

PROJECT S6F

Revision History

R1.0	SR	2005/07/01
R1.1	ER	2005/11/25
R2.0	PR	2005/01/18

SMB Signals

Host	Name	Devices	Address
Chipset	SMBCK,SMBDA	ICH7-M ADT7460 (Thermal) ICS954213 (Clock Genertor) DDR2 SO-DIMM	0001 000X b 0101 110X b D2h A0h

Power States

STATE	SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	++VALWAYS	++V	++VS	Clocks
Full ON	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S3(Suspend to RAM)	LOW	HIGH	HIGH	HIGH	ON	ON	OFF	OFF
S4(Suspend to Disk)	LOW	LOW	HIGH	HIGH	ON	OFF	OFF	OFF
S5/Soft OFF	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

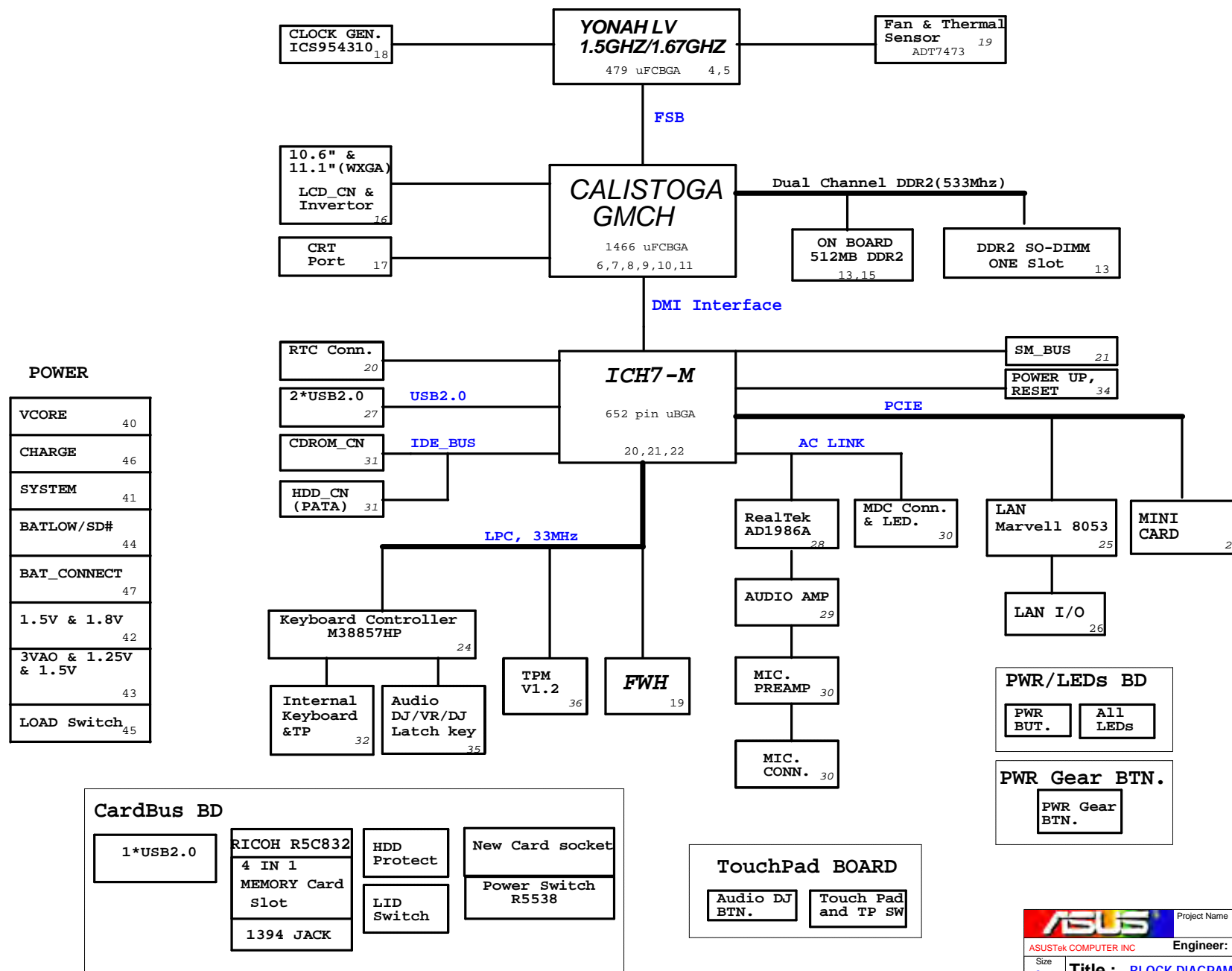
CPU
PM667 LV 1.5 GHz: 01G011010110
PM667 LV 1.66 GHz: 01G011010010

Chipset
02G010009210 C.S QG82945GM SL8Z2 INTEL CALISTOGA 876956
02G010007741 C.S NH82801GBM SL8YB INTEL ICH7-M 876595

Memory
Infineon: 03G15073B010
Nanya: 03G15133E110

YONAH/CALISTOGA(945GM) BLOCK DIAGRAM (NAPA PLATFORM)

2005.6.13 V1.0



M38857MB_GPIO	Use As	Signal Name
P20	GPO	ANKEY_RSM
P21	GPIO	BAT_SEL#
P22	GPO	BAT_LEARN
P23	GPO	TBD
P27	GPO	SCROLLOCK#_3
P42	GPO	TP_LED
P43	GPO	TBD
P44	GPO	KBDCPURST_3Q
P45	GPO	A20GATE_3Q
P46	GPO	KBDSCI_3Q
P47	GPIO	CLKRUN#_3
P50	GPI	BAT_LLOW#_OC
P51	GPI	TBD
P52	GPI	TBD
P53	GPI	TBD
P54	GPI	LID_SW#
P55	GPI	BATIN_OC#
P56	GPO	TBD
P57	GPO	ADJ_BL
P67	GPI	TBD
P66	GPI	PWRLMT#
P65	GPI	BAT_SAVING#
P64	GPI	ACIN_OC
P63	GPO	CPPE_EN
P62	GPO	RST#NEWCARD
P61	GPI	CPPE#DET
P60	GPO	PP_TPM
P77	GPI	SMC_BAT
P76	GPI	SMD_BAT
P26	GPI	KBNUM#_3
P25	GPI	KBCAP#_3
P24	GPO	PCIRST#_GATE
P40		EXTSMI_3

ICH7_GPIO	Use As	Signal Name
GPI6	GPO	BACK_OFF#
GPIO7	GPI	WIRELESS_SW#
GPI8	GPI	EXTSMI#
GPI9	TBD	
GPI10	GPI	CHG_FULL_OC
GPI12	GPI	KB_SCI#
GPI13	GPI	MEM_ID0
GPI14	GPI	MEM_ID1
GPIO15	GPO	WL_LAN_LED#
GPIO19	GPI	PANEL_ID
GPIO24	GPI	MEM_400/533#
GPIO25	GPO	CB_SD#
GPIO26	GPO	OP_MUTE#
GPIO27	GPO	WIRELESS_LAN_ON/OFF#
GPIO28	GPO	PWR_1HZ
GPI33	GPO	BT_ON/OFF#
GPI34	GPO	FWH_WP#
GPI35	TBD	
GPI36	GPO	BT_LED#
GPI37	GPI	PCB_ID0
GPIO38	GPI	PCB_ID1
GPIO39	GPI	MEM_ID2

New NET on
Yonah

CPU_BSEL2
VR_VID6

Need Check

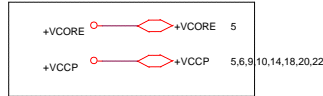
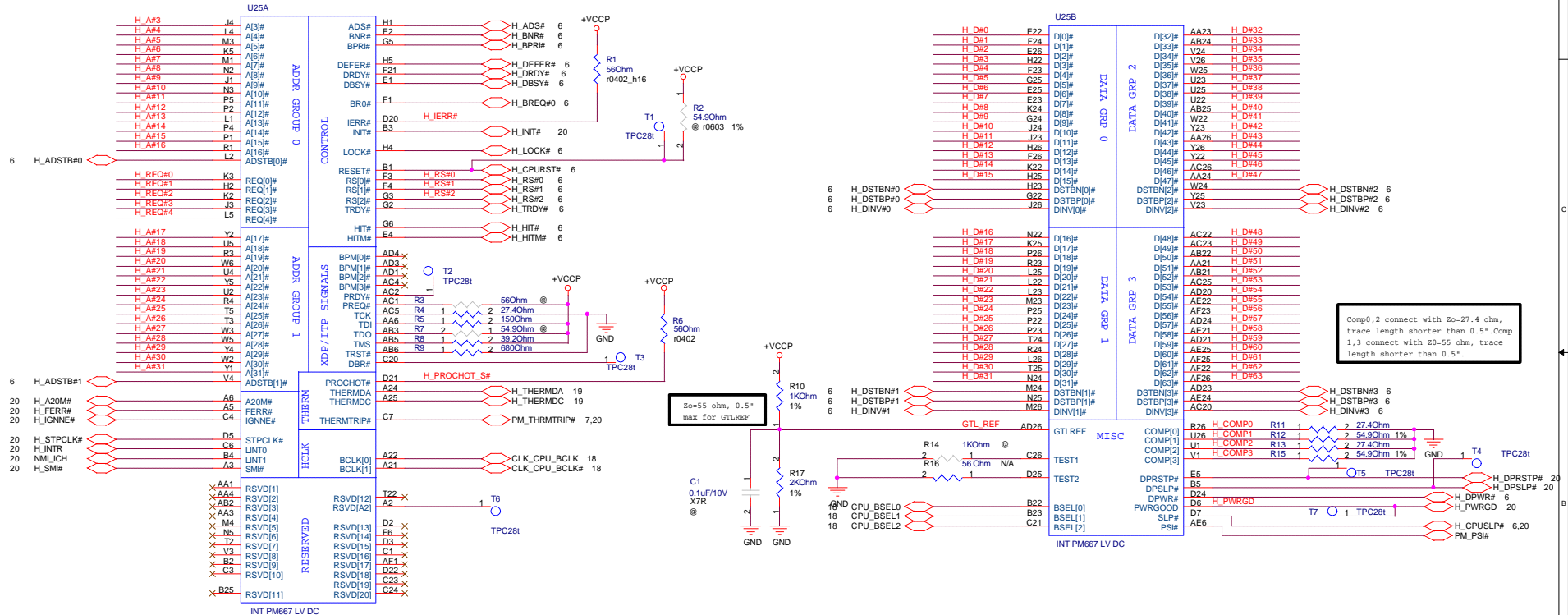
VCCSENSE
VSSSENSE

CPU PART NUMBER
01-011010010 CPU
01-011010011 CPU

INT PM667 LV DC 1.66G X48
INT PM667 LV DC 1.5G X38

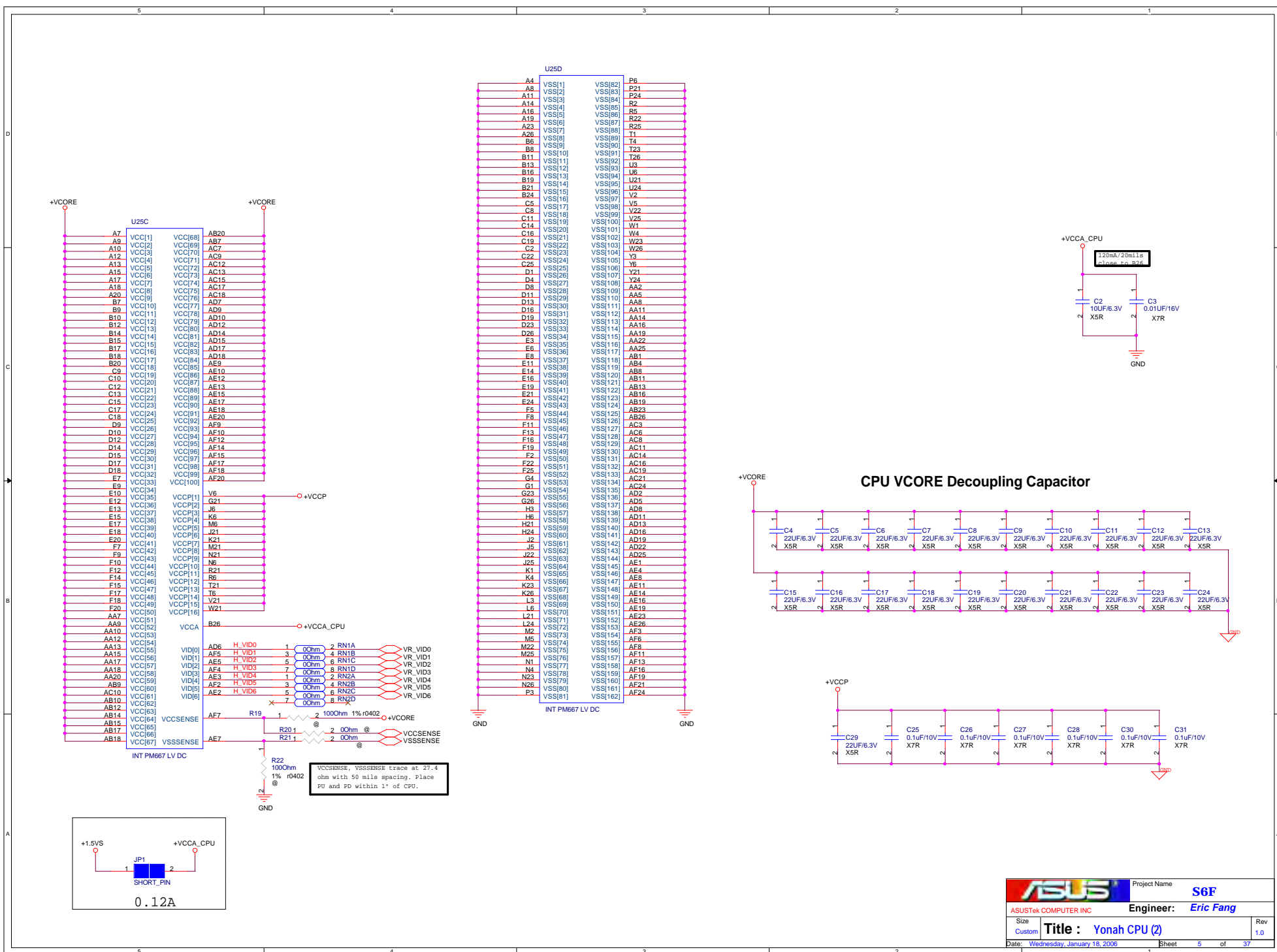
6 H_A# [31:3] H_A# [31:3]
6 H_REQ# [4:0] H_REQ# [4:0]

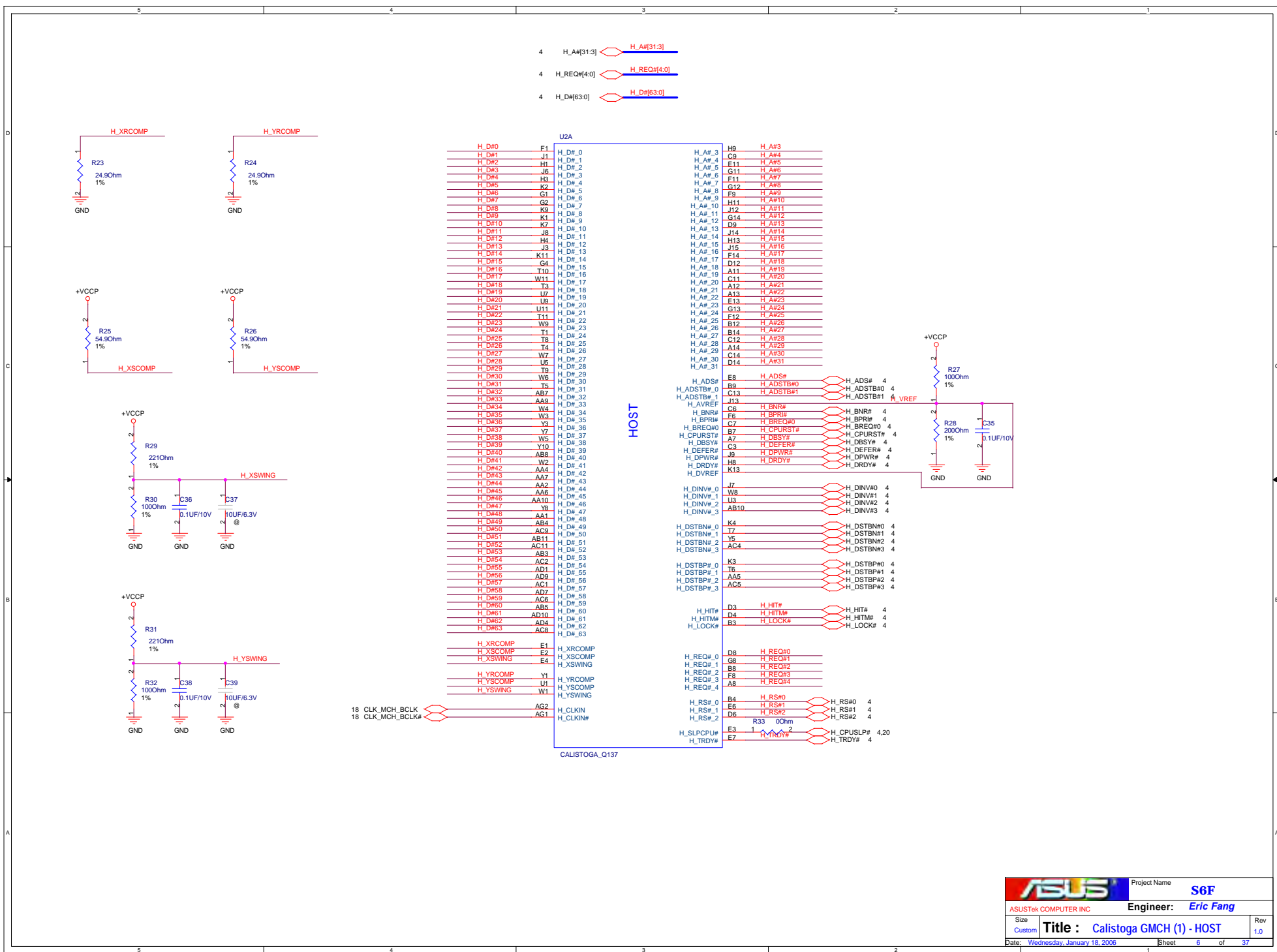
6 H_D# [63:0] H_D# [63:0]

