

Wistron Confidential

MV-3

2008/08/20

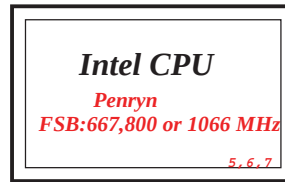
REV :MV-03

BOM1

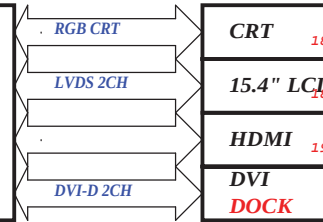
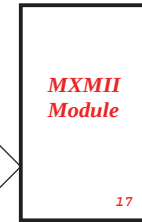
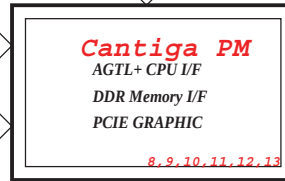
緯創資通		Wistron Corporation	
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.			
Title			
VOX			
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Artemis Block Diagram

Project code :
91.4V801.001
PCB P/N : 48.4V801.031
Revision : MV-3



HOST BUS FSB
667/800/1066MHz



SYSTEM DC/DC TPS51124			
INPUTS		OUTPUTS	
B+		1.8V	10A
		0.9V	2A

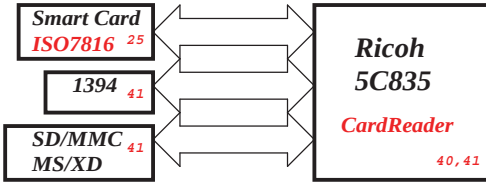
SYSTEM DC/DC TPS51120			
INPUTS		OUTPUTS	
B+		+5VALW	6A
		+3VALW	6A

SYSTEM DC/DC TPS51124			
INPUTS		OUTPUTS	
B+		+1.05M	13A

CHARGER BQ27470			
INPUTS		OUTPUTS	
BATT_A BATT_B		BATT	
		18V 3.0A 5V 100mA	

CPU DC/DC ISL6260C			
INPUTS		OUTPUTS	
B+		+VCC_CORE	
		0.844~1.3V 65A	

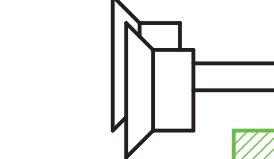
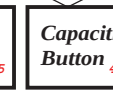
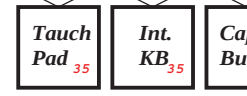
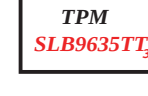
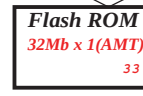
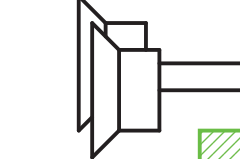
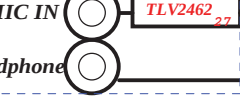
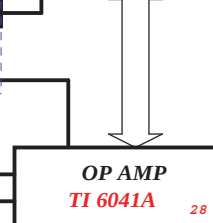
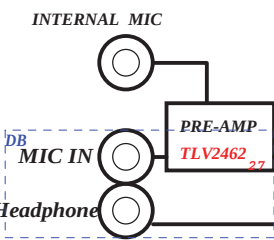
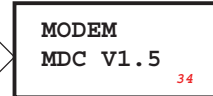
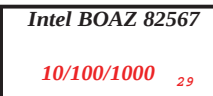
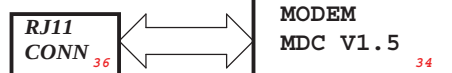
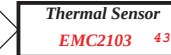
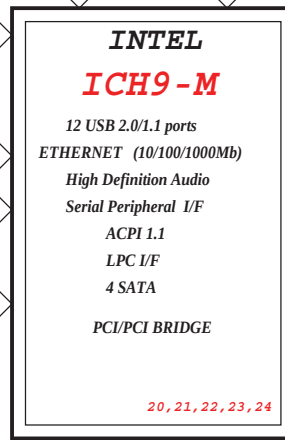
PCB LAYER			
L1:	Signal 1		
L2:	GND		
L3:	Signal 2		
L4:	Signal 3		
L5:	VCC		
L6:	Signal 4		
L7:	GND		
L8:	Signal 5		



DMI x4

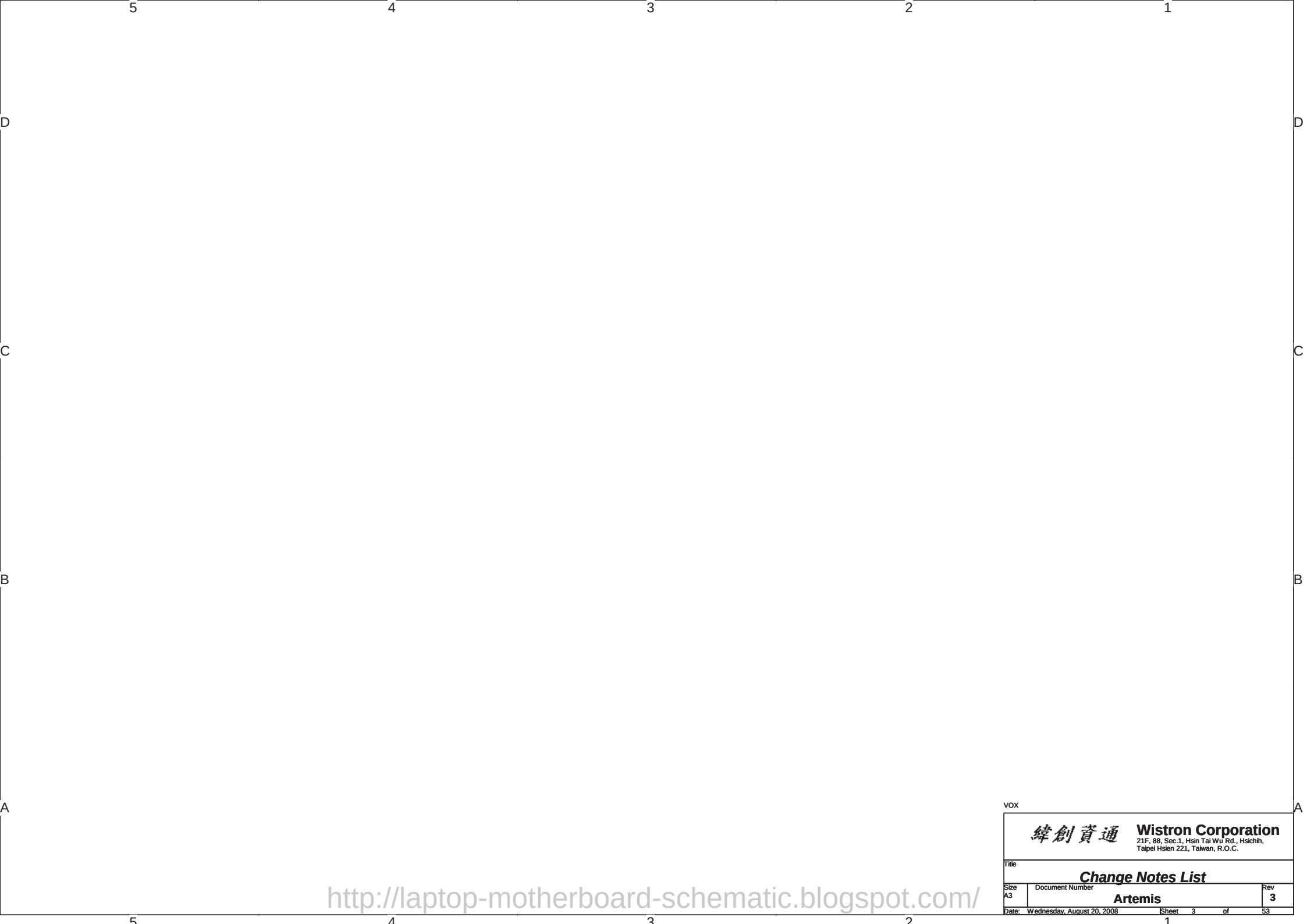
C-LINK0

PCI



BOM1

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VOX		
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Voltage Rails

○ MEANS ON x MEANS OFF

power plane State	+B +3VL LDO5	+5VALW +3VALW	+1.5V +5V +0.75V	+5VS +3VS +1.5VS +CPU CORE +VCCP	+3VM +1.05VM	CLOCK
S0	○	○	○	○	○	○
S3/M1	○	○	○	x	○	○
S3	○	○	○	x	○	○
S5 S4/AC	○	○	x	x	○	○
S5 S4/Battery only	○	x	x	x	x	x
S5 S4/AC & Battery don't exist	x	x	x	x	x	x

PCI Devices

EETERNAL	IDSEL#	REQ/GNT#	PIRQ
Cardreader & 1394	AD22	2	G,E

DMA Channel	Device
DMA0	Modem/LAN
DMA1	ECP
DMA2	Floppy Disk
DMA3	Audio
DMA4	(Cascade)
DMA5	Unused
DMA6	Unused
DMA7	Unused

Symbols	Description
DY/DUMMY	No install
1KR2J	Resistor 1K ohm ,Size 0402 ,5%
1KR3F	Resistor 1K ohm ,Size 0603 ,1%
GP	ROHS parts
NC	Pin no connect to anything

USB PORT#	Destination
0	USB1
1	USB4
2	EXPRESS SLOT
3	USB5
4	USB2
5	USB3
6	Bluetooth
7	WWAN
8	Fingerprint
9	Dock 1
10	Camera
11	Dock 2

IRQ	Device
0	System Timer
1	Keyboard
2	N/A
3	Serial port (COM2) ,LAN/Modem
4	Serial port (COM1)
5	Audio/VGA
6	Floppy
7	Parallel port
8	System CMOS/Real-time clock
9	Microsoft ACPI
10	N/A, Modem, LAN
11	Mass storage control/PCI simple communication control
12	synactic PS2 port GlidePAD
13	Numeric Data Process
14	Primary IDE interface ,HDD
15	Secondary IDE interface ,CD-ROM
16	Mobile Intel Crestline Express Chipset Family Microsoft UAA Bus Drive for High Definition Audio Intel 82801H (ICH8 Family) PCI Express Root Port -27D0
17	Intel 82801I (ICH9 Family) PCI Express Root Port -27D2 Intel 82801I (ICH9 Family) USB Universal Host Control
18	Intel 82801I (ICH9 Family) USB Universal Host Control Richo R5C835 Integrates FlashMedia Control Richo R5C835 Gemcore based SmartCard Control
19	Intel 82801I (ICH9 Family) PCI Express Root Port -27D6 Intel 82801I (ICH9 Family) USB Universal Host Control
20	Intel 82801I (ICH9 Family) USB Universal Host Control Intel 82801I (ICH9 Family) USB2 Enhanced Host Control
21	Intel 82801I (ICH9 Family) USB Universal Host Control
22	SDA Standard Compliant SD Host Control Accelerometer LIS302DL
23	HP Mobile Data Protection Sensor

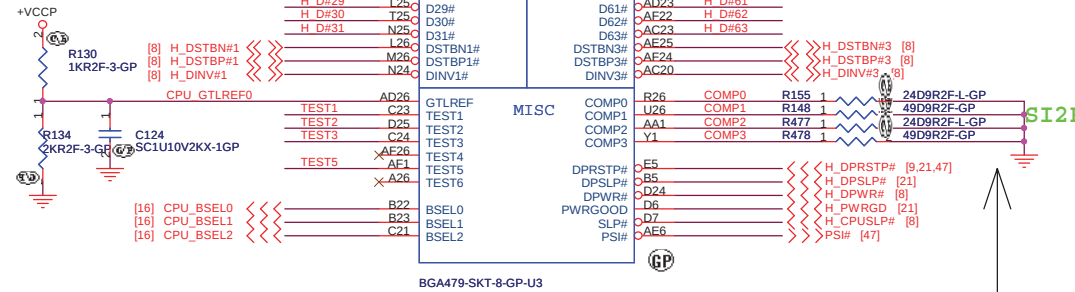
VOX

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Artemis List	
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CPU (2 of 3)

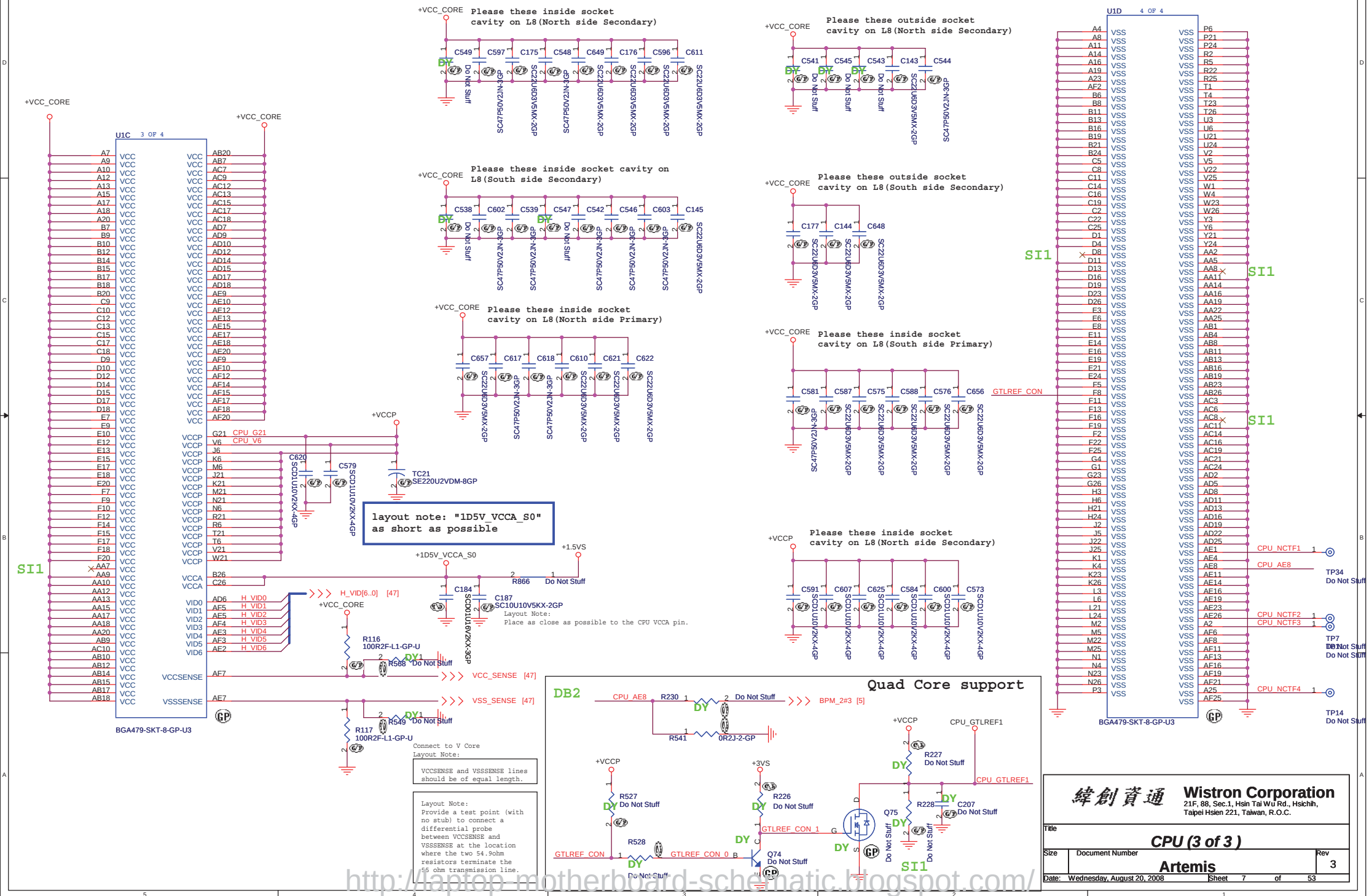
Layout notes
Z= 55 Ohm 0.5" MAX for GTLREF



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CPU (2 of 3)			
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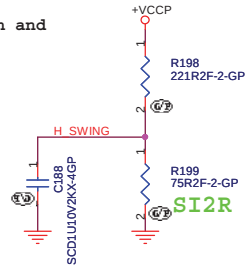
CPU (3 of 3)



NB (1 of 6) HOST

H_SWING routing Trace width and Spacing use 10 / 20 mil

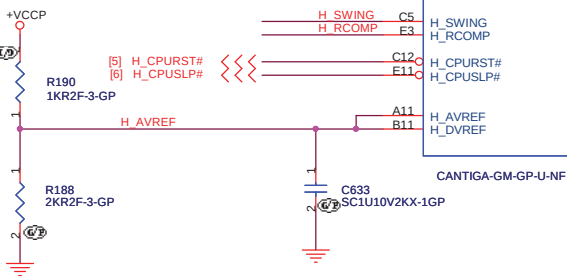
H_SWING Resistors and Capacitors close MCH 500 mil (MAX)



H_RCOMP routing Trace width and Spacing use 10 / 20 mil



Place them near to the chip (< 0.5")



