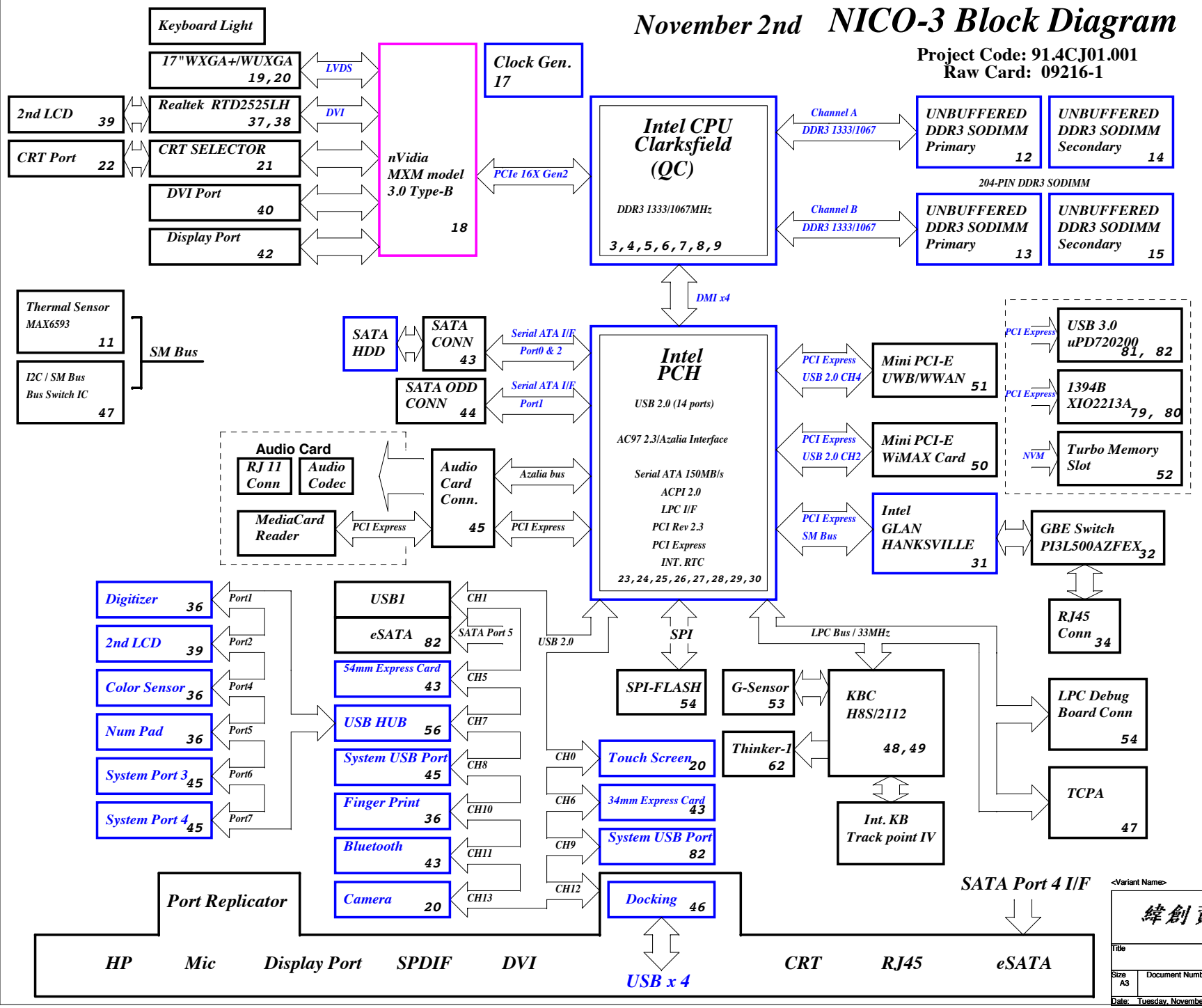
November 2nd NICO-3 Block Diagram

Project Code: 91.4CJ01.001
Raw Card: 09216-1



PCB Layer Stackup

L1:TOP
L2:GND
L3:Signal 1
L4:GND
L5: Signal 2
L6:Signal 3
L7:VCC
L8:Signal4
L9:GND
L10:BOTTOM

Battery Charger/Selector

BQ24741 58

INPUTS	OUTPUTS
DOCK_PWR20_F	M-BAT-PWR

System DC/DC

TPS51222 64

VINT20	VCC5M VCC3M

CPU DC/DC

ADP3212 65

VINT20	VCCCPUCORE

VCC1R8B

BD3551 67

VCC3M	VCC1R8B

VCC1R05LAN

VT356 66

VCC5M_OUT	VCC1R05LAN

VCC1R5A

VT357 69

VCC5M_OUT	VCC1R5A

VCC0R75B

MAX1510 70

VCC5M_OUT	VCC0R75B

VCC1R1B_VTT

VT358 71

VCC5M_OUT	VCC1R1B_VTT

<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
A3	N-Note 3.0	SC

Date: Tuesday, November 03, 2009 Sheet 1 of 82

RESISTOR

Symbol name	Value	Tolerance (J: 5%, F: 1%, D: 0.5%, B: 0.1 %)	Rating 0402=> 1/16W, 25V 0603 => 1/16W, 75V 0805 => 1/10W, 100V	Size 2=>0402, 3=>0603, 5=>0805, 6=>1206, 0=>1210
10KR3	10K Ohm	If no letter, it means J: 5%	1/16W, 75V	0603
33D3R5	33.3 Ohm	If no letter, it means J: 5%	1/10W, 100V	0805
1KR3F	1K Ohm	F: 1%	1/16W, 75V	0603

The naming rule is value + R + size + tolerance
For the value, it can be read by the number before R. (R means resistor)
For the tolerance, it can be read from the last letter.
For the rating, we don't show on the symbol name.
For the size, R2=>0402, R3=>0603, R5=>0805,....

CAPACITOR

Symbol name	Value	Tolerance (M: +/-20, K: +/-10, Z: +80/-20)	Rating	Size 2=>0402, 3=>0603, 5=>0805, 6=>1206, 0=>1210
SCD1U10V2MX-1	0.1uF	M/X5R	10V	0402
SC10U6D3V5MX	10uF	M/X5R	6.3V	0805
SC2D2U16V5ZY	2.2uF	Z/Y5V	16V	0805

The naming rule is
Capacitor type + value + rating + size + tolerance + material
SCD1U10V2MX-1
SC=> SMT Ceremic, TC=> POS cap or SP cap
D1U => 0.1uF
10V => the voltage rating is 10V
2=> 0402, 3=>0603, 5=>0805
M=>tolerance M, K, Z
X=> X7R/X5R, Y=> Y5V
-1 => symbol version, nonsense to EE characteristic

PLANAR_ID[3..0]

ICH9-M GPIOn	39	38	37	36	Planar ID Version	Planar PCB Version
PLANAR_IDn	3	2	1	0		
	0	0	0	0	Nico-3 Pre-DV	SA
	0	0	0	1	Nico-3 SDV	SB
	0	0	1	0	Nico-3 SIV	SC
	0	0	1	1	Nico-3 SIT	SD
	0	1	0	0	Nico-3 SVT	-1
	0	1	0	1		
	0	1	1	0		
	0	1	1	1		

EC HISTORY

Stage	Date	EC No.	Page	Note

PCI TABLE

DEVICE	IDSEL	IRQ (Default)	REQ# / GNT#
MINIPCI SLOT	AD18	F, G	REQ# 3/ GNT#3
CARDBUS R5C811	AD16	SERIRQ	REQ#0 / GNT#0
USB UHCI	AD29	A, C, D	
USB 2.0 EHCI	AD29	H	
DMI-to-PCI/ AC97 Modem/ AC97 Audio	AD30	B B	
LPC Bridge IDE SATA SMBus	AD31	C C B	
PCI Express	AD28	A, B, C, D	

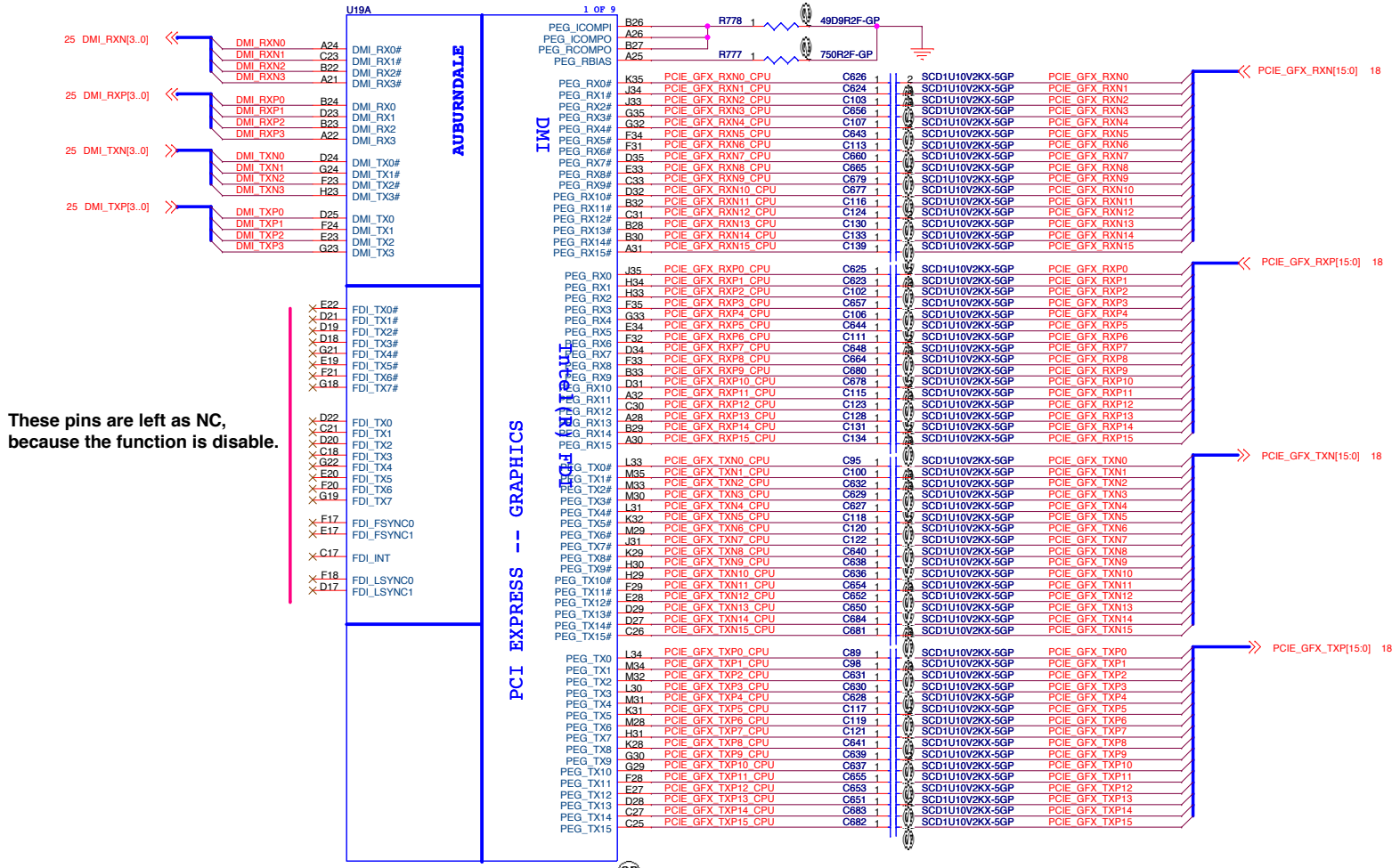
<Variant Name>

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: A3 | Document Number: **N-Note 3.0** | Rev: SC

Date: Monday, November 02, 2009 | Sheet 2 of 82



<Variant Name>

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

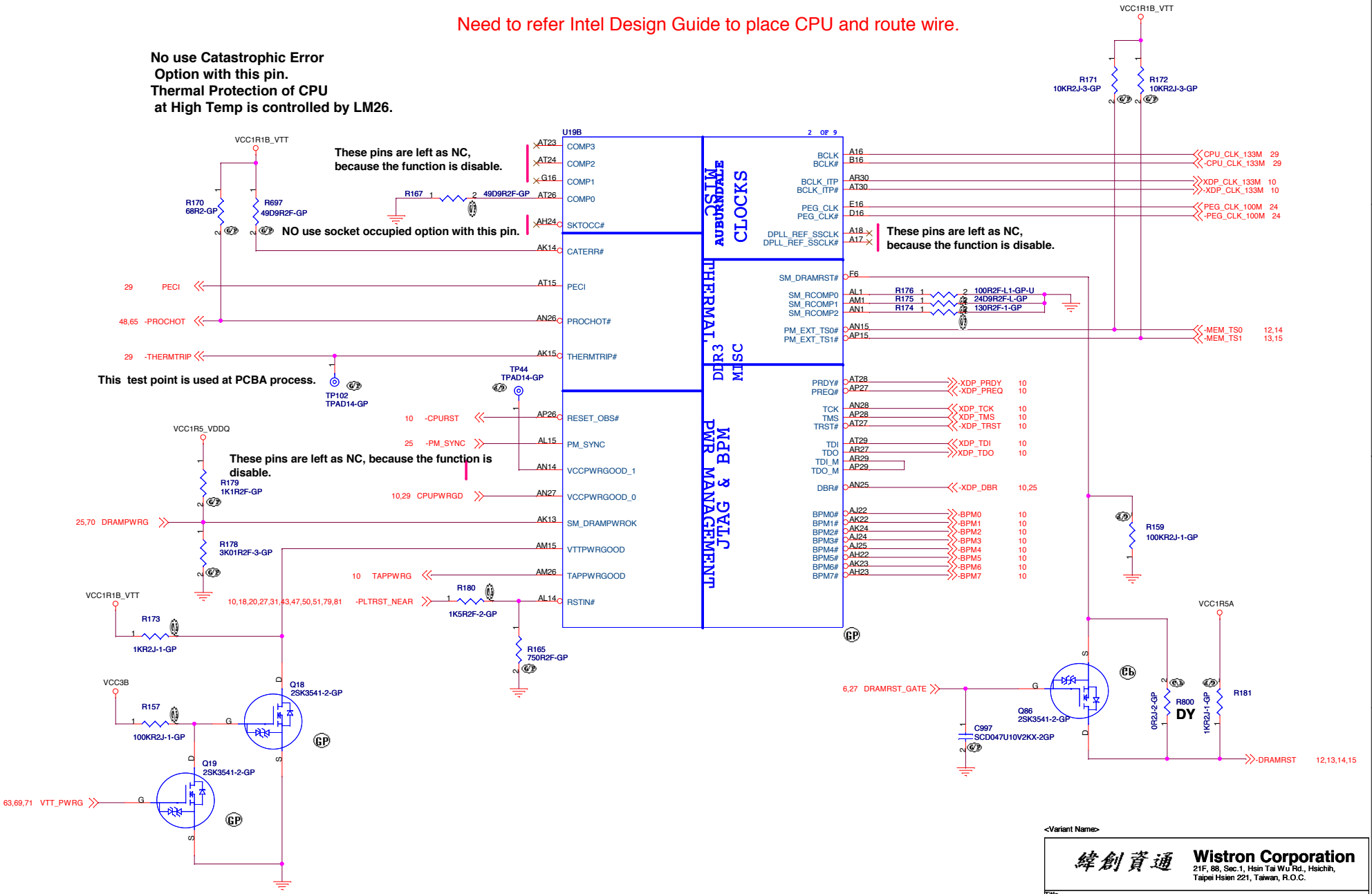
Title: ClarskField CPU(1/7):DMI/PEG/FDI

Size	Document Number	Rev
A3	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 3 of 82

Need to refer Intel Design Guide to place CPU and route wire.

No use Catastrophic Error Option with this pin.
Thermal Protection of CPU at High Temp is controlled by LM26.



<Variant Name>

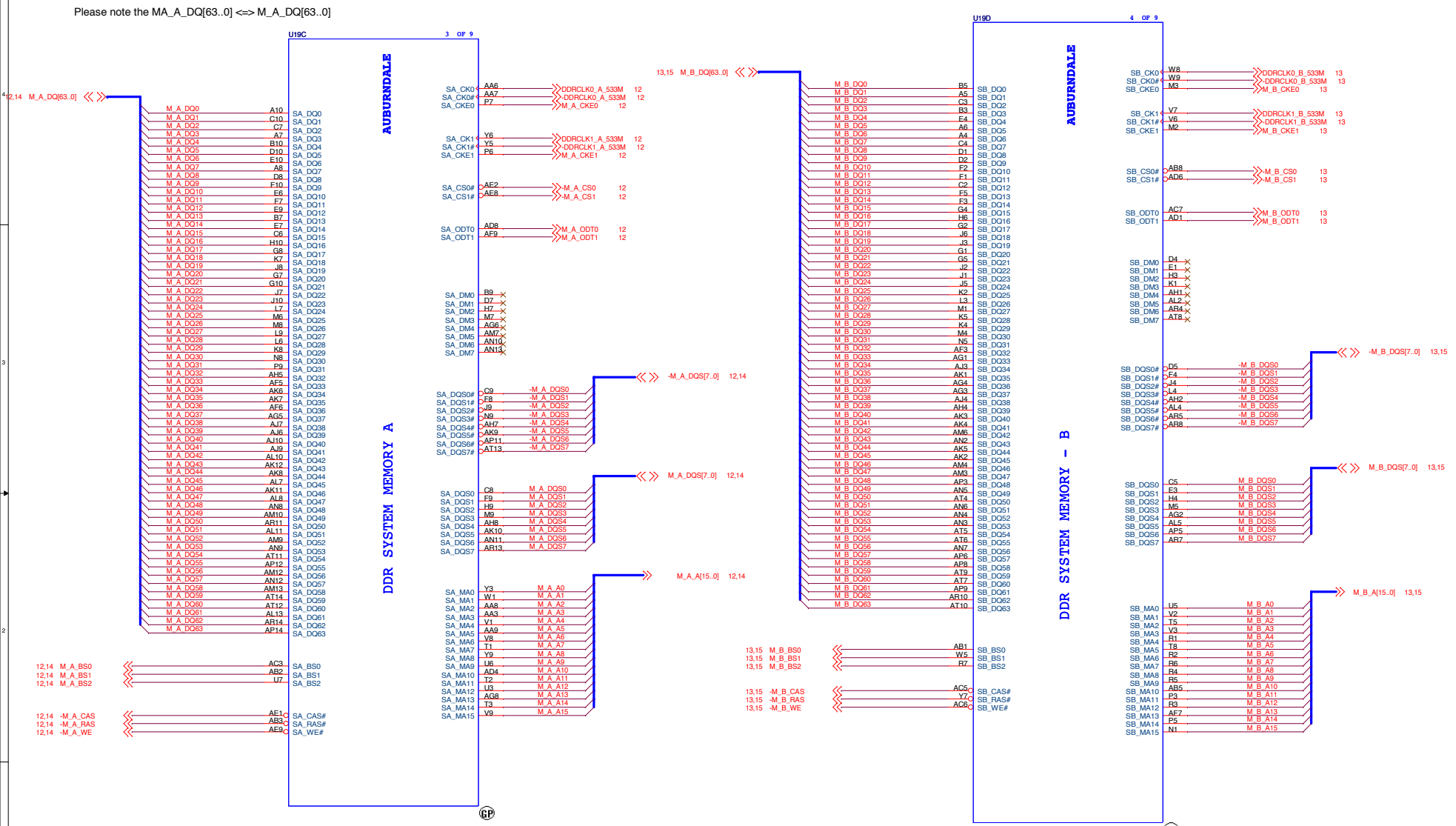
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: ClarksField CPU (2/7):CLK/MISC/JTAG

Size	Document Number	Rev
A3	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 4 of 82

Please note the MA_A_DQ[63..0] <=> M_A_DQ[63..0]



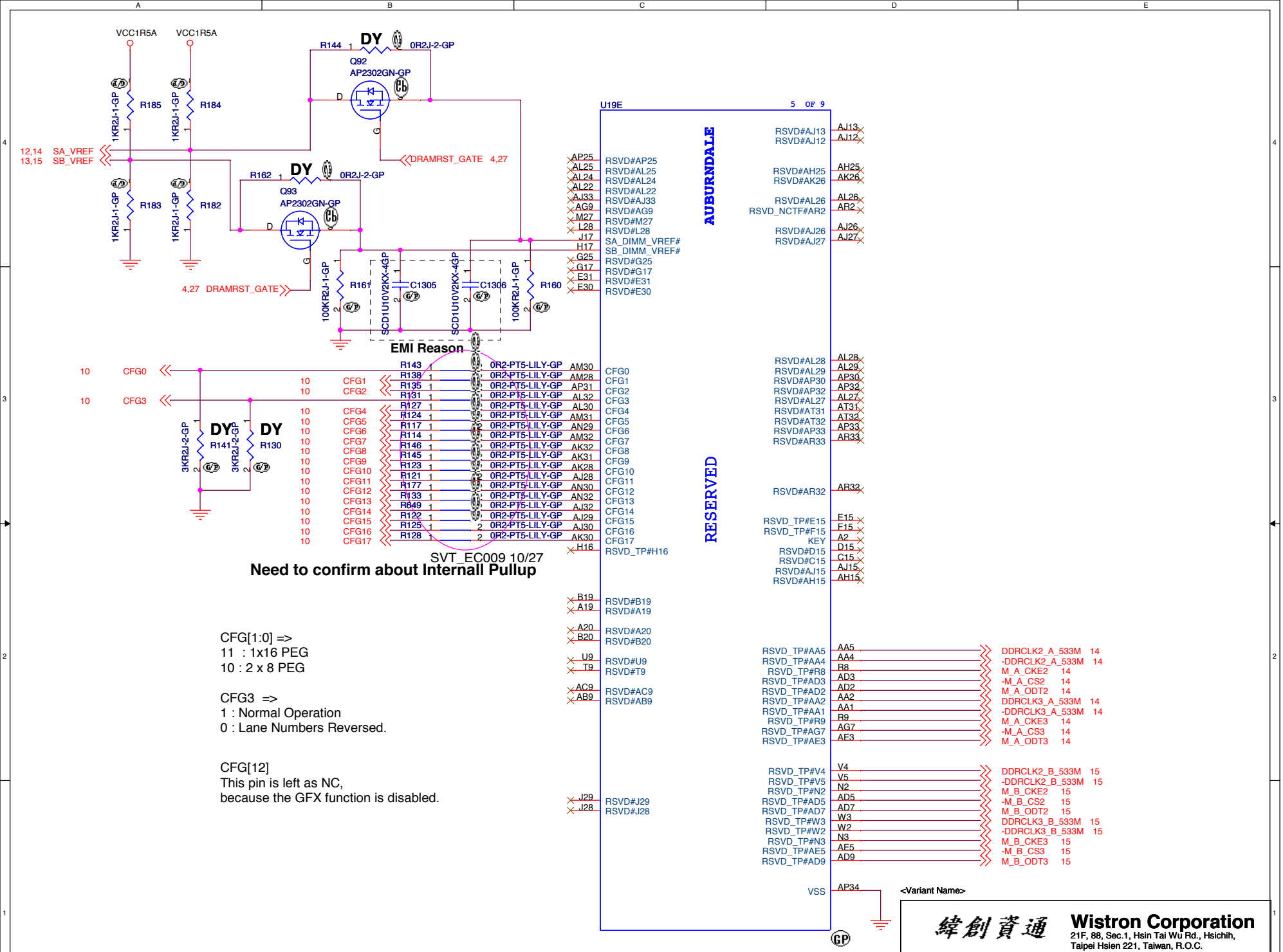
<Variant Name>

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

Title
ClarksField CPU(3/7):DDR3 CH-A/CH-B

Size	Document Number	Rev
Custom	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 5 of 82



CFG[1:0] =>
11 : 1x16 PEG
10 : 2 x 8 PEG

CFG3 =>
1 : Normal Operation
0 : Lane Numbers Reversed.

CFG[12]
This pin is left as NC,
because the GFX function is disabled.

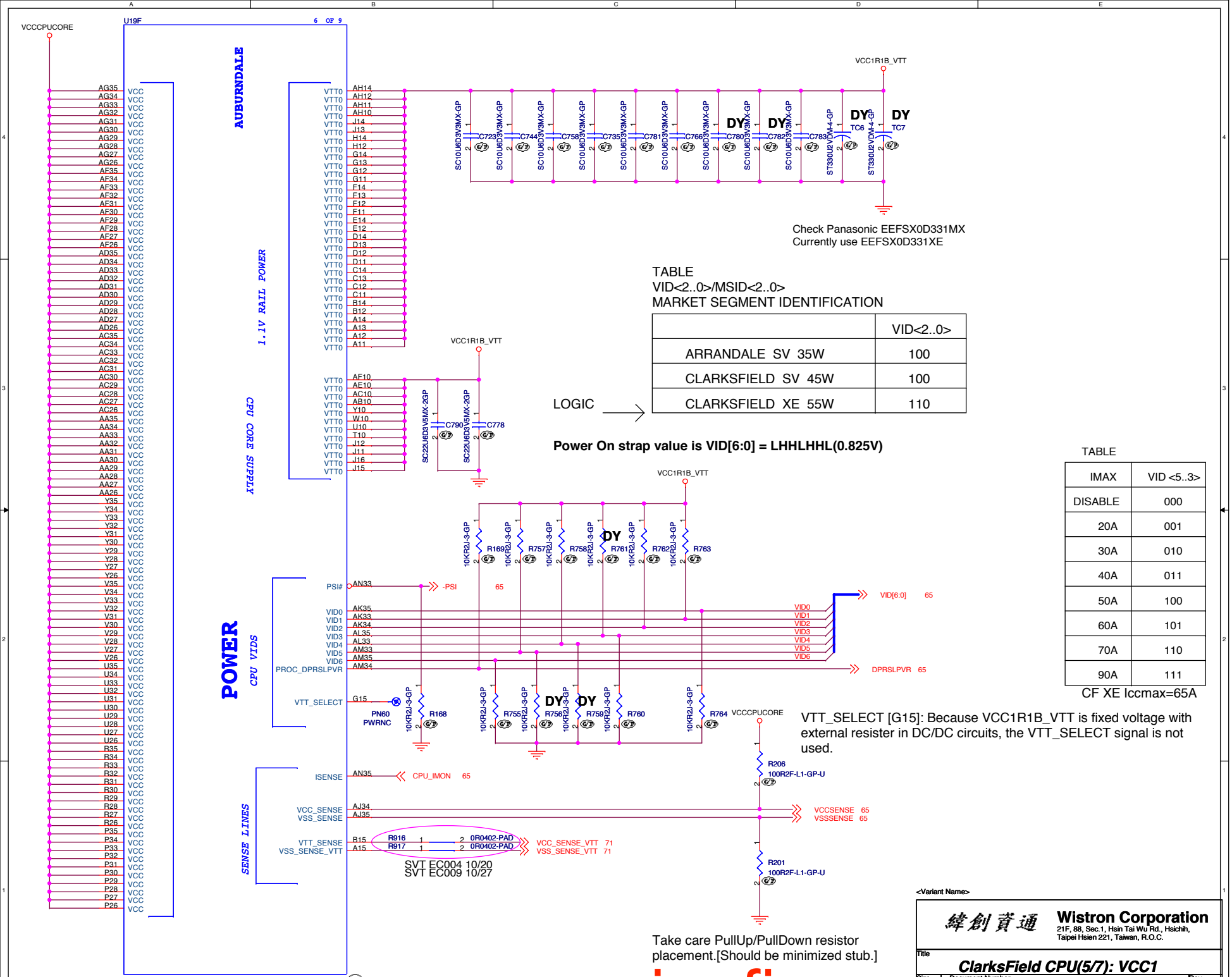
<Variant Name>

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

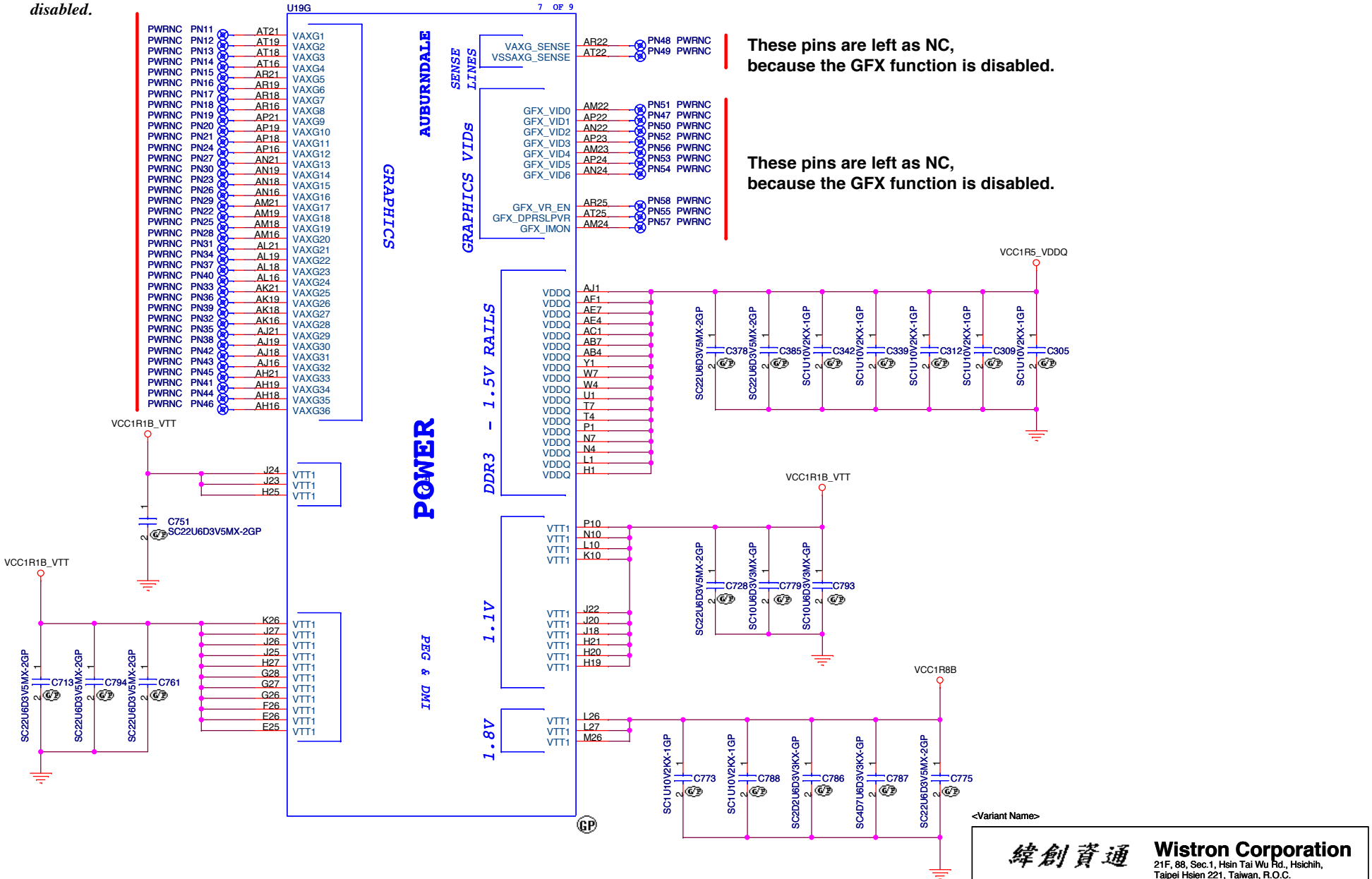
Title: ClarksField CPU(4/7): CFG/RSVD

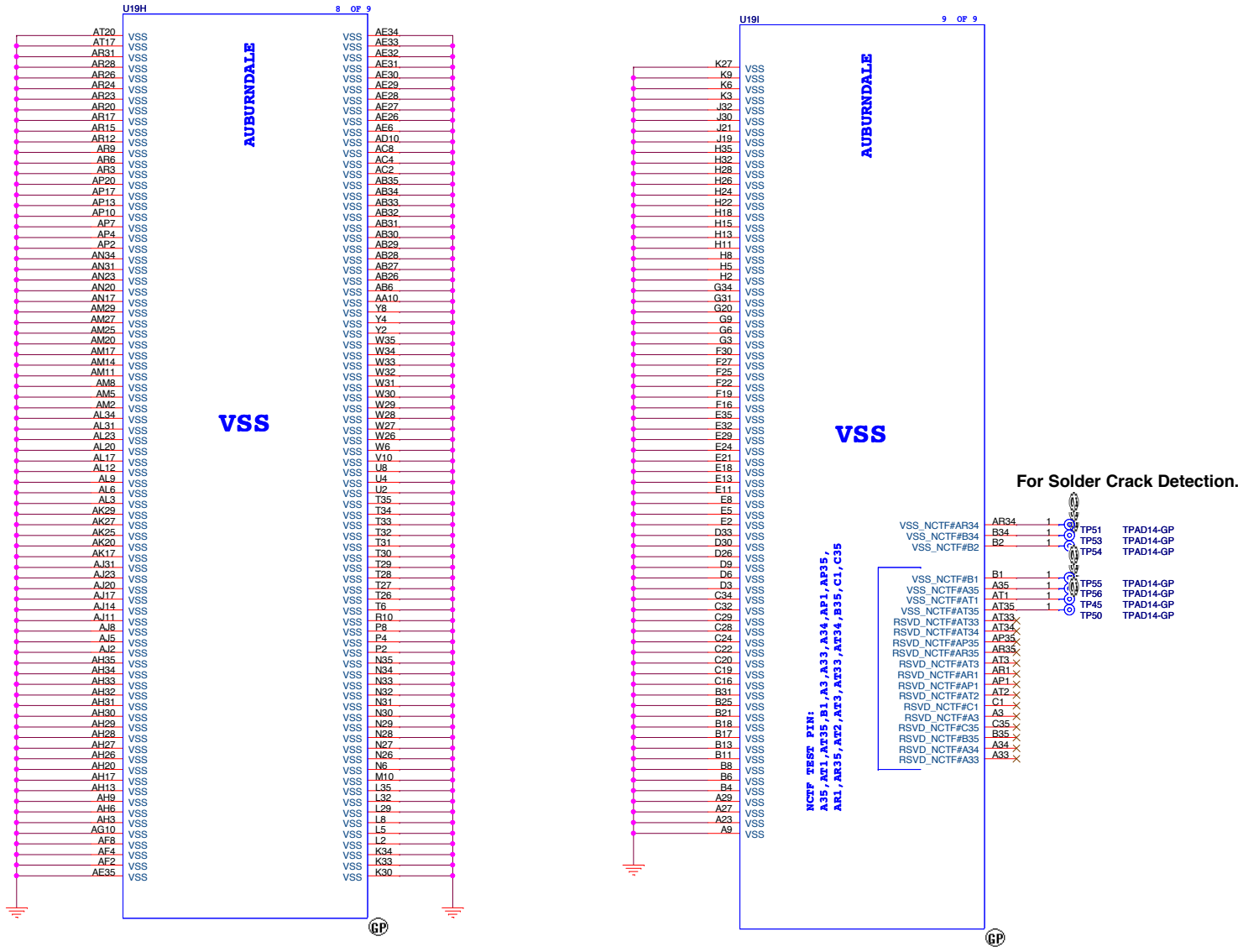
Size: Custom | Document Number: N-Note 3.0 | Rev: SC

Date: Monday, November 02, 2009 | Sheet 6 of 82


VCCCPUCORE
U19F
6 OF 9
AUBURNDALE
1.1V RAIL POWER
CPU CORE SUPPLY
POWER
CPU VIDS
SENSE LINES
VCC1R1B_VTT
Check Panasonic EEFSX0D331MX
Currently use EEFSX0D331XE
TABLE
VID<2..0>/MSID<2..0>
MARKET SEGMENT IDENTIFICATION
VID<2..0>
ARRANDALE SV 35W 100
CLARKSFIELD SV 45W 100
CLARKSFIELD XE 55W 110
LOGIC
Power On strap value is VID[6:0] = LHHLHHL(0.825V)
TABLE
IMAX VID <5..3>
DISABLE 000
20A 001
30A 010
40A 011
50A 100
60A 101
70A 110
90A 111
CF XE Iccmax=65A
VTT_SELECT [G15]: Because VCC1R1B_VTT is fixed voltage with external resister in DC/DC circuits, the VTT_SELECT signal is not used.
SVT EC004 10/20
SVT EC009 10/27
Take care PullUp/PullDown resistor placement.[Should be minimized stub.]
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
ClarksField CPU(5/7): VCC1
N-Note 3.0
Monday, November 02, 2009
www.vinafix.vn

These pins should be left as NC, because the GFX function is disabled.





For Solder Crack Detection.

