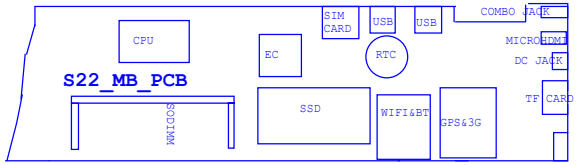
Project Name: S22

SCH Vertion: VA

PCB Fab Note

PCB1



S22_MB_PCB_VB

PCB

PAGE	TITLE
01	COVER SHEET
02	SYSTEM BLOCK DIAGRAM
03	CLOCK MAP
04	POWER MAP
05	Power up Sequence Diagram
06	POWER SEQUENCE TIMING
07	SMBUS MAP
08	HSW (HDMI,MISC)
09	HSW (DDR3)
10	HSW(RTC SATA CLK HDA SMB)
11	HSW (GPIO SDIO UART DISC)
12	HSW(PCIE USB)
13	HSW (VCC VDDQ)
14	HSW (IO POWER)
15	HSW (VSS)
16	HSW (CFG RSVD)
17	DDR3(Channel A)
18	EC+KBC(IT8587)
19	USB3.0 PORT
20	AUDIO(ALC282)
21	USB HUB
22	SENSOR
23	Camera&Touch
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28	HDMI PORT
29	SSD
30	Card Reader(RTS5307E)
31	FAN
32	Powe Sequencing Logic
33	PWRSW/MOUNT HOLE
34	BLANK
35	ADAPTER IN
36	Battery
37	CHARGER BQ24735
38	Vcore TPS51622
39	AC brick
40	5V/3.3V TPS51285
41	TPS51622 introduction
42	VCC DDR&+VTT DDR TPS51362
43	1.05V TPS51362
44	TPS62140 1.8V
45	TLV62065 1.5S
46	VBL ISL97636A
47	Switchable PWR
48	System Discharge
49	HISTORY

EA EXCELSIOR RENDER

Title: COVER

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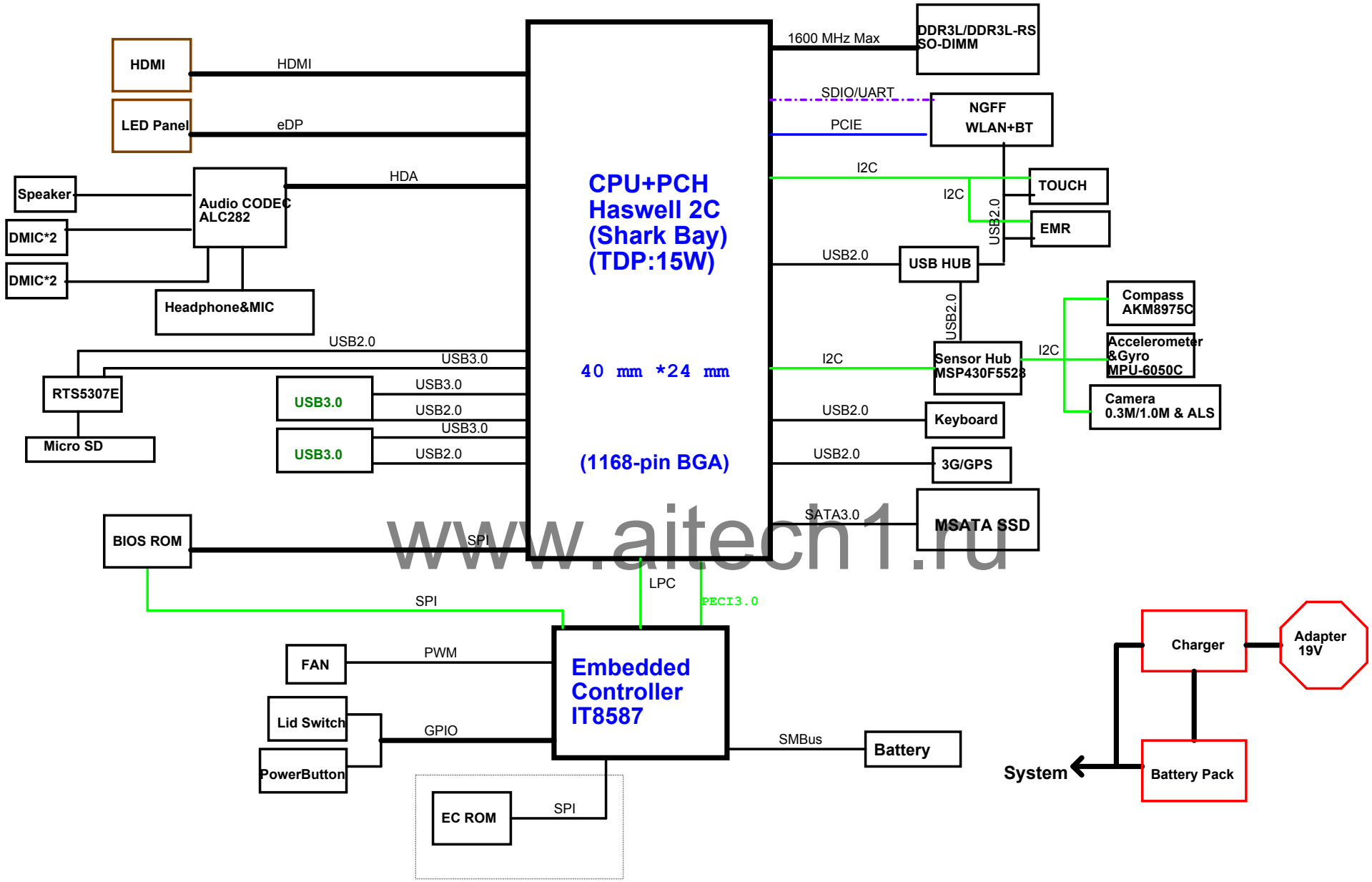
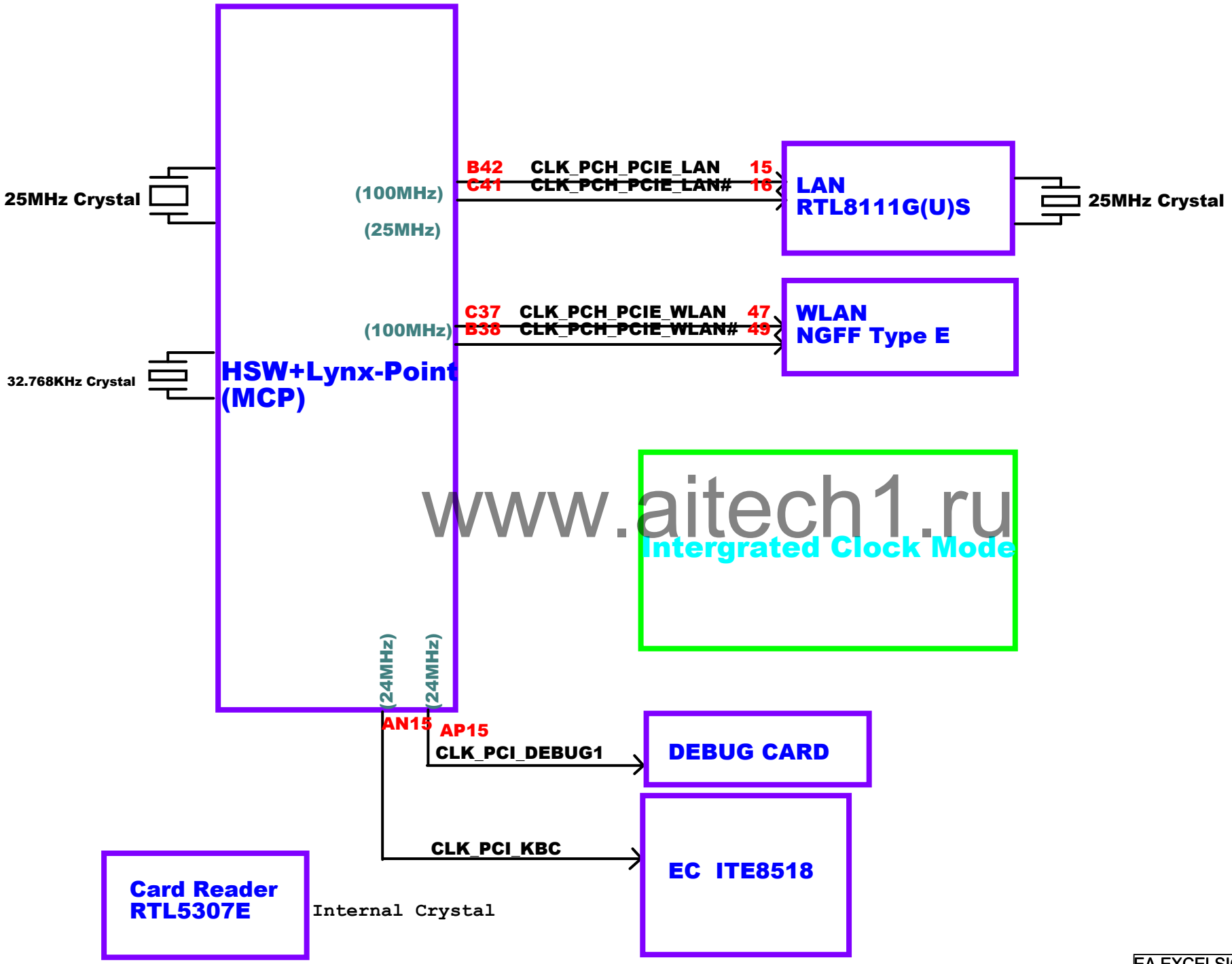
Date: Tuesday, May 28, 2013 | Sheet 1 of 49

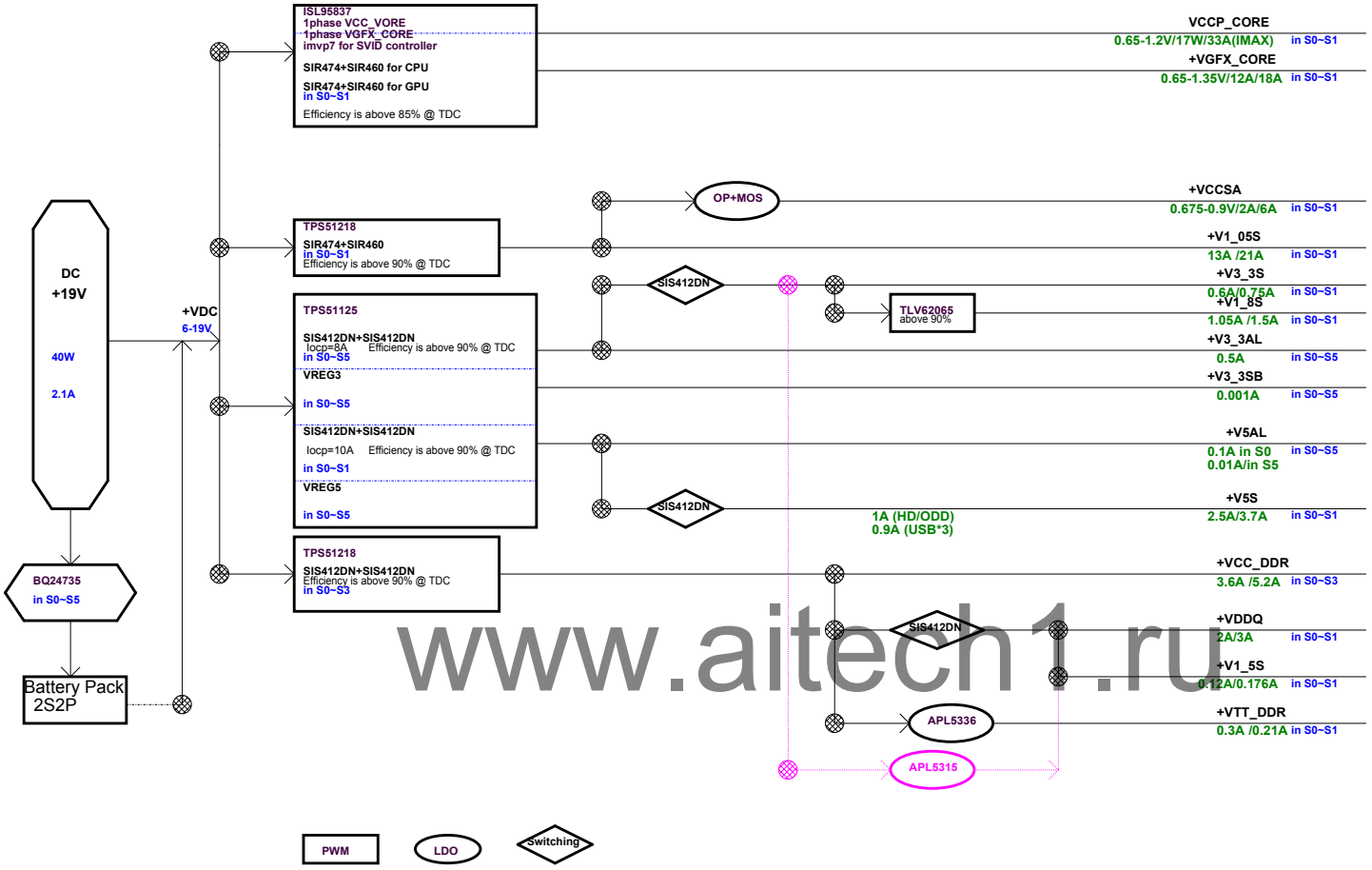


EA EXCELSIOR RENDER

Title	SYSTEM BLOCK	
Size: Custom	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 2 of 49	



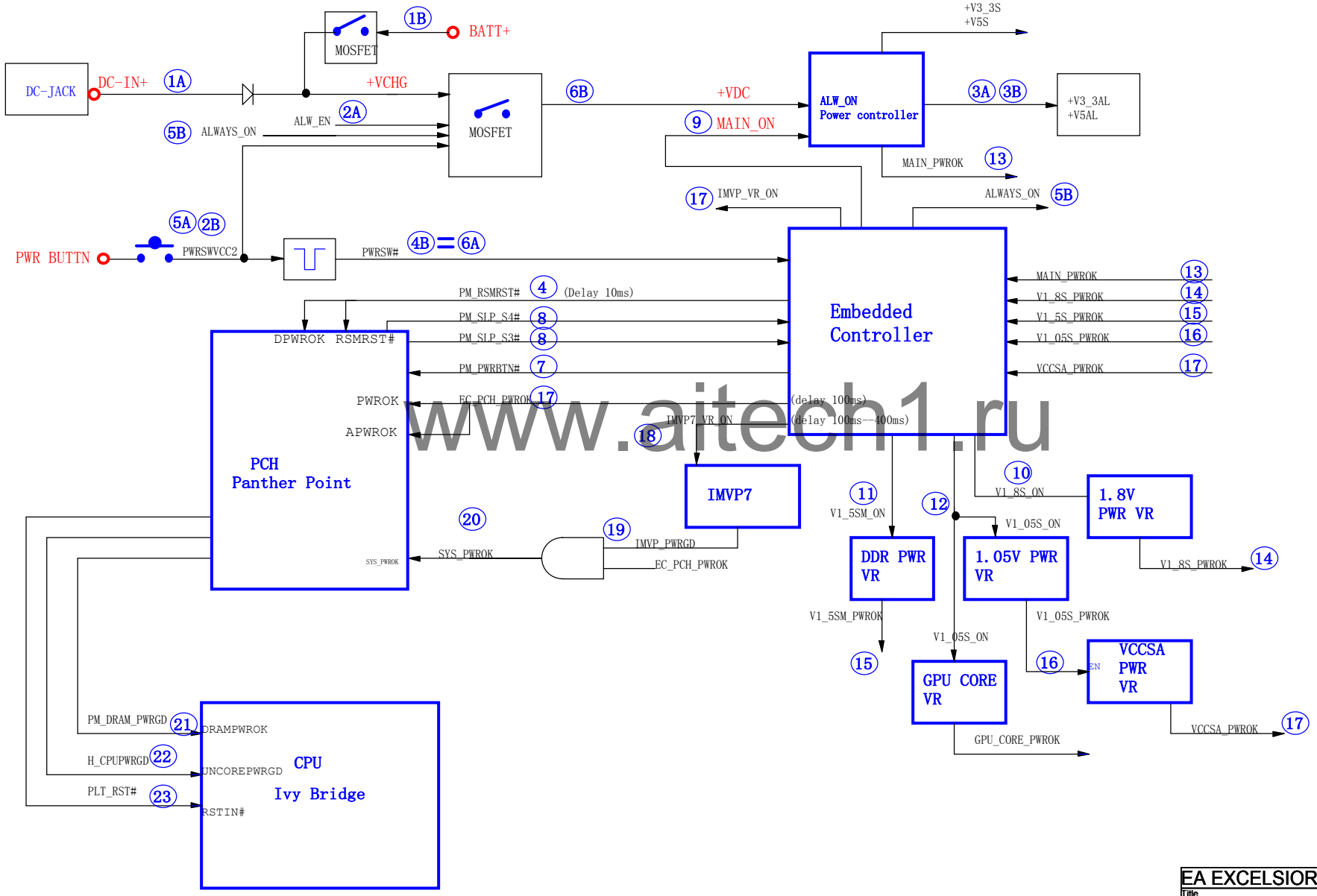
EA EXCELSIOR RENDER		
Title: CLOCK MAP		
Size: A3	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 3 of 49	



EA EXCELSIOR RENDER

Title: POWER MAP		
Size: Custom	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 4 of 49	

Power up Sequence Diagram



EA EXCELSIOR RENDER			
Title: POWER SEQUENCY DIAGRAM			
Size: Custom	Document Number: S22		Rev: A
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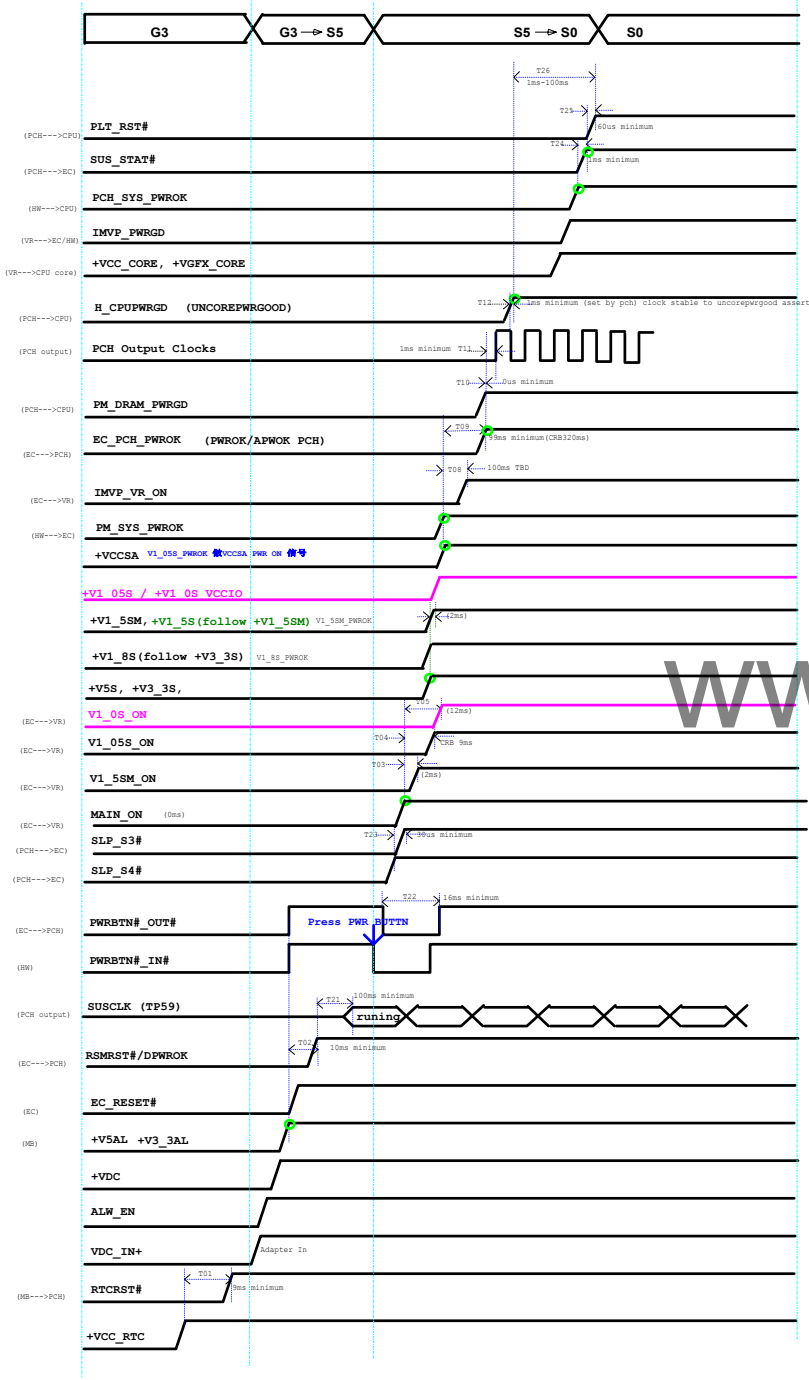
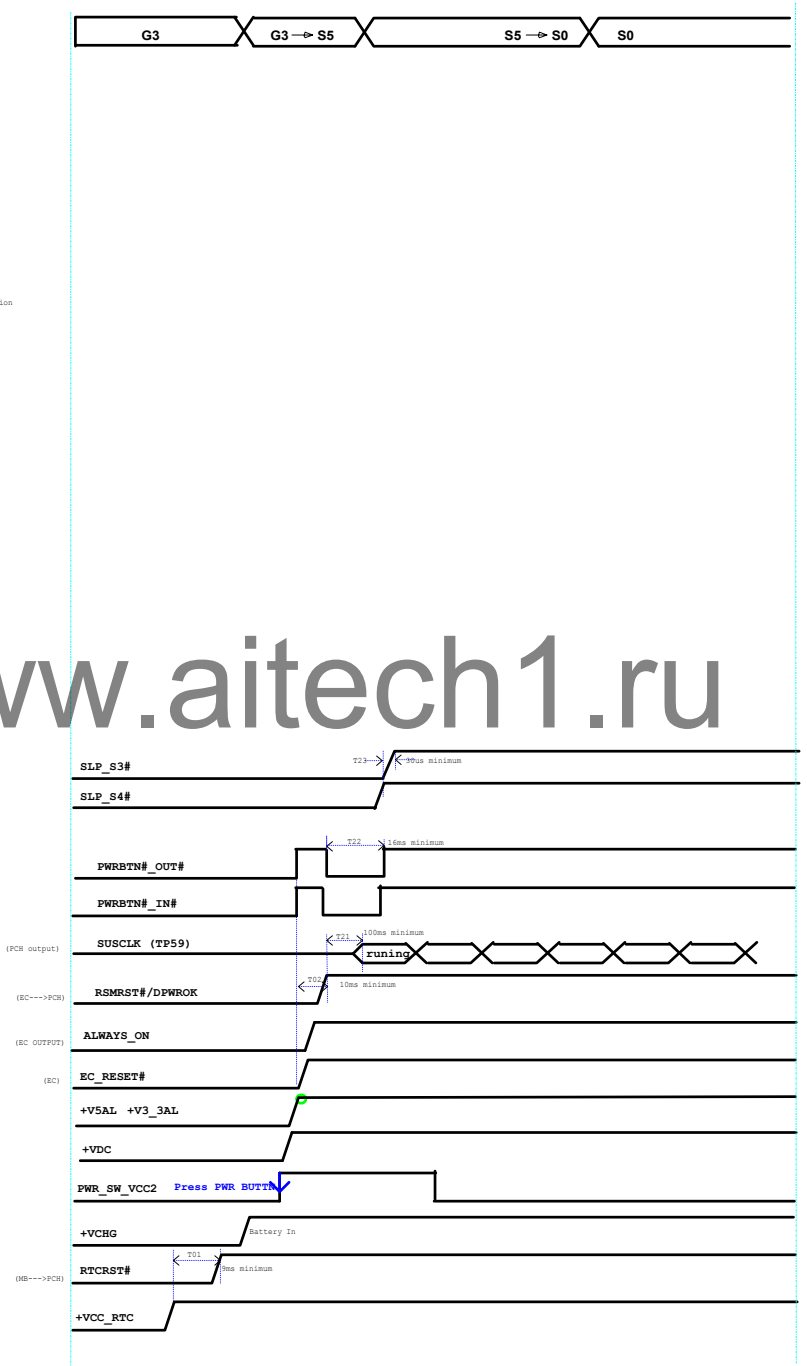
POWER ON SEQUENCE(Adapter Mode)



