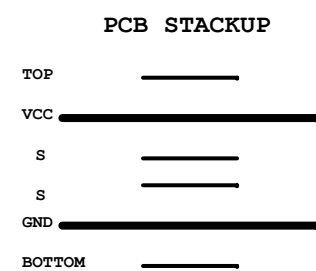
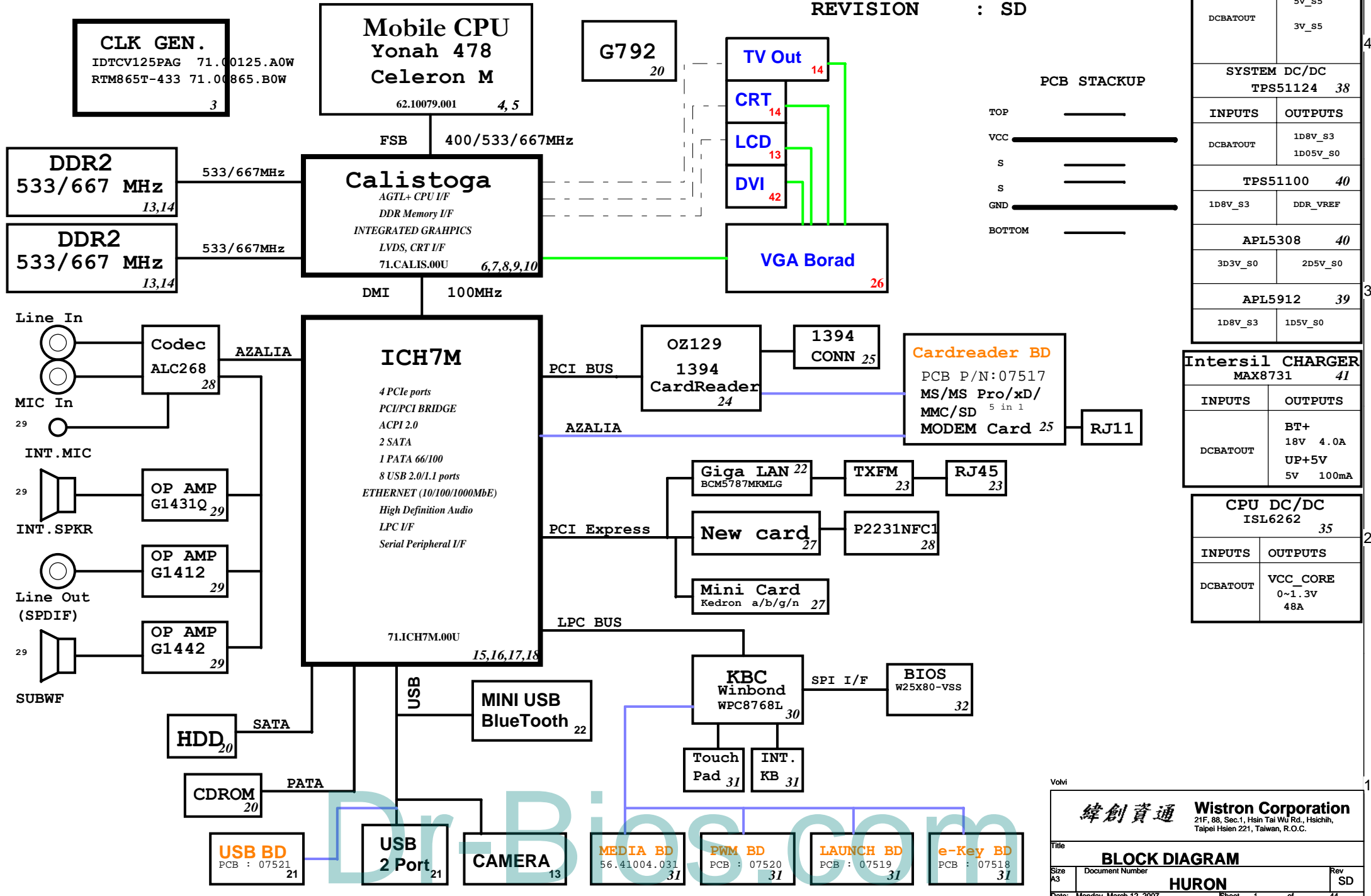


Huron Block Diagram

Project code: 91.4V301.001
 PCB P/N : 07205
 REVISION : SD



SYSTEM DC/DC TPS51120 37	
INPUTS	OUTPUTS
DCBATOUT	5V_S5 3V_S5
SYSTEM DC/DC TPS51124 38	
INPUTS	OUTPUTS
DCBATOUT	1D8V_S3 1D05V_S0
TPS51100 40	
1D8V_S3	DDR_VREF
APL5308 40	
3D3V_S0	2D5V_S0
APL5912 39	
1D8V_S3	1D5V_S0

Intersil CHARGER MAX8731 41	
INPUTS	OUTPUTS
DCBATOUT	BT+ 18V 4.0A UP+5V 5V 100mA

CPU DC/DC ISL6262 35	
INPUTS	OUTPUTS
DCBATOUT	VCC_CORE 0~1.3V 48A

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BLOCK DIAGRAM
HURON

Rev SD
 Date: Monday, March 12, 2007
 Sheet 1 of 44

ICH7M Integrated Pull-up and Pull-down Resistors

ICH7-M EDS 17837 1.5V1

EE_DIN, EE_DOUT, GNT[3:0], GPIO[25], GNT[4]#/GPIO48, GNT[5]#/GPO17, PME#, LAD[3:0]#/FHW[3:0]#, LAN_RXD[2:0]	ICH7 internal 20K pull-ups
LDRQ[0], LDRQ[1]/GPIO[41], PWRBTN#, TP[3]	
DD[7], DDREQ	ICH7 internal 11.5K pull-downs
ACZ_BIT_CLK, ACZ_RST#, ACZ_SDIN[2:0], ACZ_SDOUT, ACZ_SYNC, DPRSLPVR/GPIO16, EE_CS, SPI_ARB, SPI_CLK, SPKR,	
USB[7:0][P,N]	ICH7 internal 15K pull-downs
SATALED#	ICH7 internal 15K pull-up
LAN_CLK	ICH7 internal 100K pull-down

ICH7M IDE Integrated Series Termination Resistors

DD[15:0], DIOW#, DIOR#, DREQ, DDACK#, IORDY, DA[2:0], DCS1#, DCS3#, IDEIRQ	approximately 33 ohm
--	----------------------

ICH7M Functional Strap Definitions

page 16

Signal	Usage/When Sampled	Comment
ACZ_SDOUT	XOR Chain Entrance/PCIE Port Config bit1, Rising Edge of PWROK	Allows entrance to XOR Chain testing when TP3 pulled low. When TP3 not pulled low at rising edge of PWROK, sets bit1 of RPC.PC(Config Registers: offset 224h)
ACZ_SYNC	PCIE bit0, Rising Edge of PWROK.	Sets bit0 of RPC.PC(Config Registers:Offset 224h)
EE_CS	Reserved	This signal should not be pull high.
EE_DOUT	Reserved	This signal should not be pull low.
GNT2#	Reserved	This signal should not be pull low.
GNT3#	Top-Block Swap Override. Rising Edge of PWROK.	Sampled low:Top-Block Swap mode(inverts A16 for all cycles targeting FWH BIOS space). Note: Software will not be able to clear the Top-Swap bit until the system is rebooted without GNT3# being pulled down.
GNT5#/GPIO17#, GNT4#/GPIO48	Boot BIOS Destination Selection. Rising Edge of PWROK.	Controllable via Boot BIOS Destination bit (Config Registers:Offset 3410h:bit 11:10). GNT5# is MSB, 01-SPI, 10-PCI, 11-LPC.
DPRSLPVR	Reserved	This signal should not be pull high.
GPIO25	Reserved. Rising Edge of RSMRST#.	This signal should not be pull low.
INTVRMEN	Integrated VccSus1_05 VRM Enable/Disable. Always sampled.	Enables integrated VccSus1_05 VRM when sampled high
LINKALERT#	Reserved	Requires an external pull-up resistor.
REQ[4:1]#	XOR Chain Selection. Rising Edge of PWROK.	TBD, Chapter 8.
SATALED#	Reserved	This signal should not be pull low.
SPKR	No Reboot. Rising Edge of PWROK.	If sampled high, the system is strapped to the "No Reboot" mode(ICH7 will disable the TCO Timer system reboot feature). The status is readable via the NO REBOOT bit.
TP3	XOR Chain Entrance. Rising Edge of PWROK.	This signal should not be pull low unless using XOR Chain testing.

RTM865T-433 100Mhz/LCDCLK Spread and Frequency Selection Table

SS3 Byte9 bit 7	SS2 bit6	SS1 bit5	SS0 bit4	Spread Amount%
0	0	0	0	0.8% Down
0	0	0	1	1.0% Down
0	0	1	0	1.25% Down
0	0	1	1	1.50% Down
0	1	0	0	1.75% Down
0	1	0	1	2.0% Down
0	1	1	0	2.5% Down
0	1	1	1	3.0% Down
1	0	0	0	+0.3% Center
1	0	0	1	+0.4% Center
1	0	1	0	+0.5% Center
1	0	1	1	+0.6% Center
1	1	0	0	+0.8% Center
1	1	0	1	+1.0% Center
1	1	1	0	+1.25% Center
1	1	1	1	+1.5% Center

page 3

PCI Routing

page 16

	IDSEL	INT -> PIRQ	REQ/GNT
OZ129TZ	AD22	A-G	REQ0# ->REQ0#

PCIE Routing

LANE1	LAN BCM5787M
LANE2	MiniCard WLAN
LANE3	NewCard WLAN

USB Table

USB ports definition	
Pair	Device
0	USB1
1	USB3
2	USB2
3	USB4
4	MINICARD
5	BlueTooth
6	CCD
7	NewCard

Calistoga Strapping Signals and Configuration

EDS 17050 0.71 page 7

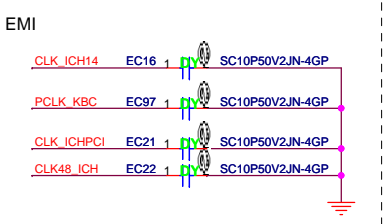
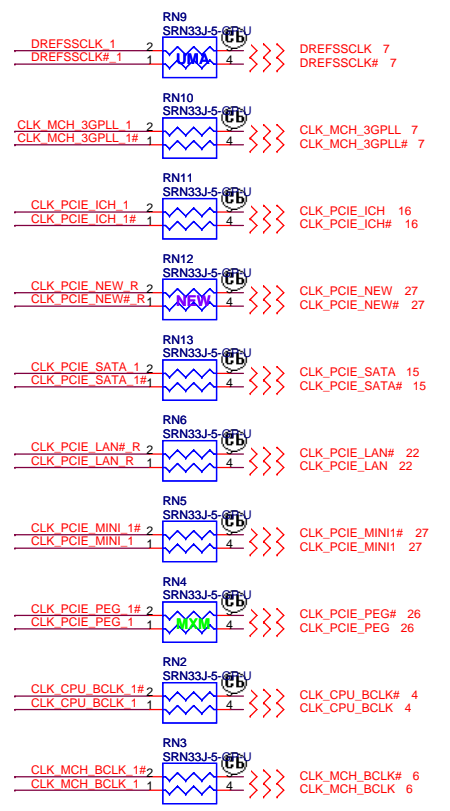
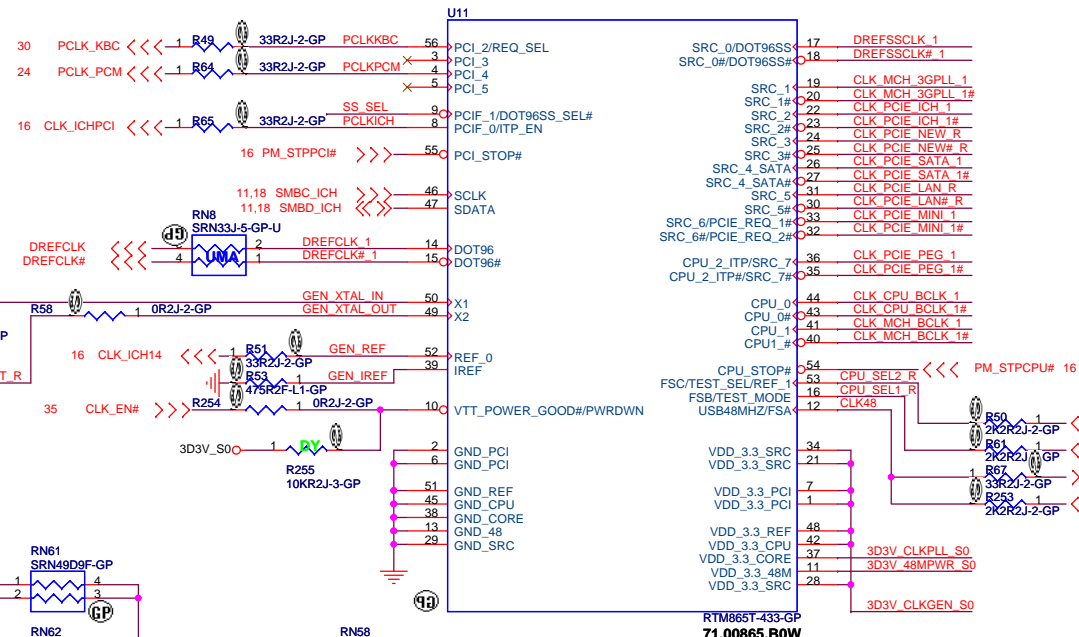
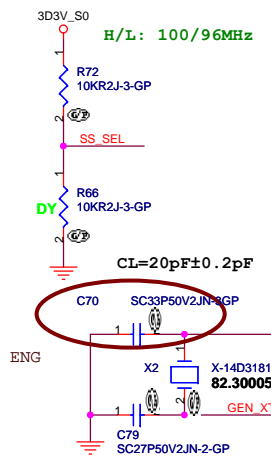
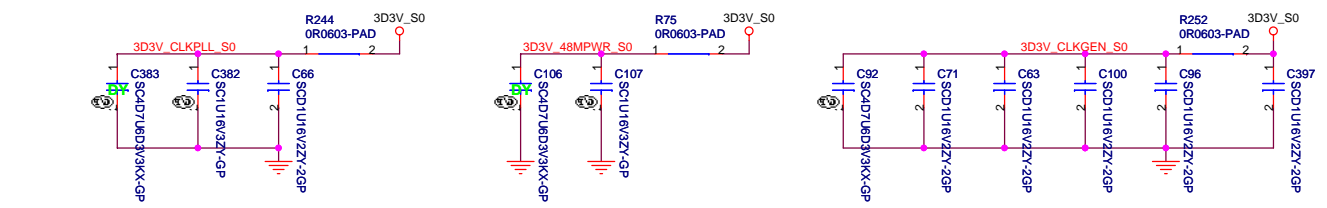
Pin Name	Strap Description	Configuration
CFG[2:0]	FSB Frequency Select	001 = FSB533 011 = FSB667 others = Reserved
CFG[4:3]	Reserved	
CFG5	DMI x2 Select	0 = DMI x2 1 = DMI x4 (Default)
CFG6	Reserved	
CFG7	CPU Strap	0 = Reserved 1 = Mobile CPU(Default)
CFG8	Reserved	
CFG9	PCI Express Graphics Lane Reversal	0 = Reverse Lanes, 15->0, 14->1 ect.. 1 = Normal operation(Default): Lane Numbered in order
CFG[11:10]	Reserved	
CFG[13:12]	XOR/ALL Z test straps	00 = Reserved 01 = XOR mode enabled 10 = All Z mode enabled 11 = Normal Operation (Default)
CFG[15:14]	Reserved	Reserved
CFG16	FSB Dynamic ODT	0 = Dynamic ODT Disabled 1 = Dynamic ODT Enabled (Default)
CFG17	Global R-comp Disable (All R-comps)	0 = All R-comp Disable 1 = Normal Operation (Default)
CFG18	VCC Select	0 = 1.05V (Default) 1 = 1.5V
CFG19	DMI Lane Reversal	0 = Normal operation (Default): lane Numbered in order 1 = Reverse Lane, 4->0, 3->1 ect...
CFG20	SDVO/PCIE Concurrent	0 = Only SDVO or PCIE x1 is operational (Default) 1 = SDVO and PCIE x1 are operating simultaneously via the PEG port
SDVOCTRL_DATA	SDVO Present	0 = No SDVO Card present (Default) 1 = SDVO Card present

NOTE: All strap signals are sampled with respect to the leading edge of the Calistoga GMCH PWROK in signal.

<Core Design>

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Title	
Reference	
Size	Document Number
HURON	
Date: Monday, March 12, 2007	Sheet 2 of 44
Rev	SD





FSC	FSB	FSA	CPU	FSB
0	0	0	266M	X
0	0	1	133M	533M
0	1	0	200M	X
0	1	1	166M	667M
1	0	0	333M	X
1	0	1	100M	X
1	1	0	400M	X
1	1	1	Reserved	X

<Core Design>

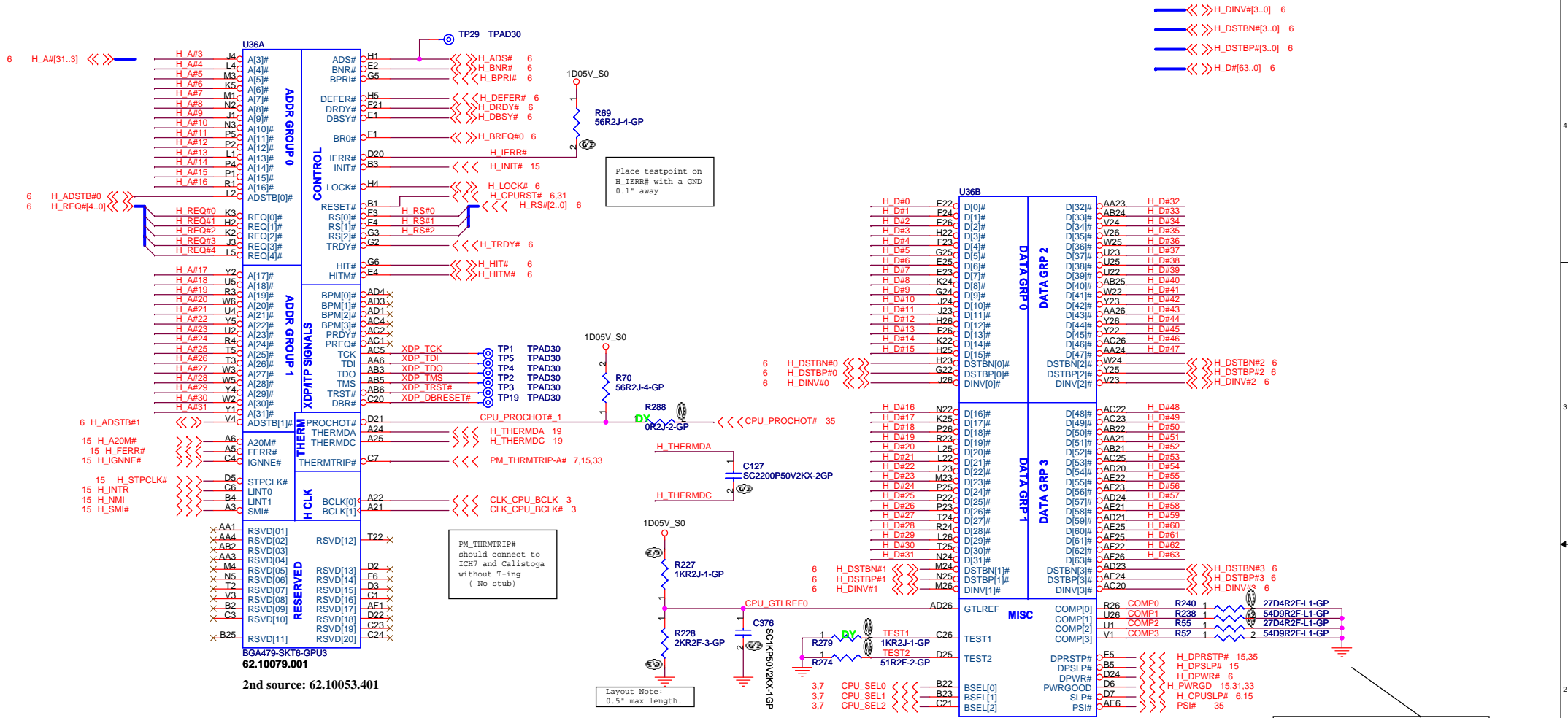
緯創資通 Wistron Corporation
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Title: **Clock Generator**

Size: Document Number **HURON** Rev **SD**

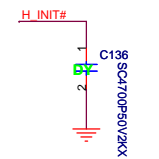
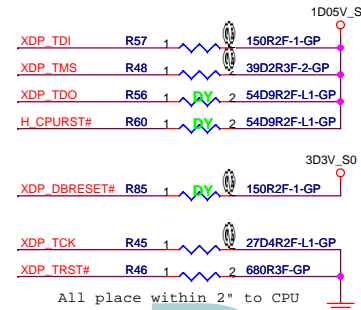
Date: Monday, March 12, 2007 Sheet 3 of 44





2nd source: 62.10053.401

2nd source: 62.10053.401



Layout Note:
0.5" max length.

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



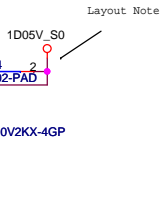
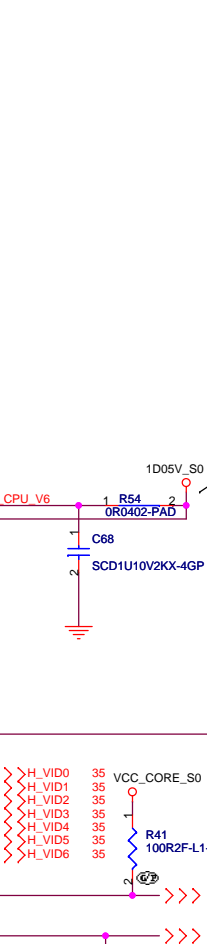
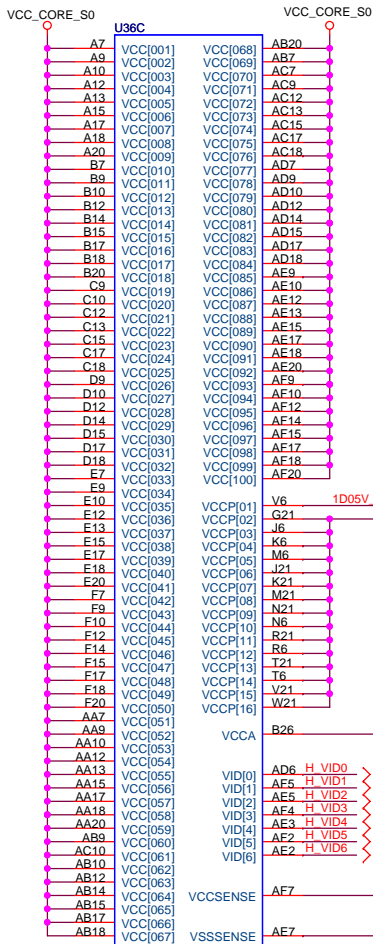
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Title: **CPU (1 of 2)**

Size: Document Number: **HURON** Rev: **SD**

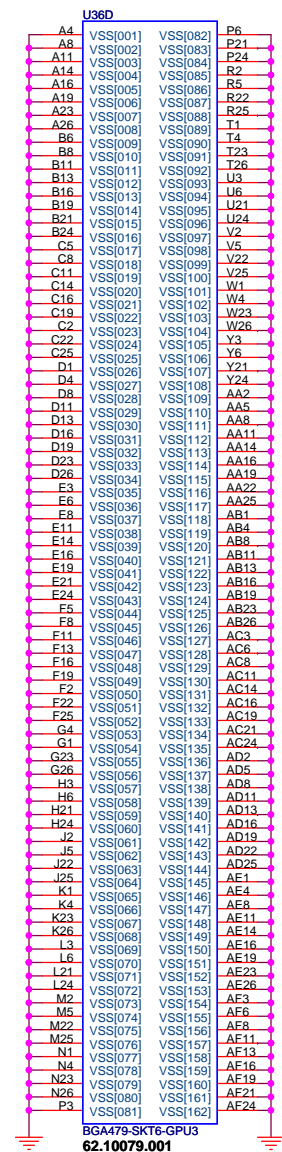
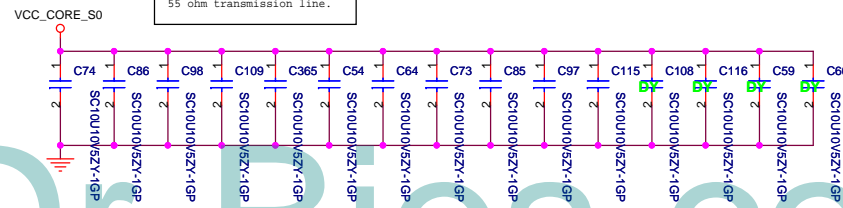
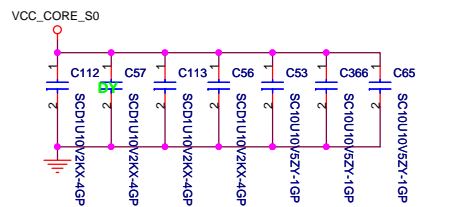
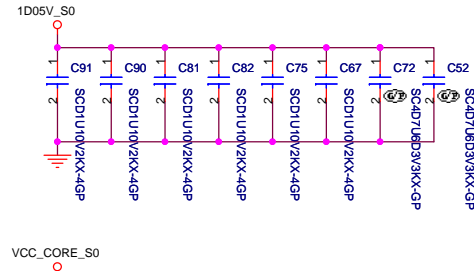
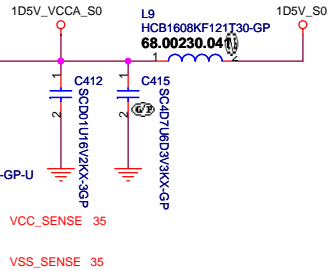
Date: Monday, March 12, 2007 Sheet 4 of 44



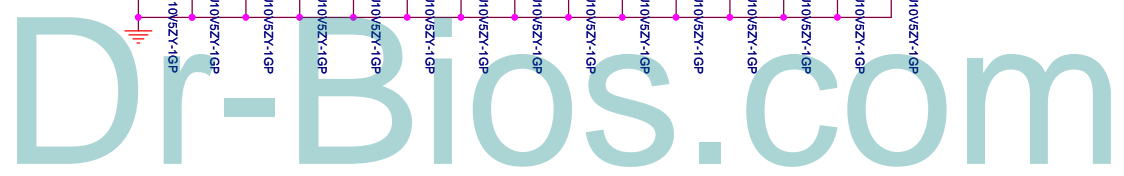
Layout Note

Layout Note:
VCCSENSE and VSSSENSE lines should be of equal length.