HOST

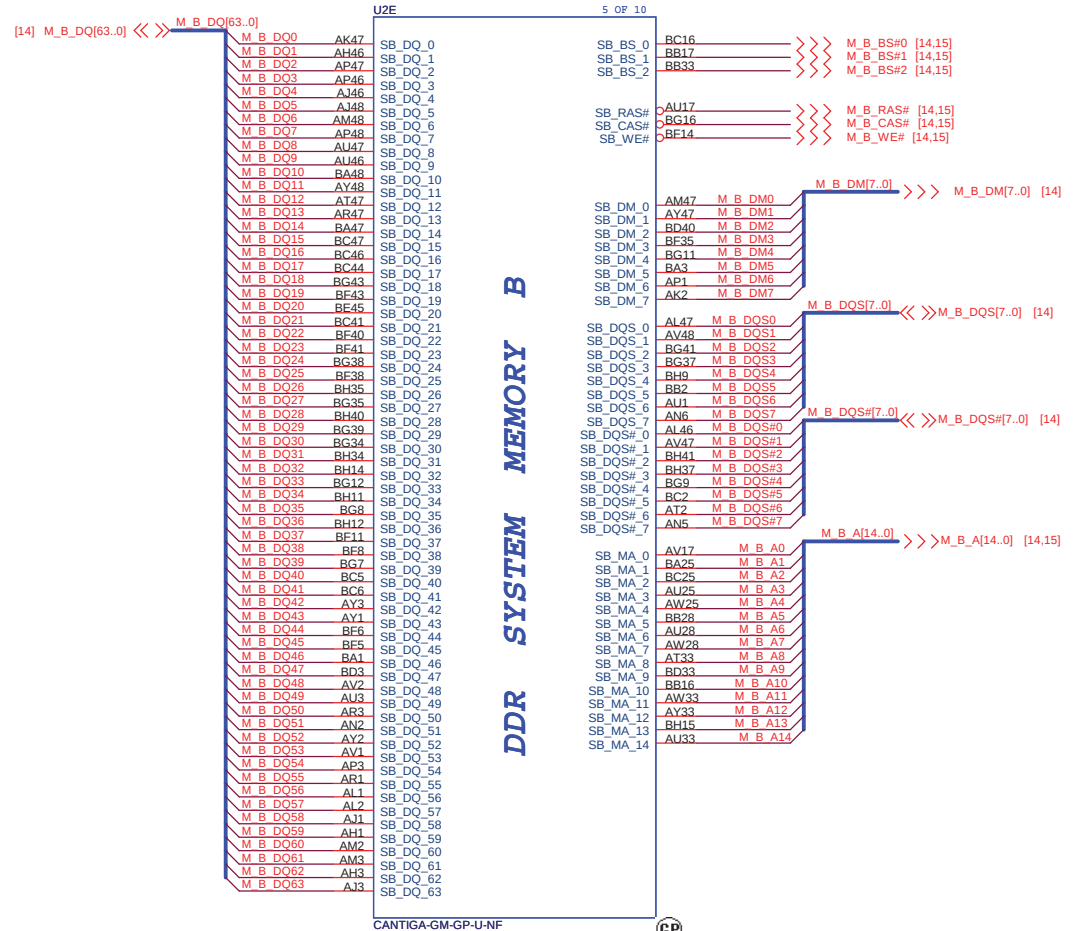
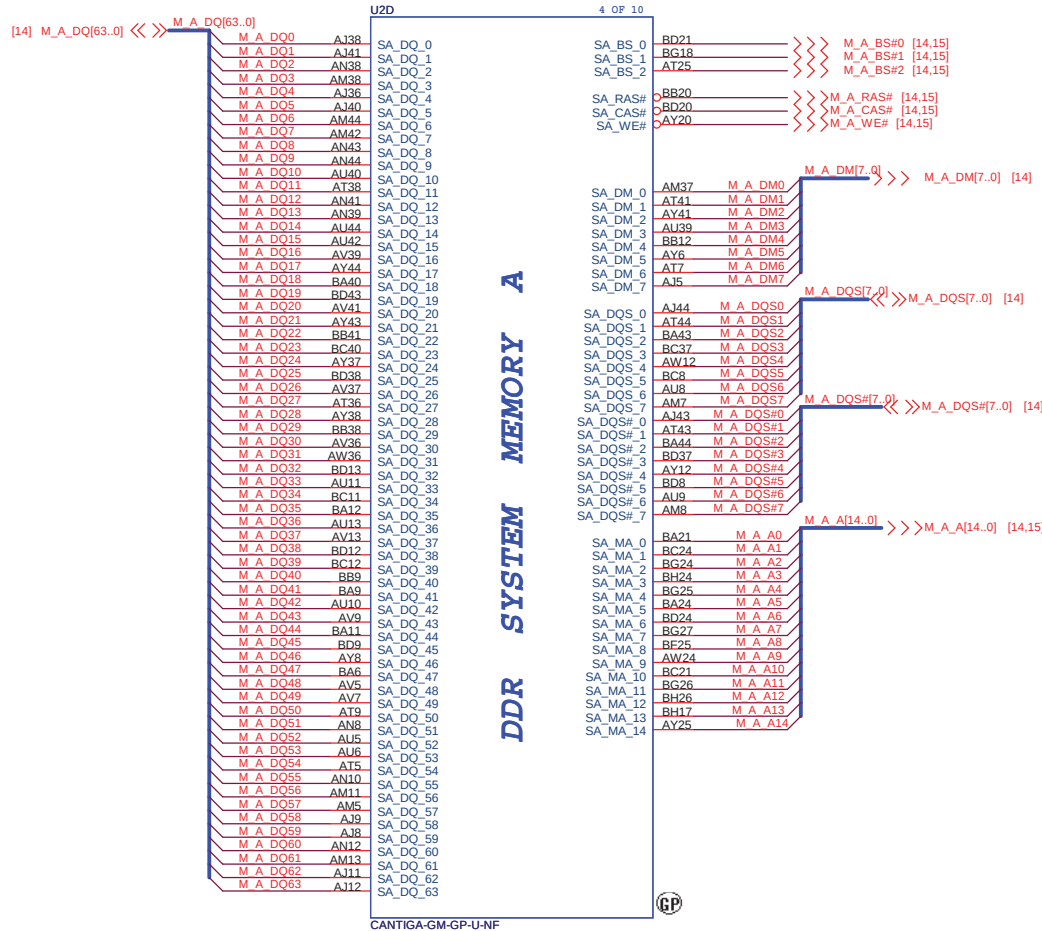
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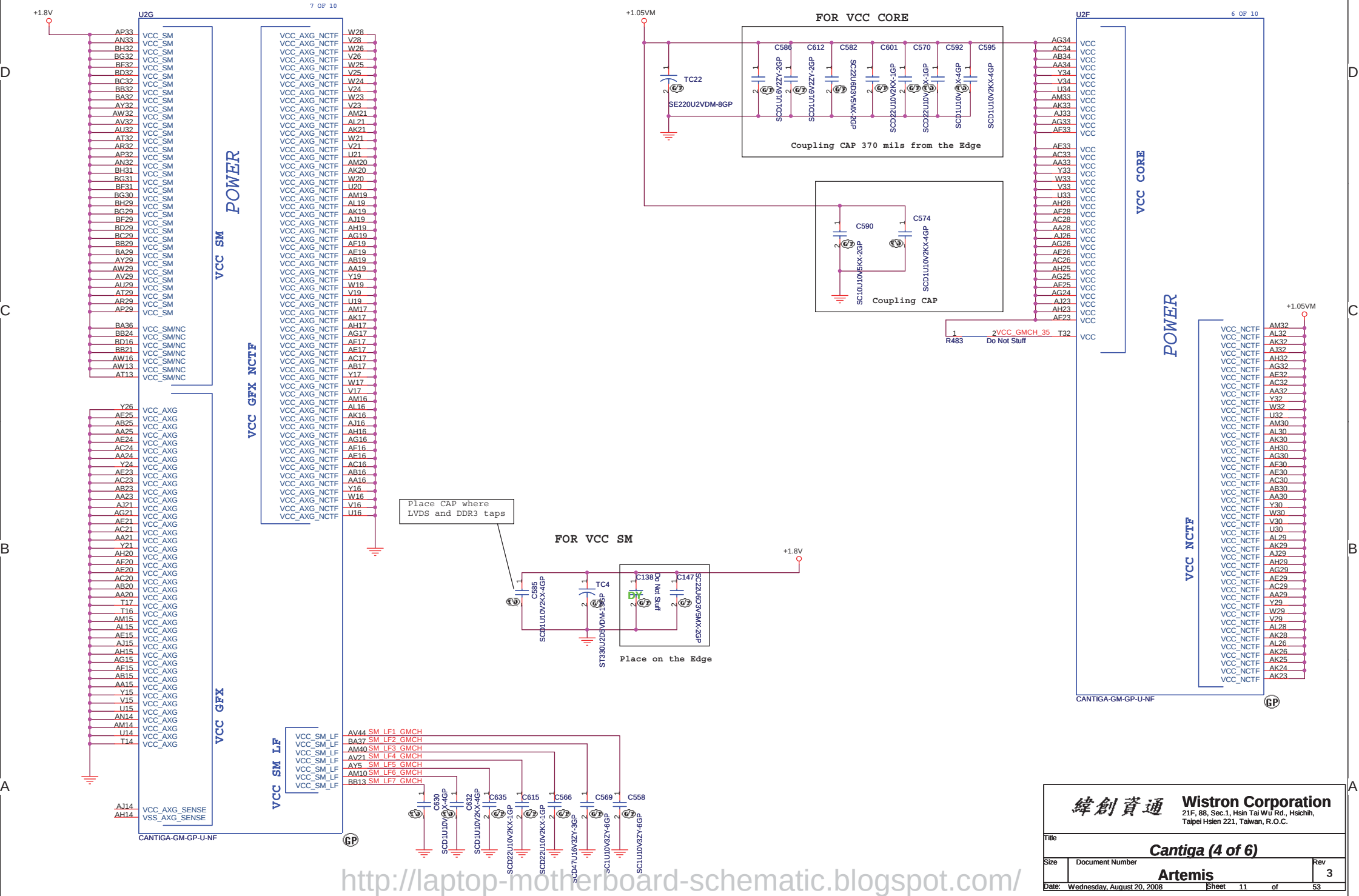
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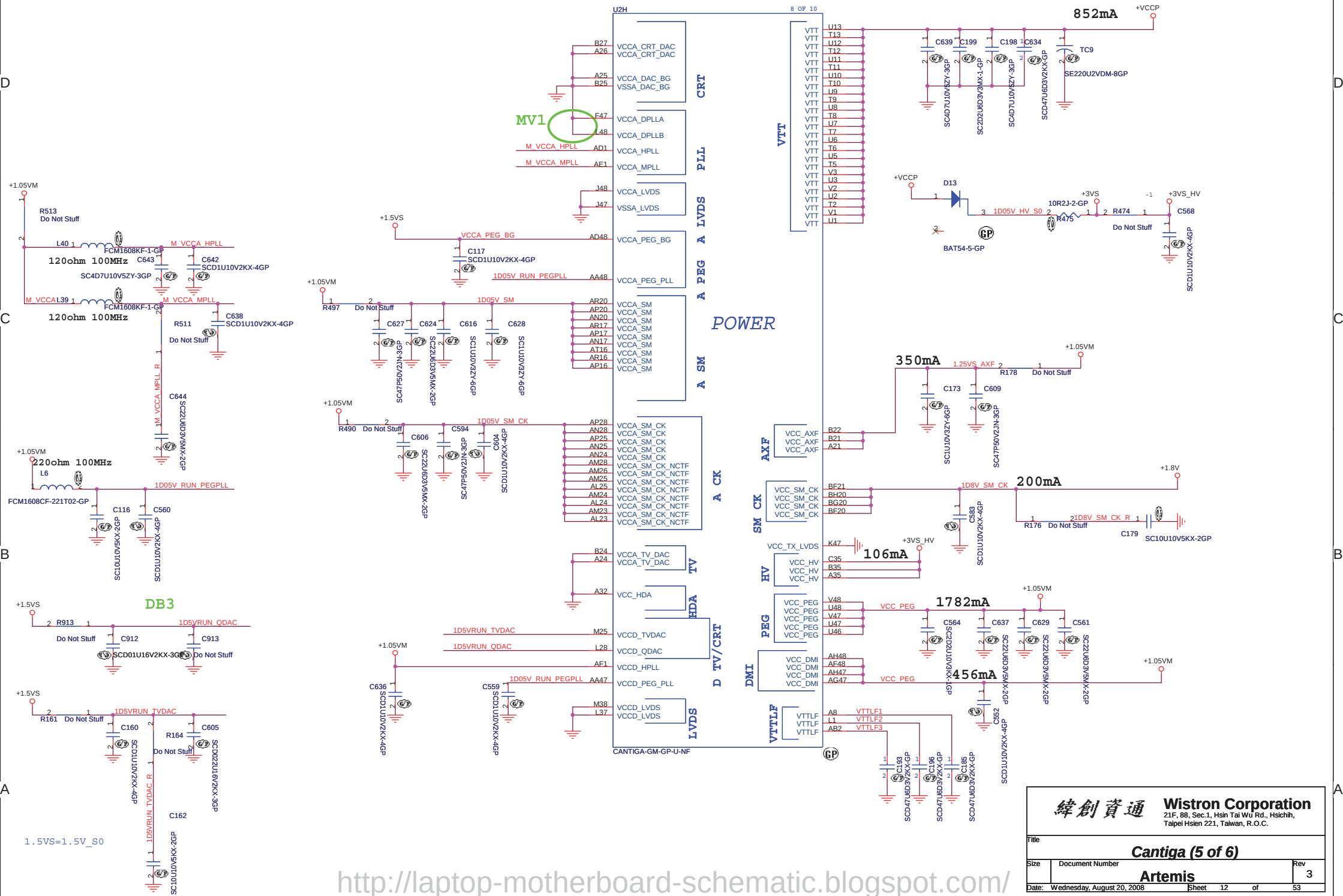
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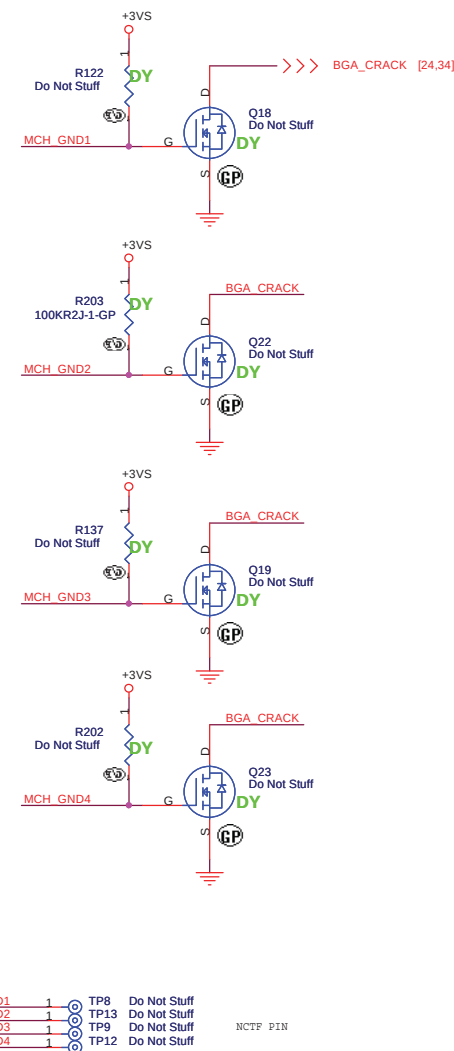
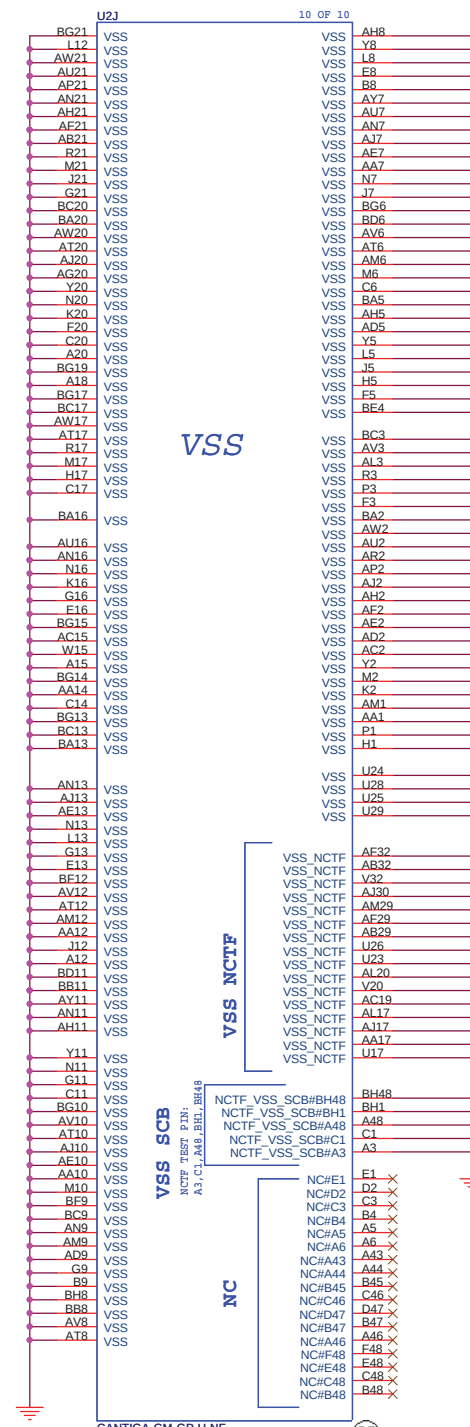


NB (3 of 6) DDRIII

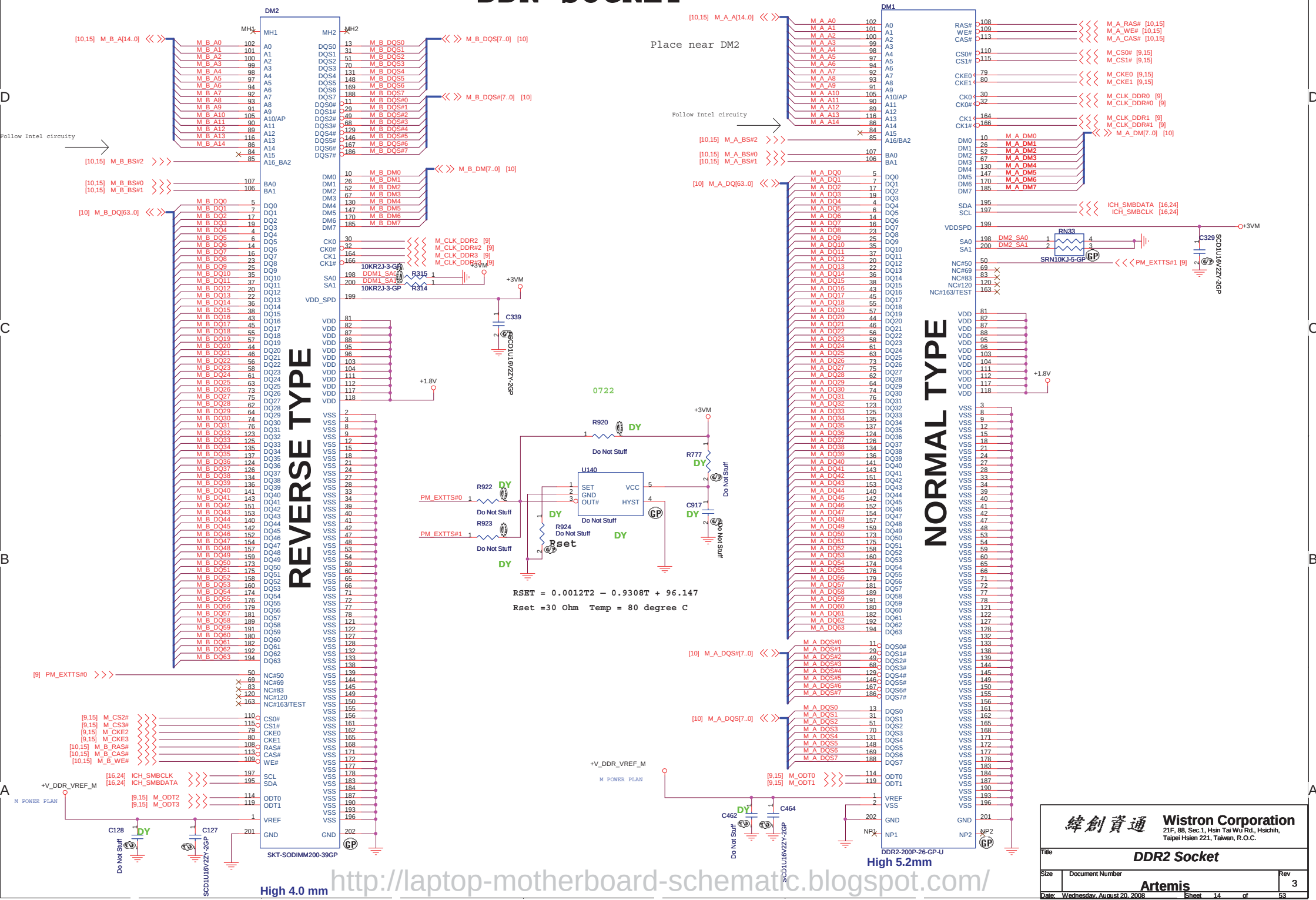






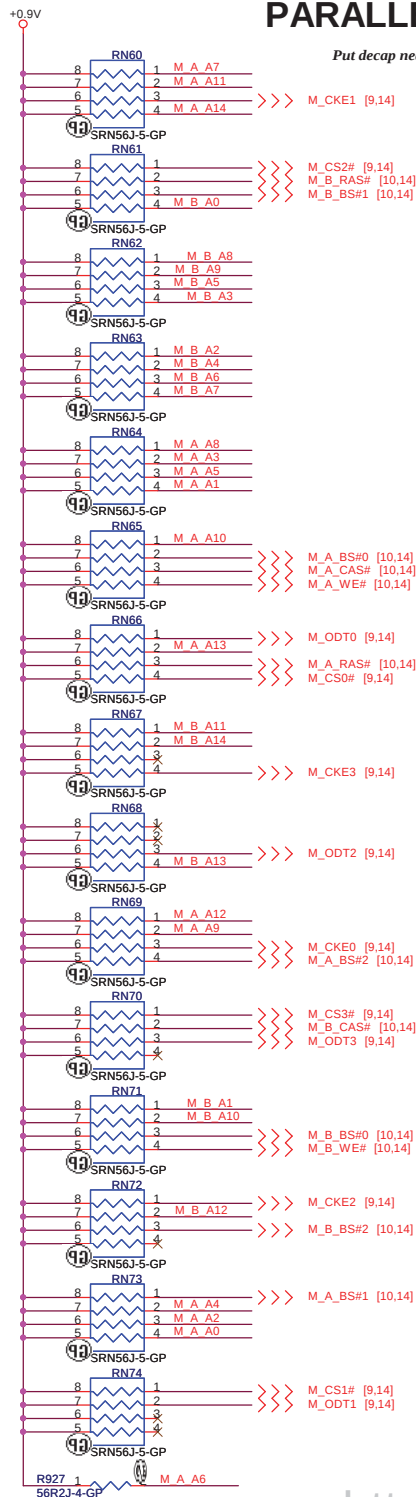


DDR SOCKET³



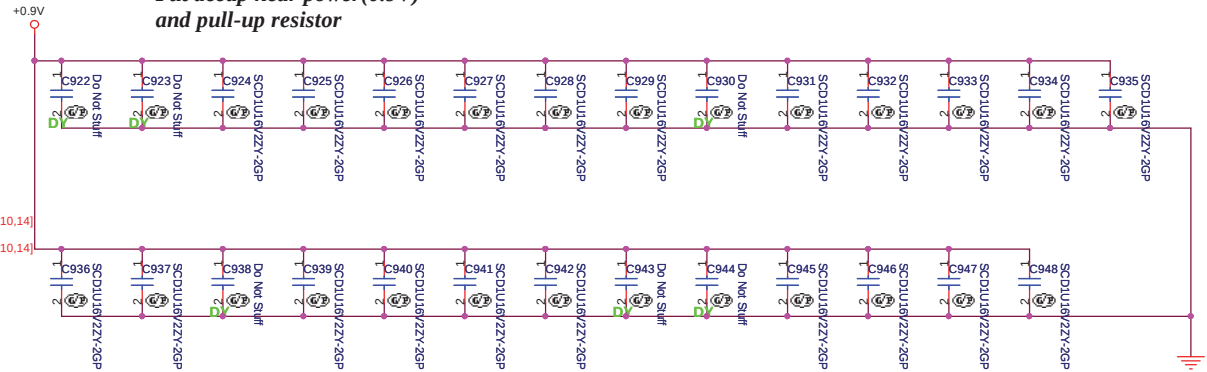
PARALLEL TERMINATION

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

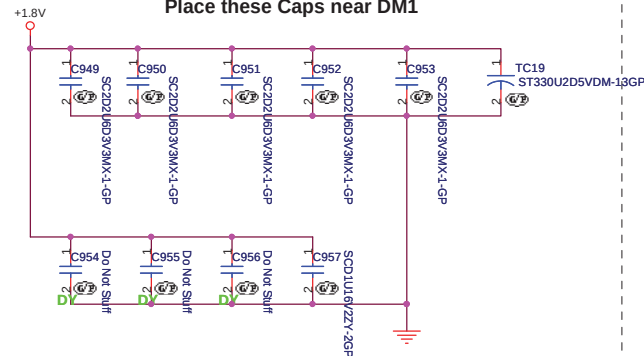


Decoupling Capacitor

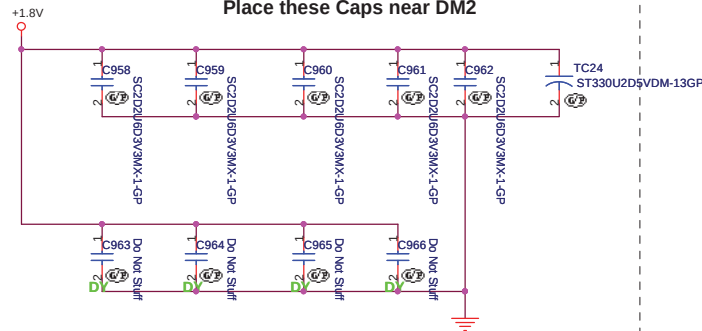
Put decap near power(0.9V) and pull-up resistor



Place these Caps near DM1



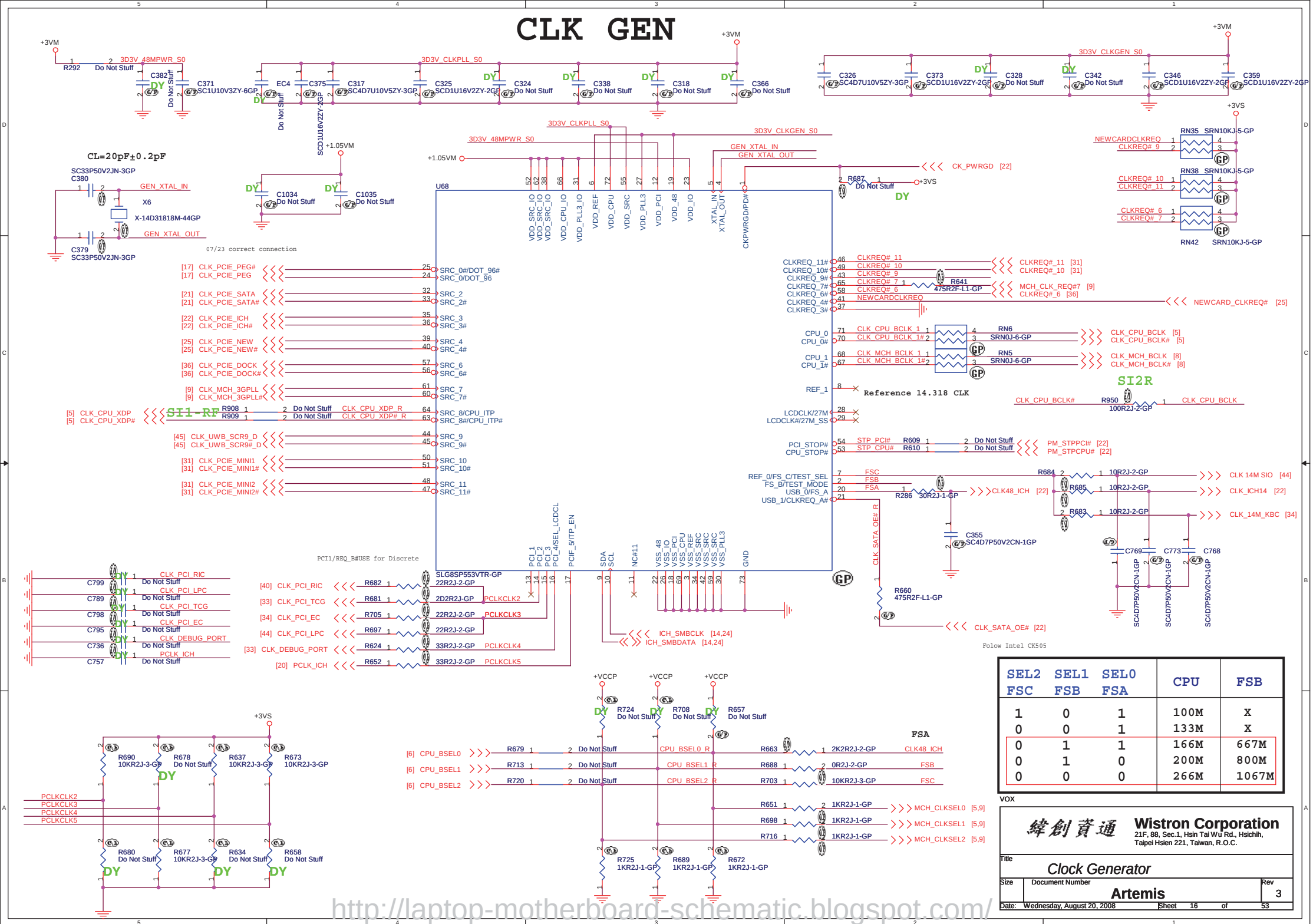
Place these Caps near DM2



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Title DDR2 Termination Resistor		
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CLK GEN



