Jan 15 '08

LS20 Block Diagram

LS20-SB_0115

Clock Generator
ICS9LPRS365BKLFT
Page4

Intel CPU
Atom N270
Diamondville
Page5,6,7

Thermal Sensor
SMSC 2102
Page8

533MHz

On Board DDR2
1GB
Page16,17

Channel A
DDR2 533 MHz

DDR2 533 MHz

DDR2 Socket
Normal Socket
Page18
200-PIN DDR SODIMM

Intel
Calistoga-GSE
DDR2 400/533MHz
INTEGRATED GRAHPICS
LVDS
CRT I/F
Page10,11,12,13,14,15

LVDS
LCD 12.1"W Panel
Page25

RGB CRT
CRT Port
Page24

DMI x 2

HP OUT
MIC IN
INT.MIC
2CH
SPEAKER

CODEC
ALC269
Page27

Azalia bus

Intel
ICH7-M
USB 2.0 (2+2+2+2)
LAN Connect I/F (LCI)
AC97 2.3/Azalia Interface
Ultra ATA/100/66/33
Serial ATA 150MB/s
ACPI 2.0
LPC I/F
PCI Rev 2.3
PCI Express
INT. RTC
Page19,20,21,22

USB 2.0
REALTEK
RTS5159
Page30

4 IN 1 CONN.
Page30

PCIE x1
LAN
Boardcom
BCM5906
10 / 100M
Page28

RJ45 CONN.
Page29

PCIE x1
Full Mini-Card
Page32

PCIE x1 & USB2.0 x 1
Full Mini-Card
Page32

SIM Card
Page32

PCIE x1 & USB2.0 x 2
NEW Card
Connector
Page31

Power Switch
TI TPS2231
Page31

Camera
Page25

USB 2.0

BlueTooth
Page25

USB 2.0

USB CONN.
x 2
Page26

USB 2.0

USB CONN.
x 1
Page26

USB 2.0

SATA

LPC Bus

SATA CONN
2.5"HDD /
1.8"SSD
Page23

KBC
WINBOND
WPCE773L
Page33

SPI

Touch
Pad
Page23

Int.
KB
Page23

Flash ROM
1MB
Page23

LS20 Daughter Card

Camera Board | Blue Tooth Board | SSD Board for MLC | Power Button Board | TP Board | LED Board

PCB Layer Stackup

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

System DC/DC
ISL62392

INPUTS	OUTPUTS
DCBATOUT_62392	5V_S5 3D3V_S5

Battery Charger/Selector
BQ24705

DCBATOUT	BT+

CPU DC/DC
ISL6261A

DCBATOUT_6261A	VCC_CORE

SYSTEM DC / DC
NX2139A

DCBATOUT_2139A	1D8V_S3

SYSTEM DC / DC
TPS51117

DCBATOUT_51117_1D05V	1D05V_S0

SYSTEM DC / DC
NX2139A

DCBATOUT_2139A	1D5V_S0

<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

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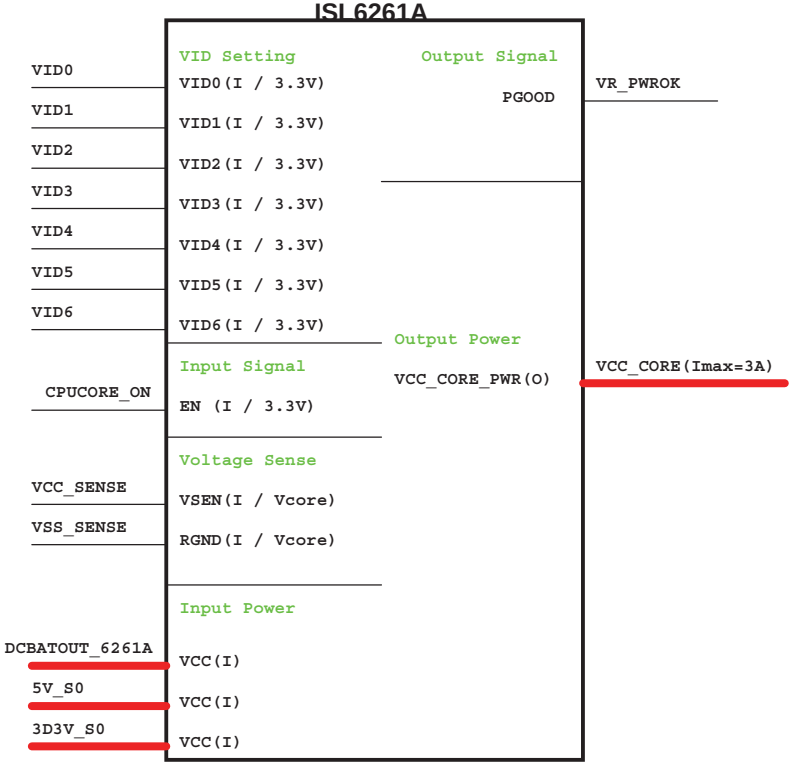
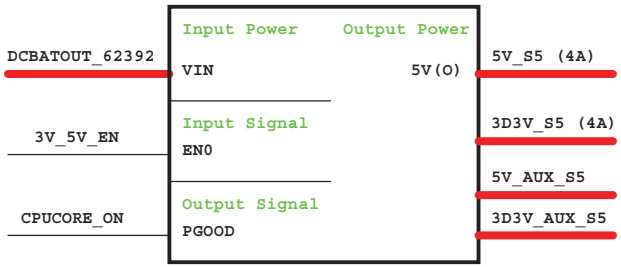
Date: Thursday, January 15, 2009 Sheet 1 of 41

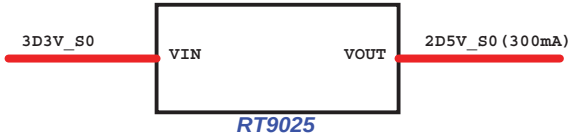
CPU_CORE
ISL6261A



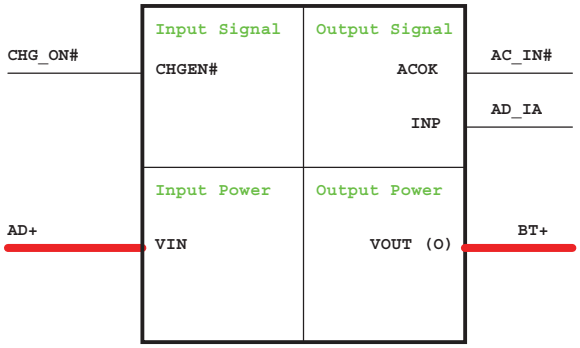
ISL62392
5V/3D3V



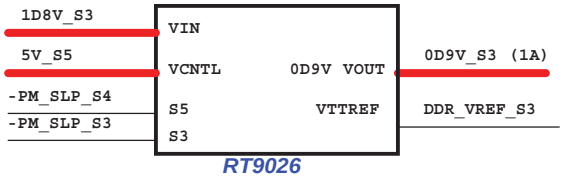
2D5V_S0



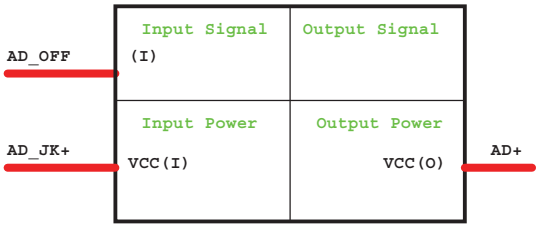
Charger BQ24705



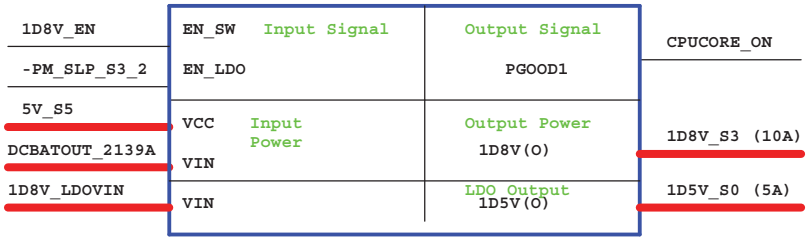
DDR_0D9V



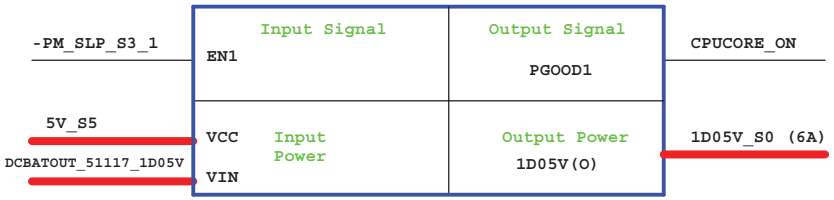
Adapter



NX2139A for 1D8V and 1D5V.



TPS51117 for 1D05V .



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 Logic**		
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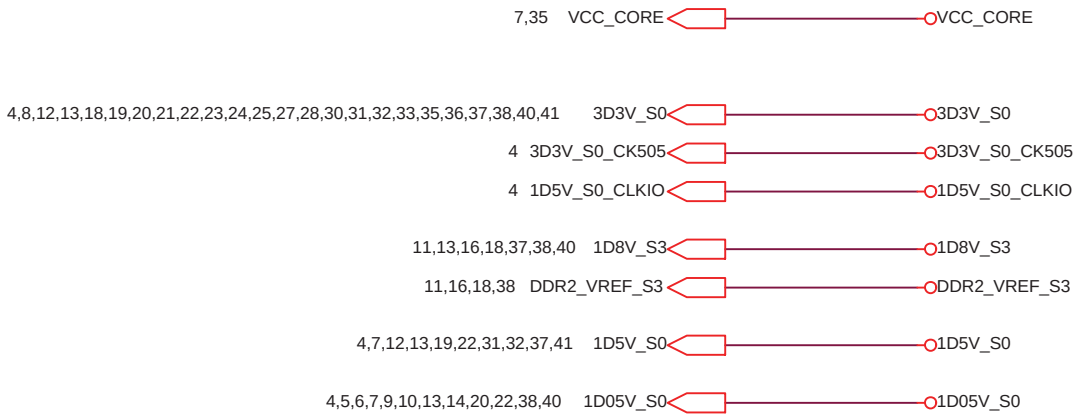
On Board DDR2_ID[2..0]

KBC GPIn	47	31	23		
DDR2_IDn	2	1	0	Vendor Part No.	Size
HYNIX	0	0	0	H5PS1G83EFR-Y5C	1G
NANYA	0	0	1	NT5TU128M8DE-3C	1G
MICRON	0	1	0	MT47H128M8HQ-3:G	1G
	0	1	1		
	1	0	0		

PLANAR_ID[2..0]

KBC GPIn		96	95	94	Planar ID Version	Planar PCB Version
PLANAR_IDn		2	1	0		
		0	0	0	LS20 Intel-SA	SA
		0	0	1	LS20 Intel-SB	SB
		0	1	0		SC
		0	1	1		-1
		1	0	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: ***Reference***

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SB 011009
Change RN58 RN78 to RN93
SB 011309
Change RN93 pin define

Clock Generator Strapping

3D3V_S0_CK505

R338 10KR2J-3-GP

PCI2_TME

R337 10KR2J-3-GP

PCI-2/TME	
0	Overclocking of CPU and SRC Allowed
1	Overclocking of CPU and SRC NOT allowed

ITP_EN	PIN53,54
0	SRC8
1	CPU_ITP

ITP_EN

R313 10KR2J-3-GP

27_SEL

R323 10KR2J-3-GP

CPU, MCH and XDP BCLK FREQUENCY SELECTION TABLE

FSC BSEL2	FSB BSEL1	FSA BSEL0	Host Clock frequency MHz
1	0	1	100
0	0	1	133
0	1	1	166
0	1	0	200
0	0	0	266
1	0	0	333
1	1	0	400
1	1	1	Reserved

27_SEL	PIN 20	PIN 21	PIN 24	PIN 25
0	DOT96	DOT96#	SRC1	SRC1#
1	SRC0	SRC0	27M_NSS	27M_SS

3D3V_S0 3D3V_S0_CK505 R172 C234 C241 C221 C237 C216 C235 C230 C238 0R0402-PAD SC10U10V5ZY-1GP SC1U16V2ZY-2GP SC1U10V3ZY-6GP

1D5V_S0_CLKIO 1D5V_S0 R180 C236 C239 C217 C218 C240 C220 C242 0R0402-PAD

X4 X-14D31818M-37GP C427 C440 SC10P50V2JN-4GP

Ver-SB: Change to 10P

U47 ICS9LPRS365BKLFT-GP-U

CLK_XTAL_IN CLK_XTAL_OUT FSA USB_48MHZ/FSLA

-PCI_STP -CPU_STP PCI_STOP# CPU_STOP#

ICH_SMBCLK ICH_SMBDATA SCLK SDATA

VR_PWROK CK_PWRGD/PD#

RN85 SRN33J-4-GP TP92 TP90 TPAD14-GP C400 C387 SC4D7P50V2CN-1GP

12 -CLKREQ_MCH 33 PCLK_FWH 33 CLK_PCI_KBC 19 CLK_PCI_ICH

PCI0_CR#A CR_B- PCI2_TME SRC-5_EN/PCI-3 27_SEL ITP_EN

PCI0/CR#_A PCI1/CR#_B PCI2/TME PCI3 PCI4/27_SELECT PCI_F5/ITP_EN

FSB FSC FSLB/TEST_MODE REF0/FSLC/TEST_SEL NC#55

SB 010909
Change R356 R354
R321 R314 to RN85

CPUT0 CPUC0 CPUT1_F CPUC1_F CPUT2_ITP/SRCT8 CPUC2_ITP/SRCC8 SRCT7/CR#_F SRCC7/CR#_E SRCT6 SRCC6 SRCT10 SRCC10 SRCT11/CR#_H SRCC11/CR#_G SRCT9 SRCC9 SRCT4 SRCC4 SRCT3/CR#_C SRCC3/CR#_D SRCT2/SATAT SRCC2/SATAC 27MHZ_NONSS/SRCT1/SE1 27MHZ_SS/SRCC1/SE2 SRCT0/DOTT_96 SRCC0/DOTC_96

RN82 RN81 RN83 RN80 RN79 RN76 RN75 RN74 RN71 RN72 RN73 SRN0J-6-GP

CLK_CPU_BCLK CLK_MCH_BCLK CLK_PCIE_MINI_1 CLK_PCIE_LAN CLK_PCIE_NEW CLK_PCIE_ICH CLK_PCIE_SATA CLK_MCH_3GPLL DREFCLKSS_100M DREFCLK_96M

-CLKREQ_WLAN -LAN_CLKREQ -CLKREQ_NEWCARD -CLKREQ_WWAN PCIE_CLK_WWAN -PCIE_CLK_WWAN

1D05V_S0 R378 R414 R300 R377 R413 R298 1KR2J-1-GP 56R2J-4-GP 0R2J-2-GP

CPU_BSEL0 CPU_BSEL1 CPU_BSEL2 MCH_BSEL0 MCH_BSEL1 MCH_BSEL2

CLK_BSEL0 R301 2K2R2J-2-GP FSA R297 22R2J-2-GP R306 22R2J-2-GP C377 C376 SC4D7P50V2CN-1GP

30 CLK48_R5158 21 CLK48_ICH

CLK_BSEL1 R396 0R0402-PAD FSB

CLK_BSEL2 R366 10KR2J-3-GP R365 33R2J-2-GP C428 SC4D7P50V2CN-1GP FSC

21 CLK_ICH14

<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: CLOCK GEN(ICS)

Size: A3 | Document Number: LS20 | Rev: SB

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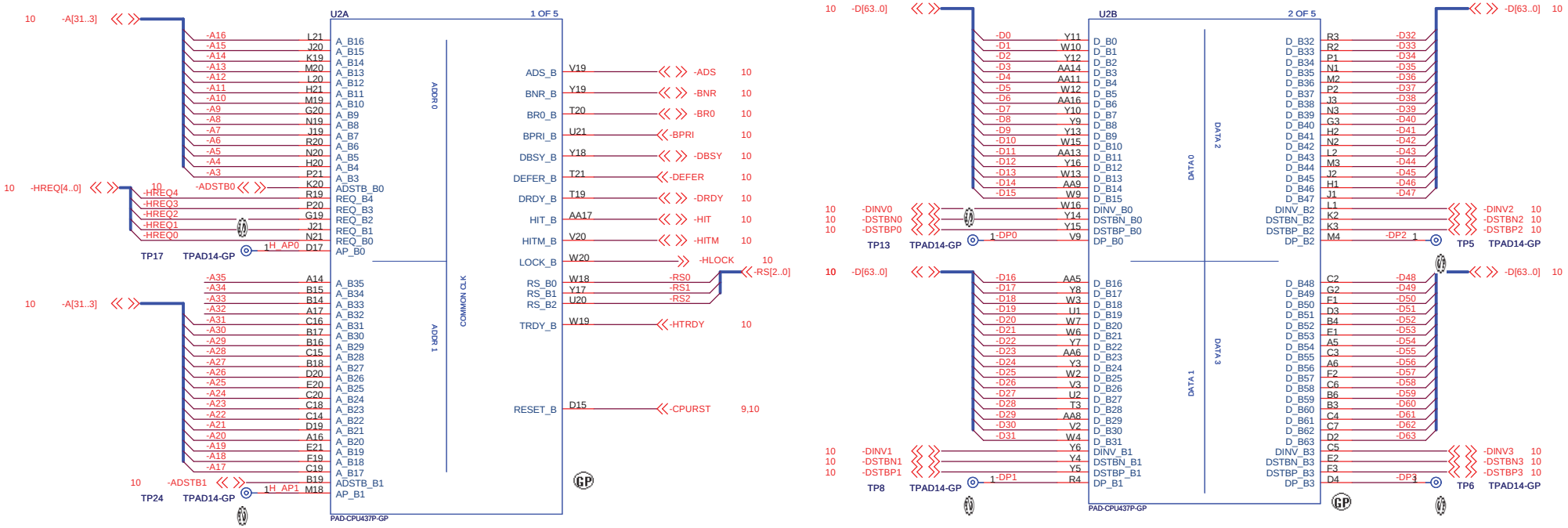
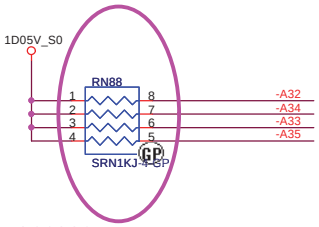




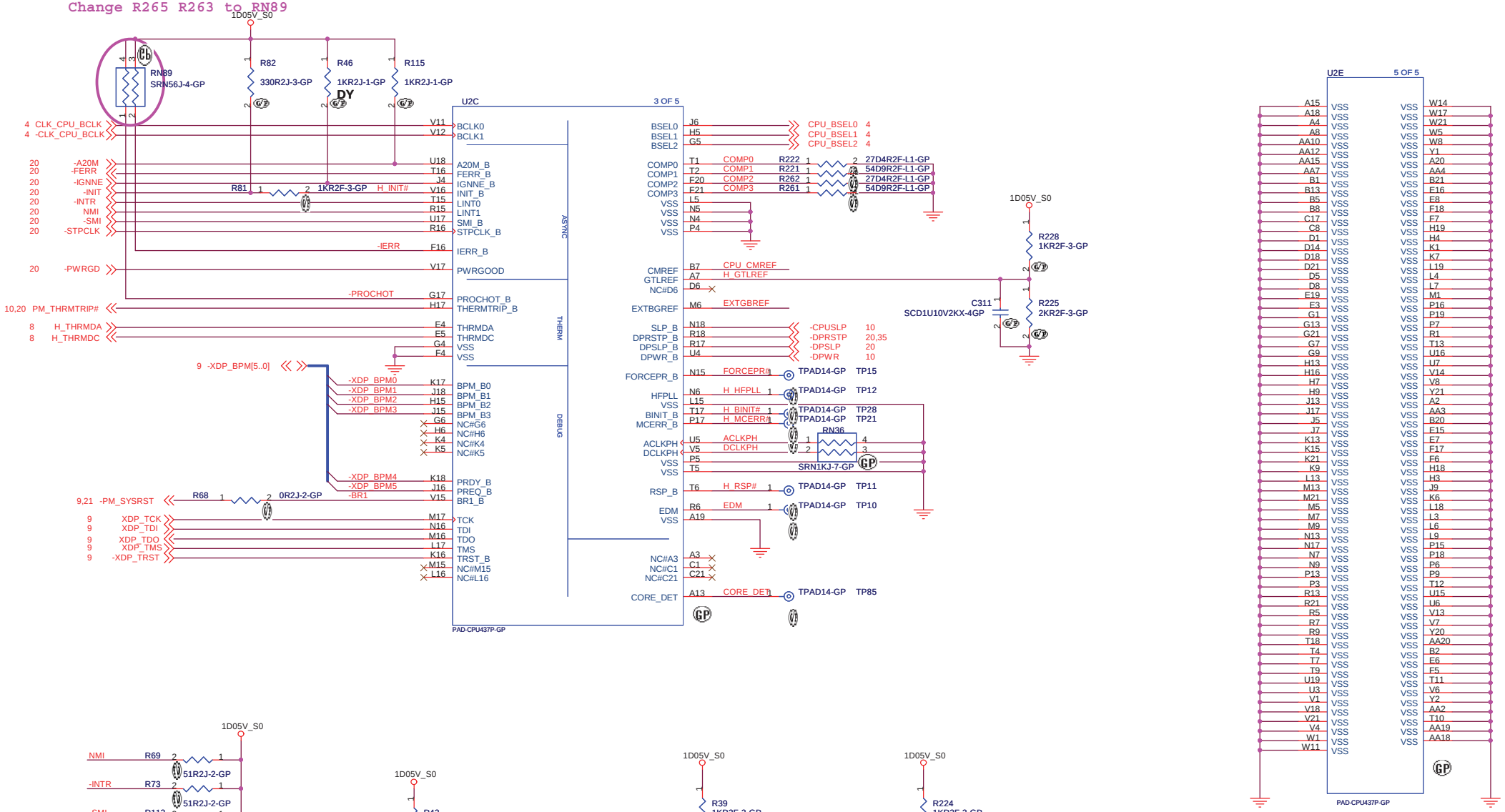
SB011009
Change R256 R253 R254 R251 to RN88
SB011309
Swap RN88 pin6 and pin7

<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	Diamondville CPU(1/3)	
Size A3	Document Number LS20	Rev SB
Date: Thursday, January 15, 2009	Sheet 5 of 41	