POWER ON SEQUENCE(BatteryMode)



Platform Sequencing Timing Spec

Label	Description	Min(ms)	Max(ms)	Units
T01	VccRTC active to RTCRST# deassertion	9	--	ms
T02	VccSUS active to RSMRST# deassertion	10	--	ms
T03	platform power rails active to PCH PWROK high	100	300	ms
T04	PWROK assertion to DRAMPWROK assertion	0	--	us
T05	PWROK high to PCH clock outputs stable	1	--	ms
T06	SYS_PWROK high to PLTRST# deassertion	1.06	--	ms
Ta	SUS_STAT# active to PLTRST# active	210	--	us
Tb	PLTRST# active to PROCPWRGD inactive	30	--	us
Tc	PROCPWRGD inactive to clocks invalid	10	--	us
Td	Clocks invalid to SLP_S3# assertion	1	--	us
	SLP_S3# assertion to VccCore (PCH) rails falling	5	--	us

EA EXCELSIOR RENDER

Title: POWER sequencing

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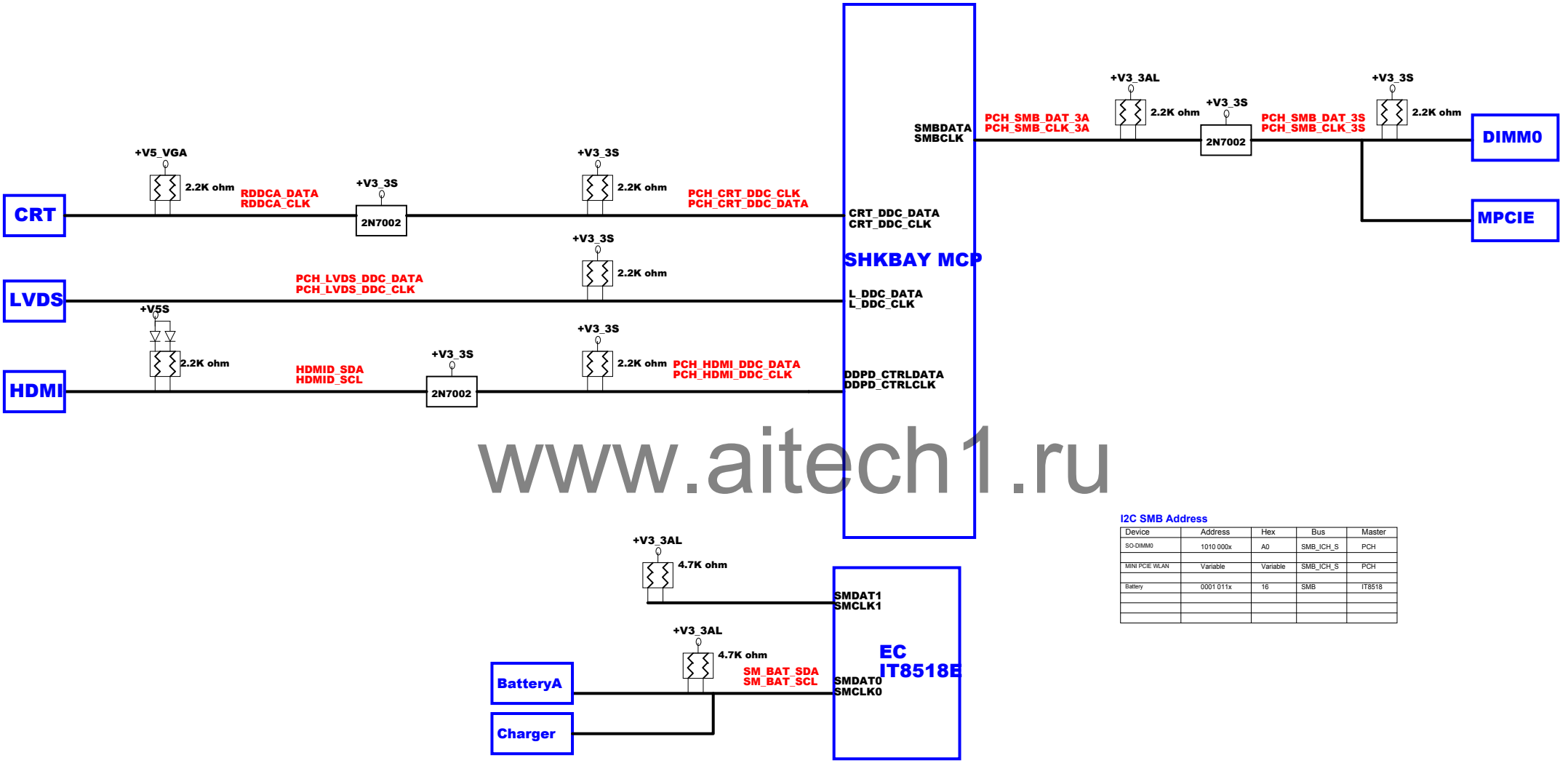
SMBUS&I2C MAP



I2C SMB Address

Device	Address	Hex	Bus	Master
SO-DIMM0	1010 000x	A0	SMB_ICH_S	PCH
MINI PCIE WLAN	Variable	Variable	SMB_ICH_S	PCH
Battery	0001 011x	16	SMB	IT8518

EA EXCELSIOR RENDER

Title: SMBUS&I2C MAP

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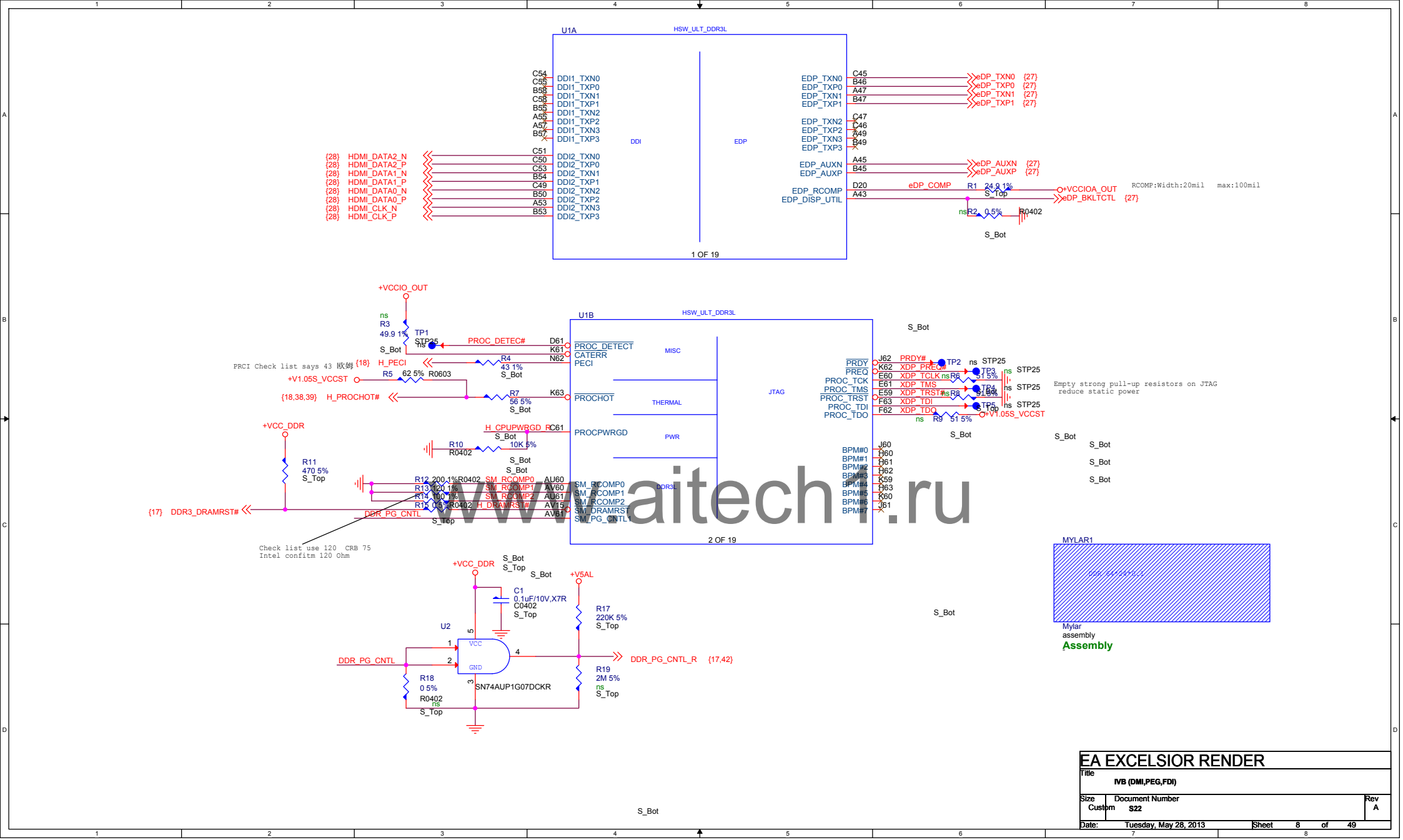

Title	EA EXCELSIOR RENDER
	IVB (DMI,PEG,FDI)
Size	Custom
Document Number	S22
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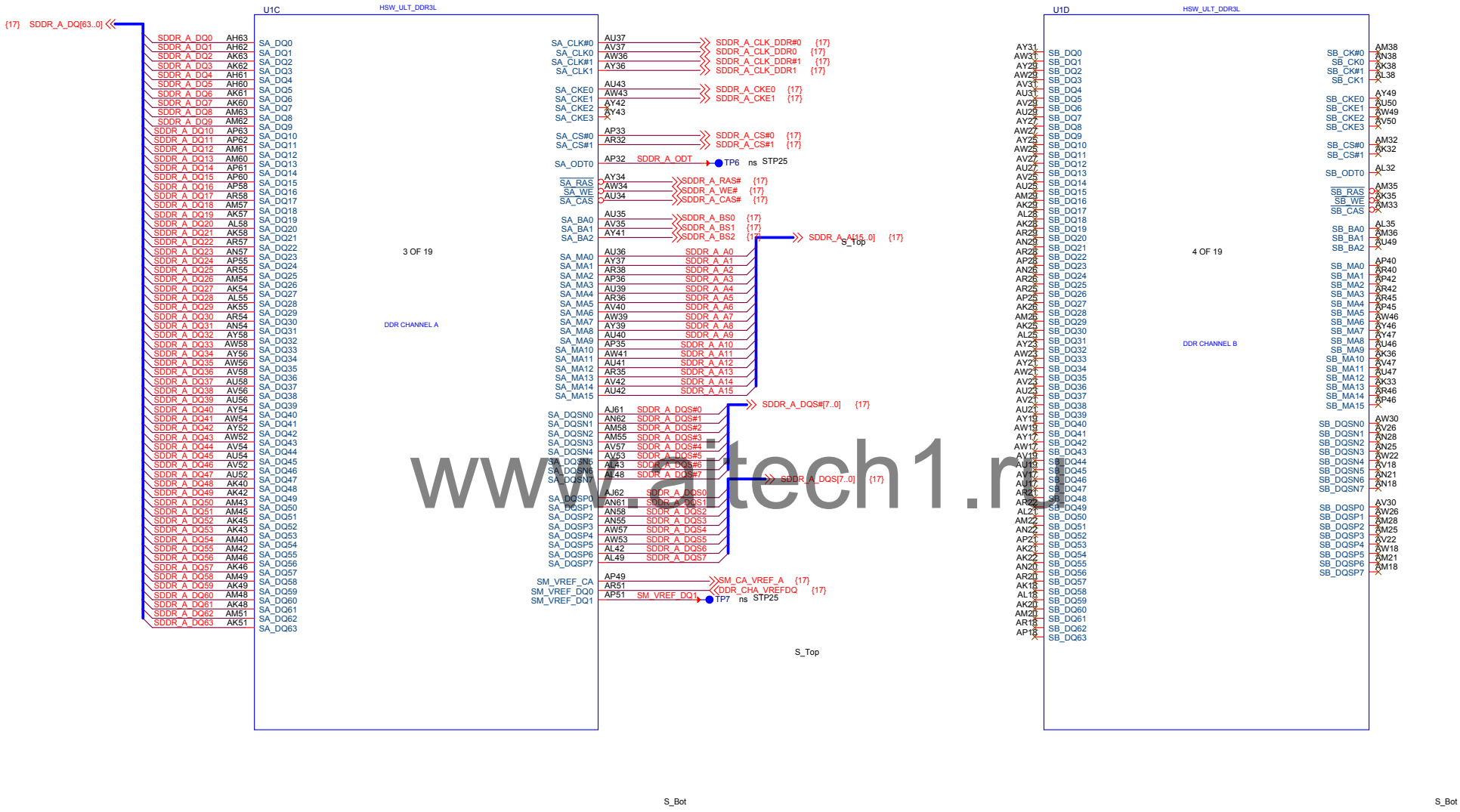
Date:	Tuesday, May 28, 2013
Sheet	8 of 49

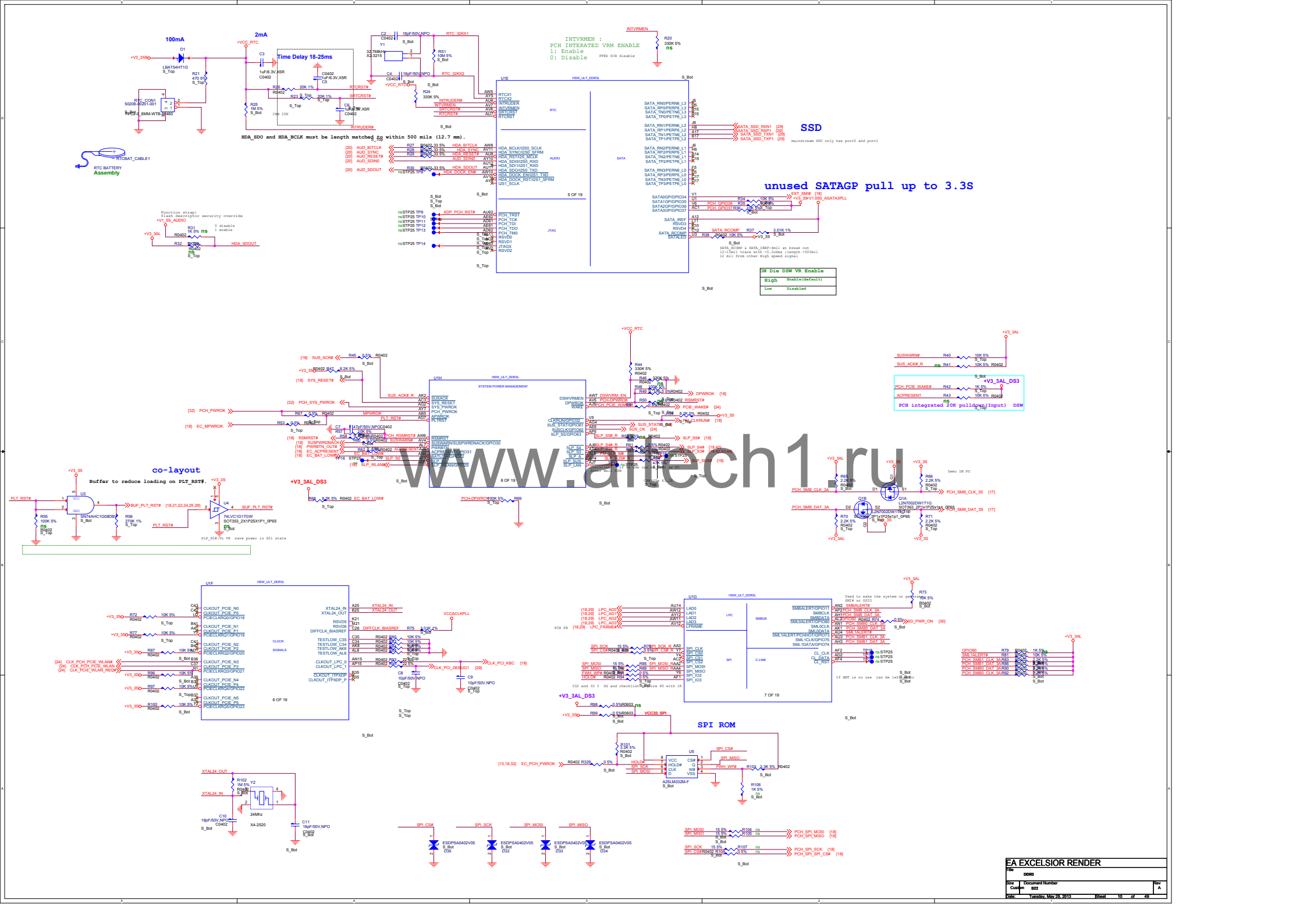


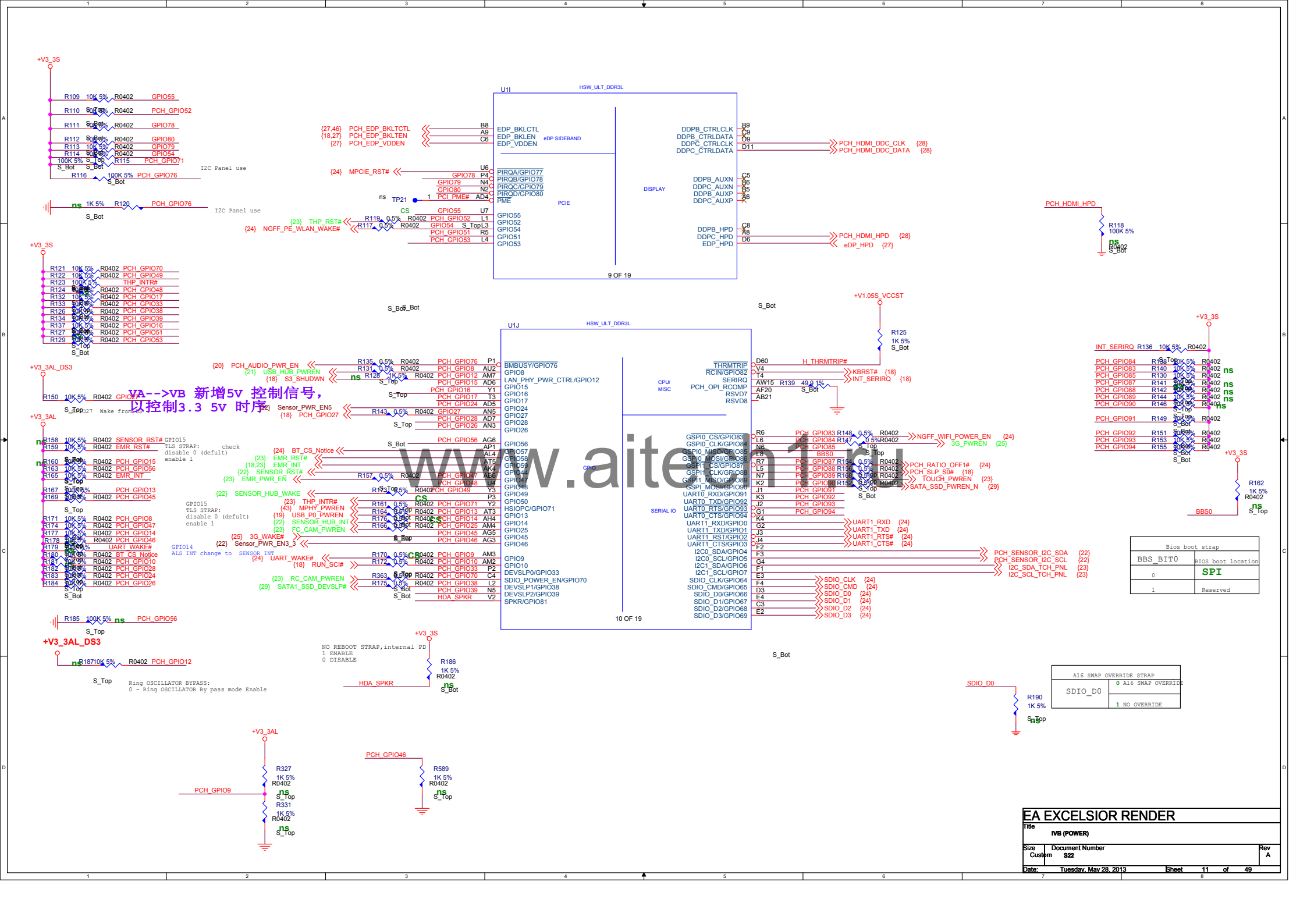
EA EXCELSIOR RENDER

Title: IVB (CLK,MISC,JTAG)