SEL2 FSC	SEL1 FSB	SEL0 FSA	CPU	FSB
1	0	1	100M	X
0	0	1	133M	X
0	1	1	166M	667M
0	1	0	200M	800M
0	0	0	266M	1067M

VOX

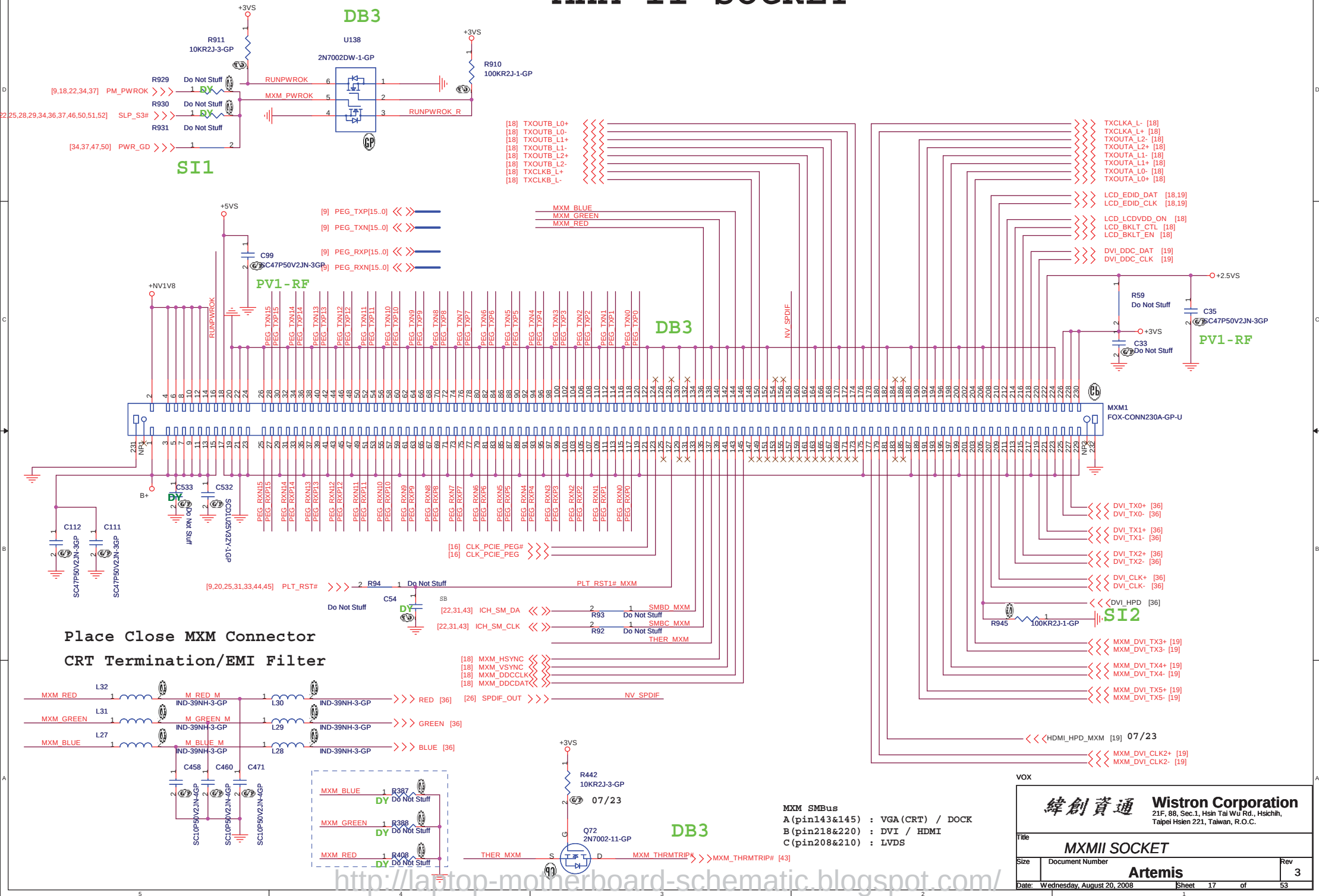
緯創資通 **Wistron Corporation**
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Title	<i>Clock Generator</i>
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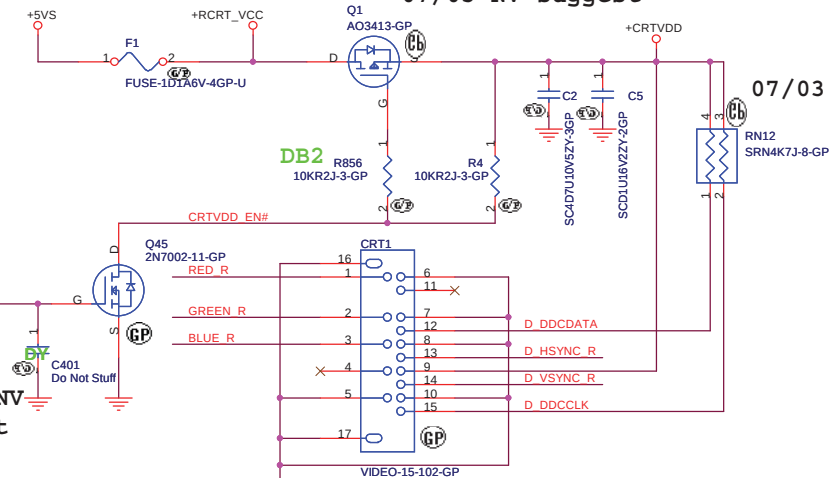
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MXM II SOCKET

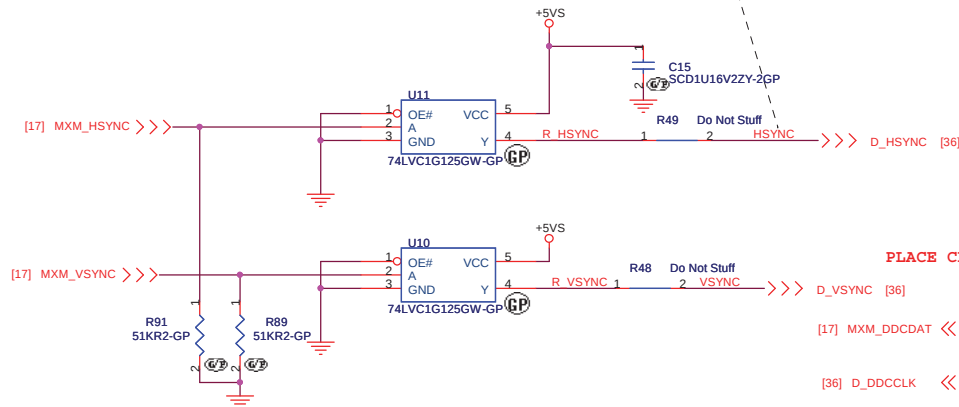


07/03



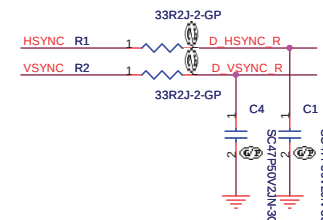
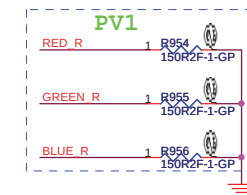
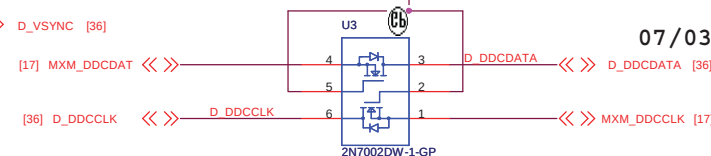
07/28

07/03 N
suggest

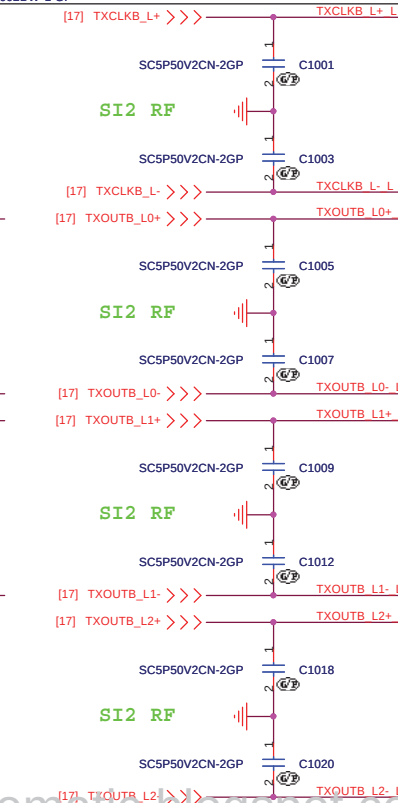
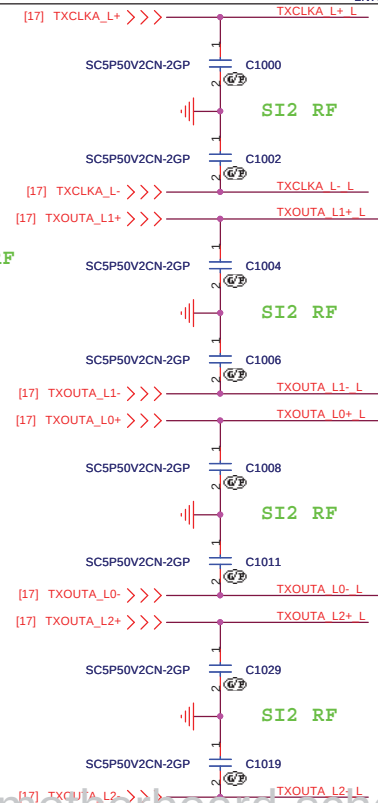
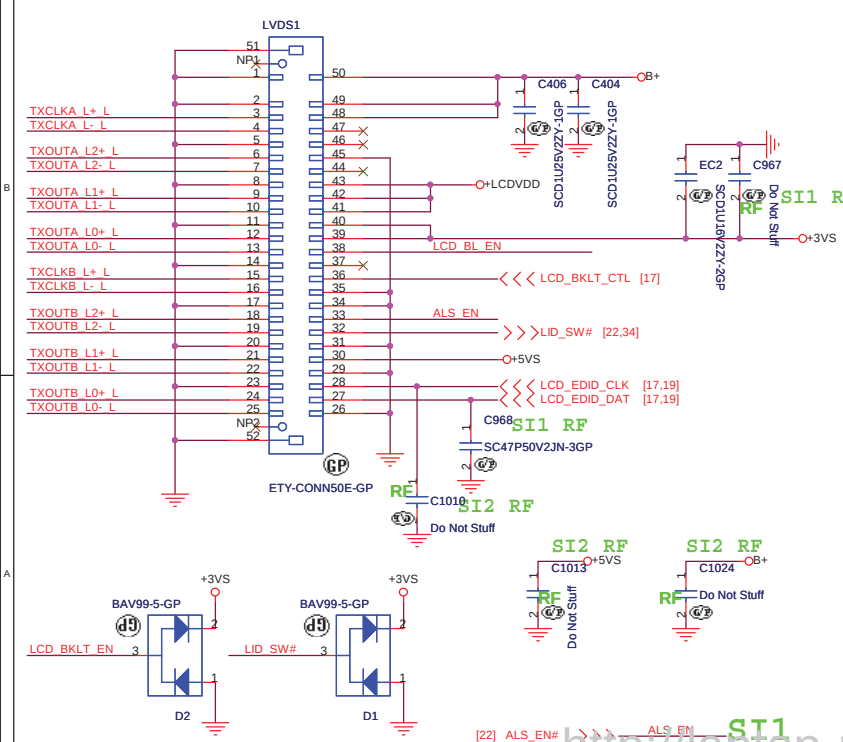
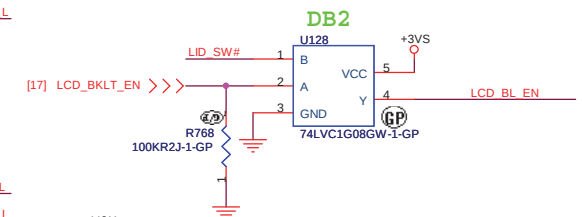
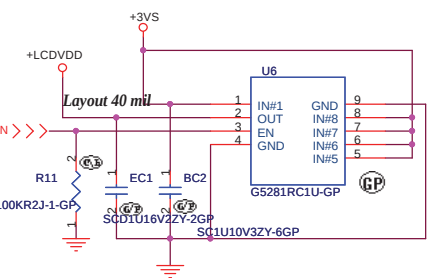


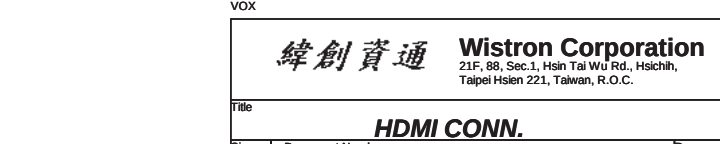
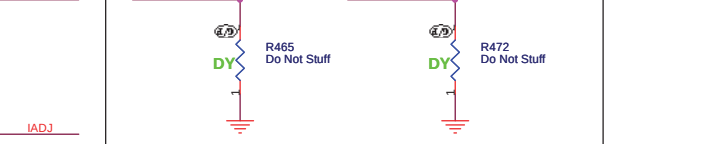
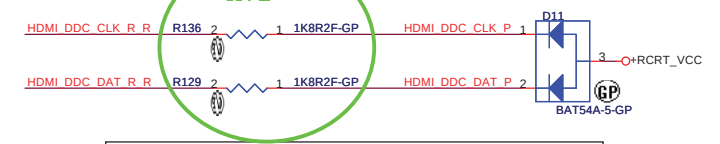
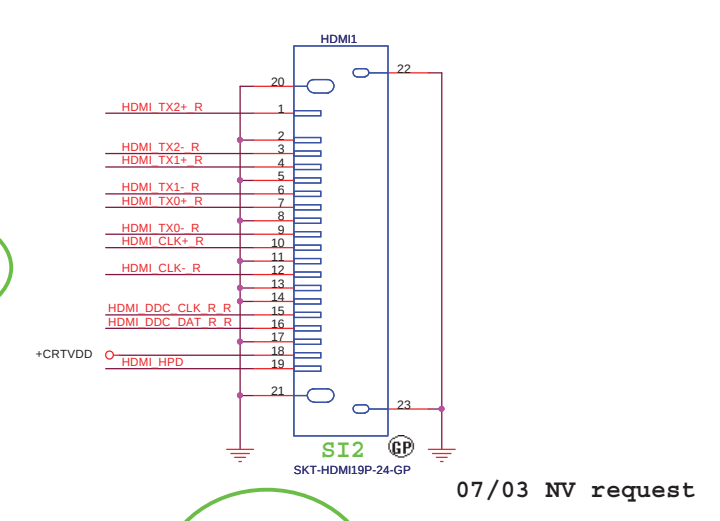
PLACE CLOSE TO DOCKING CONN

07/03

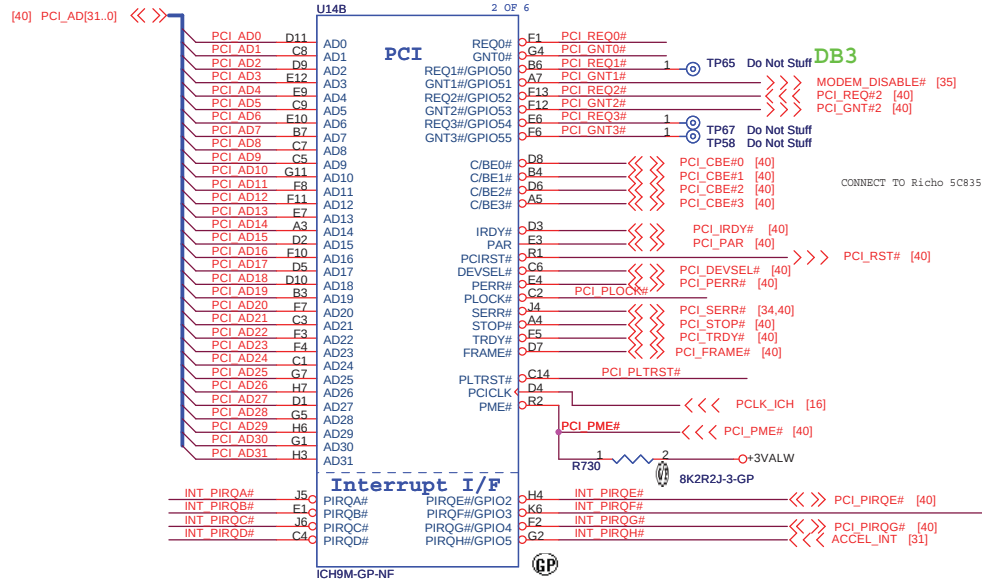
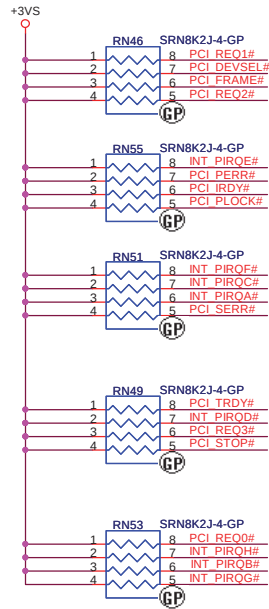


— [17] LCD_LCDVDD_ON >>>

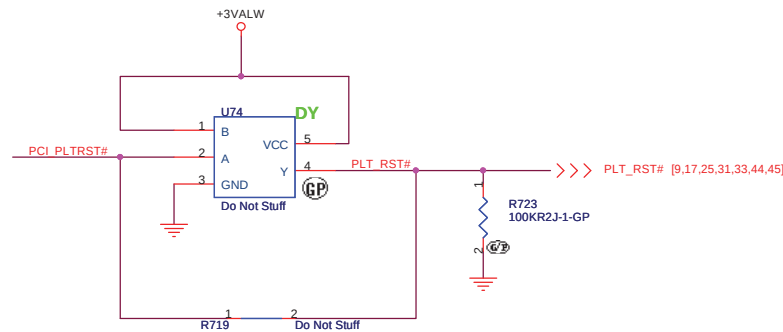




ICH9-M (1 of 5) PCI



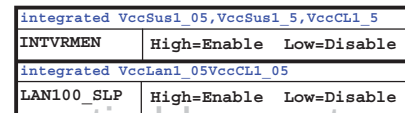
BOOT BIOS Strap		
PCI_GNT#0	SPI_CS#1	BOOT BIOS Location
0	1	SPT
1	0	PCI
1	1	LPC(Default)
A16 swap override strap		
PCI_GNT#3	low = A16 swap override enable high = default	



VOX

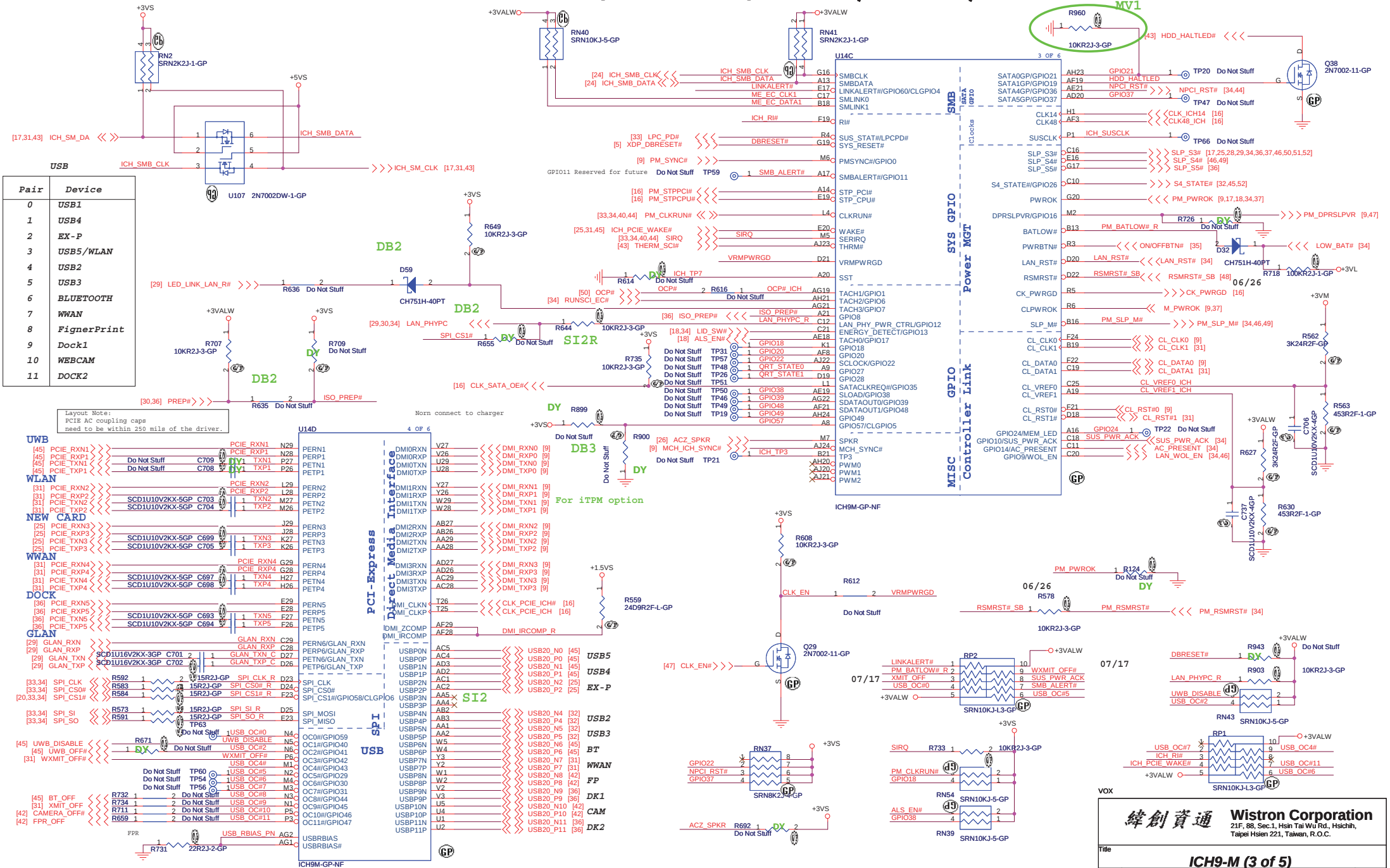
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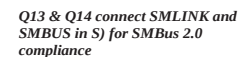
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ICH9-M (2 of 5) Artemis			
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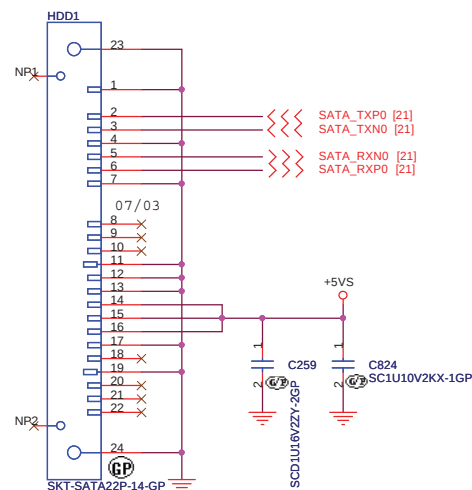
ICH9-M (3 of 5) USB/PCIE/DMI



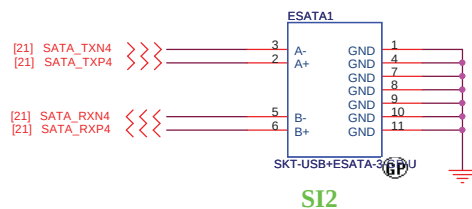


		Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
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ICH9-M (5 of 5)			
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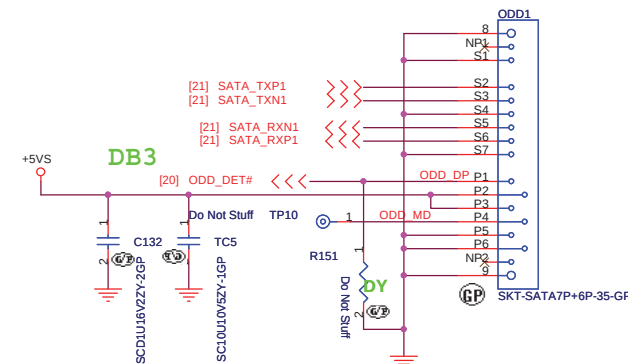
SATA HDD Connector



