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H61MX

Fab A

Micro ATX 9.6X8.0

CPU:

Intel Sandy Bridge processors in LGA1155 Package

System Chipset:

PCH

Main Memory:

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

On Board Device:

PCI Bridge :IT8893E/BX

SIO:IT8728F/CX

LAN:RealTek RTL8111E-VB-GR

HDA Codec:ALC888/ALC662

BIOS:SPI Flash ROM 4M

Expansion Slots:

PCI EXPRESS 16X SLOT *1
PCI EXPRESS 1X SLOT * 1
PCI SLOT * 2

Version	Function	SKU	BOM
Fab.A			

FOXCONN

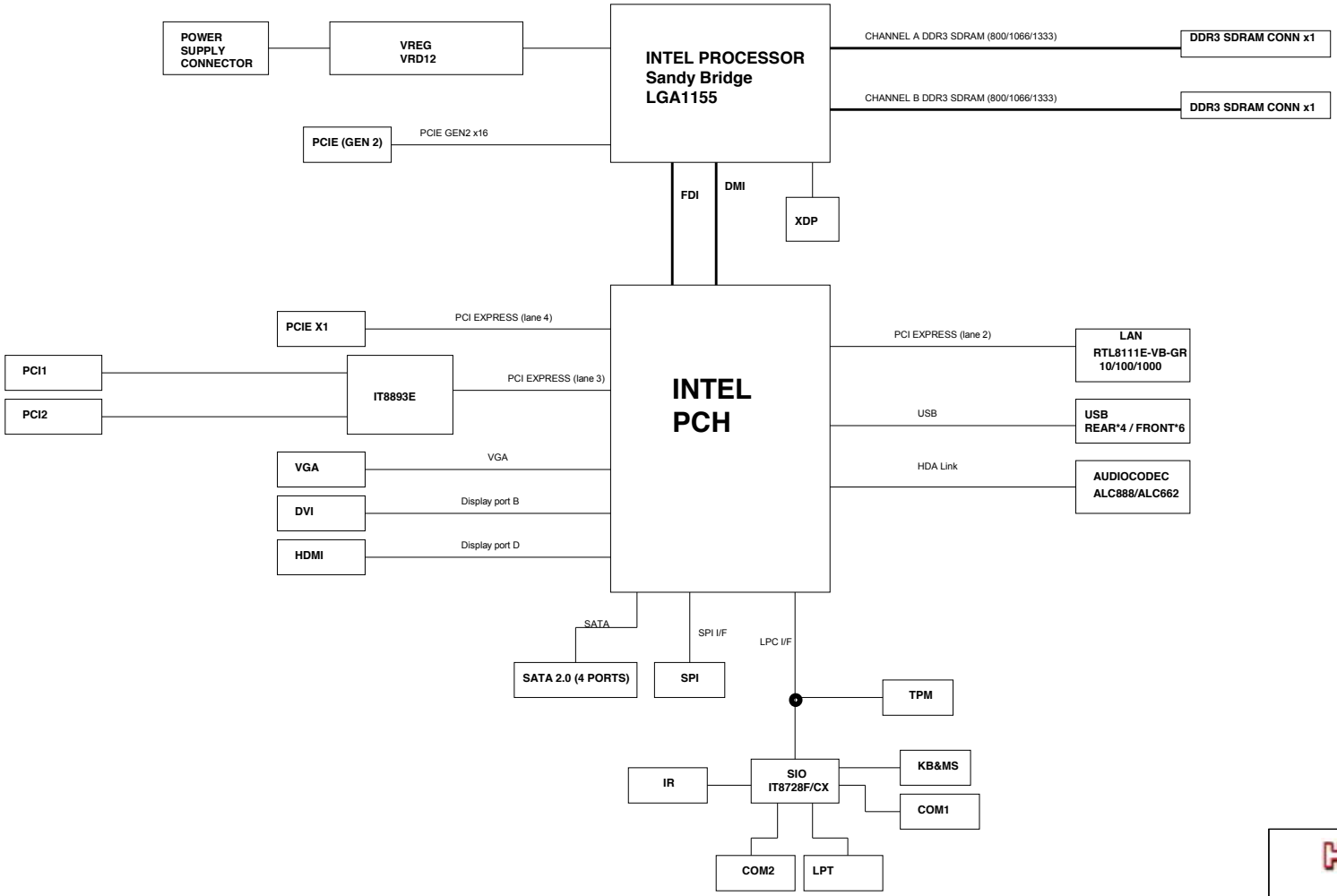
FOXCONN PCEG

Title: Cover Sheet

Size: C | Document Number: H61MX | Rev: A

Date: Tuesday, May 03, 2011 | Sheet 1 of 46

BLOCK DIAGRAM



FOXCONN PCEG

Title: Block Diagram		
Size: C	Document Number: H61MX	Rev: A
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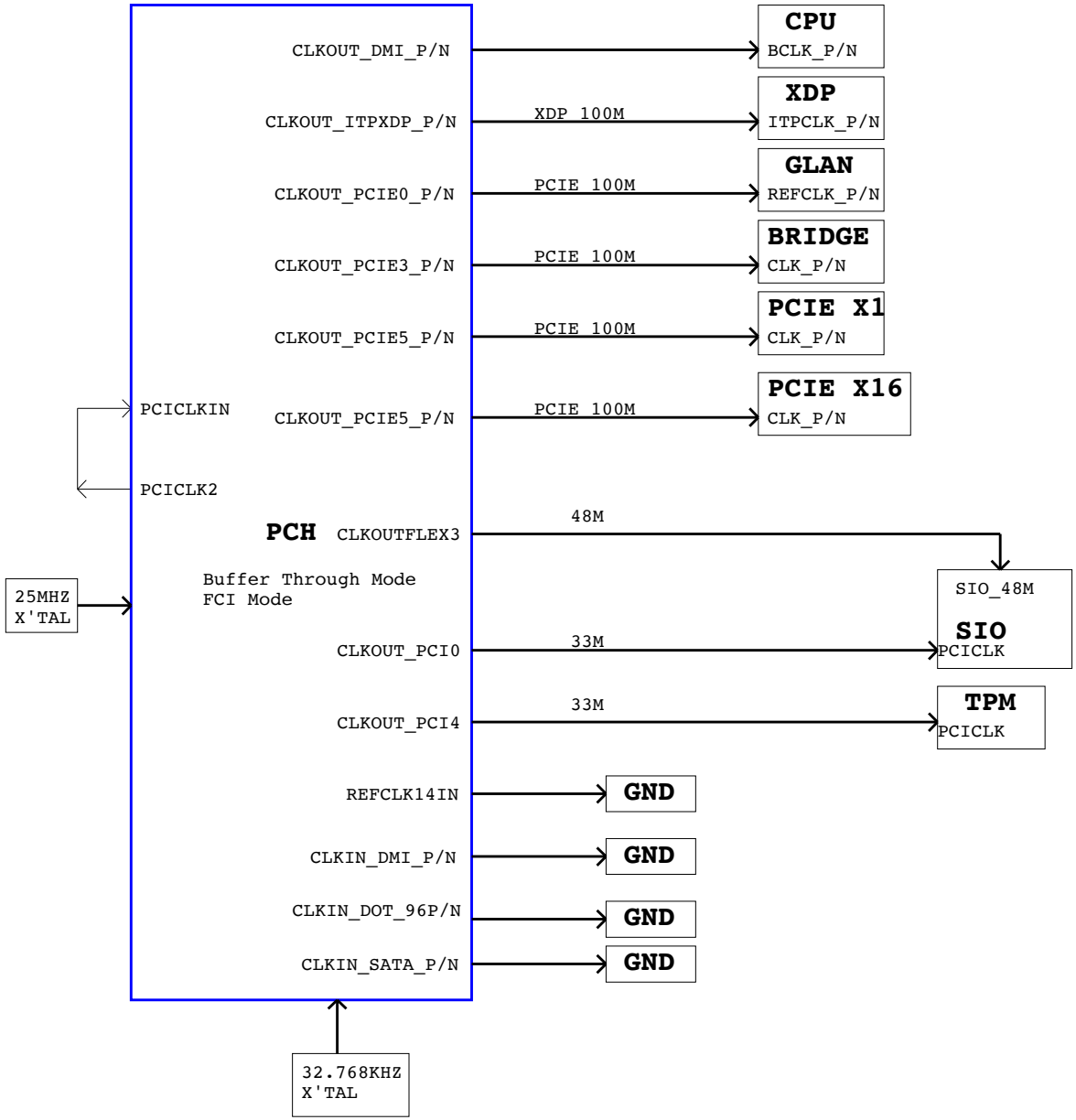
CLOCK DISTRIBUTION



FOXCONN PCEG

Title: Clock Distribution		
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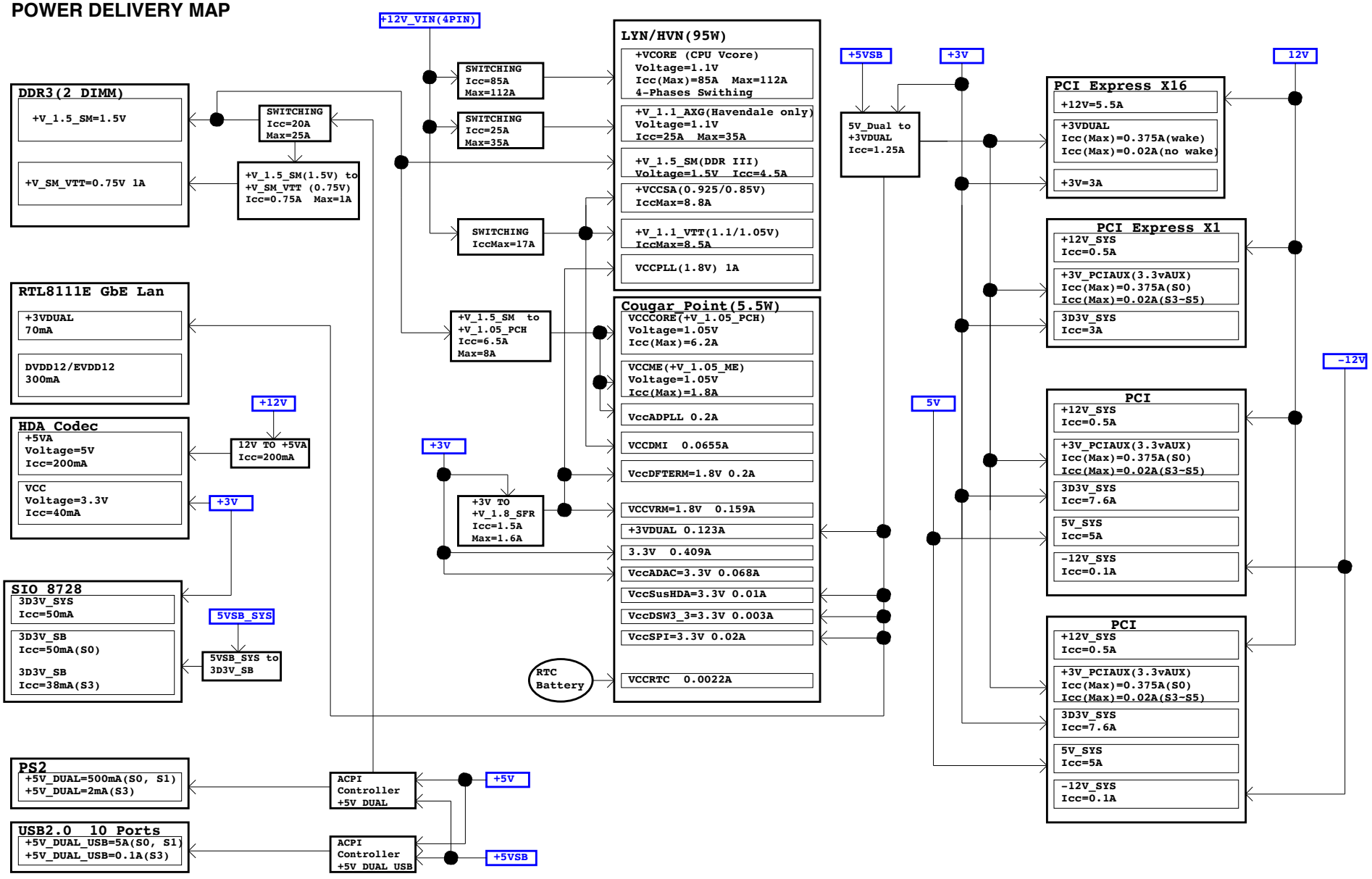
POWER DELIVERY MAP



FOXCONN PCEG

Title: Power Delivery Map

Size: C | Document Number: H61MX | Rev: A

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POWER ON SEQUENCE

G3 w/RTC Loss to S4/S5 (Without Deep S4/S5 Support) Timing Diagram

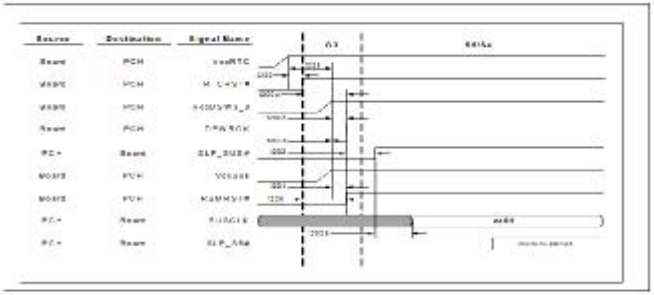


Figure 8-4. S3/M3 to S0 Timing Diagram

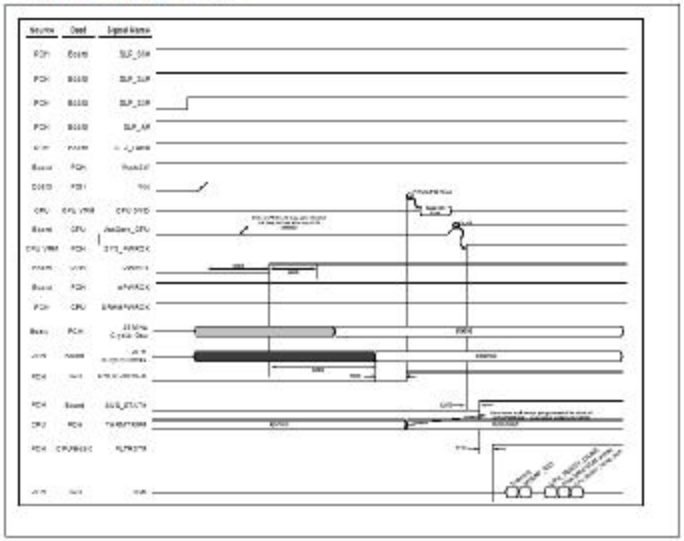


Figure 8-8. DRAMPWROK Timing Diagram

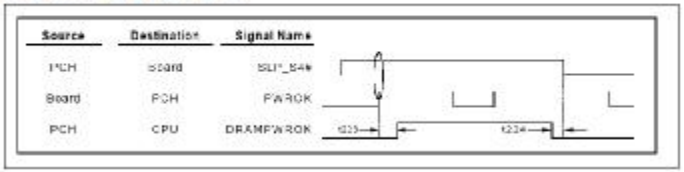


Figure 8-3. S5 to S0 Timing Diagram

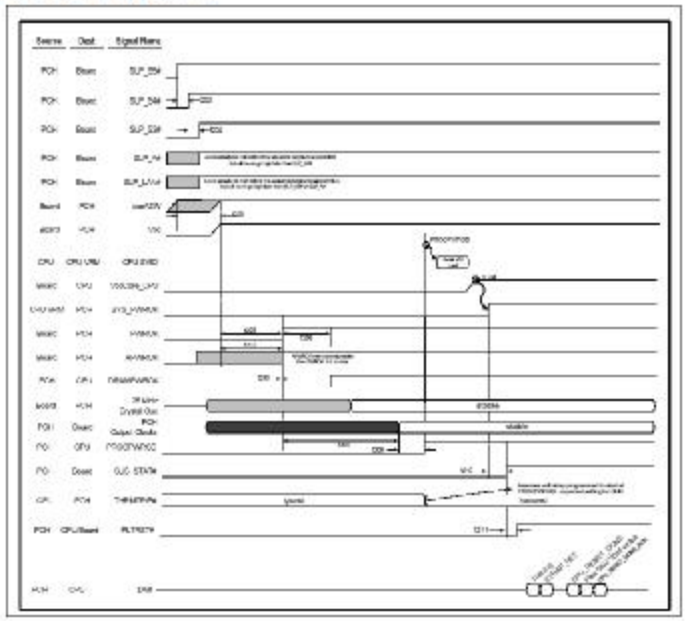
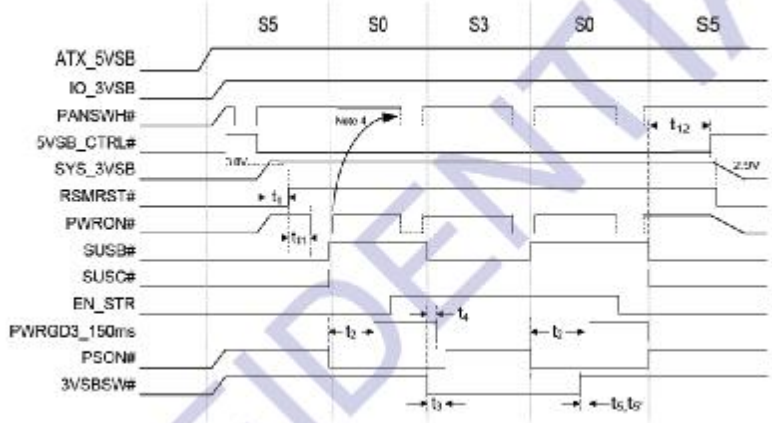


Figure 11-16. EuP Function Signal Timings



FOXCONN®

FOXCONN PCEG

Title: Power On Sequence

Size: Custom | Document Number: H61MX | Rev: A

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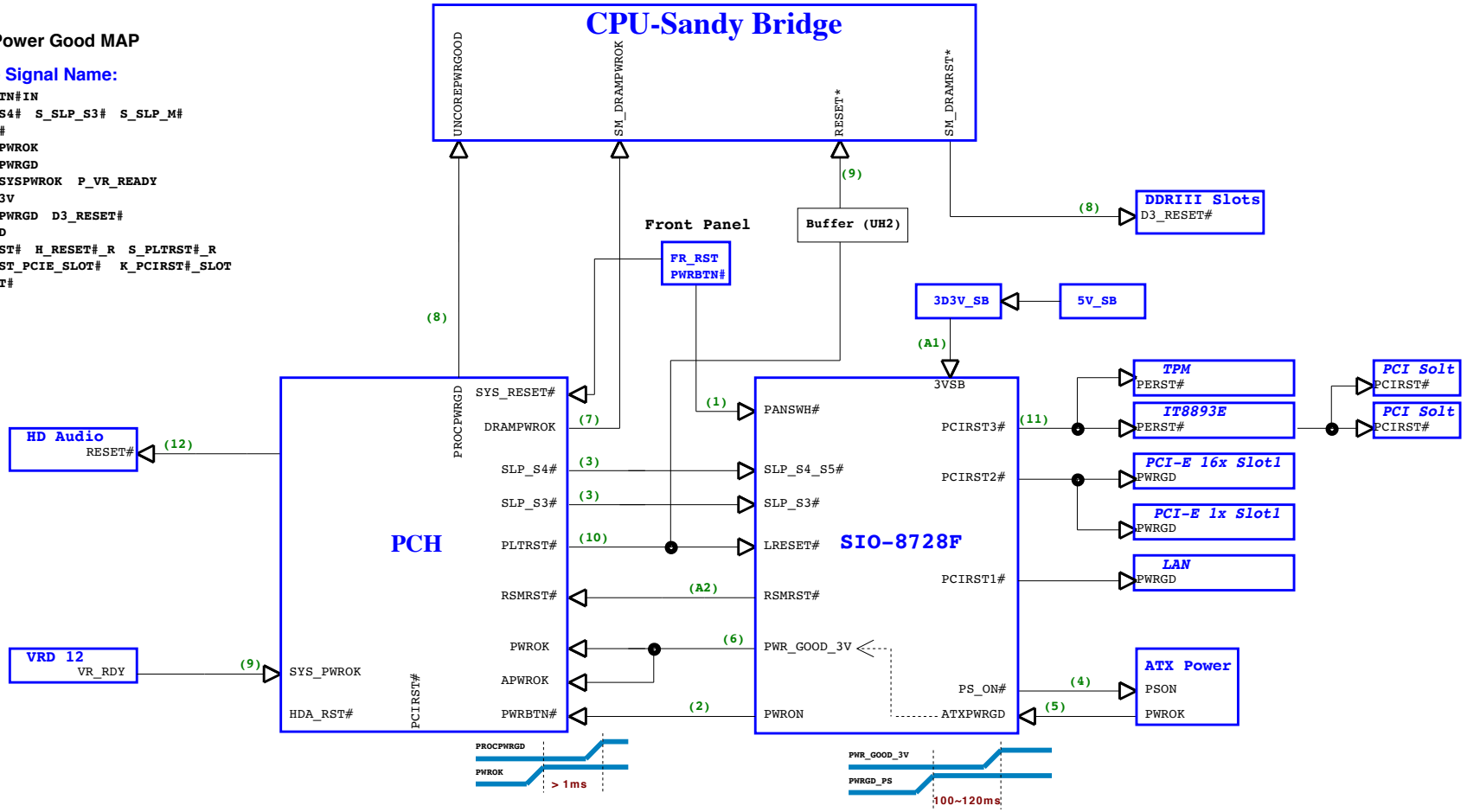
RESET / Power Good MAP