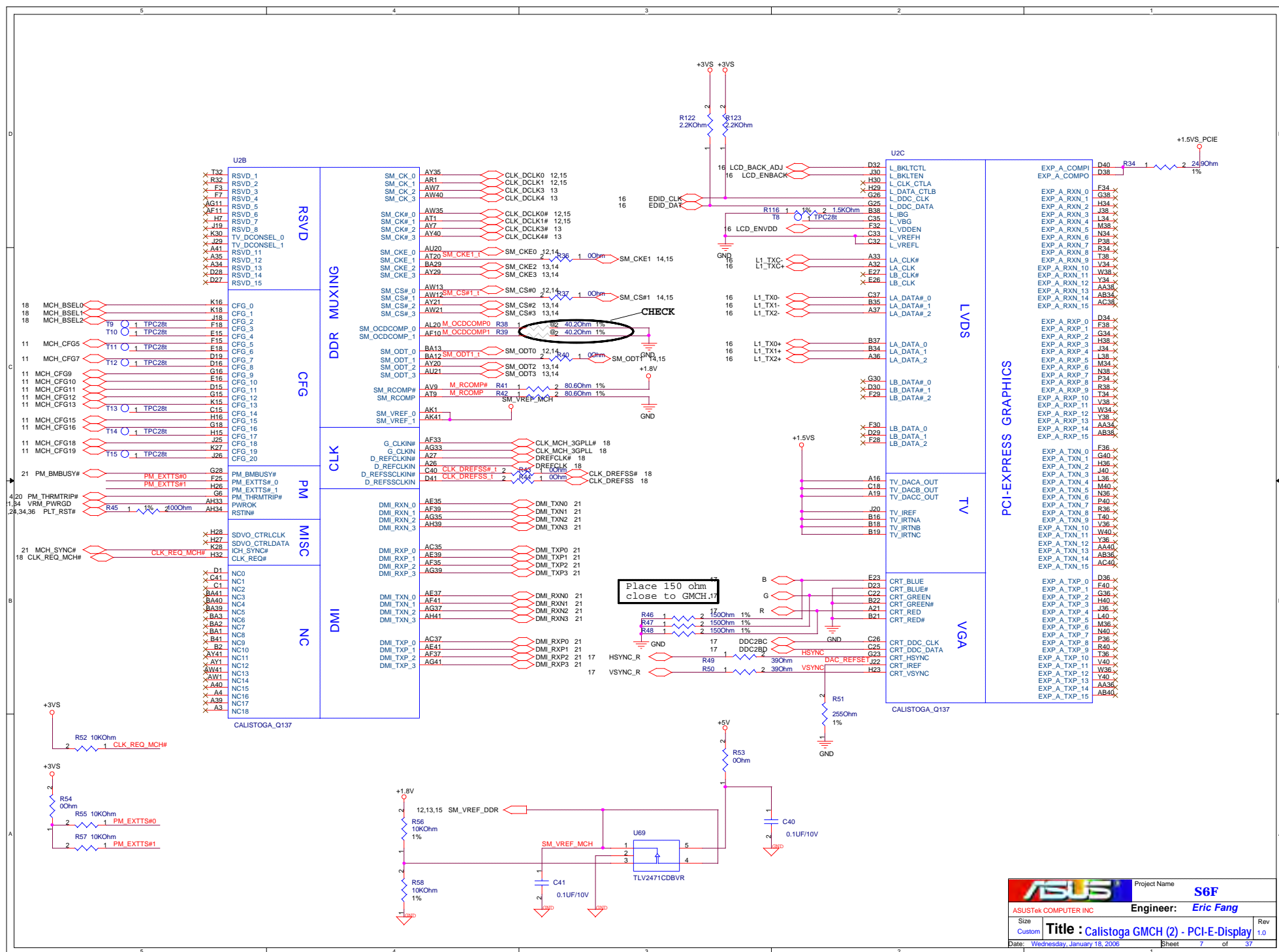


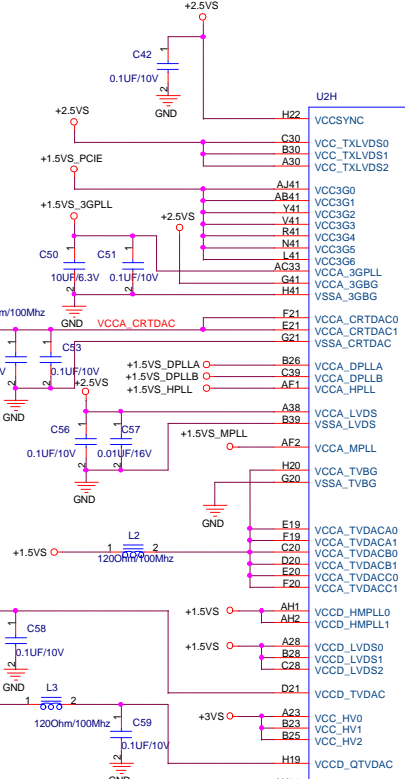
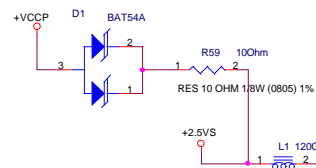
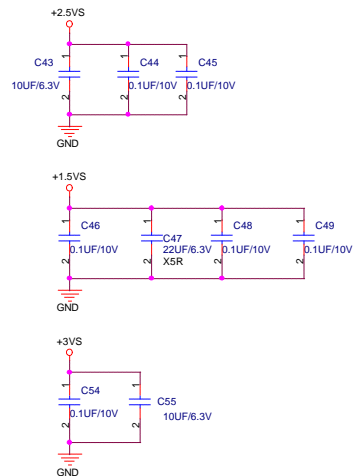
Note: Don't need for NAPA platform. But, it is exist on Alviso platform

ASUS		Project Name	S6F
ASUSTek COMPUTER INC		Engineer:	Eric Fang
Size	Custom	Title :	Yonah CPU (1)
Date:	Wednesday, January 18, 2006	Sheet	4 of 37



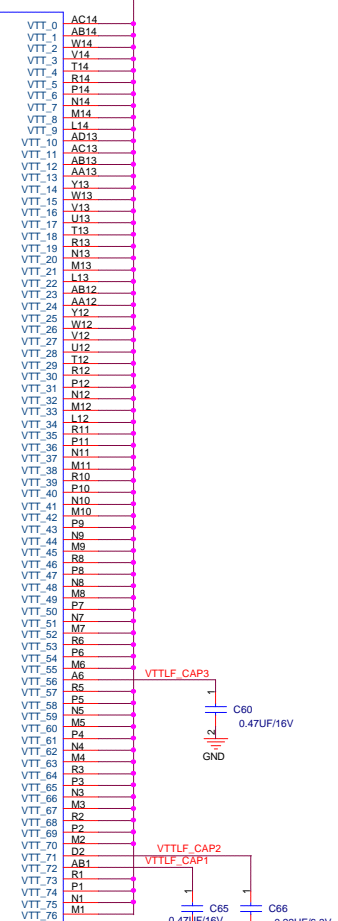
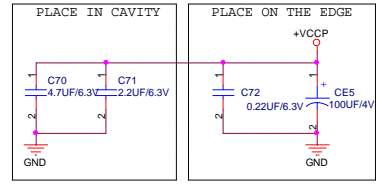
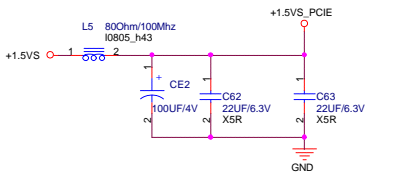
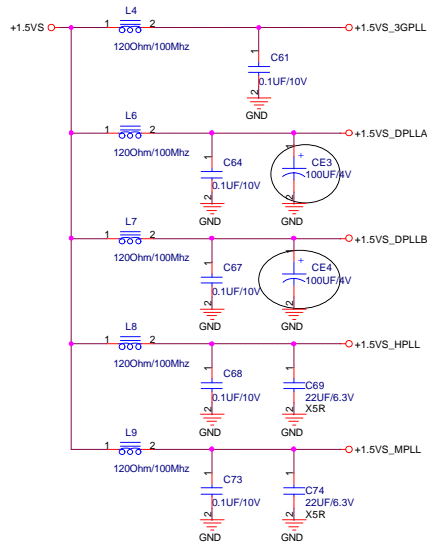


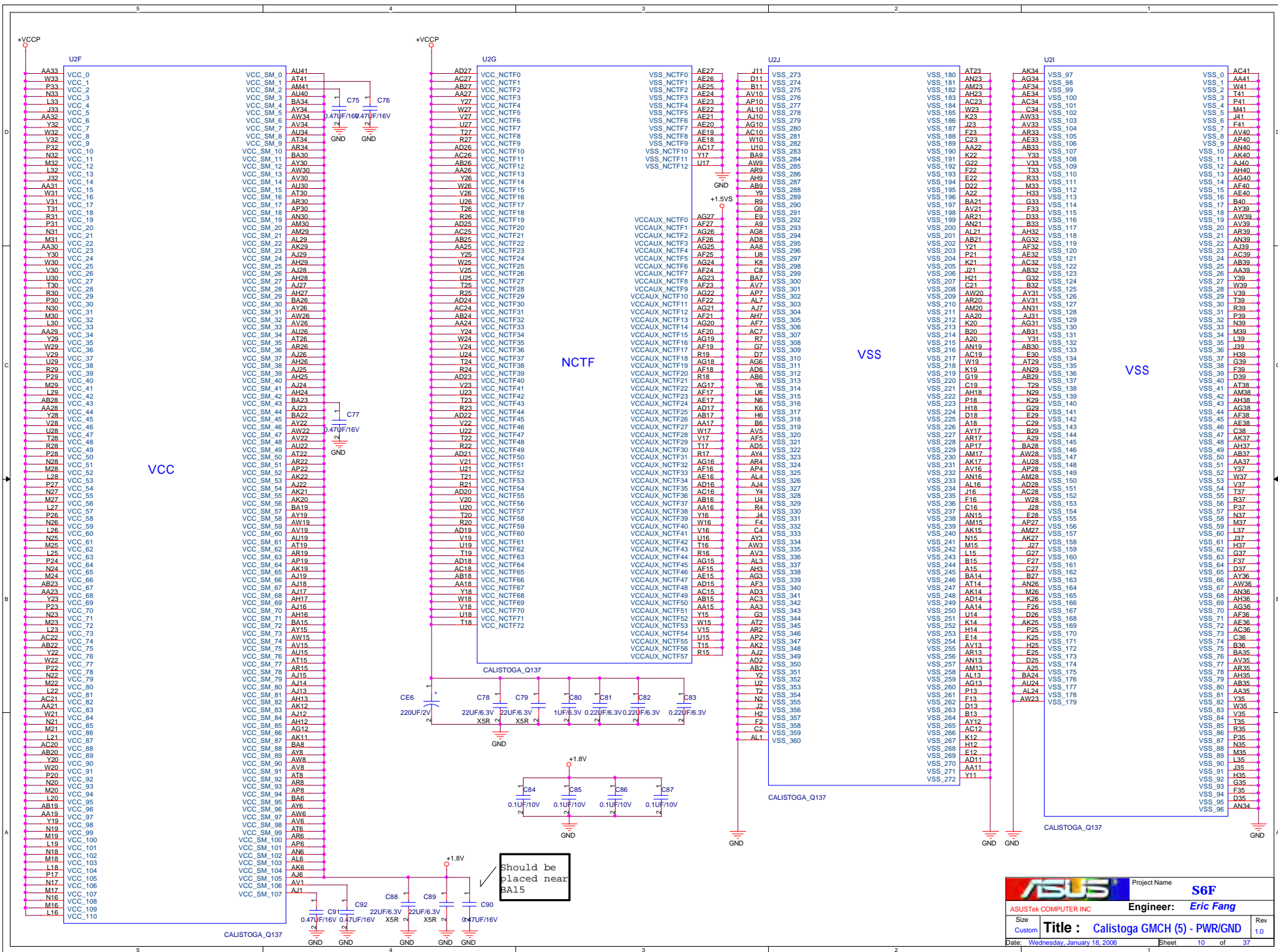


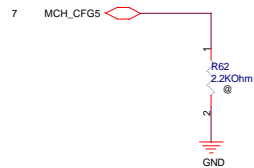


POWER

NOTE: 0.1uF caps in 1.5VS_XPLL need to be located as edge caps within 200 mils.



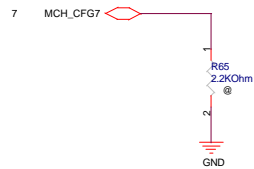




CFG5 : DMI STRAP

LOW = DMI X 2

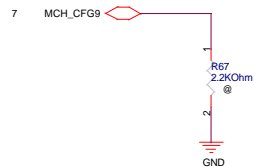
HIGH = DMI X 4 (Default)



CFG7 : CPU STRAP

LOW = Mobile Prescott

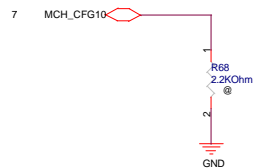
HIGH = Dothan CPU (Default)



CFG9 : PCIE GRAPHIC LANE

LOW = REVERSE LANE

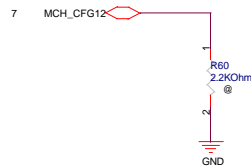
HIGH = NORMAL OPERATION (Default)



CFG10: HOST PLL VCO SELECT

LOW = RESERVED

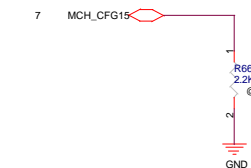
HIGH = MOBILITY



CFG11 : PSB 4X CLK ENABLE

LOW = 4X ENABLED

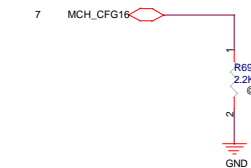
HIGH 8X ENABLED (Default)



CFG15 : ICH RESET DISABLE

LOW = ICH RESET DISABLE

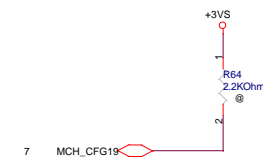
HIGH = NORMAL OPERATION



CFG16 : FSB DYNAMIC ODT

LOW = Dynamic ODT Disabled

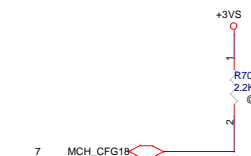
HIGH = Dynamic ODT Enabled (Default)



CFG19 : DMI LANE REVERSAL

LOW = NORMAL

HIGH = LANES REVERSED

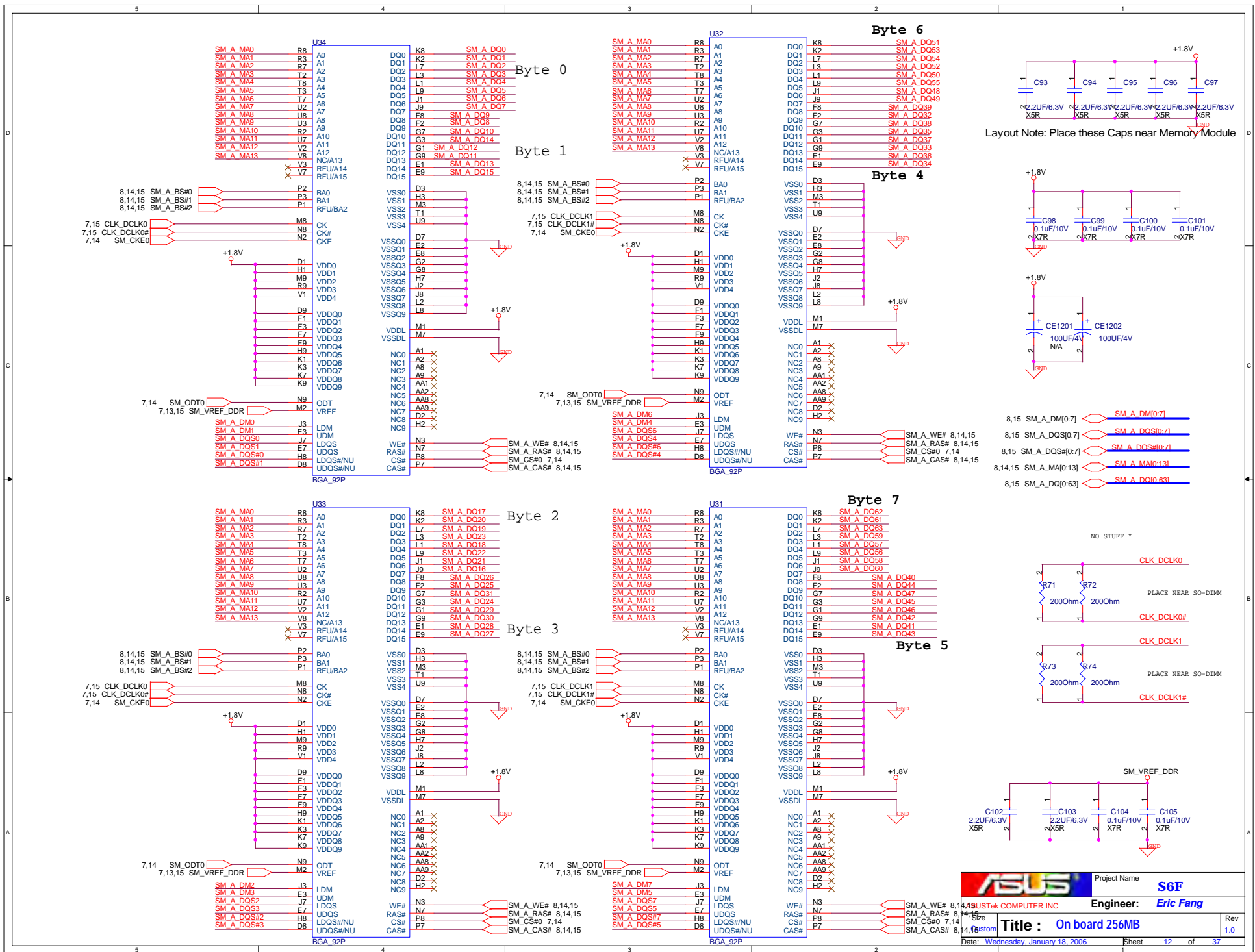


CFG18 : GMCH Core Voltage Level

LOW = 1.05V (Default)

