PADME Comet Block Diagram

Project Code: 4PD0JP010001
PCB(Raw Card): 19770-SC

External Connector/Socket
Internal Connector/Socket
Switch

PCB Layer Stackup
10 Layers FR4
L1:Component
L2:GND
L3:Signal 1
L4:VCC
L5:Signal 2
L6:Signal 3
L7:VCC
L8:Signal 4
L9:GND
L10:Component

LCD 15.6" FHD/UHD/OLED Direct boding Touch w/UHD 48
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DDI0 eDP 1.4(x4)
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Reserved — Port 12
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Reserved — Port 14

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DC/DC IMVP8 NCP81266MNTXG 87
VCC5M
DC/DC VCCCPUCORE NCP302045LMNTXG 88
VINT20 | VCCCPUCORE
DC/DC VCCGFXCORE_I NCP302155MNTXG 90
VINT20 | VCCGFXCORE_I
DC/DC VCCSA NCP81210MNTWG 91
VINT20 | VCCSA
DC/DC VCC1R05_SUS TPS51219RTER 93
VCC5M | VCC1R05_SUS
DC/DC VCCCPUIO NB694GD-C669-Z 92
VINT20 | VCCCPUIO
DC/DC VCC1R2A TPS51716RUKR 95
VINT20 | VCC1R2A
DC/DC VCC2R5A NB695GD-C669-Z 96
VINT20 | VCC2R5A
DC/DC VCC0R6B TPS51716RUKR 95
VCC1R2A | VCC0R6B
DC/DC VCC1R8_SUS NB695GD-C669-Z 94
VINT20 | VCC1R8_SUS
DC/DC VCC1R0VIDEO NB695GD-C669-Z 105
VCC5M | VCC1R0VIDEO
DC/DC VCCGFXCORE_D NCP303150MNTWG 103
VINT20 | VCCGFXCORE_D
DC/DC VCC1R25VIDEO TPS51219RTER 104
VINT20 | VCC1R25VIDEO
LOAD SW VCC1R8VIDEO AON2420 106
VCC1R8_SUS | VCC1R8VIDEO
LOAD SW VCCST TPS22971YZPR-GP 97
VCC1R05_SUS | VCCST

Battery:15.36V
USB Type-C Charge: 20V

<Variant Name>

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Title: BLOCK DIAGRAM
Size: A2 | Document Number: LPM-3 | Rev: -1
Date: Tuesday, June 30, 2020 | Sheet 1 of 111

RESISTOR

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

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

CAPACITOR

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

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

DESCRIPTION

BOM control parts :
TEXT with PURPLE color near part reference

BOM control name
Part reference
Symbol name

<Variant Name>

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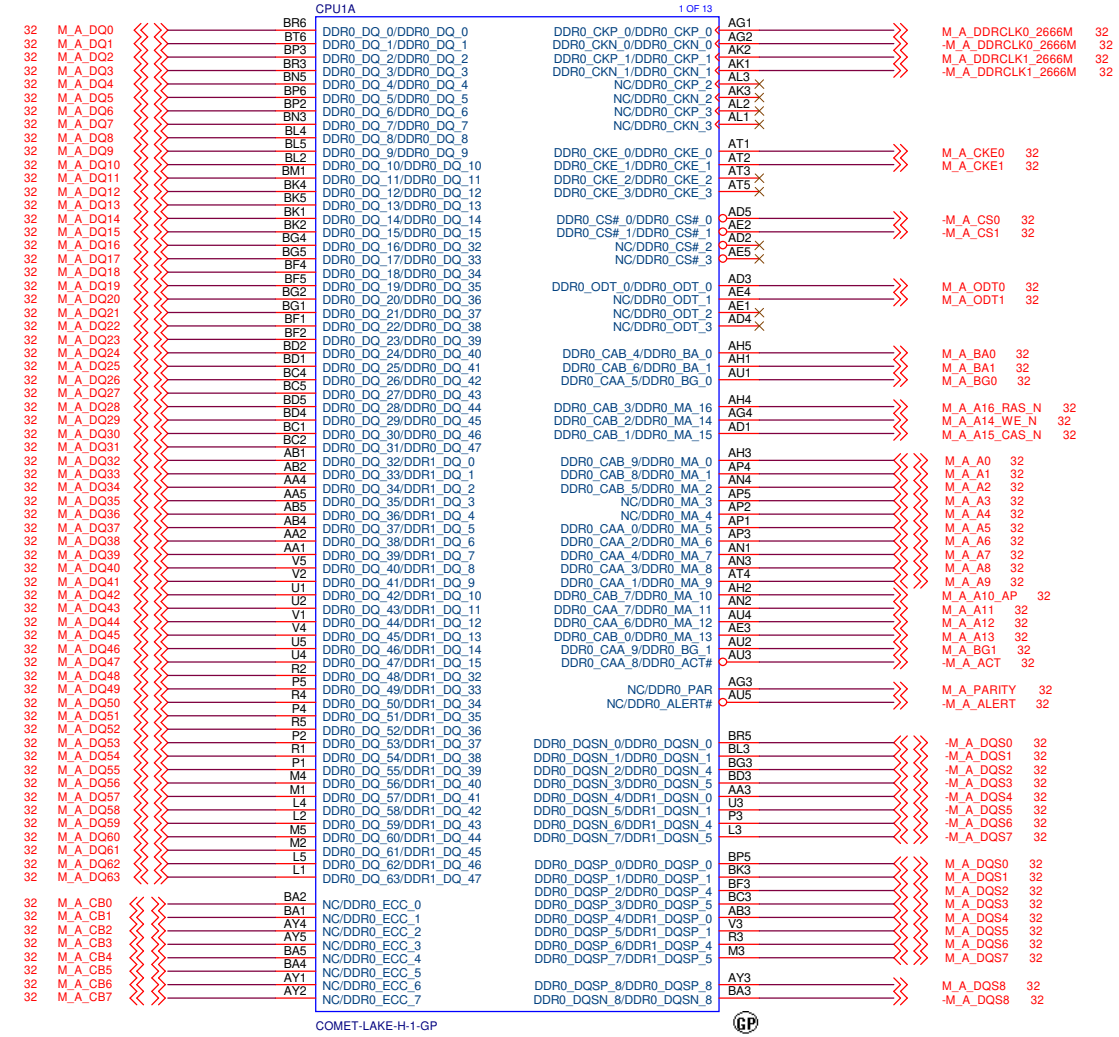
Title ***DESCRIPTION***

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 2 of 111



<Variant Name>

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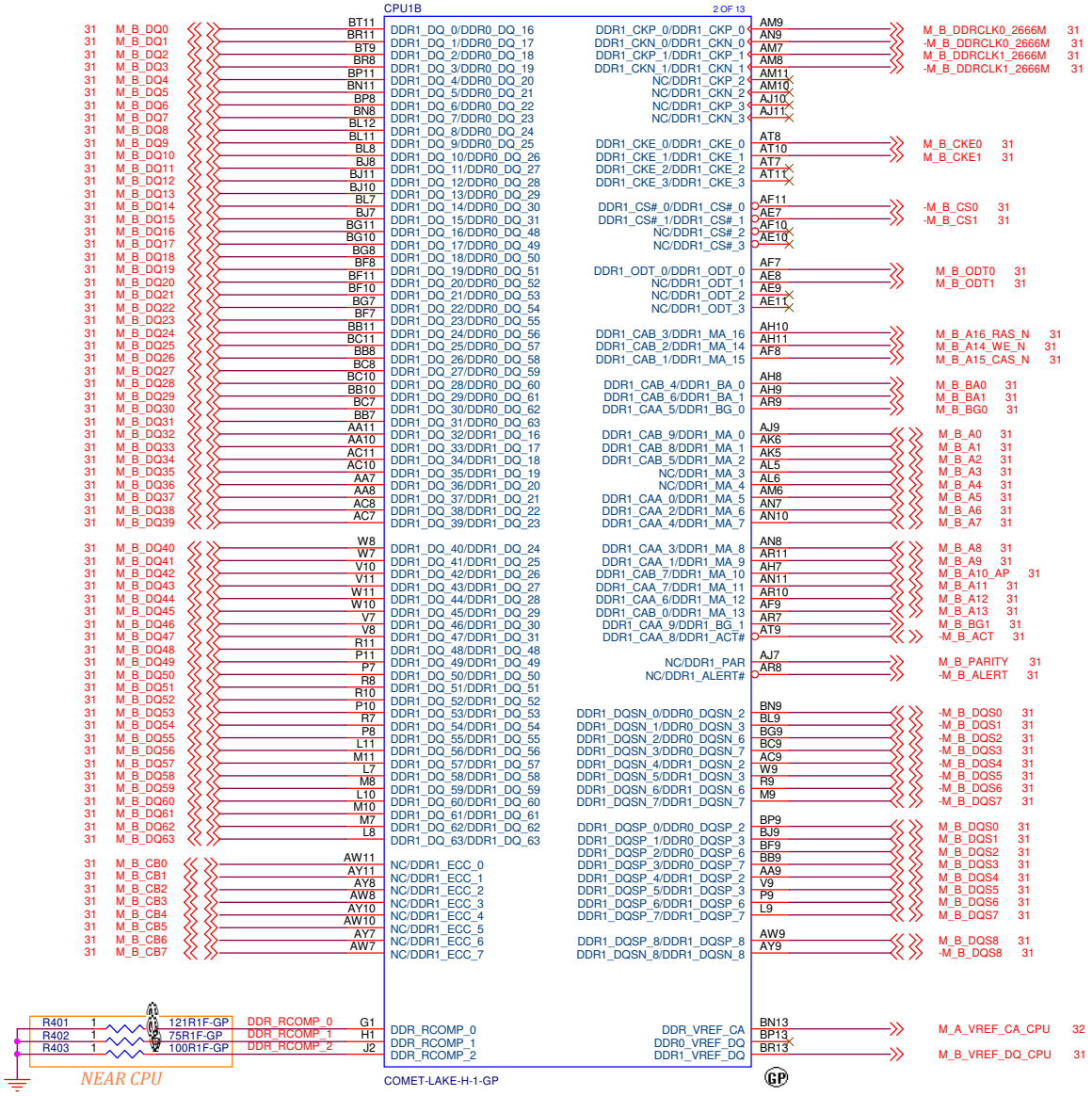
Title: CPU CML-H DDR4 CH-A

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 3 of 111



<Variant Name>

緯創資通 Wistron Corporation
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Title: CPU CML-H DDR4 CH-B

Size	Document Number	Rev
A3	LPM-3	-1

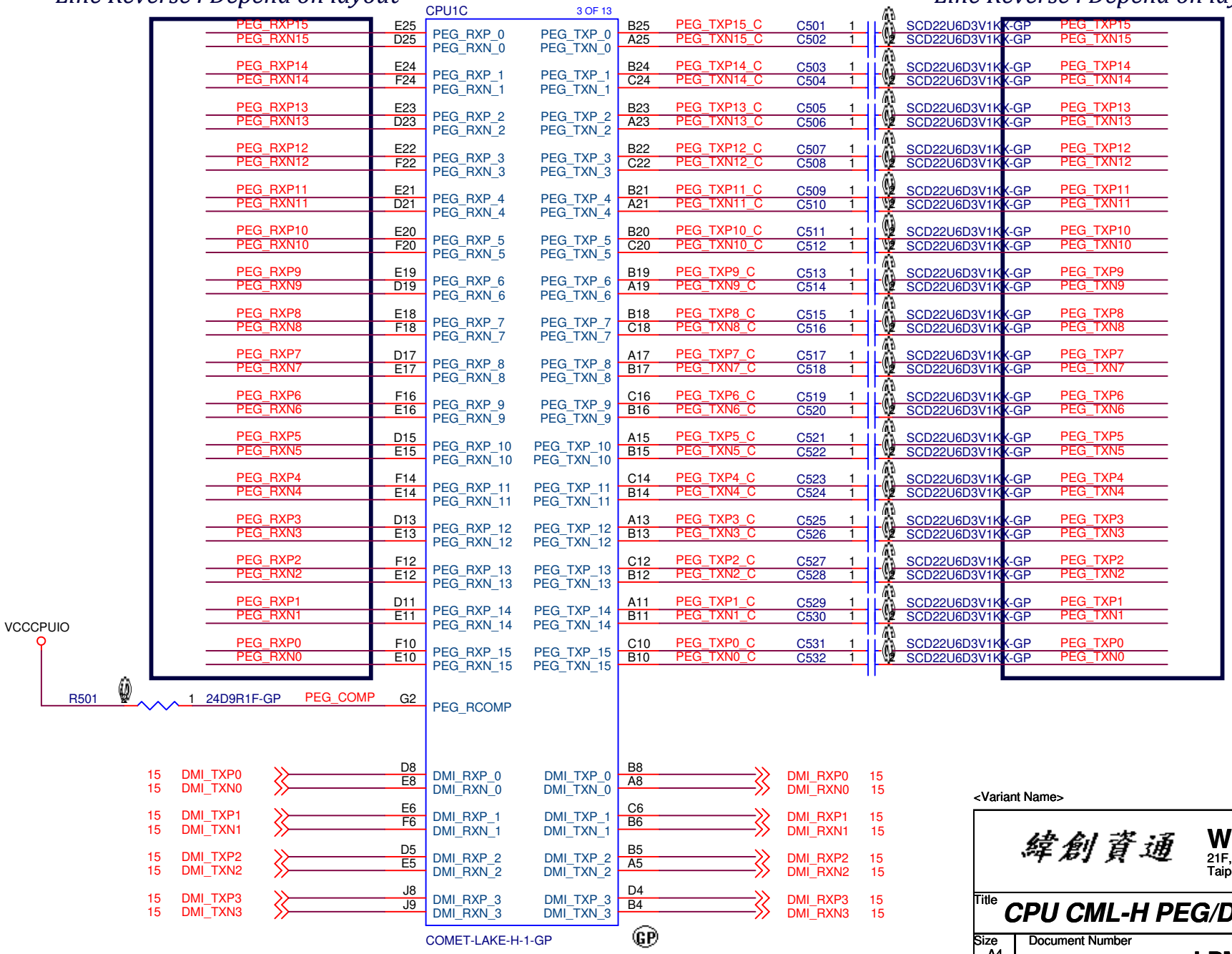
Date: Tuesday, May 19, 2020 Sheet 4 of 111

33 PEG_RXP[15:0]
33 PEG_RXN[15:0]

33 PEG_TXP[15:0]
33 PEG_TXN[15:0]

Line Reverse : Depend on layout

Line Reverse : Depend on layout



<Variant Name>

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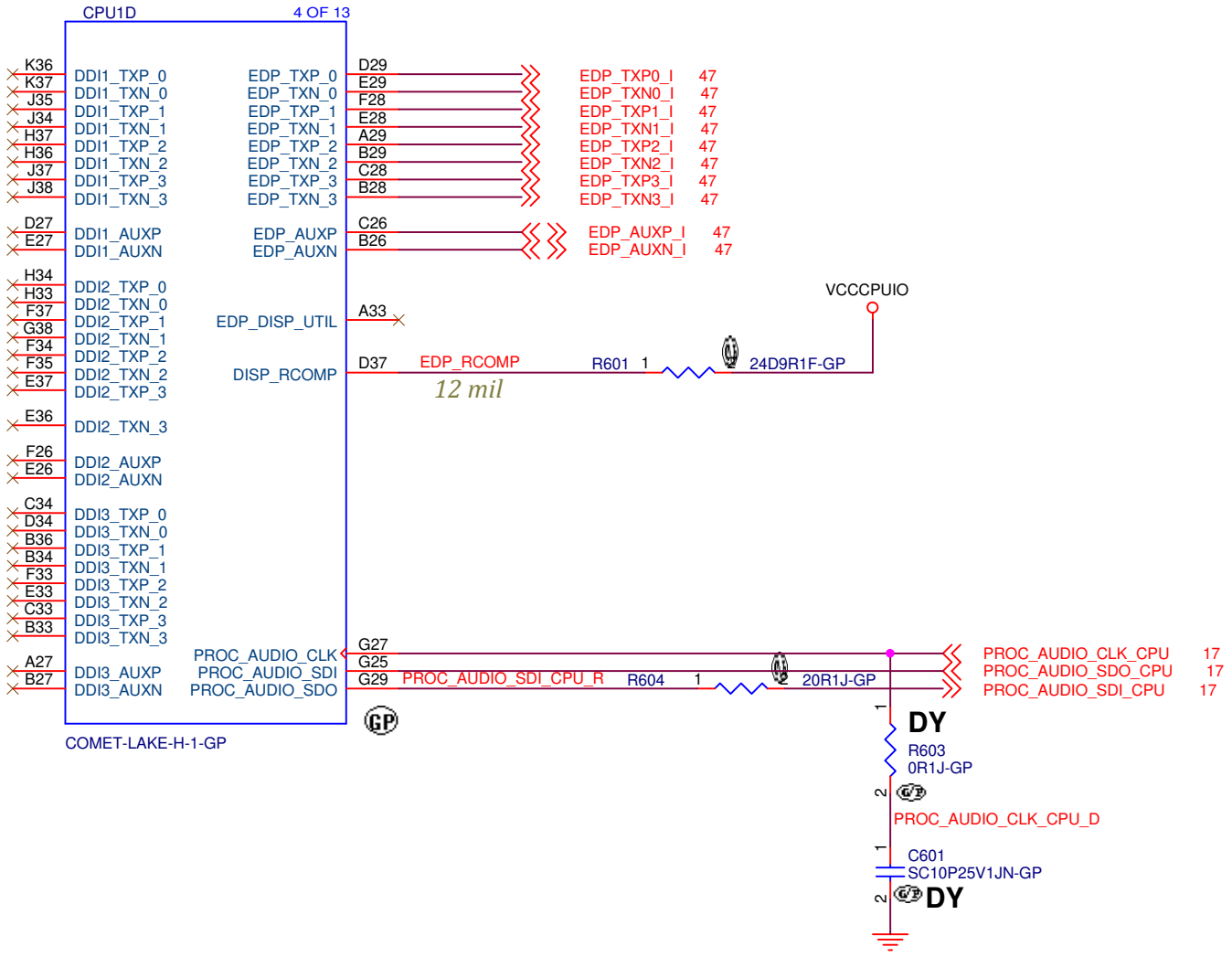
Title **CPU CML-H PEG/DMI**

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 5 of 111



<Variant Name>

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Title **CPU CML-H DDI/EDP**

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 6 of 111

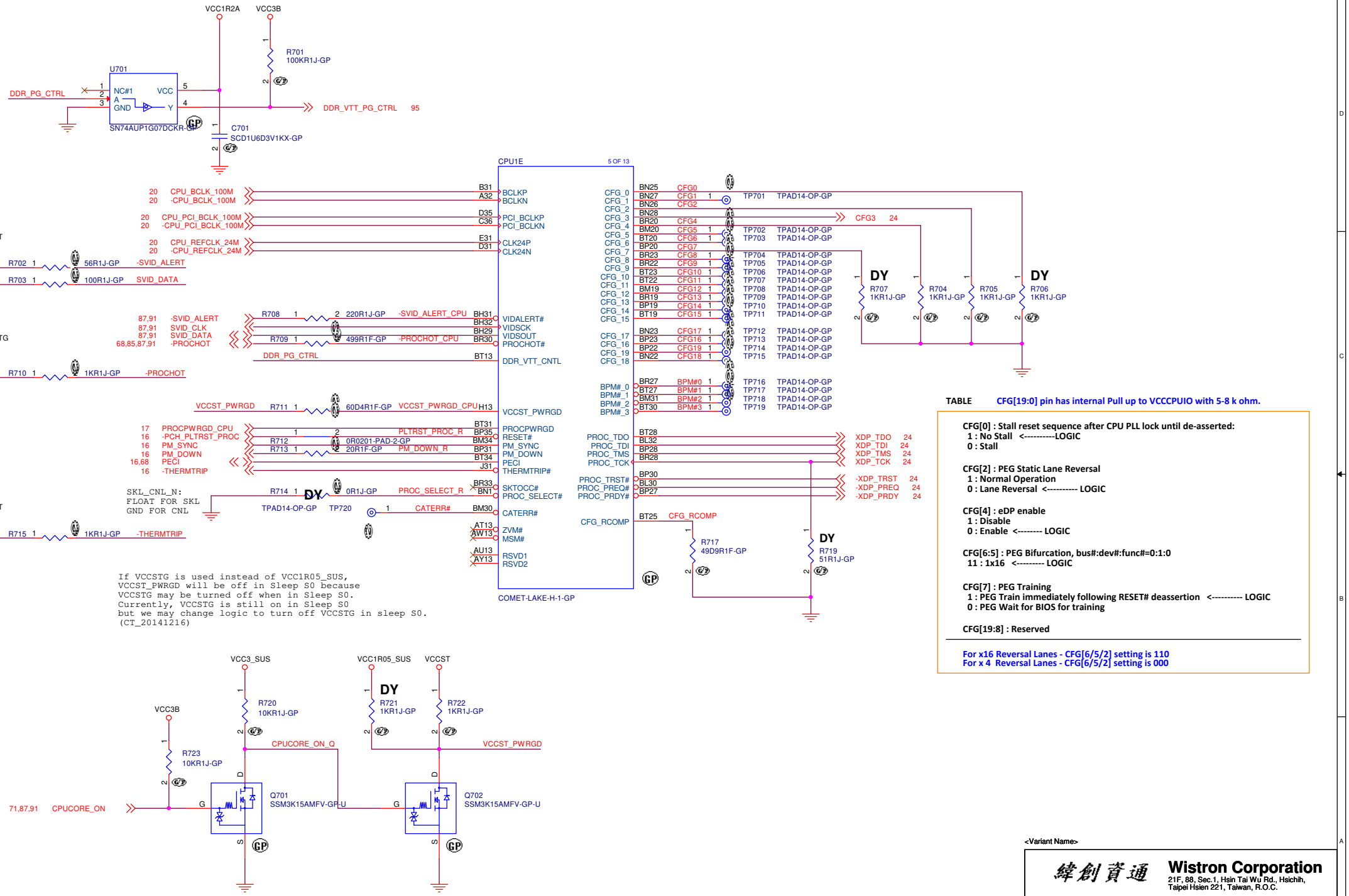

TABLE CFG[19:0] pin has internal Pull up to VCCCPUIO with 5-8 k ohm.

CFG[0] : Stall reset sequence after CPU PLL lock until de-asserted:
1 : No Stall <----------LOGIC
0 : Stall

CFG[2] : PEG Static Lane Reversal
1 : Normal Operation
0 : Lane Reversal <---------- LOGIC

CFG[4] : eDP enable
1 : Disable
0 : Enable <-------- LOGIC

CFG[6:5] : PEG Bifurcation, bus#:dev#:func#=0:1:0
11 : 1x16 <--------- LOGIC

CFG[7] : PEG Training
1 : PEG Train immediately following RESET# deassertion <---------- LOGIC
0 : PEG Wait for BIOS for training

CFG[19:8] : Reserved

For x16 Reversal Lanes - CFG[6/5/2] setting is 110
For x 4 Reversal Lanes - CFG[6/5/2] setting is 000

<Variant Name>

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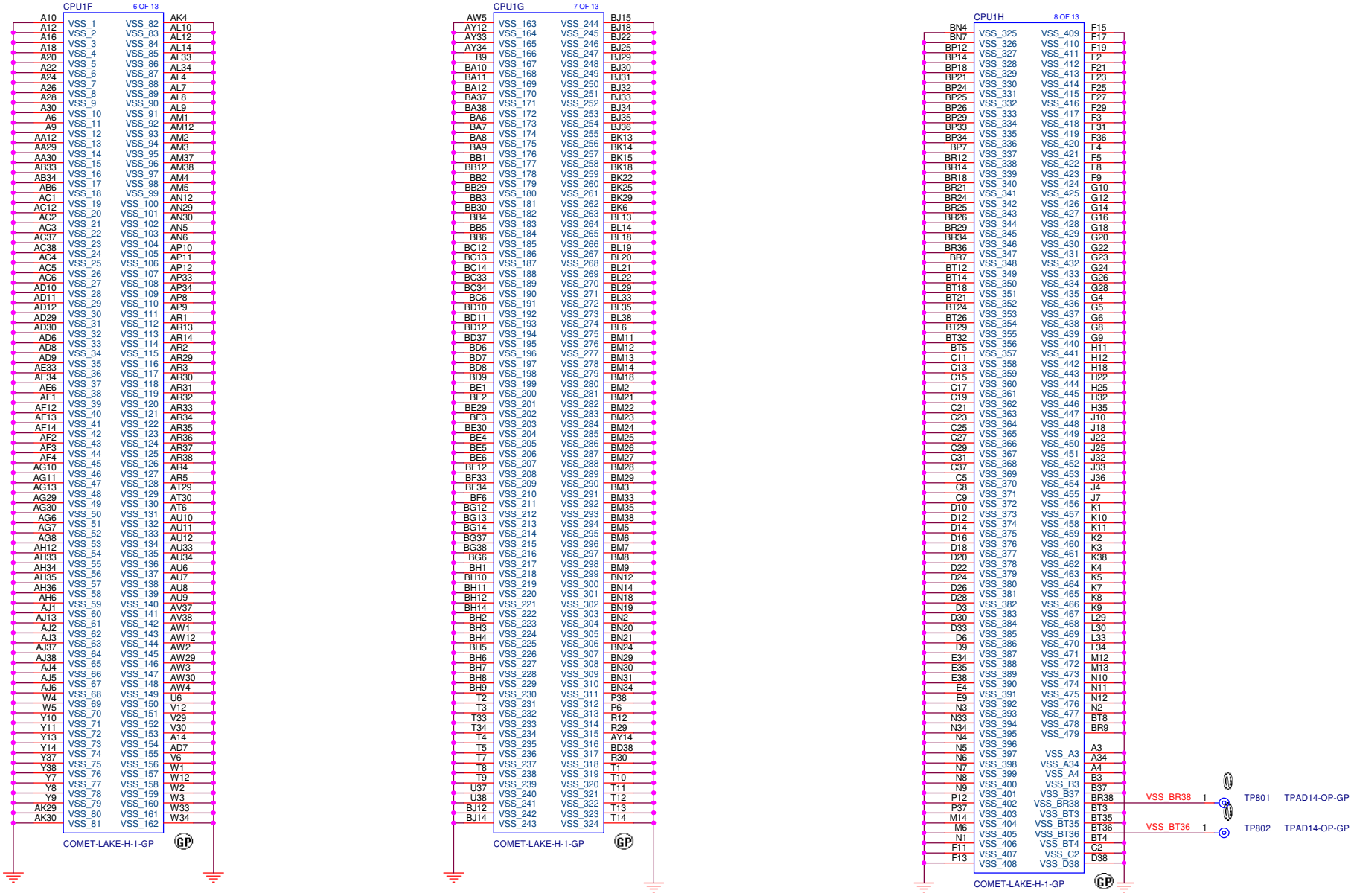
Title: **CPU CML-H MISC/CLK/JTAG/CFG**

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 7 of 111



<Variant Name>

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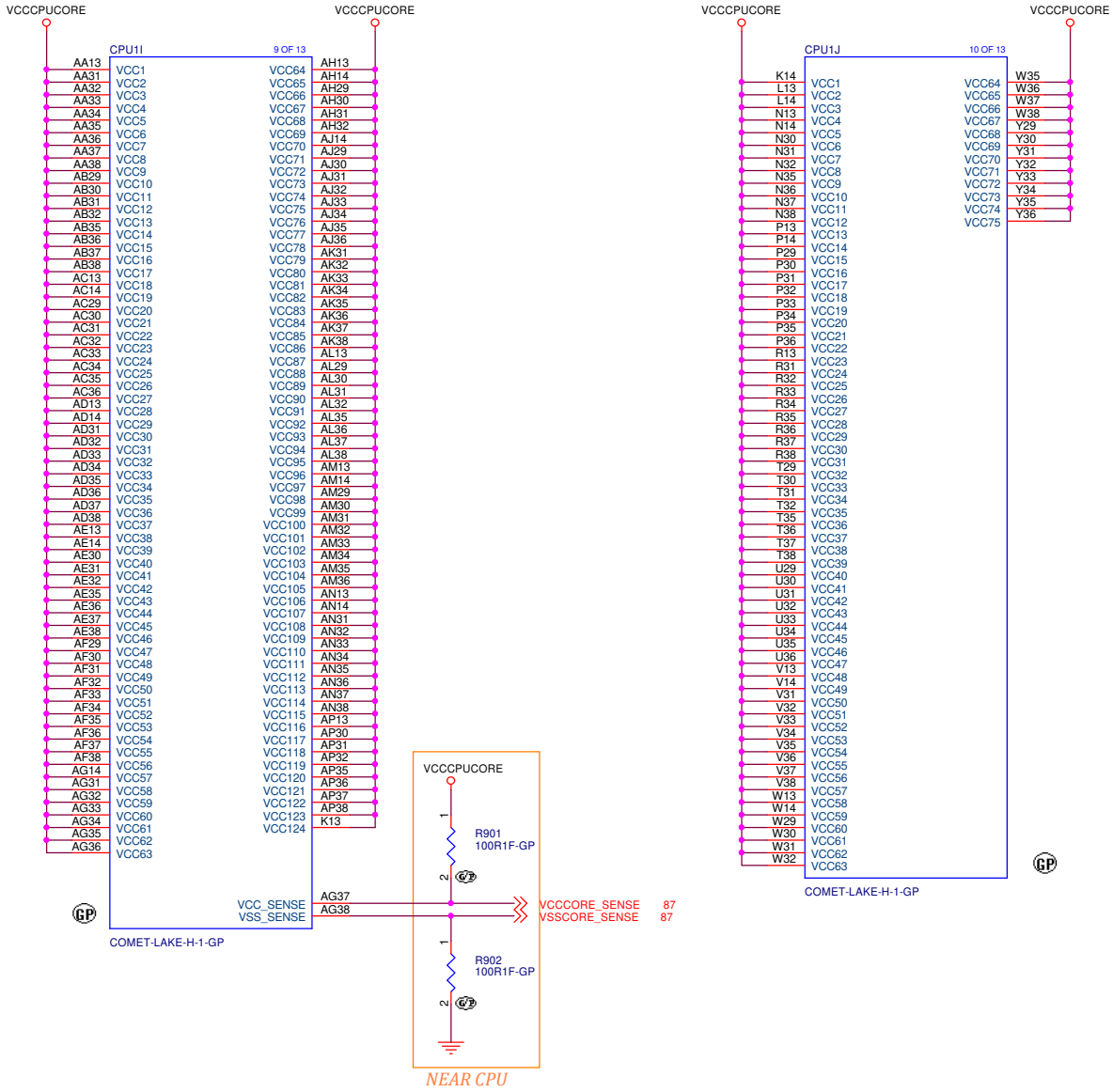
Title: CPU CML-H GND

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 8 of 111



<Variant Name>

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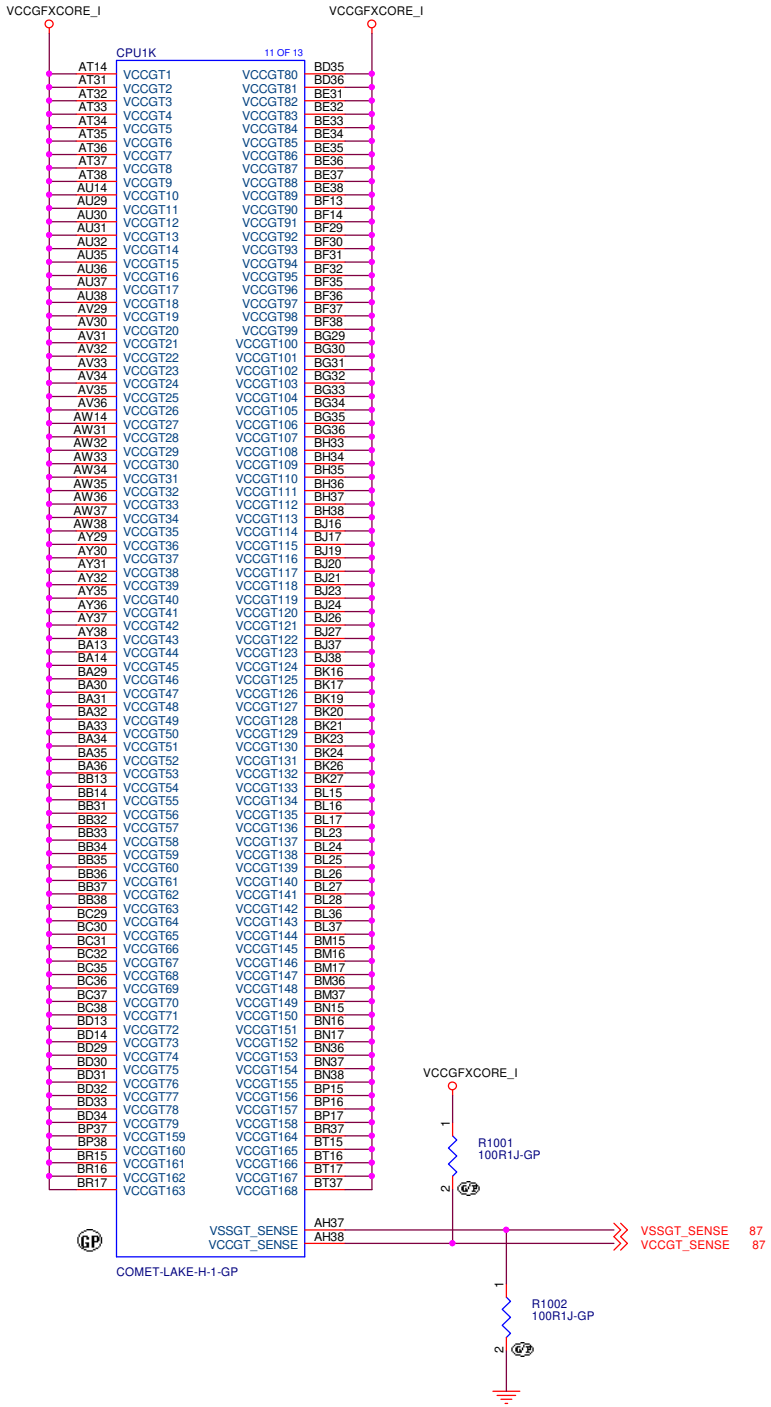
Title: ***CPU CML-H VCC***

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 9 of 111



<Variant Name>

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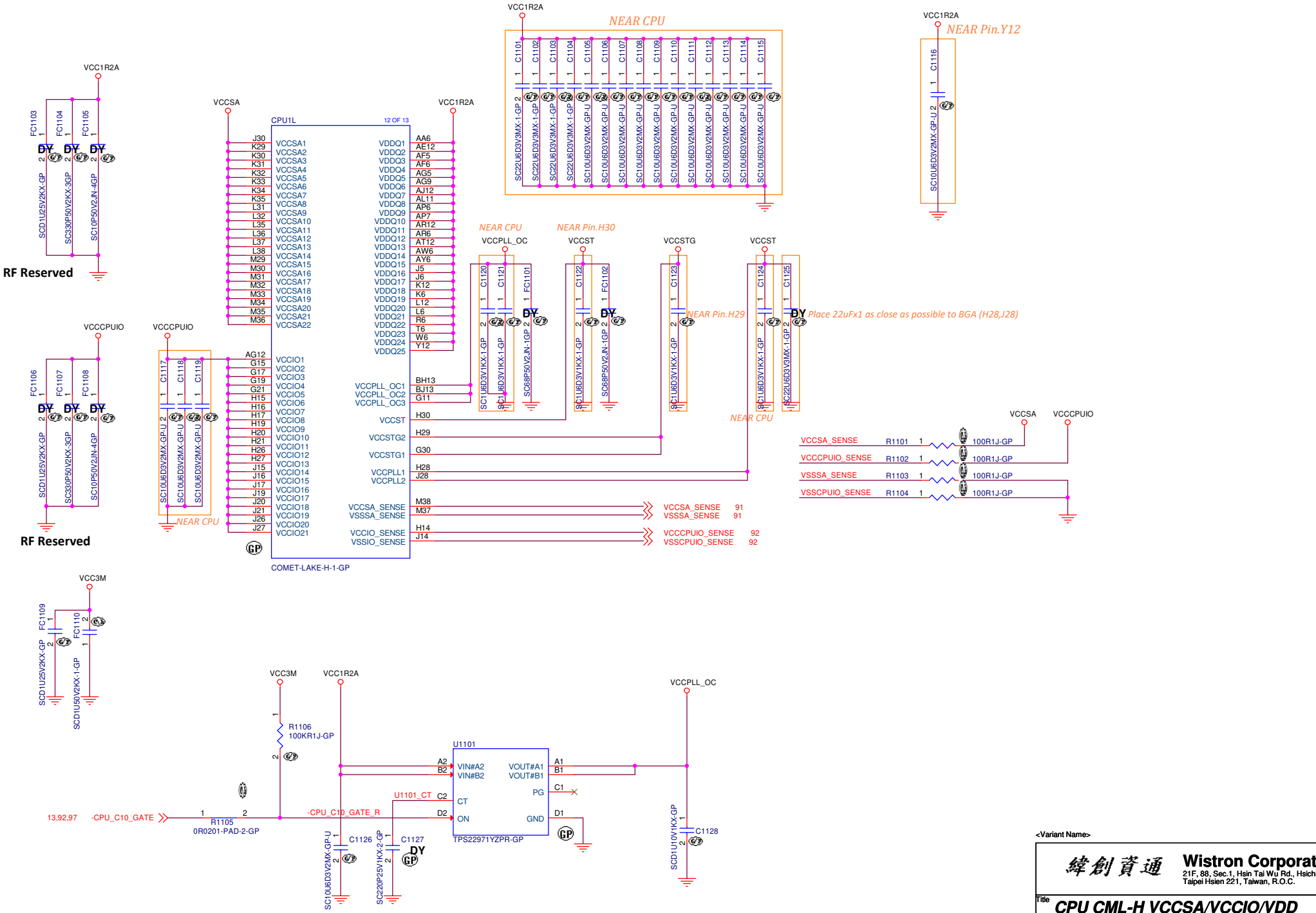
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***CPU CML-H VCCGT***

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 10 of 111



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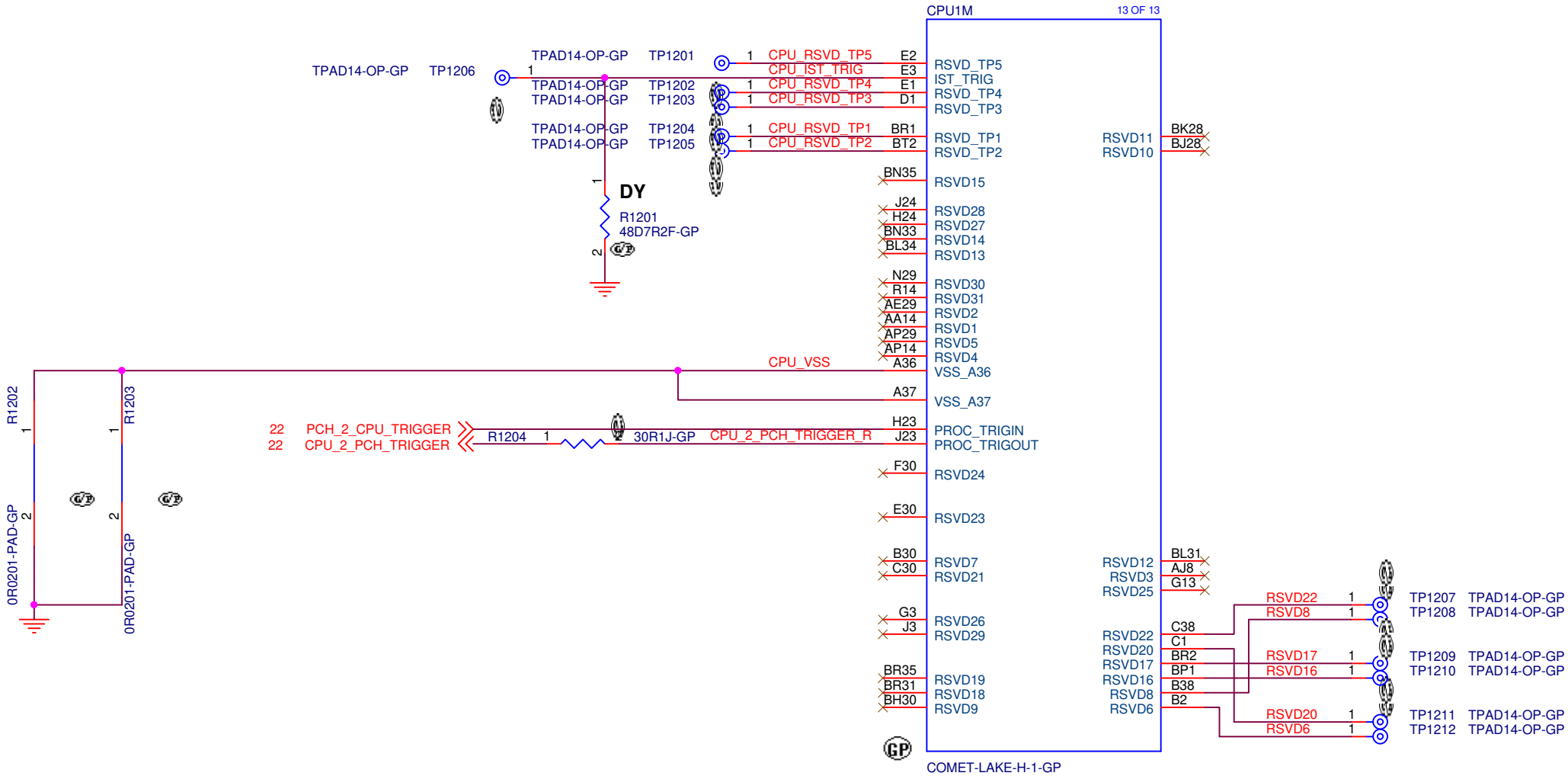
<Variant Name>

Title: CPU CML-H VCCSA/VCCIO/VDD

Size: A3 | Document Number: LPM-3 | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 11 of 111



<Variant Name>

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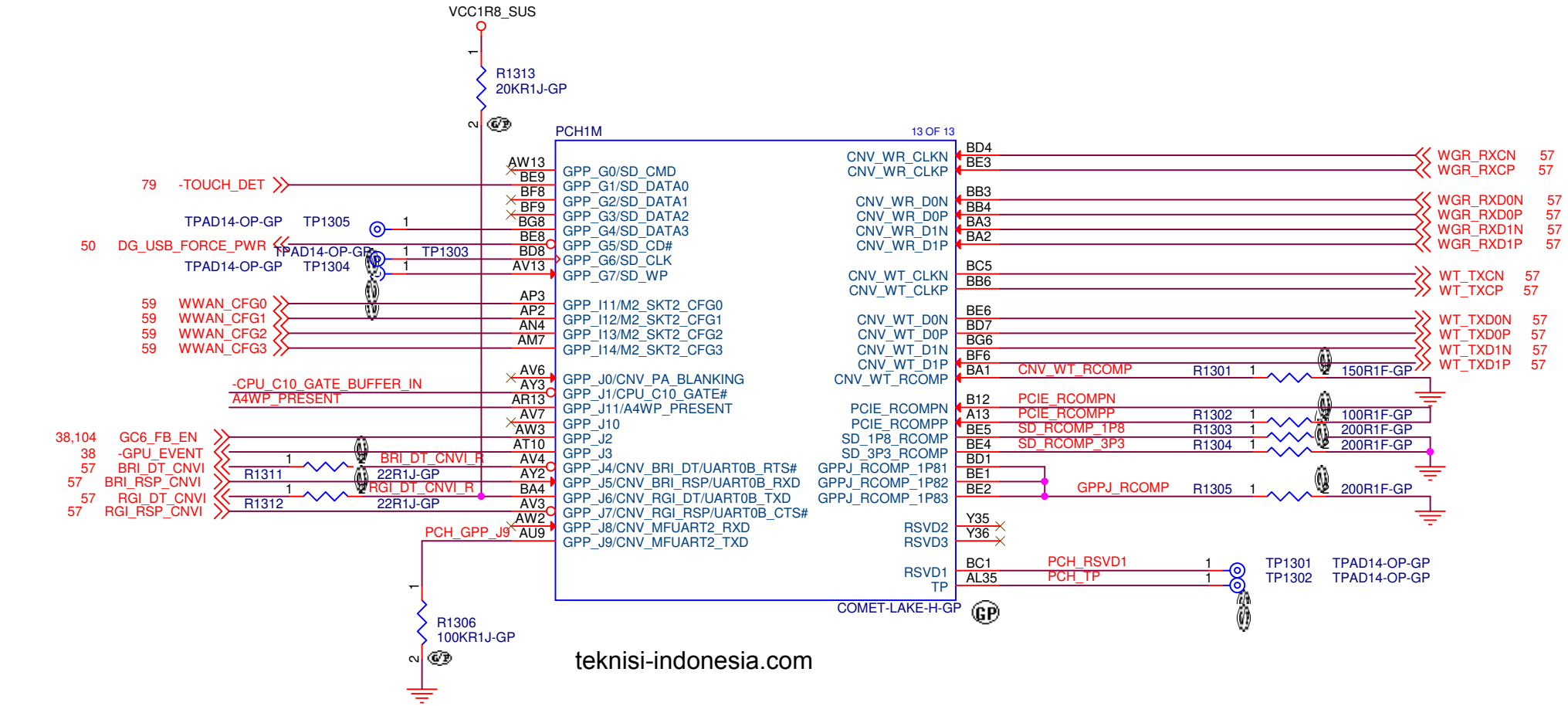
Title: ***CPU CML-H RSVD***

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 12 of 111



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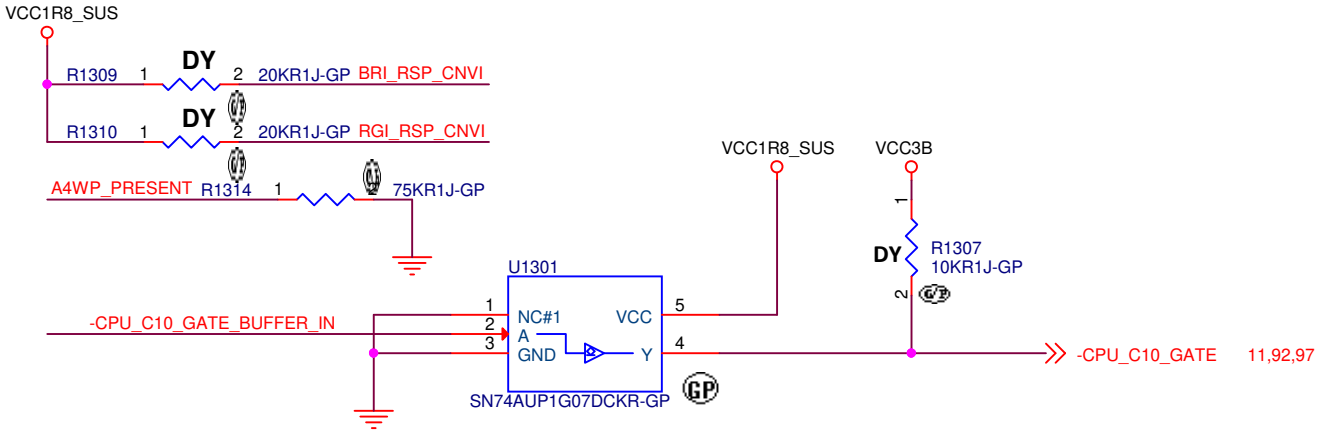

<Variant Name>

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Title	***PCH CML-H CNV***	
Size A4	Document Number **LPM-3**	Rev **-1**
Date: Tuesday, May 19, 2020	Sheet 13 of 111	

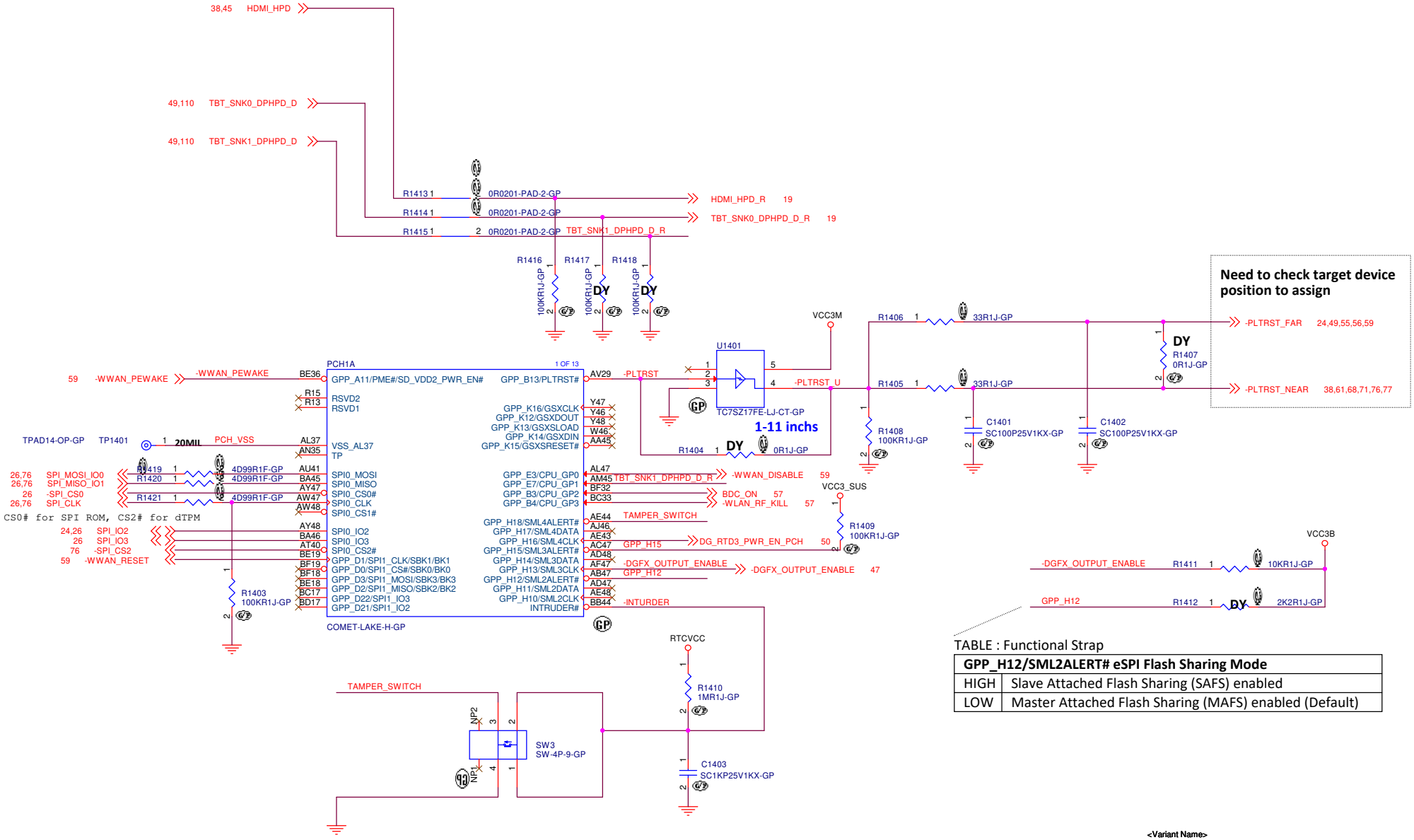

TABLE : Functional Strap

GPP_H12/SML2ALERT# eSPI Flash Sharing Mode	
HIGH	Slave Attached Flash Sharing (SAFS) enabled
LOW	Master Attached Flash Sharing (MAFS) enabled (Default)

<Variant Name>

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Title: PCH CML-H SPI

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 14 of 111

HSIO Port	WM490	Net Name
Port0	USB3.1 #1	USB3P1
Port1	USB3.1 #2	N/A
Port2	USB3.1 #3	N/A
Port3	USB3.1 #4	N/A
Port4	USB3.1 #5	N/A
Port5	USB3.1 #6	USB3P6
Port6	USB3.1 #7 / PCIe #1	PCIE1L0
Port7	USB3.1 #8 / PCIe #2	PCIE1L1
Port8	USB3.1 #9 / PCIe #3	PCIE1L2
Port9	USB3.1 #10 / PCIe #4	PCIE1L3
Port10	PCIe #5 / GbE	N/A
Port11	PCIe #6	N/A
Port12	PCIe #7	PCIE7
Port13	PCIe #8	PCIE8
Port14	PCIe #9 / GbE	PCIE12L3
Port15	PCIe #10	PCIE12L2
Port16	PCIe #11 / SATA #0a	PCIE12L1
Port17	PCIe #12 / SATA #1a / GbE	PCIE12L0_SATA1A
Port18	PCIe #13 / SATA #0b / GbE	N/A
Port19	PCIe #14 / SATA #1b	N/A
Port20	PCIe #15	N/A
Port21	PCIe #16	N/A
Port22	PCIe #17 / SATA #4	PCIE17L0_SATA4
Port23	PCIe #18 / SATA #5	PCIE17L1
Port24	PCIe #19 / SATA #6	PCIE17L2
Port25	PCIe #20 / SATA #7	PCIE17L3
Port26	PCIe #21	N/A
Port27	PCIe #22	N/A
Port28	PCIe #23	N/A
Port29	PCIe #24	N/A

PCH1B

2 OF 13

COMET-LAKE-H-GP

USB2.0 Port Assignment	
Port1	System Port (AOU)
Port2	Reserved
Port3	Reserved
Port4	USB Type-C #1
Port5	USB Type-C #2
Port6	System Port
Port7	Wireless WAN
Port8	CAMERA
Port9	Fingerprint Reader
Port10	Touch Panel
Port11	Reserved
Port12	Reserved
Port13	Reserved
Port14	Reserved

Titan-Ridge

WWAN Card

Media Card

USB2_COMP RES : Place within 1 inch

USB2_VBUSSENSE / USB2_ID

USB OTG FUNCTION SUPPORT

PCIe Port Assignment	
Port1	Thunderbolt (PCIe L0)
Port2	Thunderbolt (PCIe L1)
Port3	Thunderbolt (PCIe L2)
Port4	Thunderbolt (PCIe L3)
Port5	N/A
Port6	N/A
Port7	Wireless WAN
Port8	Media Card Controller
Port9	M.2 SSD0 (PCIe L3)
Port10	M.2 SSD0 (PCIe L2)
Port11	M.2 SSD0 (PCIe L1)
Port12	M.2 SSD0 (PCIe L0)
Port13	N/A
Port14	N/A
Port15	N/A
Port16	N/A
Port17	M.2 SSD1 (PCIe L0)
Port18	M.2 SSD1 (PCIe L1)
Port19	M.2 SSD1 (PCIe L2)
Port20	M.2 SSD1 (PCIe L3)
Port21	N/A
Port22	N/A
Port23	N/A
Port24	N/A

Planar ID Table

Phase	ID2	ID1	ID0
EVT	0	0	1
FVT	0	1	0
SIT	0	1	1
SIT-R	1	0	0
SVT	1	0	1

CPU Configration Table

Core	ID4	ID3
H62	0	0
H82	0	1
H42	1	0

<Variant Name>

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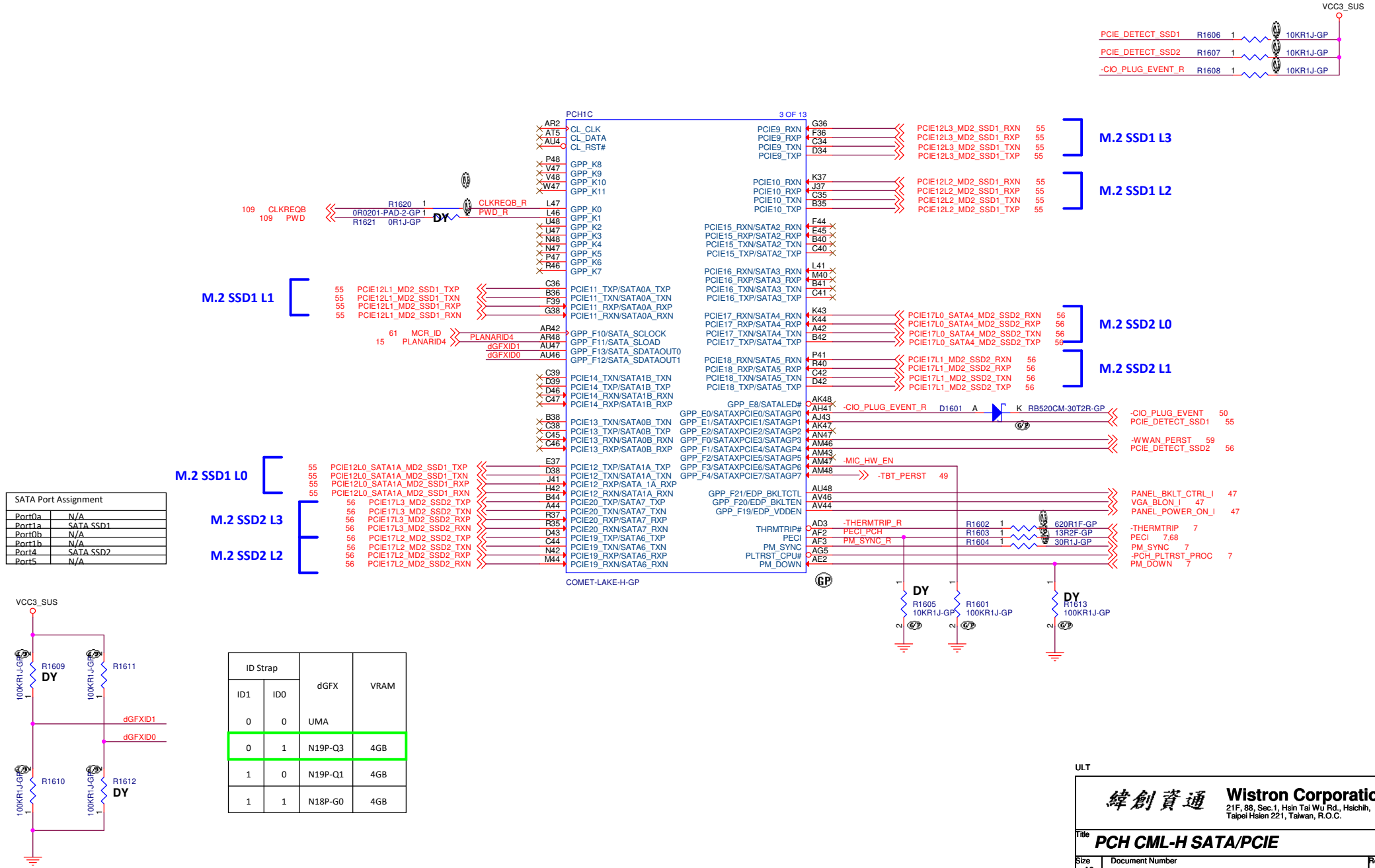
Title: PCH CML-H DMI/PCIE/USB

Size: A3 | Document Number: LPM-3 | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 15 of 111



SATA Port Assignment	
Port0a	N/A
Port1a	SATA SSD1
Port0b	N/A
Port1b	N/A
Port4	SATA SSD2
Port5	N/A

ID Strap		dGFX	VRAM
ID1	ID0		
0	0	UMA	
0	1	N19P-Q3	4GB
1	0	N19P-Q1	4GB
1	1	N18P-G0	4GB

ULT

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

Title: PCH CML-H SATA/PCIE

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 16 of 111

TABLE : Functional Strap

HDA_SDO/I2S0_TXD Flash Descriptor Security Override	
HIGH	Disable Flash Descriptor Security (Override)
LOW	Enable Flash Descriptor Security (Default)

HDA_SDO is used to update the Descritor and/or the ME regions of the SPI after MFG Done bit is set.

