

Model Name : IG41M-M7S
Marketing name : G41D3+

VER: 6.0

CPU :

Intel Core 2 Quad /Core 2 Duo/

Pentium Dual-Core /Celeron Dual Core /Celeron 4xx

System Chipset :

Intel G41

Intel ICH7

On Board Chip :

Clock Gen. -- RTM876-665 SSOP 56P

Azalia Codec -- RealTek ALC662-GR

GigaBit Lan -- RealTek RTL8111DL/8102EL

PWM Controller -- UP6219 QFP48

Super I/O -- IT8721FBX

SPI Flash 8Mb

Main Memory :

2 Channel DDR 3 * 2 (Max 4GB)

Expansion Slot :

PCI Express x16 Slot * 1

PCI Slot * 2

Heatsink :

NB: SBLS-T

SB: BNP SMALL-L

I/O Pannel :

47-RIOBRACKET-68

PCB SIZE :

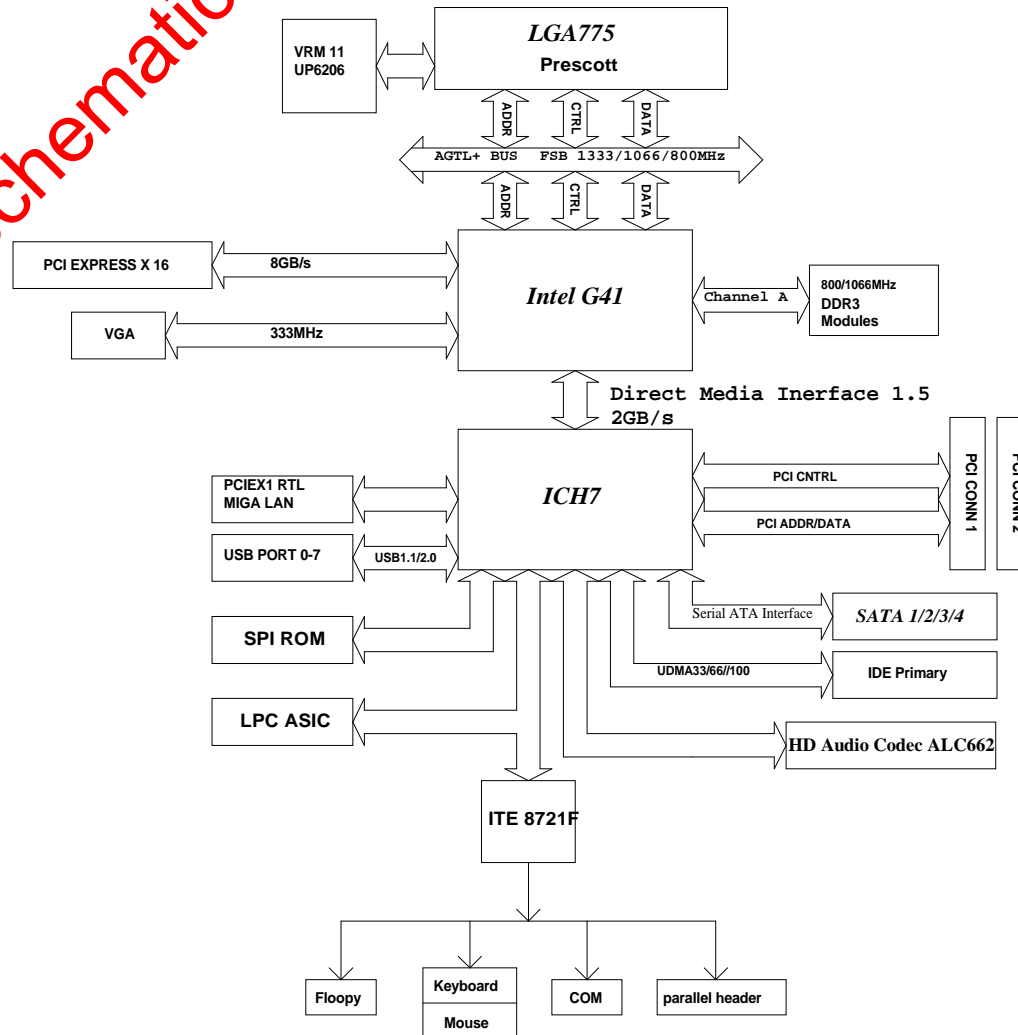
182.05*235.00mm

4-layers-1080

| TITLE | SHEET |
|--------------------------------|-----------|
| COVER Sheet | 1 |
| BLOCK DIAGRAM | 2 |
| General Spec | 3 |
| Change List | 4 |
| Power Delivery | 5 |
| Processor | 6,7 |
| North Bridge | 8,9,10,11 |
| South Bridge | 12,13,14 |
| Clock Synthesizer | 15 |
| DDR3 Dimms | 16,17,18 |
| PCIE SLOT X16 | 19 |
| PCI SLOT 1 & 2 | 20 |
| IDE Connectors | 21 |
| Audio Codec | 22 |
| AUDIO Connector | 23 |
| LPC / SUPER I / O | 24 |
| COM , PS2 , USB, FPY | 25 |
| FRONT PANEL, USB(FRONT), FAN | 26 |
| ATX POWER & BPCAP MH COUPON | 27 |
| Miscellaneous DC-DC Converters | 28 |
| V_SM & V_1P1_CORE | 29 |
| VCC_CORE DC-DC Converter | 30 |
| VGA conector | 31 |
| RTL8103EL/8111DL LAN Chips | 32 |
| BOM | 33 |

| | |
|--|----------------------------|
| HW Engineer: | Date: |
| HW Leader: | Date: |
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| COVER SHEET | |
| Size: Custom | Document Number: IG41M-M7S |
| Date: Monday, July 19, 2010 | Rev: 6.0 |
| Sheet 1 of 33 | |

BLOCK DIAGRAM



| | | | |
|---|----------------------------|-------|----------|
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| Title: Block Diagram | | | |