Size: Custom | Document Number: S22 | Rev: A

Date: Tuesday, May 28, 2013 | Sheet 9 of 49




U1I
HSW_ULT_DDR3L
9 OF 19
U1J
10 OF 19
VA-->VB 新增5v 控制信号，
以控制3.3 5v 时序
www.aiten.ru
EA EXCELSIOR RENDER
IVB (POWER)
Size Custom
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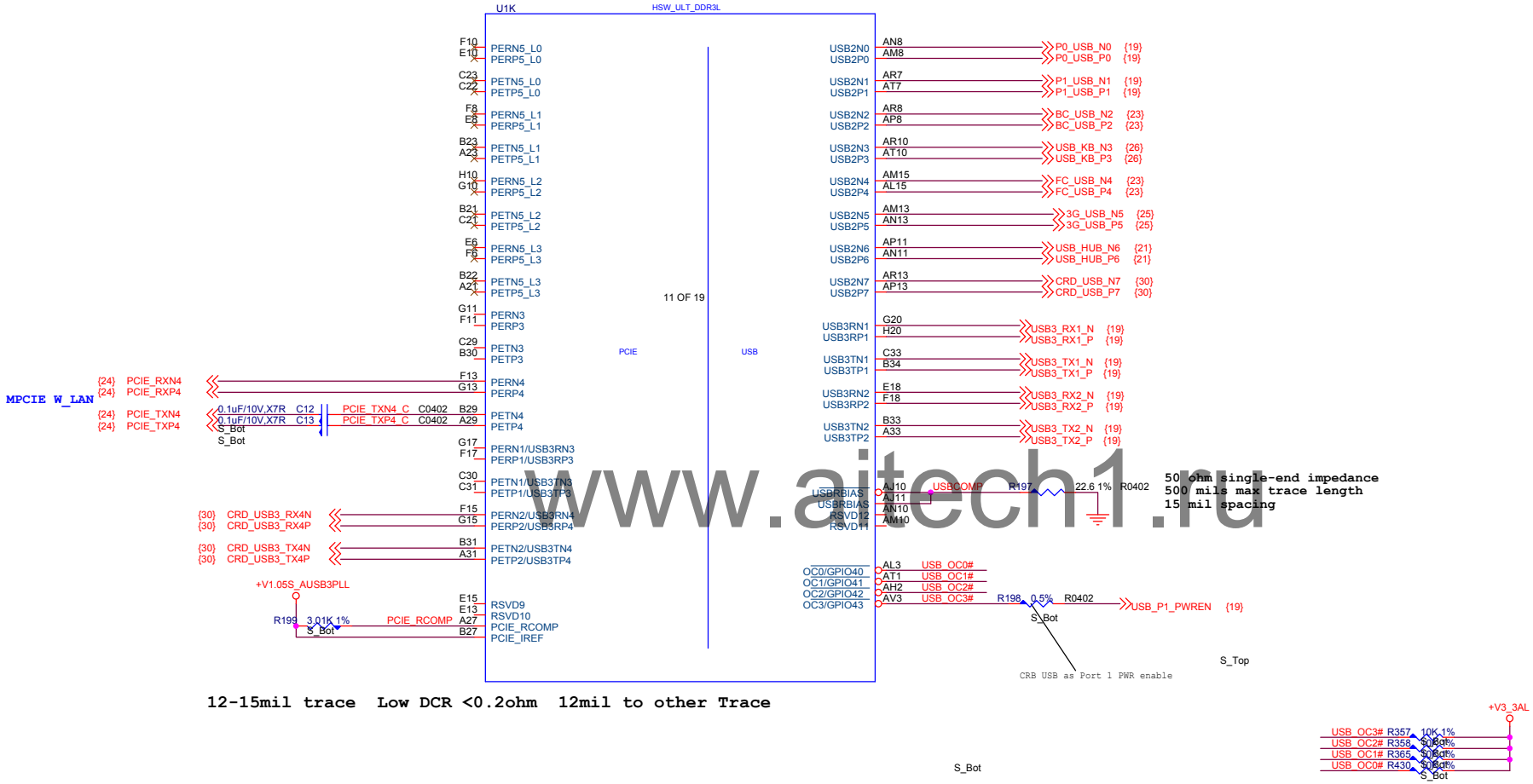
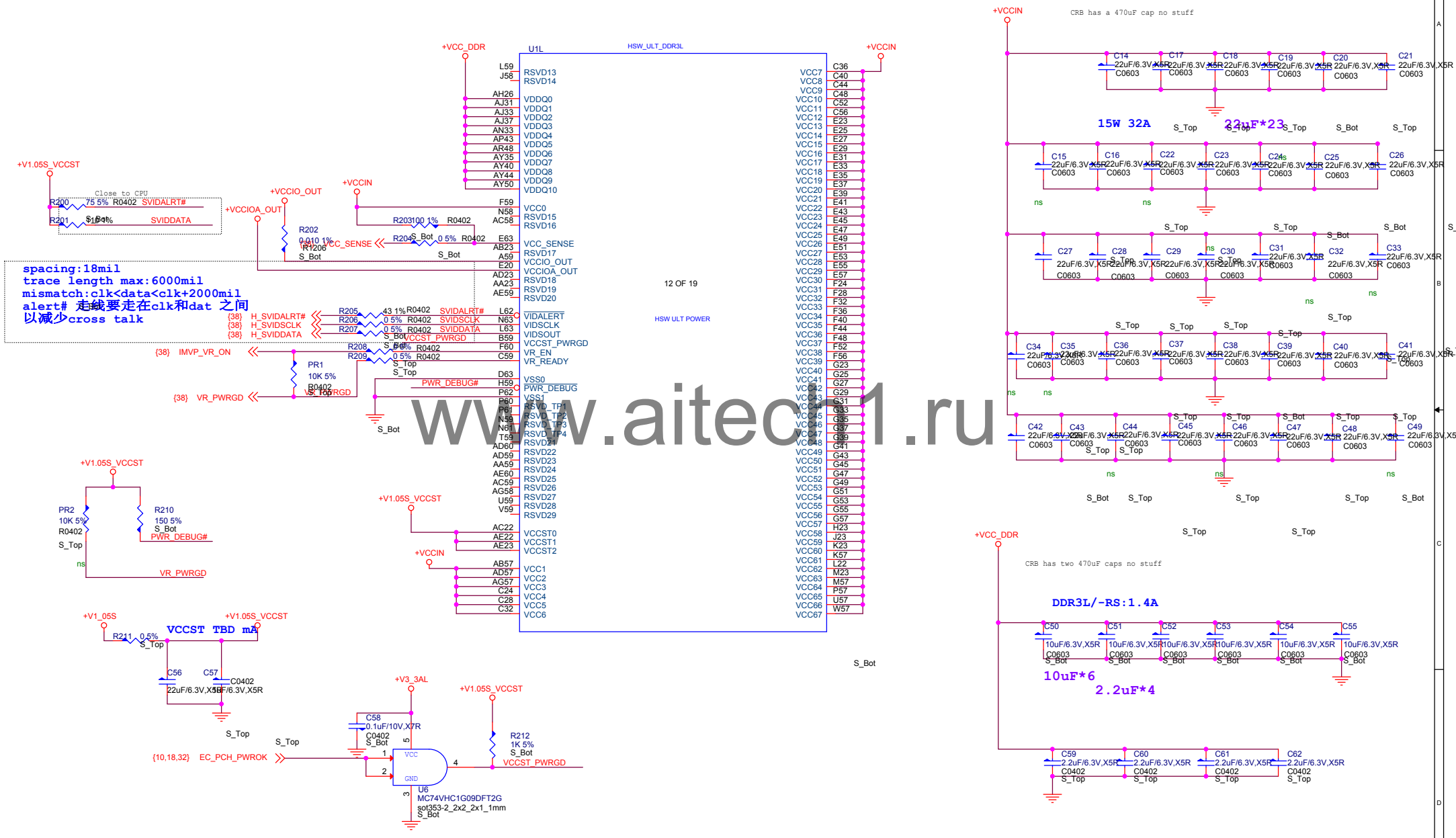
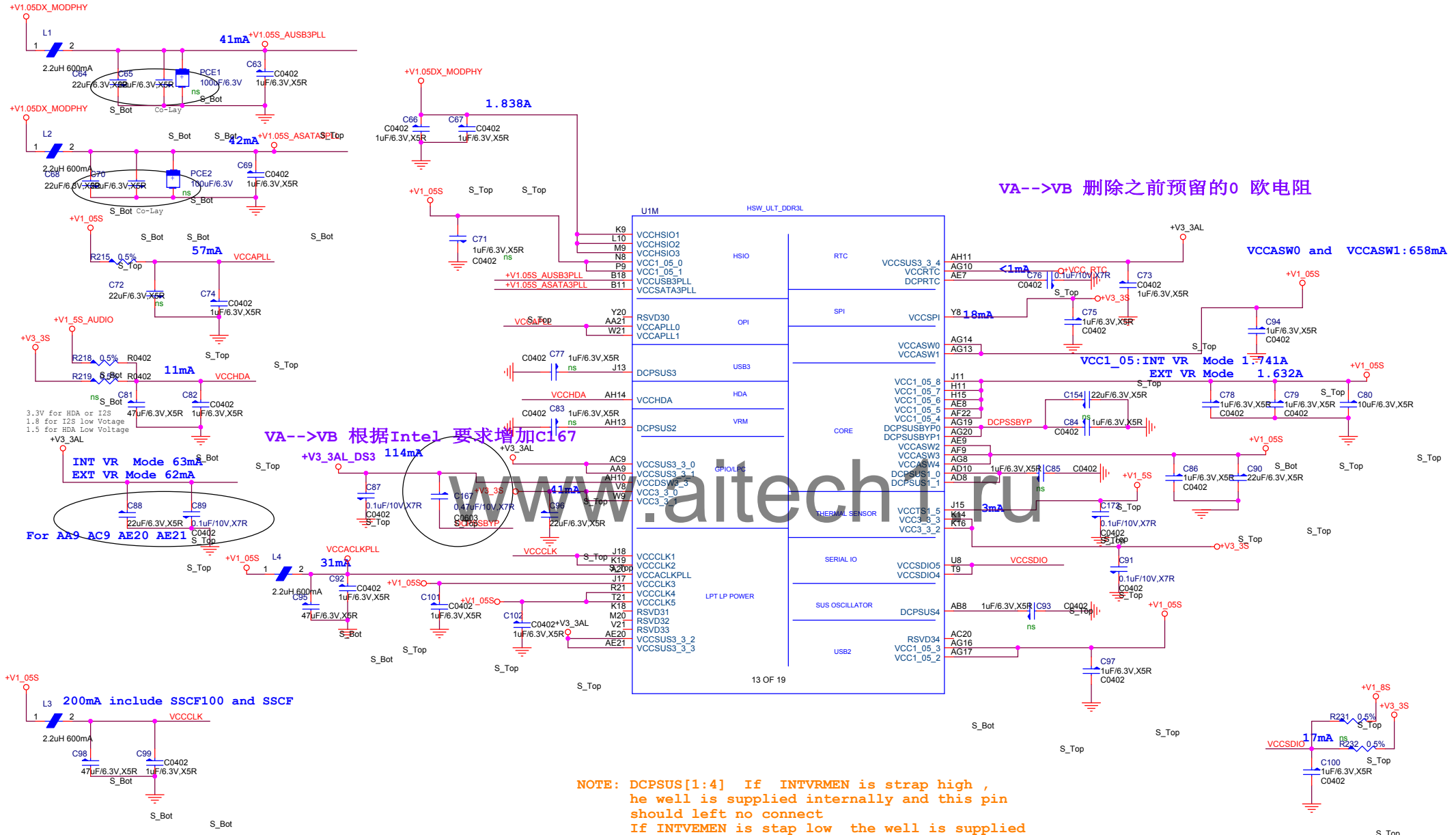


Title	IVB (GRAPHICS POWER)	
Size: Custom	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 12 of 49	

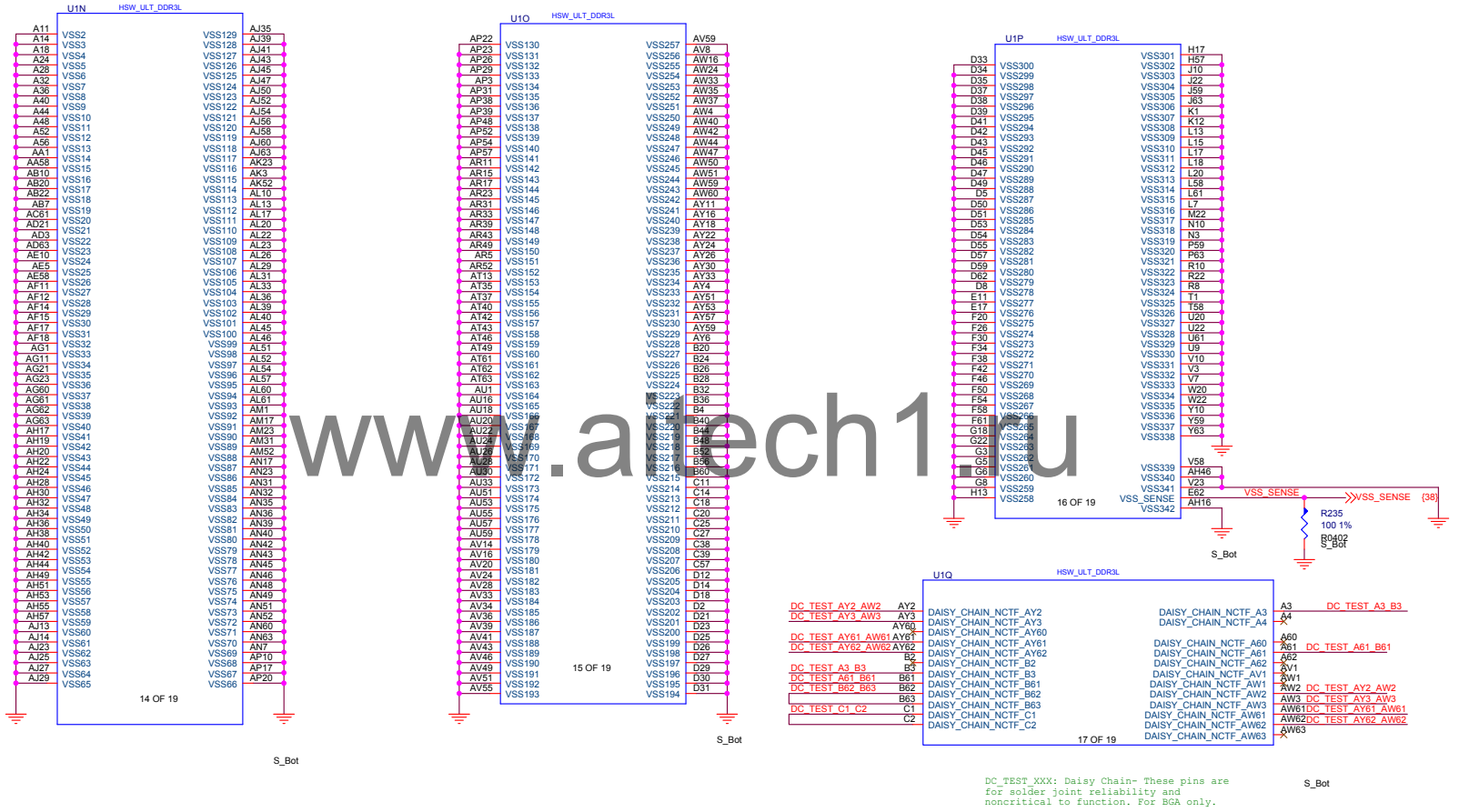
EA EXCELSIOR RENDER



EA EXCELSIOR RENDER	
Title	IVB (GND)
Size A3	Document Number S22
Rev	A
Date: Tuesday, May 28, 2013	Sheet 13 of 49



EA EXCELSIOR RENDER			
Title: IVB (RSVD)			
Size: Custom	Document Number: S22		Rev: A
Date: Tuesday, May 28, 2013	Sheet 14 of 49		



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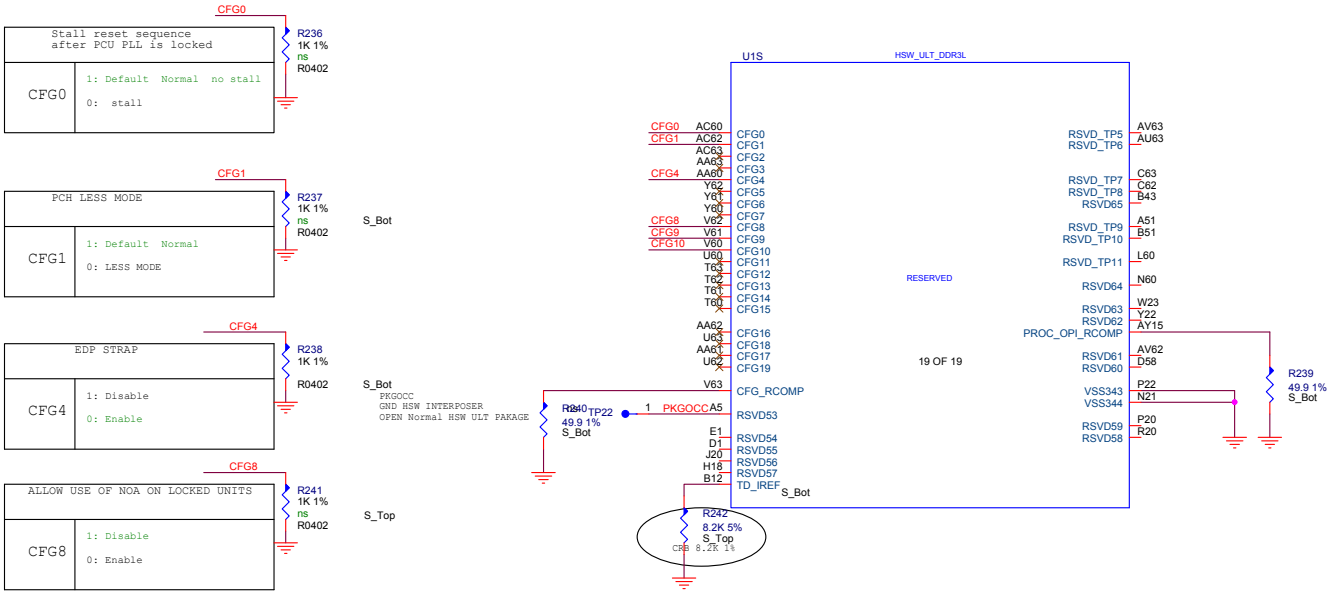
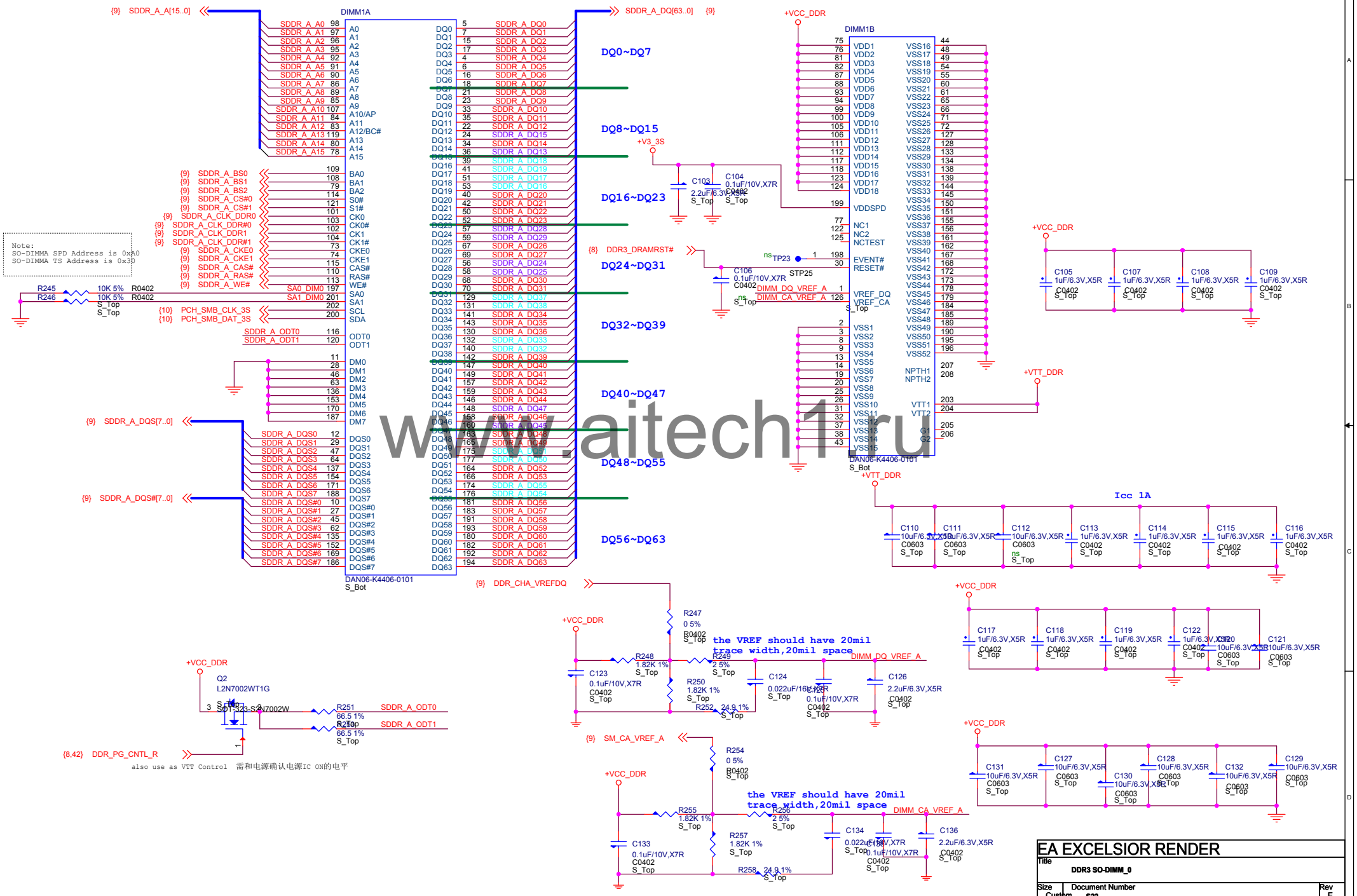
Title: PCH (HDA,JTAG,SAT)		
Size: Custom	Document Number: $22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 15 of 49	