<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	***ClarksField CPU(7/7): GND***	
Size: A3	Document Number: **N-Note 3.0**	Rev: SC
Date: Monday, November 02, 2009	Sheet 9 of 82	

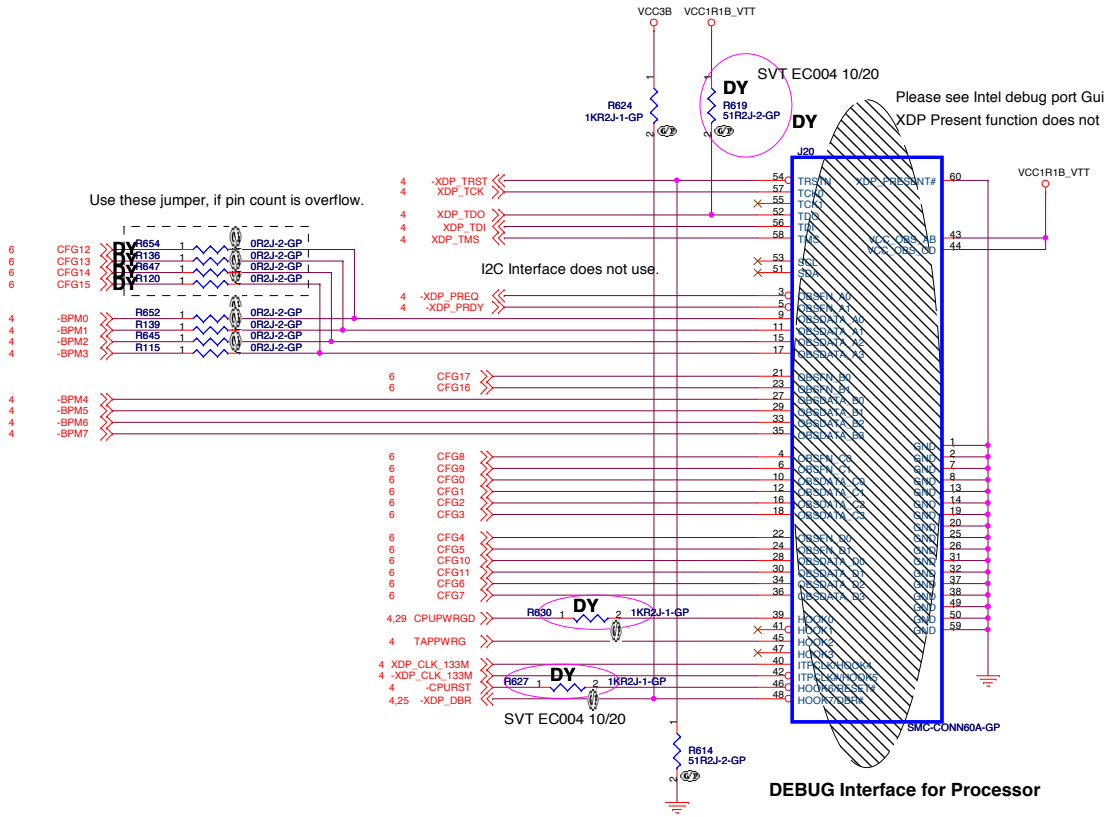
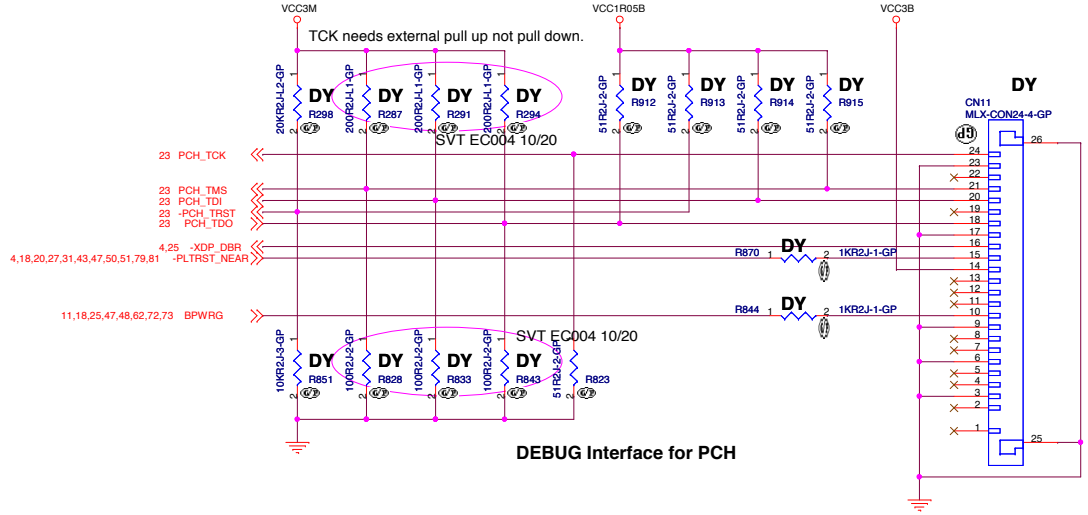


Table of Debug Interface for Processor

SIGNAL	REF DES	ENABLE	DISABLE
TDO	R619	ASM	NO_ASM
TRST#	R614	ASM	NO_ASM
DBRST#	R624	ASM	NO_ASM
CPURST#	R627	ASM	NO_ASM
PWRGD	R630	ASM	NO_ASM
	J20	ASM	NO_ASM

LOGIC



Resistor ASM Options

SVT EC006

PCH Pin	Ref Des	Enable S0/Sx	Enable S0 only	Disable
TDO	R294	200-Ohms	No ASM	No ASM
	R843	100-Ohms	No ASM	No ASM
	R912	No ASM	51-Ohms	No ASM
TMS	R287	200-Ohms	No ASM	No ASM
	R828	100-Ohms	No ASM	No ASM
	R915	No ASM	51-Ohms	No ASM
TDI	R291	200-Ohms	No ASM	No ASM
	R833	100-Ohms	No ASM	No ASM
	R914	No ASM	51-Ohms	No ASM
TCK	R823	51-Ohms	51-Ohms	51-Ohms
TRST#	R298	No ASM	No ASM	No ASM
	R851	No ASM	No ASM	No ASM
	R913	No ASM	No ASM	No ASM
PLTRST#	R870	ASM	ASM	No ASM
BPWRG	R844	ASM	ASM	No ASM
	CN11	ASM	ASM	No ASM

LOGIC

<Variant Name>

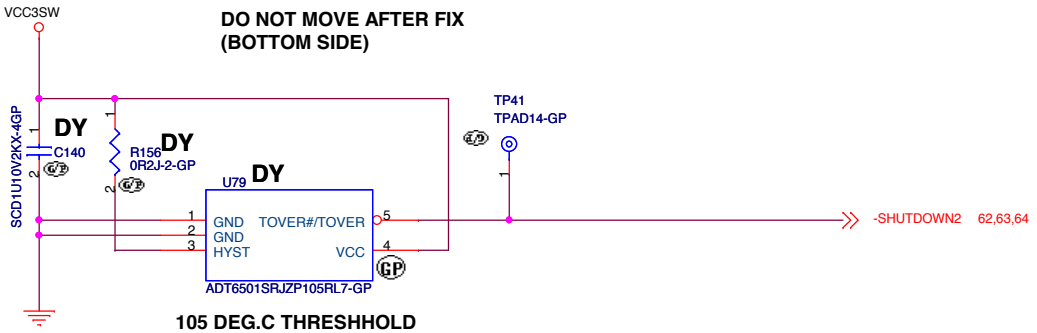
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: XDP CONNECTOR

Size: Custom | Document Number: N-Note 3.0 | Rev: SC

Date: Monday, November 02, 2009 | Sheet 10 of 82

Thermal Sensor for CPU



[Source Candidate]

		U79	R156
1	ADI	ADT6501SRJZP105RL7	ASM
2	MAXIM	MAX6501UKP105+1	ASM
3	MAXIM	MAX6519	NO_ASM
4	ROHM	BDE1055G	NO_ASM

THESE CAPS MUST BE PLACED AS CLOSE AS POSSIBLE TO MAX6593

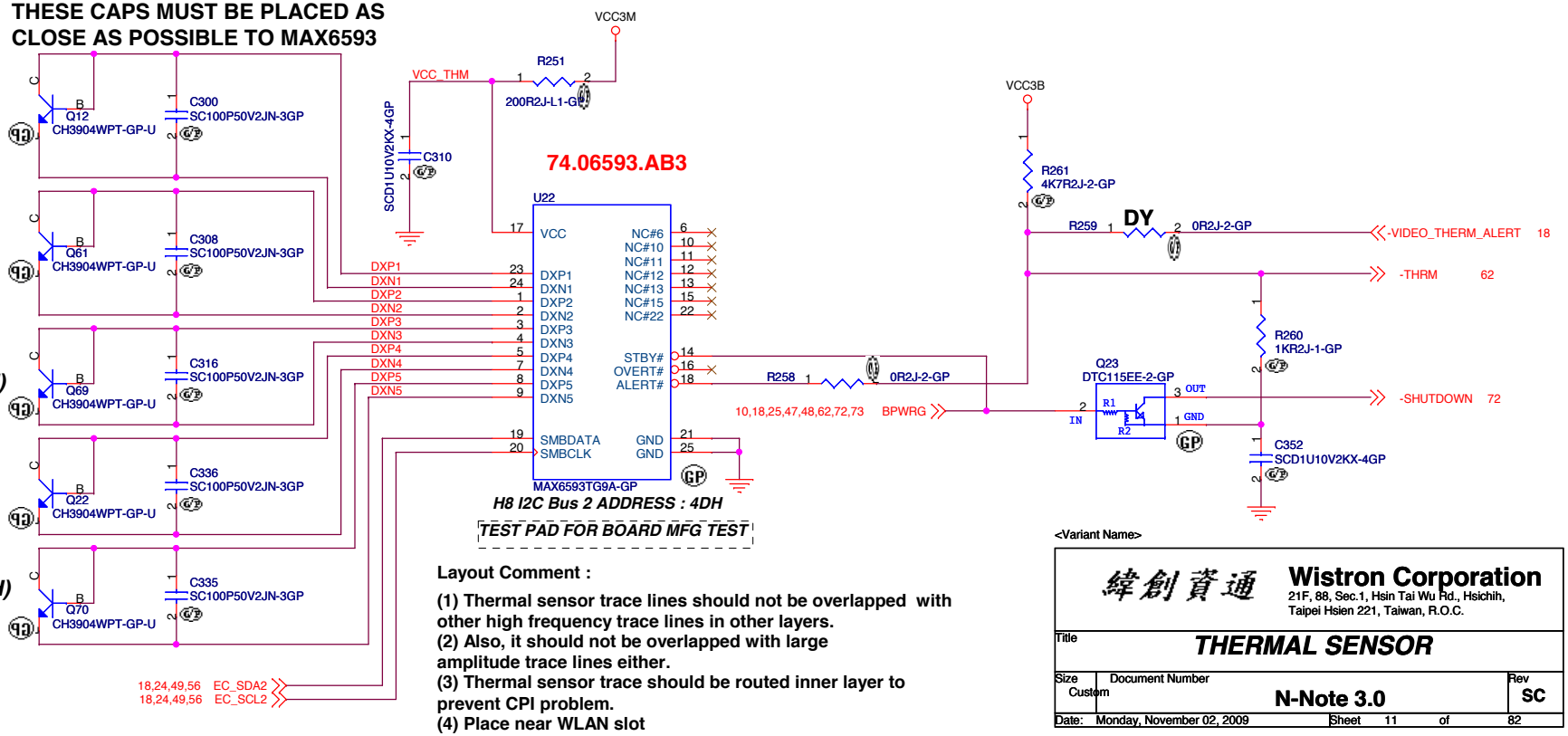
TO WLAN(TOP)

TO GBE

TO MEMORY(BOTTOM)

TO CPUCORE FET

TO BASE COVER (PCH)



Layout Comment :

(1) Thermal sensor trace lines should not be overlapped with other high frequency trace lines in other layers.
(2) Also, it should not be overlapped with large amplitude trace lines either.
(3) Thermal sensor trace should be routed inner layer to prevent CPI problem.
(4) Place near WLAN slot

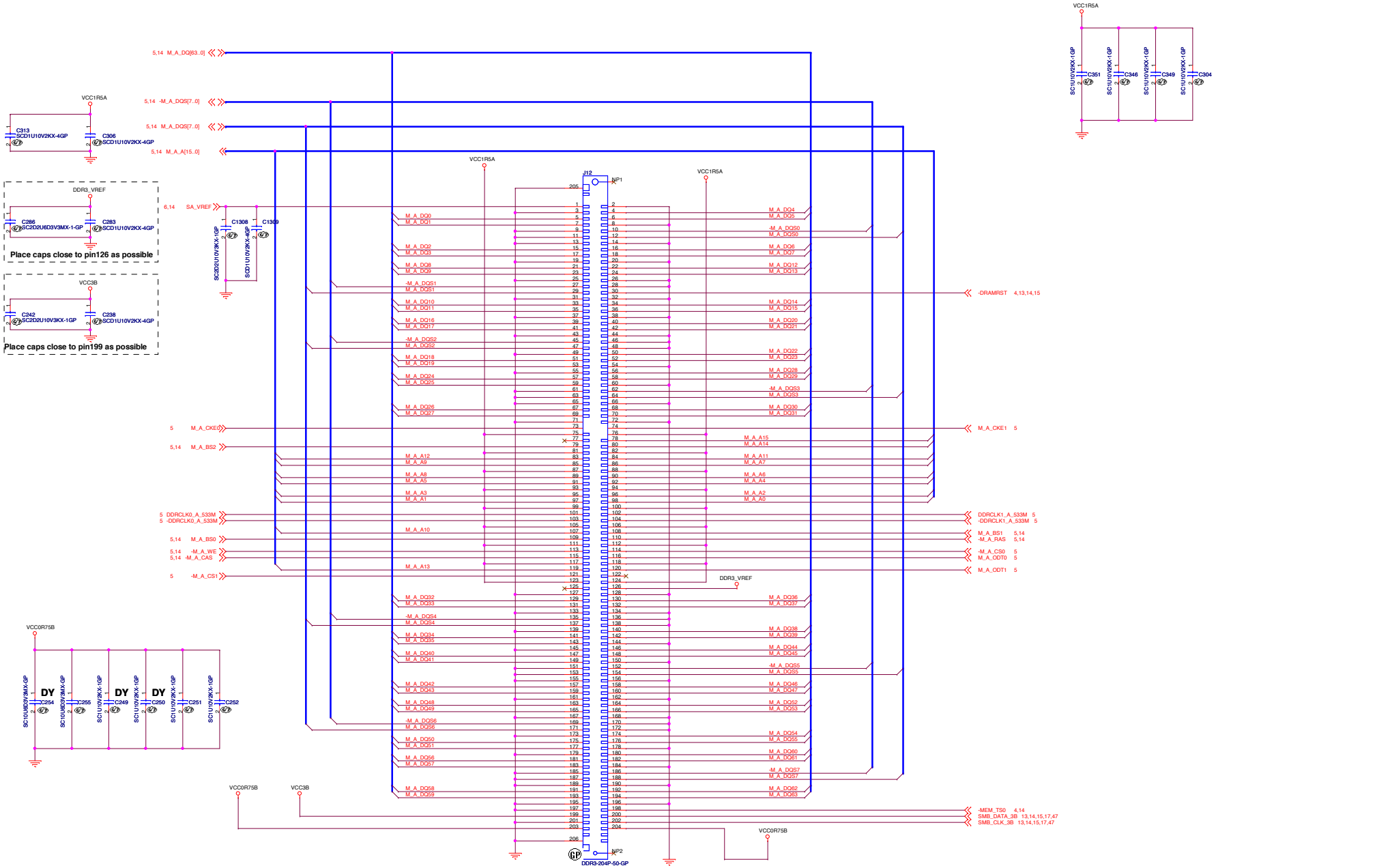
<Variant Name>

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

Title: THERMAL SENSOR

Size: Custom | Document Number: N-Note 3.0 | Rev: SC

Date: Monday, November 02, 2009 | Sheet 11 of 82



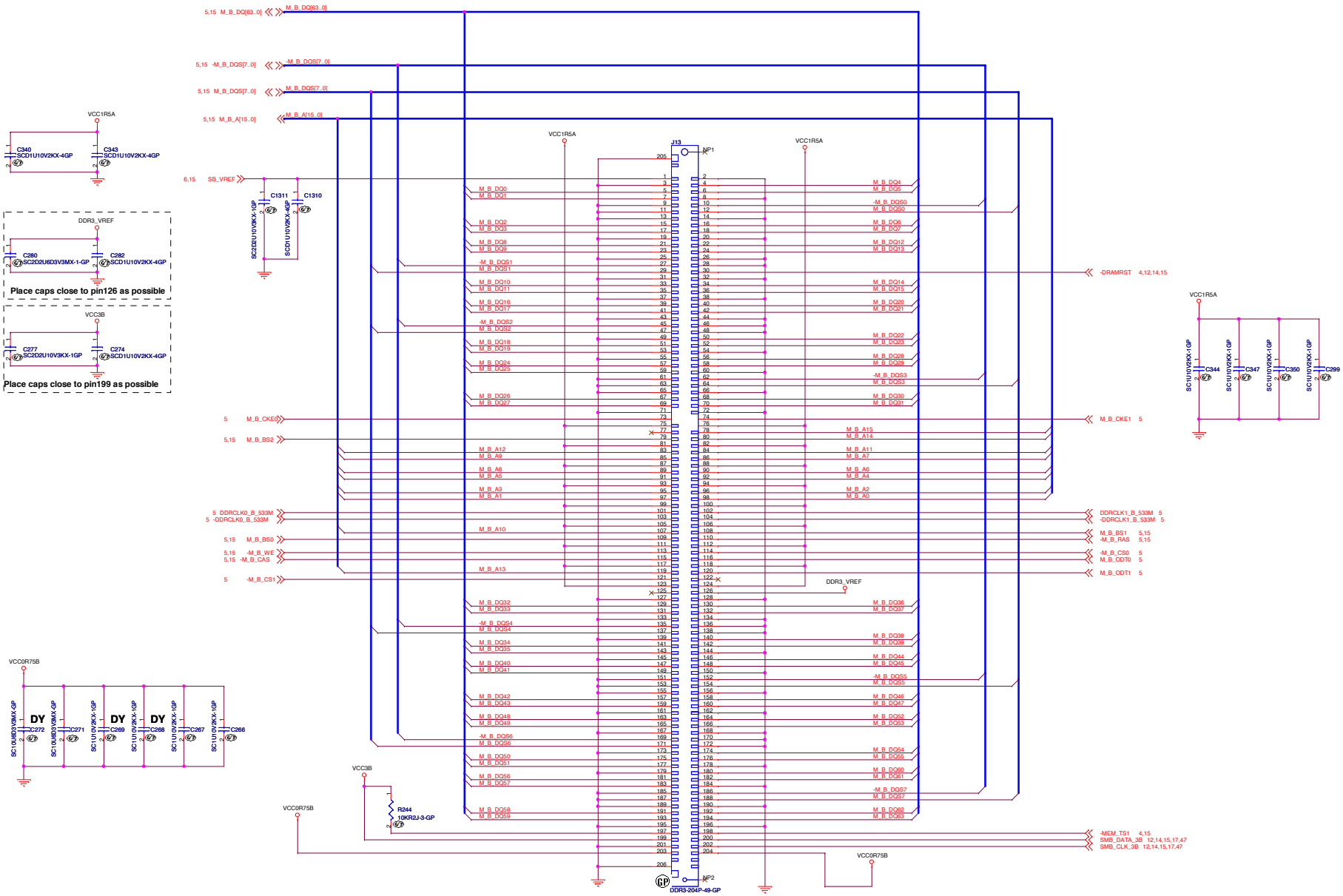
SPD Address : 50h

This connector should be placed on near side from CPU.

H=9.2mm

<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: DDR3 SODIMM_CH-A_Primary		
Size: A2	Document Number: N-Note 3.0	Rev: SC
Date: Monday, November 02, 2009	Sheet 12 of 82	



SPD Address : 51h

This connector should be placed on far side from CPU.

H=5.2mm

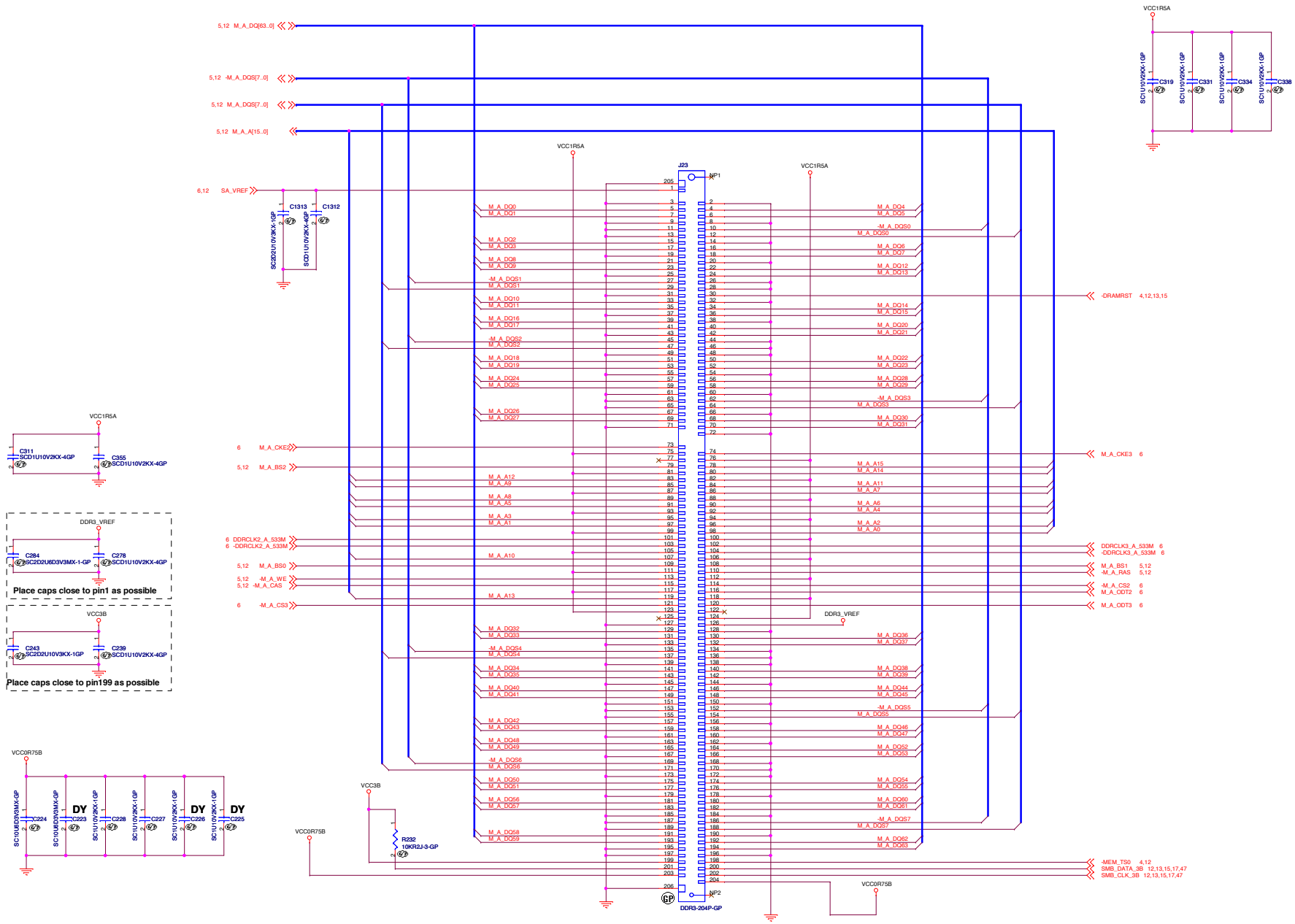
<Variant Name>

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

Title: ***DDR3 SODIMM_CH-B_Primary***

Size	Document Number	Rev
A2	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 13 of 82



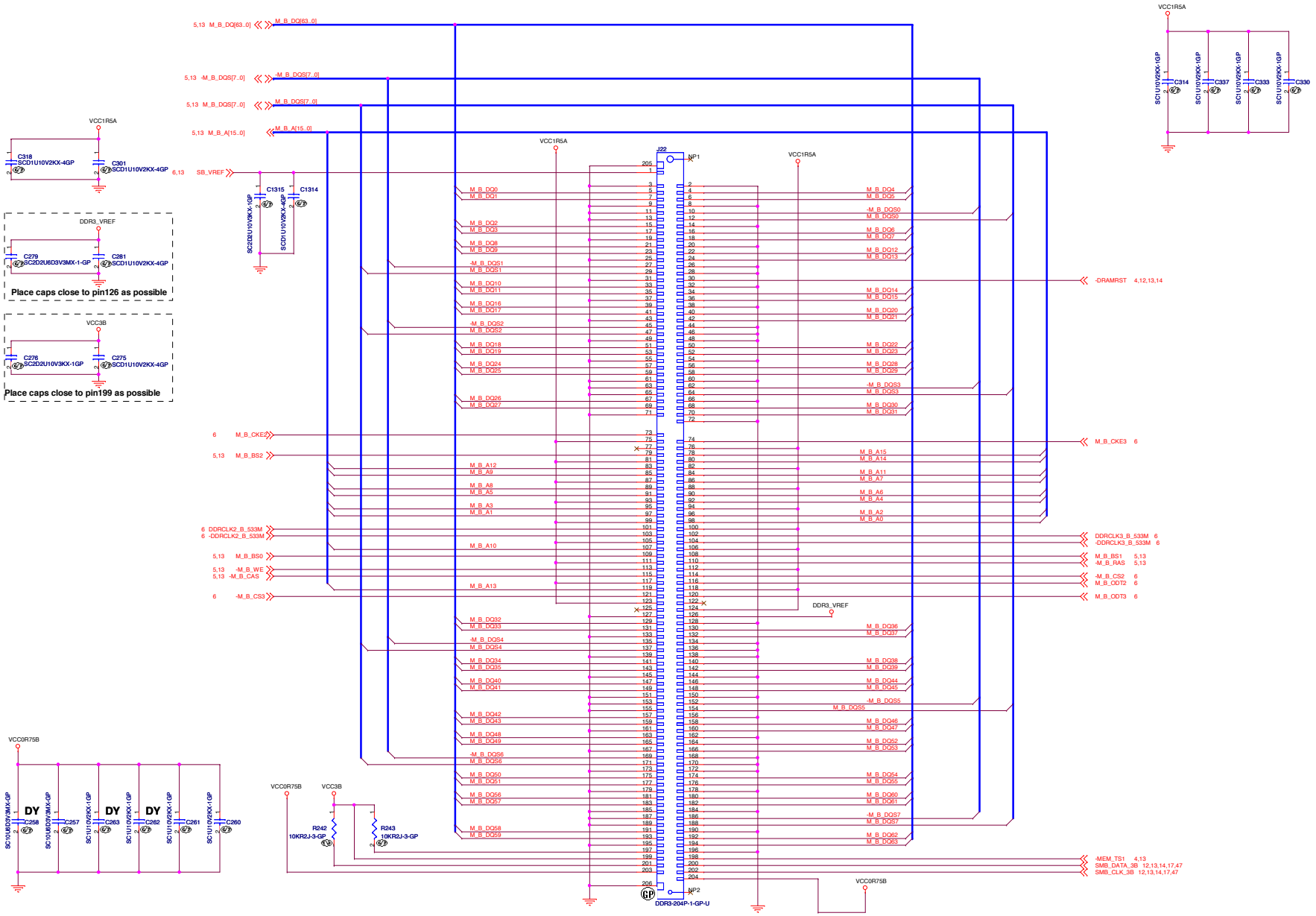
SPD Address : 52h

This connector should be placed on near side from CPU.

bom change to 62.10017.M21 (9/2)

<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: DDR3 SODIMM_CH-A_Secondary		
Size: A2	Document Number: N-Note 3.0	Rev: SC
Date: Monday, November 02, 2009	Sheet 14 of 82	



<Variant Name>

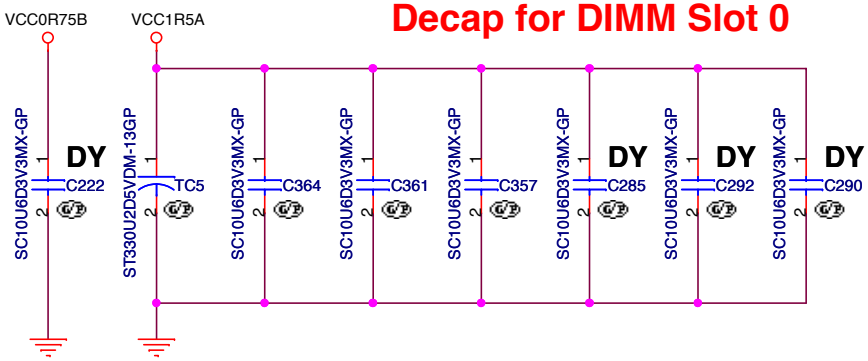
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: DDR3 SODIMM_CH-B_Secondary

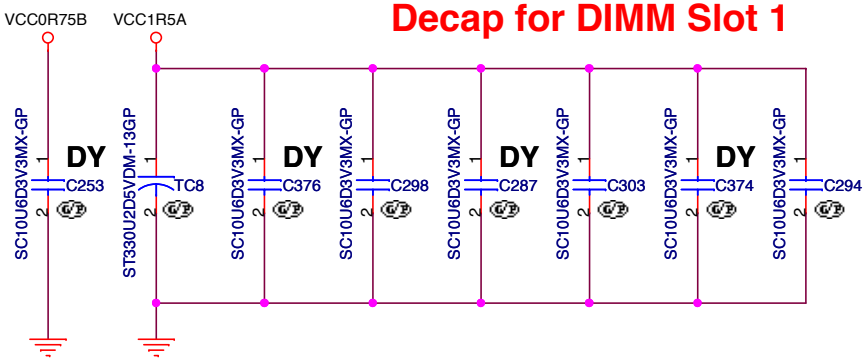
Size: A2 | Document Number: N-Note 3.0 | Rev: SC

Date: Monday, November 02, 2009 | Sheet 15 of 82

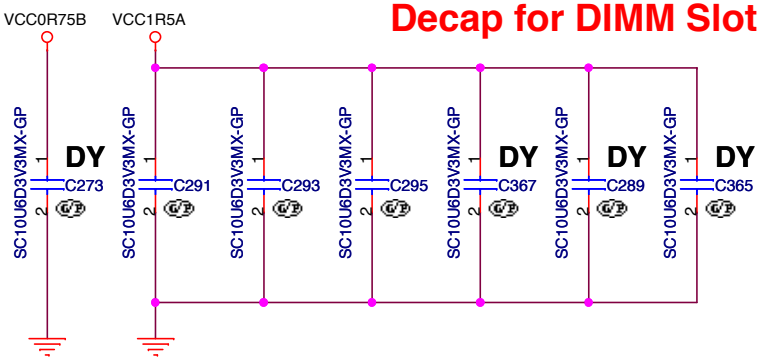
Decap for DIMM Slot 0



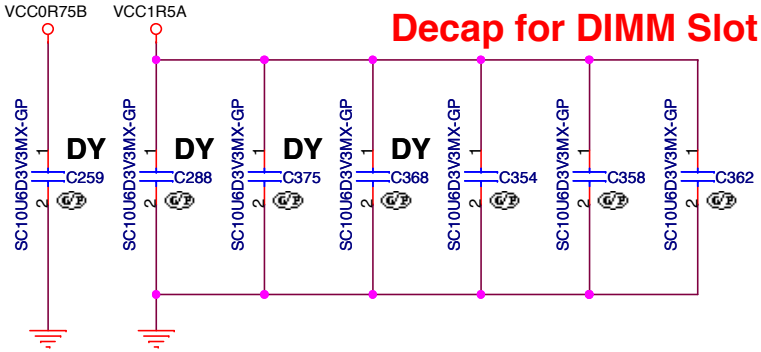
Decap for DIMM Slot 1



Decap for DIMM Slot 2



Decap for DIMM Slot 3



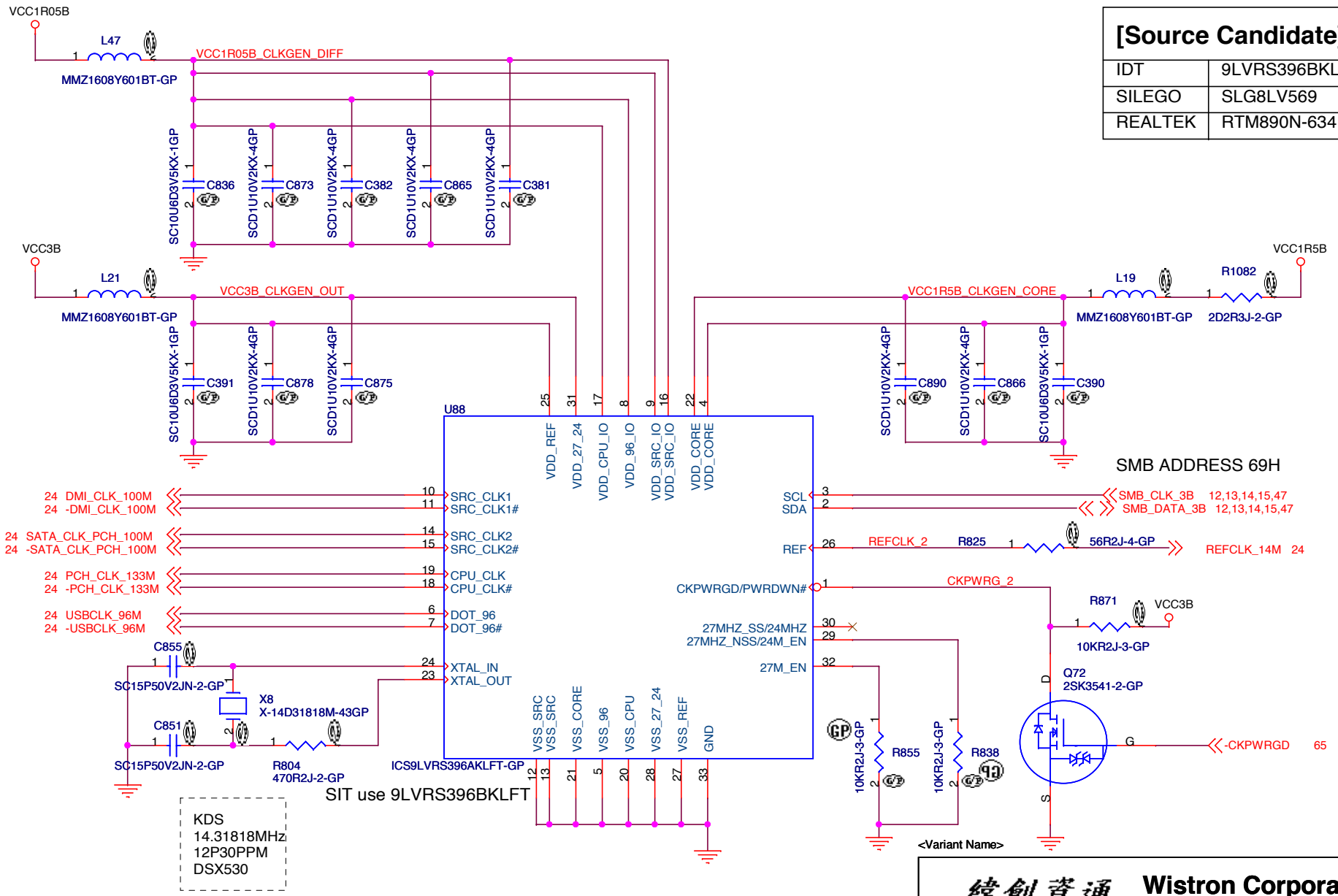
<Variant Name>

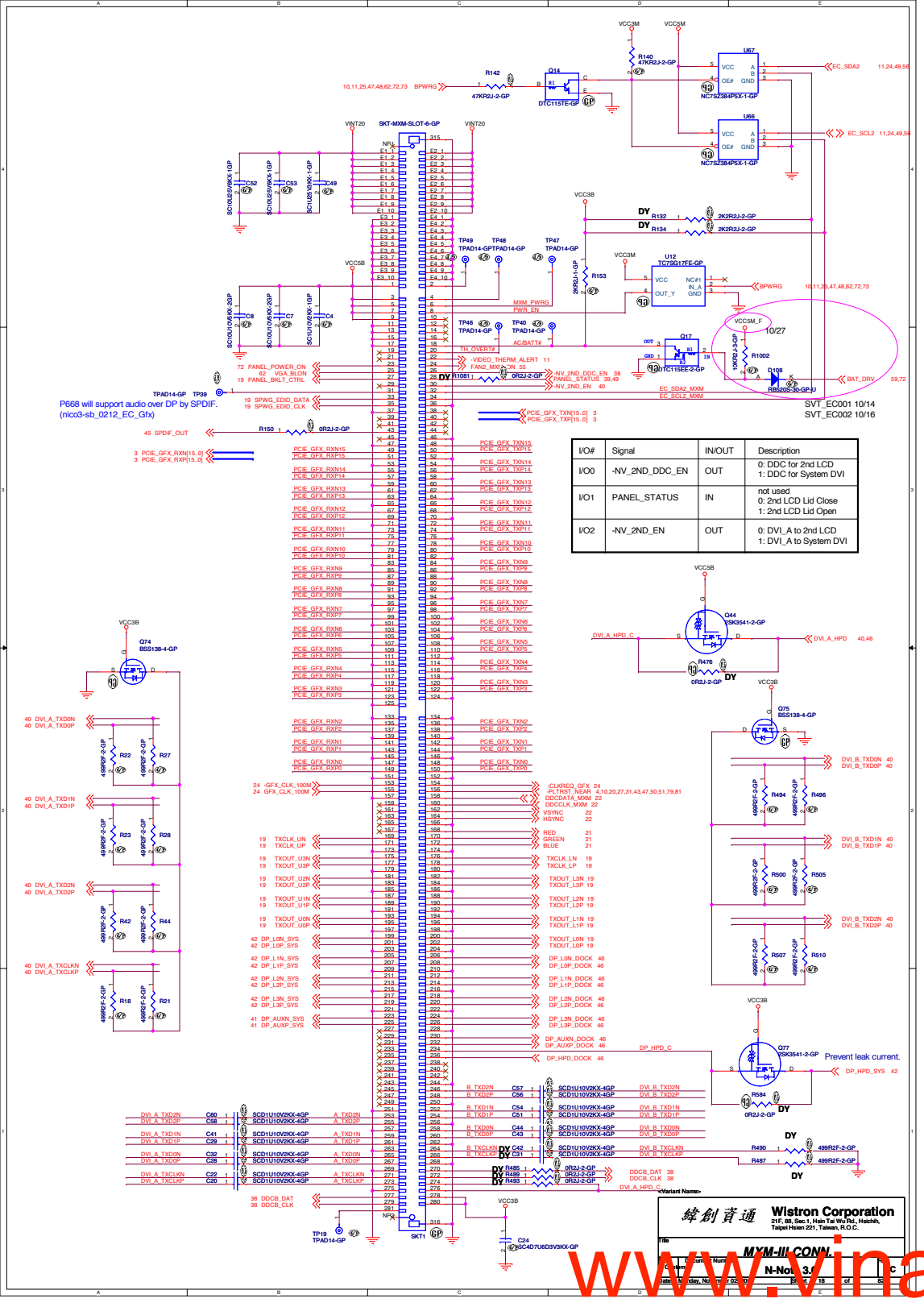
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***DECAP For DIMMs***

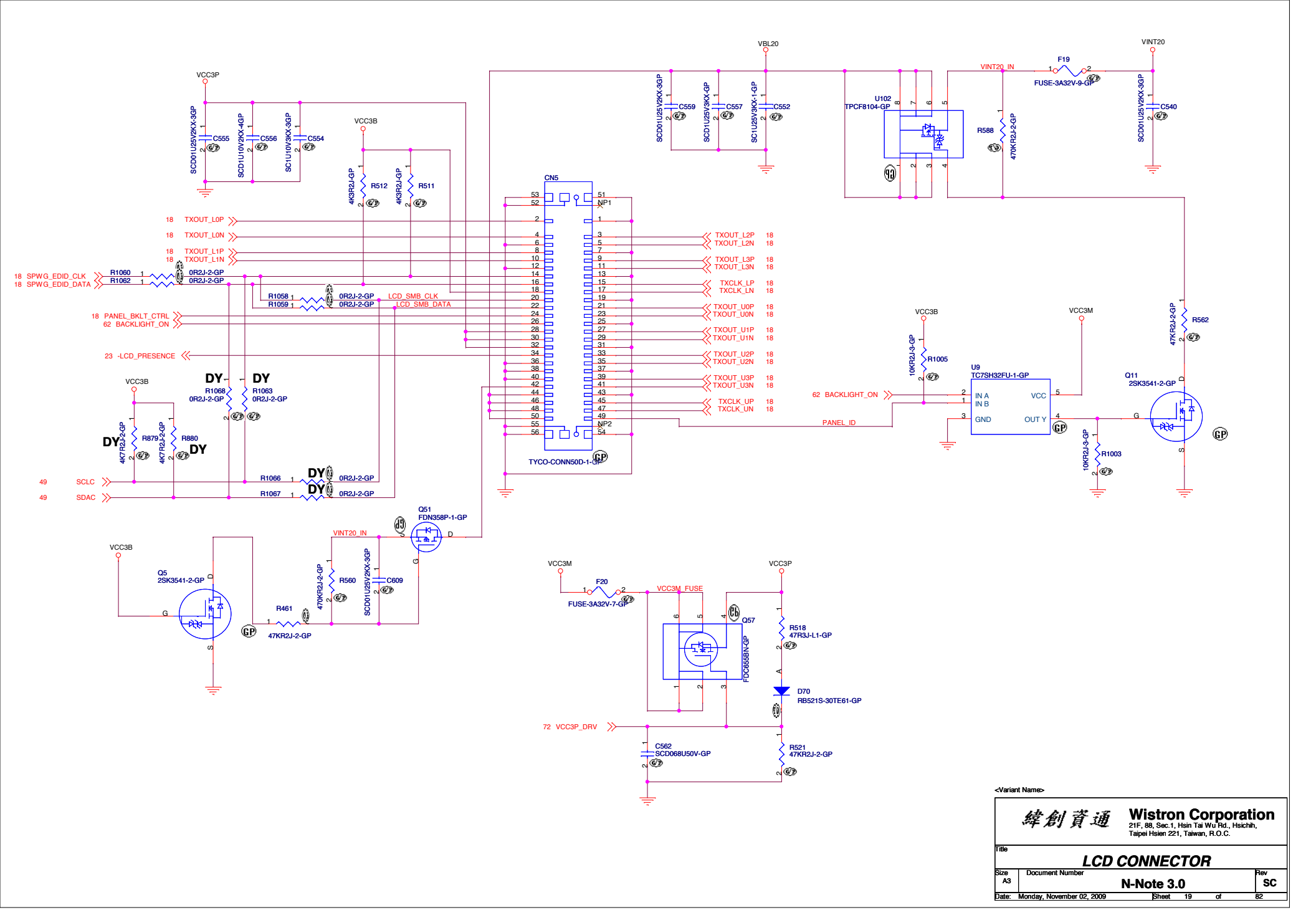
Size	Document Number	Rev
A4	N-Note 3.0	SC

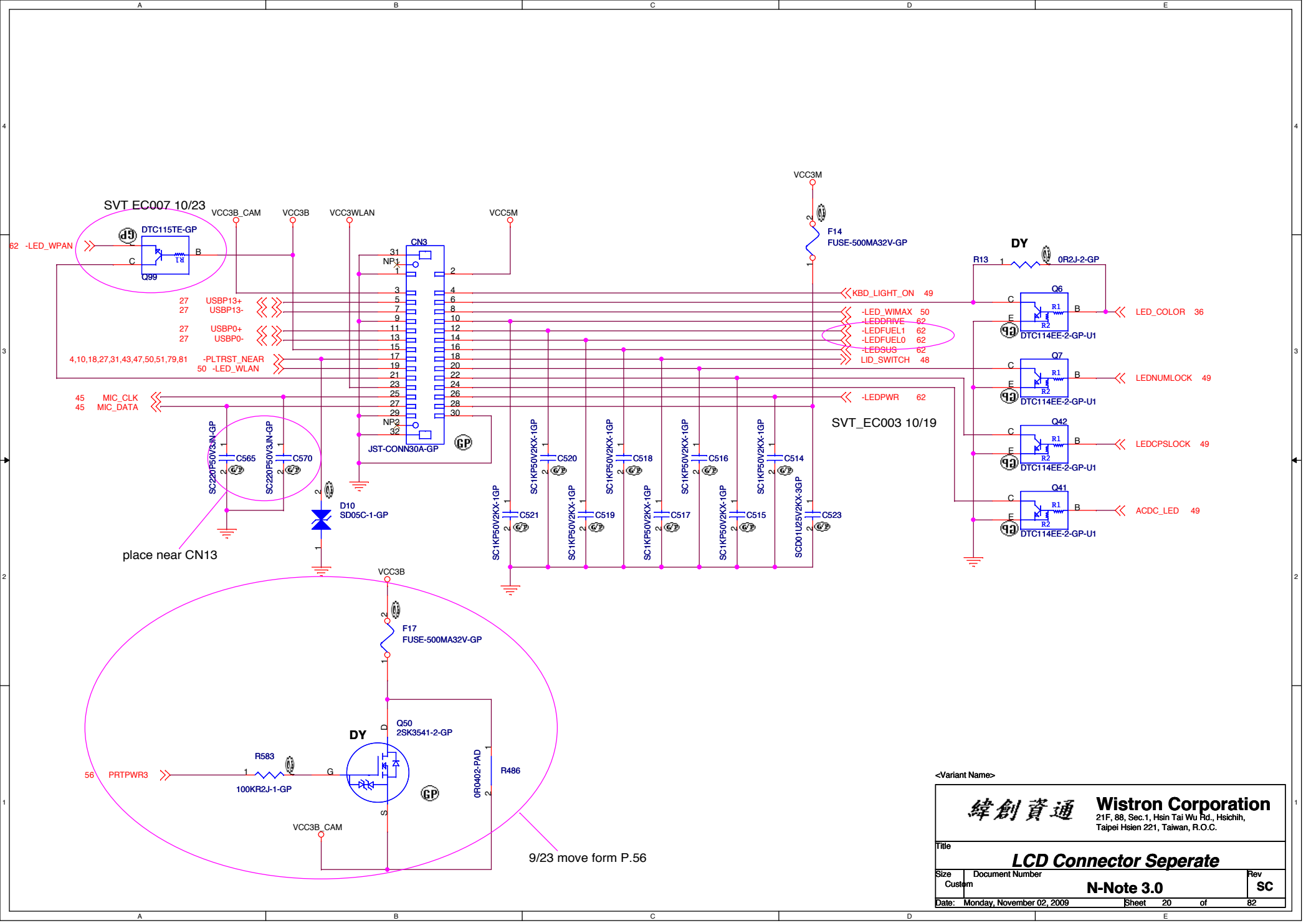
Date: Monday, November 02, 2009 Sheet 16 of 82