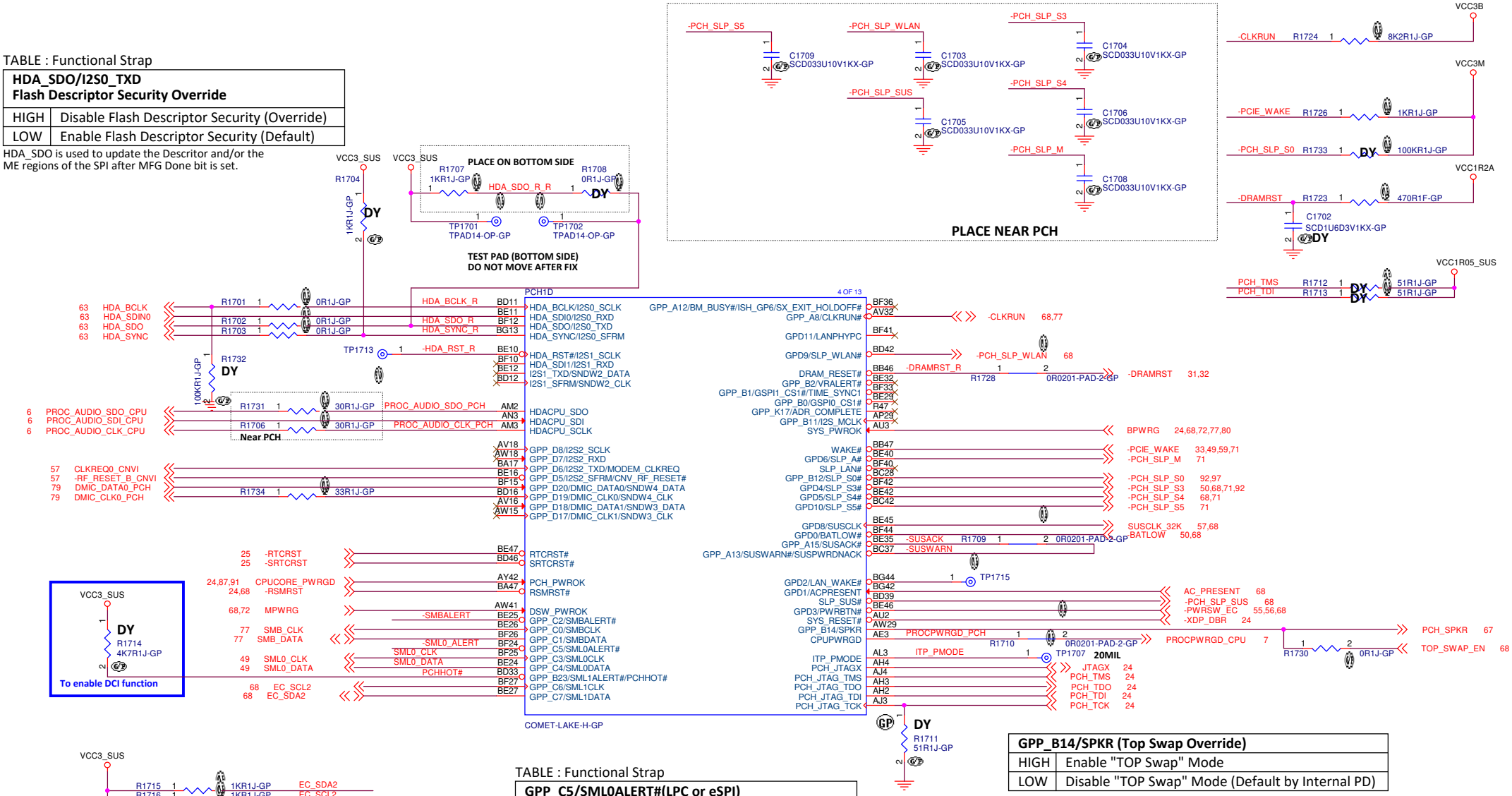

TABLE : Functional Strap

GPP_C5/SML0ALERT#(LPC or eSPI)	
HIGH	eSPI is selected
LOW	LPC is selected(Default)

TABLE : Functional Strap

GPP_C2/SMBALERT# (TLS Confidentiality)	
HIGH	Enable ME Crypto TLS with Confldentlality
LOW	Disable ME Crypto TLS(Default)

TABLE : Functional Strap

GPP_B23/SML1ALERT#/PCHHOT#(Intel DCI-OOB)	
HIGH	Enable Intel DCI-OOB
LOW	Disable Intel DCI-OOB (Default)

GPP_B14/SPKR (Top Swap Override)	
HIGH	Enable "TOP Swap" Mode
LOW	Disable "TOP Swap" Mode (Default by Internal PD)

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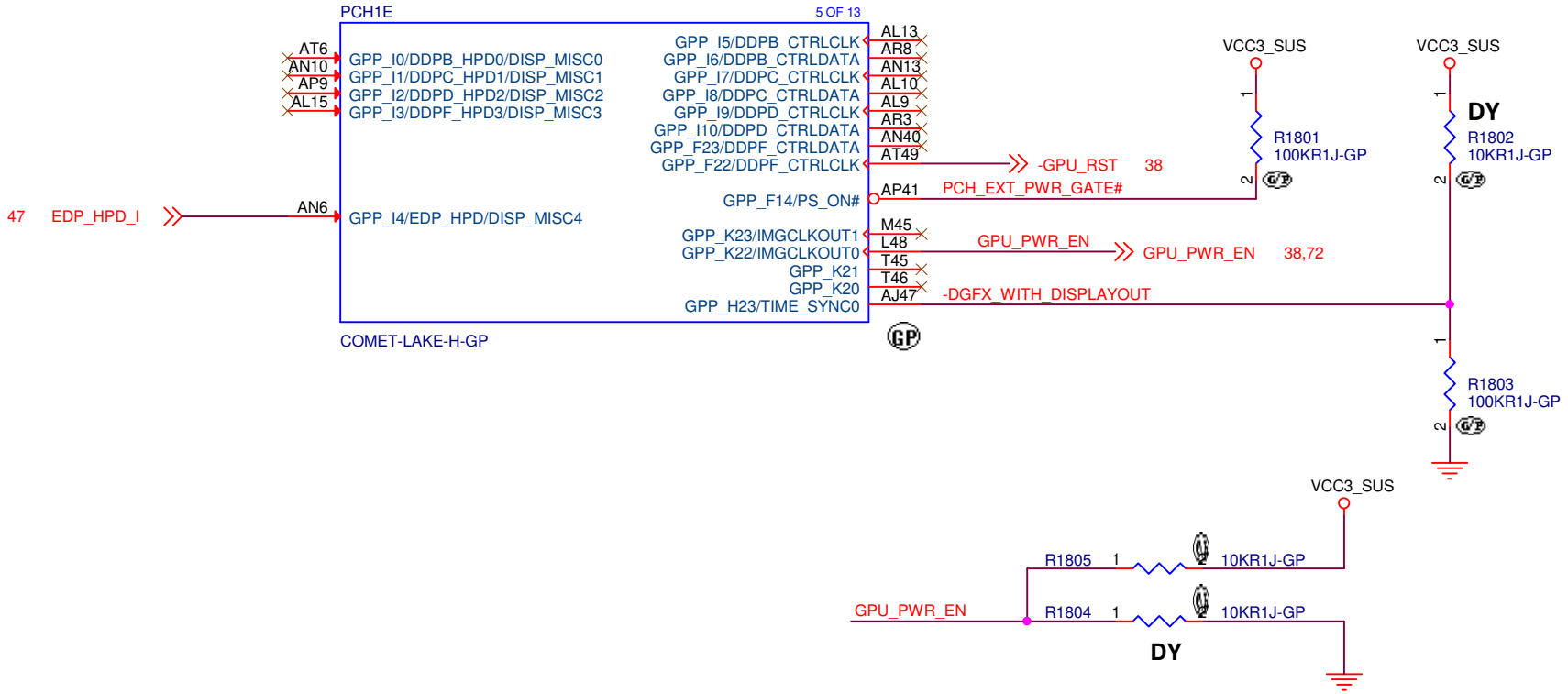
<variant_name>

Title: PCH CML-H AUDIO/SMBUS/JTAG

Size: A3 | Document Number: LPM-3 | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 17 of 111



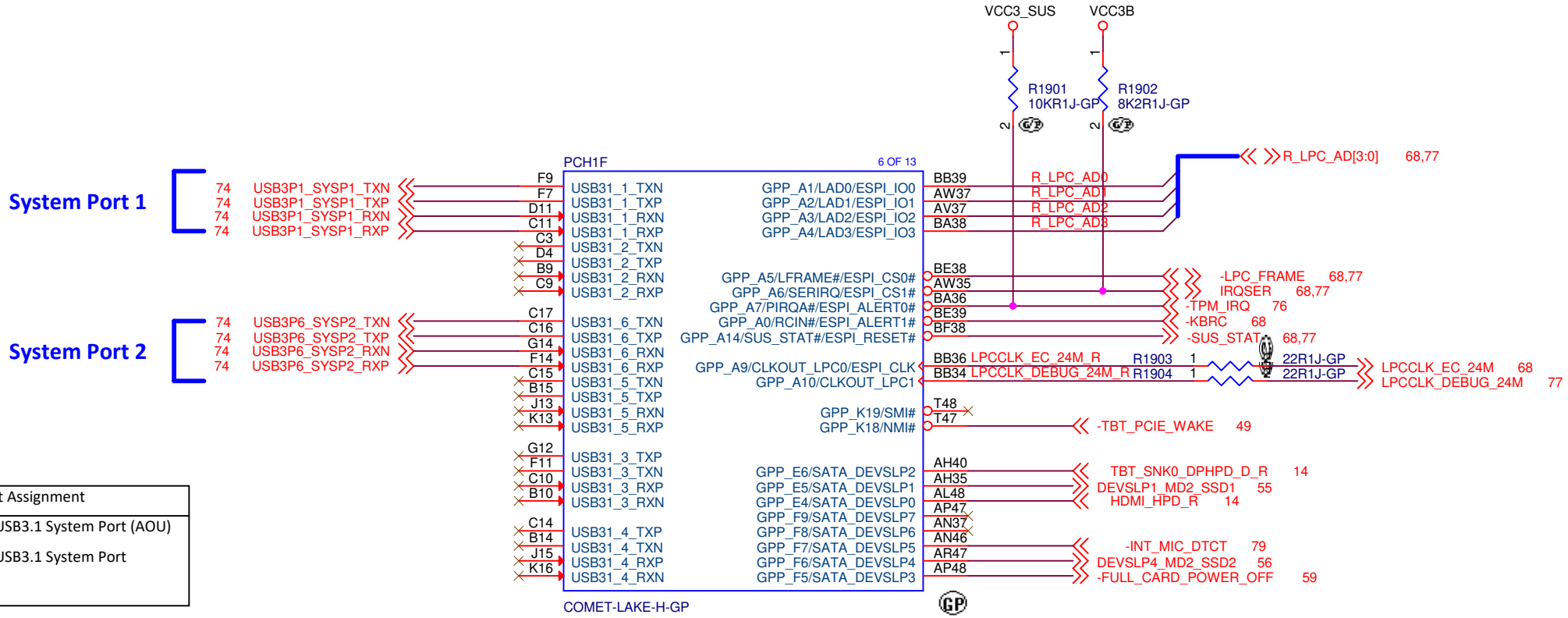
<Variant Name>

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

Title: ***PCH CML-H DDI CONTROL***

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 18 of 111



USB 3.1 Port Assignment	
Port1	USB3.1 System Port (AOU)
Port6	USB3.1 System Port

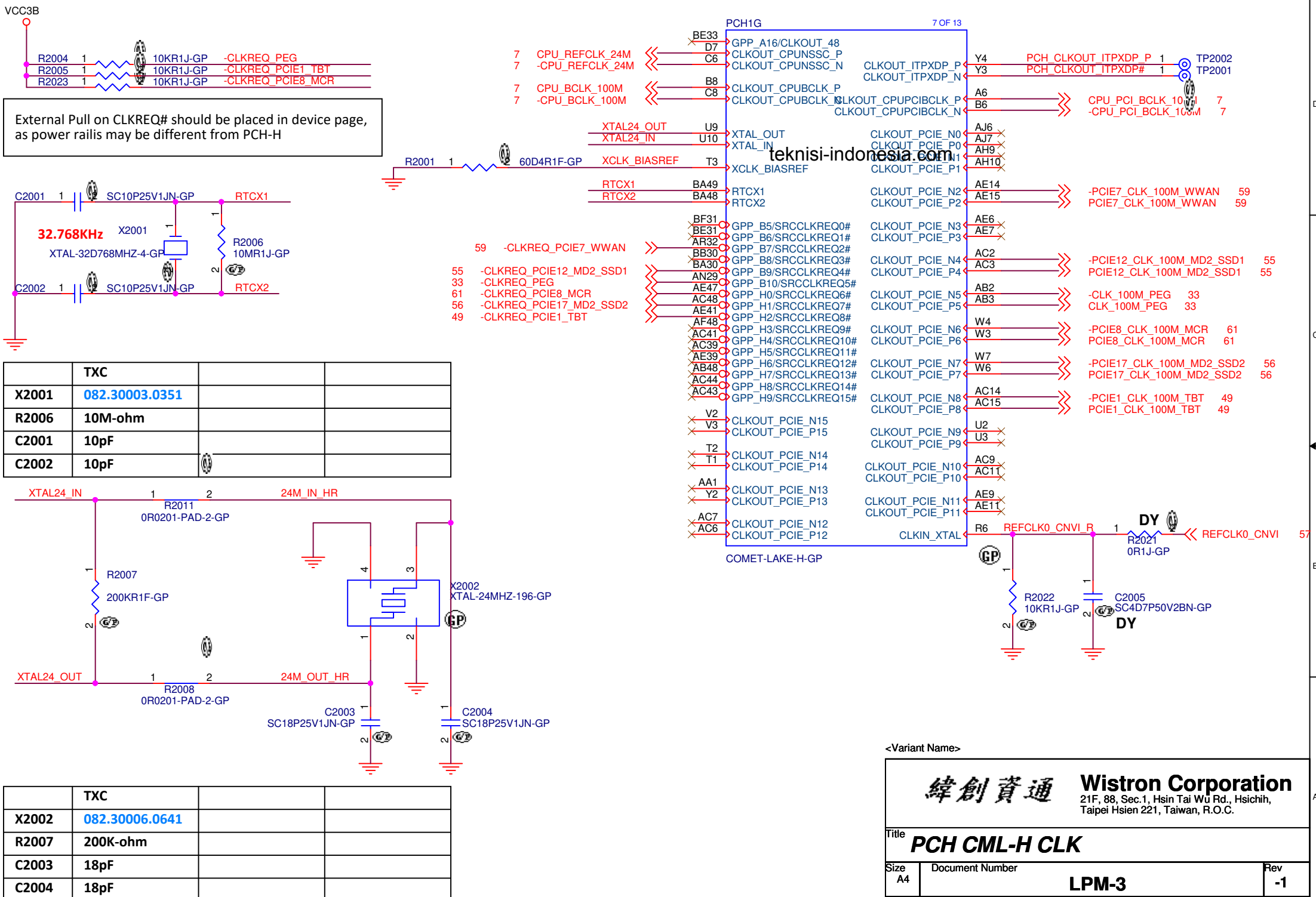
<Variant Name>

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

Title: ***PCH CML-H USB3/LPC***

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 19 of 111



	TXC		
X2001	082.30003.0351		
R2006	10M-ohm		
C2001	10pF		
C2002	10pF		

	TXC		
X2002	082.30006.0641		
R2007	200K-ohm		
C2003	18pF		
C2004	18pF		

<Variant Name>

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

Title: **PCH CML-H CLK**

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RF Reserved

PCH1H
8 OF 13
COMET-LAKE-H-GP

NEAR BC49 and BD49
NEAR BB14
NEAR BG5
NEAR P2, P3
NEAR B1, B2, B3
NEAR AY8, BB7
NEAR BE48, BE49
NEAR BG45, BG46
NEAR C49, D49, E49
NEAR C1, C2
NEAR W31
NEAR D1, E1

PWR_VCC1R05_SENSE_R 93
PWR_VCC1R05_SENSE_GND 93

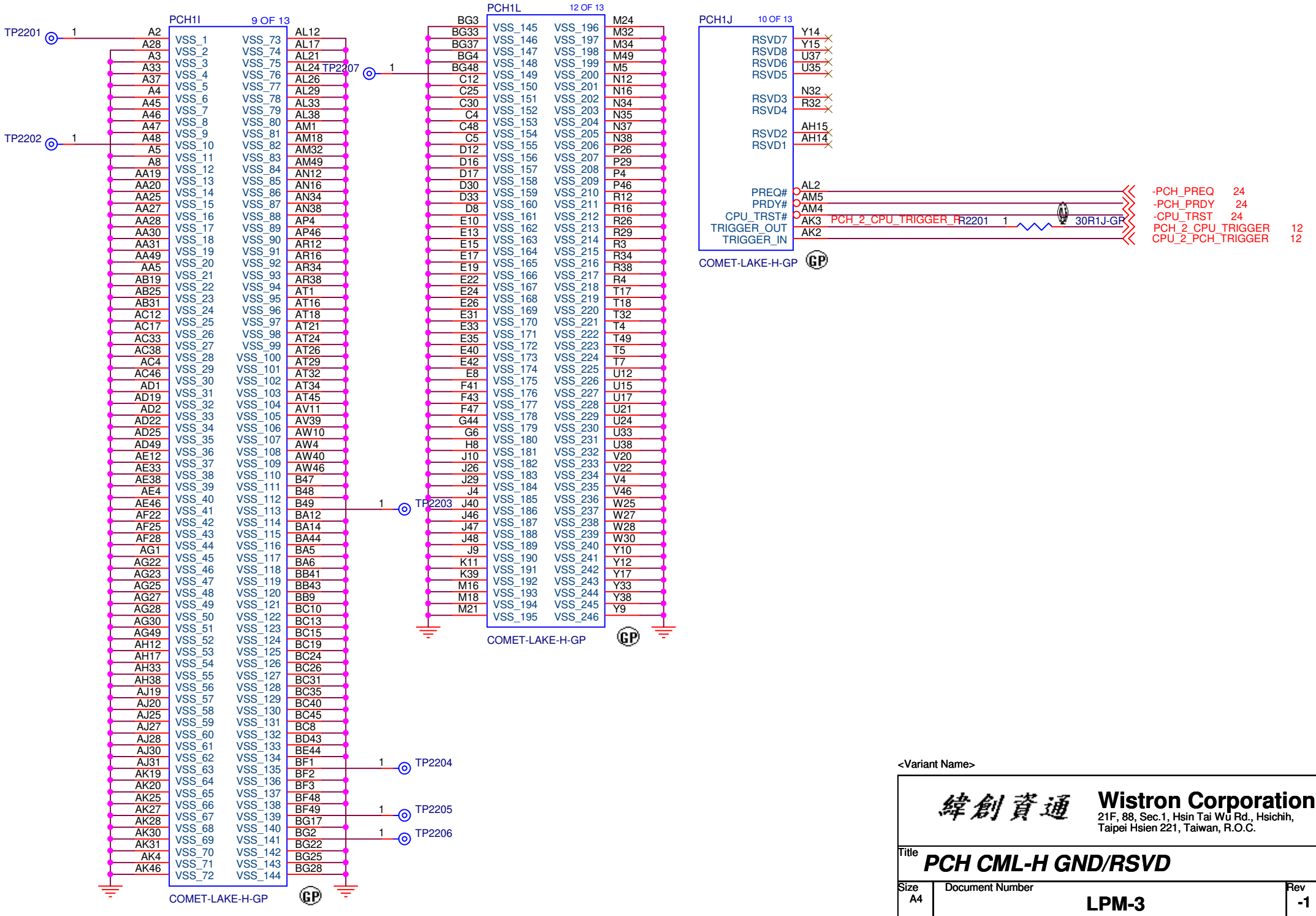
<Variant Name>

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

Title: PCH CML-H POWER

Size: A3 | Document Number: LPM-3 | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 21 of 111



<Variant Name>

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

Title **PCH CML-H GND/RSVD**

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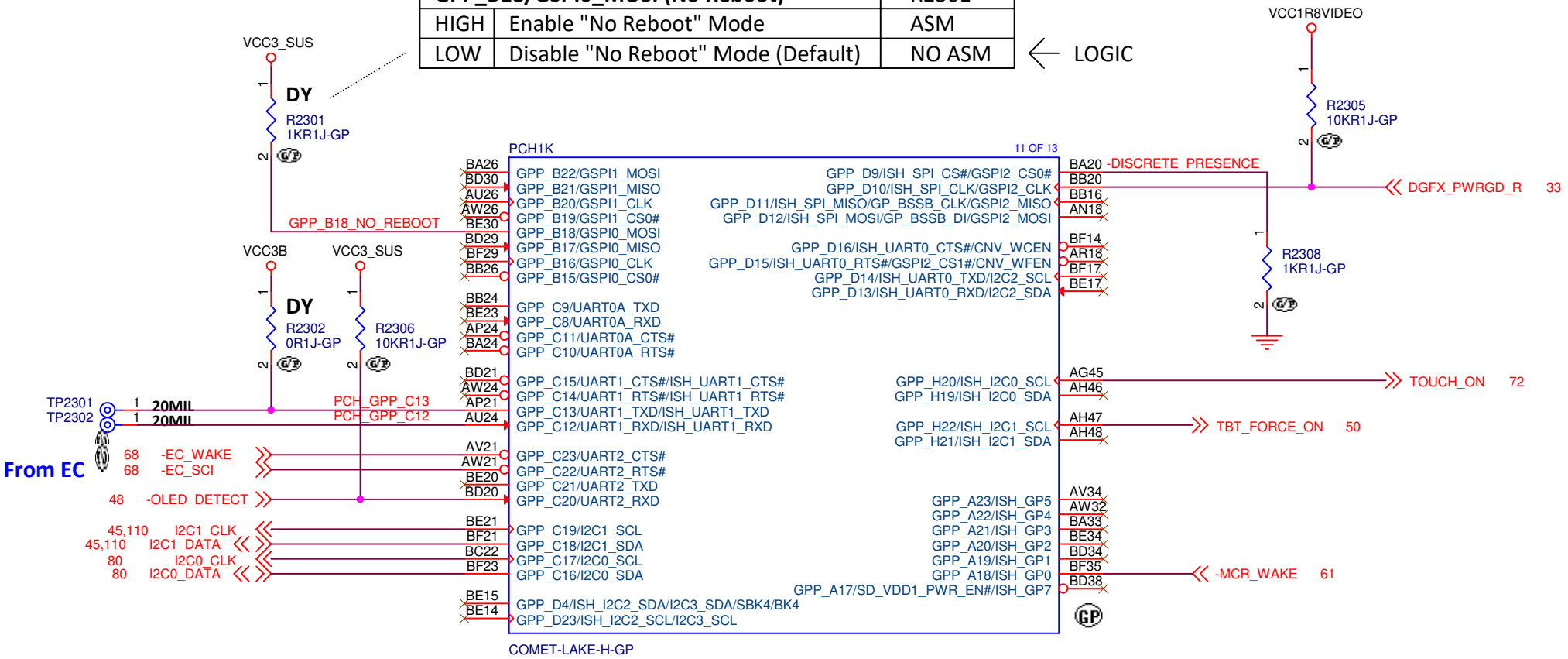
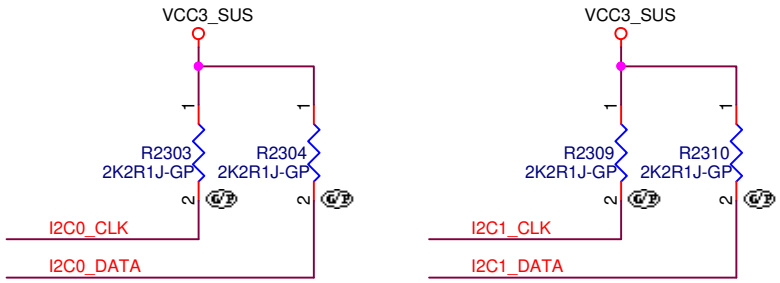
TABLE : Functional Strap

GPP_B18/GSPI0_MOSI (No Reboot)		R2301
HIGH	Enable "No Reboot" Mode	ASM
LOW	Disable "No Reboot" Mode (Default)	NO ASM

← LOGIC





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<Variant Name>

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

Title: **PCH CML-H GSPI/UART/I2C**

Size	Document Number	Rev
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XDP

TABLE : CPU ITP DEBUG REPORT

		NO Use	Individual Port	DCI 2.0 w/o connector
XDPR1	R2401	NO ASM	NO ASM	ASM
XDPR27	R2428	NO ASM	ASM	NO ASM
XDPR28	R2408	NO ASM	ASM	NO ASM
XDPR11	R2413	NO ASM	ASM	ASM
XDPC1	C2401	NO ASM	ASM	NO ASM
PCHR142	R2411	ASM	ASM	ASM
XDPR23	R2424	NO ASM	ASM	NO ASM
XDPR14	R2418	NO ASM	ASM	ASM
XDPR16	R2416	NO ASM	ASM	ASM
XDPR19	R2420	NO ASM	ASM	ASM
XDPR20	R2421	NO ASM	ASM	ASM
XDPR17	R2417	NO ASM	ASM	ASM
XDPR18	R2419	NO ASM	ASM	ASM
XDPR22	R2423	NO ASM	ASM	ASM
XDPR24	R2425	NO ASM	ASM	ASM
XDPR25	R2426	NO ASM	ASM	ASM
XDPR26	R2427	NO ASM	ASM	ASM

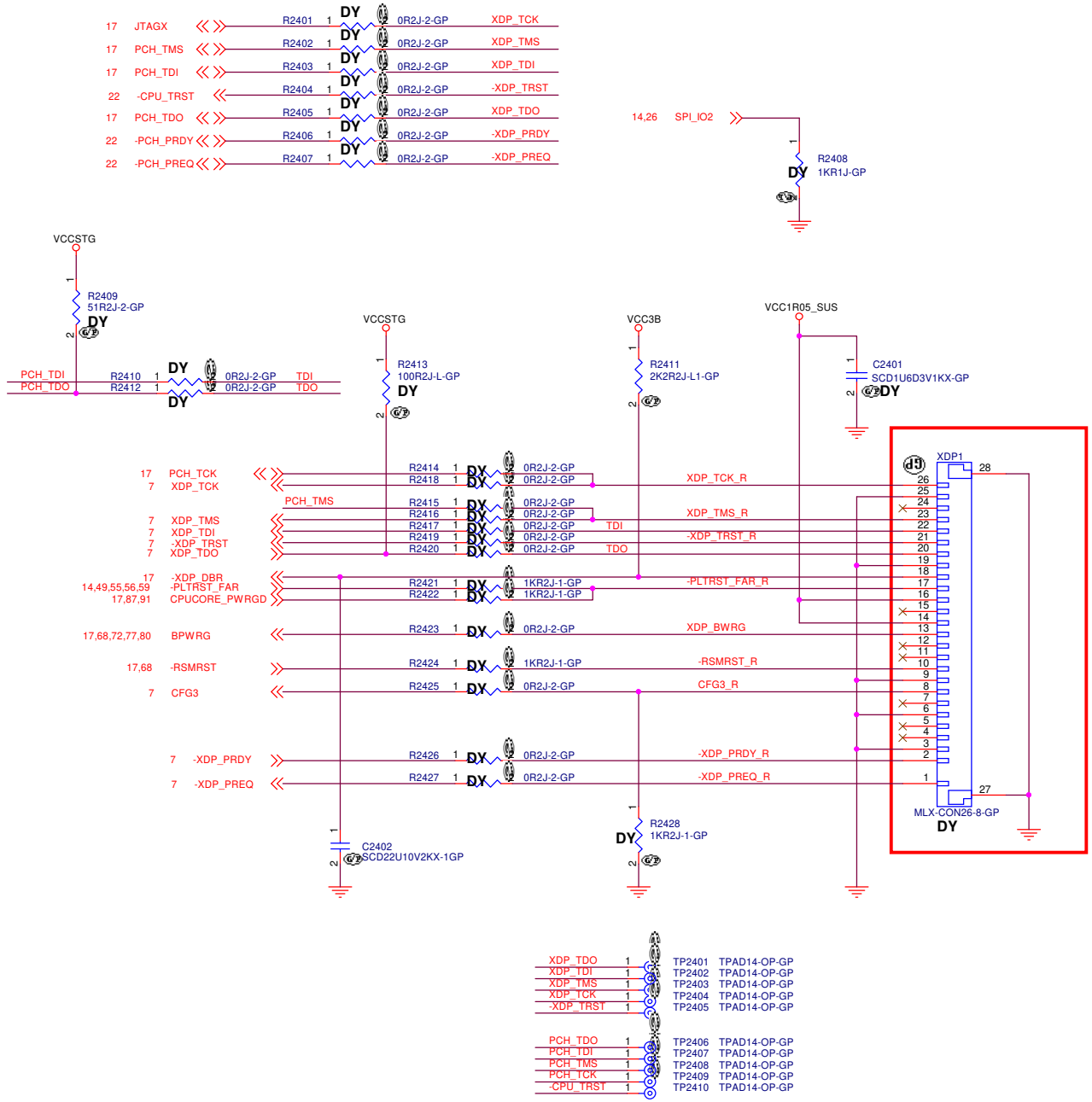
LOGIC

TABLE : PCH ITP DEBUG REPORT

		NO Use	Individual Port	DCI 2.0 w/o connector
XDPR8	R2409	NO ASM	ASM	NO ASM
XDPR21	R2422	NO ASM	ASM	NO ASM
XDPR23	R2424	NO ASM	ASM	NO ASM
XDPR13	R2414	NO ASM	ASM	NO ASM
XDPR15	R2415	NO ASM	ASM	NO ASM
XDPR9	R2410	NO ASM	ASM	NO ASM
XDPR10	R2412	NO ASM	ASM	NO ASM

LOGIC

PCHR31	R1711	NO ASM	ASM	NO ASM
PCHR32	R1712	NO ASM	ASM	NO ASM
PCHR33	R1713	NO ASM	ASM	NO ASM



<Variant Name>

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

Title: XDP CONNECTOR

Size	Document Number	Rev
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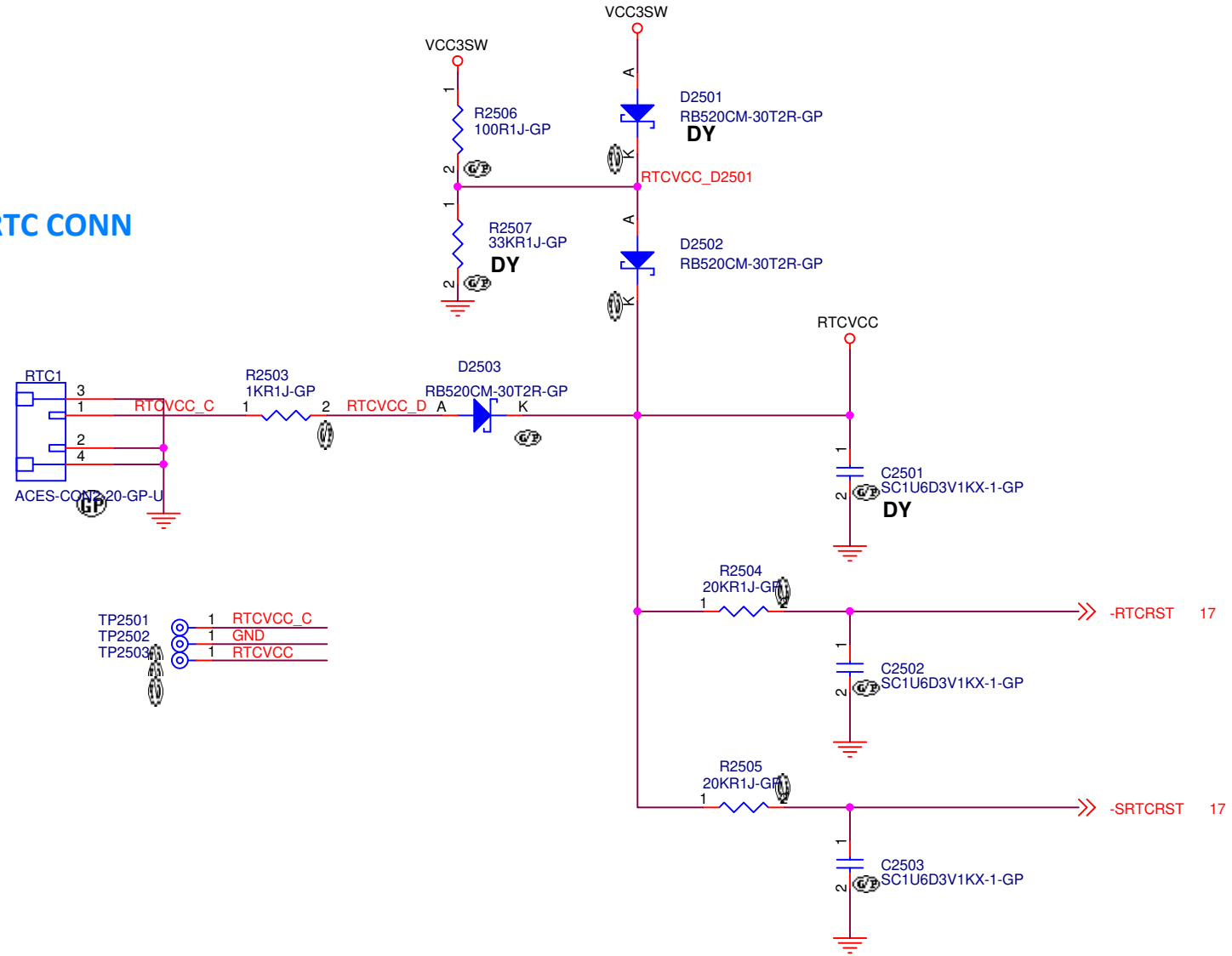
RTC

RTC CONN



<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: ***RTC BATTERY***

Size	Document Number	Rev
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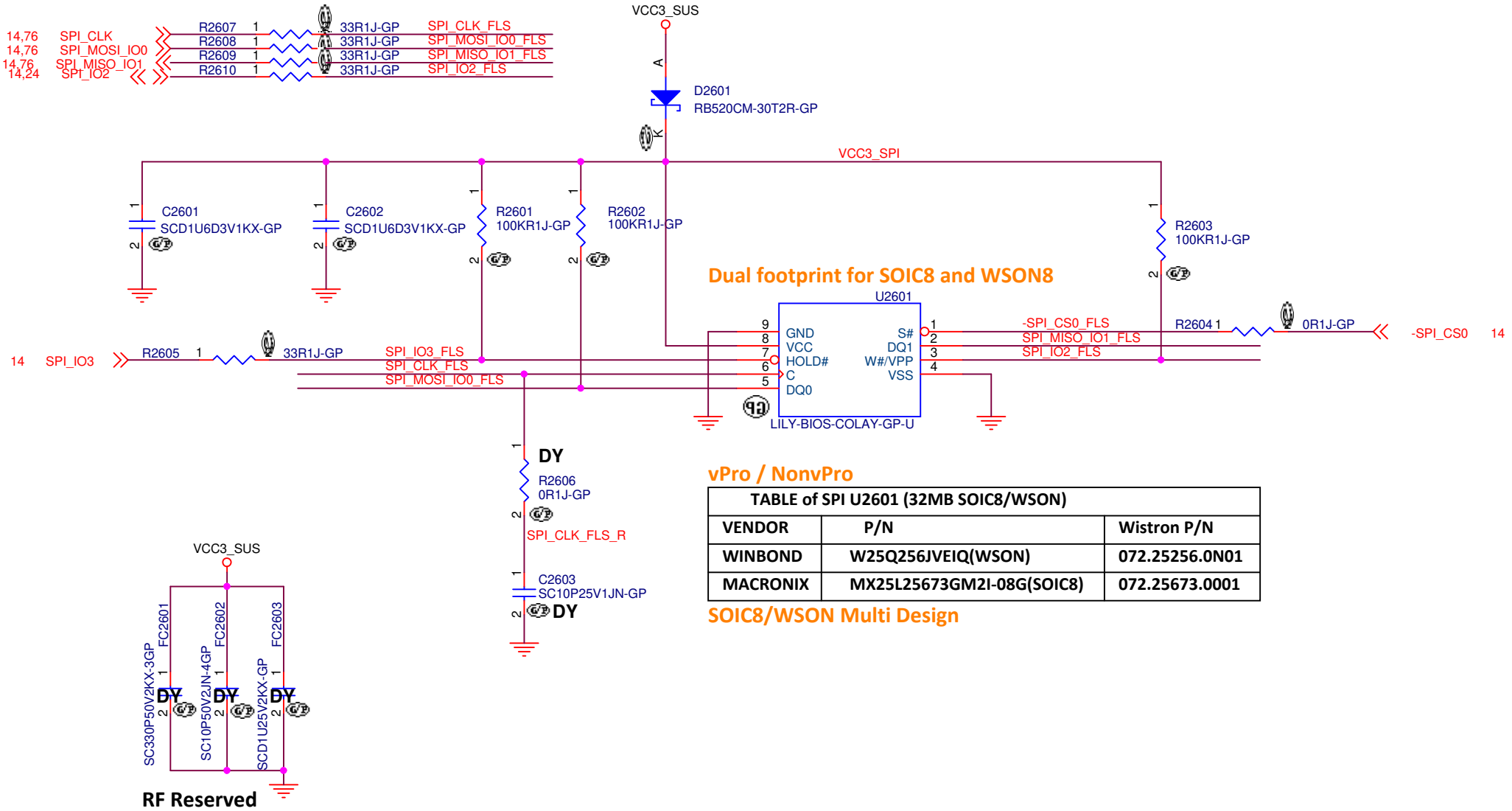

vPro / NonvPro

TABLE of SPI U2601 (32MB SOIC8/WSON)		
VENDOR	P/N	Wistron P/N
WINBOND	W25Q256JVEIQ(WSON)	072.25256.0N01
MACRONIX	MX25L25673GM2I-08G(SOIC8)	072.25673.0001

SOIC8/WSON Multi Design

<Variant Name>

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

Title: SPI FLASH

Size	Document Number	Rev
A4	LPM-3	-1

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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 ***Reserved***

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 27 of 111

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 ***Reserved***

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A4	LPM-3	-1

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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 ***Reserved***