SB011009
Change R265 R263 to RN89



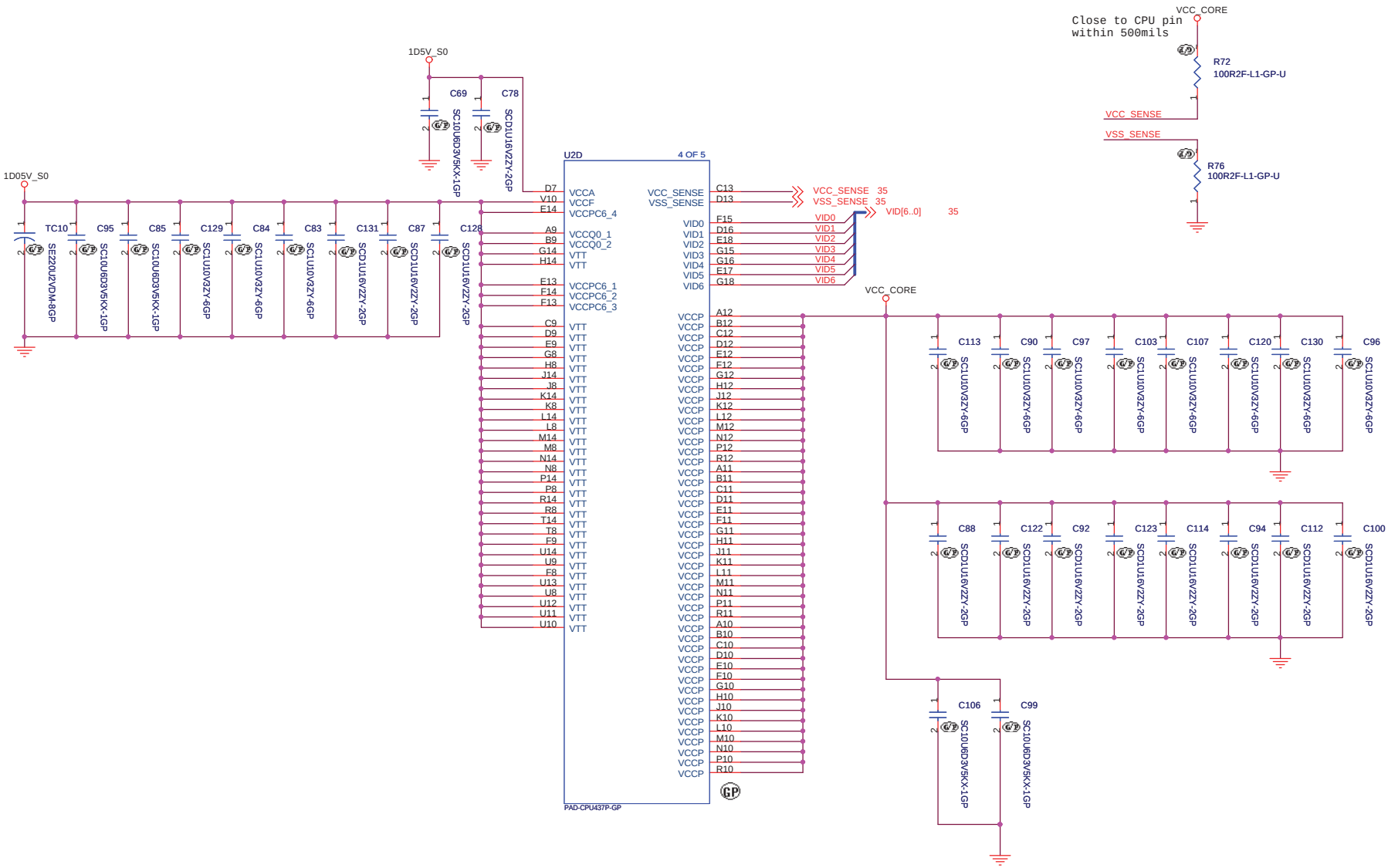
<Variant Name>

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

Title: Diamondville CPU(2/3)

Size	Document Number	Rev
A3	LS20	SB

Date: Thursday, January 15, 2009 Sheet 6 of 41



<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: ***Diamondville CPU(3/3)***

Size	Document Number	Rev
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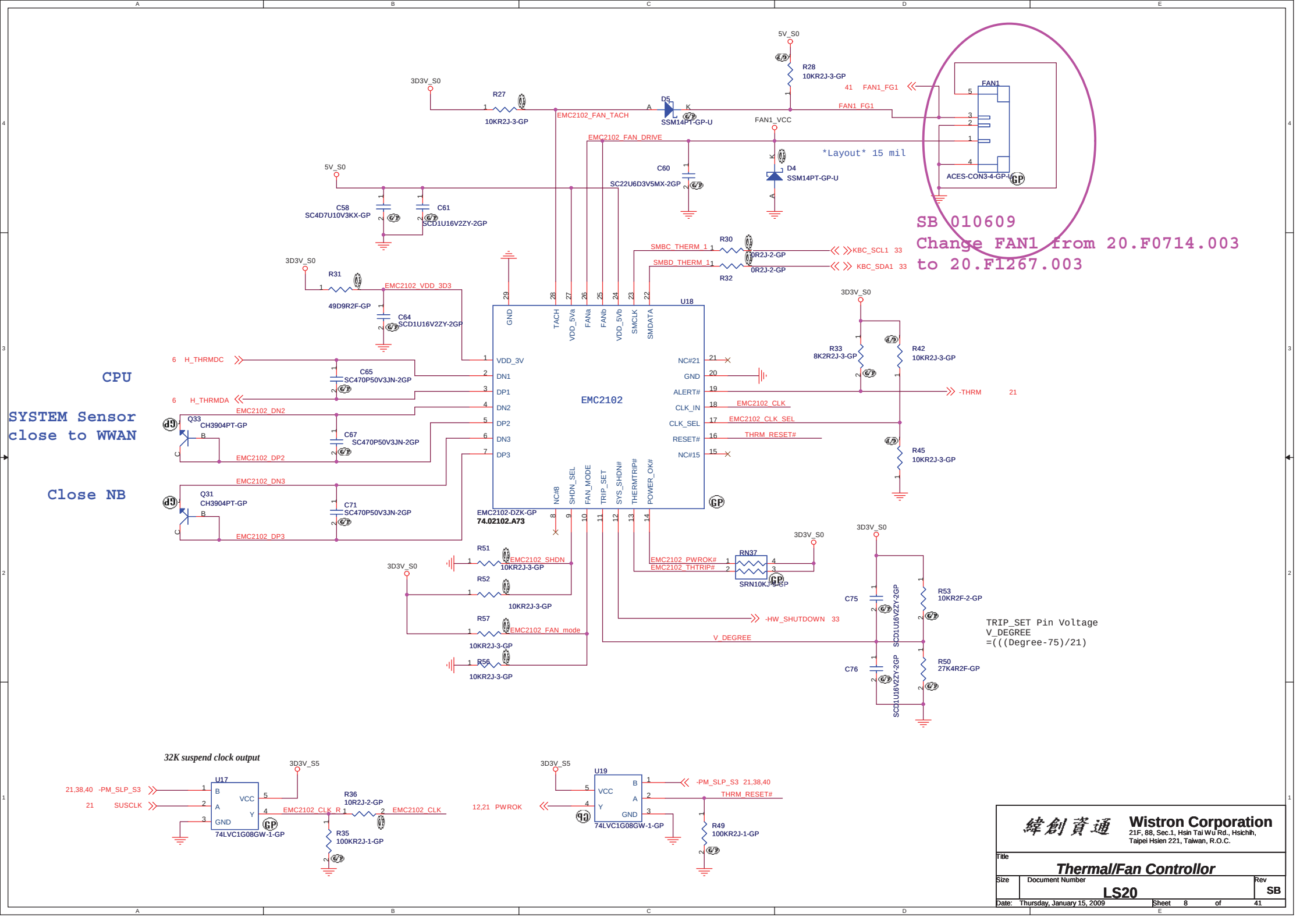
CPU
SYSTEM Sensor close to WWAN
Close NB
EMC2102
EMC2102-DZK-GP
74.02102.A73
U18
U17
U19
74LVC1G08GW-1-GP
SB 010609
Change FAN1 from 20.F0714.003 to 20.F1267.003
Layout 15 mil
TRIP_SET Pin Voltage
V_DEGREE
=(((Degree-75)/21)
32K suspend clock output
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Thermal/Fan Controllor
LS20
SB
Thursday, January 15, 2009
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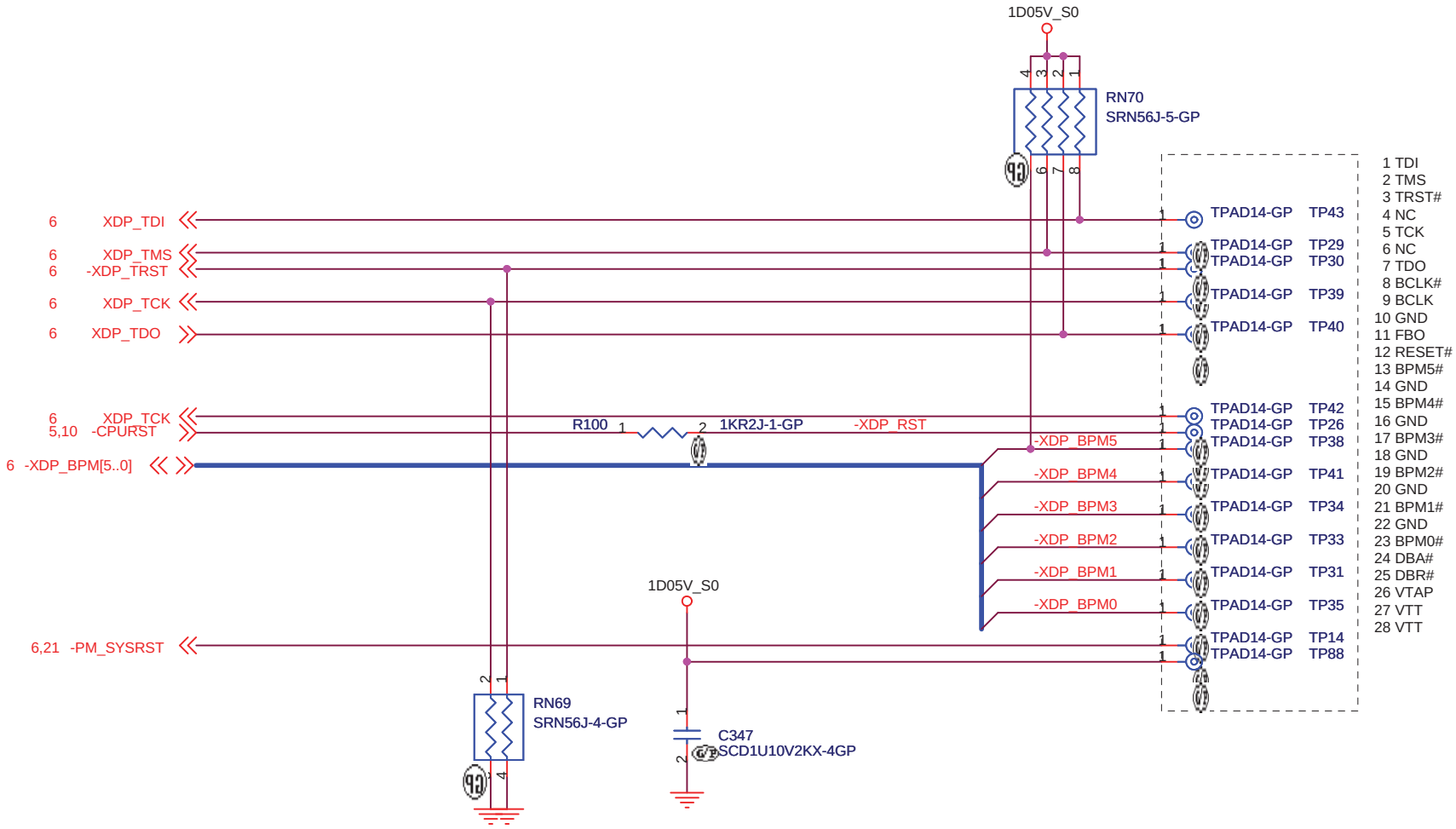

(*1) TCK SIGNAL IS BRANCHED AT CPU's PIN

(*2) CPURST# SIGNAL IS BRANCHED AT GMCH's PIN

<Variant Name>

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

Title: ITP port

Size: A4 | Document Number: LS20 | Rev: SB

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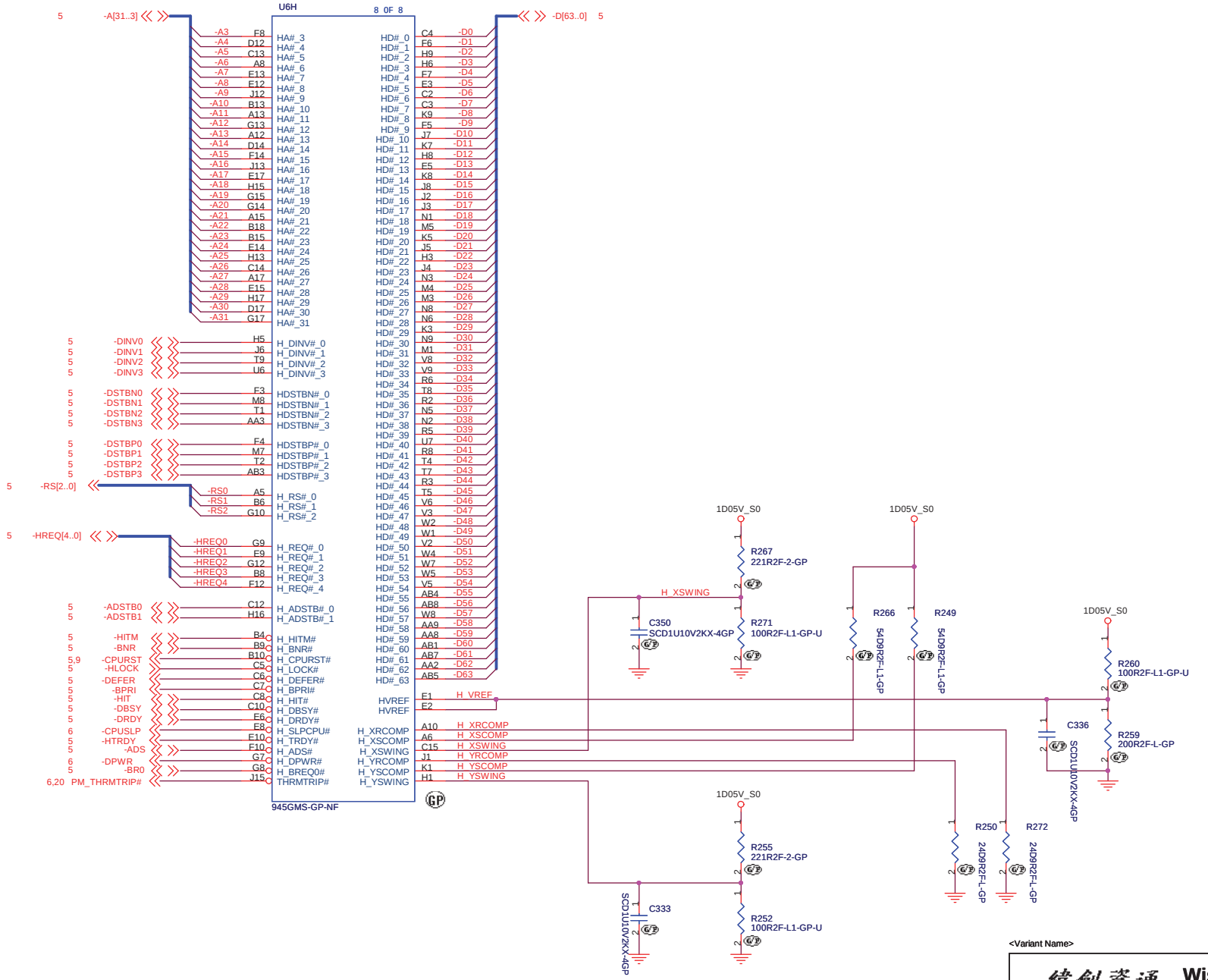

<Variant Name>

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

Title: CALISTOGA(1/7):HOST I/F

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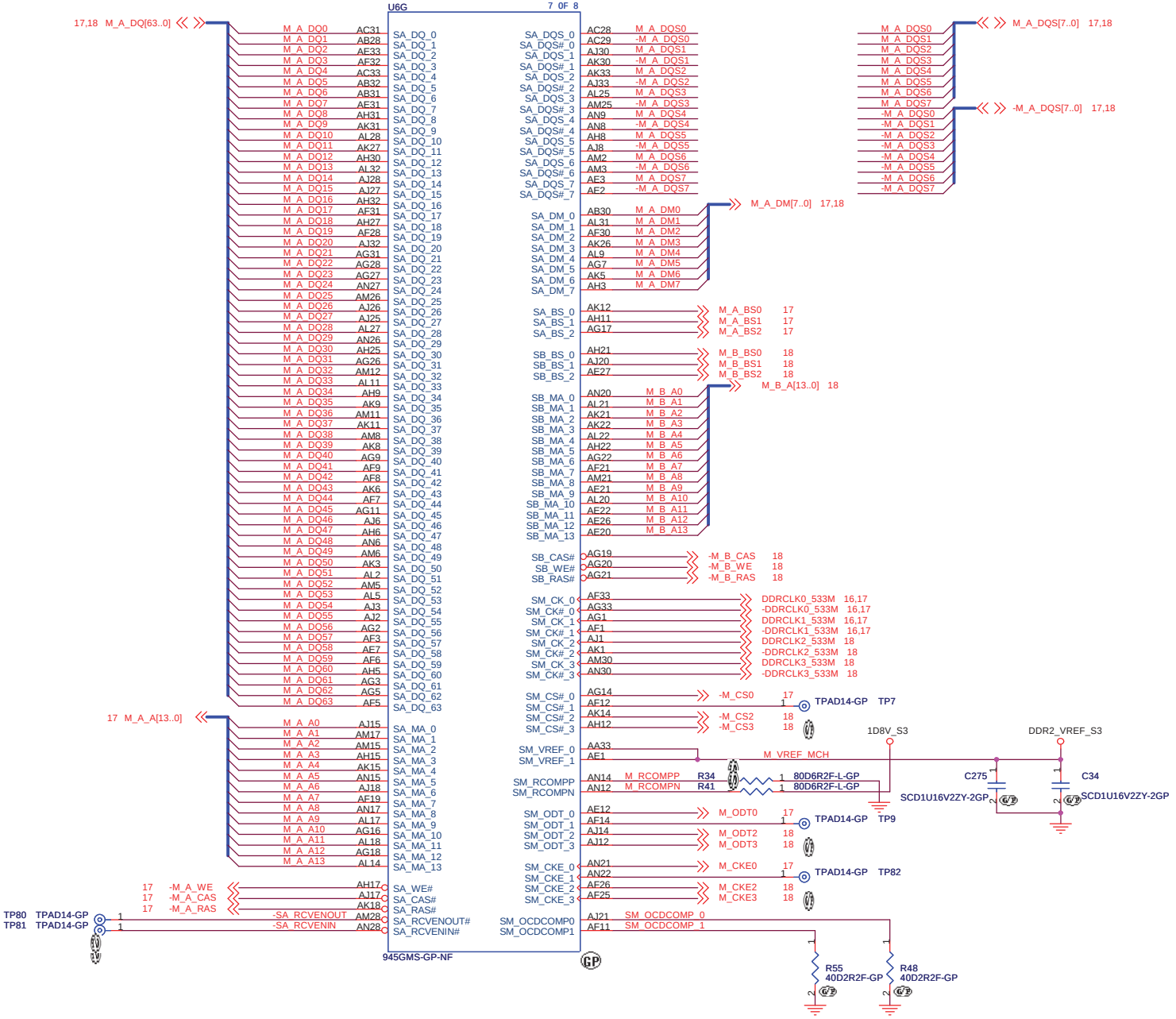

<Variant Name>

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

Title: CALISTOGA(2/7):DDR2-A

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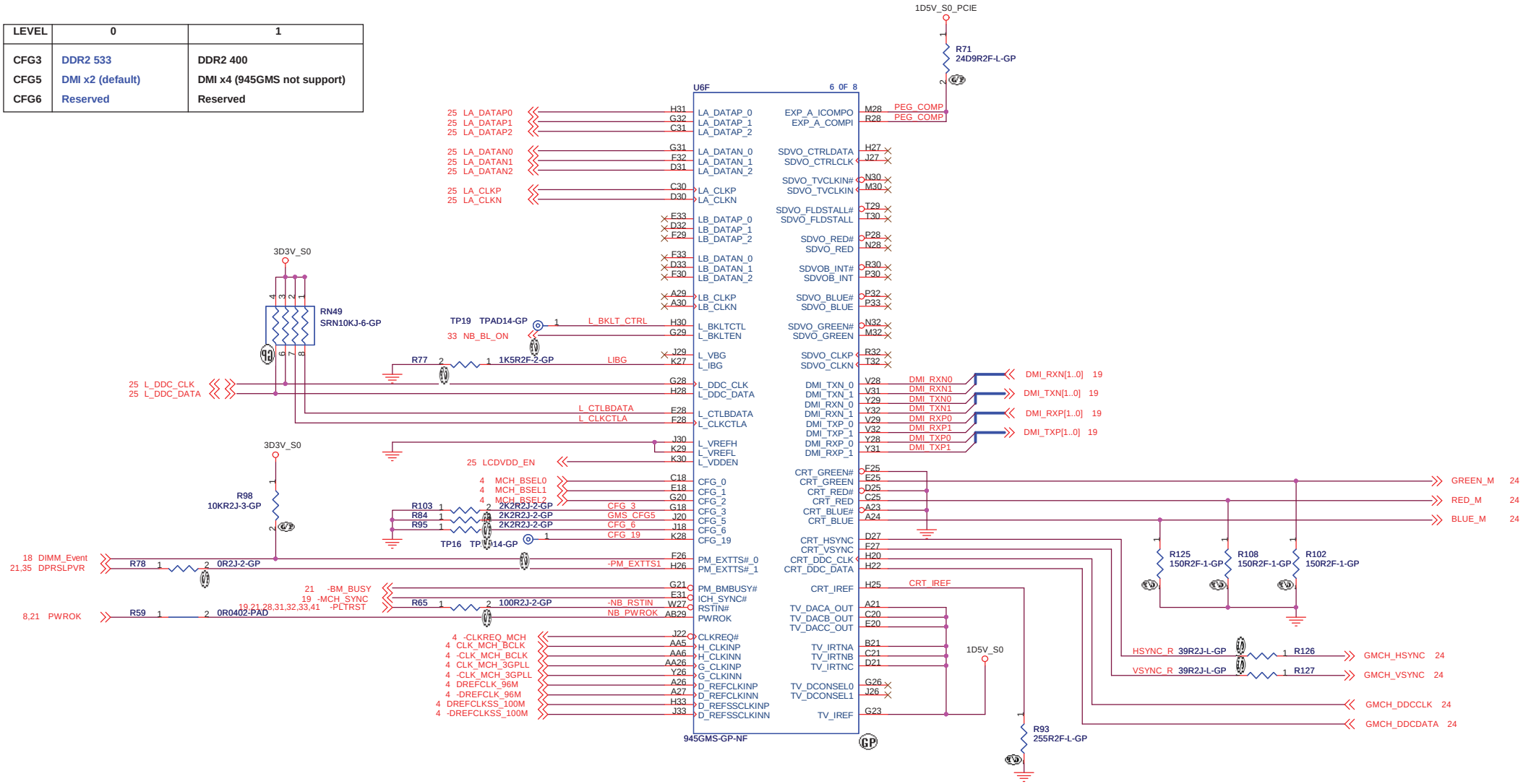
LEVEL	0	1
CFG3	DDR2 533	DDR2 400
CFG5	DMI x2 (default)	DMI x4 (945GMS not support)
CFG6	Reserved	Reserved



<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: ***CALISTOGA(3/6):DMI/PM/CFG***

