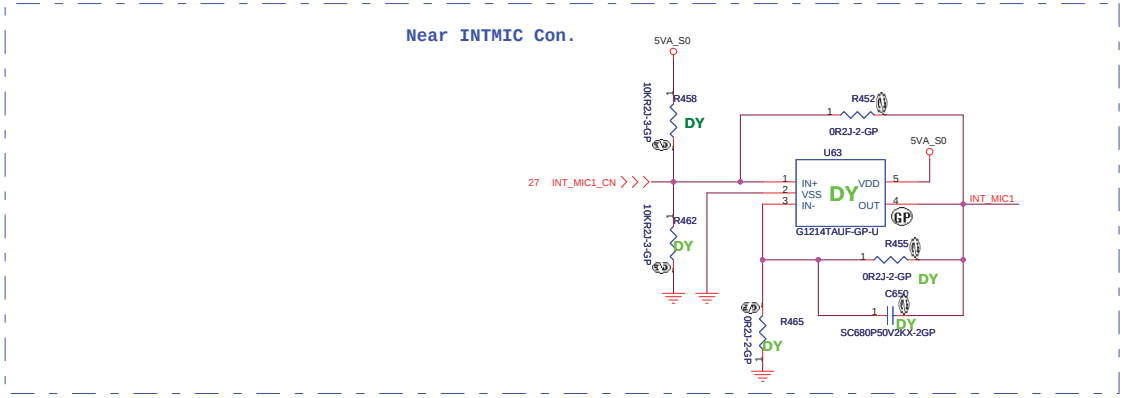


2nd:74.09198.A7F
(RT9198-4GPBG) VOUT = 1.25 (1 + R1/R2)



Change to 71.00268.A0G

Near INTMIC Con.



<Variant Name>

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

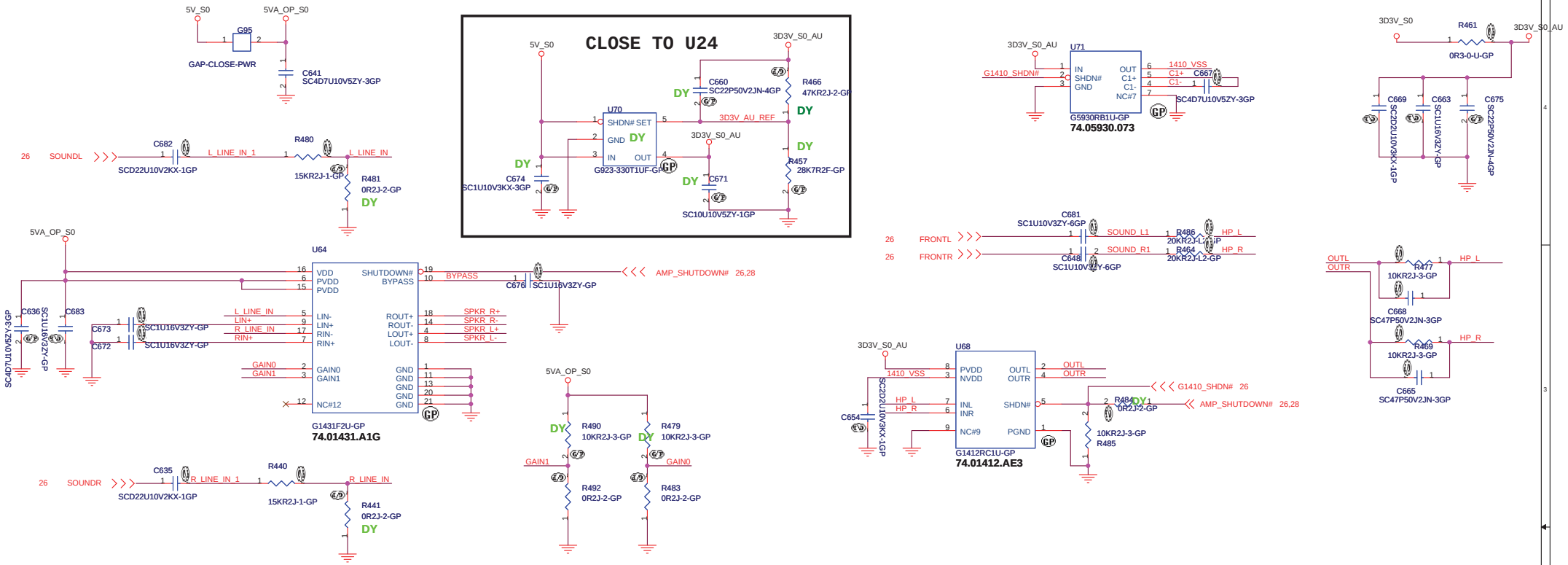
Title: AZALIA CODEC - ALC268

Size	Document Number	Rev
	Yukon	SA

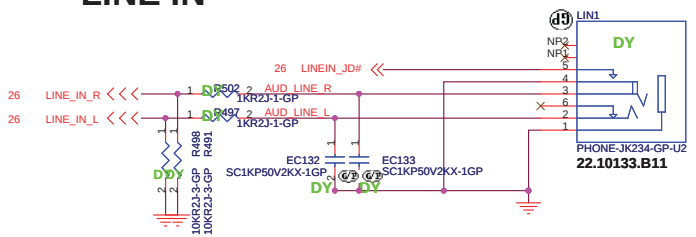
Date: Thursday, July 03, 2008 Sheet 26 of 43

