

A45D01

TABLE OF CONTENTS

COVER SHEET	1
BLOCK DIAGRAM	2
POWER DELIVERY CHART	3
CLOCK DISTRIBUTION	4
MISC TABLE	5
FT1 PCIE/UMI	6
FT1 DDR3 MEM I/F	7
FT1 DISPLAY & MISC	8
FT1 POWER & GND	9
DDR3 DIMM-1	10
DDR3 DIMM-2	11
FCH-PCIE/PCI/APU/LPC/CLK	12
FCH-ACPI/GPIO/USB/PHY/AZ	13
FCH-SATA/HWM/SPI	14
FCH-POWER & DECOUPLING	15
FCH-STRAPS	16
Scaler	17
CRT translator LVDS	18
Reserved	19
REAR USB CONN & PS/2	20
FRONT USB HEADER	21
LAN RTL8111E	22
LAN CONN & USBX2	23
ALC887VD	24
AUDIO CONNECTOR	25
CIR & HWM	26
SERIAL PORT HEADER & TPM	27
APU FT1 VCORE POWER	28
APU FT1 1D05V/1D8V	29
DDRIII MEMORY POWER	30
1D1V / FCH 1D1V POWER	31
Mini PCIe slot	32
STANDBY POWER & 12V POWRR	33
ATX CONN & FRONT PANEL	34
FANS & PWRGD & ENABLES	35
USB3.0	36
Card Reader	37
SIO IT8728F_CX	38
LPT & COM	39
Power Plane/3D3V_SB	40
ISL62392C_5V_S5/3D3V_S5	41

FAB 1.0

PCB SIZE:

9.1" X 7.5" 4 layers PCB

CPU:

AMD BROZAS APU FT1 19mm x 19mm, 0.8mm pitch BGA 413 BALL

System Chipset:

FCH Hudson-D1 A13 23mm x 23mm 0.8 mm Pitch FCBGA 605-BALL

Main Memory:

SINGLE Channel / DDR-III * 2 (Max 8GB)

On Board Device:

VRD(Type): Intersil ISL6265

LAN: RealTek 8111E

HDA Codec: ALC887


BIOS: SPI Flash ROM 1M Byte

Super IO: ITE8728F CX

Expansion Slots:

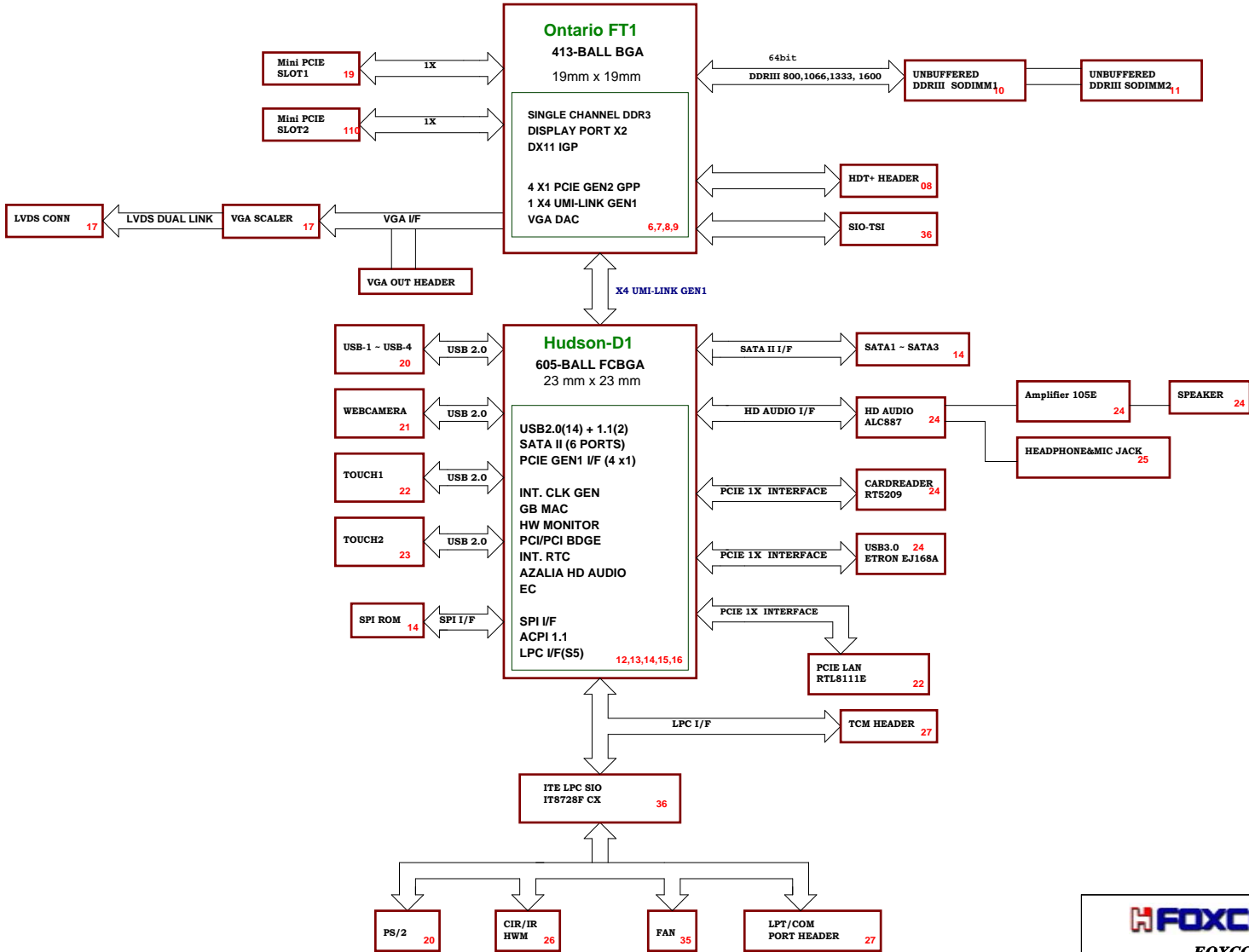
Mini PCI-E SLOT *2

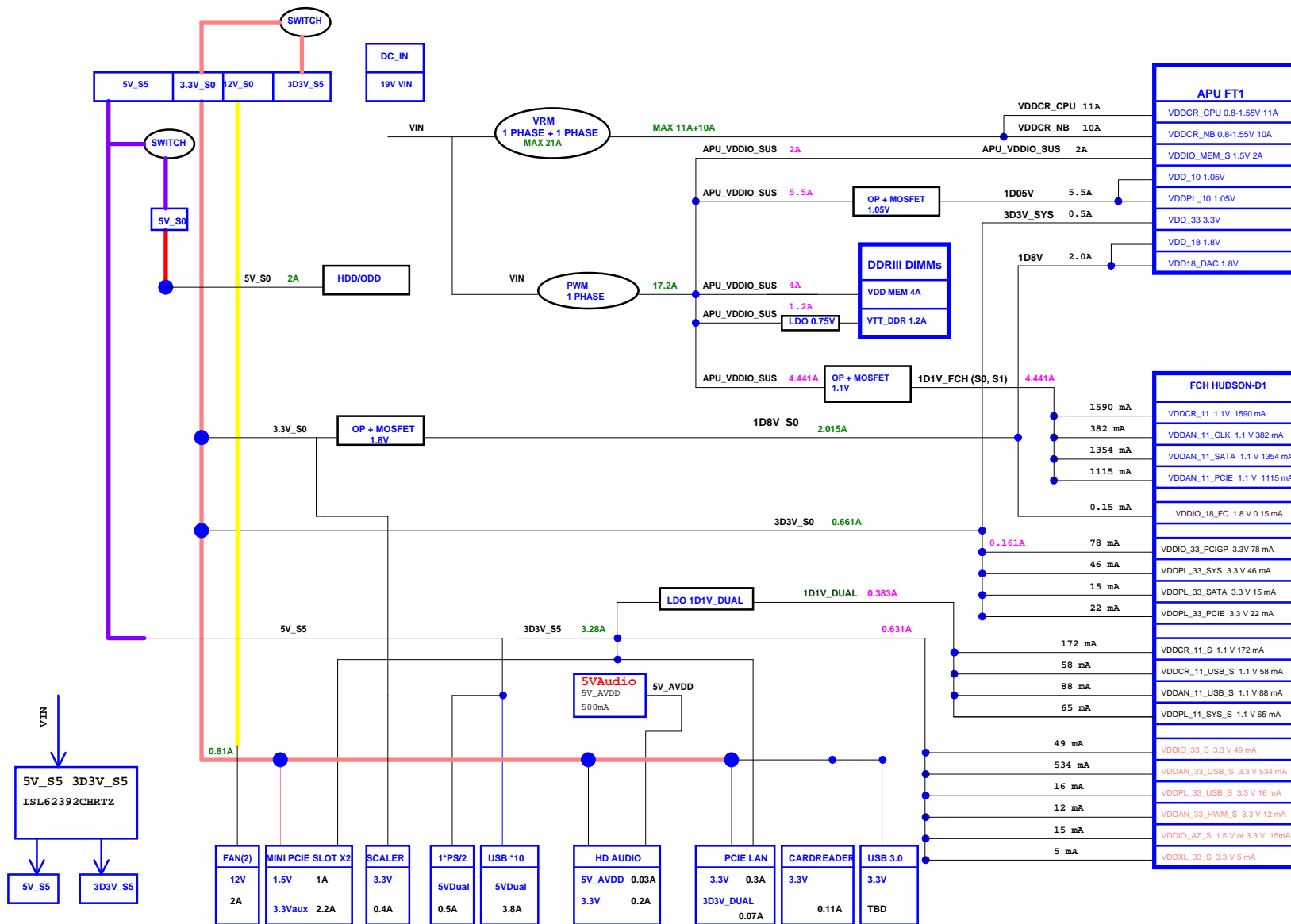
Version	Function	SKU	BOM
Fab.A			
Fab.B			

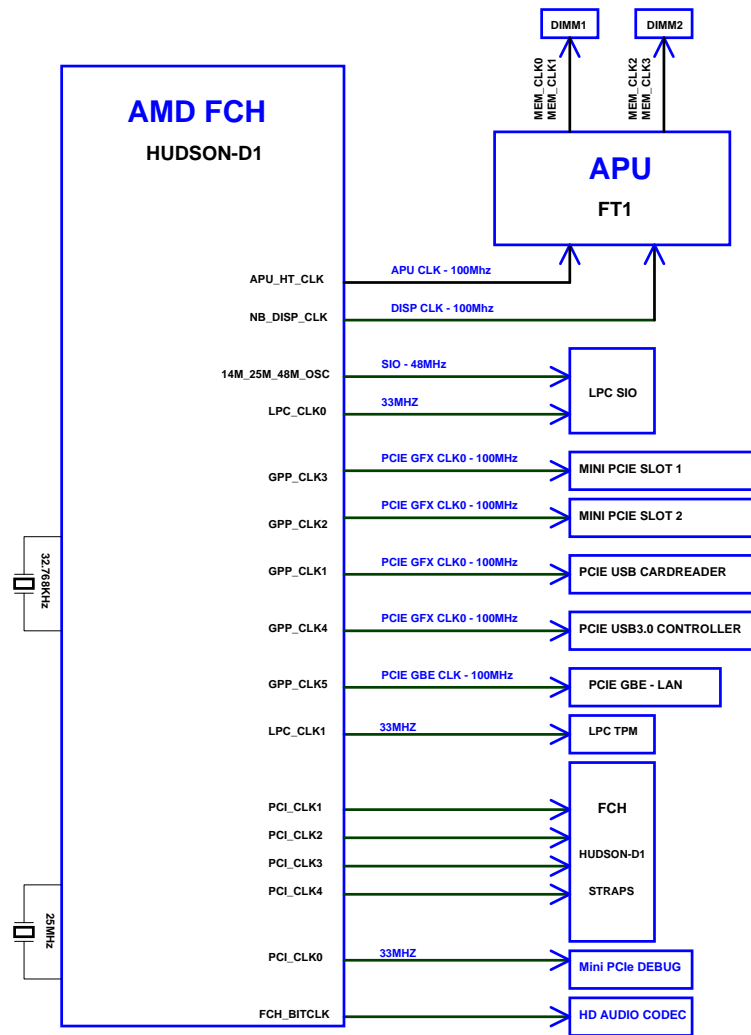
	
TABLE OF CONTENTS	
Size	Document Number
Custom	A45D01
Date	Saturday, November 19, 2011
Sheet	1 of 41