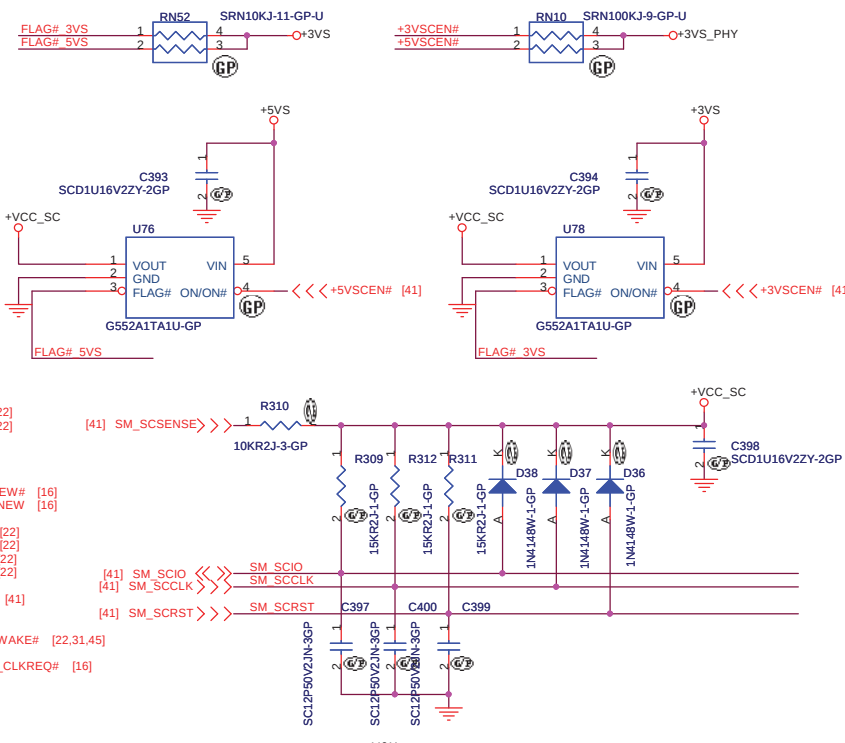
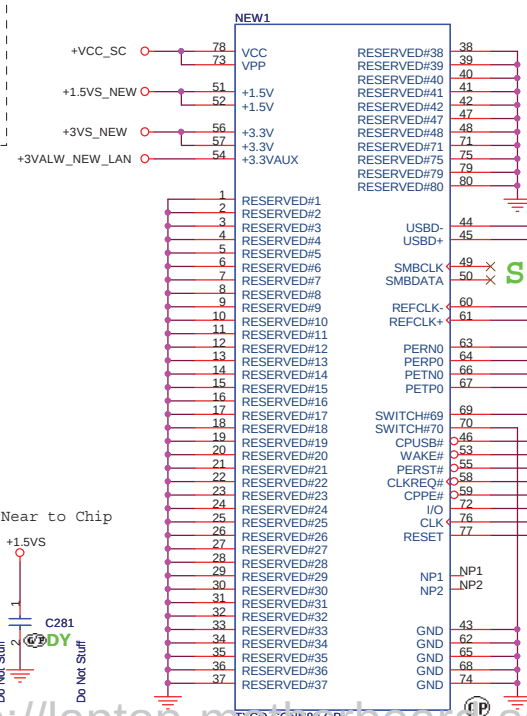
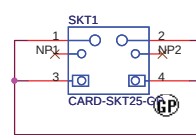
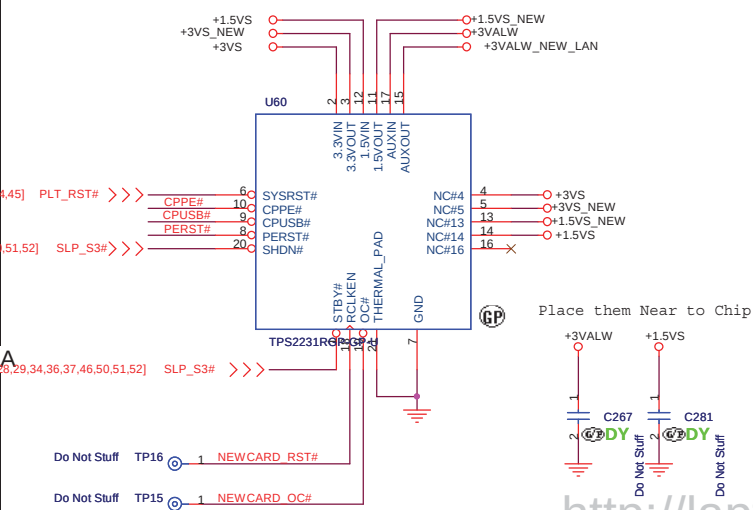
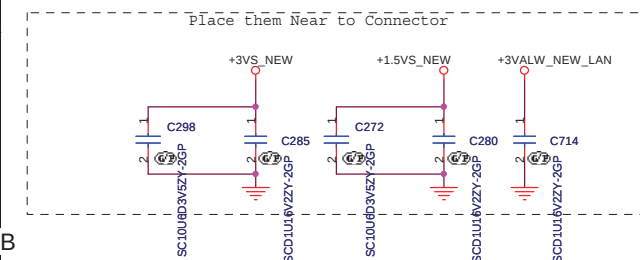
ESATA Connector

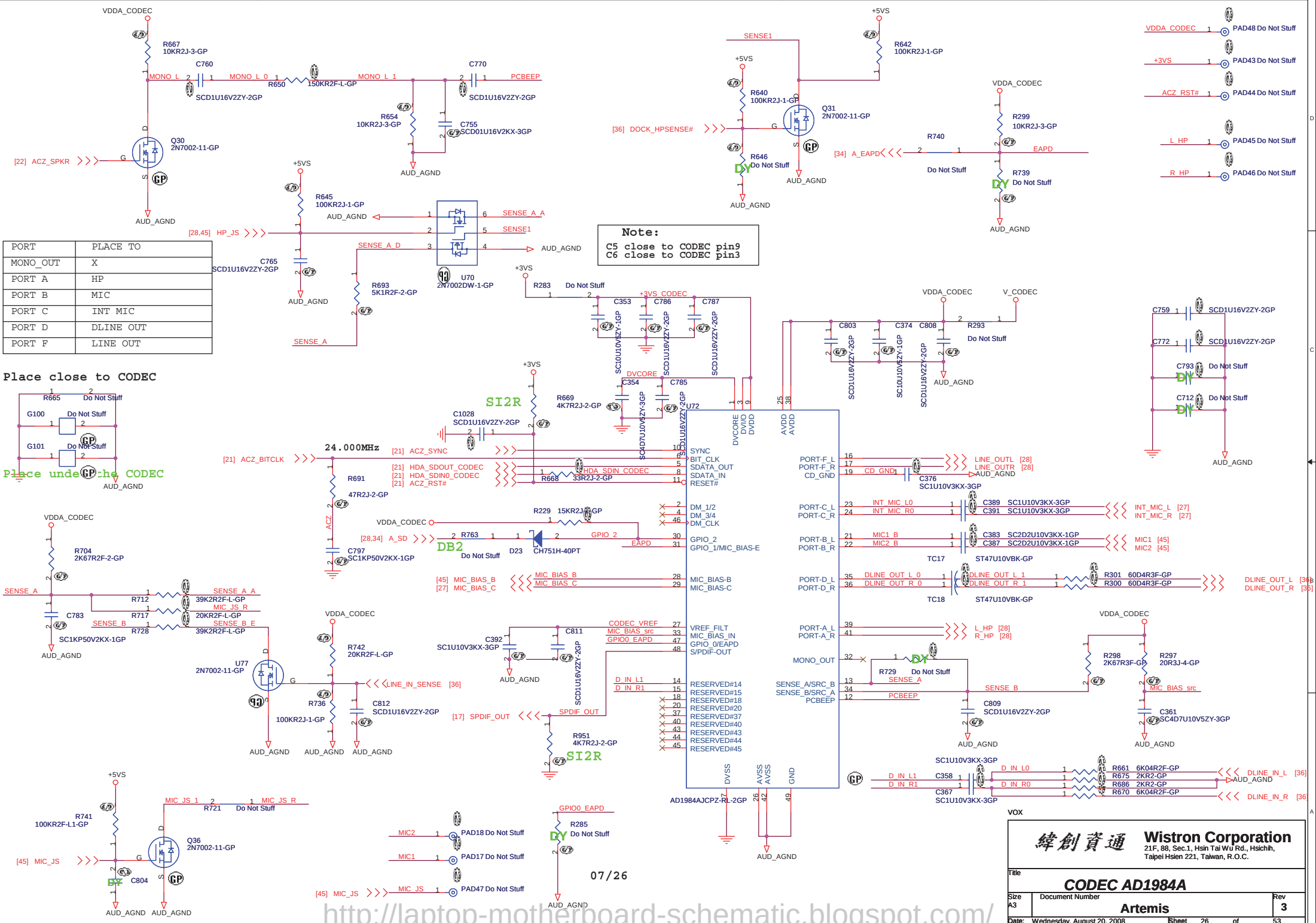


ODD Connector



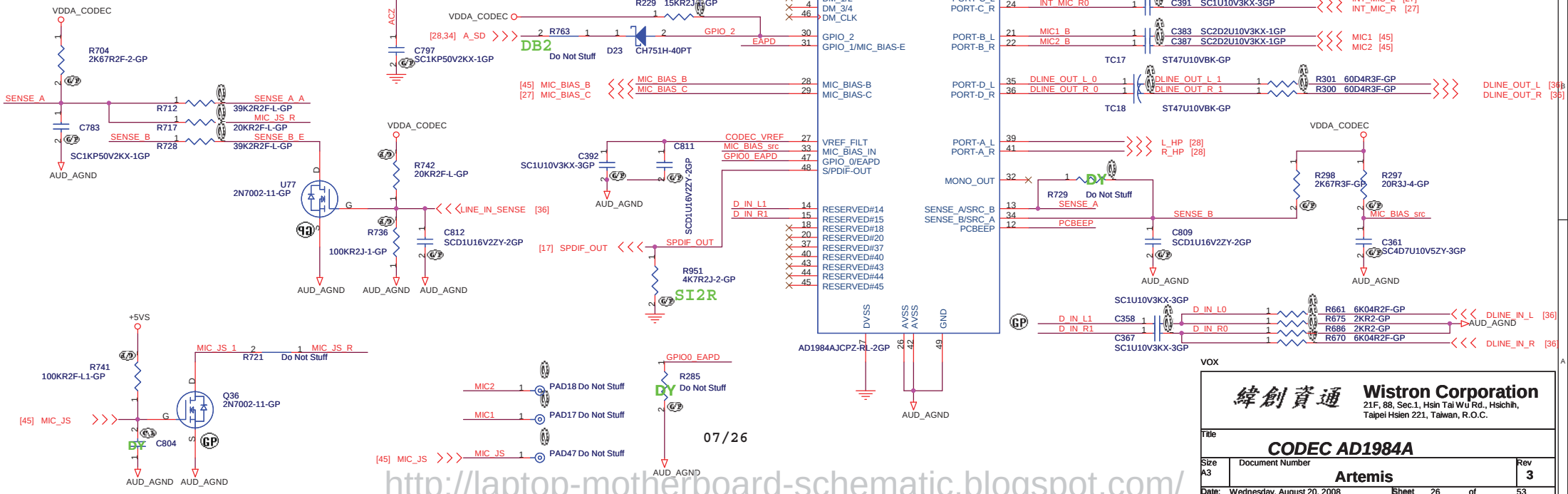
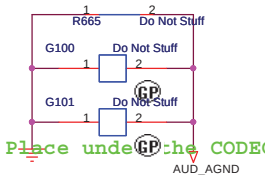
NEWCARD/SMART CARD Connector





PORT	PLACE TO
MONO_OUT	X
PORT A	HP
PORT B	MIC
PORT C	INT MIC
PORT D	DLINE OUT
PORT F	LINE OUT

Place close to CODEC



07/26

<http://laptop-motherboard-schematic.blogspot.com/>

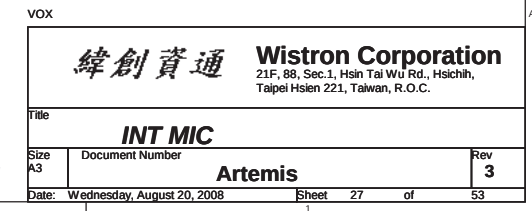
緯創資通

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Title			CODEC AD1984A		
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<http://laptop-motherboard-schematic.blogspot.com/>



SI2R

+5VS

R291 0R5J-5-GP

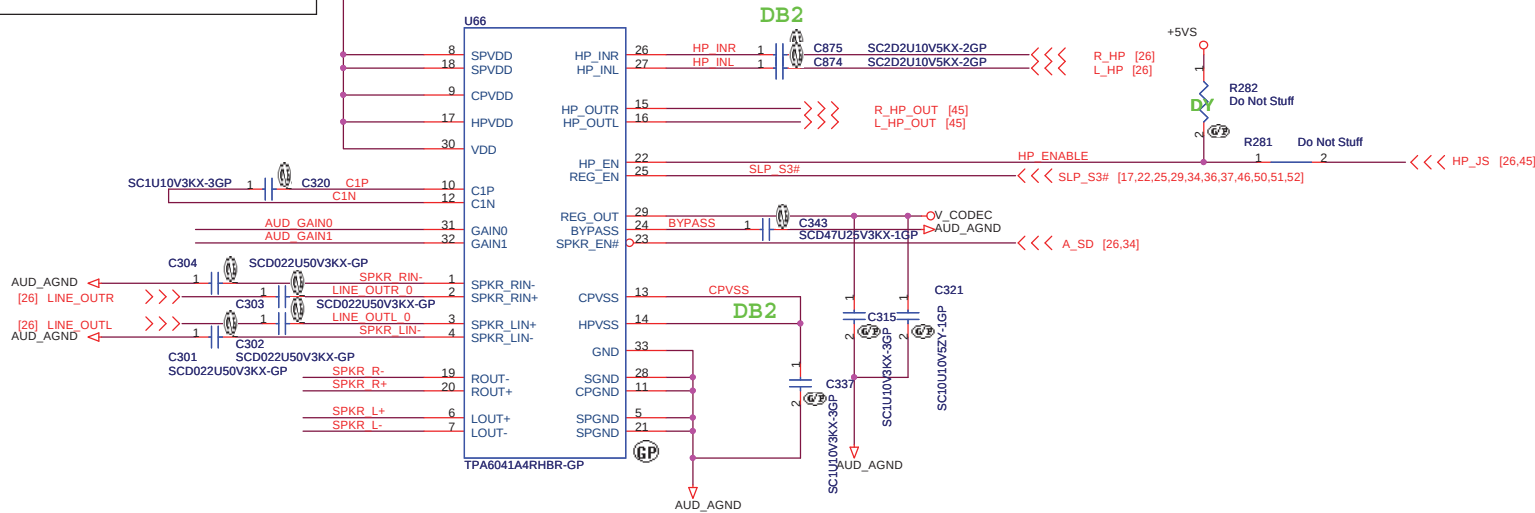
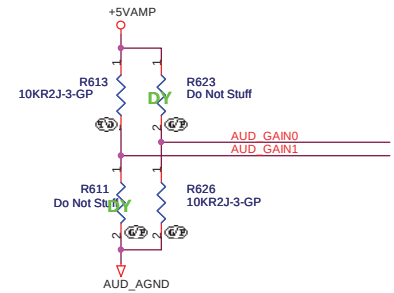
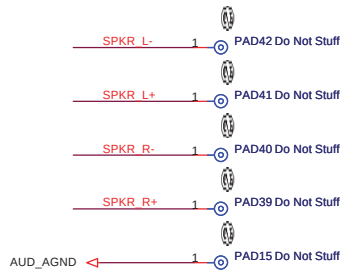
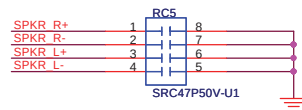
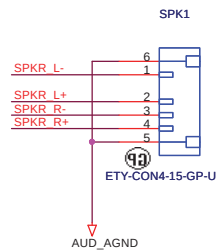
+5VAMP

Note:

pin8, pin9 and pin17, pin18
are in opposite corners of U3010

pin17, pin18 together and C26, C27
very close to the pins
pin8, pin9 together and C28, C29
very close to the pins

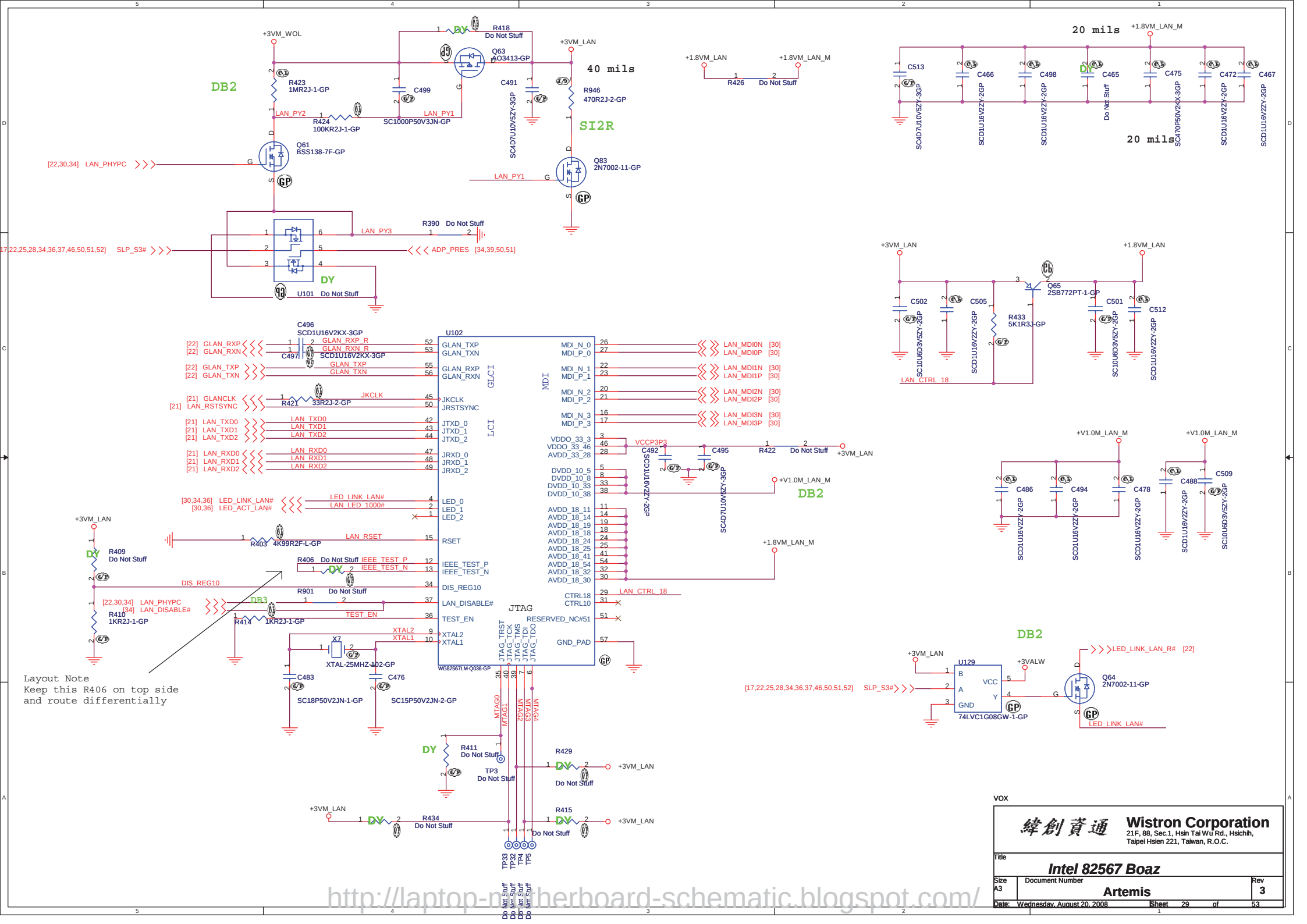
C32 close to the pin30

**Speaker CONN.**

VOX

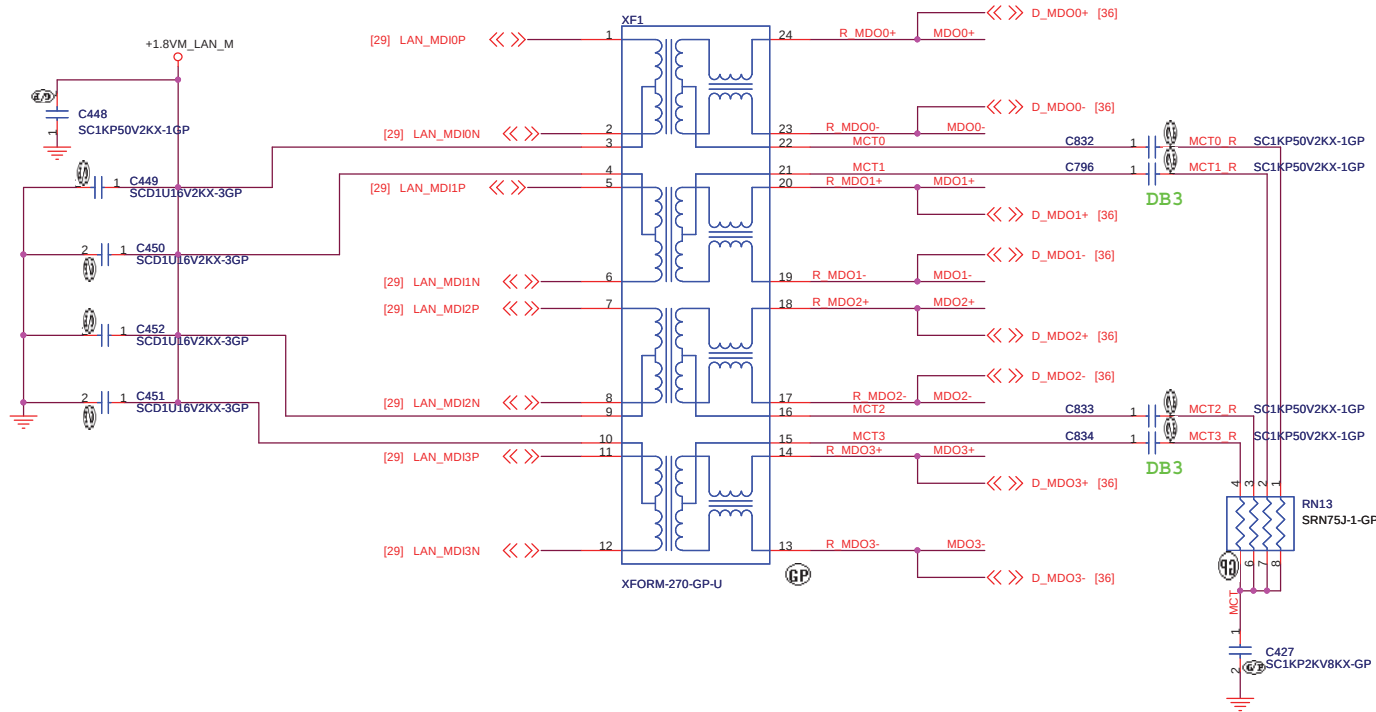
緯創資通 **Wistron Corporation**
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Title		
AMP & SPEAKER		
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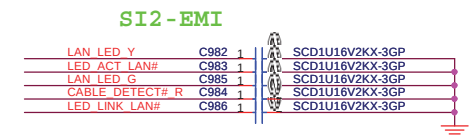
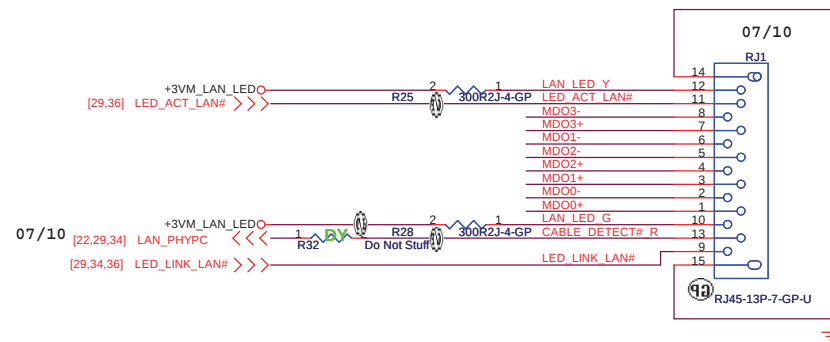
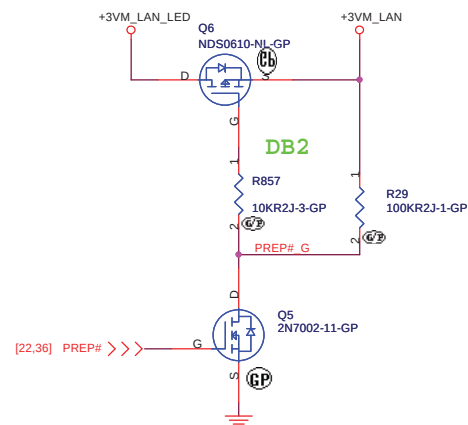


Layout Note
Keep this R406 on top side
and route differentially

Note : MDO[3..0]+- signals should route to RJ45 first then to DOCK CONN .



