P. Leader	Check by	Design by

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Title: **Index Page**

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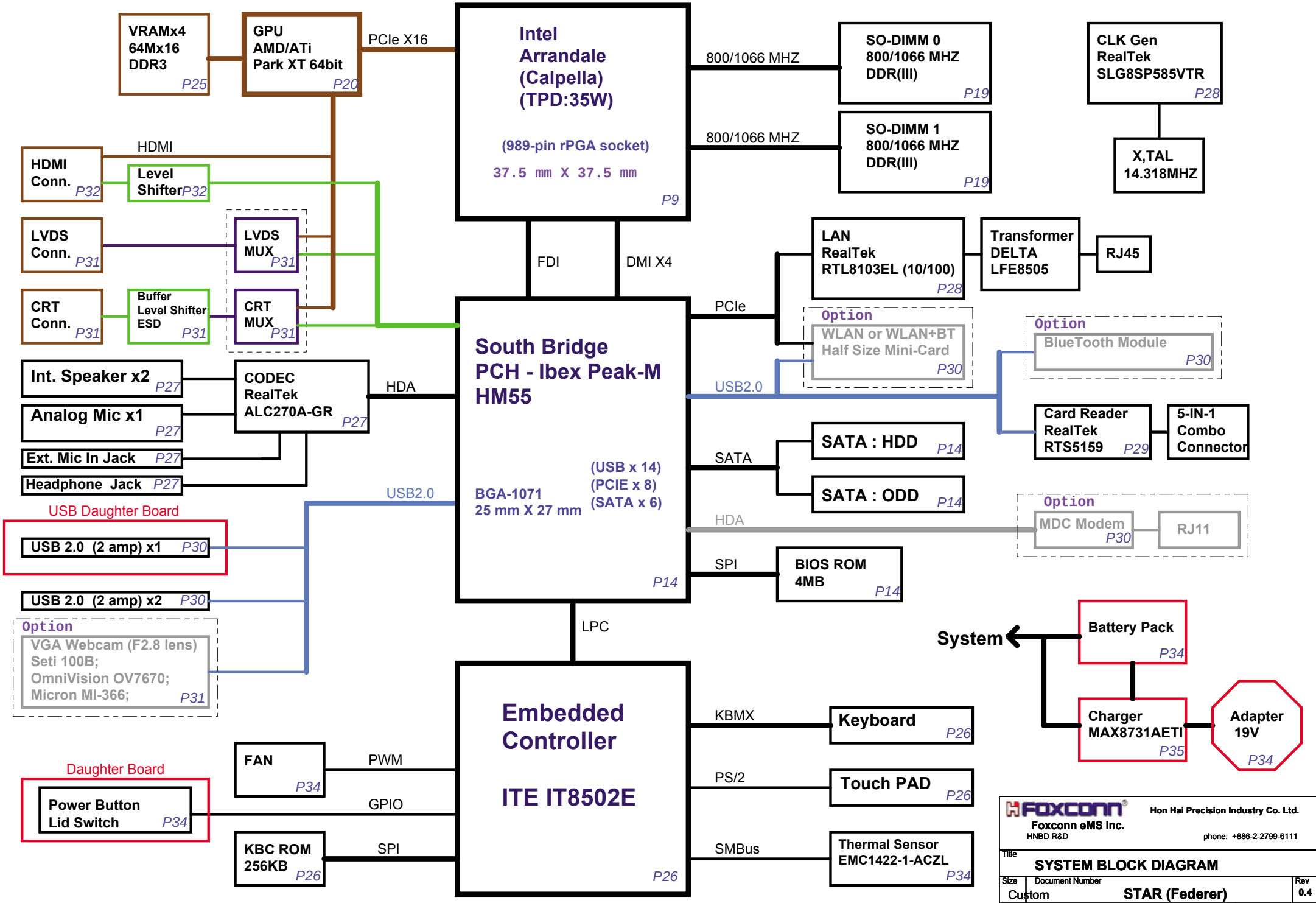
VRAMx4
64Mx16
DDR3
P25
GPU
AMD/ATi
Park XT 64bit
P20
PCIe X16
Intel
Arrandale
(Calpella)
(TPD:35W)
(989-pin rPGA socket)
37.5 mm X 37.5 mm
P9
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SO-DIMM 0
800/1066 MHZ
DDR(III)
P19
800/1066 MHZ
SO-DIMM 1
800/1066 MHZ
DDR(III)
P19
CLK Gen
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SLG8SP585VTR
P28
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14.318MHZ
HDMI
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LVDS
Conn.
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LVDS
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CRT
Conn.
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Buffer
Level Shifter
ESD
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CRT
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FDI
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LAN
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RTL8103EL (10/100)
P28
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DELTA
LFE8505
RJ45
Option
WLAN or WLAN+BT
Half Size Mini-Card
P30
Option
BlueTooth Module
P30
South Bridge
PCH - Ibex Peak-M
HM55
BGA-1071
25 mm X 27 mm
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(PCIE x 8)
(SATA x 6)
P14
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USB2.0
SATA
HDA
SPI
Int. Speaker x2
P27
Analog Mic x1
P27
Ext. Mic In Jack
P27
Headphone Jack
P27
CODEC
RealTek
ALC270A-GR
P27
HDA
SATA : HDD
P14
SATA : ODD
P14
Card Reader
RealTek
RTS5159
P29
5-IN-1
Combo
Connector
Option
MDC Modem
P30
RJ11
BIOS ROM
4MB
P14
USB Daughter Board
USB 2.0 (2 amp) x1
P30
USB 2.0 (2 amp) x2
P30
Option
VGA Webcam (F2.8 lens)
Seti 100B;
OmniVision OV7670;
Micron MI-366;
P31
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LPC
System
Battery Pack
P34
Charger
MAX8731AETI
P35
Adapter
19V
P34
Embedded
Controller
ITE IT8502E
P26
KBMX
Keyboard
P26
PS/2
Touch PAD
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SMBus
Thermal Sensor
EMC1422-1-ACZL
P34
FAN
P34
PWM
GPIO
SPI
KBC ROM
256KB
P26
Daughter Board
Power Button
Lid Switch
P34
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SYSTEM BLOCK DIAGRAM
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Document Number
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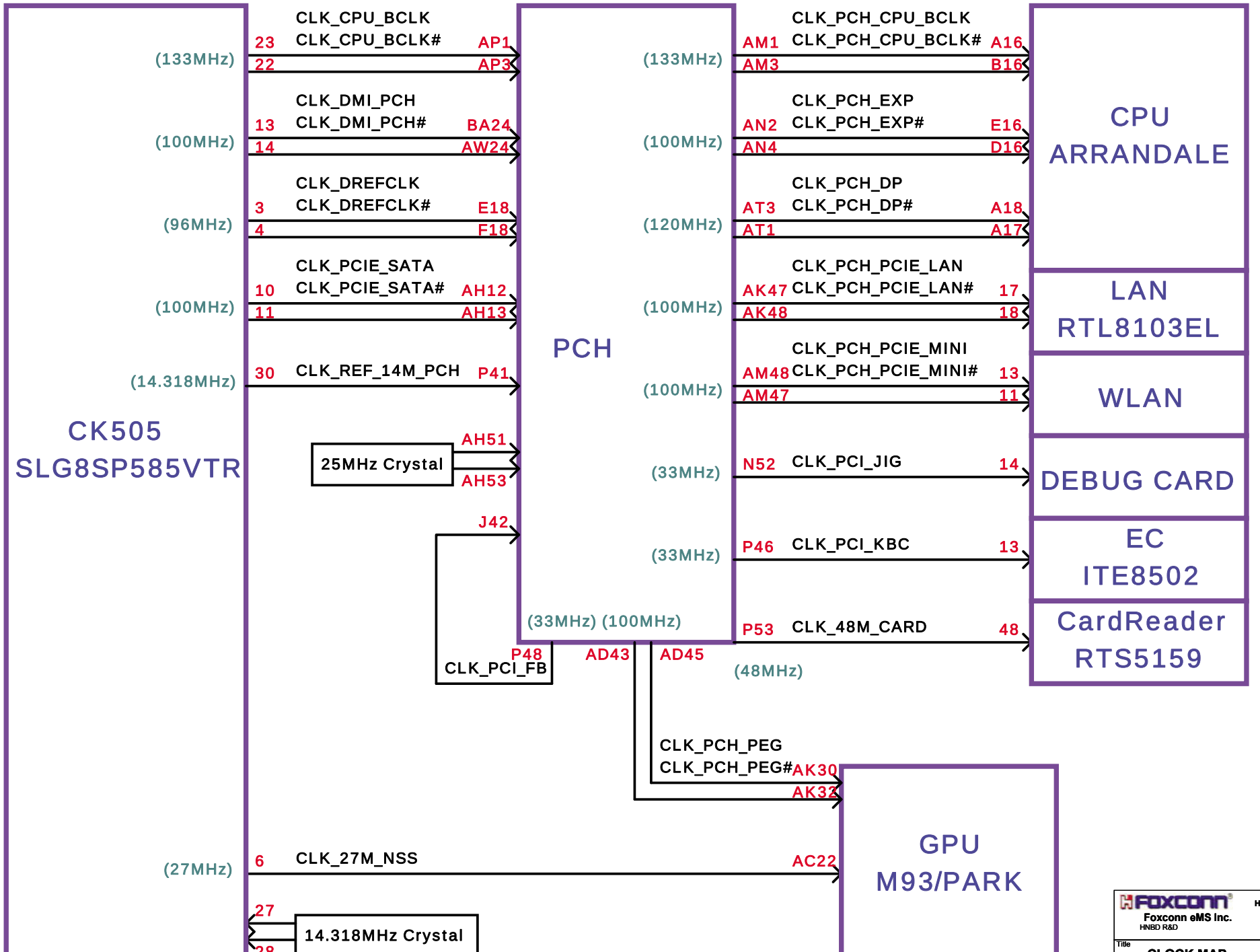

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Title: CLOCK MAP		
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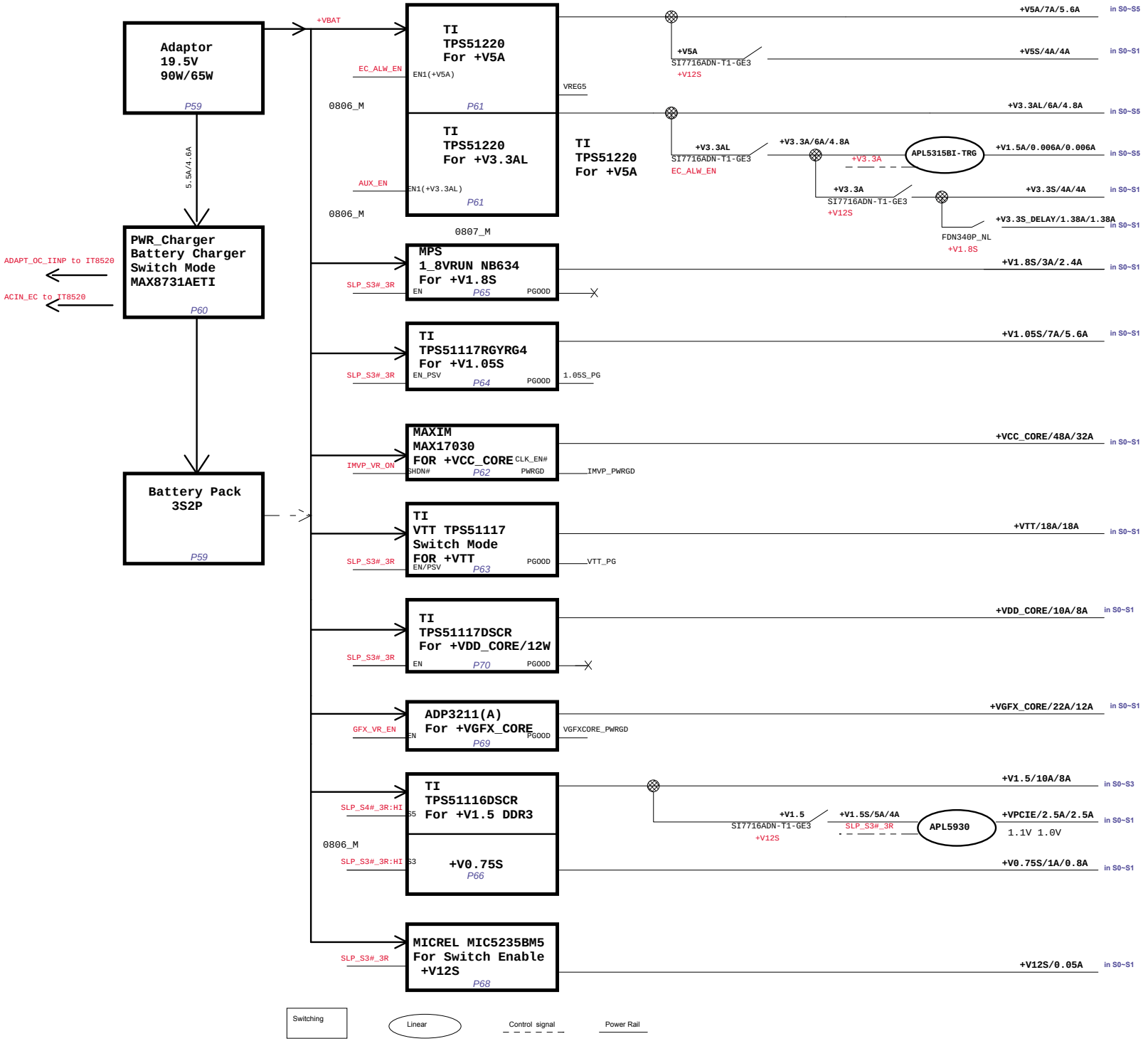

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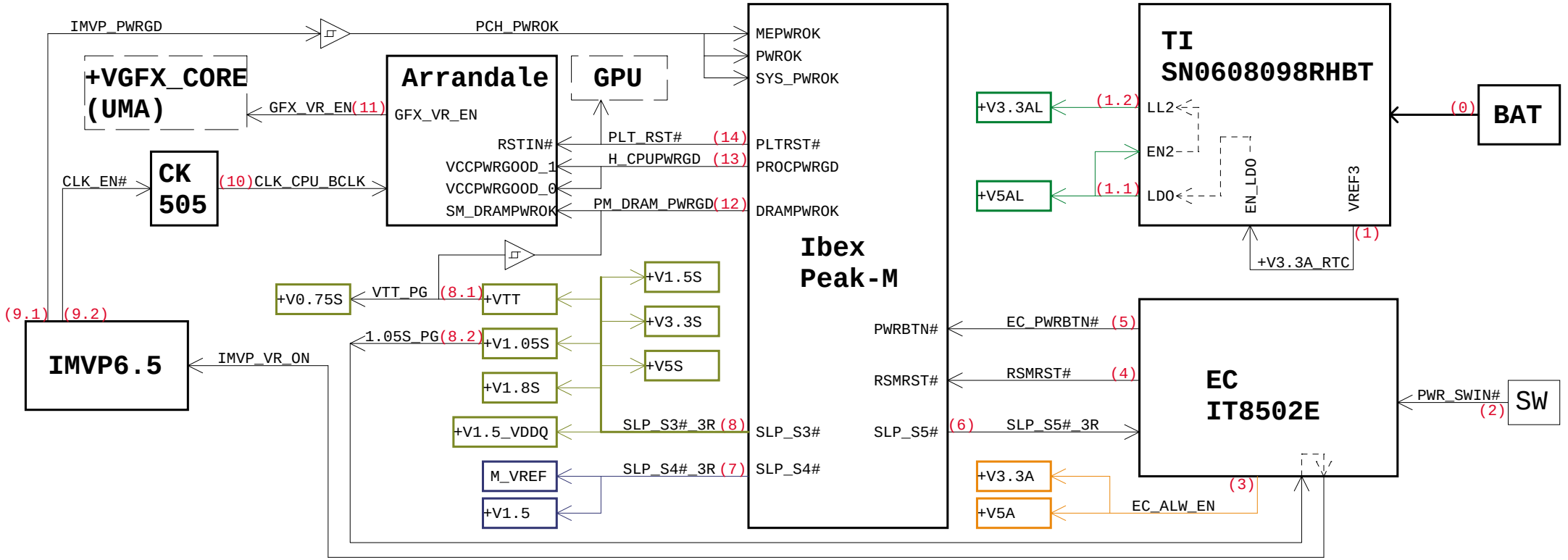
POWER SEQUENCY DIAGRAM



	Source Rail	EN	PG	Power Status				Remark
				S0	S3	AC S4/S5	DC S4/S5	
+VBAT				V	V	V	V	
+V5AL	+VBAT	+V3.3A_RTC		V	V	V	V	
+V3.3AL	+VBAT	+V5AL		V	V	V	V	
+V5A	+VBAT	EC_ALW_EN		V	V	V		
+V3.3A	+V3.3AL	EC_ALW_EN		V	V	V		
+V1.5	+VBAT	SLP_S4#_3R		V	V			
+V0.75S	+V1.5	VTT_PG		V				
+V1.5S	+V1.5	RUN_ON_LOAD		V				
+V1.5_VDDQ	+V1.5	RUN_ON_LOAD		V				
+VCC_CORE	+VBAT	IMVP_VR_ON	IMVP_PWRGD	V				
+VTT	+VBAT	SLP_S3#_3R	VTT_PG	V				
+VGFX_CORE	+VBAT	GFX_VR_EN		V				
+V1.8S	+VBAT	SLP_S3#_3R		V				
+V1.05S	+VBAT	SLP_S3#_3R	1.05S_PG	V				
+V5S	+V5A	RUN_ON_LOAD		V				
+V3.3S	+V3.3A	RUN_ON_LOAD		V				
+VDD_CORE	+VBAT	SLP_S3#_3R		V				
+V3.3S_Delay	+V3.3S	+V1.8S		V				
+VPCIE	+V1.5S	SLP_S3#_3R		V				

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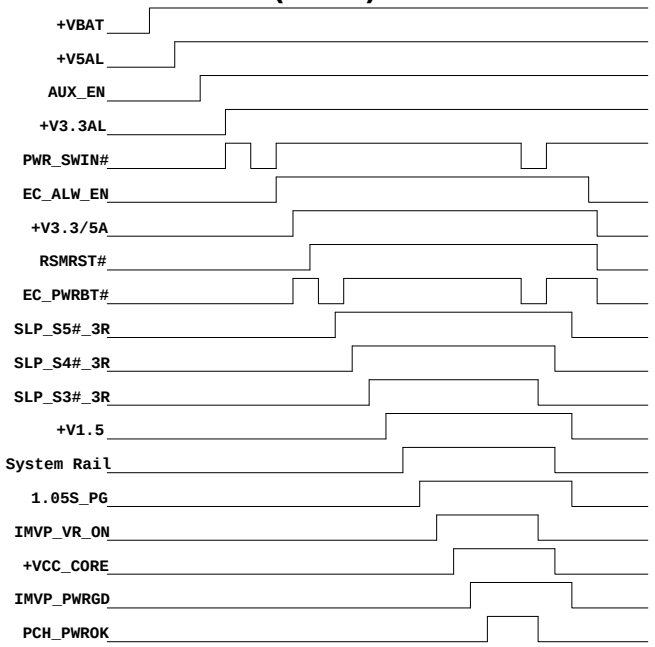
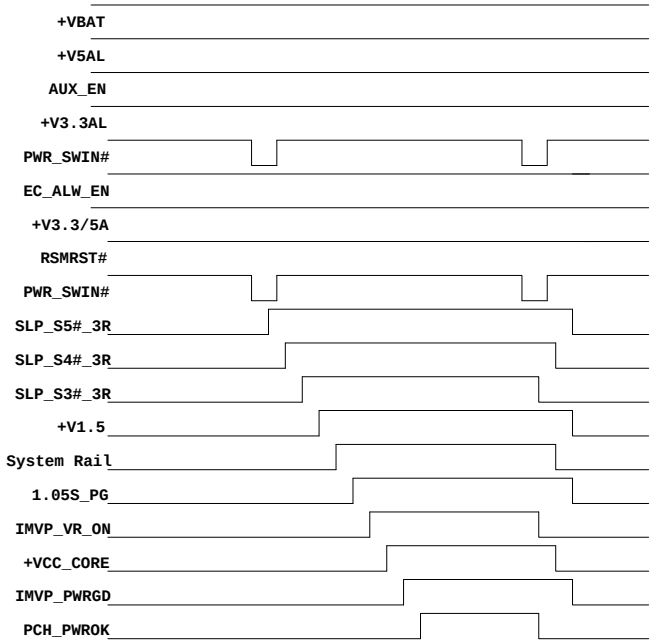
POWER SEQUENCE TIMING

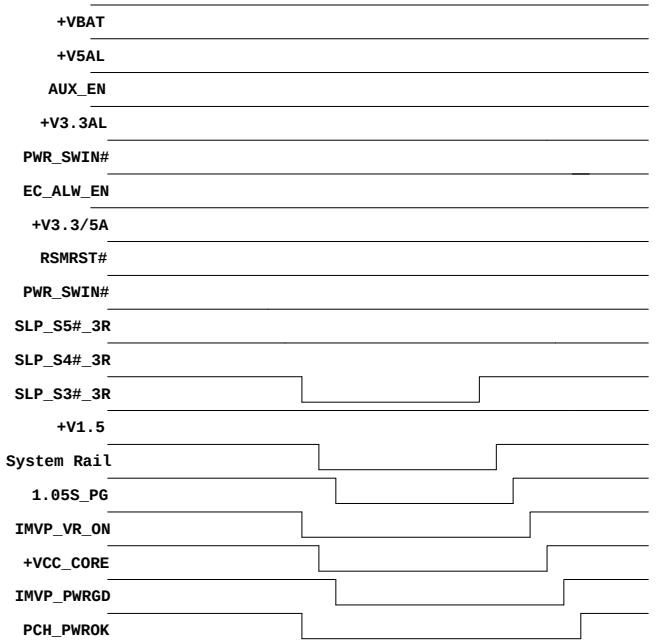
G3(OFF)->S0->S5



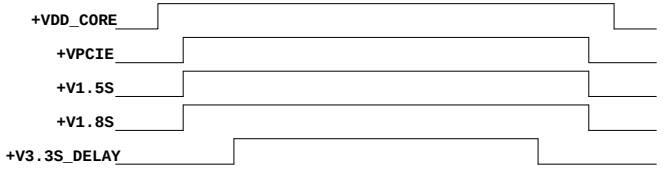
S5->S0->S5



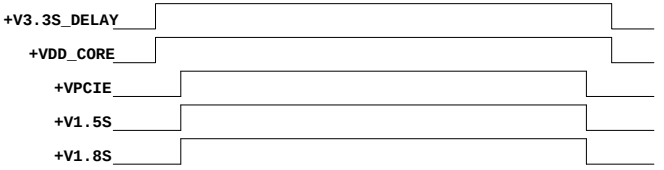
S0->S3->S0



M93 Sequence



Park Sequence



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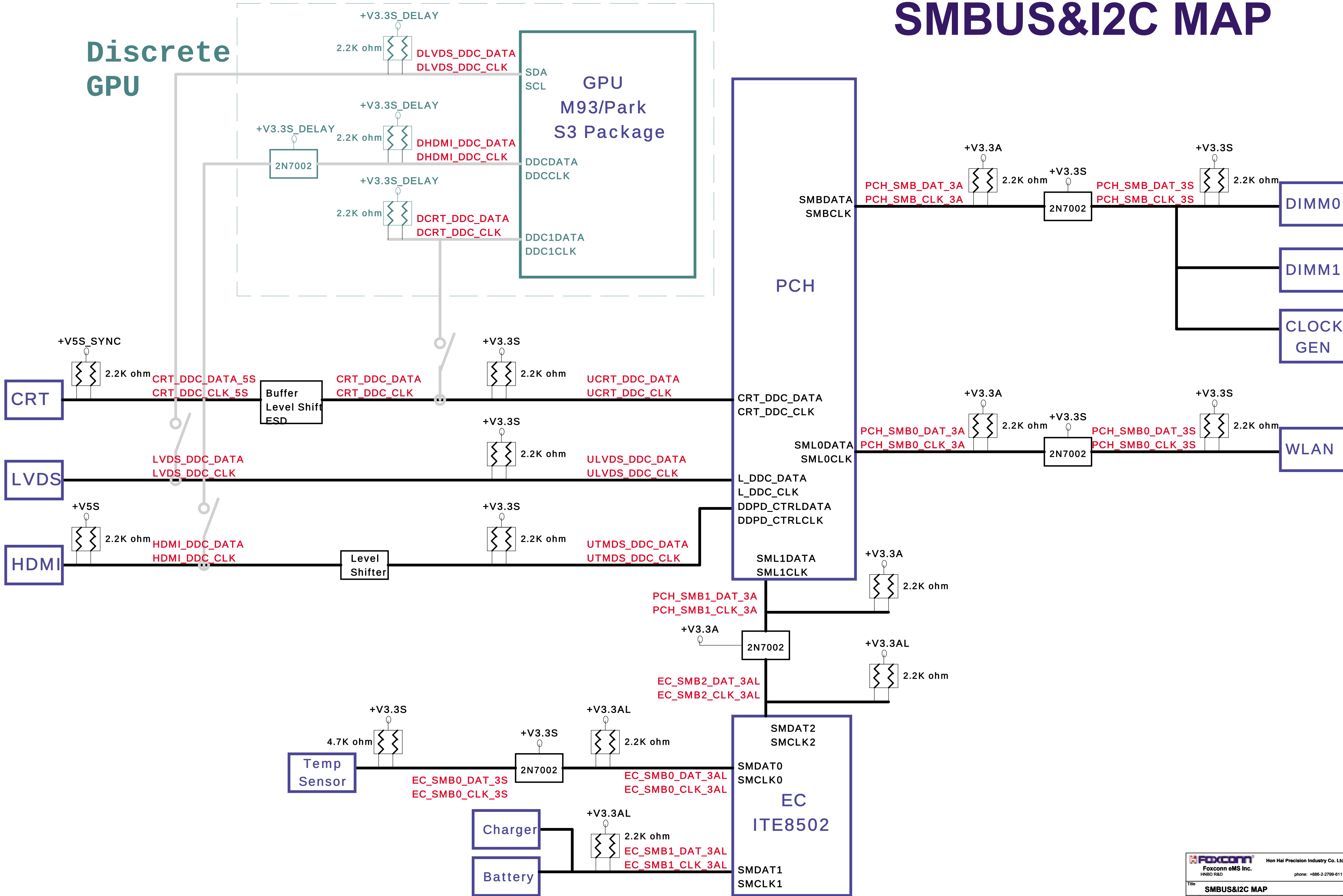
SMBUS&I2C MAP