HIGH = 1.5V

		Project Name	S6F	
ASUSTek COMPUTER INC		Engineer:	Eric Fang	
Size Custom	Title : Calistoga GMCH (6) - Strapping			Rev 1.0
Date: Wednesday, January 18, 2006	Sheet	11	of	37



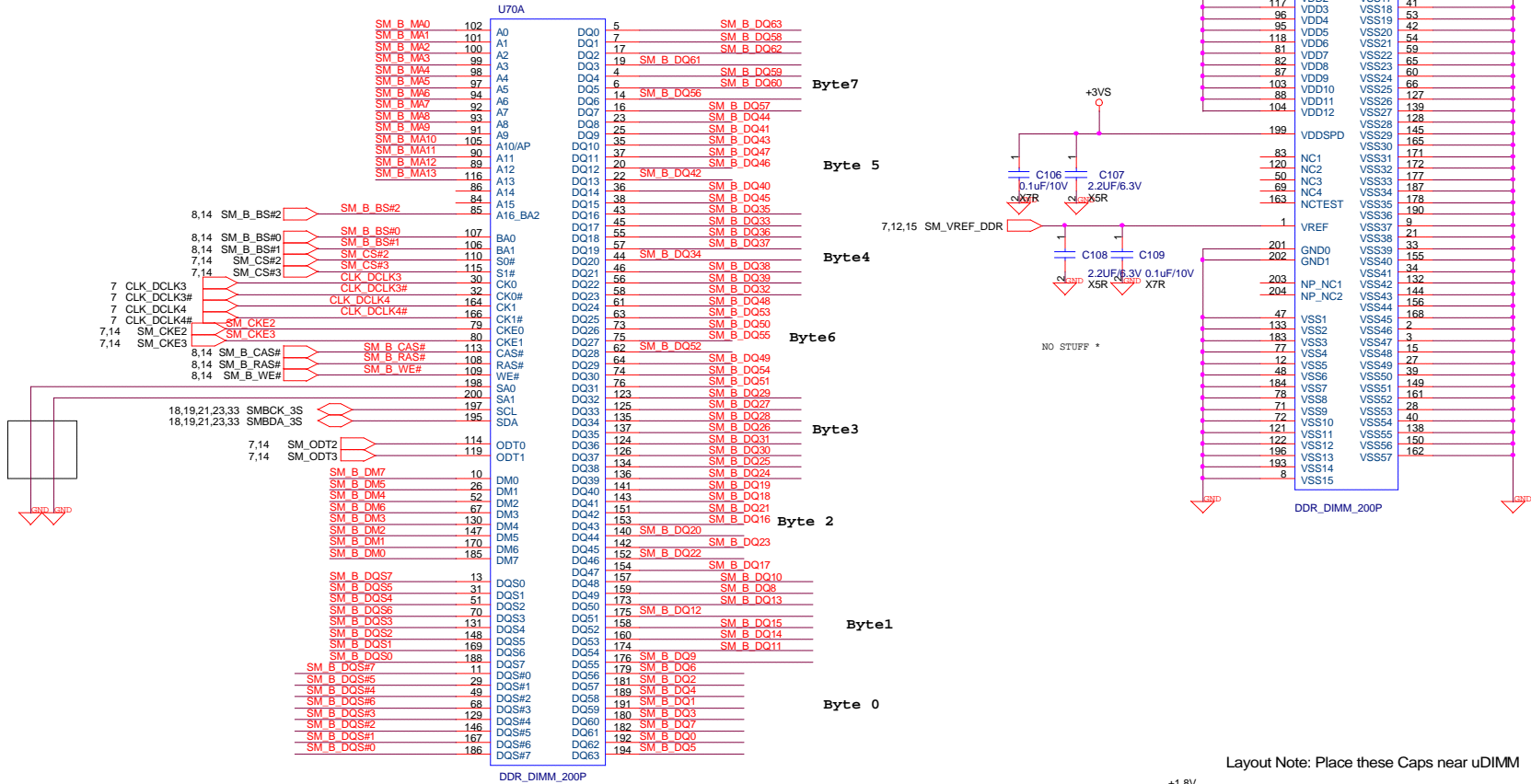
SM_B_MA[0:13] SM_B_MA[0:13] 8,14

SM_B_DQ[0:63] SM_B_DQ[0:63] 8

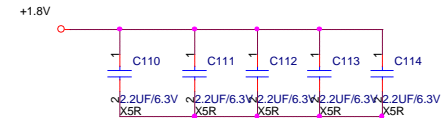
SM_B_DM[0:7] SM_B_DM[0:7] 8

SM_B_DQS[0:7] SM_B_DQS[0:7] 8

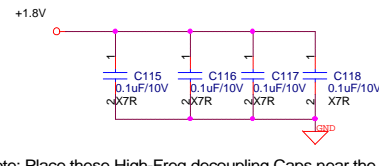
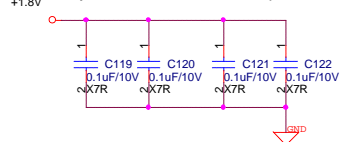
SM_B_DQS#[0:7] SM_B_DQS#[0:7] 8



Layout Note: Place these Caps near uDIMM

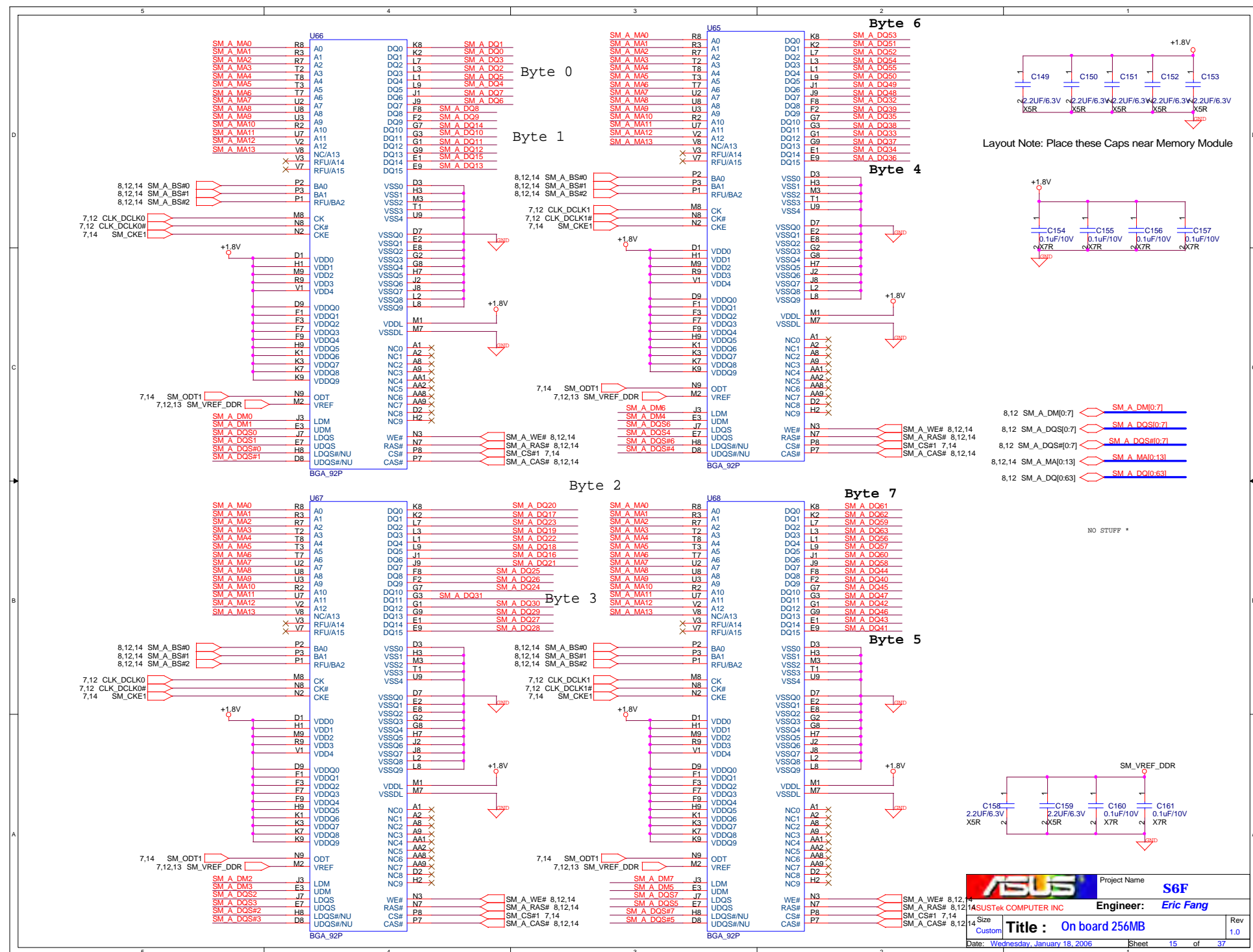


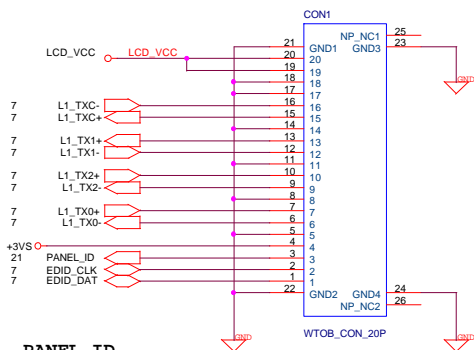
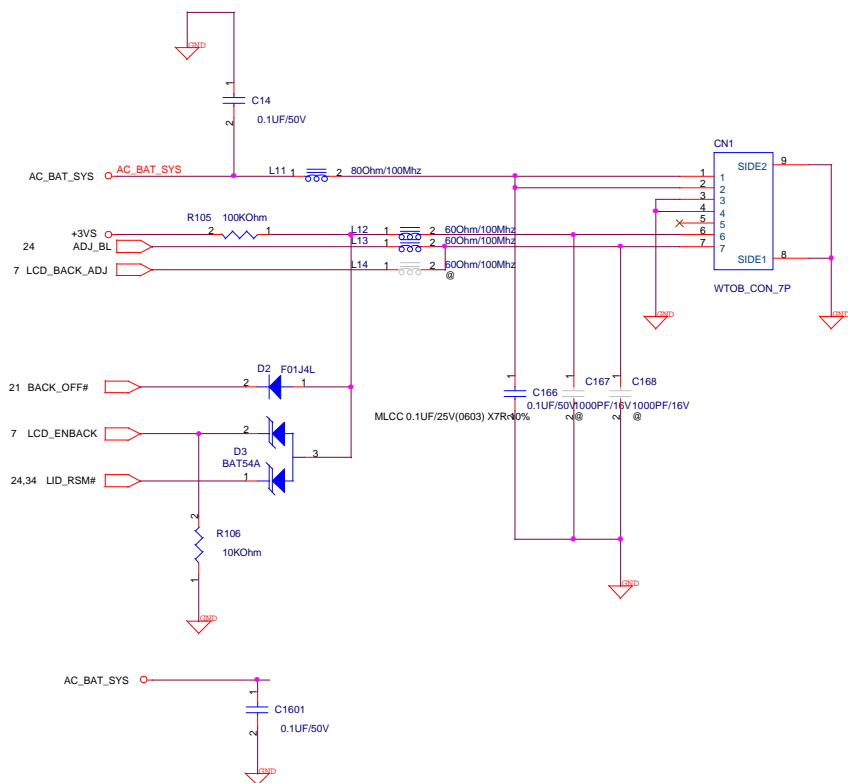
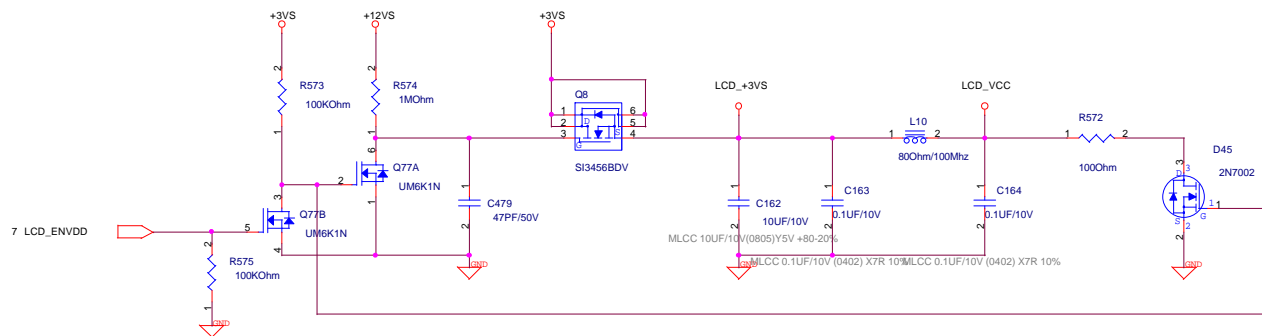
Layout Note: Place these Caps near uDIMM



Layout Note: Place these High-Freq decoupling Caps near the GMCH

		Project Name	
ASUSTek COMPUTER INC		S6F	
Size		Engineer: Eric Fang	
Custom		Title : DDR2 Micro DIMM	
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		Sheet 13 of 37	