AUDIO OP AMPLIFIER

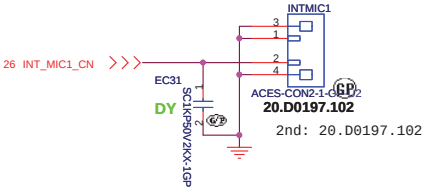
KBC_MUTE_GPIO8



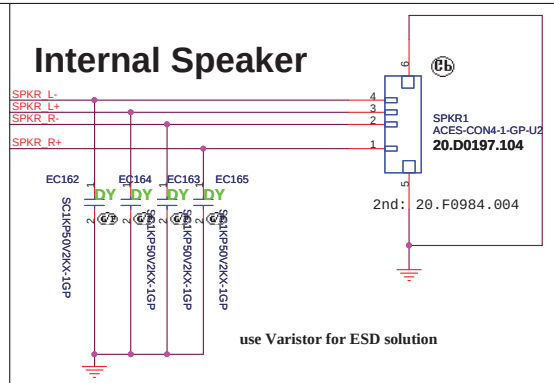
LINE IN



Internal Microphone

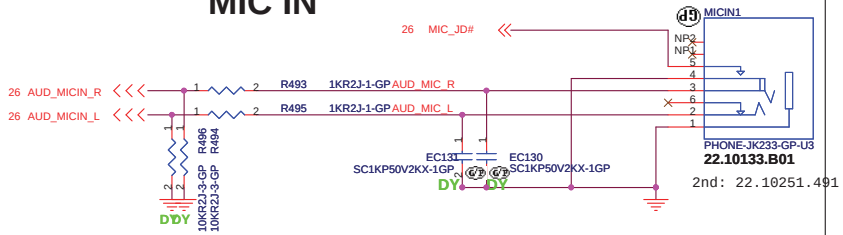


Internal Speaker

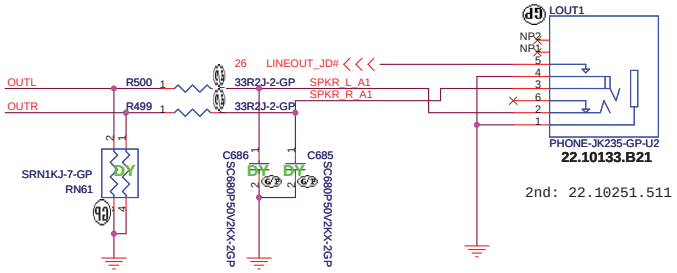


use Varistor for ESD solution

MIC IN

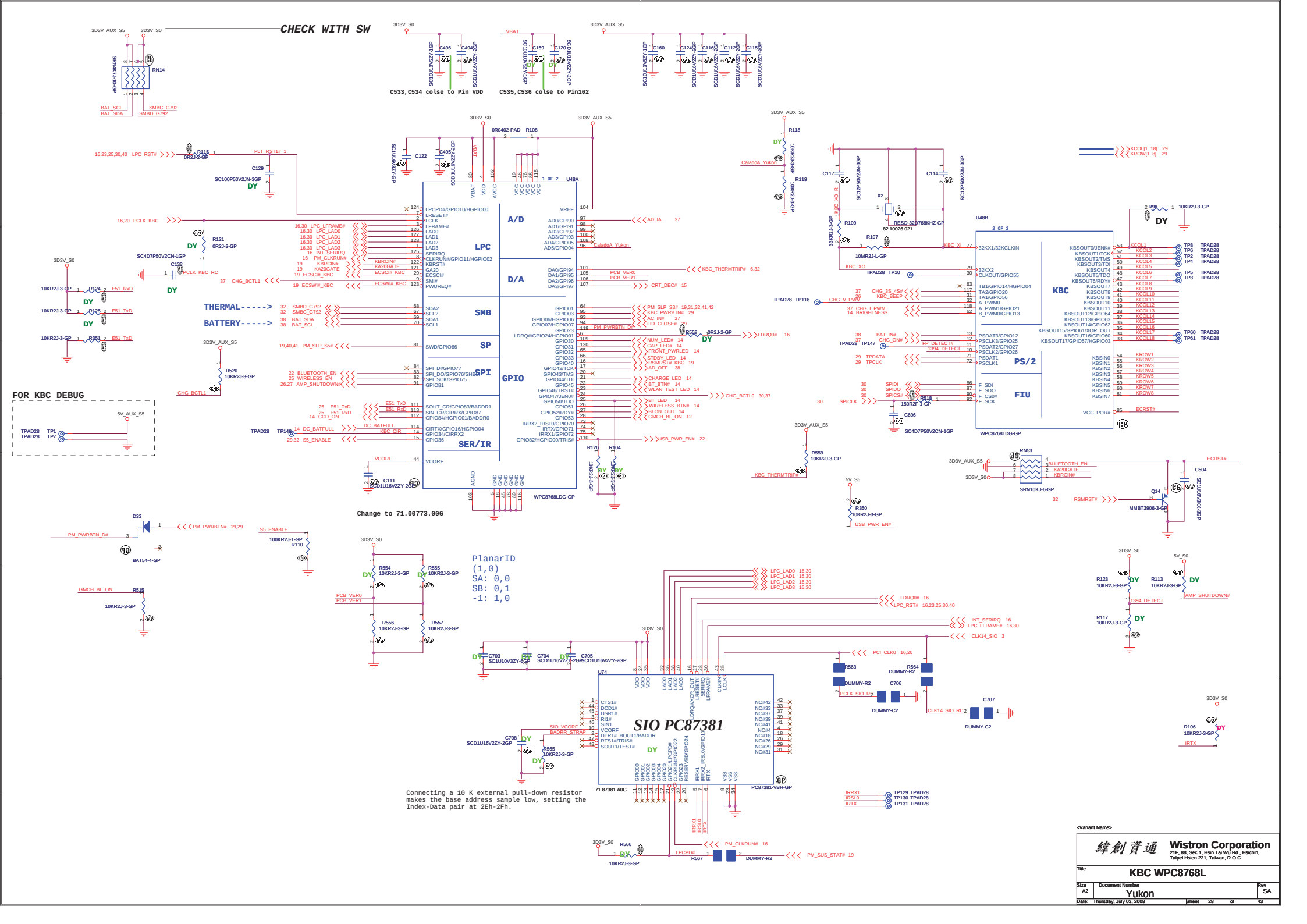


LINE OUT

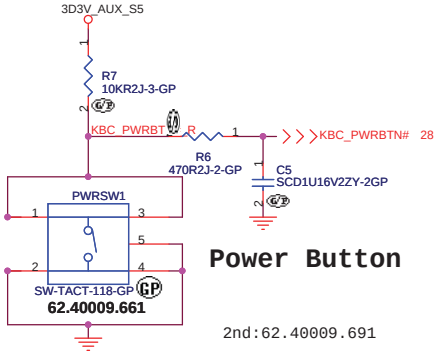


<Variant Name>

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 AND JACK*
Size	Document Number: Yukon — Rev: SA
Date: Thursday, July 03, 2008	Sheet 27 of 43

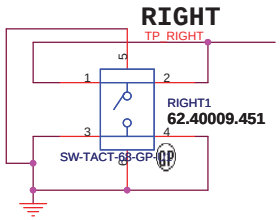

CHECK WITH SW
C533,C534 colse to Pin VDD
C535,C536 colse to Pin102
KBC WPC8768L
Yukon
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
KBC WPC8768L
Size A2
Document Number Yukon
Rev SA
Date: Thursday, July 03, 2008
Sheet 28 of 43
Change to 71.00773.00G
FOR KBC DEBUG
THERMAL-----> SMBD_G792 SMBC_G792
BATTERY-----> BAT_SDA BAT_SCL
PlanarID
(1,0)
SA: 0,0
SB: 0,1
-1: 1,0
SIO PC87381
Connecting a 10 K external pull-down resistor makes the base address sample low, setting the Index-Data pair at 2Eh-2Fh.

Power Button

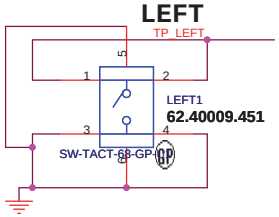


2nd:62.40009.691

RIGHT

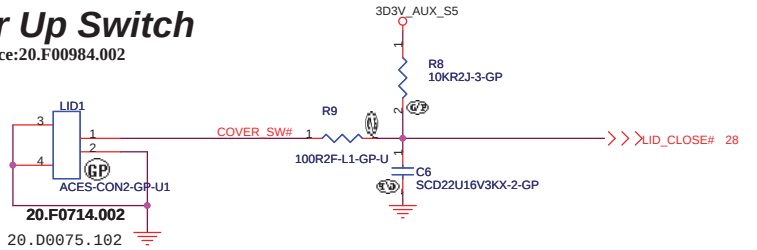


LEFT



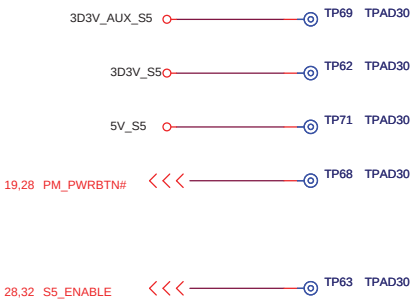
Cover Up Switch

2nd source:20.F00984.002



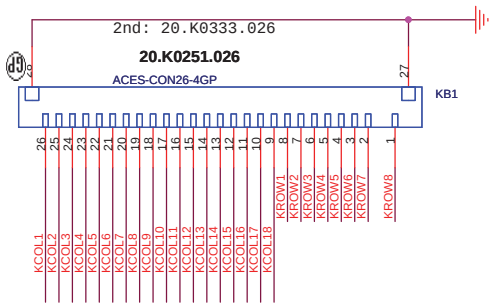
2nd: 20.D0075.102

Check test point



Test Point放在Dimm Door打開可量測處

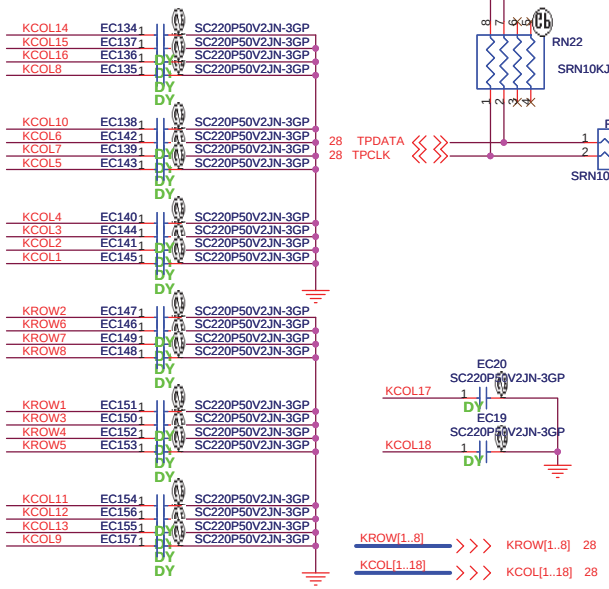
Internal KeyBoard CONN

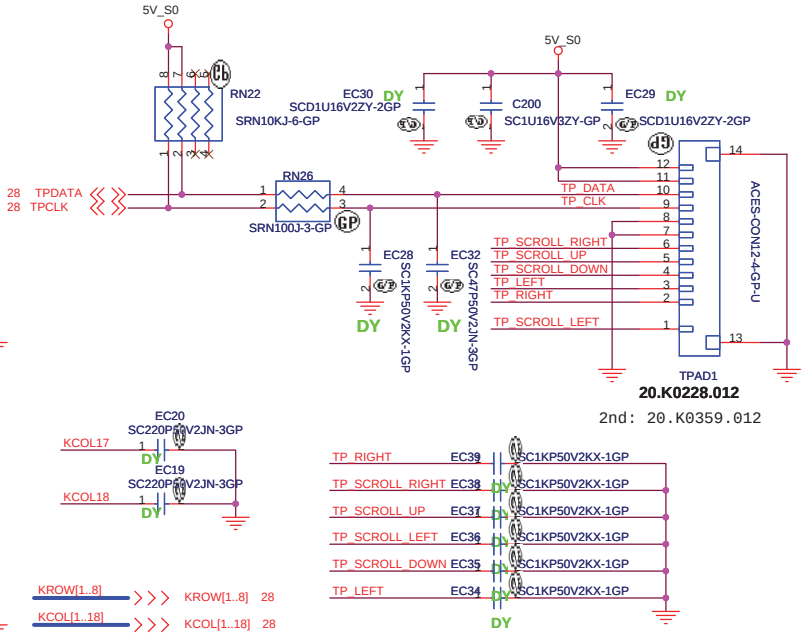


1 25

CHECK KB SPEC. AND PIN DEFINE

EMI Bypass cap.





KROW[1..8] KROW[1..8] 28

KCOL[1..18] KCOL[1..18] 28

bom1

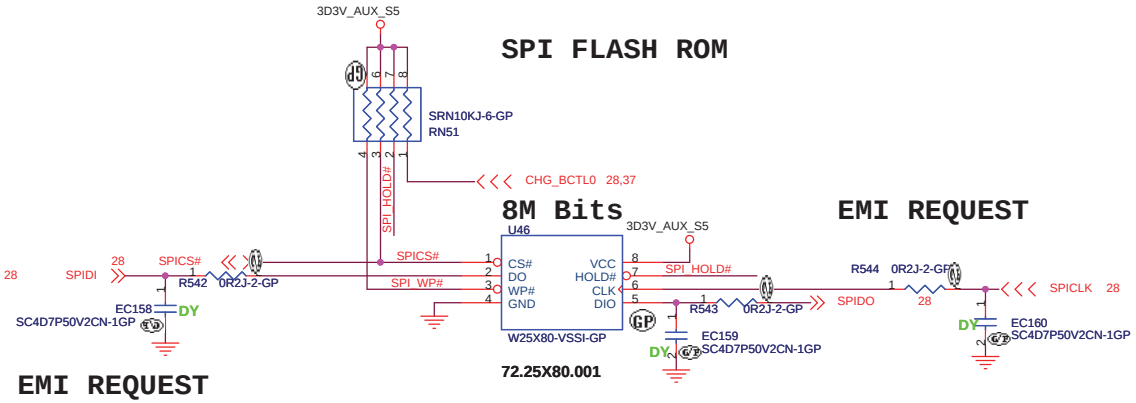
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: BUTTONs / KB / TOUCHPAD