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 29 of 111

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 ***Reserved***

Size	Document Number	Rev
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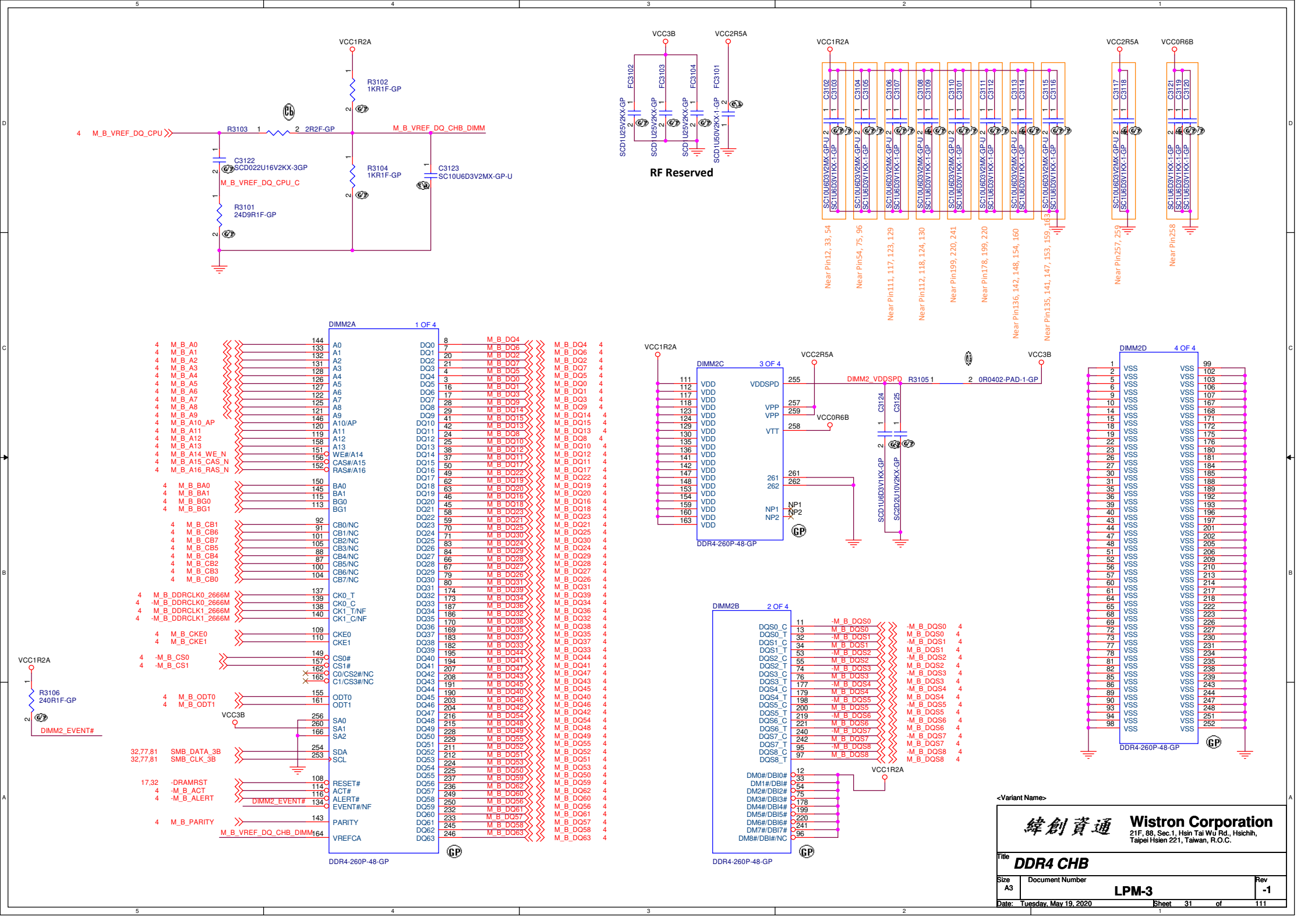
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R3102
1KR1F-GP
M_B_VREF_DQ_CPU
R3103
2R2F-GP
M_B_VREF_DQ_CHB_DIMM
C3122
SCD022U16V2KX-3GP
M_B_VREF_DQ_CPU_C
R3104
1KR1F-GP
C3123
SC10U6D3V2MX-GP-U
R3101
24D9R1F-GP
VCC3B
VCC2R5A
FC3102
FC3103
FC3104
FC3101
SCD1U25V2KX-GP
SCD1U50V2KX-1-GP
RF Reserved
VCC0R6B
C3102
C3103
C3104
C3105
C3106
C3107
C3108
C3109
C3110
C3101
C3111
C3112
C3113
C3114
C3115
C3116
C3117
C3118
C3121
C3119
C3120
SC10U6D3V2MX-GP-U
SC10U6D3V1KX-1-GP
Near Pin12, 33, 54
Near Pin54, 75, 96
Near Pin111, 117, 123, 129
Near Pin112, 118, 124, 130
Near Pin199, 220, 241
Near Pin178, 199, 220
Near Pin136, 142, 148, 154, 160
Near Pin135, 141, 147, 153, 159, 163
Near Pin257, 259
Near Pin258
DIMM2A
1 OF 4
DDR4-260P-48-GP
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M_B_A1
M_B_A2
M_B_A3
M_B_A4
M_B_A5
M_B_A6
M_B_A7
M_B_A8
M_B_A9
M_B_A10_AP
M_B_A11
M_B_A12
M_B_A13
M_B_A14_WE_N
M_B_A15_CAS_N
M_B_A16_RAS_N
M_B_BA0
M_B_BA1
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M_B_BG1
M_B_CB1
M_B_CB6
M_B_CB7
M_B_CB5
M_B_CB4
M_B_CB2
M_B_CB3
M_B_CB0
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-M_B_DDRCLK0_2666M
M_B_DDRCLK1_2666M
-M_B_DDRCLK1_2666M
M_B_CKE0
M_B_CKE1
-M_B_CS0
-M_B_CS1
M_B_ODT0
M_B_ODT1
SMB_DATA_3B
SMB_CLK_3B
-DRAMRST
-M_B_ACT
-M_B_ALERT
DIMM2_EVENT#
M_B_PARITY
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M_B_DQ0
M_B_DQ1
M_B_DQ2
M_B_DQ3
M_B_DQ4
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M_B_DQ60
M_B_DQ61
M_B_DQ62
M_B_DQ63
DIMM2C
3 OF 4
DDR4-260P-48-GP
VDDSPD
VPP
VTT
DIMM2_VDDSPD
R3105
0R0402-PAD-1-GP
SCD1U6D3V1KX-GP
SC22D2U10V2KX-GP
DIMM2B
2 OF 4
DDR4-260P-48-GP
DQS0_C
DQS0_T
DQS1_C
DQS1_T
DQS2_C
DQS2_T
DQS3_C
DQS3_T
DQS4_C
DQS4_T
DQS5_C
DQS5_T
DQS6_C
DQS6_T
DQS7_C
DQS7_T
DQS8_C
DQS8_T
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DM3#/DBI3#
DM4#/DBI4#
DM5#/DBI5#
DM6#/DBI6#
DM7#/DBI7#
DM8#/DBI#/NC
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4 OF 4
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VSS
R3106
240R1F-GP
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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
DDR4 CHB
Size
A3
Document Number
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-1
Date: Tuesday, May 19, 2020
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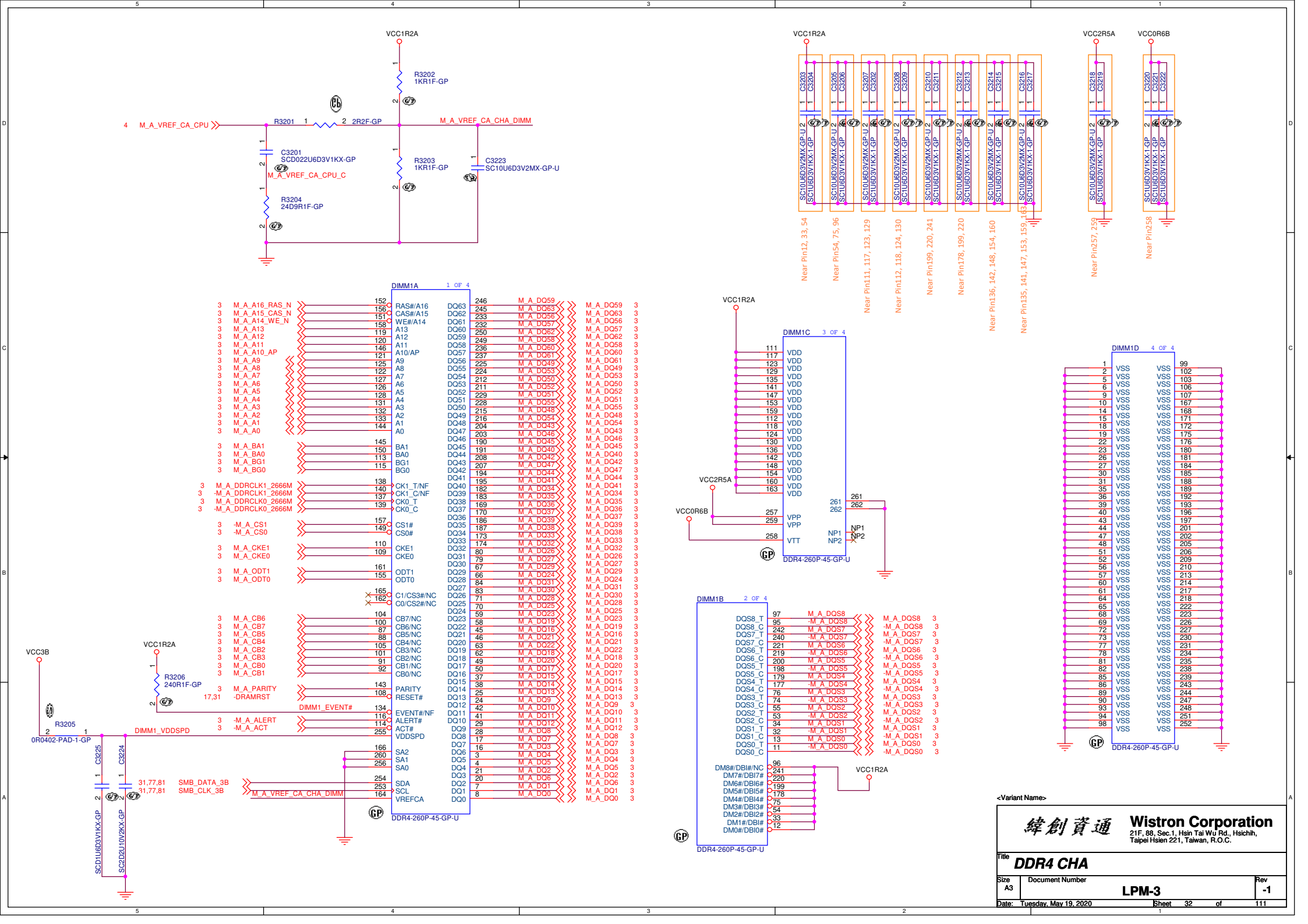
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1KR1F-GP
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R3201 1 2 2R2F-GP
M_A_VREF_CA_CHA_DIMM
C3201
SCD022U6D3V1KX-GP
M_A_VREF_CA_CPU_C
R3203
1KR1F-GP
C3223
SC10U6D3V2MX-GP-U
R3204
24D9R1F-GP
VCC1R2A
C3203 C3204 C3205 C3206 C3207 C3208 C3209 C3210 C3211 C3212 C3213 C3214 C3215 C3216 C3217
SC10U6D3V2MX-GP-U
SC10U6D3V1KX-1-GP
Near Pin12, 33, 54
Near Pin54, 75, 96
Near Pin111, 117, 123, 129
Near Pin112, 118, 124, 130
Near Pin199, 220, 241
Near Pin178, 199, 220
Near Pin136, 142, 148, 154, 160
Near Pin135, 141, 147, 153, 159, 163
VCC2R5A
C3218 C3219
Near Pin257, 259
VCC0R6B
C3220 C3221 C3222
Near Pin258
DIMM1A 1 OF 4
M_A_A16_RAS_N
M_A_A15_CAS_N
M_A_A14_WE_N
M_A_A13
M_A_A12
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M_A_A7
M_A_A6
M_A_A5
M_A_A4
M_A_A3
M_A_A2
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M_A_A0
M_A_BA1
M_A_BA0
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M_A_BG0
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M_A_DDRCLK0_2666M
-M_A_DDRCLK0_2666M
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-M_A_CS0
M_A_CKE1
M_A_CKE0
M_A_ODT1
M_A_ODT0
C1/CS3#/NC
C0/CS2#/NC
M_A_CB6
M_A_CB7
M_A_CB5
M_A_CB4
M_A_CB2
M_A_CB3
M_A_CB0
M_A_CB1
M_A_PARITY
-DRAMRST
DIMM1_EVENT#
-M_A_ALERT
-M_A_ACT
DIMM1_VDDSPD
SA2
SA1
SA0
SDA
SCL
VREFCA
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M_A_DQ63
M_A_DQ56
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M_A_DQ5
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0R0402-PAD-1-GP
VCC1R2A
R3206
240R1F-GP
C3225
C3224
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SC2D2U10V2KX-GP
31,77,81 SMB_DATA_3B
31,77,81 SMB_CLK_3B
M_A_VREF_CA_CHA_DIMM
VCC1R2A
DIMM1C 3 OF 4
VDD
VPP
VTT
NP1
NP2
VCC2R5A
VCC0R6B
DDR4-260P-45-GP-U
DIMM1B 2 OF 4
DQS8_T
DQS8_C
DQS7_T
DQS7_C
DQS6_T
DQS6_C
DQS5_T
DQS5_C
DQS4_T
DQS4_C
DQS3_T
DQS3_C
DQS2_T
DQS2_C
DQS1_T
DQS1_C
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DQS0_C
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M_A_DQS1
-M_A_DQS1
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-M_A_DQS0
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DM7#/DBI7#
DM6#/DBI6#
DM5#/DBI5#
DM4#/DBI4#
DM3#/DBI3#
DM2#/DBI2#
DM1#/DBI1#
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DDR4-260P-45-GP-U
<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
DDR4 CHA
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5 PEG_RXP[15:0]
5 PEG_RXN[15:0]
5 PEG_TXP[15:0]
5 PEG_TXN[15:0]

GPU1A — 1 OF 17 — N19P-Q1-1-GP

285mA
750mA

VCC1R0VIDEO
VCC1R8_MAIN

PEX_DVDD_1 AG21
PEX_DVDD_2 AG22
PEX_DVDD_3 AG24
PEX_DVDD_4 AH25
PEX_CVDD_1 AG19
PEX_CVDD_2 AH21

PEX_HVDD_1 AG13
PEX_HVDD_2 AG15
PEX_HVDD_3 AG16
PEX_HVDD_4 AG18
PEX_HVDD_5 AG25
PEX_HVDD_6 AH15
PEX_HVDD_7 AH18
PEX_HVDD_8 AH26
PEX_HVDD_9 AH27
PEX_HVDD_10 AJ27
PEX_HVDD_11 AK27
PEX_HVDD_12 AL27
PEX_HVDD_13 AM28
PEX_HVDD_14 AN28

UNDER GPU — 1uF x 7 Under
C3312 C3313 C3314 C3315 C3321 C3302 C3303 — SC1U6D3V1KX-1GP

UNDER GPU — 4.7uF x 3 Under
C3316 C3323 C3305 — SC4D7U6D3V2KX-GP-U

NEAR GPU — 10uF x 3 , 22uF x 2 Near
C3317 C3324 C3307 — SC10U6D3V2MX-GP-U
C3318 C3322 — SC22U6D3V2MX-1-GP

PEX_PLL_HVDD AH12
C3333 SCD47U6D3V1KX-GP
NEAR AH12

NEED CHANGE TO X6S or X7R

PEX_TERMP AP29 GPU_PEX_TERMP
R3302 2K49R1F-GP

-PCIE_WAKE (17,49,59,71) — R3305 0R1J-GP — -PCIE_WAKE_R AJ11 PEX_WAKE#
-GPU_PEX_RST (38) AJ12 PEX_RST*
-CLKREQ_PEG_D AK12 PEX_CLKREQ#
CLK_100M_PEG (20) AL13 PEX_REFCLK
-CLK_100M_PEG (20) AK13 PEX_REFCLK*

PEG_RXP0 / PEG_RXN0	C3308 / C3309	PEG_RXP0_C / PEG_RXN0_C	AK14 / AJ14
PEG_TXP0 / PEG_TXN0			AN12 / AM12
PEG_RXP1 / PEG_RXN1	C3310 / C3311	PEG_RXP1_C / PEG_RXN1_C	AH14 / AG14
PEG_TXP1 / PEG_TXN1			AN14 / AM14
PEG_RXP2 / PEG_RXN2	C3319 / C3320	PEG_RXP2_C / PEG_RXN2_C	AK15 / AJ15
PEG_TXP2 / PEG_TXN2			AP14 / AP15
PEG_RXP3 / PEG_RXN3	C3325 / C3326	PEG_RXP3_C / PEG_RXN3_C	AL16 / AK16
PEG_TXP3 / PEG_TXN3			AN15 / AM15
PEG_RXP4 / PEG_RXN4	C3327 / C3328	PEG_RXP4_C / PEG_RXN4_C	AK17 / AJ17
PEG_TXP4 / PEG_TXN4			AN17 / AM17
PEG_RXP5 / PEG_RXN5	C3329 / C3330	PEG_RXP5_C / PEG_RXN5_C	AH17 / AG17
PEG_TXP5 / PEG_TXN5			AP17 / AP18
PEG_RXP6 / PEG_RXN6	C3331 / C3332	PEG_RXP6_C / PEG_RXN6_C	AK18 / AJ18
PEG_TXP6 / PEG_TXN6			AN18 / AM18
PEG_RXP7 / PEG_RXN7	C3334 / C3335	PEG_RXP7_C / PEG_RXN7_C	AL19 / AK19
PEG_TXP7 / PEG_TXN7			AN20 / AM20
PEG_RXP8 / PEG_RXN8	C3336 / C3337	PEG_RXP8_C / PEG_RXN8_C	AK20 / AJ20
PEG_TXP8 / PEG_TXN8			AP20 / AP21
PEG_RXP9 / PEG_RXN9	C3338 / C3339	PEG_RXP9_C / PEG_RXN9_C	AH20 / AG20
PEG_TXP9 / PEG_TXN9			AN21 / AM21
PEG_RXP10 / PEG_RXN10	C3340 / C3341	PEG_RXP10_C / PEG_RXN10_C	AK21 / AJ21
PEG_TXP10 / PEG_TXN10			AN23 / AM23
PEG_RXP11 / PEG_RXN11	C3342 / C3343	PEG_RXP11_C / PEG_RXN11_C	AL22 / AK22
PEG_TXP11 / PEG_TXN11			AP23 / AP24
PEG_RXP12 / PEG_RXN12	C3301 / C3344	PEG_RXP12_C / PEG_RXN12_C	AK23 / AJ23
PEG_TXP12 / PEG_TXN12			AN24 / AM24
PEG_RXP13 / PEG_RXN13	C3345 / C3346	PEG_RXP13_C / PEG_RXN13_C	AH23 / AG23
PEG_TXP13 / PEG_TXN13			AN26 / AM26
PEG_RXP14 / PEG_RXN14	C3347 / C3348	PEG_RXP14_C / PEG_RXN14_C	AK24 / AJ24
PEG_TXP14 / PEG_TXN14			AP26 / AP27
PEG_RXP15 / PEG_RXN15	C3349 / C3350	PEG_RXP15_C / PEG_RXN15_C	AL25 / AK25
PEG_TXP15 / PEG_TXN15			AN27 / AM27

All: SCD22U6D3V1KX-GP

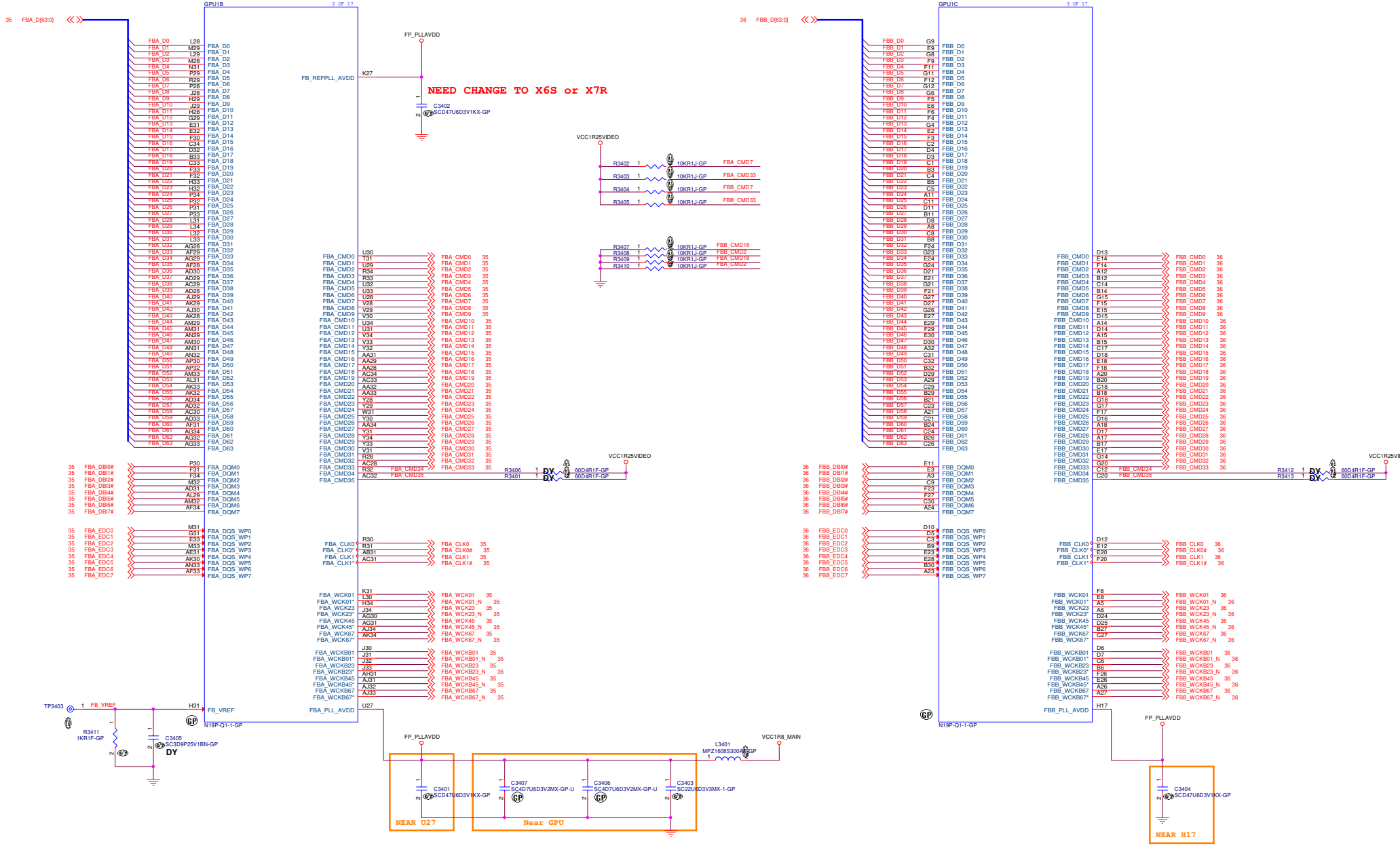
PEG_RXP0 PEG_RXN0 PEX_RX0* PEX_TX0 PEX_TX0*
PEG_TXP0 PEG_TXN0 PEX_RX0 PEX_RX0*
PEG_RXP1 PEG_RXN1 PEX_RX1* PEX_TX1 PEX_TX1*
PEG_TXP1 PEG_TXN1 PEX_RX1 PEX_RX1*
PEG_RXP2 PEG_RXN2 PEX_RX2* PEX_TX2 PEX_TX2*
PEG_TXP2 PEG_TXN2 PEX_RX2 PEX_RX2*
PEG_RXP3 PEG_RXN3 PEX_RX3* PEX_TX3 PEX_TX3*
PEG_TXP3 PEG_TXN3 PEX_RX3 PEX_RX3*
PEG_RXP4 PEG_RXN4 PEX_RX4* PEX_TX4 PEX_TX4*
PEG_TXP4 PEG_TXN4 PEX_RX4 PEX_RX4*
PEG_RXP5 PEG_RXN5 PEX_RX5* PEX_TX5 PEX_TX5*
PEG_TXP5 PEG_TXN5 PEX_RX5 PEX_RX5*
PEG_RXP6 PEG_RXN6 PEX_RX6* PEX_TX6 PEX_TX6*
PEG_TXP6 PEG_TXN6 PEX_RX6 PEX_RX6*
PEG_RXP7 PEG_RXN7 PEX_RX7* PEX_TX7 PEX_TX7*
PEG_TXP7 PEG_TXN7 PEX_RX7 PEX_RX7*
PEG_RXP8 PEG_RXN8 PEX_RX8* PEX_TX8 PEX_TX8*
PEG_TXP8 PEG_TXN8 PEX_RX8 PEX_RX8*
PEG_RXP9 PEG_RXN9 PEX_RX9* PEX_TX9 PEX_TX9*
PEG_TXP9 PEG_TXN9 PEX_RX9 PEX_RX9*
PEG_RXP10 PEG_RXN10 PEX_RX10* PEX_TX10 PEX_TX10*
PEG_TXP10 PEG_TXN10 PEX_RX10 PEX_RX10*
PEG_RXP11 PEG_RXN11 PEX_RX11* PEX_TX11 PEX_TX11*
PEG_TXP11 PEG_TXN11 PEX_RX11 PEX_RX11*
PEG_RXP12 PEG_RXN12 PEX_RX12* PEX_TX12 PEX_TX12*
PEG_TXP12 PEG_TXN12 PEX_RX12 PEX_RX12*
PEG_RXP13 PEG_RXN13 PEX_RX13* PEX_TX13 PEX_TX13*
PEG_TXP13 PEG_TXN13 PEX_RX13 PEX_RX13*
PEG_RXP14 PEG_RXN14 PEX_RX14* PEX_TX14 PEX_TX14*
PEG_TXP14 PEG_TXN14 PEX_RX14 PEX_RX14*
PEG_RXP15 PEG_RXN15 PEX_RX15* PEX_TX15 PEX_TX15*
PEG_TXP15 PEG_TXN15 PEX_RX15 PEX_RX15*

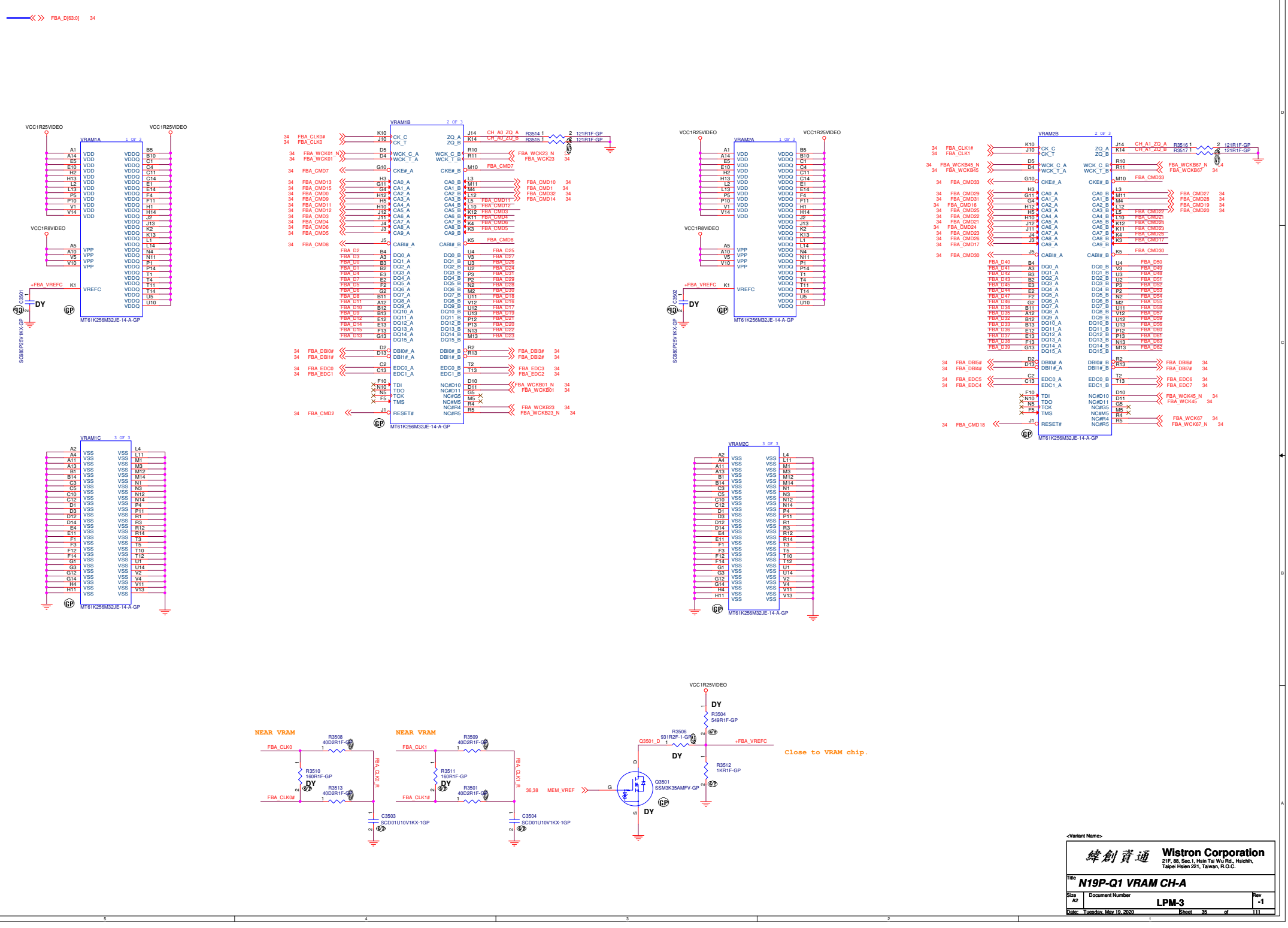
VCC3_SUS
U3301 SN74AHC1G09DCKR
72,102,105 DGFX_PWRGD
104 1R25_VIDEO_PWRGD
DGFX_PWRGD_R (23)
R3304 0R0201-PAD-2-GP
Q3301_G
VCC1R8VIDEO
R3301 10KR1J-GP
Q3301 SSM3K35AMFV-GP
-CLKREQ_PEG_D
-CLKREQ_PEG (20)

<Variant Name>

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

Title: N19P-Q1 PCI EXPRESS
Size: Custom | Document Number: LPM-3 | Rev: -1
Date: Tuesday, May 19, 2020 | Sheet 33 of 111


GPU1B
2 OF 17
GPU1C
3 OF 17
35 FBA_D[63:0]
36 FBB_D[63:0]
FP_PLLAVDD
FB_REFPLL_AVDD
K27
NEED CHANGE TO X6S or X7R
C3402
SCD47U6D3V1KX-GP
VCC1R25VIDEO
R3402 10KR1J-GP FBA_CMD7
R3403 10KR1J-GP FBA_CMD33
R3404 10KR1J-GP FBB_CMD7
R3405 10KR1J-GP FBB_CMD33
R3407 10KR1J-GP FBB_CMD18
R3408 10KR1J-GP FBB_CMD2
R3409 10KR1J-GP FBA_CMD18
R3410 10KR1J-GP FBA_CMD2
R3406 60D4R1F-GP DY
R3401 60D4R1F-GP DY
R3412 60D4R1F-GP DY
R3413 60D4R1F-GP DY
TP3403
FB_VREF
R3411 1KR1F-GP
C3405 SC3D9P25V1BN-GP DY
N19P-Q1-1-GP
FBA_PLL_AVDD
FBB_PLL_AVDD
L3401 MPZ1608S300A-GP
VCC1R8_MAIN
C3401 SCD47U6D3V1KX-GP
C3407 SC4D7U6D3V2MX-GP-U
C3406 SC4D7U6D3V2MX-GP-U
C3403 SC22U6D3V3MX-1-GP
NEAR U27
Near GPU
C3404 SCD47U6D3V1KX-GP
NEAR H17
<Variant Name>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title N19P-Q1 FB A/B
Size A2
Document Number LPM-3
Rev -1
Date: Tuesday, May 19, 2020
Sheet 34 of 111



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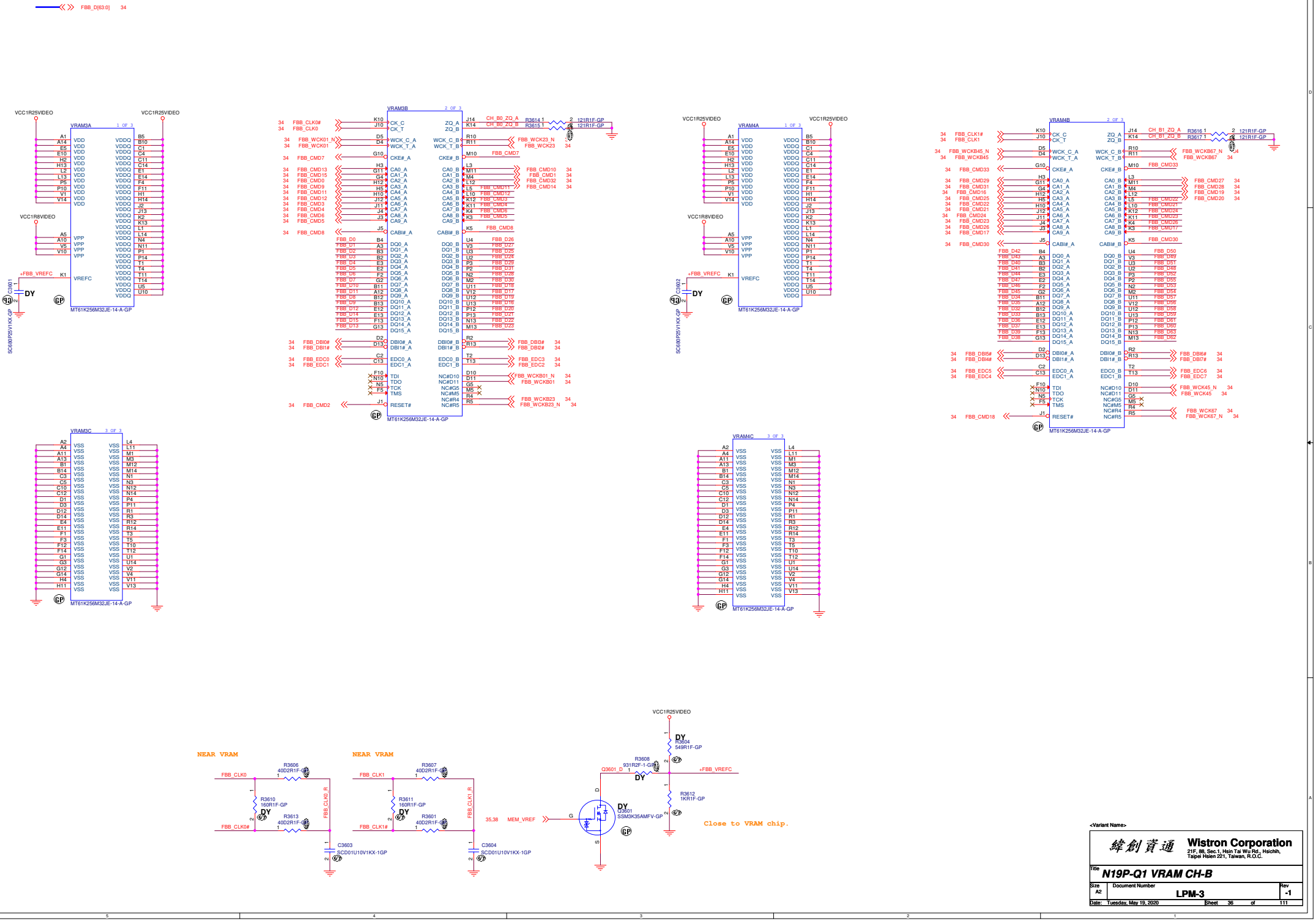
緯創資通 Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title: N19P-Q1 VRAM CH-A		
Size: A2	Document Number: LPM-3	Rev: -1
Date: Tuesday, May 19, 2020	Sheet 35 of 111	



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Title: N19P-Q1 VRAM CH-B		
Size: A2	Document Number: LPM-3	Rev: -1
Date: Tuesday, May 19, 2020	Sheet 36 of 111	

<Variant Name>

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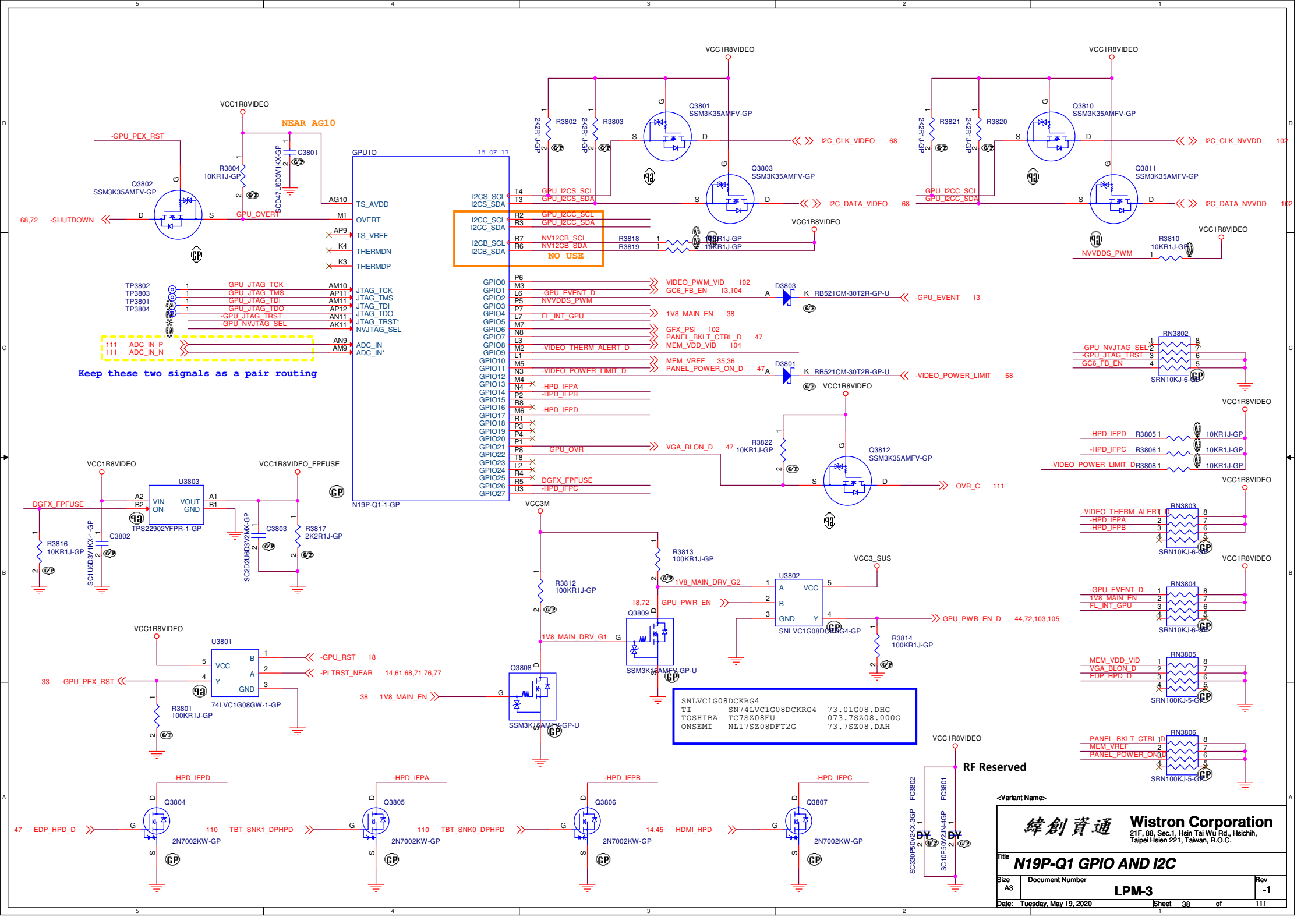
Taipei Hsien 221, Taiwan, R.O.C.

Title: **N19P-Q1 VRAM DECOUPING**

Size	Document Number	Rev
A2	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 57 of 111


GPU1O
15 OF 17
N19P-Q1-1-GP
NEAR AG10
Keep these two signals as a pair routing
NO USE
RF Reserved
SNLVC1G08DCKRG4
TI SN74LVC1G08DCKRG4 73.01G08.DHG
TOSHIBA TC7SZ08FU 073.7SZ08.000G
ONSEMI NL17SZ08DFT2G 73.7SZ08.DAH
Wistron Corporation
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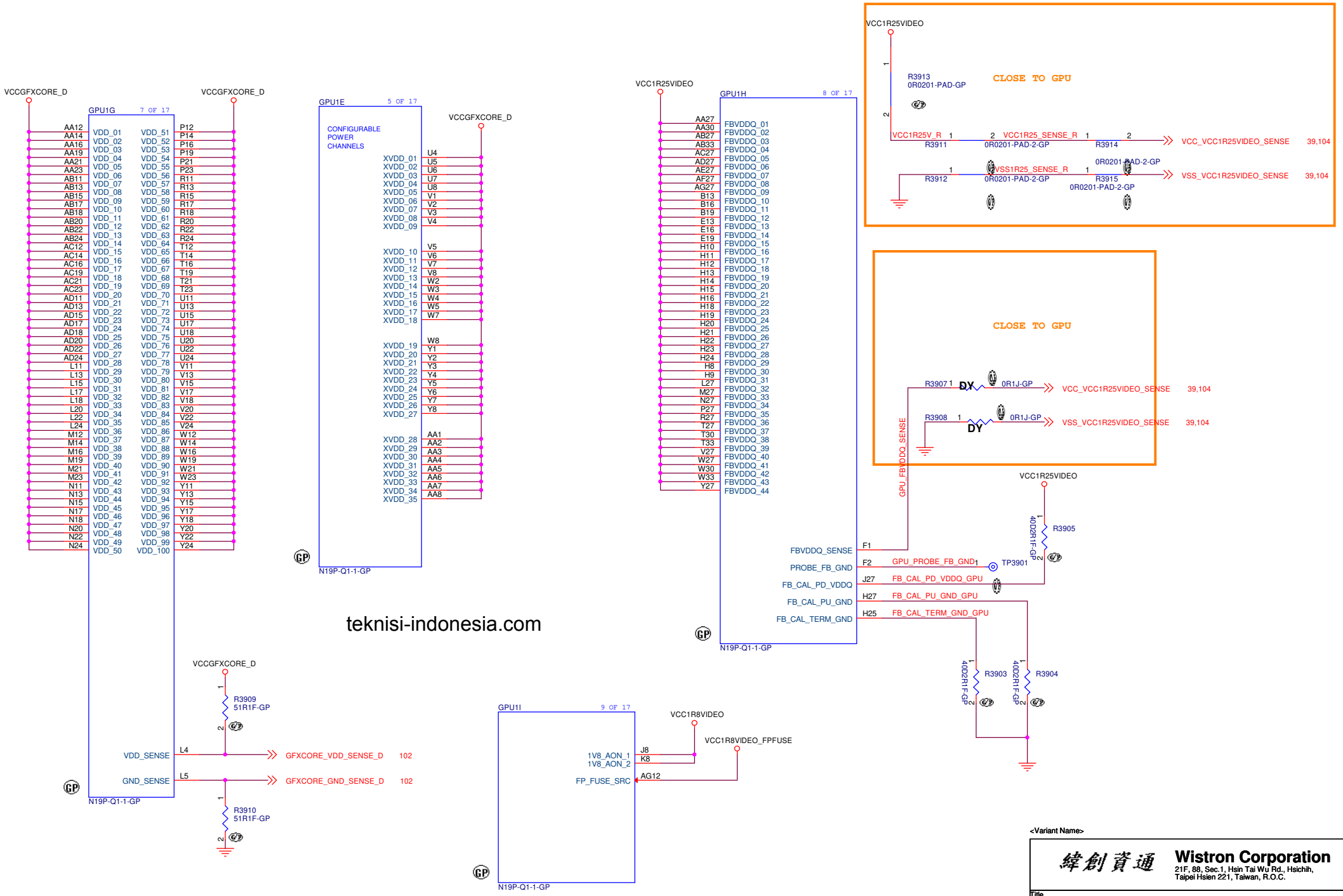
Taipei Hsien 221, Taiwan, R.O.C.
N19P-Q1 GPIO AND I2C
LPM-3
Tuesday, May 19, 2020



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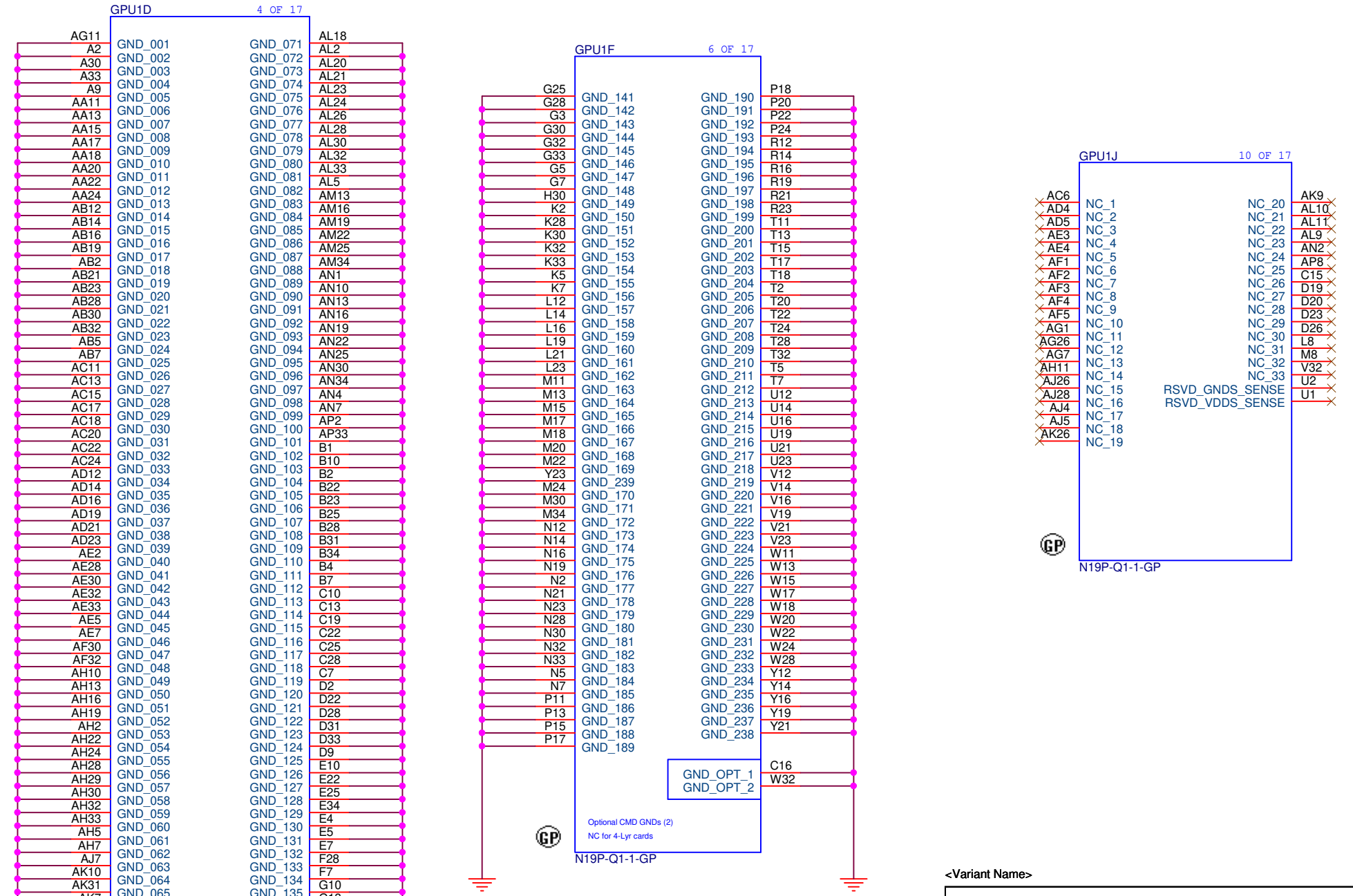
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: N19P-Q1 POWER

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 39 of 111



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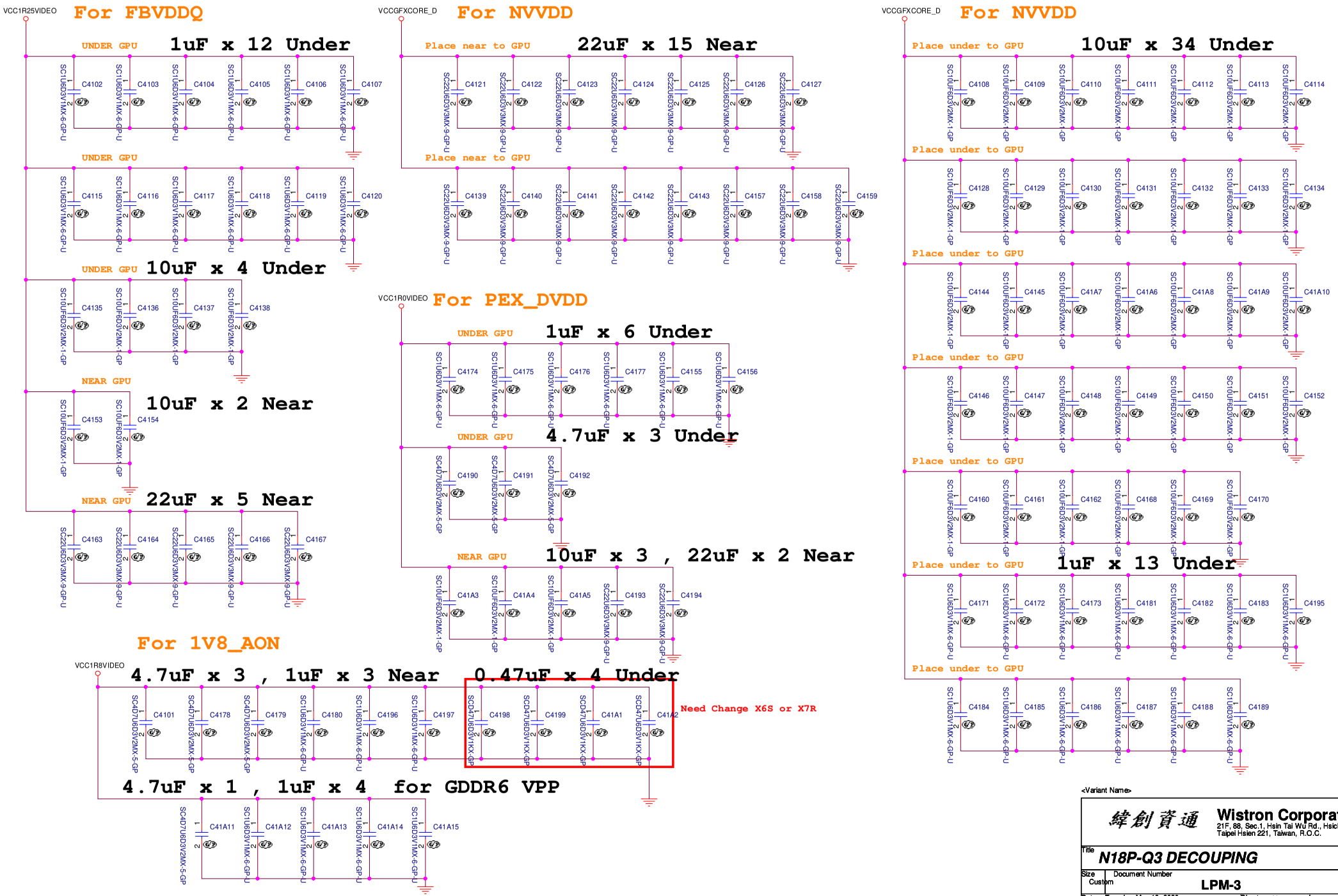
緯創資通

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

Title: ***N19P-Q1 GND***

Size	Document Number	Rev
A4	**LPM-3**	-1

Date: Tuesday, May 19, 2020 Sheet 40 of 111



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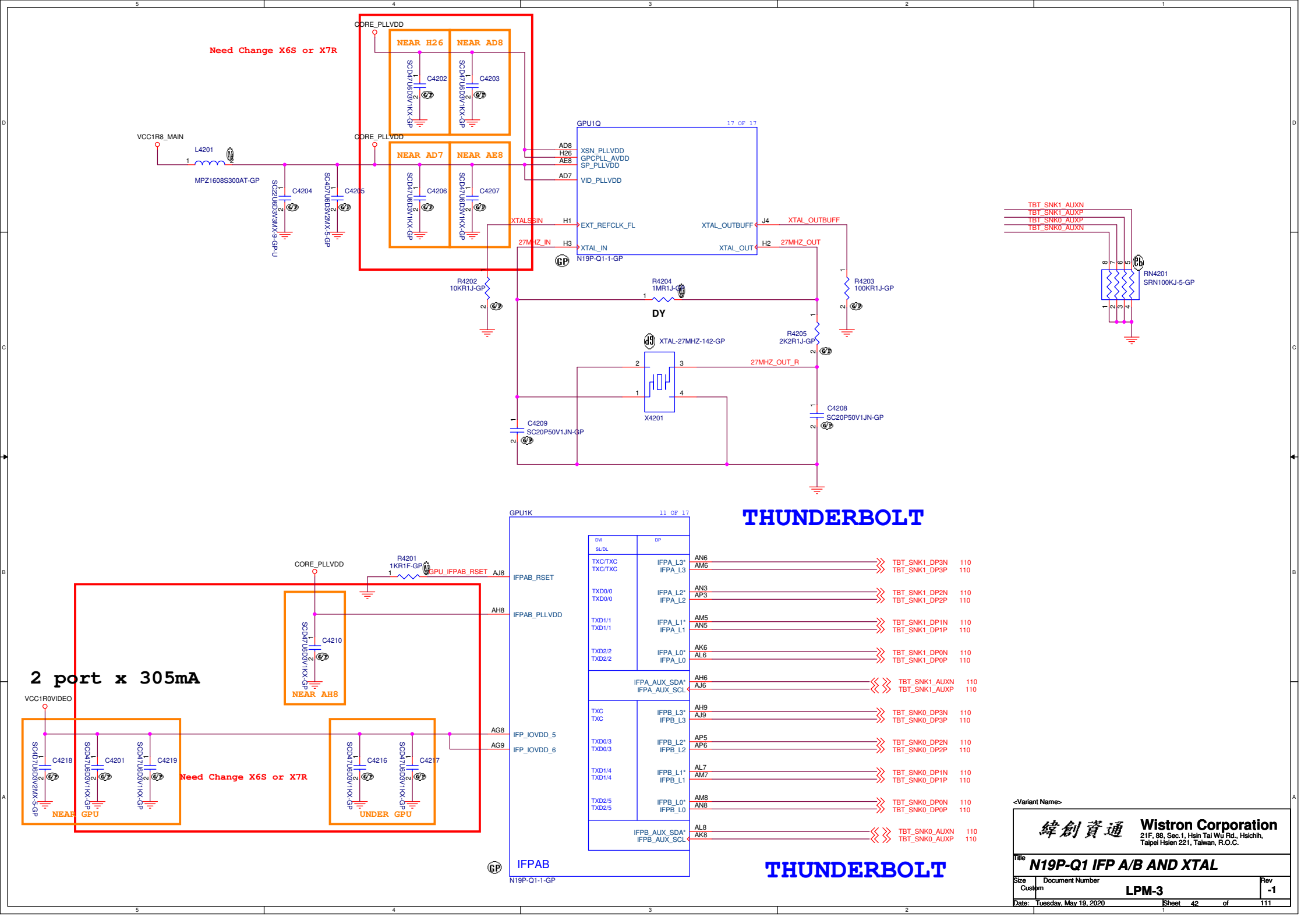
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: N18P-Q3 DECOUPING

Size	Document Number	Rev
Custom	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 41 of 111



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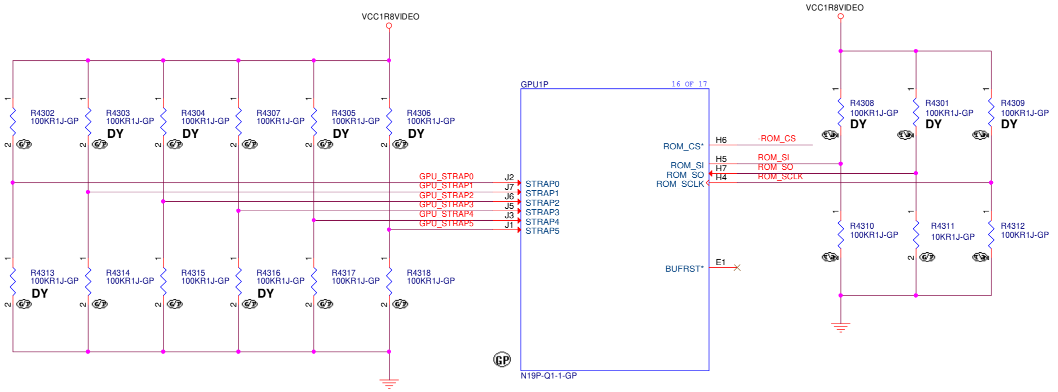
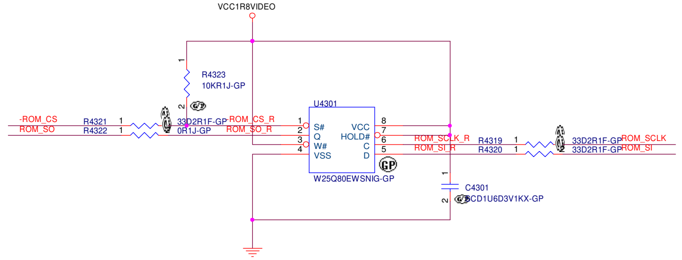
Taipei Hsien 221, Taiwan, R.O.C.