Sequence Signal Name:

(1) O_PWRBTN#IN
(2) S_SLP_S4# S_SLP_S3# S_SLP_M#
(3) O_PSON#
(4) B_ATX_PWROK
(5) PCH_MEPWRGD
(6) S_PCH_SYSPWROK P_VR_READY
(7) PWRGD_3V
(8) H_DRAMPWRGD D3_RESET#
(9) H_PWRGD
(10) S_PLTRST# H_RESET#_R S_PLTRST#_R
(11) X_PLTRST_PCIE_SLOT# K_PCIRST#_SLOT
(12) A_Z_RST#



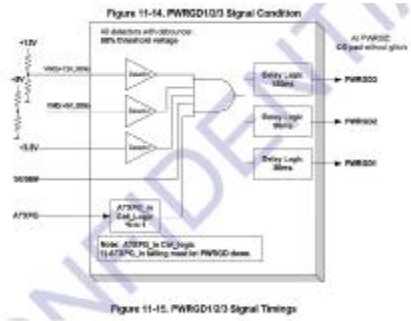


Figure 11-15. PWRGD1/2/3 Signal Timings

FOXCONN PCEG

Title: Reset/power good
Size: C
Document Number: H61MX
Rev: A
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IRQ Routing Table

	INTA#	INTB#	INTC#	INTD#	IDSEL	REQn#	GNTn#
Slot1	A	B	C	D	16	0	0

	INTA#	INTB#	INTC#	INTD#	IDSEL	REQn#	GNTn#
Slot2	B	C	D	A	17	2	2

STRAPPING Table

CPU side

CFG[17:0]	Description	
[2]	PCI Express static x16 lane numbering reversal	1: normal Default 0: lane numbers reversed
[6:5]	PCI Express Bifurcation	00: 1x8, 2x4 PCI Express 01: reserved 10: 2x8 PCI Express 11: 1x16 PCI Express Default

FOXCONN PCEG

Title: STRAP

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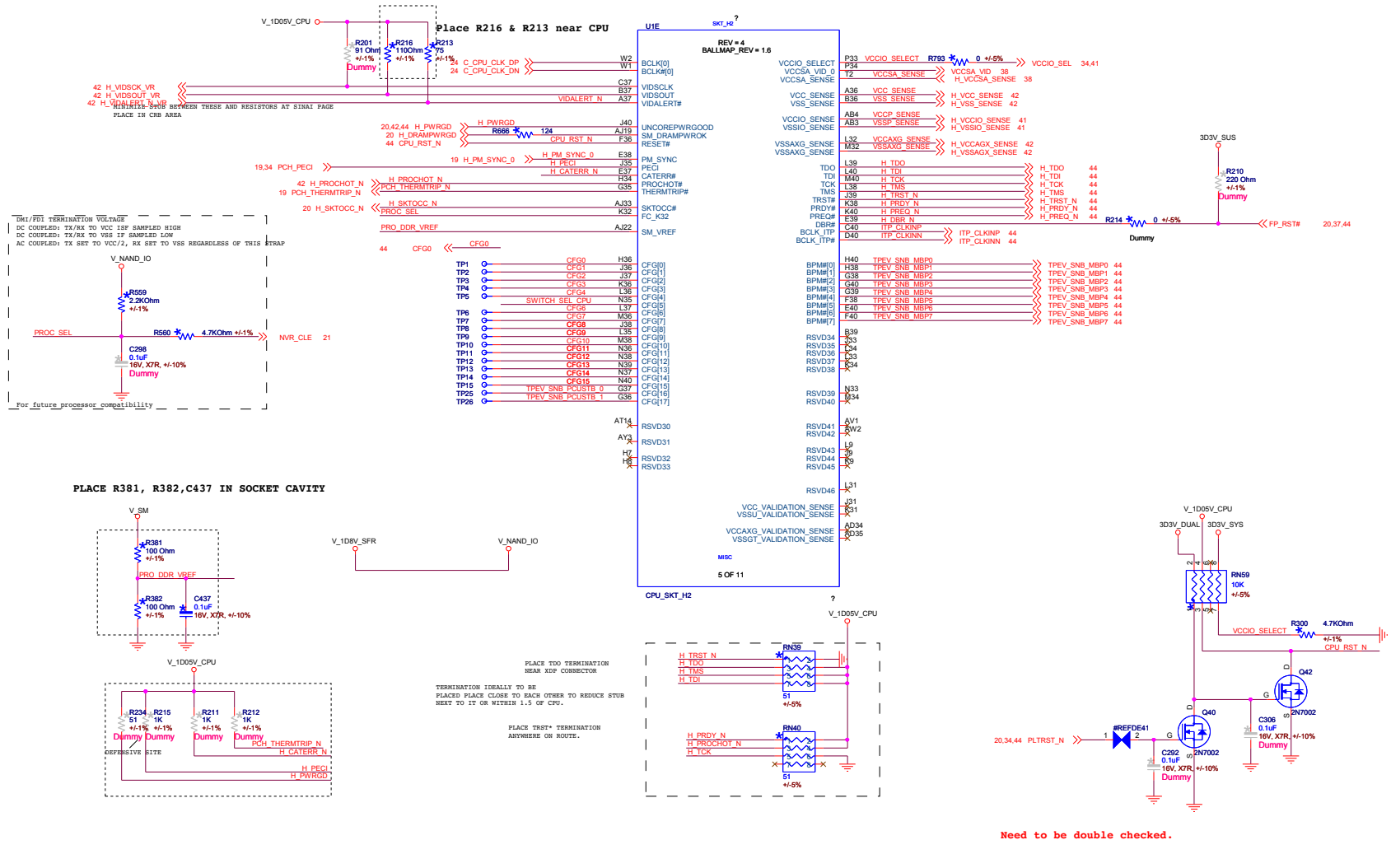
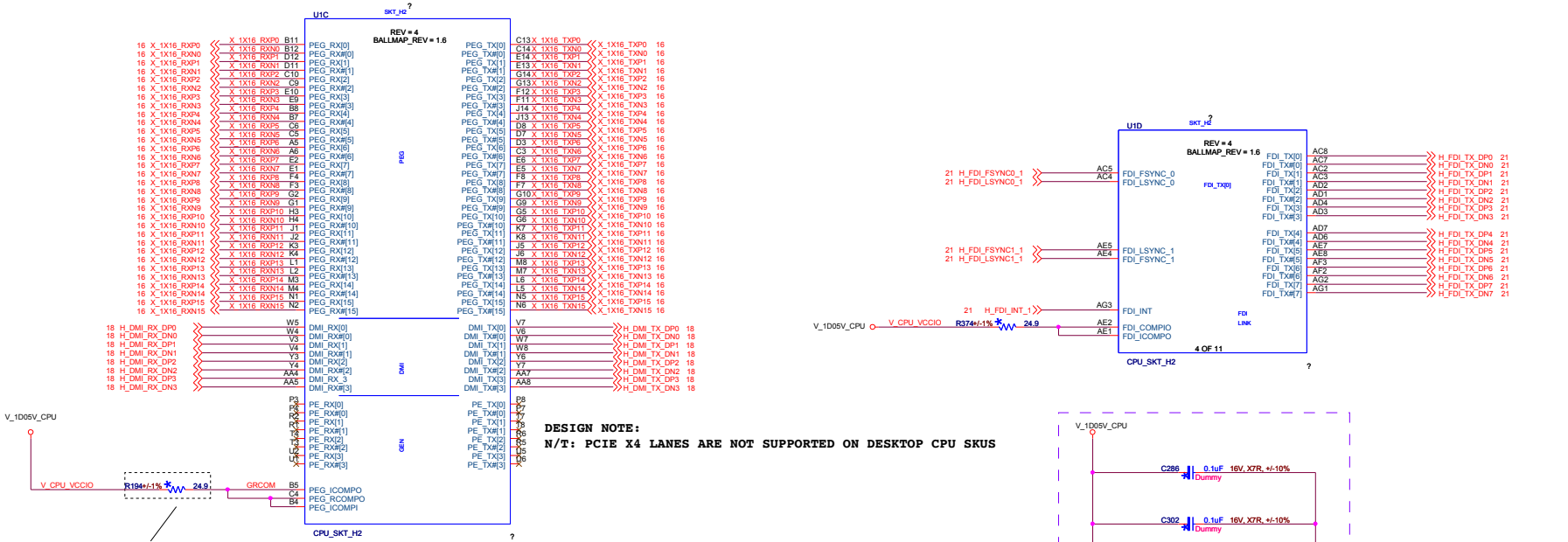
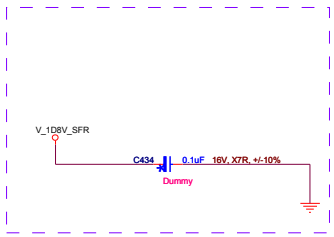


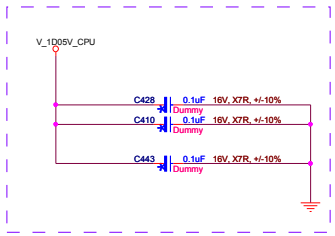


DESIGN NOTE:
N/T: PCIE X4 LANES ARE NOT SUPPORTED ON DESKTOP CPU SKUS

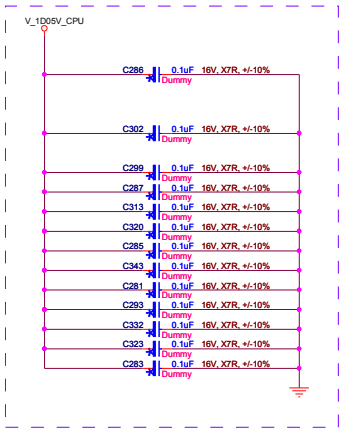
Short B4 & C4 together, route as a single 4 mil trace to R2
Route B5 to R2 as a aeperate 10 mil trace



Stiching CAP for FDI



Stiching CAP for DMI



Stiching CAP for PEG

FOXCONN PCEG

Title	CPU2-PEG/DMI/FDI	
Size C	Document Number H61MX	Rev A
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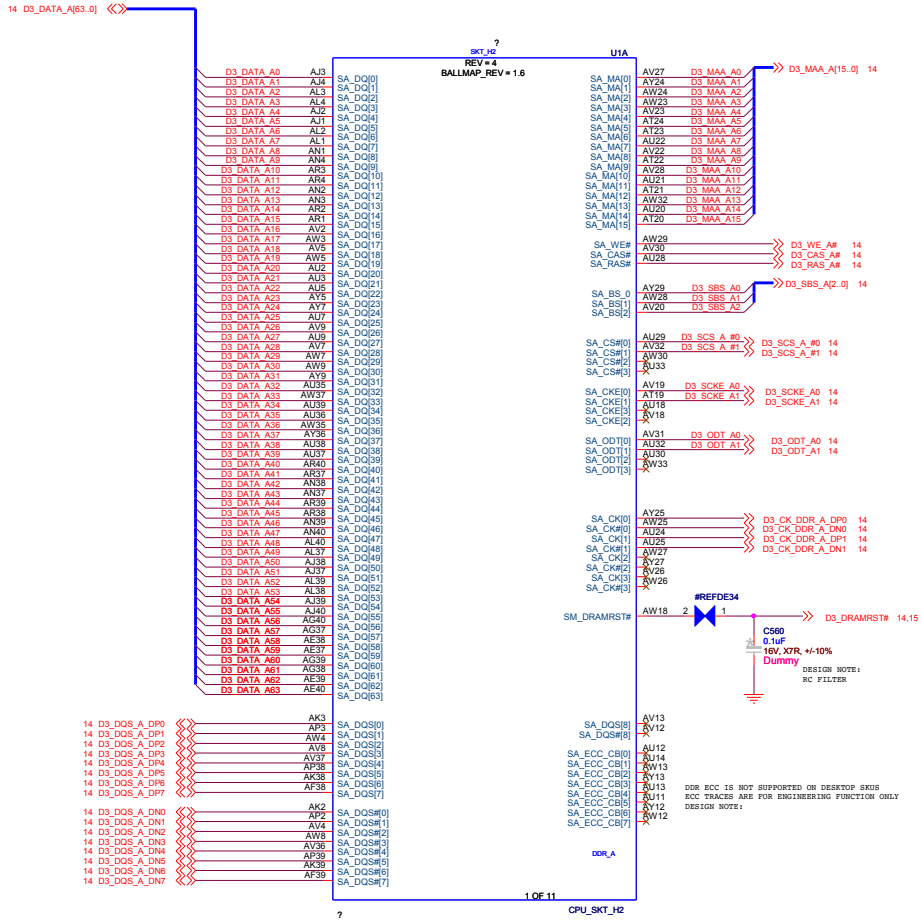
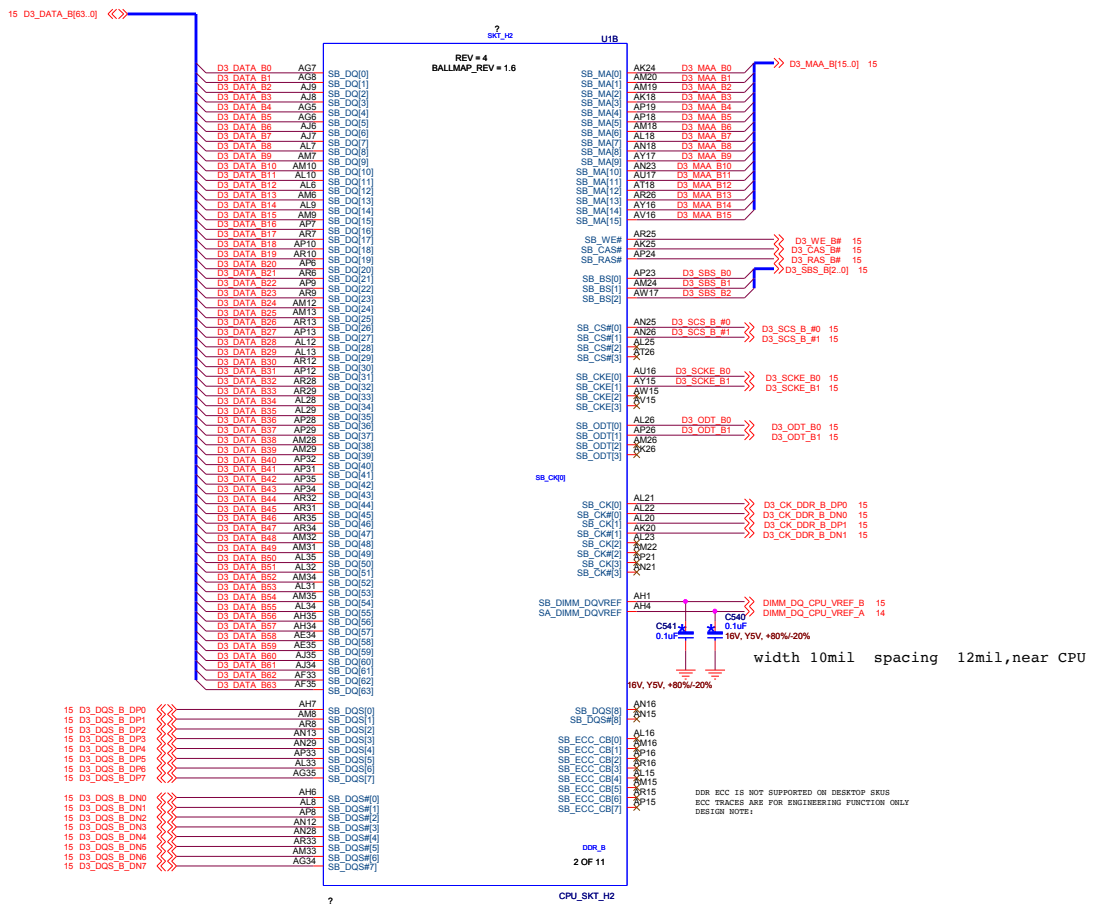


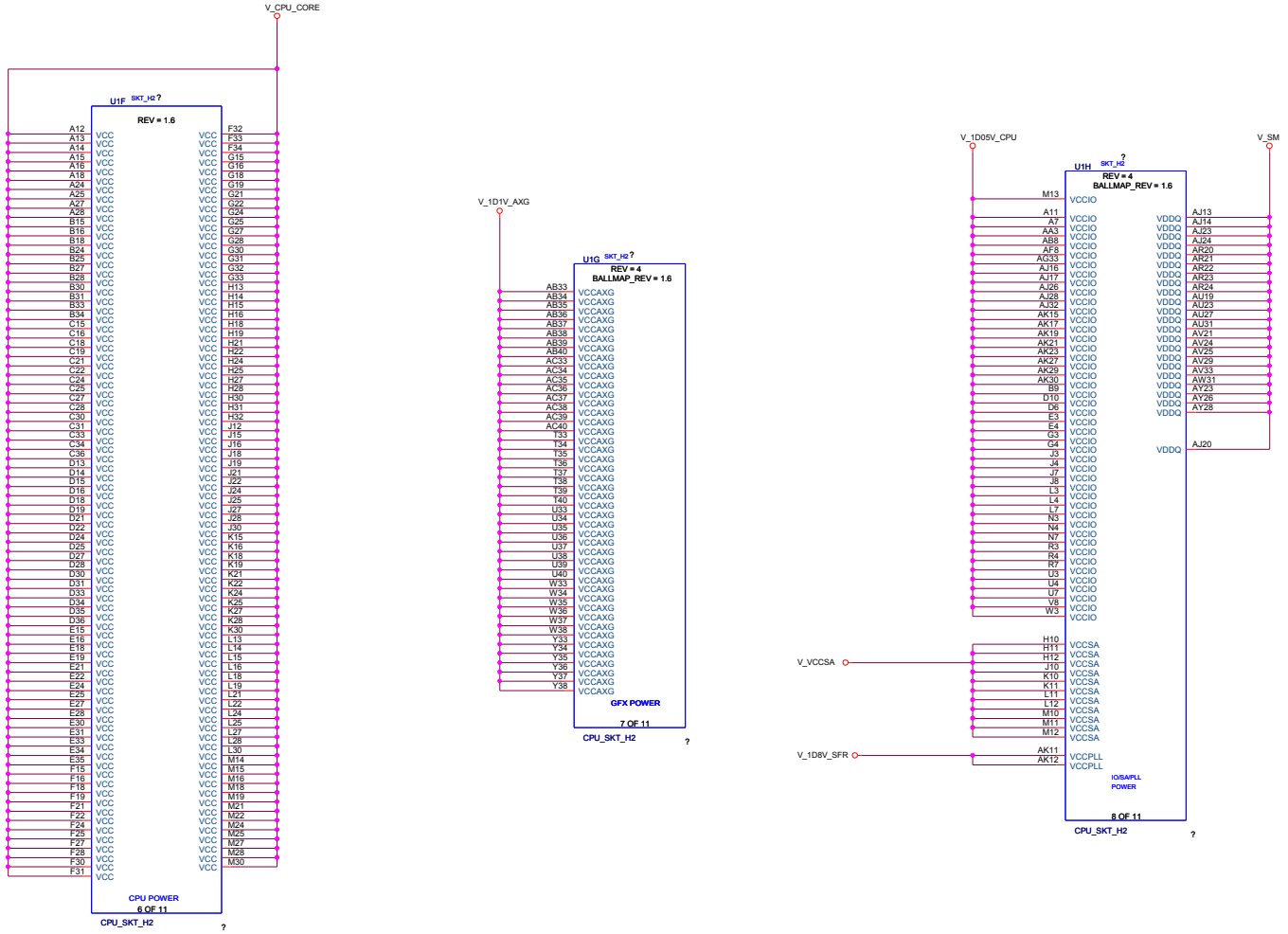
FOXCONN PCEG

Title	CPU3-DDR3_CHA	
Size C	Document Number H61MX	Rev A
Date: Tuesday, May 03, 2011	Sheet 10 of 46	