Size	Document Number	Rev
	Yukon	SA

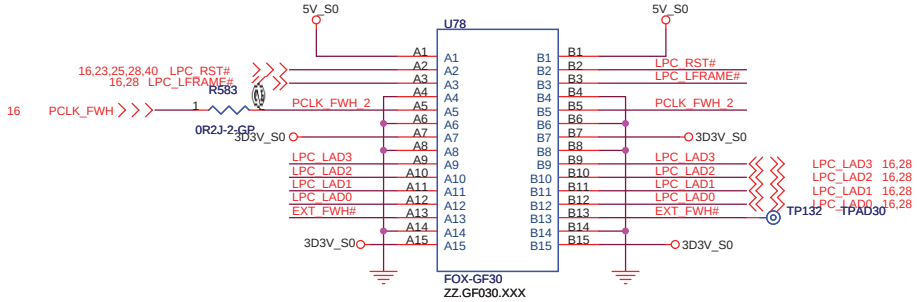
Date: Thursday, July 03, 2008 Sheet 29 of 43

SPI FLASH ROM



EMI REQUEST

GOLDEN FINGER FOR DEBUG BOARD

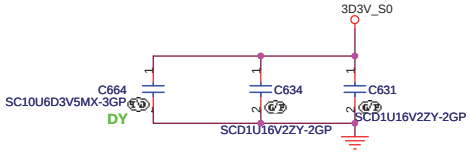


TOP VIEW

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

(BOTTOM VIEW)

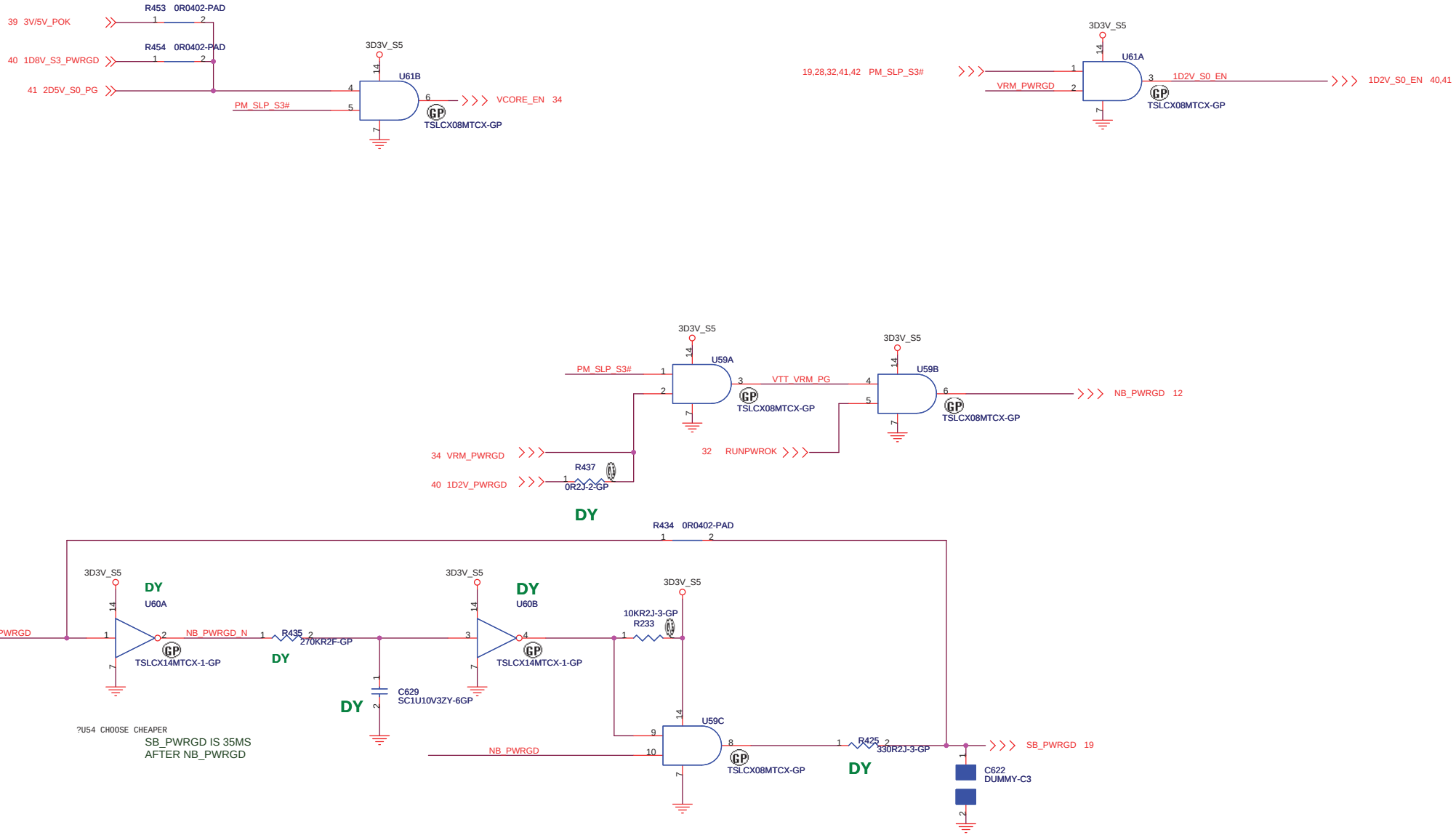
Boot Device must have ID[3:0] = 0000
Has internal pull-down resistors
All may be left floated
FPET7 Elec. P3-46



<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: BIOS		
Size: A3	Document Number: Yukon	Rev: SA
Date: Thursday, July 03, 2008	Sheet 30 of 43	



<Core Design>

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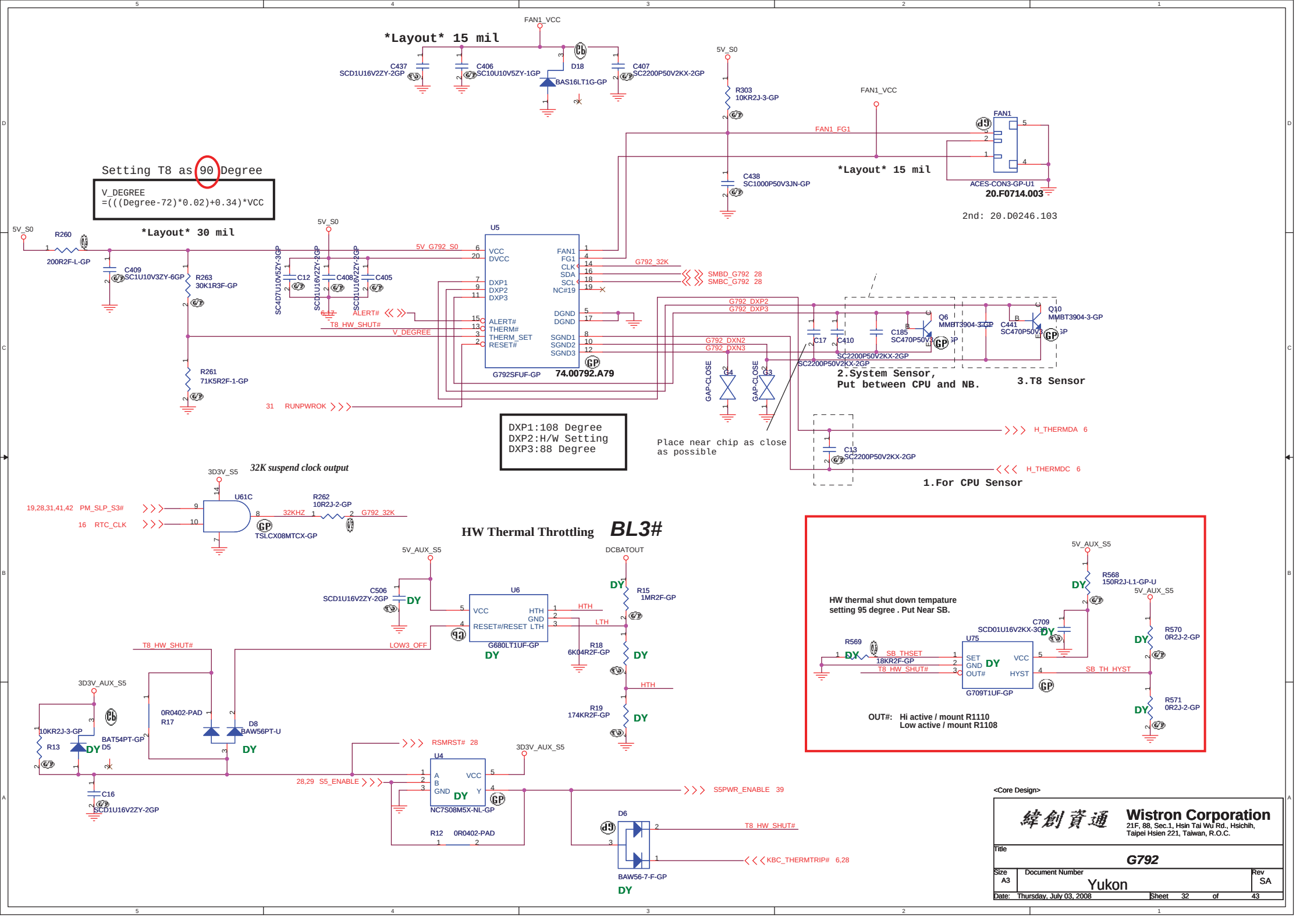
Taipei Hsien 221, Taiwan, R.O.C.

