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19	VGA(GDDR)# 4/9	1.0	09'07'27	56	SYS Power(+1.5V/+1.05V)	1.0	09'07'27
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24	VGA(POWER/GROUND) 9/9	1.0	09'07'27	61	VGA Power(NV_VDD)	1.0	09'07'27
25	VRAM (GDDR3) 1/2	1.0	09'07'27	62	Audio (CODEC & POWER)	1.0	09'07'27
26	VRAM (GDDR3) 2/2	1.0	09'07'27	63	Audio (HP)	1.0	09'07'27
27	VRAM (BYPASS) 1/2	1.0	09'07'27	64	Audio (SPKR)	1.0	09'07'27
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34	ICH9-M (GPIO) 3/5	1.0	09'07'27	71	History (1)	1.0	09'07'27
35	ICH9-M (POWER) 4/5	1.0	09'07'27	72	History (2)	1.0	09'07'27
36	ICH9-M (GND) 5/5	1.0	09'07'27	73	History (3)	1.0	09'07'27
37	EC+KBC (WPCE775L)	1.0	09'07'27	74	History (4)	1.0	09'07'27

Project Code & Schematics Subject: M870 Main Board_8L

PCB P/N:	(IRIS) :1P-0097J00-8010 (HANNSTAR) :1P-0097500-8010
A/B P/N:	(IRIS) :1P-1097J02-8010 (HANNSTAR) :1P-1097500-8010
FU/B P/N:	(IRIS) :1P-1097J00-8010 (HANNSTAR) :1P-1097503-8010
Ch/B P/N:	(IRIS) :1P-1097J01-8010 (HANNSTAR) :1P-1097501-8010
FP/B P/N:	(IRIS) :1P-1097J03-8010 (HANNSTAR) :1P-1097502-8010

P. Leader	Check by	Design by

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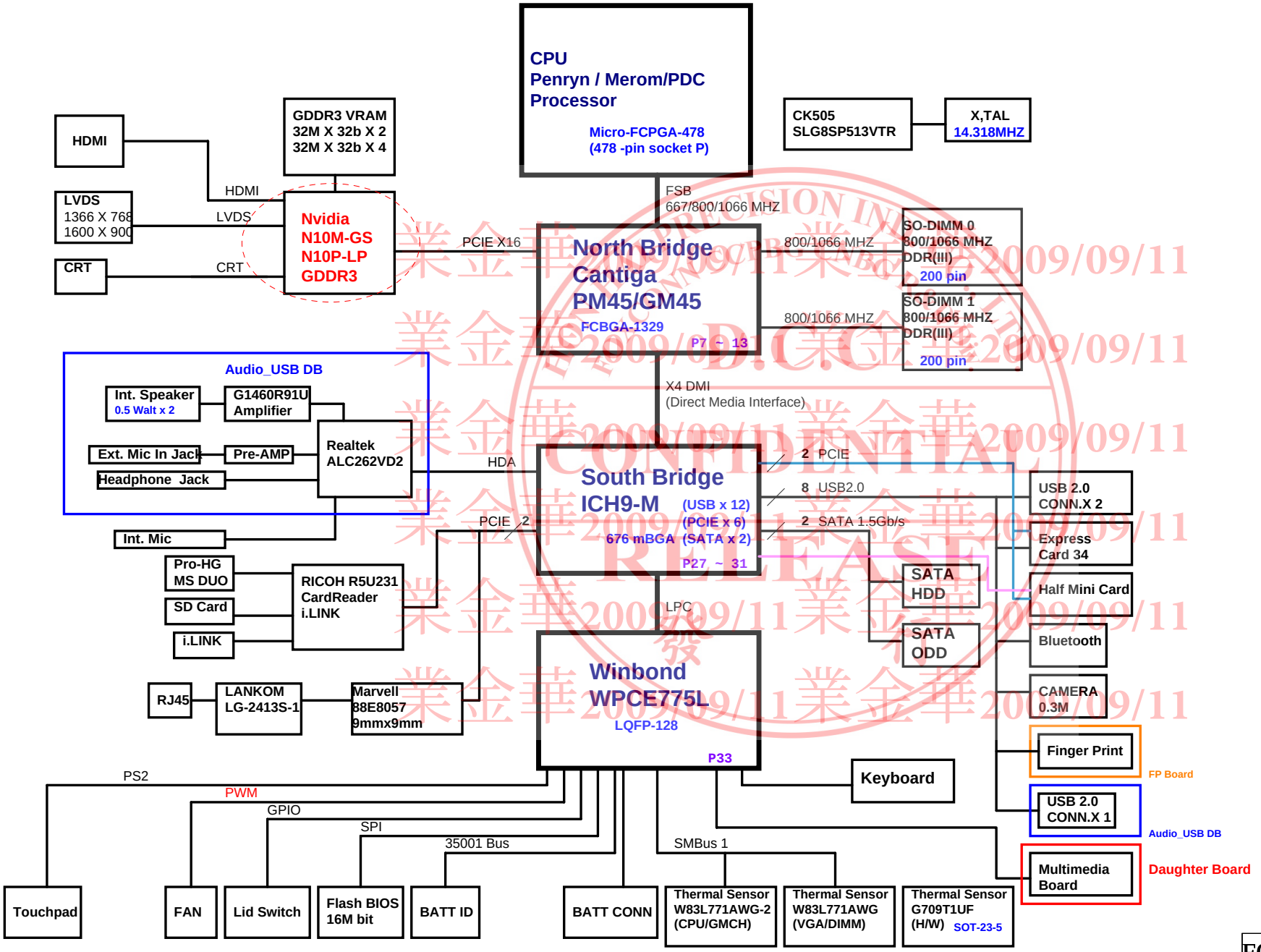
M870(Montevina + N10M/N10P-LP)

http://www.fangyuannb.com http://shop63900485.taobao.com



TI CHARGER BQ24753 P.54

	OUTPUTS
DC_IN	BT+ DCBATOUT

SYSTEM DC/DC MAX17020ETJ+ P.55

INPUTS	OUTPUTS
DCBATOUT	+5VALW +5VALW_LDO +3VALW +ECVCC +12V

SYSTEM DC/DC SC412 P.56

INPUTS	OUTPUTS
DCBATOUT	+1_5VRUN +1_05VRUN

SYSTEM DC/DC SC412+G2998 P.57

INPUTS	OUTPUTS
DCBATOUT	+1_8VSUS
+1_8VSUS	+0_9VRUN

CPU DC/DC ISL6266A P.58

INPUTS	OUTPUTS
DCBATOUT	VHCORE

SYSTEM DC/DC SC411+APL5913 P.61

INPUTS	OUTPUTS
DCBATOUT	NV_VDD
+1_5VRUN	PEX_VDD

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Title	Block Diagram	
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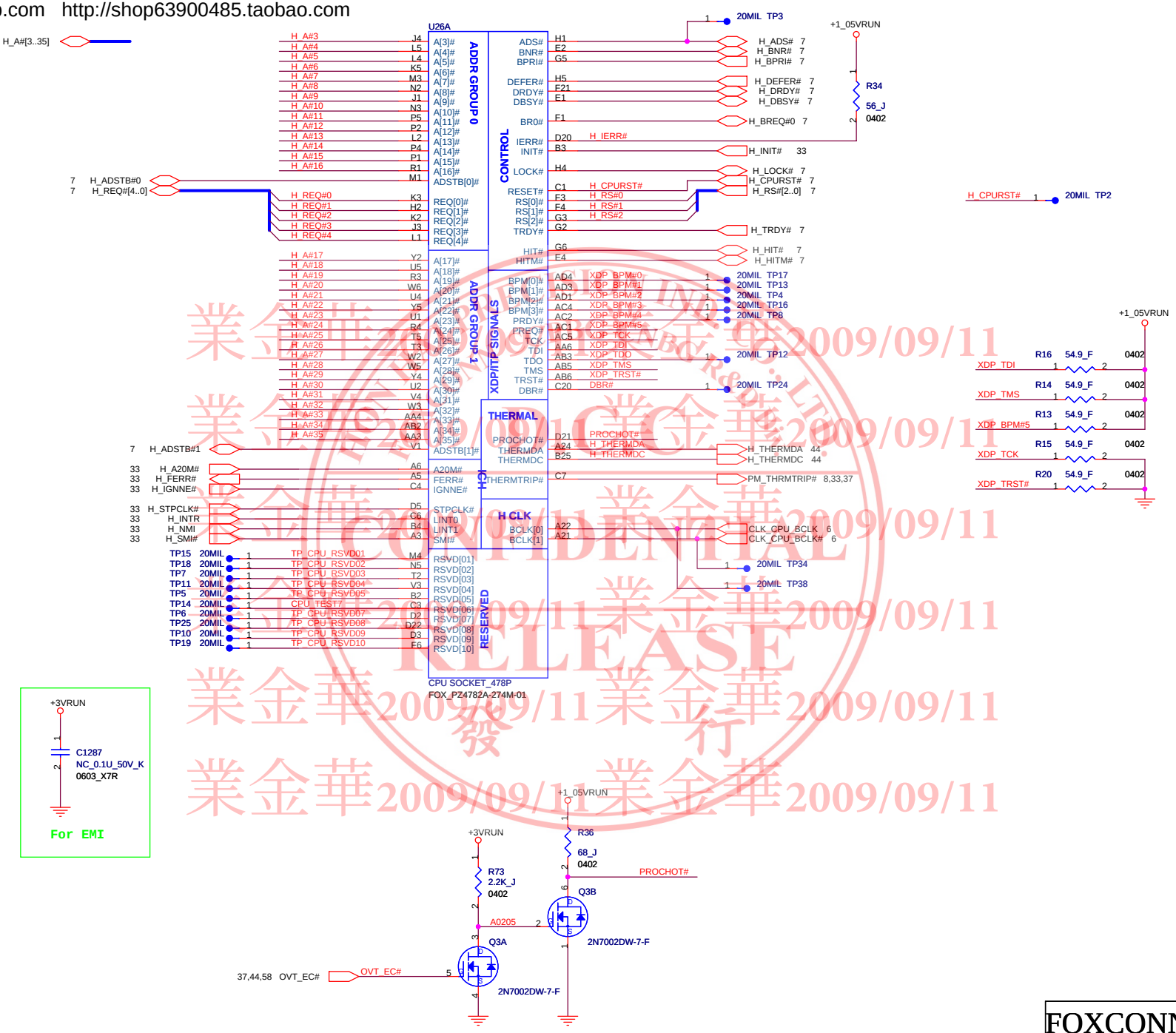

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Title	Penryn (HOST BUS) 1/3	
Size A3	Document Number M870-1-01	Rev 1.0
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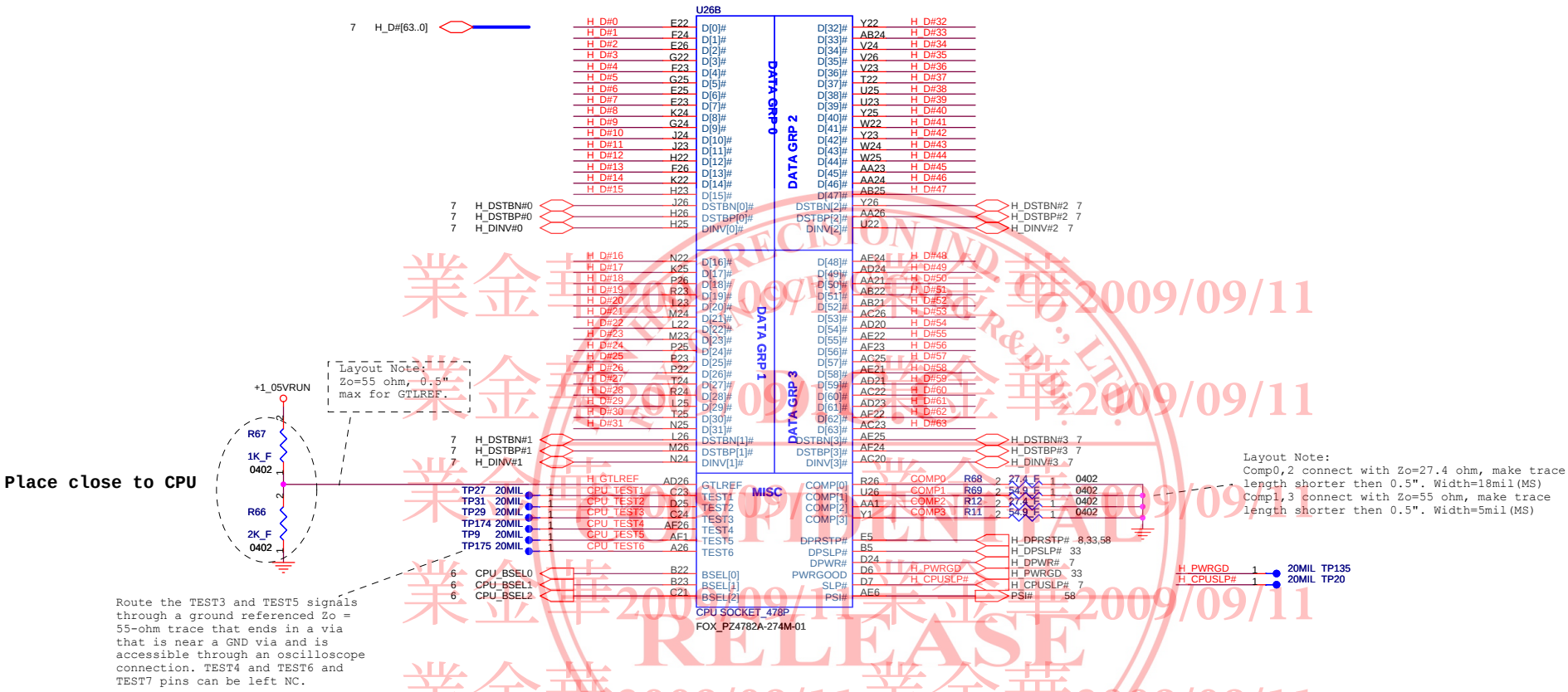

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Penryn (HOST BUS) 2/3	
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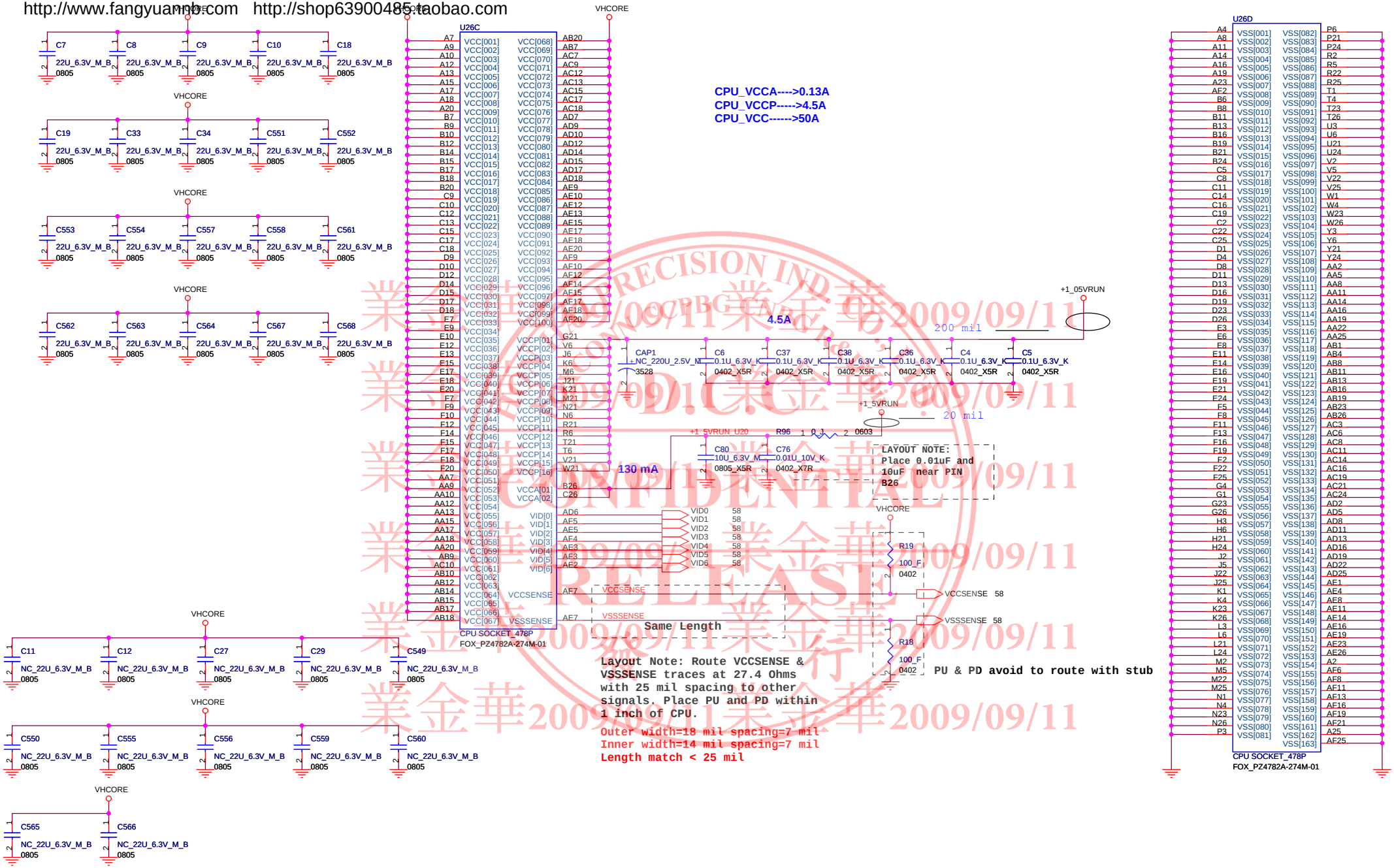

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Penryn (POWER/GROUND) 3/3	
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+3VRUN L33 120R-100MHZ_0402 EBMS100505H121RDC35

C386 0.01U_10V_K 0402_X7R
C357 0.01U_10V_K 0402_X7R
C377 0.01U_10V_K 0402_X7R
C369 0.01U_10V_K 0402_X7R
C370 0.01U_10V_K 0402_X7R
C383 0.01U_10V_K 0402_X7R

C363 1U_6.3V_M 0402_X5R
C356 0.1U_6.3V_K 0402_X5R
C373 1U_6.3V_M 0402_X5R
C387 0.1U_6.3V_K 0402_X5R
C366 1U_6.3V_M 0402_X5R
C376 0.1U_6.3V_K 0402_X5R
C380 NC_10U_6.3V_M 0805_X5R

+1_05VRUN L32 120R-100MHZ_0402 EBMS100505H121RDC35 VDD_CLK_IO

C384 0.1U_6.3V_K 0402_X5R
C382 0.1U_6.3V_K 0402_X5R
C355 0.1U_6.3V_K 0402_X5R
C375 0.1U_6.3V_K 0402_X5R

C385 0.1U_6.3V_K 0402_X5R
C352 0.1U_6.3V_K 0402_X5R
C378 NC_10U_6.3V_M 0805_X5R

CLK_XTALOUT R535 0_J 0402 R539 NC_10M_J 0402
Y5 14.31818MHZ_20P_30PPM FOX_7A14300038
CLK_XTALIN
C701 33P_50V_J 0402_NPO
C707 33P_50V_J 0402_NPO

U37

VDD_CLK_IO
+3V_CLK
VDD_CPU_I/O
VDD_PLL3_I/O
VDD_SRC_I/O_3
VDD_SRC_I/O_2
VDD_SRC_I/O_1
VDD_I/O
VDD_48
VDD_PCI
VDD_REF
VDD_SRC
VDD_CPU
VDD_PLL3

CLK_XTALIN
CLK_XTALOUT
XTAL_IN
XTAL_OUT

34 CLK_ICH14 R543 33_F 0402 CPU_BSEL2 R542 10K_J 0402 REF0
CPU_BSEL1
REF/FS_C/TEST_SEL
FS_B/TEST_MODE

R288 10K_F 0402 SELPSB0_CLK
32 CLK_ICHPCI R550 33_F 0402 R_CLK_ICHPCI
USB/FS_A
PCIF_5/ITP_EN

34 CLK_USB48 R551 33_F 0402
CPU_BSEL0 R552 2.2K_J 0402 SELPSB0_CLK
R_CLK_KBCPCI
PCI_4/SEL_LCDCLK#

38 PCLK_JIG R546 33_F 0402 PCI3
PCI_3
PCI_2
tpc40t_75 TP251
tpc40t_75 TP297
PCI_1/CLKREQ_B#

SATACLKREQ# R621 475_F 0402 SATACLKREQ# R
PCI_0/CLKREQ_A#

37 CLK_KBCPCI R549 33_F 0402
+3VRUN
R283 10K_F 0402
SCL
SDA

14,15,34,40 SMB_CLK_SUS
14,15,34,40 SMB_DATA_SUS

23 R_NV_XTALIN R5311 33_J 0402 L_NV_XTALIN
23 R_XTALSSIN R797 33_J 0402 L_XTALSSIN
LCDCLK/27M
LCDCLK#/27M_SS

VSS_I/O
VSS_PLL3
VSS_48
VSS_PCI
VSS_REF
VSS_SRC_2
VSS_SRC_3
VSS_SRC_1
VSS_CPU

THERMAL_PAD

close U37

SLG8SP513VTR
null

PCI_STOP#
CPU_STOP#
CPU_1_MCH#
CPU_1_MCH
CPU_0#
CPU_0
SRC_10
SRC_10#
SRC_9
SRC_9#
SRC_8#/CPU_ITP#
SRC_8/CPU_ITP
SRC_6#
SRC_6
SRC_4
SRC_4#
SRC_2
SRC_2#
SRC_0/DOT_96
SRC_0#/DOT_96#
SRC_11#/CLKREQ_G#
SRC_11/CLKREQ_H#
SRC_7#/CLKREQ_E#
SRC_7/CLKREQ_F#
SRC_3/CLKREQ_C#
SRC_3#/CLKREQ_D#
CKPWRGD/PD#
NC

PM_STPPCI# 34
STP_CPU# 34
CLK_MCH_BCLK# 7
CLK_MCH_BCLK 7
CLK_CPU_BCLK# 3
CLK_CPU_BCLK 3
CLK_PCIE_CARD 45
CLK_PCIE_CARD# 45
CLK_MCH_3GPLL 8
CLK_MCH_3GPLL# 8
CLK_PCIE_EXPRESS# 40
CLK_PCIE_EXPRESS 40
CLK_PCIE_MINI# 39
CLK_PCIE_MINI 39
CLK_PCIE_LAN 41
CLK_PCIE_LAN# 41
CLK_PCIE_SATA 33
CLK_PCIE_SATA# 33
CLK_PCIE_PEG 16
CLK_PCIE_PEG# 16
R_MCH_CLK_REQ# R544 475_F 0402 MCH_CLK_REQ
CARD_CLK_REQ# CARD_CLK_REQ# 45
MINI_CARD_DET# R R619 475_F 0402 MINI_CARD_DET#
EXPRESS_CLK_DET# R R620 475_F 0402 EXPRESS_CLK_DET#
CLK_PCIE_ICH 32
CLK_PCIE_ICH# 32
CLK_PWRGD 34

Clock Request	Clock Request Function
CR#A	SATACLKREQ#
CR#B	NC
CR#C	NC
CR#D	NC
CR#E	MINI_CARD_DET#
CR#F	EXPRESS_CLK_DET#
CR#G	MCH_CLK_REQ#
CR#H	CARD_CLK_REQ#

+3VRUN R5579 10K_J 0402 CARD_CLK_REQ# R5578 NC_10K_J 0402

+3VRUN R537 10K_J 0402 MINI_CARD_DET# MINI_CARD_DET# 39
+3VRUN R536 10K_J 0402 EXPRESS_CLK_DET# EXPRESS_CLK_DET# 40
+3VRUN R545 10K_J 0402 SATACLKREQ# SATACLKREQ# 34
+3VRUN R277 10K_J 0402 MCH_CLK_REQ# MCH_CLK_REQ# 8

NC_10P_50V_E_N C715 0402 CLK_USB48
NC_10P_50V_E_N C713 0402 CLK_KBCPCI
NC_10P_50V_E_N C714 0402 CLK_ICHPCI
NC_10P_50V_E_N C372 0402 CLK_ICH14
NC_10P_50V_E_N C709 0402 PCLK_JIG

4 CPU_BSEL0 R553 1K_J 0402 MCH_BSEL0 8
4 CPU_BSEL1 R534 1K_J 0402 MCH_BSEL1 8
4 CPU_BSEL2 R276 1K_J 0402 MCH_BSEL2 8

FOXCONN HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division
Title: CLOCK GEN
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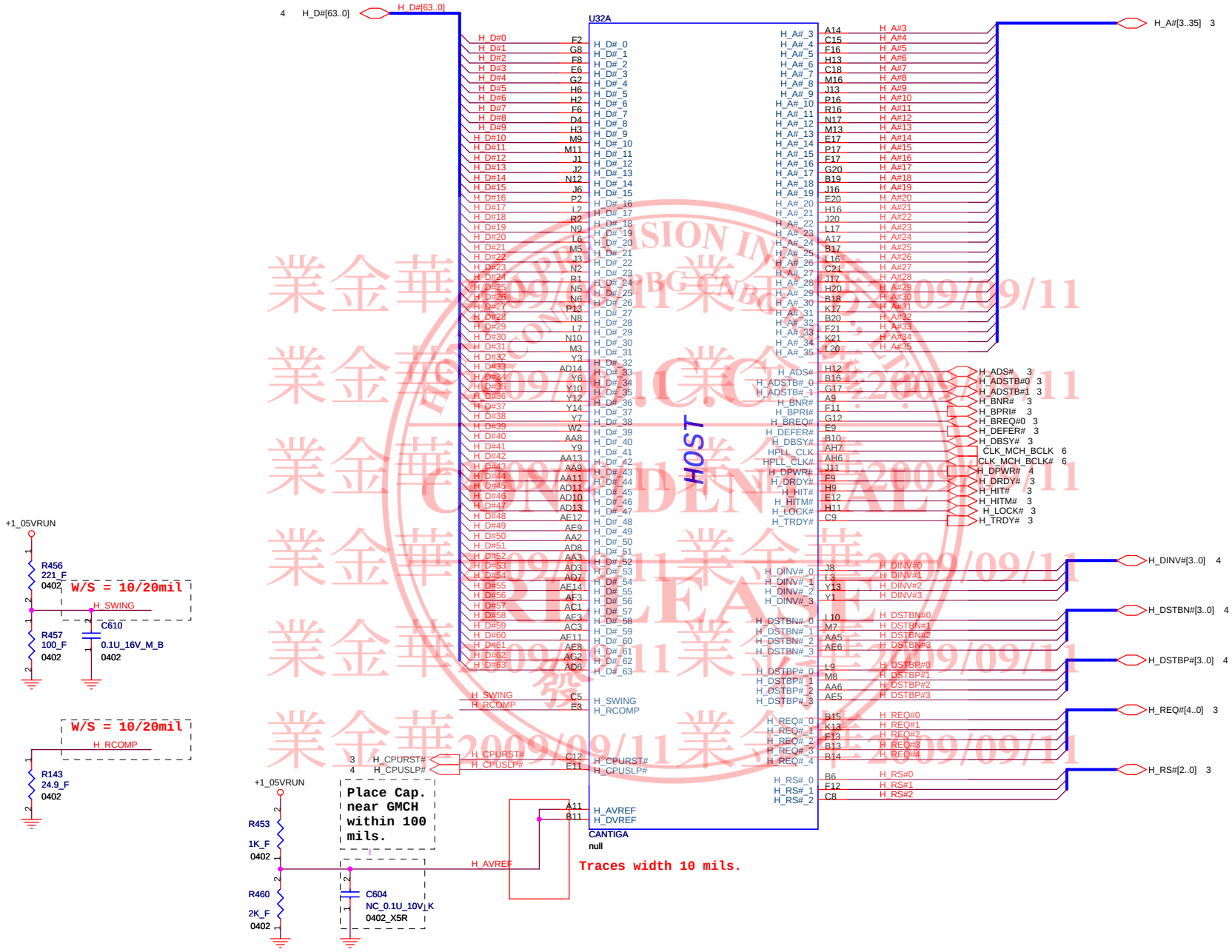

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Cantiga (HOST) 1/7	
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MCH_CFG_2 FSB Frequency	011 = FSB667 ; Others = Reserved
MCH_CFG_3~4	Reserved
MCH_CFG_5 DMI X2 Select	Low = DMI X2 High = DMI X4 (Default)
MCH_CFG_6 ITPM Host Interface	Low =The ITPM Host Interface is enabled2 High = The ITPM Host Interface is disabled (default)
MCH_CFG_7 Intel Management Engine Crypto Strap	Low = Intel Management Engine Crypto Transport Layer Security (TLS) cipher suite with no confidentiality High = Intel Management Engine Crypto TLS cipher suite with confidentiality (default)
MCH_CFG_8	Reserved
MCH_CFG_9 PCIE Graphics Lane	Low = Reverse Lane High = Normal operation (default)
MCH_CFG_10 PCIE Loopback enable	Low = Enabled3 High = Disabled (default)
MCH_CFG_11	Reserved
MCH_CFG_12 ALLZ	Low = ALLZ mode enabled3 High = Disabled (default)
MCH_CFG_13 XOR	Low = XOR mode enabled3 High = Disabled (default)
MCH_CFG_14~15	Reserved
MCH_CFG_16 FSB Dynamic ODT	Low = Dynamic ODT disabled High = Dynamic ODT enabled (default)
MCH_CFG_17~18	Reserved
MCH_CFG_19 DMI Lane Reversal	Low = Normal operation (Default): Lane Numbered in Order High = Reverse Lanes DMI x4 mode [(G)MCH->ICH]: (3->0, 2-> 1, 1->2 and 0->3) DMI x2 mode [(G)MCH ->ICH]: (3->0, 2->1)
MCH_CFG_20 Digital Display Port (SDVO/ DP/iHDMI) Concurrent with PCIe	Low = Only digital display port (SDVO/DP/iHDMI) or PCIe is operational (default) High = Digital display port (SDVO/DP/iHDMI) and PCIe are operating simultaneously via the PEG port

U32B

CANTIGA

RSVD

DDR CLK/ CONTROL/COMPENSATION

CLK

DMI

GRAPHICS VID

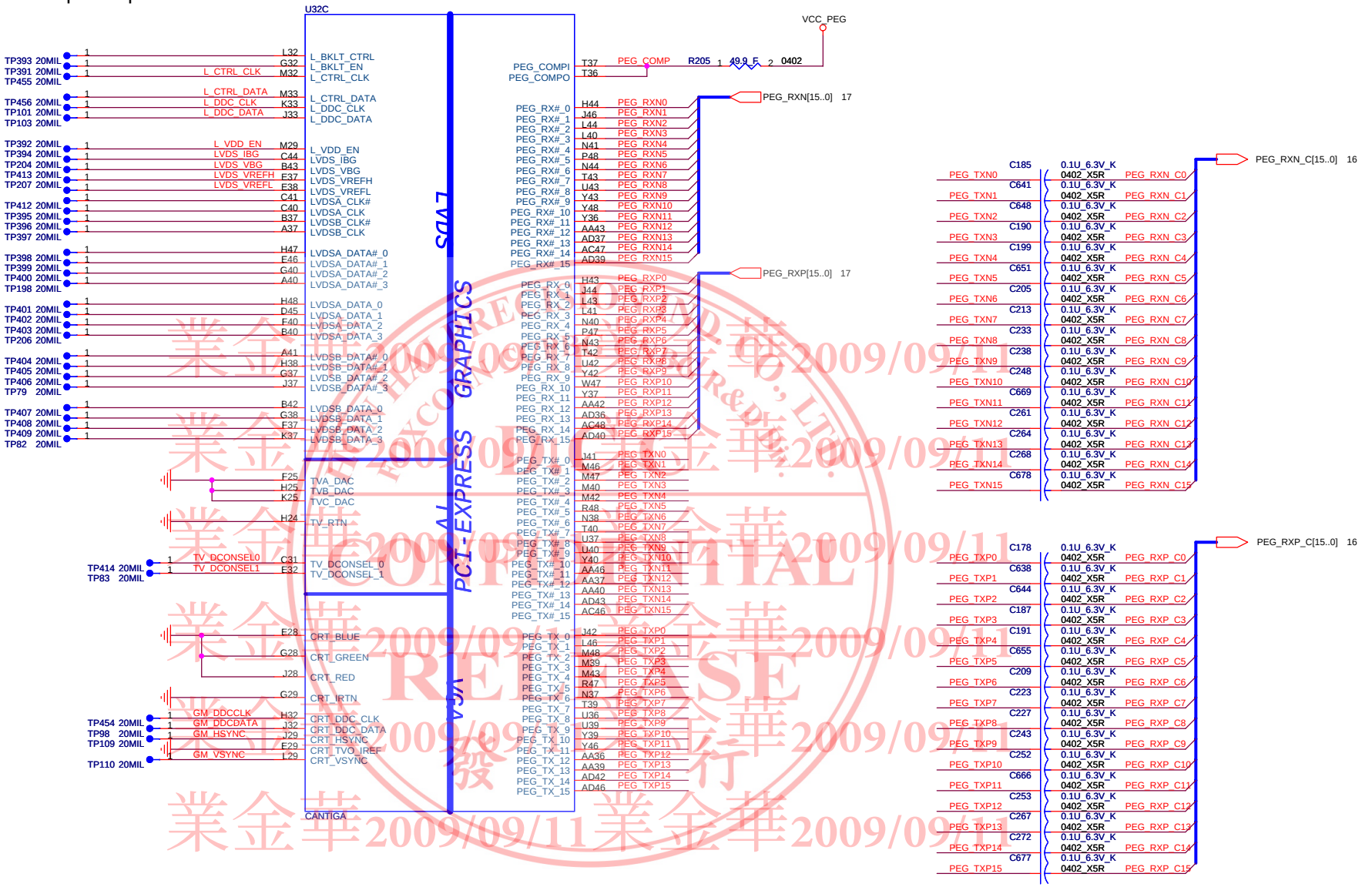
MISC

HDA

NC

R268 closed U32

Width =12mil



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Title	Cantiga (GRAPHIC) 3/7		
Size A3	Document Number M870-1-01		Rev 1.0
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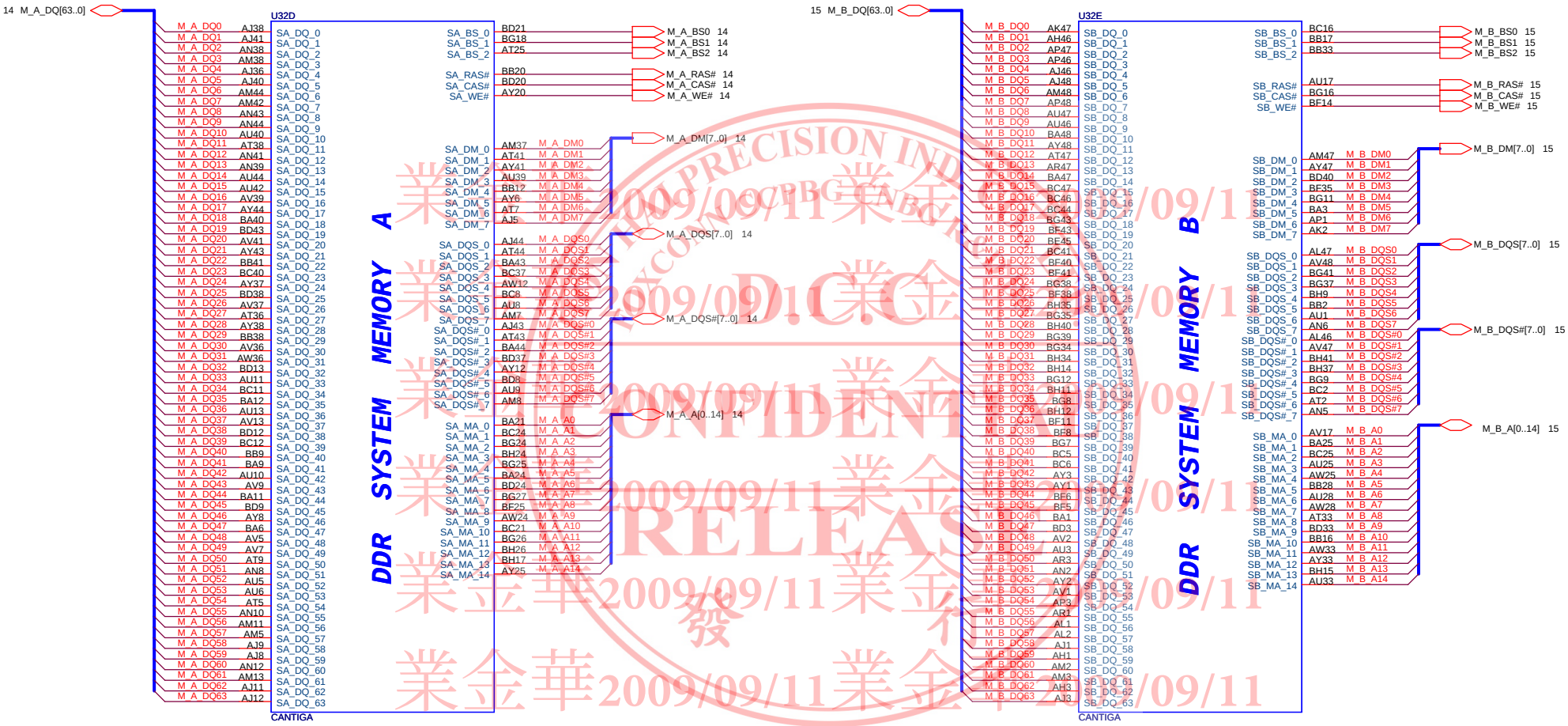

