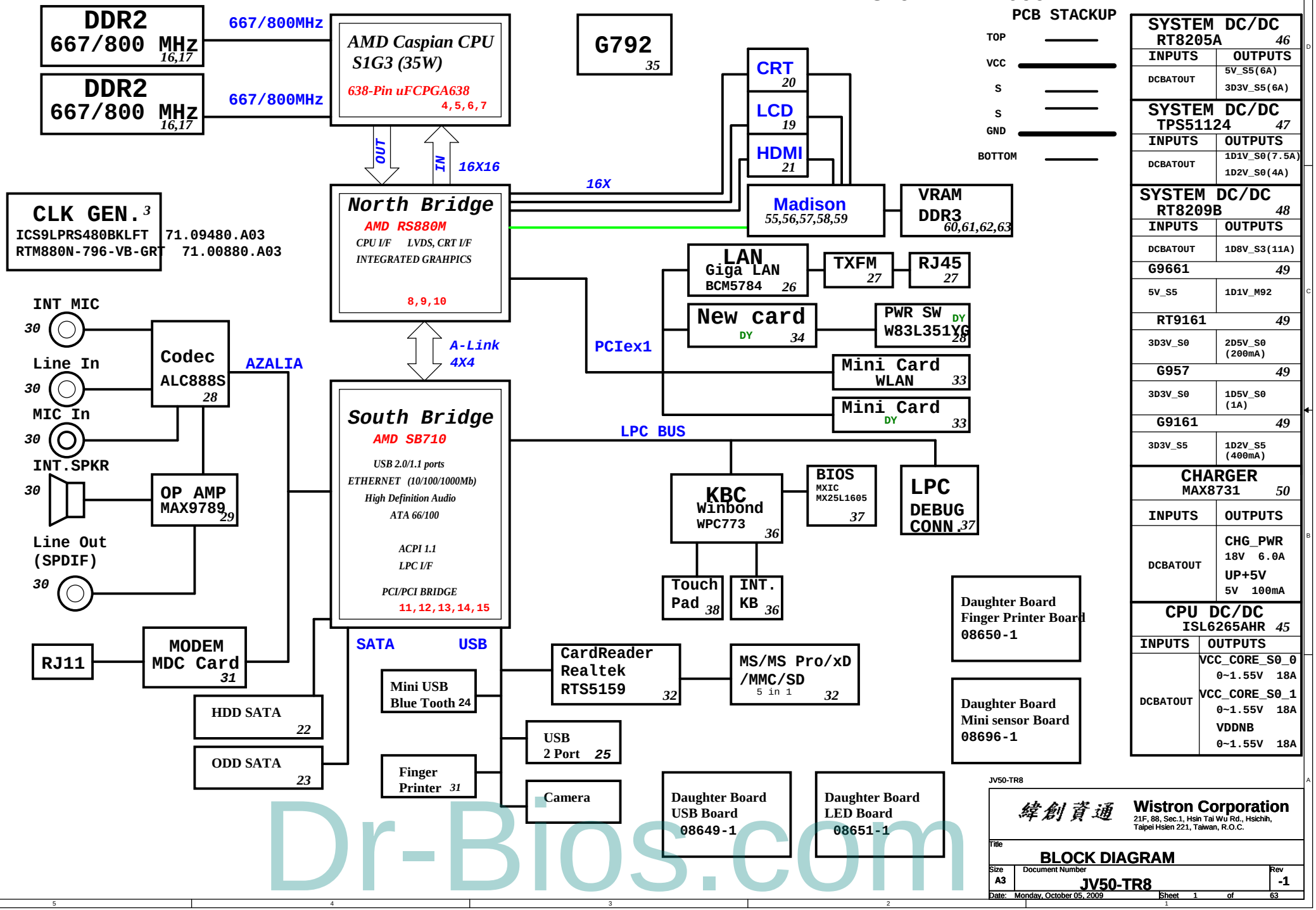
JV50-TR_8VRAM Block Diagram

Project code: 91.4FN01.001
PCB P/N : 48.4FN02.001
REVISION : 09927-1



PCB STACKUP

TOP	
VCC	
S	
S	
GND	
BOTTOM	

SYSTEM DC/DC RT8205A 46	
INPUTS	OUTPUTS
DCBATOUT	5V_S5(6A) 3D3V_S5(6A)

SYSTEM DC/DC TPS51124 47	
INPUTS	OUTPUTS
DCBATOUT	1D1V_S0(7.5A) 1D2V_S0(4A)

SYSTEM DC/DC RT8209B 48	
INPUTS	OUTPUTS
DCBATOUT	1D8V_S3(11A)
G9661 49	
5V_S5	1D1V_M92
RT9161 49	
3D3V_S0	2D5V_S0 (200mA)
G957 49	
3D3V_S0	1D5V_S0 (1A)
G9161 49	
3D3V_S5	1D2V_S5 (400mA)

CHARGER MAX8731 50	
INPUTS	OUTPUTS
DCBATOUT	CHG_PWR 18V 6.0A UP+5V 5V 100mA

CPU DC/DC ISL6265AHR 45	
INPUTS	OUTPUTS
DCBATOUT	VCC_CORE_S0_0 0~1.55V 18A VCC_CORE_S0_1 0~1.55V 18A VDDNB 0~1.55V 18A

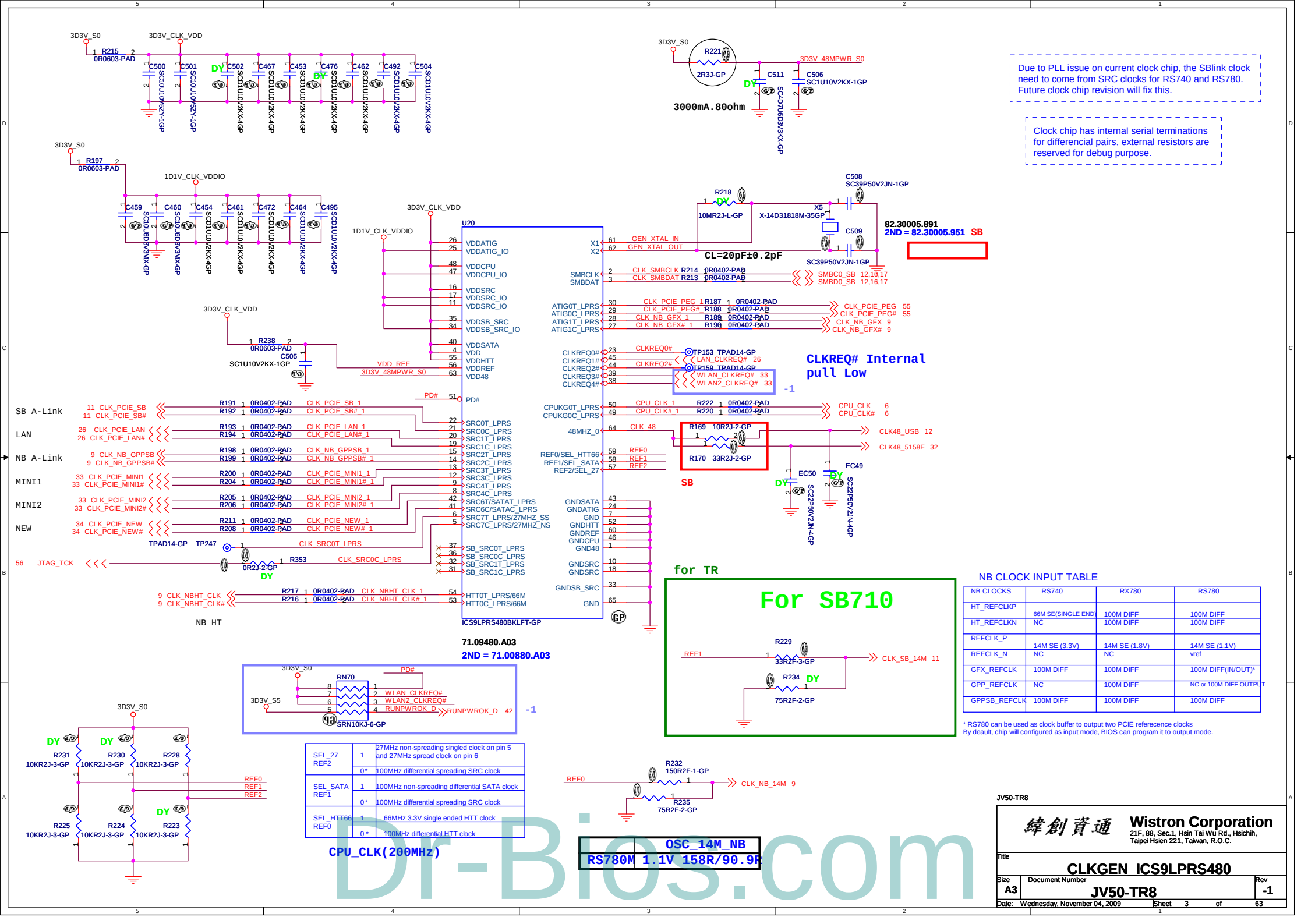
JV50-TR8

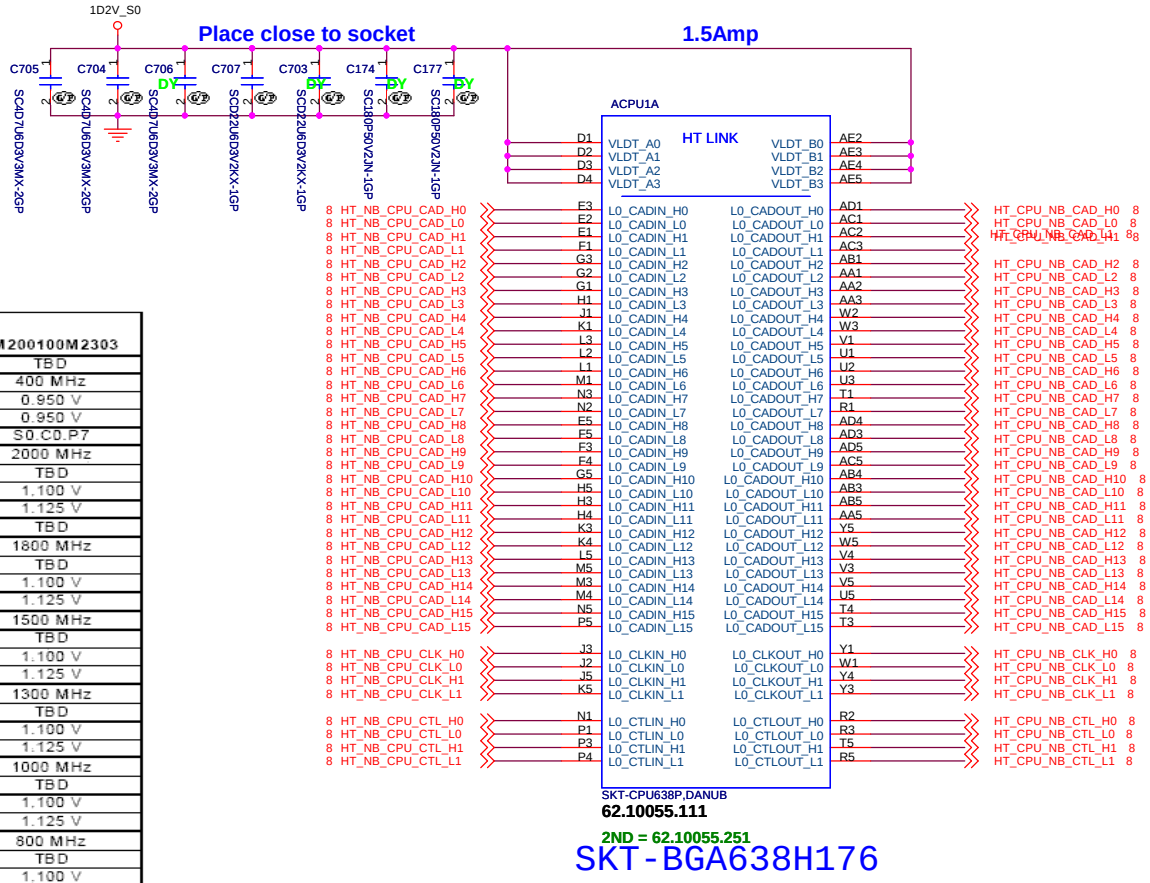
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: BLOCK DIAGRAM

Size	Document Number	Rev
A3	JV50-TR8	-1

Date: Monday, October 05, 2009 Sheet 1 of 63


3D3V_S0
3D3V_CLK_VDD
R215 0R0603-PAD
C500 SC1U10V2KX-1GP
C501 SC1U10V2KX-1GP
DY C502 SC1U10V2KX-4GP
C467 SC1U10V2KX-4GP
C453 SC1U10V2KX-4GP
DY C476 SC1U10V2KX-4GP
C462 SC1U10V2KX-4GP
C492 SC1U10V2KX-4GP
C504 SC1U10V2KX-4GP
3D3V_S0
R221 2R3J-GP
3D3V_48MPWR_S0
DY C511 SC4D7U6D3V3KX-GP
C506 SC1U10V2KX-1GP
3000mA.80ohm
Due to PLL issue on current clock chip, the SBlink clock need to come from SRC clocks for RS740 and RS780. Future clock chip revision will fix this.
Clock chip has internal serial terminations for differencial pairs, external resistors are reserved for debug purpose.
3D3V_S0
R197 0R0603-PAD
1D1V_CLK_VDDIO
C459 SC1U6D3V3MX-GP
C460 SC1U6D3V3MX-GP
C454 SC1U10V2KX-4GP
C461 SC1U10V2KX-4GP
C472 SC1U10V2KX-4GP
C464 SC1U10V2KX-4GP
C495 SC1U10V2KX-4GP
3D3V_CLK_VDD
1D1V_CLK_VDDIO
U20
VDDATIG
VDDATIG_IO
VDDCPU
VDDCPU_IO
VDDSRC
VDDSRC_IO
VDDSRC_IO
VDDSB_SRC
VDDSB_SRC_IO
VDDSATA
VDD
VDDHTT
VDDREF
VDD48
R218 DY 10MR2J-L-GP
X5 X-14D31818M-35GP
C508 SC39P50V2JN-1GP
C509 SC39P50V2JN-1GP
CL=20pF±0.2pF
82.30005.891
2ND = 82.30005.951 SB
X1 GEN_XTAL_IN
X2 GEN_XTAL_OUT
SMBCLK CLK_SMBCLK R214 0R0402-PAD SMBC0_SB 12,16,17
SMBDAT CLK_SMBDAT R213 0R0402-PAD SMBD0_SB 12,16,17
ATIG0T_LPRS CLK_PCIE_PEG_1 R187 0R0402-PAD CLK_PCIE_PEG 55
ATIG0C_LPRS CLK_PCIE_PEG# R188 0R0402-PAD CLK_PCIE_PEG# 55
ATIG1T_LPRS CLK_NB_GFX_1 R189 0R0402-PAD CLK_NB_GFX 9
ATIG1C_LPRS CLK_NB_GFX#_1 R190 0R0402-PAD CLK_NB_GFX# 9
CLKREQ0# TP153 TPAD14-GP
CLKREQ1# LAN_CLKREQ# 26
CLKREQ2# TP159 TPAD14-GP
CLKREQ3# WLAN_CLKREQ# 33
CLKREQ4# WLAN2_CLKREQ# 33
-1
CLKREQ# Internal pull Low
CPUKG0T_LPRS CPU_CLK_1 R222 0R0402-PAD CPU_CLK 6
CPUKG0C_LPRS CPU_CLK#_1 R220 0R0402-PAD CPU_CLK# 6
48MHZ_0 CLK_48
R169 10R2J-2-GP
R170 33R2J-2-GP
CLK48_USB 12
CLK48_5158E 32
SB
REF0/SEL_HTT66 REF0
REF1/SEL_SATA REF1
REF2/SEL_27 REF2
EC50 DY SC22P50V2JN-4GP
EC49 DY SC22P50V2JN-4GP
GNDSATA
GNDATIG
GND
GNDHTT
GNDREF
GNDCPU
GND48
GNDSRC
GNDSRC
GNDSB_SRC
GND
3D3V_CLK_VDD
R238 0R0603-PAD
C505 SC1U10V2KX-1GP
VDD_REF
3D3V_48MPWR_S0
PD#
SB A-Link 11 CLK_PCIE_SB 11 CLK_PCIE_SB#
R191 0R0402-PAD CLK_PCIE_SB_1
R192 0R0402-PAD CLK_PCIE_SB#_1
LAN 26 CLK_PCIE_LAN 26 CLK_PCIE_LAN#
R193 0R0402-PAD CLK_PCIE_LAN_1
R194 0R0402-PAD CLK_PCIE_LAN#_1
NB A-Link 9 CLK_NB_GPPSB 9 CLK_NB_GPPSB#
R198 0R0402-PAD CLK_NB_GPPSB_1
R199 0R0402-PAD CLK_NB_GPPSB#_1
MINI1 33 CLK_PCIE_MINI1 33 CLK_PCIE_MINI1#
R200 0R0402-PAD CLK_PCIE_MINI1_1
R204 0R0402-PAD CLK_PCIE_MINI1#_1
MINI2 33 CLK_PCIE_MINI2 33 CLK_PCIE_MINI2#
R205 0R0402-PAD CLK_PCIE_MINI2_1
R206 0R0402-PAD CLK_PCIE_MINI2#_1
NEW 34 CLK_PCIE_NEW 34 CLK_PCIE_NEW#
R211 0R0402-PAD CLK_PCIE_NEW_1
R208 0R0402-PAD CLK_PCIE_NEW#_1
SRC0T_LPRS
SRC0C_LPRS
SRC1T_LPRS
SRC1C_LPRS
SRC2T_LPRS
SRC2C_LPRS
SRC3T_LPRS
SRC3C_LPRS
SRC4T_LPRS
SRC4C_LPRS
SRC6T/SATAT_LPRS
SRC6C/SATAC_LPRS
SRC7T_LPRS/27MHZ_SS
SRC7C_LPRS/27MHZ_NS
TPAD14-GP TP247
CLK_SRC0T_LPRS
56 JTAG_TCK
0R2J-2-GP R353 CLK_SRC0C_LPRS
DY
SB_SRC0T_LPRS
SB_SRC0C_LPRS
SB_SRC1T_LPRS
SB_SRC1C_LPRS
9 CLK_NBHT_CLK
9 CLK_NBHT_CLK#
R217 0R0402-PAD CLK_NBHT_CLK_1
R216 0R0402-PAD CLK_NBHT_CLK#_1
HTT0T_LPRS/66M
HTT0C_LPRS/66M
NB HT
ICS9LPRS480BKLFT-GP
71.09480.A03
2ND = 71.00880.A03
for TR
For SB710
REF1
R229 33R2F-3-GP
CLK_SB_14M 11
R234 DY 75R2F-2-GP
NB CLOCK INPUT TABLE
NB CLOCKS | RS740 | RX780 | RS780
HT_REFCLKP | 66M SE(SINGLE END) | 100M DIFF | 100M DIFF
HT_REFCLKN | NC | 100M DIFF | 100M DIFF
REFCLK_P | 14M SE (3.3V) | 14M SE (1.8V) | 14M SE (1.1V)
REFCLK_N | NC | NC | vref
GFX_REFCLK | 100M DIFF | 100M DIFF | 100M DIFF(IN/OUT)*
GPP_REFCLK | NC | 100M DIFF | NC or 100M DIFF OUTPUT
GPPSB_REFCLK | 100M DIFF | 100M DIFF | 100M DIFF
* RS780 can be used as clock buffer to output two PCIE refererence clocks
By deault, chip will configured as input mode, BIOS can program it to output mode.
3D3V_S0
3D3V_S5
RN70 SRN10KJ-6-GP
PD#
WLAN_CLKREQ#
WLAN2_CLKREQ#
RUNPWROK_D
RUNPWROK_D 42
-1
3D3V_S0
DY R231 10KR2J-3-GP
DY R230 10KR2J-3-GP
R228 10KR2J-3-GP
REF0
REF1
REF2
R225 10KR2J-3-GP
R224 10KR2J-3-GP
DY R223 10KR2J-3-GP
SEL_27 REF2
1 27MHz non-spreading singled clock on pin 5 and 27MHz spread clock on pin 6
0* 100MHz differential spreading SRC clock
SEL_SATA REF1
1 100MHz non-spreading differential SATA clock
0* 100MHz differential spreading SRC clock
SEL_HTT66 REF0
1 66MHz 3.3V single ended HTT clock
0* 100MHz differential HTT clock
CPU_CLK(200MHz)
REF0
R232 150R2F-1-GP
CLK_NB_14M 9
R235 75R2F-2-GP
OSC_14M_NB
RS780M 1.1V 158R/90.9R
JV50-TR8
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title
CLKGEN ICS9LPRS480
Size A3
Document Number JV50-TR8
Rev -1
Date: Wednesday, November 04, 2009
Sheet 3 of 63



State	Specification	Notes	2M200100M2303
S0.C0.Px	Tcase Max	3	TBD
	NB COF	1	400 MHz
	VID_VDDNB Min	2	0.950 V
	VID_VDDNB Max	2	0.950 V
	Startup P-state		S0.C0.P7
S0.C0.P0	CPU COF	1	2000 MHz
	TDP	3	TBD
	VID_VDD Min	2	1.100 V
	VID_VDD Max	2	1.125 V
	IDD Max	3	TBD
S0.C0.P1	CPU COF	1	1800 MHz
	TDP	3	TBD
	VID_VDD Min	2	1.100 V
	VID_VDD Max	2	1.125 V
S0.C0.P2	CPU COF	1	1500 MHz
	TDP	3	TBD
	VID_VDD Min	2	1.100 V
	VID_VDD Max	2	1.125 V
S0.C0.P3	CPU COF	1	1300 MHz
	TDP	3	TBD
	VID_VDD Min	2	1.100 V
	VID_VDD Max	2	1.125 V
S0.C0.P4	CPU COF	1	1000 MHz
	TDP	3	TBD
	VID_VDD Min	2	1.100 V
	VID_VDD Max	2	1.125 V
S0.C0.P5	CPU COF	1	800 MHz
	TDP	3	TBD
	VID_VDD Min	2	1.100 V
	VID_VDD Max	2	1.125 V
S0.C0.P6	CPU COF	1	500 MHz
	TDP	3	TBD
	VID_VDD Min	2	1.100 V
	VID_VDD Max	2	1.125 V
S0.C0.P7	CPU COF	1	300 MHz
	TDP	3	TBD
	VID_VDD Min	2	1.100 V
	VID_VDD Max	2	1.125 V

JV50-TR8

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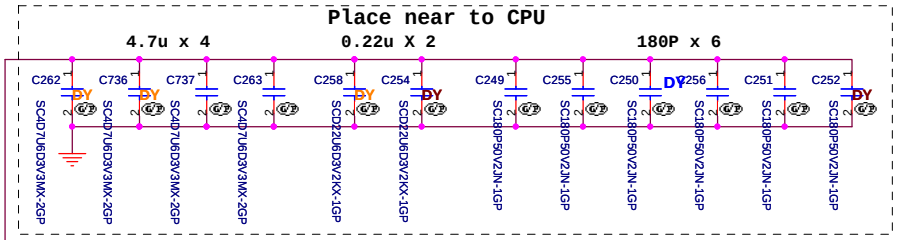
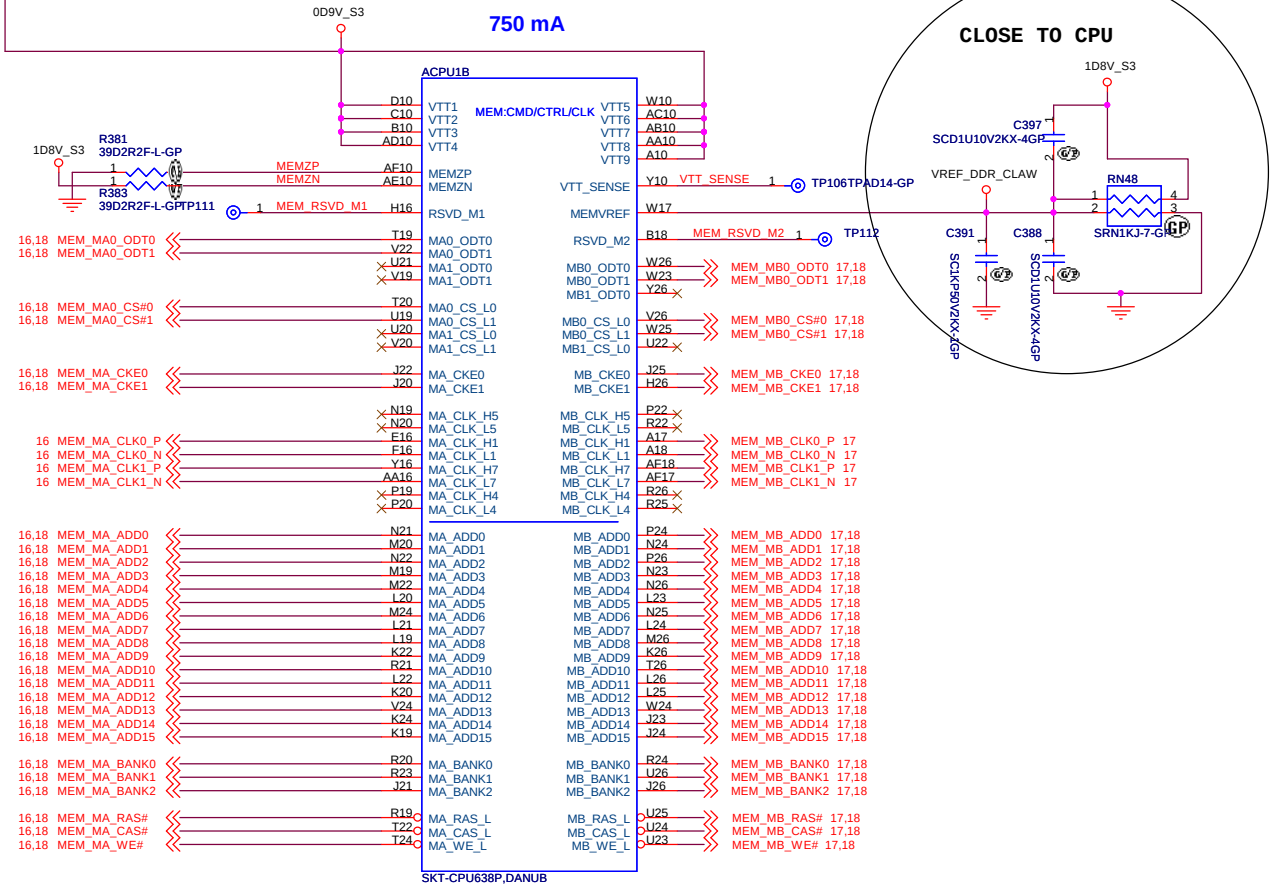
Taipei Hsien 221, Taiwan, R.O.C.

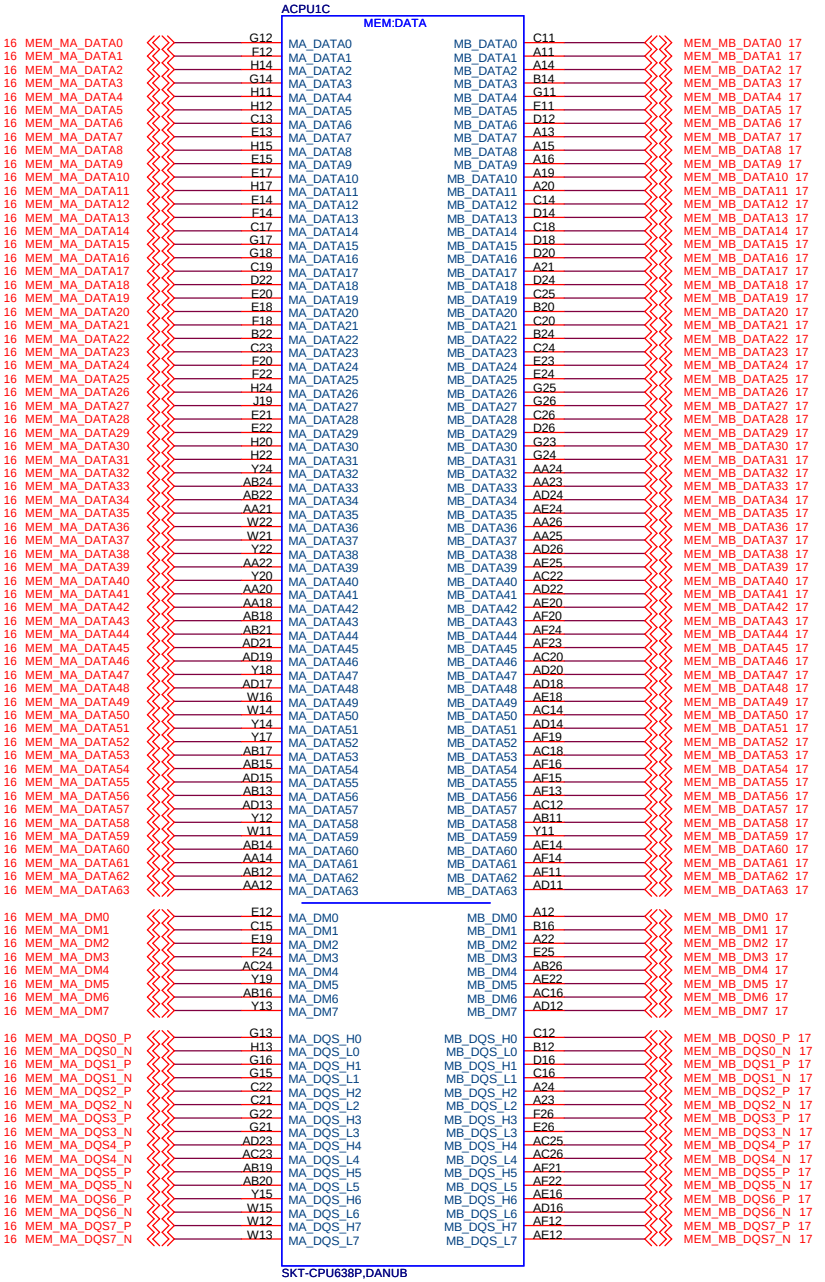
Title: CPU_HT_LINK I/F (1/4)

Size	Document Number	Rev
A3	JV50-TR8	-1

Date: Monday, October 26, 2009 Sheet 4 of 63







62.10055.111

JV50-TR8

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

Title: CPU_DDR (2/4)

Size	Document Number	Rev
A3	JV50-TR8	-1

Date: Monday, October 26, 2009 Sheet 5 of 63

The Processor has reached a preset maximum operating temperature. 100℃
I=Active HTC
O=FAN

IF 0 ohm IS NOT GOOD ENOUGH, TRY 68.00082.491

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

Cloce To CPU

For HDT DBG

for TR

for TR

internal pull high 300 ohm

LAYOUT: Route FBCLKOUT_H/L differentially impedance 80

Near CPU PIN

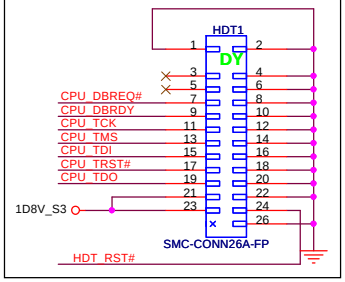
-1_20091021

CPU exceeds to 125℃

84.T3904.C11
2ND = 84.03904.L06

SKT-CPU638P,DANUBE

HDT Connectors



JV50-TR8

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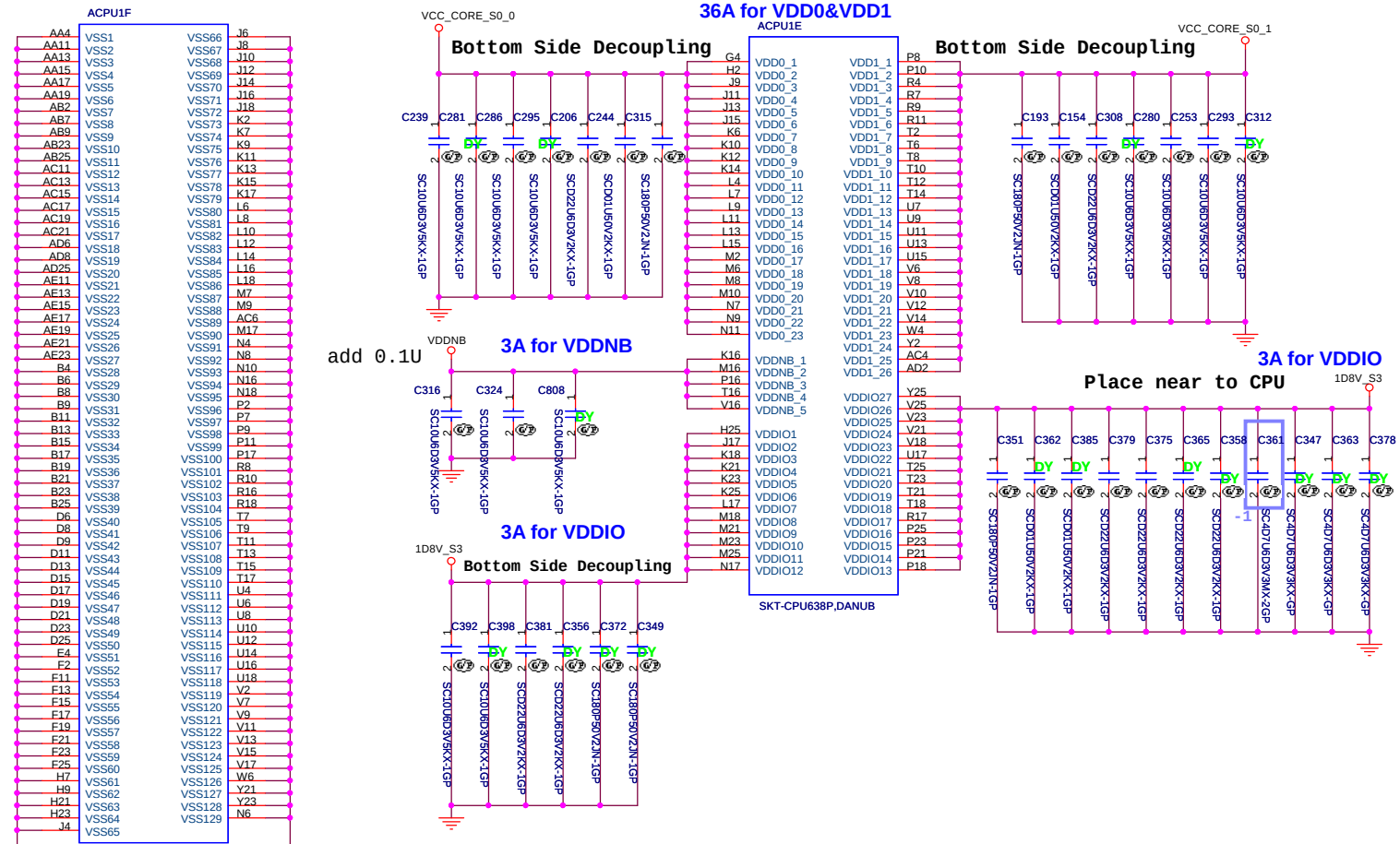
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: CPU_Control&Debug_(3/4)