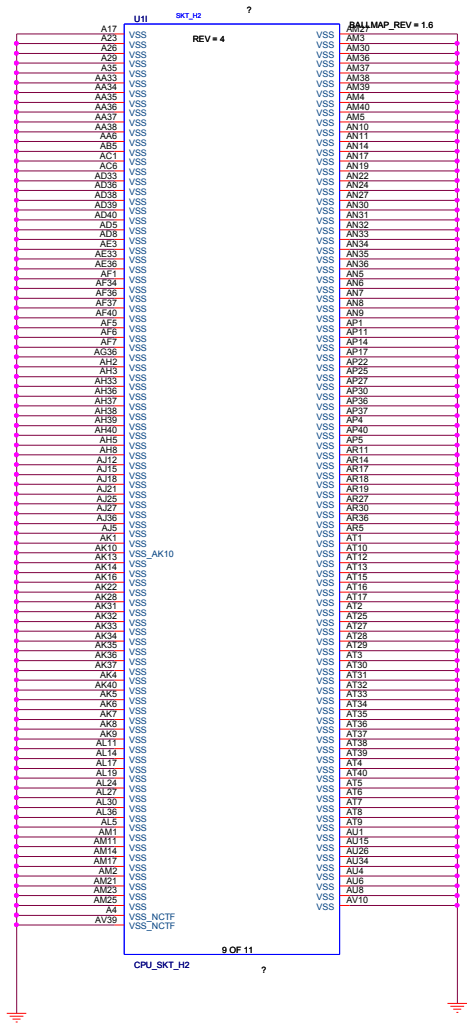
FOXCONN PCEG

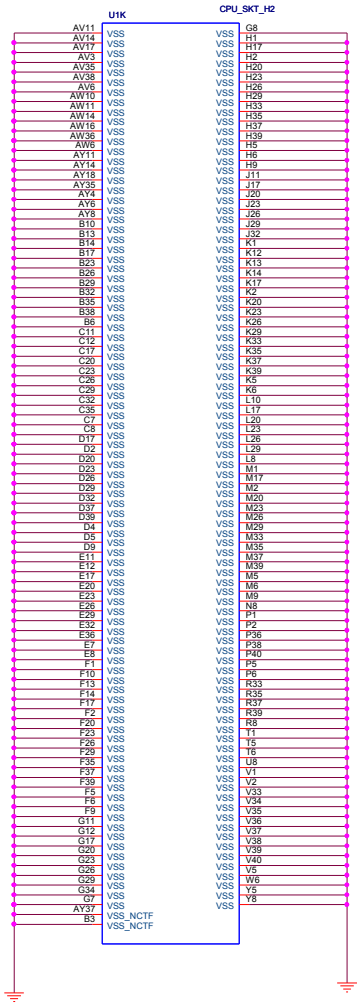
Title: CPU4-DDR3_CHB			
Size: C	Document Number: H61MX		Rev: A
Date: Tuesday, May 03, 2011	Sheet 11 of 46		

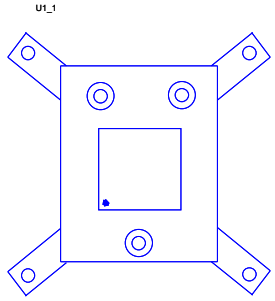


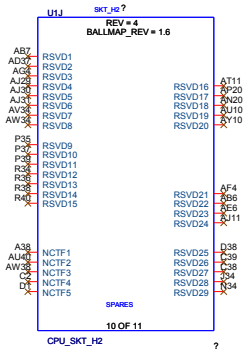
FOXCONN PCEG

Title	CPU5-POWER	
Size C	Document Number H61MX	Rev A
Date: Tuesday, May 03, 2011	Sheet 12 of 46	







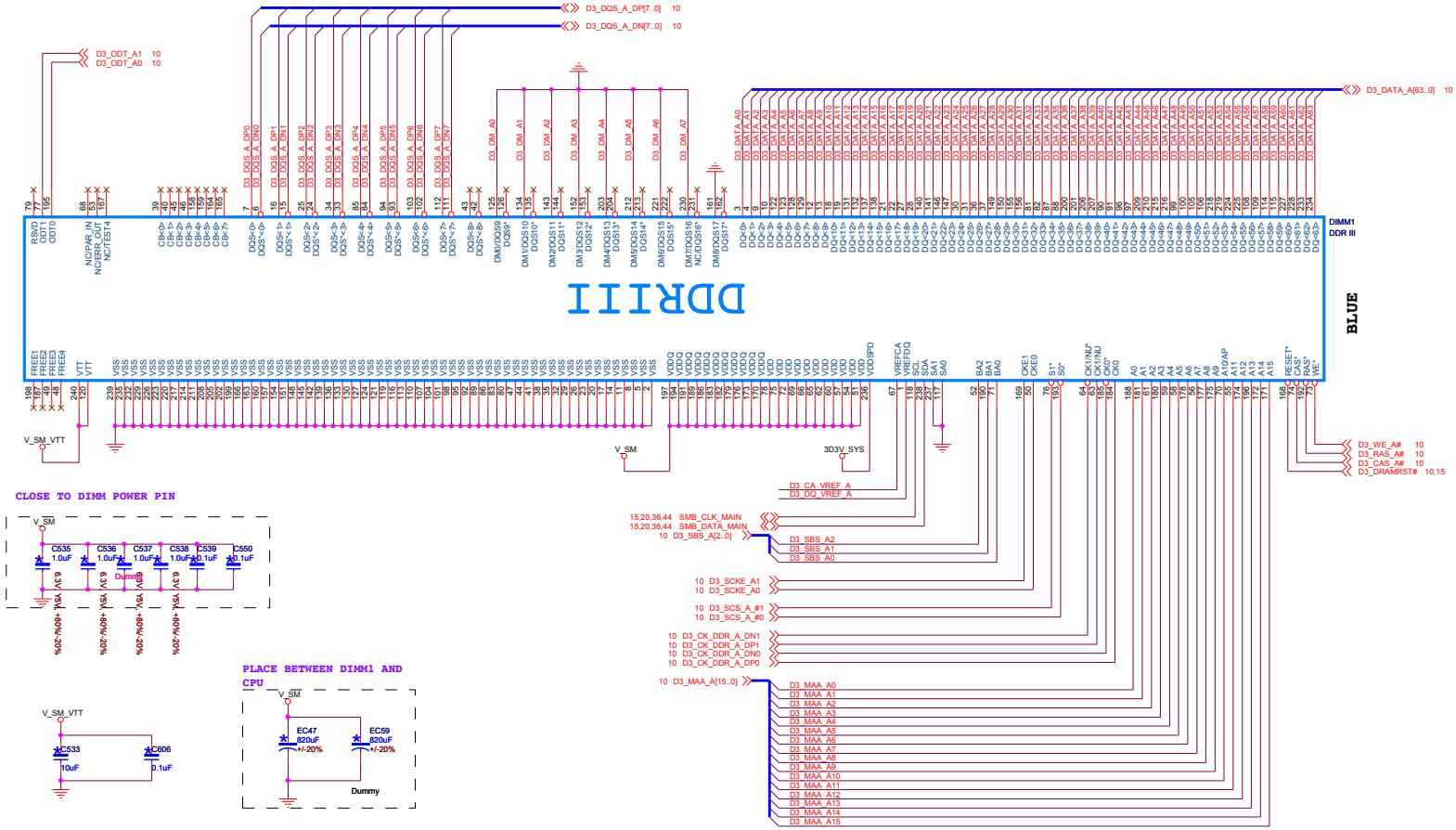


FOXCONN

FOXCONN PCEG

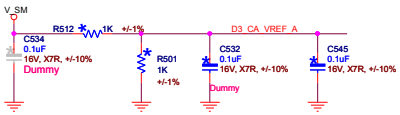
Title: CPU6-GND			
Size: C	Document Number: *H61MX*		Rev: A
Date: Tuesday, May 03, 2011	Sheet 13 of 46		

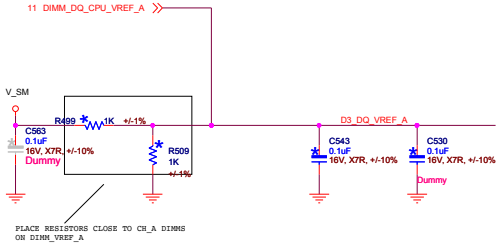
CHANNEL A DIMM 1
SMB ADDRESS:000



CLOSE TO DIMM POWER PIN

PLACE BETWEEN DIMM1 AND CPU





FOXCONN PCEG

Title: DDR3-1:CHA			
Size: C	Document Number: H61MX		Rev: A
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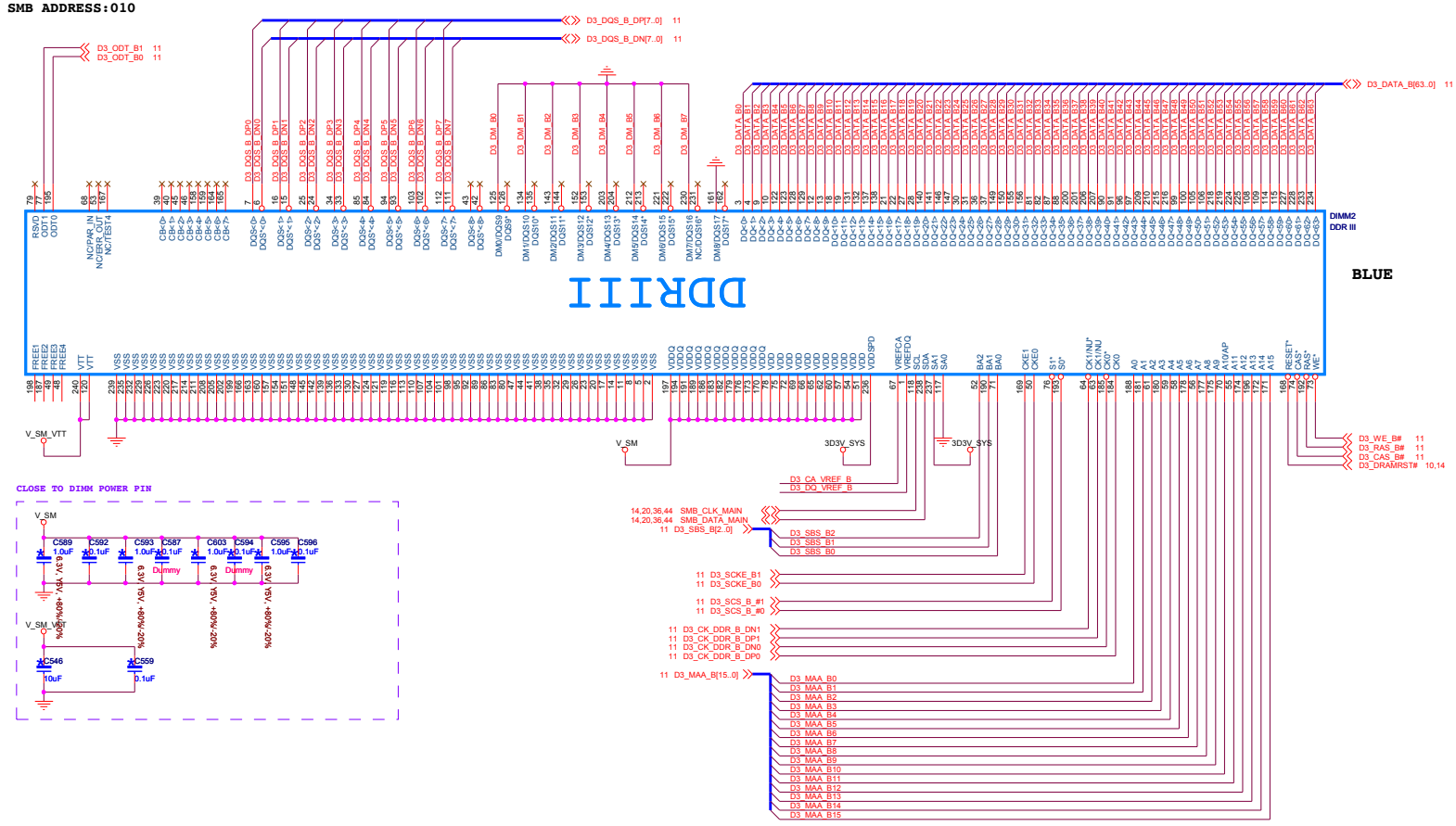
CHANNEL B DIMM 3
SMB ADDRESS:010



FOXCONN PCEG

Title	DDR3-2:CHB	
Size C	Document Number H61MX	Rev A
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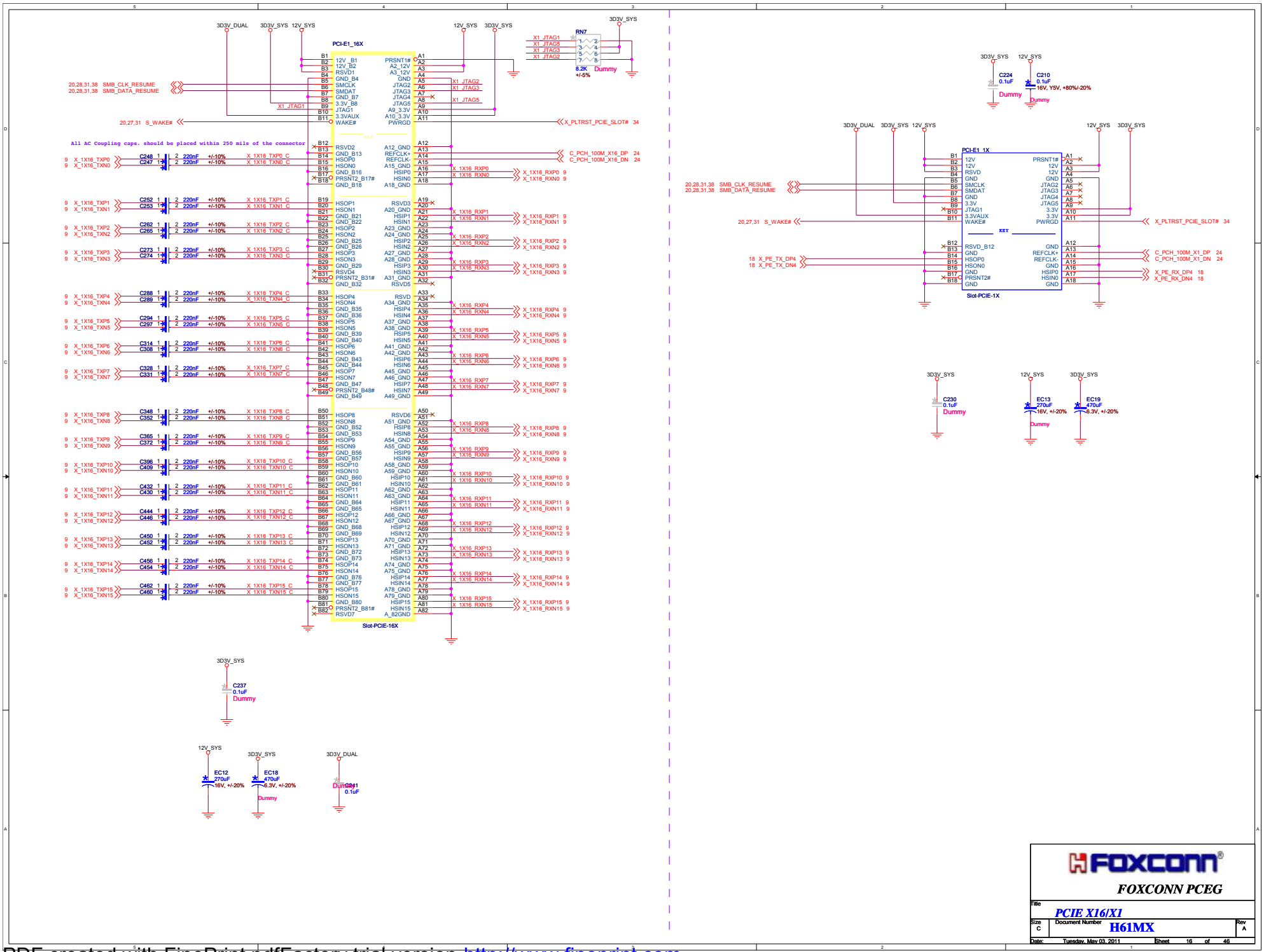

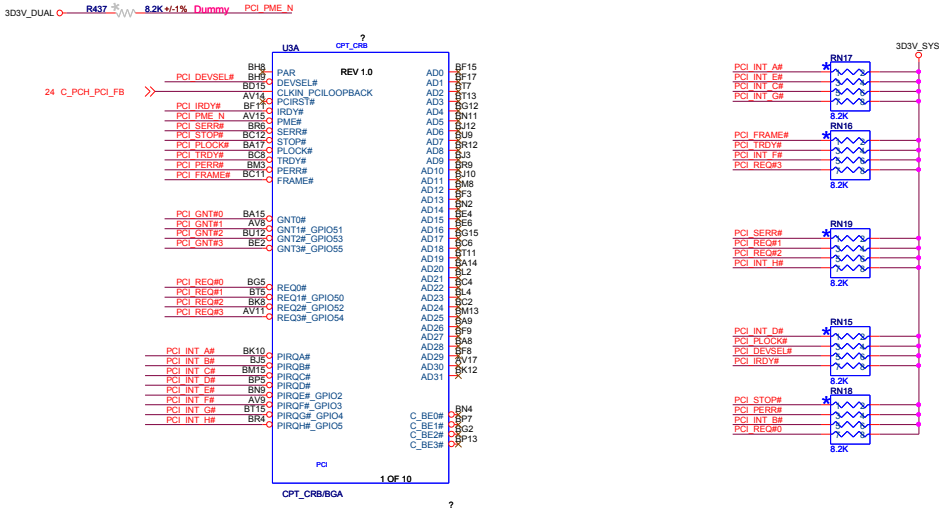

STRAP: Boot BIOSselect

check whether GNT1 or SATA1GP(GPIO19)

BOOT DEVICE	GNT1	SATA1GP
LPC	0	0
NAND	0	1
PCI	1	0
SPI	1	1

PCI_GNT#0 R445 1K Dummy

PCI_GNT#1 R438 1K Dummy

Internal pull-up

PCI_GNT#3 R446 1K Dummy

PCI_GNT#2 R454 1K Dummy

DG 0.7
GNT3 is top block swap mode:
connect to ground with 4.7k ohm weak
pull down resistor for top block swap mode

GNT2#/GPIO53:ESI strap for server platform
ONLY,Do not pull low.

FOXCONN PCEG

Title: PCH1-PCI

Size: C | Document Number: H61MX | Rev: A

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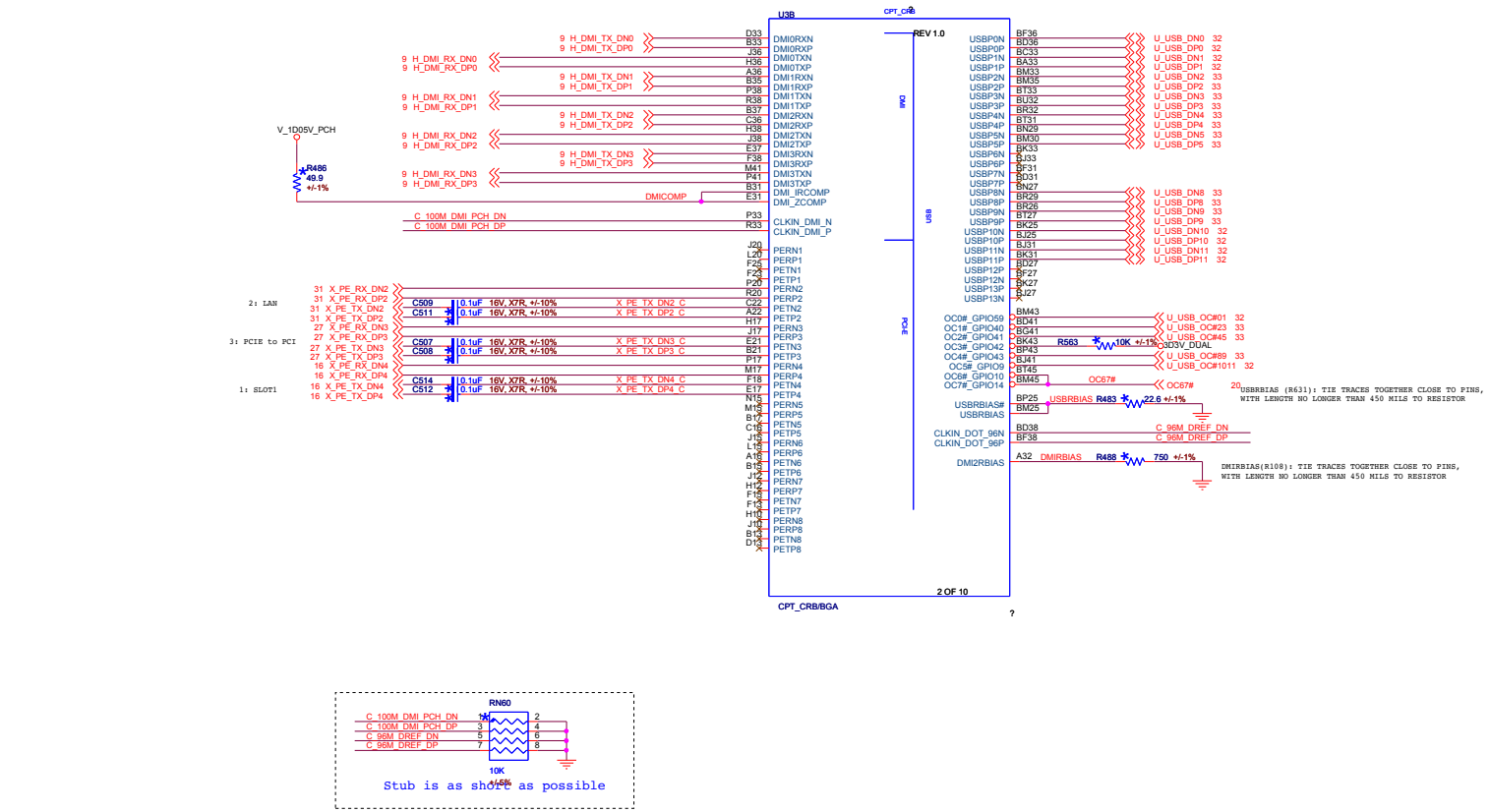