I/O#	Signal	IN/OUT	Description
I/O0	-NV_2ND_DDC_EN	OUT	0: DDC for 2nd LCD 1: DDC for System DVI
I/O1	PANEL_STATUS	IN	not used 0: 2nd LCD Lid Close 1: 2nd LCD Lid Open
I/O2	-NV_2ND_EN	OUT	0: DVI_A to 2nd LCD 1: DVI_A to System DVI





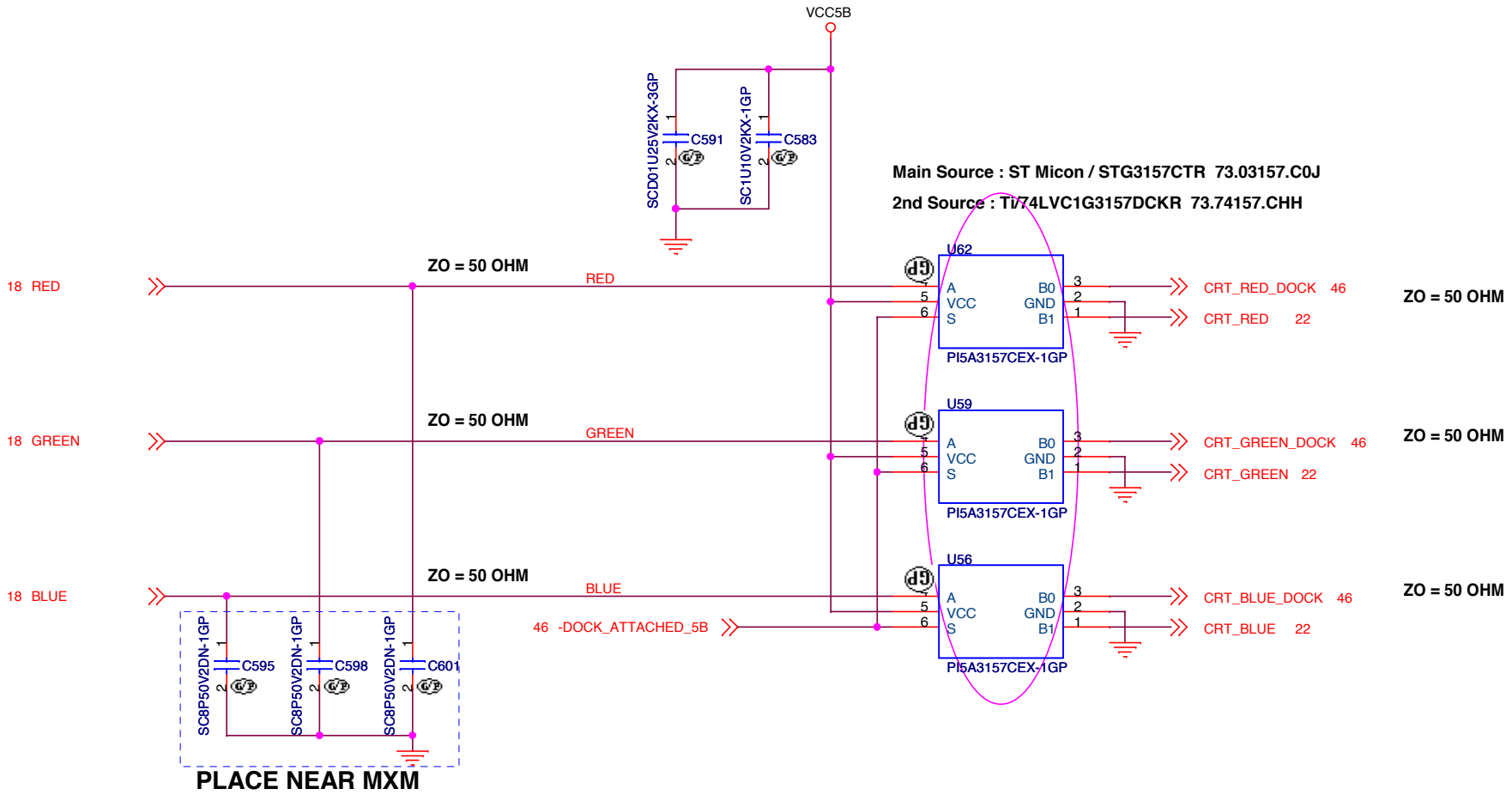
<Variant Name>

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

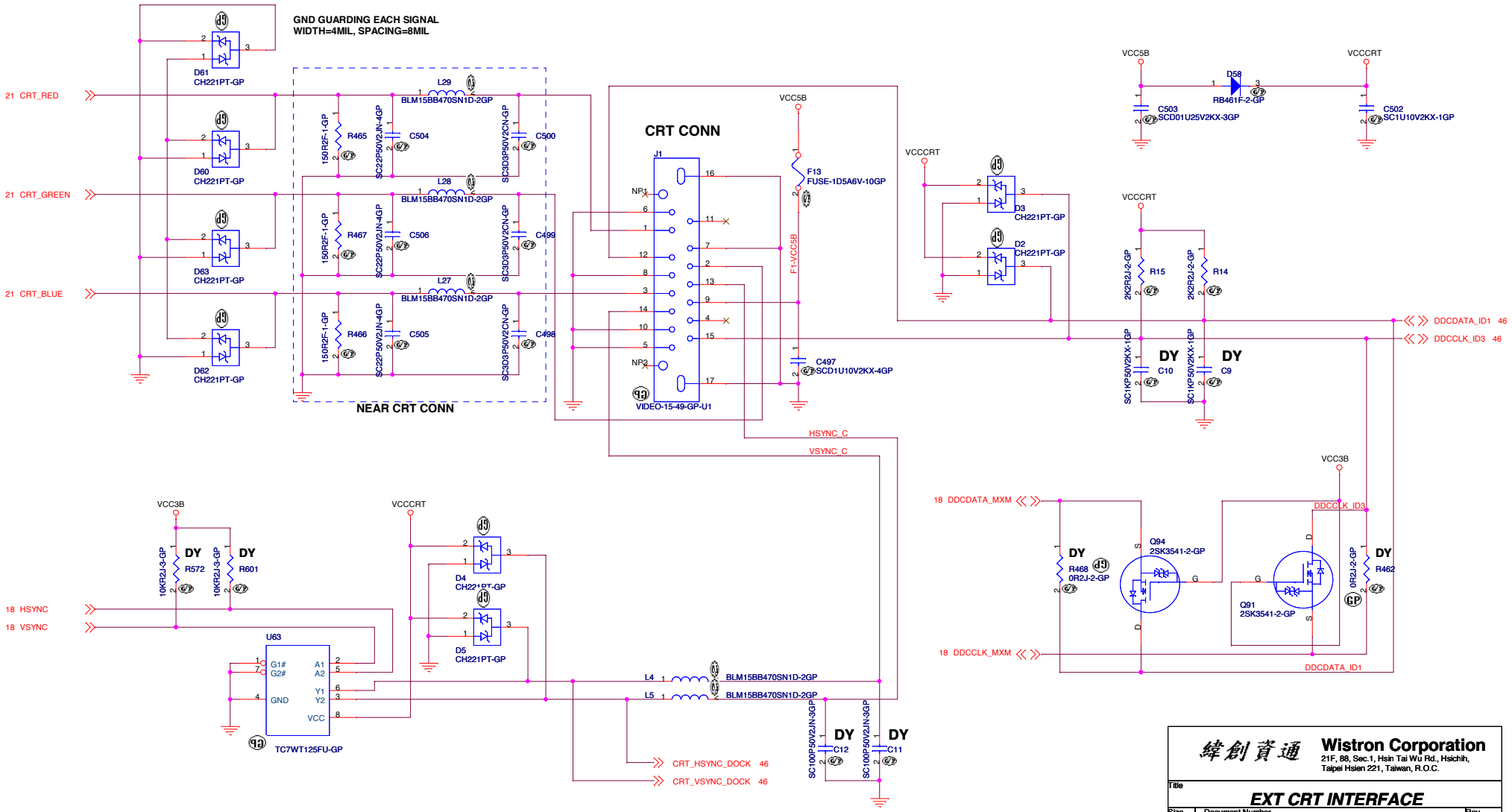
Title: LCD Connector Seperate

Size: Custom | Document Number: N-Note 3.0 | Rev: SC

Date: Monday, November 02, 2009 | Sheet 20 of 82



緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	***CRT SELECTOR***	
Size A4	Document Number **N-Note 3.0**	Rev SC
Date: Monday, November 02, 2009	Sheet 21 of 82	



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

Title: **EXT CRT INTERFACE**

Size	Document Number	Rev
Custom	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 22 of 82

SATA0: To HDD Bay
SATA1: To ODD Bay
SATA2: To HDD Bay (2nd)
SATA3: Reservede
SATA4: To Docking Connector
SATA5: To SATA Combo Connector
Note: SATA4 and SATA5 support Multiplier

X3:
EPSON 32.768K
7P20PPM MC-146SMD

INTVRMEM pin should have pull up
resister to enable integrated 1.05V VRM.

HDA_SYNC has a weak[20K] internal pull down.
The pin is low, 1.8V is provided by on die PLL VR.
The pin is high, 1.5V is provided by on die PLL VR.

HDA_BCLK has a weak(20K) internal pull down.

HDA_RST# has a weak(20K) internal pull down.

HDA_SDIN[3:0]has a weak(20K) internal pull down.

SPKR has weak[20K] internal pull down..
If external pull up is applied,
PCH will disable TCO timer system reboot function.

HDA_SDO has a weak[20K] internal pull down.
Should not place external pull up.

HDA_DOCK_EN# has a weak[20K] internal pull up.
Low : the Flash Descriptor Security will be overridden.
High : The security measures defined in the Flash descriptor will be in effect.

R846 should be placed on top side,
and at UWB slot area.

LDRQ[1:0]#/GPIO23 has a weak[20K] internal pull up.
FWH[3:0]/LAD[3:0] has a weak[20K] internal pull up.

SATA_LED# has a weak[20K] internal pull up.

HDD 0
ODD
HDD 1
Docking eSATA
System eSATA

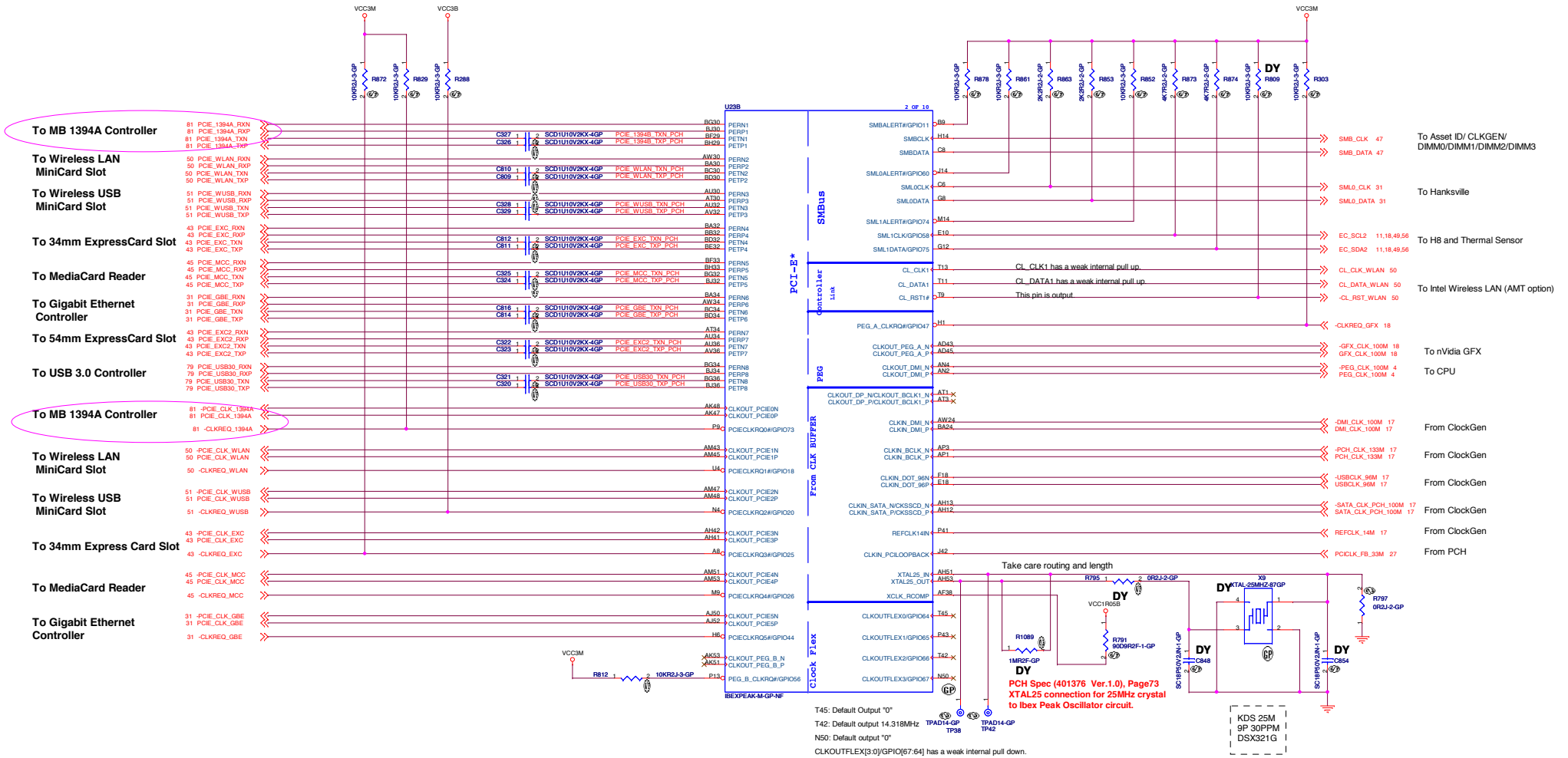
<Variant Name>

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

Title: PCH (1/8):HDA/JTAG/SATA

Size	Document Number	Rev
A3	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 23 of 82



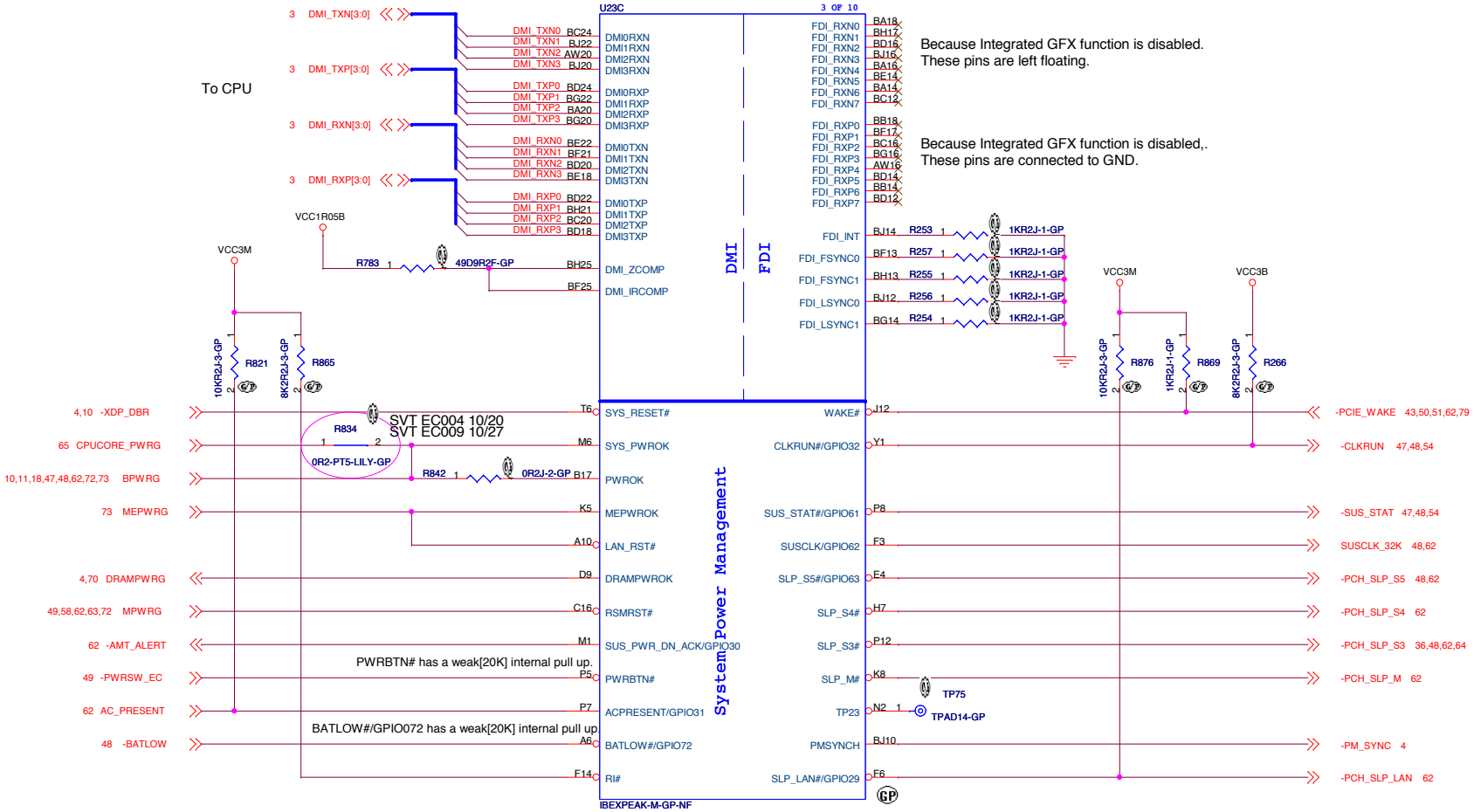
<Variant Name>

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

Title: PCH(2/8):PCIE/SMBUS/CLK

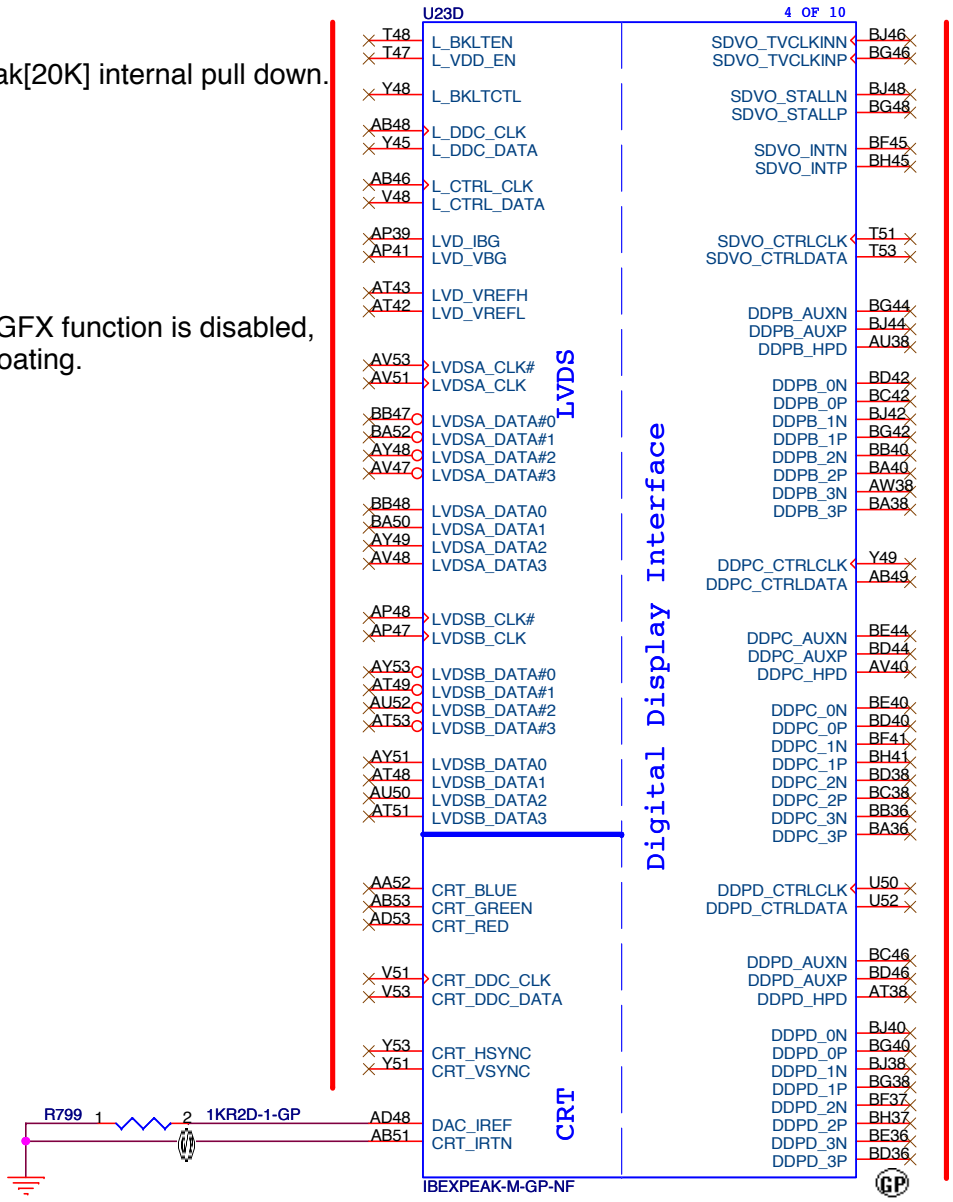
Size	Document Number	Rev
A2	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 24 of 82



L_DDC_DATA has a weak[20K] internal pull down.

Because Integrated GFX function is disabled,
These pins are left floating.



SDVO_CTRLDATA/SDVO_CTRLCLK has a weak[20K] internal pull down.

Because Integrated GFX function is disabled,
These pins are left floating.

DDP[D:C]_CTRLCLK has a weak[10K] internal pull down.
DDP[D:C]_CTRLDATA has a weak[20K] internal pull down.

<Variant Name>

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

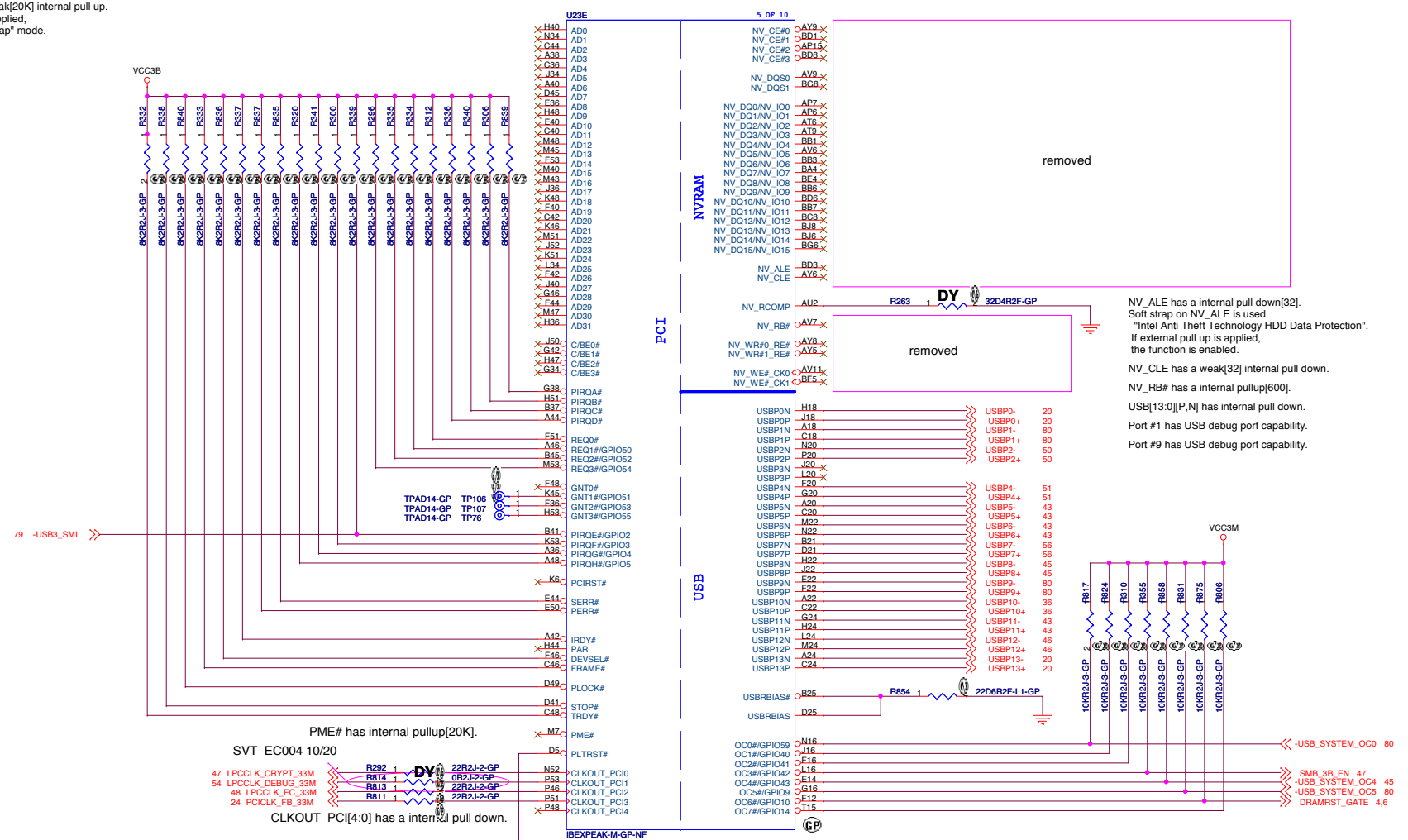
Title: **PCH (4/8):LVDS/CRT/DDI**

Size	Document Number	Rev
A4	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 26 of 82

Because PCI IF is not used, ADx.C/BEx and GNTx are left as NC.

GNT0# has a weak[20K] internal pull up.
GNT1#/GPIO51 has a weak[20K] internal pull up.
To use SPI IF flash BIOS, GNT1#/GPIO51
and GNT0# should not place external pull down.
GNT2#/GPIO53 has a weak[20K] internal pull up.
This pin should not have external pull down.
GNT3#/GPIO55 has a weak[20K] internal pull up.
If external pull down is applied,
PCH will be "topblock swap" mode.



NV_ALE has a internal pull down[32].
Soft strap on NV_ALE is used
"Intel Anti Theft Technology HDD Data Protection".
If external pull up is applied,
the function is enabled.

NV_CLE has a weak[32] internal pull down.

NV_RB# has a internal pullup[600].

USB[13:0][P,N] has internal pull down.

Port #1 has USB debug port capability.

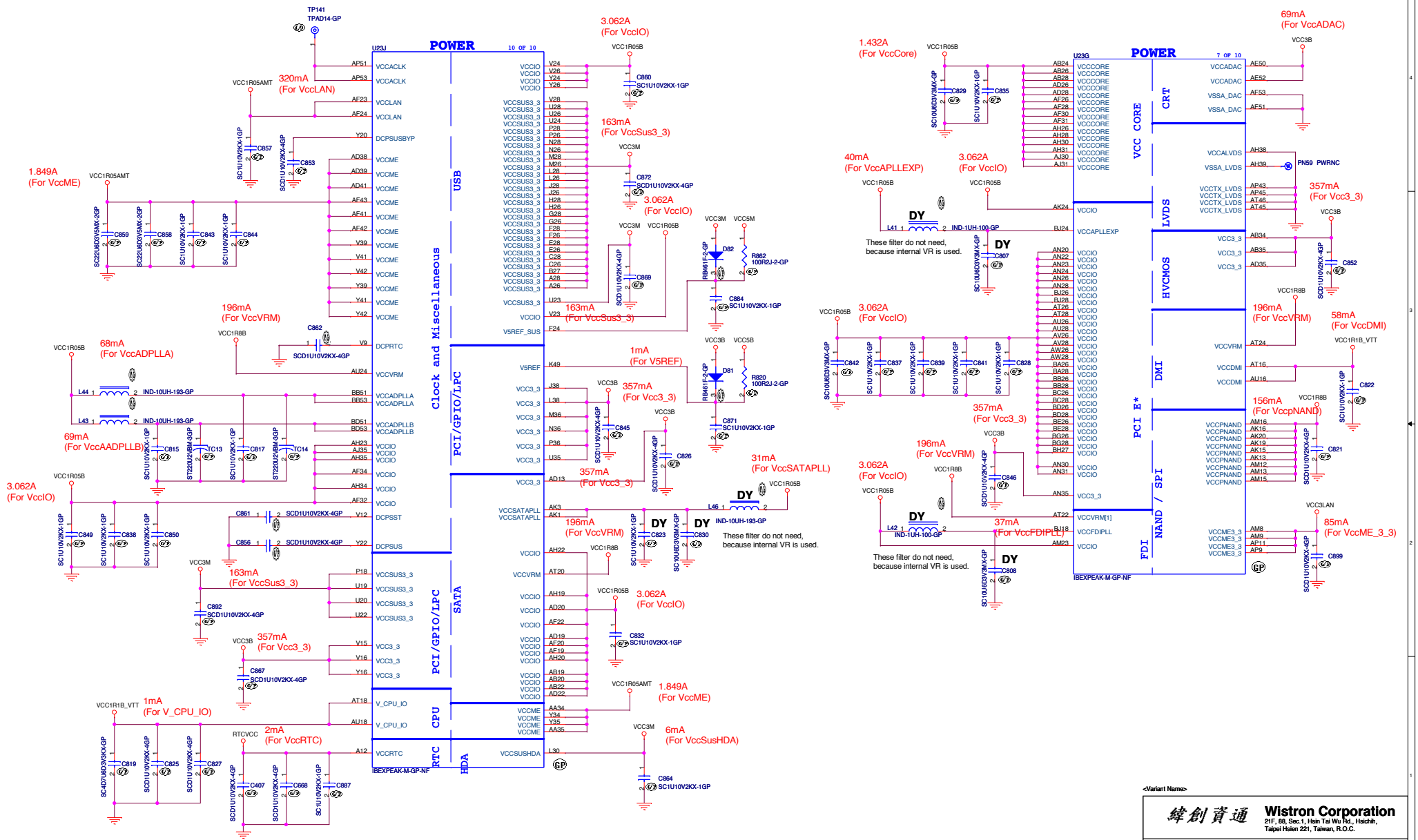
Port #9 has USB debug port capability.

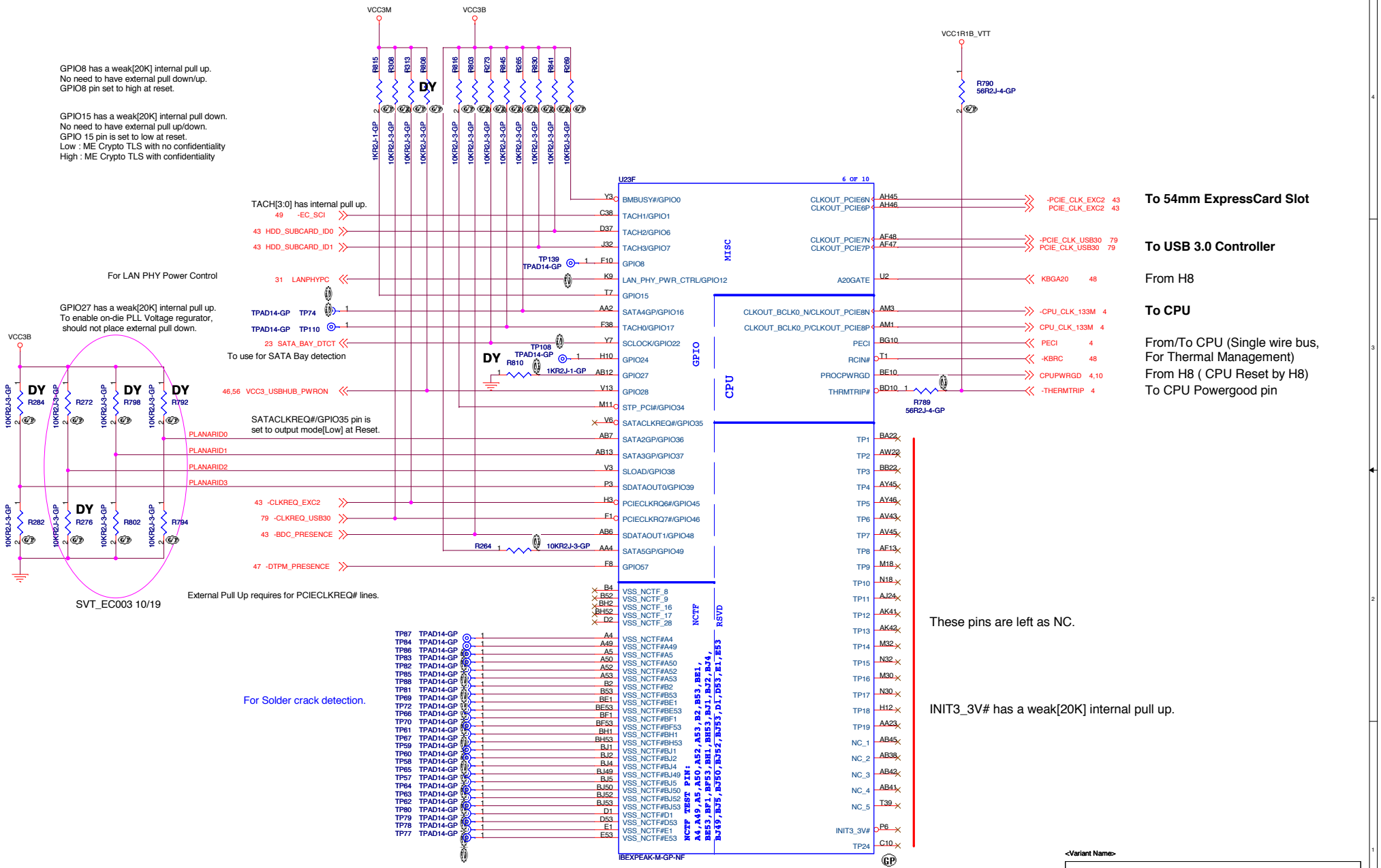
USB0 : To Touch Screen (reserve)
USB1 : To System onboard USB port (eSATA combo)
USB2 : To WiMAX Mini Card Slot
USB3 : N/A
USB4 : To WUSB Mini Card Slot & WWAN
USB5 : To 54mm ExpressCard
USB6 : To 34mm Express Card Slot
USB7 : To USB Hub
USB8 : To System USB Port => Right Side
USB9 : To System USB Port => Left Side
USB10: To FPR
USB11:To Bluetooth
USB12:To Docking
USB13:To Camera

<Variant Name>

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

Title: PCH (5/8):PCI/USB/NVM
Size: Custom | Document Number: N-Note 3.0 | Rev: SC
Date: Monday, November 02, 2009 | Sheet 27 of 82





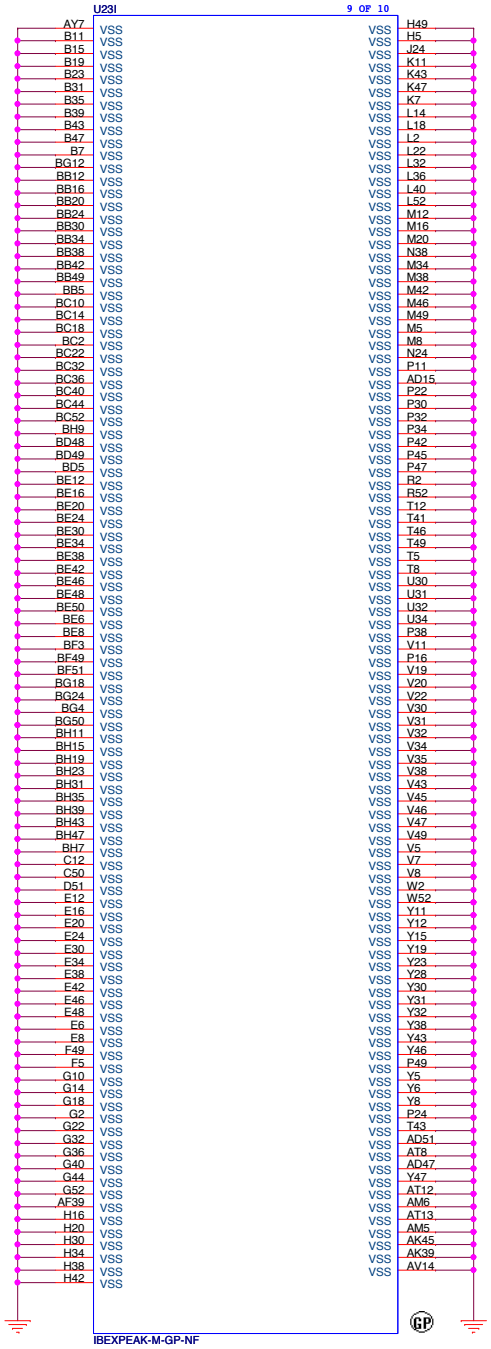
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

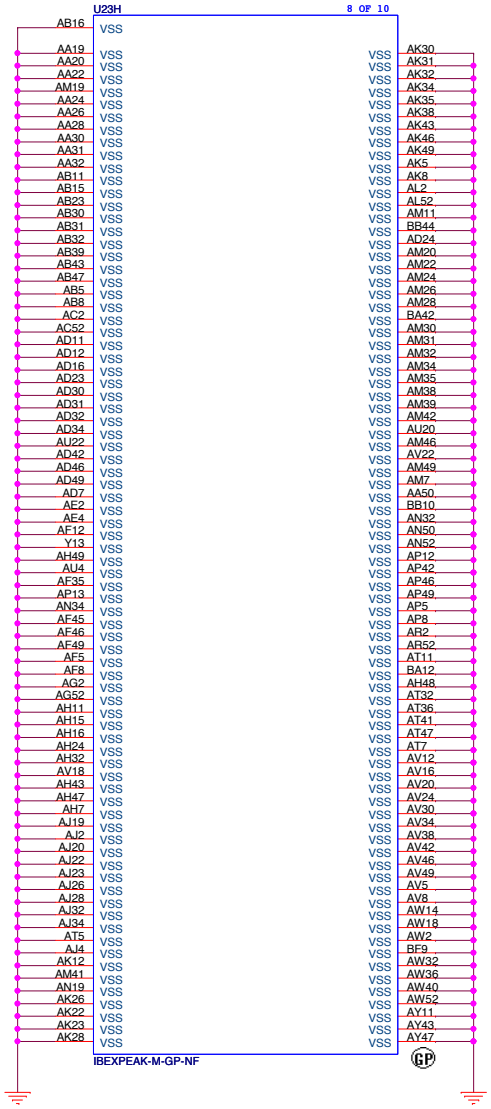
<variant_name>

Title: PCH (7/8):GPIO/NTCF/RSVD

Size: Custom | Document Number: N-Note 3.0 | Rev: SC

Date: Monday, November 02, 2009 | Sheet 29 of 82

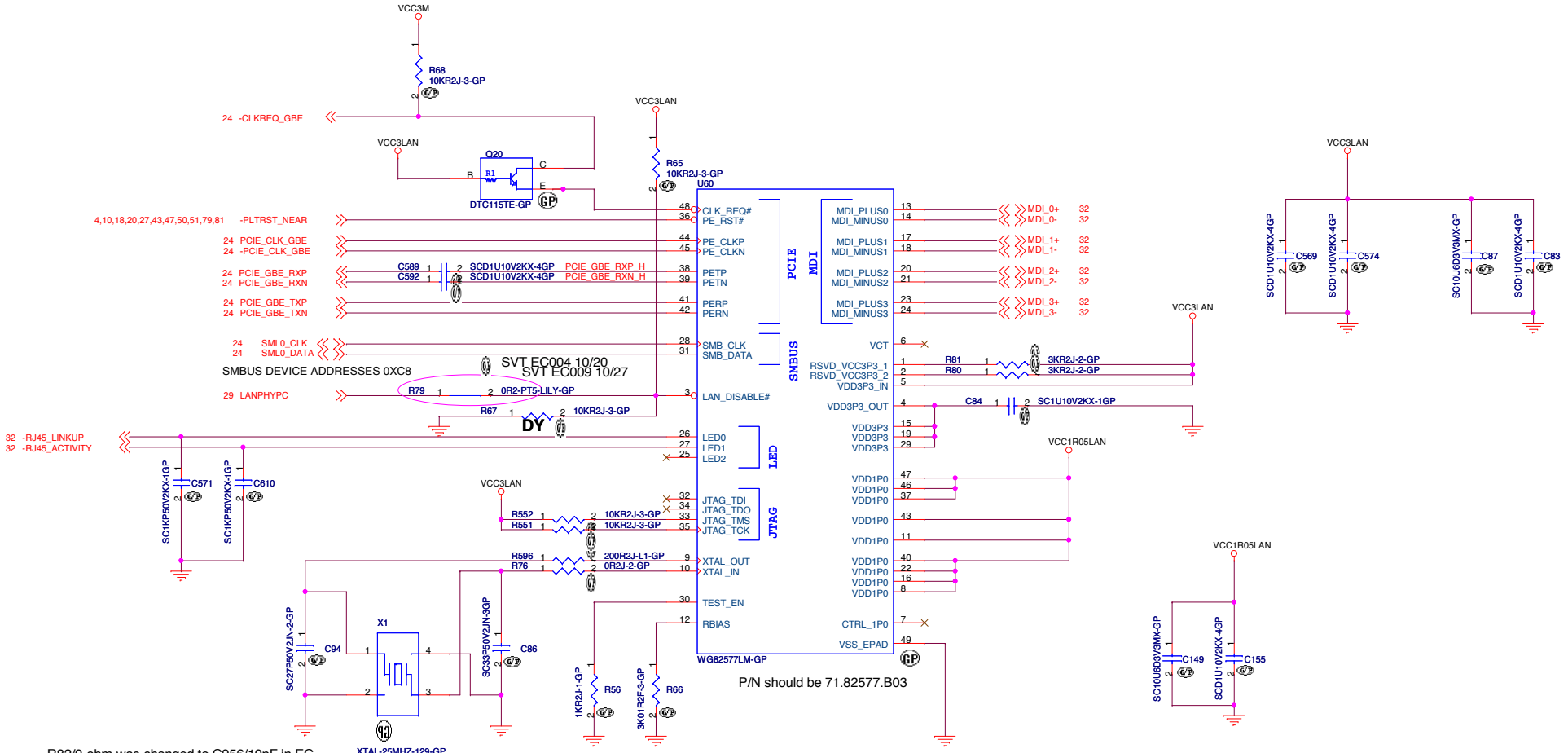




<Variant Name>

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

Title	PCH (8/8):GND	
Size: A3	Document Number: N-Note 3.0	Rev: SC
Date: Monday, November 02, 2009	Sheet 30 of 82	



