

catalog

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INTEL SANTA ROSA Platform M535

Version : A
Drawing by : Xu Yuefeng

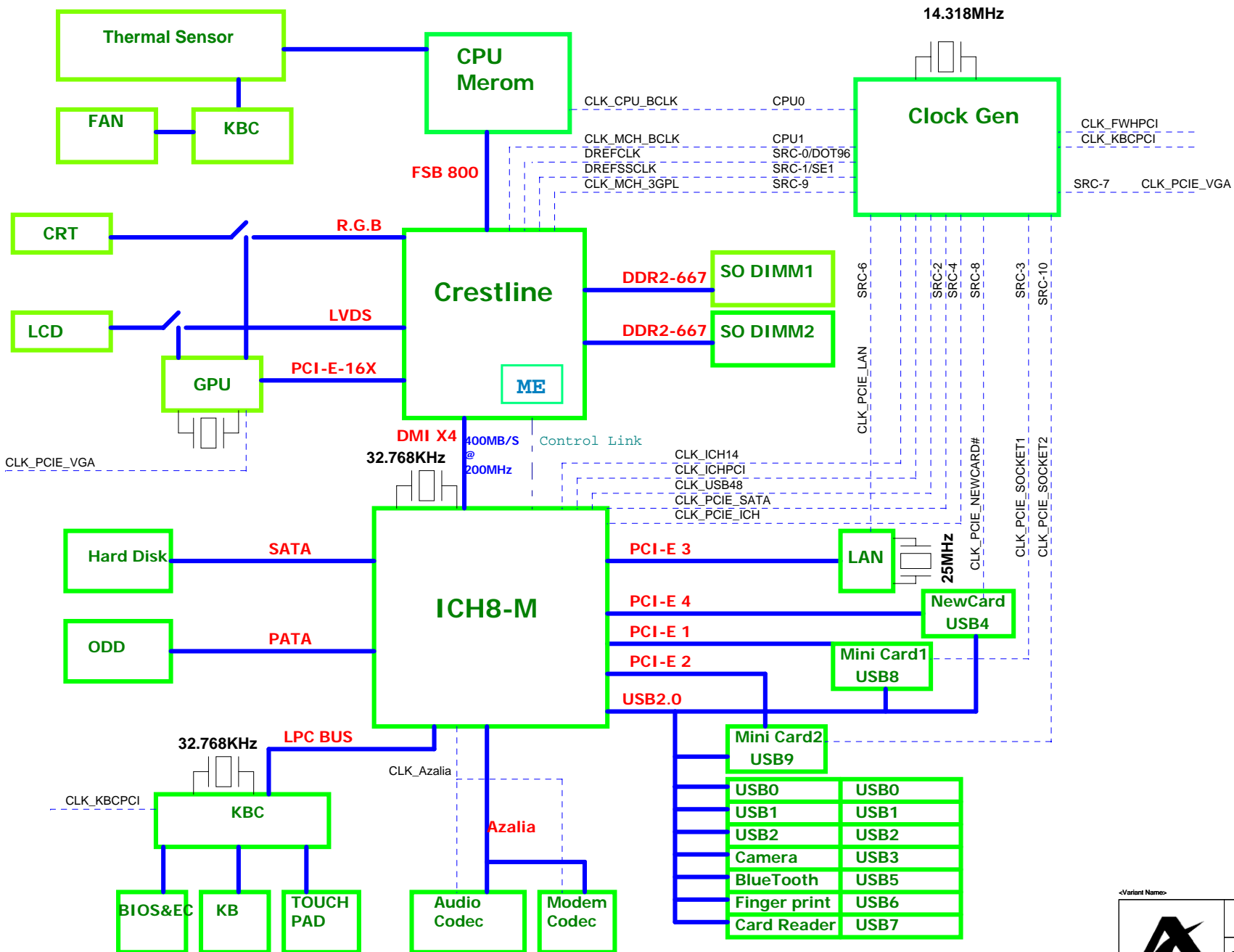
Notes:

Part Value Prefix : "@" means nopop
Net Value suffix : "#" means Low Active

<Variant Name>

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BLOCK DIAGRAM



System Power ISL6232

CPU Power ISL6262

GPU Power ISL6263A

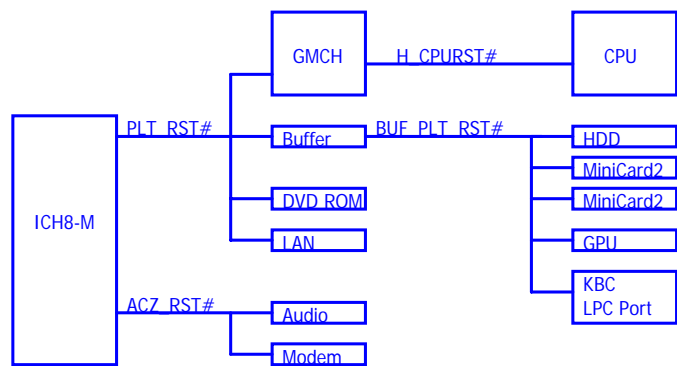
Chipset Power ISL6227

DDR2 Power TPS51116

Charger ISL6253

S3/S4 Control and Discharge

RESET TOPOLOGY

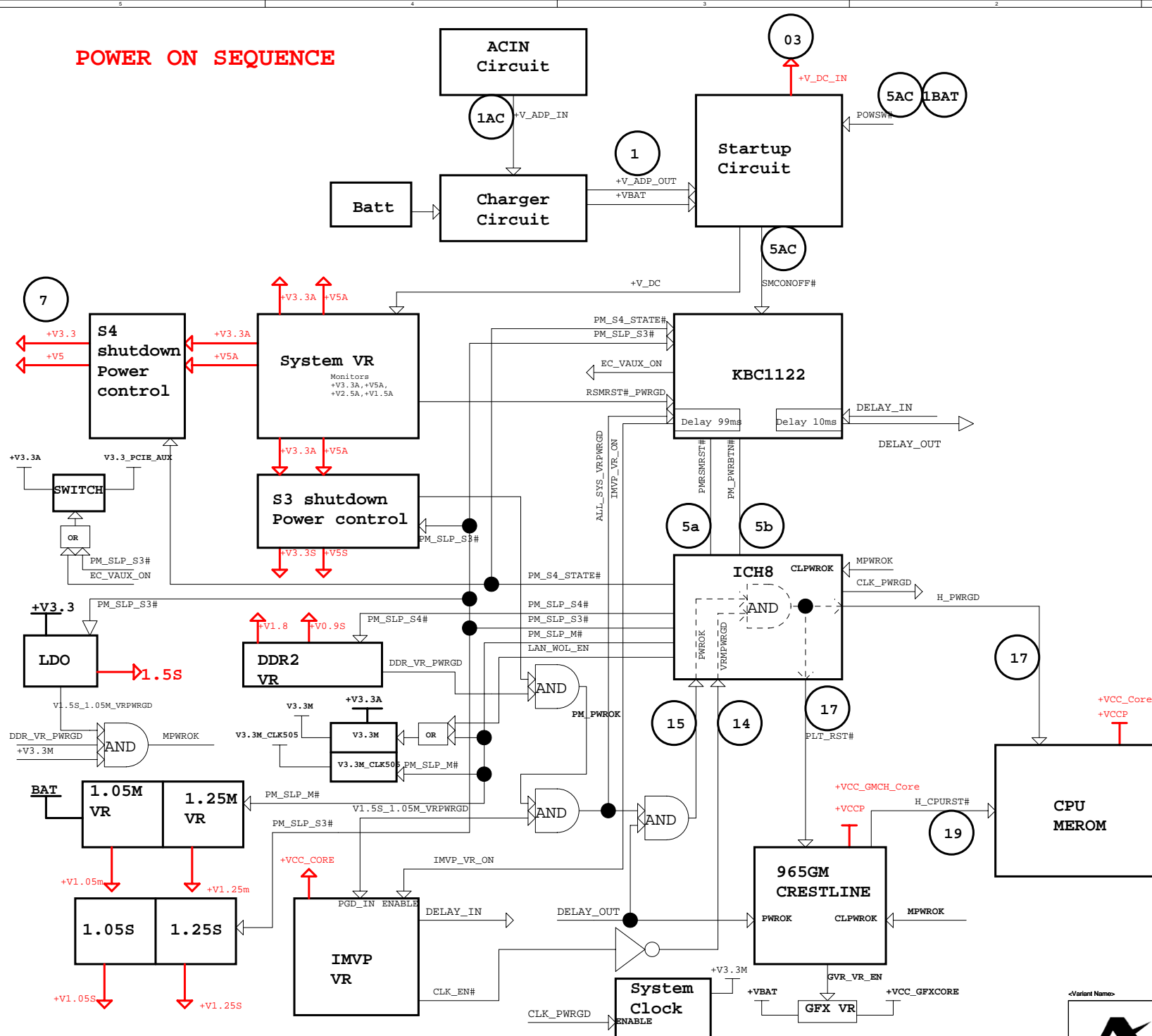


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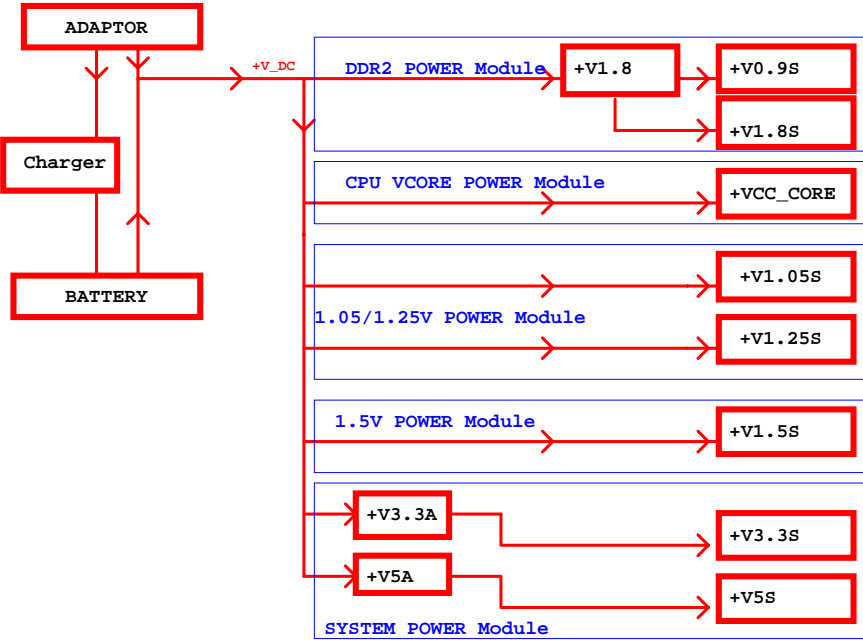
Title M535

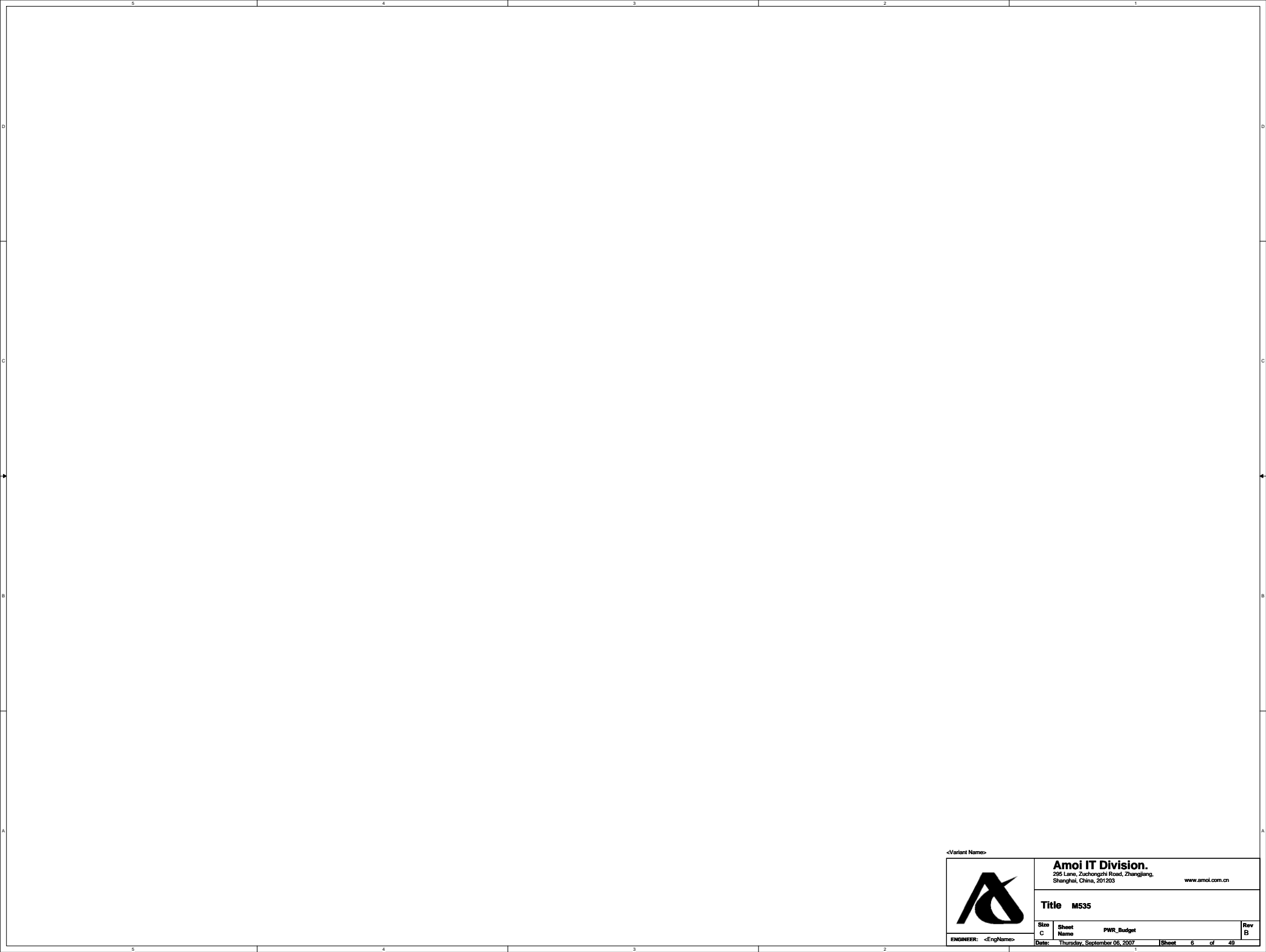
ENGINEER: <EngName>	Size C	Sheet Name	IRQ ROUTING & SMBUS	Rev B
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POWER ON SEQUENCE




POWER Delivery Architectural Block Diagram





<Variant Name>



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Size C

Sheet Name

PWR_Budget

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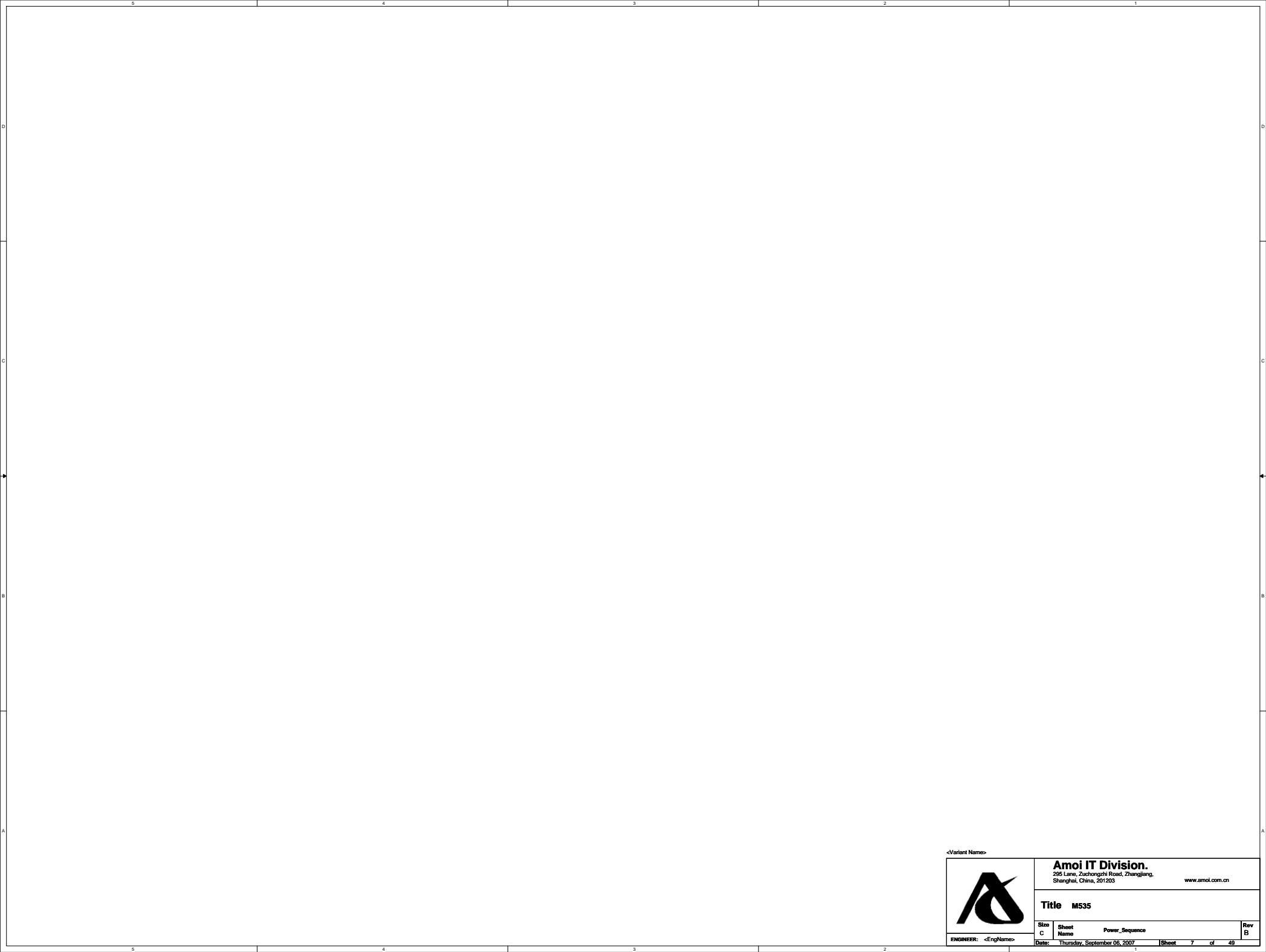
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Title M535