FOXCONN PCEG

Title: PCH2-DMI/PCIE/USB

Size: C | Document Number: H61MX | Rev: A

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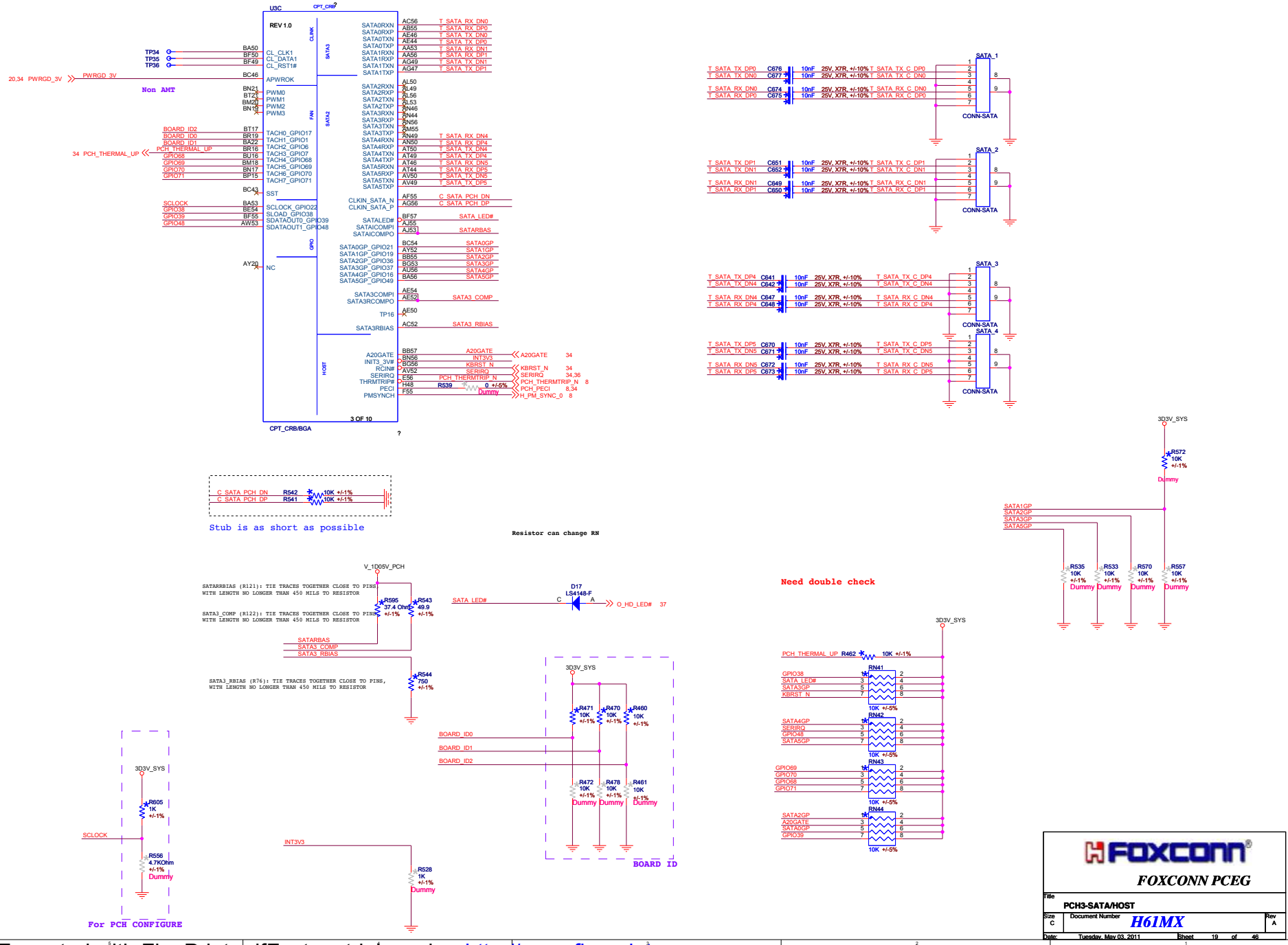

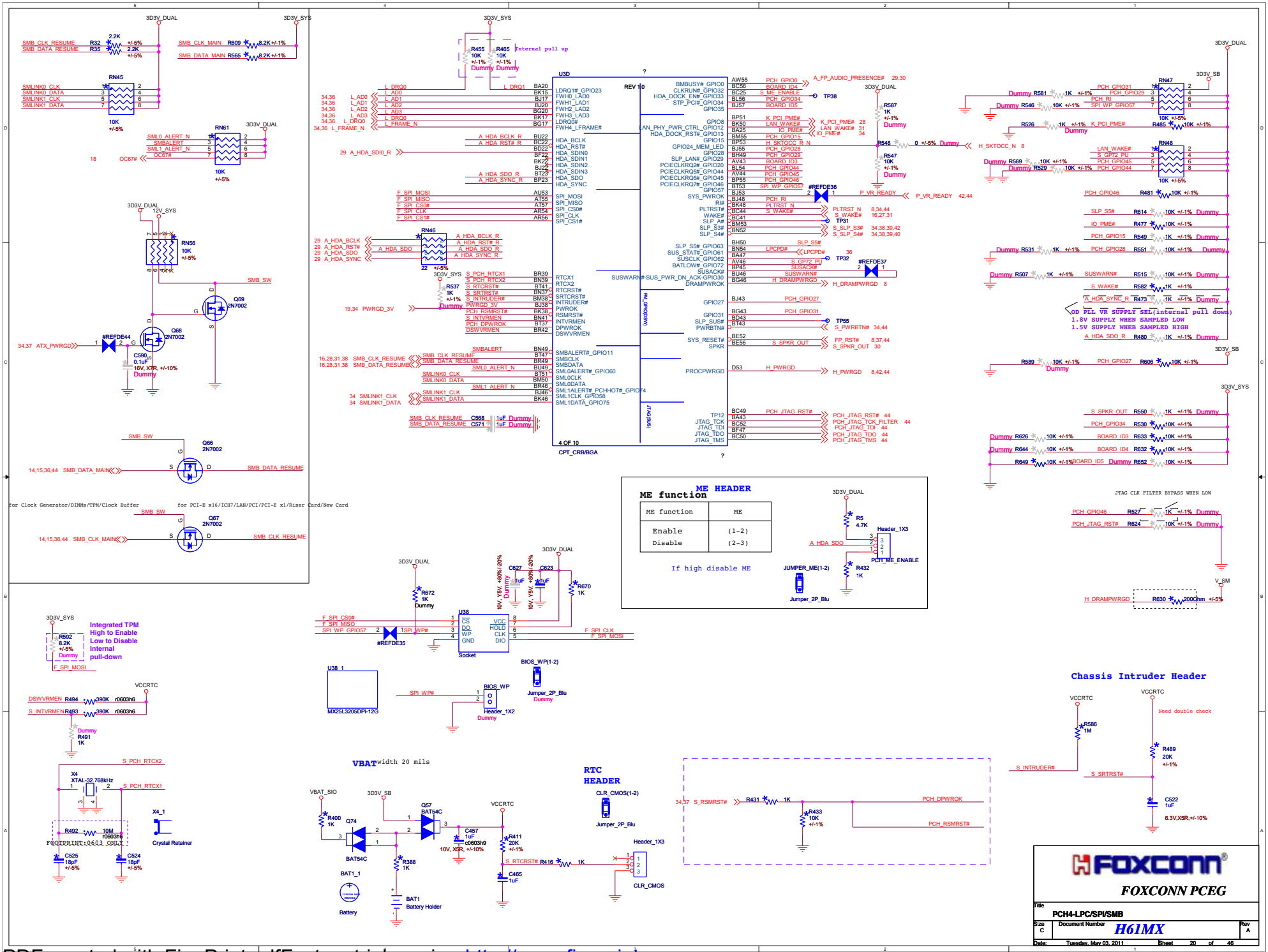

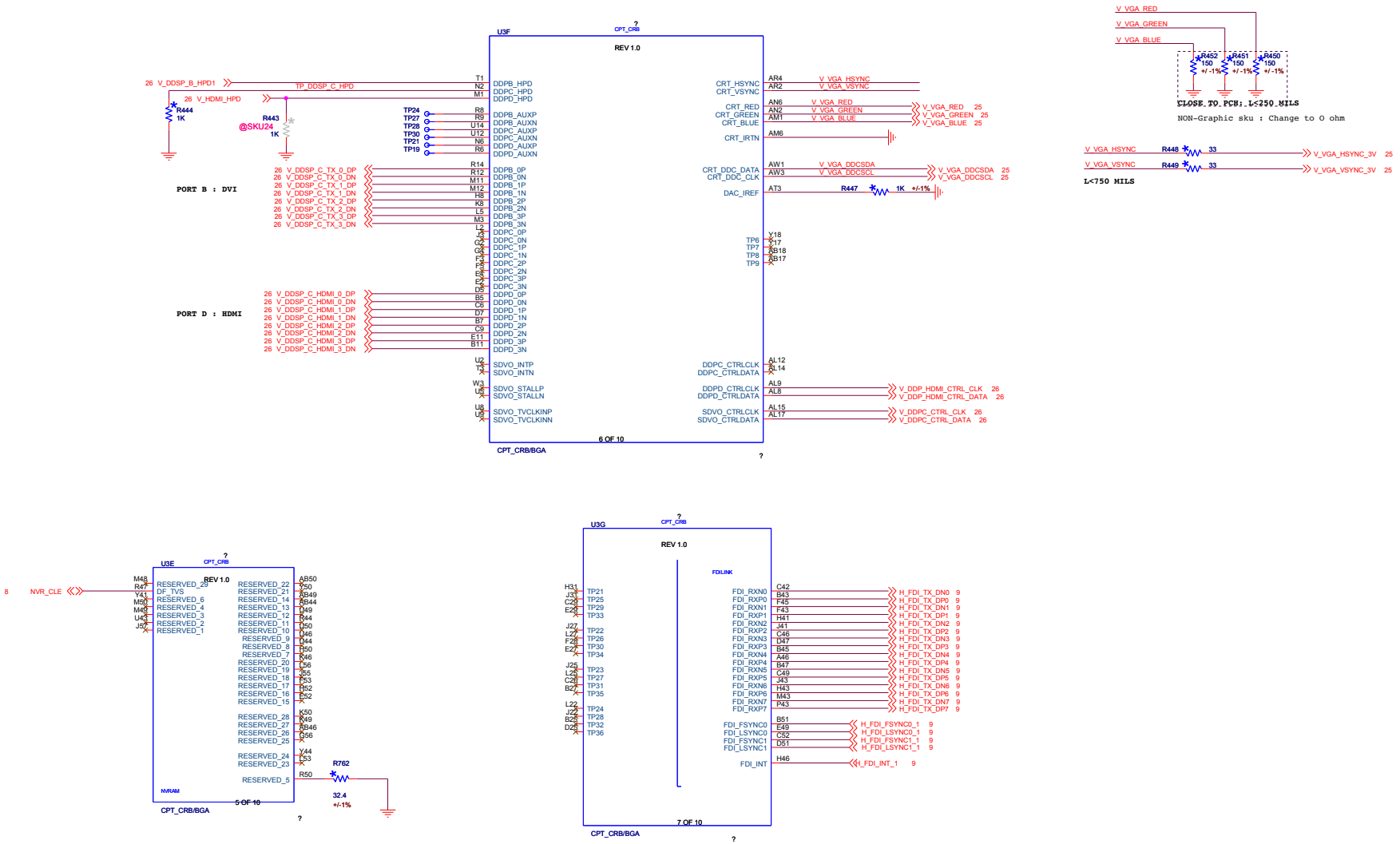

FOXCONN PCEG

Title: PCH5-NVAND/FDI/DISPLAY

Size: C | Document Number: H61MX | Rev: A

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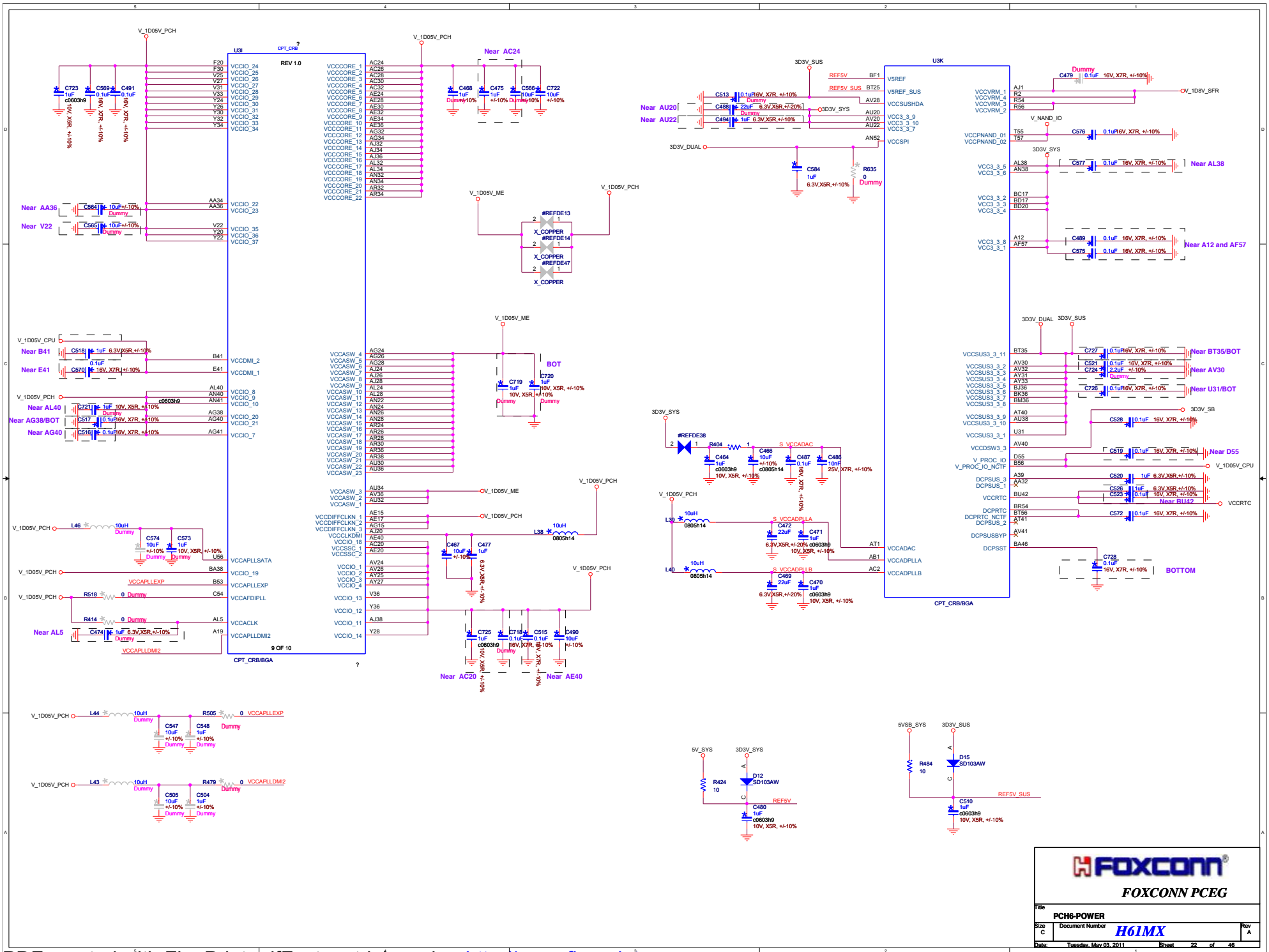
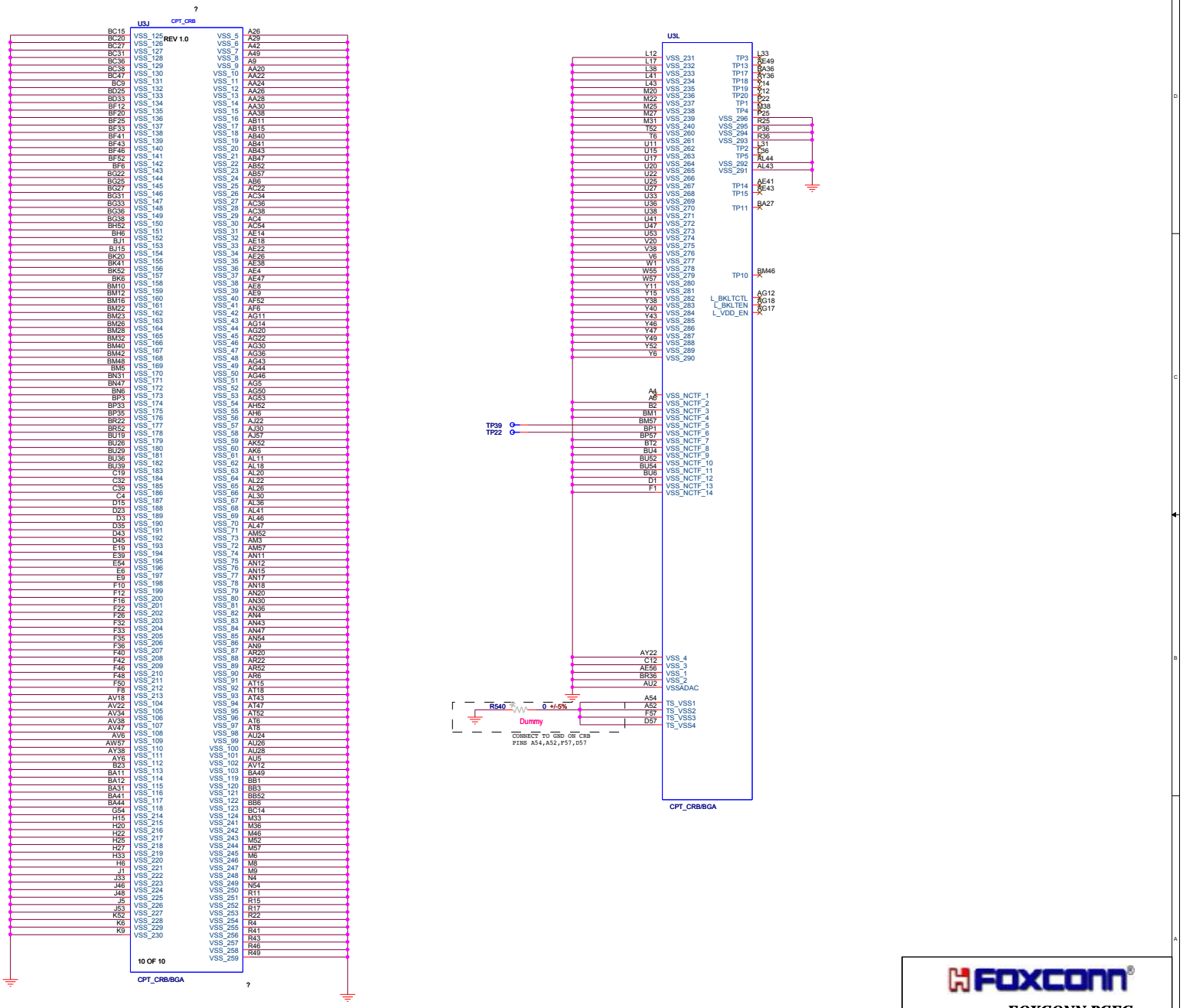


