(1) PCIE EDGE CONNECTOR

Title		
	GV-RX550GAMING OC-2GD	
Size Custom	Document Number PCIE EDGE CONNECTOR	Rev 1.0
Date:	Wednesday, April 19, 2017	Sheet 1 of 22

SYMBOL LEGEND

DNI — DO NOT INSTALL
b or # — ACTIVE LOW
BUO — BRING UP ONLY
— DIGITAL GROUND
— ANALOG GROUND

U1B
symbol2

Signal	Pin	Net
PETP0_GFXRP0	AT41	PCIE_RX0P
PETN0_GFXRN0	AT40	PCIE_RX0N
PETP1_GFXRP1	AR41	PCIE_RX1P
PETN1_GFXRN1	AR40	PCIE_RX1N
PETP2_GFXRP2	AP41	PCIE_RX2P
PETN2_GFXRN2	AP40	PCIE_RX2N
PETP3_GFXRP3	AM41	PCIE_RX3P
PETN3_GFXRN3	AM40	PCIE_RX3N
PETP4_GFXRP4	AL41	PCIE_RX4P
PETN4_GFXRN4	AL40	PCIE_RX4N
PETP5_GFXRP5	AK41	PCIE_RX5P
PETN5_GFXRN5	AK40	PCIE_RX5N
PETP6_GFXRP6	AJ41	PCIE_RX6P
PETN6_GFXRN6	AJ40	PCIE_RX6N
PETP7_GFXRP7	AH41	PCIE_RX7P
PETN7_GFXRN7	AH40	PCIE_RX7N
PCIE_REFCLKP	AV33	PCIE_REFCLKP
PCIE_REFCLKN	AU33	PCIE_REFCLKN

REV 0.9t

BAFFIN - REV 0.90x

PCIE TX side:

Signal	Pin	Net	Cap	PositionInPackage	Net out
PCIE_TX0P	AV35	PCIE_TX0P	C150	0.22u/4/X5R/0603/K	PERP0
PCIE_TX0N	AU35	PCIE_TX0N	C151	0.22u/4/X5R/0603/K	PERN0
PCIE_TX1P	AU38	PCIE_TX1P	C152	0.22u/4/X5R/0603/K	PERP1
PCIE_TX1N	AU39	PCIE_TX1N	C153	0.22u/4/X5R/0603/K	PERN1
PCIE_TX2P	AR37	PCIE_TX2P	C154	0.22u/4/X5R/0603/K	PERP2
PCIE_TX2N	AR38	PCIE_TX2N	C155	0.22u/4/X5R/0603/K	PERN2
PCIE_TX3P	AN37	PCIE_TX3P	C156	0.22u/4/X5R/0603/K	PERP3
PCIE_TX3N	AN38	PCIE_TX3N	C157	0.22u/4/X5R/0603/K	PERN3
PCIE_TX4P	AL37	PCIE_TX4P	C158	0.22u/4/X5R/0603/K	PERP4
PCIE_TX4N	AL38	PCIE_TX4N	C159	0.22u/4/X5R/0603/K	PERN4
PCIE_TX5P	AJ37	PCIE_TX5P	C160	0.22u/4/X5R/0603/K	PERP5
PCIE_TX5N	AJ38	PCIE_TX5N	C161	0.22u/4/X5R/0603/K	PERN5
PCIE_TX6P	AG37	PCIE_TX6P	C162	0.22u/4/X5R/0603/K	PERP6
PCIE_TX6N	AG38	PCIE_TX6N	C163	0.22u/4/X5R/0603/K	PERN6
PCIE_TX7P	AE37	PCIE_TX7P	C164	0.22u/4/X5R/0603/K	PERP7
PCIE_TX7N	AE38	PCIE_TX7N	C165	0.22u/4/X5R/0603/K	PERN7

PERSTB	AV41	PERSTB_BUF	IN	(1)
PX_EN	AC41	PX_EN	OUT	(15,16,17)

R151 5K/4 5% DNI <PositionInPackage>

| PCIE_ZVSS | AU41 | PCIE_ZVSS | R150 200/41 1% <PositionInPackage> |

KEEP THE TRACE SHORT

STITCHING CAPS

+VDDC

C180	0.22u/4/X5R/0603/K		C186	0.22u/4/X5R/0603/K
C181	0.22u/4/X5R/0603/K		C187	0.22u/4/X5R/0603/K
C182	0.22u/4/X5R/0603/K		C188	0.22u/4/X5R/0603/K
C183	0.22u/4/X5R/0603/K		C189	0.22u/4/X5R/0603/K
C184	0.22u/4/X5R/0603/K		C190	0.22u/4/X5R/0603/K
C185	0.22u/4/X5R/0603/K		C191	0.22u/4/X5R/0603/K

Title	GV-RX550GAMING OC-2GD		
Size	Document Number		Rev
Custom	BAFFIN PCIE		1.0
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U1C symbol3