Title: POWERGOOD&ENABLES(1/2)

Size	Document Number	Rev
A3	Yukon	SA

Date: Thursday, July 03, 2008 Sheet 31 of 43



<Core Design>

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

Title: G792

Size	Document Number	Rev
A3	Yukon	SA

Date: Thursday, July 03, 2008 Sheet 32 of 43

CPU_CORE
ISL6264CRZ

VID0
VID1
VID2
VID3
VID4
VID5

VID Setting
VID0(I / 3.3V)
VID1(I / 3.3V)
VID2(I / 3.3V)
VID3(I / 3.3V)
VID4(I / 3.3V)
VID5(I / 3.3V)

Output Signal
VROK()

MAX8760_VRM

Output Power
VCC_CORE_PWR(O)

VCC_CORE_S0(Imax=35A)

VCORE_EN

Input Signal
EN (I / 3.3V)

COREFB
COREFB#

Voltage Sense
VSEN(I / Vcore)
RGND(I / Vcore)

DCBATOUT
5V_S0
3D3V_S0

Input Power
VCC(I)
VCC(I)
VCC(I)

TI TPS51120
3D3V/5V

Input Signal
51120_EN2 FOR 3.3V
51120_EN1 FOR 5.0V
VIN

Output Signal
PGOUT(OD / 5V)

Pull High (3D3V)

DCBATOUT_51120

Input Power
VIN
REG5V_IN(I / 5V)

DCBATOUT_51120

Output Power
5V(O)
3D3V(O)

5V_AUX_S5
3D3V_AUX_S5
5V_S5 (5.4A)
3D3V_S5 (4A)

2D5V_S0

3D3V_S0 → INPUT / OUT → 2D5V_S0

APL5913

1D8V_S5

3D3V_S5 → INPUT / OUT → 1D2V_S5

APL5332KAC-TRLGP

Adapter

Input Signal
(I)

Output Signal
(O)

AD_OFF
AD_IN

Input Power
VCC(I)
VCC(I)

Output Power
VCC(O)

AD_JK
5V_AUX_S5
AD+

Charger_ISL6255

CHARGE_OFF
BT_TH
BAT+SENSE
BT_SCL_5
BT_SDA_5
FLASH_GPIO1
FLASH_GPIO2
AC_IN

Input Signal
CLS (I / 3.3V)
THM (I / 3.3V)
BATT (I / 3.3V)
SCL (IO / 5V)
SDA (IO / 5V)
RESET#/PB5 (I/5V)
PB0/MOSI/AIN0
PB0/MOSI/AIN0

Output Signal
LDO (O / 5.4V)
XTAL2/PB4 (O/5V)
XTAL1/PB3 (O/5V)

AD_IN
CHARGE_LED#
BL2#

Output Power
VCC (O)
VCC (O)

DCBATOUT
BT+

Input Power
DCIN (I)

AD+

TI TPS51116
1.8V / 0.9V

PM_SLP_S5#

Input Signal
S5
S3

Output Signal
PGOOD(OD / 3.3V)

1D8V_S3_PG

Input Power
VCC(I)
VCC(I)

DCBATOUT
5V_S5

Output Power
VCC(O)
VCC(O)

1.8V_S3
0.9V_S3

ISL6268_1D2V

1D2V_S0_EN

Input Signal
SS_STBY1(I / 5V) FOR 1.2V

Output Power
1D2V_PWR

1D2V (6.5A)

5V_S5
DCBATOUT

Input Power
VCC
VIN

ISL6268_VGA_CORE

VGA_CORE_EN

Input Signal
SS_STBY1(I / 5V) FOR 1.2V

Output Power
1D2V_PWR

VGA_CORE_S0 (15A)

5V_S5
DCBATOUT

Input Power
VCC
VIN

<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: **Power Block Diagram**

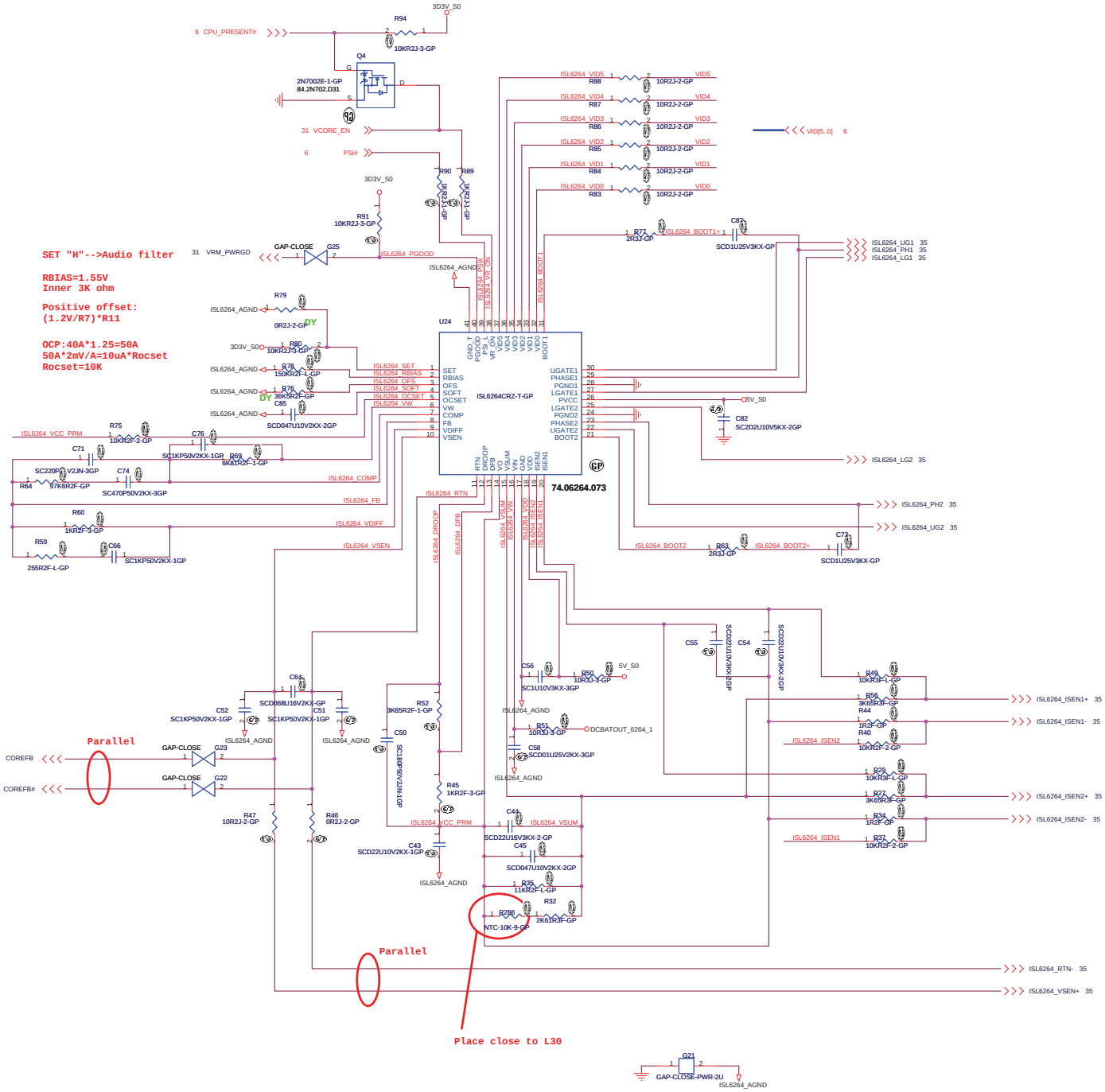
Size: A3 | Document Number: Yukon | Rev: SA

Date: Tuesday, July 01, 2008 | Sheet 33 of 43

CPU_VCORE
VID=1.20V(25W)/1.15V(35W)
Iomax=21A(25W)/35A (35W)
OCP=40A~45A

TABLE 1. VOLTAGE IDENTIFICATION CODES

VID5	VID4	VID3	VID2	VID1	VID0	DAC
0	0	0	0	0	0	1.550
0	0	0	0	0	1	1.525
0	0	0	0	1	0	1.500
0	0	0	0	1	1	1.475
0	0	0	1	0	0	1.450
0	0	0	1	0	1	1.425
0	0	0	1	1	0	1.400
0	0	0	1	1	1	1.375
0	0	1	0	0	0	1.350
0	0	1	0	0	1	1.325
0	0	1	0	1	0	1.300
0	0	1	0	1	1	1.275
0	0	1	1	0	0	1.250
0	0	1	1	0	1	1.225
0	0	1	1	1	0	1.200
0	0	1	1	1	1	1.175
0	1	0	0	0	0	1.150
0	1	0	0	0	1	1.125
0	1	0	0	1	0	1.100
0	1	0	0	1	1	1.075
0	1	0	1	0	0	1.050
0	1	0	1	0	1	1.025
0	1	0	1	1	0	1.000
0	1	0	1	1	1	0.975
0	1	1	0	0	0	0.950
0	1	1	0	0	1	0.925
0	1	1	0	1	0	0.900
0	1	1	0	1	1	0.875
0	1	1	1	0	0	0.850
0	1	1	1	0	1	0.825
0	1	1	1	1	0	0.800
0	1	1	1	1	1	0.775
1	0	0	0	0	0	0.7625
1	0	0	0	0	1	0.75
1	0	0	0	1	0	0.7375
1	0	0	0	1	1	0.725
1	0	0	1	0	0	0.7125
1	0	0	1	0	1	0.7
1	1	1	1	1	1	0.375