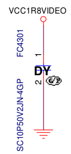
Title: N19P-Q1 IFP A/B AND XTAL

Size	Document Number	Rev
Custom	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 42 of 111







RF Reserved

Strap0 table for VRAM vendor		
Vendor	**R4302**	**R4313**
Micron MT61K256M32JE-14:A	100K 1%	NO ASM
Samsung K4Z80325BC-HC14	NO ASM	100K 1%

Strap1 table for VRAM vendor		
Vendor	**R4303**	**R4314**
Micron MT61K256M32JE-14:A	NO ASM	100K 1%
Samsung K4Z80325BC-HC14	NO ASM	100K 1%

Strap2 table for VRAM vendor		
Vendor	**R4304**	**R4315**
Micron MT61K256M32JE-14:A	NO ASM	100K 1%
Samsung K4Z80325BC-HC14	NO ASM	100K 1%

Table 5.3 RAMCFG

Strap Pins see Note			RAMCFG Setting Number
STRAP2	STRAP1	STRAP0	(see Memory RVL for memory configs corresponding to these numbers)
L	L	L	0 (0x0000)
L	L	H	1 (0x0001)
L	H	L	2 (0x0002)
L	H	H	3 (0x0003)
H	L	L	4 (0x0004)
H	L	H	5 (0x0005)
H	H	L	6 (0x0006)
H	H	H	7 (0x0007)
L	L	M	8 (0x0008)
L	M	L	9 (0x0009)
L	M	H	10 (0x000A)
L	H	M	11 (0x000B)
M	L	L	12 (0x000C)
M	L	H	13 (0x000D)

Strap Pins see Note			RAMCFG Setting Number
STRAP2	STRAP1	STRAP0	(see Memory RVL for memory configs corresponding to these numbers)
M	H	L	14 (0x000E)
M	H	H	15 (0x000F)
H	L	M	16 (0x0010)
H	M	L	17 (0x0011)
H	M	H	18 (0x0012)
H	H	M	19 (0x0013)
L	M	M	20 (0x0014)
M	L	M	21 (0x0015)
M	M	L	22 (0x0016)
M	M	H	23 (0x0017)
M	H	M	24 (0x0018)
H	M	M	25 (0x0019)
M	M	M	26 (0x001A)

Table 12.5 SMB ALT_ADDR, DEVID_SEL, PCIE_CFG, VGA_DEVICE

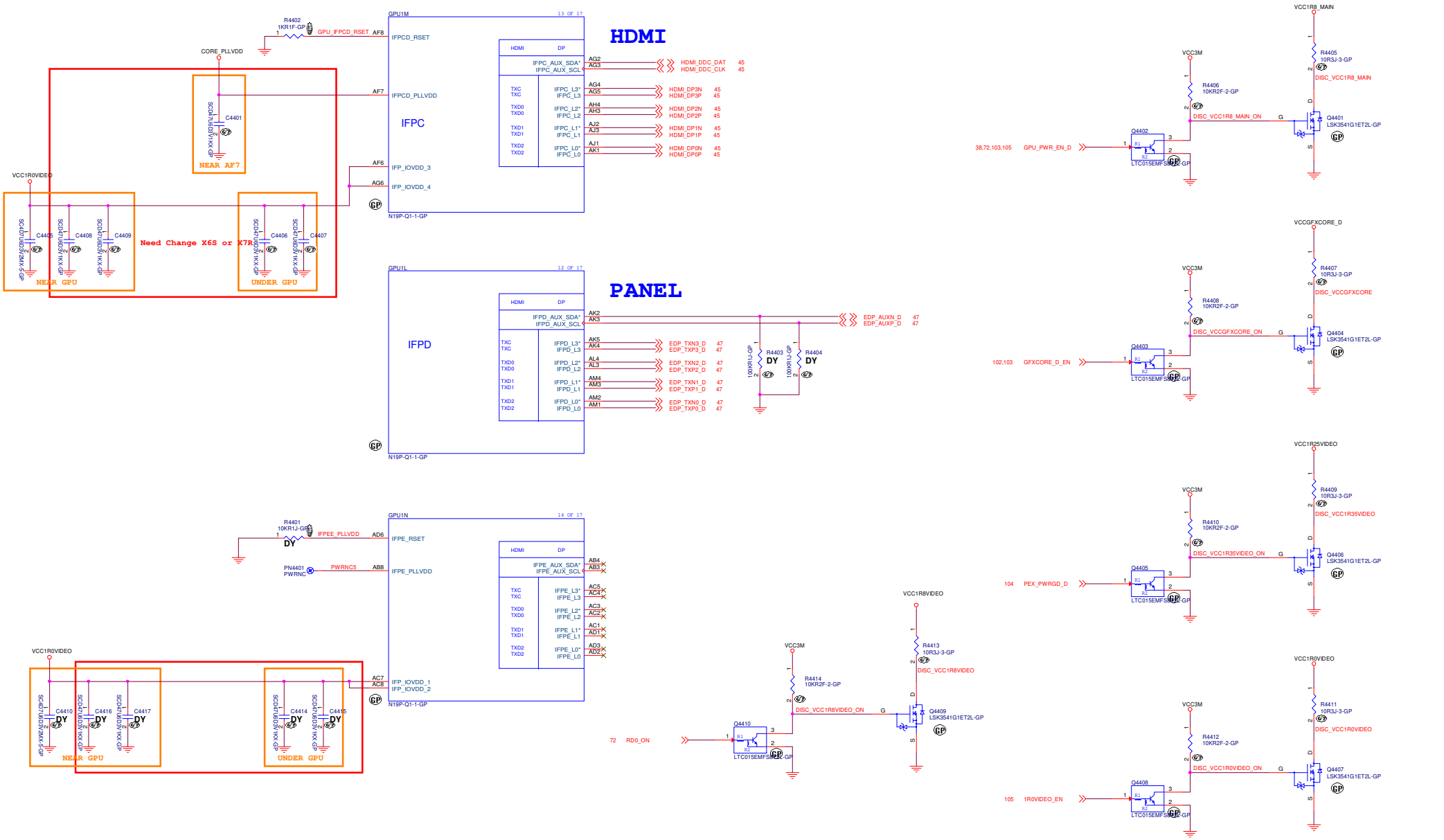
Strap Pins See Note			Functions Selected by This Strapping			
STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
L	L	L	0	0	0	0
L	L	H	0	0	0	1
L	H	L	0	0	1	0
L	H	H	0	0	1	1
H	L	L	0	1	0	0
H	L	H	0	1	0	1
H	H	L	0	1	1	0
H	H	H	0	1	1	1
L	L	M	1	0	0	0
L	M	L	1	0	0	1
L	M	H	1	0	1	0

Strap Pins See Note			Functions Selected by This Strapping			
STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
L	H	M	1	0	1	1
M	L	L	1	1	0	0
M	L	H	1	1	0	1
M	H	L	1	1	1	0
M	H	H	1	1	1	1
H	L	M	Reserved			
H	M	L				
H	M	H				
H	H	M				
L	M	M				
M	L	M				
M	M	L				
M	M	H				
M	H	M				
H	M	M				
M	M	M				

12.2.2.4 Assorted Configuration Straps

The following configurable characteristics of the graphics circuit share three physical strap pins:

- **SMB_ALT_ADDR Enable**: This strap function allows an alternate SMBus address to be configured, so that graphics circuits with multiple GPUs can have separate SMBus connections for each GPU. In dual GPU configurations, use of the alternate address on one GPU (by setting this function to '1') avoids conflicts between the two GPUs on an SMBUS port. The "SMB_ALT_ADDR disabled" setting ('0') is correct for single-GPU graphics circuits.
- **DEVID_SEL**: NVIDIA defines an original and a re-brand Device ID on a per-GPU basis. This Device ID Select strap function allows selection between the original PCIe Device ID defined for the GPU (via a function setting of '0'), and the alternate "re-brand" Device ID defined for the GPU (via a function setting of '1').
- **PCIE_CFG**: This function sets electrical characteristics of PCIe lanes, in particular signal amplitude (swing). A setting of '0' selects normal (full) signal swing. N18x graphics circuits should strap for this setting. (A setting of '1' designates reduced signal amplitude, available if special concerns require. Consult NVIDIA for guidance.)
- **VGA_DEVICE**: This strap function is used to report the graphics circuit either as a 3D device (class code 302, designated by a setting of '0' for this strap) or as a VGA device (class code 300, designated by a setting of '1') to the host system. The 3D Device (class code 302, strap='0') setting is correct for most MS-Hybrid notebook GeForce graphics circuits (consult NVIDIA for details on proper bit setting for MS-Hybrid solutions).



<Variant Name>

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

Title: N19P-Q1 IFP C/D AND E/F

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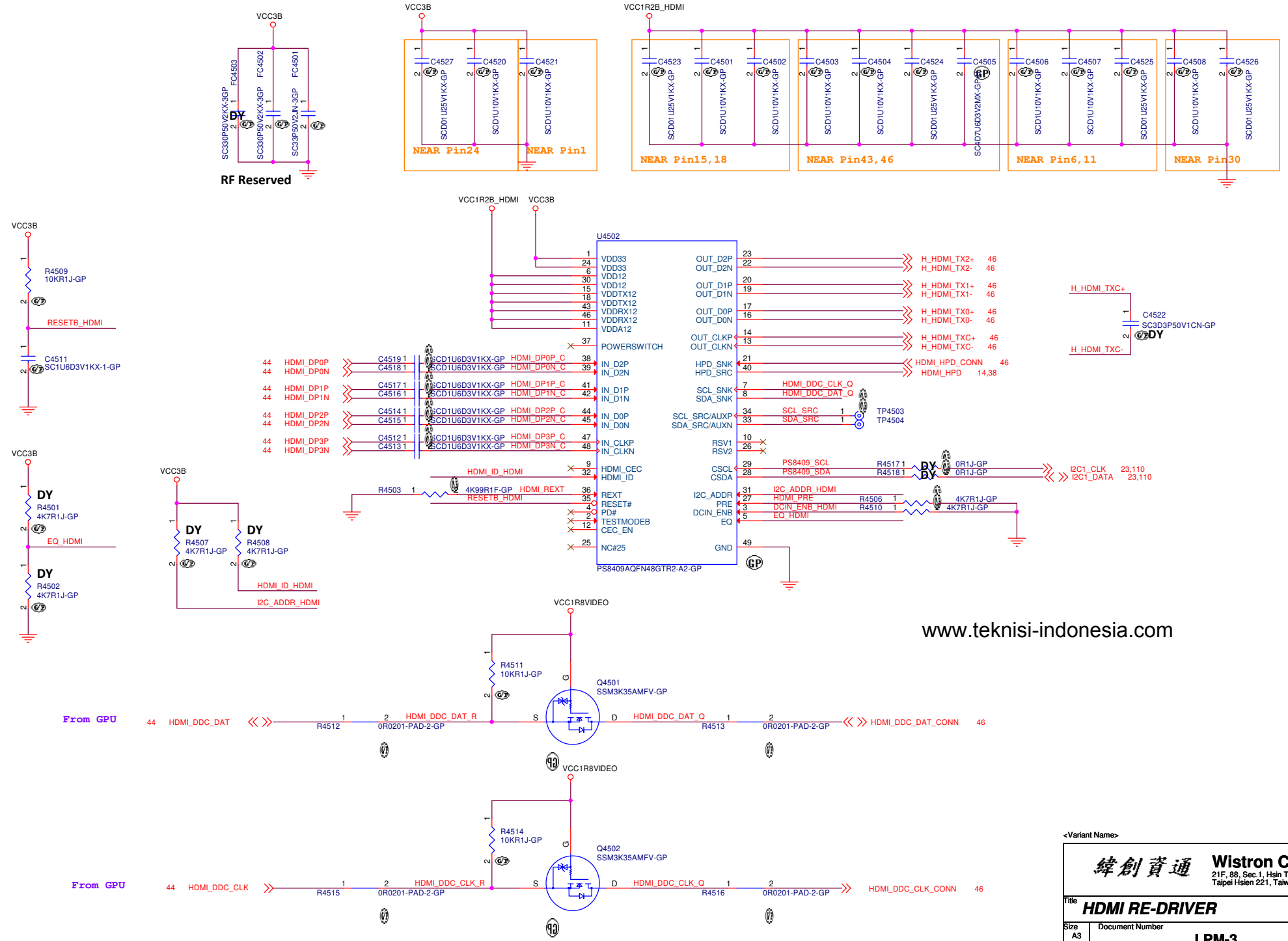
HDMI Re driver



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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: **HDMI RE-DRIVER**

Size	Document Number	Rev
A3	LPM-3	-1

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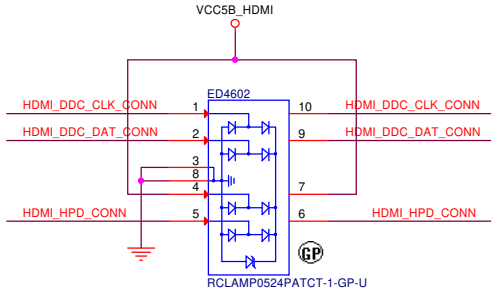
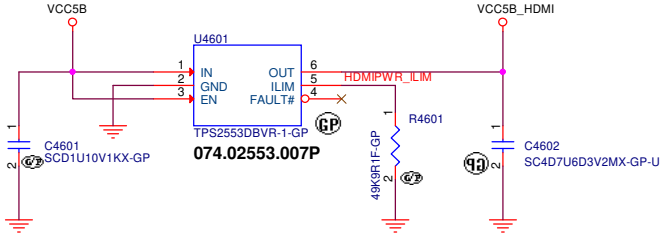
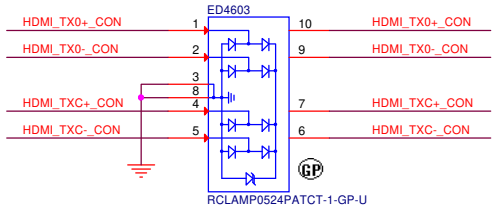
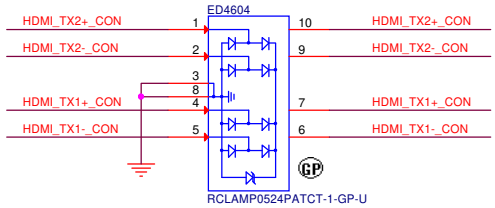
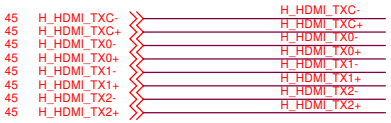
HDMI

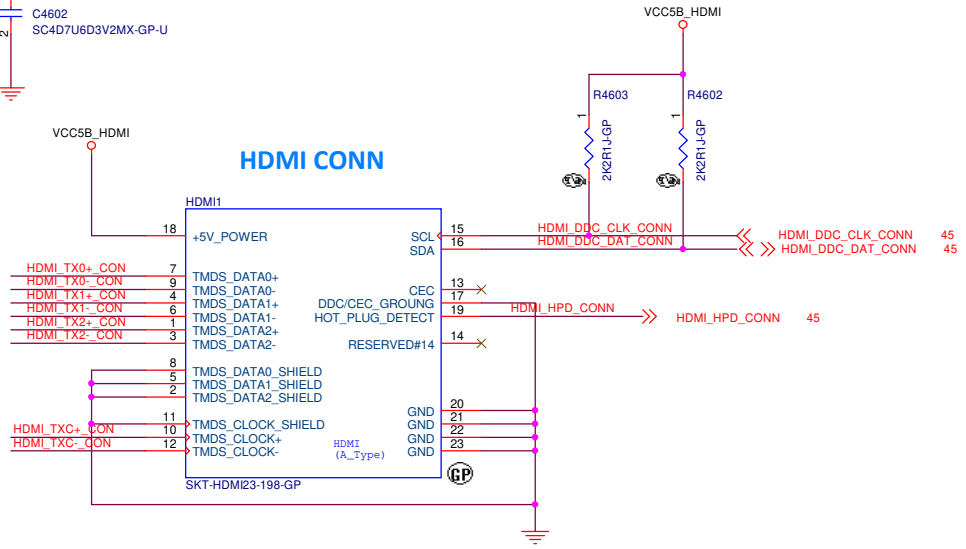


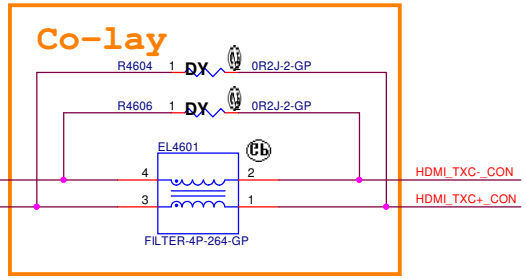


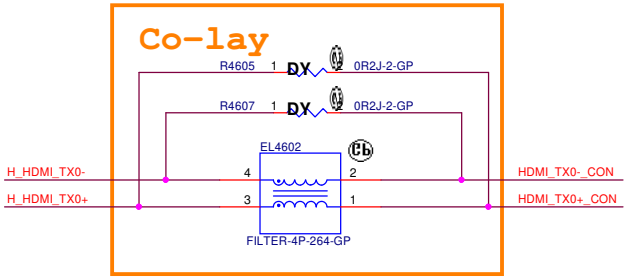


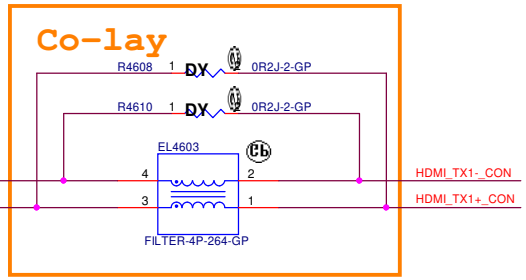


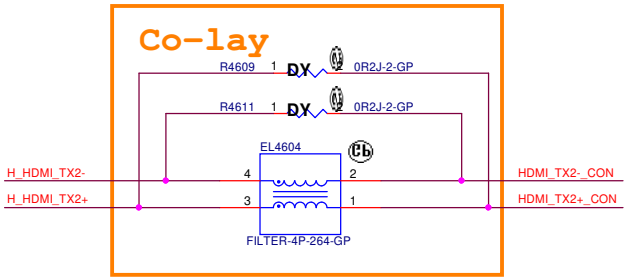












<variant_name>

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

Title: **HDMI CONNECTOR**

Size	Document Number	Rev
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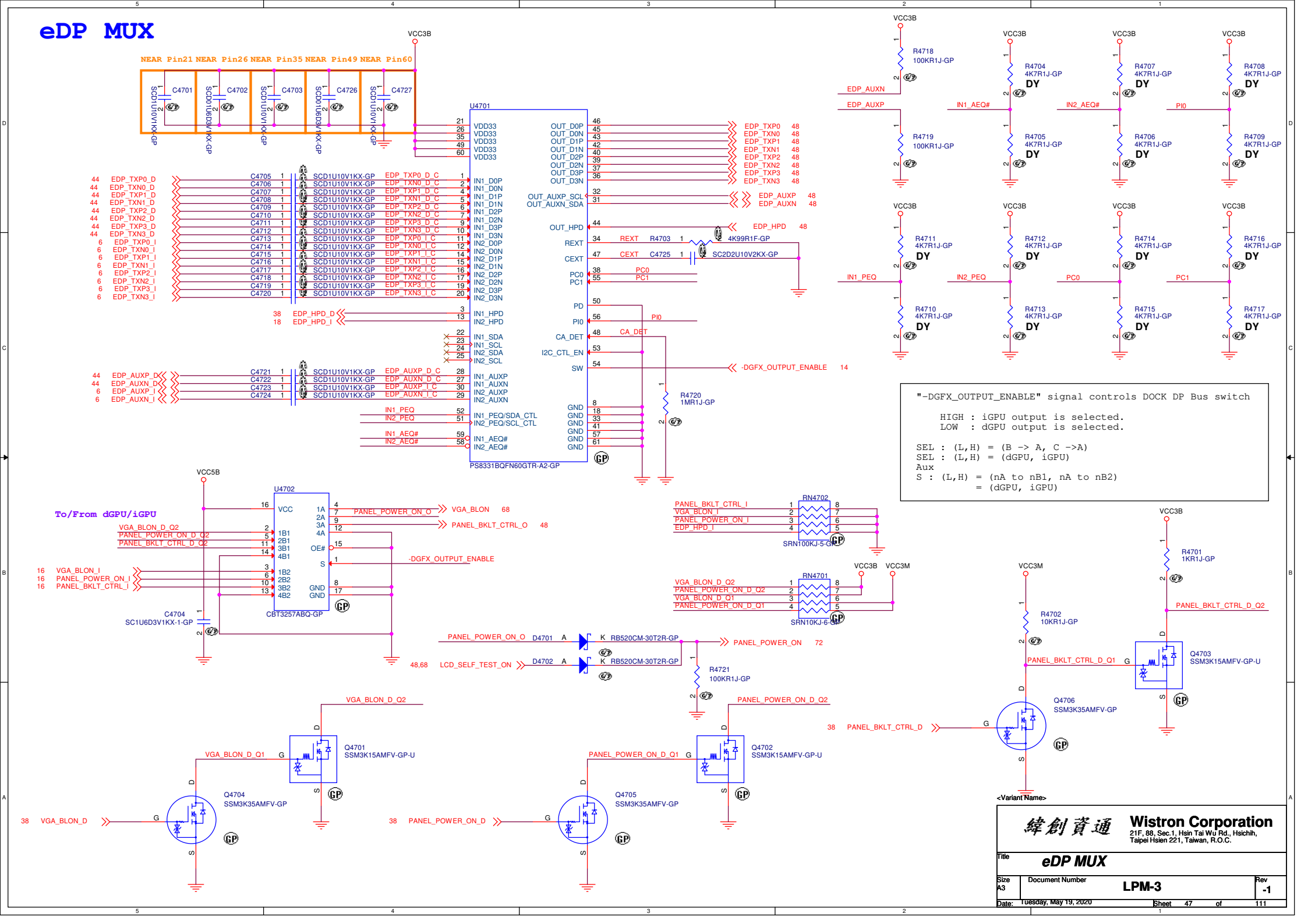
eDP MUX


NEAR Pin21 NEAR Pin26 NEAR Pin35 NEAR Pin49 NEAR Pin60
C4701 C4702 C4703 C4726 C4727
U4701
PS8331BQFN60GTR-A2-GP
EDP_TXP0_D EDP_TXN0_D EDP_TXP1_D EDP_TXN1_D EDP_TXP2_D EDP_TXN2_D EDP_TXP3_D EDP_TXN3_D
EDP_TXP0_I EDP_TXN0_I EDP_TXP1_I EDP_TXN1_I EDP_TXP2_I EDP_TXN2_I EDP_TXP3_I EDP_TXN3_I
EDP_AUXP_D EDP_AUXN_D EDP_AUXP_I EDP_AUXN_I
EDP_HPD_D EDP_HPD_I
IN1_PEQ IN2_PEQ
IN1_AEQ# IN2_AEQ#
EDP_TXP0 EDP_TXN0 EDP_TXP1 EDP_TXN1 EDP_TXP2 EDP_TXN2 EDP_TXP3 EDP_TXN3
EDP_AUXP EDP_AUXN
EDP_HPD
R4703 4K99R1F-GP
C4725 SC2D2U10V2KX-GP
PC0 PC1
PI0
CA_DET
-DGFX_OUTPUT_ENABLE
R4720 1MR1J-GP
R4718 100KR1J-GP
R4719 100KR1J-GP
R4704 4K7R1J-GP DY
R4705 4K7R1J-GP DY
R4707 4K7R1J-GP DY
R4706 4K7R1J-GP DY
R4708 4K7R1J-GP DY
R4709 4K7R1J-GP DY
R4711 4K7R1J-GP DY
R4710 4K7R1J-GP DY
R4712 4K7R1J-GP DY
R4713 4K7R1J-GP DY
R4714 4K7R1J-GP DY
R4715 4K7R1J-GP DY
R4716 4K7R1J-GP DY
R4717 4K7R1J-GP DY
"-DGFX_OUTPUT_ENABLE" signal controls DOCK DP Bus switch
HIGH : iGPU output is selected.
LOW : dGPU output is selected.
SEL : (L,H) = (B -> A, C ->A)
SEL : (L,H) = (dGPU, iGPU)
Aux
S : (L,H) = (nA to nB1, nA to nB2)
= (dGPU, iGPU)
To/From dGPU/iGPU
U4702
CBT3257ABQ-GP
PANEL_POWER_ON_O
PANEL_BKLT_CTRL_O
VGA_BLON
VGA_BLON_D_Q2
PANEL_POWER_ON_D_Q2
PANEL_BKLT_CTRL_D_Q2
VGA_BLON_I
PANEL_POWER_ON_I
PANEL_BKLT_CTRL_I
C4704 SC1U6D3V1KX-1-GP
RN4702 SRN100KJ-5-GP
RN4701 SRN10KJ-6-GP
D4701 RB520CM-30T2R-GP
D4702 RB520CM-30T2R-GP
LCD_SELF_TEST_ON
PANEL_POWER_ON
R4721 100KR1J-GP
R4701 1KR1J-GP
R4702 10KR1J-GP
Q4701 SSM3K15AMFV-GP-U
Q4702 SSM3K15AMFV-GP-U
Q4703 SSM3K15AMFV-GP-U
Q4704 SSM3K35AMFV-GP
Q4705 SSM3K35AMFV-GP
Q4706 SSM3K35AMFV-GP
VGA_BLON_D
PANEL_POWER_ON_D
PANEL_BKLT_CTRL_D
<Variant Name>
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title eDP MUX
Size A3
Document Number LPM-3
Rev -1
Date: Tuesday, May 19, 2020
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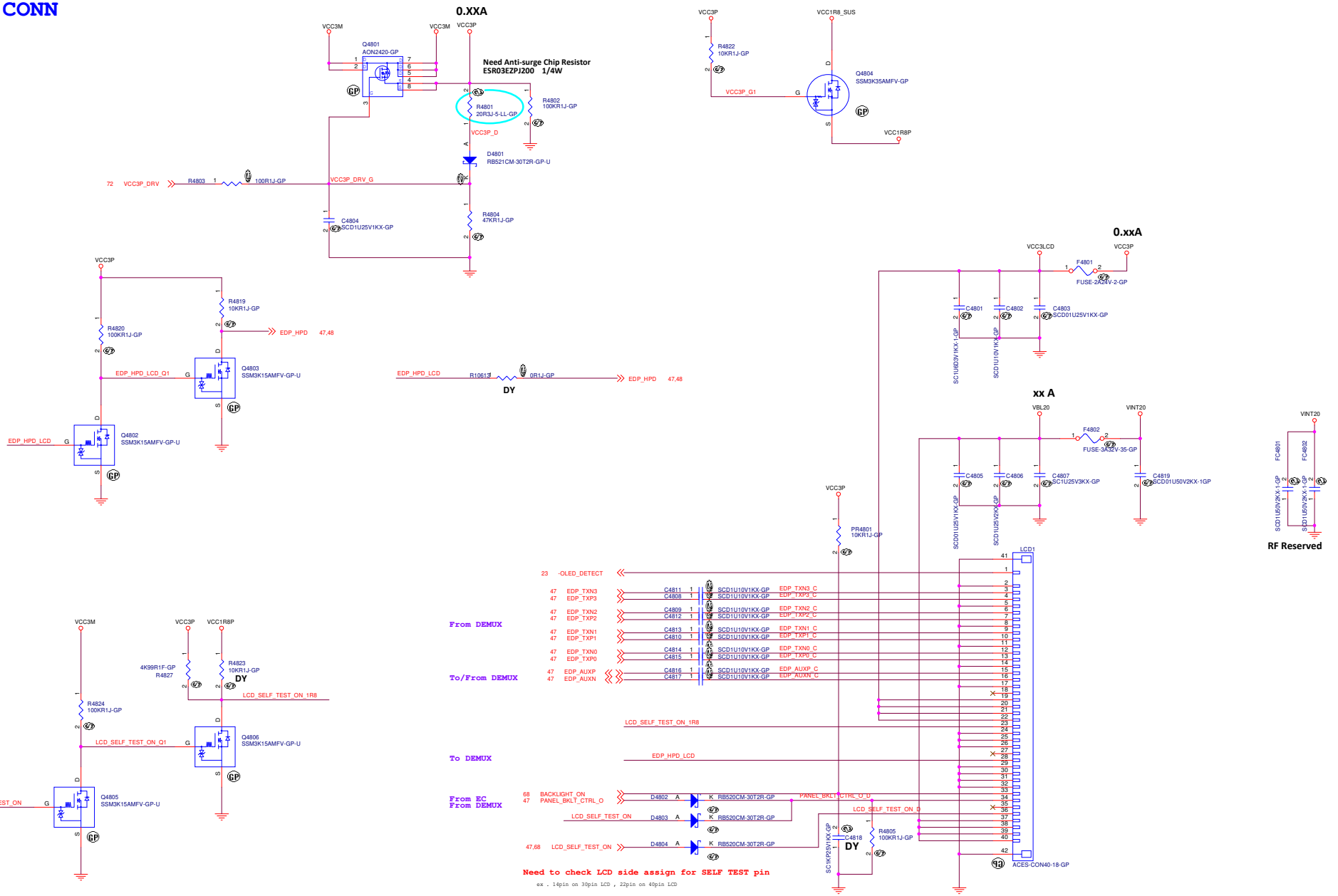
LCD CONN



<Variant Name>

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

Title: LCD CONNECTOR

Size	Document Number	Rev
A2	LPM-3	-1

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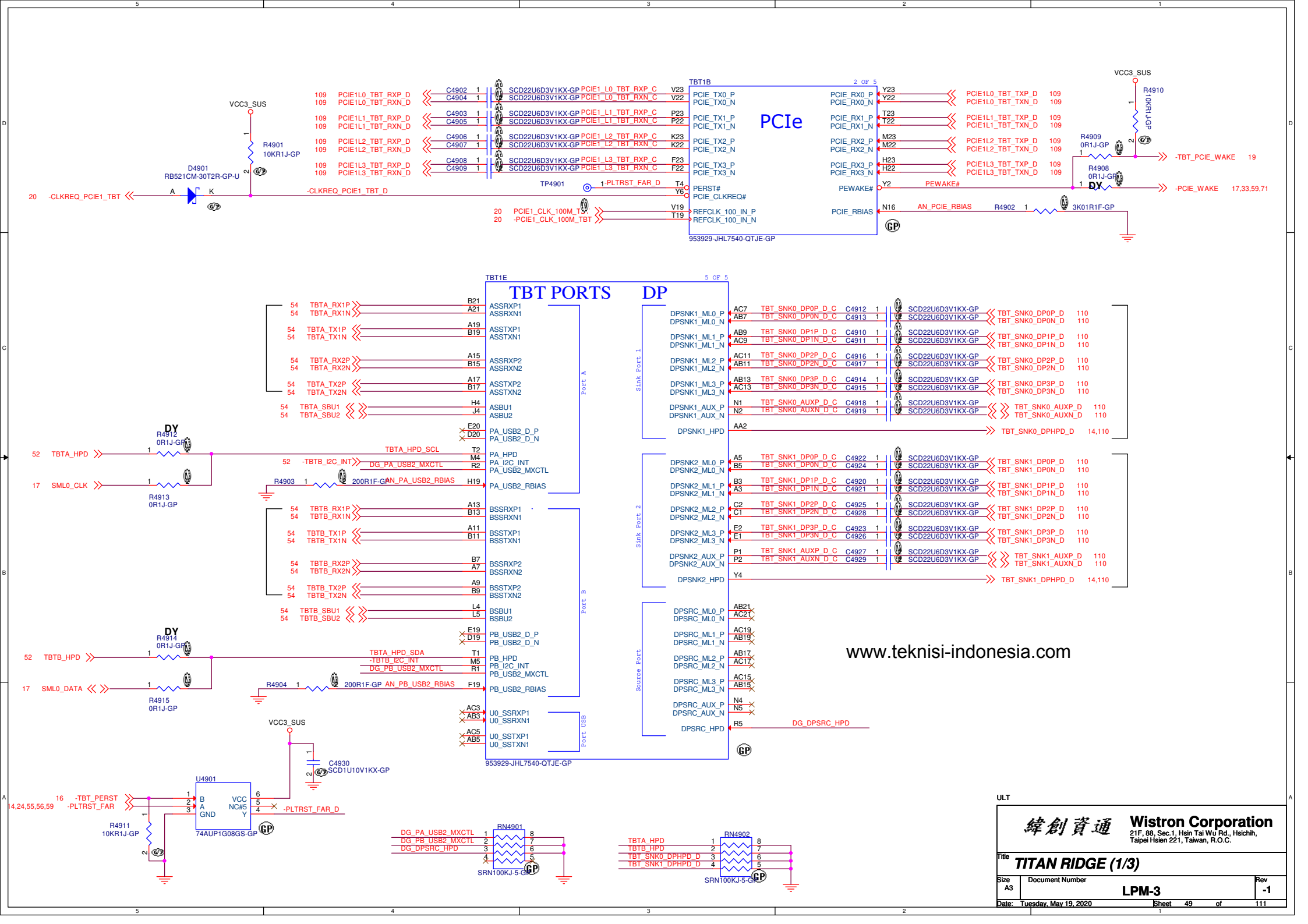


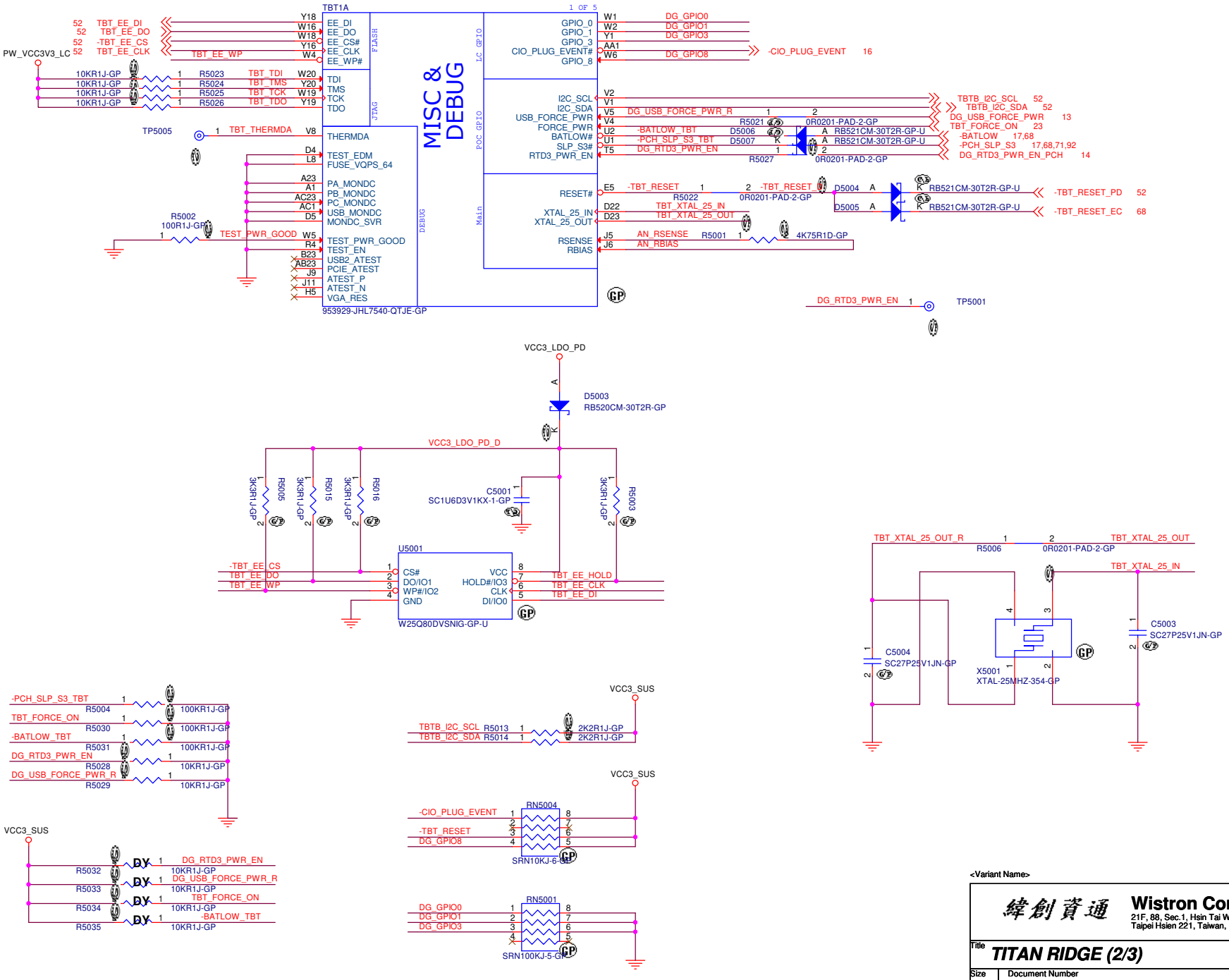
ULT

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

Title: TITAN RIDGE (1/3)

Size: A3 | Document Number: LPM-3 | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 49 of 111



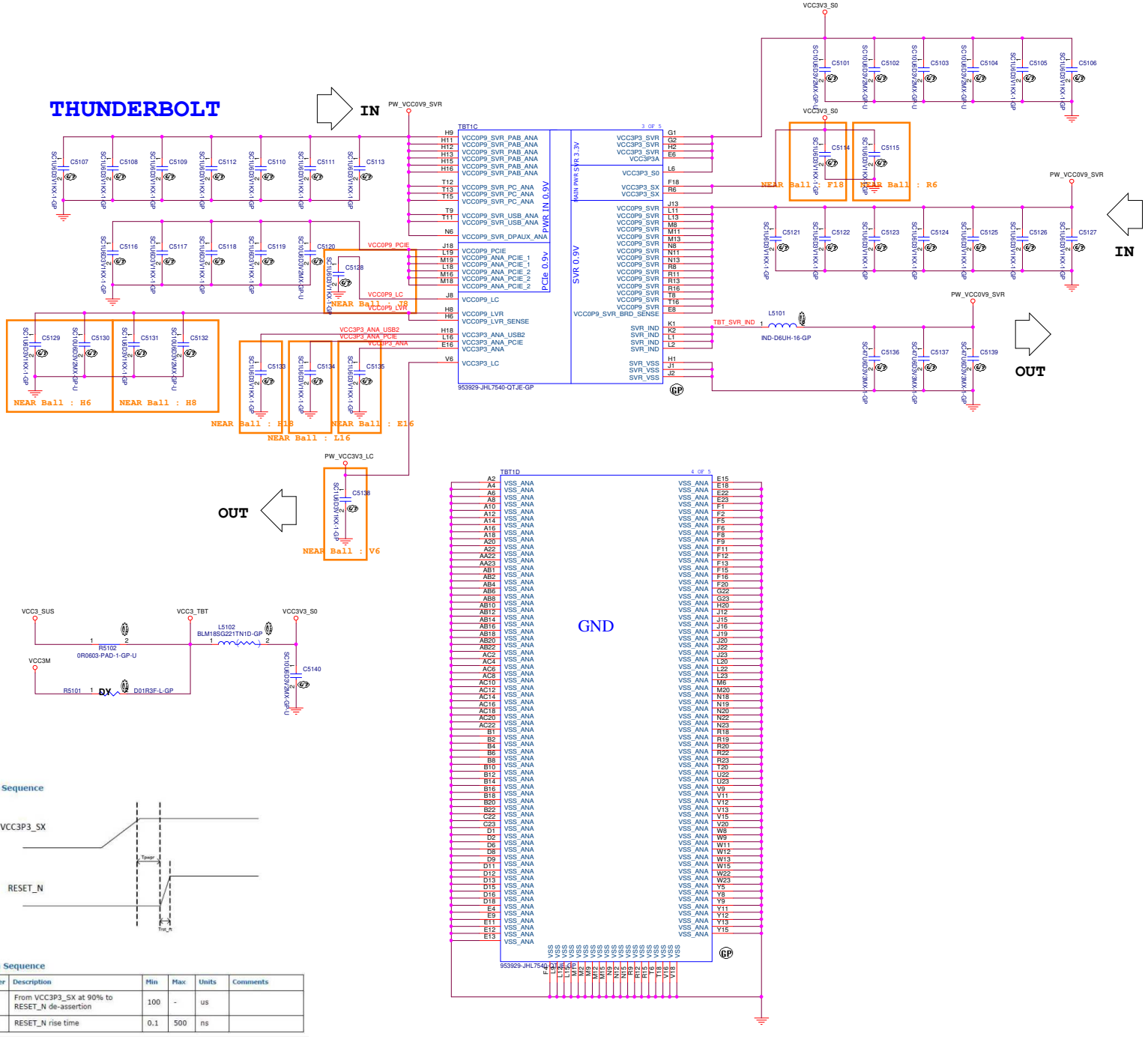
<Variant Name>

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

Title: **TITAN RIDGE (2/3)**

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 50 of 111



Parameter	Description	Min	Max	Units	Comments
Tpwpr	From VCC3P3_SX at 90% to RESET_N de-assertion	100	-	us	
Trst_rt	RESET_N rise time	0.1	500	ns	

<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: TITAN RIDGE (3/3)

Size: A2 | Document Number: LPM-3 | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 51 of 111

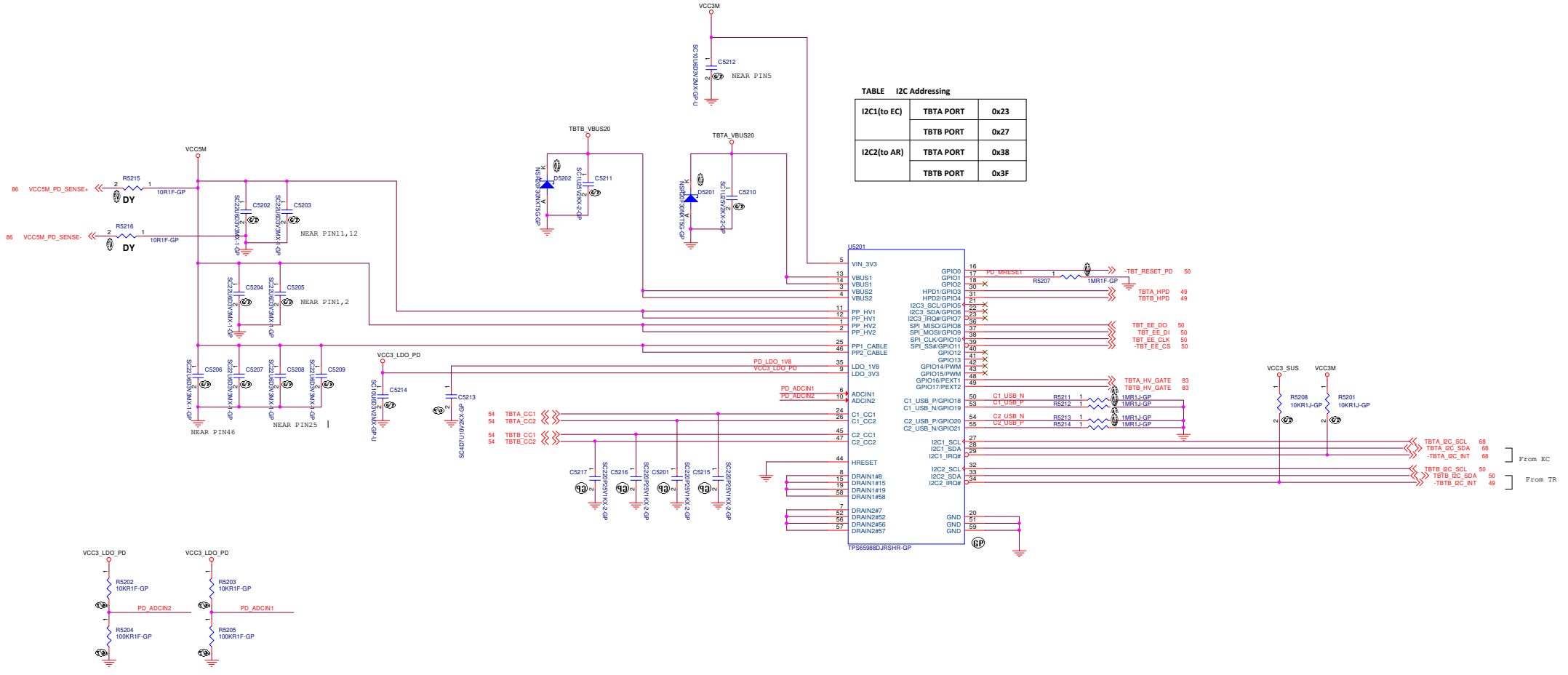


Table 7. Boot Mode Pin Strapping (continued)

SPI_MISO	ADCIN1 DIV = R2/(R1+R2)(1)		Dead Battery Mode	Device Configuration
	DIV MIN	DIV MAX		
1	0.60	1.00	BP_NoWait	Safe Configuration

Table 8. Dead Battery Configurations

CONFIGURATION	DESCRIPTION
BP_NoWait	The device continues to start-up and attempts to load configurations while receiving power from VBUS. Once configuration is loaded the appropriate power switch is closed based on the loaded configuration.

Table 10. Device Default Configurations for DJ variant

Configuration	Description
Safe	Ports disabled, if powered from VBUS operates a legacy sink

<Variant Name>

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

Title: POWER DELIVERY (1/2)

Size: A2 | Document Number: LPM-3 | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 52 of 111

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 ***Reserved***

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ACOK# is not longer monitored on RV3 by EC.

Place on BOTTOM side

CC PROTECTION

TABLE of Q5401 Q5404			
	VENDOR	P/N	Wistron P/N
1st	Fairchild	FDMA6676PZ	084.06676.003D
2nd	Viahay	SiA471DJ	

need change to 0201

Place near U5403 pin8

TABLE U5403

TI	TS3USB31E	073.00331.0003
ONSemi	NLAS7213MUTBG	073.07213.0003

TS3USB31E is placed for security reason.
When unknown USB Type-C power adapter is attached, utility in OS shuts down USB 2.0 signal from USB Type-C port to avoid computer virus.

Should be placed near Type-C connector

ACOK# is not longer monitored on RV3 by EC.

Place near U5406 pin8

TABLE U5406

TI	TS3USB31E	073.00331.0003
ONSemi	NLAS7213MUTBG	073.07213.0003

<Variant Name>

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

Title: USB TYPE-C CONNECTOR

Size: A2 | Document Number: LPM-3 | Rev: -1

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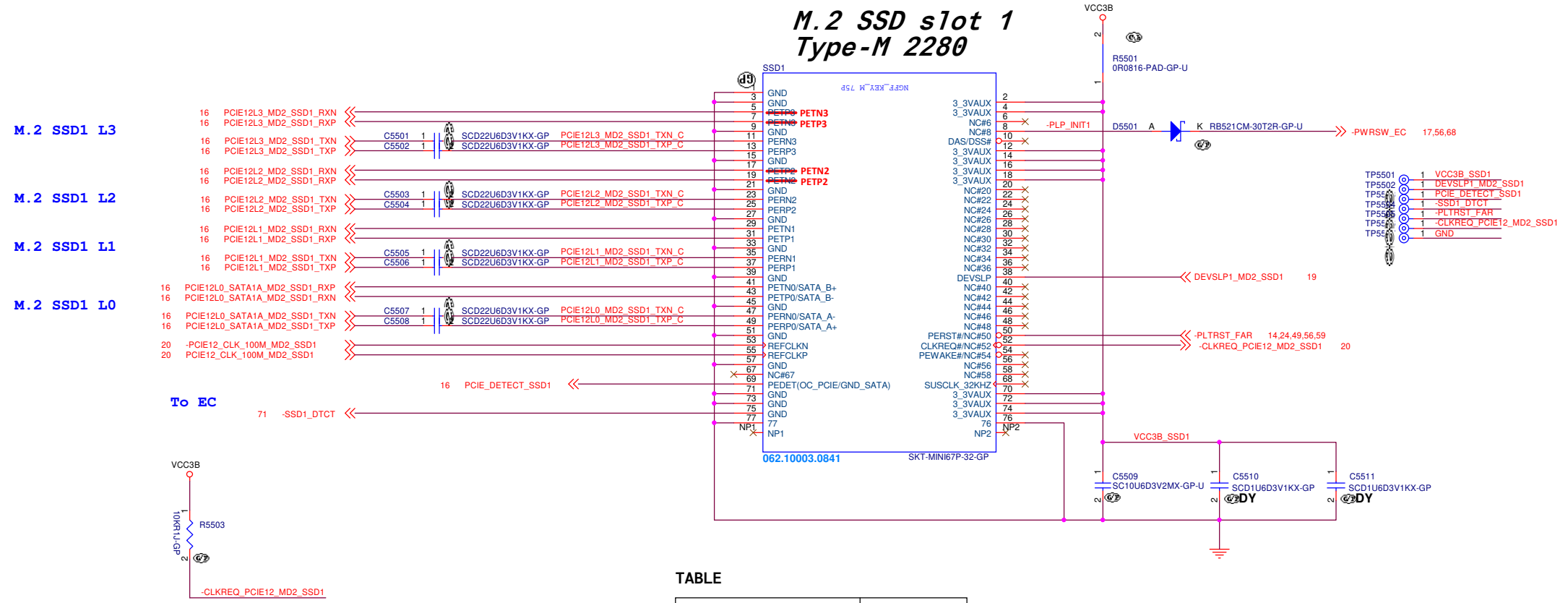
M.2 SSD



TABLE

PCIE_DETECT_SSD1	Device
LOW	SATA SSD
High	PCIe SSD

<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: M.2 SATA/PCIE SSD CARDSLOT1

Size	Document Number	Rev
A3	LPM-3	-1

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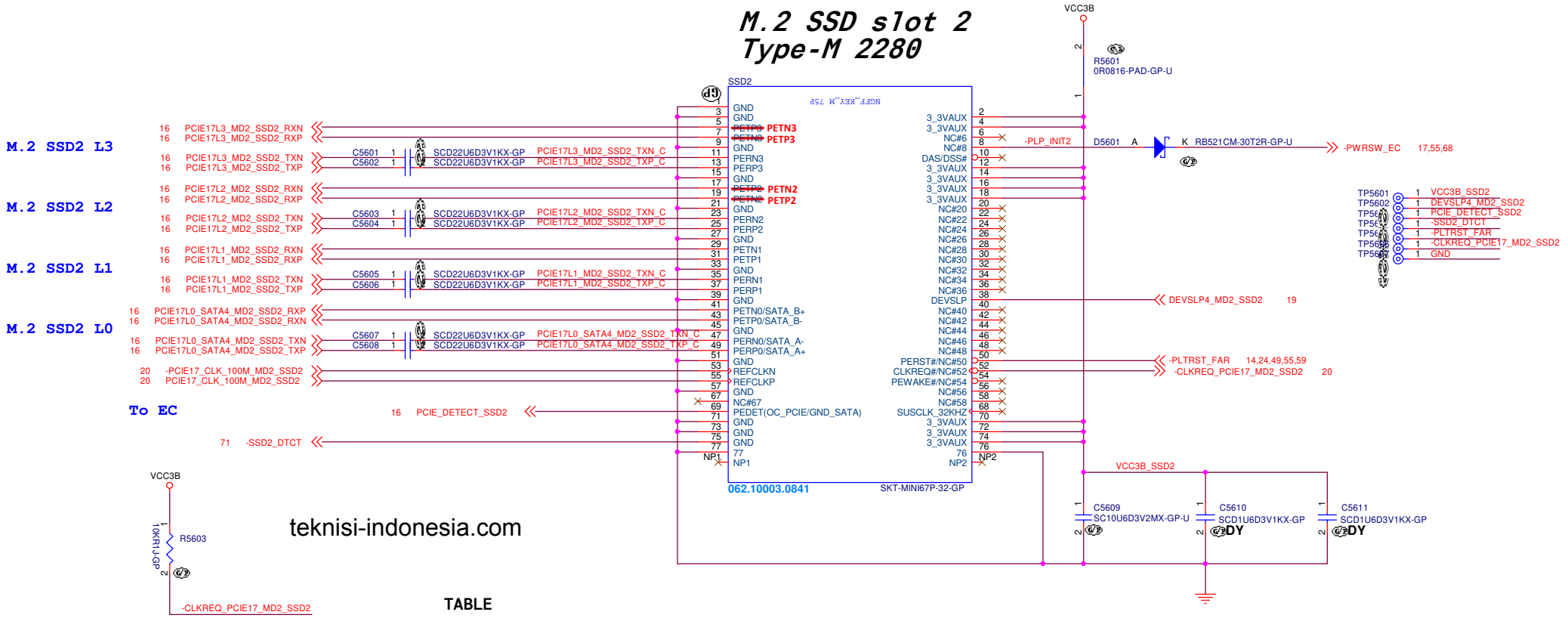
M.2 SSD



TABLE

PCIE_DETECT_SSD1	Device
LOW	SATA SSD
High	PCIe SSD

<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: M.2 SATA/PCIE SSD CARDSLOT2

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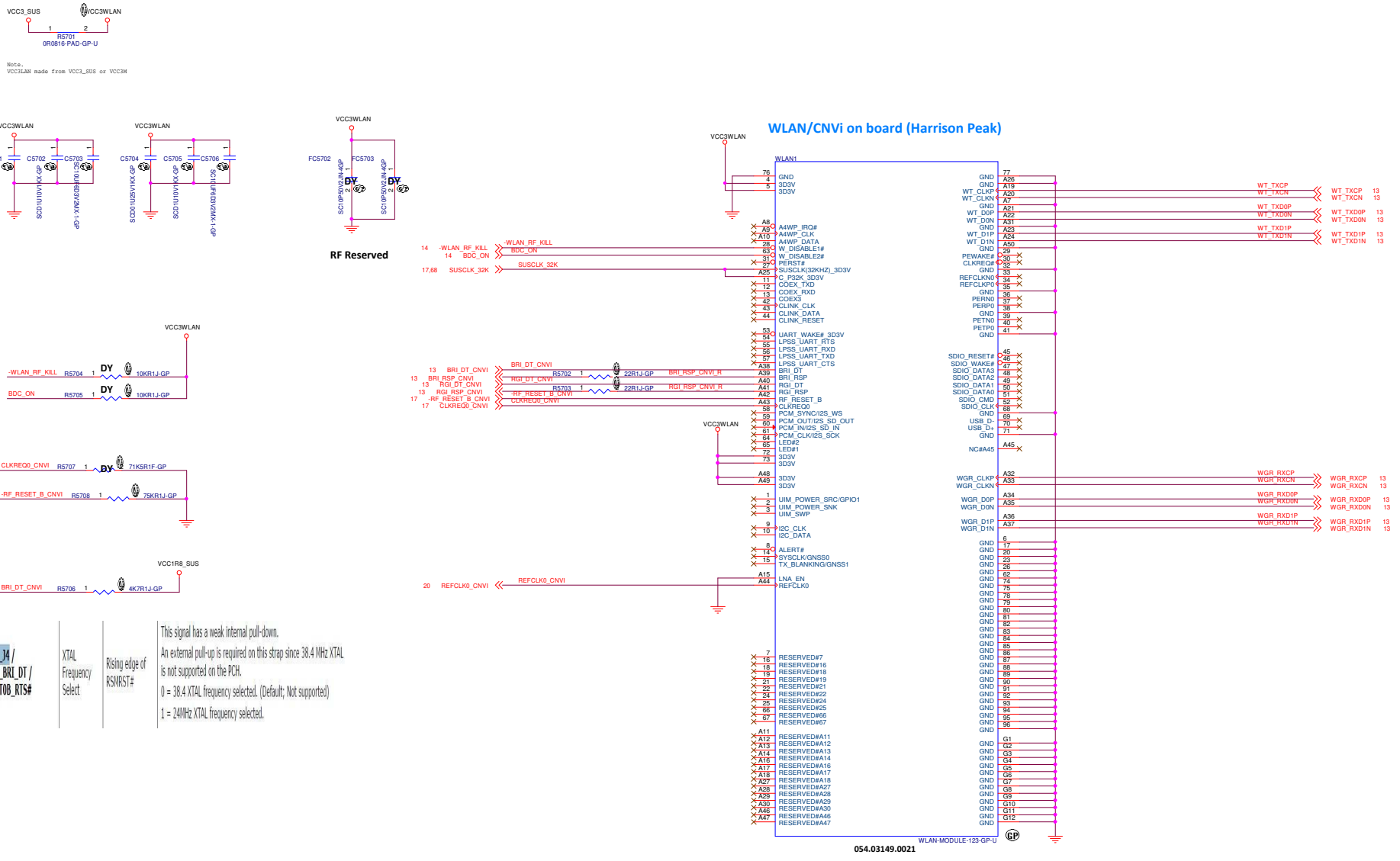
WLAN M.2 1216



GPP_J4 / CNV_BRI_DT / UART0B_RTS#	XTAL Frequency Select	Rising edge of RSMRST#	This signal has a weak internal pull-down. An external pull-up is required on this strap since 38.4 MHz XTAL is not supported on the PCH. 0 = 38.4 XTAL frequency selected. (Default; Not supported) 1 = 24MHz XTAL frequency selected.