DQA0_[31..0]   BI   DQA1_[31..0]   BI

MAA0_[9..0]   OUT   MAA1_[9..0]   OUT

U1D symbol4

DQB0_[31..0]   BI   DQB1_[31..0]   BI

MAB0_[9..0]   OUT   MAB1_[9..0]   OUT

WCKA0_0 / WCKA0B_0   WCKA1_0 / WCKA1B_0
WCKA0_1 / WCKA0B_1   WCKA1_1 / WCKA1B_1
EDCA0_0 / EDCA0_1 / EDCA0_2 / EDCA0_3
EDCA1_0 / EDCA1_1 / EDCA1_2 / EDCA1_3
DDBIA0_0 / DDBIA0_1 / DDBIA0_2 / DDBIA0_3
DDBIA1_0 / DDBIA1_1 / DDBIA1_2 / DDBIA1_3
ADBIA0   ADBIA1
CSA0B_0   CSA1B_0
CASA0B / RASA0B / WEA0B   CASA1B / RASA1B / WEA1B
CKEA0   CKEA1
CLKA0 / CLKA0B   CLKA1 / CLKA1B
MEM_CALRA   MVREFDA

WCKB0_0 / WCKB0B_0   WCKB1_0 / WCKB1B_0
WCKB0_1 / WCKB0B_1   WCKB1_1 / WCKB1B_1
EDCB0_0 / EDCB0_1 / EDCB0_2 / EDCB0_3
EDCB1_0 / EDCB1_1 / EDCB1_2 / EDCB1_3
DDBIB0_0 / DDBIB0_1 / DDBIB0_2 / DDBIB0_3
DDBIB1_0 / DDBIB1_1 / DDBIB1_2 / DDBIB1_3
ADBIB0   ADBIB1
CSB0B_0   CSB1B_0
CASB0B / RASB0B / WEB0B   CASB1B / RASB1B / WEB1B
CKEB0   CKEB1
CLKB0 / CLKB0B   CLKB1 / CLKB1B
MEM_CALRB   MVREFDB

USE INTERNAL VREF
MVREFD = 0.7 * VDDR1

BAFFIN - REV 0.90/X   REV 0.91

DRAM_RST_A   OUT
DRAM_RST_B   OUT   DRAM_RST_B_R

R3600 120/4/1 1% DNI
R3601 40.2/4/1/X 1% DNI
R3602 100/4/1/X 1%, DNI
R3603 5.1K/4/1/X 1%

R3610 120/4/1 1% DNI
R3611 40.2/4/1/X 1% DNI
R3612 100/4/1/X 1% DNI
R3613 1%
R3614 10/4/1 1%
R3615 49.9/4/1 1%
C3611 120pF/NPO/50VU 50V

+MVDD

(4) GDDR5 CHAB x32

2016.4.16 Modify Size By Bingqi.cui
2016.4.16 Modify Size By Bingqi.cui
2016.4.16 Modify Size By Bingqi.cui
2016.4.16 Modify Size By Bingqi.cui

Title		
	GV-RX550GAMING OC-2GD	
Size	Document Number	Rev
Custom	PCI Express	1.0
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(5) BAFFIN GPIO STRAPS CLK

PIN STRAPS

PINSTRAP_BIF_TX_HALF_SWING (0)
PINSTRAP_BIF_GEN3_EN_A (1)
PINSTRAP_BIF_CLK_PM_EN (0)
PINSTRAP_SMS_EN_HARD (0)
PINSTRAP_ROM_CONFIG [0] IF BIOS_ROM_EN = 1 (1)
PINSTRAP_BIF_MEM_AP_SIZE [0] IF BIOS_ROM_EN = 0
PINSTRAP_ROM_CONFIG [1] IF BIOS_ROM_EN = 1 (0)
PINSTRAP_BIF_MEM_AP_SIZE [1] IF BIOS_ROM_EN = 0
PINSTRAP_ROM_CONFIG [2] IF BIOS_ROM_EN = 1 (0)
PINSTRAP_BIF_MEM_AP_SIZE [2] IF BIOS_ROM_EN = 0
PINSTRAP_EFUSE_RD_DISABLE (0)
PINSTRAP_TX_DEEMPH_EN (0)
PINSTRAP_BIOS_ROM_EN (1)
PINSTRAP_BIF_VGA_DIS (0)
PINSTRAP_AUD [0] (0)
PINSTRAP_AUD [1] (0)
PINSTRAP_AUD_PORT_CONN [0] (0)
PINSTRAP_AUD_PORT_CONN [1] (0)
PINSTRAP_AUD_PORT_CONN [2] (0)
PINSTRAP_BOARD_CONFIG [0] (0)
PINSTRAP_BOARD_CONFIG [1] (0)
PINSTRAP_BOARD_CONFIG [2] (0)
PINSTRAP_SMBUS_ADDR [0]
PINSTRAP_SMBUS_ADDR [1]

KEEP THE CLOCK PATH
AS SHORT AS POSSIBLE

2016.5.15 MODIFY FOR 10LF0-041800-02R BY BINGQI.CUI

2016.5.15 ADD Close to GPU Add by Bingqi.cui

ROM_3V3
VIDEO BIOS
FIRMWARE

SCL/SDA

DEVICE	ADDRESS
ADS274	0x5C
RT9403	0x62
VTMM II	

DDCVGACLK/DAT

DEVICE	ADDRESS
LM96063	0x98

HDMI

DVI
DP

2016.5.20 Modify PCB Footprint By Bingqi.cui

U1G
symbol7

BAFFIN - REV 0.90/X
REV 0.91

Pin	Signal
AY32	TX2P_DPB0P
BA32	TX2M_DPB0N
AY31	TX1P_DPB1P
BA31	TX1M_DPB1N
AY30	TX0P_DPB2P
BA30	TX0M_DPB2N
AY28	TXCBP_DPB3P
BA28	TXCBM_DPB3N
AM21	DDCAUX0P
AP21	DDCAUX0N
AY36	TX5P_DPA0P
BA36	TX5M_DPA0N
AY35	TX4P_DPA1P
BA35	TX4M_DPA1N
AY34	TX3P_DPA2P
BA34	TX3M_DPA2N
AY33	TXCAP_DPA3P
BA33	TXCAM_DPA3N
AR23	DDCAUX4P
AP23	DDCAUX4N
BA12	AUX_2VSS

