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B75MX

Fab A

Micro ATX 9.6X7.6

CPU:

Intel Ivy/Sandy Bridge processors in LGA1155 Package

System Chipset:

PCH

Main Memory:

Dual Channel / DDR-III * 2 (Max 16GB)

On Board Device:

EC: ITE 8732F

LAN: Realtek RTL8111F Colay RTL8111DP

HDA Codec: ALC662

BIOS: SPI Flash ROM 8Mbyte*1

Expansion Slots:

PCI EXPRESS 16X SLOT *1

PCI EXPRESS 1X SLOT * 1

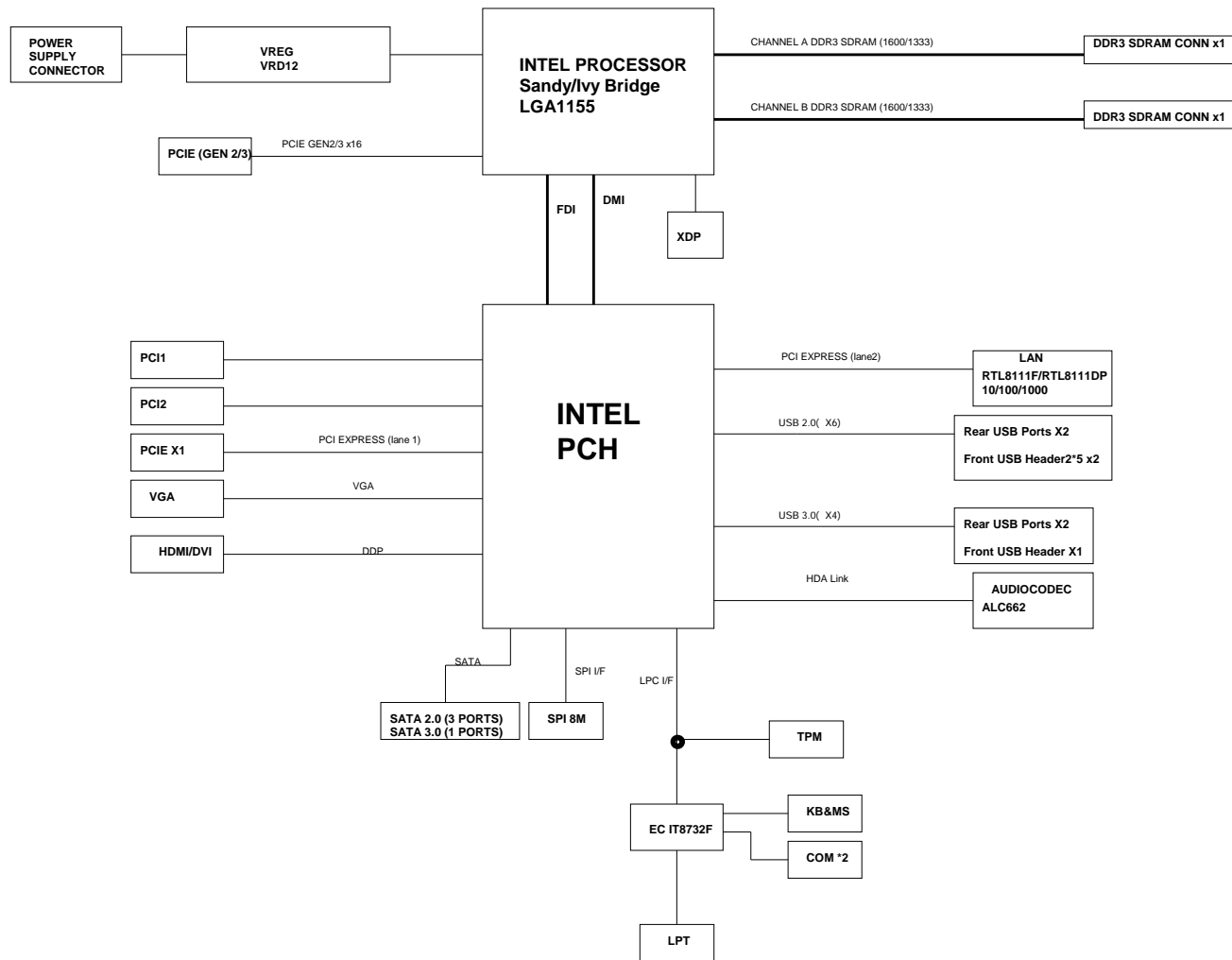
PCI SLOT * 2

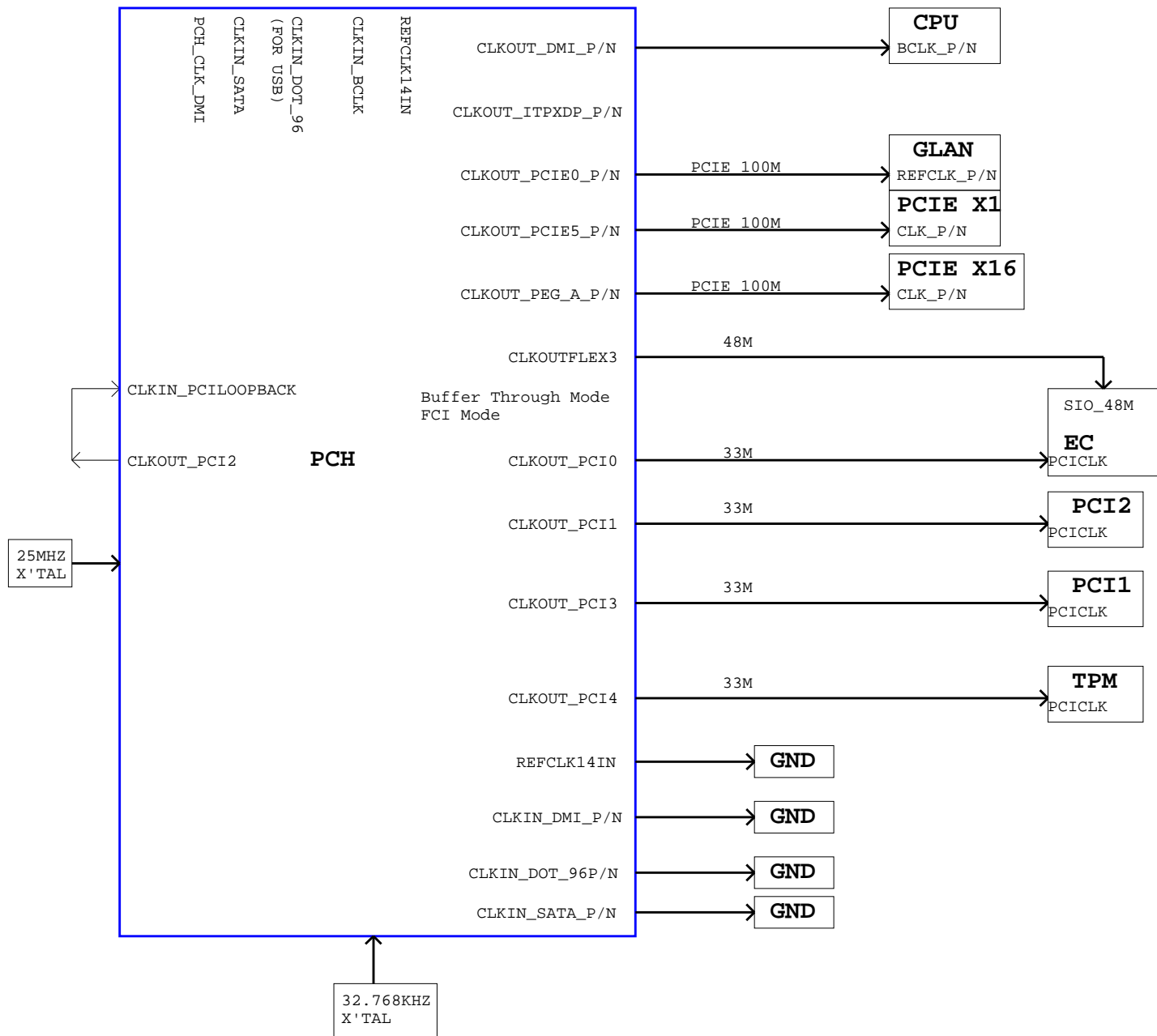


FOXCONN PCEG

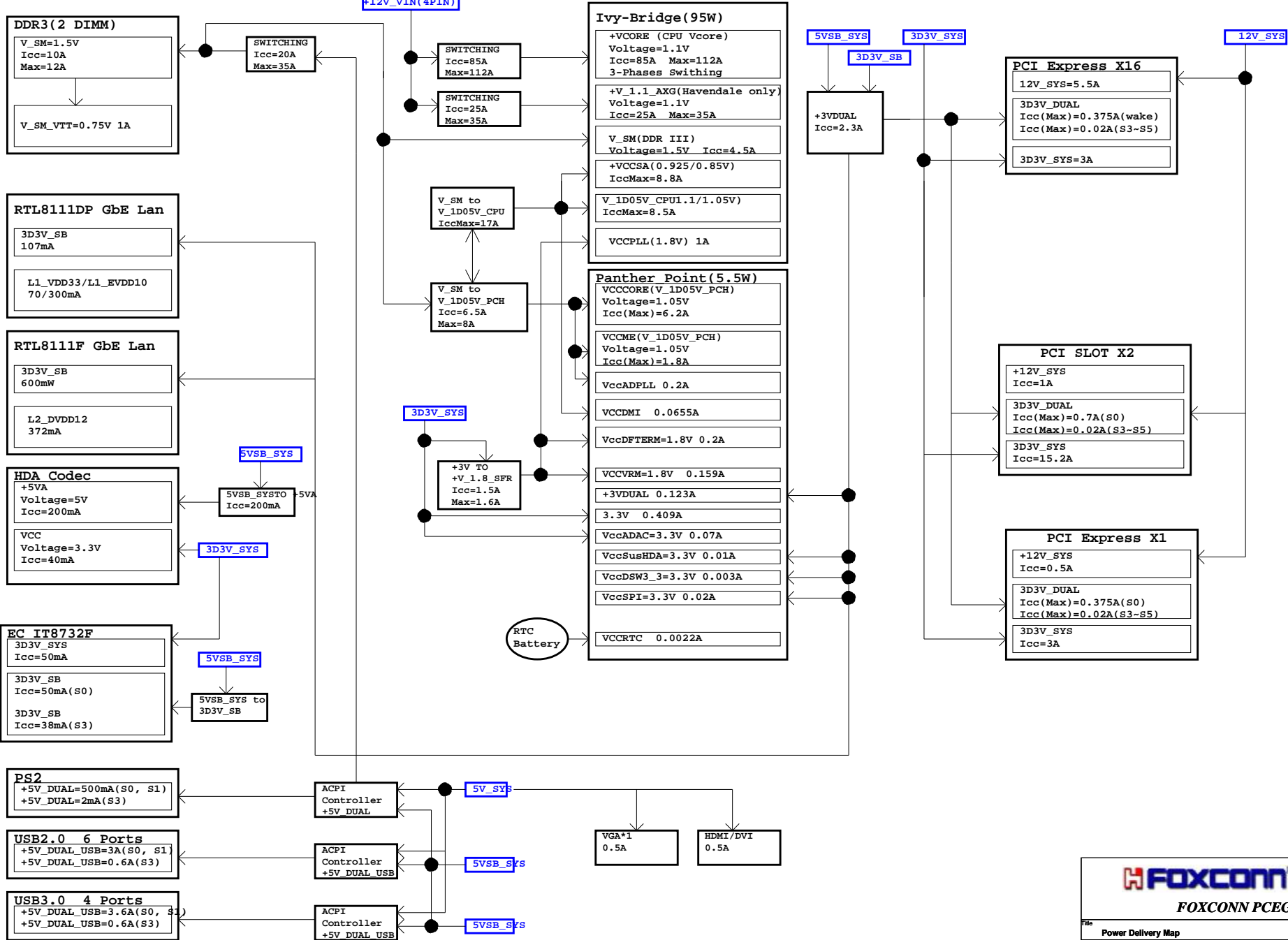
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BLOCK DIAGRAM



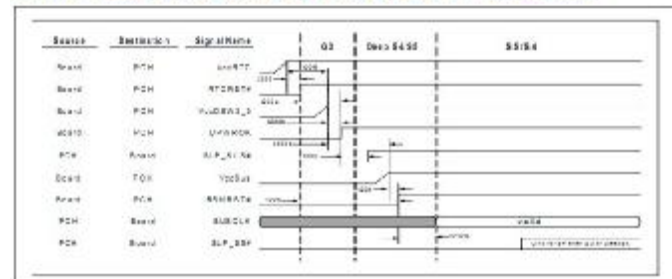


POWER DELIVERY MAP

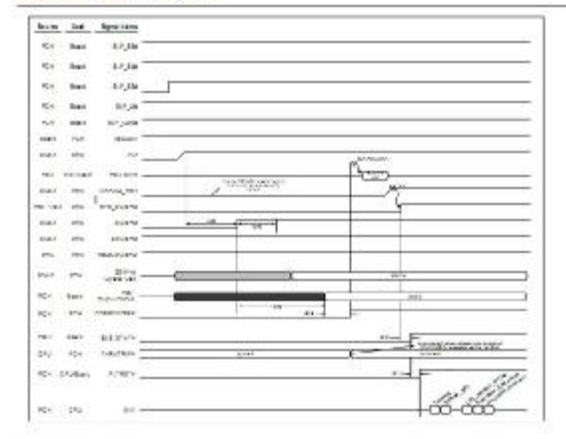


POWER ON SEQUENCE

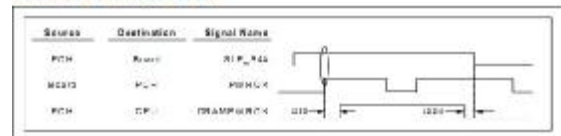
G3 w/RTC Loss to S4/S5 (With Deep S4/S5 Support) Timing Diagram