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Title	Cantiga (DDRIII) 4/7	
Size A3	Document Number M870-1-01	Rev 1.0
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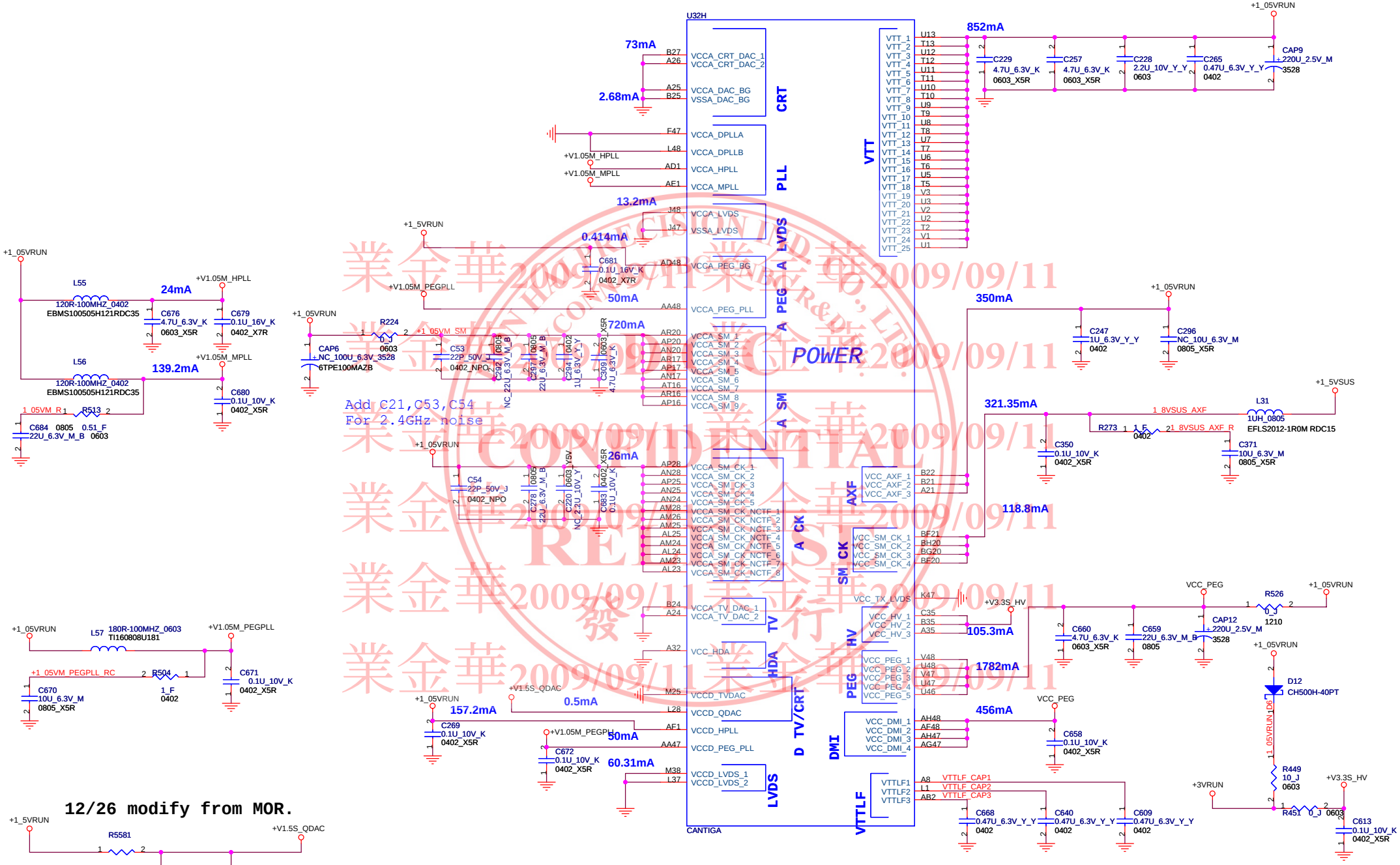

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Cantiga (POWER,VCC) 5/7	
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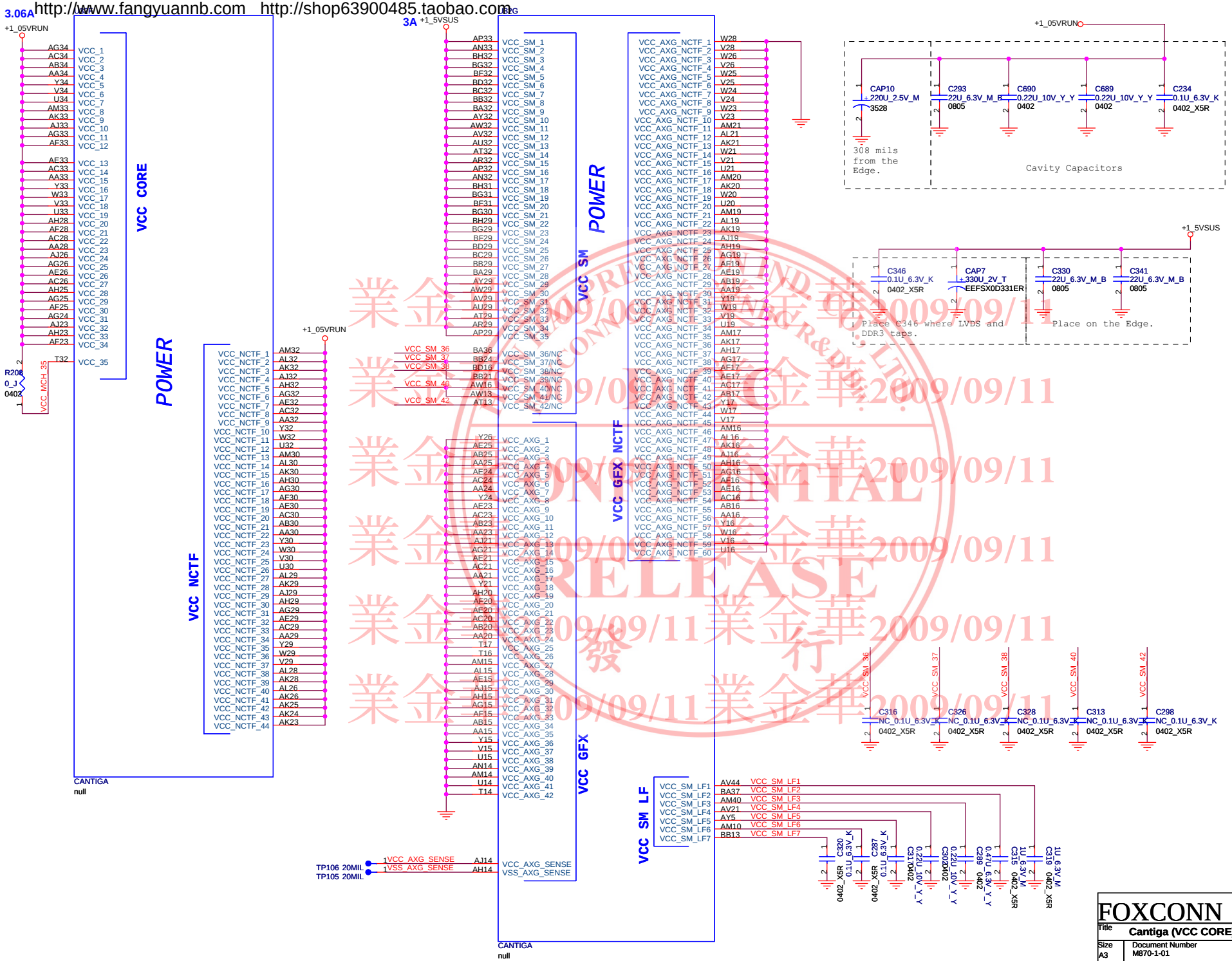

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Cantiga (VCC CORE) 6/7	
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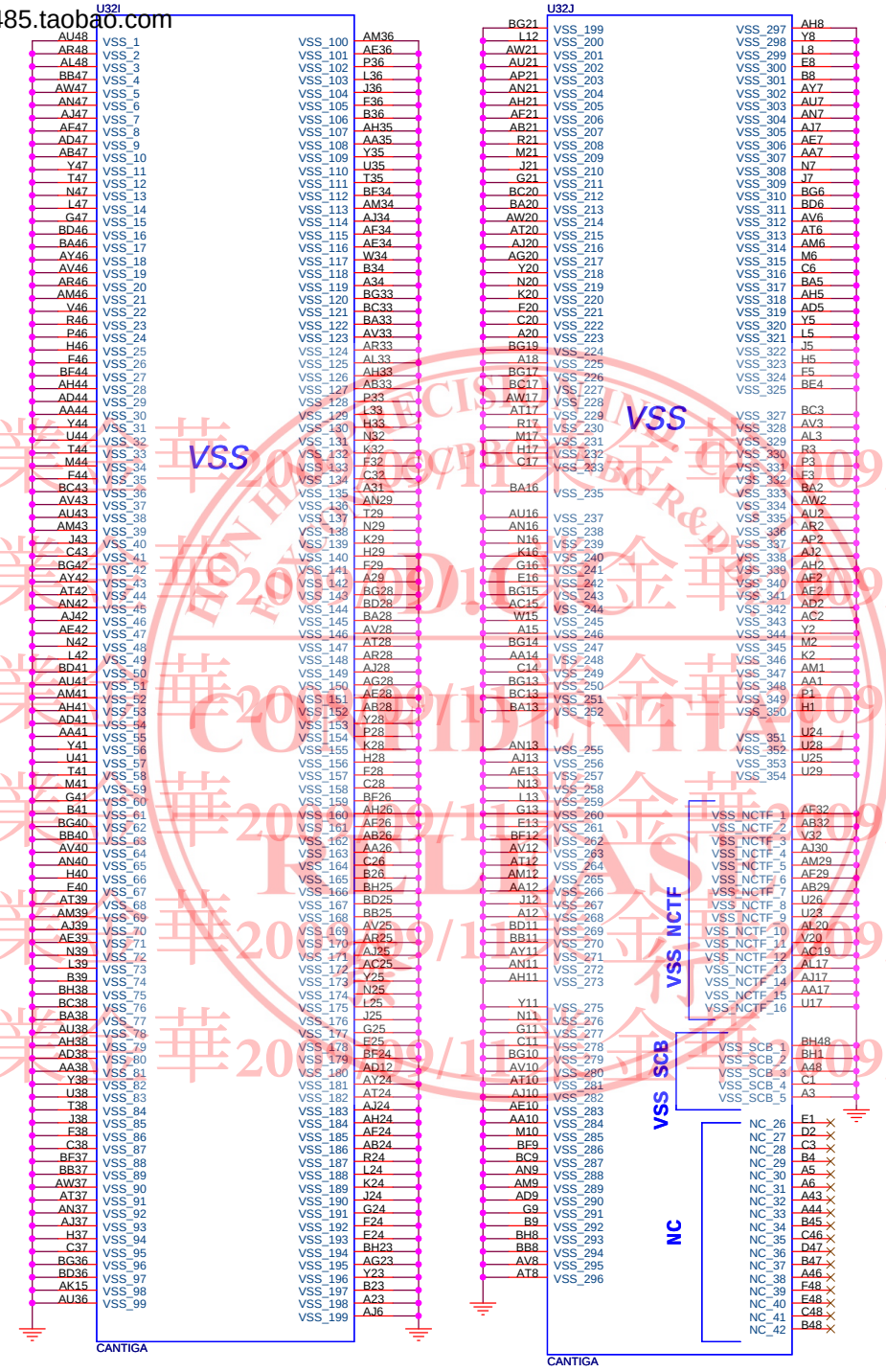

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Cantiga (VSS) 7/7	
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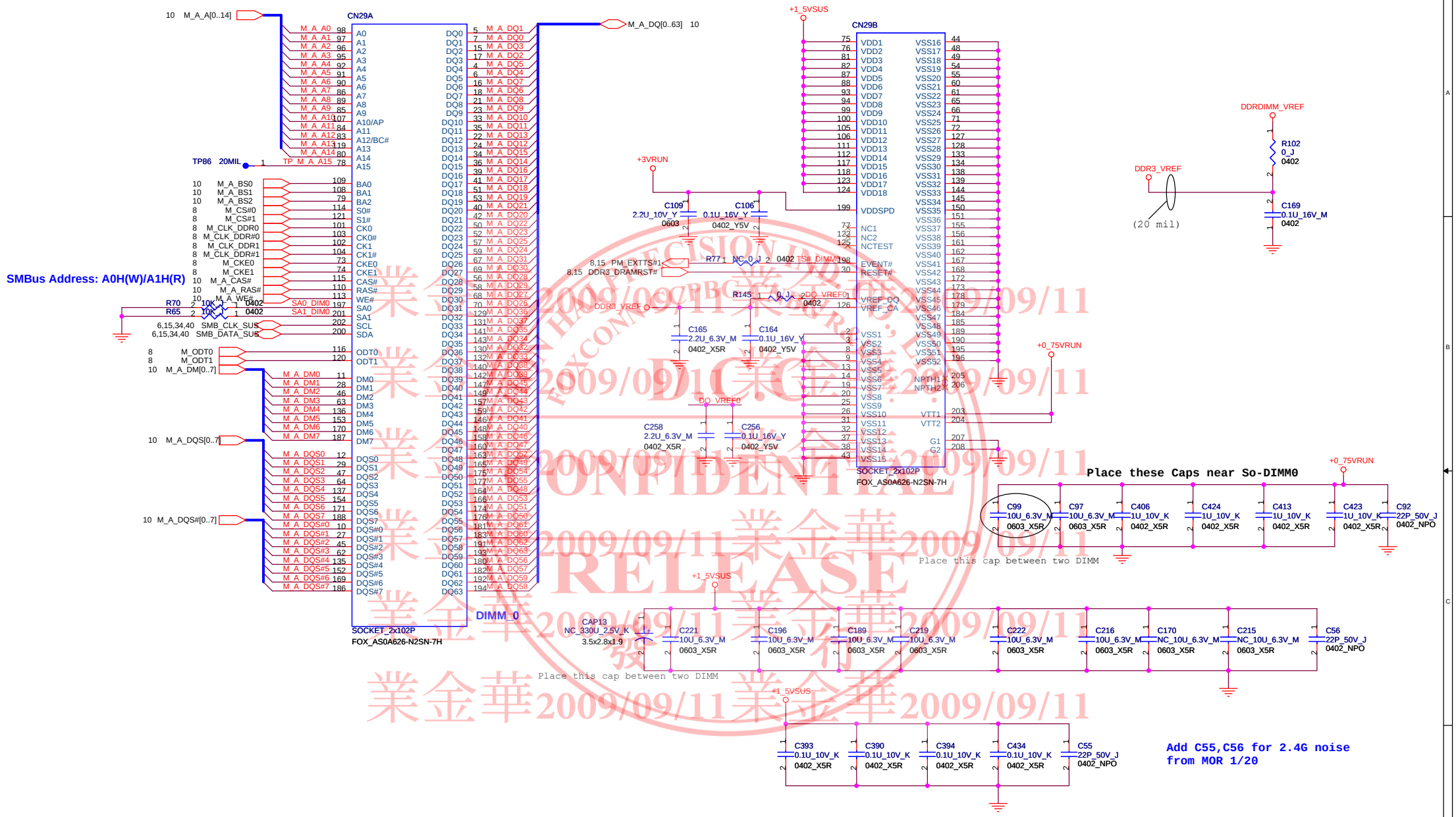

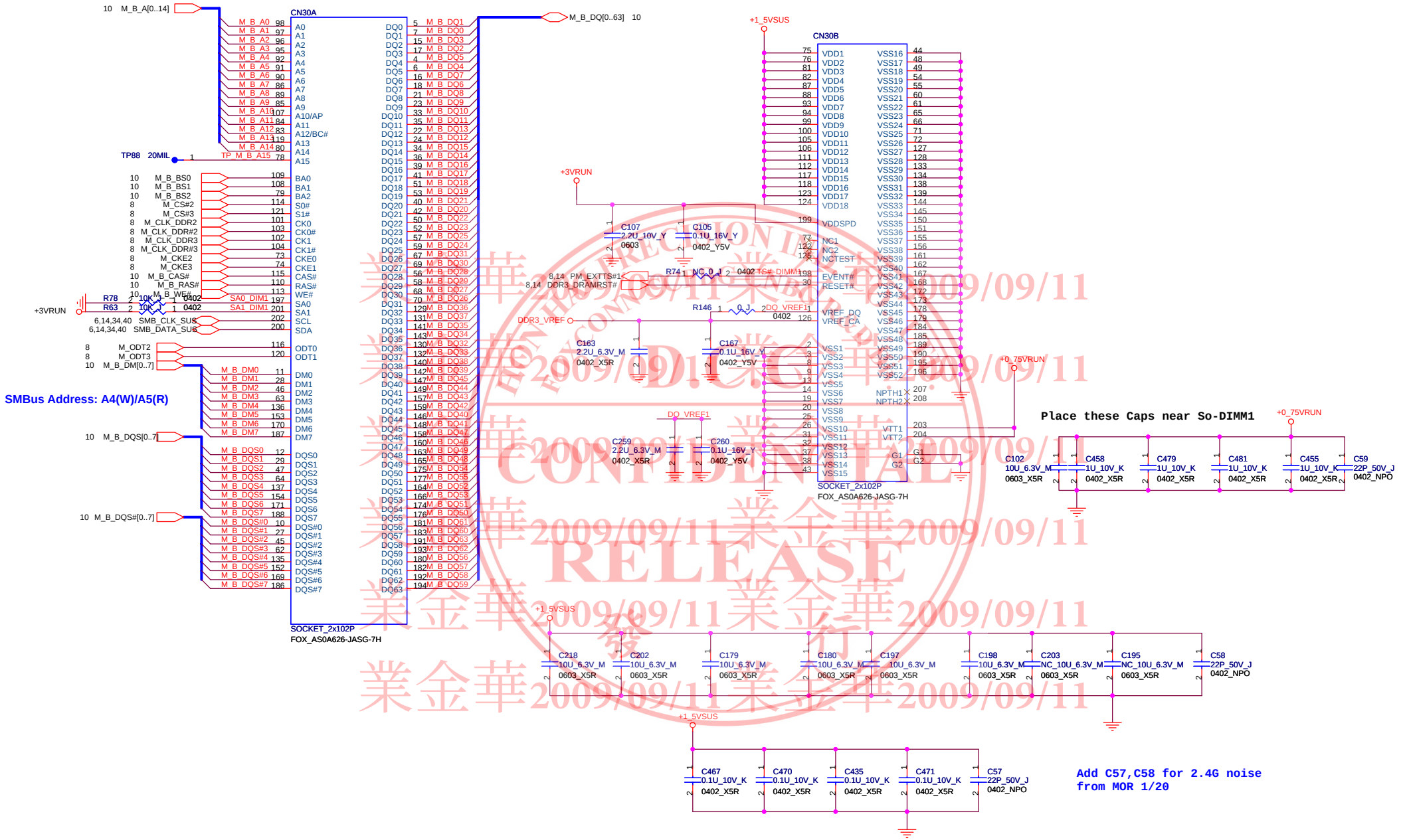

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Title	DDR(III)SO-DIMM_1	
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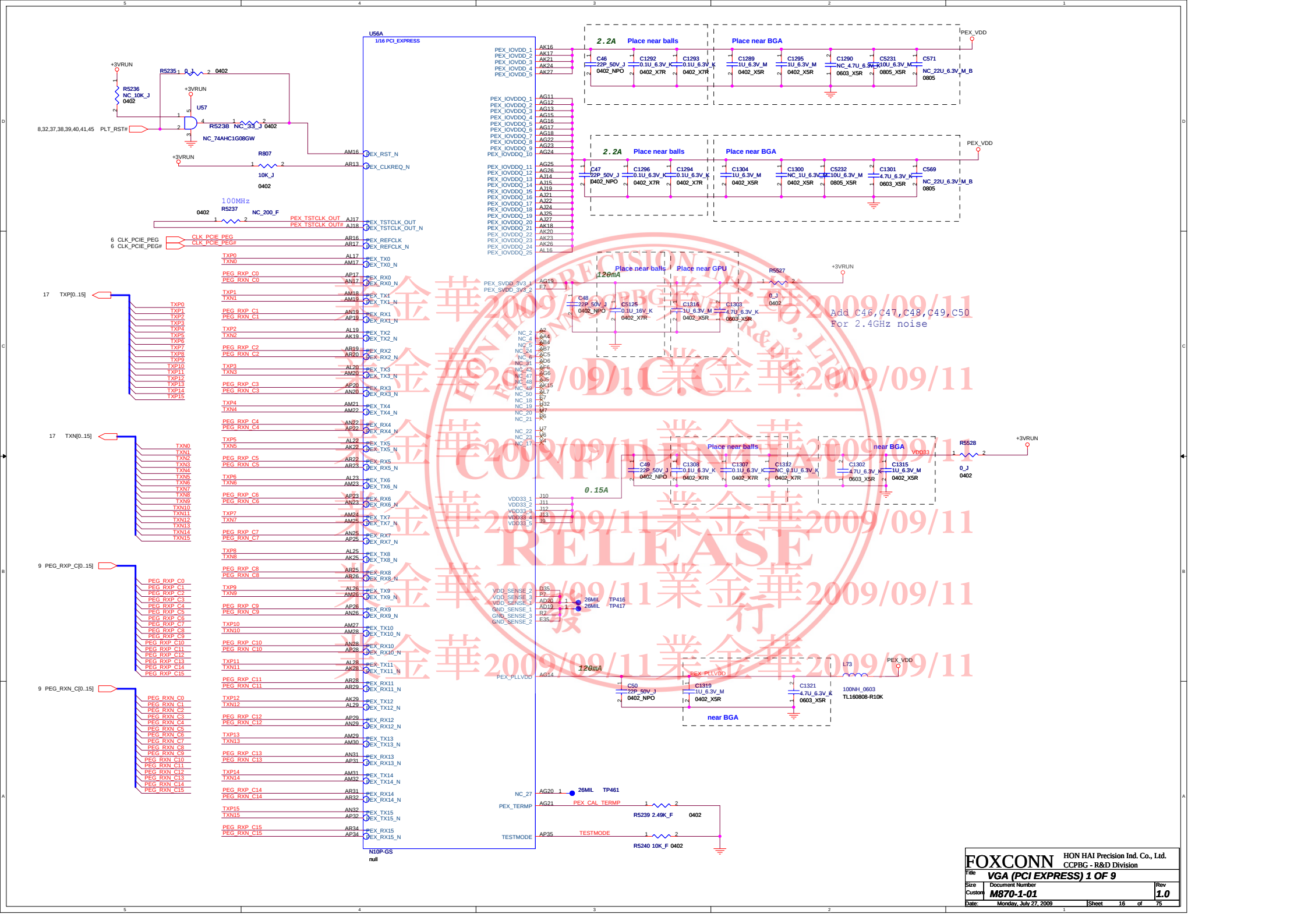

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division
Title	VGA (PCI EXPRESS) 1 OF 9
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Logical Strap bit Mapping

Resister values	Pull-up to VDD	Pull-down to GND
5KΩ	1000	0000
10KΩ	1001	0001
15KΩ	1010	0010
20KΩ	1011	0011
25KΩ	1100	0100
30KΩ	1101	0101
35KΩ	1110	0110
45KΩ	1111	0111

Strap Options

Physical Strapping pin	Power Rail	Logical Strapping pin3	Logical Strapping pin2	Logical Strapping pin1	Logical Strapping pin0
ROM_SI	+3VRUN	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
ROM_SO	+3VRUN	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE
ROM_SCLK	+3VRUN	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLL_EN_TERM
STRAP0	+3VRUN	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	+3VRUN	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
STRAP2	+3VRUN	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]

Refer to <GB1 Family Design Guide DG-03276-001_v01_secured>

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CPBG - R&D Division

Title: VGA (PCI-EXPRESS/STRAP) 2 OF 9

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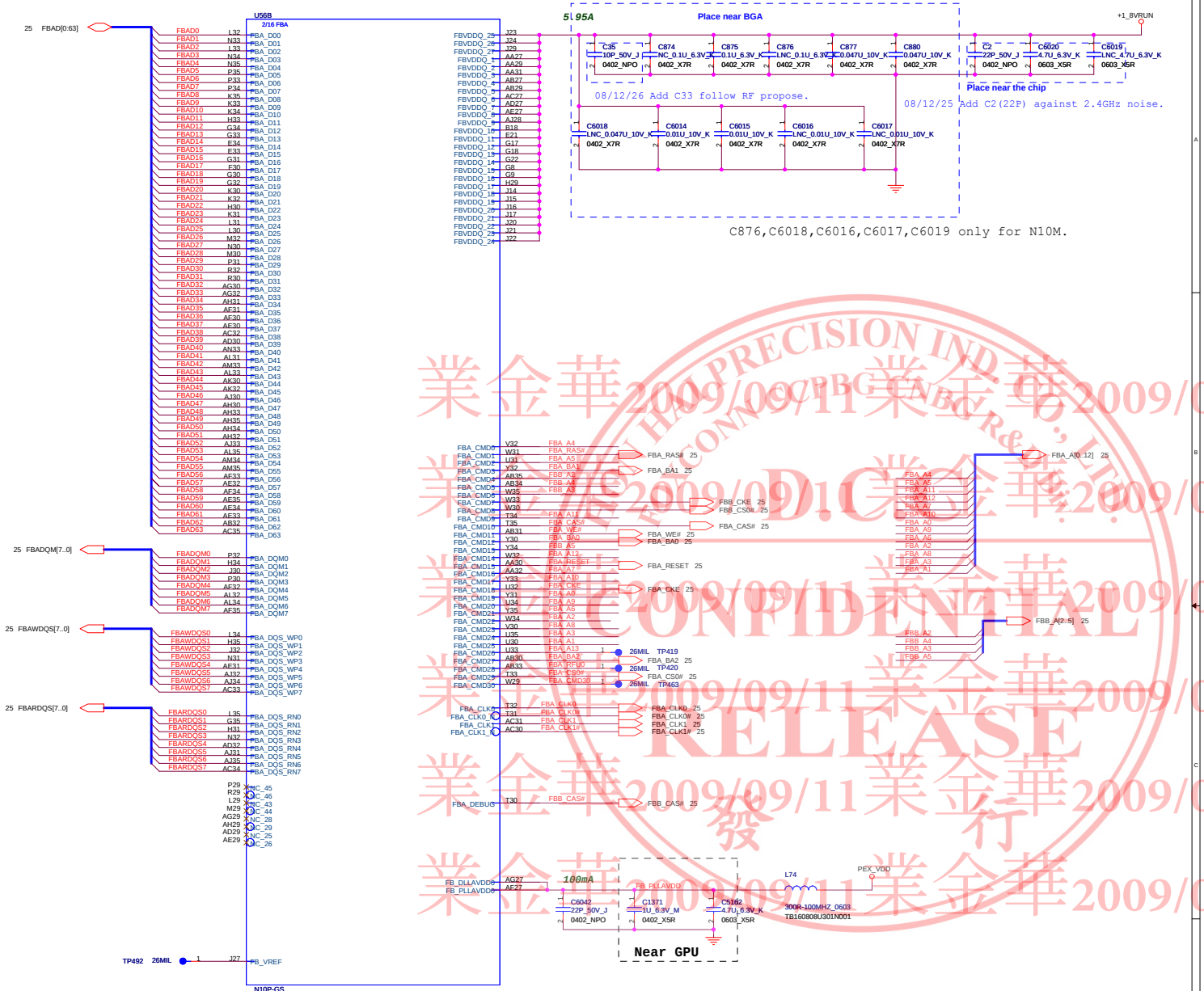

FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division	
Title	VGA(GDDR)# 3/9	
Size: Custom	Document Number: M870-1-01	Rev: 1.0
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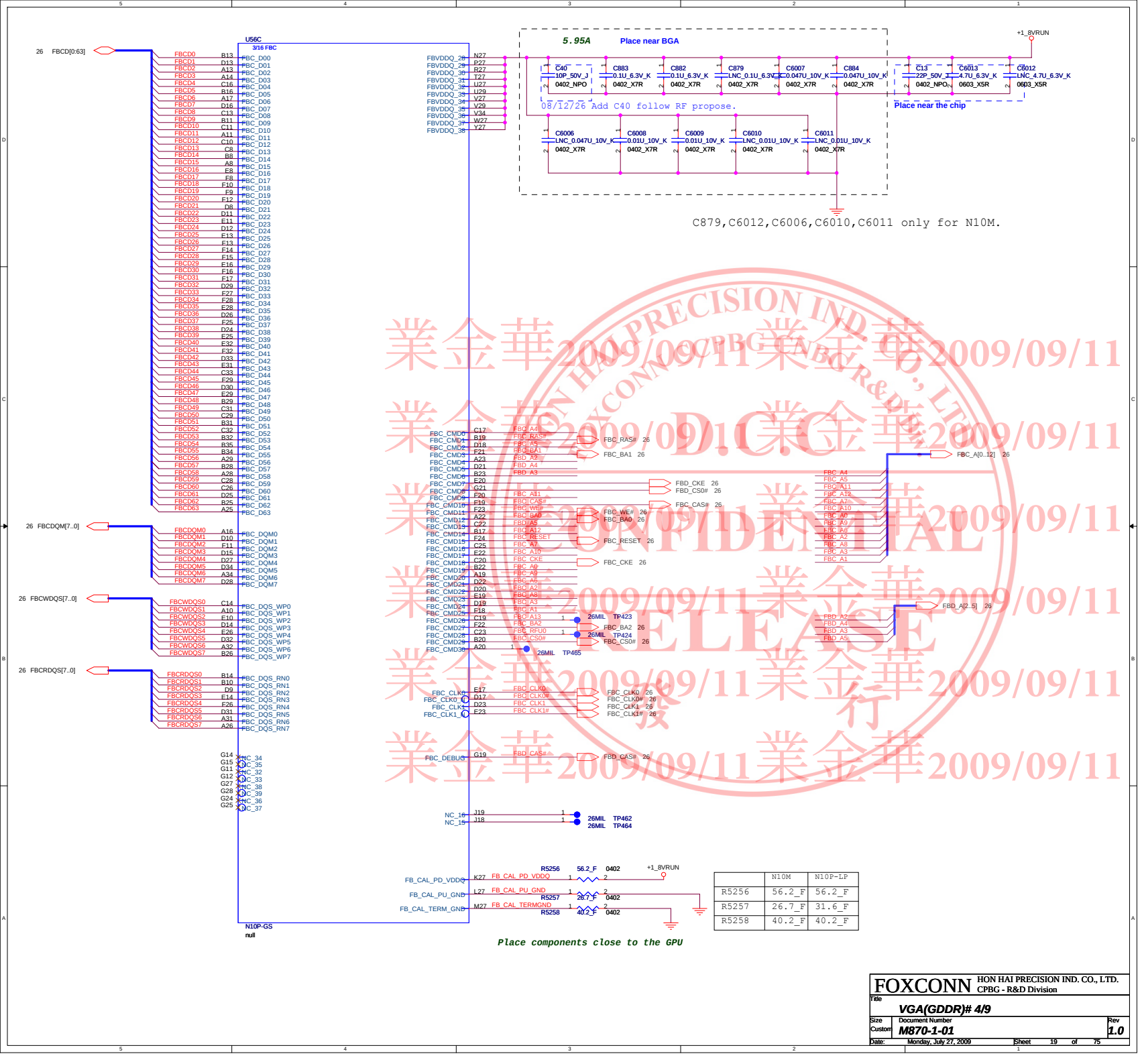

	N10M	N10P-LP
R5256	56.2_F	56.2_F
R5257	26.7_F	31.6_F
R5258	40.2_F	40.2_F

FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division
Title	VGA(GDDR)# 4/9
Size: Custom	Document Number: M870-1-01
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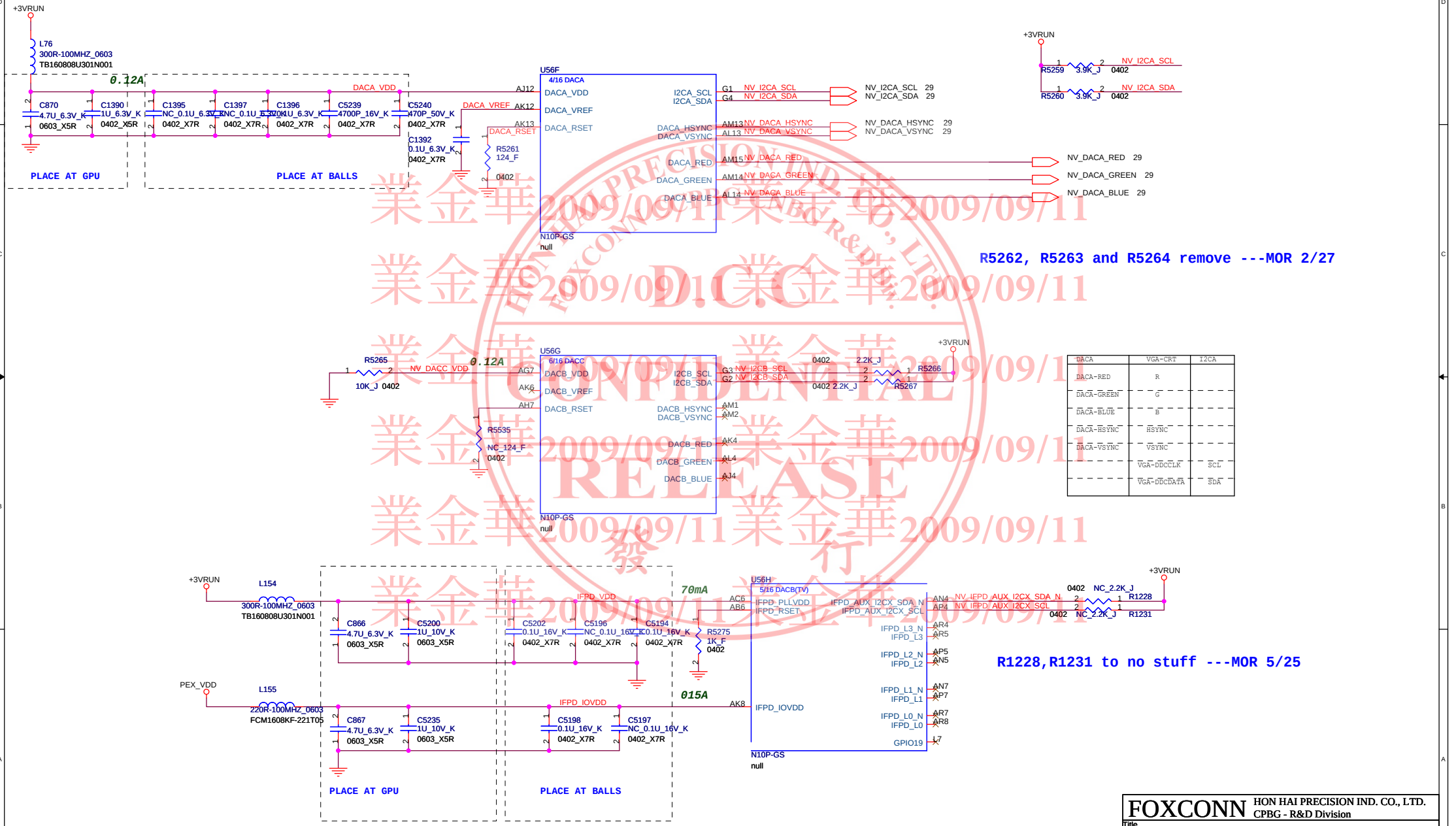
+3VRUN
L76
300R-100MHZ_0603
TB160808U301N001
0.12A
C870
4.7U_6.3V_K
0603_X5R
C1390
1U_6.3V_K
0402_X5R
C1395
NC_0.1U_6.3V_K
0402_X7R
C1397
NC_0.1U_6.3V_K
0402_X7R
C1396
1U_6.3V_K
0402_X7R
C5239
4700P_16V_K
0402_X7R
C5240
470P_50V_K
0402_X7R
C1392
0.1U_6.3V_K
0402_X7R
R5261
124_F
0402
DACA_VDD
DACA_VREF
DACA_RSET
AJ12
AK12
AK13
PLACE AT GPU
PLACE AT BALLS
U56F
4/16 DACA
DACA_VDD
DACA_VREF
DACA_RSET
I2CA_SCL
I2CA_SDA
DACA_HSYNC
DACA_VSYNC
DACA_RED
DACA_GREEN
DACA_BLUE
N10P-GS
null
G1 NV_I2CA_SCL
G4 NV_I2CA_SDA
AM13 NV_DACA_HSYNC
AL13 NV_DACA_VSYNC
AM15 NV_DACA_RED
AM14 NV_DACA_GREEN
AL14 NV_DACA_BLUE
NV_I2CA_SCL 29
NV_I2CA_SDA 29
NV_DACA_HSYNC 29
NV_DACA_VSYNC 29
NV_DACA_RED 29
NV_DACA_GREEN 29
NV_DACA_BLUE 29
+3VRUN
R5259 3.9K_J 0402 NV_I2CA_SCL
R5260 3.9K_J 0402 NV_I2CA_SDA
R5262, R5263 and R5264 remove ---MOR 2/27
U56G
6/16 DACC
DACB_VDD
DACB_VREF
DACB_RSET
I2CB_SCL
I2CB_SDA
DACB_HSYNC
DACB_VSYNC
DACB_RED
DACB_GREEN
DACB_BLUE
N10P-GS
null
R5265
10K_J 0402
NV_DACC_VDD
0.12A
AG7
AK6
AH7
R5535
NC_124_F
0402
G3 NV_I2CB_SCL
G2 NV_I2CB_SDA
AM1
AM2
AK4
AL4
AJ4
0402 2.2K_J
R5266
R5267
+3VRUN
DACA
VGA-CRT
I2CA
DACA-RED
R
DACA-GREEN
G
DACA-BLUE
B
DACA-HSYNC
HSYNC
DACA-VSYNC
VSYNC
VGA-DDCCLK
SCL
VGA-DDCDATA
SDA
+3VRUN
L154
300R-100MHZ_0603
TB160808U301N001
C866
4.7U_6.3V_K
0603_X5R
C5200
1U_10V_K
0603_X5R
C5202
0.1U_16V_K
0402_X7R
C5196
NC_0.1U_16V_K
0402_X7R
C5194
0.1U_16V_K
0402_X7R
R5275
1K_F
0402
IFPD_VDD
70mA
PEX_VDD
L155
220R-100MHZ_0603
FCM1608KF-221T05
C867
4.7U_6.3V_K
0603_X5R
C5235
1U_10V_K
0603_X5R
C5198
0.1U_16V_K
0402_X7R
C5197
NC_0.1U_16V_K
0402_X7R
IFPD_IOVDD
015A
AK8
PLACE AT GPU
PLACE AT BALLS
U56H
5/16 DACB(TV)
IFPD_PLLVDD
IFPD_RSET
IFPD_IOVDD
IFPD_AUX_I2CX_SDA_N
IFPD_AUX_I2CX_SCL
IFPD_L3_N
IFPD_L3
IFPD_L2_N
IFPD_L2
IFPD_L1_N
IFPD_L1
IFPD_L0_N
IFPD_L0
GPIO19
N10P-GS
null
AC6
AB6
AN4 NV_IFPD_AUX_I2CX_SDA_N
AP4 NV_IFPD_AUX_I2CX_SCL
AR4
AR5
AP5
AN5
AN7
AP7
AR7
AR8
L7
+3VRUN
0402 NC_2.2K_J R1228
0402 NC_2.2K_J R1231
R1228,R1231 to no stuff ---MOR 5/25
FOXCONN
HON HAI PRECISION IND. CO., LTD.
CPBG - R&D Division
Title
VGA (CRT)5/9
Size
A3
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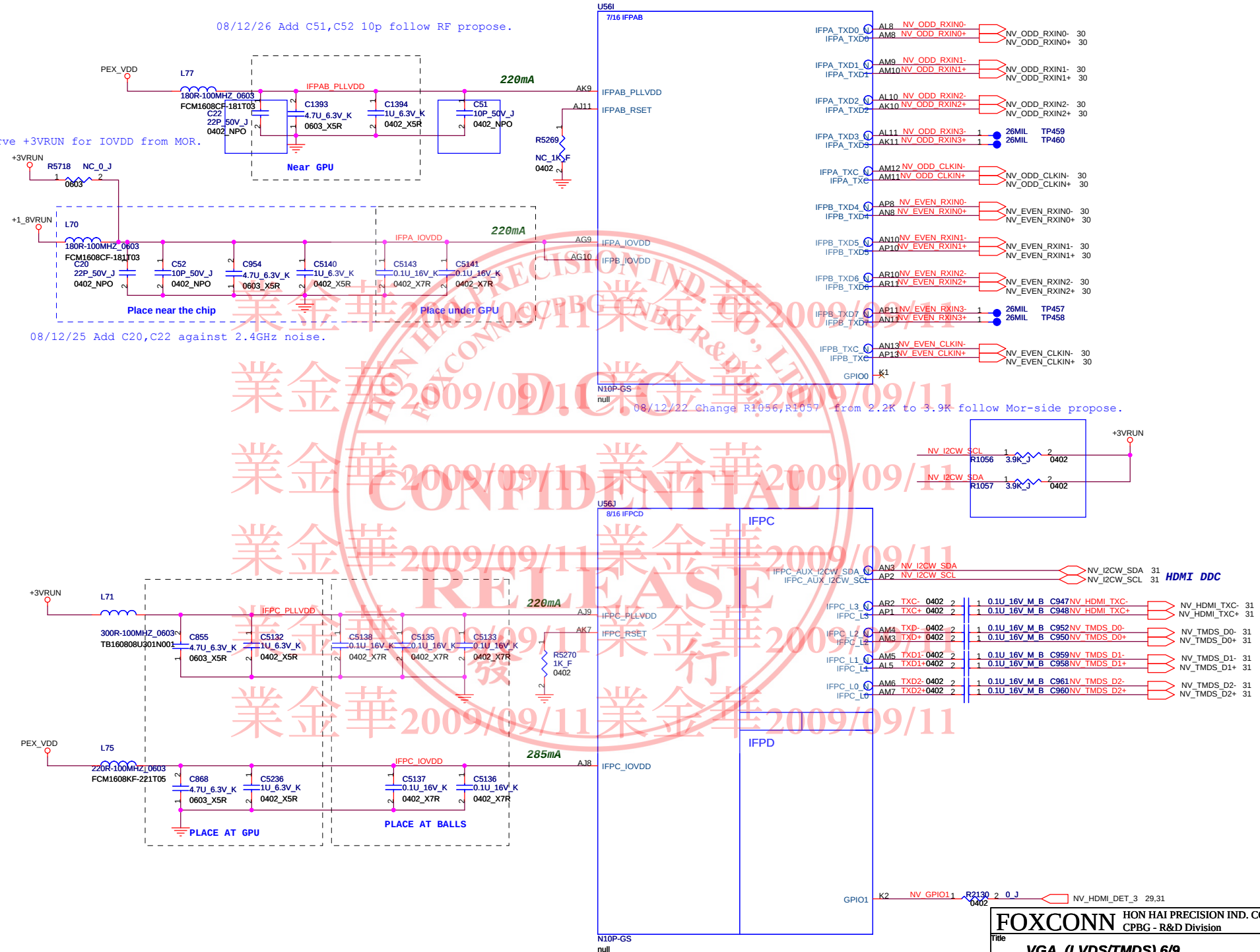
08/12/26 Add C51,C52 10p follow RF propose.