Rev B



<Variant Name>



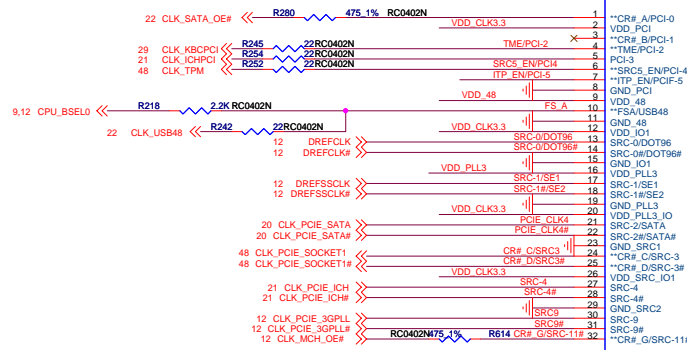
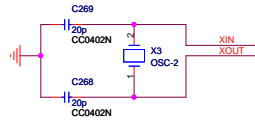
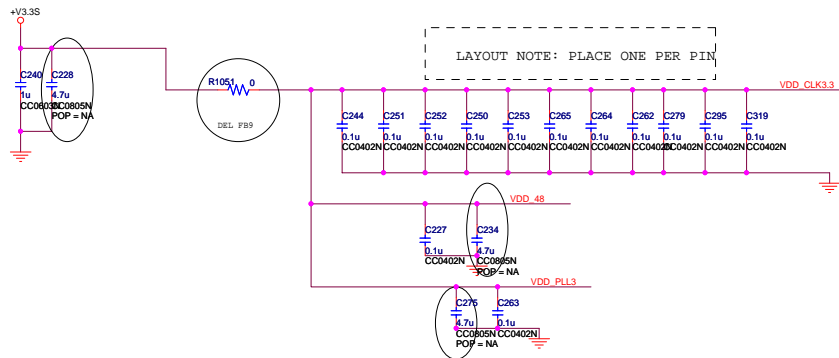
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Size C	Sheet Name	Power_Sequence	Rev B
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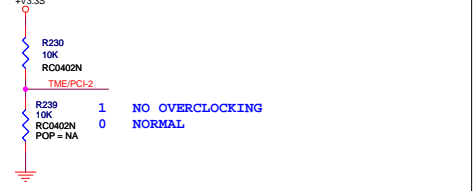
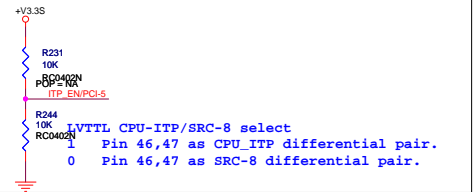
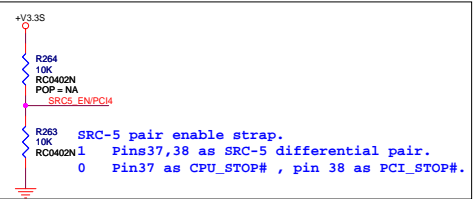
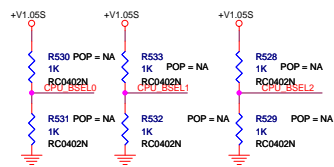
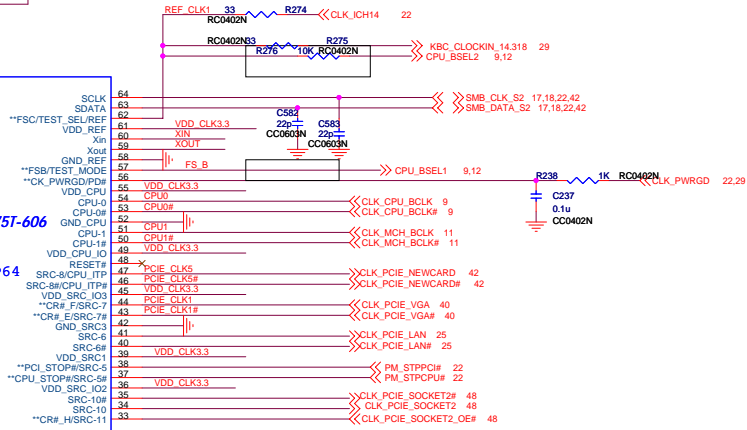
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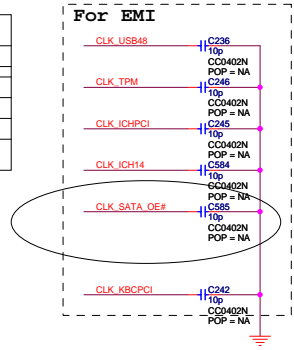
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RTM8751-606
TSSOP64



STRAP	MODE	STUFF	UNSTUFF
TME	NO OVERCLOCKING	R230 PULL UP	R230 PULLDOWN
SRC5_EN	SRC5 ENABLED	R239 PULLDOWN	R239 PULL UP
ITP_EN	ITP ENABLED	R244 PULL DOWN	R244 PULL UP



FS_C	FS_B	FS_A	CPU	SRC	PCI	DOT	REF	USB
Bit2	Bit1	Bit0	(MHz)	(MHz)	(MHz)	(MHz)	(MHz)	(MHz)
0	0	0	266.66	100.00	33.33	96.00	14.318	48.00
0	0	1	133.33	100.00	33.33	96.00	14.318	48.00
0	1	0	200.00	100.00	33.33	96.00	14.318	48.00
0	1	1	166.66	100.00	33.33	96.00	14.318	48.00
1	0	0	333.33	100.00	33.33	96.00	14.318	48.00
1	0	1	100.00	100.00	33.33	96.00	14.318	48.00
1	1	0	400.00	100.00	33.33	96.00	14.318	48.00
1	1	1	200.00	100.00	33.33	96.00	14.318	48.00

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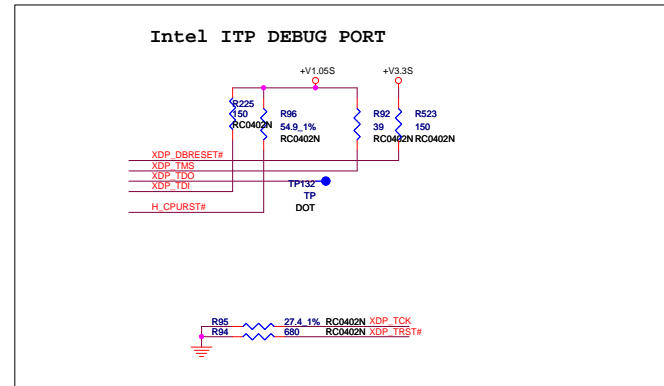
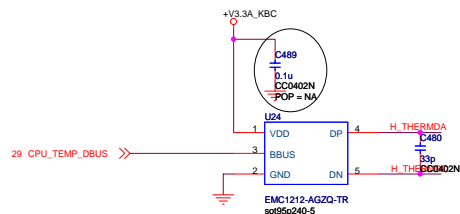
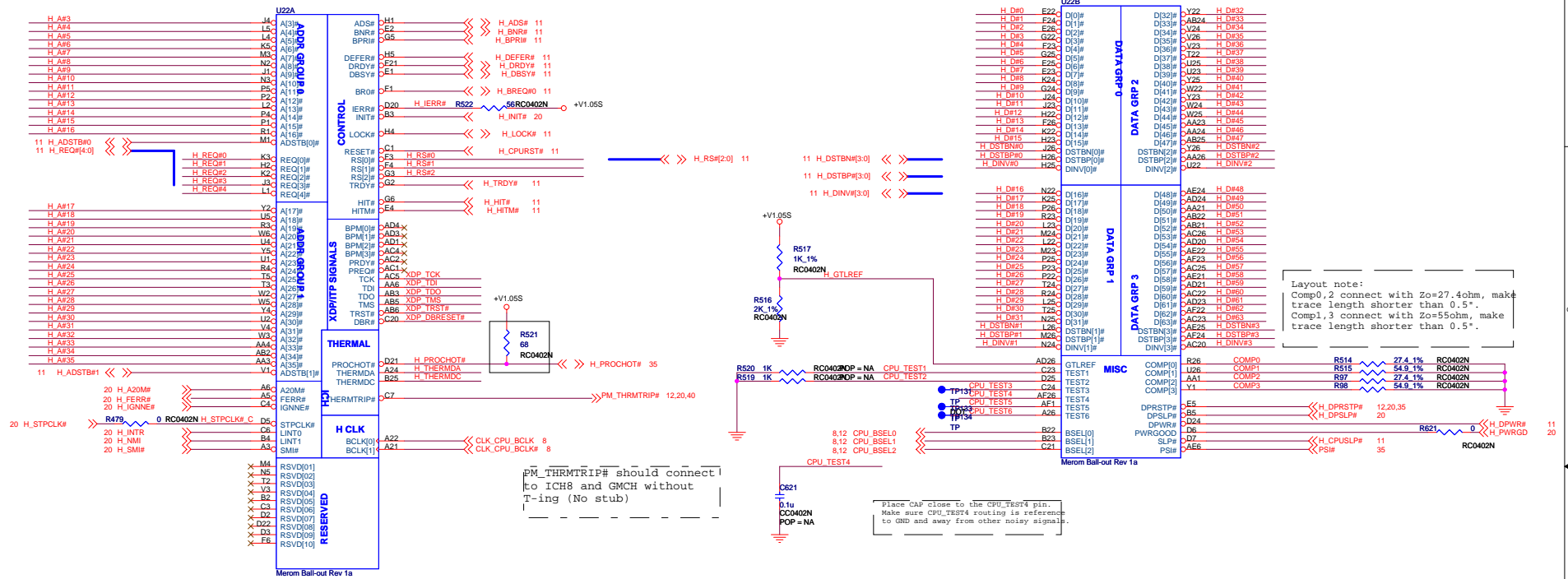
Size C **Sheet** Name **Sheet** 8 of 49

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11 H_A# [35:3] << >>

11 H_D# [63:0] << >>

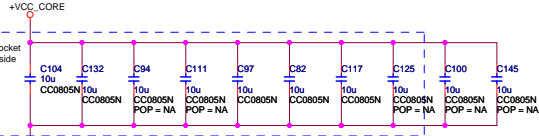


VCC(CORE) Decoupling

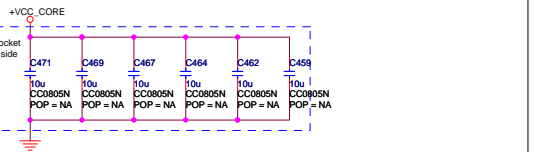
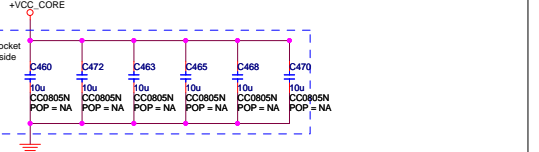
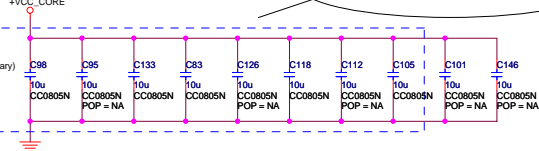
PLACE NEAR CPU

Mid Frequency

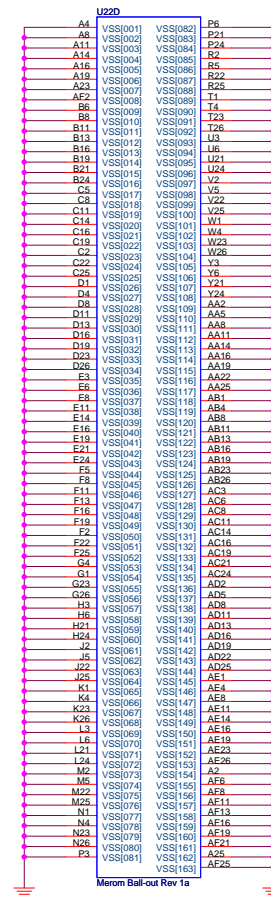
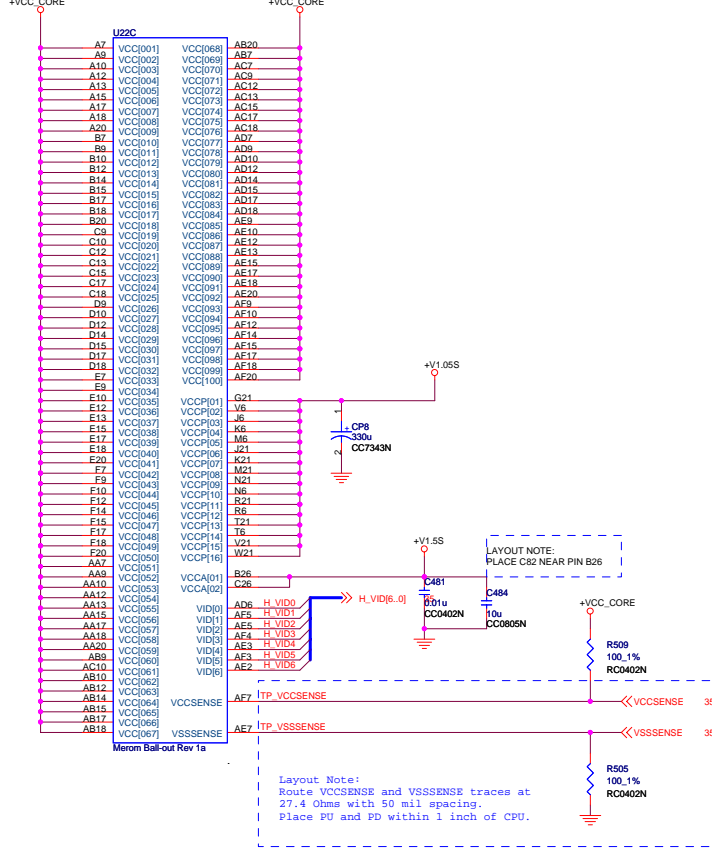
(0805,MLCC,>=X5R)



DEL one CAP per 2 cap.