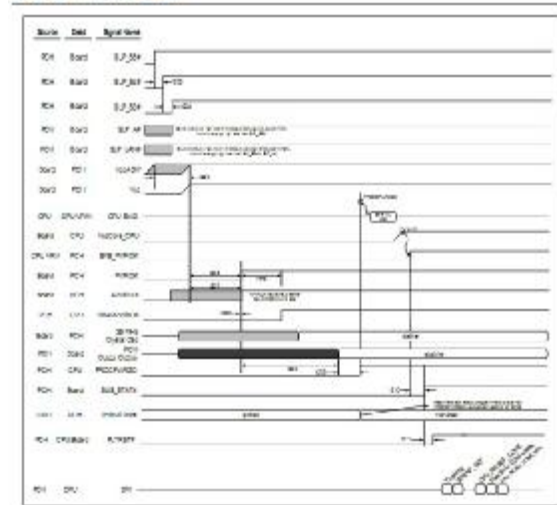
53/M3 to 50 Timing Diagram



DRAMPWROK Timing Diagram



S5 to S0 Timing Diagram



S5/Hoff - S5/M3 Timing Diagram

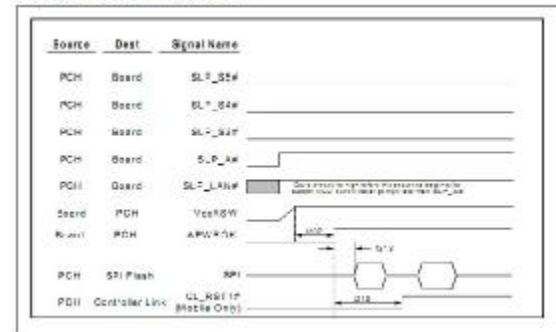


Figure 12-18. JMWOKS Termination



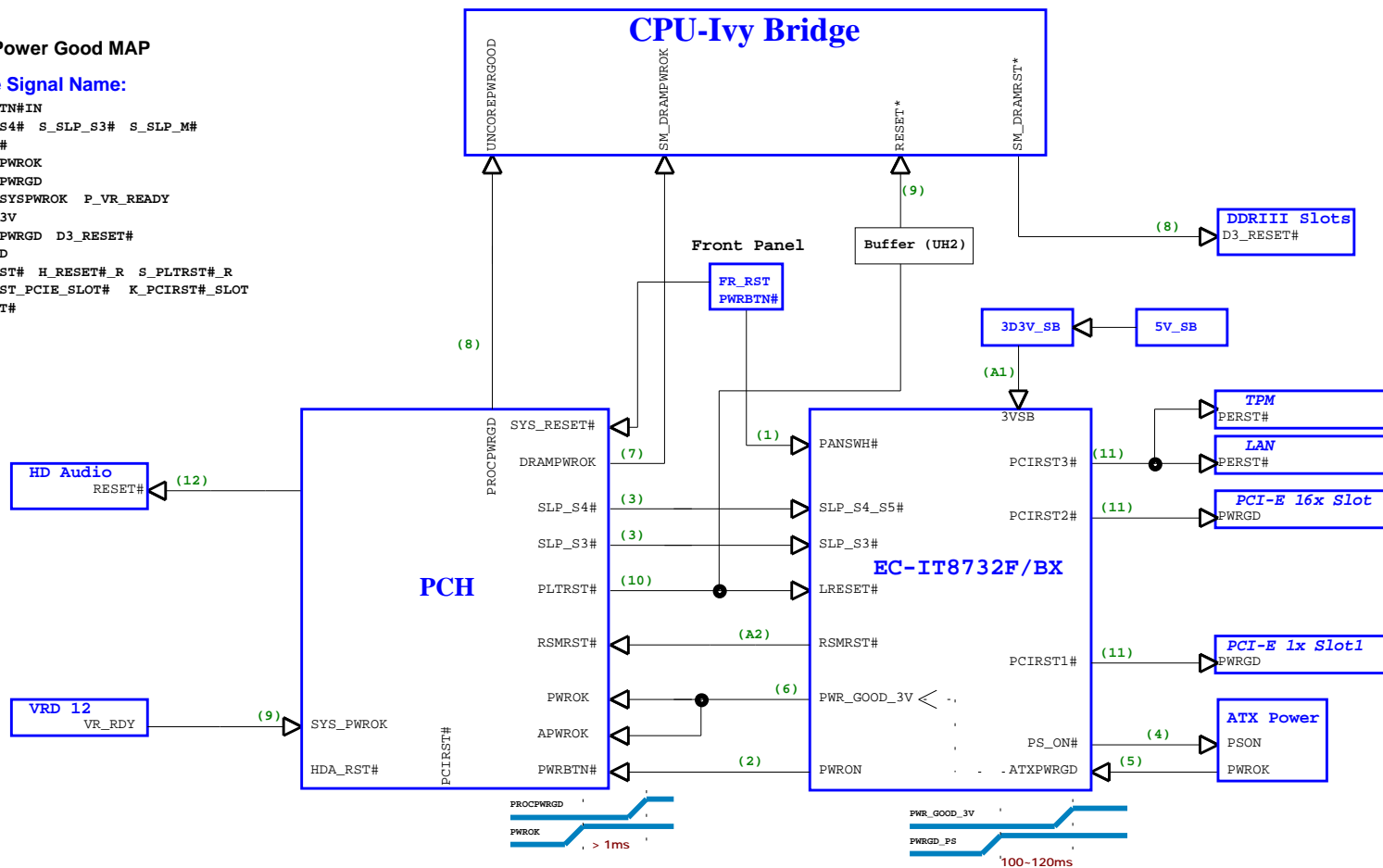
Figure 18-3 DDT Throughs.



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_DRAMPWROK 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#



IRQ Routing Table


| | INTA# | INTB# | INTC# | INTD# | IDSEL | REQn# | GNTn# |
|-------|-------|-------|-------|-------|-------|-------|-------|
| Slot1 | G | H | E | F | 17 | 0 | 0 |

| | INTA# | INTB# | INTC# | INTD# | IDSEL | REQn# | GNTn# |
|-------|-------|-------|-------|-------|-------|-------|-------|
| Slot2 | E | F | G | H | 18 | 1 | 1 |

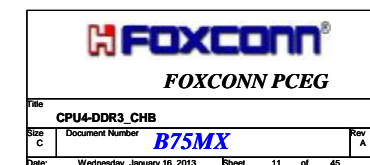
STRAPPING Table

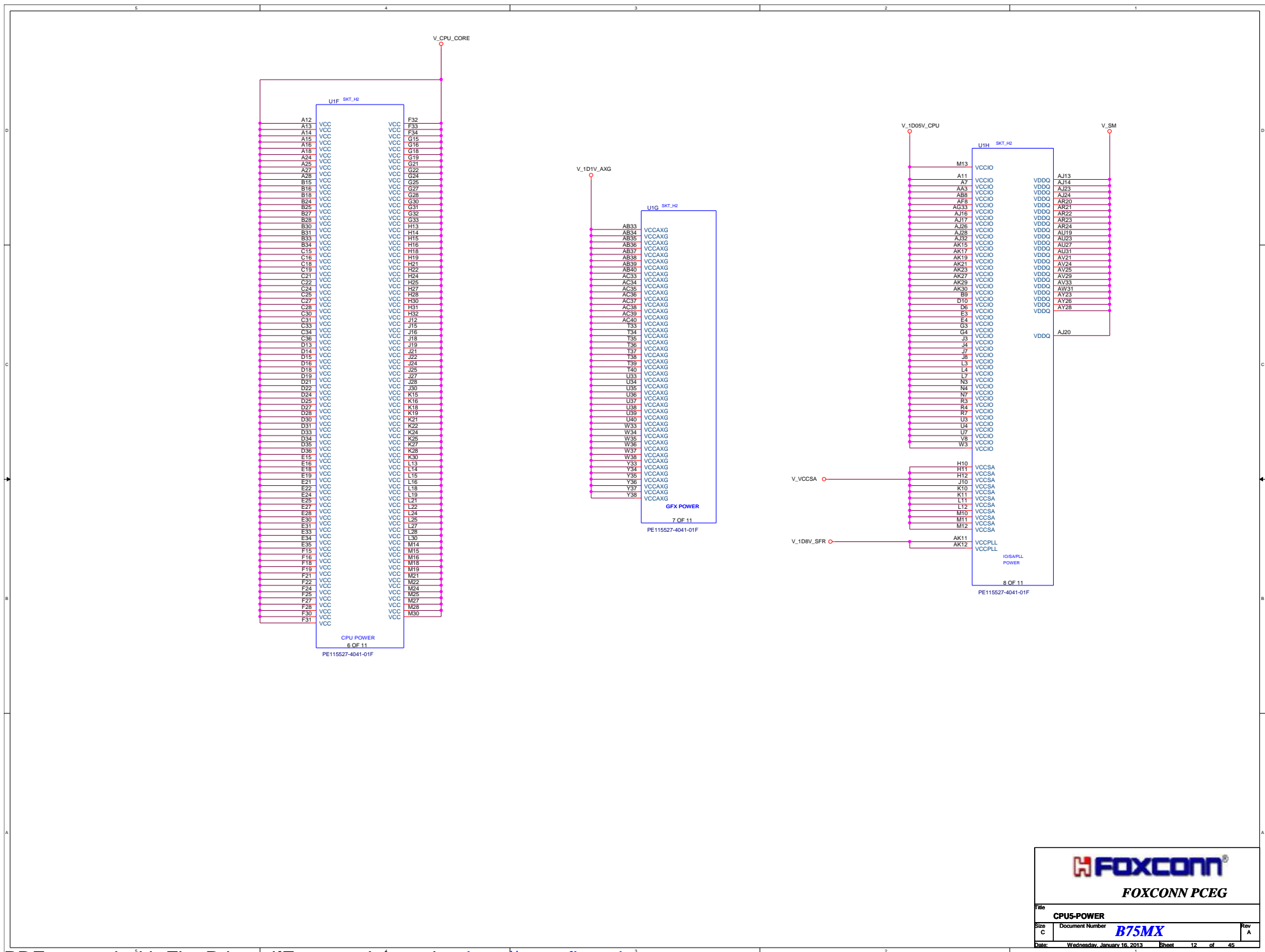
CPU side

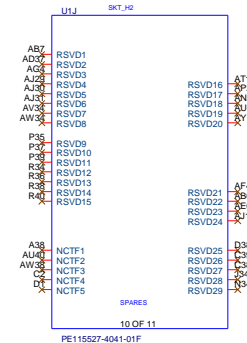
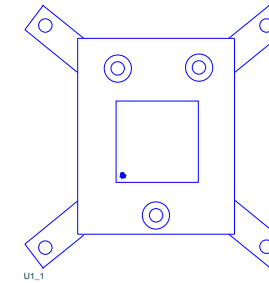
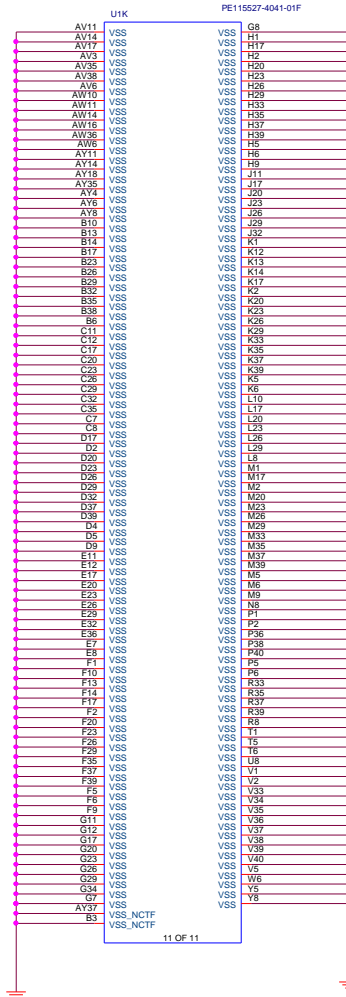
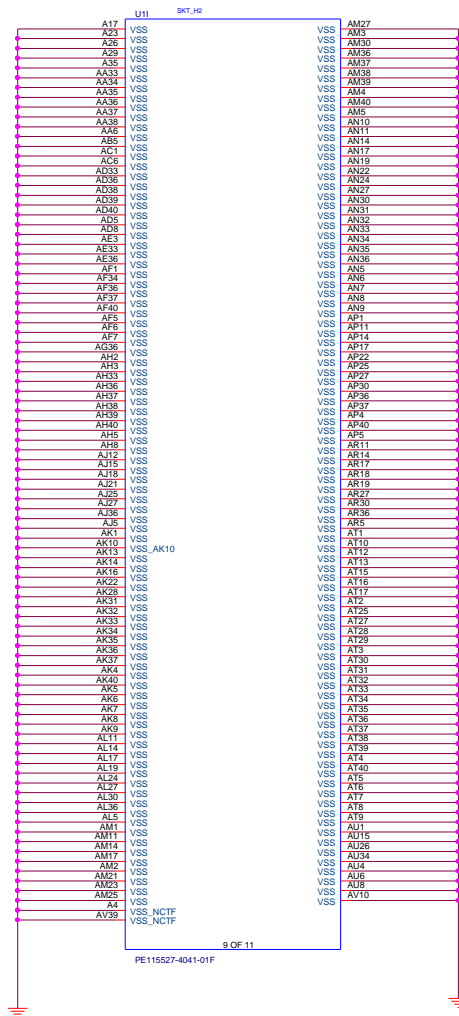
| CFG[17:0] | Description | |
|-----------|--|--|
| [2] | PCI Express static x16 lane numbering reversal | 1: normal Default 0: lane numbers reversed |
| [6:5] | PCI Express Bifurcation | 00: 1x8, 2x4 PCI Express 01: reserved 10: 2x8 PCI Express 11: 1x16 PCI Express Default |

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| File STRAP | | |
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FOXCONN

