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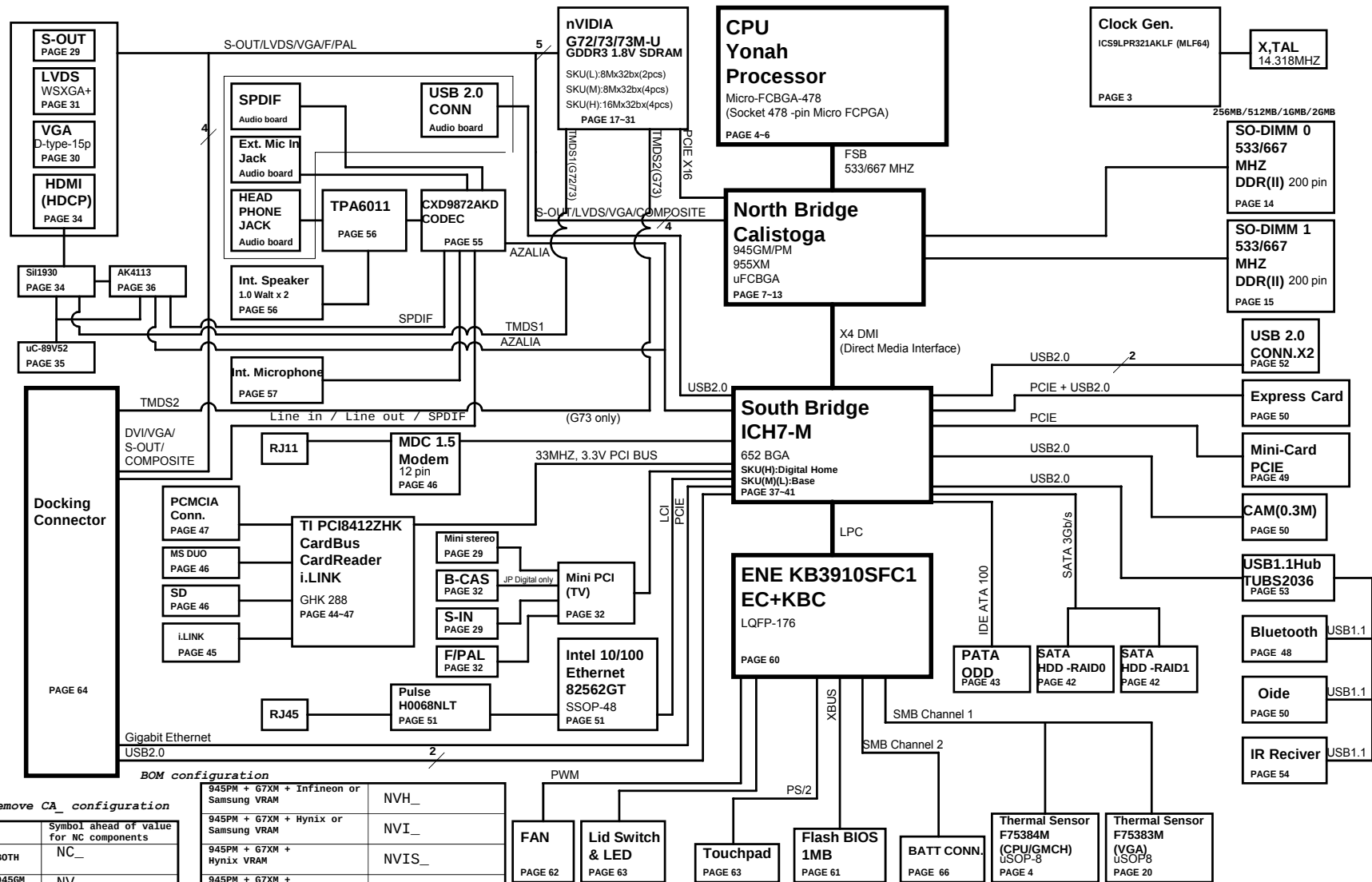
P. Leader	Check by	Design by

Project Code & Schematics Subject:	MS22 Main Board	PCB P/N:	1P-0068100-80SA
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FOXCONN		HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
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MS22(CALISTOGA PM+Gfx Block Diagram)

Red texts:
New modified

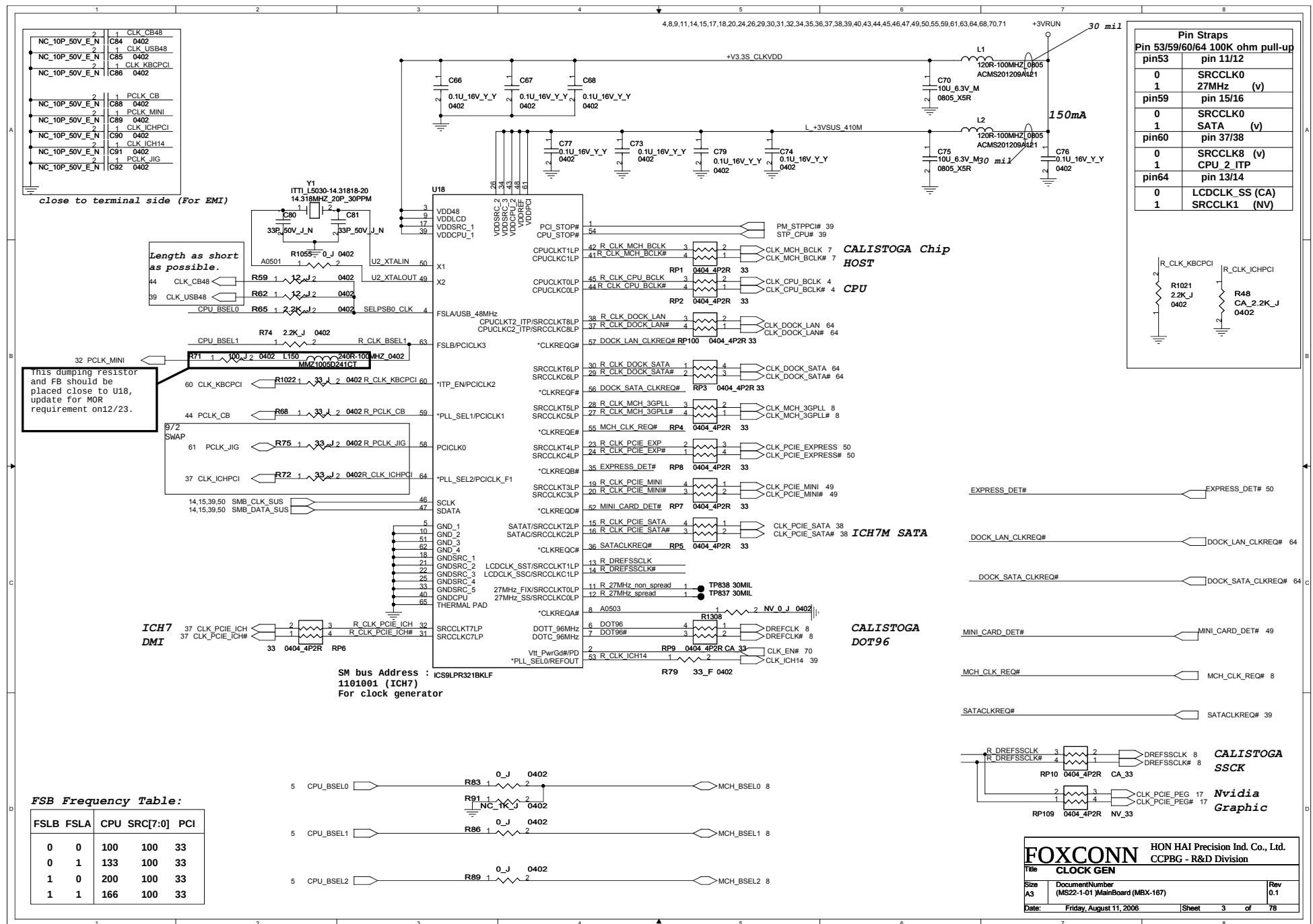


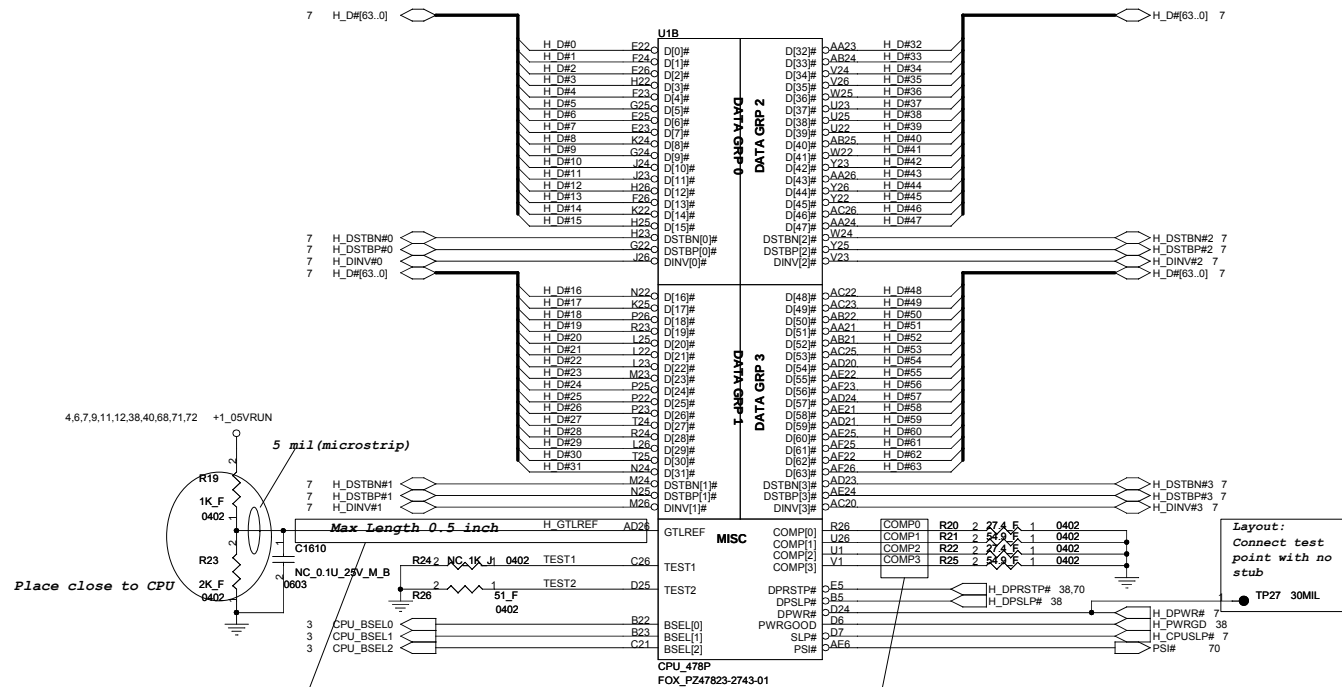
BOM configuration

Remove CA configuration

	Symbol ahead of value for NC components
BOTH	NC_
945GM	NV_
945PM + 672M	NV73_
945PM + 673M	NV72_
945PM + 672M or 673M-U	NV730only_

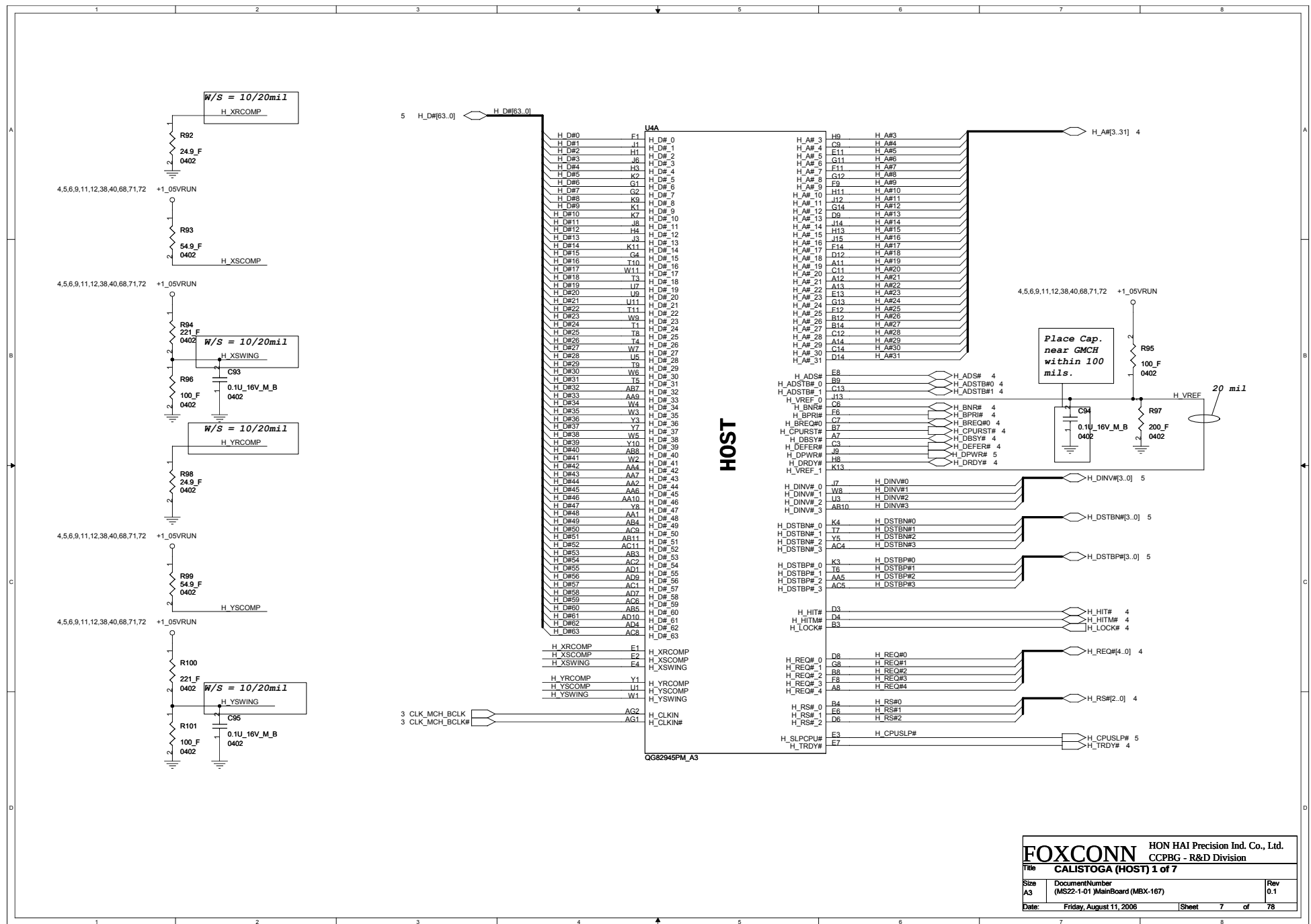
945PM + 67XM + Infineon or Samsung VRAM	NVH_
945PM + 67XM + Hynix or Samsung VRAM	NVI_
945PM + 67XM + Hynix VRAM	NVIS_
945PM + 67XM + Infineon VRAM	NVHS_
945PM + 672M or 673M	NV16M_, NV73U_
945PM + 673M-U	NV8M_, NV7273_
*JP Digital TV Tuner SKU & No Tuner SKU not stick	JDTVNC_





Layout Note:
Zo=55 ohm, 0.5"
max for GTLREF.

Layout Note:
Comp0, 2 connect with Zo=27.4 ohm, make
trace length shorter than 0.5".
Comp1, 3 connect with Zo=55 ohm, make
trace length shorter than 0.5".