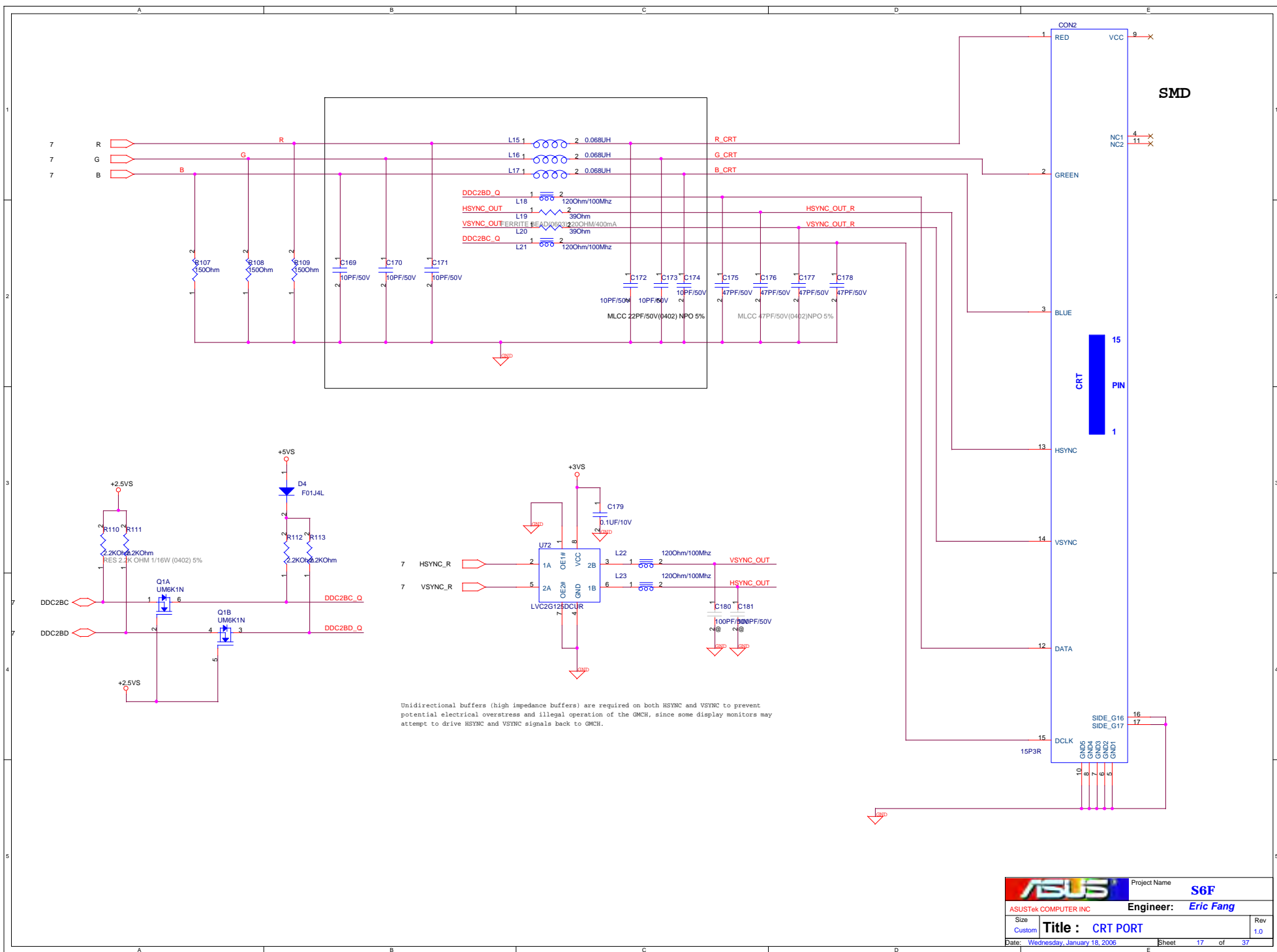


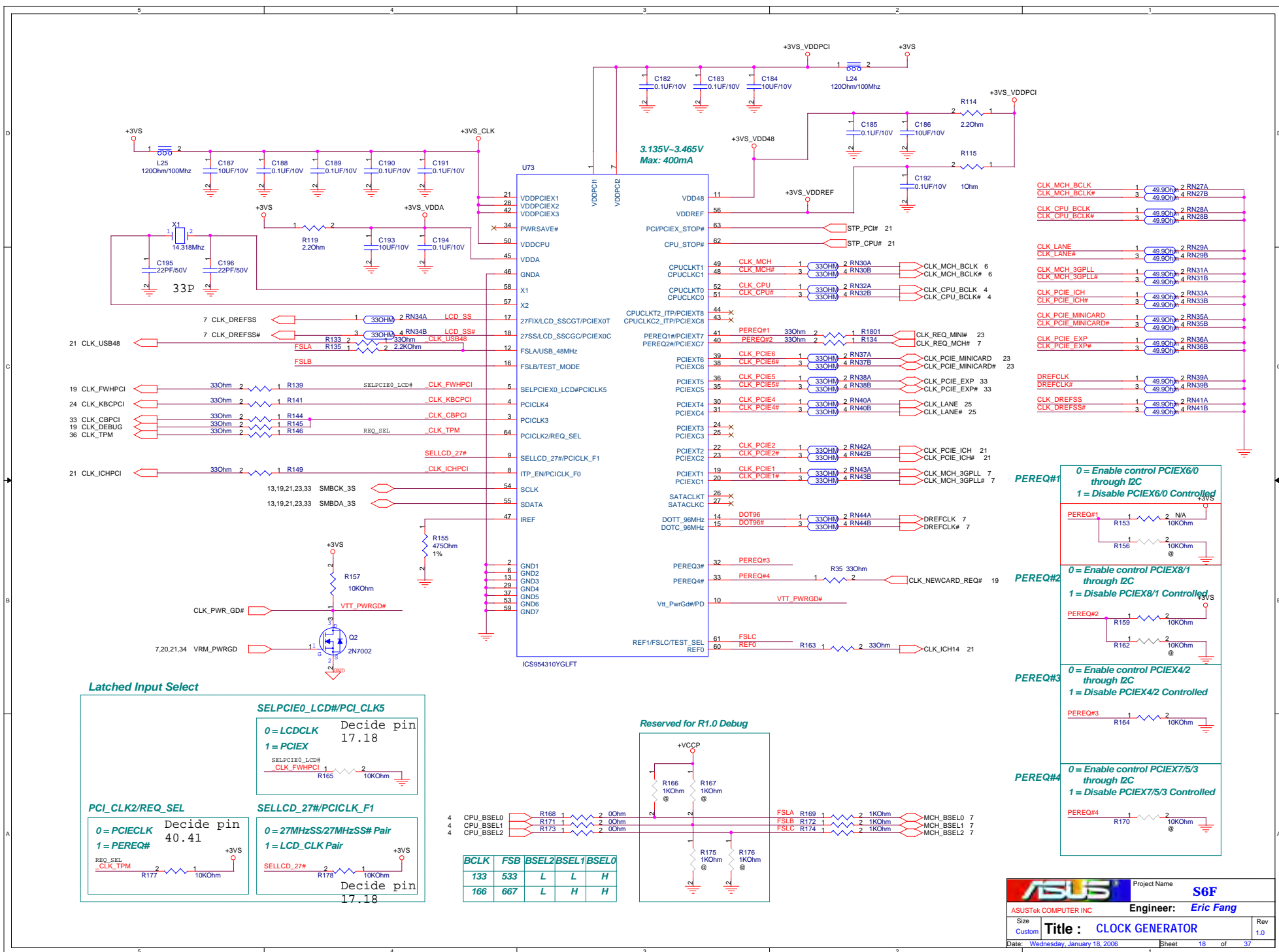


PANEL_ID
HI 10.6
LO 11.1

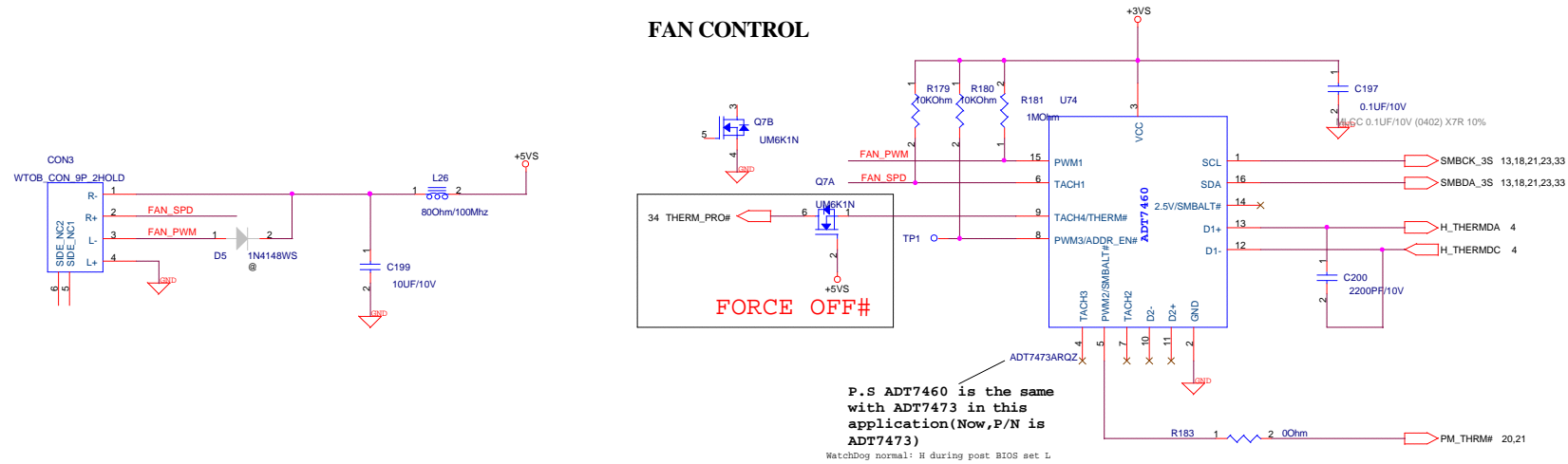
current rating = 0.3A

ASUS		Project Name	S6F
ASUSTek COMPUTER INC		Engineer:	Eric Fang
Size	Custom	Title :	LCD CON
Date:	Wednesday, January 18, 2006	Sheet	16 of 37
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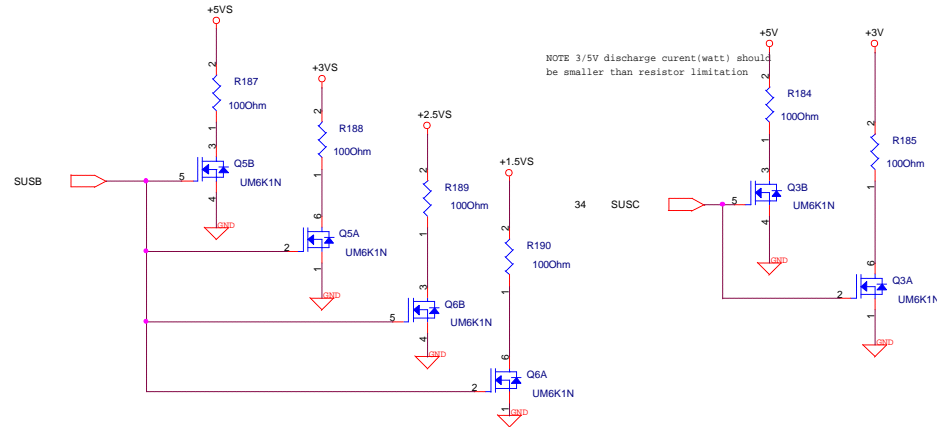




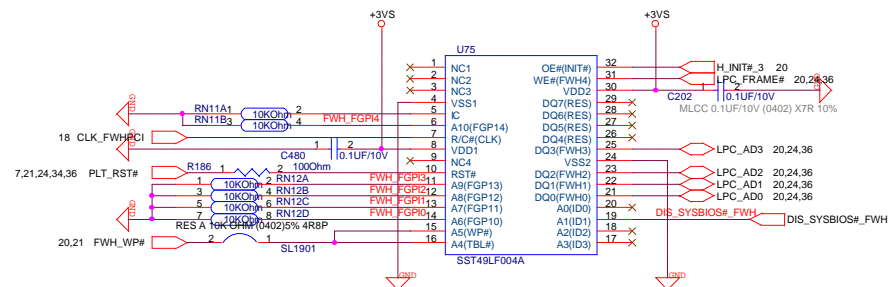
FAN CONTROL



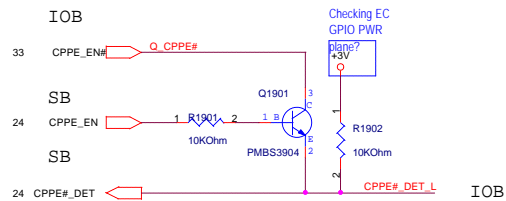
Discharge circuit for power fast down



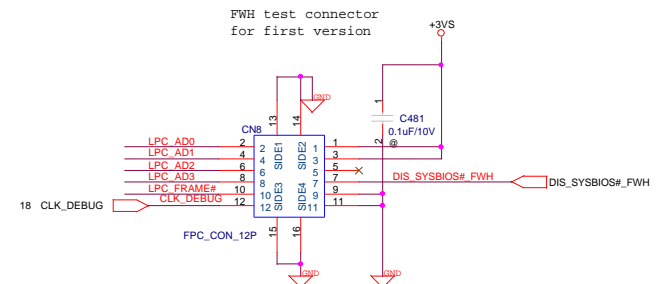
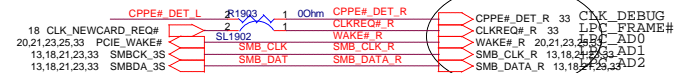
BIOS

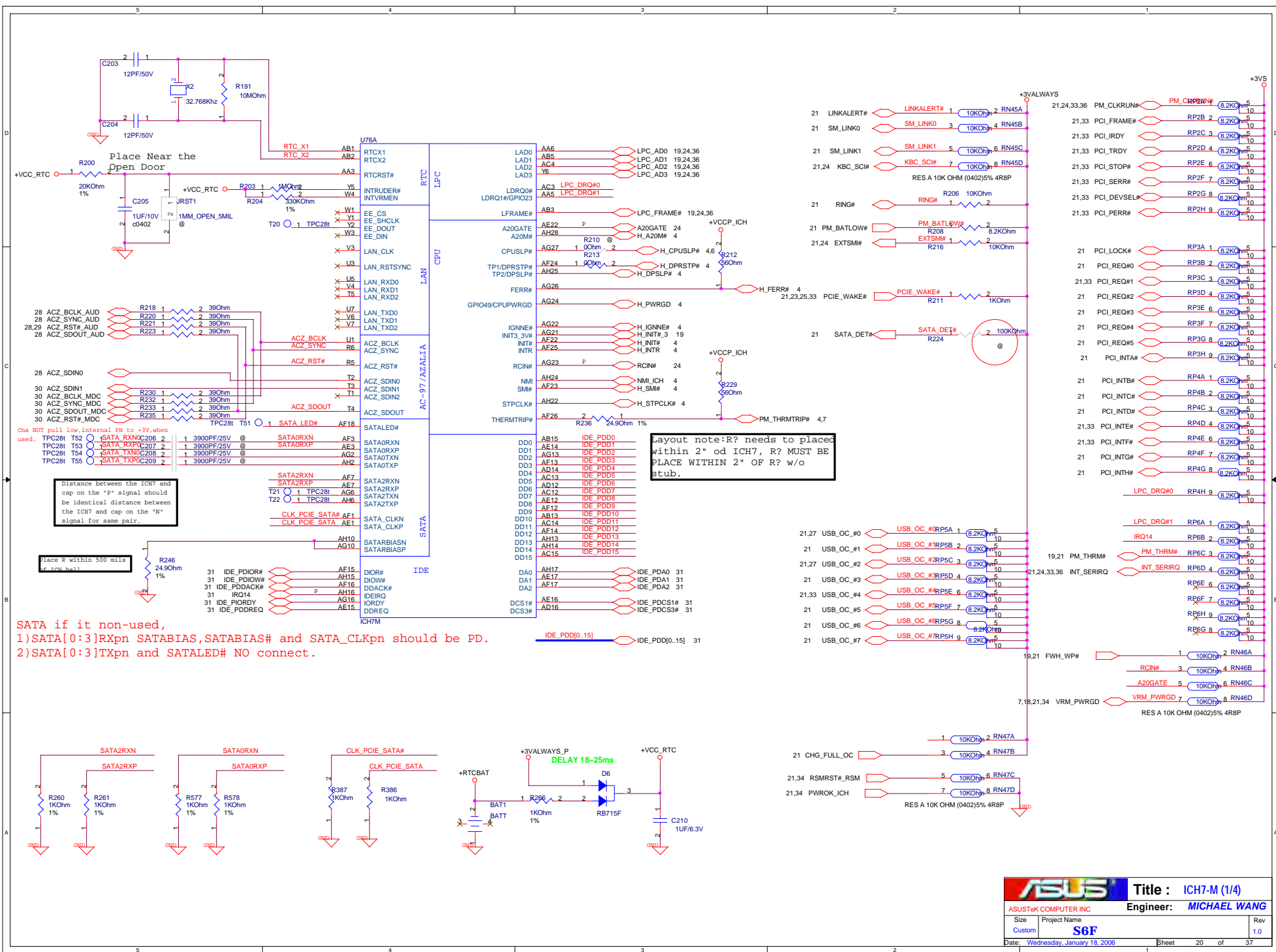


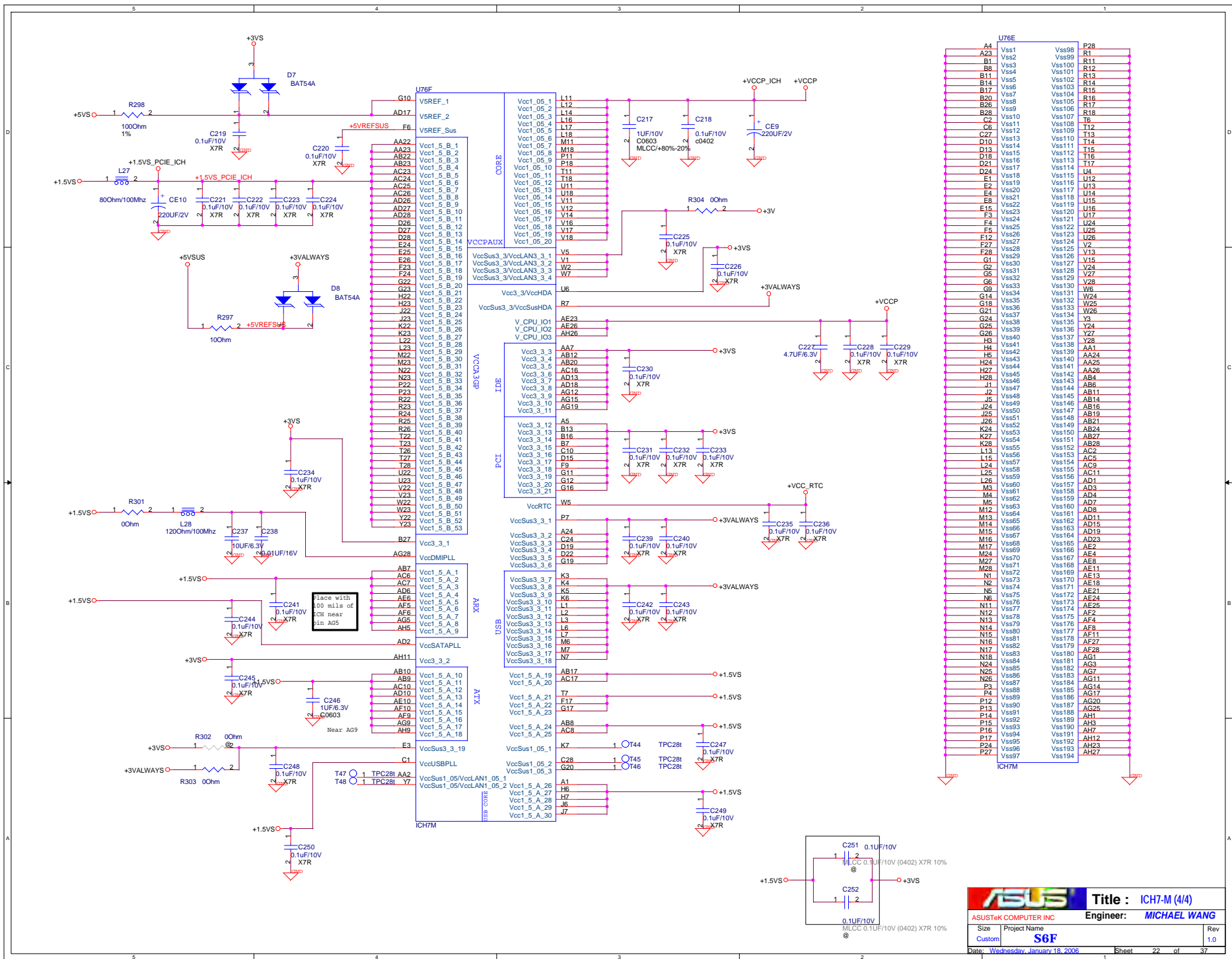
IOB



IOB





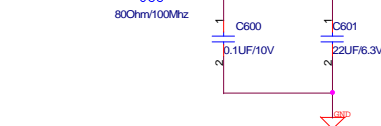


Average supply current
VDD33 103mA
AVDD18+EVDD18 198mA
VDD15 367mA

For Pin 16, 37, 46, 53, place one capacitor per pin.

