

# Dasher-2 Block Diagram

LDB-2 91.4RA01.001

Mar. 09, 2012

## PCB Layer Stackup

L1:Component  
L2:GND  
L3:Signal 1  
L4:VCC  
L5:Signal 2  
L6:Signal 3  
L7:GND  
L8:Component

## Battery Charger/Selector

BQ24760 74  
INPUTS OUTPUTS  
DOCK\_PWR20 CHARGER\_OUT12

## System DC/DC

TPS51220ARSN 78  
VINT20 VCC5M  
VCC3M

## CPU DC/DC

VT1318M/VT1324S 79  
VCC5M\_OUT VCCCPUCORE

## GMCH GFX CORE

VT1324S 80  
VCC5M\_OUT VCCGFXCORE

## VCC1R5A

VT357FCX 85  
VCC5M\_OUT VCC1R5A

## VCC0R75B

TPS51200DRCR 86  
VCC1R5A VCC0R75B

## VCC1R8B

BD9139 89  
VCC5M\_OUT VCC1R8B

## VCC1R05AMT

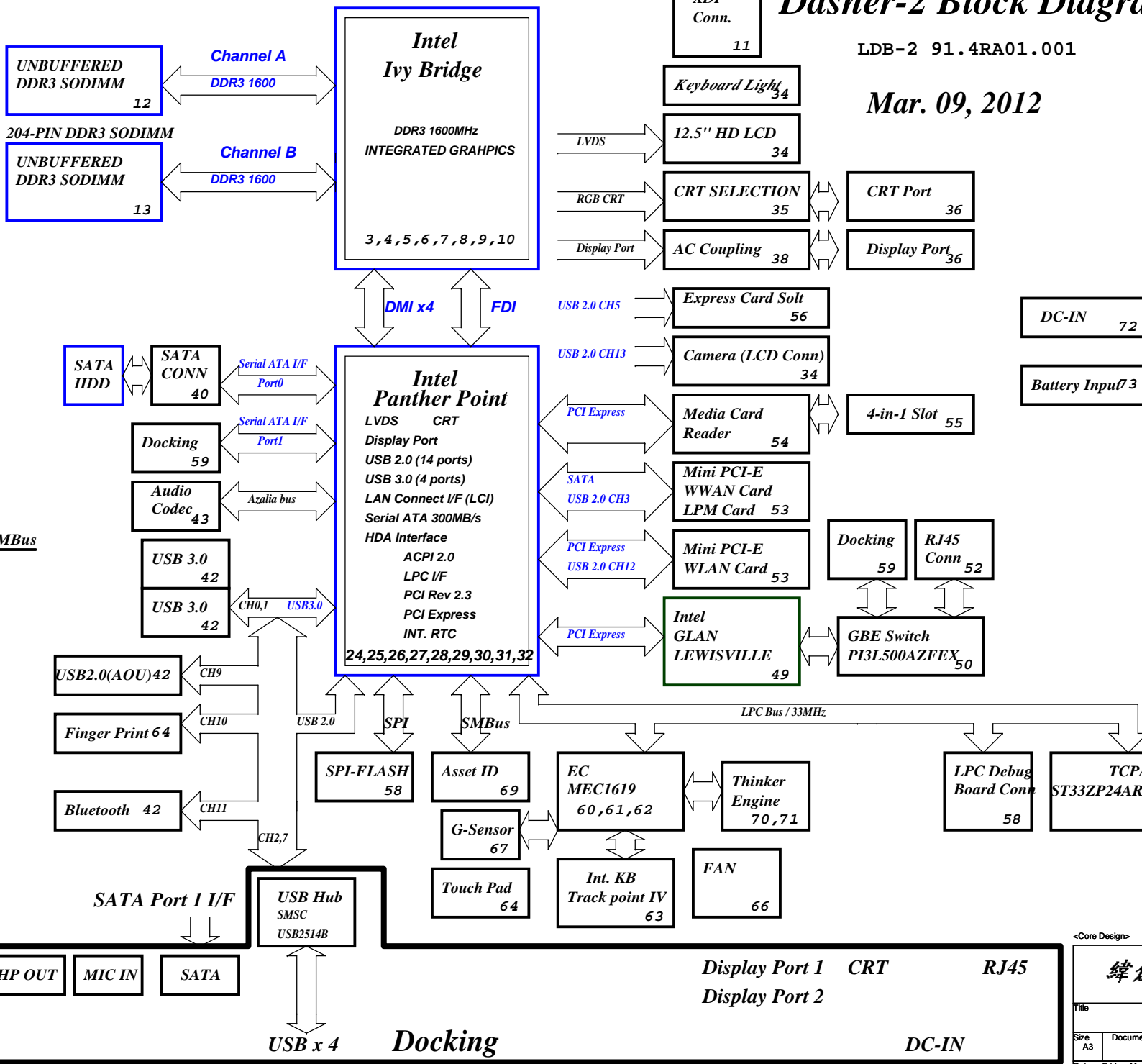
VT356FCX 84  
VCC5M\_OUT VCC1R05LAN

## VCC1R05B\_VTT

VT356 83  
VCC5M\_OUT VCC1R05B\_VTT

## VCCSA

VT370 90  
VCC5M\_OUT VCCSA



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Block Diagram			
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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

Symbol name	Value	Tolerance (M: +/-20, K: +/-10, Z: +80/-20)	Rating	Size 2>=0402, 3>=0603, 5>=0805, 6>=1206, 0>=1210

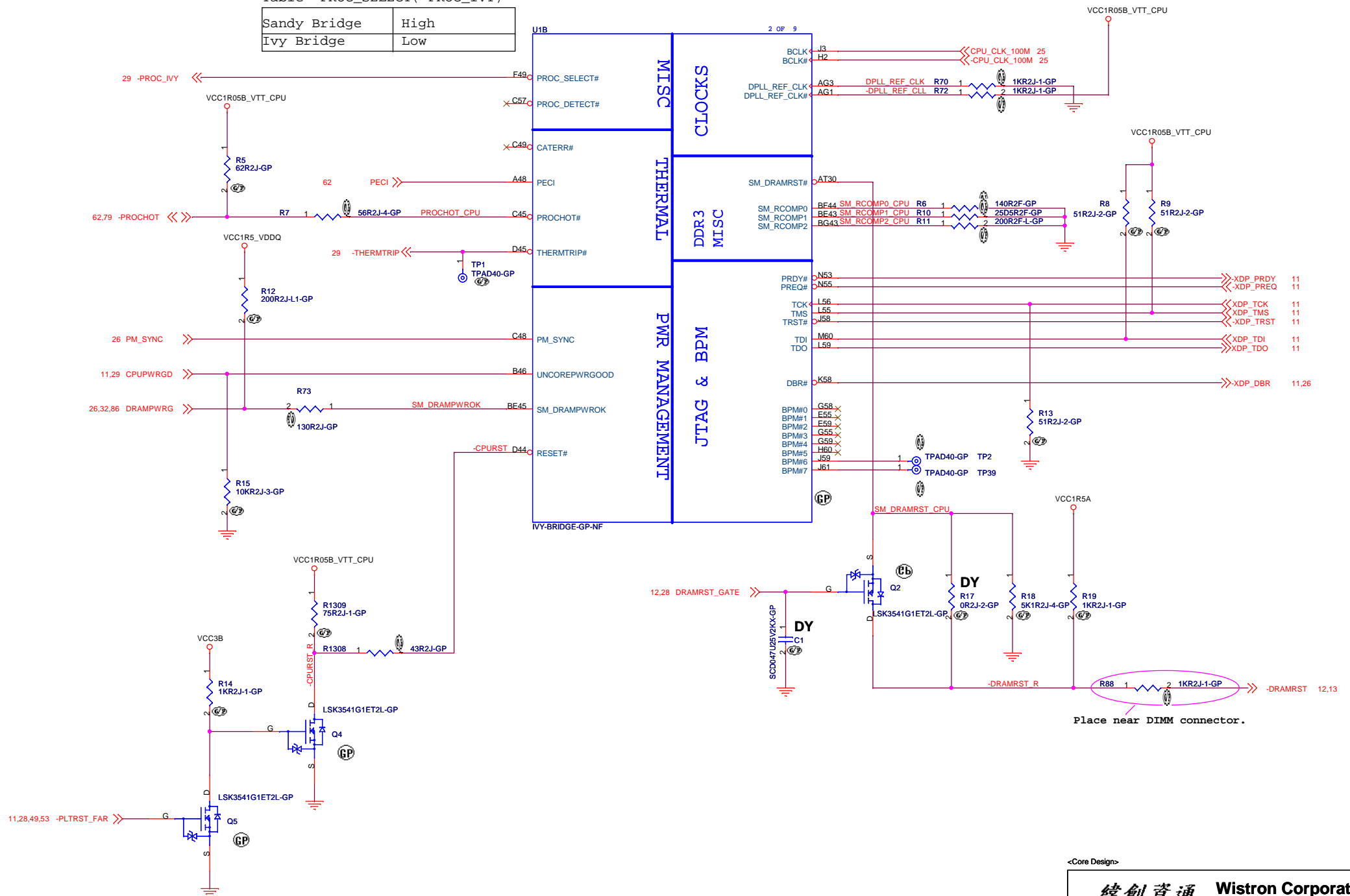
IBEXPEAK-M	39	38	48	49	Planar ID Version	Planar PCB Version
PLANAR_IDn	3	2	1	0		
	0	0	0	0	Dasher-2 initial	N/A
	0	0	0	1	Dasher-2 PreDV	SA
	0	0	1	0	Dasher-2 SDV	SA
	0	0	1	1	Dasher-2 FVT	SB
	0	1	0	0	Dasher-2 PreSIT	SC
	0	1	0	1	Dasher-2 SIT	SD
	0	1	1	0	Dasher-2 SVT	-1
	0	1	1	1		
	1	0	0	0		
	1	0	0	1		
	1	0	1	0		

[illegible]



Table -PROC\_SELECT(-PROC\_IVY)

Sandy Bridge	High
Ivy Bridge	Low



&lt;Core Design&gt;

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Title CPU(2/8):CLK/MISC/JTAG

Size A3 Document Number

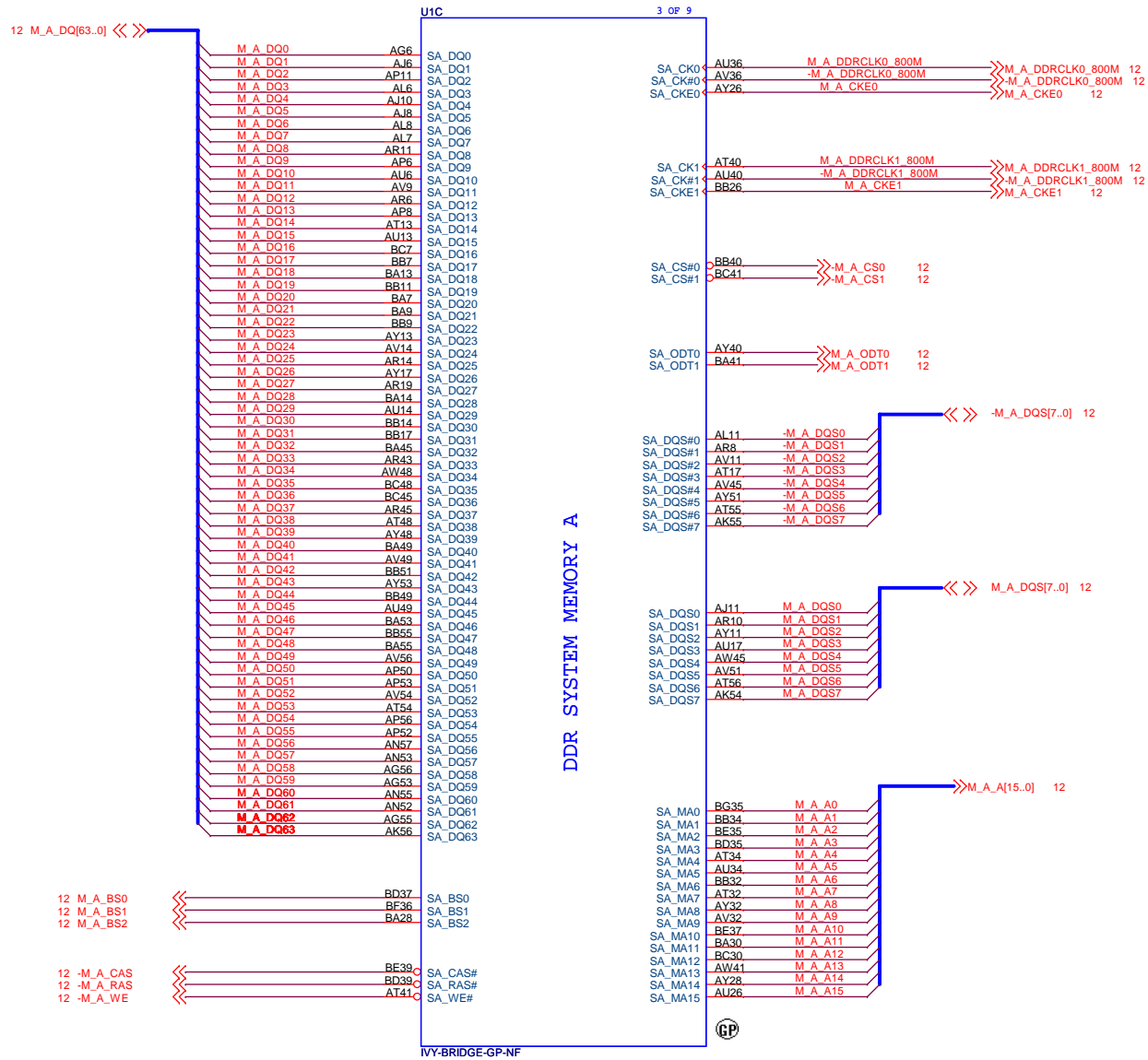
Dasher-2

Rev

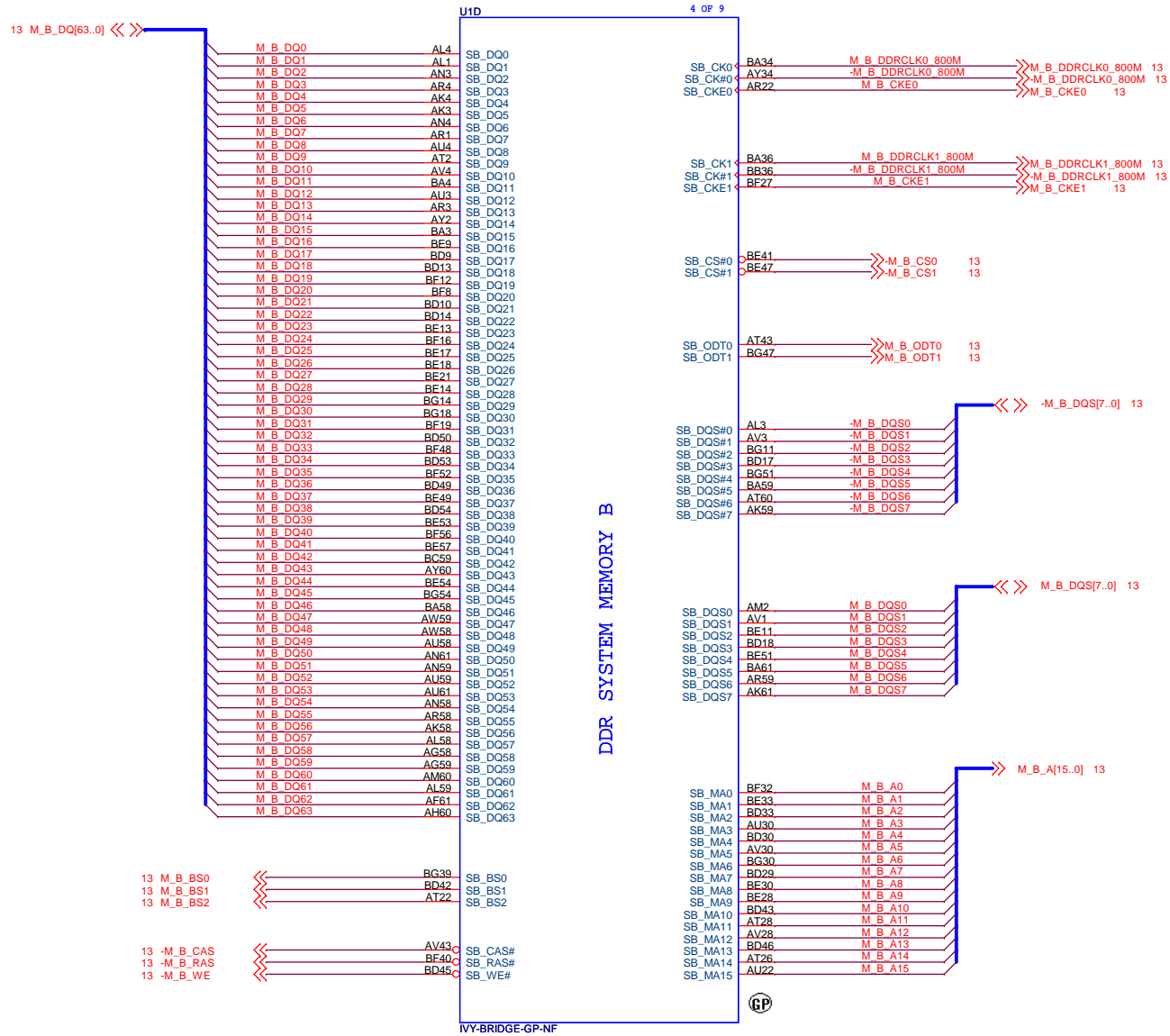
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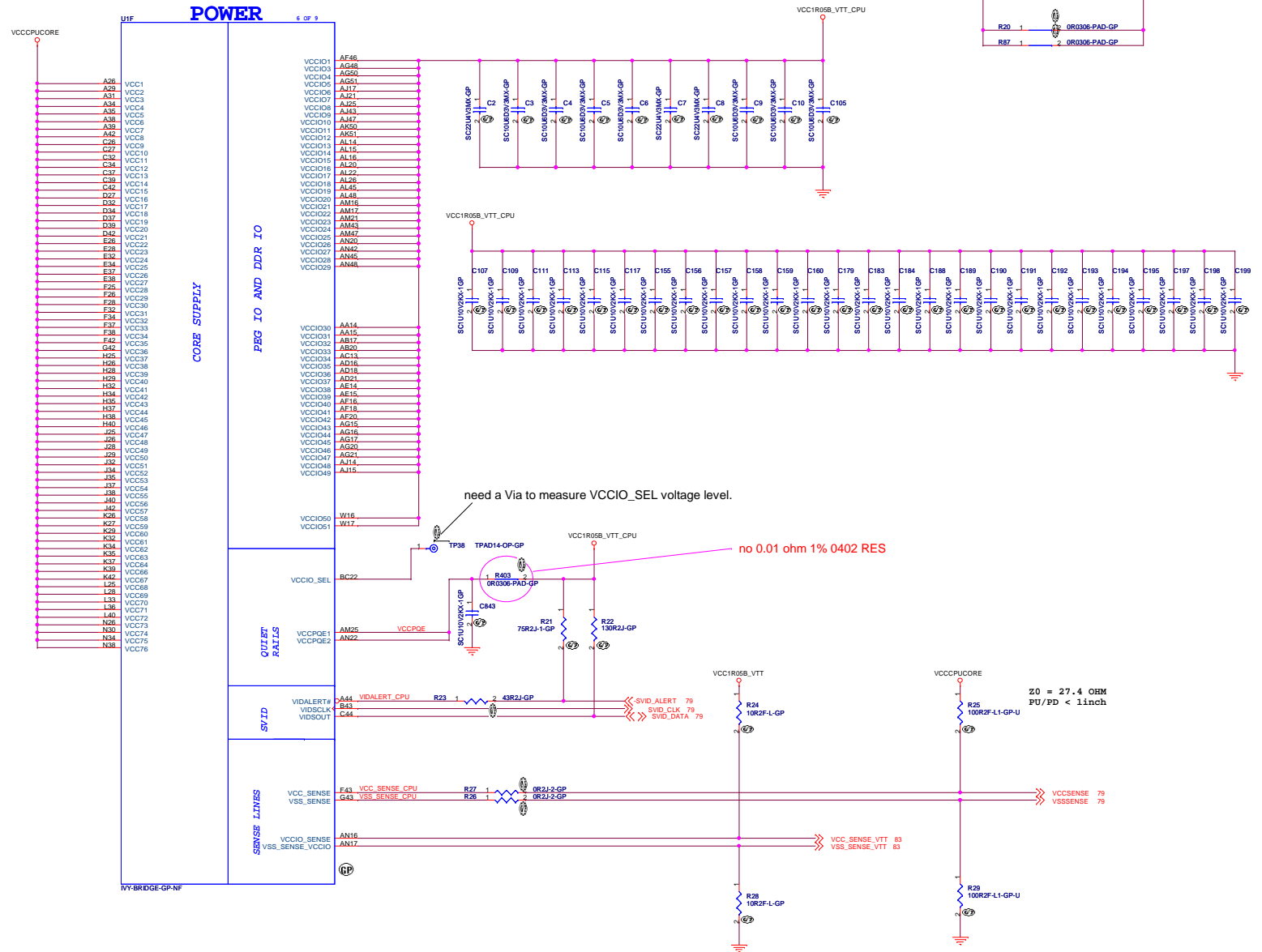
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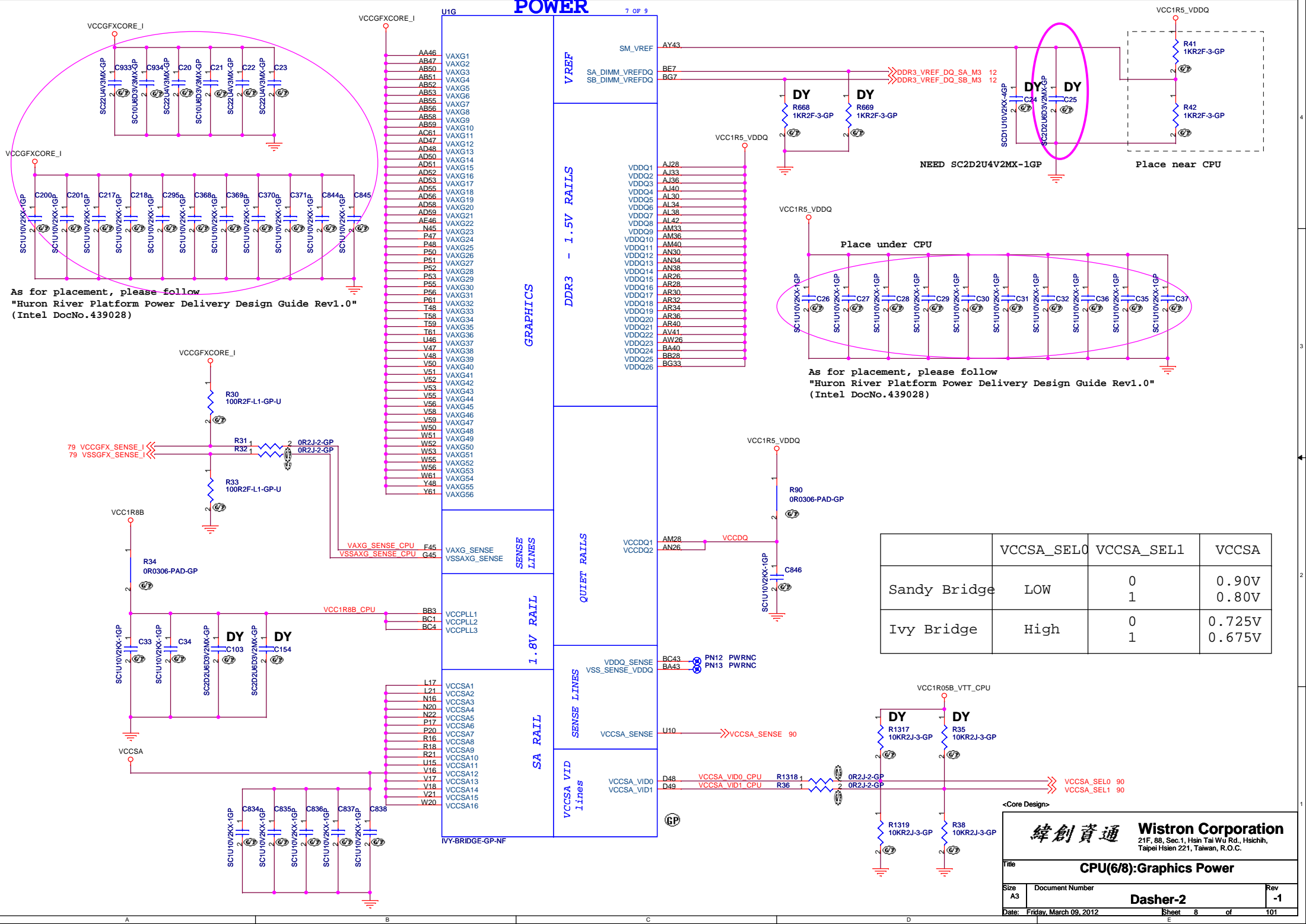
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Title			CPU(4/8):DDR3 Channel-B
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As for placement, please follow  
"Huron River Platform Power Delivery Design Guide Rev1.0"  
(Intel DocNo.439028)

As for placement, please follow  
"Huron River Platform Power Delivery Design Guide Rev1.0"  
(Intel DocNo.439028)

	VCCSA_SEL0	VCCSA_SEL1	VCCSA
Sandy Bridge	LOW	0 1	0.90V 0.80V
Ivy Bridge	High	0 1	0.725V 0.675V

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Title

CPU(6/8):Graphics Power

Size

A3

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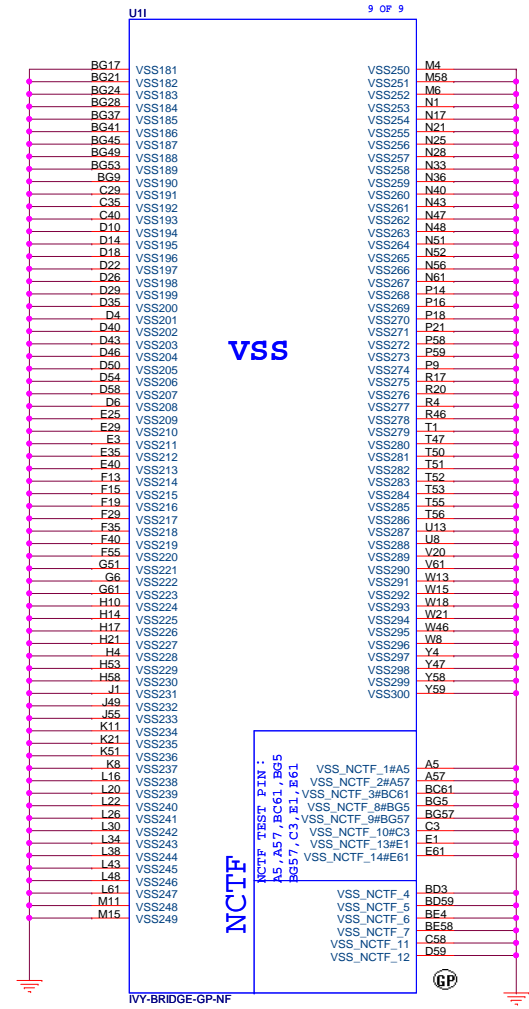
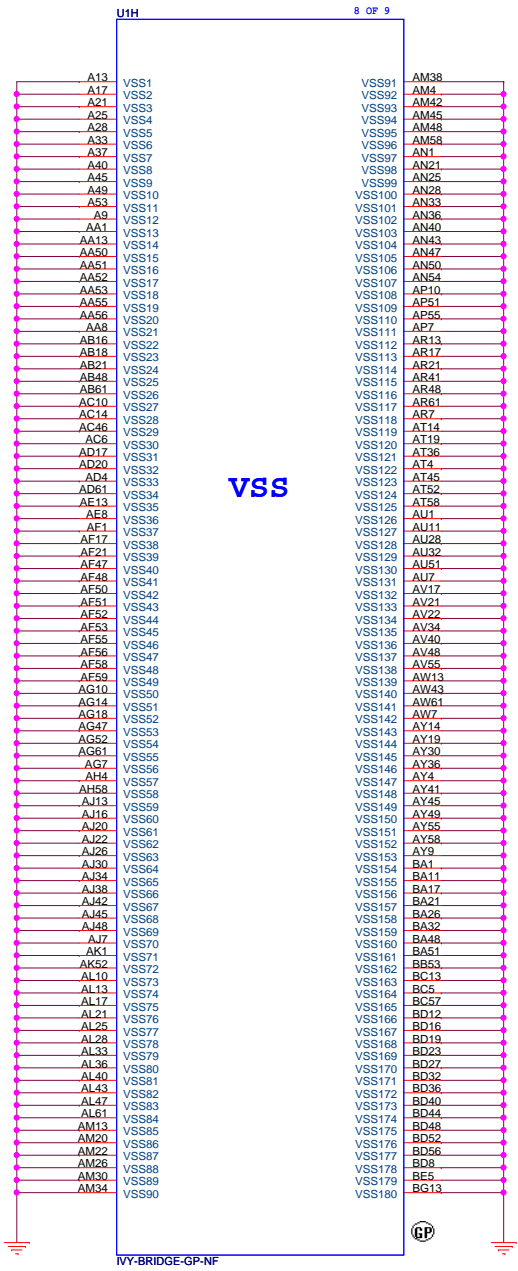
of