054.03149.0021

<Variant Name>

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

Title: WLAN M.2 1216 MODULE

Size	Document Number	Rev
A2	LPM-3	-1

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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: ***M.2 WWAN CARD SLOT***

Size	Document Number	Rev
A4	LPM-3	-1

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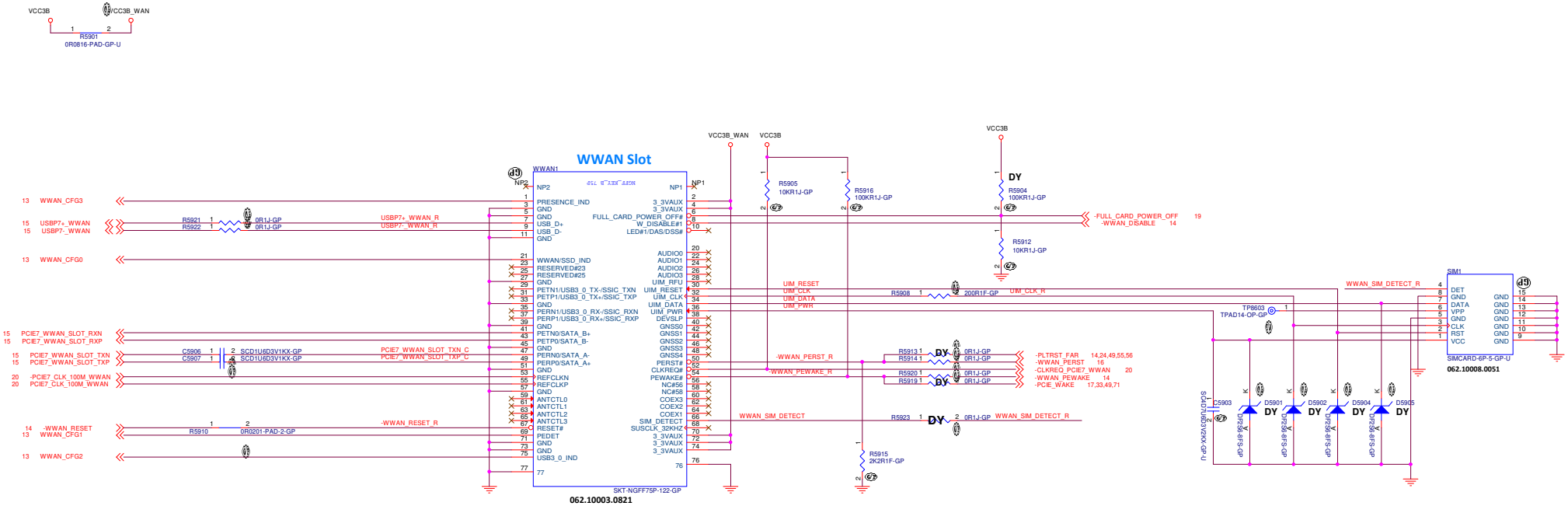
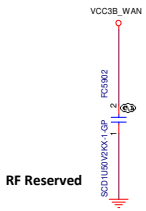
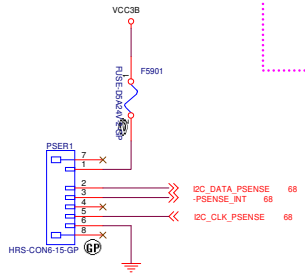
M.2 SocKet 2 (Key-B) for 3042 /3052 S3 WWAN







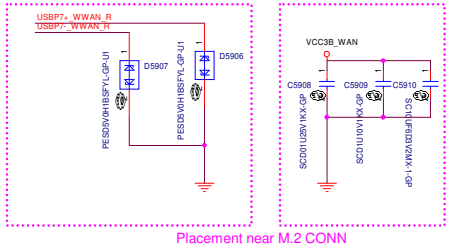


TABLE:

State #	Module Configuration Decodes				Module Type & Main Host Interface	Port Configuration
	CONFIG_0 (Pin 21)	CONFIG_3 (Pin 1)	CONFIG_2 (Pin 75)	CONFIG_1 (Pin 69)		
0	GND	GND	GND	GND	SSD - SATA	N/A
1	GND	GND	GND	NC	SSD - PCIe	N/A
2	GND	GND	NC	GND	WWAN - PCIe	0
3	GND	GND	NC	NC	WWAN - PCIe	1
4	GND	NC	GND	GND	WWAN - PCIe, USB 3.1 Gen1	0
5	GND	NC	GND	NC	WWAN - PCIe, USB 3.1 Gen1	1
6	GND	NC	NC	GND	WWAN - PCIe, USB 3.1 Gen1	2
7	GND	NC	NC	NC	WWAN - PCIe, USB 3.1 Gen1	3
8	NC	GND	GND	GND	WWAN - SSIC	0
9	NC	GND	GND	NC	WWAN - SSIC	1
10	NC	GND	NC	GND	WWAN - SSIC	2
11	NC	GND	NC	NC	WWAN - SSIC	3
12	NC	NC	GND	GND	WWAN - PCIe	2
13	NC	NC	GND	NC	WWAN - PCIe	3
14	NC	NC	NC	NC	WWAN - PCIe, USB 3.1 Gen1	Vendor Defined
15	NC	NC	NC	NC	No Module Present	N/A

ULT

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

Title: WWAN M.2 3042 Slot

Size	Document Number	Rev
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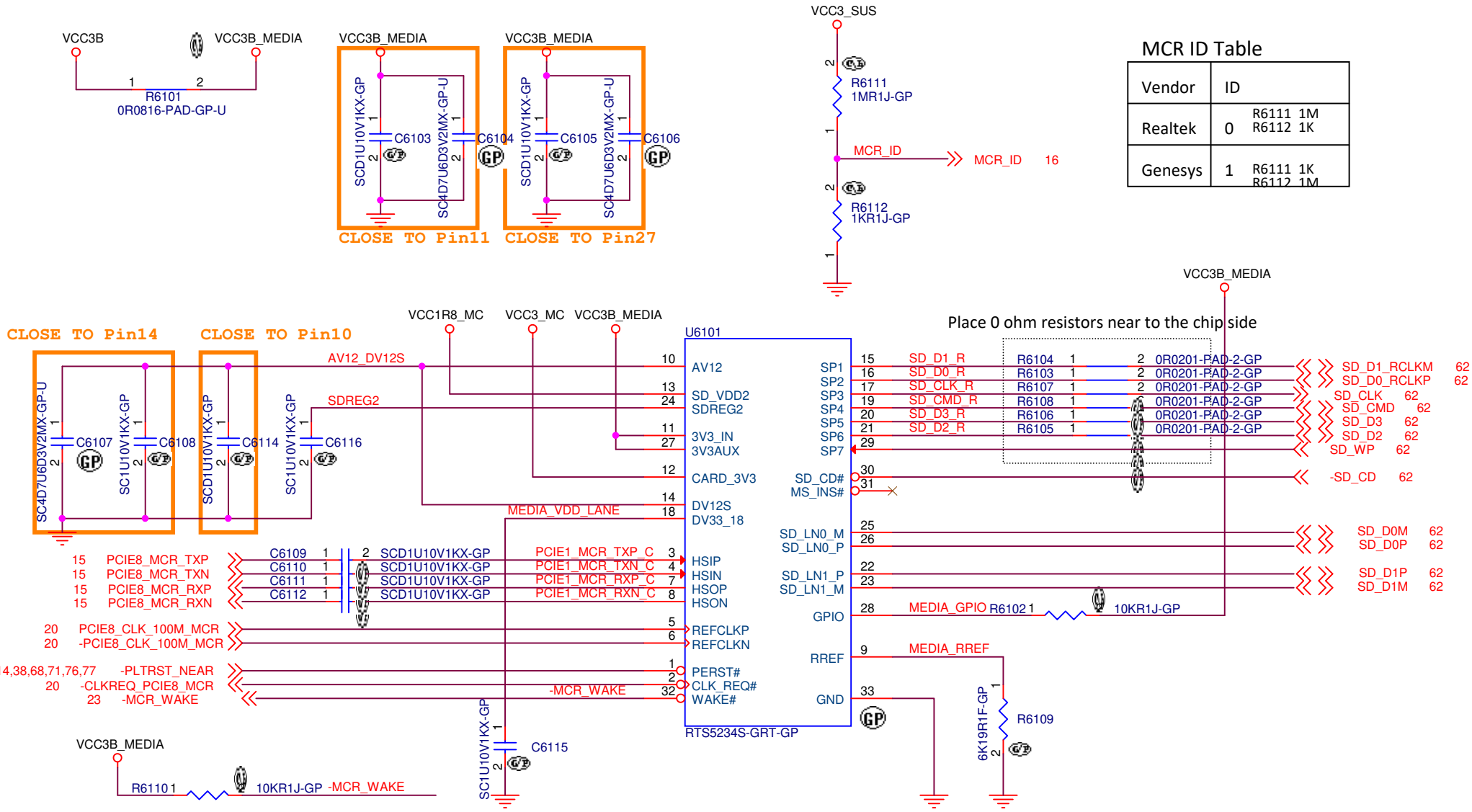
Reserved

<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: *GBE RJ45 CONNECTOR*

Size	Document Number	Rev
A3	LPM-3	-1



<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	***MEDIA CARD CONTROLLER UHS-2***
Size: A4	Document Number: **LPM-3**
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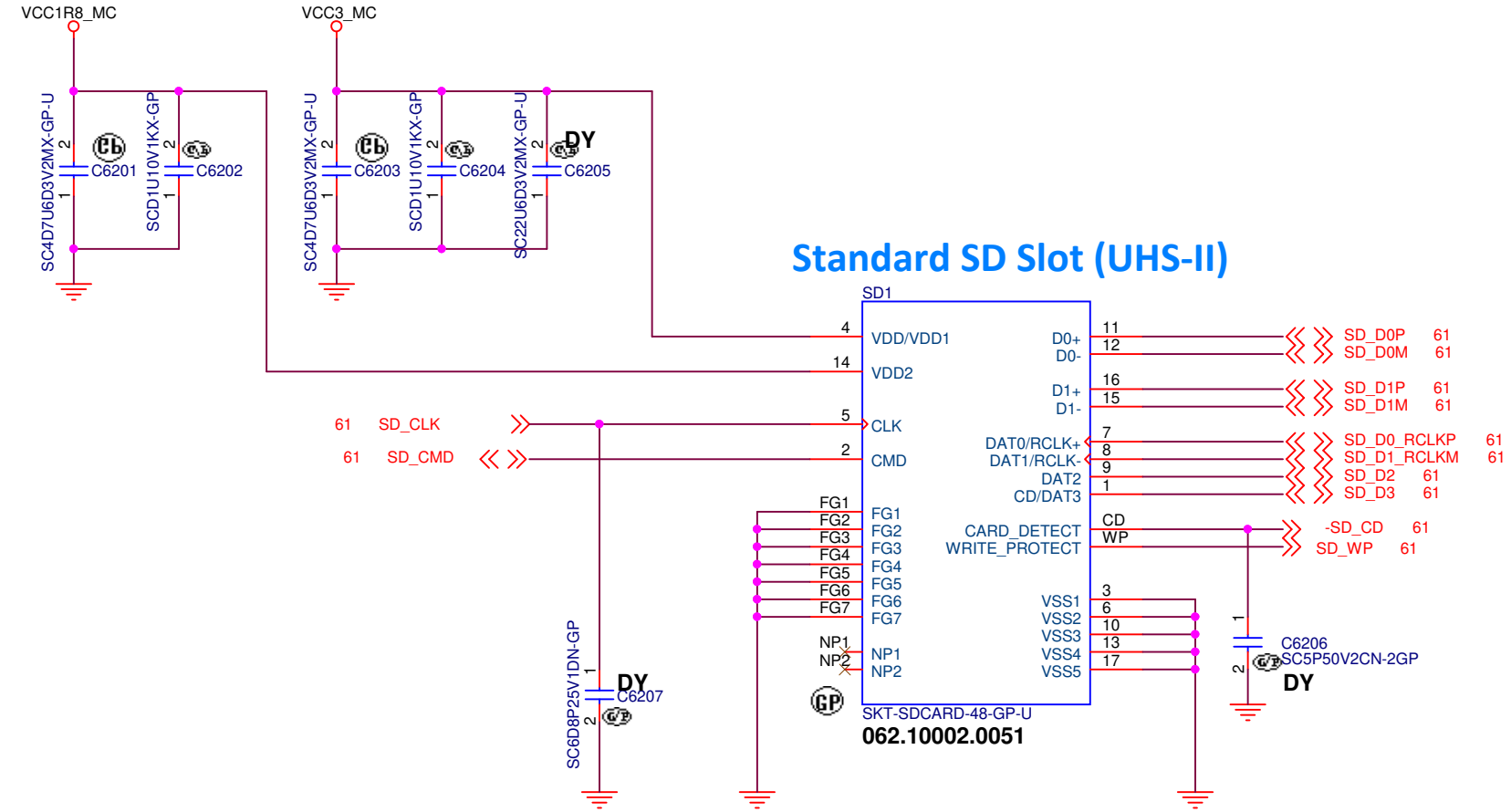
From RTS5348



<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: MEDIA CARD INTERFACE UHS-2

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AUDIO

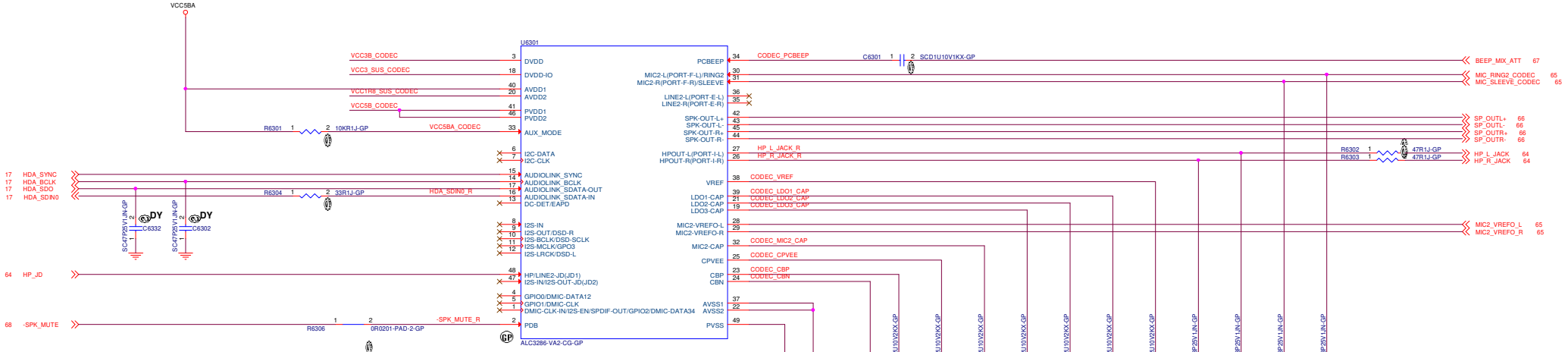
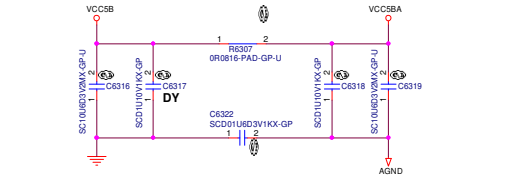
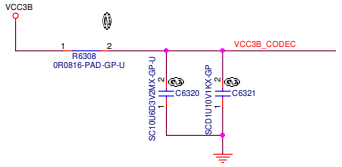


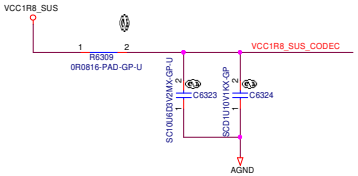
TABLE MIC HW ENABLE/DISABLE

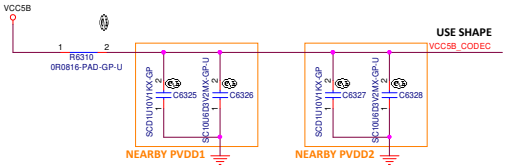
	ENABLE	DISABLE
R1601	ASM	NO ASM
R6305	ASM	NO ASM

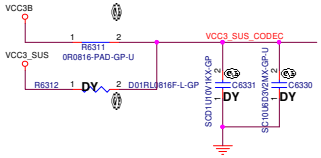
LOGIC

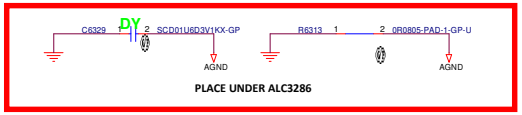












ULT

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

Title: **AUDIO ALC3286-CG**

Size	Document Number	Rev
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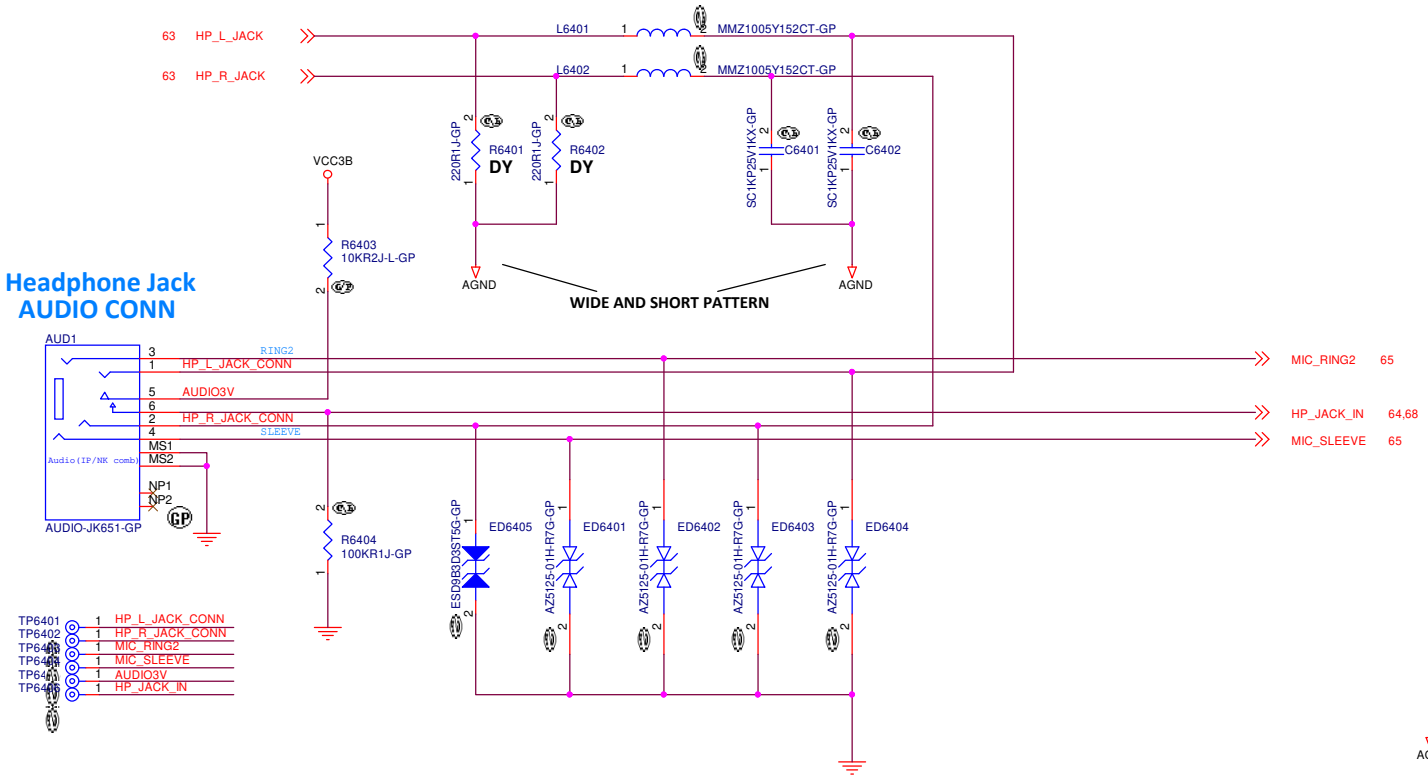
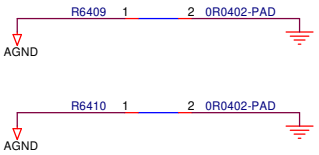
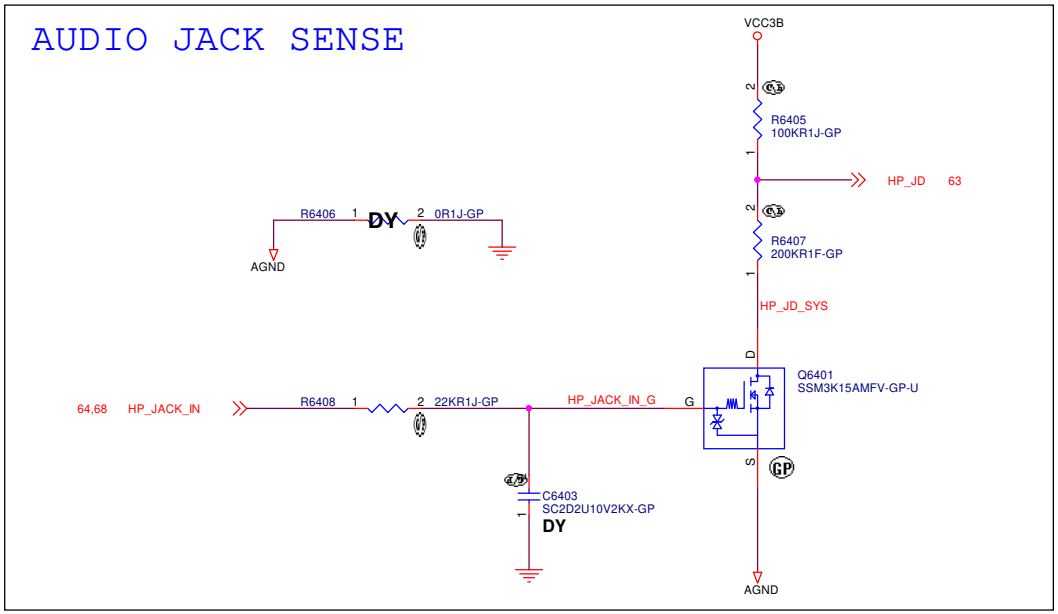
AUDIO

NEAR AUDIO1 CONN





AUDIO JACK SENSE



ULT

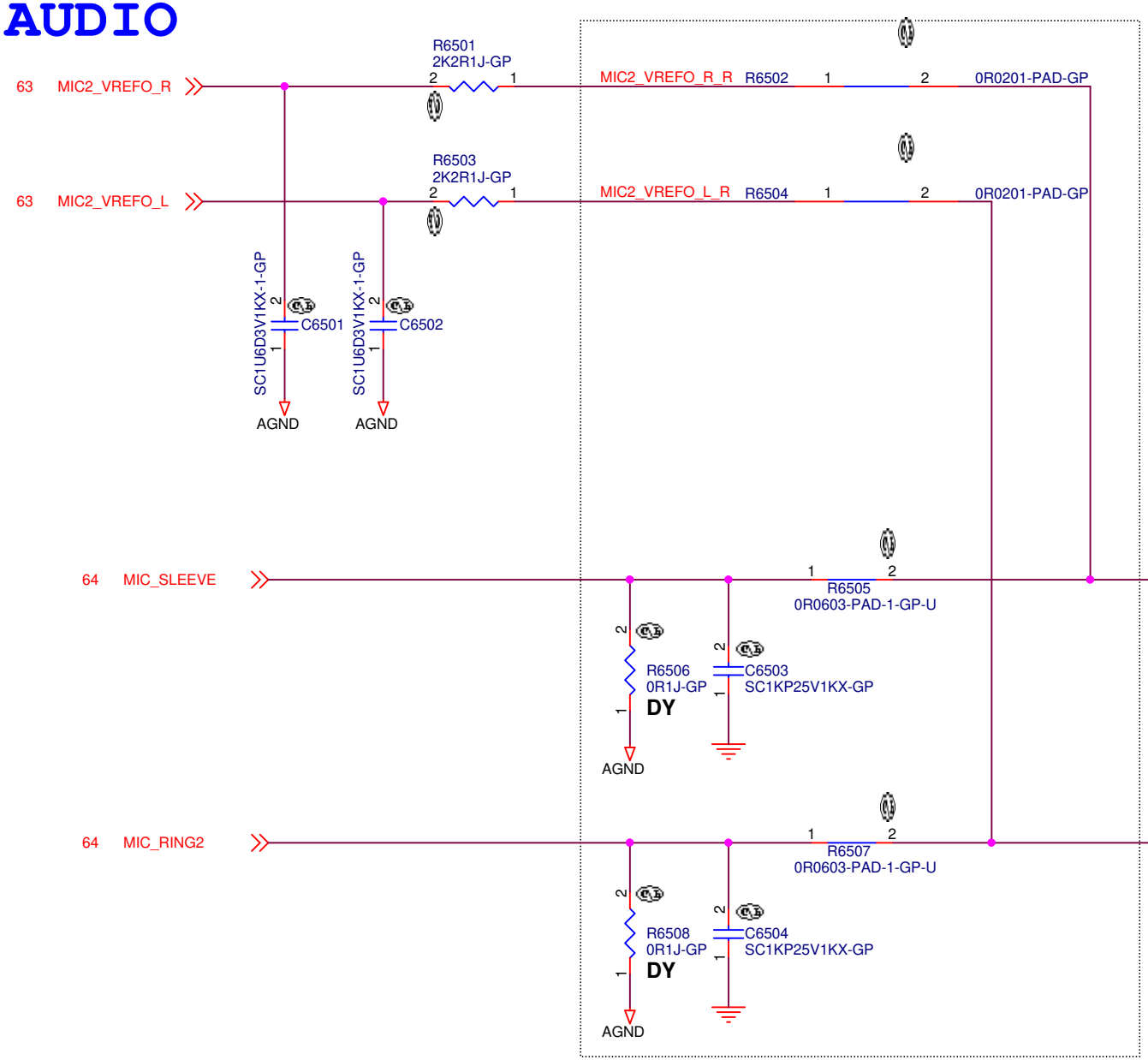
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **AUDIO CONNECTOR/SENSE**

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 64 of 111

AUDIO



NEAR EXT MIC CONN

ULT

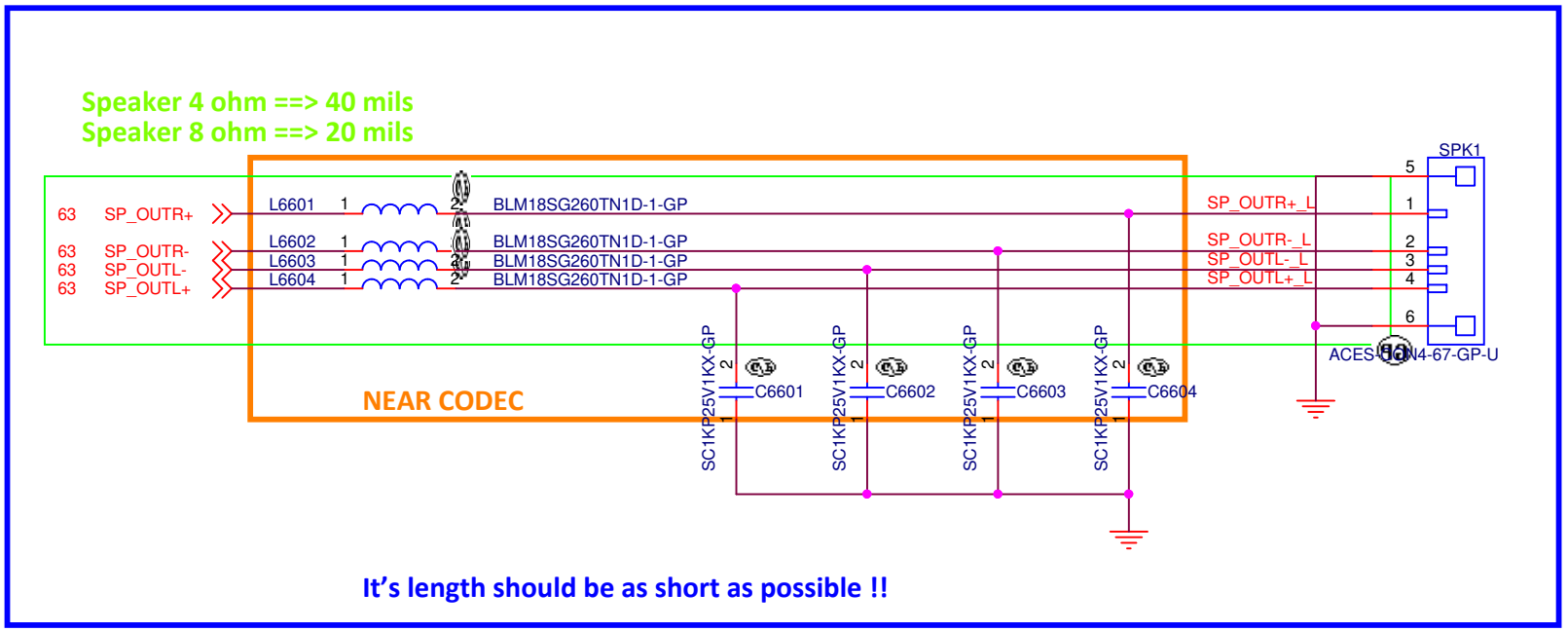
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

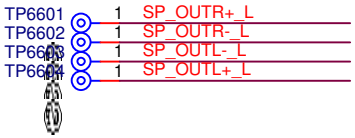
Title: **AUDIO EXT MIC I/F**

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 65 of 111

AUDIO





ULT

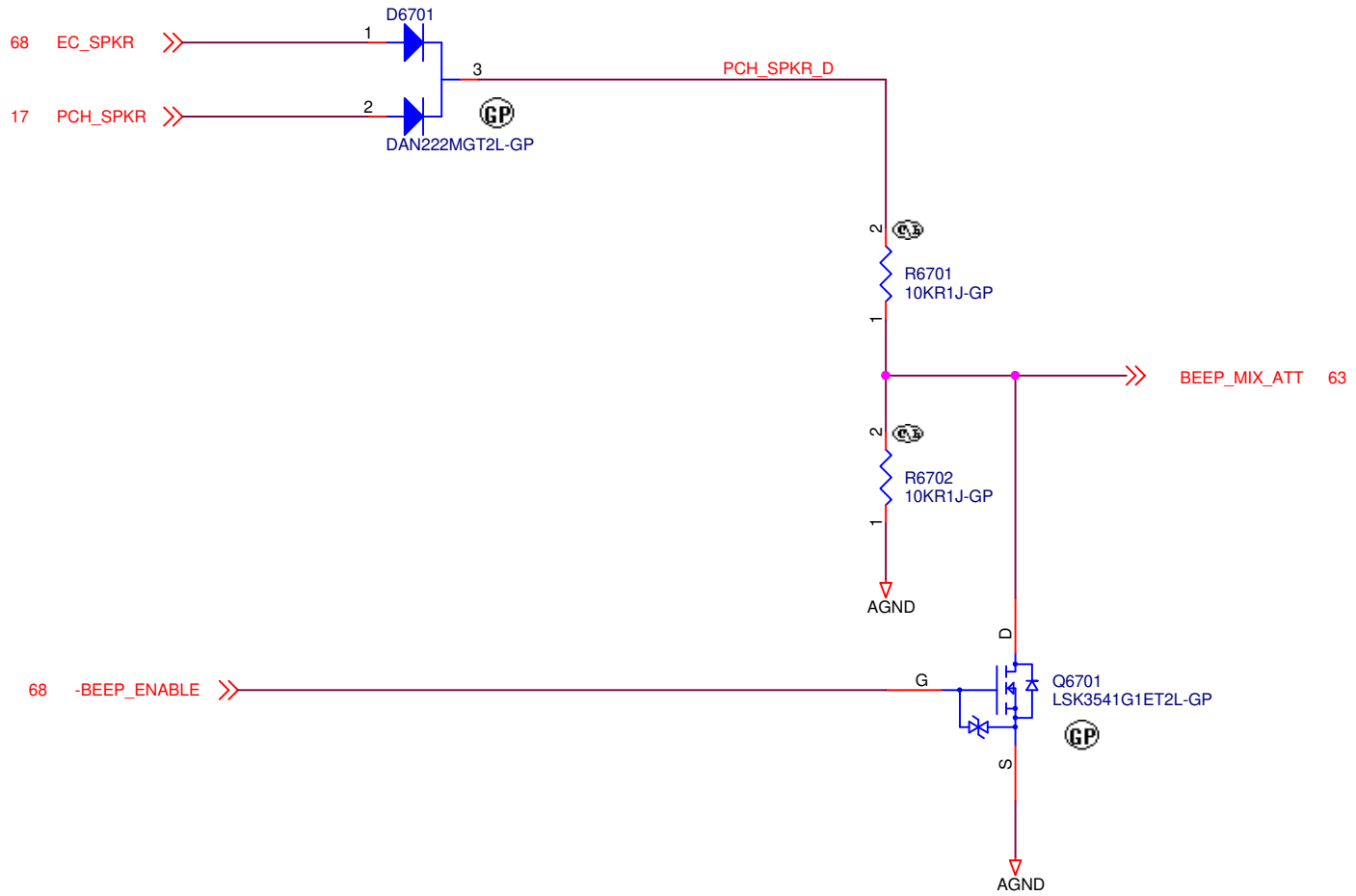
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title **AUDIO SPEAKER**

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 66 of 111

AUDIO



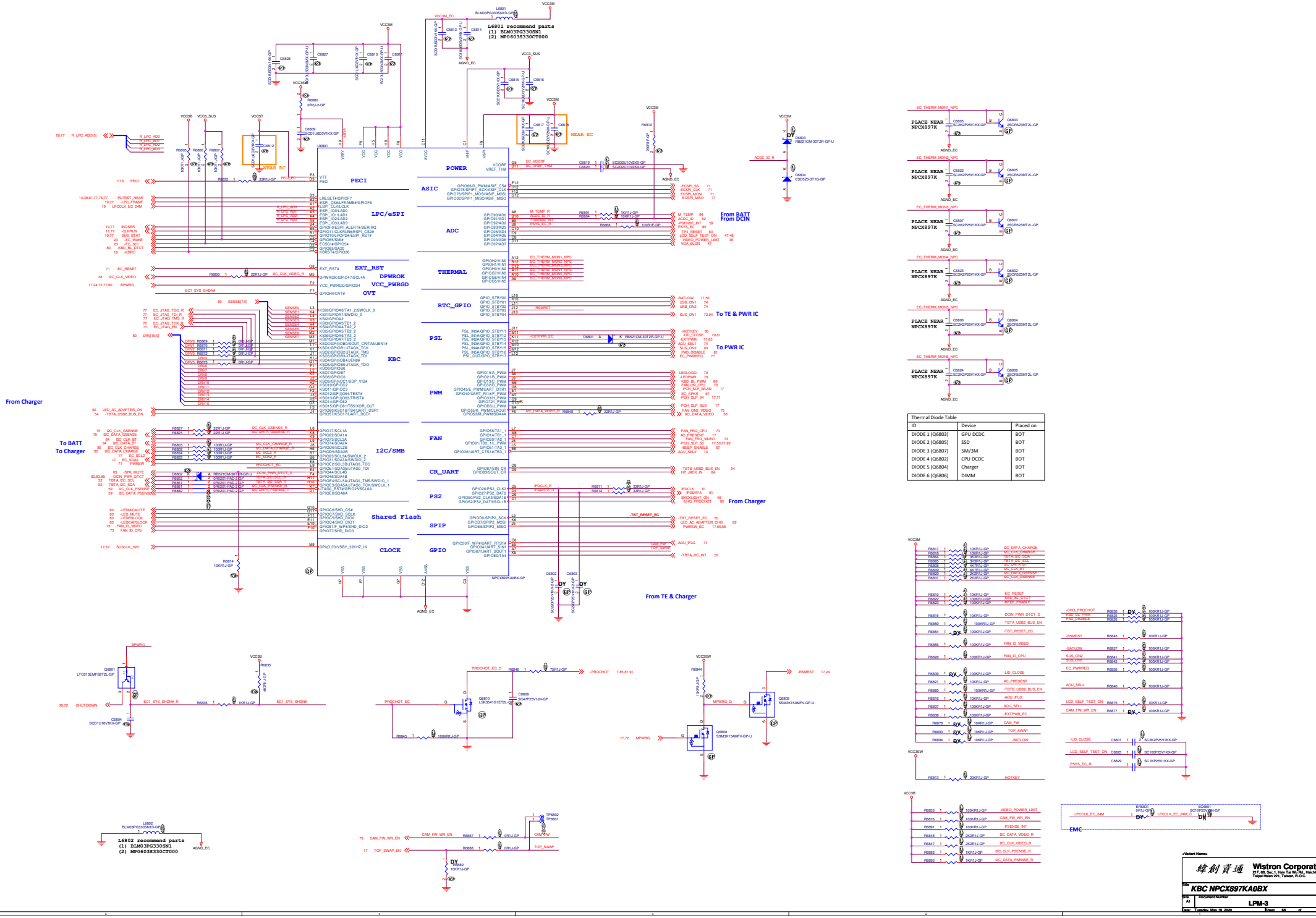
<Variant Name>

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

Title: ***AUDIO BEEP***

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 67 of 111


L6801 recommend parts
(1) BLM03PG3308N1
(2) MPO6038330CT000
L6802 recommend parts
(1) BLM03PG3308N1
(2) MPO6038330CT000
POWER
PECI
LPC/eSPI
EXT_RST
DPWROK
VCC_PWRGD
OVT
KBC
I2C/SMB
Shared Flash
CLOCK
ASIC
ADC
THERMAL
RTC_GPIO
PSL
PWM
FAN
CR_UART
PS2
SPIP
GPIO
EMC
From Charger
To BATT
To Charger
From BATT
From DCIN
To TE & PWR IC
To PWR IC
From TE & Charger
PLACE NEAR NPCX897K
Thermal Diode Table
ID | Device | Placed on
DIODE 1 (Q6803) | GPU DCDC | BOT
DIODE 2 (Q6805) | SSD | BOT
DIODE 3 (Q6807) | 5M/3M | BOT
DIODE 4 (Q6802) | CPU DCDC | BOT
DIODE 5 (Q6804) | Charger | BOT
DIODE 6 (Q6806) | DIMM | BOT
Wistron Corporation
KBC NPCX897KA0BX
LPM-3

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 ***Reserved***

Size	Document Number	Rev
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Reserved

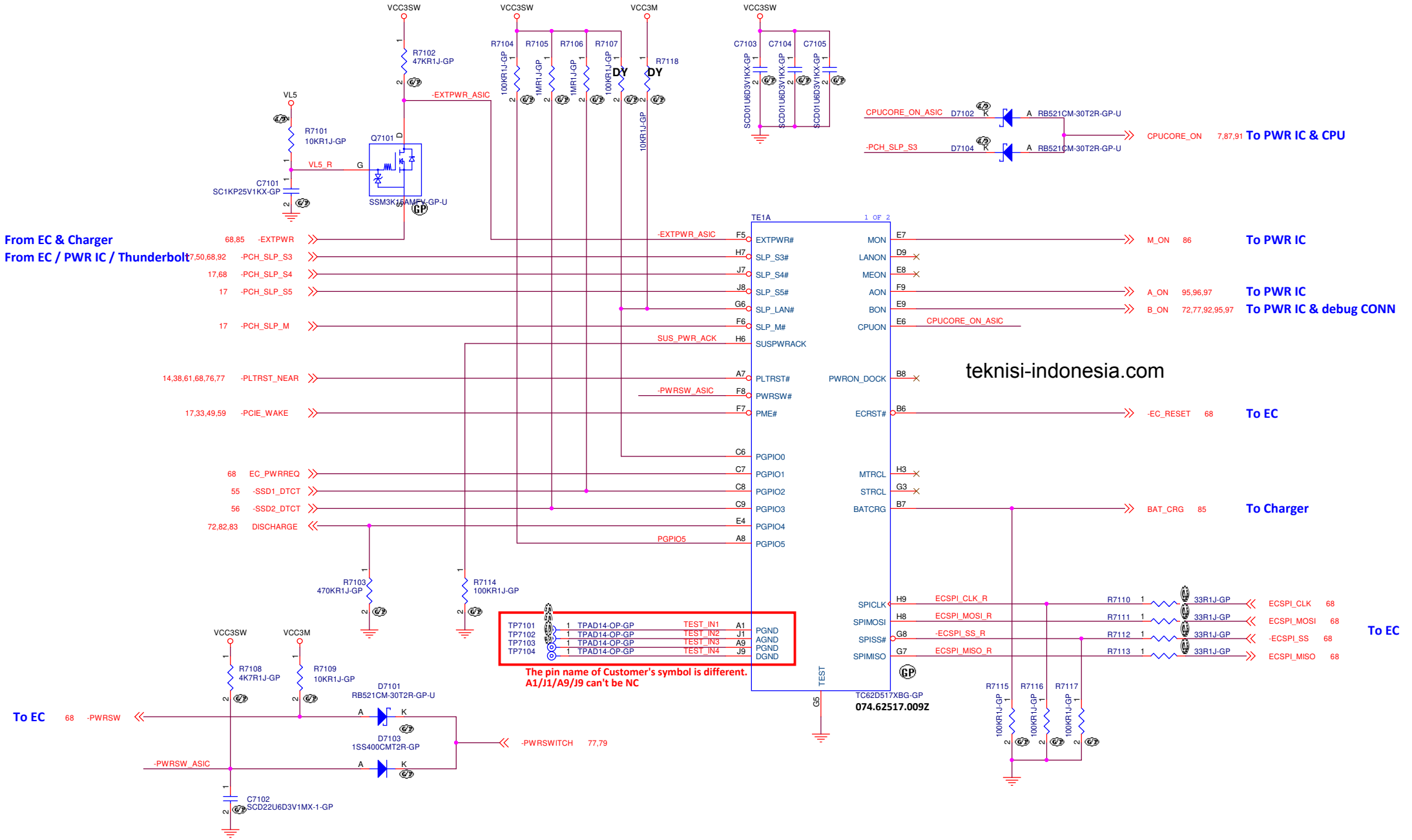
<Variant Name>

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

Title ***Reserved***

Size	Document Number	Rev
A4	LPM-3	-1

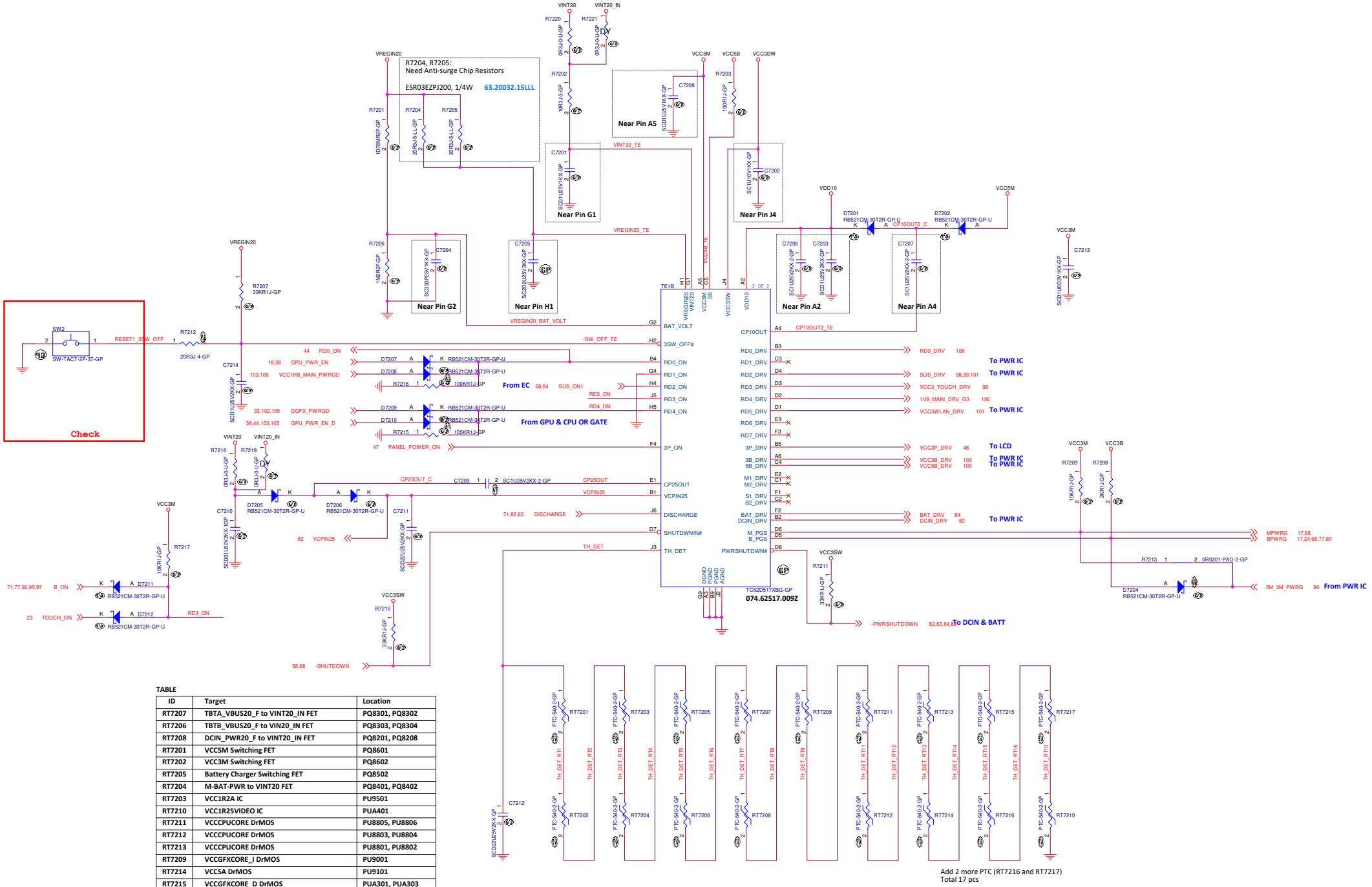
Date: Tuesday, May 19, 2020 Sheet 70 of 111



<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	THINK ENGINE2 (2/2)	
Size A3	Document Number LPM-3	Rev -1
Date: Tuesday, May 19, 2020	Sheet 71 of 111	



TABLE

ID	Target	Location
RT7207	TBTA_VBUS20_F to VINT20_IN FET	PQ8301, PQ8302
RT7206	TBTB_VBUS20_F to VIN20_IN FET	PQ8303, PQ8304
RT7208	DCIN_PWR20_F to VINT20_IN FET	PQ8201, PQ8208
RT7201	VCC5M Switching FET	PQ8601
RT7202	VCC3M Switching FET	PQ8602
RT7205	Battery Charger Switching FET	PQ8502
RT7204	M-BAT-PWR to VINT20 FET	PQ8401, PQ8402
RT7203	VCC1R2A IC	PU9501
RT7210	VCC1R25VIDEO IC	PUA401
RT7211	VCCCPUCORE DrMOS	PU8805, PU8806
RT7212	VCCCPUCORE DrMOS	PU8803, PU8804
RT7213	VCCCPUCORE DrMOS	PU8801, PU8802
RT7209	VCCGFXCORE_I DrMOS	PU9001
RT7214	VCCSA DrMOS	PU9101
RT7215	VCCGFXCORE_D DrMOS	PUA301, PUA303
RT7216	VCCGFXCORE_D DrMOS	PUA302
RT7217	CPU Die	CPU1