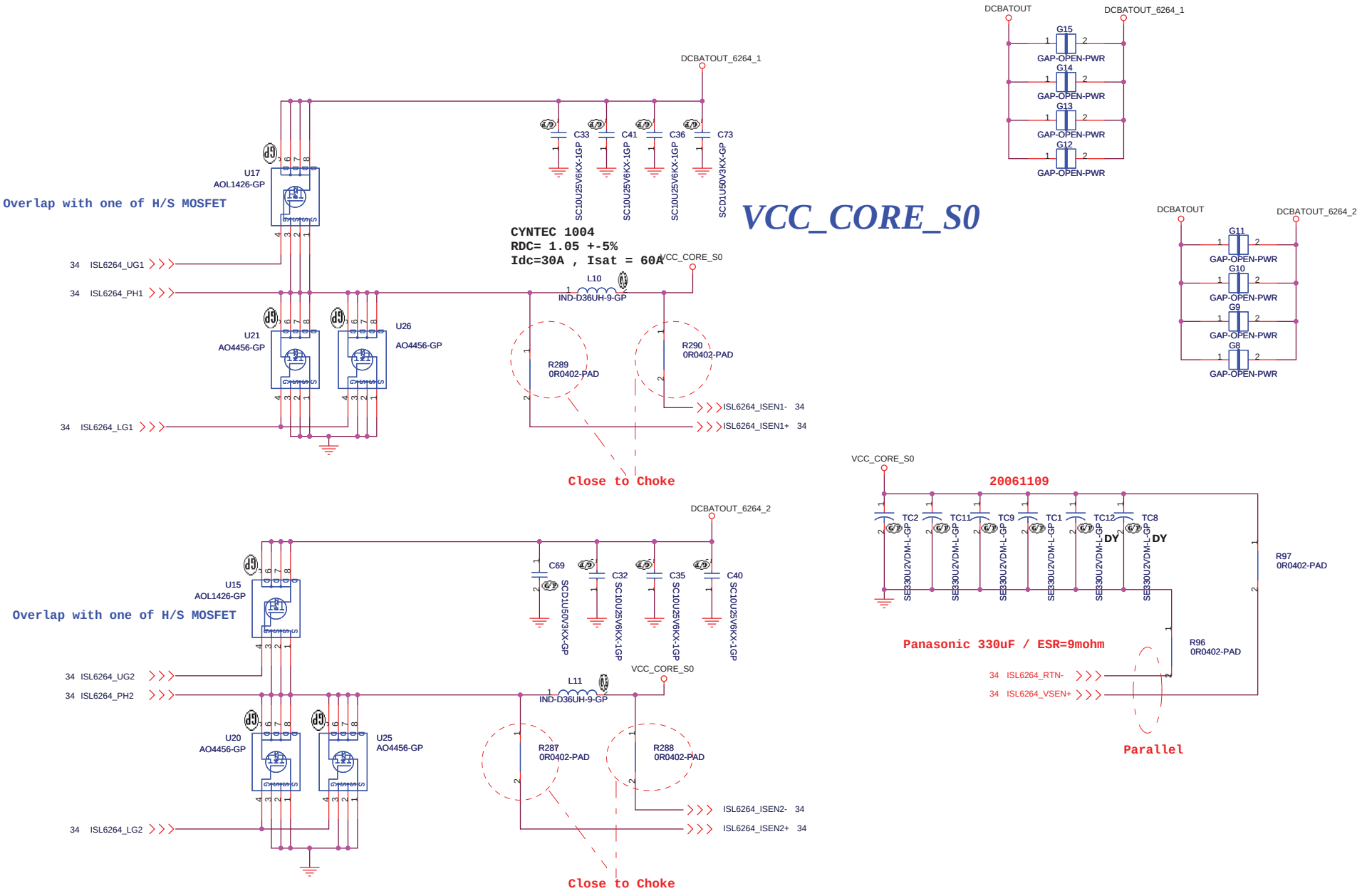
<Core Design>

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

Title: CPU Vcore Power_1

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

Date: Thursday, July 03, 2008 | Sheet 34 of 43



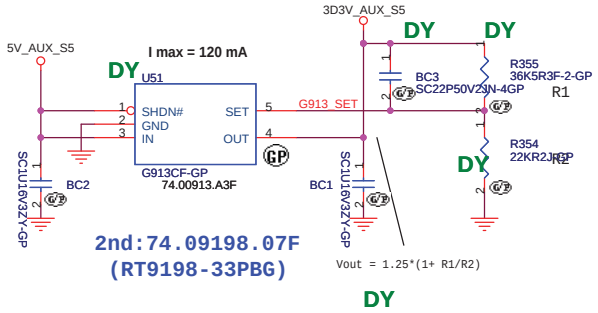
<Core Design>

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	***CPU Vcore Power_2***	
Size A3	Document Number **Yukon**	Rev SA
Date: Thursday, July 03, 2008	Sheet 35 of 43	

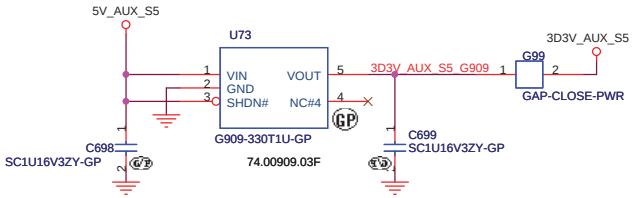
Aux Power

3D3V_AUX_S5

SB



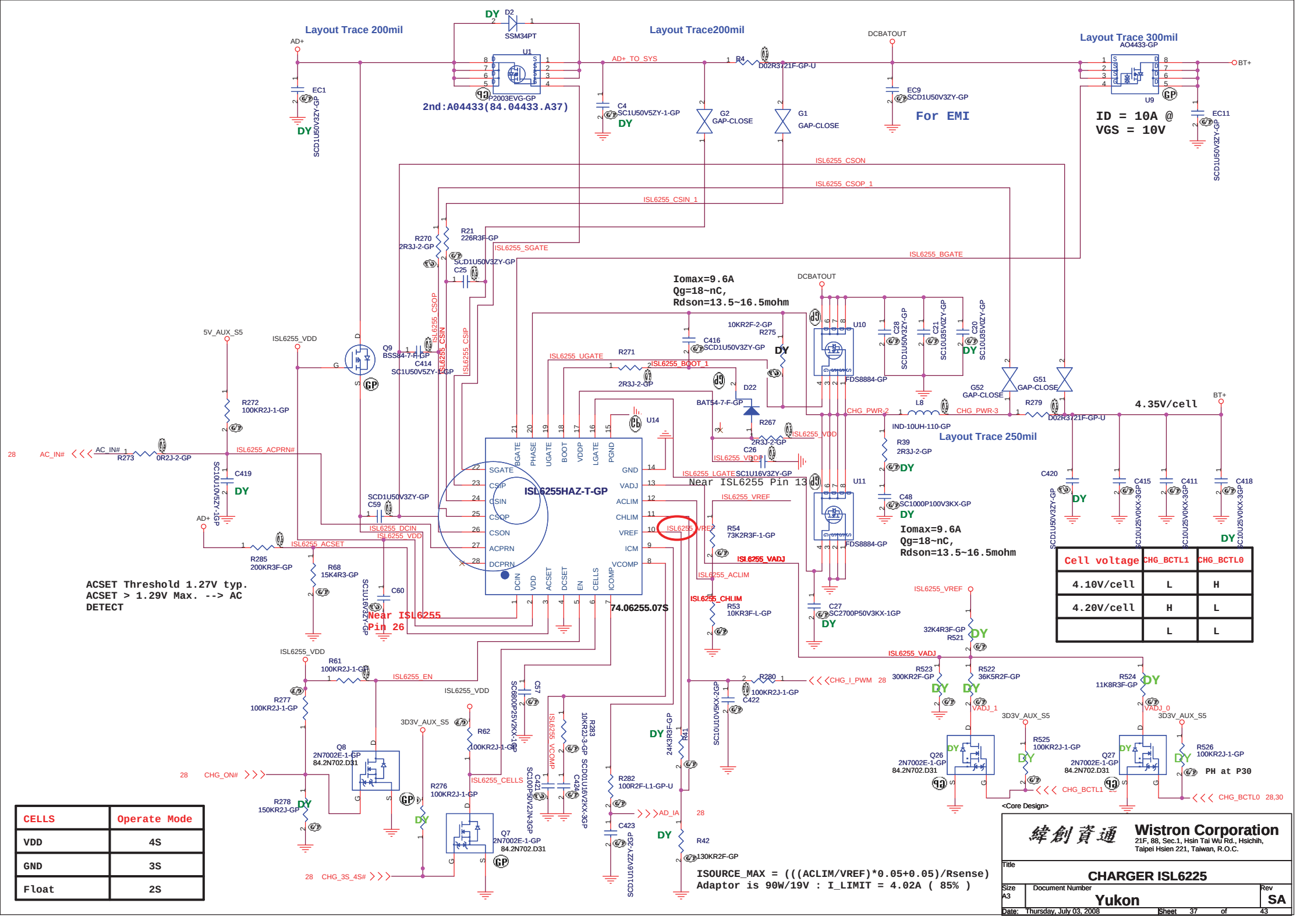
Aux Power 3D3V_AUX_S5



<Core Design>

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

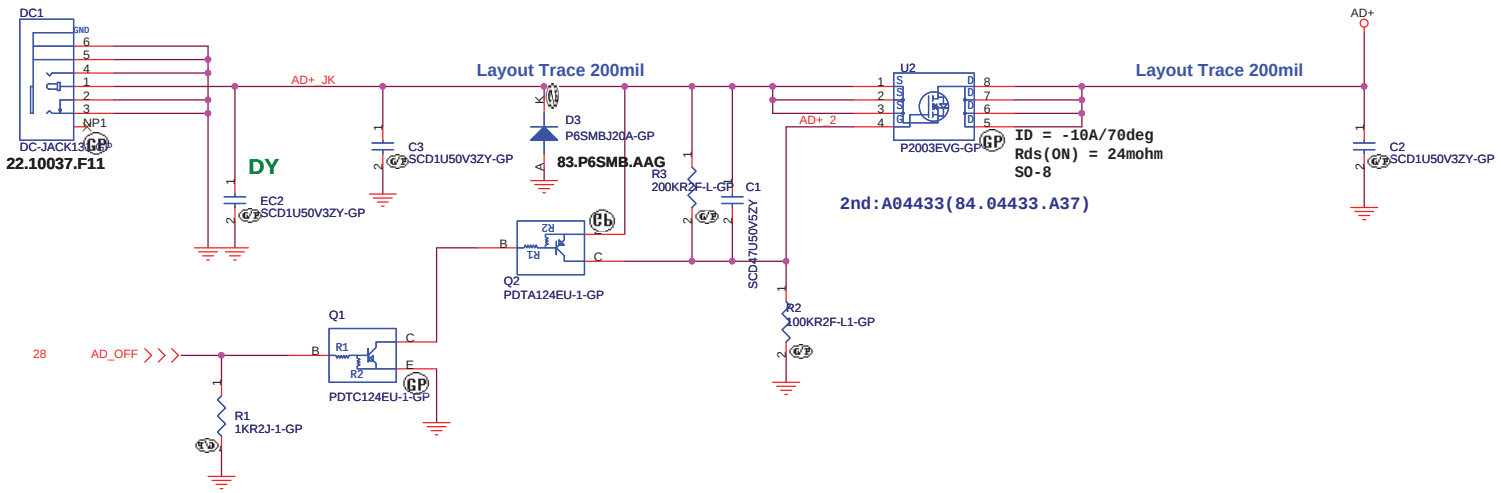
Title: 3D3V_AUX		
Size: A3	Document Number: Yukon	Rev: SA
Date: Tuesday, July 01, 2008	Sheet 36 of 43	