40 mil

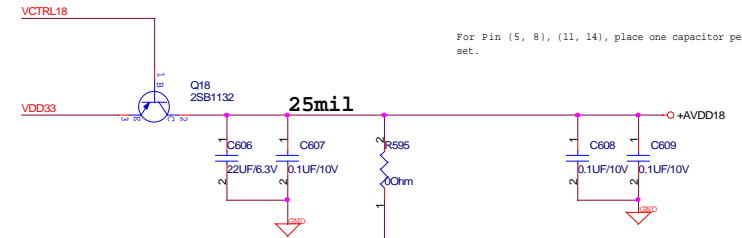
+3VALWAYS 1 2 40 mil



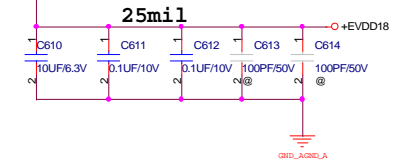
For Pin 2, 59, place one capacitor per pin.



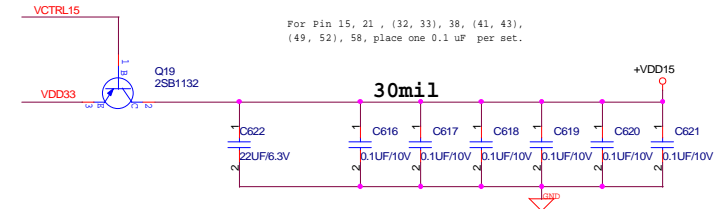
For Pin (5, 8), (11, 14), place one capacitor per set.

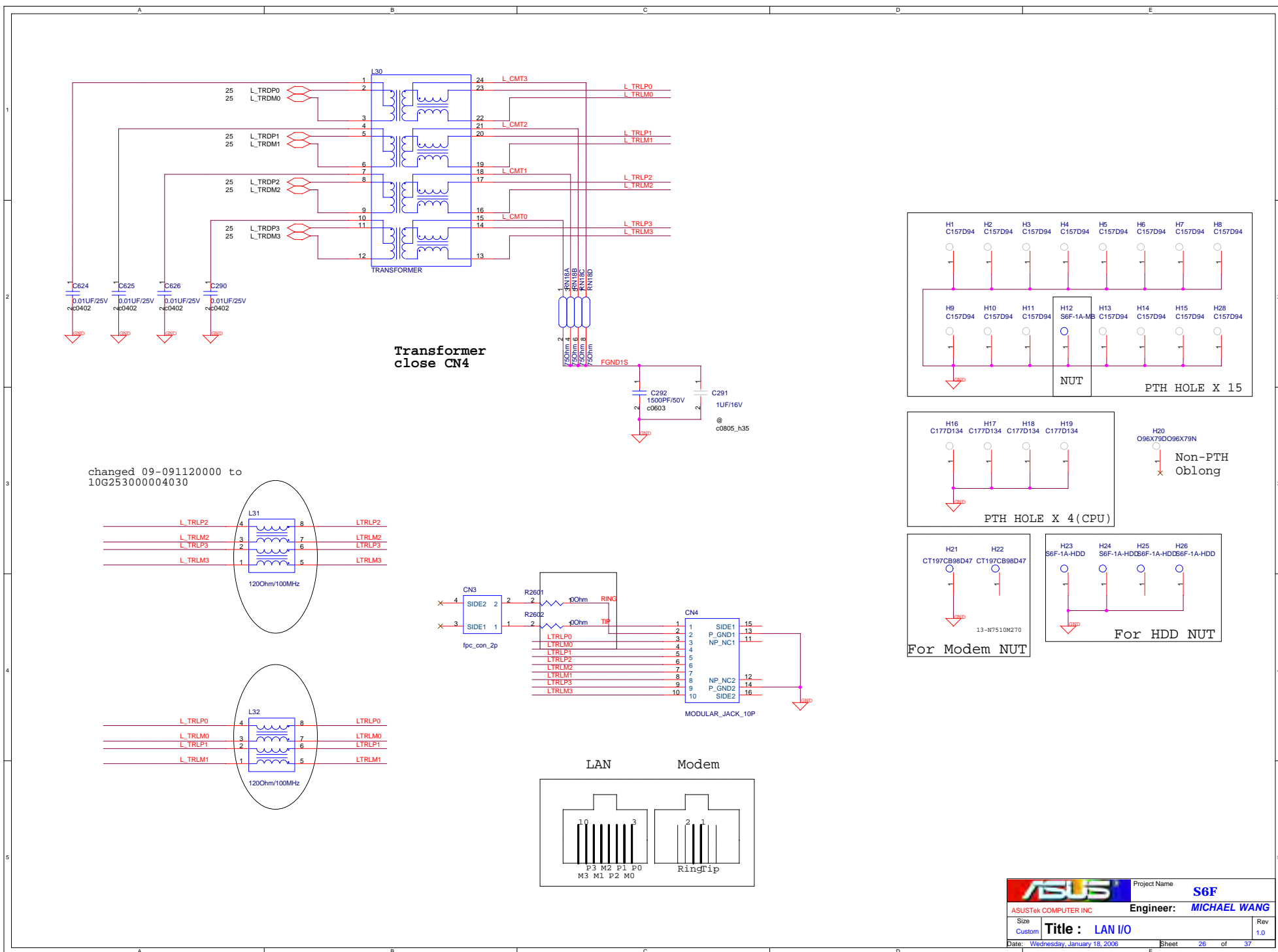


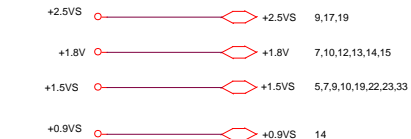
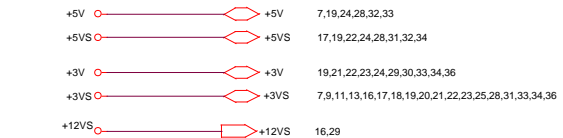
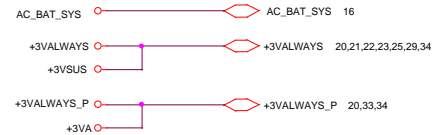
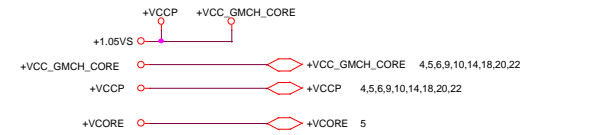
For Pin 22, 28, place one 0.1 uF and one 100 pF per pin.

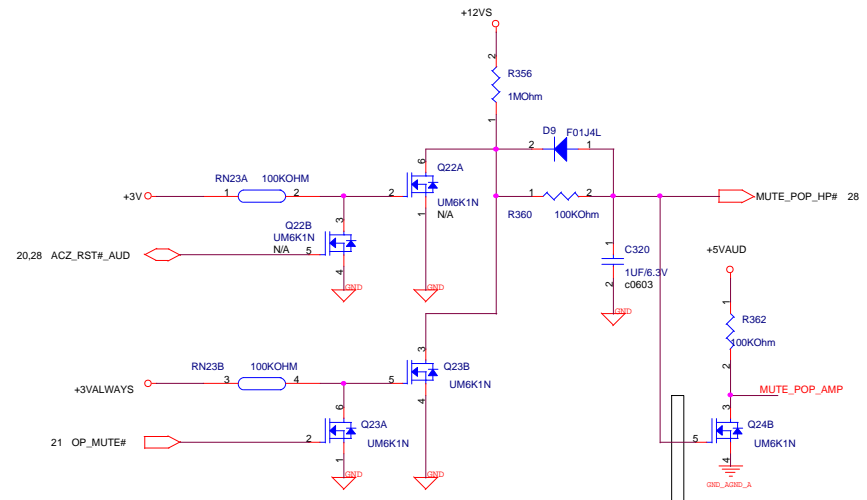
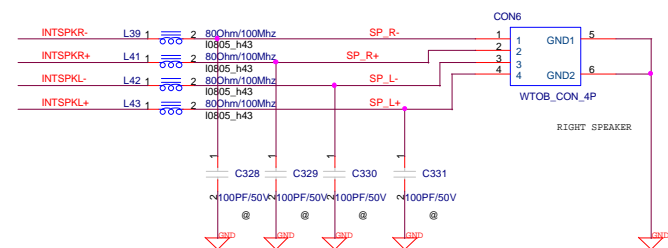


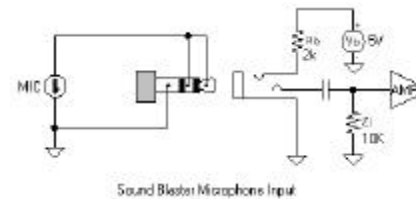
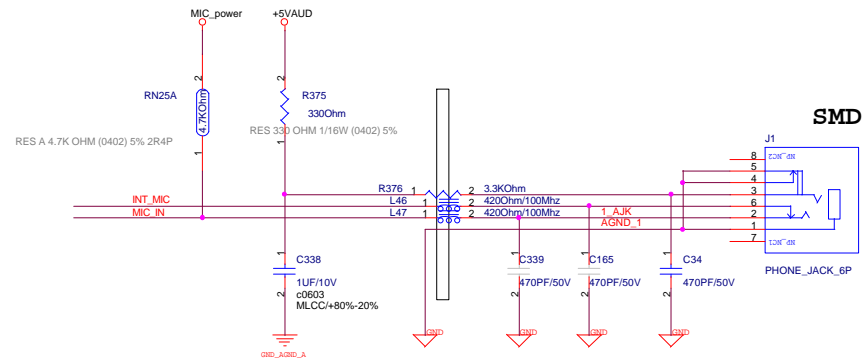
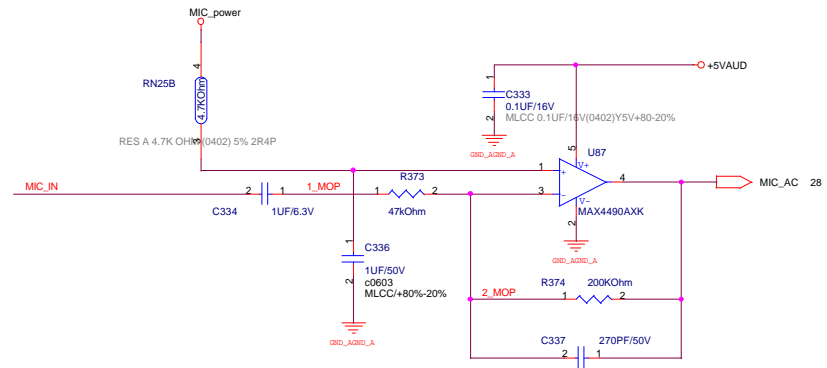
For Pin 15, 21, (32, 33), 38, (41, 43), (49, 52), 58, place one 0.1 uF per set.



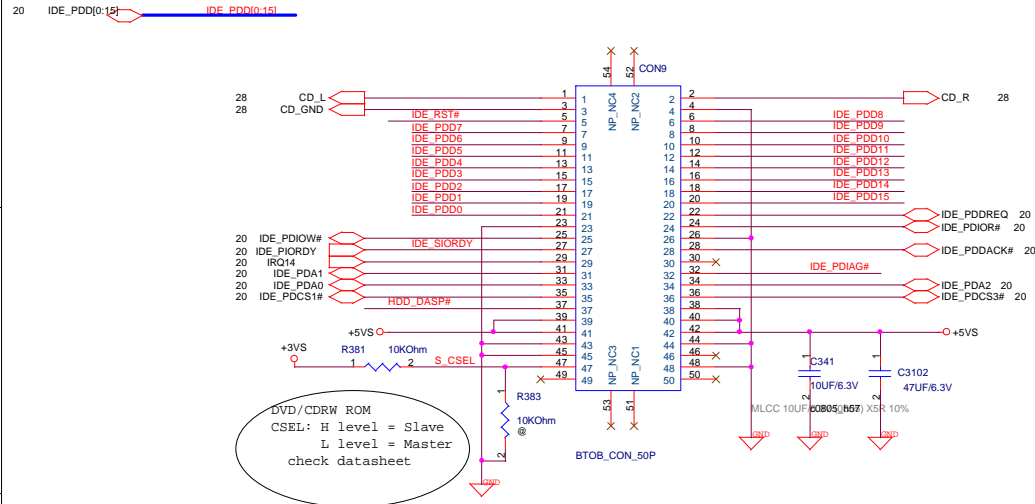




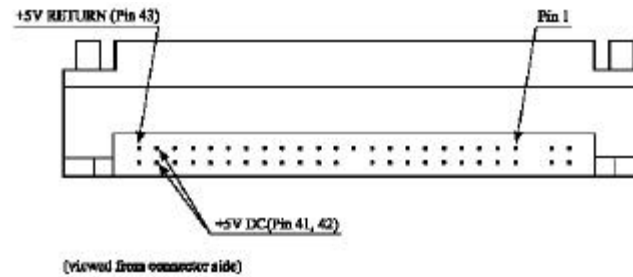
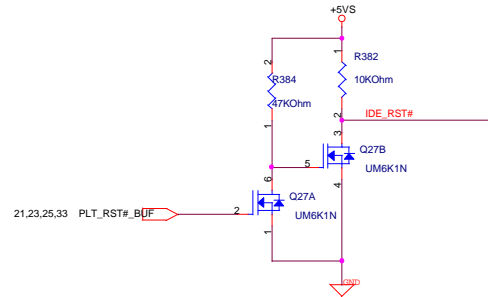
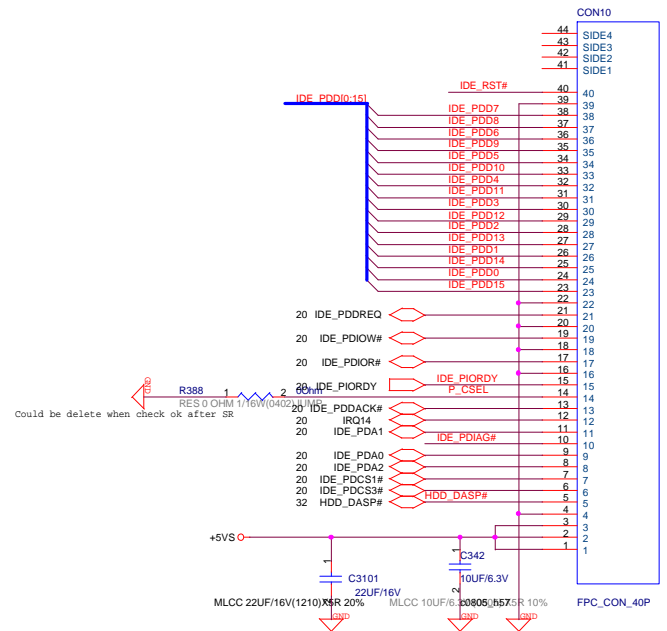
[illegible]



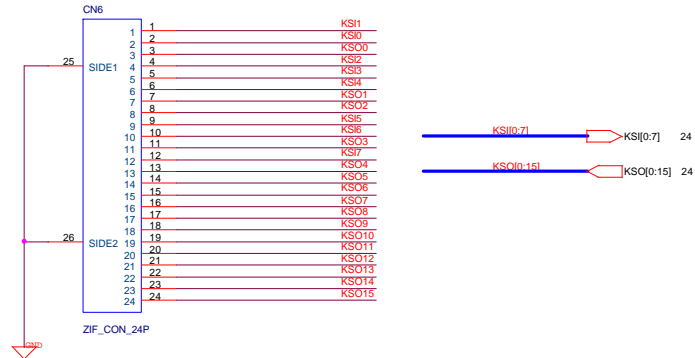
ODD CONNECTOR



HDD CONNECTOR

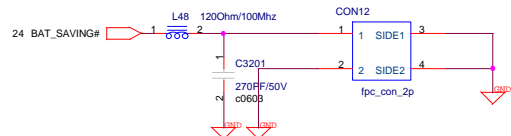


KEYBOARD CONN.