EA EXCELSIOR RENDER

Title	PCH (PCI-E,SMBUS,CLK)	
Size: Custom	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 16 of 49	



Title	DDR3 SO-DIMM_0
Size	Custom
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Rev	E
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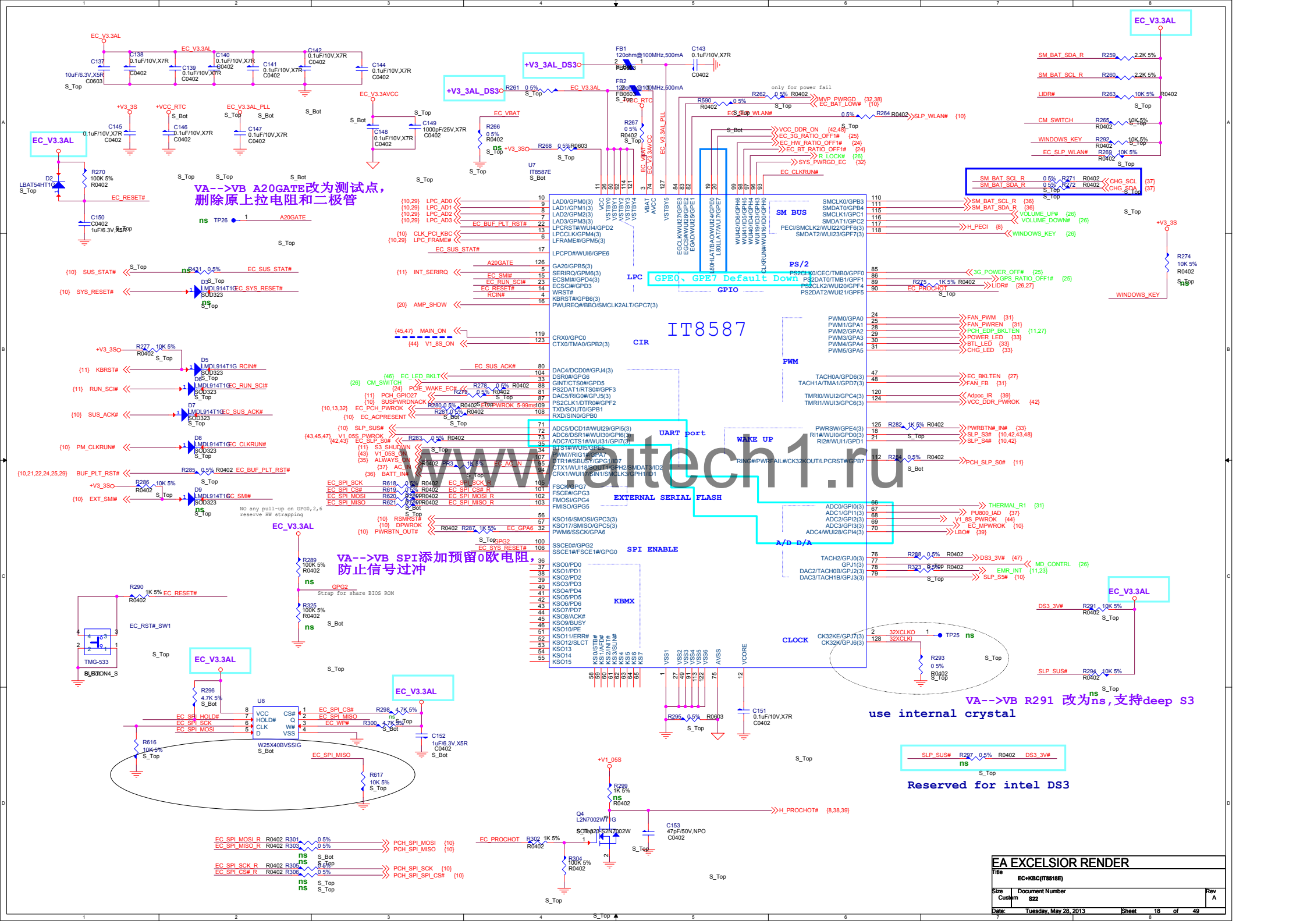
EA EXCELSIOR RENDER


IT8587
LPC
GPIO
SM BUS
PS/2
PWM
UART port
WAKE UP
EXTERNAL SERIAL FLASH
SPI ENABLE
KBMX
CLOCK
A/D D/A
CIR
GPE0、GPE7 Default Down
VA-->VB A20GATE改为测试点，删除原上拉电阻和二极管
VA-->VB SPI添加预留0欧电阻，防止信号过冲
VA-->VB R291 改为ns,支持deep S3
use internal crystal
Reserved for intel DS3
www.laitech1.ru
EA EXCELSIOR RENDER
EC+KBC(IT8518E)
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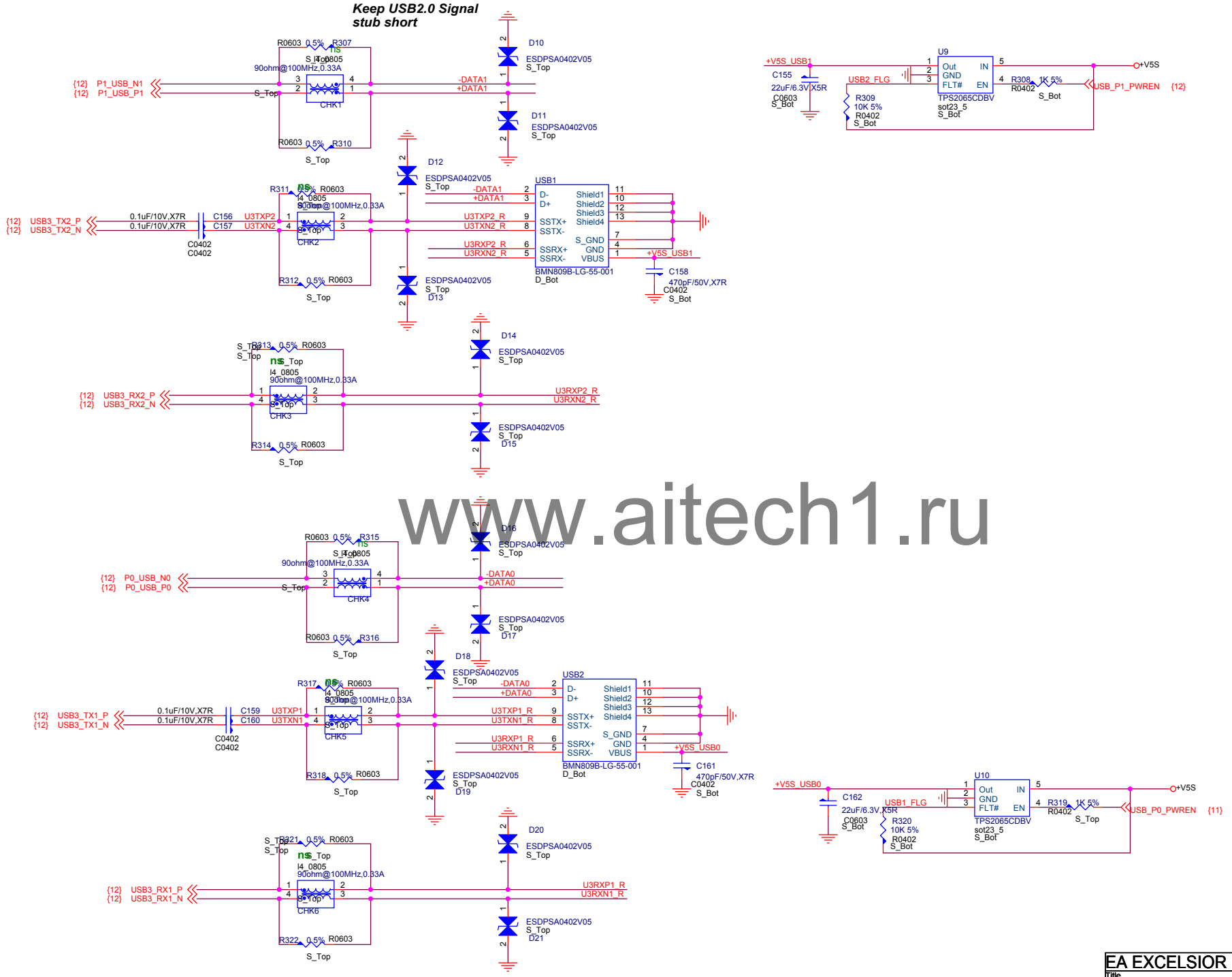

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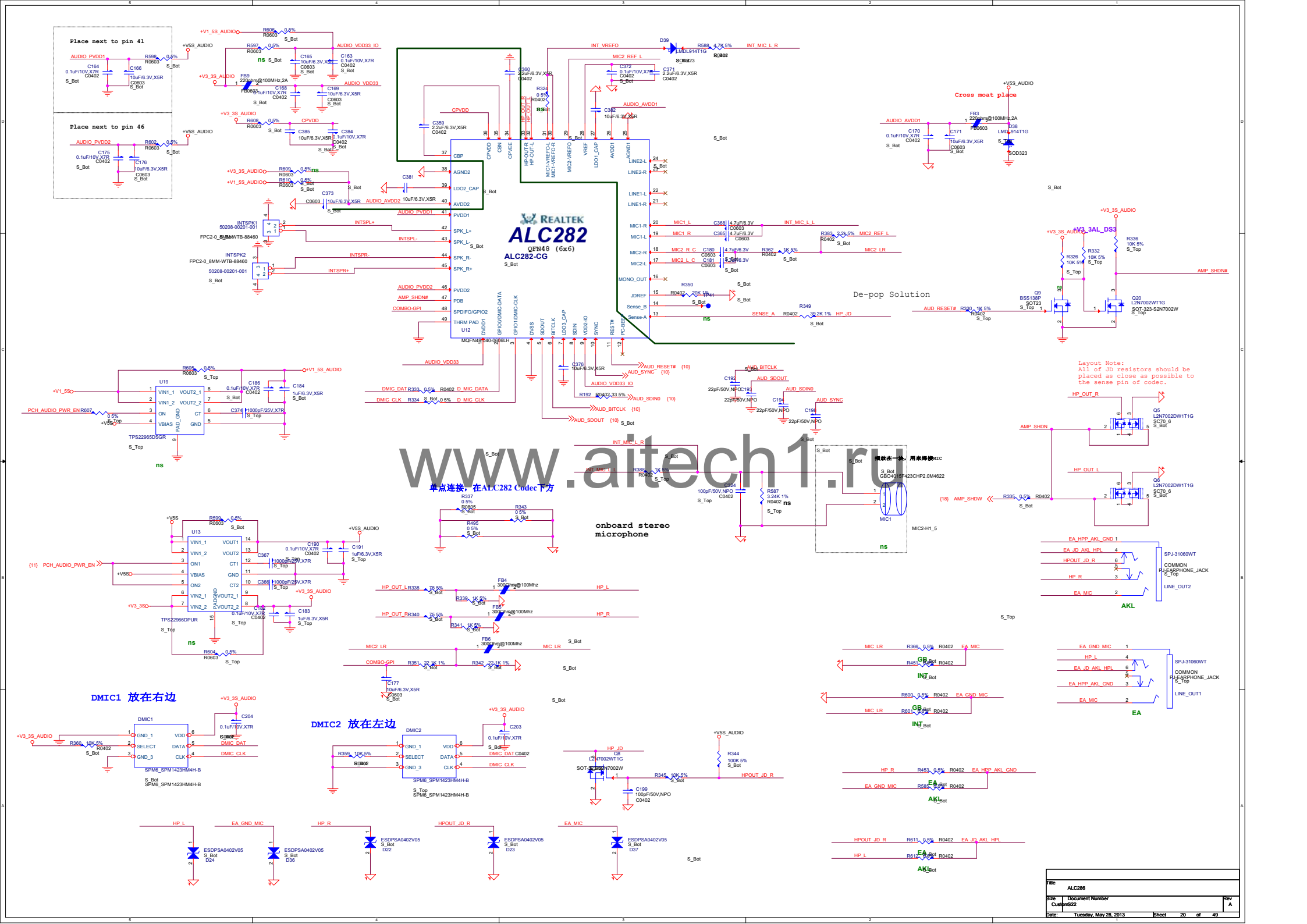
Size: A3	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 19 of 49	


Place next to pin 41
Place next to pin 46
REALTEK
ALC282
QFN48 (6x6)
ALC282-CG
MQFN48-040-0606LH
U12
De-pop Solution
Cross moat place
Layout Note:
All of JD resistors should be placed as close as possible to the sense pin of codec.
onboard stereo microphone
单点连接，在ALC282 Codec下方
DMIC1 放在右边
DMIC2 放在左边
www.aitech1.ru
ALC286
Size CustomS22
Document Number
Rev A
Date: Tuesday, May 28, 2013
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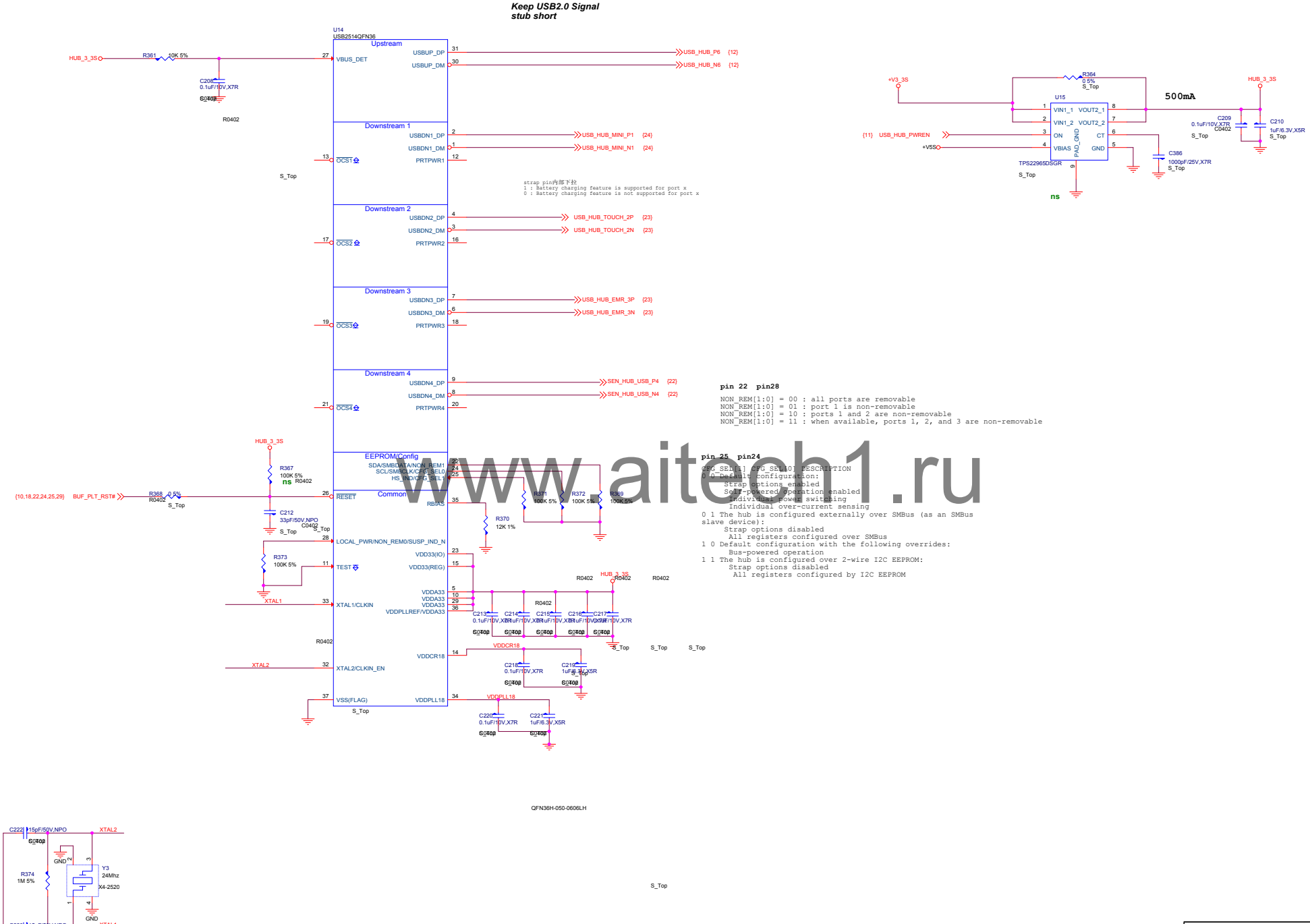