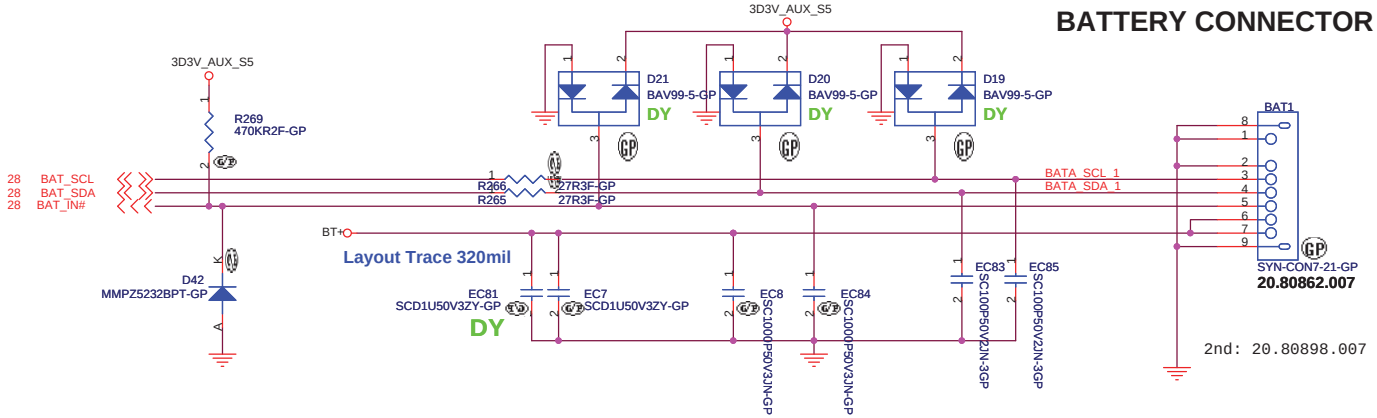
Cell voltage	CHG_BCTL1	CHG_BCTL0
4.10V/cell	L	H
4.20V/cell	H	L
	L	L

CELLS	Operate Mode
VDD	4S
GND	3S
Float	2S

Adaptor in to generate DCBATOUT



BATTERY CONNECTOR



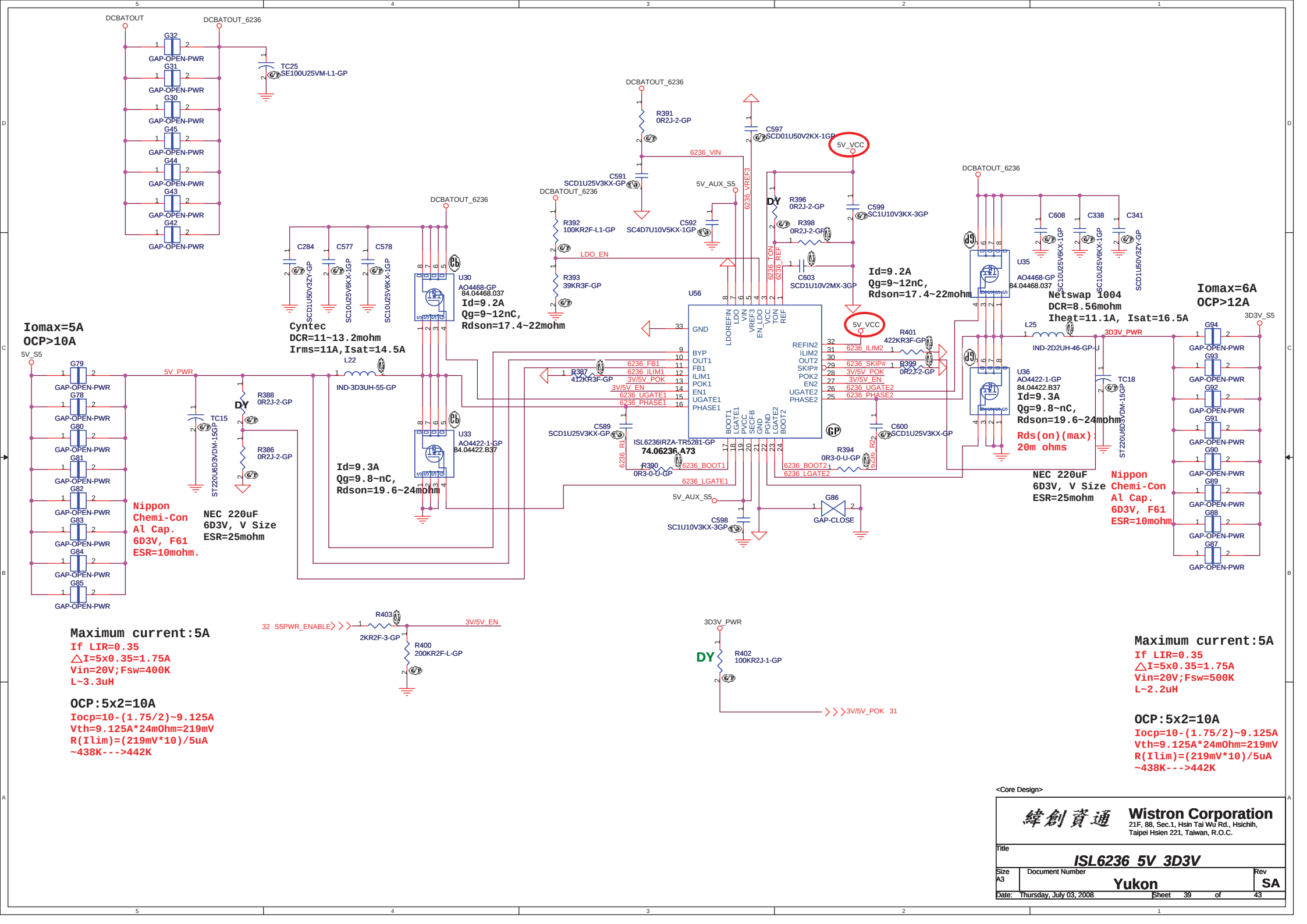
<Variant Name>

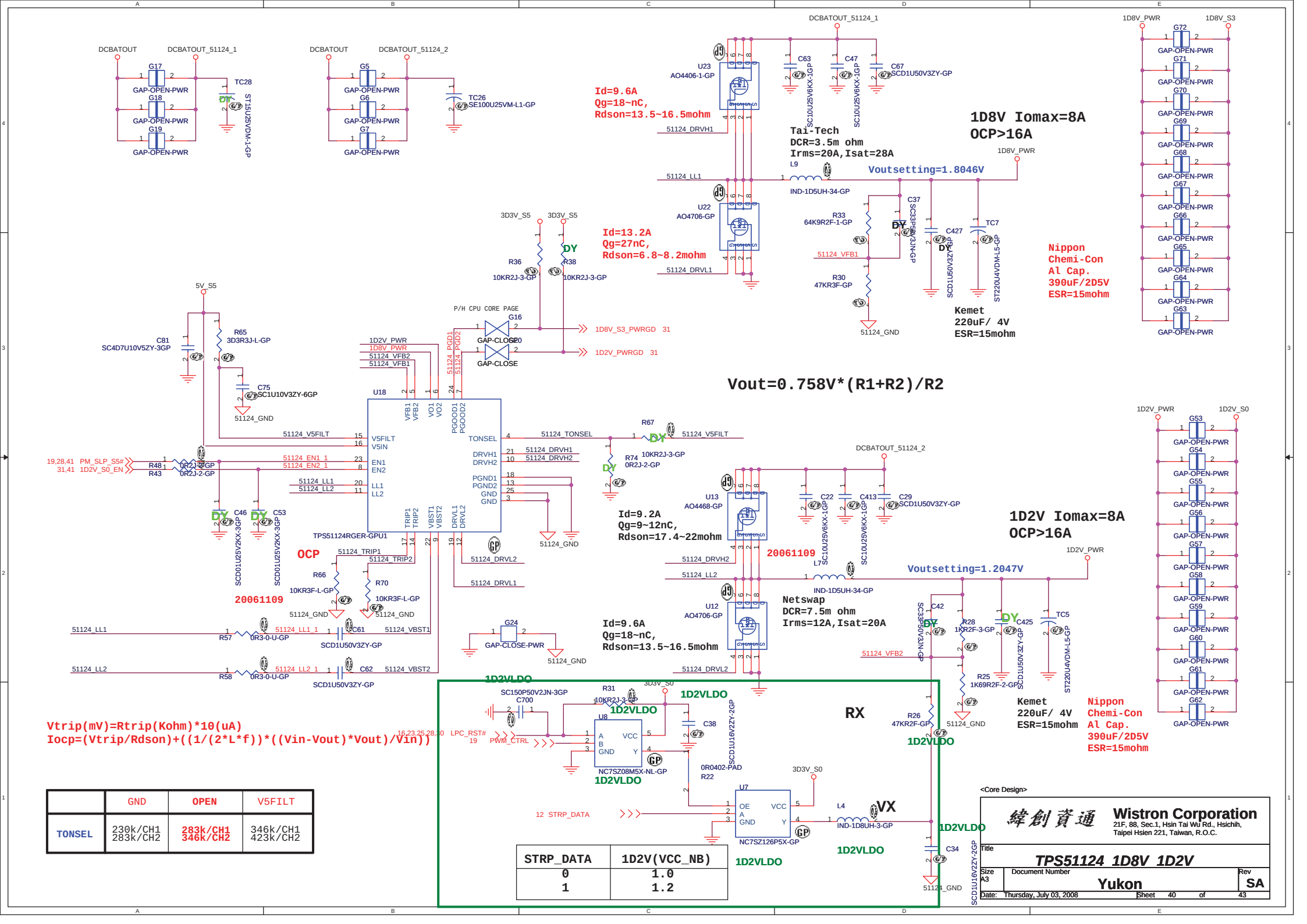
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: AD/BATT CONN