Layout Note:
Provide a test point (with no stub) to connect a differential probe between VCCSENSE and VSSSENSE at the location where the two 54.9ohm resistors terminate the 55 ohm transmission line.



BGA479-SKT6-GPU3
62-10079-001

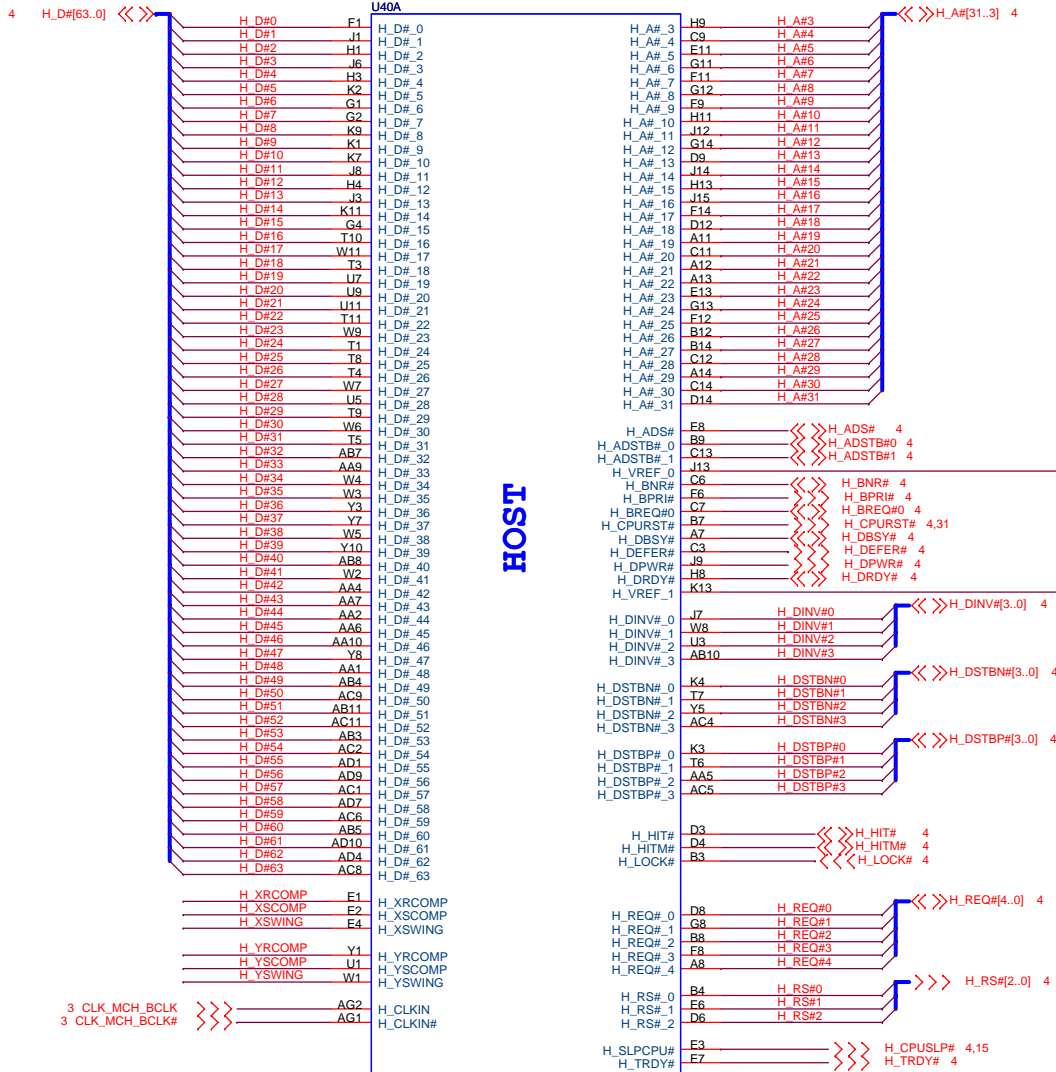
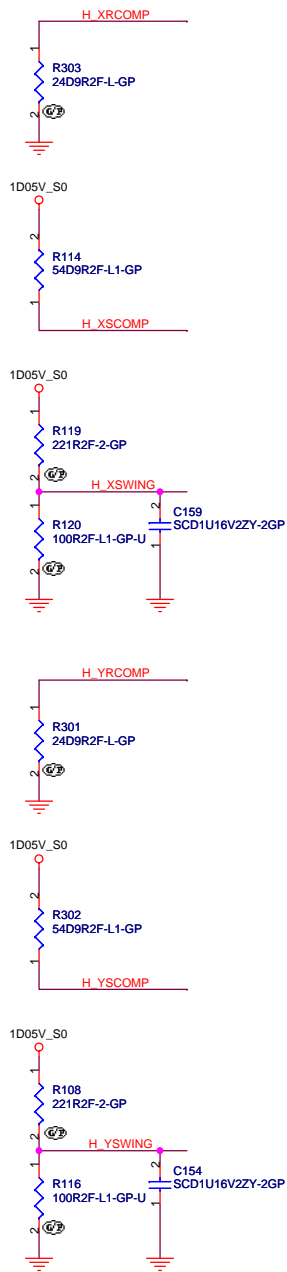


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File: **CPU (2 of 2)**

Size: Document Number **HURON** Rev: SD

Date: Monday, March 12, 2007 Sheet 5 of 44



HOST

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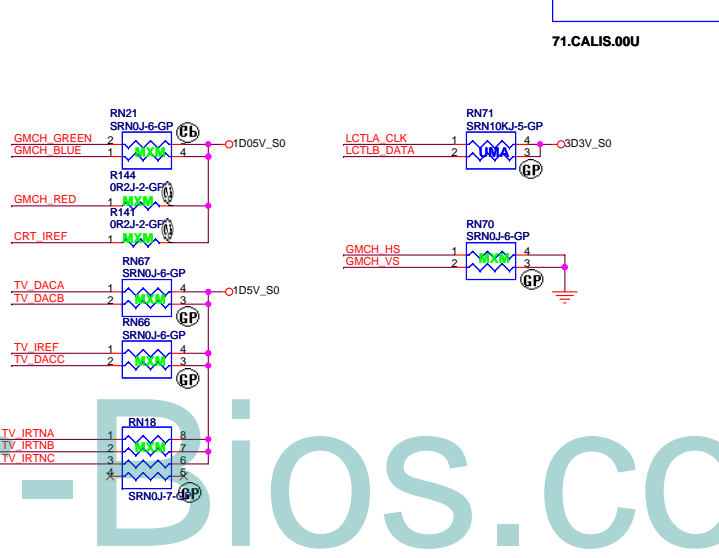
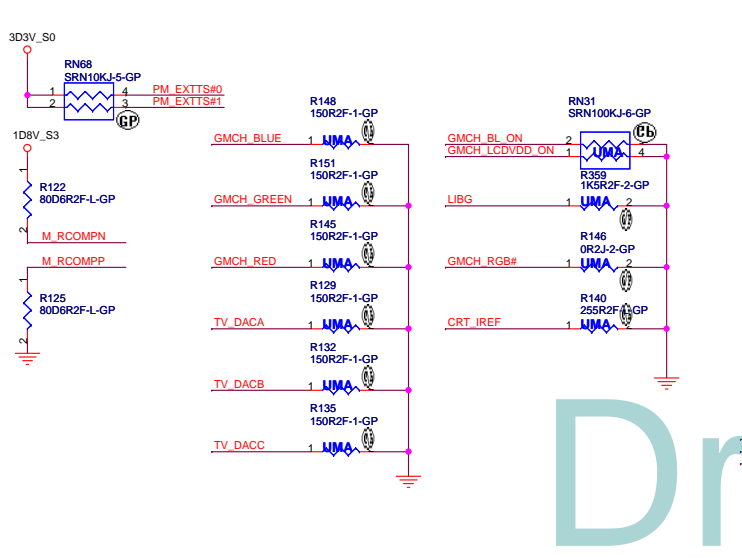
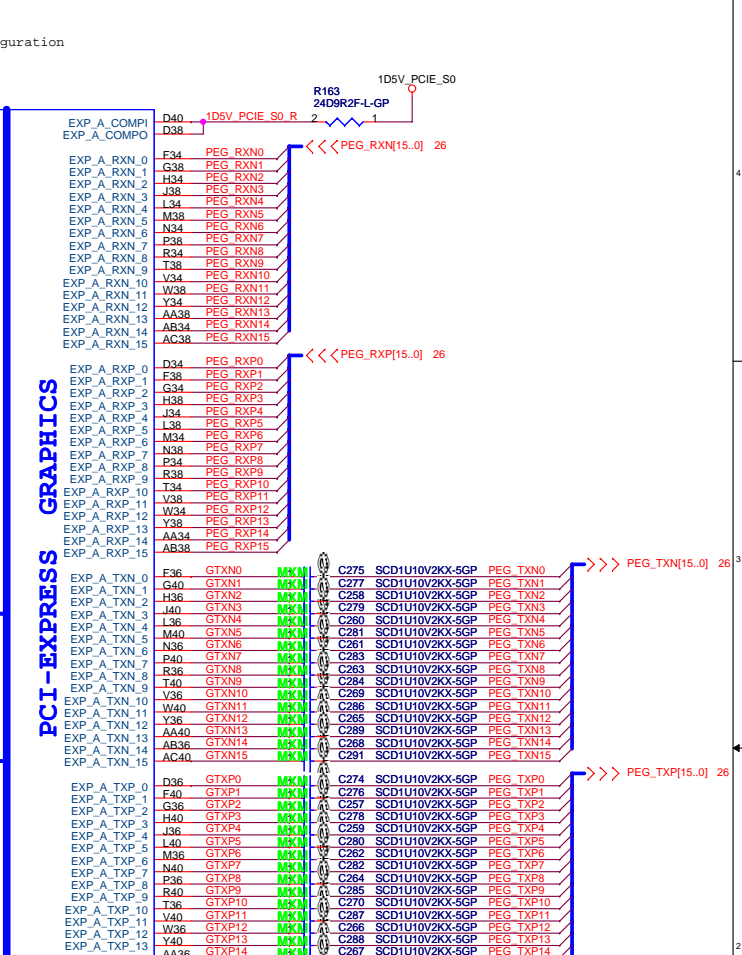
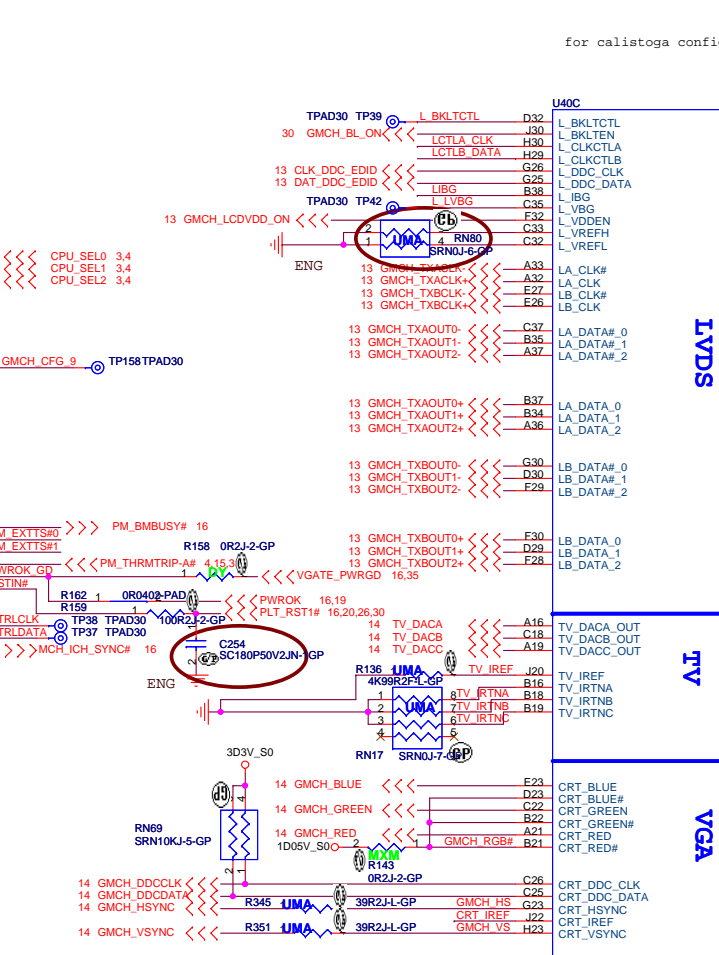
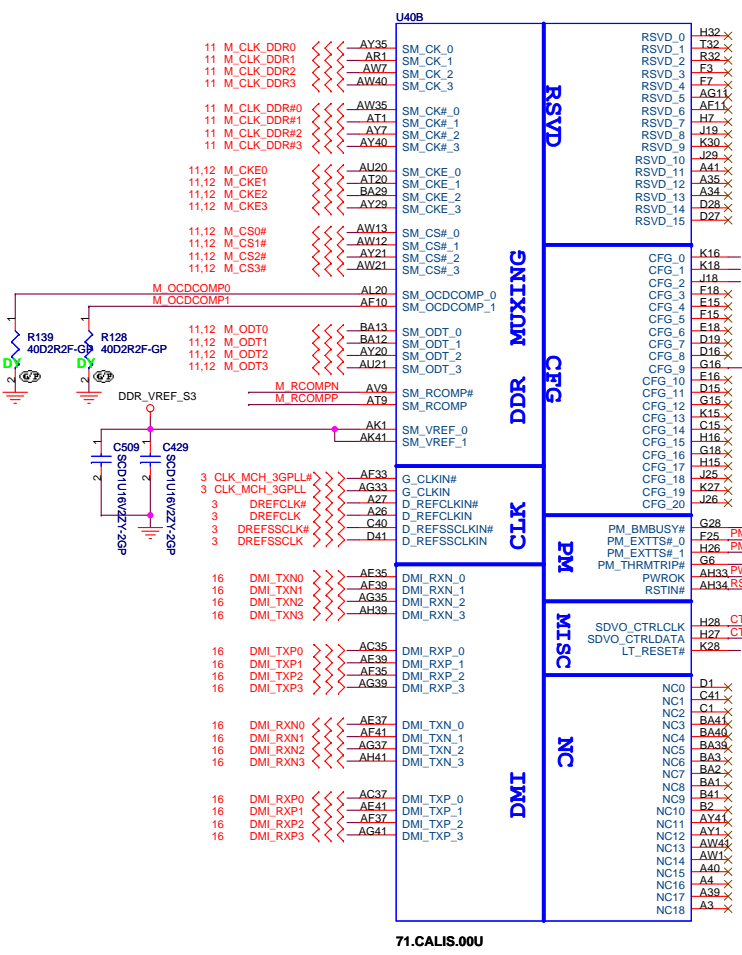
DIS : 945PN P/N is KI.94501.006
 UMA : 945GM P/N is KI.94501.005

Place them near to the chip (< 0.5")

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<Core Design>

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GMCH (1 of 5)	
Title	Rev
Size	SD
HURON	
Date: Monday, March 12, 2007	Sheet 6 of 44



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GMCH (2 of 5)

HURON

Date: Thursday, March 15, 2007 Sheet 7 of 44

11 M_A_DQ[63.0] <<<

U40D	
M A DQ0	AJ35 SA_DQ0
M A DQ1	AJ34 SA_DQ1
M A DQ2	AM31 SA_DQ2
M A DQ3	AJ36 SA_DQ3
M A DQ4	AK35 SA_DQ4
M A DQ5	AJ32 SA_DQ5
M A DQ6	AJ32 SA_DQ6
M A DQ7	AH31 SA_DQ7
M A DQ8	AN35 SA_DQ8
M A DQ9	AP33 SA_DQ9
M A DQ10	AR31 SA_DQ10
M A DQ11	AP31 SA_DQ11
M A DQ12	AN38 SA_DQ12
M A DQ13	AM36 SA_DQ13
M A DQ14	AM34 SA_DQ14
M A DQ15	AN33 SA_DQ15
M A DQ16	AK26 SA_DQ16
M A DQ17	AL27 SA_DQ17
M A DQ18	AM26 SA_DQ18
M A DQ19	AN24 SA_DQ19
M A DQ20	AK28 SA_DQ20
M A DQ21	AL28 SA_DQ21
M A DQ22	AM24 SA_DQ22
M A DQ23	AP26 SA_DQ23
M A DQ24	AP23 SA_DQ24
M A DQ25	AL22 SA_DQ25
M A DQ26	AP21 SA_DQ26
M A DQ27	AN20 SA_DQ27
M A DQ28	AL23 SA_DQ28
M A DQ29	AP24 SA_DQ29
M A DQ30	AP20 SA_DQ30
M A DQ31	AT21 SA_DQ31
M A DQ32	AR12 SA_DQ32
M A DQ33	AR14 SA_DQ33
M A DQ34	AP13 SA_DQ34
M A DQ35	AP12 SA_DQ35
M A DQ36	AT13 SA_DQ36
M A DQ37	AT12 SA_DQ37
M A DQ38	AL14 SA_DQ38
M A DQ39	AL12 SA_DQ39
M A DQ40	AK9 SA_DQ40
M A DQ41	AN7 SA_DQ41
M A DQ42	AK8 SA_DQ42
M A DQ43	AK7 SA_DQ43
M A DQ44	AP9 SA_DQ44
M A DQ45	AN9 SA_DQ45
M A DQ46	AT5 SA_DQ46
M A DQ47	AL5 SA_DQ47
M A DQ48	AY2 SA_DQ48
M A DQ49	AW2 SA_DQ49
M A DQ50	AP1 SA_DQ50
M A DQ51	AN2 SA_DQ51
M A DQ52	AV2 SA_DQ52
M A DQ53	AT3 SA_DQ53
M A DQ54	AN1 SA_DQ54
M A DQ55	AL2 SA_DQ55
M A DQ56	AC7 SA_DQ56
M A DQ57	AE9 SA_DQ57
M A DQ58	AG4 SA_DQ58
M A DQ59	AF6 SA_DQ59
M A DQ60	AG9 SA_DQ60
M A DQ61	AH6 SA_DQ61
M A DQ62	AF4 SA_DQ62
M A DQ63	AF8 SA_DQ63

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DDR SYSTEM MEMORY A

SA_BS_0	AU12	M A BS#0 11,12
SA_BS_1	AV14	M A BS#1 11,12
SA_BS_2	BA20	M A BS#2 11,12
SA_CASH#	AY13	M A CAS# 11,12
SA_DM_0	AJ33	M A DM0 11
SA_DM_1	AM35	M A DM1 11
SA_DM_2	AL26	M A DM2 11
SA_DM_3	AN22	M A DM3 11
SA_DM_4	AM14	M A DM4 11
SA_DM_5	AL9	M A DM5 11
SA_DM_6	AR3	M A DM6 11
SA_DM_7	AH4	M A DM7 11
SA_DQS_0	AK33	M A DQS0 11
SA_DQS_1	AT33	M A DQS1 11
SA_DQS_2	AN28	M A DQS2 11
SA_DQS_3	AM22	M A DQS3 11
SA_DQS_4	AN12	M A DQS4 11
SA_DQS_5	AN8	M A DQS5 11
SA_DQS_6	AP3	M A DQS6 11
SA_DQS_7	AG5	M A DQS7 11
SA_DQS#_0	AK32	M A DQS#0 11
SA_DQS#_1	AU33	M A DQS#1 11
SA_DQS#_2	AN27	M A DQS#2 11
SA_DQS#_3	AM21	M A DQS#3 11
SA_DQS#_4	AM12	M A DQS#4 11
SA_DQS#_5	AL8	M A DQS#5 11
SA_DQS#_6	AN3	M A DQS#6 11
SA_DQS#_7	AH5	M A DQS#7 11
SA_MA_0	AY16	M A A0 11,12
SA_MA_1	AU14	M A A1 11,12
SA_MA_2	AW16	M A A2 11,12
SA_MA_3	BA16	M A A3 11,12
SA_MA_4	BA17	M A A4 11,12
SA_MA_5	AU16	M A A5 11,12
SA_MA_6	AV17	M A A6 11,12
SA_MA_7	AL17	M A A7 11,12
SA_MA_8	AW17	M A A8 11,12
SA_MA_9	AT16	M A A9 11,12
SA_MA_10	AU13	M A A10 11,12
SA_MA_11	AT17	M A A11 11,12
SA_MA_12	AV20	M A A12 11,12
SA_MA_13	AV12	M A A13 11,12
SA_RAS#	AW14	M A RAS# 11,12
SA_RCVENIN#	AK23	SA RCVENIN# 11,12
SA_RCVENOUT#	AK24	SA RCVENOUT# 11,12
SA_WE#	AY14	M A WE# 11,12

Place Test PAD Near to Chip as could as possible

11 M_B_DQ[63.0] <<<

U40E	
M B DQ0	AK39
M B DQ1	AJ37
M B DQ2	AP39
M B DQ3	AR41
M B DQ4	AJ38
M B DQ5	AK38
M B DQ6	AN41
M B DQ7	AP41
M B DQ8	AT40
M B DQ9	AV41
M B DQ10	AU38
M B DQ11	AV38
M B DQ12	AP38
M B DQ13	AR40
M B DQ14	AW38
M B DQ15	AY38
M B DQ16	BA38
M B DQ17	AV36
M B DQ18	AR36
M B DQ19	AP36
M B DQ20	AR36
M B DQ21	AU36
M B DQ22	AP35
M B DQ23	AP34
M B DQ24	AY33
M B DQ25	BA33
M B DQ26	AT31
M B DQ27	AP36
M B DQ28	AL31
M B DQ29	AU31
M B DQ30	AW29
M B DQ31	AW29
M B DQ32	AM19
M B DQ33	AL19
M B DQ34	AP14
M B DQ35	AN14
M B DQ36	AN17
M B DQ37	AM16
M B DQ38	AP15
M B DQ39	AL15
M B DQ40	AJ11
M B DQ41	AH10
M B DQ42	AJ9
M B DQ43	AN10
M B DQ44	AK13
M B DQ45	AH11
M B DQ46	AK10
M B DQ47	AJ8
M B DQ48	BA10
M B DQ49	AW10
M B DQ50	BA4
M B DQ51	AW4
M B DQ52	AY10
M B DQ53	AY9
M B DQ54	AW5
M B DQ55	AY5
M B DQ56	AV4
M B DQ57	AR5
M B DQ58	AK4
M B DQ59	AK3
M B DQ60	AT4
M B DQ61	AK5
M B DQ62	AJ5
M B DQ63	AJ3

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DDR SYSTEM MEMORY B

SB_DQ0	AT24
SB_DQ1	AV23
SB_DQ2	AY28
SB_DQ3	AR24
SB_DQ4	AK36
SB_DQ5	AR38
SB_DQ6	AT36
SB_DQ7	BA31
SB_DQ8	AL17
SB_DQ9	AH8
SB_DQ10	BA5
SB_DQ11	AN4
SB_DQ12	AM39
SB_DQ13	AT39
SB_DQ14	AJ35
SB_DQ15	AR29
SB_DQ16	AR16
SB_DQ17	AR10
SB_DQ18	AR7
SB_DQ19	AN5
SB_DQ20	AM40
SB_DQ21	AR7
SB_DQ22	AJ39
SB_DQ23	AT35
SB_DQ24	AP29
SB_DQ25	AP16
SB_DQ26	AT10
SB_DQ27	AT7
SB_DQ28	AP5
SB_DQ29	AY23
SB_DQ30	AW24
SB_DQ31	AW24
SB_DQ32	AR28
SB_DQ33	AT27
SB_DQ34	AT28
SB_DQ35	AJ27
SB_DQ36	AV28
SB_DQ37	AV27
SB_DQ38	AW27
SB_DQ39	AV24
SB_DQ40	BA27
SB_DQ41	AY27
SB_DQ42	AR23
SB_DQ43	AY23
SB_DQ44	AK16
SB_DQ45	AK18
SB_DQ46	AR27
SB_DQ47	AK16
SB_DQ48	AK18
SB_DQ49	AK18
SB_DQ50	AK18
SB_DQ51	AK18
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SB_DQ56	AK18
SB_DQ57	AK18
SB_DQ58	AK18
SB_DQ59	AK18
SB_DQ60	AK18
SB_DQ61	AK18
SB_DQ62	AK18
SB_DQ63	AK18

Place Test PAD Near to Chip as could as possible



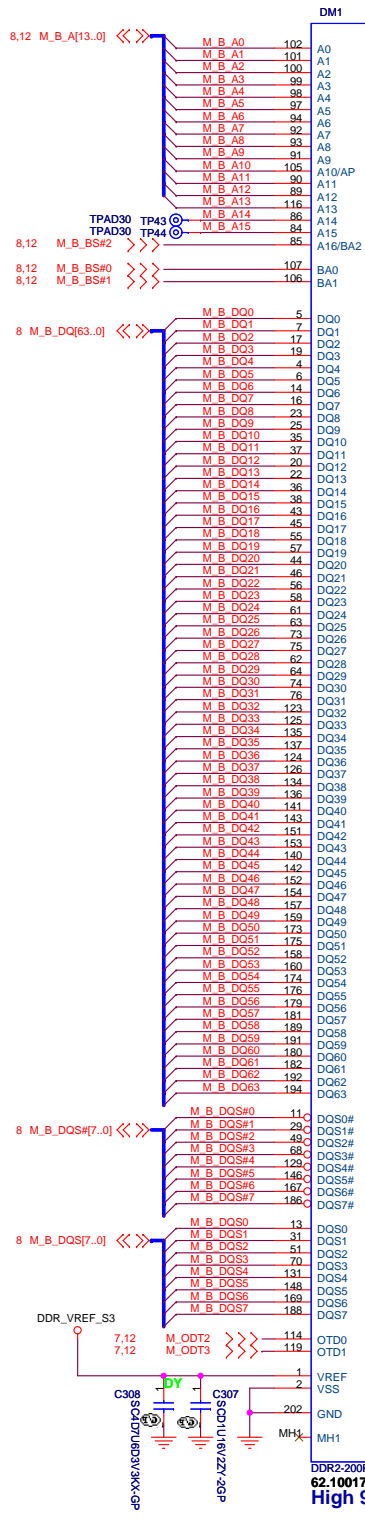
緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.