Capacitors: C1720–C1727, C1728–C1733, 0.1u/4/X7R/6.3V/K

Resistors R1720–R1733, 49Ω/4/1 1%

Signal labels (right side): ABTX2P, ABTX2N, ABTX1P, ABTX1N, ABTX0P, ABTX0N, ABTXCP, ABTXCN, ABTX5P, ABTX5N, ABTX4P, ABTX4N, ABTX3P, ABTX3N

R1700 150/4/1 1% AUX_2VSS

+12V_BUS
R1710 100K/4/1 5%
DVI_HDMI_EN
Q1700 NX7002AK/SOT23/17pF/4.5
C1710 0.1u/4/X7R/16V/K 16V
DPAB_GND
DDC5CLK_DVI
DDC5DAT_DVI

+3.3V_BUS
R1701 10K/4 5%
R1702 10K/4 5%
Q1702B 2N7002DW/SOT363/50pF/7rm
DDCAUX5P
DDCAUX5N
Q1702A 2N7002DW/SOT363/50pF/7rm

+5V_VESA
R1703 2.2K/4/1 5%
R1704 2.2K/4/1 5%

+3.3V_BUS
Q1701 MMBT3904/SOT23/200mA30
R1705 20K/4/15%
R1706 10K/4 5%
GENERICF_HPD4
HPD_DVI

J1500
DVI-I_W/SHIELD

Pin	Signal
25	CASE
1	TMDS_Data2-
2	TMDS_Data2+
3	TMDS_Data2/4_Shield
4	TMDS_Data4-
5	TMDS_Data4+
6	DDC_Clock
7	DDC_Data
8	Analog_VSYNC
9	TMDS_Data1-
10	TMDS_Data1+
11	TMDS_Data1/3_Shield
12	TMDS_Data3-
13	TMDS_Data3+
14	+5V_Power
15	GND_(for_+5V)
16	Hot_Plug_Detect
17	TMDS_Data0-
18	TMDS_Data0+
19	TMDS_Data0/5_Shield
20	TMDS_Data5-
21	TMDS_Data5+
22	TMDS_Clock_Shield
23	TMDS_Clock+
24	TMDS_Clock-
C1	Analog_Red
C2	Analog_Green
C3	Analog_Blue
C4	Analog_HYNC
C5	Analog_GND
C6	Analog_GND#C6
26	CASE#M2
27	CASE#M5
28	CASE#M4
29	CASE#M3
30	CASE#M6

Signal labels (left of J1500): ABTX2N, ABTX2P, ABTX4P, ABTX4N, DDC5CLK_DVI, DDC5DAT_DVI, ABTX1N, ABTX3N, ABTX3P, +5V_VESA, HPD_DVI, ABTX0N, ABTX0P, ABTX5N, ABTX5P, ABTXCP, ABTXCN

+5V_VESA
C1700 4.7u/6.3/SR/6.3V/K 16V

2016.6.14 Add By Bingqi.cui

SCREW1700
SCREW1701

OPTIONAL ESD PROTECTION DIODES

Ref	Part	Signal
D1700	ESD5V0U1U-0ILRHX	ABTX2P
D1701	ESD5V0U1U-0ILRHX	ABTX2N
D1702	ESD5V0U1U-0ILRHX	ABTX1P
D1703	ESD5V0U1U-0ILRHX	ABTX1N
D1704	ESD5V0U1U-0ILRHX	ABTX0P
D1705	ESD5V0U1U-0ILRHX	ABTX0N
D1706	ESD5V0U1U-0ILRHX	ABTXCP
D1707	ESD5V0U1U-0ILRHX	ABTXCN
D1708	ESD5V0U1U-0ILRHX	ABTX5P
D1709	ESD5V0U1U-0ILRHX	ABTX5N
D1710	ESD5V0U1U-0ILRHX	ABTX4P
D1711	ESD5V0U1U-0ILRHX	ABTX4N
D1712	ESD5V0U1U-0ILRHX	ABTX3P
D1713	ESD5V0U1U-0ILRHX	ABTX3N
D1714	ESD5V0U1U-0ILRHWX	DDC5CLK_DVI
D1715	ESD5V0U1U-0ILRHX	DDC5DAT_DVI

Title	GV-RX550GAMING OC-2GD	
Size: Custom	Document Number: BAFFIN TMDPAB - dDVI	Rev: 1.0
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OPTIONAL ESD PROTECTION DIODES

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Size	Document Number		Rev
Custom	BAFFIN TMDPCD - HDMI DP		1.0
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U10
symbol15

TX0P_DPE0P	AY18
TX0M_DPE0N	BA18
TX1P_DPE1P	AY16
TX1M_DPE1N	BA16
TX2P_DPE2P	AY15
TX2M_DPE2N	BA15
TX3P_DPE3P	AY14
TX3M_DPE3N	BA14