| Size: Custom | Document Number: IG41M-M7S | | Rev: 6.0 |
| Date: Monday, July 19, 2010 | Sheet: 2 | of 32 | |

| PCI SLOT | IDE SEL | INT# | GNT# | REQ# | CLOCK |
|----------|---------|------|------|------|------------|
| SLOT 1 | AD17 | A | 0 | 0 | PCLK_SLOT0 |
| SLOT 2 | AD18 | B | 1 | 1 | PCLK_SLOT1 |
| | | | | | |

| SUPERIO | GP NUM | TYPE | POWER | FUNCTION |
|---------|--------|-------|-------|---------------|
| PIN3 | GP64 | DIOD8 | VCC5 | EXTERNAL_PSI# |
| PIN13 | GP35 | DIOD8 | VCC5 | CHIP_OV_CTL |
| PIN18 | GP31 | DIOD8 | VCC5 | MCHREFSEL0 |
| PIN19 | GP30 | DIOD8 | VCC5 | MCHREFSEL1 |
| PIN20 | GP27 | DIOD8 | VCC5 | VCHIP0 |
| PIN21 | GP26 | DIOD8 | VCC5 | VCHIP1 |
| PIN22 | GP25 | DIOD8 | VCC5 | VTT_FSB_VHT0 |
| PIN23 | GP24 | DIOD8 | VCC5 | VTT_FSB_VHT1 |
| PIN24 | GP23 | DIOD8 | VCC5 | OVCPU_CORE0 |
| PIN25 | GP22 | DIOD8 | VCC5 | OVCPU_CORE1 |
| PIN26 | GP21 | DIOD8 | VCC5 | VDIMM2 |
| PIN27 | GP20 | DIOD8 | VCC5 | VDIMM1 |
| PIN28 | GP17 | DIOD8 | VCC5 | DDR_OV_CTL |
| PIN29 | GP16 | DIOD8 | VCC5 | VDIMM0 |
| PIN66 | GP47 | DIOD8 | VCC5 | THERMAL# |
| PIN77 | GP53 | DIOD8 | VCCH | IO_LED2 |
| PIN78 | GP41 | DIOD8 | VCCH | WATCH_DOG |

IG41E-M7S V0.6

CPU:

Intel Core 2 Duo / Quad / Extreme, Celeron 4xx, Pentium Dual-Core, Celeron Dual-core (FSB1600/1333/1066/800) 95W
3-Phase Power

SYSTEM CHIP:

Intel ICH7 (South Bridge)
Intel EaglelakeG41-A3 GMCH (North Bridge)

ONBOARD CHIP:

SUPERIO: ITE8721FX
AUDIO CODE: ALC662 5.1Channel Audio
LAN CHIP: Realtek RTL8103EL
CLOCK GEN:RTM876-665
DDR/CHIP PWM: FP6321A
DDR VTT: FP6137E

MEMORY SPEC:

DDR3 1200(OC)*2 /1333/1066/800
MAX 4G DUAL CHANNEL

CPU PWM:

PWM: UP6206 3PHASE UP1 LOW1 95W
COLAY UP1 LOW2

PCB SIZE

uATX,182.0mmx235.0mm, 4-Layer

EXPANSION SLOTS:

1x PCIEX16 SLOT;
2x PCI SLOT;
1x IDE connector;
1x FLOPPY connector;
4x SATA connectors;
1x CPU Fan header;
1x System Fan Header;
1 x Front Panel Header;
1 x Front Panel Audio Header;
1 x Serial Port Header;
8 x USB 2.0/1.1 Headers

| | | | |
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| Title: GENERAL SPEC | | | |
| Size: Custom | Document Number: IG41M-M7S | | Rev: 6.0 |
| Date: Monday, July 19, 2010 | Sheet: 3 | of 32 | |

1. 2010/06/18 COLAY 1000M LAN, ADD BURN IN SOLUTION (UP.5)

| | | | |
|---|------------------------------|----------------------------|------------|
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| Title Change List | | | |
| Size Custom | Document Number IG41M-M7S | | Rev 6.0 |
| Date: Monday, July 19, 2010 | | Sheet 4 of 32 | |

The VR's ICC-current numbers in this document reflect the CRB design (full sku-set). Customers should refer to the EDS to calculate their VR's ICC-current spec based on their supported sku

Core VR (VRD 11.1)
 Core VR
 70A 1.15 - 1.50V
 60A VR_TDC
 4ph Switching

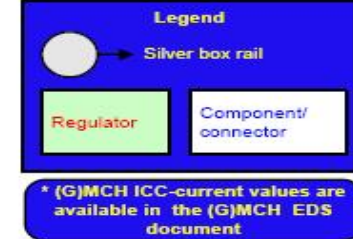
MCH_Core VR
 V_1P1_VR
 22A - 1.1V Switching

CPU
 65nm/45nm Intel® Core™2 Duo & Intel® Core™2 Quad
 Core 130 W
 V_FSB_VTT 4.8 A

DDR2/3 DIMM Connectors (4) & Termination
 V_SM (S0,S1) DDR3 1.5V 7.2 A
 V_SM_VTT (S0,S1) DDR3 0.75V 0.83 A

Intel® Eaglelake (G)MCH
 VCC_Core 1.1V
 VCC_EXP (DMI & PCIe) 1.1V
 Misc 3.3V rails 3.3V
 Misc 1.5V rails 1.5V
 V_SM DDR3 (1.5V) 1.5V
 VCC_SMCLK DDR3 (1.5V) 1.5V
 V_FSB_VTT 1.2V
 VCC_CL 1.1V

ICH10
 1.5V (USB & SATA & PLL) Vcc1_5A 1.652 A
 1.5V (PCIe) Vcc1_5B 0.646 A
 1.1V (DMI) VccDMI 41 mA
 V_CPU_IO 1.2V
 VCCRTC 6 uA
 1.1V (Core) Vcc1_1 1.16 A
 3.3V VccCL3_3 19mA
 1.5V VccGLAN1_5 97mA
 3.3V VccSus3_3 200mA
 3.3V Vcc3_3 308mA
 3.3V (10/100 LAN) VccLAN 19 mA
 3.3V (GbE LAN) VccGLAN3_3 1 mA
 1.5V / 3.3V VccHDA 32 mA
 1.5V / 3.3V VccSusHDA 33 mA



FSB_VTT Regulator
 V_FSB_VTT
 5.8 A - 1.2V
 4 A VRTDC Linear

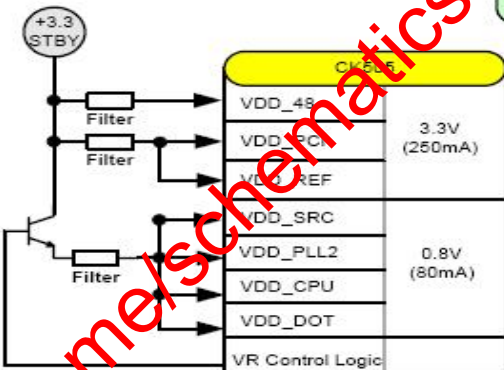
DDR VTT Regulator
 V_SM_VTT
 0.83A - 0.75V Linear (DDR3)

DDR Vcc Regulator
 V_SM (DDR3)
 18A - 1.5V Switching

GMCH CL Regulator
 VCC_CL
 ~3A - 1.1V Linear (DDR3)

ICH I/O Regulator
 V_1p5_ich
 ~2A - 1.5V Linear

PCI Slots (3)
 5.0V - 5.0A
 -12V - 0.1A
 +12V - 0.5A
 +3.3Vaux - 375mA (wake)
 +3.3Vaux - 20mA (no wake)
 +3.3V - 7.6A