Size	Document Number	Rev
A3	LS20	SB

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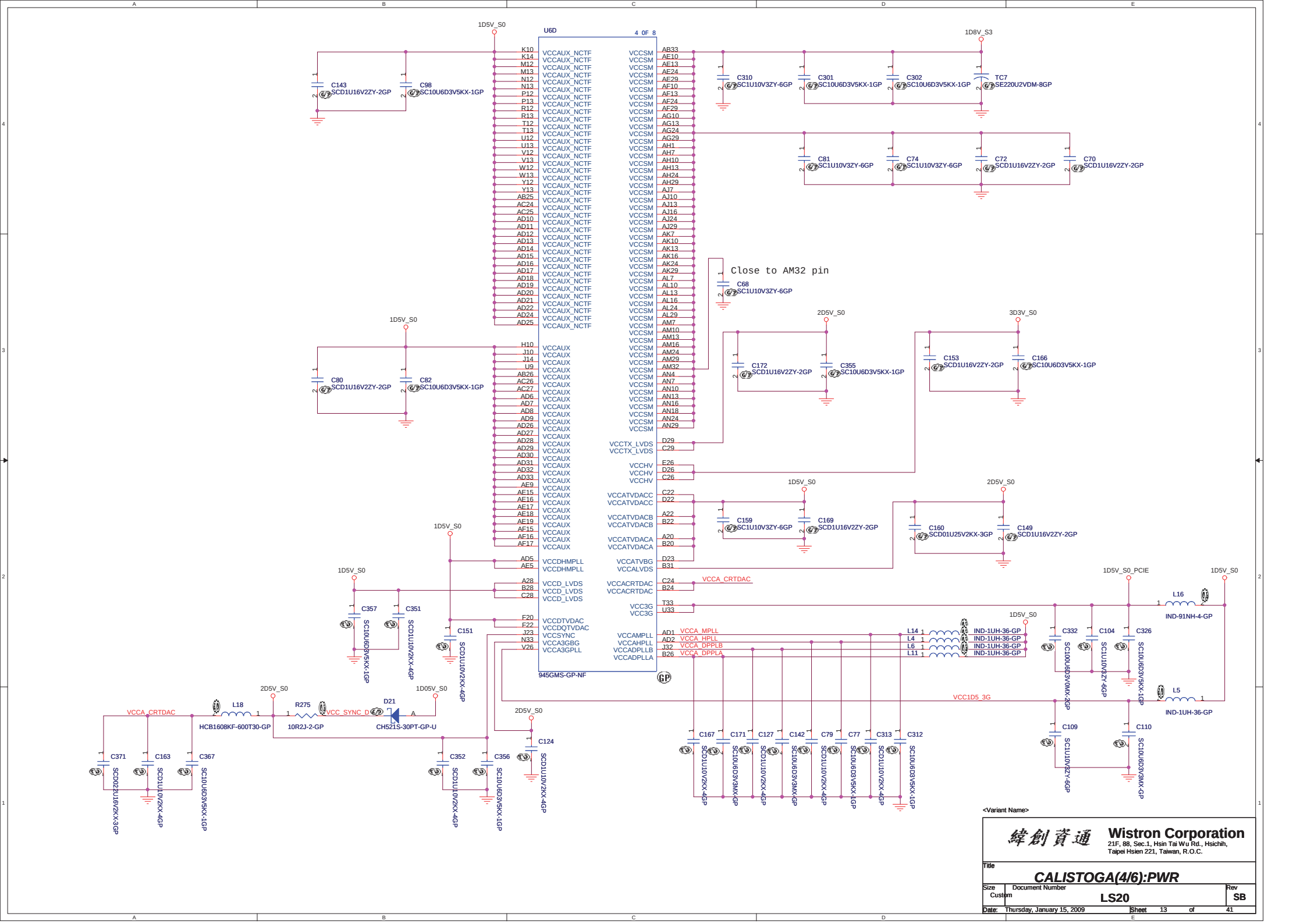
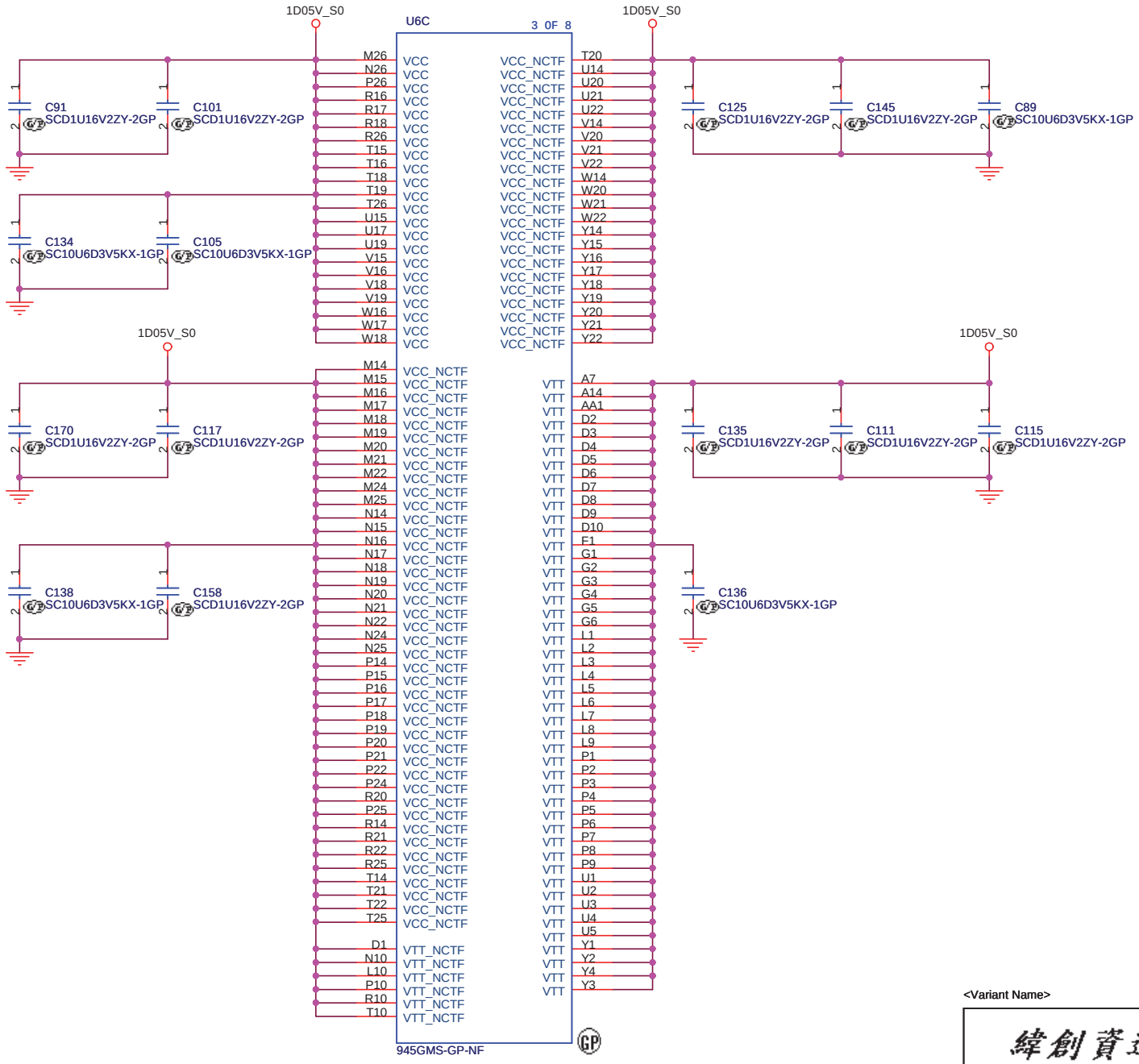

U6D
4 0F 8
945GMS-GP-NF
Close to AM32 pin
VCCA_CRTDAC
VCCA_MPLL
VCCA_HPLL
VCCA_DPPLB
VCCA_DPPLA
VCC1D5_3G
VCC_SYNC_D
1D5V_S0
2D5V_S0
3D3V_S0
1D8V_S3
1D5V_S0_PCIE
1D05V_S0
<Variant Name>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
CALISTOGA(4/6):PWR
Size
Custom
Document Number
LS20
Rev
SB
Date: Thursday, January 15, 2009
Sheet 13 of 41



<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: CALISTOGA(5/6):PWR

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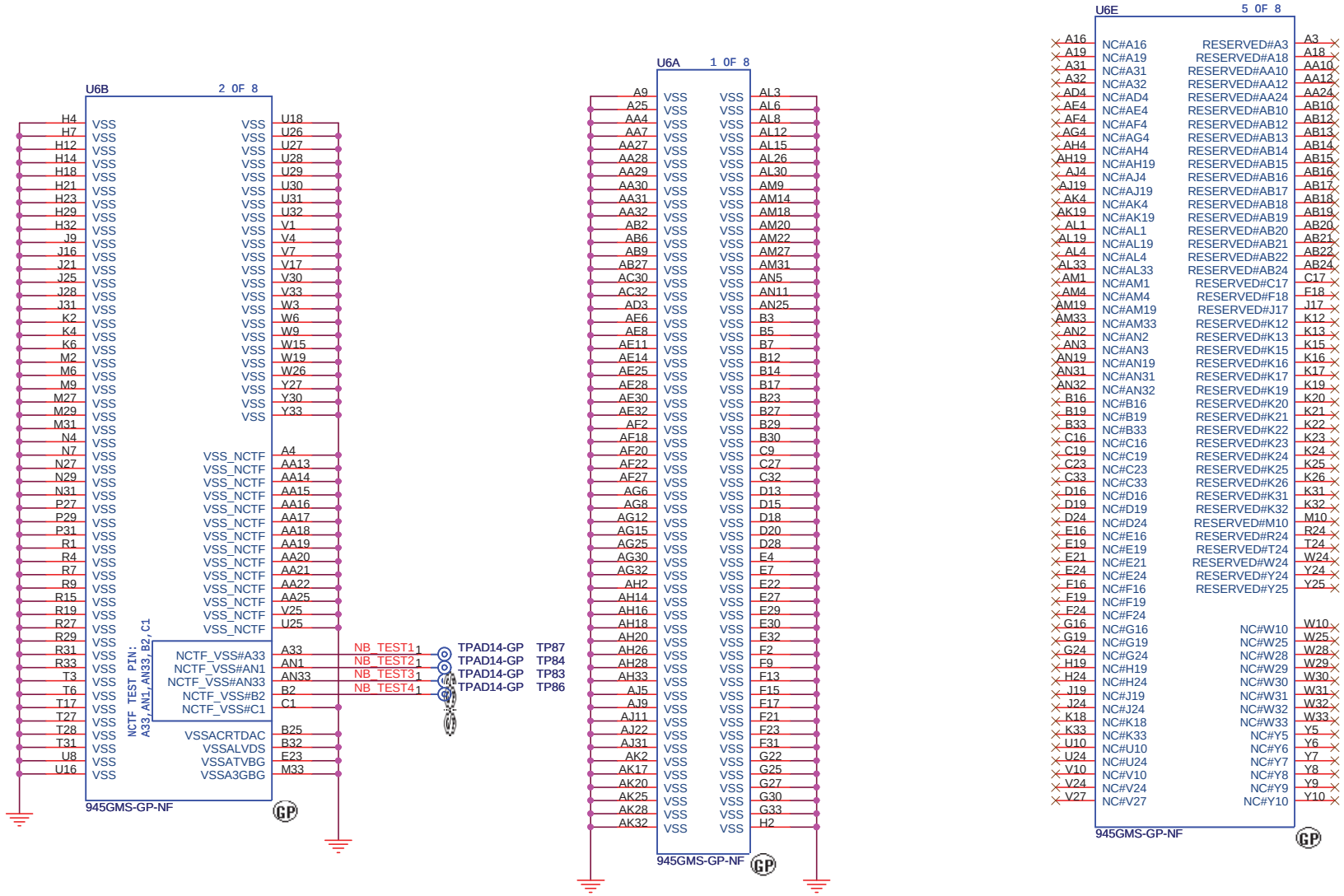

<Variant Name>

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

Title: ***CALISTOGA(6/6):GND***

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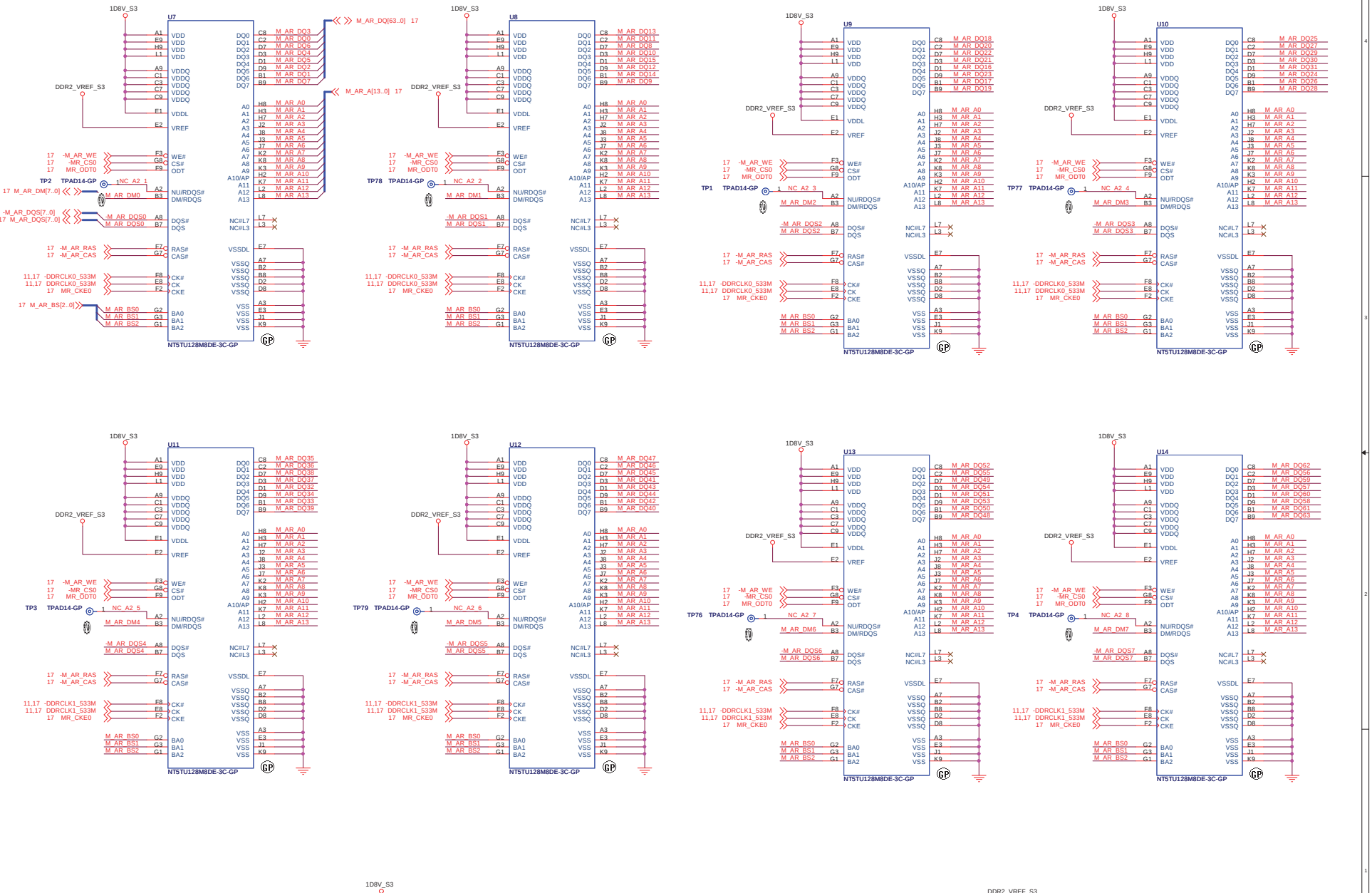
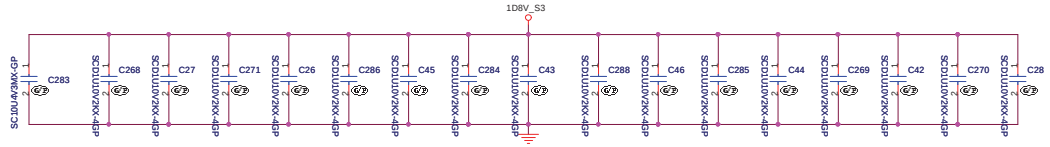
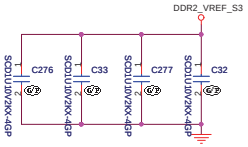
On-board DDR2 Memory







<Variant Name>

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

Title: DDR2 On_Board -B(Bank0)

Size	Document Number	Rev
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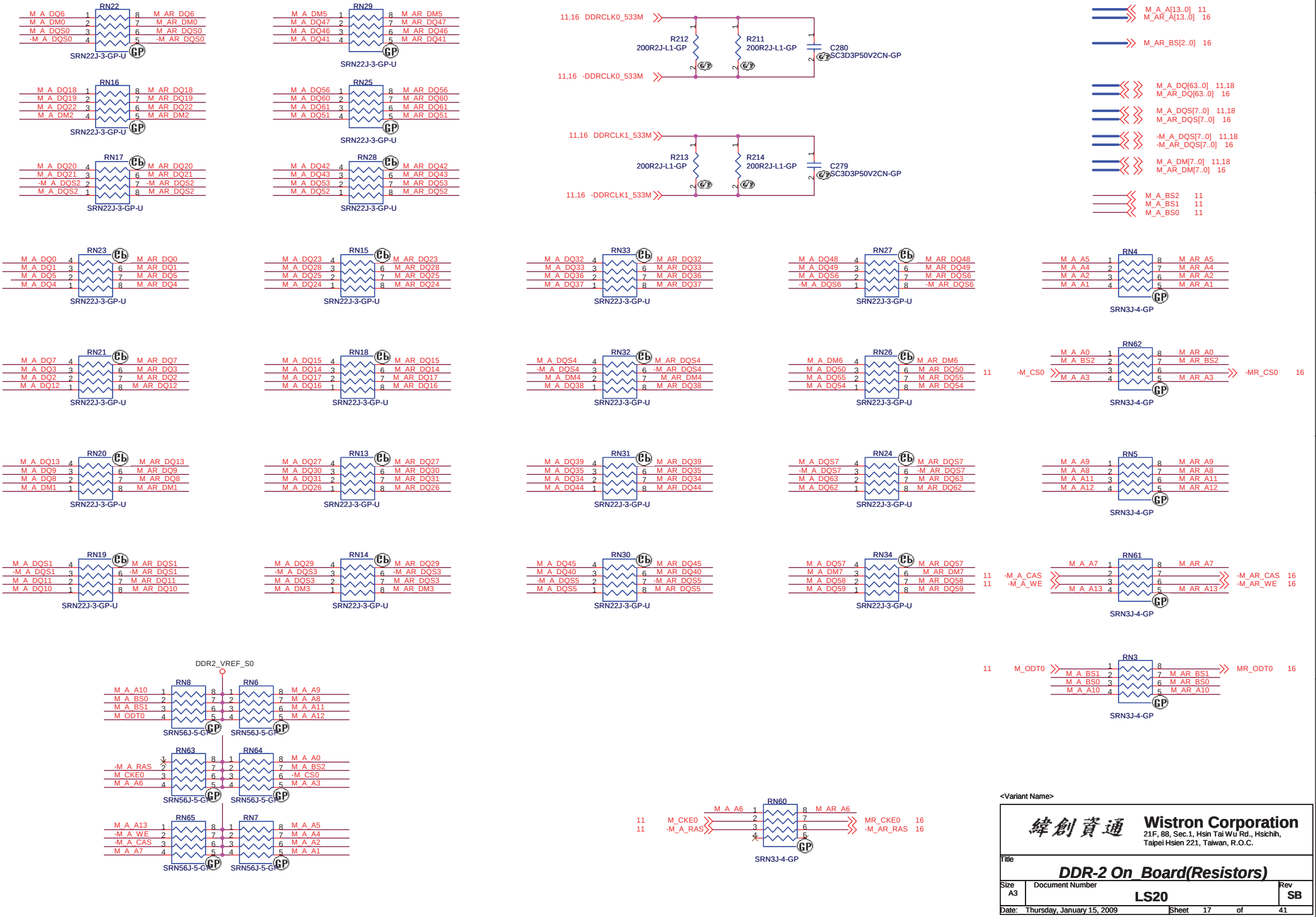
RN22
M_A_DQ6 1
M_A_DM0 2
M_A_DQS0 3
-M_A_DQS0 4
8 M_AR_DQ6
7 M_AR_DM0
6 M_AR_DQS0
5 -M_AR_DQS0
SRN22J-3-GP-U
RN29
M_A_DM5 1
M_A_DQ47 2
M_A_DQ46 3
M_A_DQ41 4
8 M_AR_DM5
7 M_AR_DQ47
6 M_AR_DQ46
5 M_AR_DQ41
SRN22J-3-GP-U
11,16 DDRCLK0_533M
11,16 -DDRCLK0_533M
R212
200R2J-L1-GP
R211
200R2J-L1-GP
C280
SC3D3P50V2CN-GP
M_A_A[13..0] 11
M_AR_A[13..0] 16
M_AR_BS[2..0] 16
RN16
M_A_DQ18 1
M_A_DQ19 2
M_A_DQ22 3
M_A_DM2 4
8 M_AR_DQ18
7 M_AR_DQ19
6 M_AR_DQ22
5 M_AR_DM2
SRN22J-3-GP-U
RN25
M_A_DQ56 1
M_A_DQ60 2
M_A_DQ61 3
M_A_DQ51 4
8 M_AR_DQ56
7 M_AR_DQ60
6 M_AR_DQ61
5 M_AR_DQ51
SRN22J-3-GP-U
11,16 DDRCLK1_533M
11,16 -DDRCLK1_533M
R213
200R2J-L1-GP
R214
200R2J-L1-GP
C279
SC3D3P50V2CN-GP
M_A_DQ[63..0] 11,18
M_AR_DQ[63..0] 16
M_A_DQS[7..0] 11,18
M_AR_DQS[7..0] 16
-M_A_DQS[7..0] 11,18
-M_AR_DQS[7..0] 16
M_A_DM[7..0] 11,18
M_AR_DM[7..0] 16
RN17
M_A_DQ20 4
M_A_DQ21 3
-M_A_DQS2 2
M_A_DQS2 1
6 M_AR_DQ20
7 M_AR_DQ21
8 -M_AR_DQS2
8 M_AR_DQS2
SRN22J-3-GP-U
RN28
M_A_DQ42 4
M_A_DQ43 3
M_A_DQ53 2
M_A_DQ52 1
6 M_AR_DQ42
7 M_AR_DQ43
7 M_AR_DQ53
8 M_AR_DQ52
SRN22J-3-GP-U
M_A_BS2 11
M_A_BS1 11
M_A_BS0 11
RN23
M_A_DQ0 4
M_A_DQ1 3
M_A_DQ5 2
M_A_DQ4 1
6 M_AR_DQ0
7 M_AR_DQ1
8 M_AR_DQ5
8 M_AR_DQ4
SRN22J-3-GP-U
RN15
M_A_DQ23 4
M_A_DQ28 3
M_A_DQ25 2
M_A_DQ24 1
6 M_AR_DQ23
7 M_AR_DQ28
8 M_AR_DQ25
8 M_AR_DQ24
SRN22J-3-GP-U
RN33
M_A_DQ32 4
M_A_DQ33 3
M_A_DQ36 2
M_A_DQ37 1
6 M_AR_DQ32
7 M_AR_DQ33
8 M_AR_DQ36
8 M_AR_DQ37
SRN22J-3-GP-U
RN27
M_A_DQ48 4
M_A_DQ49 3
M_A_DQS6 2
-M_A_DQS6 1
6 M_AR_DQ48
7 M_AR_DQ49
8 M_AR_DQS6
8 -M_AR_DQS6
SRN22J-3-GP-U
RN4
M_A_A5 1
M_A_A4 2
M_A_A2 3
M_A_A1 4
8 M_AR_A5
7 M_AR_A4
6 M_AR_A2
5 M_AR_A1
SRN3J-4-GP
RN21
M_A_DQ7 4
M_A_DQ3 3
M_A_DQ2 2
M_A_DQ12 1
6 M_AR_DQ7
7 M_AR_DQ3
7 M_AR_DQ2
8 M_AR_DQ12
SRN22J-3-GP-U
RN18
M_A_DQ15 4
M_A_DQ14 3
M_A_DQ17 2
M_A_DQ16 1
6 M_AR_DQ15
7 M_AR_DQ14
7 M_AR_DQ17
8 M_AR_DQ16
SRN22J-3-GP-U
RN32
M_A_DQS4 4
-M_A_DQS4 3
M_A_DM4 2
M_A_DQ38 1
6 M_AR_DQS4
6 -M_AR_DQS4
7 M_AR_DM4
8 M_AR_DQ38
SRN22J-3-GP-U
RN26
M_A_DM6 4
M_A_DQ50 3
M_A_DQ55 2
M_A_DQ54 1
6 M_AR_DM6
6 M_AR_DQ50
7 M_AR_DQ55
8 M_AR_DQ54
SRN22J-3-GP-U
RN62
M_A_A0 1
M_A_BS2 2
M_A_A3 4
8 M_AR_A0
7 M_AR_BS2
5 M_AR_A3
SRN3J-4-GP
11 -M_CS0
-MR_CS0 16
RN20
M_A_DQ13 4
M_A_DQ9 3
M_A_DQ8 2
M_A_DM1 1
6 M_AR_DQ13
6 M_AR_DQ9
7 M_AR_DQ8
8 M_AR_DM1
SRN22J-3-GP-U
RN13
M_A_DQ27 4
M_A_DQ30 3
M_A_DQ31 2
M_A_DQ26 1
6 M_AR_DQ27
6 M_AR_DQ30
7 M_AR_DQ31
8 M_AR_DQ26
SRN22J-3-GP-U
RN31
M_A_DQ39 4
M_A_DQ35 3
M_A_DQ34 2
M_A_DQ44 1
6 M_AR_DQ39
6 M_AR_DQ35
7 M_AR_DQ34
8 M_AR_DQ44
SRN22J-3-GP-U
RN24
M_A_DQS7 4
-M_A_DQS7 3
M_A_DQ63 2
M_A_DQ62 1
6 M_AR_DQS7
6 -M_AR_DQS7
7 M_AR_DQ63
8 M_AR_DQ62
SRN22J-3-GP-U
RN5
M_A_A9 1
M_A_A8 2
M_A_A11 3
M_A_A12 4
8 M_AR_A9
7 M_AR_A8
6 M_AR_A11
5 M_AR_A12
SRN3J-4-GP
RN19
M_A_DQS1 4
-M_A_DQS1 3
M_A_DQ11 2
M_A_DQ10 1
6 M_AR_DQS1
6 -M_AR_DQS1
7 M_AR_DQ11
8 M_AR_DQ10
SRN22J-3-GP-U
RN14
M_A_DQ29 4
-M_A_DQS3 3
M_A_DQS3 2
M_A_DM3 1
6 M_AR_DQ29
6 -M_AR_DQS3
7 M_AR_DQS3
8 M_AR_DM3
SRN22J-3-GP-U
RN30
M_A_DQ45 4
M_A_DQ40 3
-M_A_DQS5 2
M_A_DQS5 1
6 M_AR_DQ45
6 M_AR_DQ40
7 -M_AR_DQS5
8 M_AR_DQS5
SRN22J-3-GP-U
RN34
M_A_DQ57 4
M_A_DM7 3
M_A_DQ58 2
M_A_DQ59 1
6 M_AR_DQ57
6 M_AR_DM7
7 M_AR_DQ58
8 M_AR_DQ59
SRN22J-3-GP-U
11 -M_A_CAS
11 -M_A_WE
RN61
M_A_A7 1
M_A_A13 4
8 M_AR_A7
7
6
5 M_AR_A13
SRN3J-4-GP
-M_AR_CAS 16
-M_AR_WE 16
DDR2_VREF_S0
RN8
M_A_A10 1
M_A_BS0 2
M_A_BS1 3
M_ODT0 4
SRN56J-5-GP
RN6
8 M_A_A9
7 M_A_A8
6 M_A_A11
5 M_A_A12
SRN56J-5-GP
RN63
-M_A_RAS 2
M_CKE0 3
M_A_A6 4
SRN56J-5-GP
RN64
8 M_A_A0
7 M_A_BS2
6 -M_CS0
5 M_A_A3
SRN56J-5-GP
RN65
M_A_A13 1
-M_A_WE 2
-M_A_CAS 3
M_A_A7 4
SRN56J-5-GP
RN7
8 M_A_A5
7 M_A_A4
6 M_A_A2
5 M_A_A1
SRN56J-5-GP
RN3
M_A_BS1 2
M_A_BS0 3
M_A_A10 4
8
7 M_AR_BS1
6 M_AR_BS0
5 M_AR_A10
SRN3J-4-GP
11 M_ODT0
MR_ODT0 16
RN60
M_A_A6 1
2
3
4
8 M_AR_A6
7
6
5
SRN3J-4-GP
11 M_CKE0
11 -M_A_RAS
MR_CKE0 16
-M_AR_RAS 16
<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
DDR-2 On_Board(Resistors)
Size A3
Document Number
LS20
Rev SB
Date: Thursday, January 15, 2009
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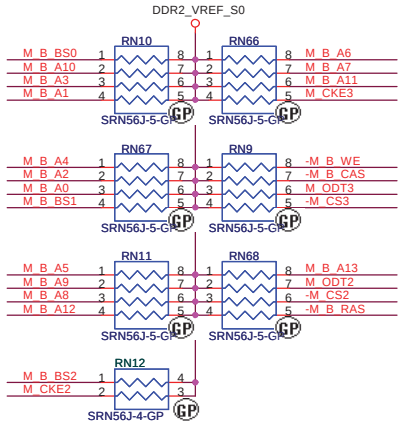
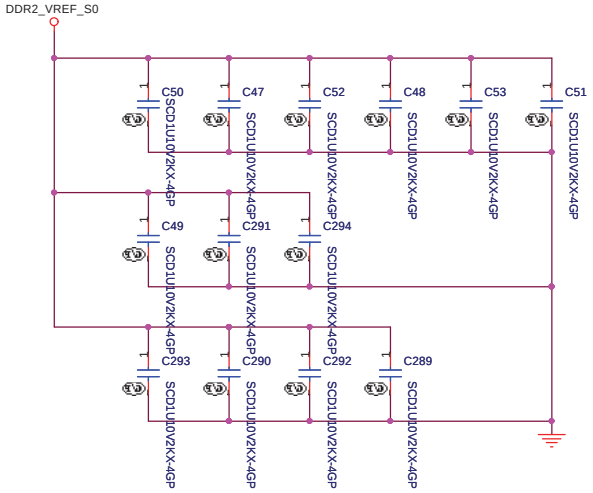
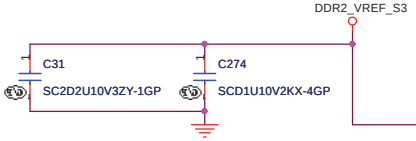
CHANNEL A PARALLEL TERMINATION