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

Date: Thursday, July 03, 2008 | Sheet 38 of 43

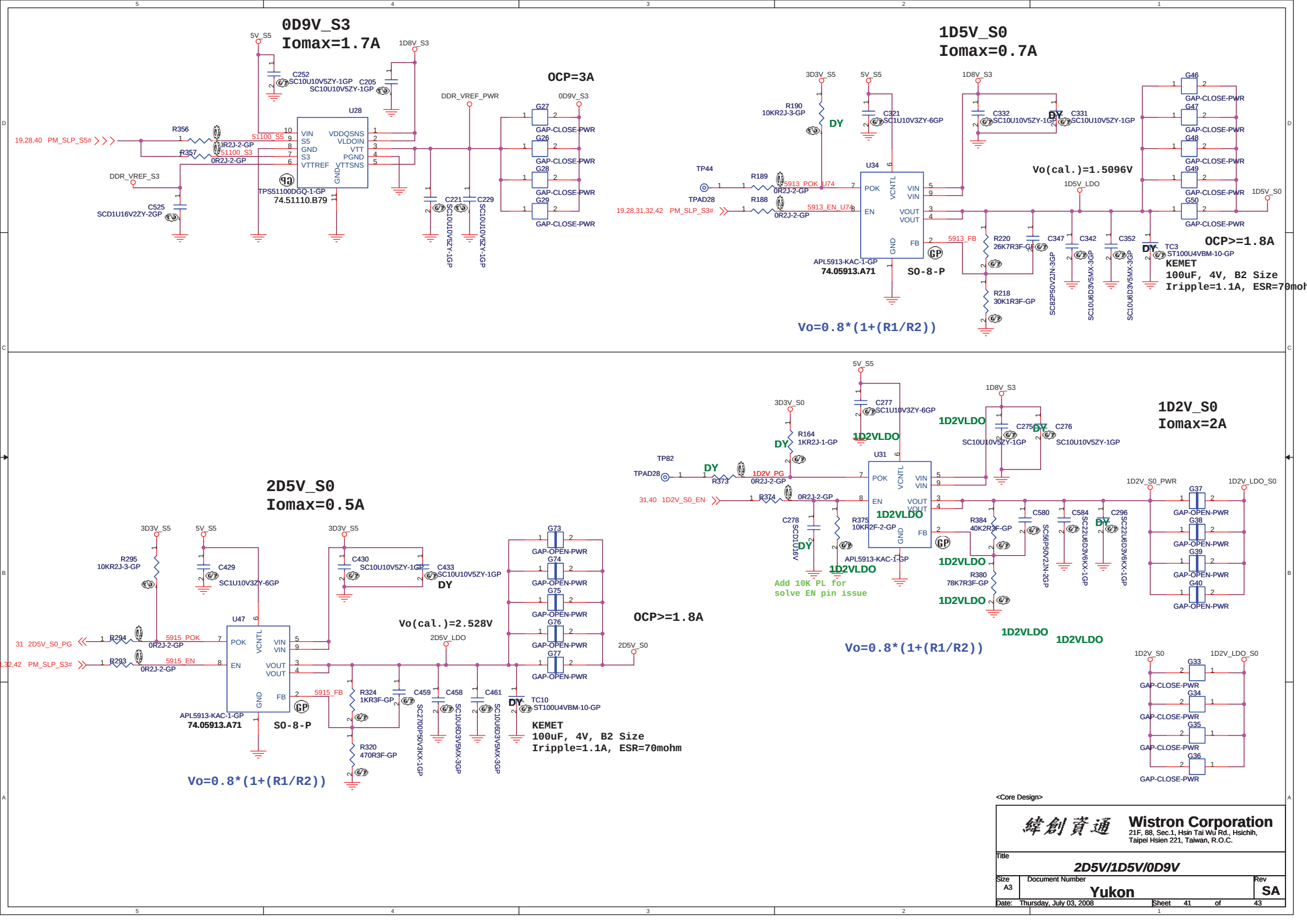

DCBATOUT
DCBATOUT_6236
G32
G31
G30
G45
G44
G43
G42
GAP-OPEN-PWR
TC25
SE100U25VM-L1-GP
R391
0R2J-2-GP
C597
SCD01U50V2KX-1GP
5V_VCC
6236_VIN
C591
SCD1U25V3KX-GP
5V_AUX_S5
6236_VREF3
R396
0R2J-2-GP
C599
SC1U10V3KX-3GP
R392
100KR2F-L1-GP
C592
SC4D7U10V5KX-1GP
R398
0R2J-2-GP
LDO_EN
6236_TON
6236_REF
C603
SCD1U10V2MX-3GP
R393
39KR3F-GP
C284
C577
C578
SCD1U50V3ZY-GP
SC10U25V6KX-1GP
U30
AO4468-GP
84.04468.037
Id=9.2A
Qg=9~12nC,
Rdson=17.4~22mohm
Cyntec
DCR=11~13.2mohm
Irms=11A,Isat=14.5A
Iomax=5A
OCP>10A
5V_S5
5V_PWR
G79
G78
G80
G81
G82
G83
G84
G85
L22
IND-3D3UH-55-GP
R388
0R2J-2-GP
R386
0R2J-2-GP
TC15
ST220U6D3VDM-15GP
U33
AO4422-1-GP
84.04422.B37
Id=9.3A
Qg=9.8~nC,
Rdson=19.6~24mohm
Nippon
Chemi-Con
Al Cap.
6D3V, F61
ESR=10mohm.
NEC 220uF
6D3V, V Size
ESR=25mohm
U56
GND
LDOREFIN
LDO
VIN
VREF3
EN_LDO
VCC
TON
REF
BYP
OUT1
FB1
ILIM1
POK1
EN1
UGATE1
PHASE1
REFIN2
ILIM2
OUT2
SKIP#
POK2
EN2
UGATE2
PHASE2
BOOT1
LGATE1
PVCC
SECFB
GND
PGND
LGATE2
BOOT2
ISL6236IRZA-TR5281-GP
74.06236.A73
6236_FB1
6236_ILIM1
3V/5V_POK
3V/5V_EN
6236_UGATE1
6236_PHASE1
6236_SKIP#
6236_UGATE2
6236_PHASE2
6236_BOOT1
6236_LGATE1
6236_BOOT2
6236_LGATE2
R387
412KR3F-GP
R399
0R2J-2-GP
R401
422KR3F-GP
C589
SCD1U25V3KX-GP
C600
SCD1U25V3KX-GP
R390
0R3-0-U-GP
R394
0R3-0-U-GP
C598
SC1U10V3KX-3GP
G86
GAP-CLOSE
Id=9.2A
Qg=9~12nC,
Rdson=17.4~22mohm
Netswap 1004
DCR=8.56mohm
Iheat=11.1A, Isat=16.5A
U35
AO4468-GP
84.04468.037
C608
C338
C341
SC10U25V6KX-1GP
SCD1U50V3ZY-GP
L25
IND-2D2UH-46-GP-U
3D3V_PWR
U36
AO4422-1-GP
84.04422.B37
Id=9.3A
Qg=9.8~nC,
Rdson=19.6~24mohm
Rds(on)(max):
20m ohms
TC18
ST220U6D3VDM-15GP
NEC 220uF
6D3V, V Size
ESR=25mohm
Nippon
Chemi-Con
Al Cap.
6D3V, F61
ESR=10mohm
Iomax=6A
OCP>12A
3D3V_S5
G94
G93
G92
G91
G90
G89
G88
G87
R403
2KR2F-3-GP
R400
200KR2F-L-GP
32 S5PWR_ENABLE
3V/5V_EN
R402
100KR2J-1-GP
3V/5V_POK 31
Maximum current:5A
If LIR=0.35
△I=5x0.35=1.75A
Vin=20V;Fsw=400K
L~3.3uH
OCP:5x2=10A
Iocp=10-(1.75/2)~9.125A
Vth=9.125A*24mOhm=219mV
R(Ilim)=(219mV*10)/5uA
~438K--->442K
Maximum current:5A
If LIR=0.35
△I=5x0.35=1.75A
Vin=20V;Fsw=500K
L~2.2uH
OCP:5x2=10A
Iocp=10-(1.75/2)~9.125A
Vth=9.125A*24mOhm=219mV
R(Ilim)=(219mV*10)/5uA
~438K--->442K
<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
ISL6236 5V 3D3V
Size A3
Document Number
Yukon
Rev
SA
Date: Thursday, July 03, 2008
Sheet 39 of 43