A45D01 BLOCK DIAGRAM

AMD FUSION APU FT1+Hudson-D1







Power sequence

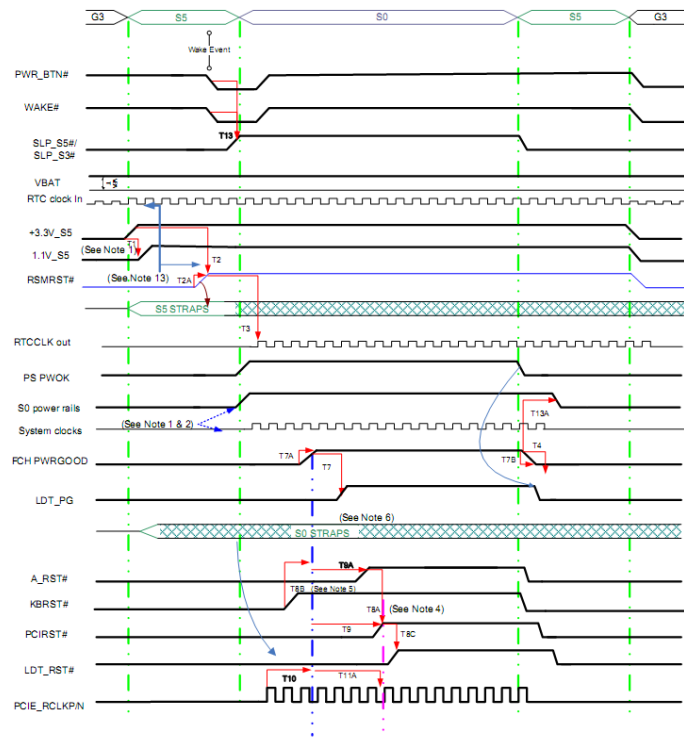


Figure 14. Power-on Sequence (S5 → S0 → S5)

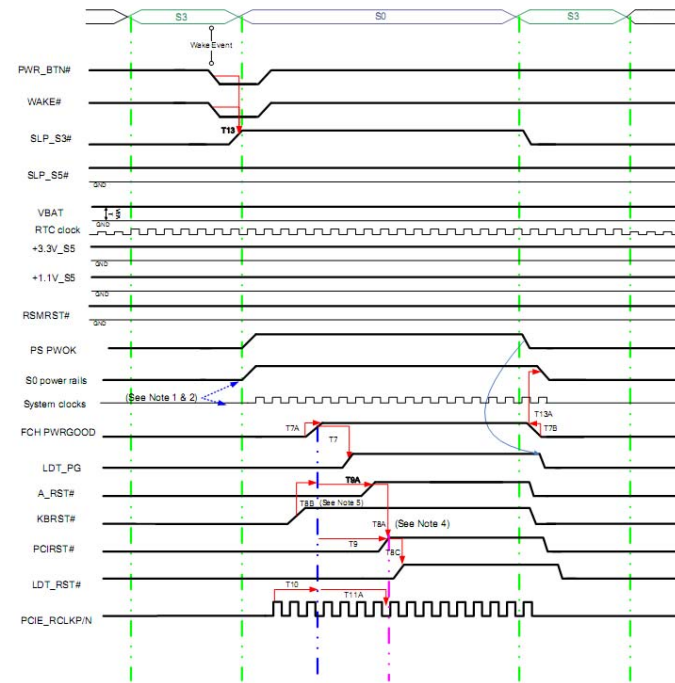


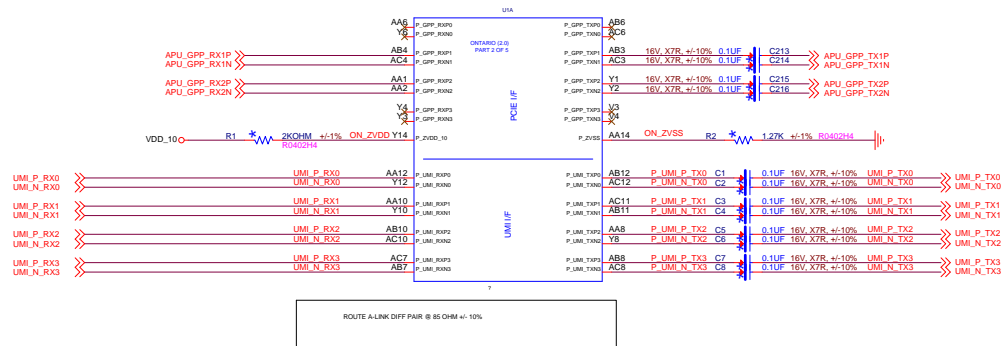
Figure 15. Power-on Sequence (S3 → S0 → S3)

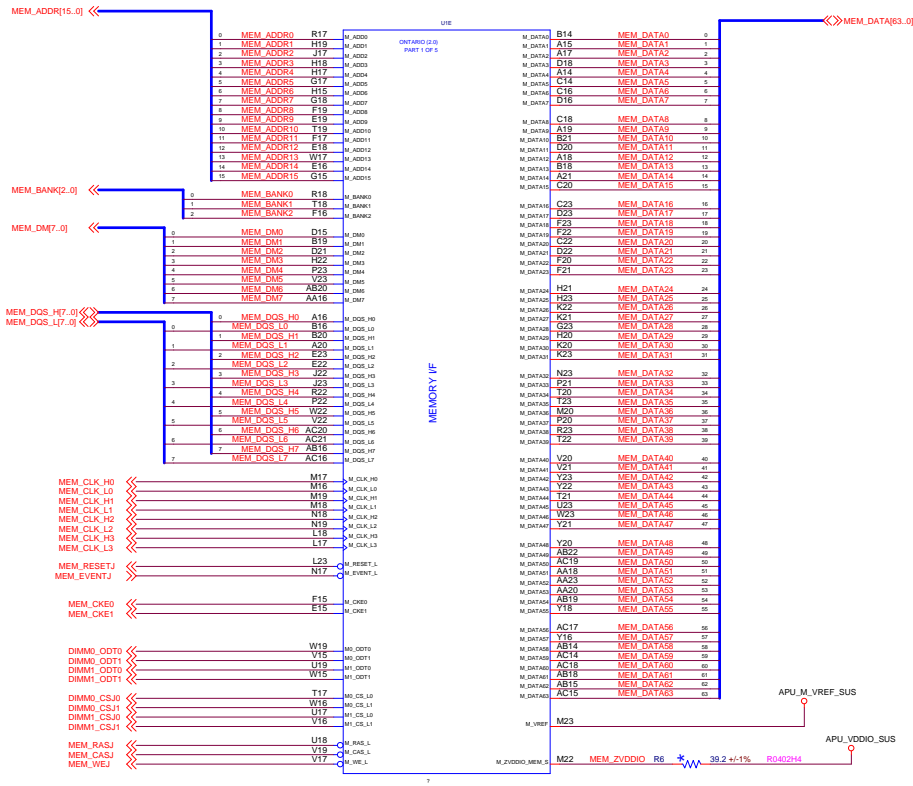
POWER RAIL		S0	S1	S3	S4	S5
5V_SB	+5V	ON	ON	ON	ON	ON
5V_DUAL	+5V	ON	ON	ON	ON	ON
303V_DUAL	+3.3V	ON	ON	ON	ON	ON
A_VBAT	+3.0V	ON	ON	ON	ON	ON
1D1V_DUAL	+1.1V	ON	ON	ON	ON	ON
+12V	+12V	ON	ON	OFF	OFF	OFF
-12V	-12V	ON	ON	OFF	OFF	OFF
5V_SYS	+5V	ON	ON	OFF	OFF	OFF
303V_SYS	+3.3V	ON	ON	OFF	OFF	OFF
5V_AVDD	+5V	ON	ON	OFF	OFF	OFF
18V	+1.8V	ON	ON	OFF	OFF	OFF
1D1V_FCH	+1.1V	ON	ON	OFF	OFF	OFF
VDDCR_CPU	SV1	ON	ON	OFF	OFF	OFF
VDDCR_NB	SV1	ON	ON	OFF	OFF	OFF
APU_VDDIO_SUS	+1.5V	ON	ON	ON	OFF	OFF
APU_VTT_SUS	+0.75V	ON	ON	OFF	OFF	OFF

DEFAULT JUMPER SETTING FOR POWER ON		
JUMPER	DEF.	FUNCTION

FOXCONN [®]	
FOXCONN PCEG	
Title: MISC TABLE	
Size: Custom	Document Number: A45D01
Date: Wednesday, October 26, 2011 Sheet 5 of 41	

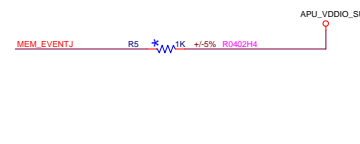
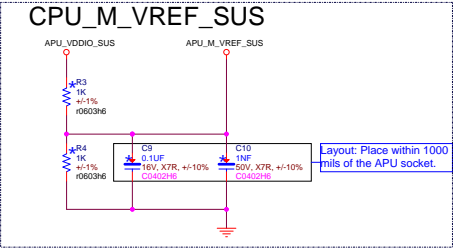
BOARD ID EEPROM
ADDRESS xA8

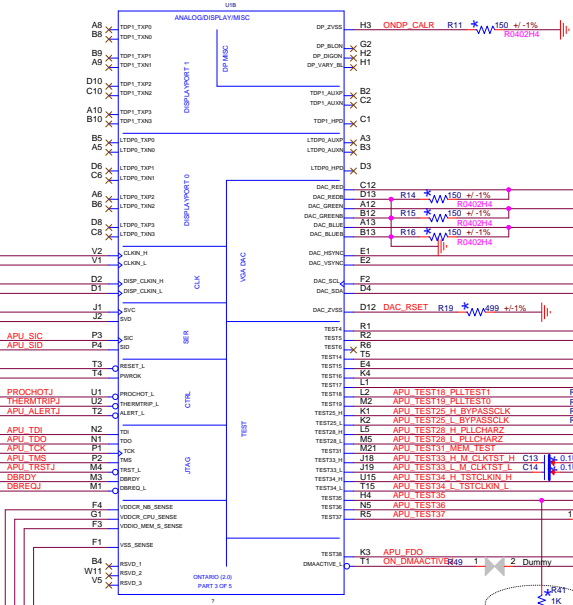
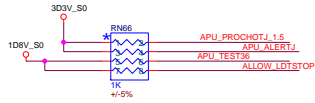
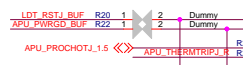
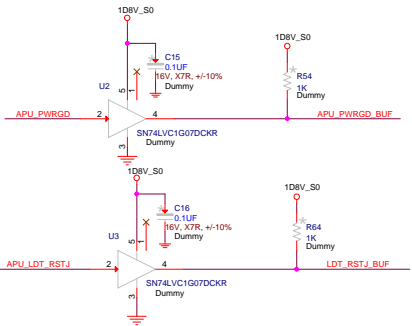
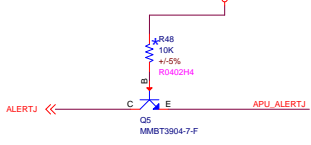
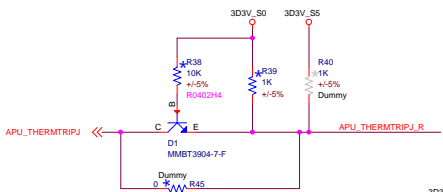
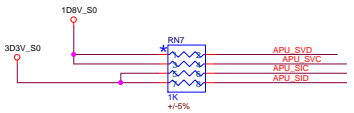
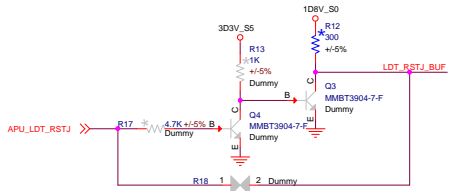
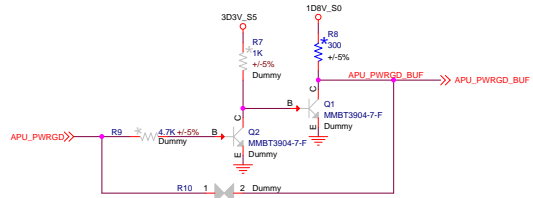




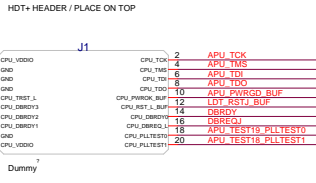
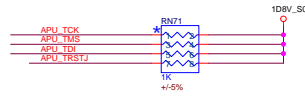
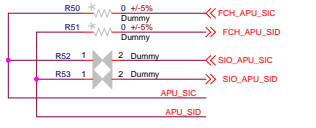
Note: Open the soldermask for Vias on Mem interface