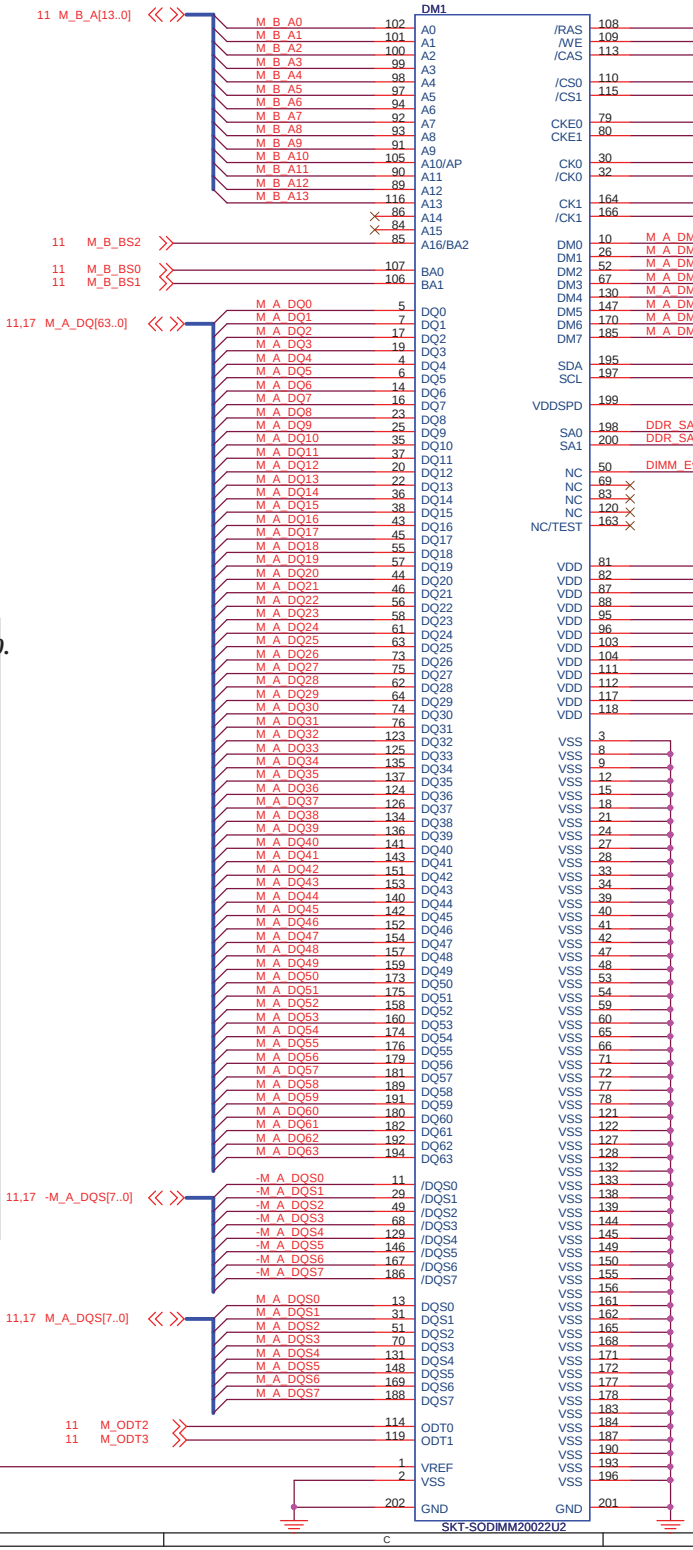


PLACE 1 CAP FOR EVERY 2 BITS TERMINATION TO DDR2_VREF_S0.



DDR SLOT2 RELATED CAPS ARE REMOVED!





<Variant Name>

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

Title: **DDR2 SODIMM-B (REVERSE TYPE)**

Size	Document Number	Rev
A3	LS20	SB

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SB 011009
Change R91 R92 to RN95
SB 011309
SWAP RN95 pin1 and pin2

Default:H

	GNT5#	GNT4#
LPC	H	H
PCI	H	L
SPI	L	H

RN39 SRN8K2J-4-GP
RN95 SRN8K2J-3-GP
RN42 SRN8K2J-4-GP
RN40 SRN8K2J-4-GP
RN41 SRN8K2J-4-GP
RN43 SRN8K2J-4-GP
R122 1KR2J-1-GP

U15B
PCI
Interrupt I/F
MISC
ICH7-M-GP

-PCI_REQ0
-PCI_REQ1
-PCI_REQ2
-PCI_REQ3
-PCI_REQ4
-PCI_REQ5
-PCI_GNT5
-PCI_IRDY
-PCI_DEVSEL
-PCI_PERR
-PCI_LOCK
-PCI_SERR
-PCI_STOP
-PCI_TRDY
-PCI_FRAME
-PLT_RST
CLK_PCI_ICH 4
-INTA
-INTB
-INTC
-INTD
SB_PIRQE#
SB_PIRQF#
SB_PIRQG#
SB_PIRQH#
-MCH_SYNC 12

AC coupling caps need to be within 250 mils of the driver.

U15D
PCI-Express
Direct Media Interface
SPI
USB
ICH7-M-GP

SCD1U10V2KX-4GP
PCIE_TXN_LAN_C
PCIE_TXP_LAN_C
PCIE_TXN_WLAN_C
PCIE_TXP_WLAN_C
PCIE_TXN_WWAN_C
PCIE_TXP_WWAN_C
PCIE_TXN_NEW_C
PCIE_TXP_NEW_C

DMI_RXN0
DMI_RXP0
DMI_TXN0
DMI_TXP0
DMI_RXN1
DMI_RXP1
DMI_TXN1
DMI_TXP1
DMI_RXN[1..0] 12
DMI_RXP[1..0] 12
DMI_TXN[1..0] 12
DMI_TXP[1..0] 12

-CLK_PCIE_ICH 4
CLK_PCIE_ICH 4
DMI_IRCOMP_R
Within 500 mils from ICH7-M

1D5V_S0
R118 24D9R2F-L-GP

R109 0R0402-PAD
U25 74LVC1G08GM-GP
-PLTRST 12,21,28,31,32,33,41
R128 100KR2J-1-GP

SB011009
Change R128 from ASM to DY

RN47, RN48 should nearby ICH
RN48 SRN10KJ-6-GP
RN47 SRN10KJ-6-GP
R274 150R2F-1-GP

SPI_SCK_SB
SPI_CS_SB
SPI_MOSI_SB
SPI_MISO_SB

-USB_OC0
-USB_OC1
-USB_OC2
-USB_OC3
-USB_OC4
-USB_OC5
-USB_OC6
-USB_OC7

USB0 --> External USB1
USB1 --> Card Reader
USB2 --> External USB2
USB3 --> BlueTooth
USB4 --> External USB3
USB5 --> Mini-PCIE (WWAN)
USB6 --> Camera
USB7 --> NEW Card

USB_RBIAS_PN R116 22D6R2F-L1-GP
Within 500 mils from ICH7-M

<Variant Name>

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

Title: ICH7-M(1/4):PCI/PCIE/DMI/USB/SPI

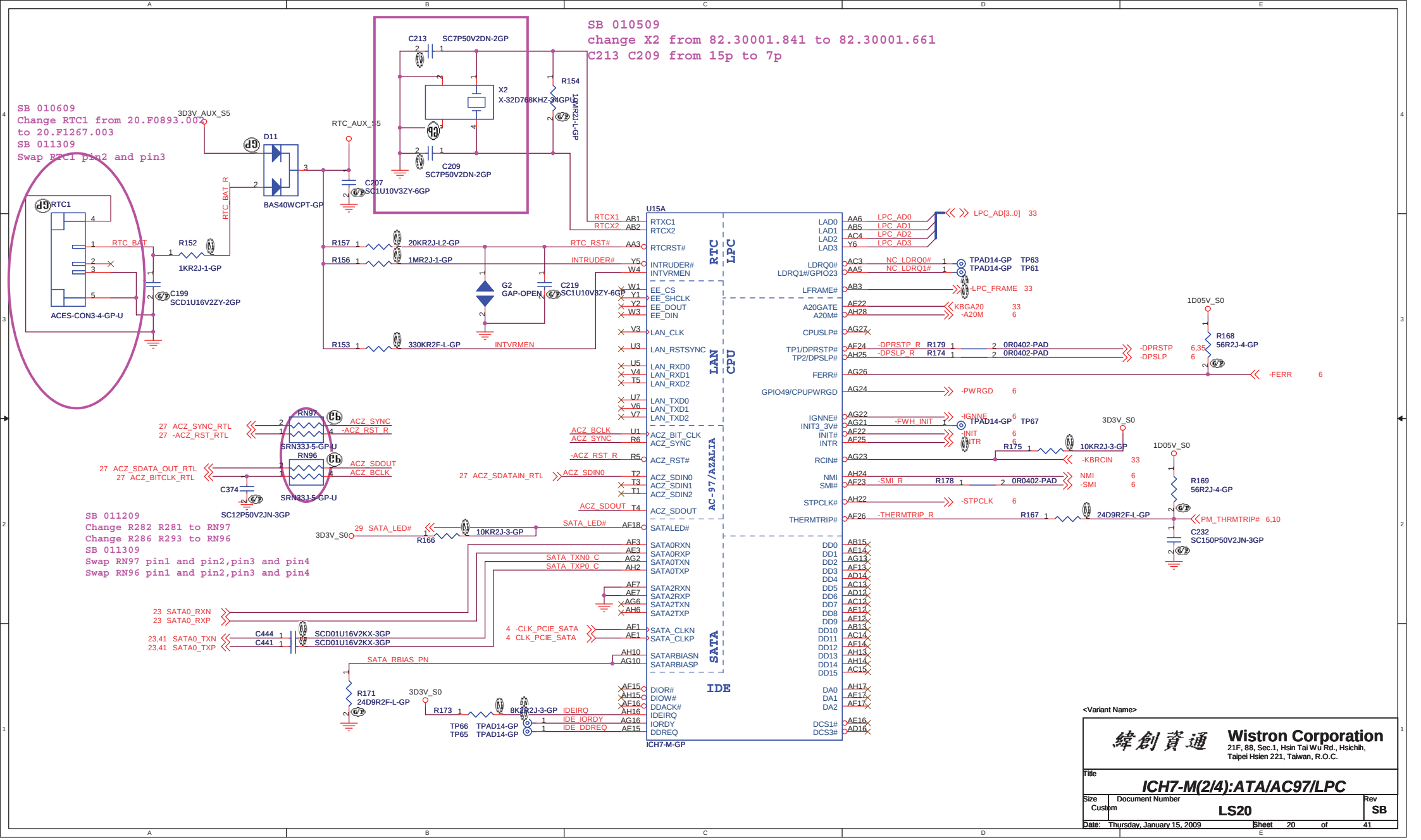
Size	Document Number	Rev
A3	LS20	SB

Date: Thursday, January 15, 2009 Sheet 19 of 41

SB 010509
change X2 from 82.30001.841 to 82.30001.661
C213 C209 from 15p to 7p

SB 010609
Change RTC1 from 20.F0893.002
to 20.F1267.003
SB 011309
Swap RTC1 pin2 and pin3

SB 011209
Change R282 R281 to RN97
Change R286 R293 to RN96
SB 011309
Swap RN97 pin1 and pin2,pin3 and pin4
Swap RN96 pin1 and pin2,pin3 and pin4



<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: ICH7-M(2/4):ATA/AC97/LPC

Size	Document Number	Rev
Custom	LS20	SB

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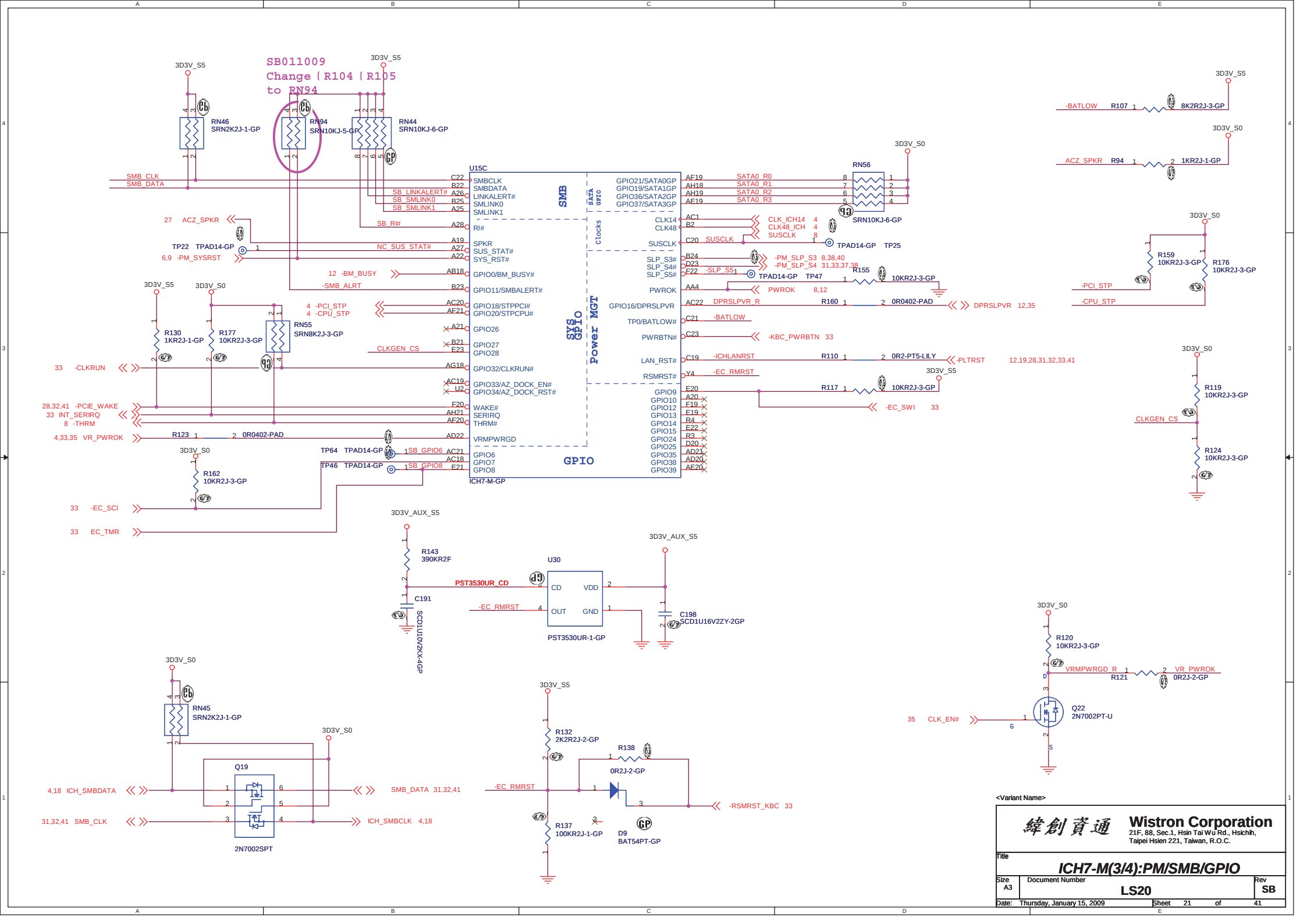