R82/0-ohm was changed to C956/10pF in EC.
(nico3-sb_0212_p31_0217.pdf)

NOTE: VCC1R05LAN WILL WORK AT 0.95V TO 1.15V

X1:
KDS 25M 18P30PPM DSX321G SMD

(Intel validated version is "DSX321G-25.000M-18pF-30-30R2")
KDS P/N= 1B225000CC0N
TXC P/N= 7V25020001
KDS TWN confirmed that "1B225000CC0N" is the same as "1C225000CC0M".
2008/11/26

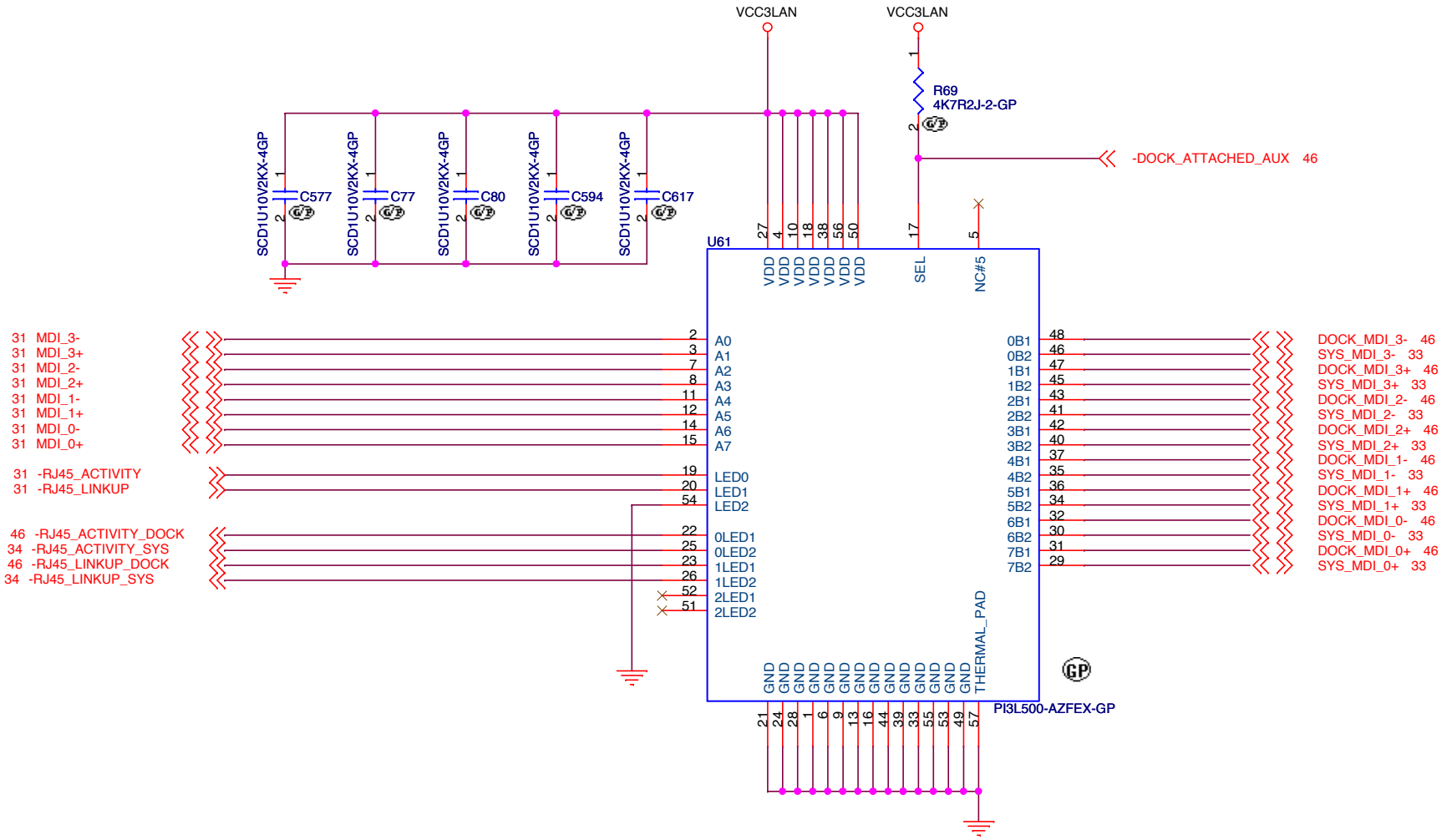
<Variant Name>

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

Title: **GBE HANKSVILLE**

Size	Document Number	Rev
A3	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 31 of 82



		Vendor P/N	Wistron P/N	B/S P/N
1st	Pericom	PI3L500AZFEX	73.3L500.003	41R0539AA
2nd	TI	TS3L500AERHUR	73.3L500.A0V	41R0539BA

<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: **GBE LAN SW**

Size: A4 | Document Number: **N-Note 3.0** | Rev: SC

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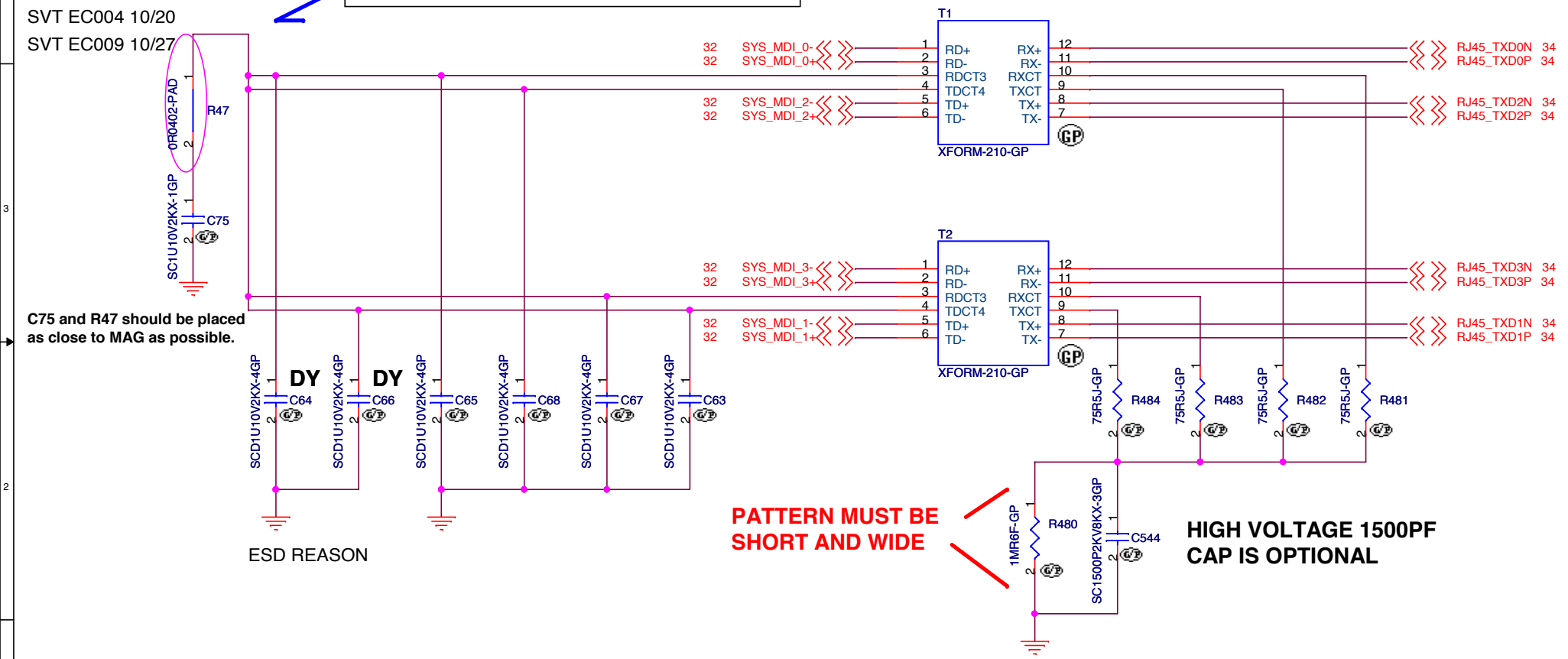
THE WIDTH OF THESE TRACE SHOULD BE WIDER THAN 35MIL TO PREVENT VOLTAGE DROP

SVT EC004 10/20
SVT EC009 10/27

C75 and R47 should be placed as close to MAG as possible.



ESD REASON

PATTERN MUST BE SHORT AND WIDE

HIGH VOLTAGE 1500PF CAP IS OPTIONAL

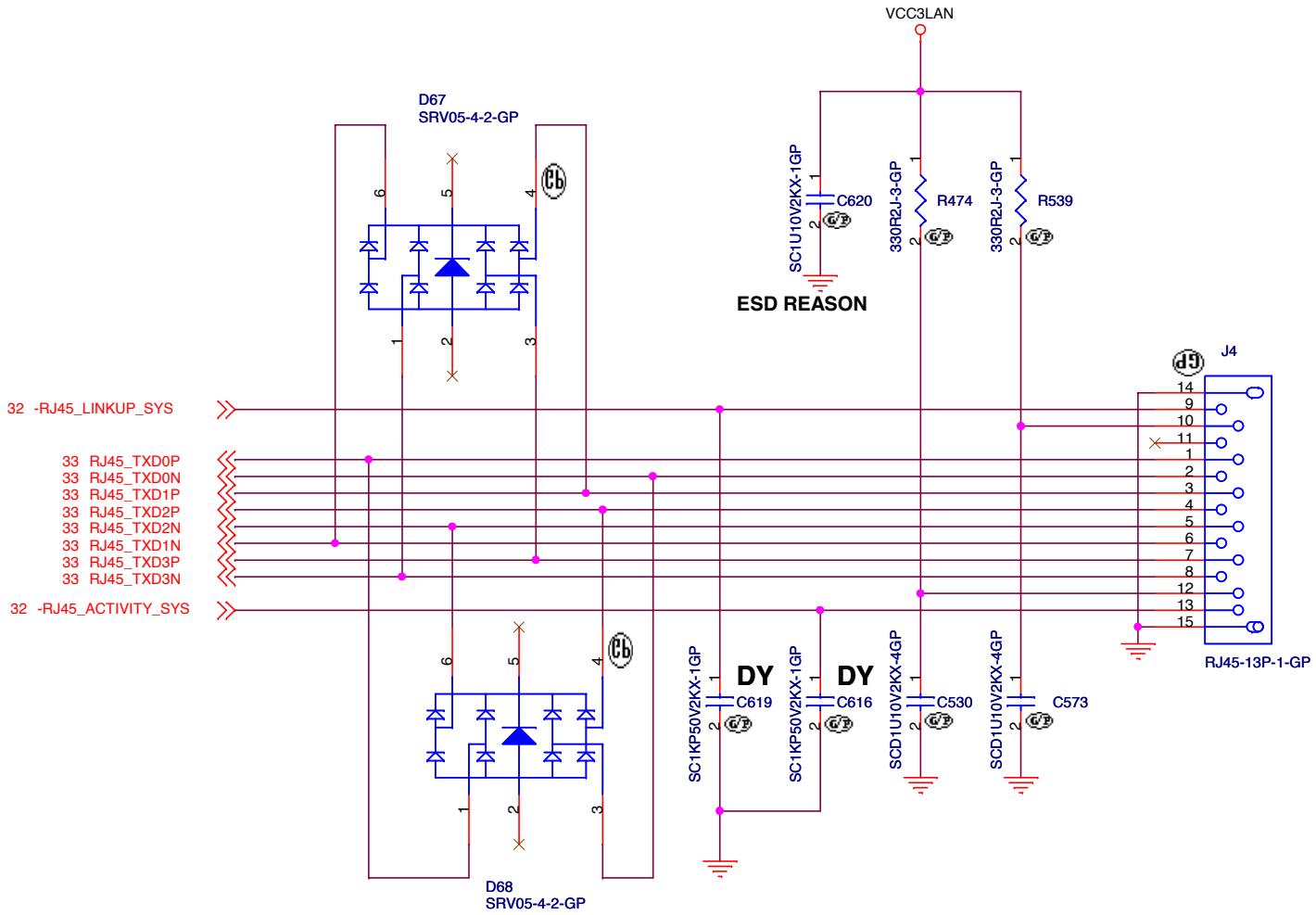
<Variant Name>

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

Title: GBE MAGNETICS

Size	Document Number	Rev
A4	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 33 of 82



<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: ***RJ45 CONN***

Size	Document Number	Rev
A4	**N-Note 3.0**	SC

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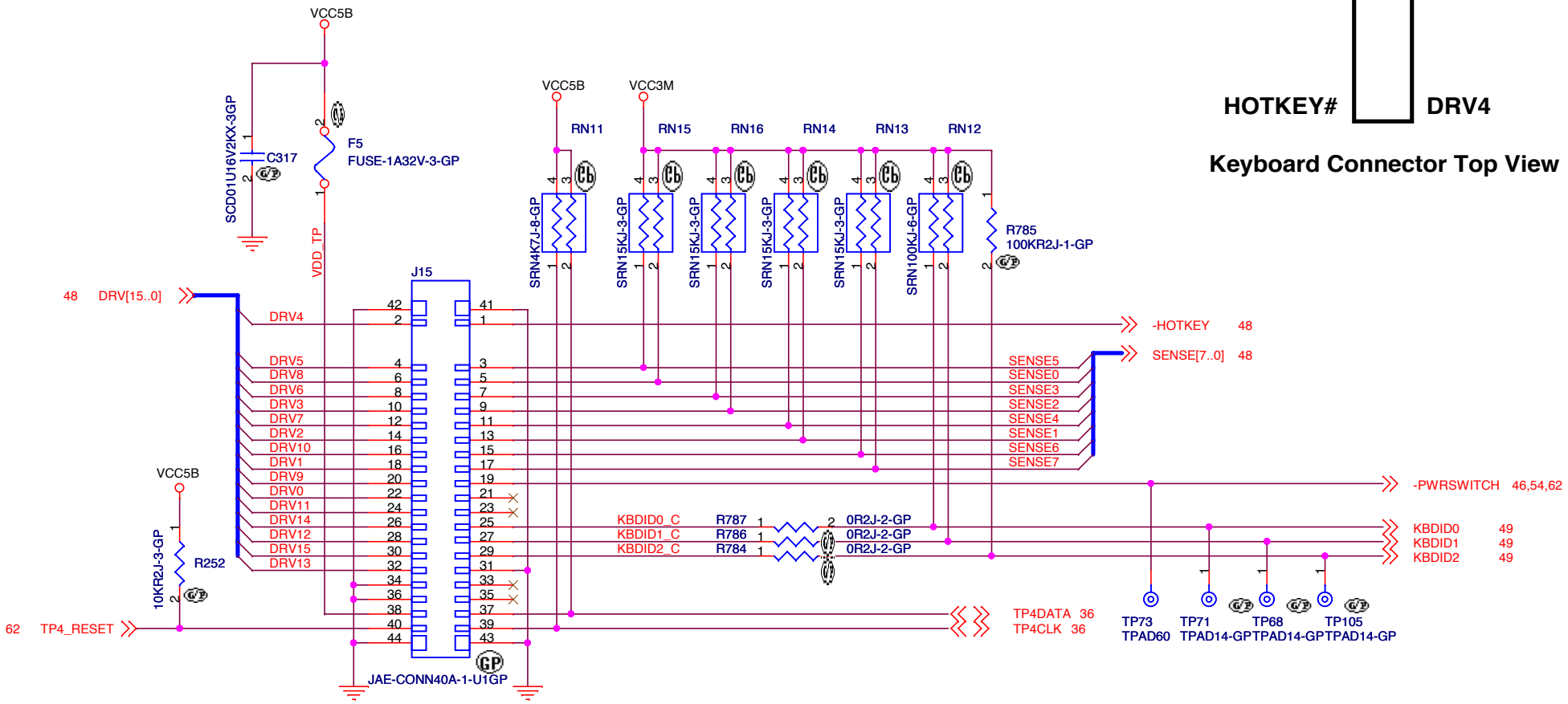
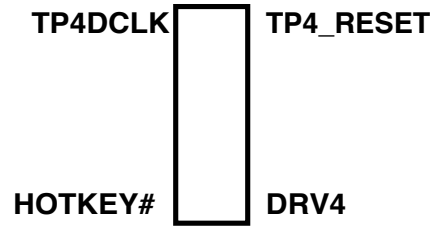
Keyboard Connector

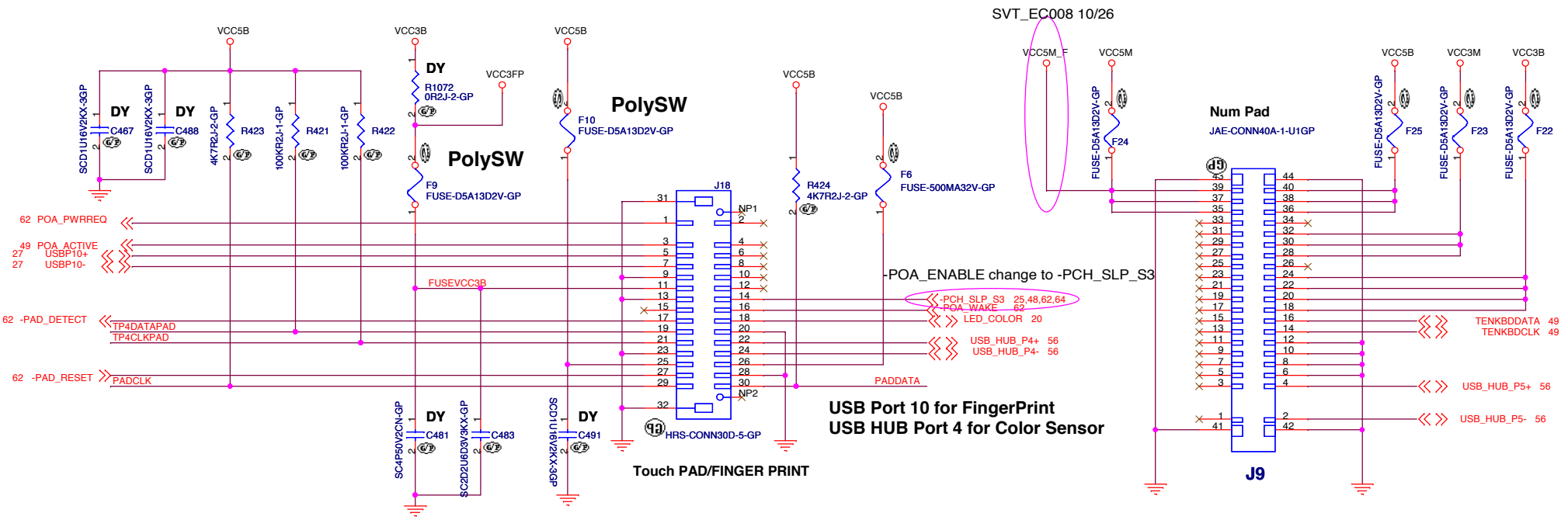




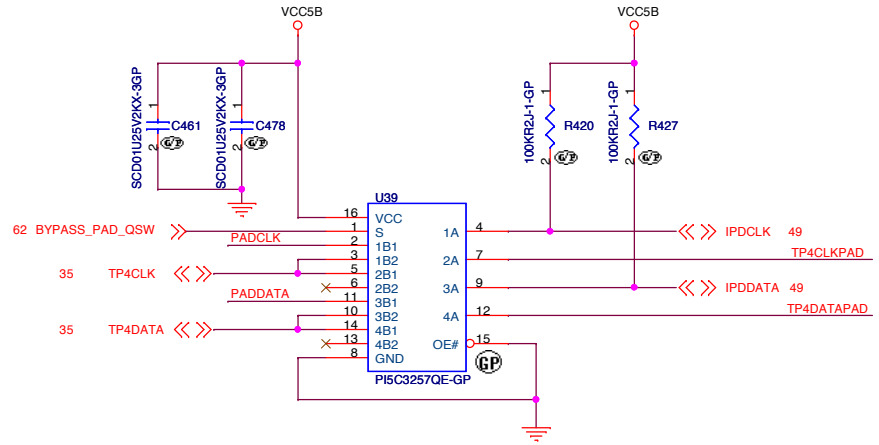
Keyboard Connector Top View

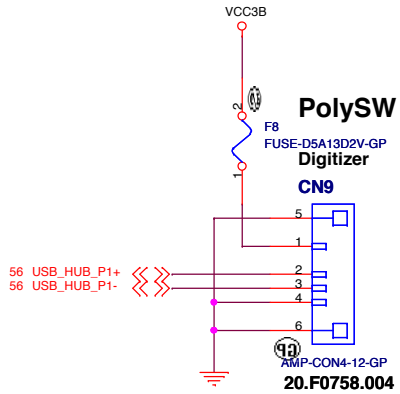
<Variant Name>

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	***KEYBOARD CONN***	
Size: A4	Document Number: **N-Note 3.0**	Rev: **SC**
Date: Monday, November 02, 2009	Sheet 35 of 82	



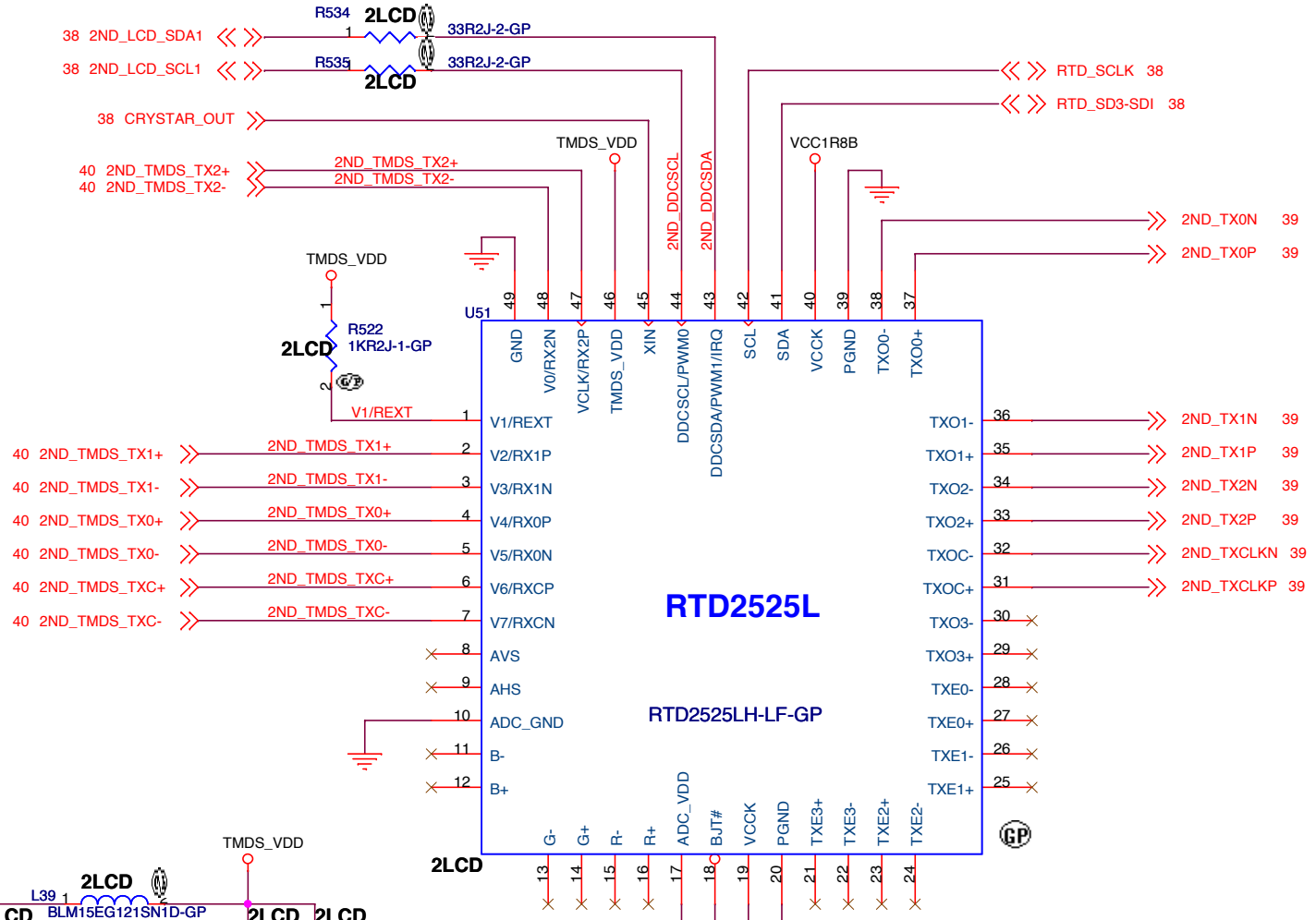
USE FSTU3257(FAIRCHILD) OR PI5C3257C(PERICOM)





<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	TOUCH PAD CONNECTOR	
Size: Custom	Document Number: N-Note 3.0	Rev: SC
Date: Monday, November 02, 2009	Sheet 36 of 82	



<Variant Name>

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

Title: RTD2525L (1/2)

Size	Document Number	Rev
A4	N-Note 3.0	SC

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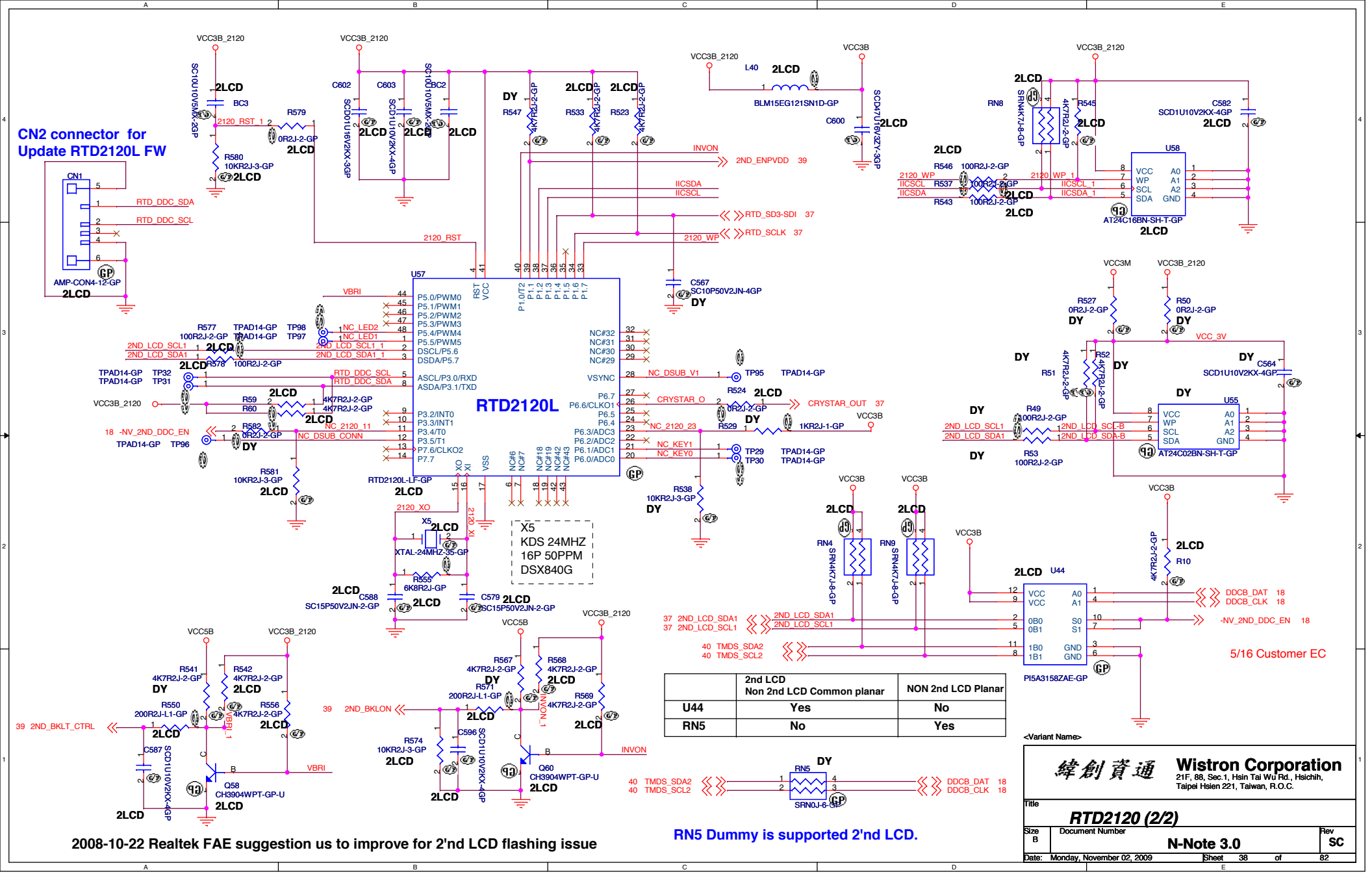
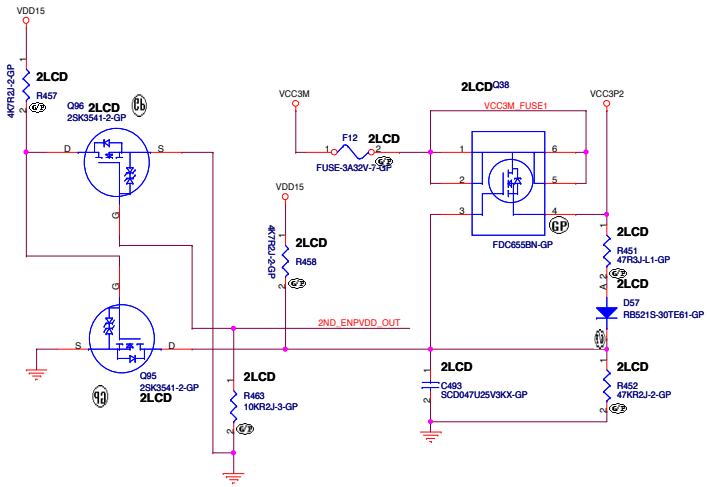
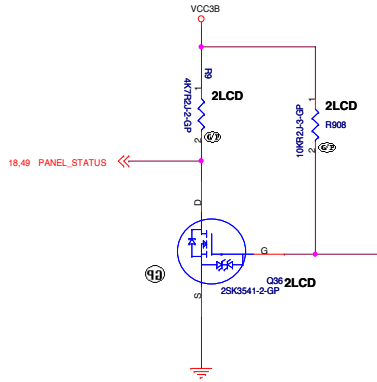
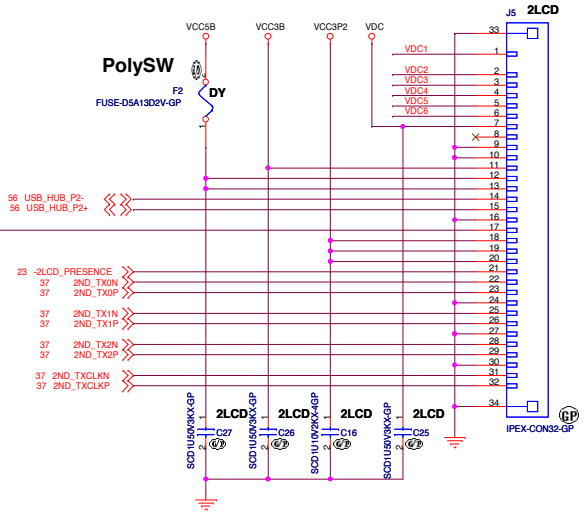
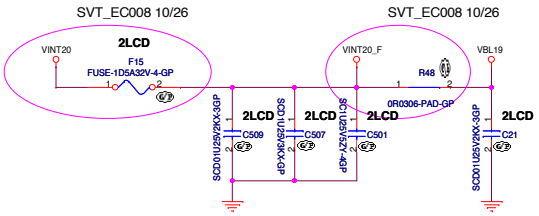


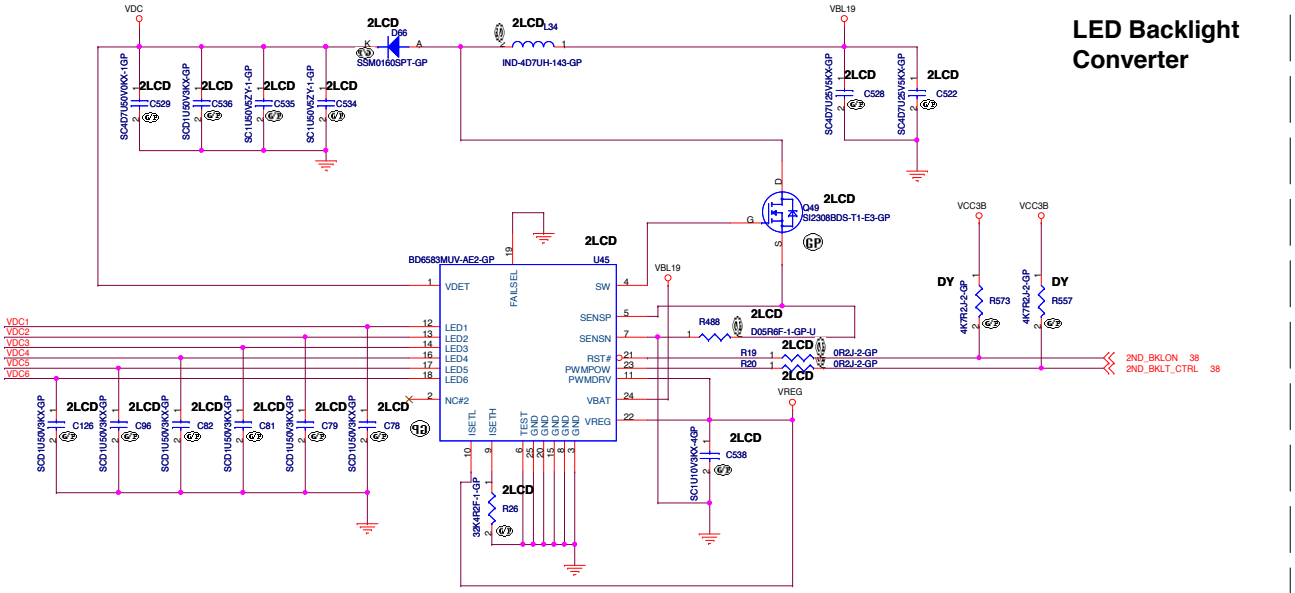


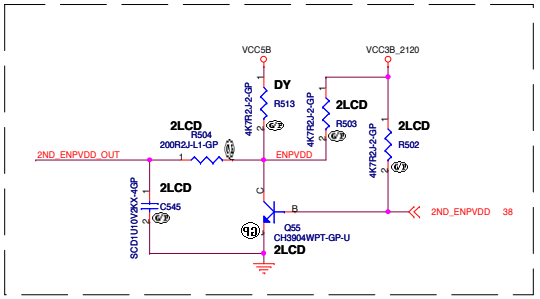






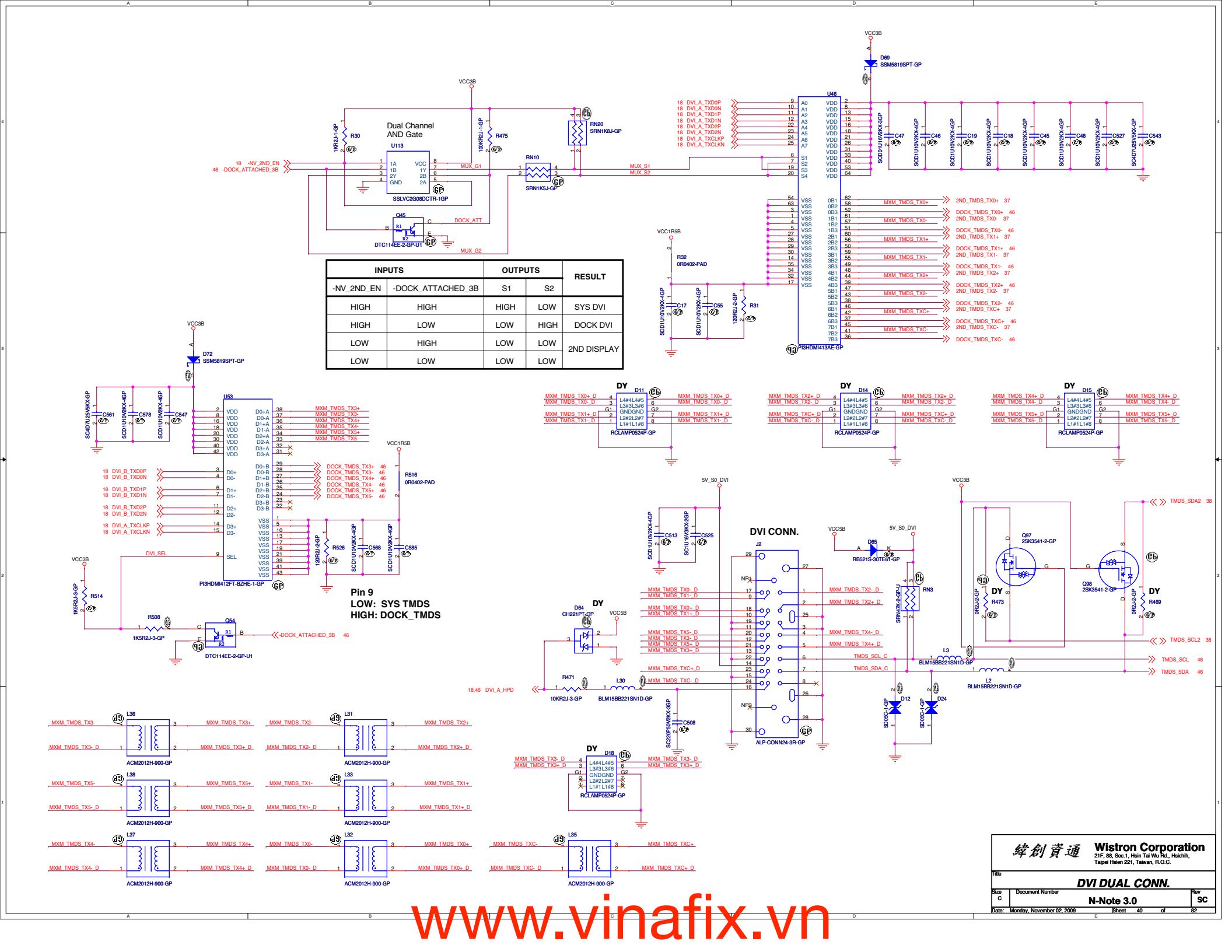
LED Backlight Converter





2008-10-22 Realtek FAE suggestion us to improve for 2'nd LCD flashing issue

緯創資通 Wistron Corporation		
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title: 2'ND LCD CONNECTOR		
Size: Custom	Document Number: N-Note 3.0	Rev: SC
Date: Monday, November 02, 2009	Sheet 39 of 82	