R10 connection to VDDIO_SUS should be directly to the plane without a long trace





DIFFERENTIAL ROUTING

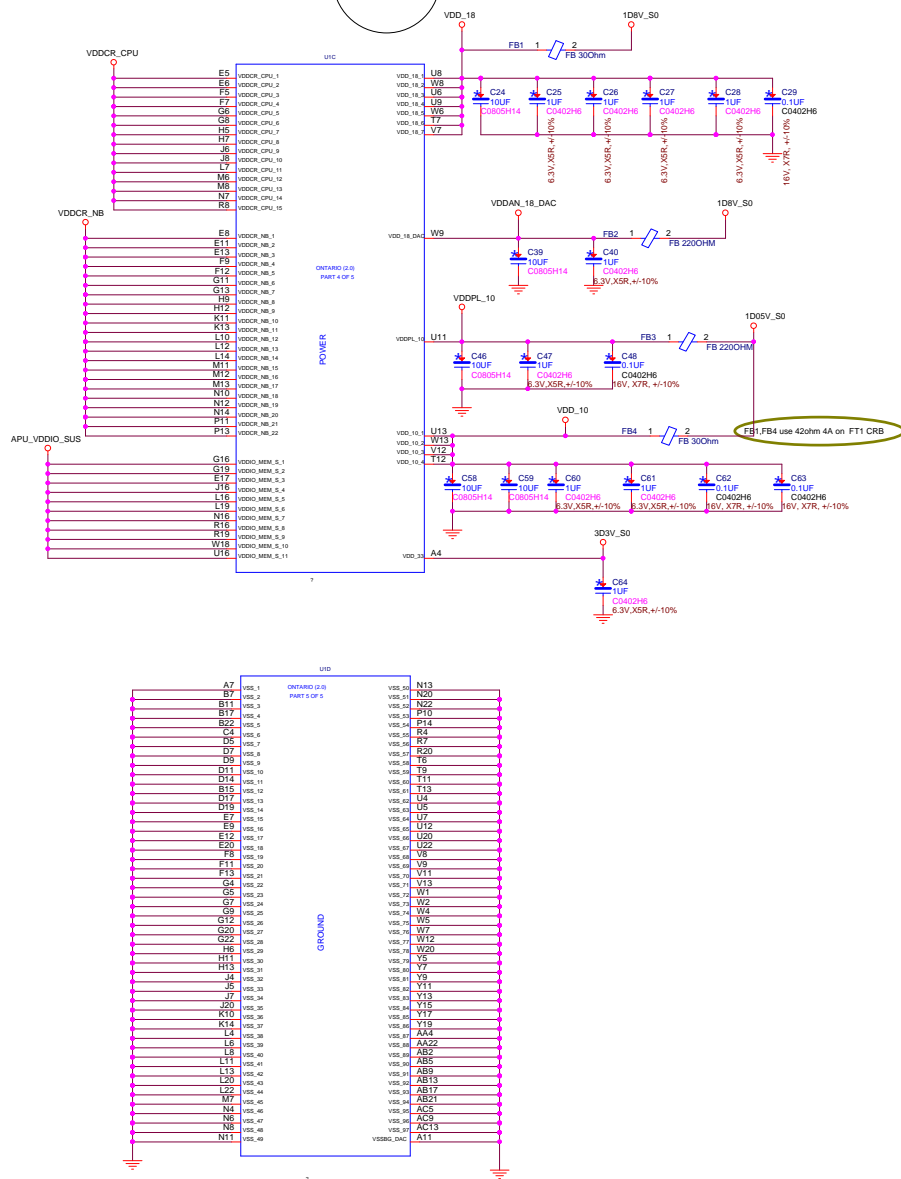


route BYPASSCLK_H/L AND PLLCHARZ_H/L differentially

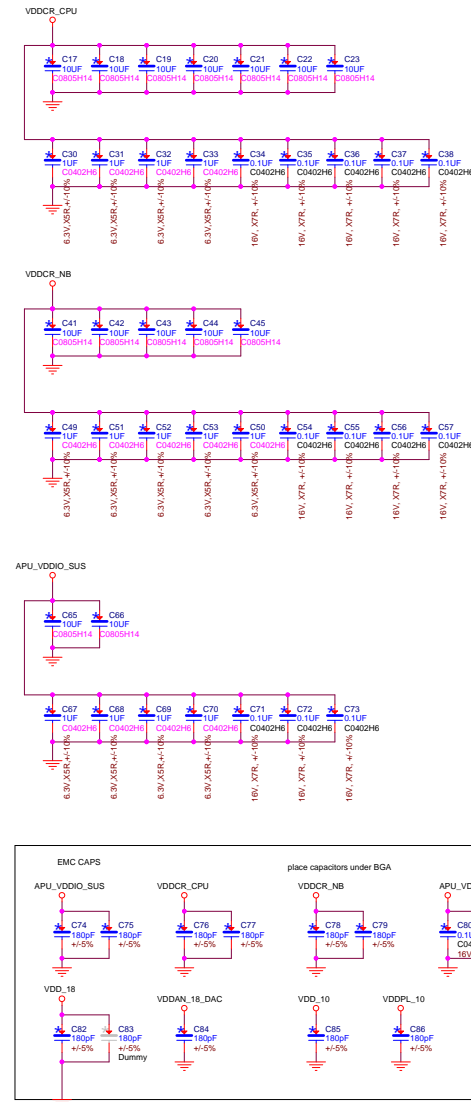
Install R31 and Dummy R29 for solve HDMI can't display 1920x1080 issue
---Modify by Dirk 2010-11-03

Title		FT11 DISPLAY & MISC	
Size	Document Number	A45D01	
Customer	Rev		
Date	Wednesday, October 26, 2011	Sheet	8 of 41

CHECK APU SYMBOL



DECOUPLING SCHEME II

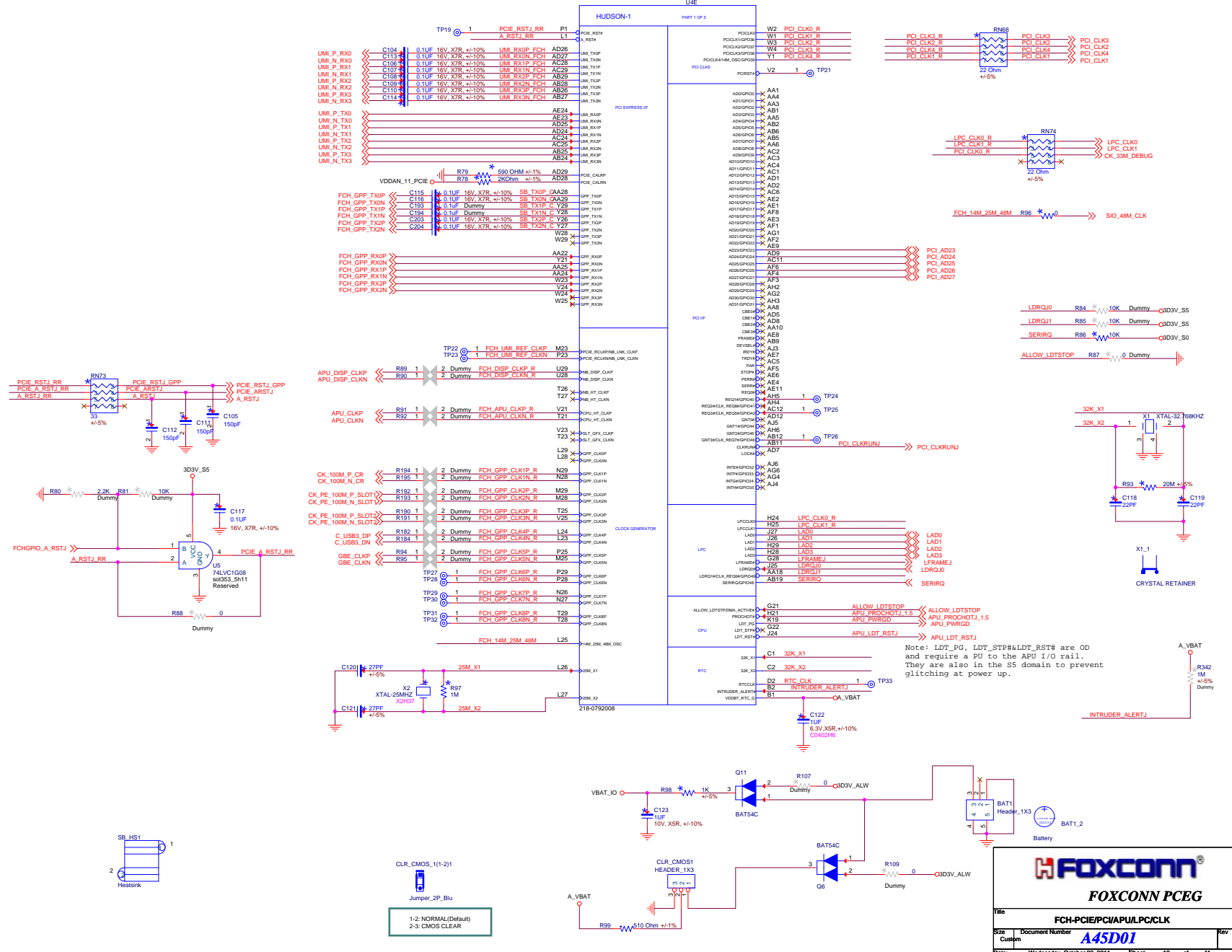


FOXCONN
FOXCONN PCEG

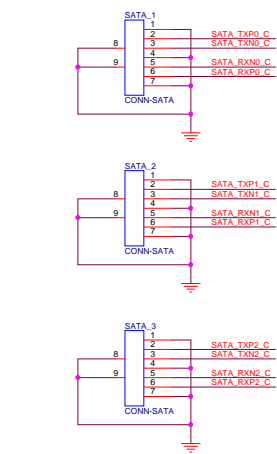
Title			FT1 POWER & GND
Size	Document Number	A45D01	
Customer			
Date	Wednesday, October 26, 2011	Sheet	9 of 41

**FOXCONN PCEG**

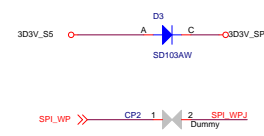
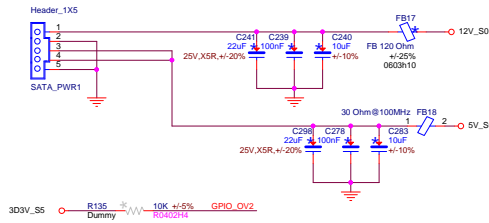
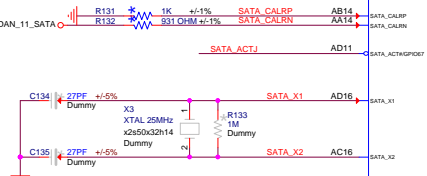
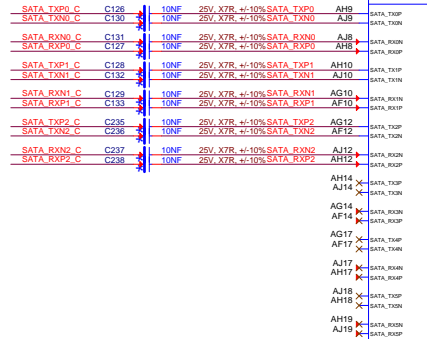
Title				
DDR3 DIMM-2				
Size	Document Number			Rev
Custom	A45D01			
Date:	Wednesday, October 26, 2011	Sheet	11	of 41



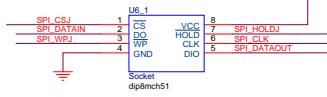
FOXCONN FOXCONN PCEG		
File: FCH-PCIE/PCI/APU/LPC/CLK		
Size: Custom	Document Number: A45D01	Rev: 1
Date: Wednesday, October 26, 2011 Sheet 12 of 41		