Title: **GMCH (3 of 5)**

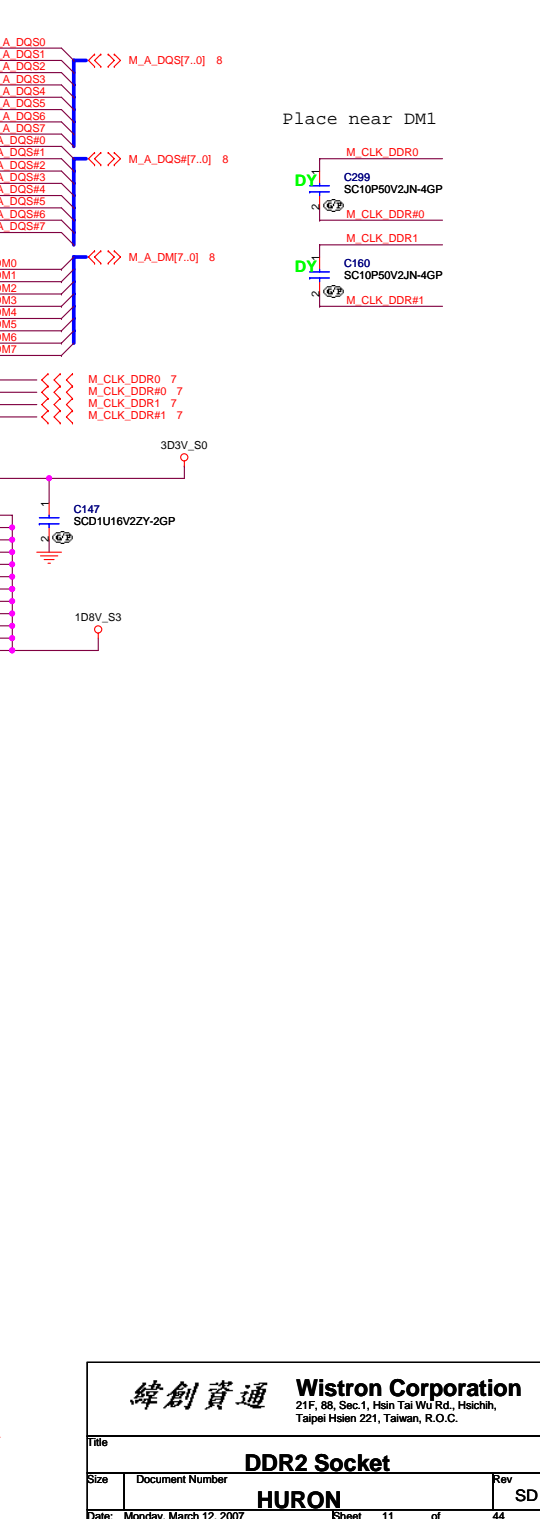
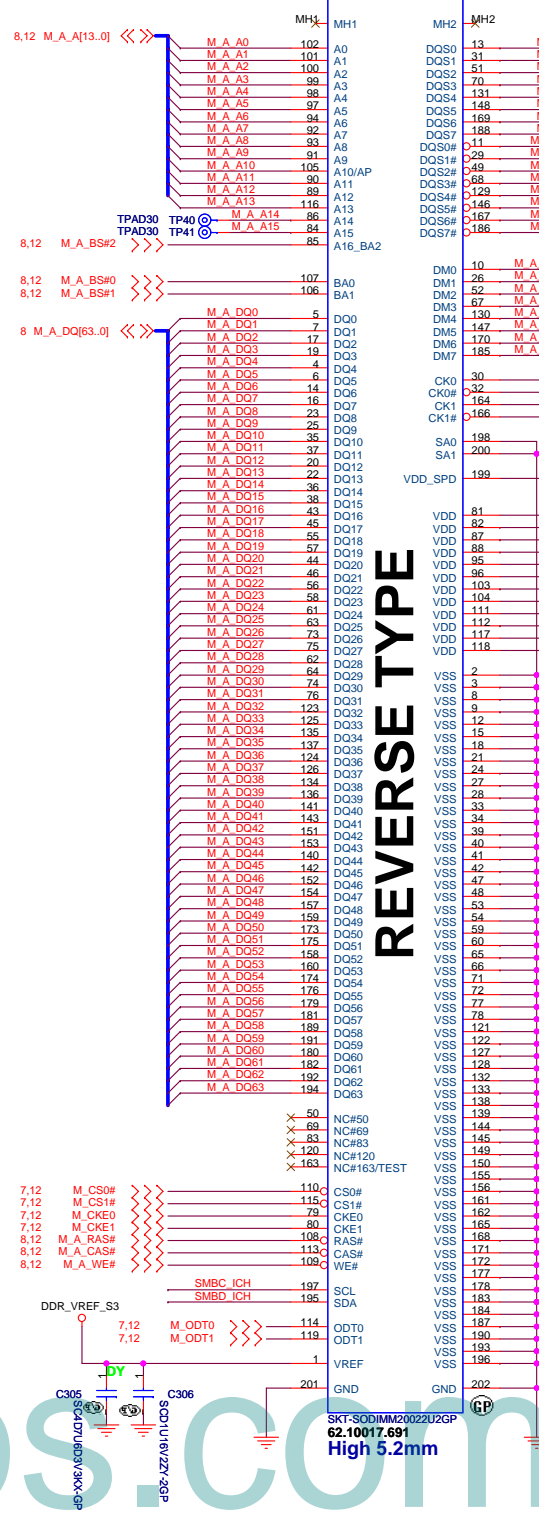
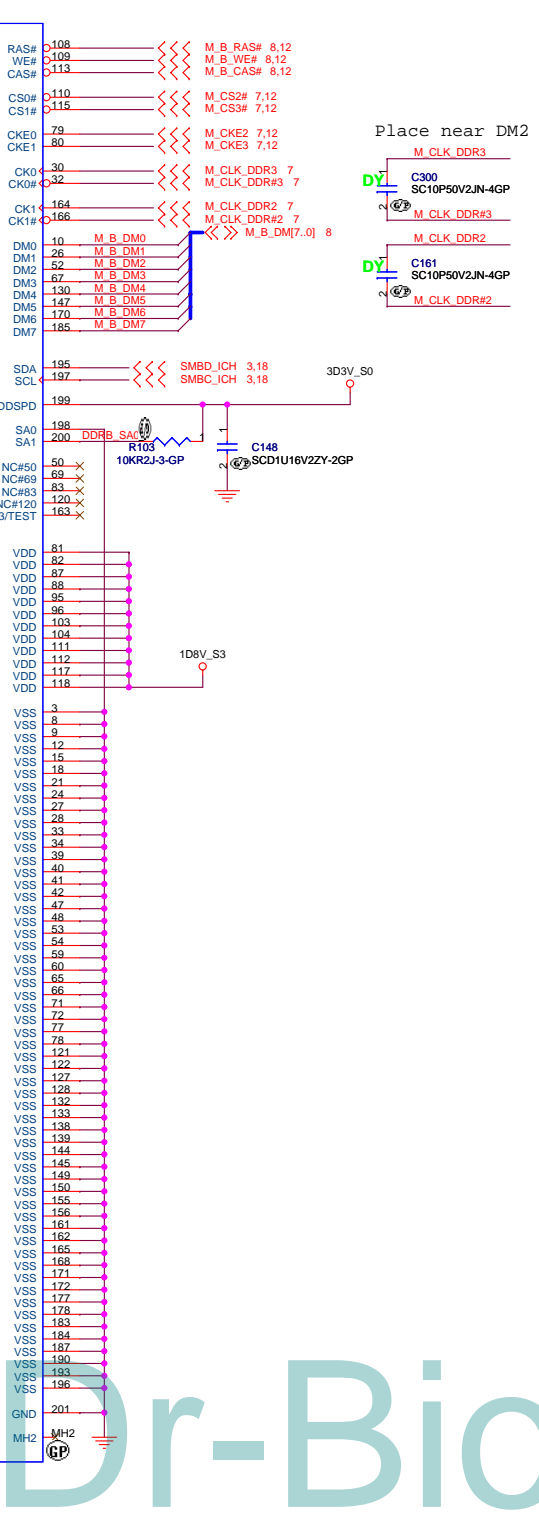
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Date: Monday, March 12, 2007 Sheet 8 of 44

U40G	
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W33	VCC_1
P33	VCC_2
N33	VCC_3
L33	VCC_4
J33	VCC_5
AA32	VCC_6
F32	VCC_7
W32	VCC_8
V32	VCC_9
P32	VCC_10
N32	VCC_11
L32	VCC_12
J32	VCC_13
V32	VCC_14
AA31	VCC_15
W31	VCC_16
V31	VCC_17
T31	VCC_18
R31	VCC_19
F31	VCC_20
M31	VCC_21
AA30	VCC_22
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W30	VCC_24
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V29	VCC_35
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W28	VCC_41
V28	VCC_42
U28	VCC_43
T28	VCC_44
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REVERSE TYPE



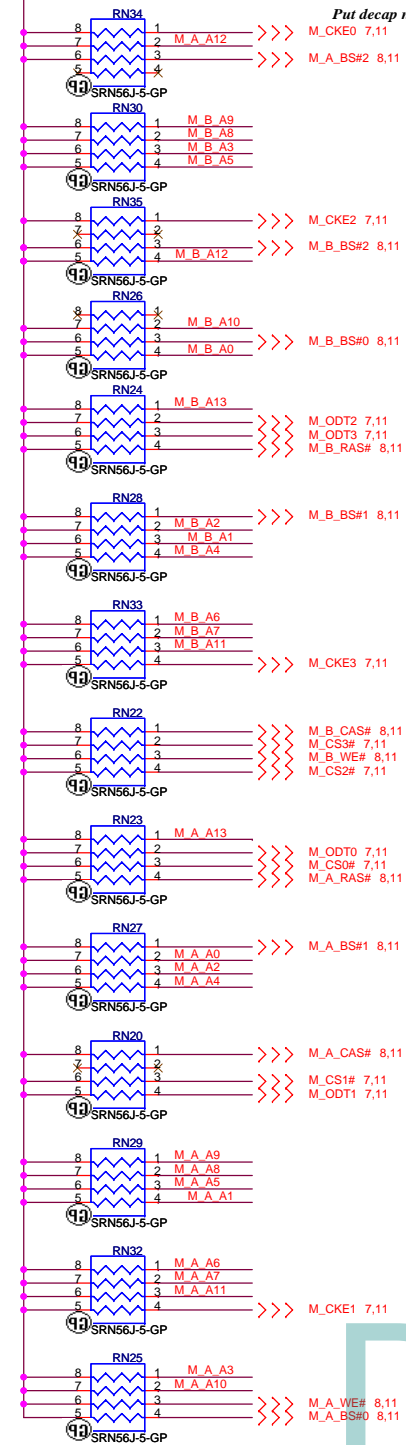
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 Taipei Hsien 221, Taiwan, R.O.C.

DDR2 Socket
HURON

Title: **DDR2 Socket**
 Size: **Document Number** Rev: **SD**
 Date: **Monday, March 12, 2007** Sheet **11** of **44**

PARALLEL TERMINATION

DDR_VREF_S0



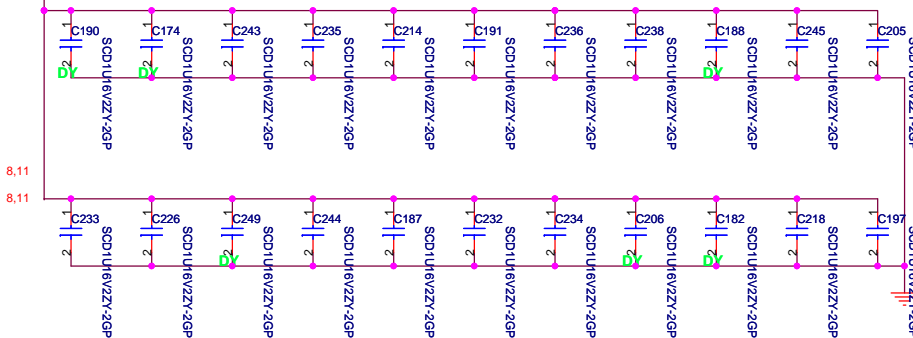
Put decap near power(0.9V) and pull-up resistor

M_A A[13..0] <<< M_A A[13..0] 8,11
M_B A[13..0] <<< M_B A[13..0] 8,11

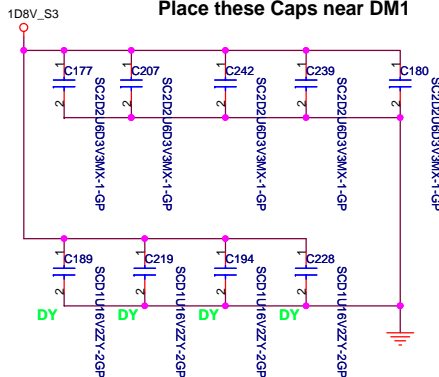
Decoupling Capacitor

DDR_VREF_S0

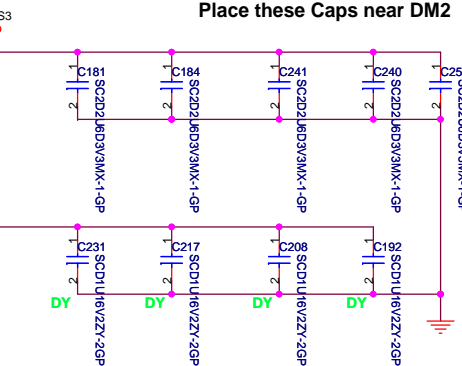
Put decap near power(0.9V) and pull-up resistor



Place these Caps near DM1



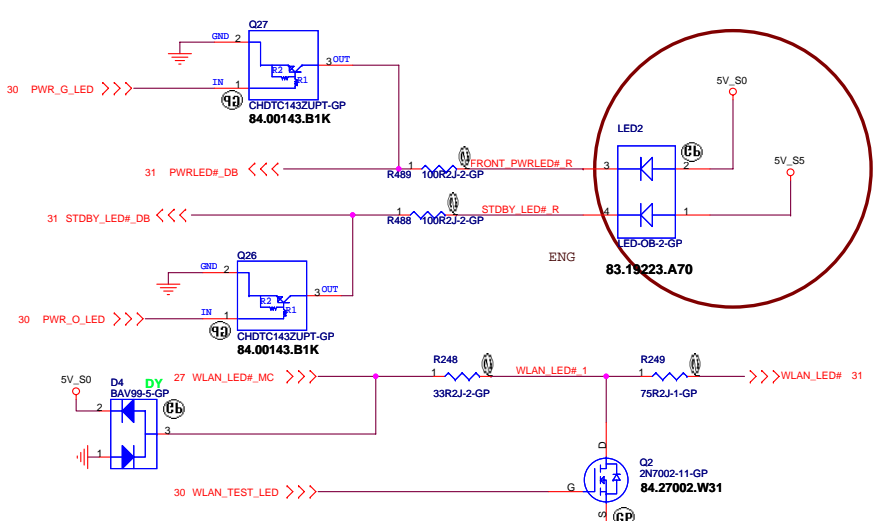
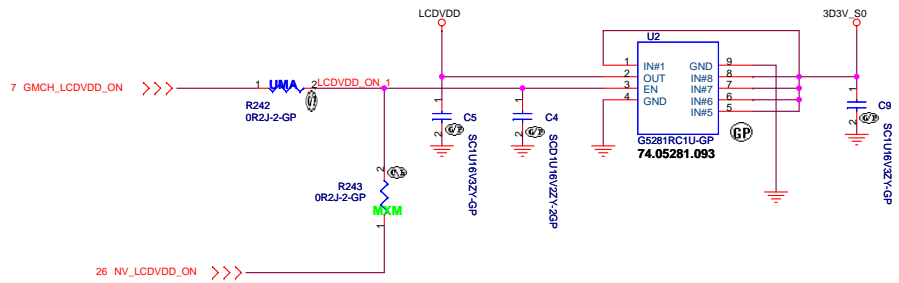
Place these Caps near DM2



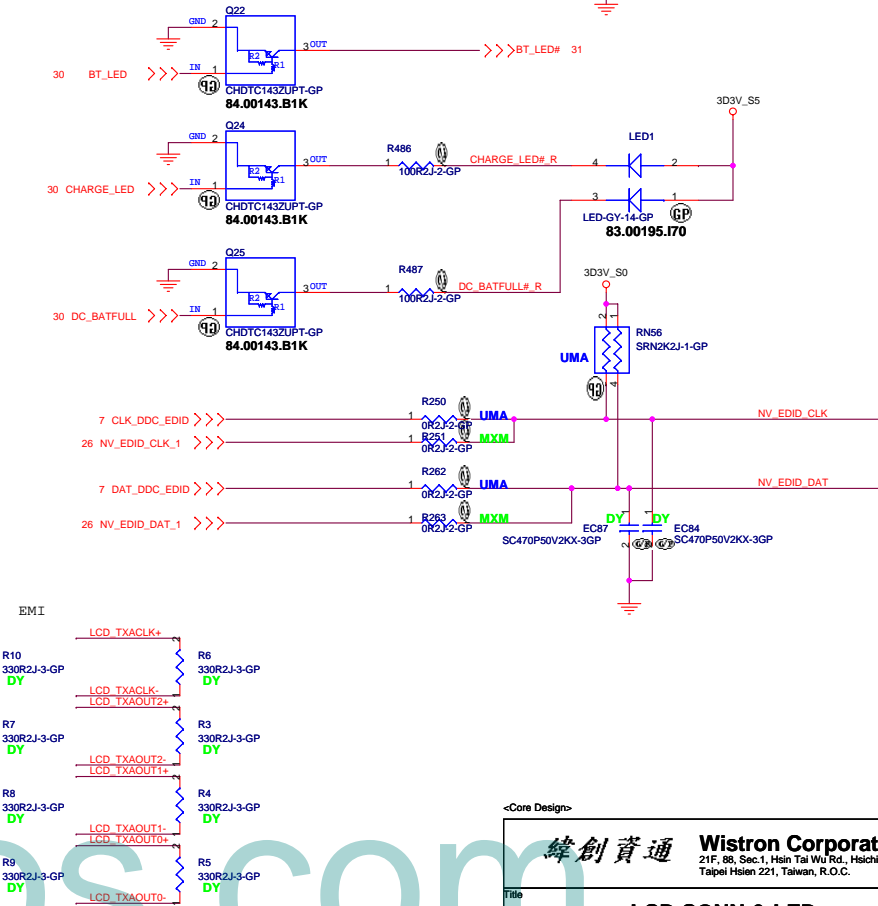
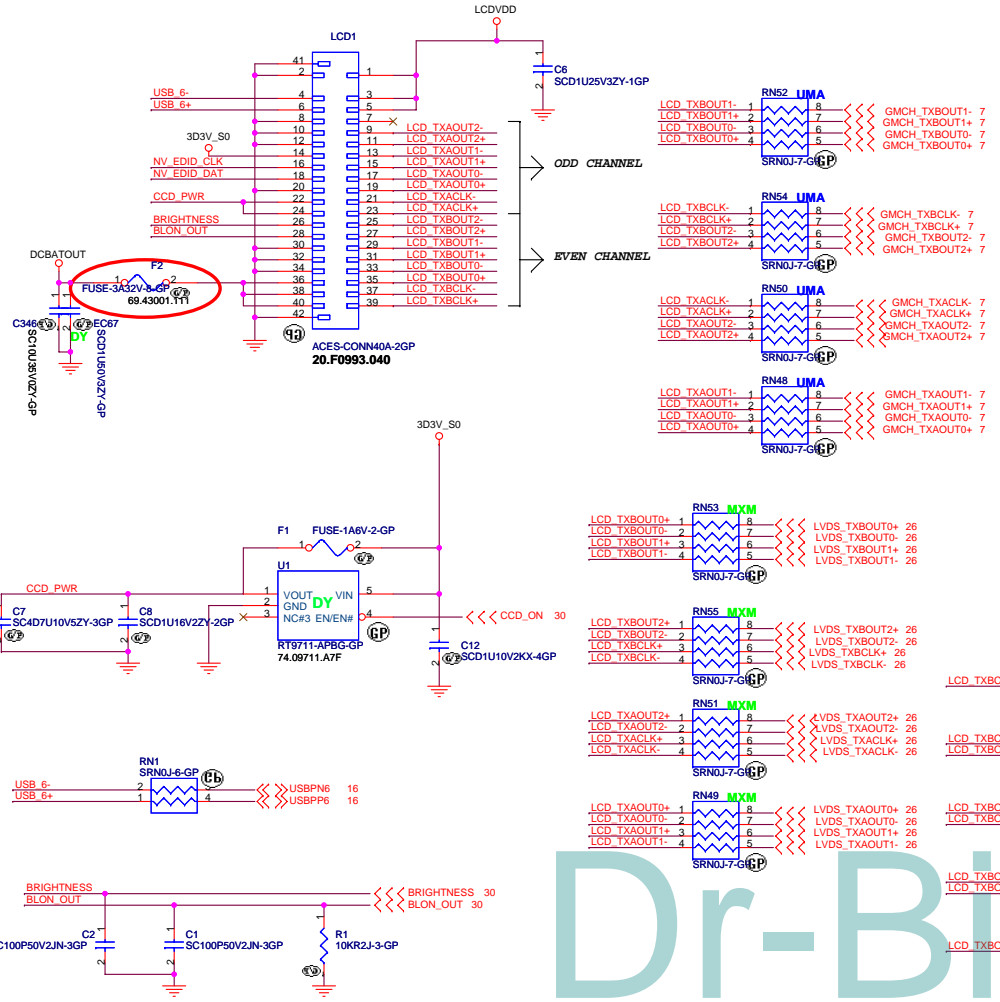
Dr-Bios.com

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Taipei Hsien 221, Taiwan, R.O.C.

Title		DDR2 Termination Resistor	
Size	Document Number	Rev	
		HURON	
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LCD/INVERTER CONN



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Core Design

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 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
 Taipei Hsien 221, Taiwan, R.O.C.