<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: **THINK ENGINE3 (2/2)**

Size	Document Number	Rev
A2	LPM-3	-1

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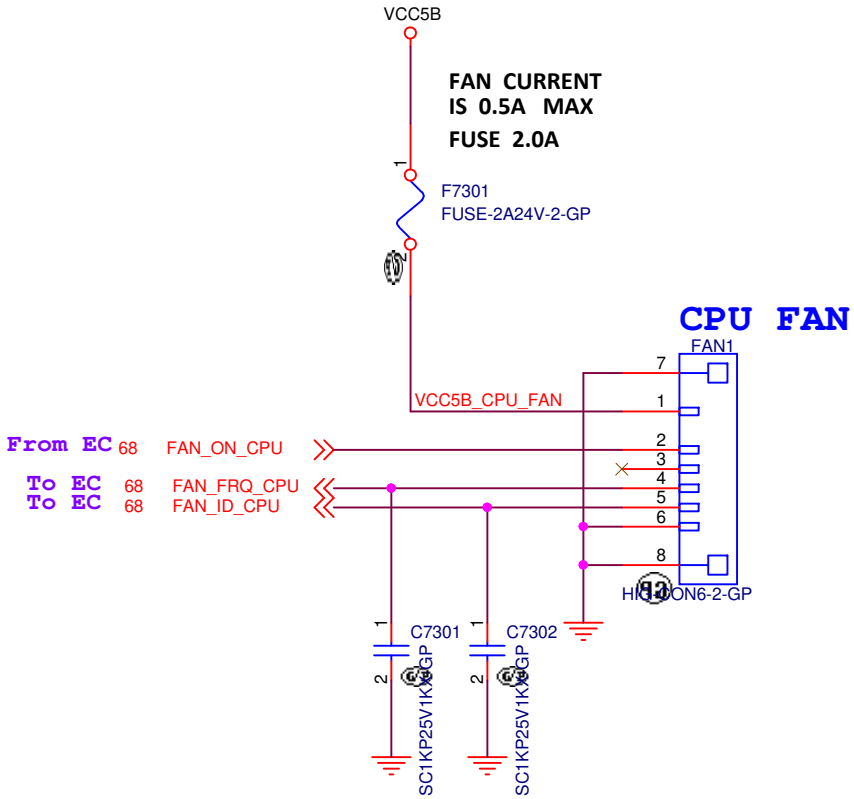
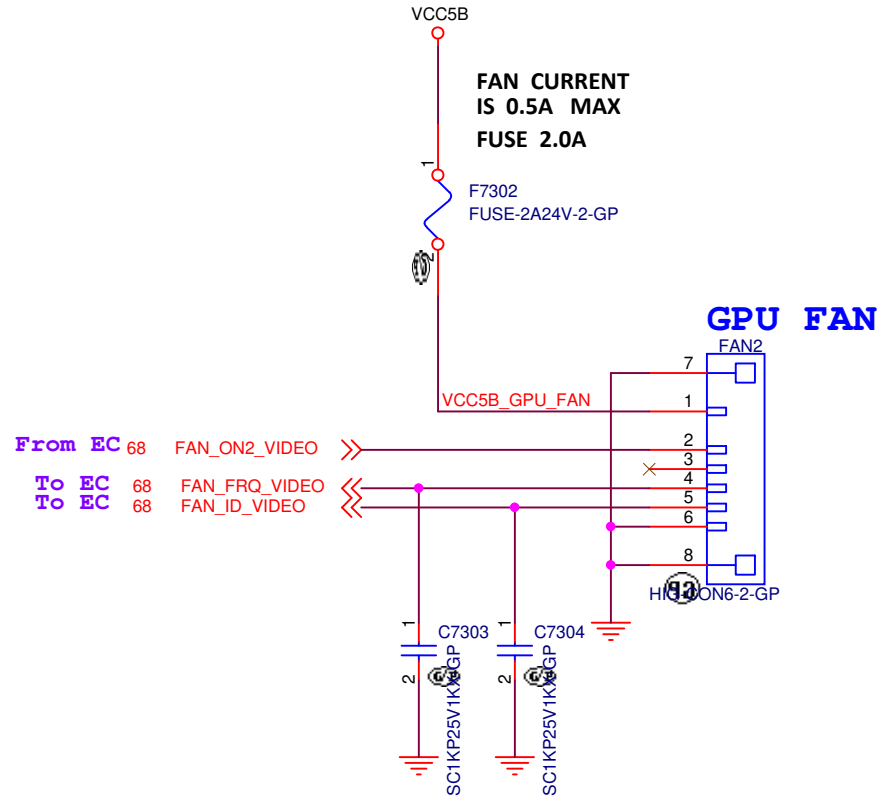
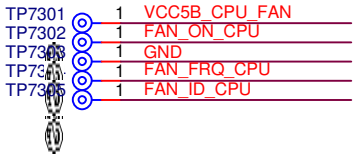
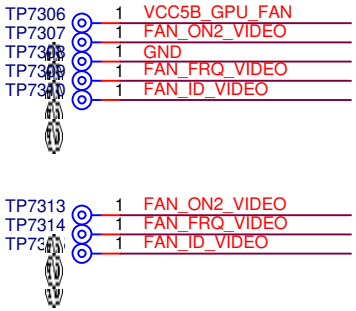
FAN









<Variant Name>

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

Title: ***FAN CONNECTOR***

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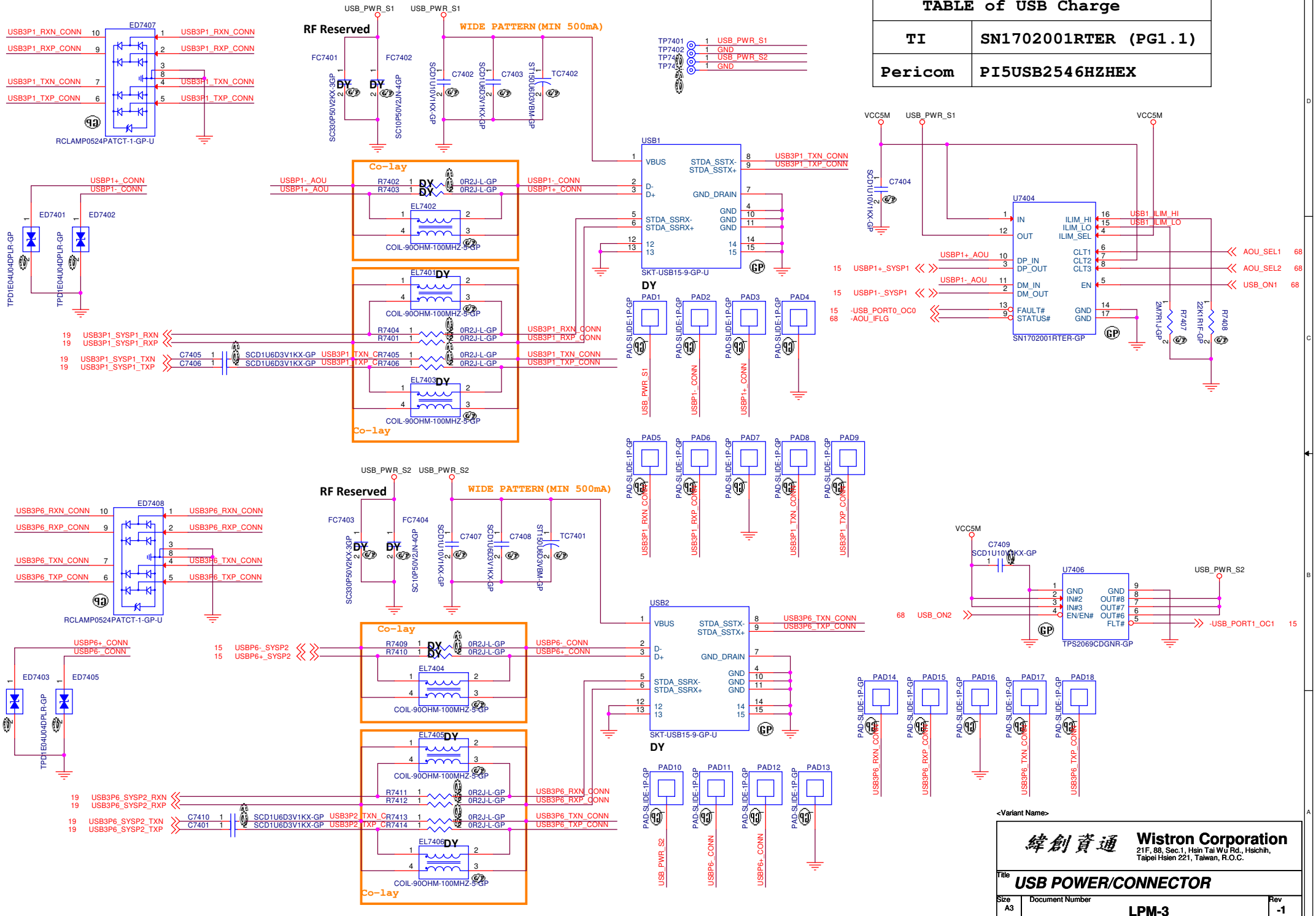
TABLE of USB Charge	
TI	SN1702001RTER (PG1.1)
Pericom	PI5USB2546HZHEX



<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 POWER/CONNECTOR**

Size	Document Number	Rev
A3	LPM-3	-1

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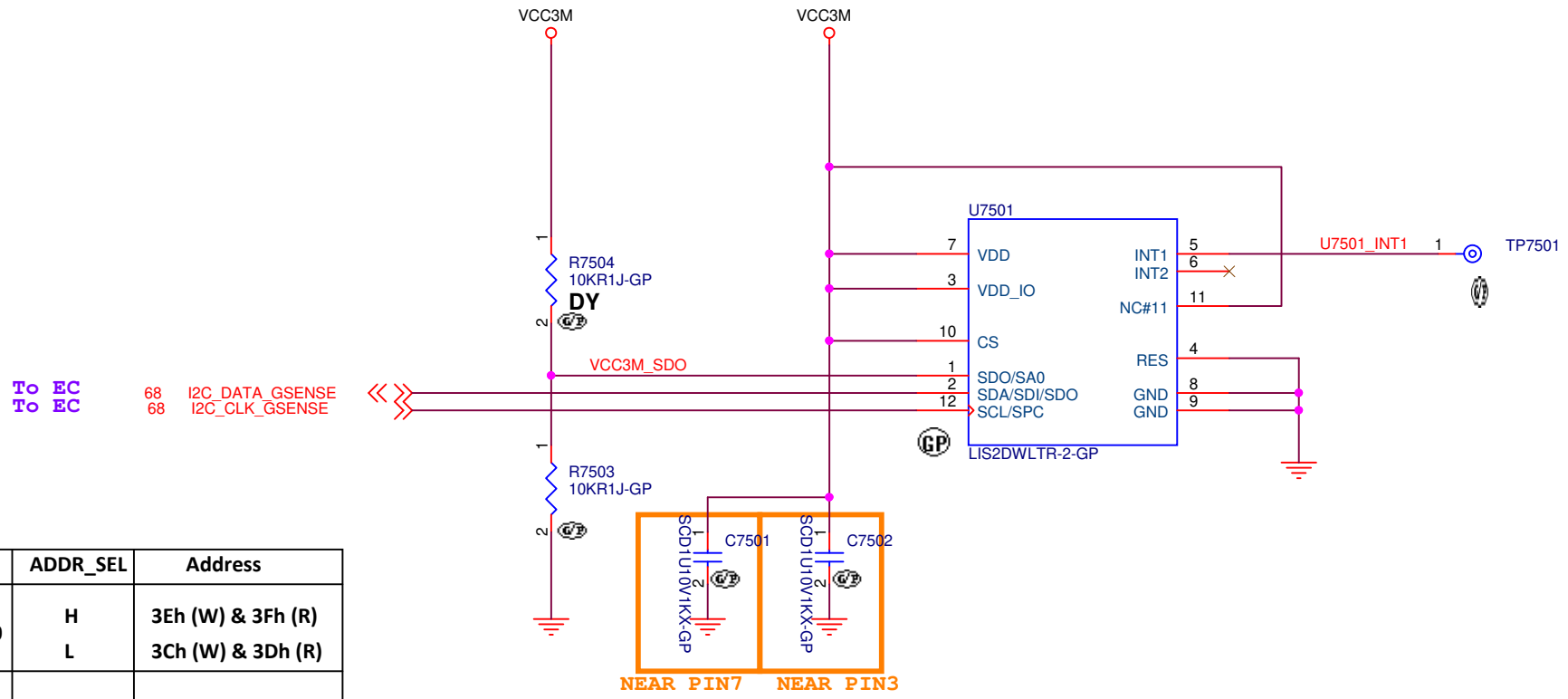

TABLE

P/N	ADDR_SEL	Address
KX022-1020	H	3Eh (W) & 3Fh (R)
	L	3Ch (W) & 3Dh (R)
LIS2DWLTR		30h (W) & 31h (R)
BMA280		30h (W) & 31h (R)

TABLE of G-Sensor (U7501)

Vendor	P/N
Kionix	KX022-1020
ST Micro	LIS2DWLTR
BOSCH	BMA280

<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: ***APS G-SENSOR P-SENSOR***

Size	Document Number	Rev
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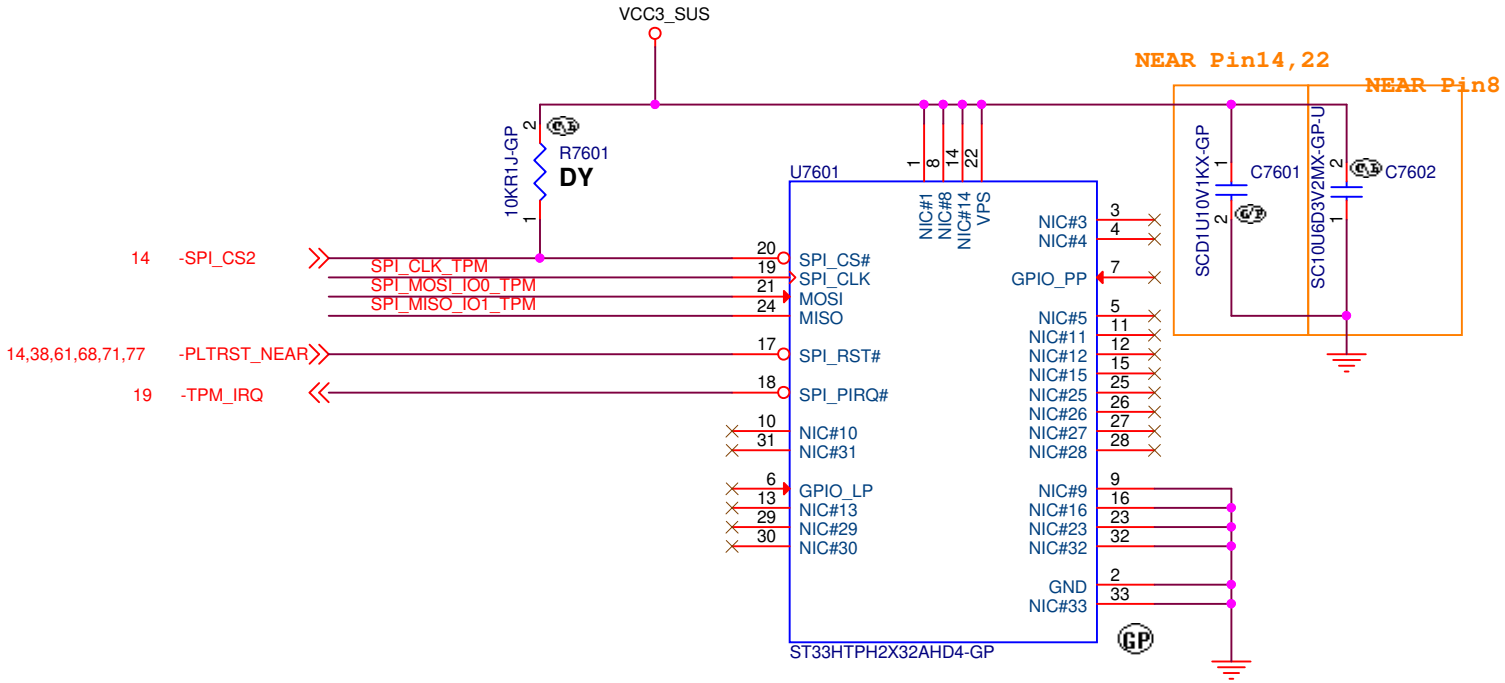
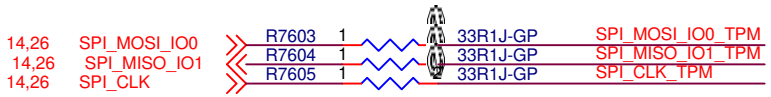
TPM





U7601	Vendor P/N	Lenovo P/N	Wistron P/N
Nuvoton	NPCT750LADYX	SL80W59122	071.00750.0H03
ST Micro	ST33HTPH2X32AHD4	SL80X01013	071.33232.0J03

<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: DISCRETE TPM 2.0

Size	Document Number	Rev
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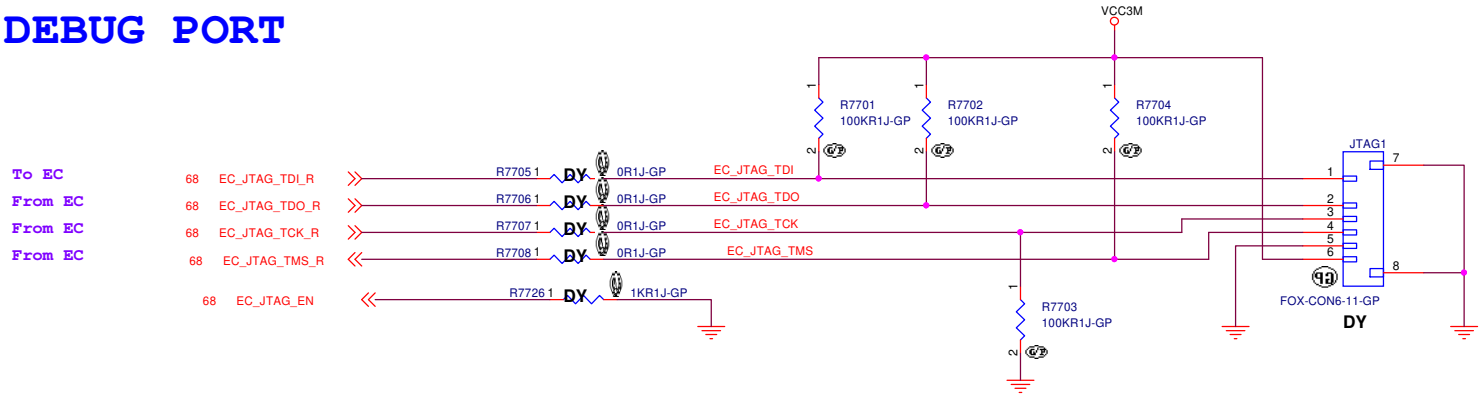
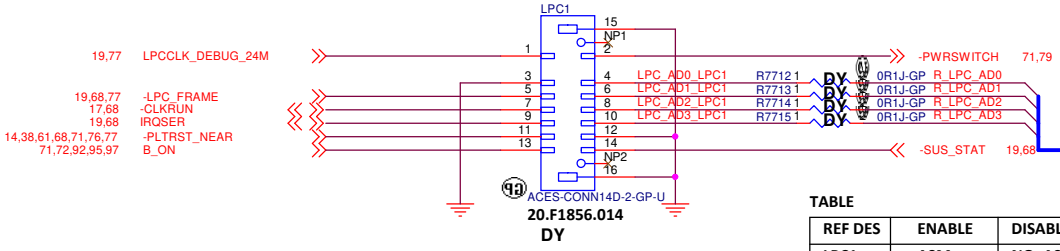
LPC DEBUG PORT



Lenovo Debug Tool I/F

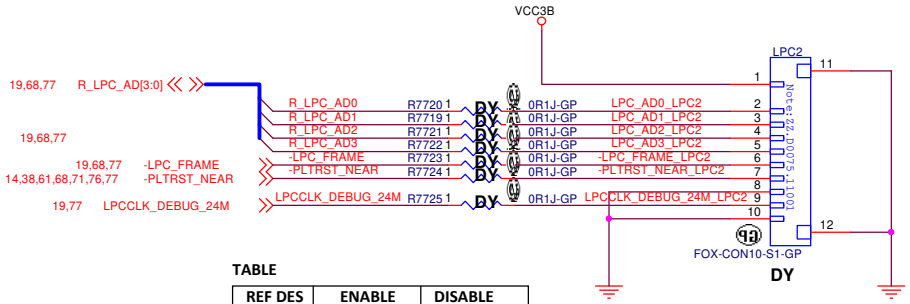


TABLE

REF DES	ENABLE	DISABLE
LPC1	ASM	NO_ASM
R7712	ASM	NO_ASM
R7713	ASM	NO_ASM
R7714	ASM	NO_ASM
R7715	ASM	NO_ASM

LOGIC

Wistron LPC for Debug Card CONN



TABLE

REF DES	ENABLE	DISABLE
R7719	ASM	NO_ASM
R7720	ASM	NO_ASM
R7721	ASM	NO_ASM
R7722	ASM	NO_ASM
R7723	ASM	NO_ASM
R7724	ASM	NO_ASM
R7725	ASM	NO_ASM

LOGIC

SMBUS SWITCH

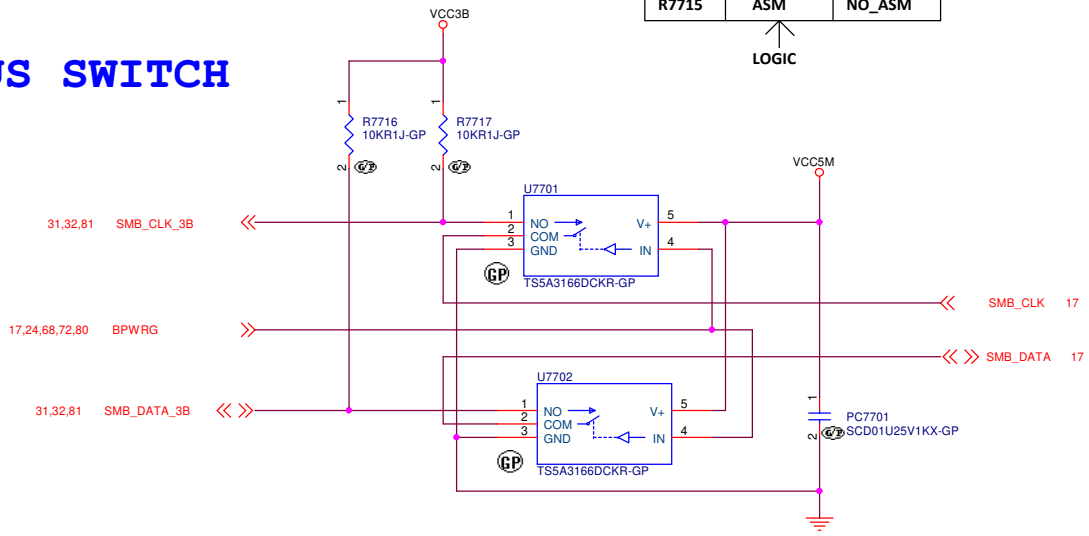


TABLE of U7701 U7702		
VENDOR	P/N	Wistron P/N
TI	TS5A3166DCKR-GP	073.53166.0A0G
ON	7SB385DFT2G	073.7S385.000G

<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: SMBUS SWITCH/LPC DEBUG PORT

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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 ***Reserved***

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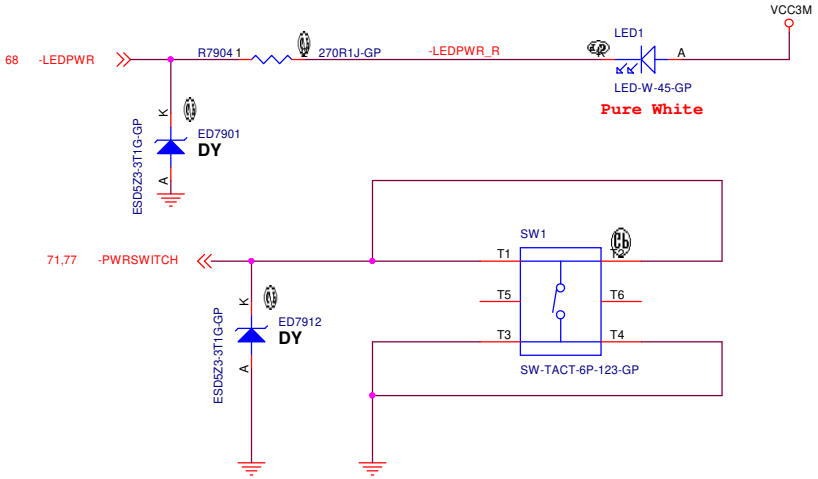
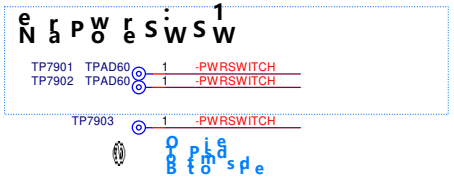
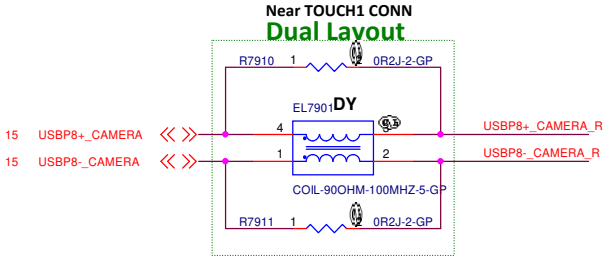
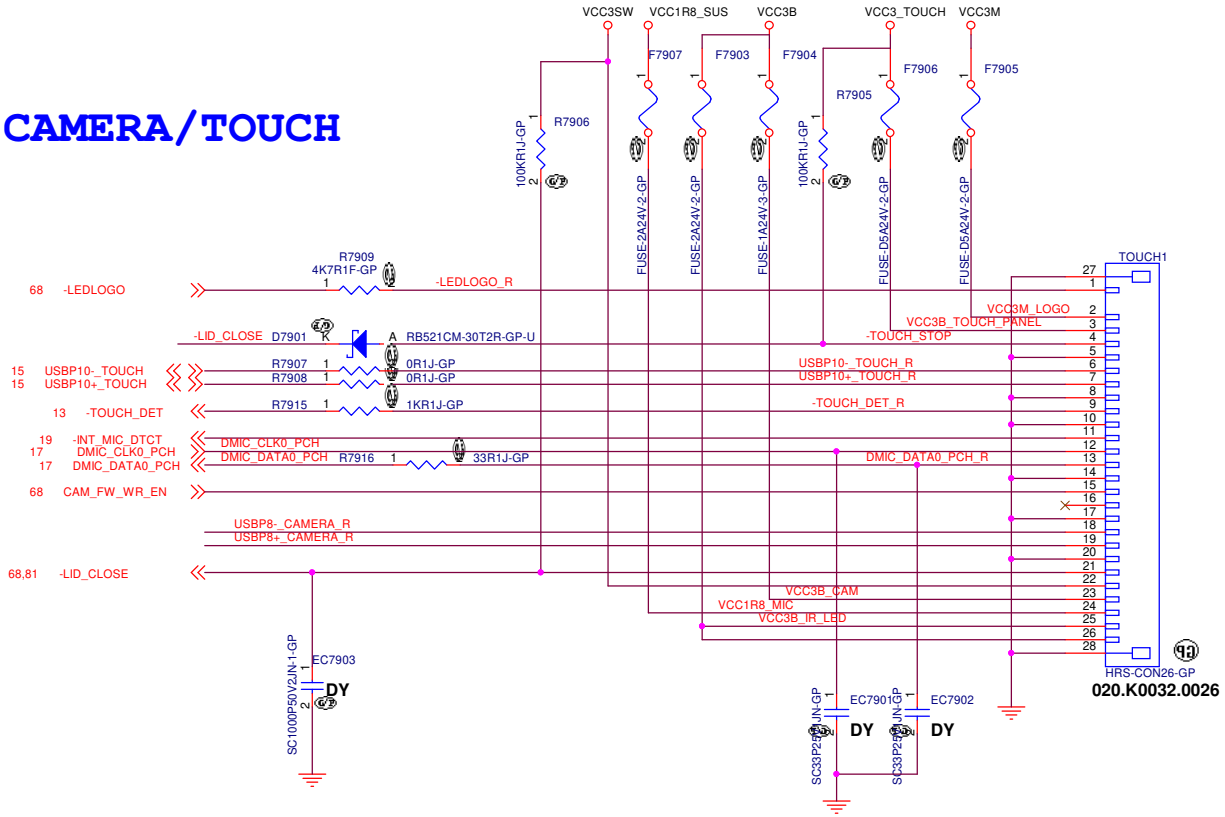
PWR BUTTON

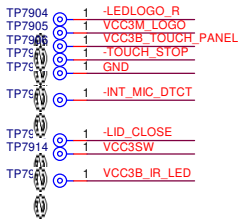


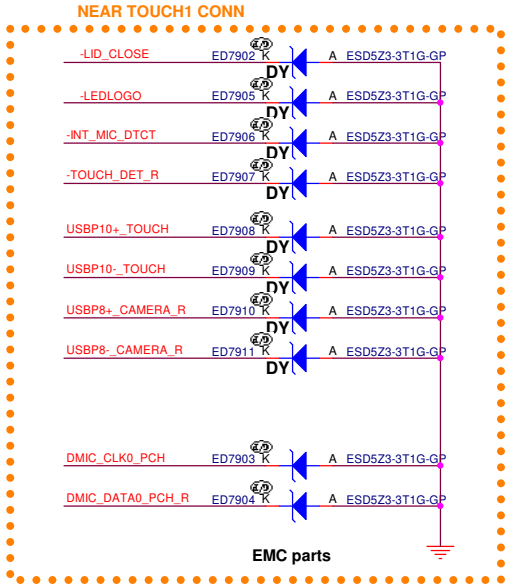




CAMERA/TOUCH







<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: CAMERA/TOUCH/PWR BUTTON

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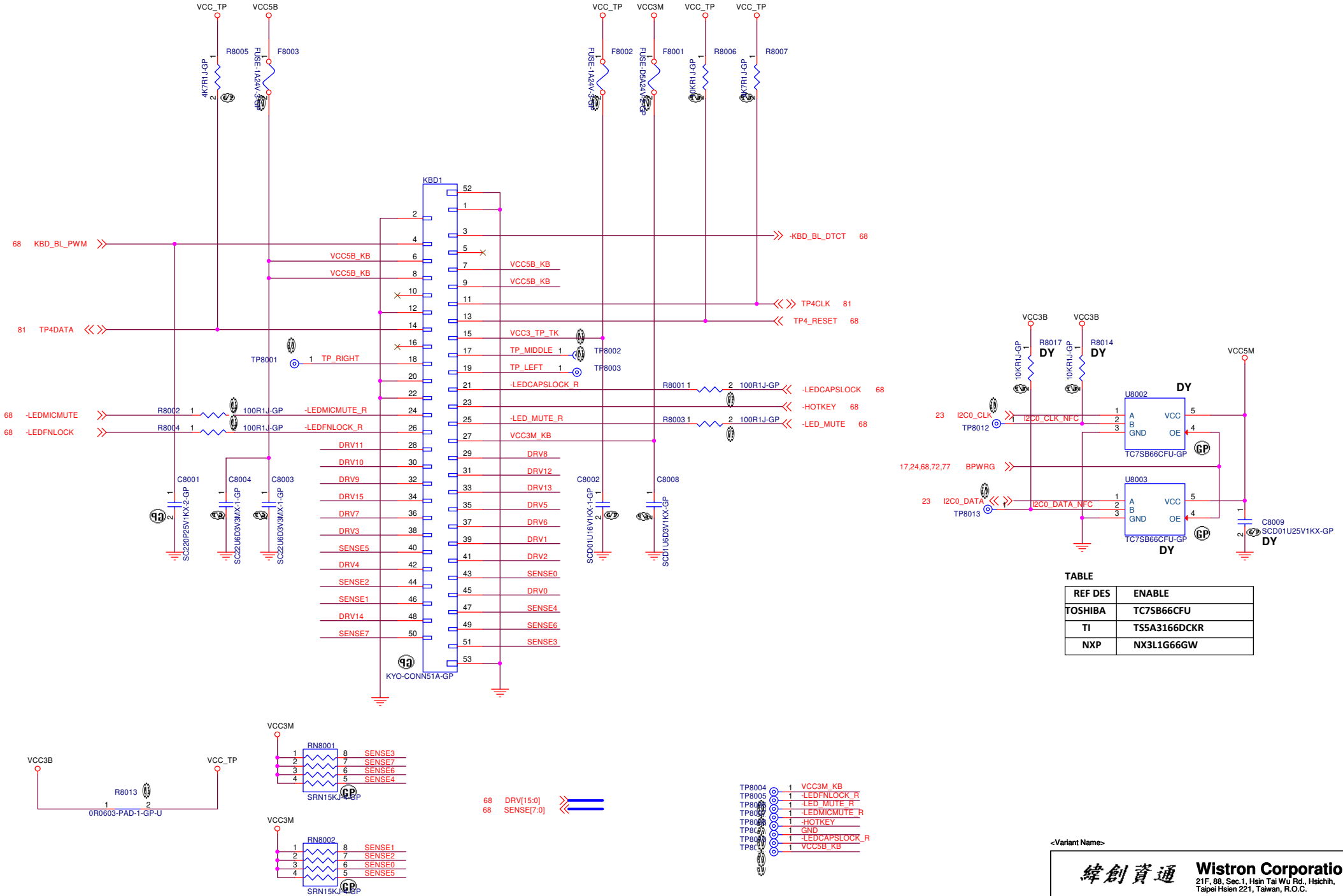

TABLE

REF DES	ENABLE
TOSHIBA	TC7SB66CFU
TI	TS5A3166DCKR
NXP	NX3L1G66GW

<Variant Name>

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

Title: **KEYBOARD/TRACK POINT**

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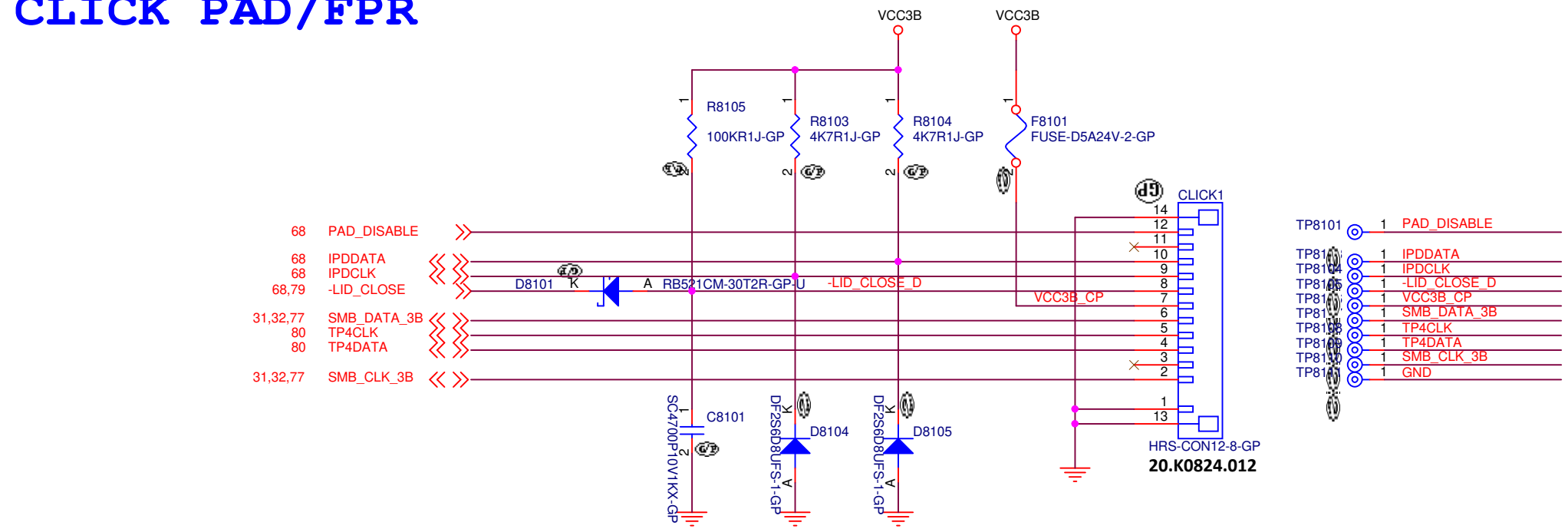
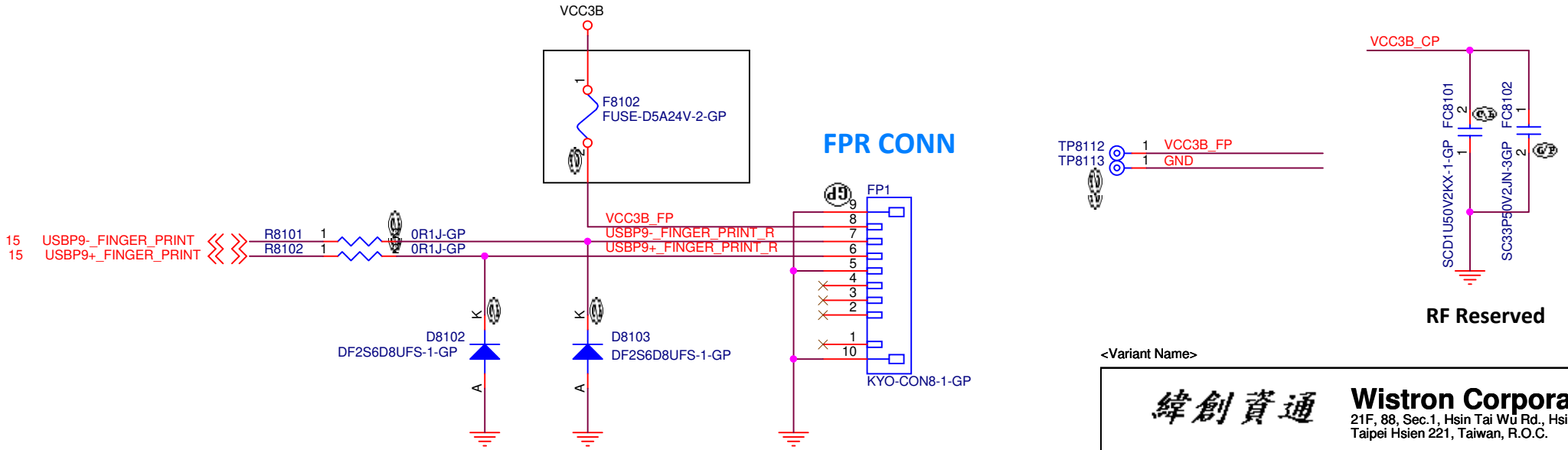
CLICK PAD/FPR





<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: *CLICK PAD/FPR*		
Size: A4	Document Number: LPM-3	Rev: -1
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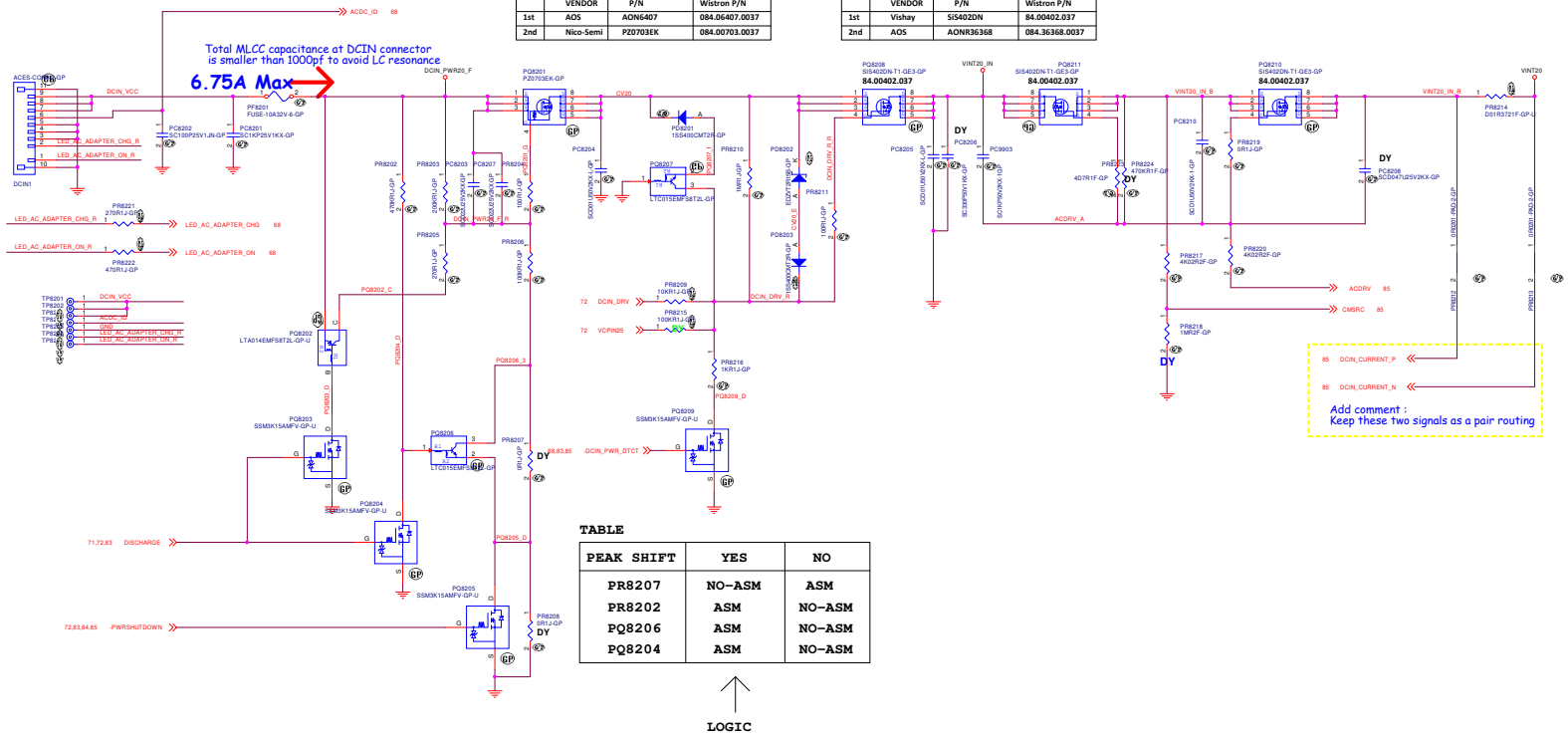
EC_EVT_007
EC_EVT_020
EC_SIT_002

TABLE of PQ8201			
	VENDOR	P/N	Wistron P/N
1st	AOS	AON6407	084.06407.0037
2nd	Nico-Semi	PZ0703EK	084.00703.0037

TABLE of PQ8208 , PQ8210 , PQ8211			
	VENDOR	P/N	Wistron P/N
1st	Vishay	SiS402DN	84.00402.037
2nd	AOS	AONR36368	084.36368.0037



TABLE

PEAK SHIFT	YES	NO
PR8207	NO-ASM	ASM
PR8202	ASM	NO-ASM
PQ8206	ASM	NO-ASM
PQ8204	ASM	NO-ASM

LOGIC

<Variant Name>

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

File: DC-IN

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

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	PQ8301, PQ8302, PQ8303, PQ8304	
1st	Vishay	SI7153DN 084.07153.0037
2nd	AOS	AONR21357 084.21357.0A37

	PL8301, PL8302
1st	FBMJ2125HM210NT 068.00046.0061
2nd	

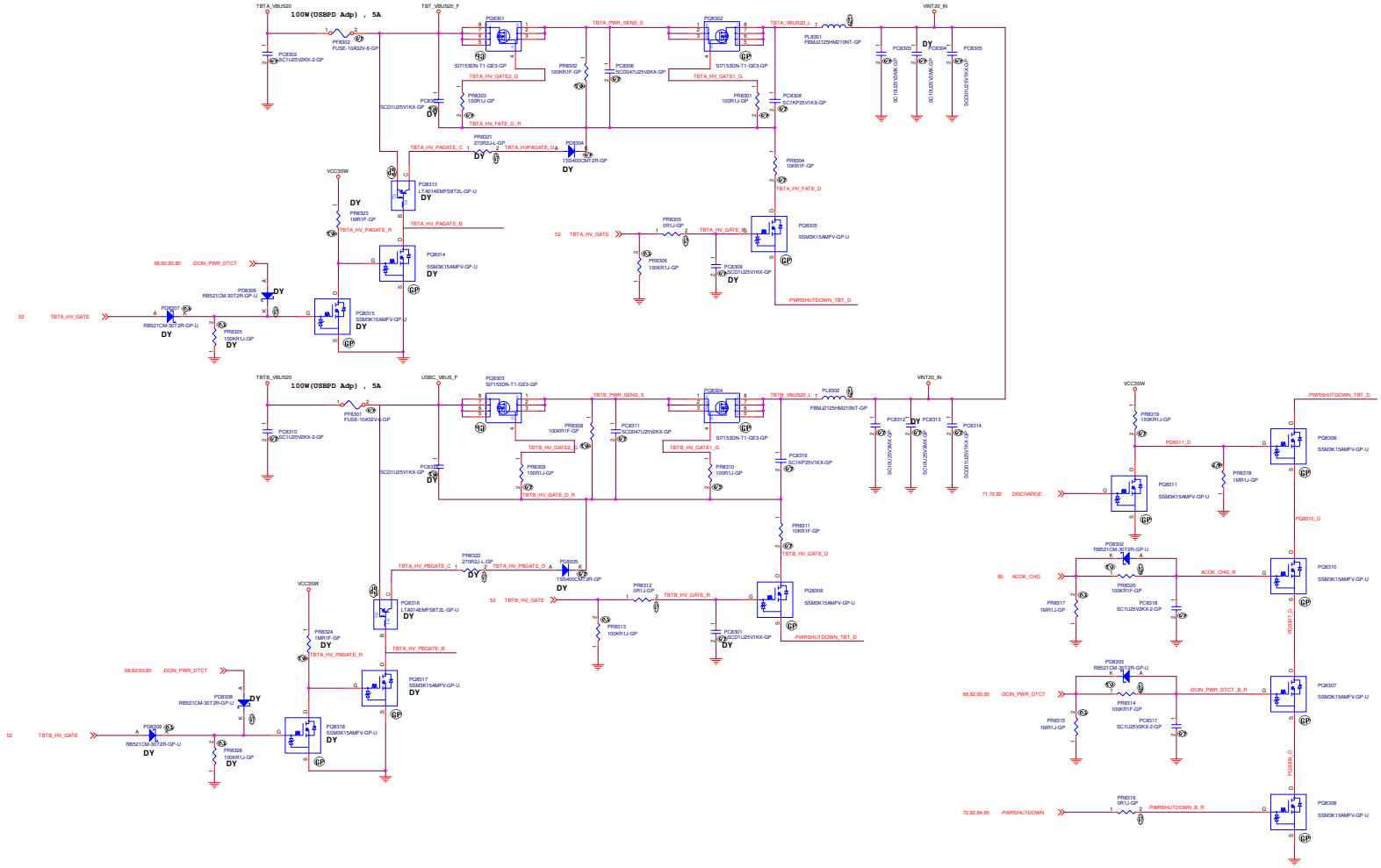
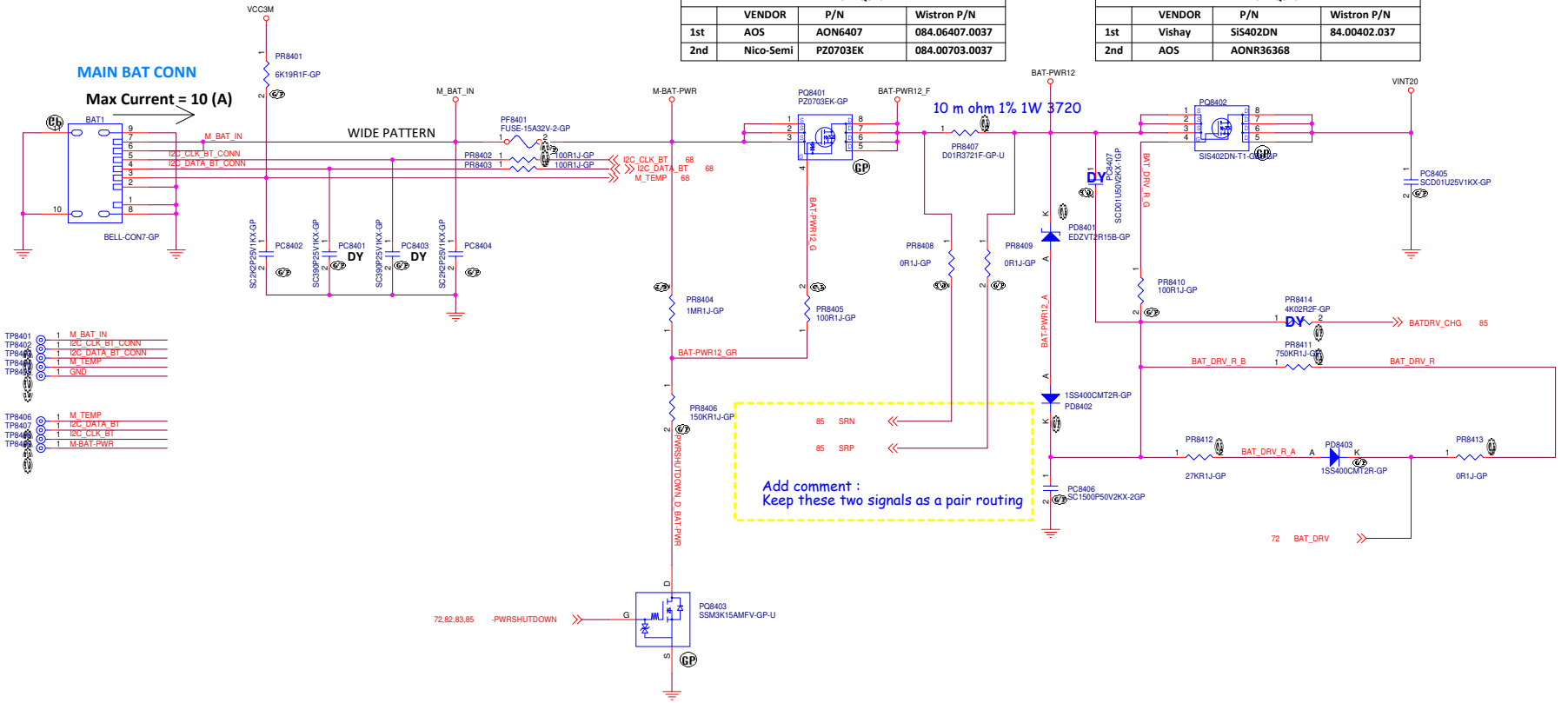


TABLE of PQ8401			
	VENDOR	P/N	Wistron P/N
1st	AOS	AON6407	084.06407.0037
2nd	Nico-Semi	PZ0703EK	084.00703.0037

TABLE of PQ8402			
	VENDOR	P/N	Wistron P/N
1st	Vishay	SiS402DN	84.00402.037
2nd	AOS	AONR36368	



<Variant Name>

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

Title: BATTERY INPUT

Size: C | Document Number | Rev: -1

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TABLE of PQ8507			
	VENDOR	P/N	Wistron P/N
1st	AOS	AON6407	084.06407.0037
2nd	Nico-Semi	PZ0703EK	084.00703.0037

PQ8502	
1st	Infineon BSC0923NDI 075.00923.M001
2nd	AOS AONY36354 075.36354.0A73

EC019 – Change to DY

Add comment :
Keep these two signals as a pair routing

Put PC8510, PC8511, PC8512, PC8514,
PR8504, PR8506, PR8501 and PR8505 close to IC side

MLCCs (input capacitors at charger)
must placed symmetrically on TOP and BOTTOM side

EC_EVT_007

PL8501
CYNTEC CMLE063T-2R2MS 068.2R210.1881
TOKO FDSD0630-H-2R2M 68.2R21E.10T

MLCCs (output capacitors as charger) must
placed symmetrically on TOP and BOTTOM side

Charge Current
Max 5.0A

Add comment :
Keep these two signals as a pair routing

EC86

<Variant Name>

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

Title: BATTERY CHARGER
Size: A2 | Document Number: LPM-3 | Rev: -1
Date: Tuesday, May 19, 2020 | Sheet 85 of 111

EC_EVT_007
EC_EVT_020

keep more than 2.0mm height for
if acoustic noise suppression MLCC use

Add comment :
MLCCs (Input capacitiors at charger)
must placed symmetrically on TOP and BOTTOM side

	PQ8601
1st	Infineon BSC0923NDI 75.00923.073
2nd	AOS AONY36354 075.36354.0A73

Dual-N standard symbol to colay

	PQ8602
1st	Infineon BSC0923NDI 75.00923.073
2nd	AOS AONY36354 075.36354.0A73

Dual-N standard symbol to colay

keep more than 2.0mm height for
if acoustic noise suppression MLCC use

Add comment :
MLCCs (Input capacitiors at charger)
must placed symmetrically on TOP and BOTTOM side