Size: A3 | Document Number: JV50-TR8 | Rev: -1

Date: Monday, October 26, 2009 | Sheet 6 of 63



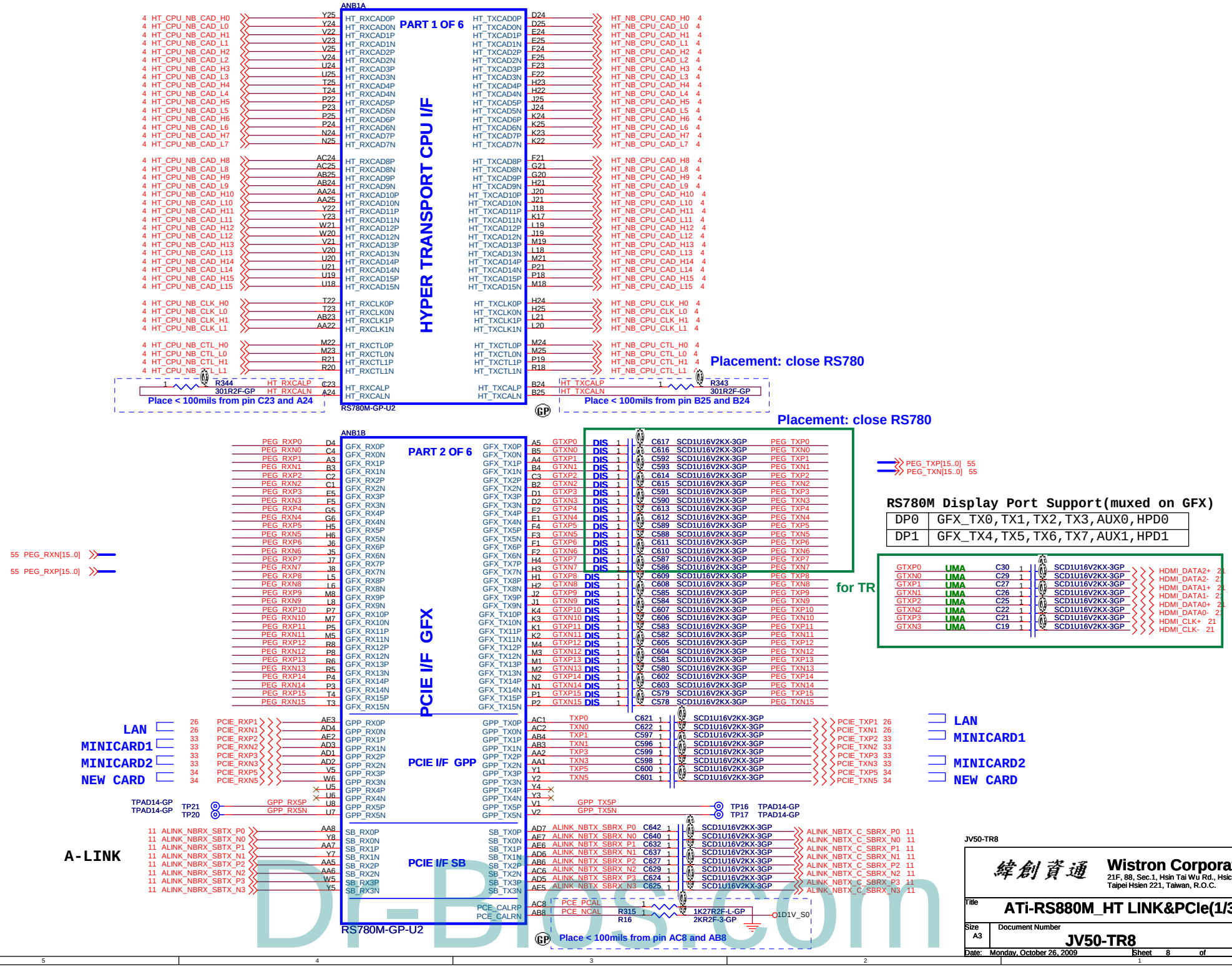
JV50-TR8

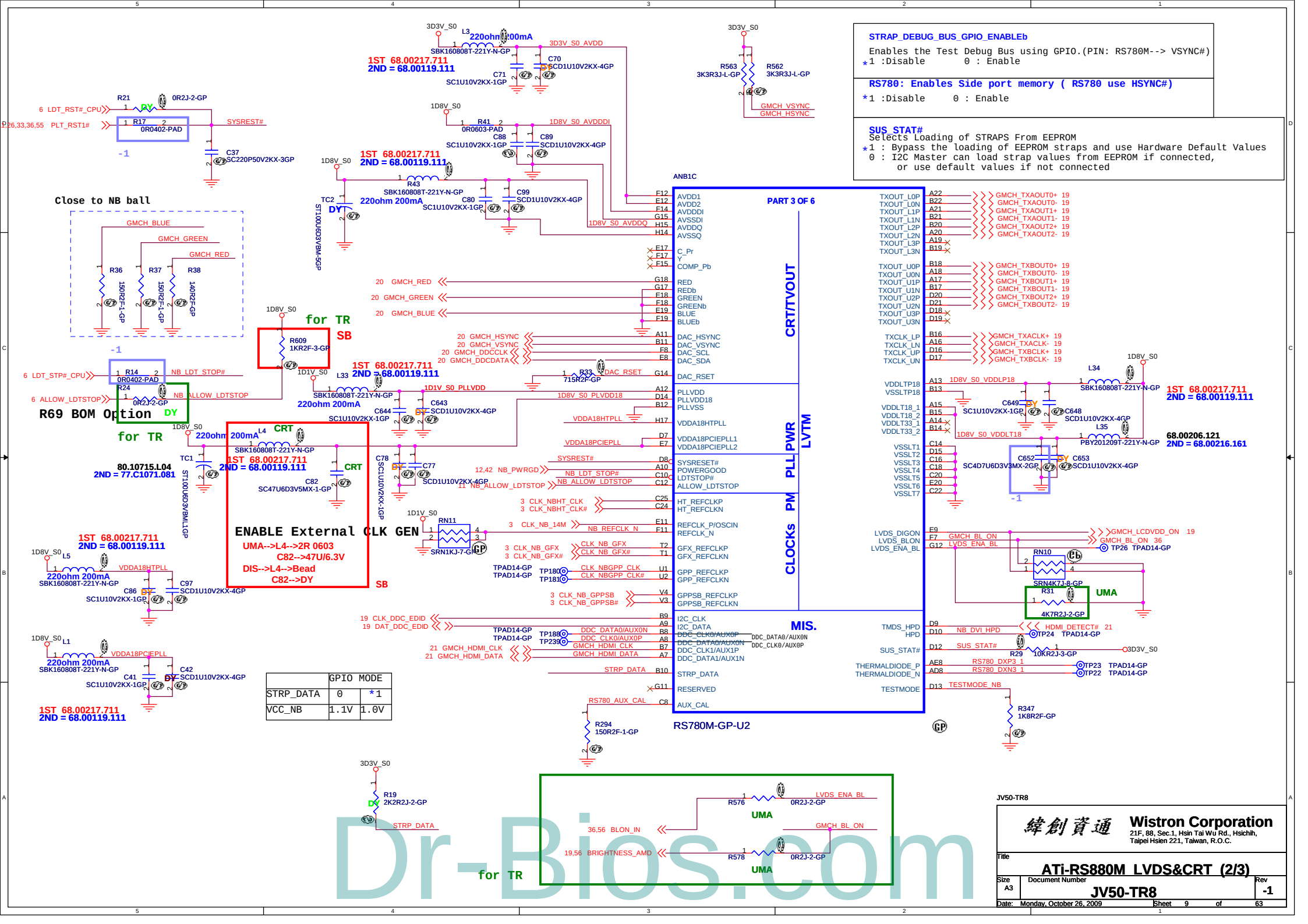
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

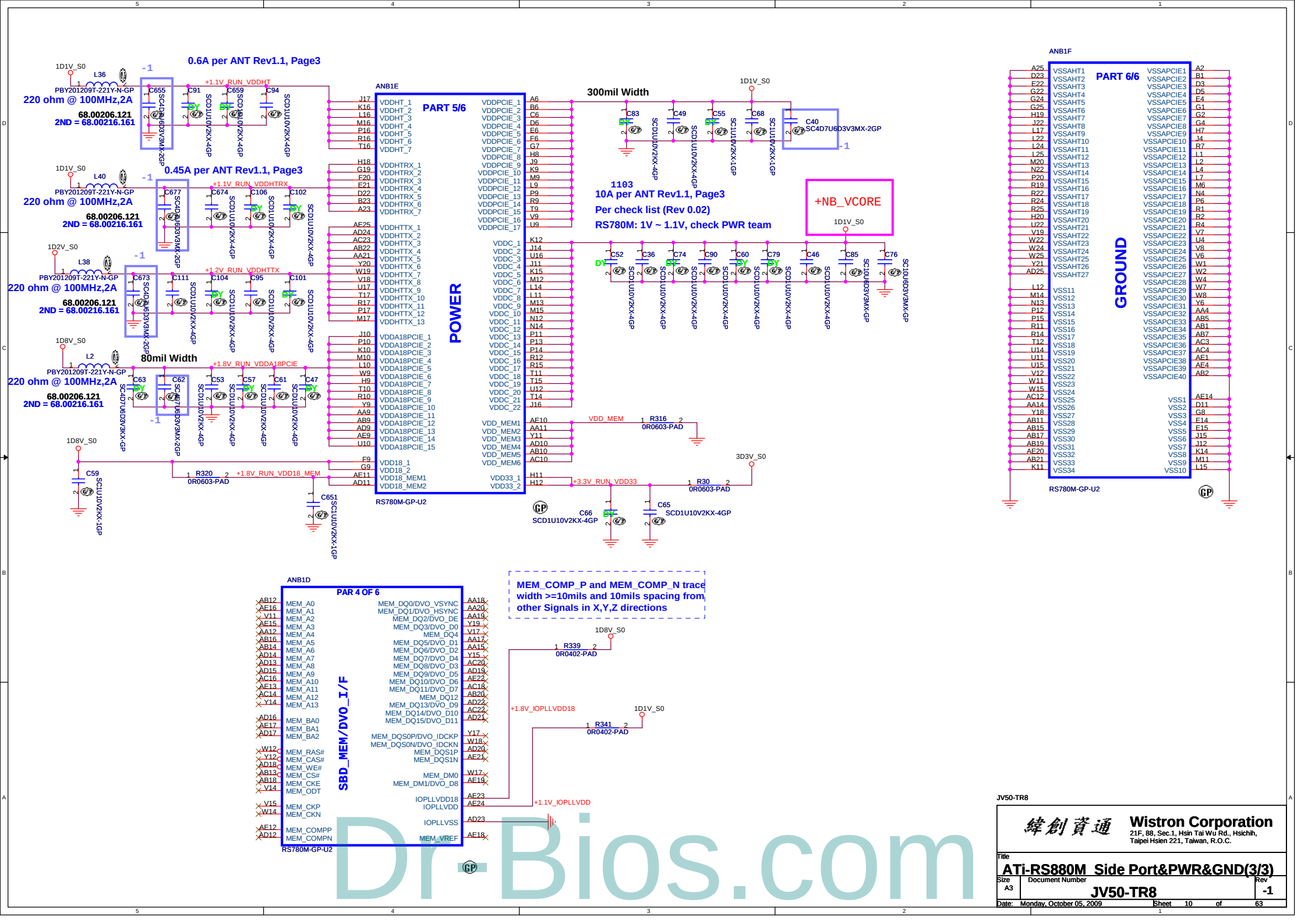
Title: CPU_Power_(4/4)

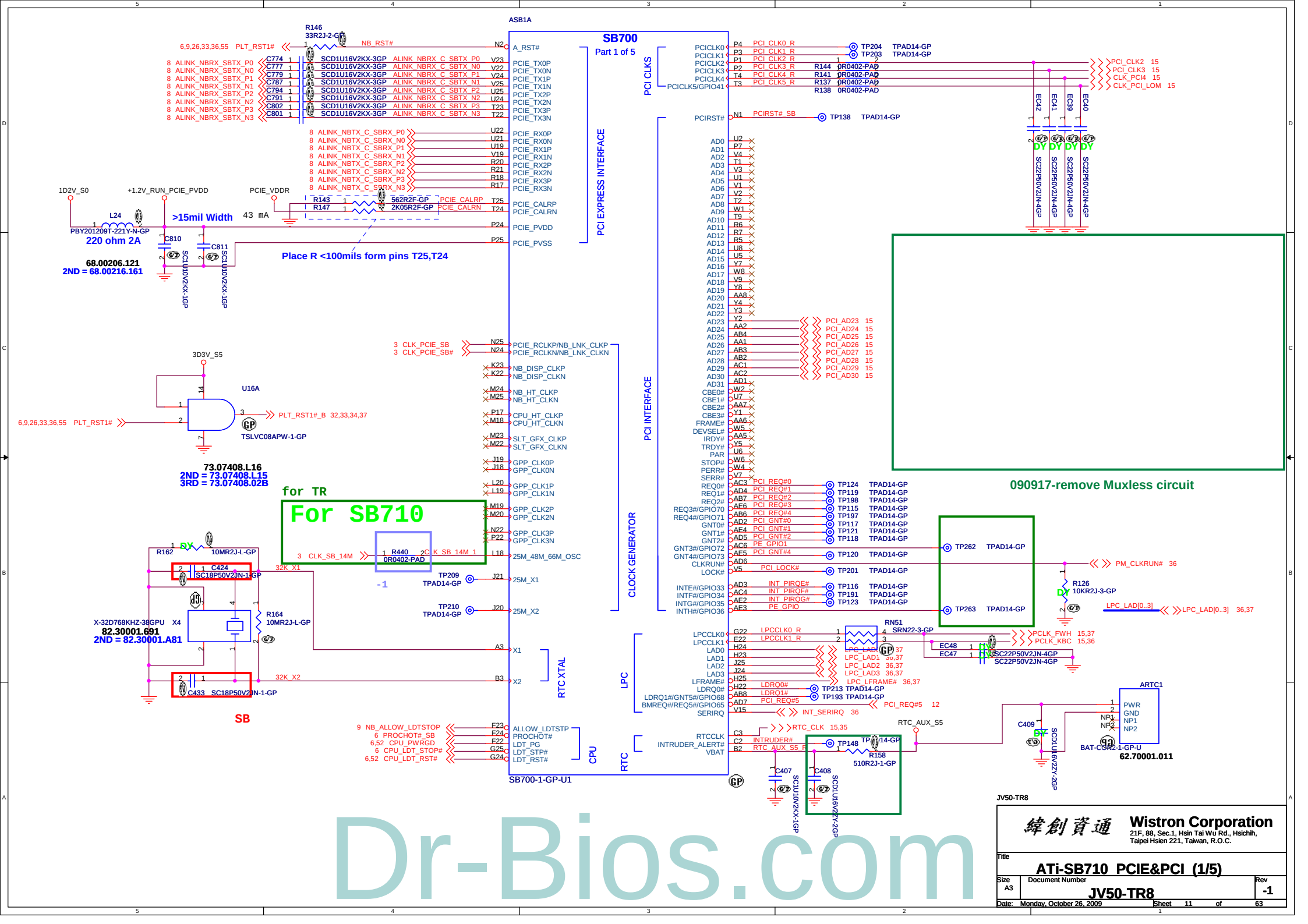
Size	Document Number	Rev
A3	JV50-TR8	-1

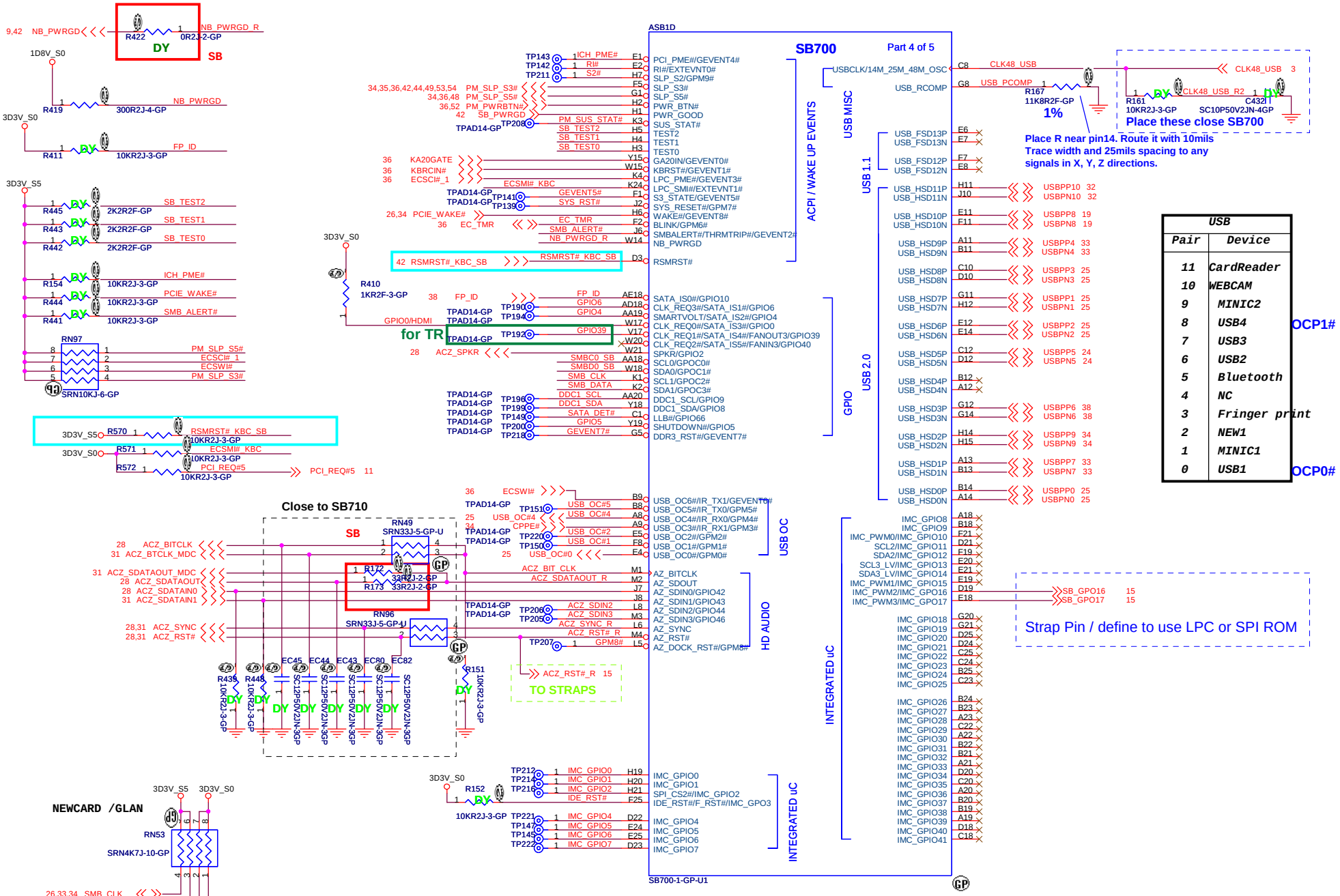
Date: Monday, October 05, 2009 Sheet 7 of 63


ANB1A
PART 1 OF 6
HYPER TRANSPORT CPU I/F
RS780M-GP-U2
Placement: close RS780
Place < 100mils from pin C23 and A24
Place < 100mils from pin B25 and B24
R344 301R2F-GP
R343 301R2F-GP
ANB1B
PART 2 OF 6
PCIE I/F GFX
PCIE I/F GPP
PCIE I/F SB
A-LINK
LAN
MINICARD1
MINICARD2
NEW CARD
for TR
RS780M Display Port Support(muxed on GFX)
DP0 GFX_TX0,TX1,TX2,TX3,AUX0,HPD0
DP1 GFX_TX4,TX5,TX6,TX7,AUX1,HPD1
Place < 100mils from pin AC8 and AB8
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
JV50-TR8
ATi-RS880M_HT LINK&PCIe(1/3)
Size A3
Document Number JV50-TR8
Rev -1
Date: Monday, October 26, 2009
Sheet 8 of 63


STRAP_DEBUG_BUS_GPIO_ENABLEb
Enables the Test Debug Bus using GPIO.(PIN: RS780M--> VSYNC#)
*1 :Disable 0 : Enable
RS780: Enables Side port memory (RS780 use HSYNC#)
*1 :Disable 0 : Enable
SUS_STAT#
Selects Loading of STRAPS From EEPROM
*1 : Bypass the loading of EEPROM straps and use Hardware Default Values
0 : I2C Master can load strap values from EEPROM if connected,
or use default values if not connected
Close to NB ball
R69 BOM Option
for TR
ENABLE External CLK GEN
UMA-->L4-->2R 0603
C82-->47U/6.3V
DIS-->L4-->Bead
C82-->DY
SB
ANB1C
PART 3 OF 6
RS780M-GP-U2
CRT/TVOUT
LVTM
PLL/PWR
CLOCKs
PM
MIS.
GPIO MODE
STRP_DATA 0 *1
VCC_NB 1.1V 1.0V
1ST 68.00217.711
2ND = 68.00119.111
80.10715.L04
2ND = 77.C1071.081
68.00206.121
2ND = 68.00216.161
Dr-Bios.com
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
JV50-TR8
ATi-RS880M LVDS&CRT (2/3)
Size A3
Document Number JV50-TR8
Rev -1
Date: Monday, October 26, 2009
Sheet 9 of 63


0.6A per ANT Rev1.1, Page3
0.45A per ANT Rev1.1, Page3
80mil Width
300mil Width
1103
10A per ANT Rev1.1, Page3
Per check list (Rev 0.02)
RS780M: 1V ~ 1.1V, check PWR team
+NB_VCORE
ANB1E
PART 5/6
POWER
RS780M-GP-U2
ANB1F
PART 6/6
GROUND
RS780M-GP-U2
ANB1D
PAR 4 OF 6
SBD_MEM/DVO_I/F
RS780M-GP-U2
MEM_COMP_P and MEM_COMP_N trace width >=10mils and 10mils spacing from other Signals in X,Y,Z directions
220 ohm @ 100MHz,2A
68.00206.121
2ND = 68.00216.161
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
JV50-TR8
ATi-RS880M_Side Port&PWR&GND(3/3)
Size A3
Document Number JV50-TR8
Rev -1
Date: Monday, October 05, 2009
Sheet 10 of 63


ASB1A
SB700
Part 1 of 5
PCI CLKS
PCI EXPRESS INTERFACE
PCI INTERFACE
CLOCK GENERATOR
LPC
RTC XTAL
CPU
RTC
SB700-1-GP-U1
R146 33R2J-2-GP
NB_RST#
PLT_RST1#
PCIE_TX0P
PCIE_TX0N
PCIE_TX1P
PCIE_TX1N
PCIE_TX2P
PCIE_TX2N
PCIE_TX3P
PCIE_TX3N
PCIE_RX0P
PCIE_RX0N
PCIE_RX1P
PCIE_RX1N
PCIE_RX2P
PCIE_RX2N
PCIE_RX3P
PCIE_RX3N
PCIE_CALRP
PCIE_CALRN
PCIE_PVDD
PCIE_PVSS
R143 562R2F-GP PCIE_CALRP
R147 2K05R2F-GP PCIE_CALRN
1D2V_S0
+1.2V_RUN_PCIE_PVDD
PCIE_VDDR
L24 PBY201209T-221Y-N-GP
220 ohm 2A
>15mil Width
43 mA
Place R <100mils form pins T25,T24
68.00206.121
2ND = 68.00216.161
3D3V_S5
U16A
TSLVC08APW-1-GP
73.07408.L16
2ND = 73.07408.L15
3RD = 73.07408.02B
for TR
For SB710
R440 0R0402-PAD
-1
CLK_SB_14M
CLK_SB_14M_1
25M_48M_66M_OSC
25M_X1
25M_X2
TP209 TPAD14-GP
TP210 TPAD14-GP
R162 10MR2J-L-GP
C424 SC18P50V2JN-1-GP
C433 SC18P50V2JN-1-GP
R164 10MR2J-L-GP
X-32D768KHZ-38GPU X4
82.30001.691
2ND = 82.30001.A81
32K_X1
32K_X2
SB
CLK_PCIE_SB
CLK_PCIE_SB#
PCIE_RCLKP/NB_LNK_CLKP
PCIE_RCLKN/NB_LNK_CLKN
NB_DISP_CLKP
NB_DISP_CLKN
NB_HT_CLKP
NB_HT_CLKN
CPU_HT_CLKP
CPU_HT_CLKN
SLT_GFX_CLKP
SLT_GFX_CLKN
GPP_CLK0P
GPP_CLK0N
GPP_CLK1P
GPP_CLK1N
GPP_CLK2P
GPP_CLK2N
GPP_CLK3P
GPP_CLK3N
PCI_CLK0_R
PCI_CLK1_R
PCI_CLK2_R
PCI_CLK3_R
PCI_CLK4_R
PCI_CLK5_R
PCIRST#_SB
TP138 TPAD14-GP
PCI_CLK2 15
PCI_CLK3 15
CLK_PCI4 15
CLK_PCI_LOM 15
EC42 EC41 EC39 EC40
SC22P50V2JN-4GP
PCI_AD23 15
PCI_AD24 15
PCI_AD25 15
PCI_AD26 15
PCI_AD27 15
PCI_AD28 15
PCI_AD29 15
PCI_AD30 15
090917-remove Muxless circuit
PCI_REQ#0
PCI_REQ#1
PCI_REQ#2
PCI_REQ#3
PCI_REQ#4
PCI_GNT#0
PCI_GNT#1
PCI_GNT#2
PE_GPIO1
PCI_GNT#4
PCI_LOCK#
INT_PIRQE#
INT_PIRQF#
INT_PIRQG#
PE_GPIO
TP124 TPAD14-GP
TP119 TPAD14-GP
TP198 TPAD14-GP
TP115 TPAD14-GP
TP197 TPAD14-GP
TP117 TPAD14-GP
TP121 TPAD14-GP
TP118 TPAD14-GP
TP120 TPAD14-GP
TP201 TPAD14-GP
TP116 TPAD14-GP
TP191 TPAD14-GP
TP123 TPAD14-GP
TP262 TPAD14-GP
TP263 TPAD14-GP
PM_CLKRUN# 36
R126 10KR2J-3-GP
LPC_LAD[0..3]
LPCCLK0_R
LPCCLK1_R
RN51 SRN22-3-GP
PCLK_FWH 15,37
PCLK_KBC 15,36
LPC_LAD0 36,37
LPC_LAD1 36,37
LPC_LAD2 36,37
LPC_LAD3 36,37
LPC_LFRAME# 36,37
LDRQ0#
LDRQ1#
TP213 TPAD14-GP
TP193 TPAD14-GP
PCI_REQ#5 12
INT_SERIRQ 36
RTC_CLK 15,35
RTC_AUX_S5
INTRUDER#
RTC_AUX_S5_R
TP148 TPAD14-GP
R158 510R2J-1-GP
C407 SC1U10V2KX-1GP
C408 SCD1U16V2ZY-2GP
ARTC1
BAT-CON2-1-GP-U
62.70001.011
C409 SCD1U16V2ZY-2GP
ALLOW_LDTSTP
PROCHOT#
LDT_PG
LDT_STP#
LDT_RST#
NB_ALLOW_LDTSTOP
PROCHOT#_SB
CPU_PWRGD
CPU_LDT_STOP#
CPU_LDT_RST#
JV50-TR8
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
ATi-SB710 PCIE&PCI (1/5)
Size A3
Document Number JV50-TR8
Rev -1
Date: Monday, October 26, 2009
Sheet 11 of 63



JV50-TR8

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

Title: ATi-SB710 USB&GPIO (2/5)

Size	Document Number	Rev
A3	JV50-TR8	-1

Date: Wednesday, November 11, 2009 Sheet 12 of 63

PLACE SATA AC DECOUPLING
CAPS CLOSE TO SB710

SATA HDD
SATA ODD

SB700
Part 2 of 5
ASB1B
SB700-1-GP-U1

SERIAL ATA
ATA 66/100/133
SPI ROM
SATA PWR
HW MONITOR

Very Close to SB710

1ST 82.30020.851
2ND = 82.30020.791
SB

Dummy CKG select

CLK_ID
(1,0)
ICS: 0,0
SEG: 0,1
RTM: 1,0

>15mil Width

Layout connect to Cap then GND

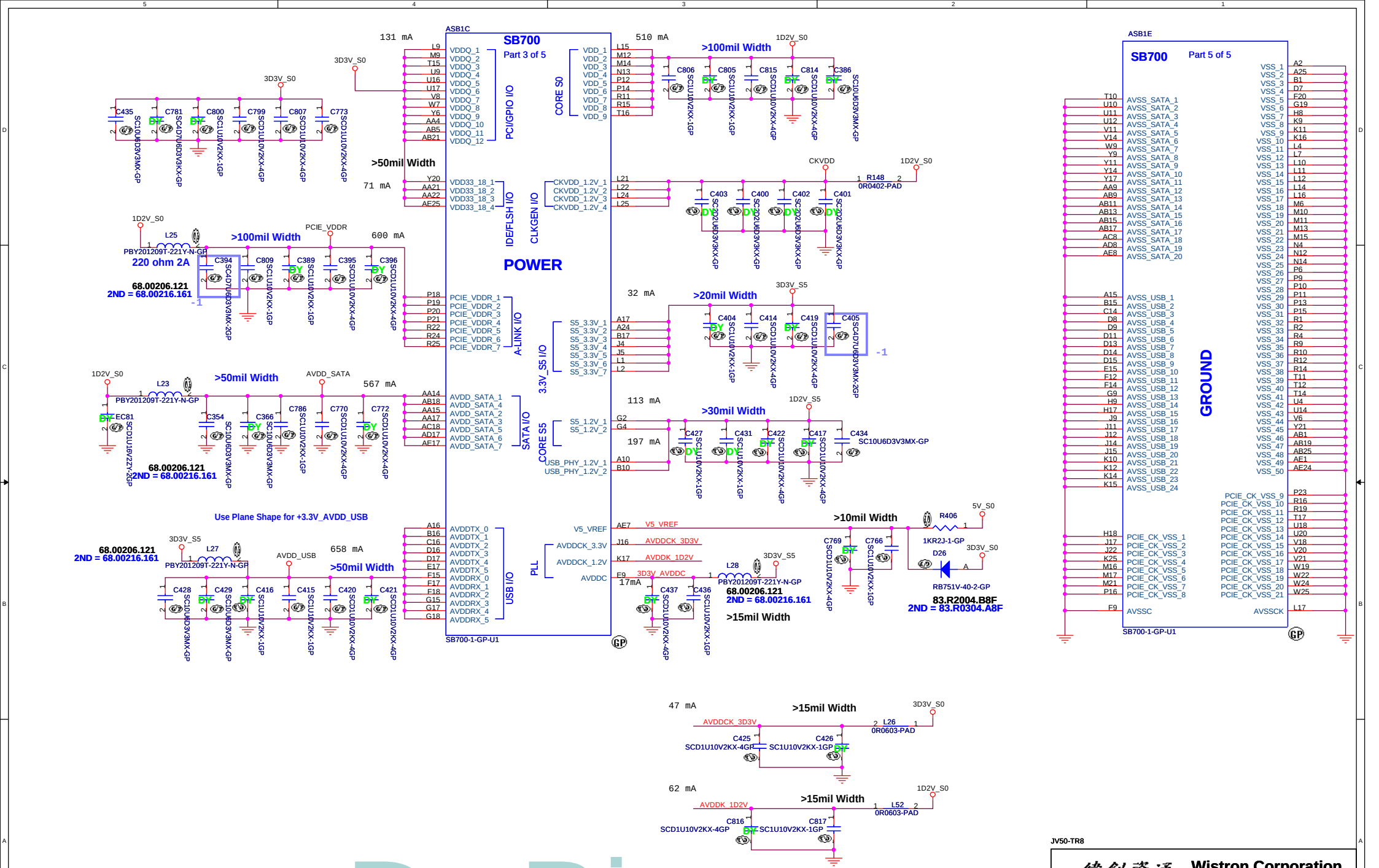
JV50-TR8

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

Title: ATi-SB710 SATA-IDE (3/5)

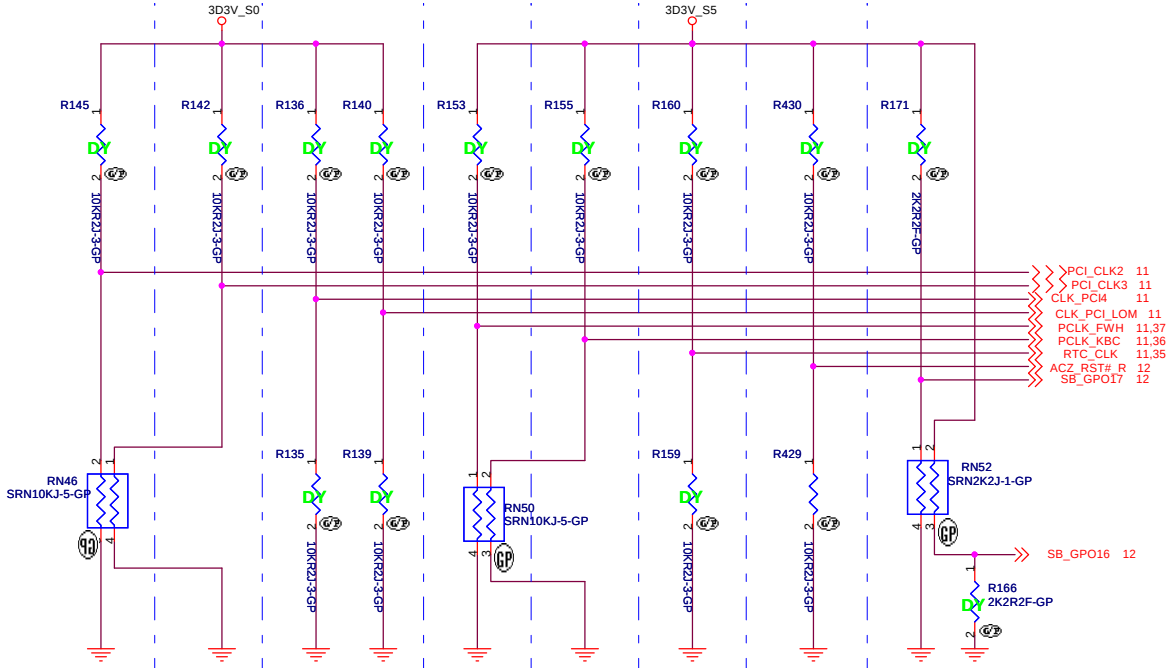
Size	Document Number	Rev
A3	JV50-TR8	-1

Date: Monday, October 26, 2009 Sheet 13 of 63


ASB1C
SB700
Part 3 of 5
POWER
SB700-1-GP-U1
ASB1E
SB700
Part 5 of 5
GROUND
SB700-1-GP-U1
131 mA
71 mA
510 mA
600 mA
32 mA
113 mA
197 mA
17mA
47 mA
62 mA
>50mil Width
>100mil Width
>20mil Width
>30mil Width
>10mil Width
>15mil Width
220 ohm 2A
68.00206.121
2ND = 68.00216.161
83.R2004.B8F
2ND = 83.R0304.A8F
Use Plane Shape for +3.3V_AVDD_USB
Dr-Bios.com
JV50-TR8
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
ATi-SB710 POWER&GND (4/5)
Size A3
Document Number JV50-TR8
Rev -1
Date: Monday, October 05, 2009
Sheet 14 of 63

REQUIRED STRAPS

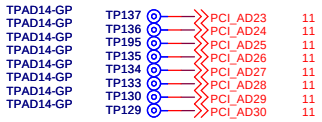
REQUIRED SYSTEM STRAPS



	PCI_CLK2	PCI_CLK3	CLK_PCI_LOM CLK_PCI4	PCLK_FWH	PCLK_KBC	RTCCLK	AZ_RST#	SB_GPO17 , SB_GPO16
PULL HIGH	WatchDOG (NB_PWRGD) ENABLED	USE DEBUG STRAPS	RESERVED	IMC ENABLED	CLKGEN ENABLED (Use Internal)	INTERNAL RTC DEFAULT	ENABLE PCI ROM BOOT	ROM TYPE: H, H = Reserved
								H, L = SPI ROM
PULL LOW	WatchDog (NB_PWRGD) DISABLED DEFAULT	IGNORE DEBUG STRAPS DEFAULT		IMC DISABLED DEFAULT	CLKGEN DISABLED (Use External) DEFAULT	EXT. RTC (PD on X1, apply 32KHz to RTC_CLK)	DISABLE PCI ROM BOOT DEFAULT	L, H = LPC ROM DEFAULT
								L, L = FWH ROM

NOTE: SB700 HAS INTERNAL 15K PULL UP RESISTOR FOR RTCCLK

DEBUG STRAPS



	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23	PCI_AD30 PCI_AD29
PULL HIGH	USE LONG RESET (DEFAULT)	USE PCI PLL (DEFAULT)	USE ACPI BCLK (DEFAULT)	USE IDE PLL (DEFAULT)	USE DEFAULT PCIE STRAPS (DEFAULT)	Reserved (DEFAULT)	Reserved
PULL LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	Reserved	

Note: SB700 has 15K internal PU FOR PCI_AD[30:23]