Title: **LCD CONN & LED**

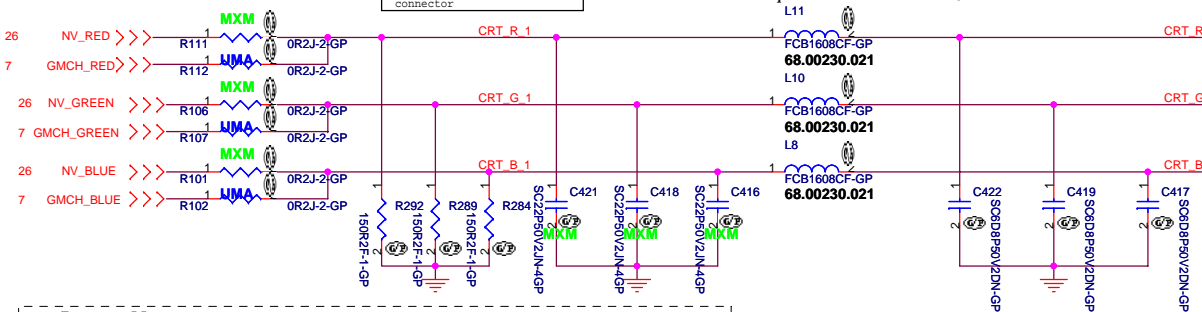
Size	Document Number	Rev
		SD

Date: Tuesday, March 13, 2007 Sheet 13 of 44

CRT I/F & CONNECTOR

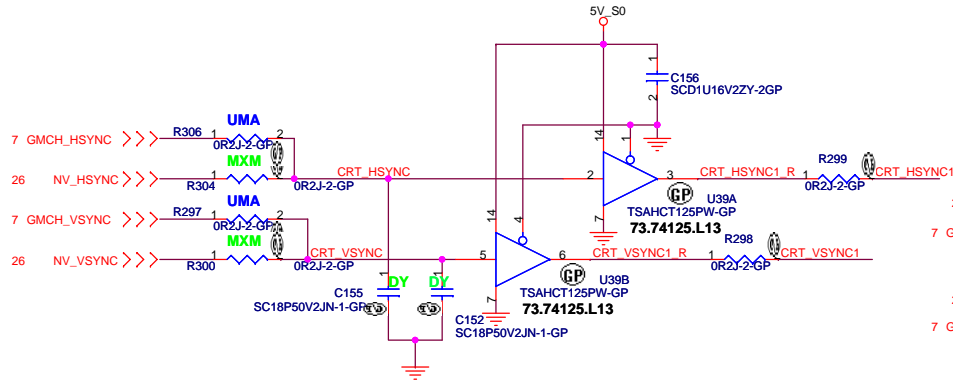
Layout Note:
Place these resistors close to the CRT-out connector

Ferrite bead impedance: 10 ohm@100MHz

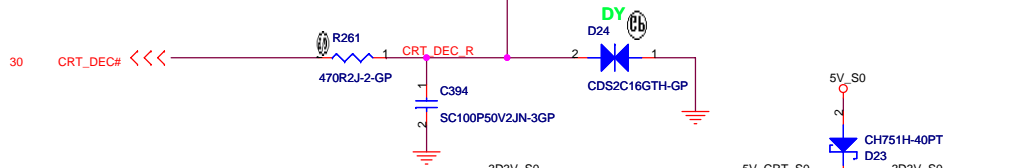
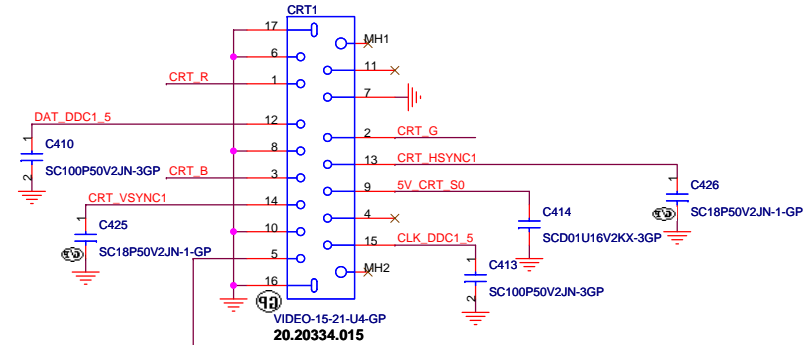
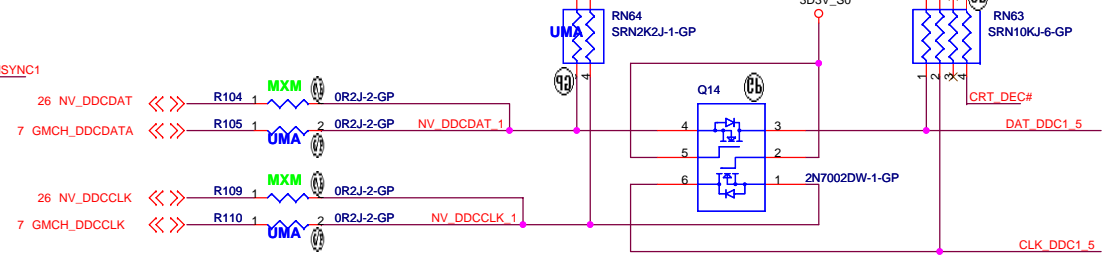


Layout Note:
* Must be a ground return path between this ground and the ground on the VGA connector.
Pi-filter & 150 Ohm pull-down resistors should be as close as to CRT CONN. RGB will hit 75 Ohm first, pi-filter, then CRT CONN.

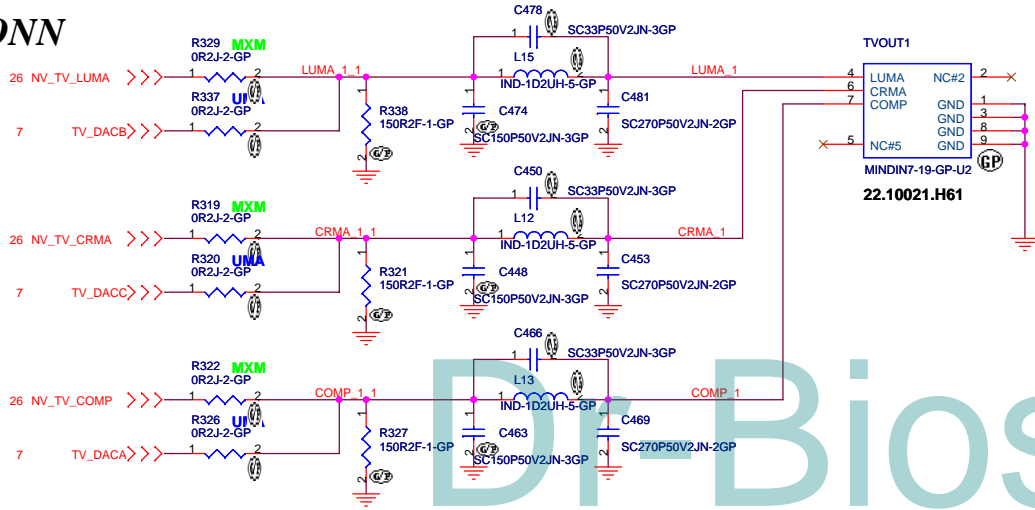
Hsync & Vsync level shift



DDC_CLK & DATA level shift



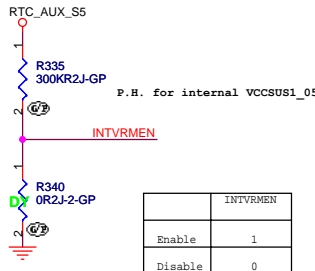
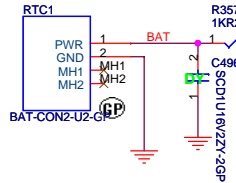
TV CONN



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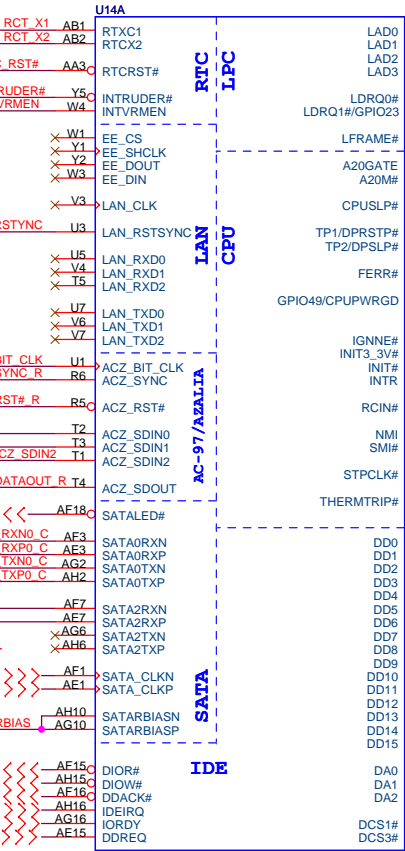
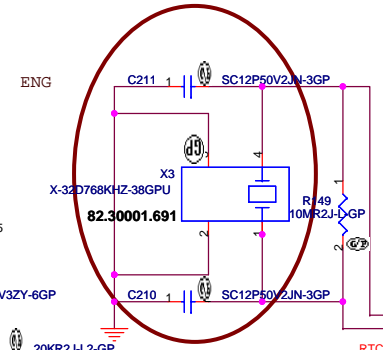
Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
CRT/TV Connector	
Title:	Rev: SD
Size:	Document Number:
Date: Monday, March 12, 2007	Sheet 14 of 44

RTC circuitry

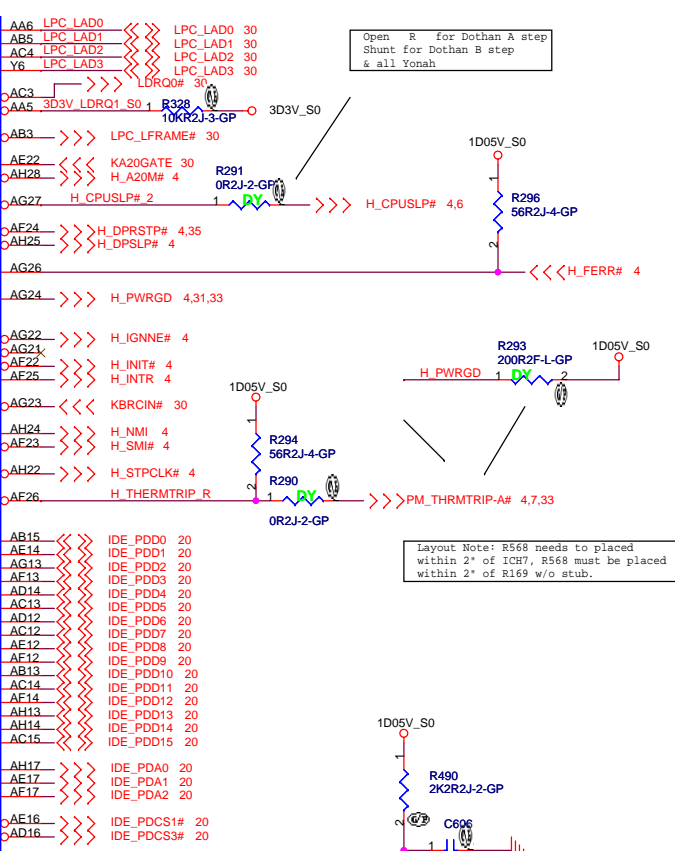


	INTVRMEN
Enable	1
Disable	0

Placement Note:
Distance between the ICH-7 M and cap on the "P" signal should be identical distance between the ICH-7 M and cap on the "N" signal for same pair.



71.ICH7M.00U
PN:KI.80101.017



Open R for Dothan A step
Shunt for Dothan B step
& all Yonah

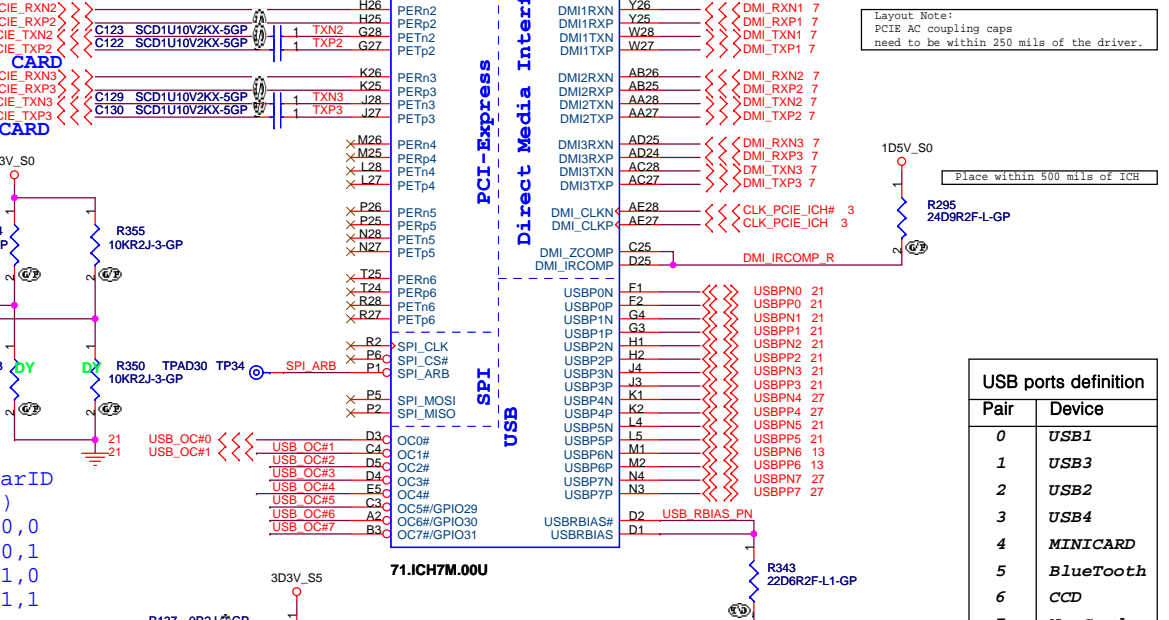
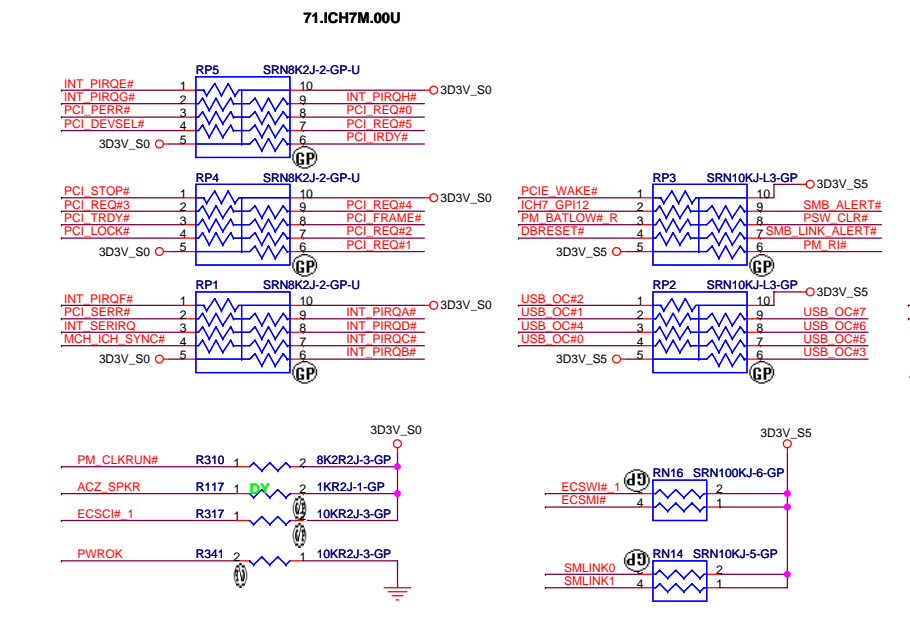
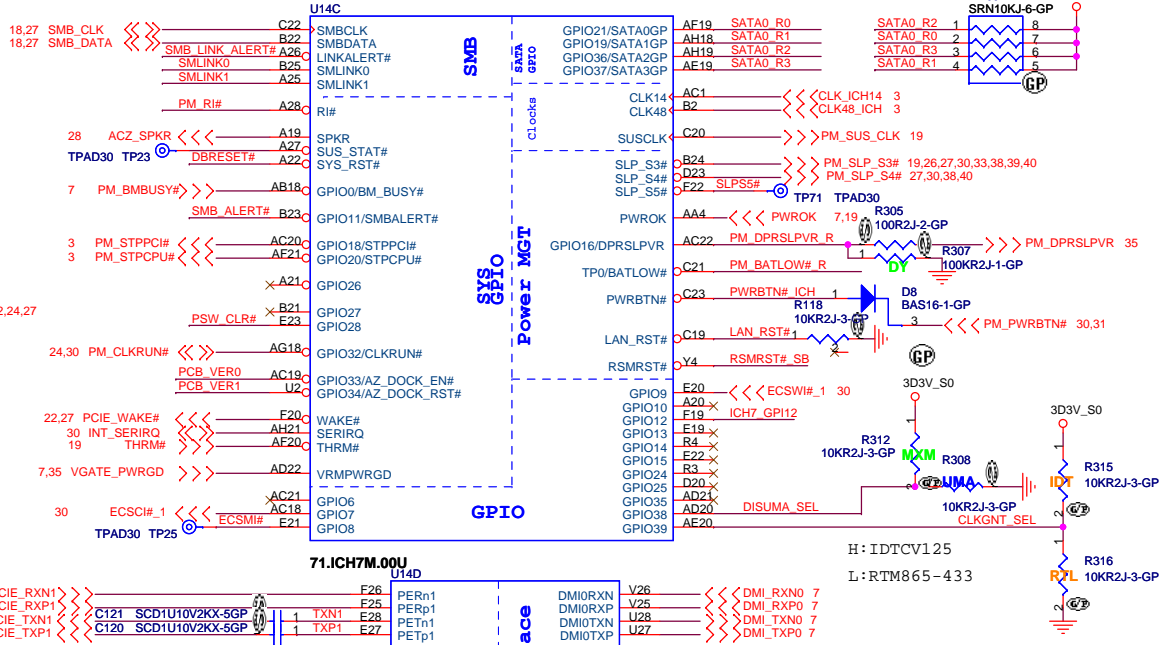
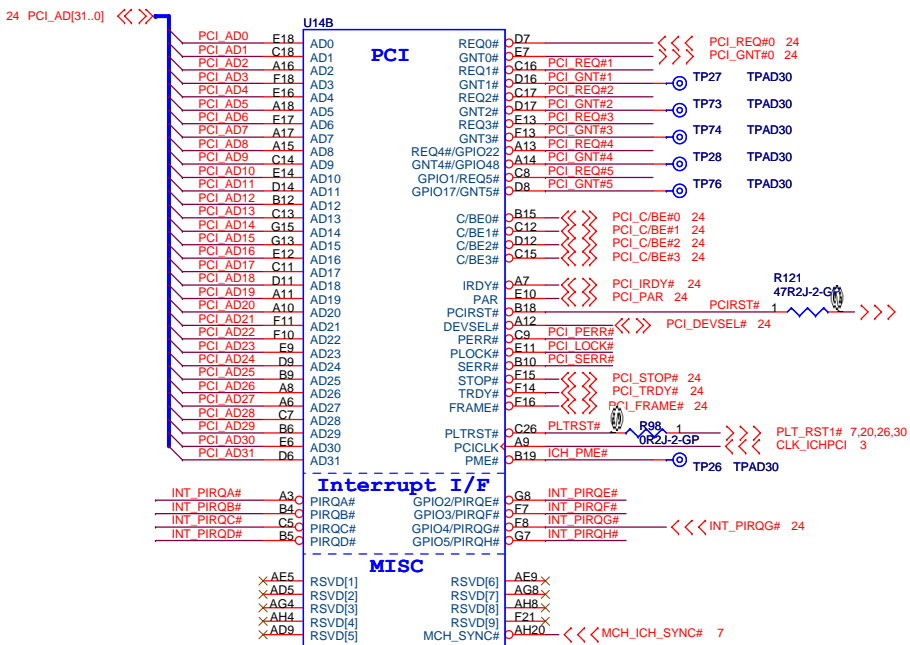
Layout Note: R568 needs to be placed
within 2" of ICH7, R568 must be placed
within 2" of R169 w/o stub.

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File: **ICH7-M (1 of 4)**

Size: Document Number Rev: SD

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PlanarID
(1,0)
SA: 0,0
SB: 0,1
SC: 1,0
SD: 1,1

Layout Note:
PCIE AC coupling caps
need to be within 250 mils of the driver.

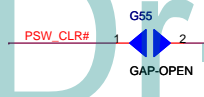
Place within 500 mils of ICH

Pair	Device
0	USB1
1	USB3
2	USB2
3	USB4
4	MINICARD
5	BlueTooth
6	CCD
7	NewCard

Default:H

	GNT5#	GNT4#
LPC	H	H
PCI	H	L
SPI	L	H

GAP放在Dimm Door打開可量測處

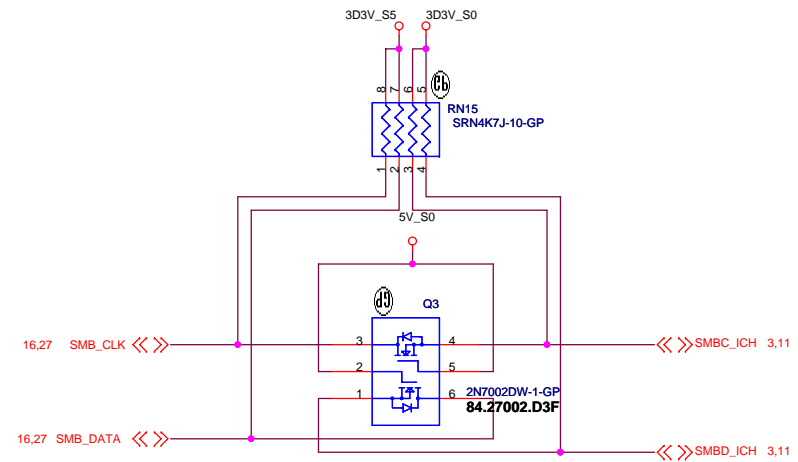


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U14E		
A4	VSS[1]	VSS[98]
A23	VSS[2]	VSS[99]
B1	VSS[3]	VSS[100]
B8	VSS[4]	VSS[101]
B11	VSS[5]	VSS[102]
B14	VSS[6]	VSS[103]
B17	VSS[7]	VSS[104]
B20	VSS[8]	VSS[105]
B26	VSS[9]	VSS[106]
B28	VSS[10]	VSS[107]
C2	VSS[11]	VSS[108]
C6	VSS[12]	VSS[109]
C27	VSS[13]	VSS[110]
D10	VSS[14]	VSS[111]
D13	VSS[15]	VSS[112]
D18	VSS[16]	VSS[113]
D21	VSS[17]	VSS[114]
D24	VSS[18]	VSS[115]
E1	VSS[19]	VSS[116]
E2	VSS[20]	VSS[117]
E4	VSS[21]	VSS[118]
E8	VSS[22]	VSS[119]
F15	VSS[23]	VSS[120]
F3	VSS[24]	VSS[121]
F4	VSS[25]	VSS[122]
F5	VSS[26]	VSS[123]
F12	VSS[27]	VSS[124]
F27	VSS[28]	VSS[125]
F28	VSS[29]	VSS[126]
G1	VSS[30]	VSS[127]
G2	VSS[31]	VSS[128]
G5	VSS[32]	VSS[129]
G6	VSS[33]	VSS[130]
G9	VSS[34]	VSS[131]
G14	VSS[35]	VSS[132]
G18	VSS[36]	VSS[133]
G21	VSS[37]	VSS[134]
G24	VSS[38]	VSS[135]
G25	VSS[39]	VSS[136]
G26	VSS[40]	VSS[137]
H3	VSS[41]	VSS[138]
H4	VSS[42]	VSS[139]
H24	VSS[43]	VSS[140]
H27	VSS[44]	VSS[141]
H28	VSS[45]	VSS[142]
J1	VSS[46]	VSS[143]
J2	VSS[47]	VSS[144]
J5	VSS[48]	VSS[145]
J24	VSS[49]	VSS[146]
J25	VSS[50]	VSS[147]
J26	VSS[51]	VSS[148]
K24	VSS[52]	VSS[149]
K24	VSS[53]	VSS[150]
K27	VSS[54]	VSS[151]
K28	VSS[55]	VSS[152]
L13	VSS[56]	VSS[153]
L15	VSS[57]	VSS[154]
L24	VSS[58]	VSS[155]
L25	VSS[59]	VSS[156]
L26	VSS[60]	VSS[157]
M3	VSS[61]	VSS[158]
M4	VSS[62]	VSS[159]
M5	VSS[63]	VSS[160]
M12	VSS[64]	VSS[161]
M13	VSS[65]	VSS[162]
M14	VSS[66]	VSS[163]
M15	VSS[67]	VSS[164]
M16	VSS[68]	VSS[165]
M17	VSS[69]	VSS[166]
M24	VSS[70]	VSS[167]
M27	VSS[71]	VSS[168]
M28	VSS[72]	VSS[169]
N1	VSS[73]	VSS[170]
N2	VSS[74]	VSS[171]
N5	VSS[75]	VSS[172]
N6	VSS[76]	VSS[173]
N11	VSS[77]	VSS[174]
N12	VSS[78]	VSS[175]
N13	VSS[79]	VSS[176]
N14	VSS[80]	VSS[177]
N15	VSS[81]	VSS[178]
N16	VSS[82]	VSS[179]
N17	VSS[83]	VSS[180]
N18	VSS[84]	VSS[181]
N24	VSS[85]	VSS[182]
N25	VSS[86]	VSS[183]
N26	VSS[87]	VSS[184]
P3	VSS[88]	VSS[185]
P4	VSS[89]	VSS[186]
P12	VSS[90]	VSS[187]
P13	VSS[91]	VSS[188]
P14	VSS[92]	VSS[189]
P15	VSS[93]	VSS[190]
P16	VSS[94]	VSS[191]
P17	VSS[95]	VSS[192]
P24	VSS[96]	VSS[193]
P27	VSS[97]	VSS[194]