09/02/05 Reserve +3VRUN for IOVDD from MOR.

08/12/25 Add C20,C22 against 2.4GHz noise.

08/12/22 Change R1056,R1057 from 2.2K to 3.9K follow Mor-side propose.



FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division		
Title	VGA (LVDS/TMDS) 6/9		
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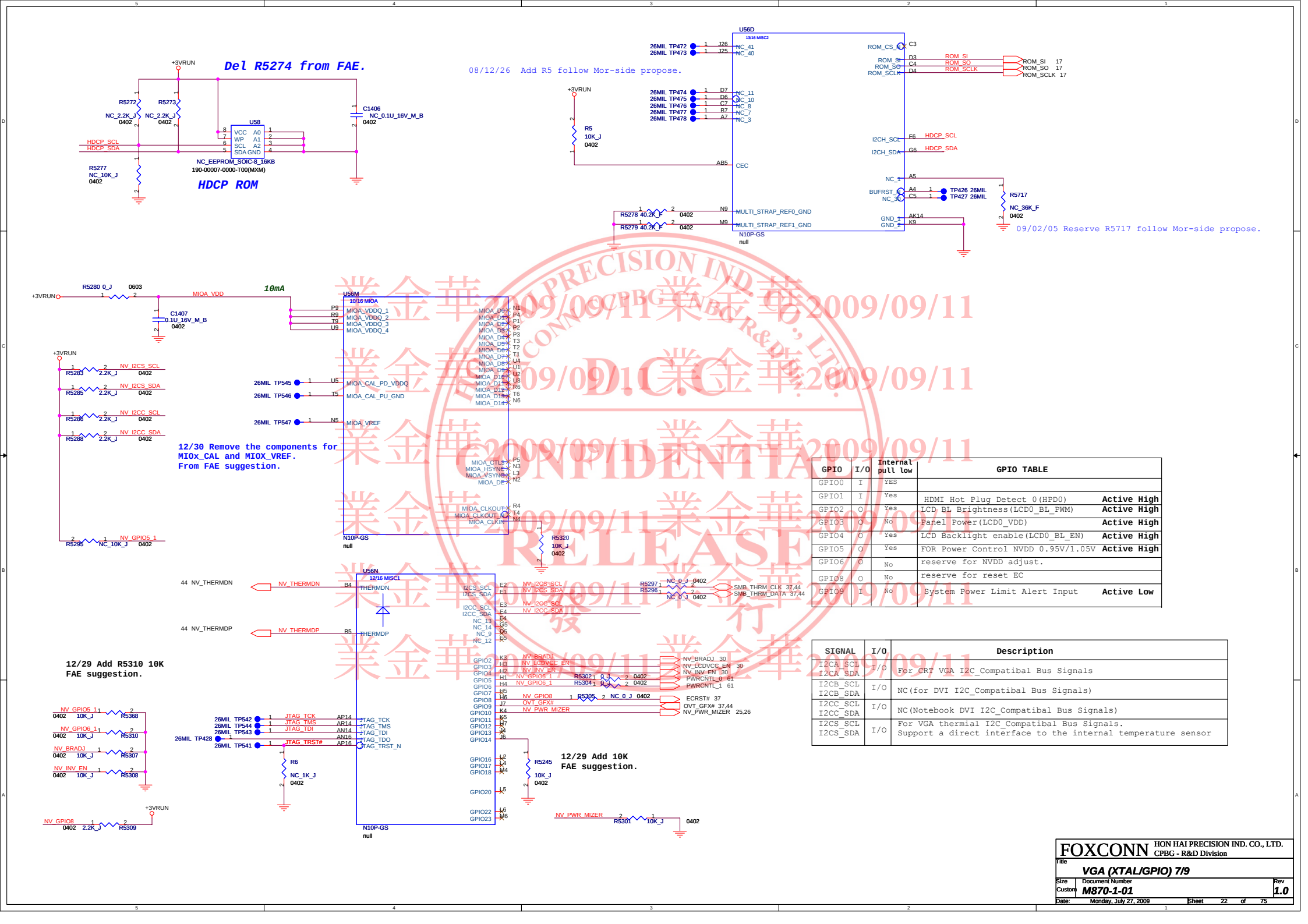

GPIO	I/O	Internal pull low	GPIO TABLE	
GPIO0	I	YES		
GPIO1	I	Yes	HDMI Hot Plug Detect 0(HPD0)	Active High
GPIO2	O	Yes	LCD BL Brightness(LCD0_BL_PWM)	Active High
GPIO3	O	No	Panel Power(LCD0_VDD)	Active High
GPIO4	O	Yes	LCD Backlight enable(LCD0_BL_EN)	Active High
GPIO5	O	Yes	FOR Power Control NVDD 0.95V/1.05V	Active High
GPIO6	O	No	reserve for NVDD adjust.	
GPIO8	O	No	reserve for reset EC	
GPIO9	I	No	System Power Limit Alert Input	Active Low

SIGNAL	I/O	Description
I2CA_SCL I2CA_SDA	I/O	For CRT VGA I2C_Compatibal Bus Signals
I2CB_SCL I2CB_SDA	I/O	NC(for DVI I2C_Compatibal Bus Signals)
I2CC_SCL I2CC_SDA	I/O	NC(Notebook DVI I2C_Compatibal Bus Signals)
I2CS_SCL I2CS_SDA	I/O	For VGA thermial I2C_Compatibal Bus Signals. Support a direct interface to the internal temperature sensor

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

Title: VGA (XTAL/GPIO) 7/9

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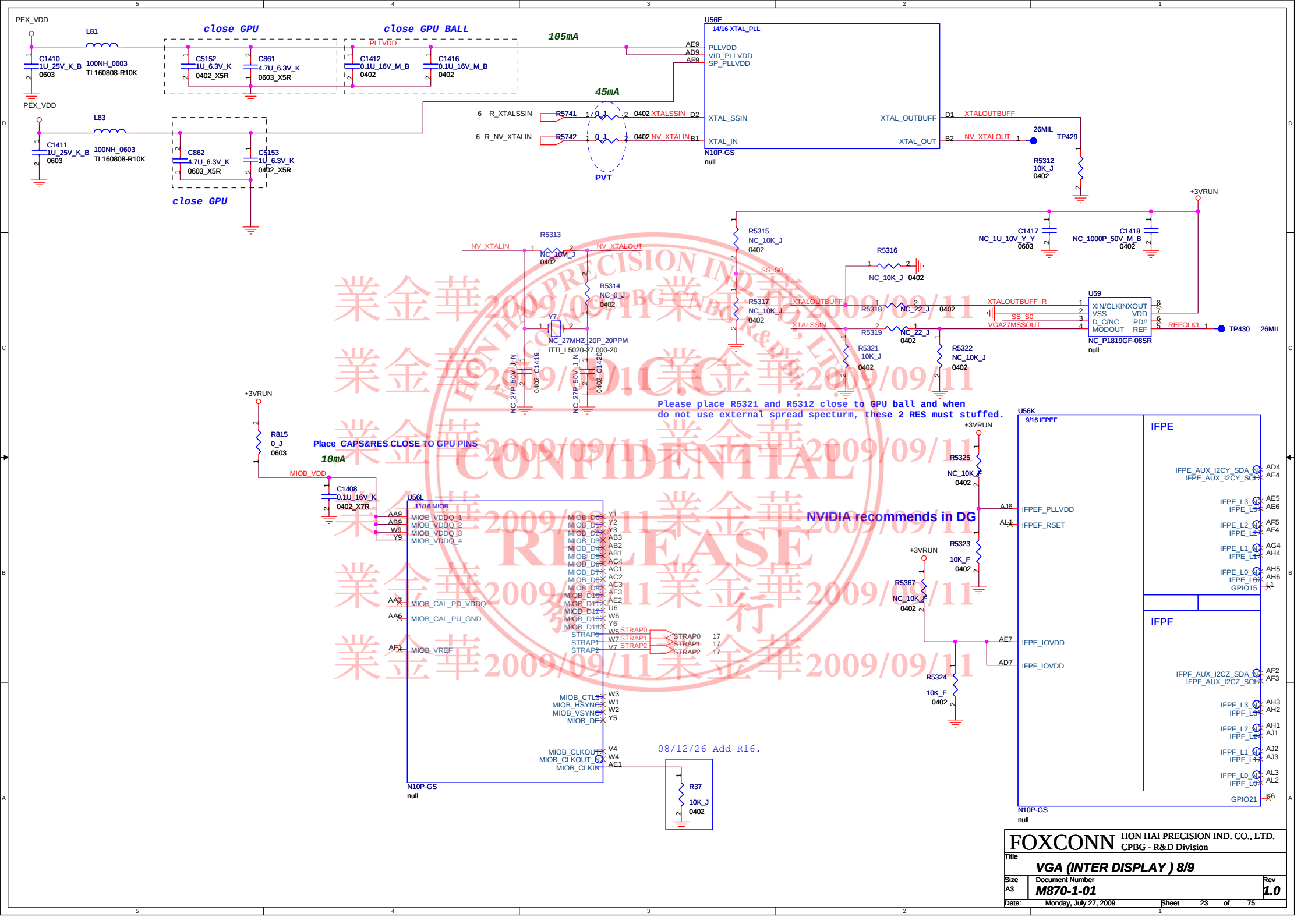
PEX_VDD
L81
close GPU
close GPU BALL
105mA
PLLVDD
C1410 1U_25V_K_B 0603
100NH_0603 TL160808-R10K
C5152 1U_6.3V_K 0402_X5R
C861 4.7U_6.3V_K 0603_X5R
C1412 0.1U_16V_M_B 0402
C1416 0.1U_16V_M_B 0402
U56E
14/16 XTAL_PLL
AE9 PLLVDD
AD9 VID_PLLVDD
AF9 SP_PLLVDD
45mA
R_XTALSSIN
R5741 0_J 0402 XTALSSIN
R_NV_XTALIN
R5742 0_J 0402 NV_XTALIN
PVT
XTAL_SSIN
XTAL_IN
XTAL_OUTBUFF
XTAL_OUT
XTALOUTBUFF
NV_XTALOUT
26MIL
TP429
R5312 10K_J 0402
N10P-GS
null
PEX_VDD
L83
C1411 1U_25V_K_B 0603
100NH_0603 TL160808-R10K
C862 4.7U_6.3V_K 0603_X5R
C5153 1U_6.3V_K 0402_X5R
close GPU
+3VRUN
R5313
NV_XTALIN
NC_10M_J 0402
NV_XTALOUT
R5314 NC_0_J 0402
Y7
NC_27MHZ_20P_20PPM
ITTI_L5020-27.000-20
NC_27P_50V_J_N 0402 C1419
NC_27P_50V_J_N 0402 C1420
R5315 NC_10K_J 0402
SS_S0
R5316 NC_10K_J 0402
R5317 NC_10K_J 0402
XTALOUTBUFF
XTALSSIN
R5318 NC_22_J 0402
R5319 NC_22_J 0402
R5321 10K_J 0402
R5322 NC_10K_J 0402
C1417 NC_1U_10V_Y_Y 0603
C1418 NC_1000P_50V_M_B 0402
U59
XIN/CLKIN XOUT
VSS VDD
D_C/NC PD#
MODOUT REF
NC_P1819GF-08SR
null
XTALOUTBUFF_R
SS_S0
VGA27MSSOUT
REFCLK1
TP430
26MIL
Please place R5321 and R5312 close to GPU ball and when do not use external spread specturm, these 2 RES must stuffed.
+3VRUN
R815 0_J 0603
Place CAPS&RES CLOSE TO GPU PINS
10mA
MIOB_VDD
C1408 0.1U_16V_K 0402_X7R
U56L
11/16 MIOB
MIOB_VDDQ_1
MIOB_VDDQ_2
MIOB_VDDQ_3
MIOB_VDDQ_4
MIOB_CAL_PD_VDDQ
MIOB_CAL_PU_GND
MIOB_VREF
MIOB_D0
MIOB_D1
MIOB_D2
MIOB_D3
MIOB_D4
MIOB_D5
MIOB_D6
MIOB_D7
MIOB_D8
MIOB_D9
MIOB_D10
MIOB_D11
MIOB_D12
MIOB_D13
MIOB_D14
STRAP0
STRAP1
STRAP2
MIOB_CTL3
MIOB_HSYNC
MIOB_VSYNC
MIOB_DE
MIOB_CLKOUT
MIOB_CLKOUT_N
MIOB_CLKIN
08/12/26 Add R16.
R37 10K_J 0402
N10P-GS
null
NVIDIA recommends in DG
U56K
9/16 IFPEF
IFPE
IFPF
R5325 NC_10K_F 0402
R5323 10K_F 0402
R5367 NC_10K_F 0402
R5324 10K_F 0402
IFPEF_PLLVDD
IFPEF_RSET
IFPE_IOVDD
IFPF_IOVDD
IFPE_AUX_I2CY_SDA
IFPE_AUX_I2CY_SCL
IFPE_L3_N
IFPE_L3_P
IFPE_L2_N
IFPE_L2_P
IFPE_L1_N
IFPE_L1_P
IFPE_L0_N
IFPE_L0_P
GPIO15
IFPF_AUX_I2CZ_SDA
IFPF_AUX_I2CZ_SCL
IFPF_L3_N
IFPF_L3_P
IFPF_L2_N
IFPF_L2_P
IFPF_L1_N
IFPF_L1_P
IFPF_L0_N
IFPF_L0_P
GPIO21
N10P-GS
null
FOXCONN
HON HAI PRECISION IND. CO., LTD.
CPBG - R&D Division
Title
VGA (INTER DISPLAY) 8/9
Size A3
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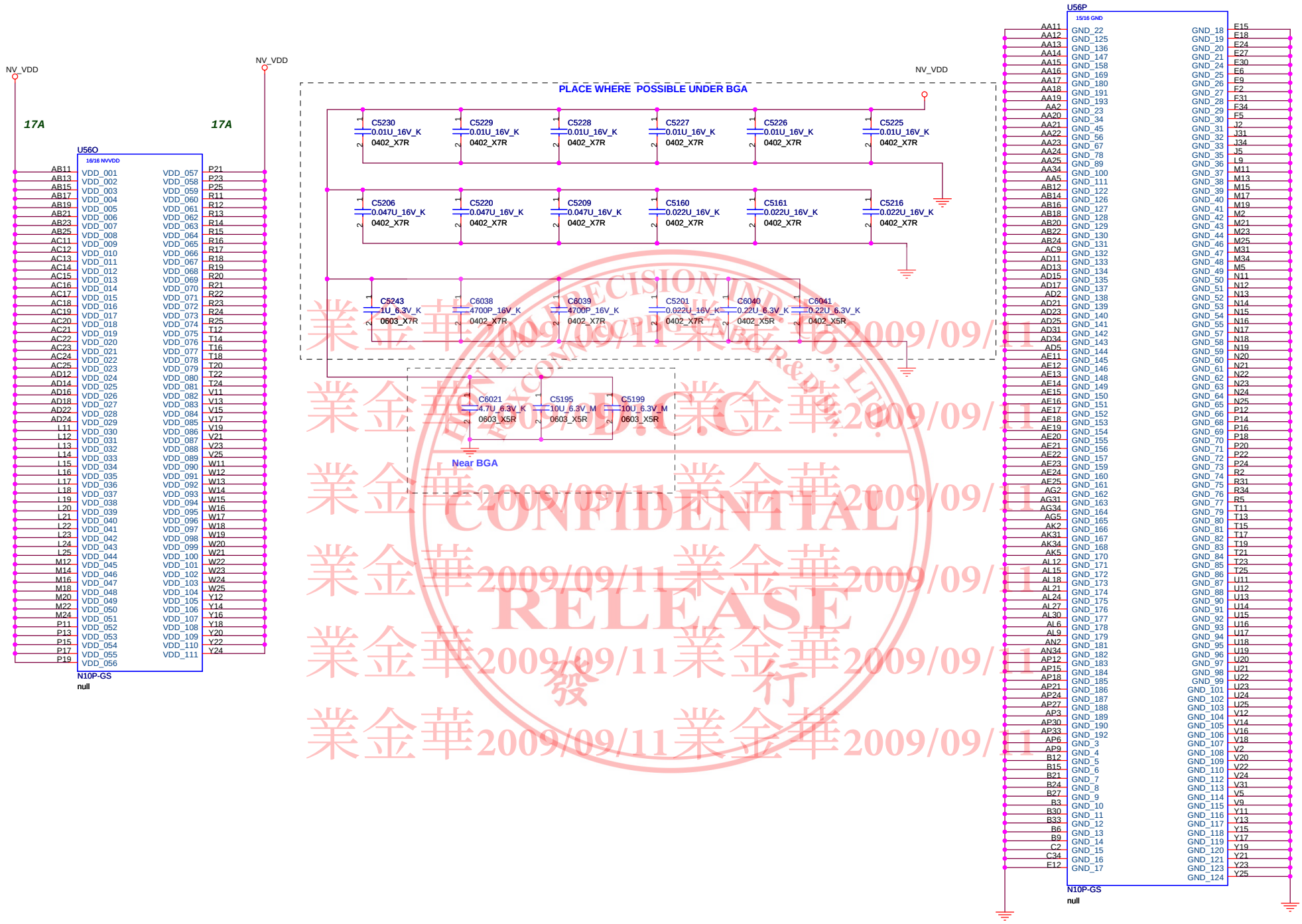

FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division	
Title	VGA(POWER/GROUND) 9/9	
Size A3	Document Number M870-1-01	Rev 1.0
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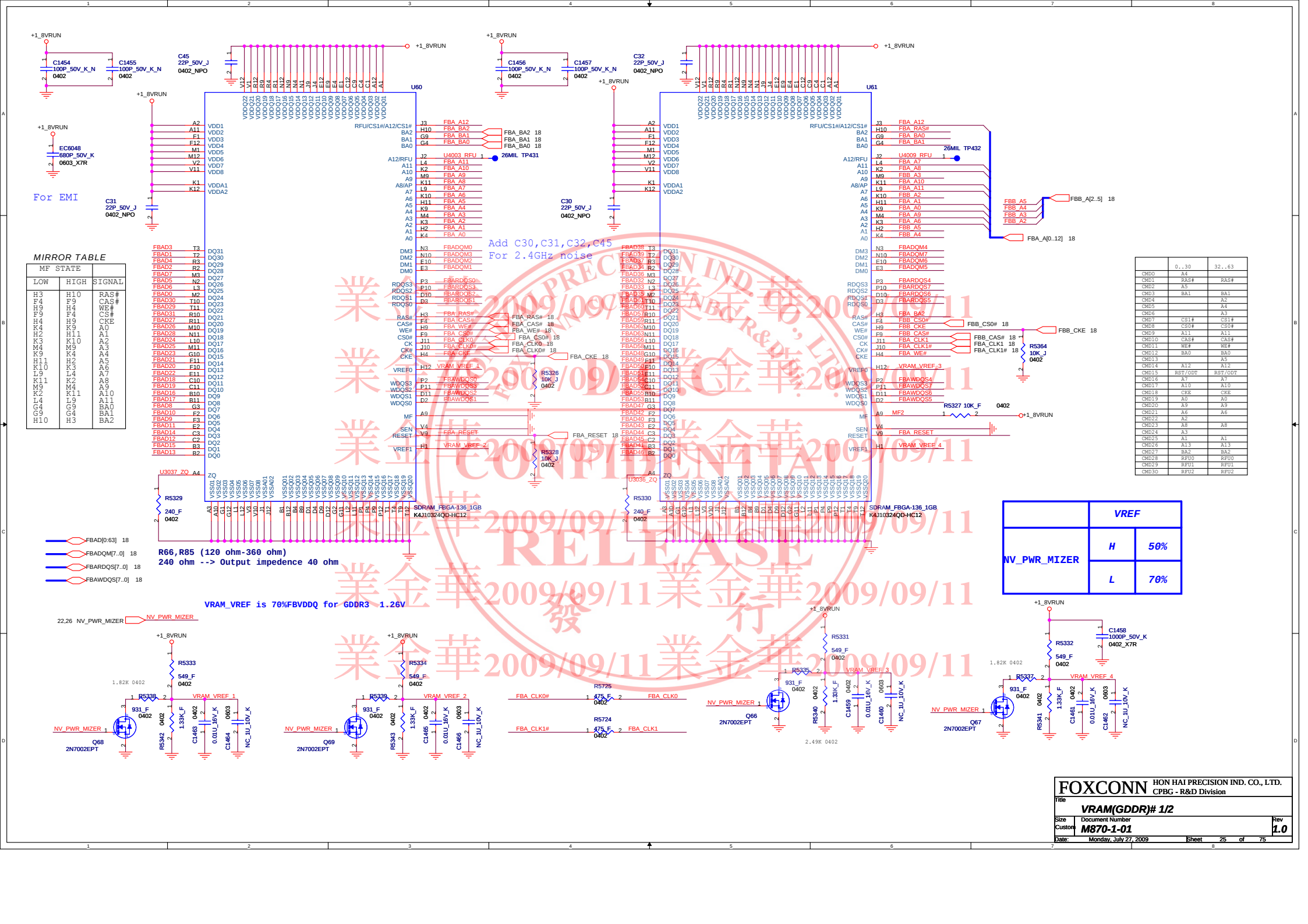
For EMI
Add C30,C31,C32,C45
For 2.4GHz noise
MIRROR TABLE
MF STATE
LOW HIGH SIGNAL
H3 H10 RAS#
F4 F9 CAS#
H9 H4 WE#
F9 F4 CS#
H4 H9 CKE
K4 K9 A0
H2 H11 A1
K3 K10 A2
M4 M9 A3
K9 K4 A4
H11 H2 A5
K10 K3 A6
L9 L4 A7
K11 K2 A8
M9 M4 A9
K2 K11 A10
L4 L9 A11
G4 G9 BA0
G9 G4 BA1
H10 H3 BA2
R66,R85 (120 ohm-360 ohm)
240 ohm --> Output impedence 40 ohm
VRAM_VREF is 70%FBVDDQ for GDDR3 1.26V
NV_PWR_MIZER
VREF
H 50%
L 70%
SDRAM_FBGA-136_1GB
K4J10324QD-HC12
Q66 2N7002EPT
Q67 2N7002EPT
Q68 2N7002EPT
Q69 2N7002EPT
FOXCONN
HON HAI PRECISION IND. CO., LTD.
CPBG - R&D Division
VRAM(GDDR)# 1/2
M870-1-01
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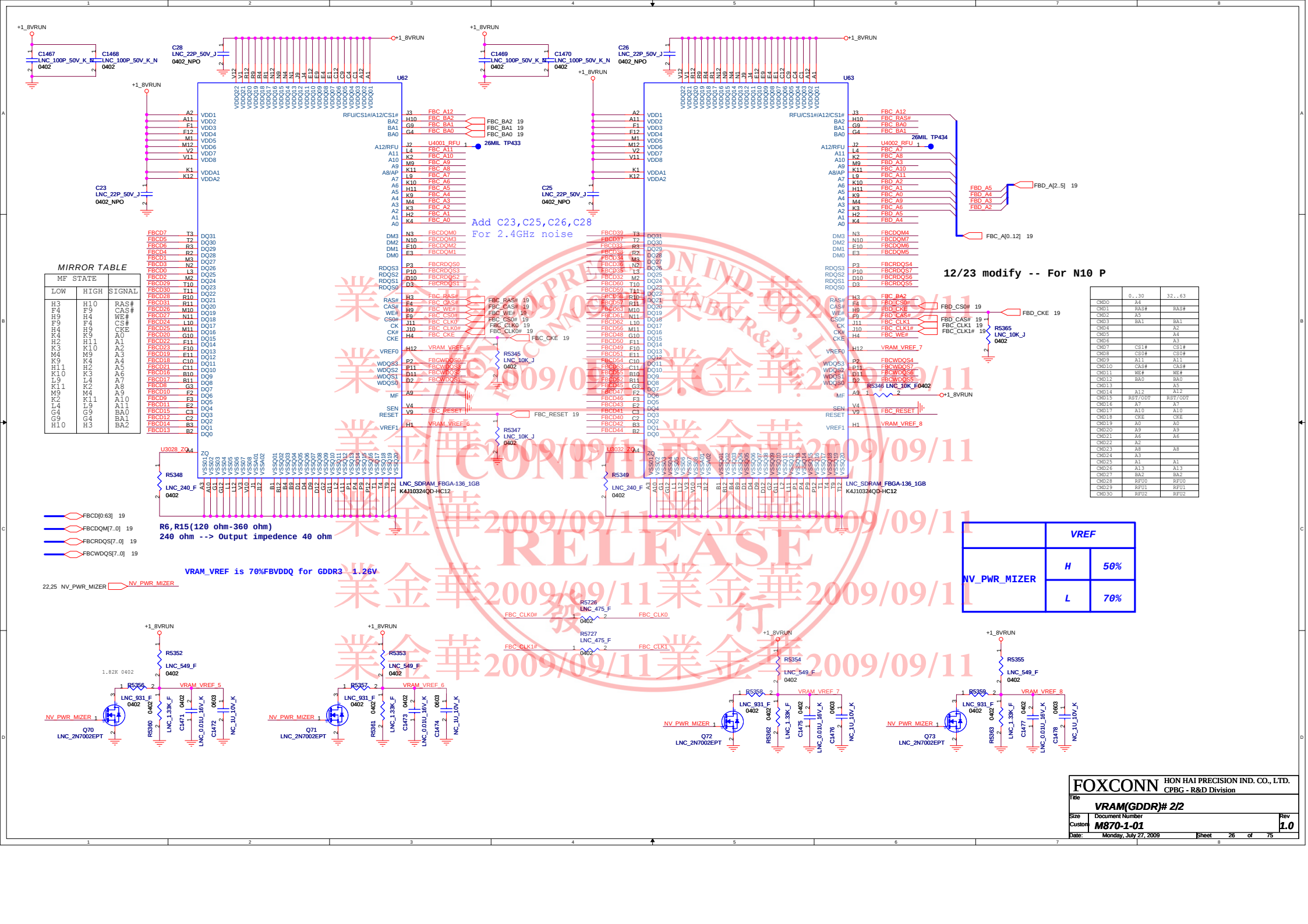
MIRROR TABLE
MF STATE
LOW HIGH SIGNAL
H3 H10 RAS#
F4 F9 CAS#
H9 M4 WE#
F9 F4 CS#
H4 H9 CKE
K4 K9 A0
H2 H11 A1
K3 K10 A2
M4 M9 A3
K9 K4 A4
H11 H2 A5
K10 K3 A6
L9 L4 A7
K11 K2 A8
M9 M4 A9
K2 K11 A10
L4 L9 A11
G4 G9 BA0
G9 G4 BA1
H10 H3 BA2
U62
U63
Add C23,C25,C26,C28
For 2.4GHz noise
12/23 modify -- For N10 P
R6,R15(120 ohm-360 ohm)
240 ohm --> Output impedence 40 ohm
VRAM_VREF is 70%FBVDDQ for GDDR3 1.26V
VREF
NV_PWR_MIZER
H 50%
L 70%
RELEASE
FOXCONN
HON HAI PRECISION IND. CO., LTD.
CPBG - R&D Division
Title
VRAM(GDDR)# 2/2
Size Custom
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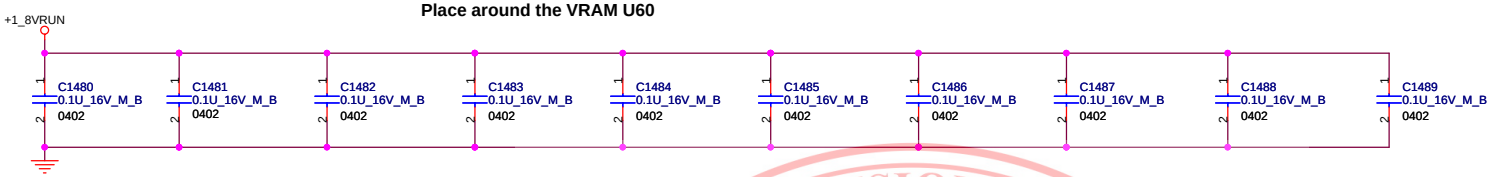
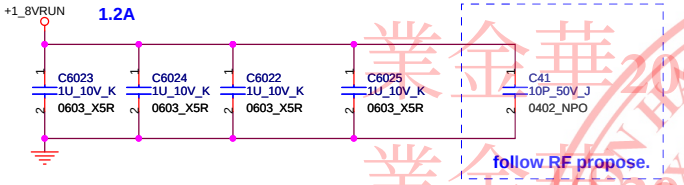
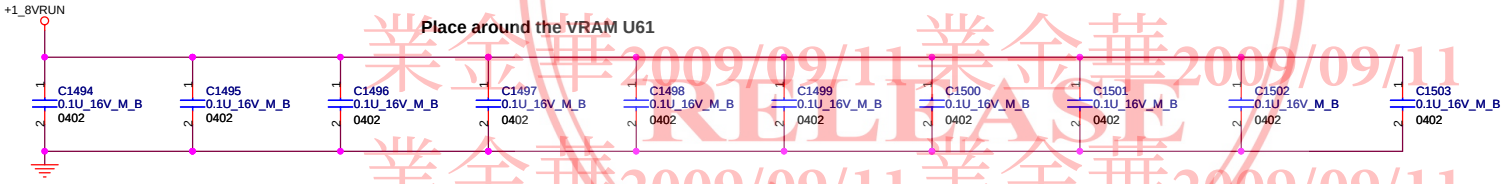
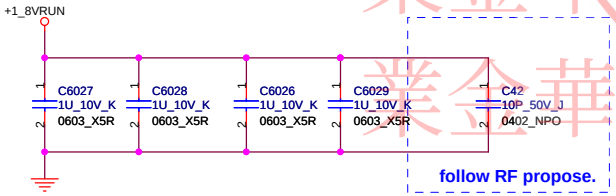
Place around the VRAM U60





Place around the VRAM U61





FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division	
Title: VRAM (POWERBYPASS) 1 OF 2		
Size: A3	Document Number: M870-1-01	Rev: 1.0
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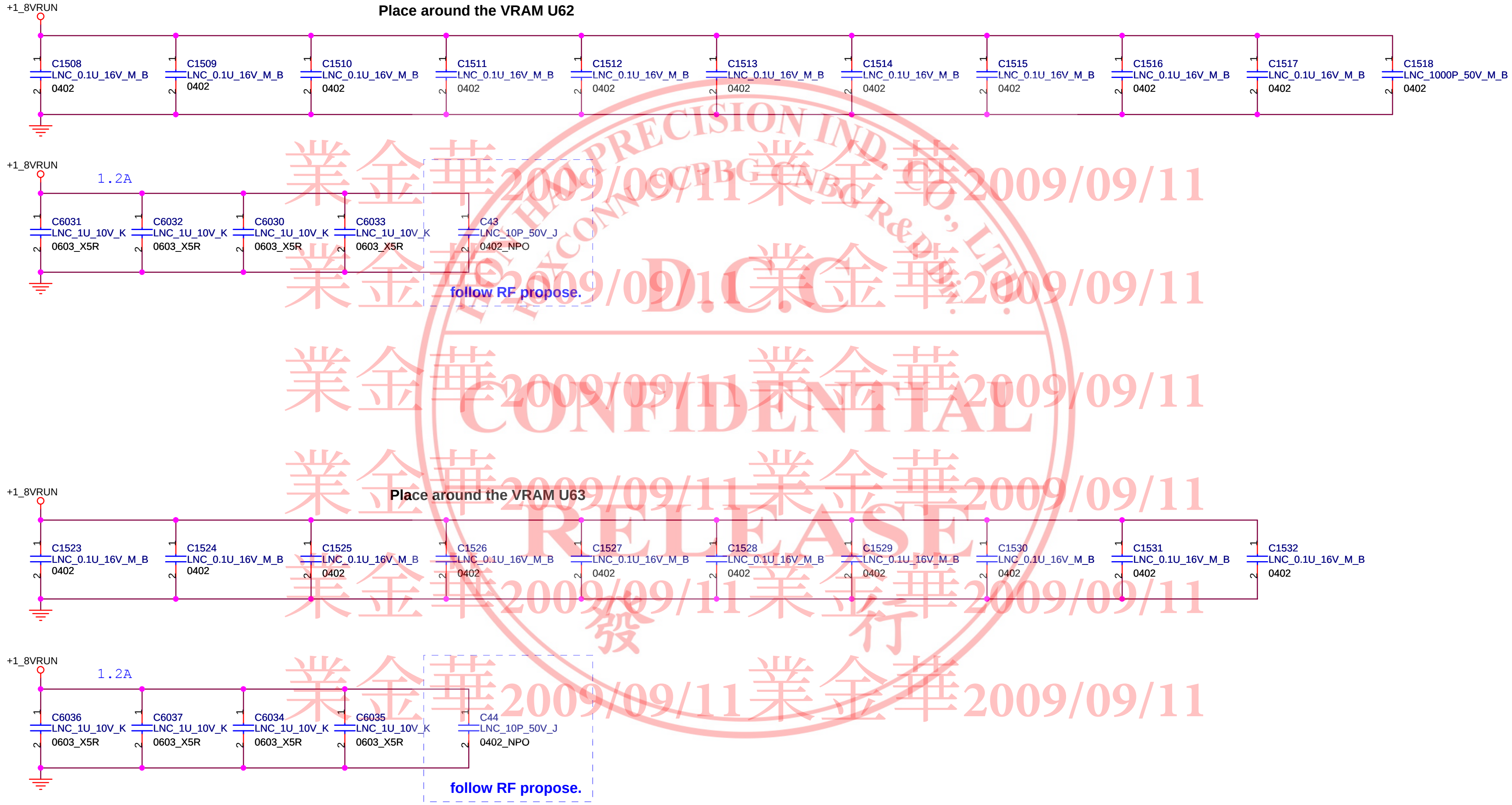

FOXCONN HON HAI PRECISION IND. CO., LTD.
CPBG - R&D Division

Title: **VRAM (POWERBYPASS) 2 OF 2**

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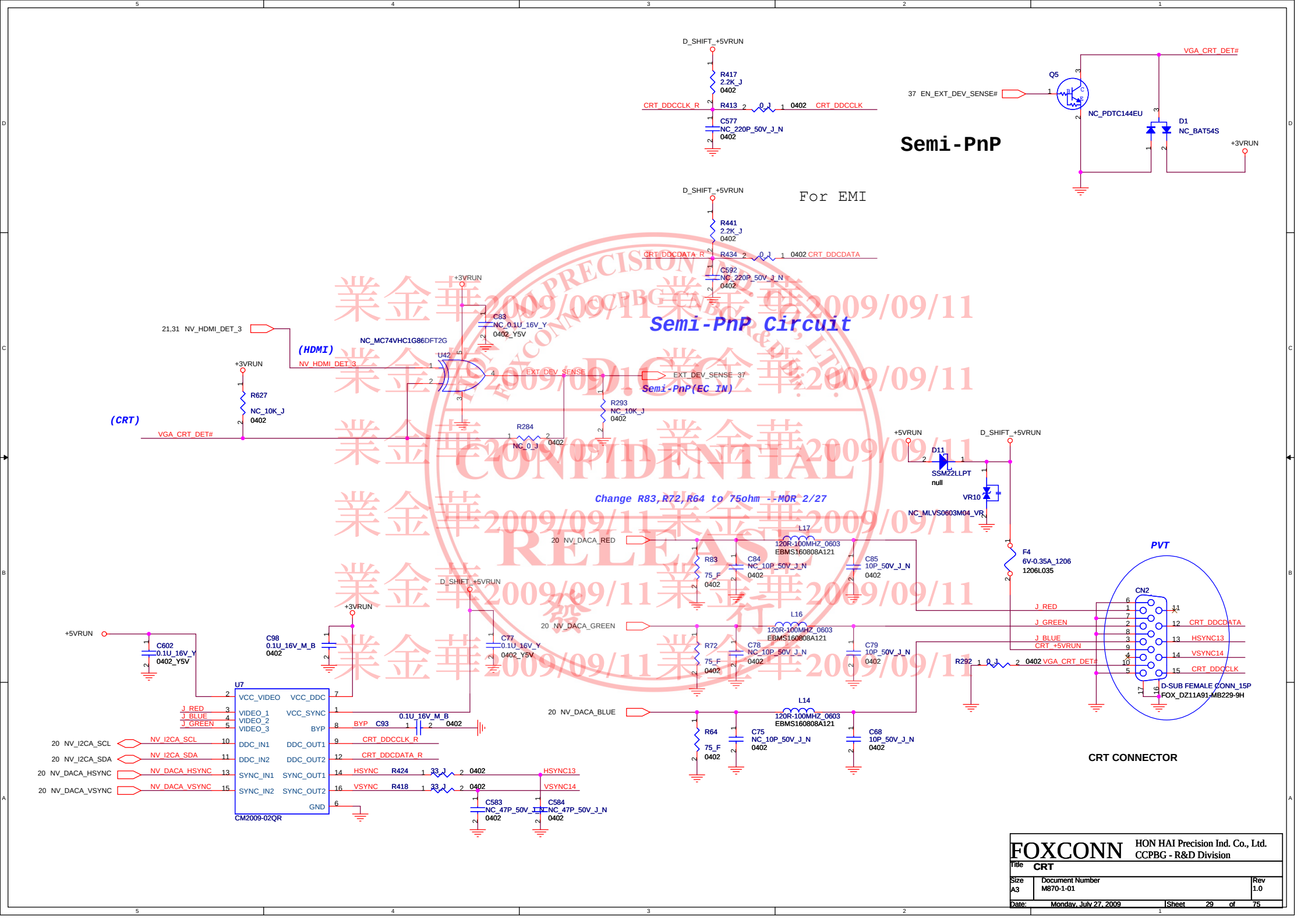


LVDS CONNECTOR

PVT
For rush current issue

DCBATOUT
C537 NC_0.1U_50V_K_B 0603
C526 1U_25V_K 0603_X5R
C525 0.1U_50V_K_B 0603

L43 NC_600R-100MHZ_0805
ACMS201209A601 2A
Q177 SI2303BDS
R5736 47K_J 0402
C575 0.1U_50V_K_B 0603
R5737 47K_J 0402
DCBATOUT_L
C541 0.1U_50V_K_B 0603

CN18 FOX_GS12401-1011-9F FPC CONN _40P

INV_ENABLE
INV_BRADJ
NV_EVEN_CLKIN- / NV_EVEN_CLKIN+
NV_EVEN_RXIN0- / NV_EVEN_RXIN0+
NV_EVEN_RXIN1- / NV_EVEN_RXIN1+
NV_EVEN_RXIN2- / NV_EVEN_RXIN2+
NV_ODD_CLKIN- / NV_ODD_CLKIN+
NV_ODD_RXIN0- / NV_ODD_RXIN0+
NV_ODD_RXIN1- / NV_ODD_RXIN1+
NV_ODD_RXIN2- / NV_ODD_RXIN2+

+3VRUN
C543 0.1U_16V_Y_Y 0402
U131D 74LCX08MTC
INV_EN
22 NV_BRADJ
NV_BRADJ
R383 NC_10K_J 0402

+3VRUN
C542 0.1U_16V_Y_Y 0402
U131A 74LCX08MTC
37,50 LIDIN#
LIDIN#
22 NV_INV_EN
NV_INV_EN
R5241 NC_10K_J 0402

+3VRUN
C540 0.1U_16V_Y_Y 0402
U131B 74LCX08MTC
34 INV_EN
INV_EN
NV_INV_EN1
37 BL_OFF#
INV_ENABLE_2
R301 NC_10K_J 0402

+3VRUN
C547 0.1U_16V_Y_Y 0402
U131C 74LCX08MTC
INV_ENABLE
R394 10K_J 0402
C539 NC_100P_50V_J 0402_NPO
R10 NC_0_J 0402

LCDVCC
C570 0.1U_10V_K 0402_X5R
C1264 10P_50V_J 0402_NPO
C24 22P_50V_J 0402_NPO
follow RF propose.

