Compal Confidential

PIQY0 M/B Schematics Document

Intel Sandy Bridge Processor with DDRIII + Cougar Point PCH
nVIDIA N12P-GT

2010-12-30

REV:1.0

Security Classification	Compal Secret Data		
Issued Date	2010/11/30	Deciphered Date	2011/08

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ZZZ1 DAZ0HA00100
ZZZ2 X7625738L01 X761G@
ZZZ3 X7625738L03 X762G@
ZZZ4 LS6881P DAZ@
ZZZ5 LS6882P DAZ@
ZZZ6 LS6883P DAZ@
ZZZ7 LA6881P DAZ@

POWER & ALS BOARD

CAP SENSOR & Slid bar BOARD

nVIDIA N12P-GT
VRAM 64*16 DDR3*8

PCI-E X16

Intel Sandy Bridge
Socket-rPGA988B
37.5mm*37.5mm

DDR3-SO-DIMM X2
BANK 0, 1, 2, 3
UP TO 8G

Dual Channel
DDR3-1066(1.5V)
DDR3-1333(1.5V)

100MHz 2.7GT/s
FDI *8
DMI *4

HDMI CONN
Passive level shift
CRT Connector
optimus 1.0
LVDS Connector
optimus 1.0

Intel Cougar Point
FCBGA 951
25mm*25mm

AZALIA
Audio Codec
RealTek
ALC272/ALC5503
2Channel Speaker
Array Digital MIC
Audio Jacks
Stereo
HeadPhone Output
Microphone Input

PCI Express Mini card Slot 1
WLAN/WiMAX
USB(WiMAX)
PCI-E(WLAN)

PCI Express Mini card Slot 2
SSD
SATA(SSD)

6*PCI-E BUS

14*USB2.0
CMOS Camera
BlueTooth CONN
USB PORT 2.0 x2(Left)
Option3.0 x2
WLAN/WiMAX
USB PORT 2.0 x1(Right)

6*SATA serial
(port0,1 support SATA3)

SPI ROM BIOS

LPC BUS

EC
ENE KB930

USB3.0
RENESAS
UPD720200

Card Reader
Jmicro JMB389
SD/MMC/MS/XD

WLAN/WiMAX

Broadcom
BCM57781/57780
10/100/1G LAN
RJ45 CONN

Touch Pad
Int.KBD
SPI ROM
Thermal Sensor
EMC1403

ESATA HDD AND USB CONN (Right)
SATA3.0 HDD CONN
SATA3.0 HDD (SSD)
SATA ODD CONN

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Title: MB Block Diagram

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Voltage Rails

power plane / State	+B	+5VALW +3VALW	+1.5V	+5VS +3VS +1.5VS +VCCP +CPU_CORE +VGA_CORE +GFX_CORE +1.8VS +0.75VS +1.05VS
S0	O	O	O	O
S3	O	O	O	X
S5 S4/AC	O	O	X	X
S5 S4/ Battery only	O	X	X	X
S5 S4/AC & Battery don't exist	X	X	X	X

SMBUS Control Table

	SOURCE	VGA	BATT	KB930	SODIMM	WLAN WWAN	Thermal Sensor	PCH
SMB_EC_CK1 SMB_EC_DA1	KB930 +3VALW	X	V +3VALW	X	X	X	X	X
SMB_EC_CK2 SMB_EC_DA2	KB930 +3VALW	X	X	X	X	X	X	V +3VS
SMBCLK SMBDATA	PCH +3VALW	X	X	X	V +3VS	V +3VS	X	X
SML0CLK SML0DATA	PCH +3VALW	X	X	X	X	X	X	X
SML1CLK SML1DATA	PCH +3VALW	V +3VS	X	V +3VS	X	X	V +3VS	X

EC SM Bus1 address

Device	Address
Smart Battery	0001 011X b

EC SM Bus2 address

Device	Address
Thermal Sensor EMC1403-2	1001_101xb

PCH SM Bus address

Device	Address
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 010Xb

STATE \ SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	LOW	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

Board ID / SKU ID Table for AD channel

Vcc	3.3V +/- 5%
Ra/Rc/Re	100K +/- 5%

Board ID	Rb / Rd / Rf	V_{AD_BID} min	V_{AD_BID} typ	V_{AD_BID} max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

BOARD ID Table

Board ID	PCB Revision
0	0.1
1	
2	
3	
4	
5	
6	
7	

USB Port Table

USB 2.0	USB 1.1	Port	3 External USB Port
EHCI1	UHCI0	0	USB/Cable (Right Side)
		1	USB Port (Right Side COMBO)
	UHCI1	2	USB/B (Left Side)
		3	USB/B (Left Side)
	UHCI2	4	
		5	Camera
	UHCI3	6	
		7	
EHCI2	UHCI4	8	
		9	Mini Card(WLAN)
	UHCI5	10	
		11	
	UHCI6	12	
		13	Blue Tooth

BOM Structure Table

BTO Item	BOM Structure
UMA	
UMA Only	UMA_ONLY@
Optimus	OPTI@
VRAM	X76@
HDMI	HDMI@
Blue Tooth	BT@
USB3.0	USB30@
ESATA	ESATA@
USB Charger	USB_CHG@
No USB Charger	NO_CHG@
Unpop	@
Codec ALC272	272@
Codec ALC5503	5503@
LAN 57781	57781@
LAN 57780	57780@
Ventura Feature	VENTURA@
Camera	CMOS@