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RESET SIGNAL MAP

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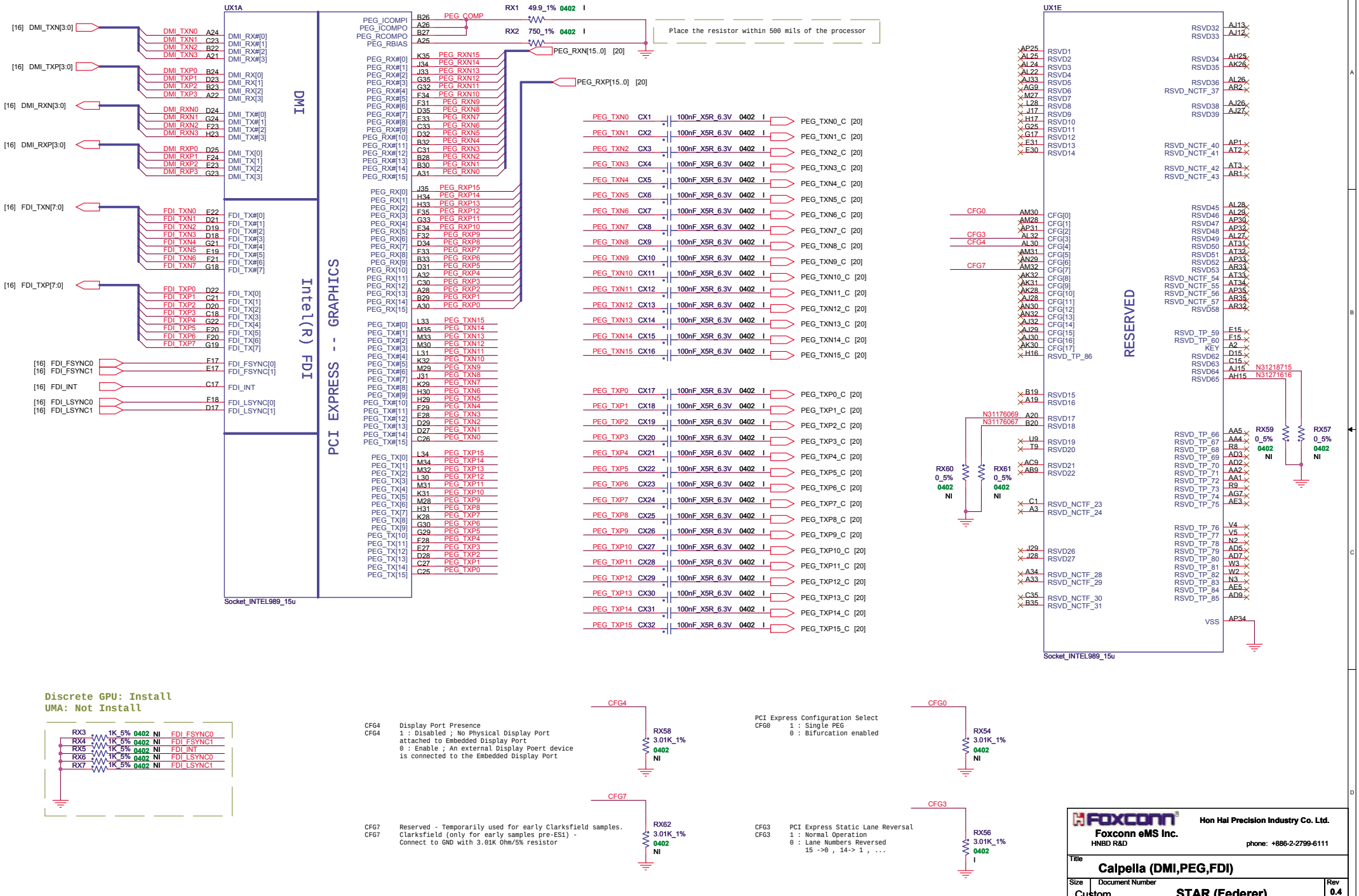
UX1A
Socket_INTEL989_15u
DMI
Intel(R) FDI
PCI EXPRESS -- GRAPHICS
[16] DMI_TXN[3:0]
[16] DMI_TXP[3:0]
[16] DMI_RXN[3:0]
[16] DMI_RXP[3:0]
[16] FDI_TXN[7:0]
[16] FDI_TXP[7:0]
[16] FDI_FSYNC0
[16] FDI_FSYNC1
[16] FDI_INT
[16] FDI_LSYNC0
[16] FDI_LSYNC1
PEG_COMP
RX1 49.9_1% 0402 I
RX2 750_1% 0402 I
Place the resistor within 500 mils of the processor
PEG_RXN[15..0] [20]
PEG_RXP[15..0] [20]
100nF_X5R_6.3V 0402 I
UX1E
RESERVED
Socket_INTEL989_15u
RX60 0_5% 0402 NI
RX61 0_5% 0402 NI
RX59 0_5% 0402 NI
RX57 0_5% 0402 NI
Discrete GPU: Install
UMA: Not Install
RX3 1K_5% 0402 NI FDI_FSYNC0
RX4 1K_5% 0402 NI FDI_FSYNC1
RX5 1K_5% 0402 NI FDI_INT
RX6 1K_5% 0402 NI FDI_LSYNC0
RX7 1K_5% 0402 NI FDI_LSYNC1
CFG4 Display Port Presence
CFG4 1 : Disabled ; No Physical Display Port attached to Embedded Display Port
0 : Enable ; An external Display Poert device is connected to the Embedded Display Port
RX58 3.01K_1% 0402 NI
PCI Express Configuration Select
CFG0 1 : Single PEG
0 : Bifurcation enabled
RX54 3.01K_1% 0402 NI
CFG7 Reserved - Temporarily used for early Clarksfield samples.
CFG7 Clarksfield (only for early samples pre-ES1) - Connect to GND with 3.01K Ohm/5% resistor
RX62 3.01K_1% 0402 NI
CFG3 PCI Express Static Lane Reversal
CFG3 1 : Normal Operation
0 : Lane Numbers Reversed
15 ->0 , 14-> 1 , ...
RX56 3.01K_1% 0402 I
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Layout Note:
Comp0,2 connect with Zo=27.4 ohm,
make trace length shorter then
0.5".
Width=20mil(MS)
Comp1,3 connect with Zo=55 ohm,
make trace length shorter then
0.5".
Width=5mil(MS)

Place close to chip

+V1.5_VDDQ [13,18,28,30,39]
+V3.3S [14,15,16,17,18,19,20,26,27,28,29,30,31,32,33,36,37,38,39,40,41]
+VTT [12,13,17,18,28,36,37,40]
+V1.5 [19,38,39]
+V3.3A [14,15,16,17,18,26,28,30,33,34,38,39]

UX1B
Socket_INTEL989_15u

MISC: COMP3 AT23, COMP2 AT24, COMP1 G16, COMP0 AT26, SKTOCC# AH24
THERMAL: CATERR# AK14, PECI AT15, PROCHOT# AN26, THERMTRIP# AK15
PWR MANAGEMENT: RESET_OBS# AP26, PM_SYNC AL15, VCCPWRGOOD_1 AN14, VCCPWRGOOD_0 AN27, SM_DRAMPWROK AK13, VTTPWRGOOD AM15, TAPPWRGOOD AM26, RSTIN# AL14
CLOCKS: BCLK A16/B16, BCLK_ITP AR30/AT30, PEG_CLK E16/D16, DPLL_REF_SSCLK A18/A17
DDR3 MISC: SM_DRAMRST# F6, SM_RCOMP[0] AL1, SM_RCOMP[1] AM1, SM_RCOMP[2] AN1, PM_EXT_TS#[0] AN15, PM_EXT_TS#[1] AP15
JTAG & BPM: PRDY# AT28, PREQ# AP27, TCK AN28, TMS AP28, TRST# AT27, TDI AT29, TDO AR27, TDI_M AR29, TDO_M AP29, DBR# AN25, BPM#[0] AJ22, BPM#[1] AK22, BPM#[2] AK24, BPM#[3] AJ24, BPM#[4] AJ25, BPM#[5] AH22, BPM#[6] AK23, BPM#[7] AH23

RX8 20_1% 0402 COMP3
RX9 20_1% 0402 COMP2
RX10 49.9_1% 0402 COMP1
RX11 49.9_1% 0402 COMP0
RX46 68_5% 0402
RX39 49.9_1% 0402 +VTT
H_CATERR#
[17] H_PECI
[36] PROCHOT#
[17,33] PM_THRMTRIP#

BCLK_ITP_P
BCLK_ITP_N
CLK_PCH_CPU_CLK [17]
CLK_PCH_CPU_CLK# [17] (133MHz)

Discrete :RX14,RX17 Not Install and RX15,RX16 0 ohm
UMA: RX14,RX17 0 ohm and RX15,RX16 Not Install

CLK_PCH_EXP_R
CLK_PCH_EXP#_R
CLK_PCH_DP_R
CLK_PCH_DP#_R
RX12 0_5% 0402
RX13 0_5% 0402
RX14 0_5% 0402 NI
RX15 0_5% 0402
RX16 0_5% 0402
RX17 0_5% 0402 NI
CLK_PCH_EXP [15]
CLK_PCH_EXP# [15] (100MHz)
CLK_PCH_DP [15]
CLK_PCH_DP# [15] (120MHz)

SM_RCOMP0 RX18 100_1% 0402
SM_RCOMP1 RX21 24.9_1% 0402
SM_RCOMP2 RX22 130_1% 0402
+VTT
RX19 10K_5% 0402
RX20 10K_5% 0402
PM_EXTTS#0
PM_EXTTS#1 [19]

XDP_PRDY#
XDP_PREQ# DDR3 module w/o this function
RX24 12.4K_1% 0402 NI
XDP_TCLK
XDP_TMS
XDP_TRST#
XDP_TDI
XDP_TDO
XDP_TDI_M
XDP_TDO_M
RX42 0_5% 0402
SB_RST# [16,26]
XDP_OBS0
XDP_OBS1
XDP_OBS2
XDP_OBS3
XDP_OBS4
XDP_OBS5
XDP_OBS6
XDP_OBS7

+V1.5
RX72 0_5% 0402 NI
RX73 1K_5% 0402
DDR3_DRAMRST# [19]
RX74 100K_5% 0402
QX3 2N7002 SOT23-3
PCH_DDR_RST# [17]
CX43 47nF_X7R_16V 0402

+V1.5_VDDQ
RX75 1.1K_1% 0402 NI
XDP_RST# R
RX71 1K_5% 0402
H_CPURST#
[16] H_PM_SYNC
[17] H_CPUPWRGD
RX25 0_5% 0402 CPUPWRGD1
RX26 0_5% 0402 CPUPWRGD0
[16] PM_DRAM_PWRGD
RX28 0_5% 0402 DRAM_PWRGD
VTTPWRGOOD
H_PWRGD_XDP
+V3.3A
CX80 100nF_X5R_6.3V 0402
RX79 1.5K_1% 0402
RX78 750_1% 0402
UX5 74LVC1G17GW
Modify for reduce S3 power consumption on 0908
[33,37,38] VTT_PG
RX77 0_5% 0402
[16,26,33,37,38,39,41] SLP_S3#_3R
RX76 0_5% 0402 NI
[17,20] PLT_RST#
RX30 1.5K_1%
RX31 750_1% 0402

Clarksfield: 1.1V(RX30=1.5K 1%; RX31=750 1%)
Arrandale : 1.05V(RX30=1.5K 1% ; RX31=698 1%)

TCK 50 PD
TMS 2k~5k PU
TRST 2k~5k PU
TDI 50 PU
TDO unconnect
TDI_M 50 PU
TDO_M unconnect

+VTT
RX32 XDP_TDO
RX33 XDP_TMS
RX34 XDP_TDI
RX35 XDP_PREQ#
RX36 XDP_TCLK
RX37 XDP_TRST#
(all 0402 51_5% NI)

Change to "NI"

CON18
BSH-030-01-L-D-A-TR NI
Hole1 Hole2

H_CPUPWRGD RX70 1K_5% 0402
H_CPUPWRGD_XDP
[16,26] EC_PWRBTN#
H_PWRGD_XDP
+VTT

+V1.5
RX38 1.1K_1% 0402 NI
DRAM_PWRGD
RX43 3K_1% 0402 NI

+V3.3S
RX45 0_5% 0402 NI
CX33 100nF_X5R_6.3V 0402
[33,37,38] VTT_PG
[33,37] 1.05S_PG
UX2 74LVC1G17GW
RX41 2K_1% 0402
RX40 0_5% 0402
VTTPWRGOOD
RX44 1K_1% 0402

[33,36] IMVP_PWRGD
RX29 2M_5% 0402
PCH_PROCHOT# [17,33]
QX1 2N7002 SOT23-3 A0205
QX2 PDTC144EU
[36] PROCHOT#

Clarksfield: 1.1V(RX38=1.1K 1%; RX43=3.01K 1%)
Arrandale : 1.05V(RX38=1.1K 1% ; Rx43=2.61K 1%)

Clarksfield: 1.1V(RX41=2K 1%; RX44=1K 1%)
Arrandale : 1.05V(RX41=2K 1% ; R44=931ohm 1%)

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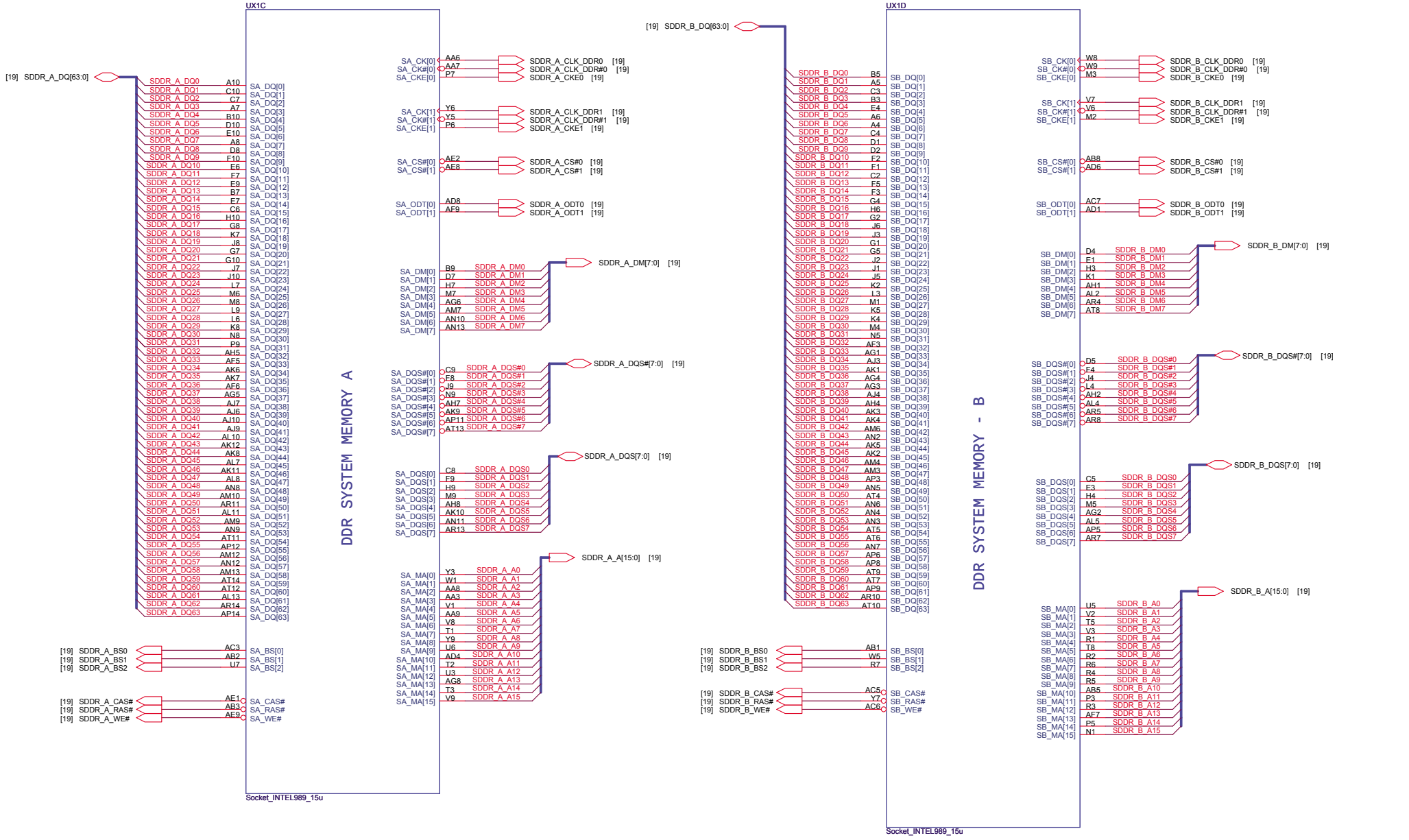

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FOR VCC:
12x 0805 22 µF inside cavity,
7x 0805 10 µF under cavity and 9 x 0805 10 µF
between inductor and socket on top layer

FOR VTT:
7x 0805 22 µF under cavity
8x 0805 10 µF edge caps

52A

+VCC_CORE

CX42 22uF_X5R_6.3V 0805

CX46 22uF_X5R_6.3V 0805
CX47 22uF_X5R_6.3V 0805
CX48 22uF_X5R_6.3V 0805
CX49 22uF_X5R_6.3V 0805
CX50 22uF_X5R_6.3V 0805

CX51 22uF_X5R_6.3V 0805
CX52 22uF_X5R_6.3V 0805
CX53 22uF_X5R_6.3V 0805
CX54 22uF_X5R_6.3V 0805
CX55 22uF_X5R_6.3V 0805

CX56 22uF_X5R_6.3V 0805
CX57 10uF_Y5V_10V 0805
CX58 10uF_Y5V_10V 0805
CX59 10uF_Y5V_10V 0805
CX60 10uF_Y5V_10V 0805

CX61 10uF_Y5V_10V 0805
CX62 10uF_Y5V_10V 0805
CX63 10uF_Y5V_10V 0805
CX64 10uF_Y5V_10V 0805
CX65 10uF_Y5V_10V 0805

CX66 10uF_Y5V_10V 0805
CX67 10uF_Y5V_10V 0805
CX68 10uF_Y5V_10V 0805
CX69 10uF_Y5V_10V 0805
CX70 10uF_Y5V_10V 0805

CX71 33pF_NPO_50V 0402
CX72 10uF_Y5V_10V 0805
CX73 10uF_Y5V_10V 0805
CX74 33pF_NPO_50V 0402

UX1F

VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 VCC7 VCC8 VCC9 VCC10 VCC11 VCC12 VCC13 VCC14 VCC15 VCC16 VCC17 VCC18 VCC19 VCC20 VCC21 VCC22 VCC23 VCC24 VCC25 VCC26 VCC27 VCC28 VCC29 VCC30 VCC31 VCC32 VCC33 VCC34 VCC35 VCC36 VCC37 VCC38 VCC39 VCC40 VCC41 VCC42 VCC43 VCC44 VCC45 VCC46 VCC47 VCC48 VCC49 VCC50 VCC51 VCC52 VCC53 VCC54 VCC55 VCC56 VCC57 VCC58 VCC59 VCC60 VCC61 VCC62 VCC63 VCC64 VCC65 VCC66 VCC67 VCC68 VCC69 VCC70 VCC71 VCC72 VCC73 VCC74 VCC75 VCC76 VCC77 VCC78 VCC79 VCC80 VCC81 VCC82 VCC83 VCC84 VCC85 VCC86 VCC87 VCC88 VCC89 VCC90 VCC91 VCC92 VCC93 VCC94 VCC95 VCC96 VCC97 VCC98 VCC99 VCC100

1.1V RAIL POWER

VTT0_1 VTT0_2 VTT0_3 VTT0_4 VTT0_5 VTT0_6 VTT0_7 VTT0_8 VTT0_9 VTT0_10 VTT0_11 VTT0_12 VTT0_13 VTT0_14 VTT0_15 VTT0_16 VTT0_17 VTT0_18 VTT0_19 VTT0_20 VTT0_21 VTT0_22 VTT0_23 VTT0_24 VTT0_25 VTT0_26 VTT0_27 VTT0_28 VTT0_29 VTT0_30 VTT0_31 VTT0_32

CX34 10uF_Y5V_10V 0805
CX35 10uF_Y5V_10V 0805
CX36 10uF_Y5V_10V 0805
CX37 10uF_Y5V_10V 0805
CX38 10uF_Y5V_10V 0805
CX39 10uF_Y5V_10V 0805
CX40 10uF_Y5V_10V 0805
CX41 10uF_Y5V_10V 0805

CPU CORE SUPPLY

VTT0_33 VTT0_34 VTT0_35 VTT0_36 VTT0_37 VTT0_38 VTT0_39 VTT0_40 VTT0_41 VTT0_42 VTT0_43 VTT0_44

CX44 22uF_X5R_6.3V 0805
CX45 22uF_X5R_6.3V 0805

POWER

CPU VIDS

PSI# AN33 → PSI# [36]

VID[0] AK35 → VID0 [36]
VID[1] AK33 → VID1 [36]
VID[2] AK34 → VID2 [36]
VID[3] AL35 → VID3 [36]
VID[4] AL33 → VID4 [36]
VID[5] AM33 → VID5 [36]
VID[6] AM35 → VID6 [36]
PROC_DPRSLPVR AM34 → PM_DPRSLPVR [36]

VTT_SELECT G15 → TP1033 TP_P30

Arrandale drives this pin High
Clarksfield drives this pin Low.

SENSE LINES

ISENSE AN35 → IMVP_IMON [36]

VCC_SENSE AJ34 → VCCSENSE [36]
VSS_SENSE AJ35 → VSSSENSE [36]

VTT_SENSE B15 → VTT_SENSE [37]
VSS_SENSE_VTT A15

RX47 100_1% 0402
RX48 100_1% 0402

Place close to CPU

Socket_INTEL989_15u

UX1H

VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 VSS8 VSS9 VSS10 VSS11 VSS12 VSS13 VSS14 VSS15 VSS16 VSS17 VSS18 VSS19 VSS20 VSS21 VSS22 VSS23 VSS24 VSS25 VSS26 VSS27 VSS28 VSS29 VSS30 VSS31 VSS32 VSS33 VSS34 VSS35 VSS36 VSS37 VSS38 VSS39 VSS40 VSS41 VSS42 VSS43 VSS44 VSS45 VSS46 VSS47 VSS48 VSS49 VSS50 VSS51 VSS52 VSS53 VSS54 VSS55 VSS56 VSS57 VSS58 VSS59 VSS60 VSS61 VSS62 VSS63 VSS64 VSS65 VSS66 VSS67 VSS68 VSS69 VSS70 VSS71 VSS72 VSS73 VSS74 VSS75 VSS76 VSS77 VSS78 VSS79 VSS80

VSS

VSS81 VSS82 VSS83 VSS84 VSS85 VSS86 VSS87 VSS88 VSS89 VSS90 VSS91 VSS92 VSS93 VSS94 VSS95 VSS96 VSS97 VSS98 VSS99 VSS100 VSS101 VSS102 VSS103 VSS104 VSS105 VSS106 VSS107 VSS108 VSS109 VSS110 VSS111 VSS112 VSS113 VSS114 VSS115 VSS116 VSS117 VSS118 VSS119 VSS120 VSS121 VSS122 VSS123 VSS124 VSS125 VSS126 VSS127 VSS128 VSS129 VSS130 VSS131 VSS132 VSS133 VSS134 VSS135 VSS136 VSS137 VSS138 VSS139 VSS140 VSS141 VSS142 VSS143 VSS144 VSS145 VSS146 VSS147 VSS148 VSS149 VSS150 VSS151 VSS152 VSS153 VSS154 VSS155 VSS156 VSS157 VSS158 VSS159 VSS160

Socket_INTEL989_15u

UX1I

VSS161 VSS162 VSS163 VSS164 VSS165 VSS166 VSS167 VSS168 VSS169 VSS170 VSS171 VSS172 VSS173 VSS174 VSS175 VSS176 VSS177 VSS178 VSS179 VSS180 VSS181 VSS182 VSS183 VSS184 VSS185 VSS186 VSS187 VSS188 VSS189 VSS190 VSS191 VSS192 VSS193 VSS194 VSS195 VSS196 VSS197 VSS198 VSS199 VSS200 VSS201 VSS202 VSS203 VSS204 VSS205 VSS206 VSS207 VSS208 VSS209 VSS210 VSS211 VSS212 VSS213 VSS214 VSS215 VSS216 VSS217 VSS218 VSS219 VSS220 VSS221 VSS222 VSS223 VSS224 VSS225 VSS226 VSS227 VSS228 VSS229 VSS230 VSS231 VSS232 VSS233

VSS

NCTF

VSS_NCTF1 AT35 TP_MCP_VSS_NCTF1 → TP_P30TP846
VSS_NCTF2 AT1 TP_MCP_VSS_NCTF2 → TP_P30TP2
VSS_NCTF3 AR34
VSS_NCTF4 B34
VSS_NCTF5 B2
VSS_NCTF6 B1 TP_MCP_VSS_NCTF6 → TP_P30TP3
VSS_NCTF7 A35 TP_MCP_VSS_NCTF7 → TP_P30TP4

Socket_INTEL989_15u

+VTT → +VTT [10,13,17,18,28,36,37,40]
+VCC_CORE → +VCC_CORE [36]

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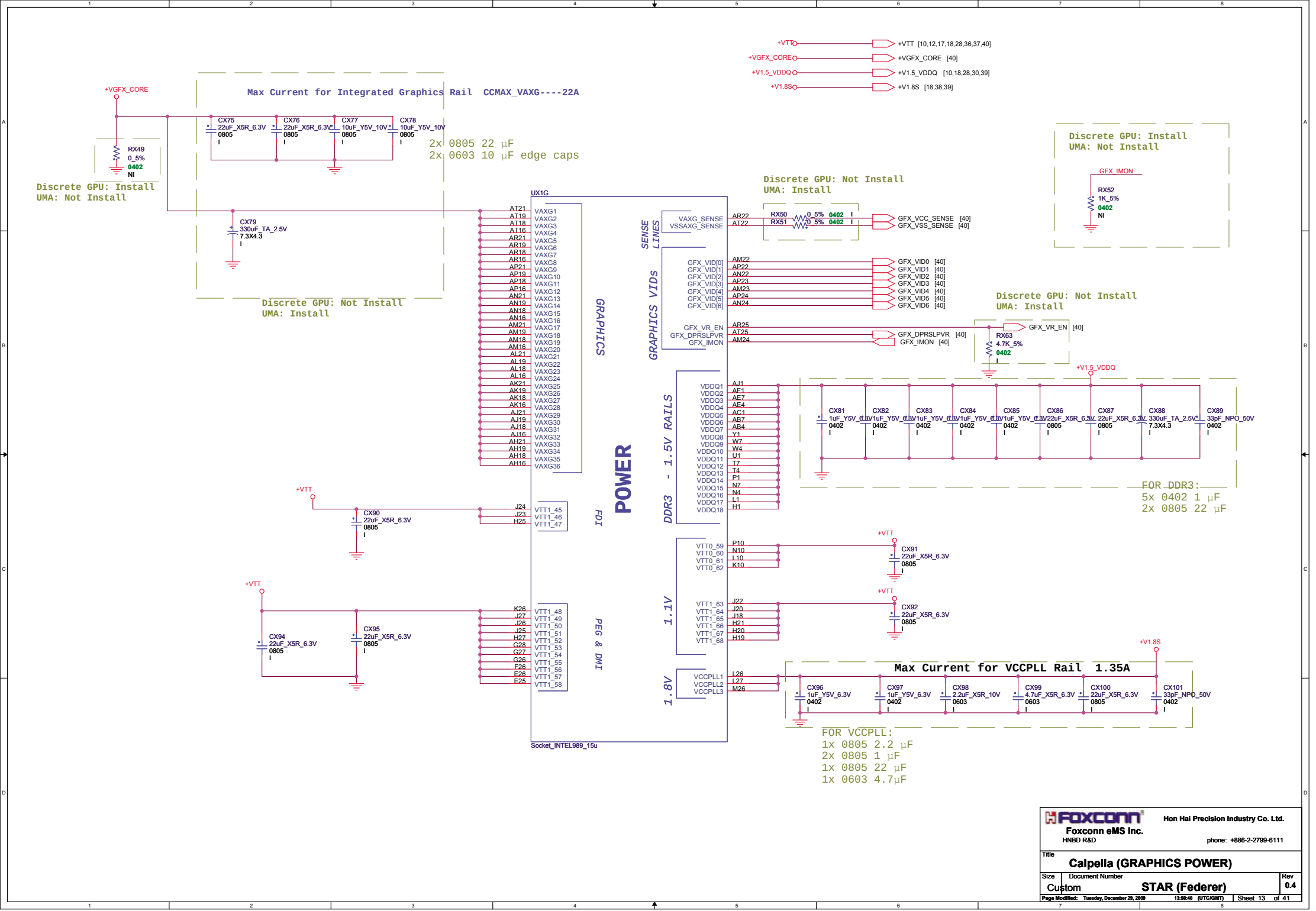
Title: Calpella (POWER/GND)		
Size: Custom	Document Number: STAR (Federer)	Rev: 0.4
Page Modified: Tuesday, December 29, 2009 13:02:40 (UTC/GMT)		Sheet 12 of 41