101

Rev

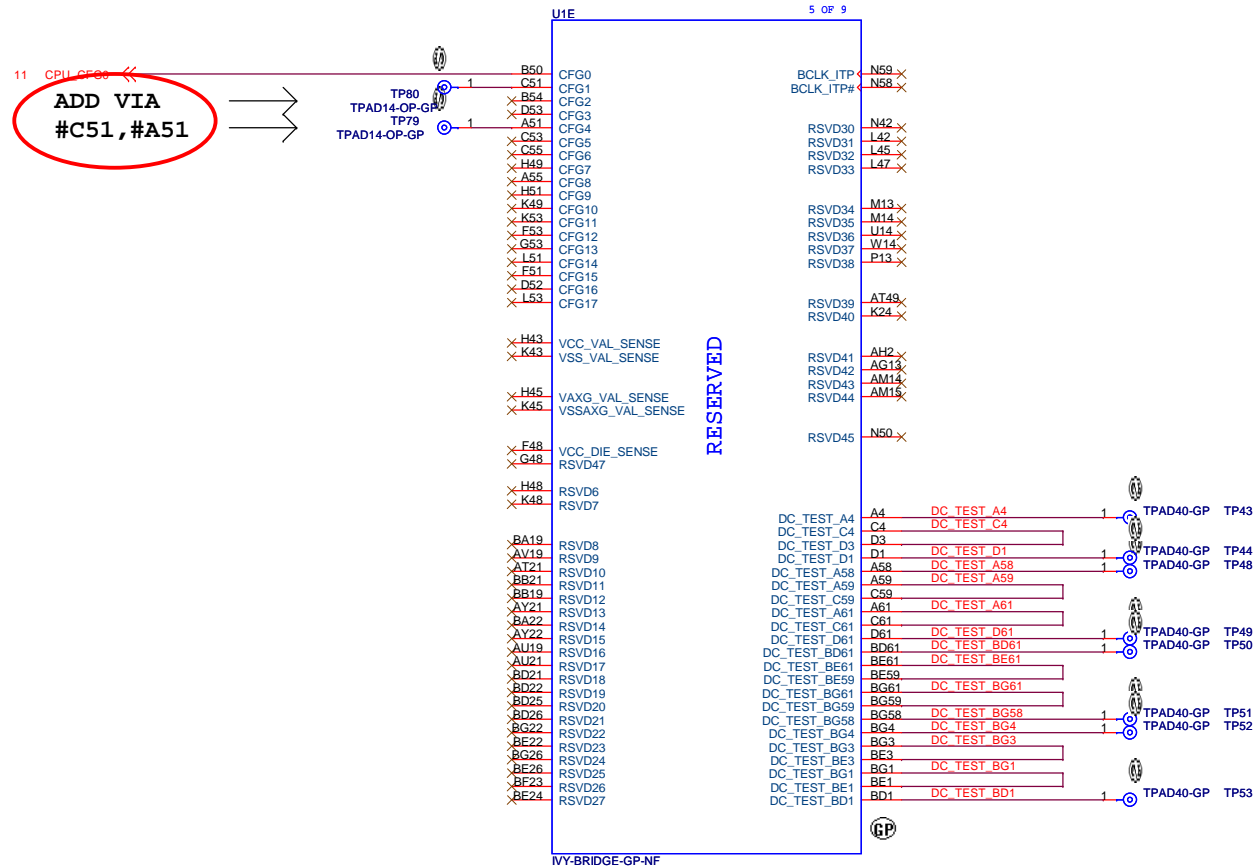
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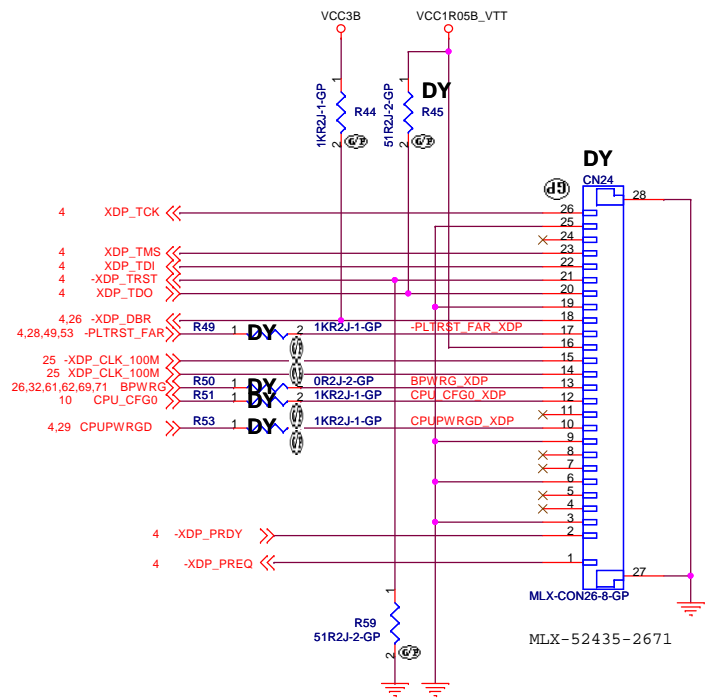
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21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title CPU(7/8):GND		
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CPU(8/8):CFG/Reserved		
Size	Document Number	Rev
A3	Dasher-2	-1
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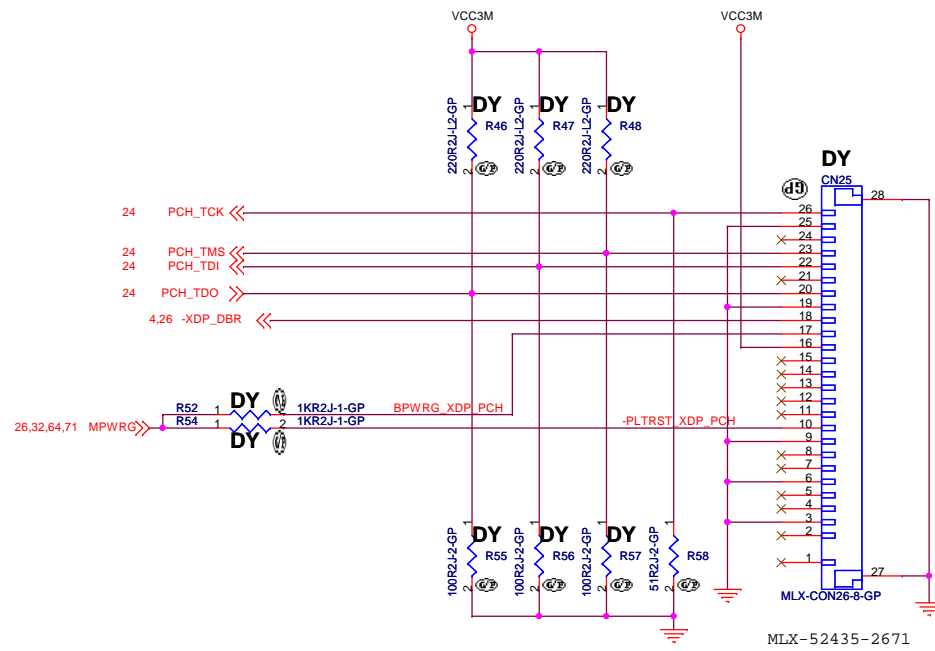


DEBUG Interface for Processor.

**XDP1** NOTE:"ASM" FOR PDV/SDV ONLY

		ENABLE	DISABLE
TDO	R45	ASM	DY
TRST#	R59	ASM	ASM
DBRST#	R44	ASM	ASM
RESET#	R49	ASM	DY
CFG0	R51	ASM	DY
PWRGD	R53	ASM	DY
BPWRG	R50	ASM	DY
	CN24	ASM	DY

↑  
FVT Logic



DEBUG Interface for PCH.

**XDP2** NOTE:"ASM" FOR PDV/SDV ONLY

		ENABLE	DISABLE
TDO	R46	220	DY
	R55	100	DY
TMS	R48	220	DY
	R57	100	DY
TDI	R47	220	DY
	R56	100	DY
TCK	R58	51	51
MPWRG	R52	ASM	DY
	R54	ASM	DY
	CN25	ASM	DY

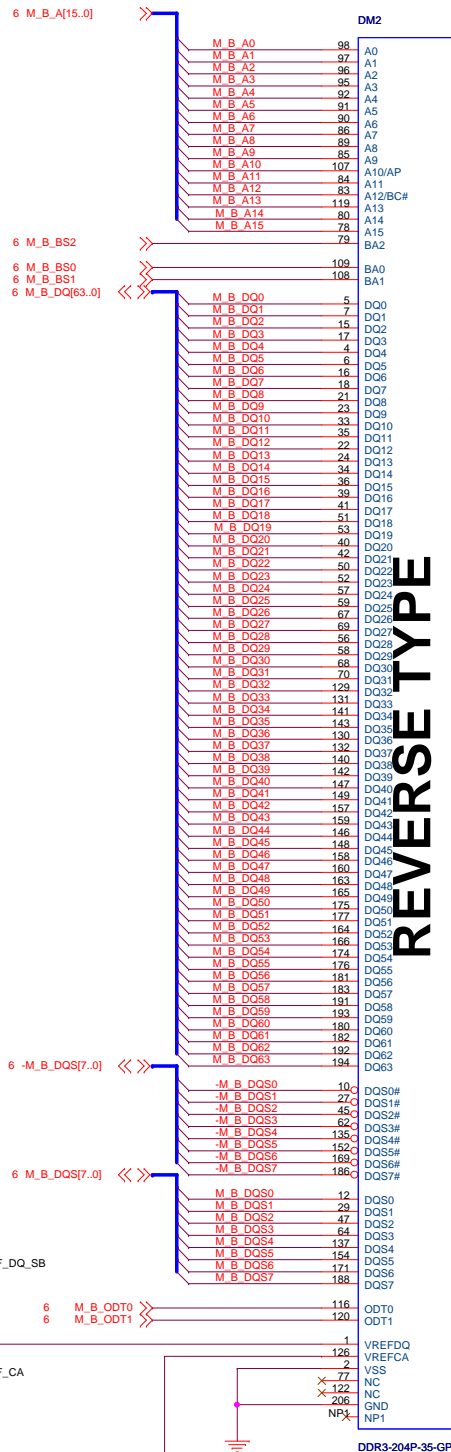
↑  
FVT Logic

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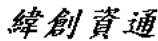
**緯創資通** **Wistron Corporation**  
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Title			<b>XDP Connector</b>	
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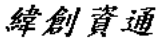




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54 PCIE\_MCC\_RXN  
54 PCIE\_MCC\_RXP  
54 PCIE\_MCC\_TXN  
54 PCIE\_MCC\_TXP

53 PCIE\_WLAN\_RXN  
53 PCIE\_WLAN\_RXP  
53 PCIE\_WLAN\_TXN  
53 PCIE\_WLAN\_TXP

56 PCIE\_EXC\_RXN  
56 PCIE\_EXC\_RXP  
56 PCIE\_EXC\_TXN  
56 PCIE\_EXC\_TXP

49 PCIE\_GBE\_RXN  
49 PCIE\_GBE\_RXP  
49 PCIE\_GBE\_TXN  
49 PCIE\_GBE\_TXP

54 -PCIE\_CLK\_MCC  
54 PCIE\_CLK\_MCC  
54 -CLKREQ\_MCC

53 -PCIE\_CLK\_WLAN  
53 PCIE\_CLK\_WLAN  
53 -CLKREQ\_WLAN

56 -PCIE\_CLK\_EXC  
56 PCIE\_CLK\_EXC  
56 -CLKREQ\_EXC

49 -PCIE\_CLK\_GBE  
49 PCIE\_CLK\_GBE  
49 -CLKREQ\_GBE

11 -XDP\_CLK\_100M  
11 XDP\_CLK\_100M

U14B  
PERN1  
PERP1  
PETN1  
PETP1  
PERN2  
PERP2  
PETN2  
PETP2  
PERN3  
PERP3  
PETN3  
PETP3  
PERN4  
PERP4  
PETN4  
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PETN8  
PETP8

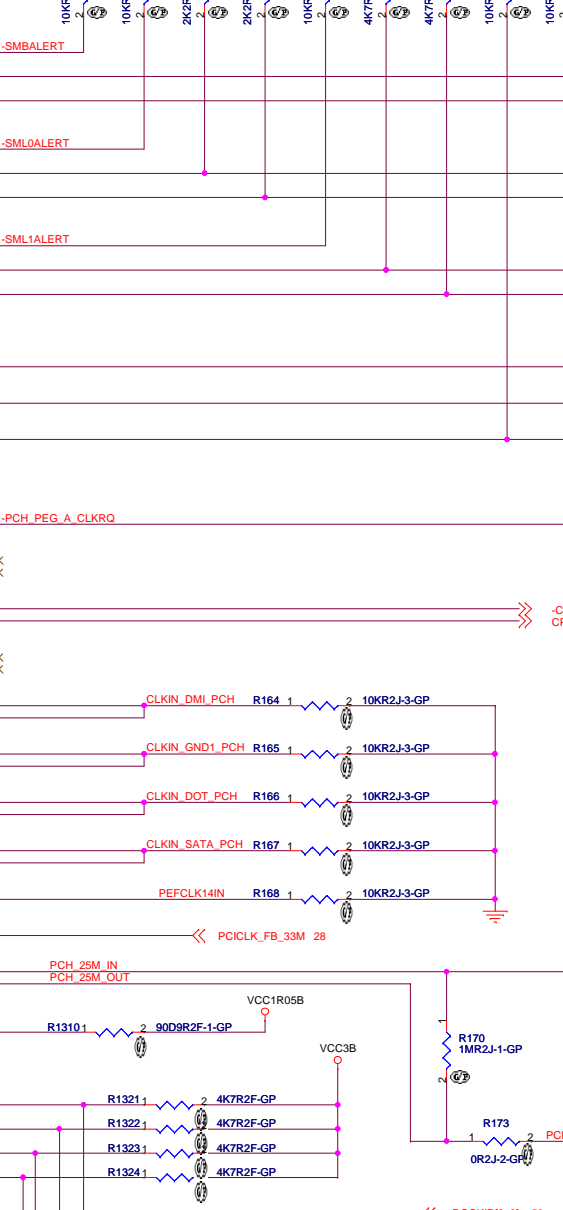
Y40  
Y39  
J2  
AB49  
AB47  
M1  
AA48  
AA47  
V10  
Y37  
Y36  
A8  
Y43  
Y45  
V45  
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V42  
T13  
V38  
V37  
K12  
AK14  
AK13

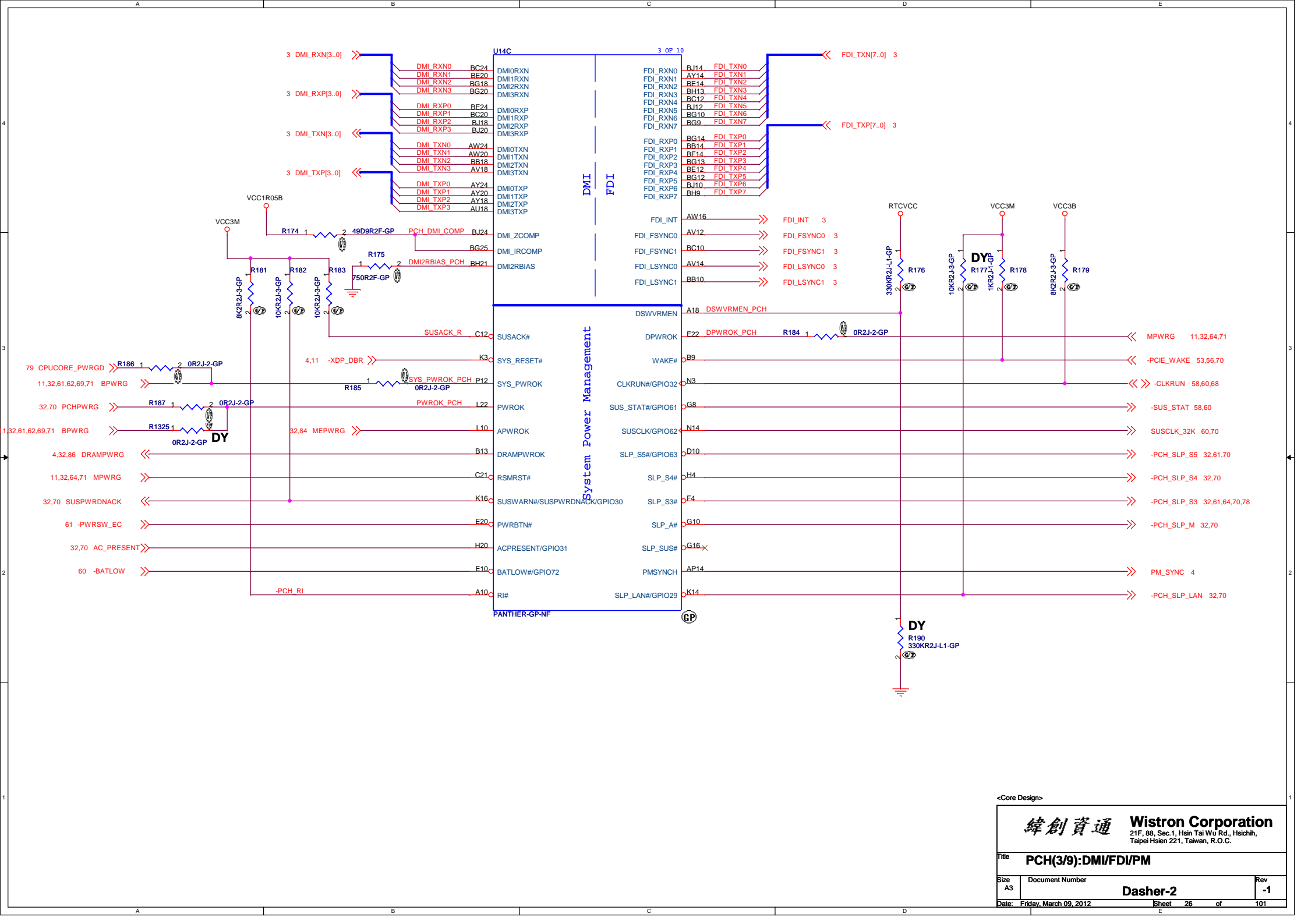
PANTHER-GP-NF

SMBUS  
SMBALERT#/GPIO11  
SMBCLK  
SMBDATA  
SML0ALERT#/GPIO60  
SML0CLK  
SML0DATA  
SML1ALERT#/PCHHOT#/GPIO74  
SML1CLK/GPIO58  
SML1DATA/GPIO75  
CL\_CLK1  
CL\_DATA1  
CL\_RST1#

CLOCKS  
CLKOUT\_PCIE0N  
CLKOUT\_PCIE0P  
PCIECLKRQ0#/GPIO73  
CLKOUT\_PCIE1N  
CLKOUT\_PCIE1P  
PCIECLKRQ1#/GPIO18  
CLKOUT\_PCIE2N  
CLKOUT\_PCIE2P  
PCIECLKRQ2#/GPIO20  
CLKOUT\_PCIE3N  
CLKOUT\_PCIE3P  
PCIECLKRQ3#/GPIO25  
CLKOUT\_PCIE4N  
CLKOUT\_PCIE4P  
PCIECLKRQ4#/GPIO26  
CLKOUT\_PCIE5N  
CLKOUT\_PCIE5P  
PCIECLKRQ5#/GPIO44  
CLKOUT\_PEG\_B\_N  
CLKOUT\_PEG\_B\_P  
PEG\_B\_CLKRQ#/GPIO56  
CLKOUT\_PCIE6N  
CLKOUT\_PCIE6P  
PCIECLKRQ6#/GPIO45  
CLKOUT\_PCIE7N  
CLKOUT\_PCIE7P  
PCIECLKRQ7#/GPIO46  
CLKOUT\_ITPXD\_P\_N  
CLKOUT\_ITPXD\_P\_P

FLEX CLOCKS





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Title PCH(3/9):DMI/FDI/PM

Size A3 Document Number

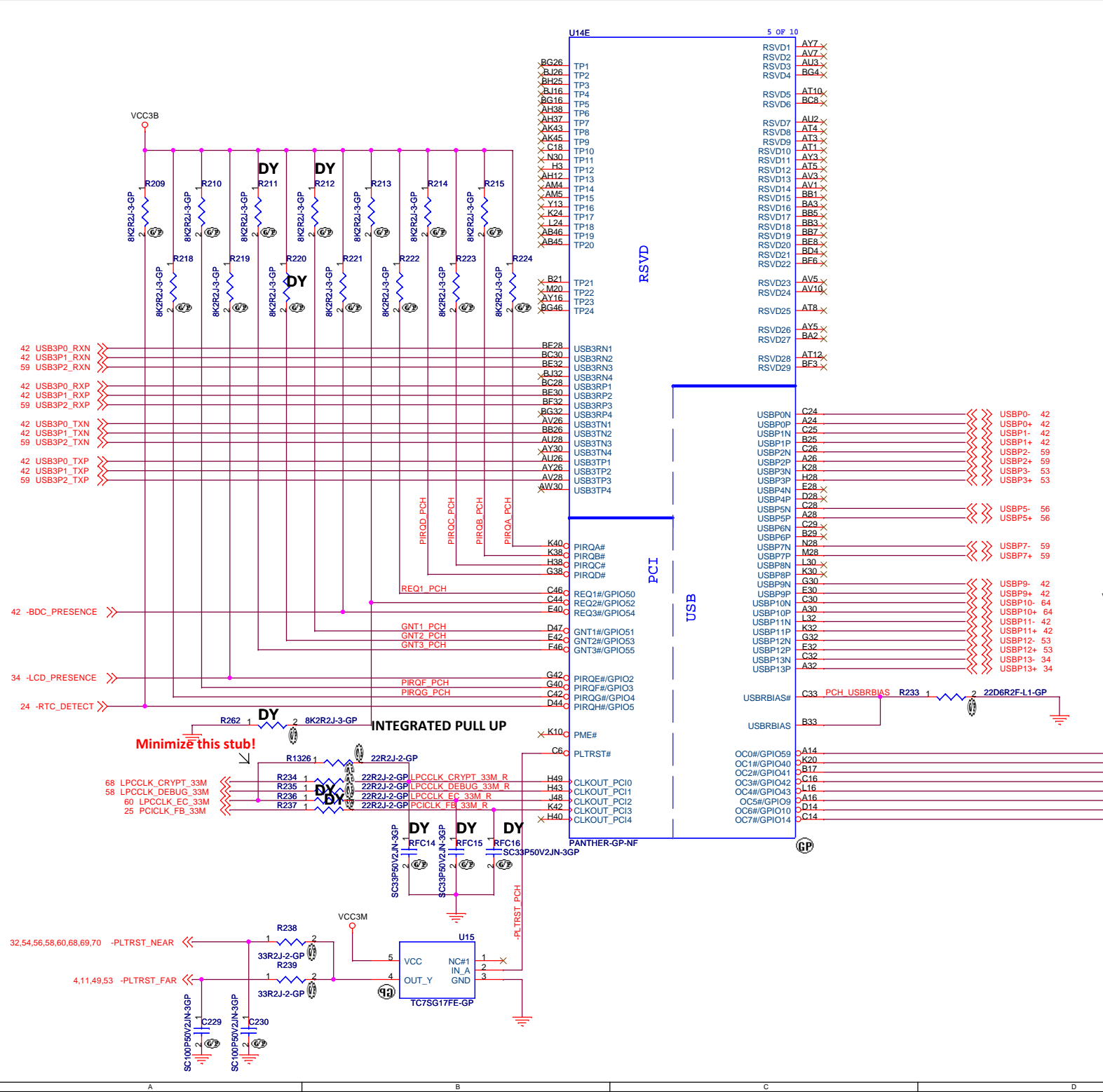
Dasher-2

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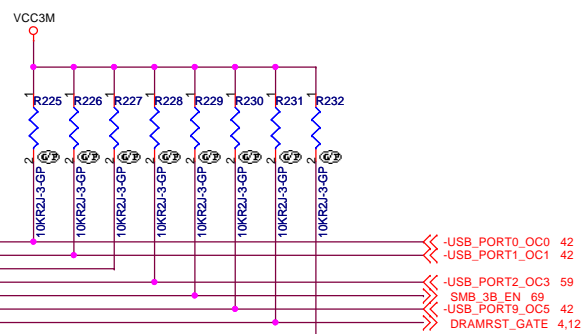
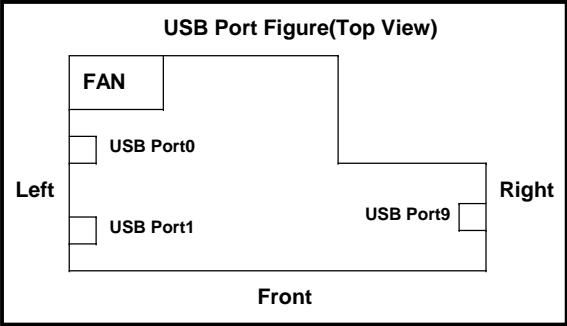
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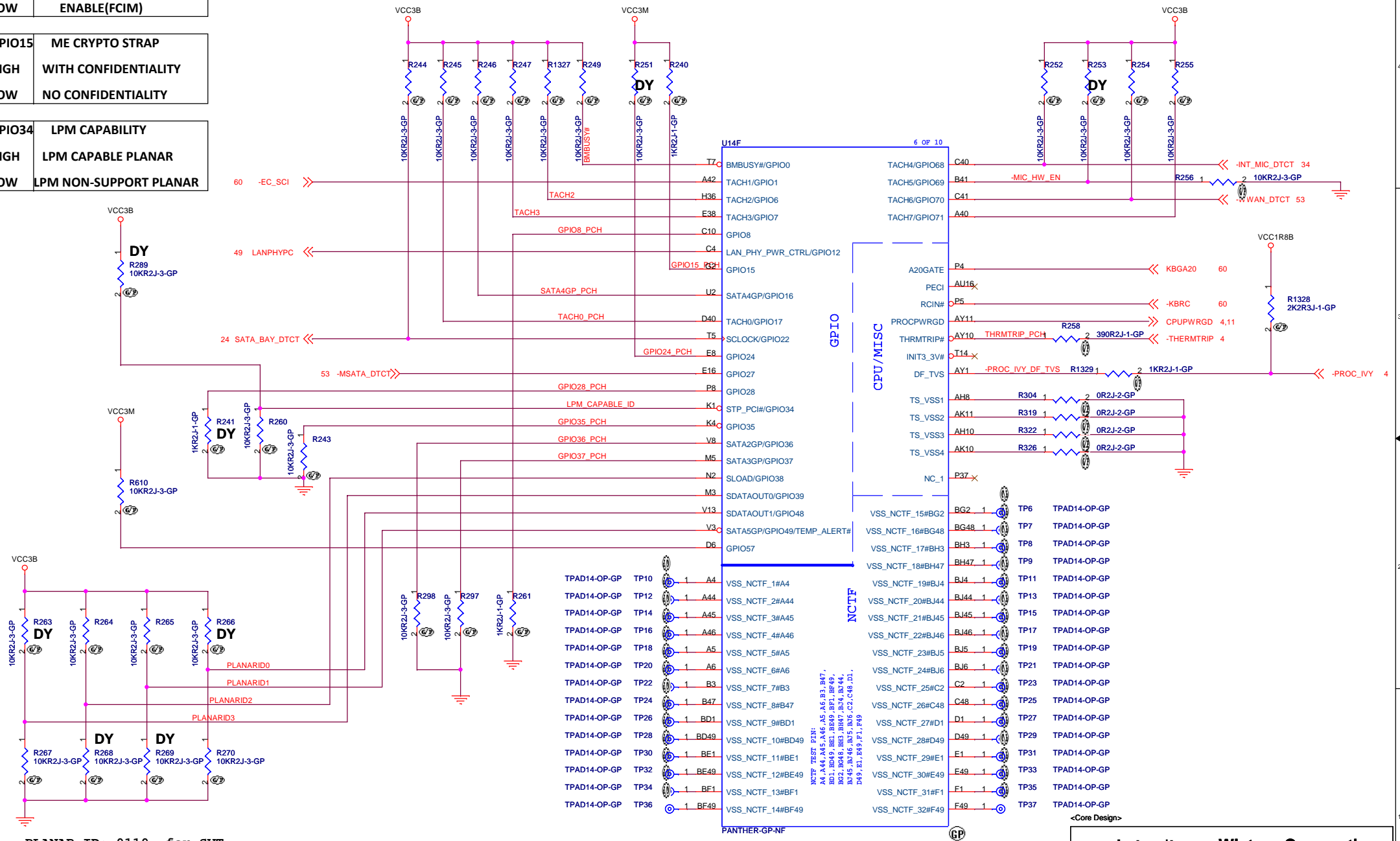