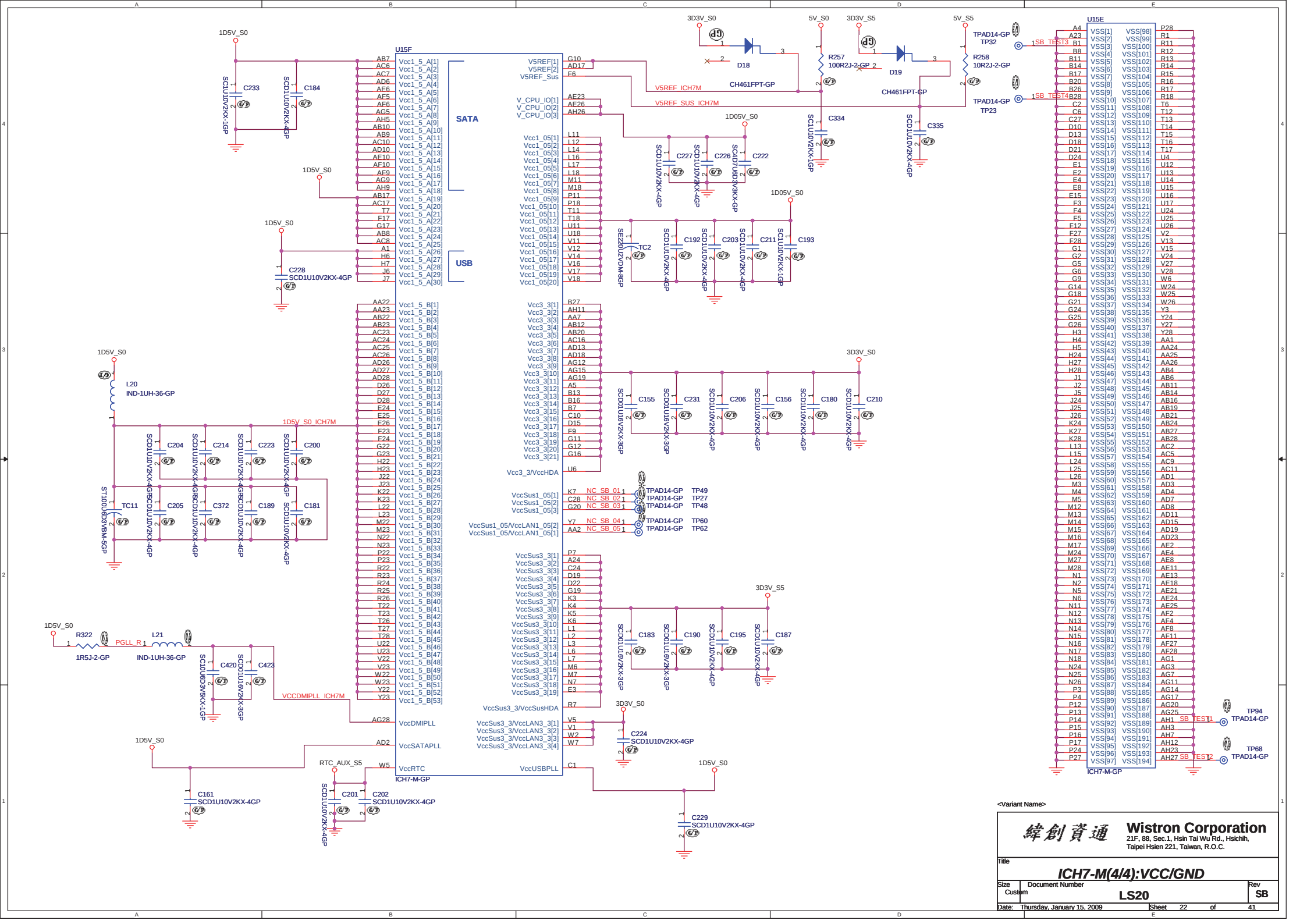
<Variant Name>

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

Title: **ICH7-M(3/4):PM/SMB/GPIO**

Size	Document Number	Rev
A3	LS20	SB

Date: Thursday, January 15, 2009 Sheet 21 of 41



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

<Variant Name>

Title: ICH7-M(4/4):VCC/GND

Size: Custom | Document Number: LS20 | Rev: SB

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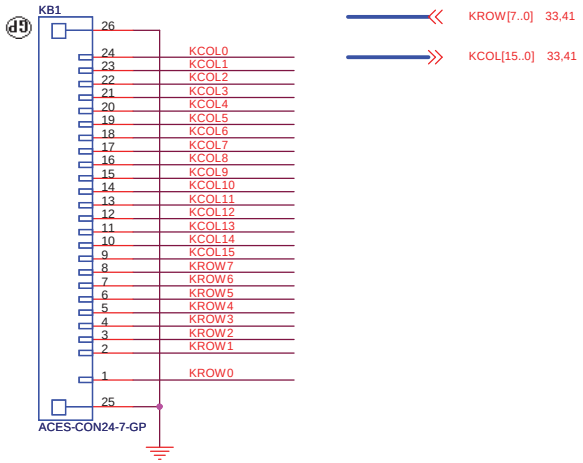
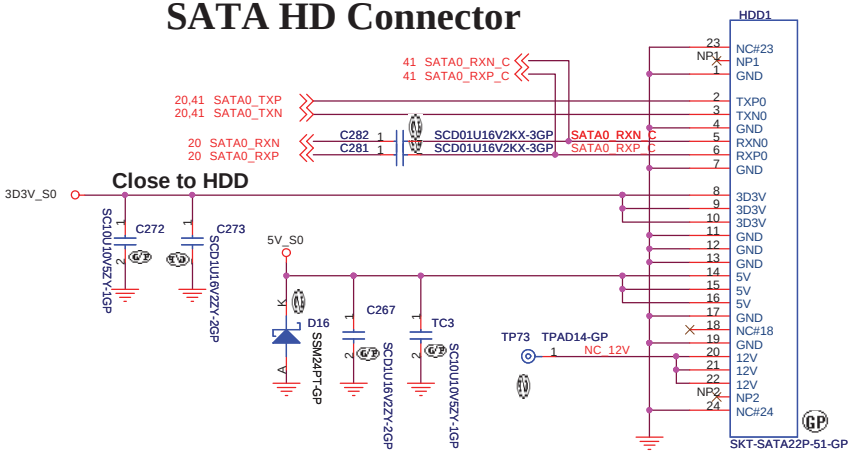
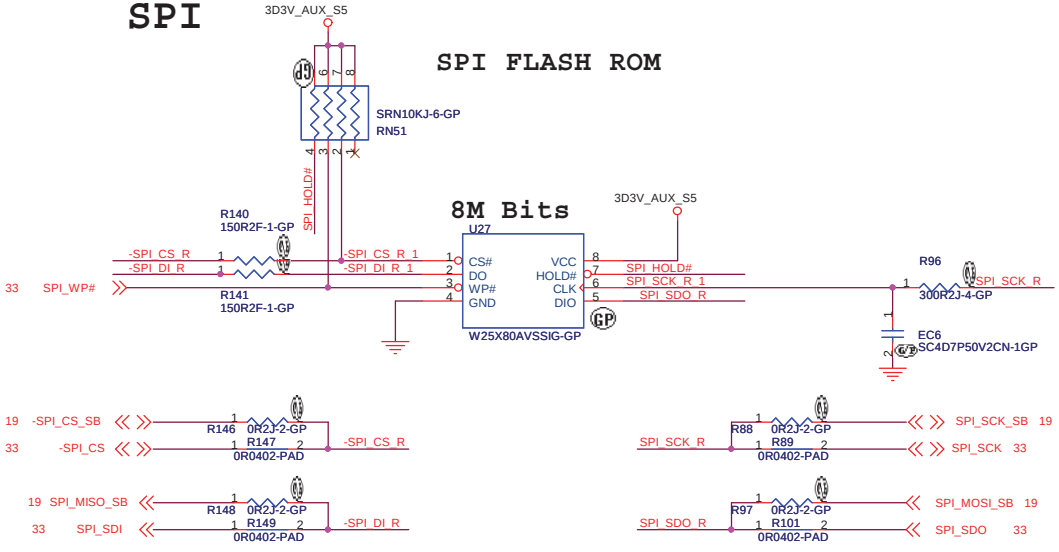
Internal KeyBoard Connector



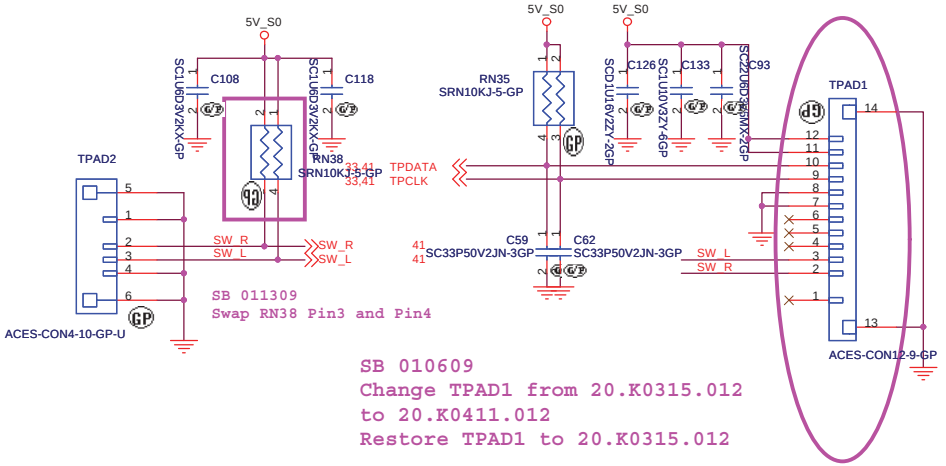
SATA HD Connector



SPI



TouchPad Connector



<Core Design>

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

Title: HDD /KeyBoard / FWH / TouchPad

Size	Document Number	Rev
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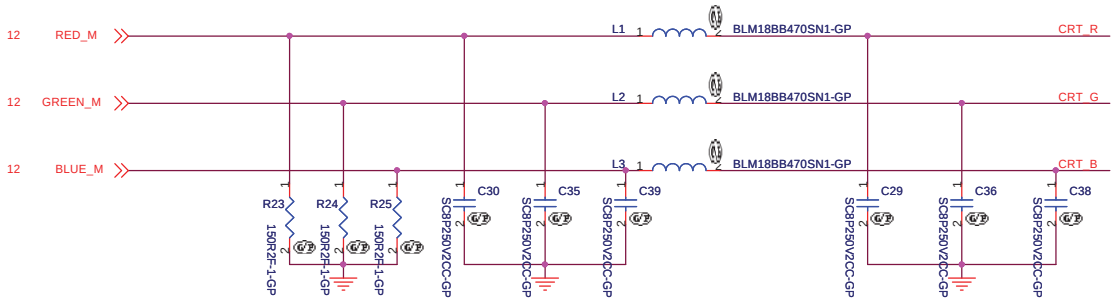
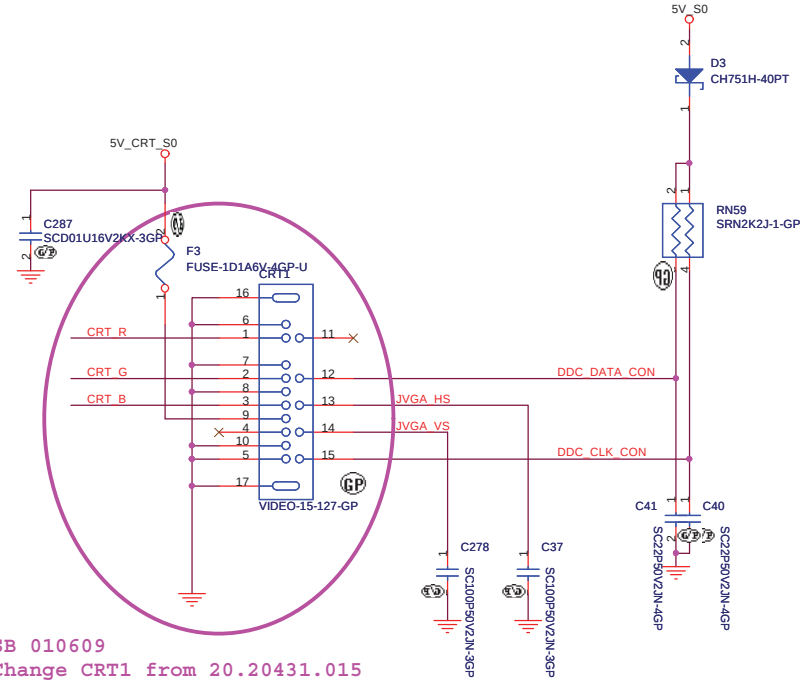
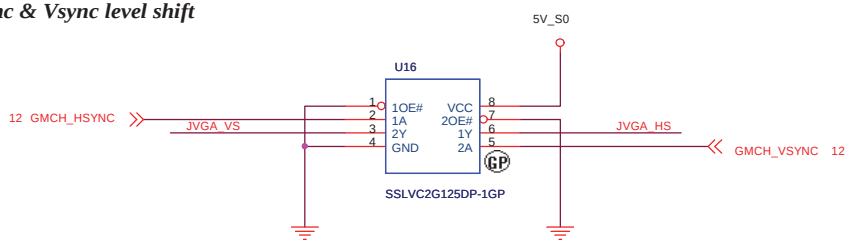
CRT I/F & CONNECTOR

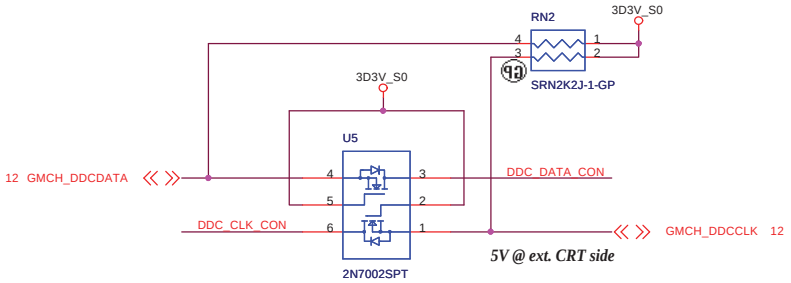




SB 010609
Change CRT1 from 20.20431.015
to 20.20401.015
SB 011409
ADD F3

Hsync & Vsync level shift





5V @ ext. CRT side

To test pad

41 CRT_R
41 CRT_G
41 CRT_B
41 JVGA_HS
41 JVGA_VS
41 DDC_DATA_CON
41 DDC_CLK_CON

<Core Design>

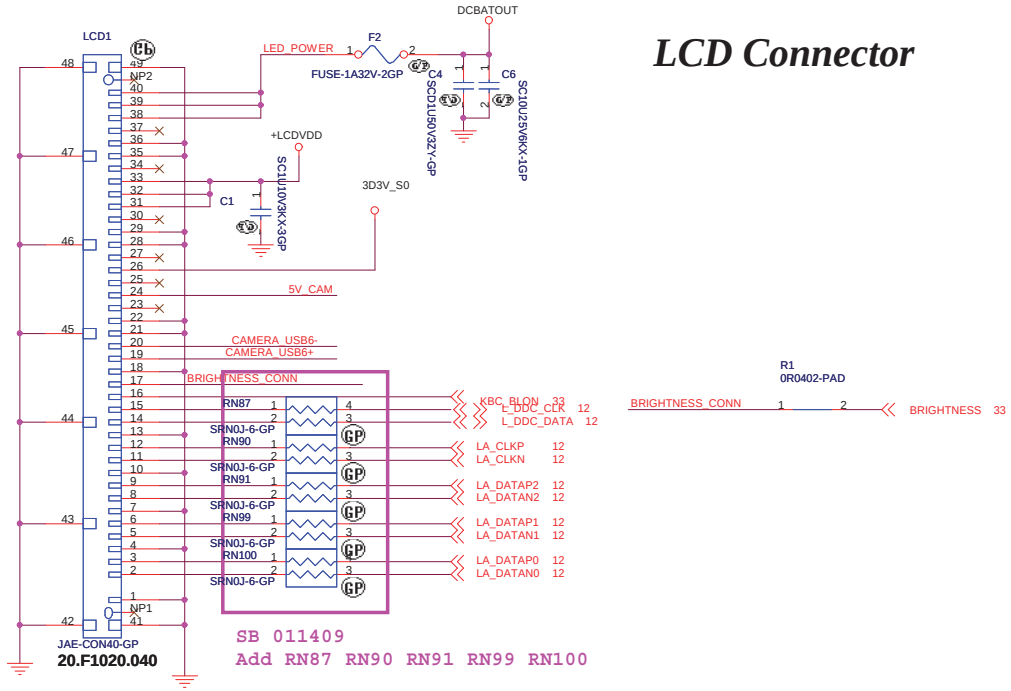
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: CRT Connector

Size	Document Number	Rev
A3	LS20	SB

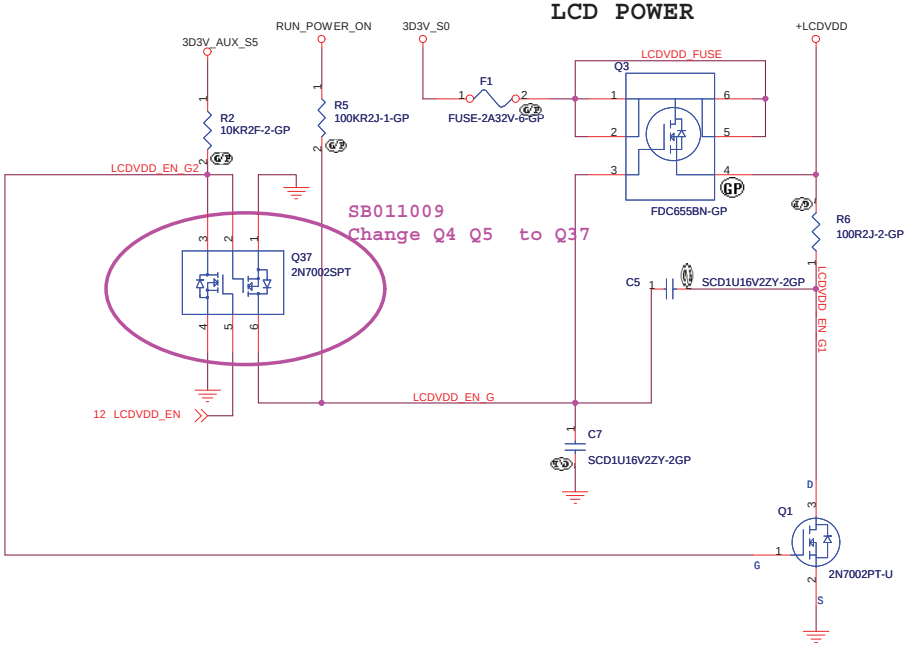
Date: Thursday, January 15, 2009 Sheet 24 of 41

LCD Connector



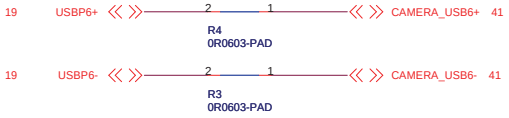
SB 011409
Add RN87 RN90 RN91 RN99 RN100

LCD POWER

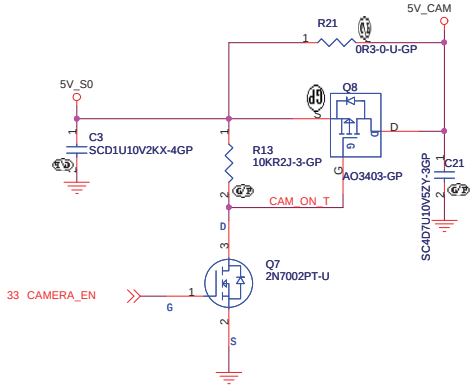


SB011009
Change Q4 Q5 to Q37

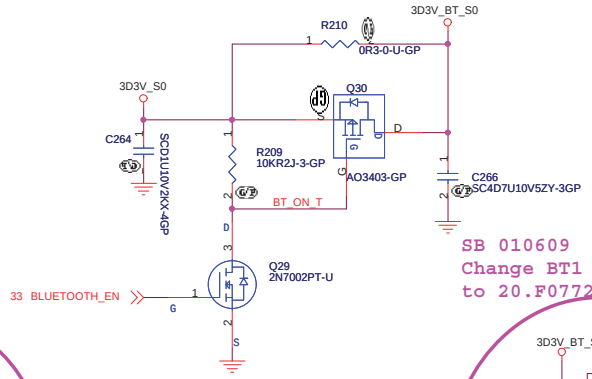
CAMERA



CAMERA POWER



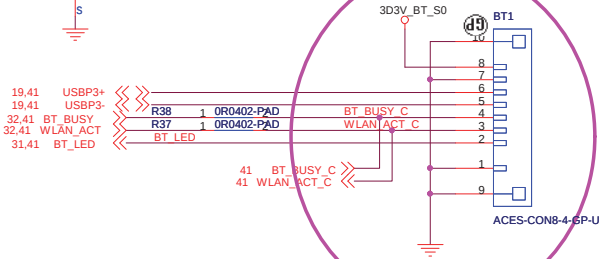
Bluetooth Power



SB 010609
Change BT1 from 20.F0779.008
to 20.F0772.008

Pin#	Pin Name
1	GND
2	LED
3	WLAN_ACT
4	BT_PRI
5	USB D-
6	USB D+
7	GND
8	3.3V

SB 010809
Swap the BT1 pin define



<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	LCD CONN/ Camera / BT	
Size: Custom	Document Number: LS20	Rev: SB
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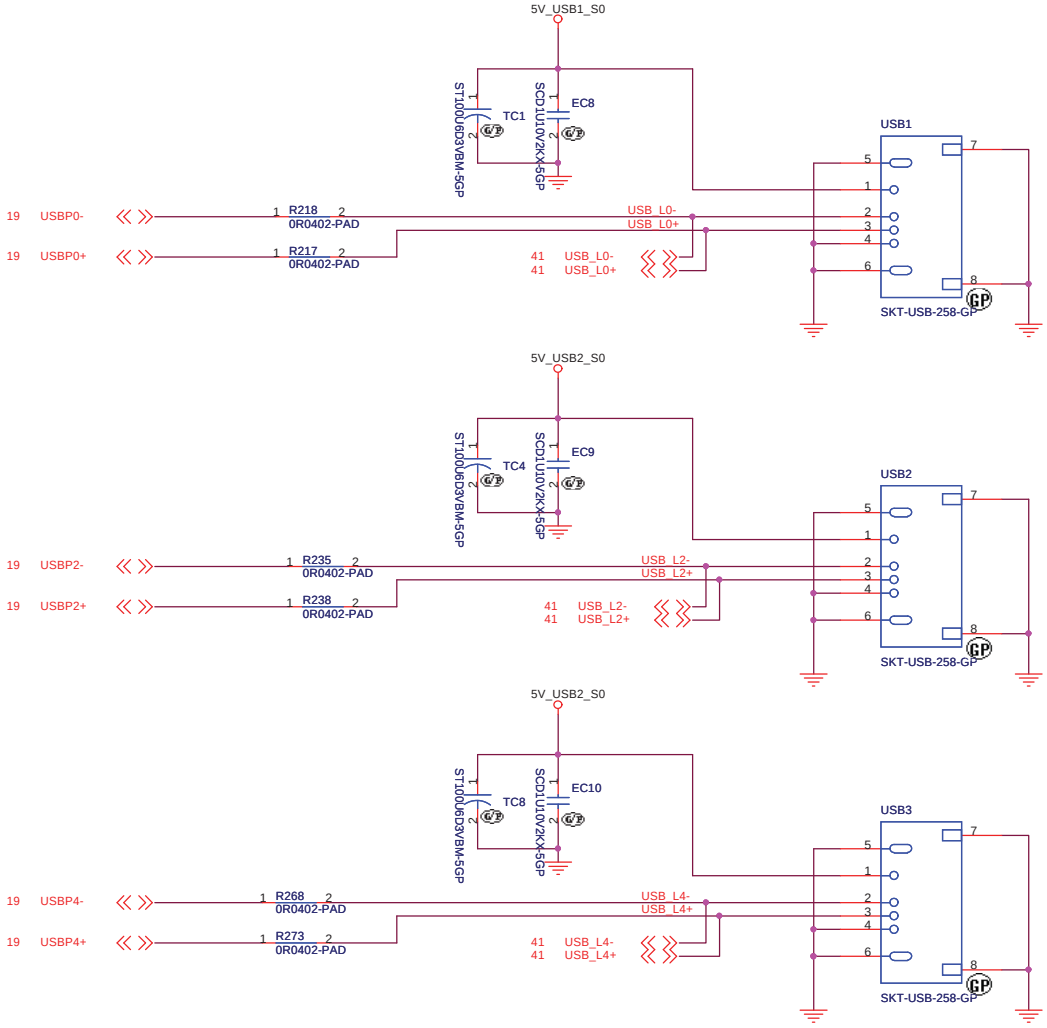
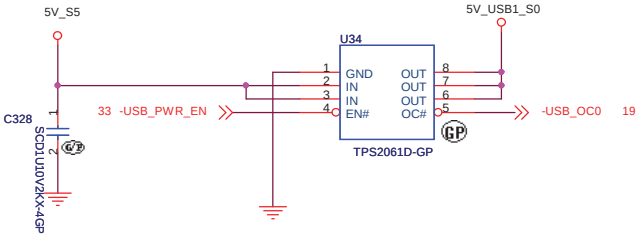
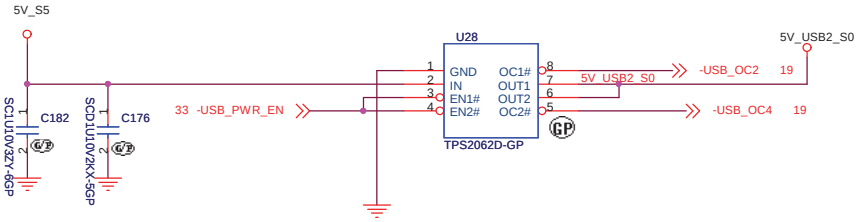
USB x 3 Connector