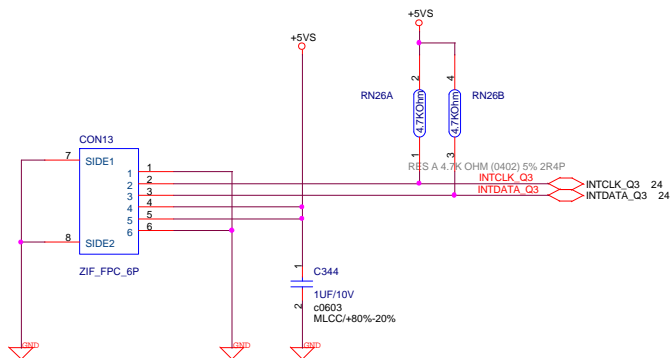


Follow J4A keyboard Matrix

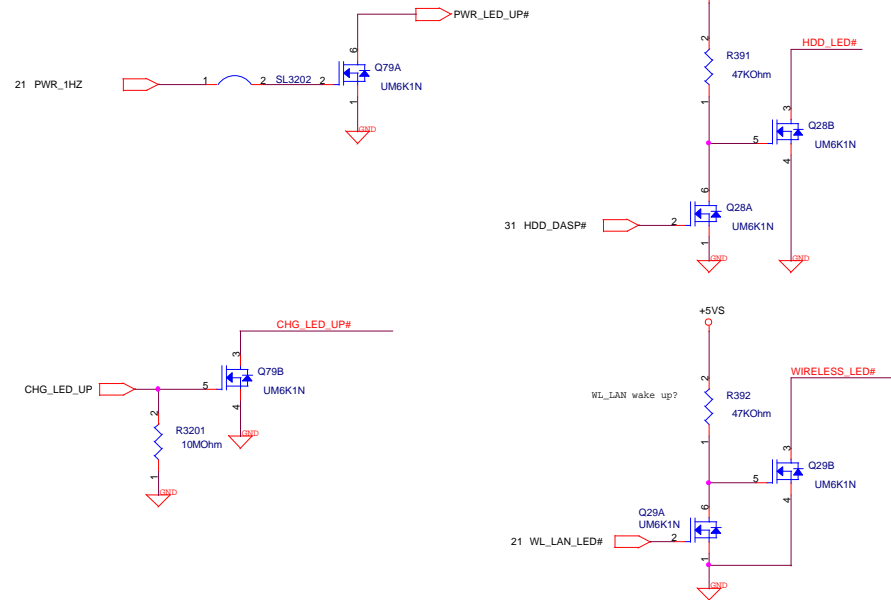
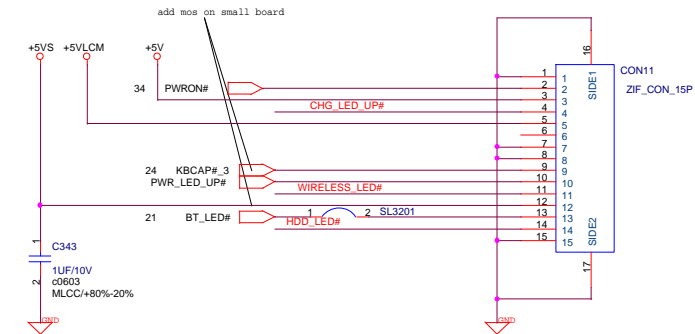
TO POWER4GEER SMALL BOARD



Touch PAD

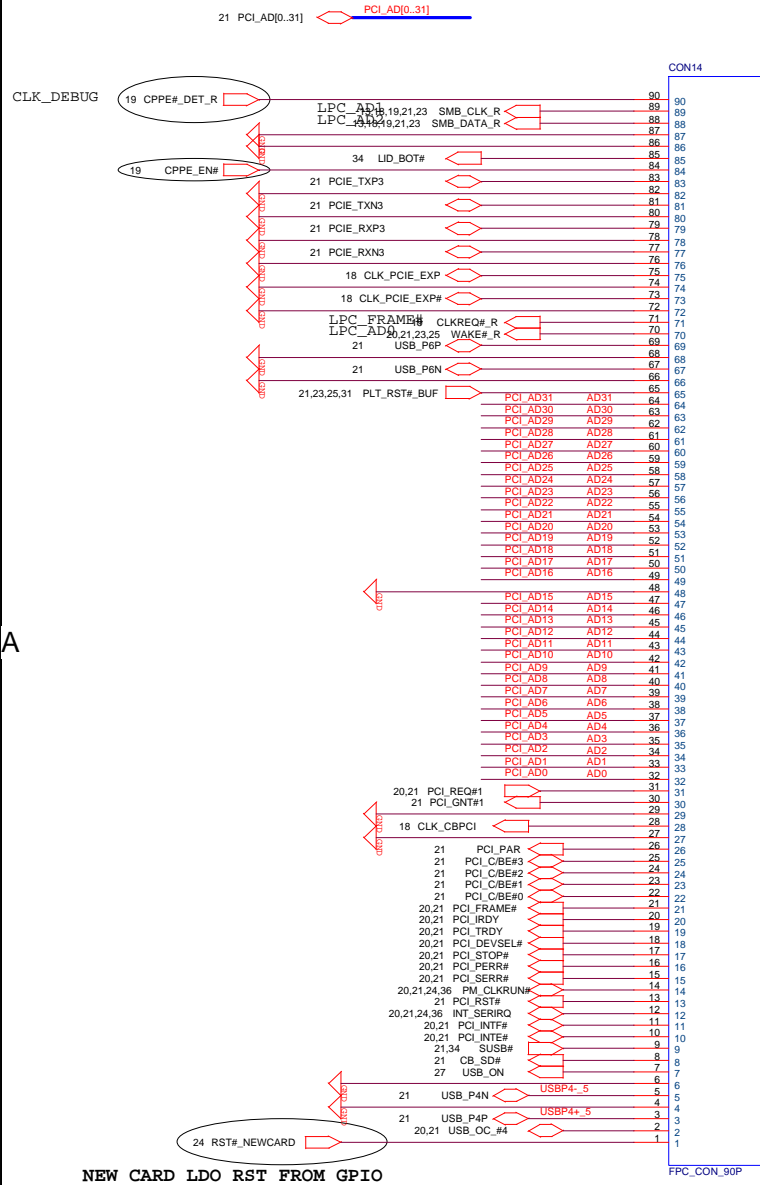


HotKey/PWRBT CON



ASUS		Project Name	S6F
ASUSTek COMPUTER INC		Engineer:	MICHAEL WANG
Size	Custom	Title :	DCIN Jack & PID & PCB_ID
Date:	Wednesday, January 18, 2006	Sheet	32 of 37
		Rev	1.0

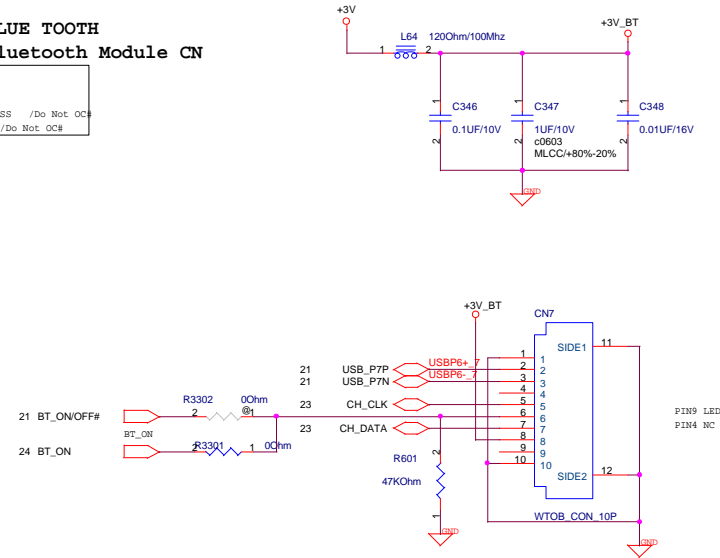
To I/O board connector (signal)



NEW CARD LDO RST FROM GPIO

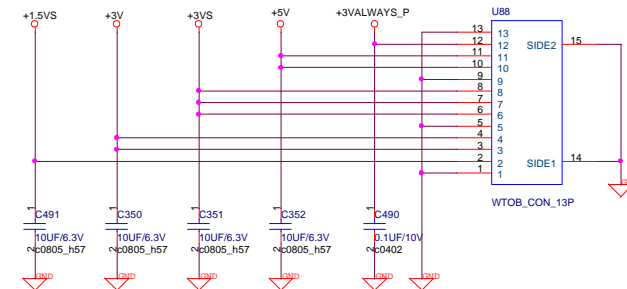
BLUE TOOTH Bluetooth Module CN

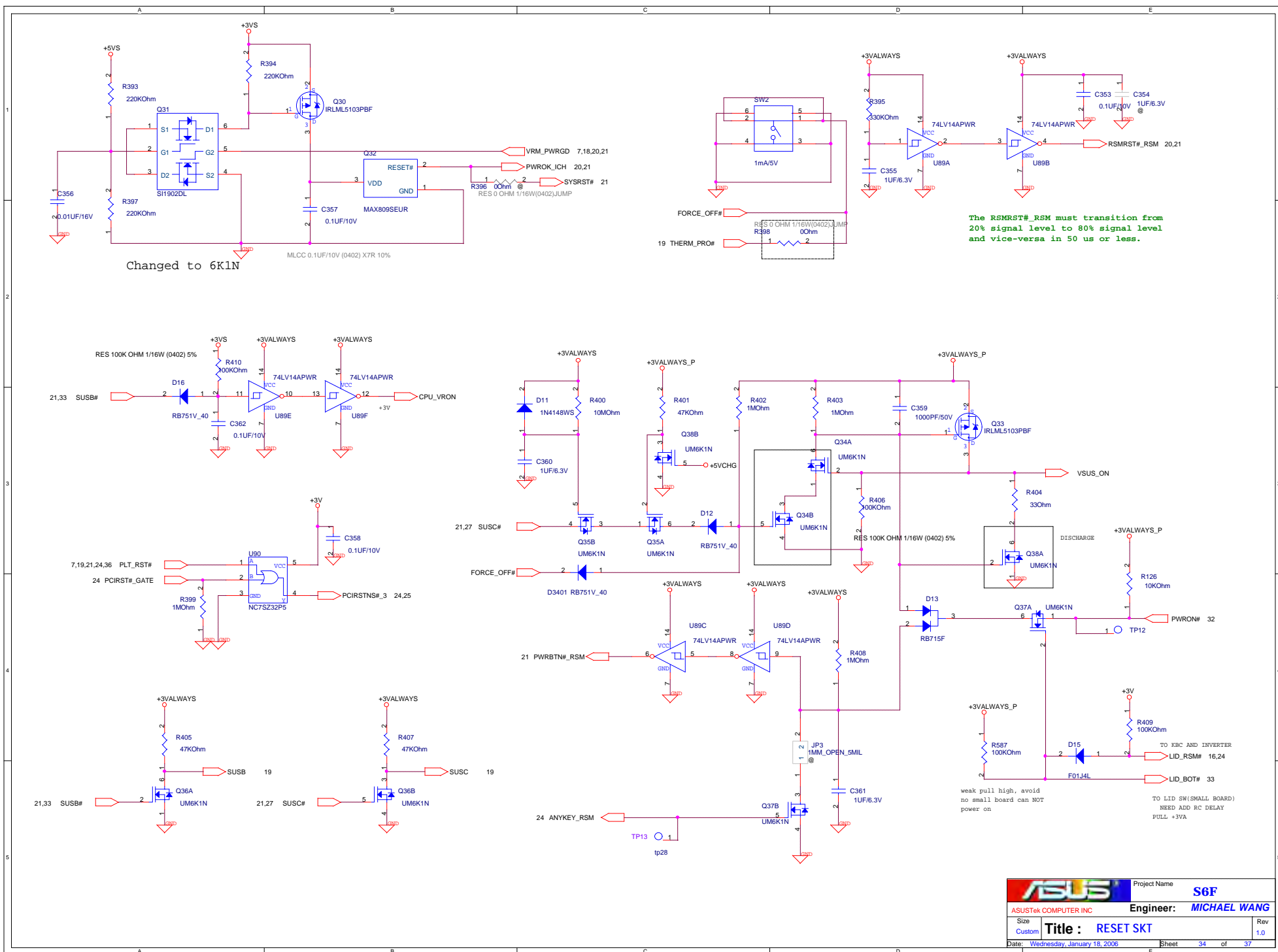
USB 0	USB
USB 2	USB
USB 4	USB
USB 6	EXPRESS /Do Not OC#
USB 7	BT /Do Not OC#



To I/O board connector (power)

Check with io board

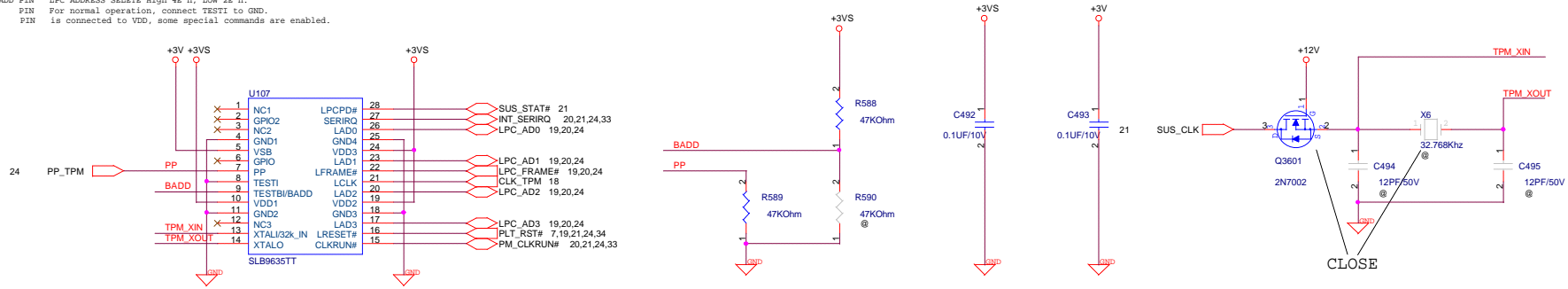


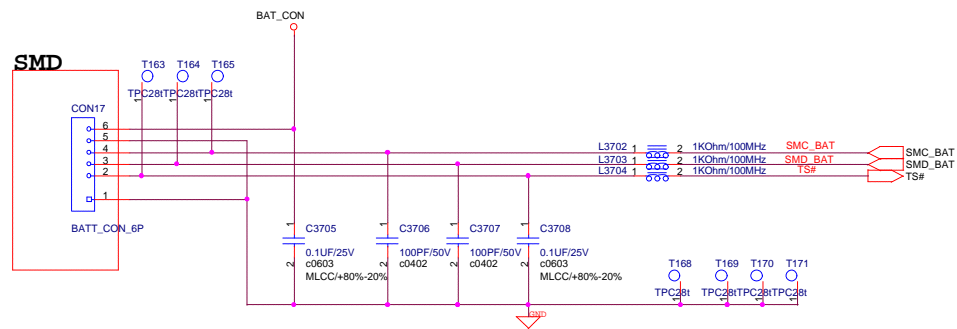
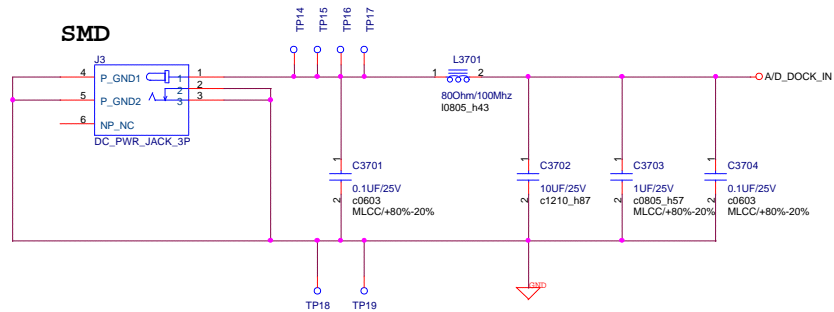


	5	4	3	2	1	
D						D
C						C
B						B
A						A
	5	4	3	2	1	

		Project Name	S6F
ASUSTek COMPUTER INC		Engineer:	Eric Fang
Size Custom	Title : Audio DJ		Rev 1.0
Date: Wednesday, January 18, 2006	Sheet	35	of 37

TESTBI/BADD PIN LPC ADDRESS SELETE High 4h, LOW 2h.
 TEST PIN For normal operation, connect TESTI to GND.
 PP PIN is connected to VDD, some special commands are enabled.





Release S6F R1.0 on AUG, 2005

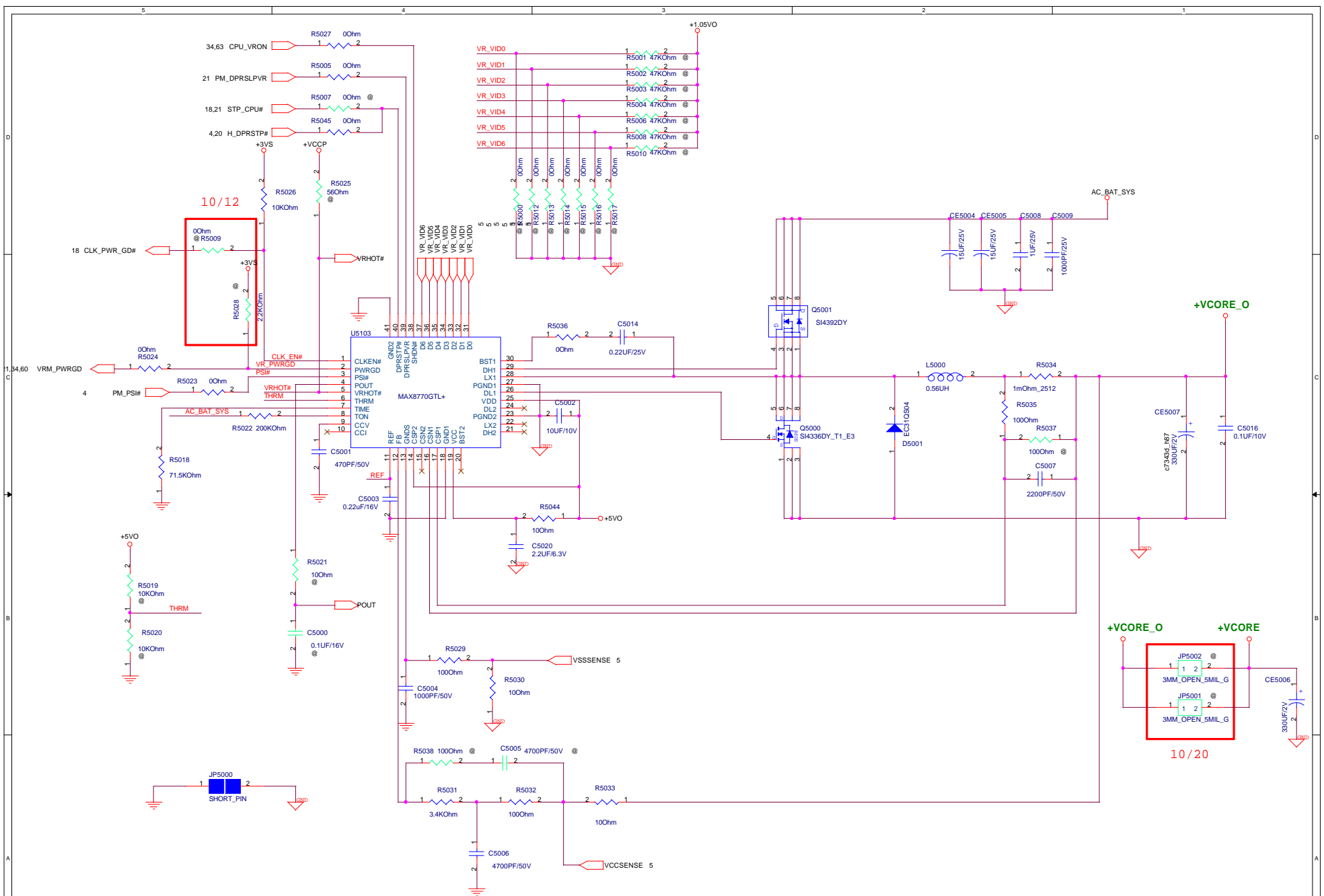
S6F R1.1 short pad footprint:
shortpin_sl

1. Delete assistance power led(for power on led delay), delete D49 D48 Q81 Q80 R591-R593 C496 and U92B in Page 36, and delete net PWRON_LED#.
2. Delete AUDIO DJ FUNCTION, delete D14 in page 34 and delete all coomponents in page 35.
Delete net SWDJ_EN#, PWR_DJ_ON#, DJ_SCAN AND DJ_SW_BTN#.
3. In page 4, to mount R16 56 Ohm for "can not boo tissue".
4. In page 16. modify LCD discharge circuit, replacemnet of diode by 2N7002, and we swap LCD con. pin defined for ME rotation CON 1.
5. In page 22, for +3VALWAYS leakage to +5V, we delete Q12, Q13, R299 and R300. And R297 pull high to +5VSUS.
6. In page 25, R599 pull high to +3Vs for lan con not wake-up from S3
7. In page 27, we replacemant of G5250 by G5251, u80 u81.
8. In page 31, we delete RN49 and RN50, add R124&R125.WIRE-OR IDE_PDIAG# AND IDE_SDIAG# ,WIRE-OR HDD_DASP# AND CDROM_DASP#, FOR HDD AND CD CAN NOT WORK AT THE SAME TIME.
9. In page 33, conl3 connector changed 6pin for 15pin for remove audio DJ.
10. In page 34, add R126 and pull high +3VALWAYS_P for PWR_BTN# can not work stable.
11. In page 20&36, X2&X6 07G010313271 CM519 32.768000KHZFTR instead of ORIGINAL.(x6 OPTION)
12. Added Debug circuit for Express debug card.
13. In page 25, audio codce changed RTL660 for ADI 1986 .
14. In page 18, Added R1801 for MINICARD CLK_REQ .