FOXCONN PCEG

File: CPU06-GND

Size: C Document Number: B75MX

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CHANNEL A DIMM 1
SMB ADDRESS:000

DDR II

BLA

CLOSE TO DIMM POWER PIN

11

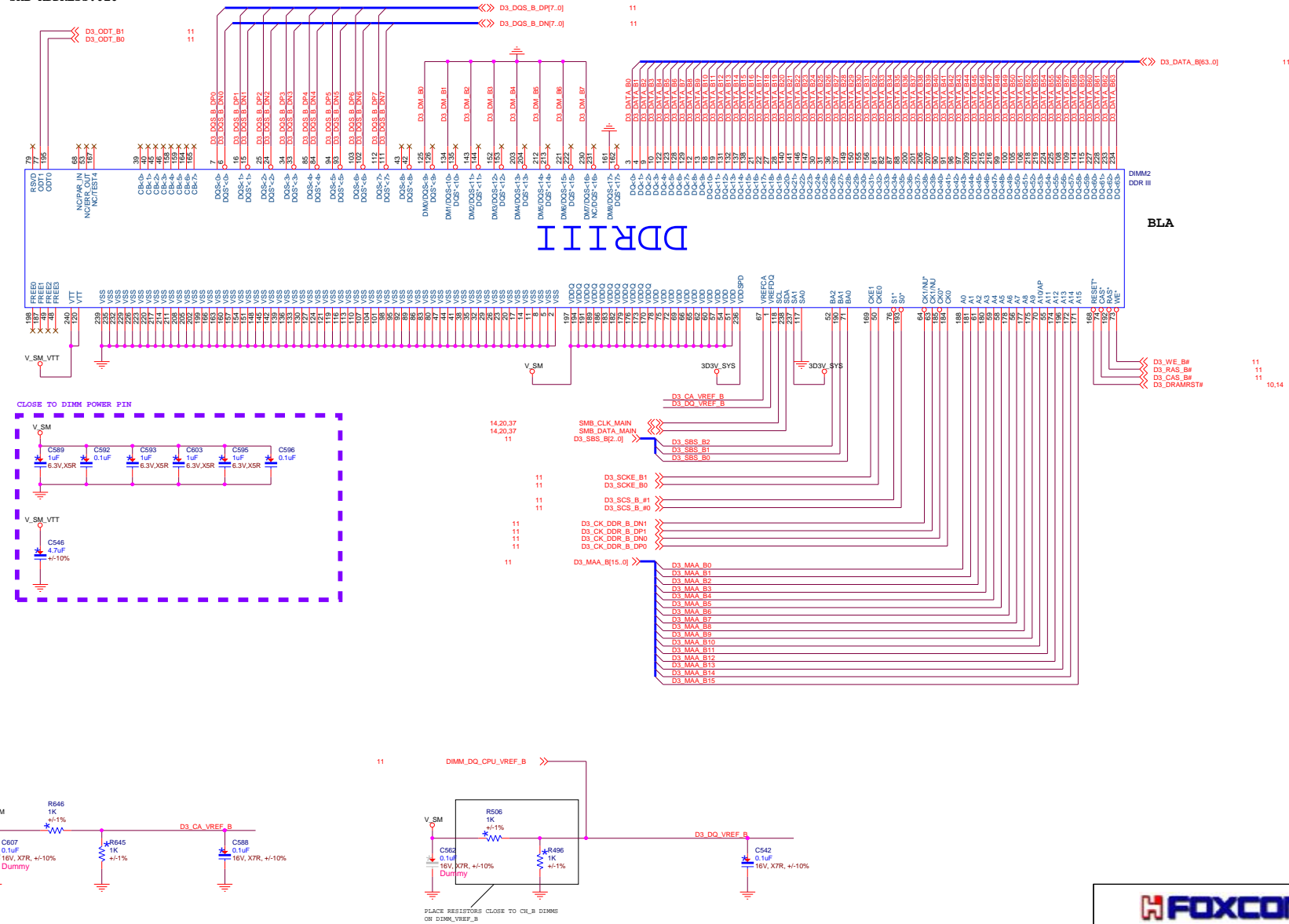
PLACE RESISTORS CLOSE TO CHA DIMMS
ON DIMM_VREF_A

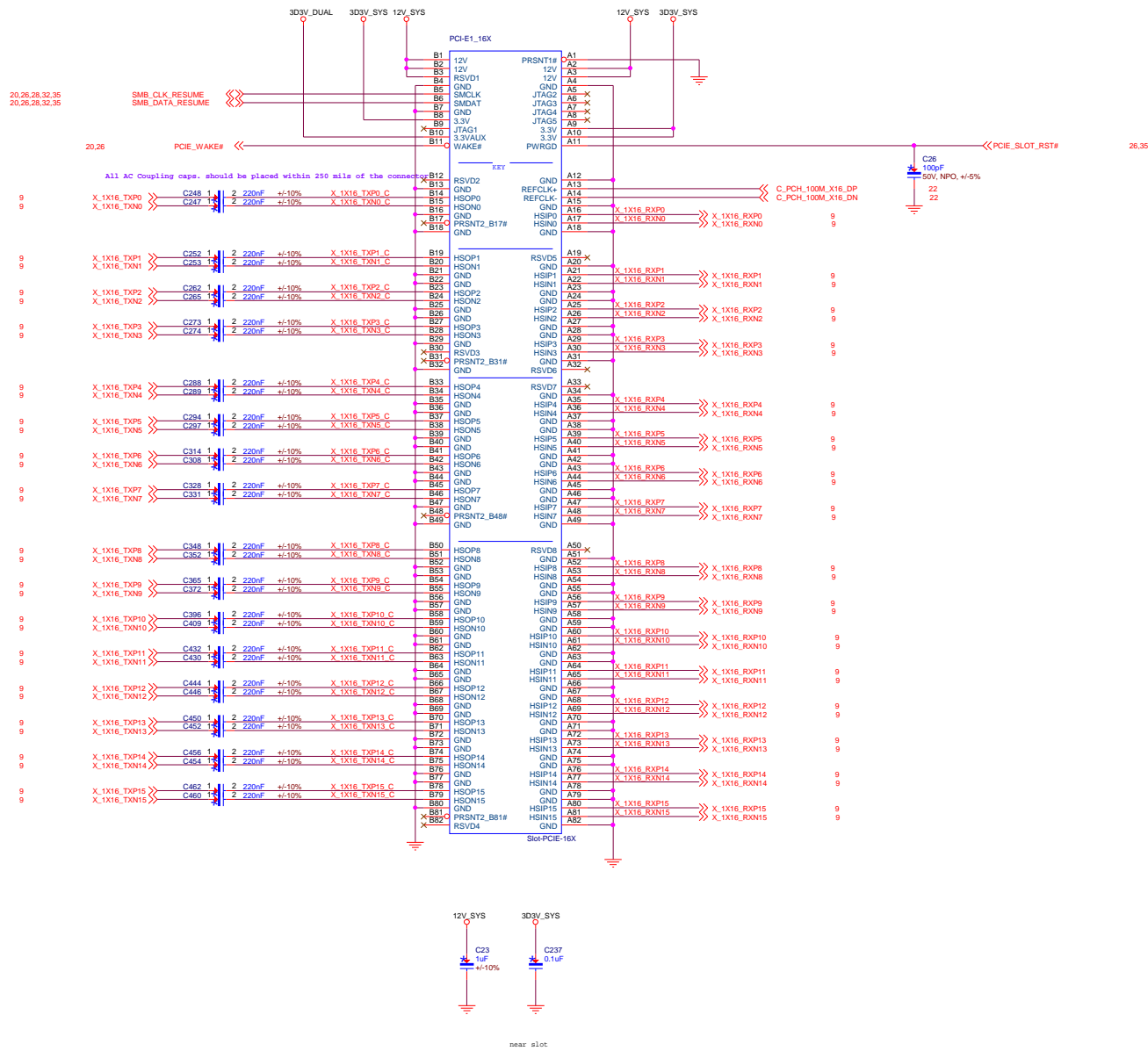



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DDR3-1:CHA
Rev
A

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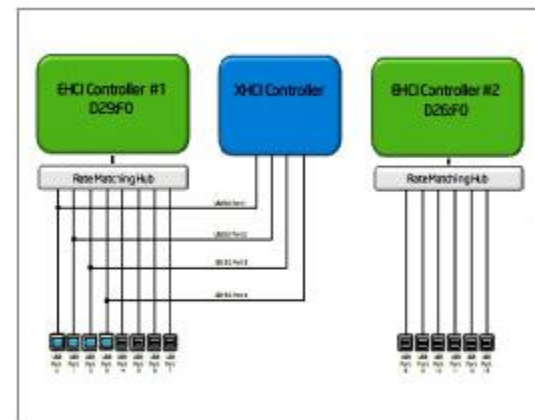
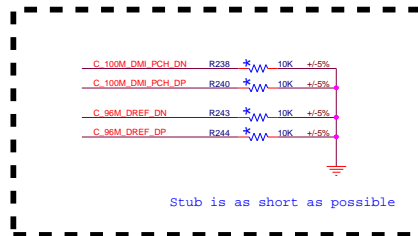
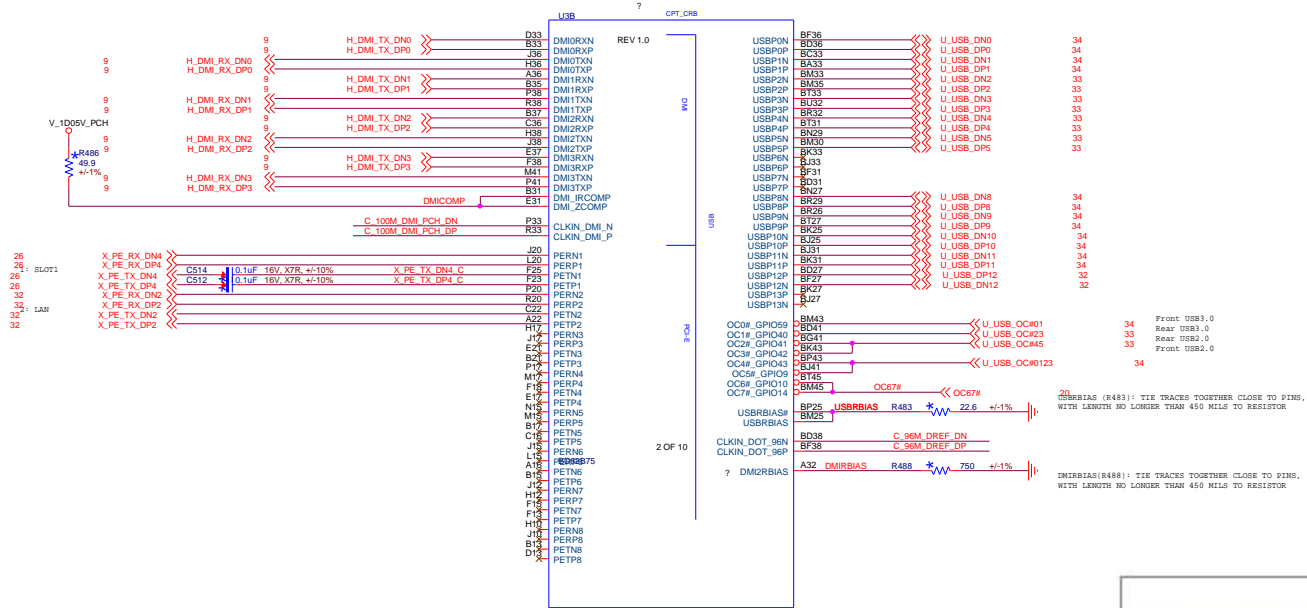