Boaz GbE
 3.3V STBY I/O & LED 15.5 mA
 1.8V ANALOG 418.2 mA
 1.0V - Internal 1.8 to 1.0 VR CORE 277.2 mA
 VR CONTROL LOGIC

Intel HD Audio
 5V Audio - 200 mA
 3.3V Audio - 32 mA

3.3V Stand-by regulator
 V_3p3_stby
 1.5 A - 3.3V Linear

PCI Express x16 slot (1)
 +12 V - 5.5A
 +3.3Vaux - 375mA (wake)
 +3.3Vaux - 20mA (no wake)
 +3.3V - 3.0A

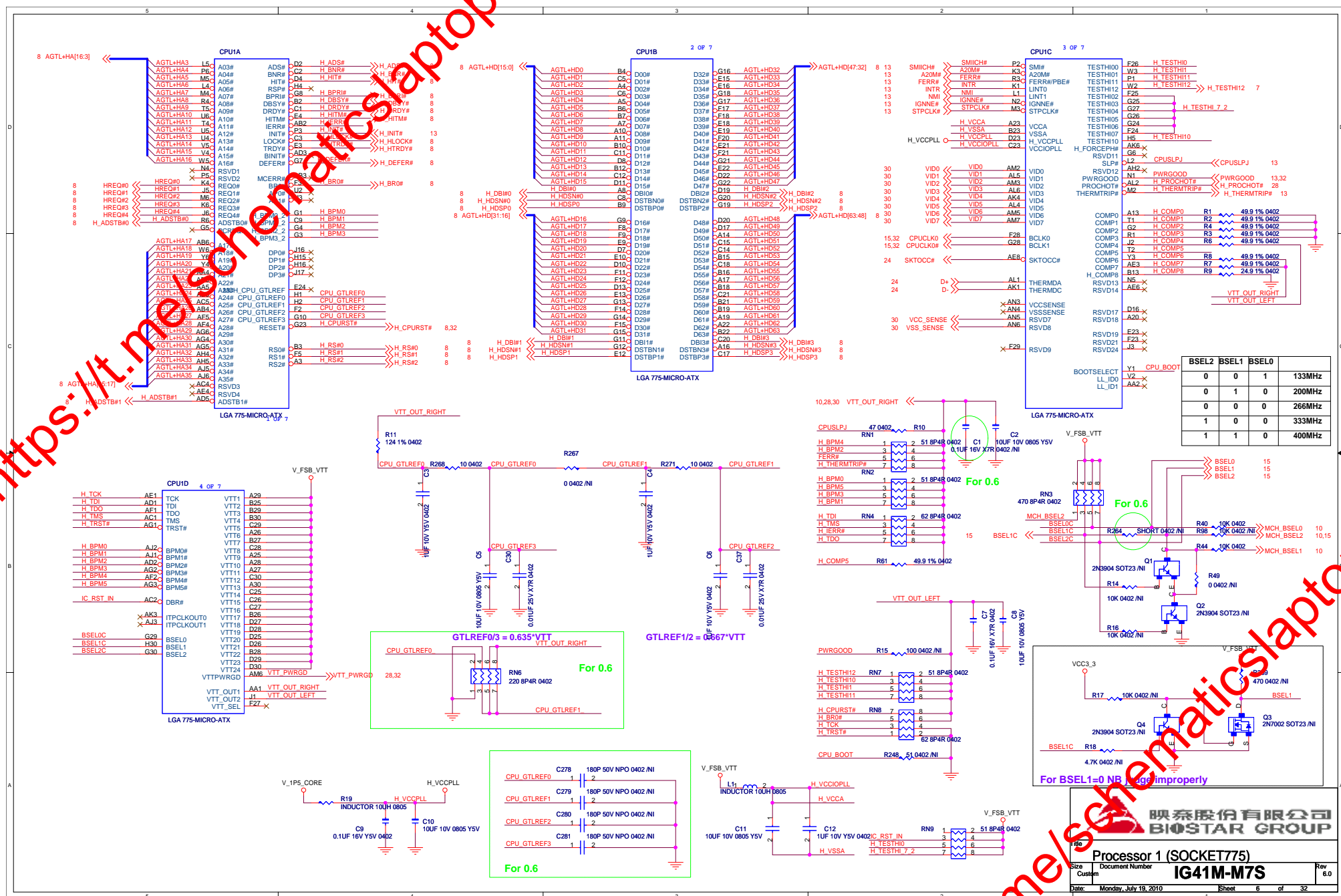
PCI Express x1 slot (2)
 +12 V - 0.5A
 +3.3Vaux - 375mA (wake)
 +3.3Vaux - 20mA (no wake)
 +3.3V - 3.0A