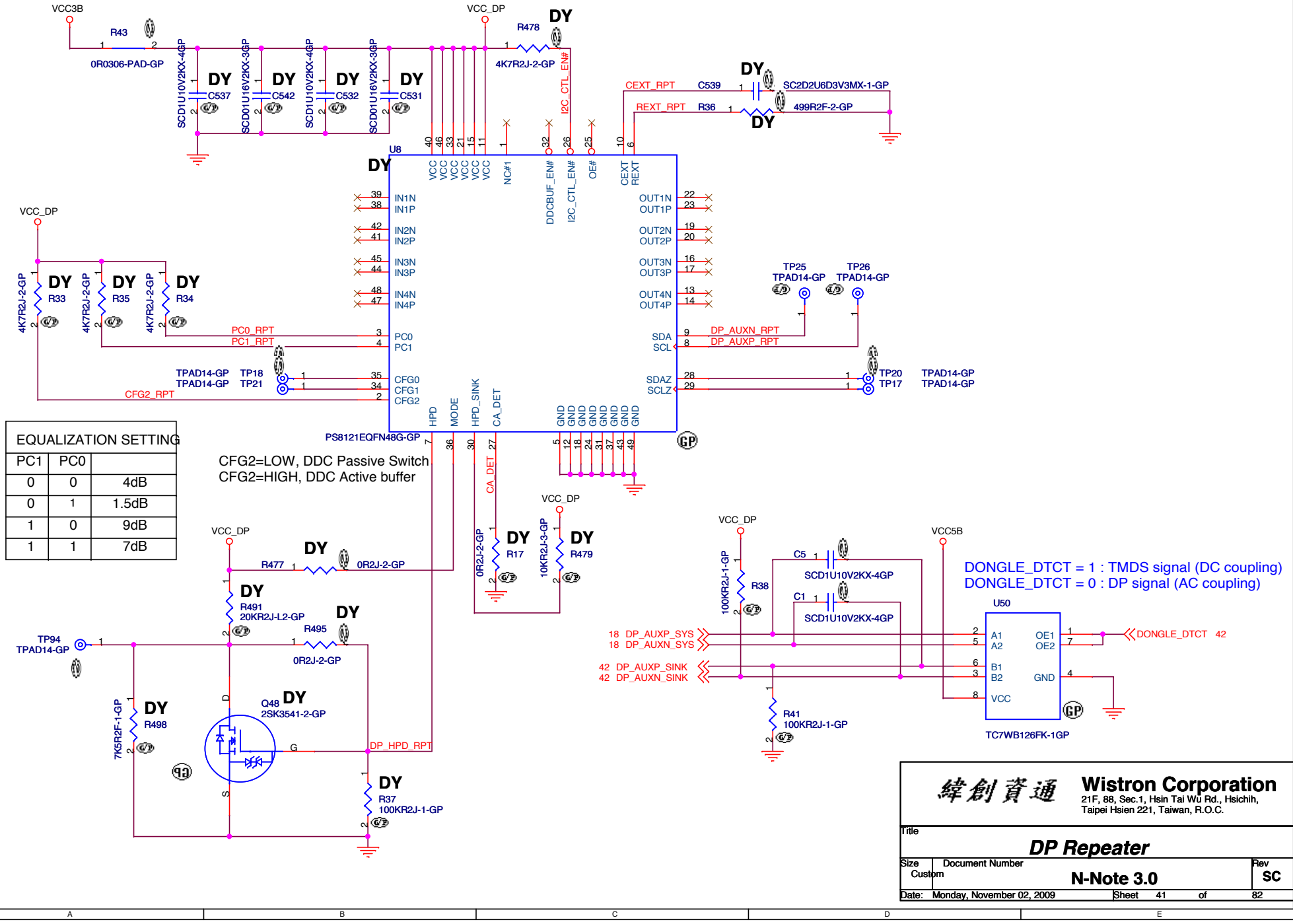
INPUTS		OUTPUTS		RESULT
-NV_2ND_EN	-DOCK_ATTACHED_3B	S1	S2	
HIGH	HIGH	HIGH	LOW	SYS DVI
HIGH	LOW	LOW	HIGH	DOCK DVI
LOW	HIGH	LOW	LOW	2ND DISPLAY
LOW	LOW	LOW	LOW	

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

Title: **DVI DUAL CONN.**

Size: C | Document Number: N-Note 3.0 | Rev: SC

Date: Monday, November 02, 2009 | Sheet 40 of 82



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

Title: ***DP Repeater***

Size: Custom | Document Number: **N-Note 3.0** | Rev: SC

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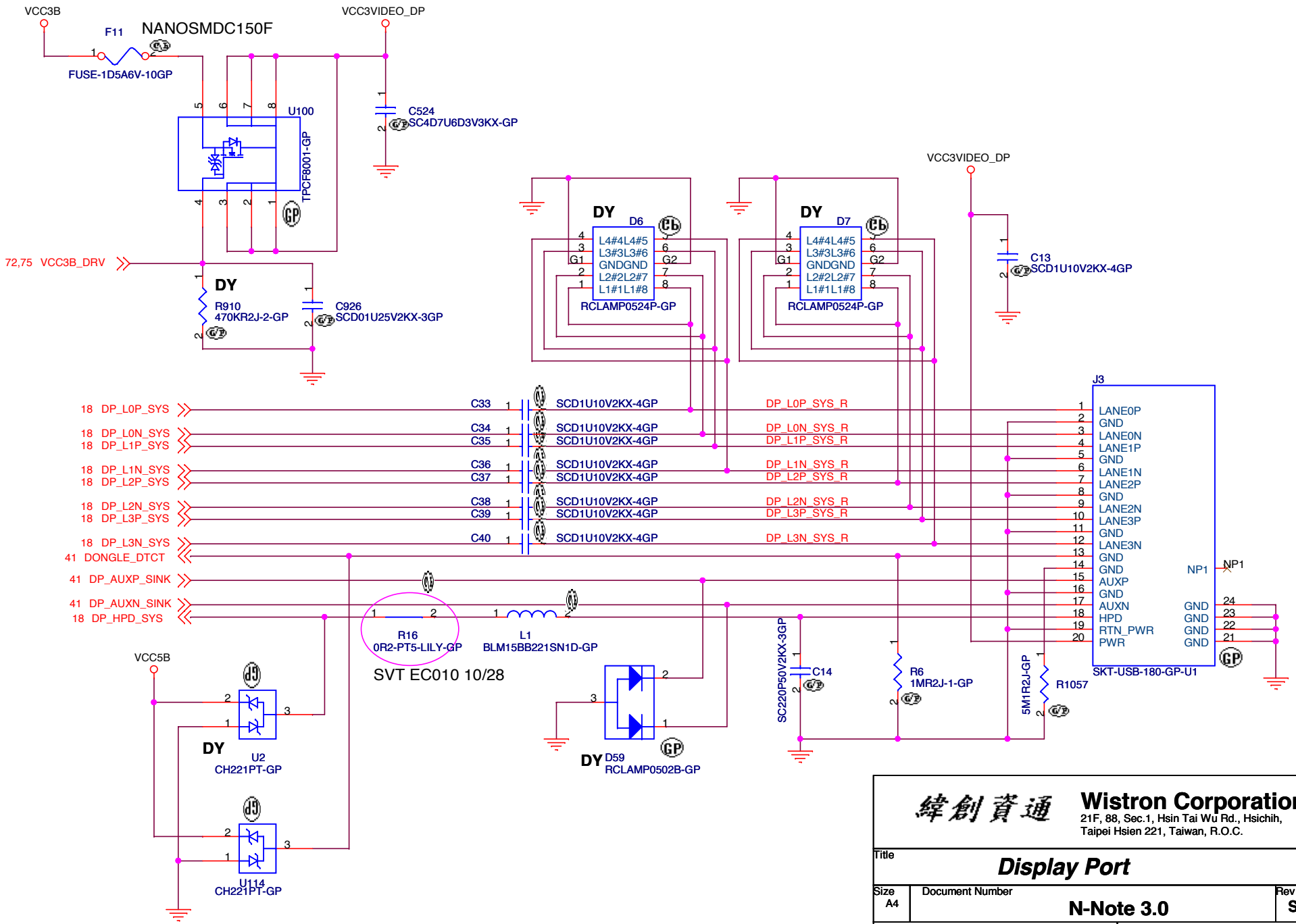
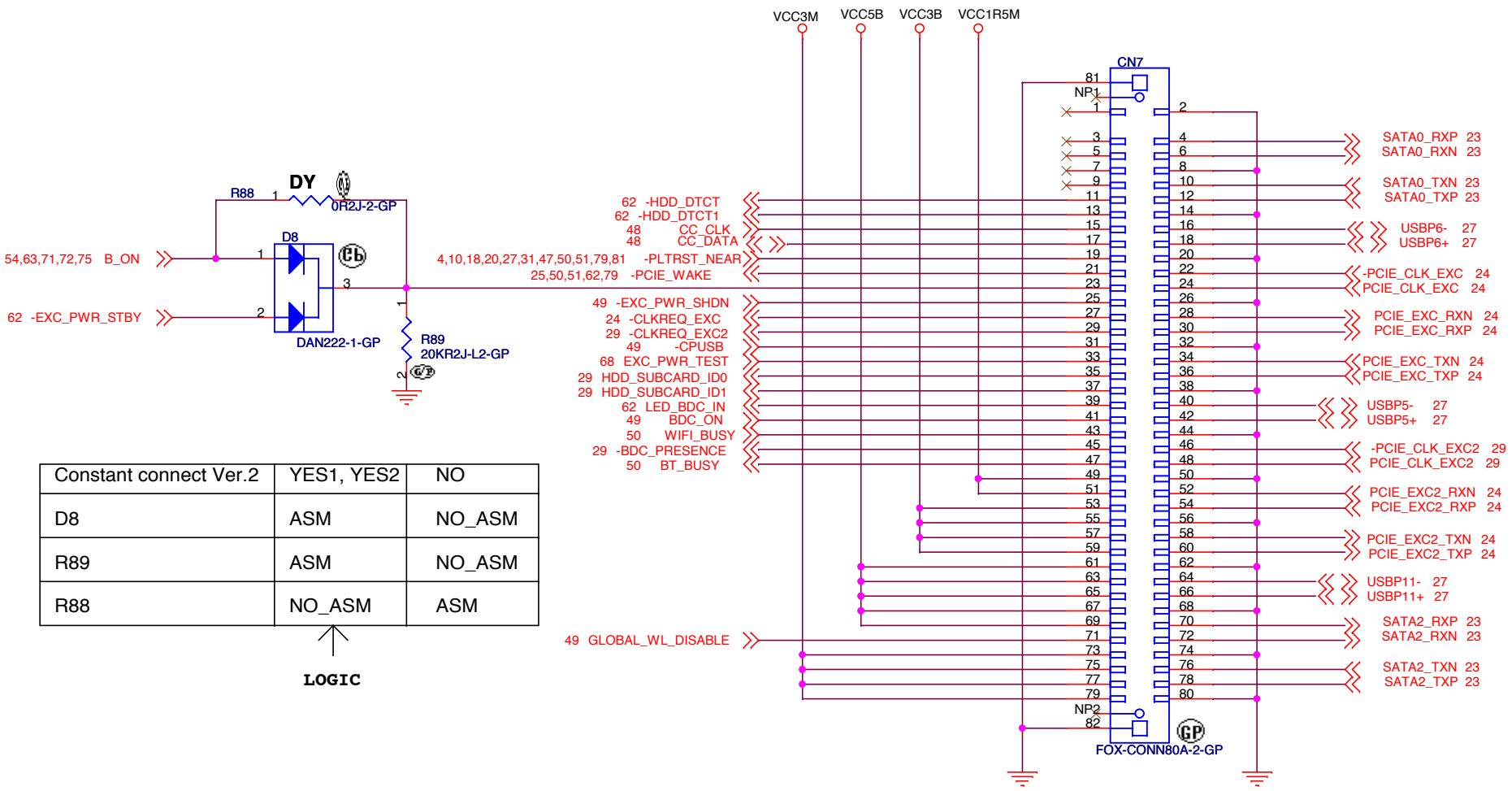


Wistron Corporation	21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	Display Port
Size A4	Document Number N-Note 3.0
Rev	SC
Date: Monday, November 02, 2009	Sheet 42 of 82

HDD IO SUB CARD Connector



Constant connect Ver.2	YES1, YES2	NO
D8	ASM	NO_ASM
R89	ASM	NO_ASM
R88	NO_ASM	ASM

LOGIC

<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: **SATA HDD CONN**

Size	Document Number	Rev
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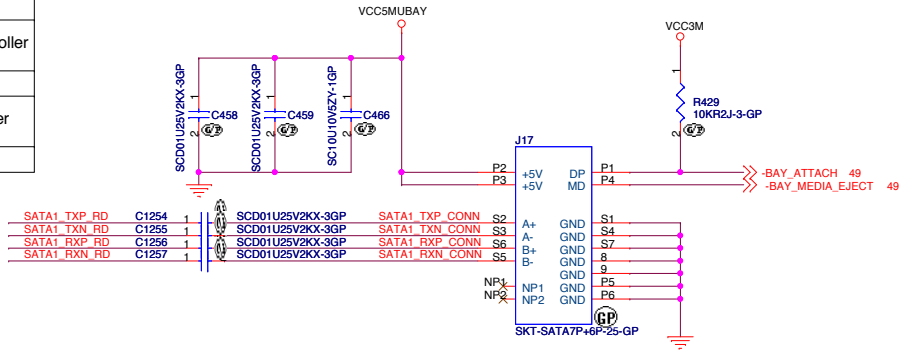
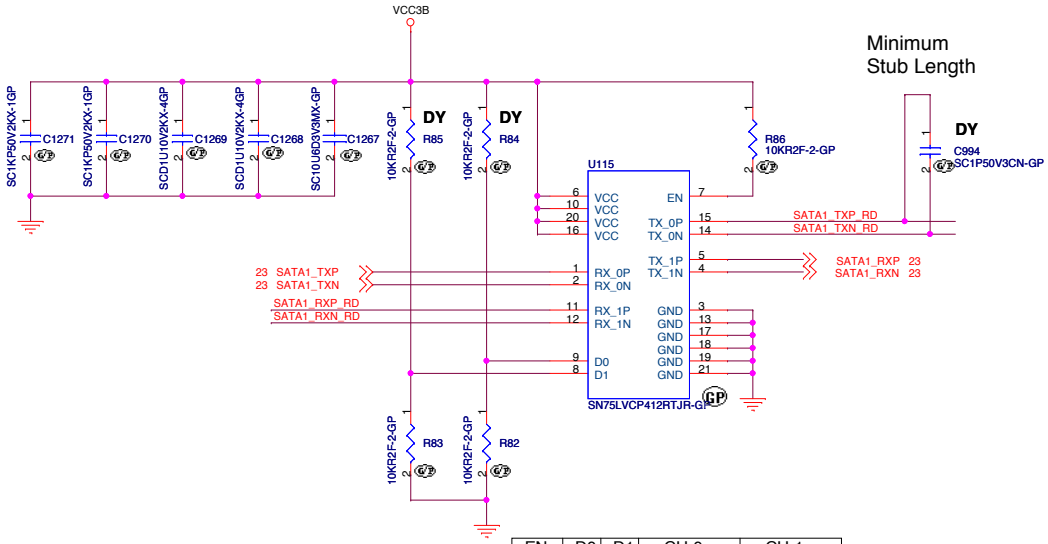
SATA ODD/BAY Connector

SATA SIGNAL SEGMENT		
S1	GND	
S2	A+	Differential signal pair from host controller
S3	A-	
S4	GND	
S5	B-	Differential signal pair to host controller
S6	B+	
S7	GND	

SATA POWER SEGMENT		
P1	DP	Device Present
P2	+5V	
P3	+5V	
P4	MD	Manufacturing Dianostic
P5	GND	
P6	GND	





EN	D0	D1	CH-0	CH-1
0	X	X	STANDBY	STANDBY
1	0	0	Standard	Standard
1	1	0	BOOST	Standard
1	0	1	Standard	BOOST
1	1	1	BOOST	BOOST

LOGIC

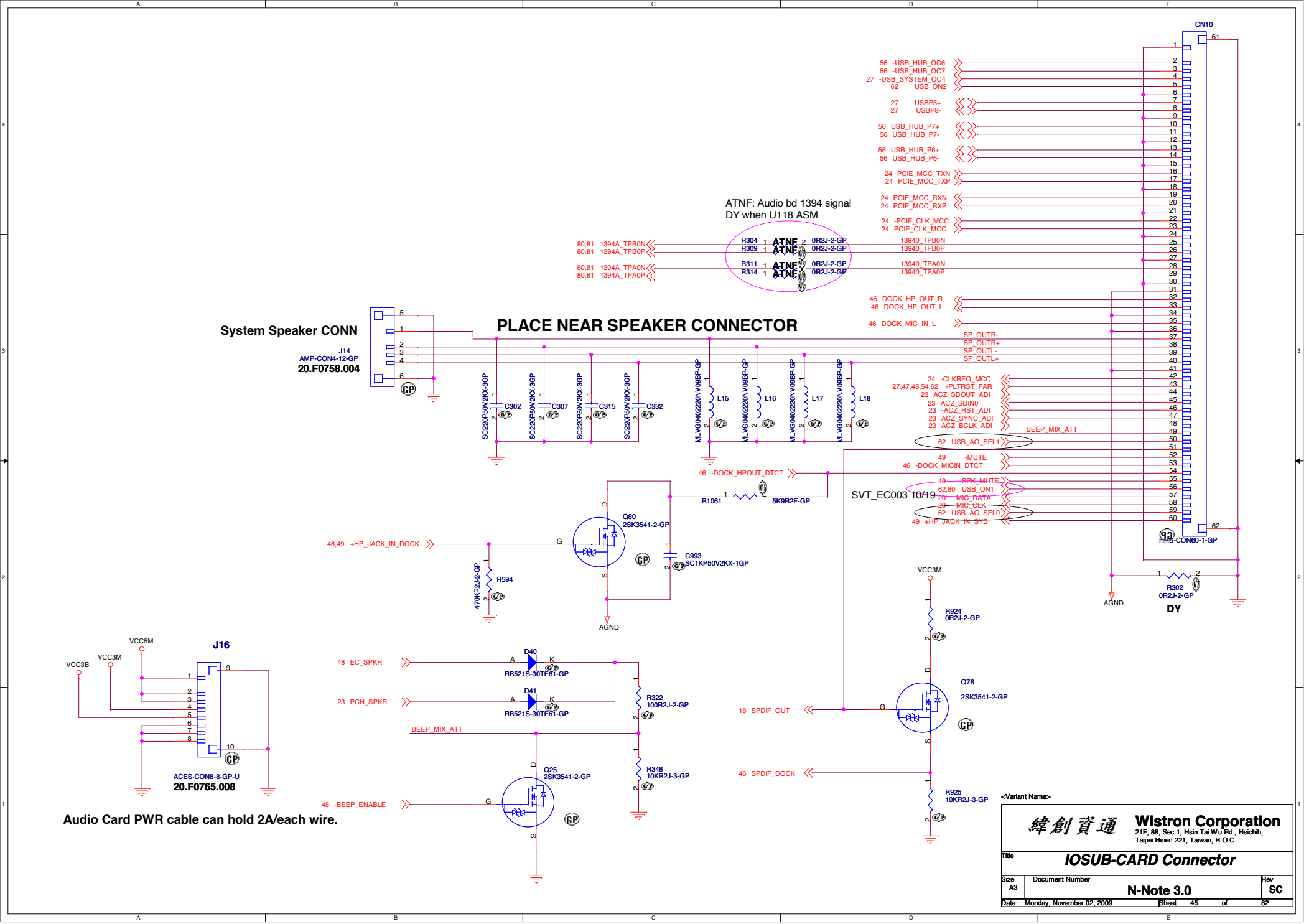
<Variant Name>

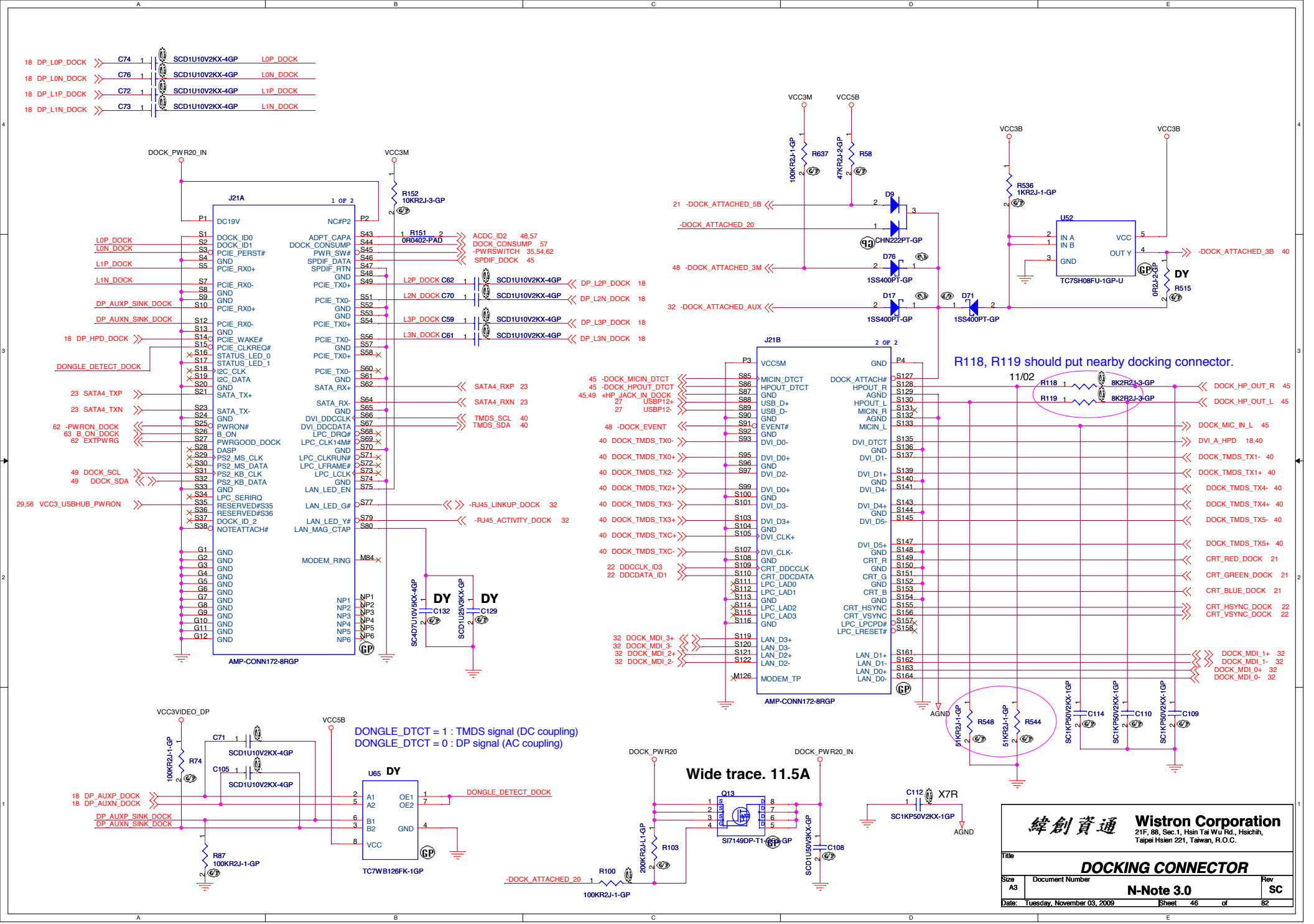
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

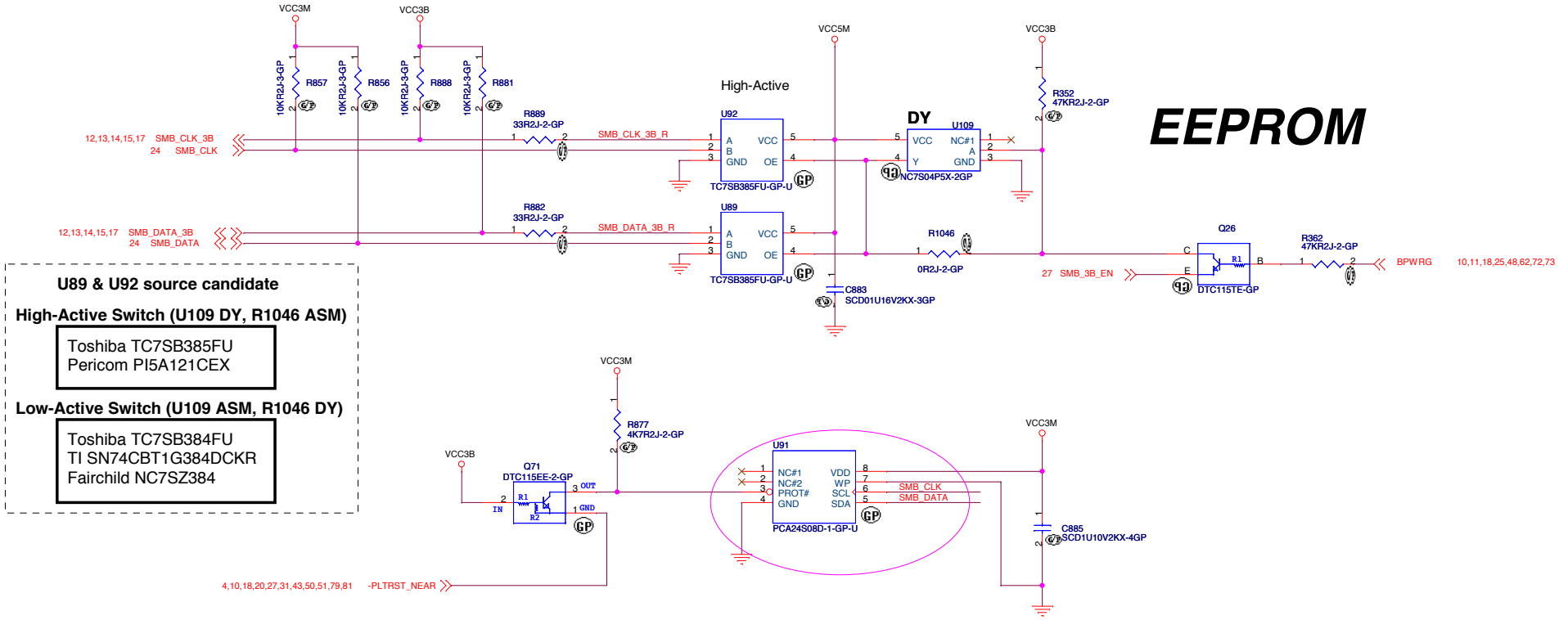
Title: ***SATA BAY I/F CONN***

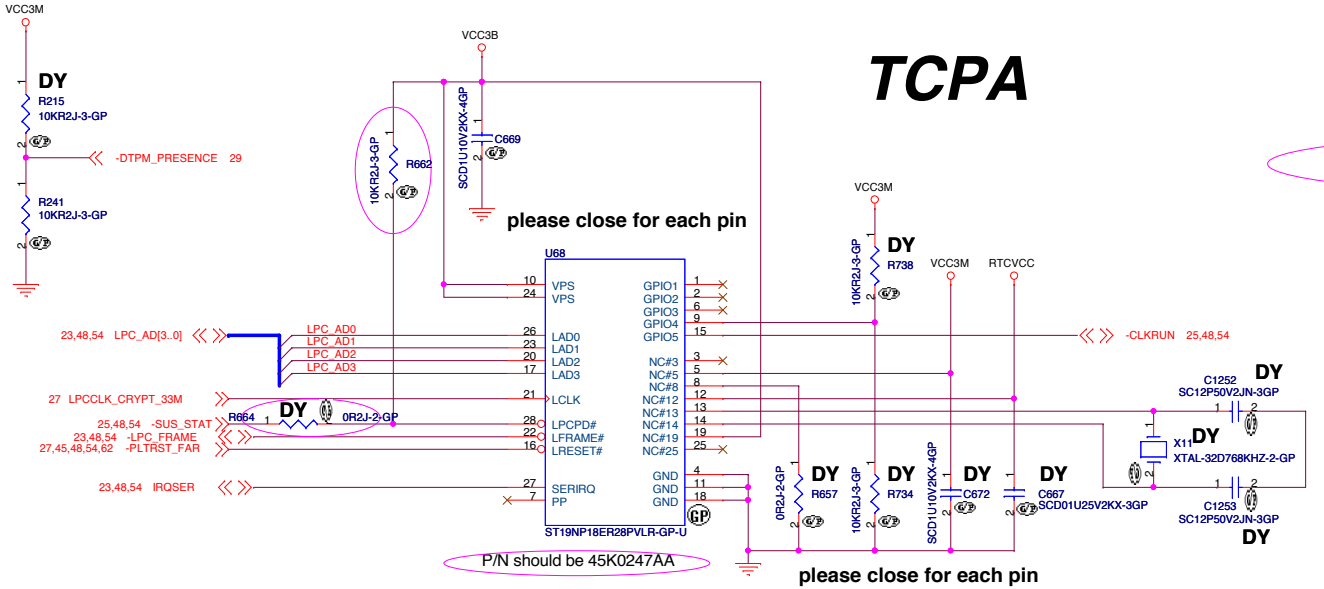
Size | Document Number: **N-Note 3.0** | Rev: SC

Date: Monday, November 02, 2009 | Sheet 44 of 82









REF DES	NO TPM	WINBOND WPCT200	NUVOTON WPCT210A	ST MICRO ST19NP18-TPM-A
U68	NO_ASM	ASM	ASM	ASM
C667	NO_ASM	ASM	NO_ASM	NO_ASM
C672	NO_ASM	ASM	ASM	NO_ASM
C669	NO_ASM	ASM	ASM	ASM
R664	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R662	NO_ASM	ASM	ASM	ASM
R657	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R734	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R738	NO_ASM	NO_ASM	NO_ASM	NO_ASM
X11	NO_ASM	NO_ASM	NO_ASM	NO_ASM
C1252	NO_ASM	NO_ASM	NO_ASM	NO_ASM
C1253	NO_ASM	NO_ASM	NO_ASM	NO_ASM
R215	ASM	NO_ASM	NO_ASM	NO_ASM
R241	NO_ASM	ASM	ASM	ASM

SVTEC001 10/14

EPSON
32.768KHz
2.5P20PPM
FC-135

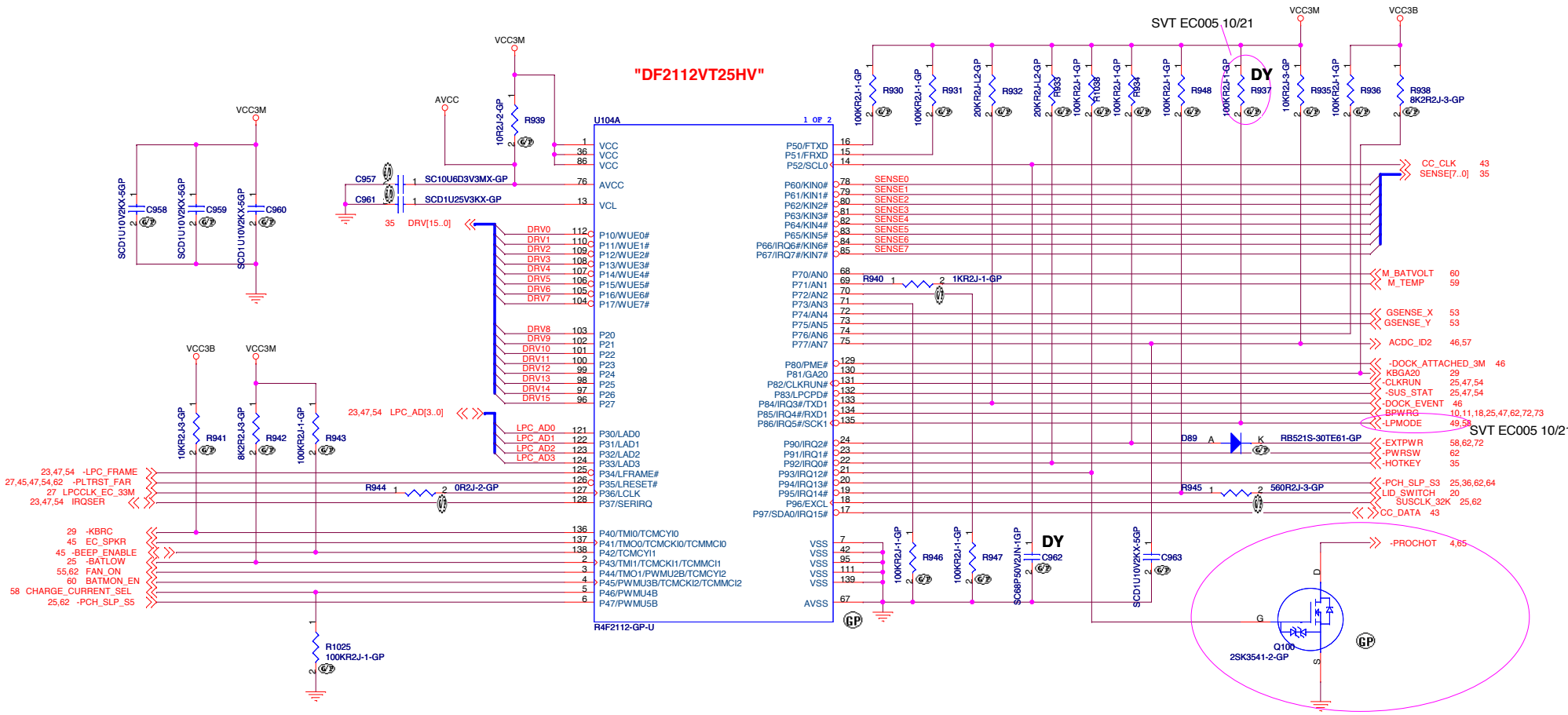
<Variant Name>

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

Title: EEPROM/TCPA

Size: A3 | Document Number: N-Note 3.0 | Rev: SC

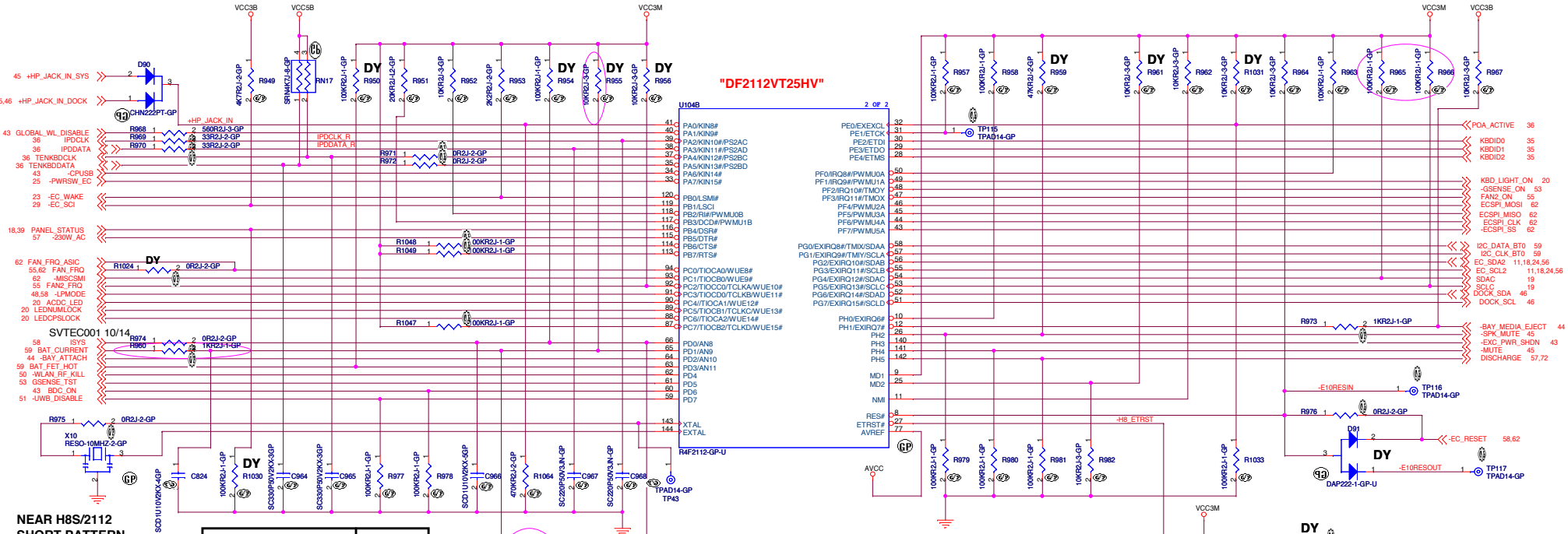
Date: Monday, November 02, 2009 | Sheet 47 of 82



<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: H8S/2112 (1/2)		
Size: A3	Document Number: N-Note 3.0	Rev: SC
Date: Monday, November 02, 2009	Sheet 48 of 82	

GLOBAL_WL_DISABLE	High	Low
RF function	Enable	Disable



NEAR H8S/2112 SHORT PATTERN. NO PATTERN UNDER THIS AREA.