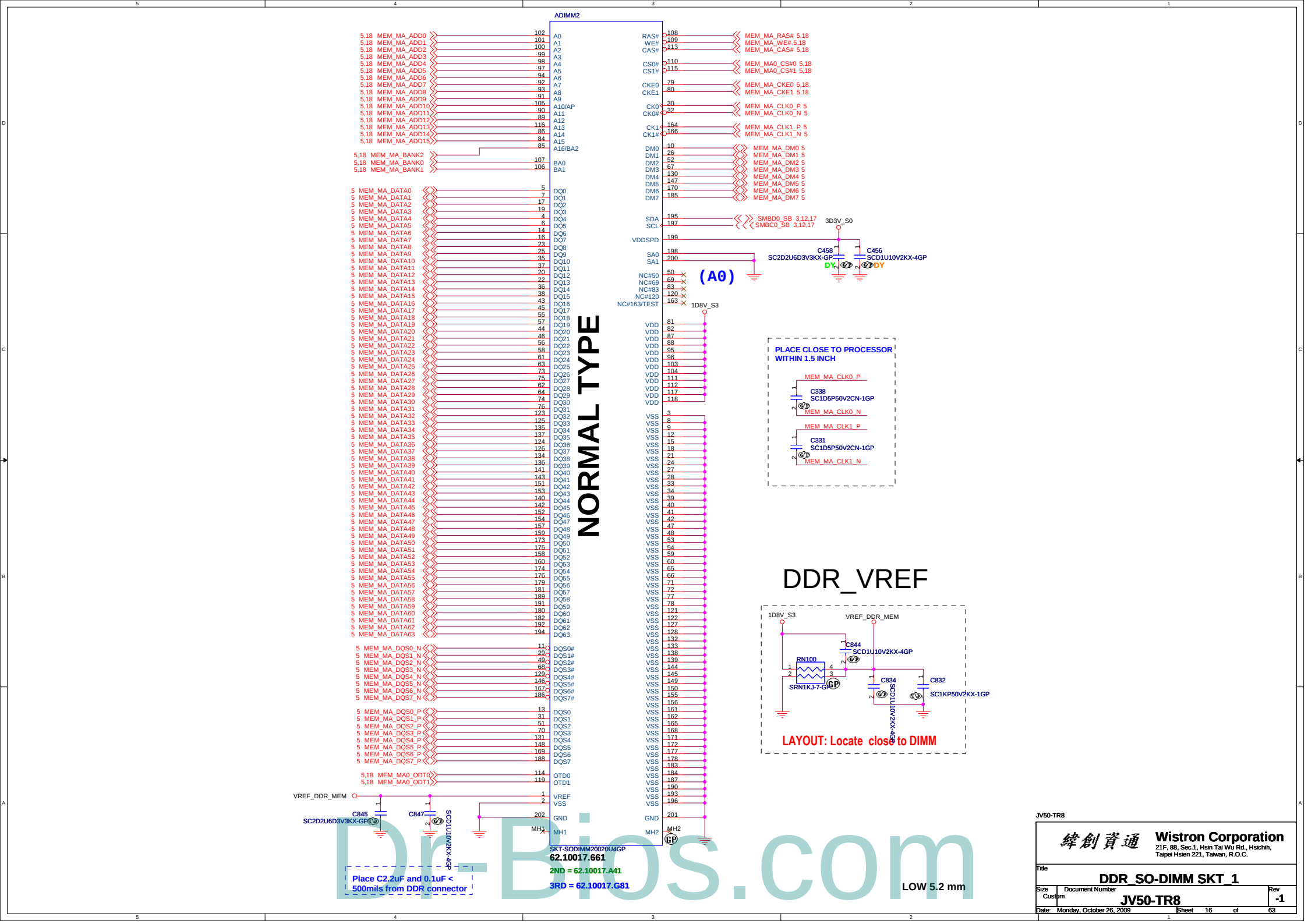
JV50-TR8

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

Title: ATi-SB710 STRAPPING (5/5)

Size	Document Number	Rev
A3	JV50-TR8	-1

Date: Monday, October 26, 2009 Sheet 15 of 63



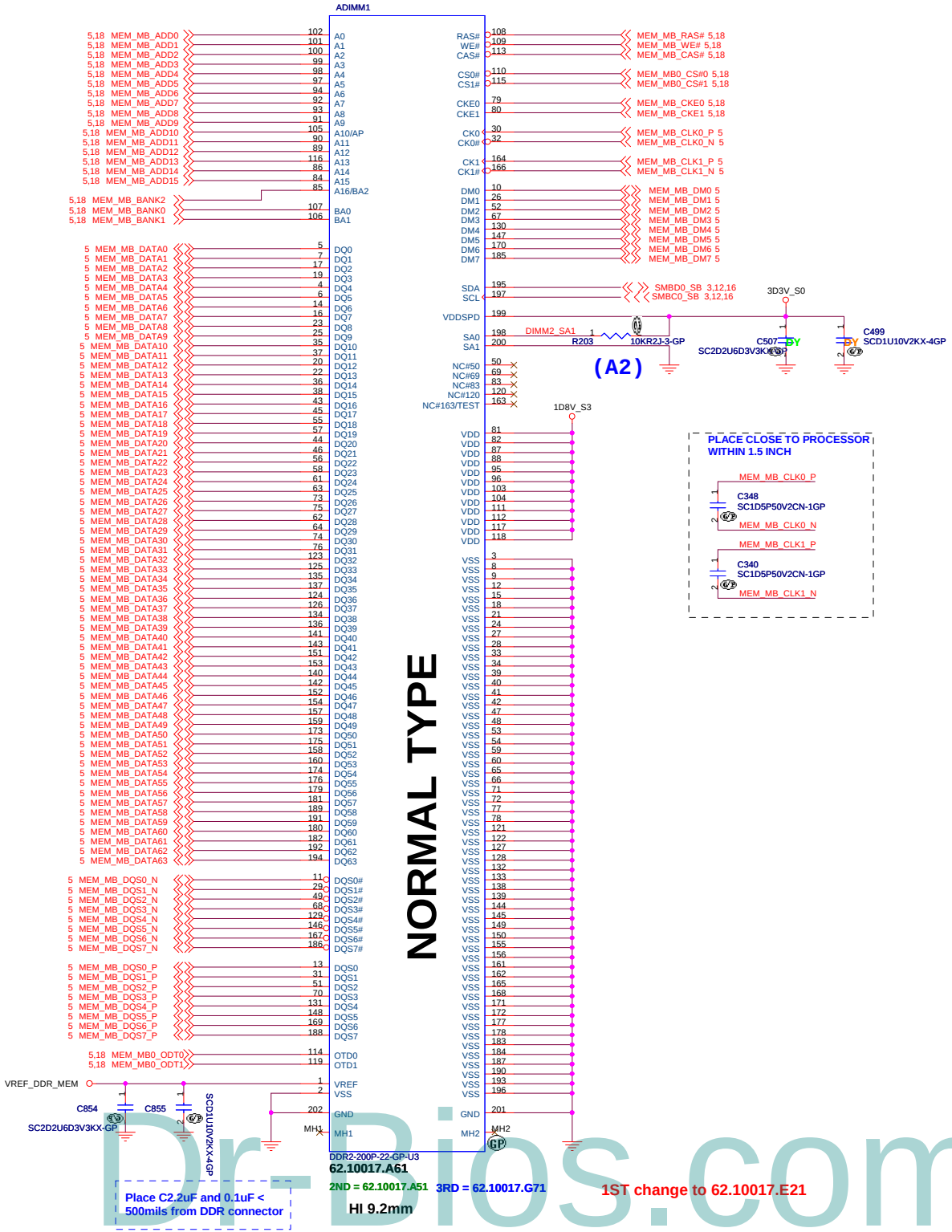
JV50-TR8

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

Title: DDR_SO-DIMM SKT_1

Size	Document Number	Rev
Custom	JV50-TR8	-1

Date: Monday, October 26, 2009 Sheet 16 of 63



JV50-TR8

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

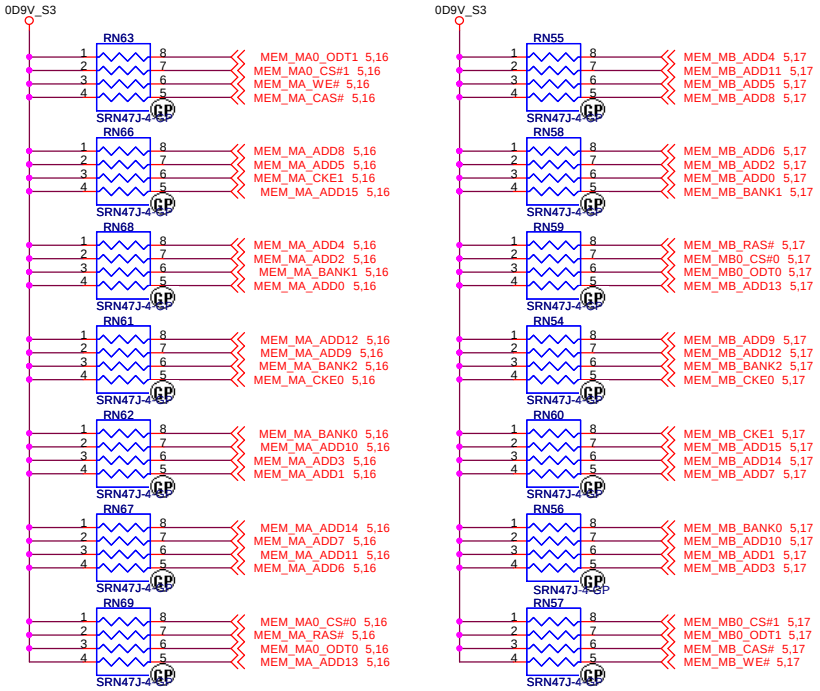
Title: DDR_SO-DIMM SKT_2

Size: Custom | Document Number: JV50-TR8 | Rev: -1

Date: Monday, October 26, 2009 | Sheet 17 of 63

PARALLEL TERMINATION

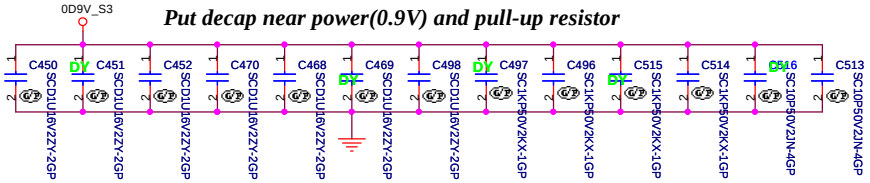
Put decap near power(0.9V) and pull-up resistor



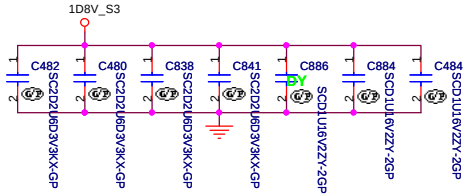
Do not share the Term resistor between the DDR addess and Control Signals.

Decoupling Capacitor

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

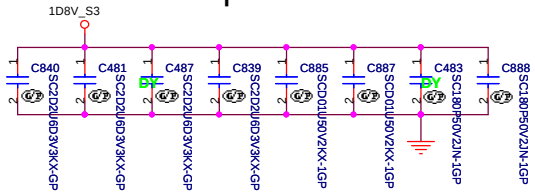


Place these Caps near DM1



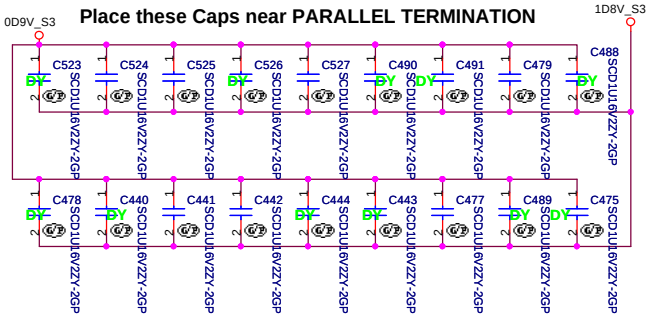
Layout Note:
Place one cap close to every 2 pullup resistors terminated to 0D9V_S3

Place these Caps near DM2



Layout Note:
Place one cap close to every 2 pullup resistors terminated to 0D9V_S3

Place these Caps near PARALLEL TERMINATION



JV50-TR8

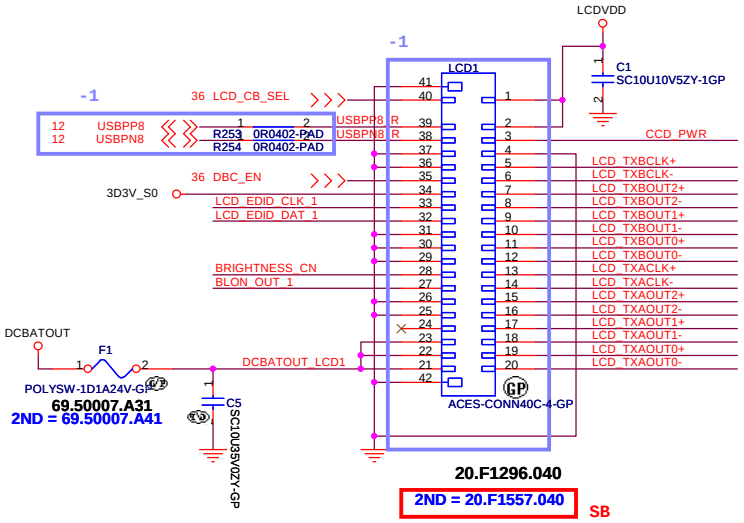
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

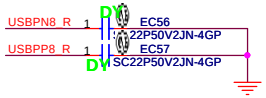
Title: **DDR_DAMPING & TERMINATION**

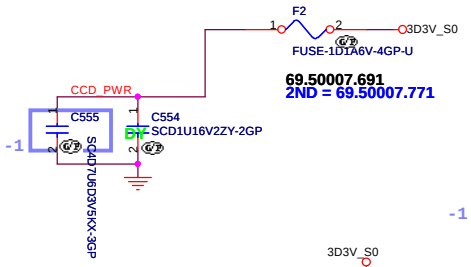
Size	Document Number	Rev
A3	JV50-TR8	-1

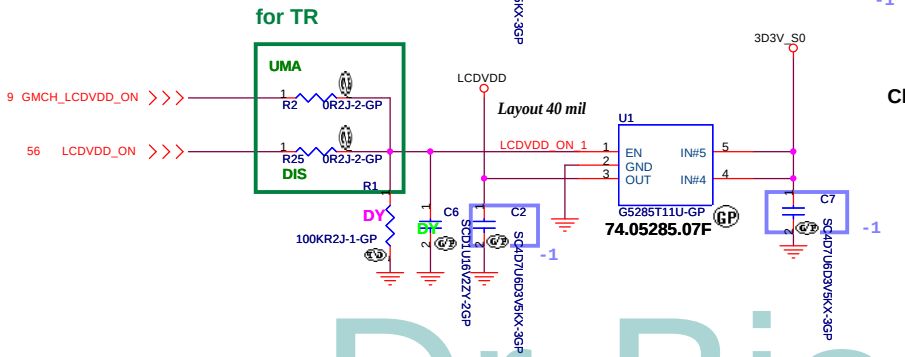
Date: Monday, October 26, 2009 Sheet 18 of 63

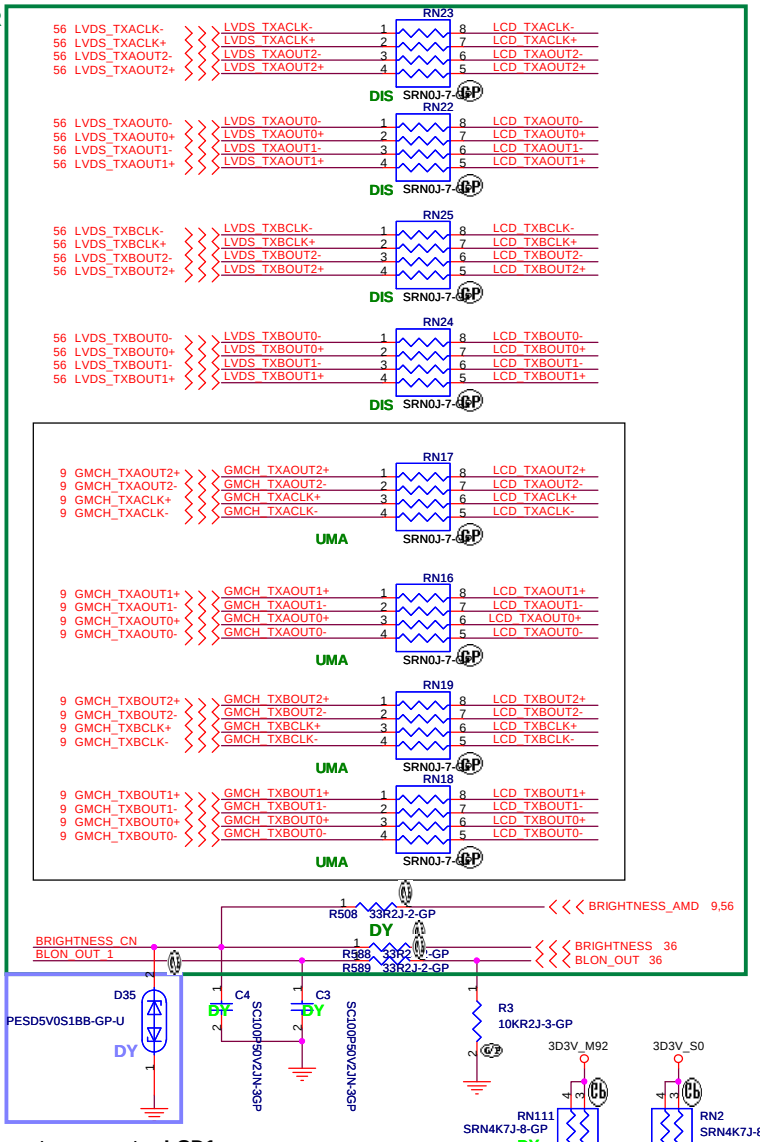
LCD/INVERTER/CCD CONN











Inverter Pin	
Pin	Symbol
1	Vin
2	Vin
3	Brightness
4	BLON
5	GND
6	GND

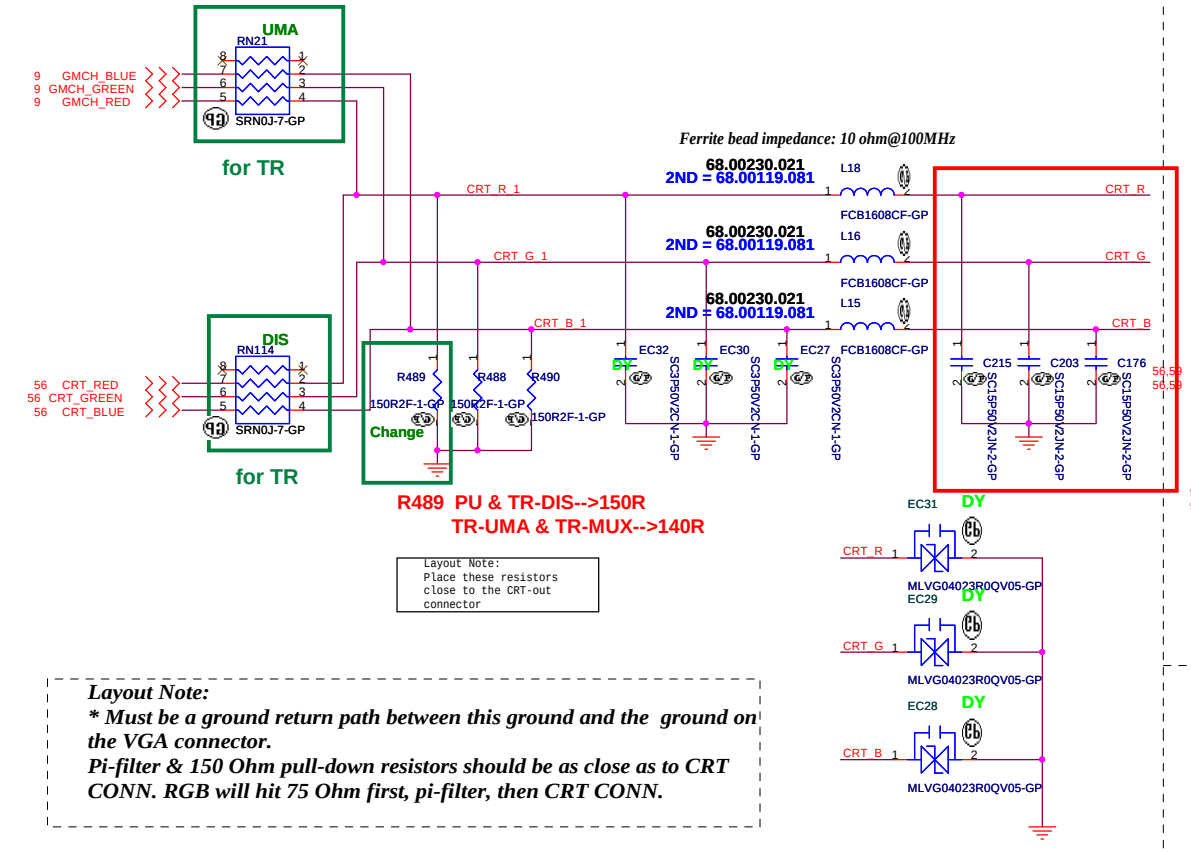
CCD Pin	
Pin	Symbol
1	CCD_PWR
2	USB-
3	USB+
4	GND
5	GND

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

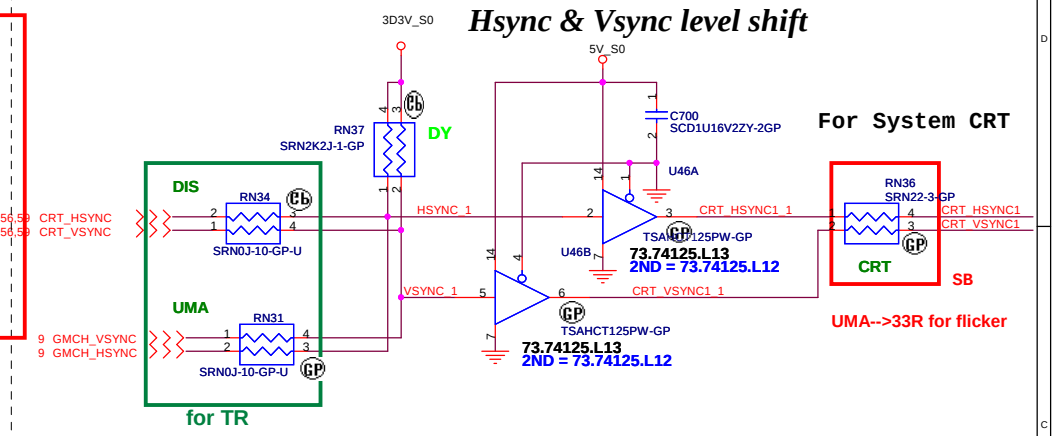
Title: LCD CONN

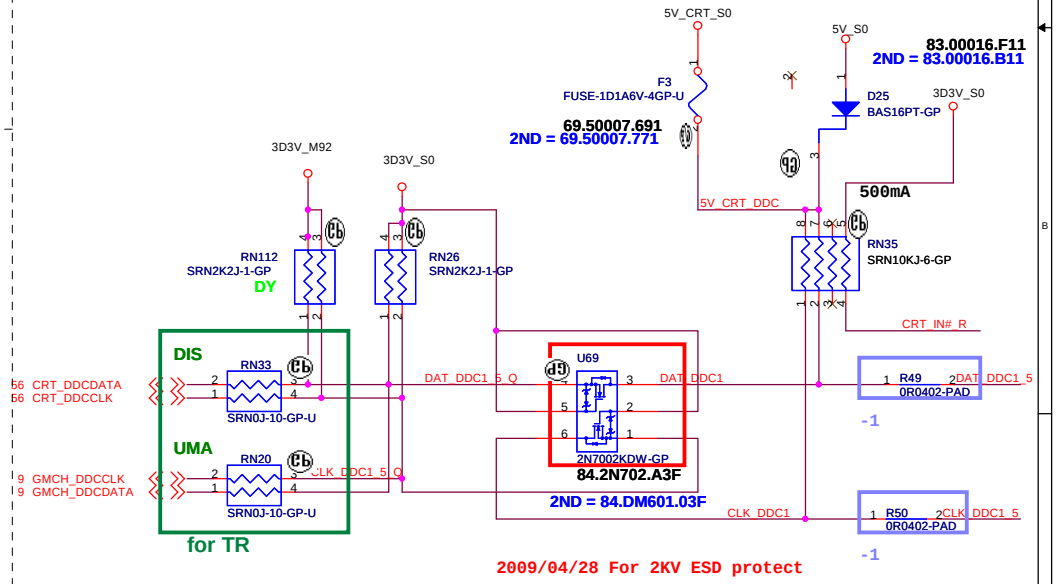
Size: A3 | Document Number: JV50-TR8 | Rev: -1

Date: Monday, October 26, 2009 | Sheet 19 of 63

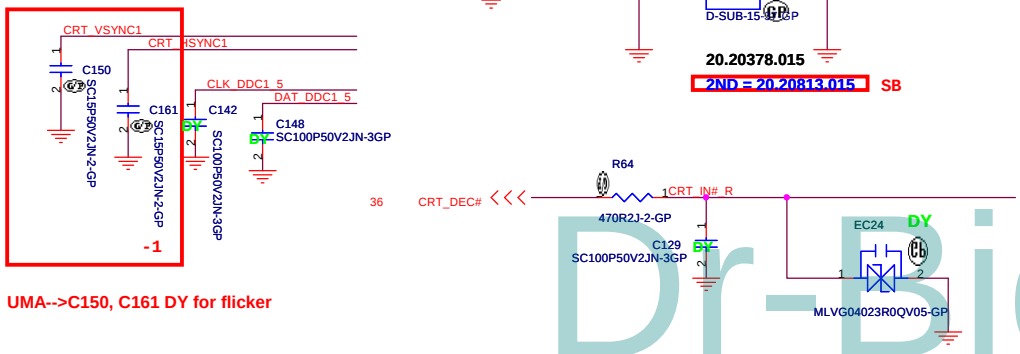


Layout Note:
** Must be a ground return path between this ground and the ground on the VGA connector.*
Pi-filter & 150 Ohm pull-down resistors should be as close as to CRT CONN. RGB will hit 75 Ohm first, pi-filter, then CRT CONN.



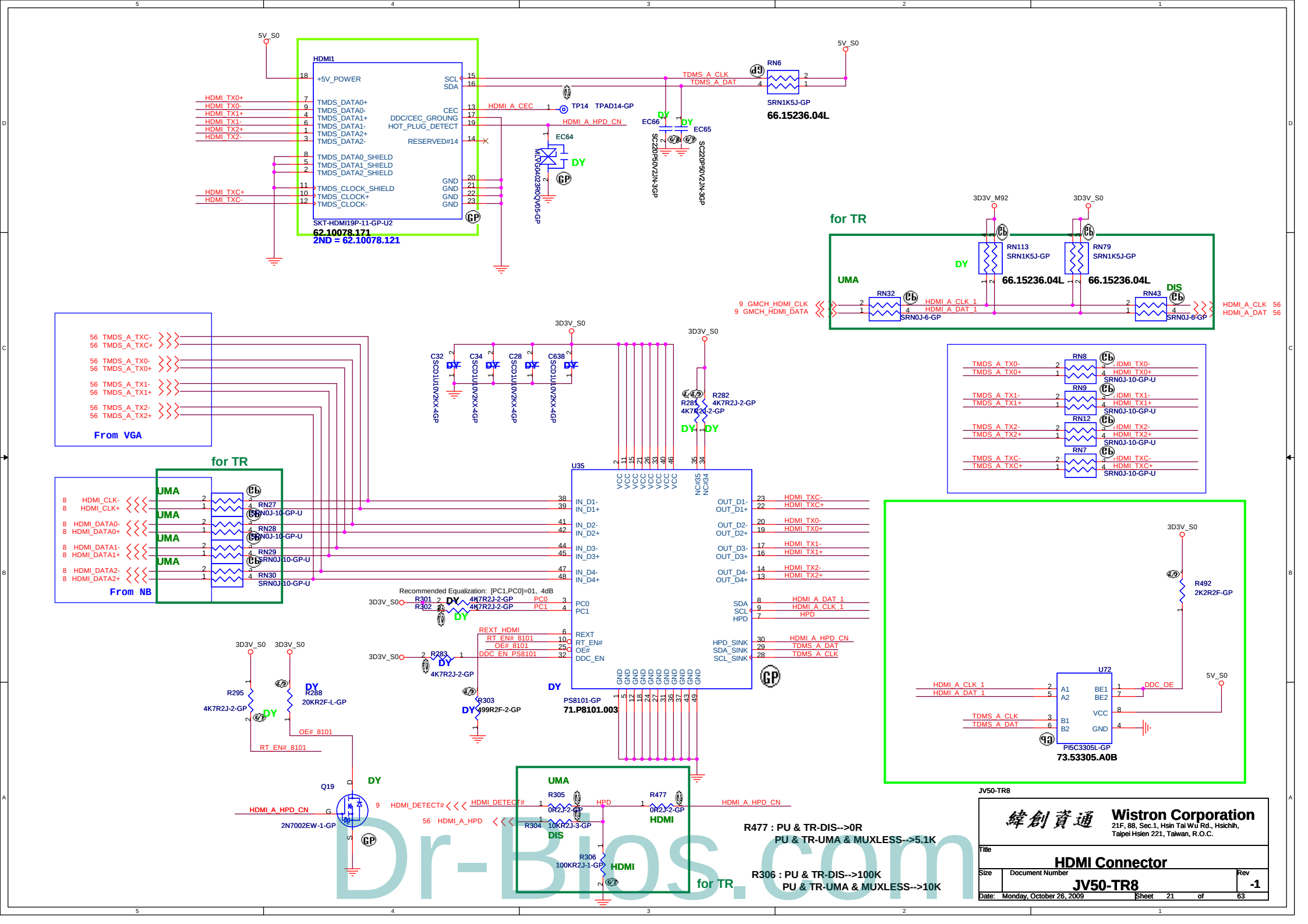


CRT I/F & CONNECTOR

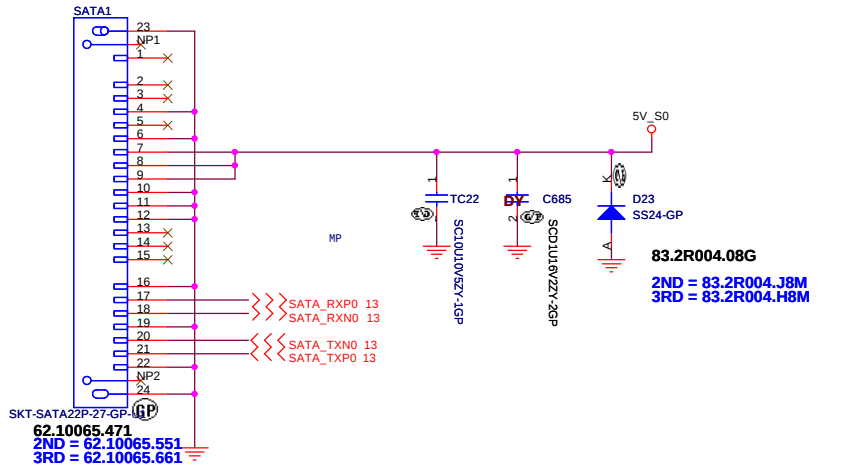


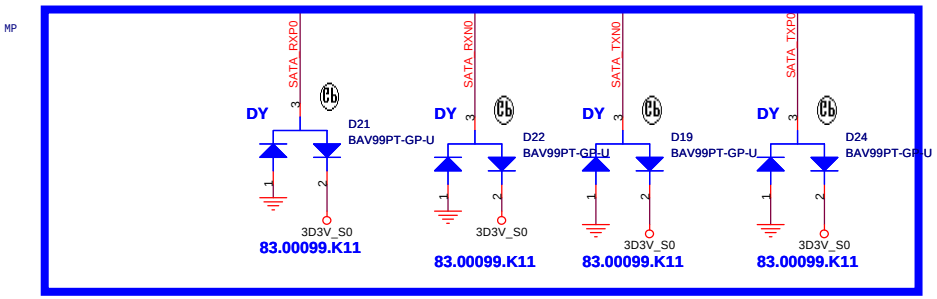
JV50-TR8

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: **JV50-TR8** Rev: **-1**
Date: Monday, October 26, 2009	Sheet 20 of 63


HDMI1
SKT-HDMI19P-11-GP-U2
62.10078.171
2ND = 62.10078.121
RN6
SRN1K5J-GP
66.15236.04L
TP14 TPAD14-GP
EC64
EC65
EC66
SC220P50V2JN-3GP
MLTG0402R30QW05-GP
for TR
UMA
DIS
RN113
RN79
RN32
RN43
SRN0J-6-GP
RN8
RN9
RN12
RN7
SRN0J-10-GP-U
From VGA
From NB
RN27
RN28
RN29
RN30
U35
PS8101-GP
71.P8101.003
R282
R283
R288
20KR2F-L-GP
R295
R303
499R2F-2-GP
R301
R302
R492
2K2R2F-GP
U72
PI5C3305L-GP
73.53305.A0B
Q19
2N7002EW-1-GP
R305
R304
R306
R477
Recommended Equalization: [PC1,PC0]=01, 4dB
R477 : PU & TR-DIS-->0R
PU & TR-UMA & MUXLESS-->5.1K
R306 : PU & TR-DIS-->100K
PU & TR-UMA & MUXLESS-->10K
JV50-TR8
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
HDMI Connector
JV50-TR8
Monday, October 26, 2009
Sheet 21 of 63

SATA Connector



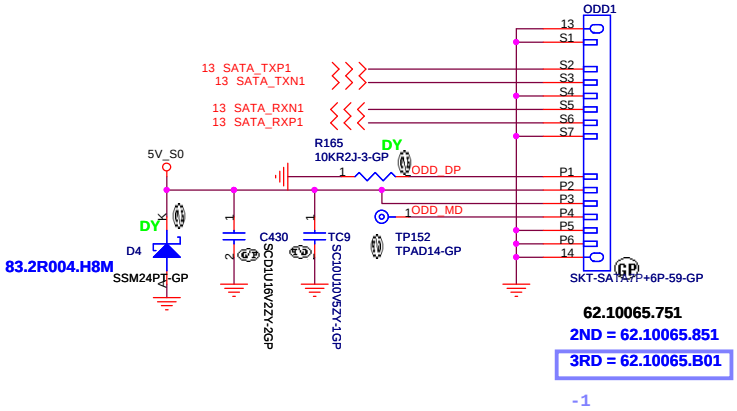


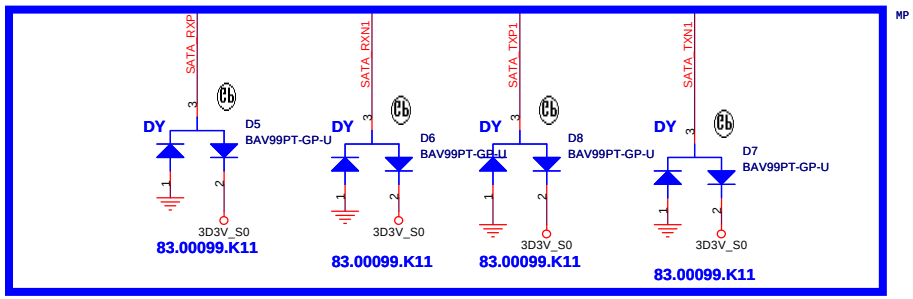
JV50-TR8

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

Title	HDD	
Size	Document Number: JV50-TR8	Rev: -1
Date: Monday, October 26, 2009	Sheet 22 of 63	

SATA ODD Connector





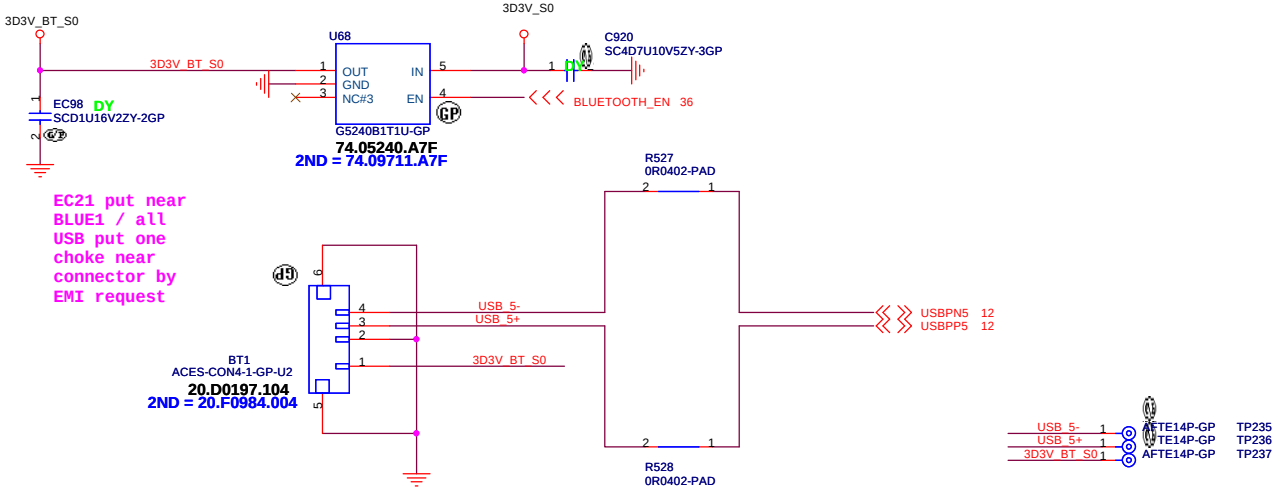
JV50-TR8

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

Title	ODD	
Size	Document Number JV50-TR8	Rev -1
Date: Monday, October 26, 2009	Sheet 23 of 63	