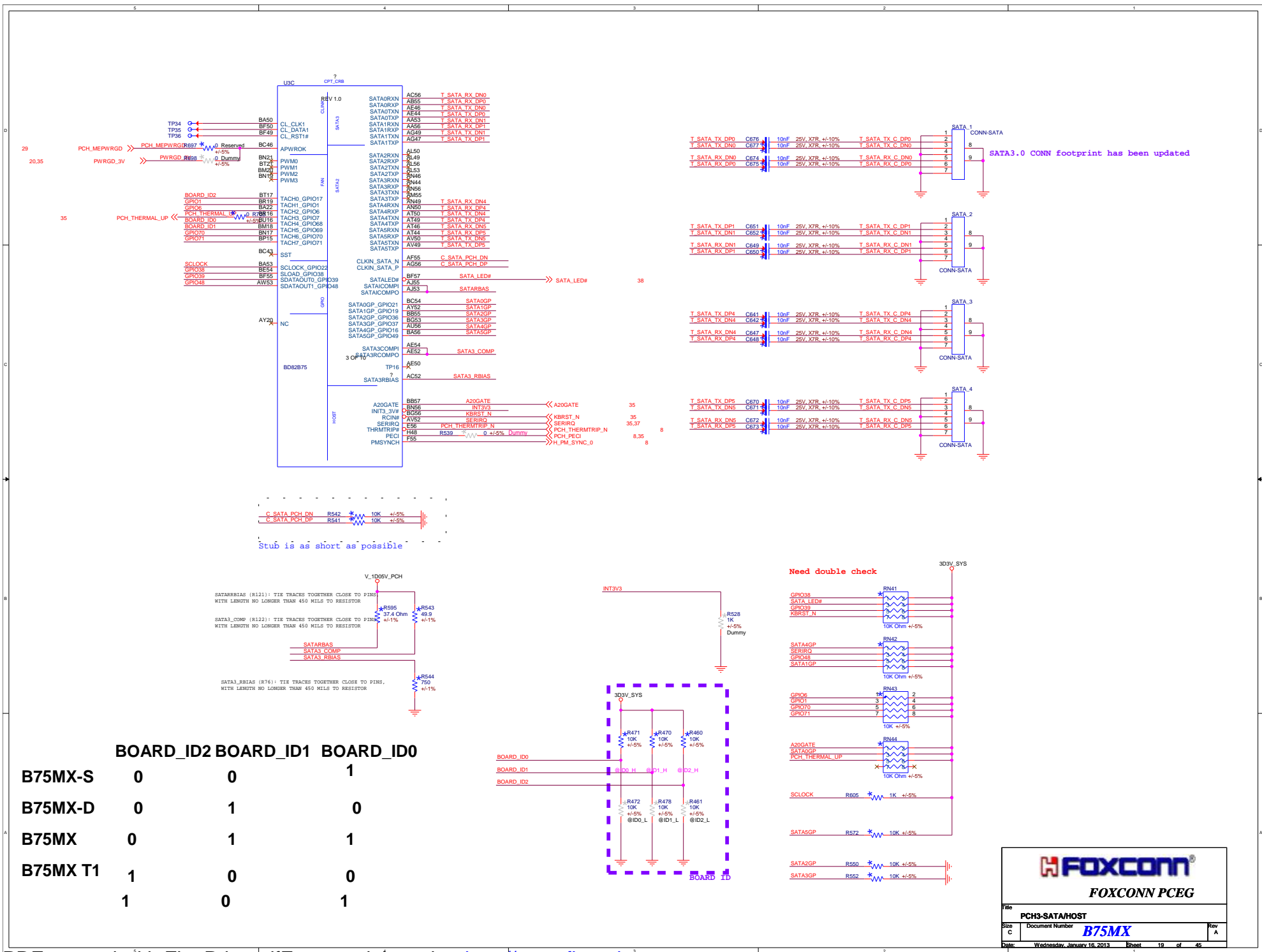


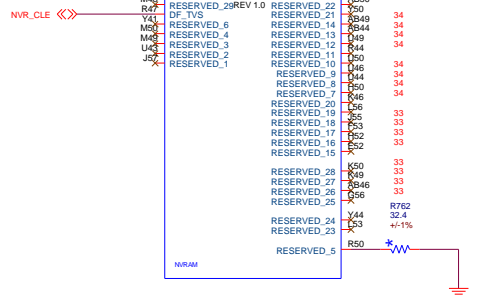
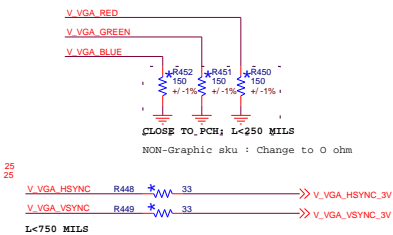


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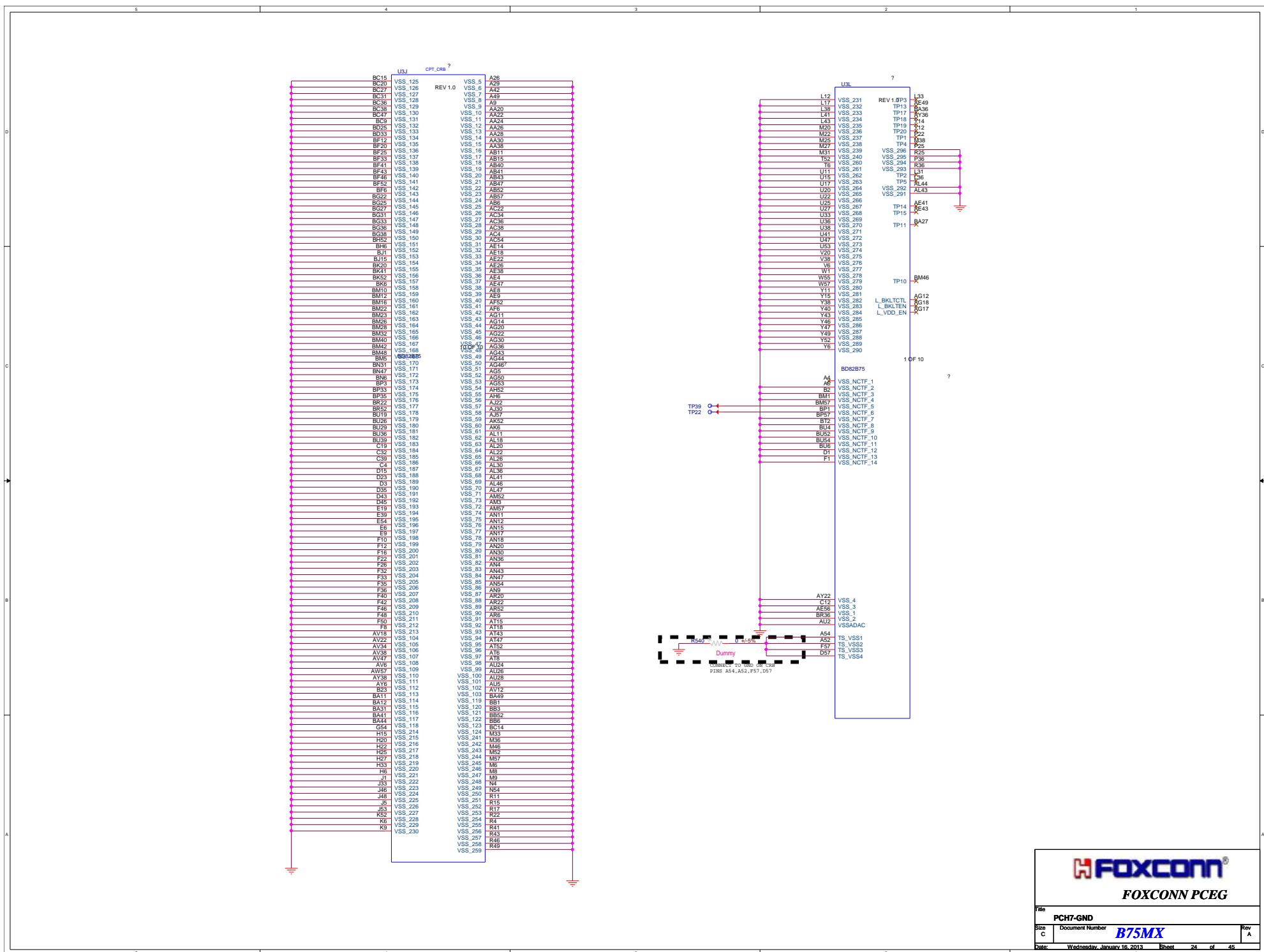
| | |
|-----|--------|
| D25 | JCB3T4 |
| D27 | JCB3T3 |
| D28 | JCB3T2 |
| D70 | FCM70 |
| D35 | JCB3T4 |
| D36 | JCB3T3 |
| D37 | JCB3T2 |
| D39 | JCB3T |
| D77 | FCM74 |
| D39 | JCB363 |
| D27 | JCB362 |
| D31 | JCB361 |
| D22 | JCB364 |
| D75 | FCM63 |
| D24 | JCB362 |
| D37 | JCB361 |

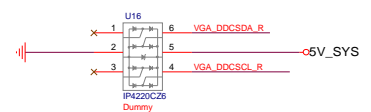
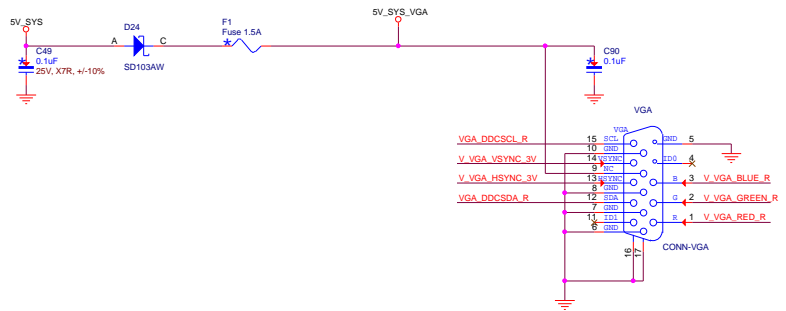
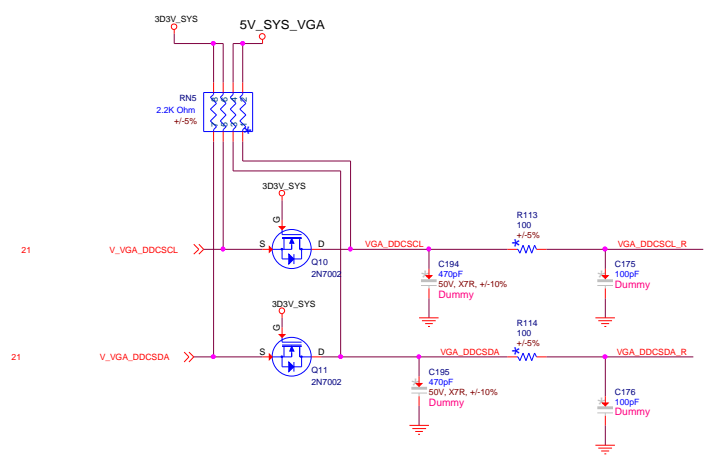
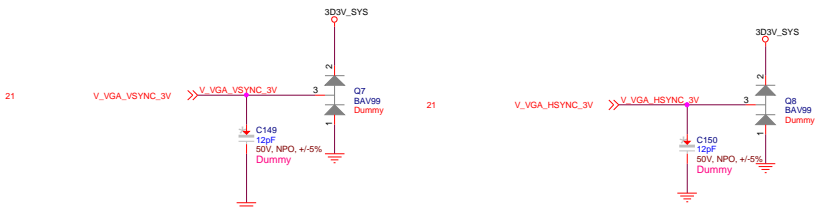
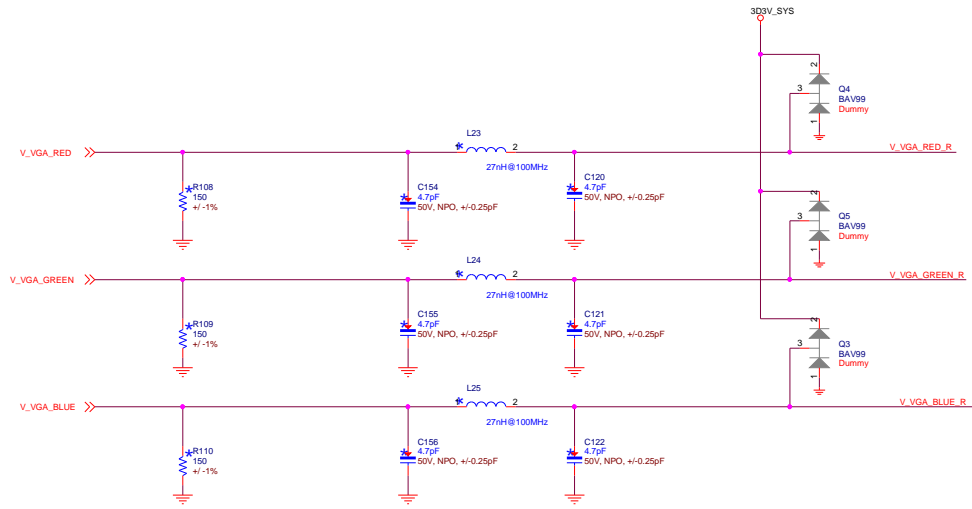
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BD82B75

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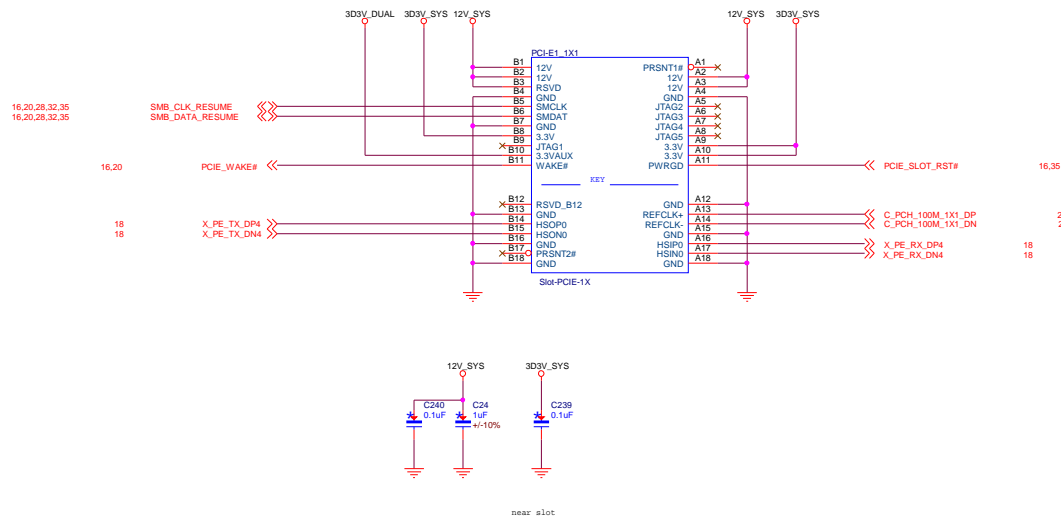






FOXCONN PCEG

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|  FOXCONN PCEG | | |
| File PCIE 1X | | |
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|----------------------|-----------------------------|-------|----------|
| Title | | | |
| PCIE BRIDGE ITE8893E | | | |
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IRQ: FGHE
IDSEL: AD17
REQ/GNT: 0

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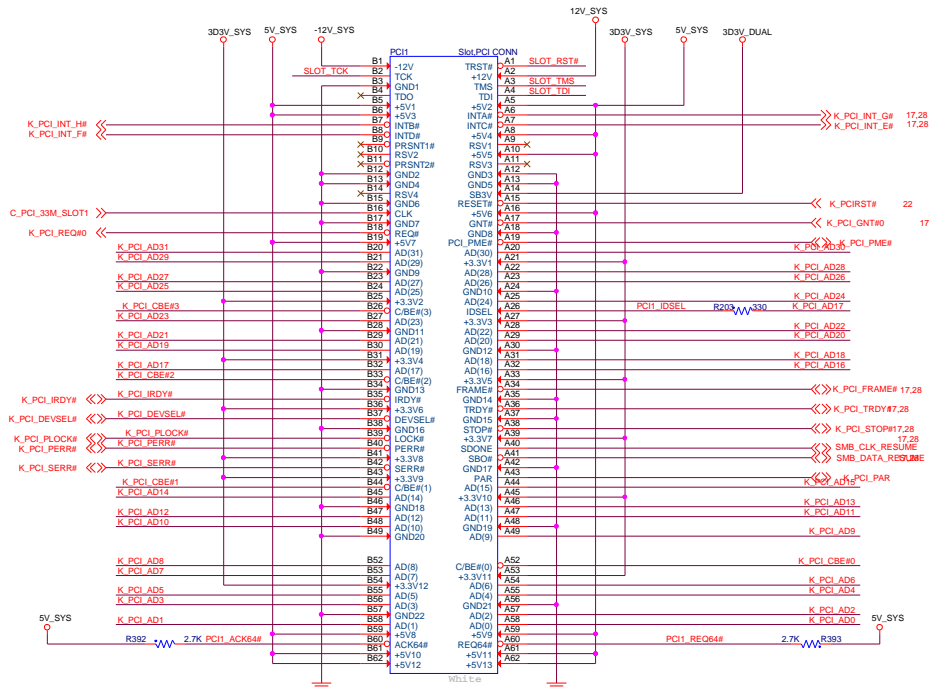
The diagram illustrates the REQ/GNT: 1 interface, showing the connection of PCI2 signals to various system components. The top section shows power supply connections for 3.3V, 5V, and 12V, and signal traces for REQ and GNT lines. The middle section shows the connection of PCI2 signals to various system components, including SLOTTCK, SLOTTMS, SLOTTDI, and various K_PCI_* signals. The bottom section shows the connection of PCI2 signals to various system components, including K_PCI_* signals and various system components.