Current limit is from 1.1A to 2.1A.

+3VRUN
C992 1000P_50V_K 0402_X7R
C249 4.7U_6.3V_K 0805_X5R
U31 G5281RC1U_V0.1
IN1 OUT EN GND THERMAL PAD IN5 IN4 IN3 IN2
LCDVCC
C251 4.7U_10V_Y 0805_Y5V
C96 0.1U_16V_Y 0402_Y5V
22 NV_LCDVCC_EN
NV_LCDVCC_EN
C250 0.1U_16V_Y 0402_Y5V
R5234 10K_J 0402

12/29 change to 10K
FAE suggestion.

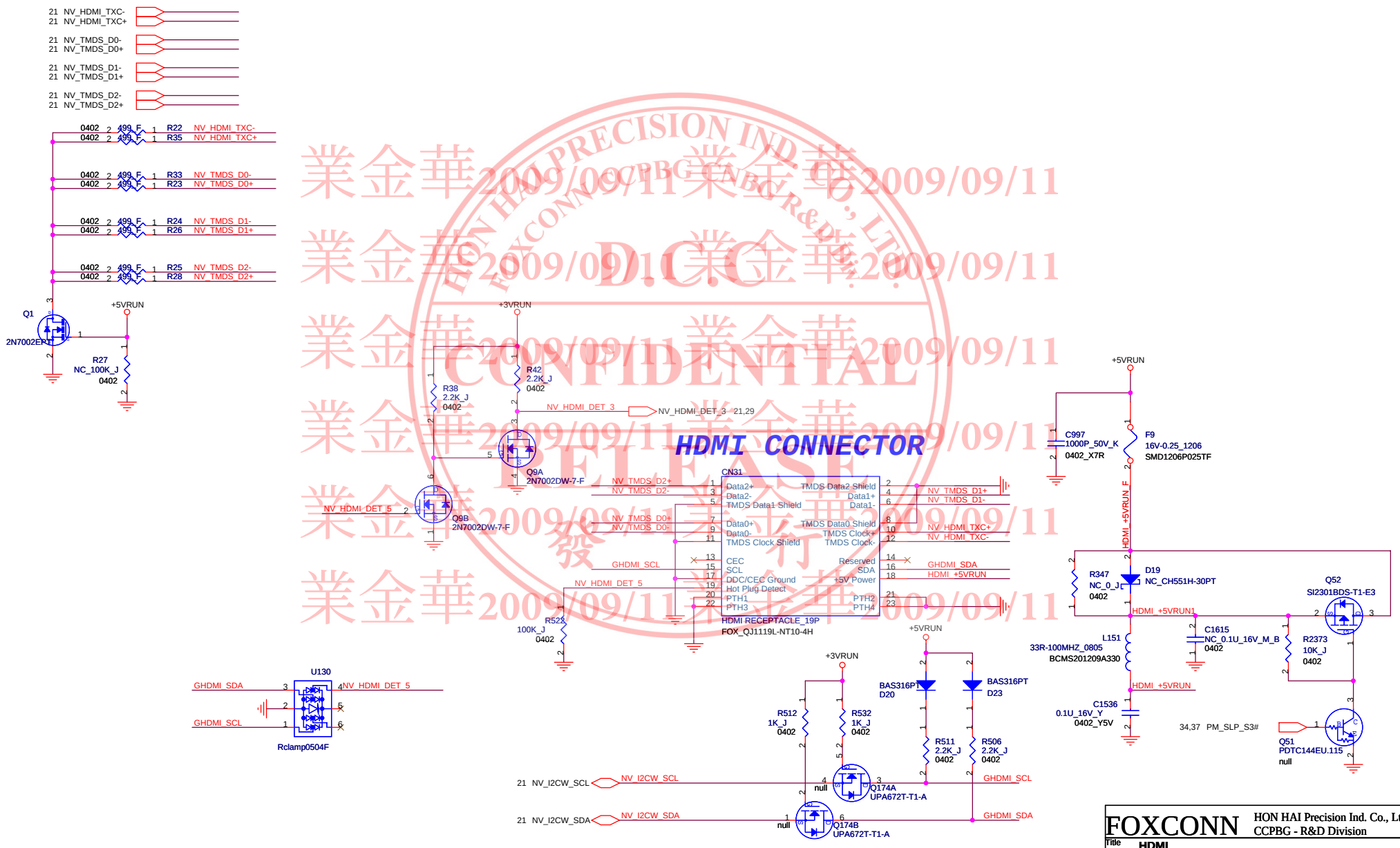
J3 OPEN_JUMP_OPEN2
FAN_ED_SW
TOP
BOT
J2 OPEN_JUMP_OPEN2
For DVT JIG test.

SW1 HDS506-E_SW-SMD12P
LCDID0 34
LCDID1 34
LCDID2 34
FAN_ED_SW 37
INST_ON_SW# 37
TP418 20MIL
null PANEL ID

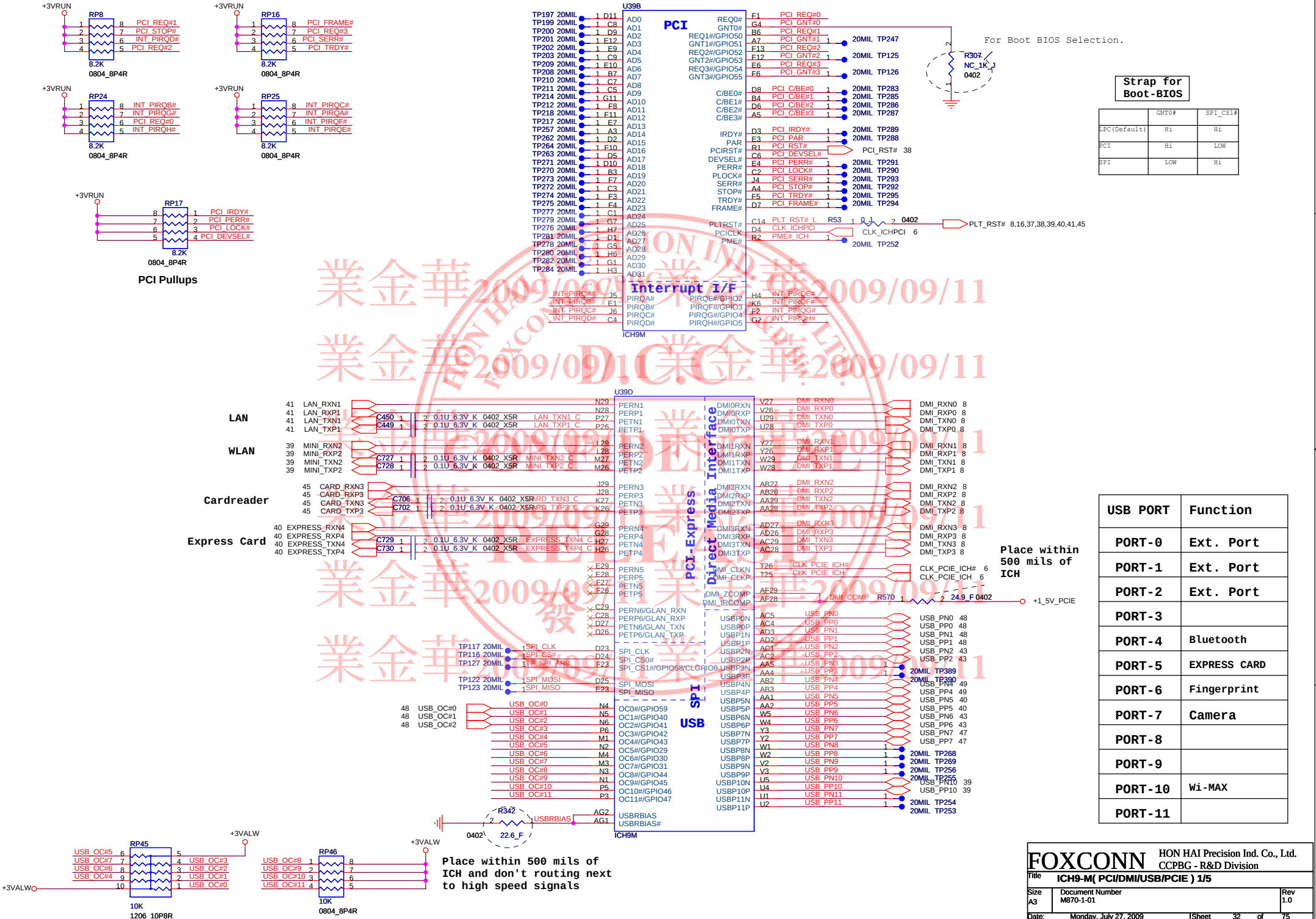
	DIS_FAN_MON#	LCDID2	LCDID1	LCDID0
	0	0	0	0
AUO B140XW02	0	0	0	1
LGD LP140WH2	0	0	1	0
SAMSUNG LTN140AT08	0	0	1	1
DISABLE FAN LOCK FUNCTION	0	X	X	X

ON:0 , OFF:1

FOXCONN HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division
Title: LVDS
Size: A3 | Document Number: M870-1-01 | Rev: 1.0
Date: Monday, July 27, 2009 | Sheet 30 of 75



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	HDMI	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 31 of 75	


RP8
RP16
RP24
RP25
RP17
8.2K
0804_8P4R
+3VRUN
PCI_REQ#1
PCI_STOP#
INT_PIRQD#
PCI_REQ#2
PCI_FRAME#
PCI_REQ#3
PCI_SERR#
PCI_TRDY#
INT_PIRQB#
INT_PIRQG#
PCI_REQ#0
INT_PIRQH#
INT_PIRQC#
INT_PIRQA#
INT_PIRQF#
INT_PIRQE#
PCI_IRDY#
PCI_PERR#
PCI_LOCK#
PCI_DEVSEL#
PCI Pullups
U39B
PCI
Interrupt I/F
ICH9M
For Boot BIOS Selection.
R307
NC_1K_J
0402
Strap for Boot-BIOS
GNT0#
SPI_CS1#
LPC(Default)
PCI
SPI
U39D
LAN
WLAN
Cardreader
Express Card
PCI-Express
Direct Media Interface
SPI
USB
Place within 500 mils of ICH
Place within 500 mils of ICH and don't routing next to high speed signals
USB PORT
Function
PORT-0
Ext. Port
PORT-1
Ext. Port
PORT-2
Ext. Port
PORT-3
PORT-4
Bluetooth
PORT-5
EXPRESS CARD
PORT-6
Fingerprint
PORT-7
Camera
PORT-8
PORT-9
PORT-10
Wi-MAX
PORT-11
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title
ICH9-M(PCI/DMI/USB/PCIE) 1/5
Size
A3
Document Number
M870-1-01
Rev
1.0
Date:
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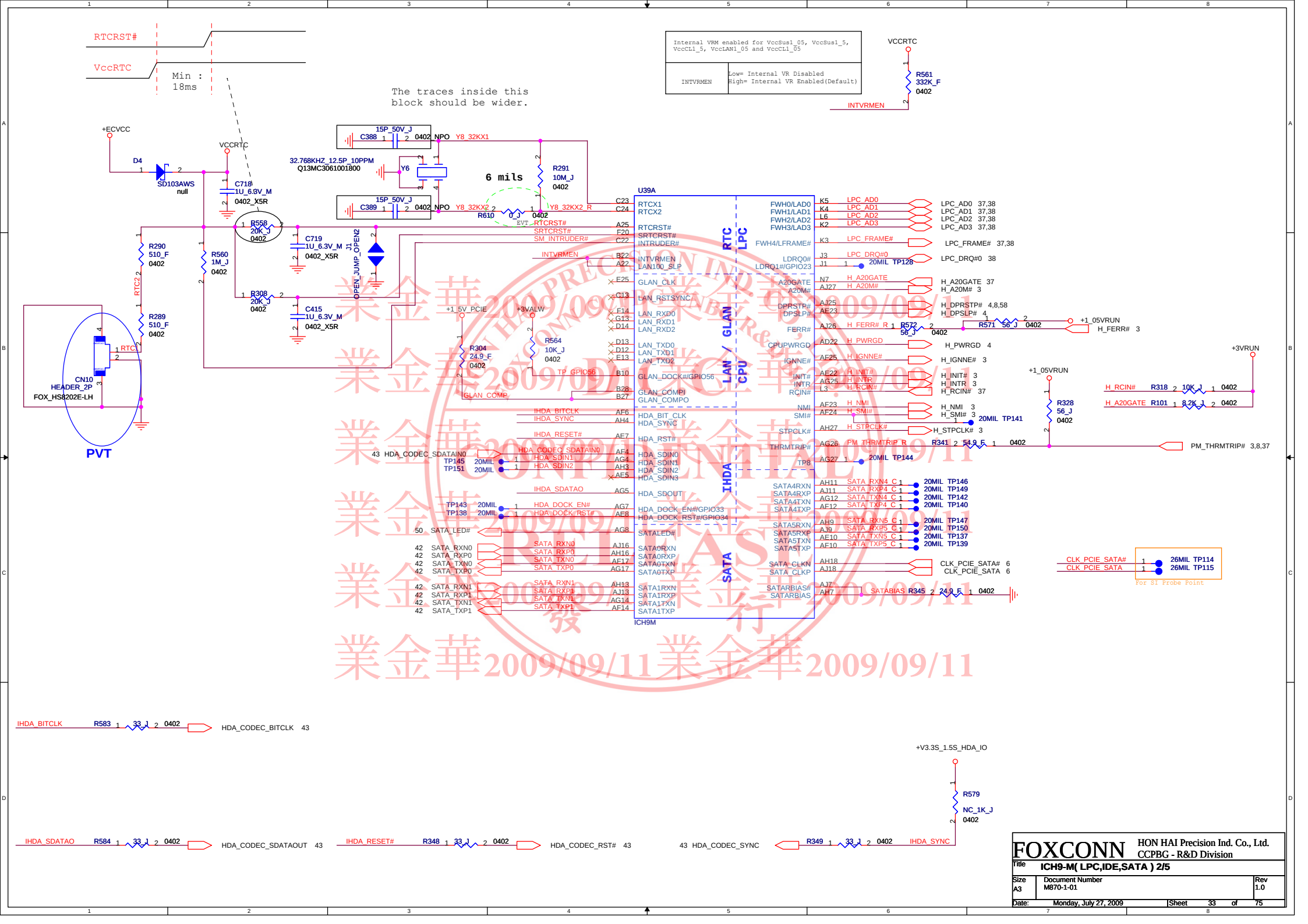
of
75


RTCRST#
VccRTC
Min : 18ms
The traces inside this block should be wider.
Internal VRM enabled for VccSus1_05, VccSus1_5, VccCL1_5, VccLAN1_05 and VccCL1_05
INTVRMEN
Low= Internal VR Disabled
High= Internal VR Enabled(Default)
VCCRTC
R561 332K_F 0402
INTVRMEN
+ECVCC
D4
SD103AWS null
C718 1U_6.3V_M 0402_X5R
C388 15P_50V_J 0402 NPO
C389 15P_50V_J 0402 NPO
32.768KHZ_12.5P_10PPM Q13MC3061001800
Y6
Y8_32KX1
Y8_32KX2
Y8_32KX2_R
6 mils
R291 10M_J 0402
R610 0_J 0402
EVT
RTCRST#
R558 20K_J 0402
R560 1M_J 0402
R290 510_F 0402
R289 510_F 0402
RTC2
C719 1U_6.3V_M 0402_X5R
C415 1U_6.3V_M 0402_X5R
R308 20K_J 0402
J1 OPEN_JUMP_OPEN2
SRTCRST#
SM_INTRUDER#
INTVRMEN
CN10 HEADER_2P FOX_HS8202E-LH
RTC1
PVT
+1_5V_PCIE
+3VALW
R304 24.9_F 0402
R564 10K_J 0402
TP_GPIO56
GLAN_COMP
U39A
RTCX1
RTCX2
RTCRST#
SRTCRST#
INTRUDER#
INTVRMEN
LAN100_SLP
GLAN_CLK
LAN_RSTSYNC
LAN_RXD0
LAN_RXD1
LAN_RXD2
LAN_TXD0
LAN_TXD1
LAN_TXD2
GLAN_DOCK#/GPIO56
GLAN_COMPI
GLAN_COMPO
IHDA_BITCLK
IHDA_SYNC
IHDA_RESET#
HDA_BIT_CLK
HDA_SYNC
HDA_RST#
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
HDA_SDOUT
IHDA_SDATAO
HDA_DOCK_EN#/GPIO33
HDA_DOCK_RST#/GPIO34
SATALED#
SATA0RXN
SATA0RXP
SATA0TXN
SATA0TXP
SATA1RXN
SATA1RXP
SATA1TXN
SATA1TXP
RTC
LPC
GLAN
LAN / CPU
IHDA
SATA
ICH9M
FWH0/LAD0
FWH1/LAD1
FWH2/LAD2
FWH3/LAD3
FWH4/LFRAME#
LDRQ0#
LDRQ1#/GPIO23
A20GATE
A20M#
DPRSTP#
DPSLP#
FERR#
CPUPWRGD
IGNNE#
INIT#
INTR
RCIN#
NMI
SMI#
STPCLK#
THRMTRIP#
TP8
SATA4RXN
SATA4RXP
SATA4TXN
SATA4TXP
SATA5RXN
SATA5RXP
SATA5TXN
SATA5TXP
SATA_CLKN
SATA_CLKP
SATARBIAS#
SATARBIAS
LPC_AD0 37,38
LPC_AD1 37,38
LPC_AD2 37,38
LPC_AD3 37,38
LPC_FRAME# 37,38
LPC_DRQ#0 38
H_A20GATE 37
H_A20M# 3
H_DPRSTP# 4,8,58
H_DPSLP# 4
H_FERR# 3
+1_05VRUN
H_PWRGD 4
H_IGNNE# 3
H_INIT# 3
H_INTR 3
H_RCIN# 37
H_NMI 3
H_SMI# 3
H_STPCLK# 3
PM_THRMTRIP# 3,8,37
+3VRUN
R328 56_J 0402
R318 10K_J 0402
R101 8.2K_J 0402
R572 56_J 0402
R571 56_J 0402
R341 54.9_F 0402
R345 24.9_F 0402
20MIL TP128
20MIL TP141
20MIL TP144
20MIL TP146
20MIL TP149
20MIL TP142
20MIL TP140
20MIL TP147
20MIL TP150
20MIL TP137
20MIL TP139
CLK_PCIE_SATA# 6
CLK_PCIE_SATA 6
26MIL TP114
26MIL TP115
For SI Probe Point
43 HDA_CODEC_SDATAIN0
TP145 20MIL
TP151 20MIL
TP143 20MIL
TP138 20MIL
50 SATA_LED#
42 SATA_RXN0
42 SATA_RXP0
42 SATA_TXN0
42 SATA_TXP0
42 SATA_RXN1
42 SATA_RXP1
42 SATA_TXN1
42 SATA_TXP1
IHDA_BITCLK R583 33_J 0402 HDA_CODEC_BITCLK 43
IHDA_SDATAO R584 33_J 0402 HDA_CODEC_SDATAOUT 43
IHDA_RESET# R348 33_J 0402 HDA_CODEC_RST# 43
43 HDA_CODEC_SYNC R349 33_J 0402 IHDA_SYNC
+V3.3S_1.5S_HDA_IO
R579 NC_1K_J 0402
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title ICH9-M(LPC,IDE,SATA) 2/5
Size A3
Document Number M870-1-01
Rev 1.0
Date: Monday, July 27, 2009
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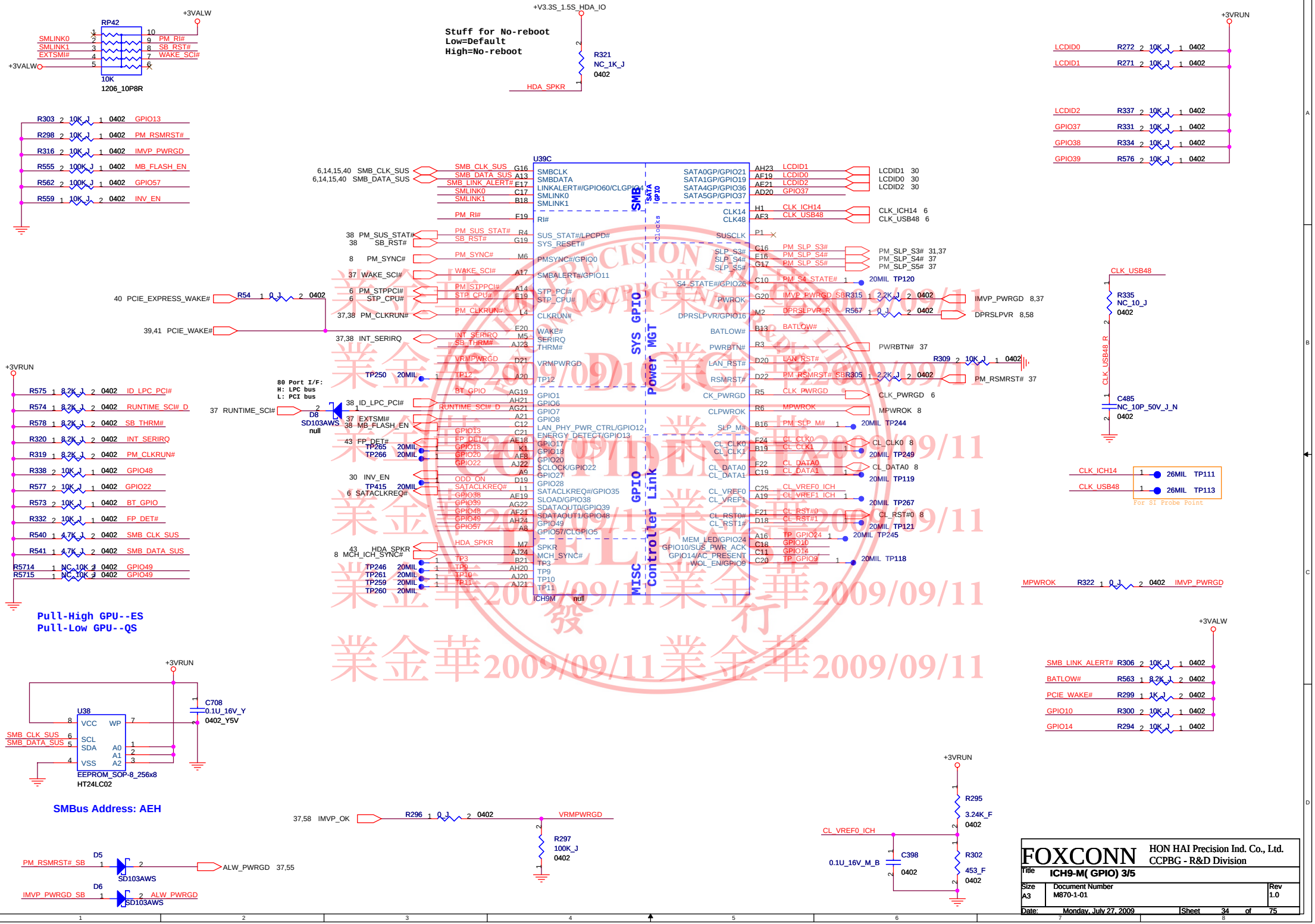
RP42
+3VALW
SMLINK0
SMLINK1
EXTSMI#
PM_RI#
SB_RST#
WAKE_SCI#
10K
1206_10P8R
Stuff for No-reboot
Low=Default
High=No-reboot
+V3.3S_1.5S_HDA_IO
R321
NC_1K_J
0402
HDA_SPKR
+3VRUN
LCDID0
LCDID1
LCDID2
GPIO37
GPIO38
GPIO39
R272
R271
R337
R331
R334
R576
10K_J
R303
R298
R316
R555
R562
R559
GPIO13
PM_RSMRST#
IMVP_PWRGD
MB_FLASH_EN
GPIO57
INV_EN
100K_J
U39C
SMB
SATA GPIO
Clocks
SYS GPIO
Power MGT
GPIO
Controller Link
MISC
SMB_CLK_SUS
SMB_DATA_SUS
SMB_LINK_ALERT#
SMLINK0
SMLINK1
PM_RI#
RI#
PM_SUS_STAT#
SUS_STAT#/LPCPD#
SB_RST#
SYS_RESET#
PM_SYNC#
PMSYNC#/GPIO0
WAKE_SCI#
SMBALERT#/GPIO11
PM_STPPCI#
STP_CPU#
STP_PCI#
PM_CLKRUN#
CLKRUN#
WAKE#
INT_SERIRQ
SERIRQ
SB_THRM#
THRM#
VRMPWRGD
TP12
BT_GPIO
GPIO1
GPIO6
GPIO7
GPIO8
LAN_PHY_PWR_CTRL/GPIO12
ENERGY_DETECT/GPIO13
FP_DET#
GPIO17
GPIO18
GPIO20
SCLOCK/GPIO22
GPIO27
GPIO28
SATACLKREQ#/GPIO35
SLOAD/GPIO38
SDATAOUT0/GPIO39
SDATAOUT1/GPIO48
GPIO49
GPIO57/CLGPIO5
ODD_ON
SATACLKREQ#
GPIO36
GPIO39
GPIO48
GPIO49
GPIO57
HDA_SPKR
SPKR
MCH_SYNC#
TP3
TP9
TP10
TP11
ICH9M
null
SATA0GP/GPIO21
SATA1GP/GPIO19
SATA4GP/GPIO36
SATA5GP/GPIO37
CLK14
CLK48
SUSCLK
SLP_S3#
SLP_S4#
SLP_S5#
S4_STATE#/GPIO26
PWROK
DPRSLPVR/GPIO16
BATLOW#
PWRBTN#
LAN_RST#
RSMRST#
CK_PWRGD
CLPWROK
SLP_M#
CL_CLK0
CL_CLK1
CL_DATA0
CL_DATA1
CL_VREF0
CL_VREF1
CL_RST#0
CL_RST#1
MEM_LED/GPIO24
GPIO10/SUS_PWR_ACK
GPIO14/AC_PRESENT
WOL_EN/GPIO9
LCDID1
LCDID0
LCDID2
GPIO37
CLK_ICH14
CLK_USB48
PM_SLP_S3#
PM_SLP_S4#
PM_SLP_S5#
PM_S4_STATE#
IMVP_PWRGD_SB
DPRSLPVR_R
PWRBTN#
PM_RSMRST#_SB
CK_PWRGD
MPWROK
PM_SLP_M#
CL_CLK0
CL_CLK1
CL_DATA0
CL_DATA1
CL_VREF0_ICH
CL_VREF1_ICH
CL_RST#0
CL_RST#1
TP_GPIO24
GPIO10
GPIO14
TP_GPIO9
R315
R567
R309
R305
R335
C485
NC_10P_50V_J_N
CLK_USB48_R
TP120
TP244
TP249
TP119
TP267
TP245
TP118
TP111
TP113
26MIL
For SI Probe Point
R322
IMVP_PWRGD
R306
R563
R299
R300
R294
SMB_LINK_ALERT#
BATLOW#
PCIE_WAKE#
GPIO10
GPIO14
+3VALW
PCIE_EXPRESS_WAKE#
PCIE_WAKE#
R54
INT_SERIRQ
INT_CLKRUN#
80 Port I/F:
H: LPC bus
L: PCI bus
ID_LPC_PCI#
RUNTIME_SCI#
EXTSMI#
MB_FLASH_EN
FP_DET#
TP265
TP266
INV_EN
TP415
SATACLKREQ#
HDA_SPKR
MCH_ICH_SYNC#
TP246
TP261
TP259
TP260
D8
SD103AWS
R575
R574
R578
R320
R319
R338
R577
R573
R332
R540
R541
R5714
R5715
8.2K_J
4.7K_J
NC_10K_J
ID_LPC_PCI#
RUNTIME_SCI#_D
SB_THRM#
INT_SERIRQ
PM_CLKRUN#
GPIO48
GPIO22
BT_GPIO
FP_DET#
SMB_CLK_SUS
SMB_DATA_SUS
GPIO49
Pull-High GPU--ES
Pull-Low GPU--QS
U38
VCC
WP
SCL
SDA
A0
A1
A2
VSS
C708
0.1U_16V_Y
0402_Y5V
EEPROM_SOP-8_256x8
HT24LC02
SMBus Address: AEH
IMVP_OK
R296
VRMPWRGD
R297
100K_J
D5
D6
PM_RSMRST#_SB
IMVP_PWRGD_SB
ALW_PWRGD
R295
3.24K_F
R302
453_F
C398
0.1U_16V_M_B
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
ICH9-M(GPIO) 3/5
Size A3
Document Number M870-1-01
Rev 1.0
Date: Monday, July 27, 2009
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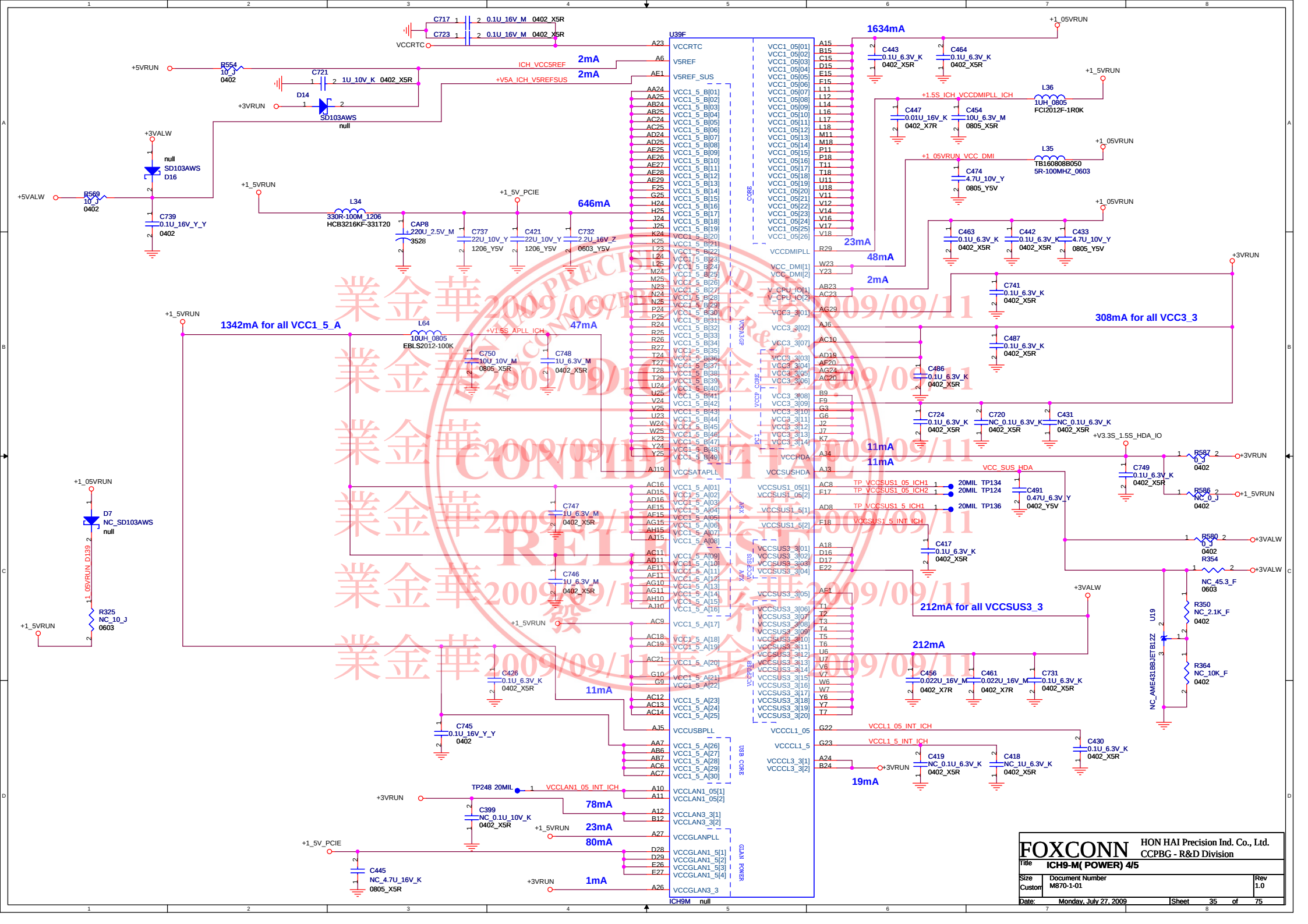
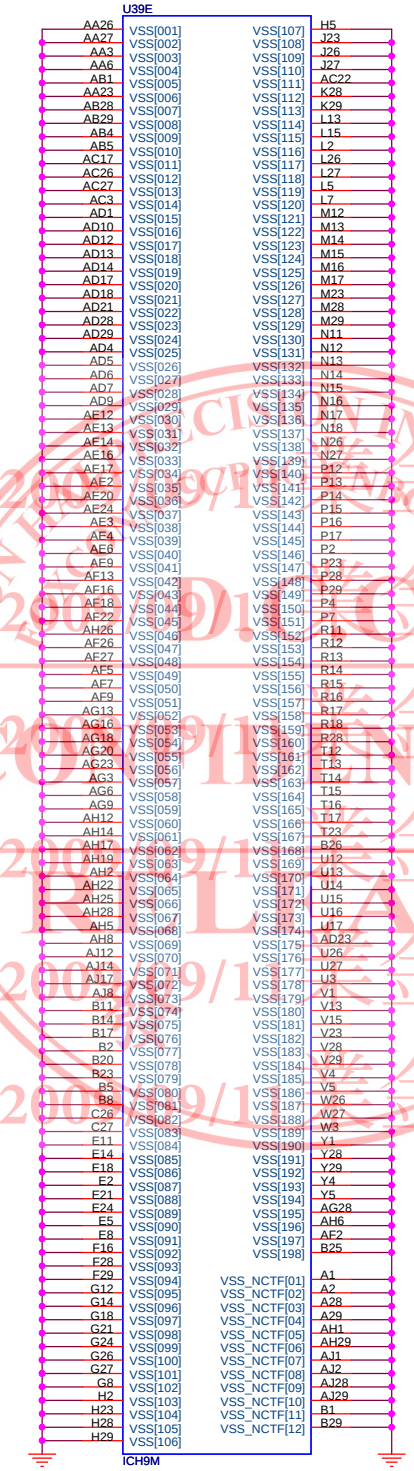
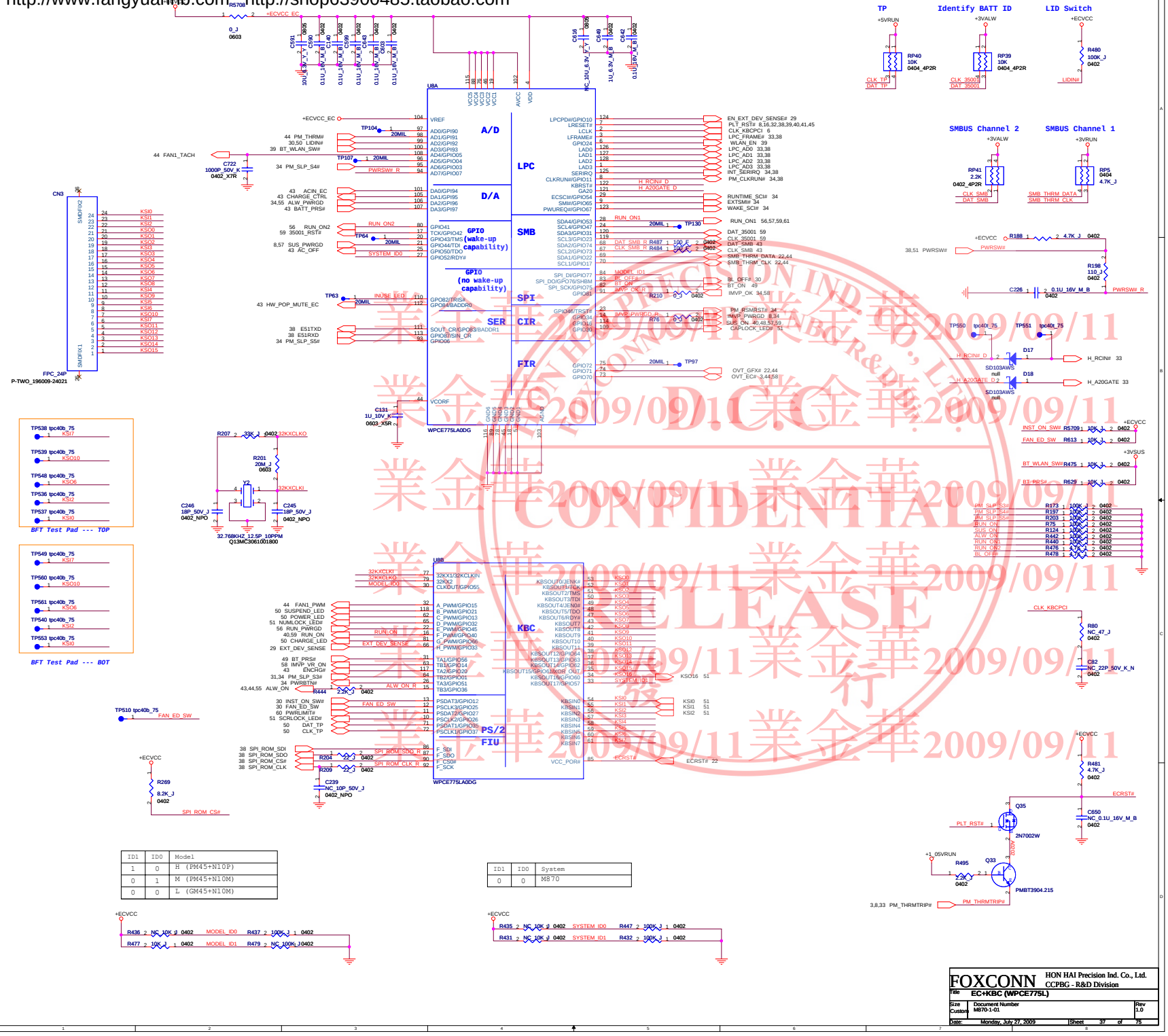