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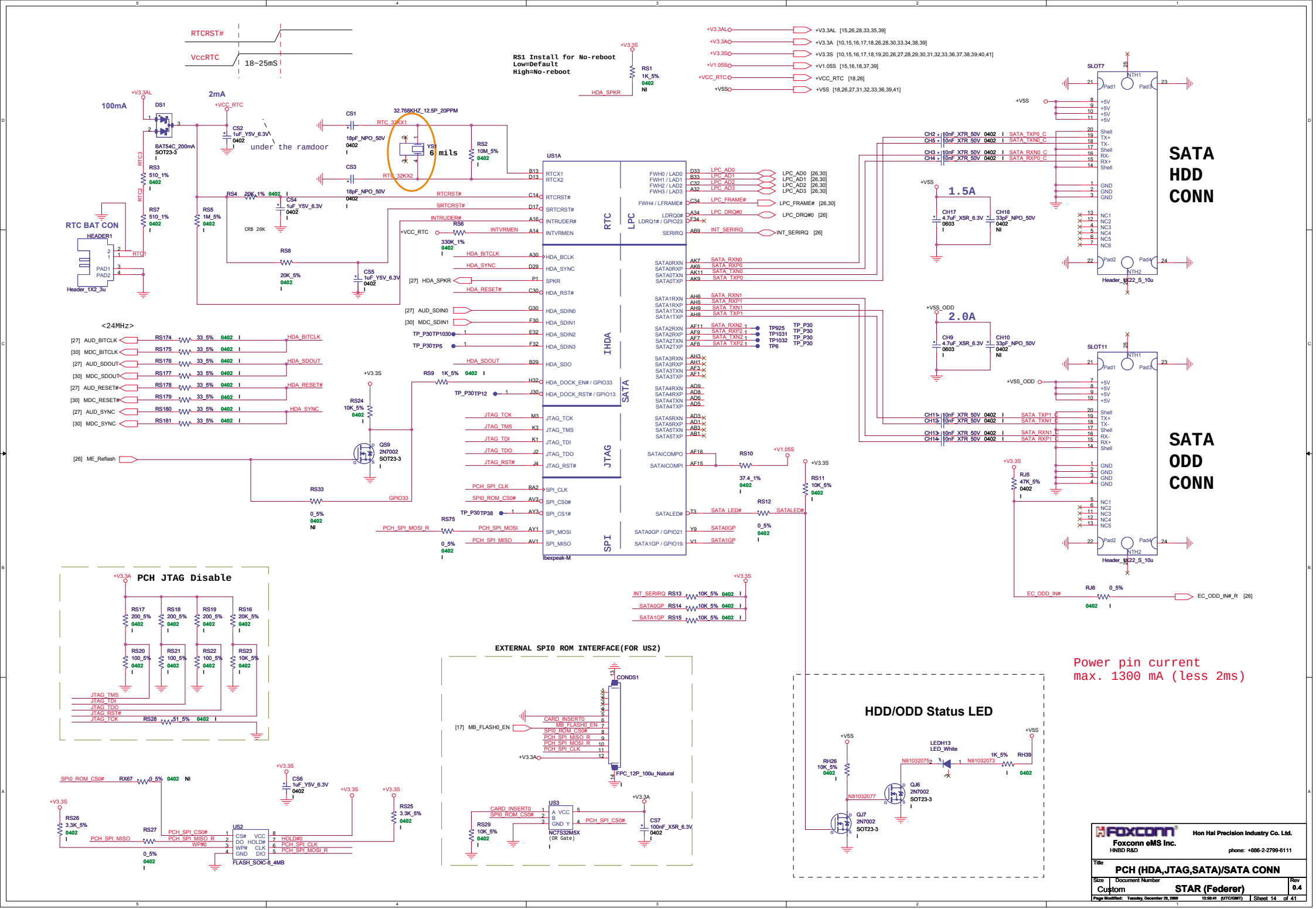
Title: Calpella (GRAPHICS POWER)

Size: Custom | Document Number: STAR (Federer) | Rev: 0.4

Page Modified: Tuesday, December 29, 2009 13:58:40 (UTC/GMT) | Sheet 13 of 41


RTCRST#
VccRTC
18~25mS
RS1 Install for No-reboot
Low=Default
High=No-reboot
RS1
1K_5%
0402
NI
HDA_SPKR
+V3.3AL [15,26,28,33,35,39]
+V3.3A [10,15,16,17,18,26,28,30,33,34,38,39]
+V3.3S [10,15,16,17,18,19,20,26,27,28,29,30,31,32,33,36,37,38,39,40,41]
+V1.05S [15,16,18,37,39]
+VCC_RTC [18,26]
+V5S [18,26,27,31,32,33,36,39,41]
100mA
2mA
DS1
BAT54C_200mA
SOT23-3
CS2
1uF_Y5V_6.3V
0402
under the ramdoor
32.768KHZ_12.5P_20PPM
YS1
6 mils
CS1
CS3
18pF_NPO_50V
RS2
10M_5%
RS3
510_1%
RS7
510_1%
RS5
1M_5%
RS4
20K_1%
CS4
1uF_Y5V_6.3V
CRB 20K
RS6
330K_1%
RS8
20K_5%
CS5
1uF_Y5V_6.3V
RTC BAT CON
HEADER1
Header_1X2_3u
US1A
RTC
LPC
IHDA
SATA
JTAG
SPI
Ibexpeak-M
RTCRST#
SRTCRST#
INTRUDER#
INTVRMEN
HDA_BITCLK
HDA_SYNC
HDA_RST#
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
HDA_SDO
HDA_DOCK_EN# / GPIO33
HDA_DOCK_RST# / GPIO13
JTAG_TCK
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_RST#
SPI_CLK
SPI_CS0#
SPI_CS1#
SPI_MOSI
SPI_MISO
LPC_AD0
LPC_AD1
LPC_AD2
LPC_AD3
LPC_FRAME#
LPC_DRQ#0
INT_SERIRQ
SATA_RXN0
SATA_RXP0
SATA_TXN0
SATA_TXP0
SATA_RXN1
SATA_RXP1
SATA_TXN1
SATA_TXP1
SATA_RXN2
SATA_RXP2
SATA_TXN2
SATA_TXP2
SATALED#
SATA0GP
SATA1GP
SATA HDD CONN
SATA ODD CONN
SLOT7
SLOT11
Header_1X22_S_10u
1.5A
2.0A
<24MHz>
RS174
RS175
RS176
RS177
RS178
RS179
RS180
RS181
33_5%
RS9
1K_5%
RS24
10K_5%
QS9
2N7002
SOT23-3
RS33
0_5%
RS75
RS10
37.4_1%
RS11
10K_5%
RS12
0_5%
RJ5
47K_5%
RJ6
EC_ODD_IN#
EC_ODD_IN#_R [26]
PCH JTAG Disable
RS17
RS18
RS19
RS16
RS20
RS21
RS22
RS23
RS28
51_5%
EXTERNAL SPI0 ROM INTERFACE(FOR US2)
CONDS1
FPC_12P_100u_Natural
US3
NC7S32M5X
(OR Gate)
CS7
100nF_X5R_6.3V
RS29
10K_5%
US2
FLASH_SOIC-8_4MB
RS25
3.3K_5%
RS26
3.3K_5%
RS27
0_5%
HDD/ODD Status LED
LEDH13
LED_White
RH26
10K_5%
RH39
1K_5%
QJ6
2N7002
SOT23-3
QJ7
2N7002
SOT23-3
Power pin current
max. 1300 mA (less 2ms)
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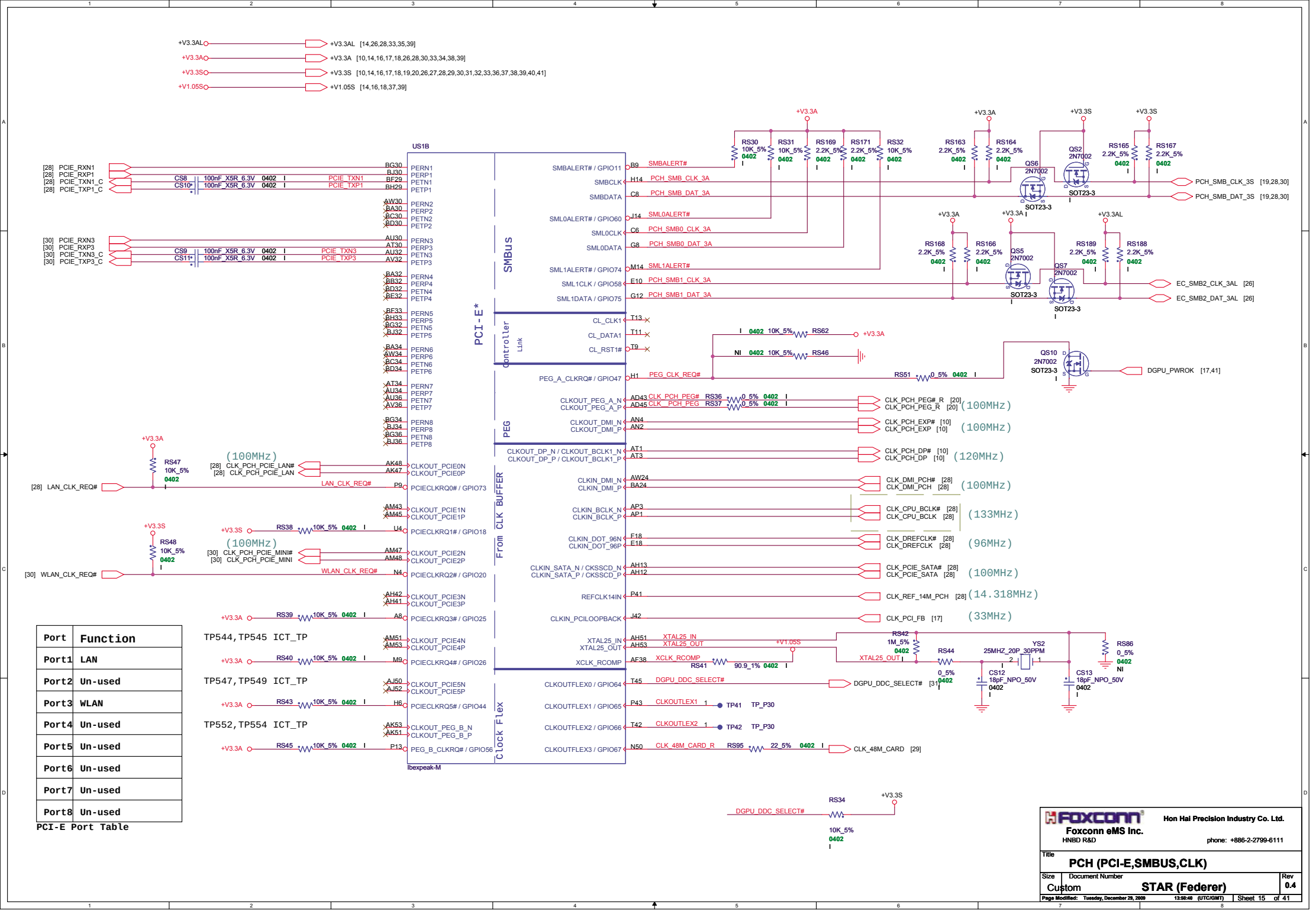
PCH (HDA,JTAG,SATA)/SATA CONN
Custom
STAR (Federer)
Rev 0.4
Sheet 14 of 41