VCC5M
Cont 10.0A
Max 12.6A
Peak 13.3A

VCC3M
Cont 9.1A
Max 12.6A
Peak15.3A

Table PL8601
TDK SPM6530T-1R0M120 68.1R01A.11A
CYNTEC CMLE063T-1R0MS 068.R1010.1081

Table PL8602
Cyntec CMLS063T-R82MS applying
Sumida 0630CDMCDDS-R82MC applying

	PT8601 PT8602 PT8603
1st	Panasonic 6TPE220MAPB 77.22271.39L
2nd	KEMET T520B227M006ATE025 077.C2271.0041
3rd	TOKIN PSLB20J227M25LQ 077.C2271.M003

	PT8604 PT8605 PT8606
1st	Panasonic 6TPE220MAPB 77.22271.39L
2nd	KEMET T520B227M006ATE025 077.C2271.0041
3rd	TOKIN PSLB20J227M25LQ 077.C2271.M003

PR8621	VCC5M
154K Ohm	5.08 V
158K Ohm	5.16 V
162K Ohm	5.24 V

PR8622	VCC3M
130K Ohm	3.30 V
133K Ohm	3.33 V
137K Ohm	3.37 V

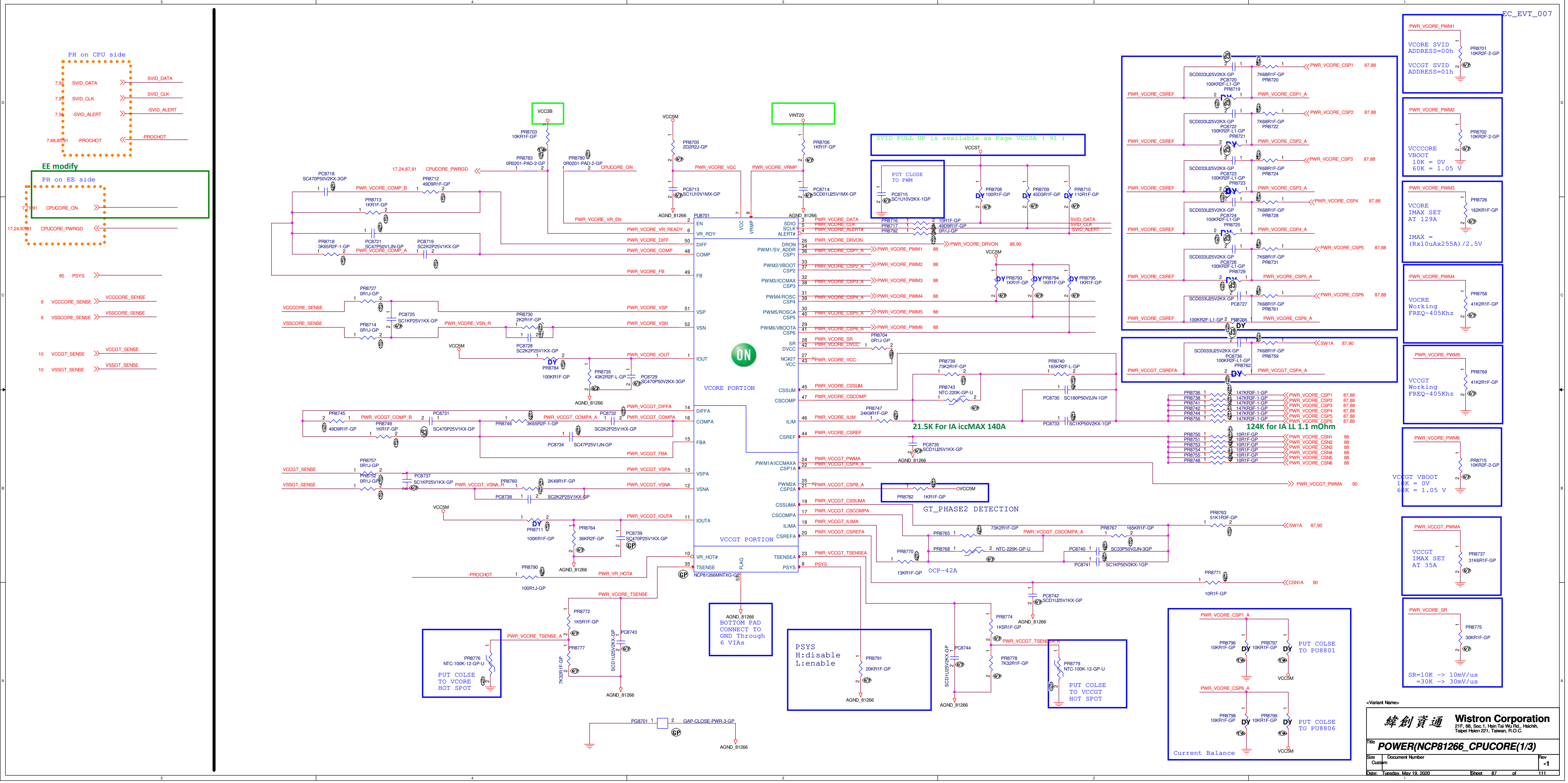
<Variant Name>

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

Title: DC/DC VCC5M/VCC3M

Size: Custom | Document Number | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 88 of 111


EC_EVT_007
PH on CPU side
SVID_DATA
SVID_CLK
SVID_ALERT
PROCHOT
EE modify
PH on EE side
CPUCORE_ON
CPUCORE_PWRGD
PSYS
VCCCORE_SENSE
VSSCORE_SENSE
VCCGT_SENSE
VSSGT_SENSE
VCC3B
VINT20
VCC5M
SVID PULL UP is available as Page VCCSA (91)
PUT CLOSE TO PWM
VCORE PORTION
VCCGT PORTION
21.5K For IA iccMAX 140A
124K for IA LL 1.1 mOhm
GT_PHASE2 DETECTION
OCP~42A
NCP81266MNTXG-GP
AGND_81266 BOTTOM PAD CONNECT TO GND Through 6 VIAs
PUT COLSE TO VCORE HOT SPOT
PSYS H:disable L:enable
PUT COLSE TO VCCGT HOT SPOT
PUT COLSE TO PU8801
PUT COLSE TO PU8806
Current Balance
GAP-CLOSE-PWR-3-GP
VCORE SVID ADDRESS=00h
VCCGT SVID ADDRESS=01h
VCCCORE VBOOT 10K = 0V 60K = 1.05 V
VCORE IMAX SET AT 129A
IMAX = (Rx10uAx255A)/2.5V
VCORE Working FREQ~405Khz
VCCGT Working FREQ~405Khz
VCCGT VBOOT 10K = 0V 60K = 1.05 V
VCCGT IMAX SET AT 35A
SR=10K -> 10mV/us =30K -> 30mV/us

<Variant Name>

緯創資通 Wistron Corporation

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

Title: POWER(NCP81266_CPUCORE(1/3))

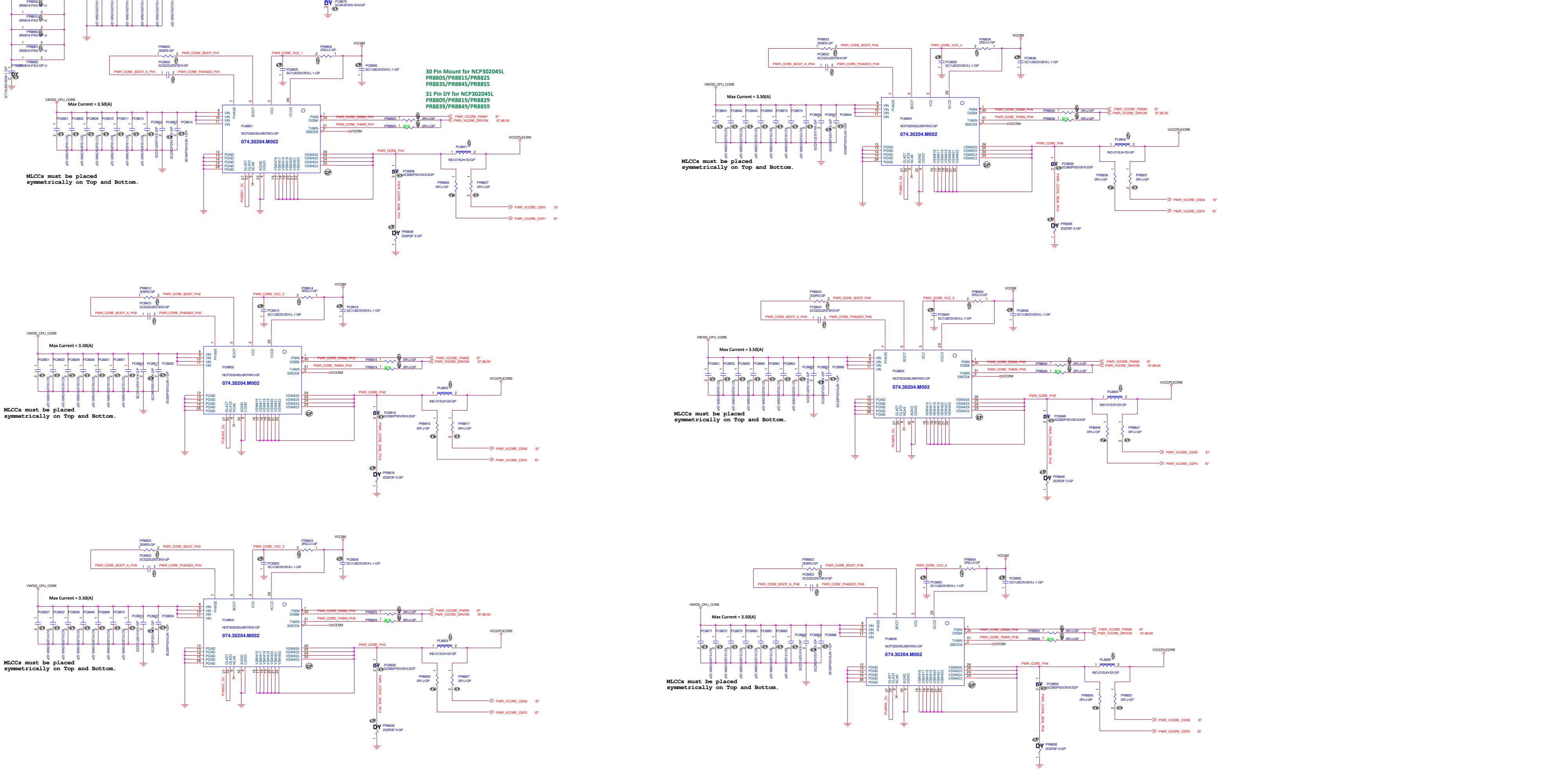
Size: Custom | Document Number | Rev: -1

Date: Tuesday, May 19, 2020 | Sheet 87 of 111

EC_EVT_007

TABLE of PL8801,PL8802,PL8803,PL8804,PL8805,PL8806			
	VENDOR	P/N	Wistron P/N
1st	Cyntec	CMLE064T-R15MS0R667	068.R1510.1271
2nd	TOKIN	MPCH0740LR15D	68.R1510.10F

TABLE of PU8801,PU8802,PU8803,PU8804,PU8805,PU8806			
	VENDOR	P/N	Wistron P/N
1st	ON-Semi	NPC302045LMNTWG	074.30204.M002
2nd	AOS	AOZ5116QI	074.05116.0073



<Variant Name>

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

Title: **DC/DC VCCCPUCORE (1/2)**

Size	Document Number	Rev
E		-1

Date: Tuesday, May 19, 2020 Sheet 88 of 111

VCCCPUCORE
IMAX 140A
TDC(IPL2) 86A
OCP 180A

EC_EVT_020

TABLE for PT8901~PT8908

NEC TOKIN	PSGB20E337M9 (80.3371V.A2L)
Panasonic	ETPE330MA9L (077.23371.M001)
KEMET	T520B337M2R5ATE009 (077.C3371.0051)

330uF 6 Pcs + 2 Pcs no mount

VCCCPUCORE

PT8901 PT8902 PT8903 PT8904 PT8905 PT8906 PT8907 PT8908

DY DY DY DY

ST330UD05VBM-1-GP

22uF 24 Pcs

PC8901 PC8902 PC8903 PC8904 PC8905 PC8906 PC8907 PC8908

PC89A4 PC89A3 PC89A2 PC89A1 PC8909 PC8910 PC8911

PC89B9 PC89B8 PC89B7 PC89B6 PC89B5 PC89B4 PC89B3 PC89B2 PC89B1

SC22U6D3V3MX-1-GP

22uF 30 Pcs

VCCCPUCORE

PC8912 PC8913 PC8914 PC8915 PC8916 PC89C5 PC8928 PC89C6 PC89C7 PC89C8

PC89C9 PC8984 PC8987 PC8986 PC8988 PC89D1 PC8985 PC89D2 PC89D3 PC89D4

PC89D5 PC8990 PC8994 PC8992 PC8993 PC89D6 PC8991 PC89D8 PC89D7 PC89D9

1uF 63 Pcs

PC8917 PC8918 PC8919 PC8920 PC8921 PC8922 PC8923 PC8924 PC8925 PC8926

PC8933 PC8927 PC8929 PC8930 PC8931 PC8934 PC8935 PC8936 PC8932 PC8937

PC8939 PC8940 PC8941 PC8942 PC8943 PC8944 PC8945 PC8946 PC8947 PC8948

PC8949 PC8950 PC8951 PC8952 PC8953 PC8954 PC8955 PC8956 PC8957 PC8958

PC8959 PC8960 PC8961 PC8962 PC8963 PC8964 PC8965 PC8966 PC8967 PC8968

PC8969 PC8970 PC8971 PC8972 PC8974 PC8975 PC8976 PC8977 PC8978 PC8973

PC8979 PC8980 PC8981

SC1U6D3V1KX-1-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: DC/DC VCCCPUCORE (2/2)

Size	Document Number	Rev
C	LPM-3	-1

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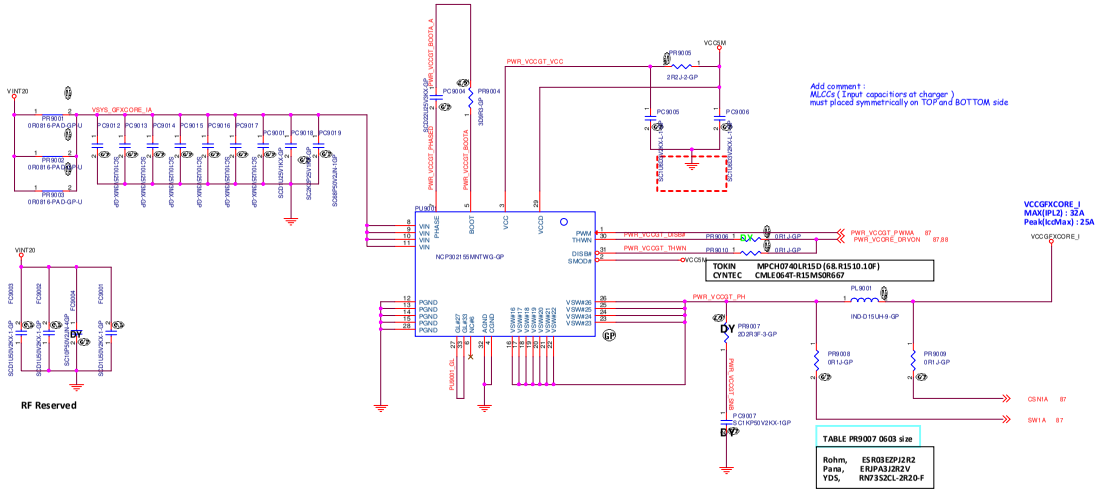
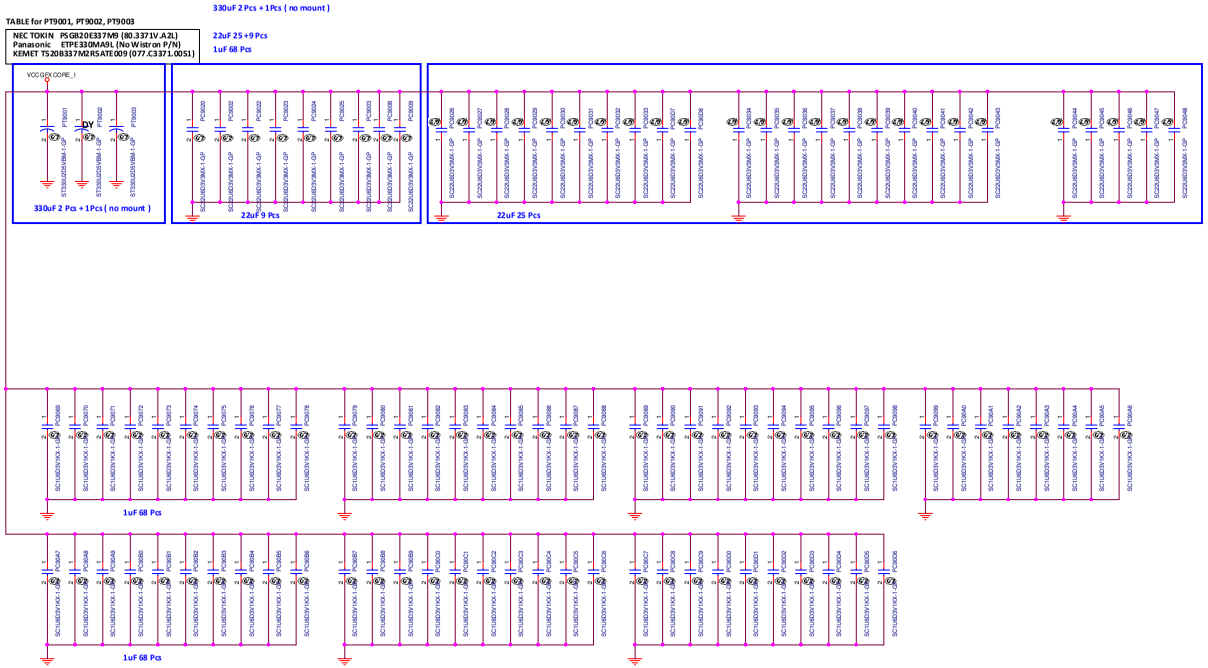
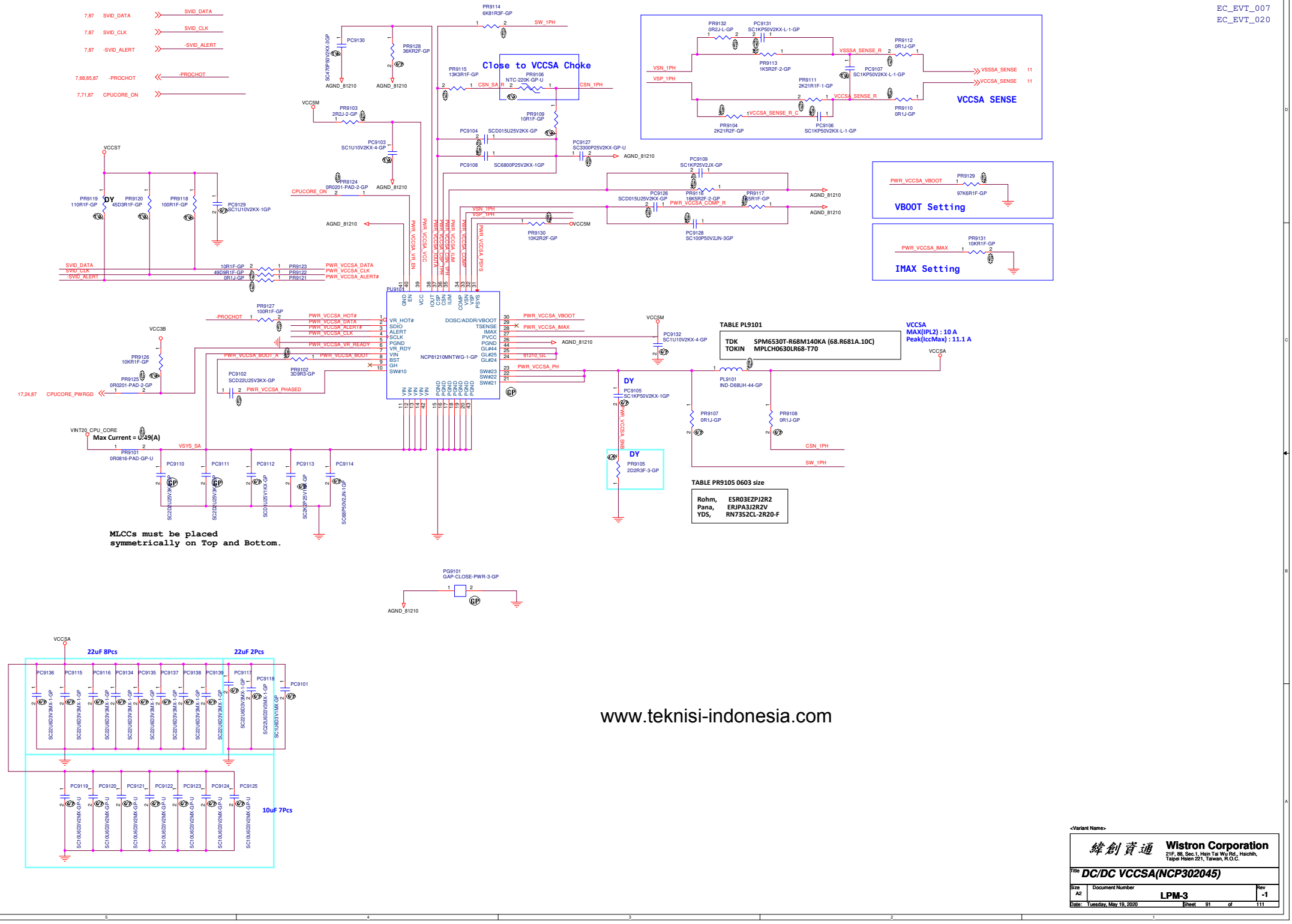




VCCCPUCORE Table

page	Component Name	Comet Lake H Performance H82	H62	H42	Unit	memo
	Number of phases	6 phase	5 phase	4 Phase	Phase	
	IA ICCmax	165	140	105	A	
	IA IPL2	125	92	80	A	
	IA DC/AC LL	1.1	1.1	1.1	mohm	
87	PR8747	24.9	21.5	16.2	kohm	165A*1.3 / 140A*1.3 / 105A*1.3
	PR8726	162	137	105	kohm	
	PR8731	7.68	7.68	No ASM	kohm	
	PR8761	7.68	No ASM	No ASM	kohm	
	PC8726	0.033	0.033	No ASM	uF	
	PC8727	0.033	No ASM	No ASM	uF	
	PR8744	124	124	No ASM	kohm	
	PR8756	124	No ASM	No ASM	kohm	
	PR8755	10	10	No ASM	ohm	
	PR8748	10	No ASM	No ASM	ohm	
	PR8794	No ASM	No ASM	1	kohm	
	PR8795	No ASM	1	1	kohm	
88	PU8805	NCP302045L	NCP302045L	No ASM	-	
	PR8844	2.2	2.2	No ASM	ohm	
	PC8845	1	1	No ASM	uF	
	PC8846	1	1	No ASM	uF	
	PR8843	3.9	3.9	No ASM	ohm	
	PC8843	0.22	0.22	No ASM	uF	
	PC8851	10	10	No ASM	uF	
	PC8852	10	10	No ASM	uF	
	PC8859	10	10	No ASM	uF	
	PC8860	10	10	No ASM	uF	
	PC8861	10	10	No ASM	uF	
	PC8863	10	10	No ASM	uF	
	PC8865	0.1	0.1	No ASM	uF	
	PC8867	2200	2200	No ASM	pF	
	PC8866	68	68	No ASM	pF	
	PR8845	0	0	No ASM	ohm	
	PR8849	No ASM	No ASM	No ASM	-	
	PL8805	CMLE064T-R15MS0R667 MPCH0740LR15D	CMLE064T-R15MS0R667 MPCH0740LR15D	No ASM	-	
	PR8846	0	0	No ASM	ohm	
	PR8847	0	0	No ASM	ohm	
	PC8848	No ASM	No ASM	No ASM	-	
	PR8848	No ASM	No ASM	No ASM	-	
88	PU8806	NCP302045L	No ASM	No ASM	-	
	PR8854	2.2	No ASM	No ASM	ohm	
	PC8855	1	No ASM	No ASM	uF	
	PC8856	1	No ASM	No ASM	uF	
	PR8853	3.9	No ASM	No ASM	ohm	
	PC8853	0.22	No ASM	No ASM	uF	
	PC8871	10	No ASM	No ASM	uF	
	PC8872	10	No ASM	No ASM	uF	
	PC8879	10	No ASM	No ASM	uF	
	PC8880	10	No ASM	No ASM	uF	
	PC8881	10	No ASM	No ASM	uF	
	PC8882	10	No ASM	No ASM	uF	
	PC8862	0.1	No ASM	No ASM	uF	
	PC8864	2200	No ASM	No ASM	pF	
	PC8868	68	No ASM	No ASM	pF	
	PR8855	0	No ASM	No ASM	ohm	
	PR8859	No ASM	No ASM	No ASM	-	
	PL8806	CMLE064T-R15MS0R667 MPCH0740LR15D	No ASM	No ASM	-	
	PR8856	0	No ASM	No ASM	ohm	
	PR8857	0	No ASM	No ASM	ohm	
	PR8858	No ASM	No ASM	No ASM	-	



<Variant Name>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title DC/DC VCCSA(NCP302045)
Size A2 | Document Number LPM-3 | Rev -1
Date: Tuesday, May 19, 2020 | Sheet 91 of 111

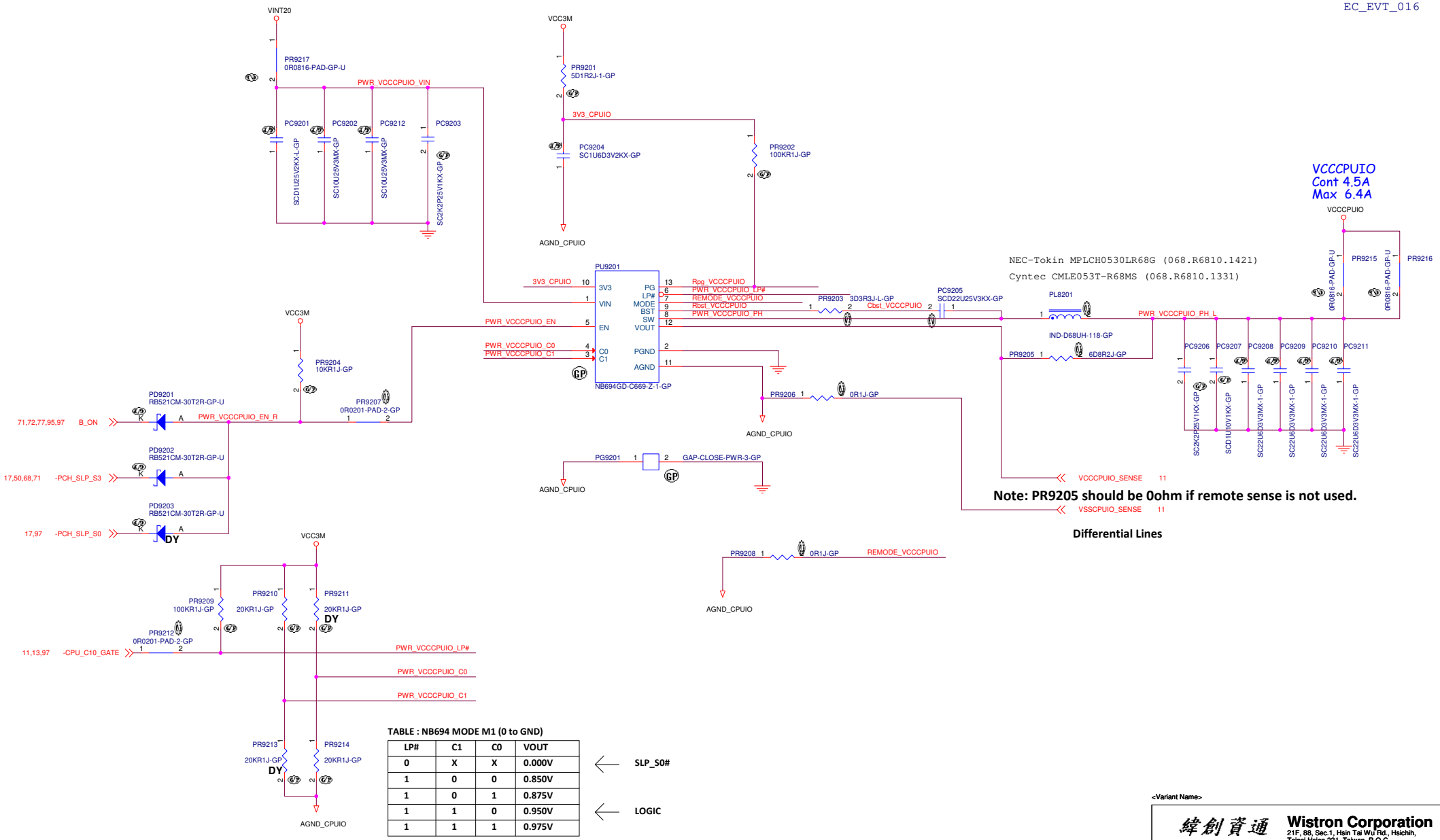


TABLE : NB694 MODE M1 (0 to GND)

LP#	C1	C0	VOUT	
0	X	X	0.000V	← SLP_S0#
1	0	0	0.850V	
1	0	1	0.875V	
1	1	0	0.950V	← LOGIC
1	1	1	0.975V	

<Variant Name>

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

Title: DC/DC VCCCPUIO

Size: Custom | Document Number: LPM-3 | Rev: -1

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EC_EVT_007
EC_EVT_020

TABLE of PL9301			
	VENDOR	P/N	Wistron P/N
1st	Cyntec	CMMS064T-R33MS	068.R3310.2041
2nd	Sumida	0640CDMCCDS-R33MC	068.R3310.2101

PQ9301	
1st	Infineon BSC0923NDI 75.00923.073
2nd	AOS AONY36354

MLCCs must placed symmetrically on TOP and BOTTOM side

VCC1R05_SUS
Count : 7.7A
Max : 11.0A
Peak : 11.0A

PR9314/PR9318 must to close PT9301

TABLE for PT9301 , PT9302

NEC TOKIN PSGB20E337M9 (80.3371V.A2L)
Panasonic ETPE330MA9L (077.23371.M001)
KEMET T520B337M2R5ATE009 (077.C3371.0051)

<Variant Name>

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

Title: DC/DC VCC1R05_SUS
Size: A2 | Document Number: LPM-3 | Rev: -1
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EC_EVT_007
EC_EVT_020

VINT20
PR9401 0R0816-PAD-GP-U
PC9412 SC10U25V3MX-GP
PC9403 SC10U25V3MX-GP
PC9402 SCD1U25V1KX-GP
PC9404 SC220P25V1KX-2-GP

VCC3M
PR9402 5D1R2J-1-GP
3V3_1D8V_SUS
PC9405 SC1U6D3V2KX-GP
AGND_1R8SUS

VCC3M
PR9403 20KR1J-GP
PR9404 100KR1J-GP

PWR_1D8VSUS_VIN
FC9401 SCD1U50V2KX-1-GP
RR9402 SC330P50V2HX-3GP

RF Reserved

PU9401 NB695GD-C669-Z-GP
3V3_1D8V_SUS → 3V3
PWR_1D8VSUS_VIN → VIN
PR9407 0R0201-PAD-2-GP
68,72 SUS_ON → PWR_1D8VSUS_EN → EN
PWR_1D8VSUS_C0 → C0
PWR_1D8VSUS_C1 → C1
PG
LP#
MODE
BST
SW
VOUT
PGND
AGND
PWR_1D8VSUS_PWG
PWR_1D8VSUS_LP#
PWR_1D8VSUS_REMODE
PWR_1D8VSUS_BST
PWR_1D8VSUS_PH
PR9406 3D3R3J-L-GP
PWR_1D8VSUS_BST_R
PC9406 SCD22U25V3KX-GP
AGND_1R8SUS

PG9412 GAP-CLOSE-PWR-3-GP
AGND_1R8SUS

PG9401 150KR1F-GP
PWR_1D8VSUS_REMODE
AGND_1R8SUS

VCC3M
PR9409 20KR1J-GP
PR9410 20KR1J-GP DY
PWR_1D8VSUS_C0
PWR_1D8VSUS_C1
PR9412 20KR1J-GP DY
PR9413 20KR1J-GP
AGND_1R8SUS

TABLE : NB695 MODE M4 (150K to GND)

LP#	C1	C0	VOUT
1	0	0	1.2V
1	0	1	1.5V
1	1	0	1.8V ← LOGIC
1	1	1	2.5V

VCC1R8_SUS
Cont : 1.6 A
Max : 2.9 A
Peak : 3.3 A

TOKO DFE252012F-1R0M=P2 (068.1R010.1791)
CYNTEC HMLQ25201B-1R0MSR (068.1R010.1831)

PL9401 IND-1UH-363-GP
VCC1R8_SUS
PR9405 0R0816-PAD-GP-U
VCC1R8_SUSP
PC9407 SC2K2P25V1KX-GP
PC9408 SCD1U25V1KX-GP
PC9409 SC22U6D3V3MX-1-GP
PC9401 SC22U6D3V3MX-1-GP
PC9410 SC22U6D3V3MX-1-GP
PC9411 SC22U6D3V3MX-1-GP
PR9414 210R2F-L-GP
PWR_1D8VSUS_FB
PR9415 20KR2F-L-GP
AGND_1R8SUS

<Variant Name>

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

Title: DC/DC VCC1R8_SUS
Size: Custom | Document Number: LPM-3 | Rev: -1
Date: Tuesday, May 19, 2020 | Sheet 94 of 111

TABLE of PQ9501			
	VENDOR	P/N	Wistron P/N
1st	Infineon	BSC0921NDI	075.00921.0073
2nd	AOS	AONY36352	075.36352.0073

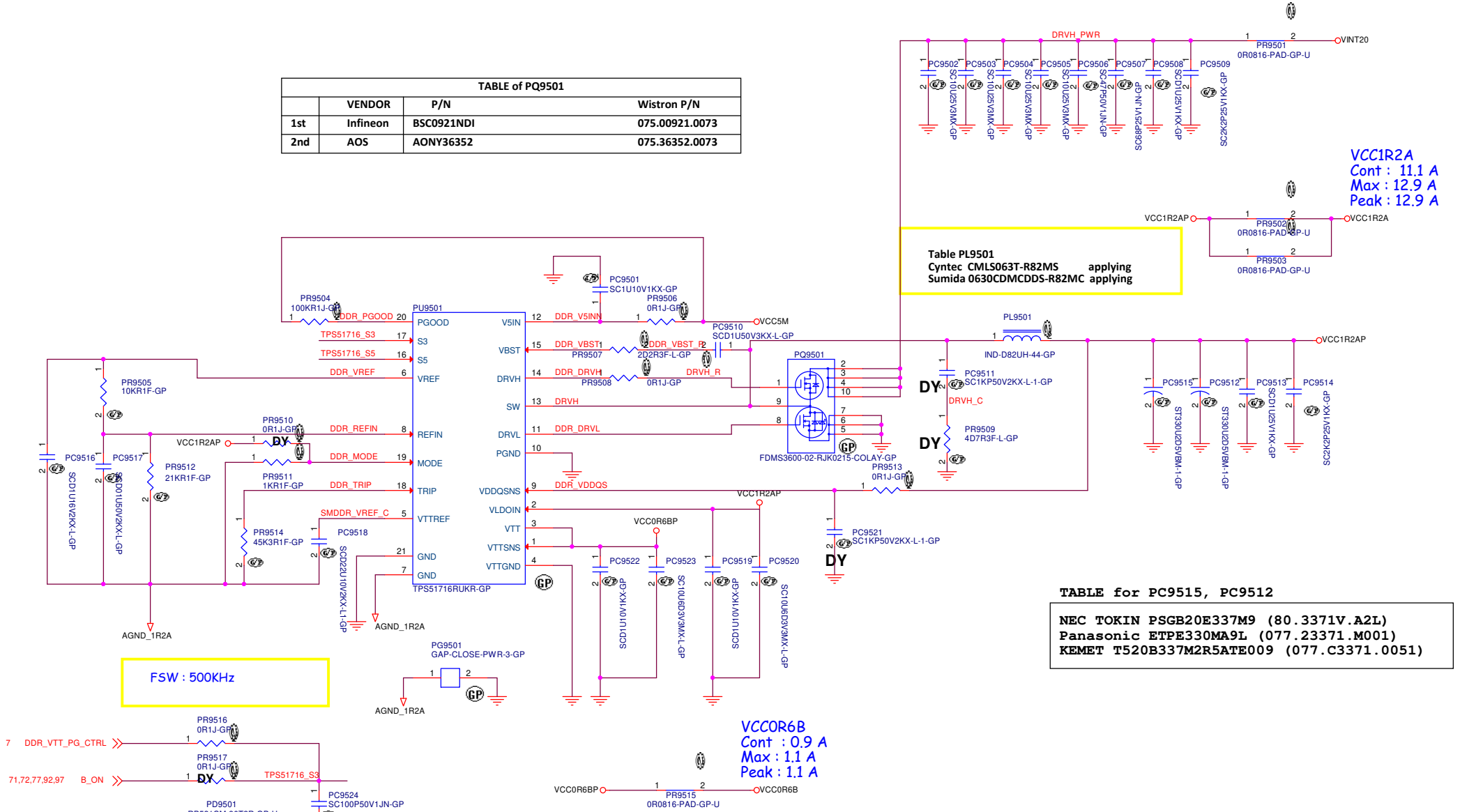

Table 1. S3/S5 Power State Control

STATE	S3	S5	VREF	VDDQ	VTTREF	VTT
S0	HI	HI	ON	ON	ON	ON
S3	LO	HI	ON	ON	ON	OFF(High-Z)
S4/S5	LO	LO	OFF	OFF(Discharge)	OFF(Discharge)	OFF(Discharge)

<Variant Name>

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

Title: DC/DC VCC1R2A/VCC0R6B

Size	Document Number	Rev
A3	LPM-3	-1

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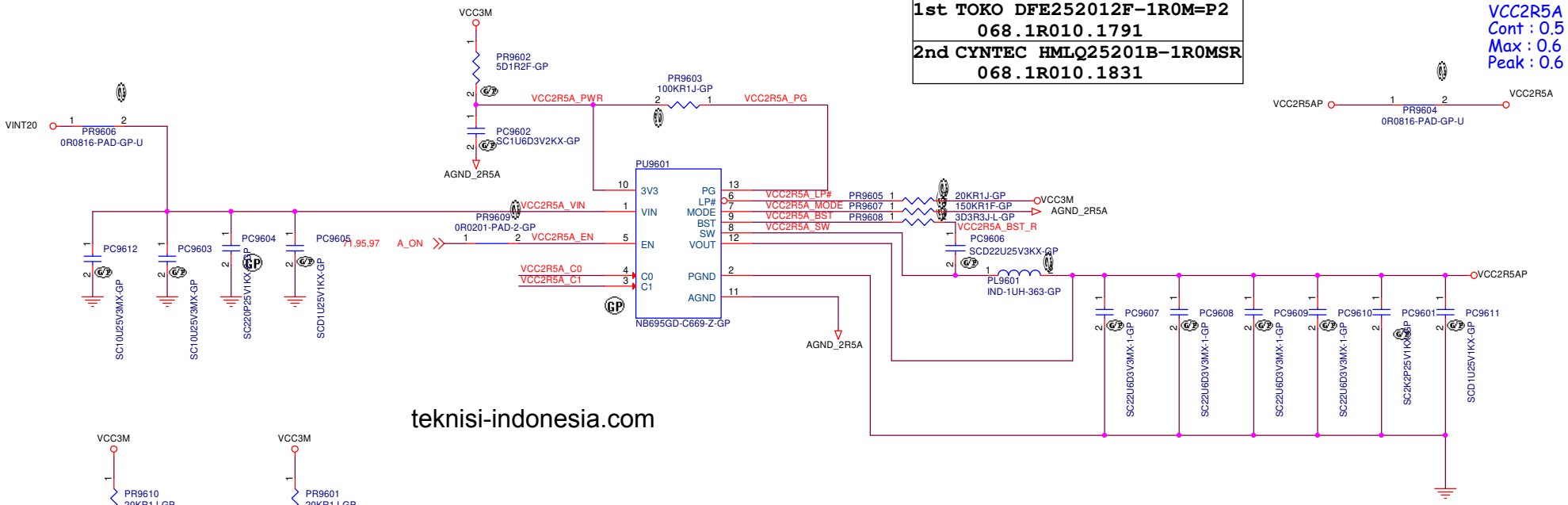
EC_EVT_007
EC_EVT_020

PL9601
1st TOKO DFE252012F-1R0M=P2 068.1R010.1791
2nd CYNTEC HMLQ25201B-1R0MSR 068.1R010.1831

VCC2R5A
Cont : 0.5 A
Max : 0.6 A
Peak : 0.6 A



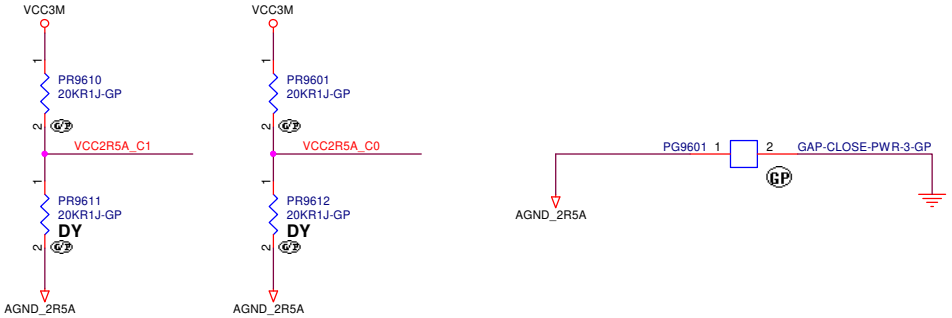


TABLE : NB695 MODE M4 (150K to GND)

LP#	C1	C0	VOUT (V)
1	0	0	1.2V
1	0	1	1.5V
1	1	0	1.8V
1	1	1	2.5V

<-- LOGIC

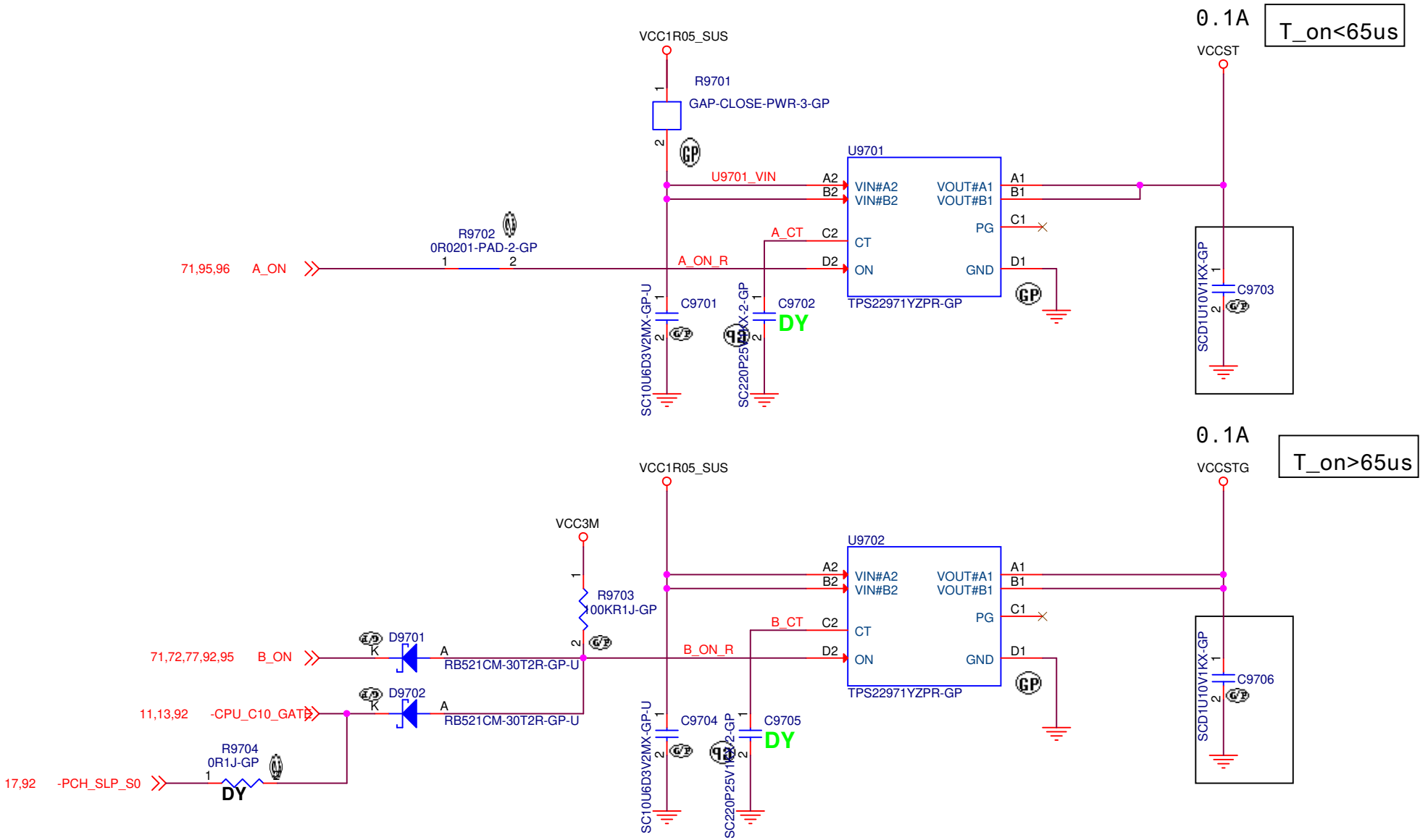
<Variant Name>

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

Title: DC/DC VCC2R5A

Size	Document Number	Rev
A3	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 96 of 111



<Variant Name>

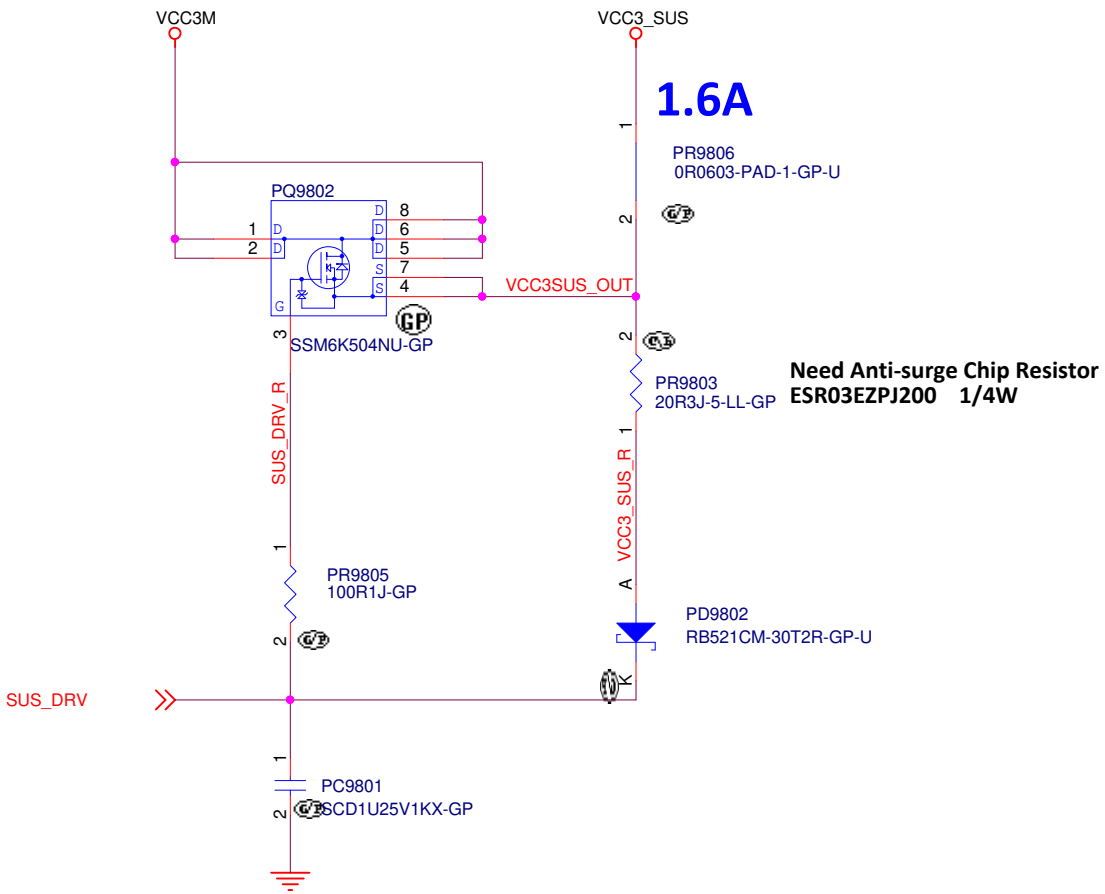
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: **LOAD SW VCCST/VCCSTG**

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 97 of 111

TABLE of PQ9802			
	VENDOR	P/N	Wistron P/N
1st	Toshiba	SSM6K504NU	084.6K504.003D
2nd	AOS	AON2420	084.02420.M001



<Variant Name>

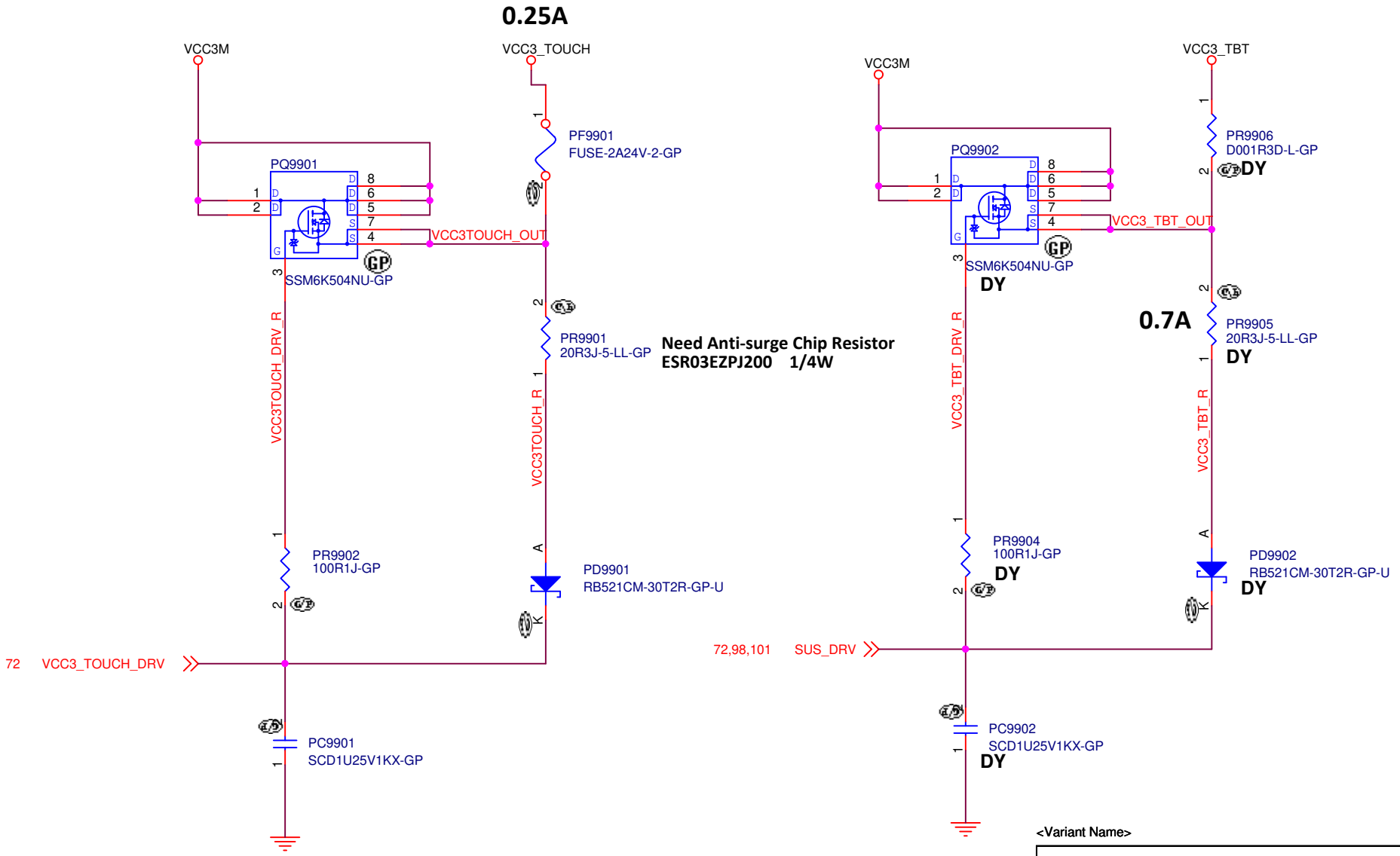
緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title: ***LOAD SW PCH SUS/TP***