71.ICH7M.00U

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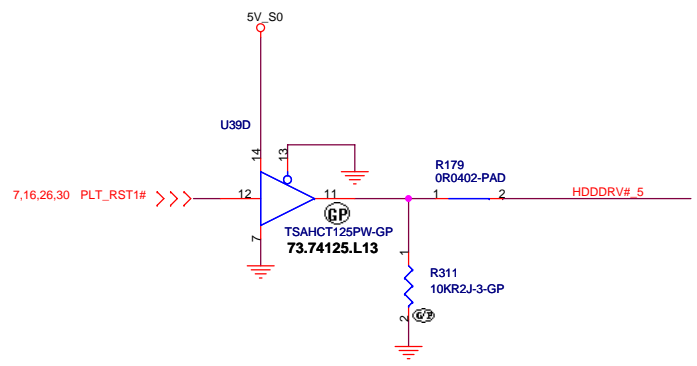
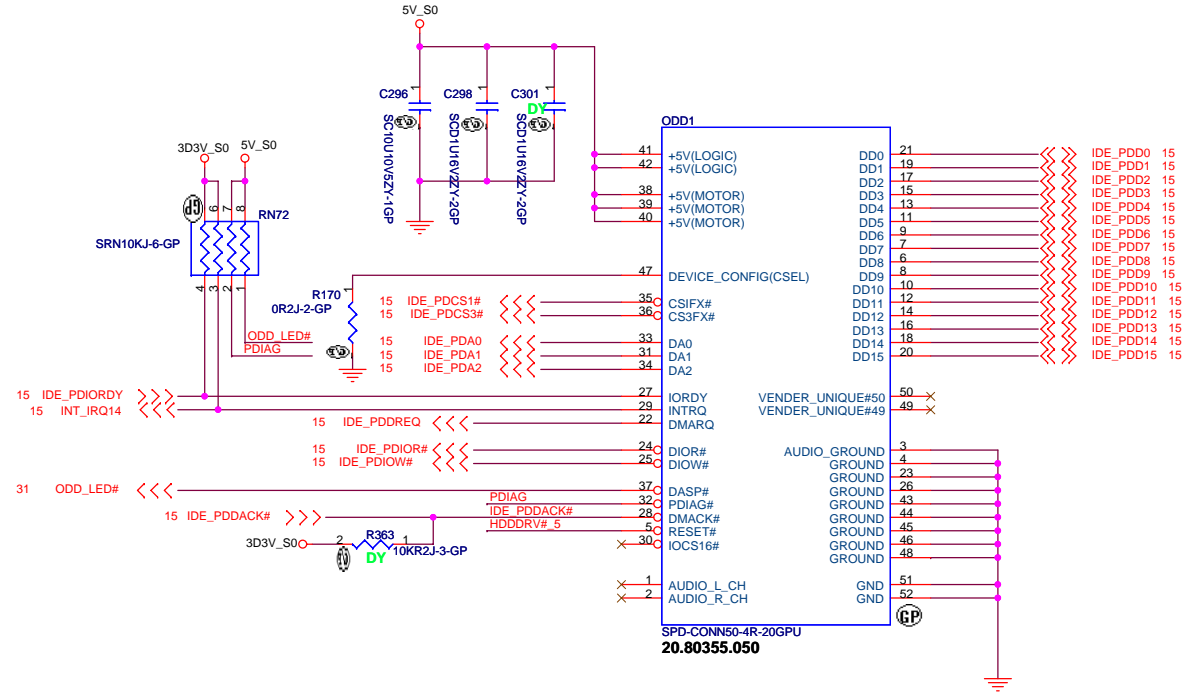
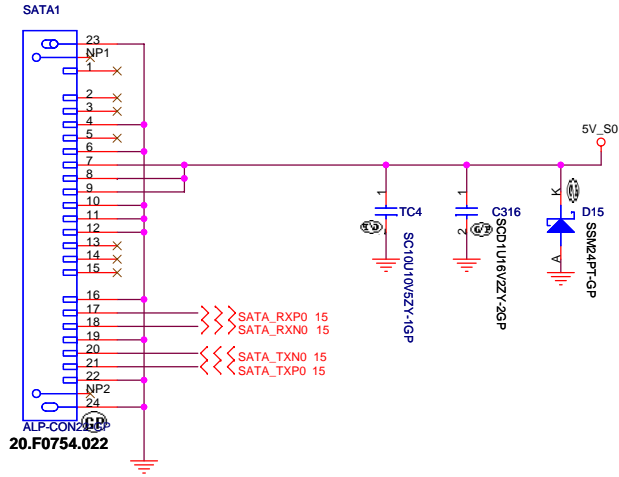
Q14 connect SMLINK and SMBUS in S) for SMBUS 2.0 compliance

SMBUS

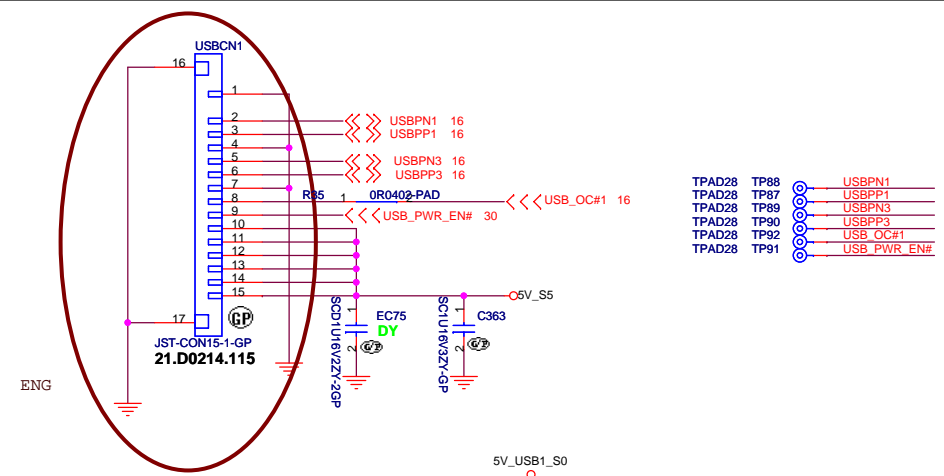
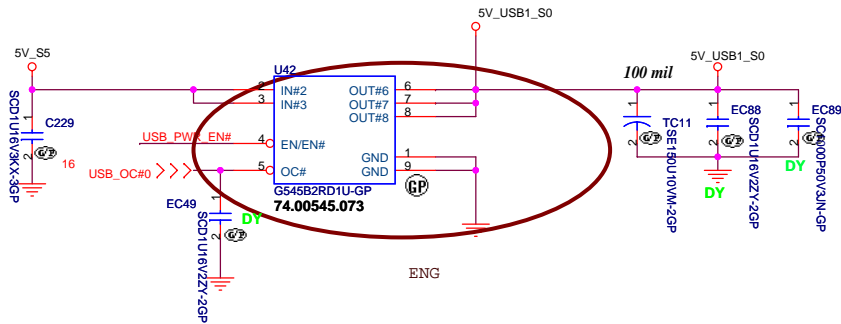
Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.	
Title	
ICH7-M (4 of 4)	
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SATA HD Connector

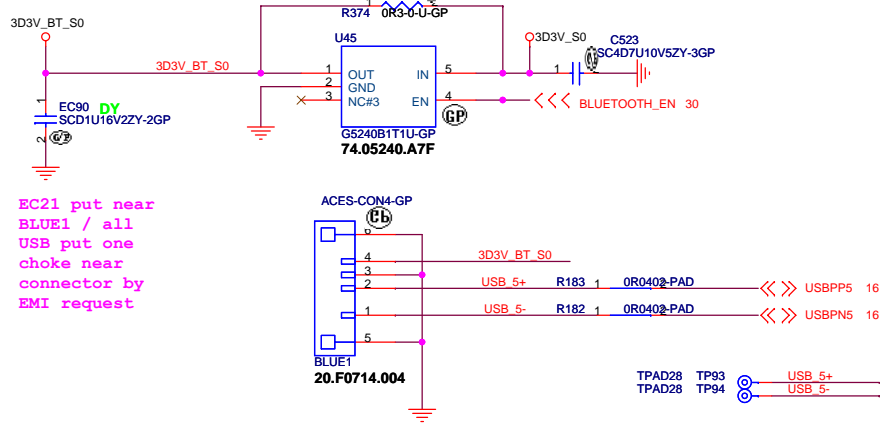
ODD Connector



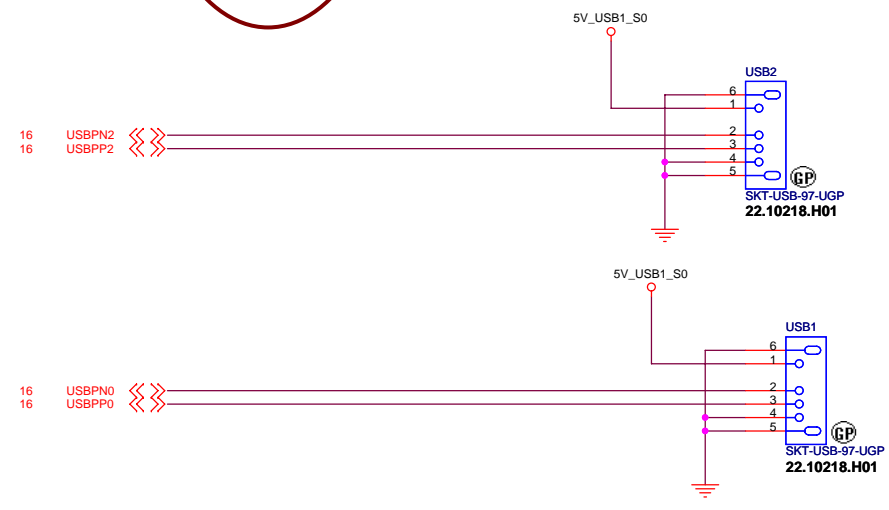
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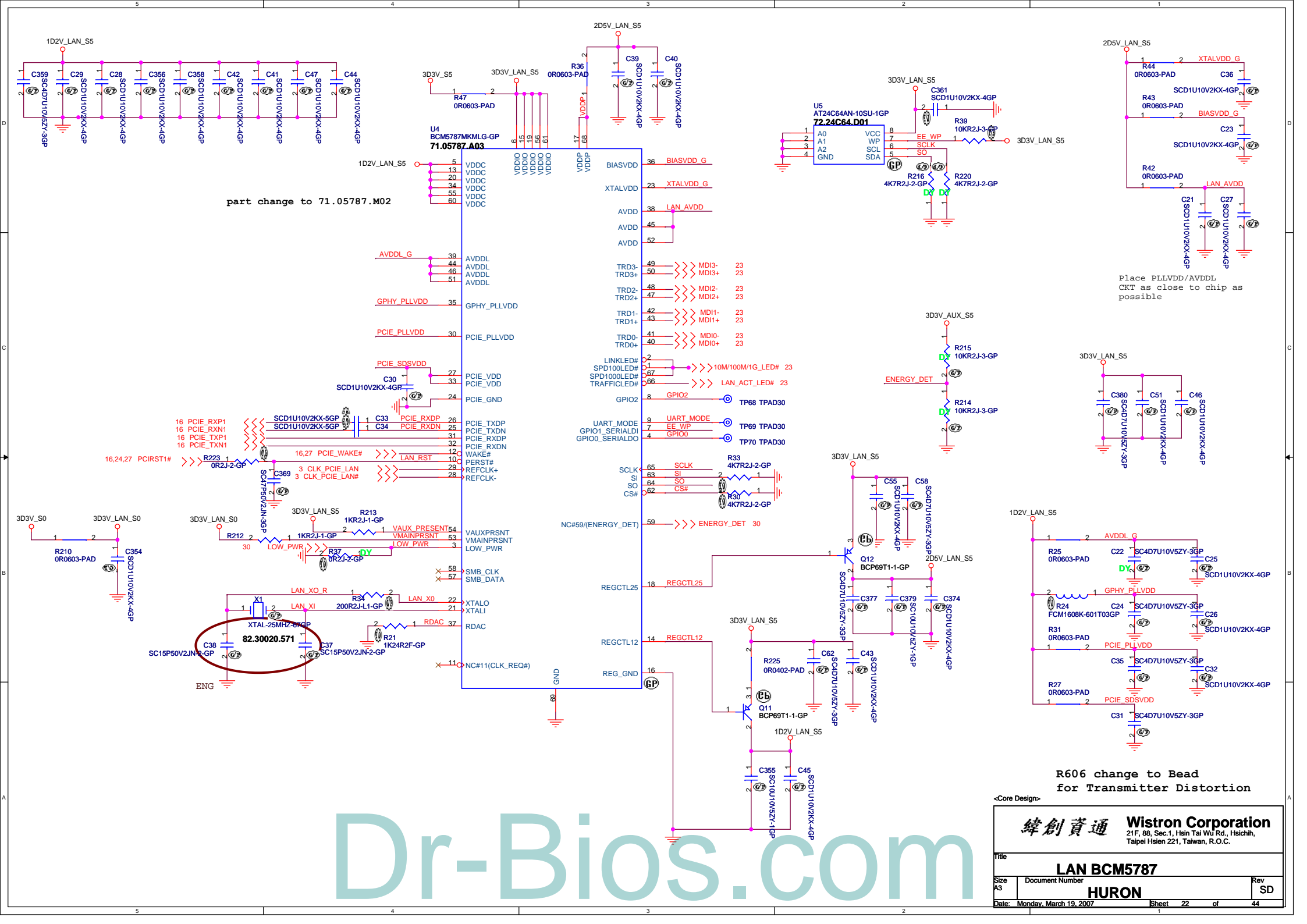
BLUETOOTH MODULE



EC21 put near BLUE1 / all USB put one choke near connector by EMI request



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part change to 71.05787.M02

Place PLLVDD/AVDDL CKT as close to chip as possible

R606 change to Bead
for Transmitter Distortion

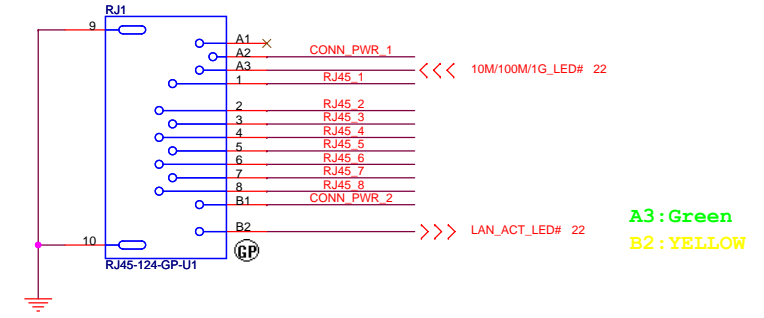
<Core Design>

緯創資通 Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title	LAN BCM5787	
Size A3	Document Number	Rev SD
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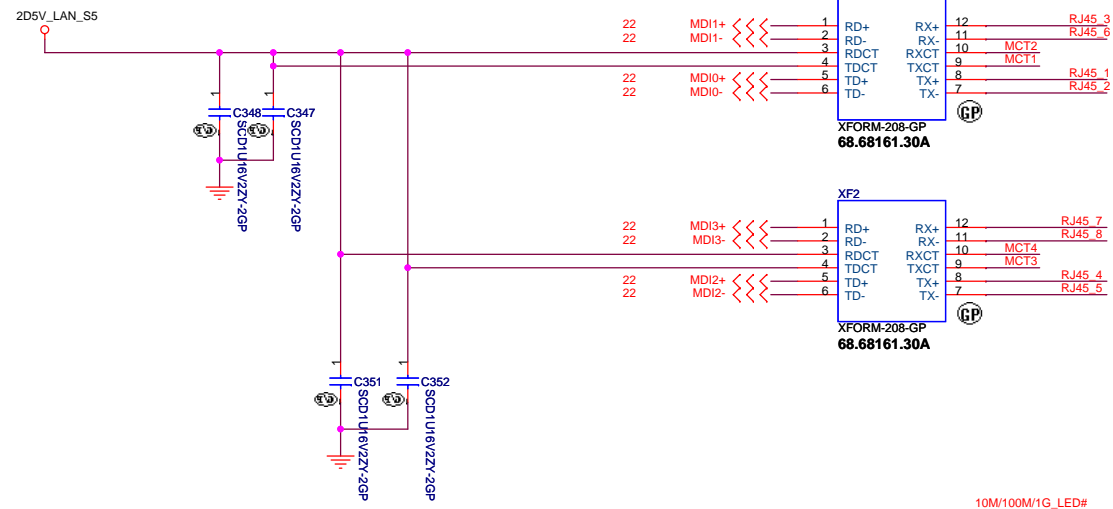
Voltage Rail	4401E	5789	5787
VDDIO_PCI	3D3V_LAN_S5	3D3V_S0	Don't Care
VDDC	1D8V_LAN_S5	1D2V_LAN_S5	
VDDIO	3D3V_LAN_S5	3D3V_LAN_S5	
VESD	3D3V_LAN_S5	3D3V_S0	Don't Care
VDDP	Don't Care	2D5V_S5	
3D3V_2D5V_S5	3D3V_S5	2D5V_S5	
1D8V_1D2V_S5	1D8V_LAN_S5	1D2V_S5	

LAN Connector



LAN Link: Green(A3), behavior is the same for 10/100/1000 bits
 LAN Data: Yellow(B2), when LAN is transferring data.

GIGA Lan Transformer

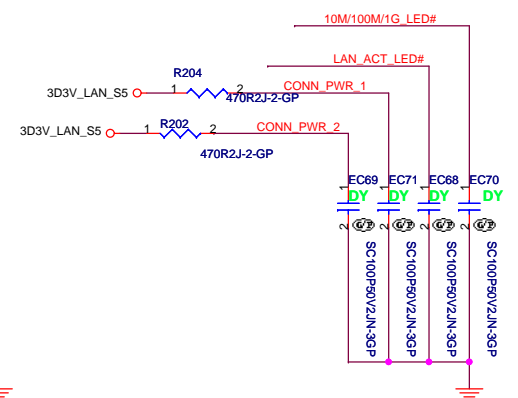


- route on bottom as differential pairs.
- Tx+/Tx- are pairs. Rx+/Rx- are pairs.
- No vias, No 90 degree bends.
- pairs must be equal lengths.
- 5.6mil trace width, 12mil separation.
- 3.6mil between pairs and any other trace.
- Must not cross ground moat, except RJ-45 moat.

RJ11 signal must leave the other signal or power plane 100mil.

DOC_TIP,DOC_RING,TIP,RING:
 W/S : 10/100 @ Surface layers
 10/20 @ Inner layers

10/100 LAN Transformer	RJ45 PIN
TD+ --> TX+	RJ45-1
TD- --> TX-	RJ45-2
RD+ --> RX+	RJ45-3
RD- --> RX-	RJ45-6



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<Core Design>

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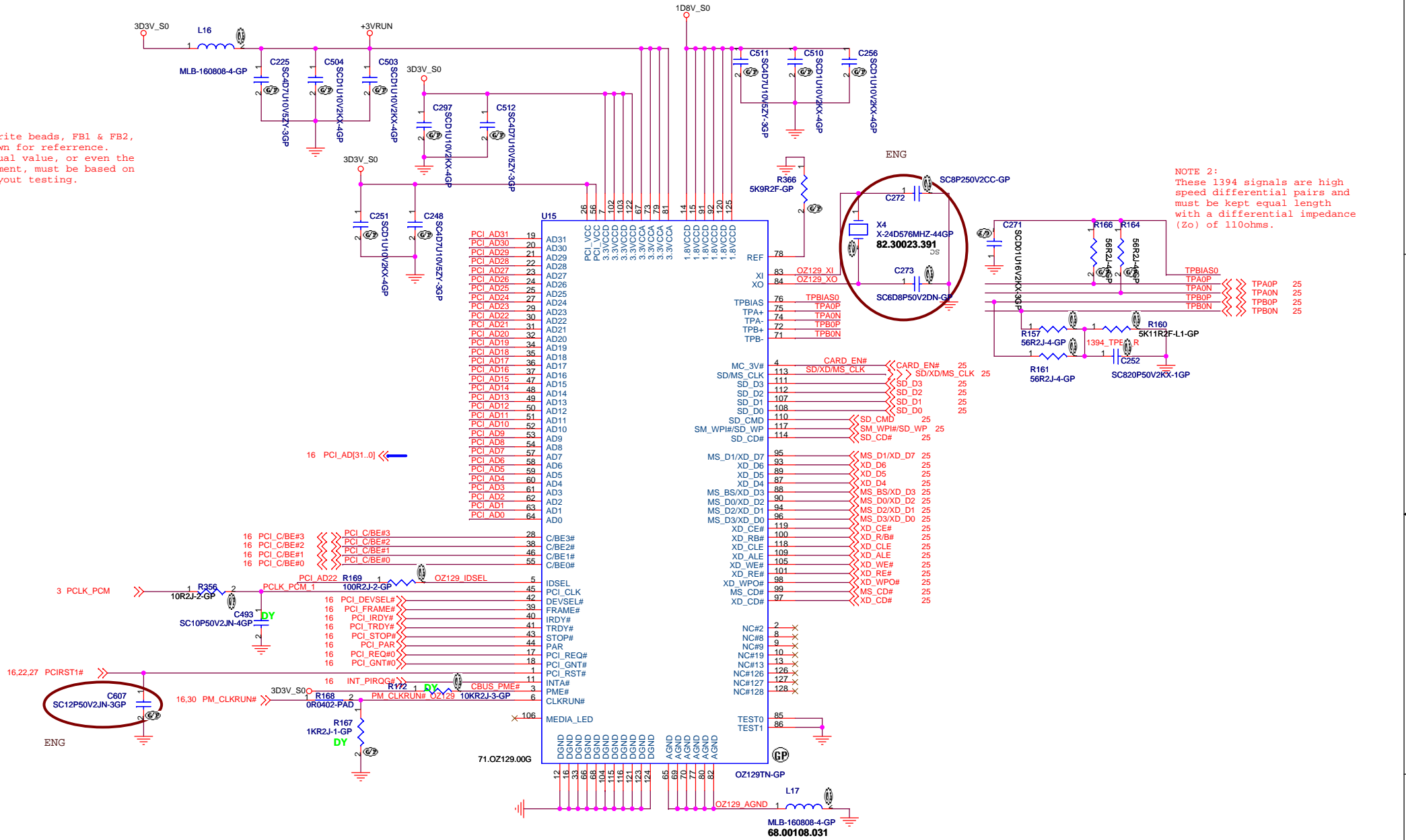
Title: **LAN Connector**

Size A3 Document Number: **HURON** Rev SD

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NOTE 1:
The Ferrite beads, FB1 & FB2,
are shown for reference.
The actual value, or even the
requirement, must be based on
post-layout testing.

NOTE 2:
These I394 signals are high
speed differential pairs and
must be kept equal length
with a differential impedance
(Zo) of 110ohms.



16 PCL_AD[31..0] <<<

IDSEL: AD22
INTA-->: INT_PIRQ#
GNT: PCI_GNT#0
REQ: PCI_REQ#0

<Core Design>

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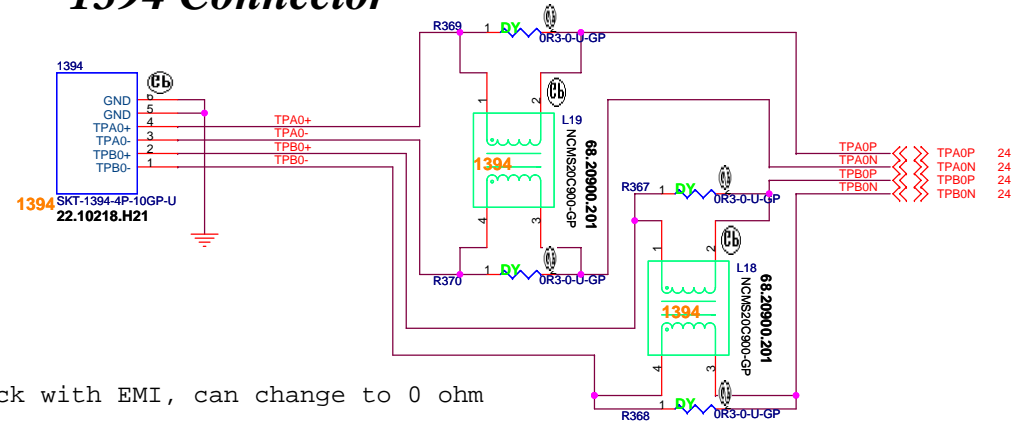
Title: **OZ129T**