+V3.3AL [14,26,28,33,35,39]
+V3.3A [10,14,16,17,18,26,28,30,33,34,38,39]
+V3.3S [10,14,16,17,18,19,20,26,27,28,29,30,31,32,33,36,37,38,39,40,41]
+V1.05S [14,16,18,37,39]
US1B
PCI-E*
SMBus
Controller Link
PEG
From CLK BUFFER
Clock Flex
Ibexpeak-M
PCIE_RXN1
PCIE_RXP1
PCIE_TXN1_C
PCIE_TXP1_C
PCIE_RXN3
PCIE_RXP3
PCIE_TXN3_C
PCIE_TXP3_C
SMBALERT# / GPIO11
SMBCLK
SMBDATA
SML0ALERT# / GPIO60
SML0CLK
SML0DATA
SML1ALERT# / GPIO74
SML1CLK / GPIO58
SML1DATA / GPIO75
PCH_SMB_CLK_3S [19,28,30]
PCH_SMB_DAT_3S [19,28,30]
EC_SMB2_CLK_3AL [26]
EC_SMB2_DAT_3AL [26]
CL_CLK1
CL_DATA1
CL_RST1#
PEG_A_CLKRQ# / GPIO47
DGPU_PWROK [17,41]
CLKOUT_PEG_A_N
CLKOUT_PEG_A_P
CLKOUT_DMI_N
CLKOUT_DMI_P
CLKOUT_DP_N / CLKOUT_BCLK1_N
CLKOUT_DP_P / CLKOUT_BCLK1_P
CLKIN_DMI_N
CLKIN_DMI_P
CLKIN_BCLK_N
CLKIN_BCLK_P
CLKIN_DOT_96N
CLKIN_DOT_96P
CLKIN_SATA_N / CKSSCD_N
CLKIN_SATA_P / CKSSCD_P
REFCLK14IN
CLKIN_PCILOOPBACK
XTAL25_IN
XTAL25_OUT
XCLK_RCOMP
CLKOUTFLEX0 / GPIO64
CLKOUTFLEX1 / GPIO65
CLKOUTFLEX2 / GPIO66
CLKOUTFLEX3 / GPIO67
DGPU_DDC_SELECT#
CLK_48M_CARD
PCIECLKRQ0# / GPIO73
PCIECLKRQ1# / GPIO18
PCIECLKRQ2# / GPIO20
PCIECLKRQ3# / GPIO25
PCIECLKRQ4# / GPIO26
PCIECLKRQ5# / GPIO44
PEG_B_CLKRQ# / GPIO56
LAN_CLK_REQ#
WLAN_CLK_REQ#
(100MHz)
(120MHz)
(133MHz)
(96MHz)
(14.318MHz)
(33MHz)
TP544,TP545 ICT_TP
TP547,TP549 ICT_TP
TP552,TP554 ICT_TP
Port | Function
Port1 | LAN
Port2 | Un-used
Port3 | WLAN
Port4 | Un-used
Port5 | Un-used
Port6 | Un-used
Port7 | Un-used
Port8 | Un-used
PCI-E Port Table
Hon Hai Precision Industry Co. Ltd.
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phone: +886-2-2799-6111
PCH (PCI-E,SMBUS,CLK)
Size: Custom
Document Number: STAR (Federer)
Rev: 0.4
Page Modified: Tuesday, December 29, 2009 13:50:40 (UTC/GMT)
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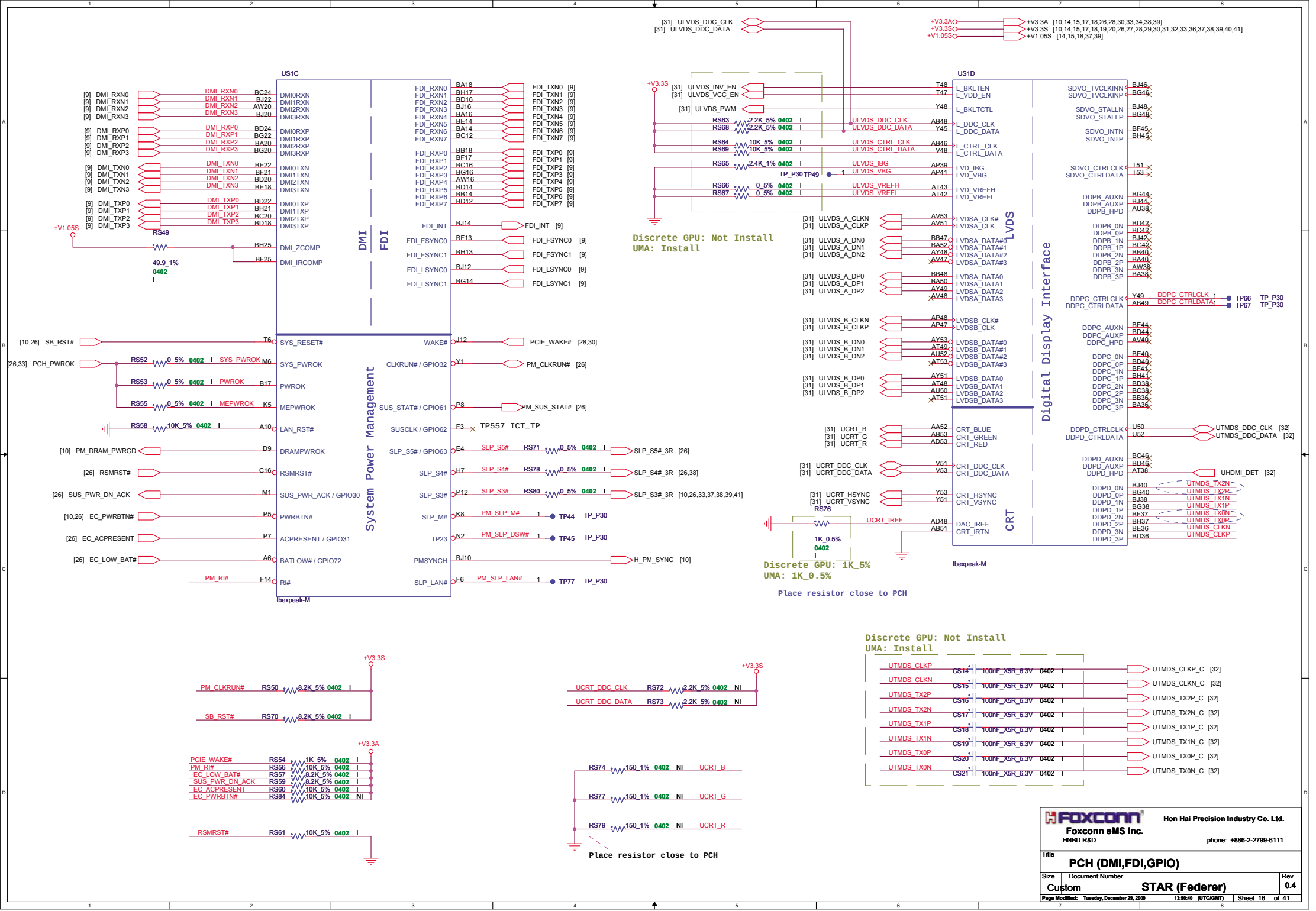
US1C
DMI
FDI
System Power Management
lbexpeak-M
US1D
LVDS
Digital Display Interface
CRT
Discrete GPU: Not Install
UMA: Install
Discrete GPU: 1K_5%
UMA: 1K_0.5%
Place resistor close to PCH
Discrete GPU: Not Install
UMA: Install
Place resistor close to PCH
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PCH (DMI,FDI,GPIO)
Custom
STAR (Federer)
0.4
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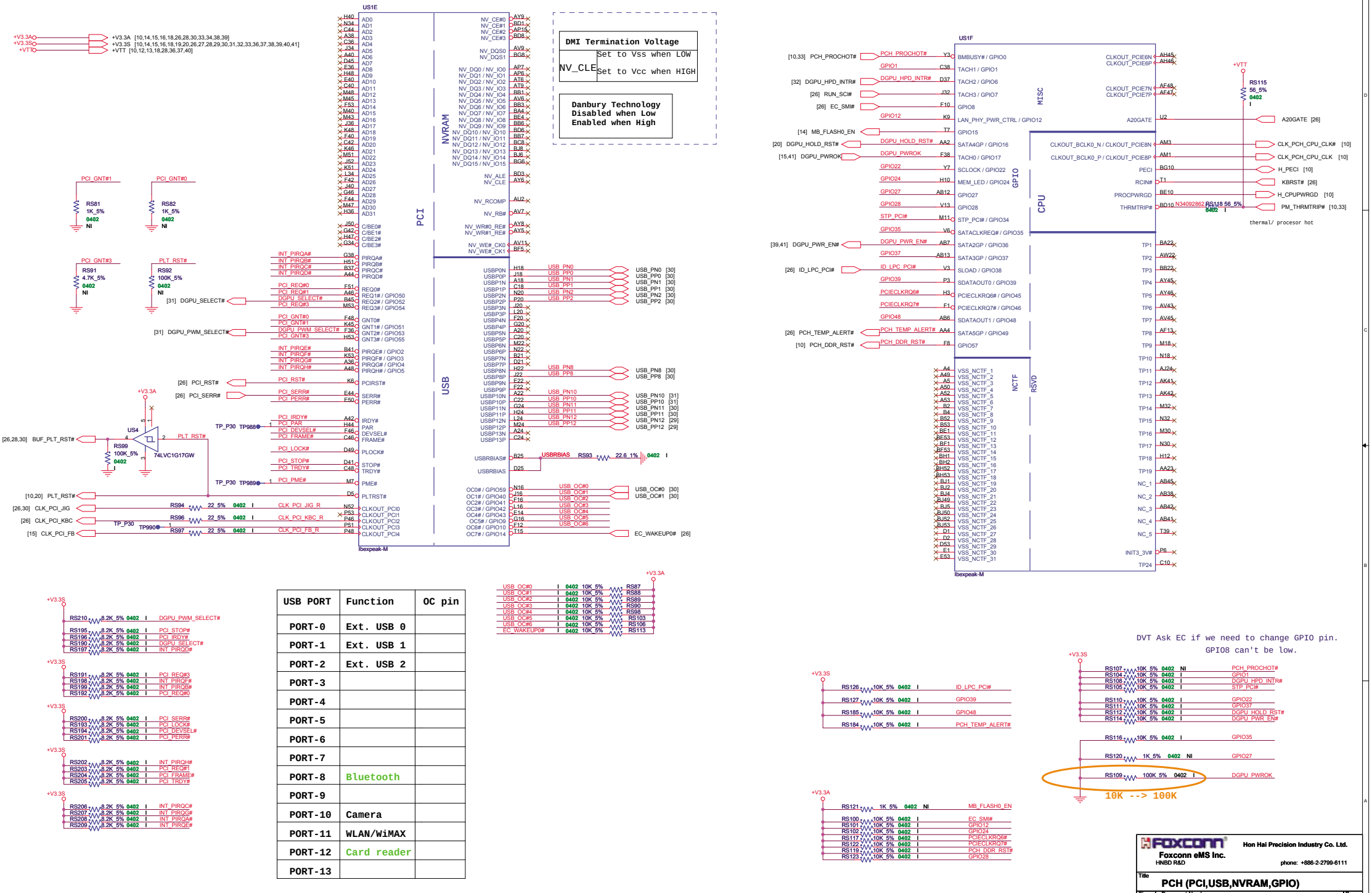
+V3.3A [10,14,15,16,18,26,28,30,33,34,38,39]
+V3.3S [10,14,15,16,18,19,20,26,27,28,29,30,31,32,33,36,37,38,39,40,41]
+VTT [10,12,13,18,28,36,37,40]
US1E
PCI
NVRAM
USB
AD0 AD1 AD2 AD3 AD4 AD5 AD6 AD7 AD8 AD9 AD10 AD11 AD12 AD13 AD14 AD15 AD16 AD17 AD18 AD19 AD20 AD21 AD22 AD23 AD24 AD25 AD26 AD27 AD28 AD29 AD30 AD31
C/BE0# C/BE1# C/BE2# C/BE3#
PIRQA# PIRQB# PIRQC# PIRQD#
REQ0# REQ1# / GPIO50 REQ2# / GPIO52 REQ3# / GPIO54
GNT0# GNT1# / GPIO51 GNT2# / GPIO53 GNT3# / GPIO55
PIRQE# / GPIO2 PIRQF# / GPIO3 PIRQG# / GPIO4 PIRQH# / GPIO5
PCIRST# SERR# PERR# IRDY# PAR DEVSEL# FRAME# PLOCK# STOP# TRDY# PME# PLTRST#
CLKOUT_PCI0 CLKOUT_PCI1 CLKOUT_PCI2 CLKOUT_PCI3 CLKOUT_PCI4
NV_CE#0 NV_CE#1 NV_CE#2 NV_CE#3 NV_DQS0 NV_DQS1
NV_DQ0 / NV_IO0 NV_DQ1 / NV_IO1 NV_DQ2 / NV_IO2 NV_DQ3 / NV_IO3 NV_DQ4 / NV_IO4 NV_DQ5 / NV_IO5 NV_DQ6 / NV_IO6 NV_DQ7 / NV_IO7 NV_DQ8 / NV_IO8 NV_DQ9 / NV_IO9 NV_DQ10 / NV_IO10 NV_DQ11 / NV_IO11 NV_DQ12 / NV_IO12 NV_DQ13 / NV_IO13 NV_DQ14 / NV_IO14 NV_DQ15 / NV_IO15
NV_ALE NV_CLE NV_RCOMP NV_RB# NV_WR#0_RE# NV_WR#1_RE# NV_WE#_CK0 NV_WE#_CK1
USBP0N USBP0P USBP1N USBP1P USBP2N USBP2P USBP3N USBP3P USBP4N USBP4P USBP5N USBP5P USBP6N USBP6P USBP7N USBP7P USBP8N USBP8P USBP9N USBP9P USBP10N USBP10P USBP11N USBP11P USBP12N USBP12P USBP13N USBP13P
USBRBIAS# USBRBIAS
OC0# / GPIO59 OC1# / GPIO40 OC2# / GPIO41 OC3# / GPIO42 OC4# / GPIO43 OC5# / GPIO9 OC6# / GPIO10 OC7# / GPIO14
USB_PN0 USB_PP0 USB_PN1 USB_PP1 USB_PN2 USB_PP2 USB_PN8 USB_PP8 USB_PN10 USB_PP10 USB_PN11 USB_PP11 USB_PN12 USB_PP12
USB_OC#0 USB_OC#1 USB_OC#2 USB_OC#3 USB_OC#4 USB_OC#5 USB_OC#6
USBRBIAS RS93 22.6 1% 0402
EC_WAKEUP0# [26]
Ibexpeak-M
DMI Termination Voltage
NV_CLE: Set to Vss when LOW / Set to Vcc when HIGH
Danbury Technology
Disabled when Low
Enabled when High
PCI_GNT#1 RS81 1K_5% 0402 NI
PCI_GNT#0 RS82 1K_5% 0402 NI
PCI_GNT#3 RS91 4.7K_5% 0402 NI
PLT_RST# RS92 100K_5% 0402 NI
[31] DGPU_SELECT#
[31] DGPU_PWM_SELECT#
[26] PCI_RST#
[26] PCI_SERR#
[26,28,30] BUF_PLT_RST#
US4 74LVC1G17GW
RS99 100K_5% 0402
TP_P30 TP988
TP_P30 TP989
TP_P30 TP990
[10,20] PLT_RST#
[26,30] CLK_PCI_JIG
[26] CLK_PCI_KBC
[15] CLK_PCI_FB
RS94 22_5% 0402 CLK_PCI_JIG_R
RS96 22_5% 0402 CLK_PCI_KBC_R
RS97 22_5% 0402 CLK_PCI_FB_R
US1F
MISC
GPIO
CPU
NCTF
RSVD
BMBUSY# / GPIO0
TACH1 / GPIO1
TACH2 / GPIO6
TACH3 / GPIO7
GPIO8
LAN_PHY_PWR_CTRL / GPIO12
GPIO15
SATA4GP / GPIO16
TACH0 / GPIO17
SCLOCK / GPIO22
MEM_LED / GPIO24
GPIO27
GPIO28
STP_PCI# / GPIO34
SATACLKREQ# / GPIO35
SATA2GP / GPIO36
SATA3GP / GPIO37
SLOAD / GPIO38
SDATAOUT0 / GPIO39
PCIECLKRQ6# / GPIO45
PCIECLKRQ7# / GPIO46
SDATAOUT1 / GPIO48
SATA5GP / GPIO49
GPIO57
CLKOUT_PCIE6N CLKOUT_PCIE6P CLKOUT_PCIE7N CLKOUT_PCIE7P
A20GATE
CLKOUT_BCLK0_N / CLKOUT_PCIE8N CLKOUT_BCLK0_P / CLKOUT_PCIE8P
PECI RCIN# PROCPWRGD THRMTRIP#
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP16 TP17 TP18 TP19 NC_1 NC_2 NC_3 NC_4 NC_5 INIT3_3V# TP24
VSS_NCTF_1 ... VSS_NCTF_31
[10,33] PCH_PROCHOT#
[32] DGPU_HPD_INTR#
[26] RUN_SCI#
[26] EC_SMI#
[14] MB_FLASH0_EN
[20] DGPU_HOLD_RST#
[15,41] DGPU_PWROK
[39,41] DGPU_PWR_EN#
[26] ID_LPC_PCI#
[26] PCH_TEMP_ALERT#
[10] PCH_DDR_RST#
RS115 56_5% 0402
A20GATE [26]
CLK_PCH_CPU_CLK# [10]
CLK_PCH_CPU_CLK [10]
H_PECI [10]
KBRST# [26]
H_CPUPWRGD [10]
PM_THRMTRIP# [10,33]
RS118 56_5% 0402
thermal/ procesor hot
Ibexpeak-M
USB_PORT | Function | OC pin
PORT-0 | Ext. USB 0 |
PORT-1 | Ext. USB 1 |
PORT-2 | Ext. USB 2 |
PORT-3 |
PORT-4 |
PORT-5 |
PORT-6 |
PORT-7 |
PORT-8 | Bluetooth |
PORT-9 |
PORT-10 | Camera |
PORT-11 | WLAN/WiMAX |
PORT-12 | Card reader |
PORT-13 |
USB_OC#0 USB_OC#1 USB_OC#2 USB_OC#3 USB_OC#4 USB_OC#5 USB_OC#6 EC_WAKEUP0# 0402 10K_5% RS87 RS88 RS89 RS90 RS98 RS103 RS106 RS113
RS210 8.2K_5% 0402 DGPU_PWM_SELECT#
RS195 8.2K_5% 0402 PCI_STOP#
RS196 8.2K_5% 0402 PCI_IRDY#
RS190 8.2K_5% 0402 DGPU_SELECT#
RS197 8.2K_5% 0402 INT_PIRQD#
RS191 8.2K_5% 0402 PCI_REQ#3
RS198 8.2K_5% 0402 INT_PIRQF#
RS199 8.2K_5% 0402 INT_PIRQB#
RS192 8.2K_5% 0402 PCI_REQ#0
RS200 8.2K_5% 0402 PCI_SERR#
RS193 8.2K_5% 0402 PCI_LOCK#
RS194 8.2K_5% 0402 PCI_DEVSEL#
RS201 8.2K_5% 0402 PCI_PERR#
RS202 8.2K_5% 0402 INT_PIRQH#
RS203 8.2K_5% 0402 PCI_REQ#1
RS204 8.2K_5% 0402 PCI_FRAME#
RS205 8.2K_5% 0402 PCI_TRDY#
RS206 8.2K_5% 0402 INT_PIRQC#
RS207 8.2K_5% 0402 INT_PIRQG#
RS208 8.2K_5% 0402 INT_PIRQA#
RS209 8.2K_5% 0402 INT_PIRQE#
RS126 10K_5% 0402 ID_LPC_PCI#
RS127 10K_5% 0402 GPIO39
RS185 10K_5% 0402 GPIO48
RS184 10K_5% 0402 PCH_TEMP_ALERT#
RS121 1K_5% 0402 NI MB_FLASH0_EN
RS100 10K_5% 0402 EC_SMI#
RS101 10K_5% 0402 GPIO12
RS102 10K_5% 0402 GPIO24
RS117 10K_5% 0402 PCIECLKRQ6#
RS122 10K_5% 0402 PCIECLKRQ7#
RS119 10K_5% 0402 PCH_DDR_RST#
RS123 10K_5% 0402 GPIO28
DVT Ask EC if we need to change GPIO pin.
GPIO8 can't be low.
RS107 10K_5% 0402 NI PCH_PROCHOT#
RS104 10K_5% 0402 GPIO1
RS106 10K_5% 0402 DGPU_HPD_INTR#
RS105 10K_5% 0402 STP_PCI#
RS110 10K_5% 0402 GPIO22
RS111 10K_5% 0402 GPIO37
RS112 10K_5% 0402 DGPU_HOLD_RST#
RS114 10K_5% 0402 DGPU_PWR_EN#
RS116 10K_5% 0402 GPIO35
RS120 1K_5% 0402 NI GPIO27
RS109 100K_5% 0402 DGPU_PWROK
10K --> 100K
Hon Hai Precision Industry Co. Ltd.
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phone: +886-2-2799-6111
Title: PCH (PCI,USB,NVRAM,GPIO)
Size: Custom
Document Number: STAR (Federer)
Rev: 0.4
Page Modified: Tuesday, December 29, 2009 13:50:41 (UTC/GMT)
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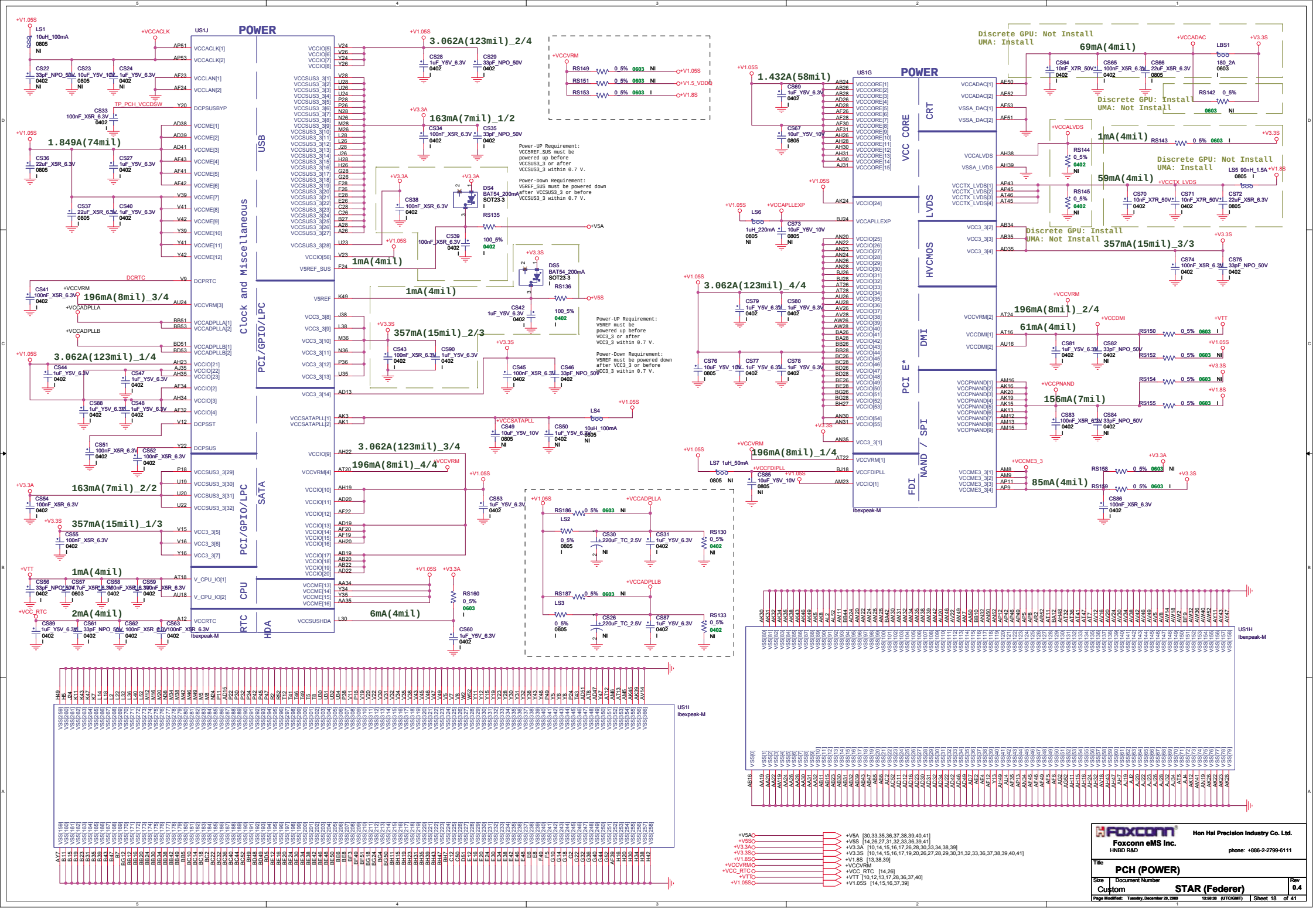
POWER
US1J
Clock and Miscellaneous
USB
PCI/GPIO/LPC
SATA
CPU
RTC
HDA
1.849A(74mil)
3.062A(123mil)_1/4
163mA(7mil)_2/2
357mA(15mil)_1/3
1mA(4mil)
2mA(4mil)
196mA(8mil)_3/4
3.062A(123mil)_2/4
163mA(7mil)_1/2
1mA(4mil)
357mA(15mil)_2/3
1mA(4mil)
3.062A(123mil)_3/4
196mA(8mil)_4/4
6mA(4mil)
Power-Up Requirement:
VCC5REF_SUS must be
powered up before
VCCSUS3_3 or after
VCCSUS3_3 within 0.7 V.
Power-Down Requirement:
V5REF_SUS must be powered down
after VCCSUS3_3 or before
VCCSUS3_3 within 0.7 V.
Power-Up Requirement:
V5REF must be
powered up before
VCC3_3 or after
VCC3_3 within 0.7 V.
Power-Down Requirement:
V5REF must be powered down
after VCC3_3 or before
VCC3_3 within 0.7 V.
Discrete GPU: Not Install
UMA: Install
69mA(4mil)
Discrete GPU: Install
UMA: Not Install
1mA(4mil)
Discrete GPU: Not Install
UMA: Install
59mA(4mil)
Discrete GPU: Install
UMA: Not Install
357mA(15mil)_3/3
US1G
POWER
VCC CORE
CRT
LVDS
HVCMOS
DMI
PCI E*
NAND / SPI
FDI
1.432A(58mil)
196mA(8mil)_2/4
61mA(4mil)
3.062A(123mil)_4/4
196mA(8mil)_1/4
156mA(7mil)
85mA(4mil)
US1H
US1I
lbexpeak-M
+V5A [30,33,35,36,37,38,39,40,41]
+V5S [14,26,27,31,32,33,36,39,41]
+V3.3A [10,14,15,16,17,26,28,30,33,34,38,39]
+V3.3S [10,14,15,16,17,19,20,26,27,28,29,30,31,32,33,36,37,38,39,40,41]
+V1.8S [13,38,39]
+VCCVRM
+VCC_RTC [14,26]
+VTT [10,12,13,17,28,36,37,40]
+V1.05S [14,15,16,37,39]
Foxconn eMS Inc.
HNBD R&D
Hon Hai Precision Industry Co. Ltd.
phone: +886-2-2799-6111
Title
PCH (POWER)
Size
Custom
Document Number
STAR (Federer)
Rev
0.4
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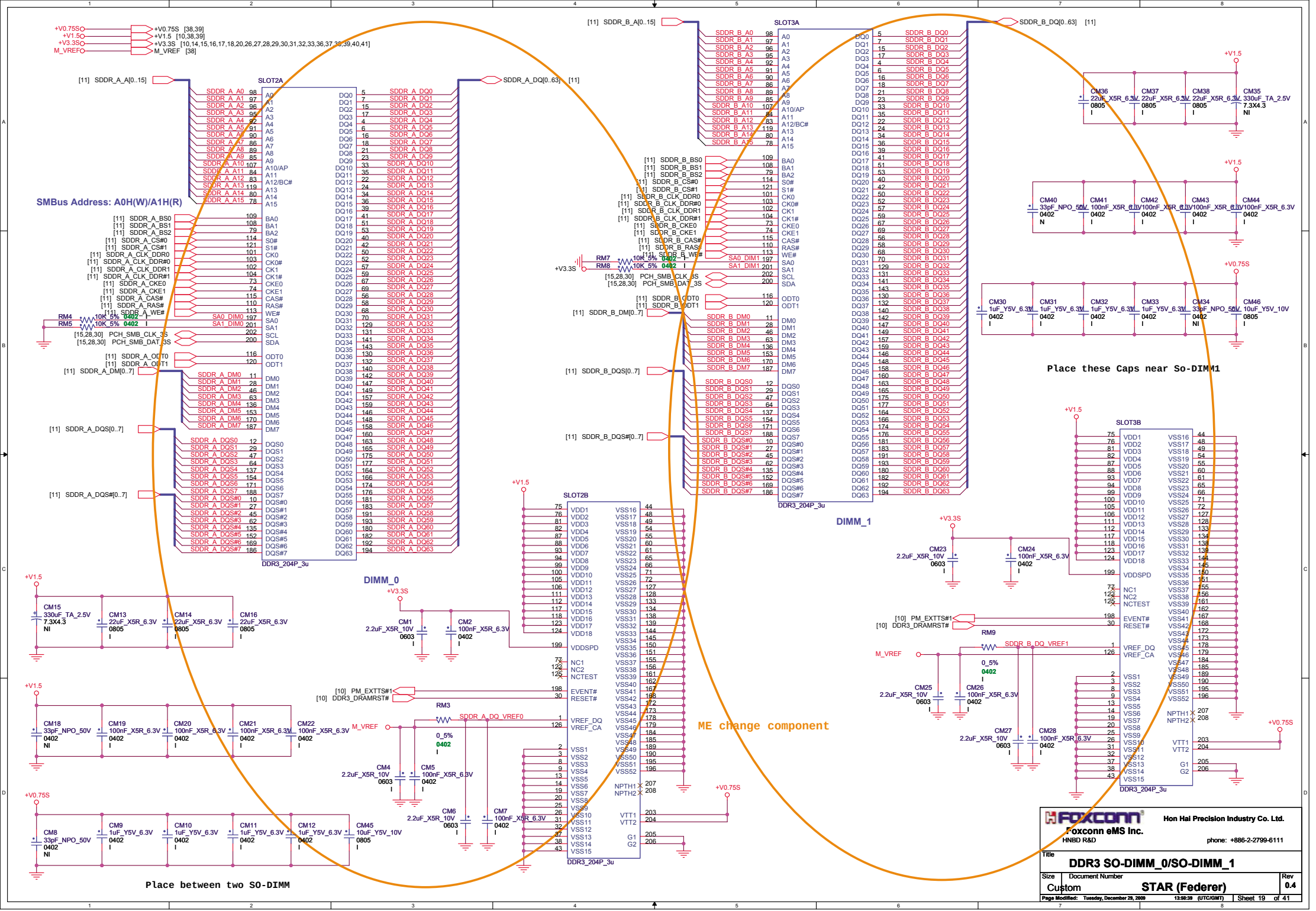
SMBus Address: A0H(W)/A1H(R)
DIMM_0
DIMM_1
ME change component
Place these Caps near So-DIMM1
Place between two SO-DIMM
SLOT2A
SLOT3A
SLOT2B
SLOT3B
DDR3_204P_3u
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HNBD R&D
phone: +886-2-2799-6111
DDR3 SO-DIMM_0/SO-DIMM_1
Custom
STAR (Federer)
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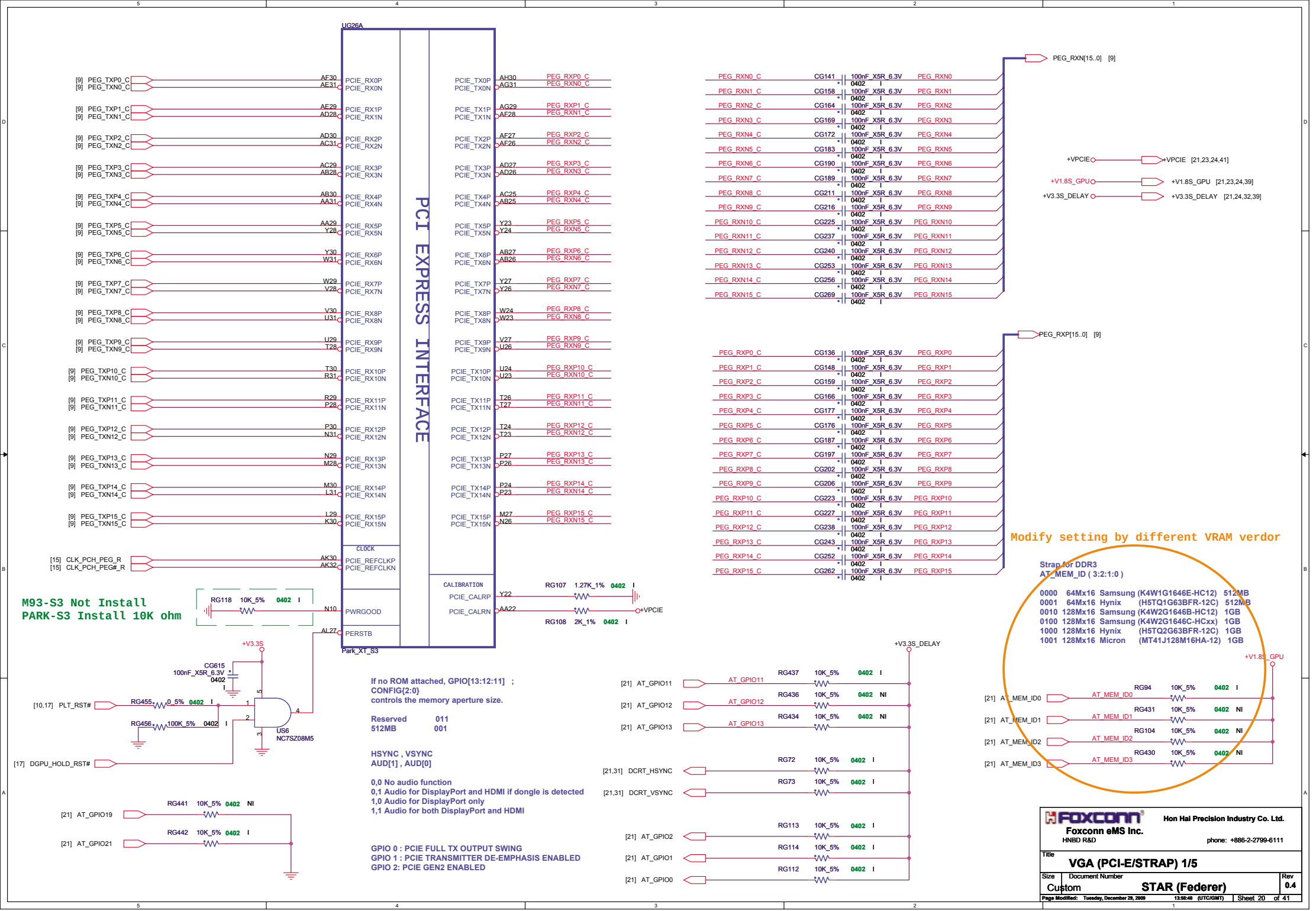
UG26A
PCI EXPRESS INTERFACE
[9] PEG_TXP0_C
[9] PEG_TXN0_C
AF30 PCIE_RX0P
AE31 PCIE_RX0N
PCIE_TX0P AH30 PEG_RXP0_C
PCIE_TX0N AG31 PEG_RXN0_C
[9] PEG_TXP1_C
[9] PEG_TXN1_C
AE29 PCIE_RX1P
AD28 PCIE_RX1N
PCIE_TX1P AG29 PEG_RXP1_C
PCIE_TX1N AF28 PEG_RXN1_C
[9] PEG_TXP2_C
[9] PEG_TXN2_C
AD30 PCIE_RX2P
AC31 PCIE_RX2N
PCIE_TX2P AF27 PEG_RXP2_C
PCIE_TX2N AF26 PEG_RXN2_C
[9] PEG_TXP3_C
[9] PEG_TXN3_C
AC29 PCIE_RX3P
AB28 PCIE_RX3N
PCIE_TX3P AD27 PEG_RXP3_C
PCIE_TX3N AD26 PEG_RXN3_C
[9] PEG_TXP4_C
[9] PEG_TXN4_C
AB30 PCIE_RX4P
AA31 PCIE_RX4N
PCIE_TX4P AC25 PEG_RXP4_C
PCIE_TX4N AB25 PEG_RXN4_C
[9] PEG_TXP5_C
[9] PEG_TXN5_C
AA29 PCIE_RX5P
Y28 PCIE_RX5N
PCIE_TX5P Y23 PEG_RXP5_C
PCIE_TX5N Y24 PEG_RXN5_C
[9] PEG_TXP6_C
[9] PEG_TXN6_C
Y30 PCIE_RX6P
W31 PCIE_RX6N
PCIE_TX6P AB27 PEG_RXP6_C
PCIE_TX6N AB26 PEG_RXN6_C
[9] PEG_TXP7_C
[9] PEG_TXN7_C
W29 PCIE_RX7P
V28 PCIE_RX7N
PCIE_TX7P Y27 PEG_RXP7_C
PCIE_TX7N Y26 PEG_RXN7_C
[9] PEG_TXP8_C
[9] PEG_TXN8_C
V30 PCIE_RX8P
U31 PCIE_RX8N
PCIE_TX8P W24 PEG_RXP8_C
PCIE_TX8N W23 PEG_RXN8_C
[9] PEG_TXP9_C
[9] PEG_TXN9_C
U29 PCIE_RX9P
T28 PCIE_RX9N
PCIE_TX9P V27 PEG_RXP9_C
PCIE_TX9N U26 PEG_RXN9_C
[9] PEG_TXP10_C
[9] PEG_TXN10_C
T30 PCIE_RX10P
R31 PCIE_RX10N
PCIE_TX10P U24 PEG_RXP10_C
PCIE_TX10N U23 PEG_RXN10_C
[9] PEG_TXP11_C
[9] PEG_TXN11_C
R29 PCIE_RX11P
P28 PCIE_RX11N
PCIE_TX11P T26 PEG_RXP11_C
PCIE_TX11N T27 PEG_RXN11_C
[9] PEG_TXP12_C
[9] PEG_TXN12_C
P30 PCIE_RX12P
N31 PCIE_RX12N
PCIE_TX12P T24 PEG_RXP12_C
PCIE_TX12N T23 PEG_RXN12_C
[9] PEG_TXP13_C
[9] PEG_TXN13_C
N29 PCIE_RX13P
M28 PCIE_RX13N
PCIE_TX13P P27 PEG_RXP13_C
PCIE_TX13N P26 PEG_RXN13_C
[9] PEG_TXP14_C
[9] PEG_TXN14_C
M30 PCIE_RX14P
L31 PCIE_RX14N
PCIE_TX14P P24 PEG_RXP14_C
PCIE_TX14N P23 PEG_RXN14_C
[9] PEG_TXP15_C
[9] PEG_TXN15_C
L29 PCIE_RX15P
K30 PCIE_RX15N
PCIE_TX15P M27 PEG_RXP15_C
PCIE_TX15N N26 PEG_RXN15_C
CLOCK
[15] CLK_PCH_PEG_R
[15] CLK_PCH_PEG#_R
AK30 PCIE_REFCLKP
AK32 PCIE_REFCLKN
CALIBRATION
PCIE_CALRP Y22
PCIE_CALRN AA22
RG107 1.27K_1% 0402
RG108 2K_1% 0402
+VPCIE
RG118 10K_5% 0402
N10 PWRGOOD
AL27 PERSTB
Park_XT_S3
PEG_RXN[15..0] [9]
PEG_RXN0_C CG141 100nF_X5R_6.3V 0402 PEG_RXN0
PEG_RXN1_C CG158 100nF_X5R_6.3V 0402 PEG_RXN1
PEG_RXN2_C CG164 100nF_X5R_6.3V 0402 PEG_RXN2
PEG_RXN3_C CG169 100nF_X5R_6.3V 0402 PEG_RXN3
PEG_RXN4_C CG172 100nF_X5R_6.3V 0402 PEG_RXN4
PEG_RXN5_C CG183 100nF_X5R_6.3V 0402 PEG_RXN5
PEG_RXN6_C CG190 100nF_X5R_6.3V 0402 PEG_RXN6
PEG_RXN7_C CG189 100nF_X5R_6.3V 0402 PEG_RXN7
PEG_RXN8_C CG211 100nF_X5R_6.3V 0402 PEG_RXN8
PEG_RXN9_C CG216 100nF_X5R_6.3V 0402 PEG_RXN9
PEG_RXN10_C CG225 100nF_X5R_6.3V 0402 PEG_RXN10
PEG_RXN11_C CG237 100nF_X5R_6.3V 0402 PEG_RXN11
PEG_RXN12_C CG240 100nF_X5R_6.3V 0402 PEG_RXN12
PEG_RXN13_C CG253 100nF_X5R_6.3V 0402 PEG_RXN13
PEG_RXN14_C CG256 100nF_X5R_6.3V 0402 PEG_RXN14
PEG_RXN15_C CG269 100nF_X5R_6.3V 0402 PEG_RXN15
+VPCIE +VPCIE [21,23,24,41]
+V1.8S_GPU +V1.8S_GPU [21,23,24,39]
+V3.3S_DELAY +V3.3S_DELAY [21,24,32,39]
PEG_RXP[15..0] [9]
PEG_RXP0_C CG136 100nF_X5R_6.3V 0402 PEG_RXP0
PEG_RXP1_C CG148 100nF_X5R_6.3V 0402 PEG_RXP1
PEG_RXP2_C CG159 100nF_X5R_6.3V 0402 PEG_RXP2
PEG_RXP3_C CG166 100nF_X5R_6.3V 0402 PEG_RXP3
PEG_RXP4_C CG177 100nF_X5R_6.3V 0402 PEG_RXP4
PEG_RXP5_C CG176 100nF_X5R_6.3V 0402 PEG_RXP5
PEG_RXP6_C CG187 100nF_X5R_6.3V 0402 PEG_RXP6
PEG_RXP7_C CG197 100nF_X5R_6.3V 0402 PEG_RXP7
PEG_RXP8_C CG202 100nF_X5R_6.3V 0402 PEG_RXP8
PEG_RXP9_C CG206 100nF_X5R_6.3V 0402 PEG_RXP9
PEG_RXP10_C CG223 100nF_X5R_6.3V 0402 PEG_RXP10
PEG_RXP11_C CG227 100nF_X5R_6.3V 0402 PEG_RXP11
PEG_RXP12_C CG238 100nF_X5R_6.3V 0402 PEG_RXP12
PEG_RXP13_C CG243 100nF_X5R_6.3V 0402 PEG_RXP13
PEG_RXP14_C CG252 100nF_X5R_6.3V 0402 PEG_RXP14
PEG_RXP15_C CG262 100nF_X5R_6.3V 0402 PEG_RXP15
Modify setting by different VRAM verdor
Strap for DDR3
AT_MEM_ID (3:2:1:0)
0000 64Mx16 Samsung (K4W1G1646E-HC12) 512MB
0001 64Mx16 Hynix (H5TQ1G63BFR-12C) 512MB
0010 128Mx16 Samsung (K4W2G1646B-HC12) 1GB
0100 128Mx16 Samsung (K4W2G1646C-HCxx) 1GB
1000 128Mx16 Hynix (H5TQ2G63BFR-12C) 1GB
1001 128Mx16 Micron (MT41J128M16HA-12) 1GB
+V1.8S_GPU
RG94 10K_5% 0402 I
[21] AT_MEM_ID0
AT_MEM_ID0
RG431 10K_5% 0402 NI
[21] AT_MEM_ID1
AT_MEM_ID1
RG104 10K_5% 0402 NI
[21] AT_MEM_ID2
AT_MEM_ID2
RG430 10K_5% 0402 NI
[21] AT_MEM_ID3
AT_MEM_ID3
M93-S3 Not Install
PARK-S3 Install 10K ohm
+V3.3S
CG615 100nF_X5R_6.3V 0402
[10,17] PLT_RST#
RG455 0_5% 0402 I
RG456 100K_5% 0402 I
US6 NC7SZ08M5
[17] DGPU_HOLD_RST#
If no ROM attached, GPIO[13:12:11] ;
CONFIG{2:0}
controls the memory aperture size.
Reserved 011
512MB 001
HSYNC , VSYNC
AUD[1] , AUD[0]
0,0 No audio function
0,1 Audio for DisplayPort and HDMI if dongle is detected
1,0 Audio for DisplayPort only
1,1 Audio for both DisplayPort and HDMI
GPIO 0 : PCIE FULL TX OUTPUT SWING
GPIO 1 : PCIE TRANSMITTER DE-EMPHASIS ENABLED
GPIO 2: PCIE GEN2 ENABLED
RG441 10K_5% 0402 NI
[21] AT_GPIO19
RG442 10K_5% 0402 I
[21] AT_GPIO21
+V3.3S_DELAY
[21] AT_GPIO11
AT_GPIO11
RG437 10K_5% 0402 I
[21] AT_GPIO12
AT_GPIO12
RG436 10K_5% 0402 NI
[21] AT_GPIO13
AT_GPIO13
RG434 10K_5% 0402 NI
[21,31] DCRT_HSYNC
RG72 10K_5% 0402 I
[21,31] DCRT_VSYNC
RG73 10K_5% 0402 I
[21] AT_GPIO2
RG113 10K_5% 0402 I
[21] AT_GPIO1
RG114 10K_5% 0402 I
[21] AT_GPIO0
RG112 10K_5% 0402 I
Hon Hai Precision Industry Co. Ltd.
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phone: +886-2-2799-6111
Title
VGA (PCI-E/STRAP) 1/5
Size Custom
Document Number STAR (Federer)
Rev 0.4
Page Modified: Tuesday, December 29, 2009 13:50:40 (UTC/GMT)
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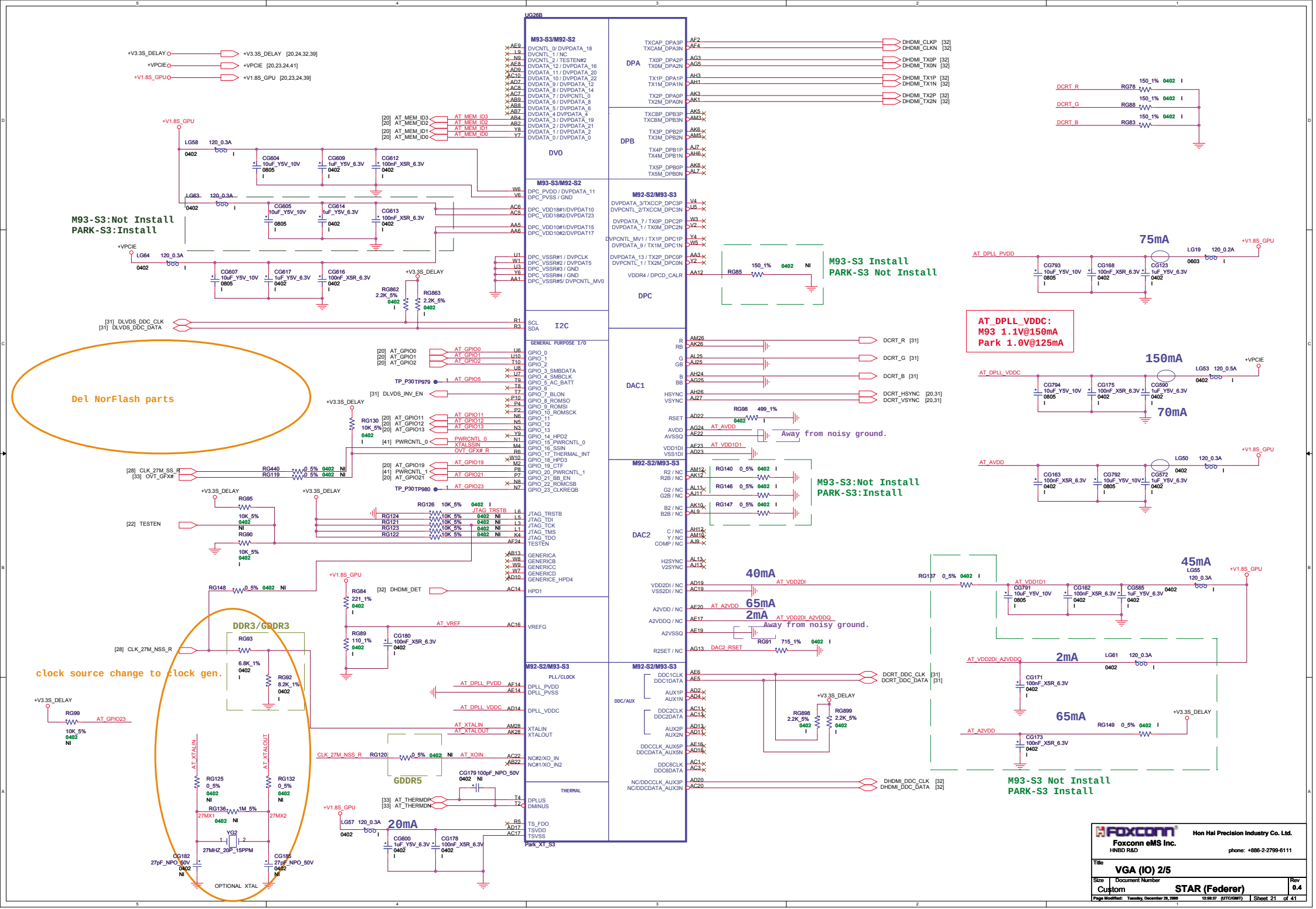
UG26B
M93-S3/M92-S2
DVCNTL_0/ DVPDATA_18
DVCNTL_1 / NC
DVCNTL_2 / TESTEN#2
DVDATA_12 / DVPDATA_16
DVDATA_11 / DVPDATA_20
DVDATA_10 / DVPDATA_22
DVDATA_9 / DVPDATA_12
DVDATA_8 / DVPDATA_14
DVDATA_7 / DVPCNTL_0
DVDATA_6 / DVPDATA_8
DVDATA_5 / DVPDATA_6
DVDATA_4 DVPDATA_4
DVDATA_3 / DVPDATA_19
DVDATA_2 / DVPDATA_21
DVDATA_1 / DVPDATA_2
DVDATA_0 / DVPDATA_0
DVO
DPA
DPB
DPC
I2C
GENERAL PURPOSE I/O
PLL/CLOCK
THERMAL
DAC1
DAC2
DDC/AUX
Park_XT_S3
+V3.3S_DELAY
+VPCIE
+V1.8S_GPU
M93-S3:Not Install
PARK-S3:Install
M93-S3 Install
PARK-S3 Not Install
M93-S3:Not Install
PARK-S3:Install
M93-S3 Not Install
PARK-S3 Install
Del NorFlash parts
clock source change to clock gen.
DDR3/GDDR3
GDDR5
OPTIONAL XTAL
Away from noisy ground.
Away from noisy ground.
AT_DPLL_VDDC:
M93 1.1V@150mA
Park 1.0V@125mA
75mA
150mA
70mA
40mA
65mA
2mA
2mA
45mA
65mA
20mA
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phone: +886-2-2799-6111
VGA (IO) 2/5
Custom
STAR (Federer)
Rev 0.4
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+V1.5S → +V1.5S [24,25,39,41]