If use Low Inductance Low-Frequency Decoupling Cap
(Total LF Cap ESR=1.5mohm,ESL=0.8nH/6),
these cap can NA,
If use Common Low-Frequency Decoupling Cap
(Total LF Cap ESR=1.5mohm,ESL=1.8nH/6),
these must be mounted

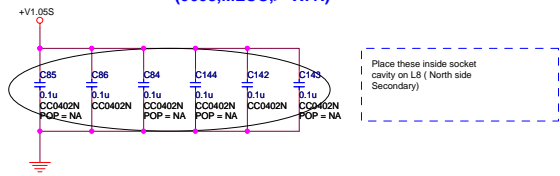


VCCP Decoupling

PLACE NEAR CPU

High Frequency

(0603,MLCC,>=X7R)



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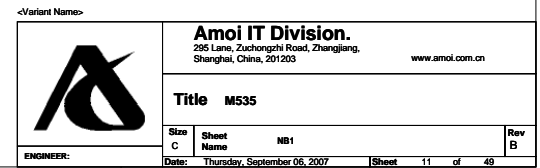
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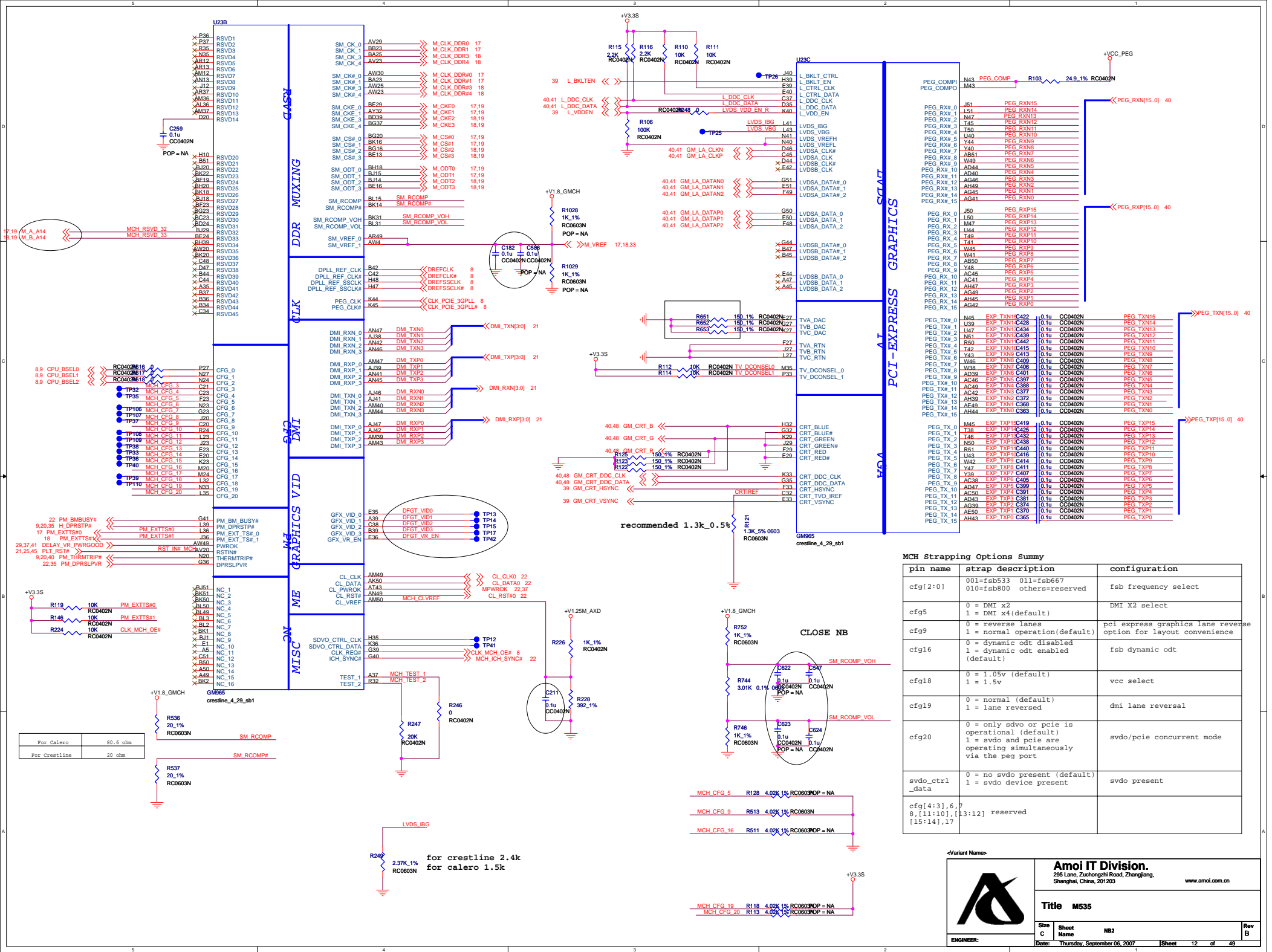
Rev B

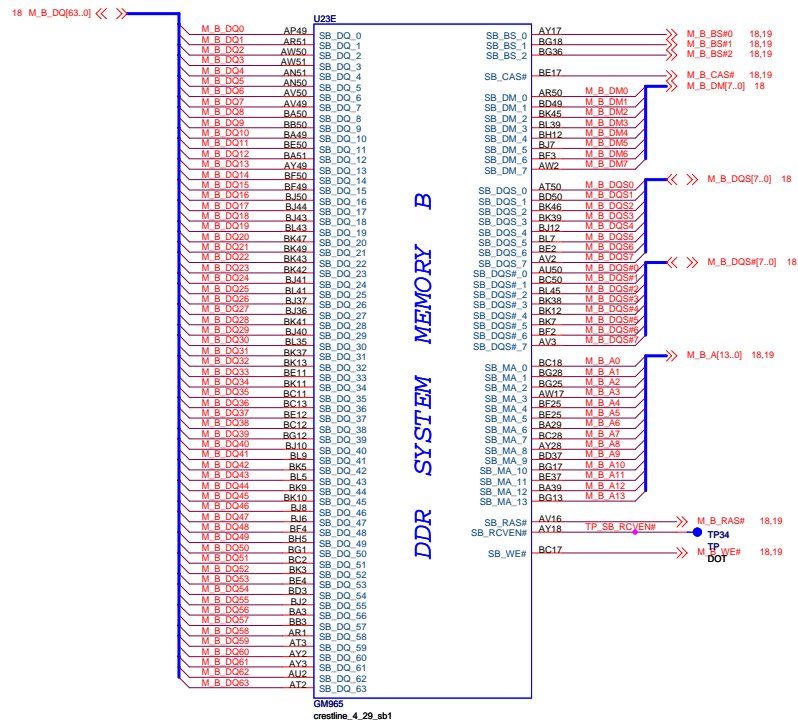
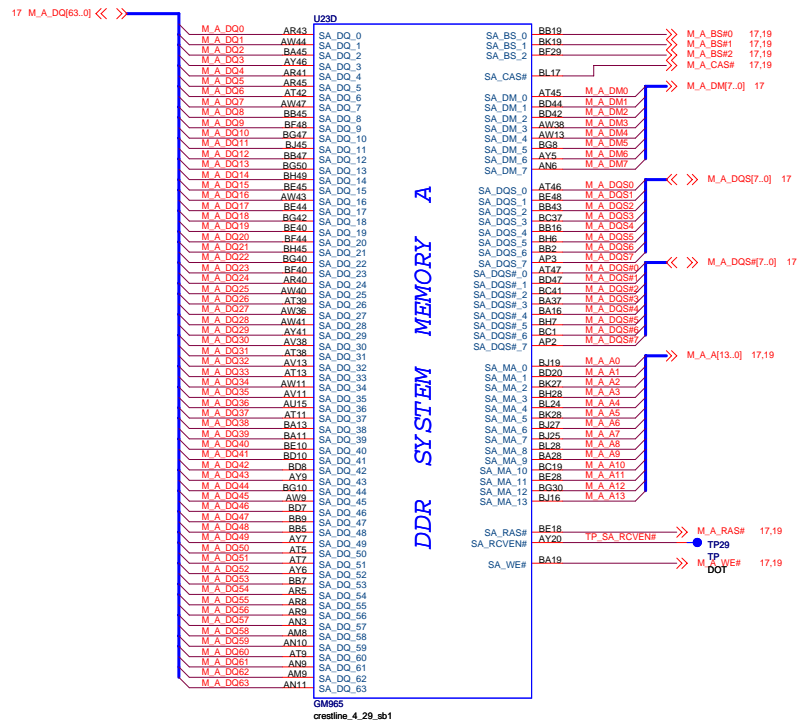
Sheet Name CPU2

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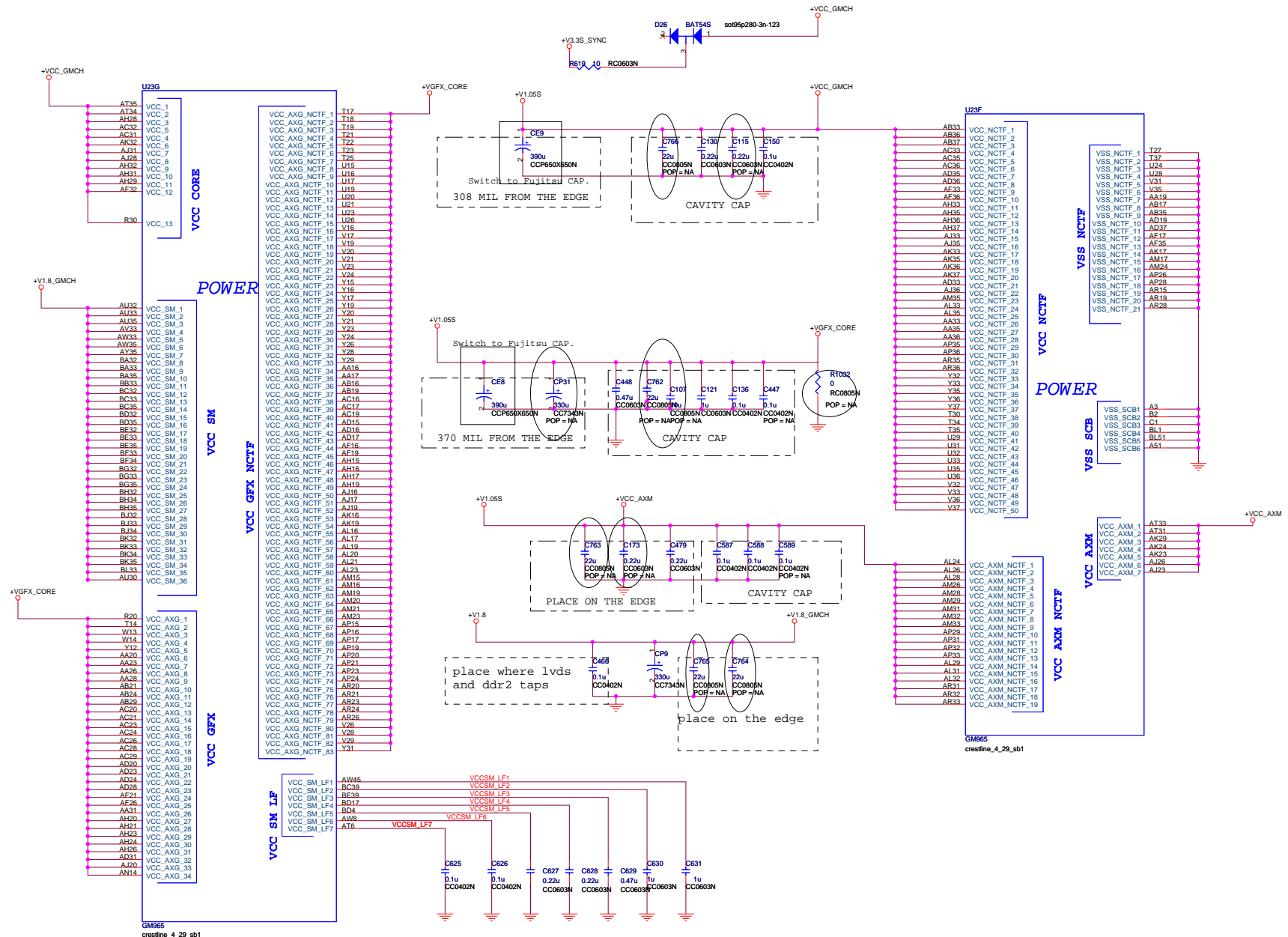


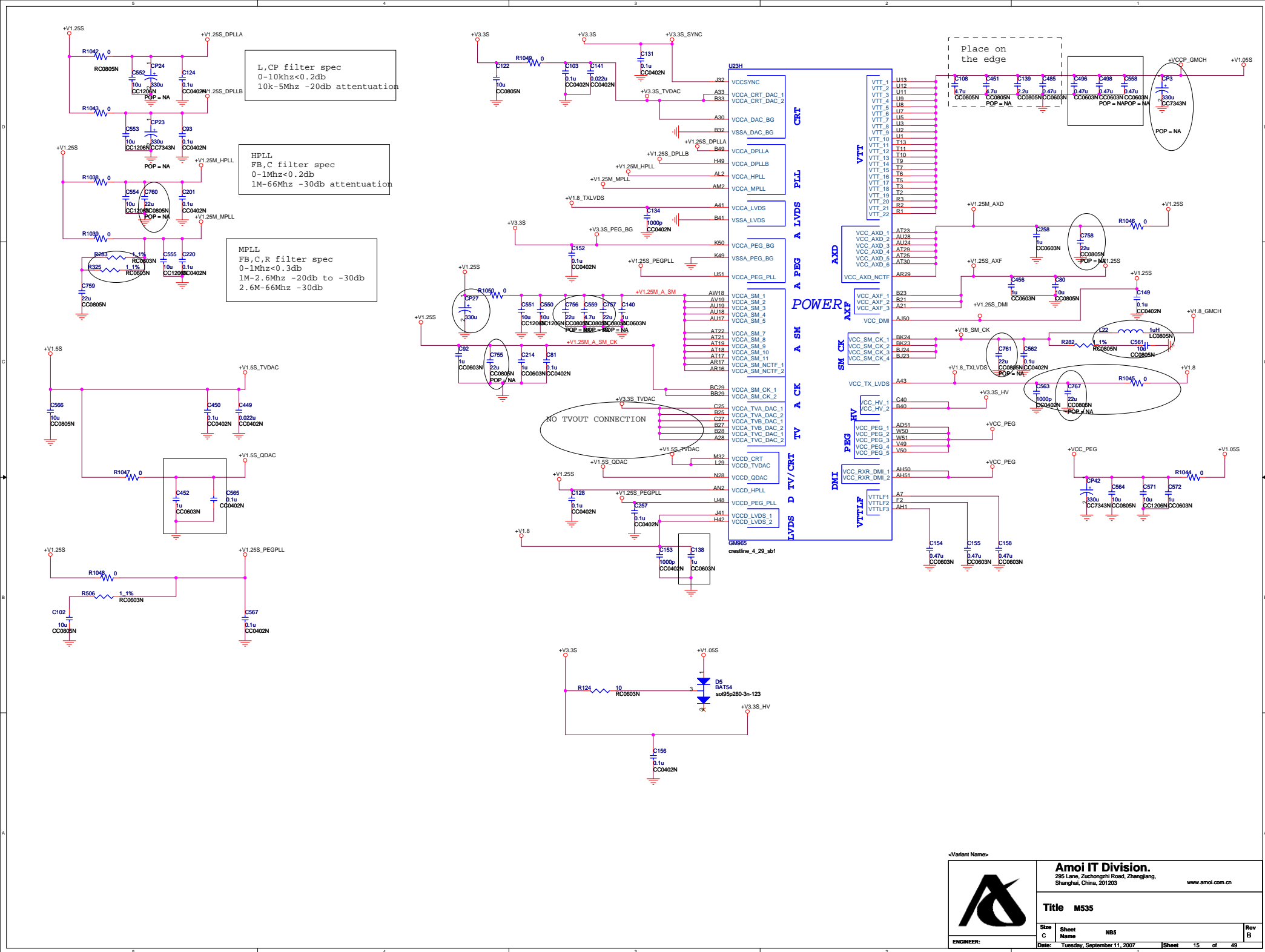


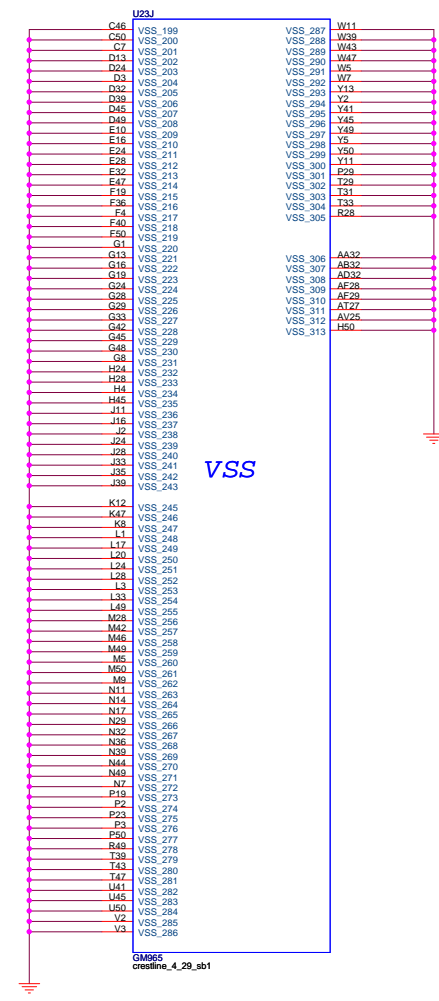
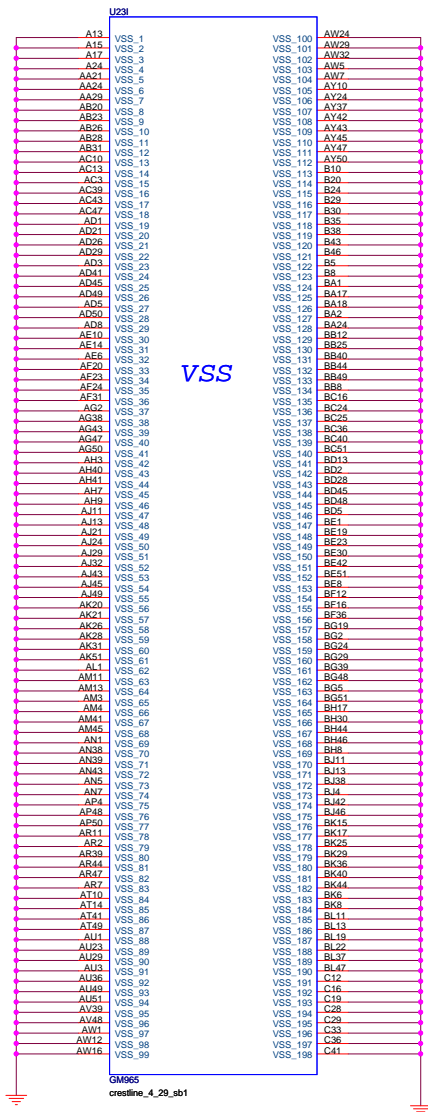