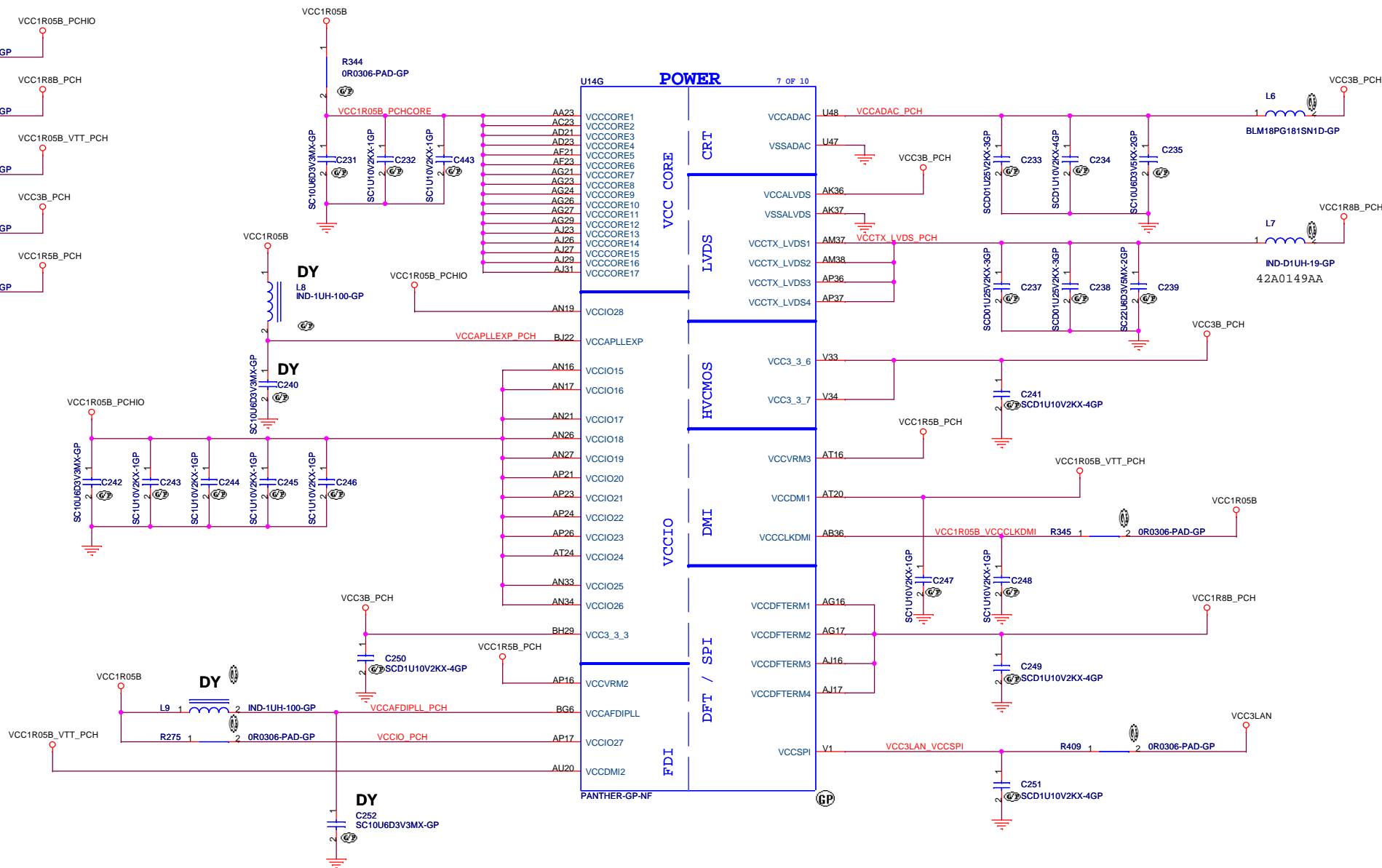
Dasher2	
USB0	System Port 0 (USB3.0)
USB1	System Port 1 (USB3.0)
USB2	since Dock USB3.0
USB3	WWAN
USB4	Reserved
USB5	Express Card
USB6	Reserved
USB7	USB2.0 DOCKING
USB8	Reserved
USB9	System Port 9 (iPod)
USB10	FPR/TOUCH PAD
USB11	Bluetooth
USB12	WLAN
USB13	Camera



<b>GPIO34</b>	<b>LPM CAPABILITY</b>
<b>HIGH</b>	<b>LPM CAPABLE PLANAR</b>
<b>LOW</b>	<b>LPM NON-SUPPORT PLANAR</b>



PLANAR ID: 0110 for SVT



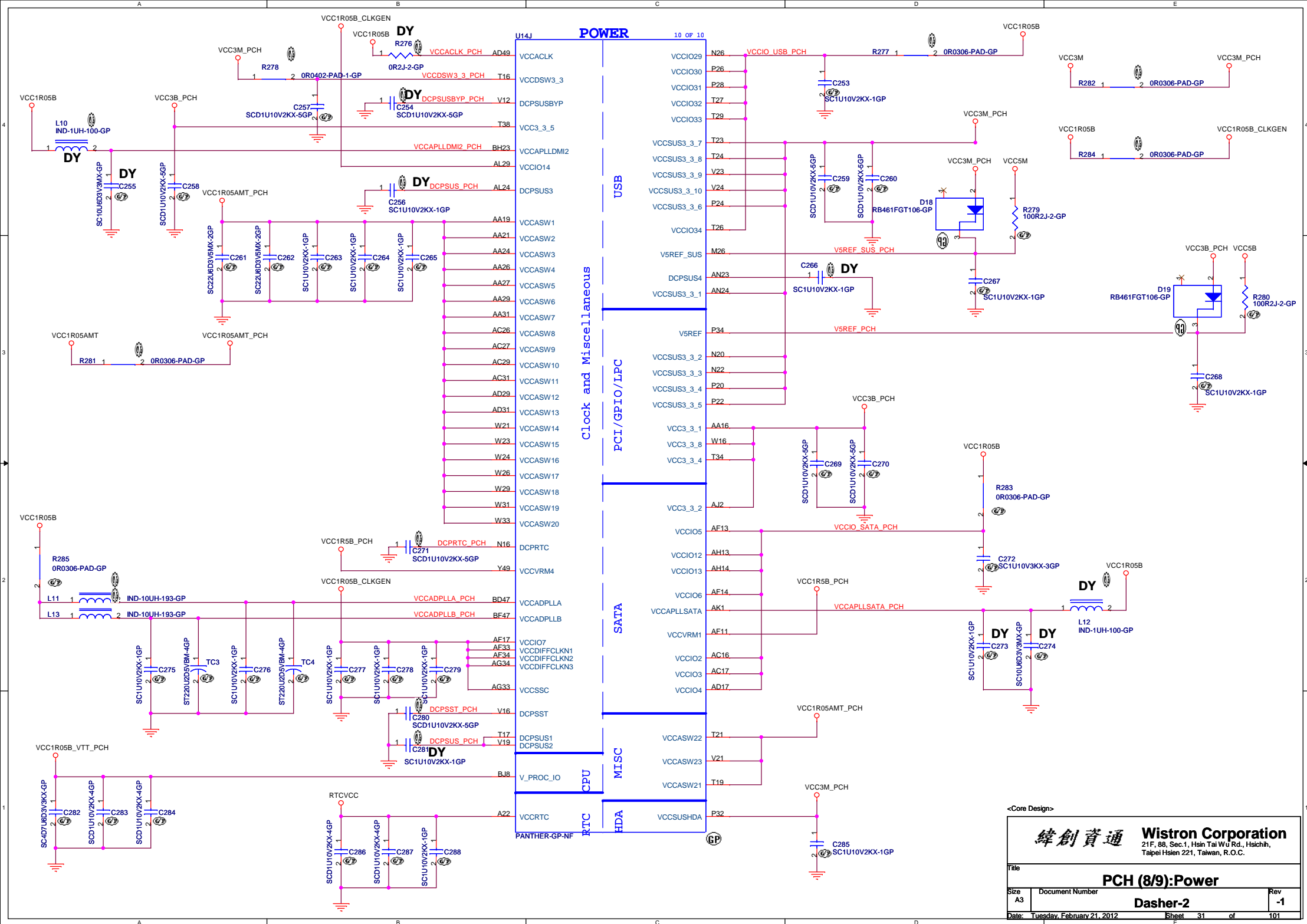
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Title **PCH(7/9):Power**

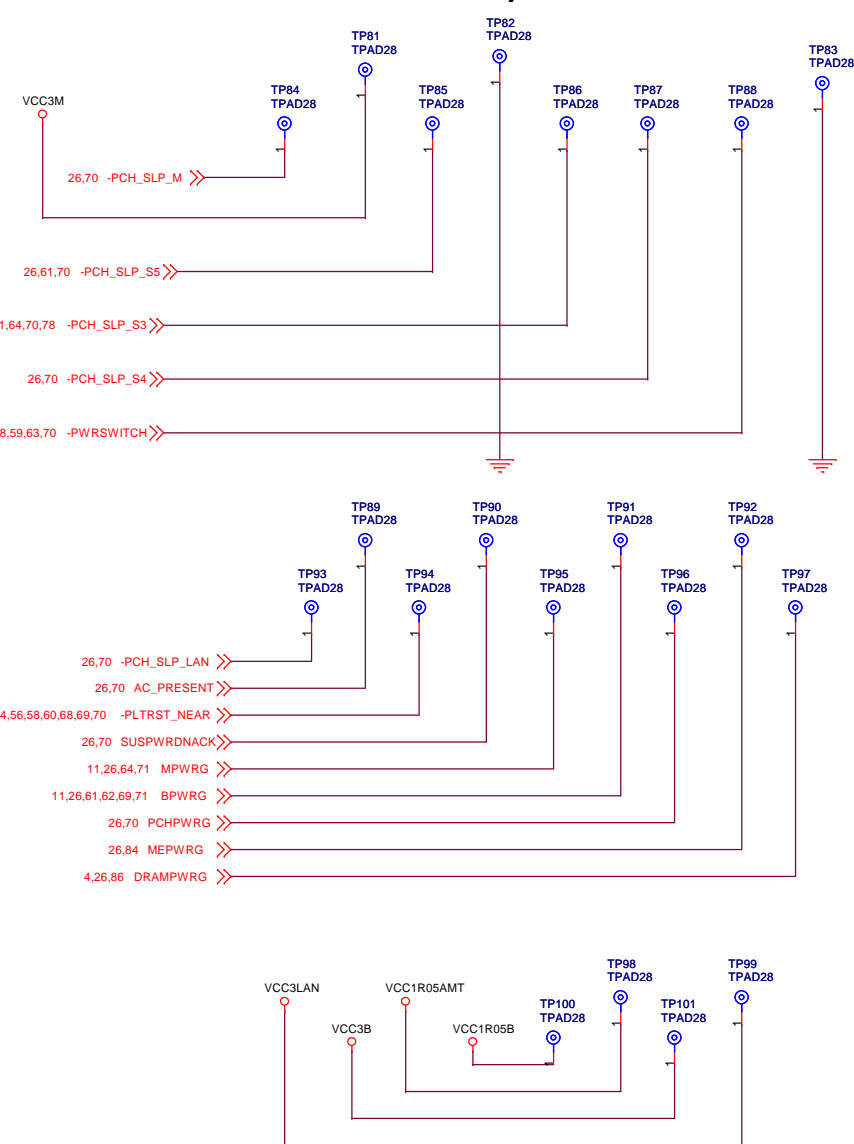
Size A3 Document Number **Dasher-2** Rev **-1**

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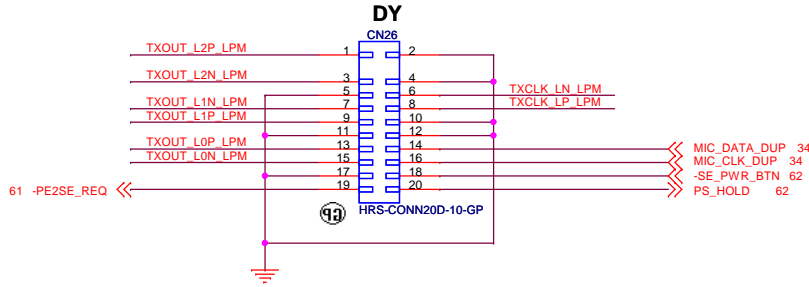
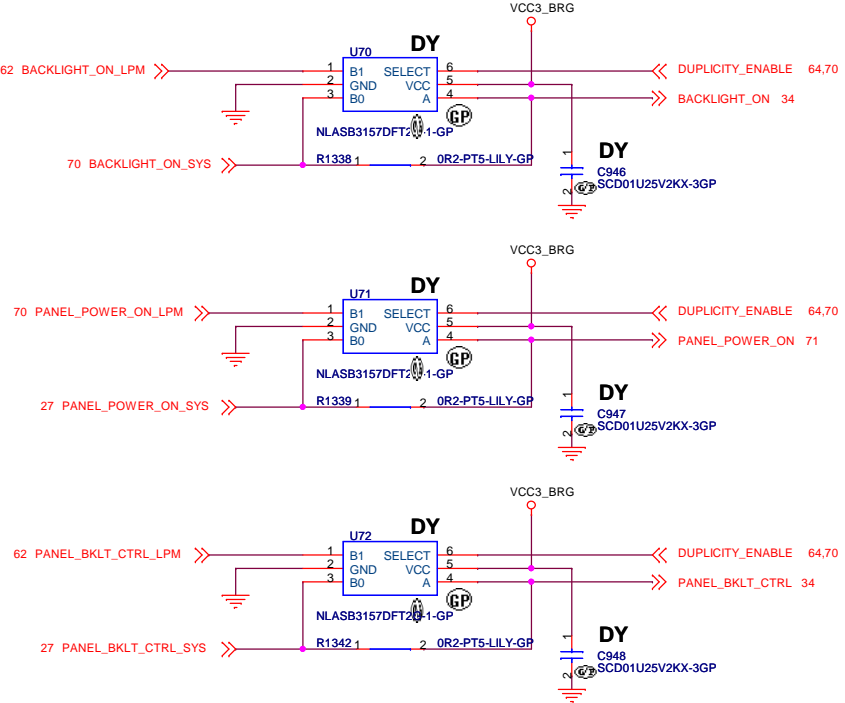
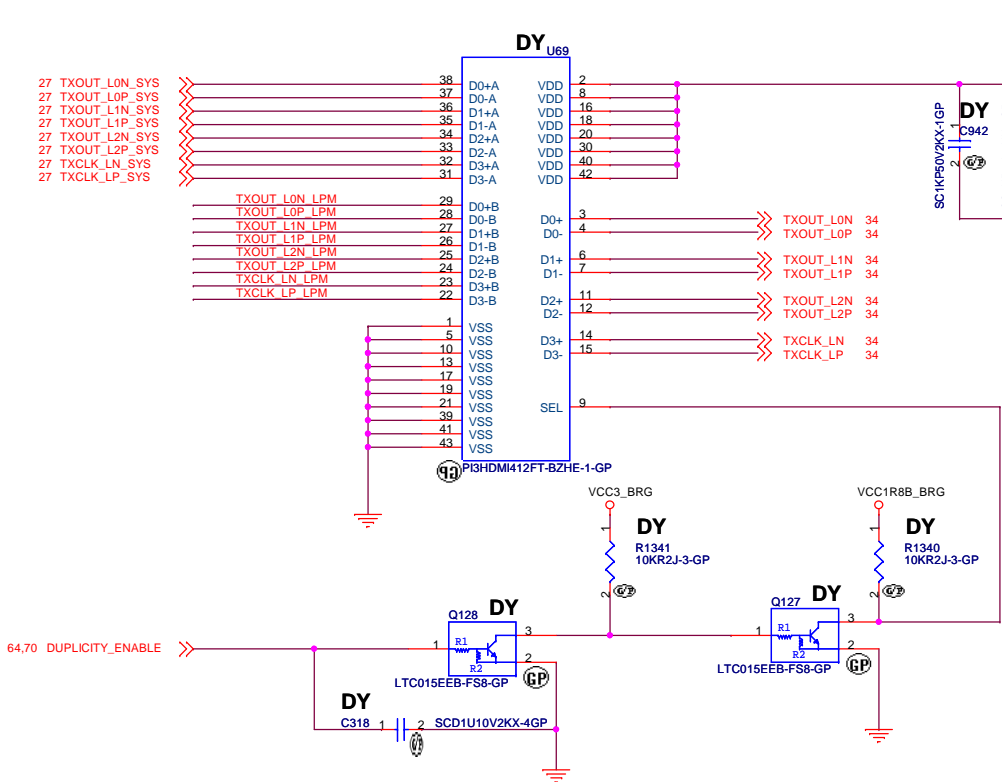
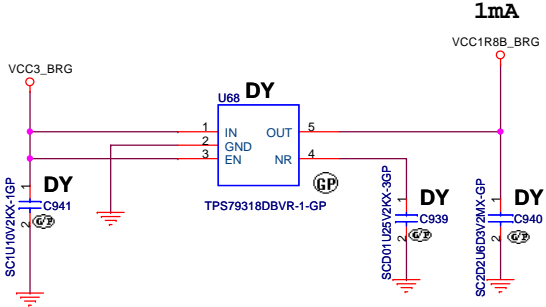
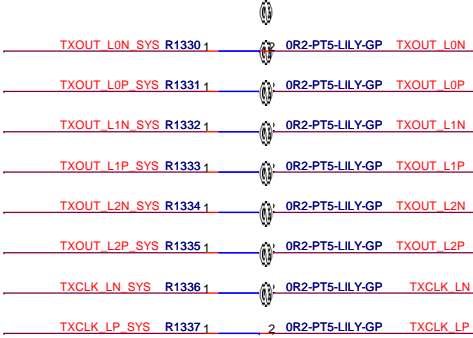


# TEST PAD FOR METS/APS





supplier	Vendor P/N	Wistron P/N
Pericom	PIHDMI412-BZHE	71.03412.B0G
TI	TS3DV421RUAR	71.03421.003



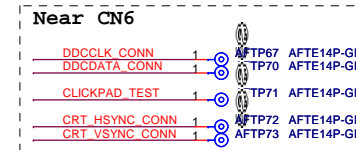
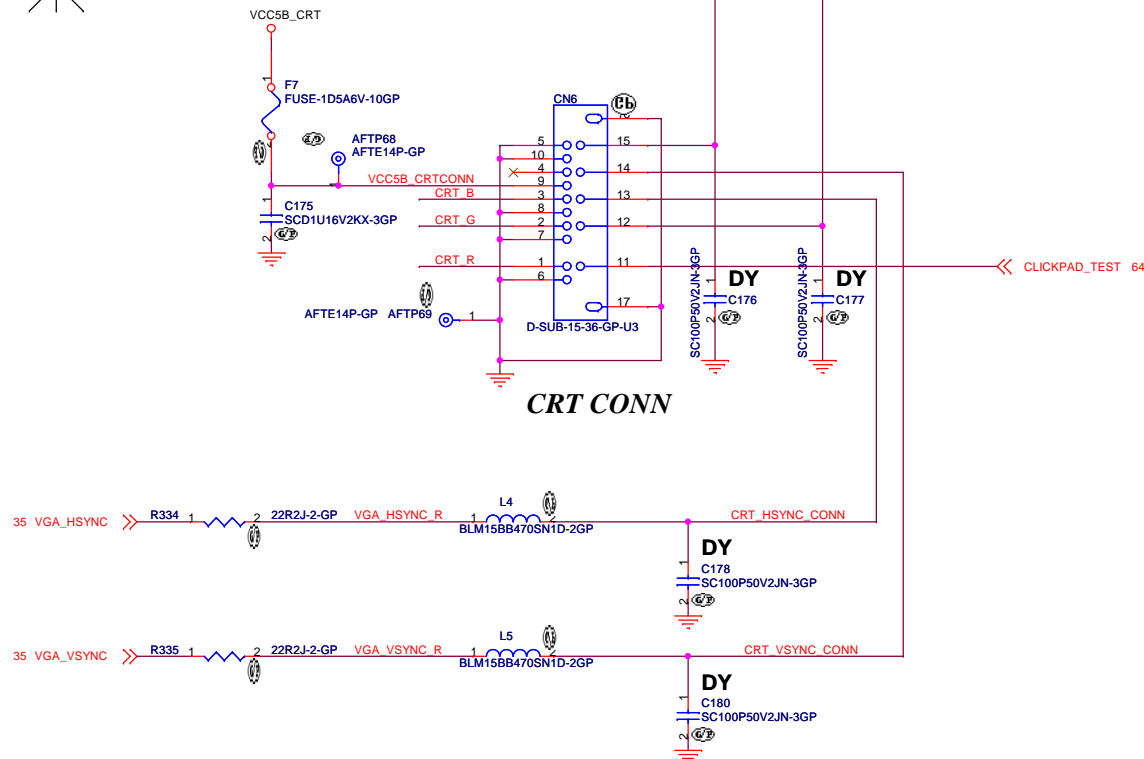
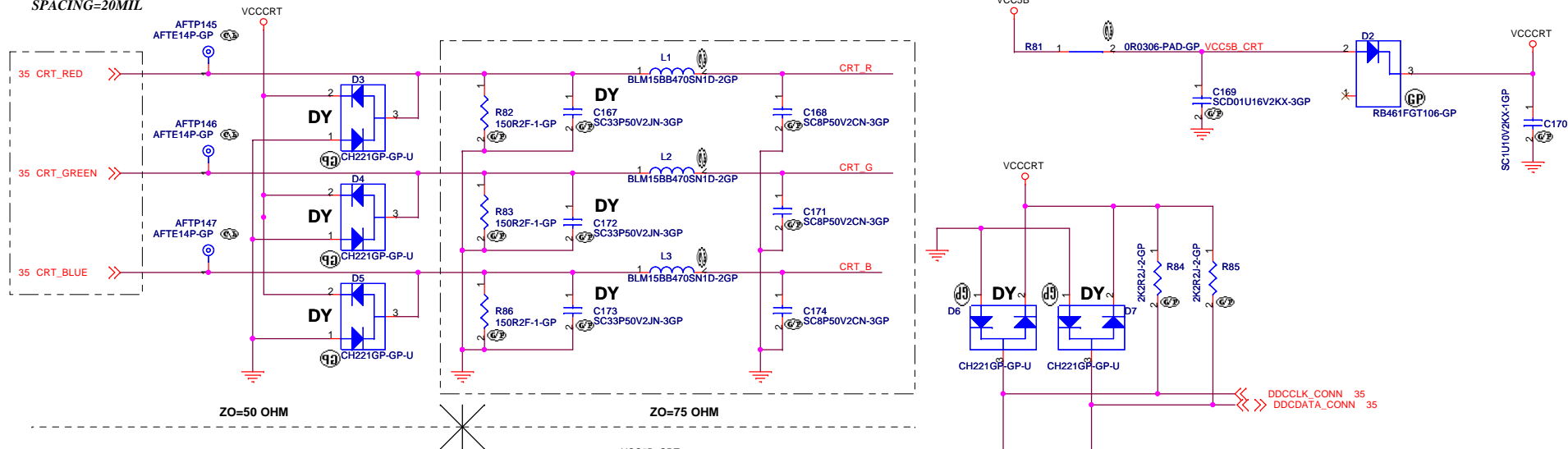




# GND GUARDING

EACH SIGNAL WIDTH DEPENDS ON ZO(TRACE IMPEDANCE)

SPACING=20MIL



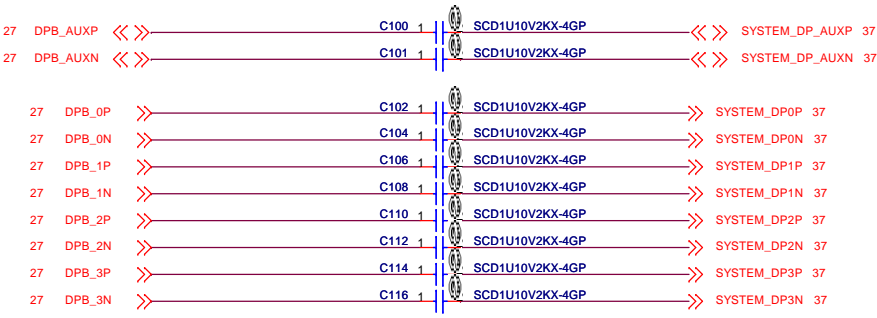
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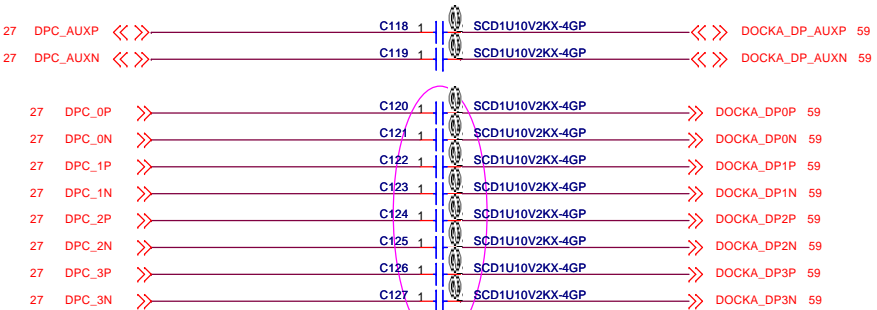
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Ext CRT Interface			
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System DP Connector

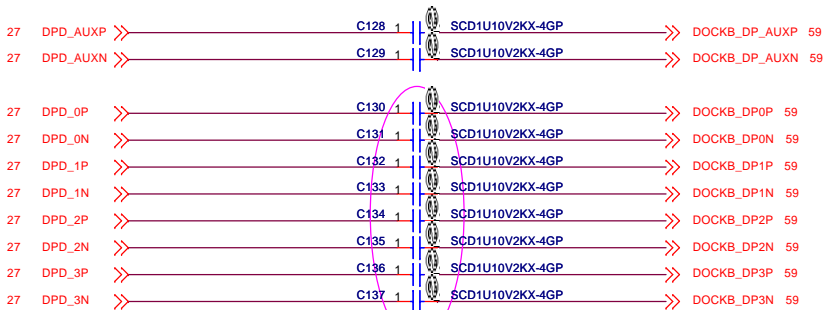


Docking DP Connector A



Place Near Docking Connector

Docking DP Connector B

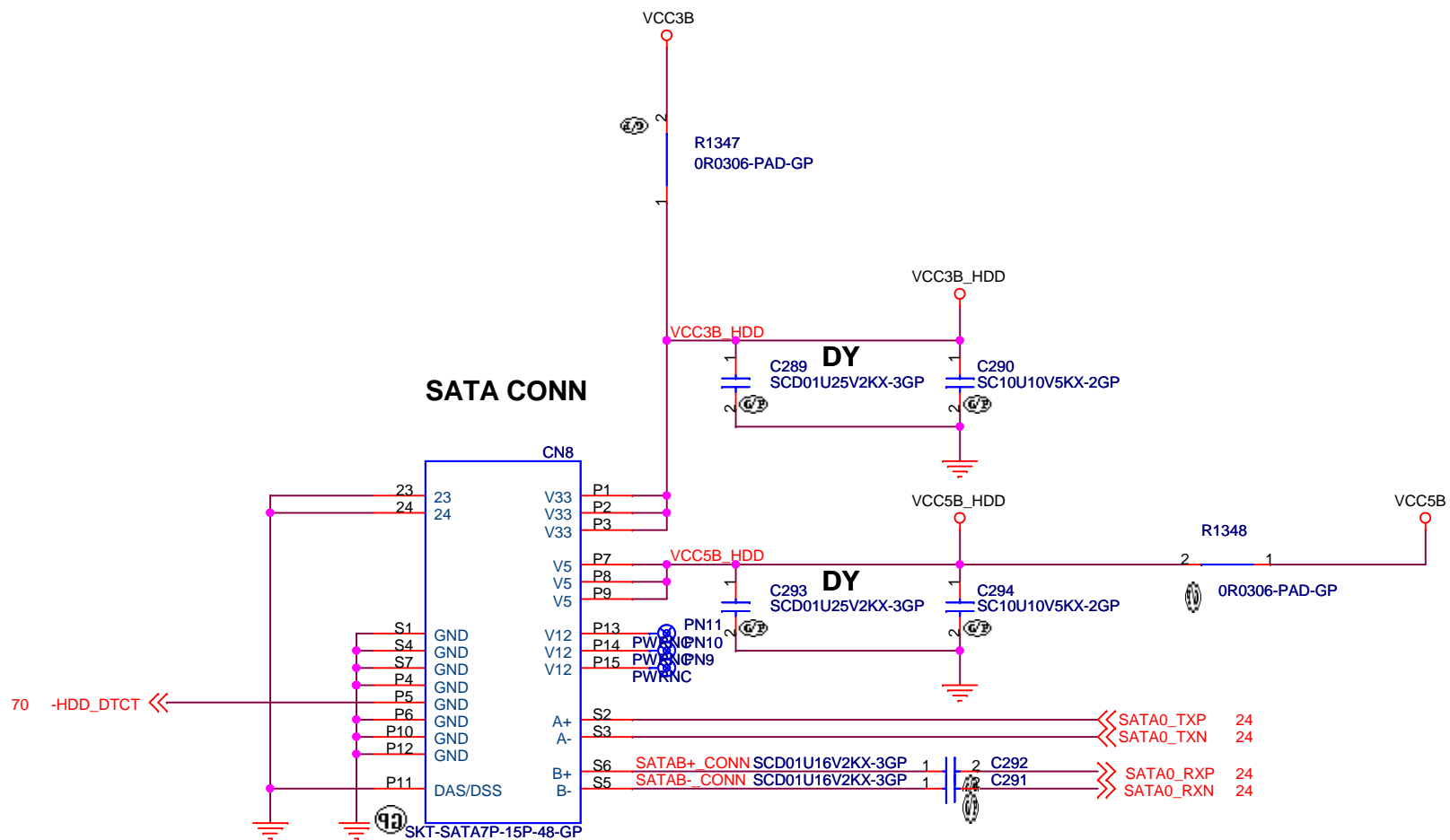


Place Near Docking Connector

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Title

**SATA Connector**

Size  
A4

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**Dasher-2**

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-1

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Title

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Size

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Document Number

Dasher-2

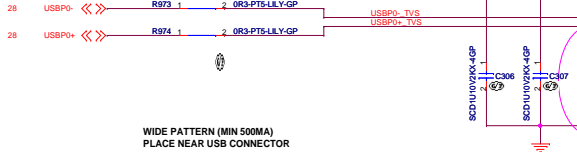
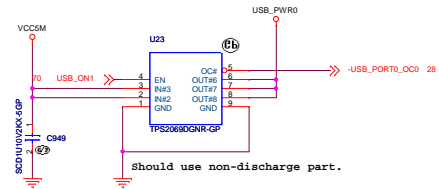
Rev