UG26F — Park_XT_S3

LVDS CONTROL
VARY_BL AB11 → DLVDS_PWM [31]
DIGON AB12 → DLVDS_VCC_EN [31]

TXCLK_UP_DPF3P / TXCLK_UN_DPF3N	AH20 / AJ19	DLVDS_U_CLKP / DLVDS_U_CLKN [31]
TXOUT_U0P_DPF2P / TXOUT_U0N_DPF2N	AL21 / AK20	DLVDS_U_DP0 / DLVDS_U_DN0 [31]
TXOUT_U1P_DPF1P / TXOUT_U1N_DPF1N	AH22 / AJ21	DLVDS_U_DP1 / DLVDS_U_DN1 [31]
TXOUT_U2P_DPF0P / TXOUT_U2N_DPF0N	AL23 / AK22	DLVDS_U_DP2 / DLVDS_U_DN2 [31]
TXOUT_U3P / TXOUT_U3N	AK24 / AJ23	

LVTMDP

TXCLK_LP_DPE3P / TXCLK_LN_DPE3N	AL15 / AK14	DLVDS_L_CLKP / DLVDS_L_CLKN [31]
TXOUT_L0P_DPE2P / TXOUT_L0N_DPE2N	AH16 / AJ15	DLVDS_L_DP0 / DLVDS_L_DN0 [31]
TXOUT_L1P_DPE1P / TXOUT_L1N_DPE1N	AL17 / AK16	DLVDS_L_DP1 / DLVDS_L_DN1 [31]
TXOUT_L2P_DPE0P / TXOUT_L2N_DPE0N	AH18 / AJ17	DLVDS_L_DP2 / DLVDS_L_DN2 [31]
TXOUT_L3P / TXOUT_L3N	AL19 / AK18	

PLACE MVREF DIVIDERS AND CAPS CLOSE TO ASIC

+V1.5S
RG139 40.2_1% 0402 I
MVREFD
RG135 100_1% 0402 I
CG274 100nF_X5R_6.3V 0402 I

+V1.5S
RG143 40.2_1% 0402 I
MVREFS
RG133 100_1% 0402 I
CG302 100nF_X5R_6.3V 0402 I

CLKTESTA
CLKTESTB
CG273 100nF_X5R_6.3V 0402 NI
CG280 100nF_X5R_6.3V 0402 NI
RG127 51_5% 0402 NI
RG134 51_5% 0402 NI

+V1.5S
RG128 240_1% 0402 I
M93-S3 No Install
PARK-S3 Install
[21] TESTEN → RG188 0_5% 0402 I

+V1.5S
RG145 2.2K_5% 0402 NI
[25] MEM_RST → RG142 680_5% 0402 I
CG781 68pF_NPO_50V 0402 I
RG141 10K_5% 0402 I

	M93-S3	PARK-S3
RG141	DNI	10K
RG142	0R	680R
RG145	2.2K	DNI
CG781	2.2nF	68pF

CLKTESTA
CLKTESTB
RG131 4.7K_5% 0402 NI
RG129 4.7K_5% 0402 NI
RG144 240_1% 0402 I
RG138 150_1% 0402 I

M93-S3 Install
PARK-S3 Not Install

M93-S3 Not Install
PARK-S3 Install

M93-S3 Install 240 ohm
PARK-S3 Install 150 ohm

UG26C — Park_XT_S3 — MEMORY INTERFACE

[25] GDDR_A_DQ[63:0]

GDDR_A_DQ0	K27	DQA_0
GDDR_A_DQ1	J29	DQA_1
GDDR_A_DQ2	H30	DQA_2
GDDR_A_DQ3	H32	DQA_3
GDDR_A_DQ4	G29	DQA_4
GDDR_A_DQ5	F28	DQA_5
GDDR_A_DQ6	F32	DQA_6
GDDR_A_DQ7	F30	DQA_7
GDDR_A_DQ8	C30	DQA_8
GDDR_A_DQ9	F27	DQA_9
GDDR_A_DQ10	A28	DQA_10
GDDR_A_DQ11	C28	DQA_11
GDDR_A_DQ12	E27	DQA_12
GDDR_A_DQ13	G26	DQA_13
GDDR_A_DQ14	D26	DQA_14
GDDR_A_DQ15	F25	DQA_15
GDDR_A_DQ16	A25	DQA_16
GDDR_A_DQ17	C25	DQA_17
GDDR_A_DQ18	E25	DQA_18
GDDR_A_DQ19	D24	DQA_19
GDDR_A_DQ20	F23	DQA_20
GDDR_A_DQ21	F23	DQA_21
GDDR_A_DQ22	D22	DQA_22
GDDR_A_DQ23	F21	DQA_23
GDDR_A_DQ24	E21	DQA_24
GDDR_A_DQ25	D20	DQA_25
GDDR_A_DQ26	F19	DQA_26
GDDR_A_DQ27	A19	DQA_27
GDDR_A_DQ28	D18	DQA_28
GDDR_A_DQ29	F17	DQA_29
GDDR_A_DQ30	A17	DQA_30
GDDR_A_DQ31	C17	DQA_31
GDDR_A_DQ32	E17	DQA_32
GDDR_A_DQ33	D16	DQA_33
GDDR_A_DQ34	F15	DQA_34
GDDR_A_DQ35	A15	DQA_35
GDDR_A_DQ36	D14	DQA_36
GDDR_A_DQ37	F13	DQA_37
GDDR_A_DQ38	A13	DQA_38
GDDR_A_DQ39	C13	DQA_39
GDDR_A_DQ40	E11	DQA_40
GDDR_A_DQ41	A11	DQA_41
GDDR_A_DQ42	C11	DQA_42
GDDR_A_DQ43	F11	DQA_43
GDDR_A_DQ44	A9	DQA_44
GDDR_A_DQ45	C9	DQA_45
GDDR_A_DQ46	F9	DQA_46
GDDR_A_DQ47	D8	DQA_47
GDDR_A_DQ48	E7	DQA_48
GDDR_A_DQ49	A7	DQA_49
GDDR_A_DQ50	C7	DQA_50
GDDR_A_DQ51	F7	DQA_51
GDDR_A_DQ52	A5	DQA_52
GDDR_A_DQ53	E5	DQA_53
GDDR_A_DQ54	C3	DQA_54
GDDR_A_DQ55	E1	DQA_55
GDDR_A_DQ56	G7	DQA_56
GDDR_A_DQ57	G6	DQA_57
GDDR_A_DQ58	G1	DQA_58
GDDR_A_DQ59	G3	DQA_59
GDDR_A_DQ60	J6	DQA_60
GDDR_A_DQ61	J1	DQA_61
GDDR_A_DQ62	J3	DQA_62
GDDR_A_DQ63	J5	DQA_63
MVREFD	K26	MVREFDA
MVREFS	J26	MVREFSA
	J25	MEM_CALRN0
	K7	NC/TESTEN#2
	J8	MEM_CALRP1/DPC_CALR
	K25	MEM_CALRP0
	L10	DRAM_RST
CLKTESTA	K8	CLKTESTA
CLKTESTB	L7	CLKTESTB

MAA_0	K17	GDDR_A_A0
MAA_1	J20	GDDR_A_A1
MAA_2	H23	GDDR_A_A2
MAA_3	G23	GDDR_A_A3
MAA_4	G24	GDDR_A_A4
MAA_5	H24	GDDR_A_A5
MAA_6	J19	GDDR_A_A6
MAA_7	K19	GDDR_A_A7
MAA_8	J14	GDDR_A_A8
MAA_9	K14	GDDR_A_A9
MAA_10	J11	GDDR_A_A10
MAA_11	J13	GDDR_A_A11
MAA_12	H11	GDDR_A_A12

GDDR_A_A[12:0] [25]

MAA_13/BA2	G11	GDDR_A_BA2 [25]
MAA_14/BA0	J16	GDDR_A_BA0 [25]
MAA_15/BA1	L15	GDDR_A_BA1 [25]
		GDDR_A_DM[7:0] [25]

DQMA_0	E32	GDDR_A_DM0
DQMA_1	E30	GDDR_A_DM1
DQMA_2	A21	GDDR_A_DM2
DQMA_3	C21	GDDR_A_DM3
DQMA_4	E13	GDDR_A_DM4
DQMA_5	D12	GDDR_A_DM5
DQMA_6	E3	GDDR_A_DM6
DQMA_7	F4	GDDR_A_DM7

RDQSA_0	H28	GDDR_A_DQS0
RDQSA_1	C27	GDDR_A_DQS1
RDQSA_2	A23	GDDR_A_DQS2
RDQSA_3	E19	GDDR_A_DQS3
RDQSA_4	E15	GDDR_A_DQS4
RDQSA_5	D10	GDDR_A_DQS5
RDQSA_6	D6	GDDR_A_DQS6
RDQSA_7	G5	GDDR_A_DQS7

GDDR_A_DQS0 [25] … GDDR_A_DQS7 [25]

WDQSA_0	H27	GDDR_A_DQS#0
WDQSA_1	A27	GDDR_A_DQS#1
WDQSA_2	C23	GDDR_A_DQS#2
WDQSA_3	C19	GDDR_A_DQS#3
WDQSA_4	C15	GDDR_A_DQS#4
WDQSA_5	E9	GDDR_A_DQS#5
WDQSA_6	C5	GDDR_A_DQS#6
WDQSA_7	H4	GDDR_A_DQS#7

GDDR_A_DQS#0 [25] … GDDR_A_DQS#7 [25]

ODTA0	L18	GDDR_A_ODT0
ODTA1	K16	GDDR_A_ODT1

GDDR_A_ODT0 [25] … GDDR_A_ODT1 [25]

CLKA0	H26	GDDR_A_CLK0
CLKA0B	H25	GDDR_A_CLK#0
CLKA1	G9	GDDR_A_CLK1
CLKA1B	H9	GDDR_A_CLK#1
RASA0B	G22	GDDR_A_RAS#0
RASA1B	G17	GDDR_A_RAS#1
CASA0B	G19	GDDR_A_CAS#0
CASA1B	G16	GDDR_A_CAS#1
CSA0B_0	H22	GDDR_A_CS0_0#
CSA0B_1	J22	
CSA1B_0	G13	GDDR_A_CS1_0#
CSA1B_1	K13	
CKEA0	K20	GDDR_A_CKE0
CKEA1	J17	GDDR_A_CKE1
WEA0B	G25	GDDR_A_WE#0
WEA1B	H10	GDDR_A_WE#1
PX_EN	AB16	
RSVD#2	G14	
RSVD#3	G20	GDDR_A_A13_R

RG187 0_5% 0402 I → GDDR_A_A13 [25]

M93-S3 No Install
PARK-S3 Install

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Title: VGA (DDR3) 3/5
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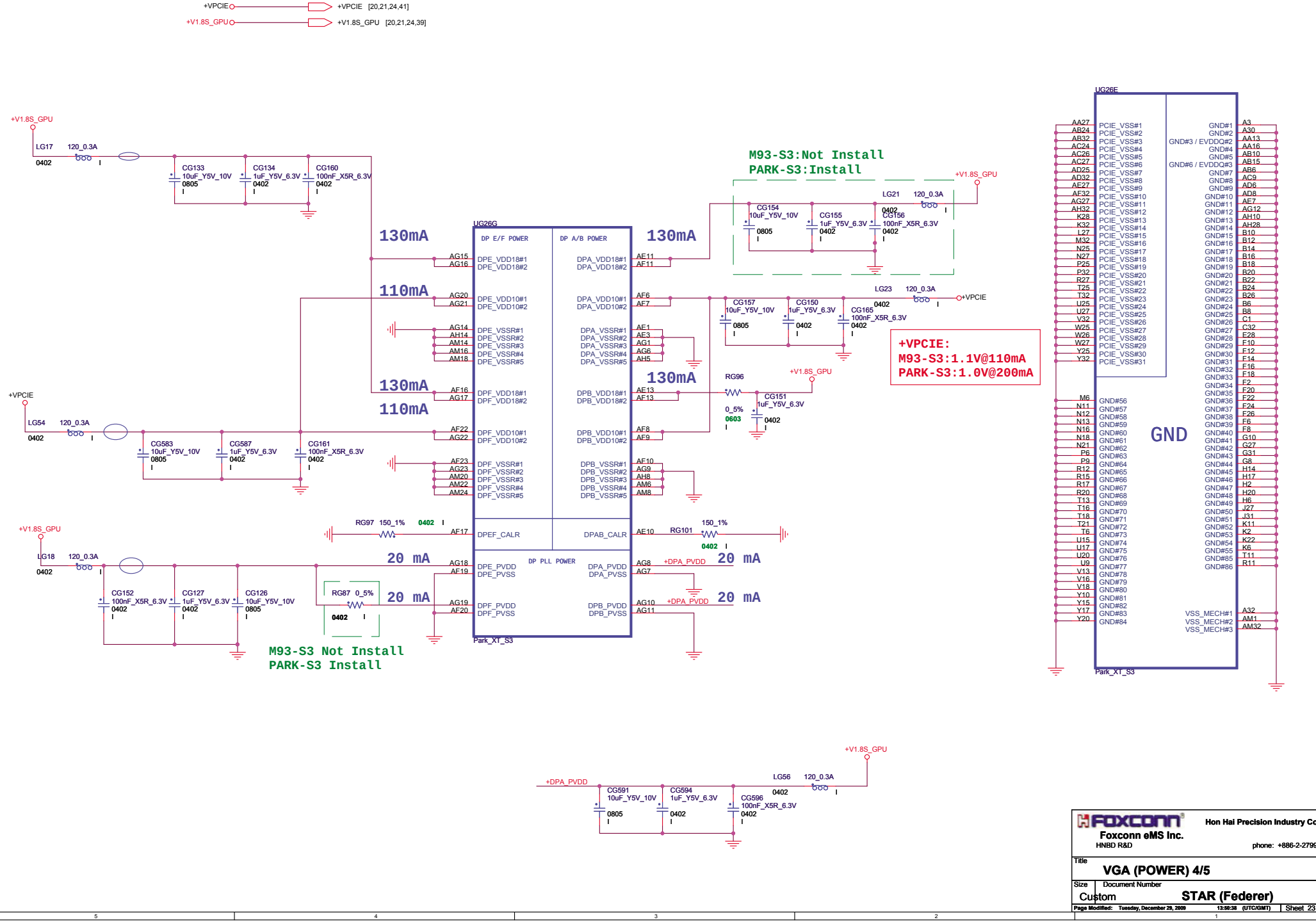
Page Modified: Tuesday, December 29, 2009 13:50:39 (UTC/GMT) | Sheet 22 of 41



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Title: VGA (POWER) 4/5

Size: Custom | Document Number: STAR (Federer) | Rev: 0.4

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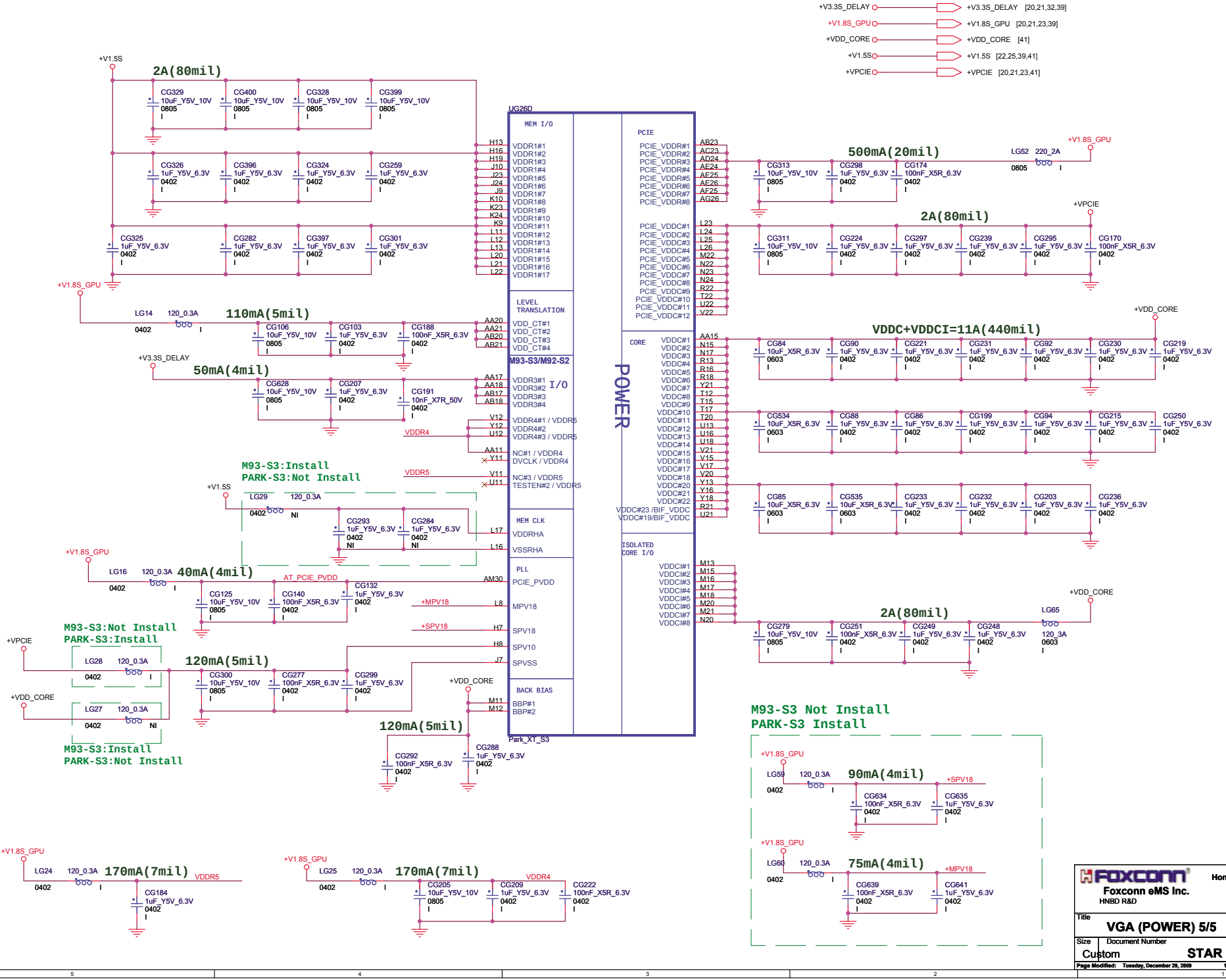
+V3.3S_DELAY +V3.3S_DELAY [20,21,32,39]
+V1.8S_GPU +V1.8S_GPU [20,21,23,39]
+VDD_CORE +VDD_CORE [41]
+V1.5S +V1.5S [22,25,39,41]
+VPCIE +VPCIE [20,21,23,41]
UG26D
MEM I/O
LEVEL TRANSLATION
M93-S3/M92-S2 I/O
MEM CLK
PLL
BACK BIAS
Park_XT_S3
POWER
PCIE
CORE
ISOLATED CORE I/O
2A(80mil)
500mA(20mil)
110mA(5mil)
50mA(4mil)
VDDC+VDDCI=11A(440mil)
40mA(4mil)
120mA(5mil)
M93-S3:Install
PARK-S3:Not Install
M93-S3:Not Install
PARK-S3:Install
M93-S3 Not Install
PARK-S3 Install
90mA(4mil)
75mA(4mil)
170mA(7mil)
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VGA (POWER) 5/5
Custom
STAR (Federer)
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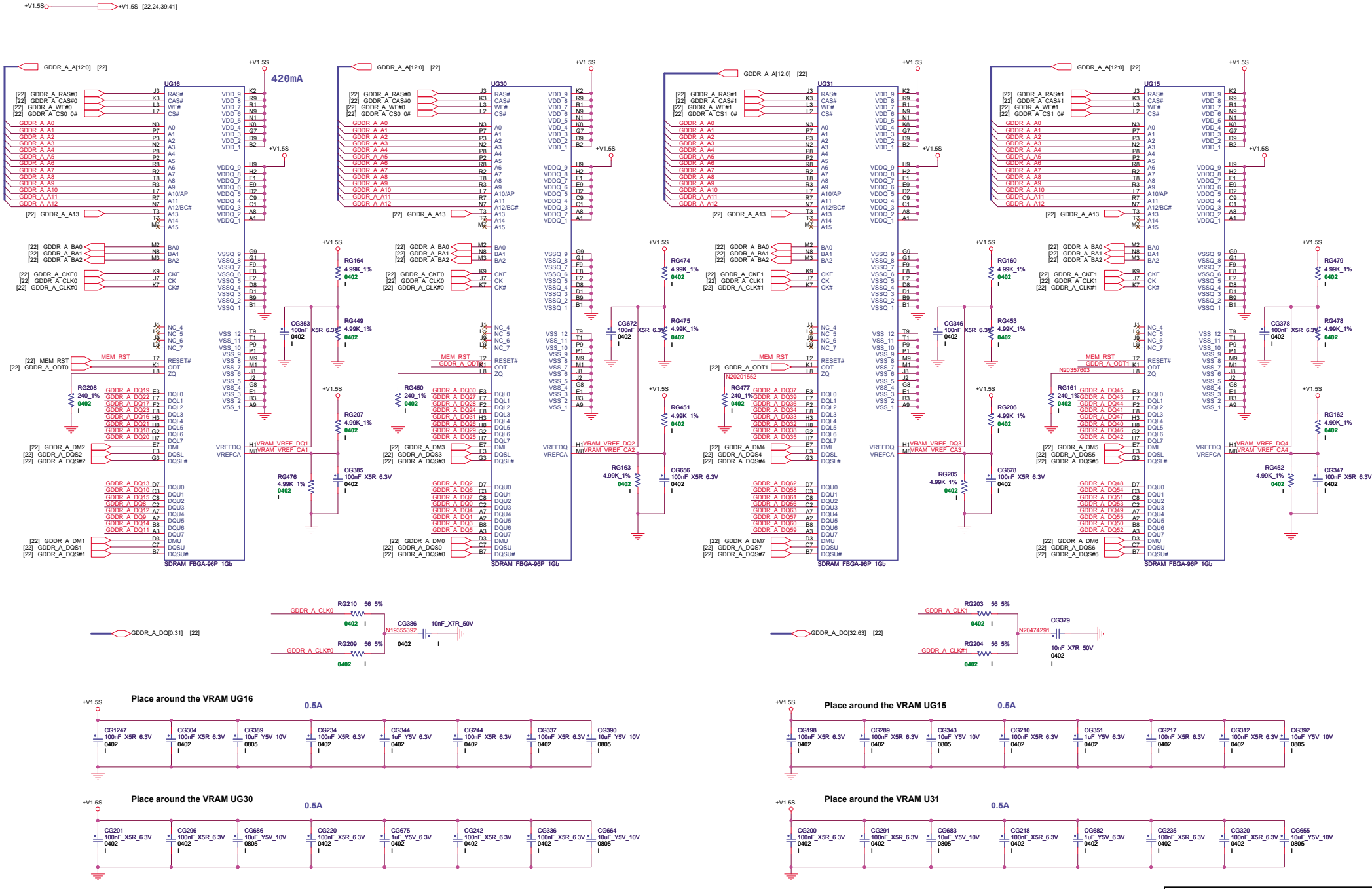

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Title: VRAM (DDR3)