BLUETOOTH MODULE

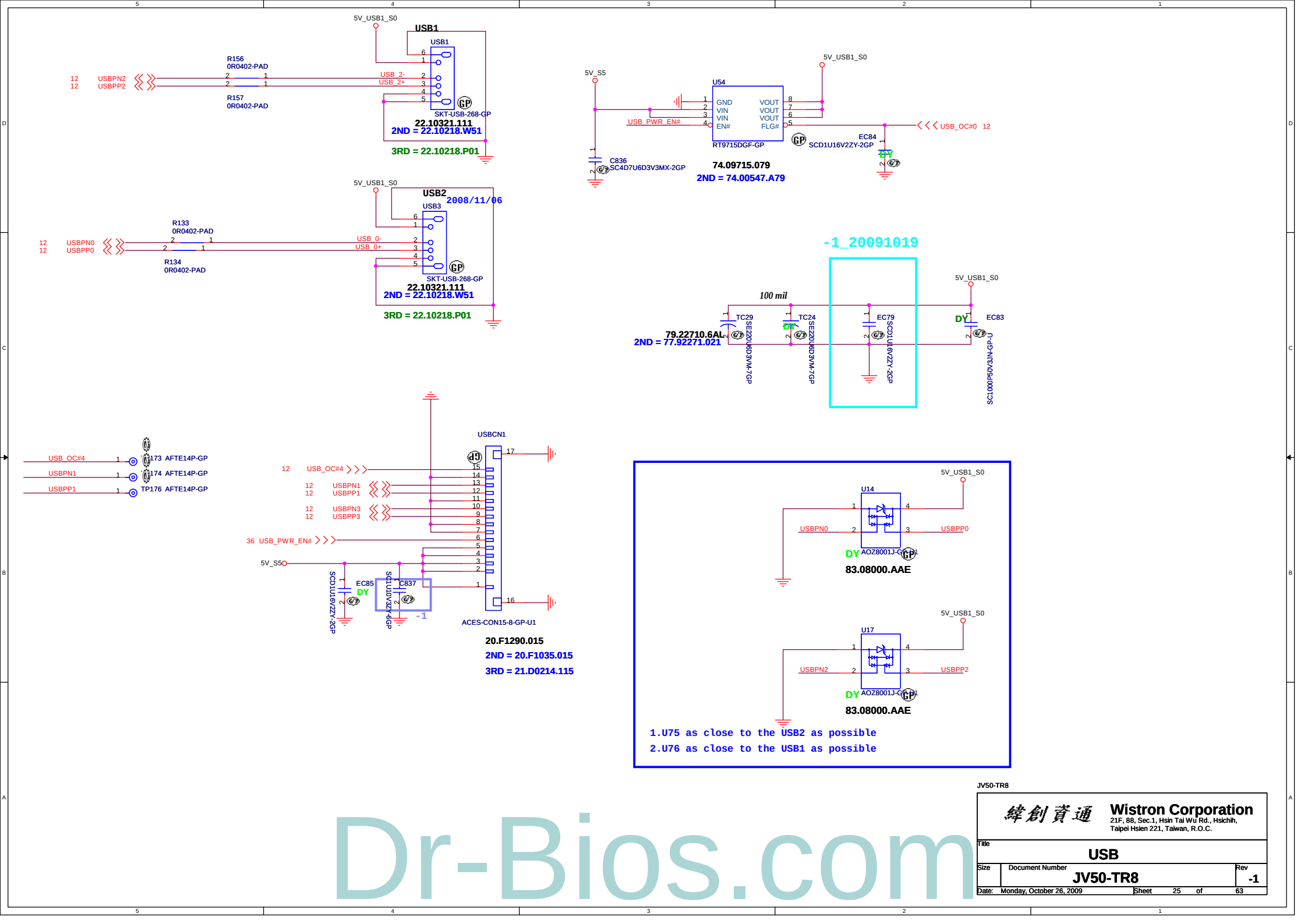
1.5A / High Active Voltage 2V



JV50-TR8

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

Title: **BLUETOOTH**		
Size	Document Number: **JV50-TR8**	Rev: **-1**
Date: Thursday, November 12, 2009	Sheet 24 of 63	



JV50-TR8

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

Title: USB		
Size	Document Number: JV50-TR8	Rev: -1
Date: Monday, October 26, 2009	Sheet 25 of 63	

CO-Layout BCM5764 and BCM5784
modify BOM :71.05784.M03

U4
BCM5784MKMLG-GP
71.05784.M03

U3
AT24C02BN-SH-T-GP
72.24C02.R01
2ND = 72.24C02.M01

82.30020.851
2ND = 82.30020.791

1ST 84.DCP69.01B
2ND = 84.00069.B1B

Place PLLVDD/AVDDL
CKT as close to chip as
possible

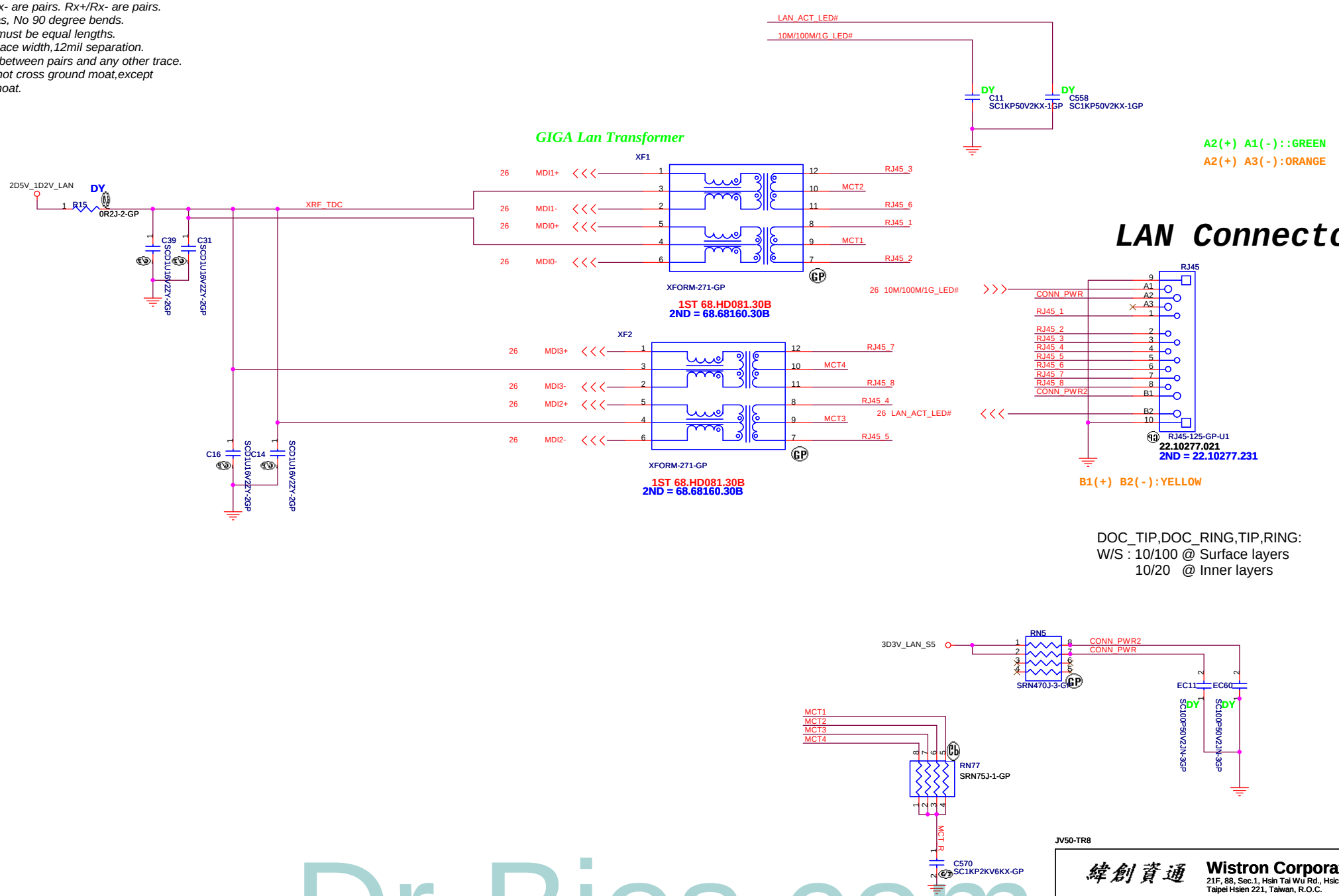
JV50-TR8

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

Title: BCM5784MKMLG
Size: Custom | Document Number: JV50-TR8 | Rev: -1
Date: Monday, October 26, 2009 | Sheet 26 of 63

LAN Connector

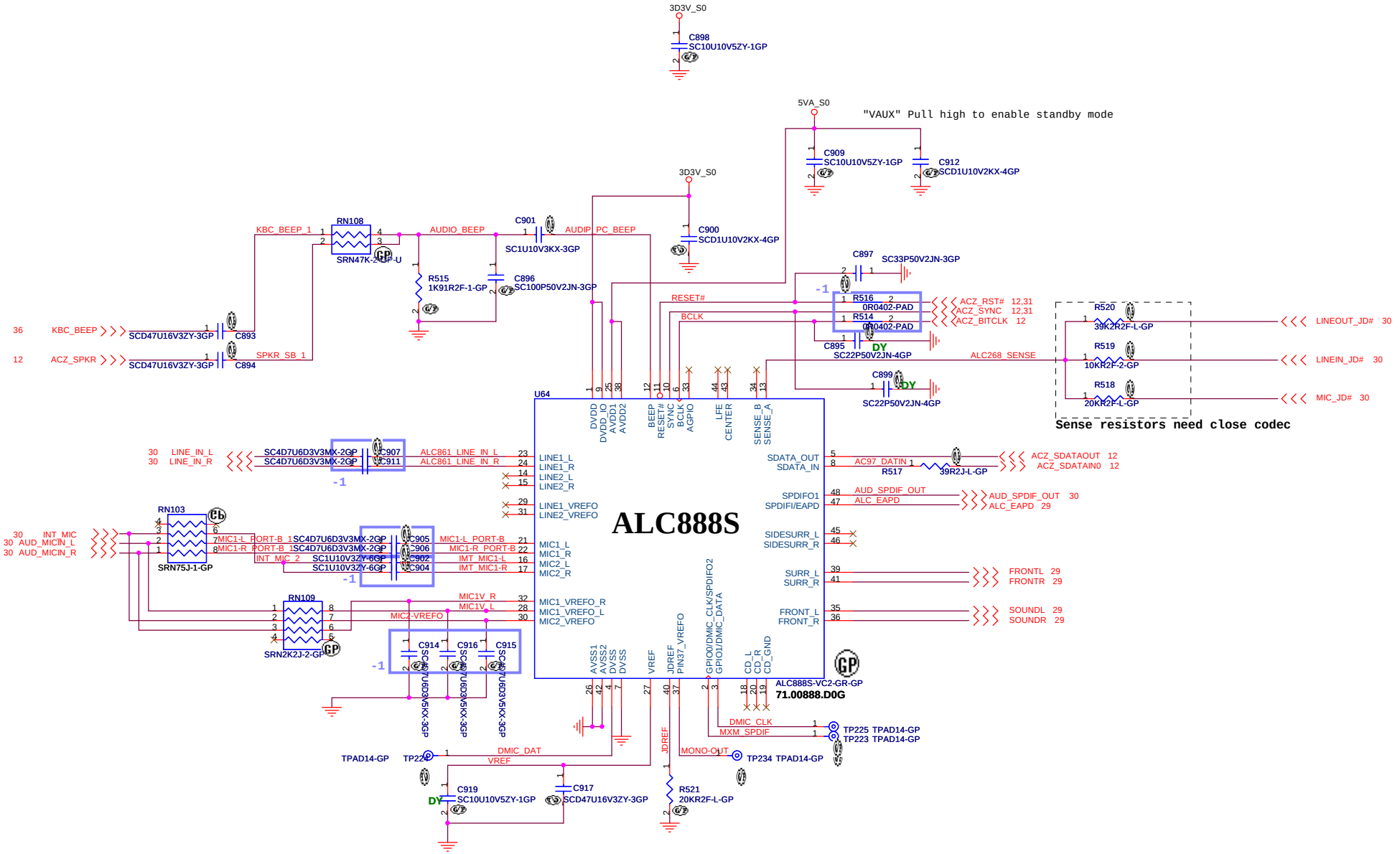
1.route on bottom as differential pairs.
2.Tx+/Tx- are pairs. Rx+/Rx- are pairs.
3.No vias, No 90 degree bends.
4.pairs must be equal lengths.
5.6mil trace width,12mil separation.
6.36mil between pairs and any other trace.
7.Must not cross ground moat,except
RJ-45 moat.



JV50-TR8

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

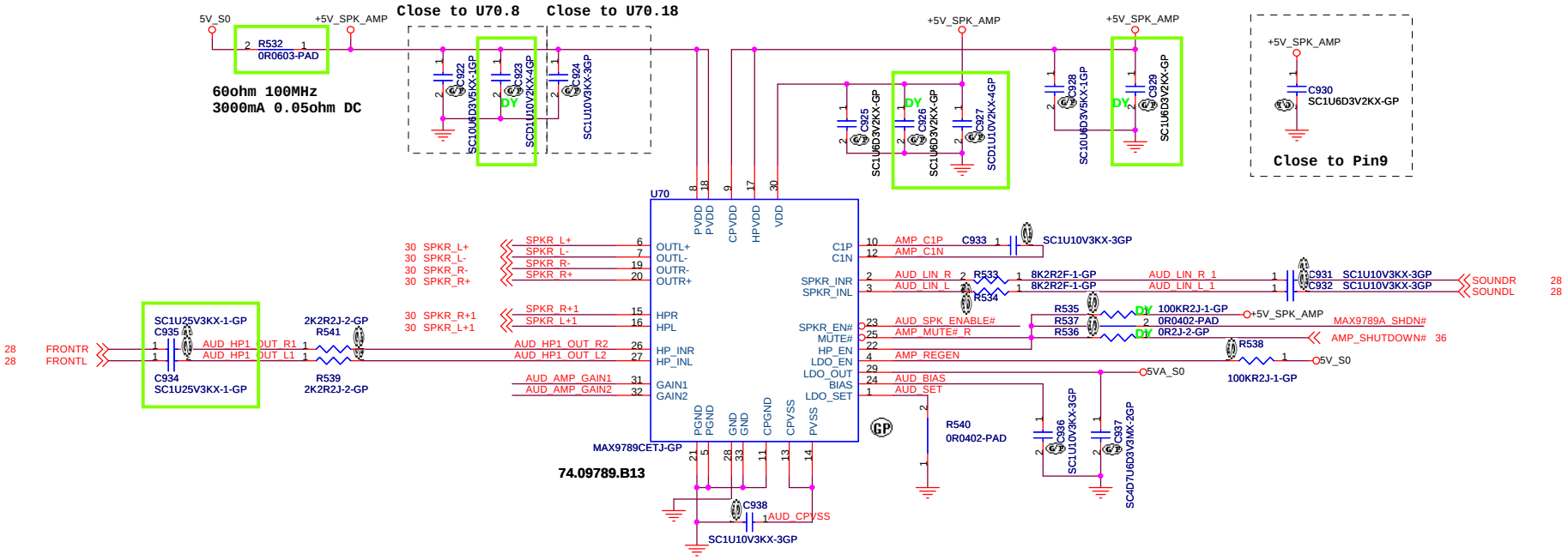
Title	LAN CONN	
Size A3	Document Number JV50-TR8	Rev -1
Date: Monday, October 26, 2009	Sheet 27 of 63	



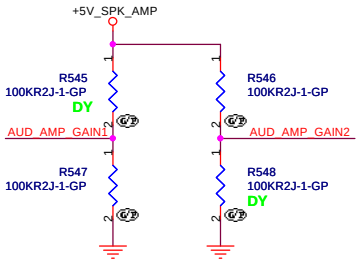
JV50-TR8

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

Title	**Azalia codec ALC888**	
Size A3	Document Number **JV50-TR8**	Rev **-1**
Date: Monday, October 26, 2009	Sheet 28 of 63	

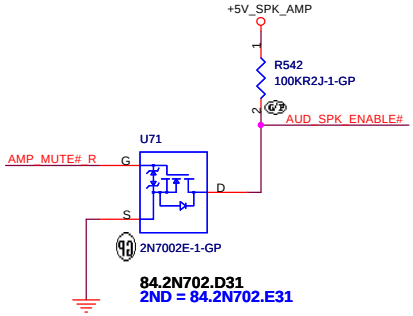


GAIN SETTING

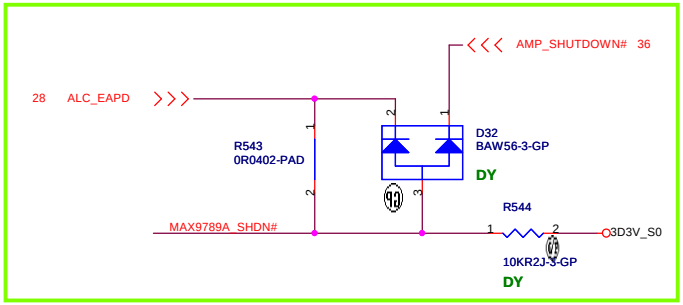


GAIN1	GAIN2	GAIN
0	0	6dB
0	1	10dB
1	0	15.6dB
1	1	21.6dB

Signal inverter for speaker shutdown



84.2N702.D31
2ND = 84.2N702.E31



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緯創資通 Wistron Corporation
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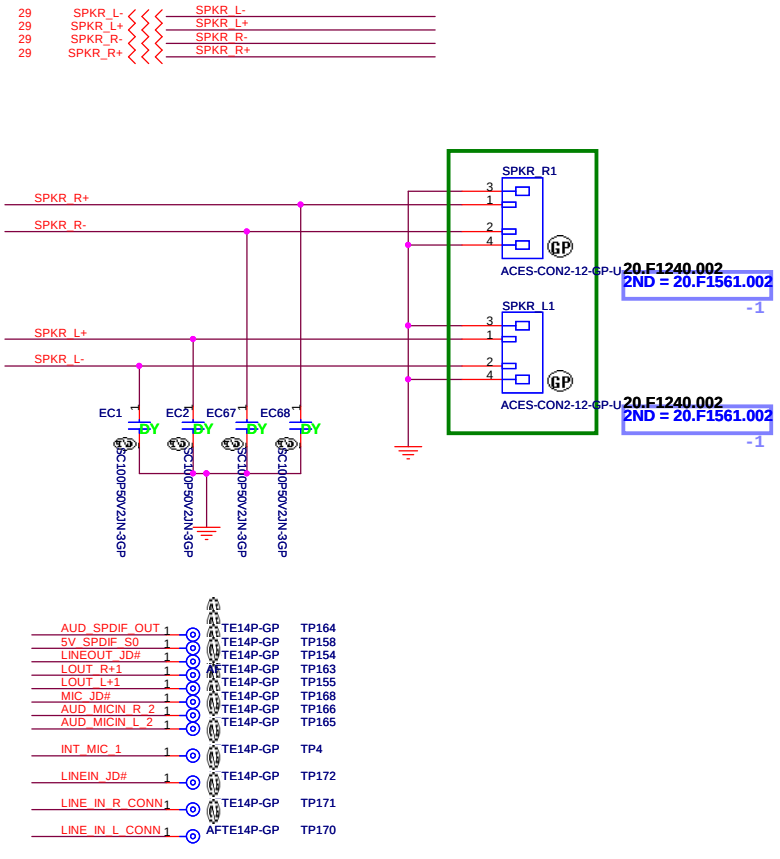
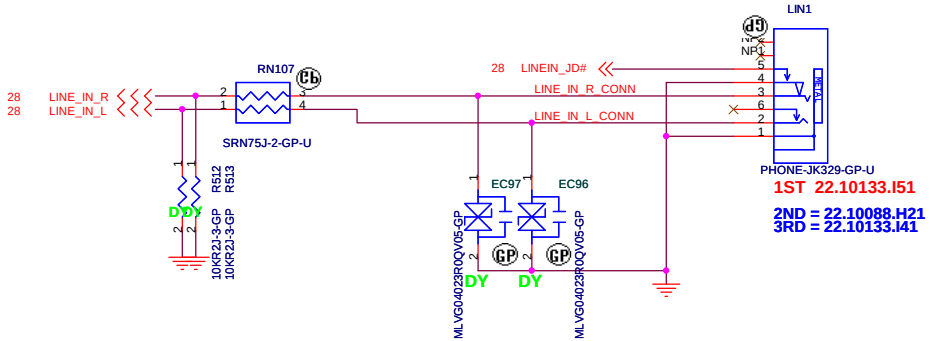
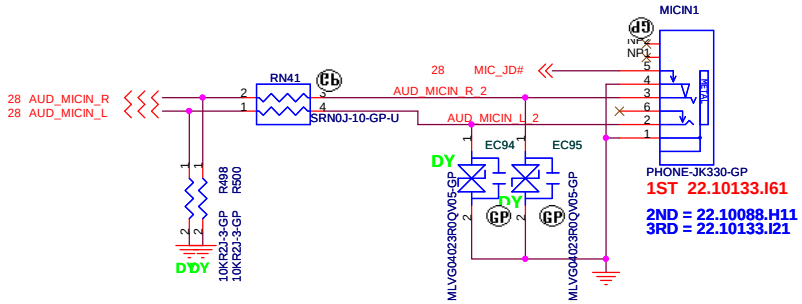
Internal Speaker



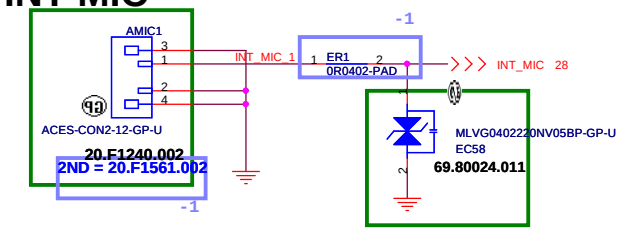
LINE IN



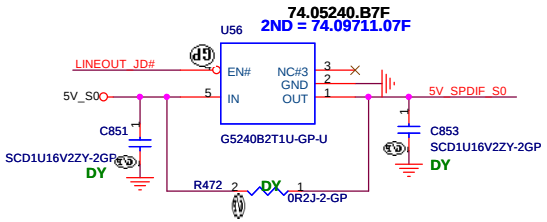
MIC IN

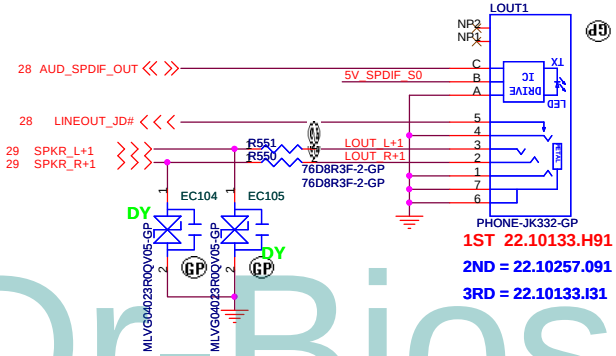


INT MIC



LINE OUT





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緯創資通 **Wistron Corporation**
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Title: **AUDIO JACK**

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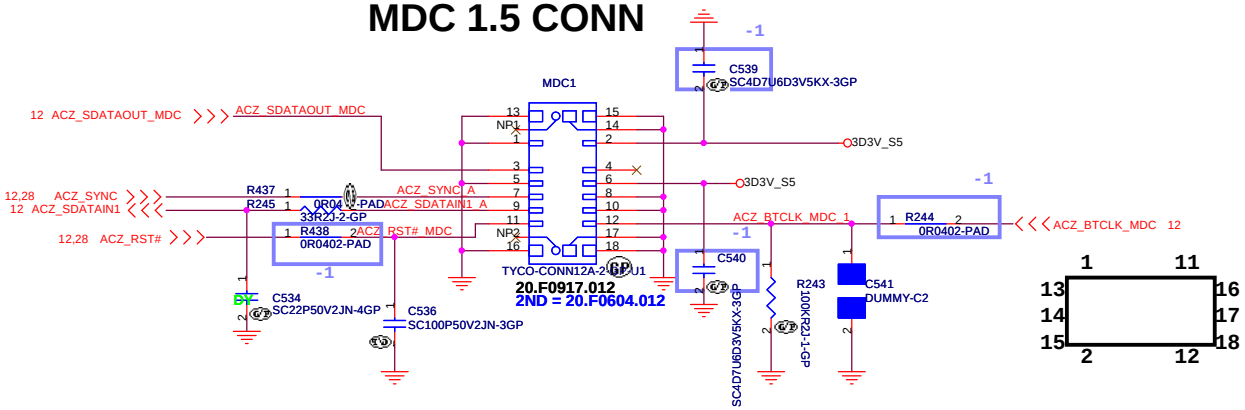
MDC 1.5 CONN



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

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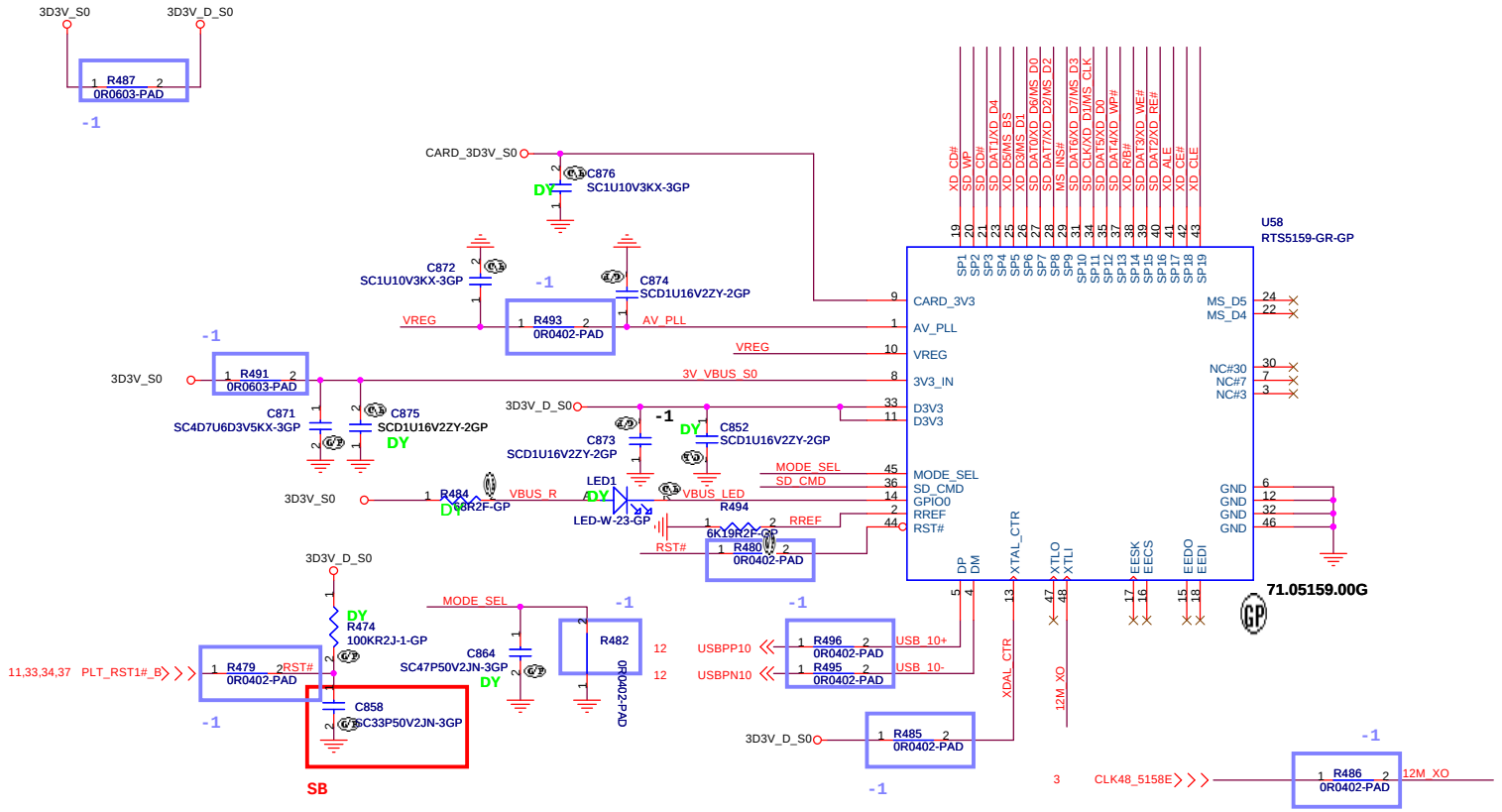
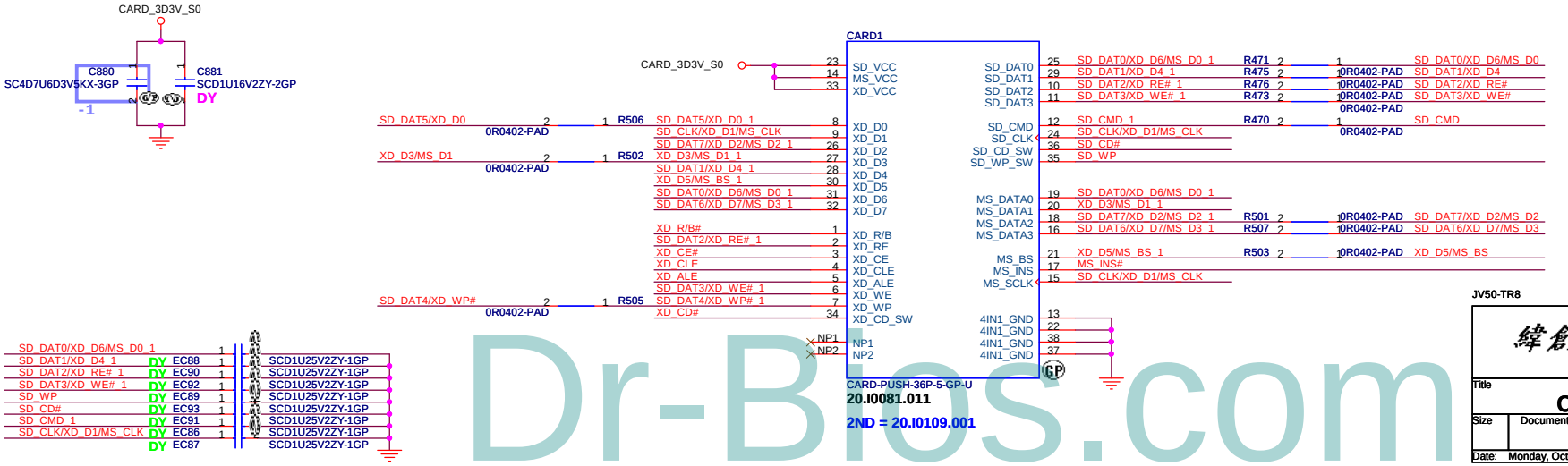


5 IN1 CARD-READER (SD/MMC/MS/MS PRO/XD)



Wistron Corporation	緯創資通
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title: CARDREADER- RTS5159	
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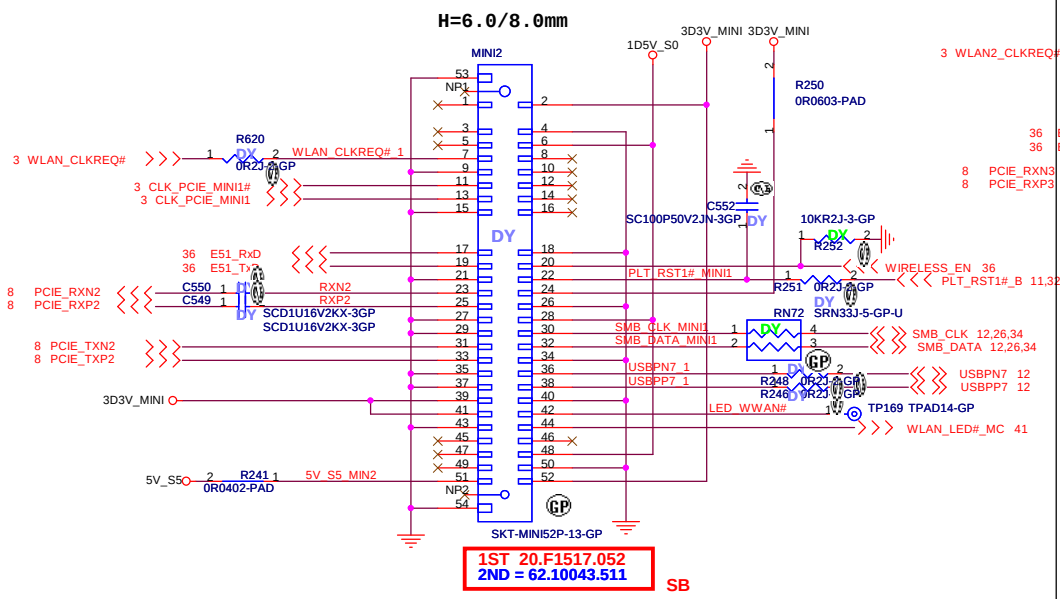
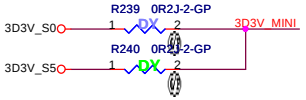
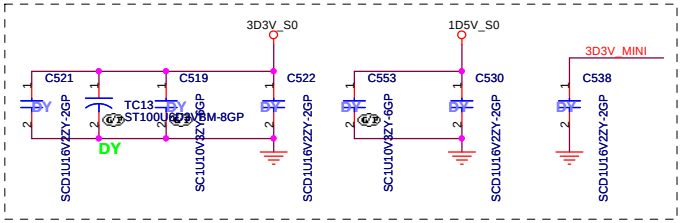
Mini Card Connector(WLAN)

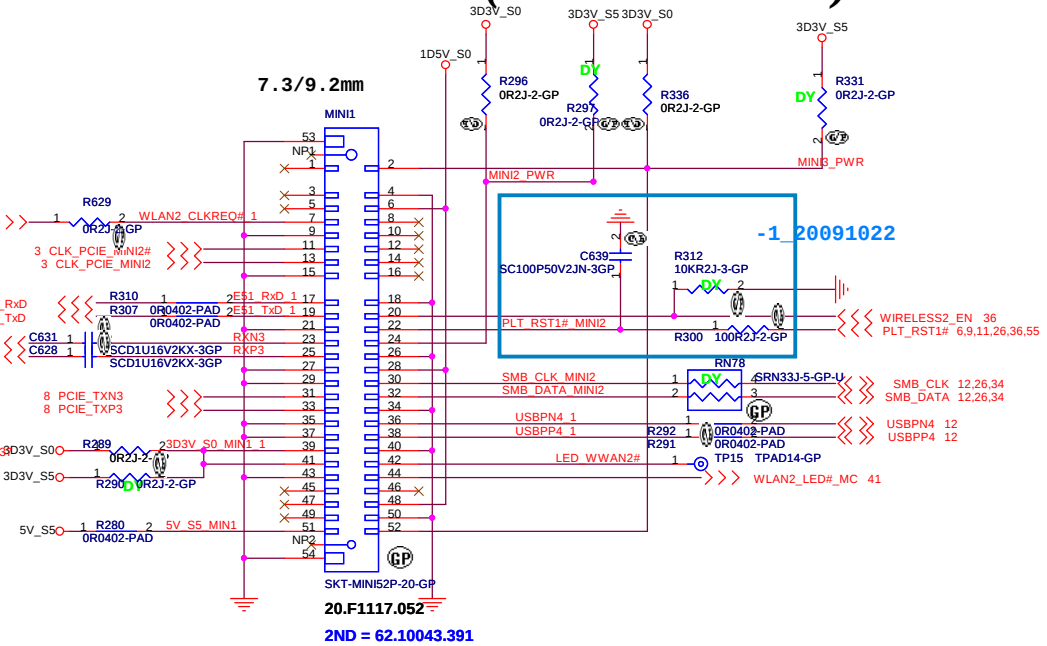




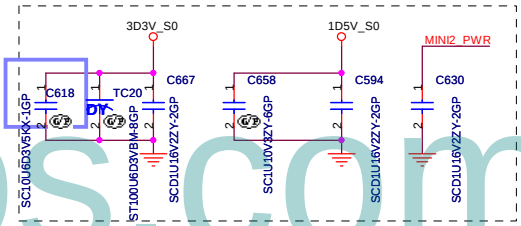
Place near MINI2



Mini Card Connector(Robson2 and 3G)