Power Supply Connections:

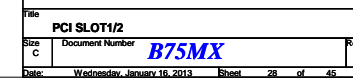
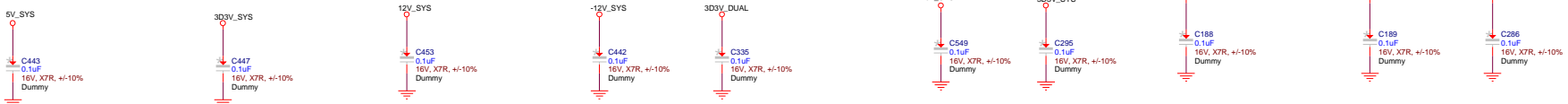
- 3.3V_SYS: Connected to 3.3V_DUAL and 3.3V.
- 5V_SYS: Connected to 5V.
- 12V_SYS: Connected to 12V.

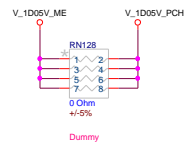
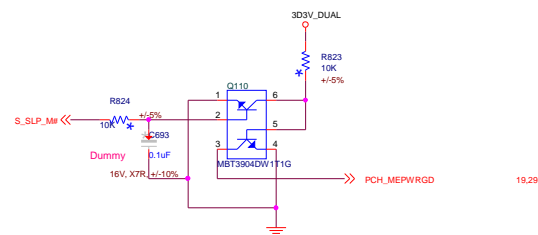
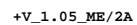
Signal Connections:

- REQ/GNT: 1:** Connected to REQ and GNT lines.
- PCI2:** Connected to various system components, including SLOTTCK, SLOTTMS, SLOTTDI, and various K_PCI_* signals.
- SLOTTCK:** Connected to K_PCI_TCK.
- SLOTTMS:** Connected to K_PCI_TMS.
- SLOTTDI:** Connected to K_PCI_TDI.
- K_PCI_* signals:** Connected to various system components, including K_PCI_INT_E#, K_PCI_INT_G#, K_PCI_RST#, K_PCI_FRAME#, K_PCI_TRDY#, K_PCI_STOP#, K_PCI_RESUME, K_PCI_PAR, K_PCI_ADE#, K_PCI_ADE, K_PCI_ADE2, K_PCI_ADE3, K_PCI_ADE4, K_PCI_ADE5, K_PCI_ADE6, K_PCI_ADE7, K_PCI_ADE8, K_PCI_ADE9, K_PCI_ADE10, K_PCI_ADE11, K_PCI_ADE12, K_PCI_ADE13, K_PCI_ADE14, K_PCI_ADE15, K_PCI_ADE16, K_PCI_ADE17, K_PCI_ADE18, K_PCI_ADE19, K_PCI_ADE20, K_PCI_ADE21, K_PCI_ADE22, K_PCI_ADE23, K_PCI_ADE24, K_PCI_ADE25, K_PCI_ADE26, K_PCI_ADE27, K_PCI_ADE28, K_PCI_ADE29, K_PCI_ADE30, K_PCI_ADE31, K_PCI_ADE32, K_PCI_ADE33, K_PCI_ADE34, K_PCI_ADE35, K_PCI_ADE36, K_PCI_ADE37, K_PCI_ADE38, K_PCI_ADE39, K_PCI_ADE40, K_PCI_ADE41, K_PCI_ADE42, K_PCI_ADE43, K_PCI_ADE44, K_PCI_ADE45, K_PCI_ADE46, K_PCI_ADE47, K_PCI_ADE48, K_PCI_ADE49, K_PCI_ADE50, K_PCI_ADE51, K_PCI_ADE52, K_PCI_ADE53, K_PCI_ADE54, K_PCI_ADE55, K_PCI_ADE56, K_PCI_ADE57, K_PCI_ADE58, K_PCI_ADE59, K_PCI_ADE60, K_PCI_ADE61, K_PCI_ADE62, K_PCI_ADE63, 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| | | |
|---|------------------|----|
| | K_PCI_AD[31..0] | 17 |
|  | K_PCI_CBE#[3..0] | 17 |





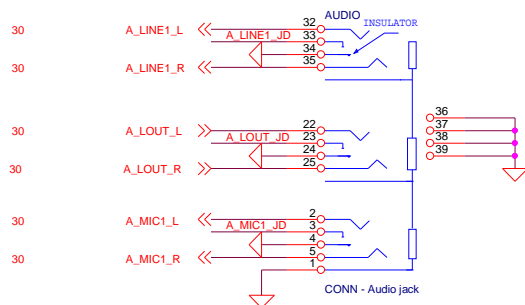
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|--|-----------------------------|-------|----------|
|  FOXCONN PCEG | | | |
| File | | | |
| 1.05ME POWER | | | |
| Size | Document Number | Rev | |
| C | B75MX | A | |
| Date: | Wednesday, January 16, 2013 | Sheet | 29 of 45 |

JACK SENSE



+5VA for AUDIO

Audio Jack

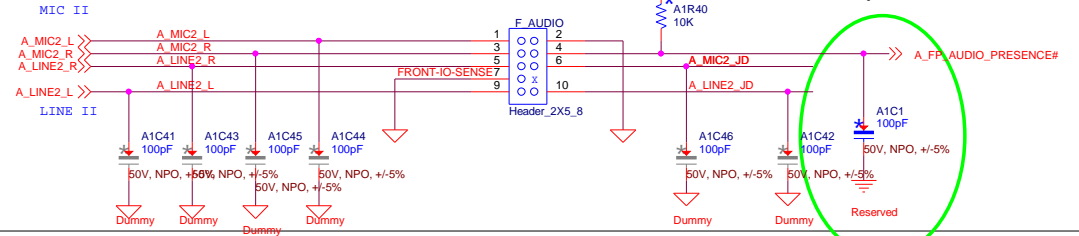


Audio Jack

- C LINE IN (UAJ)
- B LINE OUT (UAJ)
- A MIC IN (UAJ)

Front_Audio

FAB:1.0



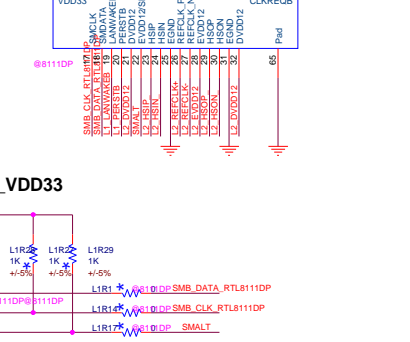
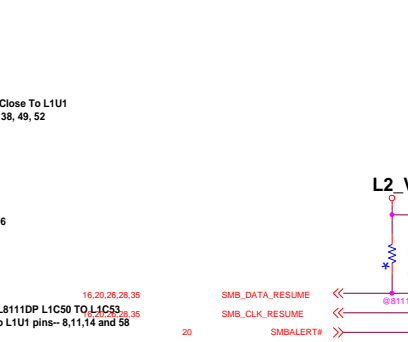
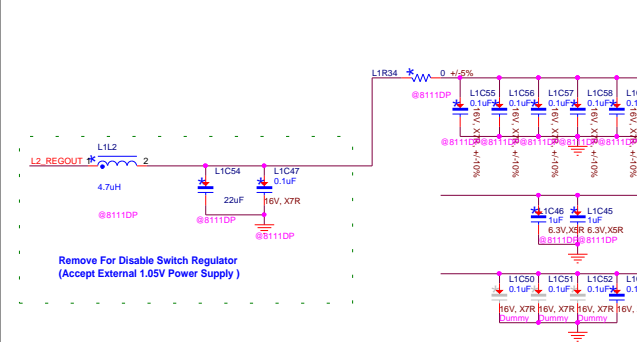
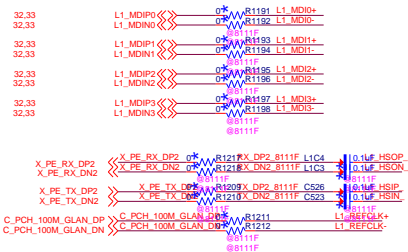
FOXCONN

FOXCONN PCEG

| | | |
|-------------------|-----------------------------|----------------|
| Title | | |
| AUDIO-2:CONNECTOR | | |
| Size | Document Number | Rev |
| A3 | B75MX | A |
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The diagram shows a detailed PCB layout for the C63-C69 pins, which are close to the L1U2 component. The layout includes several components and annotations:

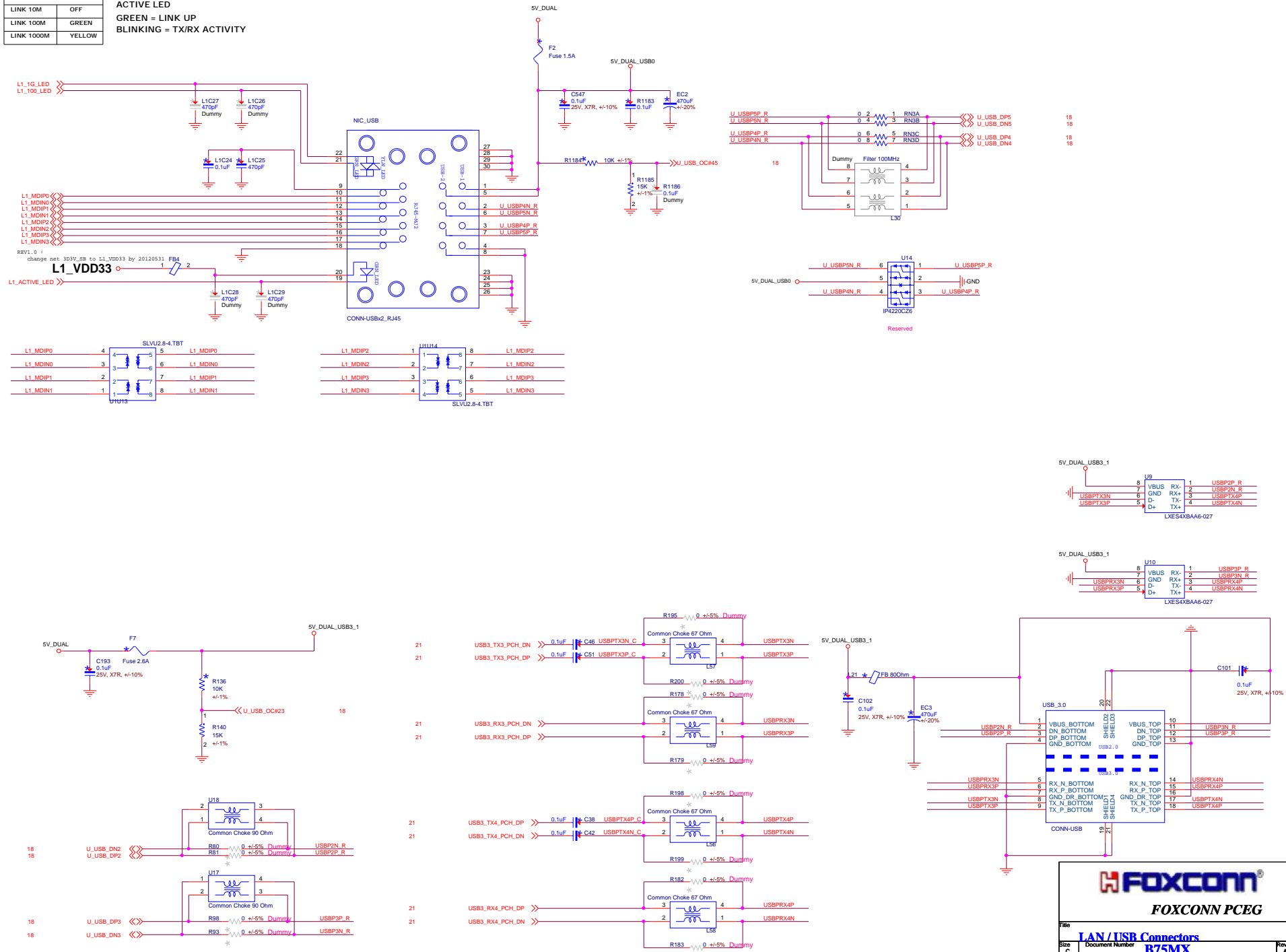
- Top Section:** A horizontal line with components L1R100, L1R191, L1C20, L1R192, L1C21, L1R193, L1C22, L1R194, L1C23, L1R195, L1C24, L1R196, L1C25, L1R197, L1C26, L1R198, L1C27, L1R199, L1C28, L1R200, L1C29, L1R201, L1C30, L1R202, L1C31, L1R203, L1C32, L1R204, L1C33, L1R205, L1C34, L1R206, L1C35, L1R207, L1C36, L1R208, L1C37, L1R209, L1C38, L1R210, L1C39, L1R211, L1C40, L1R212, L1C41, L1R213, L1C42, L1R214, L1C43, L1R215, L1C44, L1R216, L1C45, L1R217, L1C46, L1R218, L1C47, L1R219, L1C48, L1R220, L1C49, L1R221, L1C50, L1R222, L1C51, L1R223, L1C52, L1R224, L1C53, L1R225, L1C54, L1R226, L1C55, L1R227, L1C56, L1R228, L1C57, L1R229, L1C58, L1R230, L1C59, L1R231, L1C60, L1R232, L1C61, L1R233, L1C62, L1R234, L1C63, L1R235, L1C64, L1R236, L1C65, L1R237, L1C66, L1R238, L1C67, L1R239, L1C68, L1R240, L1C69, L1R241, L1C70, L1R242, L1C71, L1R243, L1C72, L1R244, L1C73, L1R245, L1C74, L1R246, L1C75, L1R247, L1C76, L1R248, L1C77, L1R249, L1C78, L1R250, L1C79, L1R251, L1C80, L1R252, L1C81, L1R253, L1C82, L1R254, L1C83, L1R255, L1C84, L1R256, L1C85, L1R257, L1C86, L1R258, L1C87, L1R259, L1C88, L1R260, L1C89, L1R261, L1C90, L1R262, L1C91, L1R263, L1C92, L1R264, L1C93, L1R265, L1C94, L1R266, L1C95, L1R267, L1C96, L1R268, L1C97, L1R269, L1C98, L1R270, L1C99, L1R271, L1C100, L1R272, L1C101, L1R273, L1C102, L1R274, L1C103, L1R275, L1C104, L1R276, L1C105, L1R277, L1C106, L1R278, L1C107, L1R279, L1C108, L1R280, L1C109, L1R281, L1C110, L1R282, L1C111, L1R283, L1C112, L1R284, L1C113, L1R285, L1C114, L1R286, L1C115, L1R287, L1C116, L1R288, L1C117, L1R289, L1C118, L1R290, L1C119, L1R291, L1C120, L1R292, L1C121, L1R293, L1C122, L1R294, L1C123, L1R295, L1C124, L1R296, L1C125, L1R297, L1C126, L1R298, L1C127, L1R299, L1C128, L1R300, L1C129, L1R301, L1C130, L1R302, L1C131, L1R303, L1C132, L1R304, L1C133, L1R305, L1C134, L1R306, L1C135, L1R307, L1C136, L1R308, L1C137, L1R309, L1C138, L1R310, L1C139, L1R311, L1C140, L1R312, L1C141, L1R313, L1C142, L1R314, L1C143, L1R315, L1C144, L1R316, L1C145, L1R317, L1C146, L1R318, L1C147, L1R319, L1C148, L1R320, L1C149, L1R321, L1C150, L1R322, L1C151, L1R323, L1C152, L1R324, L1C153, L1R325, L1C154, L1R326, L1C155, L1R327, L1C156, L1R328, L1C157, L1R329, L1C158, L1R330, L1C159, L1R331, L1C160, L1R332, L1C161, L1R333, L1C162, L1R334, L1C163, L1R335, L1C164, L1R336, L1C165, L1R337, L1C166, L1R338, L1C167, L1R339, L1C168, L1R340, L1C169, L1R341, L1C170, L1R342, L1C171, L1R343, L1C172, L1R344, L1C173, L1R345, L1C174, L1R346, L1C175, L1R347, L1C176, L1R348, L1C177, L1R349, L1C178, L1R350, L1C179, L1R351, L1C180, L1R352, L1C181, L1R353, L1C182, L1R354, L1C183, L1R355, L1C184, L1R356, L1C185, L1R357, L1C186, L1R358, L1C187, L1R359, L1C188, L1R360, L1C189, L1R361, L1C190, L1R362, L1C191, L1R363, L1C192, L1R364, L1C193, L1R365, L1C194, L1R366, L1C195, L1R367, L1C196, L1R368, L1C197, L1R369, L1C198, L1R370, L1C199, L1R371, L1C200, L1R372, L1C201, L1R373, L1C202, L1R374, L1C203, L1R375, L1C204, L1R376, L1C205, L1R377, L1C206, L1R378, L1C207, L1R379, L1C208, L1R380, L1C209, L1R381, L1C210, L1R382, L1C211, L1R383, L1C212, L1R384, L1C213, L1R385, L1C214, L1R386, L1C215, L1R387, L1C216, L1R388, L1C217, L1R389, L1C218, L1R390, L1C219, L1R391, L1C220, L1R392, L1C221, L1R393, L1C222, L1R394, L1C223, L1R395, L1C224, L1R396, L1C225, L1R397, L1C226, L1R398, L1C227, L1R399, L1C228, L1R400, L1C229, L1R401, L1C230, L1R402, L1C231, L1R403, L1C232, L1R404, L1C233, L1R405, L1C234, L1R406, L1C235, L1R407, L1C236, L1R408, L1C237, L1R409, L1C238, L1R410, L1C239, L1R411, L1C240, L1R412, L1C241, L1R413, L1C242, L1R414, L1C243, L1R415, L1C244, L1R416, L1C245, L1R417, L1C246, L1R418, L1C247, L1R419, L1C248, L1R420, L1C249, L1R421, L1C250, L1R422, L1C251, L1R423, L1C252, L1R424, L1C253, L1R425, L1C254, L1R426, L1C255, L1R427, L1C256, L1R428, L1C257, L1R429, L1C258, L1R430, L1C259, L1R431, L1C260, L1R432, L1C261, L1R433, L1C262, L1R434, L1C263, L1R435, L1C264, L1R436, L1C265, L1R437, L1C266, L1R438, L1C267, L1R439, L1C268, L1R440, L1C269, L1R441, L1C270, L1R442, L1C271, L1R443, L1C272, L1R444, L1C273, L1R445, L1C274, L1R446, L1C275, L1R447, L1C276, L1R448, L1C277, L1R449, L1C278, L1R450, L1C279, L1R451, L1C280, L1R452, L1C281, L1R453, L1C282, L1R454, L1C283, L1R455, L1C284, L1R456, L1C285, L1R457, L1C286, L1R458, L1C287, L1R459, L1C288, L1R460, L1C289, L1R461, L1C290, L1R462, L1C291, L1R463, L1C292, L1R464, L1C293, L1R465, L1C294, L1R466, L1C295, L1R467, L1C296, L1R468, L1C297, L1R469, L1C298, L1R470, L1C299, L1R471, L1C300, L1R472, L1C301, L1R473, L1C302, L1R474, L1C303, L1R475, L1C304, L1R476, L1C305, L1R477, L1C306, L1R478, L1C307, L1R479, L1C308, L1R480, L1C309, L1R481



| SPEED LED | |
|------------|--------|
| LINK 10M | OFF |
| LINK 100M | GREEN |
| LINK 1000M | YELLOW |

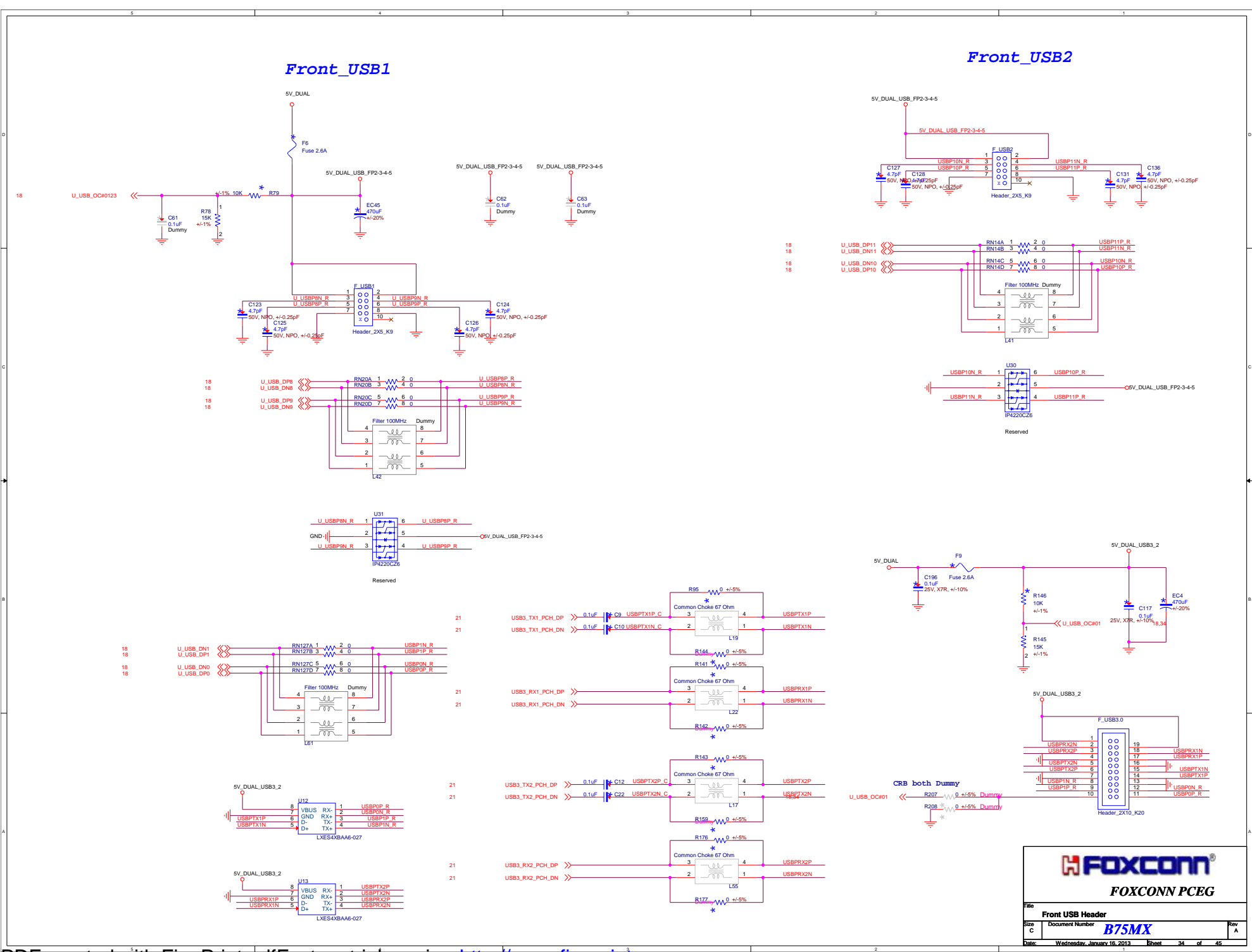
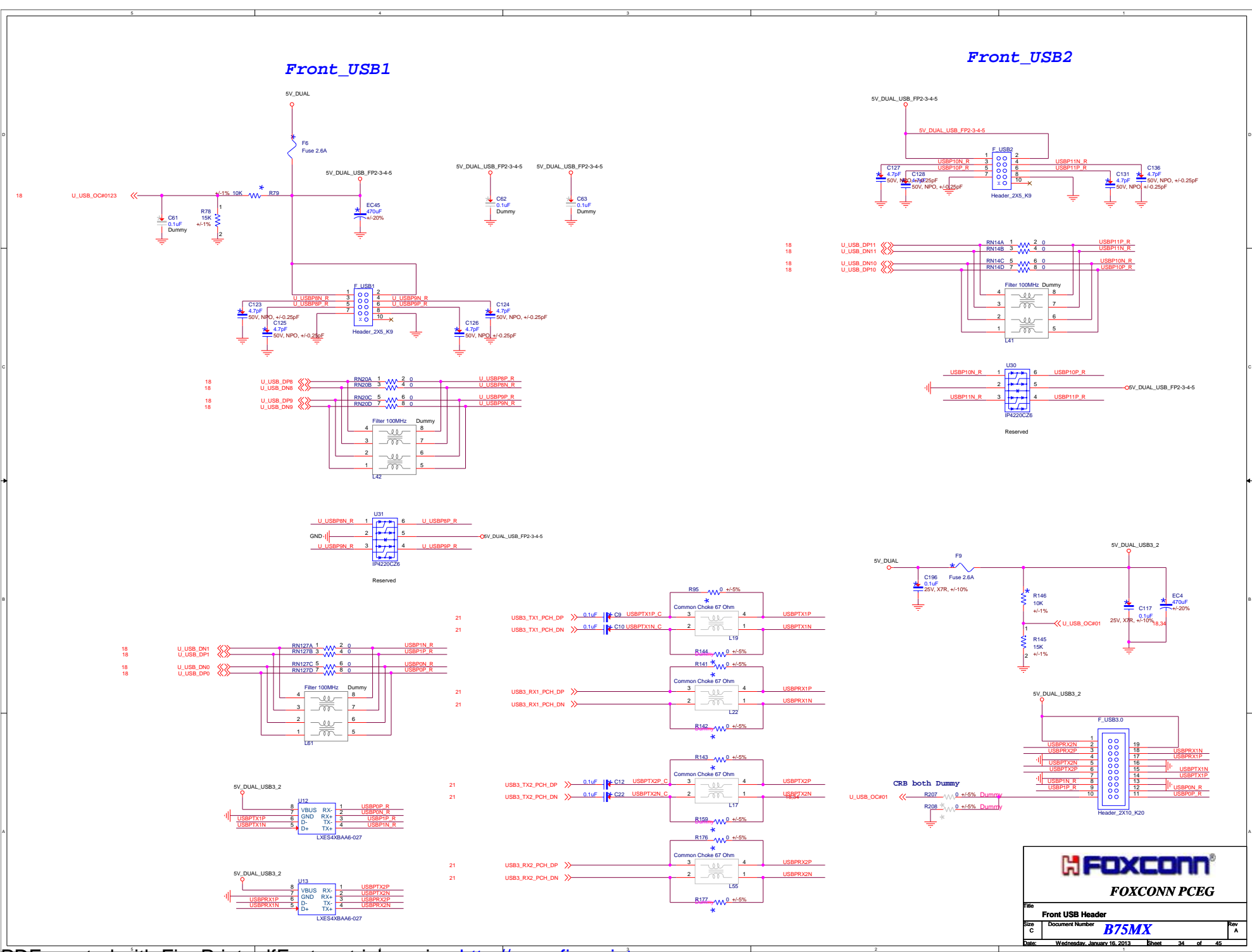
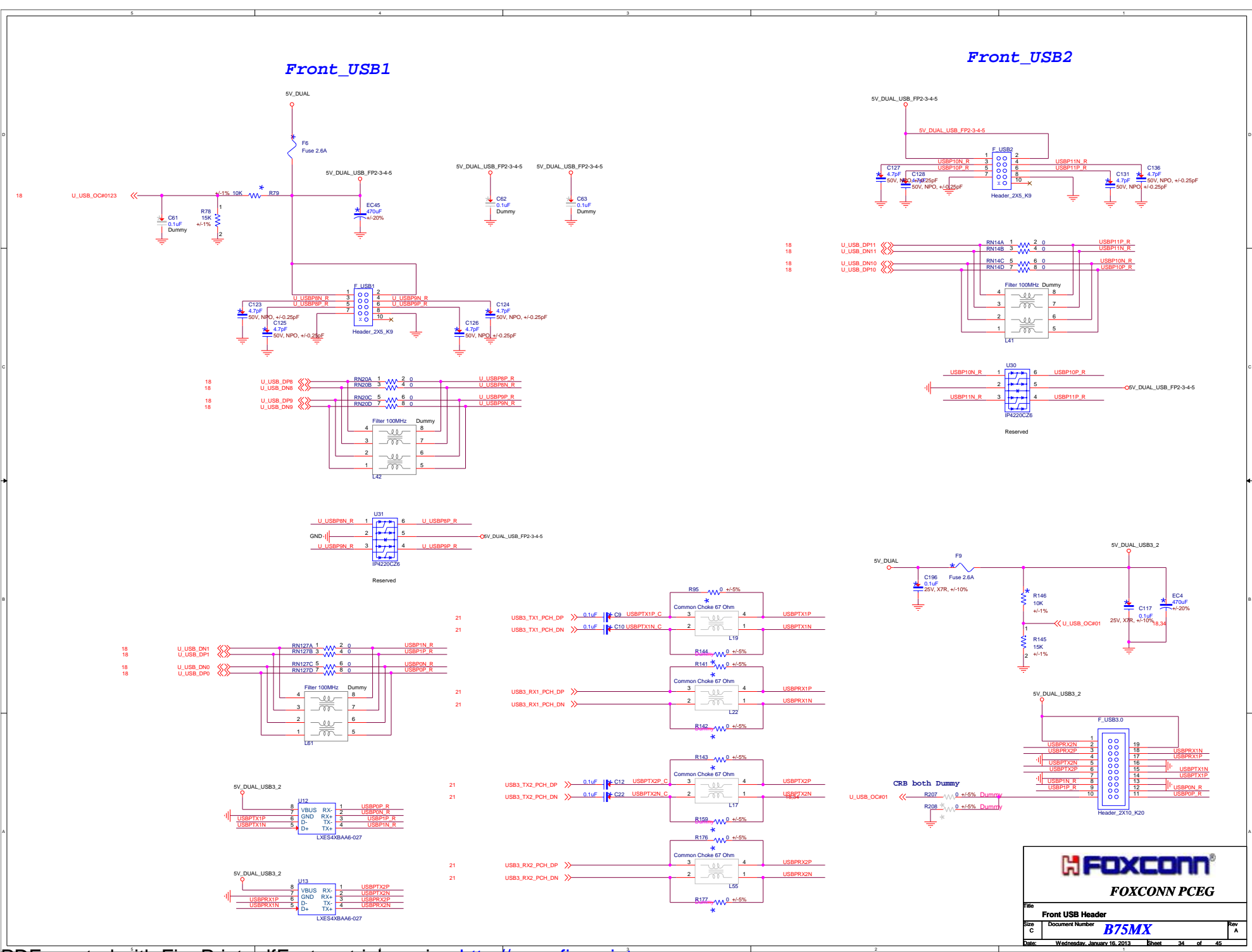
ACTIVE LED
GREEN = LINK UP
BLINKING = TX/RX ACTIVITY