Usage	R1030
Non 2nd LCD planar	**ASM**
2nd LCD non 2nd LCD common planar	**NO_ASM**

LOGIC

E10A Debug I/F	Enable	Disable
R976	NO ASM	ASM
R964	ASM	ASM
D91	ASM	NO ASM
R985	NO ASM	ASM
R984	ASM	NO ASM
R983	ASM	NO ASM
D92	ASM	NO ASM
D94	ASM	NO ASM
R982	NO ASM	ASM
R961	ASM	NO ASM
R959	ASM	NO ASM
R979	NO ASM	ASM
R787	NO ASM	ASM
R786	NO ASM	ASM
R784	NO ASM	ASM

<Variant Name>

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

Title: ***H8S/2112(2/2)***

Size	Document Number	Rev
Custom	**N-Note 3.0**	**SC**

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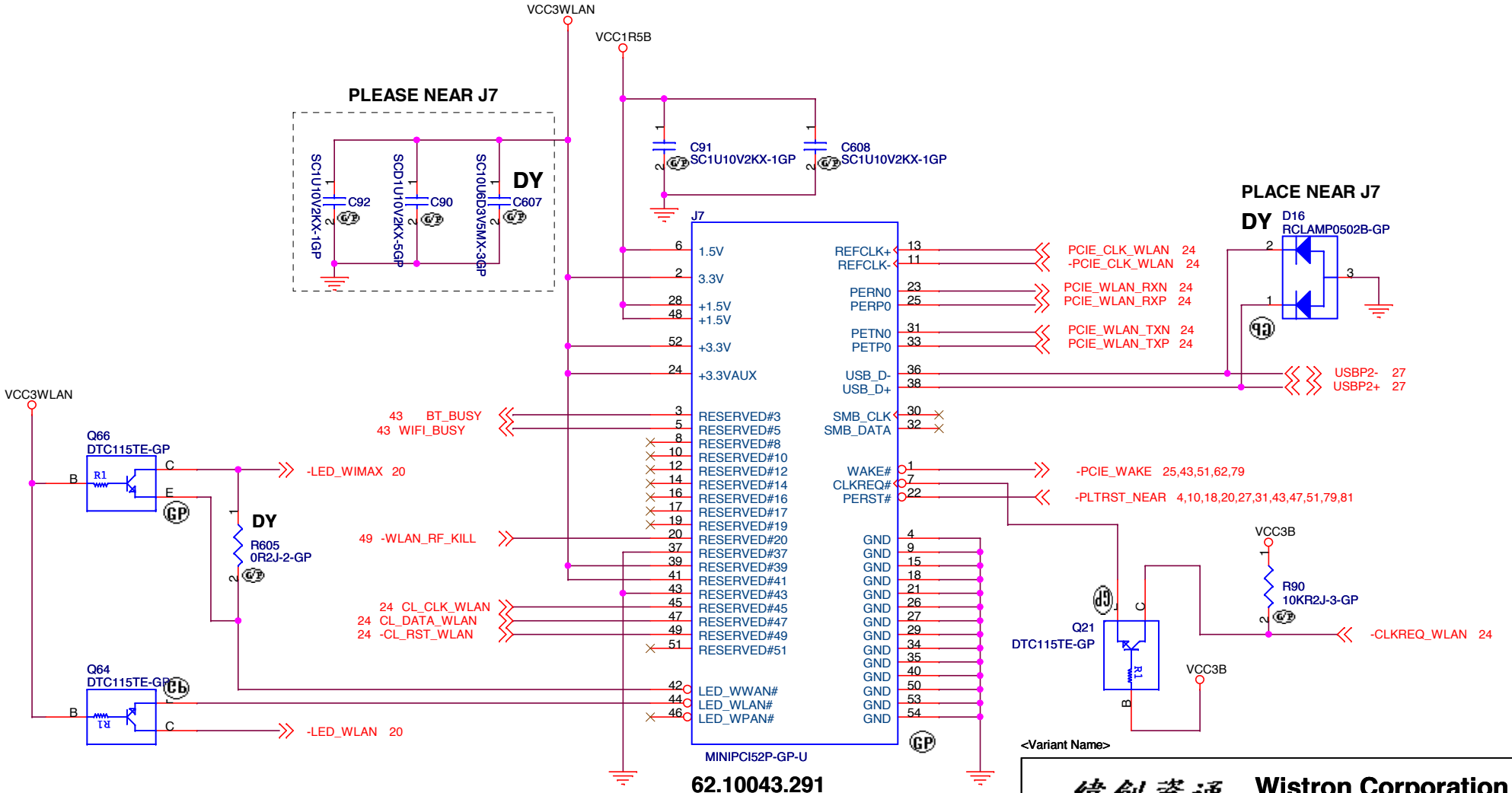
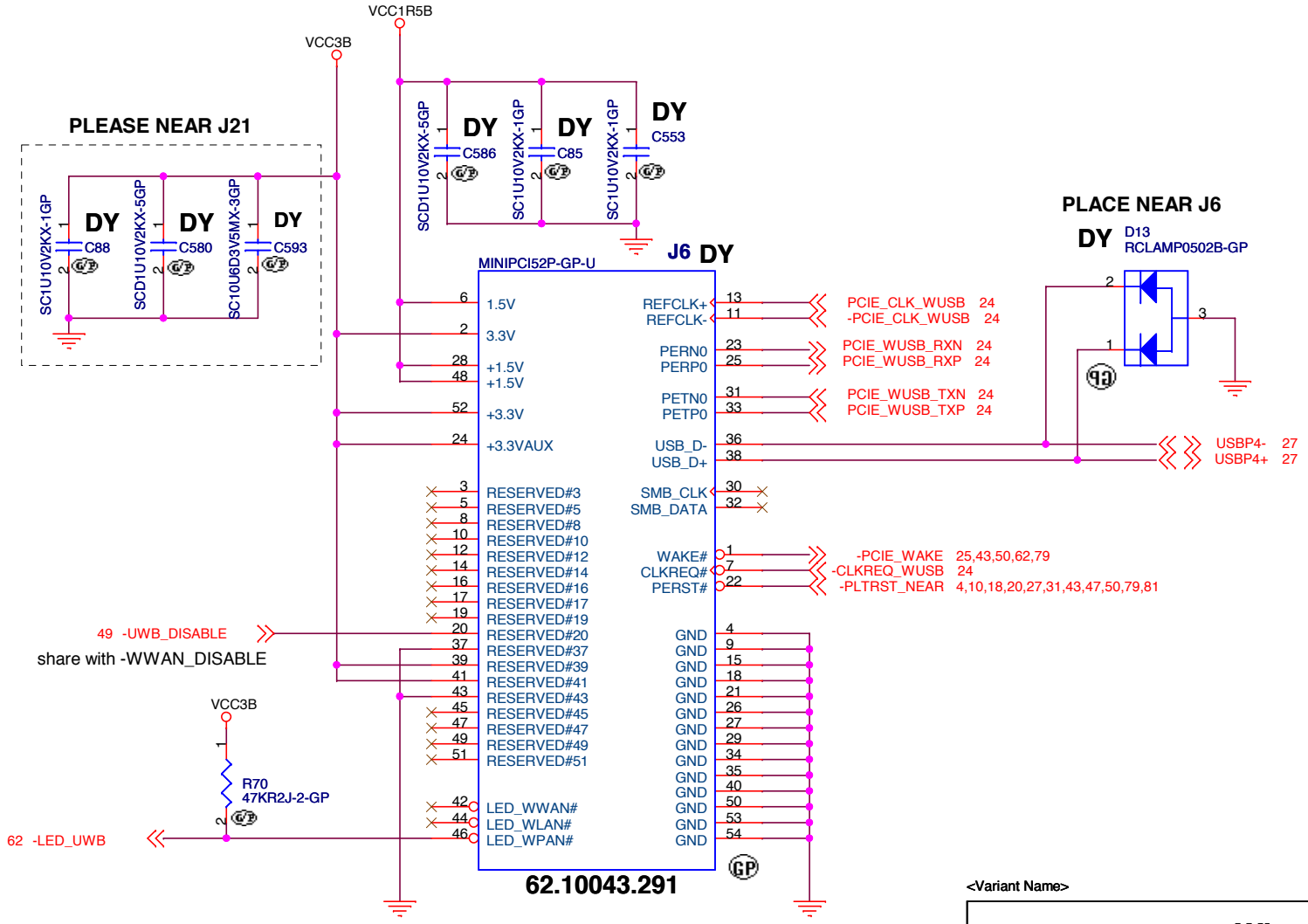
MINI PCIE CONN FOR WLAN



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 SLOT 1***	
Size A4	Document Number **N-Note 3.0**	Rev SC
Date: Monday, November 02, 2009	Sheet 50 of 82	

MINI CARD FOR UWB



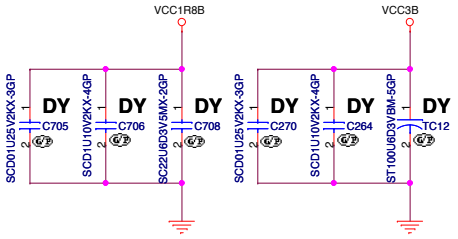
<Variant Name>

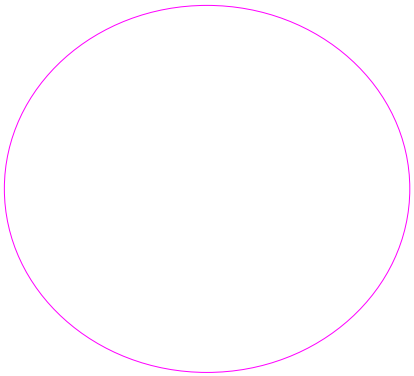
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***MINI CARD SLOT 2***

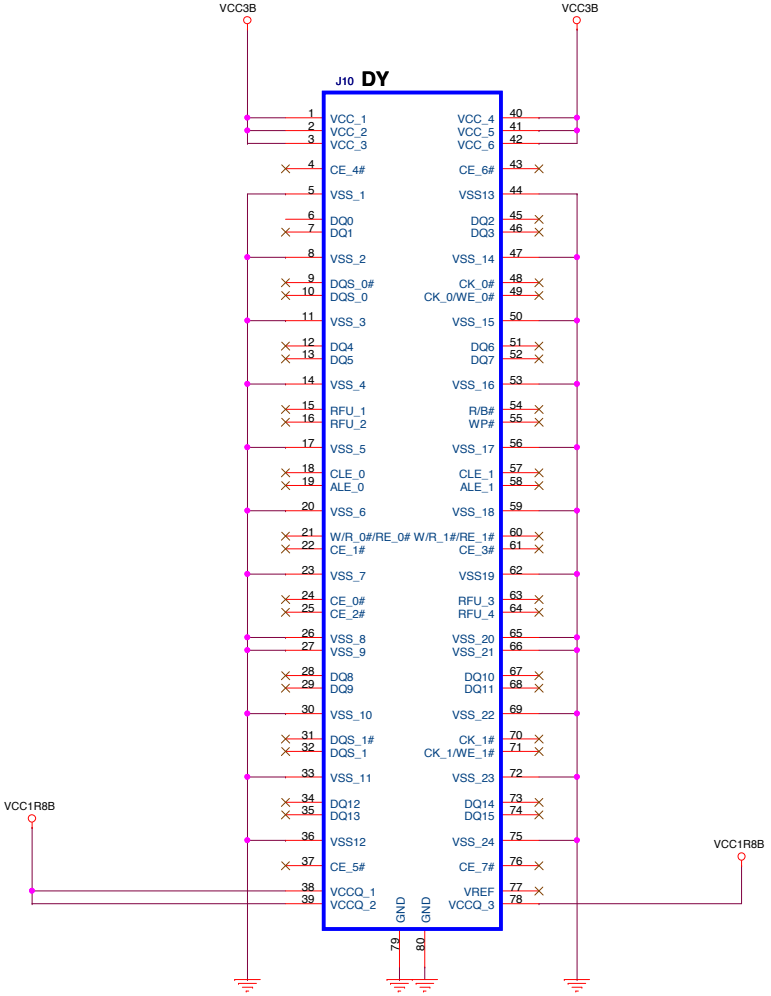
Size	Document Number	Rev
A4	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 51 of 82





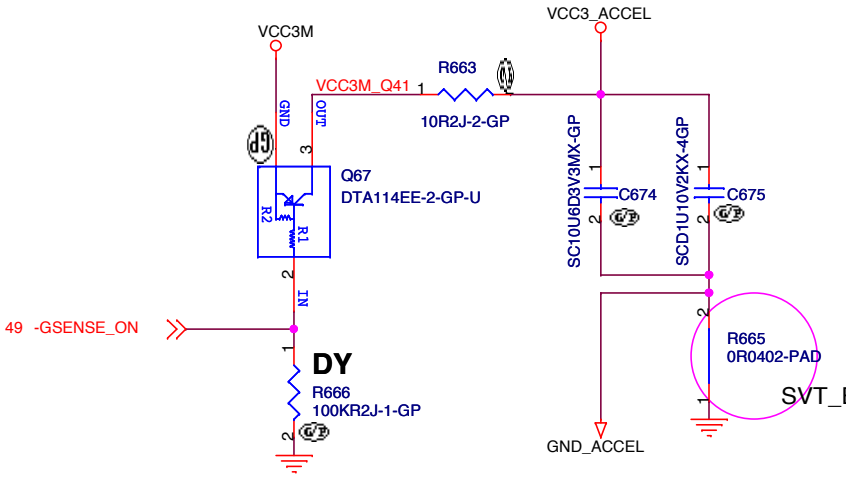
SVT_EC004 10/20



J10 P/N should be 62.10034.361

<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	***TURBO MEMORY SLOT***
Size: A3	Document Number: **N-Note 3.0**
Rev: SC	
Date: Monday, November 02, 2009	Sheet 52 of 82



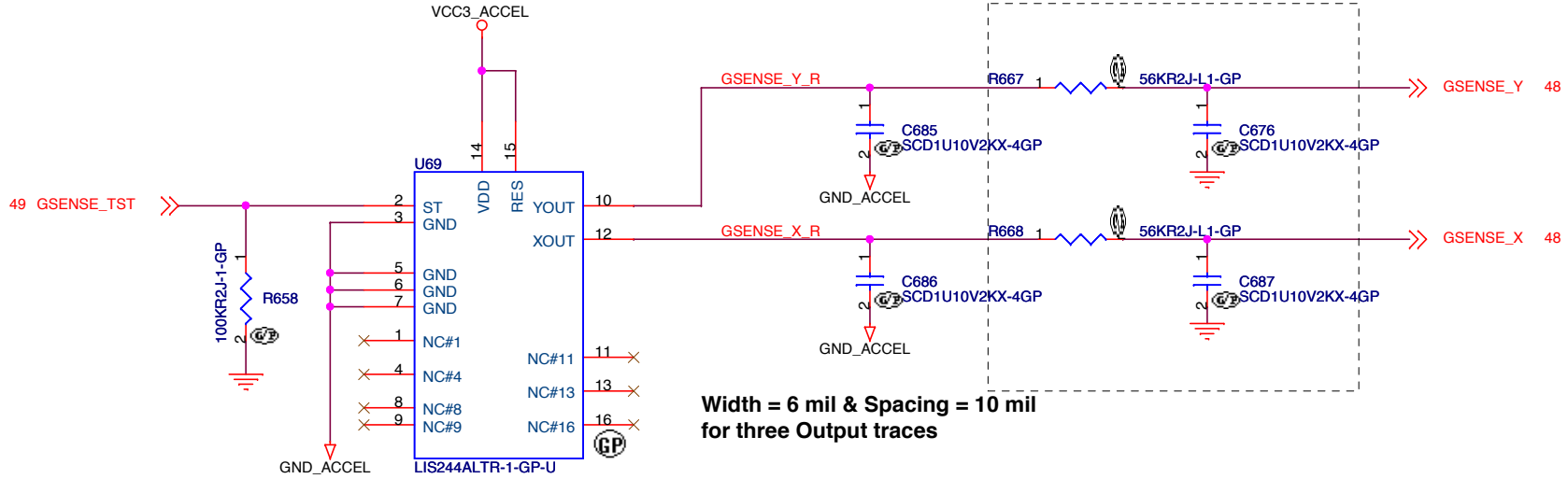
Layout Comment :

(1) Place Q67, R666, R663, C674, C675, R665, C685 and C686 close to U69.

(2) Avoid routing under DCDC switching area.

SVT_EC009 10/27

PLACE NEAR EC



Width = 6 mil & Spacing = 10 mil for three Output traces

[Source Candidate]
STMicro LIS244AL 41R0525AA
STMicro LIS34AL 41R0828AA

<Variant Name>

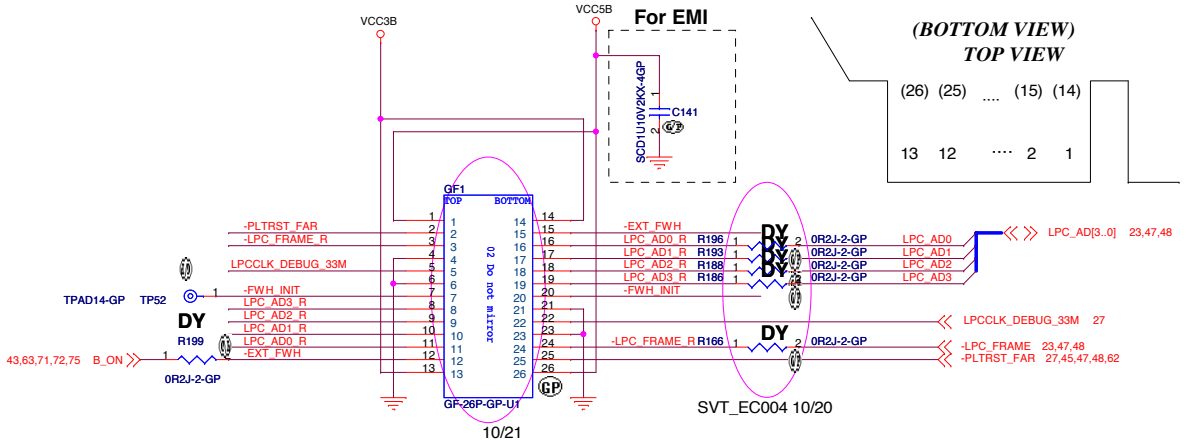
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***G-SENSOR***

Size	Document Number	Rev
A4	N-Note 3.0	SC

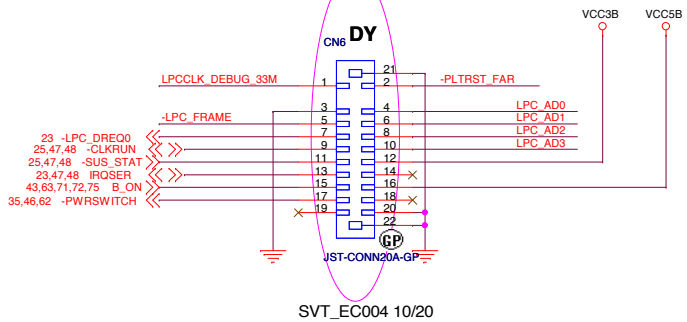
Date: Monday, November 02, 2009 Sheet 53 of 82

Golden Finger for Debug Board



Ref Des	Enable	Disable
CN6	ASM	NO_ASM
R814	ASM	NO_ASM
R196	ASM	NO_ASM
R193	ASM	NO_ASM
R188	ASM	NO_ASM
R186	ASM	NO_ASM
R166	ASM	NO_ASM

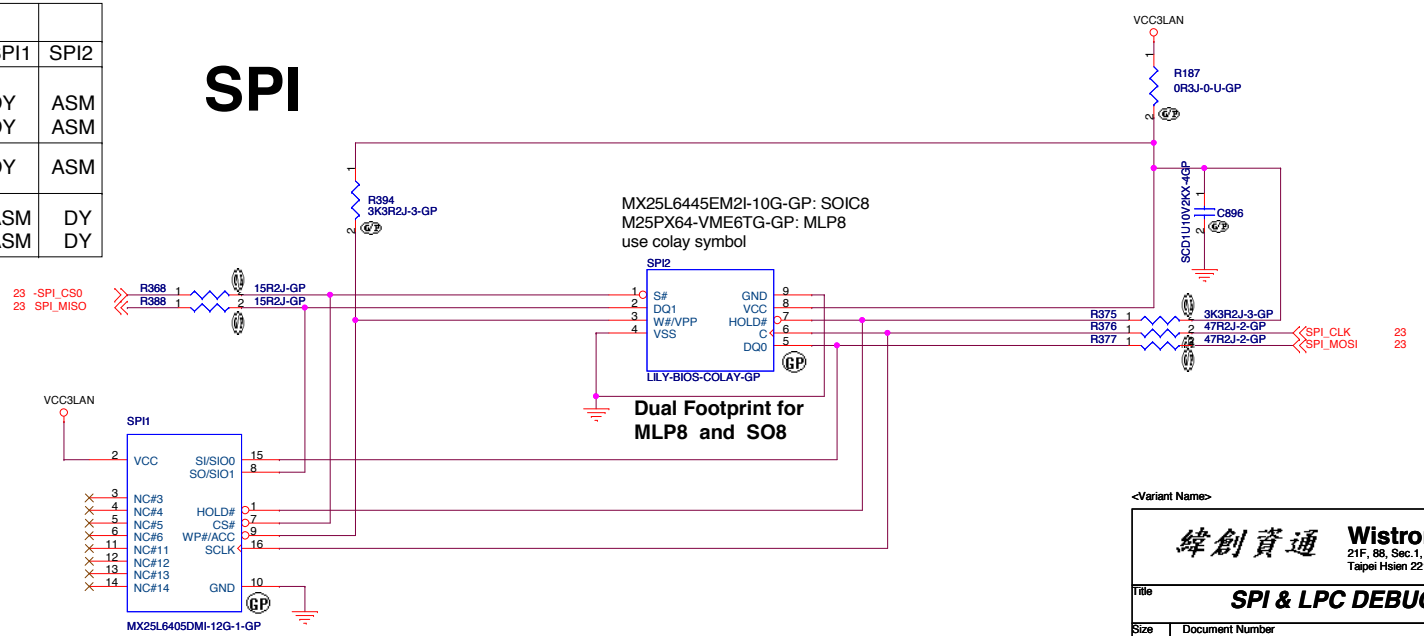
SVT_EC004 10/20



SVT_EC004 10/20

64M-bit SPI Flash			SPI1	SPI2
SO8	MACRONIX WINBOND	MX25L6445EM21-10G MX25X64BVSSIG	DY DY	ASM ASM
MLP8	NUMONYX	M25PX64-VME6TG	DY	ASM
SO16	MACRONIX WINBOND	MX25L6405DMI-12G MX25X64VSFIG	ASM ASM	DY DY

SPI



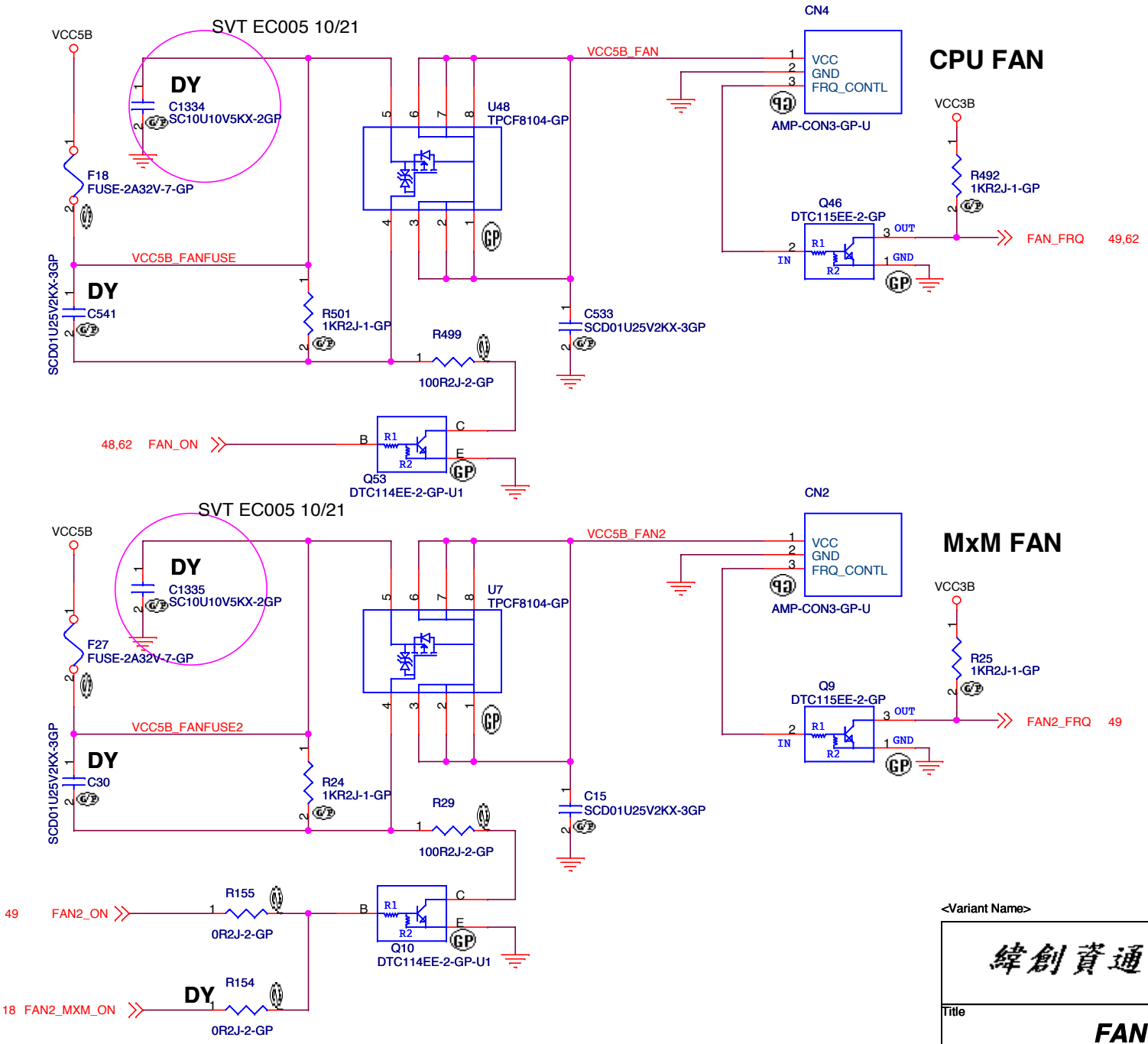
<Variant Name>

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

Title: ***SPI & LPC DEBUG CARD***

Size	Document Number	Rev
A3	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 54 of 82



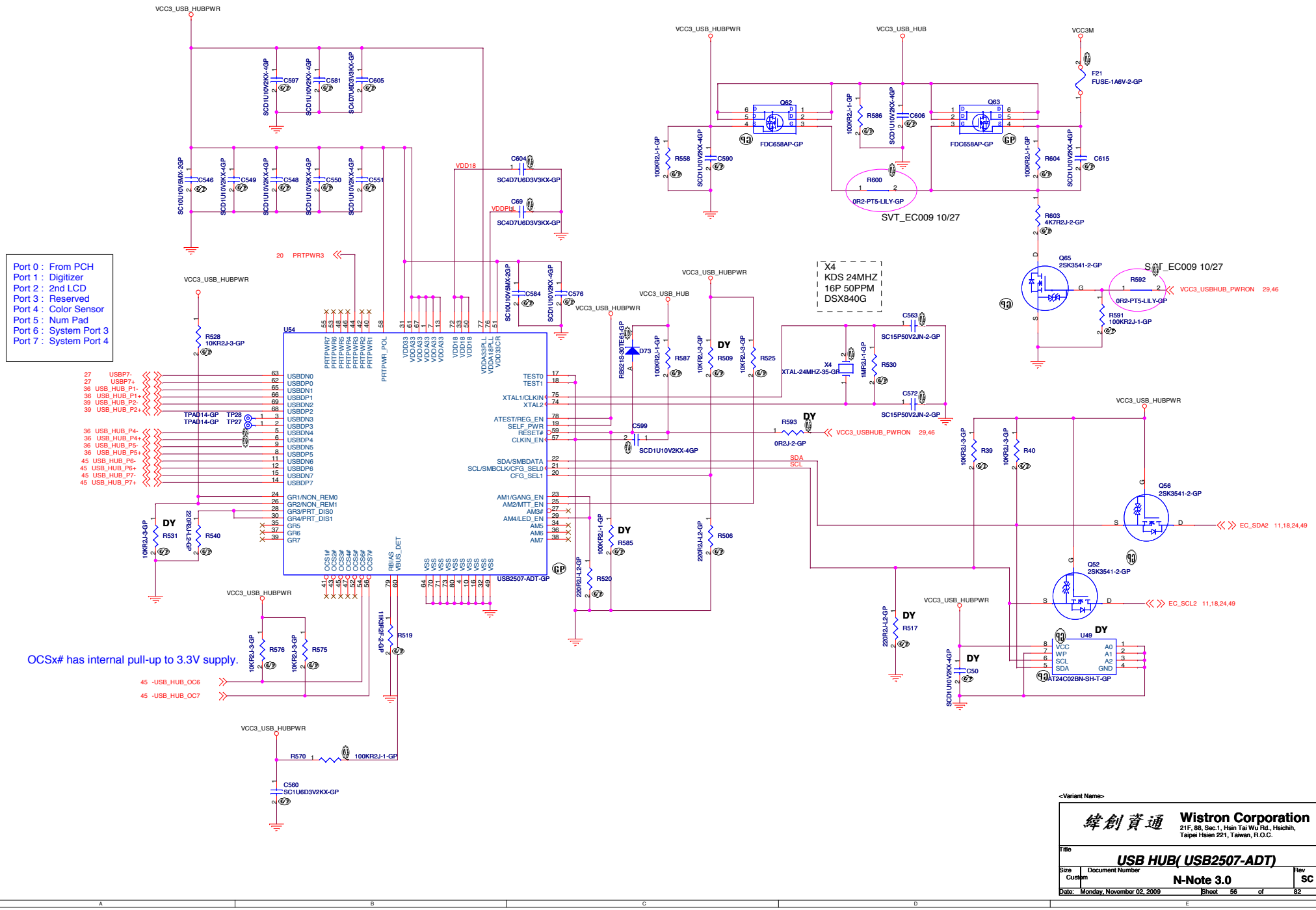
<Variant Name>

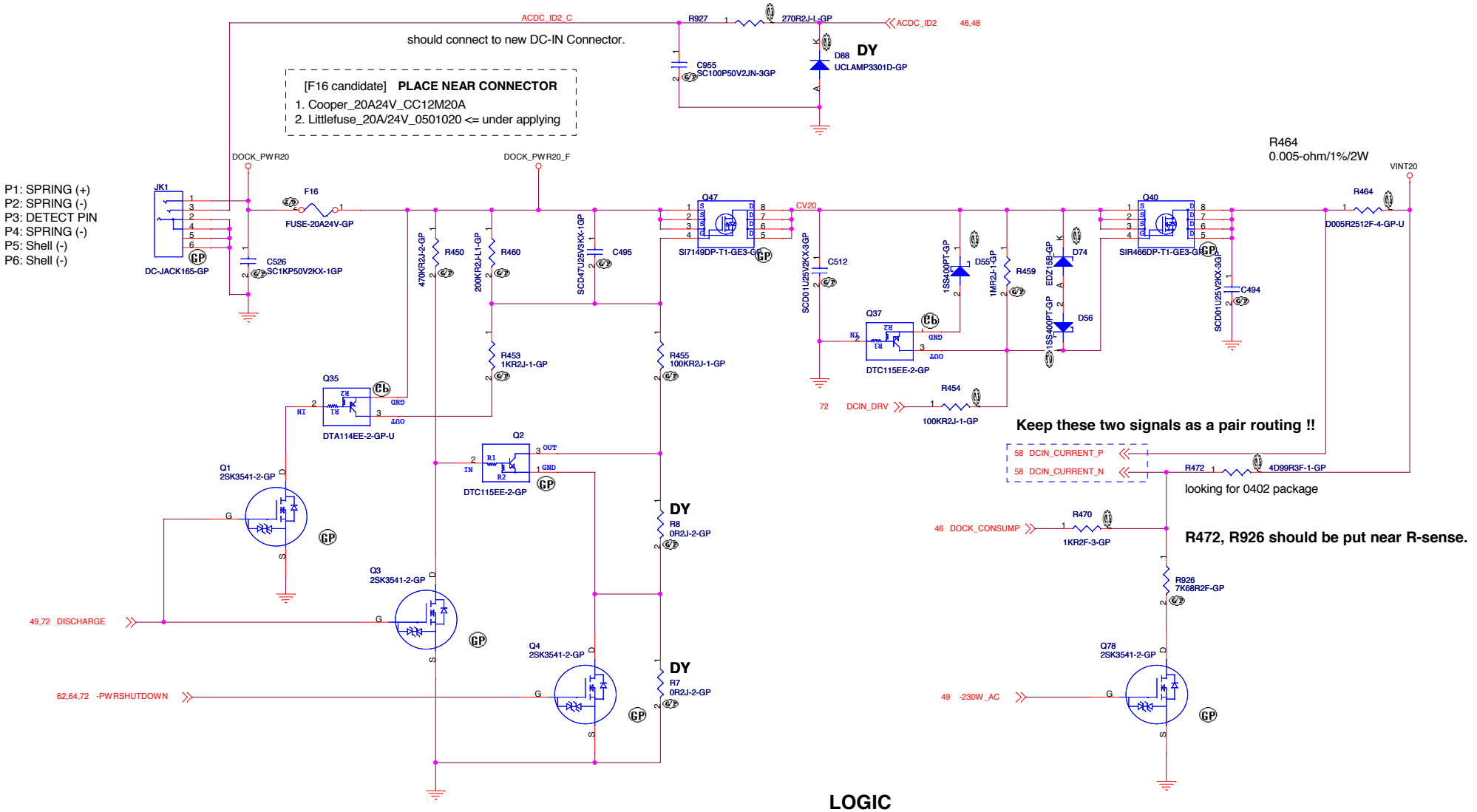
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **FAN CONTROL**

Size	Document Number	Rev
A4	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 55 of 82





LOGIC

PEAK SHIFT	YES	NO
R8	NO-ASM	ASM
R7	ASM	NO-ASM
Q2	ASM	NO-ASM
Q3	ASM	NO-ASM

<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-IN AND CHARGER (1/2)

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A3	N-Note 3.0	SC

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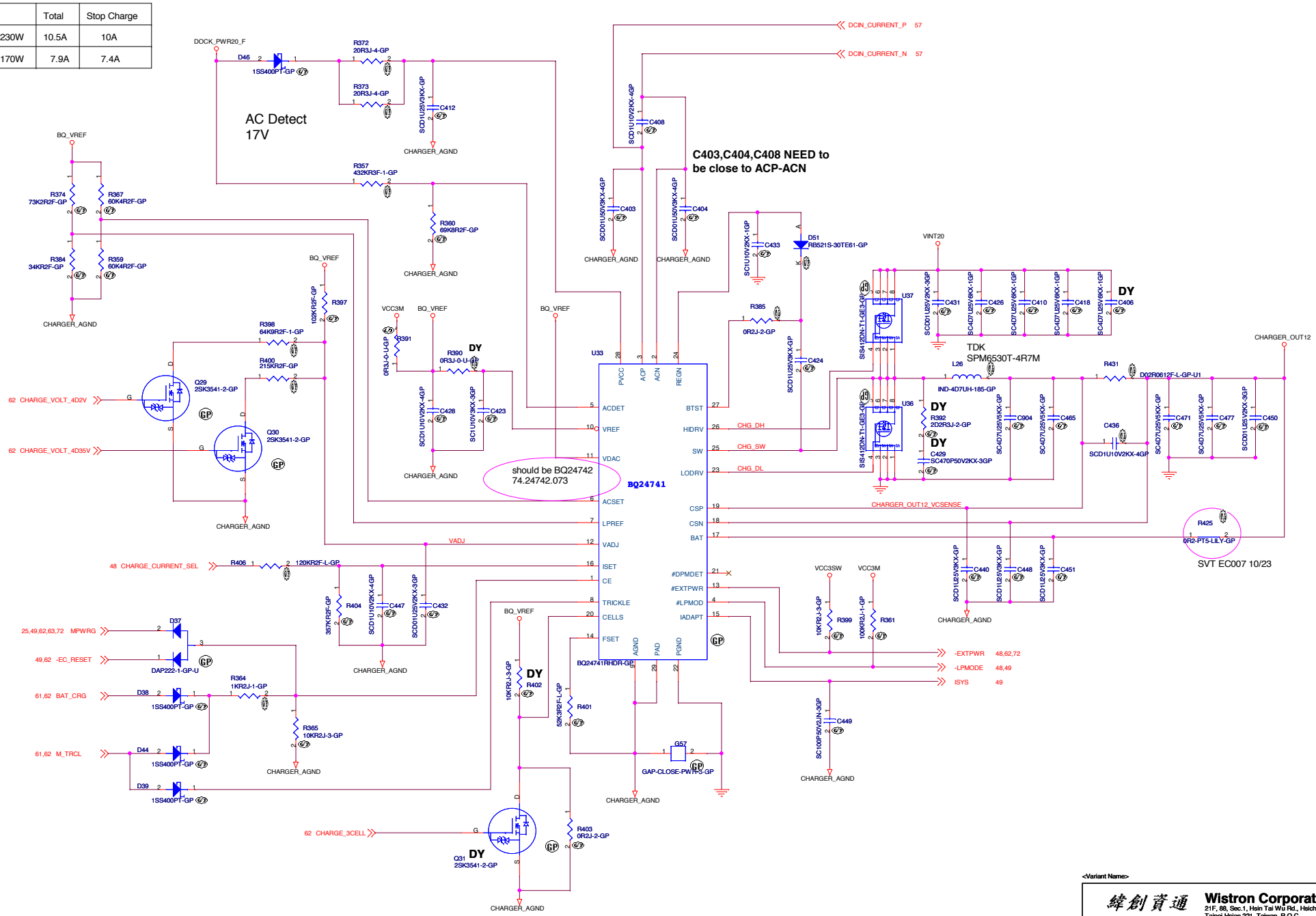
	Total	Stop Charge
230W	10.5A	10A
170W	7.9A	7.4A



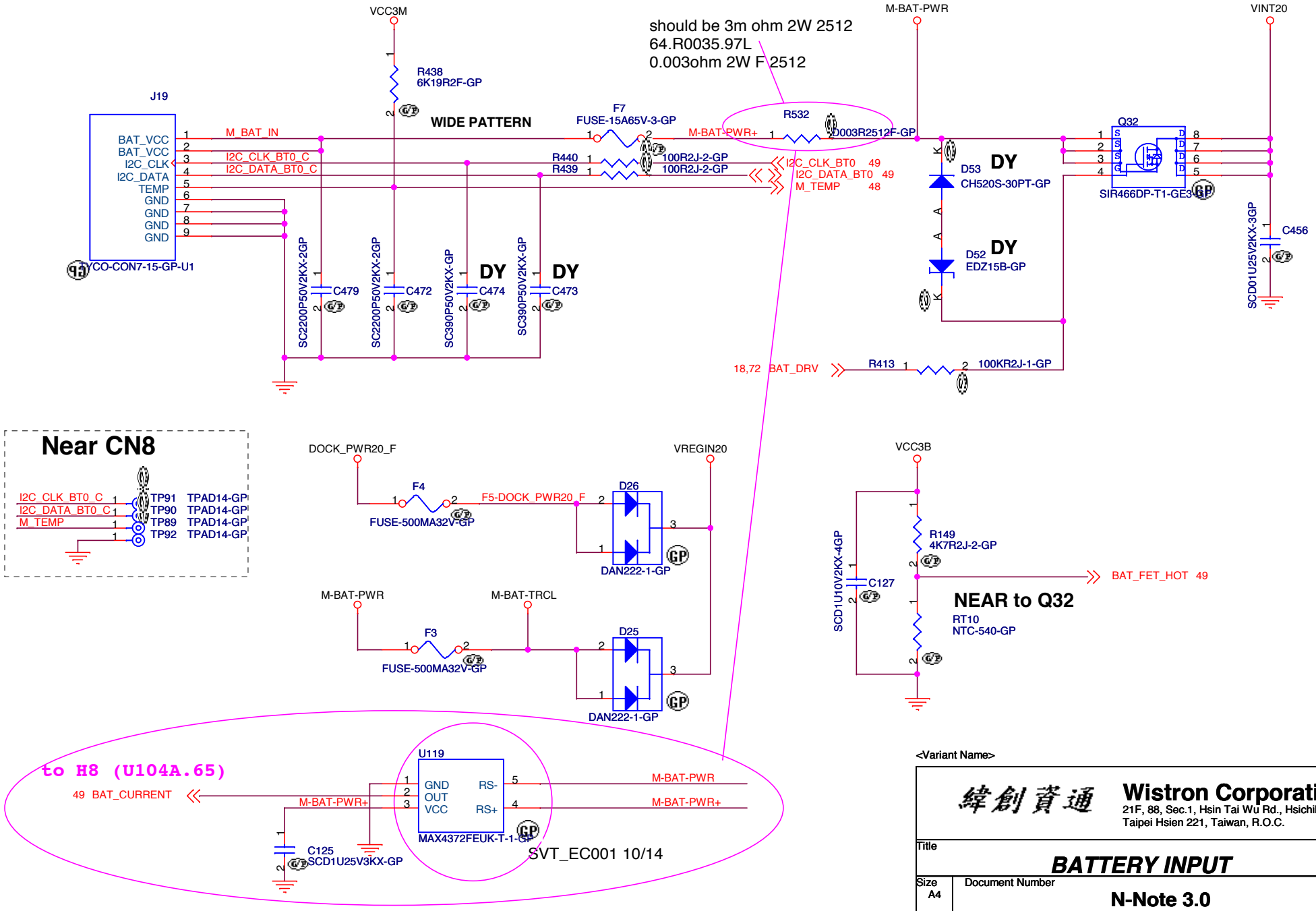
<Variant Name>

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

Title: DC-IN AND CHARGER (2/2)

Size: Custom | Document Number: N-Note 3.0 | Rev: SC

Date: Monday, November 02, 2009 | Sheet 58 of 82



<Variant Name>

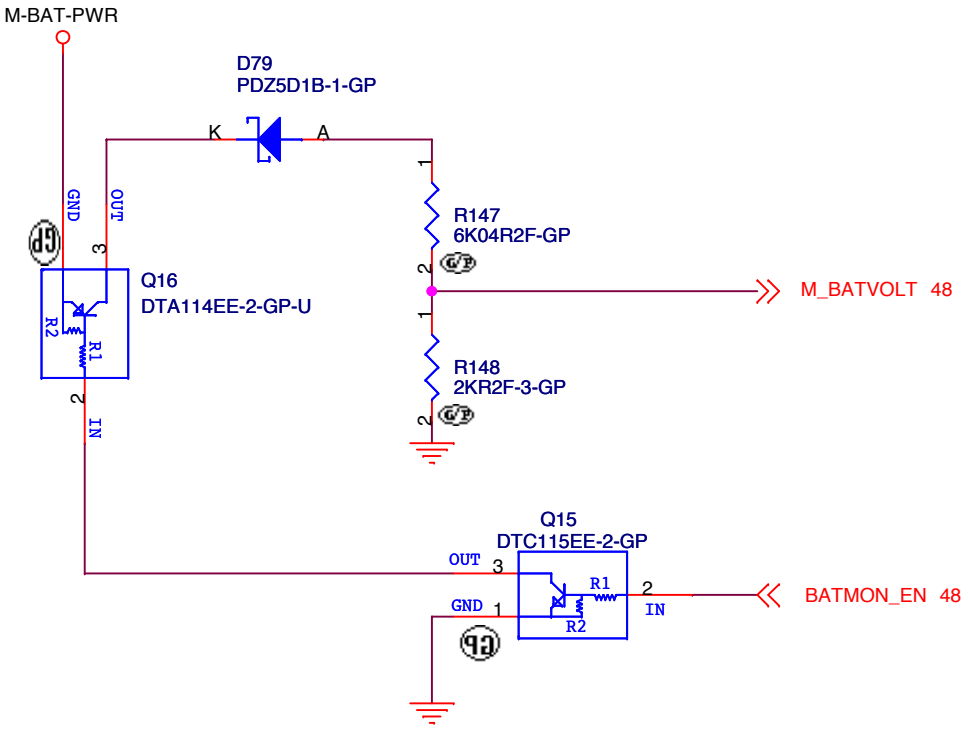
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **BATTERY INPUT**