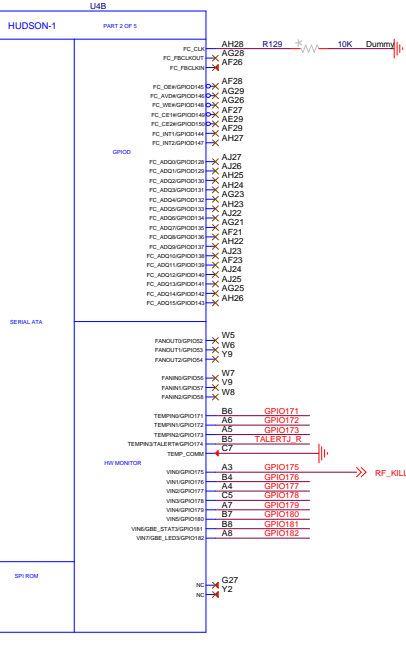
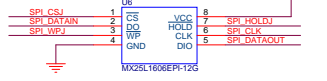
ROUTE SATA TX DIFF PAIR @ 100 OHM±10%
RX DIFF PAIR @ 90 OHM±10%



BIOS SOCKET



SPI ROM



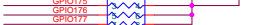
TALERTJ_R CP1



GPIO173



GPIO178



GPIO180



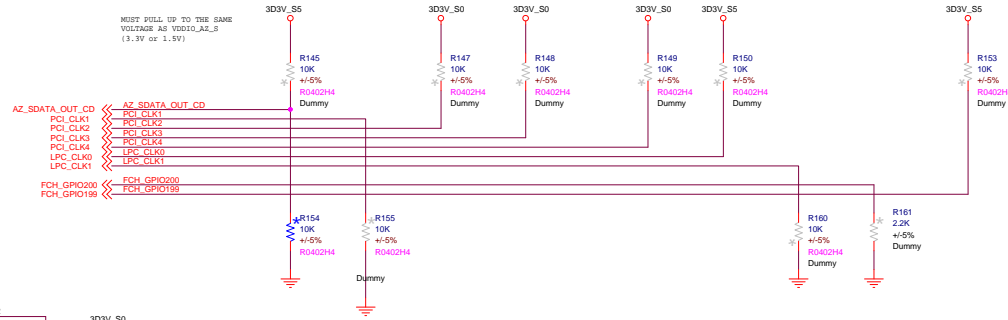
SATA ACTJ



FOXCONN PCEG

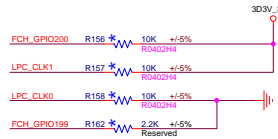
File		
FCH-SATA/HWM/SPI		
Size	Document Number	Rev
Custom	A45D01	
Date	Wednesday, October 26, 2011 Sheet 14 of 41	

FCH REQUIRED STRAPS



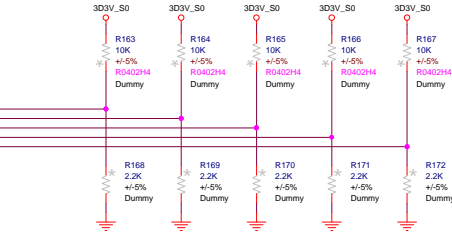
	AS_S00T	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	GPIO200	GPIO199
PULL HIGH	LOW POWER MODE	ALLOW PCIe GEN2	WATCHDOG TIMER ON HW_PWRD ENBLD	USE DEBUG STRAPS	NON-FUSION APU CLOCK MODE	EC ENABLED	CLAGEN ENABLED	ROM TYPE: N, N = Reserved	
PULL LOW	HIGH PERFORMANCE MODE	FORCE PCIe GEN1	WATCHDOG TIMER ON HW_PWRD DISABLED	IGNORE DEBUG STRAPS	FUSION APU CLOCK MODE	EC DISABLED	CLAGEN DISABLED	N, L = SPI ROM L, N = LPC ROM L, L = PWR ROM	DEFAULT

HUDSON-D1 HAS 15K INTERNAL PU FOR PCI_AD[30:23]



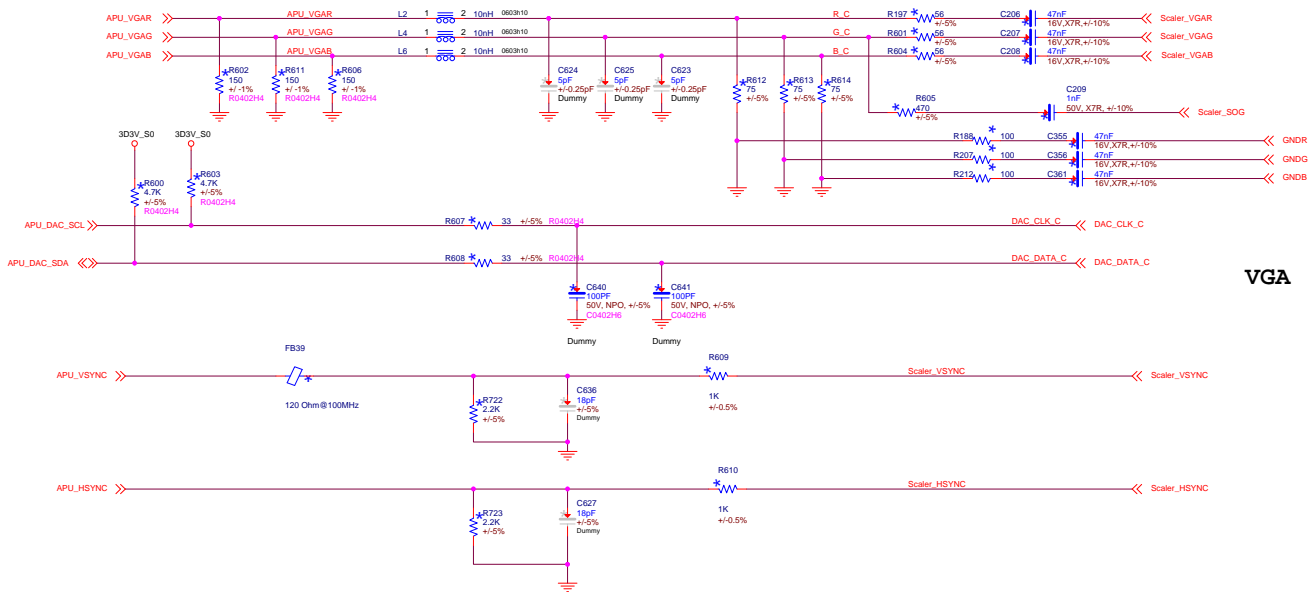
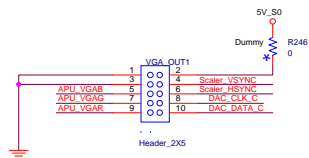
FCH DEBUG STRAPS

PCI_AD27
PCI_AD26
PCI_AD25
PCI_AD24
PCI_AD23



	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE PC PLL DEFAULT	USE DEFAULT PCIe STRAPS DEFAULT	DISABLE PCI MEN BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS PC PLL	USE EEPROM PCIe STRAPS	ENABLE PCI MEN BOOT

File		FCH-STRAPS	
Size	Document Number	A45D01	
Custom	Rev	B	
Date	Wednesday, October 26, 2011	Sheet	16 of 41



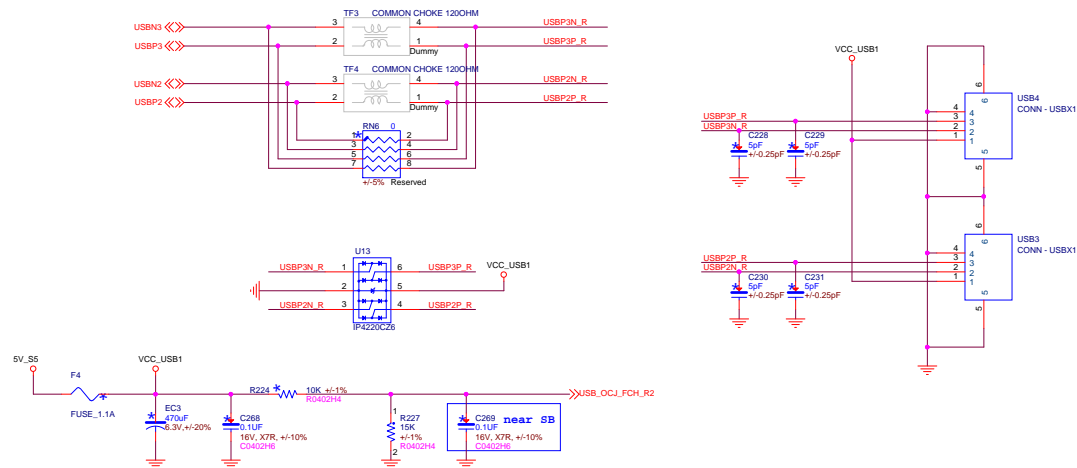
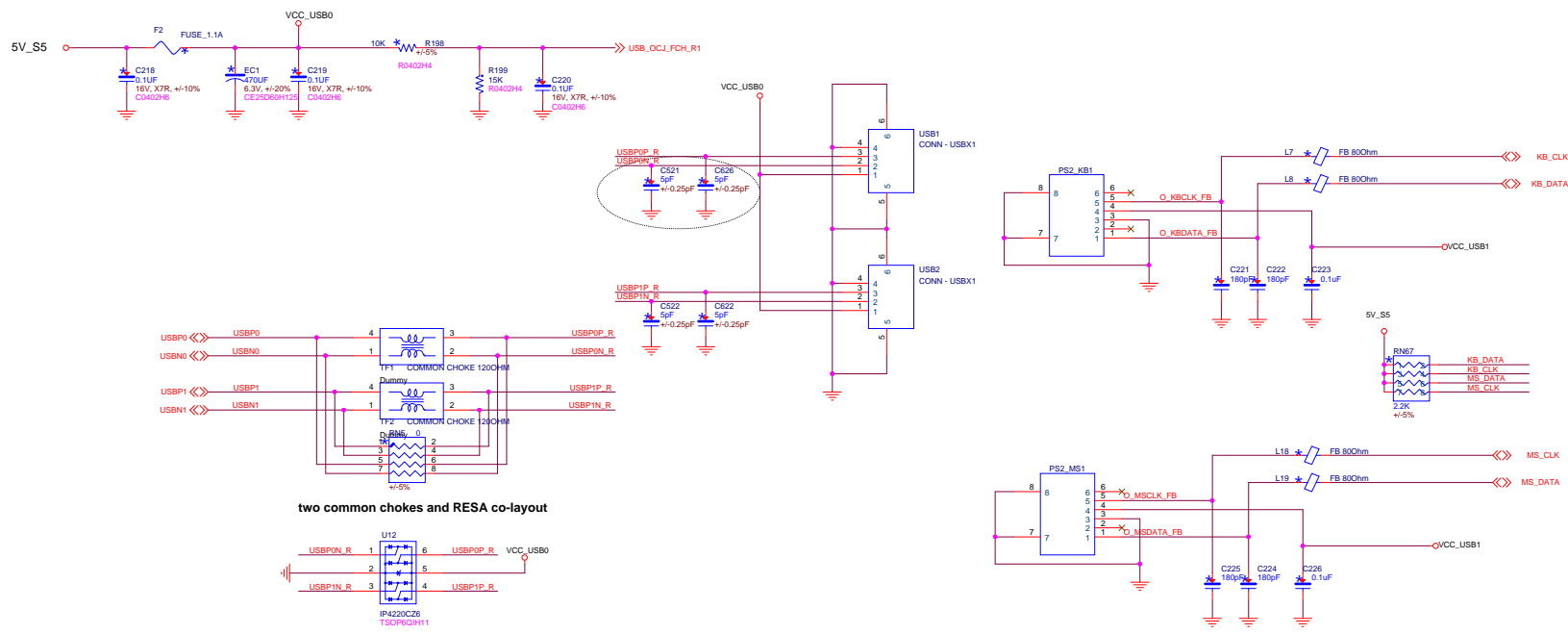
VGA

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



FOXCONN PCEG

Title		
PCIE x16 CONNECTOR		
Size A	Document Number <i>A45D01</i>	Rev
Date:	Wednesday, October 26, 2011	Sheet 19 of 41