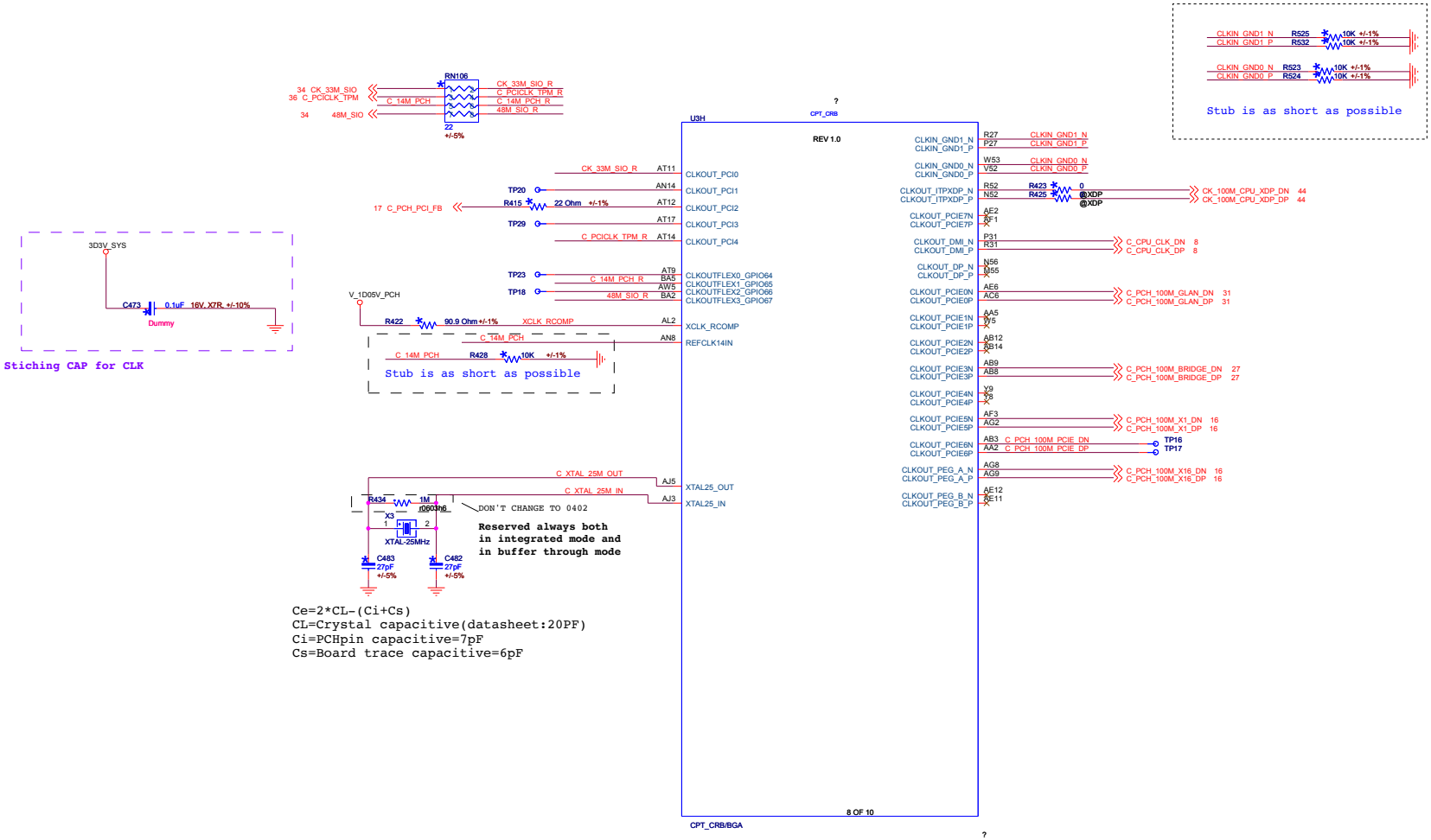


FOXCONN PCEG

Title: PCH7-GND

Size: C | Document Number: H61MX | Rev: A

Date: Tuesday, May 03, 2011 | Sheet 23 of 46



FOXCONN PCEG

Title	PCH8-CLOCK	
Size C	Document Number H61MX	Rev A
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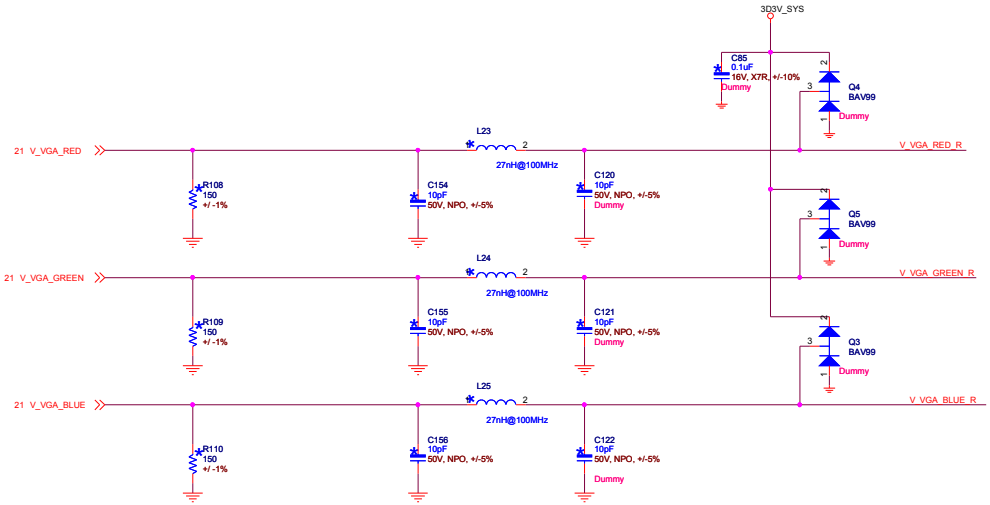

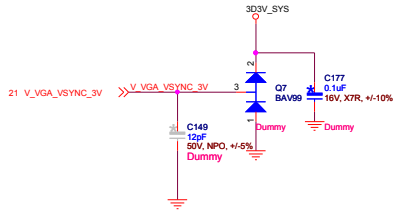

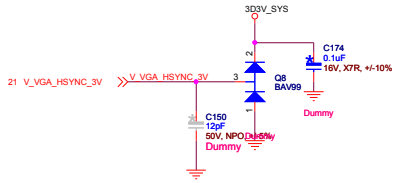

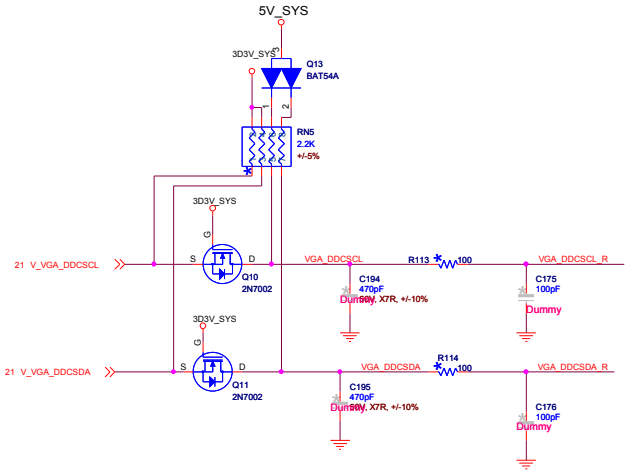

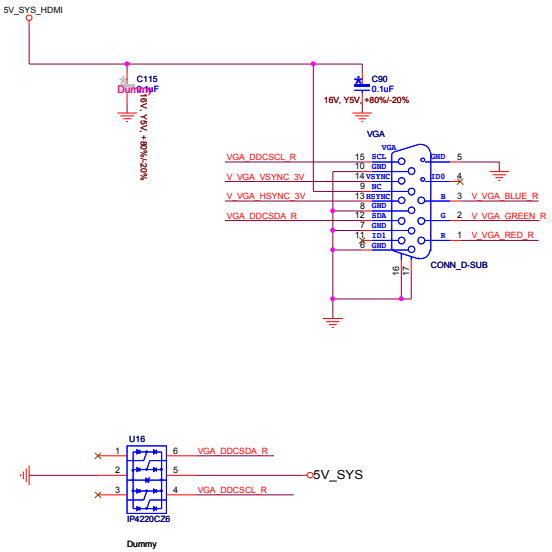

FOXCONN PCEG

Title: VGA

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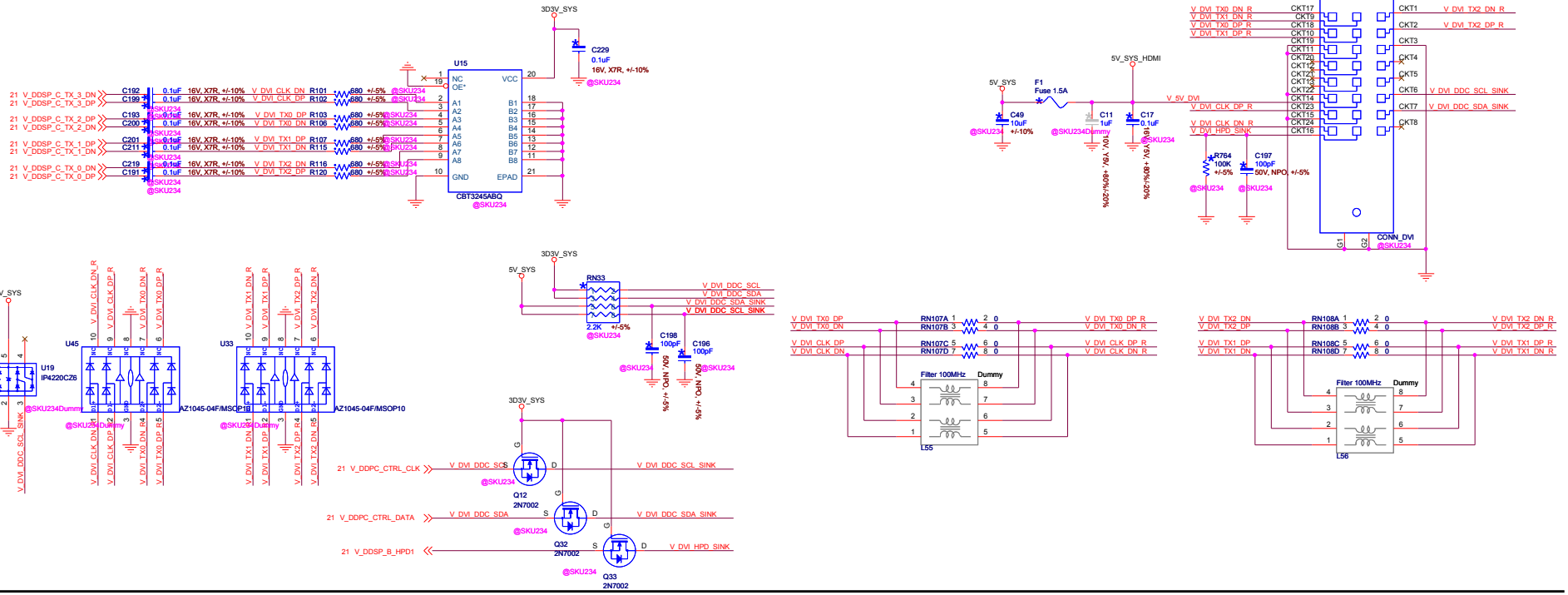
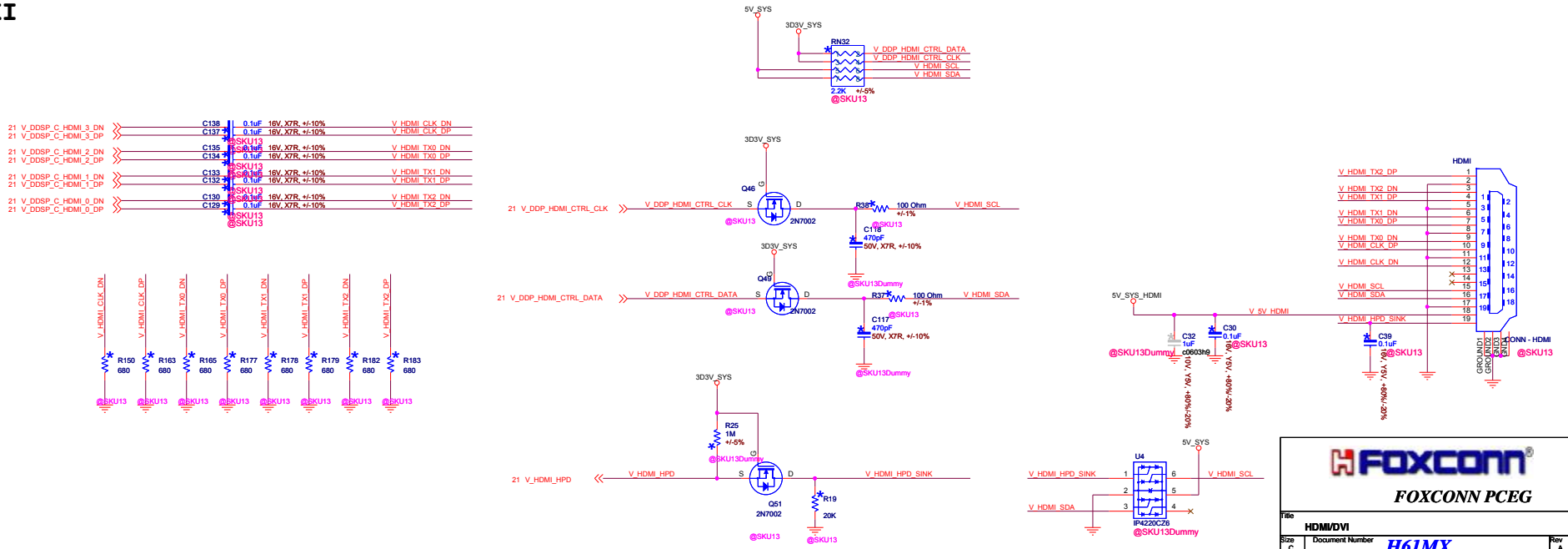
DVI-D



HDMI



Title	HDMI/DVI		
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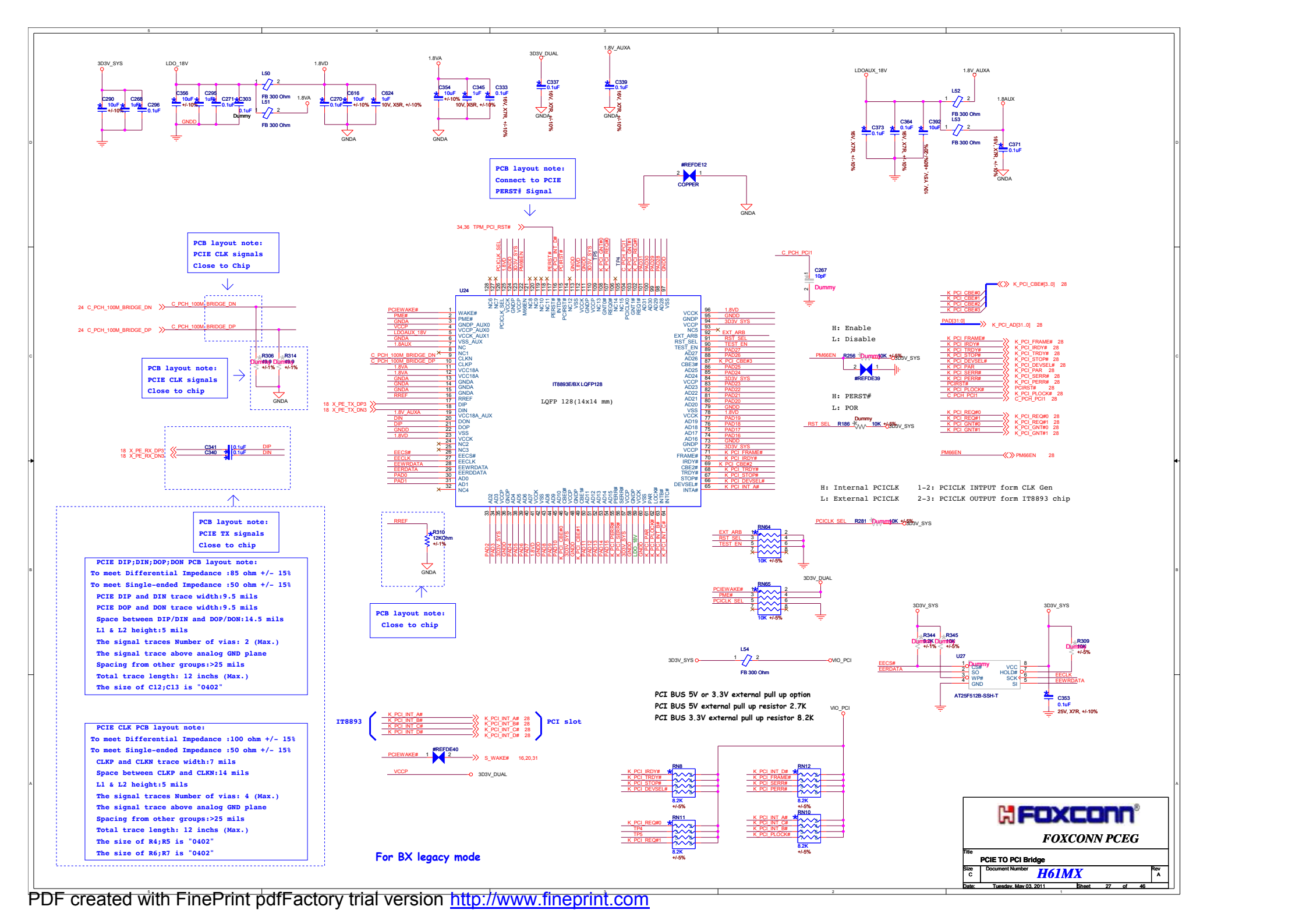
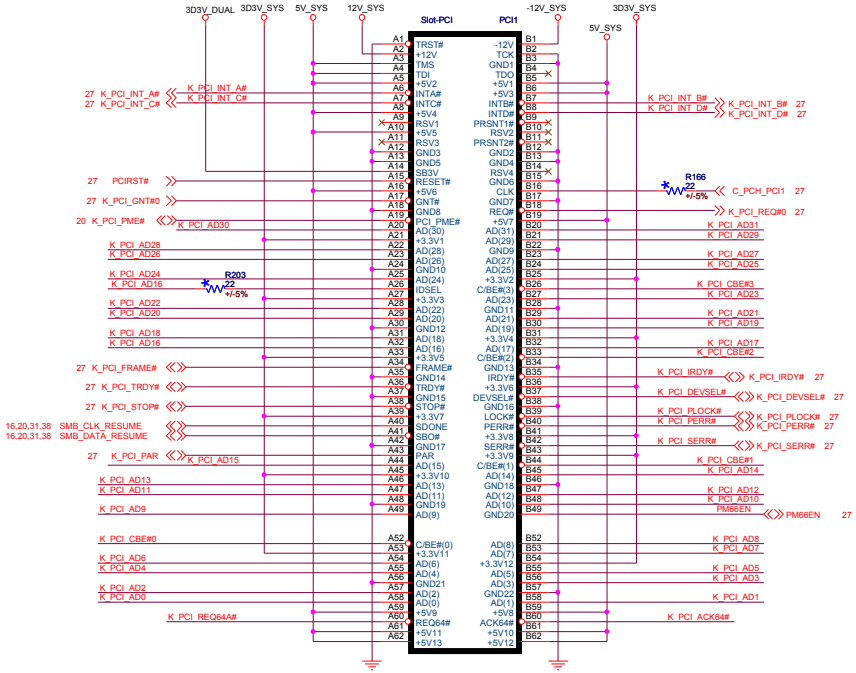
FOXCONN PCEG

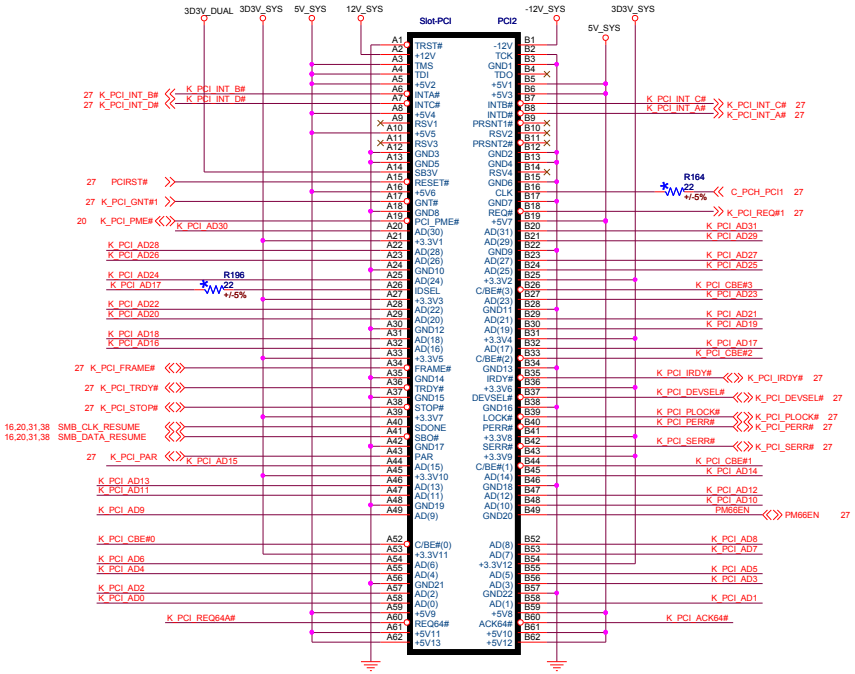


PCI 1



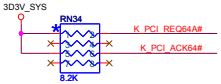
IRQ: A B C D
IDSEL: AD16
REQ/GNT: 0

PCI 2

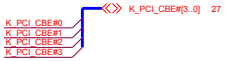


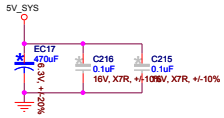
IRQ: B C D A
IDSEL: AD17
REQ/GNT: 1

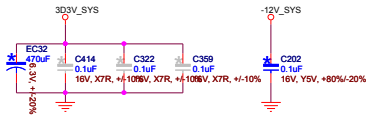
PCI BUS if use 5V external pull up resistor is 2.7K