U39F
VCCRTC
V5REF
V5REF_SUS
1342mA for all VCC1_5_A
1634mA
308mA for all VCC3_3
212mA for all VCCSUS3_3
2mA
646mA
47mA
11mA
78mA
23mA
80mA
1mA
48mA
212mA
19mA
ICH9M null
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
ICH9-M(POWER) 4/5
Document Number M870-1-01
Rev 1.0
Monday, July 27, 2009
Sheet 35 of 75



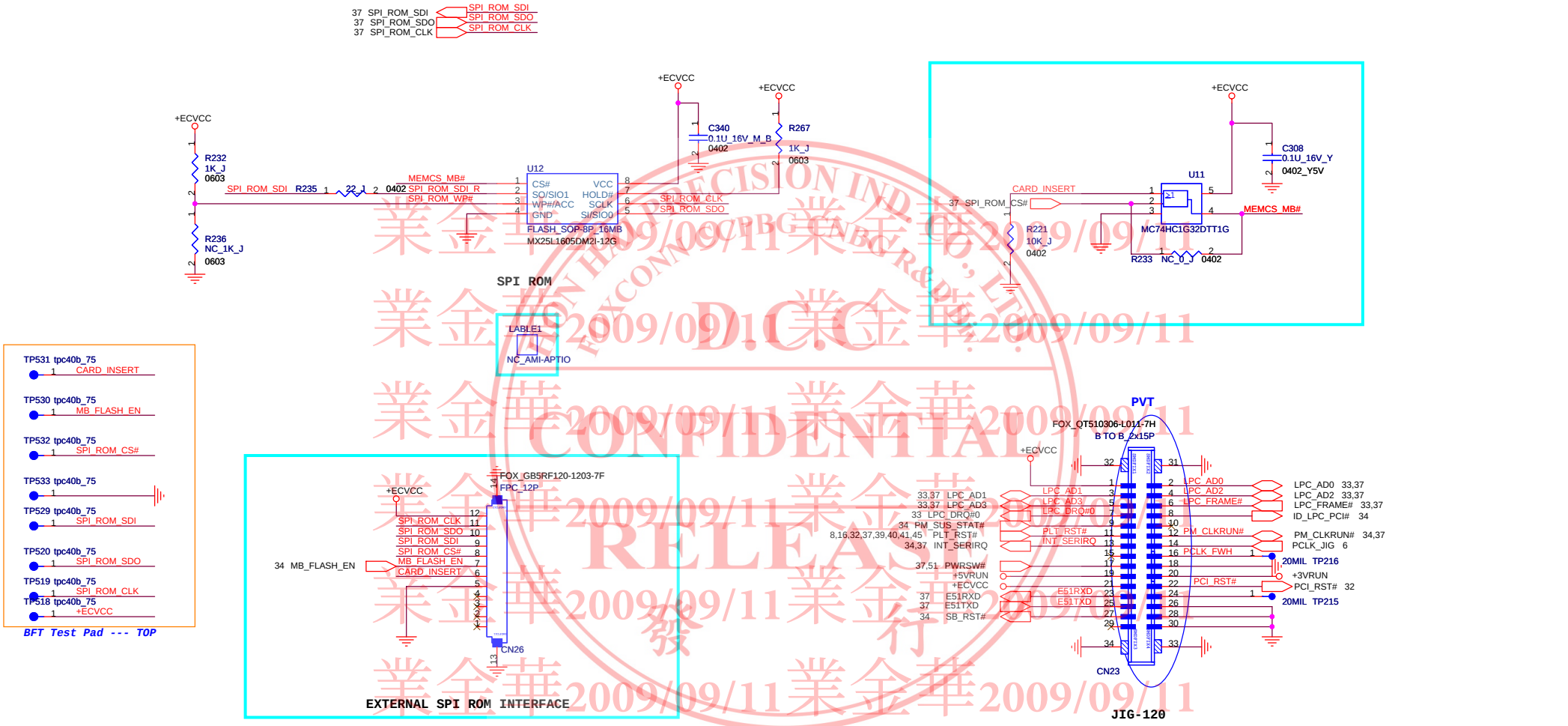
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	ICH9-M(GND) 5/5	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 36 of 75	



ID1	ID0	Model
1	0	H (PM45+N10P)
0	1	M (PM45+N10M)
0	0	L (GM45+N10M)

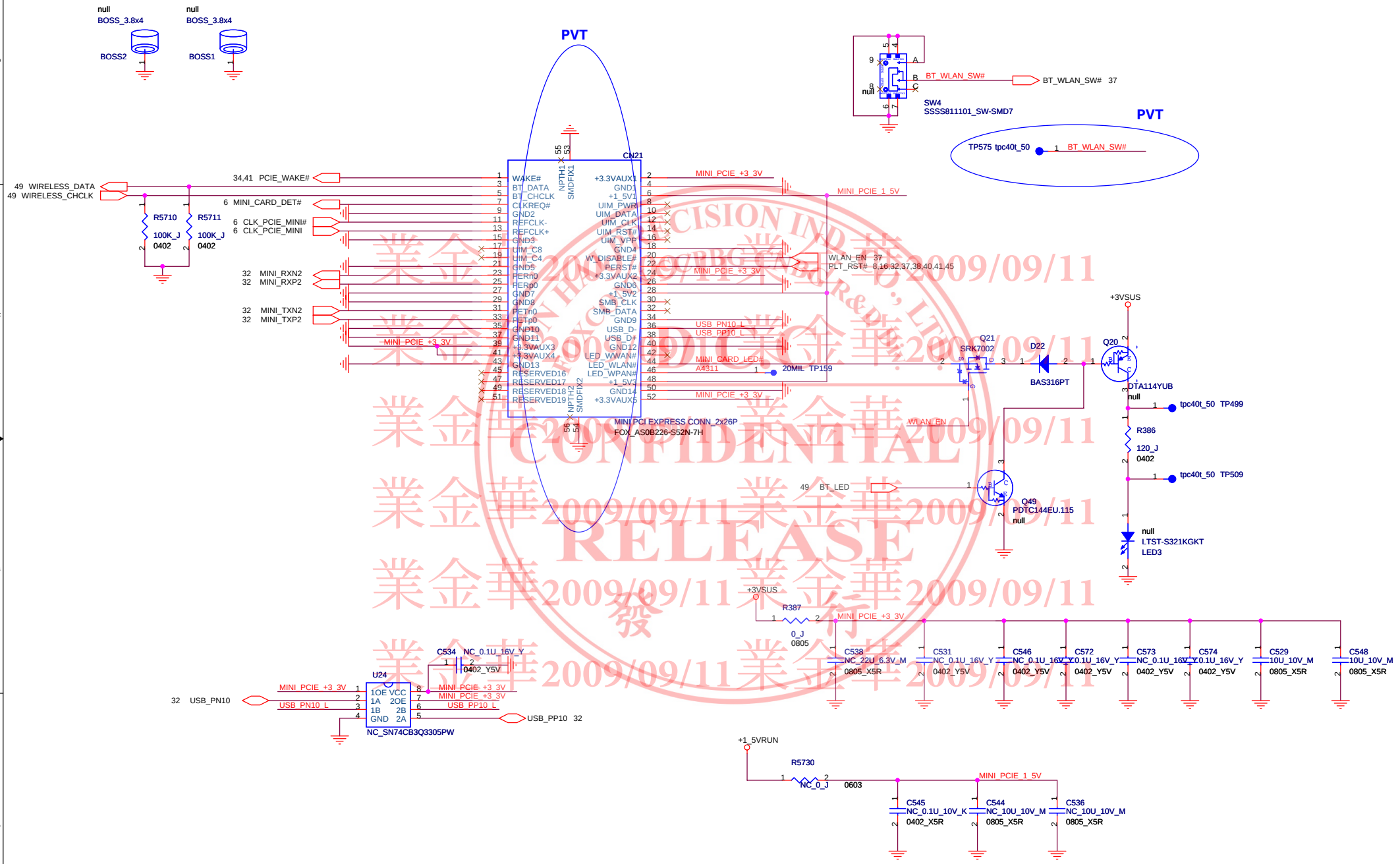
ID1	ID0	System
0	0	M870

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
File: EC+KBC (WPCE775L)		
Size: Custom	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 37 of 75	



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title: Flash ROM/SPI		
Size: A3	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 38 of 75	

SW4.C pin delete and SW4.A connect to GND.

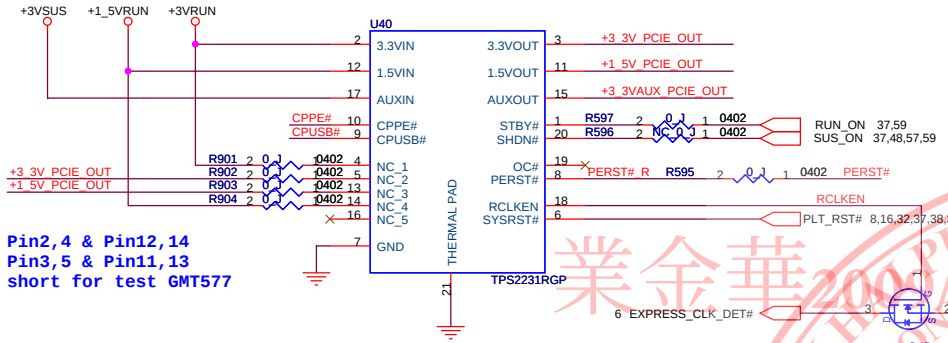


FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Half Mini Card	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 39 of 75	

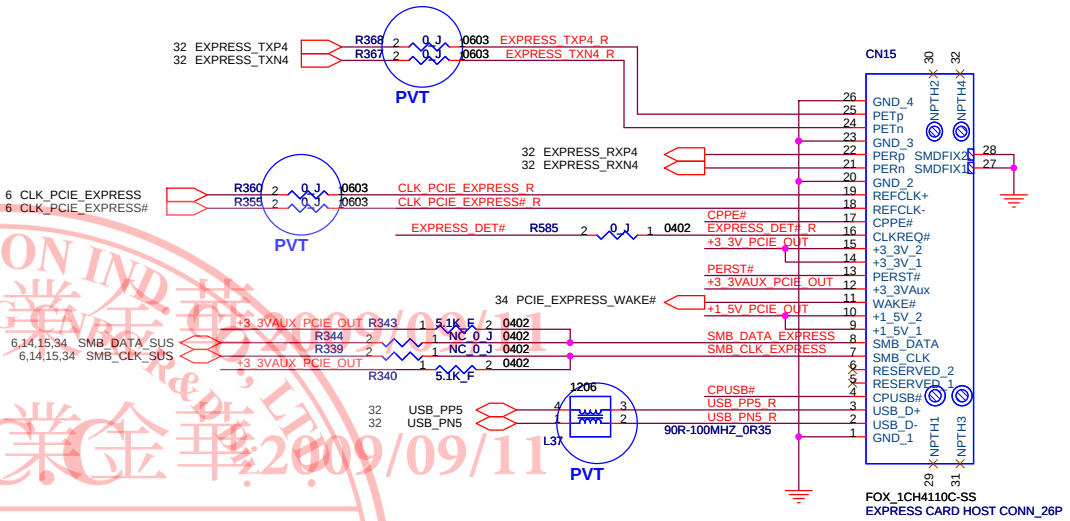
http://www.fangyuannb.com http://shop63900485.taobao.com

+1_5V=>1.3A
+3_3VAux=>0.6A
+3_3V=>2.5A

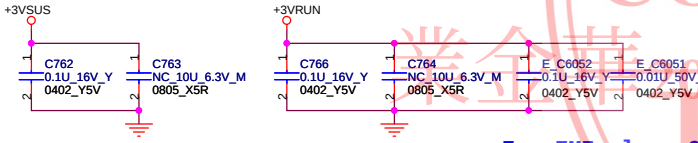
Express Card Power Switch



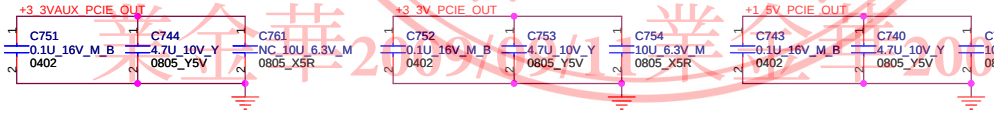
Pin2,4 & Pin12,14
Pin3,5 & Pin11,13
short for test GMT577

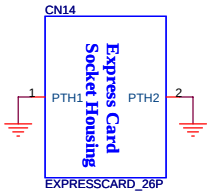


Express Card Slot.



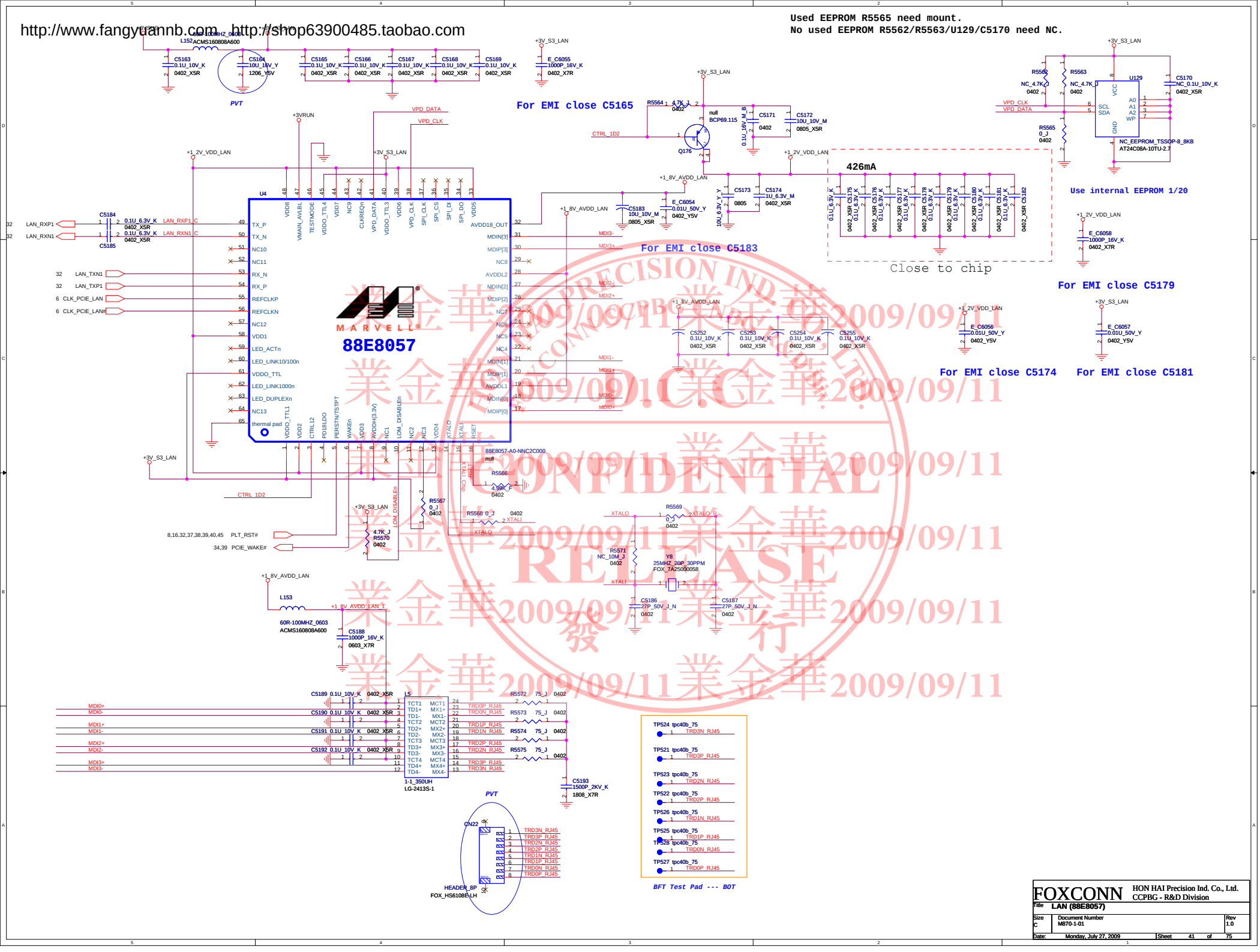
For EMI close C764



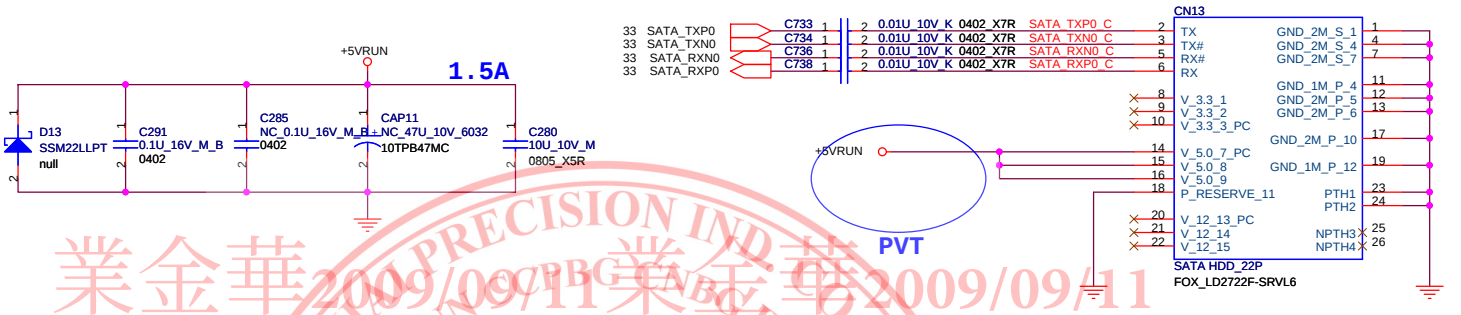


FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	EXPRESS CARD	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 40 of 75	

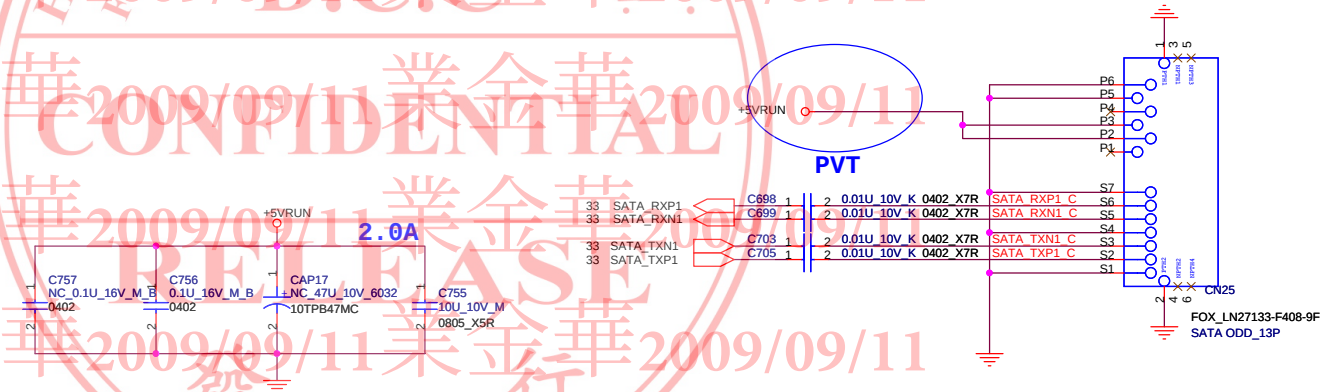
Used EEPROM R5565 need mount.
No used EEPROM R5562/R5563/U129/C5170 need NC.



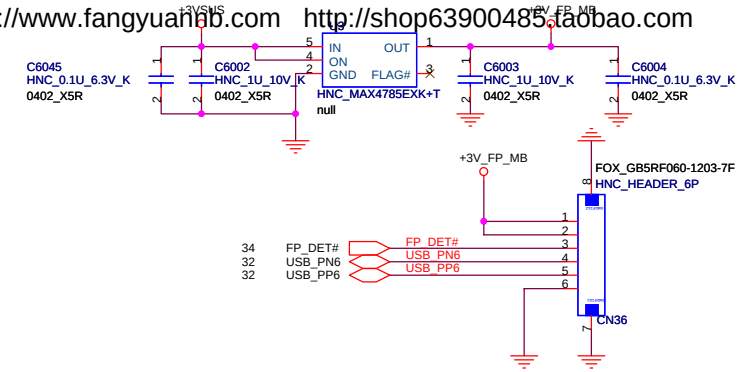
SATA HDD CONN



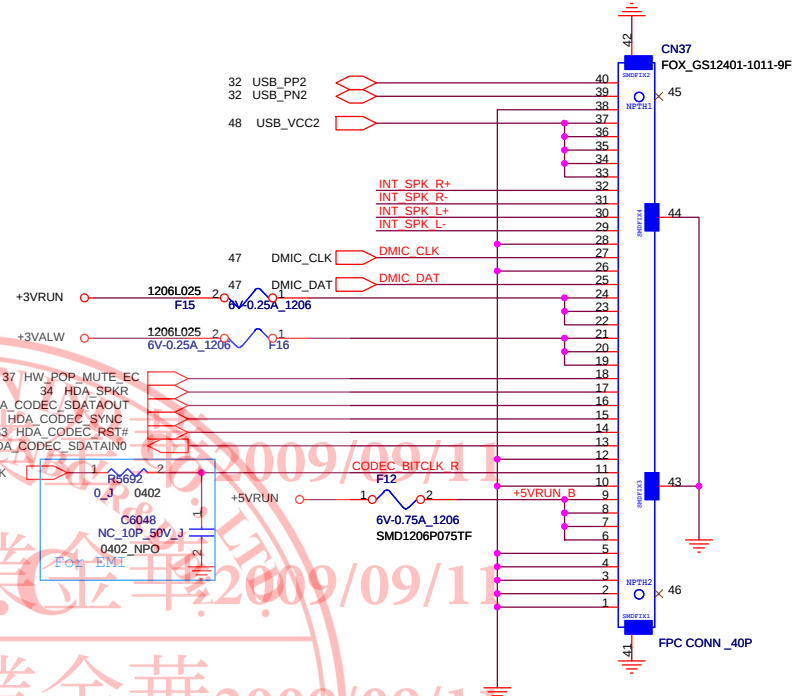
SATA ODD CONN



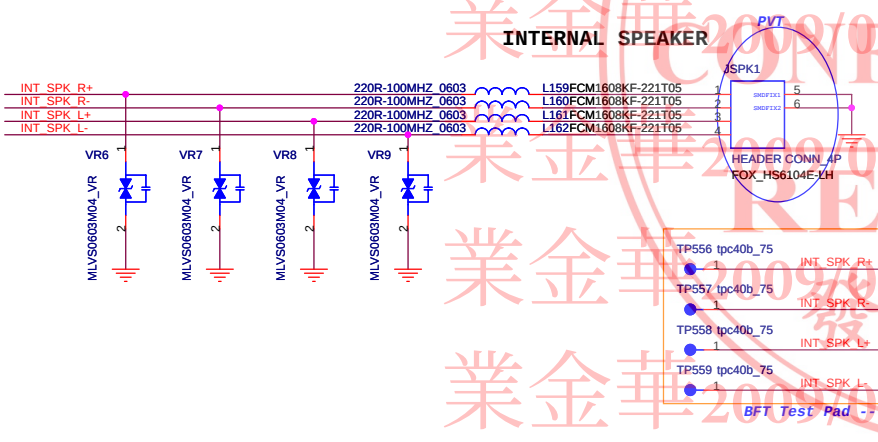
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	SATA HDD/ODD	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 42 of 75	



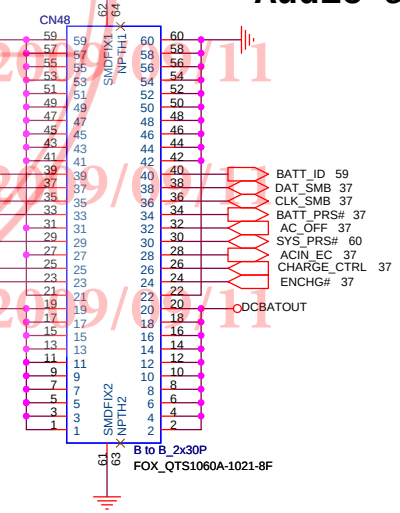
Fingerprint FTB CONN.

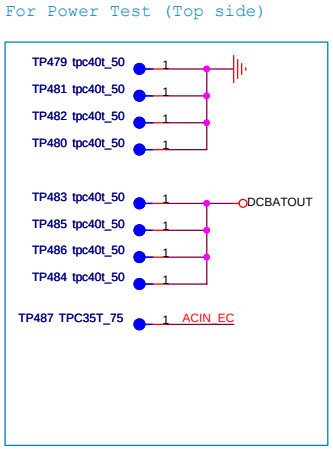


INTERNAL SPEAKER



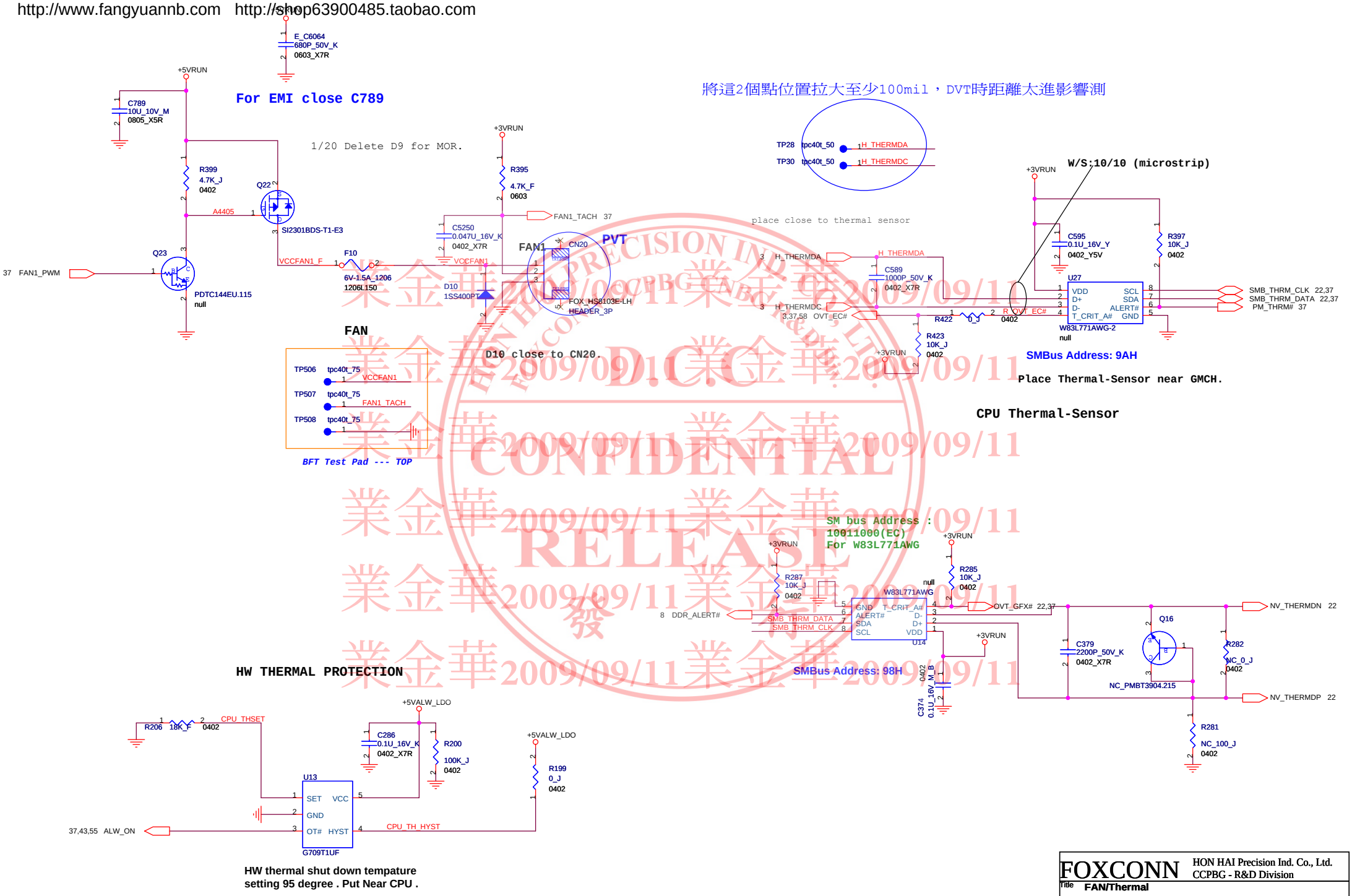
Audio & USB WTB CONN.





Charger Board CONN.

FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division	
Title: BTB CONN		
Size: A3	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 43 of 75	



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	FAN/Thermal	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 44 of 75	

01/20 Add pin headers and resistors for PCIe protocol measurement for R5U231.

http://www.fangyuannb.com http://shop63900485.taobao.com

Change CN35 From ME request.

Close to U21

Close to U21

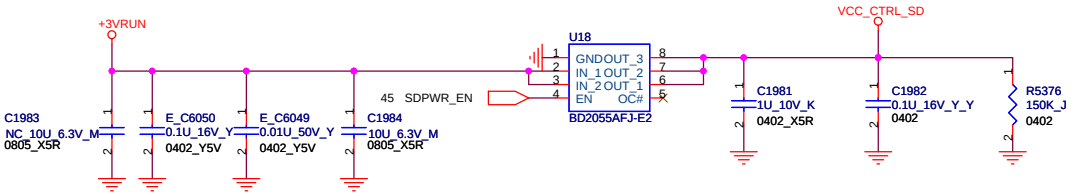
SROM: UDIO1
Pull-Hi: Disable
Pull-Lo: Enable (Default)

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

Title: PCIE (PCIE BUS) 1/2

Size: A3 | Document Number: M870-1-01 | Rev: 1.0

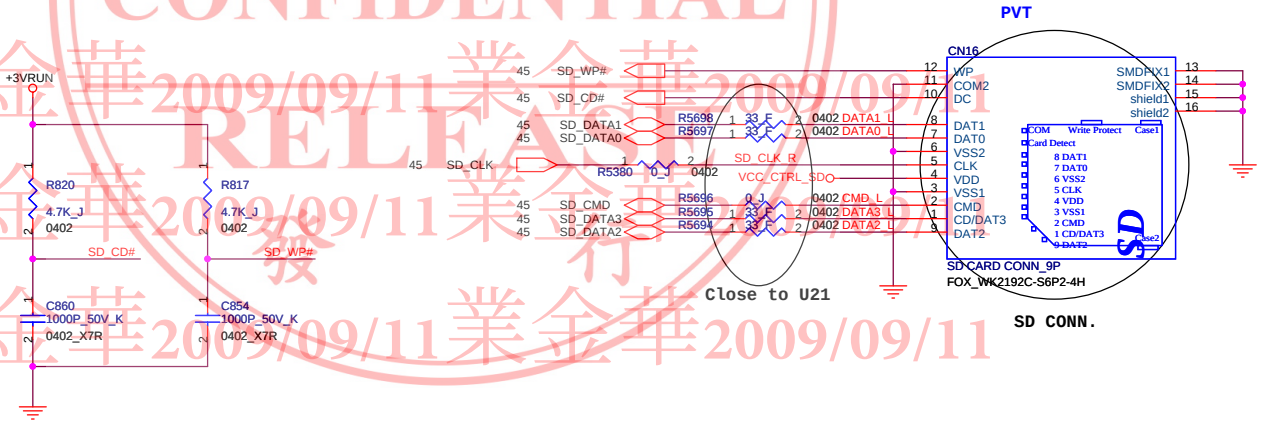
Date: Monday, July 27, 2009 | Sheet 45 of 75



SD POWER

For EMI close C1983

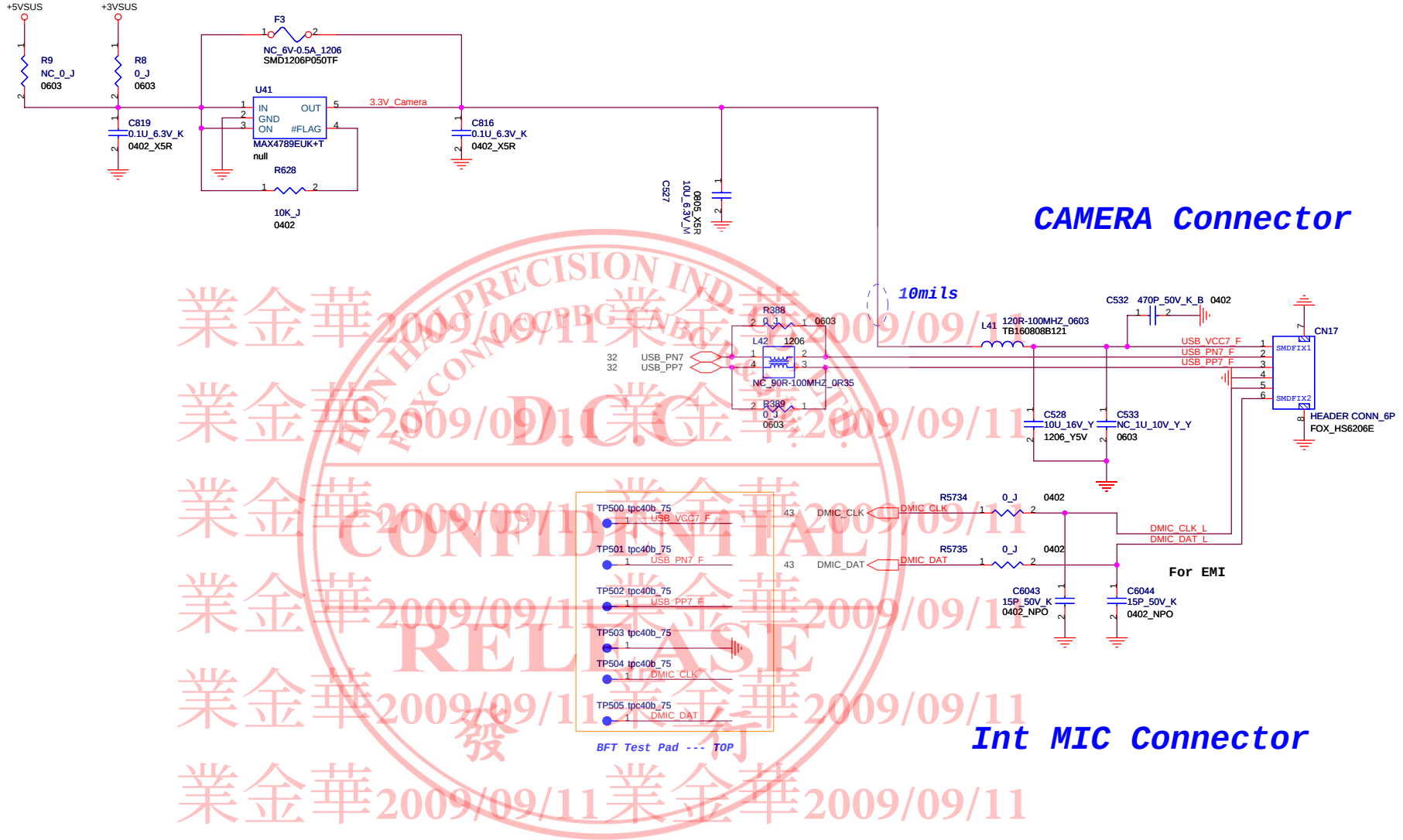
http://www.fangyuannb.com http://shop63900485.taobao.com



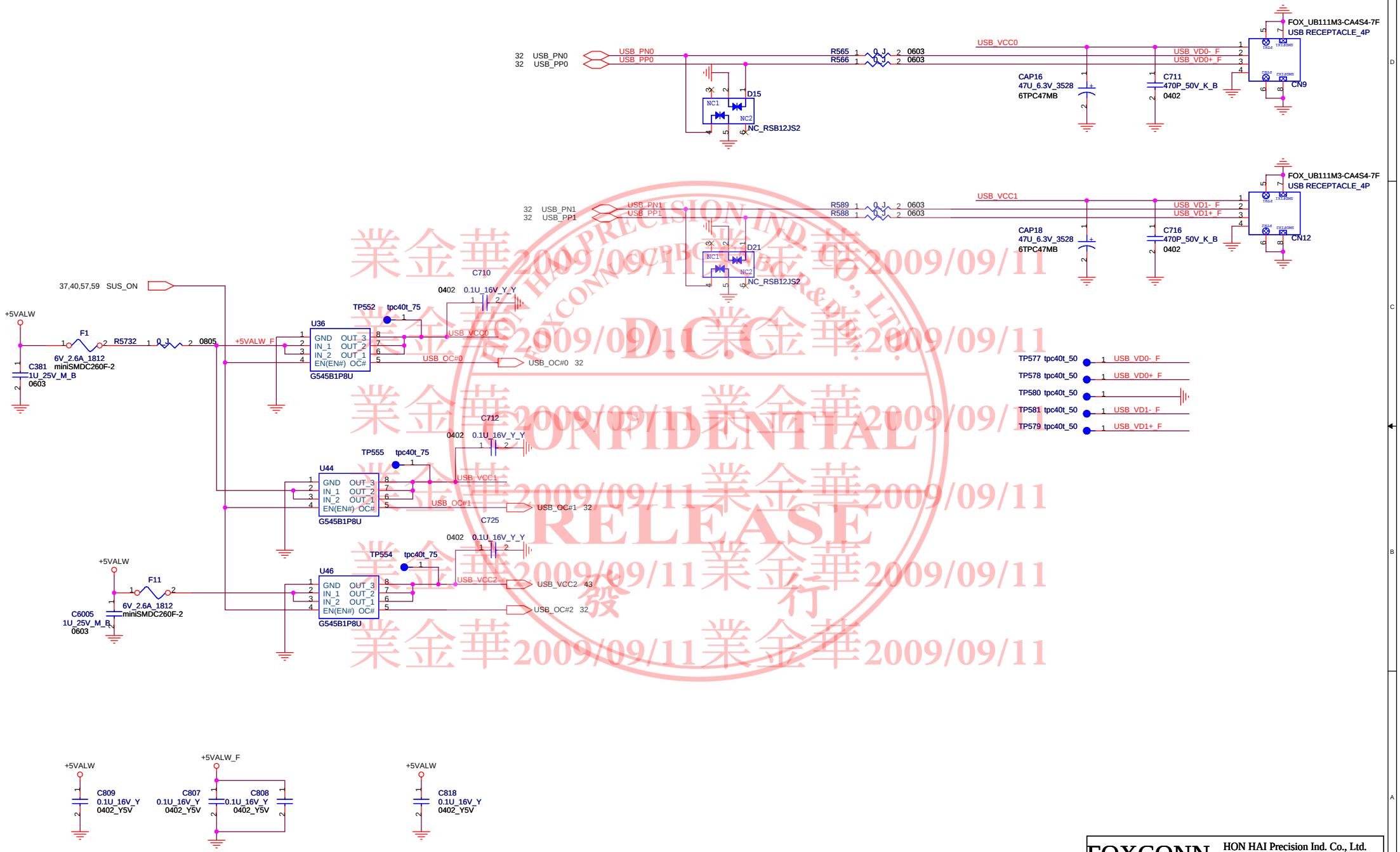
SD CONN.