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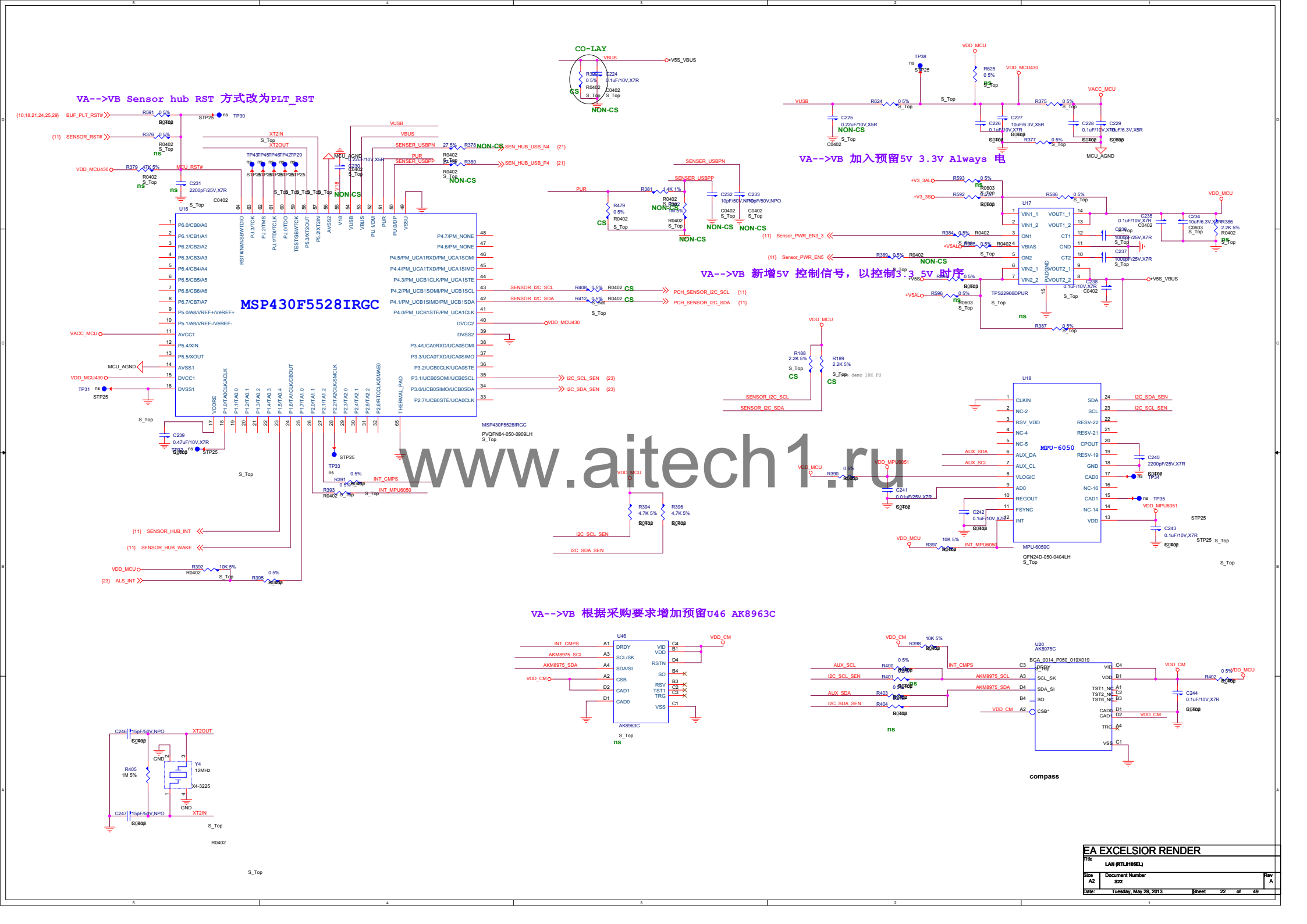
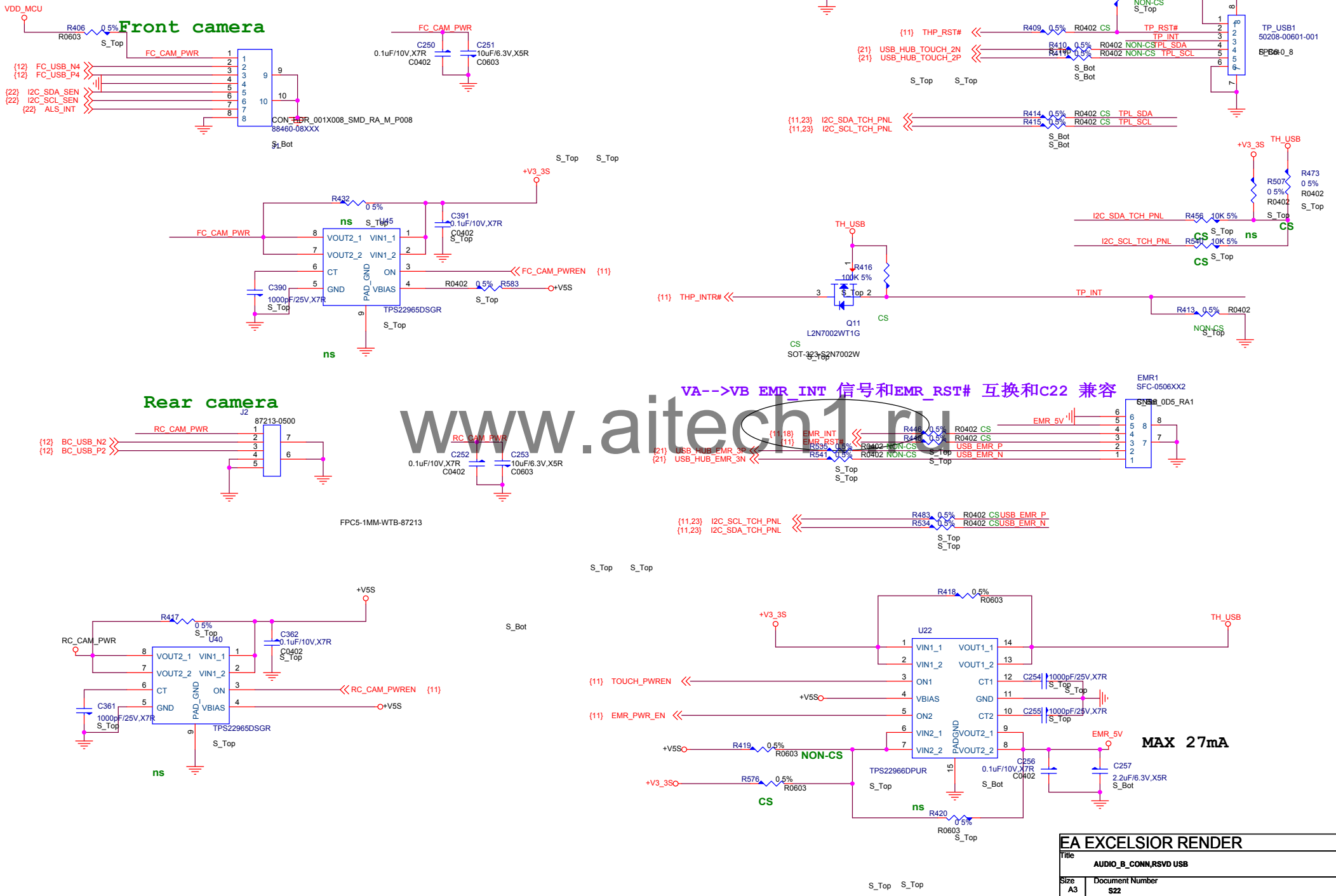
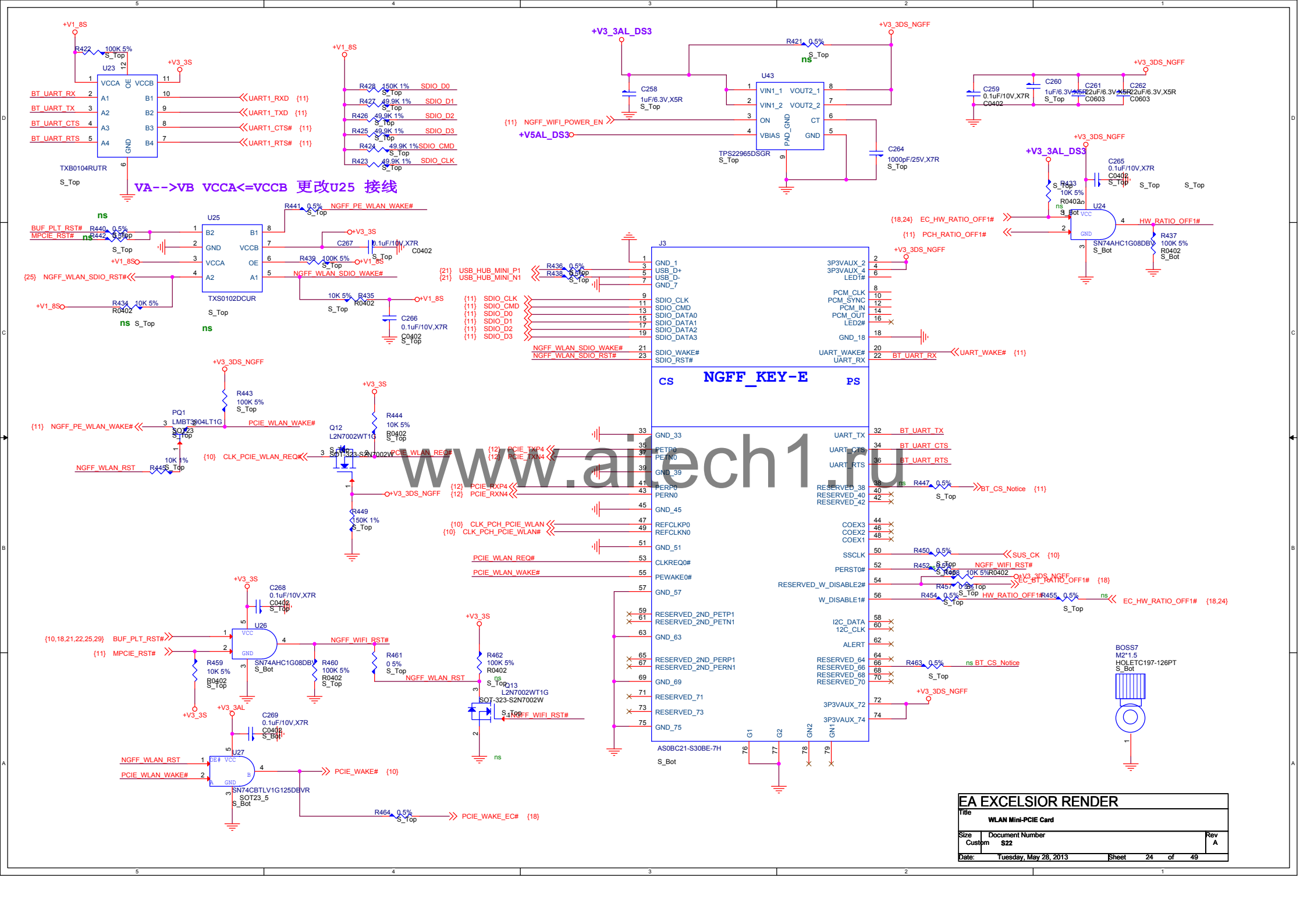
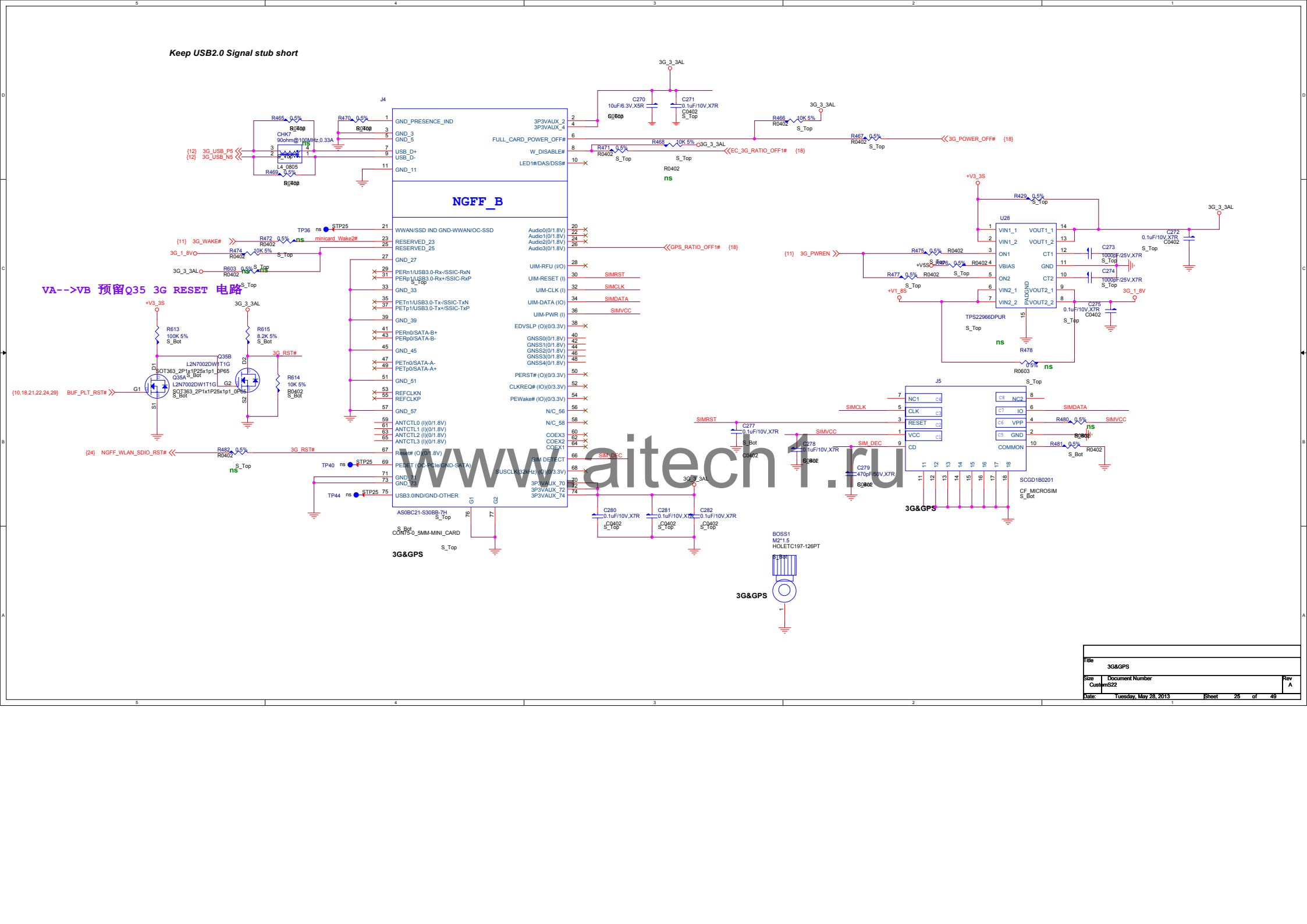
Title: LAN			
Size: A2	Document Number: S22		Rev: A
Date: Tuesday, May 28, 2013	Sheet 21 of 49		

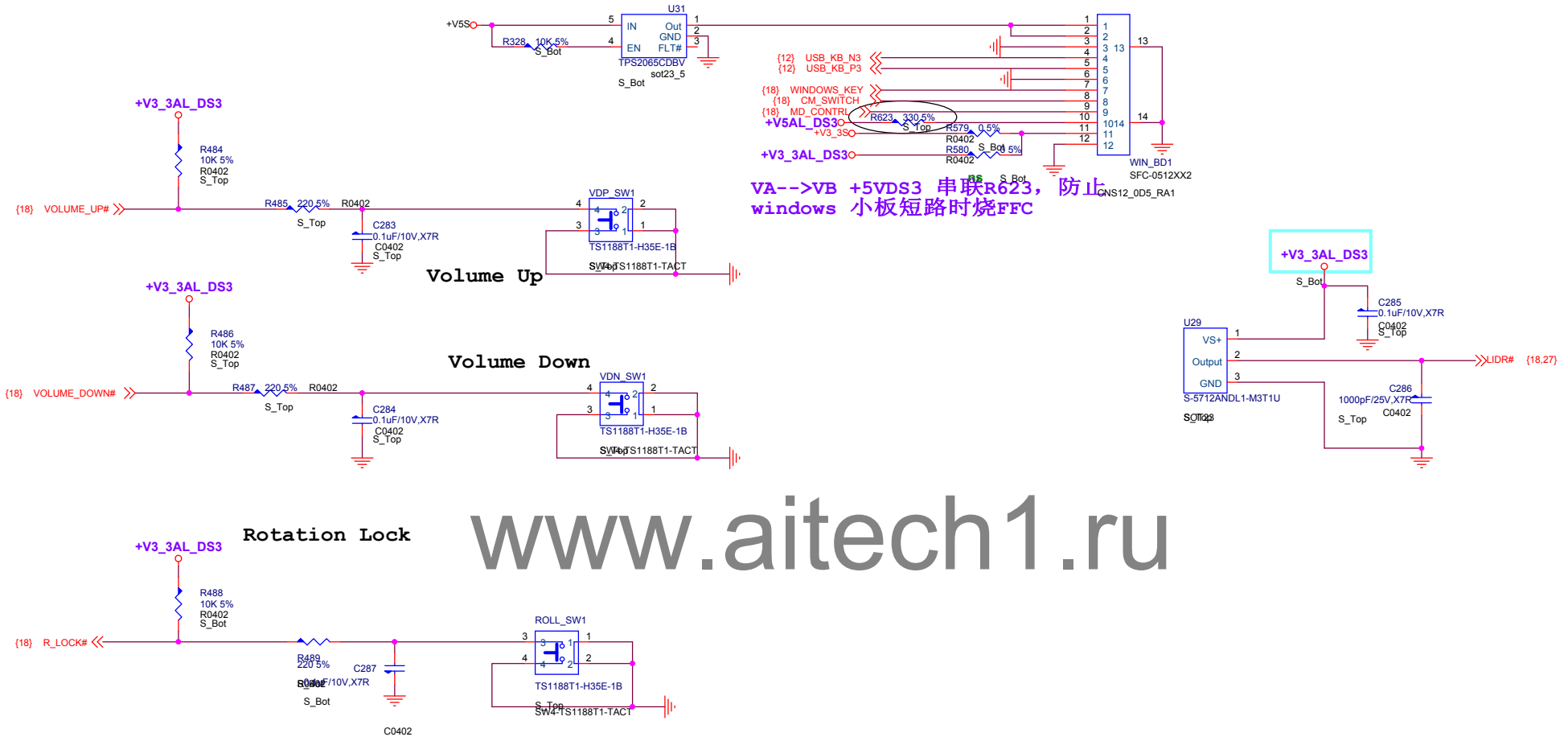


EA EXCELSIOR RENDER		
Title: LAN (RTL8105EL)		
Size: A2	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 22 of 49	

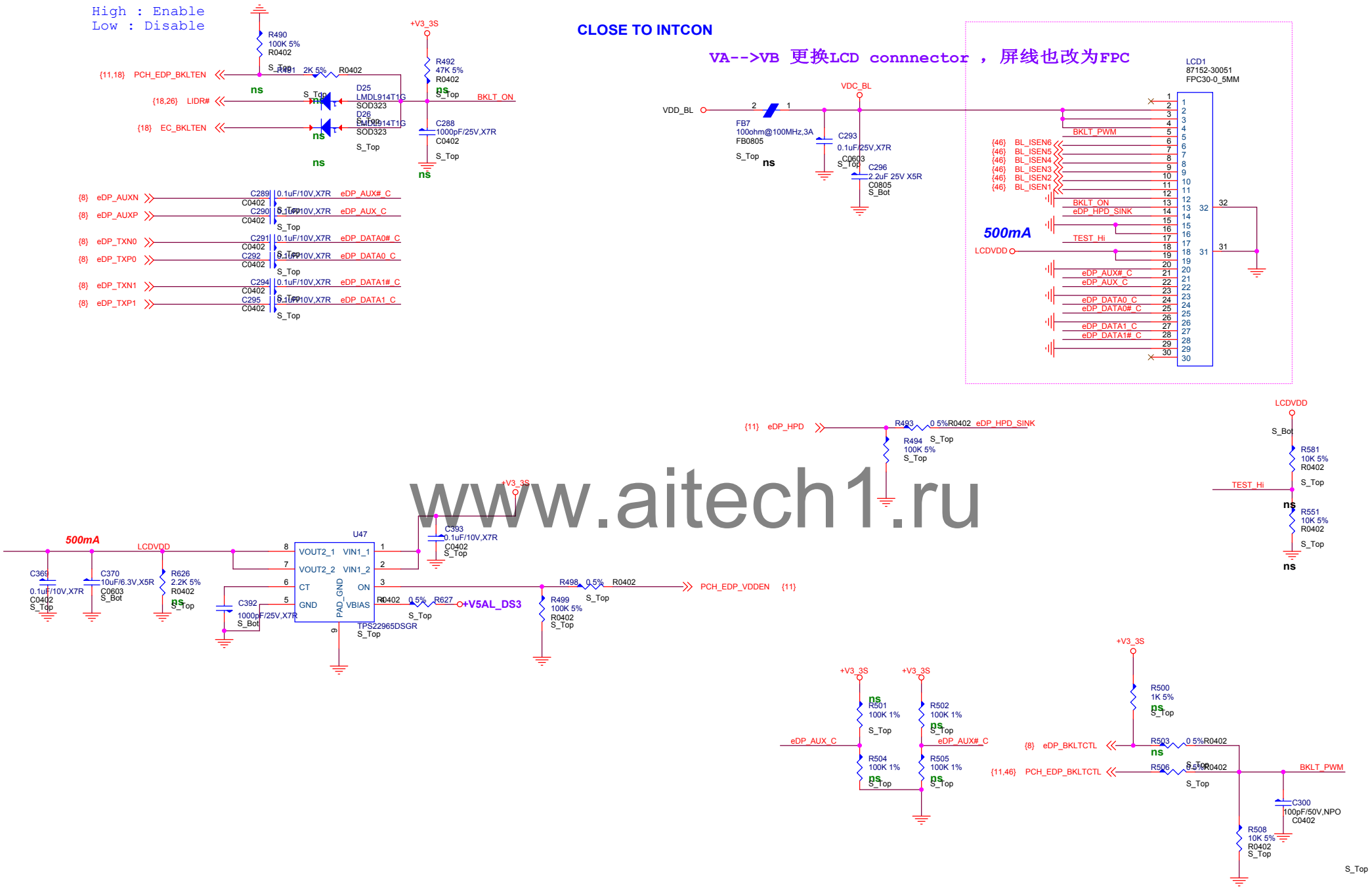








EA EXCELSIOR RENDER		
Title: SATA HDD/ODD		
Size: A3	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 26 of 49	



Title	LVDS
Size	A3
Document Number	S22
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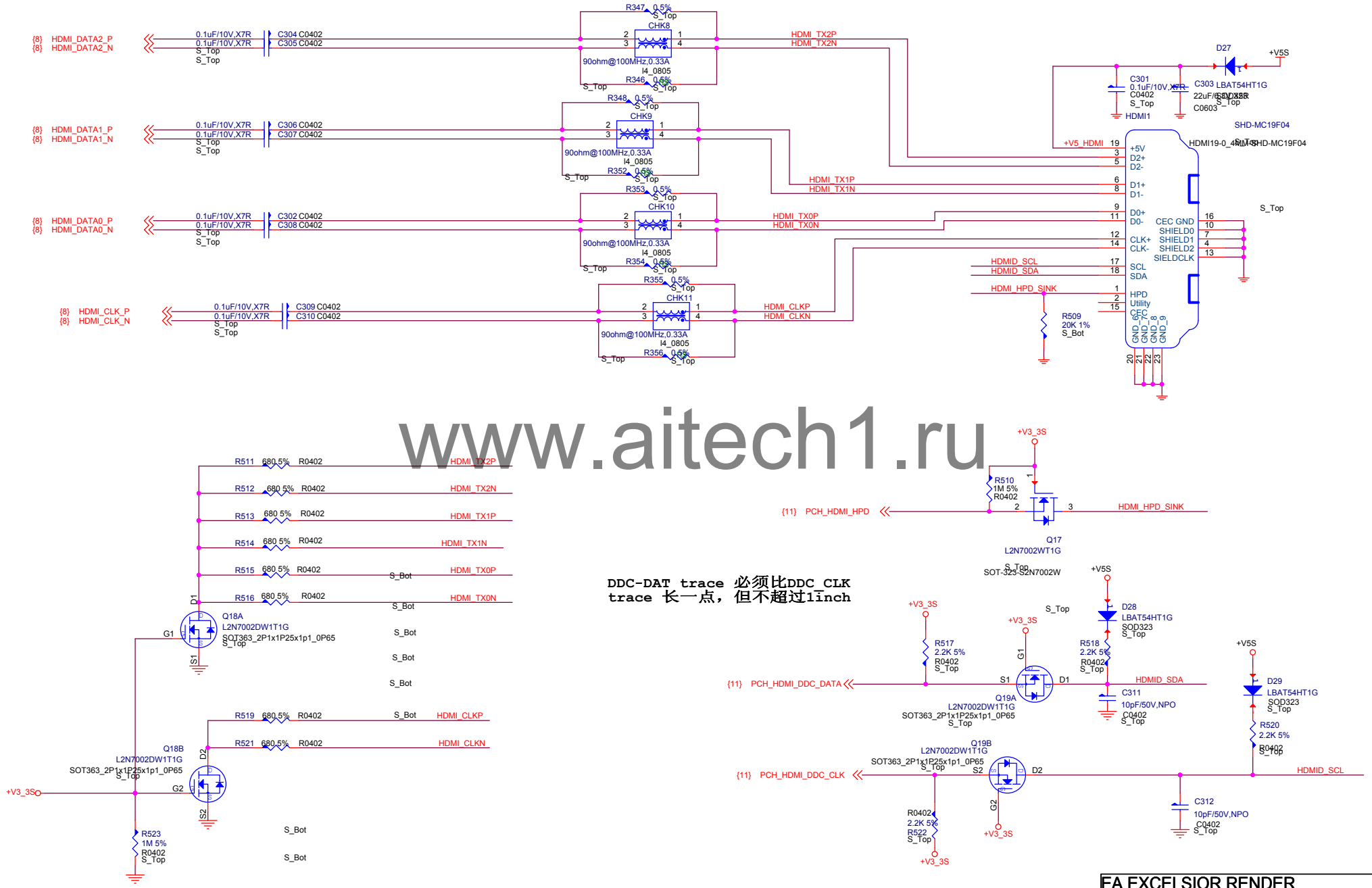
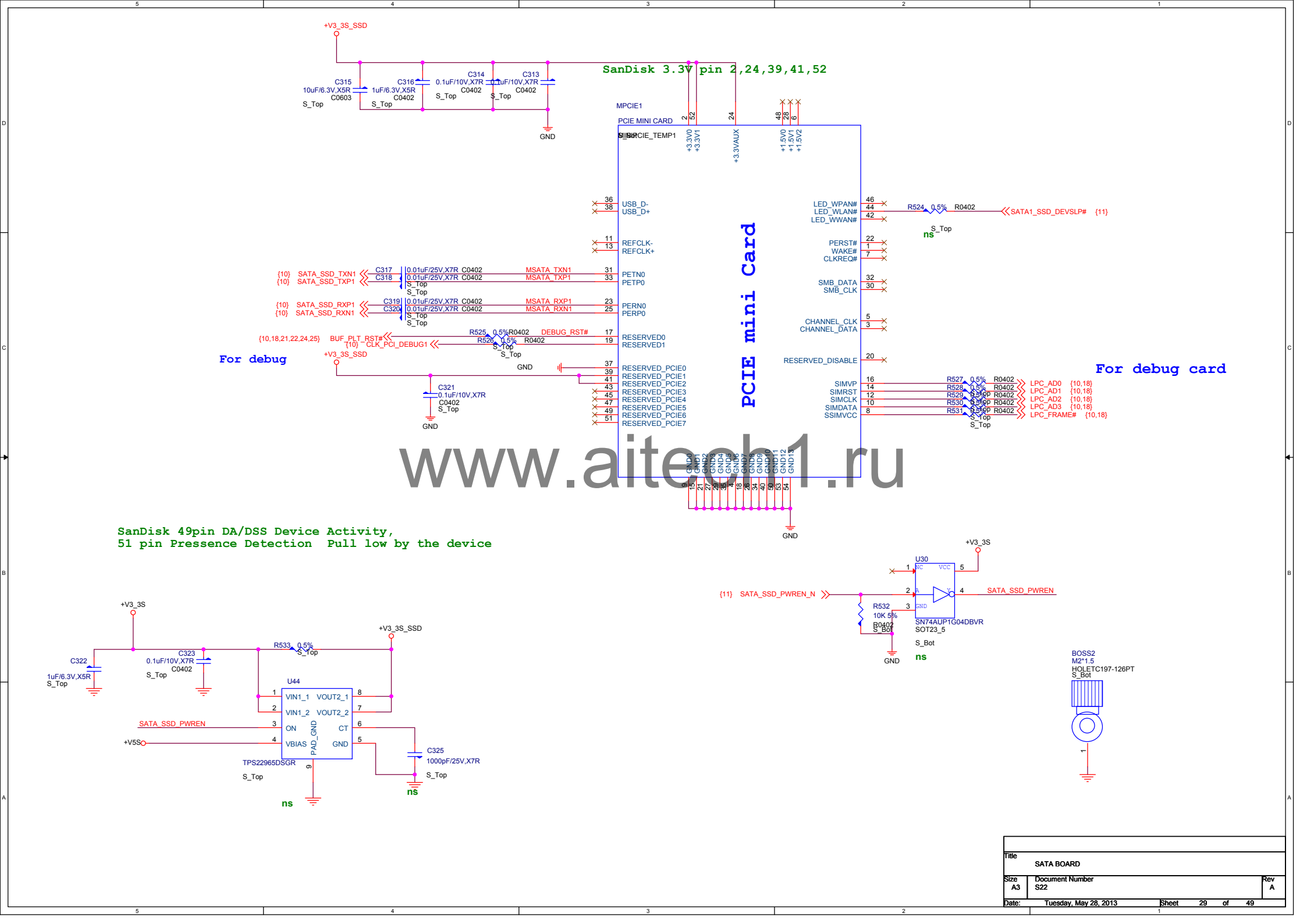
EA EXCELSIOR RENDER