Size	Document Number	Rev
A4	N-Note 3.0	SC

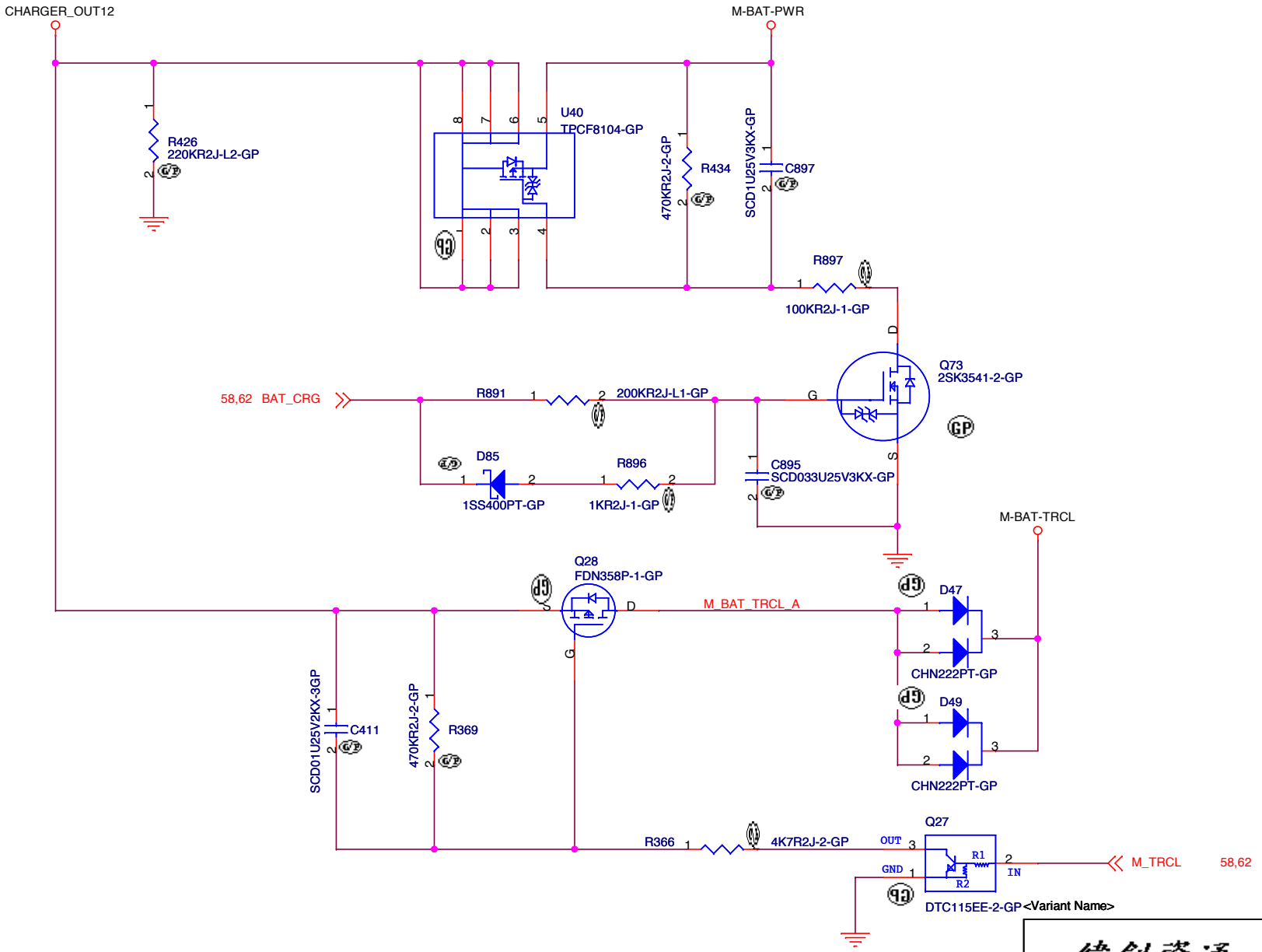
Date: Monday, November 02, 2009 Sheet 59 of 82

VOUT = 0.249 (VBAT - 5)



<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	***BATTERY MONITOR***
Size: Custom	Document Number: **N-Note 3.0**
Rev: **SC**	
Date: Monday, November 02, 2009	Sheet 60 of 82

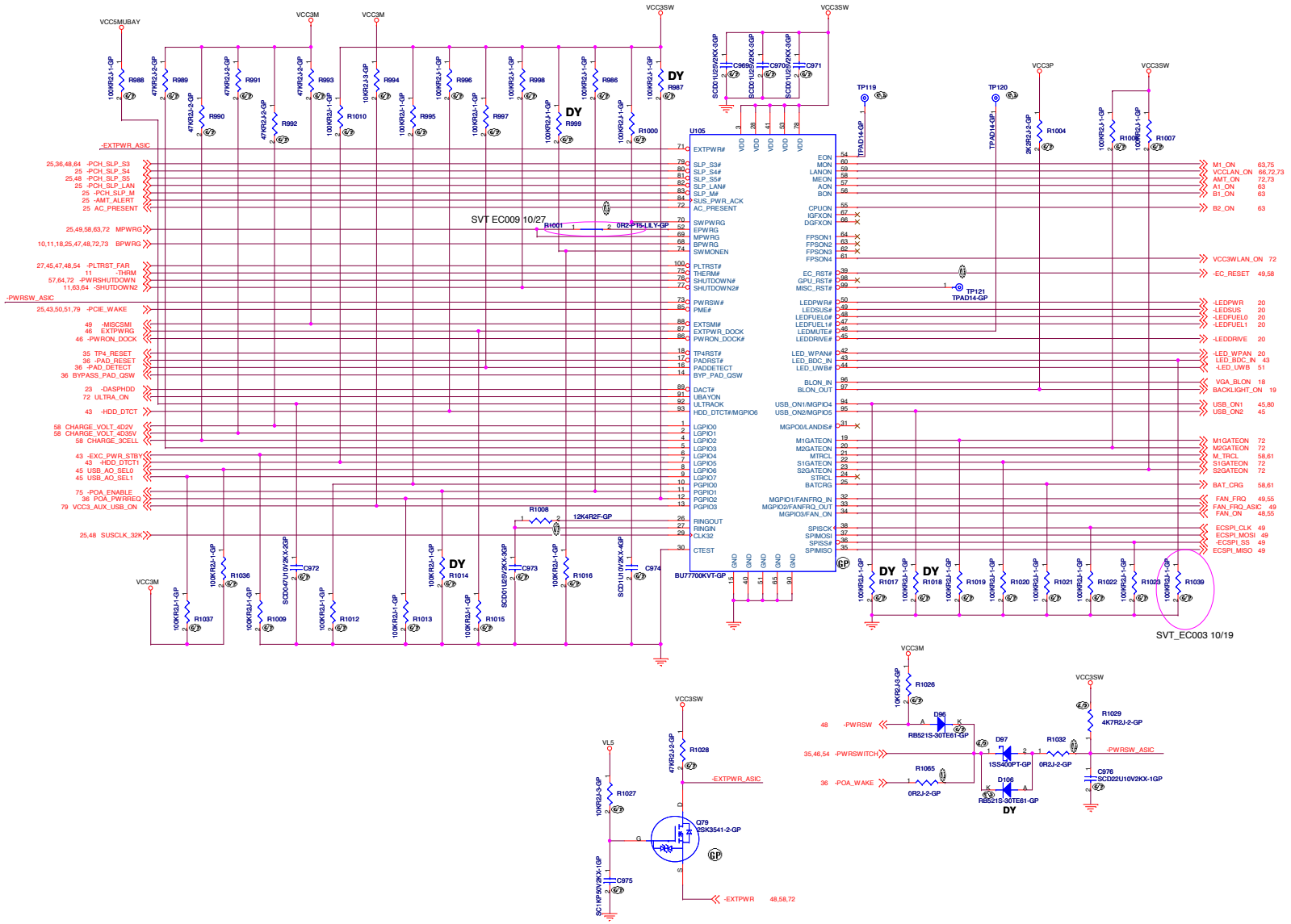


緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***CHARGER SELECT***

Size	Document Number	Rev
A4	**N-Note 3.0**	SC

Date: Monday, November 02, 2009 Sheet 61 of 82



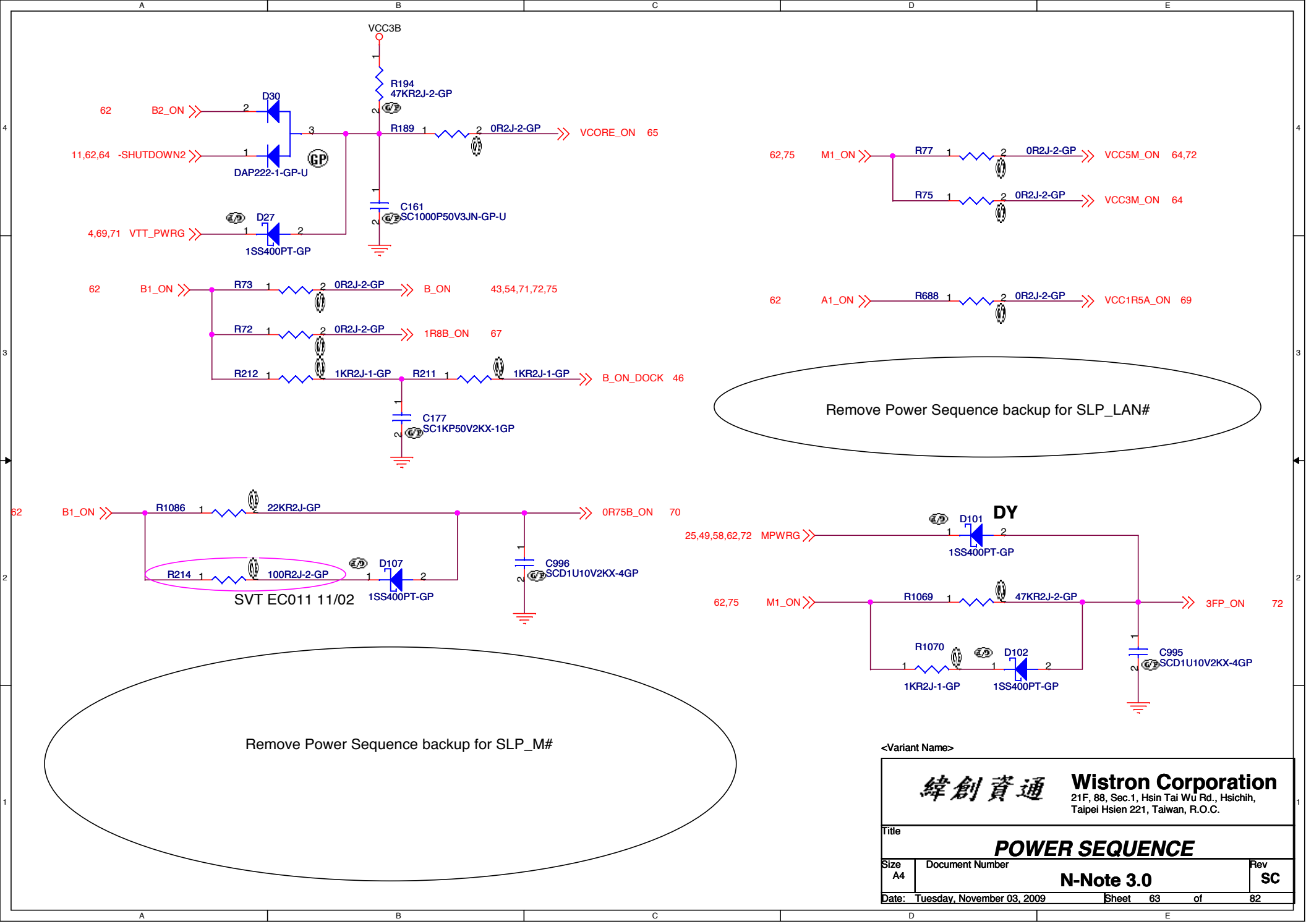
<Variant Name>

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

Title: **MISC G/A (Thinker-1)**

Size	Document Number	Rev
A2	N-Note 3.0	SC

Date: Monday, November 02, 2009 Sheet 82 of 82



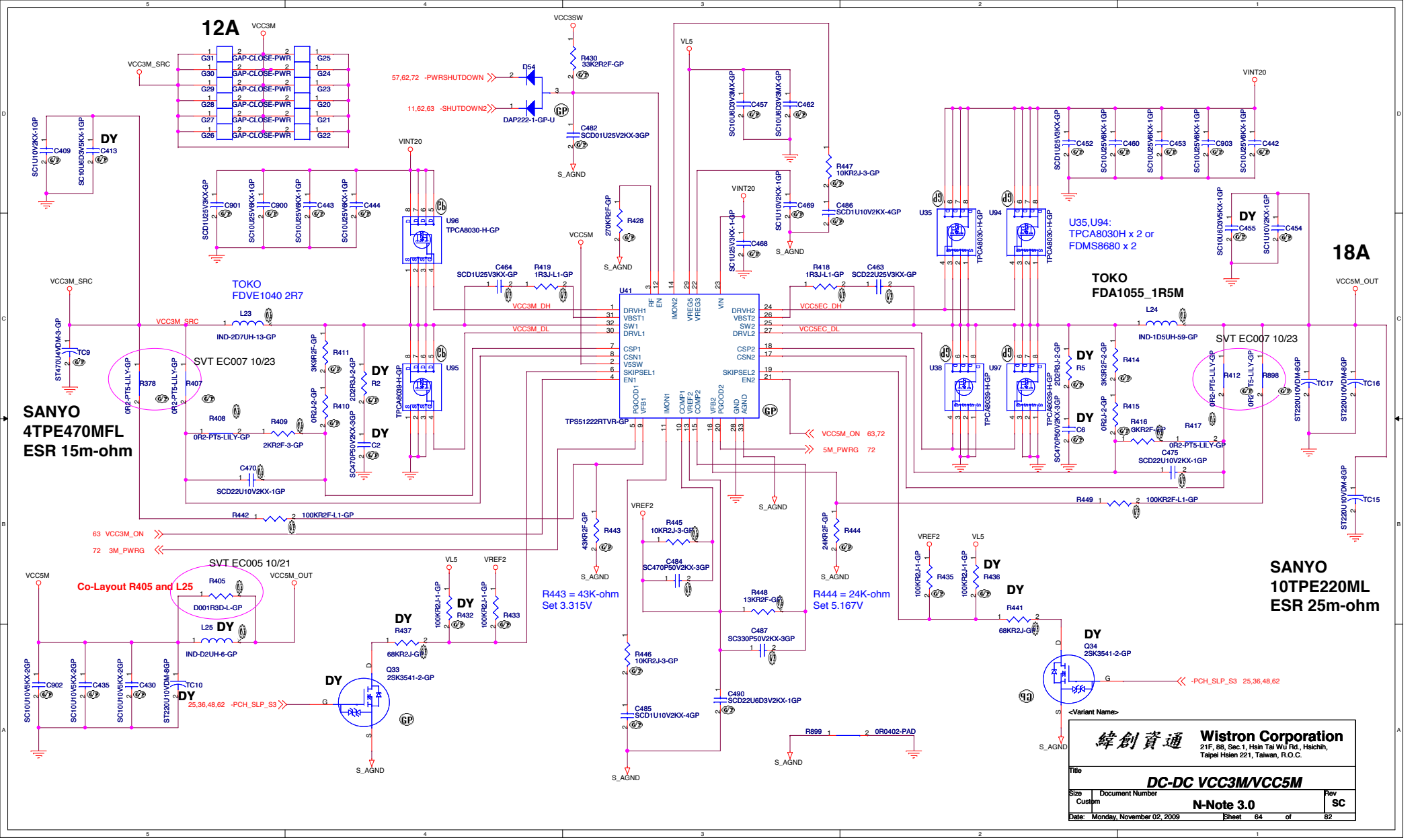
<Variant Name>

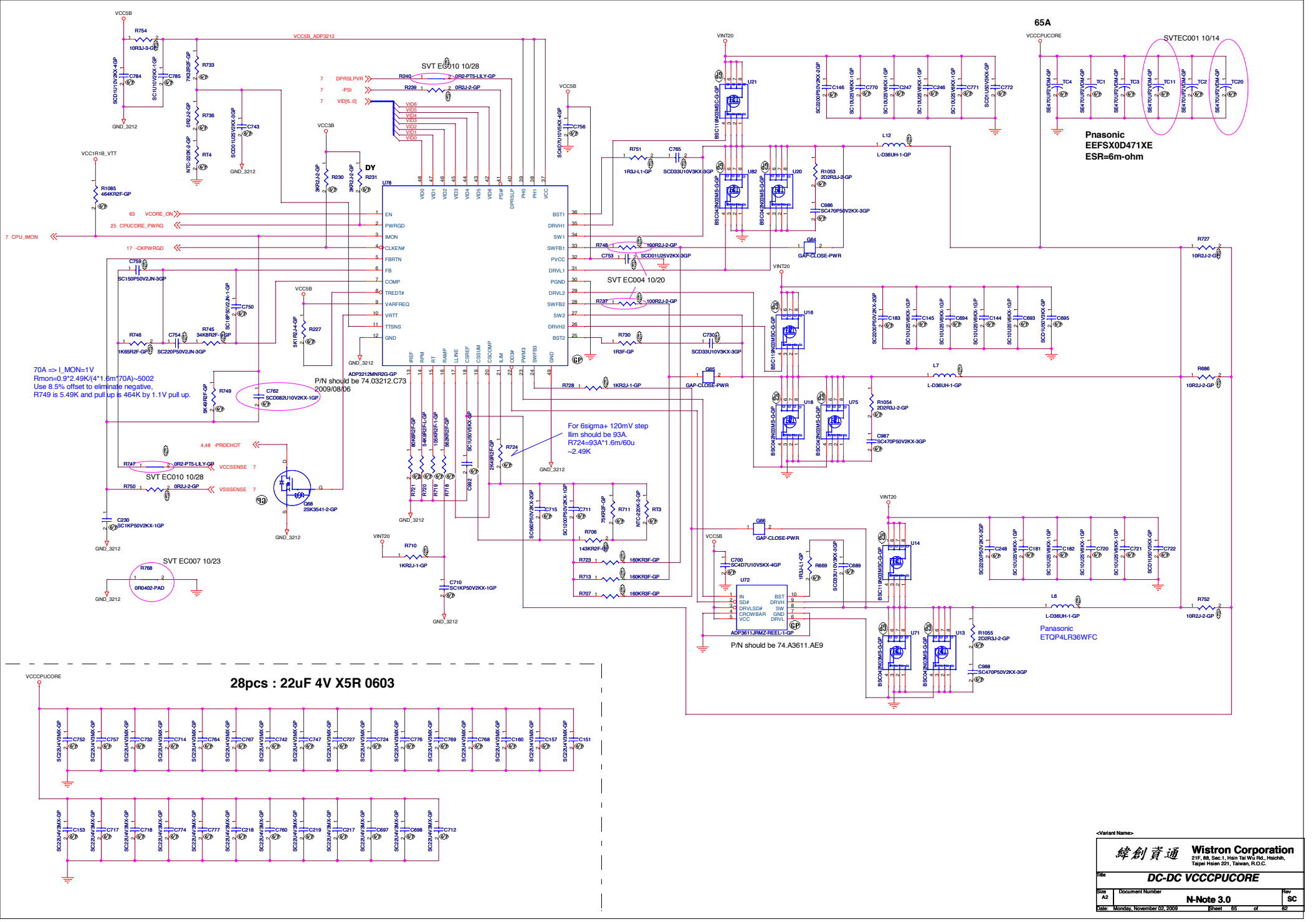
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

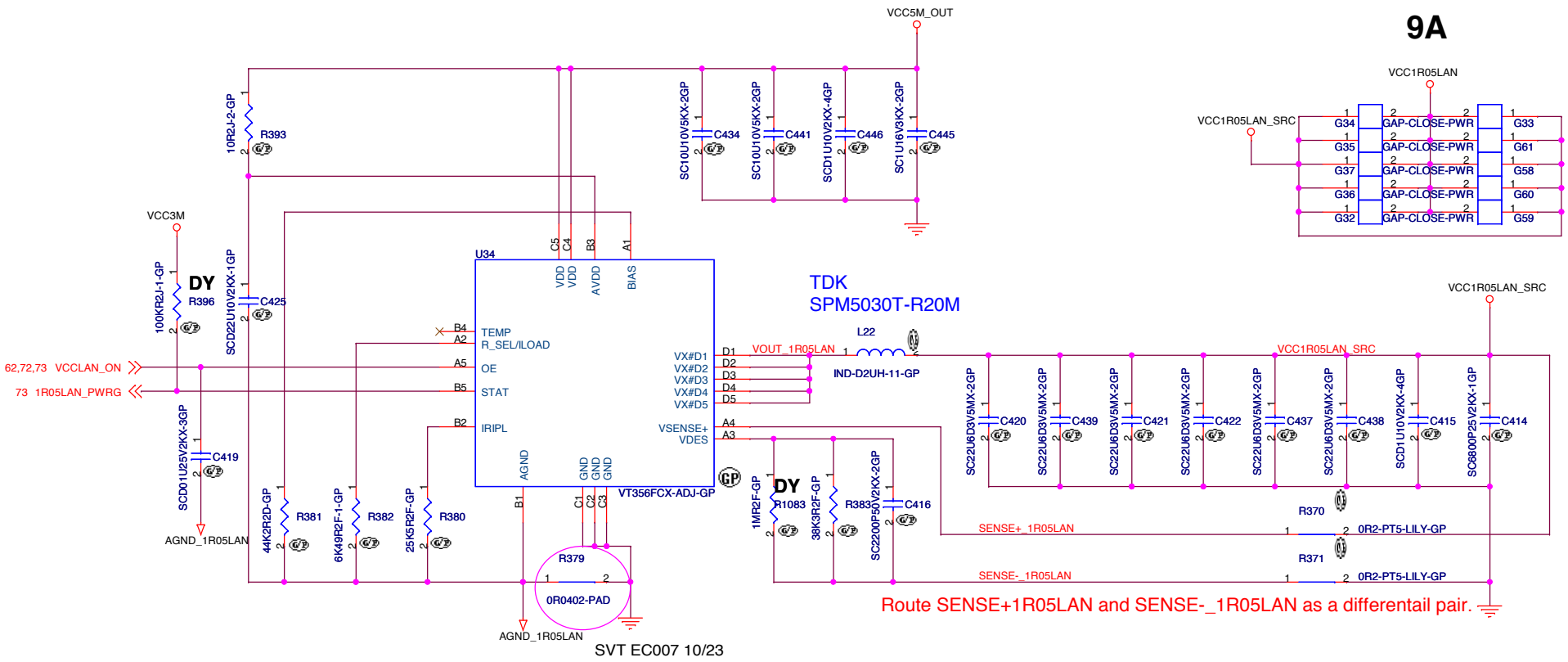
Title: **POWER SEQUENCE**

Size	Document Number	Rev
A4	N-Note 3.0	SC

Date: Tuesday, November 03, 2009 Sheet 63 of 82







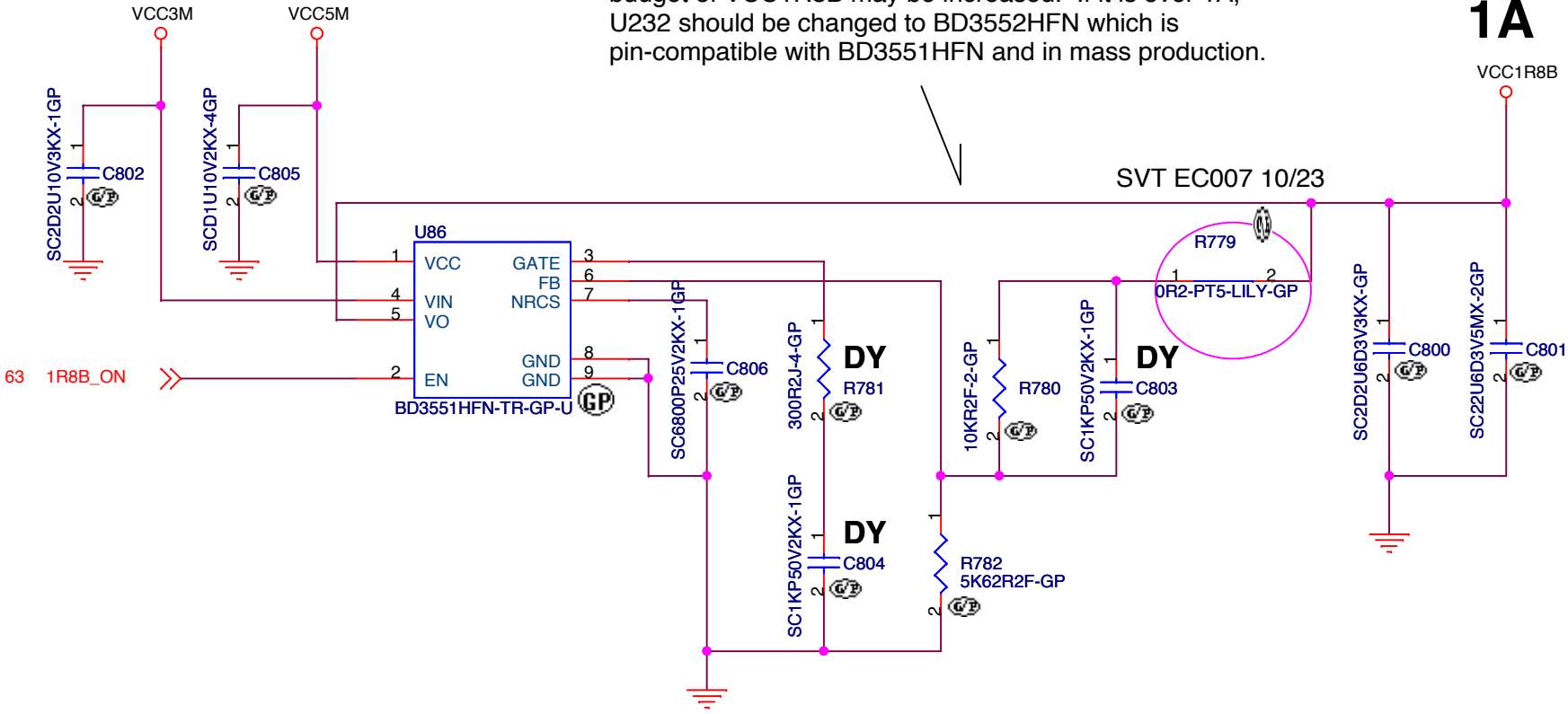
<Variant Name>

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 VCC1R05LAN***
Size: Custom	Document Number: **N-Note 3.0** — Rev: **SC**
Date: Monday, November 02, 2009	Sheet 66 of 82

Pattern should be routed as 1.5A rating, because power budget of VCC1R8B may be increased. If it is over 1A, U232 should be changed to BD3552HFN which is pin-compatible with BD3551HFN and in mass production.

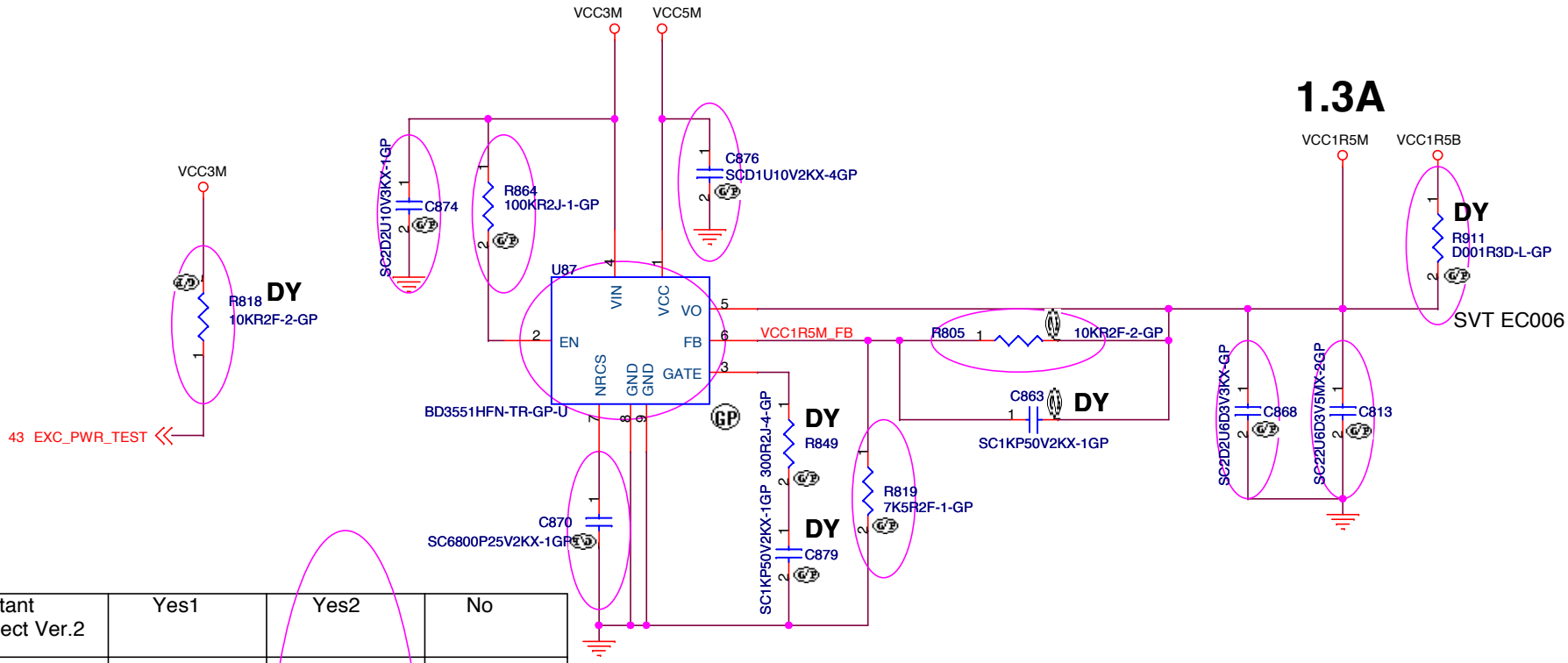
1A

SVT EC007 10/23



<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 VCC1R8B		
Size: A	Document Number: N-Note 3.0	Rev: SC
Date: Monday, November 02, 2009	Sheet 67 of 82	



Constant Connect Ver.2	Yes1	Yes2	No
R818	ASM	NO ASM	NO ASM
R911	ASM	NO ASM	ASM
U87	NO ASM	ASM	NO ASM
R864	NO ASM	ASM	NO ASM
C874	NO ASM	ASM	NO ASM
C876	NO ASM	ASM	NO ASM
C870	NO ASM	ASM	NO ASM
R849	NO ASM	NO ASM	NO ASM
C879	NO ASM	NO ASM	NO ASM
R805	NO ASM	ASM	NO ASM
R819	NO ASM	ASM	NO ASM
C863	NO ASM	NO ASM	NO ASM
C868	NO ASM	ASM	NO ASM
C813	NO ASM	ASM	NO ASM

Logic

SVT EC010 10/28

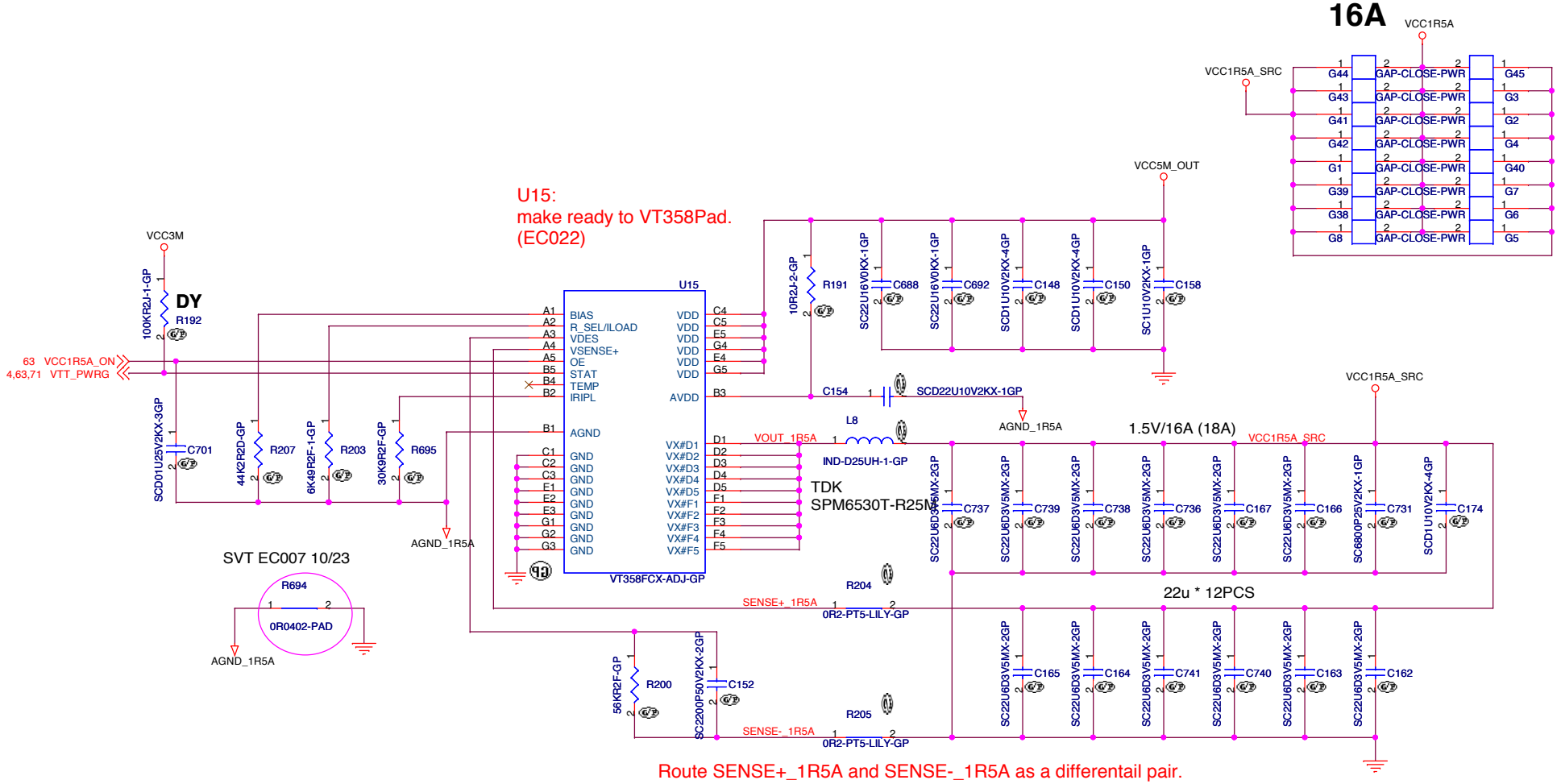
<Variant Name>

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

Title: ***VCC1R5M***

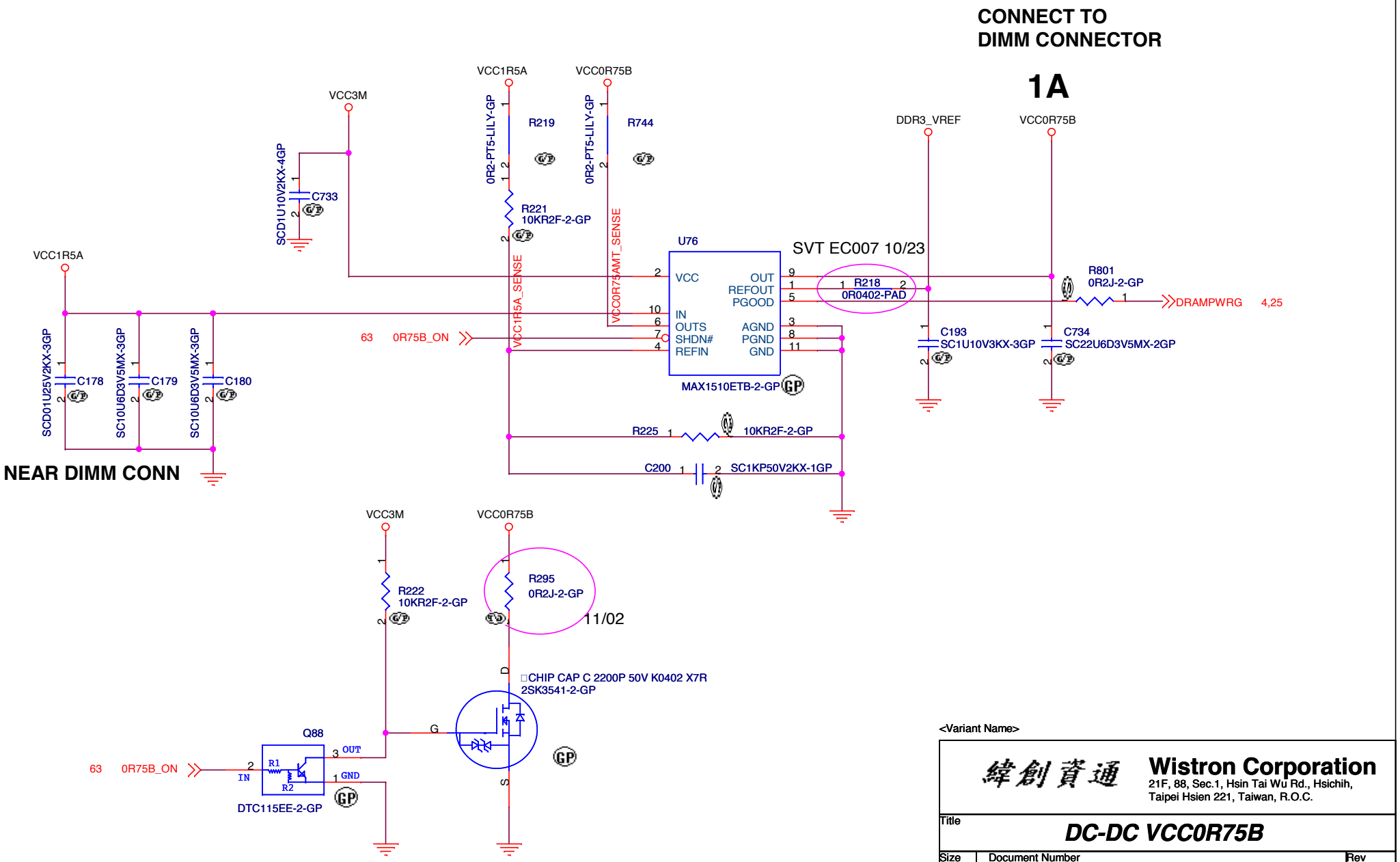
Size: A4 | Document Number: **N-Note 3.0** | Rev: SC

Date: Monday, November 02, 2009 | Sheet 68 of 82



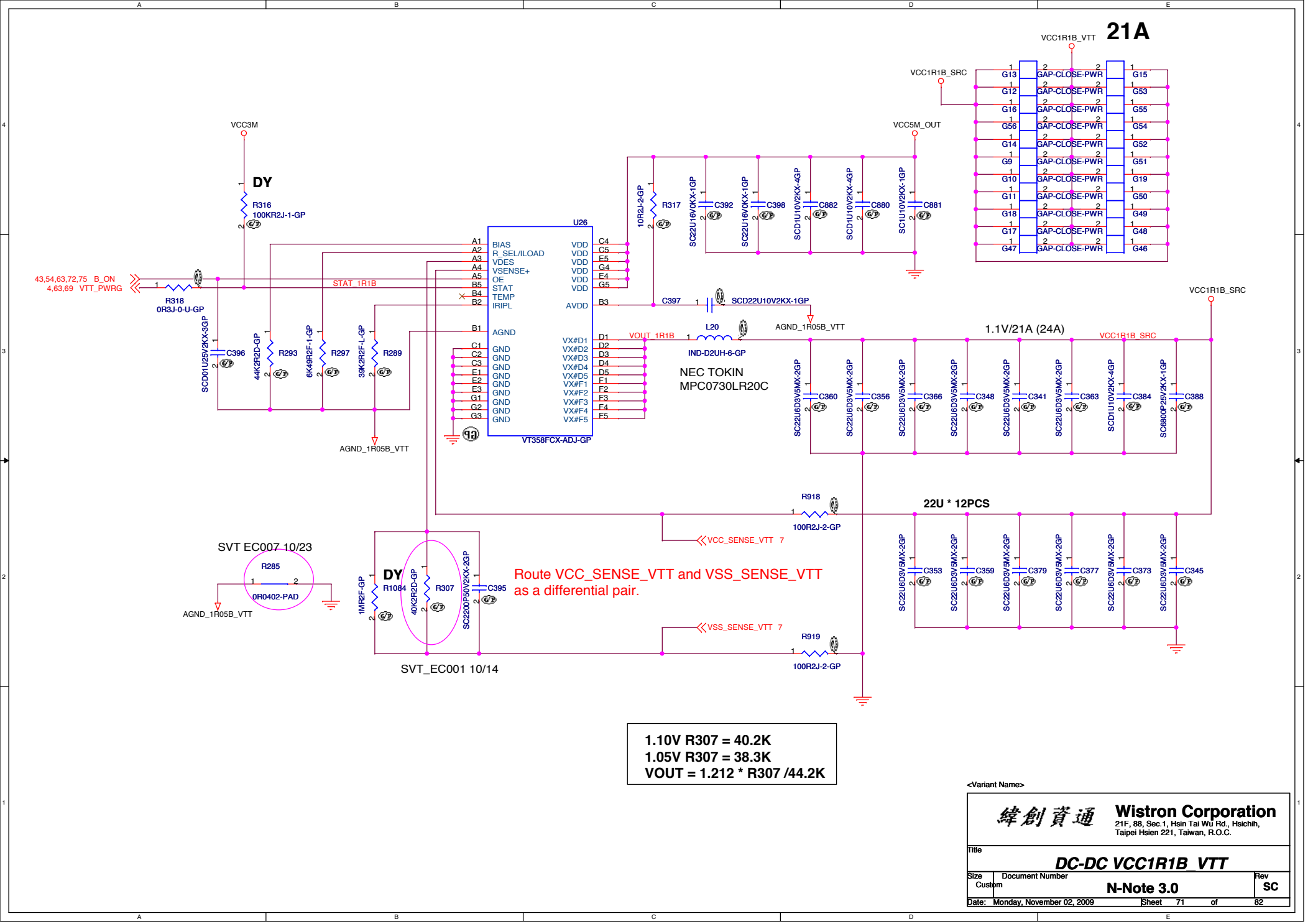
<Variant Name>

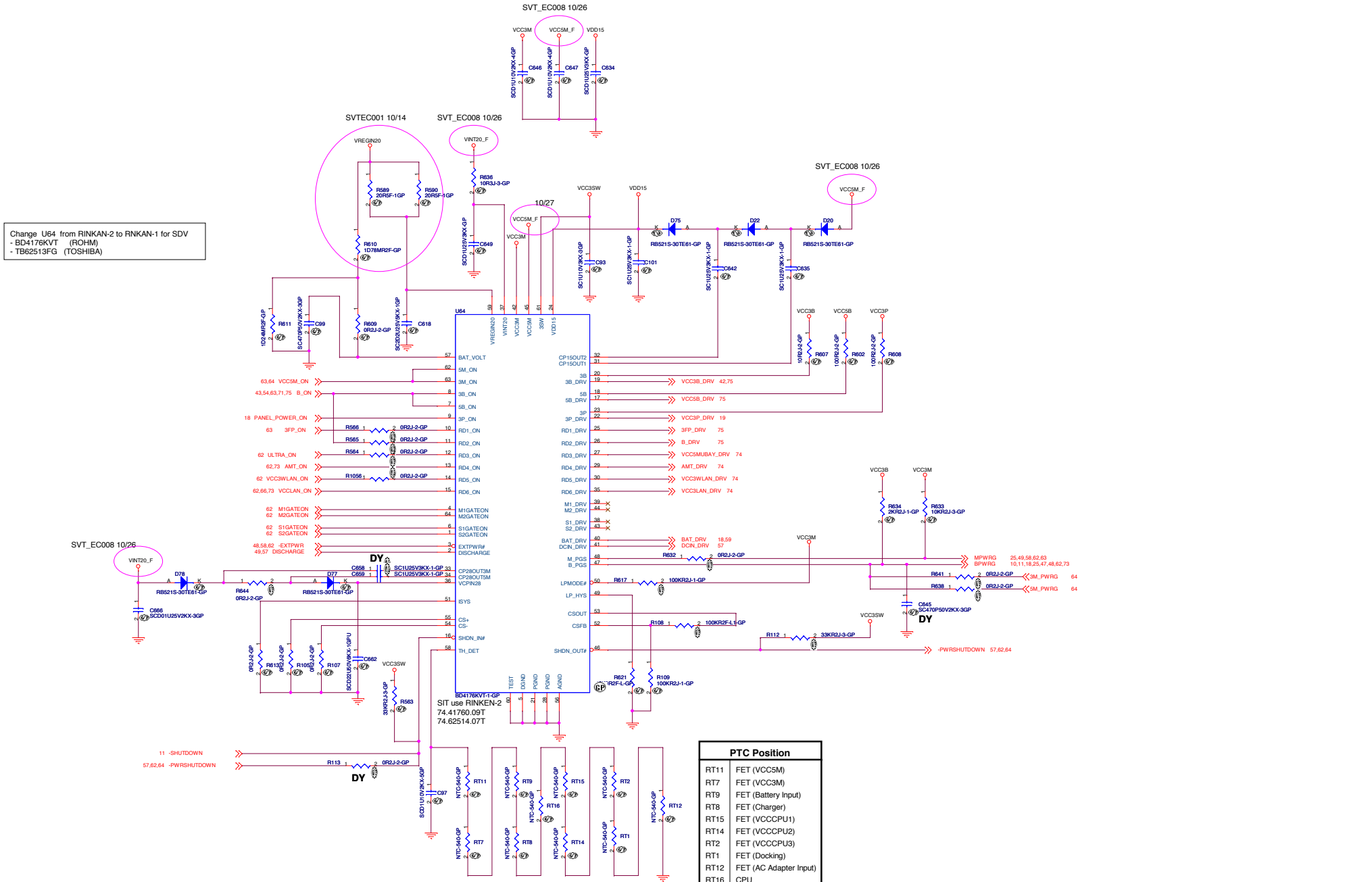
緯創資通 Wistron Corporation	21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	DC-DC VCC1R5A
Size: Custom / Document Number	N-Note 3.0 / Rev: SC
Date: Monday, November 02, 2009	Sheet 69 of 82