Place near MINI1



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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	MINI CARD	
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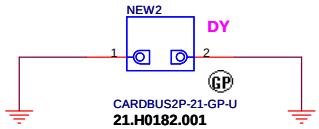
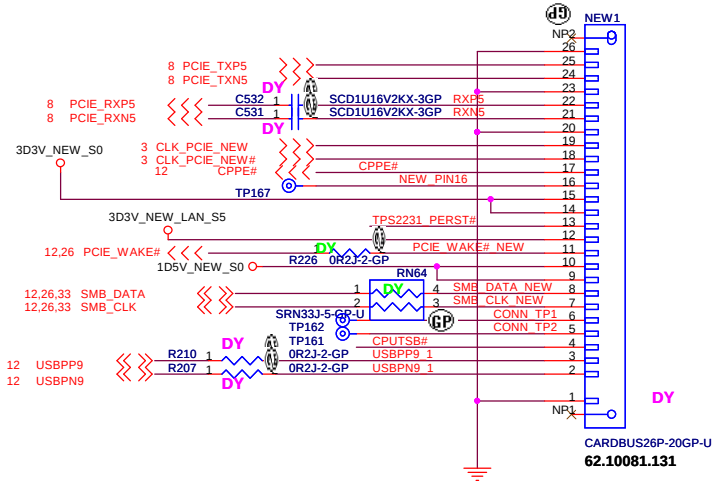
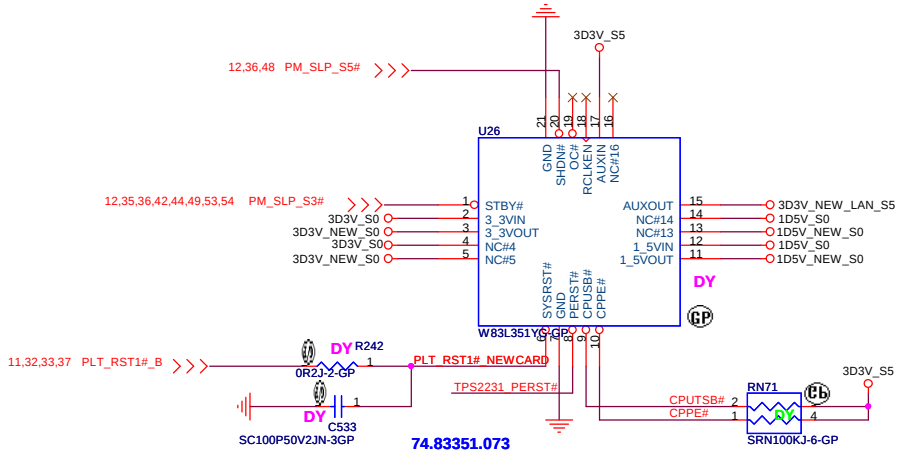
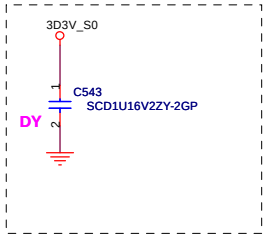
NEWCARD Connector



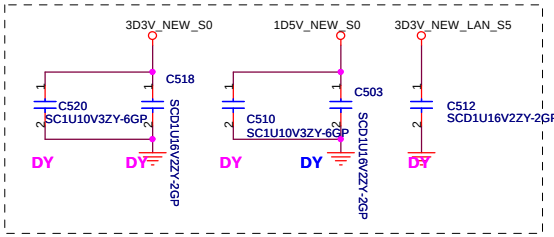




Place them Near to Chip



Place them Near to Connector



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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	**NEW CARD**
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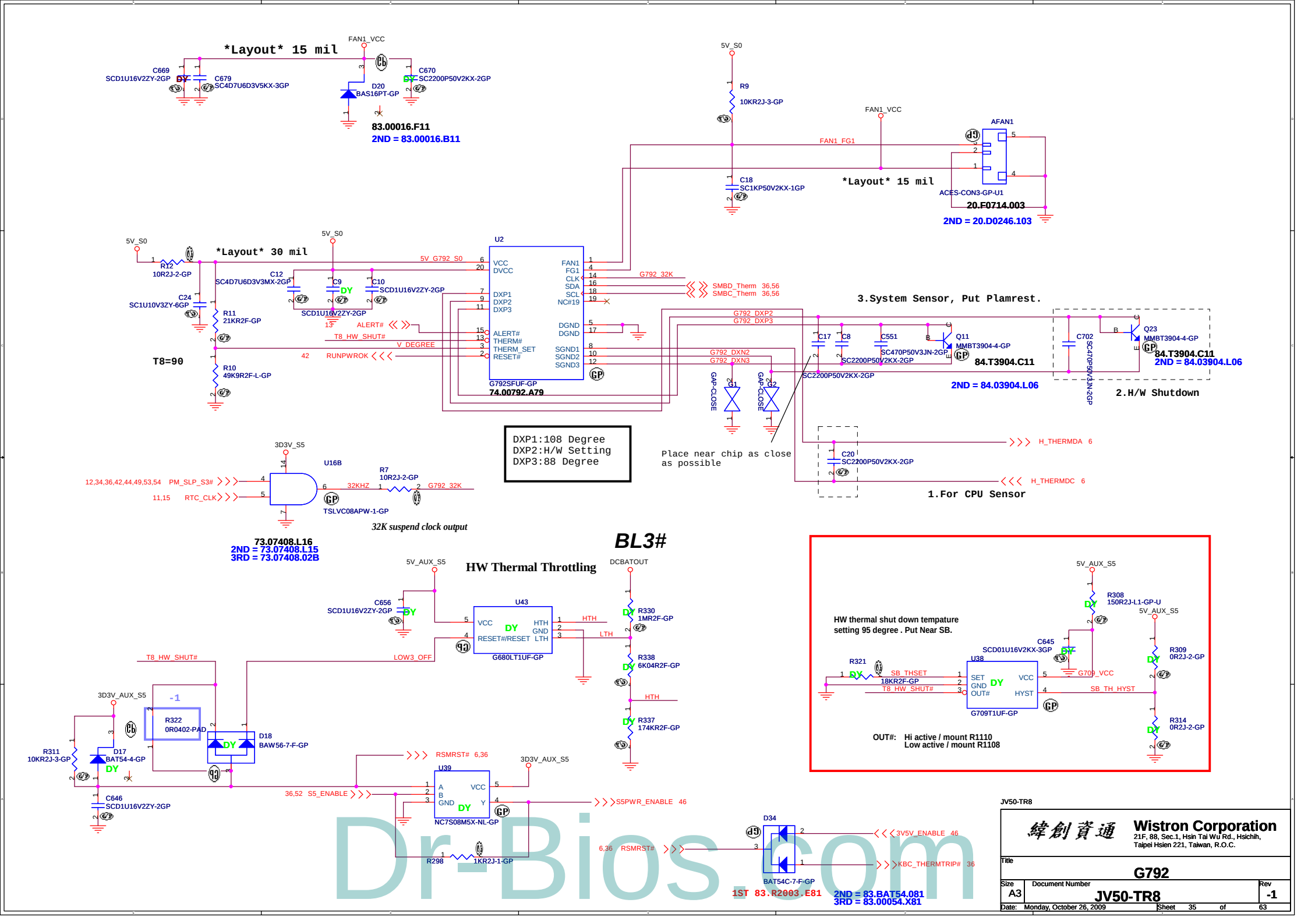

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緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

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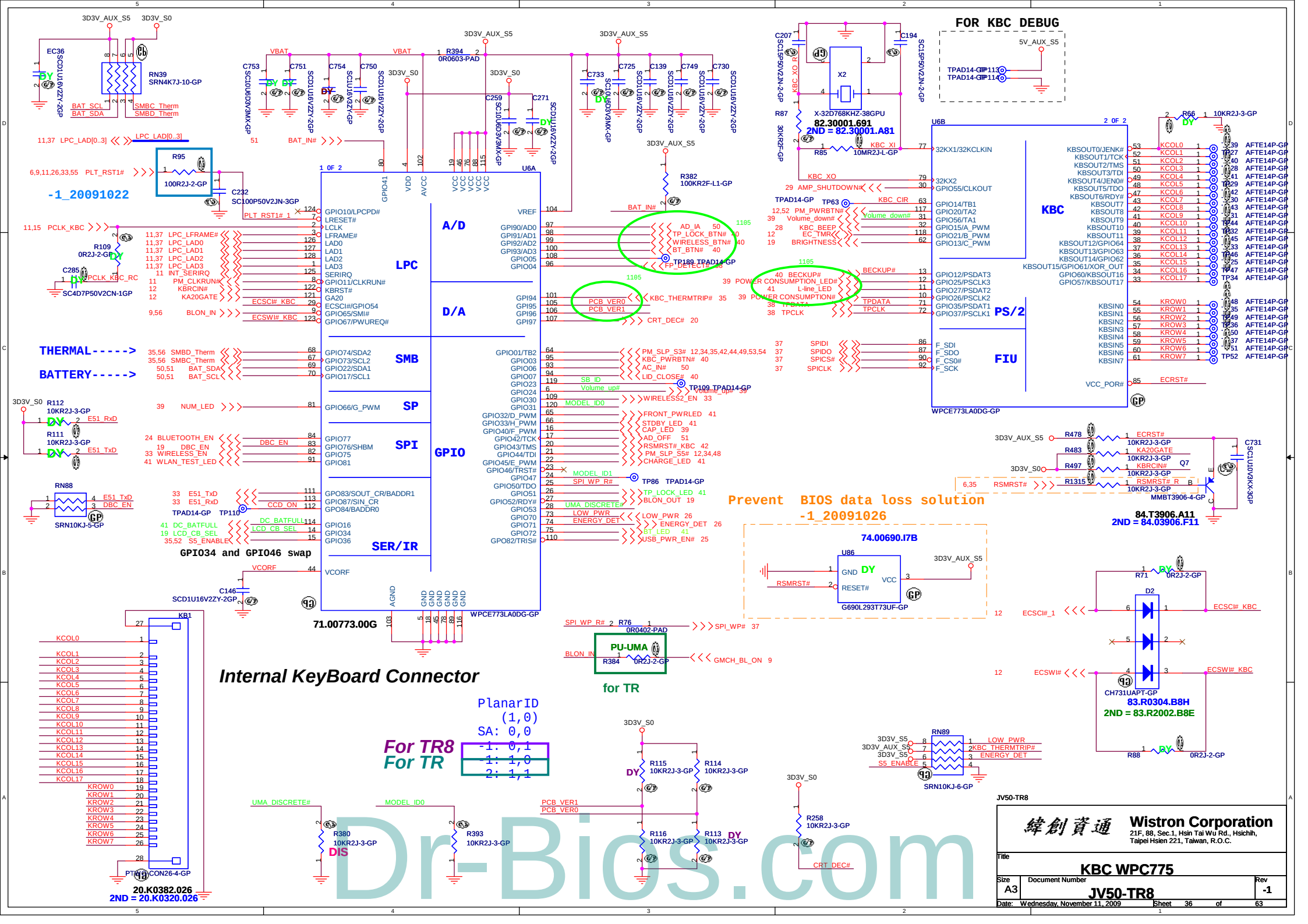
FOR KBC DEBUG
KBC
PS/2
FIU
GPIO
A/D
D/A
LPC
SMB
SP
SPI
SER/IR
THERMAL----->
BATTERY----->
GPIO034 and GPIO046 swap
Prevent BIOS data loss solution
-1_20091026
Internal KeyBoard Connector
for TR
PU-UMA
PlanarID
(1,0)
SA: 0,0
-1: 0,1
-1: 1,0
2: 1,1
For TR8
For TR
DIS
-1_20091022
82.30001.691
2ND = 82.30001.A81
74.00690.I7B
84.T3906.A11
2ND = 84.03906.F11
83.R0304.B8H
2ND = 83.R2002.B8E
71.00773.00G
20.K0382.026
2ND = 20.K0320.026
WPCE773LA0DG-GP
G690L293T73UF-GP
SRN10KJ-5-GP
SRN10KJ-6-GP
CH731UAPT-GP
MMBT3906-4-GP
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
KBC WPC775
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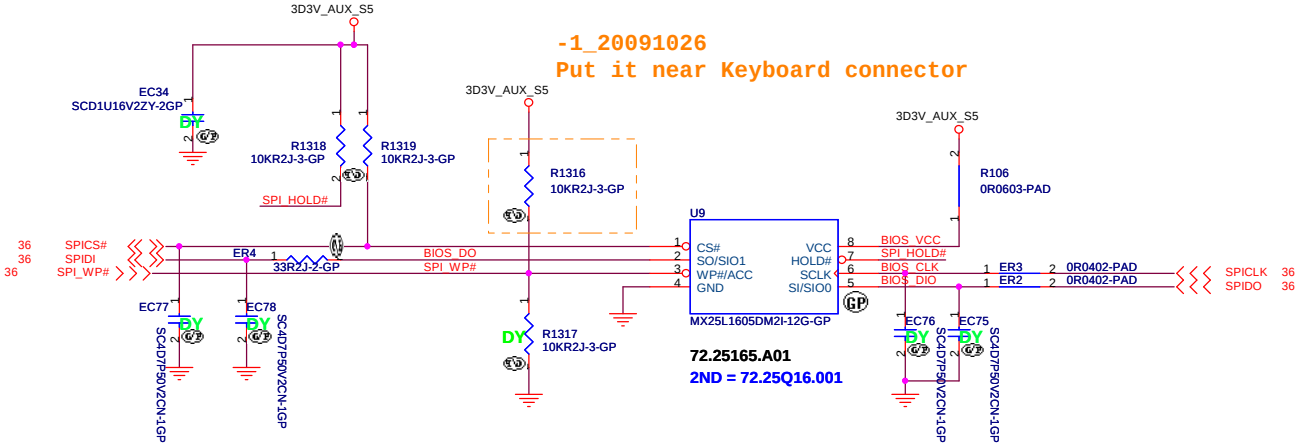
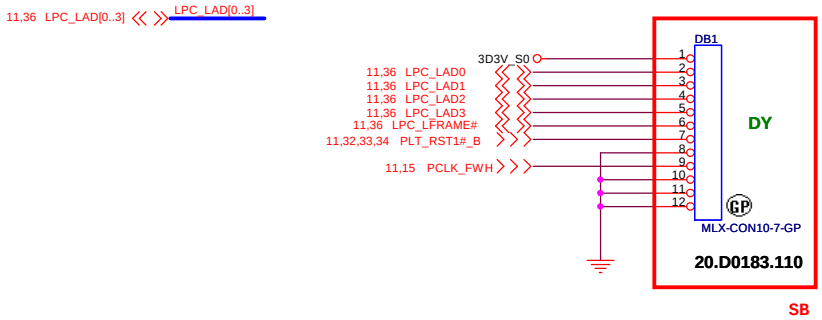


16M Bits

SPI FLASH ROM

GOLDEN FINGER FOR DEBUG BOARD



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

Title: BIOS		
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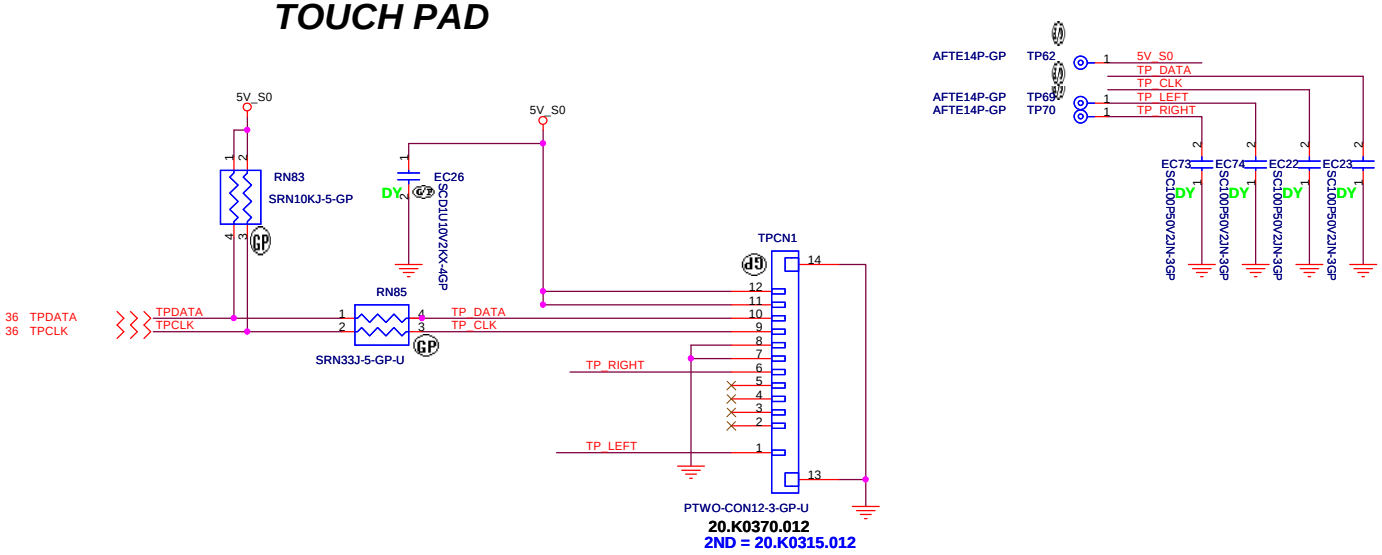
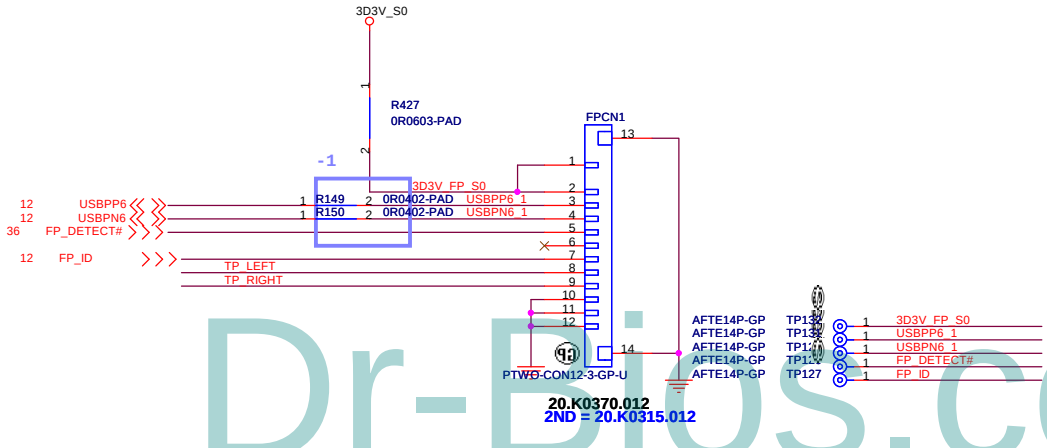
TOUCH PAD



Finger printer



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

Title: Touch PAD/Finger printer

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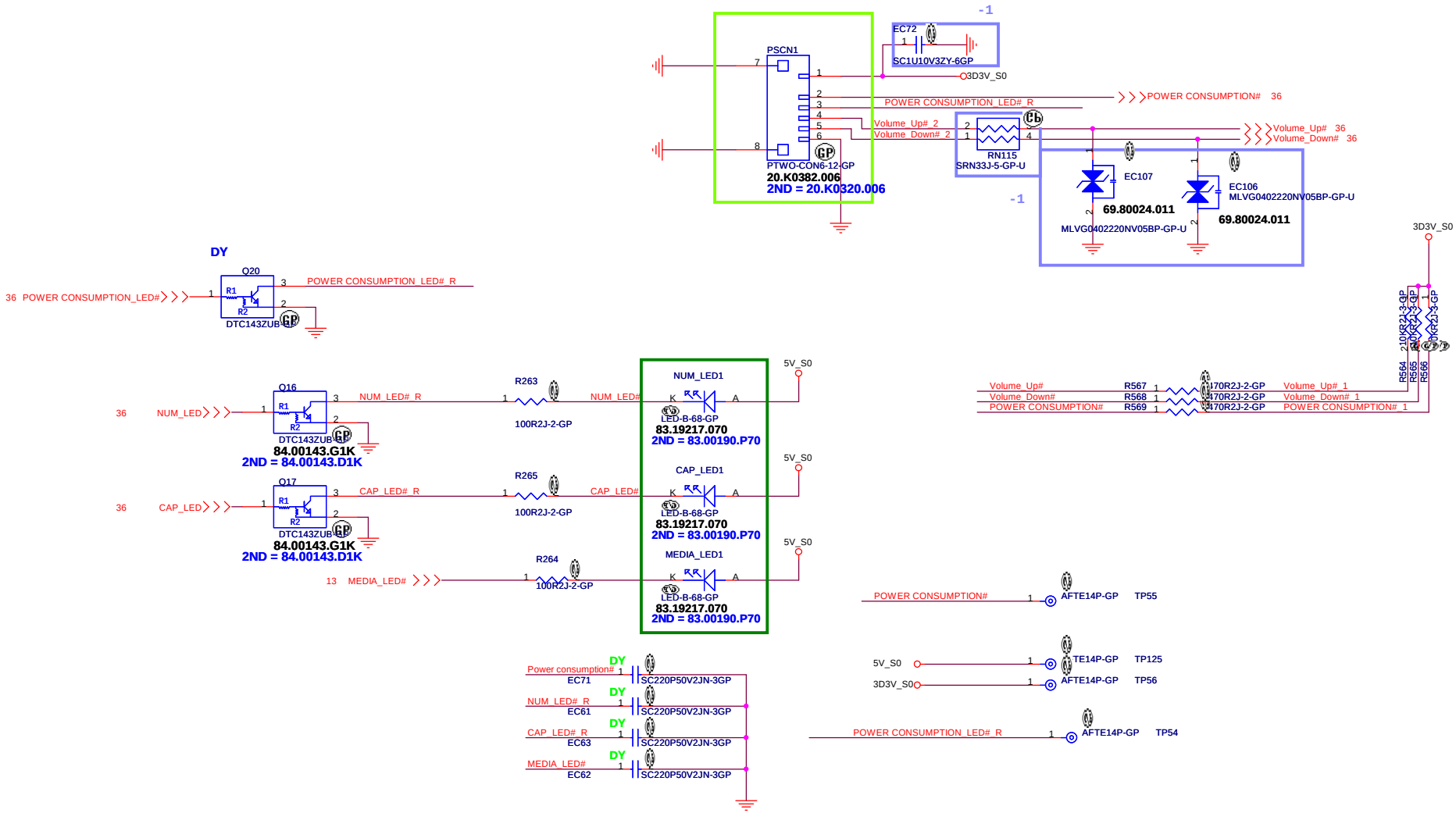

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	**LAUNCH BOARD**	
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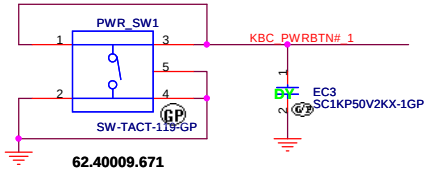
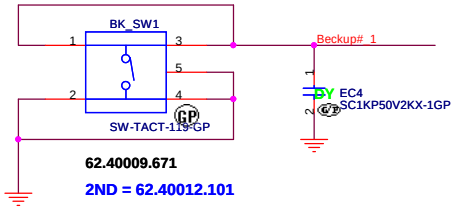
Power Button



62.40009.671

2ND = 62.40012.101

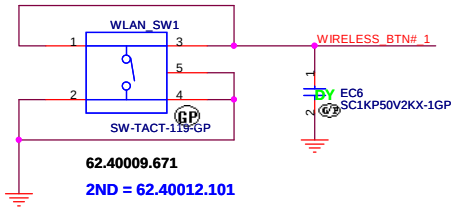
Beckup Button



62.40009.671

2ND = 62.40012.101

WIRELESS Button



62.40009.671

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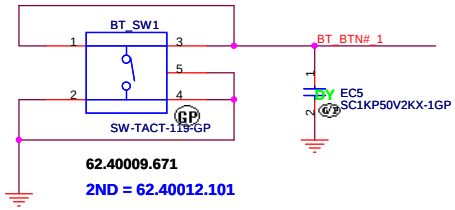
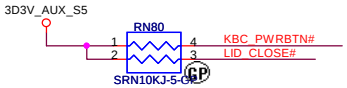
BT/3G Button

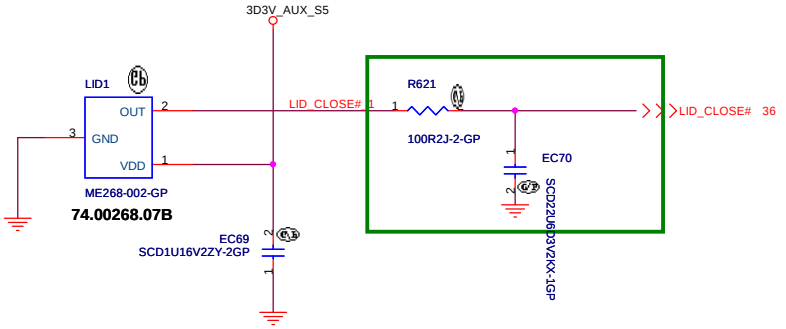


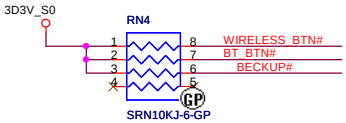
62.40009.671

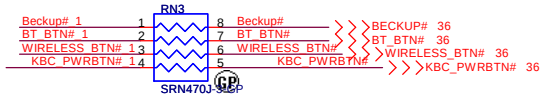
2ND = 62.40012.101

Cover Up Switch

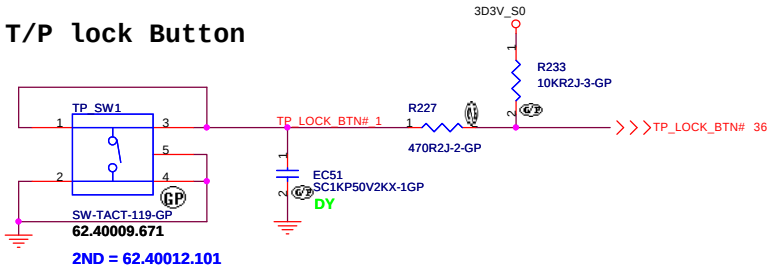








T/P lock Button



62.40009.671

2ND = 62.40012.101

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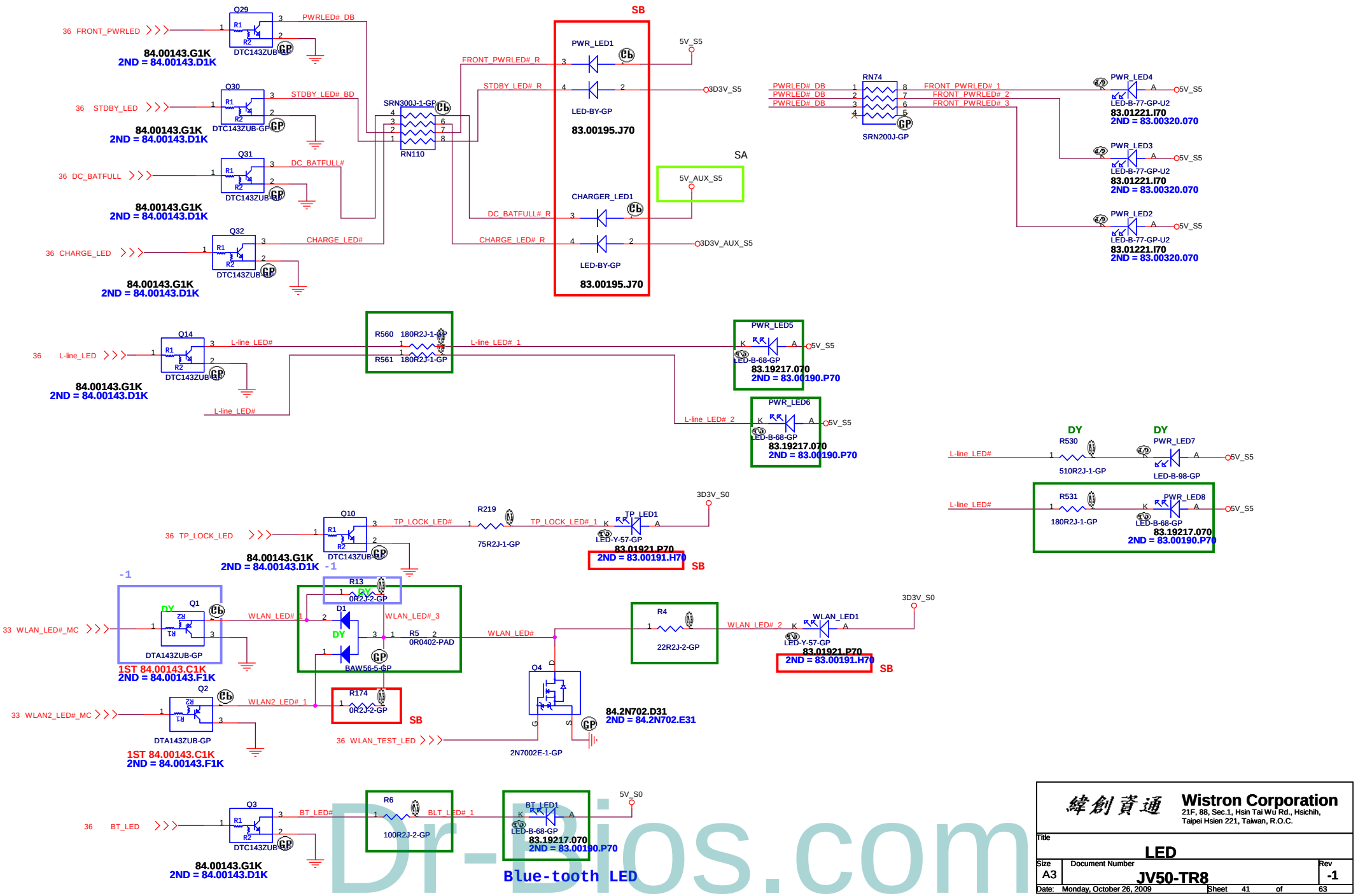

緯創資通	**Wistron Corporation**
	21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	**LED**
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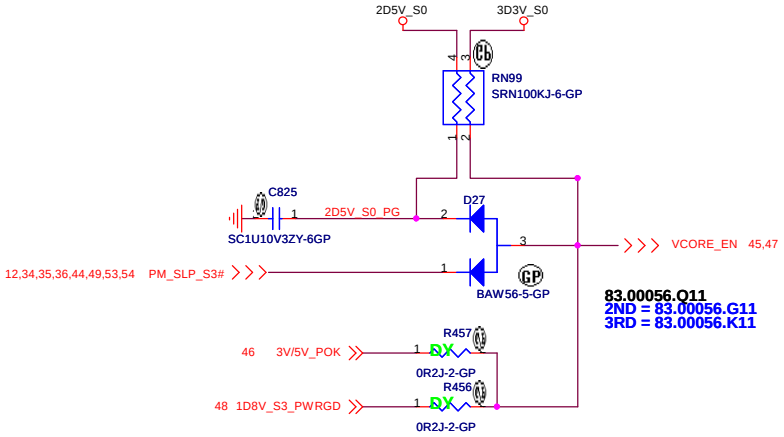

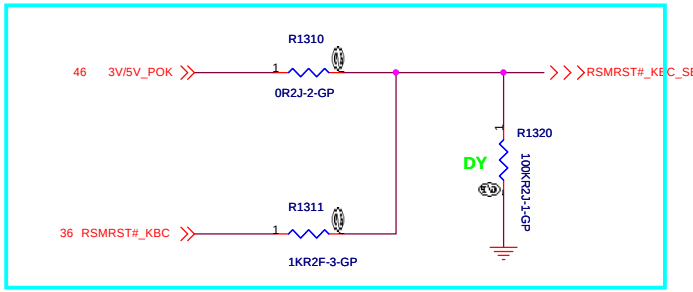

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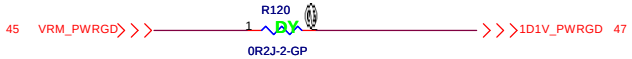
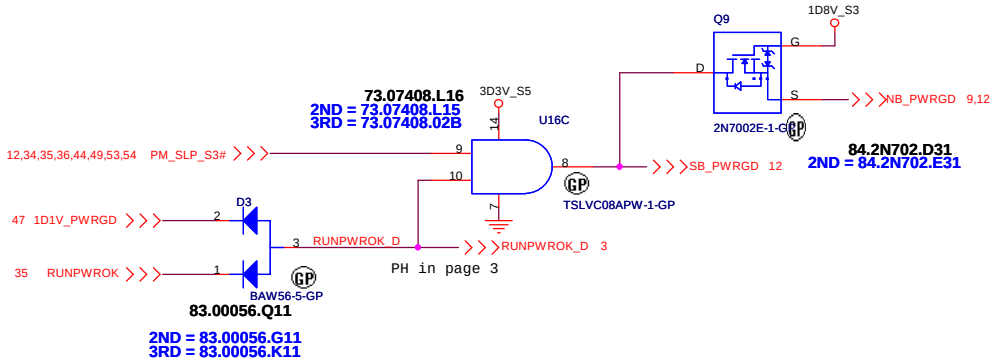
P/H @ 1D8V_S3 PAGE





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

Title: POWER ON LOGIC

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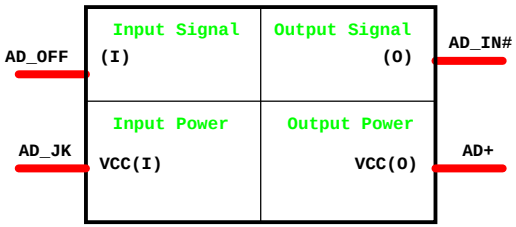
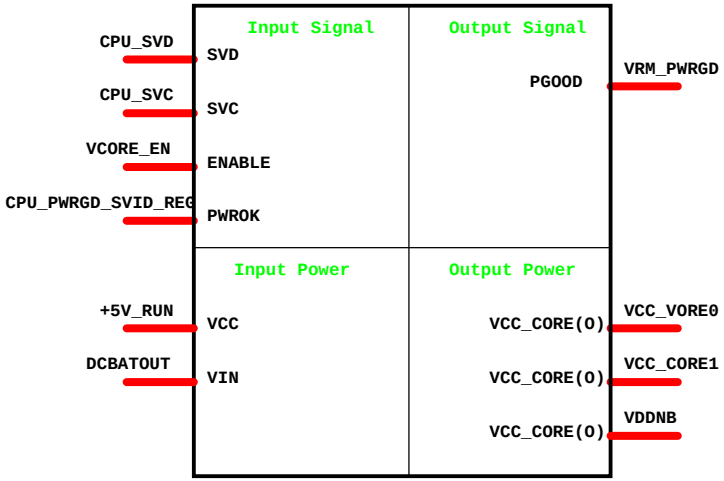
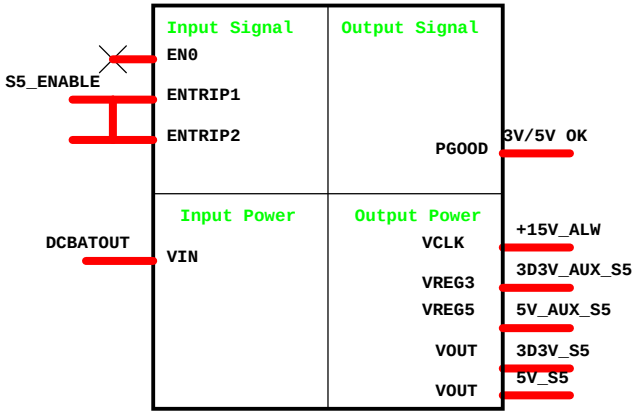
Adapter



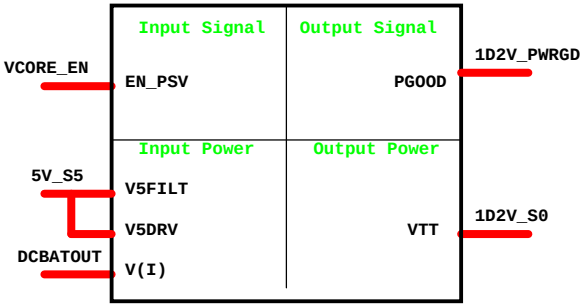
CPU_CORE
ISL6265HRTZ



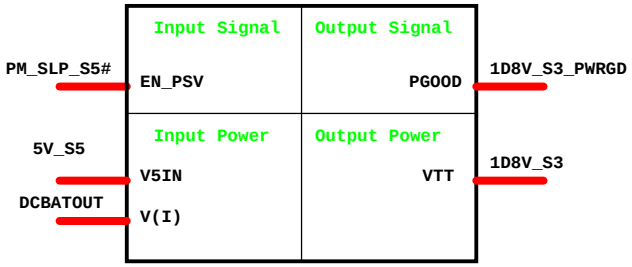
DCDC 5V/3D3V(RT8205A)



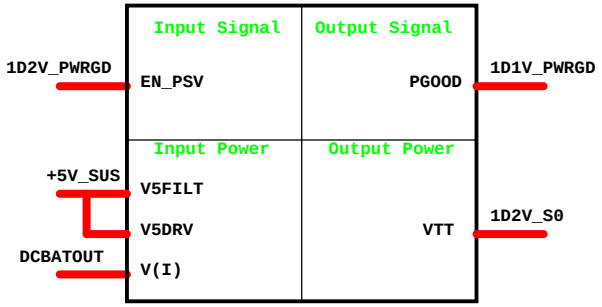
DCDC 1D2V(TPS51124)