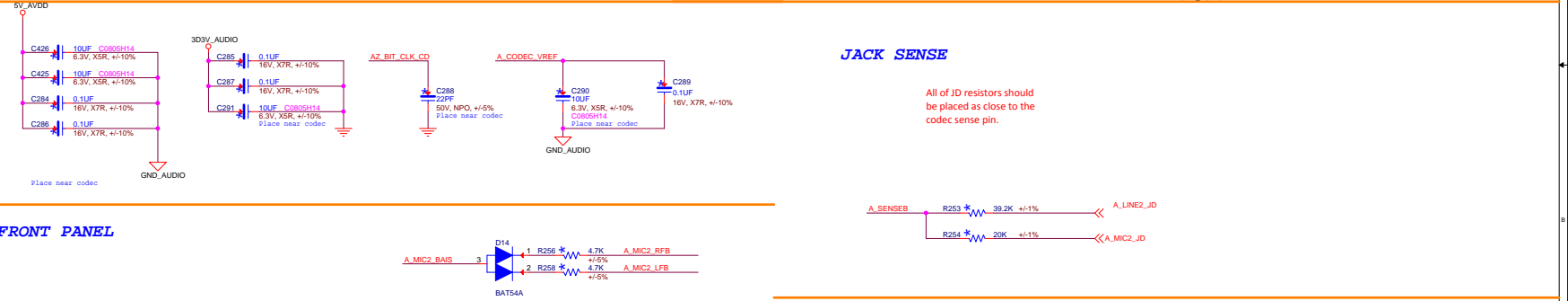
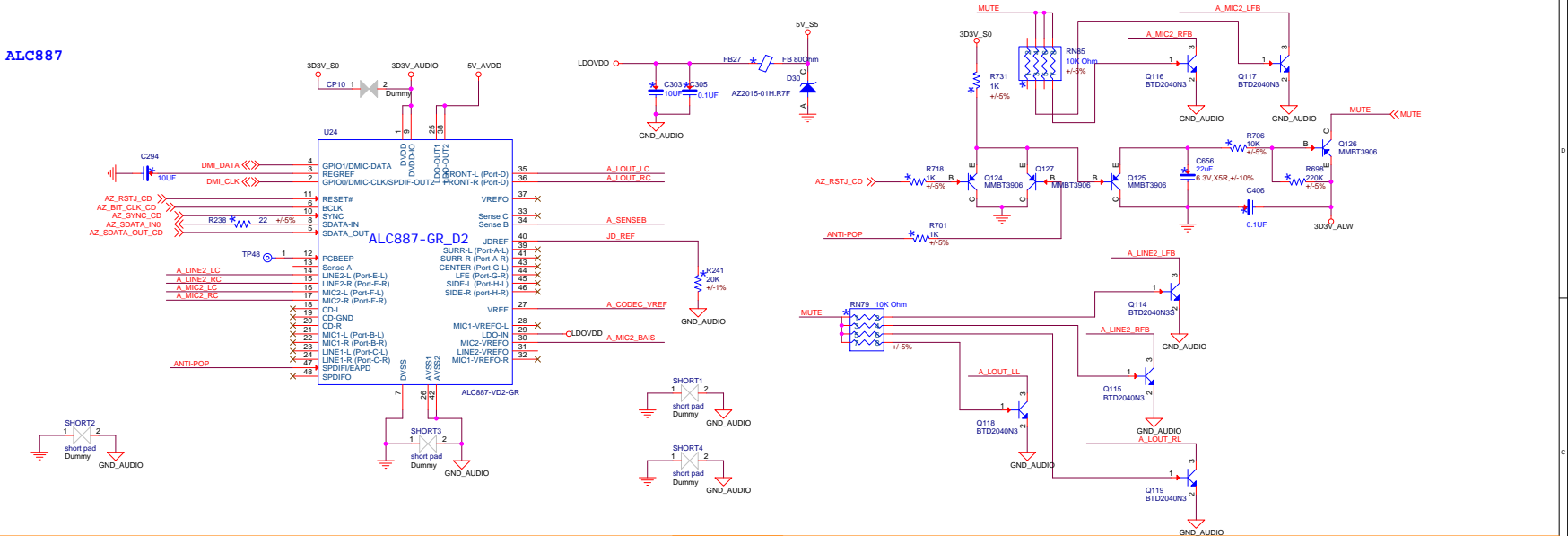
	5	4	3	2	1
D					D
C					C
B					B
A					A
	5	4	3	2	1



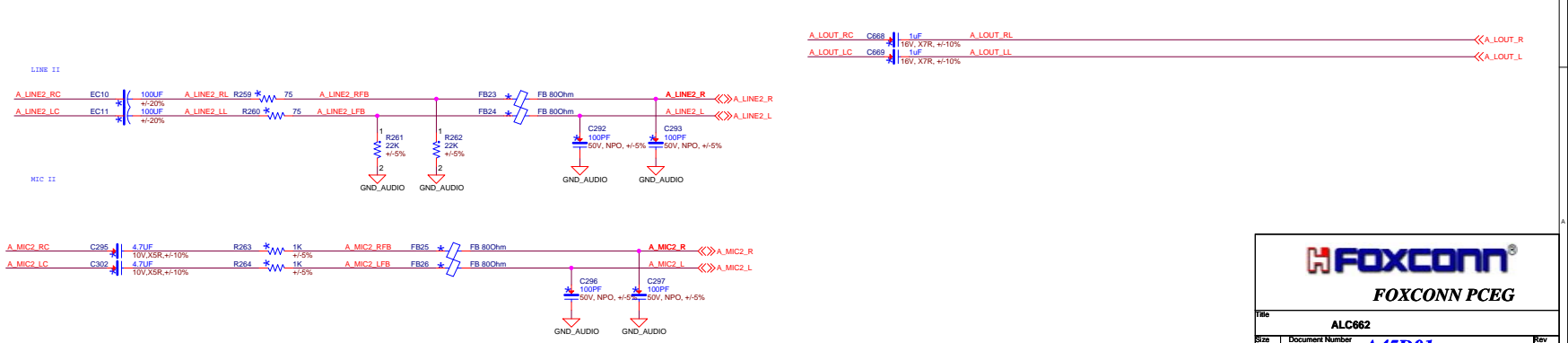
FOXCONN PCEG

Title		
FRONT USB HEADER		
Size A	Document Number <i>A45D01</i>	Rev
Date:	Wednesday, October 26, 2011	Sheet 21 of 41

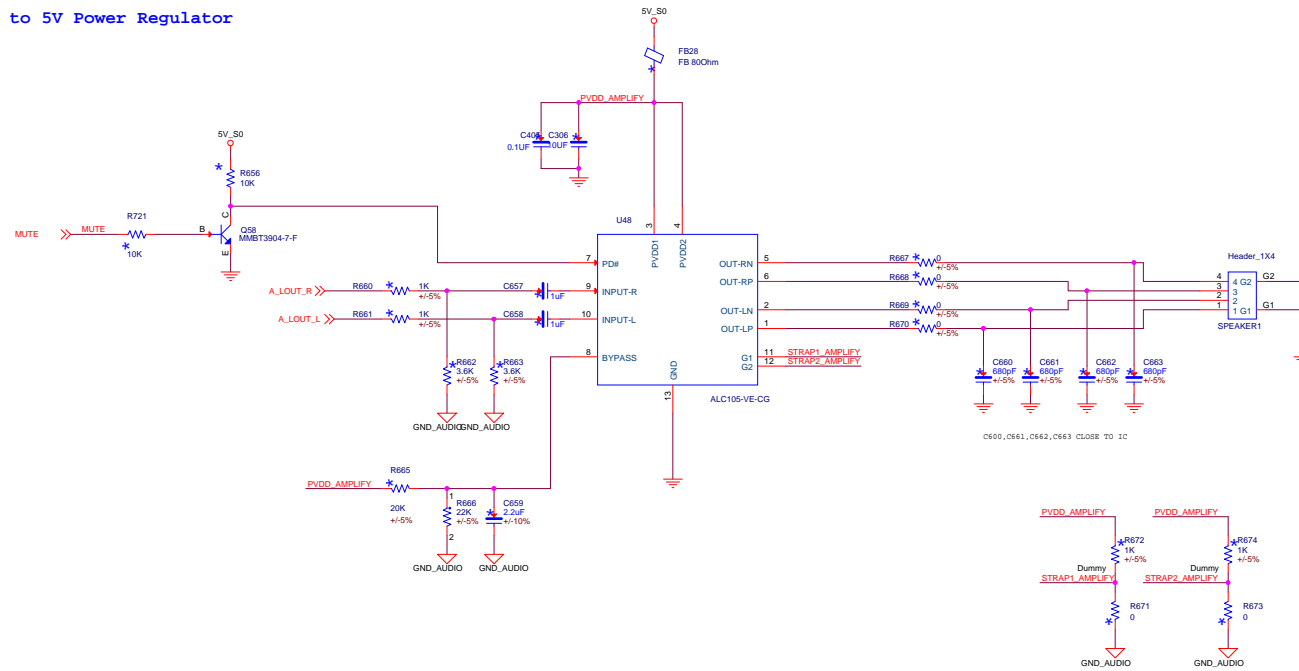
ALC887



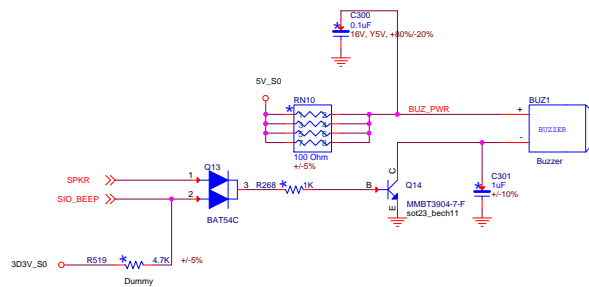
FRONT PANEL



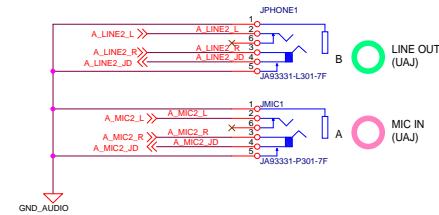
12V to 5V Power Regulator



BUZZER/Speaker Header

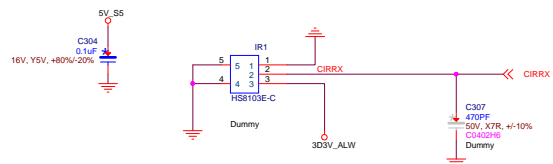


Audio CONN (3 Port)



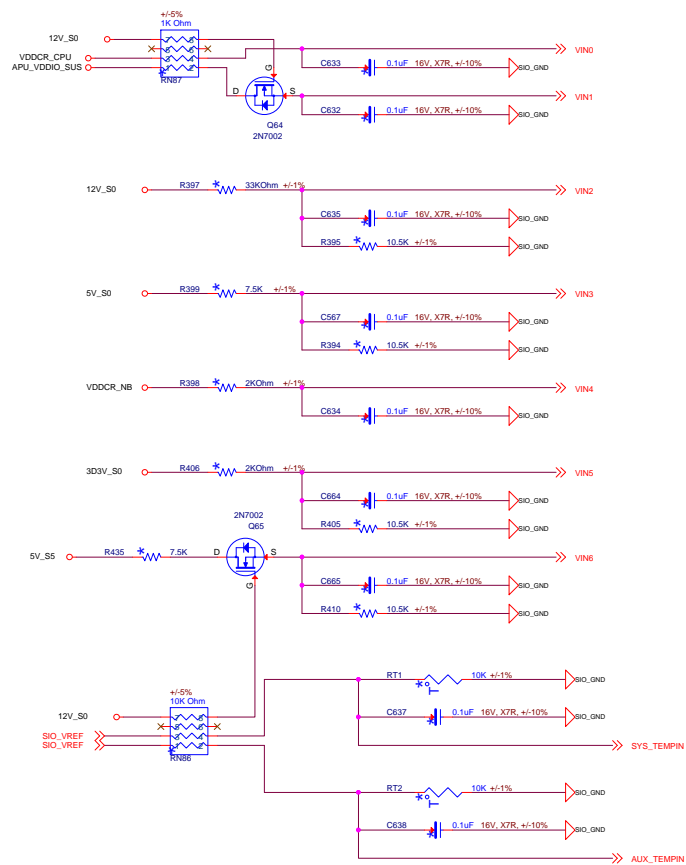
FOXCONN PCEG		
Title		
AUDIO CONNECTOR		
Size	Document Number	Rev
Custom	A45D01	
Date: Wednesday, October 26, 2011 Sheet 25 of 41		