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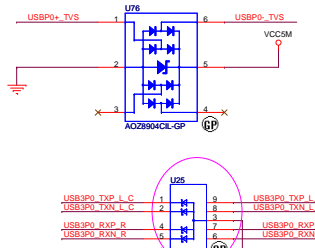
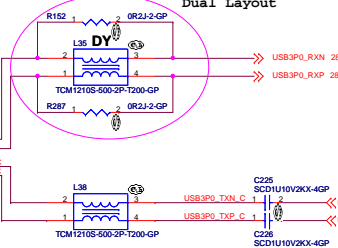
Sheet 41 of 101

USB3.0 port0			
U23,U18			
USB3.0 Enable	TI	TPS2069DGN	74.02069.079
	GMT	G548A1F51U	74.00548.A79

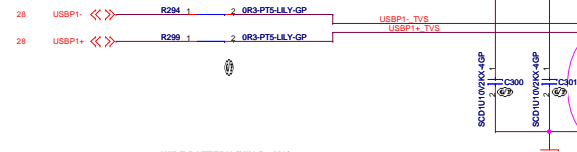
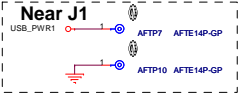
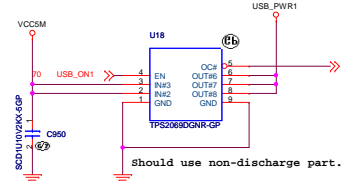


L35,L38,L41,L42
1st:TDK TCM1210S-500-2P 68.01210.20E
2nd:Murata DLP118A350HL2L 68.11350.201

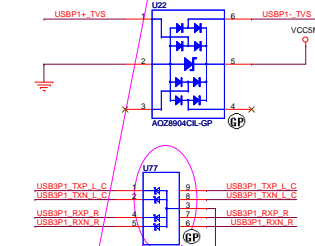
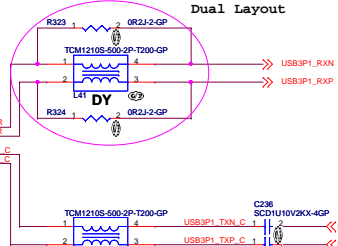
USB3.0 CONNECTOR



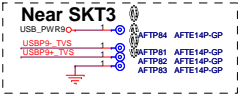
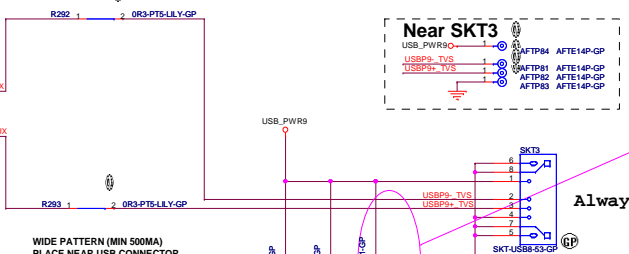
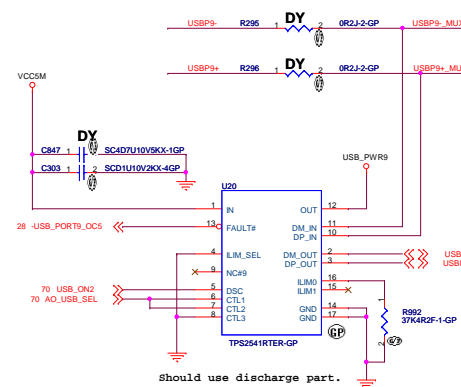
USB3.0 port1



USB3.0 CONNECTOR



USB port9(Always On USB)



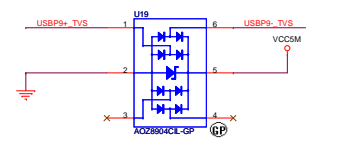
Always on port

C299, C303, TCS
1st NEC Tokin TEPSLB20J157M 77.C1571.09L
2nd SANYO 6TPE150MA2B 77.21571.111

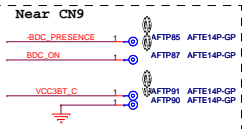
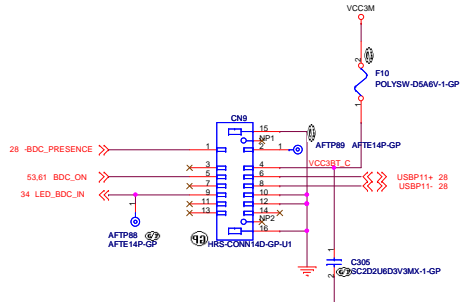
Always On USB Part List (U20)		
	~SDV	FVT~
TI	TPS2541RTER (74.02541.073)	TPS2541A(74.02541. A73)

U25,U77	
1st:Infineon ESD3V3U4ULC	83.3V3U4.0A0
2nd:NXP IP4294CZ10-TBR	83.04294.0A0
3rd:AMC AZ1045-04F DFN2510P 10E	83.01045.AA0

U76,U22,U19	
1st:AOS AO28904CIL	83.08904.0AE
2nd:Little Fuse SP3002-04HTG	84.03200.0AF



Bluetooth Module



PSIT Config.

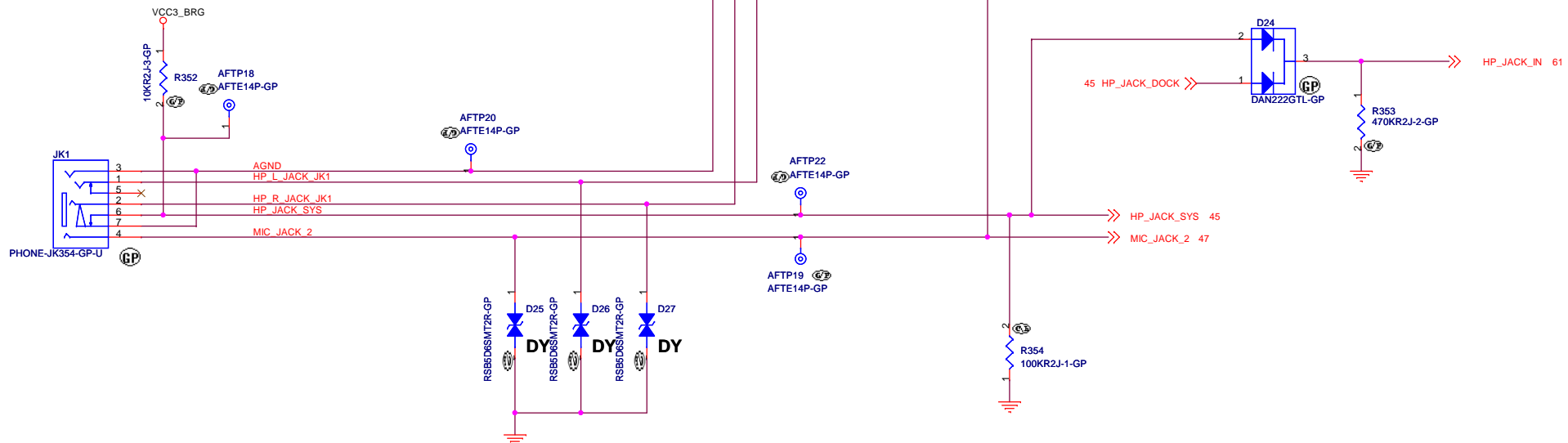
	PSIT-1	PSIT-2	PSIT-3	PSIT-4	PSIT-5	PSIT-6
L35,L41	No ASM	No ASM	No ASM	No ASM	No ASM	No ASM
L38,L42	TDK	No ASM	No ASM	TDK	No ASM	Murata
U25,U77	Infineon	NXP	AMC	NXP	Infineon	AMC
R152,287,323,324	ASM	ASM	ASM	ASM	ASM	ASM
R320,321,325,328	No ASM	ASM	ASM	No ASM	ASM	No ASM



# NEAR HEADPHONE CONN

WIDE PATTERN

WIDE AND SHORT PATTERN

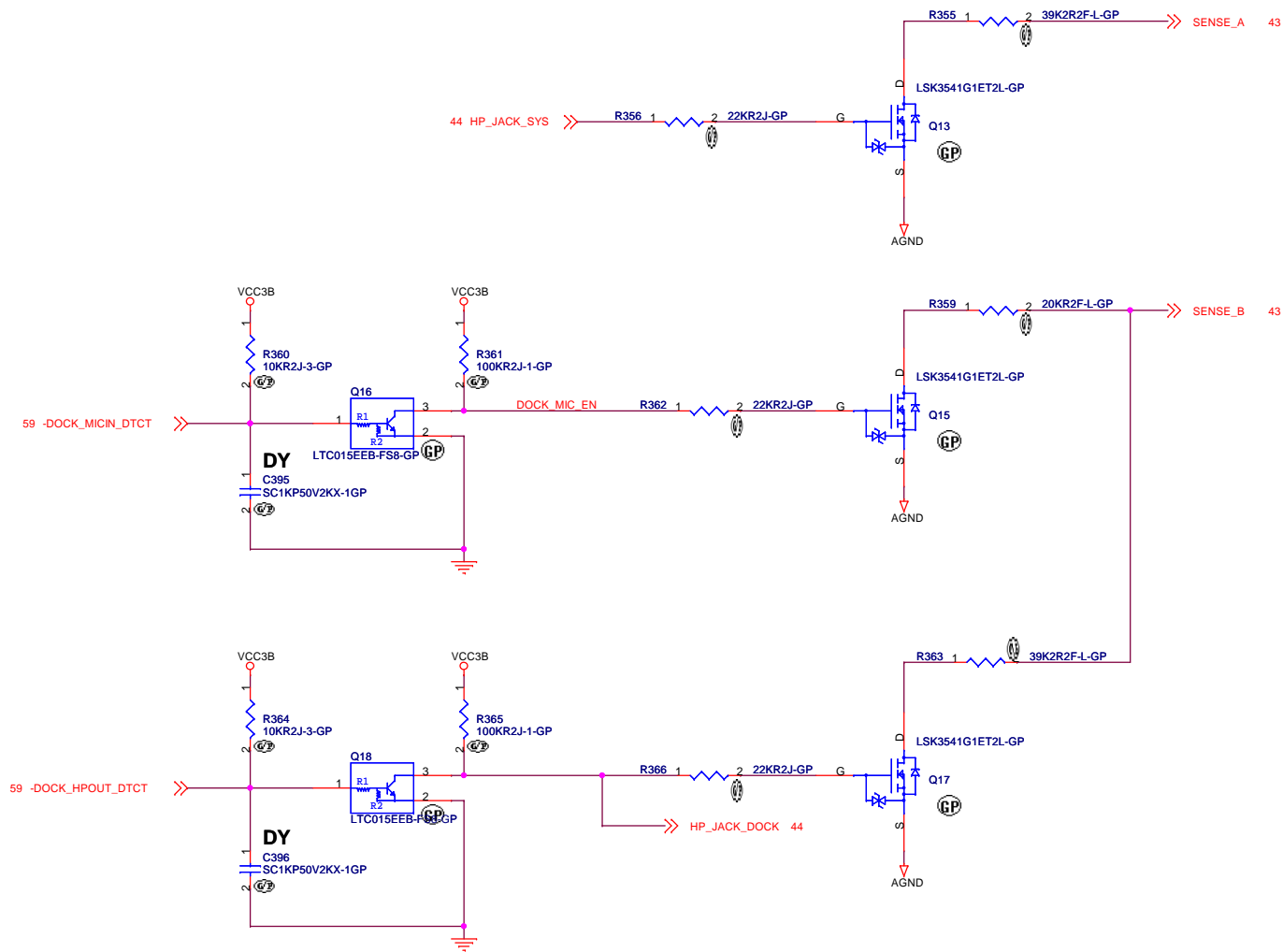


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Title Audio Connector

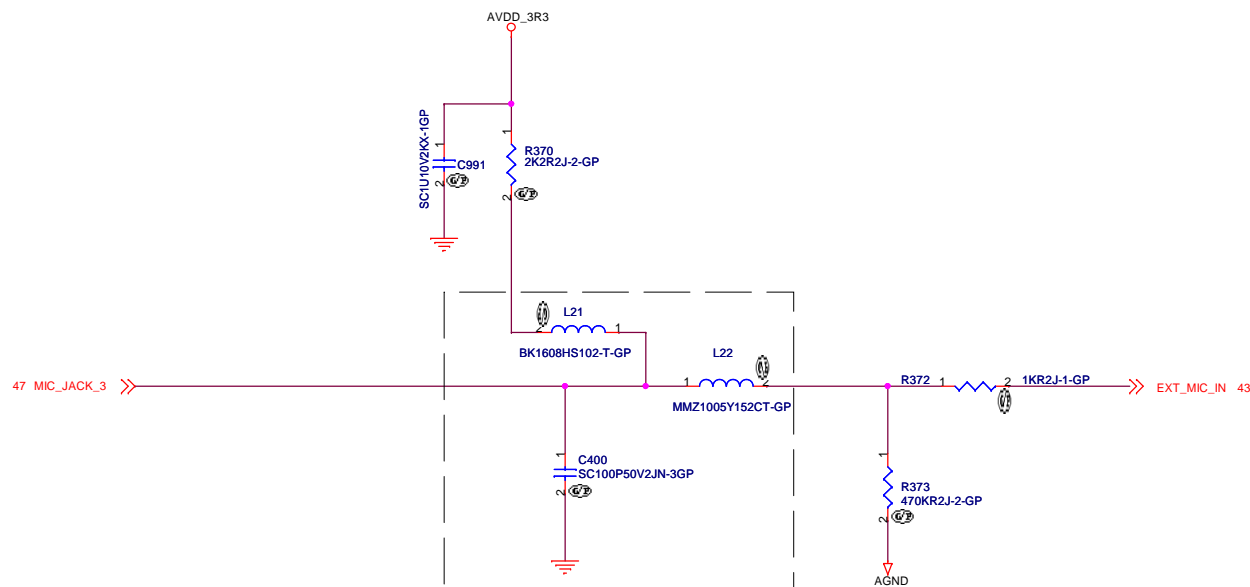
Size A3	Document Number	Rev -1
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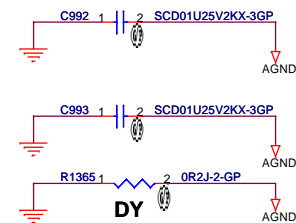
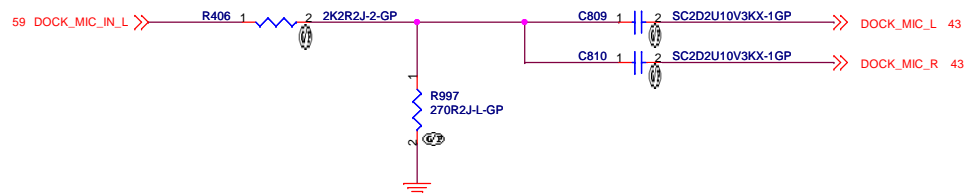
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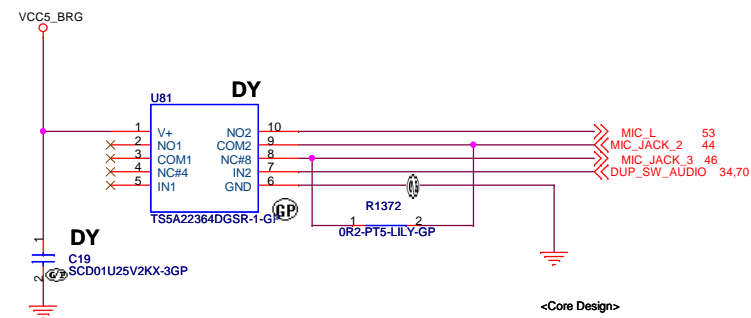
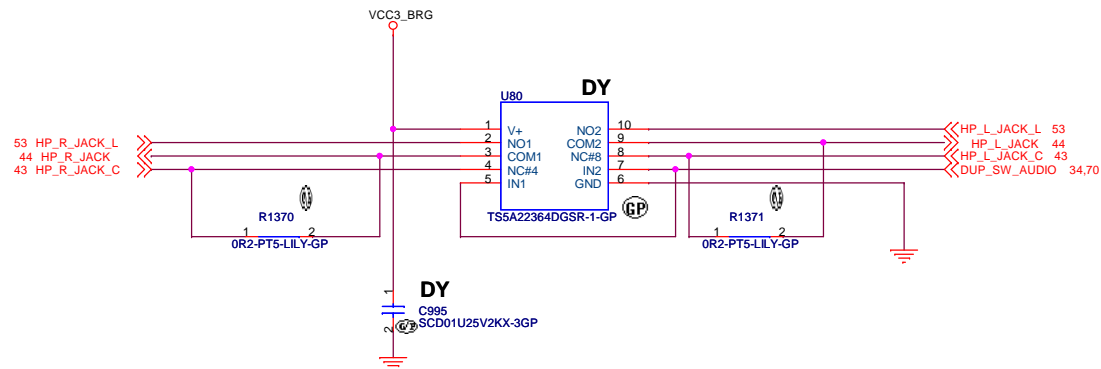
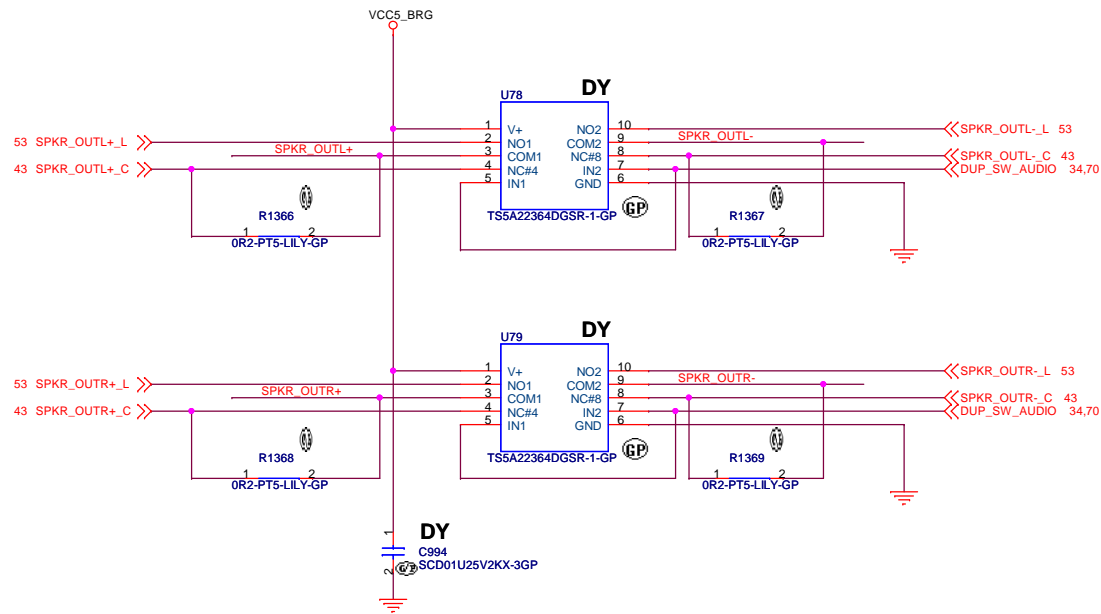
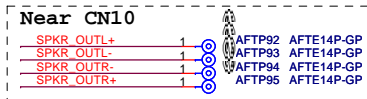
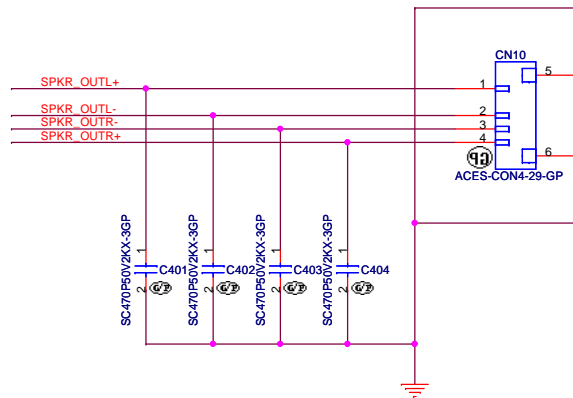
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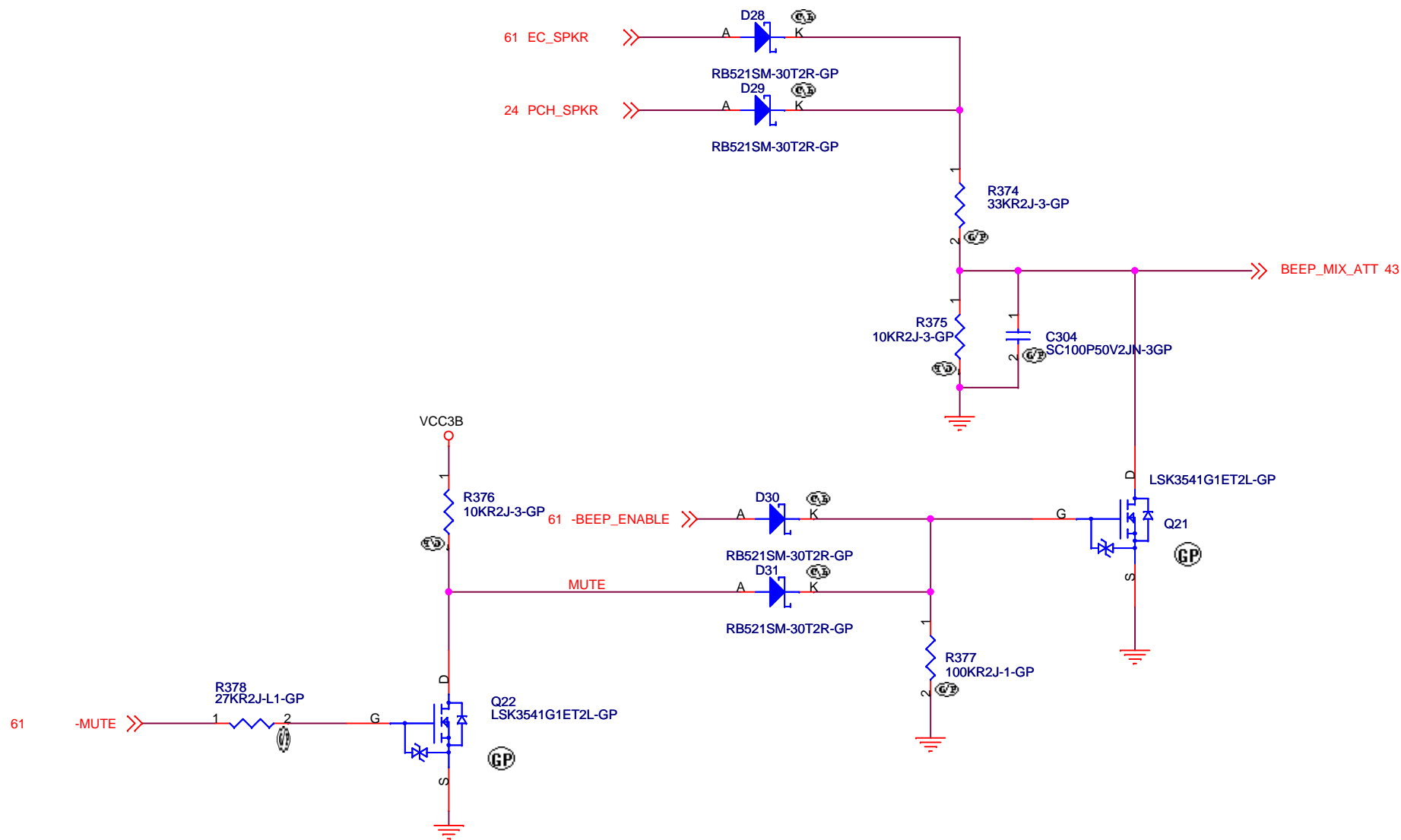
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Size	Document Number	Dasher-2		Rev
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NEAR EXT MIC CONN







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Title

**Audio BEEP**

Size  
A4

Document Number

**Dasher-2**

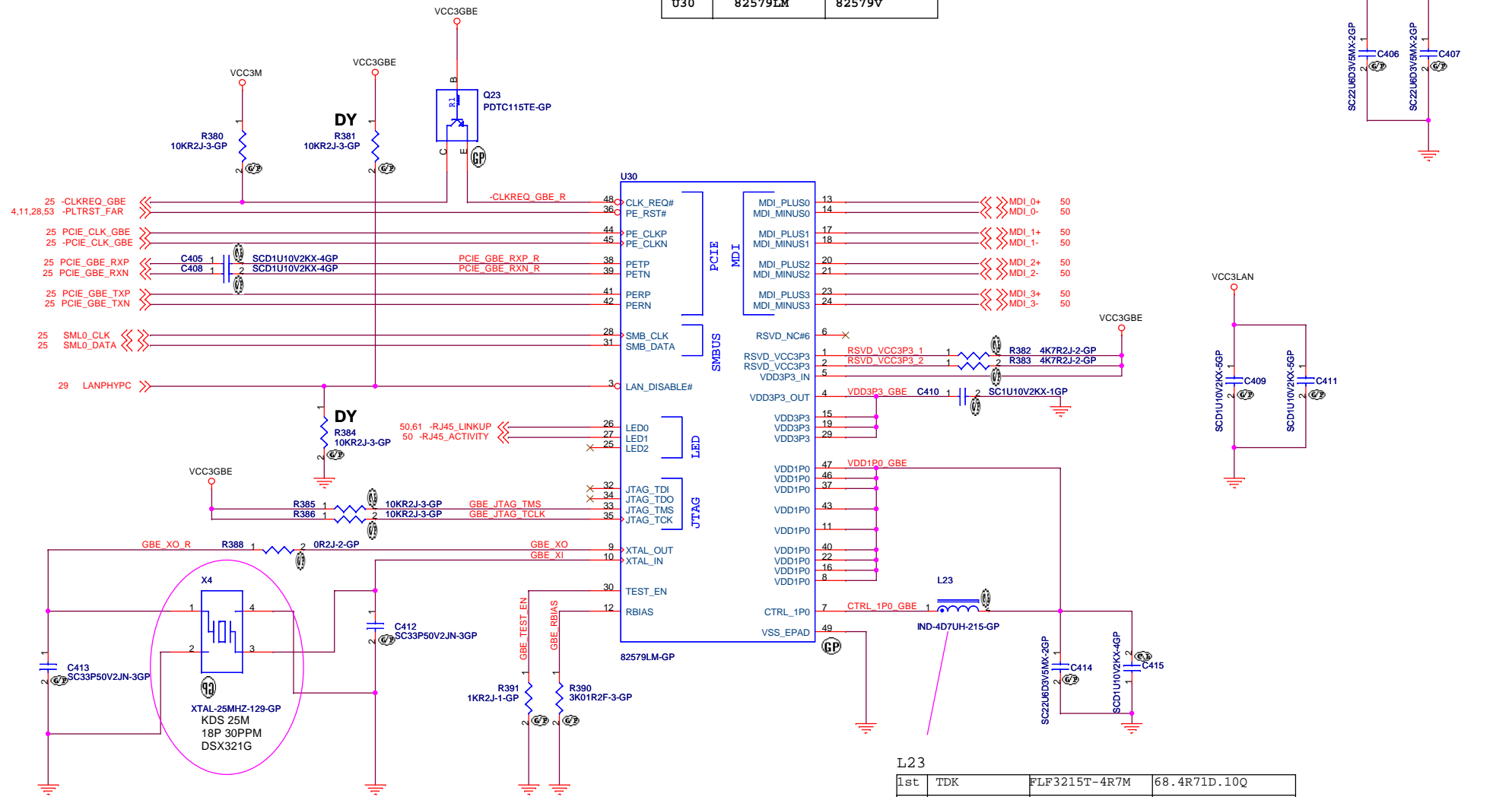
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-1

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AMT	YES	NO
U30	82579LM	82579V



X4			
1st	KDS	DSX321G 25M 18P 30PPM	82.30020.B11
2nd	H.ELE	HSX321S 25M 18P 30PPM	82.30020.B21
3rd	TXC	7V25020001 25M 18P 30PPM	41U6141AA

L23			
1st	TDK	FLF3215T-4R7M	68.4R71D.10Q
2nd	Murata	LQH32PN4R7NN0	68.4R750.20H
3rd	Taiyo Yuden	BRL3225T4R7M	68.4R71E.10I