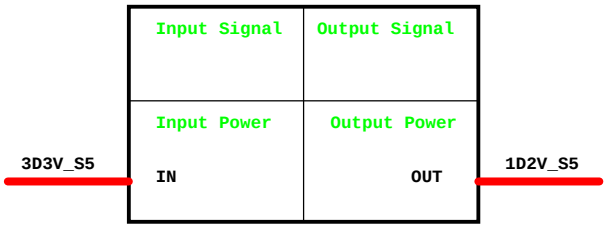
DCDC 1D8V(RT8209B)



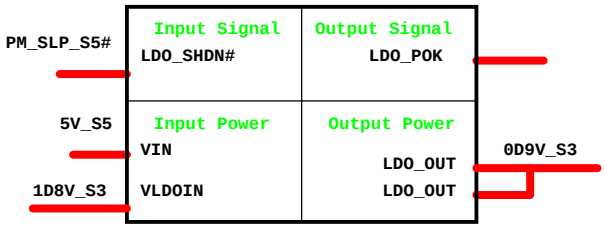
DCDC 1D1V(TPS51124)



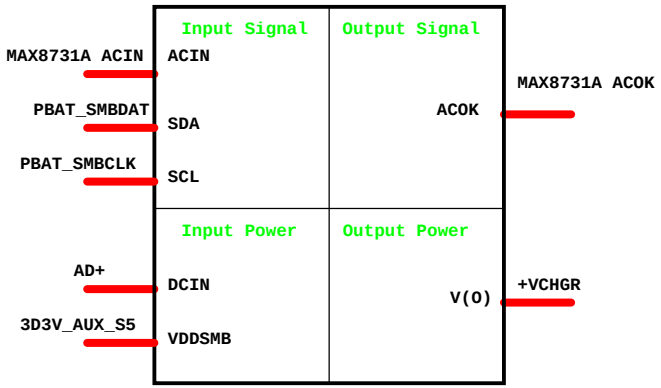
1D2V LDO G9161



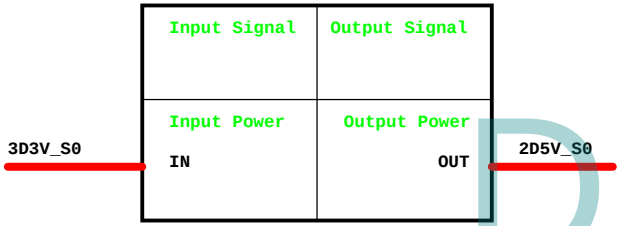
0D9V LDO RT9026



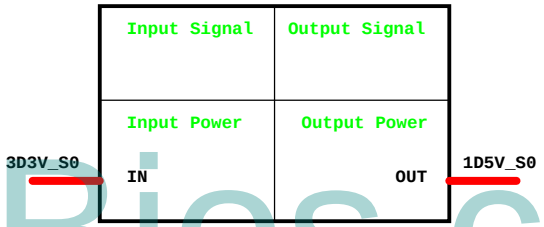
CHARGER MAX8731



2D5V LDO R9161



1D5V LDO G9571



JV50-TR8

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

Title: Power Block Diagram

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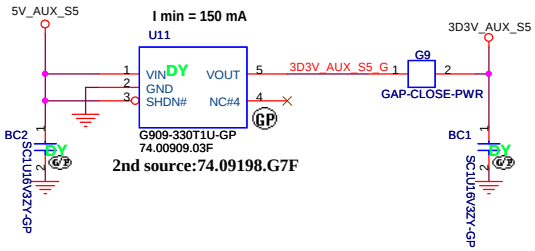
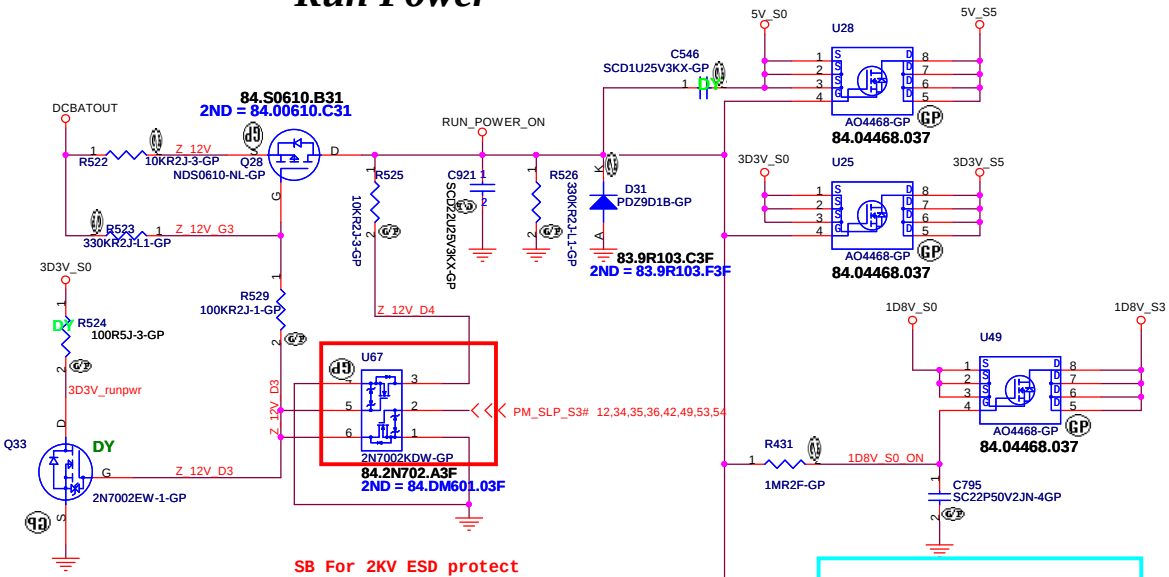
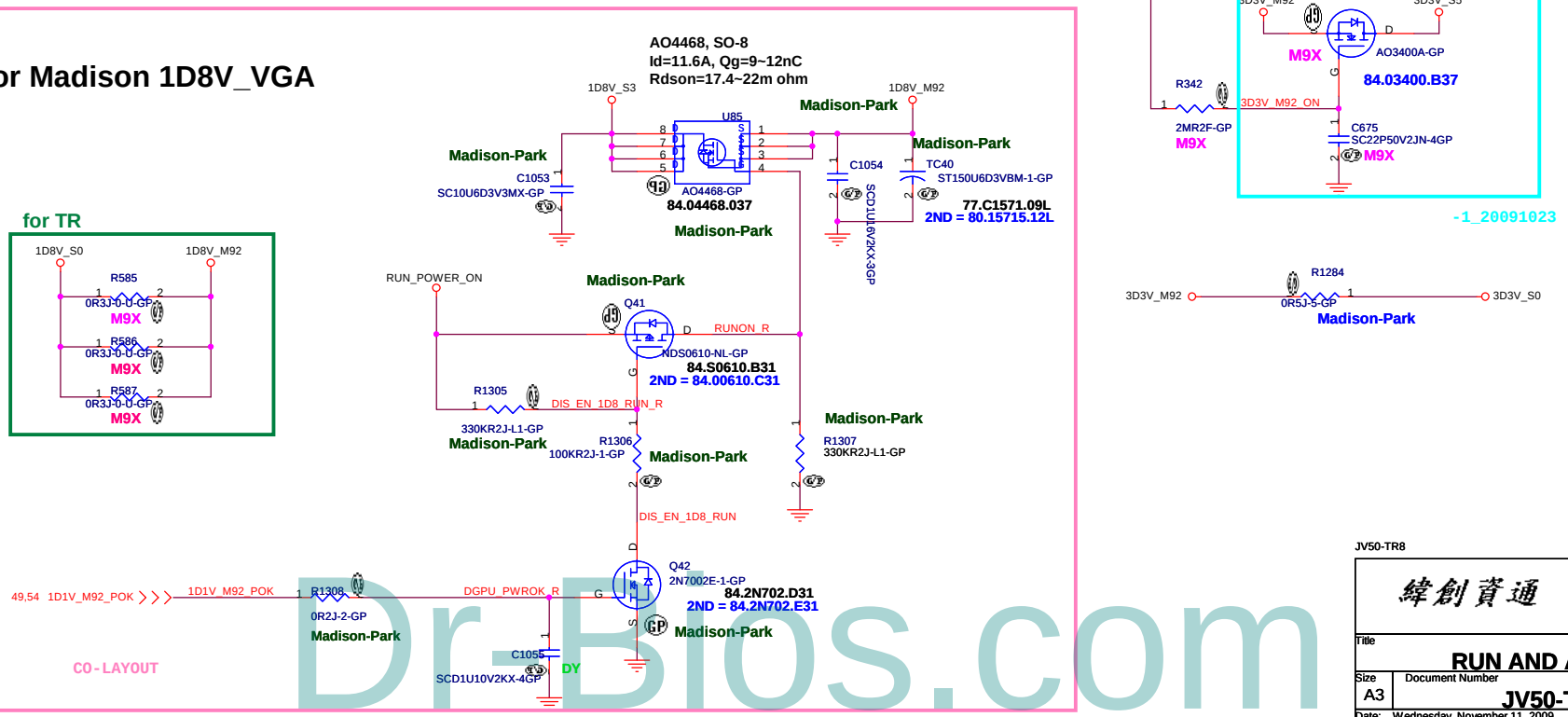
Aux Power 3D3V_AUX_S5



Run Power



For Madison 1D8V_VGA



JV50-TR8

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
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Title: RUN AND AUX POWER

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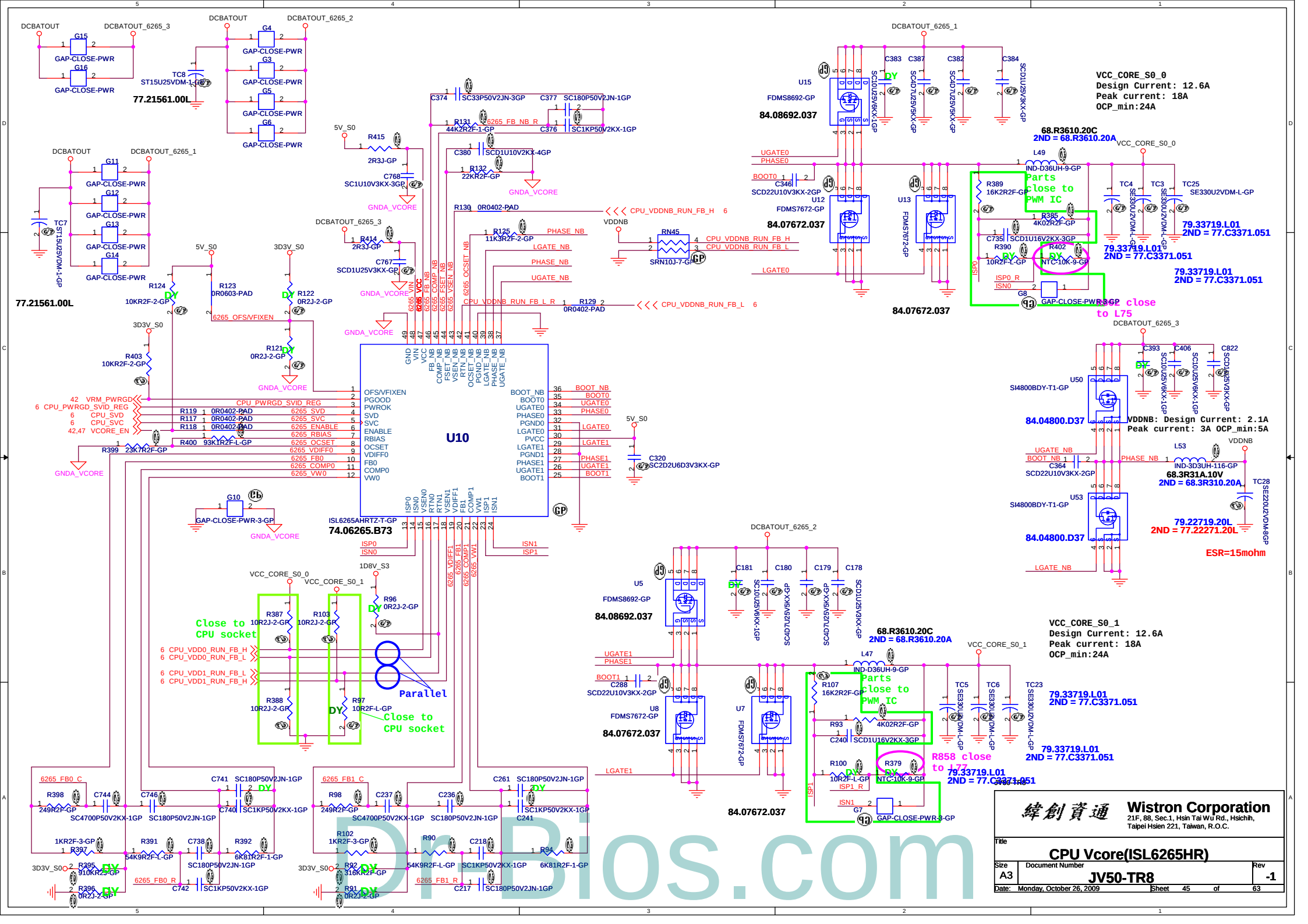
U10
ISL6265AHRTZ-T-GP
74.06265.B73
VCC_CORE_S0_0
Design Current: 12.6A
Peak current: 18A
OCP_min:24A
VCC_CORE_S0_1
Design Current: 12.6A
Peak current: 18A
OCP_min:24A
VDDNB: Design Current: 2.1A
Peak current: 3A OCP_min:5A
Close to CPU socket
Parallel
Parts close to PWM IC
R858 close to L77
R379 close to L75
77.21561.00L
84.08692.037
84.07672.037
84.04800.D37
79.33719.L01
79.22719.20L
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
CPU Vcore(ISL6265HR)
JV50-TR8
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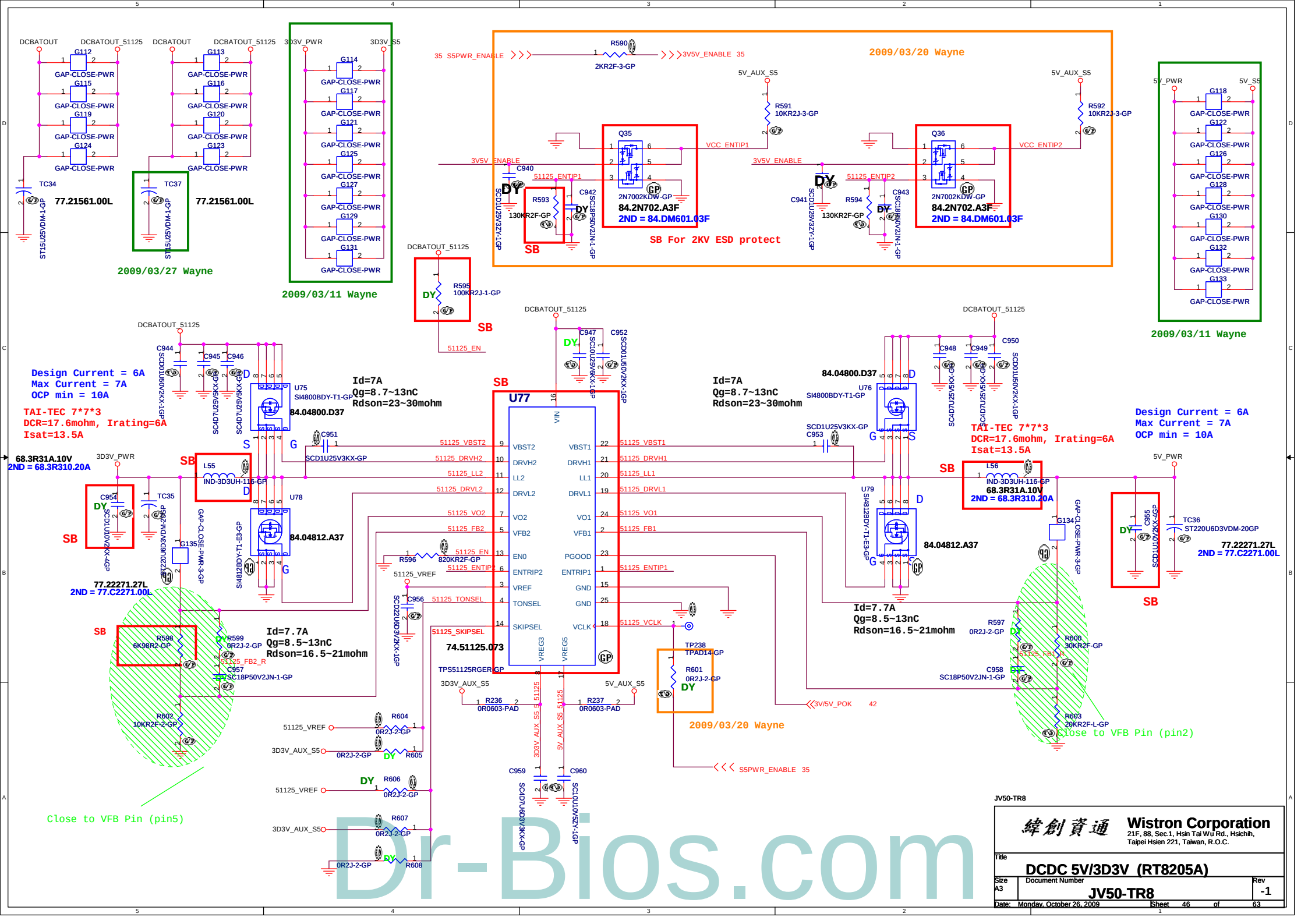
DCBATOUT
DCBATOUT_51125
3D3V_PWR
3D3V_S5
5V_PWR
5V_S5
5V_AUX_S5
35 S5PWR_ENABLE
3V5V_ENABLE 35
R590
2KR2F-3-GP
2009/03/20 Wayne
R591
10KR2J-3-GP
R592
10KR2J-3-GP
Q35
Q36
VCC_ENTIP1
VCC_ENTIP2
3V5V_ENABLE
51125_ENTIP1
51125_ENTIP2
C940
C941
C942
C943
R593
130KR2F-GP
R594
130KR2F-GP
2N7002KDW-GP
84.2N702.A3F
2ND = 84.DM601.03F
SB For 2KV ESD protect
SB
DY
GP
G112
G113
G114
G115
G116
G117
G118
G119
G120
G121
G122
G123
G124
G125
G126
G127
G128
G129
G130
G131
G132
G133
GAP-CLOSE-PWR
TC34
TC37
77.21561.00L
ST15U25VDM-1-GP
2009/03/27 Wayne
2009/03/11 Wayne
R595
100KR2J-1-GP
51125_EN
U77
VIN
VBST2
VBST1
DRVH2
DRVH1
LL2
LL1
DRVL2
DRVL1
VO2
VO1
VFB2
VFB1
EN0
PGOOD
ENTRIP2
ENTRIP1
VREF
GND
TONSEL
SKIPSEL
VCLK
VREG3
VREG5
TPS51125RGER-GP
51125_VBST2
51125_VBST1
51125_DRVH2
51125_DRVH1
51125_LL2
51125_LL1
51125_DRVL2
51125_DRVL1
51125_VO2
51125_VO1
51125_FB2
51125_FB1
51125_EN
51125_ENTIP2
51125_ENTIP1
51125_VREF
51125_TONSEL
51125_SKIPSEL
51125_VCLK
74.51125.073
U75
U76
U78
U79
SI4800BDY-T1-GP
SI4812BDY-T1-E3-GP
84.04800.D37
84.04812.A37
Id=7A
Qg=8.7~13nC
Rdson=23~30mohm
Id=7.7A
Qg=8.5~13nC
Rdson=16.5~21mohm
Design Current = 6A
Max Current = 7A
OCP min = 10A
TAI-TEC 7*7*3
DCR=17.6mohm, Irating=6A
Isat=13.5A
68.3R31A.10V
2ND = 68.3R310.20A
L55
L56
IND-3D3UH-116-GP
C944
C945
C946
C947
C948
C949
C950
C951
C952
C953
C954
C955
C956
C957
C958
C959
C960
SCD1U25V3KX-GP
SCD1U50V2KX-1GP
SCD1U10V2KX-4GP
SC4D7U25V5KX-GP
SCD22U6D3V2KX-1GP
SC18P50V2JN-1-GP
SC4D7U6D3V3KX-GP
TC35
TC36
ST220U6D3VDM-20GP
77.22271.27L
2ND = 77.C2271.00L
R596
820KR2F-GP
R597
0R2J-2-GP
R598
6K98R2-GP
R599
0R2J-2-GP
R600
30KR2F-GP
R601
0R2J-2-GP
R602
10KR2F-2-GP
R603
20KR2F-L-GP
R604
0R2J-2-GP
R605
0R2J-2-GP
R606
0R2J-2-GP
R607
0R2J-2-GP
R608
0R2J-2-GP
R236
0R0603-PAD
R237
0R0603-PAD
TP238
TPAD14-GP
3V/5V_POK 42
S5PWR_ENABLE 35
3D3V_AUX_S5
5V_AUX_S5
Close to VFB Pin (pin5)
Close to VFB Pin (pin2)
JV50-TR8
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
DCDC 5V/3D3V (RT8205A)
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A3
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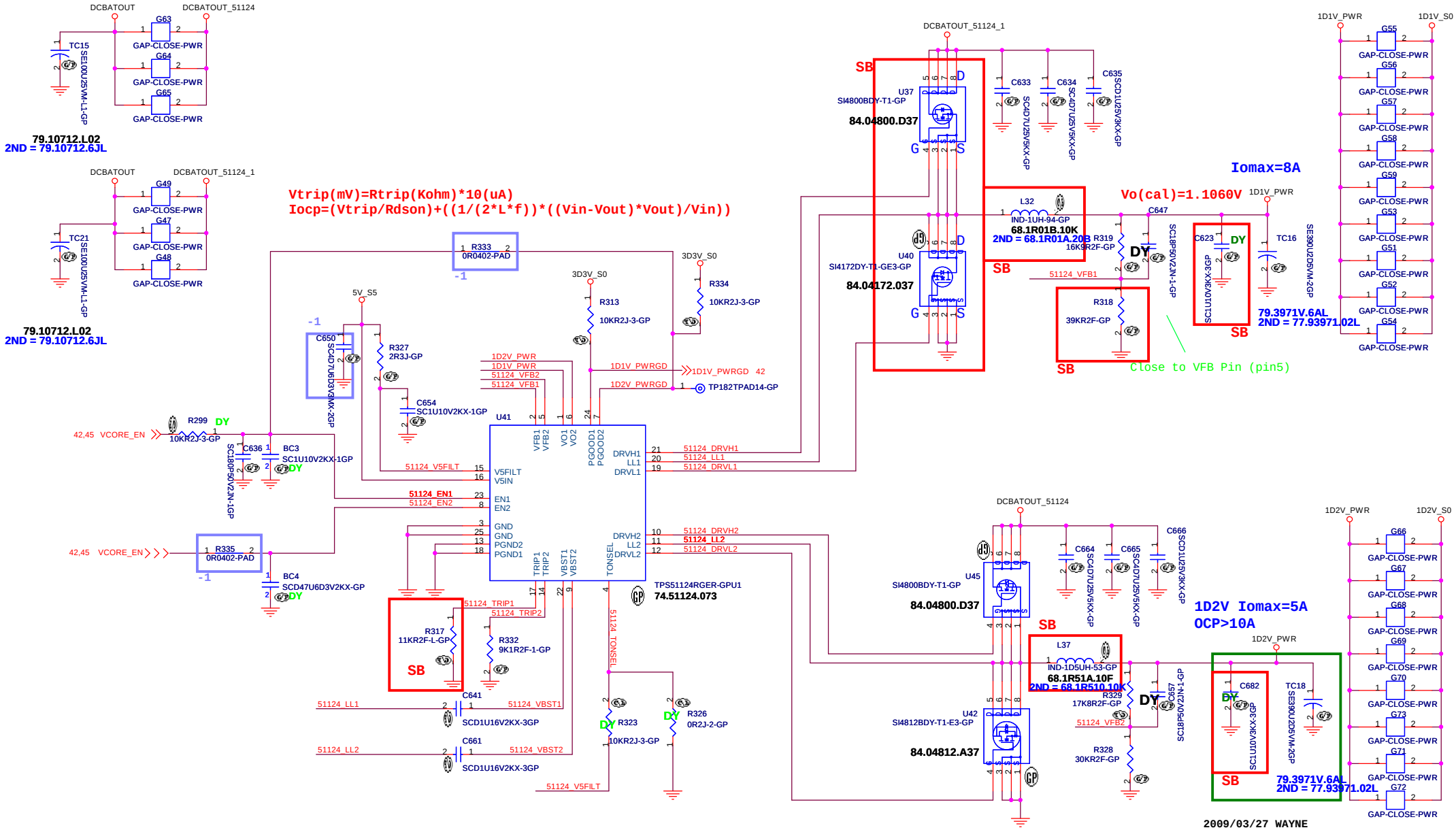

	GND	OPEN	V5FILT
TONSEL	240k/CH1 300k/CH2	300k/CH1 360k/CH2	360k/CH1 420k/CH2

Vout=0.758V*(R1+R2)/R2 --> PWM mode
Vout=0.764V*(R1+R2)/R2 --> Skip Mode

JV50-TR8

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Title: TPS51124_1D1V_1D2V

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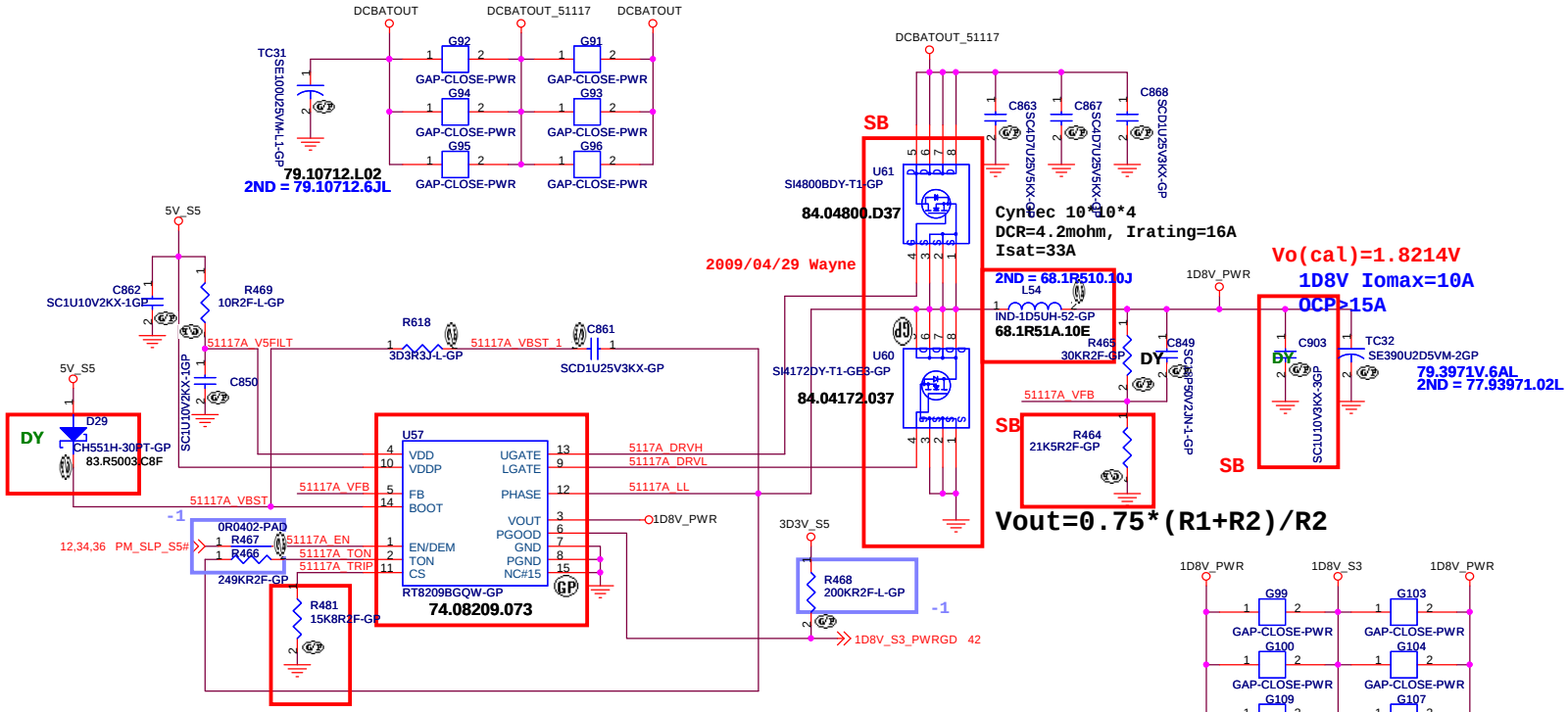
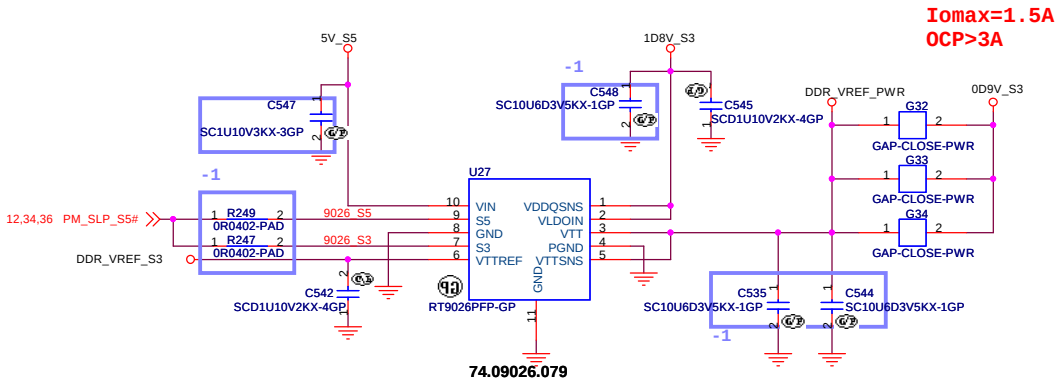


DDR_0.9V



JV50-TR8

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

Title: DCDC_1D8V_RT8209B/LDO 0D9V

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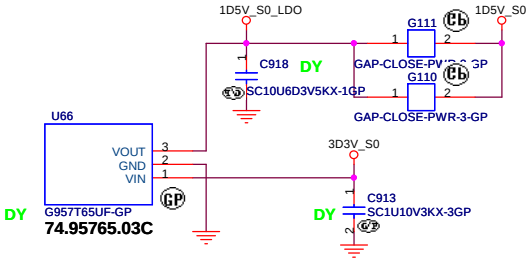
G957

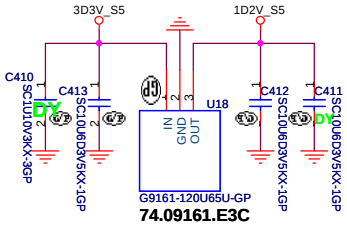
1D5V_S0
Iomax=1A



For MINI Card.NEW Card power SW

G9161

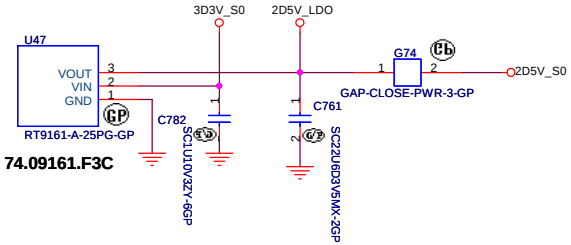
1D2V_S5
Iomax=400mA



Place near to SB710

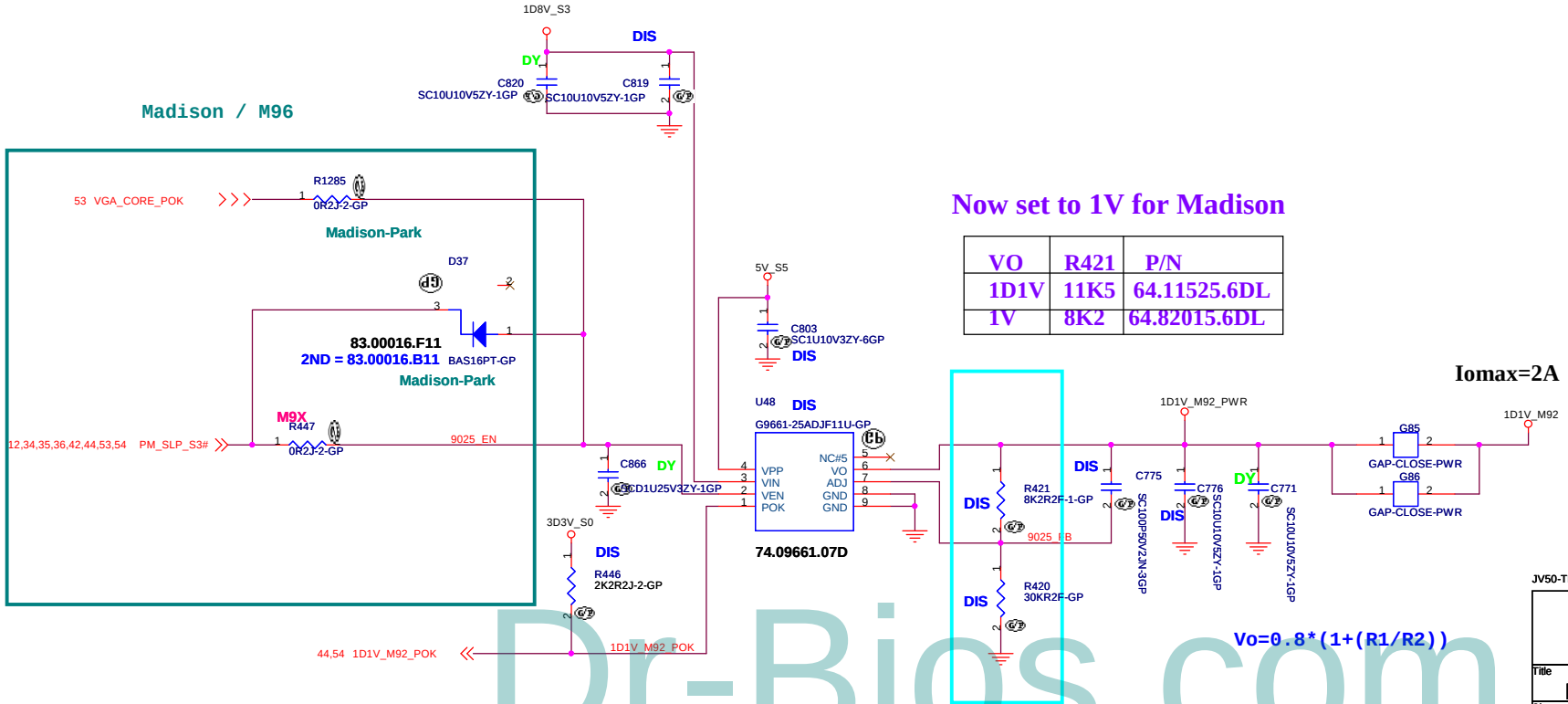
RT9161A

2D5V
Iomax=0.2A



Place near to CPU

Madison / M96



-1 20091019

JV50-TR8

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

Title: LDO 2D5V/1D5V/1D2V S5/1V VGA

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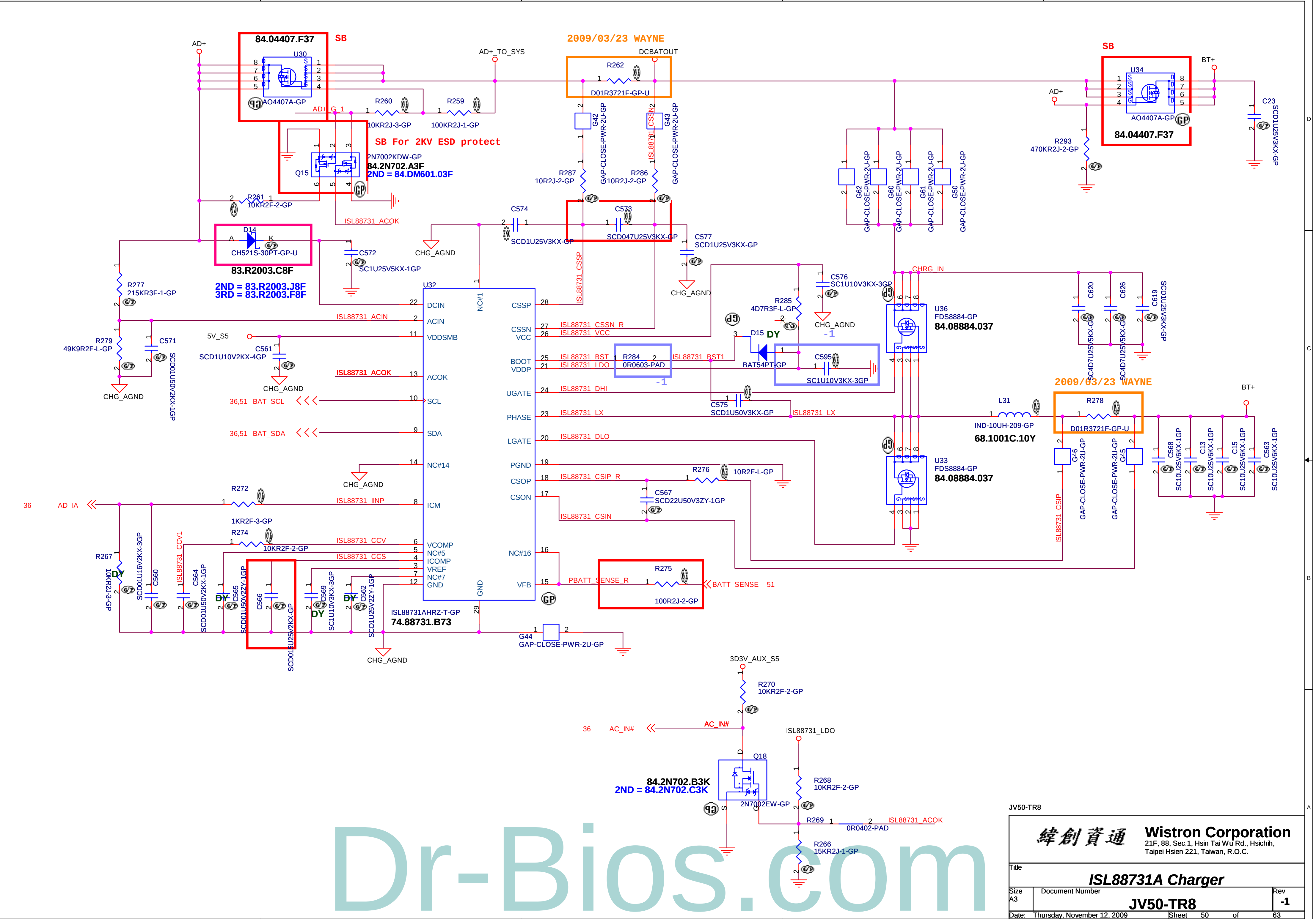