For EMI

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	PCIE (MS/SD) 2/2	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 46 of 75	

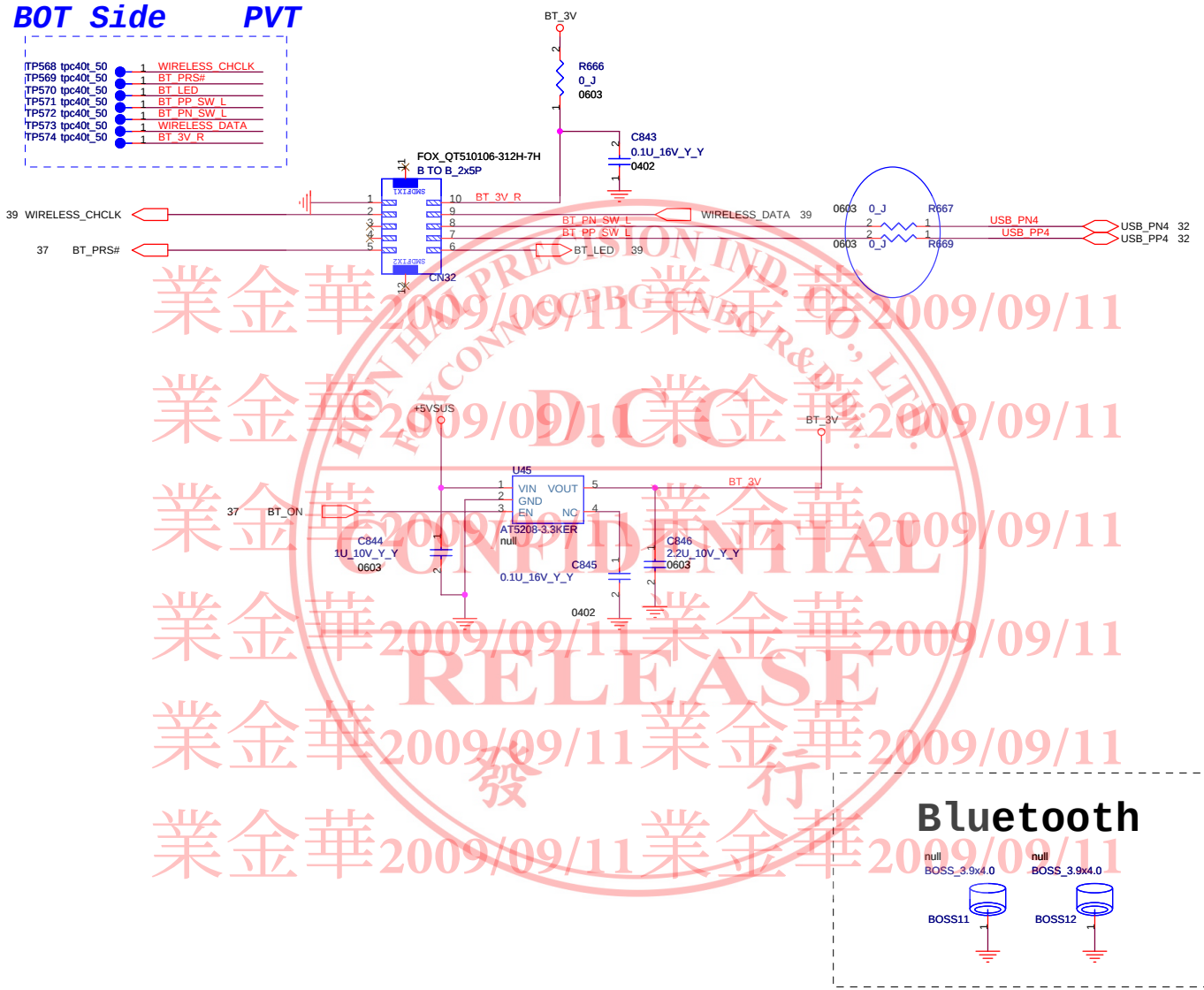


FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	CAMERA/Int MIC.	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 47 of 75	

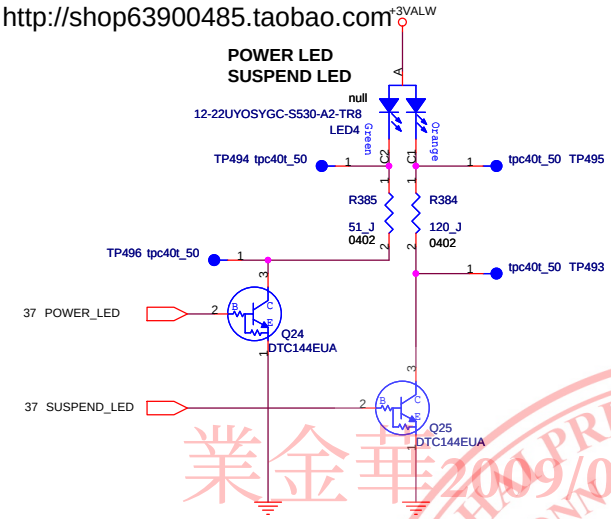


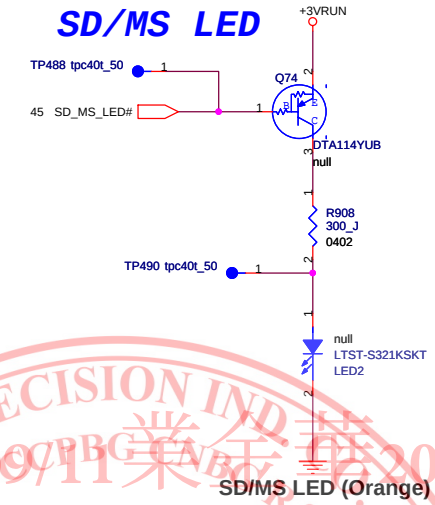
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	USB2.0	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 48 of 75	

Bluetooth connector

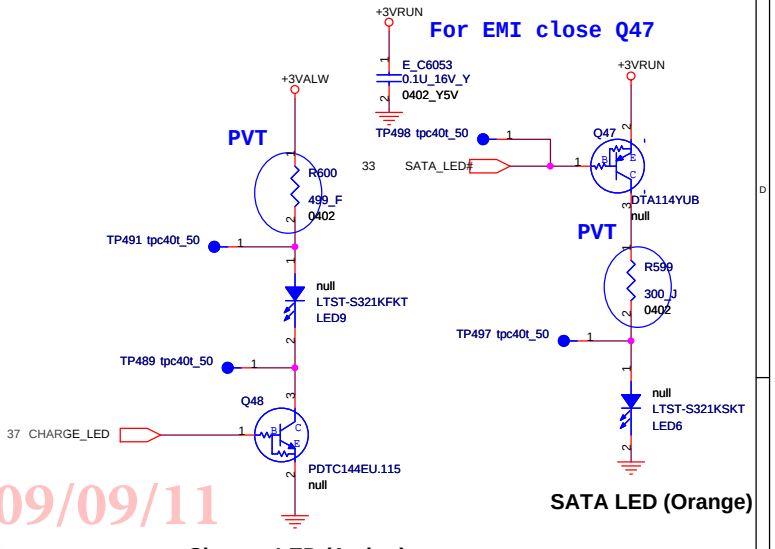


FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division	
Title: Bluetooth		
Size: A3	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 49 of 75	



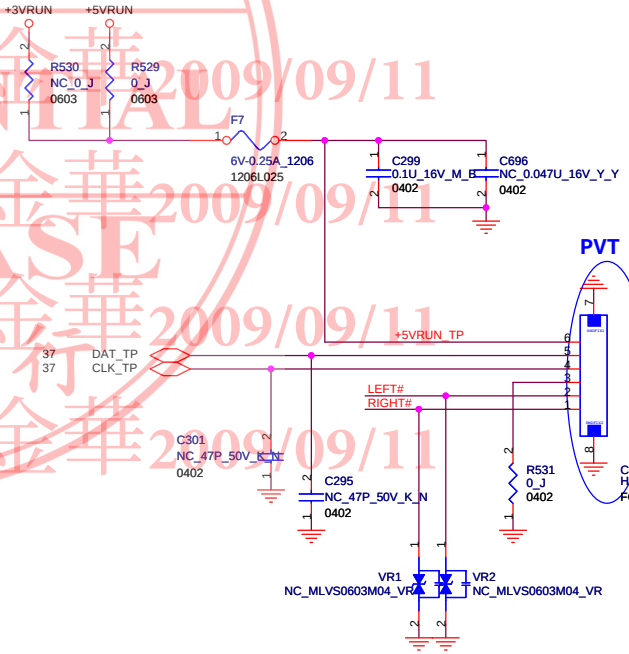


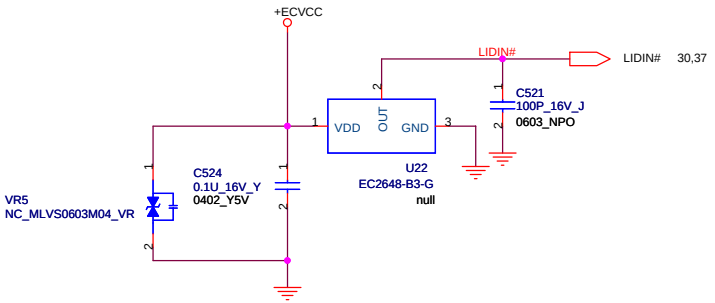
SD/MS LED (Orange)



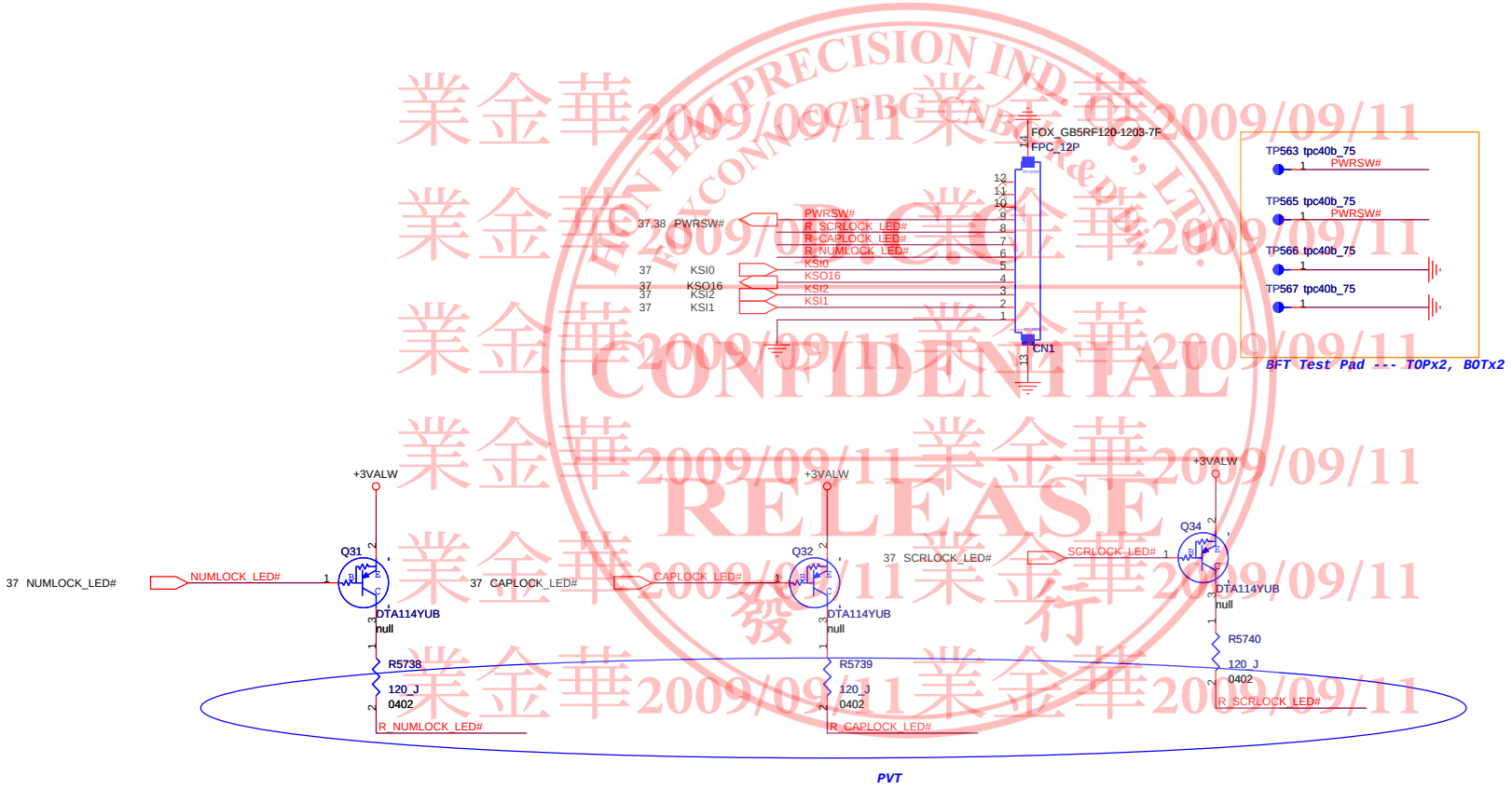
SATA LED (Orange)

Charger LED (Amber)



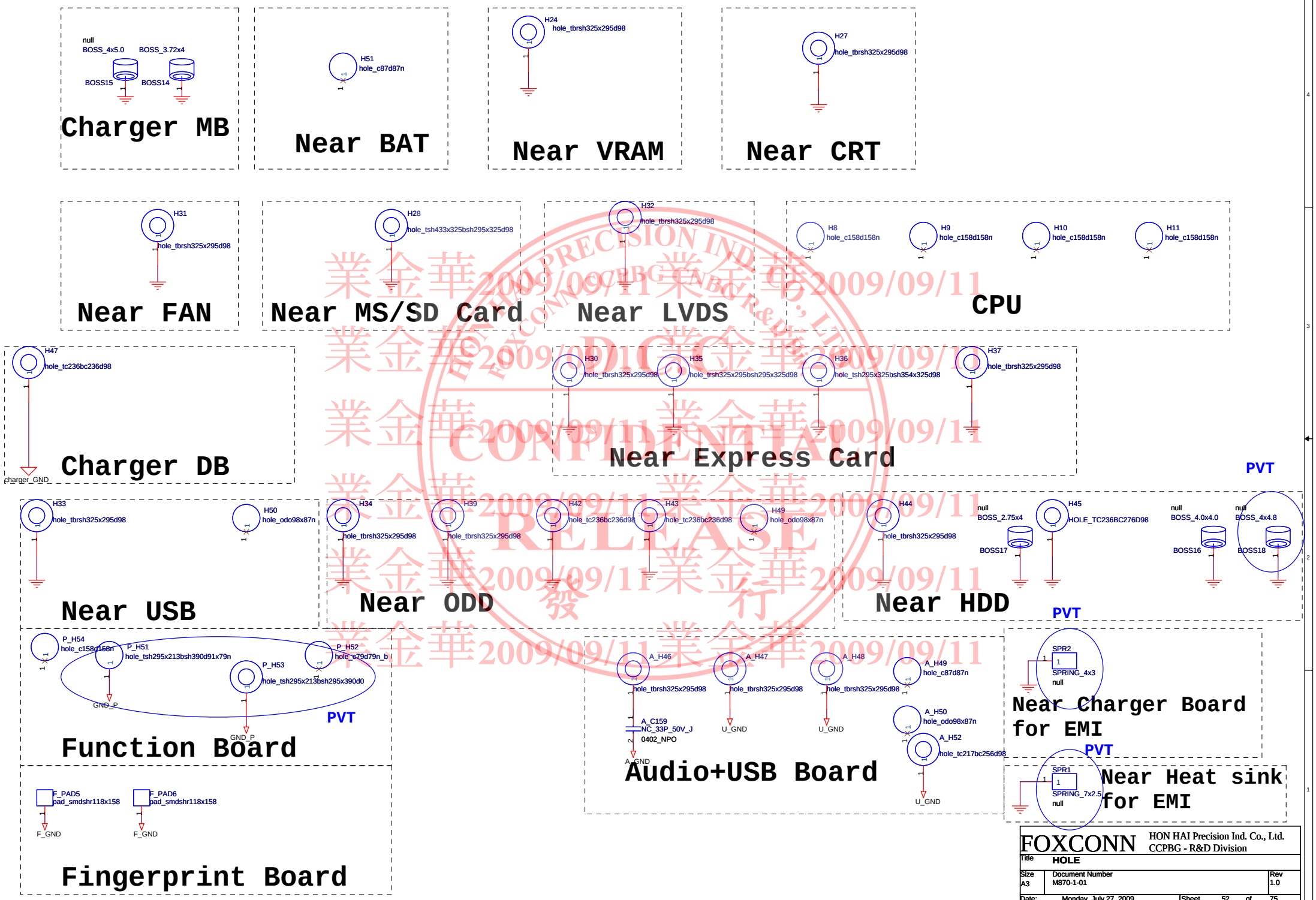


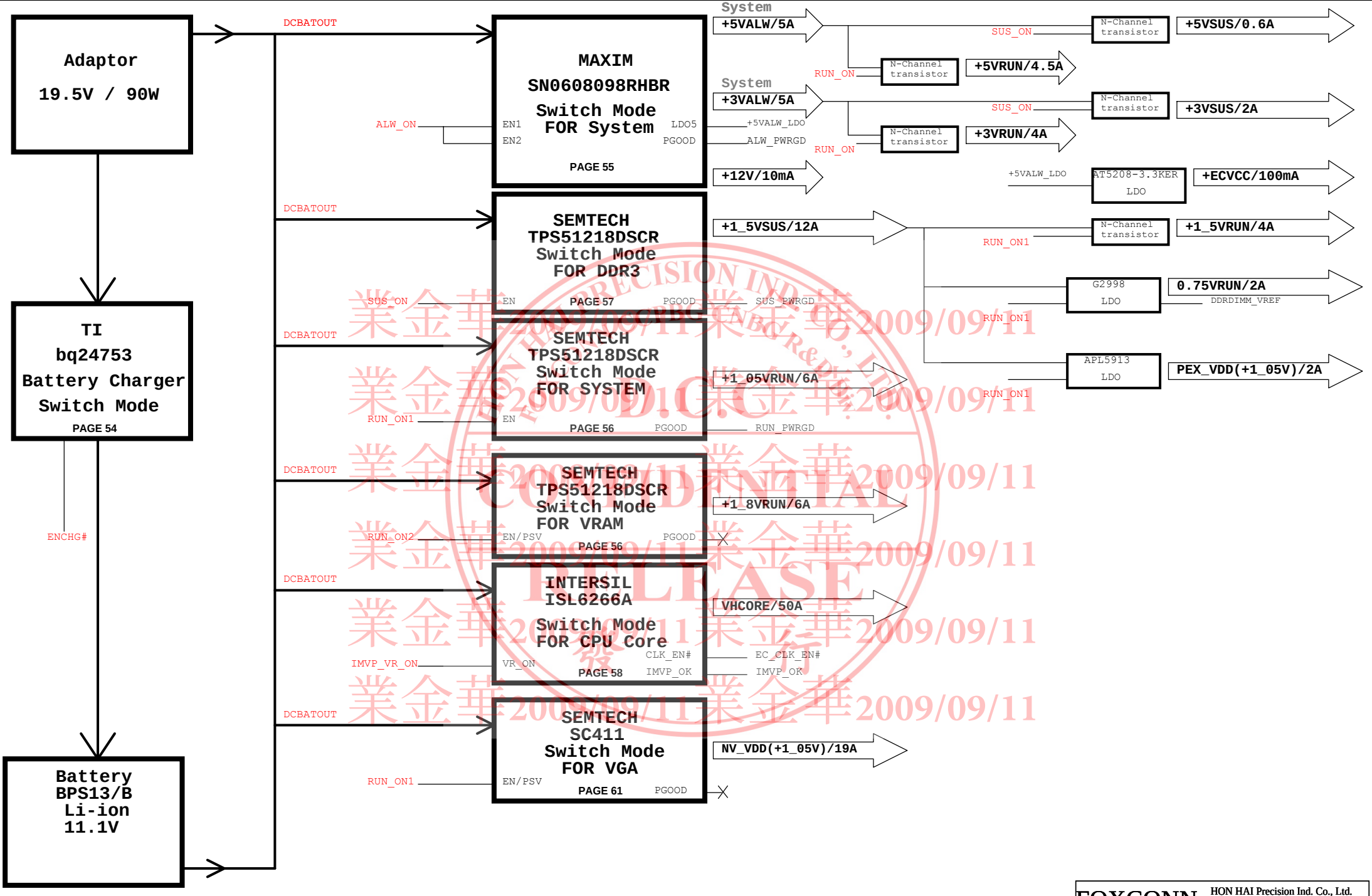
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	LED & T/P & LID	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 50 of 75	



PVT

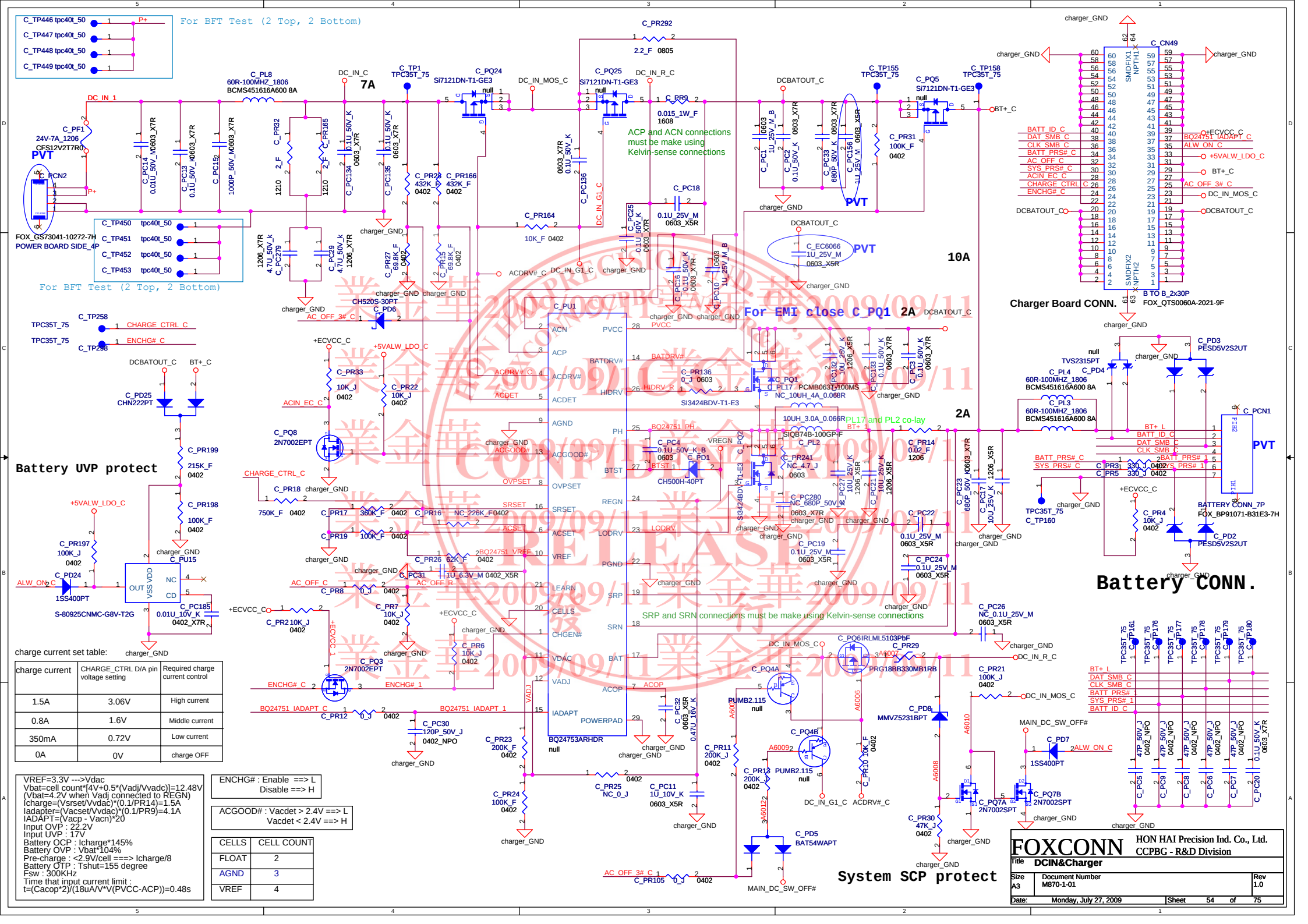
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Power Board MB CONN	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 51 of 75	





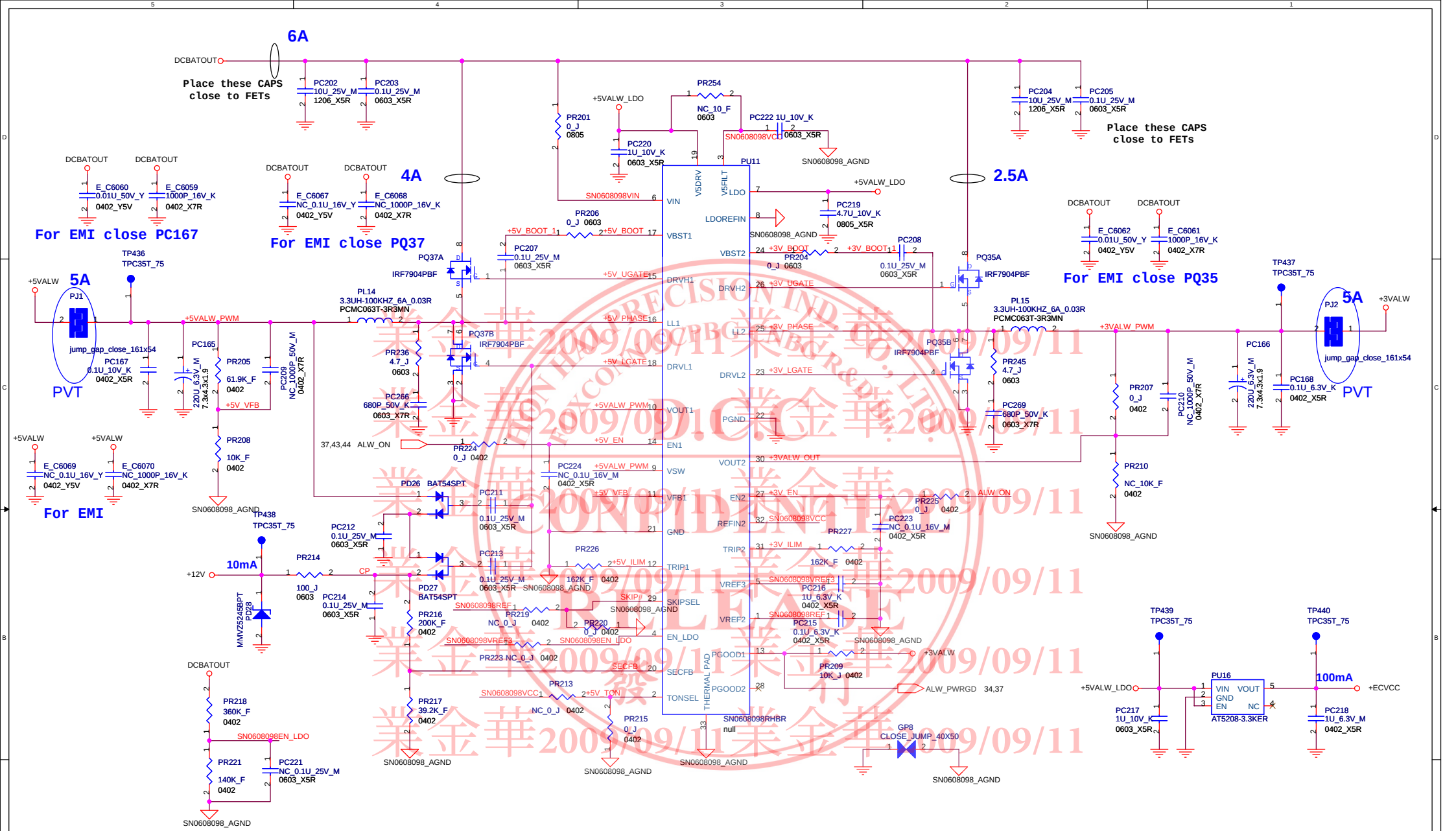
FOXCONN — HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division

Title	Power Design Diagram	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 53 of 75	



charge current	CHARGE_CTRL D/A pin voltage setting	Required charge current control
1.5A	3.06V	High current
0.8A	1.6V	Middle current
350mA	0.72V	Low current
0A	0V	charge OFF

CELLS	CELL COUNT
FLOAT	2
AGND	3
VREF	4



TON	Operating Frequence (+5VALW/+3VALW)
VCC	200KHz/300KHz
REF(OPEN)	400KHz/300KHz
GND	400KHz/500KHz

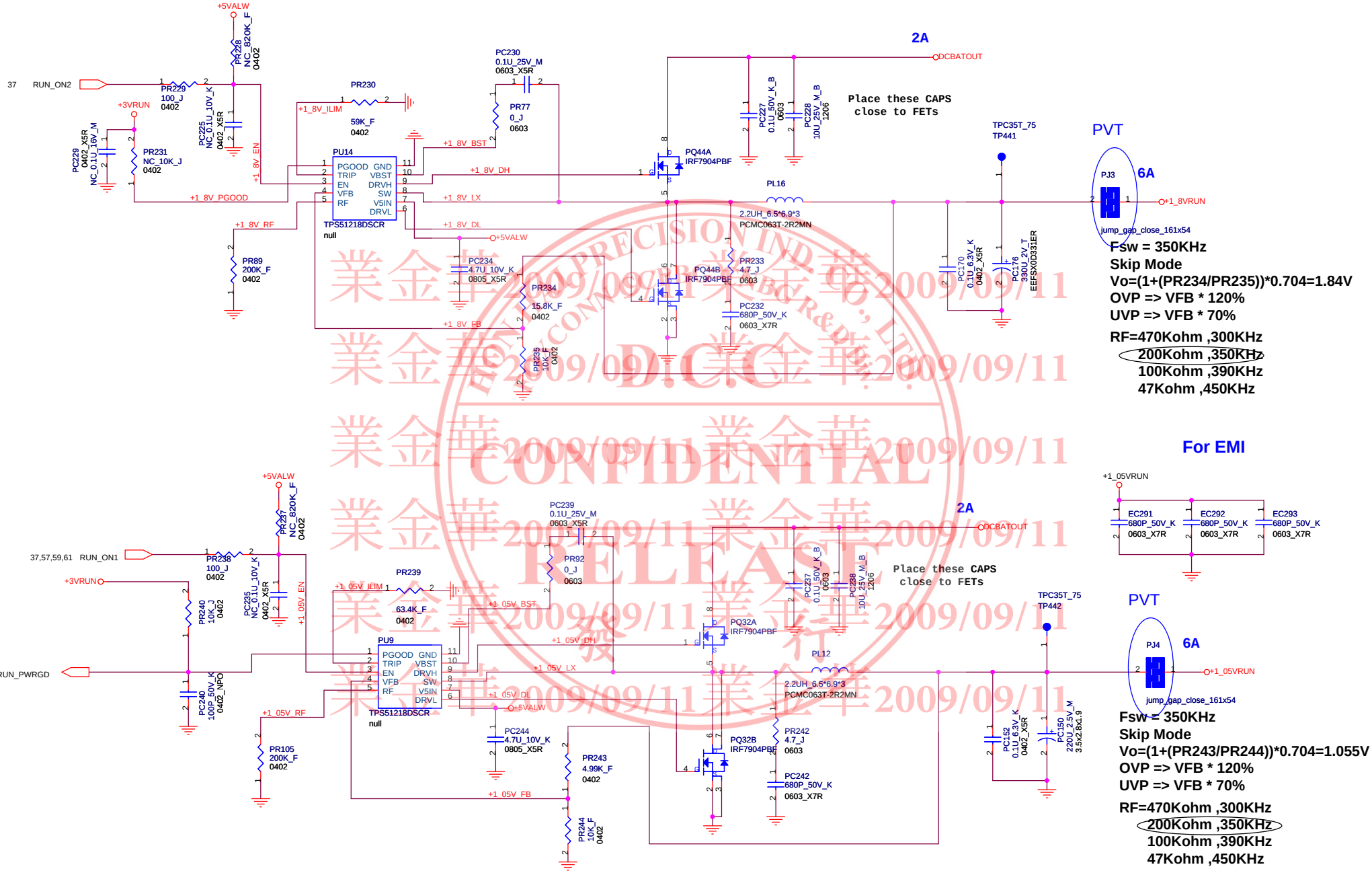
SKIP#	Operating Mode
GND	Pulse-Skipping
REF	Ultrasonic-Skip
VCC	PWM

L=VOUT(VIN-VOUT)/(VIN*f*LIR*ILOAD(MAX))