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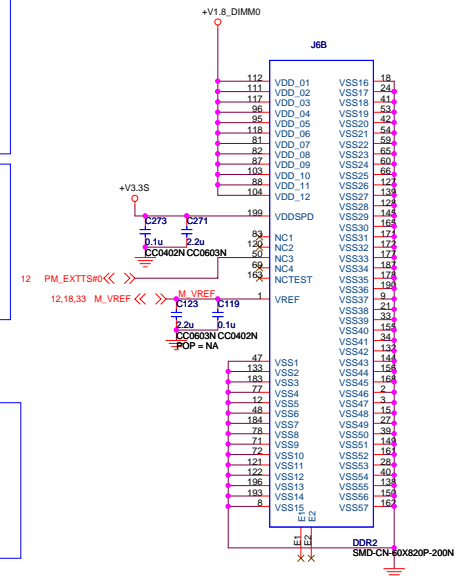
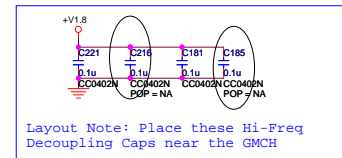
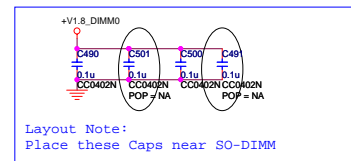
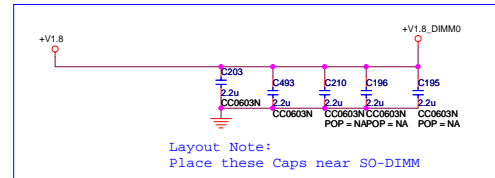
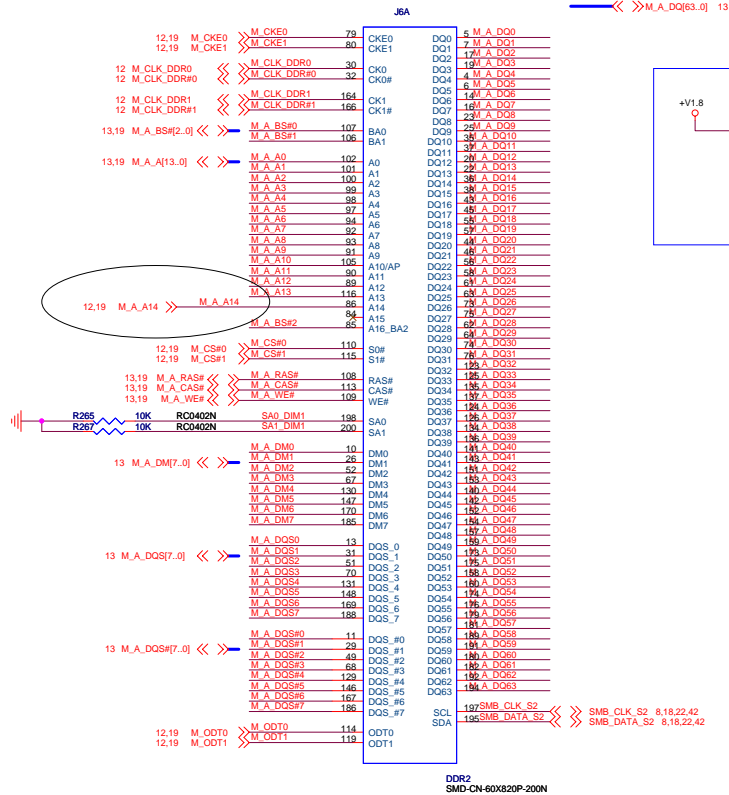
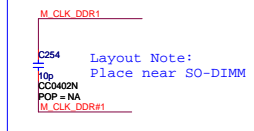
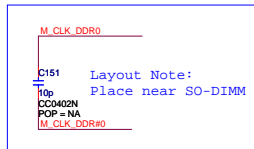
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		Title M355	
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DDR2 SODIMM0



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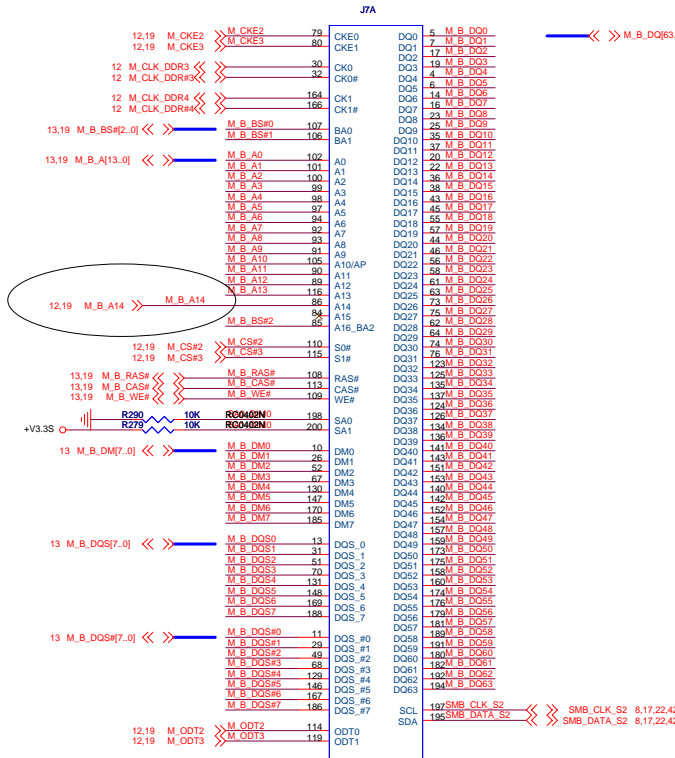
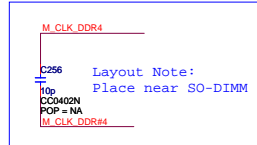
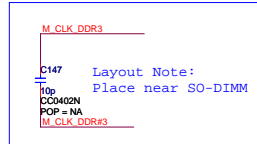
Title	M515
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Size	Sheet	DDR2_SODIMM0(1 of 3)
C	Name	

Rev B	
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C	Name	
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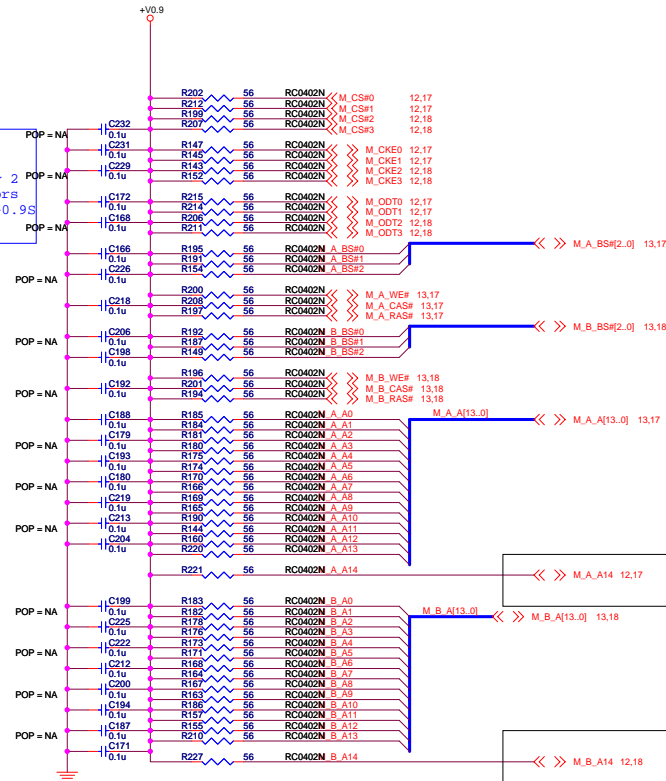
DDR2 SODIMM1




DDR2 Termination

Layout note:
Place one cap
close to every 2
pullup resistors
terminated to +0.9S

DEL one per 2 cap.



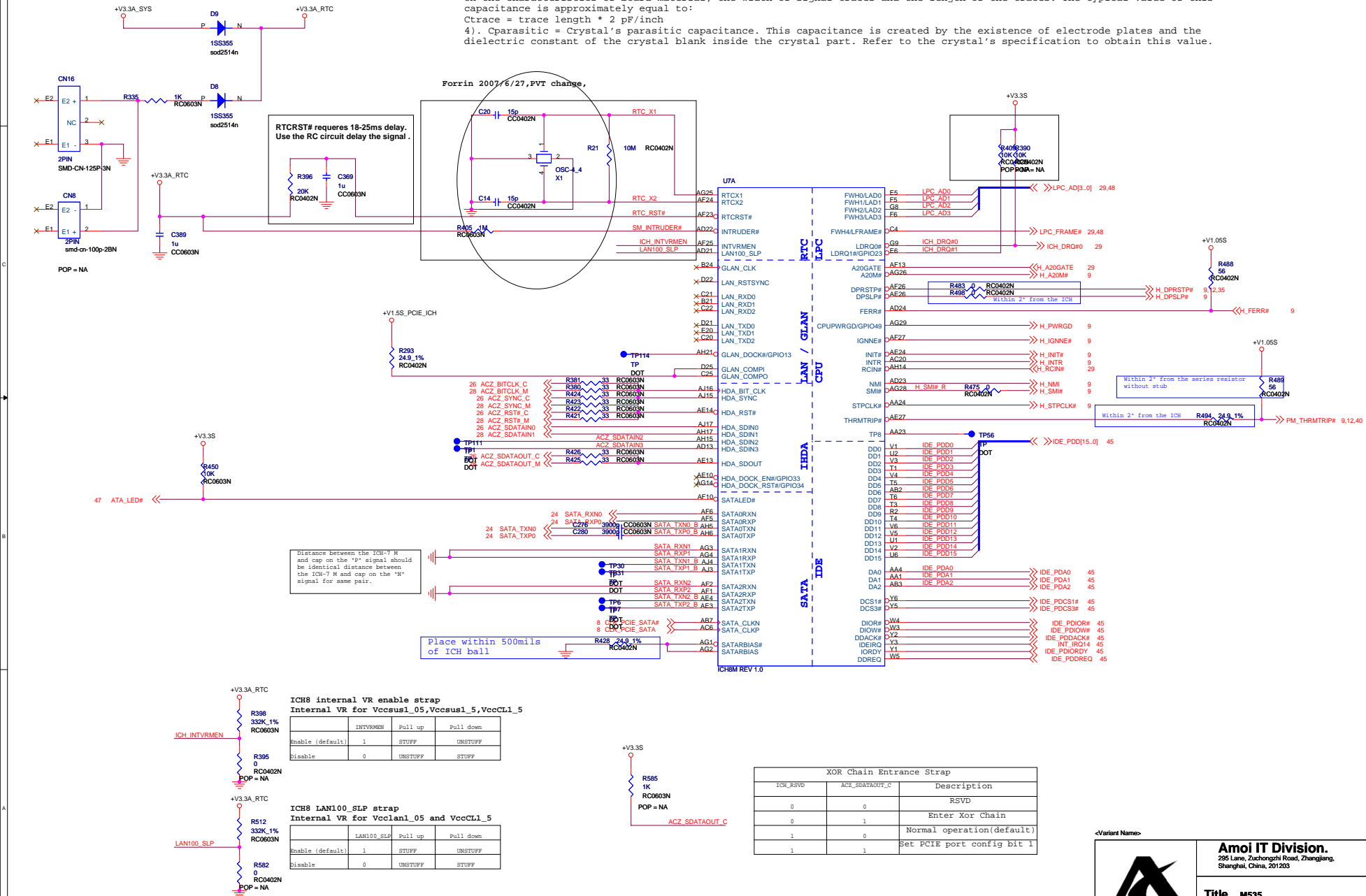
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Size C	Sheet Name	DDR2_Termination(3 of 3)	Rev B	
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$$C_{load} = [(C1 + C_{in1} + C_{trace1}) * (C2 + C_{in2} + C_{trace2})] / [(C1 + C_{in1} + C_{trace1} + C2 + C_{in2} + C_{trace2})] + C_{parasitic}$$

Where:

- 1). Cload = Crystal's load capacitance. This value can be obtained from Crystal's specification.
- 2). Cin1, Cin2 = input capacitances at RTCX1, RTCX2 pins of the ICHN. These values can be obtained in the ICHN's data sheet.
- 3). Ctrace1, Ctrace2 = Trace length capacitances measured from the Crystal terminals to RTCX1, RTCX2 pins. These values depend on the characteristics of board material, the width of signal traces and the length of the traces. The typical value of this capacitance is approximately equal to:
Ctrace = trace length * 2 pF/inch
- 4). Cparasitic = Crystal's parasitic capacitance. This capacitance is created by the existence of electrode plates and the dielectric constant of the crystal blank inside the crystal part. Refer to the crystal's specification to obtain this value.



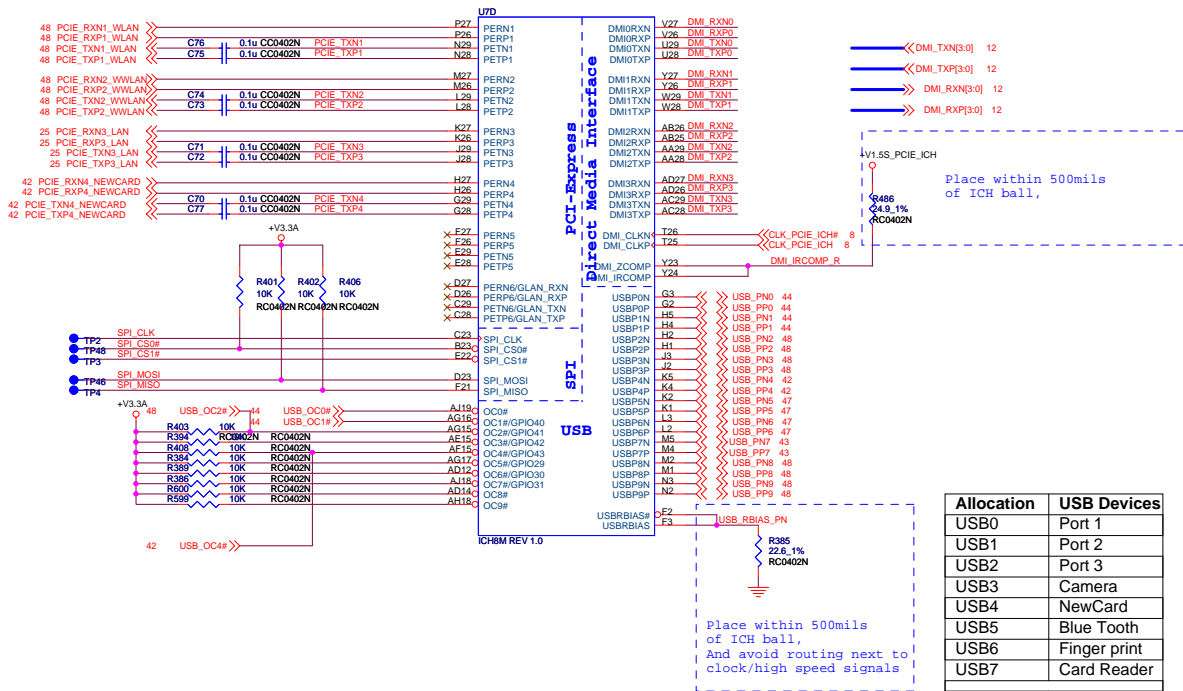
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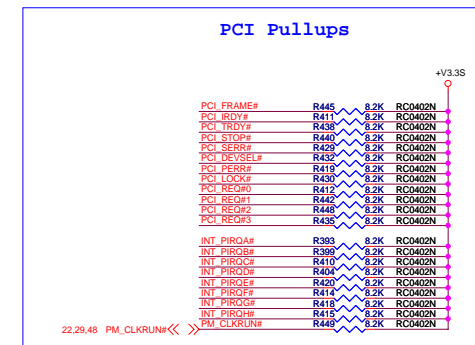
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Size C **Sheet** Name ICH8M1 **Rev** B

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Boot BIOS Strap		
PCI_GNT0#	SPI_CS1#	Boot BIOS Location
0	1	SPI
1	0	PCI
1	1	LPC(default)