S6F R2.0

15. In Page 24, Q14 changed to 2N7002, and correct the route batsel_2p# throght Q14(nand get)to U77.35.(Not barsel_3s# to U77.37. U77.37 need pull down resistor R2402(1M Ohm)
16. In page 24, for S3 resume issue, reserve a BT ON route from EC(U77.22) and R3301 R3302.
(added R3301 R3302 and net BT_on from EC)
17. In page 32&24, for deleted TP_led function, we deleted Q14B.refer item 15.
18. In page 12, added c1201 and c1202 on +1.8V.
19. In page34, reset circuit modify, R395 and C355 close to U89 and added D3401 to avoid restart itself after push reset botton.
20. In page36, added Q3601 to replase R608 to avoid +3Va(susclock) leakage to +3V.
21. In page 19&33, deleted debug citcuit of PCIE, delete ic1901, c1901 and s13301
22. In page 26, LAN connector change ner part, and added R2601 R2602 for EMI
23. In page 37, DC_IN CON changed new part
24. In page 32, added R3201 pull low CHG_LED_UP to avoid indetermination state.
25. Update new foorprint of JP and short pad for GA process.
26. In page 32, internel speaker route replacemant of PIN 39&41 by Pin 35&36 to avoid non-pcbeep to speaker.
27. In page 16,added C1601 for EMI
28. C163 change Net into LCD_+3VS
29. N19145985 reserve 1pcs cap.

		Project Name	S6F
ASUSTeK COMPUTER INC		Engineer:	MICHAEL WANG
Size	Title : History		Rev
C			1.0
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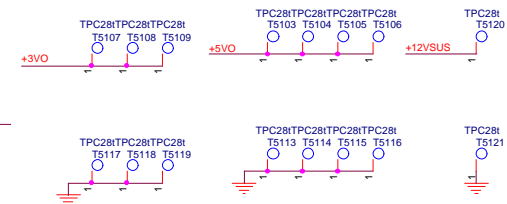
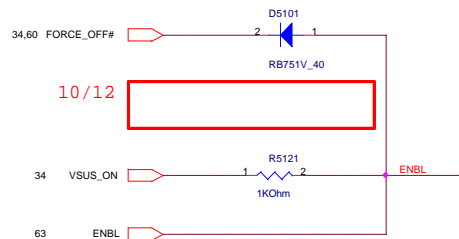
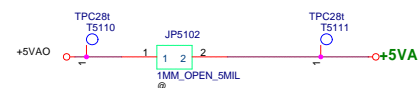
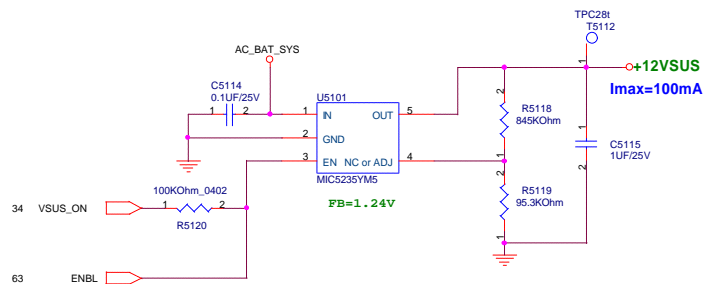
PROJECT: S6F

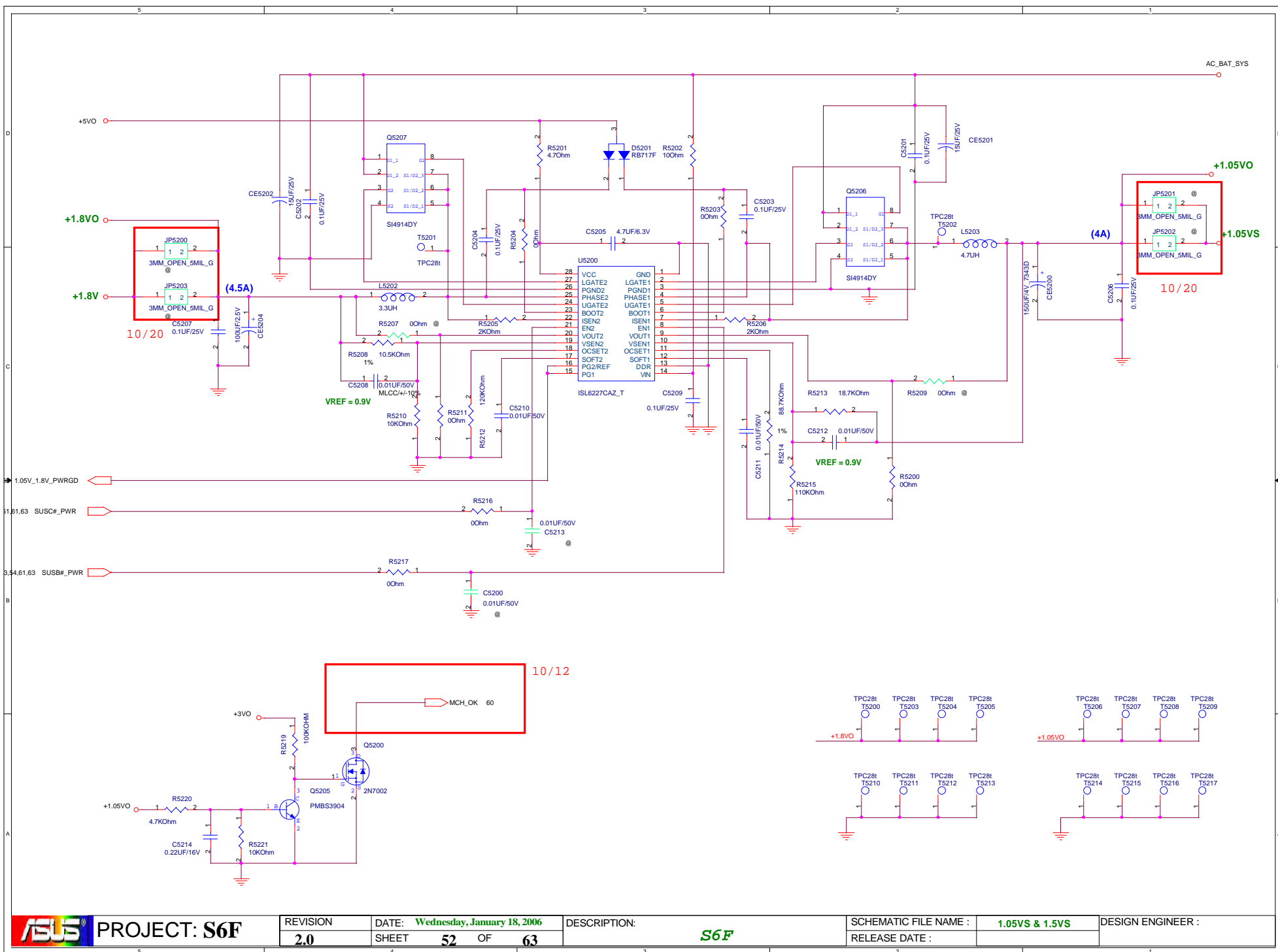
REVISION: 2.0
DATE: Wednesday, January 18, 2006
SHEET 50 OF 63

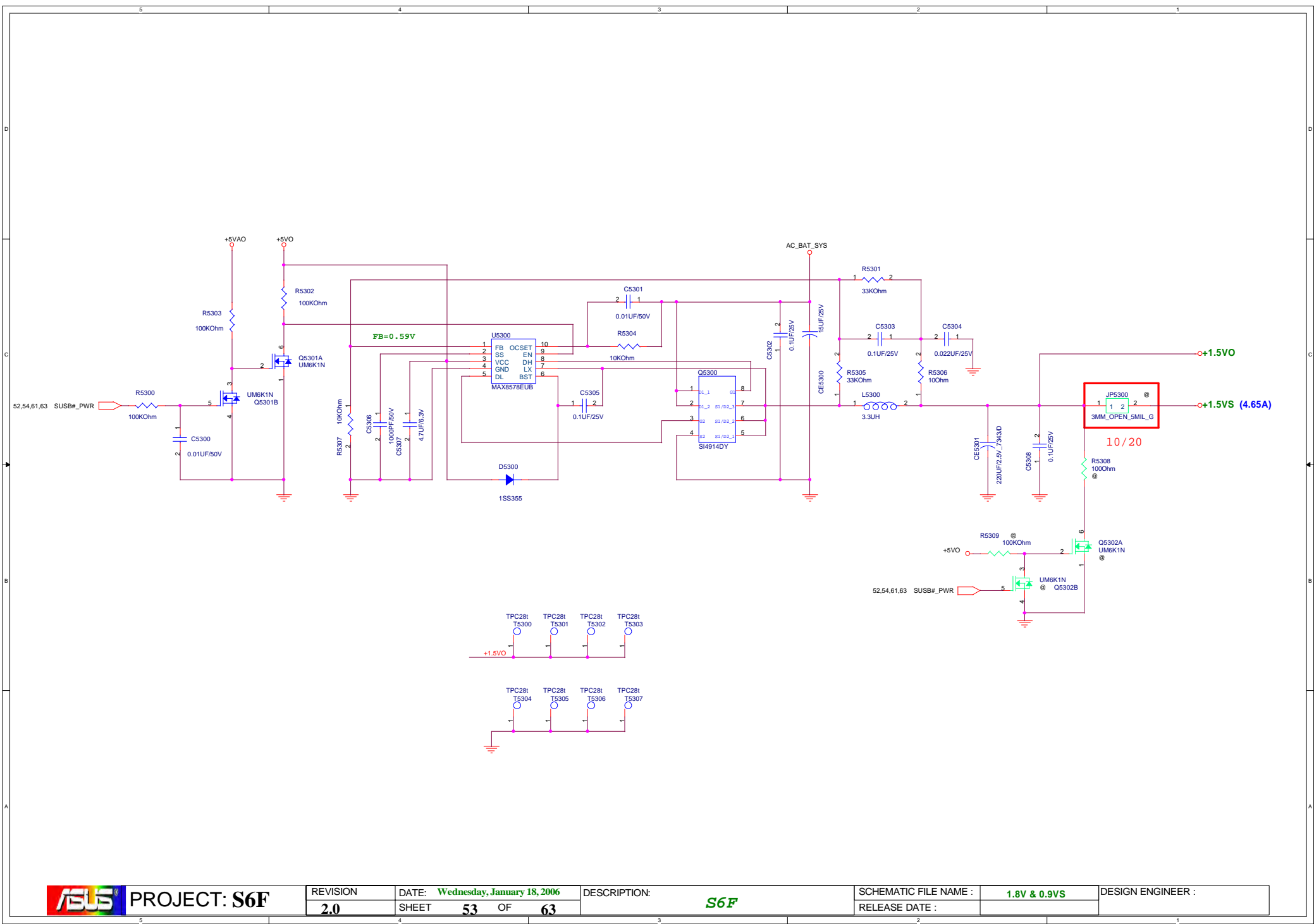
DESCRIPTION: S6F

SCHEMATIC FILE NAME : Vcore Power
RELEASE DATE :

DESIGN ENGINEER :







PROJECT: S6F

REVISION
2.0

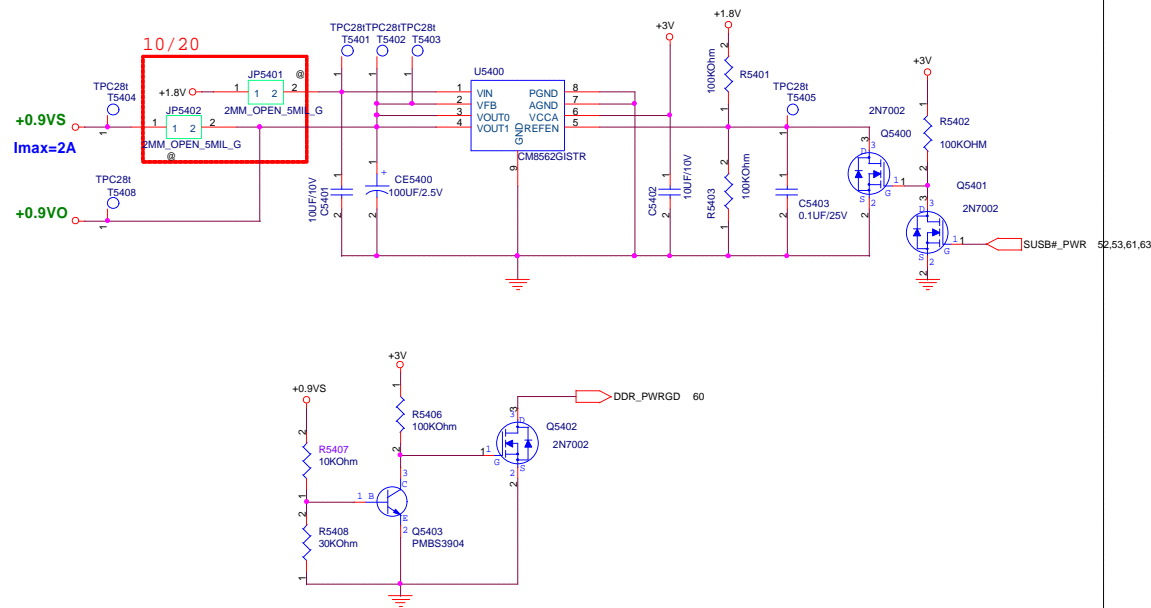
DATE: Wednesday, January 18, 2006
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DESCRIPTION:
S6F

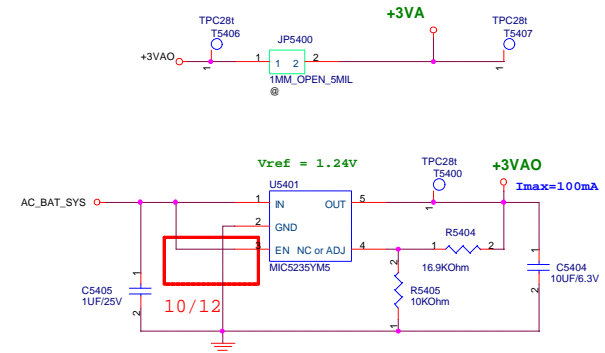
SCHEMATIC FILE NAME : 1.8V & 0.9VS
RELEASE DATE :

DESIGN ENGINEER :

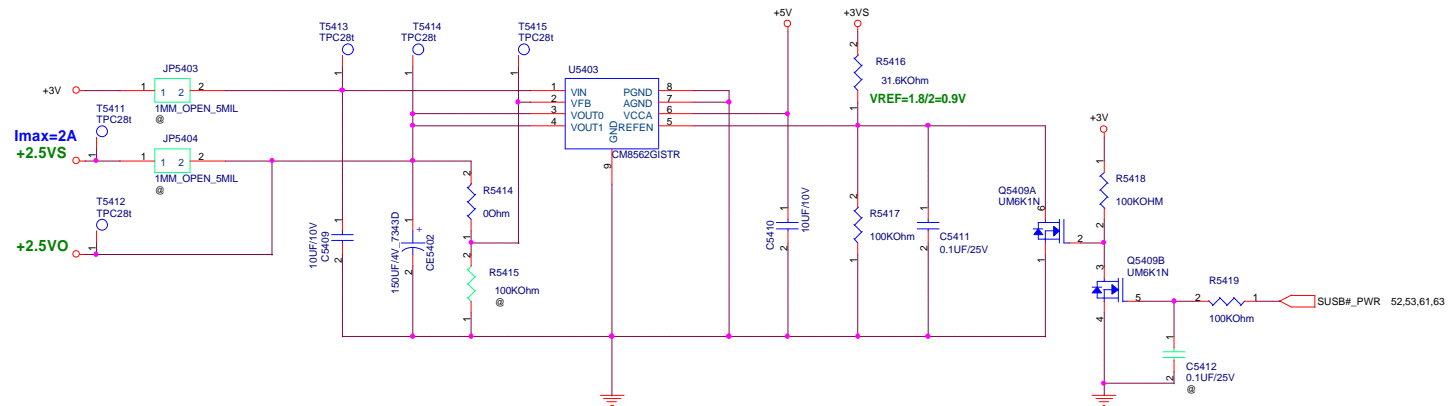
DDR-->VTT



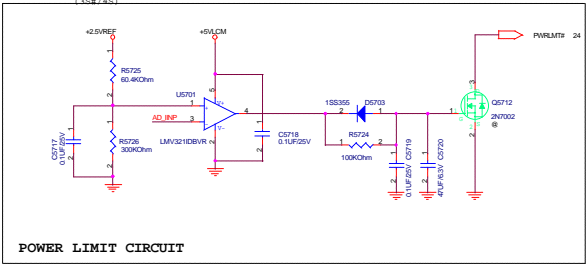
+3VAO



+2.5VS

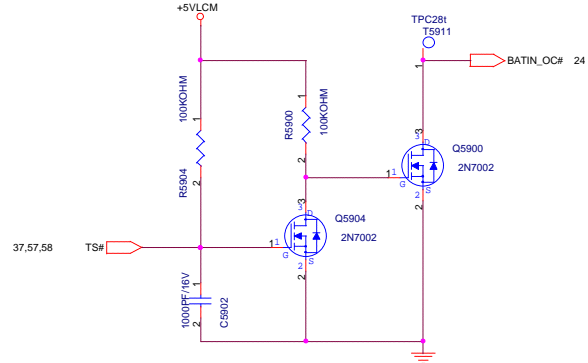


5		4		3		2		1	

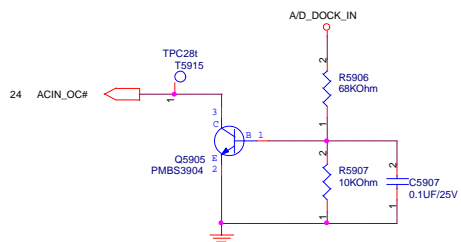


[illegible]