Size: Document Number: **HURON** Rev: **SD**

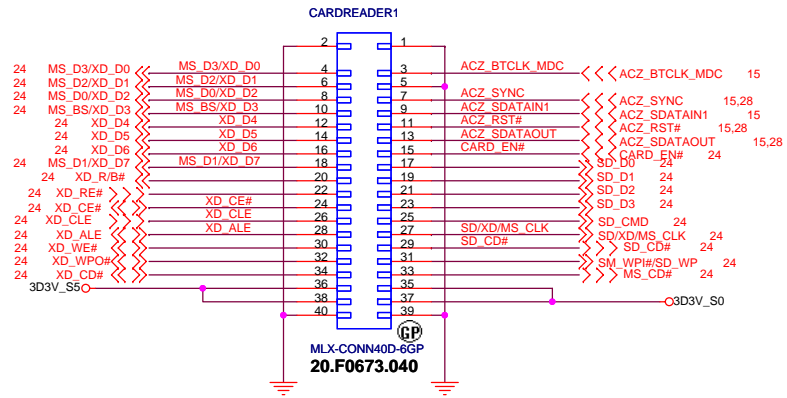
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1394 Connector



check with EMI, can change to 0 ohm



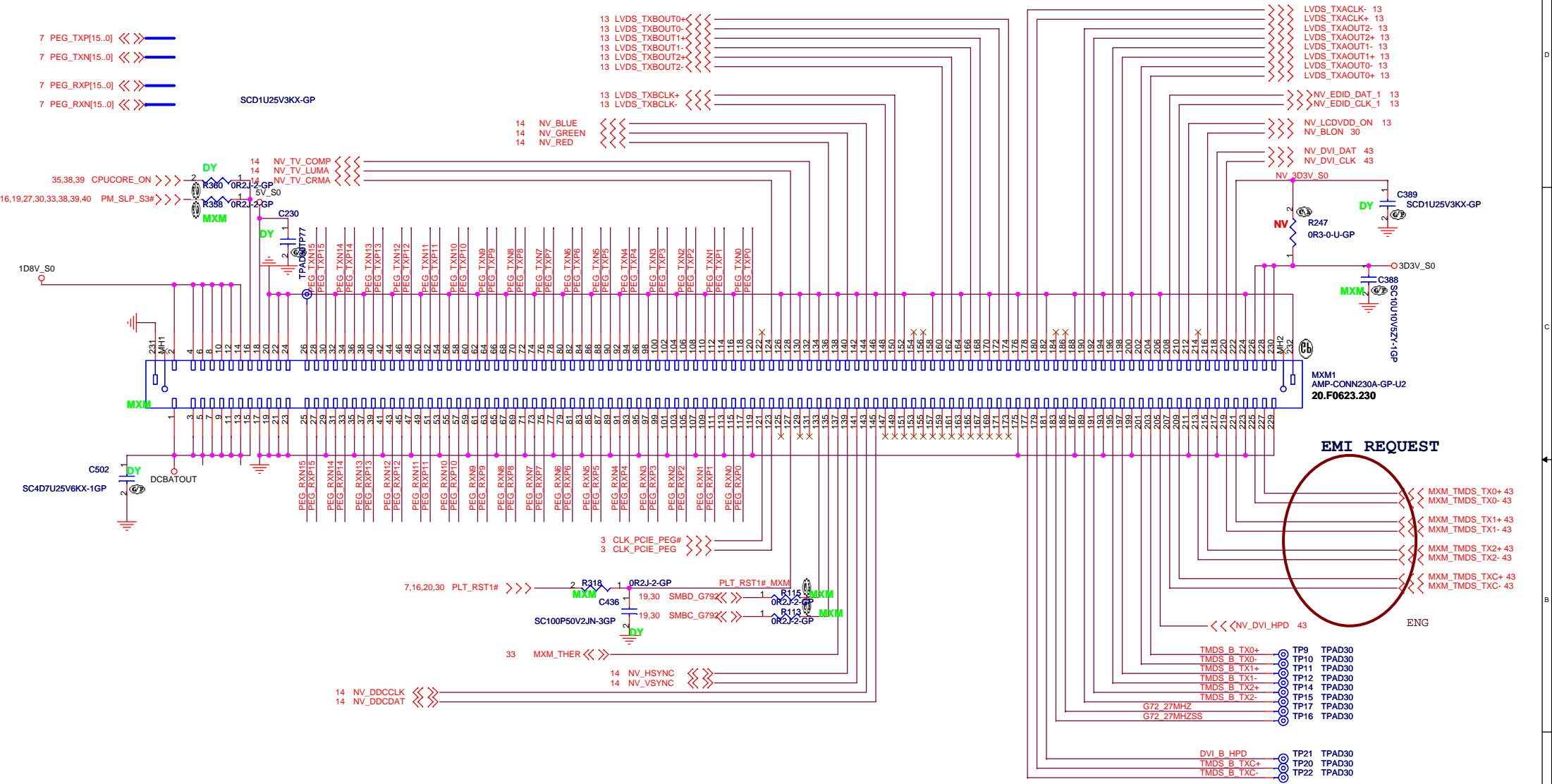
CONN on Bottom side

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<Core Design>			
緯創資通		Wistron Corporation	
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Title			
1394 / CARD READER BD			
Size	Document Number	Rev	
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NV SMBus
 A (pin143&145) : VGA (CRT) / DOCK
 B (pin218&220) : DVI
 C (pin208&210) : HDMI / TPI / LVDS

Put near graphic connector



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<Core Design>

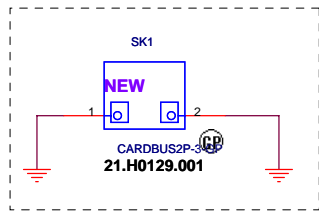
緯創資通 Wistron Corporation
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Title: **Graphic MXM CONN**

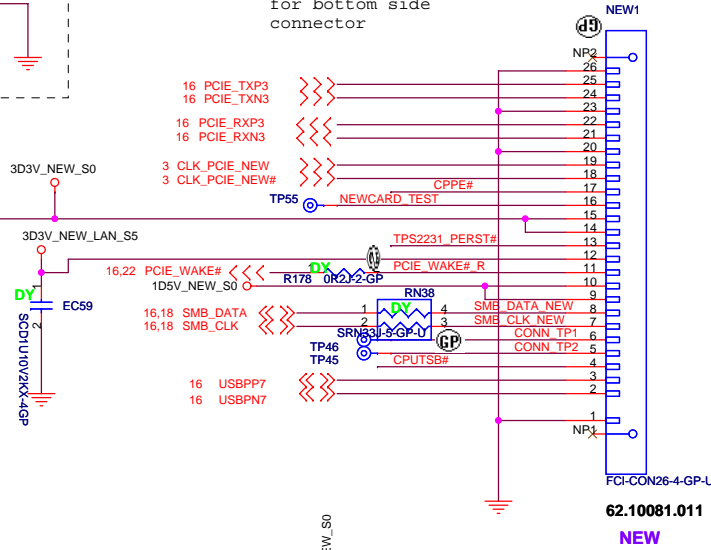
Size A3 Document Number: **HURON** Rev SD

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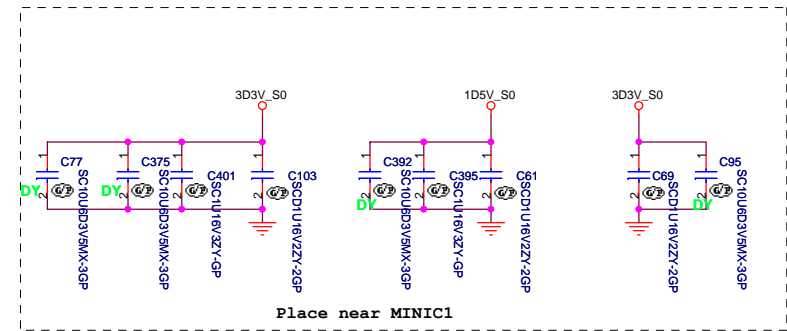
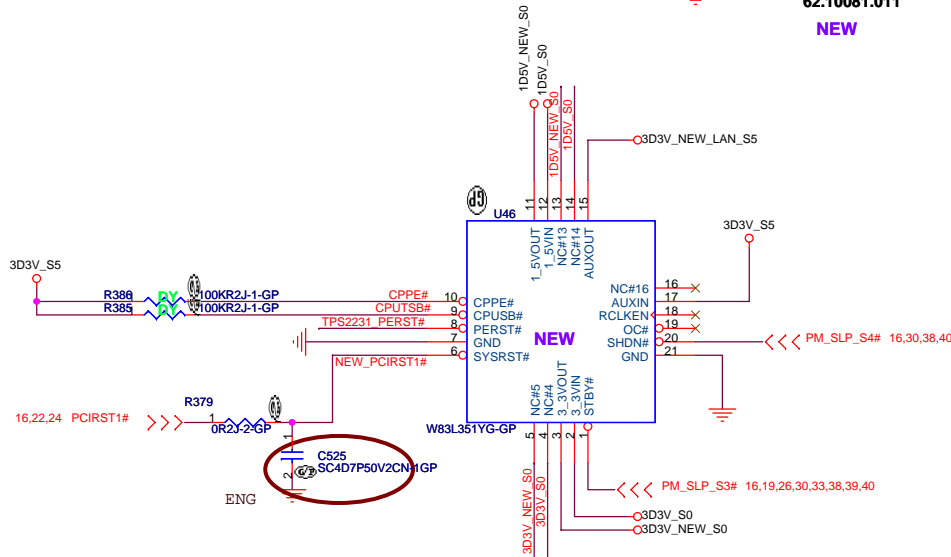
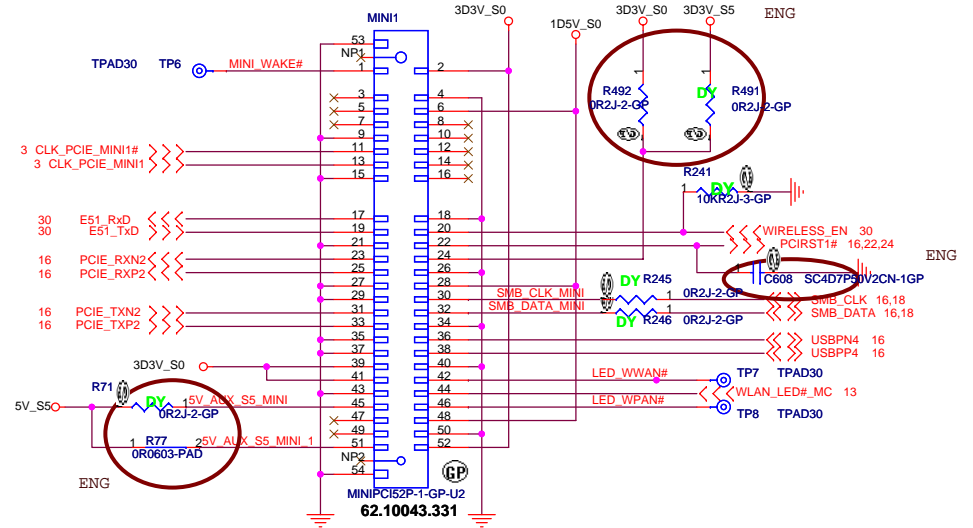
NEWCARD Connector



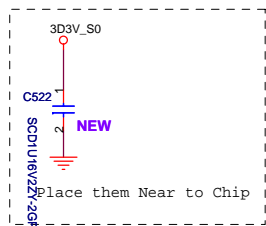
Reserve the symbol for bottom side connector



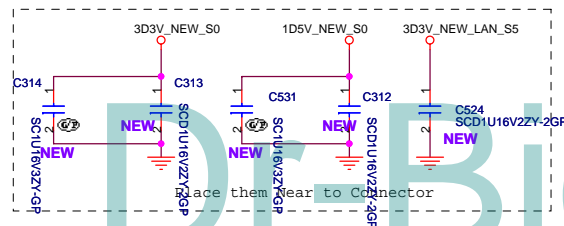
Mini Card Connector



Place near MINIC1



Place them Near to Chip

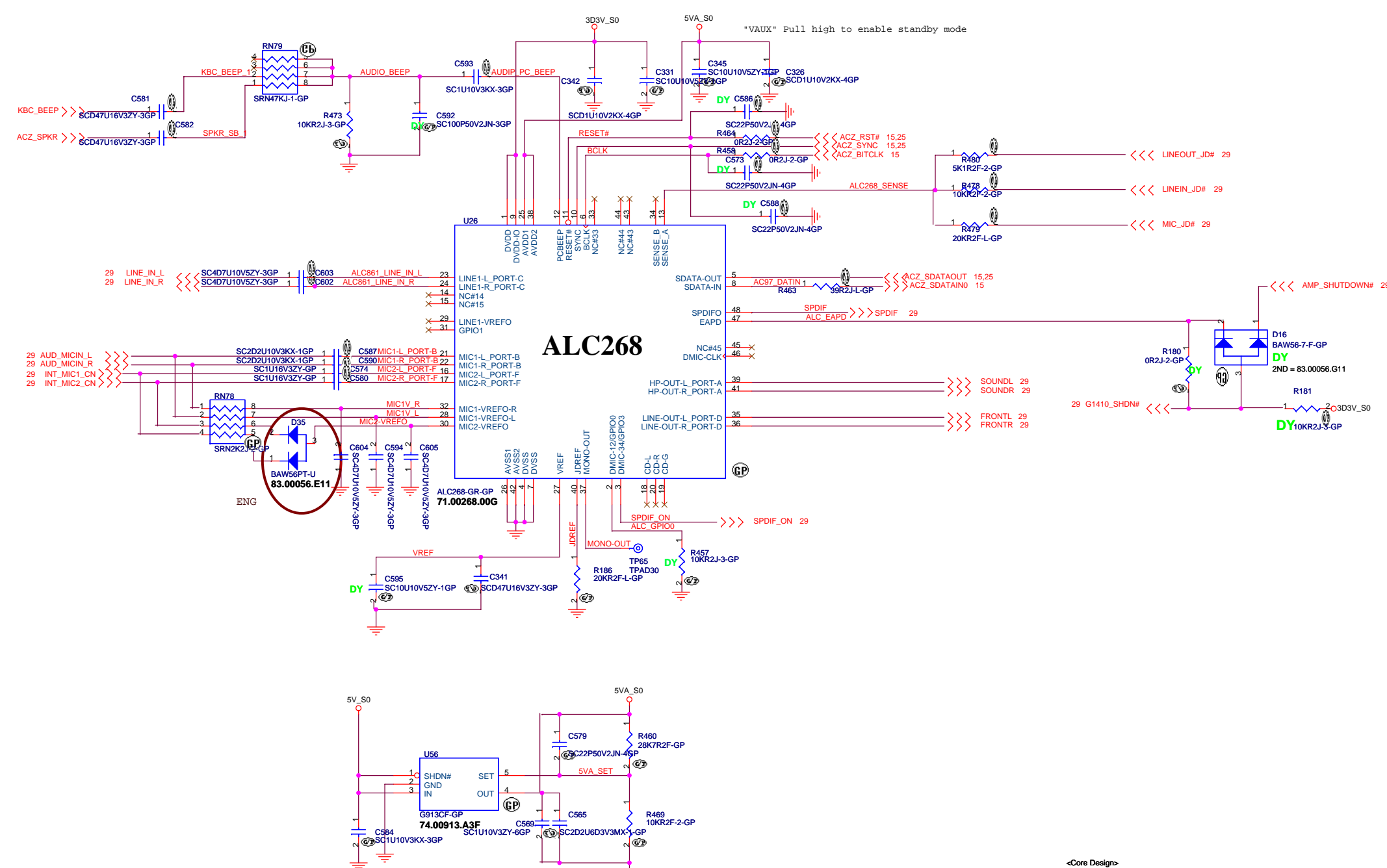


Place them Near to Connector

<Core Design>

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MINI CARD / NEW CARD			
Title	Document Number	Rev	SD
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2nd: 74.09198.A7F
(RT9198-4GPBG)

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<Core Design>

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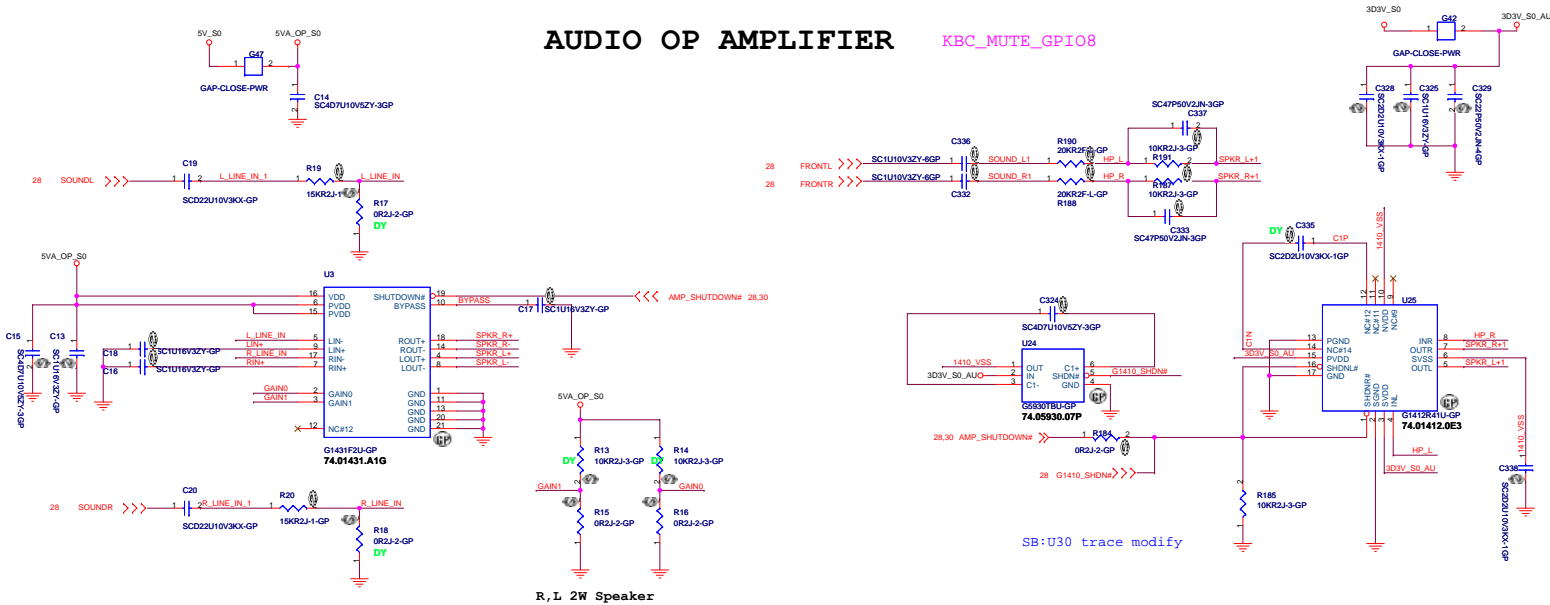
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Size	Document Number	Rev
	HURON	SD

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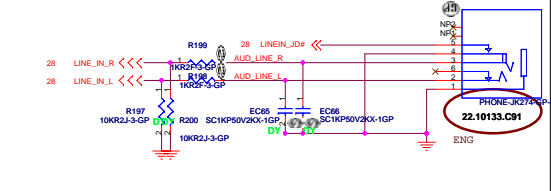
AUDIO OP AMPLIFIER

KBC_MUTE_GPIO8

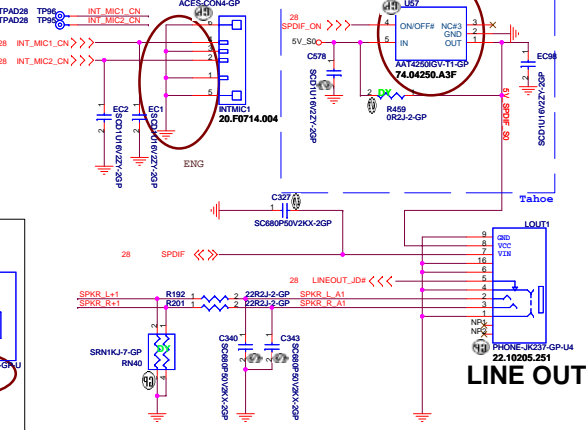


R, L 2W Speaker

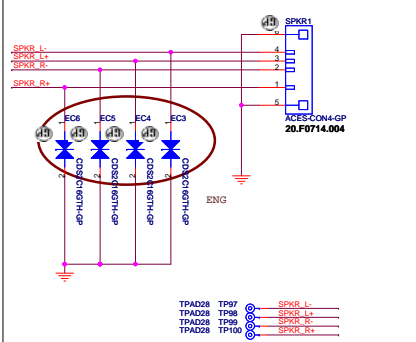
LINE IN



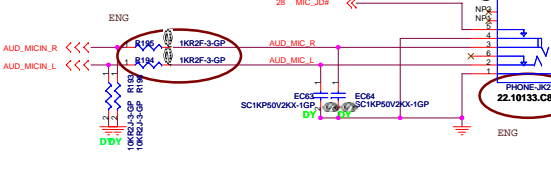
Internal Microphone



Internal Speaker



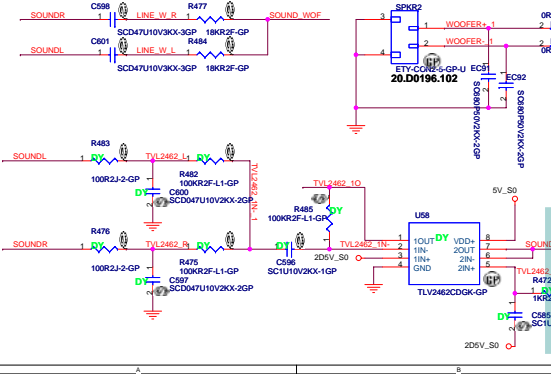
MIC IN



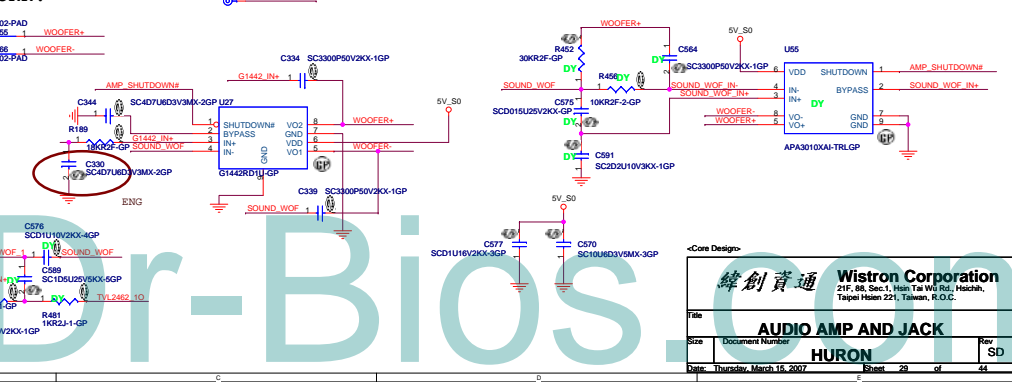
LINE OUT



SUBWOOFER CONN.