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 98 of 111

TABLE of PQ9901			
	VENDOR	P/N	Wistron P/N
1st	Toshiba	SSM6K504NU	084.6K504.003D
2nd	AOS	AON2420	084.02420.M001



<Variant Name>

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

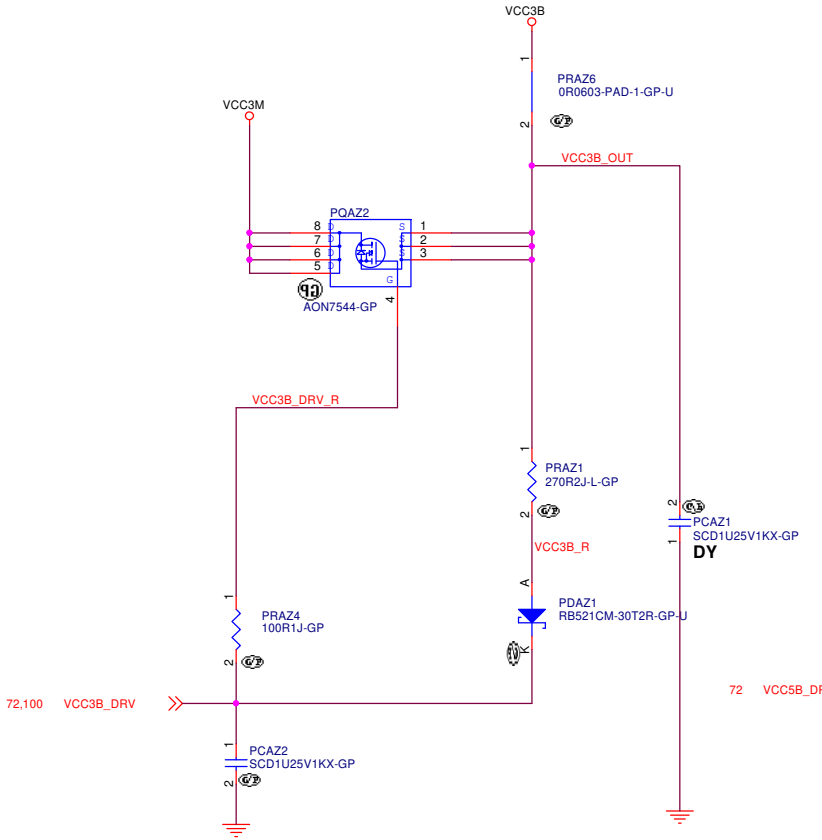
Title: **LOAD SW LAN/VCC3_TBT**

Size	Document Number	Rev
A4	LPM-3	-1

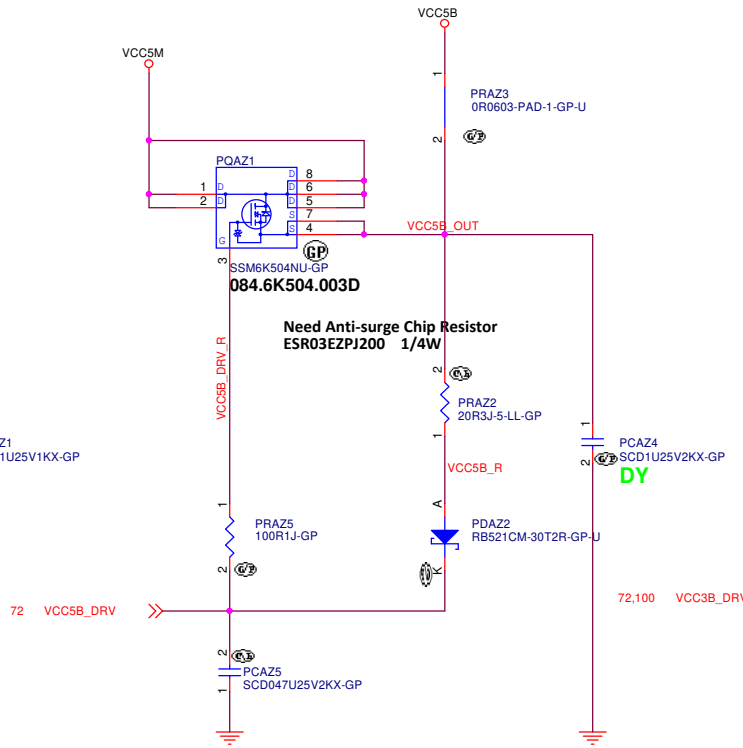
Date: Tuesday, May 19, 2020 Sheet 99 of 111

TABLE of PQAZ1,PQAZ3			
	VENDOR	P/N	Wistron P/N
1st	Toshiba	SSM6K504NU	084.6K504.003D
2nd	AOS	AON2420	084.02420.M001

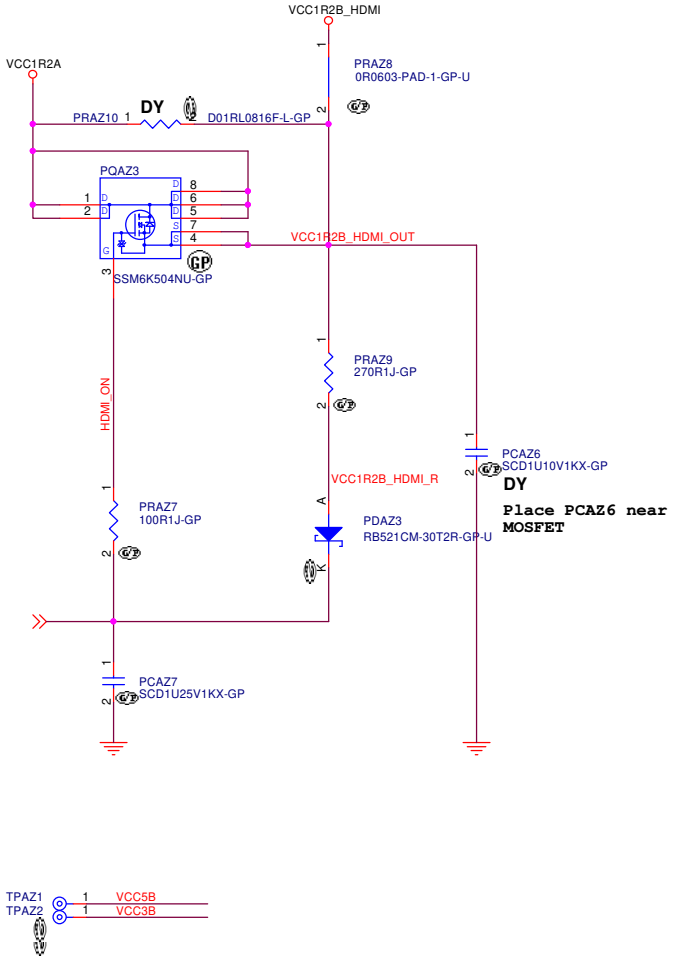
VCC3B
Max Current = 7.4 (A)



VCC5B
Max Current = 1.9 (A)



HDMI
Max Current = 1.7 (A)



TPAZ1 1 VCC5B
TPAZ2 1 VCC3B

<Variant Name>

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

Title: **LOAD SW B**

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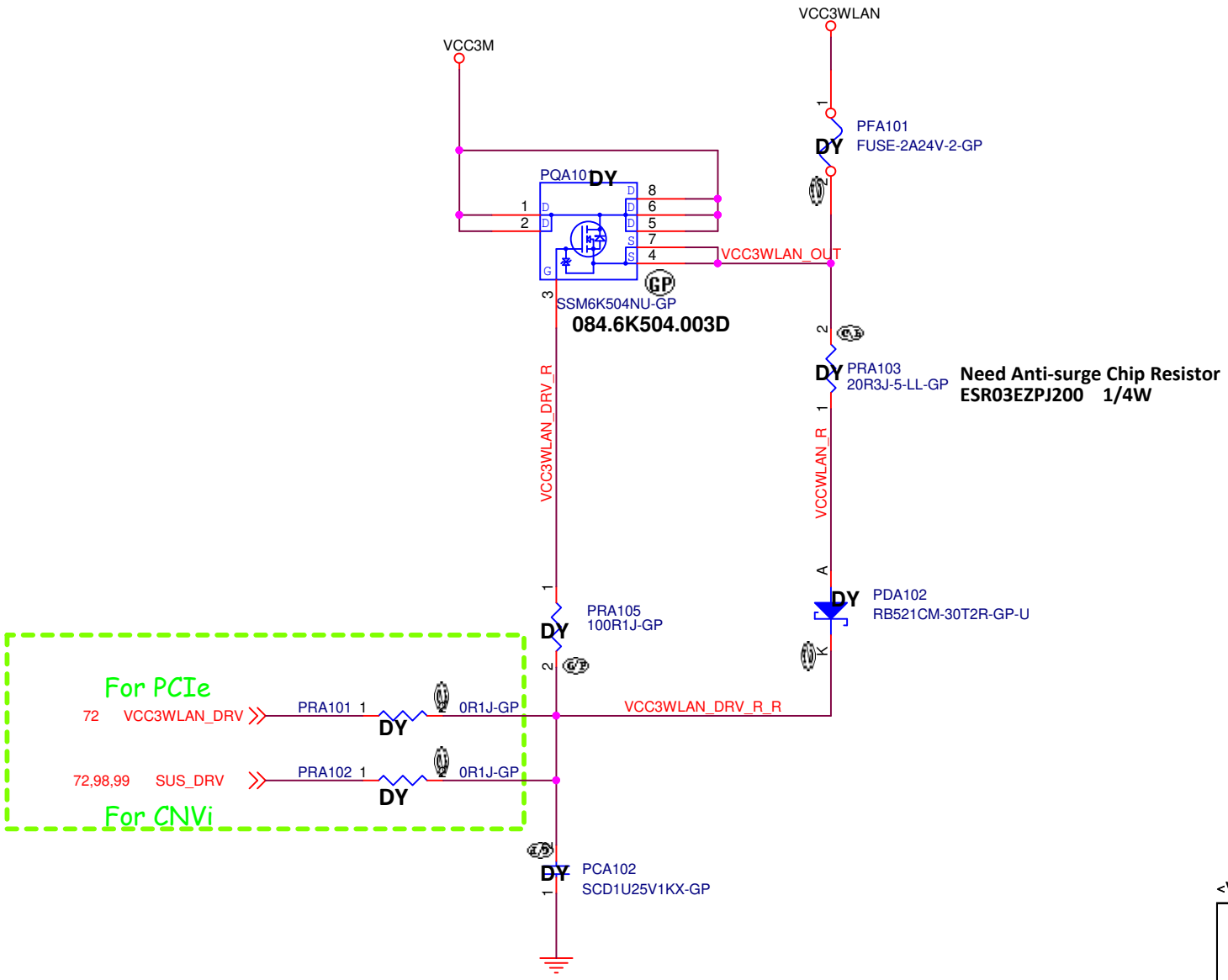
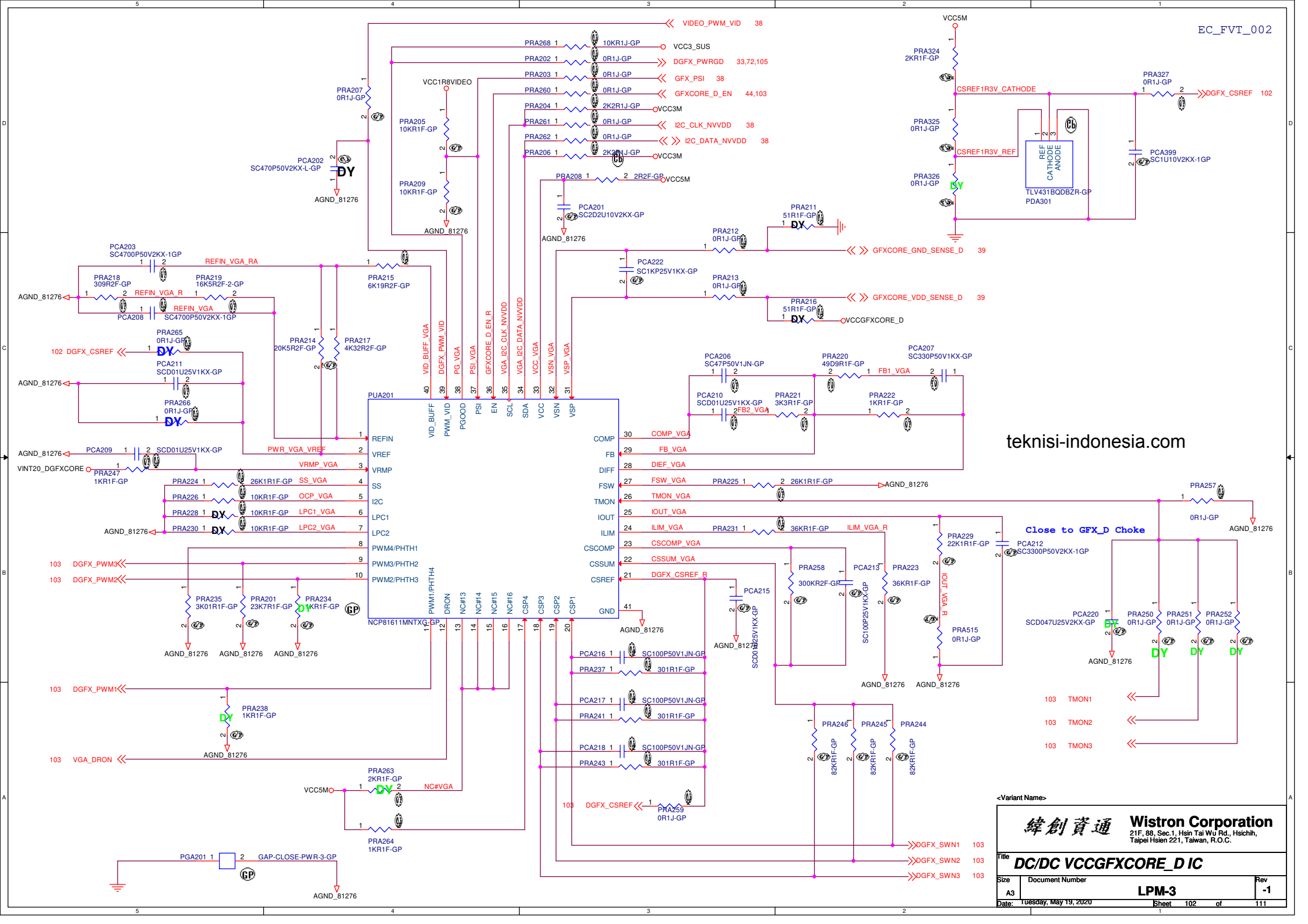
WLAN

1.1A



<Variant Name>

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title	***LOAD SW WLAN***
Size: A4	Document Number: **LPM-3**
Rev: -1	
Date: Tuesday, May 19, 2020	Sheet 101 of 111


EC_FVT_002
teknisi-indonesia.com
VIDEO_PWM_VID 38
VCC3_SUS
DGFX_PWRGD 33,72,105
GFX_PSI 38
GFXCORE_D_EN 44,103
I2C_CLK_NVVDD 38
I2C_DATA_NVVDD 38
VCC1R8VIDEO
VCC3M
VCC5M
AGND_81276
REFIN_VGA_RA
REFIN_VGA_R
REFIN_VGA
PWR_VGA_VREF
VRMP_VGA
SS_VGA
OCP_VGA
LPC1_VGA
LPC2_VGA
VID_BUFF_VGA
DGFX_PWM_VID
PG_VGA
PSI_VGA
GFXCORE_D_EN_R
VGA_I2C_CLK_NVVDD
VGA_I2C_DATA_NVVDD
VCC_VGA
VSN_VGA
VSP_VGA
PUA201
NCP81611MNTXG-GP
REFIN
VREF
VRMP
SS
I2C
LPC1
LPC2
PWM4/PHTH1
PWM3/PHTH2
PWM2/PHTH3
PWM1/PHTH4
DRON
NC#13
NC#14
NC#15
NC#16
CSP4
CSP3
CSP2
CSP1
GND
VID_BUFF
PWM_VID
PGOOD
PSI
EN
SCL
SDA
VCC
VSN
VSP
COMP
FB
DIFF
FSW
TMON
IOUT
ILIM
CSCOMP
CSSUM
CSREF
COMP_VGA
FB_VGA
DIEF_VGA
FSW_VGA
TMON_VGA
IOUT_VGA
ILIM_VGA
CSCOMP_VGA
CSSUM_VGA
DGFX_CSREF_R
ILIM_VGA_R
GFXCORE_GND_SENSE_D 39
GFXCORE_VDD_SENSE_D 39
VCCGFXCORE_D
DGFX_CSREF 102
DGFX_PWM3 103
DGFX_PWM2 103
DGFX_PWM1 103
VGA_DRON 103
DGFX_SWN1 103
DGFX_SWN2 103
DGFX_SWN3 103
TMON1 103
TMON2 103
TMON3 103
CSREF1R3V_CATHODE
CSREF1R3V_REF
TLV431BQDBZR-GP
PDA301
Close to GFX_D Choke
VINT20_DGFXCORE
PGA201 GAP-CLOSE-PWR-3-GP
<Variant Name>
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.
Title DC/DC VCCGFXCORE_D IC
Size A3
Document Number LPM-3
Rev -1
Date: Tuesday, May 19, 2020
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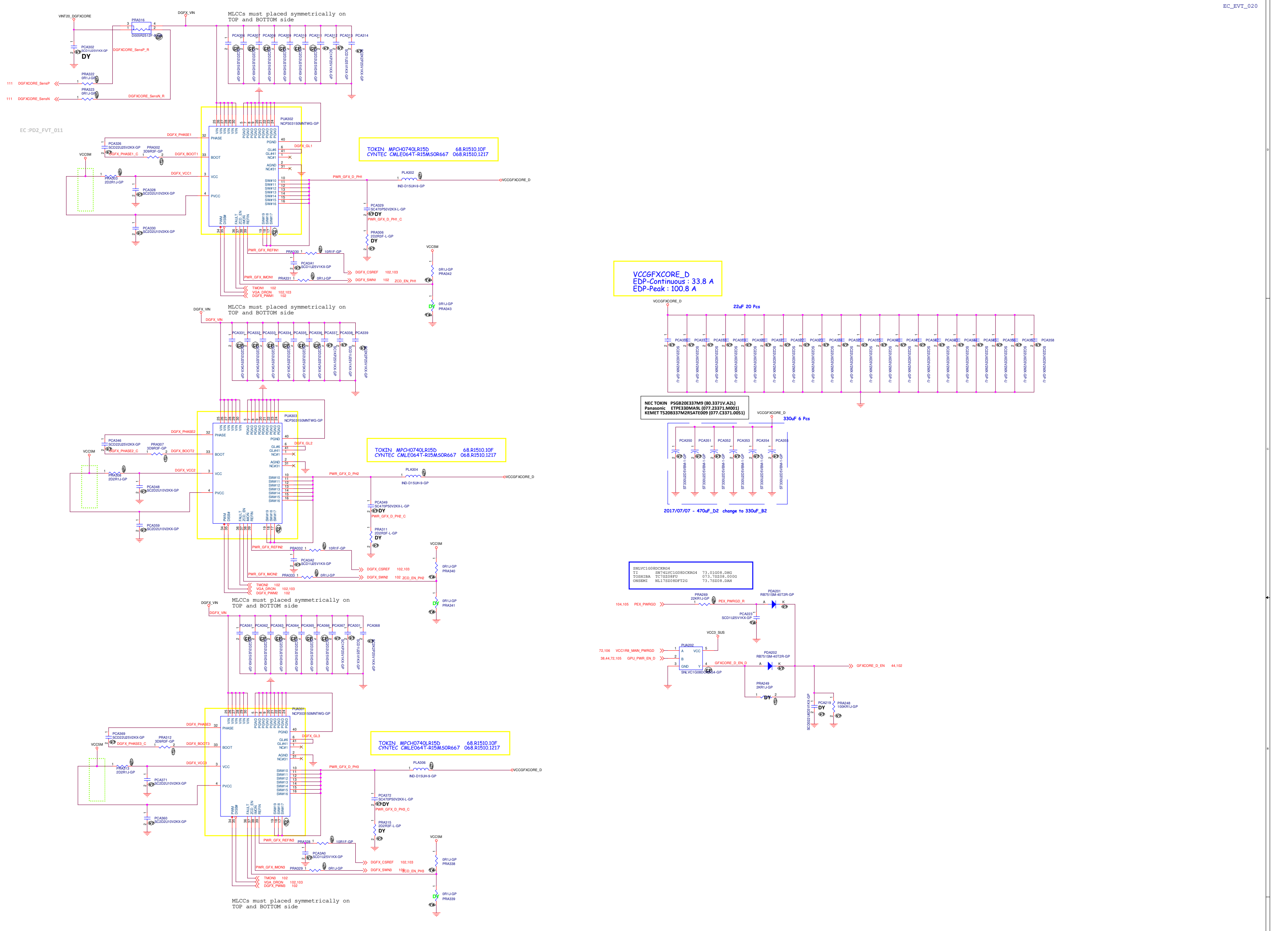

<Variant Name>

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

Title: **DC/DC VCCGFXCORE_D**

Size	Document Number	Rev
Custom	LPM-3	-1

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EC_EVT_007
EC_EVT_020

TABLE of PLA401			
	VENDOR	P/N	Wistron P/N
1st	Cyntec	CMMS064T-R33MS	068.R3310.2041
2nd	Sumida	0640CDMCCDS-R33MC	068.R3310.2101

PQA401	
1st	Infineon BSC0923NDI 75.00923.073
2nd	AOS AONY36354

MLCCs must placed symmetrically on TOP and BOTTOM side

VCC1R25VIDEO
Quadro
VOUT : 1.25 V
CON : 15.7 A
Peak : 32.7 A
GeForce
VOUT : 1.20 V
CON : 15.5 A
Peak : 16.6 A

Table PLA401
CYNTEC CMMS064T-R33MS ESR:1.95m Ohm IDC:23A ISAT 33A

TABLE for PTA401, PTA402

NEC TOKIN PSGB20E337M9 (80.3371V.A2L)
Panasonic ETPE330MA9L (077.23371.M001)
KEMET T520B337M2R5ATE009 (077.C3371.0051)

INPUT
12 ~ 20V

PRA406	PCA415	PCA418	mode	sw freq
1Kohm	ASM	NO ASM	D_CAP2	500KHz
200Kohm	NO ASM	ASM	D_CAP	400KHz
100Kohm	NO ASM	ASM	D_CAP	300KHz

	Vout	PRA410	PRA412	PRA416	PRA415
Quadro	1.25V	12k ohm	20k ohm	0 ohm	49.9k ohm
GeForce	1.20V	12k ohm	18k ohm	0 ohm	25.5k ohm

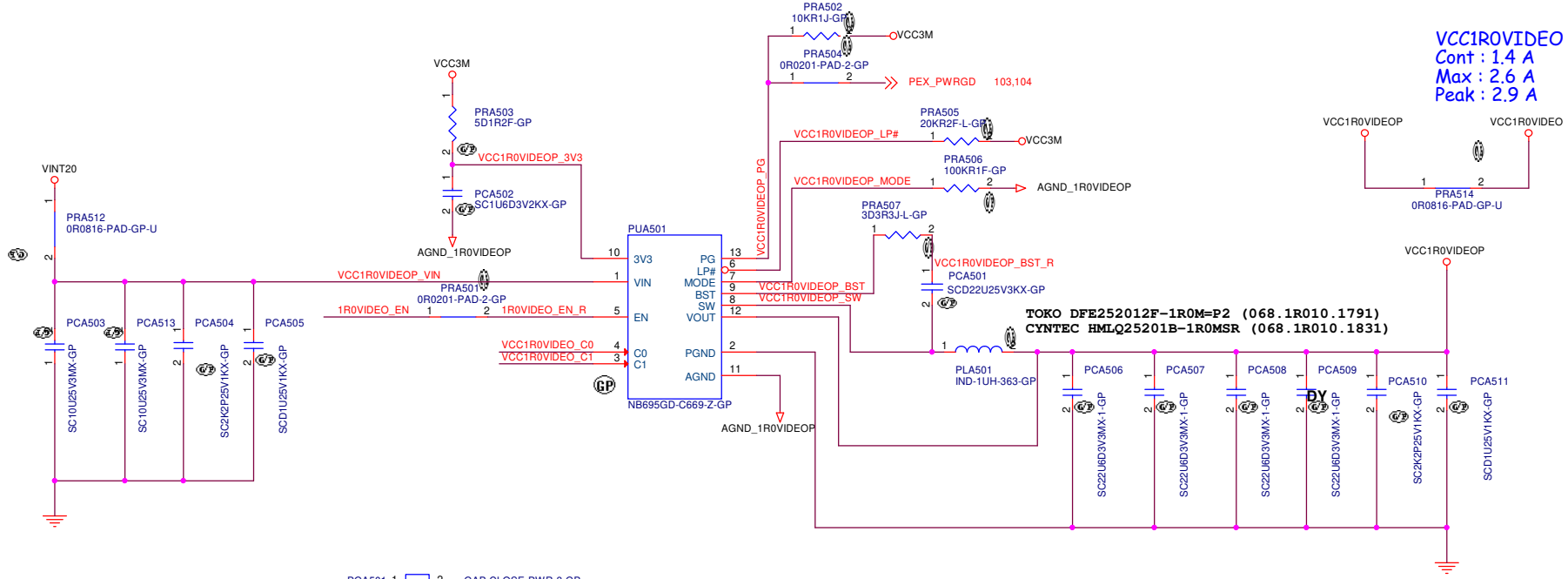
<Variant Name>

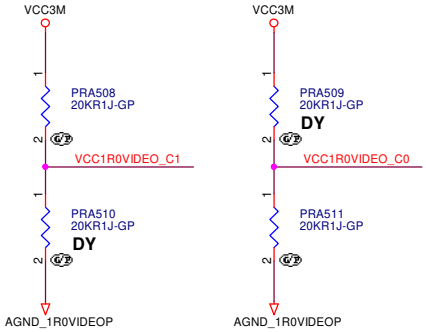
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

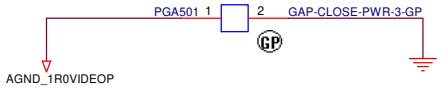
Title: DC/DC VCC1R35VIDEO
Size: A2 | Document Number: LPM-3 | Rev: -1
Date: Tuesday, May 19, 2020 | Sheet 104 of 111

EC_EVT_007
EC_EVT_016
EC_EVT_020

VCC1R0VIDEO
Cont : 1.4 A
Max : 2.6 A
Peak : 2.9 A







SNLVC1G08DCKRG4
TI SN74LVC1G08DCKRG4 73.01G08.DHG
TOSHIBA TC7SZ08FU 073.7SZ08.000G
ONSEMI NL17SZ08DFT2G 73.7SZ08.DAH

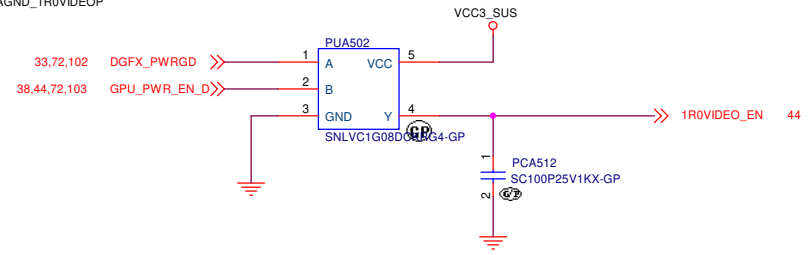


TABLE : NB695 MODE M3 (100k to GND)

LP#	C1	C0	VOUT (V)
0	X	X	0V
1	0	0	0.8V (MSM)
1	0	1	0.95V
1	1	0	1.0V
1	1	1	1.05V

<Variant Name>

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

Title: DC/DC VCC1R0VIDEO

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VCC1R8VIDEO & VCC1R8MAIN Total Max Current = 3.3 (A)

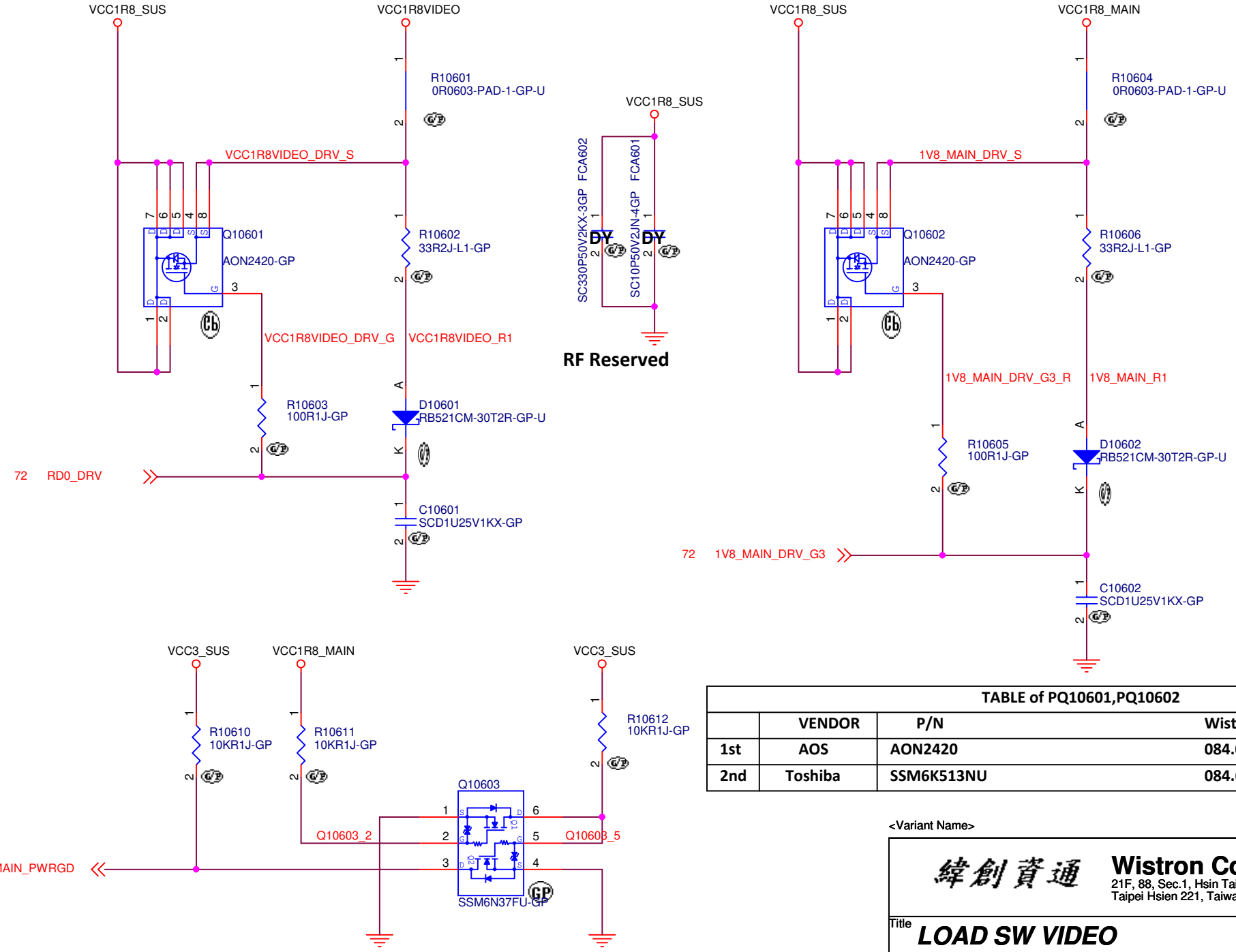


TABLE of PQ10601,PQ10602			
	VENDOR	P/N	Wistron P/N
1st	AOS	AON2420	084.02420.M001
2nd	Toshiba	SSM6K513NU	084.6K513.003D

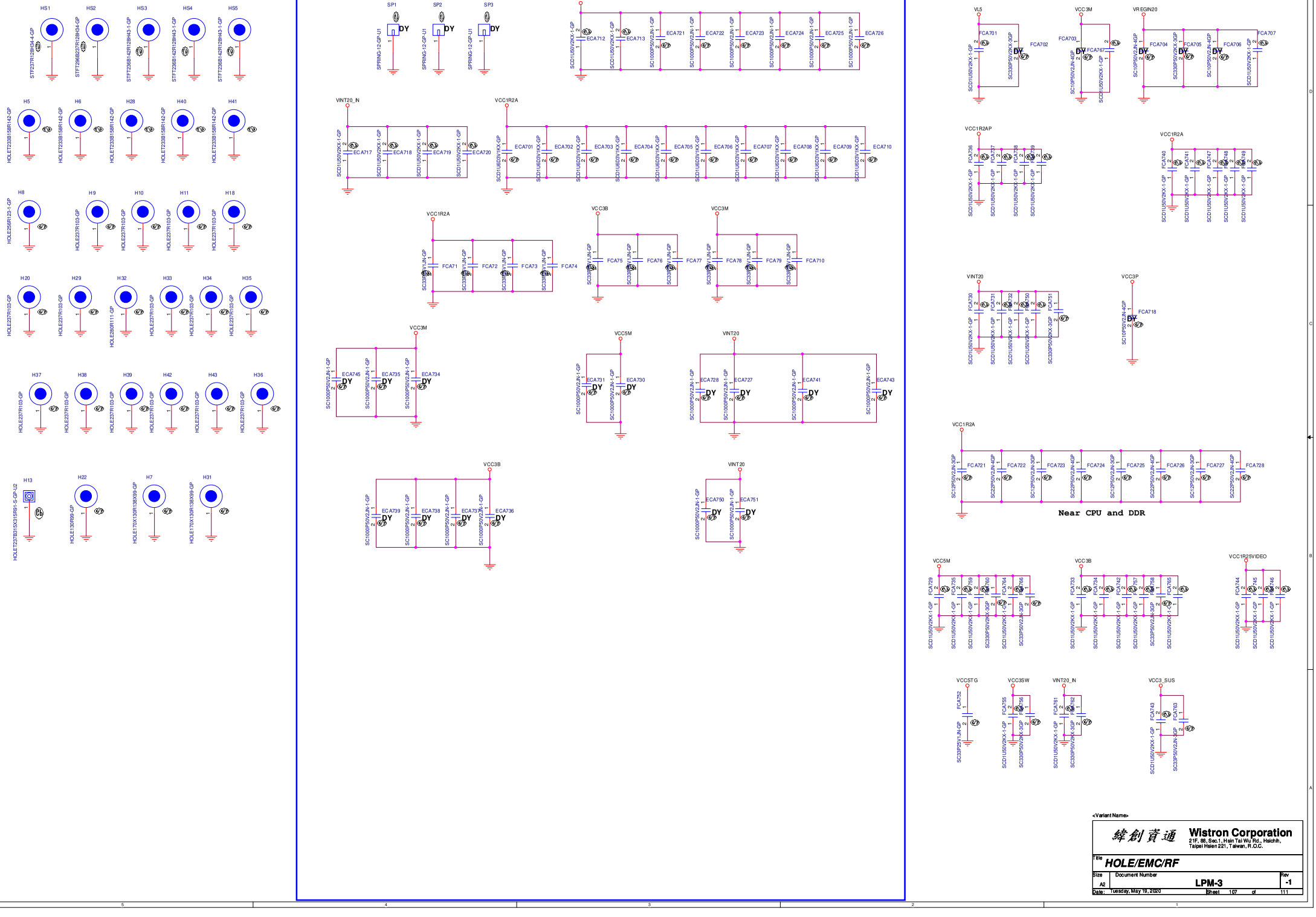
<Variant Name>

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

Title: **LOAD SW VIDEO**

Size	Document Number	Rev
A4	LPM-3	-1

Date: Tuesday, May 19, 2020 Sheet 106 of 111



<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: HOLE/EMC/RF

Size	Document Number	Rev
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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: ***LOAD BOM ONLY***

Size	Document Number	Rev
A4	LPM-3	-1

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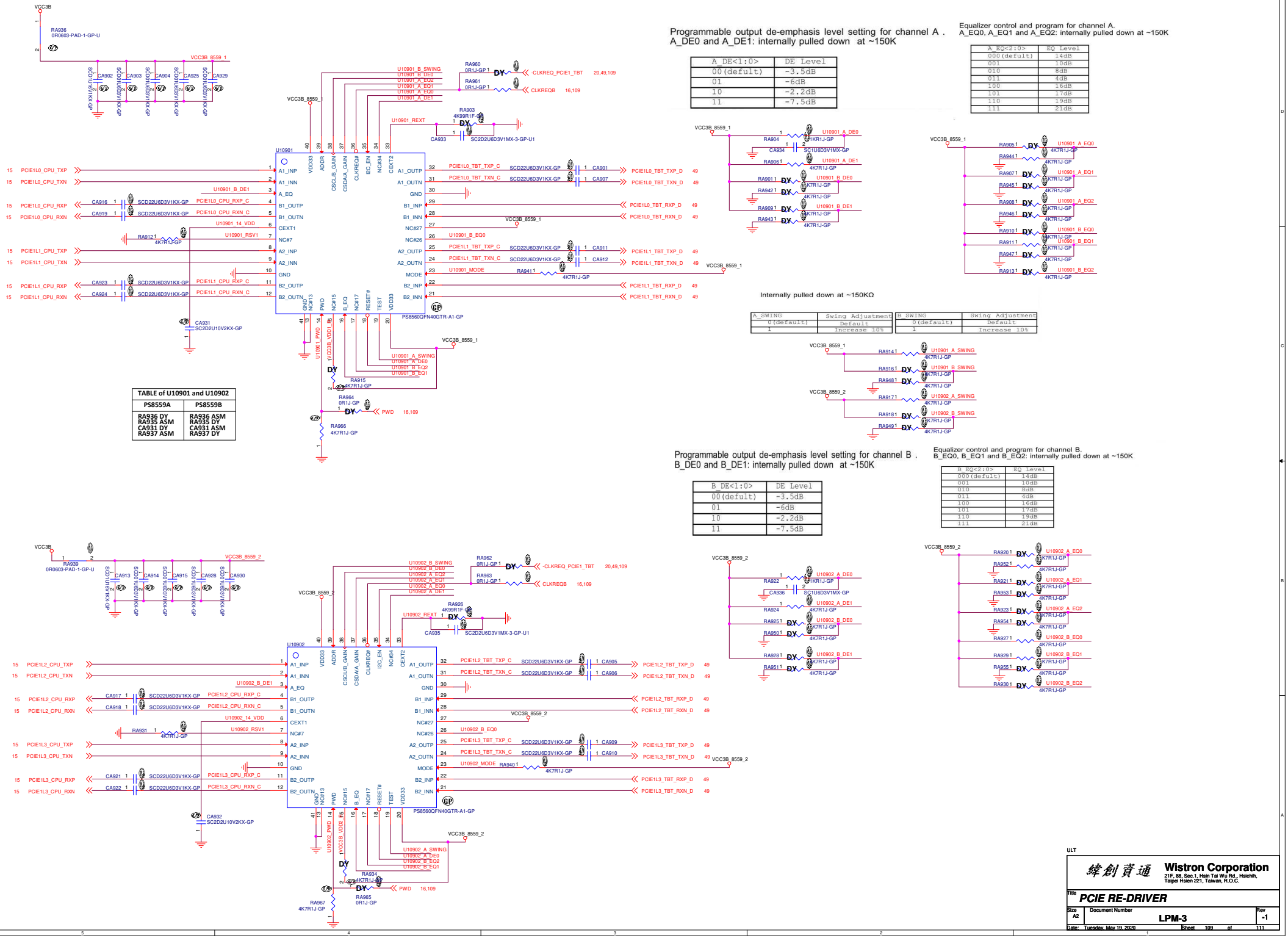
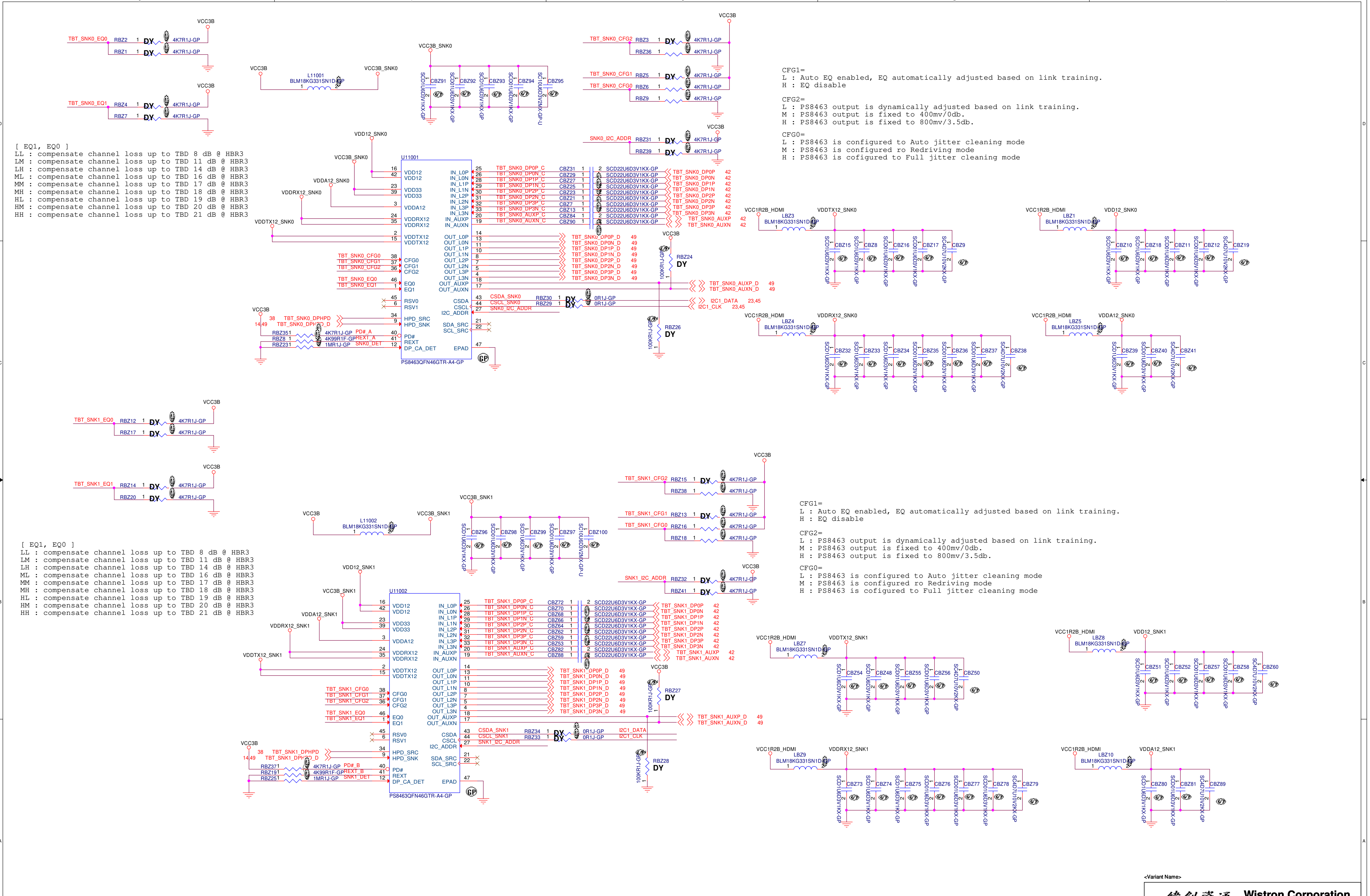

Programmable output de-emphasis level setting for channel A . A_DE0 and A_DE1: internally pulled down at ~150K
A_DE<1:0> | DE Level
00(default) | -3.5dB
01 | -6dB
10 | -2.2dB
11 | -7.5dB
Equalizer control and program for channel A. A_EQ0, A_EQ1 and A_EQ2: internally pulled down at ~150K
A_EQ<2:0> | EQ Level
000(default) | 14dB
001 | 10dB
010 | 8dB
011 | 4dB
100 | 16dB
101 | 17dB
110 | 19dB
111 | 21dB
Internally pulled down at ~150KΩ
A_SWING | Swing Adjustment
0(default) | Default
1 | Increase 10%
B_SWING | Swing Adjustment
0(default) | Default
1 | Increase 10%
TABLE of U10901 and U10902
PS8559A | PS8559B
RA936 DY RA935 ASM CA931 DY RA937 ASM | RA936 ASM RA935 DY CA931 ASM RA937 DY
Programmable output de-emphasis level setting for channel B . B_DE0 and B_DE1: internally pulled down at ~150K
B_DE<1:0> | DE Level
00(default) | -3.5dB
01 | -6dB
10 | -2.2dB
11 | -7.5dB
Equalizer control and program for channel B. B_EQ0, B_EQ1 and B_EQ2: internally pulled down at ~150K
B_EQ<2:0> | EQ Level
000(default) | 14dB
001 | 10dB
010 | 8dB
011 | 4dB
100 | 16dB
101 | 17dB
110 | 19dB
111 | 21dB
ULT
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title PCIE RE-DRIVER
Size A2 Document Number LPM-3 Rev -1
Date: Tuesday, May 19, 2020 Sheet 109 of 111



[EQ1, EQ0]
LL : compensate channel loss up to TBD 8 dB @ HBR3
LM : compensate channel loss up to TBD 11 dB @ HBR3
LH : compensate channel loss up to TBD 14 dB @ HBR3
ML : compensate channel loss up to TBD 16 dB @ HBR3
MM : compensate channel loss up to TBD 17 dB @ HBR3
MH : compensate channel loss up to TBD 18 dB @ HBR3
HL : compensate channel loss up to TBD 19 dB @ HBR3
HM : compensate channel loss up to TBD 20 dB @ HBR3
HH : compensate channel loss up to TBD 21 dB @ HBR3

CFG1=
L : Auto EQ enabled, EQ always adjusted based on link training.
H : EQ disable

CFG2=
L : PS8463 output is dynamically adjusted based on link training.
M : PS8463 output is fixed to 400mv/0db.
H : PS8463 output is fixed to 800mv/3.5db.

CFG0=
L : PS8463 is configured to Auto jitter cleaning mode
M : PS8463 is configured ro Redriving mode
H : PS8463 is cofigured to Full jitter cleaning mode

[EQ1, EQ0]
LL : compensate channel loss up to TBD 8 dB @ HBR3
LM : compensate channel loss up to TBD 11 dB @ HBR3
LH : compensate channel loss up to TBD 14 dB @ HBR3
ML : compensate channel loss up to TBD 16 dB @ HBR3
MM : compensate channel loss up to TBD 17 dB @ HBR3
MH : compensate channel loss up to TBD 18 dB @ HBR3
HL : compensate channel loss up to TBD 19 dB @ HBR3
HM : compensate channel loss up to TBD 20 dB @ HBR3
HH : compensate channel loss up to TBD 21 dB @ HBR3

CFG1=
L : Auto EQ enabled, EQ always adjusted based on link training.
H : EQ disable

CFG2=
L : PS8463 output is dynamically adjusted based on link training.
M : PS8463 output is fixed to 400mv/0db.
H : PS8463 output is fixed to 800mv/3.5db.

CFG0=
L : PS8463 is configured to Auto jitter cleaning mode
M : PS8463 is configured ro Redriving mode
H : PS8463 is cofigured to Full jitter cleaning mode

<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: DP RE-DRIVER

Size	Document Number	Rev
A2	LPM-3	-1

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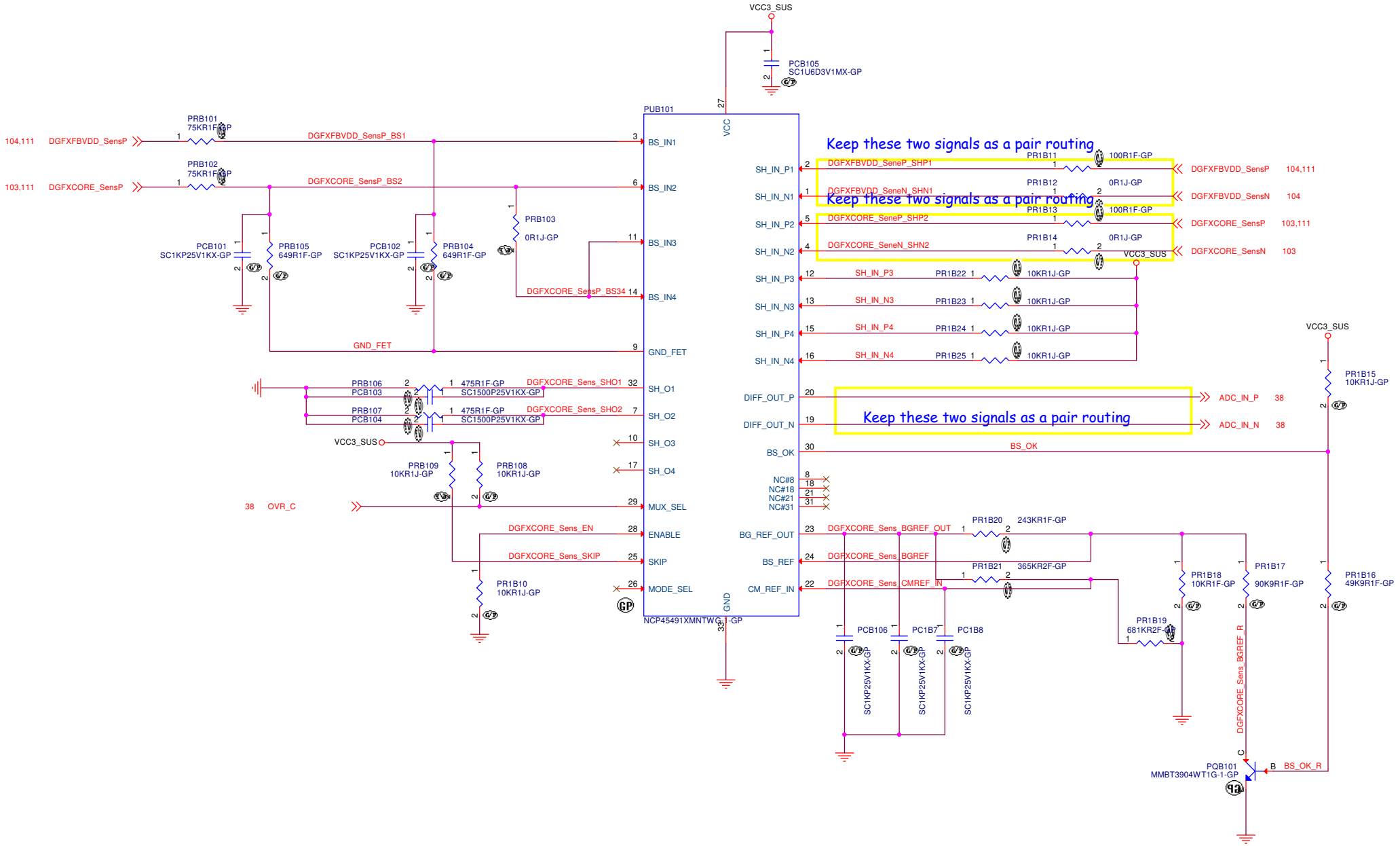

ULT

緯創資通	**Wistron Corporation** 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	***OVR-M***	
Size A3	Document Number **LPM-3**	Rev -1
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