<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: ***USB connector***

Size	Document Number	Rev
Custom	LS20	SB

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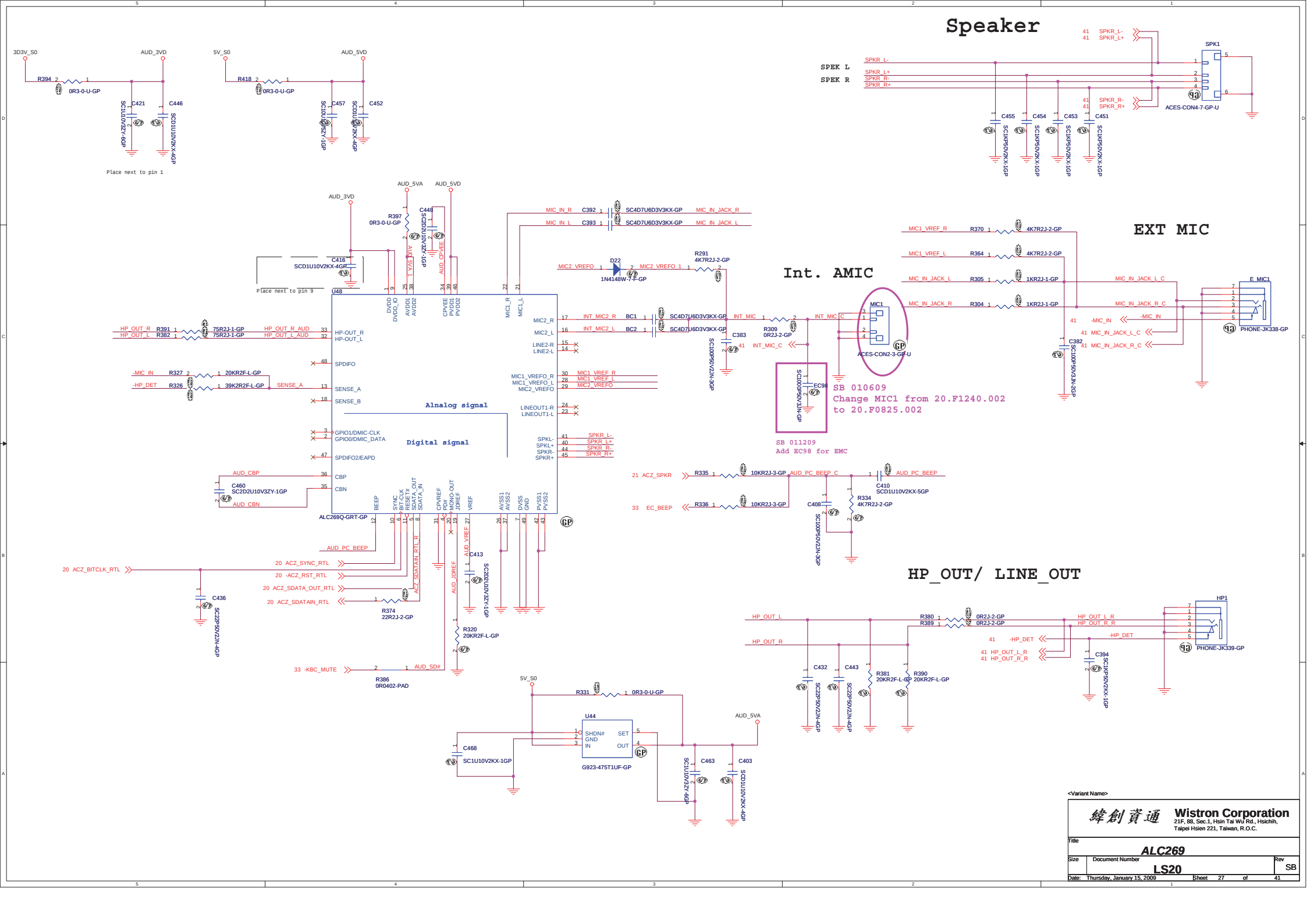
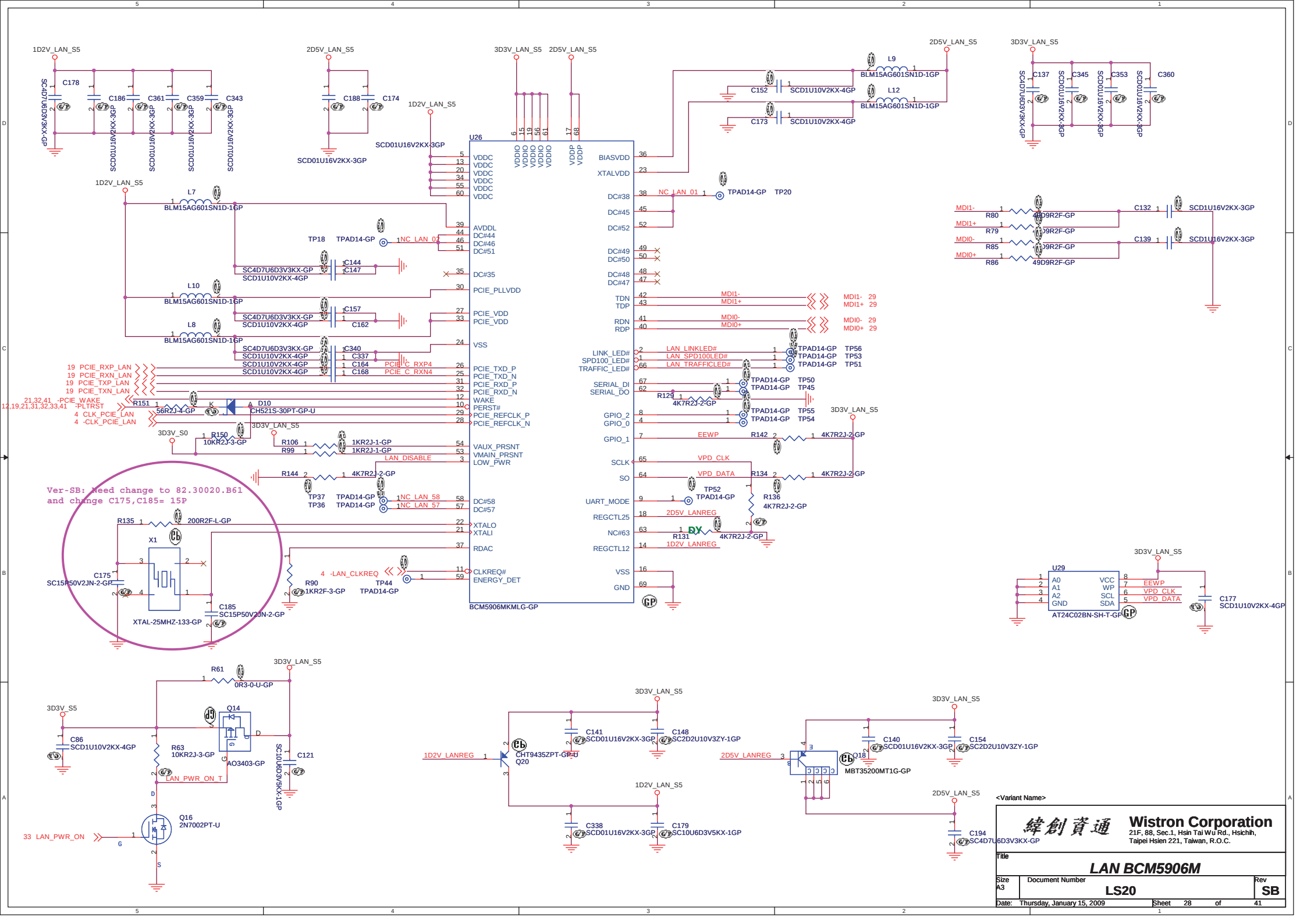

Speaker
SPEK L
SPEK R
SPK1
ACES-CON4-7-GP-U
Int. AMIC
EXT MIC
MIC1
ACES-CON2-3-GP-U
E_MIC1
PHONE-JK338-GP
SB 010609
Change MIC1 from 20.F1240.002
to 20.F0825.002
SB 011209
Add EC98 for EMC
HP_OUT/ LINE_OUT
HP1
PHONE-JK339-GP
U48
ALC269Q-GRT-GP
U44
G923-475T1UF-GP
Alnalog signal
Digital signal
Place next to pin 1
Place next to pin 9
3D3V_S0
AUD_3VD
5V_S0
AUD_5VD
AUD_5VA
ACZ_BITCLK_RTL
ACZ_SYNC_RTL
ACZ_RST_RTL
ACZ_SDATA_OUT_RTL
ACZ_SDATAIN_RTL
-KBC_MUTE
ACZ_SPKR
EC_BEEP
AUD_PC_BEEP
-MIC_IN
-HP_DET
MIC_IN_JACK_L
MIC_IN_JACK_R
MIC_IN_JACK_L_C
MIC_IN_JACK_R_C
HP_OUT_L
HP_OUT_R
HP_OUT_L_R
HP_OUT_R_R
SPKR_L-
SPKR_L+
SPKR_R-
SPKR_R+
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
ALC269
LS20
Thursday, January 15, 2009


1D2V_LAN_S5
2D5V_LAN_S5
3D3V_LAN_S5
C178
C186
C361
C359
C343
C188
C174
SCD01U16V2KX-3GP
SC4D7U6D3V3KX-GP
U26
BCM5906MKMLG-GP
VDDC
VDDIO
VDDP
BIASVDD
XTALVDD
DC#38
DC#45
DC#52
DC#49
DC#50
DC#48
DC#47
TDN
TDP
RDN
RDP
LINK_LED#
SPD100_LED#
TRAFFIC_LED#
SERIAL_DI
SERIAL_DO
GPIO_2
GPIO_0
GPIO_1
SCLK
SO
UART_MODE
REGCTL25
NC#63
REGCTL12
VSS
GND
AVDDL
DC#35
PCIE_PLLVDD
PCIE_VDD
VSS
PCIE_TXD_P
PCIE_TXD_N
PCIE_RXD_P
PCIE_RXD_N
WAKE
PERST#
PCIE_REFCLK_P
PCIE_REFCLK_N
VAUX_PRSNT
VMAIN_PRSNT
LOW_PWR
DC#58
DC#57
XTALO
XTALI
RDAC
CLKREQ#
ENERGY_DET
L7
L10
L8
BLM15AG601SN1D-1GP
L9
L12
C152
C173
SCD1U10V2KX-4GP
TP18
TP20
TPAD14-GP
NC_LAN_01
C144
C147
C157
C162
C340
C337
C164
C168
PCIE_C_RXP4
PCIE_C_RXN4
19 PCIE_RXP_LAN
19 PCIE_RXN_LAN
19 PCIE_TXP_LAN
19 PCIE_TXN_LAN
21,32,41 -PCIE_WAKE
12,19,21,31,32,33,41 -PLTRST
4 CLK_PCIE_LAN
4 -CLK_PCIE_LAN
R151
56R2J-4-GP
D10
CH521S-30PT-GP-U
R150
10KR2J-3-GP
R106
R99
1KR2J-1-GP
LAN_DISABLE
R144
4K7R2J-2-GP
TP37
TP36
NC_LAN_58
NC_LAN_57
Ver-SB: Need change to 82.30020.B61
and change C175,C185= 15P
R135
200R2F-L-GP
X1
C175
SC15P50V2JN-2-GP
C185
XTAL-25MHZ-133-GP
R90
1KR2F-3-GP
4 -LAN_CLKREQ
TP44
MDI1-
MDI1+
MDI0-
MDI0+
R80
R79
R85
R86
49D9R2F-GP
C132
C139
SCD1U16V2KX-3GP
LAN_LINKLED#
LAN_SPD100LED#
LAN_TRAFFICLED#
R129
EEWP
R142
VPD_CLK
VPD_DATA
R134
TP52
TPAD14-GP
R136
4K7R2J-2-GP
2D5V_LANREG
R131
1D2V_LANREG
U29
AT24C02BN-SH-T-GP
C177
SCD1U10V2KX-4GP
R61
0R3-0-U-GP
Q14
AO3403-GP
C86
R63
10KR2J-3-GP
LAN_PWR_ON_T
C121
SC10U6D3V5KX-1GP
Q16
2N7002PT-U
33 LAN_PWR_ON
Q20
CHT9435ZPT-GP-U
C141
C148
SC2D2U10V3ZY-1GP
C338
C179
Q18
MBT35200MT1G-GP
C140
C154
C194
SC4D7U6D3V3KX-GP
<Variant Name>
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
LAN BCM5906M
Size
A3
Document Number
LS20
Rev
SB
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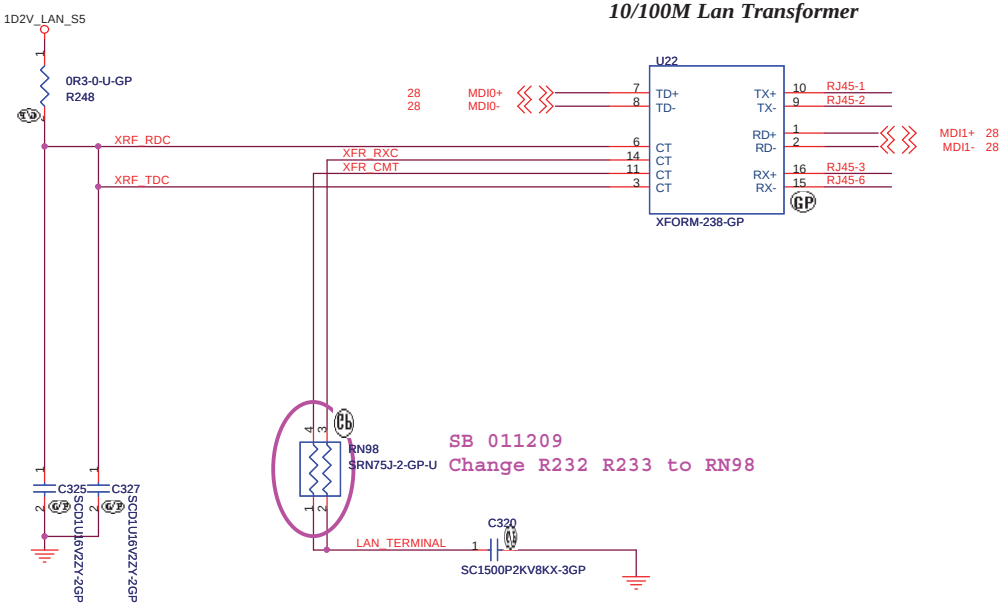
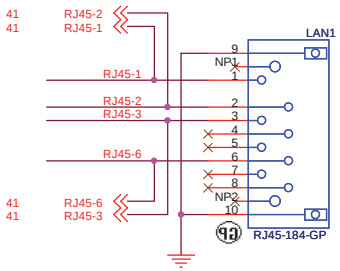
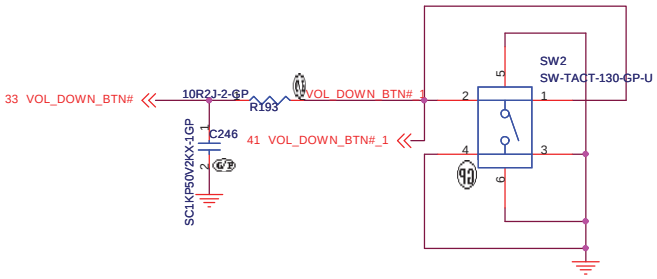
10/100M Lan Transformer

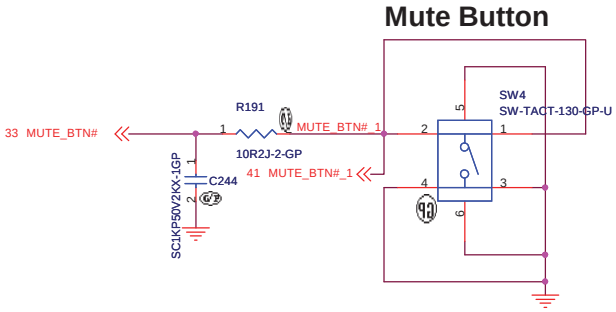




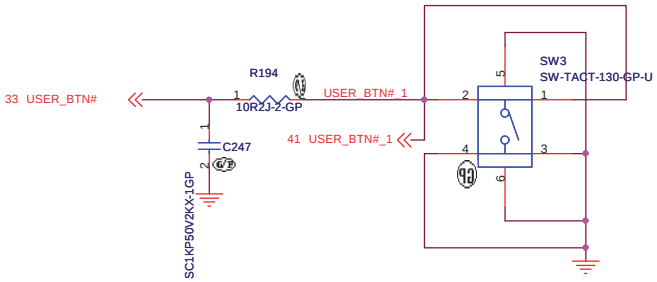
Volume Down Button



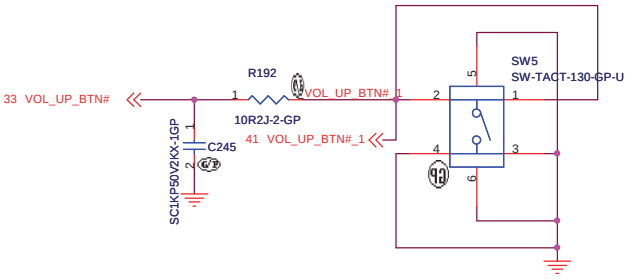
Mute Button



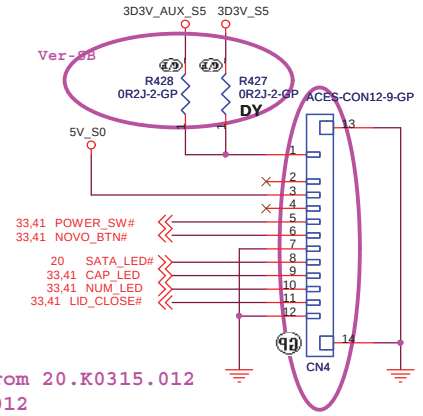
USER Button



Volume Up Button



Power Button Board



SB 010609
Change CN4 from 20.K0315.012
to 20.K0411.012
011009
Restore CN4 to 20.K0315.012

<Variant Name>

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

Title: ***LAN connector/ Function Button***

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A3	LS20	SB

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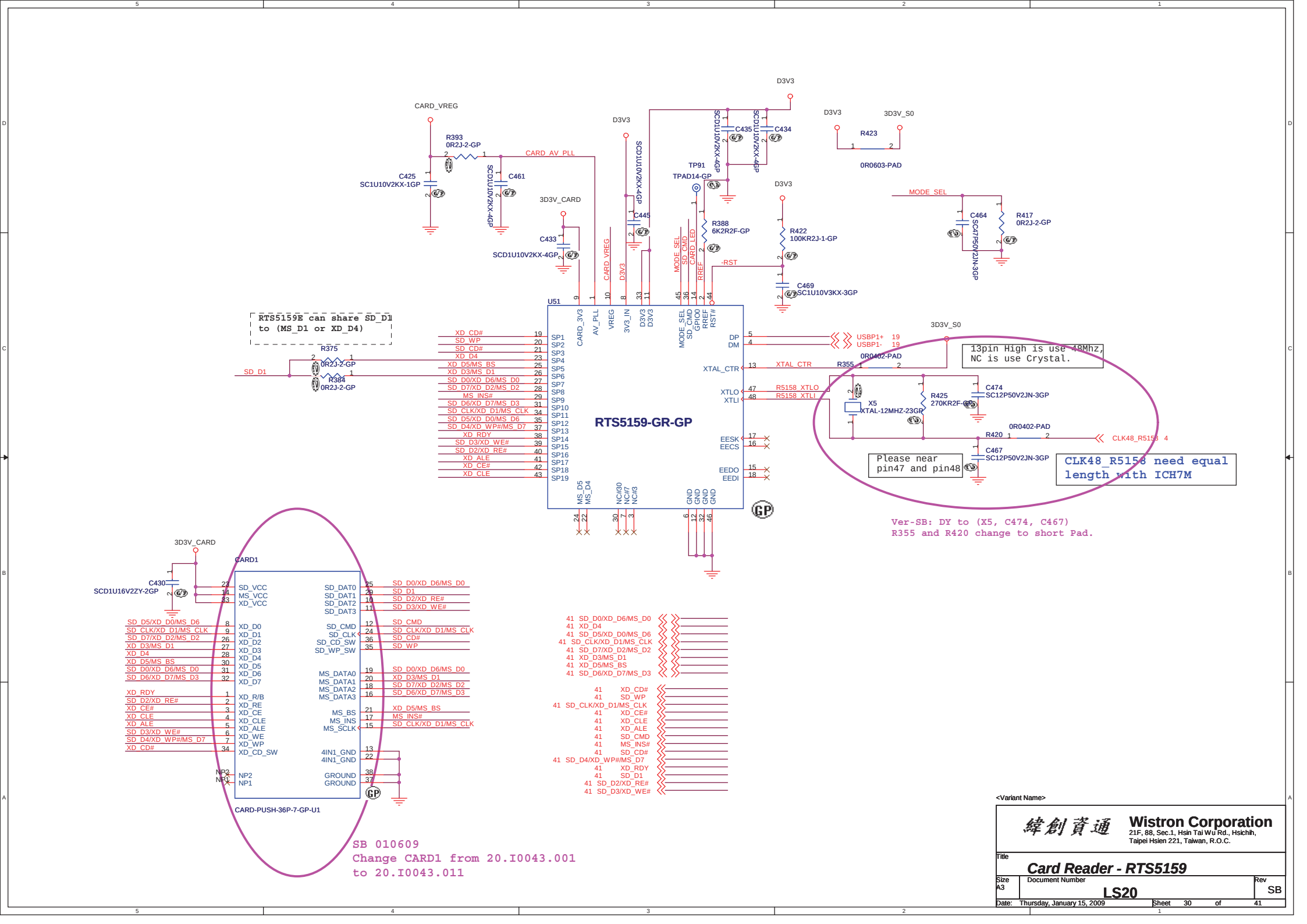
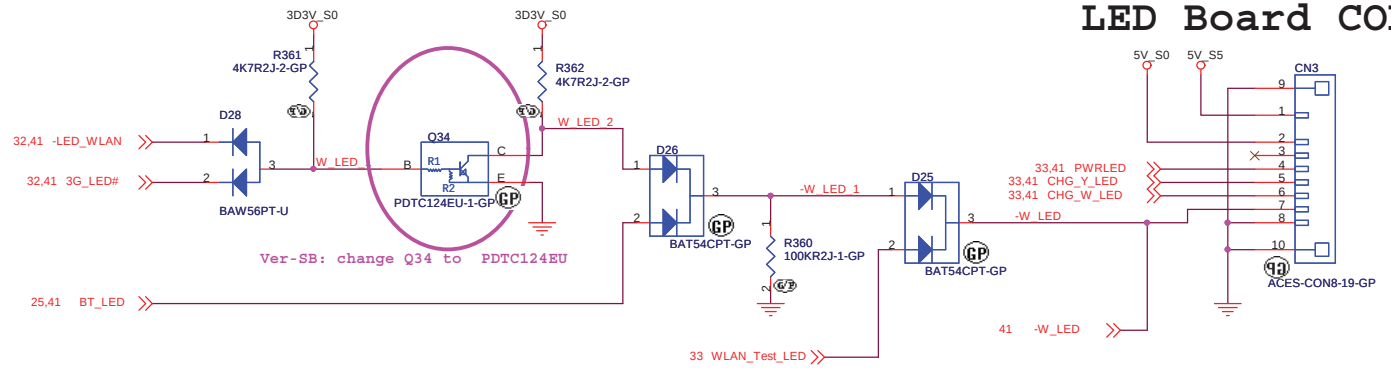
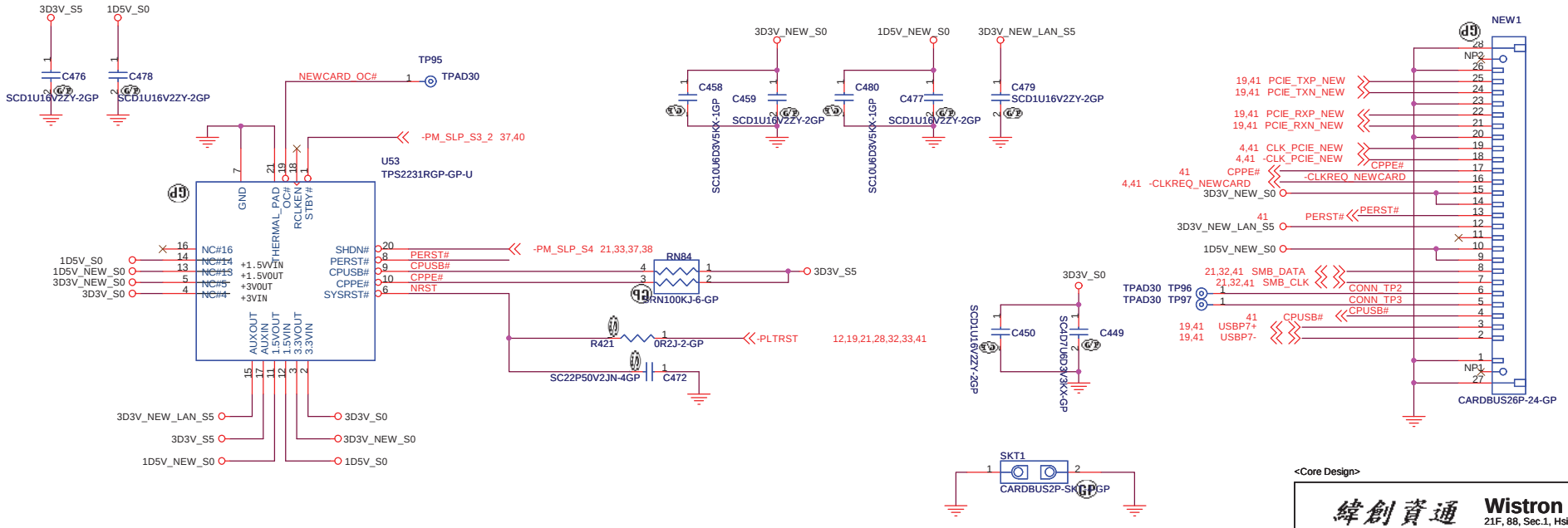

RTS5159E can share SD_D1 to (MS_D1 or XD_D4)
RTS5159-GR-GP
U51
CARD1
CARD-PUSH-36P-7-GP-U1
13pin High is use 48Mhz, NC is use Crystal.
Please near pin47 and pin48
CLK48_R5158 need equal length with ICH7M
Ver-SB: DY to (X5, C474, C467)
R355 and R420 change to short Pad.
SB 010609
Change CARD1 from 20.I0043.001
to 20.I0043.011
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Card Reader - RTS5159
LS20
Thursday, January 15, 2009

LED Board CONN.