IR/CIR



IR/CIR CONNECTOR

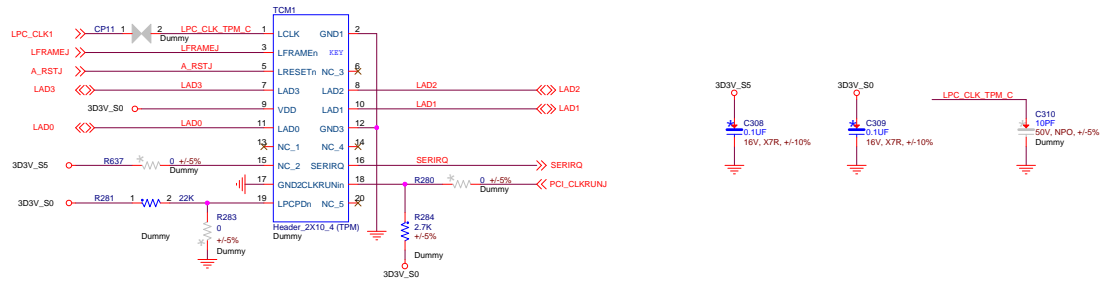
POWER RAILS MONITOR



FOXCONN PCEG

Title			
CIR & HWM			
Size	Document Number		Rev
Custom	A45D01		
Date:	Wednesday, October 26, 2011		Sheet 26 of 41

TPM



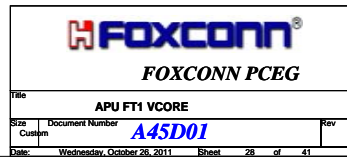
Metal VID Codes

VFIXEN VID Codes

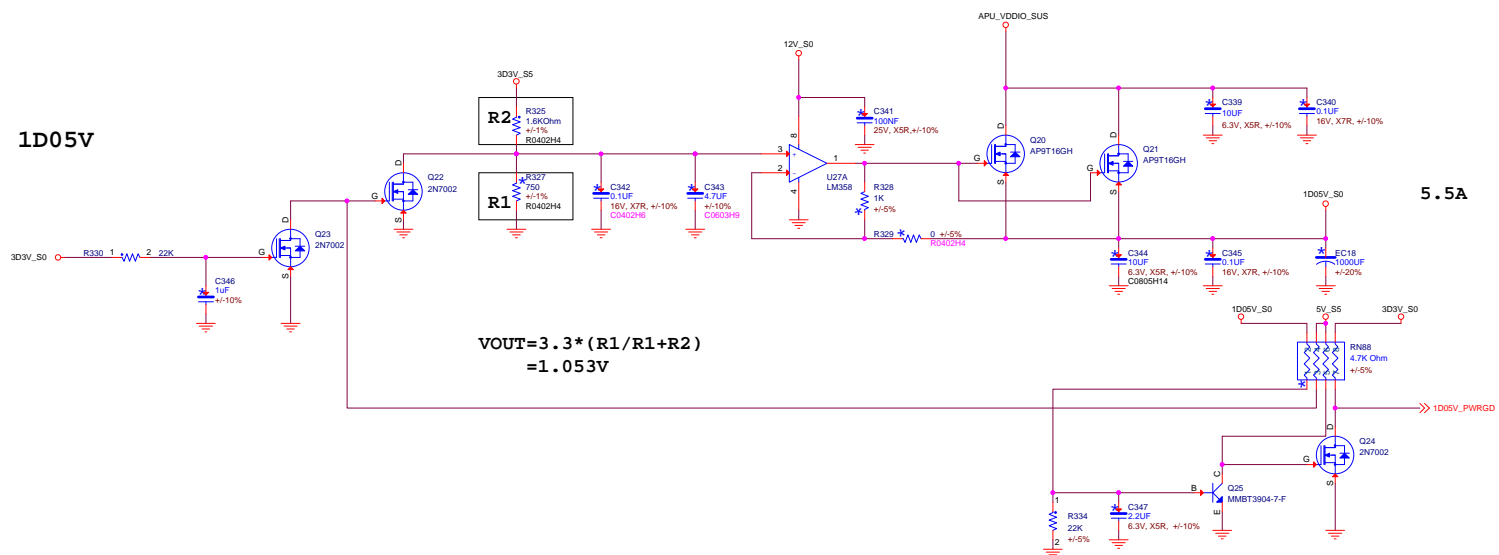
```

change VRM_PWRGD pull high from 3D3V_DUAL to 3D3V_SYS,
adjust VRM_PWRGD output rise and fall pulse)
Modify by dirk 2010-11-01

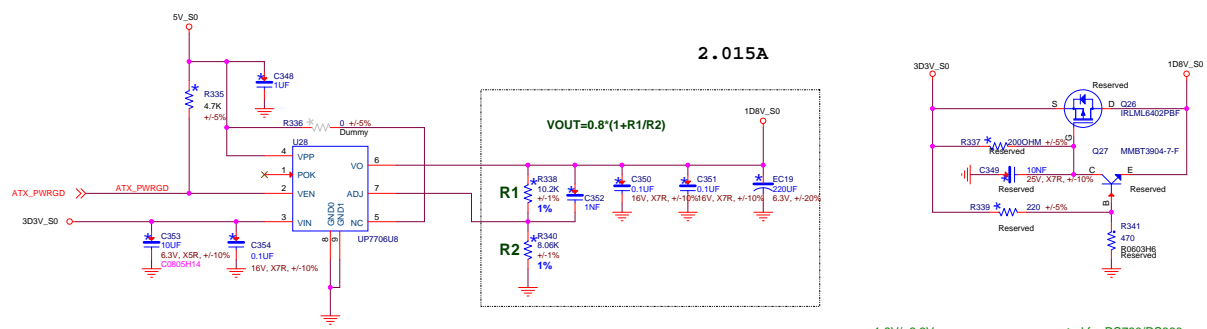
```



1D05V



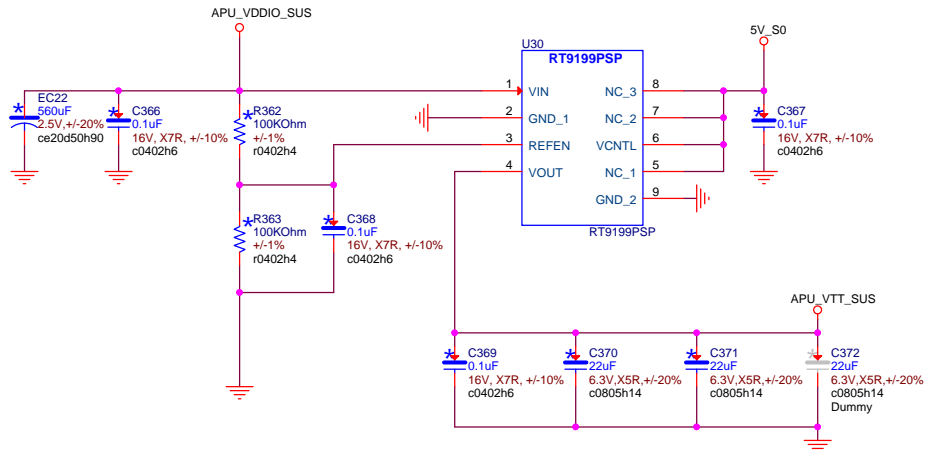
1D8V



+1.8V/+3.3V power up sequence control for RS780/RS880



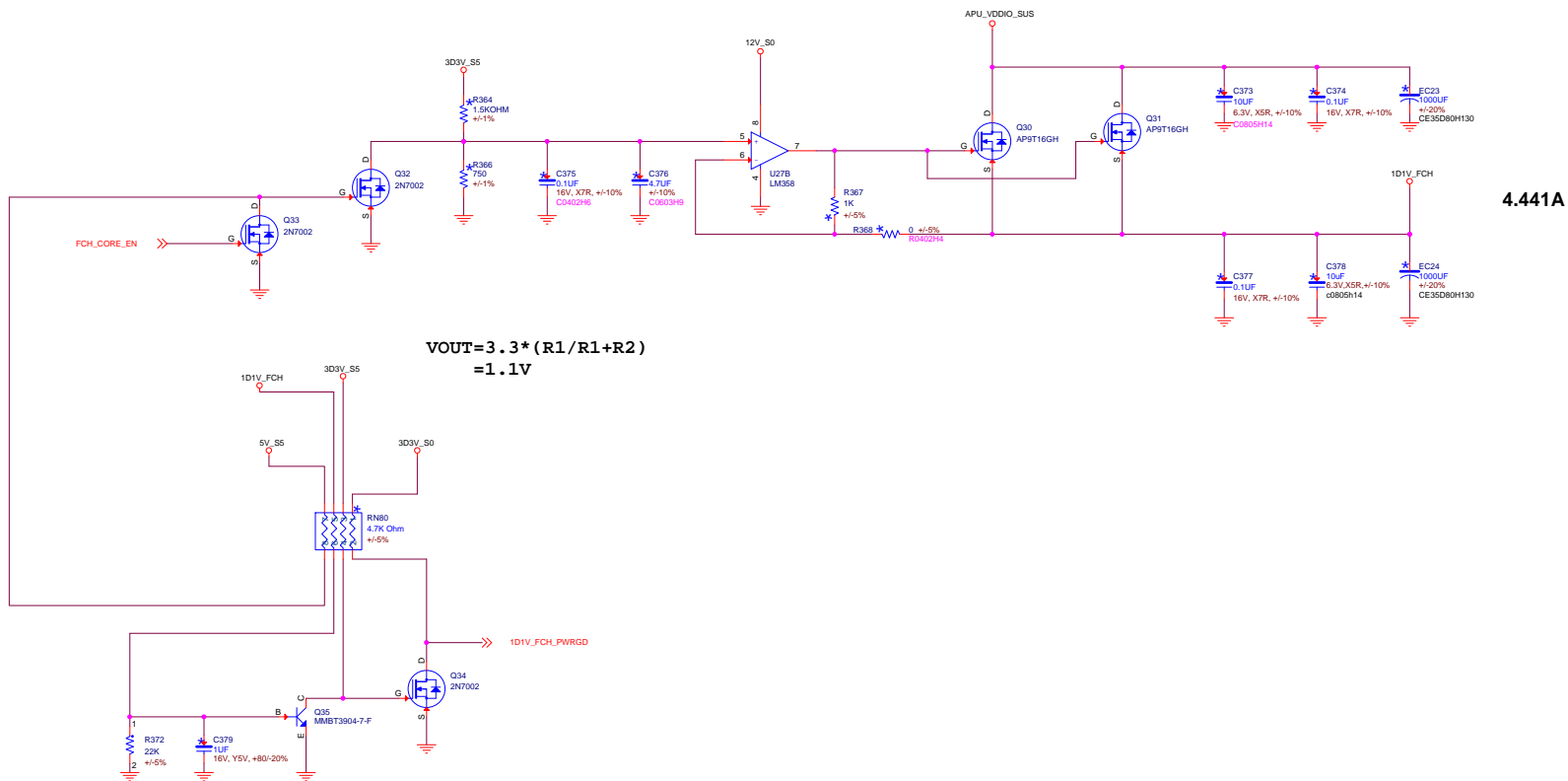
VTT_DDR



Size A3	Document Number A45D01
------------	----------------------------------

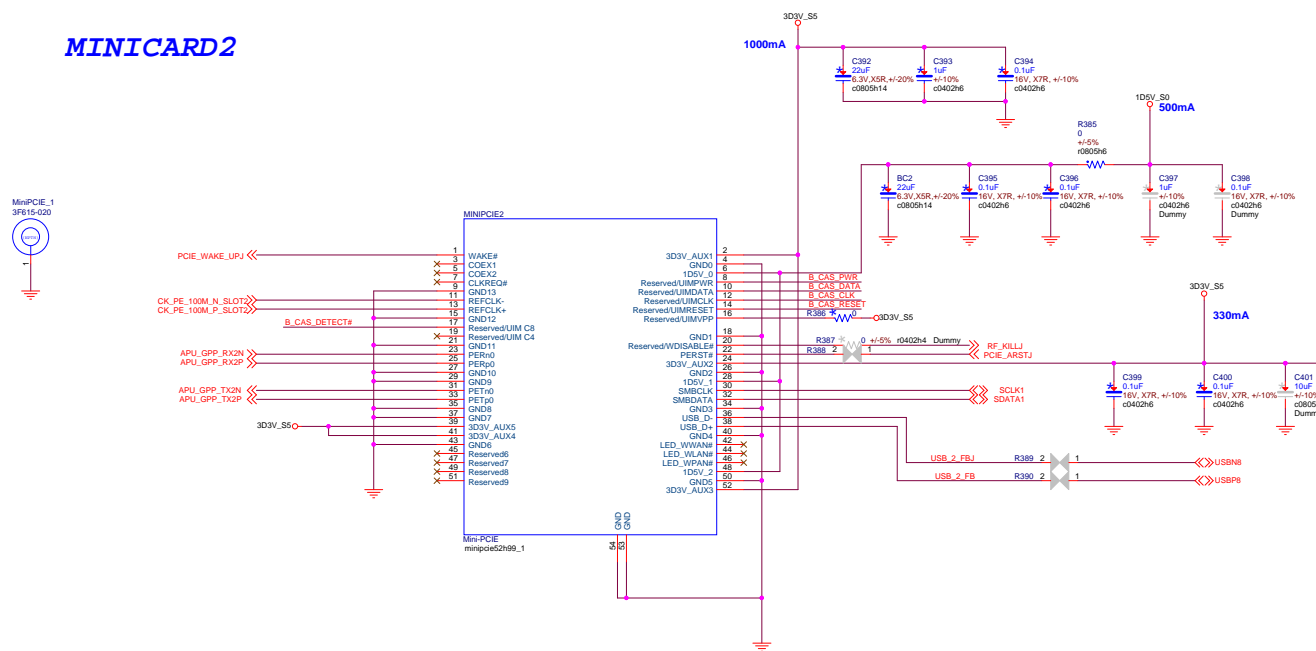
Date: Wednesday, October 26, 2011 Sheet 30 of 41