1 2 3 4 5 6 7 8

A

B

C

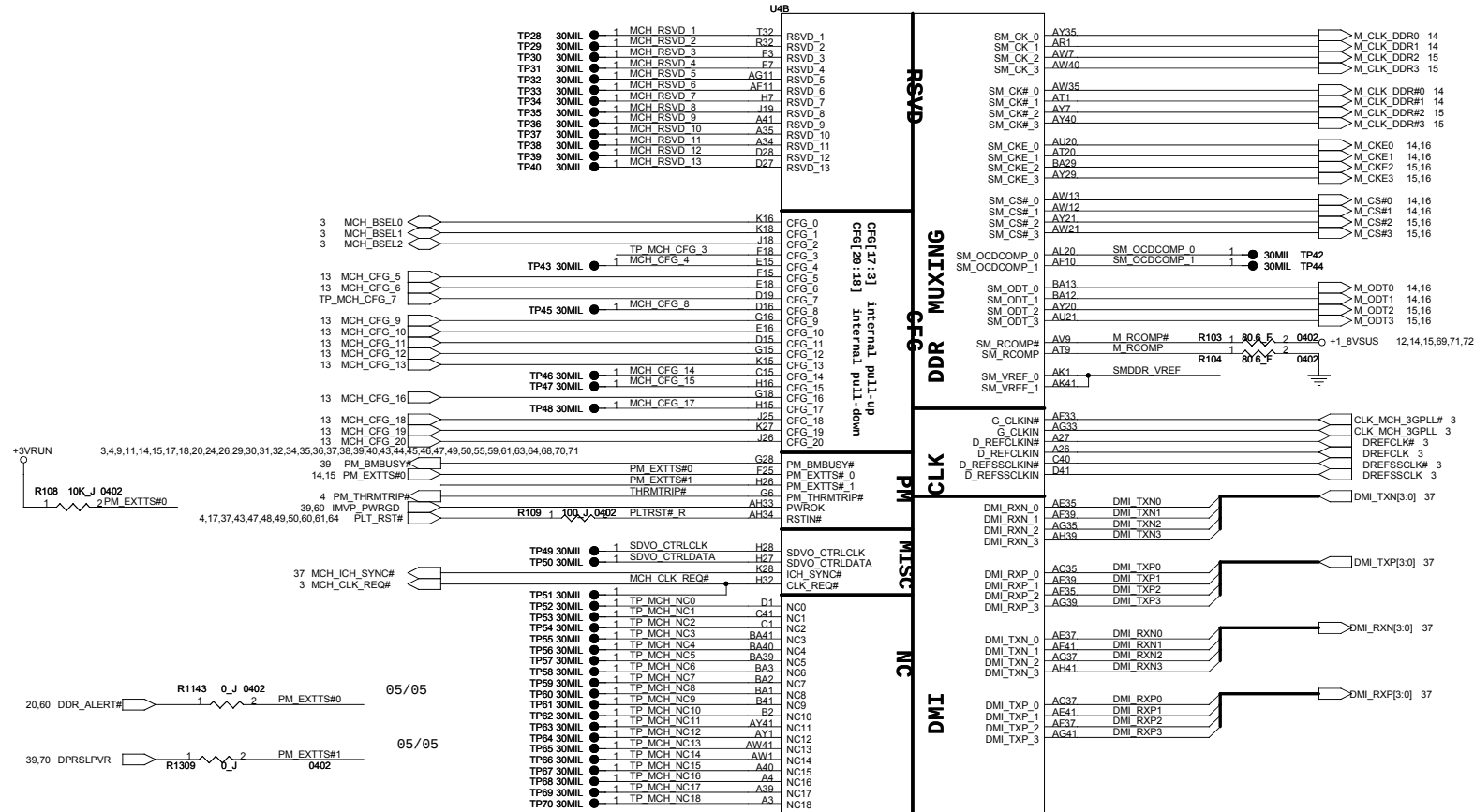
D

A

B

C

D

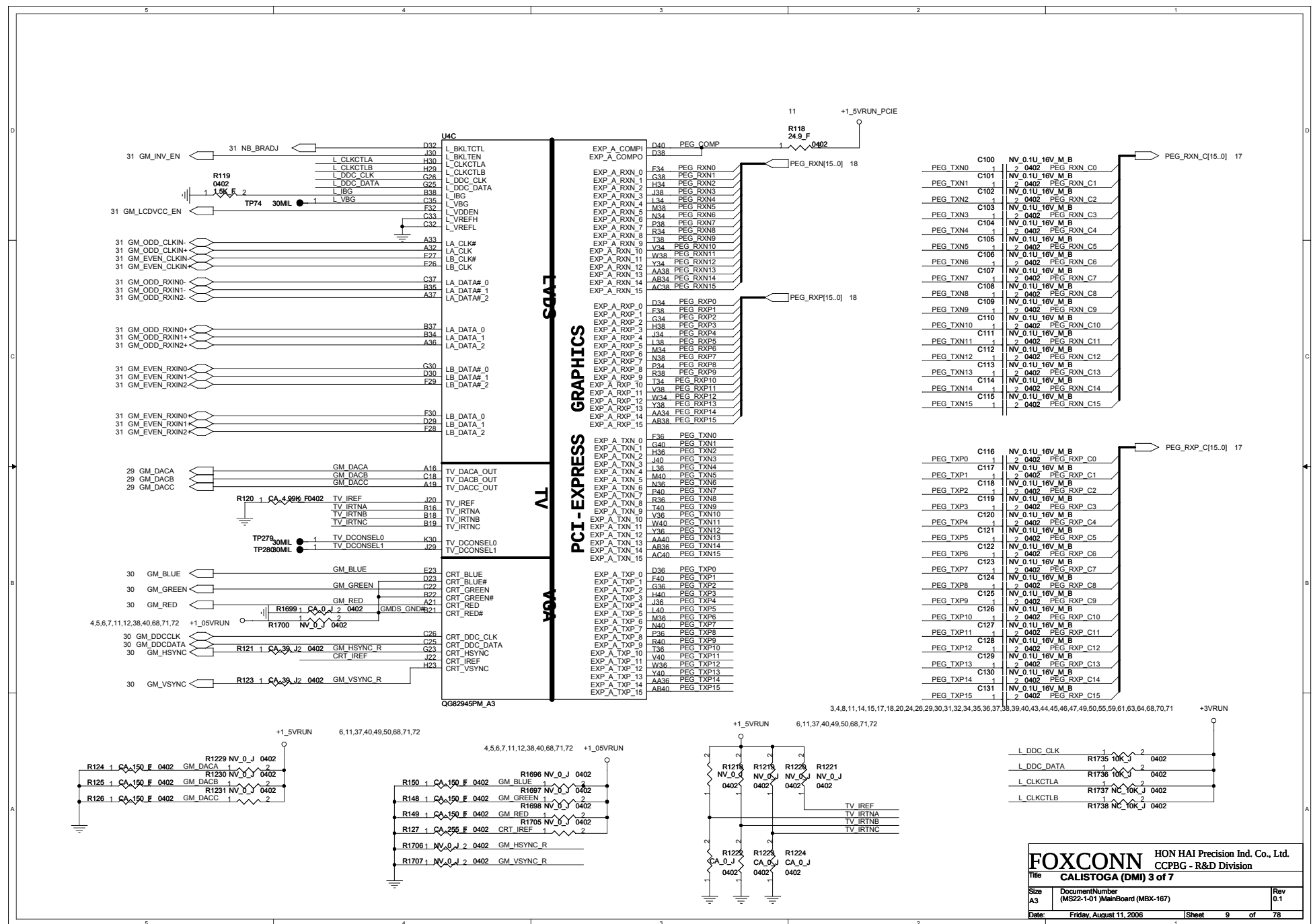


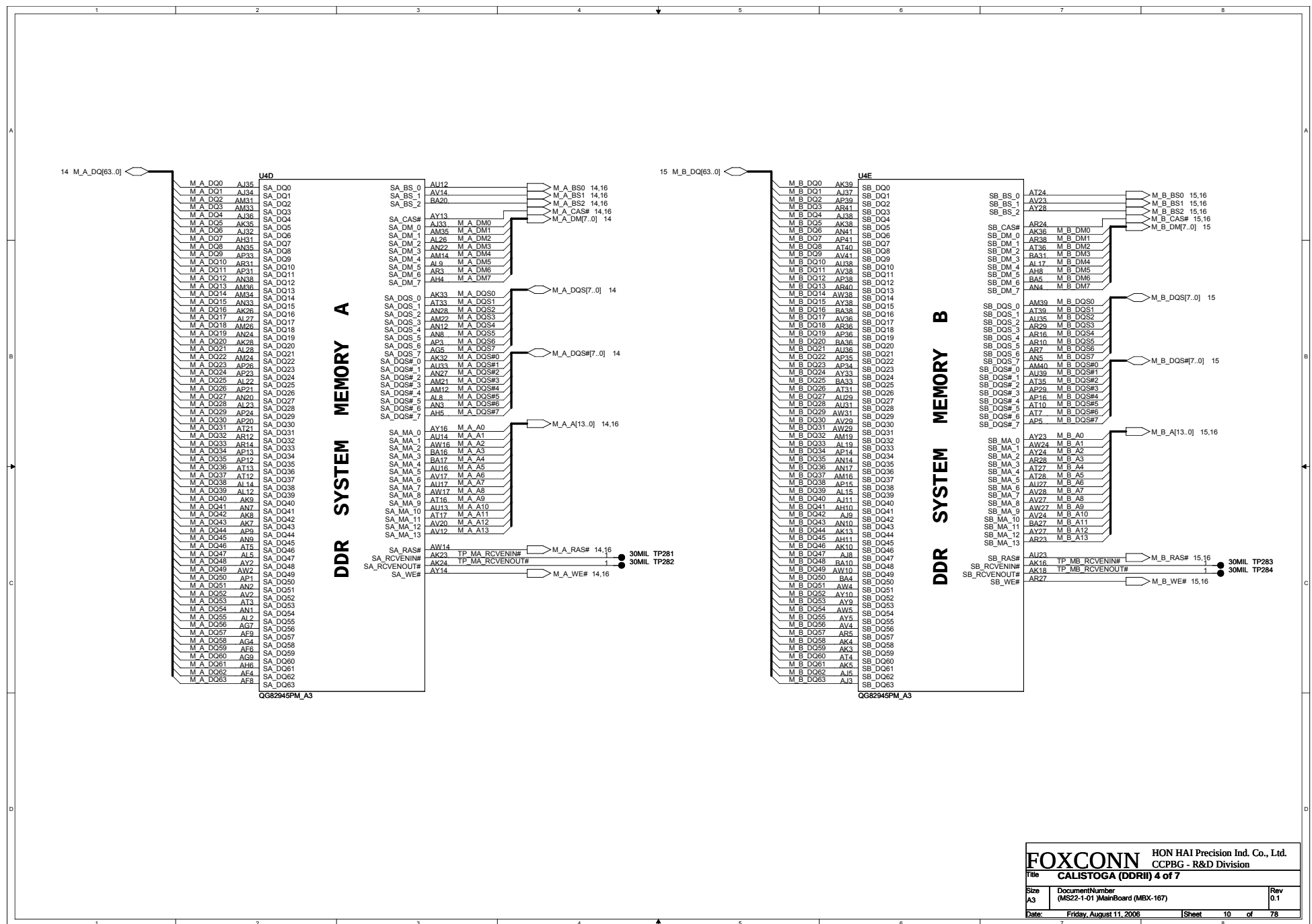
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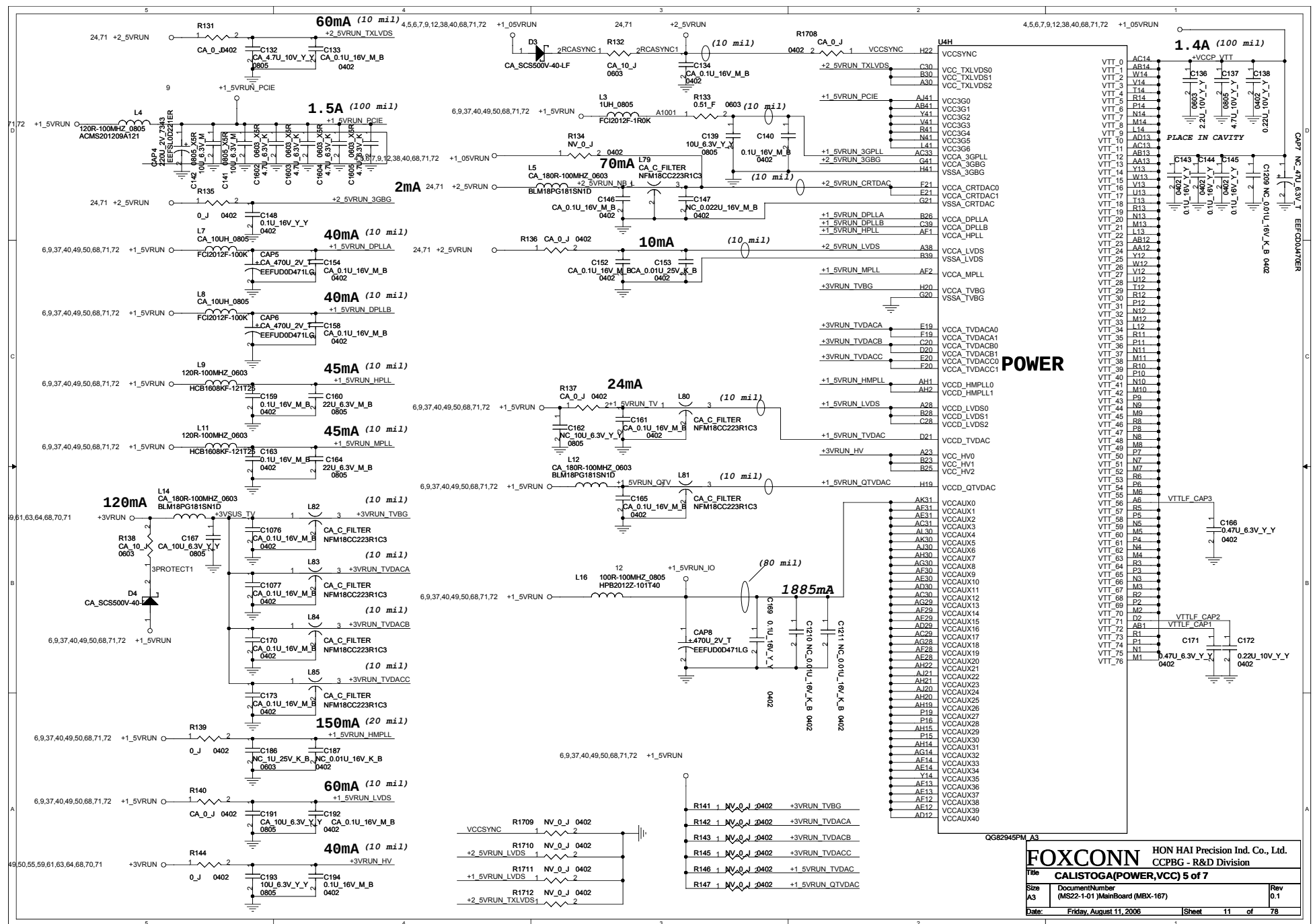
FOXCONN HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division

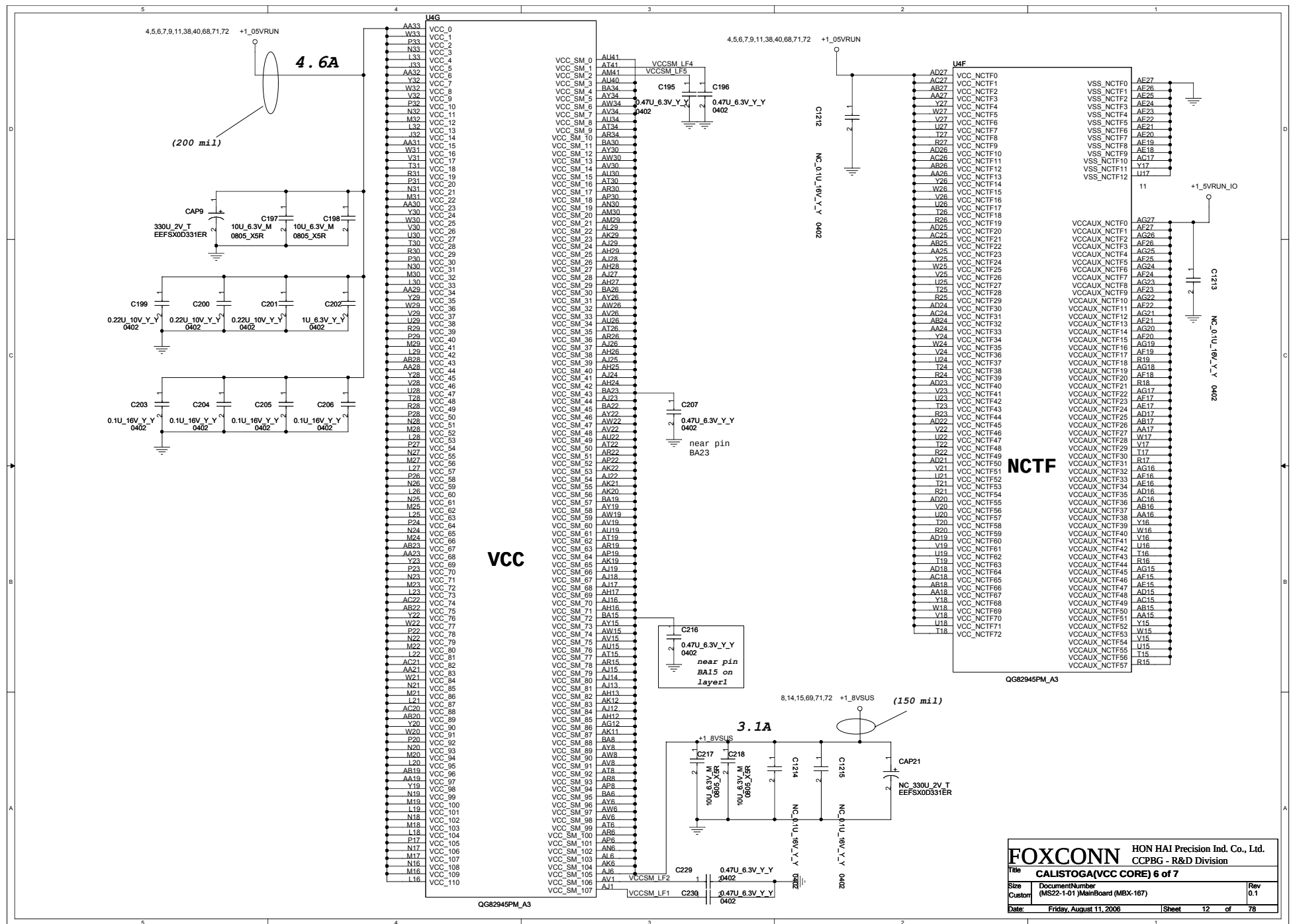
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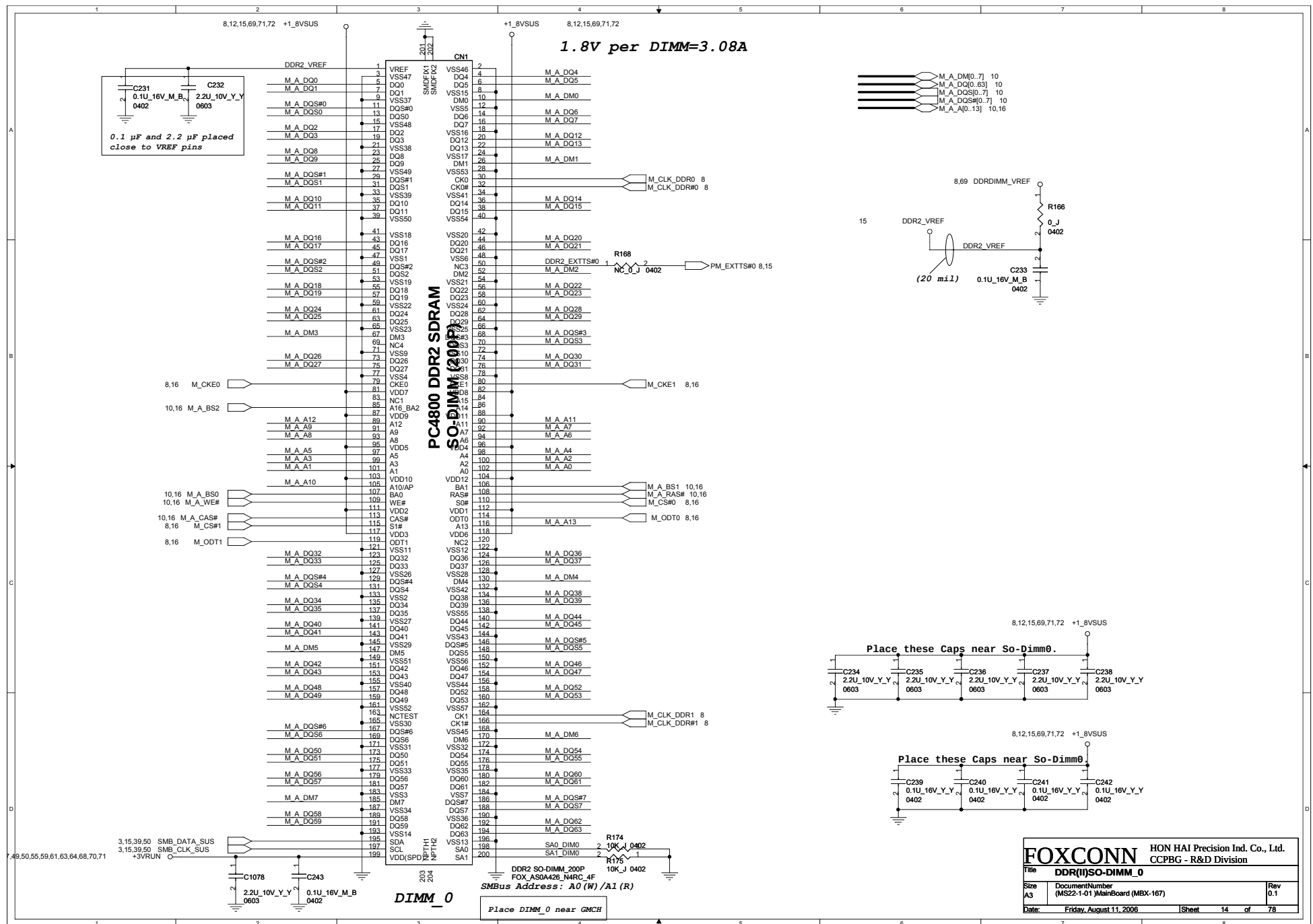
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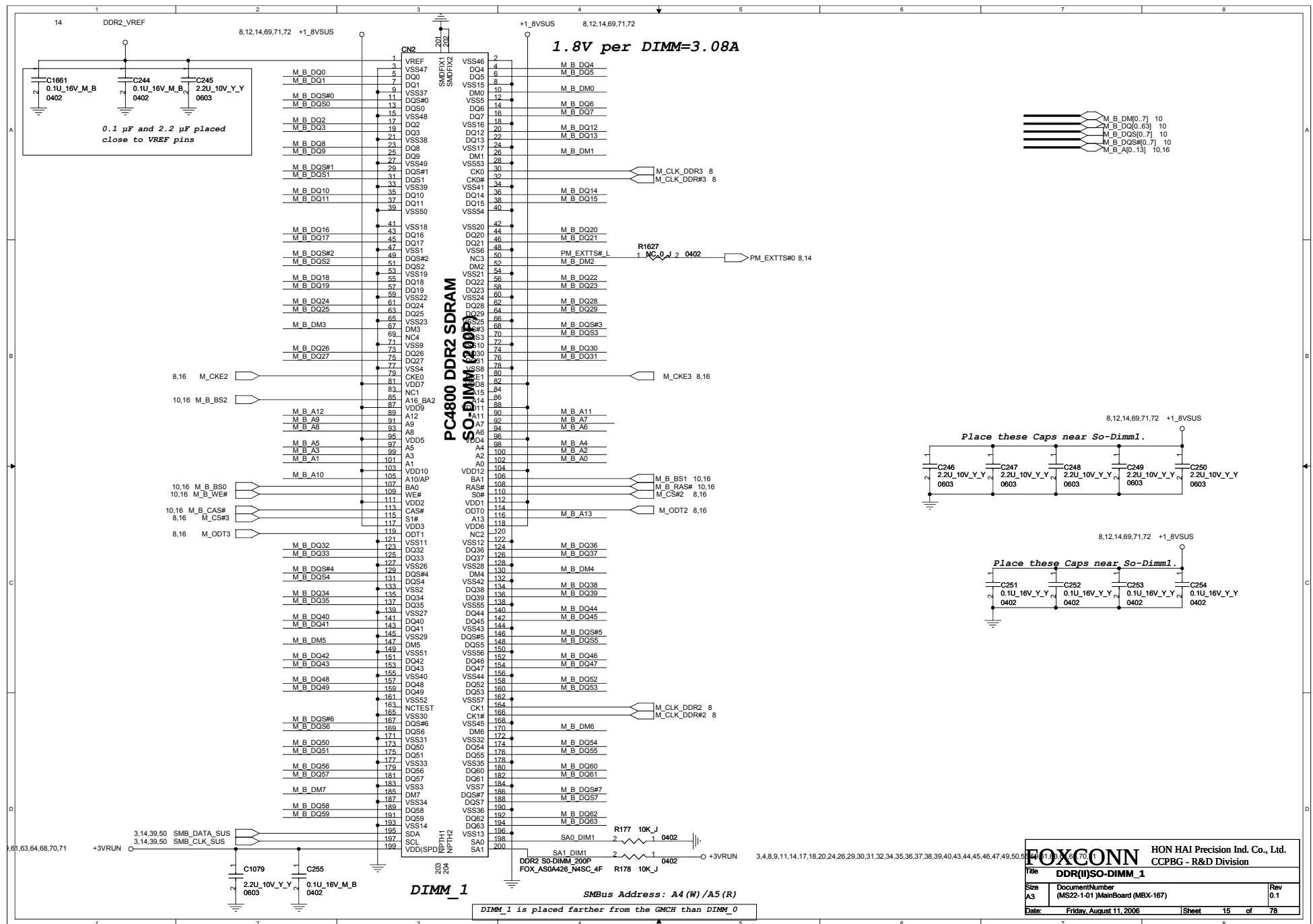