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Title

GBE Lewisville

Size

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Rev

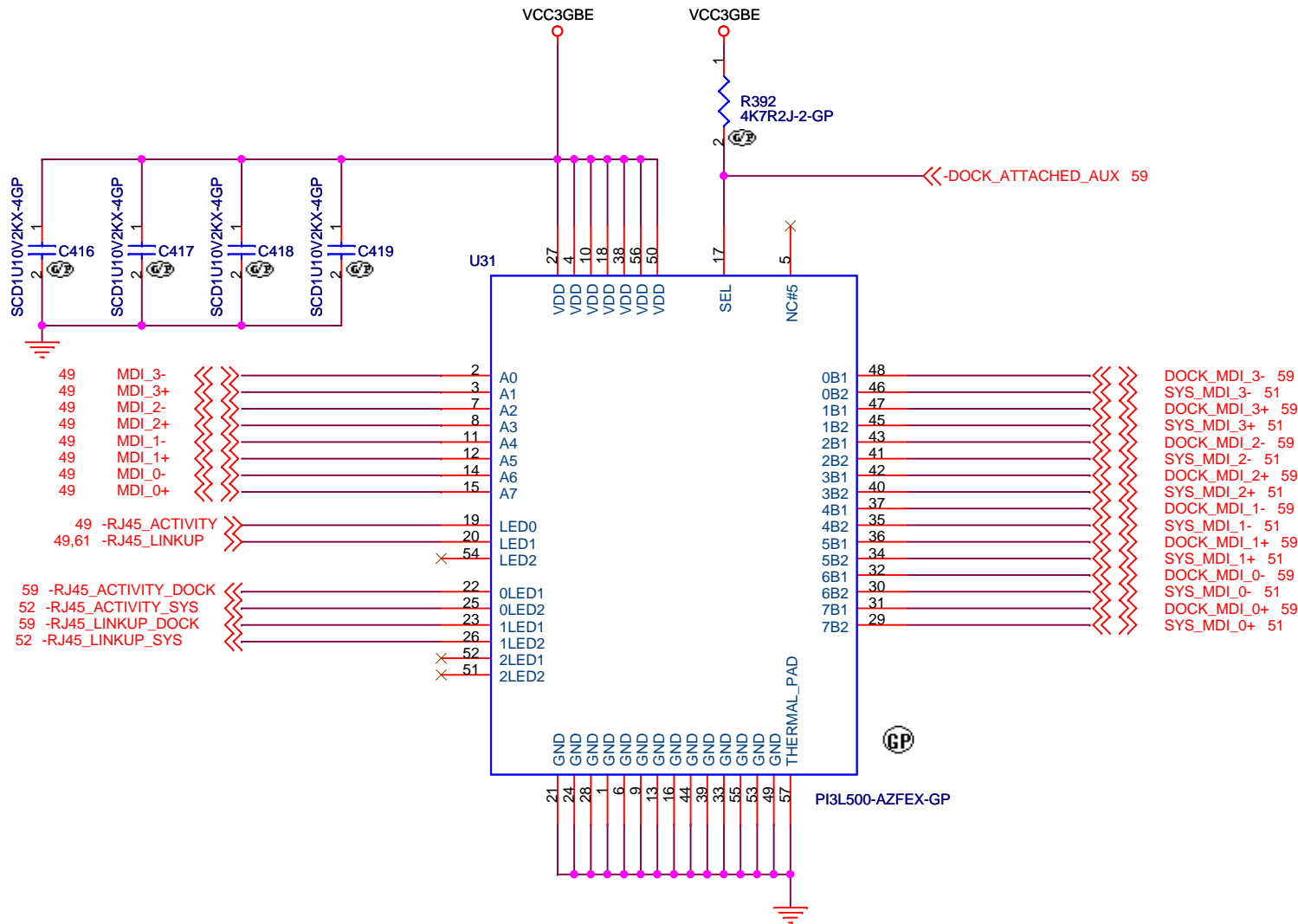
-1

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		Vendor P/N	Wistron P/N
1st	Pericom	PI3L500AZFEX	73.3L500.003
2nd	TI	TS3L500AERHUR	73.3L500.A0V
3rd	ST	STMUX1800LQTR	73.01800.003

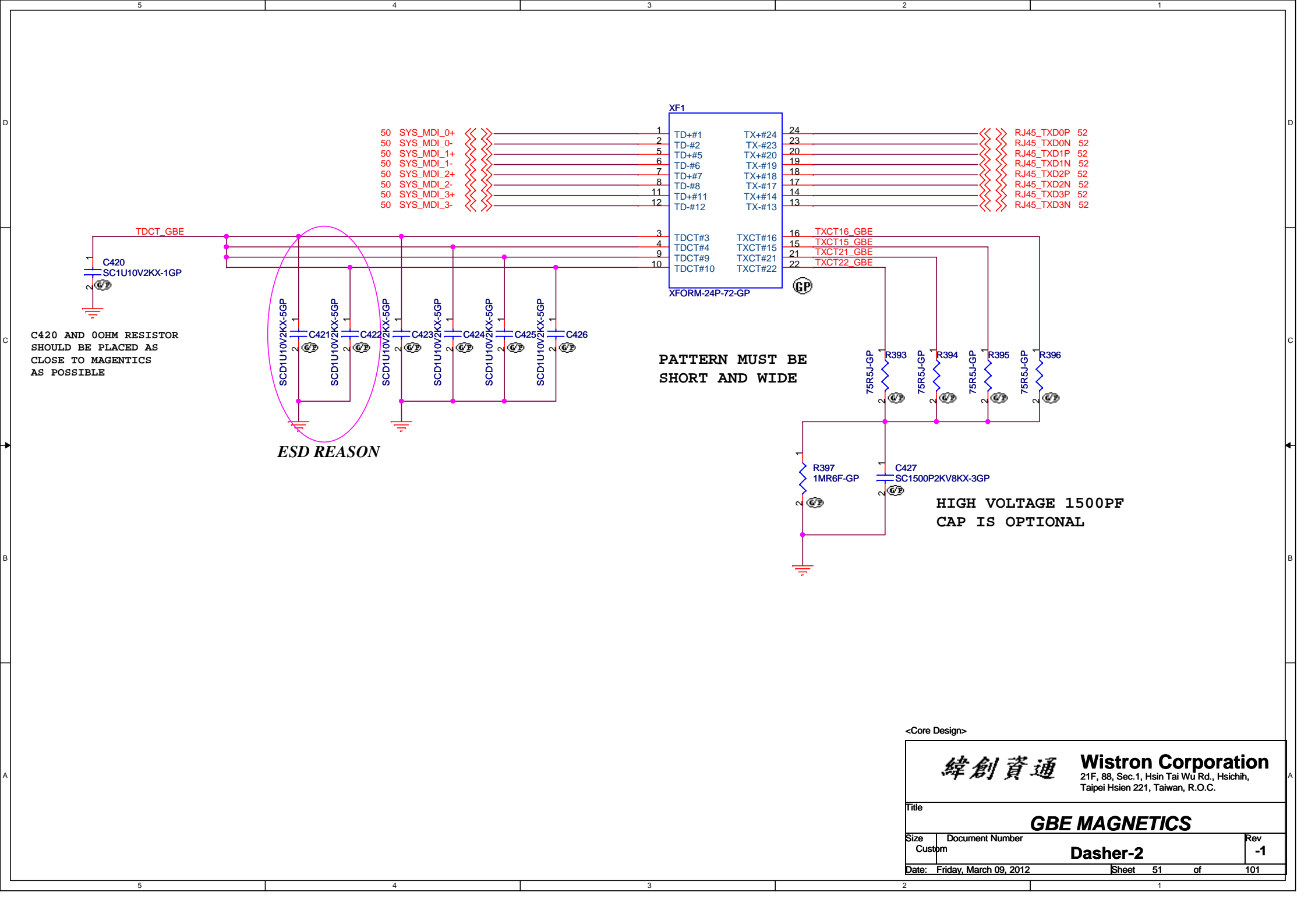
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Title

**GBE LAN Switch**

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Title

GBE MAGNETICS

Size

Document Number

Custom

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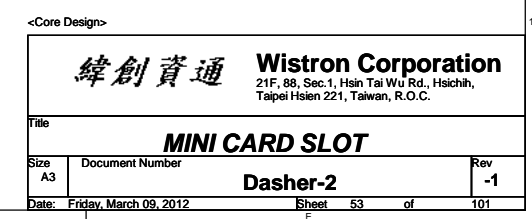
Rev

-1

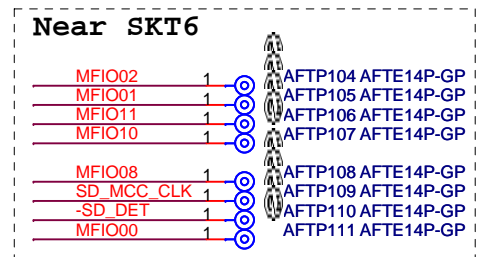
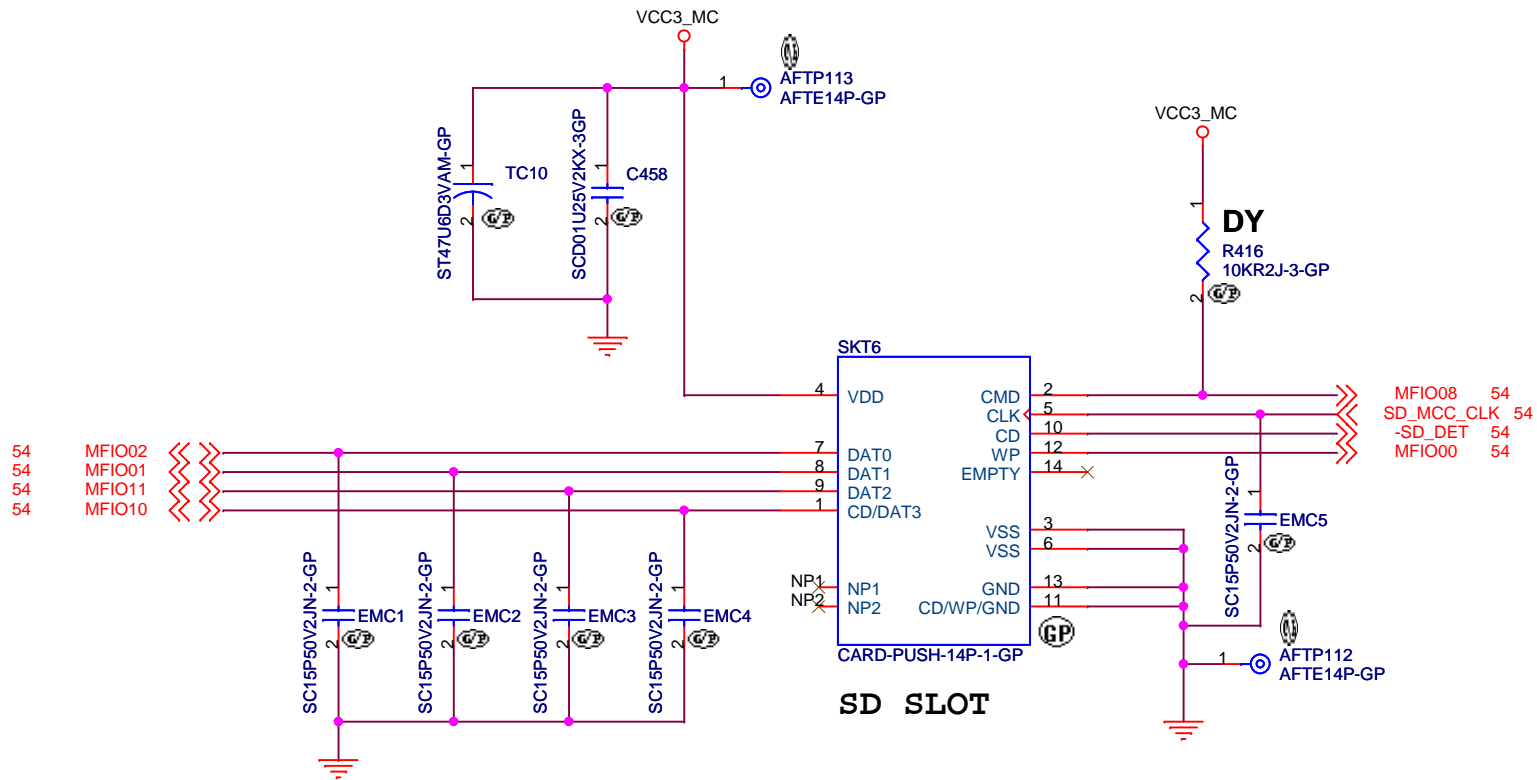
Date: Friday, March 09, 2012

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Title

**Media Card Slot**

Size  
A4

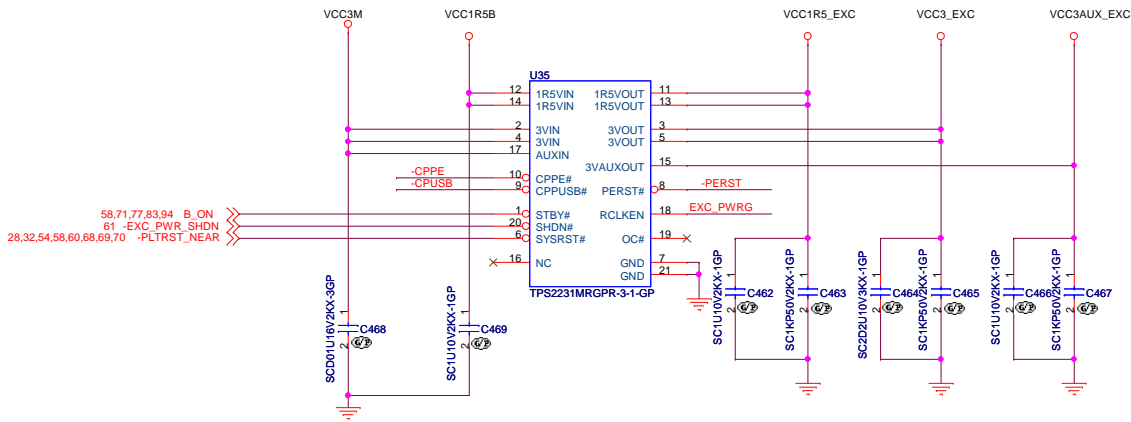
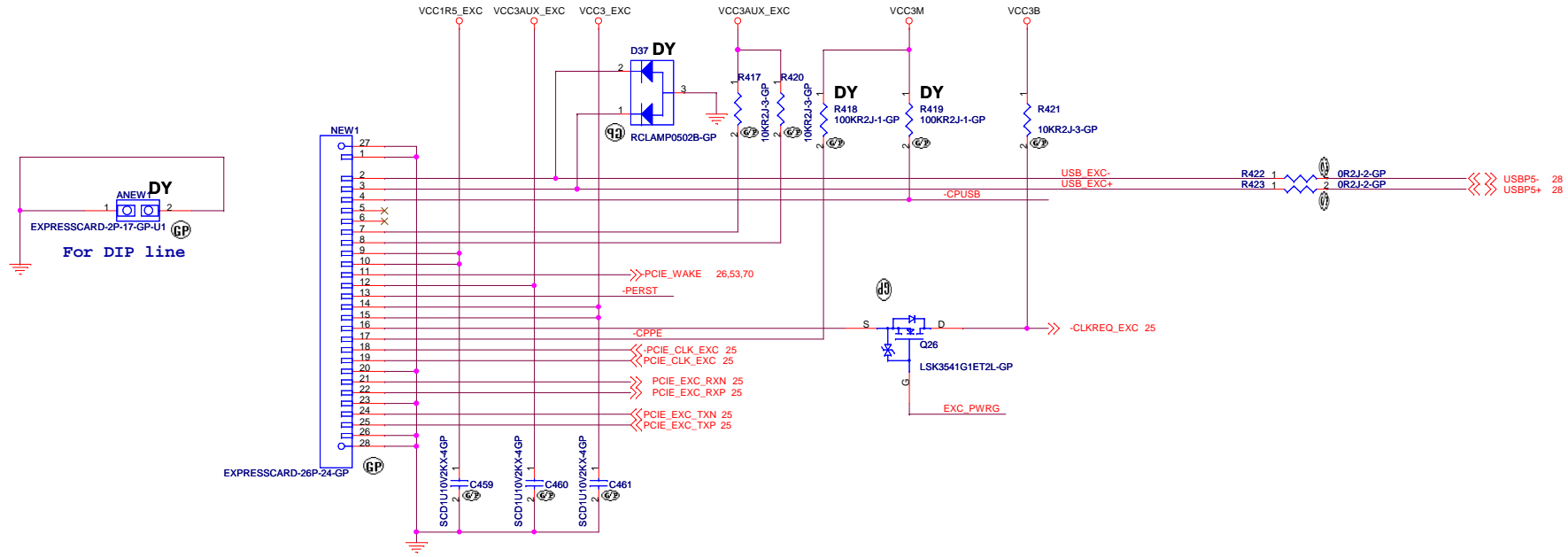
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U35	TI	TPS2231MRGP-3	45K0234BA
	Rohm	BD4156MUV-GTR	74.04156.A73
	Rohm	BD4157MUV-GE2	74.04157.A73

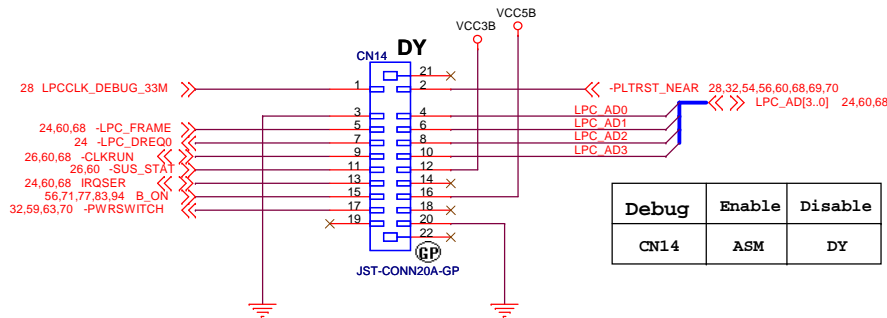


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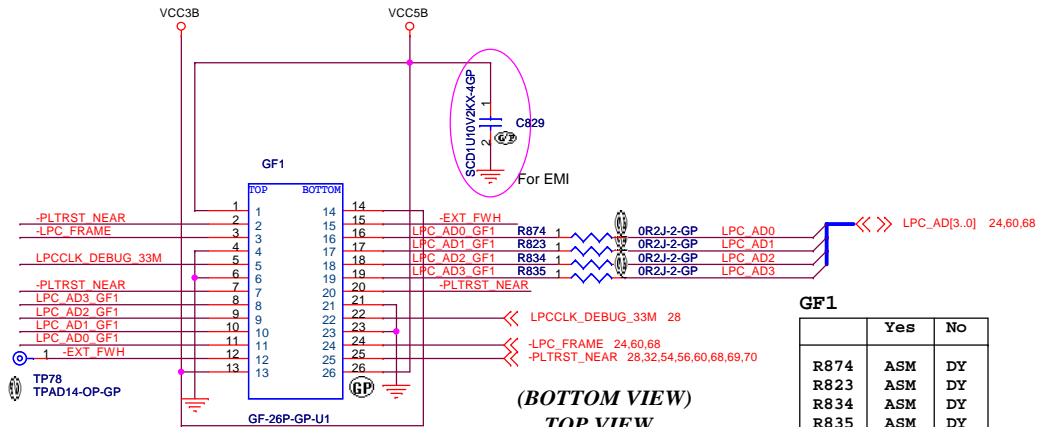
## Debug card connector



Put "easy-to -access" place

4MB				
SO8	Manufacturer	Part Number	Part Number	Part Number
	Marconix	MX25L3206EM2I-12G	72.25320.C01	
	Winbond	W25Q032BVSSIG	72.25Q32.A01	
	Eon	EN25QH32-104HIP	72.02532.B01	
	Numonyx	N25Q032A13ESEC0	72.25Q32.C01	
8MB				
SO8	Manufacturer	Part Number	Part Number	Part Number
	Marconix	MX25L6406EM2I-12G	72.25640.D01	
	Winbond	W25Q064CVSSIG	72.25Q64.B01	
	Eon	EN25QH64-104HIP	72.02564.001	
	Numonyx	N25Q064A13ESEC0	72.25Q64.G01	
	Winbond	W25Q64FVSSIG	72.25Q64.F01	

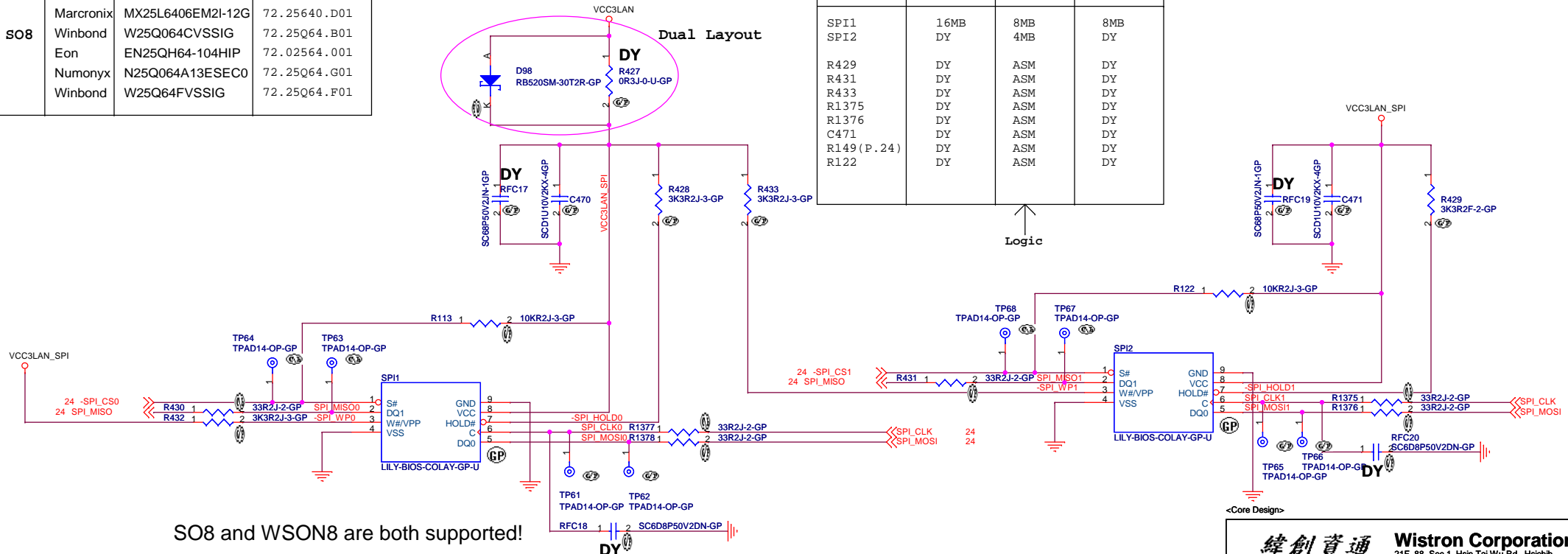
## Golden Finger for Debug Board



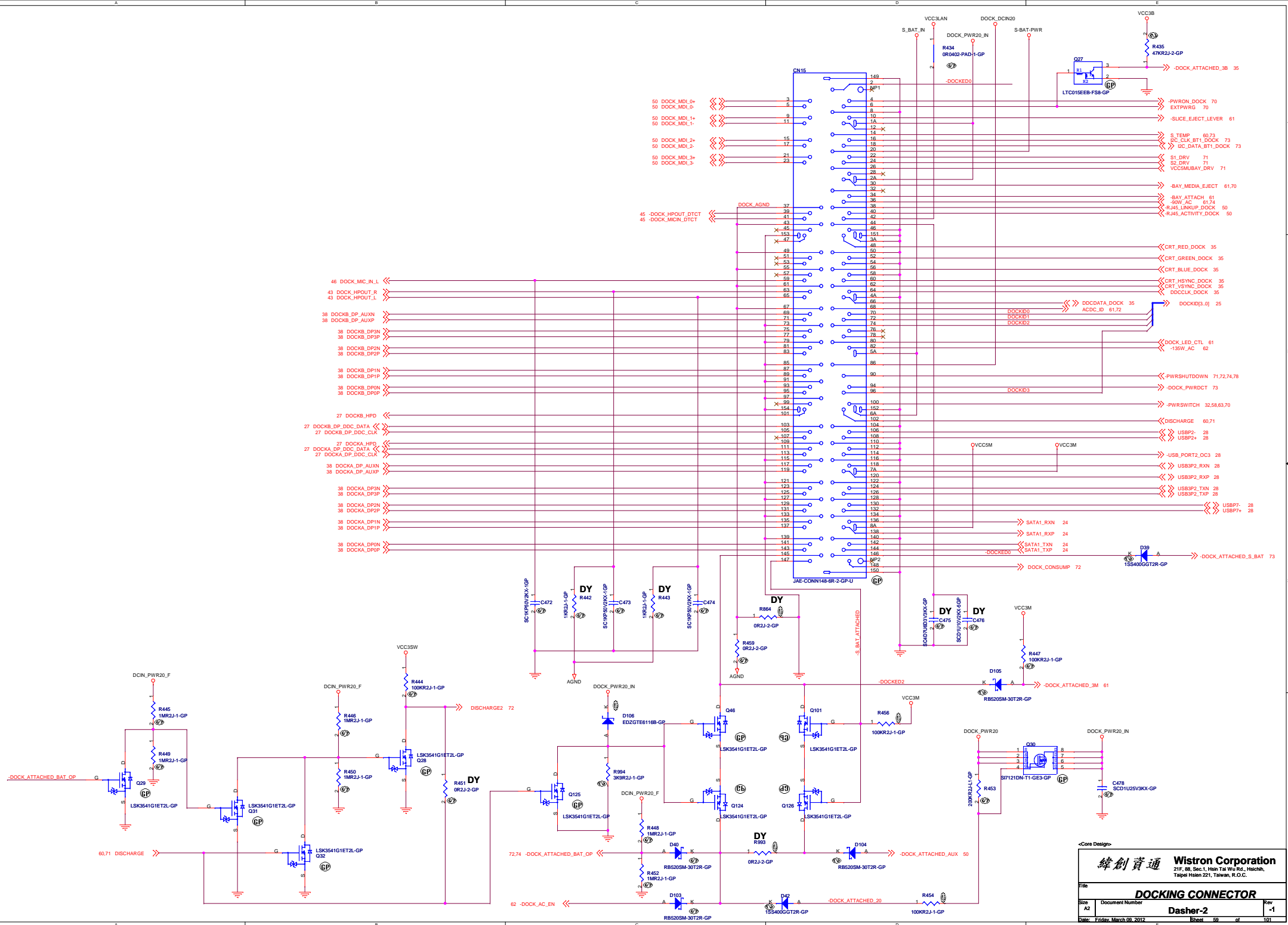
Configuration Table

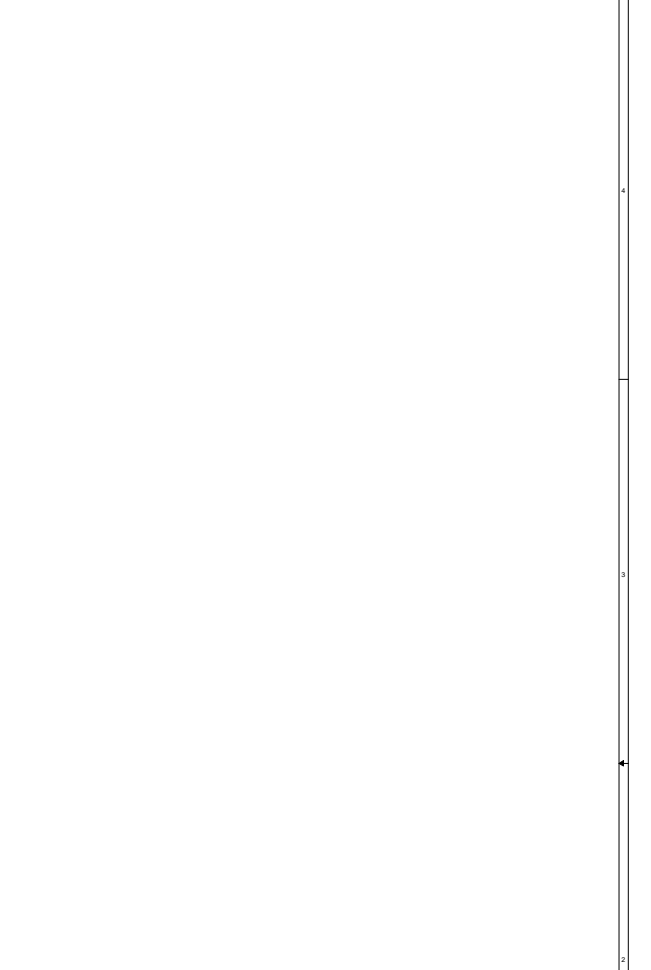
	CONFIG-1 16MB	CONFIG-2 12MB	CONFIG-3 8MB
SPI1	16MB	8MB	8MB
SPI2	DY	4MB	DY
R429	DY	ASM	DY
R431	DY	ASM	DY
R433	DY	ASM	DY
R1375	DY	ASM	DY
R1376	DY	ASM	DY
C471	DY	ASM	DY
R149 (P. 24)	DY	ASM	DY
R122	DY	ASM	DY

Dual Layout



SO8 and WSON8 are both supported!