2010.6.22 update







FOXCONN PCEG

Title	PCI SLOT1/2	
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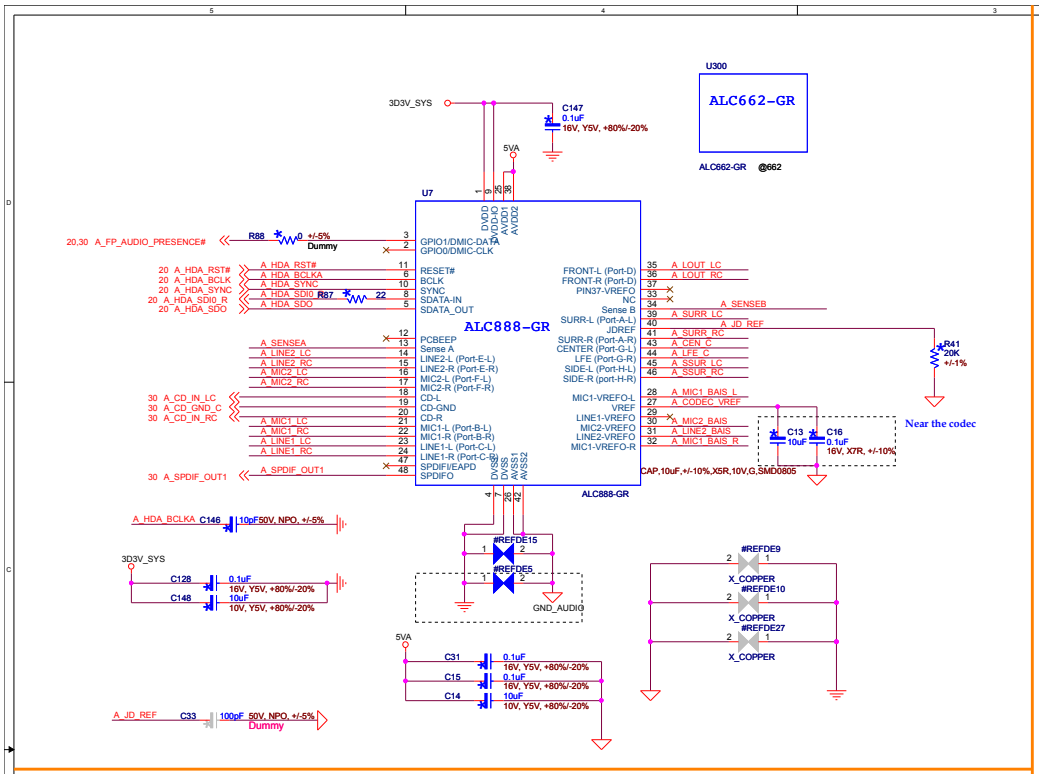

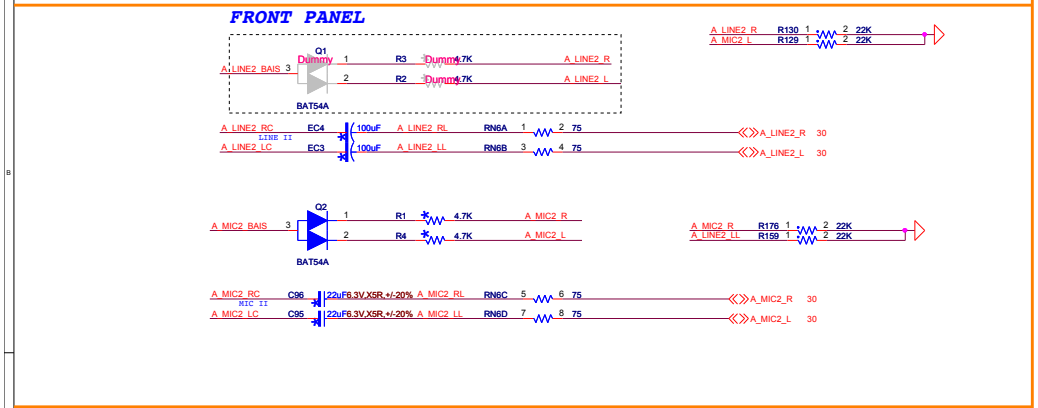

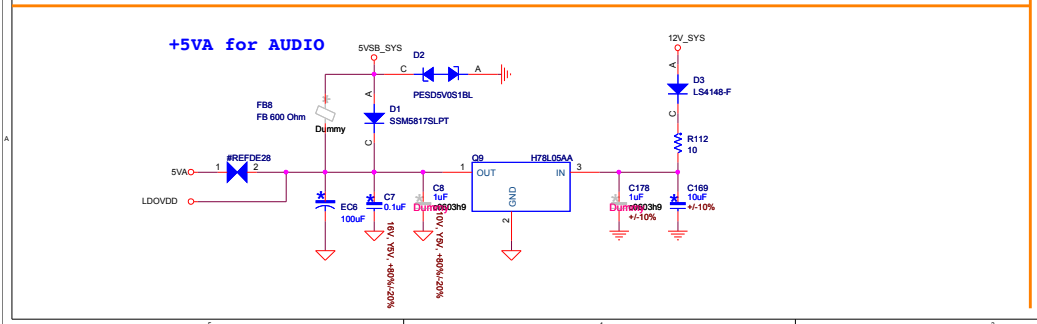

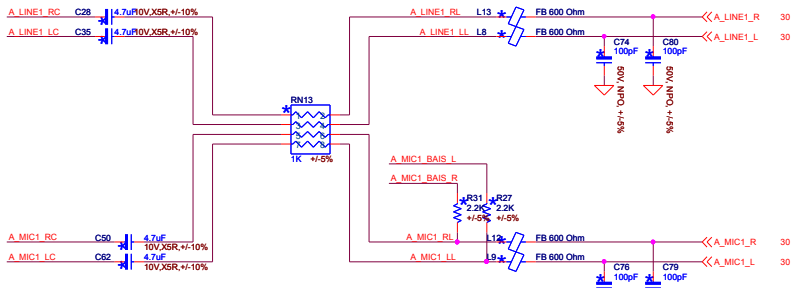

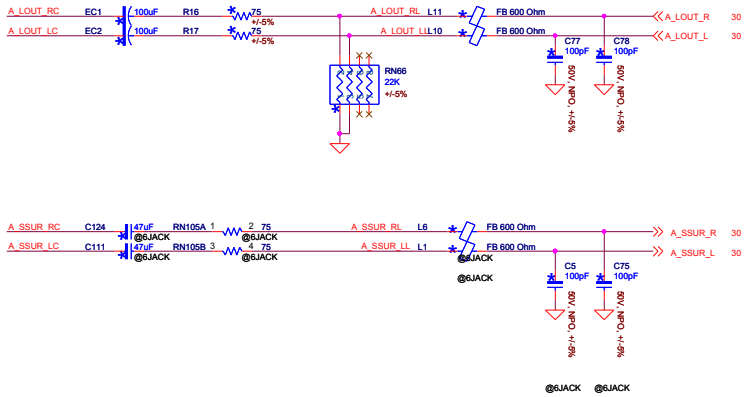

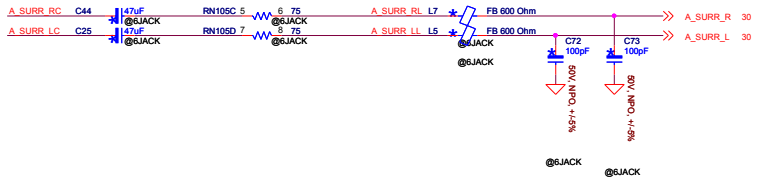

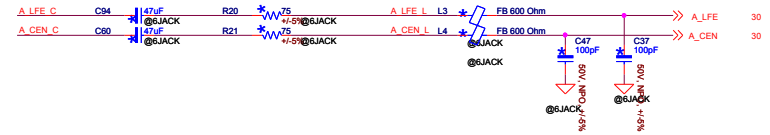

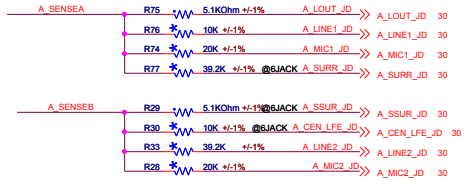

FOXCONN PCEG

Title: AUDIO_ALC888/ALC662

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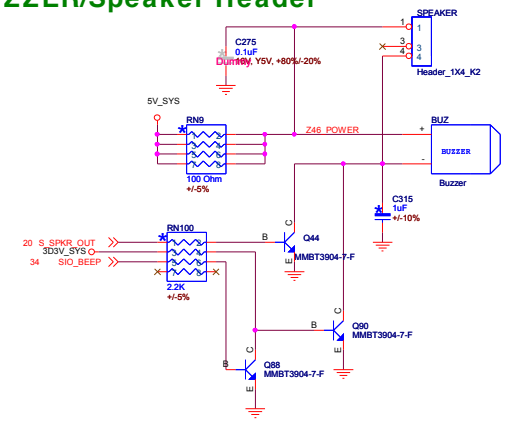
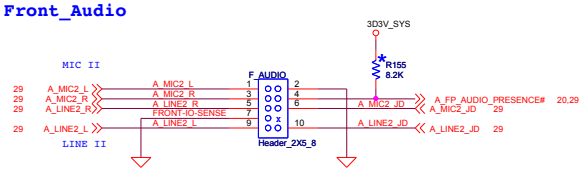
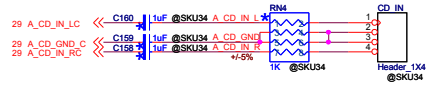
BUZZER/Speaker Header

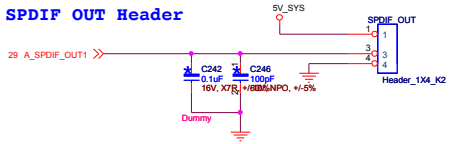


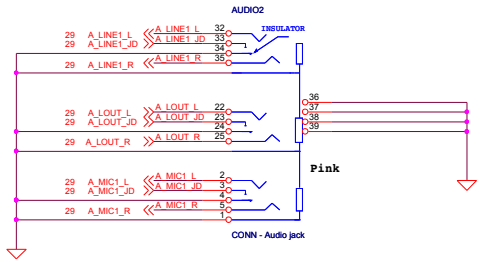
Front_Audio



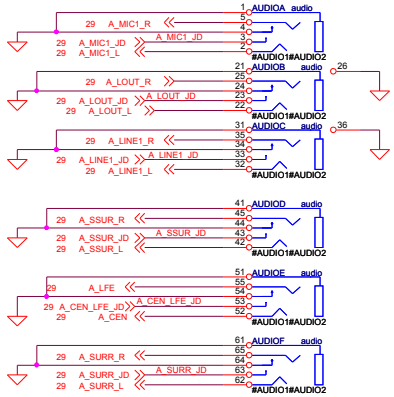


SPDIF OUT Header





Colay



AUDIO1

CONN-6 Ports Audio
@6JACK

Audio Jack

C	LINE IN (UAJ)	F	SURR OUT (UAJ)
B	LINE OUT (UAJ)	E	CEN/LFE (UAJ)
A	MIC IN (UAJ)	D	SIDE SURR OUT (UAJ)

FOXCONN

FOXCONN PCEG

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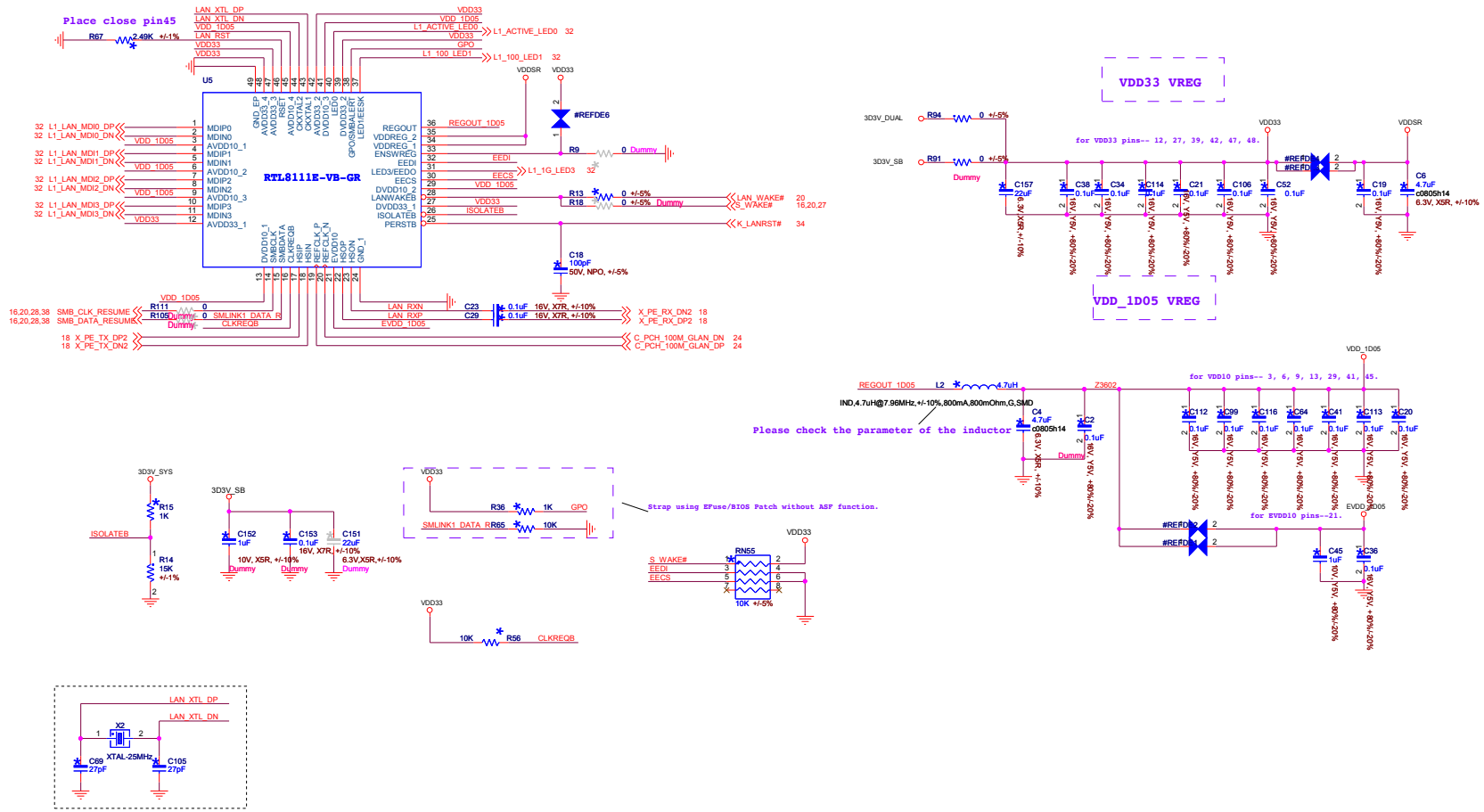

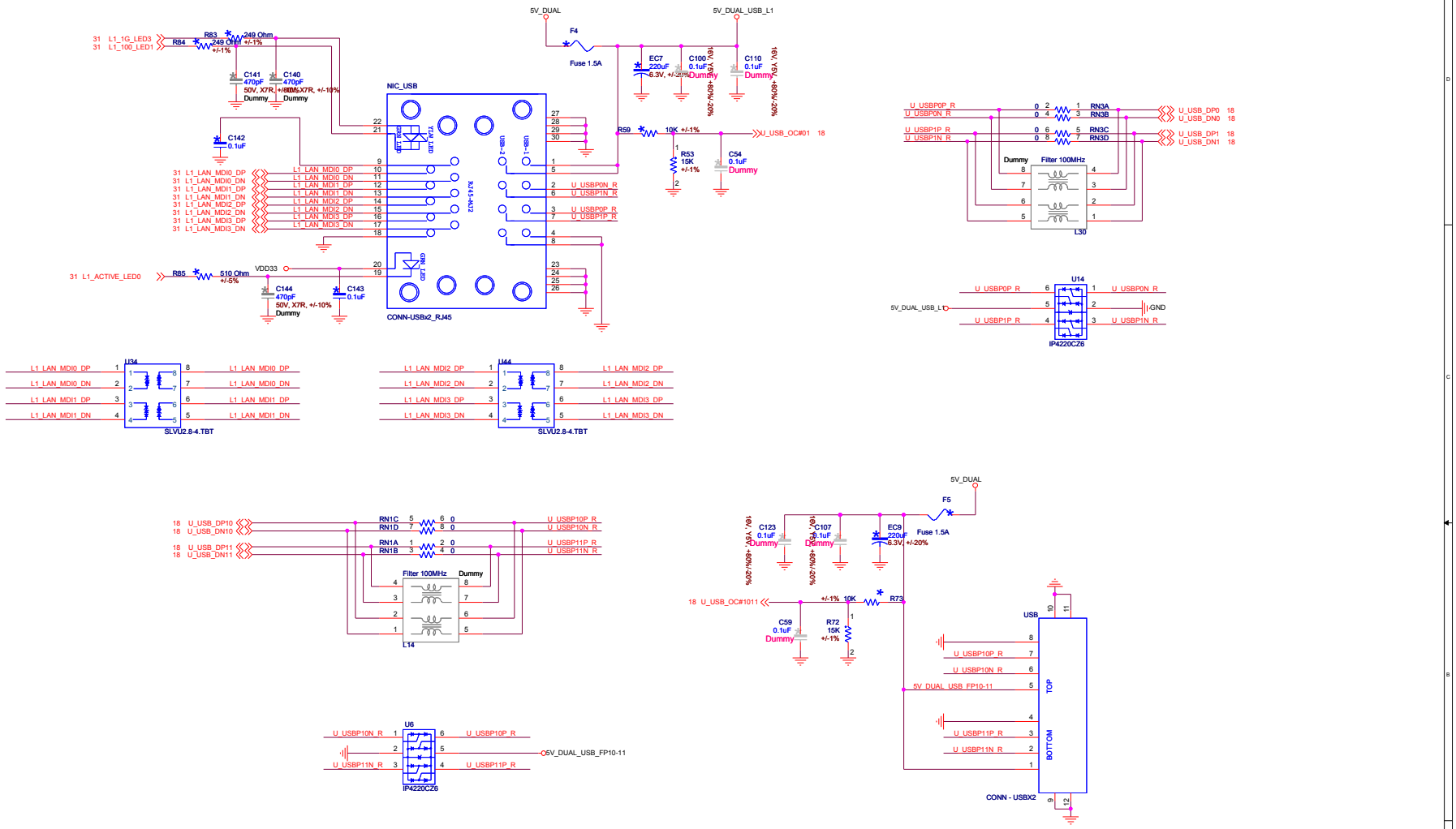

FOXCONN PCEG

Title	LAN/USB2.0 CONN	
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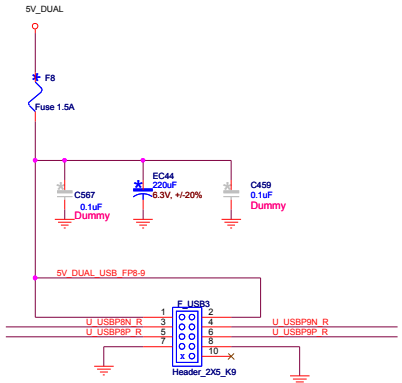
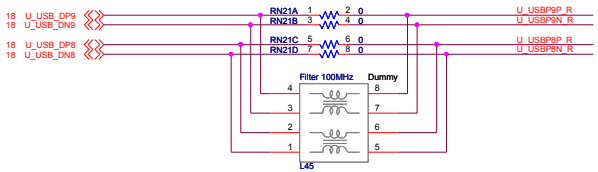
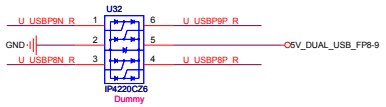
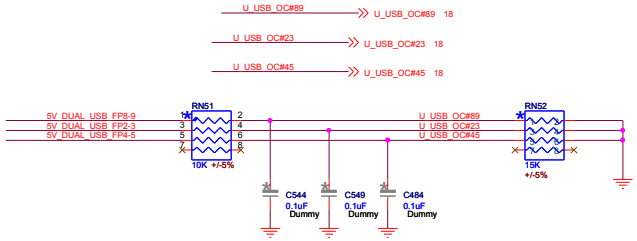
Front_USB1