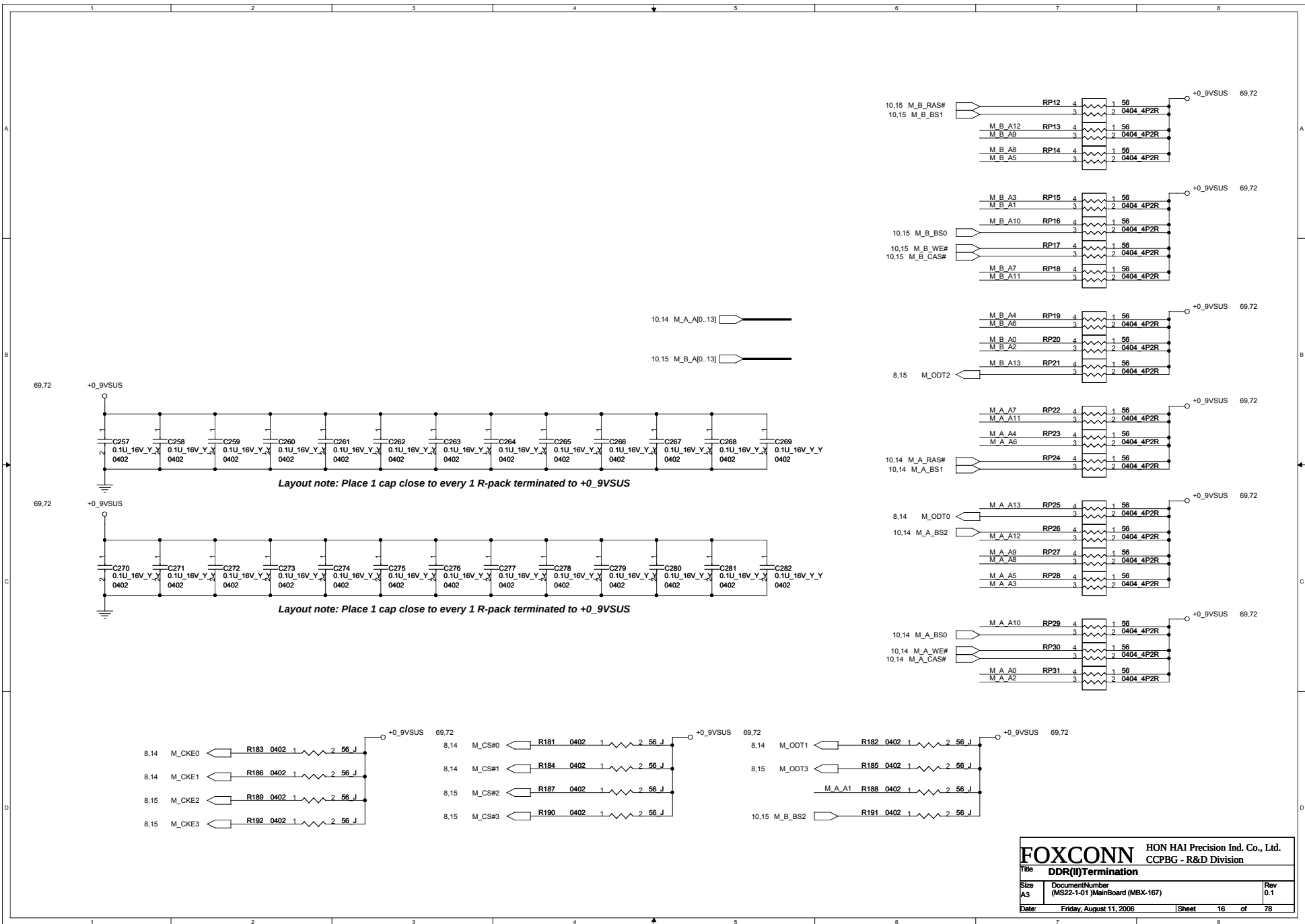


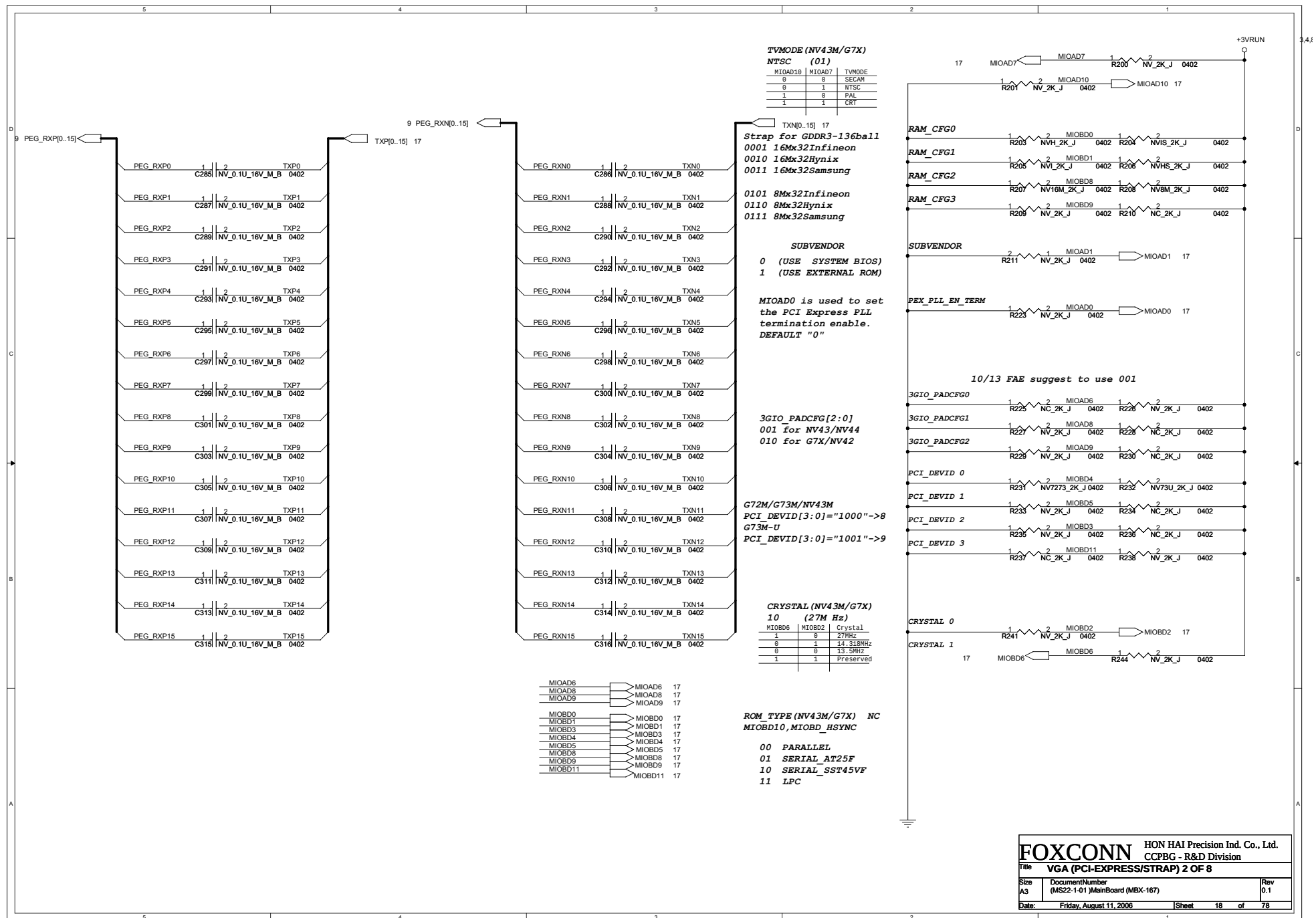


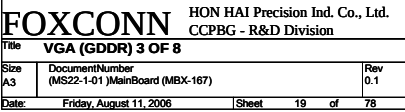


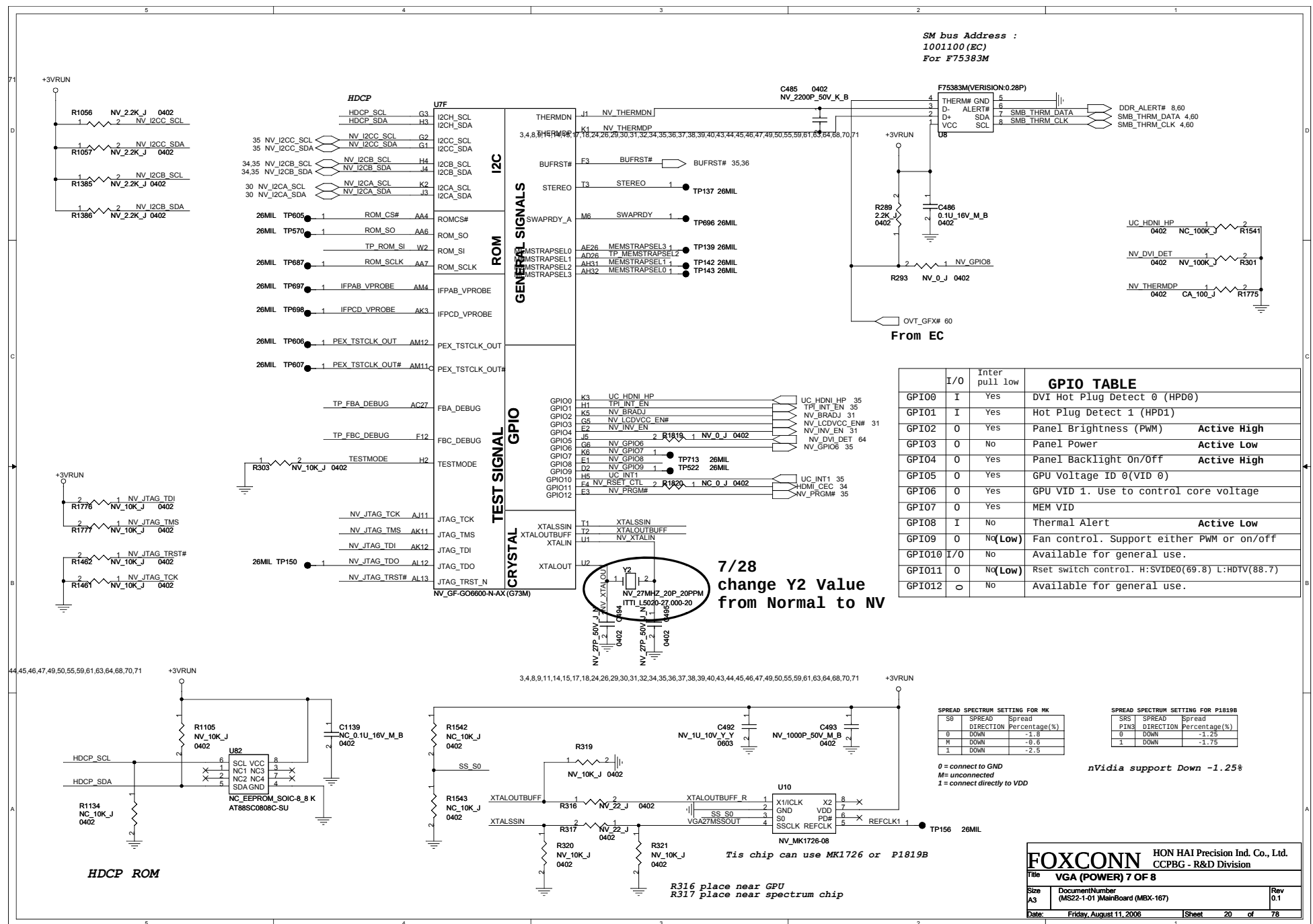


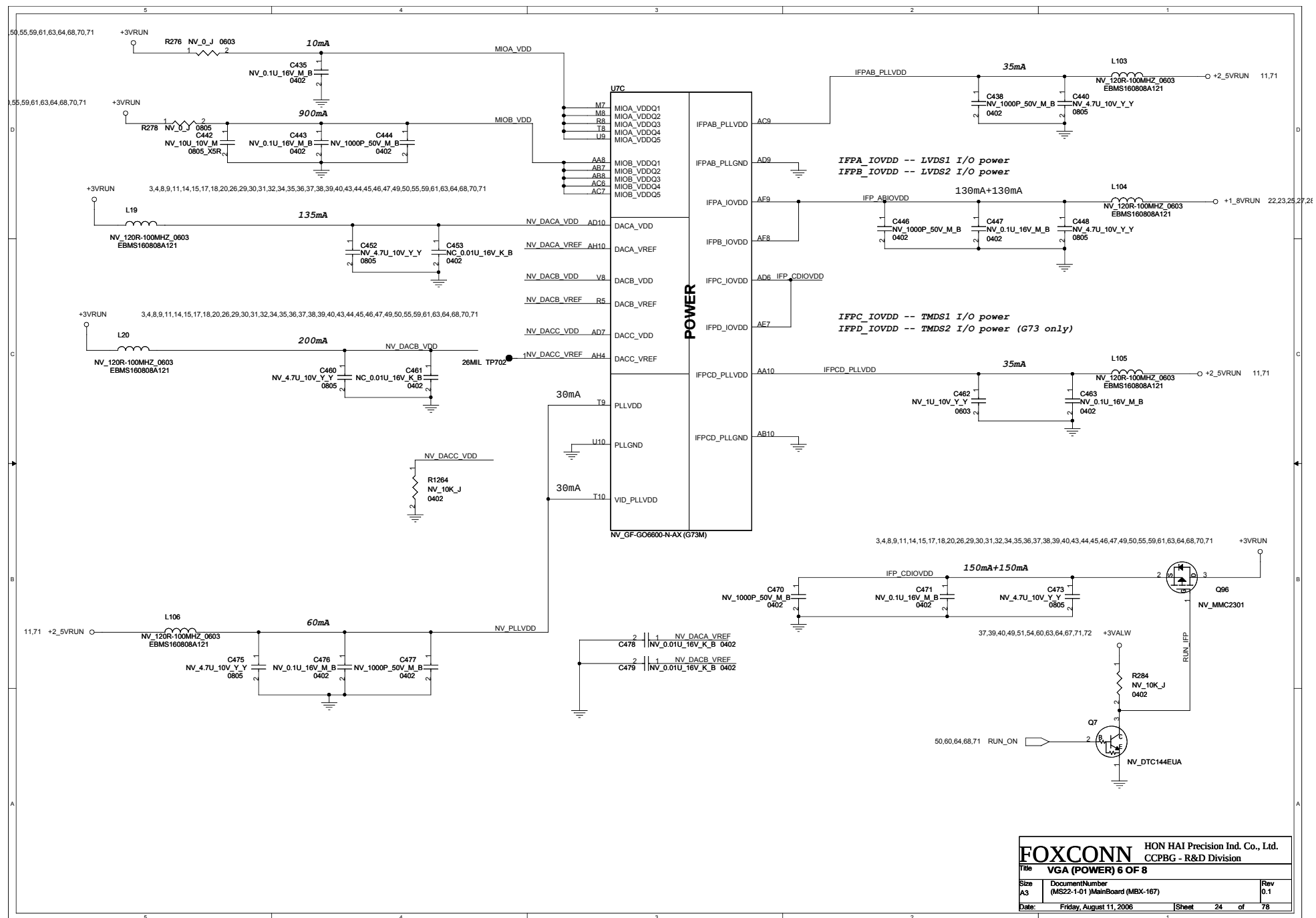






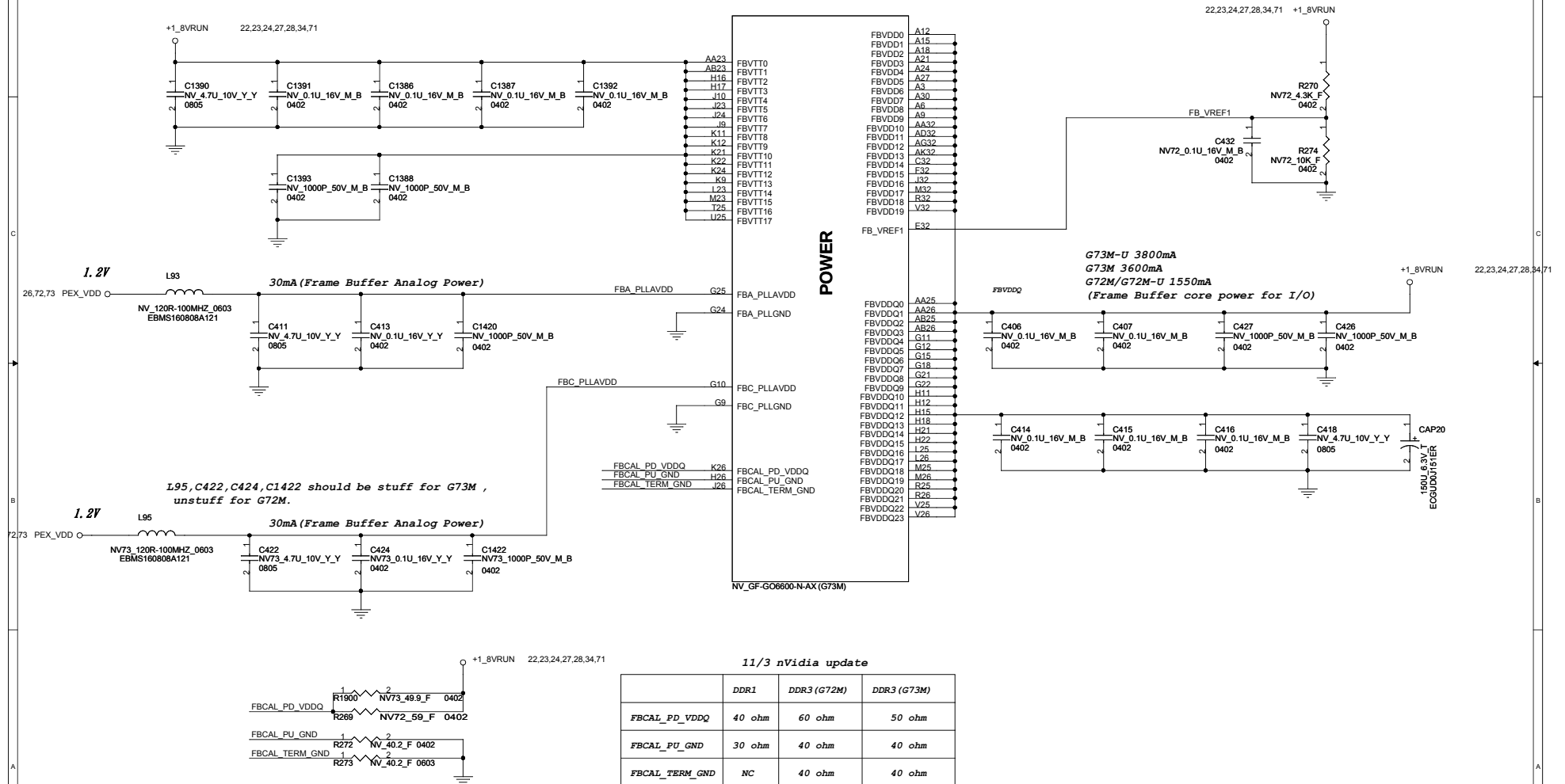


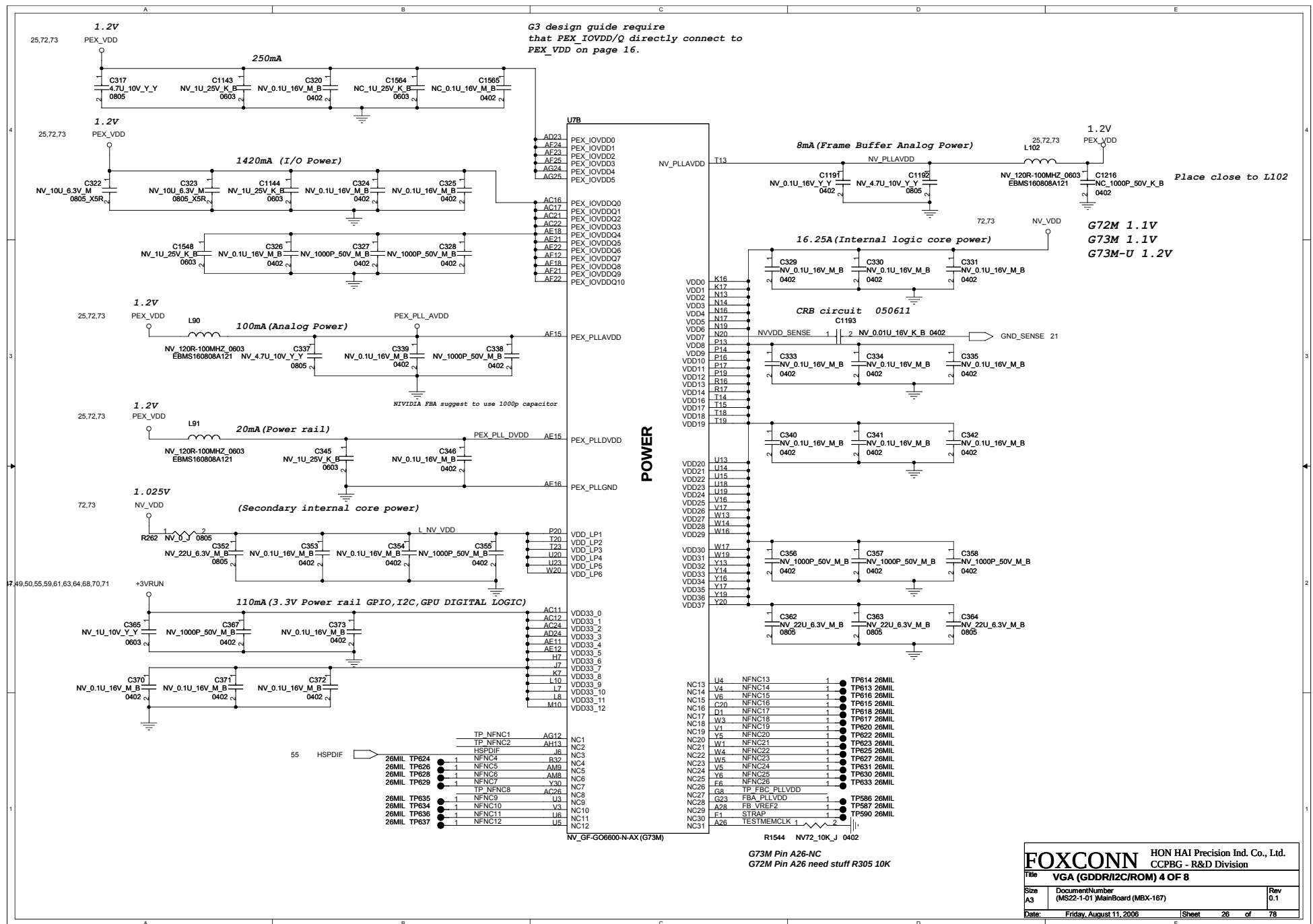




For GDDR3 FBVTT require decoupling capacitor,FBVDD don't require them.

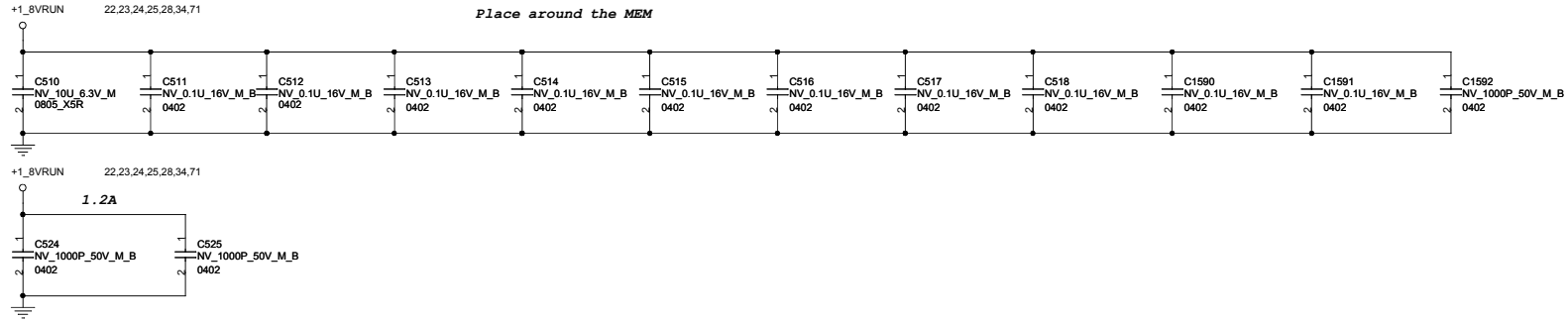
U71





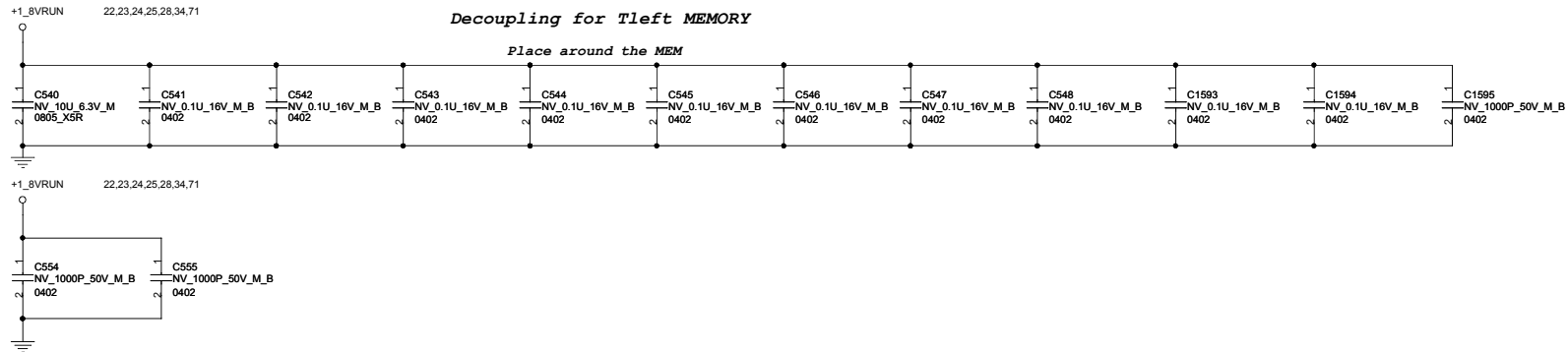
Decoupling for Tright MEMORY

Place around the MEM



Decoupling for Tleft MEMORY

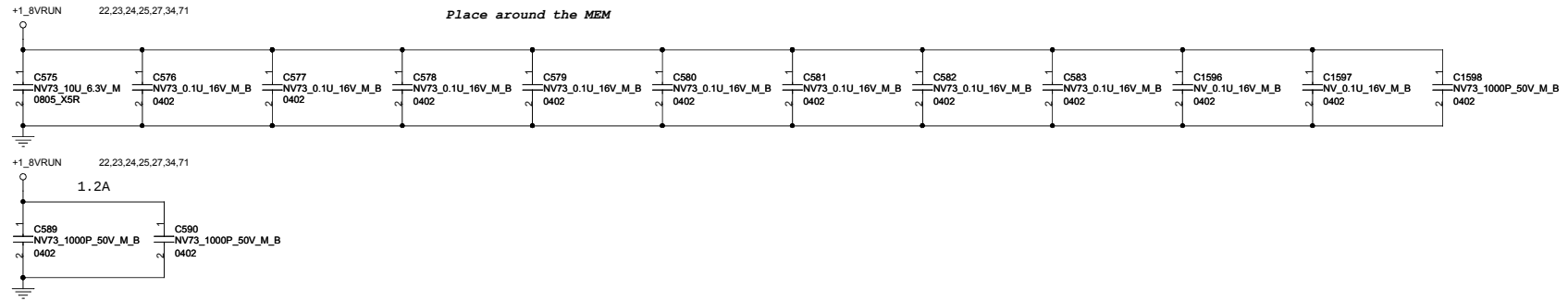
Place around the MEM



FOXCONN		HON HAI Precision Ind. Co., Ltd.
Title VRAM (GDDR) 3 OF 4		CCPBG - R&D Division
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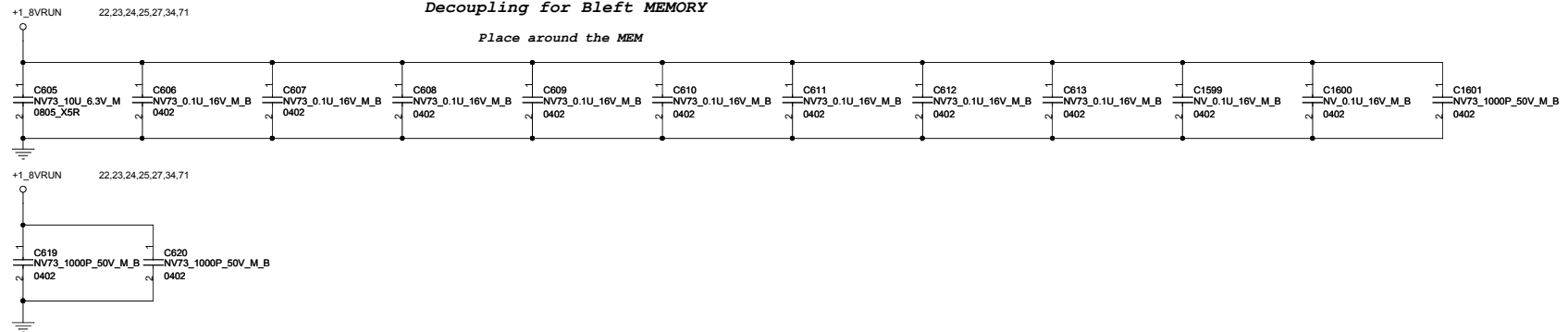
Decoupling for Bright MEMORY