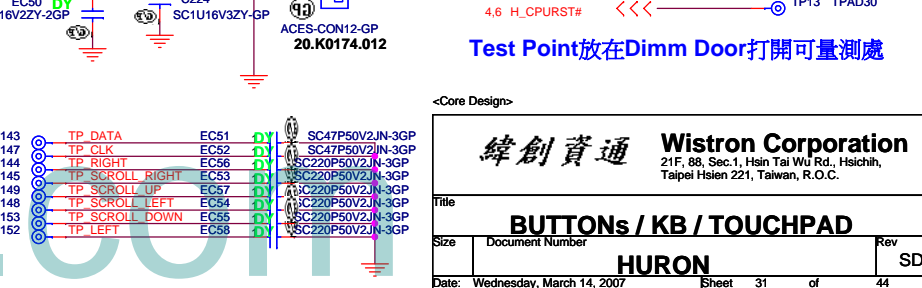
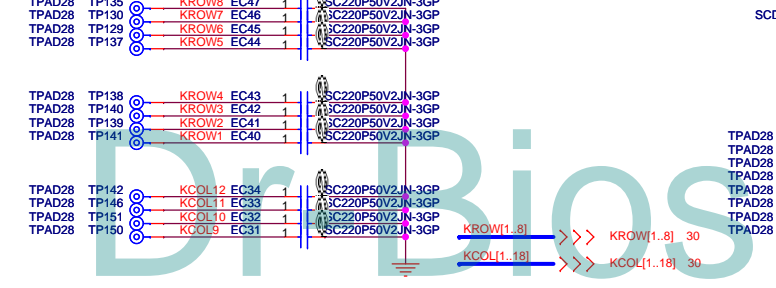
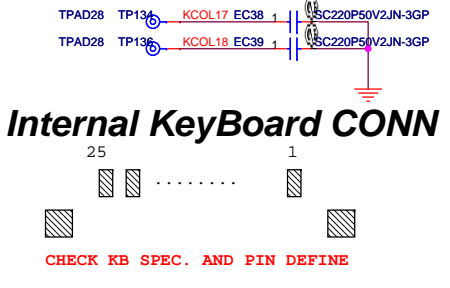
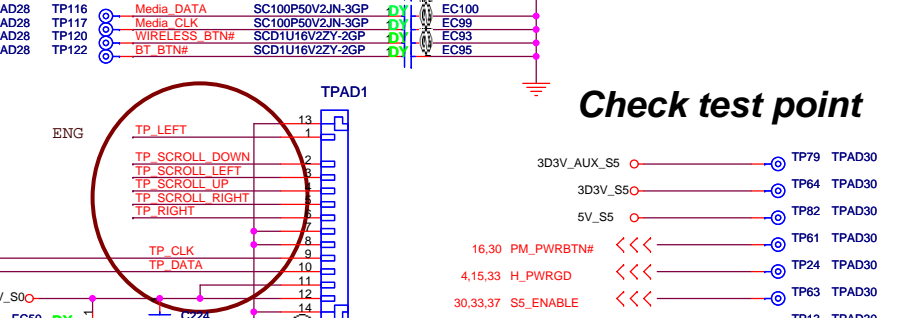
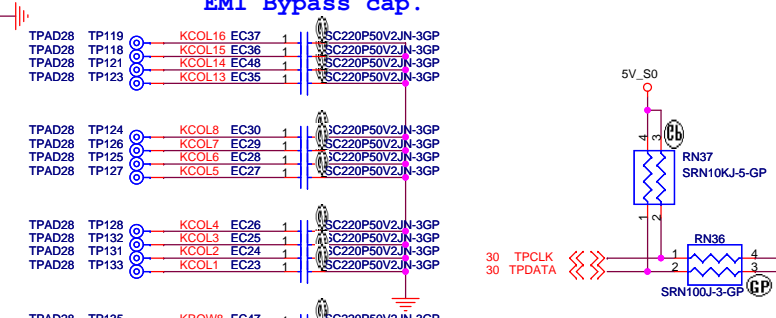
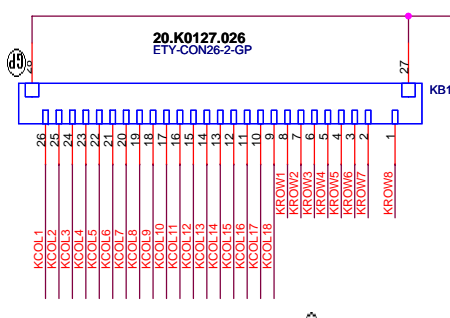
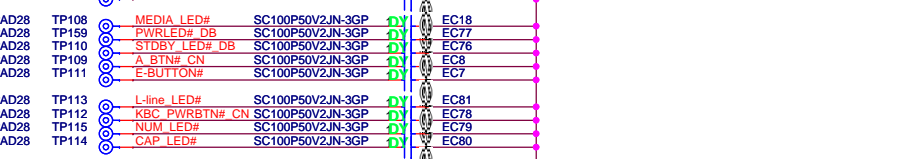
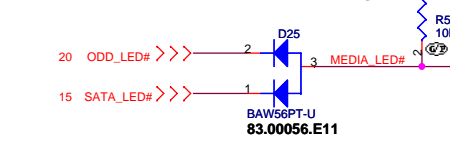
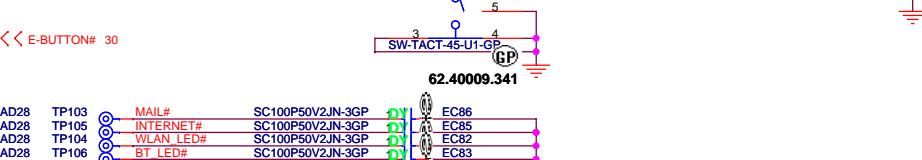
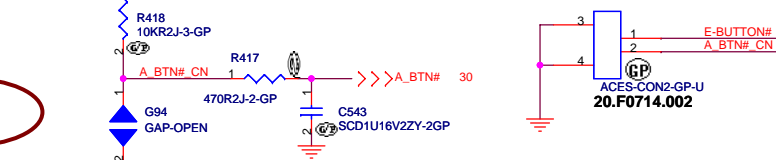
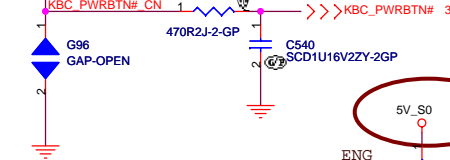
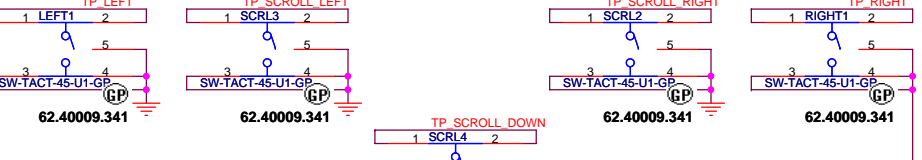
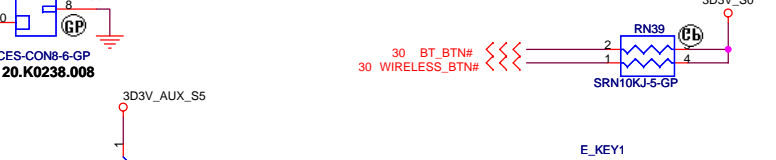
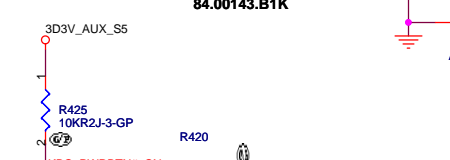
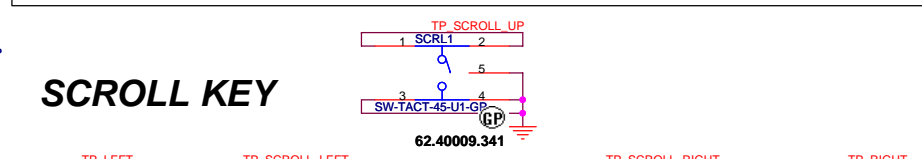
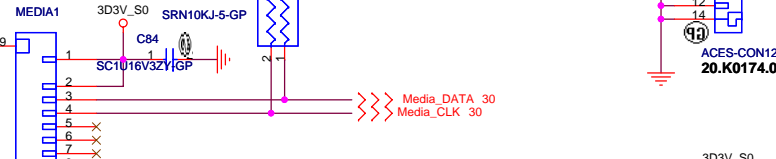
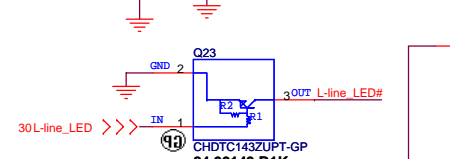
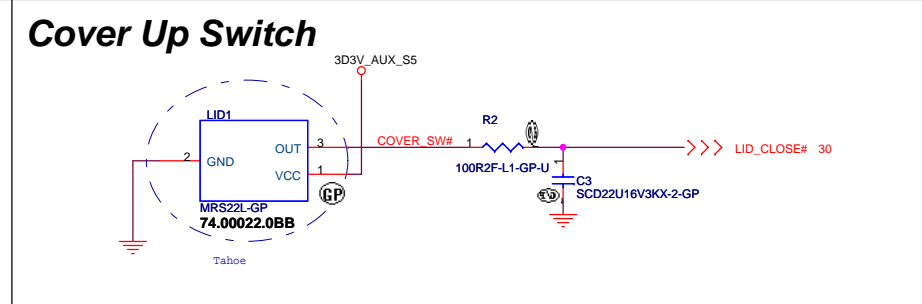
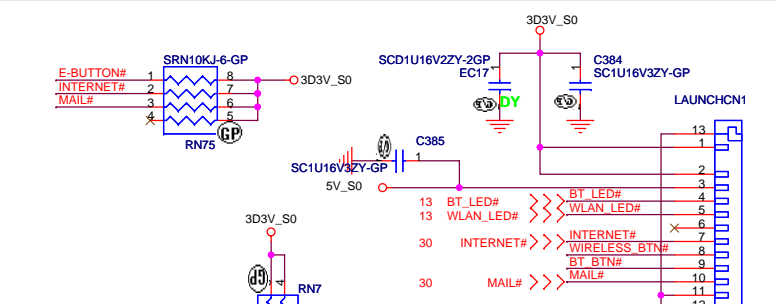
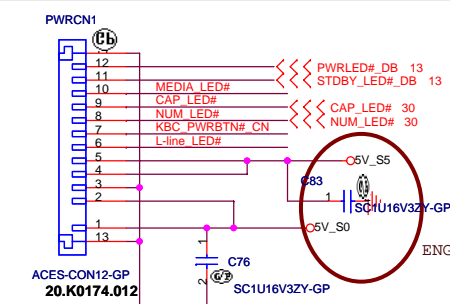


SUBWOOFER AMP.



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File: **AUDIO AMP AND JACK**
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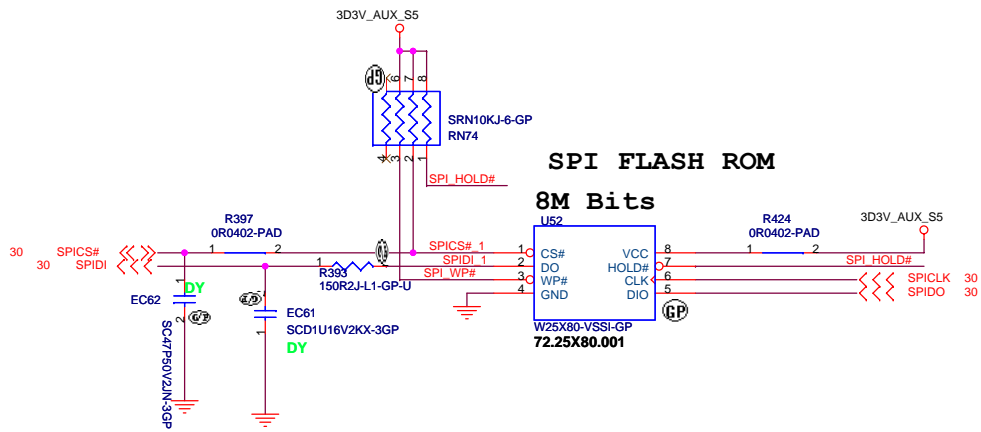


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Buttons / KB / TOUCHPAD

HURON

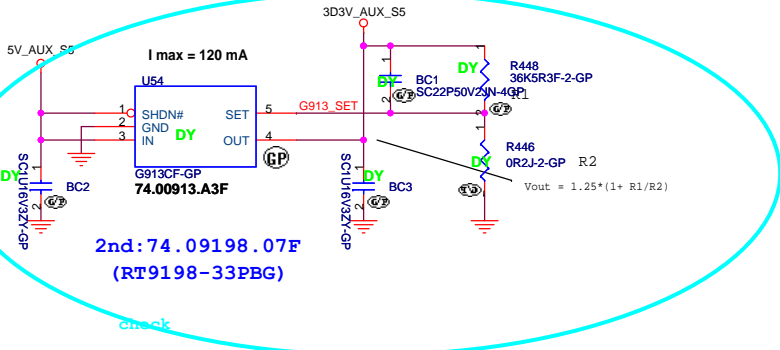
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Size: Document Number
Date: Wednesday, March 14, 2007
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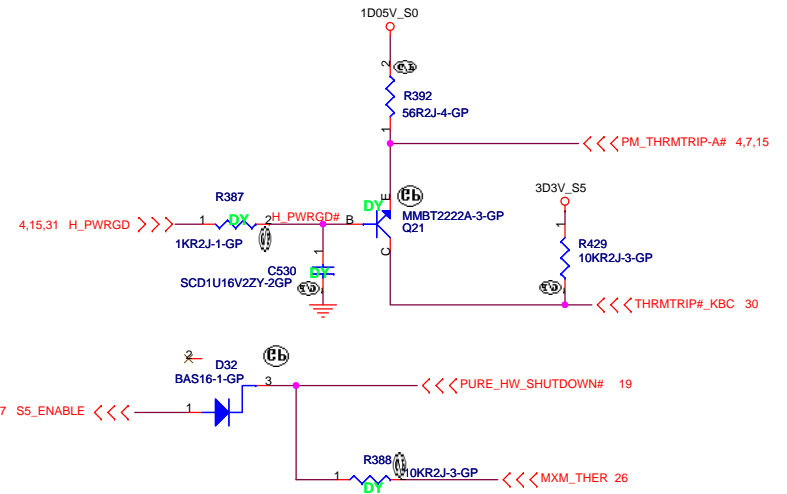
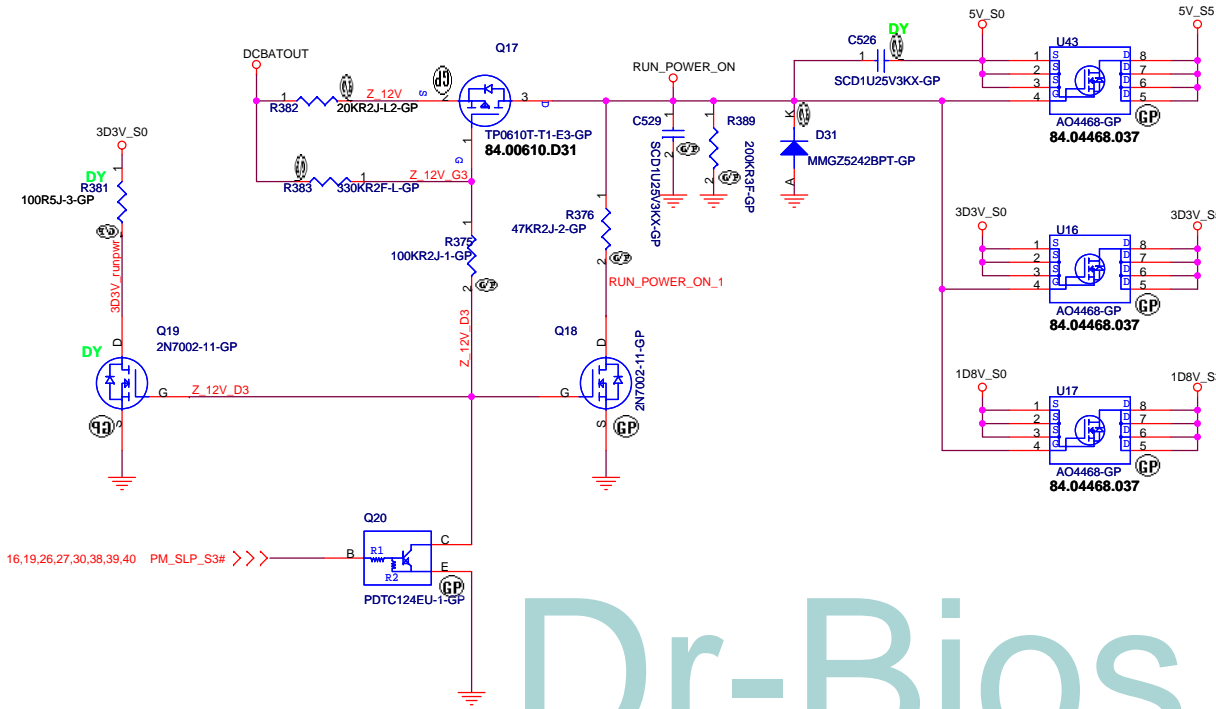
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BIOS			
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Aux Power 3D3V_AUX_S5

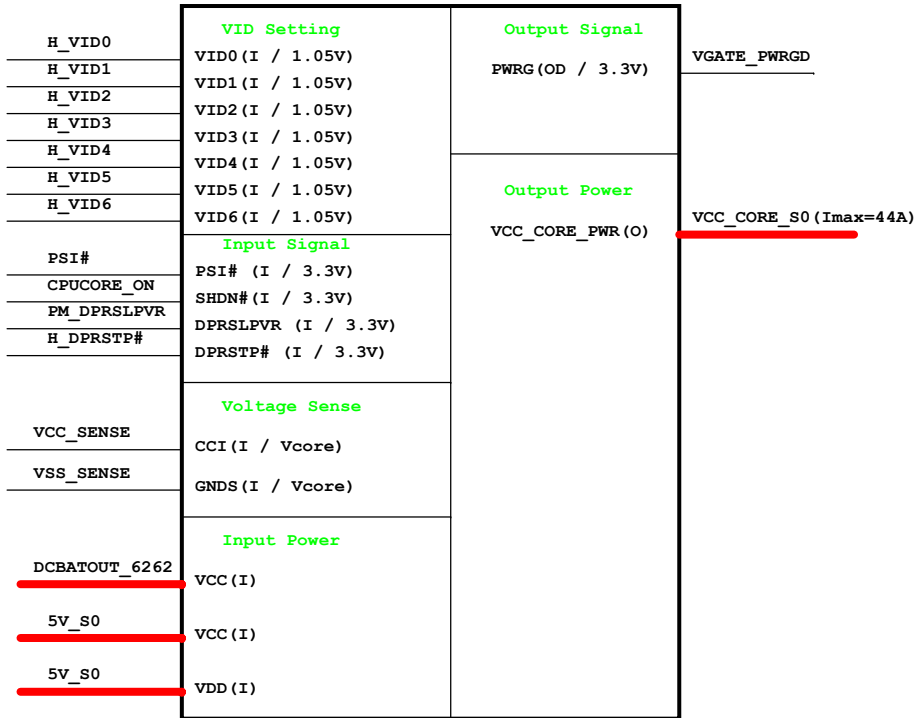


Run Power

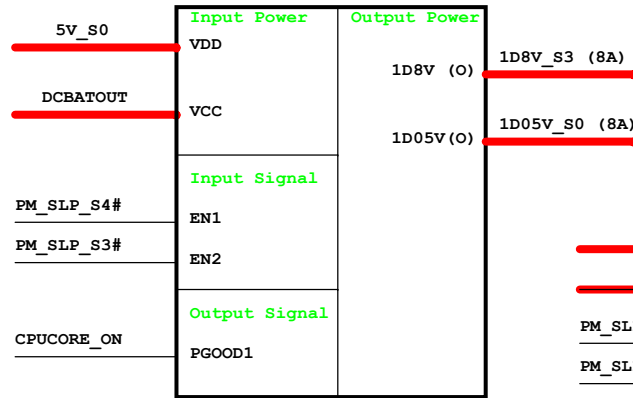


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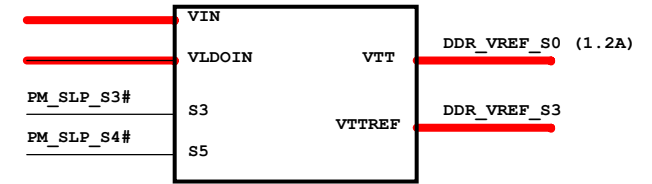
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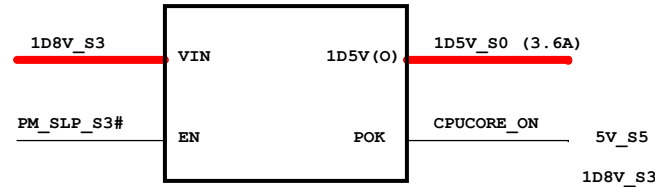
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1D8V_S3 / 1D05V_S0



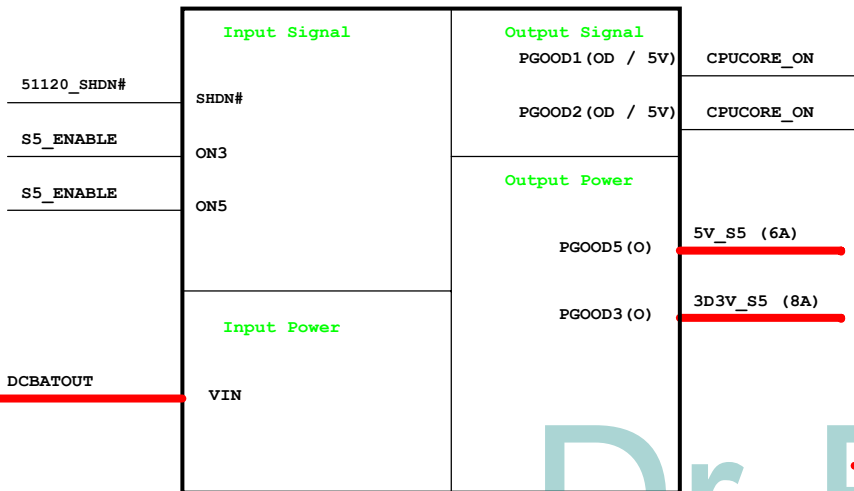
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API5912
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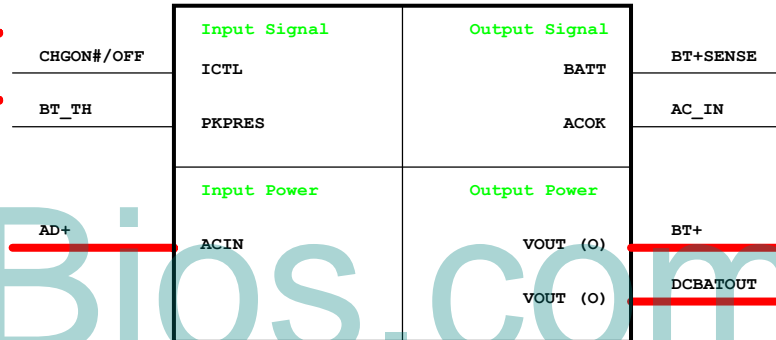
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5V_S5 / 3D3V_S5



APL5308
2D5V_S0



Charger MAX8731A



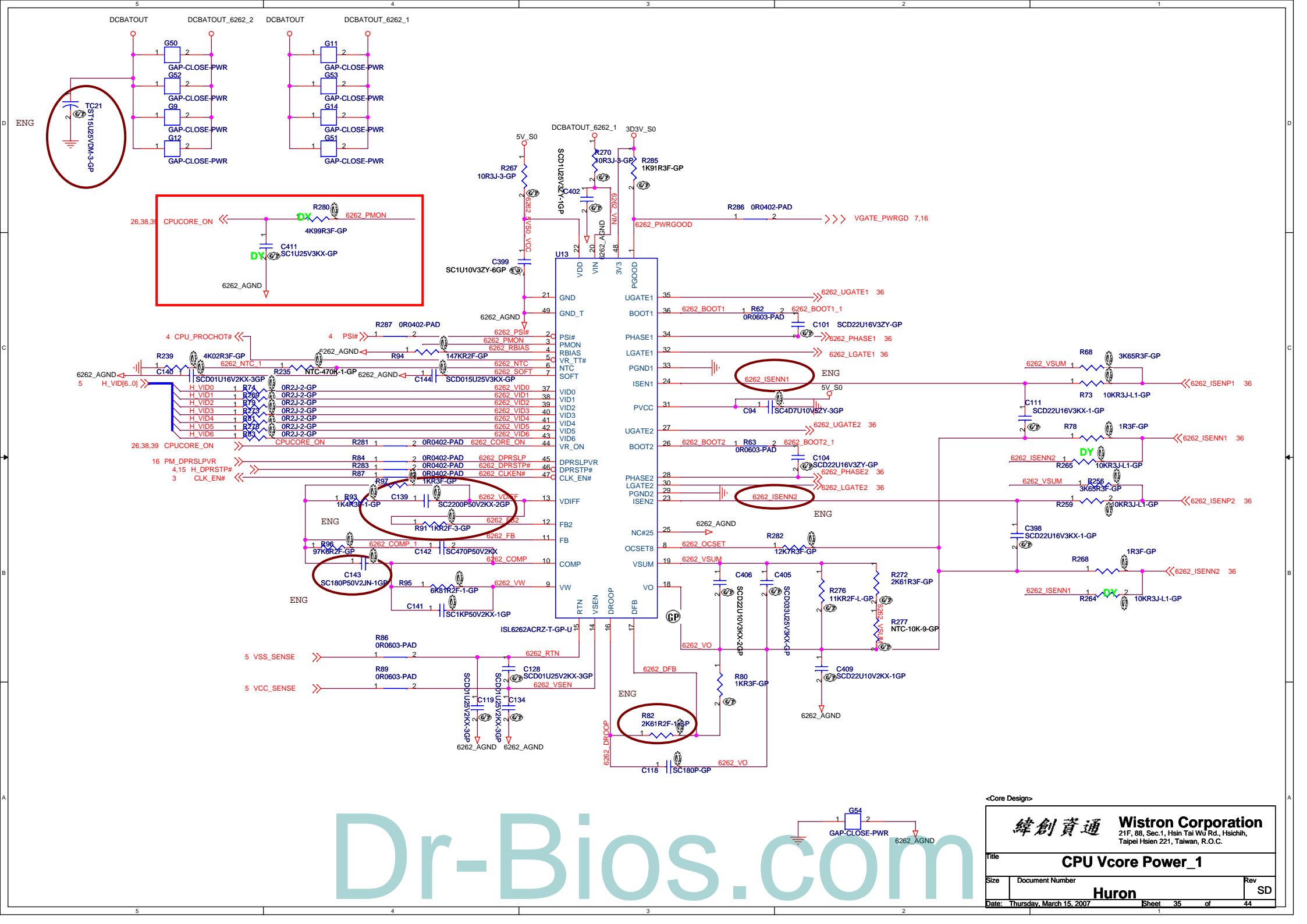
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Title Power Block Diagram		
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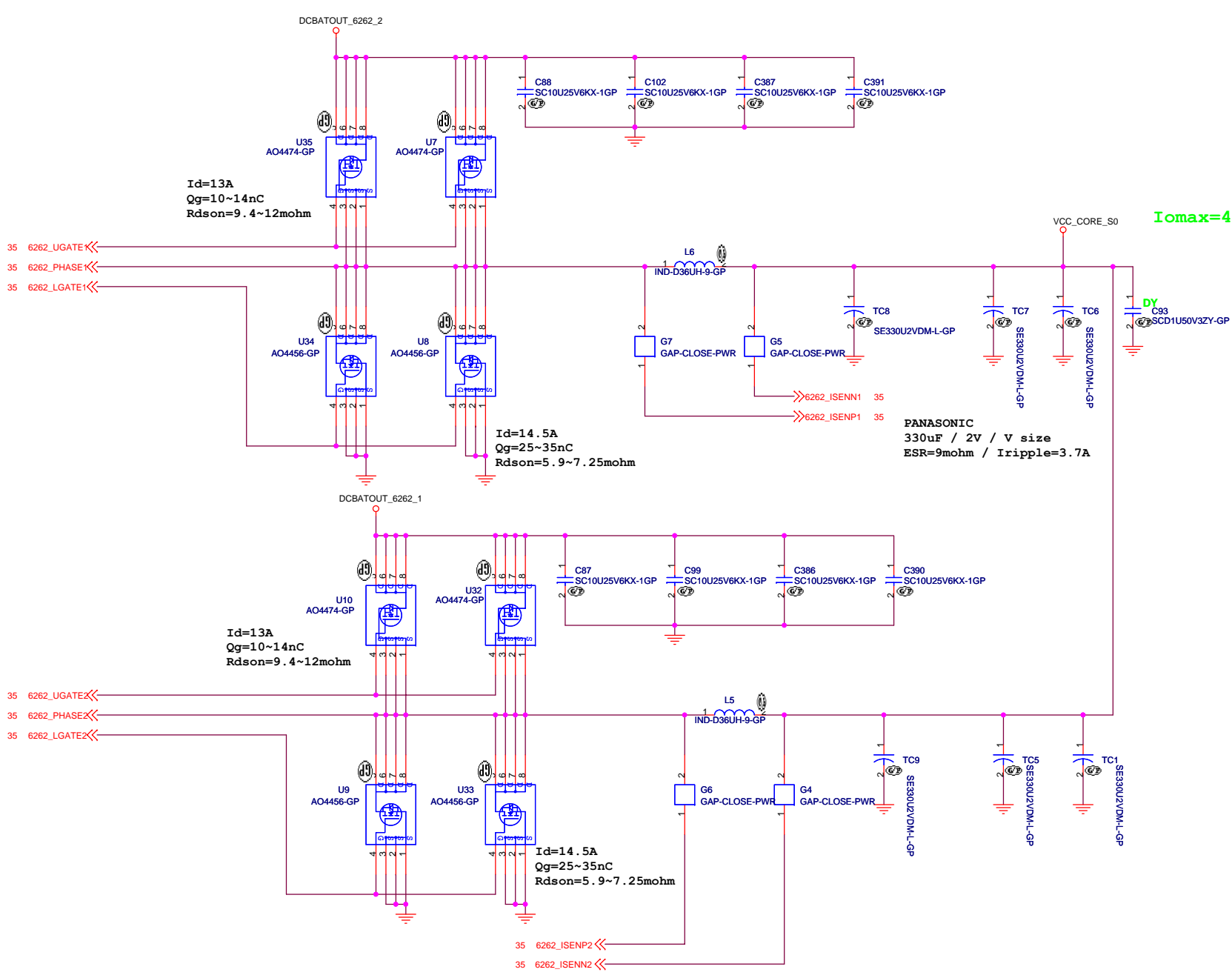