DDCAUXSP AU27 DDCAUXSP OUT (6)
DDCAUXSN AV27 DDCAUXSN BI   (6)

REV 0.91
BAFFIN - REV 0.90.X

Title
GV-RX550GAMING OC-2GD

Size   Document Number   Rev
Custom   BAFFIN TMDPE - NC   1.0
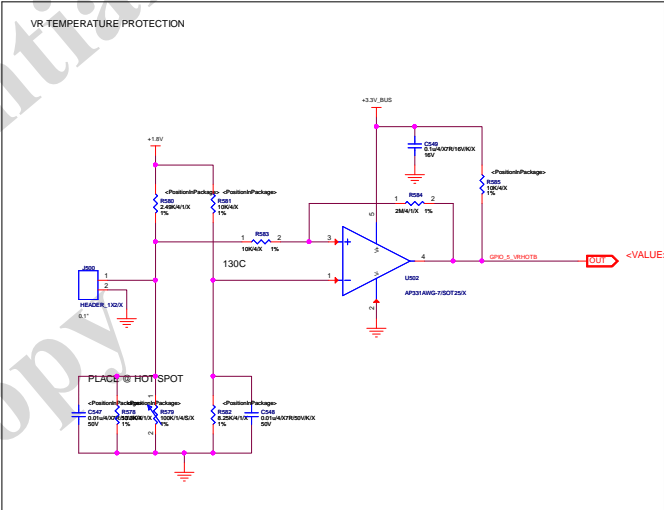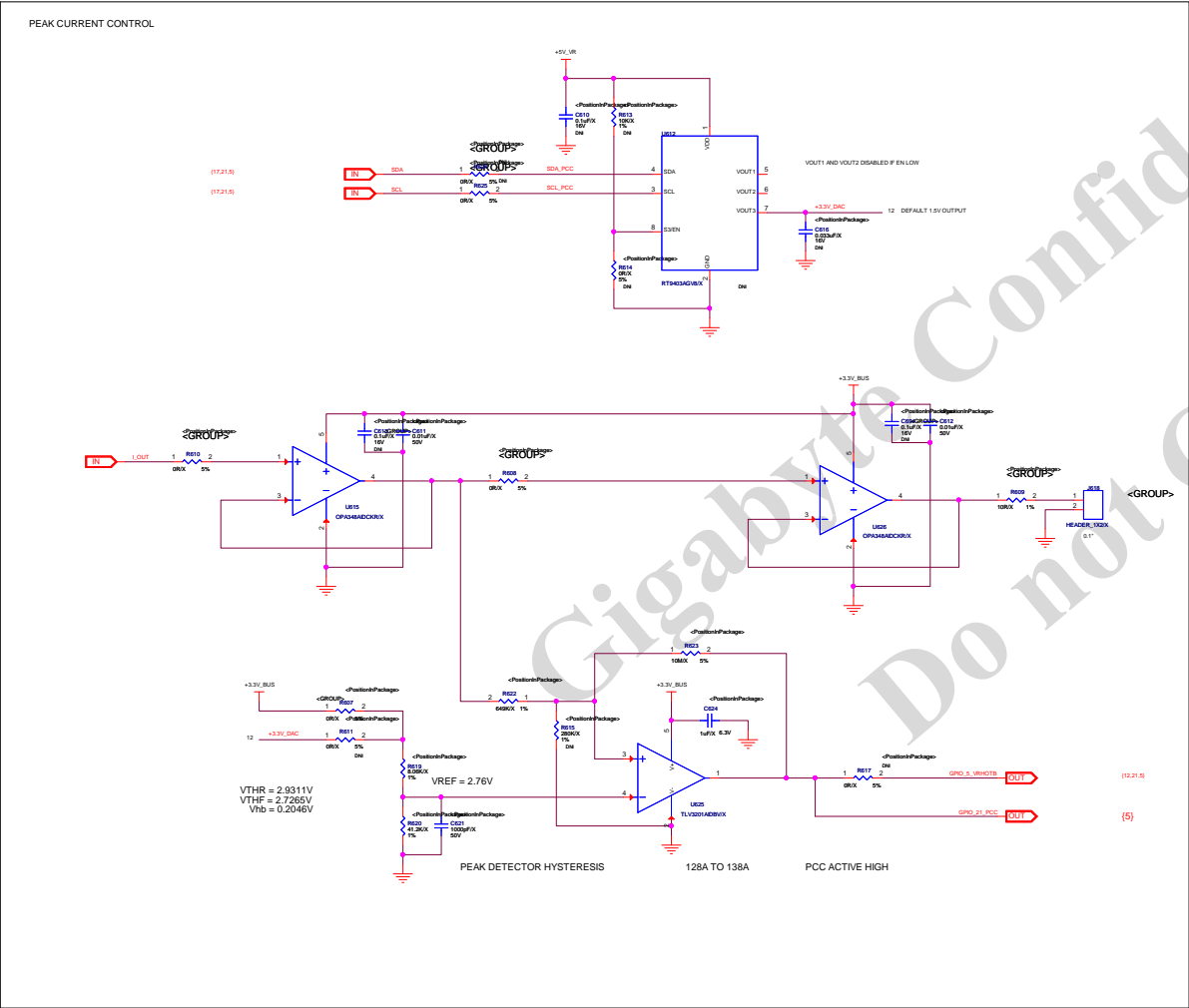
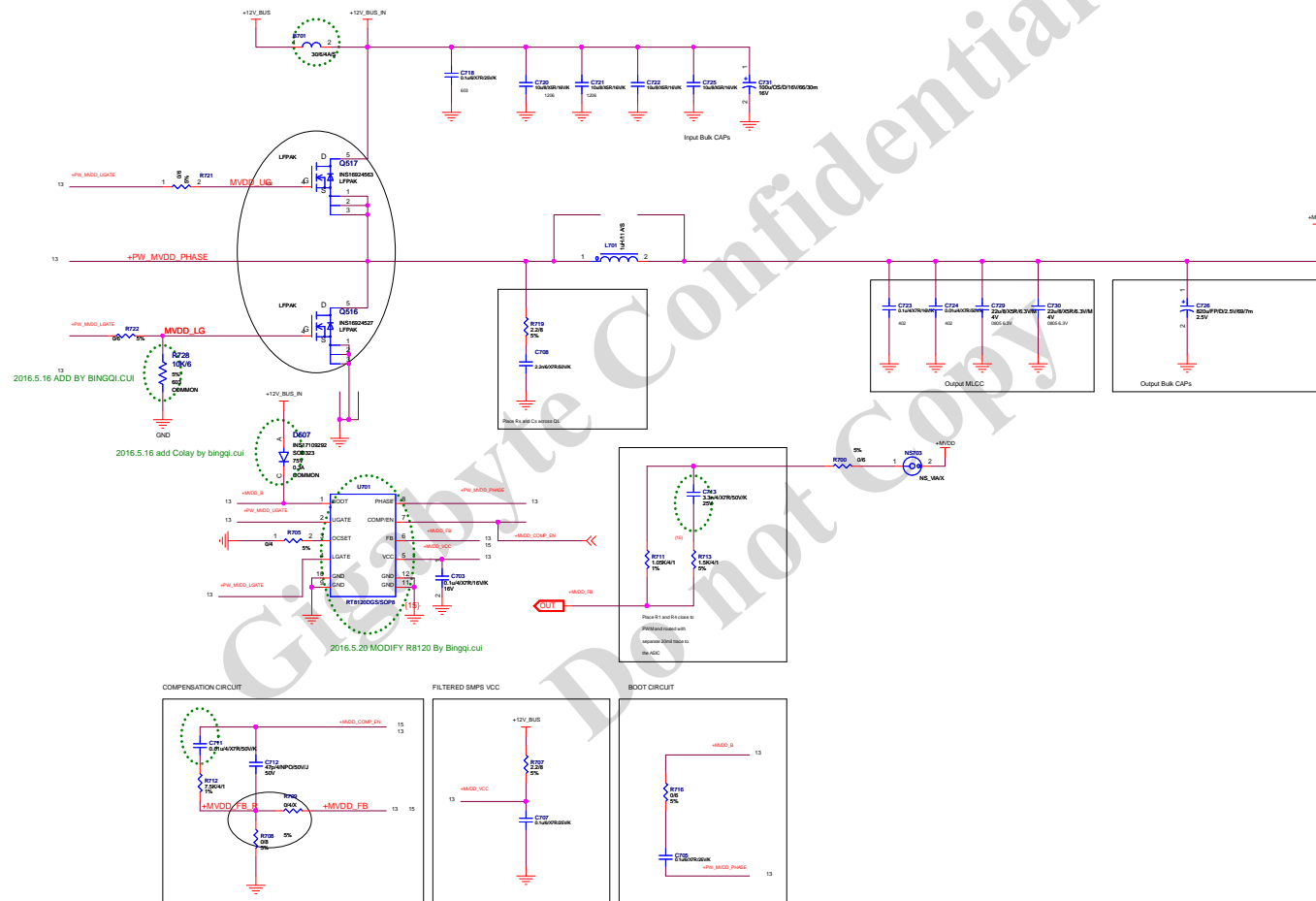Date: Wednesday, April 19, 2017   Sheet   8   of   22