EA EXCELSIOR RENDER			
Title: HDMI			
Size: A3	Document Number: S22		Rev: A
Date: Tuesday, May 28, 2013	Sheet 28 of 49		


SanDisk 3.3V pin 2,24,39,41,52
MPCIE1
PCIE MINI CARD
PCIE_TEMP1
PCIE mini Card
For debug
For debug card
SanDisk 49pin DA/DSS Device Activity,
51 pin Pressence Detection Pull low by the device
www.aitech1.ru
SN74AUP1G04DBVR
SOT23_5
TPS22965DSGR
BOSS2
M2*1.5
HOLETC197-126PT
SATA BOARD
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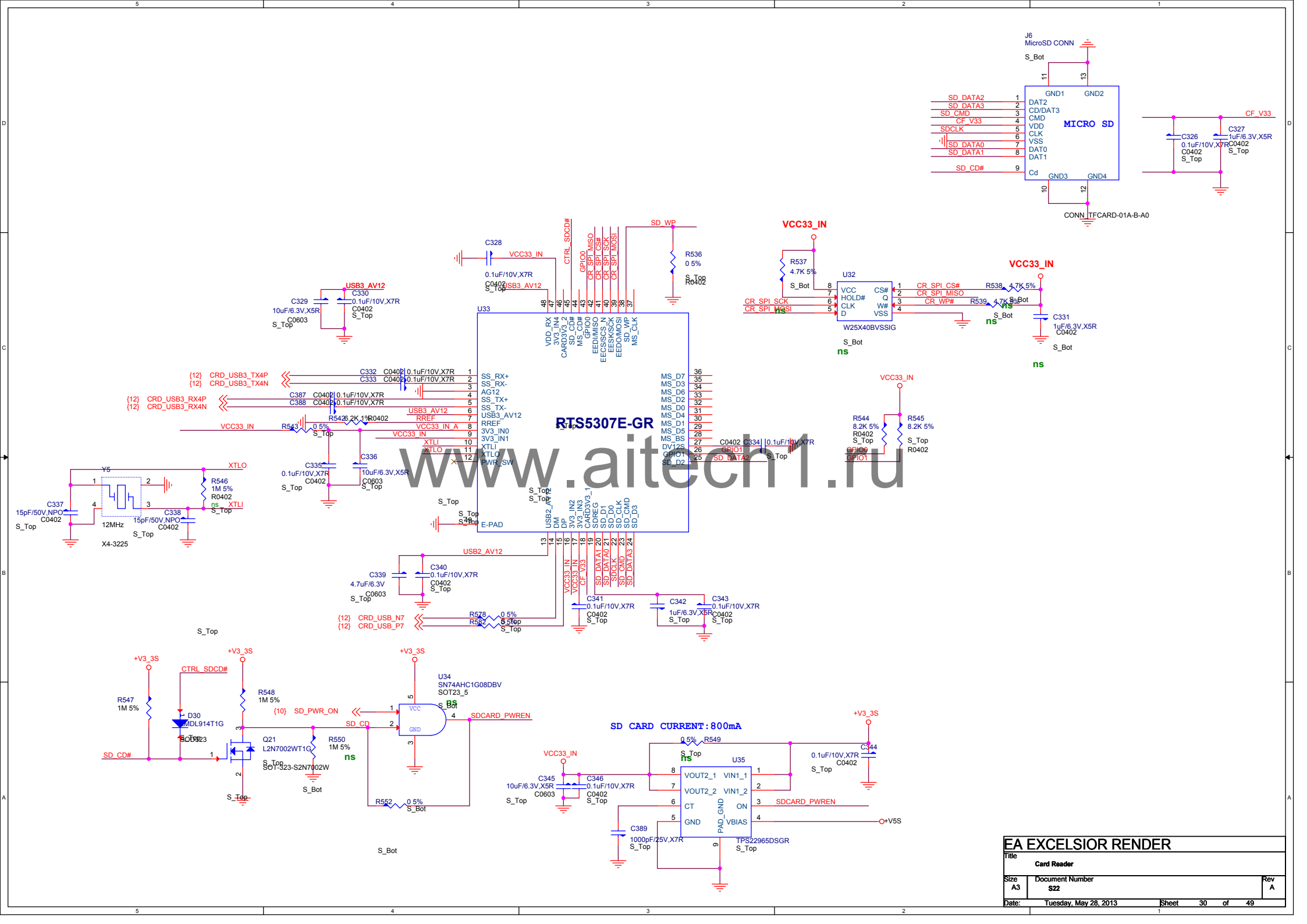
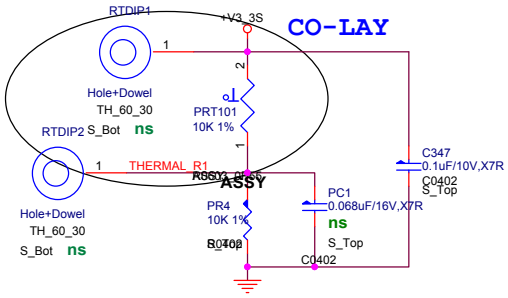
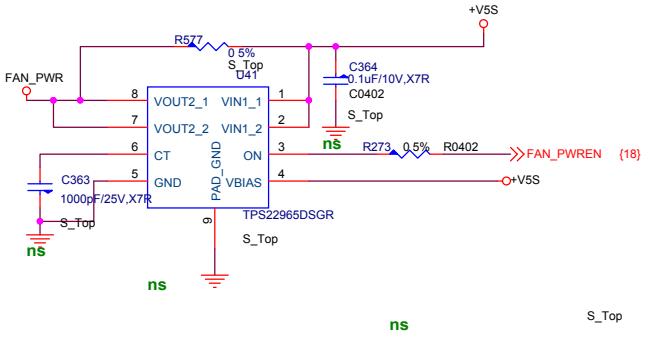


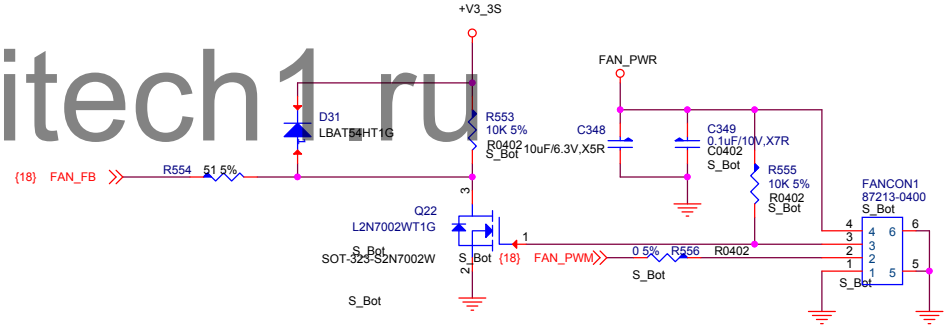
EA EXCELSIOR RENDER		
Title: Card Reader		
Size: A3	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 30 of 49	

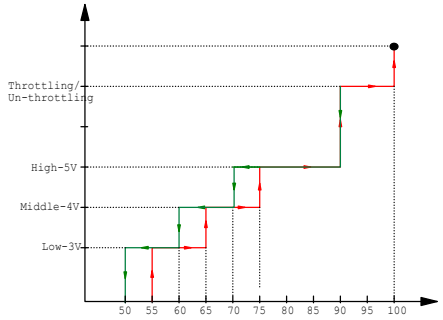
MAX 1.75W 0.35A,待机15mW 0.003A



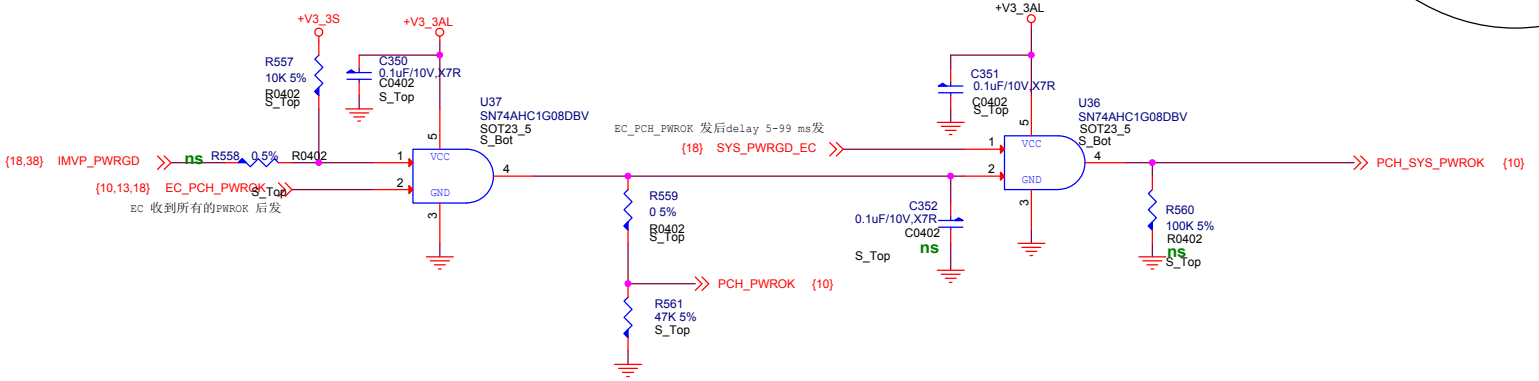


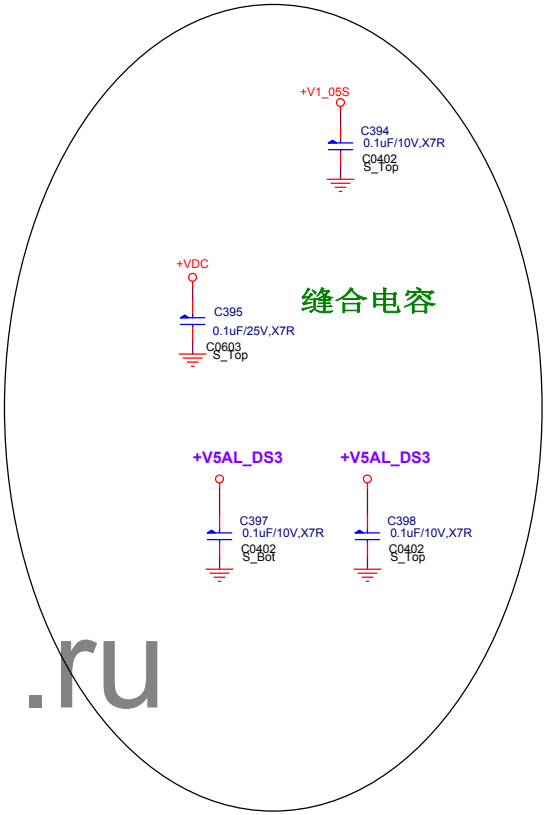
走线需包地，用于测温度





EA EXCELSIOR RENDER		
Title: FAN		
Size: A3	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 31 of 49	





RSMRST#

RSMRST# sequence requirement:
1. VCCSUS3_3 stable to RSMRST# asserted ,at least 10ms.

2. RSMRST# rising edge transition from 20% to 80% 50us Max

3. RSMRST# falling edge must transition to 0.8 V or less before VccSus3_3 drops to 2.9 V, RSMRST# falling edge transition 500us Max

EA EXCELSIOR RENDER		
Title: PWR Sequencing		
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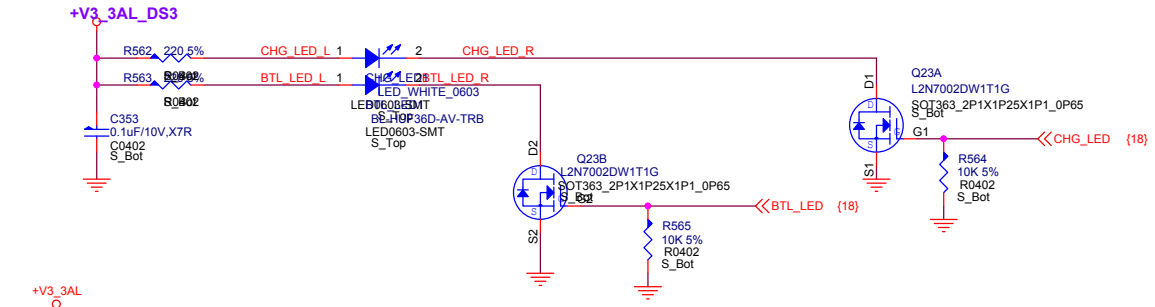

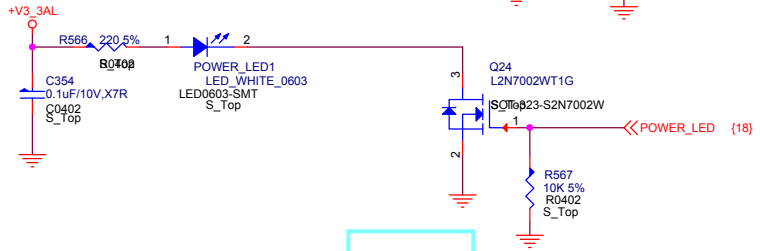

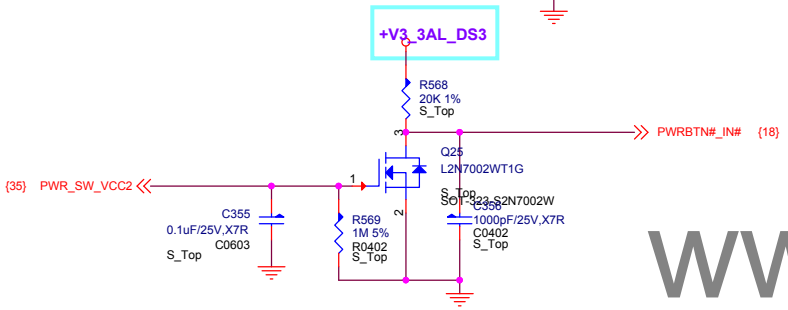

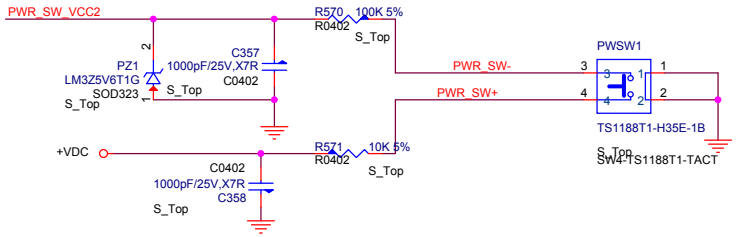

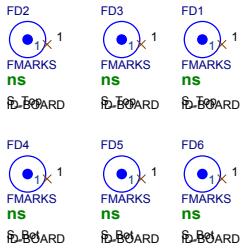

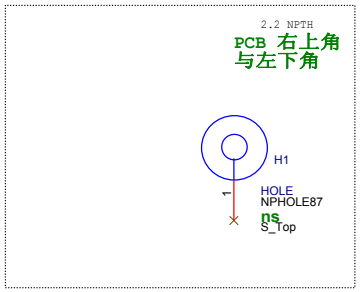

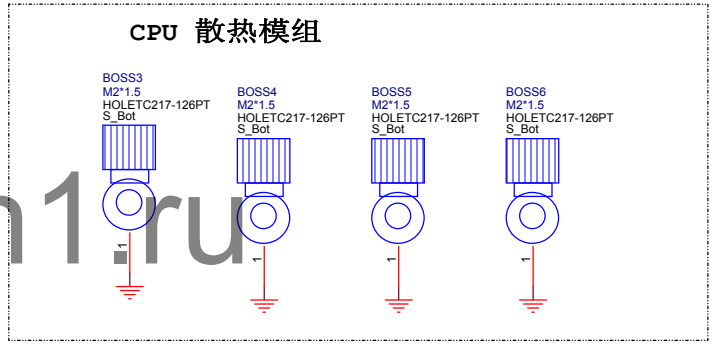

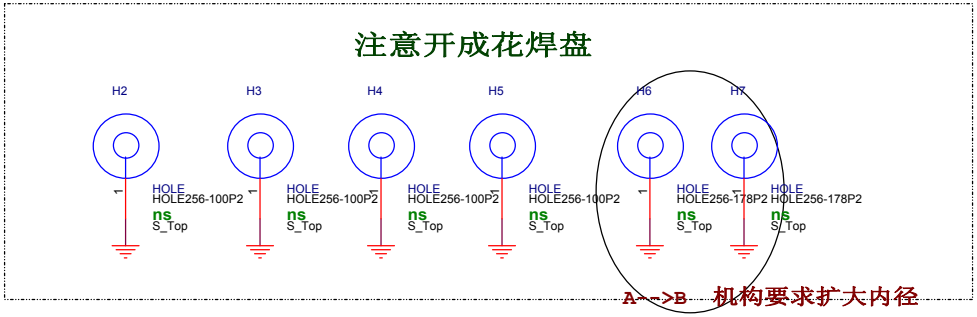

EA EXCELSIOR RENDER			
Title: Power Button Board/LED			
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Title <Title>		
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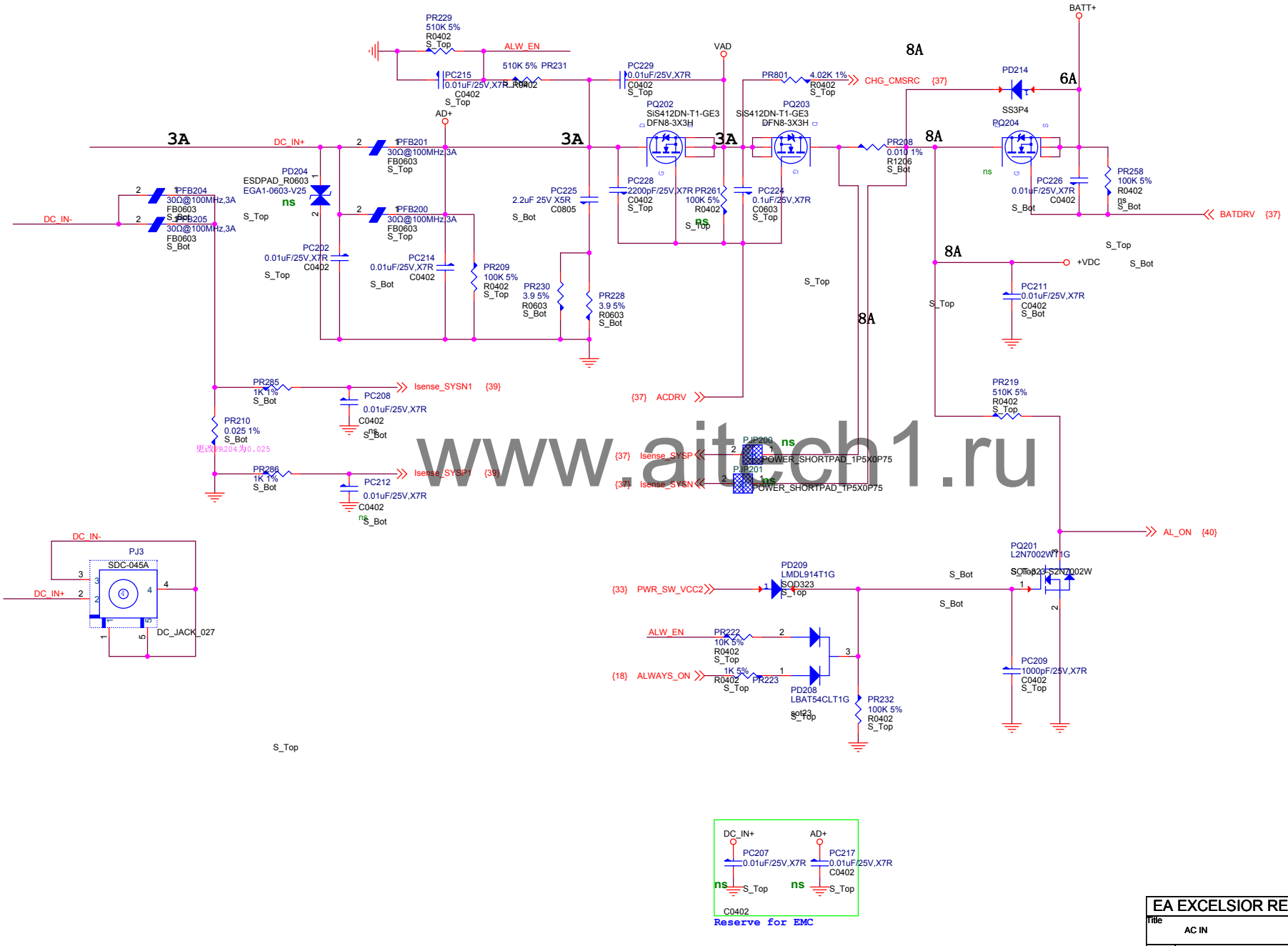