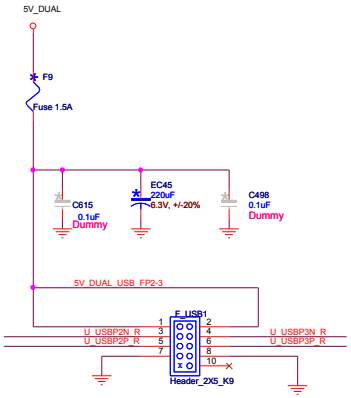


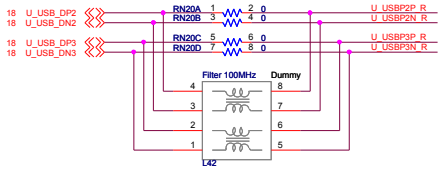


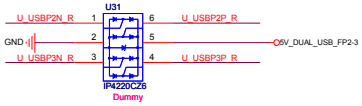


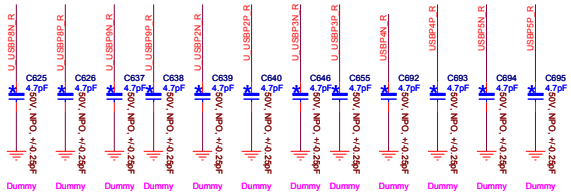


Front_USB2

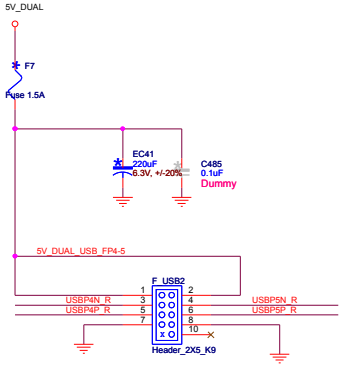


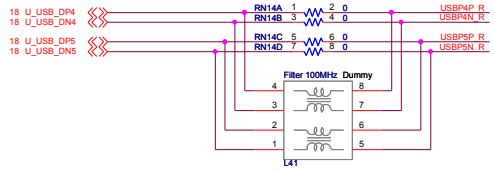


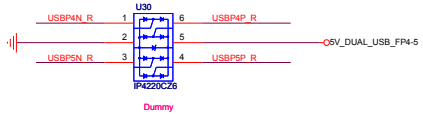




Front_USB3







FOXCONN PCEG

Title: Front USB2.0 Header		
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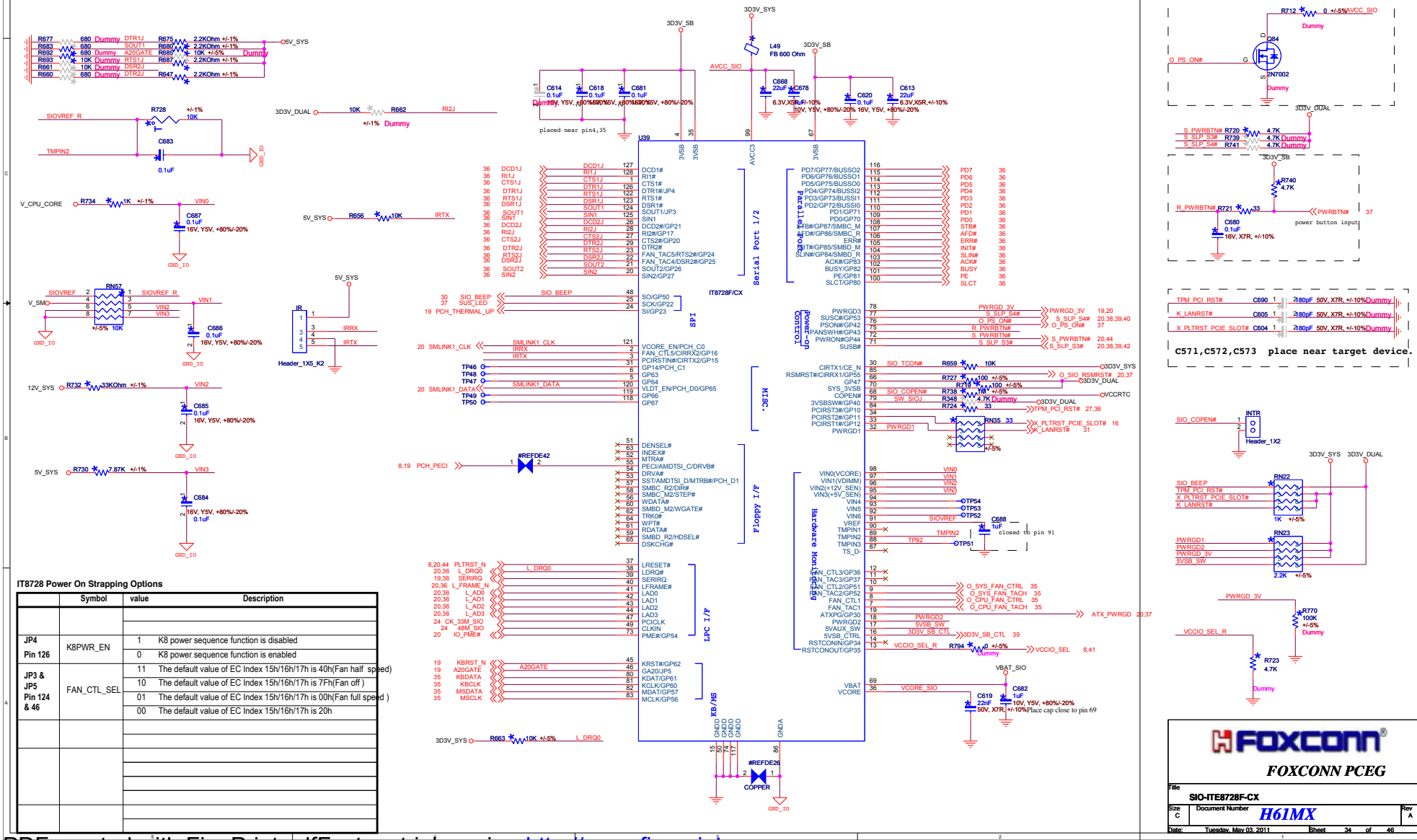
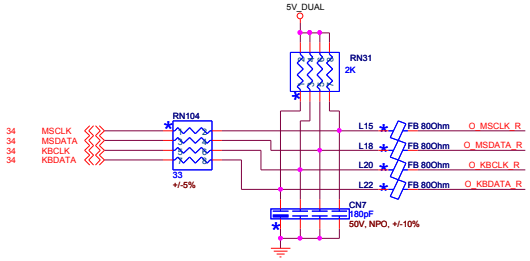


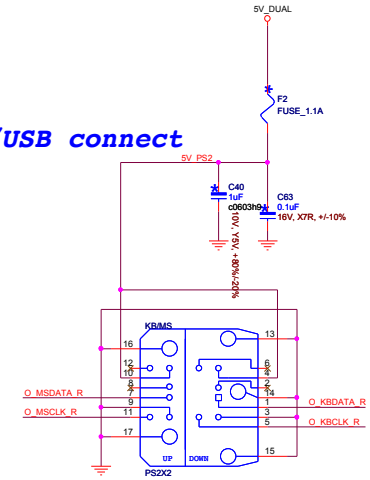
IT8728 Power On Strapping Options

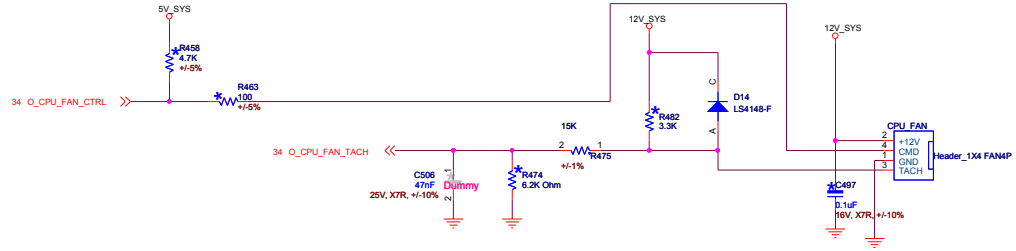
	Symbol	value	Description
JP4 Pin 126	K8PWR_EN	1	K8 power sequence function is disabled
		0	K8 power sequence function is enabled
JP3 & JP5 Pin 124 & 46	FAN_CTL_SEL	11	The default value of EC Index 15h/16h/17h is 40h(Fan half speed)
		10	The default value of EC Index 15h/16h/17h is 7Fh(Fan off)
		01	The default value of EC Index 15h/16h/17h is 00h(Fan full speed)
		00	The default value of EC Index 15h/16h/17h is 20h

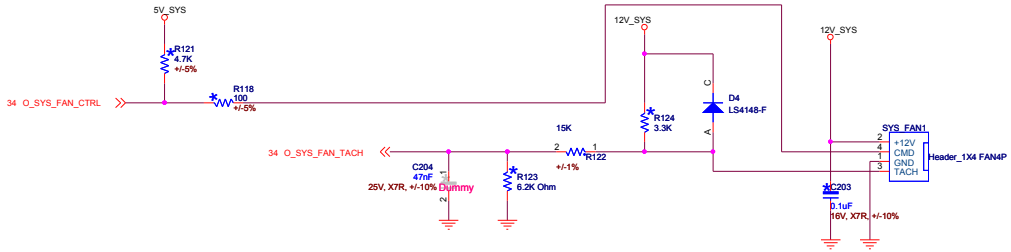
Add for EMI on 0929

KB /USB connect









FOXCONN PCEG

Title: PS2/FAN

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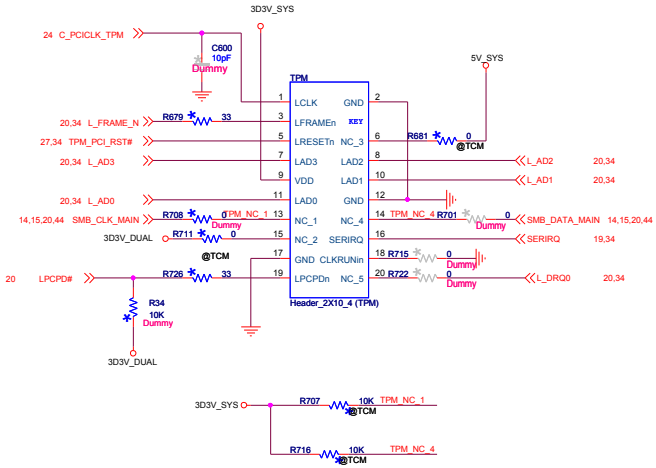
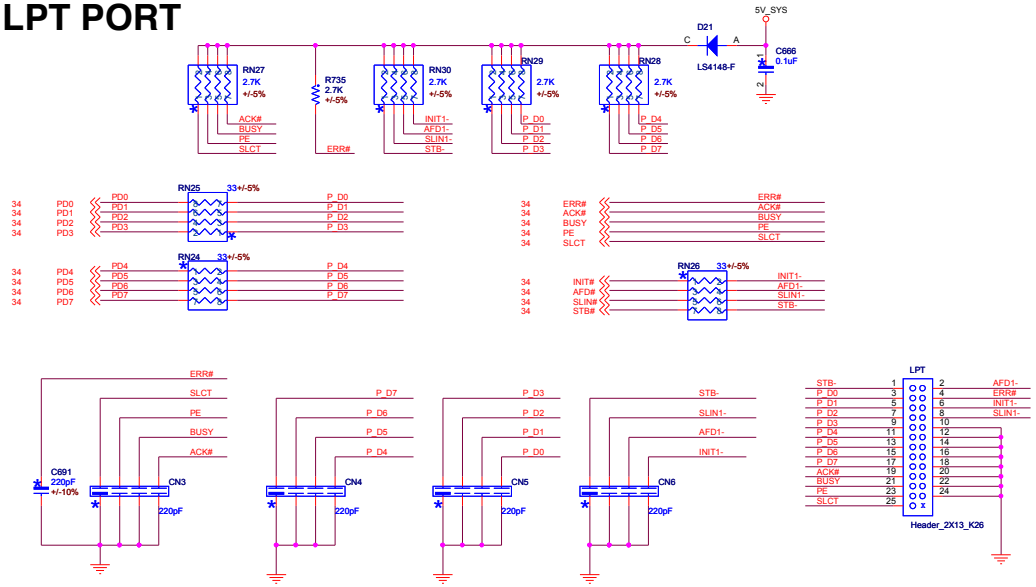
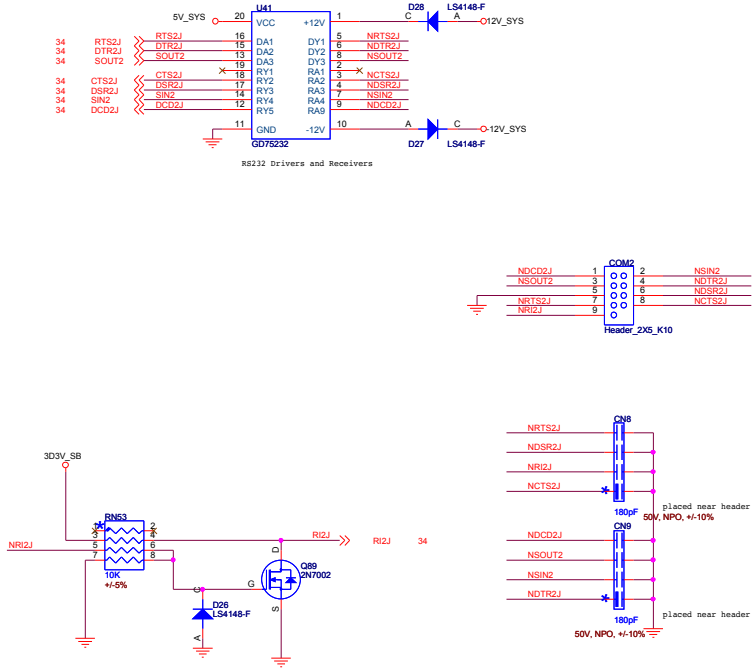
TPM



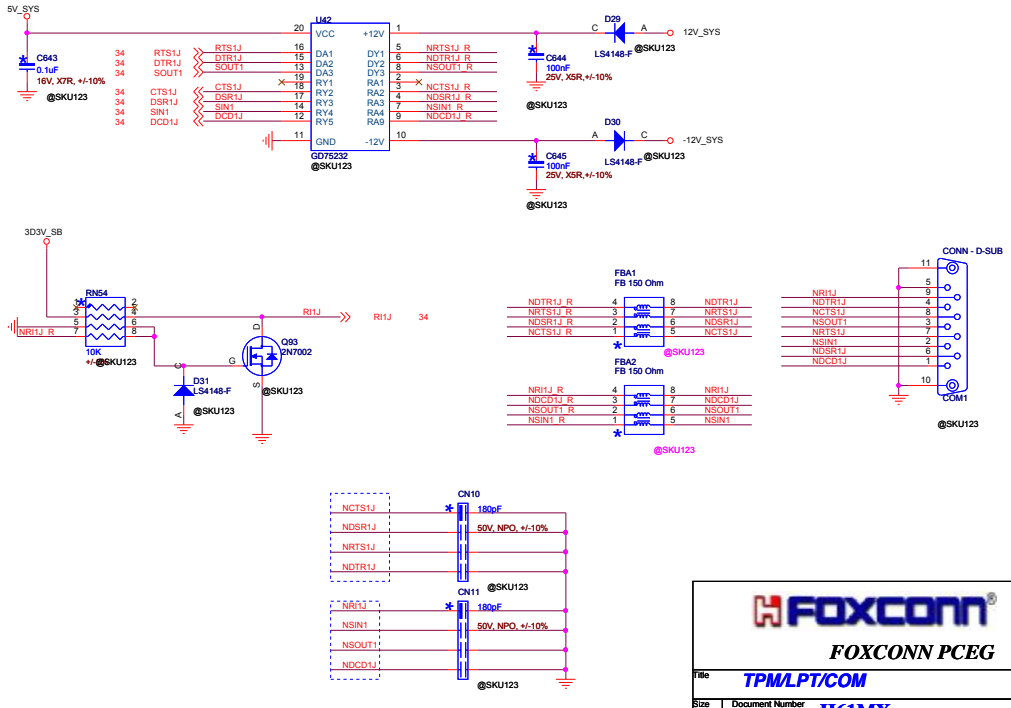
LPT PORT



COM HEADER



COM PORT



FOXCONN PCEG

Title	TPM/LPT/COM	
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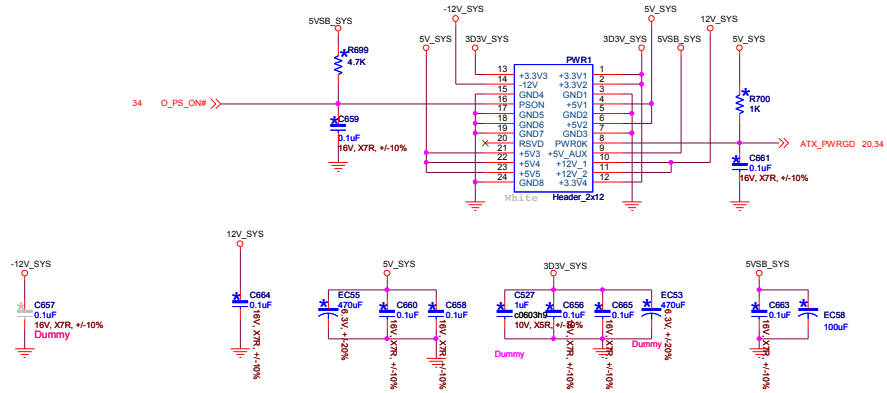
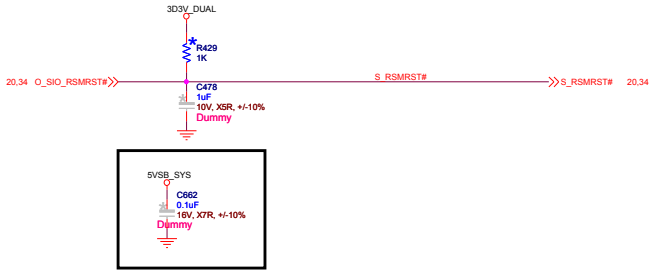
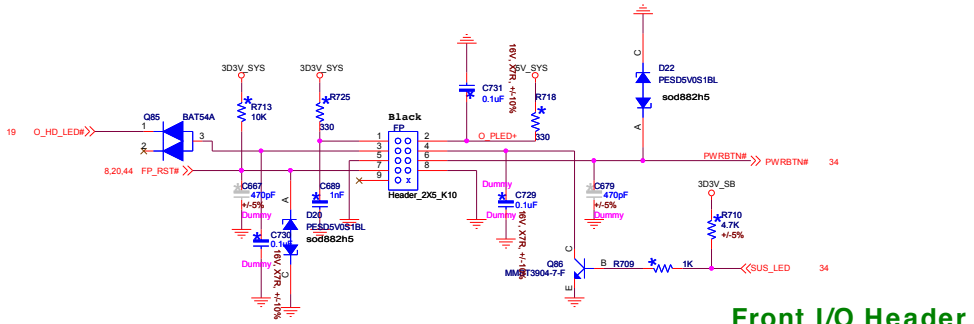
ATX POWER CONNECTOR



RESUME RESET LOGIC



Front I/O Header



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

Front Panel Switch/LED

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

FOXCONN PCEG

Title: ATX CONN/FP PANEL/RSMRST

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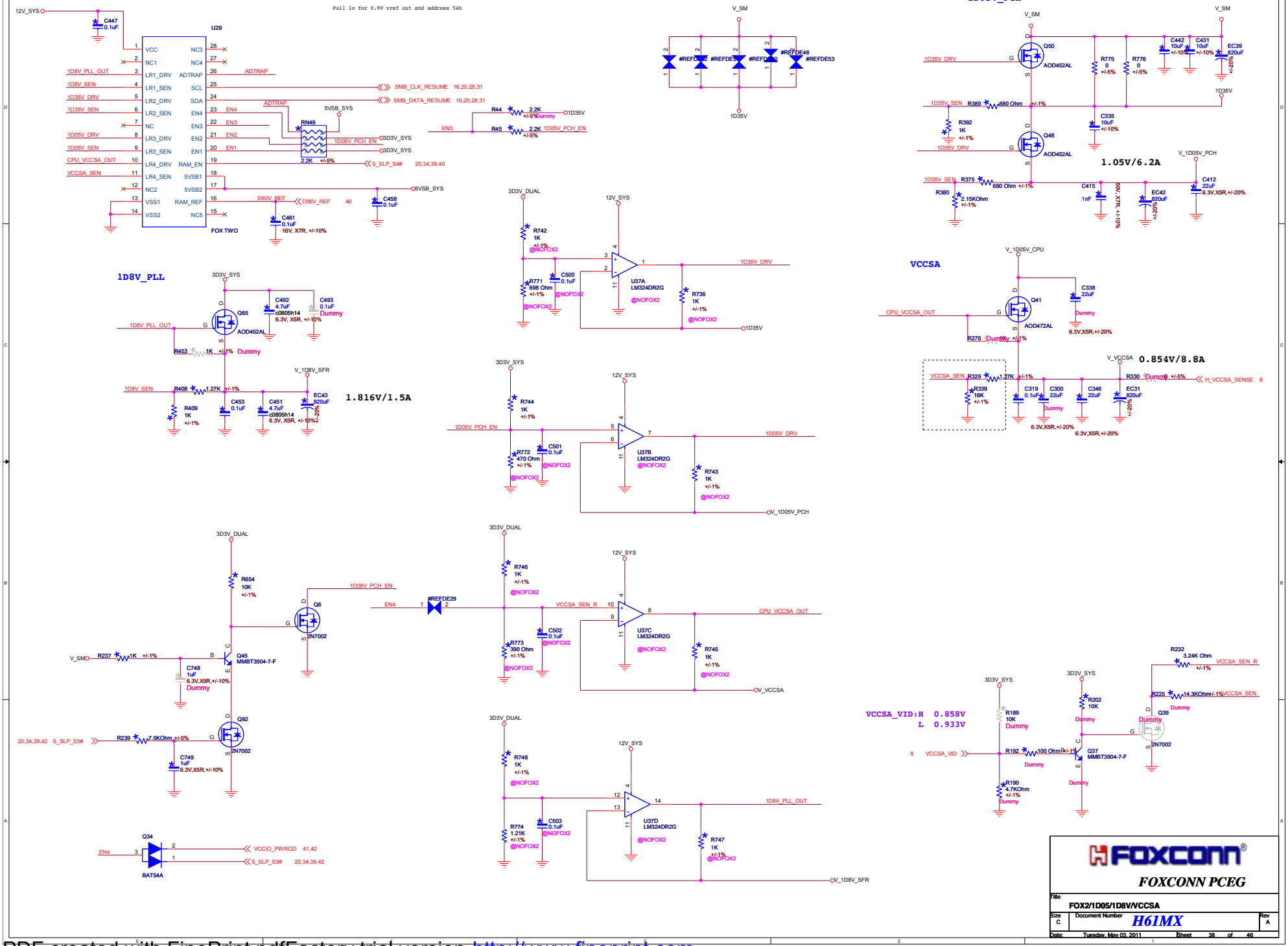
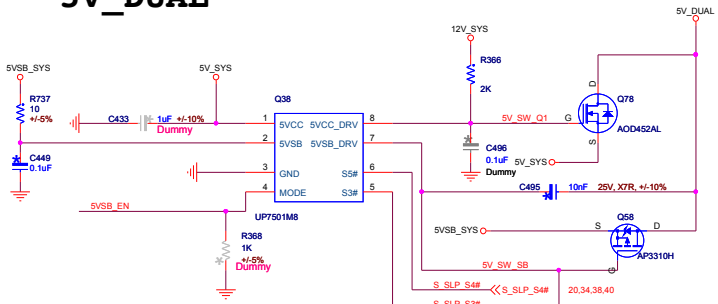
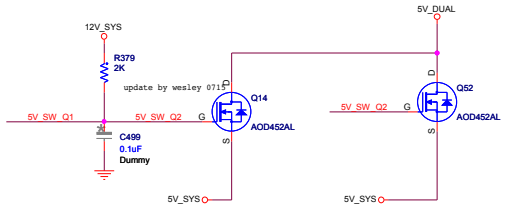