2016.5.15 AND 330U BY BINGQI.CUI

Title		
	GV-RX550GAMING OC-2GD	
Size	Document Number	Rev
Custom	BAFFIN POWER GND	1.0
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VDDC INPUT

2016.5.20DEL 3PHASE PWM By Bingqi.cui

2016.5.20 MODIFY 4PHASE PWM & 常用料 By Bingqi.cui

+12V_VIN

VDDC1_12V
NCP81161/DFN8/S
VDD_DRON_1
VDDC_PWM1
VDD_DRON

VDDC_UG1
VDDC_UG1_CTL
VDDC_PH1
VDDC_LG1

Q505
Q502
Q503

L5
COMMON
0.22uH/23A/S

FB_VDDC-
FB_VDDC+

+VDDC

VDDC_ISENN1
VDDC_ISENP1

VDDC_ISENP1 {21}
VDDC_ISENN1 {21}

+12V_VIN

VDDC2_12V
NCP81161/DFN8/S
VDD_DRON_2
VDDC_PWM2
VDD_DRON

VDDC_UG2
VDDC_UG2_CTL
VDDC_PH2
VDDC_LG2

Q506
Q507
Q504

L6
COMMON
0.22uH/23A/S

VDDC_ISENN2
VDDC_ISENP2

VDDC_ISENP2 {21}
VDDC_ISENN2 {21}

+12V_VIN

VDDC3_12V
NCP81161/DFN8/S
VDD_DRON_3
VDDC_PWM3
VDD_DRON

VDDC_UG3
VDDC_UG3_CTL
VDDC_PH3
VDDC_LG3

Q509
Q510
Q508

L7
COMMON
0.22uH/23A/S

+VDDC

VDDC_ISENN3
VDDC_ISENP3

VDDC_ISENP3 {21}
VDDC_ISENN3 {21}

(11) VDDCI

INPUT FILTER & INPUT BULK CAPS LOCATED ON PWR MGT PAGE

2016.5.20 MODIFY 4PHASE PWM & 常用料 By Bingqi.cui

PEAK CURRENT CONTROL

VR TEMPERATURE PROTECTION

PLACE @ HOT SPOT

130C

VTHR = 2.9311V
VTHF = 2.7265V
Vhb = 0.2046V

VREF = 2.76V

PEAK DETECTOR HYSTERESIS   128A TO 138A   PCC ACTIVE HIGH

VOUT1 AND VOUT2 DISABLED IF EN LOW

DEFAULT 1.5V OUTPUT

Input Bulk CAPs

Output MLCC

Output Bulk CAPs

COMPENSATION CIRCUIT

FILTERED SMPS VCC

BOOT CIRCUIT

+12V_BUS
+12V_BUS_IN
+MVDD

+PW_MVDD_PHASE

MVDD_UG

MVDD_LG

2016.5.16 ADD BY BINGQI.CUI

2016.5.16 add Colay by bingqi.cui

2016.5.20 MODIFY R8120 By Bingqi.cui

+MVDD_FB

+MVDD_FB

+MVDD_VCC

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(19) 0.8V

+12V_BUS

+3.3V_BUS

DNI

0.8V_PGOOD   OUT   (15)

IN   0.8V_EN

U900
GS9238TQ-R/QFN23

+0.8V

0.8V_REG_FB   IN   (15)

REGULATOR FOR +5V RAILS

IOUT MAX = 150mA

LDO #1:   VIN = 3.0V TO 3.6V MAX   VOUT = +1.8V +/- 2%   IOUT = 1.3A RMS MAX

PCB: 50 TO 70mm SQ. COPPER AREA FOR COOLING

+3.3V_BUS

MU300
UP0104PDC8/x/X

AGND

+5V_VR

U300
GS7103-APSOP8/3A

VOUT = Vref x (1 + R5/R4)

AGND

2016.6.14 Add By Bingqi.cui

U388
GS7119-AST-1P8-R/SOT-23-5/300mA

+1.8V_CLK

+12V_BUS   +5V   +5V_VESA

7BDS/TO2S31/A
REG1

F400

2016.5.15 DEL AZ1117CH-5.0 @OLAY BY BINGQI.CUI

+5V_VR

+12V_BUS

7BDS/TO2S21/A
REG2

+5V_VR

2nd source: 24B0149900G AZ1117CR2-5.0

Title
GV-RX550GAMING OC-2GD

Size   Document Number   Rev
Custom   0.8V REG   1.0

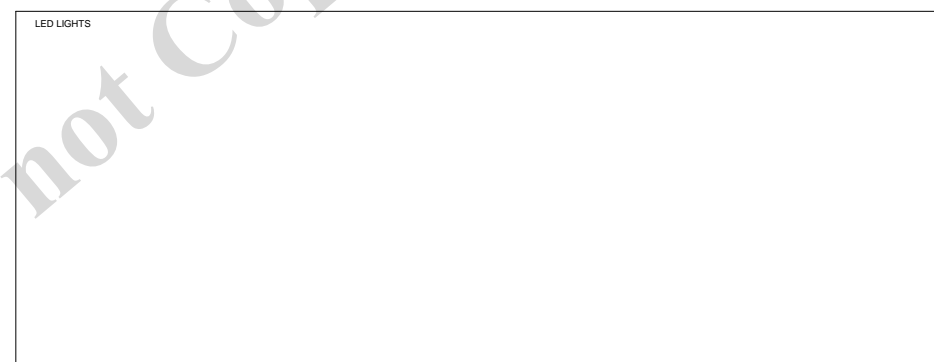Date: Wednesday, April 19, 2017   Sheet   14   of   22