1D1V_FCH

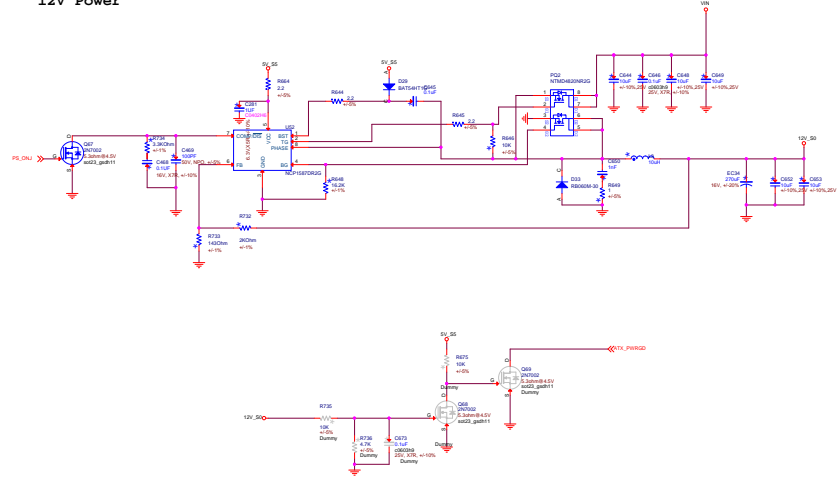


4.441A

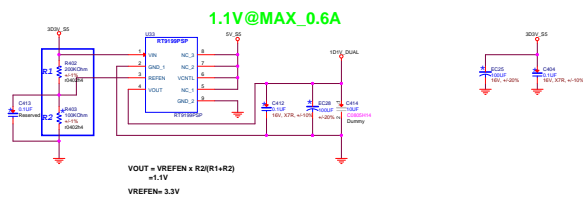
MINICARD2



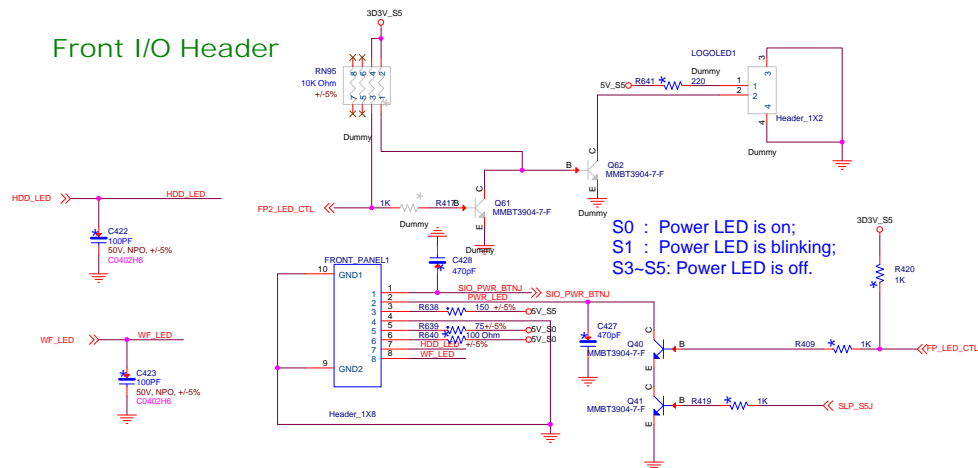
12V Power



1D1V EUP



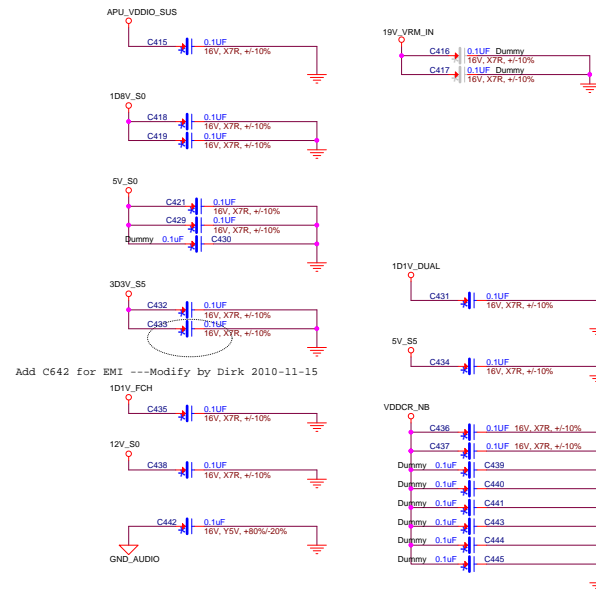
Front I/O Header



S0 : Power LED is on;
S1 : Power LED is blinking;
S3~S5: Power LED is off.

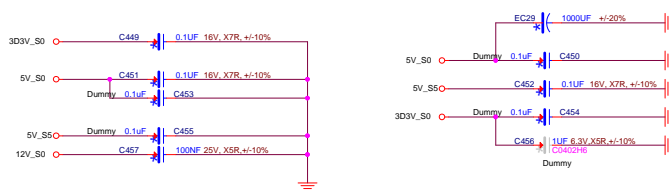
Front Panel Switch/LED

HDD_LED+	1	2	Power
HDD_LED-	3	4	Power LED(Green)
GND	5	6	Power button
Reset button	7	8	Detect pin
Detect pin	9	10	Key



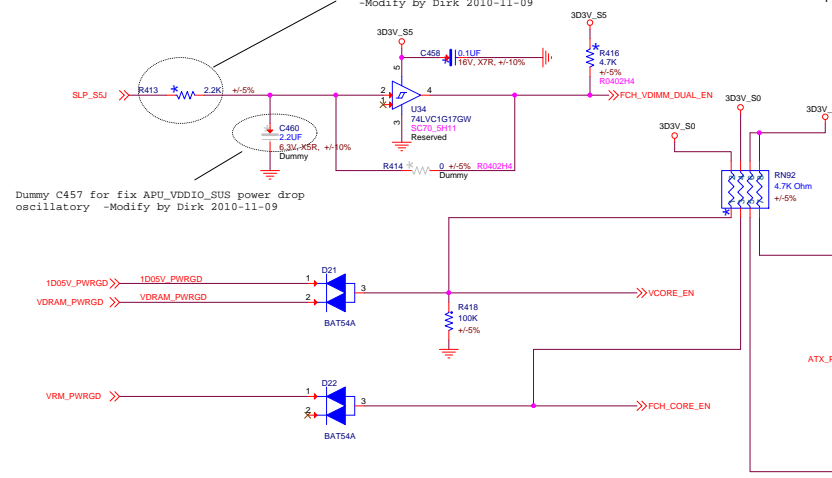
Add C642 For EMI ---Modify by Dirk 2010-11-15

ATX POWER CONN

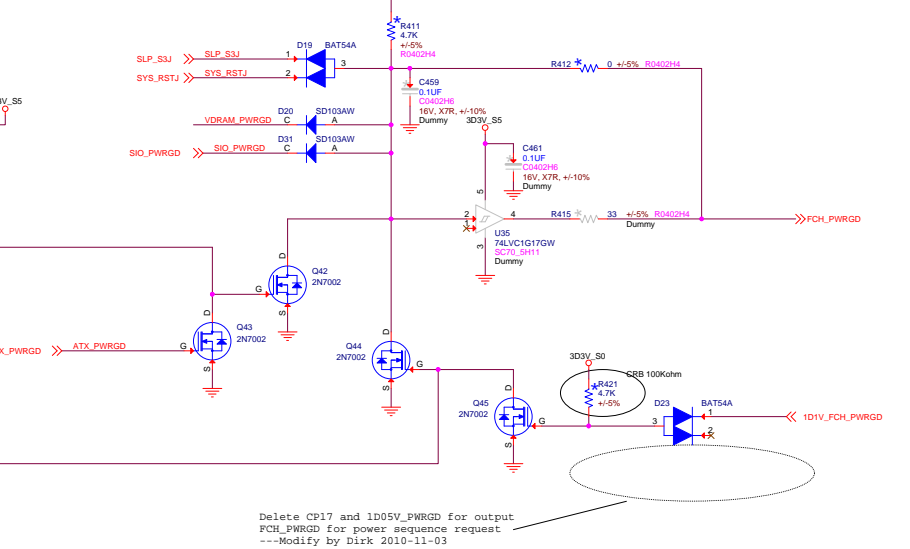


 FOXCONN PCEG	
File: FRONT PANEL	
Size: Custom	Document Number: A45D01
Date: Wednesday, October 26, 2011 Sheet 34 of 41	