<Variant Name>

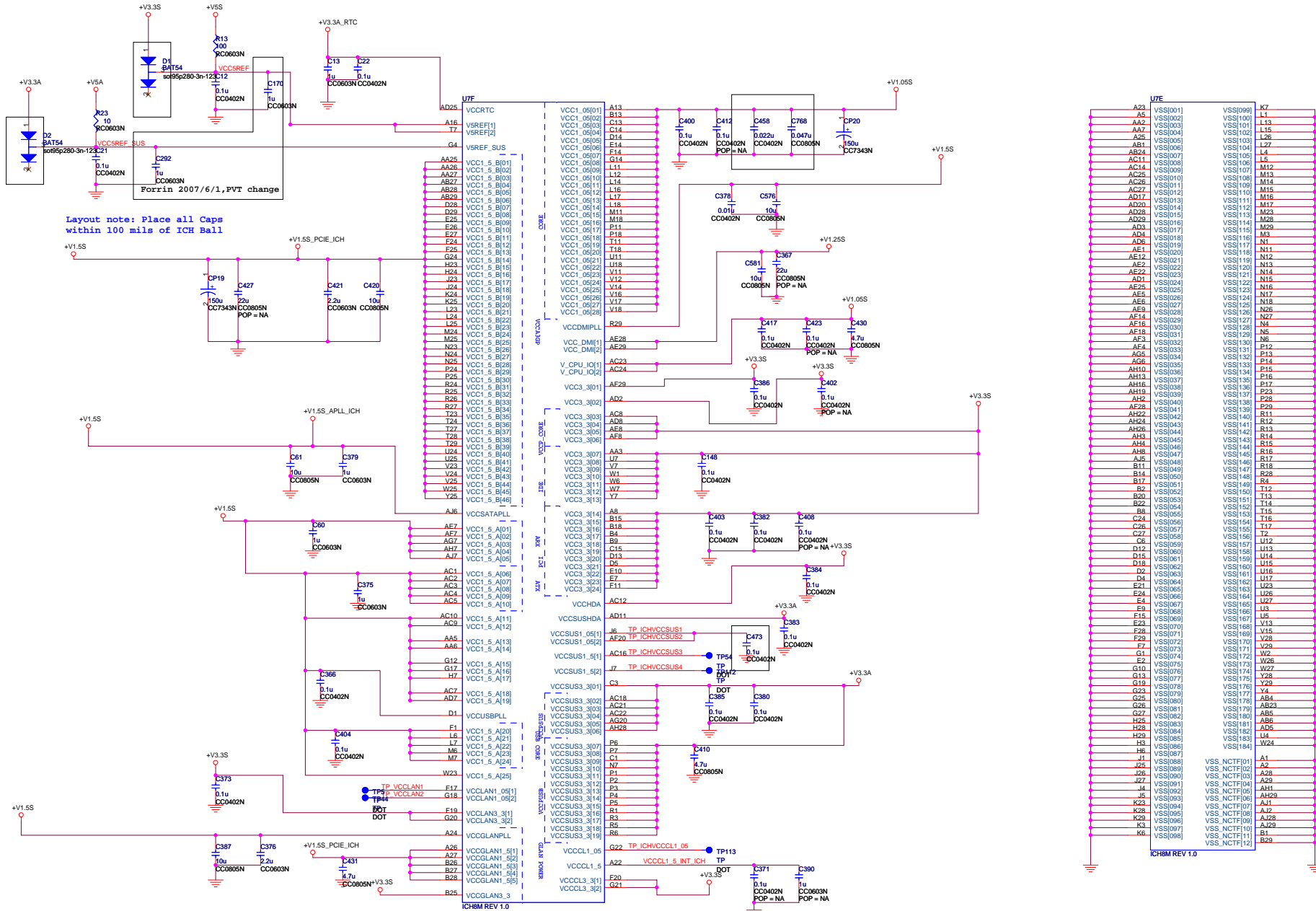


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Layout note: Place all Caps within 100 mils of ICH Ball


Forrin 2007/6/1, PVT change

ICH8M REV 1.0

U7E		
A23	VSS[001]	VSS[099]
A5	VSS[002]	VSS[100]
A6	VSS[003]	VSS[101]
A7	VSS[004]	VSS[102]
A8	VSS[005]	VSS[103]
A9	VSS[006]	VSS[104]
AB1	VSS[007]	VSS[105]
AB2	VSS[008]	VSS[106]
AB3	VSS[009]	VSS[107]
AB4	VSS[010]	VSS[108]
AB5	VSS[011]	VSS[109]
AB6	VSS[012]	VSS[110]
AB7	VSS[013]	VSS[111]
AB8	VSS[014]	VSS[112]
AB9	VSS[015]	VSS[113]
AB10	VSS[016]	VSS[114]
AB11	VSS[017]	VSS[115]
AB12	VSS[018]	VSS[116]
AB13	VSS[019]	VSS[117]
AB14	VSS[020]	VSS[118]
AB15	VSS[021]	VSS[119]
AB16	VSS[022]	VSS[120]
AB17	VSS[023]	VSS[121]
AB18	VSS[024]	VSS[122]
AB19	VSS[025]	VSS[123]
AB20	VSS[026]	VSS[124]
AB21	VSS[027]	VSS[125]
AB22	VSS[028]	VSS[126]
AB23	VSS[029]	VSS[127]
AB24	VSS[030]	VSS[128]
AB25	VSS[031]	VSS[129]
AB26	VSS[032]	VSS[130]
AB27	VSS[033]	VSS[131]
AB28	VSS[034]	VSS[132]
AB29	VSS[035]	VSS[133]
AB30	VSS[036]	VSS[134]
AB31	VSS[037]	VSS[135]
AB32	VSS[038]	VSS[136]
AB33	VSS[039]	VSS[137]
AB34	VSS[040]	VSS[138]
AB35	VSS[041]	VSS[139]
AB36	VSS[042]	VSS[140]
AB37	VSS[043]	VSS[141]
AB38	VSS[044]	VSS[142]
AB39	VSS[045]	VSS[143]
AB40	VSS[046]	VSS[144]
AB41	VSS[047]	VSS[145]
AB42	VSS[048]	VSS[146]
AB43	VSS[049]	VSS[147]
AB44	VSS[050]	VSS[148]
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AB46	VSS[052]	VSS[150]
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AB50	VSS[056]	VSS[154]
AB51	VSS[057]	VSS[155]
AB52	VSS[058]	VSS[156]
AB53	VSS[059]	VSS[157]
AB54	VSS[060]	VSS[158]
AB55	VSS[061]	VSS[159]
AB56	VSS[062]	VSS[160]
AB57	VSS[063]	VSS[161]
AB58	VSS[064]	VSS[162]
AB59	VSS[065]	VSS[163]
AB60	VSS[066]	VSS[164]
AB61	VSS[067]	VSS[165]
AB62	VSS[068]	VSS[166]
AB63	VSS[069]	VSS[167]
AB64	VSS[070]	VSS[168]
AB65	VSS[071]	VSS[169]
AB66	VSS[072]	VSS[170]
AB67	VSS[073]	VSS[171]
AB68	VSS[074]	VSS[172]
AB69	VSS[075]	VSS[173]
AB70	VSS[076]	VSS[174]
AB71	VSS[077]	VSS[175]
AB72	VSS[078]	VSS[176]
AB73	VSS[079]	VSS[177]
AB74	VSS[080]	VSS[178]
AB75	VSS[081]	VSS[179]
AB76	VSS[082]	VSS[180]
AB77	VSS[083]	VSS[181]
AB78	VSS[084]	VSS[182]
AB79	VSS[085]	VSS[183]
AB80	VSS[086]	VSS[184]
AB81	VSS[087]	VSS[185]
AB82	VSS[088]	VSS[186]
AB83	VSS[089]	VSS[187]
AB84	VSS[090]	VSS[188]
AB85	VSS[091]	VSS[189]
AB86	VSS[092]	VSS[190]
AB87	VSS[093]	VSS[191]
AB88	VSS[094]	VSS[192]
AB89	VSS[095]	VSS[193]
AB90	VSS[096]	VSS[194]
AB91	VSS[097]	VSS[195]
AB92	VSS[098]	VSS[196]

ICH8M REV 1.0

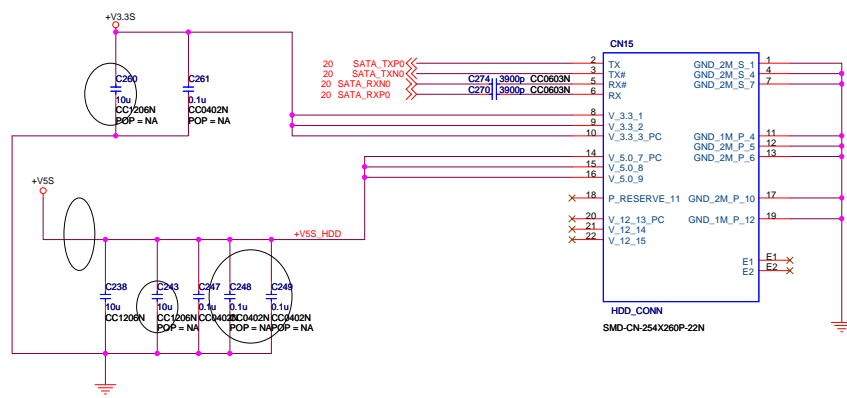
<Variant Name>




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Shanghai, China, 201293

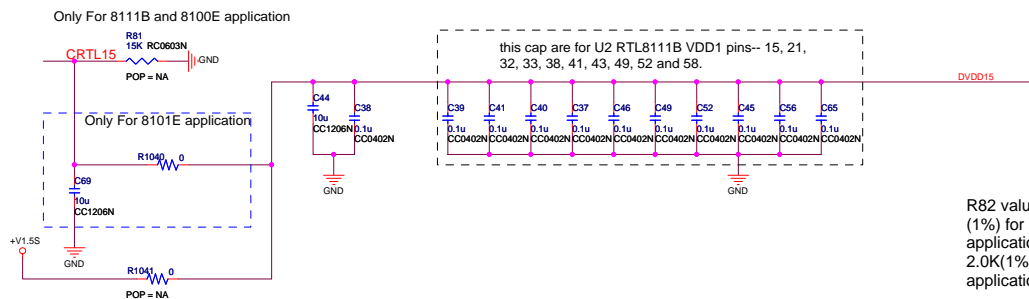
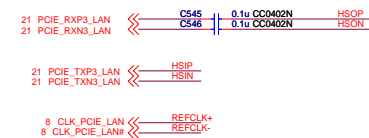
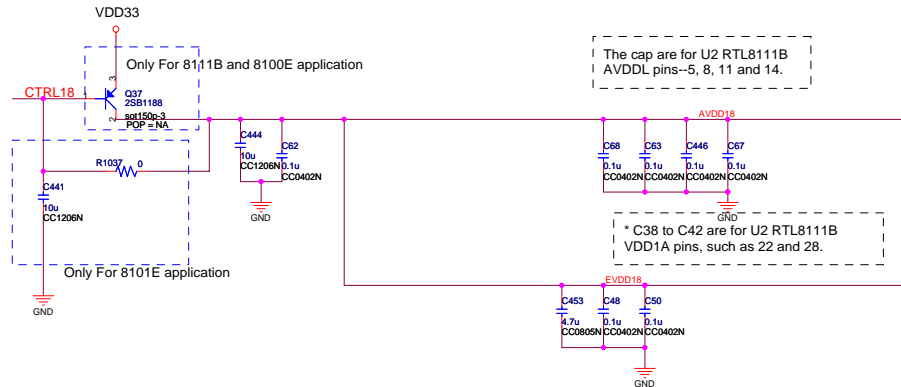
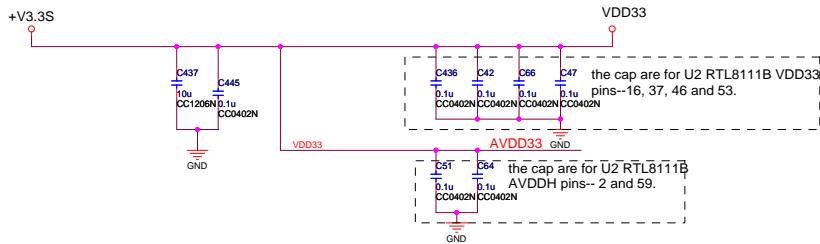
www.amoi.com.cn

Title M355	
Size C	Sheet Name ICH8M4
ENGINEER:	Date: Thursday, September 06, 2007
Sheet 23	Rev B

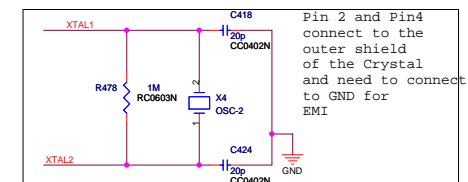


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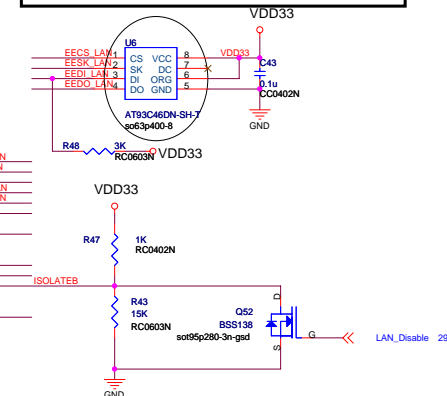
		Amol IT Division. 295 Lane, Zuchongzhi Road, Zhangjiang, Shanghai, China, 201203		www.amol.com.cn
		Title MS15		
ENGINEER:	Size C	Sheet SATA HD	Date: Thursday, September 06, 2007	Rev S
		(Sheet 24 of 48)		



R82 value should be 2.49K (1%) for 8111B/8111C application. R21 should be 2.0K(1%) for 8101E application

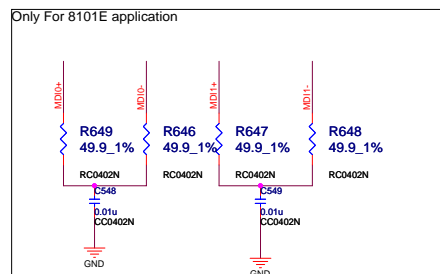


Only is R48 used when 93C56 is used. NC if 93C46 is used.

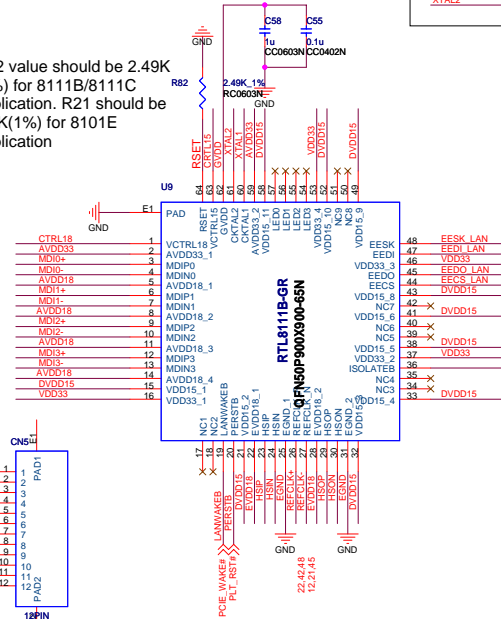
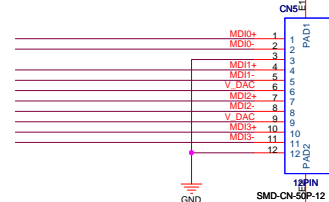


Remove R507 for 8111B and 8100E

AVDD18 R507 0 V_DAC



GIGALAN Connector



<Variant Name>

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Title M335

Size C

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The MAX9789A/MAX9790A allow for the speaker and headphone amplifiers to be muted. By driving MUTE low, both the speaker and headphone amplifiers are muted. When muted, the speaker outputs remain biased at $V_{DD} / 2$.

The MAX9789A/9790A features a low-power shutdown mode, drawing 0.3µA of supply current. By disabling the speaker, headphone amplifiers and the LDO (for MAX9789A), the MAX9789A/9790A enter lowpower shutdown mode. Set SPKR_EN to VDD and HP_EN and LDO_EN to GND to disable the speaker amplifiers, headphone amplifiers, and LDO, respectively.



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Size	Sheet	Audio speaker&earphone
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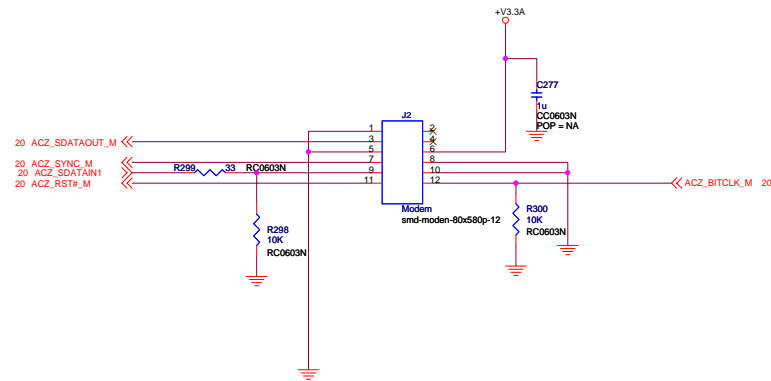
ENGINEER.