INPUT POWER

VOLTAGE CONTROL

INPUT FILTER

1.8V EN > 1.4V
0.8V EN > 2.5V
VDDC EN > 2.0V
MVDD EN > 0.5V

INTERNAL CTF LATCH - 1.8V REQUIRED

IN BACO MODE
TURN OFF
VDDC, VDDCI AND MVDD

2016.5.17 Modify MLCC By bingqi.cui

SVI2 POWER UP VOLTAGE

SVC	SVD	VDDC/I
0	0	1.1V
0	1	1.0V
1	0	0.9V
1	1	0.8V

+MVDD OUTPUT VOLTAGE

VOUT = VREF * (1+RFB/RFB2)
RFB2 = (RFB * VREF) / (VOUT - VREF)
VREF = 0.6V

CRITICAL TEMPERATURE FAULT

HEATSINKS

BOARD STIFFENER
9 connected mounting pins
MEC2
MH-C236D125-10
COMMON
GND

BOARD STIFFENER
9 connected mounting pins
MEC3
MH-C236D125-10
COMMON
GND

BOARD STIFFENER
9 connected mounting pins
MEC8
MH-C236D125-10
COMMON
GND

BOARD STIFFENER
9 connected mounting pins
MEC9
MH-C236D125-10
COMMON
GND

ASIC SOCKET

BRACKET   BRACKET MT HOLE

BOARD STIFFENER
9 connected mounting pins
MEC6
MH-C236D125-10
COMMON
GND

8020058600G
SS DP W TAB, HDMI, DVI

802005620AG
DS DP W TAB, HDMI, DVI

TO PREVENT
FAN RUNNING
FULL SPEED AT
POWER UP

TO SHUTDOWN FAN IN BACO

FOR 4-WIRE FAN

CTF BYPASS

Title	GV-RX550GAMING OC-2GD	
Size Custom	Document Number THERMAL MANAGEMENT	Rev 1.0
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(18) DEBUG CIRCUITS

JTAG

2016.5.18 DEL CONNECT By Bingqi.cui

U1A
symbol1

BP_9 AA38
BP_1 AA37

AF41 JTAG_TDO
AD40 JTAG_TDI
AD41 JTAG_TMS
AE41 JTAG_TCK

TP400
TP400

DECRACKMON B2 TEST6

R4000 0/4/X 5%

TESTEN AE40 TESTEN
AF40

+3.3V_BUS

+3.3V_BUS

<PositionInPackage>
MR4006
1K/X
5%
DM

<PositionInPackage>
R4008
1K/X
5%

REV 0.91

BAFFIN - REV 0.90/x

JTAG_TRSTB

R4005 1K/X 5%
MR4005 1K/X 5%
DM

<PositionInPackage>

G_SMBCLK*
G_SMBDAT*

TP4002
TP4003
TP4004

OUT
BI

PX_EN R4007 33/4/1/05%

<PositionInPackage>
TP4005
TP4006

OUT

2016.6.14 Add By Bingqi.cui

(1,17)
(1,17)

DEBUG BUS

(21,9)
(21,9)
(12,17,21,5)

SWITCHES

CTF_OUT R4085 0R/X 5% BYPASS CTF
IN

PWMB R4088 0R/X 5% MAXIMIZE FAN SPEED
IN

(16)
(16,22)

DIGITAL POT

+3.3V_BUS

+3.3V_BUS

R4060 10K/X 5%
R4061 10K/X 5%
DM

U40D

RESET_N 7
ADDR 10

VDD 1

C4050 C4051
0.1u/4/X/R 1u/4/X/R/6.3V/6.3V/M/X
6.3V 6.3V

SCL R4062 0/4/X 5%
SDA R4063 0/4/X 5%

SCL 9
SDA 8

W 3
A 2

MVDD_FB_POT OUT

GND 6
THM 11
THM 12

EXT_CAP 5
VSS 4

MR4054
17.4K/X
1%
DM

<PositionInPackage>

AD5272BCPZ-100-RL7/CP-10-9/5/X

C4052
1u/4/X/R/6.3V/6.3V
10V

R4054
1.82K/4/1/X
1%

(12,17,21,5)

(15)

EFUSE

REMOVED, COMMENCT EVDDQ TO 1.8V

EXTERNAL THERMAL SENSOR

+3.3V_BUS

+3.3V_BUS

<PositionInPackage>
C4010
1u/4/X/R
6.3V
R4010
10K/X
5%

MR4012 R4013 R4014
10K/4/X 10K/4/X 10K/X
5% 5% 5%
DM

MR4015 0R/X 5% G_SMBCLK
MR4015 0R/X 5% G_SMBDAT

IN
BI

(1,17)
(1,17)

LM_TCRTB OUT

GPU_DPLUS IN
GPU_DMINUS IN
PWM OUT

U4010

1 RESET   10 SMBCLK
2 VDD   9 SMBDAT
3 D_P   8 TACH
4 D_N   7 ALERT
5 PWM   6 GND

11 EPAD

C4011 2.2n/4/X/R/52V/M/X

R4011 0R/X 5%

LM96063CISD/NOPB/QFN10/X

R4015 0/4/X 5% DDCVGACLK
R4016 0/4/X 5% DDCVGADAT

IN
BI

LM_ALERTB R6 0R/X 5% GPIO_6_TACH IN
GPIO_17_THERM_INTB OUT

LM_PWM

2016.6.14 Add By Bingqi.cui

(5)
(5)

(16,5)

(5)

VTMM

2016.5.18 DEL CONNECT By Bingqi.cui

2016.5.18 DEL CONNECT By Bingqi.cui

FB_VDDC IN
FB_VDDCI IN
SCL R4030 0/4/X 5% SCL_VTMM IN

GPIO_2 FB_VDDC IN
FB_VSSC IN
SDA_VTMM R4031 0/4/X 5% SDA IN

FB_VMEMIO IN
FB_VMEMISS IN

CON_SAMTEC_SFML-05-02-L-D_ALT

PIN HEADERS

(12,17,21,5)

(9)
(9)

LED LIGHTS

TEST POWERGOOD

REMOVED

REPLACED BY NEW CIRCUITS

DEBUG HEADER

JTAG HEADER

DP
+3.3V_DP

HDMI
+5V_VESA

DVI-D
+5V_VESA

AC CAPS

AC CAPS
TERMINATIONS

AC CAPS
TERMINATIONS

STRAPS

EEPROM
VBIOS/UEFI

DBG
DBGDATA[15:0]