NEWCARD Connector



<Core Design>

緯創資通 Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title: NEW Card / LED CONN		
Size: A3	Document Number: LS20	Rev: SB
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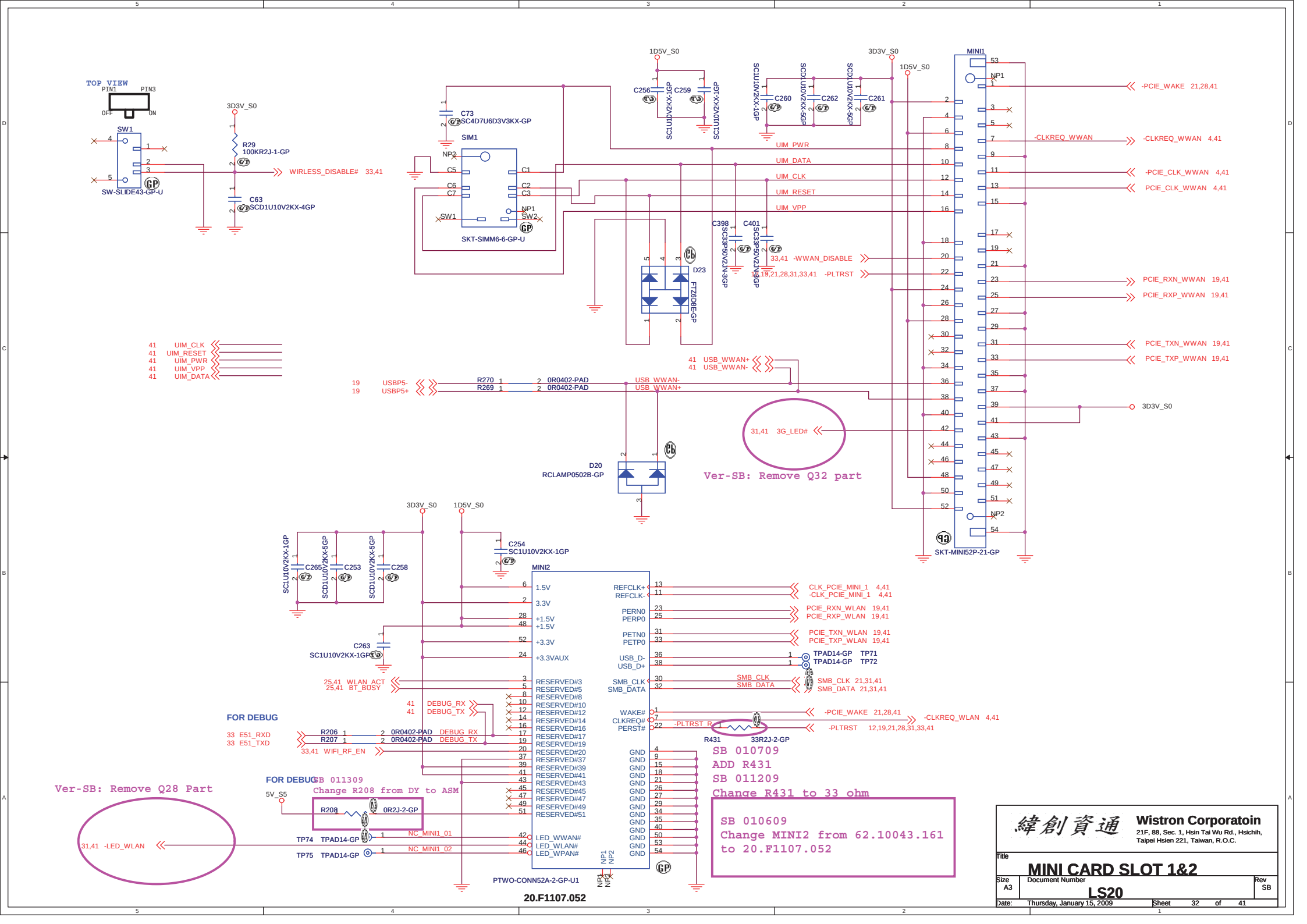
TOP VIEW
PIN1
PIN3
OFF
ON
SW1
SW-SLIDE43-GP-U
WIRELESS_DISABLE# 33,41
3D3V_S0
R29
100KR2J-1-GP
C63
SCD1U10V2KX-4GP
SIM1
SKT-SIMM6-6-GP-U
C73
SC4D7U6D3V3KX-GP
1D5V_S0
C256
C259
SC1U10V2KX-1GP
C260
C262
C261
SCD1U10V2KX-5GP
UIM_PWR
UIM_DATA
UIM_CLK
UIM_RESET
UIM_VPP
C398
C401
SC33P50V2JN-3GP
SC33P50V2JN-4GP
33,41 -WWAN_DISABLE
19,21,28,31,33,41 -PLTRST
D23
FTZ6D8E-GP
MINI1
SKT-MINI52P-21-GP
-PCIE_WAKE 21,28,41
-CLKREQ_WWAN
-CLKREQ_WWAN 4,41
-PCIE_CLK_WWAN 4,41
PCIE_CLK_WWAN 4,41
PCIE_RXN_WWAN 19,41
PCIE_RXP_WWAN 19,41
PCIE_TXN_WWAN 19,41
PCIE_TXP_WWAN 19,41
3D3V_S0
41 UIM_CLK
41 UIM_RESET
41 UIM_PWR
41 UIM_VPP
41 UIM_DATA
19 USBP5-
19 USBP5+
R270
R269
0R0402-PAD
USB_WWAN-
USB_WWAN+
41 USB_WWAN+
41 USB_WWAN-
D20
RCLAMP0502B-GP
31,41 3G_LED#
Ver-SB: Remove Q32 part
C254
SC1U10V2KX-1GP
C265
C253
C258
SCD1U10V2KX-5GP
C263
MINI2
1.5V
3.3V
+1.5V
+3.3V
+3.3VAUX
RESERVED#3
RESERVED#5
RESERVED#8
RESERVED#10
RESERVED#12
RESERVED#14
RESERVED#16
RESERVED#17
RESERVED#19
RESERVED#20
RESERVED#37
RESERVED#39
RESERVED#41
RESERVED#43
RESERVED#45
RESERVED#47
RESERVED#49
RESERVED#51
LED_WWAN#
LED_WLAN#
LED_WPAN#
REFCLK+
REFCLK-
CLK_PCIE_MINI_1 4,41
-CLK_PCIE_MINI_1 4,41
PERN0
PERP0
PCIE_RXN_WLAN 19,41
PCIE_RXP_WLAN 19,41
PETN0
PETP0
PCIE_TXN_WLAN 19,41
PCIE_TXP_WLAN 19,41
USB_D-
USB_D+
TPAD14-GP TP71
TPAD14-GP TP72
SMB_CLK
SMB_DATA
SMB_CLK 21,31,41
SMB_DATA 21,31,41
WAKE#
CLKREQ#
PERST#
-PCIE_WAKE 21,28,41
-CLKREQ_WLAN 4,41
-PLTRST
12,19,21,28,31,33,41
R431
33R2J-2-GP
GND
PTWO-CONN52A-2-GP-U1
25,41 WLAN_ACT
25,41 BT_BUSY
41 DEBUG_RX
41 DEBUG_TX
FOR DEBUG
33 E51_RXD
33 E51_TXD
R206
R207
0R0402-PAD
DEBUG_RX
DEBUG_TX
33,41 WIFI_RF_EN
FOR DEBUG
SB 011309
Change R208 from DY to ASM
5V_S5
R208
0R2J-2-GP
TP74 TPAD14-GP
TP75 TPAD14-GP
NC_MINI1_01
NC_MINI1_02
Ver-SB: Remove Q28 Part
31,41 -LED_WLAN
SB 010709
ADD R431
SB 011209
Change R431 to 33 ohm
SB 010609
Change MINI2 from 62.10043.161
to 20.F1107.052
20.F1107.052
緯創資通
Wistron Corporatoin
21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
MINI CARD SLOT 1&2
Size A3
Document Number
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SB 010509
change X3 from 82.30001.841 to 82.30001.661
C215 C225 from 15p to 7p

SB 010509

SB011009
Change RN52 RN53 to RN86

Planar ID	[2, 1, 0]
SA:	0, 0, 0
SB:	0, 0, 1
SC:	0, 1, 0
-1:	0, 1, 1

CHIP_ID	GPI[97]
VIA	0
Intel	1

KBC GPIn	47	31	23		
DDR2_IDn	2	1	0	Vendor Part No.	Size
	0	0	0	HY5PS1G1631CFR-Y5	1G
	0	0	1	NT5TU128M8DE-ACI	1G
	0	1	0	MT47H128M8HQ-3:G	1G

Reserve FOR DEBUG BOARD

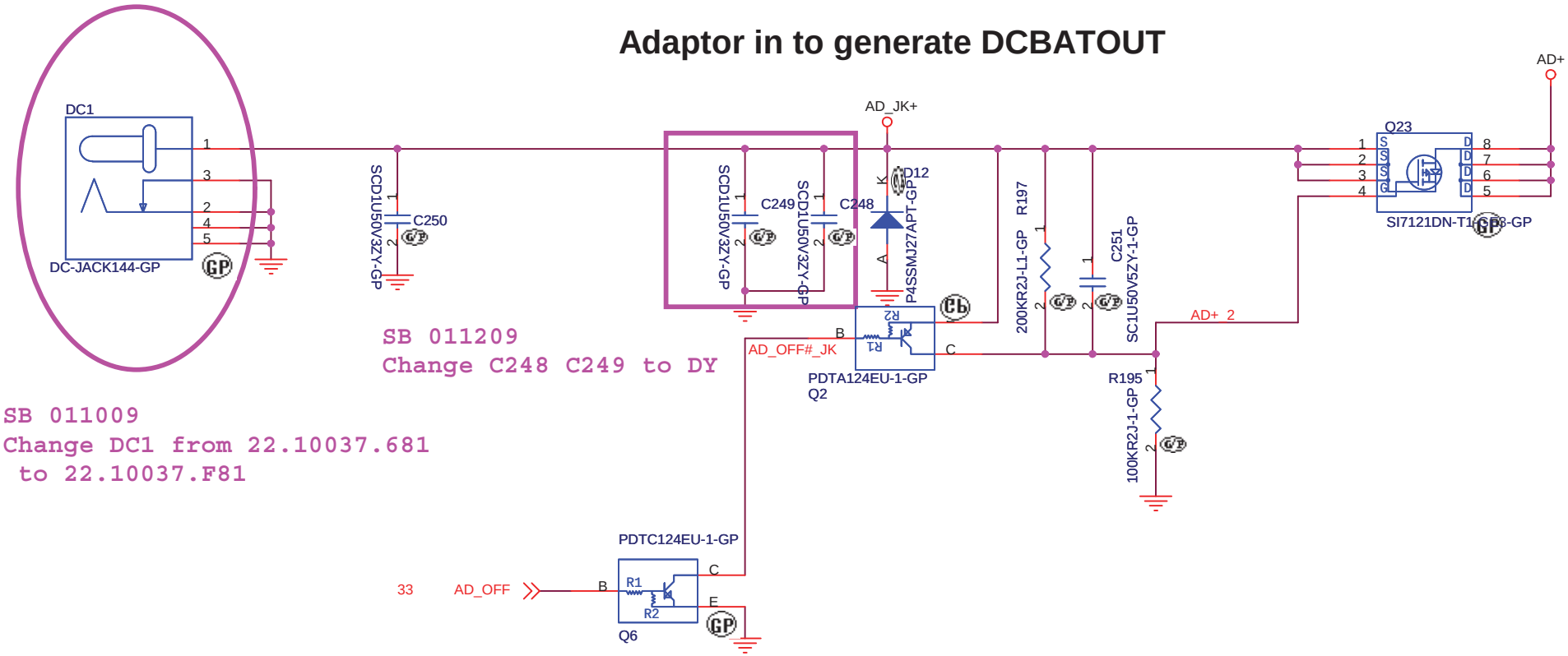
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

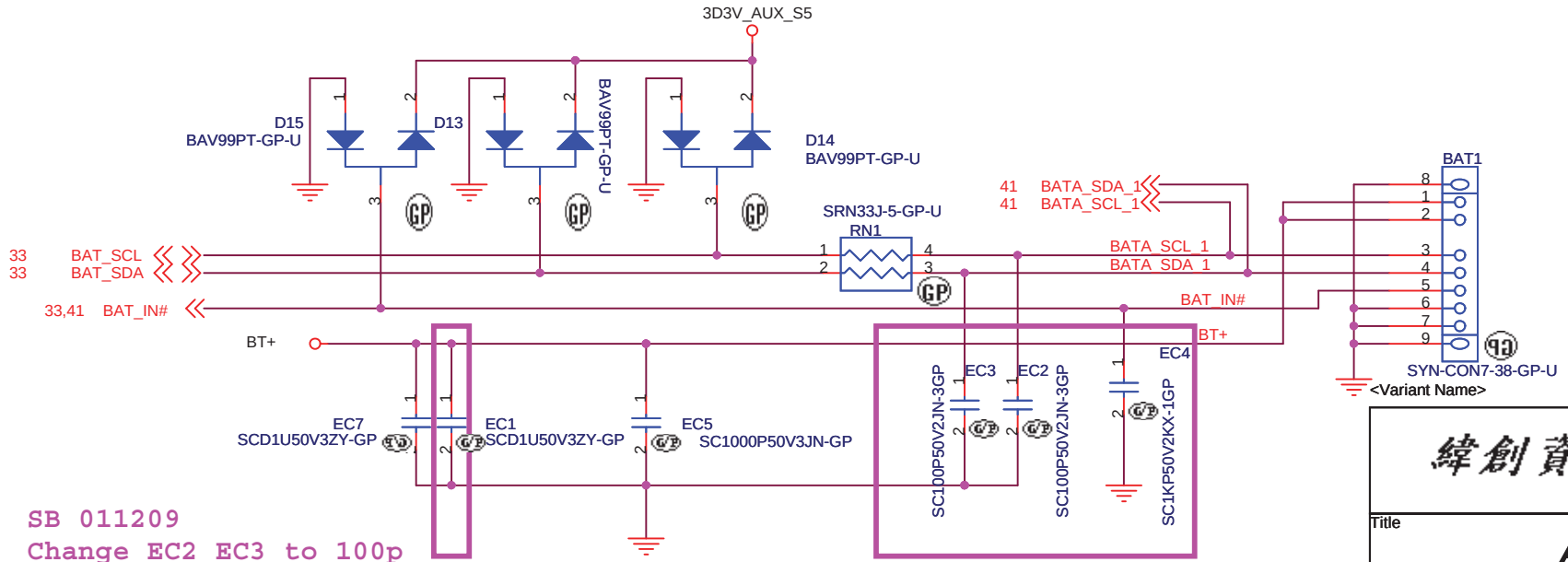
Title: KBC WPCE773L

Size: C | Document Number: LS20 | Rev: SB

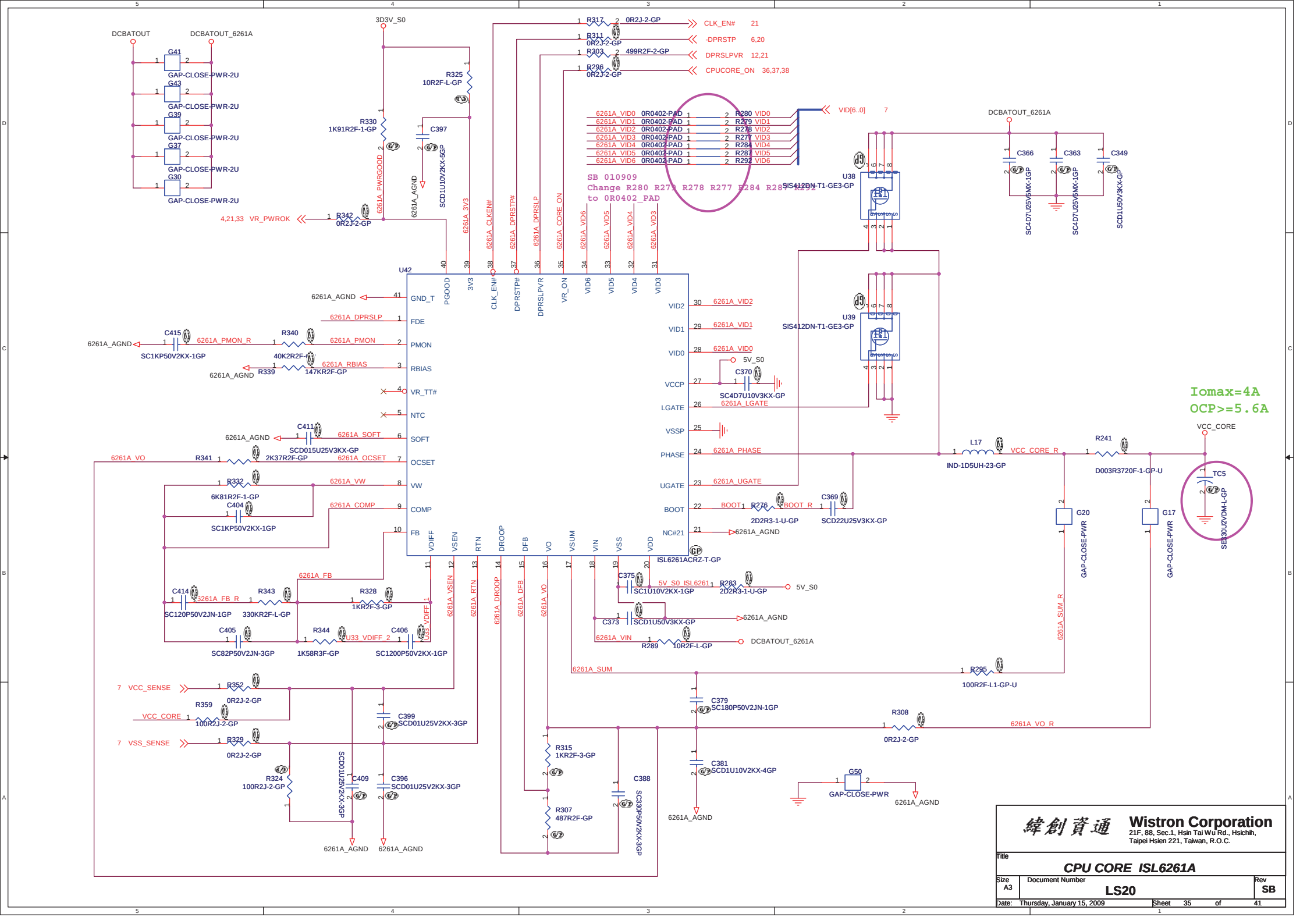
Date: Thursday, January 15, 2009 | Sheet 33 of 41

Adaptor in to generate DCBATOUT





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: A4	Document Number: LS20	Rev: SB
Date: Thursday, January 15, 2009	Sheet 34 of 41	


DCBATOUT
DCBATOUT_6261A
3D3V_S0
U42
ISL6261ACRZ-T-GP
U38
U39
SIS412DN-T1-GE3-GP
SB 010909
Change R280 R279 R278 R277 R284 R285 R292
to 0R0402_PAD
Iomax=4A
OCP>=5.6A
VCC_CORE
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
CPU CORE ISL6261A
Size A3
Document Number LS20
Rev SB
Date: Thursday, January 15, 2009
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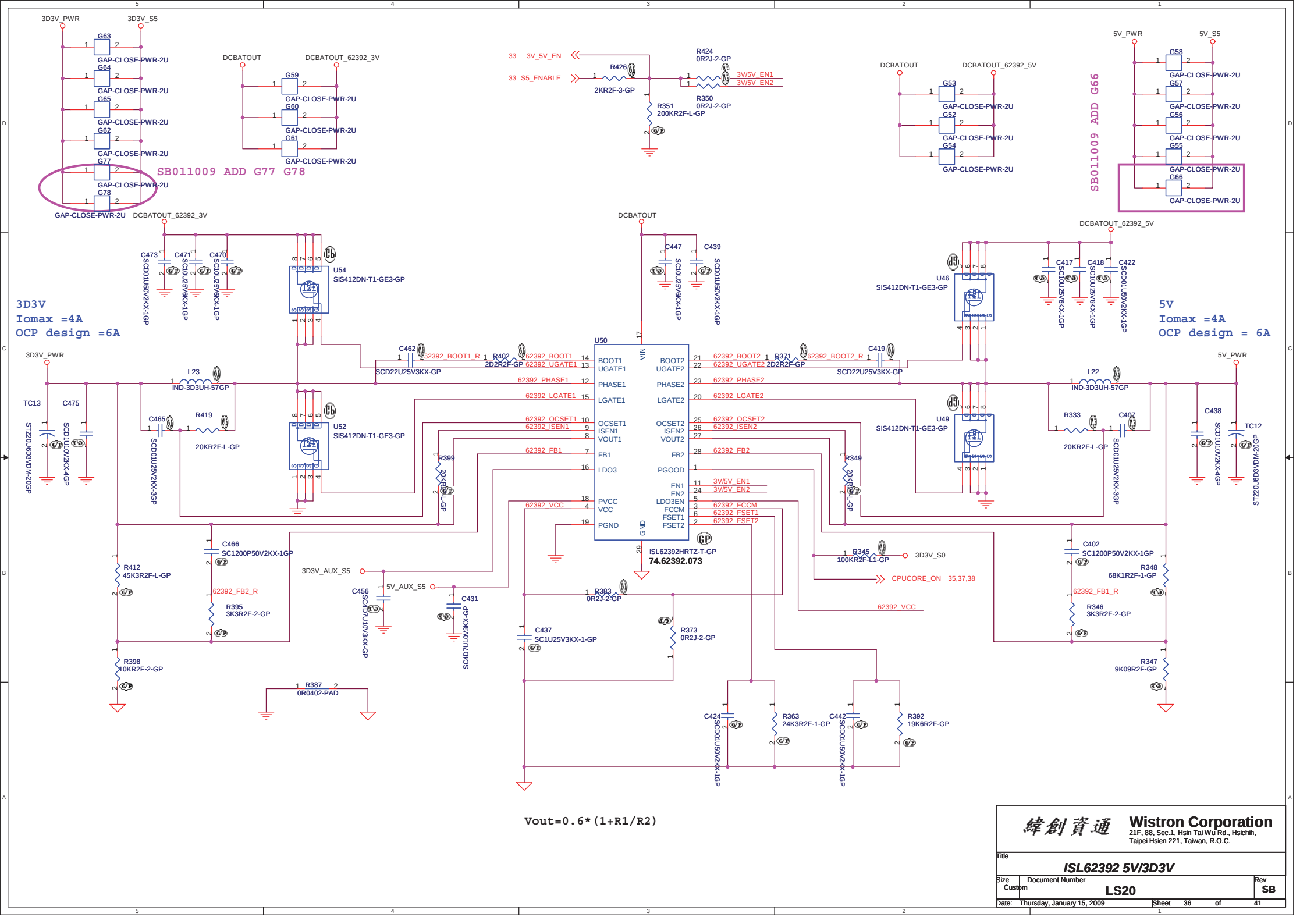