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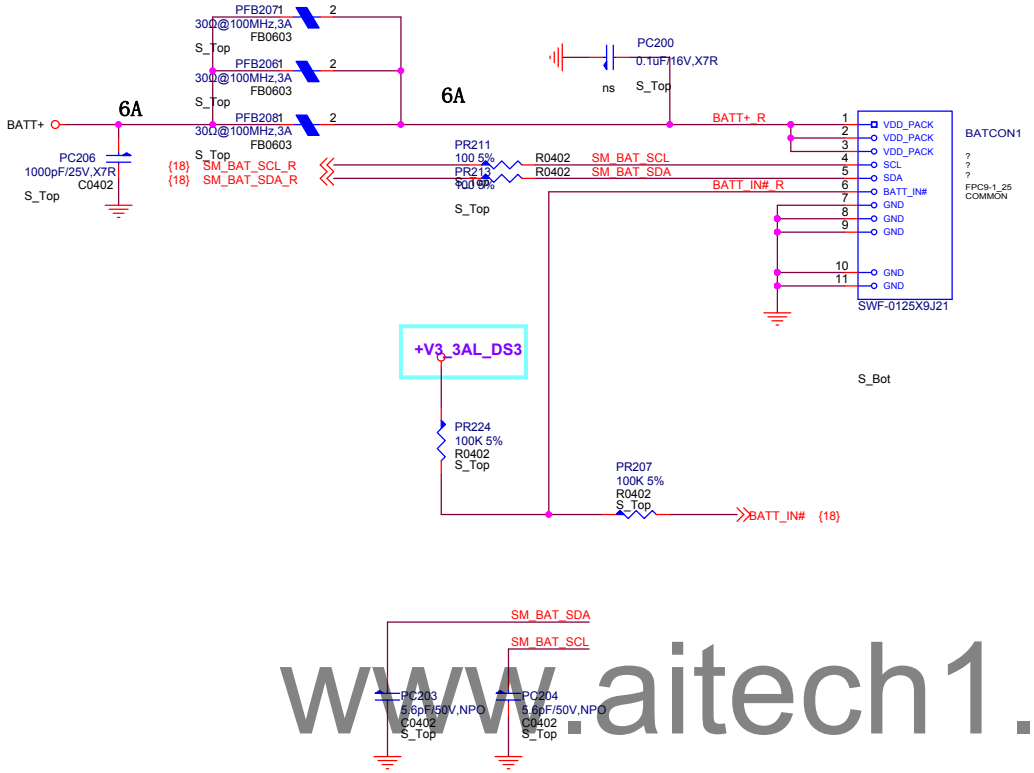
Size: A3	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 35 of 49	



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Size: A3	Document Number: S22	Rev: A
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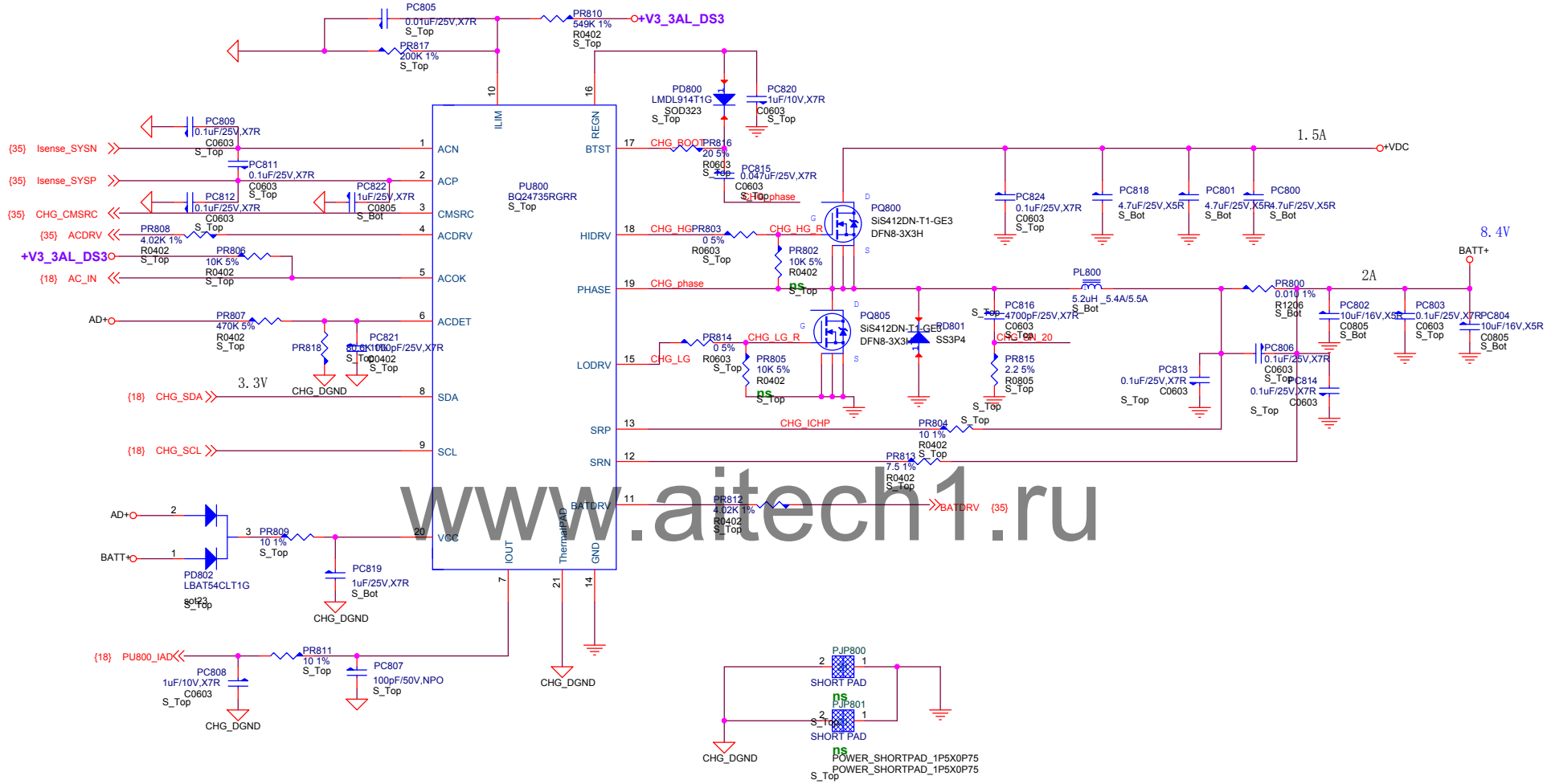

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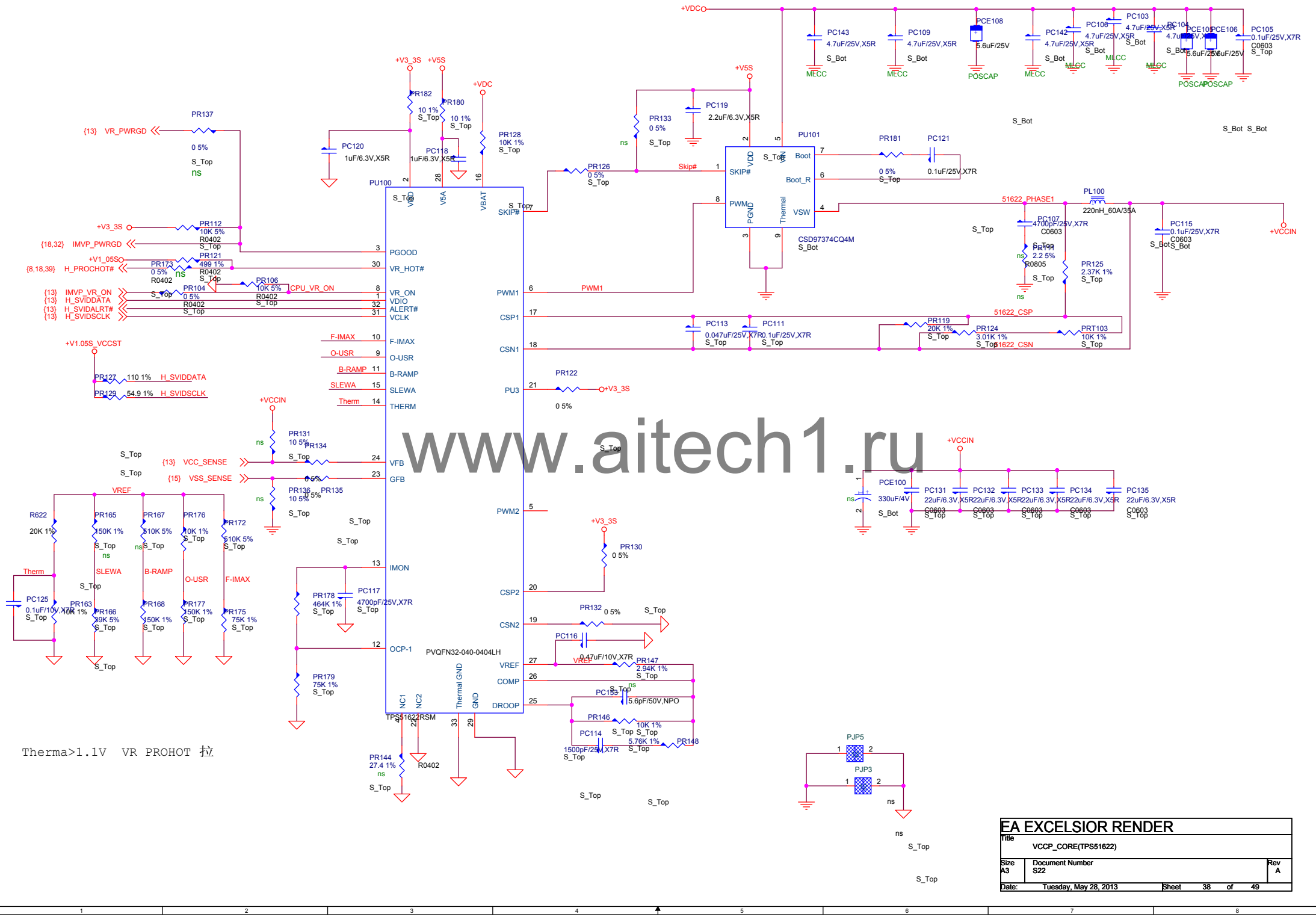
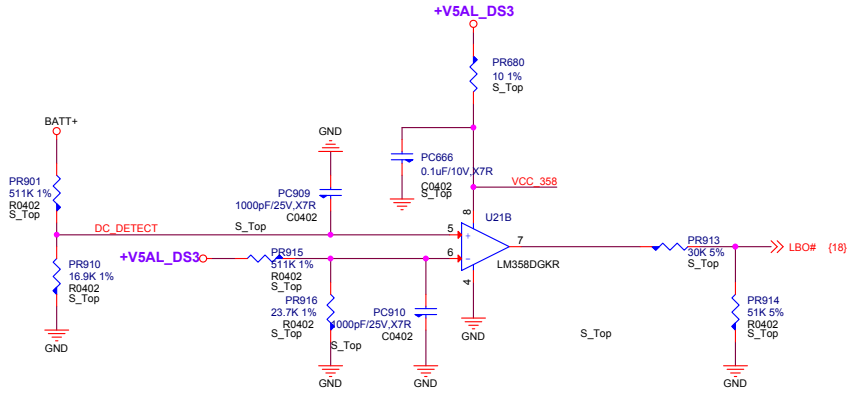
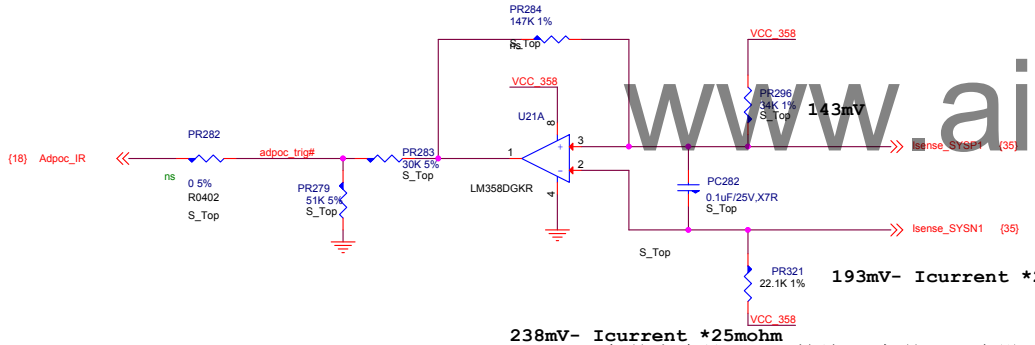
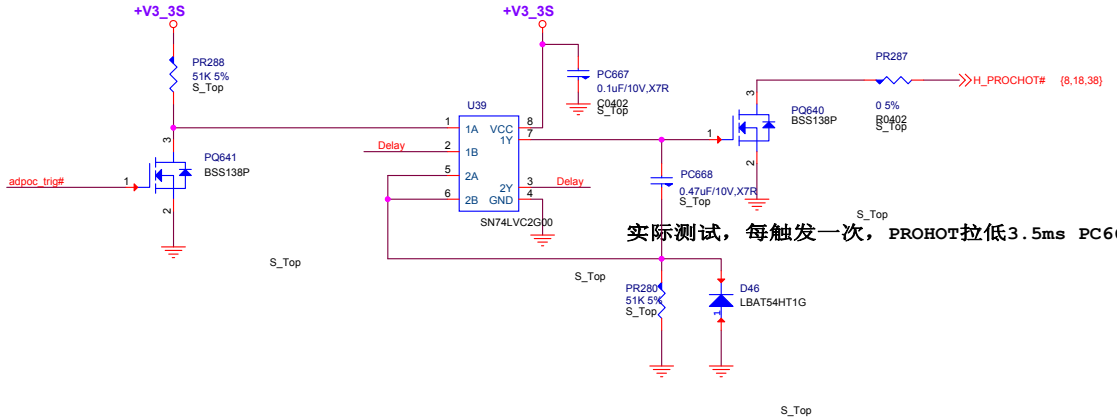
Size: A3	Document Number: S22	Rev: A
Date: Tuesday, May 28, 2013	Sheet 37 of 49	







238mV- Icurrent *25mohm
Adapter 保护电流是3.8A，持续5ms保护，现在设Adapter 3A的时候降频



实际测试，每触发一次，PROHOT拉低3.5ms PC668=0.1uf

EA EXCELSIOR RENDER		
Title: VCCP_CORE(62882)		
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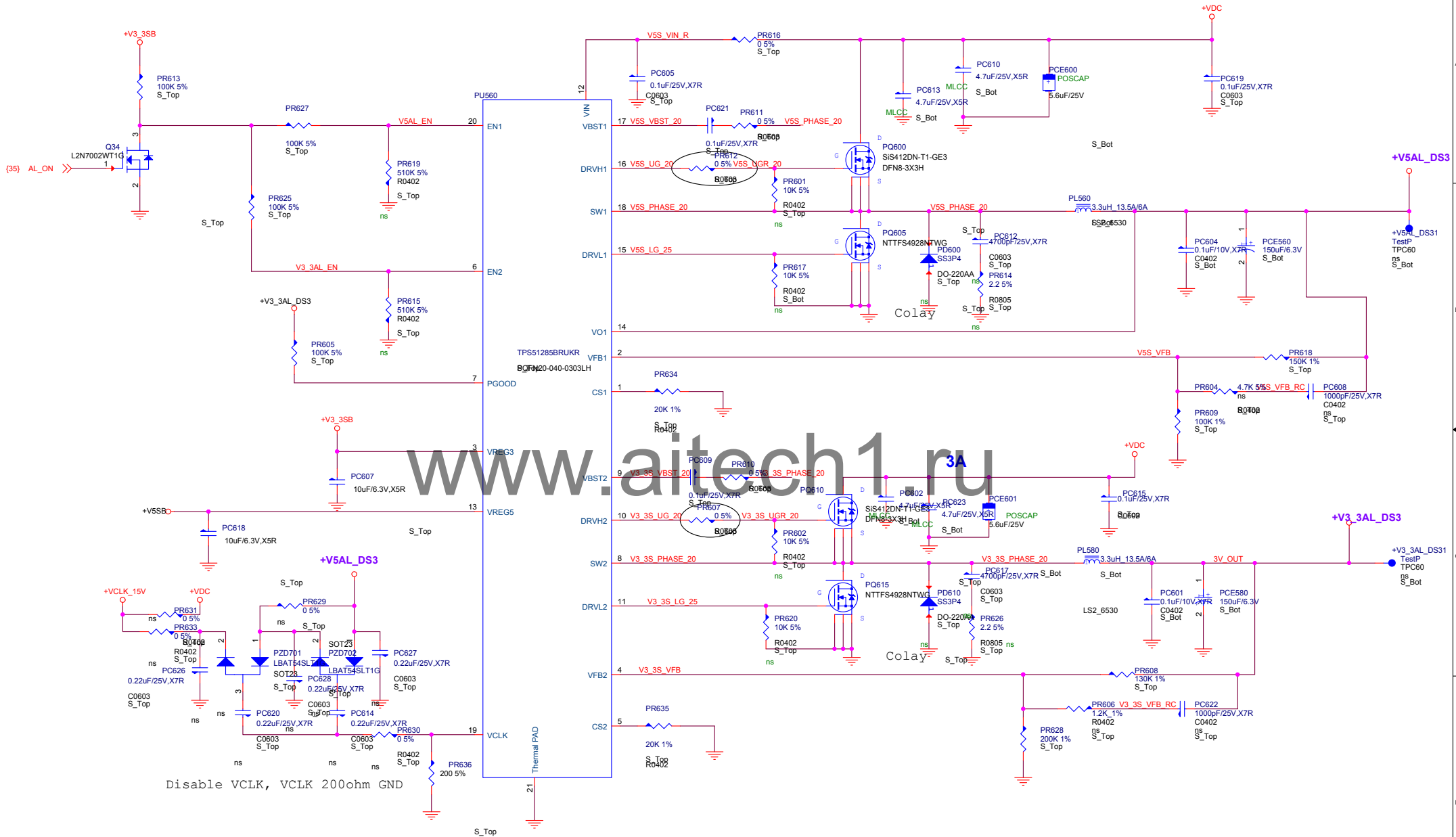

EA EXCELSIOR RENDER		
Title: SYSTEM POWER		
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Table 1. Frequency Vs. Selection Resistor

Selection Resistor	Frequency (kHz)
20k	300
24k	400
30k	500
39k	600
56k	700
75k	800
100k	900
150k	1000

```
Iccmax=255*(PR175/(PR172+PR175))
 PR172=1045K
```

Table 2. Slew rate Vs. Selection Resistor

Selection Resistor	Minimum Slew Rate (mV/µs)
20k	2.5
24k	5.0
30k	7.5
39k	10.0
56k	12.5
75k	15.0
100k	17.5
150k	20.0

EA EXCELSIOR RENDER

Title: VCCSA

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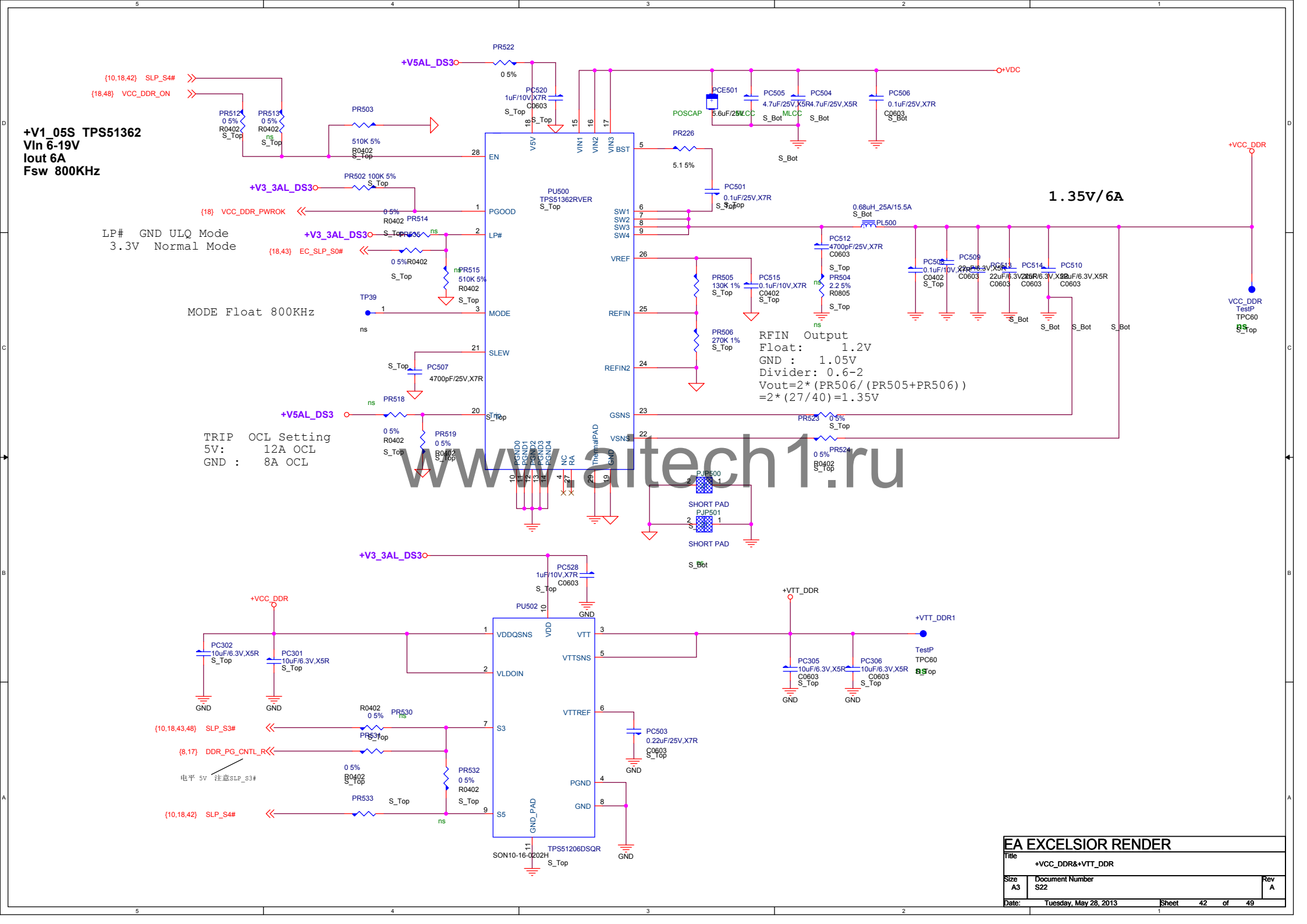