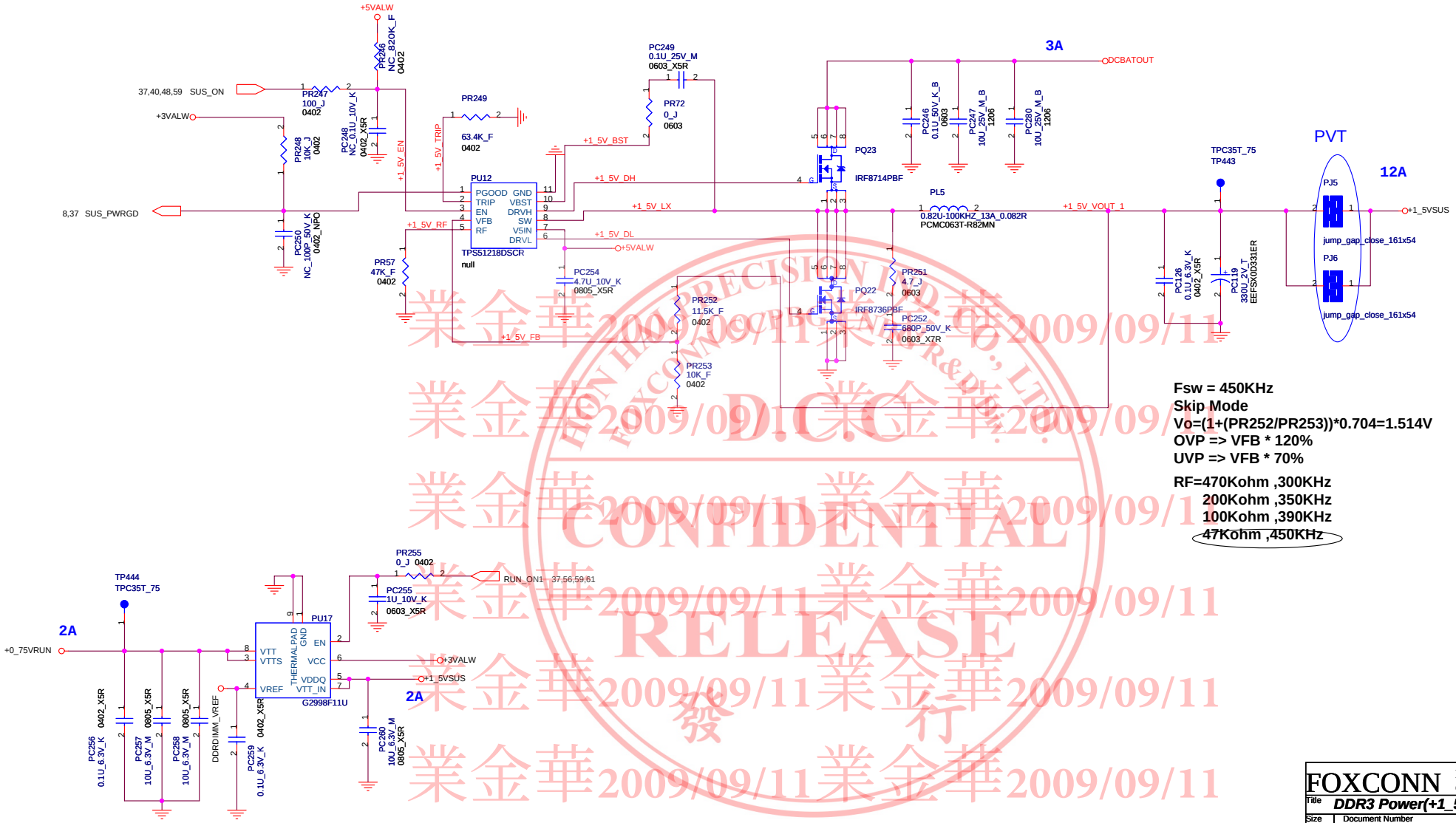
Rocp=(Iocp-Iripple/2)*(10*Rds(on))/5u

+5VALW=((PR205/PR208)+1)*VFB1

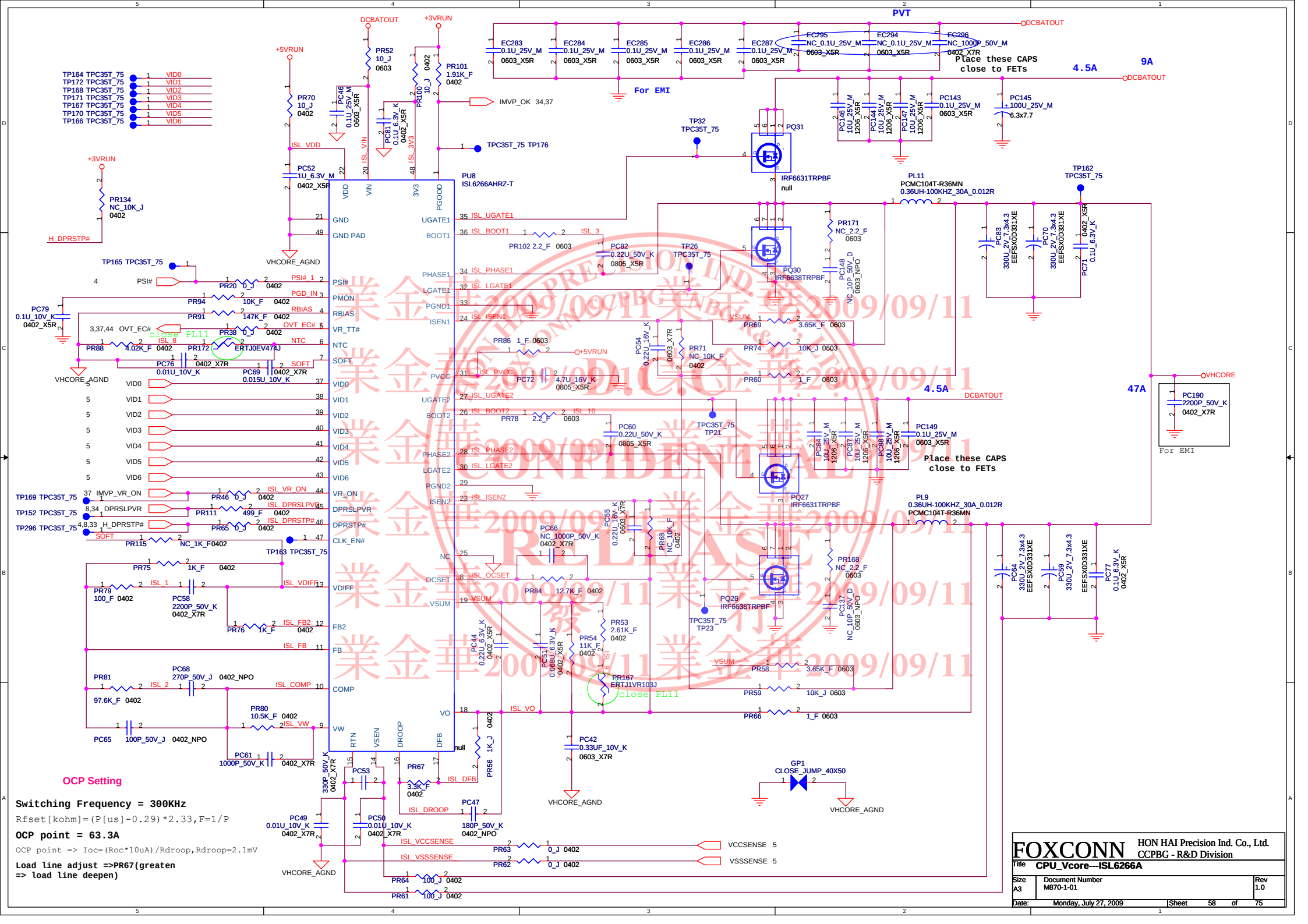
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division
Title	SYS Power (+3_3V/+5V)
Size A3	Document Number M870-1-01
Rev	1.0
Date:	Monday, July 27, 2009
Sheet	55 of 75



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division
Title	SYS Power(+1_5V/+1_05V)
Size A3	Document Number M870-1-01 Rev 1.0
Date: Monday, July 27, 2009	Sheet 56 of 75



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	DDR3 Power(+1_5V/+0_75V)	
Size: Custom	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 57 of 75	


PVT
Place these CAPS close to FETs
4.5A
9A
For EMI
PU8 ISL6266AHRZ-T
PQ31 IRF6631TRPBF
PQ30 IRF6638TRPBF
PQ27 IRF6631TRPBF
PQ28 IRF6638TRPBF
PL11 PCMC104T-R36MN 0.36UH-100KHZ_30A_0.012R
PL9 0.36UH-100KHZ_30A_0.012R PCMC104T-R36MN
47A
VHCORE
OCP Setting
Switching Frequency = 300KHz
Rfset[kohm]=(P[us]-0.29)*2.33,F=1/P
OCP point = 63.3A
OCP point => Ioc=(Roc*10uA)/Rdroop,Rdroop=2.1mV
Load line adjust =>PR67(greaten
=> load line deepen)
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title CPU_Vcore---ISL6266A
Size A3
Document Number M870-1-01
Rev 1.0
Date: Monday, July 27, 2009
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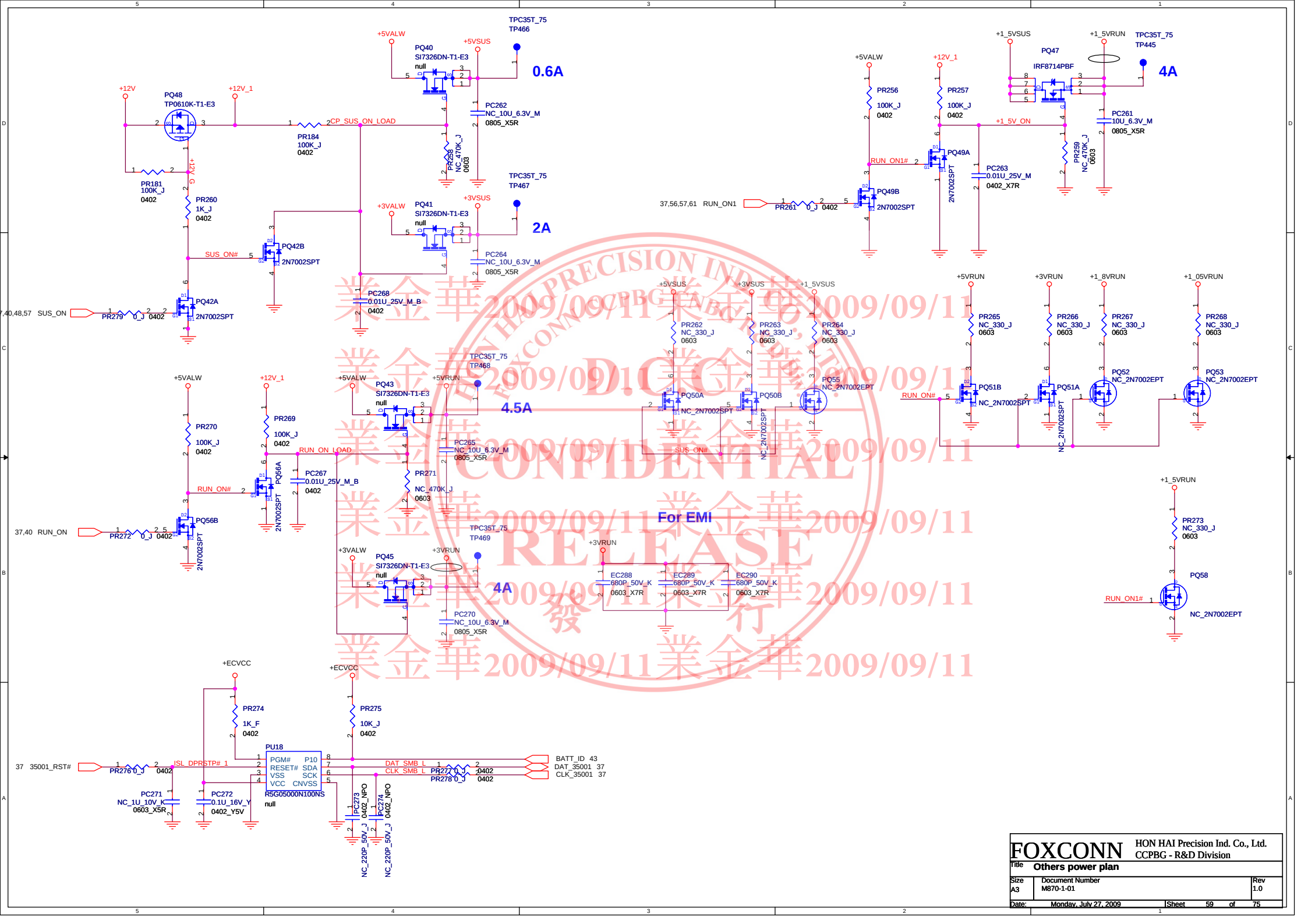
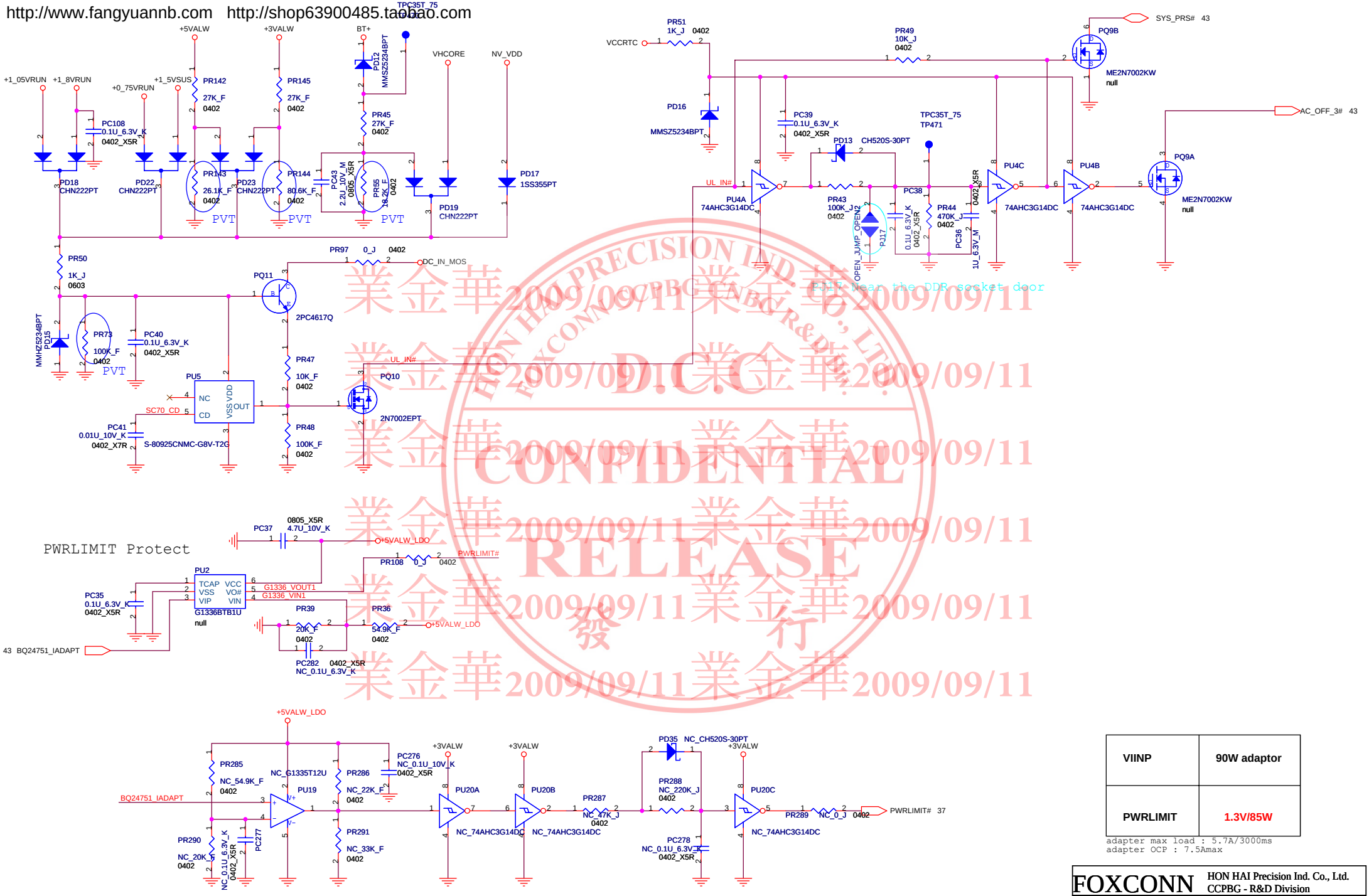


FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Others power plan	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 59 of 75	



VIINP	90W adaptor
PWRLIMIT	1.3V/85W

adapter max load : 5.7A/3000ms
adapter OCP : 7.5Amax

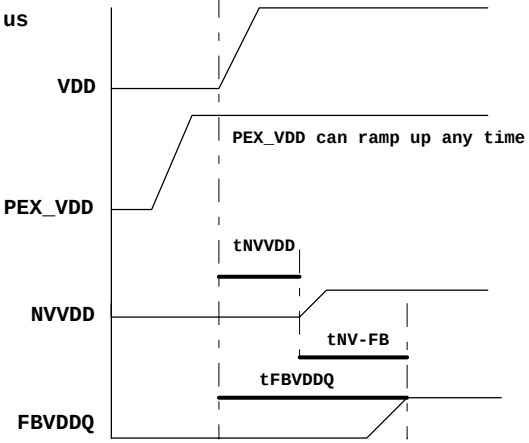
FOXCONN HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division

Title: OVP protection

Size	Document Number	Rev
A3	M870-1-01	1.0

Date: Monday, July 27, 2009 Sheet 60 of 75

The ramp time for any rail must be more than 40 us
NVVDD<=VDD(3.3V+0.5V)
FBVDDQ<=VDD(3.3V+0.5V)



For EMI close PC140

3A

Recommended Power sequencing order

PVT 19A

Vo=(1+(PR181/PR184))*0.5
Ioc=(Itrip*Rtrip)/Rdson =>(10uA*PR180)/Rdson
Operating Frequeny : 300KHz
OVP => VFB * 116%
UVP => VFB * 70%

For EMI close PC102

2A

PVT 2A

Vo=(1+(PR121/PR122))*0.8=1.05V

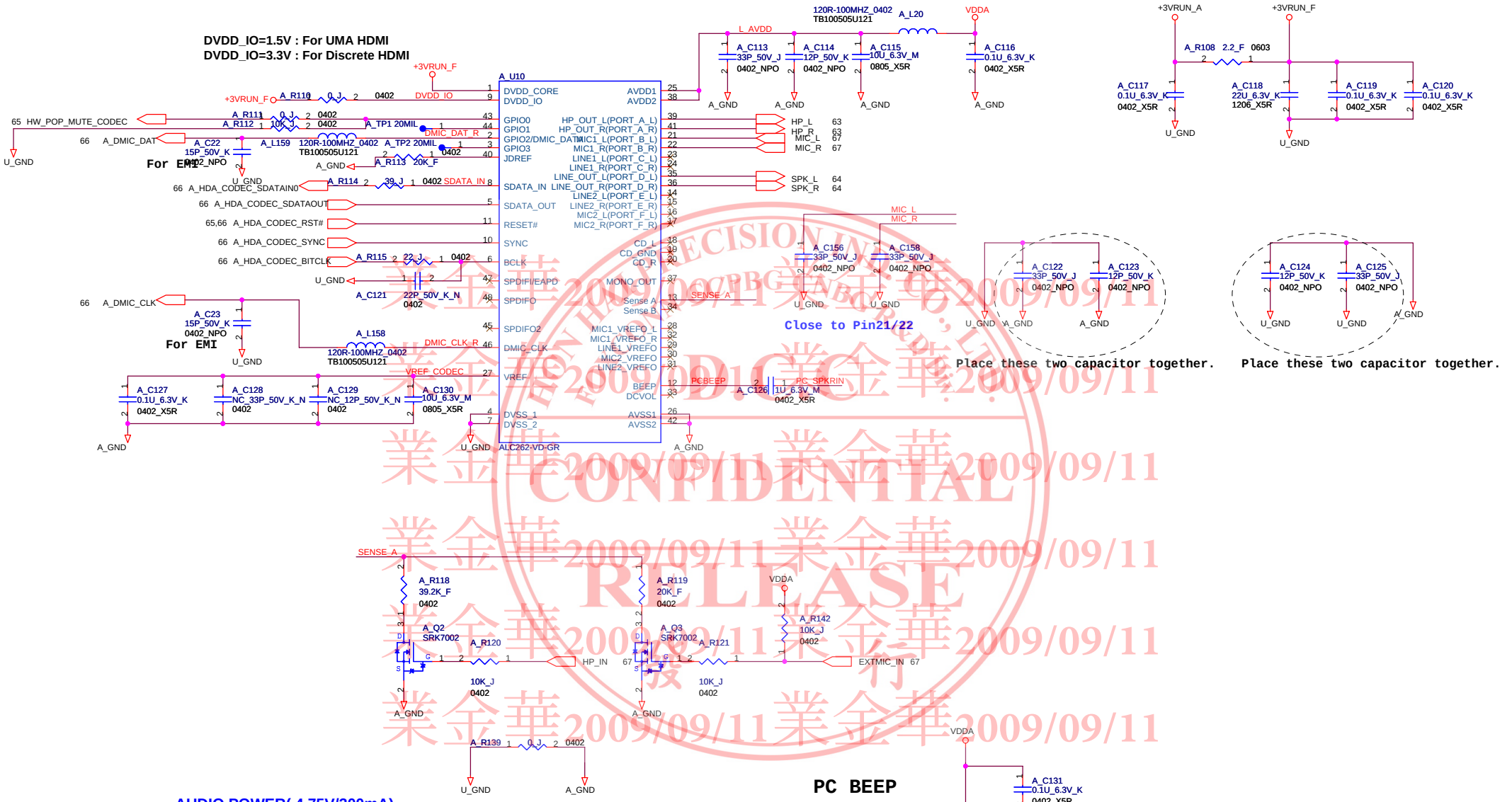
N10P-LP	I/O	Inter pull low	GPIO TABLE
PWRCNTL_0	O	Yes	GPU Voltage fix 0.85V

N10M-GS	I/O	Inter pull low	GPIO TABLE
PWRCNTL_0	O	Yes	GPU Voltage H:=1.00V GPU Voltage L:=0.85V

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

Title	VGA Power(Fix +1_1V)	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 61 of 75	

DVDD_IO=1.5V : For UMA HDMI
DVDD_IO=3.3V : For Discrete HDMI

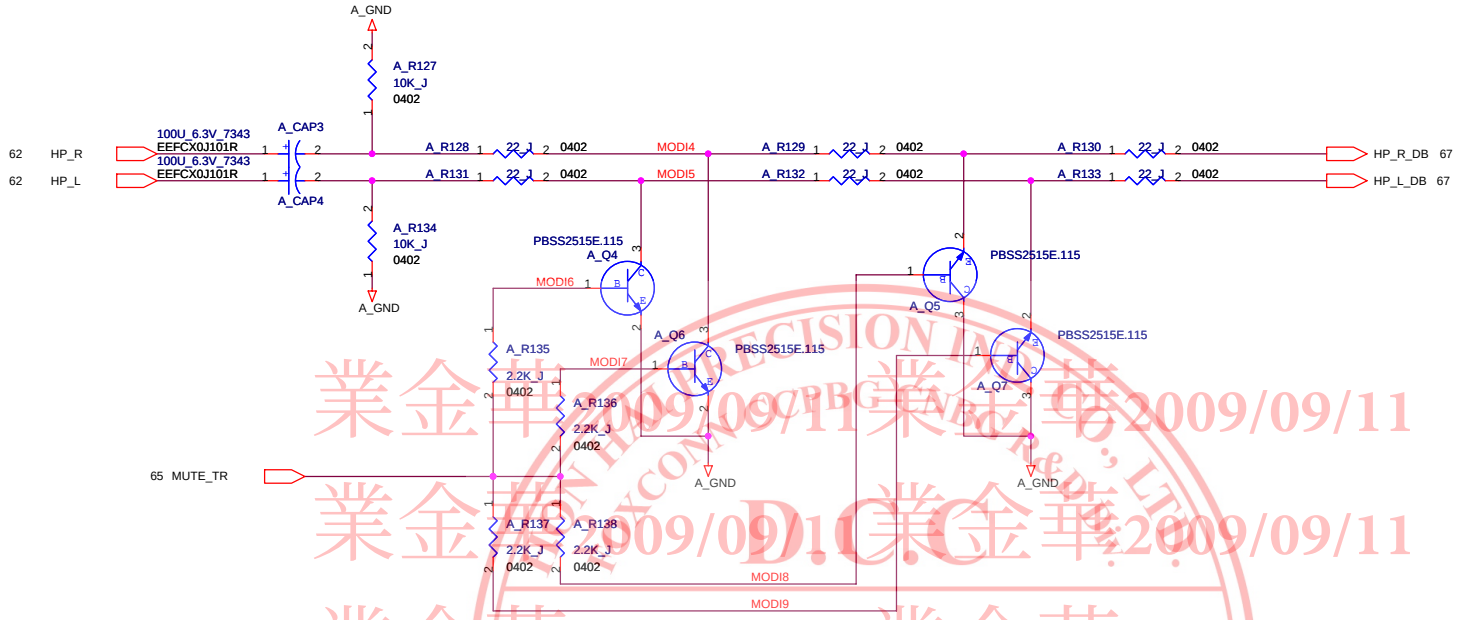


FOXCONN HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division

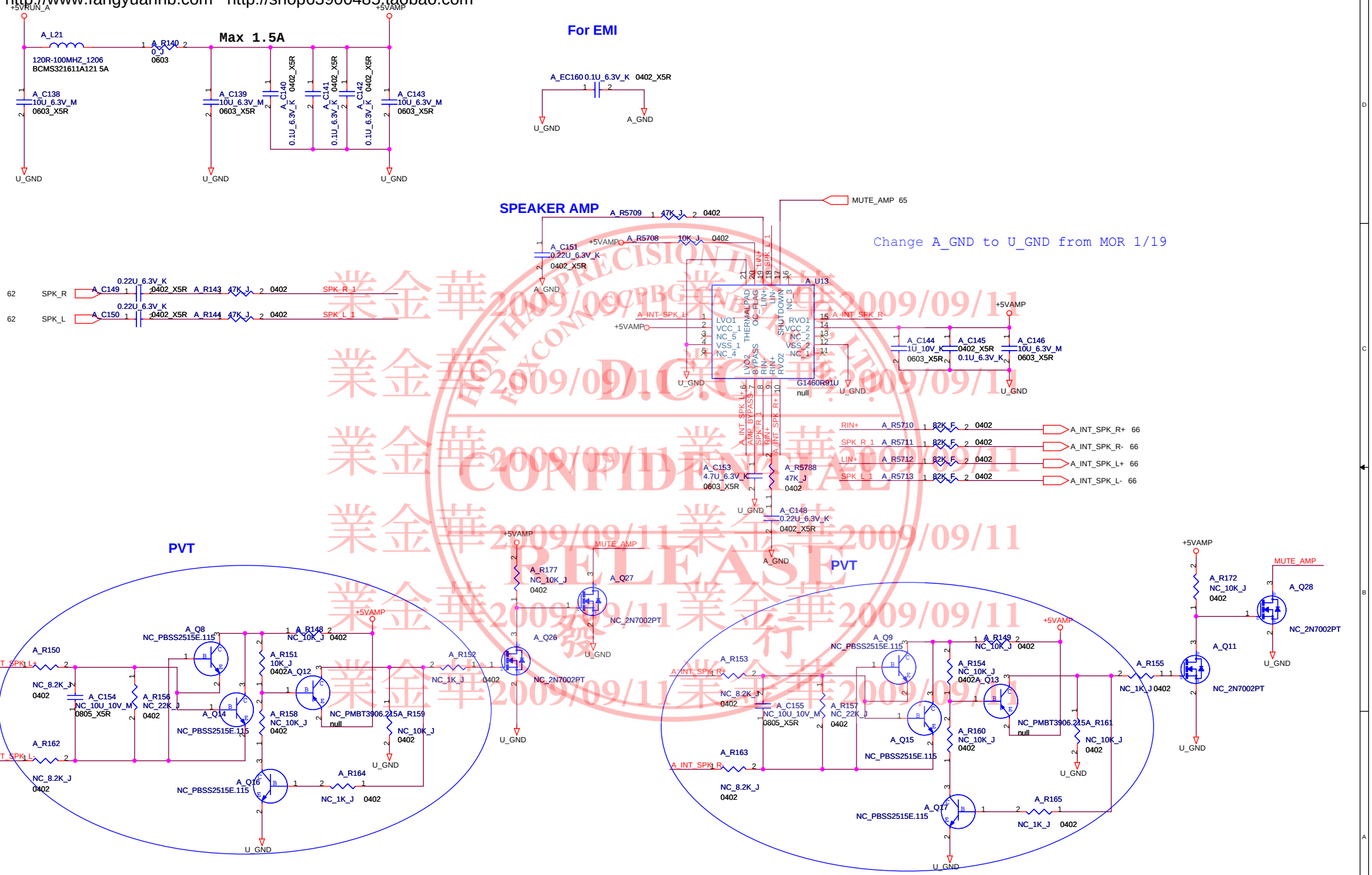
Title: Audio (CODEC & POWER)

Size	Document Number	Rev
A3	M870-1-01	1.0

Date: Monday, July 27, 2009 Sheet 62 of 75

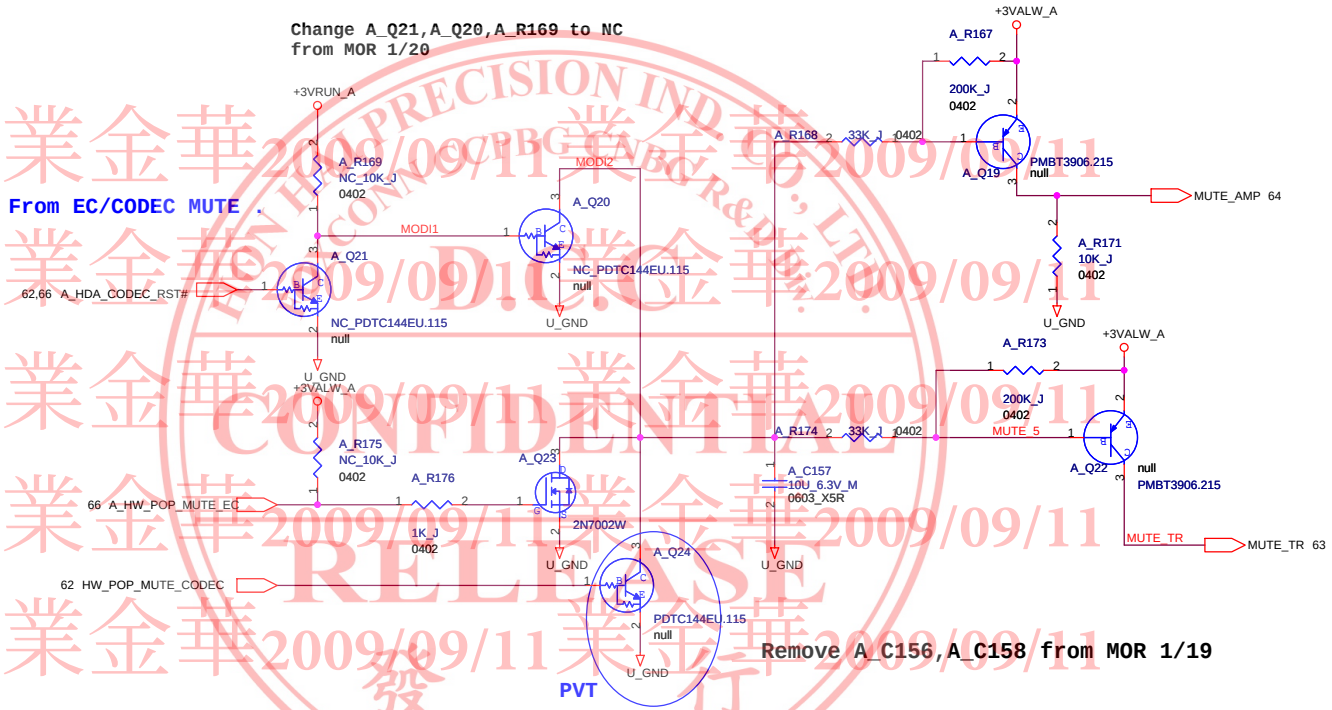


FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Audio (HP)	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 63 of 75	

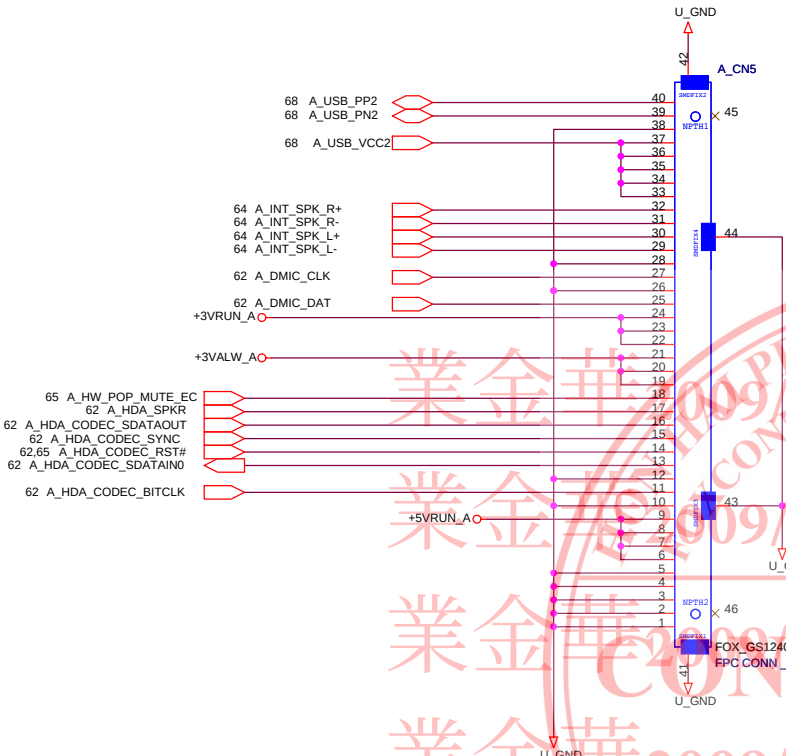


For Mor request,add the speaker cable short protection circuit

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Audio (SPKR)	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 64 of 75	

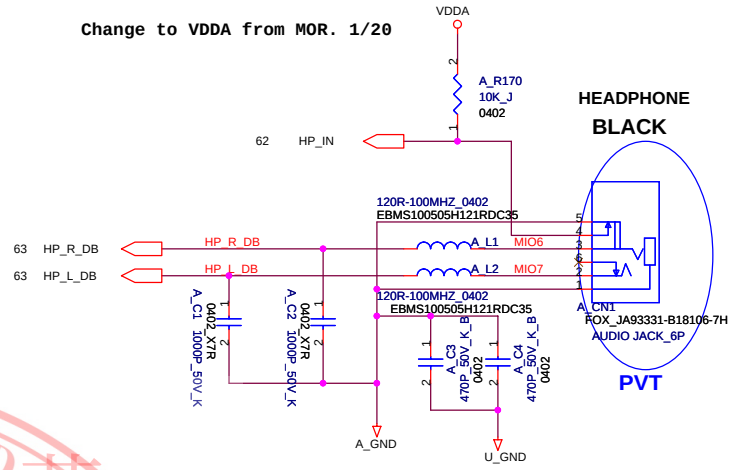


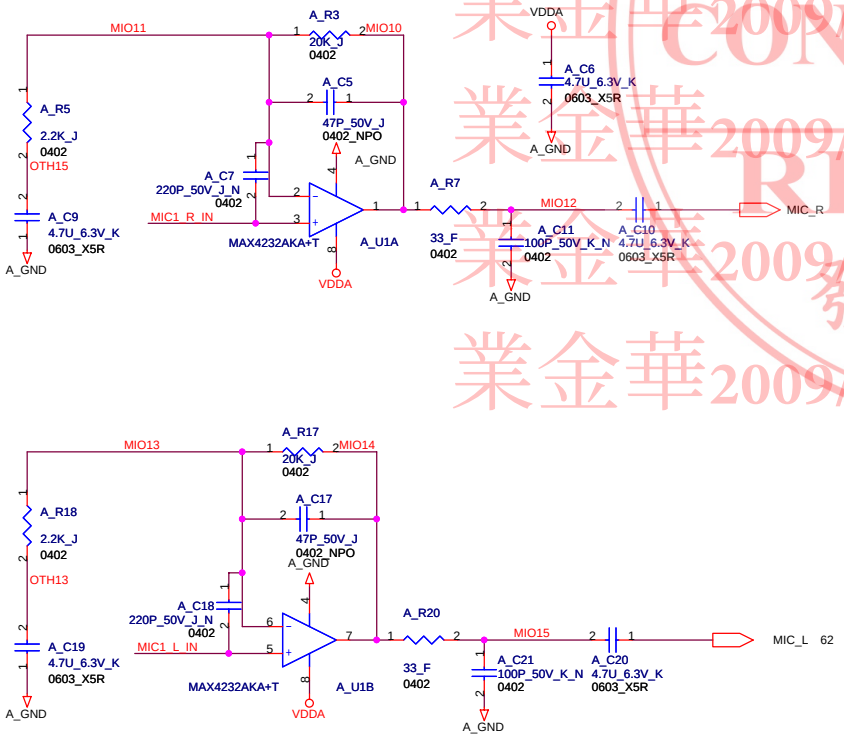
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title: Audio (MUTE)		
Size: A3	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 65 of 75	

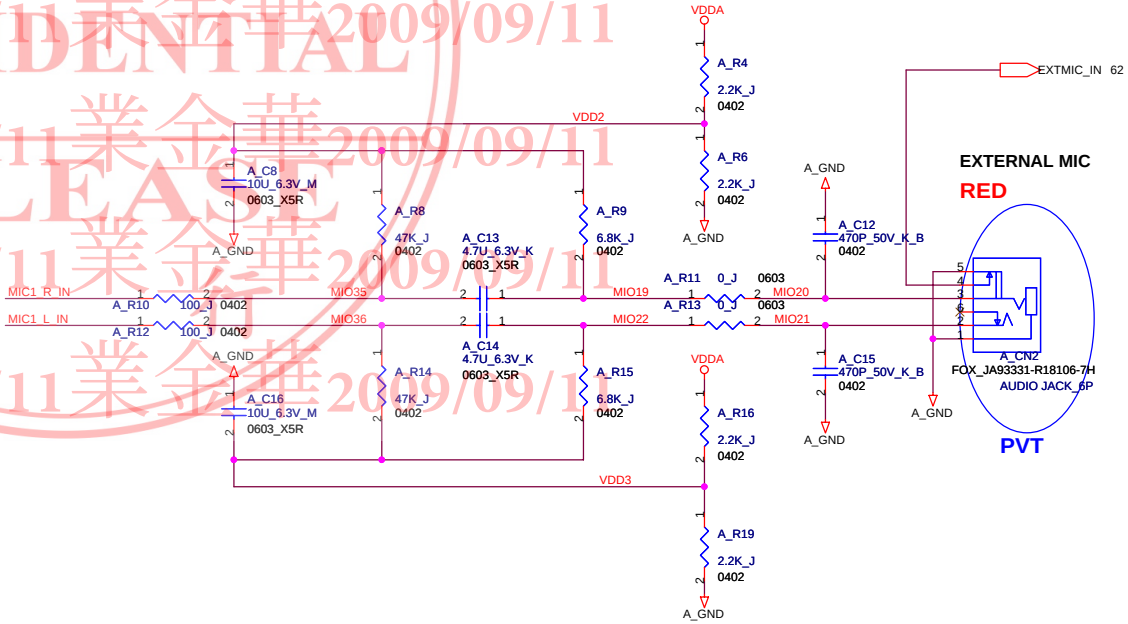


FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division	
Title: Audio+USB DB CONN		
Size: A3	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 66 of 75	