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	ISL62392 5V/3D3V	
Size: Custom	Document Number: LS20	Rev: SB
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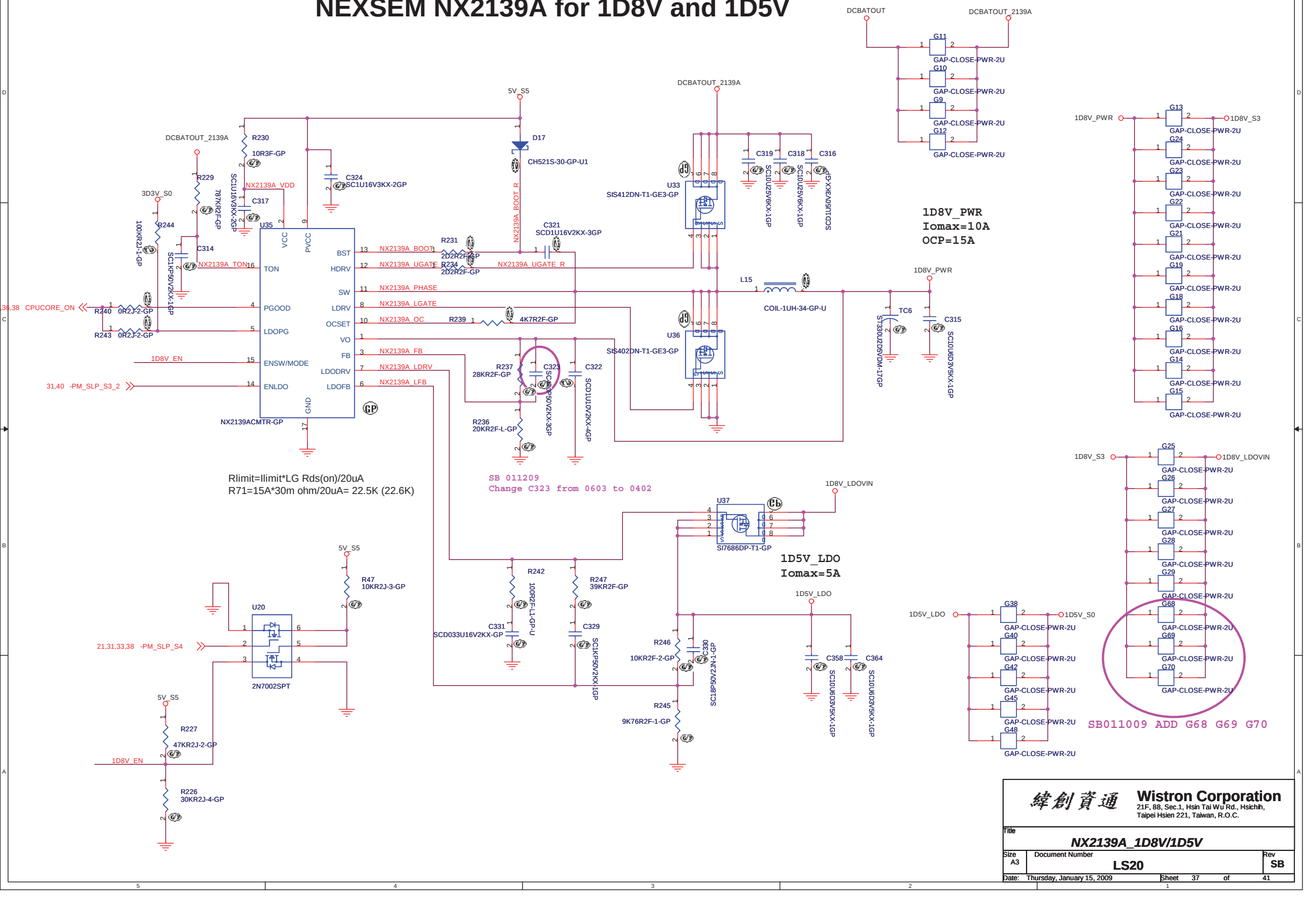
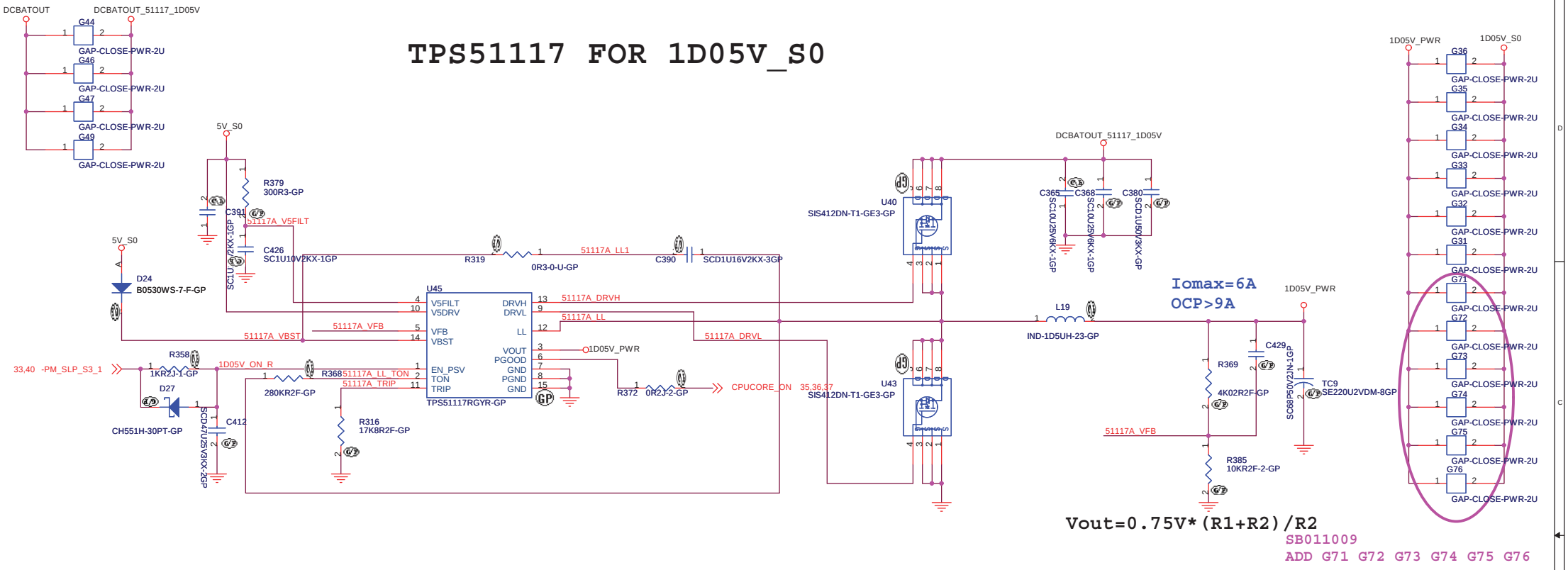
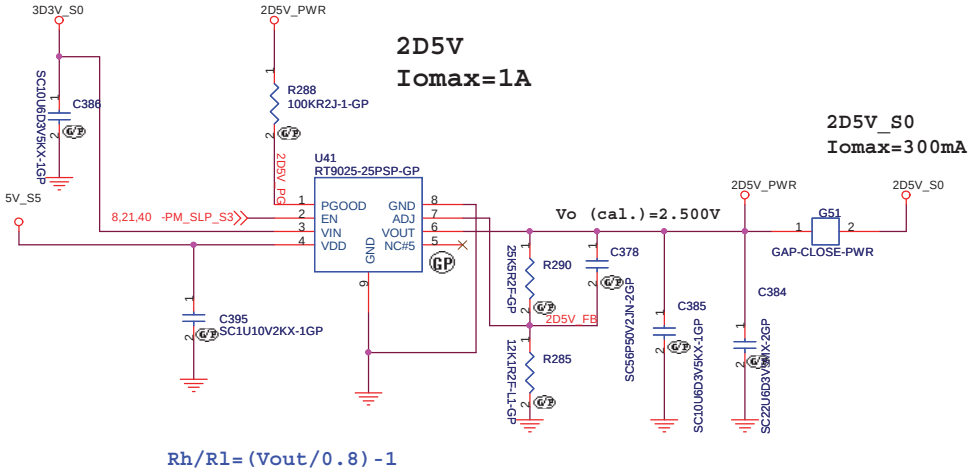
NEXSEM NX2139A for 1D8V and 1D5V

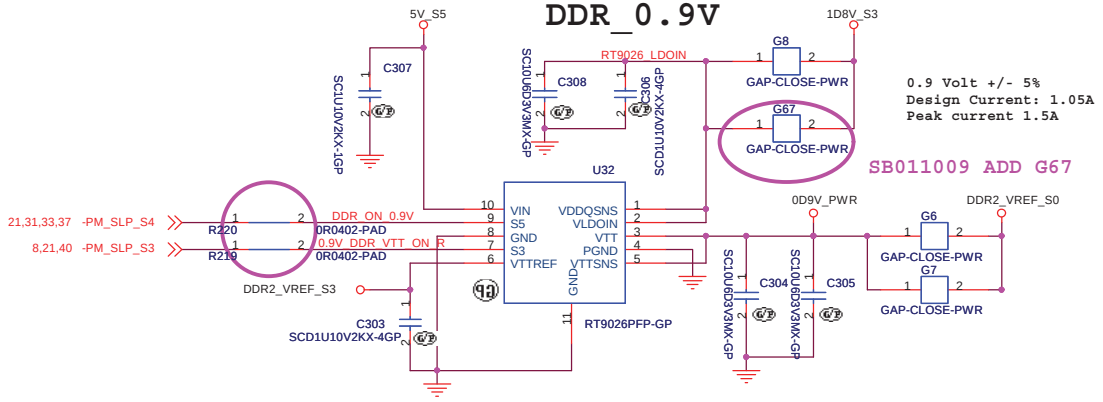


緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title	***NX2139A_1D8V/1D5V***		
Size A3	Document Number **LS20**		Rev **SB**
Date: Thursday, January 15, 2009	Sheet 37 of 41		

TPS51117 FOR 1D05V_S0







緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	*TPS51117_1D05V/0D9V/2D5V*	
Size A3	Document Number LS20	Rev SB
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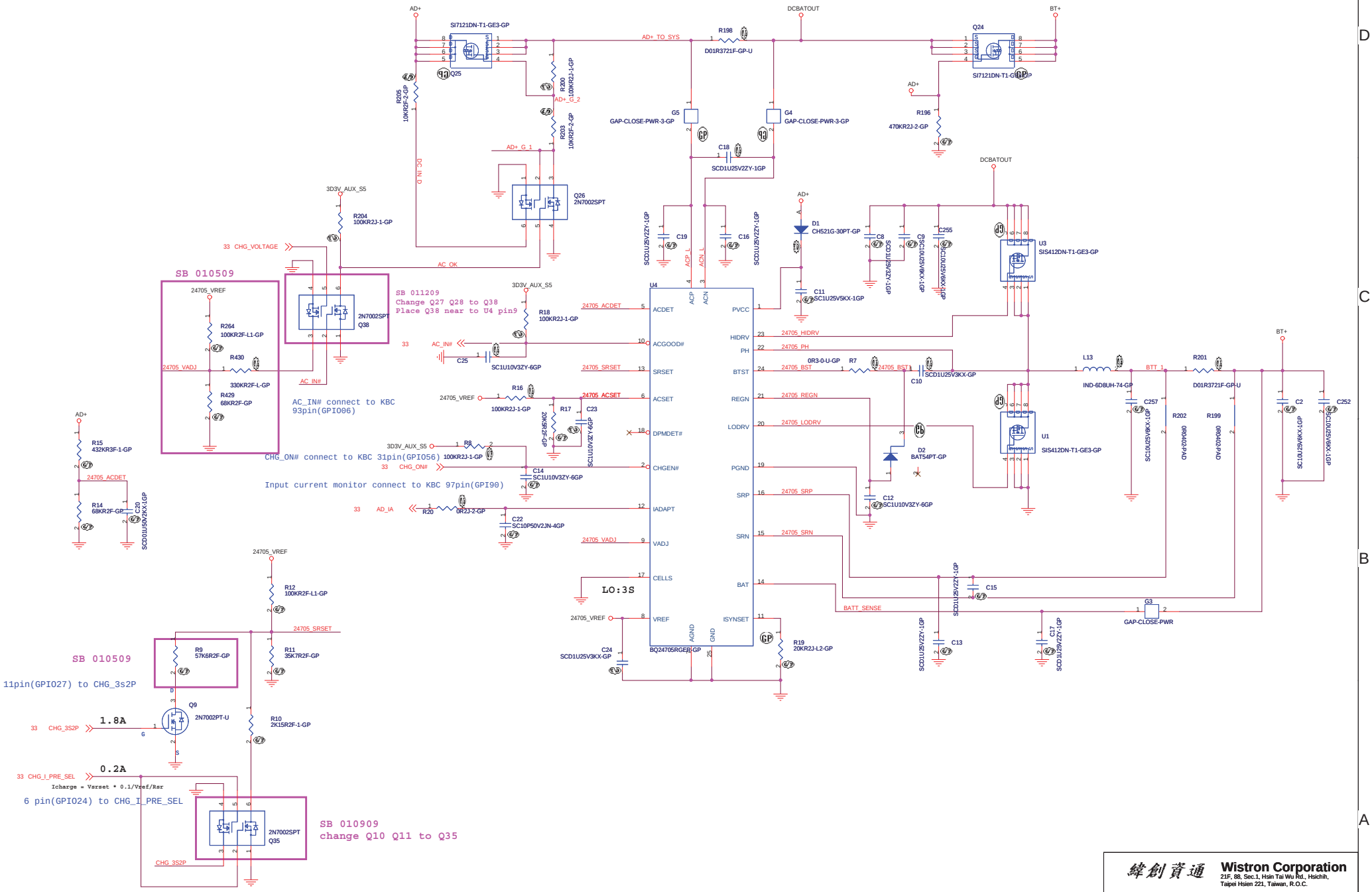
CHARGER



Wistron Corporation	緯創資通
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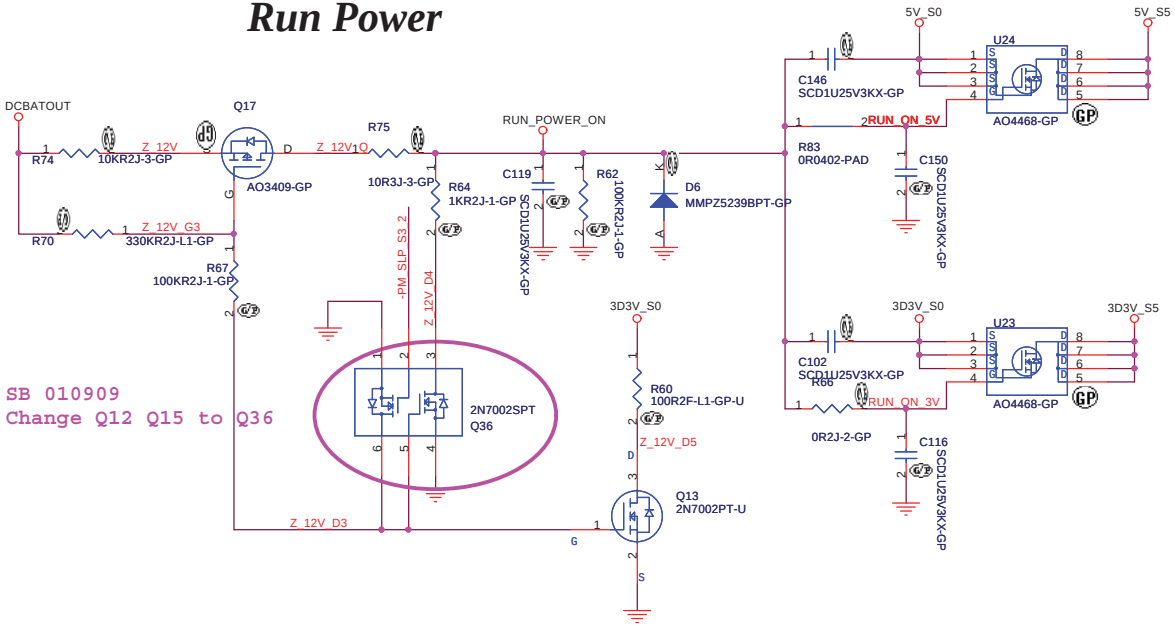
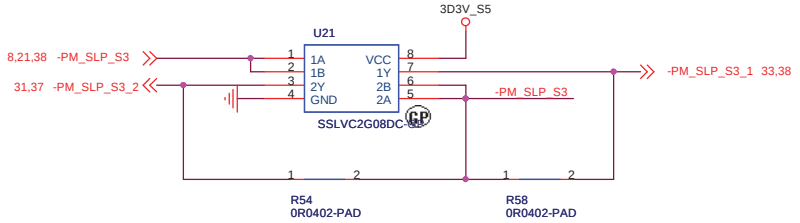
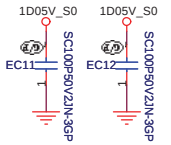
Run Power

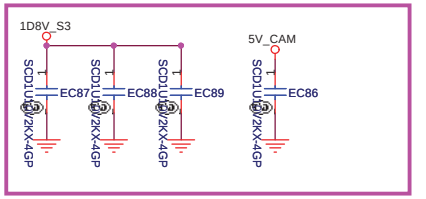


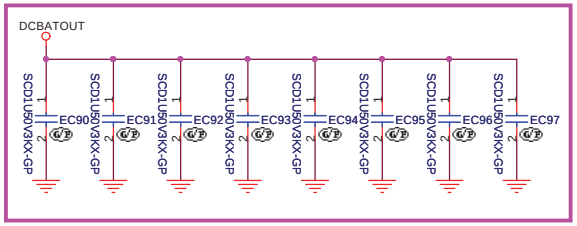
SB 010909
Change Q12 Q15 to Q36



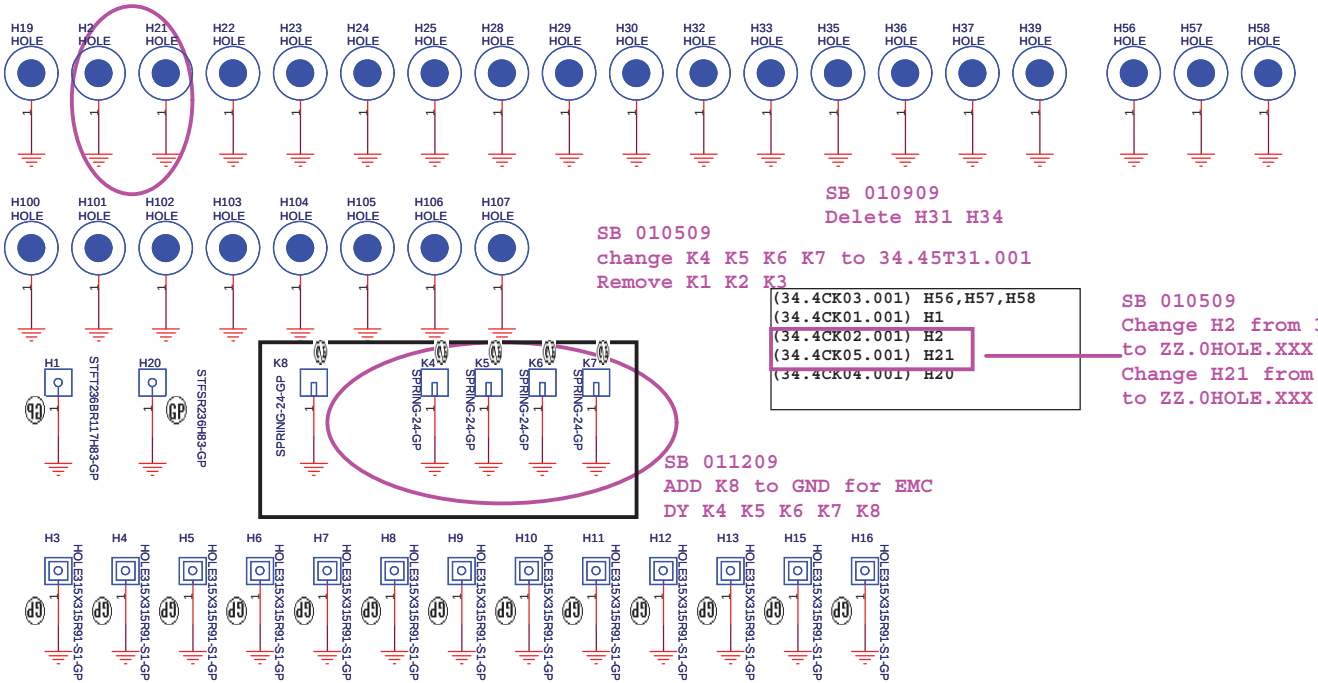
For RF team







SB 011209
ADD FOR EMC



SB 010909
Delete H31 H34

SB 010509
change K4 K5 K6 K7 to 34.45T31.001
Remove K1 K2 K3

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(34.4CK03.001) H56,H57,H58
(34.4CK01.001) H1
(34.4CK02.001) H2
(34.4CK05.001) H21
(34.4CK04.001) H20
```

SB 010509
Change H2 from 34.4CK02.001
to ZZ.0HOLE.XXX
Change H21 from 34.4CK05.001
to ZZ.0HOLE.XXX

SB 011209
ADD K8 to GND for EMC
DY K4 K5 K6 K7 K8

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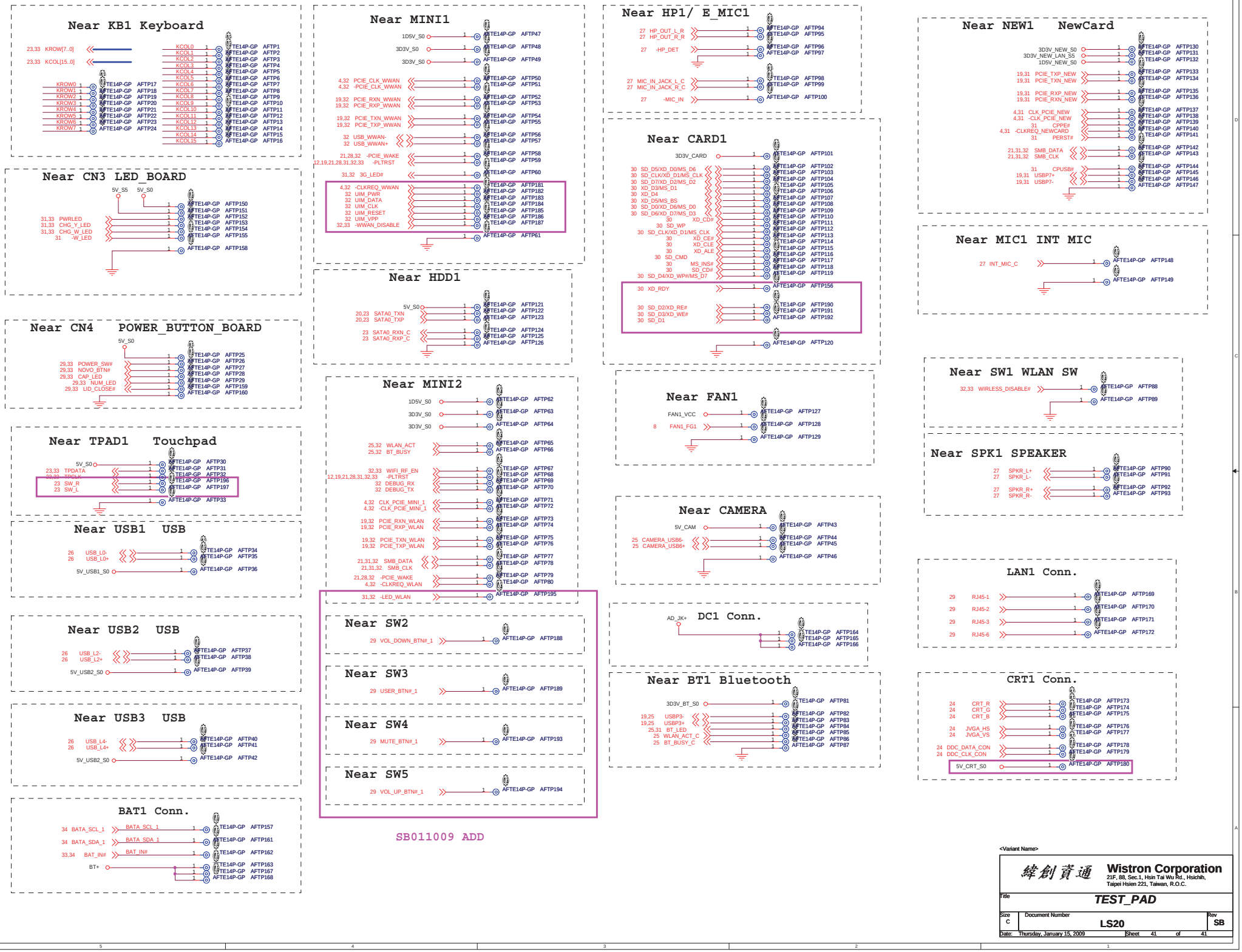
Near KB1 Keyboard
Near CN3 LED_BOARD
Near CN4 POWER_BUTTON_BOARD
Near TPAD1 Touchpad
Near USB1 USB
Near USB2 USB
Near USB3 USB
BAT1 Conn.
Near MINI1
Near HDD1
Near MINI2
Near SW2
Near SW3
Near SW4
Near SW5
SB011009 ADD
Near HP1/ E_MIC1
Near CARD1
Near FAN1
Near CAMERA
DC1 Conn.
Near BT1 Bluetooth
Near NEW1 NewCard
Near MIC1 INT MIC
Near SW1 WLAN SW
Near SPK1 SPEAKER
LAN1 Conn.
CRT1 Conn.
Wistron Corporation
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TEST_PAD
LS20
SB
Thursday, January 15, 2009