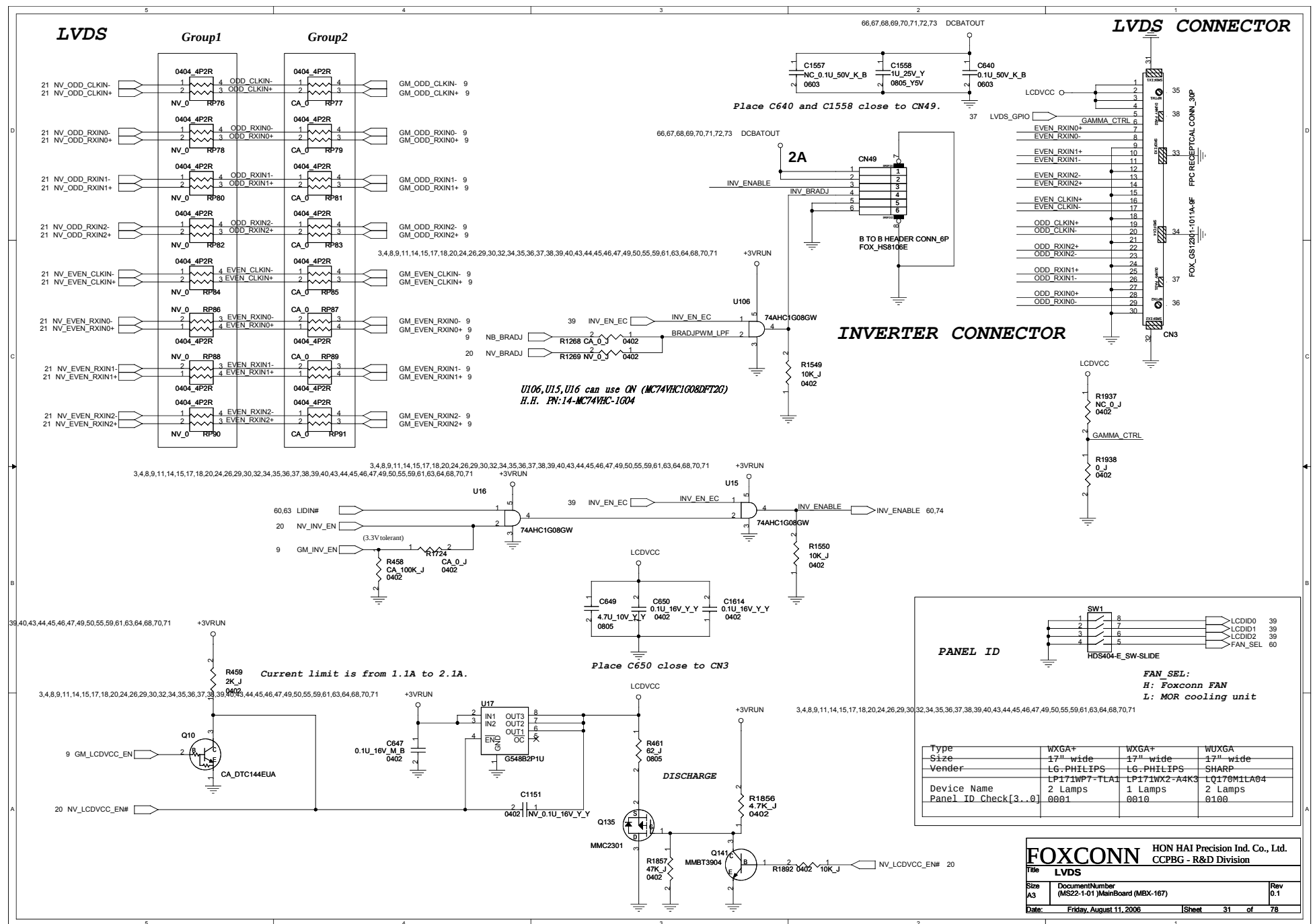
Place around the MEM



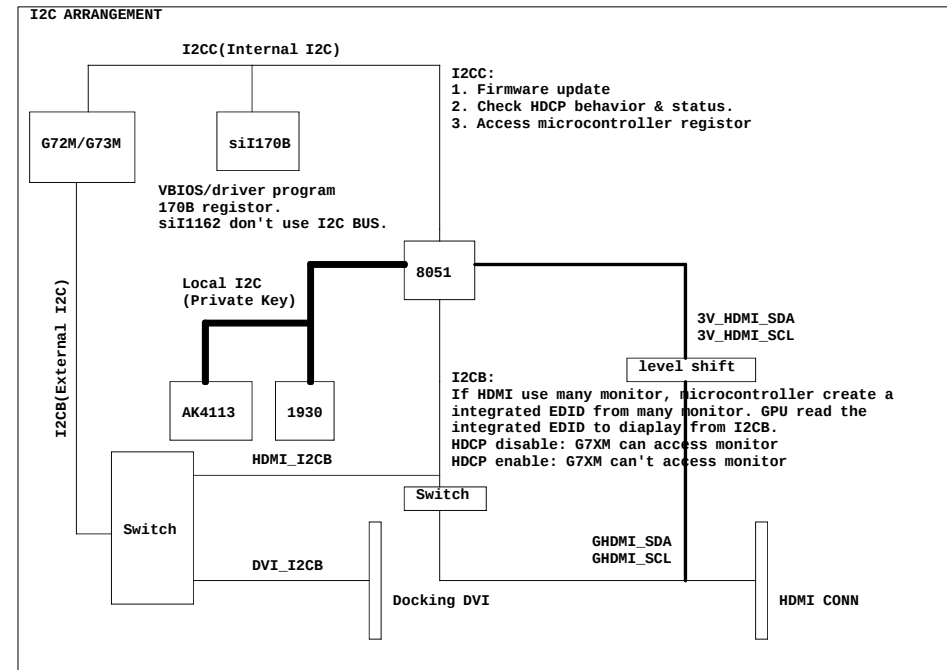
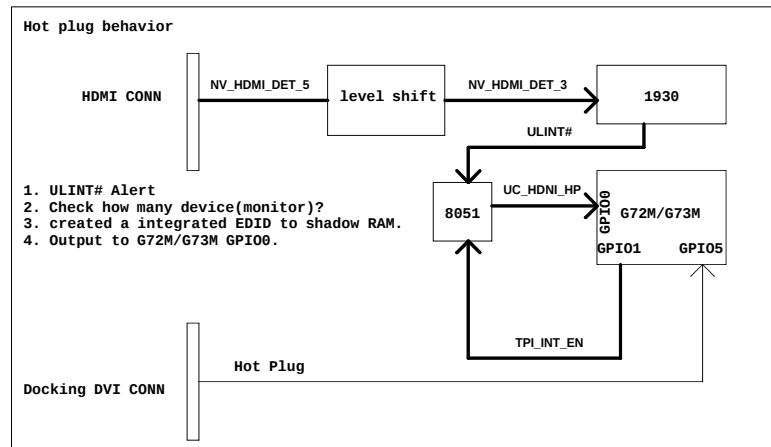
Decoupling for Bleft MEMORY

Place around the MEM

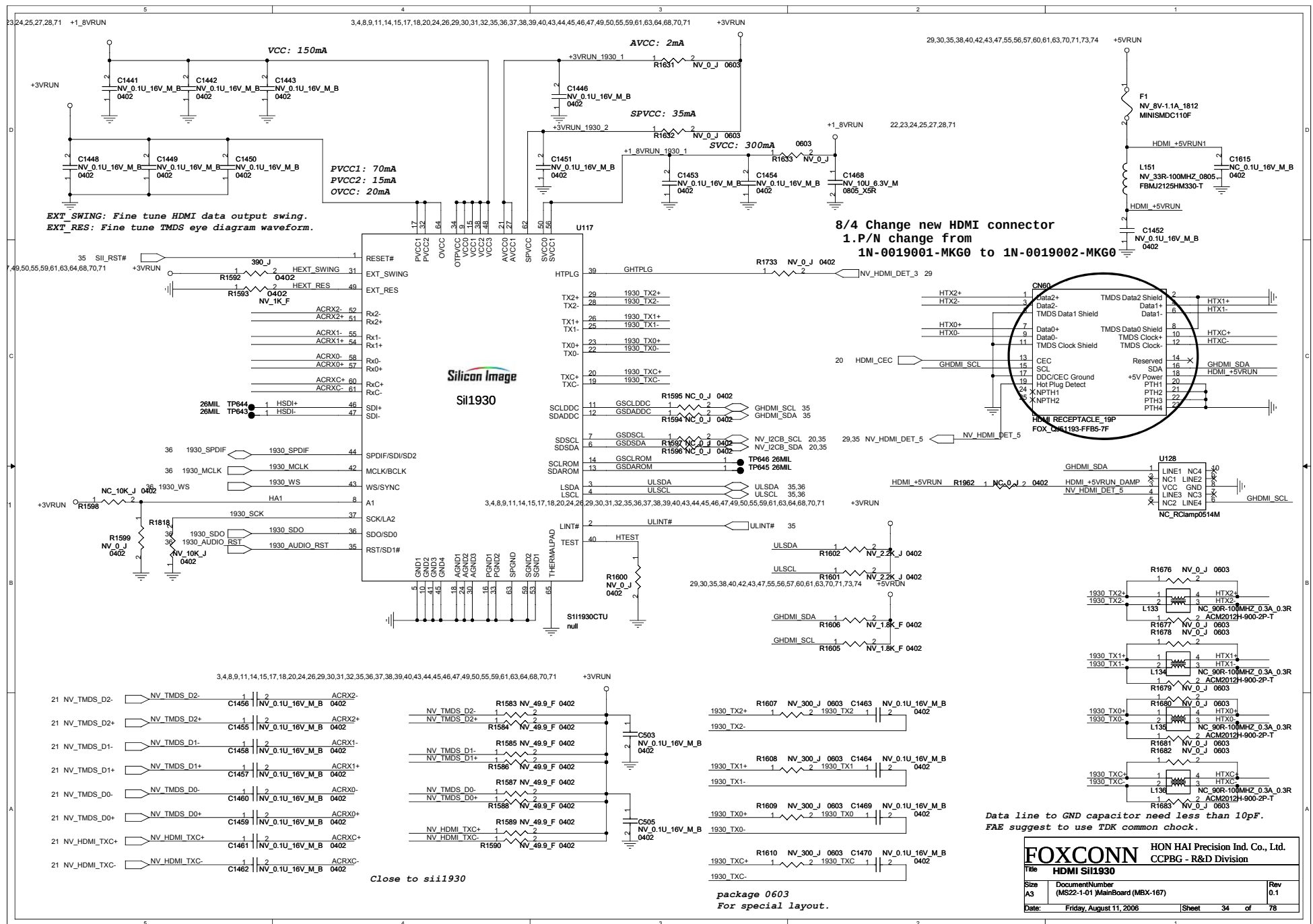


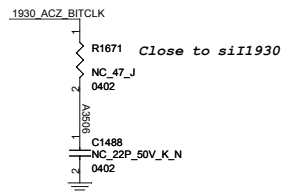
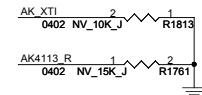


Hot plug behavior & I2C ARRANGEMENT block diagram

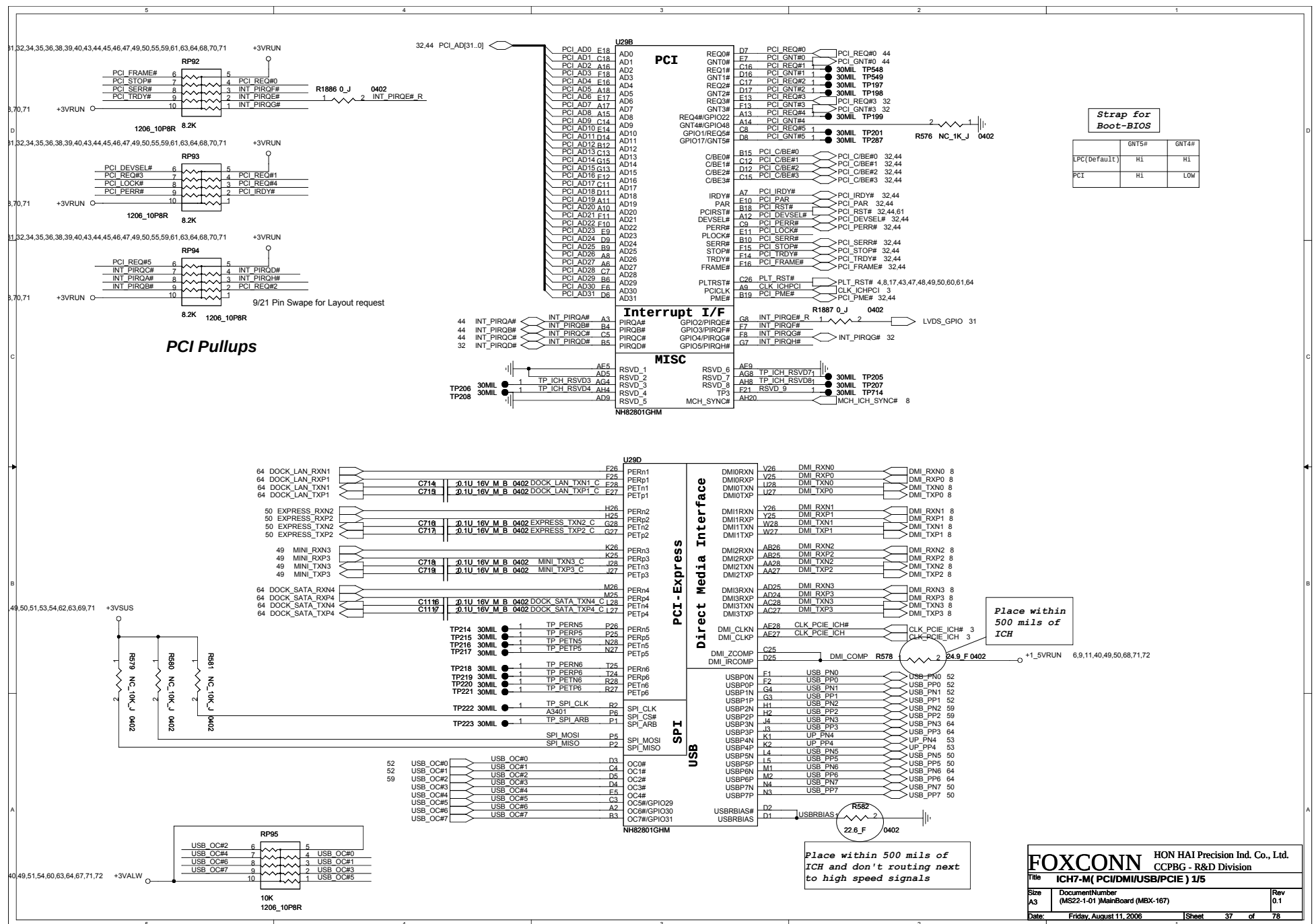


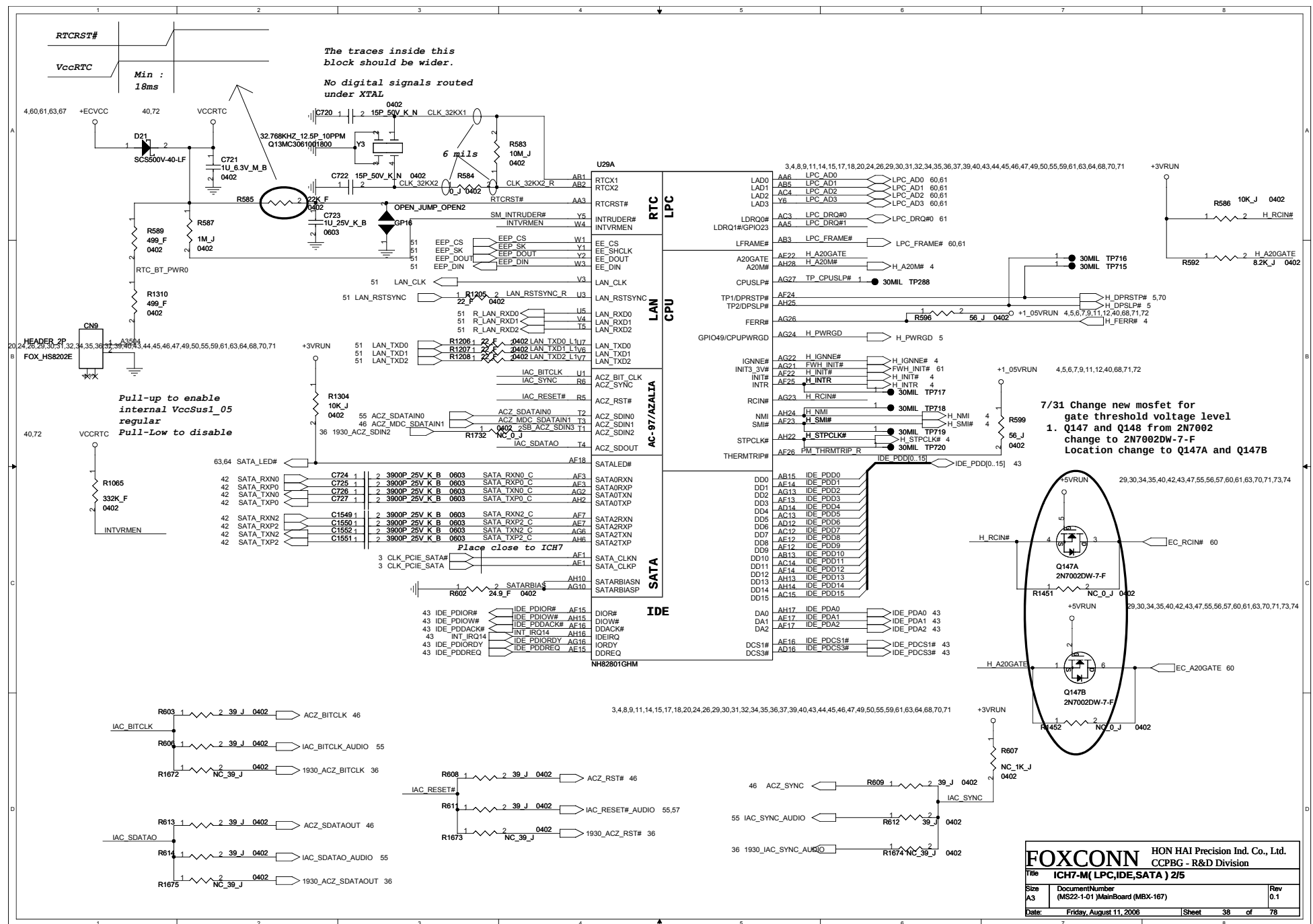
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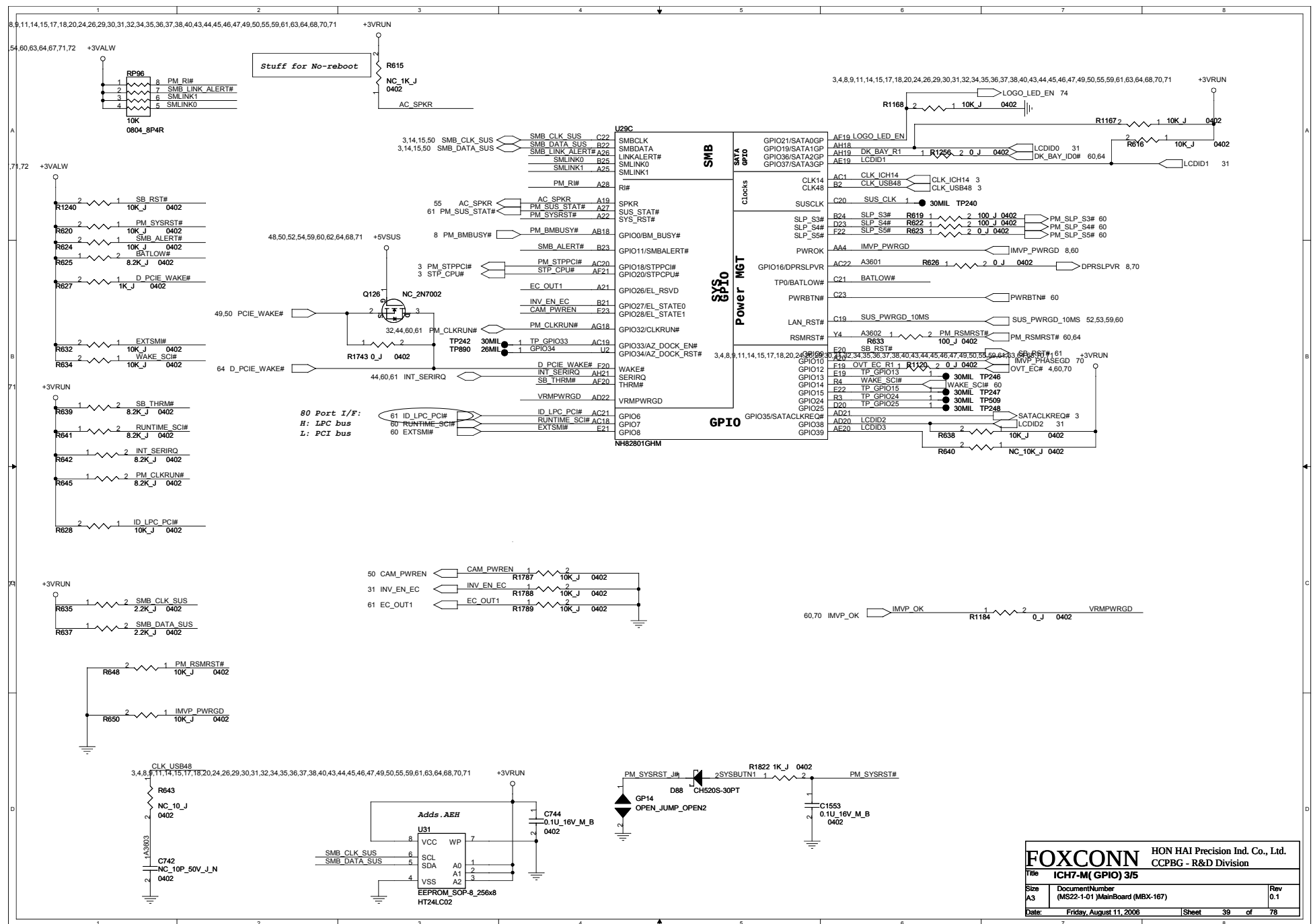


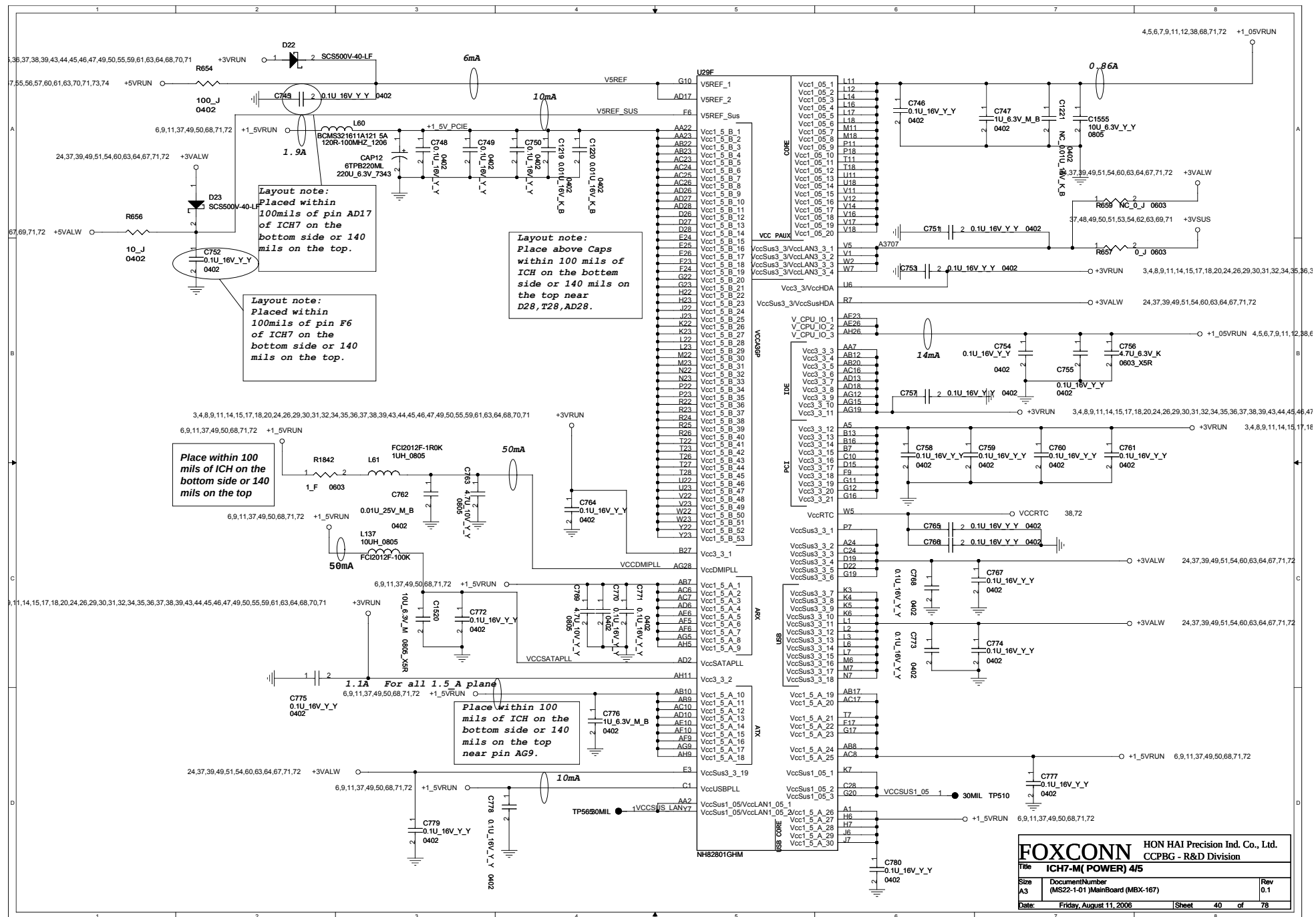


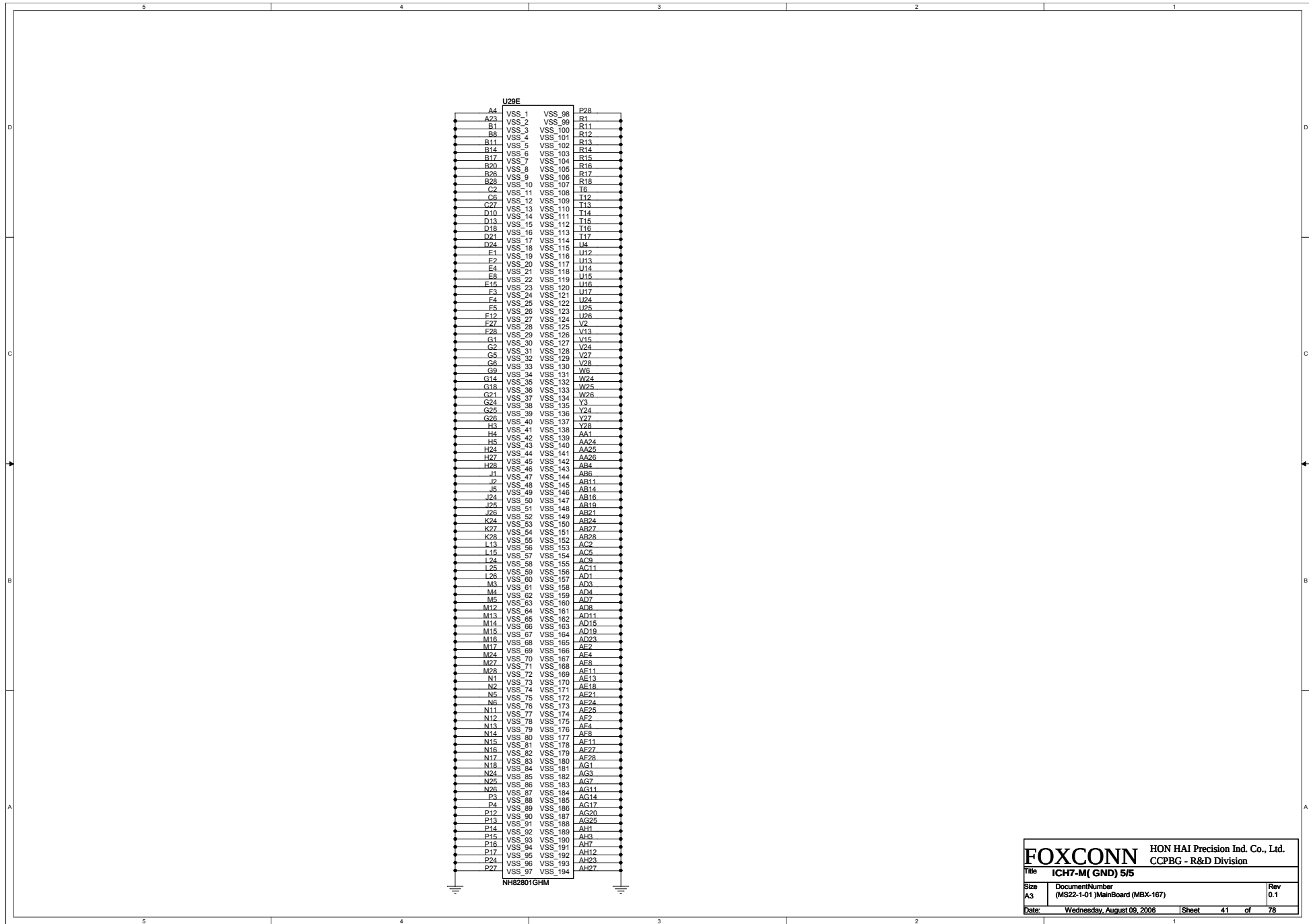
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Title		CPBG - R&D Division	
HDMI UCODEC			
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29,30,34,35,38,40,43,47,55,56,57,60,61,63,70,71,73,74