<Variant Name>

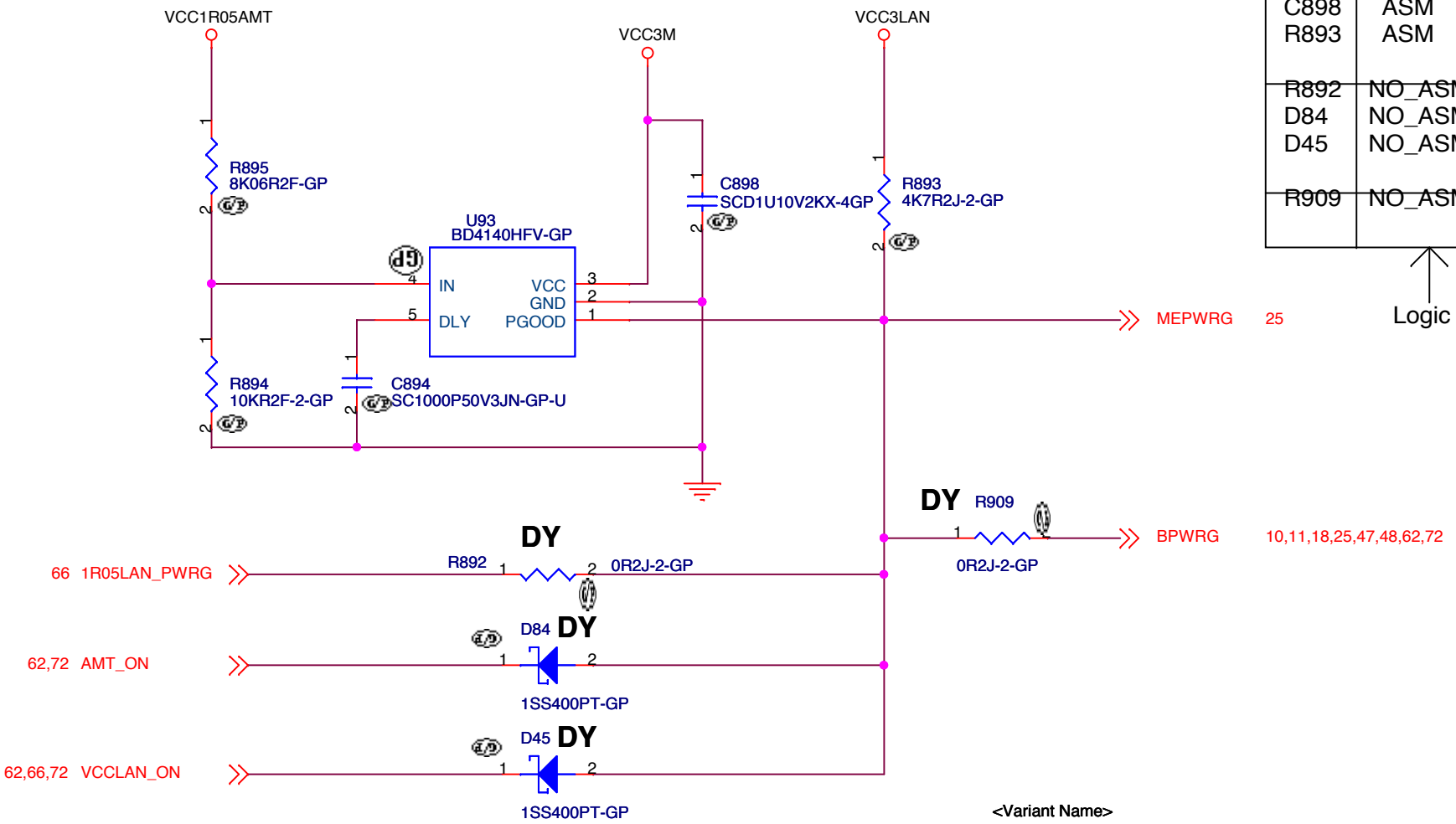
緯創資通 Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title: *DC-DC VCC0R75B*		
Size: A4	Document Number: N-Note 3.0	Rev: SC
Date: Tuesday, November 03, 2009	Sheet 70 of 82	





AMT	YES	NO
U93	ASM	NO_ASM
R895	ASM	NO_ASM
R894	ASM	NO_ASM
C894	ASM	NO_ASM
C898	ASM	NO_ASM
R893	ASM	NO_ASM
R892	NO_ASM	NO_ASM
D84	NO_ASM	NO_ASM
D45	NO_ASM	NO_ASM
R909	NO_ASM	ASM

Logic



<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: **MEPWRG**

Size	Document Number	Rev
A	N-Note 3.0	SC

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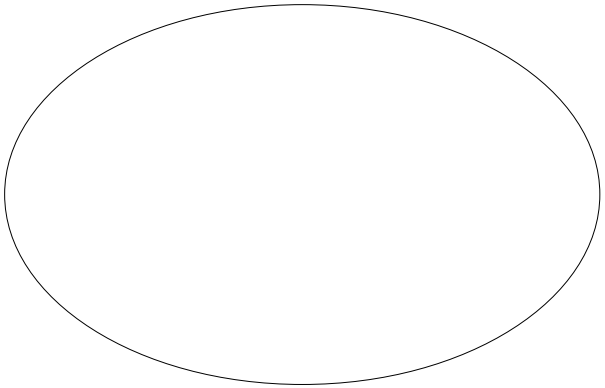
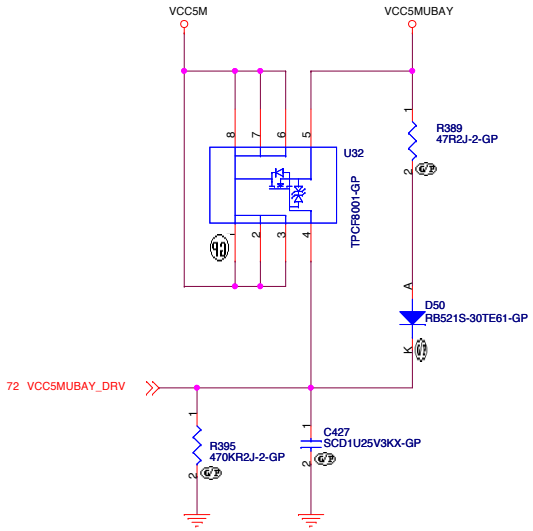


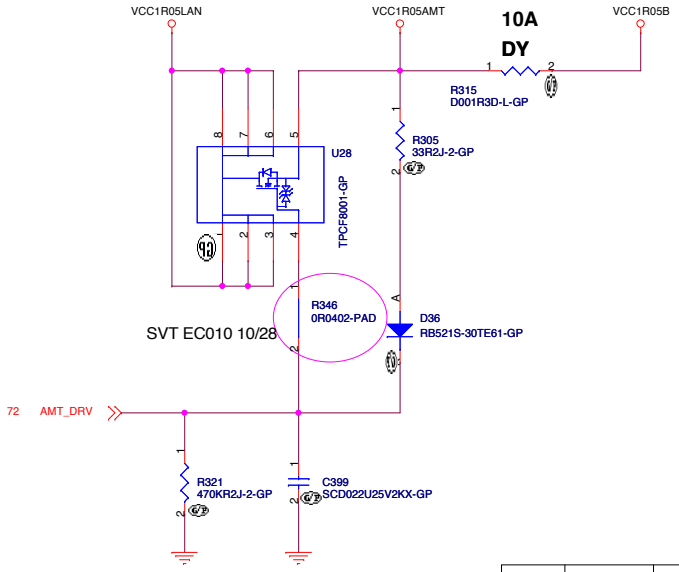
3A



2A

10A

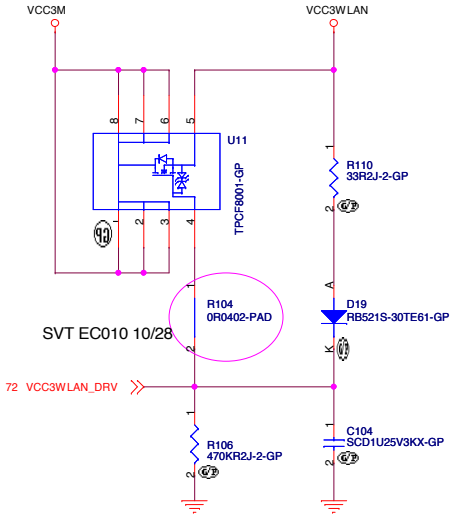
DY



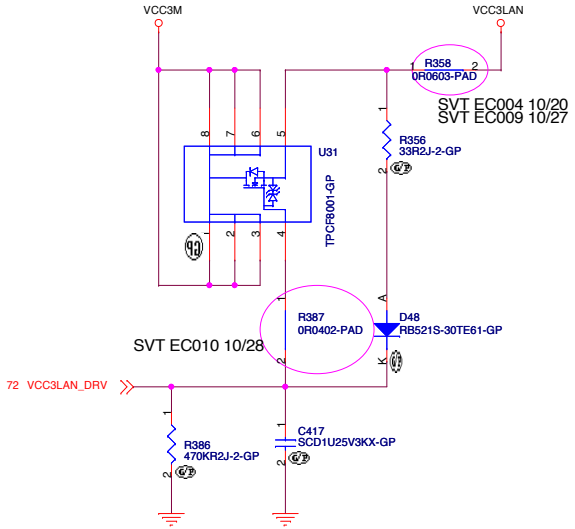
AMT	YES	NO
U28	ASM	NO_ASM
R305	ASM	NO_ASM
D36	ASM	NO_ASM
R346	ASM	NO_ASM
C399	ASM	NO_ASM
R321	ASM	NO_ASM
R315	NO_ASM	ASM

Logic

2.7A



0.5A



<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: **LOAD SW 1**

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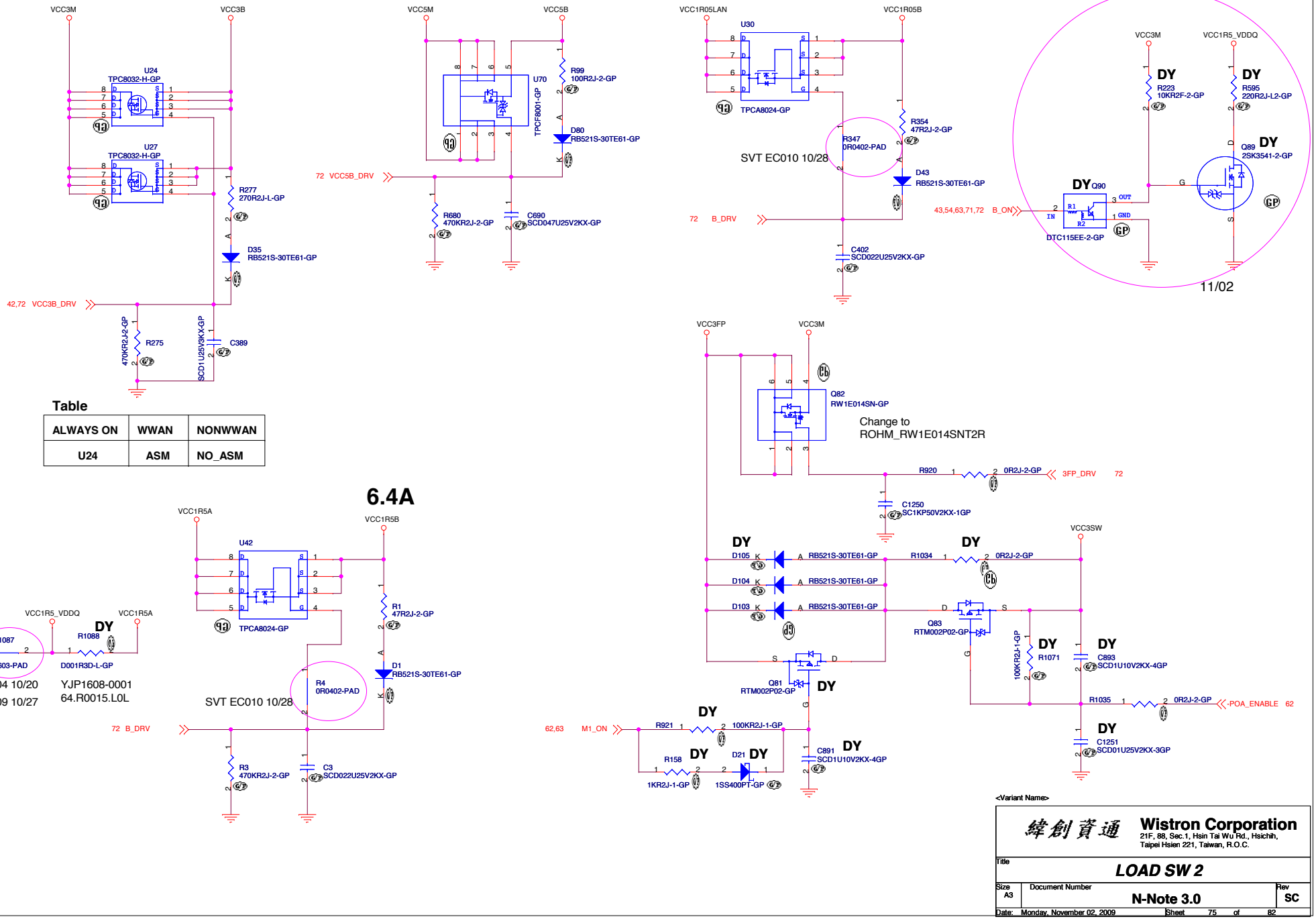

Table

ALWAYS ON	WWAN	NONWWAN
U24	ASM	NO_ASM

<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: ***LOAD SW 2***

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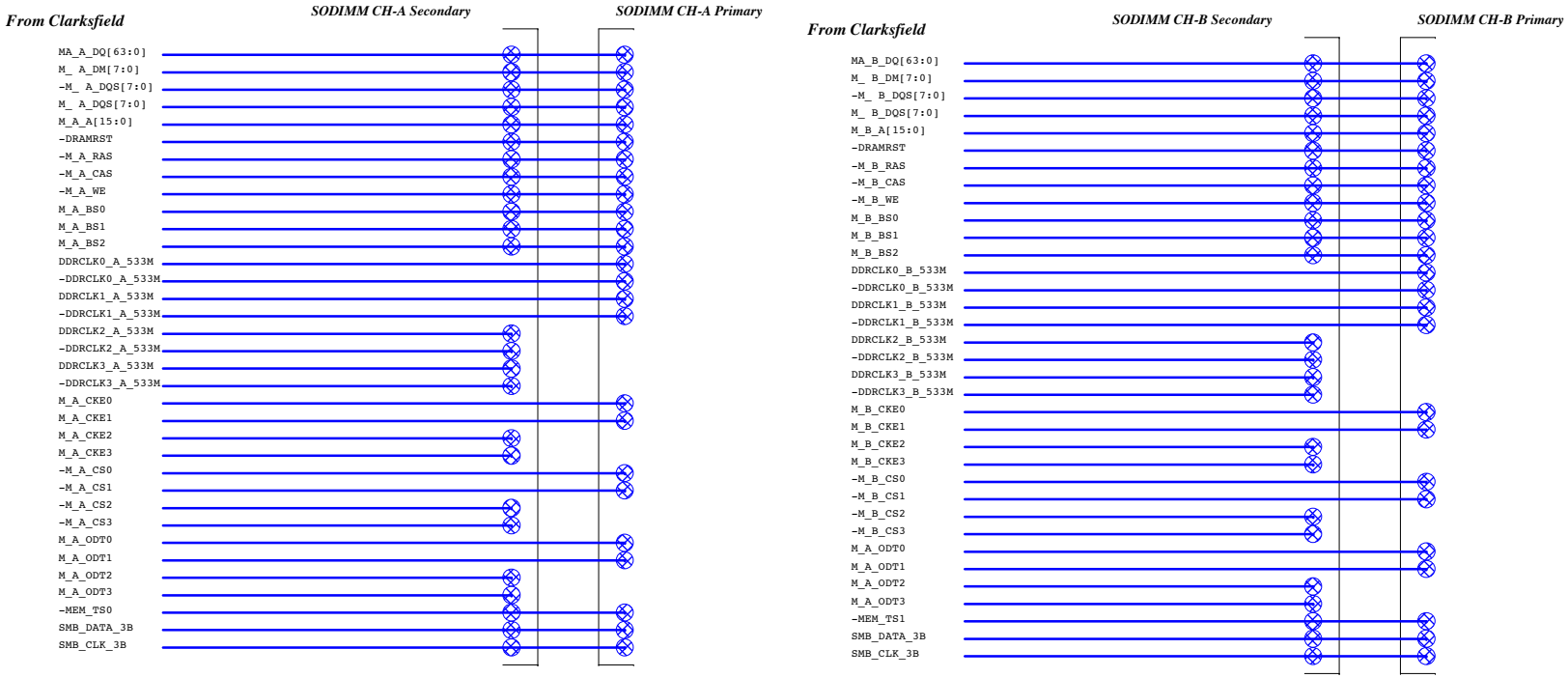
SODIMM should be installed on CH0 Primary at first.



SODIMM IIC Address :
CH-A Primary : 50h
CH-B Primary : 51h
CH-A Secondary : 52h
CH-B Secondary : 53h

Pin1 on SODIM connector (VREF_DQ) only conects to DDR Voltage divider.
Clarksfield H17/J17 is left.

<Variant Name>

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Title: SODIMM CONFIGRATION

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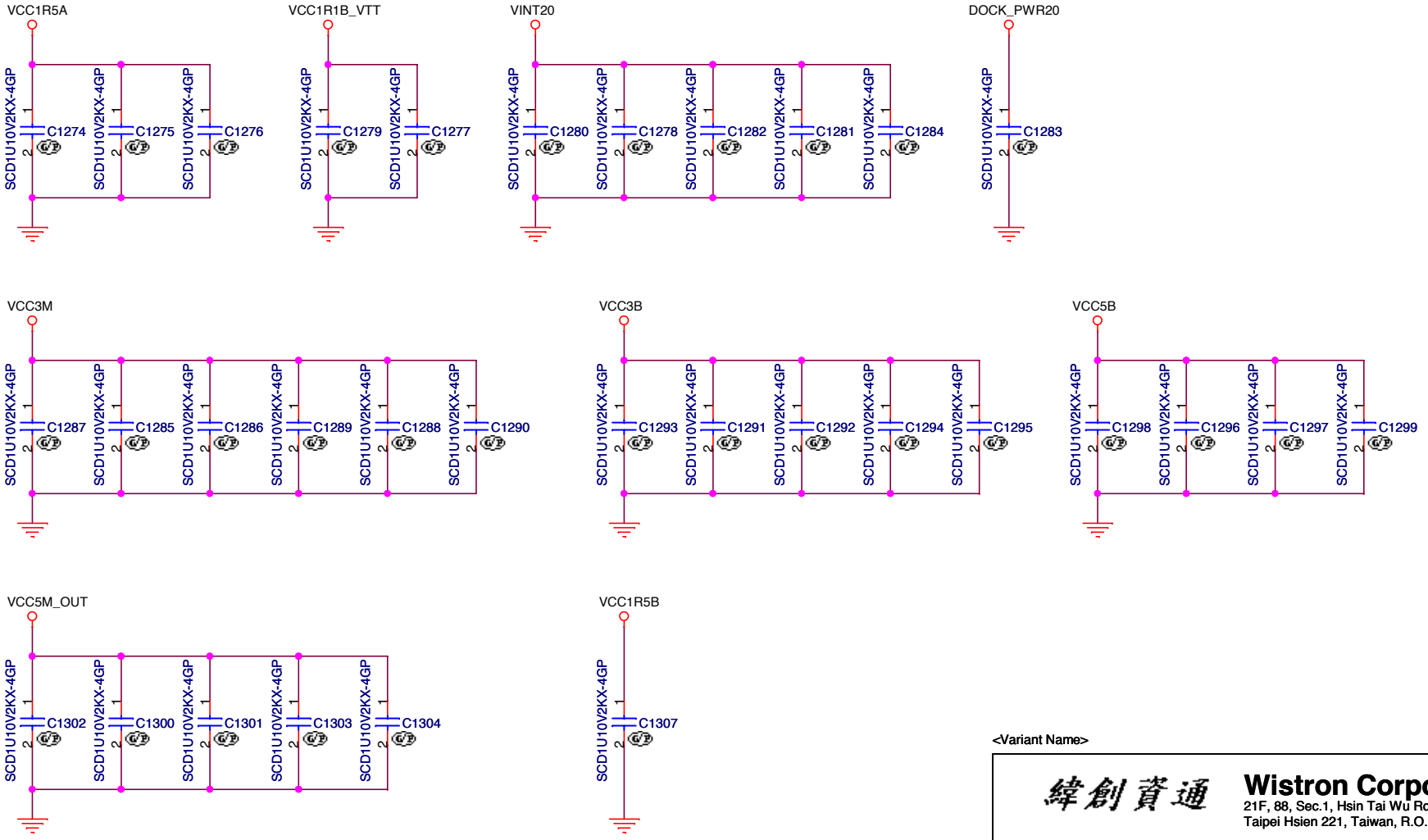
Long power trace EMI decoupling caps



<Variant Name>

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

Title: ***EMI DECOUPLING***

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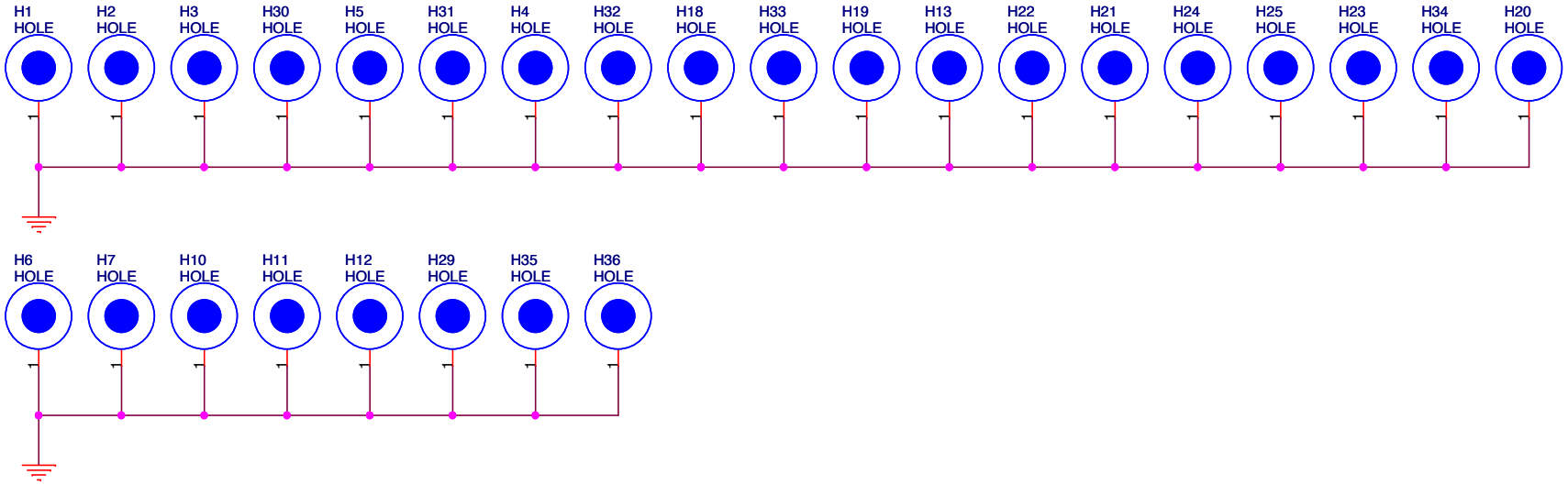
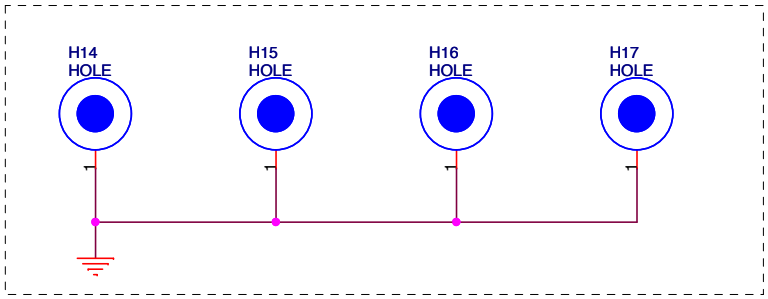
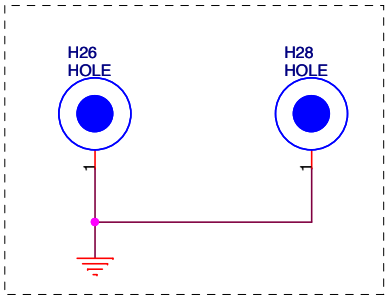


BOSS for PCI Express H = 2.8mm
P/N:34.4B502.001

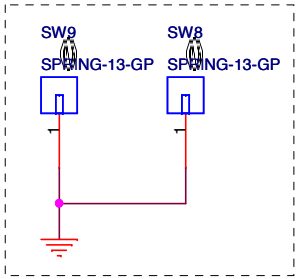


MB MXM BOSS H = 2.7mm
P/N:34.4Y909.001

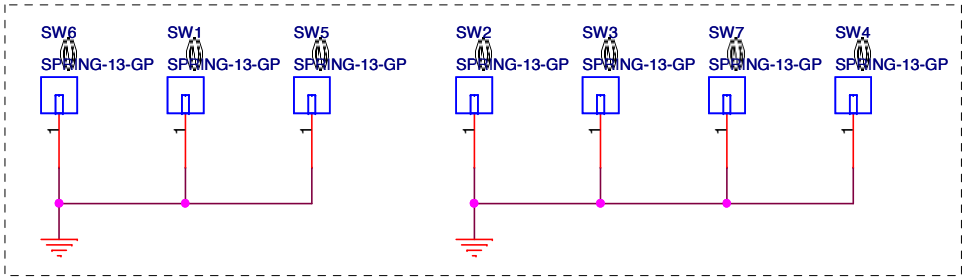


EMI STOPS

Bottom Side
P/N:34.13B01.001



Top Side
P/N: 34.43E24.001



<Variant Name>

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Taipei Hsien 221, Taiwan, R.O.C.

Title: ***HOLES/GND/PADS***

Size	Document Number	Rev
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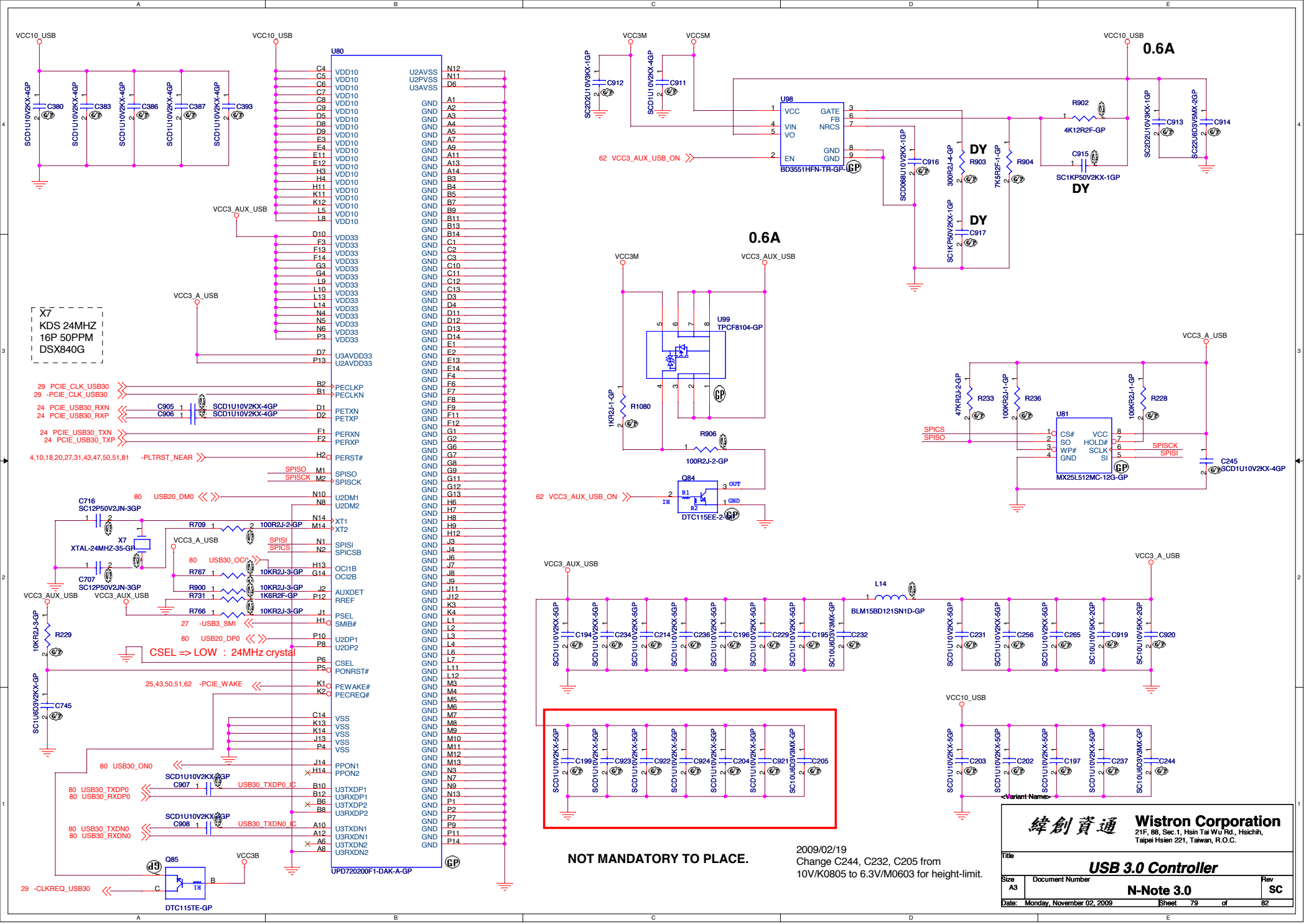
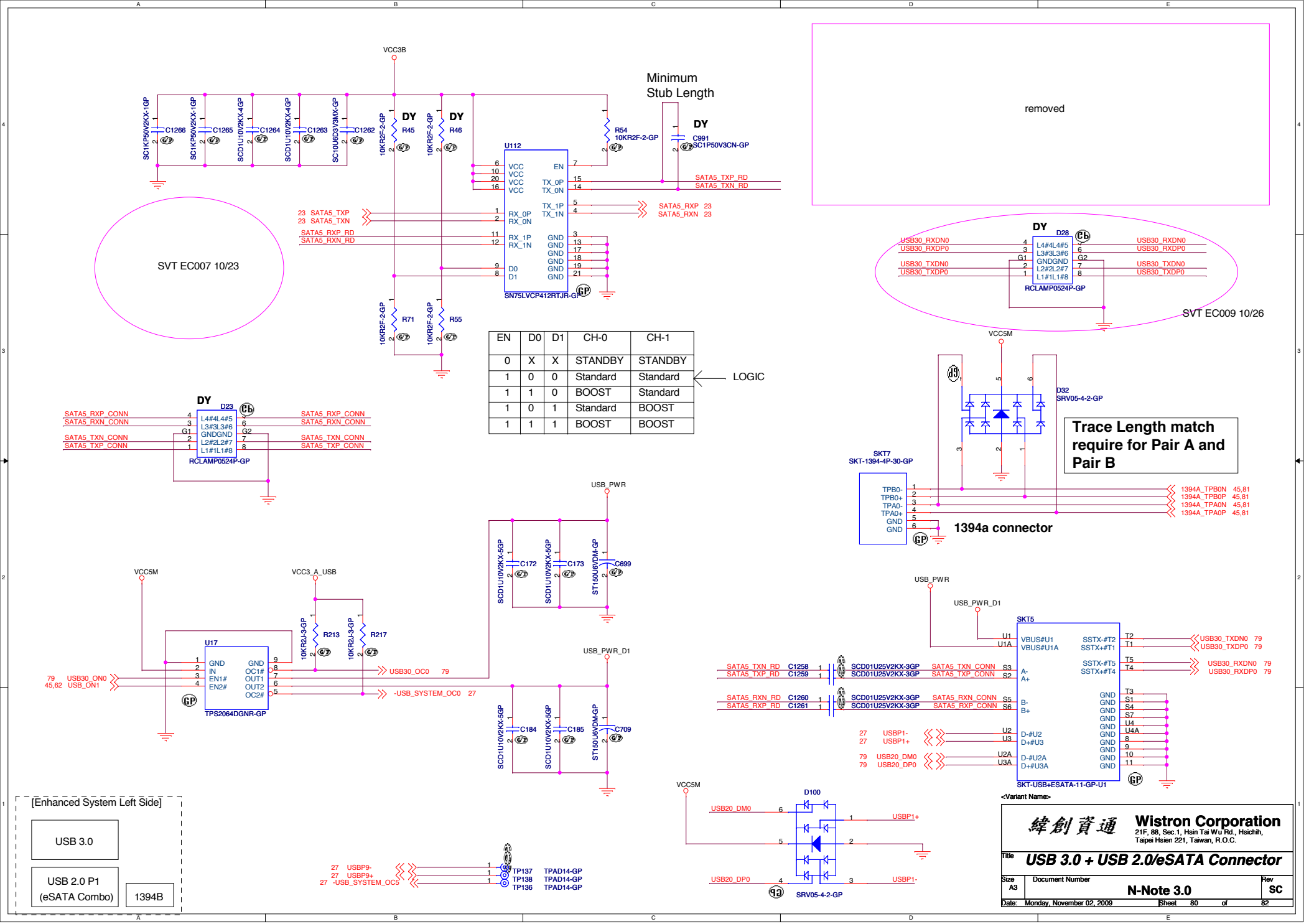
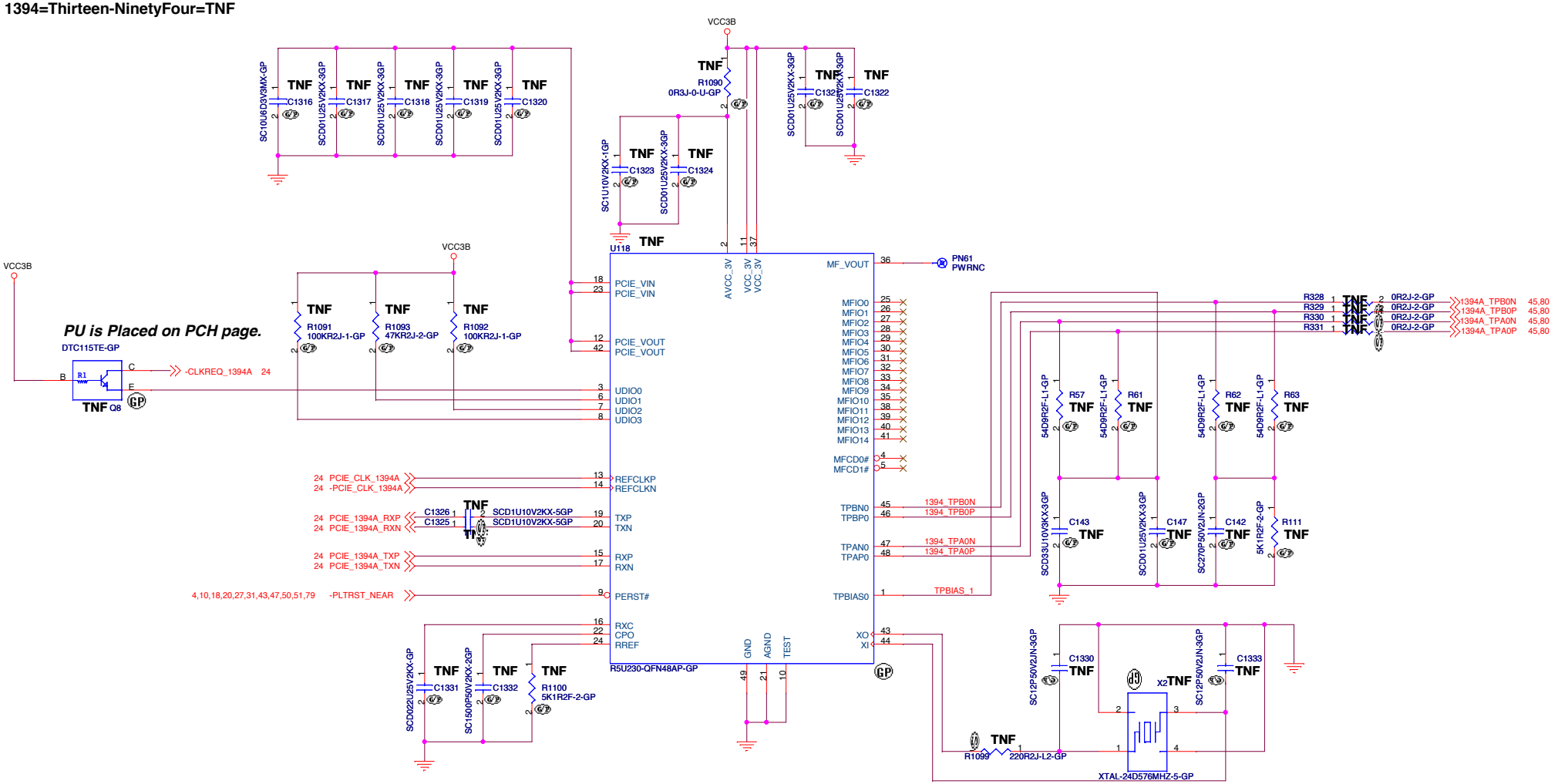




1394=Thirteen-NinetyFour=TNF



Richo Recommended Conditions:
Normal Frequency: 24.576MHz
Frequency Tolerance: +/- 50ppm.
Load Capacitance: 10pF.
Effective Series Resistance: 50-ohm.
Effective Shunt Capacitance: 7pF.

KDS Recommended Conditions:
Normal Frequency: 24.576MHz
Frequency Tolerance: +/- 30ppm.
Load Capacitance: 12pF+/-0.2.
Effective Series Resistance: 50-ohm.
Effective Shunt Capactiance: 7pF.

<Variant Name>

Wistron Corporation
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Taipei Hsien 221, Taiwan, R.O.C.

Title: 1394A CONTROLLER

Size: A3 | Document Number: Nico-3 | Rev: SC

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