VRAM BOM Config

X761G@:	X7625738L01	Samsung 1GB
Sub:	X7625738L02	Hynix 1GB
X762G@:	X7625738L03	Samsung 2GB
Sub:	X7625738L04	Hynix 2GB

GPU BOM Config

N12P SKU:	OPTI@
GS SKU:	GS@
GT SKU:	GT@

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Title: Notes List

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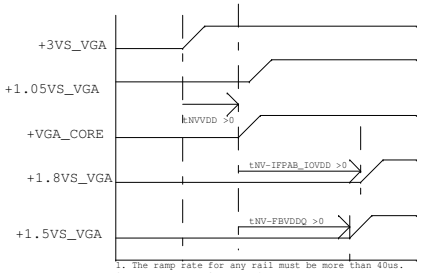

1. The ramp rate for any rail must be more than 40us.
2. +VGA_CORE <= +3VS_VGA +0.5V
3. +1.5VS_VGA <= +3VS_VGA +0.5V
4. Optimus follows power sequencing rules
   specified in discrete GPU design guide.

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Title: **VGA Notes List**

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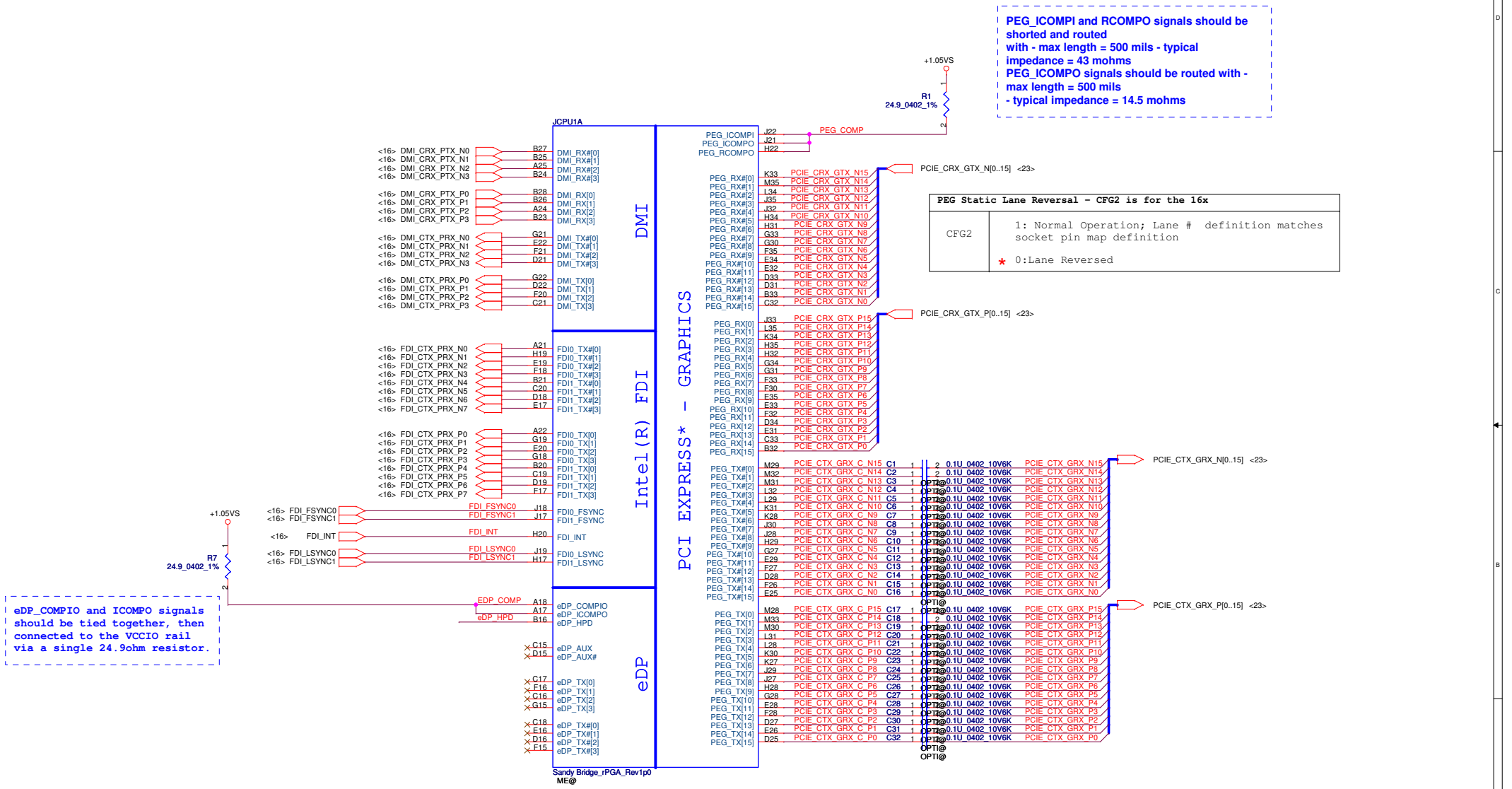

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