+5VRUN



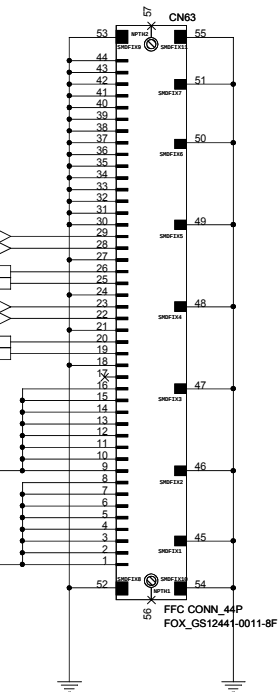
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+5VRUN

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+5VRUN

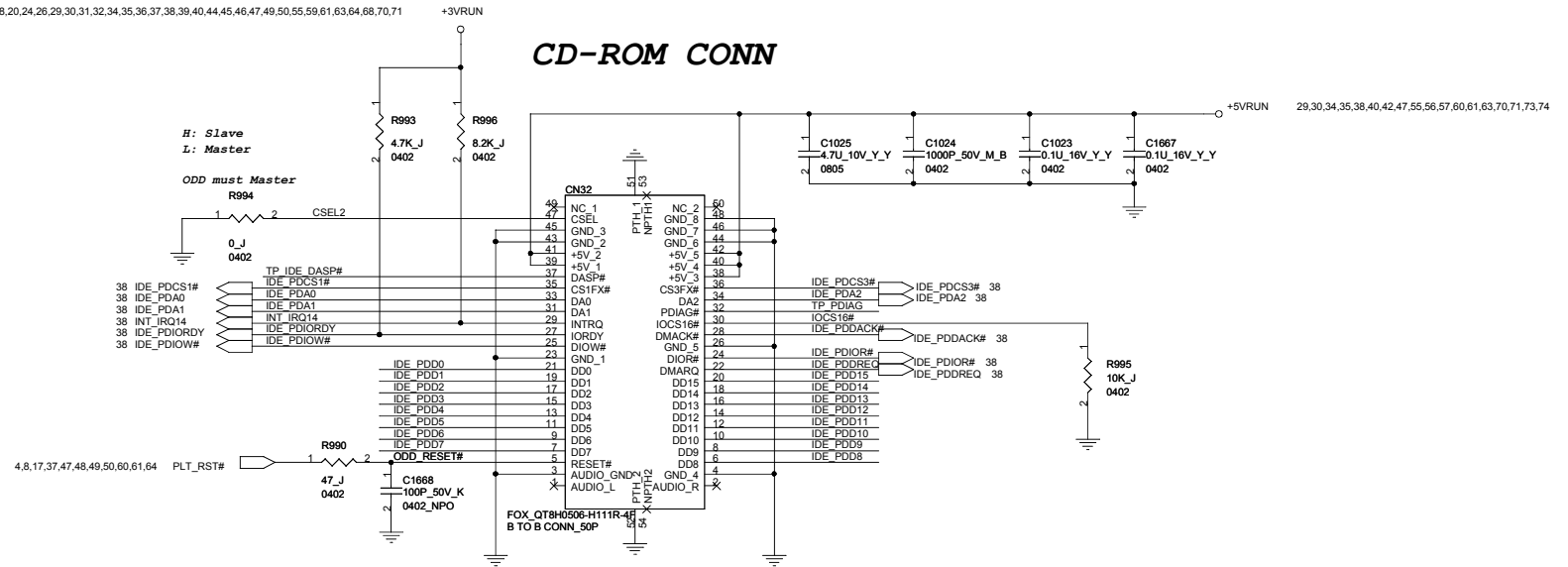
38 SATA_TXP2
38 SATA_TXN2
38 SATA_RXN2
38 SATA_RXP2
38 SATA_TXP0
38 SATA_TXN0
38 SATA_RXN0
38 SATA_RXP0



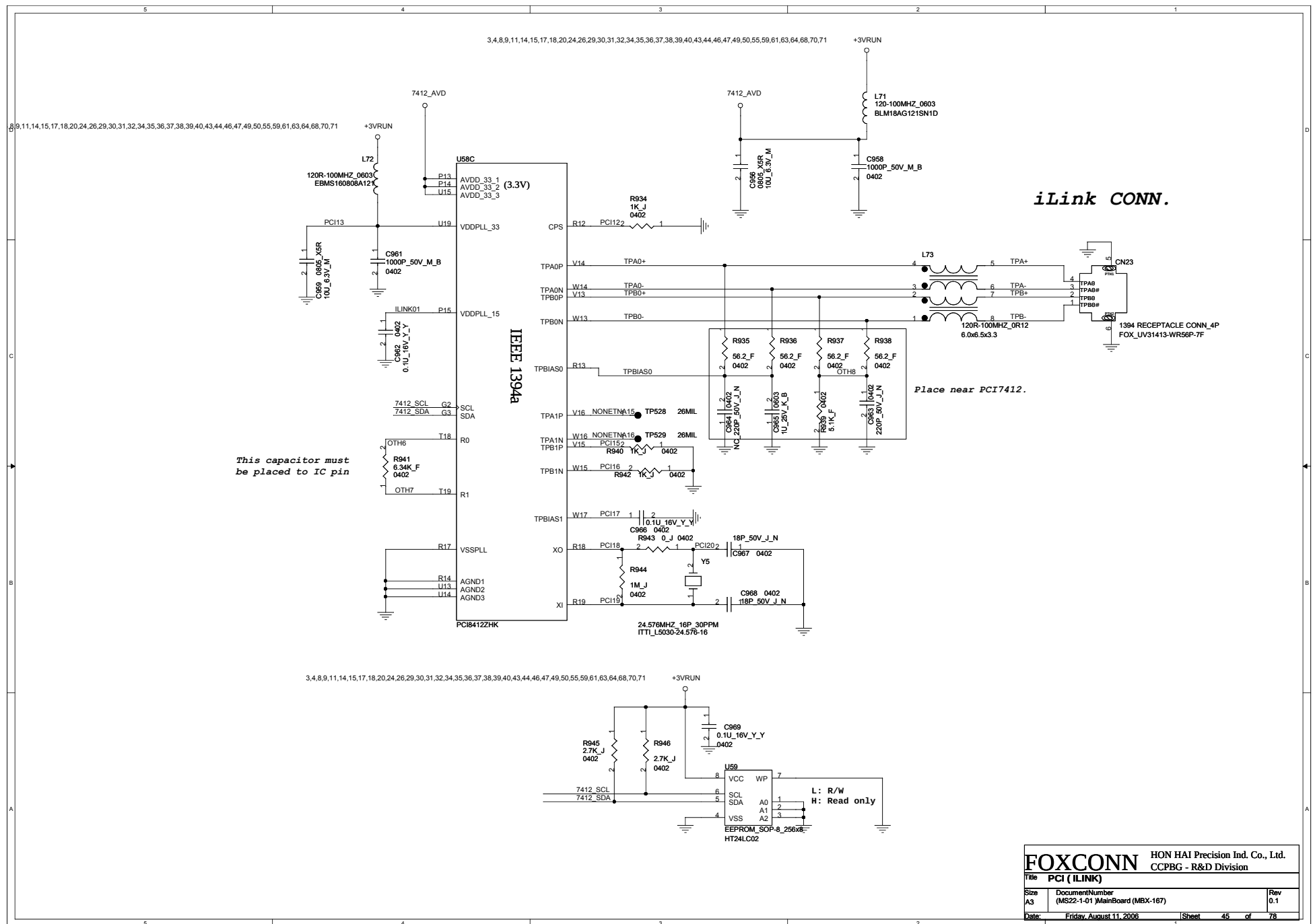
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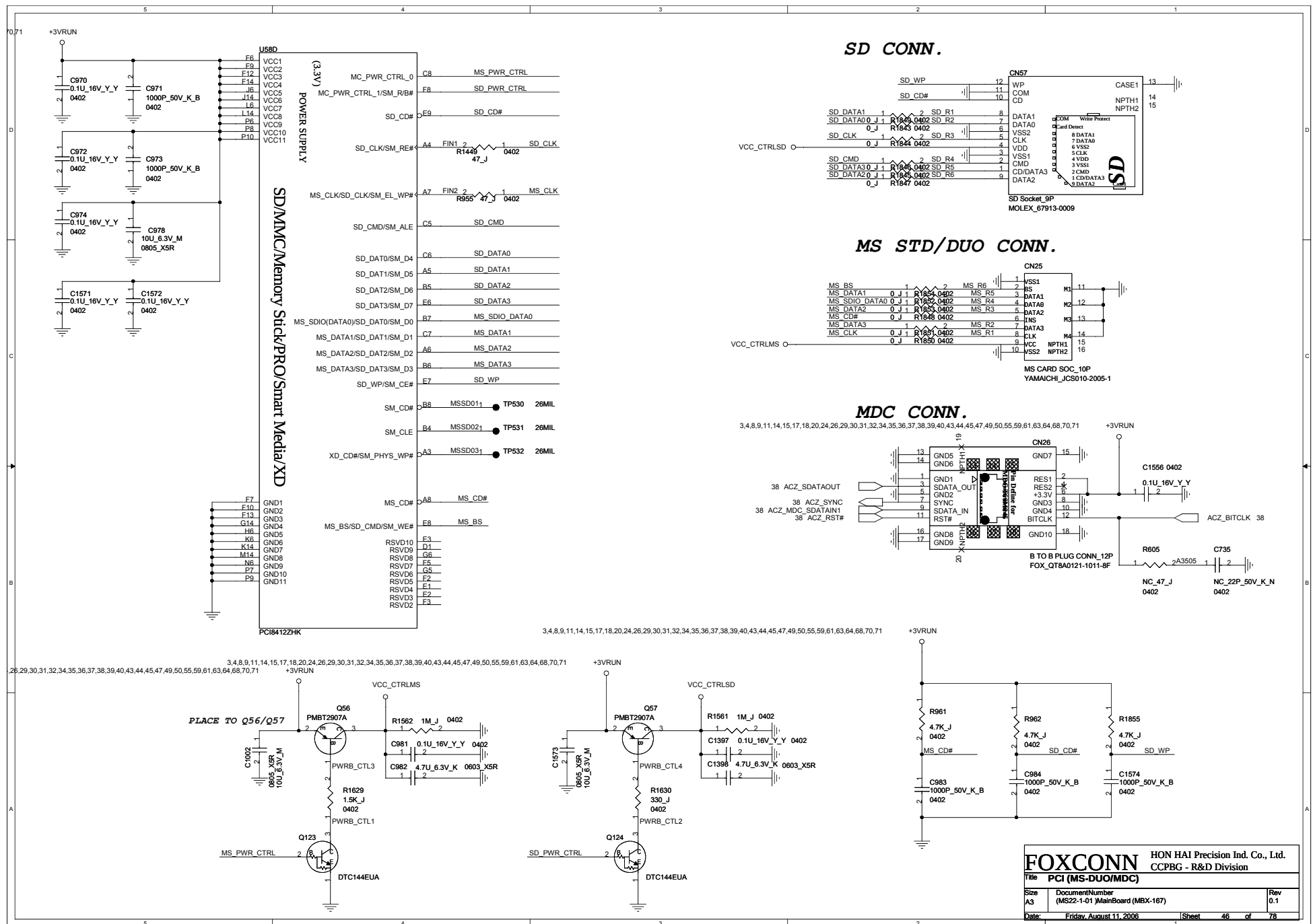
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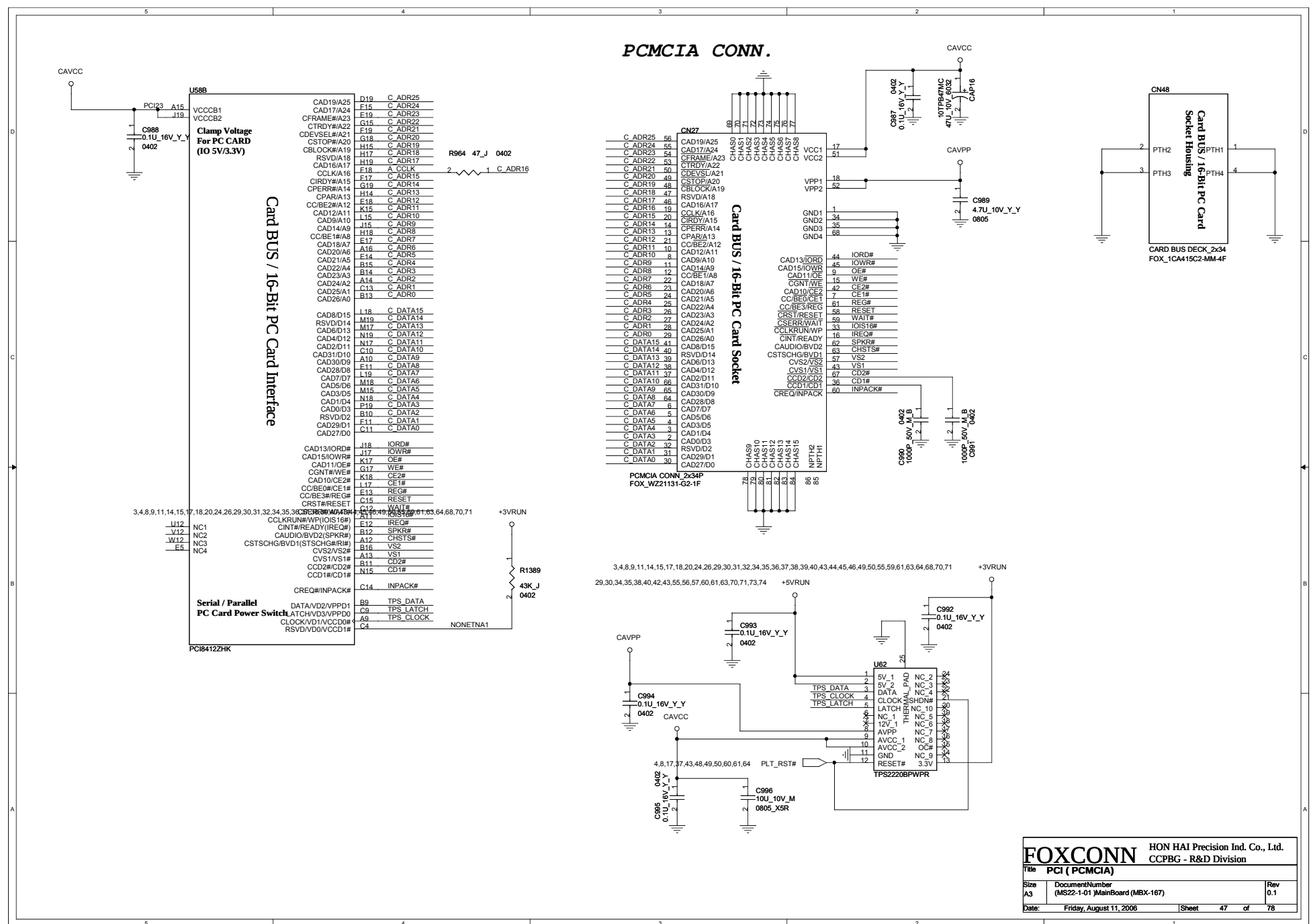
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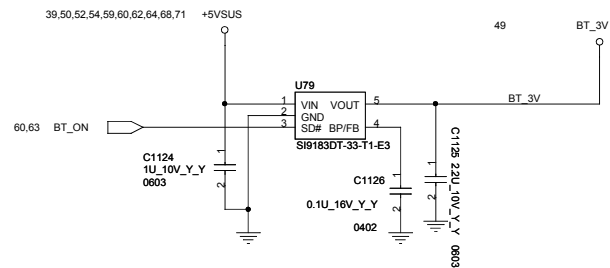


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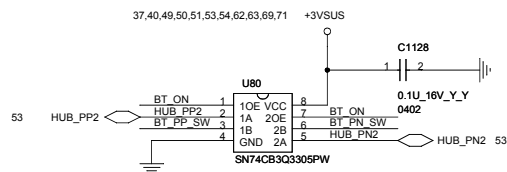
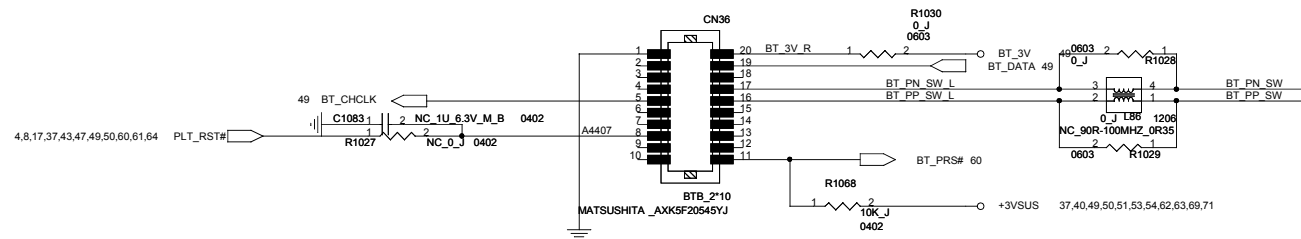




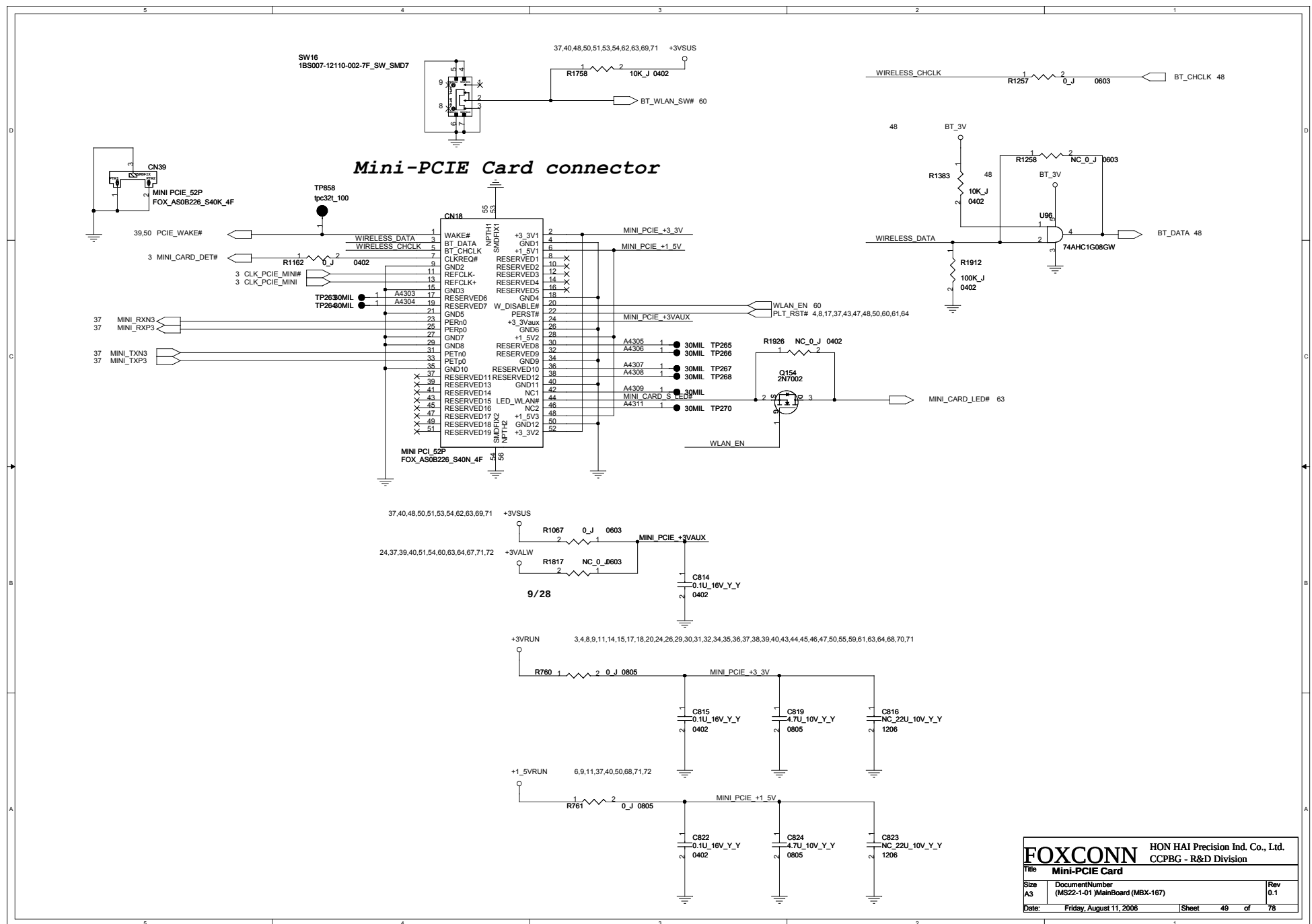




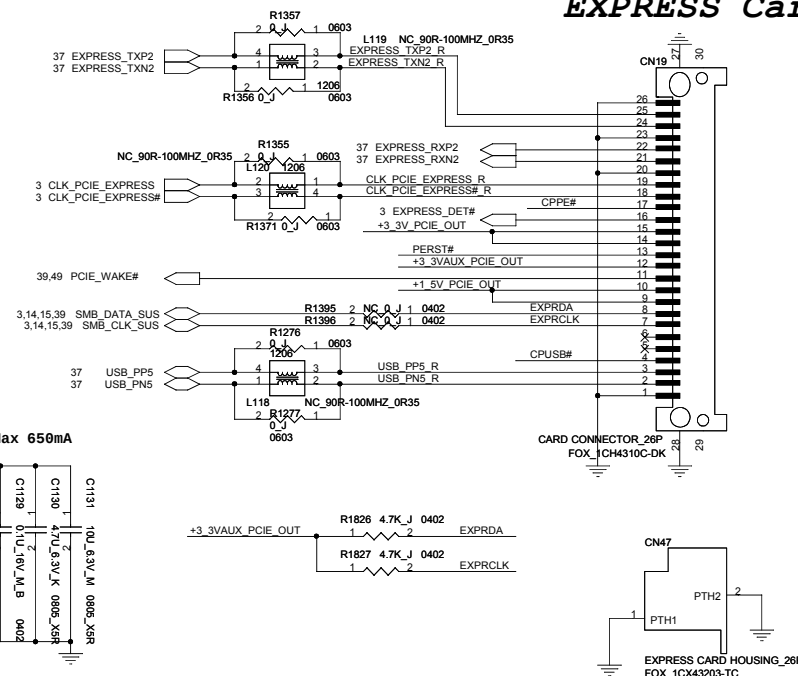
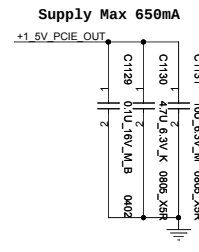
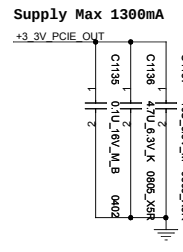
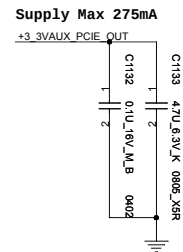
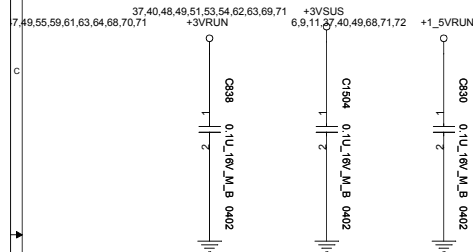
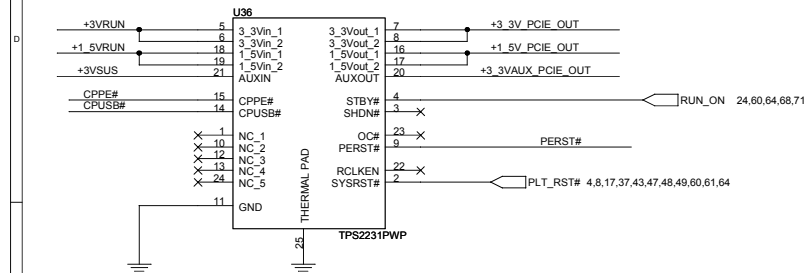
Bluetooth connector