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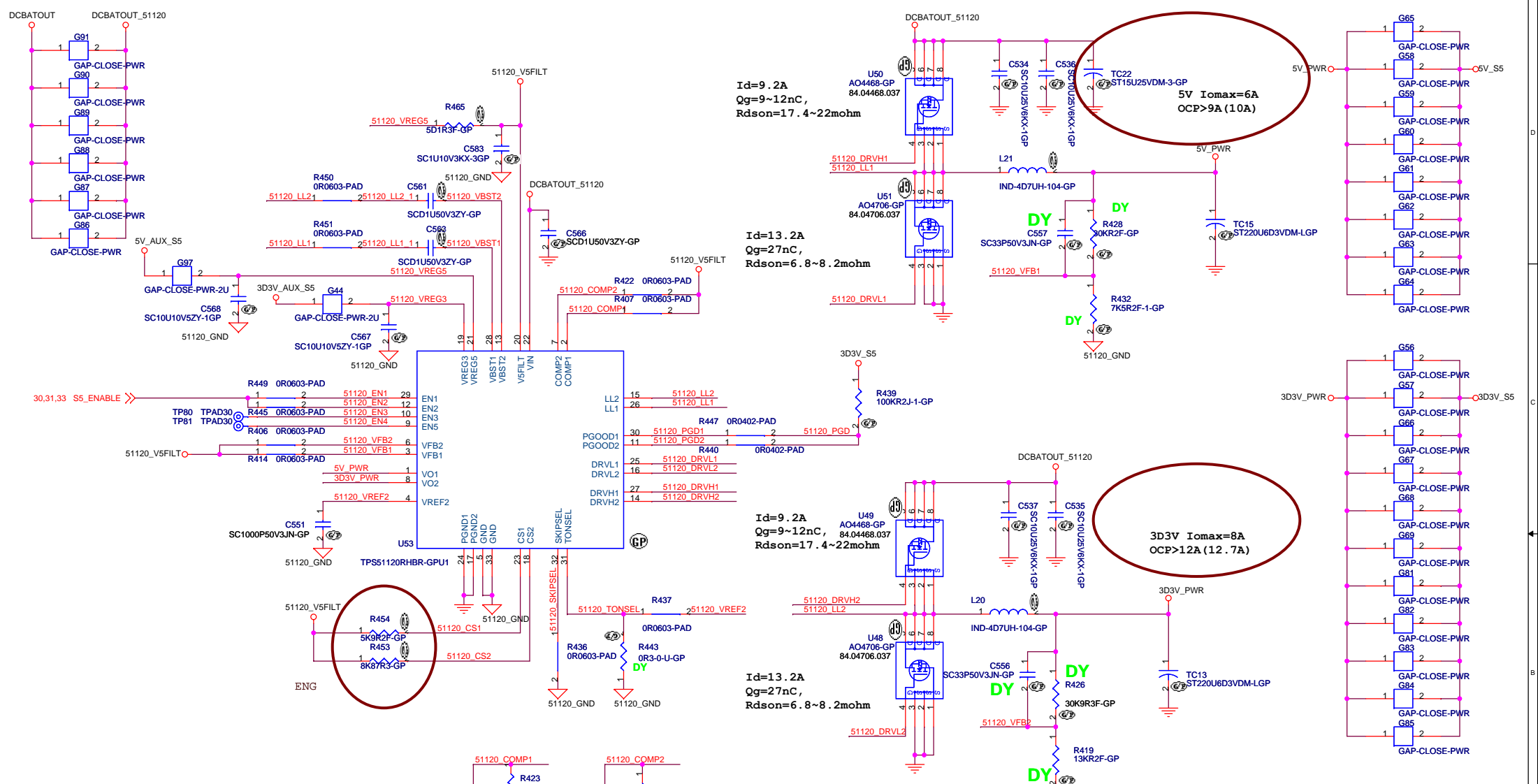
Title CPU Vcore Power_1		
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For TPS51120,
 Vout=5V
 1. If you use a 6.8uH inductor, the minimum ESR is 70m ohm.
 2. If you use a 4.7uH inductor, the minimum ESR is 48m ohm.
 3. If you use a 3.3uH inductor, the minimum ESR is 34m ohm.
 Vout=3.3V
 1. If you use a 4.7uH inductor, the minimum ESR is 51m ohm.
 2. If you use a 3.3uH inductor, the minimum ESR is 36m ohm.
 3. If you use a 2.5uH inductor, the minimum ESR is 27m ohm.

	GND	VREF2	FLOAT	V5FILT
SKIPSEL	AUTOSKIP	AUTOSKIP / FAULTS OFF	PWM	PWM
COMP	N/A	N/A	CURRENT MODE	D-Cap MODE
TONSEL	380k/CH1 590k/CH2	280k/CH1 430k/CH2	220k/CH1 330k/CH2	180k/CH1 280k/CH2
VFB1	N/A	not use	ADJ.	5V Fixed Output
VFB2	N/A	not use	ADJ.	3.3V Fixed Output
EN1, EN2	switcher OFF	not use	Switchchr ON	Switcher ON
EN3, EN5	LDO OFF	not use	LDO ON	VREG3 on

$$V_{out} = 1V * (R1 + R2) / R2$$

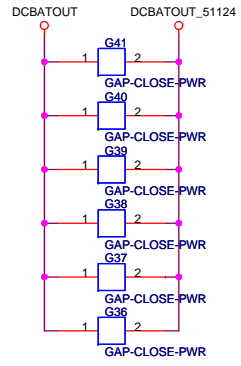
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Id=9.2A
Qg=9~12nC,
Rdson=17.4~22mohm

Id=13.2A
Qg=27nC,
Rdson=6.8~8.2mohm

1D8V Iomax=10A
OCP>15

$V_{out} = 0.758V * (R1 + R2) / R2$

1D05V Iomax=8A
OCP>12A

16,27,30,40 PM_SLP_S4#
9,26,27,30,33,39,40 PM_SLP_S3#

2007.1.19

$V_{trip} (mV) = R_{trip} (Kohm) * 10 (uA)$
 $I_{ocp} = (V_{trip} / R_{dson}) + ((1 / (2 * L * f)) * ((V_{in} - V_{out}) * V_{out}) / V_{in})$

	GND	OPEN	V5FILT
TONSEL	240k/CH1 300k/CH2	300k/CH1 360k/CH2	360k/CH1 420k/CH2

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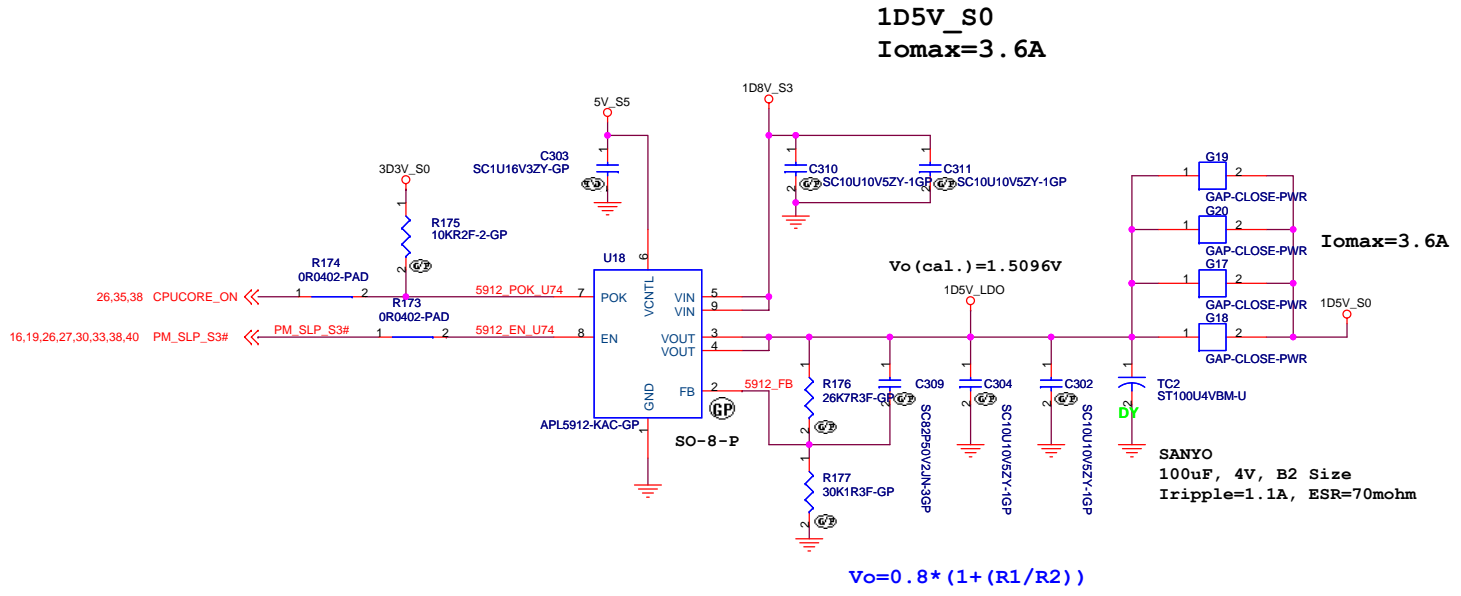
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Title: **TPS51124 1D8V 1D05V**

Size A3 Document Number **Huron** Rev SD

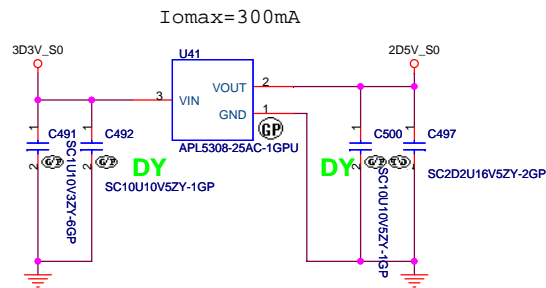
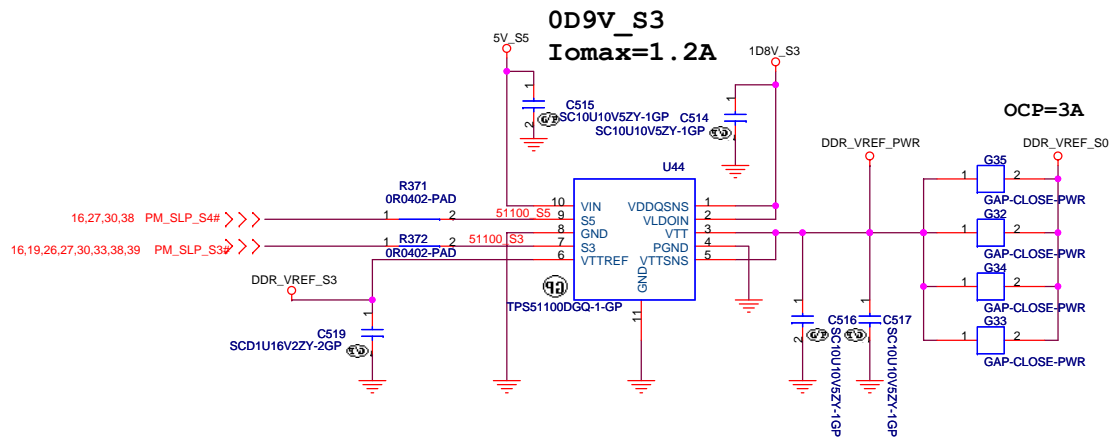
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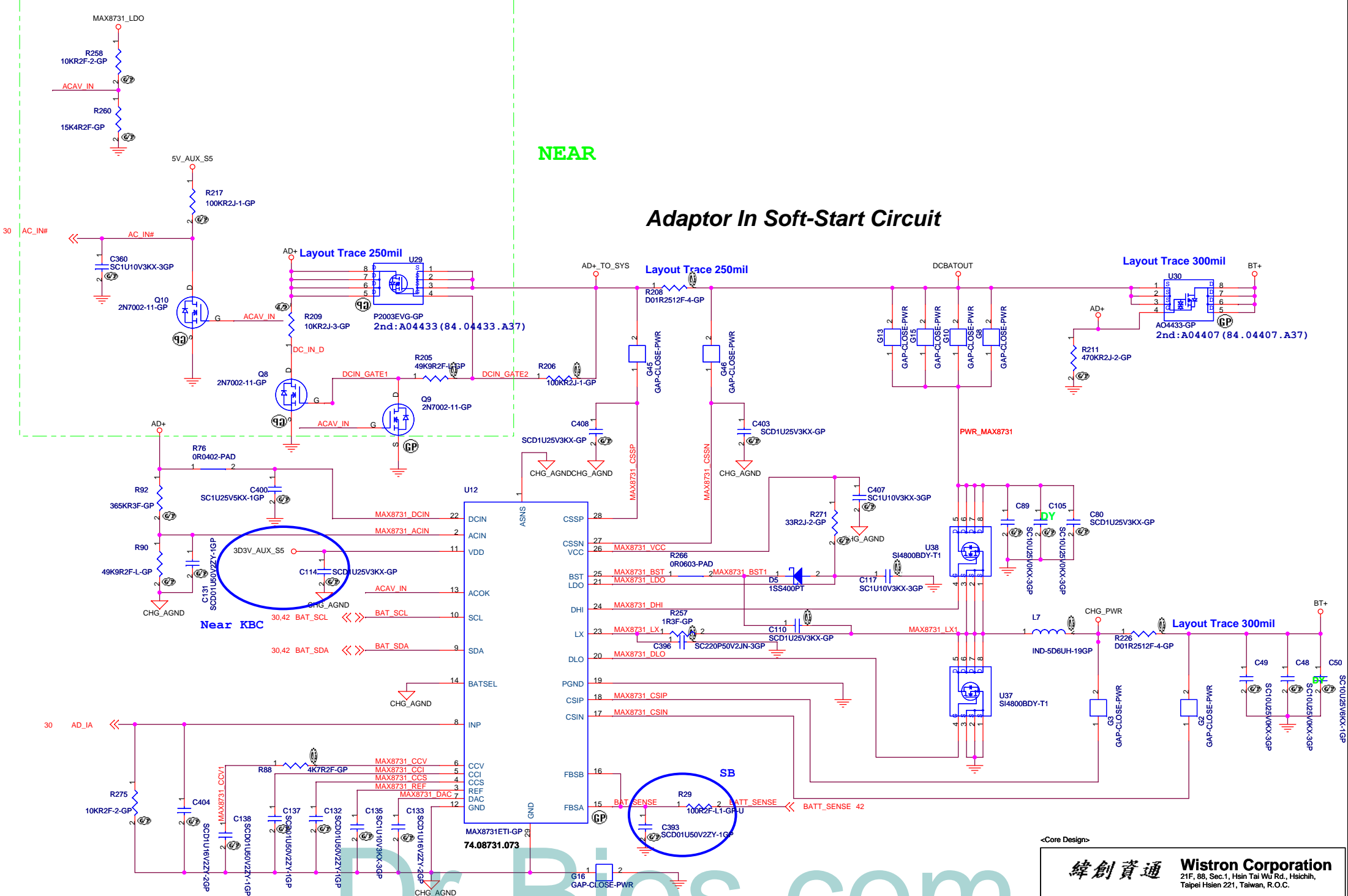
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<p>Title 0D9V/2D5V</p>		
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NEAR

Adaptor In Soft-Start Circuit

Near KBC

SB

Need Check MAXIM Sming Use MAX8731 or MAX8731A

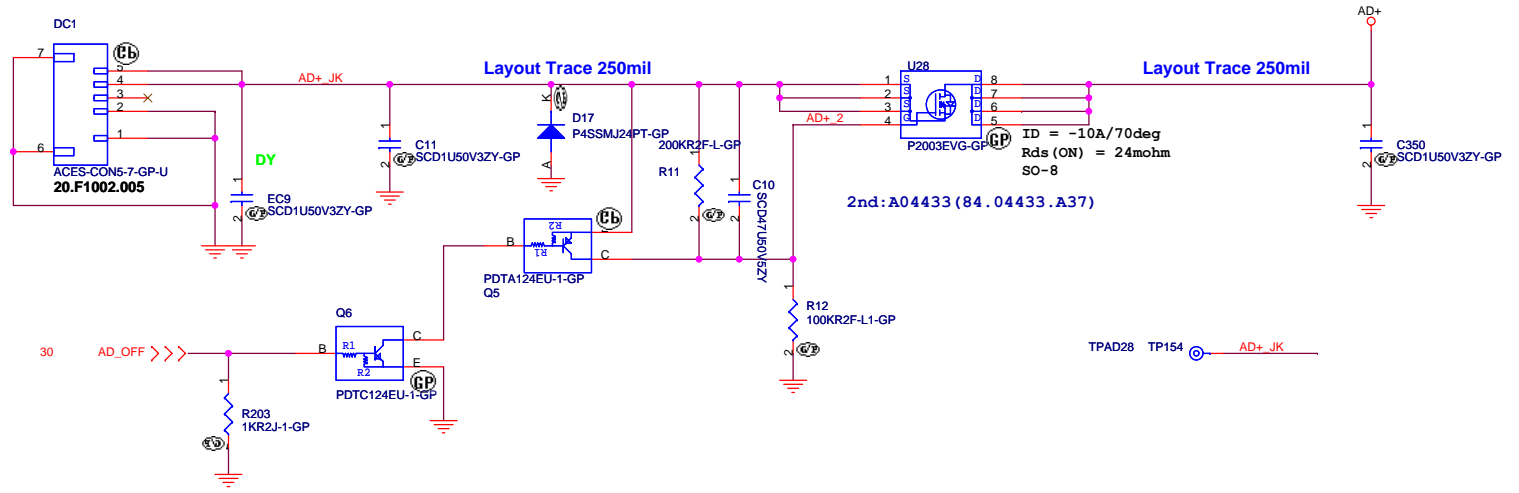
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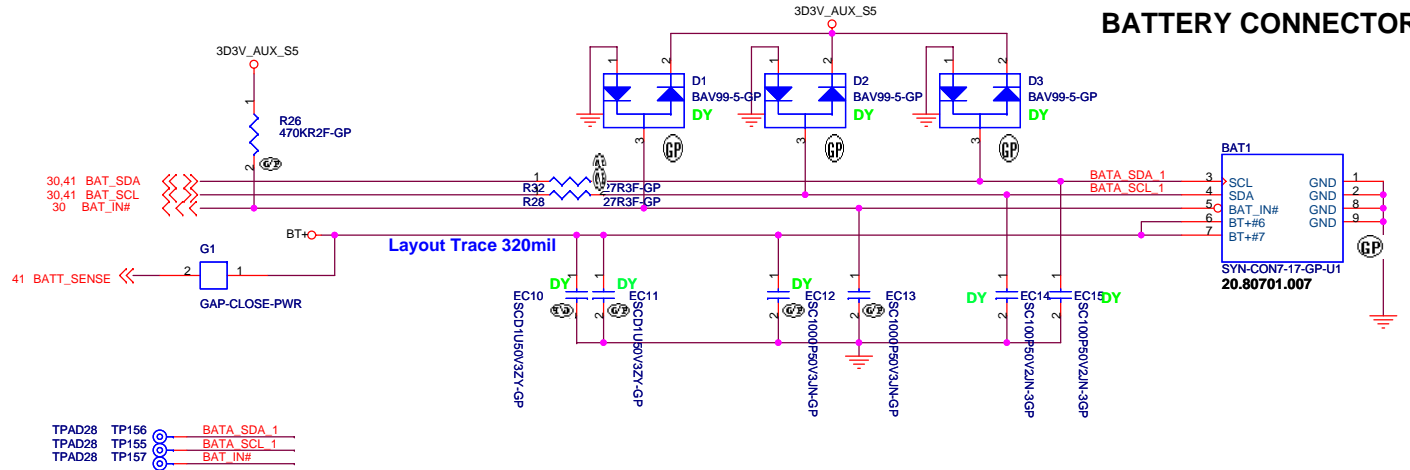
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Adaptor in to generate DCBATOUT



BATTERY CONNECTOR



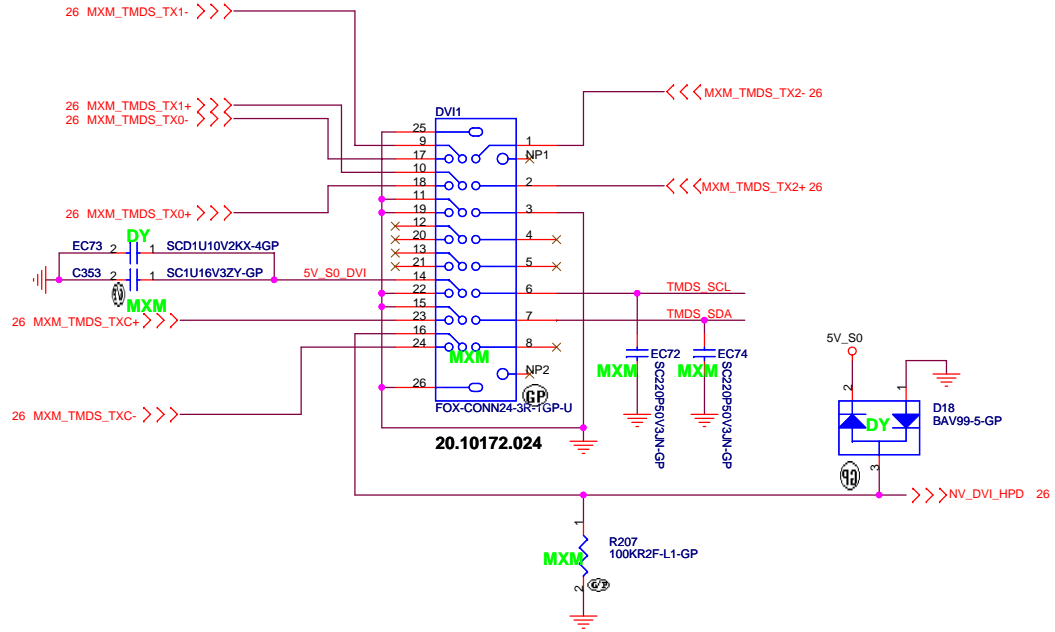
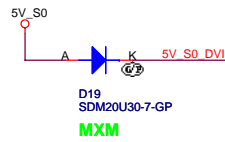
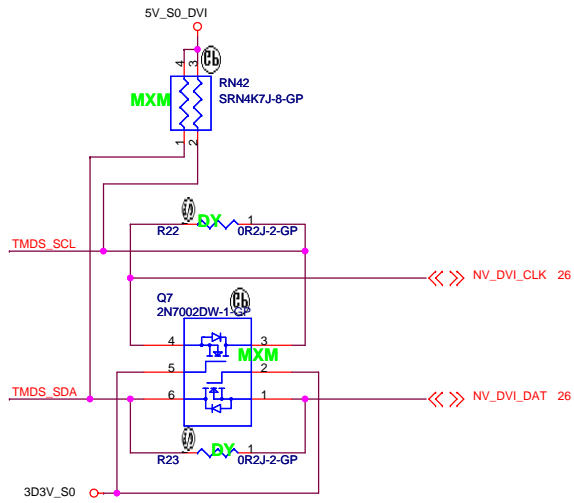
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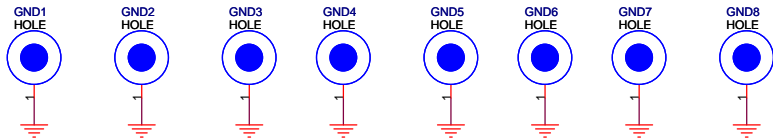
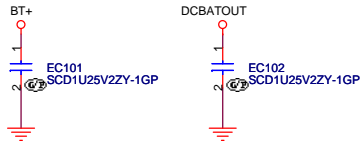
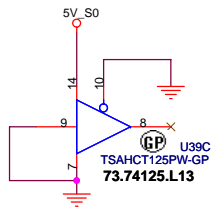
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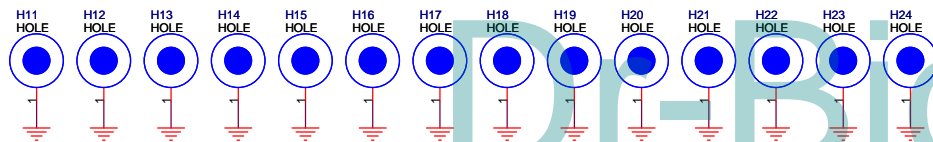
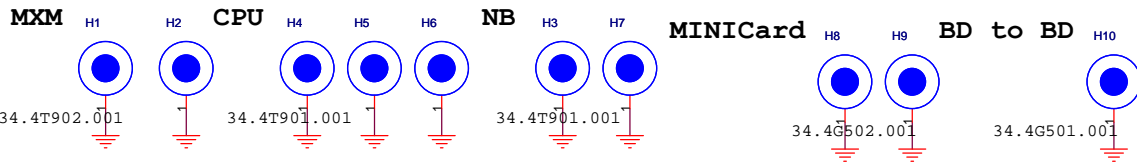
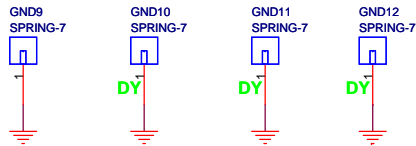


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Title		
DVI CONNECTOR		
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Spring



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