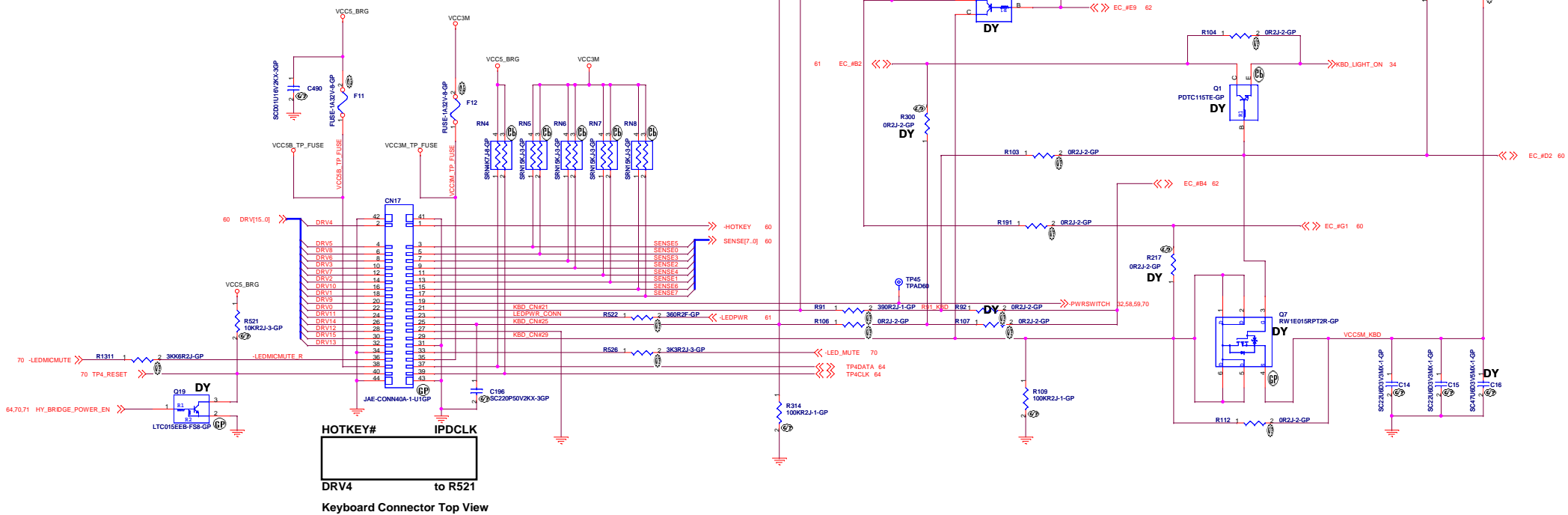




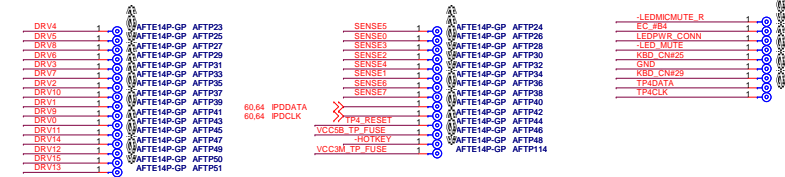




### *Keyboard Connector*



### Keyboard Connector Top View



**KBD Table1**

		case1	case2	case3	case4
CS12 KBD w/o BL		v	v	v	
CS12 KBD w BL			v	v	
CS09				v	v
Parts#	parts	case1	case2	case3	case4
R108	10k_5%_0402	DY	DY	ASM	ASM
R104	0.5%_0402	ASM	ASM	DY	DY
R89	100k_5%_0402	ASM	ASM	ASM	ASM
R105	1k_5%_0402	ASM	DY	ASM	ASM
R111	10k_5%_0402	ASM	ASM	ASM	ASM
R110	10k_5%_0402	DY	ASM	ASM	ASM
R92	0.5%_0402	DY	DY	ASM	ASM
R91	390_5%_0402	DY	ASM	ASM	ASM
R107	0.5%_0402	DY	ASM	DY	DY
R103	0.5%_0402	ASM	ASM	DY	DY
R106	0.5%_0402	DY	ASM	ASM	ASM
R112	0.5%_0402	DY	ASM	DY	DY
R109	100k_5%_0402	DY	ASM	ASM	DY
R191	0.5%_0402	ASM	ASM	DY	ASM
R217	0.5%_0402	DY	DY	ASM	DY
R300	0.5%_0402	DY	DY	ASM	ASM
C16	47uF_6.3V_0805	DY	DY	DY	DY
C15	10uF_6.3V_0603	DY	ASM	ASM	DY
C14	10uF_6.3V_0603	DY	ASM	ASM	DY
Q1	LTC015TE	DY	DY	ASM	ASM
Q8	LTA015TE	DY	DY	ASM	DY
Q7	RW1E015RP	DY	ASM	DY	DY
F5	1.5A/6A Fuse	DY	ASM	DY	DY
	1.5A/6V PolySW	DY	DY	ASM	DY
R314	100K_5%_0402	DY	ASM	DY	DY

### KBD Table2

Pre-DV	case4
SDV	case2
FVT	case2
PreSIT	case2
SIT	case2

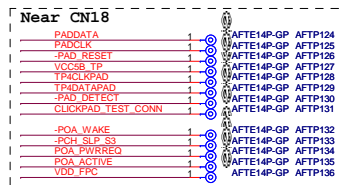
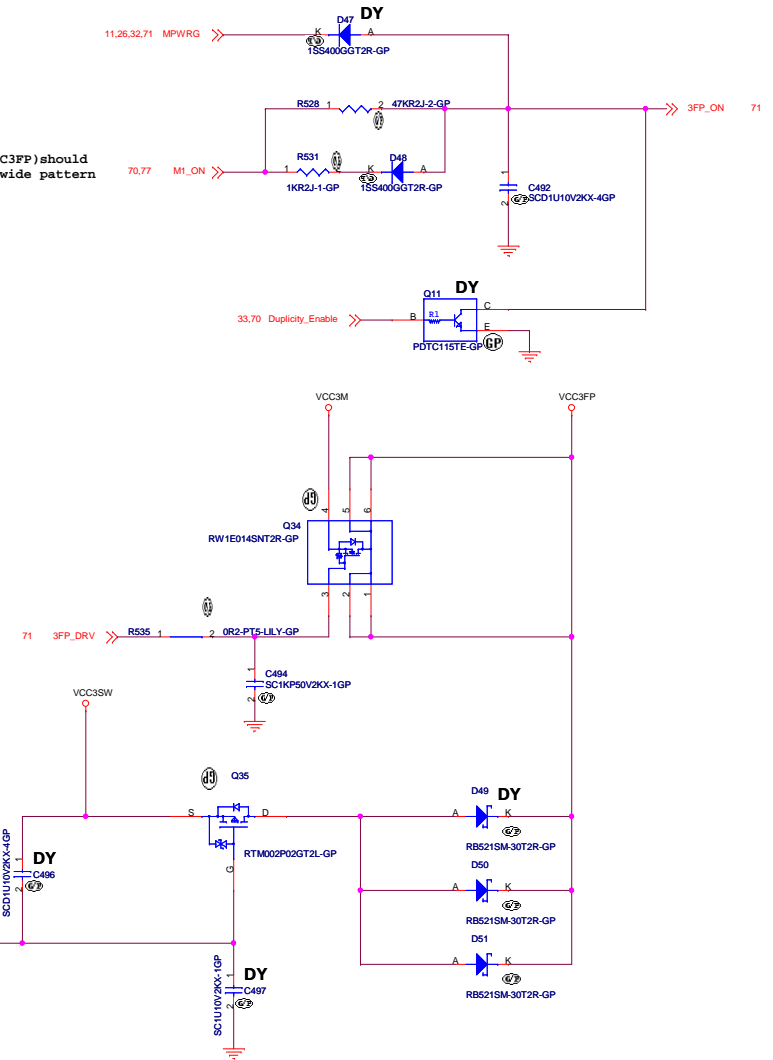
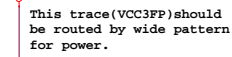
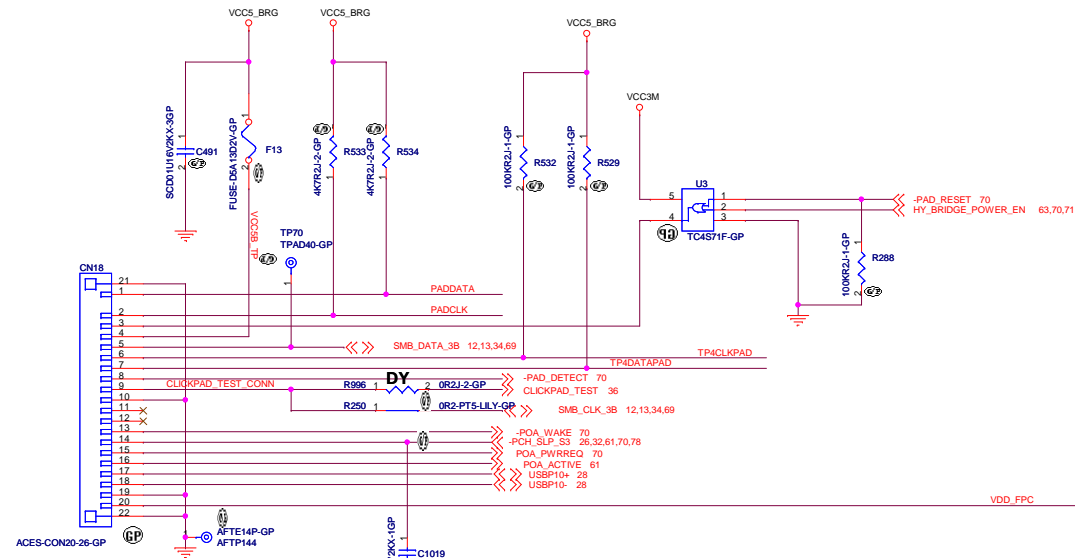
← Logic

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Title			
<b>KEYBOARD CONNECTOR</b>			
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**Fingerprint Reader / Touch PAD**



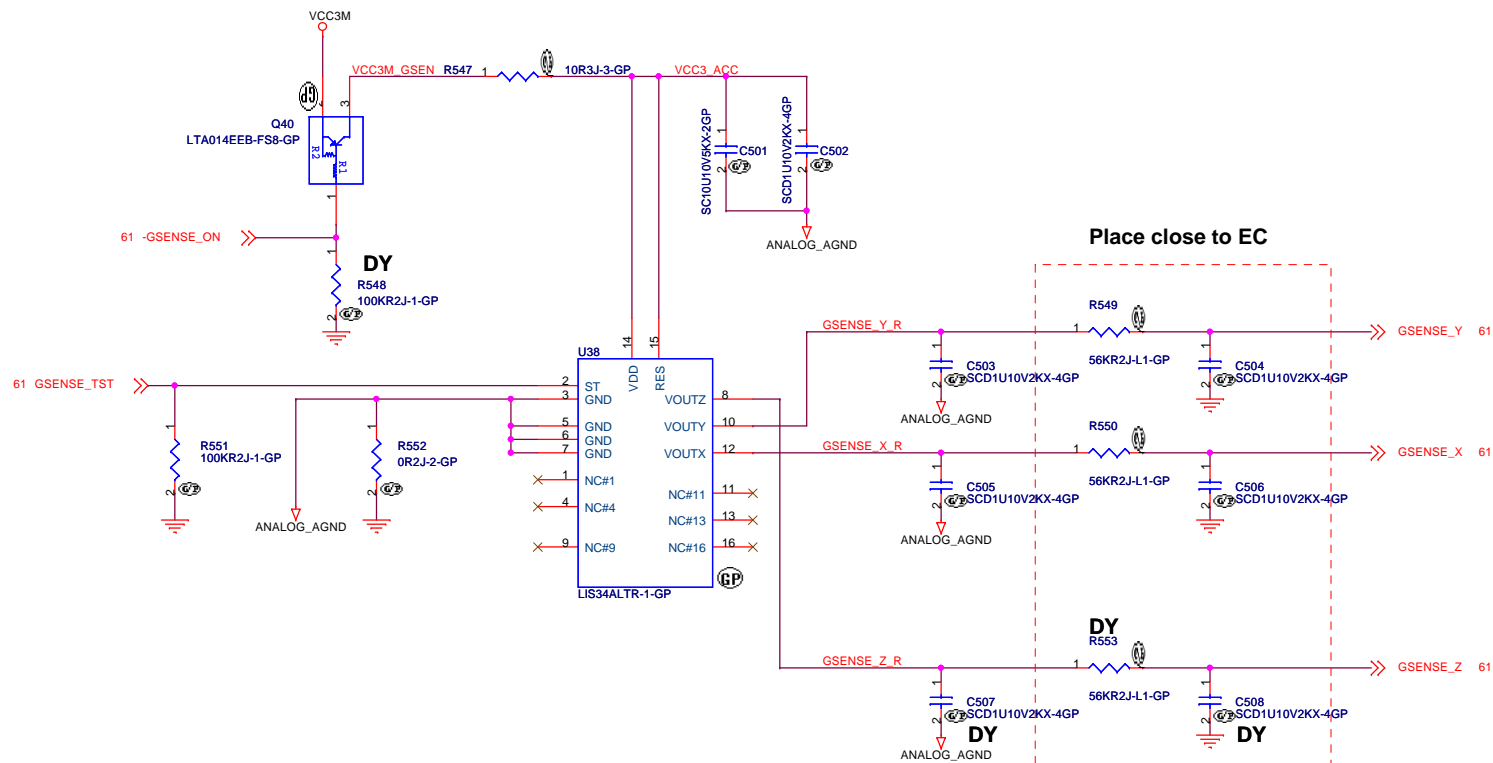


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U38

Primary	STMicro LIS34AL	41R0828AA
Second	Kionix KXTC8-2850	74.KXTC8.0BZ
Third		

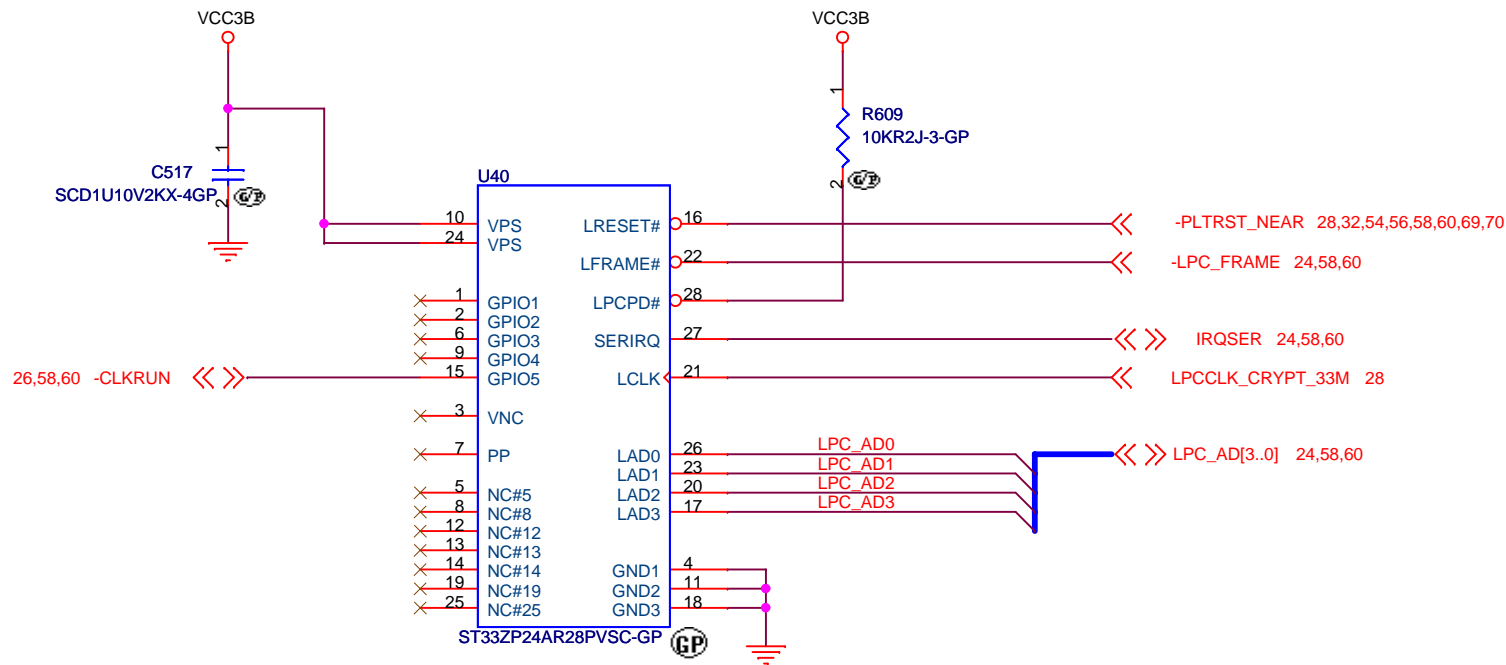
Layout Comment :

(1) Avoid routing under DCDC switching area.

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

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Title		
<b>G-SENSOR</b>		
Size A3	Document Number	Rev -1
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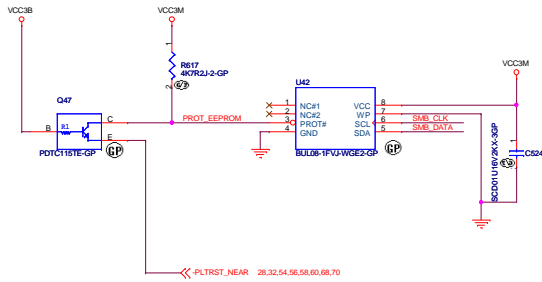


BU	After SDV
ST19NP18ER28PVMO (71.19N18.T0W)	ST33ZP24AR28PVxx xx="OG" for SDV(71.03324.A0W), "RC" for FVT, PreSIT (FW 1.2.C.0)(71.03324.C0W) SC for SIT (not PreSIT) FW 1.2.D.0(71.03324.D0W)

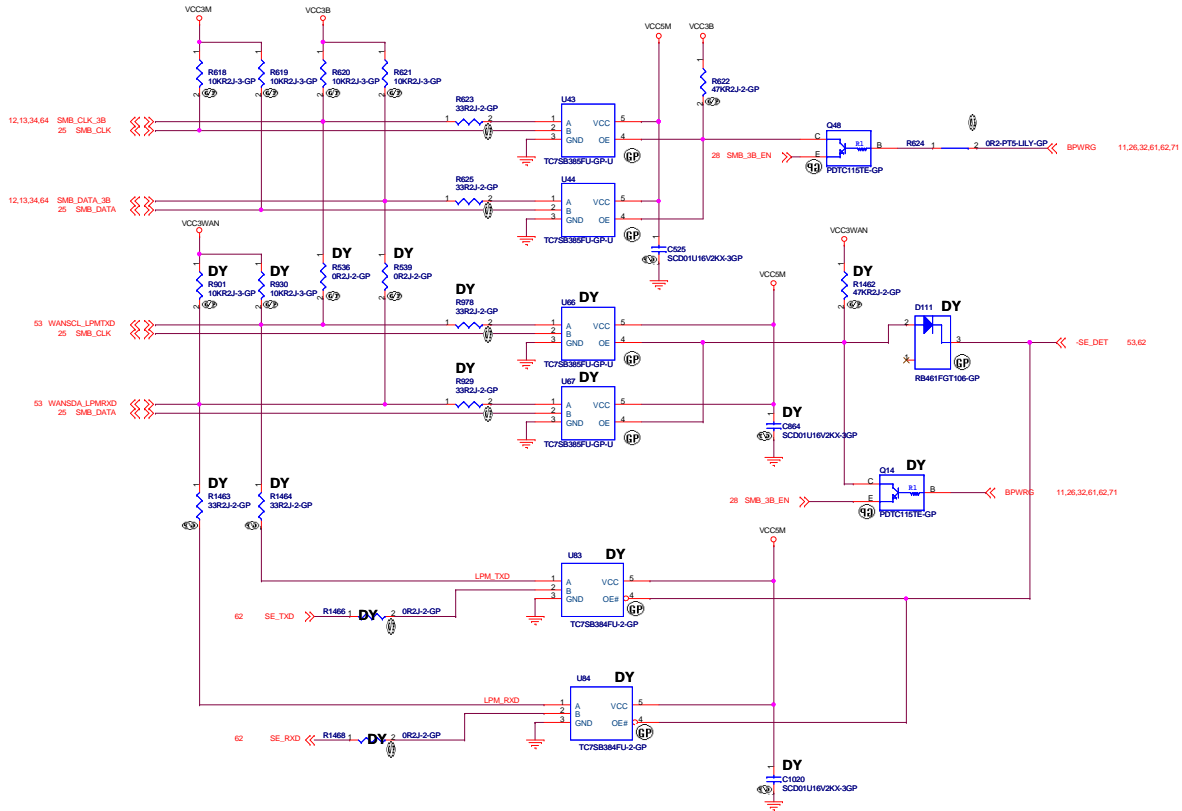
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Title			
TPM			
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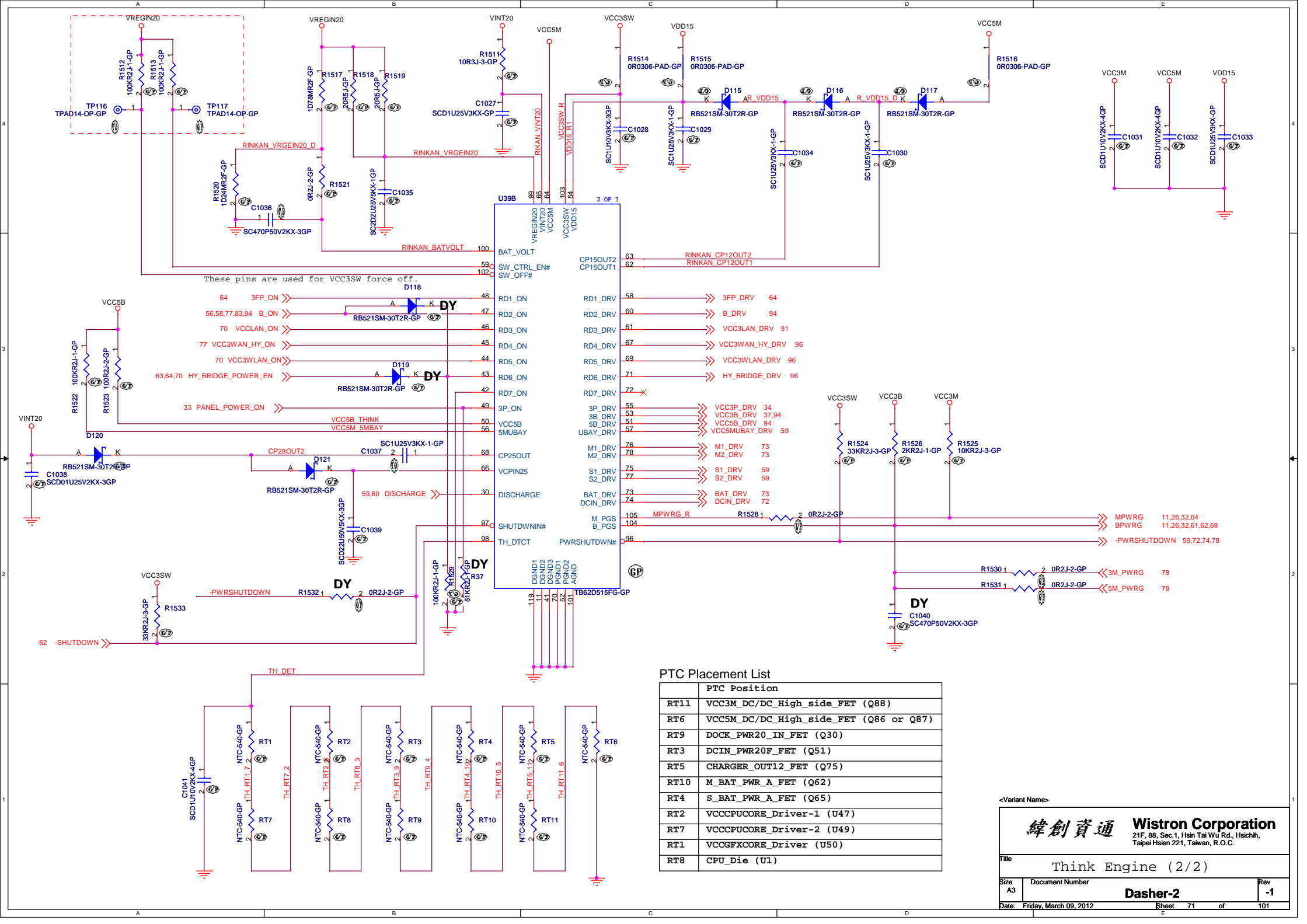
## EEPROM



	Vendor	U42	Part Number
1st	ROHM	BUL08-1FVJ-W	72.BUL08.A0Q
2nd	NXP	PCA24S08ADP	72.24S08.A0Q
3rd	Sanyo	LE26CAP08TT	72.26C08.00R







PTC Placement List

	PTC Position
RT11	VCC3M_DC/DC_High_side_FET (Q88)
RT6	VCC5M_DC/DC_High_side_FET (Q86 or Q87)
RT9	DOCK_PWR20_IN_FET (Q30)
RT3	DCIN_PWR20F_FET (Q51)
RT5	CHARGER_OUT12_FET (Q75)
RT10	M_BAT_PWR_A_FET (Q62)
RT4	S_BAT_PWR_A_FET (Q65)
RT2	VCCCPUCORE_Driver-1 (U47)
RT7	VCCCPUCORE_Driver-2 (U49)
RT1	VCCGFXCORE_Driver (U50)
RT8	CPU_Die (U1)

<Variant Name>

緯創資通

Wistron Corporation

Think Engine (2/2)

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File

Document Number

Rev

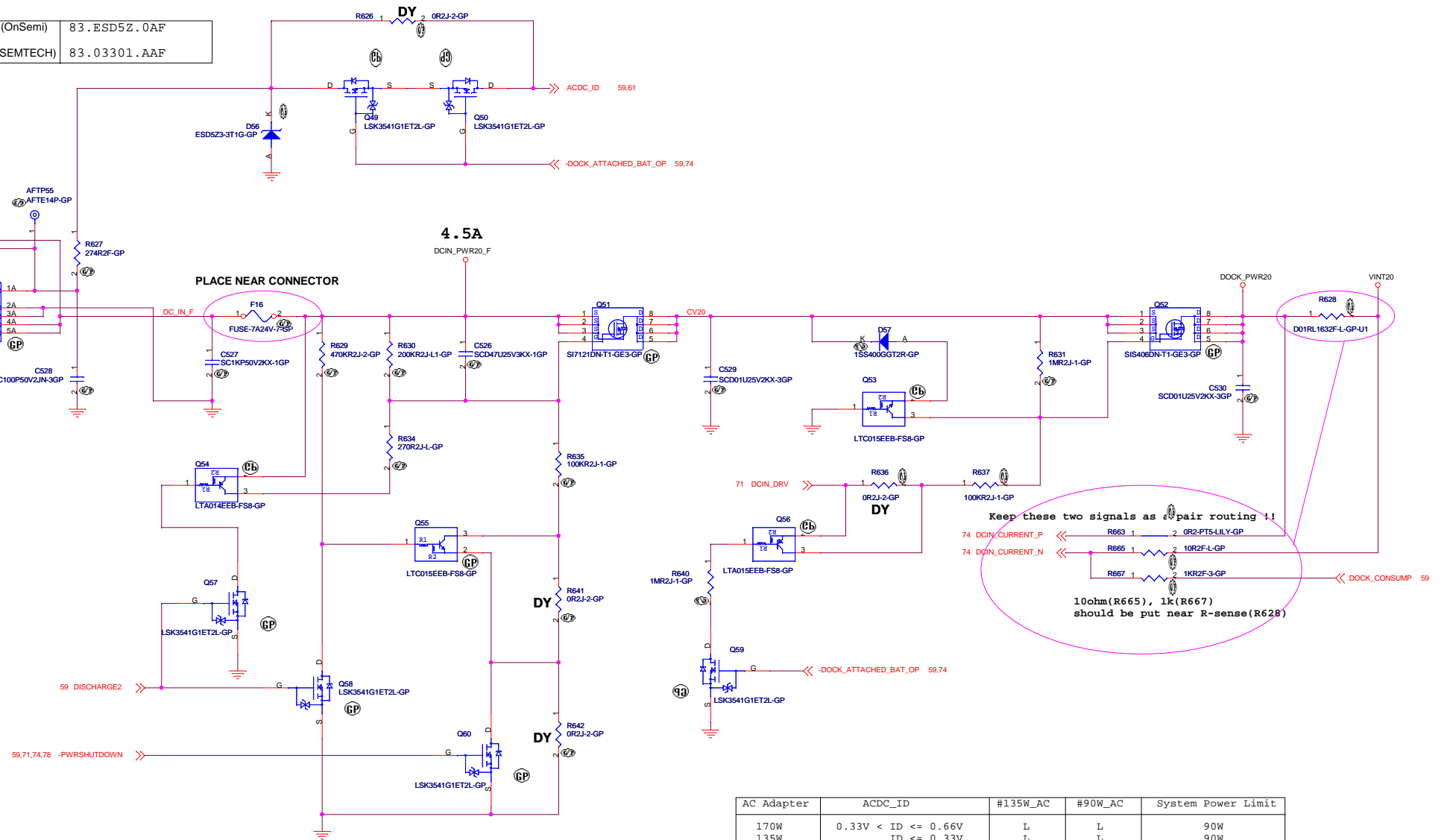
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ESD5Z3.3T1G(OnSemi)	83.E5D5Z.0AF
uClamp3301H(SEMTECH)	83.03301.AAF



AC Adapter	ACDC_ID	#135W_AC	#90W_AC	System Power Limit
170W	0.33V < ID <= 0.66V	L	L	90W
135W	ID <= 0.33V	L	L	90W
90W	2.64V < ID	H	L	90W
65W	1.32V < ID <= 1.98V	H	H	65W