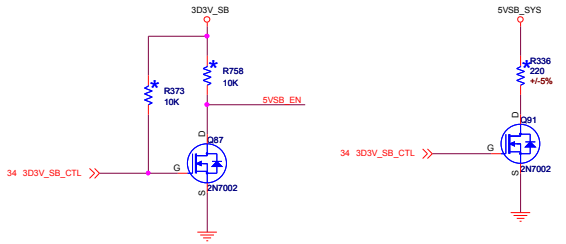
5V_DUAL





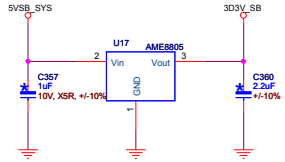
HI= S4/S5 5VDUAL FORM 5VSB
Low= S4/S5 5VDUAL TURN OFF

S5	S3	MODE	5VDUAL/5V_DUAL_USB
H	H	X	5VCC
H	L	X	5VSB
L	X	H	5VSB
L	X	L	Shutdown

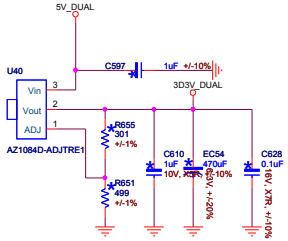


3D3V_SB

Max. output current = 3A



3D3V_DUAL



Vout=Vref(1+R2/R1)+IadjR2
R1 is Up Resistor.
Iadj=50uA
Vref=1.25V

FOXCONN PCEG

Title: 5V_DUAL/3.3V_SB/3.3V_DUAL
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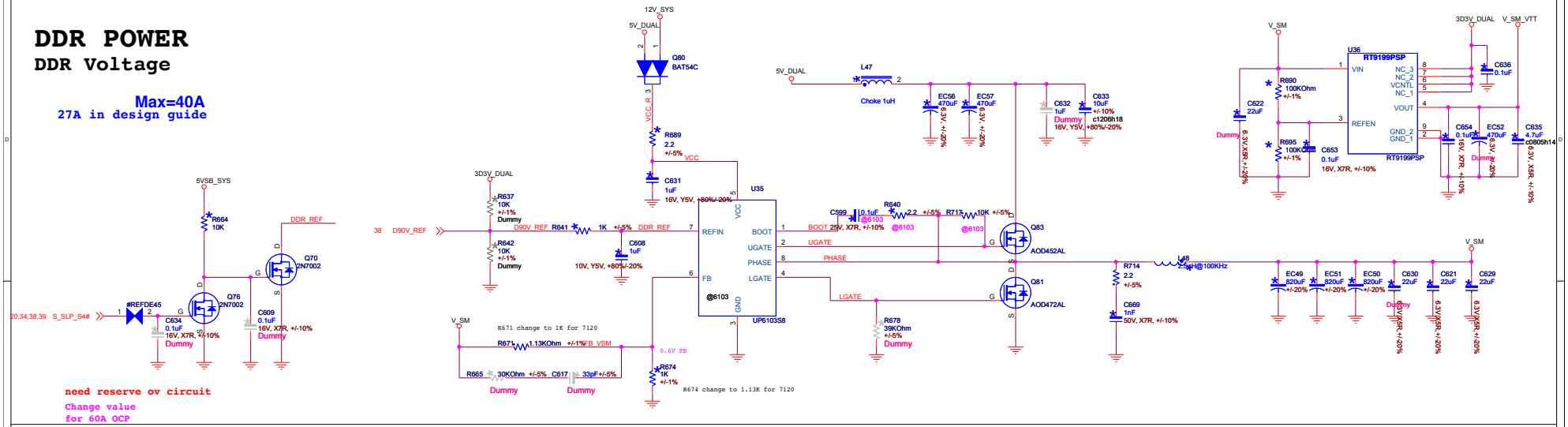
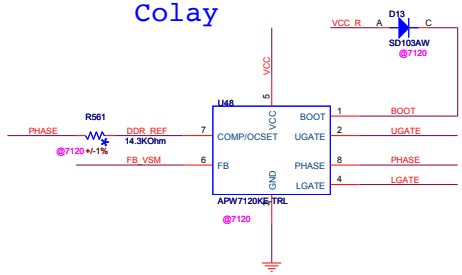
DDR POWER

DDR Voltage

Max=40A
27A in design guide



Colay



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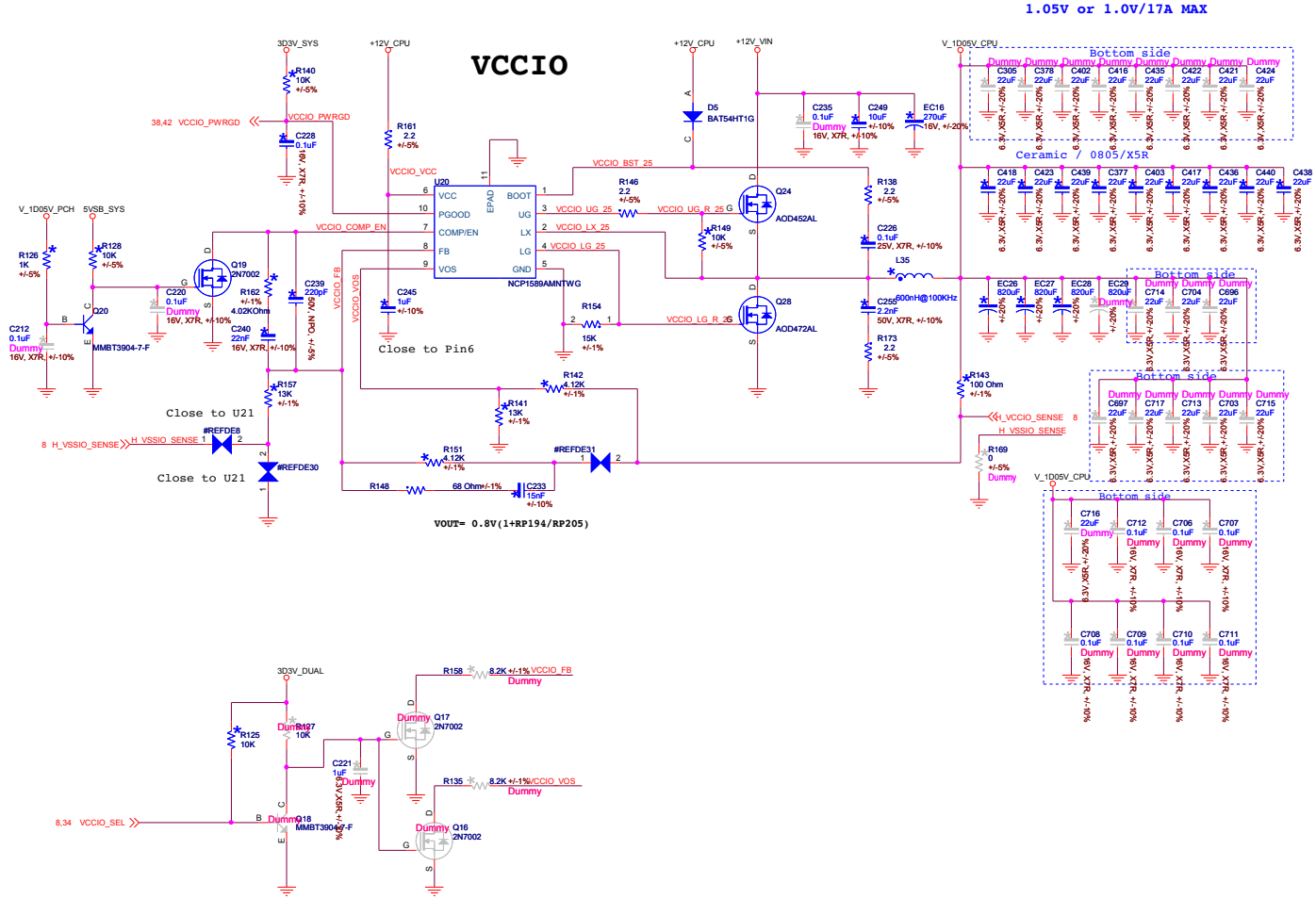
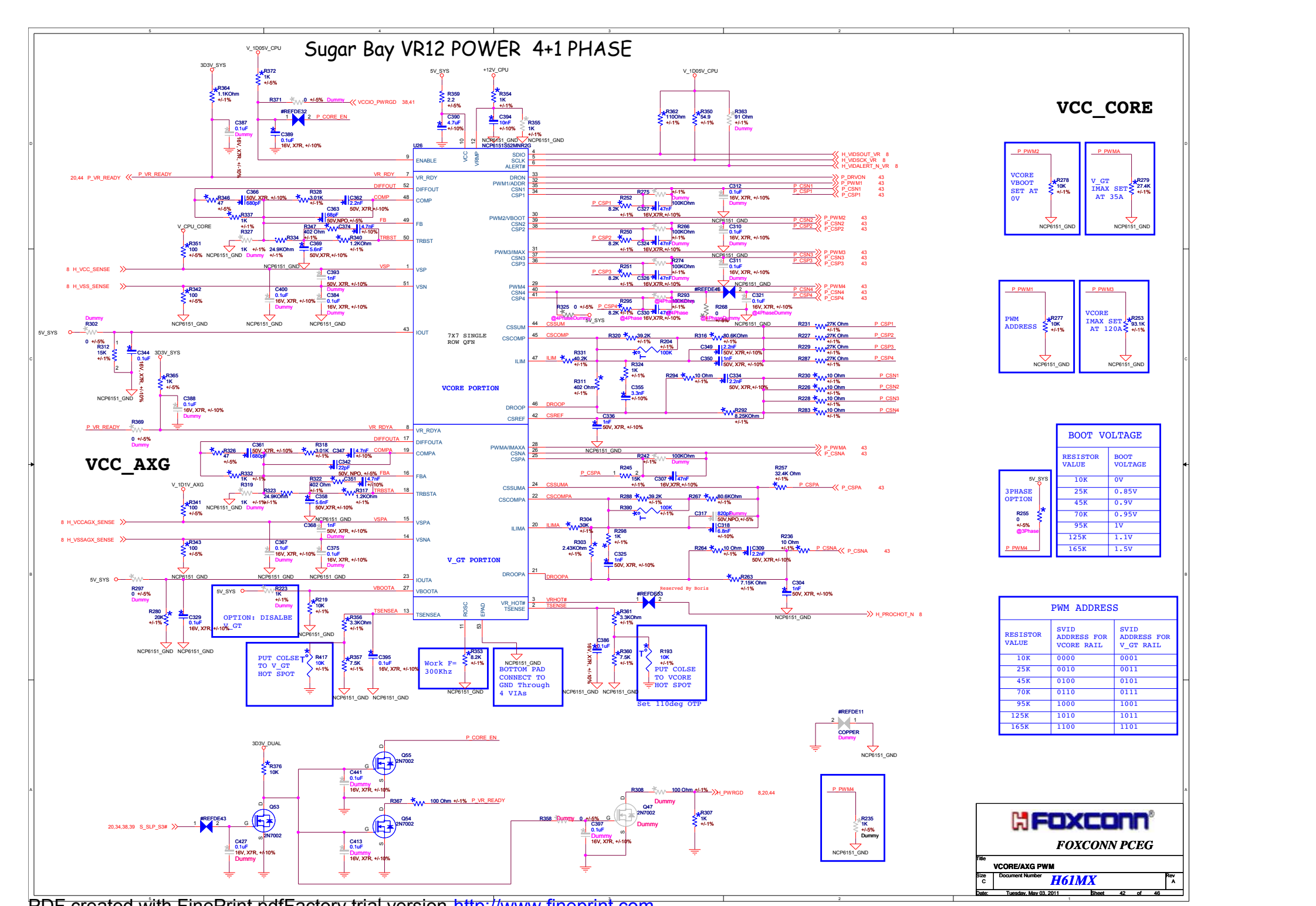
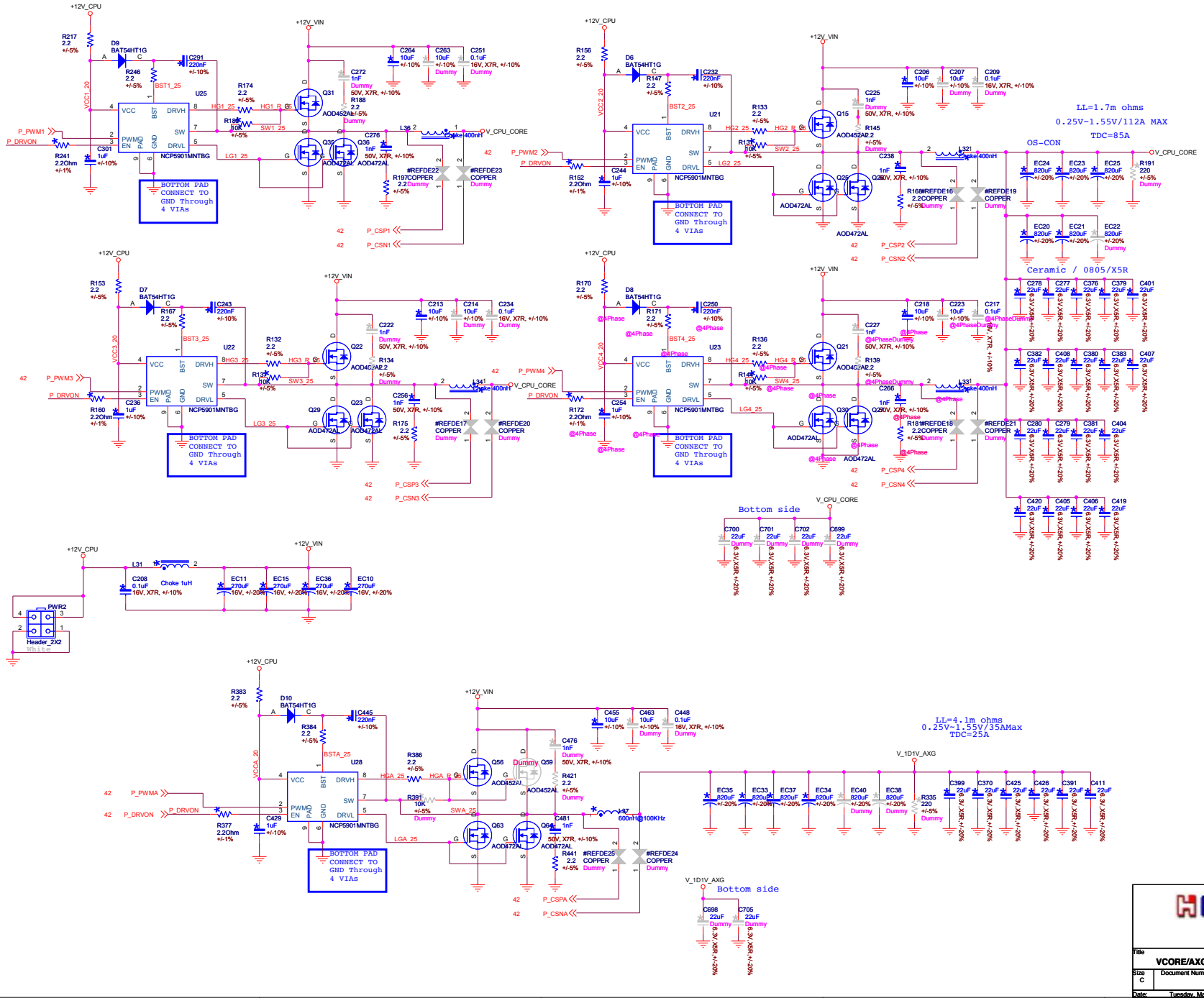
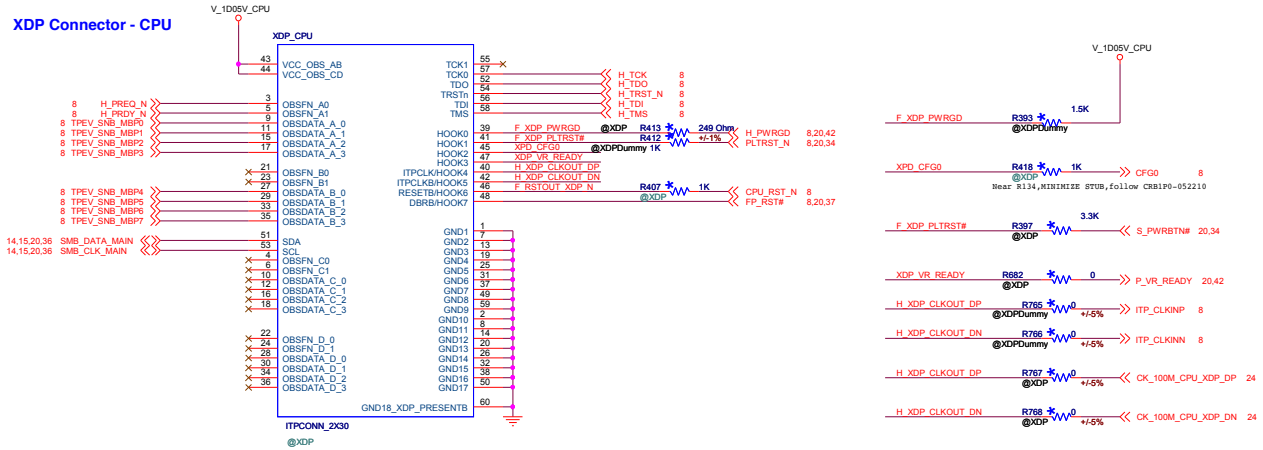






XDP Connector - CPU



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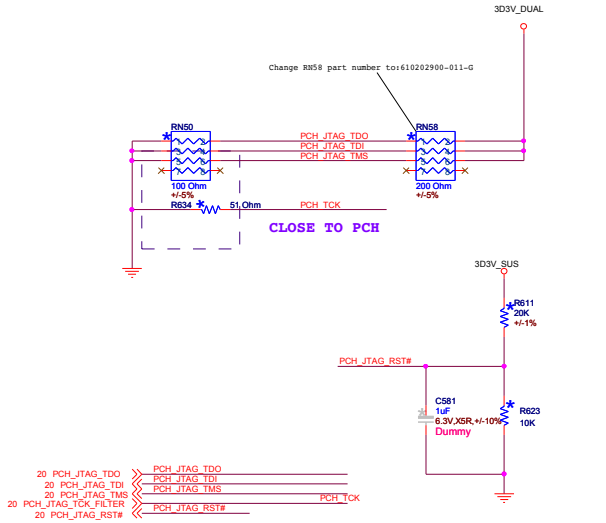

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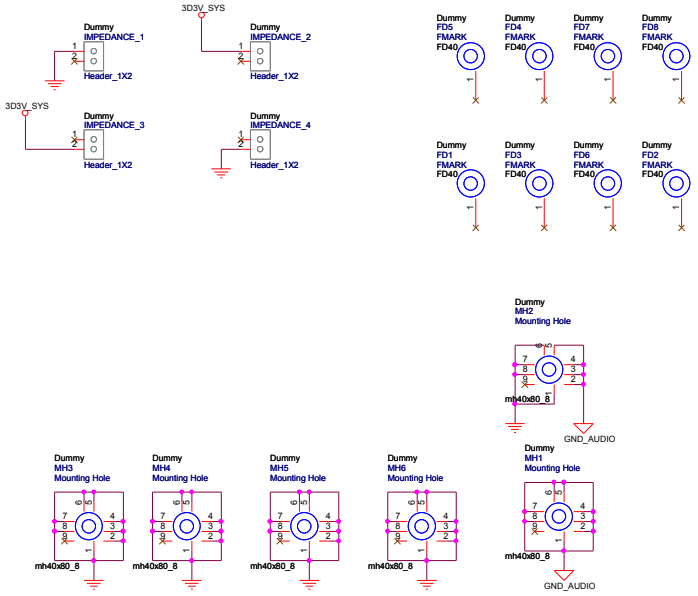

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