LAN ENERGY DET



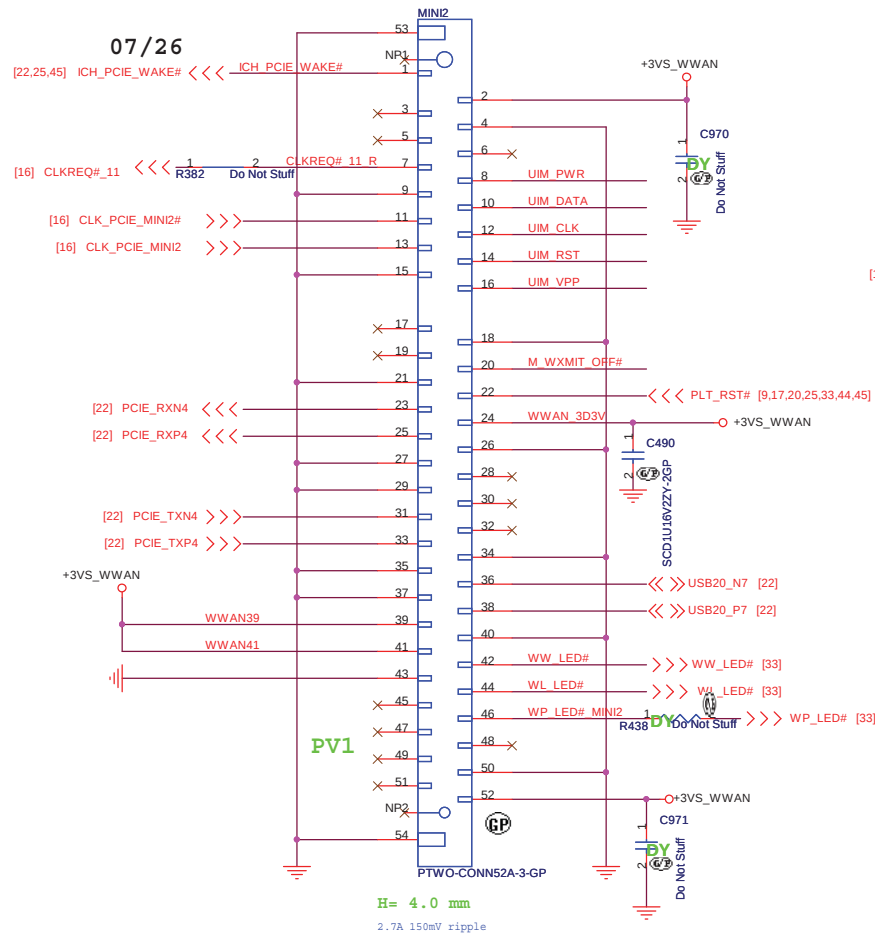
VOX

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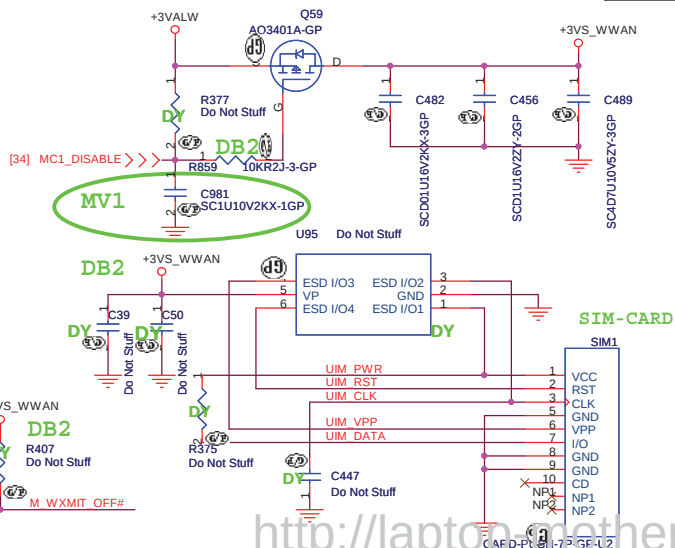
Title			
Magnetic & RJ45			
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Mini-Card--WWAN BOTTOM

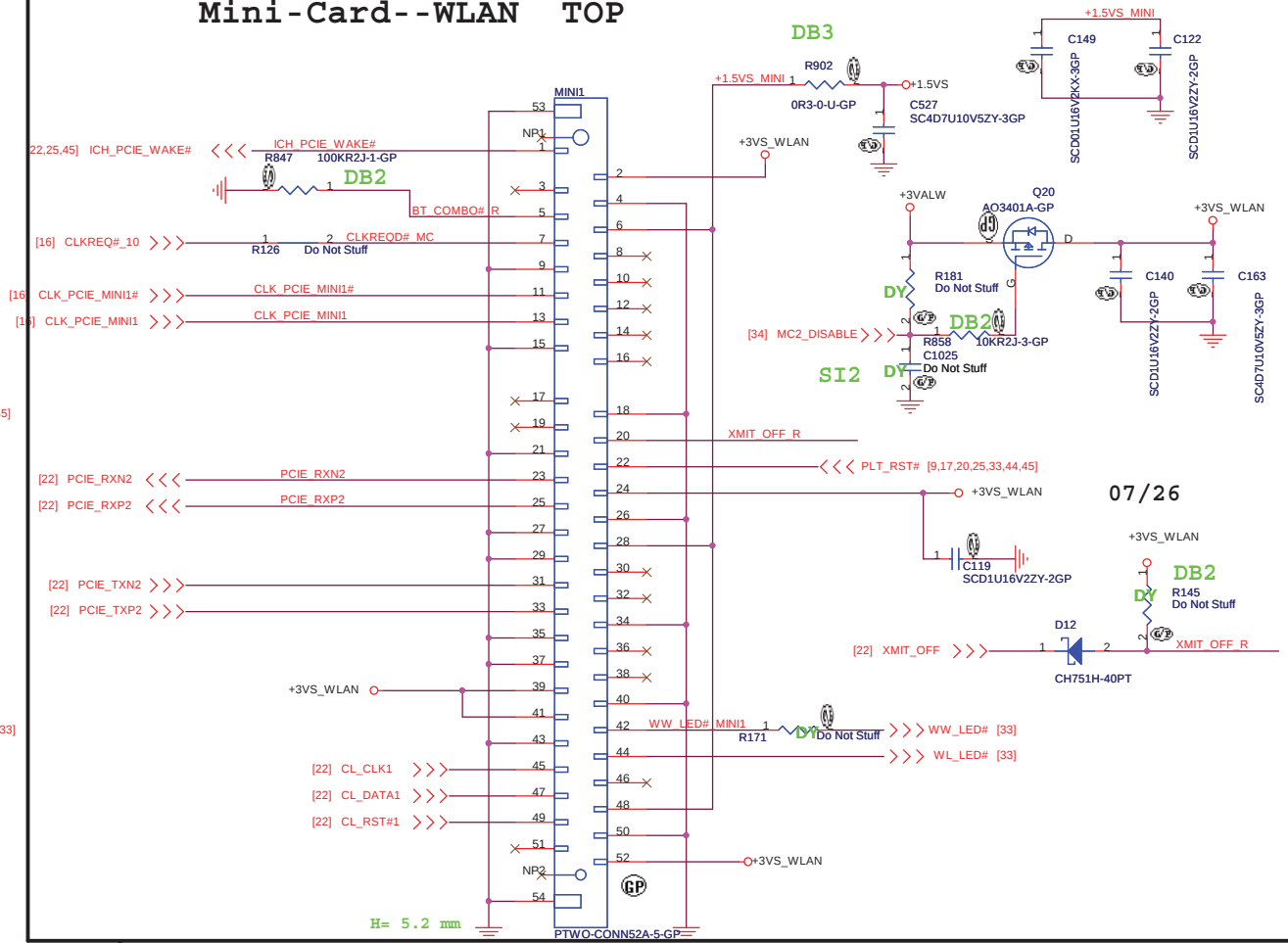
07 / 26



H= 4.0 mm
2.7A 150mV ripple



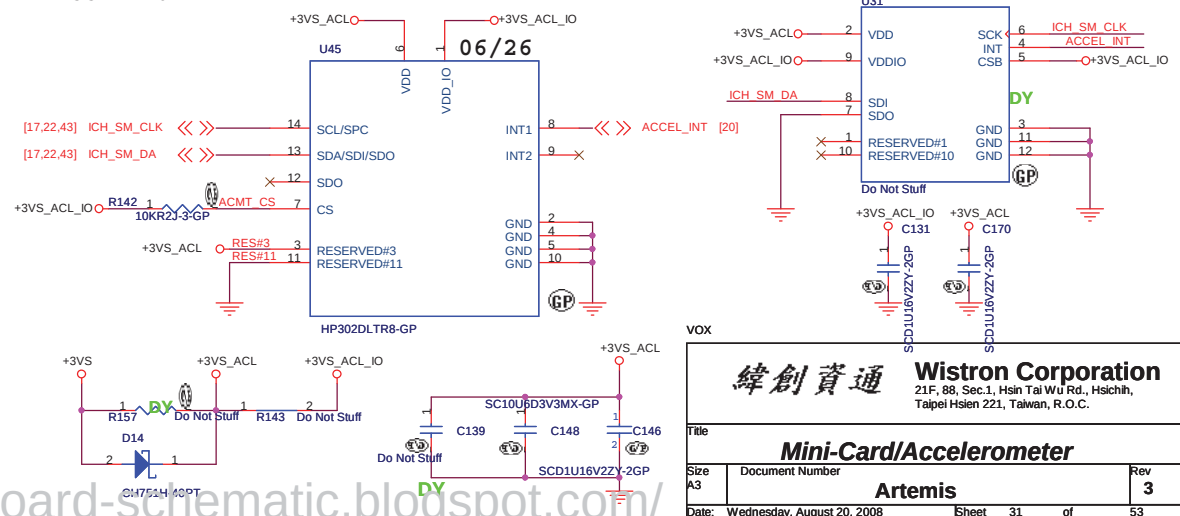
Mini-Card--WLAN TOP



H= 5.2 mm

ACCELEROMETER Must be placed in the center of the system

1 06/26

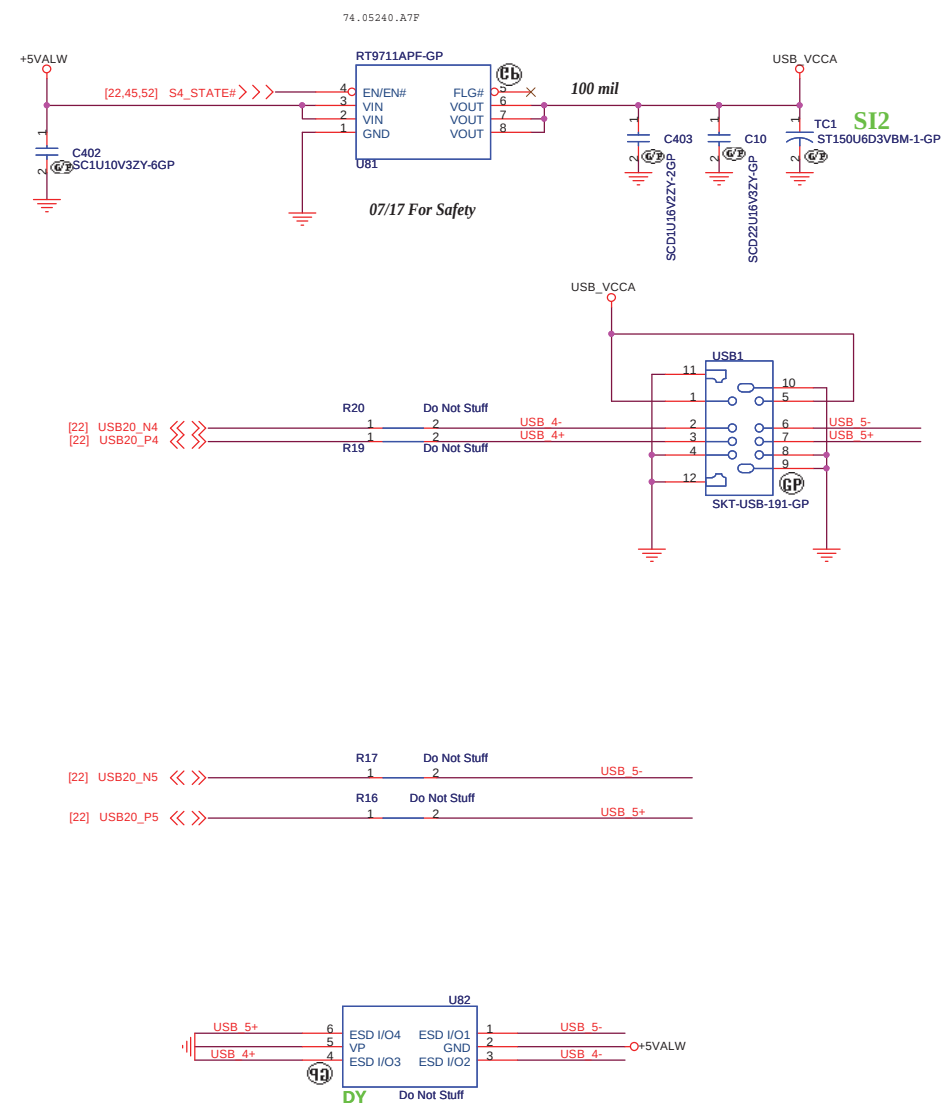


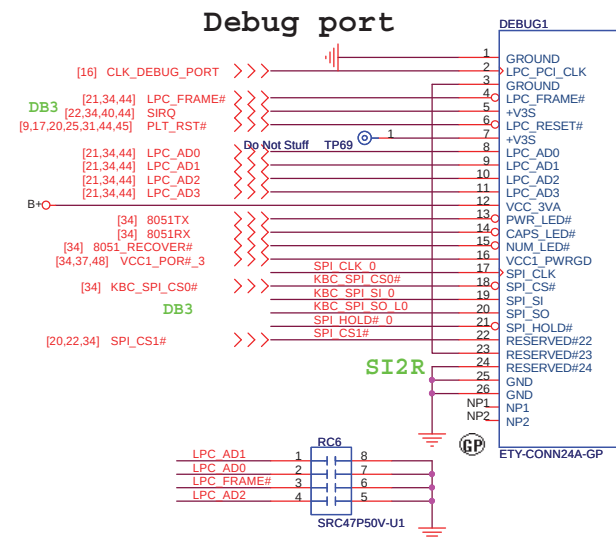
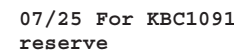
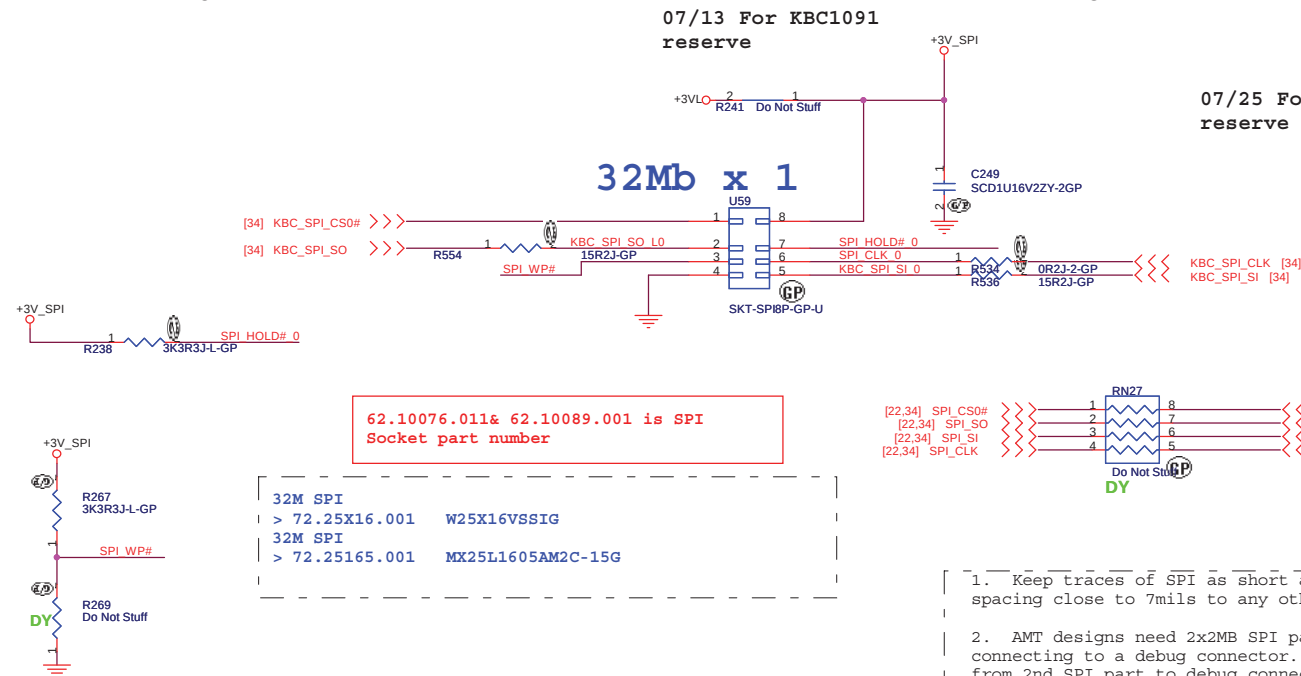
07/12

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

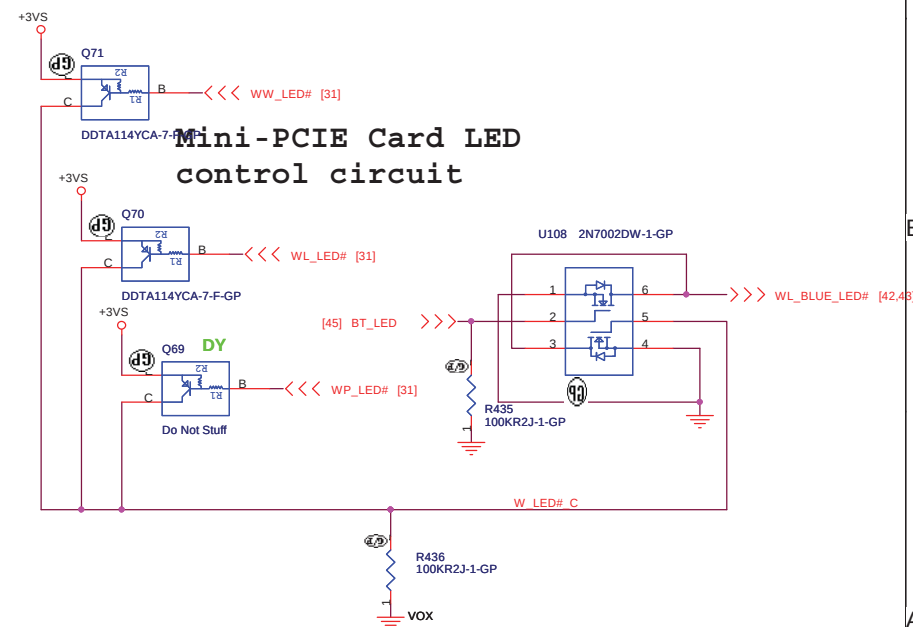
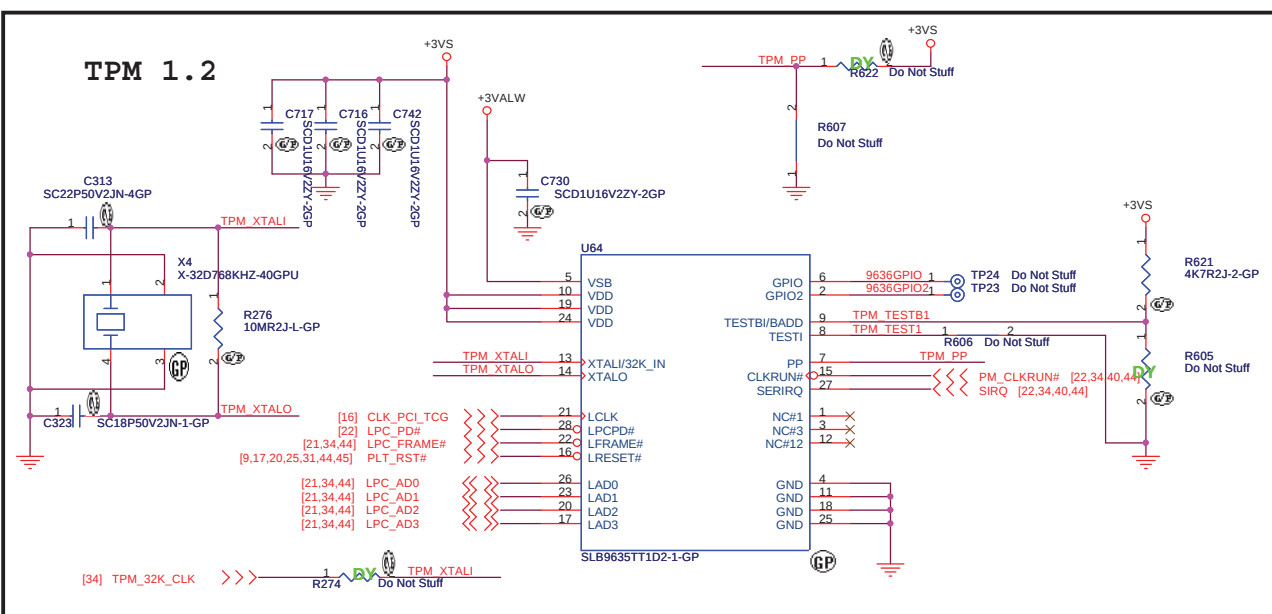
Title			
Mini-Card/Accelerometer			
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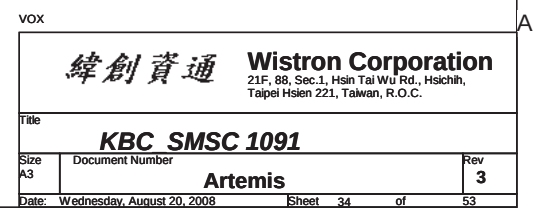
74.02231.073-->74.00577.A73,74.05538.073
2462--G1224



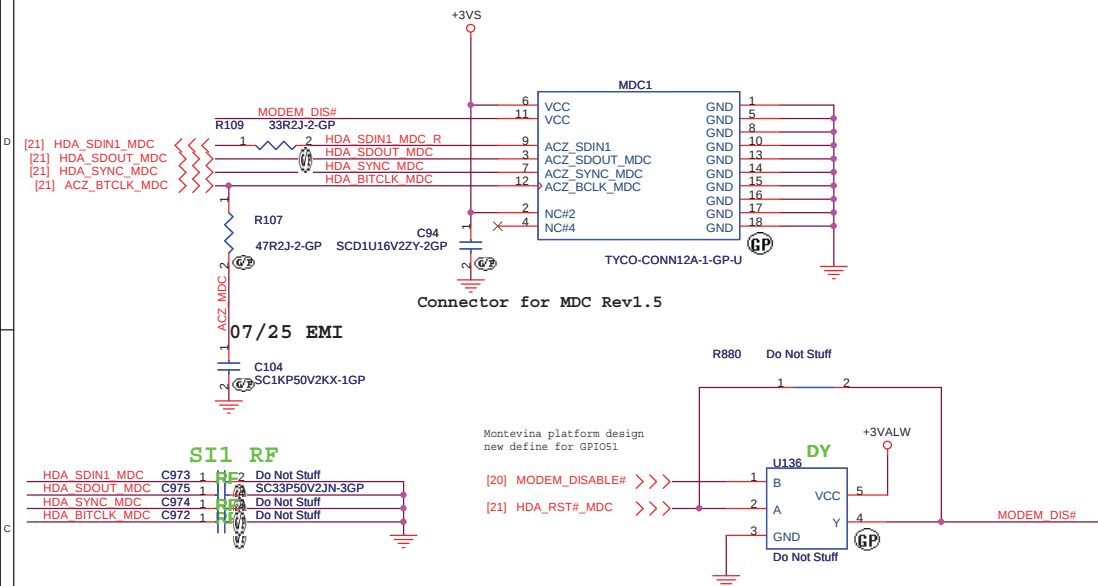


1. Keep traces of SPI as short as possible and keep trace spacing close to 7mils to any other signal (basically follow specs).
2. AMT designs need 2x2MB SPI parts in addition to connecting to a debug connector. Keep stuffing options from 2nd SPI part to debug connector very close to 2nd part so stub effect can be eliminated during testing as needed.