C	Name	
	Time	05:00


Case	Case	Case	Case
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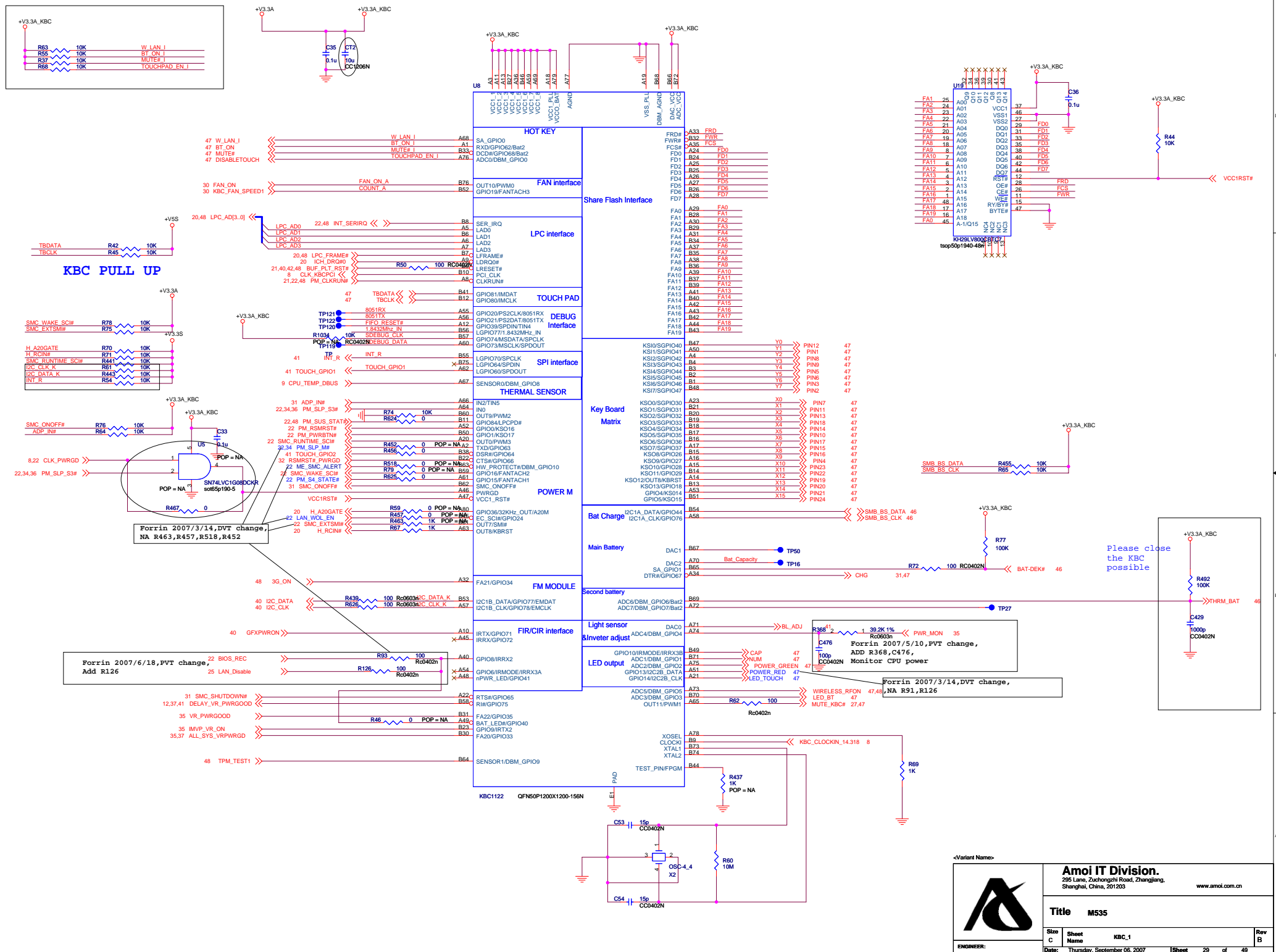
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Modem CON

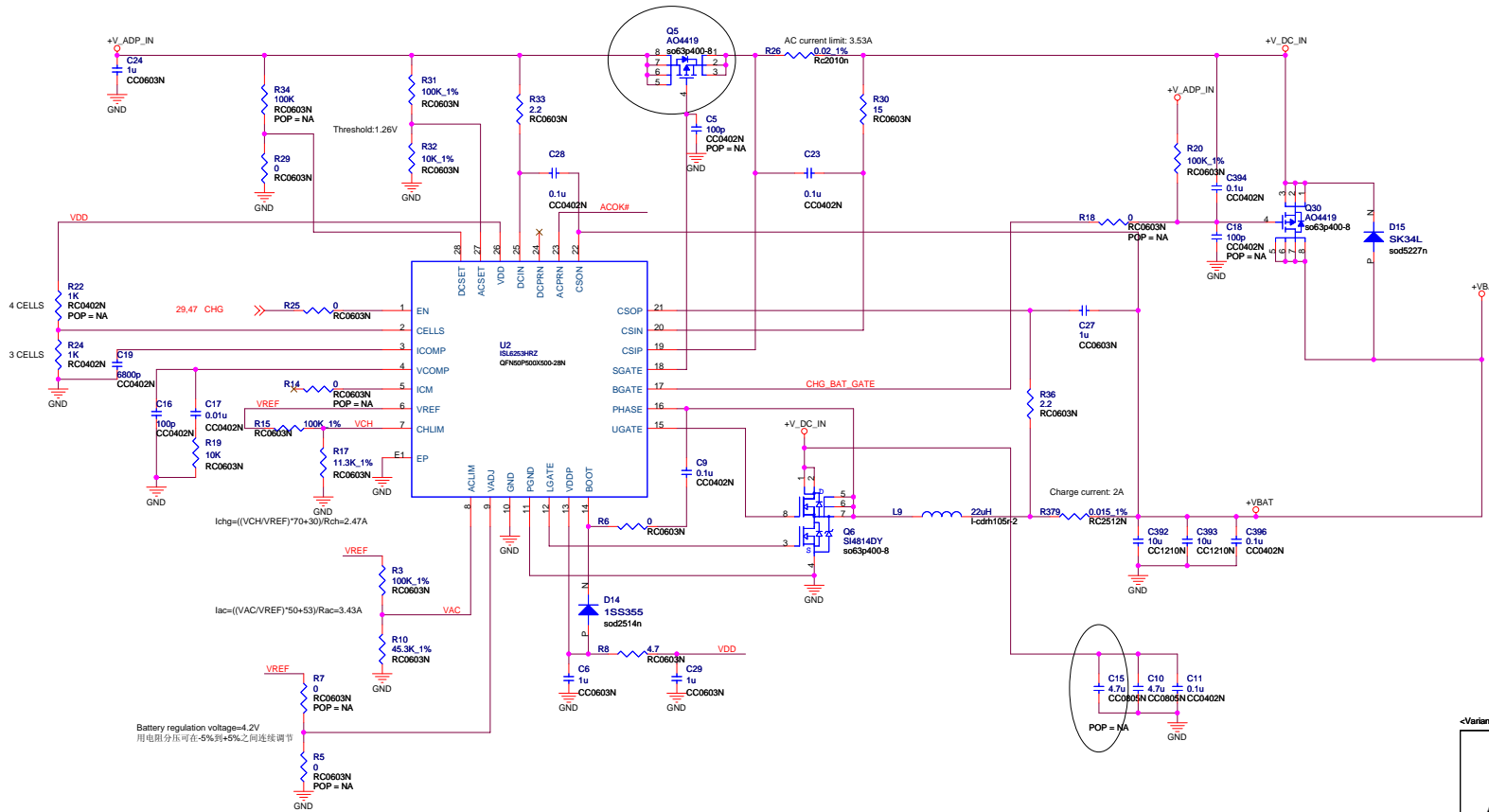
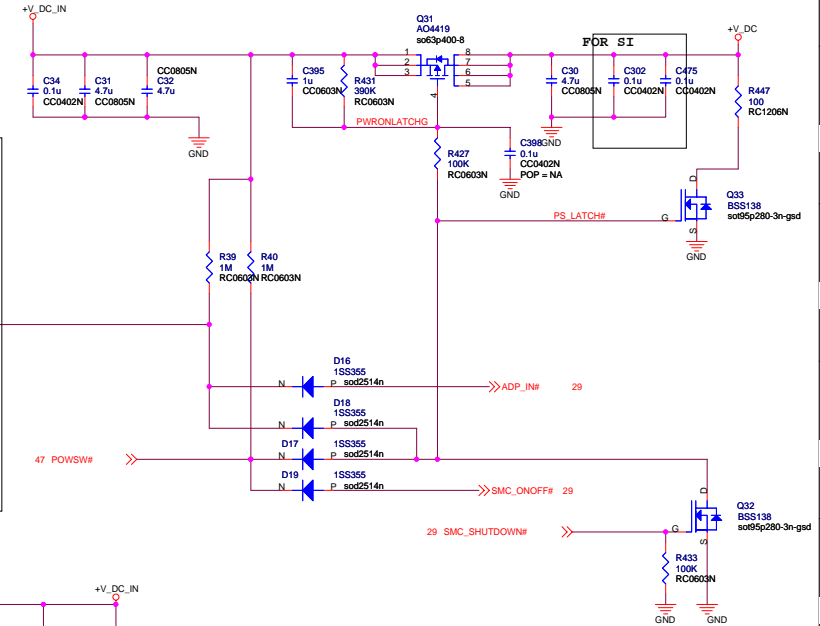
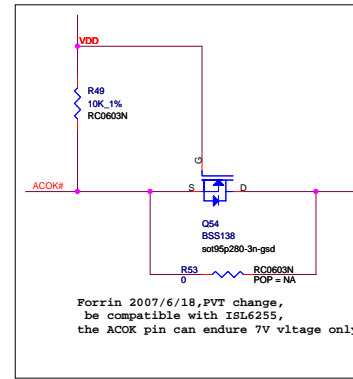


<Variant Name>

		Amoi IT Division. 295 Lane, Zuchongchi Road, Zhangjiang, Shanghai, China, 201203 www.amoi.com.cn	
		Title M535	
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Power Button Detect & Latch



<Variant Name>



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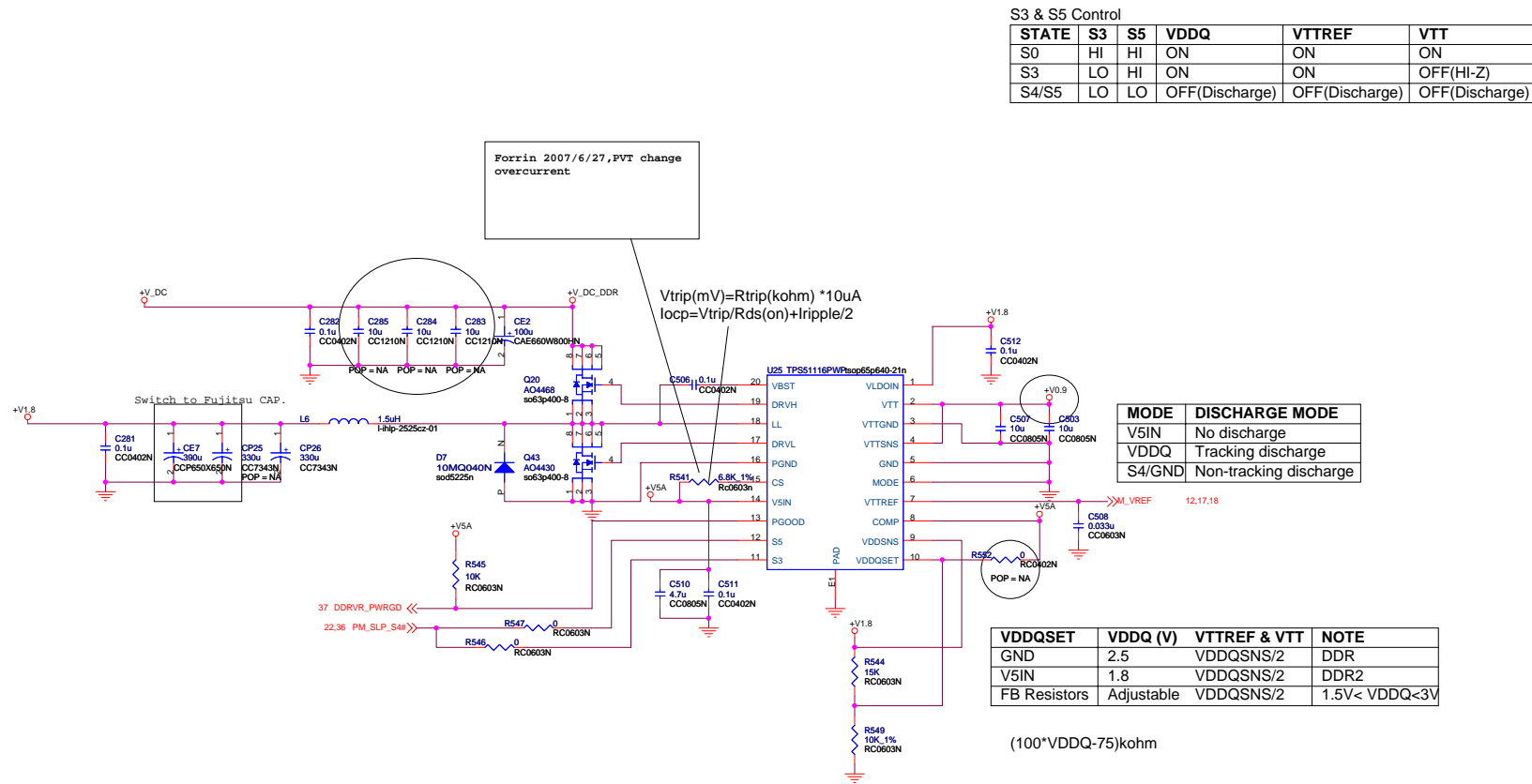
Title M535

Size	Sheet	Power_Charge	Rev
C	1		5


ENGINEER: <EngName>

Date: Thursday, September 06, 2007

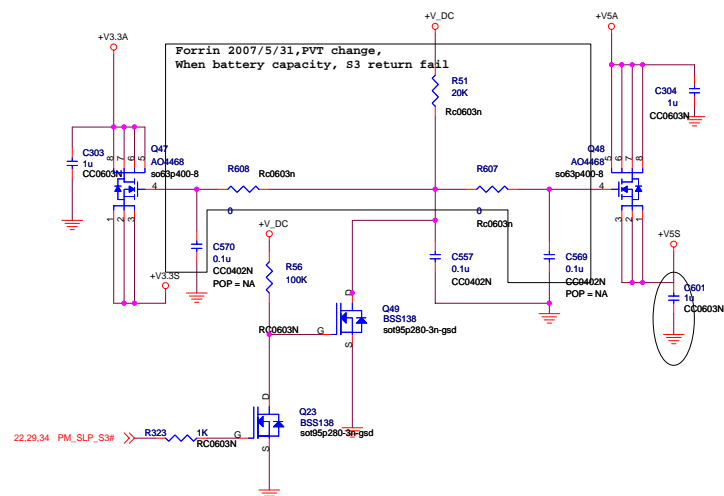
Sheet 31 of 48



<Variant Name>

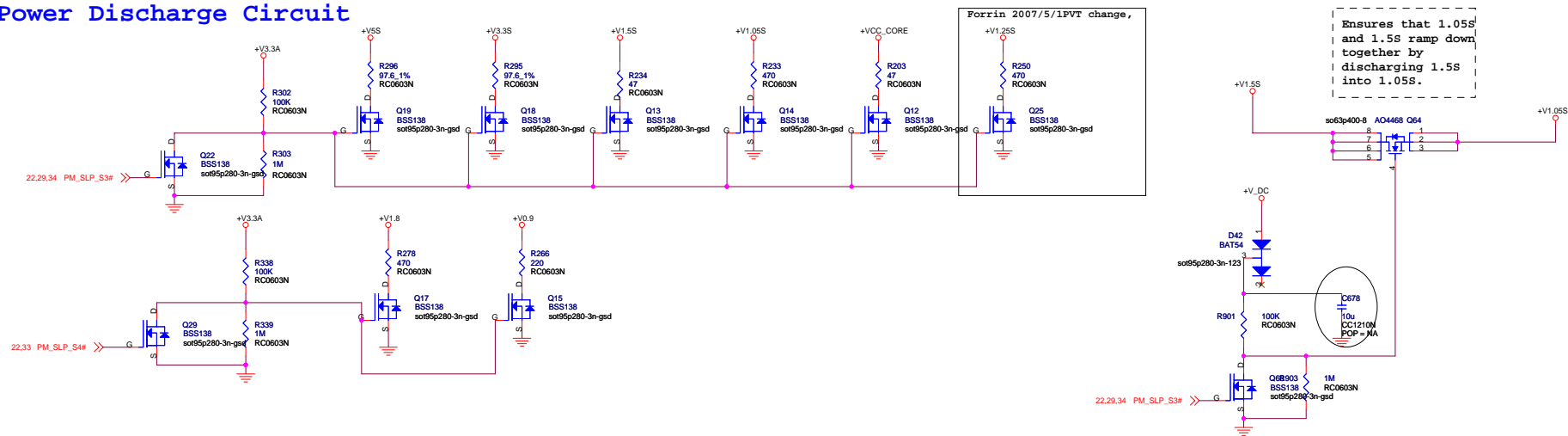
		Amol IT Division. 295 Lane, Zuchongchi Road, Zhongjiang, Shanghai, China, 201203		www.amol.com.cn
		Title M535		
Size C	Sheet Name PWR_DDR2	Date: Thursday, October 25, 2007	Sheet 33 of 49	Rev B