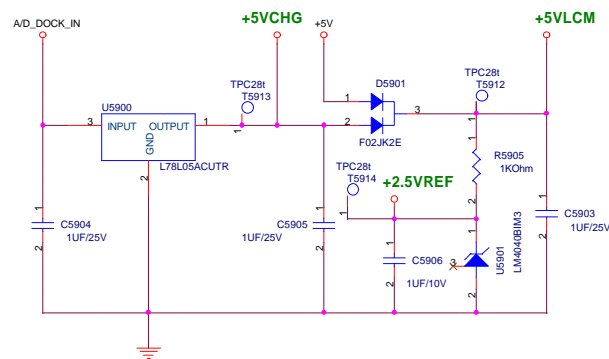
BATTERY IN DETECT



ADAPTER IN DETECT

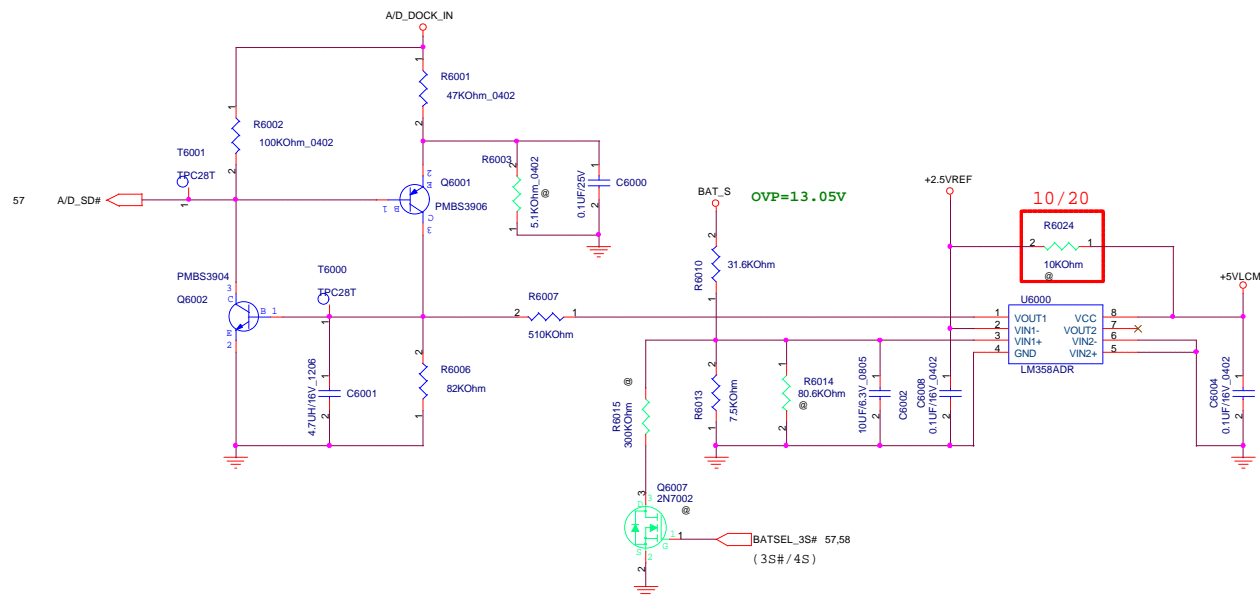


+5VLCM, +5VCHG & +2.5VREF

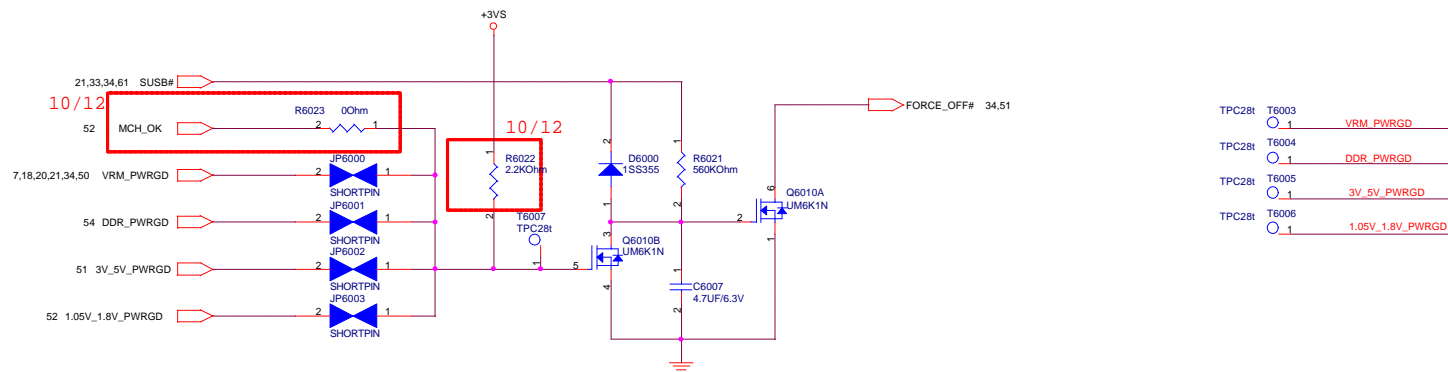


BATTERY A/D_SD# (OVP)

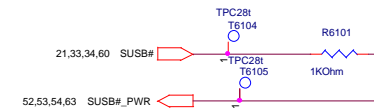
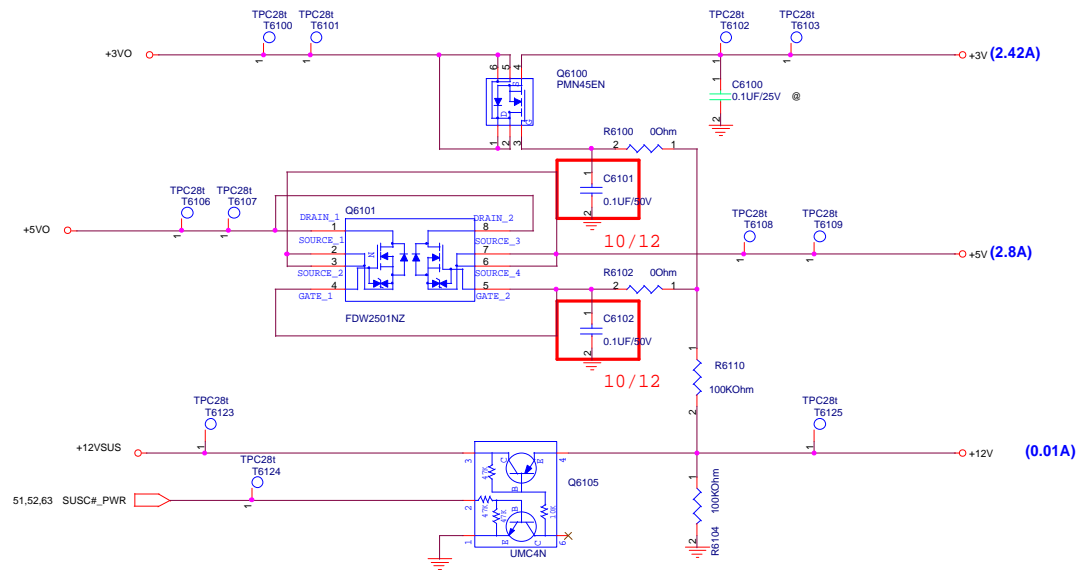
10/12



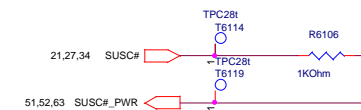
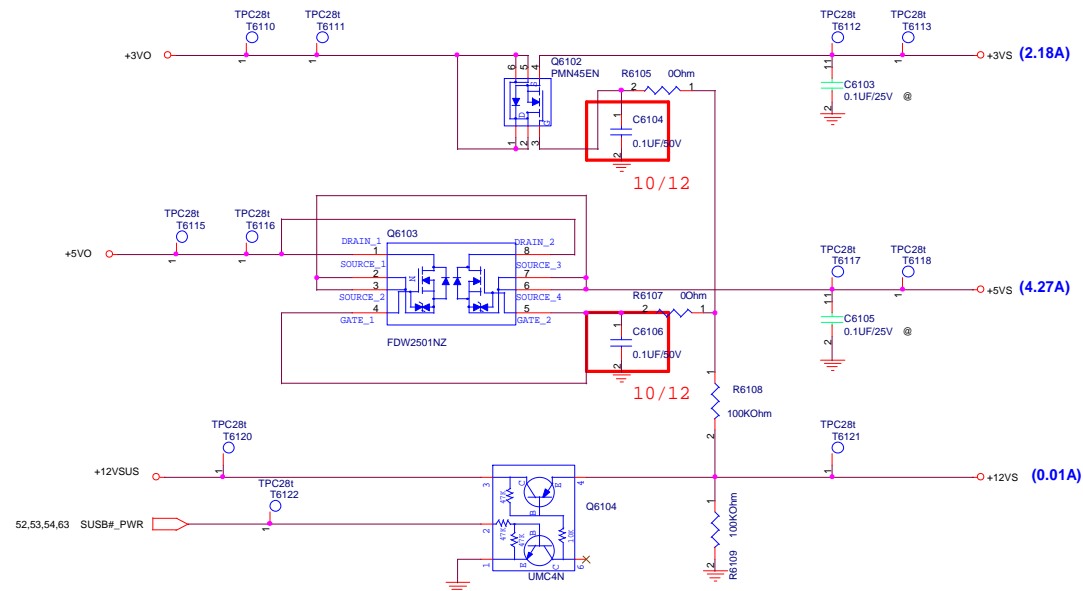
POWER GOOD DETECTOR

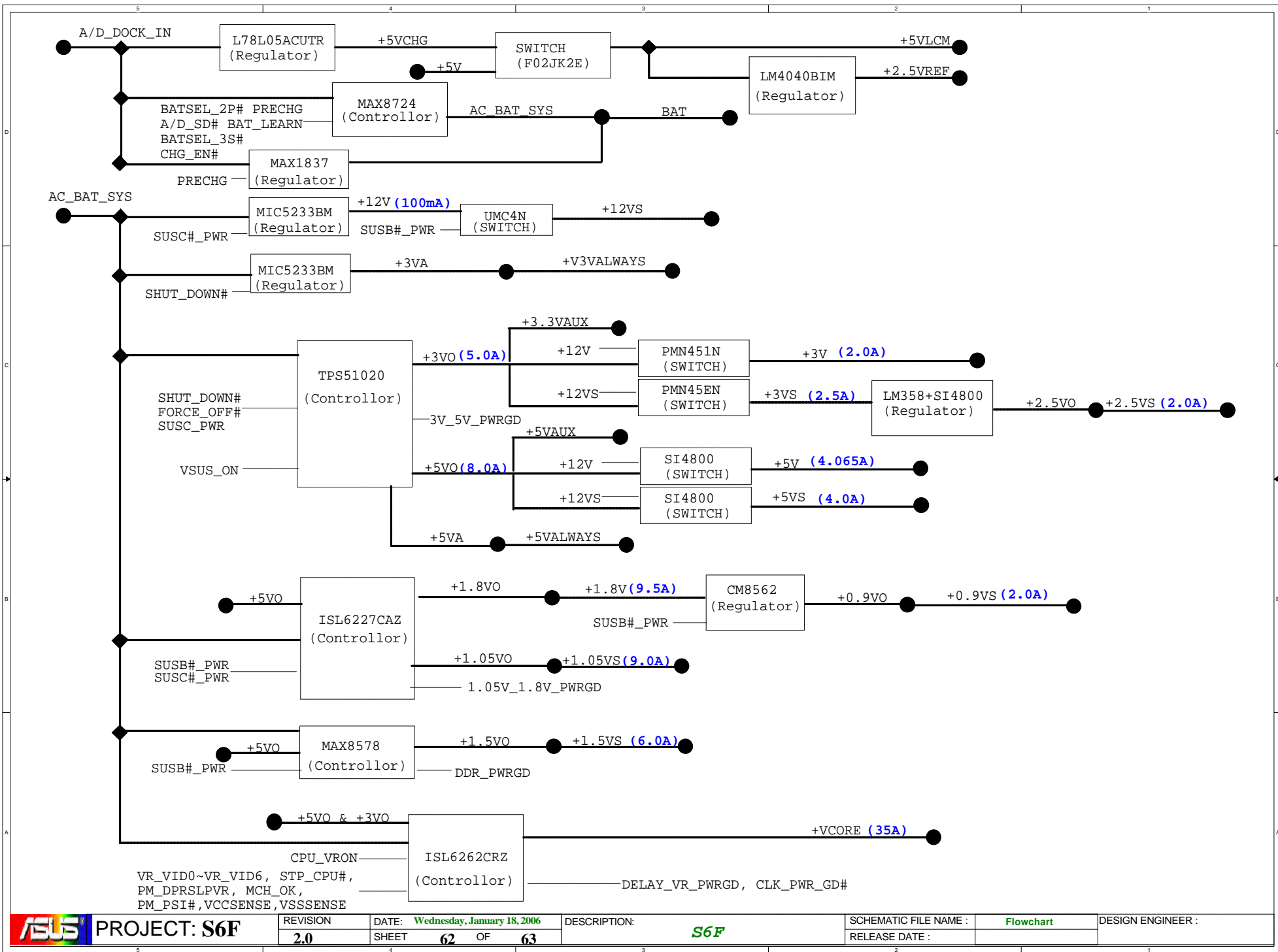


SUSC#_PWR POWER



SUSB#_PWR POWER





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DESCRIPTION:

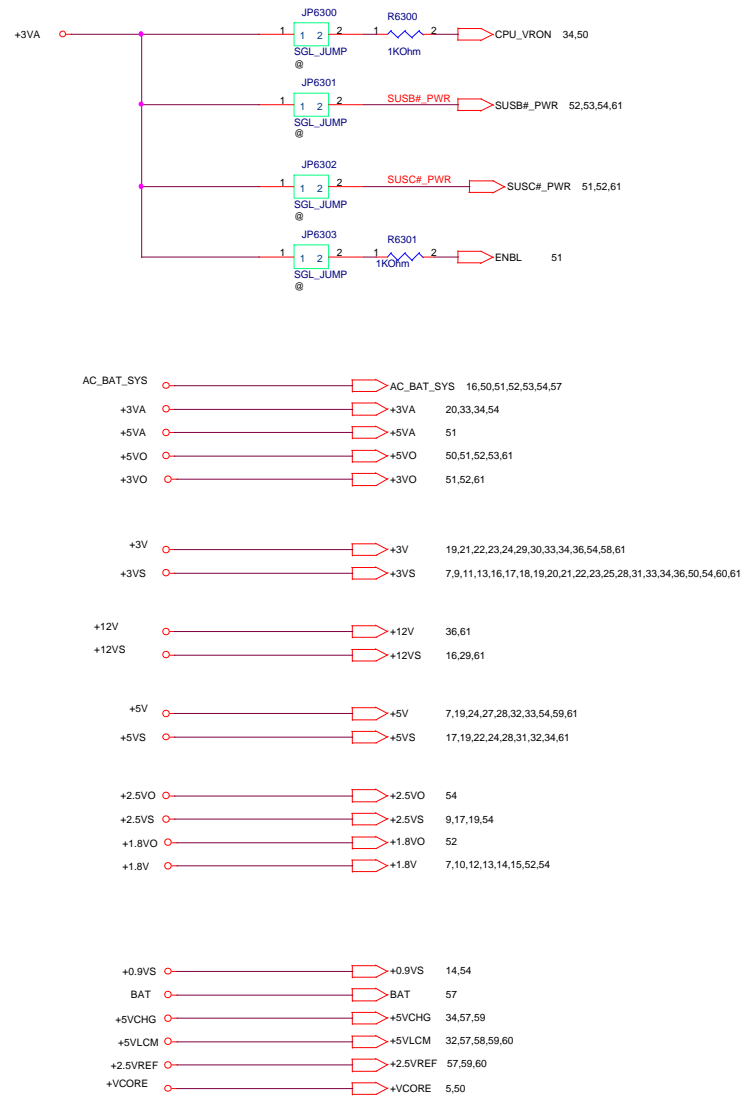
S6F

SCHEMATIC FILE NAME :
RELEASE DATE :

Flowchart

DESIGN ENGINEER :

FOR POWER TEST



PROJECT: S6F

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DESCRIPTION:
S6F

SCHEMATIC FILE NAME :
RELEASE DATE :
SIGNAL

DESIGN ENGINEER :