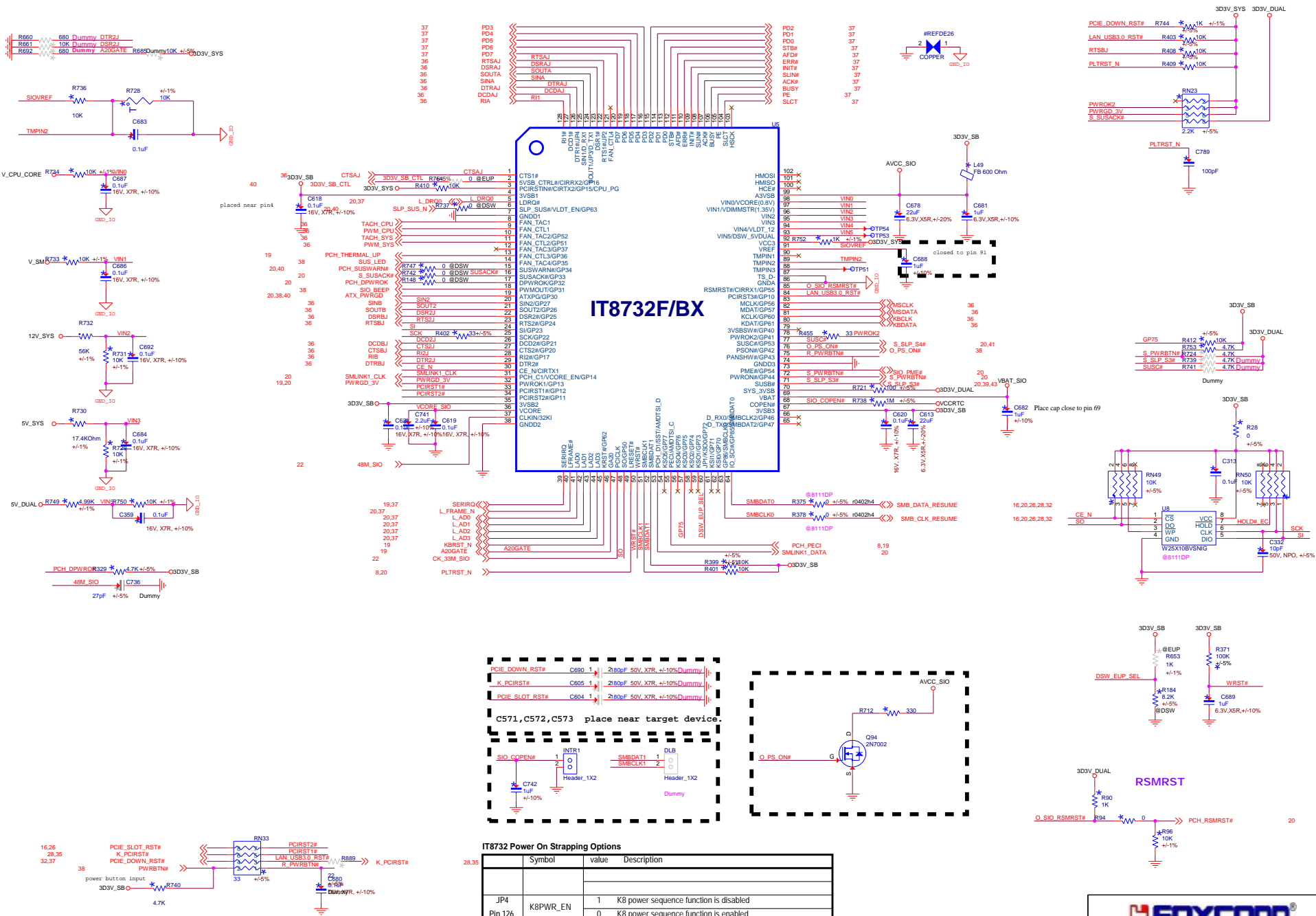
BACK PANEL (LAN 1+ 2 USB Connector)



FOXCONN
FOXCONN PCEG

| File | Document Number | Rev |
|----------------------|-----------------------------|----------------|
| LAN / USB Connectors | B75MX | A |
| Date: | Wednesday, January 16, 2013 | Sheet 33 of 45 |





[illegible]

LPT PORT

5V SYS

D22

LS4148-F

C666

0.1uF

RN27

2.7K

+/-5%

ACK#

BUS#

PE

SLCT

R735

2.7K

+/-5%

ERR#

RN30

2.7K

+/-5%

STB

AFD1-

INIT1-

SLIN1-

RN29

2.7K

+/-5%

P_D0

P_D1

P_D2

P_D3

RN28

2.7K

+/-5%

P_D4

P_D5

P_D6

P_D7

RN32

33

+/-5%

P_D0

P_D1

P_D2

P_D3

RN25

33

+/-5%

P_D4

P_D5

P_D6

P_D7

ERR#

ACK#

BUS#

PE

SLCT

RN26

33

+/-5%

STB

AFD1-

INIT1-

SLIN1-

C691

220pF

+/-10%

CN3

220pF

CN4

220pF

CN5

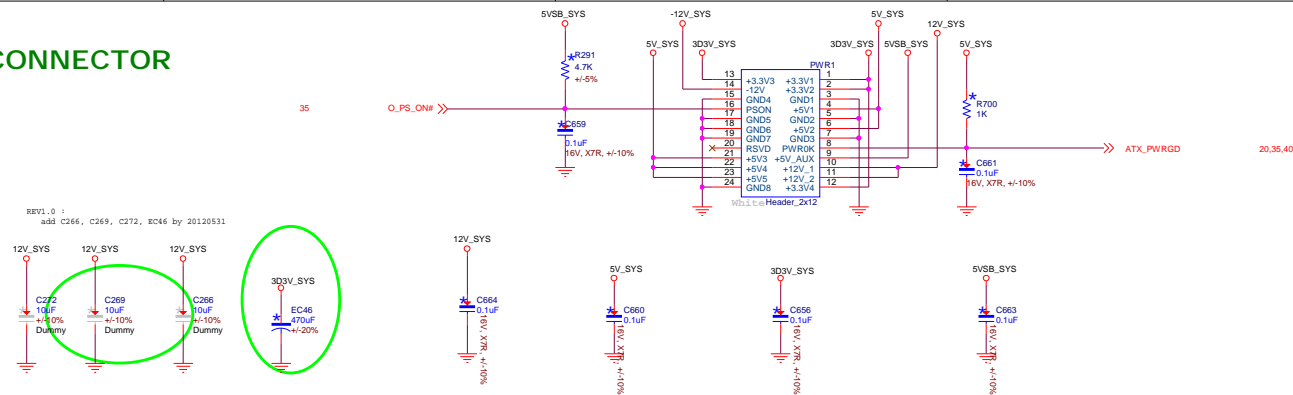
220pF

CN6

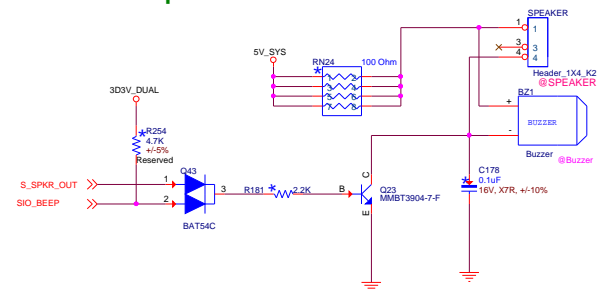
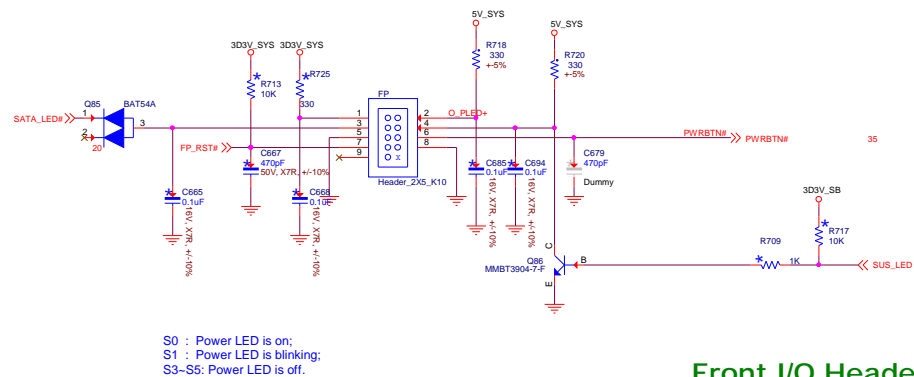
220pF