EA EXCELSIOR RENDER			
Title: +VCC_DDR&+VTT_DDR			
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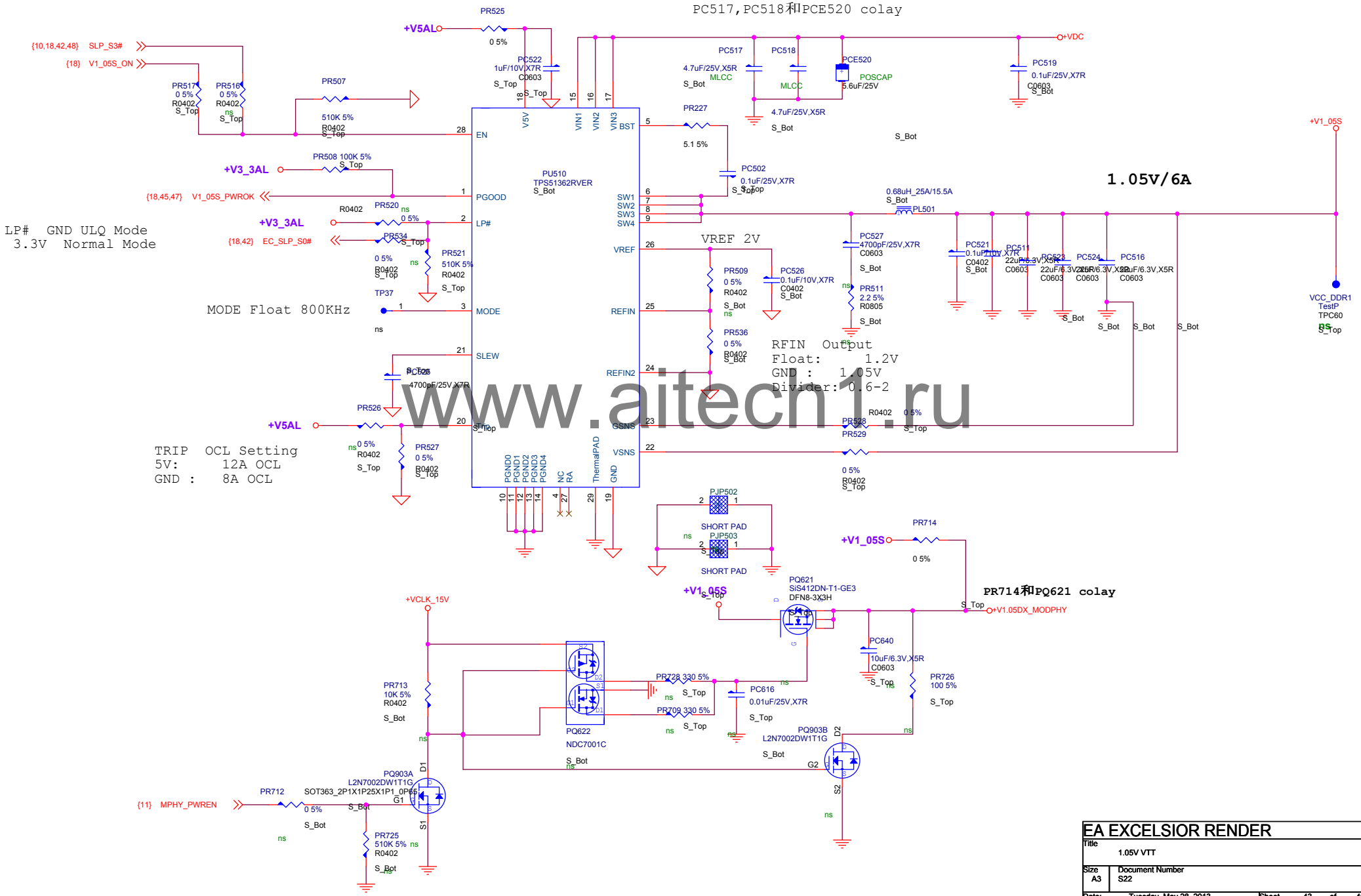
+V1_05S TPS51362
Vin 6-19V
Iout 6A
Fsw 800KHz



EA EXCELSIOR RENDER		
Title: 1.05V VTT		
Size: A3	Document Number: S22	Rev: A
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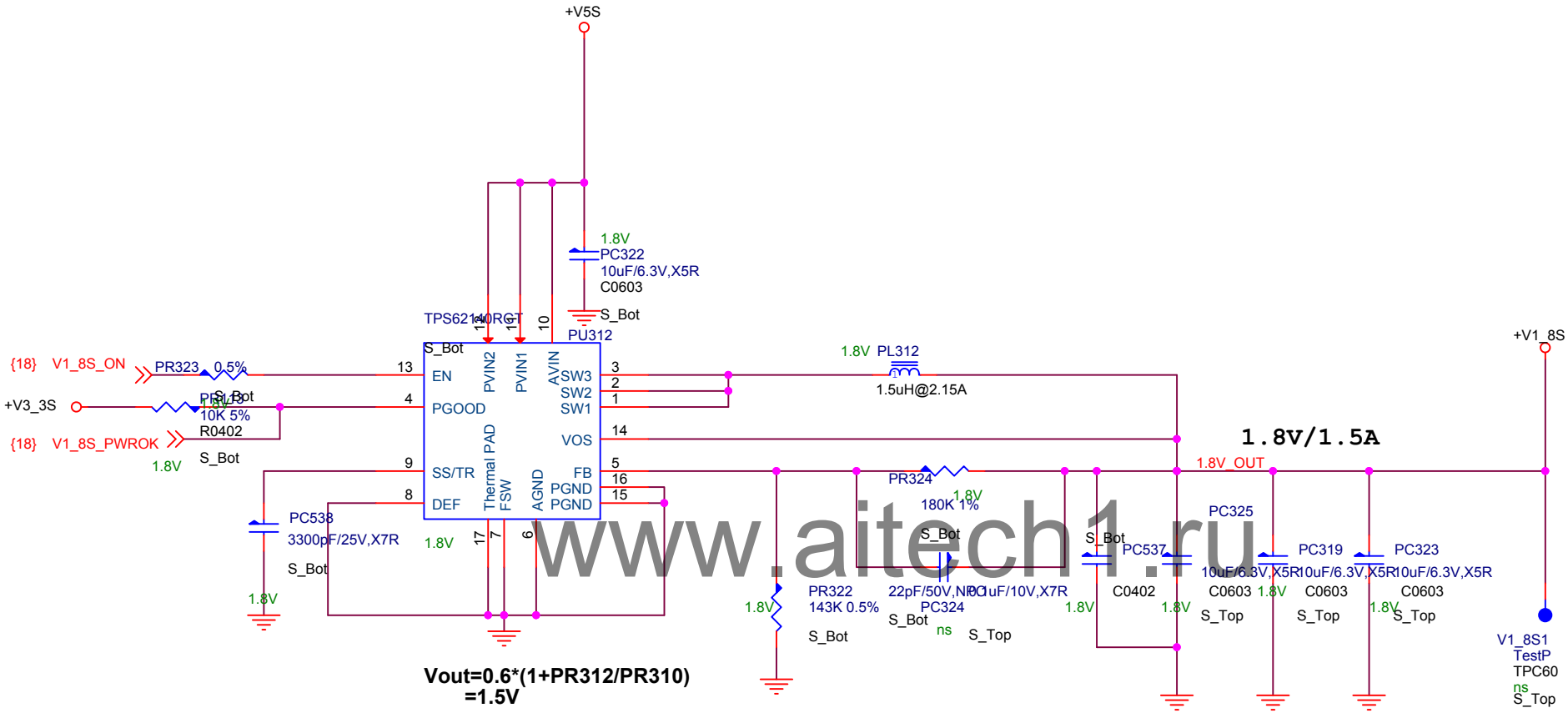

Title	V1_8S	
Size A4	Document Number S22	Rev A
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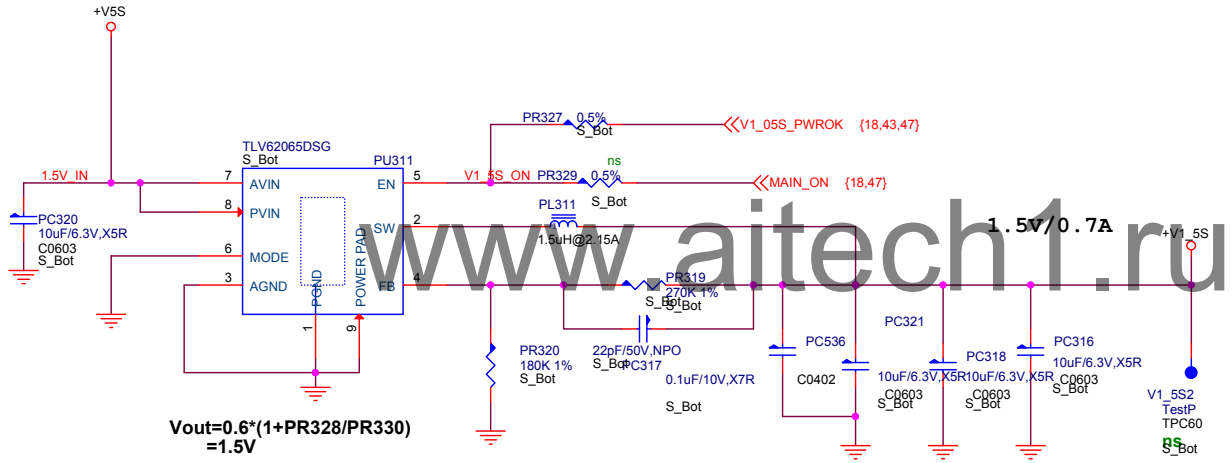

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Size: B	Document Number: S22	Rev: A
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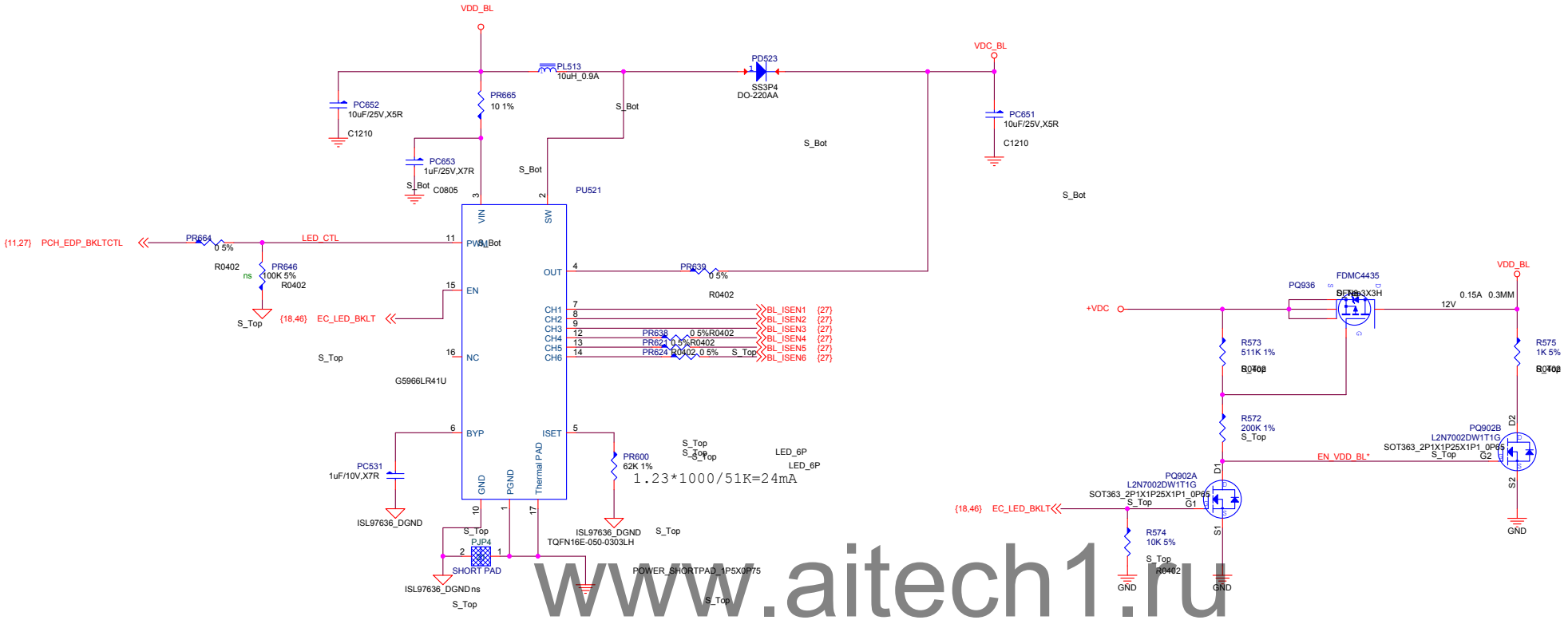

EA EXCELSIOR RENDER		
Title: VCCP_CORE(62882)		
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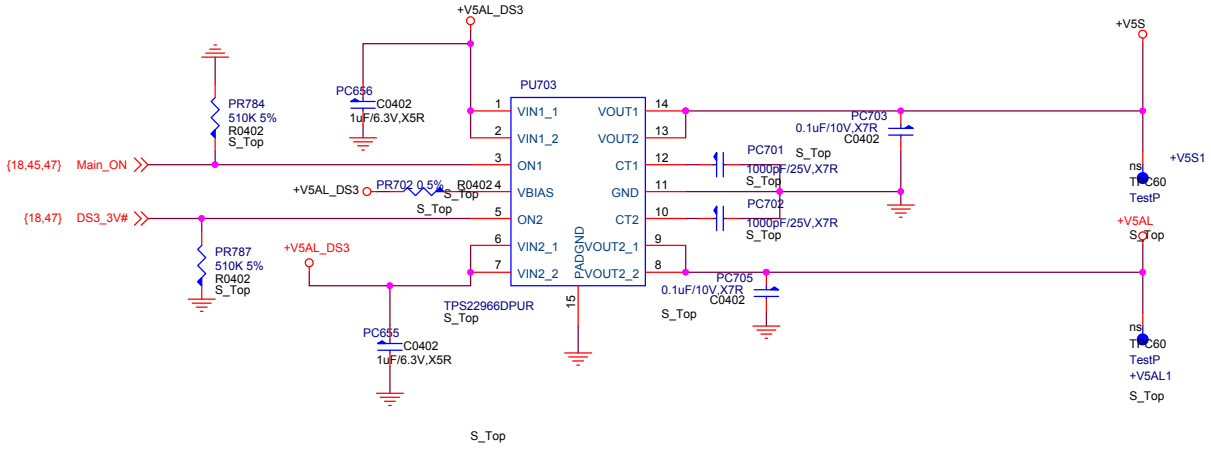
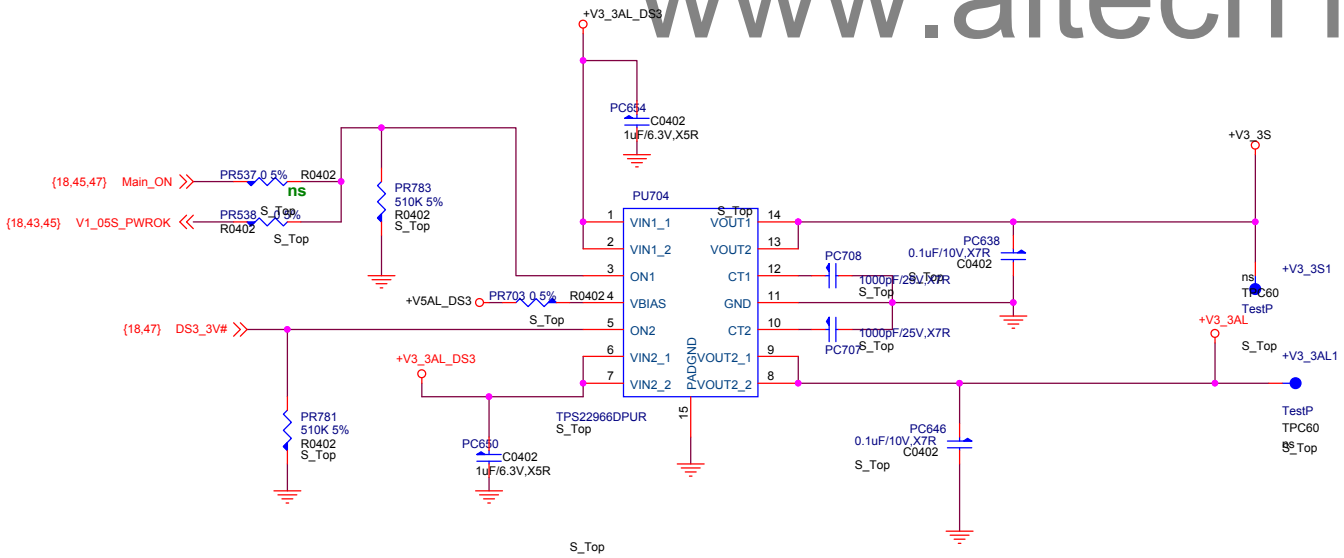
System Power





Title	SWITCH POWER	
Size A3	Document Number S22	Rev A
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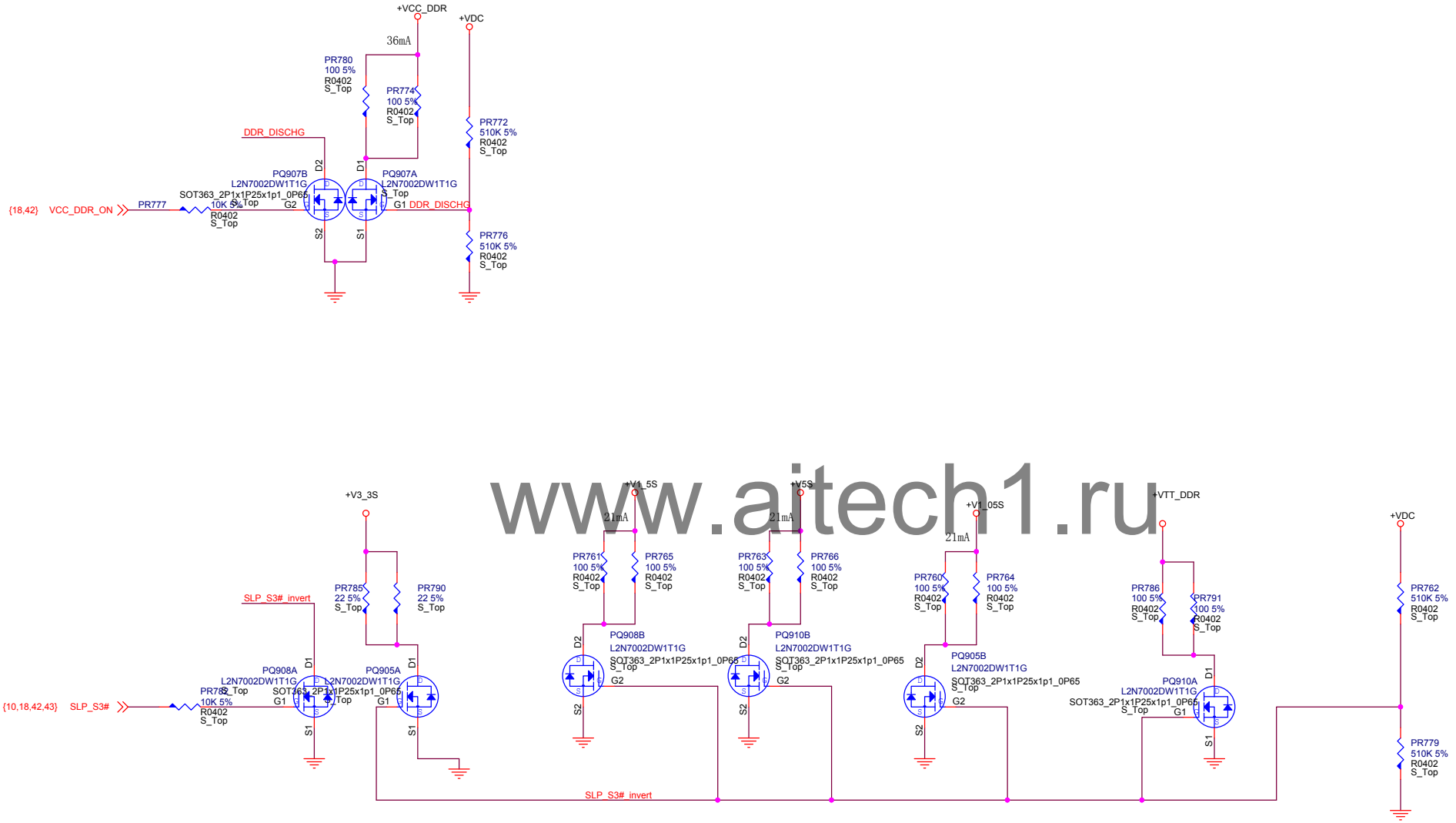

仁聚科技有限公司

Title: SYSTEM DISCHARGE		
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VA-->VB change list

1.P11 新增5V 控制信号，以控制sensor hub 3.3 5V 时序

2.P14 将之前串联的0欧电阻 R213 R214 R233 R226改为电感，删除串联0欧电阻 R221 R222 R228 R234 R216 R217 R223 R225 R227 R229

3.P18 A20GATE改为测试点，删除原上拉电阻和二极管

4.P18 R291 改为ns,支持deep S3,SPI添加预留0欧电阻，方便调试，防止信号过冲

5.P22 Sensor hub RST 方式添加预留PLT_RST，sensor hub 添加预留3.3VAL 5VAL,新增5V 控制信号,预留U46 AK8963C

6.P24 VCCA<=VCCB 更改U25 接线

7.P25 预留Q35 3G RESET 电路，non cs 下可以删除V1.8

8.P10 P18 U5 U8 改为更为通用的SO8封装，由TOP面调整为BOT面

9.P25 更换LCD connnector ，屏线也改为FPC

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