PEAK SHIFT	YES	NO
R641	NO-ASM	ASM
R629	ASM	NO-ASM
Q58	ASM	NO-ASM
Q55	ASM	NO-ASM

Logic

**<Core Design>**

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**DC-IN**

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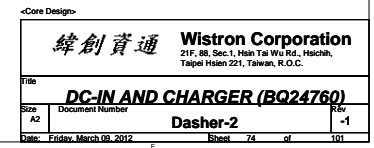
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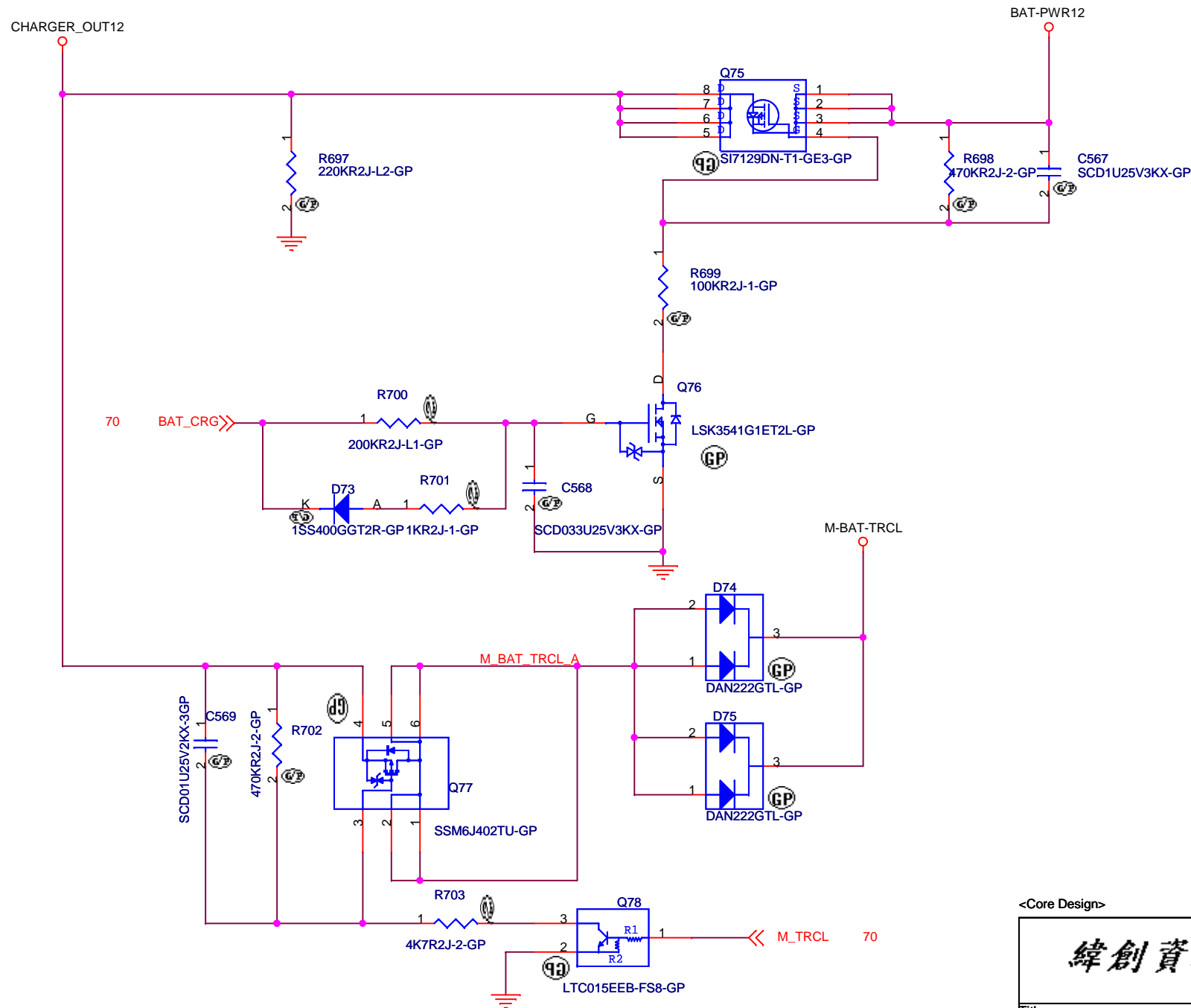
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<Core Design>

緯創資通

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Title

**CHARGER SELECT**

Size  
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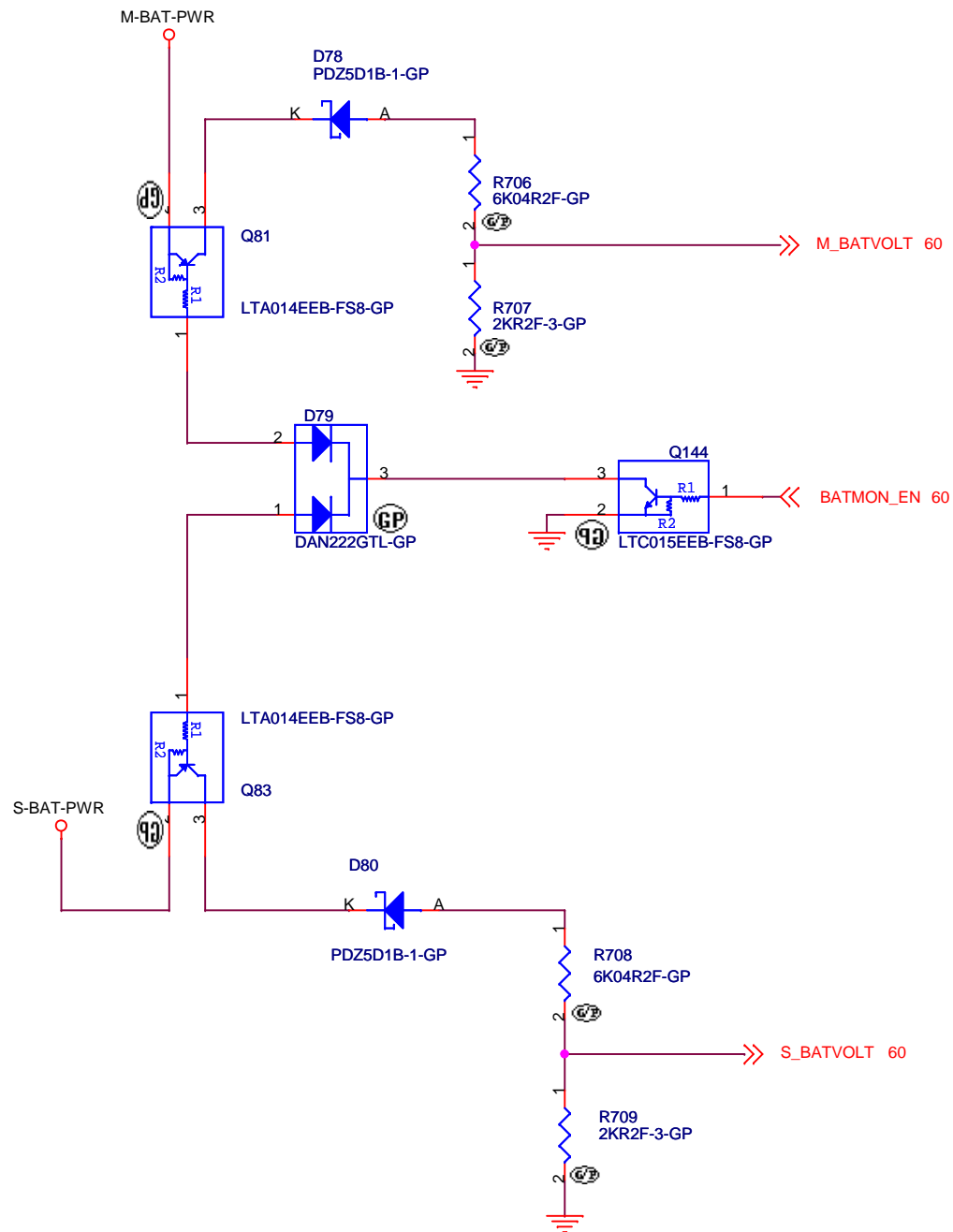
**Dasher-2**

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$$V_{OUT} = 0.249 (V_{BAT} - 5)$$



<Core Design>

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Title

**BATTERY MONITOR**

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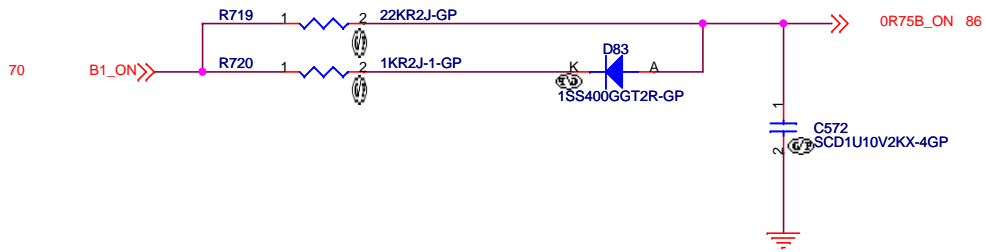
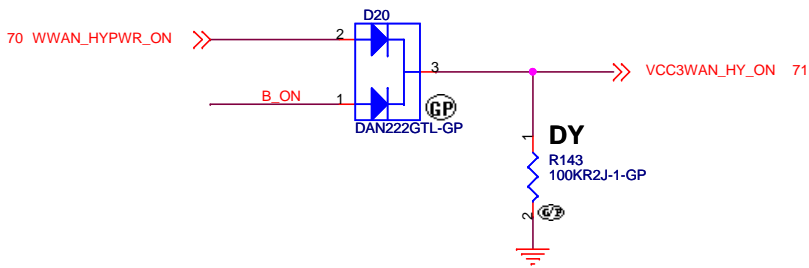
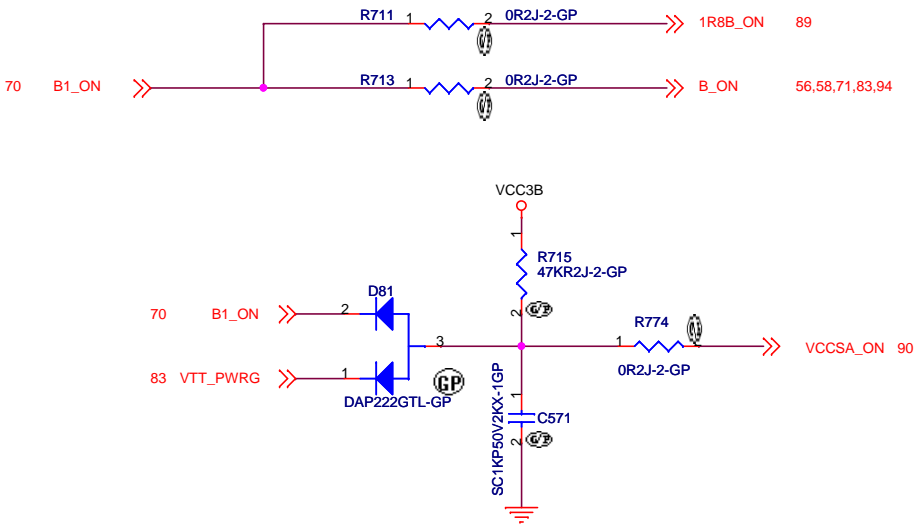
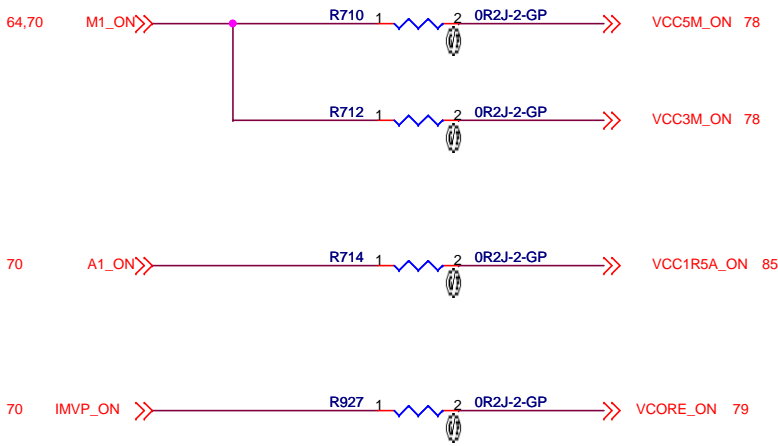
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AOAC Duplicity	YES YES	YES NO	NO YES	NO NO
D20 R143	ASM DY	ASM DY	ASM DY	DY ASM

Logic

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Title

POWER SEQUENCE

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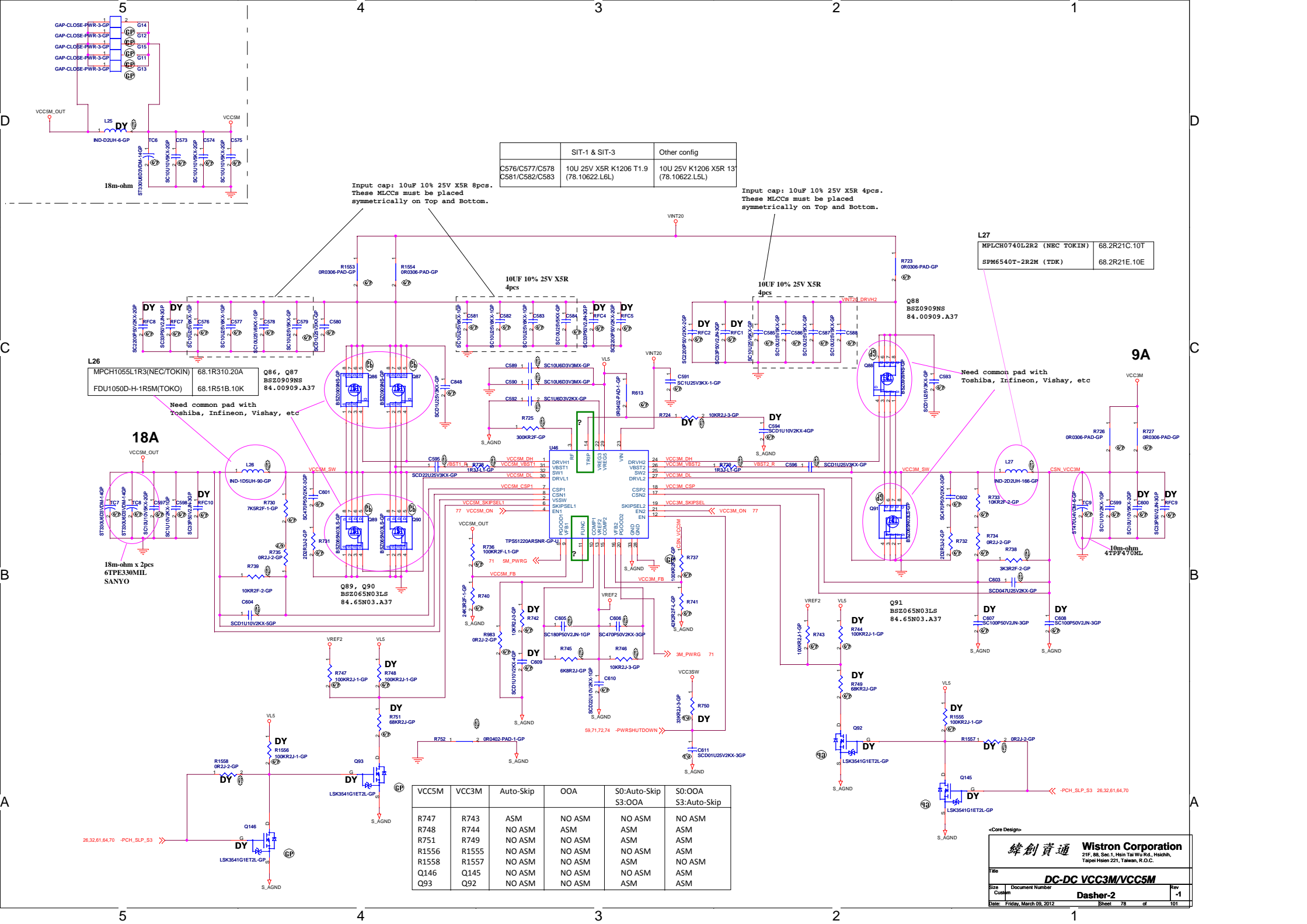
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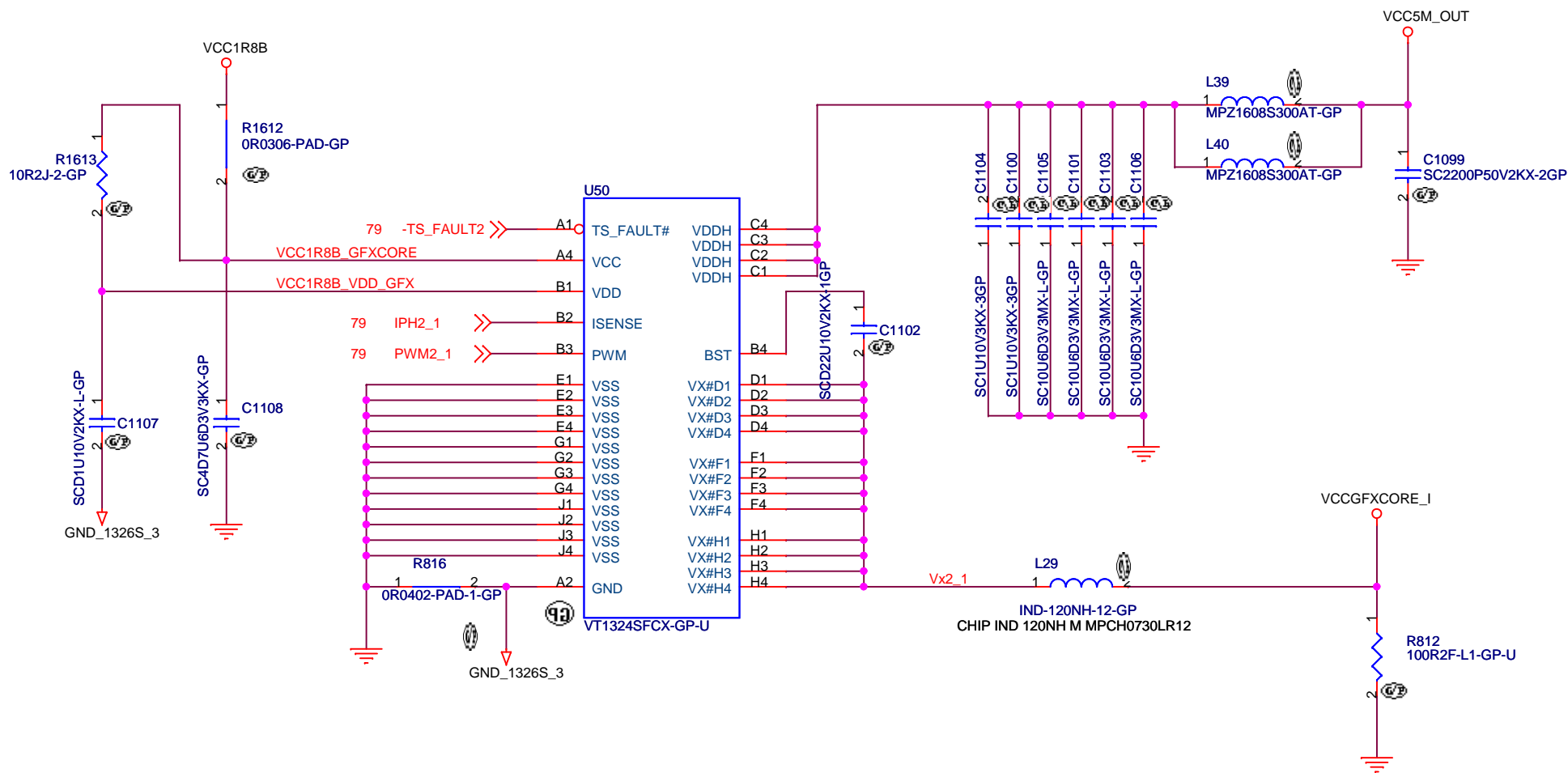
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緯創資通

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Title  
**VCCGFXCORE**

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Title

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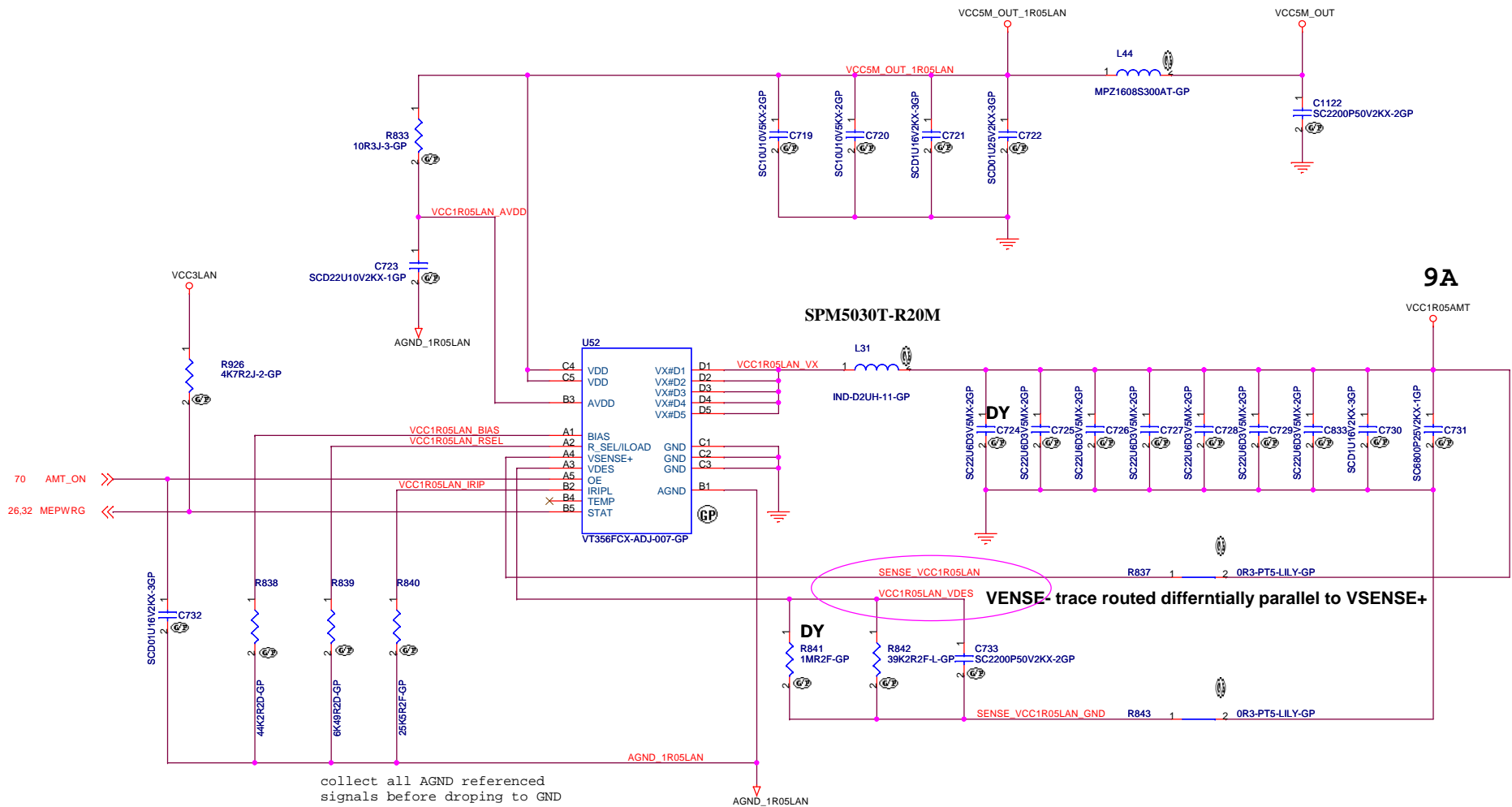
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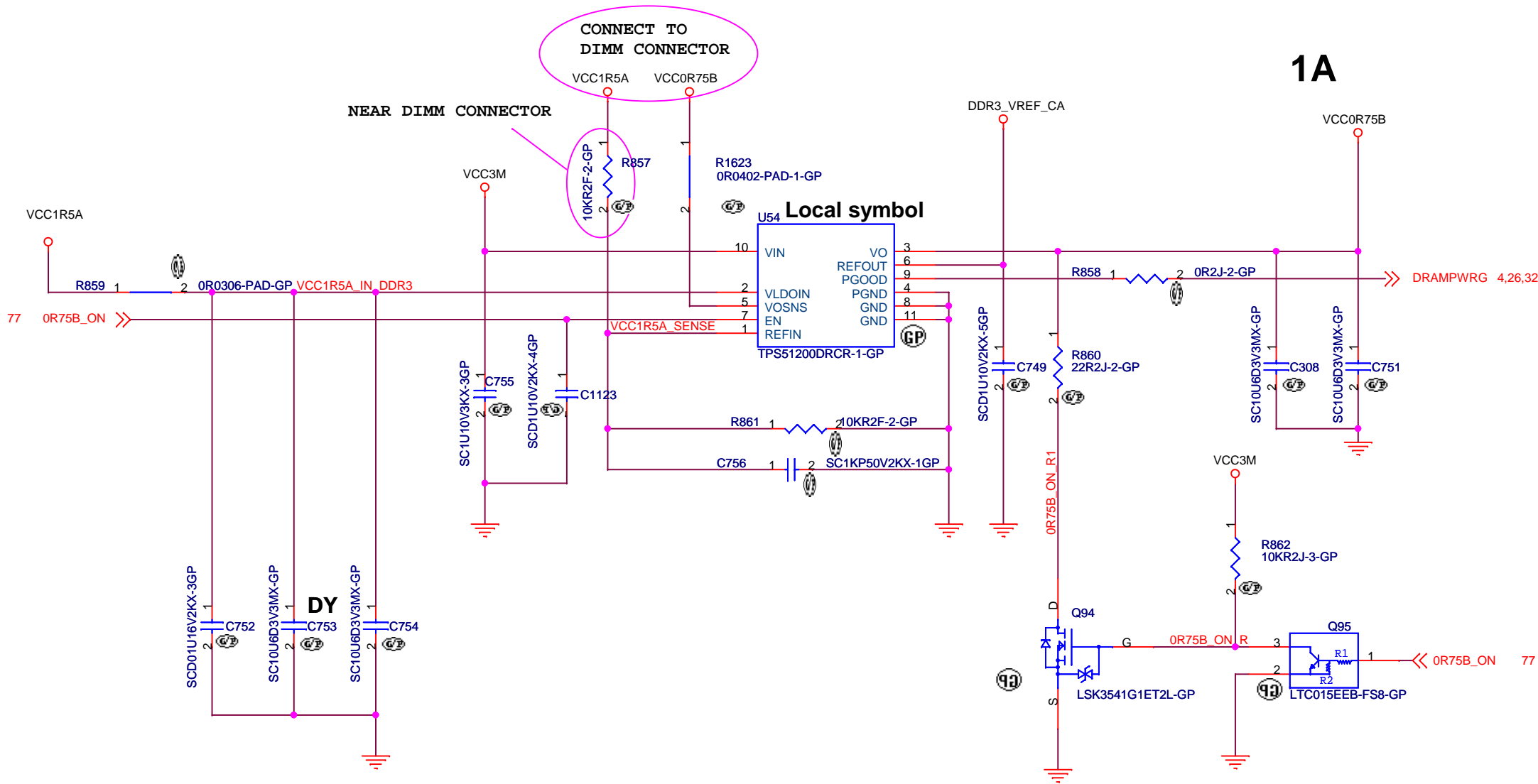




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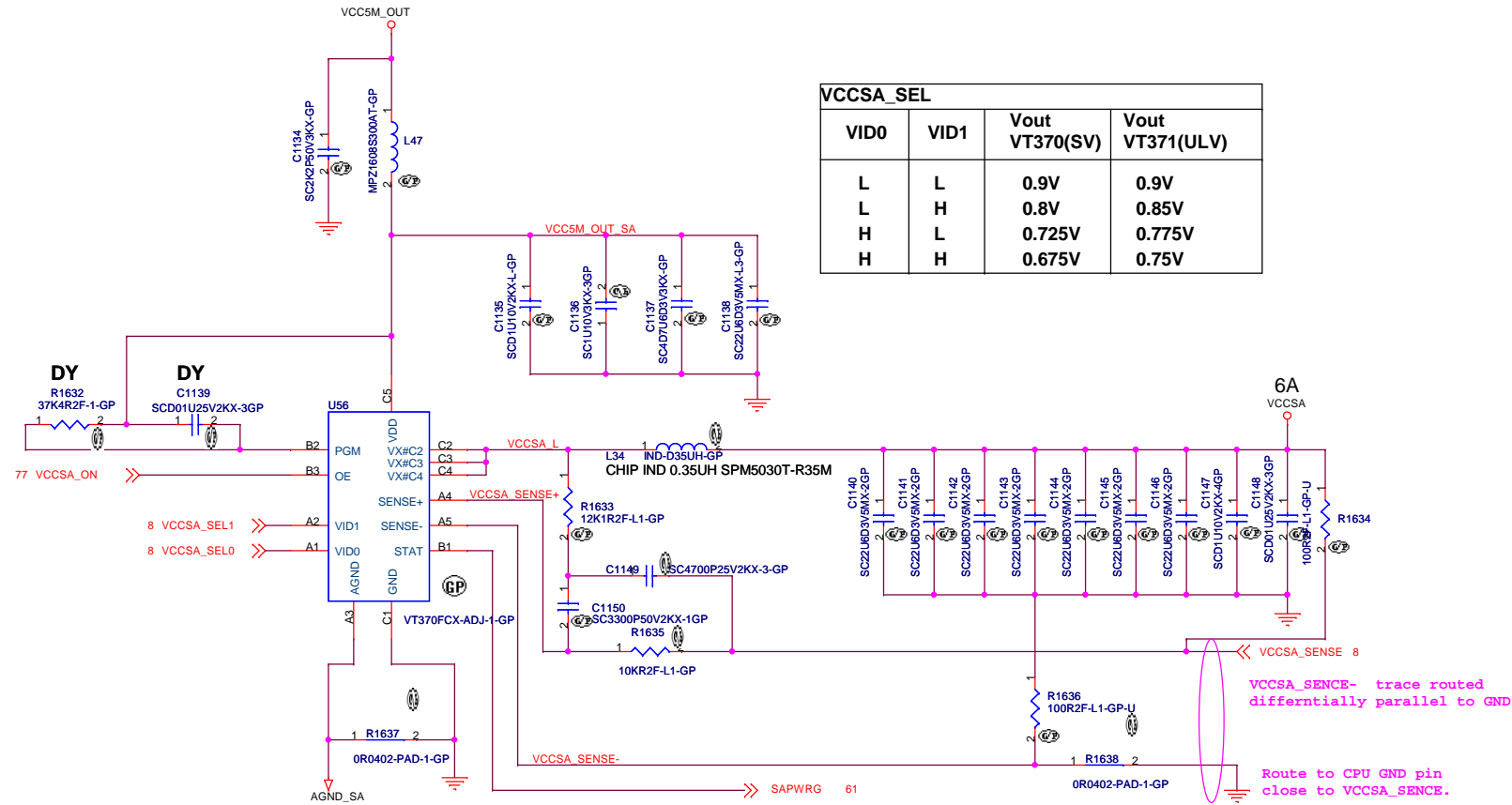
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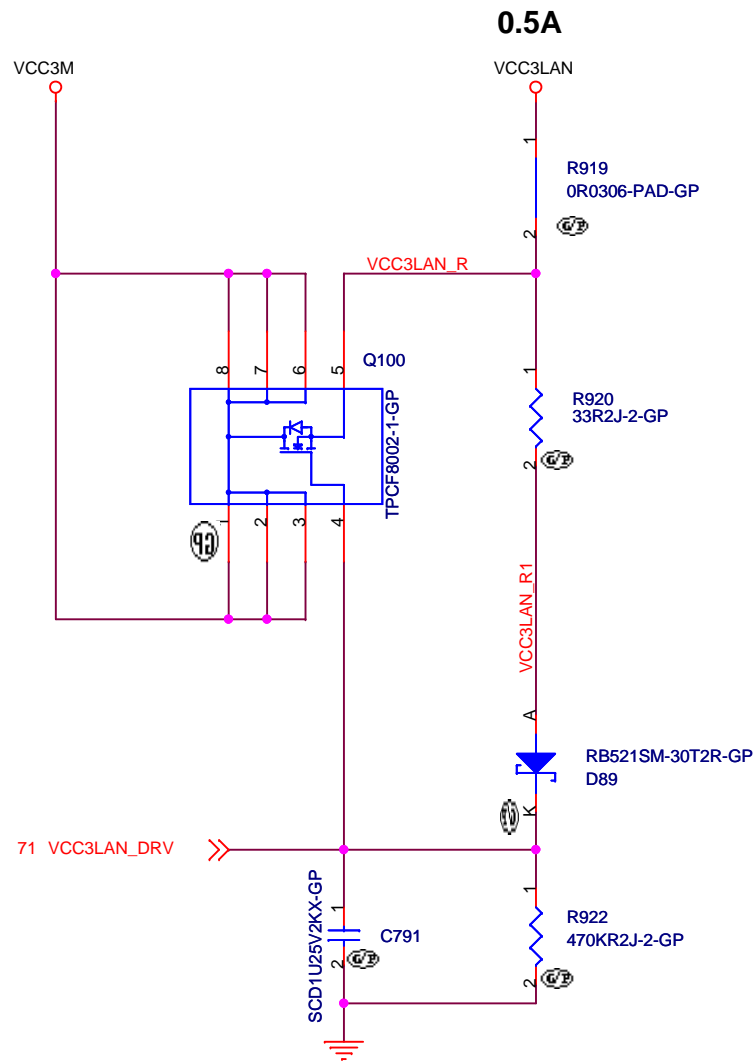


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**緯創資通 Wistron Corporation**  
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Taipei Hsien 221, Taiwan, R.O.C.