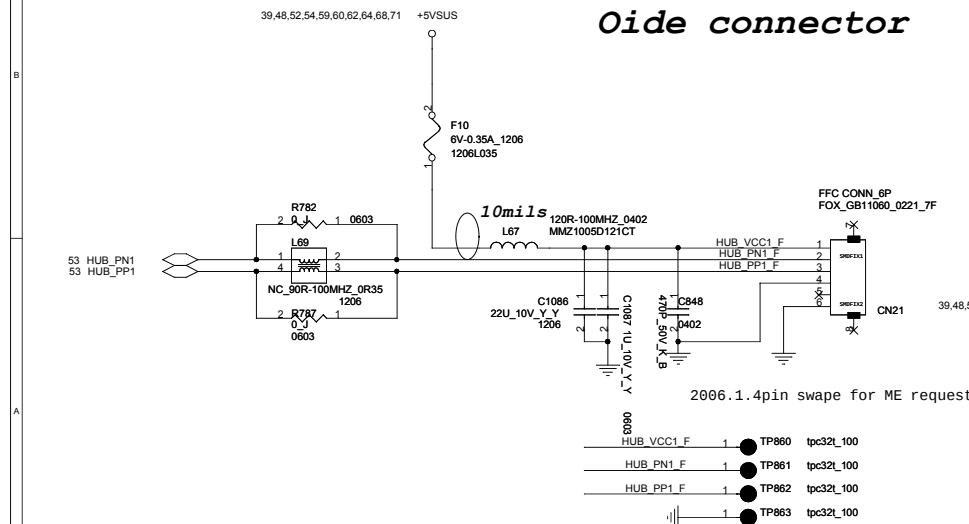
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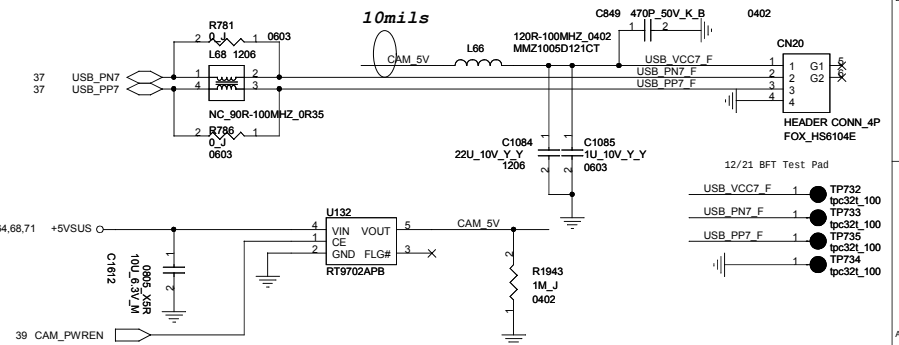
VOLTAGE INPUTS ⁽¹⁾			LOGIC INPUTS			VOLTAGE OUTPUTS ⁽²⁾			MODE ⁽³⁾
AUXIN	3.3VIN	1.5VIN	SHDN	STBY	CP ⁽⁴⁾	AUXOUT	3.3VOUT	1.5VOUT	
Off	x	x	x	x	x	Off	Off	Off	OFF
On	x	x	0	x	x	GND	GND	GND	Shutdown
On	x	x	1	x	1	GND	GND	GND	No Card
On	On	On	1	0	0	On	Off	Off	Standby
On	On	On	1	1	0	On	On	On	Card Inserted



Oide connector

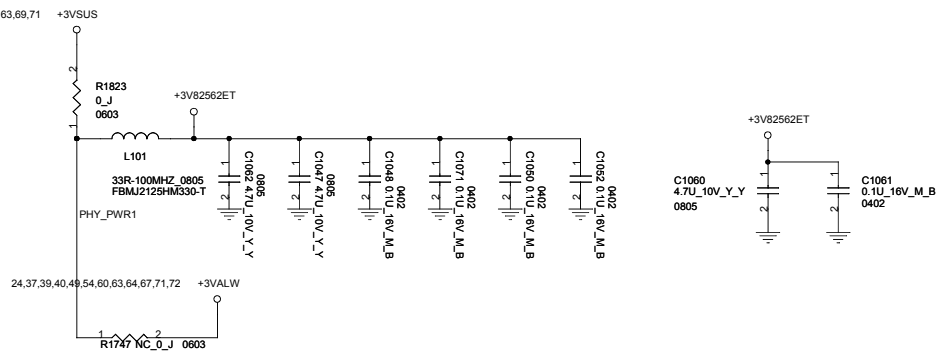
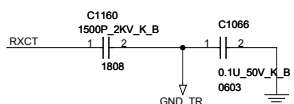
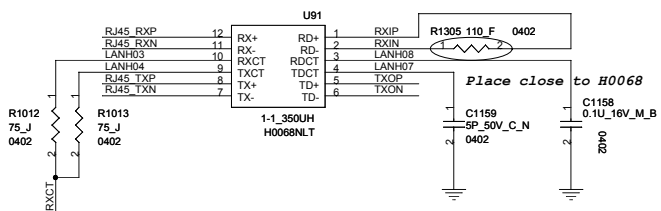
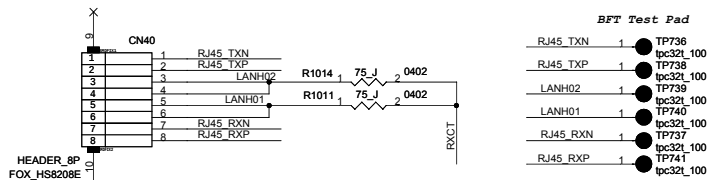
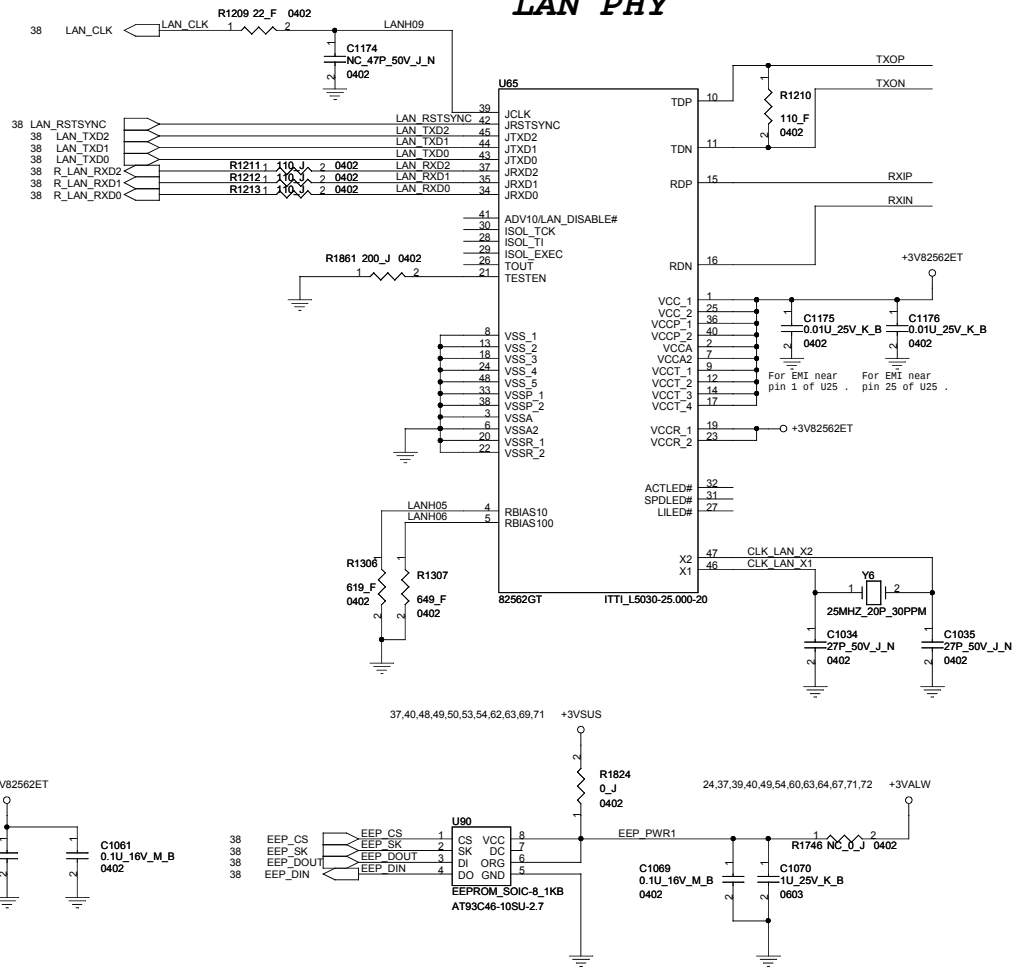


CAMERA connector



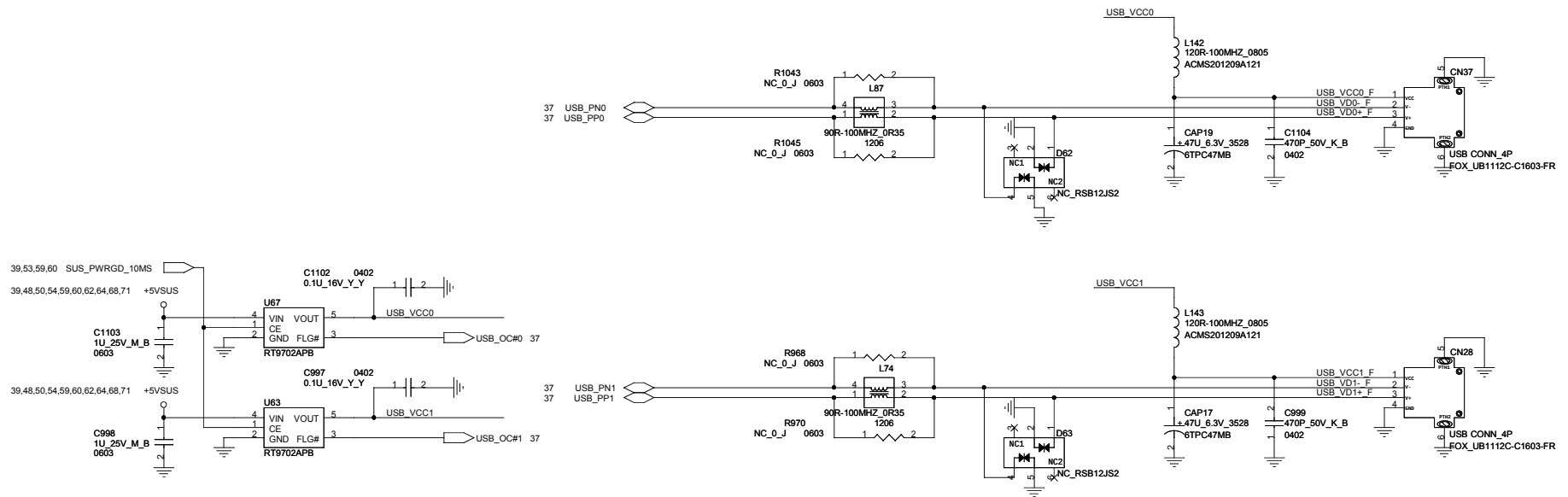
FOXCONN			HON HAI Precision Ind. Co., Ltd.	
EXPRESS/CAM/OIDE			CCPBG - R&D Division	
Title	Document Number	Rev		
A3	(MS22-1-01) MainBoard (MBX-167)	0.1		
Date:	Friday, August 11, 2006	Sheet	50	of 78

LAN connector

**LAN PHY**

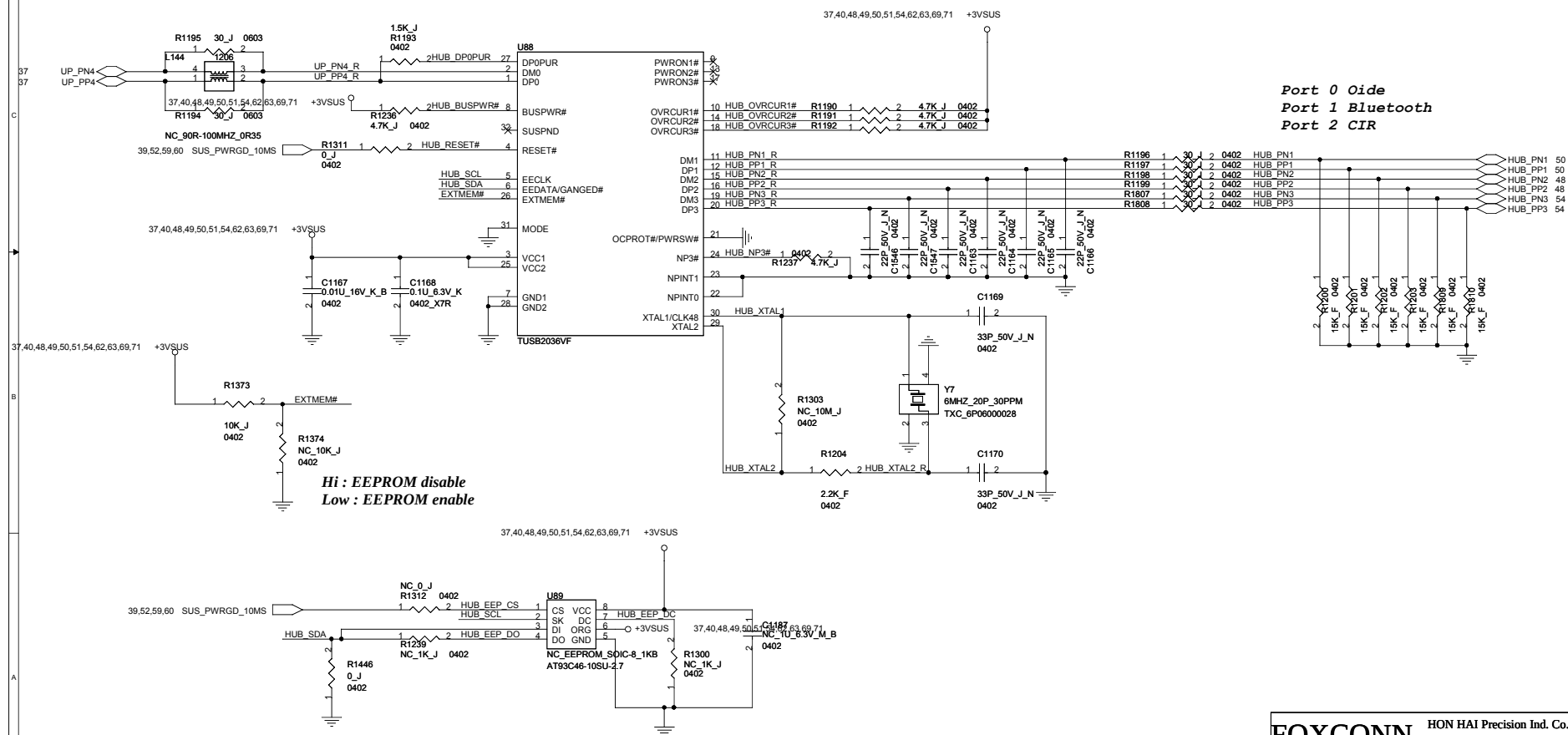
Default for S3 waking up event ,
backup for S4 waking up event

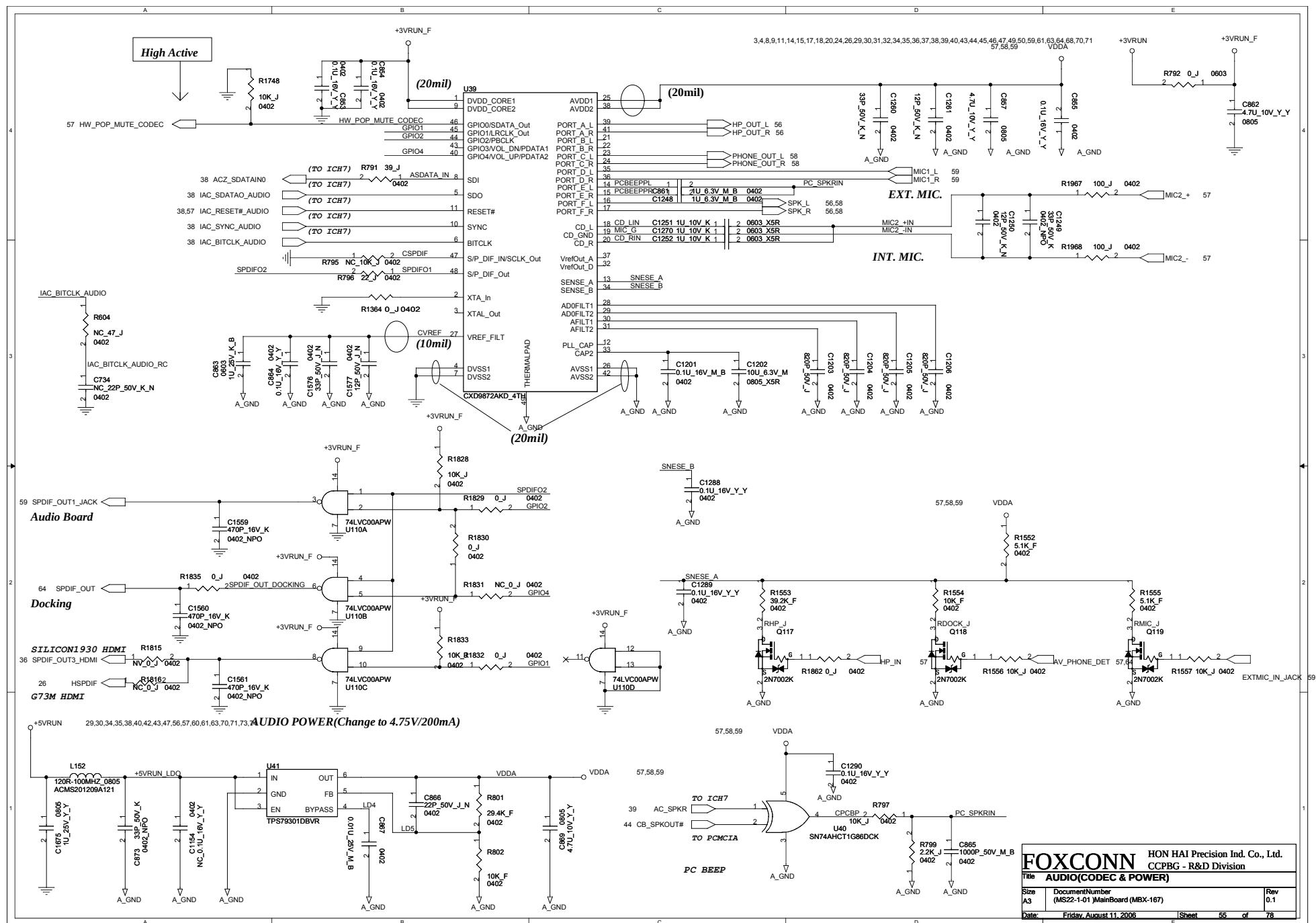
USB connector *2



Application design in datasheet 27 ohm;
but 30ohm is also in range of USB Spec.