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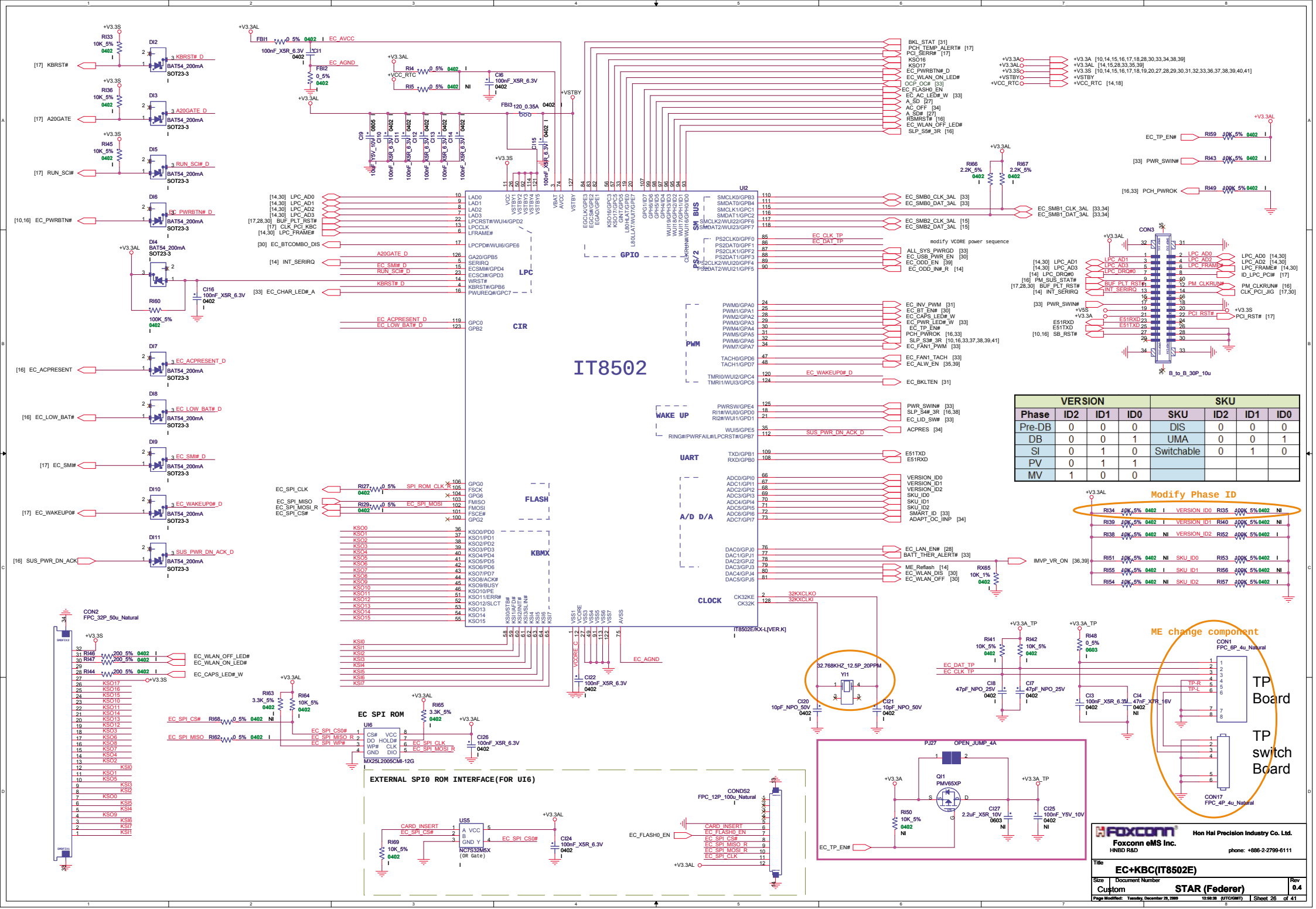
IT8502
LPC
CIR
GPIO
SM BUS
PS/2
PWM
WAKE UP
UART
A/D D/A
FLASH
KBMX
CLOCK
EC SPI ROM
EXTERNAL SPI0 ROM INTERFACE(FOR UI6)
Modify Phase ID
ME change component
TP Board
TP switch Board
VERSION
SKU
Phase | ID2 | ID1 | ID0 | SKU | ID2 | ID1 | ID0
Pre-DB | 0 | 0 | 0 | DIS | 0 | 0 | 0
DB | 0 | 0 | 1 | UMA | 0 | 0 | 1
SI | 0 | 1 | 0 | Switchable | 0 | 1 | 0
PV | 0 | 1 | 1
MV | 1 | 0 | 0
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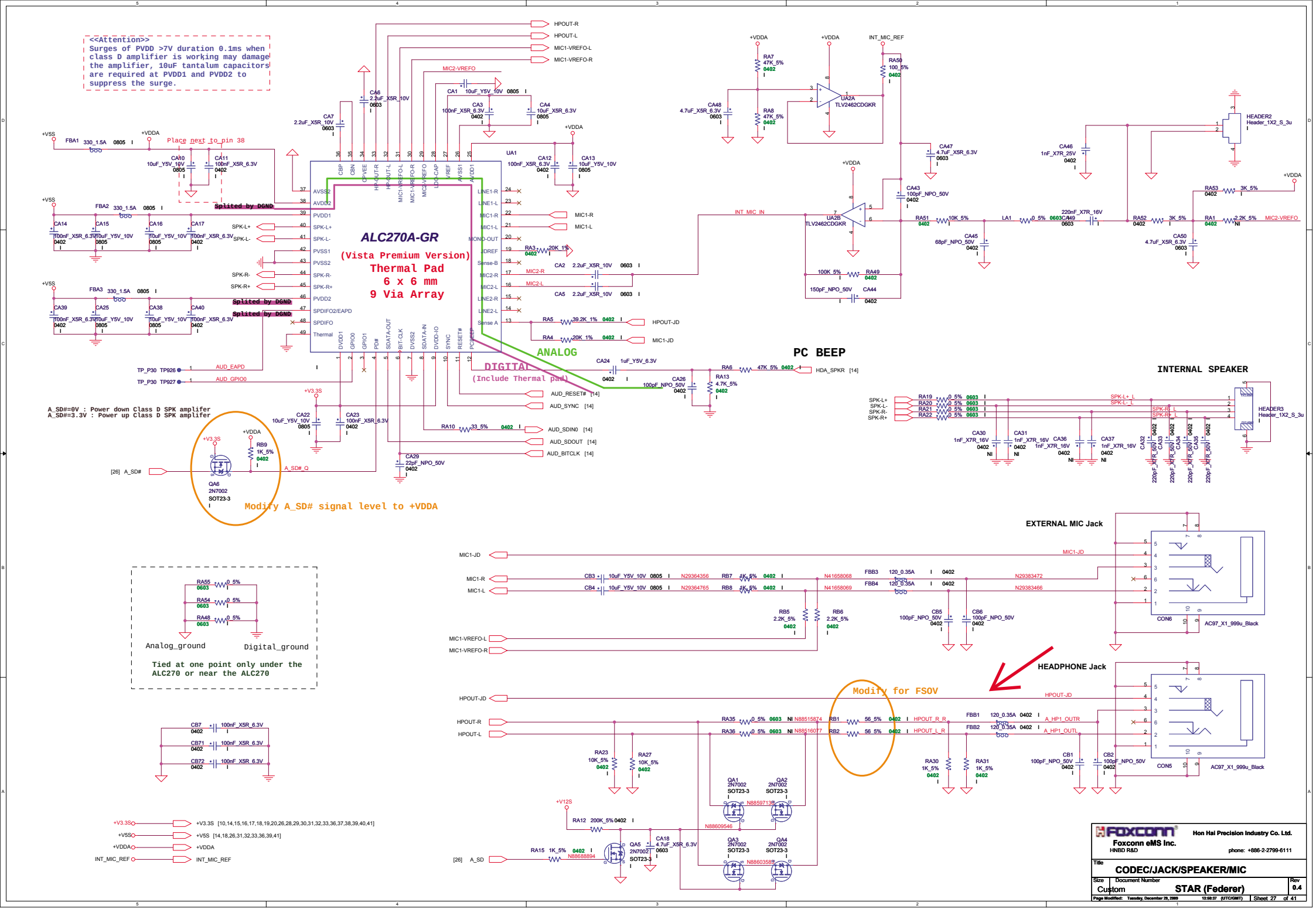
EC+KBC(IT8502E)
STAR (Federer)
Custom
Rev 0.4
Sheet 26 of 41


<<Attention>>
Surges of PVDD >7V duration 0.1ms when class D amplifier is working may damage the amplifier, 10uF tantalum capacitors are required at PVDD1 and PVDD2 to suppress the surge.
ALC270A-GR
(Vista Premium Version)
Thermal Pad
6 x 6 mm
9 Via Array
ANALOG
DIGITAL
(Include Thermal pad)
PC BEEP
INTERNAL SPEAKER
EXTERNAL MIC Jack
HEADPHONE Jack
Modify for FSOV
Modify A_SD# signal level to +VDDA
A_SD#=0V : Power down Class D SPK amplifer
A_SD#=3.3V : Power up Class D SPK amplifer
Place next to pin 38
Splited by DGND
Analog_ground
Digital_ground
Tied at one point only under the ALC270 or near the ALC270
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HNBD R&D
phone: +886-2-2799-6111
CODEC/JACK/SPEAKER/MIC
Custom
STAR (Federer)
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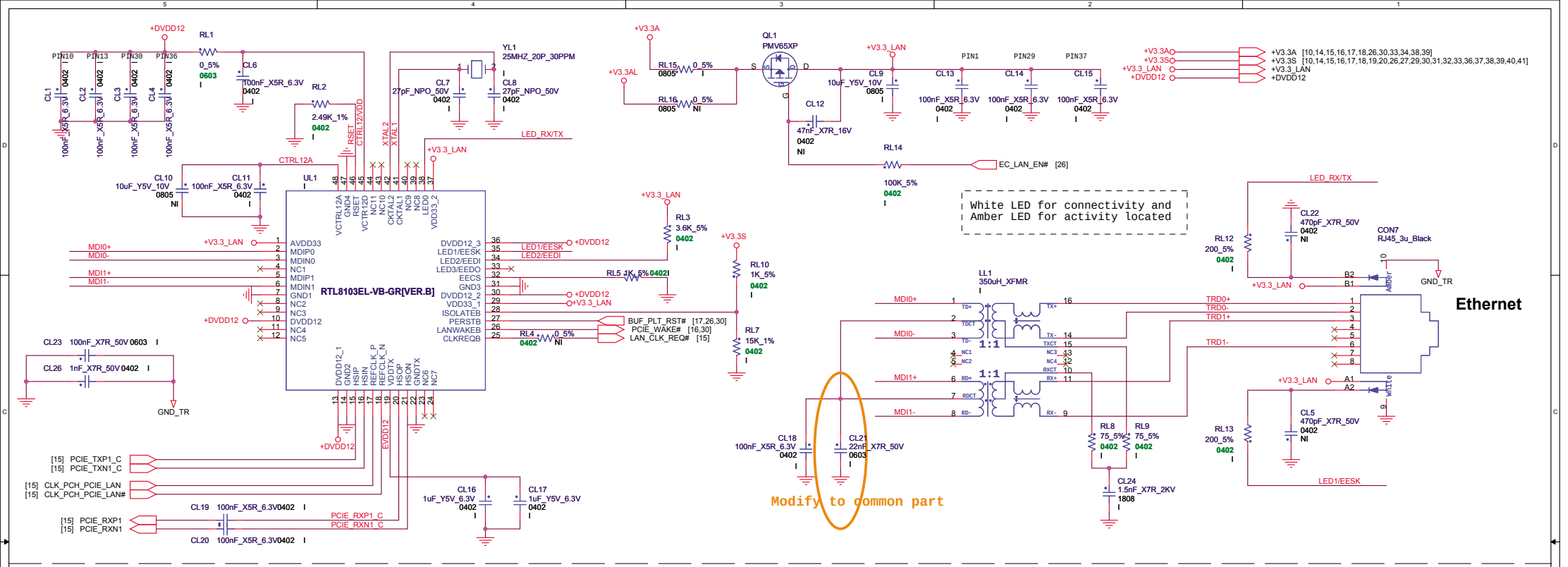

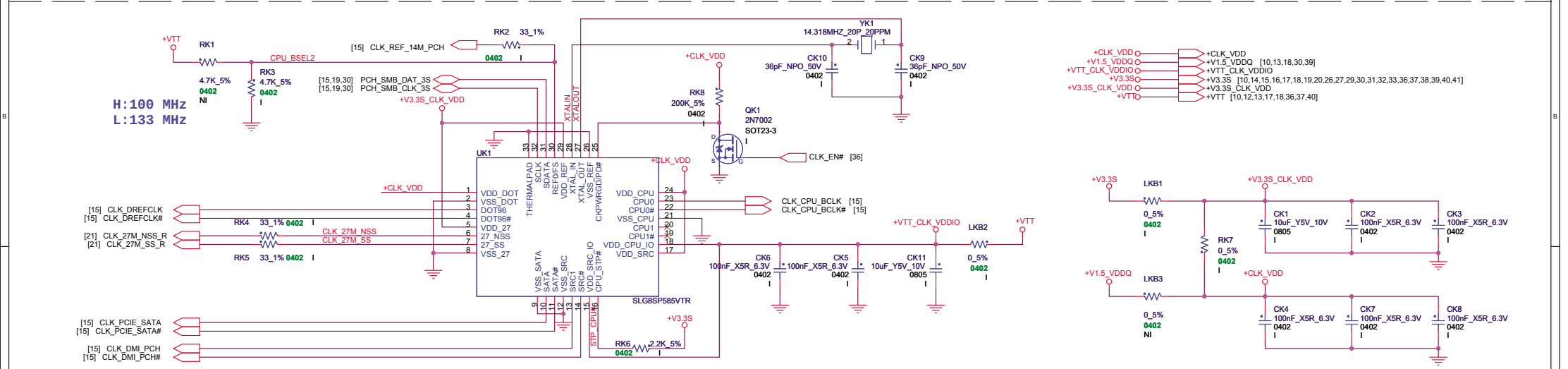

FSP Table

FS	CPU (PCH-->CPU)	Power On	SRC(DMI) (PCH-->CPU)	SATA (PCH)	DOT96 (PCH)	27MHz (GPU)	REF
0	133MHz	Default	100MHz	100MHz	96MHz	27MHz	14.318MHz
1	100MHz						

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Title: LAN (RTL8103EL)/CLOCK GEN

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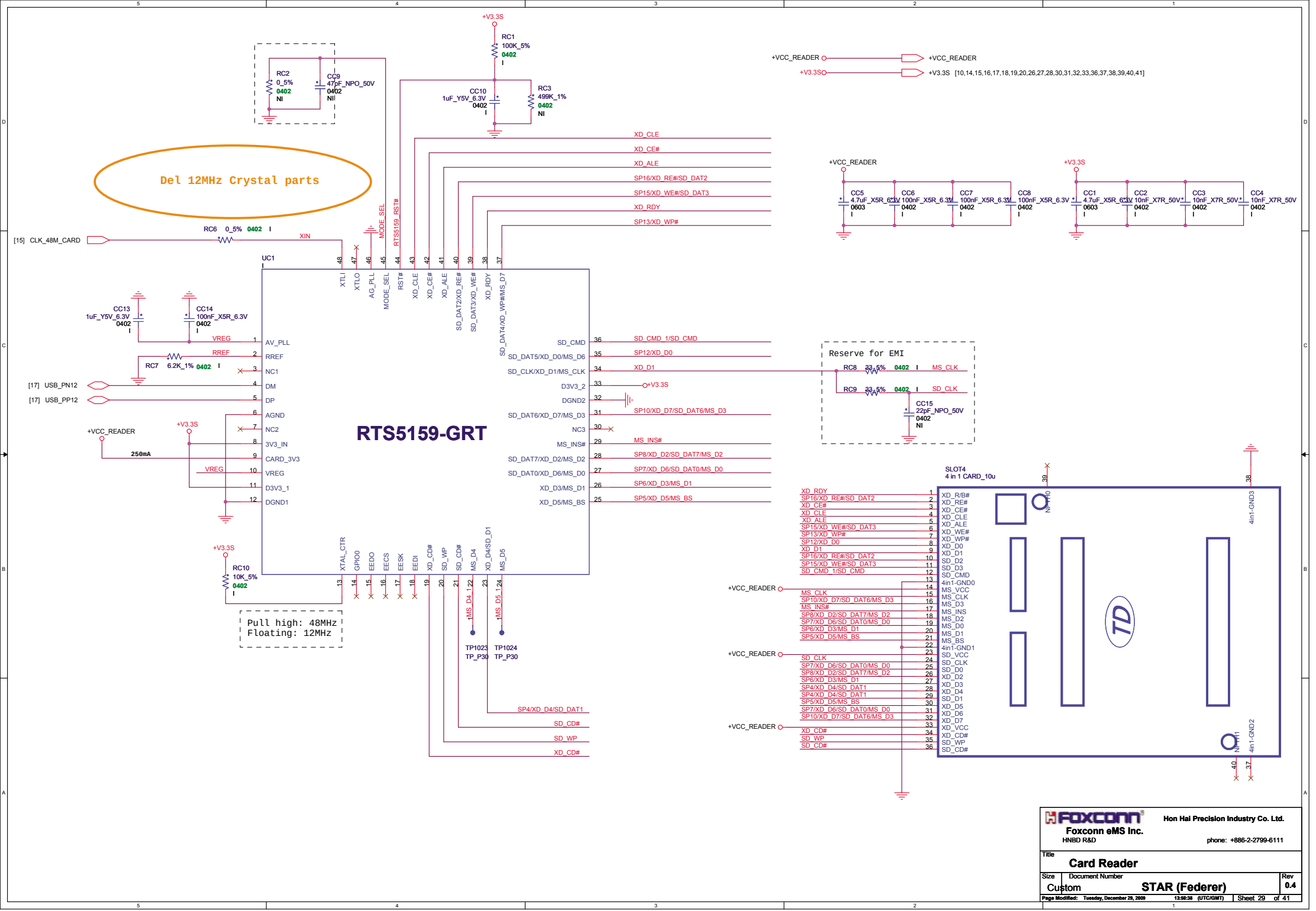
Del 12MHz Crystal parts
RTS5159-GRT
Reserve for EMI
Pull high: 48MHz
Floating: 12MHz
SLOT4
4 in 1 CARD_10u
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Card Reader
Custom
STAR (Federer)
0.4
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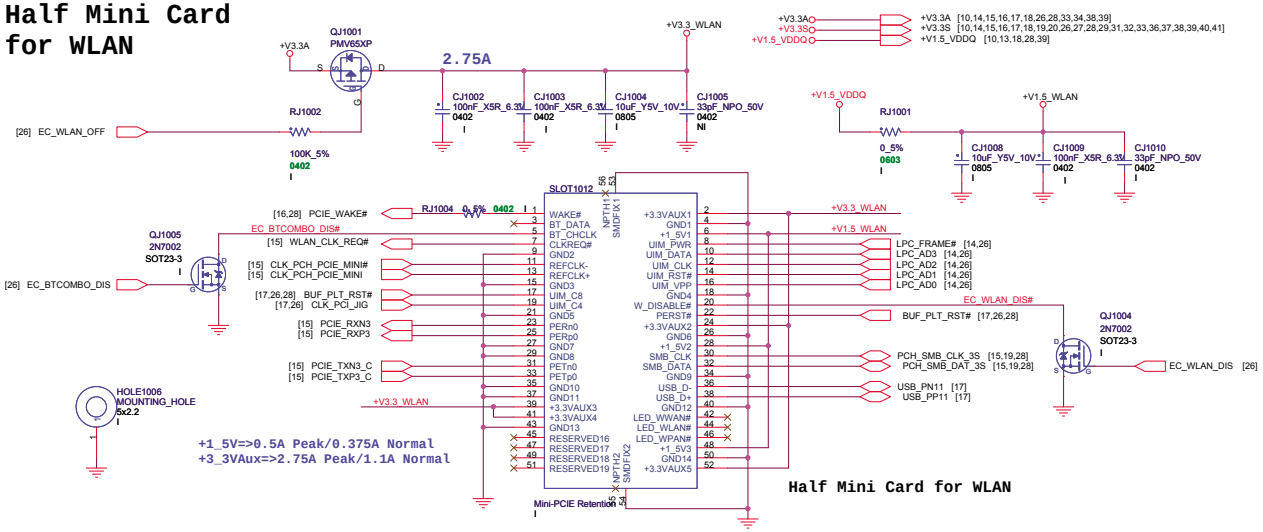
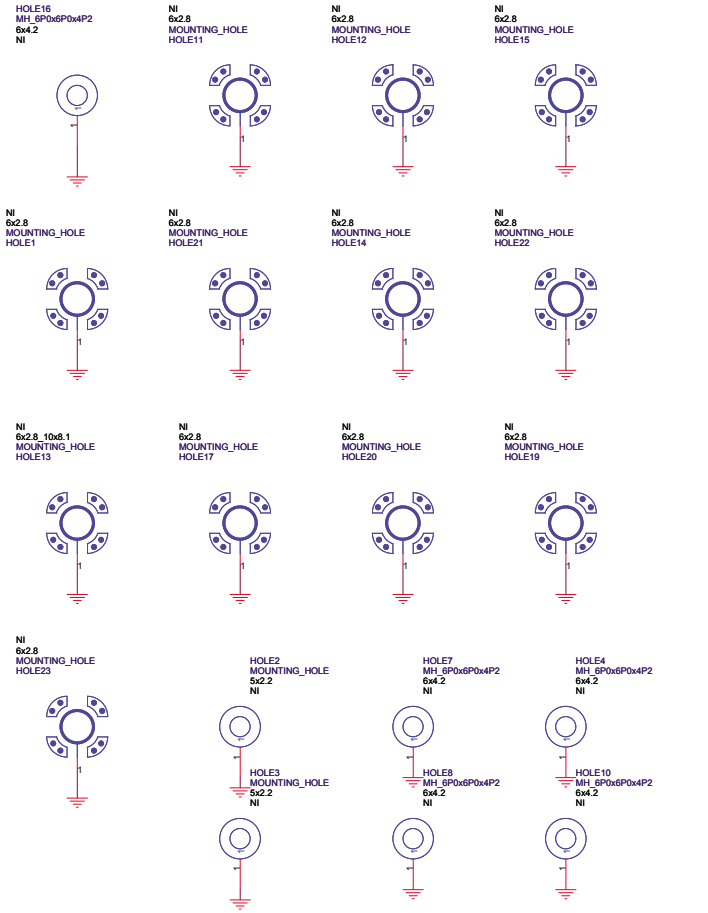
Half Mini Card for WLAN

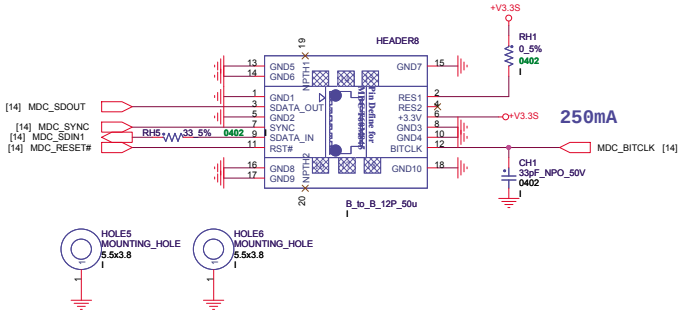


Half Mini Card for WLAN

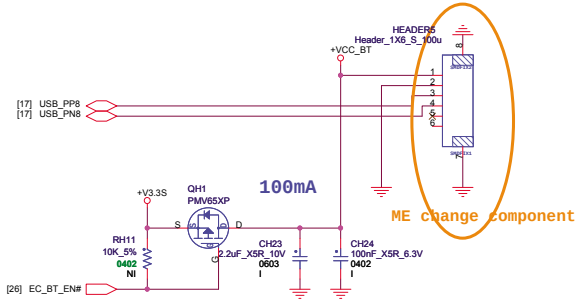
MOUNTING HOLE



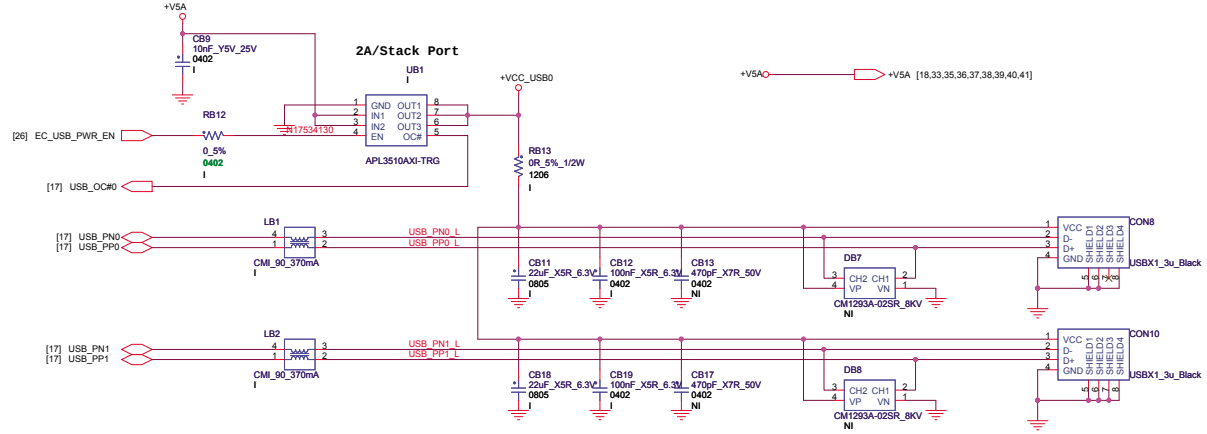
MDC CONN.



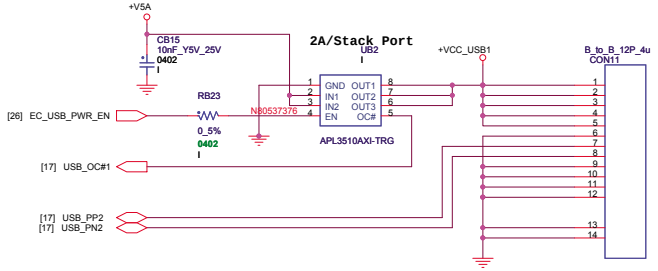
Bluetooth CONN.



USBX2 CONN.



USBX1 CONN.



FOXCONN	Hon Hai Precision Industry Co. Ltd.	
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Title: WLAN/BT/MDC/USB/MOUNTING HOLE		
Size: Custom	Document Number: STAR (Federer)	Rev: 0.4
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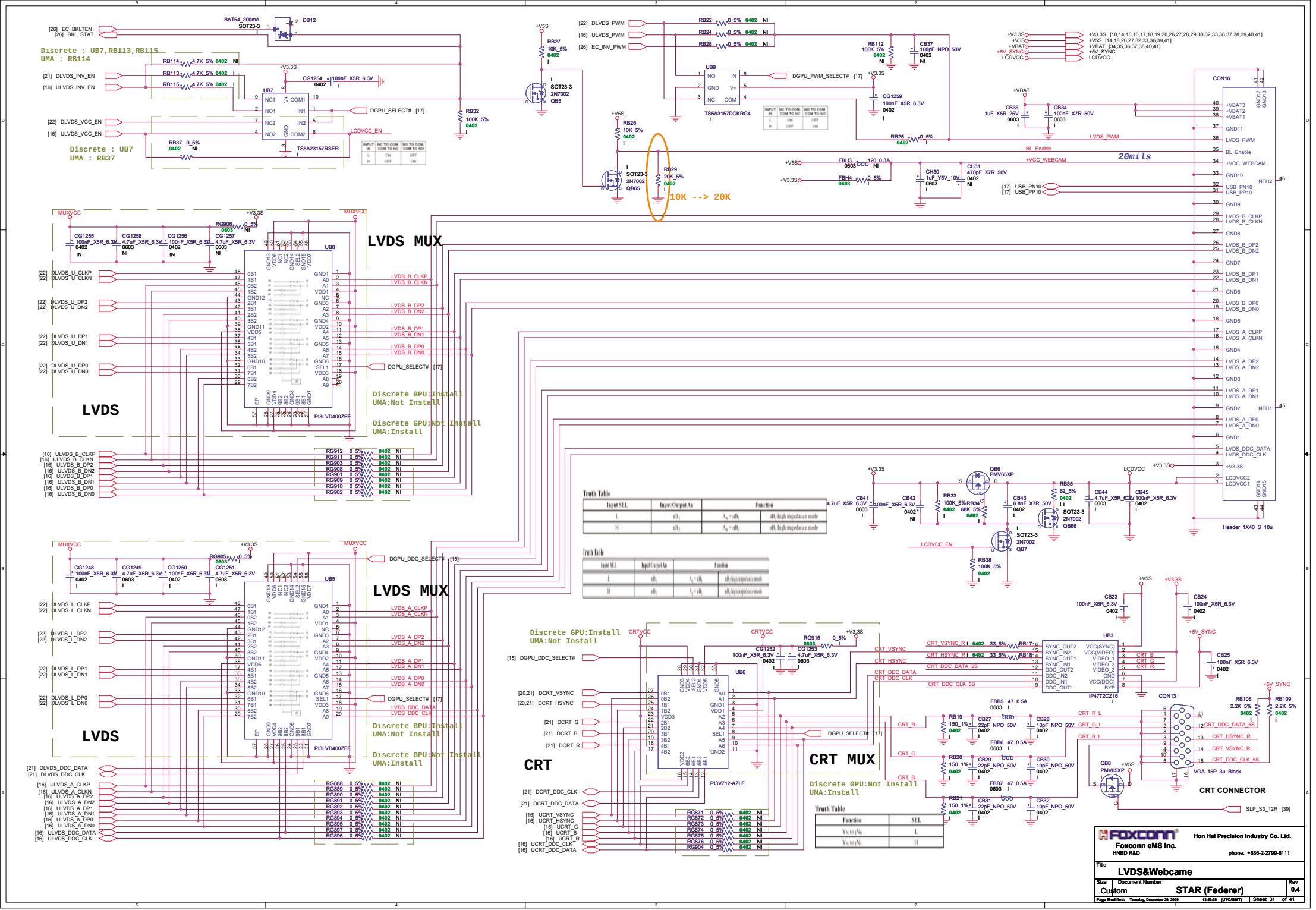
LVDS MUX
LVDS MUX
CRT
CRT MUX
LVDS
LVDS
CRT CONNECTOR
Discrete : UB7,RB113,RB115
UMA : RB114
Discrete : UB7
UMA : RB37
Discrete GPU:Install
UMA:Not Install
Discrete GPU:Not Install
UMA:Install
10K --> 20K
20mils
Truth Table
Truth Table
Truth Table
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LVDS&Webcame
Custom
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Rev 0.4
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Discrete GPU: Install
UMA: Not Install

+V3.3S_DELAY
RB41 2.2K_5% 0402 I
RB42 2.2K_5% 0402 I
[21] DHDMI_DDC_DATA
[21] DHDMI_DDC_CLK
QB67 2N7002 SOT23-3 I
QB9 2N7002 SOT23-3 I
HDMI_DDC_DATA
HDMI_DDC_CLK

+V5S
DB13 BAT54_200mA SOT23-3 I
RB43 2.2K_5% 0402 I
RB44 2.2K_5% 0402 I

[17] DGPU_HPD_INTR#
QB10 SOT23-3 2N7002 I

+V3.3S_DELAY
QB2 MMBT3904_NL SOT23-3 I
HDMI_DET_5_R
RB45 200K_1% 0402 I
HDMI_DET_5
[21] DHDMI_DET
RB83 0_5% 0402 I
RB39 10K_5% 0402 I

+V5S [14,18,26,27,31,33,36,39,41]
+V3.3S [10,14,15,16,17,18,19,20,26,27,28,29,30,31,33,36,37,38,39,40,41]
+V3.3S_DELAY [20,21,24,39]
+V5S_HDMI
+V3.3S_HDMI

HDMI spec: +5V:4.7V min , 55mA max.