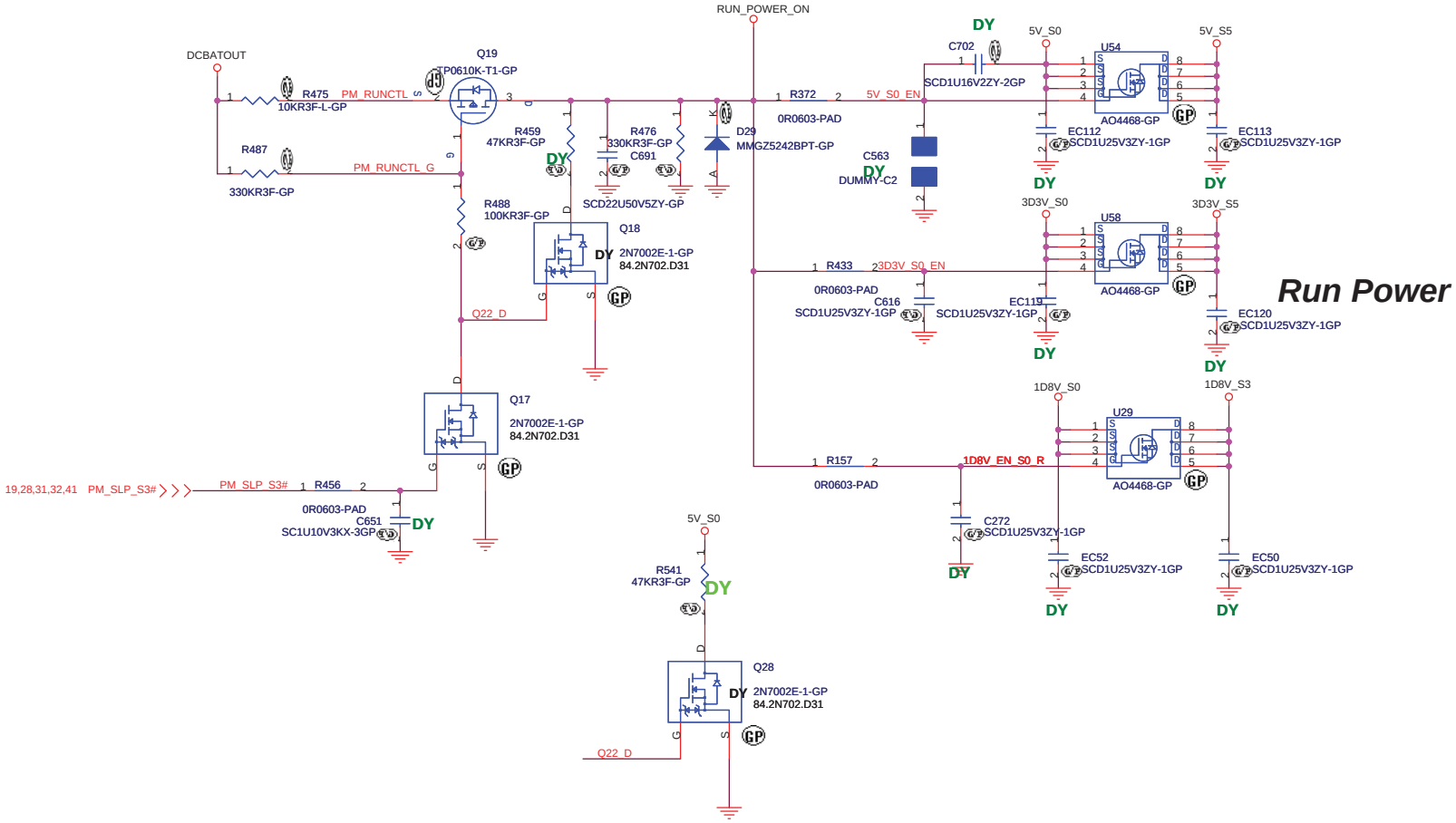


	GND	OPEN	V5FILT
TONSEL	230k/CH1 283k/CH2	283k/CH1 346k/CH2	346k/CH1 423k/CH2

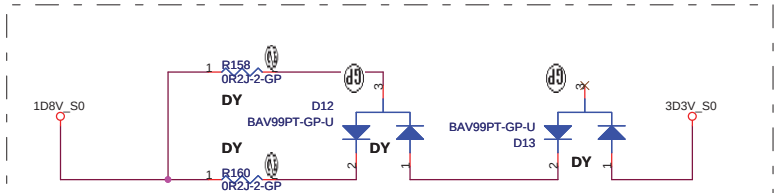
STRP_DATA	1D2V(VCC_NB)
0	1.0
1	1.2

Size	A3
Document Number	Yukon
Rev	SA
Date:	Thursday, July 03, 2008
Sheet	40 of 43


0D9V_S3
Iomax=1.7A
OCP=3A
5V_S5
1D8V_S3
C252
SC10U10V5ZY-1GP
C205
SC10U10V5ZY-1GP
U28
DDR_VREF_PWR
0D9V_S3
R356
0R2J-2-GP
R357
0R2J-2-GP
19,28,40 PM_SLP_S5#
51100_S5
51100_S3
DDR_VREF_S3
C525
SCD1U16V2ZY-2GP
TPS51100DGQ-1GP
74.51110.B79
VIN
S5
GND
S3
VTTREF
VDDQSNS
VLDOIN
VTT
PGND
VTTSNS
GND
C221
C229
SC10U10V5ZY-1GP
G27
G26
G28
G29
GAP-CLOSE-PWR
1D5V_S0
Iomax=0.7A
Vo(cal.)=1.5096V
OCP>=1.8A
3D3V_S5
5V_S5
1D8V_S3
R190
10KR2J-3-GP
DY
C321
SC1U10V3ZY-6GP
C332
SC10U10V5ZY-1GP
C331
SC10U10V5ZY-1GP
U34
TP44
TPAD28
R189
0R2J-2-GP
R188
0R2J-2-GP
19,28,31,32,42 PM_SLP_S3#
5913_POK_U74
5913_EN_U74
POK
EN
VCNTL
VIN
VOUT
GND
FB
5913_FB
APL5913-KAC-1-GP
74.05913.A71
SO-8-P
1D5V_LDO
R220
26K7R3F-GP
R218
30K1R3F-GP
C347
C342
C352
SC82P50V2JN-3GP
SC10U6D3V5MX-3GP
SC10U6D3V5MX-3GP
TC3
ST100U4VBM-10-GP
KEMET
100uF, 4V, B2 Size
Iripple=1.1A, ESR=70moh
G46
G47
G48
G49
G50
Vo=0.8*(1+(R1/R2))
2D5V_S0
Iomax=0.5A
OCP>=1.8A
3D3V_S5
5V_S5
R295
10KR2J-3-GP
C429
SC1U10V3ZY-6GP
C430
SC10U10V5ZY-1GP
C433
SC10U10V5ZY-1GP
DY
U47
31 2D5V_S0_PG
32,42 PM_SLP_S3#
R294
0R2J-2-GP
R293
0R2J-2-GP
5915_POK
5915_EN
POK
EN
VCNTL
VIN
VOUT
GND
FB
5915_FB
APL5913-KAC-1GP
74.05913.A71
SO-8-P
Vo(cal.)=2.528V
2D5V_LDO
2D5V_S0
R324
1KR3F-GP
R320
470R3F-GP
C459
C458
C461
SC2700P50V3KX-1GP
SC10U6D3V5MX-3GP
SC10U6D3V5MX-3GP
TC10
ST100U4VBM-10-GP
KEMET
100uF, 4V, B2 Size
Iripple=1.1A, ESR=70mohm
G73
G74
G75
G76
G77
GAP-OPEN-PWR
Vo=0.8*(1+(R1/R2))
1D2V_S0
Iomax=2A
5V_S5
3D3V_S0
1D8V_S3
C277
SC1U10V3ZY-6GP
R164
1KR2J-1-GP
DY
1D2VLDO
C275
SC10U10V5ZY-1GP
C276
SC10U10V5ZY-1GP
U31
TP82
TPAD28
R373
1D2V_PG
0R2J-2-GP
31,40 1D2V_S0_EN
R374
0R21-2-GP
C278
SCD1U16V
R375
10KR2F-2-GP
APL5913-KAC-1-GP
Add 10K PL for
solve EN pin issue
R384
40K2R3F-GP
R380
78K7R3F-GP
C580
C584
C296
SC56P50V2JN-2GP
SC22U6D3V6KX-1GP
SC22U6D3V6KX-1GP
1D2V_S0_PWR
1D2V_LDO_S0
G37
G38
G39
G40
G33
G34
G35
G36
GAP-CLOSE-PWR
GAP-OPEN-PWR
Vo=0.8*(1+(R1/R2))
<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
2D5V/1D5V/0D9V
Size
A3
Document Number
Yukon
Rev
SA
Date: Thursday, July 03, 2008
Sheet 41 of 43



Run Power



Add as ATI suggestion

Power On Logic

<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: RUB POWER		
Size: A3	Document Number: Yukon	Rev: SA
Date: Thursday, July 03, 2008	Sheet 42 of 43	

SA

5V_S0

U3C
TSAHCT125PW-GP

DUMMY in SA

3D3V_S5

U60C
U60D
U60E
U60F
TSLCX14MTCX-1-GP

DY

34.42Y01.001
34.42Y01.001
34.4G502.001

CPU
Near H8
K1 DY
K2 DY
SPRING-5-GP
34.41Y01.001
34.41Y01.001
34.42Y01.001
34.42Y01.001

CPU
PCMCIA
Near H8
Near H15
Near CCD
K4 DY
K5 DY
K10 DY
K6 DY
K9 DY
K8 DY
K7
K3 DY
SPRING-23-GP
SPRING-7
34.39S07.001
34.49U26.001

K11
K12
SPRING-23-GP
34.39S07.001
34.39S07.001

H1 HOLE
H2 HOLE
H3 HOLE
H4 HOLE
H5 HOLE
H6 HOLE
H7 HOLE
H10 HOLE
H11 HOLE
H12 HOLE
H13 HOLE
H14 HOLE
H15 HOLE
H16 HOLE
H18 HOLE
H17 HOLE
H19 HOLE
H20 HOLE
H23 HOLE
H24 HOLE

GP8 GNDPAD
GP7 GNDPAD
GP5 GNDPAD
GP1 GNDPAD
GP2 GNDPAD
GP3 GNDPAD
GP4 GNDPAD
GP6 GNDPAD
GP10 GNDPAD

BOT(MDC)
34.42Y01.011

BOT(CPU)
H20 34.42Y01.011

BOT(MINI CARD)
34.4G502.001

34.49U26.001
K13 SPRING-7
K16 SPRING-7
K17 SPRING-7
K18 SPRING-7
K19 SPRING-7
K20 SPRING-7
K21 SPRING-7
K22 SPRING-7

34.39S07.001
K23 SPRING-23-GP
K24 SPRING-23-GP
K25 SPRING-23-GP

DCBATOUT
EC3 EC4 EC82 EC88 EC92 EC21 EC99 EC101 EC108 EC86 EC10 EC5 EC80
SCD1U25V2ZY-1GP

VCC_CORE_S0
EC94 EC15 EC97 EC47 EC104
SCD1U16V2ZY-6GP

1D8V_S0
EC111 EC98 EC46 EC53 EC54 EC55
SCD1U16V2ZY-6GP

3D3V_S0
EC87 EC91 EC90 EC100 EC76 EC6 EC121 EC59 EC71 EC57 EC68 EC109
DY
SCD1U16V2ZY-6GP

1D8V_S3
EC93 EC18 EC66 EC49 EC48 EC22
DY
SCD1U16V2ZY-6GP

5V_USB1_S5
EC102 EC56 EC106 EC74 EC123 EC69 EC75
DY
SCD1U16V2ZY-6GP

3D3V_AUX_S5
EC161
SCD1U16V2ZY-6GP

5V_S0
EC14 EC27 EC103 EC110 EC122 EC70 EC67
DY
SCD1U16V2ZY-6GP

1D2V_S0
EC89 EC116 EC95 EC96 EC105 EC107 EC58
DY
SCD1U16V2ZY-6GP

<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: EMI/Spring/Boss

Size	Document Number	Rev
	Yukon	SA

Date: Thursday, July 03, 2008 Sheet 43 of 43