USB 1.1 HUB

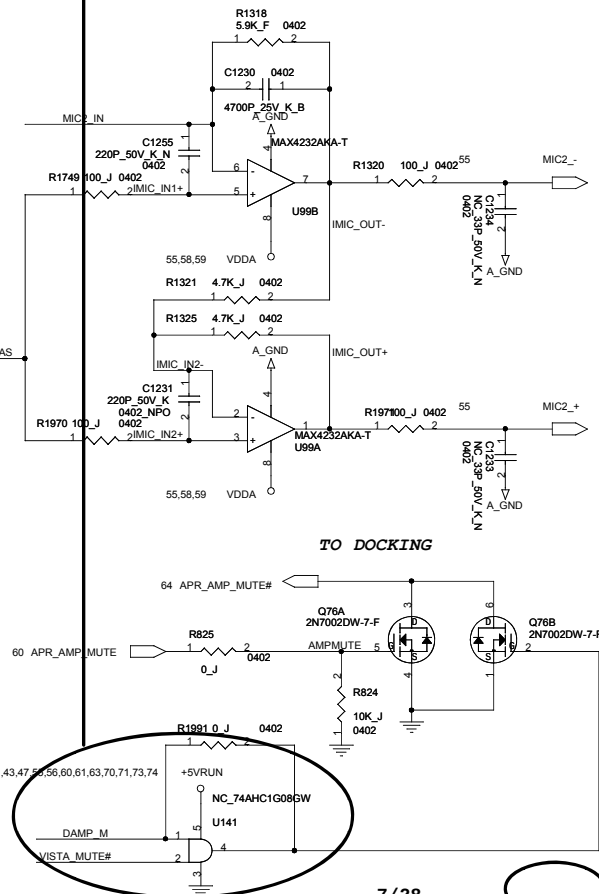




- 8/9 Modify Int SPK mute circuit for Vista requirement
1. default original circuit
Add R1984, R1991
 2. Backup circuit 1
backup R1985
 3. Backup circuit 2
backup U140, U141
- Please reference below setting table

Circuit setting table

Circuit 0	Circuit 1	Circuit 2	component
Stuff	NC	Stuff	U45
NC	NC	Stuff	U140
Stuff	NC	Stuff	U83
Stuff	NC	Stuff	R1111
NC	Stuff	NC	R1985
Stuff	NC	NC	R1984
Stuff	Stuff	NC	R1991
NC	NC	Stuff	U141

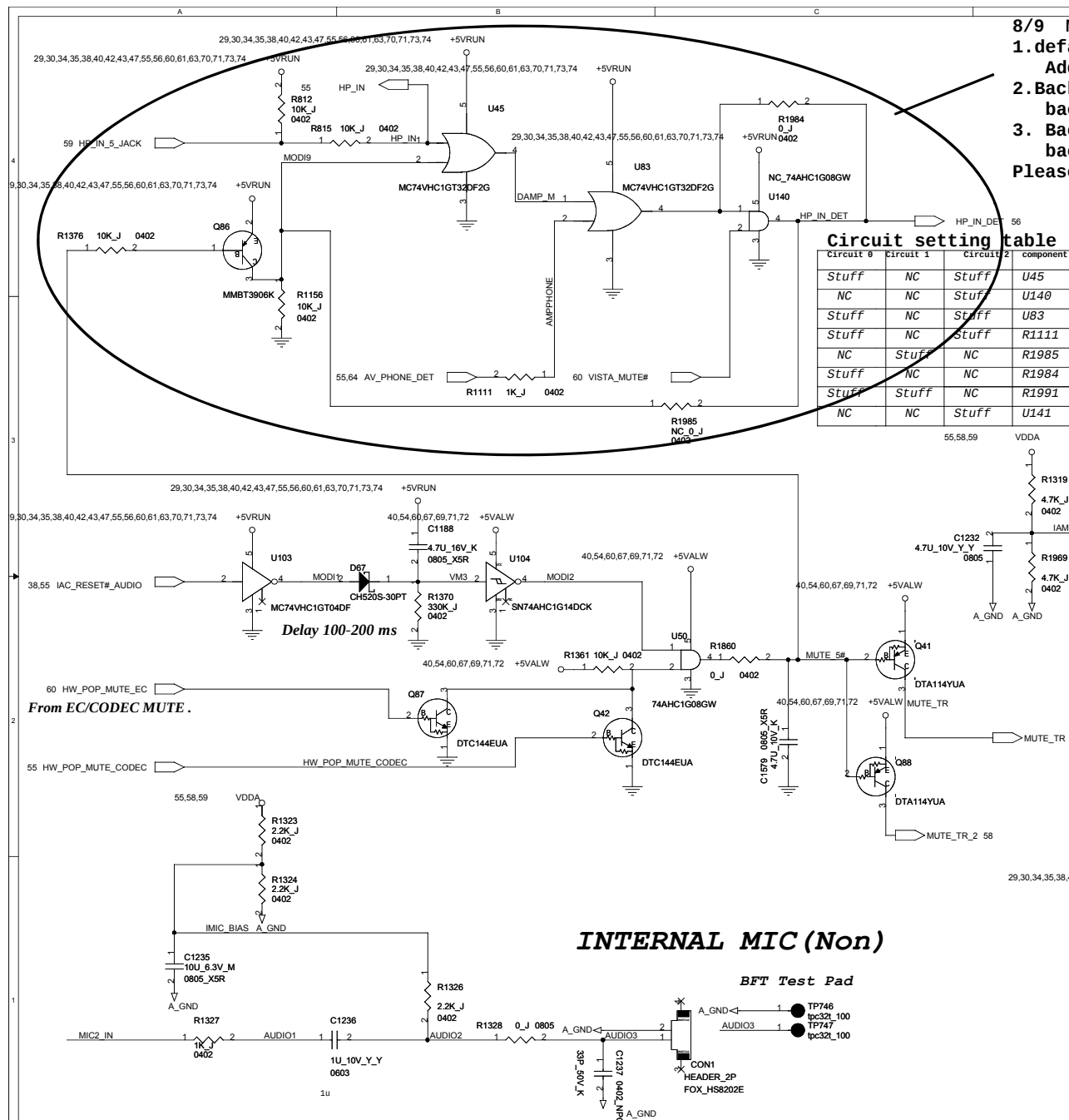


7/28
Delete C1676
For MOR suggestion

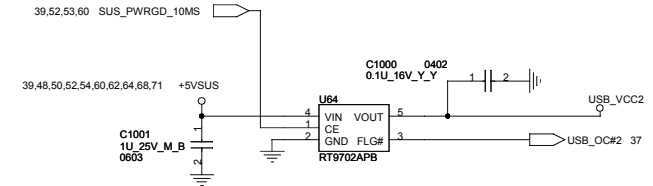
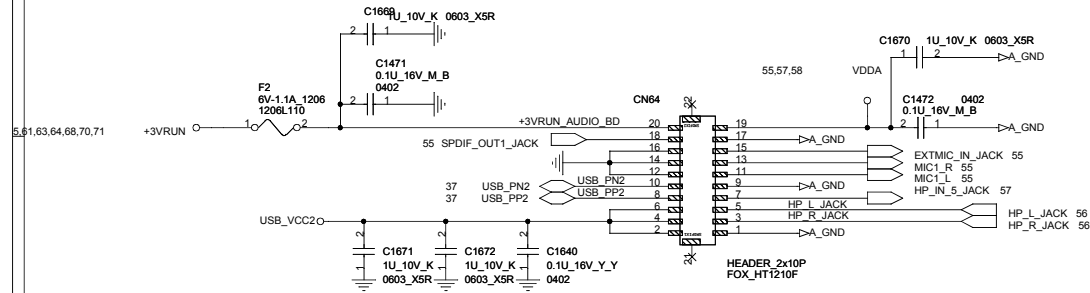
FOXCONN		HON HAI Precision Ind. Co., Ltd.	
Title AUDIO (MUTE & INTMIC)		CCPBG - R&D Division	
Size A3	Document Number (MS22-1-01) MainBoard (MBX-167)	Rev 0.1	
Date: Friday, August 11, 2006	Sheet 57	of 78	

INTERNAL MIC (Non)

BFT Test Pad

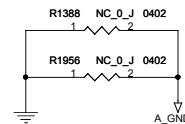


Audio Board connector

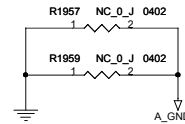


Backup two jumper resistors for bridge between GND and A_GND

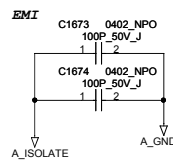
Close screw hole H3



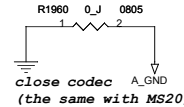
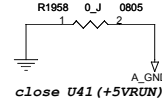
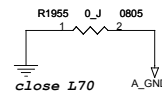
Close screw hole H5



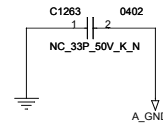
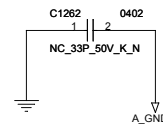
Isolate screw hole H4, and add EMI/ESD solution



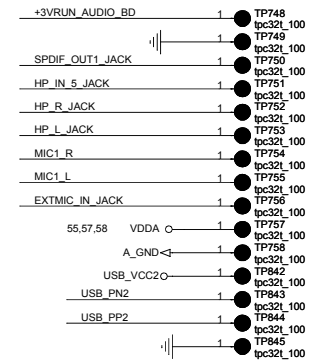
Add jumper resistor for Return patch

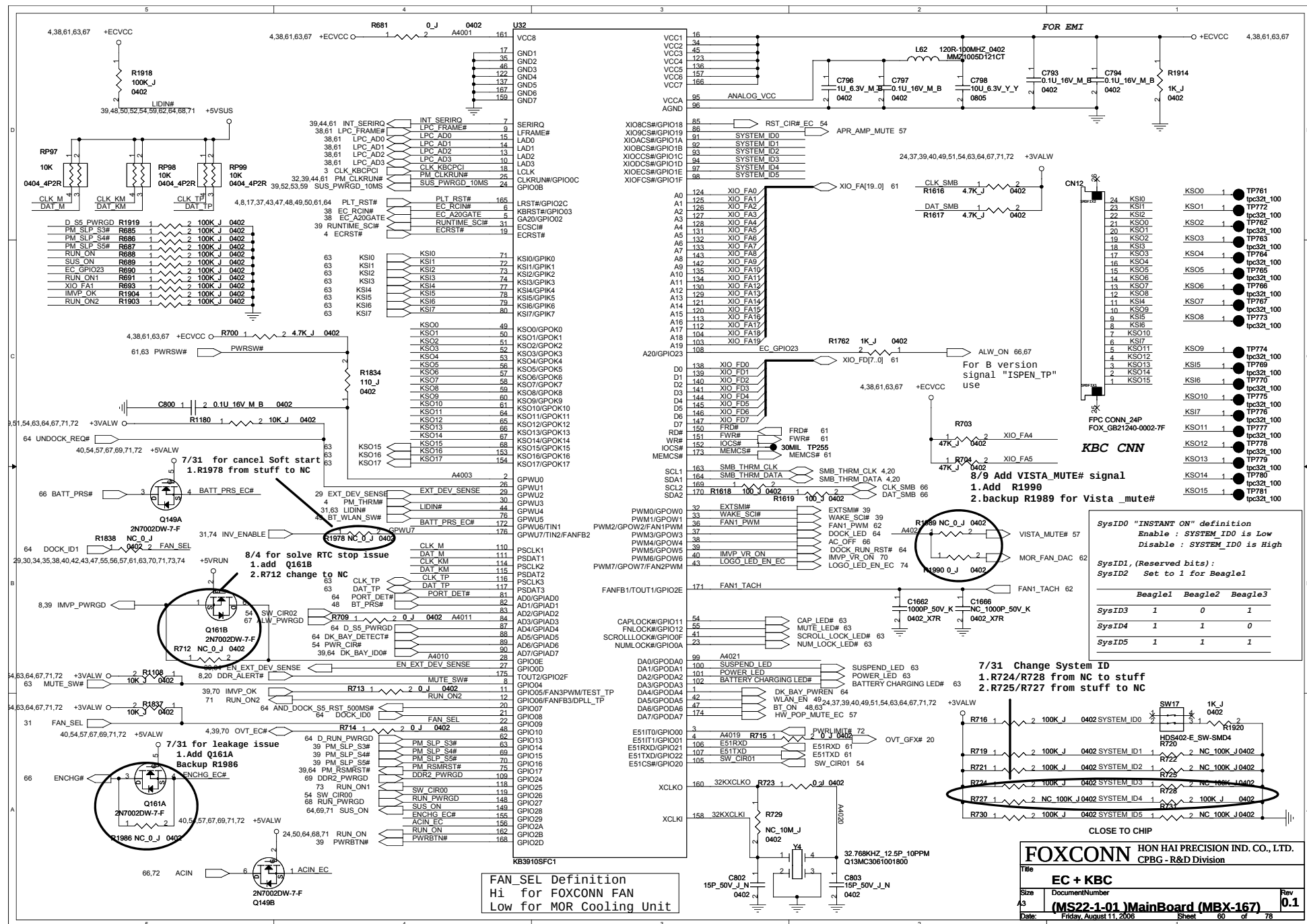


Original EMI back up solution to continue with MS20 (bridge between GND and A_GND)



BFT Test Pad





FLASH BIOS

60 XIO_FA[19..0]

60 XIO_FD[7..0]

U34

VCC1 37

DQ0 29 XIO_FD0

DQ1 31 XIO_FD1

DQ2 33 XIO_FD2

DQ3 35 XIO_FD3

DQ4 38 XIO_FD4

DQ5 40 XIO_FD5

DQ6 42 XIO_FD6

DQ7 44 XIO_FD7

DQ8 46

DQ9 48

DQ10 50

DQ11 52

DQ12 54

DQ13 56

DQ14 58

DQ15/A-1 60

CE# 26 MEMCS MB#

OE# 28 FRD#

RESET# 12 FLASH RESET#

RYBY# 16

WE# 11 FWR#

BYTE# 47

NC4 44

VSS2 27

FLASH_TSOP-48_8MB

EN28LV800BB-70TCP

4.38,60,63,67

+ECVCC

C804 0.1U_16V_M_B

C1515 1U_10V_Y_Y

0402

0603

4.38,60,63,67

+ECVCC

R734 10K_J

0402

JIG-120

4,38,60,63,67 +ECVCC

CN15

31 32 33 34

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

38,60 LPC_AD1 LPC_AD1 3 4 LPC_AD2 LPC_AD2 38,60
 38,60 LPC_AD3 LPC_AD3 5 6 LPC_FRAME# LPC_FRAME# 38,60
 38 LPC_DRQ#0 LPC_DRQ#0 7 8 ID_LPC_PCI# ID_LPC_PCI# 39
 39 PM_SUS_STAT# PLT_RST# 11 12 PM_CLKRUN# PM_CLKRUN# 32,39,44,60
 4,8,17,37,43,47,48,49,50,60,64 INT_SERIRQ INT_SERIRQ 13 14 PCLK_JIG 3
 60,63 PWRSW# 15 16 NC 0 J 2
 +5VRUN 19 20
 29,30,34,35,38,40,42,43,47,55,56,57,60,63,70,71,73,74 +3VRUN 34,8,9,11,14,15,17,18,20,24,26,29,32
 4,38,60,63,67 E51RXD 23 24 PCI_RST# PCI_RST# 32,37,44
 60 E51TXD 25 26
 60 E51TXD 27 28
 39 SB_RST# 29 30

B TO B CONN, 2x15P
 FOX_QT510306-L011-F7

X-BUS

ON14
B TO B CONN_2x20P
FOX_QT510406-L011-F

4,38,60,63,67 +ECVCC

C806
0.1U_16V_M_B
0402

C807
0.1U_16V_M_B
0402

MEMCS# 60

FWR#

CARD_INSERT

EC_OUT1 39

R753
10K_J
0402

CARD_INSERT

MEMCS# 60

MEMCS# 2

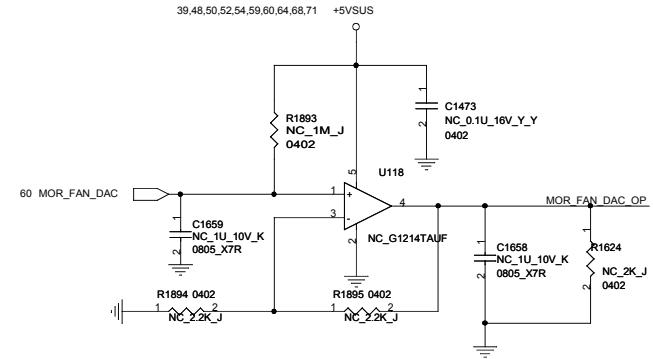
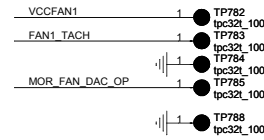
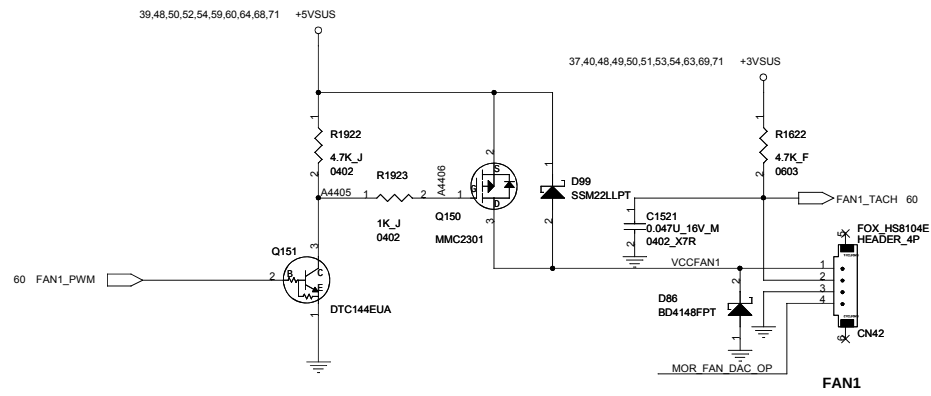
MEMCS_MB#

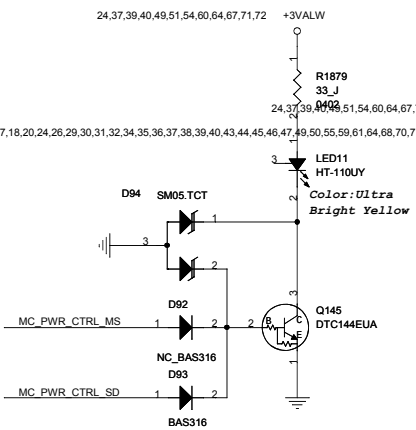
SN74AHC1G32DBVR

FOXCONN HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division	
Title	Flash ROM + Jig-120 + XBUS
Size	DocumentNumber
A3	(MS22-1-01) MainBoard (MBX-167)
Date:	Friday, August 11, 2006 Sheet 61 of 78

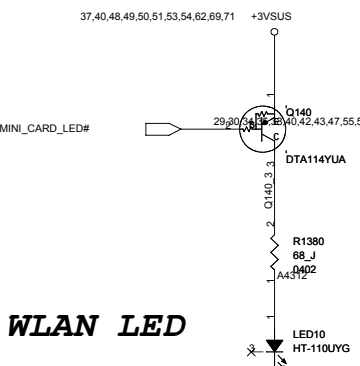
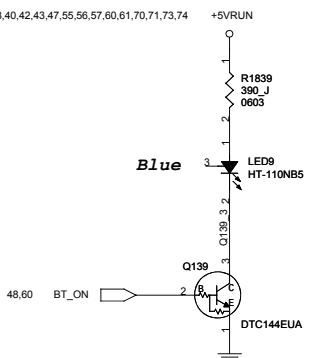
2

FAN circuit

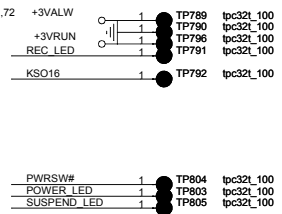




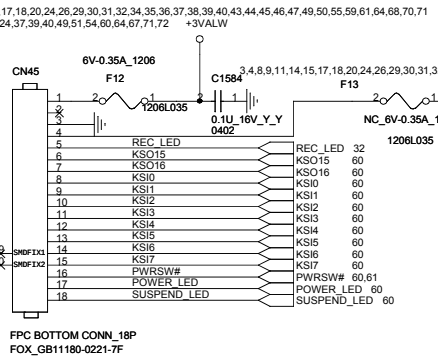
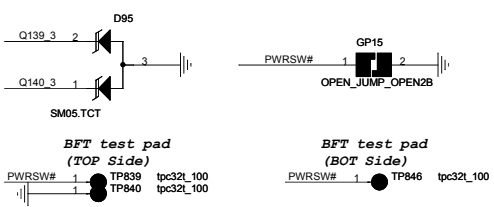
SD LED BLUETOOTH LED



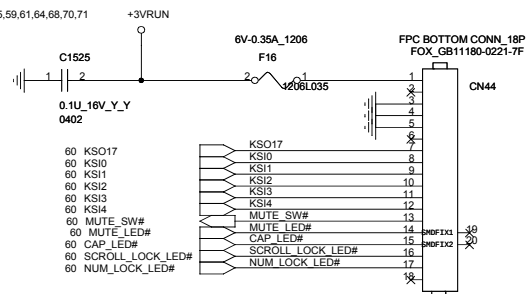
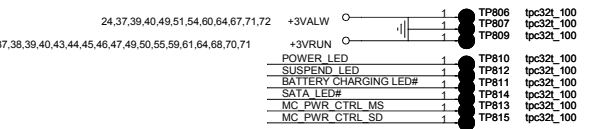
LED IF SPEC:
20mA (TYP) , 30mA (MAX)



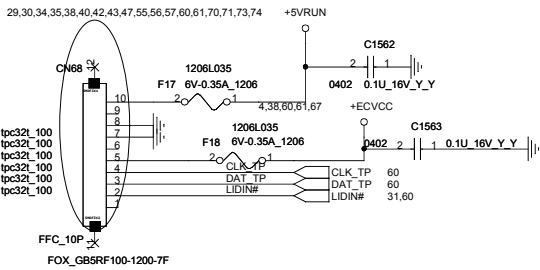
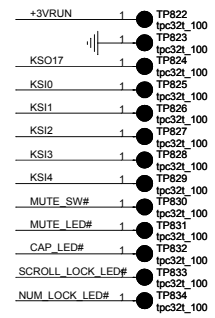
To Power Button Board Connector



To LED Board Connector



To AV Function Board Connector



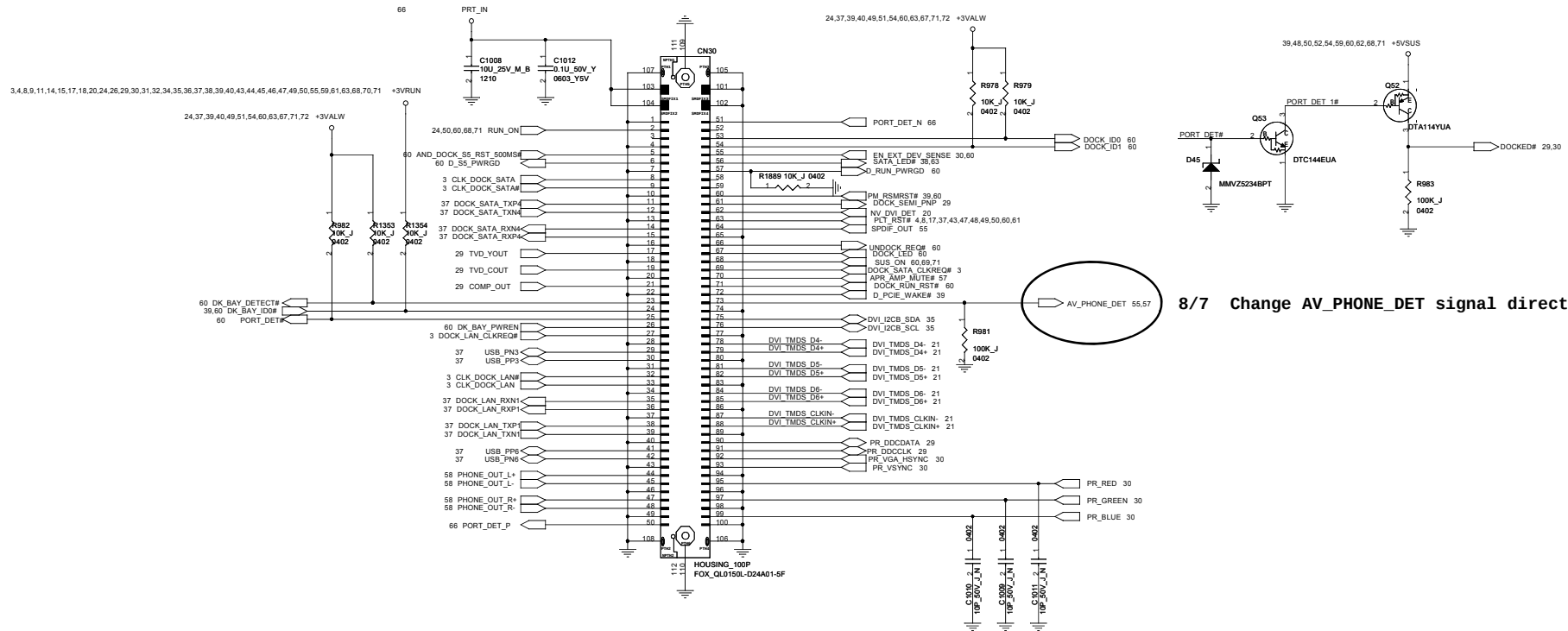
To Touch Pad Board Connector

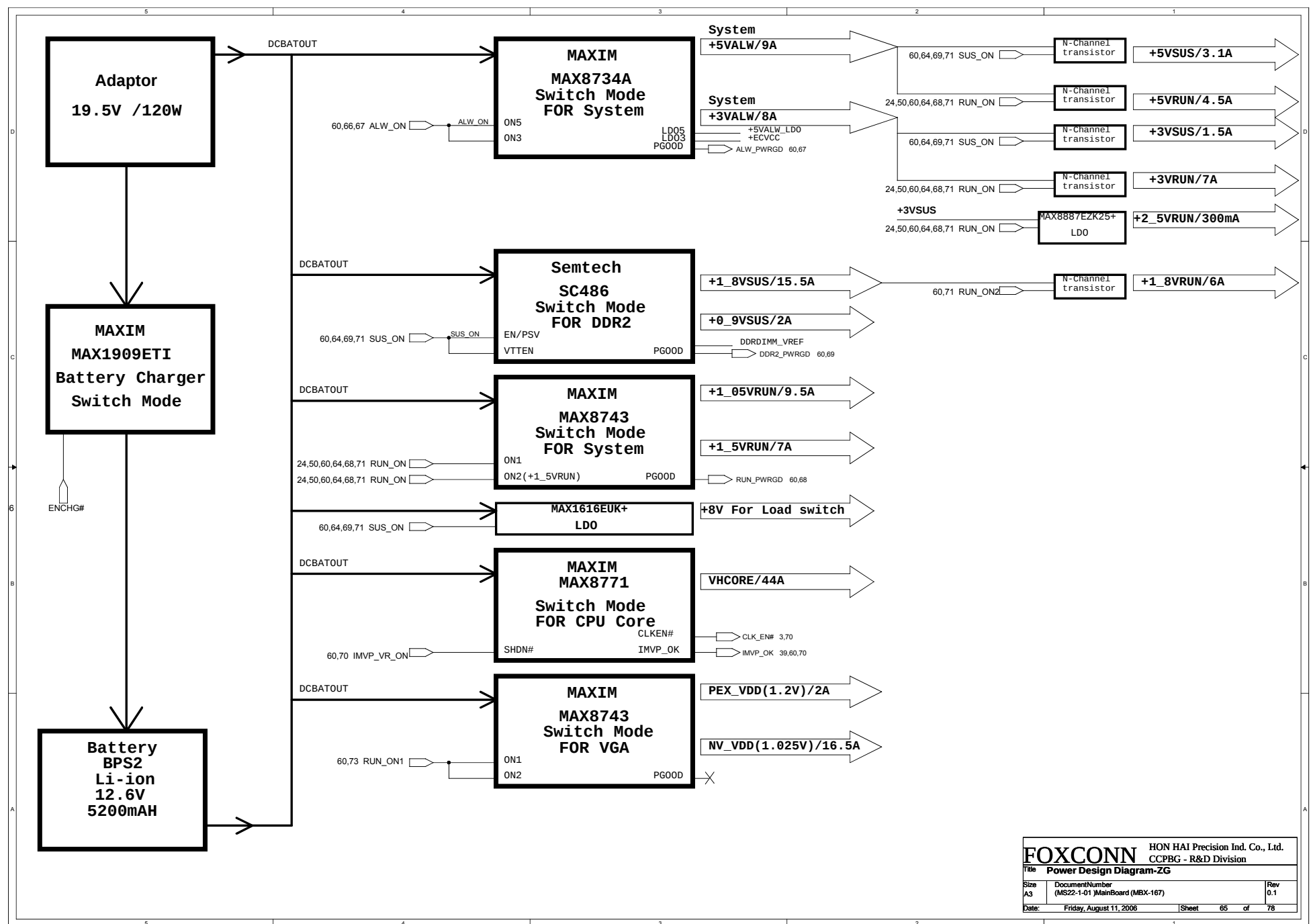
FOXCONN HON HAI PRECISION IND. CO., LTD.
CPBG - R&D Division