PDF created with FinePrint pdfFactory trial version <http://www.fineprint.com>

ATX POWER CONNECTOR



BUZZER/Speaker Header

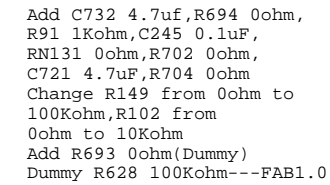


Front I/O Header

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 |

5V_DUAL



35

3D3V_CTL

3D3V_SB

3D3V_SB

3D3V_SB

3D3V_P

3D3V_DUAL

5VSB_SYS

5V_REF

add current for 5V_REF issue.
---20121220

5VSB_5VSYS

U40

3 3

2

1

Vin

Vout

ADJ

AZ1084D-ADJTR1

C597

6.3V_XSR +/-10%

1uF

3D35_5B

303V_5B

Max. output current = 3A

R655

301

+/-1%

R651

499

+/-1%

C610

6.3V_XSR +/-20%

1uF

Dummy

EC54

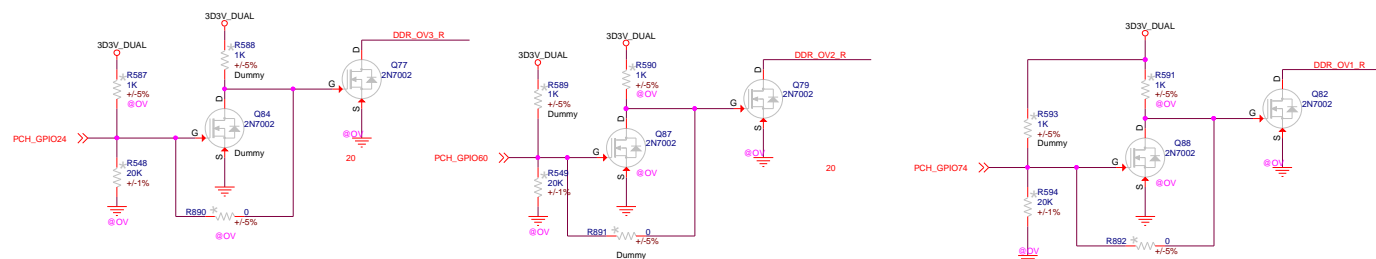
170uF

C628

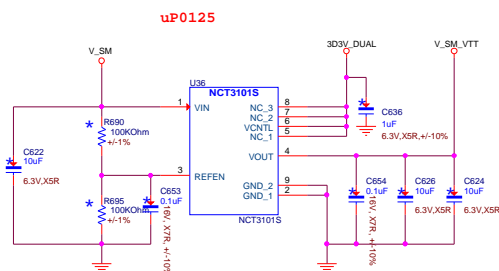
0.1uF

3.3V_XSR +/-10%

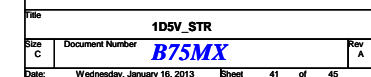
Vout=Vref(1+R2/R1)+IadjR2
R1 is Up Resistor.
Iadj=50uA
Vref=1.25V

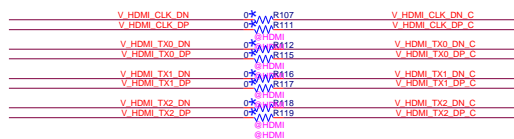
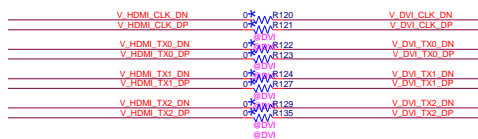


Max=40A
27A in design guide

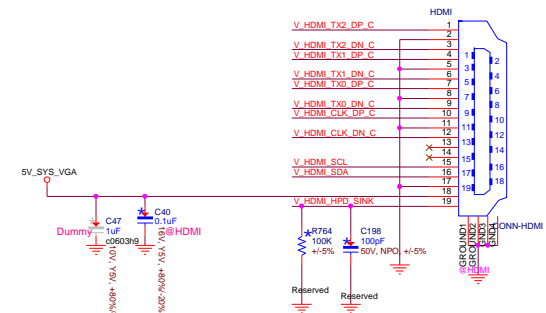
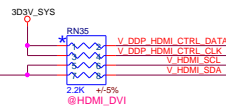
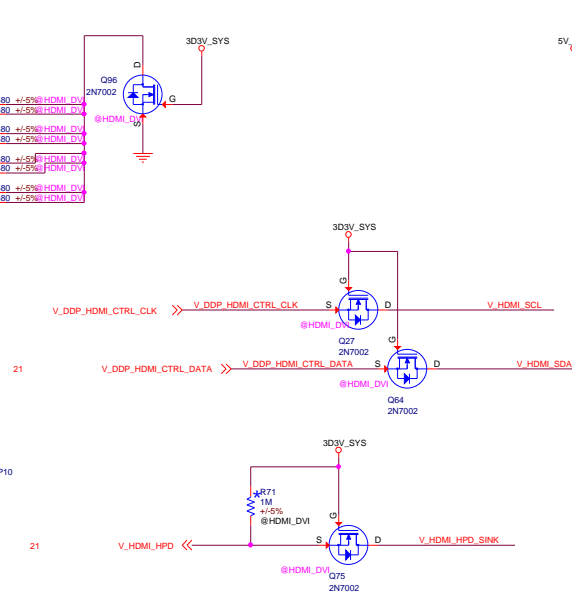
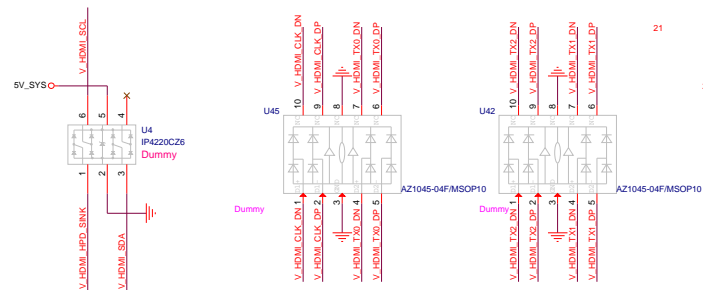
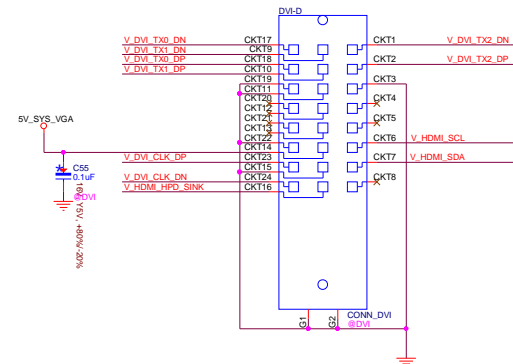
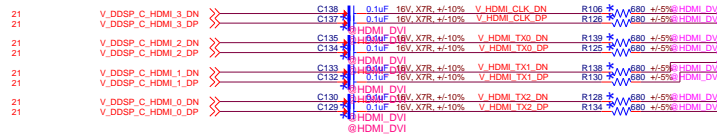


| GPIO24 | GPIO13 | GPIO29 | Voltage |
|--------|--------|--------|-------------|
| 0 | 0 | 0 | 1.563636364 |
| 0 | 0 | 1 | 1.675636364 |
| 0 | 1 | 0 | 1.656969697 |
| 0 | 1 | 1 | 1.768969697 |
| 1 | 0 | 0 | 1.787636364 |
| 1 | 0 | 1 | 1.899636364 |
| 1 | 1 | 0 | 1.880969697 |
| 1 | 1 | 1 | 1.992969697 |





HDMI



| | | | |
|-----------------------------------|-----------------|----|-------|
| Title | | | |
| HDM/DVI | | | |
| Size | Document Number | | Rev |
| C | B75MX | | A |
| Date: Wednesday, January 16, 2013 | | | |
| Sheet | | 42 | of 45 |

Sugar Bay VR12 POWER 4+1 PHASE

VCC_CORE

VCC_AXG

BOOT VOLTAGE

| RESISTOR VALUE | BOOT VOLTAGE |
|----------------|--------------|
| 10K | 0V |
| 25K | 0.9V |
| 45K | 1.0V |
| 70K | 1.1V |
| 95K | 1.2V |
| 125K | 1.35V |
| 165K | 1.5V |

PWM ADDRESS

| RESISTOR VALUE | SVID ADDRESS FOR VCORE RAIL | SVID ADDRESS FOR VGT RAIL |
|----------------|-----------------------------|---------------------------|
| 10K | 0000 | 0001 |
| 25K | 0010 | 0011 |
| 45K | 0100 | 0101 |
| 70K | 0110 | 0111 |
| 95K | 1000 | 1001 |
| 125K | 1010 | 1011 |
| 165K | 1100 | 1101 |

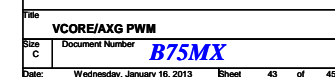
FOXCONN PCEG

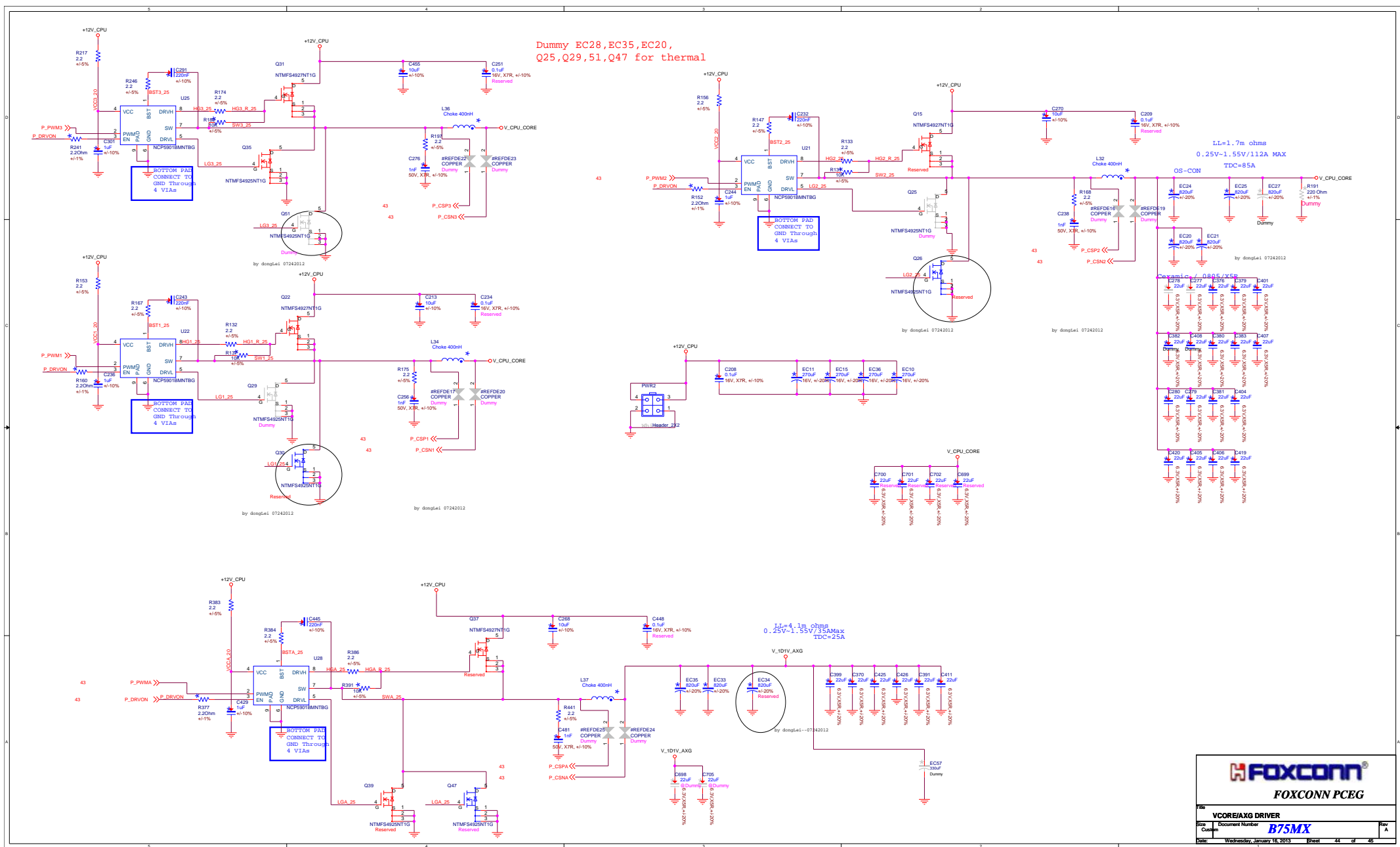
B75MX

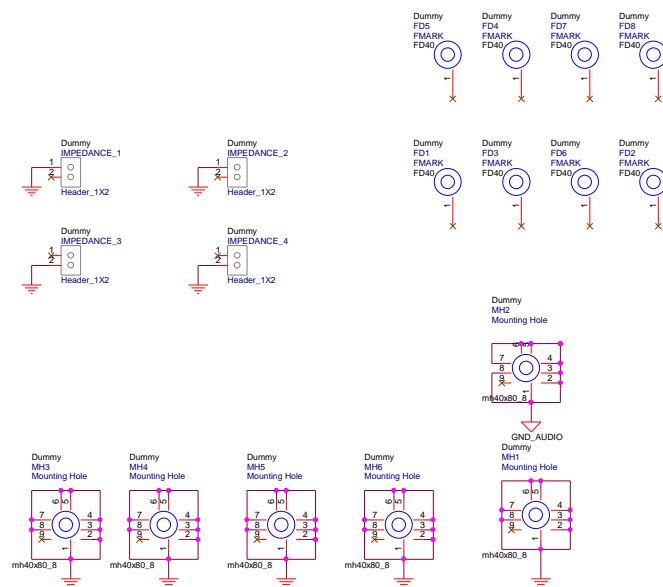
File: VCCORE/AXG PWM
Size: C
Document Number: B75MX
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| RESISTOR VALUE | BOOT VOLTAGE |
|-------------------|-----------------|
| 10K | 0V |
| 25K | 0.9V |
| 45K | 1.0V |
| 70K | 1.1V |
| 95K | 1.2V |
| 125K | 1.35V |
| 165K | 1.5V |

| RESISTOR VALUE | SVID ADDRESS FOR VCORE RAIL | SVID ADDRESS FOR V_GT RAIL |
|-------------------|-----------------------------------|----------------------------------|
| 10K | 0000 | 0001 |
| 25K | 0010 | 0011 |
| 45K | 0100 | 0101 |
| 70K | 0110 | 0111 |
| 95K | 1000 | 1001 |
| 125K | 1010 | 1011 |
| 165K | 1100 | 1101 |







| | | |
|-------------------------|-----------------------------|----------------|
| FOXCONN PCEG | | |
| THROUGH HOLE | | |
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