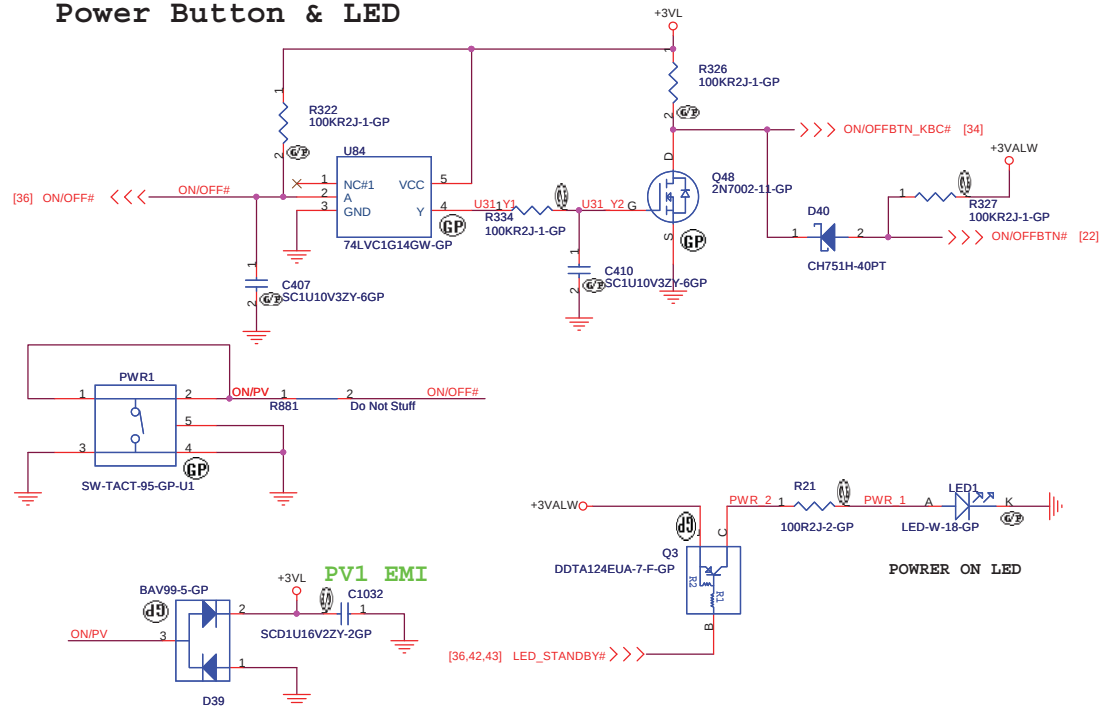




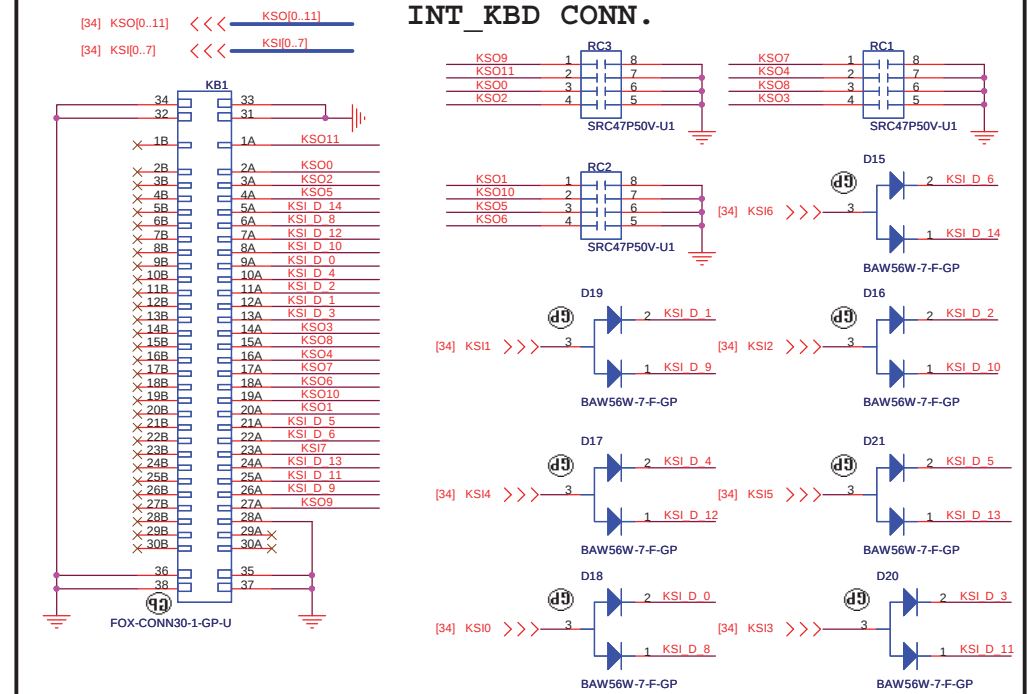
MDC 1.5 Conn.



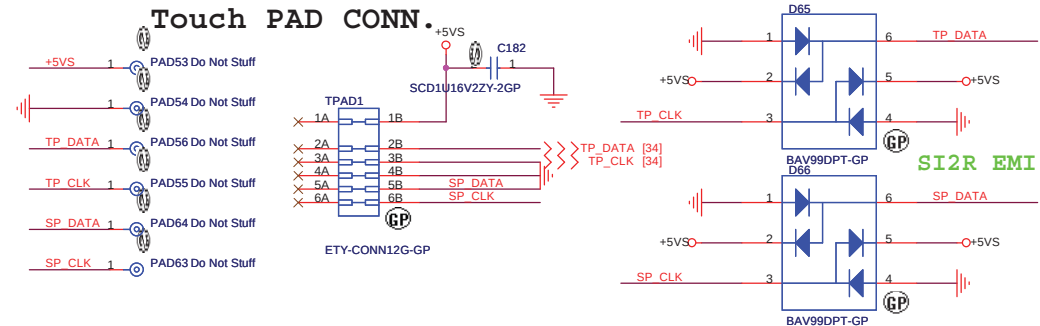
Power Button & LED



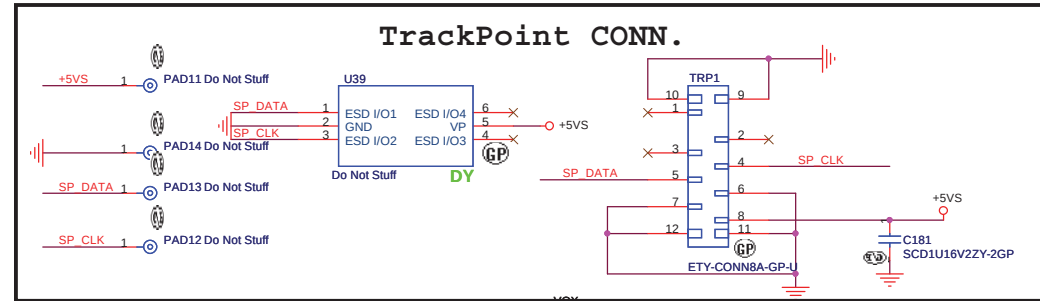
INT KBD CONN.

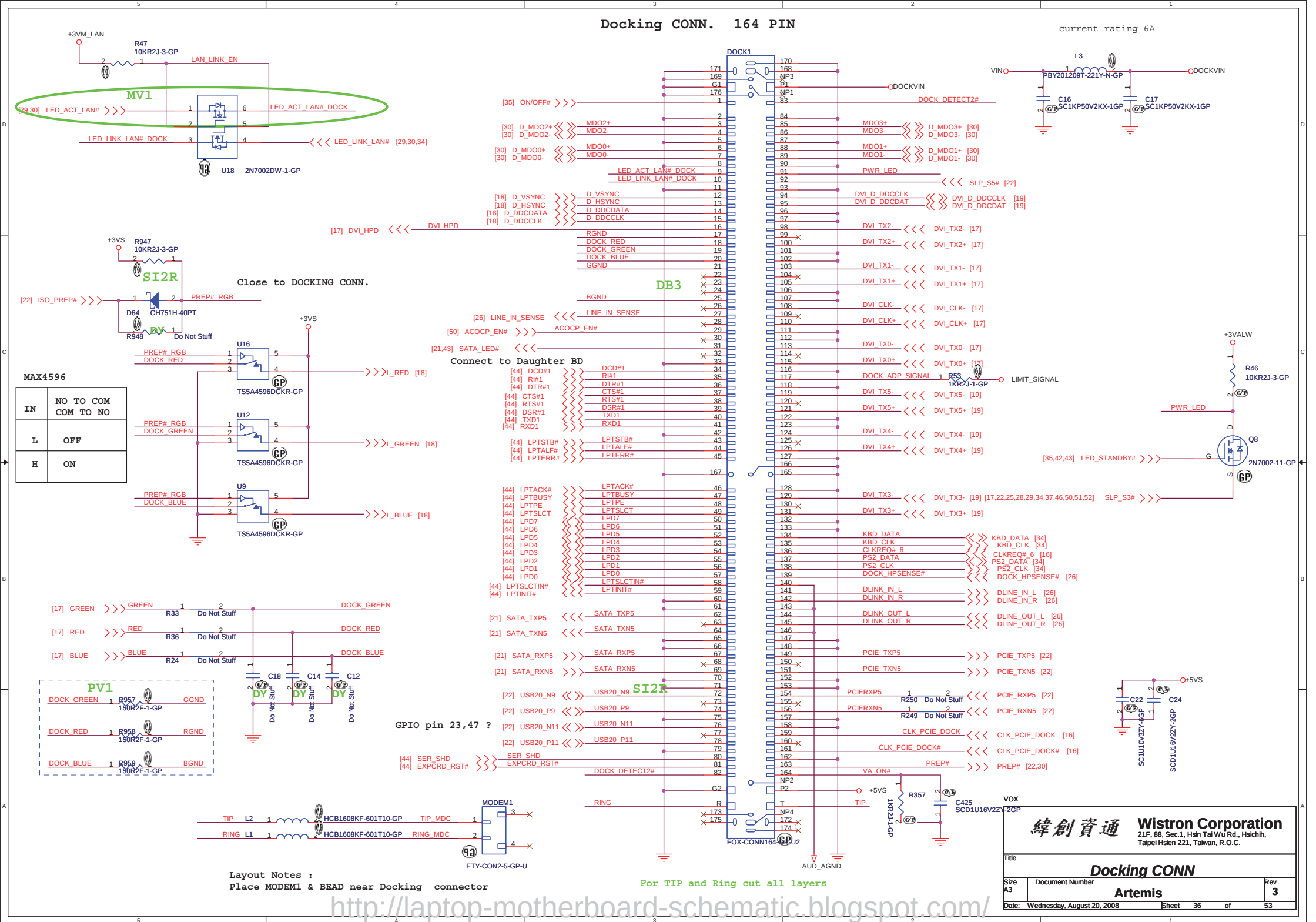


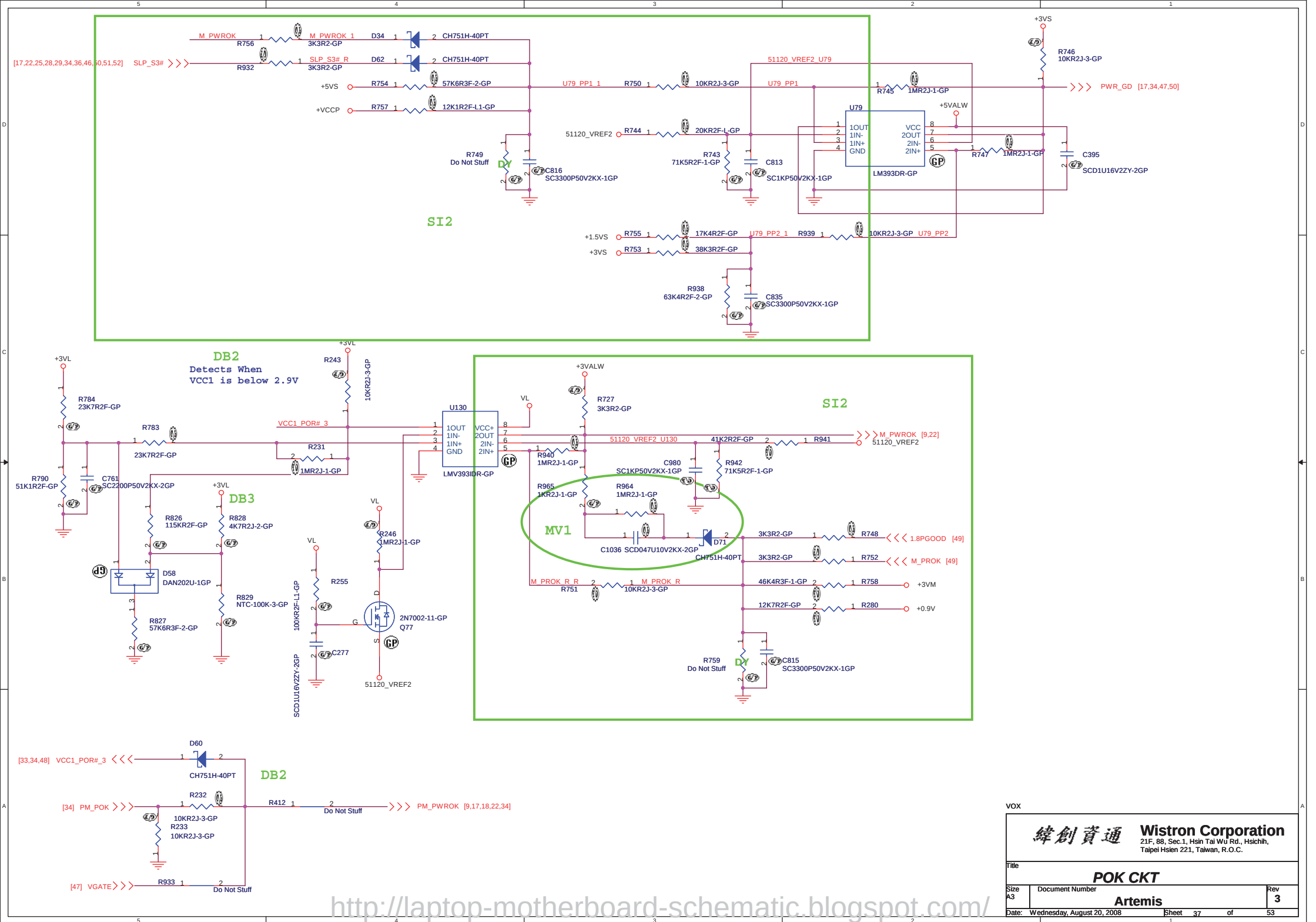
Touch PAD CONN.



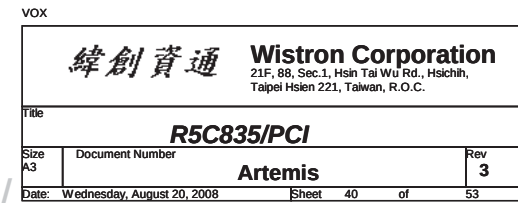
TrackPoint CONN.







top-motherboard-schematic.blogspot.com/



RICOH R5C835 (2 OF 2)

Layout notes :
1394

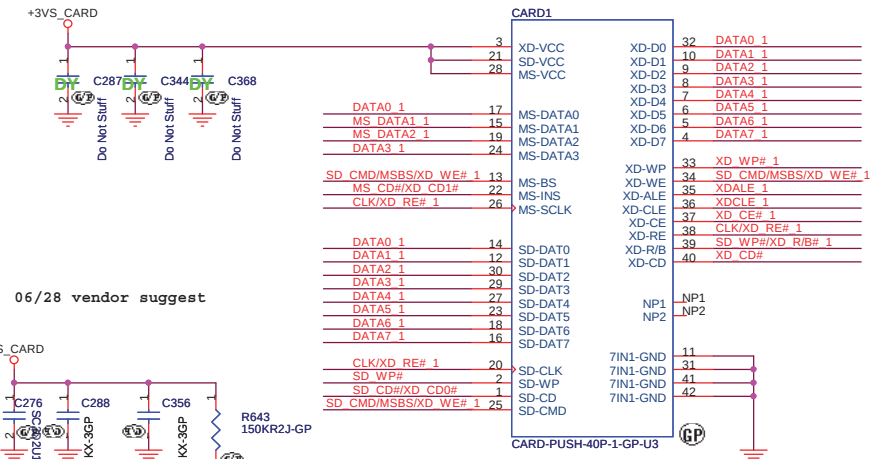
=====GND
-----TPB0-
-----TPB0+
-----GND
-----TPA0-
-----TPA0+
=====GND

06/28 vendor suggest

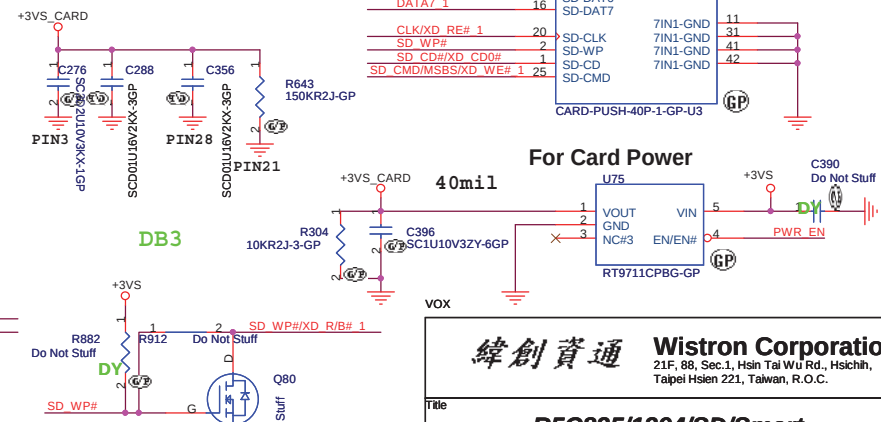
TPA0P R222 1 2 Do Not Stuff TPA0+
TPA0N R223 1 2 Do Not Stuff TPA0-
TPB0P R215 1 2 Do Not Stuff TPB0+
TPB0N R216 1 2 Do Not Stuff TPB0-

TPB0P R215 1 2 Do Not Stuff TPB0+
TPB0N R216 1 2 Do Not Stuff TPB0-

SD/MS/XD CARD Connector



06/28 vendor suggest

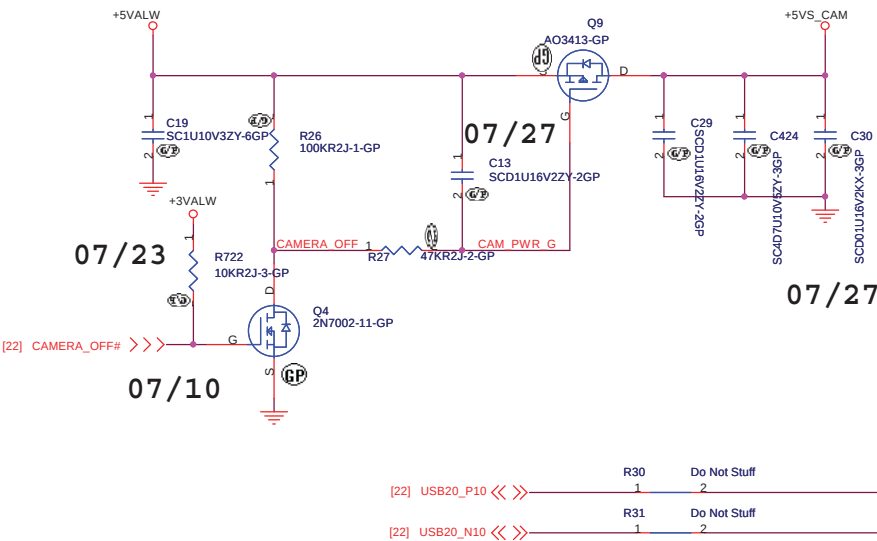


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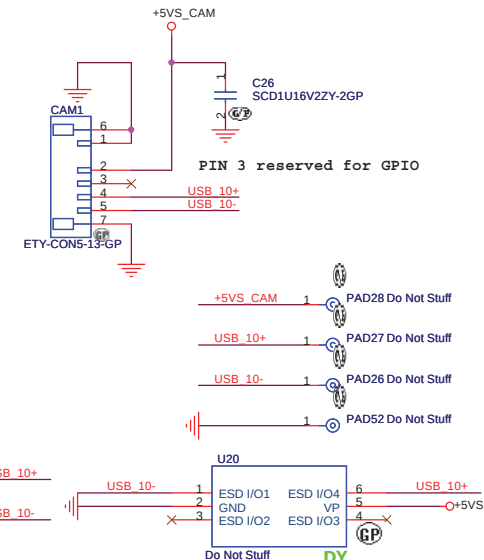
R5C835/1394/SD/Smart

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CAMERA



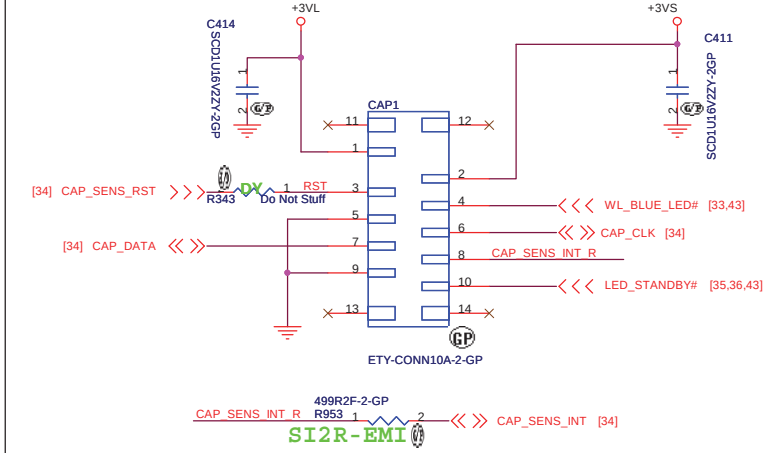
CAMERA Conn.



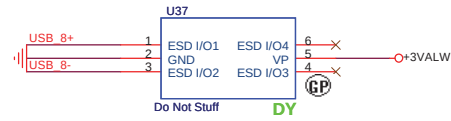
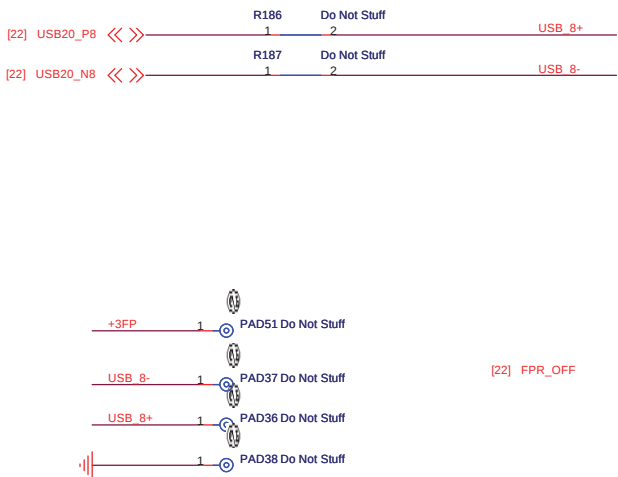
SYSTEM CAPACITY BOARD

Vol up , Vol down , Mute , Presentation

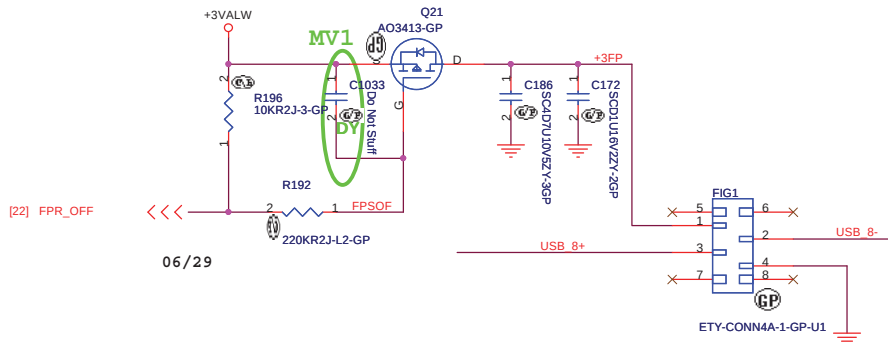
PIN 3 reserved for GPIO



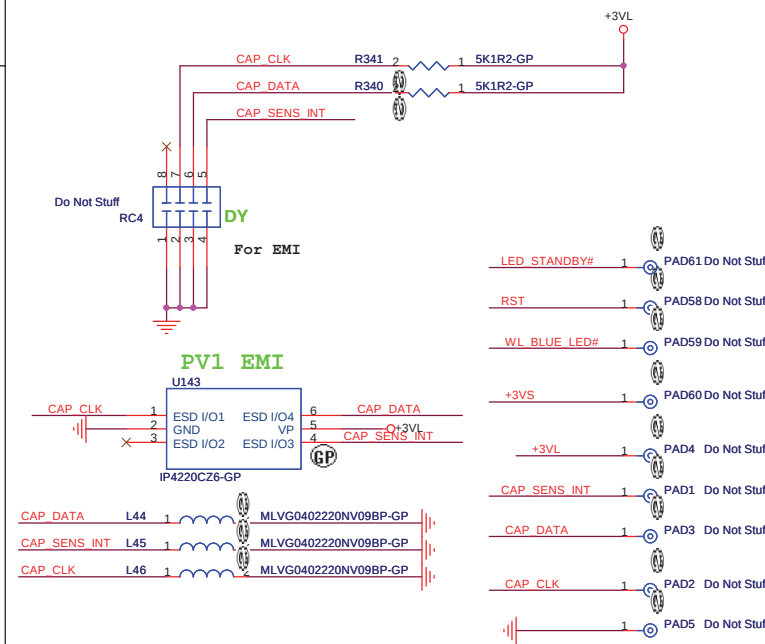
FingerPrint



3VALW FOR XP , 3VS FOR Vista



FingerPrint Conn.