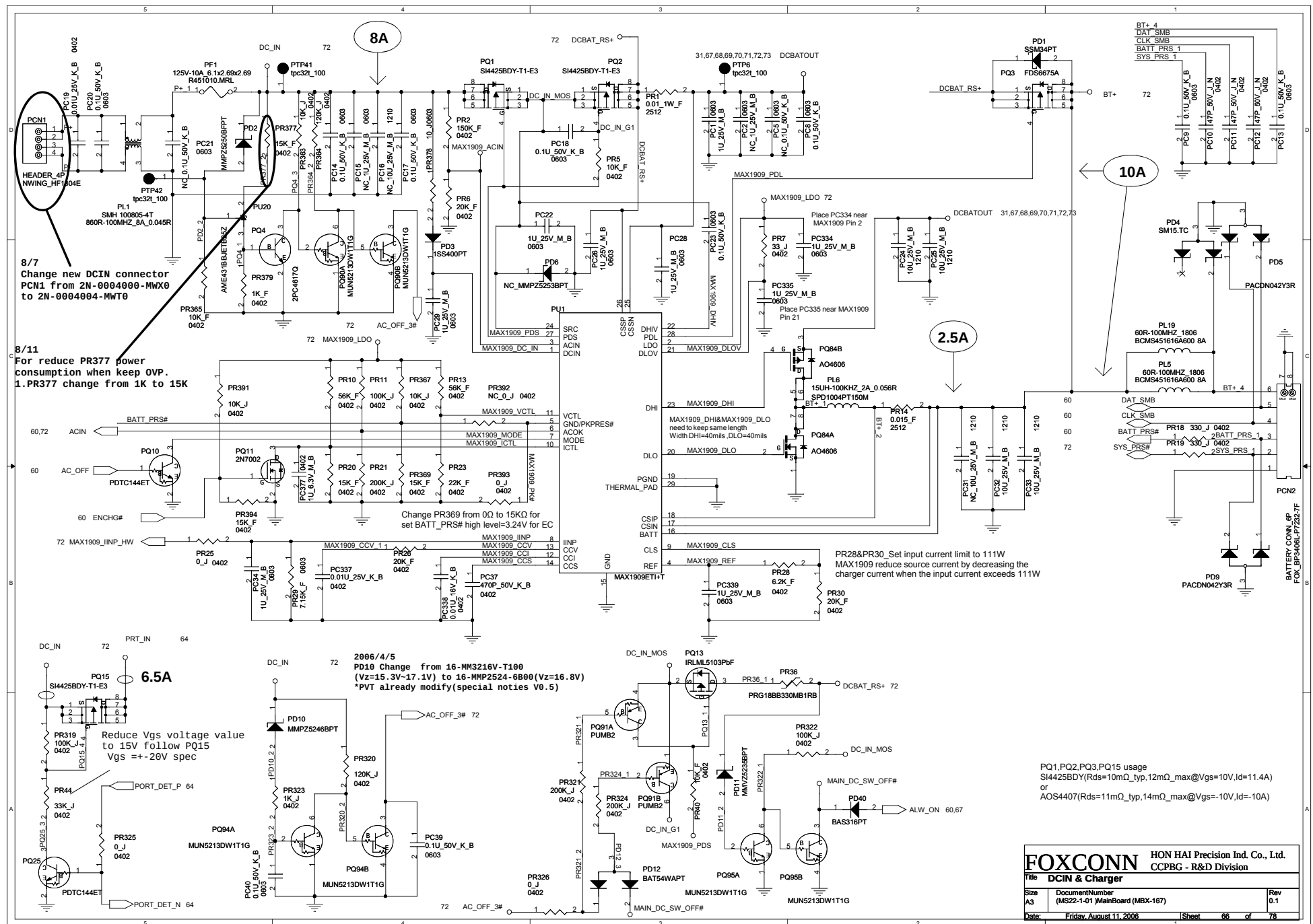
Title: **POWER BD + HOT KEY BD + TIP&LED BD + LOGO LED**

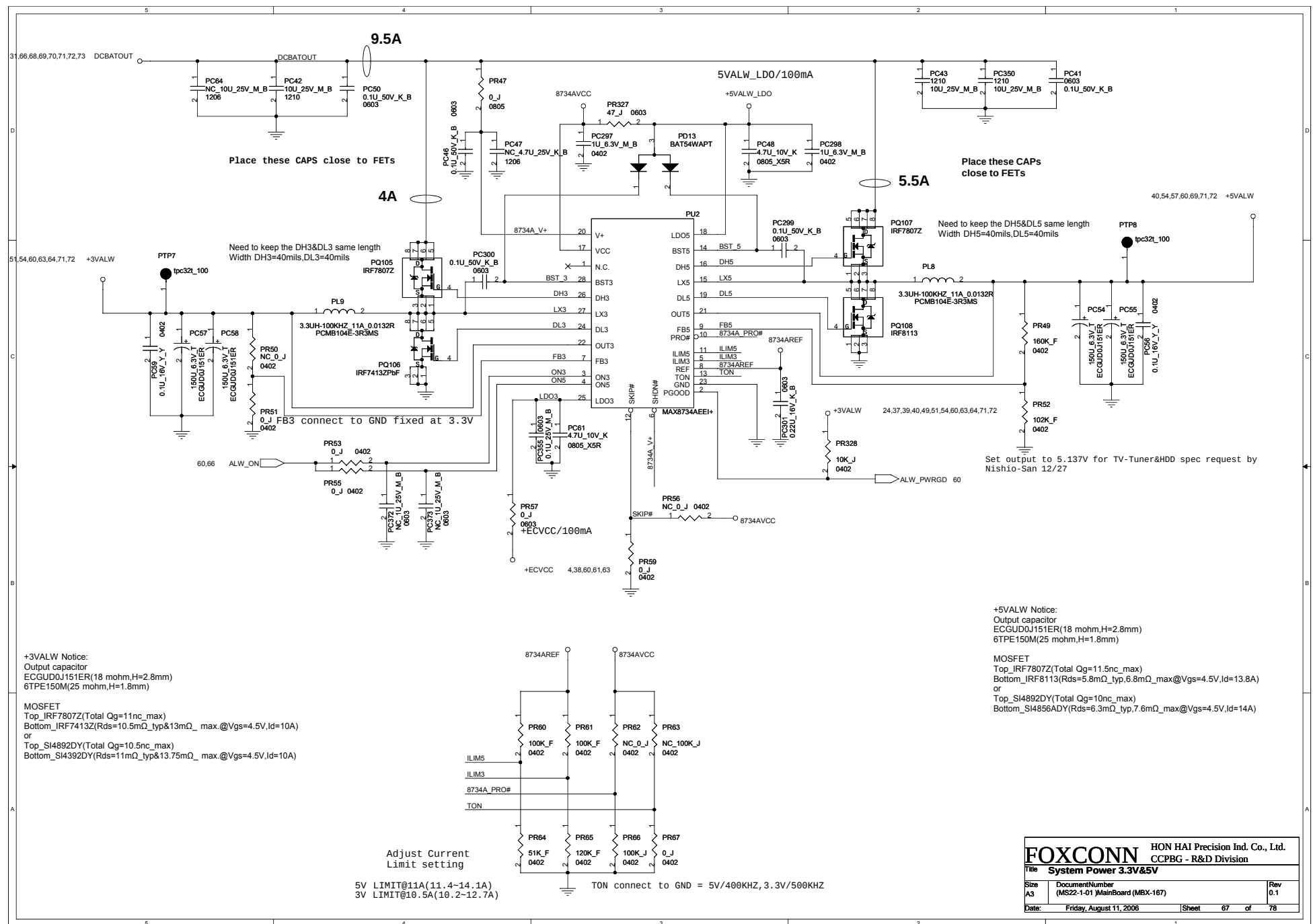
Size: A3 Document Number: **(MS22-1-01) MainBoard (MBX-167)** Rev: **0.1**

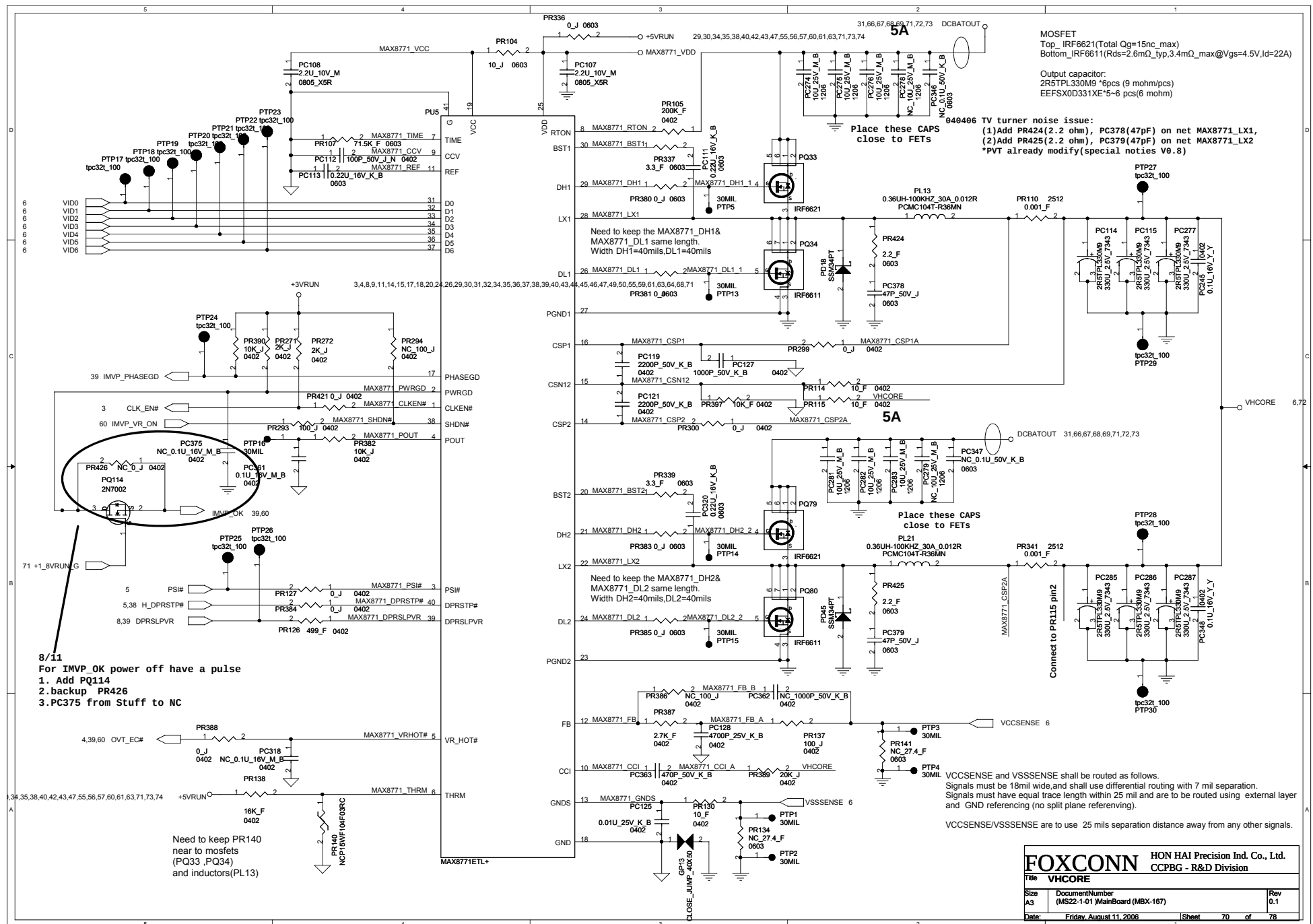
Date: Friday, August 11, 2006 Sheet: 63 of 78

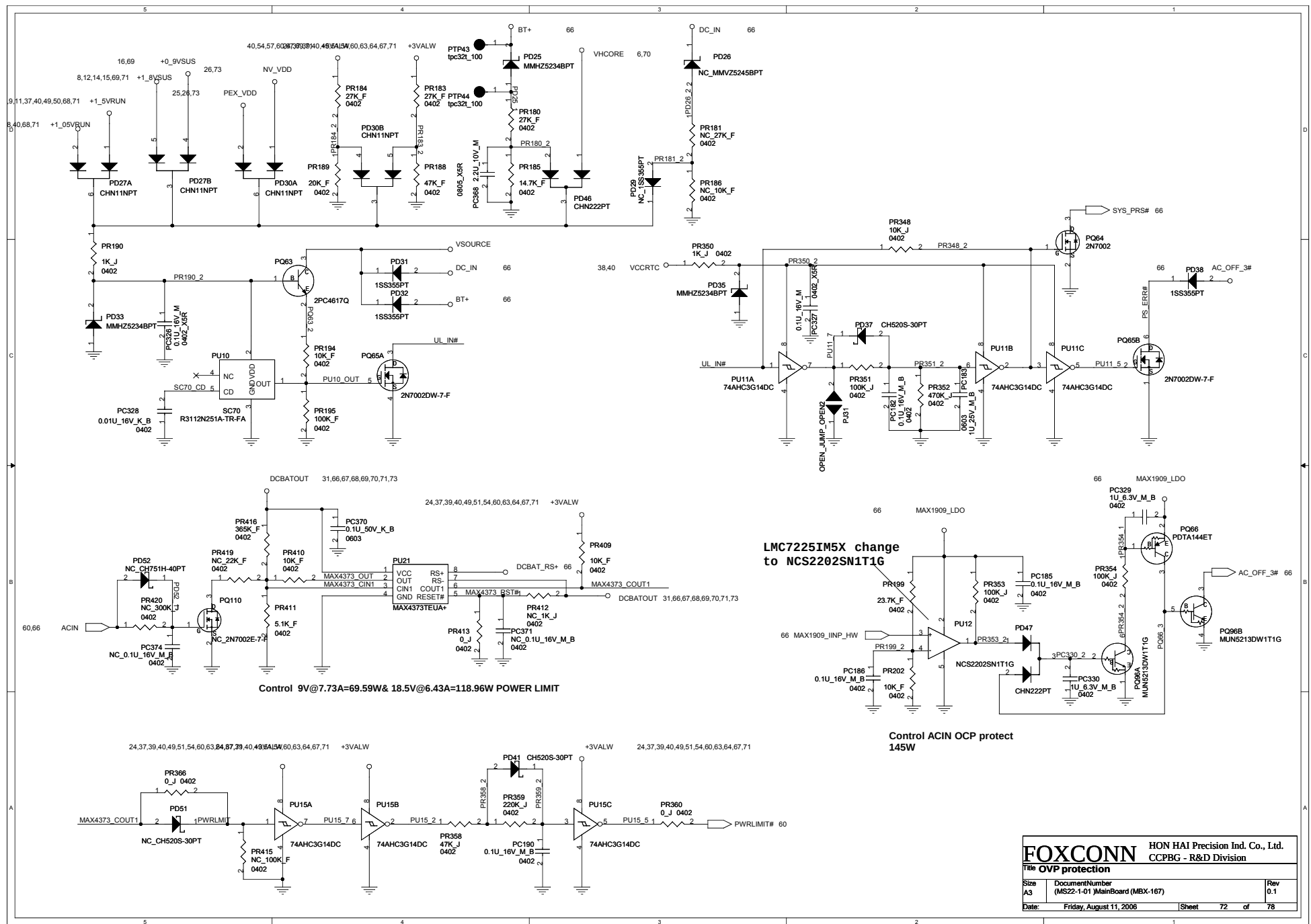


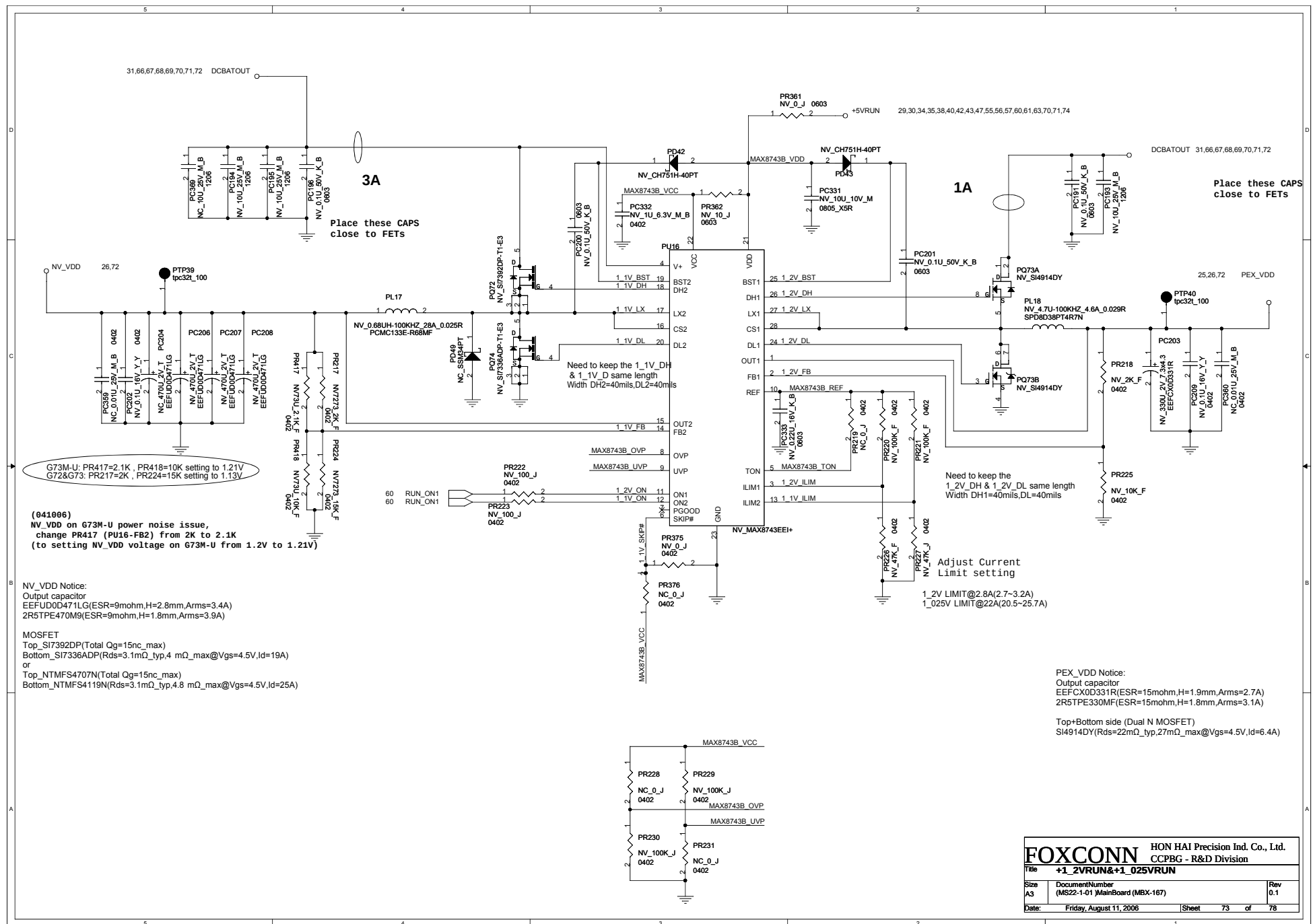






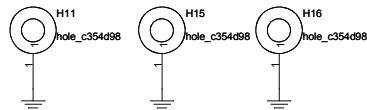






HOLE

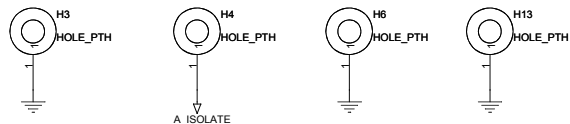
Type 1



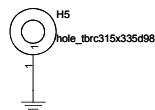
Type 2

Type 3

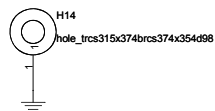
Type 4



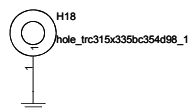
Type 5



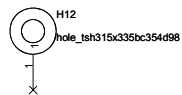
Type 6



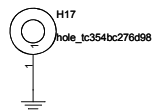
Type 7



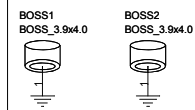
Type 8



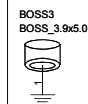
Type 9



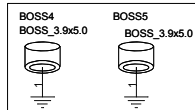
Type CPU



BOSS(H=3.1)
MDC
(TOP side)

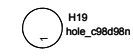


BOSS(H=2.8)
Blue Tooth
(BOP side)



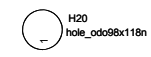
BOSS(H=2.8)
TV Tuner
(BOP side)

Type NPTH Guide (spherical)HOLD

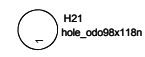


close H1

Type NPTH Guide (oval-shaped)HOLD



close H6



close H17

FOXCONN		HON HAI Precision Ind. Co., Ltd.	
File HOLE & BOSS		CCPBG - R&D Division	
Size A3	Document Number (MS22-1-01) MainBoard (MBX-167)	Rev 0.1	
Date:	Wednesday, August 09, 2006	Sheet 76	of 78

MS21 PVT to MS22 EVT Change History
(2006/7/28)

- (修) 01.(Page57) Delete C1676 For MOR suggestion
- (調) 02.(Page29) change D60,D61,D81 Value from NV to Normal
- (調) 03.(Page20) change Y2 Value from Normal to NV

(2006/7/31)

- (費) 04.(Page60) for cancel Soft start
1.R1978 from stuff to NC
- (才) 05.(Page60) Change System ID
1.R724/R728 from NC to stuff
2.R725/R727 from stuff to NC
- (費) 06.(Page74) For cancel soft start
1.R1981 from NC to stuff
2.R1980 from stuff to NC
- (才) 07.(Page38) Change new mosfet for gate threshold voltage level issue
1. Q147 and Q148 from 2N7002 change to 2N7002DW-7-F
Location change to Q147A and Q147B
- (才) 08.(Page60) for Leakage issue
1.Add Q161A
2.Backup R1986

(2006/8/4)

- (才) 09.(Page60) for solve RTC stop issue
1.add Q161B
2.R712 change to NC
- (調) 10.(Page34)Change new HDMI connector
1.P/N change from
1N-0019001-MKG0 to 1N-0019002-MKG0
- (費) 11.(Page64) Change AV_PHONE_DET signal direction
- (青) 12.(Page66) Change new DCIN connector
1. PCN1 from 2N-0004000-MwX0 to 2N-0004004-MWT0
- (青) 13.(Page66) For reduce PR377 power consumption when keep OVP.
1.PR377 Value change from 1K to 15K

(2006/8/9)

- (修) 14.(Page57) Modify Int SPK mute circuit for Vista requirement
1.default original circuit
Add R1984,R1991
2.Backup circuit 1
backup R1985
3. Backup circuit 2
backup U140 , U141
- (才) 15.(Page60) Add VISTA_MUTE# signal
1.Add R1990
2.backup R1989 for Vista _mute#
- (青) 16.(Page70)For IMVP_OK power off have a pulse
1. Add PQ114
2.backup PR426
3.PC375 From Stuff to NC