CON15
HDMI_TX2P
HDMI_TX2N
HDMI_TX0P
HDMI_TX0N
HDMI_CEC
HDMI_DDC_CLK
HDMI_DET_5
Data2+
Data2-
TMDS Data1 Shield
Data0+
Data0-
TMDS Clock Shield
CEC
SCL
DDC/CEC Ground
Hot Plug Detect
PTH1
TMDS Data2 Shield
Data1+
Data1-
TMDS Data0 Shield
TMDS Clock+
TMDS Clock-
Reserved
SDA
+5V Power
PTH2
HDMI_TX1P
HDMI_TX1N
HDMI_CLKP
HDMI_CLKN
HDMI_DDC_DATA
TP_P30 TP1025
CB74 180pF_NPO_50V 0402 NI
DB22 PESD24VS1UL SOD882-2 NI
CB58 180pF_NPO_50V 0402 NI
+V5S_HDMI
CB57 100nF_X5R_6.3V 0402 I
DB15 B340A-13-F_3A SOD123-2 I
HDMI_R_19P_999u_Black

[21] DHDMI_TX2P
[21] DHDMI_TX2N
CB63 0402 100nF_X5R_6.3V I HDMI_TX2P
CB64 0402 100nF_X5R_6.3V I HDMI_TX2N
[21] DHDMI_TX1P
[21] DHDMI_TX1N
CB65 0402 100nF_X5R_6.3V I HDMI_TX1P
CB66 0402 100nF_X5R_6.3V I HDMI_TX1N
[21] DHDMI_TX0P
[21] DHDMI_TX0N
CB67 0402 100nF_X5R_6.3V I HDMI_TX0P
CB68 0402 100nF_X5R_6.3V I HDMI_TX0N
[21] DHDMI_CLKP
[21] DHDMI_CLKN
CB69 0402 100nF_X5R_6.3V I HDMI_CLKP
CB70 0402 100nF_X5R_6.3V I HDMI_CLKN

RB84 499_1% 0402 I HDMI_TX2P
RB85 499_1% 0402 I HDMI_TX2N
RB88 499_1% 0402 I HDMI_TX1P
RB89 499_1% 0402 I HDMI_TX1N
RB92 499_1% 0402 I HDMI_TX0P
RB93 499_1% 0402 I HDMI_TX0N
RB97 499_1% 0402 I HDMI_CLKP
RB98 499_1% 0402 I HDMI_CLKN
QB63 2N7002 SOT23-3 I
+V5S
RB100 100K_5% 0402 I

Discrete GPU:Not Install
UMA:Install

+V3.3S
FBB9 0_5% 0603 NI
+V3.3S_HDMI
CB52 10nF_X7R_25V 0402 NI
CB53 10nF_X7R_25V 0402 NI
CB54 100nF_X5R_6.3V 0402 NI
CB55 100nF_X5R_6.3V 0402 NI
CB51 10uF_Y5V_10V 0805 NI
CB46 100nF_X5R_6.3V 0402 NI
CB47 100nF_X5R_6.3V 0402 NI
CB50 10nF_X7R_25V 0402 NI
CB56 100nF_X5R_6.3V 0402 NI

+V3.3S
+V3.3S_HDMI
RB53 2.2K_5% 0402 NI
HDMI_DET_5
HDMI_DDC_DATA
HDMI_DDC_CLK
OE#
UB4
PTN3360BBS
GND_8 NC_4 NC_3 VDD_6 DDC_EN GND_7 HPD_SINK SDA_SINK SCL_SINK GND_6 VDD_5 OE#
GND_9 IN_D1- IN_D1+ VDD_7 IN_D2- IN_D2+ GND_10 IN_D3- IN_D3+ VDD_8 IN_D4- IN_D4+ GND_11
GND_5 OUT_D1- OUT_D1+ VDD_4 OUT_D2- OUT_D2+ GND_4 OUT_D3- OUT_D3+ VDD_3 OUT_D4- OUT_D4+
GND_1 VDD_1 NC_0 NC_1 GND_2 GND_0 HPD_SOURCE SDA_SOURCE SCL_SOURCE NC_2 VDD_2 GND_3

[16] UTMDS_TX2P_C
[16] UTMDS_TX2N_C
[16] UTMDS_TX1P_C
[16] UTMDS_TX1N_C
[16] UTMDS_TX0P_C
[16] UTMDS_TX0N_C
[16] UTMDS_CLKP_C
[16] UTMDS_CLKN_C

UHDMI_TX2P RB56 0_5% 0402 NI HDMI_TX2P
UHDMI_TX2N RB57 0_5% 0402 NI HDMI_TX2N
UHDMI_TX1P RB58 0_5% 0402 NI HDMI_TX1P
UHDMI_TX1N RB59 0_5% 0402 NI HDMI_TX1N
UHDMI_TX0P RB60 0_5% 0402 NI HDMI_TX0P
UHDMI_TX0N RB61 0_5% 0402 NI HDMI_TX0N
UHDMI_CLKP RB62 0_5% 0402 NI HDMI_CLKP
UHDMI_CLKN RB63 0_5% 0402 NI HDMI_CLKN

+V3.3S
RB46 10K_5% 0402 NI
QB64 2N7002 SOT23-3 NI
HDMI_DET_5_R

[16] UHDMI_DET
+V3.3S
RB73 2.2K_5% 0402 NI
RB71 2.2K_5% 0402 NI
RB106 100K_5% 0402 NI
RB77 10K_1% 0402 NI
[16] UTMDS_DDC_DATA
[16] UTMDS_DDC_CLK

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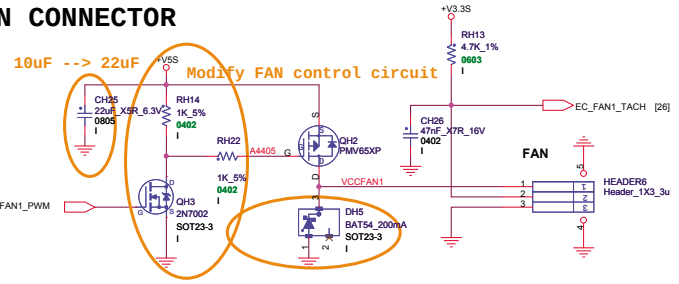
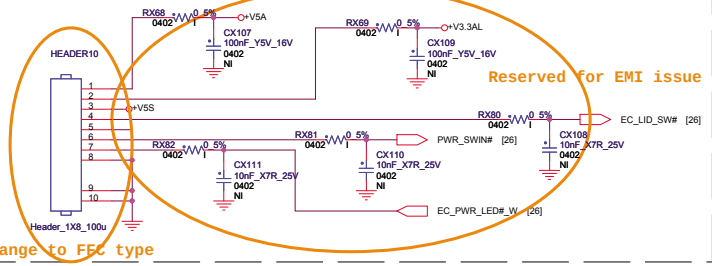
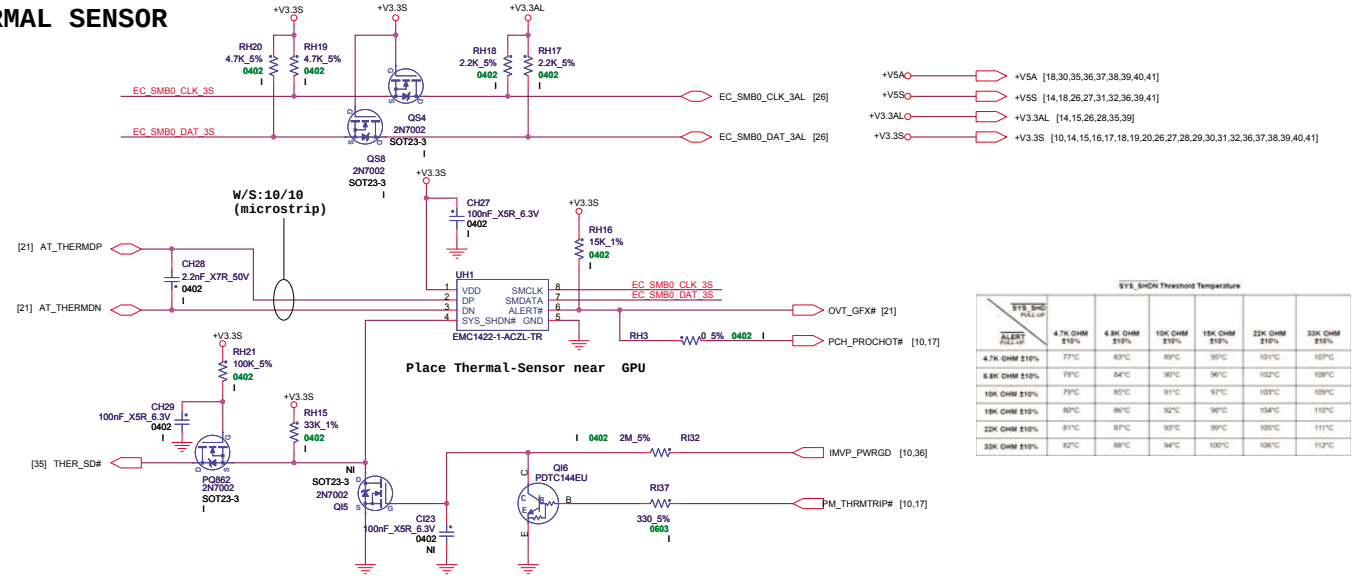
FAN CONNECTOR



POWER BUTTON BOARD CONNECTOR



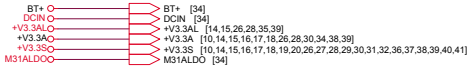
THERMAL SENSOR

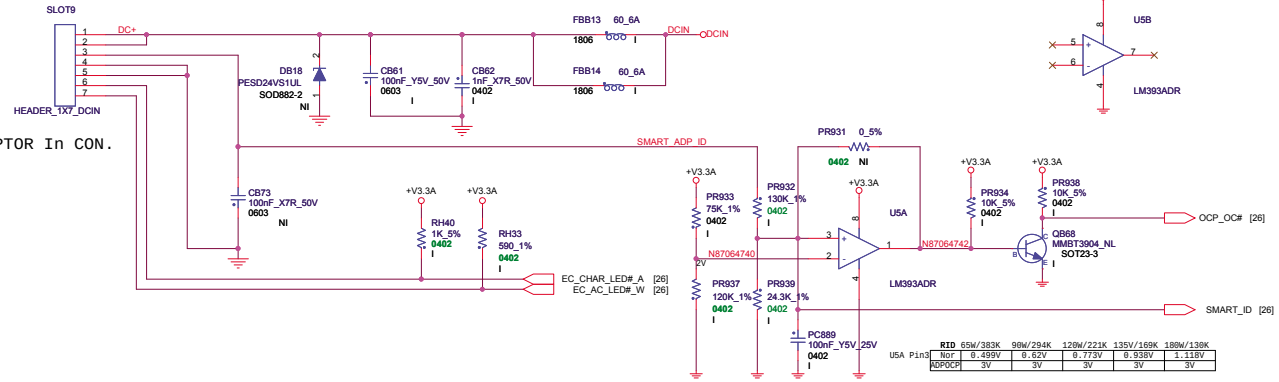


SYS_SHDN Threshold Temperature

SYS_SHDN PULL-UP / ALERT PULL-UP	4.7K OHM ±10%	6.8K OHM ±10%	10K OHM ±10%	15K OHM ±10%	22K OHM ±10%	33K OHM ±10%
4.7K OHM ±10%	77°C	83°C	89°C	95°C	101°C	107°C
6.8K OHM ±10%	78°C	84°C	90°C	96°C	102°C	108°C
10K OHM ±10%	79°C	85°C	91°C	97°C	103°C	109°C
15K OHM ±10%	80°C	86°C	92°C	98°C	104°C	110°C
22K OHM ±10%	81°C	87°C	93°C	99°C	105°C	111°C
33K OHM ±10%	82°C	88°C	94°C	100°C	106°C	112°C

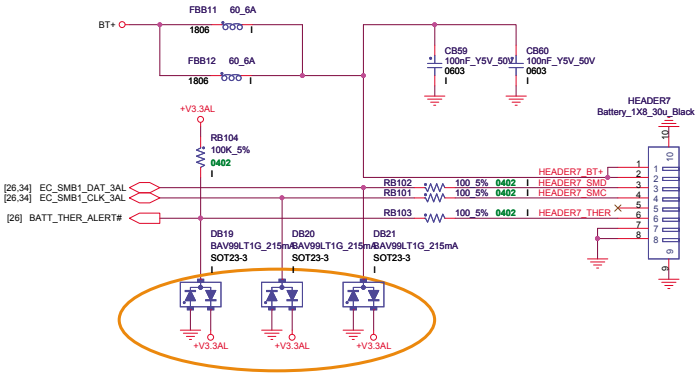
DC_JACK Wire to Board CONNECTOR

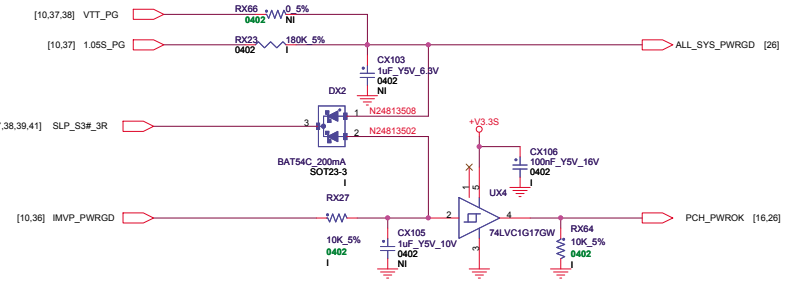




RID	65W/383K	90W/294K	120W/221K	135W/169K	180W/130K
U5A Pin3 Nor	0.499V	0.62V	0.773V	0.938V	1.118V
ADPOCP	3V	3V	3V	3V	3V

BATTERY CONNECTOR





Pin No.	Symbol	Comments
1	BATT+	Batt+, Battery Positive Terminal.
2	BATT+	Batt+, Battery Positive Terminal.
3	SMD	SMBus data interface I/O pin.
4	SMC	SMBus clock interface I/O pin.
5	ID	Open
6	B/I	Connect to thermistor (103AT2 equivalent)
7	GND	Batt-, Battery Negative Terminal
8	GND	Batt-, Battery Negative Terminal

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Title: DCIN/Battery/OCP/FAN
Size: Custom
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Rev: 0.4
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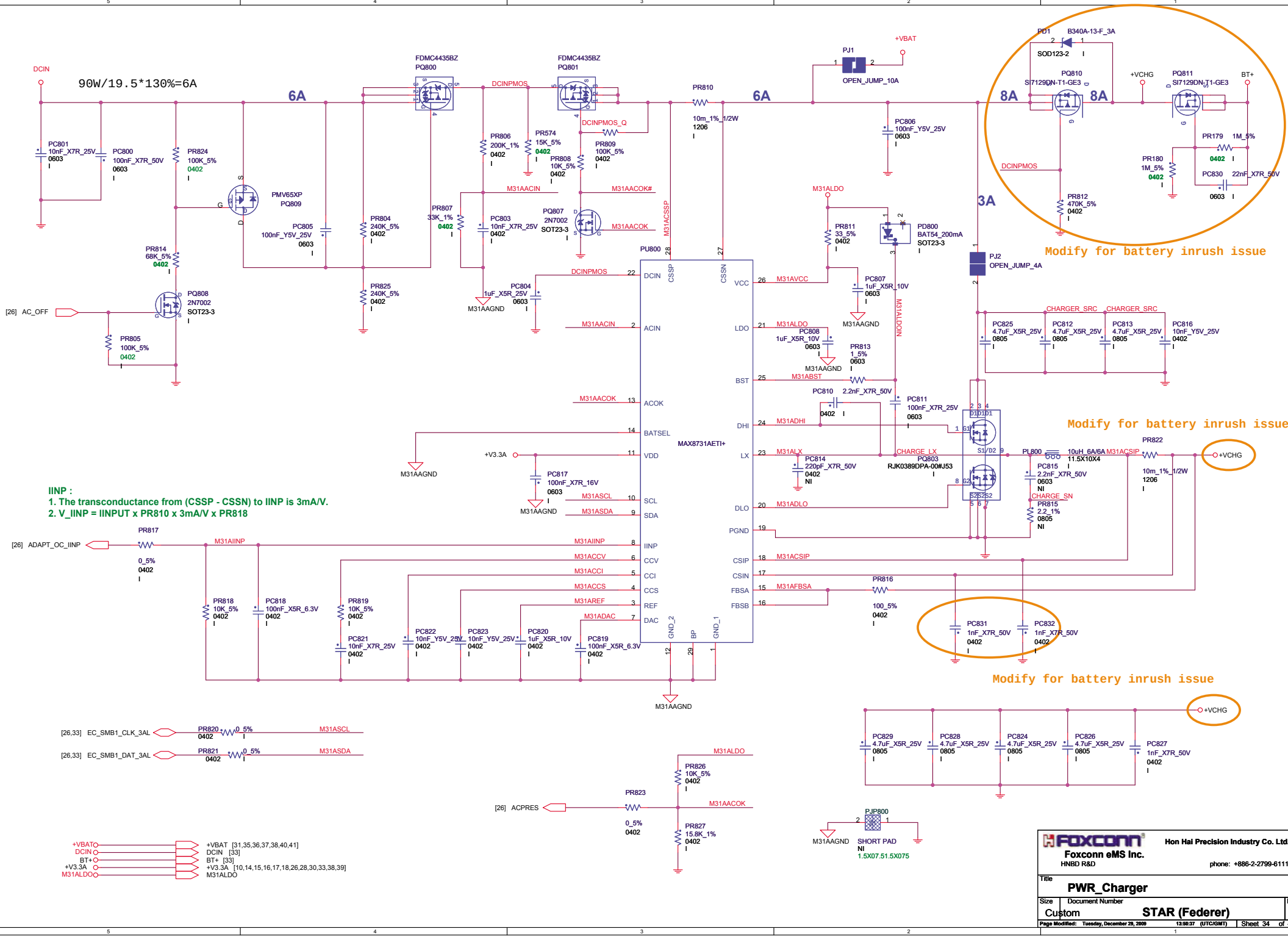
DCIN
90W/19.5*130%=6A
6A
FDMC4435BZ
PQ800
FDMC4435BZ
PQ801
DCINPMOS
DCINPMOS_Q
PR810
10m_1%_1/2W
1206
+VBAT
PJ1
OPEN_JUMP_10A
PD1
B340A-13-F_3A
SOD123-2
PQ810
SI7129DN-T1-GE3
PQ811
SI7129DN-T1-GE3
+VCHG
BT+
8A
8A
PC801
10nF_X7R_25V
0603
PC800
100nF_X7R_50V
0603
PR824
100K_5%
0402
PMV65XP
PQ809
PC805
100nF_Y5V_25V
0603
PR804
240K_5%
0402
PR825
240K_5%
0402
PR806
200K_1%
0402
PR574
15K_5%
0402
PR808
10K_5%
0402
PR809
100K_5%
0402
PR807
33K_1%
0402
PC803
10nF_X7R_25V
0402
PQ807
2N7002
SOT23-3
M31AACIN
M31AACOK#
M31AACOK
M31ACSSP
PC804
1uF_X5R_25V
0603
M31AAGND
PR814
68K_5%
0402
PQ808
2N7002
SOT23-3
[26] AC_OFF
PR805
100K_5%
0402
PC806
100nF_Y5V_25V
0603
PR179
1M_5%
0402
PR180
1M_5%
0402
PC830
22nF_X7R_50V
0603
PR812
470K_5%
0402
Modify for battery inrush issue
3A
PJ2
OPEN_JUMP_4A
M31ALDO
PR811
33_5%
0402
PD800
BAT54_200mA
SOT23-3
PU800
MAX8731AETI+
DCIN
CSSP
CSSN
VCC
LDO
BST
DHI
LX
DLO
PGND
CSIP
CSIN
FBSA
FBSB
ACIN
ACOK
BATSEL
VDD
SCL
SDA
IINP
CCV
CCI
CCS
REF
DAC
GND_2
BP
GND_1
M31AVCC
M31ALDOIN
M31ABST
M31ADHI
M31ALX
M31ADLO
M31ACSIP
M31AFBSA
M31ASCL
M31ASDA
M31AIINP
M31ACCV
M31ACCI
M31ACCS
M31AREF
M31ADAC
PC807
1uF_X5R_10V
0603
PC808
1uF_X5R_10V
0603
PR813
1_5%
0603
PC810
2.2nF_X7R_50V
0402
PC811
100nF_X7R_25V
0603
PC814
220pF_X7R_50V
0402
NI
PQ803
RJK0389DPA-00#J53
PL800
10uH_6A/6A
11.5X10X4
PR822
10m_1%_1/2W
1206
PC815
2.2nF_X7R_50V
0603
NI
CHARGE_SN
PR815
2.2_1%
0805
NI
CHARGE_LX
CHARGE_SRC
CHARGE_SRC
PC825
4.7uF_X5R_25V
0805
PC812
4.7uF_X5R_25V
0805
PC813
4.7uF_X5R_25V
0805
PC816
10nF_Y5V_25V
0402
Modify for battery inrush issue
PC817
100nF_X7R_16V
0603
+V3.3A
IINP :
1. The transconductance from (CSSP - CSNN) to IINP is 3mA/V.
2. V_IINP = IINPUT x PR810 x 3mA/V x PR818
[26] ADAPT_OC_IINP
PR817
0_5%
0402
PR818
10K_5%
0402
PC818
100nF_X5R_6.3V
0402
PR819
10K_5%
0402
PC821
10nF_X7R_25V
0402
PC822
10nF_Y5V_25V
0402
PC823
10nF_Y5V_25V
0402
PC820
1uF_X5R_10V
0402
PC819
100nF_X5R_6.3V
0402
PR816
100_5%
0402
PC831
1nF_X7R_50V
0402
PC832
1nF_X7R_50V
0402
Modify for battery inrush issue
PC829
4.7uF_X5R_25V
0805
PC828
4.7uF_X5R_25V
0805
PC824
4.7uF_X5R_25V
0805
PC826
4.7uF_X5R_25V
0805
PC827
1nF_X7R_50V
0402
[26,33] EC_SMB1_CLK_3AL
PR820
0_5%
0402
[26,33] EC_SMB1_DAT_3AL
PR821
0_5%
0402
[26] ACPRES
PR823
0_5%
0402
PR826
10K_5%
0402
PR827
15.8K_1%
0402
PJP800
SHORT PAD
NI
1.5X07.51.5X075
+VBAT [31,35,36,37,38,40,41]
DCIN [33]
BT+ [33]
+V3.3A [10,14,15,16,17,18,26,28,30,33,38,39]
M31ALDO
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Foxconn eMS Inc.
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phone: +886-2-2799-6111
Title
PWR_Charger
Size
Custom
Document Number
STAR (Federer)
Rev
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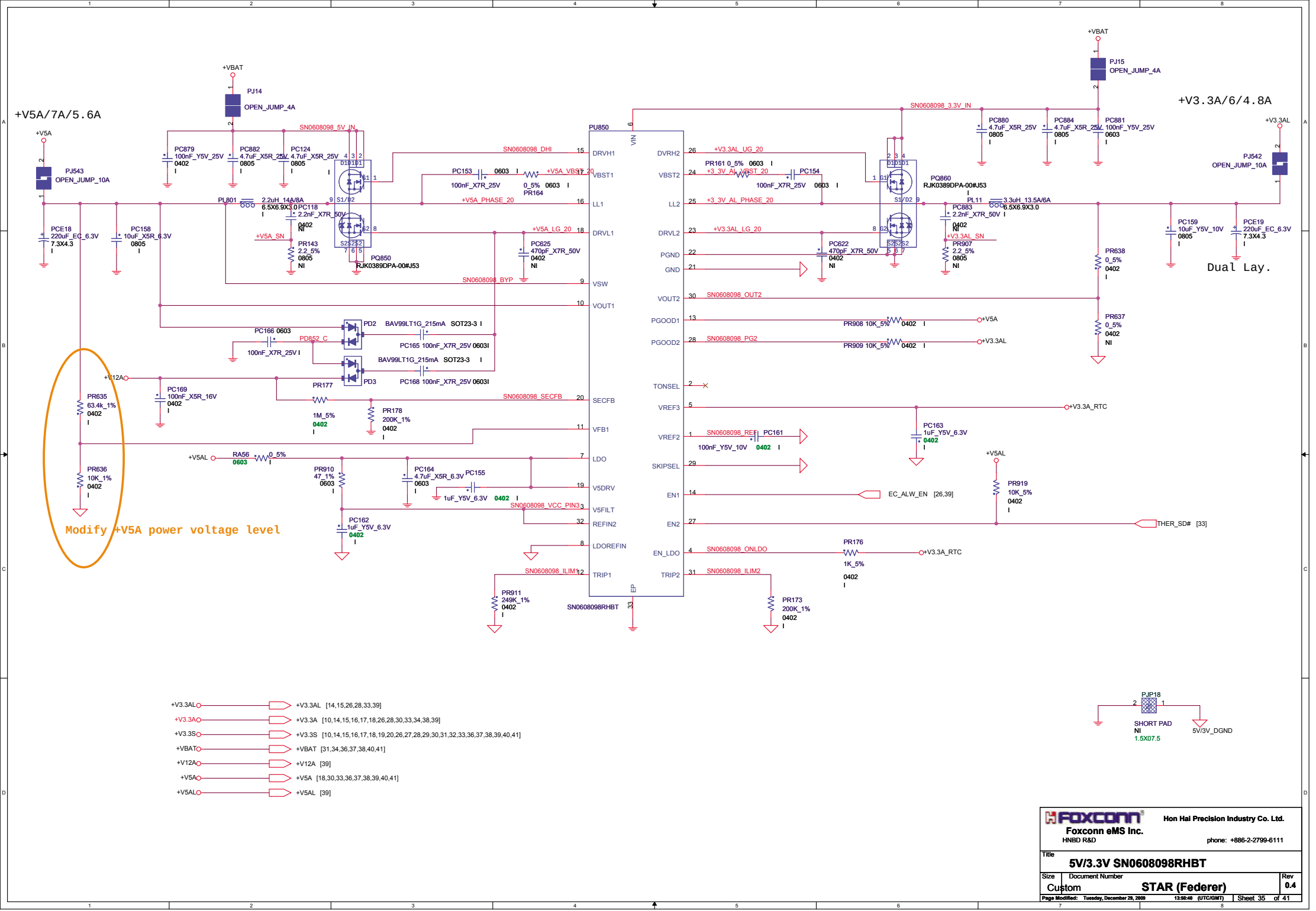
+V5A/7A/5.6A
+V3.3A/6/4.8A
Modify +V5A power voltage level
Dual Lay.
PU850
SN0608098RHBT
+VBAT
PJ14
OPEN_JUMP_4A
PJ15
OPEN_JUMP_4A
PJ543
OPEN_JUMP_10A
PJ542
OPEN_JUMP_10A
SN0608098_5V_IN
SN0608098_3.3V_IN
SN0608098_DHI
SN0608098_BYP
SN0608098_OUT2
SN0608098_PG2
SN0608098_SECFB
SN0608098_REF
SN0608098_VCC_PIN3
SN0608098_ONLDO
SN0608098_ILIM1
SN0608098_ILIM2
PQ850 RJK0389DPA-00#J53
PQ860 RJK0389DPA-00#J53
PD2 BAV99LT1G_215mA SOT23-3
PD3 BAV99LT1G_215mA SOT23-3
PL801 2.2uH_14A/8A 6.5X6.9X3.0
PL11 3.3uH_13.5A/6A 6.5X6.9X3.0
EC_ALW_EN [26,39]
THER_SD# [33]
PJP18
SHORT PAD
NI
1.5X07.5
5V/3V_DGND
+V3.3AL [14,15,26,28,33,39]
+V3.3A [10,14,15,16,17,18,26,28,30,33,34,38,39]
+V3.3S [10,14,15,16,17,18,19,20,26,27,28,29,30,31,32,33,36,37,38,39,40,41]
+VBAT [31,34,36,37,38,40,41]
+V12A [39]
+V5A [18,30,33,36,37,38,39,40,41]
+V5AL [39]
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Title
5V/3.3V SN0608098RHBT
Size
Custom
Document Number
STAR (Federer)
Rev
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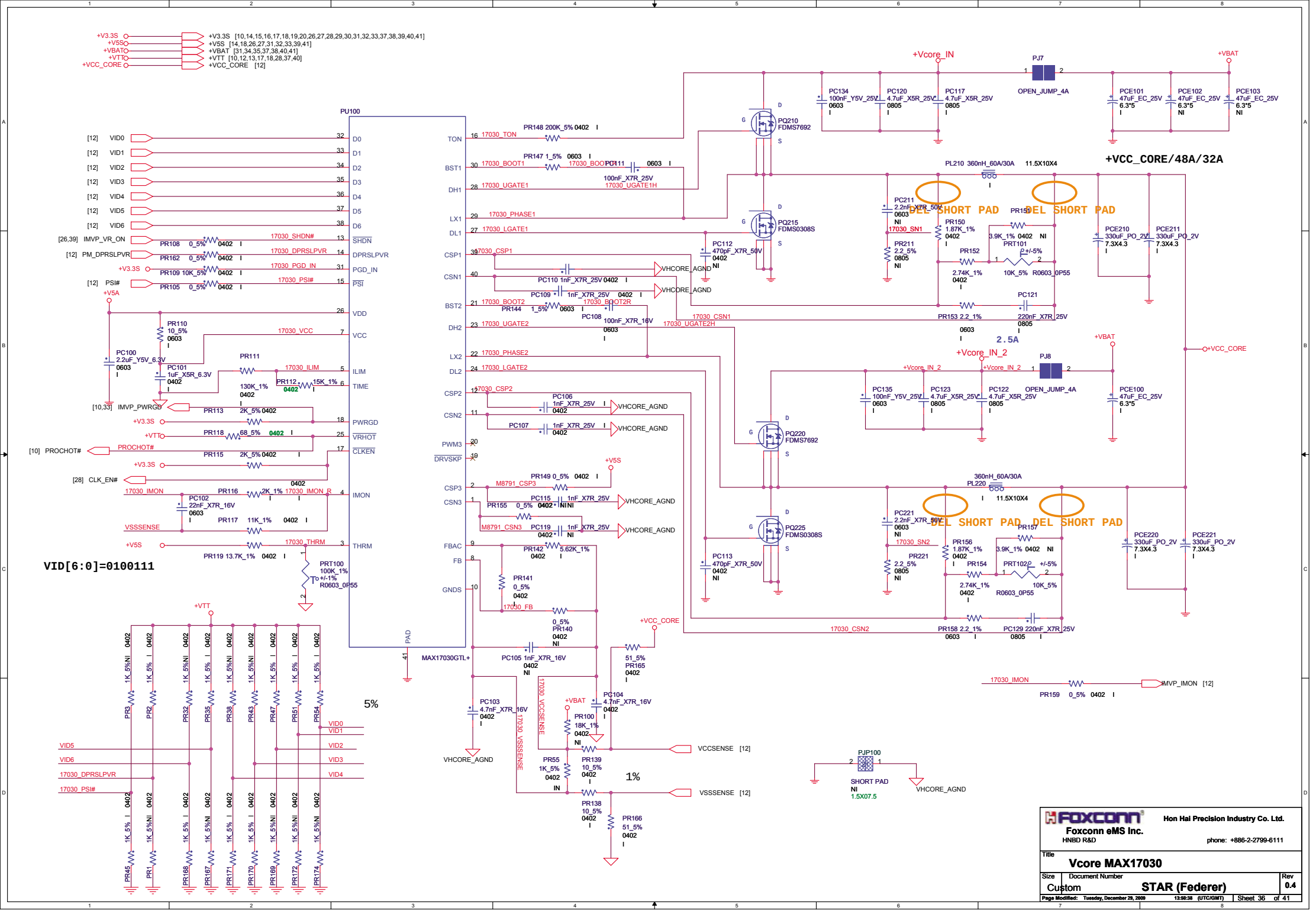