S3 Shut Down Power control




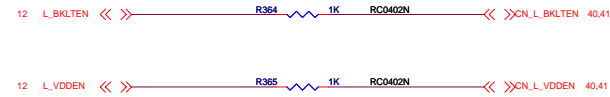
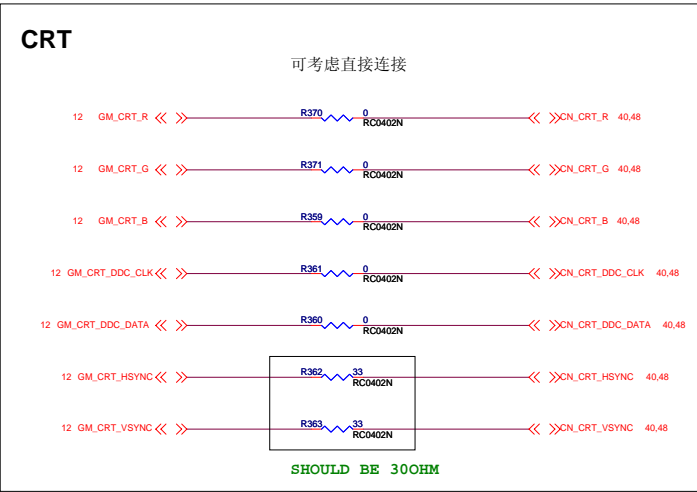
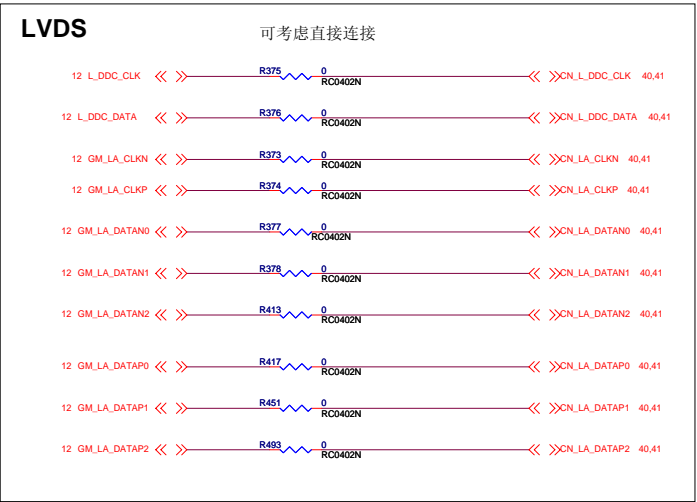
SLP_M# Shut Down Power control

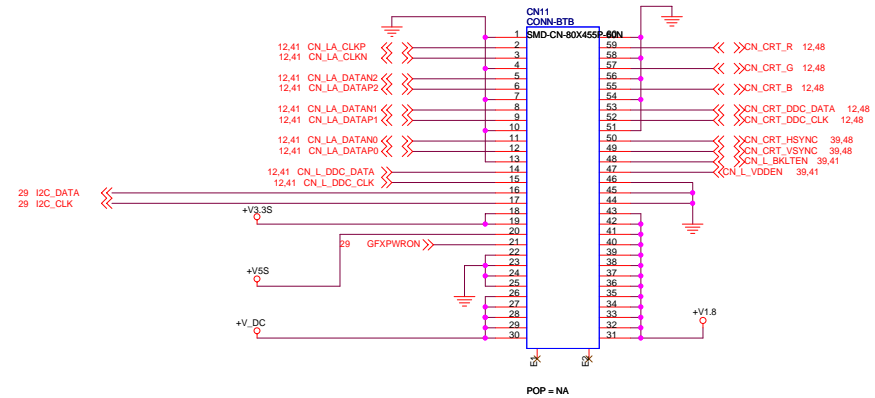
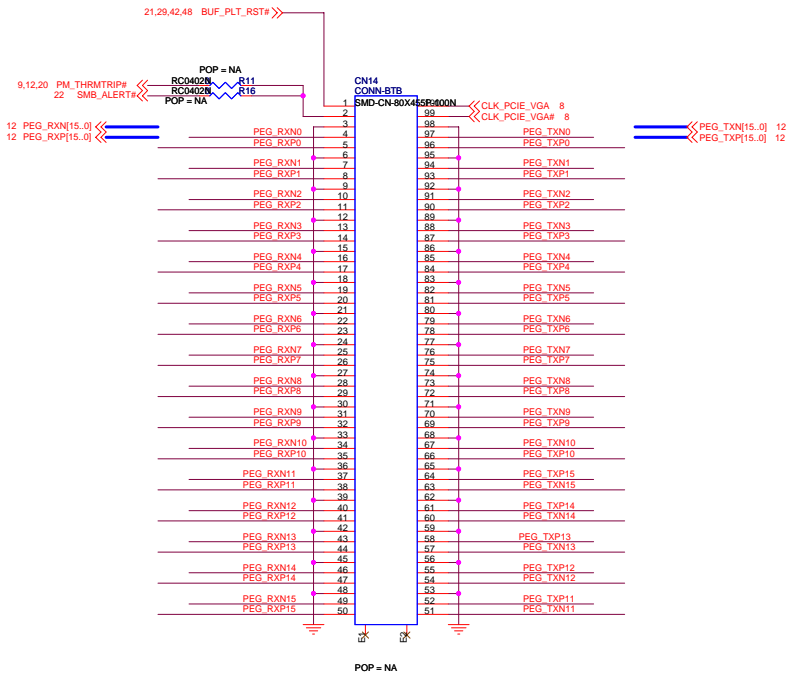
Power Discharge Circuit



<Variant Name>

		Amoi IT Division. 295 Lane, Zuchongchi Road, Zhangjiang, Shanghai, China, 201203 www.amoi.com.cn	
		Title M535	
Size C	Sheet Name	S3_S4_CNTR&Discharge	Rev B
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<Variant Name>



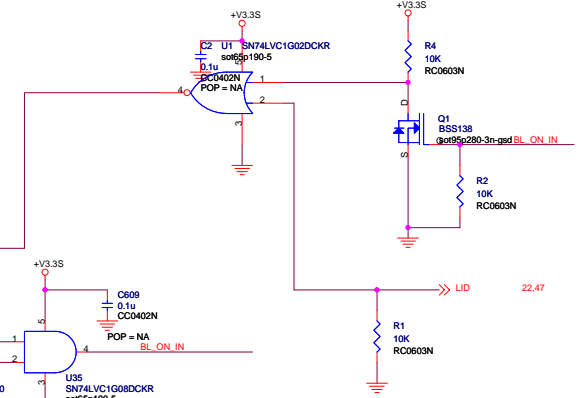
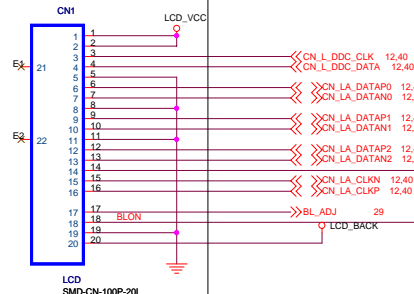
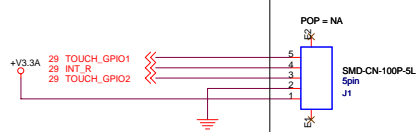
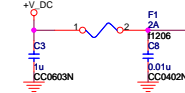
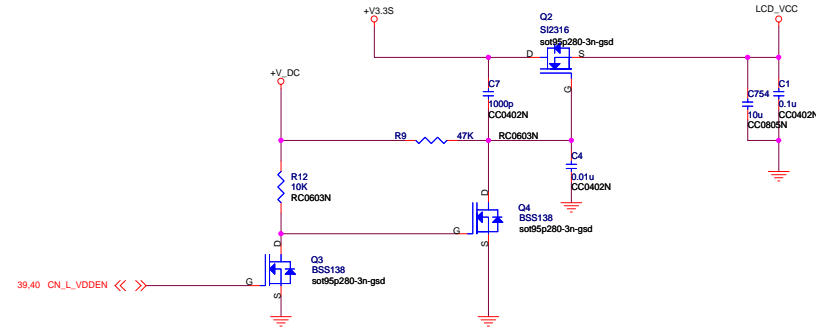
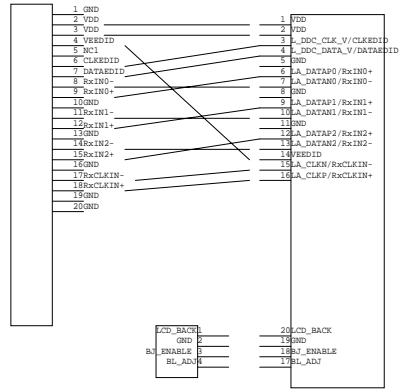
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Title M535

Size	Sheet	GPU Connector	Rev
C	Name		B
ENGINEER: <EngName>	Date: Thursday, September 06, 2007	Sheet 39 of 49	

LCD CON" cable IPEX 30PIN CON"

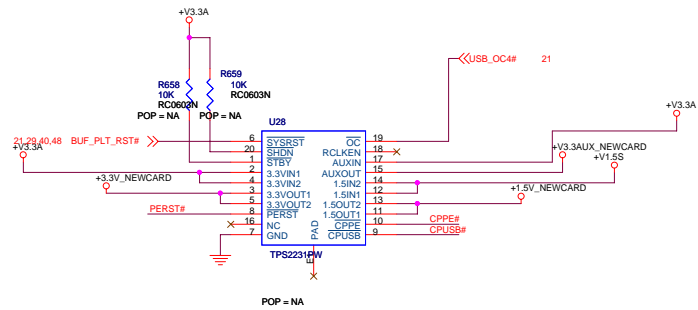


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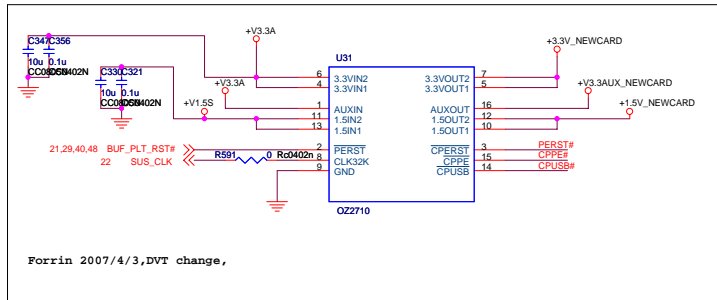
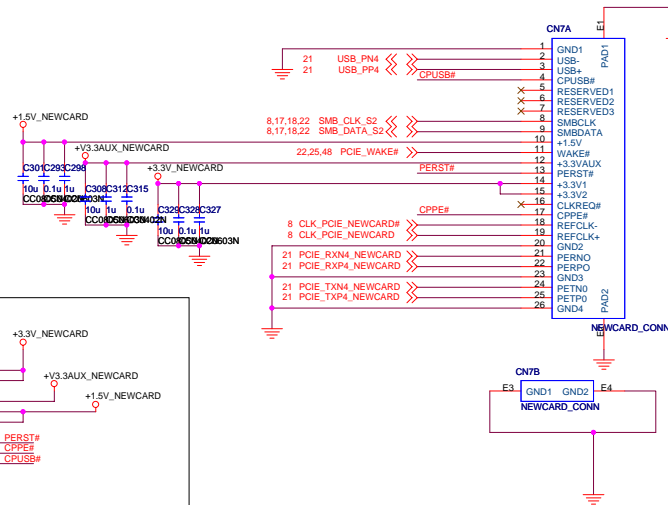
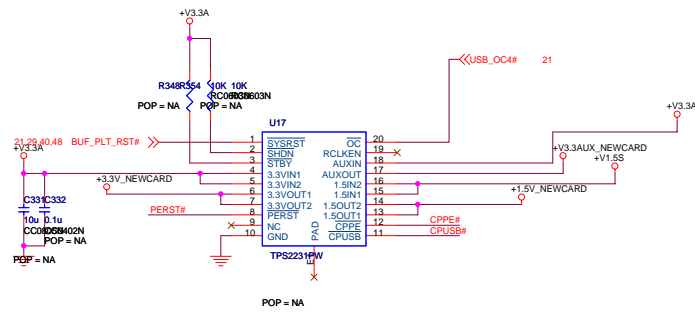
		Amoi IT Division. 295 Lane, Zuchongchi Road, Zhangjiang, Shanghai, China, 201203 www.amoi.com.cn	
		Title M535	
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Express Card CONN

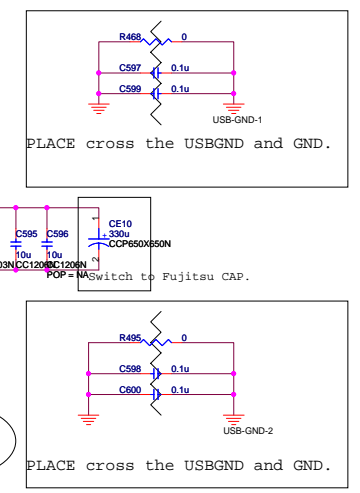
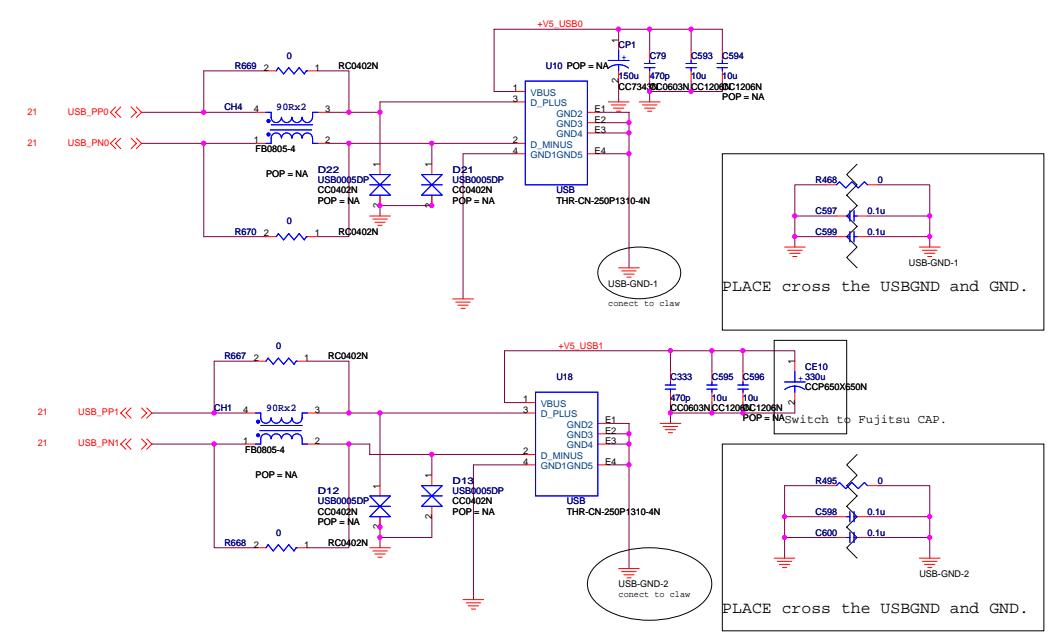
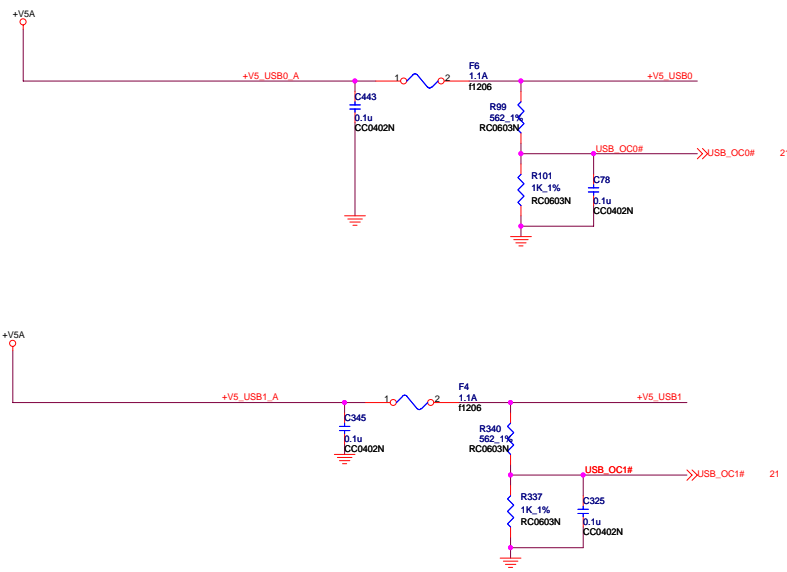


Minicard ME Component,
Not bring to Layout

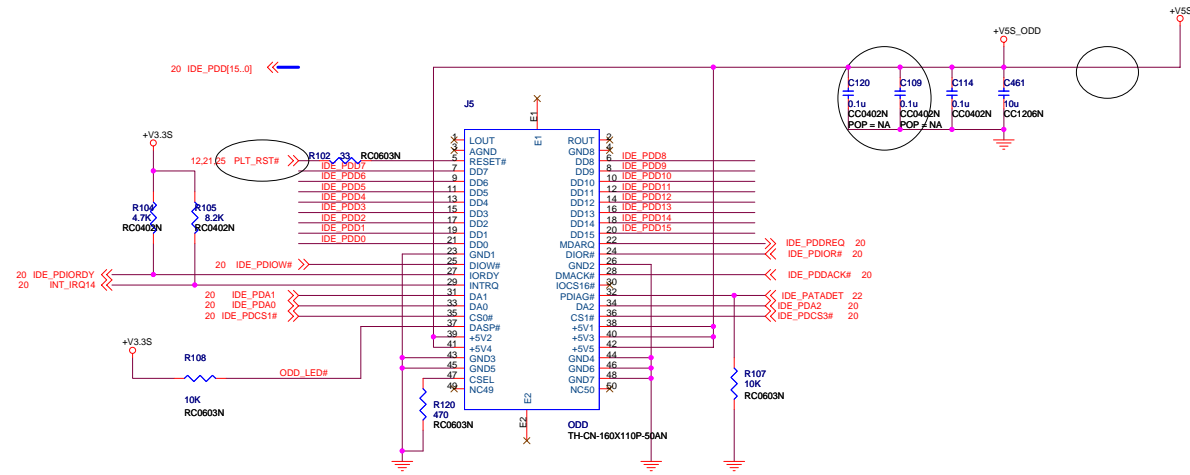


<Variant Name>


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	Title M535	
ENGINEER: <EngName>	Size C Sheet Name express card connector Date: Thursday, September 06, 2007	Rev S Sheet 41 of 48