JTAG
TDO/TDI/TMS
TCK/TRSTs
TESTEN

TMDPE
DDCAUX1
HPD2

TMDPC
DDCAUX4
HPD5

TMDPAB
DDCAUX5
HPD3

GPIO_x
HSYNC/VSYNC
DBGDATA_x

GPIO8/9/10/22

PCI-E x8

MEMORY
CHA/B

SVC/D/T
SCL/SDA
GPIO16/30

GPIO5

GPIO21

PK_EN

THERM
DDCVGA
D+/D-
GPIO17

TS_FDO
GPIO6
GPIO19
XTALIN/OUT

BAFFIN
S4

CHA/B GDDR5 4pcs x32

VOLTAGE REGULATORS

FROM +12V_EXT
+VDDC, +VDDCI, +MVDD, FAN

FROM +12V_BUS
+VDDC, +VDDCI, +MVDD, FAN, +5V, +5V_VR
+0.8V

FROM +3.3V_BUS
+1.8V, +0.8V, +3.3V_DP, VDD_33

FROM +VDDC (SMPS)
VDDC

FROM +VDDCI (SMPS)
VDDCI

FROM +MVDD (SMPS)
VMEMIO, MVDDQ/C

FROM +0.8V (SMPS)
VDD_08

FROM +1.8V (LDO)
VDD_18, TSVDD

POWER DELIVERY

POWER MANAGEMENT

VRHOT

PCC

VRHOT

PCC

BACO

**POWER ENABLE
SEQUNCING**

I2C
TEMP SENSING
THERMAL ALERT

BUILT-IN PWM
TACH INPUT
CTF

**EXTERNAL
THERMAL
SENSOR**

TCRIT

PWM

**FAN SPEED
CONTROL**

FAN

100M
27M

CLOCK CHIP

CRYSTAL

PCI-E BAFFIN GDDR5 4pcs. x32

DP HDMI DL-DVI FH 6L 5.7"

PCI-EXPRESS BUS

+12V_BUS
+3.3V_BUS

Title		GV-RX550GAMING OC-2GD		
Size Custom	Document Number	BLOCK DIAGRAM		Rev 1.0
Date:	Wednesday, April 19, 2017		Sheet 18 of 22	

0	00A	13/12/2015	INITIAL DESIGN
1	00B	12/23/2015	Add 1.8V LDO for CLK GEN, Add 100MHz CLOCK option
			Change 0.8V power good pull_up

Title	
GV-RX550GAMING OC-2GD	

Size	Document Number	Rev
Custom	REVISION HISTORY	1.0

| Date: | Wednesday, April 19, 2017 | Sheet | 19 | of | 22 |

Title		
GV-RX550GAMING OC-2GD		
Size	Document Number	Rev
Custom	SHEET TITLE	1.0

(14) VDDGFX/VDDC CNTL

Modify by xiang.l Change VDDC to 3phase@20170208

Modify by xiang.l Change VDDC to 3phase@20170208

PLACE CLOSE TO THE VDDC INDUCTOR (L510&L520)

PLACE CLOSE TO THE VDDCI INDUCTOR

2016.5.20 MODIFY 4PHASE PWM By Bingqi.cui

U503 NCP81022MNTXG/QFN52

Title	GV-RX550GAMING OC-2GD		
Size Custom	Document Number VDDC/VDDCi PWM		Rev 1.0
Date:	Wednesday, April 19, 2017	Sheet 21 of 22	

2016.5.15 Add MOS VRHOT CIRCUIT BY BINGQI.CUI

VDDC Thermal Protection

VDDC Thermal Protection

Near VDDC each hi

Title		
	GV-RX550GAMING OC-2GD	
Size Custom	Document Number MOS	Rev 1.0
Date: Wednesday, April 19, 2017	Sheet 22 of 22	

Q6228 MMBT3904/SOT23/200mA/30
Q6230 MMBT3904/SOT23/200mA/30
Q6231 MMBT3904/SOT23/200mA/30
Q6232 MMBT3904/SOT23/200mA/30

R6333 4.22K/4/1
R6284
R6364 0/8 5% 0805 COMMON
+5V
R5355
11K/4/1
100K/1/4/S 0402
R6285
11K/4/1
R5350
100K/1/4/S 0402
R6332
11K/4/1
R5356
100K/1/4/S 0402
R6334
11K/4/1
R5357
100K/1/4/S 0402

清呆滞10RC4-004221-22R，清完改回4.7K by diho.su 20150807

+12V_BUS
C6225 0.1u/4/X7R/16V/K
U4823A
LM358DR2G/SO8

OUT
PWMB

R6274 1K/4
Q6222 MMBT3904/SOT23/200mA/30
+3.3V_BUS
R6279 1K/X

C6224 0.1u/4/X7R/16V/K
+5V
R6264 2.74K/4/1
R6259 2.74K/4/1
PTC
VREF_PTC
C6220 0.1u/4/X7R/16V/K
U4823B
LM358DR2G/SO8
R6267 1K/4
R6278 1K/X

R6280 0/4
VDDC_I_EN
IN
{15,21}

Q6223 MMBT3904/SOT23/200mA/30

R6801 0/4