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Title: **Vcore MAX17030**

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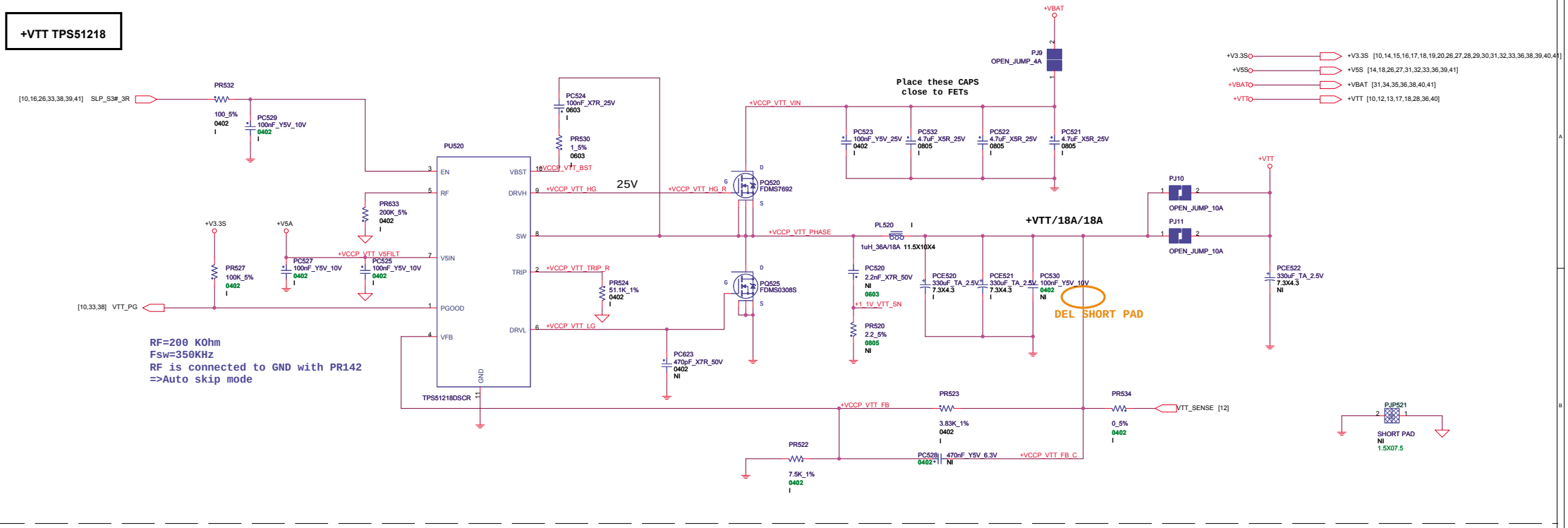
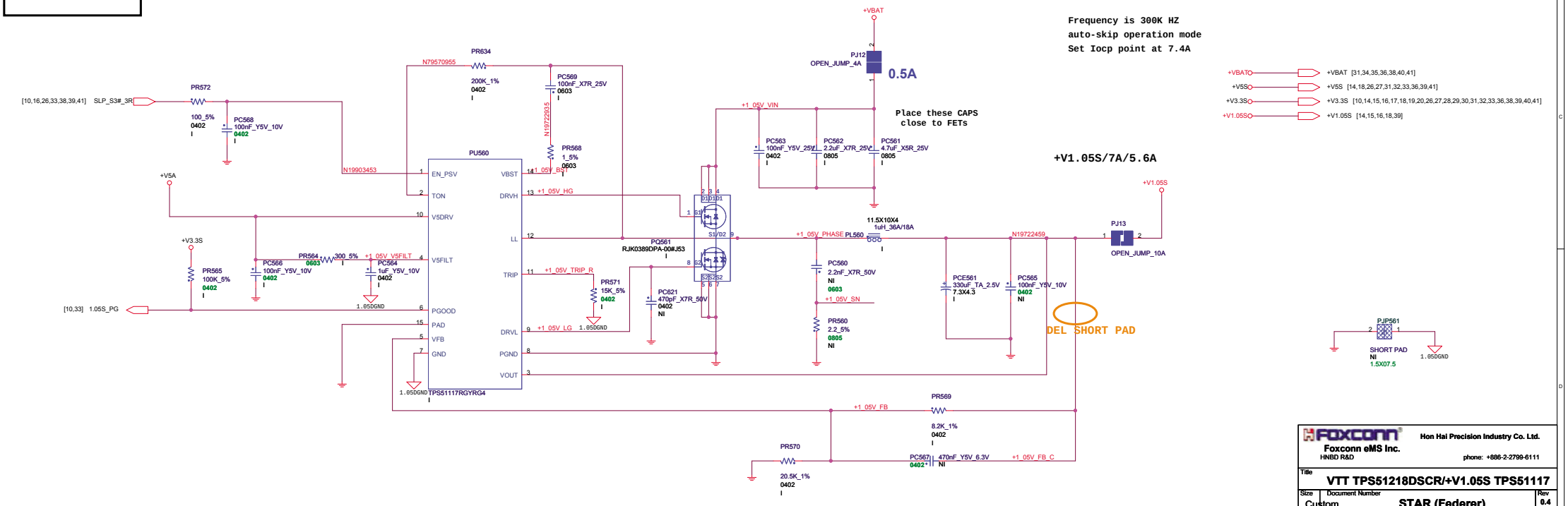
+VTT TPS51218



+V1.05S TPS51117



FOXCONN	Hon Hai Precision Industry Co. Ltd.	
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Title	VTT TPS51218DSCR/+V1.05S TPS51117	
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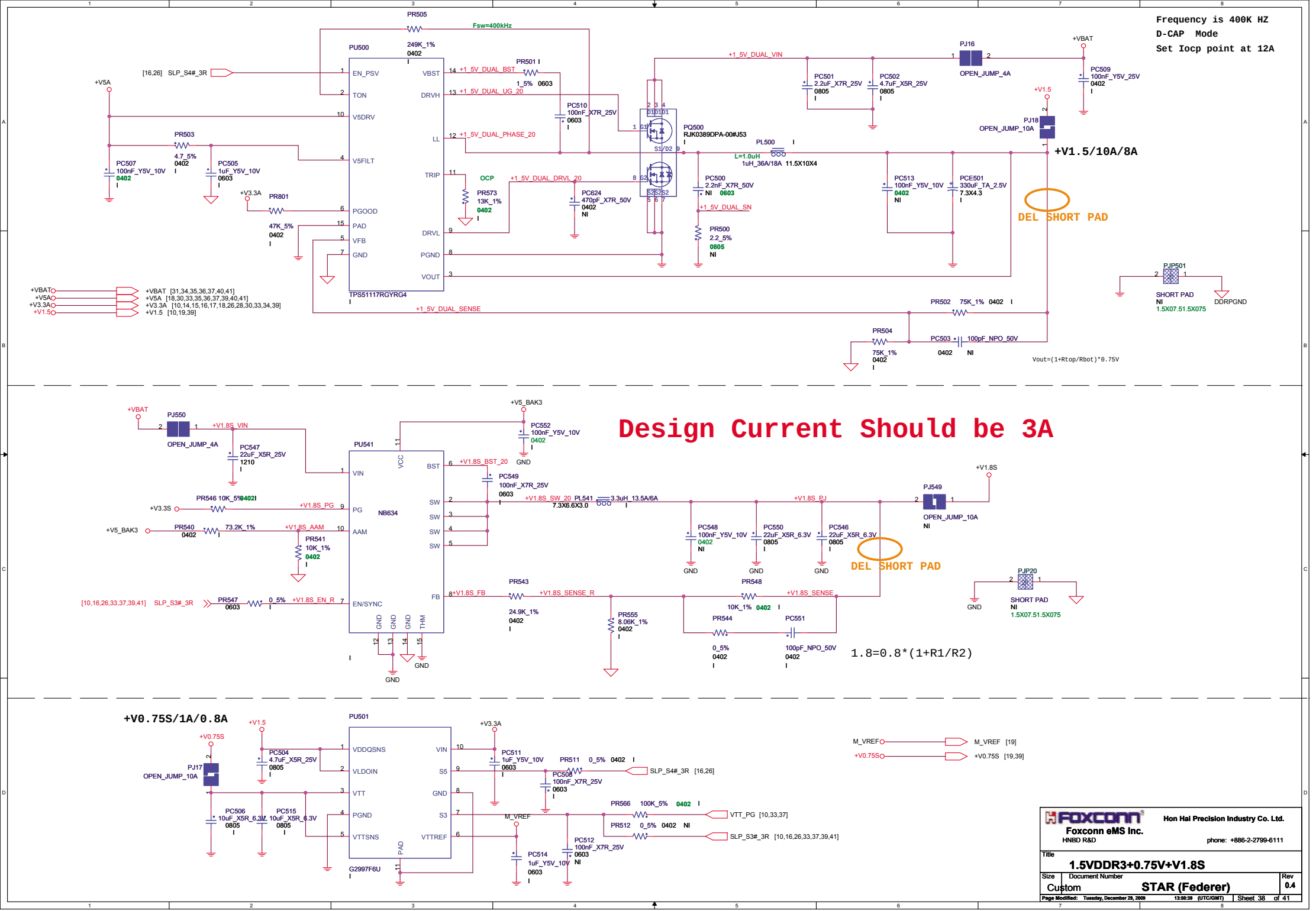
Frequency is 400K HZ
D-CAP Mode
Set Iocp point at 12A
PU500
TPS51117RGYRG4
+V1.5/10A/8A
DEL SHORT PAD
Design Current Should be 3A
PU541
NB634
1.8=0.8*(1+R1/R2)
DEL SHORT PAD
+V0.75S/1A/0.8A
PU501
G2997F6U
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1.5VDDR3+0.75V+V1.8S
Custom
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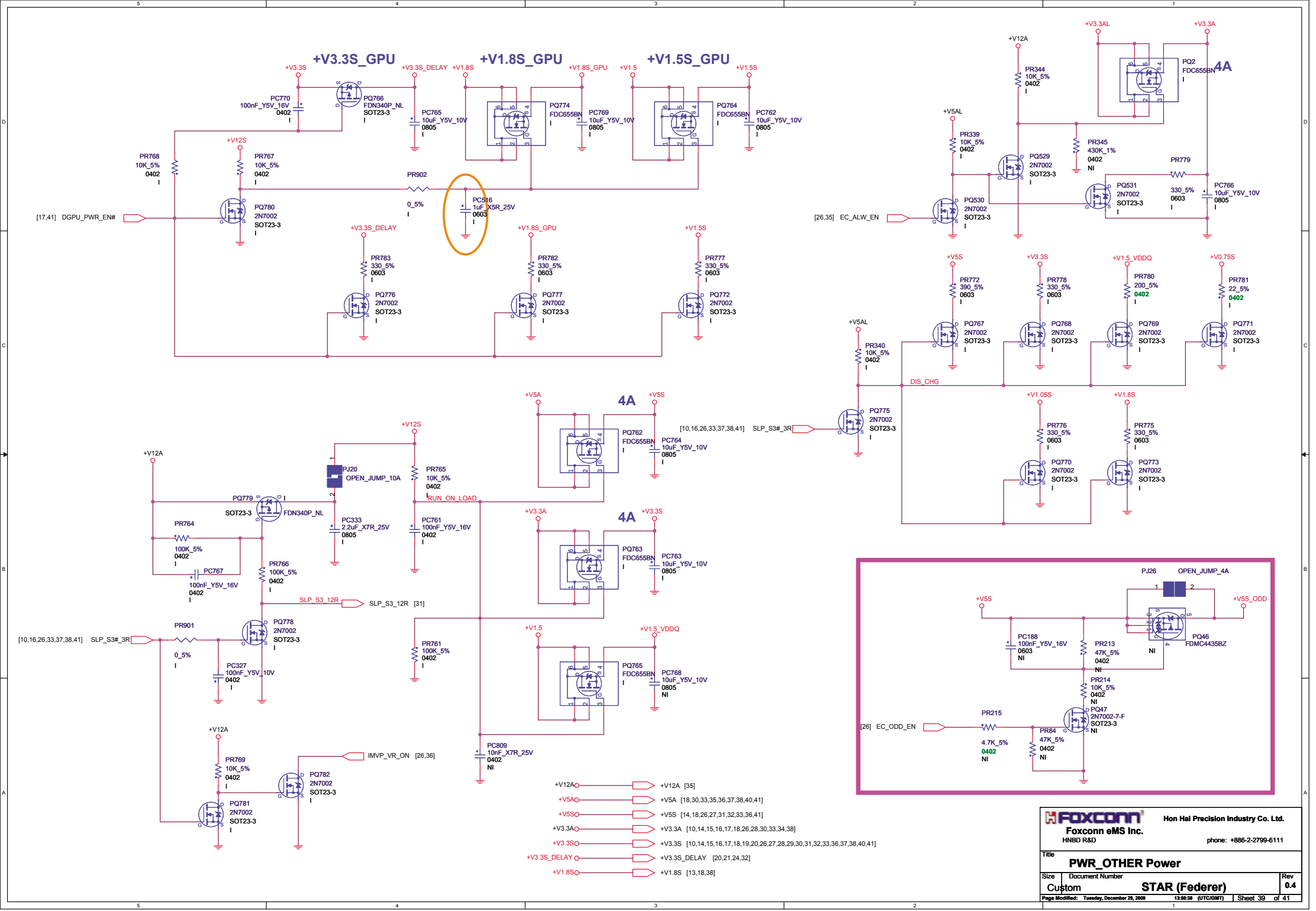

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Title	PWR_OTHER Power
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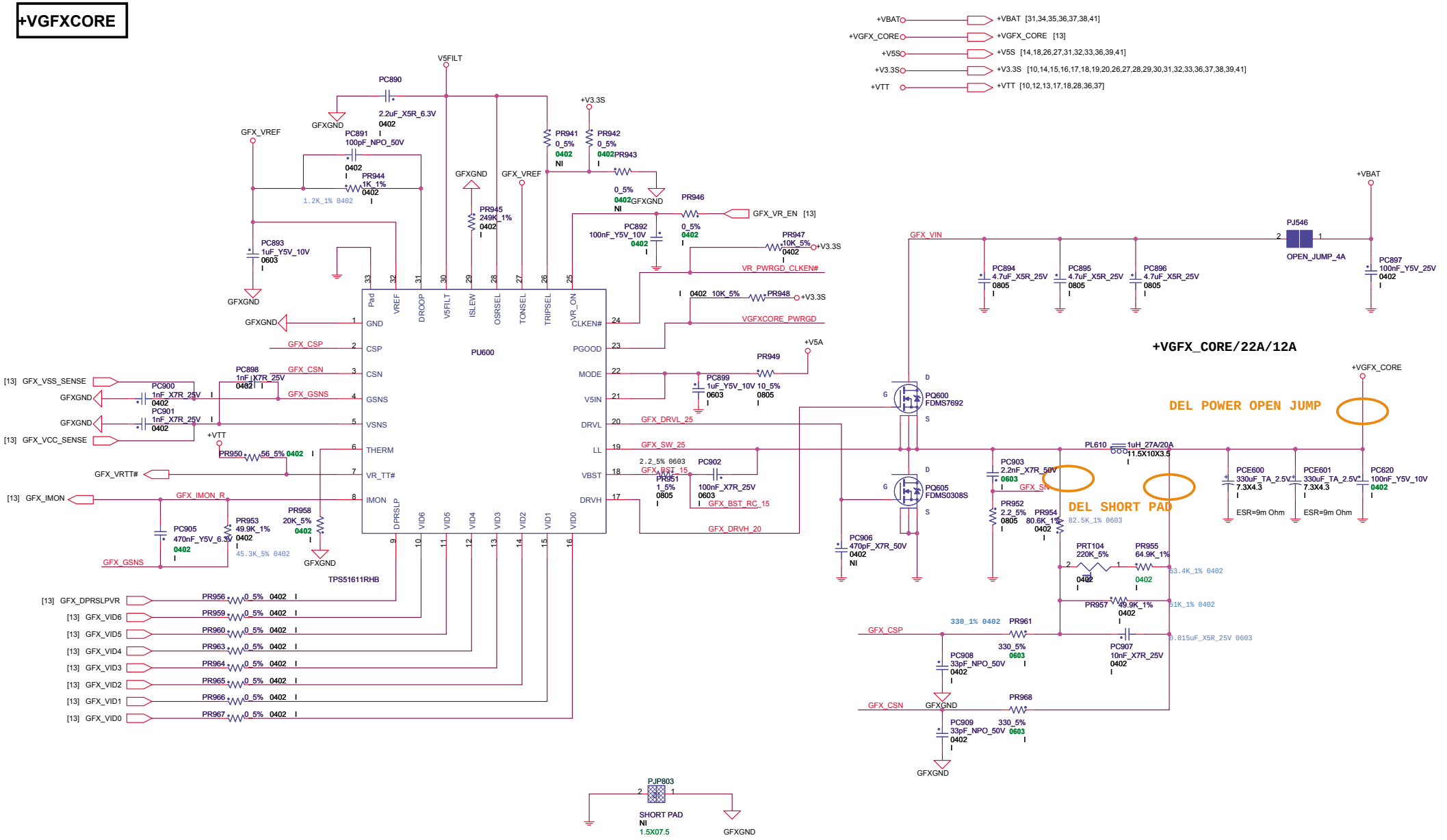
+VGFXCORE



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Title: CPU VREG & Decoupling

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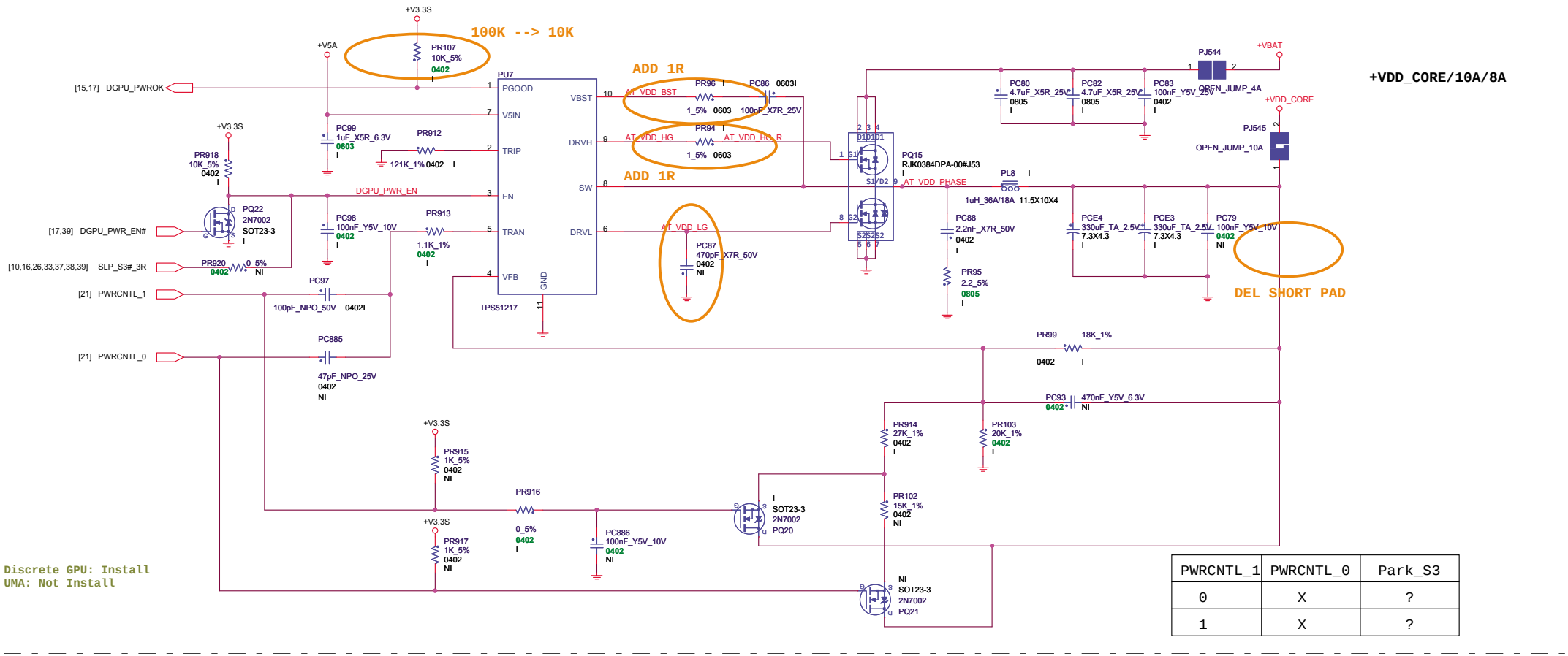
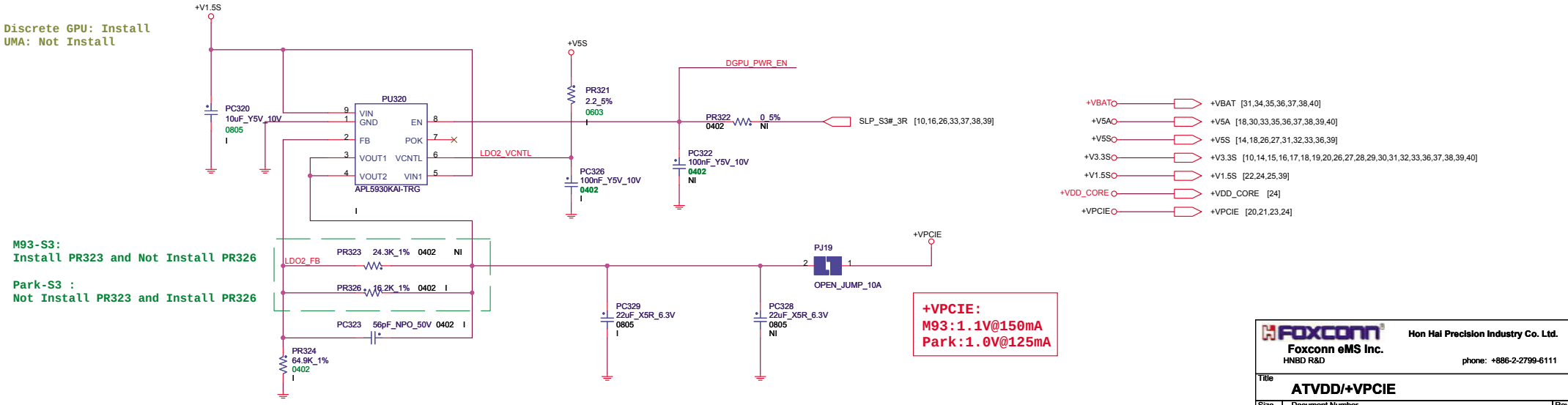


PWRCNTL_1	PWRCNTL_0	Park_S3
0	X	?
1	X	?



+VBAT [31,34,35,36,37,38,40]
+V5A [18,30,33,35,36,37,38,39,40]
+V5S [14,18,26,27,31,32,33,36,39]
+V3.3S [10,14,15,16,17,18,19,20,26,27,28,29,30,31,32,33,36,37,38,39,40]
+V1.5S [22,24,25,39]
+VDD_CORE [24]
+VPCIE [20,21,23,24]

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Title: ATVDD/+VPCIE
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