84.04407.F37
SB
U30
AO4407A-GP
AD+
AD+_TO_SYS
R260
10KR2J-3-GP
R259
100KR2J-1-GP
AD+_G_1
SB For 2KV ESD protect
Q15
2N7002KDW-GP
84.2N702.A3F
2ND = 84.DM601.03F
R261
10KR2F-2-GP
ISL88731_ACOK
D14
CH521S-30PT-GP-U
83.R2003.C8F
2ND = 83.R2003.J8F
3RD = 83.R2003.F8F
C572
SC1U25V5KX-1GP
R277
215KR3F-1-GP
R279
49K9R2F-L-GP
C571
SCD01U50V2KX-1GP
CHG_AGND
5V_S5
C561
SCD1U10V2KX-4GP
2009/03/23 WAYNE
DCBATOUT
R262
D01R3721F-GP-U
G42
GAP-CLOSE-PWR-2U-GP
G43
R287
10R2J-2-GP
R286
10R2J-2-GP
C574
SCD1U25V3KX-GP
C573
SCD047U25V3KX-GP
C577
SCD1U25V3KX-GP
ISL88731_CSSP
ISL88731_CSSN
U32
DCIN
ACIN
VDDSMB
ACOK
SCL
SDA
NC#14
ICM
VCOMP
NC#5
ICOMP
VREF
NC#7
GND
NC#1
CSSP
CSSN
VCC
BOOT
VDDP
UGATE
PHASE
LGATE
PGND
CSOP
CSON
NC#16
VFB
ISL88731AHRZ-T-GP
74.88731.B73
ISL88731_ACIN
ISL88731_CSSN_R
ISL88731_VCC
ISL88731_BST
ISL88731_LDO
ISL88731_DHI
ISL88731_LX
ISL88731_DLO
ISL88731_CSIP_R
ISL88731_CSIN
ISL88731_IINP
ISL88731_CCV
ISL88731_CCS
ISL88731_CCV1
36,51 BAT_SCL
36,51 BAT_SDA
36 AD_IA
R272
1KR2F-3-GP
R274
10KR2F-2-GP
R267
10KR2J-3-GP
C560
SCD01U16V2KX-3GP
C564
SCD01U50V2KX-1GP
C565
SCD01U50V2ZY-1GP
C566
SCD015U25V2KX-GP
C569
SC1U10V3KX-3GP
C562
SCD1U25V2ZY-1GP
DY
R284
0R0603-PAD
-1
D15
BAT54PT-GP
C595
SC1U10V3KX-3GP
C575
SCD1U50V3KX-GP
R285
4D7R3F-L-GP
C576
SC1U10V3KX-3GP
CHRG_IN
U36
FDS8884-GP
84.08884.037
U33
FDS8884-GP
84.08884.037
G62
G60
G61
G50
GAP-CLOSE-PWR-2U-GP
C620
C626
C619
SC4D7U25V5KX-GP
SCD1U25V3KX-GP
L31
IND-10UH-209-GP
68.1001C.10Y
R278
D01R3721F-GP-U
BT+
G46
G45
C568
C13
C15
C563
SC10U25V6KX-1GP
R276
10R2F-L-GP
C567
SCD22U50V3ZY-1GP
ISL88731_CSIP
R275
100R2J-2-GP
PBATT_SENSE_R
BATT_SENSE 51
G44
GAP-CLOSE-PWR-2U-GP
U34
AO4407A-GP
84.04407.F37
R293
470KR2J-2-GP
C23
SCD1U25V3KX-GP
3D3V_AUX_S5
R270
10KR2F-2-GP
36 AC_IN#
Q18
2N7002EW-GP
84.2N702.B3K
2ND = 84.2N702.C3K
ISL88731_LDO
R268
10KR2F-2-GP
R269
0R0402-PAD
R266
15KR2J-1-GP
JV50-TR8
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title
ISL88731A Charger
Size A3
Document Number JV50-TR8
Rev -1
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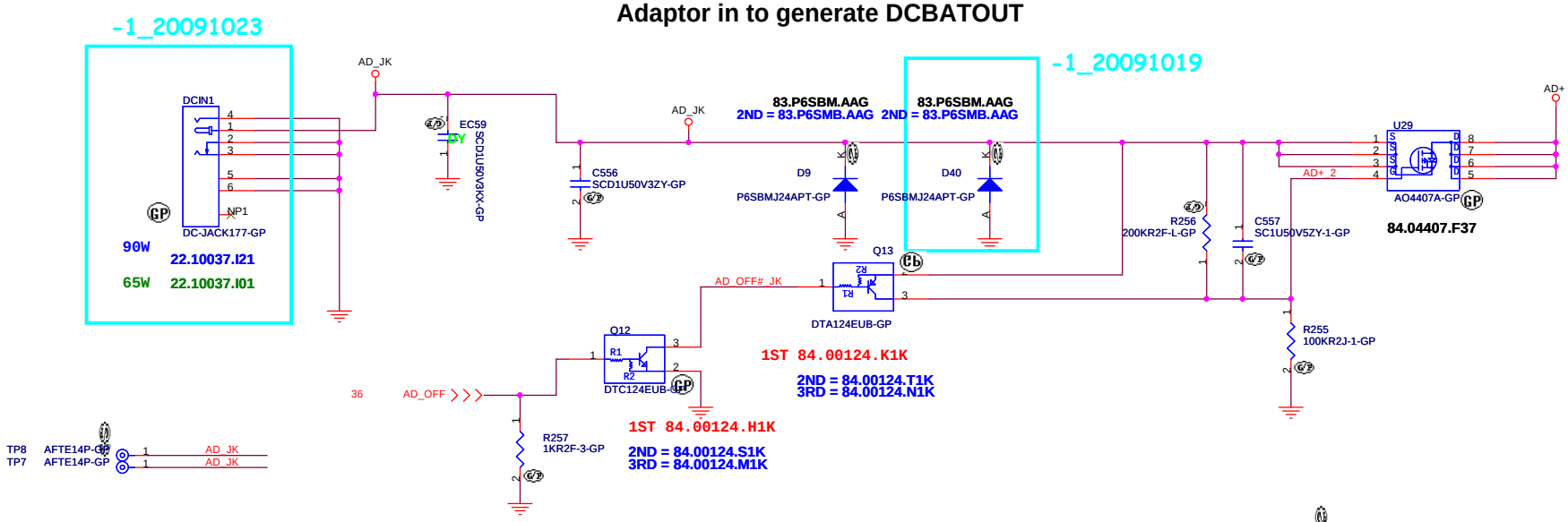
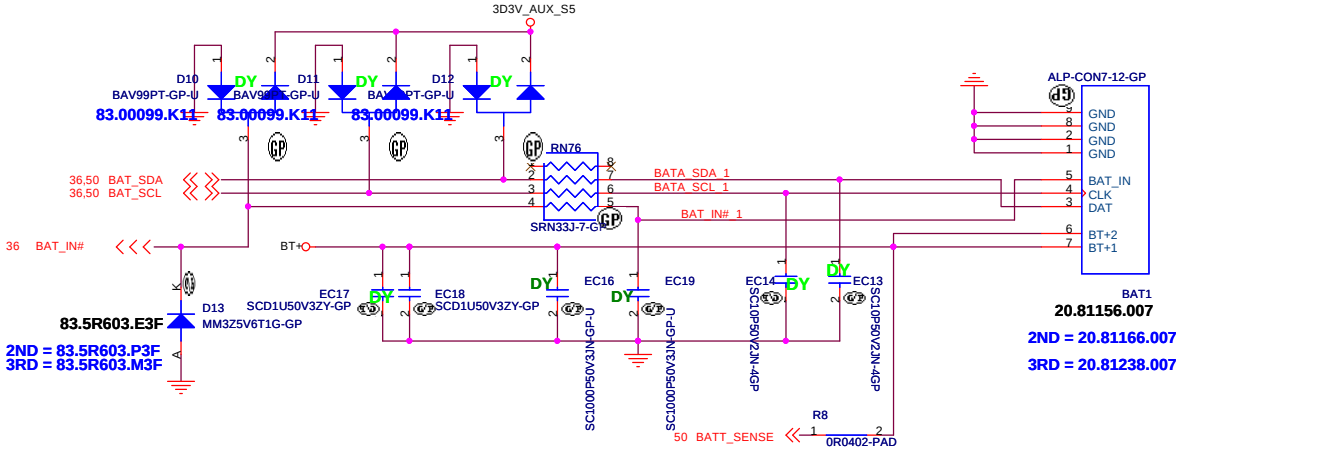
Adaptor in to generate DCBATOUT



BATTERY CONNECTOR



緯創資通	Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	AD/BATT CONN	
Size	Document Number: JV50-TR8	Rev: -1
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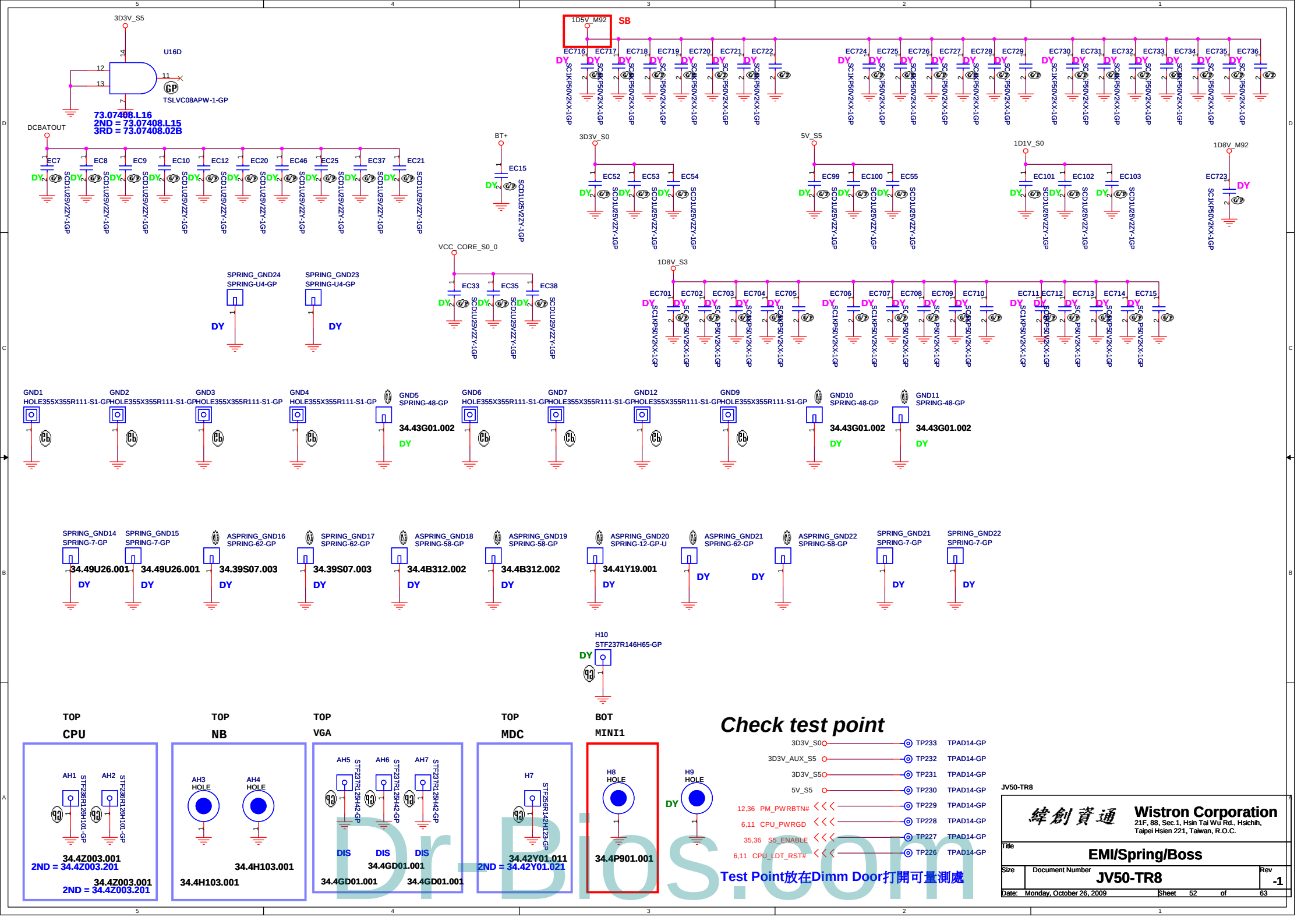
3D3V_S5
U16D
TSLVC08APW-1-GP
73.07408.L16
2ND = 73.07408.L15
3RD = 73.07408.02B
DCBATOUT
EC7 EC8 EC9 EC10 EC12 EC20 EC46 EC25 EC37 EC21
SCD1U25V2ZY-1GP
BT+
EC15
SCD1U25V2ZY-1GP
VCC_CORE_S0_0
EC33 EC35 EC38
SCD1U25V2ZY-1GP
SPRING_GND24
SPRING-U4-GP
SPRING_GND23
SPRING-U4-GP
1D5V_M92
SB
EC716 EC717 EC718 EC719 EC720 EC721 EC722
EC724 EC725 EC726 EC727 EC728 EC729 EC730 EC731 EC732 EC733 EC734 EC735 EC736
SC1KP50V2KX-1GP
3D3V_S0
EC52 EC53 EC54
5V_S5
EC99 EC100 EC55
1D1V_S0
EC101 EC102 EC103
1D8V_M92
EC723
SC1KP50V2KX-1GP
1D8V_S3
EC701 EC702 EC703 EC704 EC705 EC706 EC707 EC708 EC709 EC710 EC711 EC712 EC713 EC714 EC715
SC1KF50V2KX-1GP
SC4K7P50V2KX-1GP
GND1 HOLE355X355R111-S1-GP
GND2 HOLE355X355R111-S1-GP
GND3 HOLE355X355R111-S1-GP
GND4 HOLE355X355R111-S1-GP
GND5 SPRING-48-GP
34.43G01.002
GND6 HOLE355X355R111-S1-GP
GND7 HOLE355X355R111-S1-GP
GND12 HOLE355X355R111-S1-GP
GND9 HOLE355X355R111-S1-GP
GND10 SPRING-48-GP
34.43G01.002
GND11 SPRING-48-GP
34.43G01.002
SPRING_GND14 SPRING-7-GP
34.49U26.001
SPRING_GND15 SPRING-7-GP
34.49U26.001
ASPRING_GND16 SPRING-62-GP
34.39S07.003
SPRING_GND17 SPRING-62-GP
34.39S07.003
ASPRING_GND18 SPRING-58-GP
34.4B312.002
ASPRING_GND19 SPRING-58-GP
34.4B312.002
ASPRING_GND20 SPRING-12-GP-U
34.41Y19.001
ASPRING_GND21 SPRING-62-GP
ASPRING_GND22 SPRING-58-GP
SPRING_GND21 SPRING-7-GP
SPRING_GND22 SPRING-7-GP
H10 STF237R146H65-GP
DY
TOP
CPU
AH1 STF236R126H101-GP
AH2 STF236R126H101-GP
34.4Z003.001
2ND = 34.4Z003.201
34.4Z003.001
2ND = 34.4Z003.201
TOP
NB
AH3 HOLE
AH4 HOLE
34.4H103.001
34.4H103.001
TOP
VGA
AH5 STF237R125H42-GP
AH6 STF237R125H42-GP
AH7 STF237R125H42-GP
DIS DIS DIS
34.4GD01.001
34.4GD01.001 34.4GD01.001
TOP
MDC
H7 STF256R142H123-GP
34.42Y01.011
2ND = 34.42Y01.021
BOT
MINI1
H8 HOLE
34.4P901.001
H9 HOLE
DY
Check test point
3D3V_S0 TP233 TPAD14-GP
3D3V_AUX_S5 TP232 TPAD14-GP
3D3V_S5 TP231 TPAD14-GP
5V_S5 TP230 TPAD14-GP
12,36 PM_PWRBTN# TP229 TPAD14-GP
6,11 CPU_PWRGD TP228 TPAD14-GP
35,36 S5_ENABLE TP227 TPAD14-GP
6,11 CPU_LDT_RST# TP226 TPAD14-GP
Test Point放在Dimm Door打開可量測處
JV50-TR8
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title
EMI/Spring/Boss
Size
Document Number
JV50-TR8
Rev
-1
Date: Monday, October 26, 2009
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RT8209E for VGA

Iomax=23A, OCP>40A

DCBATOUT, DCBATOUT_8209E_VGA, G136–G142 GAP-CLOSE-PWR

5V_S5, C1037 SC1U10V2KX-3GP, R1286 10R2F-L-GP, C1041 SC1U10V2KX-1GP

D36 B0530WS-7-F-GP

R1287 3D3R3J-L-GP, 8209A_R_BOOT_VGA, C1038 SCD1U16V2KX-3GP

U81 RT8209EGQW-GP

8209A_VDD_VGA	VDD / VDDP	UGATE / LGATE	8209A_HGATE_VGA / 8209A_LGATE_VGA
RT8209_FB_VGA / 8209A_BOOT	FB / BOOT	PHASE	8209A_PHASE_VGA
	VOUT / PGOOD		VGA_CORE_PWR / 8209A_PGOOD_VGA
8209A_EN/DEM_VGA / 8209A_TON_VGA	EN/DEM / TON	GND / PGND	
8209A_CS_VGA	CS	NC#15	

R1288 8K2R2F-1-GP, R1290 220KR2F-GP, R1289 10KR2J-3-GP M9X, 12,34,35,36,42,44,49,54 PM_SLP_S3#

D38 BAS16PT-GP, 83.00016.F11, 2ND = 83.00016.B11, Madison-Park

R1293 10KR2J-3-GP Madison-Park, 3D3V_M92

C1043 16KR3F-GP

3D3V_S0, R1291 10KR2J-3-GP, R1292 0R0402-PAD-1-GP, VGA_CORE_POK 49

C1042 SC100P50V2JN-3GP

-1_20091021

DCBATOUT_8209E_VGA, U80 SIR474DP-T1-GE3-GP, U82 SIR460DP-T1-GE3-GP, U83 SIR460DP-T1-GE3-GP

C1039 SC10U25V5KX-GP, C1040 SC10U25V5KX-GP, C1056 SC10U25V5KX-GP

L62 IND-D45UH-14-GP

VGA_CORE_PWR, TC38 TSE330U2VDM-L-GP, TC39 TSE330U2VDM-L-GP

79.33719.L01

-1_20091021

Vout=0.75*(1+Rh/Rl)

R1294 10KR2F-2-GP, C1044 SC47P50V2JN-3GP, RT8209_FB_VGA

R1295 49K9R2F-L-GP, R1296 110KR2F-L-GP, R1297 73K2R2F-GP

Q39 2N7002EW-GP, Q40 2N7002EW-GP

84.2N702.B3K, 2ND = 84.2N702.C3K

NV_VID1_Q, NV_VID0_Q, R1298, NV_VID1, PWRCNTL_1 56, C1046 SCD1U10V2KX-4GP

-1_20091019

3D3V_S0, R1309 100KR2J-1-GP, NV_VID0_R, Q45 MMBT2222A-3-GP, R1299 10KR2J-3-GP, NV_VID0, PWRCNTL_0 56, C1045 SCD1U10V2KX-4GP

30k(64.30025.6DL)
73.2k(64.73225.6DL)
37.4k (64.37425.6DL)

M92 XT			
R1295	37.4K	R1297	30K
VGA_CORE	1.20V		

PWRCNTL_0	Madison Pro	Park XT	M96 Pro	M92-XT
0	1.00V	1.12V	1.15V	1.20V
1	0.90V	0.90V	0.90V	0.95V

	Madison Pro	Park XT	M96 Pro
R1297	73.2K	36.5K	30K
VGA_CORE	1.00V	1.12V	1.15V

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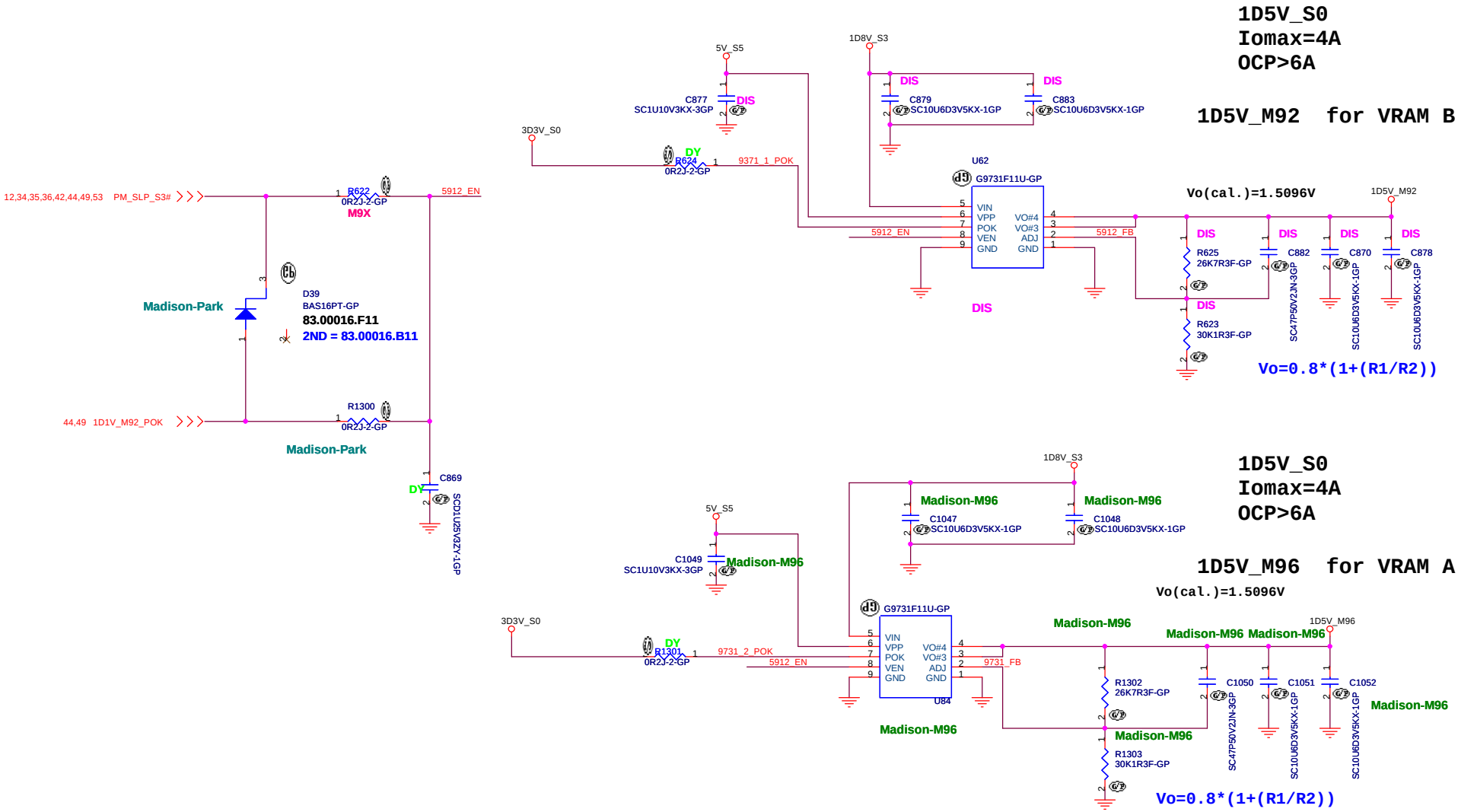
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: RT8209E VGA CORE
Size: A3 | Document Number: JV50-TR8 | Rev: -1
Date: Thursday, November 12, 2009 | Sheet 53 of 63



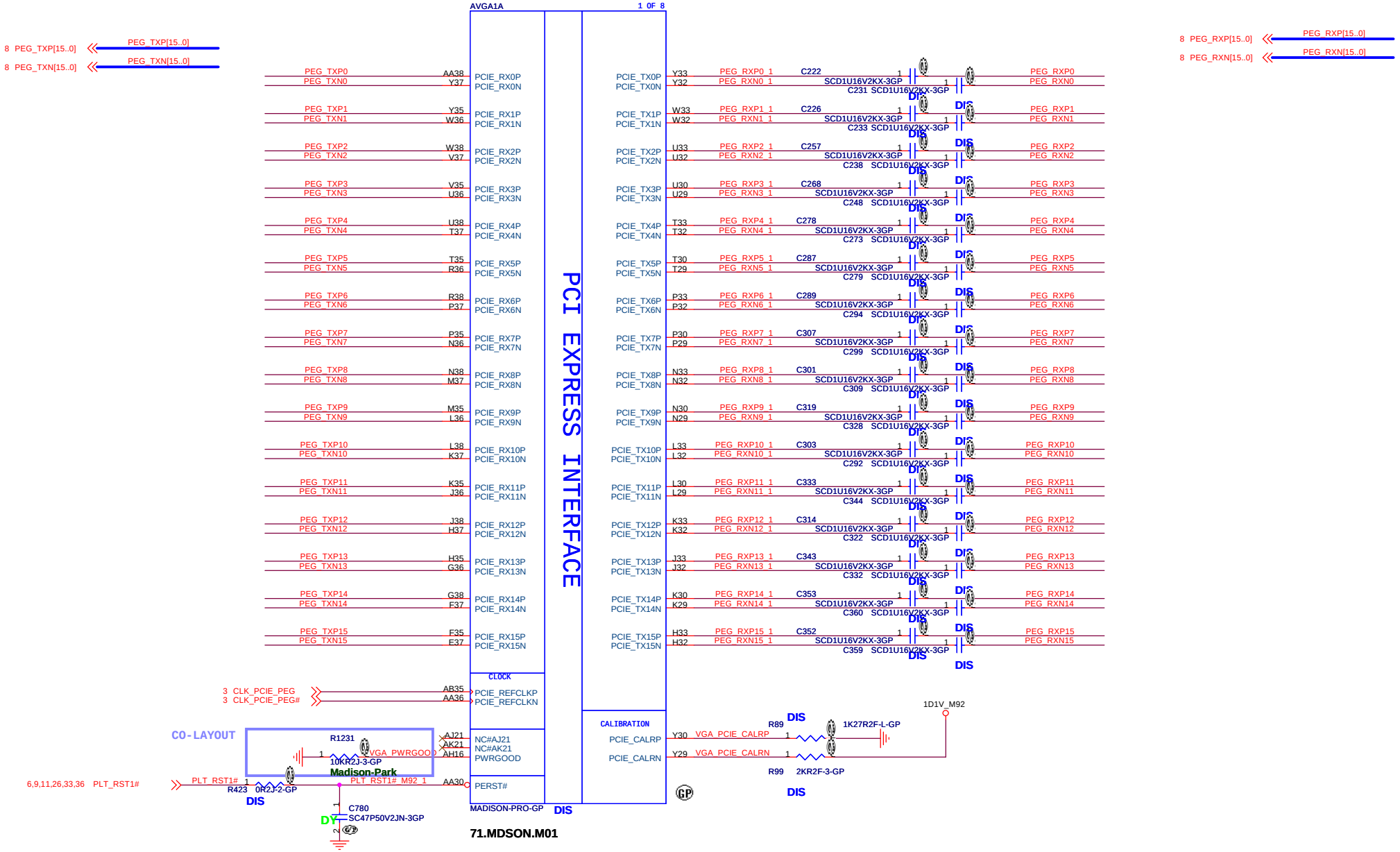
JV50-TR8

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

Title: G9731_1D5V_VRAM POWER

Size	Document Number	Rev
A3	JV50-TR8	-1

Date: Wednesday, November 11, 2009 Sheet 54 of 63



DIS / UMA

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	**Madison PCIE**
Size A3 / Document Number	JV71-TR / Rev -1
Date: Monday, October 26, 2009	Sheet 55 of 63

Layout notice:
It should be pleace near HDMI connector

DVPDATA [3:2:1:0] for VRAM type
selection H/W strap
Should provide VRAM Table for VBios
request

DVPDATA [3:0]
0100 1GB GDDR3 Hynix-H5TQ1G63BFR-12C (800MHz)
1000 1GB GDDR3 Samsung-K4W1G1646E-HC12 (800MHz)
1100 1GB GDDR3 ATI (800MHz)

It's strap for GDDR3-136ball
Need to Clarify

Back Bias (body bias) which minimizes
power consumption in battery modes.
PD = Disable
PU = Enable

VREFG VOLTAGE DIVIDER IS
(VREFG = VDDR4,5(1.8V) / 3 = 0.6V)

For Thermal sensor

for TR

Wistron Corporation	21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	Madison IO
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Date	Wednesday, November 11, 2009
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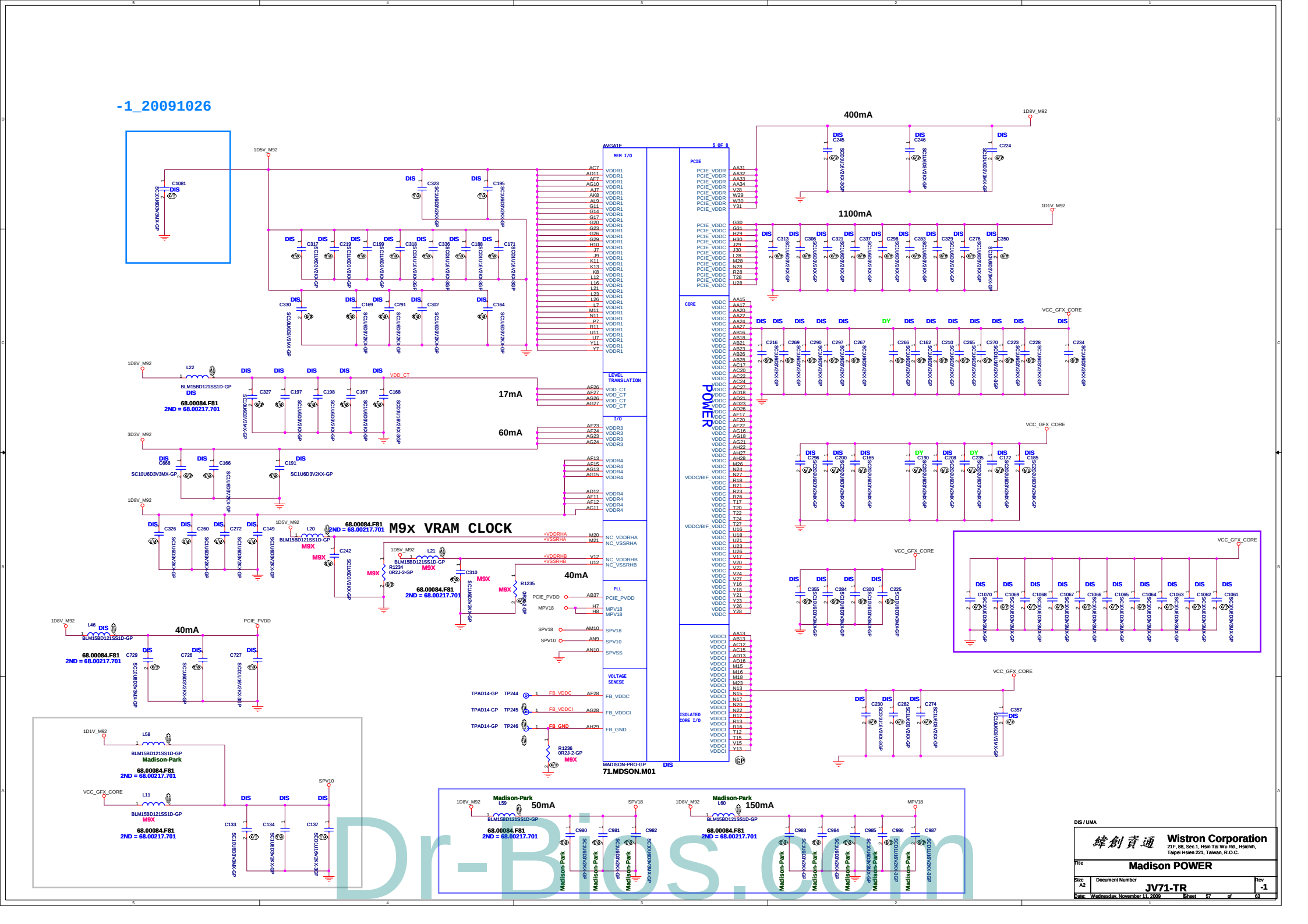
-1_20091026



DIS / UMA

Wistron Corporation	21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	Madison POWER
Size A2	Document Number JV71-TR
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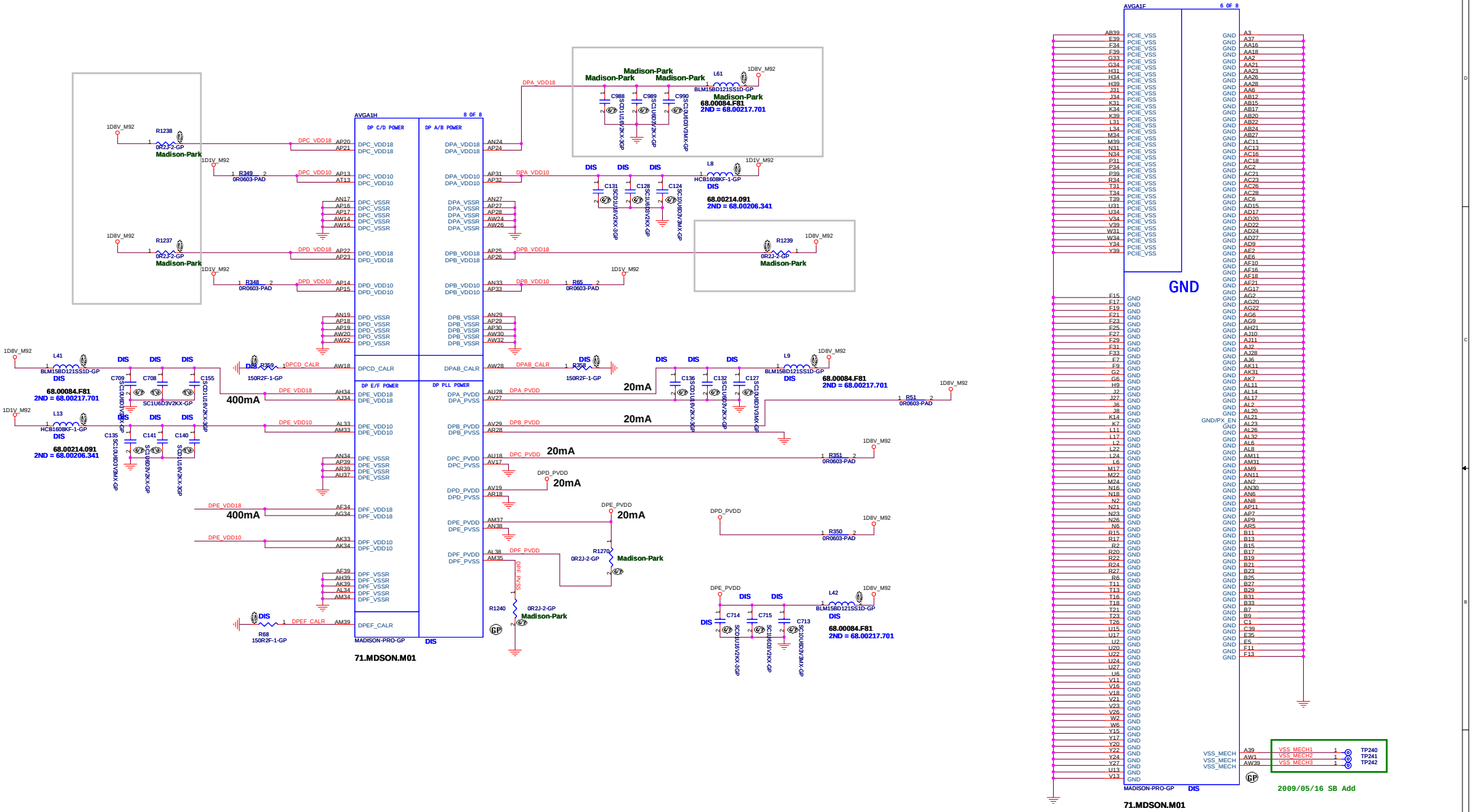

DIS / UMA

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

Title: DP POWER_GND

Size	Document Number	Rev
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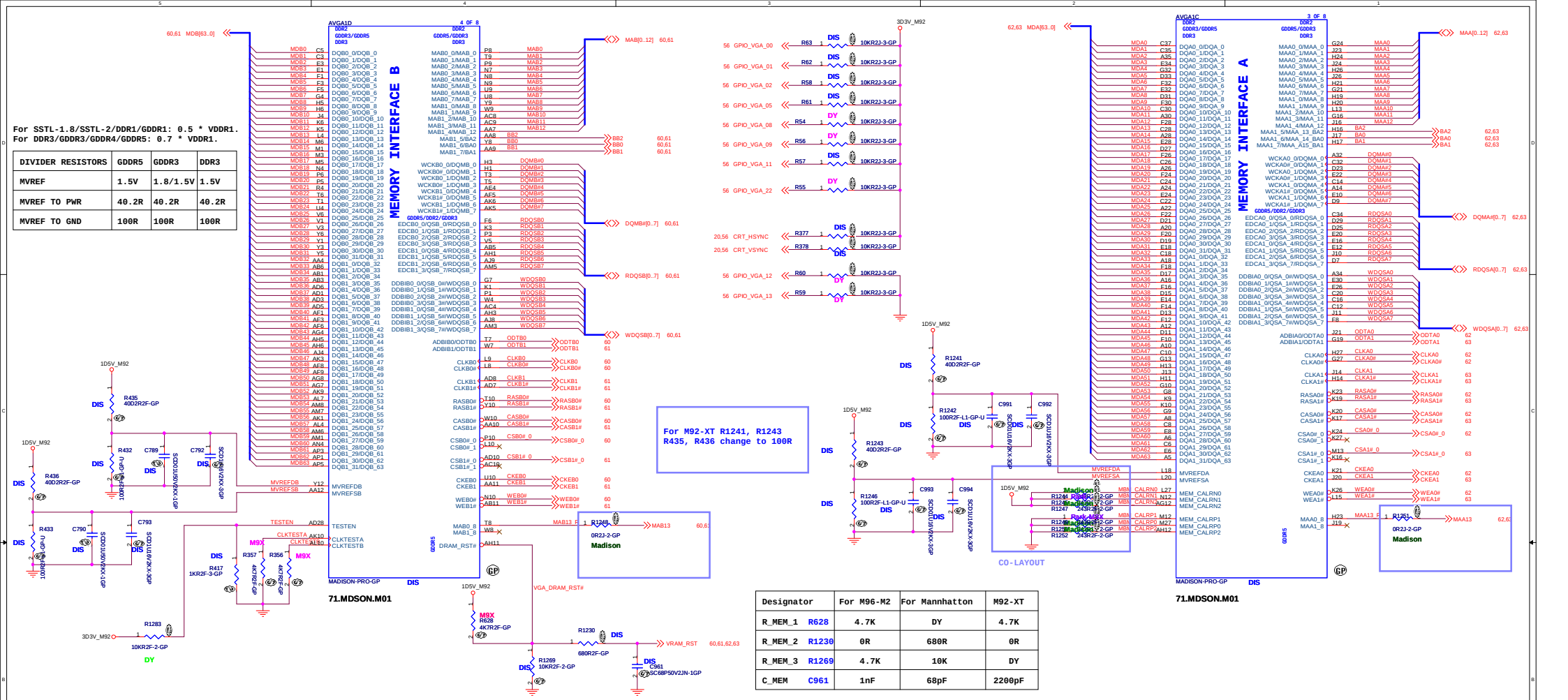
For SSTL-1.8/SSTL-2/DDR1/GDDR1: 0.5 * VDDR1.
For DDR3/GDDR3/GDDR4/GDDR5: 0.7 * VDDR1.