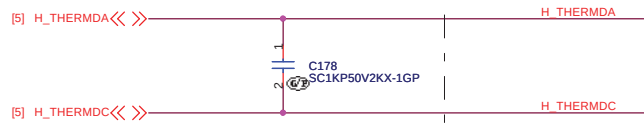
VOX

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Thermal Sensor

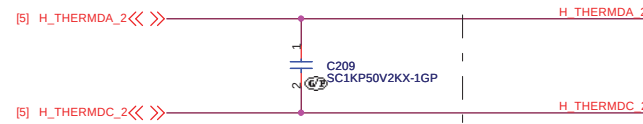
CPU TEMP:

H_THERMDA and H_THERMDC routing 10mil trace width and spacing. Locate Capacity near ADT7473.

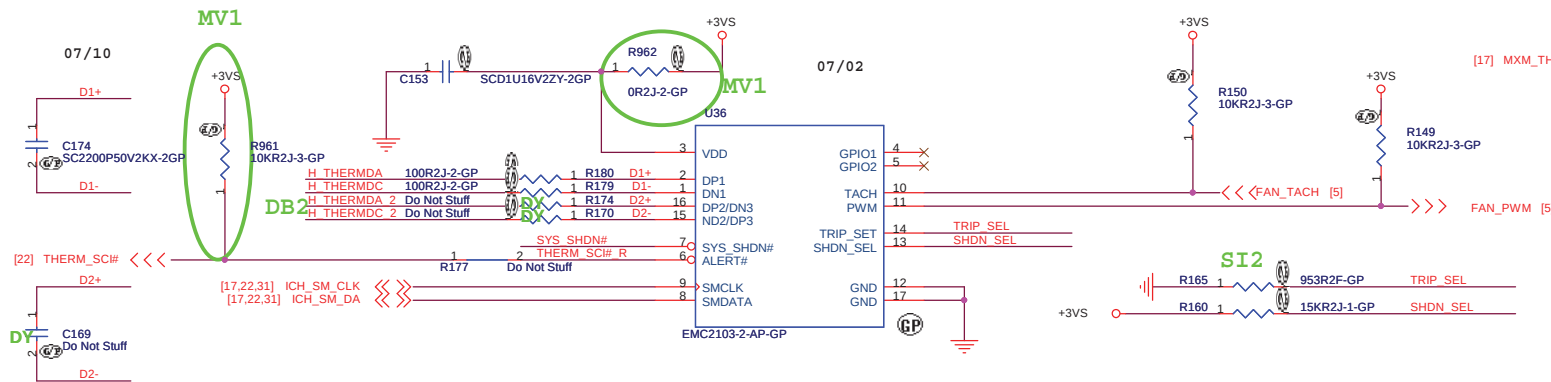


CPU TEMP:

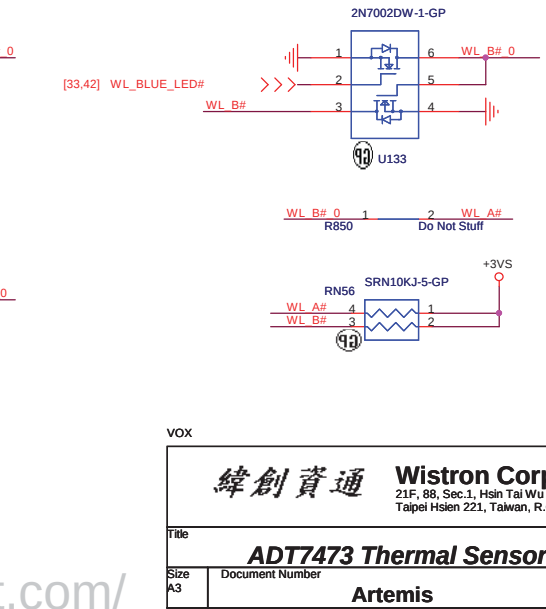
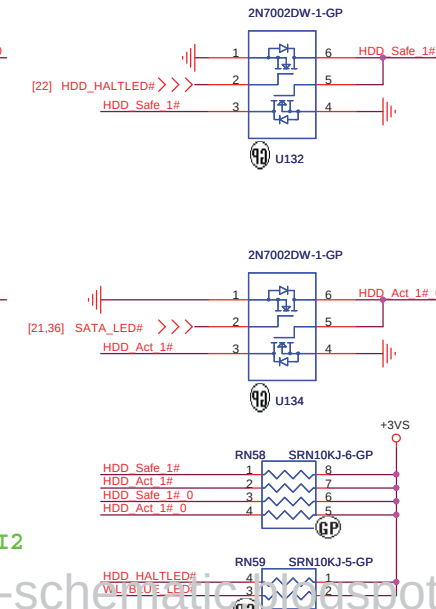
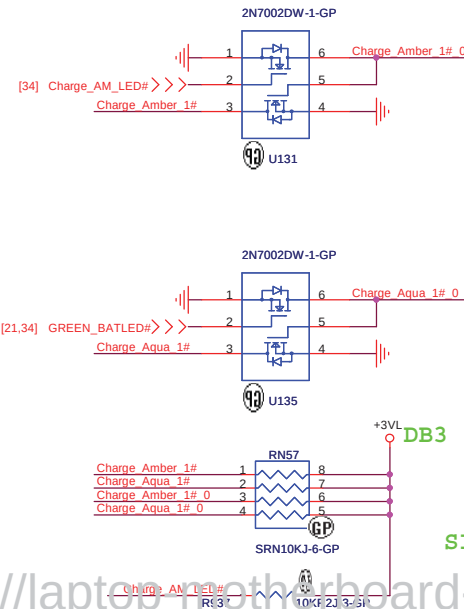
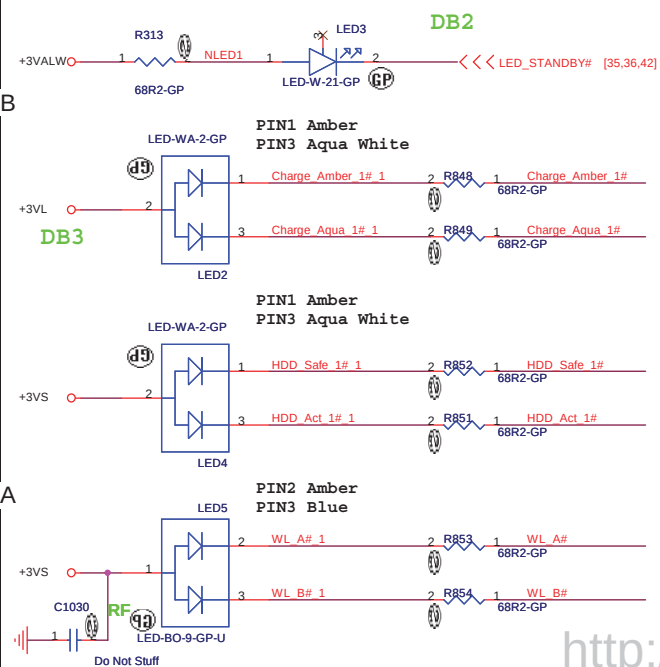
H_THERMDA and H_THERMDC routing 10mil trace width and spacing. Locate Capacity near ADT7473.



DB3 Change Power to 3VS for A009 issue



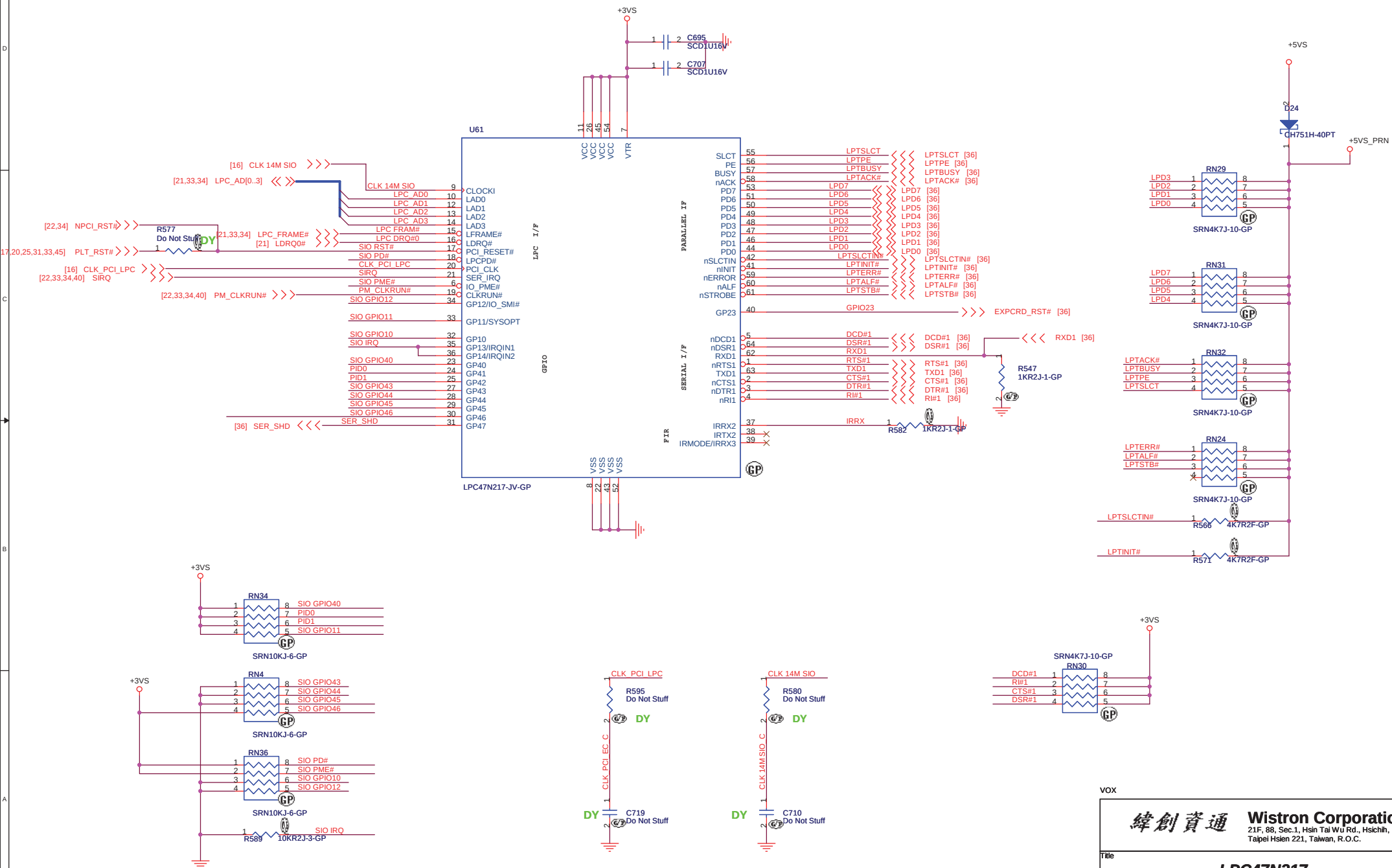
LED



VOX

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Title	
ADT7473 Thermal Sensor	
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SIO



VOX

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LPC47N217			
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[illegible]

EMI SI1

+5VALW

C914

SCD1U16V2Z-2GP

[26] MIC1 >>> 10

[26] MIC2 >>> 11

[26] MIC_BIAS_B >>> 13

[26] MIC_JS >>> 14

AUD_AGN2 >>> 16

AUD_AGN1 >>> 17

USB20_P0 [22] >>> 29

USB20_P1 [22] >>> 28

USB20_N1 [22] >>> 27

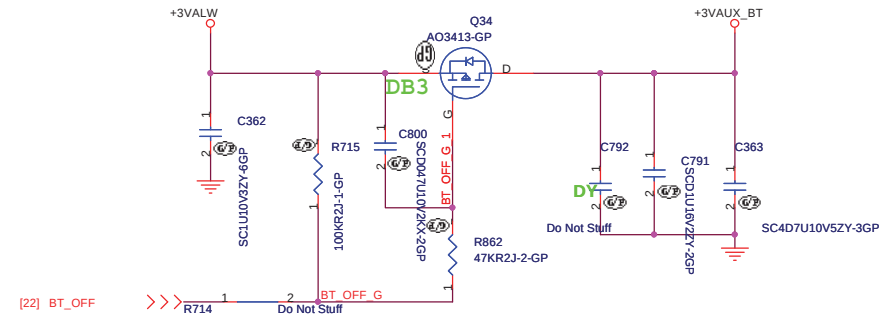
VDDA_CODECS HP_JS [26,28] >>> 23

L_HP_OUT [28] >>> 18

R_HP_OUT [28] >>> 17

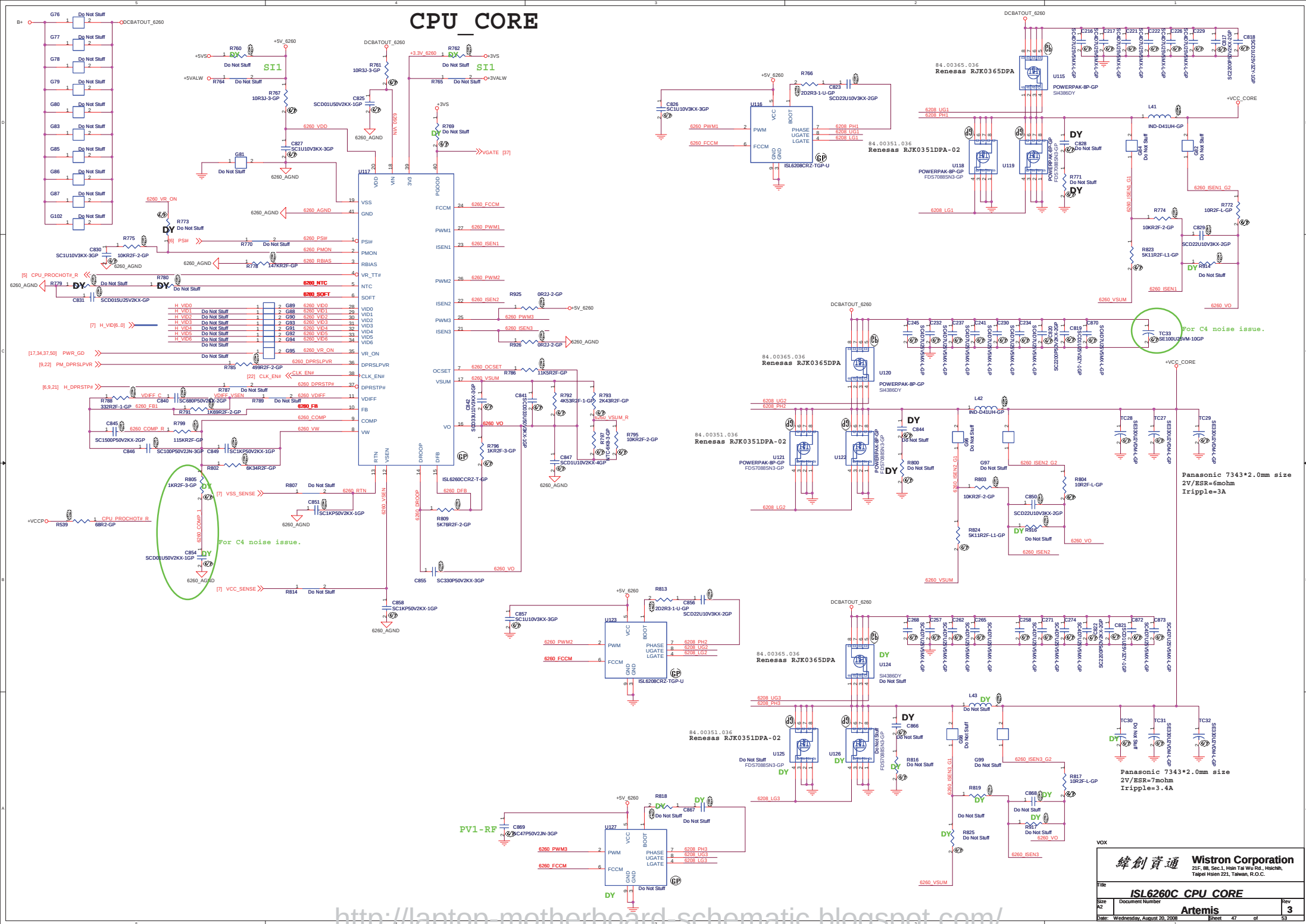
ANALOG

The schematic shows the BT Connector (BT1) and the USB20 connector (U69). The BT Connector is a 10-pin connector with pins 1 through 8 labeled. Pin 1 is connected to +3VAUX_BT. Pin 2 is connected to USB20_P6. Pin 3 is connected to USB20_N6. Pin 4 is connected to BT_LED_R. Pin 5 is connected to USB20_P6 [22]. Pin 6 is connected to USB20_N6 [22]. Pin 7 is connected to BT_LED_R. Pin 8 is connected to USB20_P6 [22]. Pin 9 is connected to +3VAUX_BT. Pin 10 is connected to GND. The USB20 connector (U69) is a 6-pin connector with pins 1 through 6 labeled. Pin 1 is connected to USB20_P6. Pin 2 is connected to GND. Pin 3 is connected to USB20_N6. Pin 4 is connected to +5VALL. Pin 5 is connected to USB20_P6. Pin 6 is connected to USB20_N6. The USB20 connector is labeled "Do Not Stuff" and "DY".

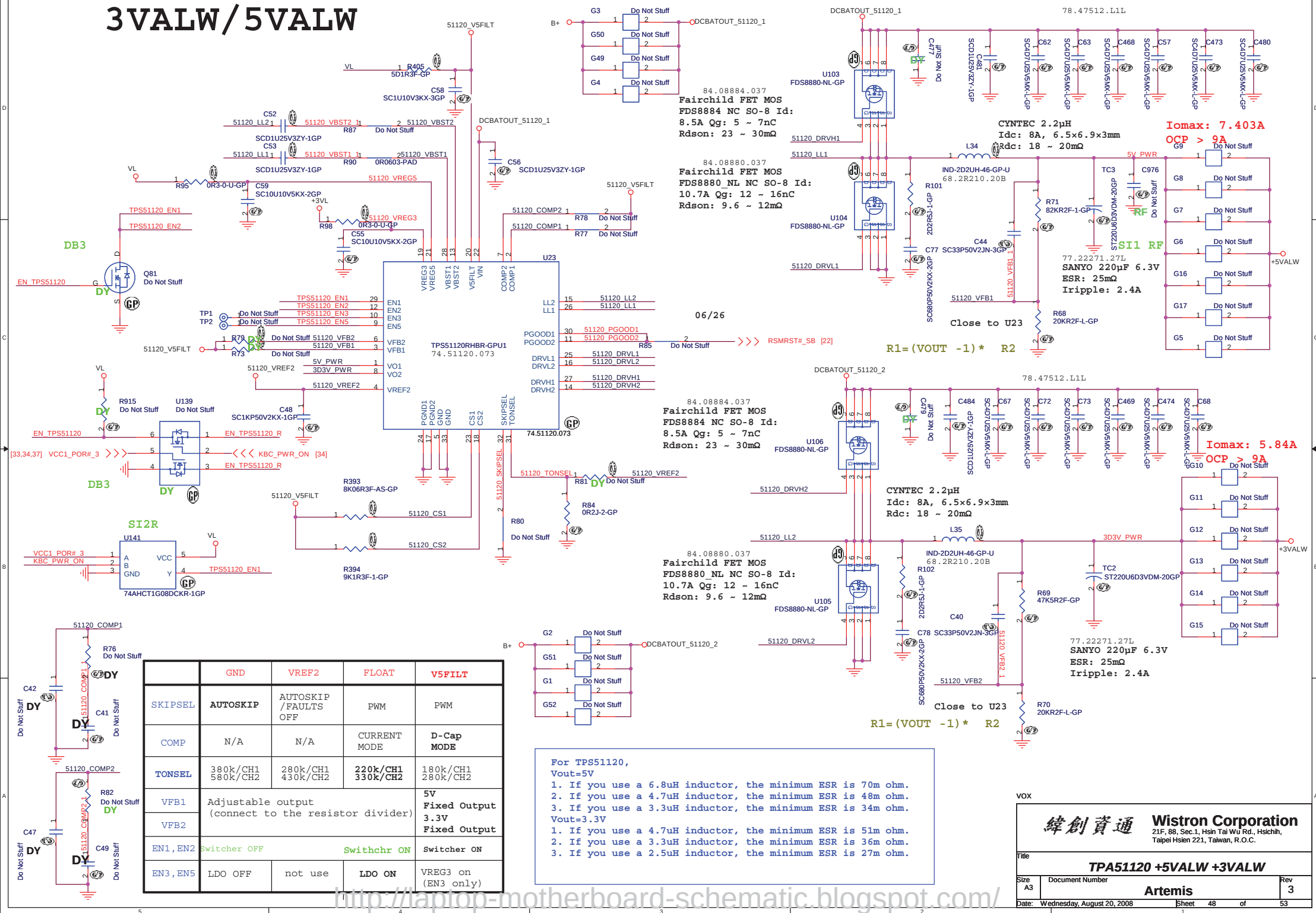


Title			
BT/UWB/Audio board Connector			
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CPU CORE