DVDROM CON



<Variant Name>

		Amol IT Division. 295 Lane, Zuchongchi Road, Zhangjiang, Shanghai, China, 201203		www.amol.com.cn
		Title M535		
Size C	Sheet Name DVDROM	Date: Thursday, September 06, 2007		Sheet 44 of 49

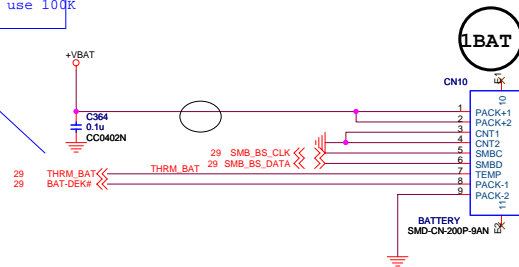
ENGINEER: <EngName>

Rev
B


In Battery Package,
have internal 10K pull low,
so external pull high use 100k

Battery Connector

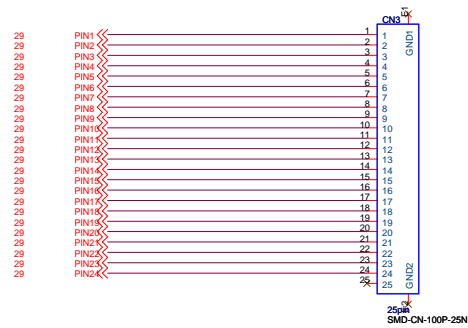
Power Sequence



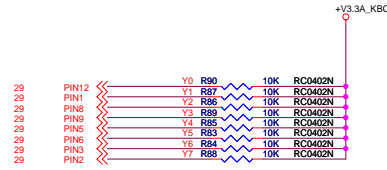
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		Amol IT Division. 295 Lane, Zuchongzhi Road, Zhangjiang, Shanghai, China, 201203 www.amol.com.cn	
		Title M535	
ENGINEER: <EngName>	Size C	Sheet Name Battery Connector	Rev S
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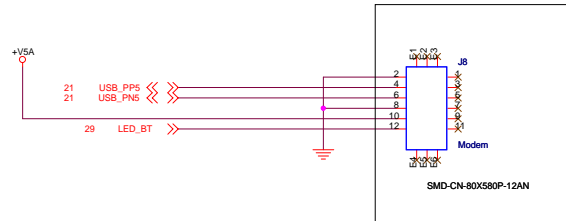
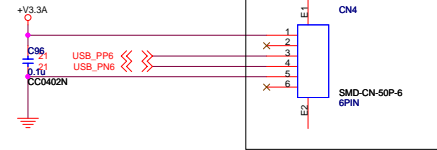
Keyboard Connector



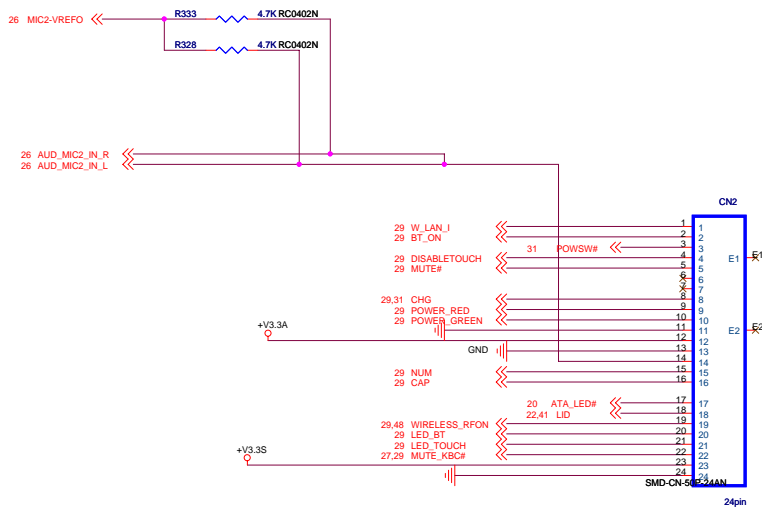
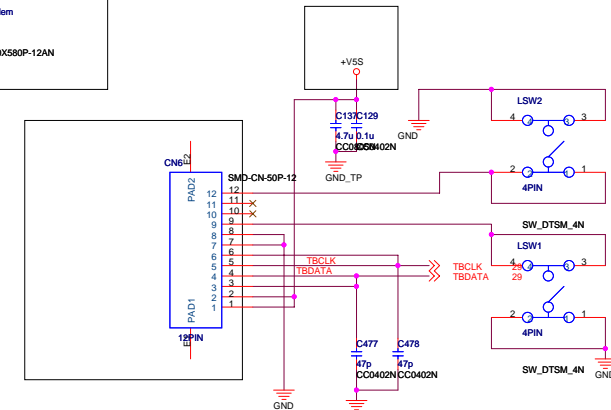
Button Function Board




指纹识别小板Connector

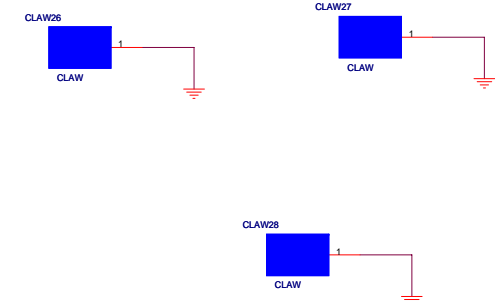
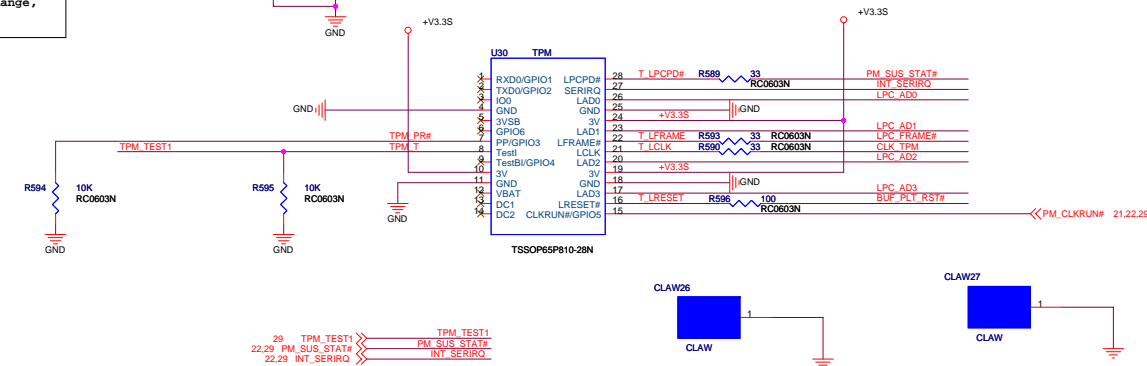
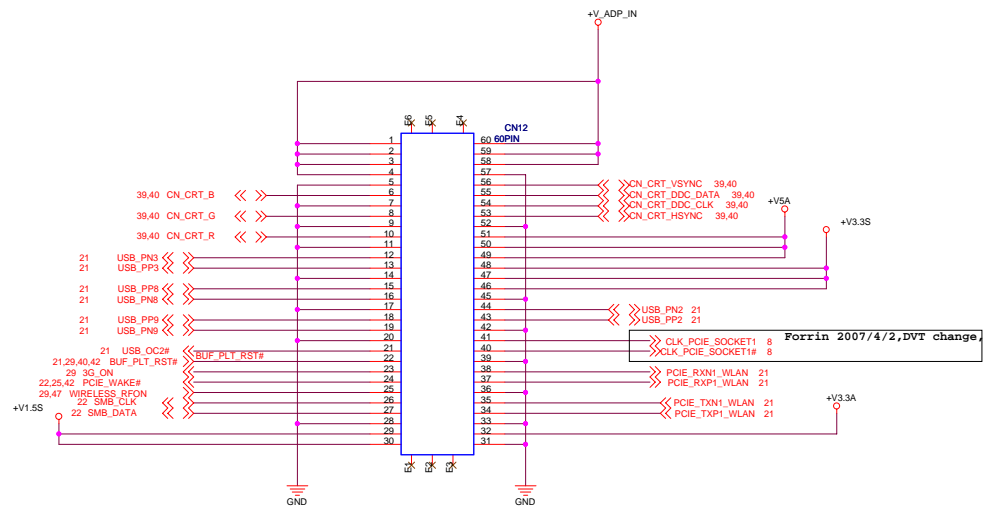
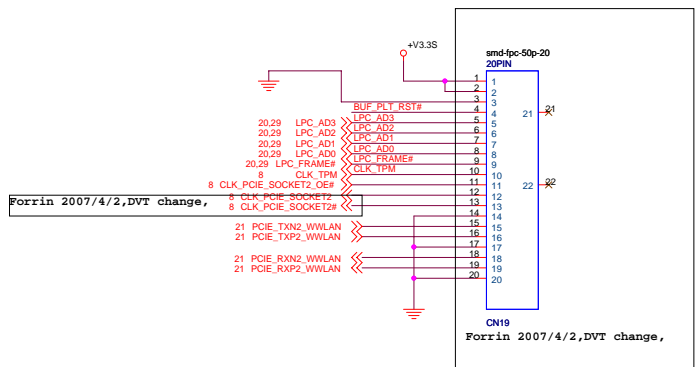


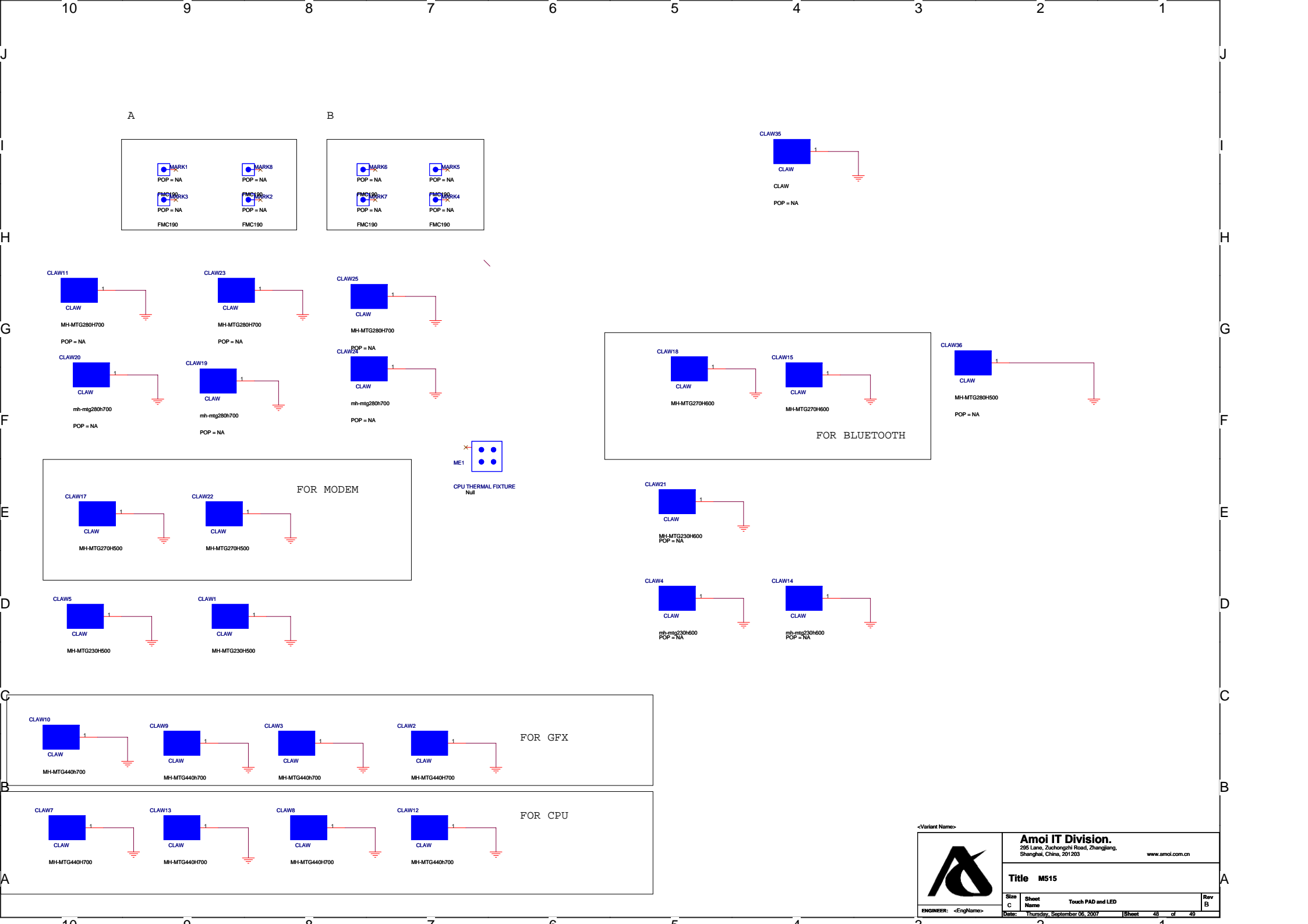
Connect to Touch PAD

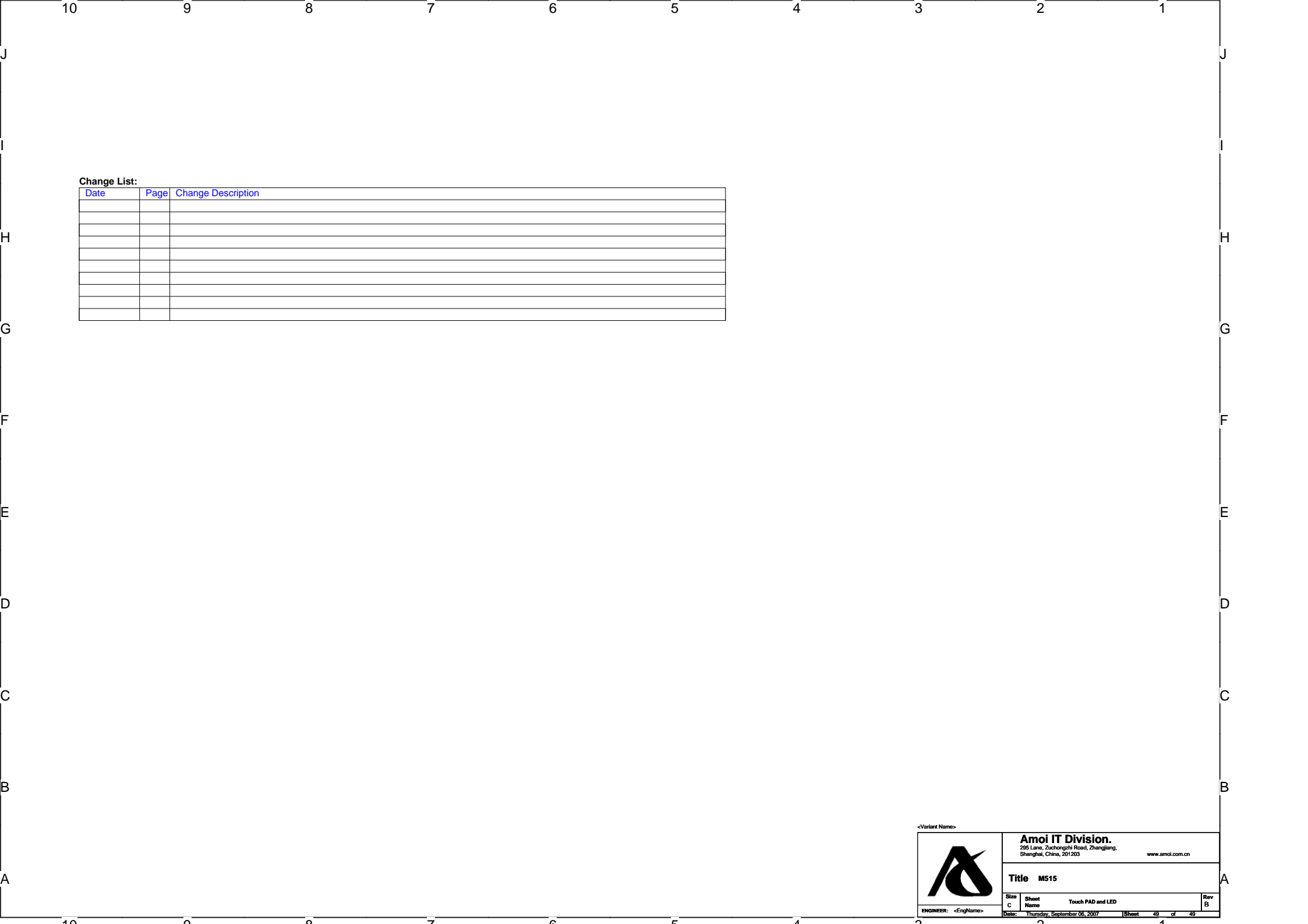


<Variant Name>

		Amoi IT Division. 295 Lane, Zuchongchi Road, Zhangjiang, Shanghai, China, 201203 www.amoi.com.cn	
		Title M535	
Size C Sheet Name KBC,func board conn & tpm	Rev B	Date: Thursday, September 06, 2007 Sheet 46 of 49	








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Touch PAD and LED

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Title MS15

Rev S