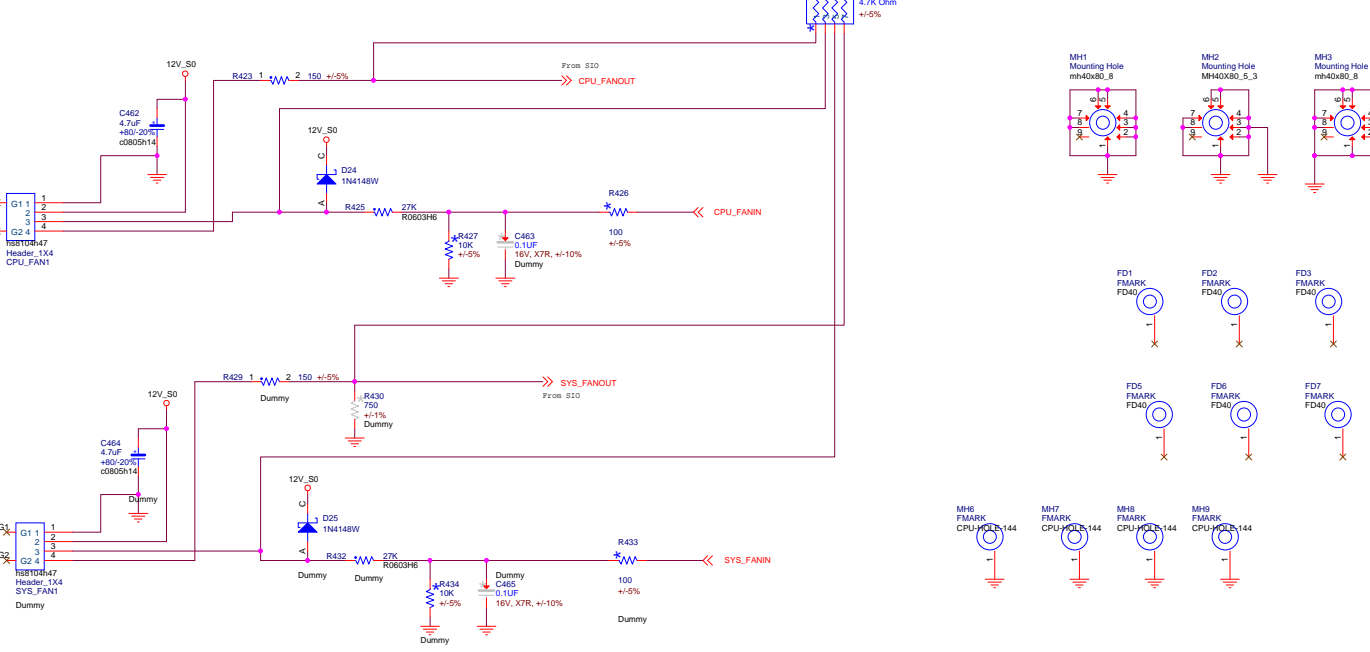
POWER GOOD & ENABLES CIRCUIT



POWER GOOD CIRCUIT



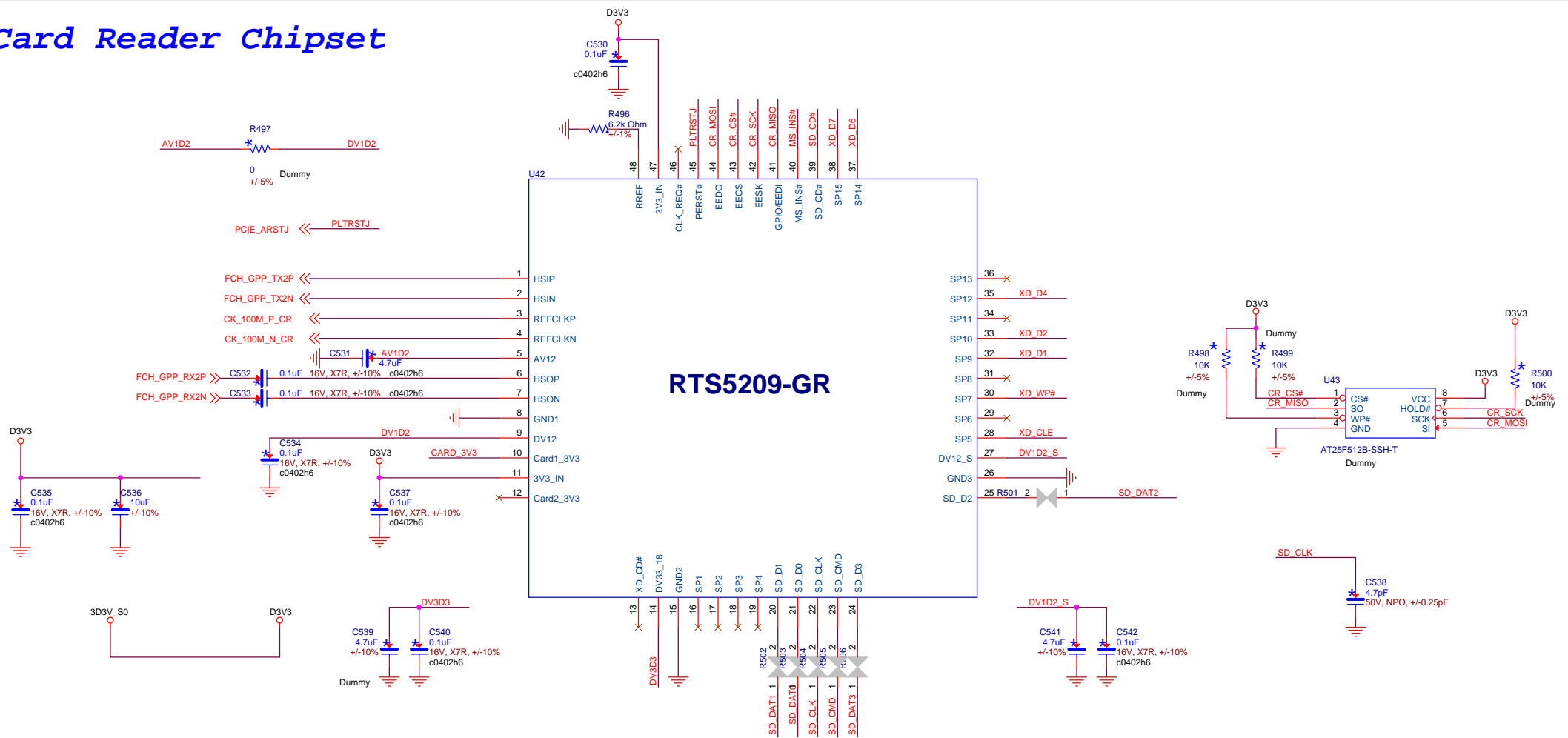
FANS



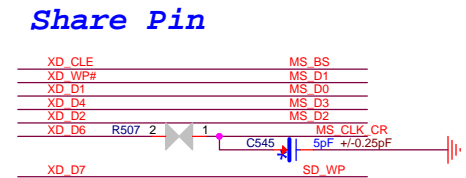
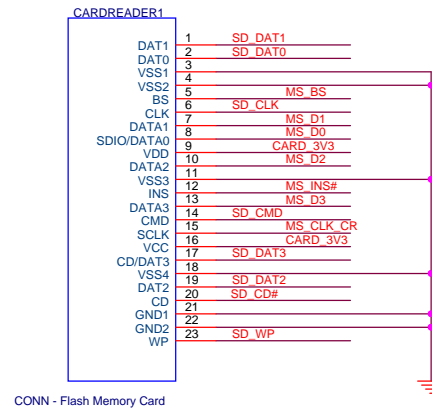
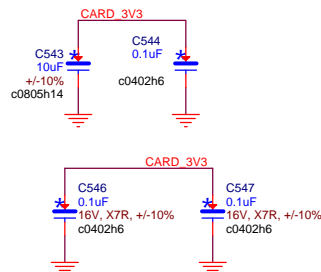
FOXCONN
FOXCONN PCEG

Title		FANS & PWRGD & ENABLES	
Size	Custom	Document Number	A45D01
Date	Wednesday, October 26, 2011	Sheet	35 of 41

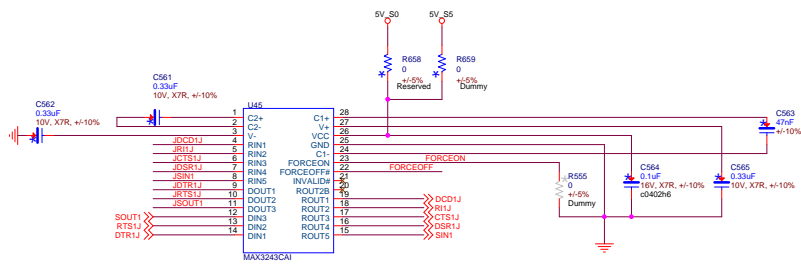
Card Reader Chipset



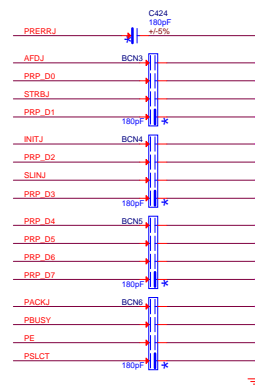
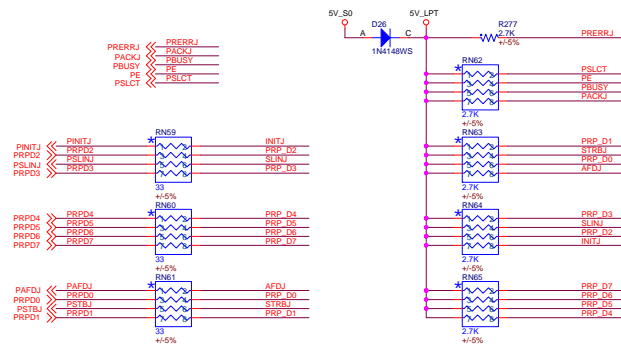
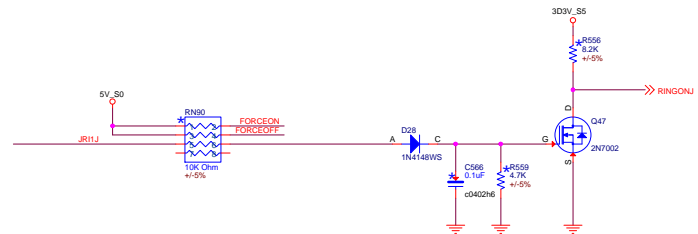
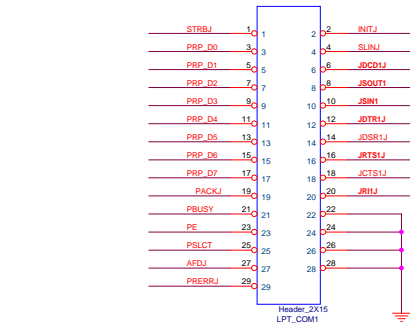
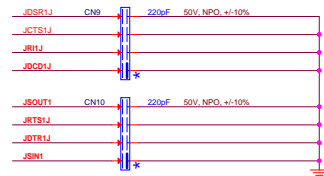
Card Reader Connector




Title			
Card Reader			
Size A3	Document Number	Rev	
	A45D01		
Date:	Wednesday, October 26, 2011	Sheet	37 of 41

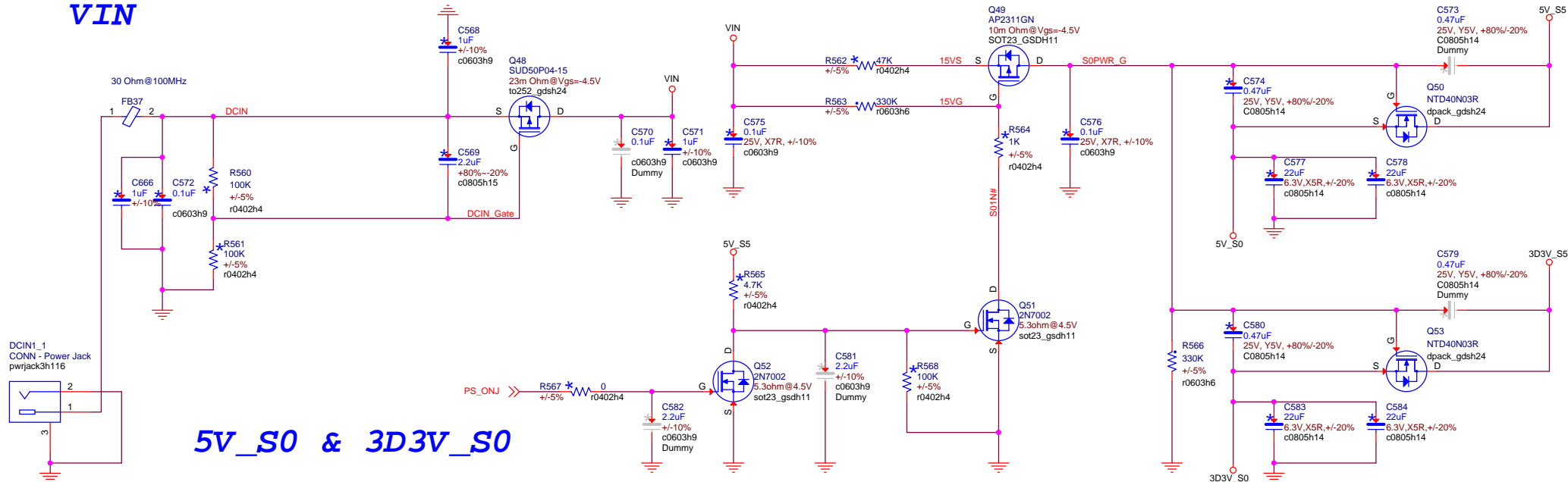


FOR MODEM WAKE-UP FUNCTION

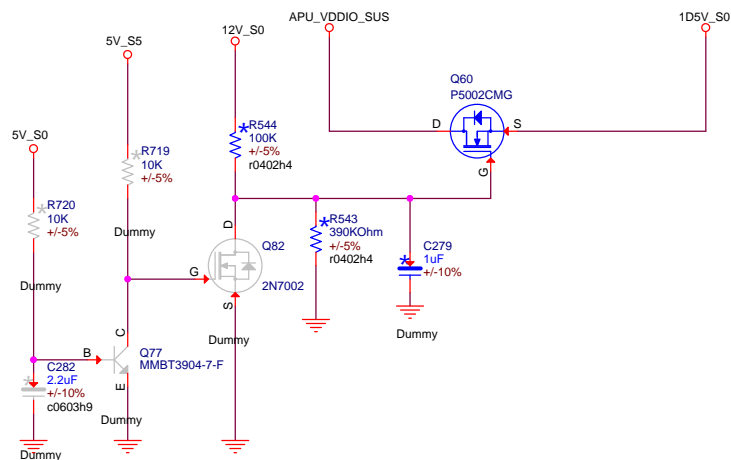


 FOXCONN PCEG		
TABLE OF CONTENTS		
Rev	Document Number	Rev
	A45D01	
Date	Wednesday, October 28, 2011	Sheet 38 of 41

VIN



5V_S0 & 3D3V_S0



1D5V_S0

FOXCONN

FOXCONN PCEG

Title		Power_Plane/3D3V_SB	
Size	A3	Document Number	A45D01
Date:	Wednesday, October 26, 2011	Sheet	40 of 41