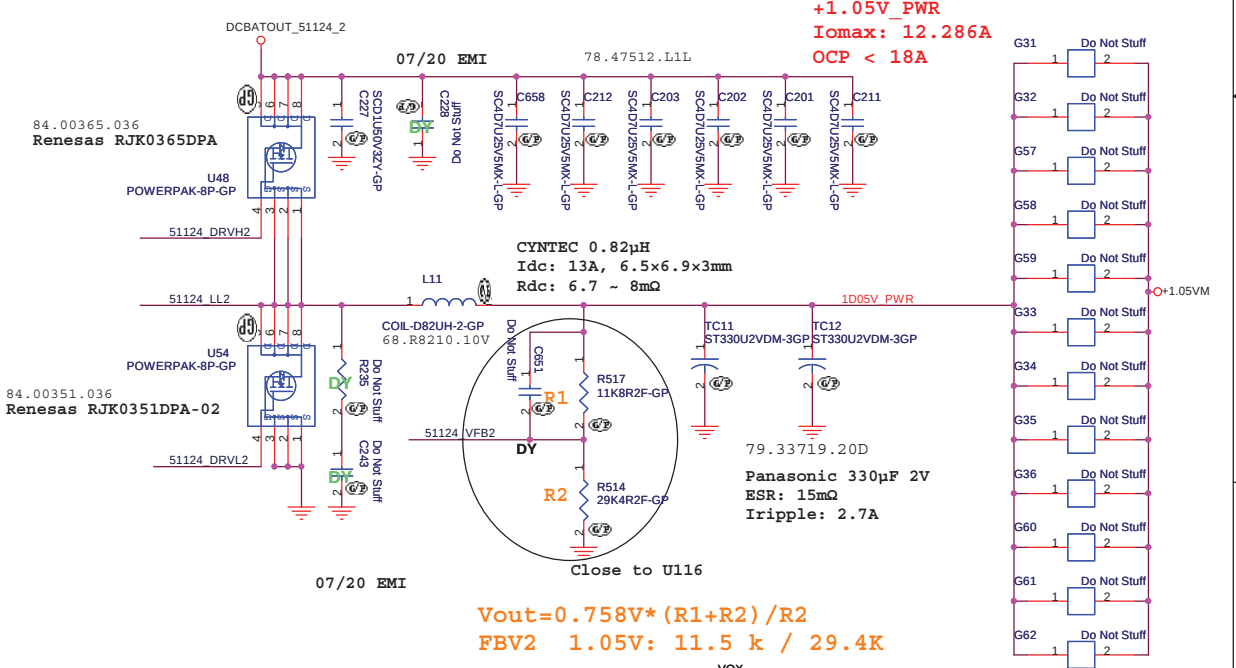
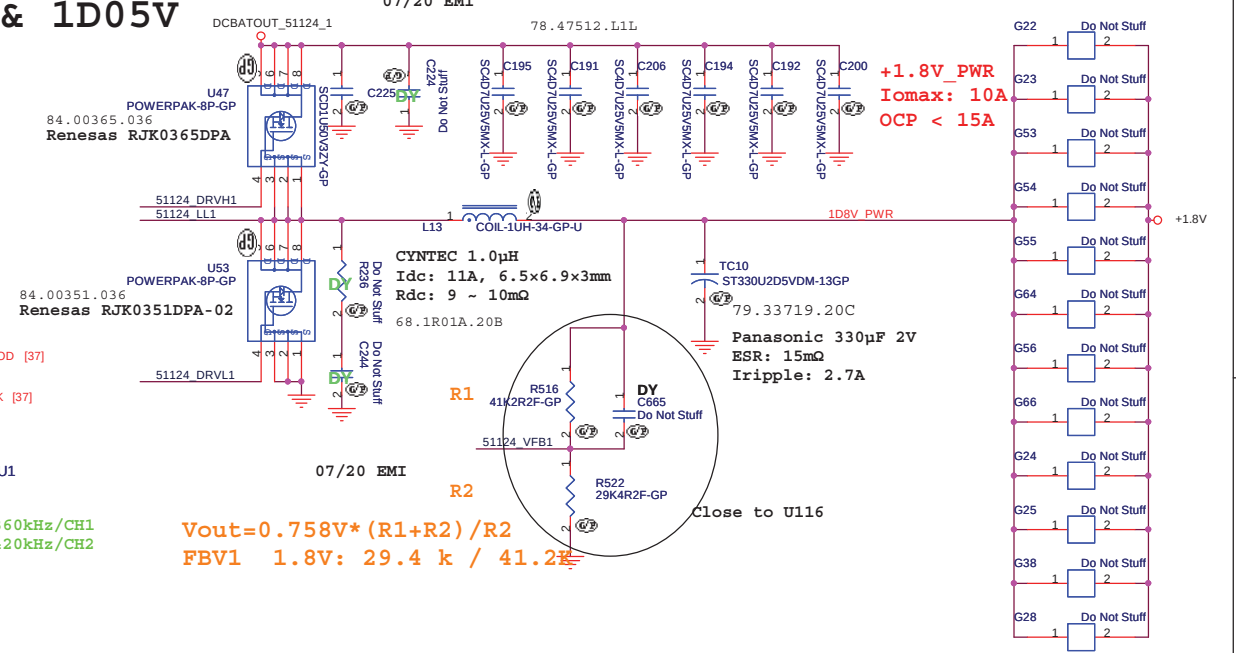
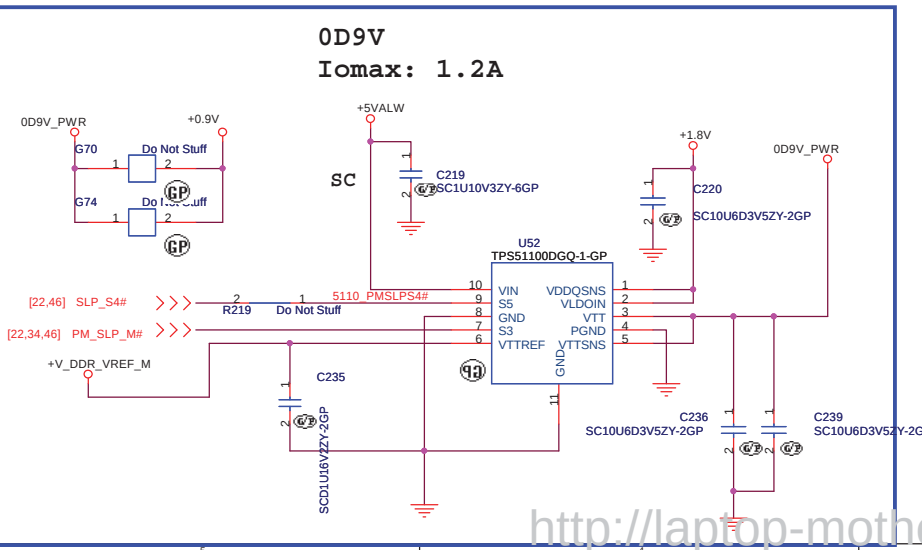
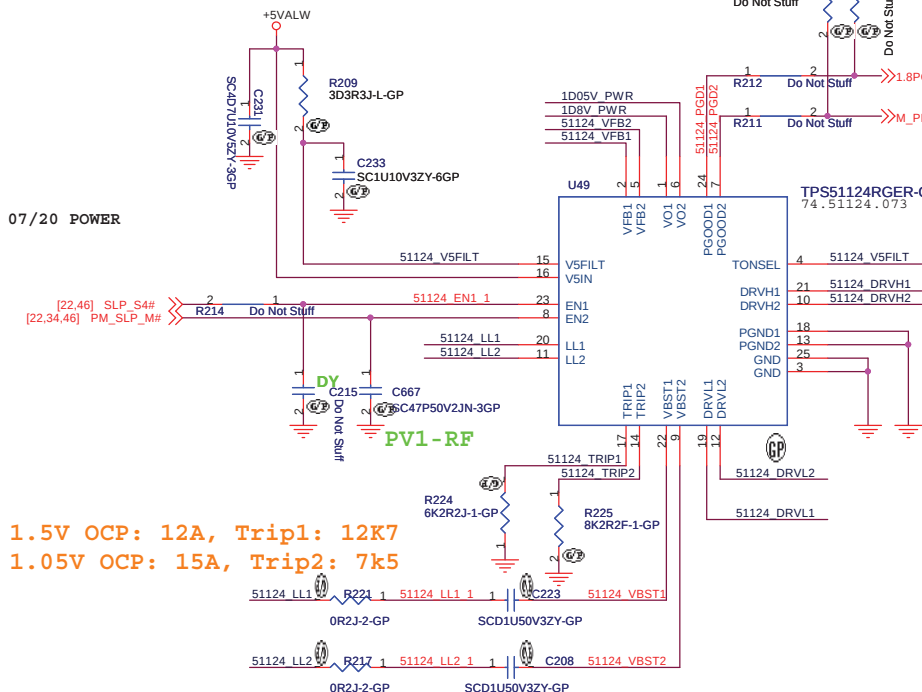
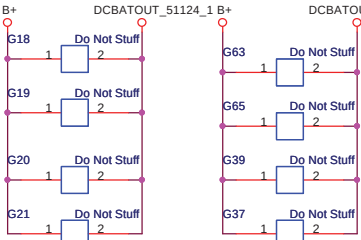


3VALW/5VALW



1D8V & 1D05V

	GND	OPEN	V5FILT
TONSEL	230k/CH1 283k/CH2	283k/CH1 346k/CH2	360kHz/CH1 420kHz/CH2



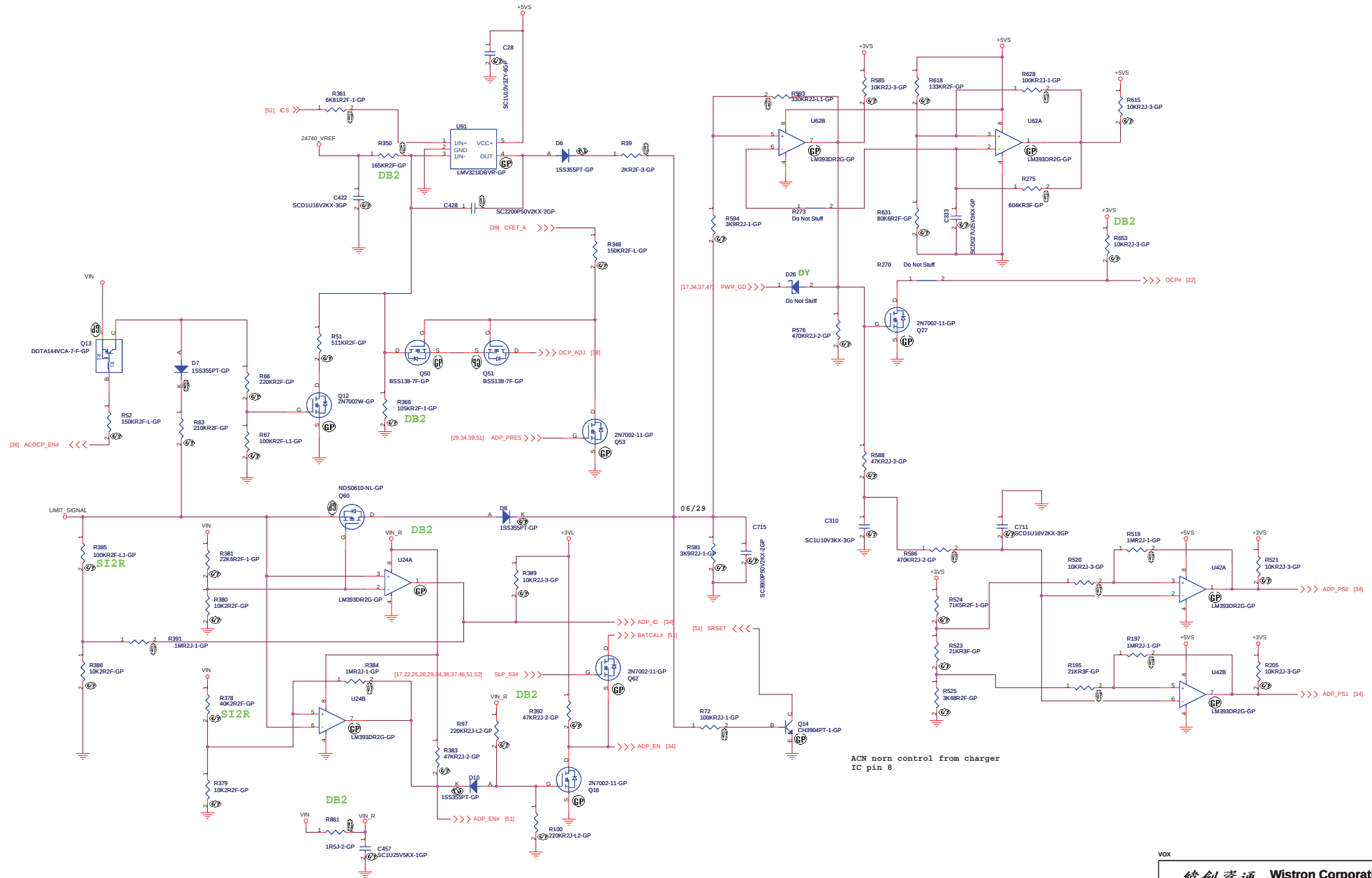
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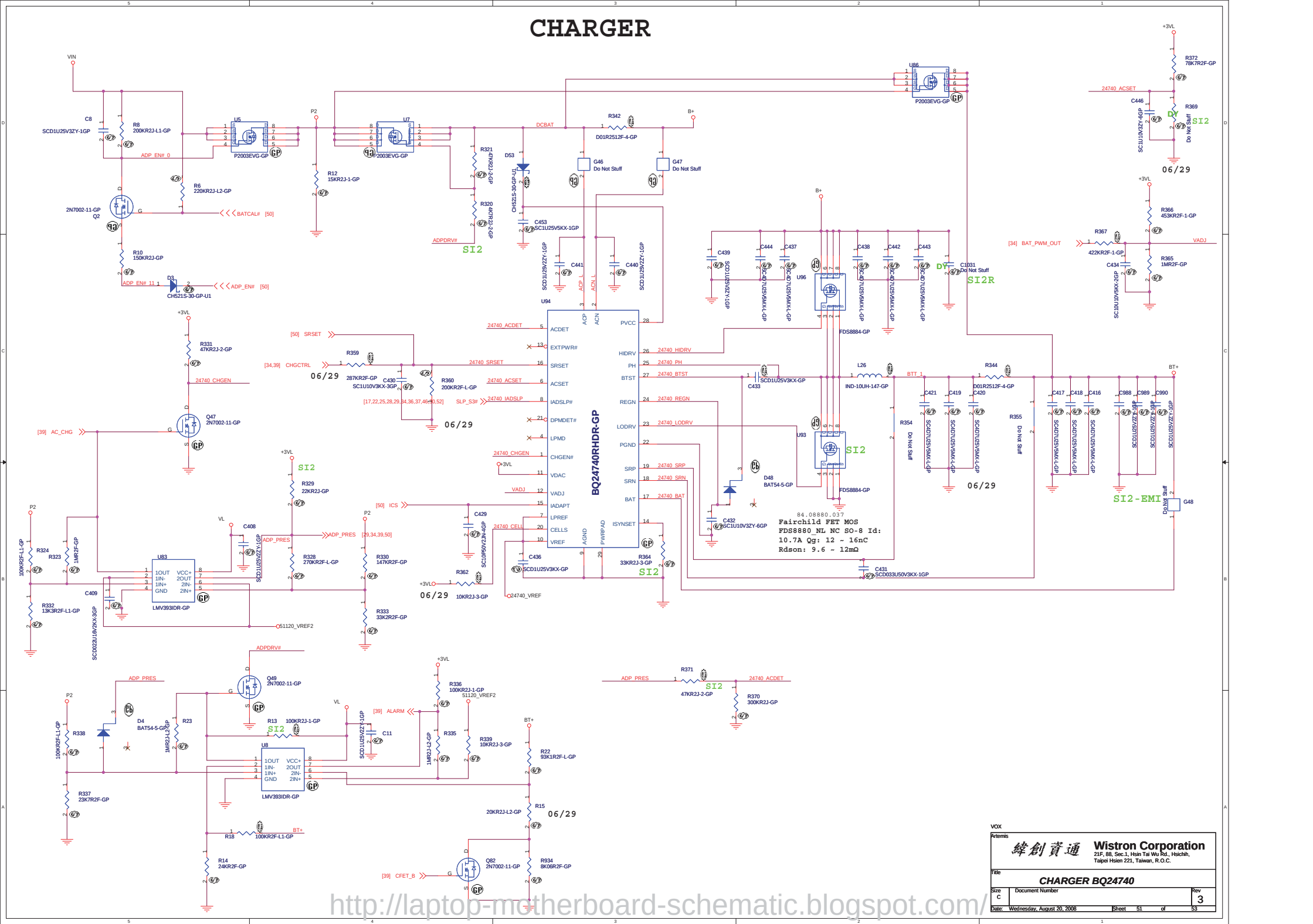
ADP/OCF



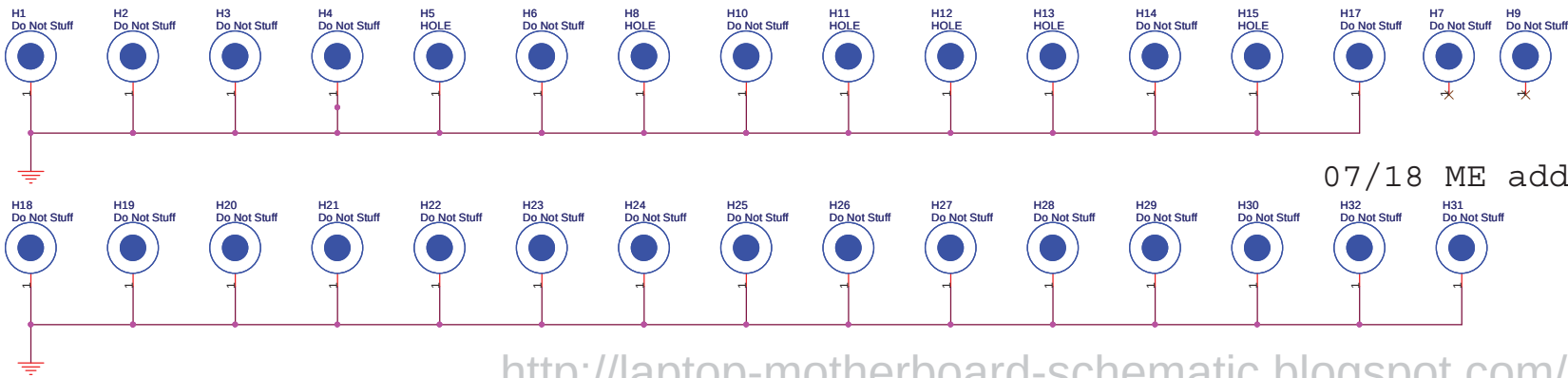
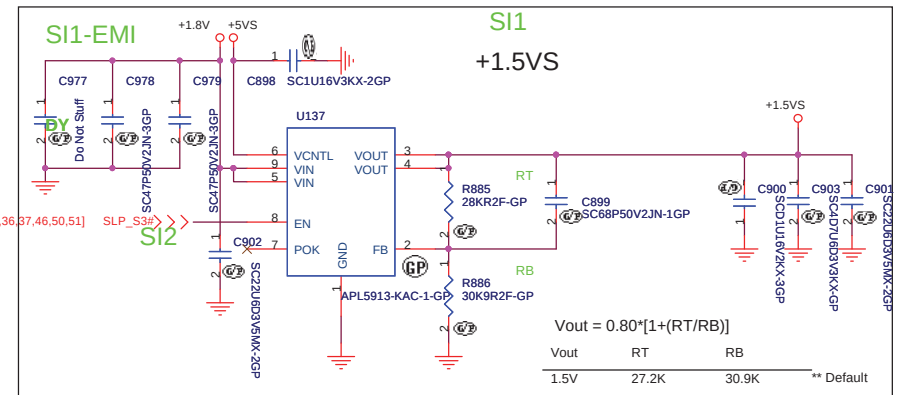
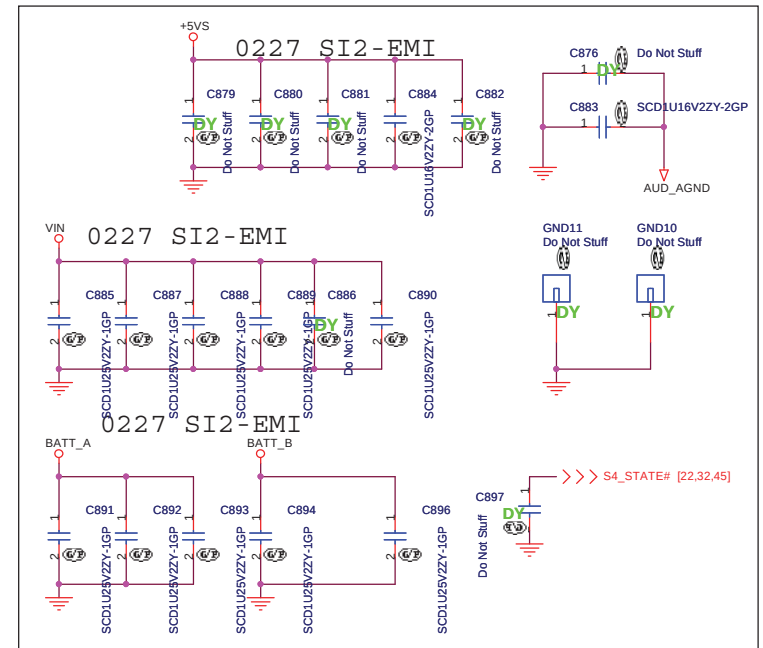
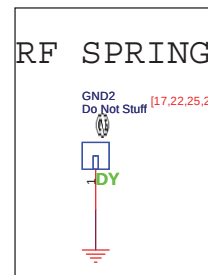
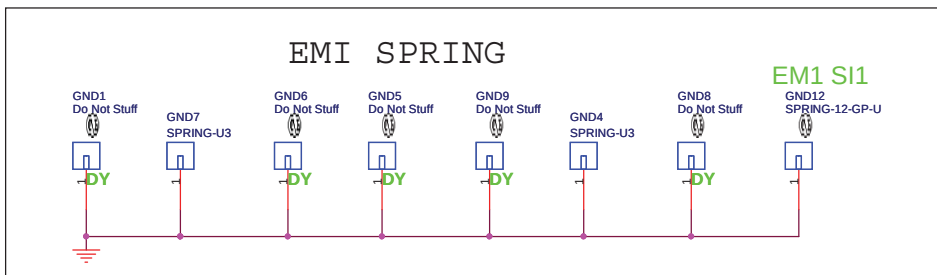
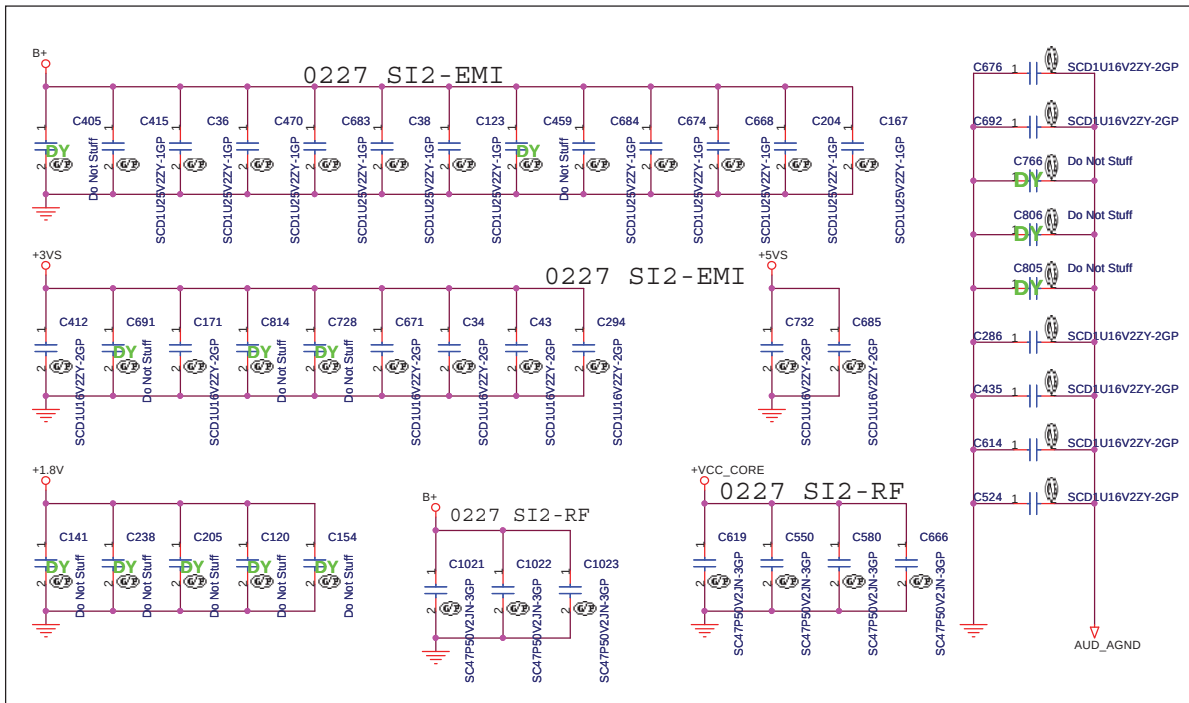
ACN norm control from charger IC pin 8

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ADP OCP	
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CHARGER



07/25 EMI



07/18 ME add.

VOX	
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