Title **DC/DC VCCSA**

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Title

**LOAD SW LAN**

Size  
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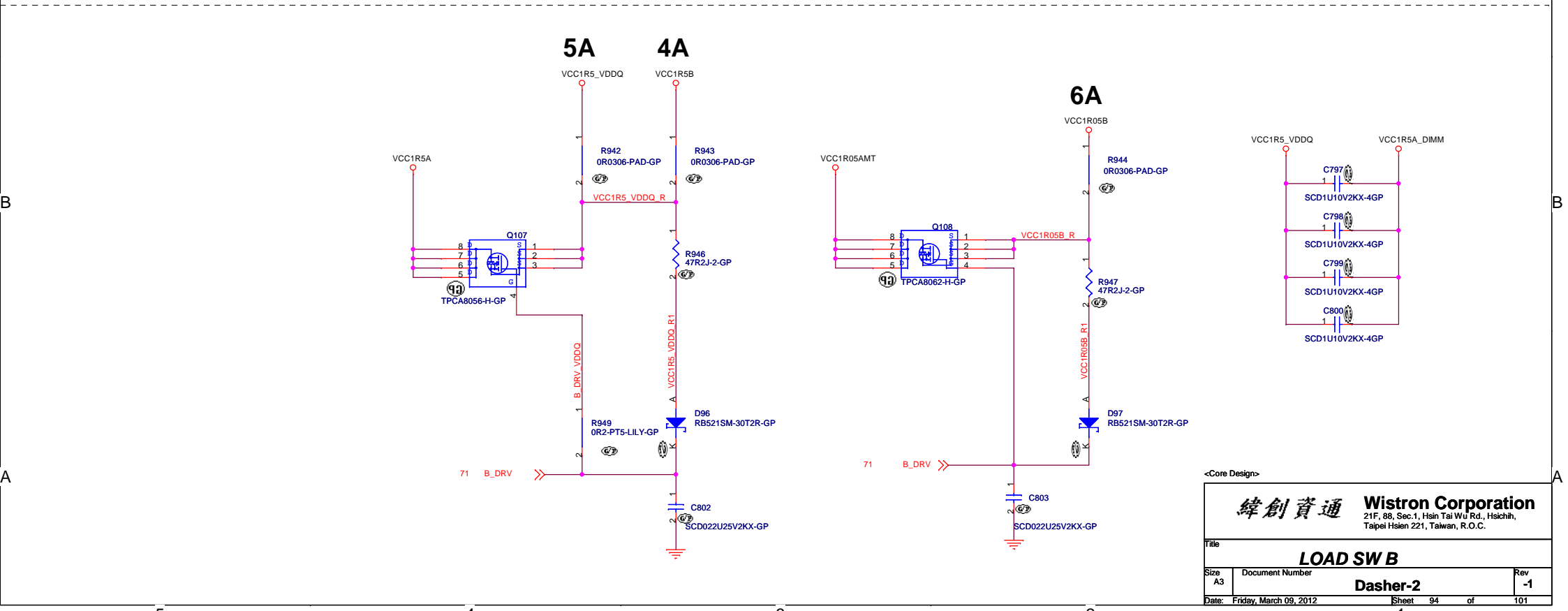
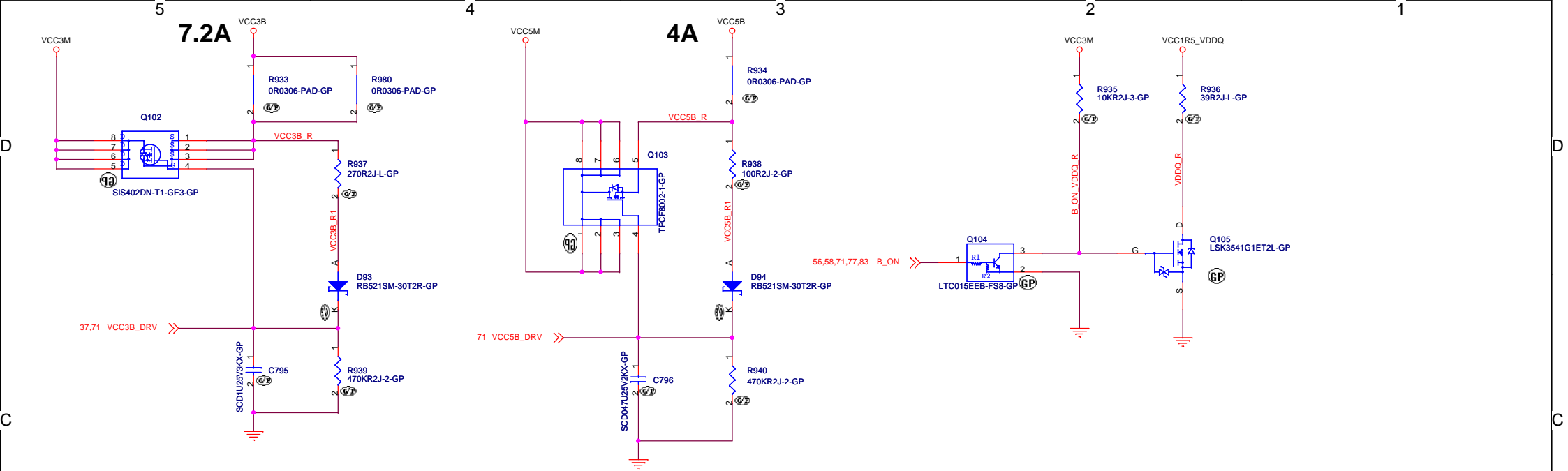
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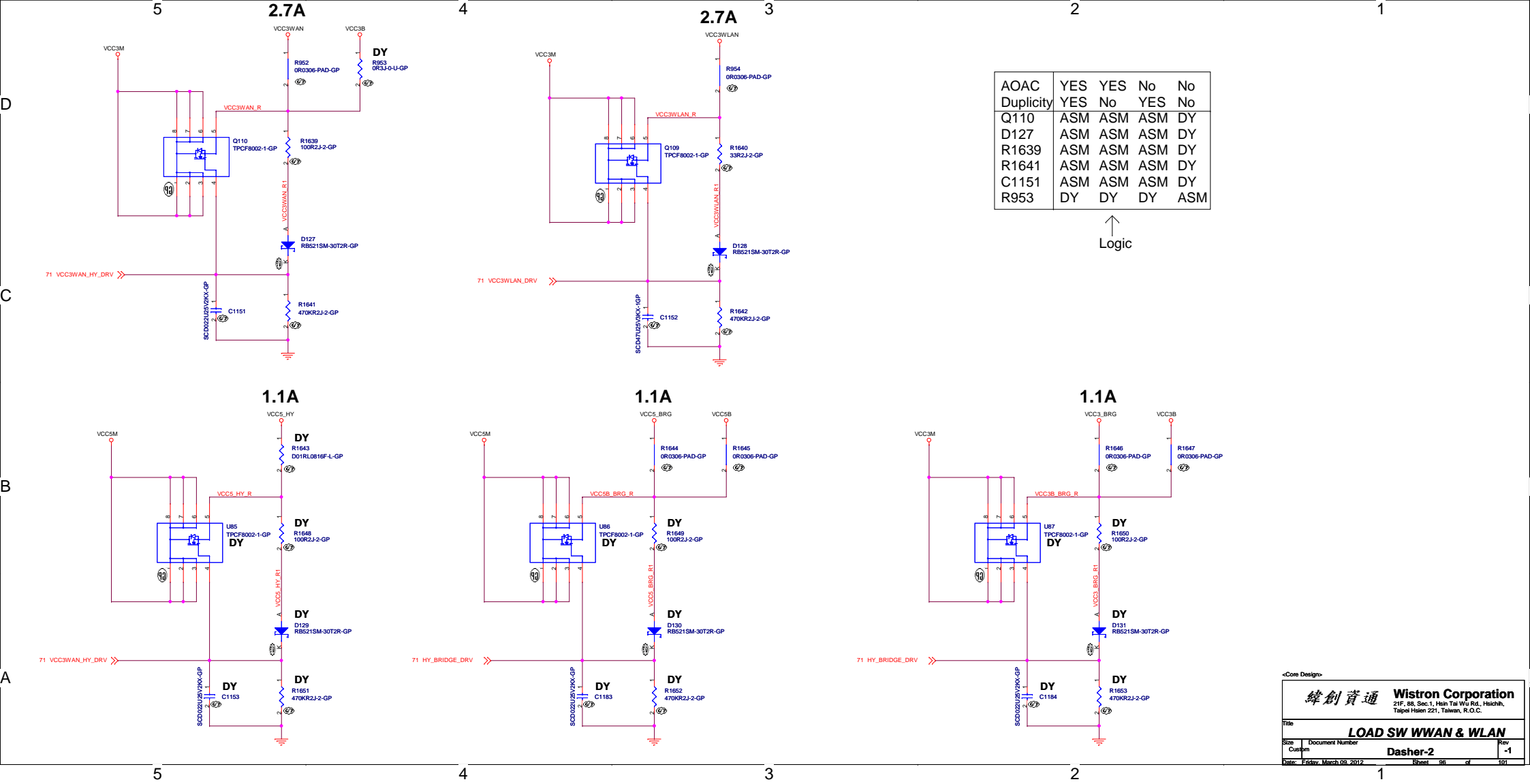
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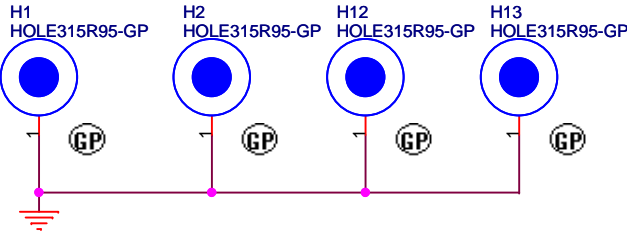
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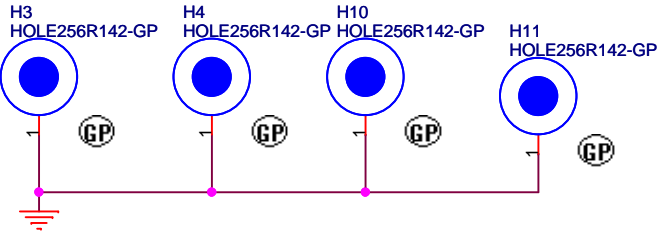




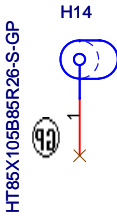
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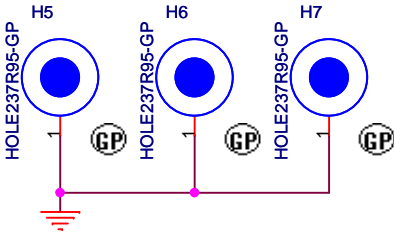
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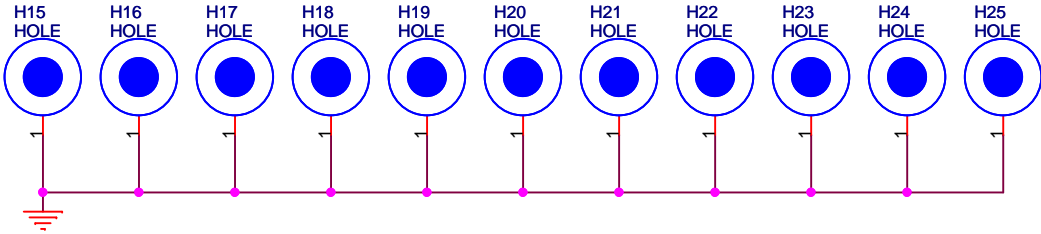
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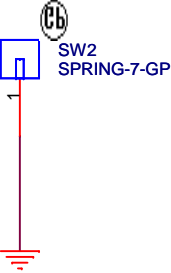
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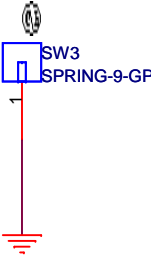
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34.49U26.001  
GND pad for docking connector



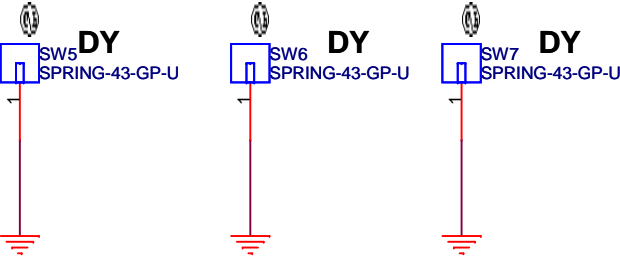
34.49U23.001  
GND pad for docking connector



34.15J03.001  
spring for EMI



34.15J03.001  
spring for RF (SW5~SW7)



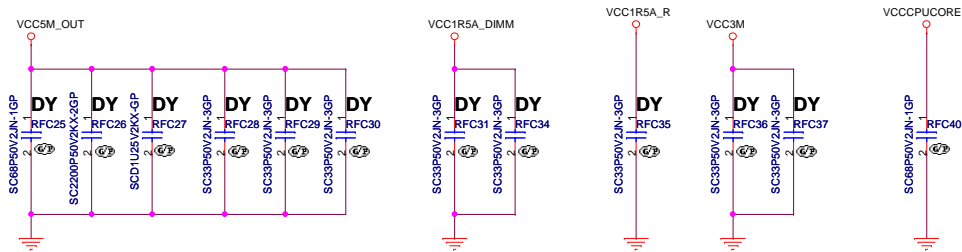
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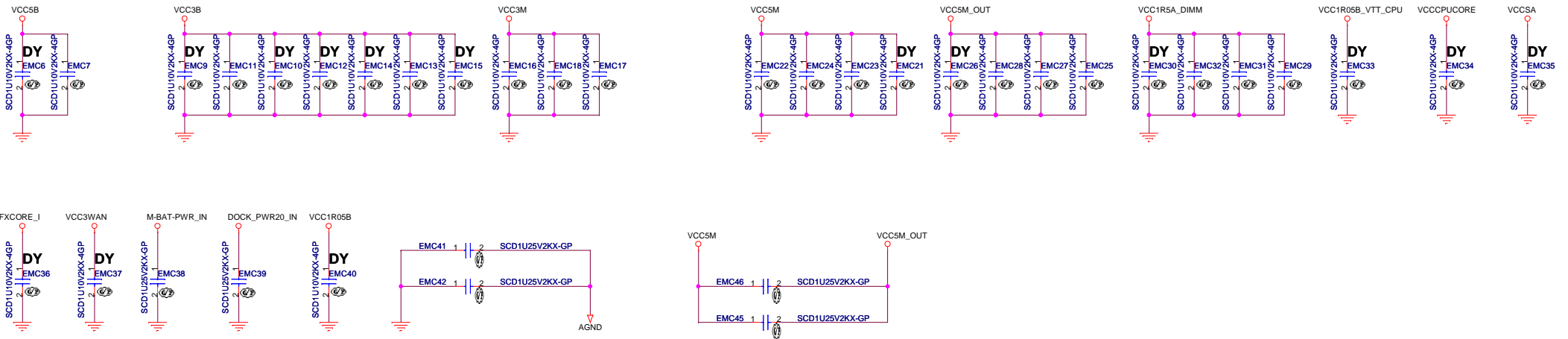


# RF decoupling caps

named as RFCxxx



## Long power trace EMI decoupling caps



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Title EMI DECOUPLING

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		SV		ULV	
Master IC		U48	VT1318M	VT1318M	
# of slave for CPU		2		1	
Slave for CPU		U47	VT1324S	VT1324S	
Inductor for CPU		U49	VT1324S	no stuff	
		L14	BFW10040	no stuff	
			no stuff	MPCH0730LR12	
# of slave for GPU		1		1	
Slave for GPU		U50	VT1324S	VT1324S	
Inductor for GPU		L29	MPCH0730LR12	MPCH0730LR12	

			SV		ULV	
R_SEL[0]	pin 38	R1574	715	0.5%	280	1.0%
R_SEL[1]	pin 37	R1575	887	0.5%	825	0.5%
R_SEL[2]	pin 36	R1576	0	5.0%	0	5.0%
R_SEL[3]	pin 35	R1577	196	0.5%	196	0.5%
R_SEL[4]	pin 44	R1571	825	0.5%	825	0.5%
R_SEL[5]	pin 32	R1579	475	1.0%	402	0.5%
R_SEL[6]	pin 48	R1567	21.5	1.0%	21.5	1.0%
R_REF	pin 34	R1578	20K	0.5%	20K	0.5%
ROSC	pin 39	R1572	75K	1.0%	61.9K	1.0%

			SV		ULV	
LL_R1_CPU	pin 15 - pin 16	R1599	10K	0.5%	10K	0.5%
LL_R2_CPU	pin 16 - pin 17	R1600	20K	0.5%	7.5K	0.5%
	pin 16 - pin 17	R1601	787	1.0%	453	1.0%
LL_C1_CPU	pin 15 - pin 16	C1086	56pF		33pF	
LL_C2_CPU	pin 16 - pin 17	C1087	22pF		22pF	
LL_RLEAD_CPU	pin 15 - pin 16	R1595	30.1K	1.0%	15K	1.0%
LL_CLEAD_CPU	pin 15 - pin 16	C1091	220pF		680pF	
LL_RLAG_CPU	pin 16 - pin 17	R1596	no stuff		no stuff	
LL_CLAG_CPU	pin 16 - pin 17	C1092	no stuff		no stuff	
RDES_CPU	pin 17 - pin 18	R1592	845	0.5%	487	0.5%
RINT_CPU	pin 18 - pin 19	R1593	1.3K	1.0%	2.74K	1.0%
CINT_CPU	pin 18 - pin 19	C1088	4700pF		3300pF	
RPH11	IPH1_1 - pin 18	R1598	499	1.0%	750	1.0%
RPH12	IPH1_2 - pin 18	R1594	499	1.0%	no stuff	1.0%
IPHF11_R	pin 11	R1582	1.96K	1.0%	1.96K	1.0%
IPHF11_C	pin 11	C1076	10pF		no stuff	1.0%
IPHF12_R	pin 10	R1581	1.96K	1.0%	no stuff	1.0%
IPHF12_C	pin 10	C1075	10pF		no stuff	1.0%
R_MRAMP1	pin 12	R1584	15.8K	1.0%	13K	1.0%
R_MRAMP1_PU	pin 12	R1587	60.4K	1.0%	43.2K	1.0%
R_PWM2	Pin 6	R4	no stuff		0	5.0%
LL_R1_GPU	pin 24 - pin 23	R1609	10K	0.5%	10K	0.5%
LL_R2_GPU	pin 23 - pin 22	R1610	7.5K	0.5%	7.87K	0.5%
	pin 23 - pin 22	R1611	237	1.0%	0	5.0%
LL_C1_GPU	pin 24 - pin 23	C1094	22pF		22pF	
LL_C2_GPU	pin 23 - pin 22	C1095	22pF		22pF	
LL_RLEAD_GPU	pin 24 - pin 23	R1606	30K	1.0%	30K	1.0%
LL_CLEAD_GPU	pin 24 - pin 23	C1097	1200pF		1000pF	
LL_RLAG_GPU	pin 23 - pin 22	R1607	no stuff		no stuff	
LL_CLAG_GPU	pin 23 - pin 22	C1098	no stuff		no stuff	
RDES_GPU	pin 22 - pin 21	R1604	665	0.5%	665	0.5%
RINT_GPU	pin 21 - pin 20	R1605	3.24K	1.0%	3.24K	1.0%
CINT_GPU	pin 21 - pin 20	C1096	10nF		10nF	
RPH21	IPH2_1 - pin 21	R1608	1K	1.0%	1K	1.0%
IPHF21_R	pin 28	R1580	1.96K	1.0%	1.96K	1.0%
IPHF21_C	pin 28	C1077	no stuff		no stuff	1.0%
R_MRAMP2	pin 27	R1586	15.4K	1.0%	15.4K	1.0%
R_MRAMP2_PU	pin 27	R1590	56.2K	1.0%	56.2K	1.0%

			SV	ULV
		C1090	4.7uF	no stuff
		R1589	10 1.0%	no stuff
		C1089	0.1uF	no stuff
		C1082	0.22uF	no stuff
		C1083	1uF	no stuff
		C1090	1uF	no stuff
		C1084	10uF	no stuff
		C1079	10uF	no stuff
		C1081	10uF	no stuff
		C1085	10uF	no stuff
		L50	MPZ1608S300A	no stuff
		L51	MPZ1608S300A	no stuff
		C1078	2200pF	no stuff

Vcore Coutput

		SV		ULV	
C687	22uF	0805	22uF	0805	
C669	22uF	0603	22uF	0603	
C671	22uF	0603	22uF	0603	
C673	4.7uF	0603	22uF	0603	
C675	22uF	0603	22uF	0603	
C676	22uF	0603	22uF	0603	
C678	22uF	0603	22uF	0603	
C695	4.7uF	0603	22uF	0603	
C681	4.7uF	0603	22uF	0603	
C682	4.7uF	0603	22uF	0603	
C683	22uF	0603	22uF	0603	
C750	22uF	0603	22uF	0603	
C686	22uF	0603	22uF	0603	
C691	22uF	0603	22uF	0603	
C670	22uF	0603	22uF	0603	
C694	22uF	0603	22uF	0603	
C698	4.7uF	0603	22uF	0603	
C1112	22uF	0603	22uF	0603	
C1113	22uF	0603	22uF	0603	
C672	22uF	0603	22uF	0603	
C1157	22uF	0603	22uF	0603	
C674	22uF	0603	22uF	0603	
C1160	22uF	0603	22uF	0603	
C689	22uF	0603	22uF	0603	
C1167	22uF	0603	22uF	0603	
C680	22uF	0603	22uF	0603	
C679	4.7uF	0603	10uF	0603	
C677	4.7uF	0603	10uF	0603	
C1156	4.7uF	0603	10uF	0603	
C684	10uF	0603	10uF	0603	
C693	4.7uF	0603	10uF	0603	
C1159	10uF	0603	10uF	0603	
C692	10uF	0603	10uF	0603	
C1158	4.7uF	0603	10uF	0603	
C1161	4.7uF	0603	10uF	0603	
C1162	4.7uF	0603	10uF	0603	
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C1109	N/A	0603	N/A	0603	
C1110	N/A	0603	N/A	0603	
C1111	N/A	0603	N/A	0603	
C1163	N/A	0603	N/A	0603	
C1164	22uF	0603	N/A	0603	
C1165	N/A	0603	N/A	0603	
C1166	22uF	0603	N/A	0603	
C1168	N/A	0603	N/A	0603	
C1169	22uF	0603	N/A	0603	
C444	2.2uF	0402	2.2uF	0402	
C445	2.2uF	0402	2.2uF	0402	
C446	2.2uF	0402	2.2uF	0402	
C447	2.2uF	0402	2.2uF	0402	
C448	2.2uF	0402	2.2uF	0402	
C449	2.2uF	0402	2.2uF	0402	
C450	2.2uF	0402	N/A	0402	
C451	2.2uF	0402	2.2uF	0402	
C452	2.2uF	0402	2.2uF	0402	
C453	2.2uF	0402	2.2uF	0402	

		SV		ULV	
C477	2.2uF	0402	2.2uF	0402	
C486	2.2uF	0402	2.2uF	0402	
C518	2.2uF	0402	2.2uF	0402	
C520	2.2uF	0402	2.2uF	0402	
C521	2.2uF	0402	2.2uF	0402	
C522	2.2uF	0402	N/A	0402	
C533	2.2uF	0402	2.2uF	0402	
C830	2.2uF	0402	2.2uF	0402	
C831	2.2uF	0402	2.2uF	0402	
C832	2.2uF	0402	2.2uF	0402	
C1172	N/A	0402	N/A	0402	
C1173	2.2uF	0402	N/A	0402	
C1174	2.2uF	0402	N/A	0402	
C1175	2.2uF	0402	N/A	0402	
C1176	N/A	0402	N/A	0402	
C1177	N/A	0402	N/A	0402	
C1178	2.2uF	0402	2.2uF	0402	
C1179	2.2uF	0402	2.2uF	0402	
C1180	2.2uF	0402	2.2uF	0402	
C1181	2.2uF	0402	2.2uF	0402	
C1182	2.2uF	0402	2.2uF	0402	
C1185	2.2uF	0402	2.2uF	0402	
C1186	2.2uF	0402	2.2uF	0402	
C1187	2.2uF	0402	2.2uF	0402	
C1188	2.2uF	0402	2.2uF	0402	
C1189	2.2uF	0402	2.2uF	0402	
C1190	2.2uF	0402	2.2uF	0402	
C1191	2.2uF	0402	2.2uF	0402	
C1192	2.2uF	0402	2.2uF	0402	
C1193	2.2uF	0402	2.2uF	0402	
C1194	2.2uF	0402	2.2uF	0402	
C1195	2.2uF	0402	2.2uF	0402	
C1196	2.2uF	0402	2.2uF	0402	

<Core Design>

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Title		VT1318M TABLE	
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Capability												
Config	1	2	3	4	5	6	7	8	9	10	11	12
AOAC	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes	No
Anti-Theft	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No
External EEPROM	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Duplicity	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes
U66	ASM	ASM	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
U67	ASM	ASM	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
C864	ASM	ASM	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
R978	ASM	ASM	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
R929	ASM	ASM	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
R901	ASM	ASM	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
R930	ASM	ASM	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
R1462	ASM	ASM	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
Q14	ASM	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
Q48	ASM	DY	ASM	DY	ASM	DY	ASM	DY	ASM	ASM	ASM	ASM
R624	ASM	DY	ASM	DY	ASM	DY	ASM	DY	ASM	ASM	ASM	ASM
R536	DY	DY	DY	DY	ASM	ASM	DY	DY	DY	DY	DY	DY
R539	DY	DY	DY	DY	ASM	ASM	DY	DY	DY	DY	DY	DY
U42	ASM	DY	ASM	DY	ASM	DY	ASM	DY	ASM	ASM	ASM	ASM
Q47	ASM	DY	ASM	DY	ASM	DY	ASM	DY	ASM	ASM	ASM	ASM
R617	ASM	DY	ASM	DY	ASM	DY	ASM	DY	ASM	ASM	ASM	ASM
C524	ASM	DY	ASM	DY	ASM	DY	ASM	DY	ASM	ASM	ASM	ASM
D111	DY	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	DY	DY
R1463	DY	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	ASM	ASM
R1464	DY	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	ASM	ASM
U83	DY	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	ASM	ASM
U84	DY	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	ASM	ASM
C1020	DY	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	ASM	ASM
R1466	DY	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	ASM	ASM
R1468	DY	DY	DY	DY	DY	DY	DY	DY	ASM	ASM	ASM	ASM

↑  
Logic

Duplicity	Y	Y	N	N
Battery Authentication	Y	N	Y	N
--> External EEPROM	Y	Y	Y	N

↑  
Logic