DIVIDER RESISTORS	GDDR5	GDDR3	DDR3
MVREF	1.5V	1.8/1.5V	1.5V
MVREF TO PWR	40.2R	40.2R	40.2R
MVREF TO GND	100R	100R	100R



Designator		For M96-M2	For Mannhatton	M92-XT
R_MEM_1	R628	4.7K	DY	4.7K
R_MEM_2	R1230	0R	680R	0R
R_MEM_3	R1269	4.7K	10K	DY
C_MEM	C961	1nF	68pF	2200pF

STRAPS	PIN	DESCRIPTION	RECOMMENDED SETTINGS 0= DO NOT INSTALL RESISTOR 1 = INSTALL 10K RESISTOR X = DESIGN DEPENDANT NA = NOT APPLICABLE
TX_PWRS_ENB (Internal PD)	GPIO0	PCIE FULL TX OUTPUT SWING Tansmitter Power Savings Enable 0= 50% Tx output swing 1= Full Tx output swing	1
TX_DEEMPH_EN (Internal PD)	GPIO1	Transmitter De-emphasis Enable 0= Tx de-emphasis disabled 1= Tx de-emphasis enabled	1
BIF_GEN2_EN_A	GPIO2	PCIE GNE2 ENABLED 0 = Advertises the PCI-E device as 2.5GT/s 1 = Advertises the PCI-E device as 5GT/s	1
AC_BATT	GPIO5	AC (Performance mode) = 3.3 V Battery saving mode = 0.0 V	
ROMSO	GPIO8	BIF_CLK_PM_EN Serial ROM Output from ROM	0
ROMSI	GPIO9	VGA ENABLED Serial ROM Input to ROM	0
ROMIDCFG[3:0] (Internal PD)	GPIO[13,12,11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT if BIOS_ROM_EN=1,then Config[3:0] defines the ROM type if BIOS_ROM_EN=0,then Config[3:0] defines the primary memory apeture size	X X X

STRAPS	PIN	DESCRIPTION	RECOMMENDED SETTINGS 0= DO NOT INSTALL RESISTOR 1 = INSTALL 10K RESISTOR X = DESIGN DEPENDANT NA = NOT APPLICABLE
PWRCNTL_[1,0]	GPIO[15,20]	Power control signals to control the core voltage regulator	
BB_EN	GPIO21	Back Bias (body bias) which minimizes power consumption in battery modes. 0V = Disable 3D3V = Enable	0
AUD[1] AUD[0] (Internal PD)	VGA_HSYNC VGA_VSYNC	AUD[1:0] 00:No audio function 01:Audio for DisplayPort and HDMI (if adapter is detected) 10:Audio for DisplayPort only 11:Audio for both DisplayPort and HDMI	1
CCBYPASS	GENERICC		0

HDMI must only be enabled on systems that are legally entitled. It is the responsibility of the system designer to ensure that the system is entitled to support this feature.

STRAPS	PIN	DESCRIPTION
GPIO	DVPDATA(23:20) (Internal PD)	Initialization Behavior: This signal is input during reset (no reference clock is required). After reset, the default state is output low (0 V). The signals above can be left unconnected if not used.

AMD RESERVED CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

H2SYNC, GENERICC

PULLUP PADS ARE NOT REQUIRED FOR THESE STRAPS BUT IF THESE GPIOS ARE USED, THEY MUST NOT CONFLICT DURING RESET

GPIO_28_TDO , GPIO21_BB_EN

If BIOS_ROM_EN (GPIO22) = 0		If BIOS_ROM_EN (GPIO22) = 1		
Size of the primary memory apertures	GPIO[13,12,11]	Manufacturer	Part Number	GPIO[13,12,11]
128MB	x000	ST Microelectronics	M25P05A	0100
256MB	x001		M25P10A	0101
V 64MB	x010		M25P20	0101
32MB	x		M25P40	0101
512MB	x		M25P80	0101
1GB	x	Chingis (formerly PMC)	Pm25LV512A	0100
2GB	x		Pm25LV010A	0101
4GB	x			

DIS / UMA

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

Title: Madison Memory / Straps

Size: A2 | Document Number: JV71-TR | Rev: -1

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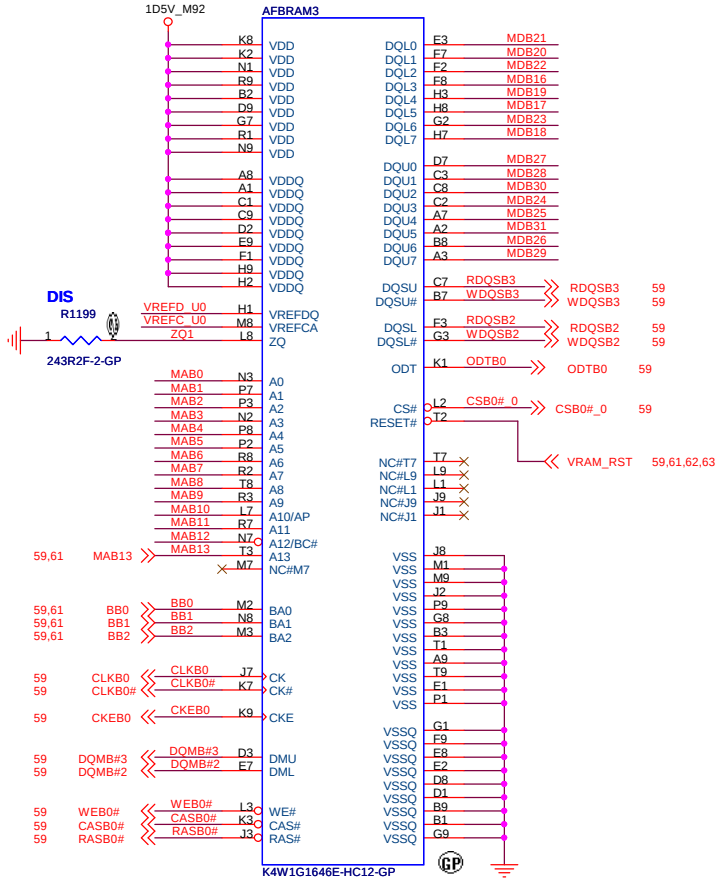
GDDR3



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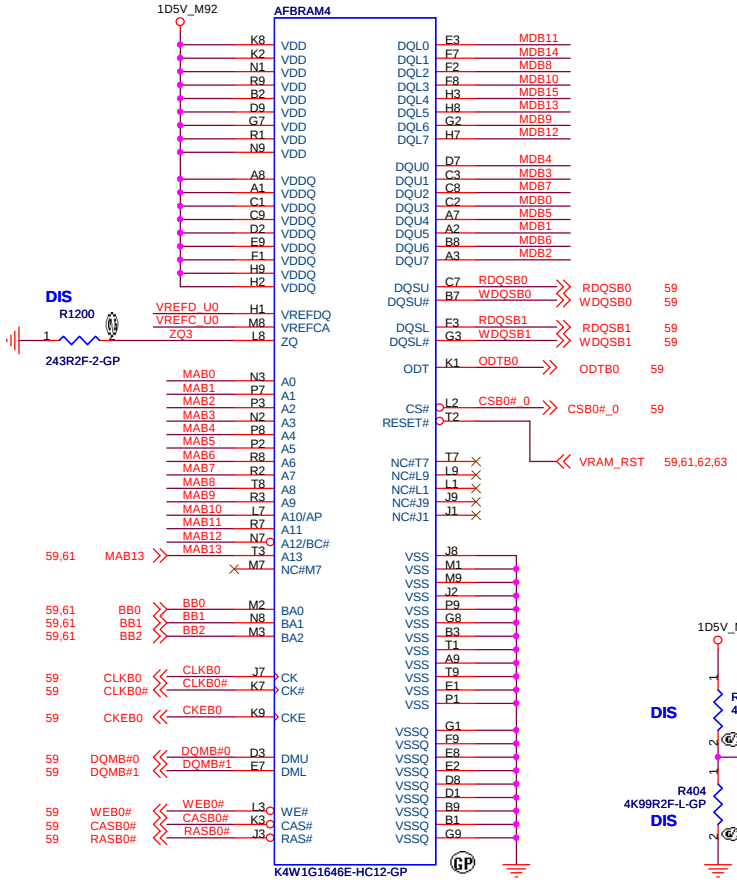
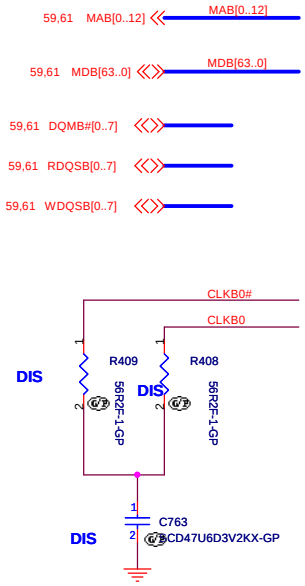
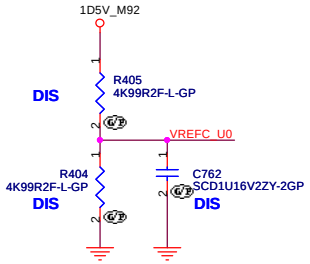
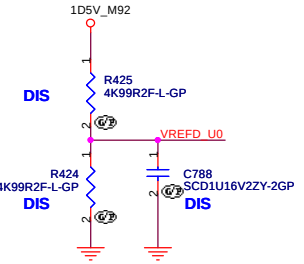
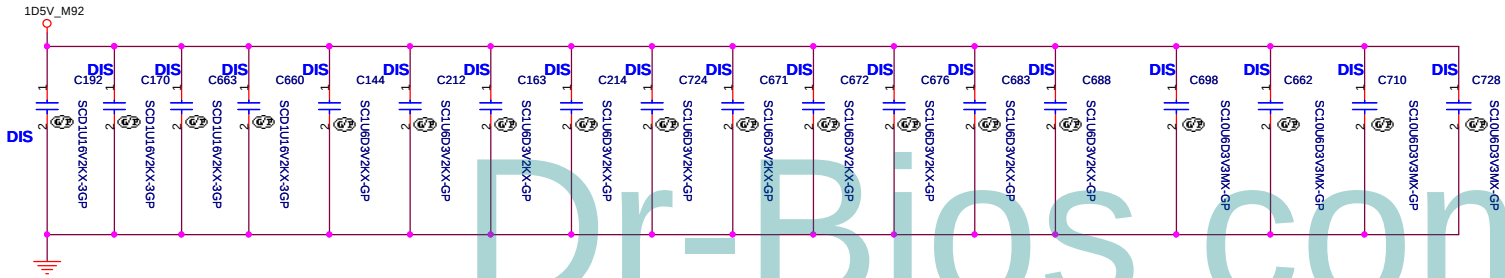
HYUNIX 2ND=72.51G63.C0U











JV50-TR8

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

Title	M92 DDR3 B0	
Size A3	Document Number JV50-TR8	Rev -1
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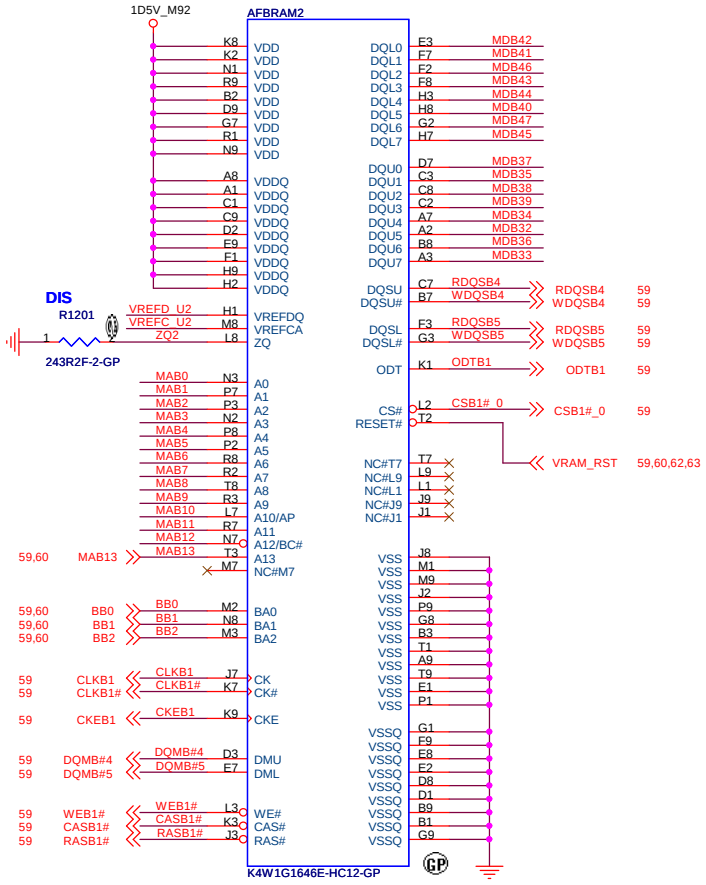
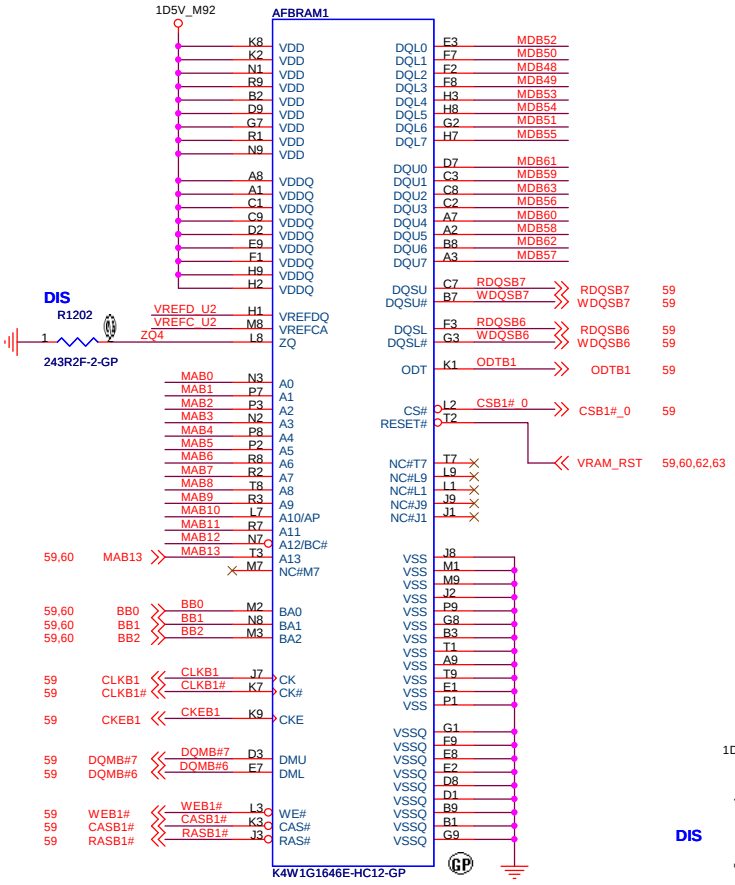
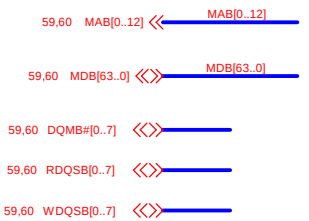
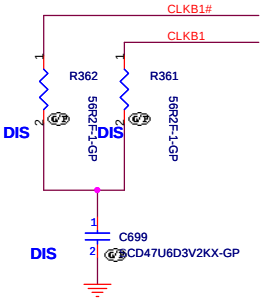
GDDR3

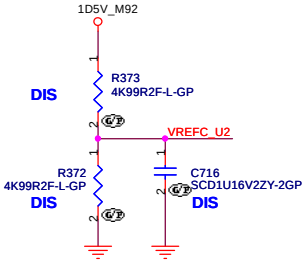


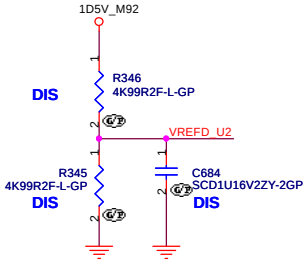


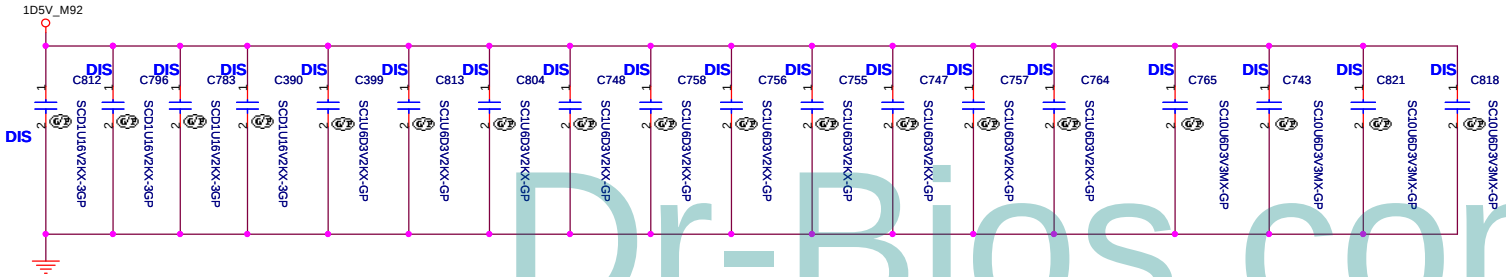
SAMSUNG 1ST=72.41164.H0U
HYUNIX 2ND=72.51G63.C0U









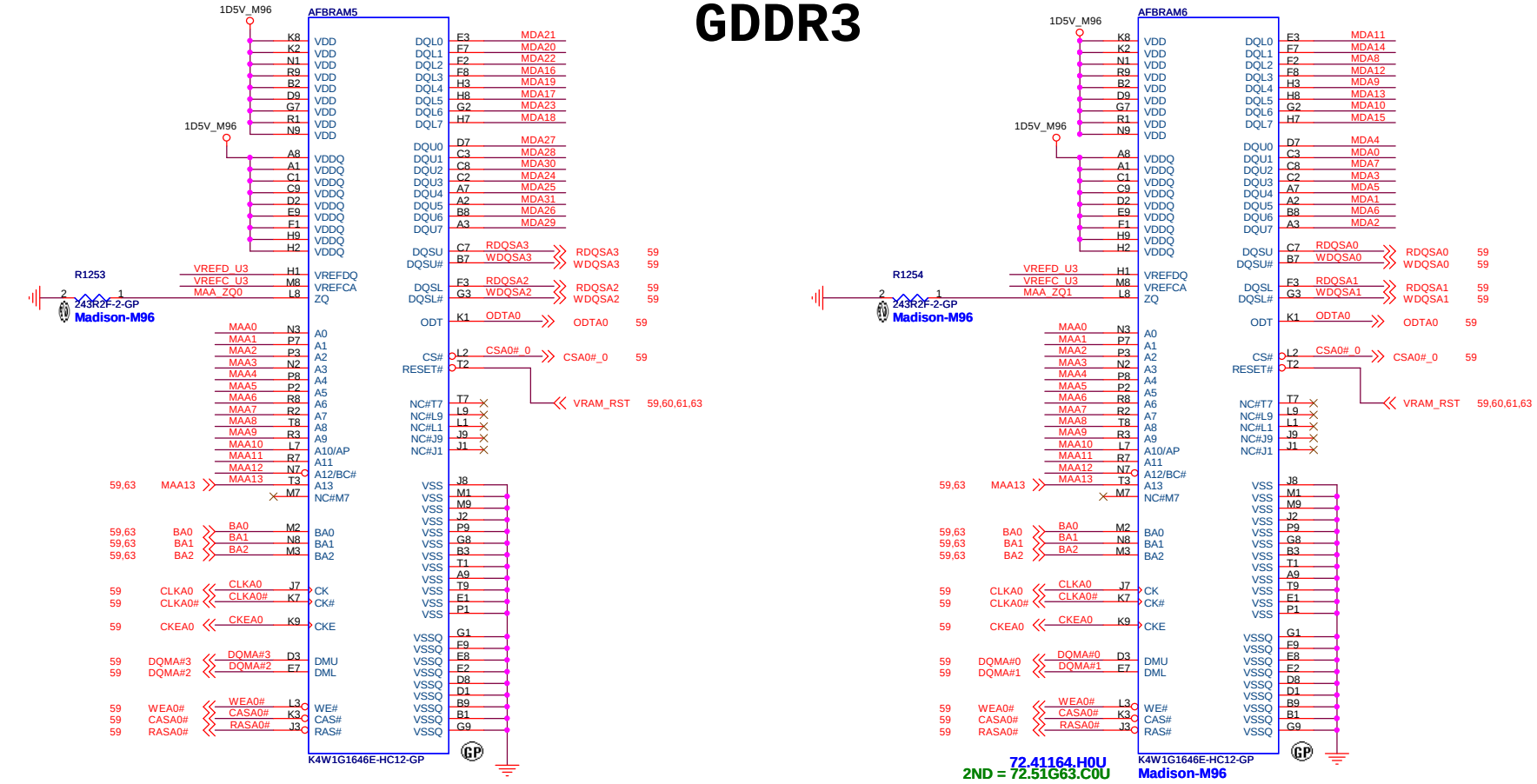


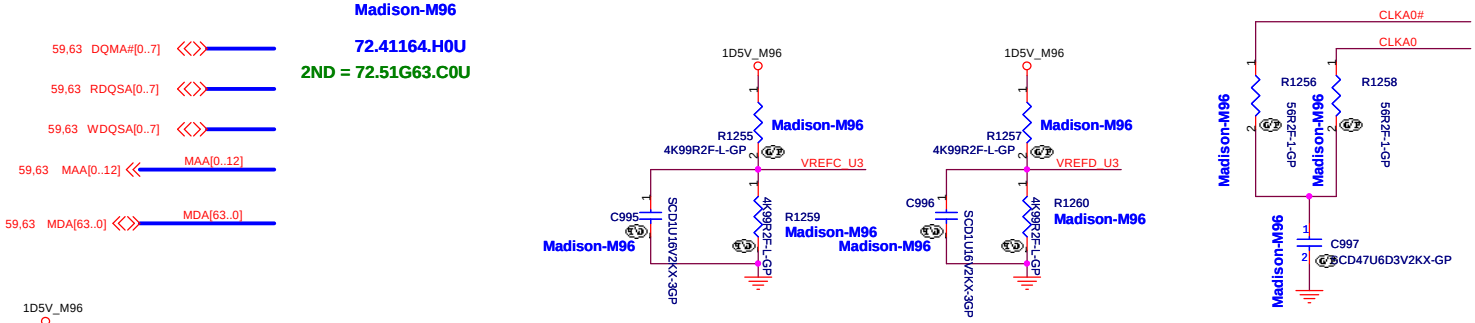
JV50-TR8

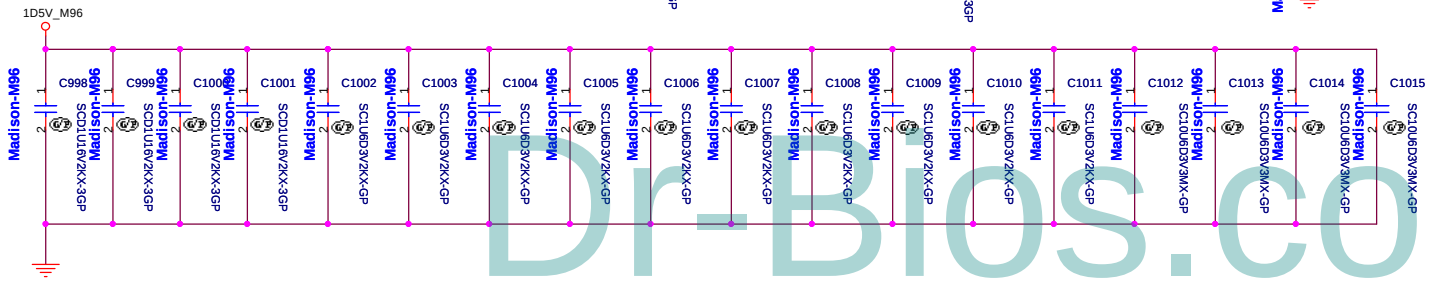
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title	M92 DDR3 B1	
Size A3	Document Number JV50-TR8	Rev -1
Date: Monday, October 26, 2009	Sheet 61 of 63	

GDDR3





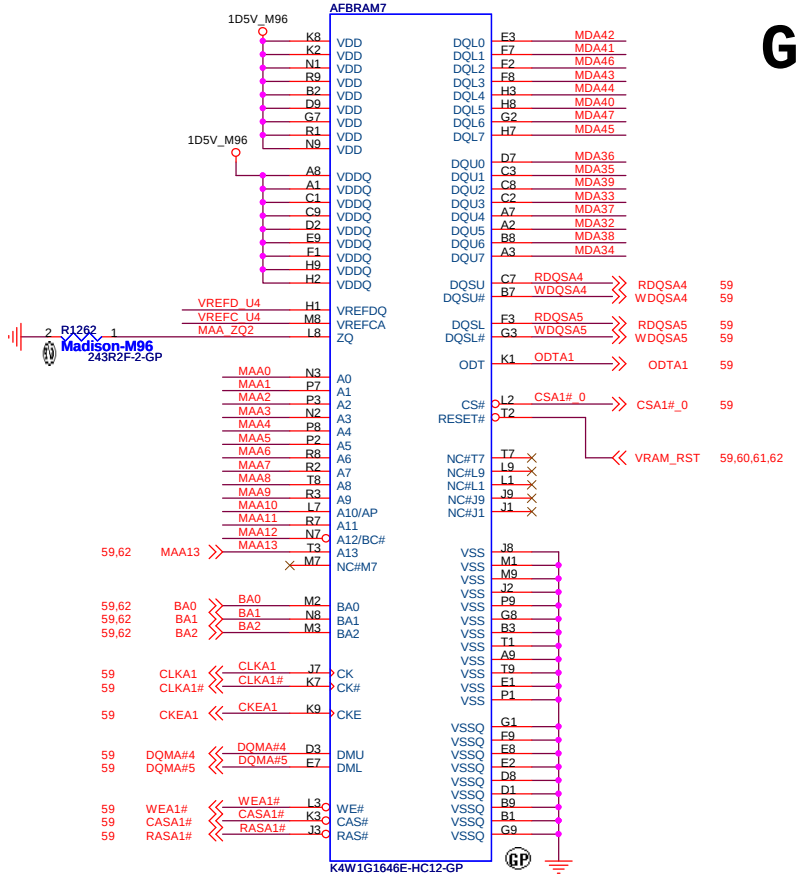


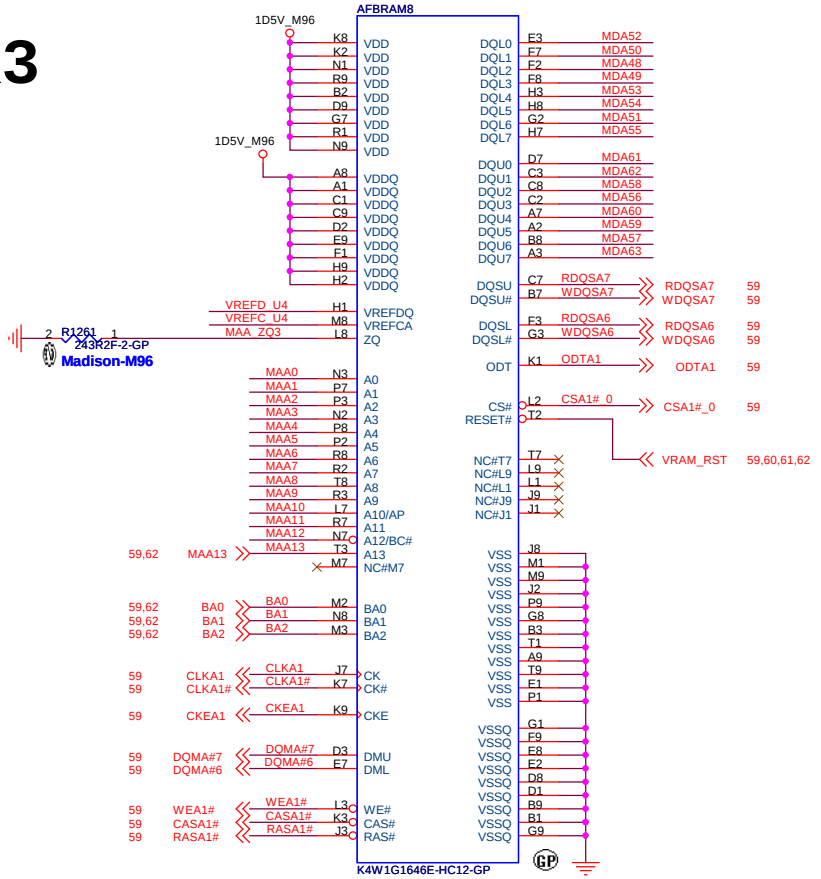
JV50-TR8

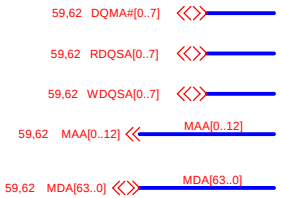
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

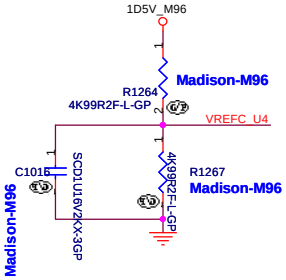
Title	M92 DDR3 A0	
Size A3	Document Number JV50-TR8	Rev -1
Date: Monday, October 26, 2009	Sheet 62 of 63	

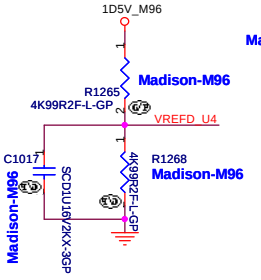
GDDR3

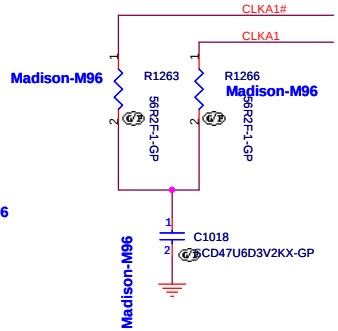


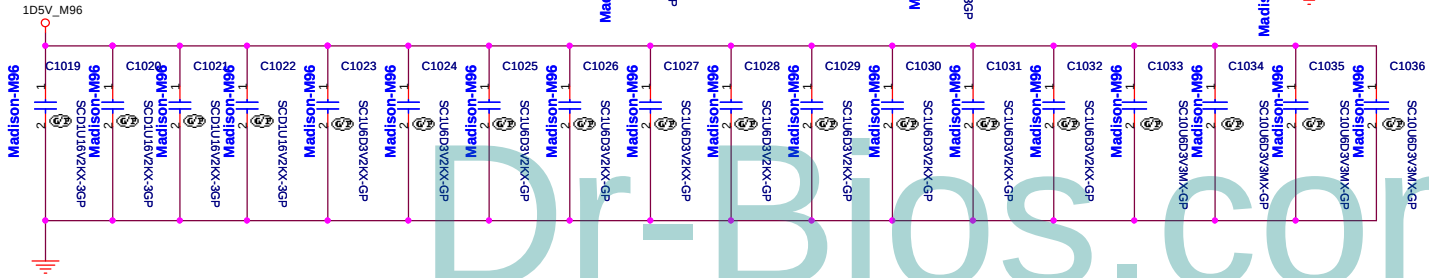












JV50-TR8

緯創資通	Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	M92 DDR3 A1	
Size A3	Document Number JV50-TR8	Rev -1
Date: Monday, October 26, 2009	Sheet 63 of 63	