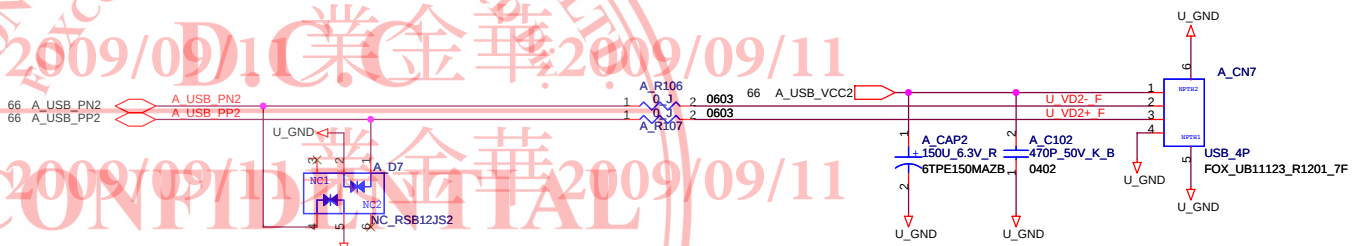
Change to VDDA from MOR. 1/20



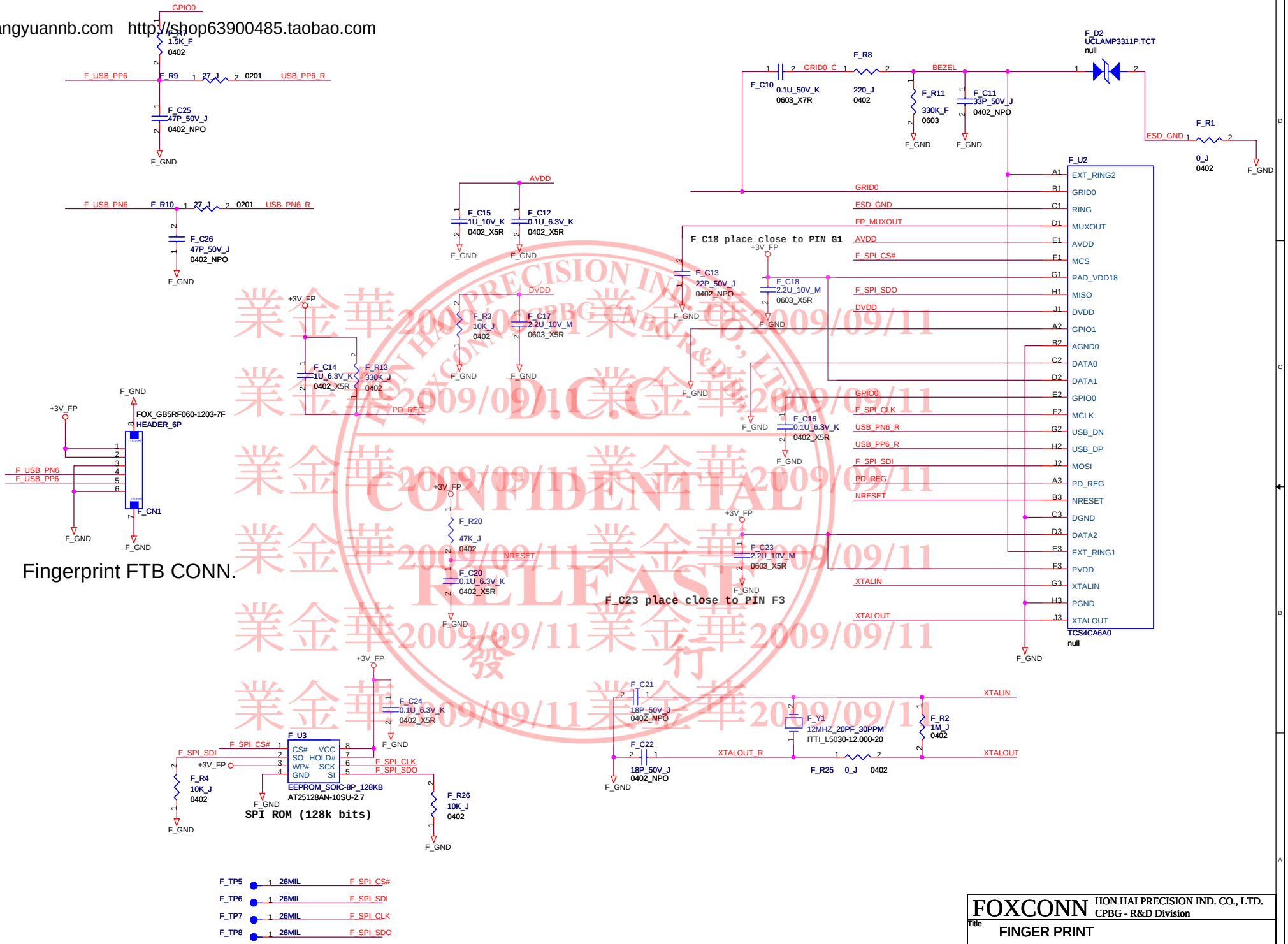




FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Audio (HP, MIC Jack)	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 67 of 75	

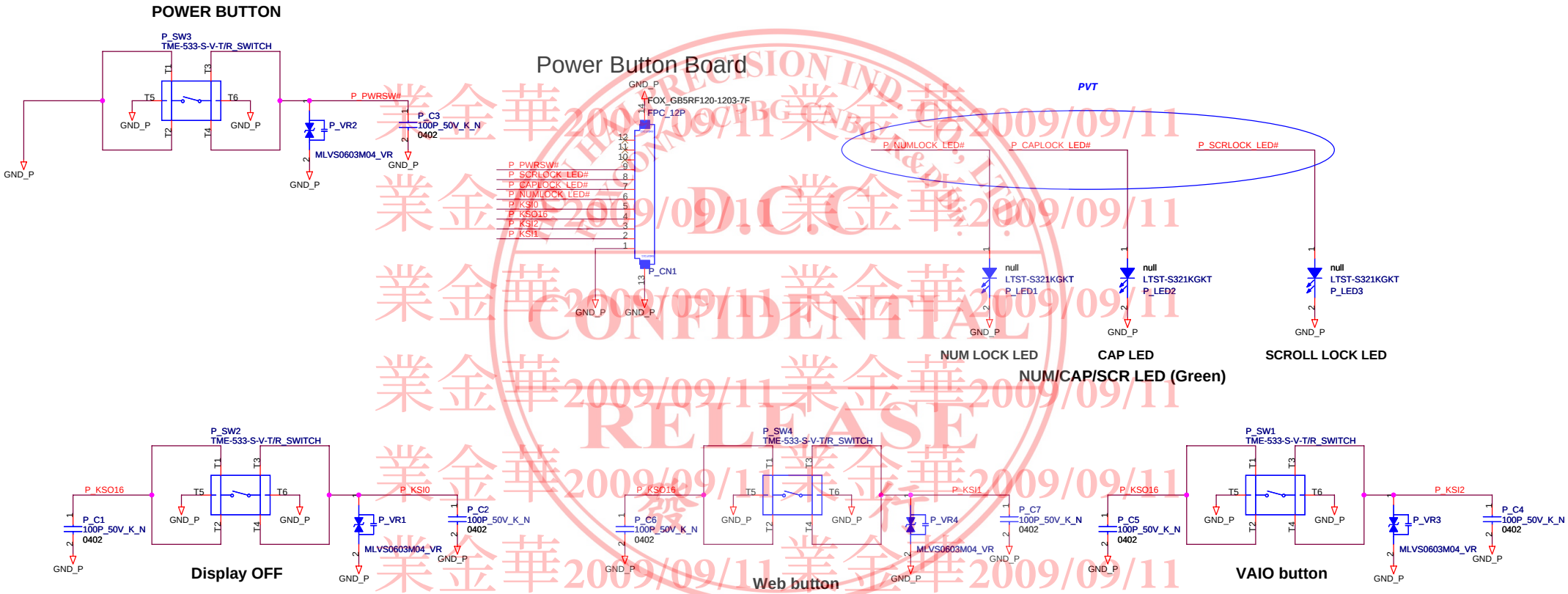


FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title: USB2.0		
Size: A3	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 68 of 75	



Fingerprint FTB CONN.

FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division	
Title: FINGER PRINT		
Size: A3	Document Number: M870-1-01	Rev: 1.0
Date: Monday, July 27, 2009	Sheet 69 of 75	



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	CONN & BUTTONS	
Size A3	Document Number M870-1-01	Rev 1.0
Date: Monday, July 27, 2009	Sheet 70 of 75	

(2009/01/08)
P.37 RP41 pin swap for layou request.
P.31 RP1~RP4 pin swap for layou request.
P.30 Reserve R5693 for SW test od del SW1.
P.41 Change C5183 4.7u to 10u for FAE suggestion.
P.33 Change D4 footprint for SMT request.
P.34 Change D5,D6,D8 footprint for SMT request.
P.35 Change D7,D14,D16 footprint for SMT request.
P.37 Change D17,D18 footprint for SMT request.

(2009/01/09)
P.44 Change R200 from 150 ohm to 100K.C286 change to 0402.
P.50 Modify MS/SD LED circuit of active low schematic.
P.06 Del R547,R556 for FAE suggestion.
P.09,17 Change PCIE cap to 0402 size.
P.46 Add 0 ohm resistor for SD Data.
P.45 Add 0 ohm resistor for MS Data.
P.64 Change SPK AMP circuit.
P.41 Add C5252,C5253,C5254,C5255 for FAE suggestion.

(2009/01/10)
P.03 Add Test point for CPU side (TP34,TP38)
P.69 Change F_U3 to AT25128AN-10SU-2.7.

(2009/01/12)
P.37,43 Add LED control signal for MOR request.
P.64 Add A_R5708,A_R5709,A_R5710,A_R5711,A_R5712,A_R5713 for FAE request.

(2009/01/13)
P.18 Add C878 change L74 for demo circuit.
P.23 Remove R4813,R4802,R4803,R4804,C5127 from FAE.
P.20 Change C1390 to 1u.
P.16 Remove C1322
P.20 Change R5265 to 10K ohm from Design guide.
P.58 Add PC145 for power suggestion.
P.41 Change C5184,C5185 cap size to 0402.
P.69 Change F_C12,F_C16,F_C20,F_C24 size to 0402.
P.46 Change C1985 size to 0402.
P.70 Change P_LED1,P_LED2,P_LED3 to HT-170UYG for PE suggestion.
P.50 Change LED9 to HT-170UD,LED2,LED8,LED6 to HT-170UY for PE suggestion.
P.32 Change PCIE port, port3 for cardreader,port4 for Express from MOR suggestion.
P.50 Add Q59,Q60 for power and suspend LED control.
P.24 Add C5195,C5199 for DG.
P.15 RP36,RP34,RP33,RP38 pin3,4 swap for layout.
P.20 Change C5240 for PUR request.
P.24 Change C5243,C5246 for PUR suggestion.
P.30 Change C1264 for PUR suggestion.
P.69 Change F_C10 for PUR suggestion.
P.69 Change F_C28 size to 0402.

(2009/01/14)
P.37 Add R5708 for power request.
P.62 Add A_R117 and reserve A_C22,A_C23,A_CN3,change A_R116 for EMI suggestion.
P.50 Modify power and suspend LED schematic.
P.42 Change CN13 to LD2722F-S08L6 for ME request.
P.54 Change PCN1 to BP91071-B71E3-7F for ME request.

(2009/01/15)
P.62 Delete A_C112,A_R109.
P.43,66 Modify DB conector pin define.
P.21 Change R5269 value to stuff from MOR suggestion.

(2009/01/15)
P.31 {HDMI}Delete R515,R538 because double pull-high.
P.18/19 {VGA}Remove R5576,R5579,R5577,R5580
P.62 {Audio}Change A_R112 to 10K and add A_R142 from MOR request.
P.64 {Audio}Remove A_R150,A_R162,A_R153,A_R163.
P.65 {Audio}Remove A_R172 because have double resistor.
P.16 {VGA}Remove C5124.Add C1303 for DG.
P.22 {VGA}Remove R5300 from FAE suggestion.
P.17 {VGA}Add R5251 for N10P-Lp deivce ID 0x0A2A.
P.43 {LED}Move LED circuit to MB.

(2009/01/19)
P.55 {3V/5V}Add PR236,PR245,PC266,PC269 for EMI request.
P.62 {Audio}A_CN3 For EMI Request.
P.12 {Cantiga}Remove R211 from MOR request
P.30 {LVDS} Change L43 to 600R-100MHZ_0805 from MOR request.
P.37 {EC} Add 10K pull-high resistor for INST_ON_SW.
P.30 Change SW1 to HDS406-021E_SW-SMD12 for INST_ON_SW function.
P.45 {Cardreader} Add R818,C864 MOR request (For noise reduction).
P.45 {Cardreader} Change C489 to 1u MOR request.
P.46 {Cardreader} Change C1981 to X5R MOR request.
P.46 {Cardreader} Remove R5377 for MOR request.
P.65 {Audio}Remove A_C156,A_C158 from MOR request.
P.62 {Audio} Change A_R123 to 200K from MOR request.
P.64 {Audio} Change A_5709,A_5788 to 47K,A_C148,A_C151 to 1U from MOR request.
P.26 {VRAM} Add C23,C25,C26,C28 For 2.4GHz noise.
P.25 {VRAM} Add C30,C31,C32,C45 For 2.4GHz noise.
P.16 {VGA} Add C46,C47,C48,C49,C50 For 2.4GHz noise.
P.11 {Cantiga} Add C21,C53,C54 For 2.4GHz noise.
P.14/15 {DDR3} Modify to DDR3 circuit from MOR request.

(2009/01/20)
P.60 {OVP} Remove PD10 from MOR request.
P.08 {Cantiga} Add U43, C820, R568,R582 to solve SUS_PWRGD level drop issue.
P.37 {EC} EXT_DEV_SENSE change to GPIO33 from EC request.

(2009/01/23)
P.45,46 {Cardreader} Change CN35,CN16 connector from ME request.
P.34 {ICH9} Add R5714 for GPU ES sample.
P.17 {VGA} Change R5251 to 15K,Add R5716 15K for FAE request.
P.38 {EC} Add 1K pull-high from Vendor suggestion.
P.43 {LED} Change LED power plan from 3V to 5V from MOR suggestion.
P.17 {VGA} Change R5249 to 45.3K.

(2009/02/05)
P.38 {SPI} Change U12 to MX25L1605DM2I-12G.
P.21 {VGA} R5269 to no stuff from MOR request.
P.22 {VGA} Reserve R5717 from MOR request.
P.30 {LVDS} Change U29.1 to INV_EN from MOR request.(LCD timing)
P.21 {VGA} Reserve R5718(+3VRUN) for IOVDD backup from MOR.

(2009/02/16)
P.42 {SATA} Change CN13 HDD CONN from ME request.
P.21 {VGA} Add C5138 for design guide v03.
P.31 {HDMI} Delete LEVEL SHIFTER circuit from MOR.
P.56 {+1_8V/+1_05V} Change PL12 to PCMB053T-1R5MS for Power request.
P.45 {Cardreader} Change PCIE Head connector.
P.43,69 {Fingerprint} Change Fingerprint CONN to 6pin for layout sapce.

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(2009/02/19)

P.24 {VGA Power} Delete C5246,C5207,C5210 Add C6038,C6039,C5201,C6040,C6041 from DG v04.

P.25 {VRAM} Delete R5336,R5720,R5344,R5721 Add R5724,R5725 from DG v04.

P.26 {VRAM} Delete R5350,R5723,R5351,R5722 Add R5726,R5727 from DG v04.

P.18 {VGA} Delete C876,C6018,C6016,C6017,C6019 for M and L board. for N10M.

P.18 {VGA} Delete C879,C6012,C6006,C6010,C6011 for M and L board. for N10M.

P.21 {VGA} Change L70,L77 to 180R from DG v04.

P.21 {VGA} Change L75 to 220R from DG v04.

P.21 {VGA} Change C5132 to 1U from DG v04.

P.20 {VGA} Change C5200 to 1U and add C5202 from DG v04.

P.20 {VGA} Change L155 to 220R from DG v04.

P.20 {VGA} Add C1395,C1397,C1396 from DG v04.

P.14 {DDR} Change CAP13,C222,C219,C196,C221 to stuff.

P.15 {DDR} Change C202,C179,C197 to stuff.

P.54 {Charger} Reserve PQ14,PD9 and PR34.

P.41 {LAN} Change L5 to LFE9249-R for PUR request.

P.70 {Power Board} Change P_SW1~P_SW4 to TME-533-S-V-T/R_SWITCH from PUR request.

P.38 {SPI} Change R269 to 8.2K from FAE.

(2009/02/23)

P.50 {LED} Change LED2,LED6,LED9 for ME request.

P.49 {BT} Change BOSS11,BOSS12 to A40M20-31BS for ME request.

P.52 {HOLE} Change BOSS14 to A40M20-40BS for ME request.

P.39 {WLAN} Change BOSS1,BOSS2 to A40M20-30BS for ME request.

P.39 {WLAN} Change SW4 to 1BS007-12120-002-7F fro ME request.

P.39 {WLAN} Change CN21 to AS0B226-S52N-7F fro ME request.

P.68 {USB/DB} Change A_CN7 to UB11123_R1201_7F for ME request.

P.16 {VGA} Change L73 to 100NH from DG v04.

P.18 {VGA} Change L74 to 300R from DG v04.

P.50 {TP} Change F7 to 6V-0.25A_1206 from MOR request.

P.21 {VGA} Change L71 to 300R from DG v04.

P.20 {VGA} Change L76 to 300R from DG v04.

P.20 {VGA} Change L81,L83 to 100NH from DG v04.

P.42 {HDD} Change CN13 to LD2522H-S02 from ME request.

P.42 {ODD} Change CN25 to LN27133-F408-9F from ME request.

(2009/02/24)

P.69 Change F_D2 to UCLAMP3311P.TCT.

P.22 {VGA} Delete R5297,R5296.

P.47 {CAM} Change U41 to MAX4789EUK+T.

P.31 {HDMI} Delete RP1,RP2,RP3,RP4 from FAE suggestion.

P.24 {VGA} Change C6040,C6041 to 0.22U_6.3V_K from PUR suggestion.

(2009/02/25)

P.18 {VGA} Remove U56.J27 reserve circuit from FAE suggestion.

P.30 {LVDS} Change CN18 to GS12401-1011-9F from ME request.

P.54 {Charger} Change PF1 to 24V-7A_1206 from power request.

P.52 {HOLE} Delete BOSS3,BOSS13, add BOSS15 from ME request.

P.69 {FP} Delete F_BOSS1 from ME request.

P.64 {Audio} Change A_R5710,A_R5711,A_R5712,A_R5713 to 105K from FAE suggestion.

P.22 {VGA} Add R5728,R5729 from FAE sguusetion. Because use external thermal sensor.

(2009/02/26)

P.45 {Cardreader} Change CN11 to UV31413-RU82P-7H from ME request.

P.49 {BT} Change CN32 to QT510106-312H-7H from ME request.

P.29 {CRT} Change CN2 to DZ11A91-MB229-9F from ME request.

P.48 {USB} Change CN9,CN12 to UB111M3-CAGS4-7H from ME request.

P.42 {HDD} Change CN13 to LD2722F-SRYL6 from ME request.

P.41 {LAN} Chnage L5 to LG-2413S-1 from PUR suggestion.

P.47 {CAM} Change CN17 to HS6204E. Because move MIC to Audio board from MI request.

P.62 {Audio} Change A_CN3 to HS6202E from ME request.

P.47 {CAM} Delete L65,L63,C779,C780 from EMI request.

P.62 {Audio} Add A_L27,A_L28,A_C159,A_C160 from EMI request.

P.17 {VGA} Change R5251 to 15K from FAE request.

(2009/02/27)

P.20 {VGA} Change L154 to 33ohm from DG v04.

P.47 {CAM} Remove R7,R4. Add R8 from MOR suggestion.

P.11 {Cantiga} Change C21 value to NC from MOR request.

P.15 {DDR3} Add C59 from MOR request.

P.16,23 {VGA} Change L73,L81,L83 to TL160808-R10K.

P.18 {VGA} Add C6042 from MOR request.

P.27 {VRAM} Remove C14,C15 from MOR request.

P.28 {VRAM} Remove C16,C17 from MOR request.

P.39 {WLAN} Reserve R5370 from MOR request.

P.29 {CRT} Change R83,R72,R64 to 75ohm from MOR suggestion.

P.20 {VGA} Remove R5262,R5263,R5264 from MOR suggestion.

(2009/03/02)

P.39 {WLAN} Change BOSS1,BOSS2 footptint.

P.14 {DDR} Change C92 to 22P for RE suggestion.

P.14,15 {DDR} Remove C214,C200, because had same solution.

P.52 {HOLE} Modify F_PAD5,F_PAD6 PAD size from EMI request.

P.42 {HDD} Remove R5712, add open jump.

P.42 {ODD} Remove R5713, add open jump.

P.54 {Charger} Change PCN2 to GS73041-10272-7F from ME request.

P.21 {VGA} Change C5132,C5236 size to 0402 from DG v04.

P.54 {Charger} Change PCN1 to BP91071-B71E3-7H from ME request.

(2009/03/03)

P.62 {Audio} Change A_CN3 to HS8202E from ME request.

P.52 {HOLE} Add P_R4,P_C8(reserve) for EMI request.

P.50 {LED} Change LED2,6 to L-C170KRCT-FX for SPEC.

P.50 {LED} Change LED9 to HT-191UD for SPEC.

P.70 {Function} Change P_LED1,P_LED2,P_LED3,P_LED11 to L-C170KGCT-FX for SPEC.

P.39 {WLAN} Change LED3 to L-C170KGCT-FX for SPEC.

P.50 {TP} Chnage CN34 to GB5RF060-1203-7F for ME request.

P.39 {WLAN} Change SW4 to SSSS811101_SW-SMD7 from ME request.

(2009/03/04)

P.50 {TP} Add R5733~R5740 for co-lay 2 TP vendor.

P.14 {DDR} Change CN29 to AS0A626-U2SN-7F from ME request.

P.48 {USB} Add L156 for EMI suggestion.

P.61 {VGA} Change PR87 to 7.15K for power request.

P.52 {HOLE} Add BOSS16 for ME request.

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(2009/03/09)

P.48,43 {USB} Change F1,F11,F12 to 6V_2.0A_1812.
P.62 {Audio} Change A_R118,A_R119,A_R120,A_R121,A_C116,A_C117,A_C119,A_C120, A_C127,A_C133,A_C131,A_C136 to 0402 size.
P.62,67 {Audio} Change A_C137,A_R119,A_R125,A_R5,A_R18 to 0402 size.
P.63 {HP} Change A_R127,A_R134,A_R128,A_R129,A_R130,A_R131,A_R132,A_R133,A_R135, A_R136,A_R137,A_R138 to 0402 size.
P.37 {EC} Change R476,R487,R484,R76,R210,R437,R479,R447,R432,R173,R197,R203,R124, R75,R442,R440,R477,R436,R431,R435,R613,R475,R629,R444 to 0402 size.
P.34 {ICH9} Change R302,R295,R563,R575,R574,R578,R320,R319,R271,R272,R337,R331,R334, R576,R309,R294,R300,R306,R298,R303,R316,R338,R577,R573,R332,R555,R562,R297,R322, R296,R567,R54,R540,R541,R299,R321,R305,R315 to 0402 size.
P.06 {CLK} Change R288,R283,R542,R537,R536,R545,R277,R553,R534,R276,R552,C357, C377,C369,C370,C383,C386 to 0402 size.
P.64 {SPK} Change A_C145,A_C140,A_C141,A_C142 to 0402 size.
P.54 {Charger} SWAP PD2 Pin1.2 for layout.
P.12 {Cantiga} Change R208,C234,C346,C320,C287,C316,C326,C328,C313,C298 to 0402 size.
P.06 {CLK} Change R544,R619,R620,R621,R543,R550,R546,R551,R549,C384,C382,C355, C375,C385,C352,C376,C387,C356 to 0402 size.
P.32 {ICH9} Change R53,R307,C449,C450,C727,C728,C706,C702,C729,C730 to 0402 size.
P.69 {FP} Change F_R9,F_R10,F_R20,F_R1,F_R25,F_R3,F_R26,F_R4,F_C12,F_C20,F_C24, F_C16 to 0402 size.
P.65 {Audio} Change A_R166,A_R171,A_R169,A_R175,A_R176 to 0402 size.
P.67 {HP} Change A_R7,A_R20,A_R170 to 0402 size.
P.08 {Cantiga} Change R268,R195,R286,R181,R130,R193 to 0402 size.
P.33 {ICH9} Change R101,R610,R318,R564 to 0402 size.
P.67 {MIC} Change A_R17,A_R3 to 0402 size.
P.65 {MUTE} Change A_R174,A_R168,A_R167,A_R173 to 0402 size.
P.38 {FLASH} Change R233 to 0402 size.

(2009/03/10)

P.55 {3V/5V} Change PU11 to SN0608098RHBR for power request.
P.55 {3V/5V} Change PC216 to 1U for power request.
P.54 {Charger} Add 2 test point for BFT.
P.43 {Audio} Move D-MIC and SPK circuit to MB for ME request.
P.43.66 {Audio} Change CN37 to 40 pin for ME request.
P.49 {BT} Delete R909 from MOR suggestion.Because Vespa is used only UGPZ9.

(2009/03/11)

P.46 {SD} Change U18 to BD2055AFJ-E2 for VEDS spec.
P.50 {TP} Change R529 value to stuff.
P.43,66 {Audio} Modify Audio connector pin define for layout.

(2009/03/12)

P.52 {HOLE} Add A_C159 for EMI request.
P.31 {HDMI} Delete U128, add U130 for low cost solution.

(2009/03/13)

P.29 {CRT} Change Q5,D1,R627,R284 value to no stuff from MOR request.
P.29 {CRT} Add R292 from MOR request.
P.37 {EC} Change C616 value to no stuff from power request.

(2009/03/16)

P.43,66 {Audio} Change Audio BTB connector pin define for EMI suggestion.
P.52 {HOLE} Change H45 for ME request.
P.42 {HDD} Change CN13 to LD2722F-SRVL6 from ME request.

(2009/03/17)

P.64 {SPK} Change cable short circuit from A_GND to U_GND.
P.50 {TP} Delete R5733~R5740 for remove co-lay 2 TP vendor.
P.64 {SPK} Change A_R5710,A_R5711,A_R5712,A_R5713 to 75K from FAE suggestion.

(2009/03/18)

P.50,70 {LED} Move Power & suspend LED to MB for ID modify.
P.54 {Charger} Change PCN1 to BP91071-B31E3-7H from ME request.
P.52 {HOLE} Add A_H49,A_H50 for ME request.
P.70 {LED} Change P_LED1,P_LED2,P_LED3 to L-S110KGCT-FX from ME request.
P.50 {TP} Change SW2,SW3 SKHMQKE010_SW-SMD5 from ME suggestion.
P.52 {HOLE} Delete P_PAD1,P_PAD2,P_PAD3,P_PAD4 for EMI request.

(2009/03/19)

P.52 {HOLE} Change BOSS14,BOSS15 from ME request.
P.49 {BT} Change U45 to AT5208-3.3KER.
P.50 {TP} Change R530 to stuff,R529 to no stuff from MOR request.
P.64 {SPK} Change A_Q10,A_Q11 to 2N7002PT and add A_Q27,A_Q28,A_R172,A_R177.
P.65 {MUTE} Delete A_Q18,A_R166 for MUTE_AMP high active of AMP.

(2009/03/20)

P.52 {HOLE} Delete A_C159 from EMI suggestion.
P.52 {HOLE} Change BOSS15 to BOSS_3.72x4 from ME request.
P.31 {HDMI} Change CN31 to QJ1119L-NT10-4H from ME request.
P.04 {CPU} Reserve C6047 for H_DPRSTP#.

(2009/03/23)

P.22 {VGA} Delete R5728,R5729 because double pull-high.
P.38 {EC} Move R269 to SPI_ROM_CS# signal of EC side.
P.16 {VGA} Change C571,C569 value to no stuff. because control IC have 22uF.
P.14 {DDR3} Change CAP13 to no stuff.
P.54 {Charger} SWAP PD2 pin1,2 for layout request.
P.30 {LVDS} Add CN18.32 to GND.
P.17 {GPU} Change R5689 to 24.9K from DG v04.
P.52 {HOLE} Reserve A_C159 to A_GND from EMI suggestion.
P.69 {FP} Change F_R9,F_R10 to 0201 size for layout space issue.

(2009/03/24)

P.52 {HOLE} Delete SPR1 for EMI request.

(2009/03/25)

P.19 {VGA} Change R5256,R5257 to 56.2 and 27 ohm from N10M PUN modify.

(2009/03/27)

P.50 {TP} Change R529 to stuff,R530 to no stuff for new TP power.
P.08 {Cantiga} Change C820 to Y5V.
P.57 {1.5V_0.75V} Change PC250 to no stuff.
P.59 {Others} Change PC262,PC264,PC265,PC270,PR262,PR263,PR264,PQ50,PQ55, PR265,PR266,PQ51 to no stuff.
P.29 {CRT} C577,C592,C583,C584 to no stuff.
P.30 {LVDS} Delete L43,Add R5731 and change R394 to no stuff.
P.41 {LAN} Delete L152,Add R5733.C5164 change to 10U.
P.42 {SATA} Change C285,C757 to no stuff.
P.48 {USB} Delete L156, Add R5372, Change CAP16,CAP18 to 47UF.
P.50 {LED} Change C6045,C6046,C295,C301 value to no stuff.

(2009/04/03)

P.34 {ICH9} Change R5714 value to no stuff.
P.17 {VGA} Change R5250 to 34.8K from PUN update.
P.39 {WLAN} Change C531,C546,C573 value to no stuff.
P.16 {VGA} Change C1290,C1300,C1312 to no stuff.
P.18 {VGA} Change C874 value to no stuff.
P.20 {VGA} Change C1395,C1397,C5196,C5197 value to no stuff.
P.11 {Canita} Change CAP6 to NC.

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(2009/04/10)

P.21 {VGA} HDMI I2C data and CLK signal swap.
P.19 {VGA} Change R5256 to 56.2_F,R5257 to 40.2_F for PUN V07.
P.37 {EC} Add R478 pull-down resistor for BL_OFF#.
P.50 {TP} Modify SW2,SW3 pin define.

(2009/04/18)

P.39 {WLAN} SW4.C pin delete and SW4.A connect to GND for ME ID design.
P.61 {VGA POWER} Change PR99 to 13.7K, PR110 to 33K,PC85 value to stuff for N10M GPU power.
P.61 {VGA POWER} Change PR99 to 13.7K, Change PR110 to NC_* for N10P GPU power.
P.44 {Thermal} Delete R426,R430 for vendor suggestion.
P.30 {LVDS} Delete U25,U29,U2,U23 and Add U131 (4 channel) for can reducing parts.

(2009/04/21)

P.58 {CPU_CODE} Change PR67 to 3.3K from Power request.

(2009/04/22)

P.43,54 {Charger} Modify charger board BTB connector from ME request.
P.55 {3V/5V} Change PC216 to 1U_6.3V from power request.

(2009/04/28)

P.50 {LED} Change LED2,LED6 to HT-110UY for ME request.
P.50 {LED} Change LED9 to HT-110UD for ME request.
P.43 {SPK} Change JSPK1 to HS6104E for ME request.
P.47 {CAM} Change CN17 to HS6106E for ME request.
P.52 {HOLE} Add BOSS17 for ME request.

(2009/04/30)

P.54 {Charger} Change charger board location to C_*.
P.29 {CRT} Change D11 to SSM22LLPT for leakage issue.
P.30 {LVDS} Change R5241 to no stuff, because had double PL.

(2009/05/04)

P.43 {Audio} Change F12 from 2.6A to 0.75A, because +5VRUN power budget only 0.55A.
P.50 {LED} Change power/suspend LED circuit, same M850.
P.37 {KB} Add 10 test point for BFT.

(2009/05/05)

P.39 {WLAN} Chnage LED3 to HT-110UYG for ME request.
P.70 {Function} Change P_LED1~PLED3 to HT-110UYG for ME request.
P.30 {LVDS} Add J3 for BFT test.

(2009/05/07)

P.39 {WLAN} Add TP499,TP509 for Power test.
P.50 {LED} Add TP494,TP496,TP495,TP493,TP488,TP490,TP491,TP489,TP498,TP497 for power test.
P.57 {DDR Power} Change PU17 pin6 change from +3VSUS to +3VALW for Power request.
P.58 {CPU Power} Add TP176 for Power test.
P.54 {Charger} C_PU1 change to BQ24753ARHDR and schematic_part select bq24753ARHDR_T821_PWR for power request.
P.60 {OVP} PU2 change to G1336BTB1U for power request.
P.60 {OVP} Del PR40,PR41 and pin6 link to +5VALW_LDO directly.
P.30,43,66 {LVDS,BTB,Audio} Change CN18,CN37,A_CN5 to GS12407-11151-9F from ME request.

(2009/05/11)

P.58 {CPU} Add 0.1ux5pcs (EC283~EC287) and PC143,PC149 stuff for EMI suggestion.
P.25 {VRAM} Add EC6048 for EMI suggestion.
P.59 {Others} Add EC288,EC289,EC290 for EMI suggestion.
P.64 {Audio} Delete A_R141, Add A_EC160 for EMI suggestion.
P.14 {DDR} Change CN29 to AS0A626-N2SN-7H from ME request.
P.15 {DDR} Change CN30 to AS0A626-JASG-7H from ME request.
P.40 {Express} Delete R330,R333, Add L37 for express card SI test fail issue.

(2009/05/13)

P.46 {SD} Change R5694,R5695,R5697,R5698 to 33ohm for SI test solution.
P.45 {MS} Change R5704,R5705,R5707,R5701 to 33ohm R5703 to 68ohm for SI test solution.
P.43 {Audio} Chnage A_C110 to C6048 for layout suggestion.
P.43 {Audio} Chnage A_F16,A_F17 to F15,F16 for layout suggestion.
P.33 {ICH9} Change CN10 to HS8102E from ME request.
P.45 {MS} Change CN35 to JES014-2000-1 from ME request.
P.30,43,66 {LVDS,BTB,Audio} Change CN18,CN37,A_CN5 to GS12401_1011 for ME request.
P.52 {HOLE} Change function board and Audio board serew.
P.69 {FP} Change F_CN1 pin define from ME request.
P.70 {Function} Change P_CN1 pin define from ME request.

(2009/05/18)

P.56 {+1_05V} Add 3pcs 680p CAP of EMI suggestion.
P.54 {Charger} Add C_PR136 of EMI request.
P.47 {DMI} Delete L157,L158, add R5734,R5735 for EMI request.
P.43,54 {Charger} Modify charger board CONN pin define for EMI suggestion.

(2009/05/19)

P.62 {Audio} Change A_C23,A_C22 to 15p, And delete A_R117,A_R116 Add A_L158,A_159 for EMI request.

(2009/05/20)

P.56 {1.8/1.05V} Change power solution to TPS51218DSCR for power request.
P.57 {1.05/0.75V} Change power solution to TPS51218DSCR for power request.

(2009/05/21)

P.41 {LAN} Change R5733 to Bead (L152),Add E_C6054,E_C6055,E_C6056 for EMI request
P.46 {SD} Add E_C6049,E_C6050 for EMI request.
P.40 {Exress} Add E_C6051,E_C6052 for EMI request.
P.50 {LED} Add E_C6053 for EMI request.

(2009/05/22)

P.56 {1.8V_1.05V} Change PR235 to 9.76K, PC176 to 330U for power request.
P.52 {HOLE} Add SPR1,SPR2 for EMI request.
P.41 {LAN} Add E_C6054~E_C6057 for EMI request.
P.70 {Function LED} Change P_LED1,P_LED2,P_LED3 for factory request.
P.39 {WLAN LED} Change LED3 for factory request.
P.50 {LED} Change LED2,LED6 for factory request.

(2009/05/23)

P.55 {SYSPOWER} Add E_C6059,E_C6060,E_C6061,E_C6062 for EMI request.
P.41 {LAN} Add E_C6058 for EMI request.
P.44 {LAN} Add E_C6064 for EMI request.
P.61 {VGA Power} Add E_C6063,E_C6065 for EMI request.
P.54 {Charger} Reserve E_C6066 for EMI request.
P.55 {SYSPOWER} Reserve E_C6067,E_C6068,E_C6069,E_C6070 for EMI request.

(2009/05/25)

P.11 {Cantiga} Delete C21 from MOR request.
P.45 {MS} Change R376,R373,R5373,R5374 to 54.9 ohm for i.LINK test issue.
P.20 {VGA} Change R1228,R1231 to NC_* from MOR suggestion.
P.47 {CAM} Change CN17 to HS6206E for ME request.
P.64 {SPK} Delete A_C147,A_C152,Change A_C149,A_C148,A_C150,A_C151 to 0.22u for POP noise issue.
P.64 {SPK} Change A_R5710~A_R5713 resistor to 82K for SPK low voice issue.
P.43 {FP} Change U3 to Max4785 for FP current limit issue.
P.46 {SD} Change CN16 to WK21923-S6P1-7F from ME request.
P.30 {LVDS} Add Swith circuit for rush current issue.

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(2009/06/03)

P.30 {LVDS} Change SW1 to DHNF-06F-T-V-T-R_SW-SMD12 because original part well EOL.
P.17 {VGA} Add R5252 for nVIDIA suggestion.

PVT

(2009/07/01)

P.30 {LVDS} Modify rush current circuit.
P.29 {CRT} Change CN2 to DZ11A91-MB229-9H for ME request.
P.44 {FAN} Change CN20 to HS8103E-LH for ME request.
P.37 {EC} Change CN3 to 196009-24021-3 for ME request.
P.41 {LAN} Change CN22 to HS6108E-LH fot ME request.
P.50/43/69 {TP} Change CN34/CN36/F_CN1 to GB5RF060-1203-7H for ME request.
P.39 {WLAN} Change CN21 to AS0B226-S52N-7H for ME request.
P.43 {BTB} Change JSPK1 to HS6104E-LH for ME request.
P.67 {HP} Change A_CN1 to JA93331-B18106-7H for ME request.
P.52 {HOLE} Change BOSS16 and Add BOSS18 for ME request.
P.45 {Cardreader} Change CN11 to UV31413-WU82P-7H for ME request.
P.38 {Flash} Change CN23 to QT510306-L011-7H for ME request.

(2009/07/03)

P.65 {MUTE} Change A_Q24 to stuff from MOR request.
P.42 {HDD/ODD} Remove PJ12,PJ13,F13,F14 for PVT not need.
P.64 {AMP} Modify cable circuit to no stuff.

(2009/07/06)

P.49 {BT} Add TP568~TP574 test point of BT.
P.49 {BT} Remove L72. DVT no mount becasue have 2 0ohm res.
P.40 {EXpress} Delete R333,R330,L38,L40. becasue have colay parts.
P.48 (USB) Delete L66,L61 becasue have colay res.

(2009/07/07)

P.67 {Audio} Change A_CN2 to JA93331-R18106-7H from ME request.
P.33 {ICH9} Change CN10 to HS8202E-LH from ME request.
P.70 {Function} Move P_R1,P_R2,P_R3 TO PAGE. 50 from MOR side suggestion.
P.55,56,57,61 {Power JP} Modify power Jump for power request.
P.30 {LVDS} L43 no stuff and Q177,C575,R5736,R5737 stuff for
LVDS dcbatout inruch current issue.

(2009/07/10)

P.57 {DDR3} Add PJ6 for Power request.
P.45 {MS} Change R5700,R5706,R5699,R5702 to 33ohm for overshoot issue.
P.68 {USB} Change A_CN7 to UB11123-R1201-7H for ME request.
P.39 {WLAN} Add TP575 for WLAN test point.

(2009/07/15)

P.05 {CPU VID} Delete R29,R30,R31,R32,R39,R40,R41 for power suggestion.
P.54 {Charger} Change C_EC6066,C_PC156 to 1u for EMI request.
P.48 {USB} Add USB test point of BFT.
P.58 {CPU} Reserve EC294,EC295,EC296 on DCBATOUT for EMI request.

(2009/07/16)

P.52 {HOLE} Change SPR1,SPR2 for EMI request.
P.46 {SD} Change CN16 to WK2192C-S6P2-4H for ME request.
P.54 {Charger} Change C_PCN1 to BP91071-B31E3-7H for ME request.
P.46 {SD} Change CN16 to WK2192C-S6P2-4H from ME request.

(2009/07/17)

P.23 {VGA} Add R5741,R5742 0 ohm for MOR suggestion.
P.52 {HOLE} Change P_H51,P_H53 for ME request.

(2009/07/18)

P.52 {HOLE} Add function board hole for ME request.
P.50 {LED} Change R599,R600 to 499,300 ohm for brightness issue.

(2009/07/24)

P.60 {OVP} Change PR55 to 18.2K,PR143 to 26.1K,PR144 to 80.6K and mount PR73
from MOR request.

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