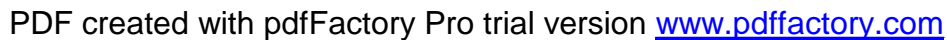
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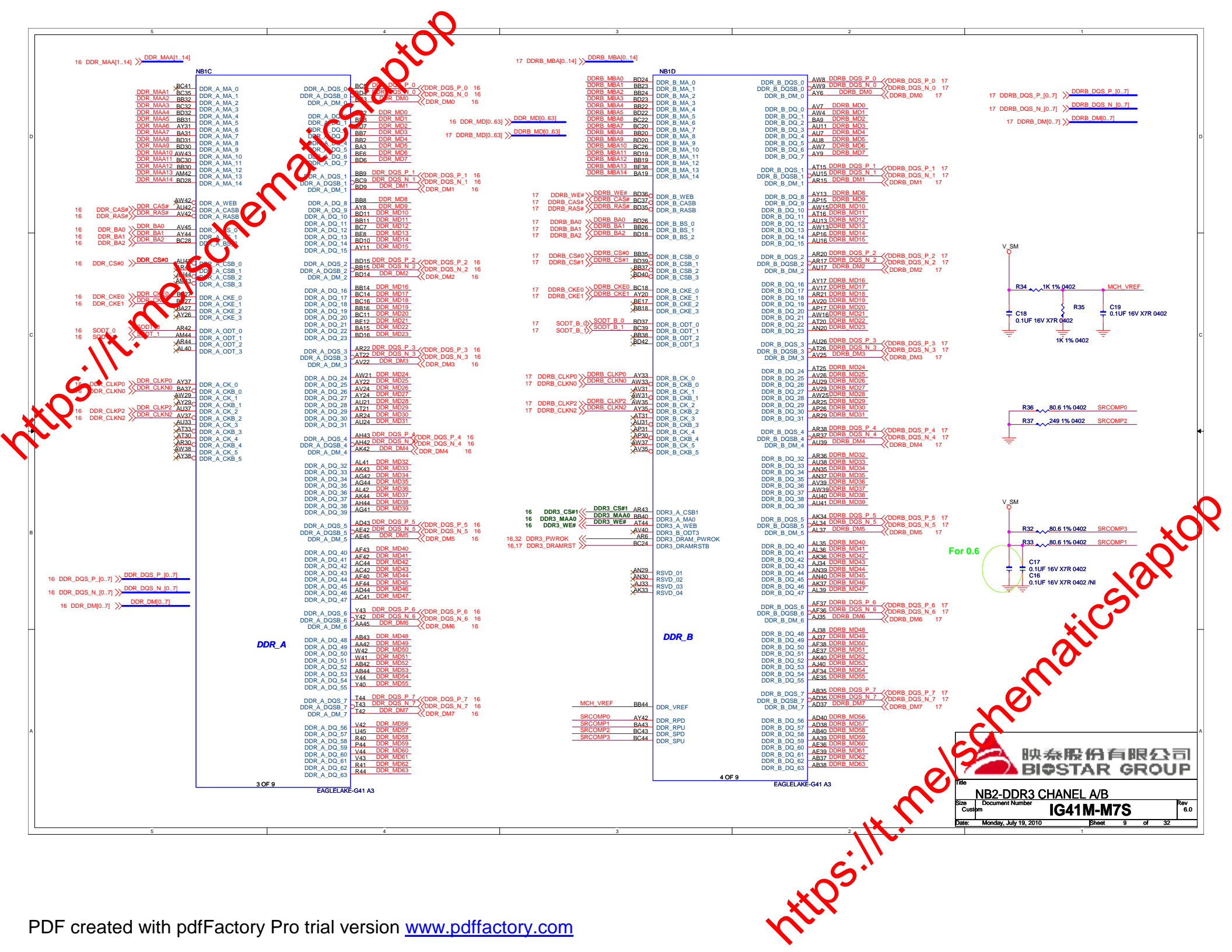
Power Delivery

Size: Custom Document Number: **IP41E-M7S** Rev: 6.3

Date: Monday, July 19, 2010 Sheet: 5 of 32







Eaglelake G41 Strap Pins:(Collected By Tonylee 08/03)

ITPM_ENB[L17]

0 = Enable Intel TPM

1 = Disable Intel TPM

DualX8_Enable[F20](Input)

0 = 2x8 PCI Express Ports Enabled

1 = 1x16 PCI Express Port Enabled

CEN[J17](Input)

0 = Disable TLS

1 = Enable TLS

EXP_SLR[F15]

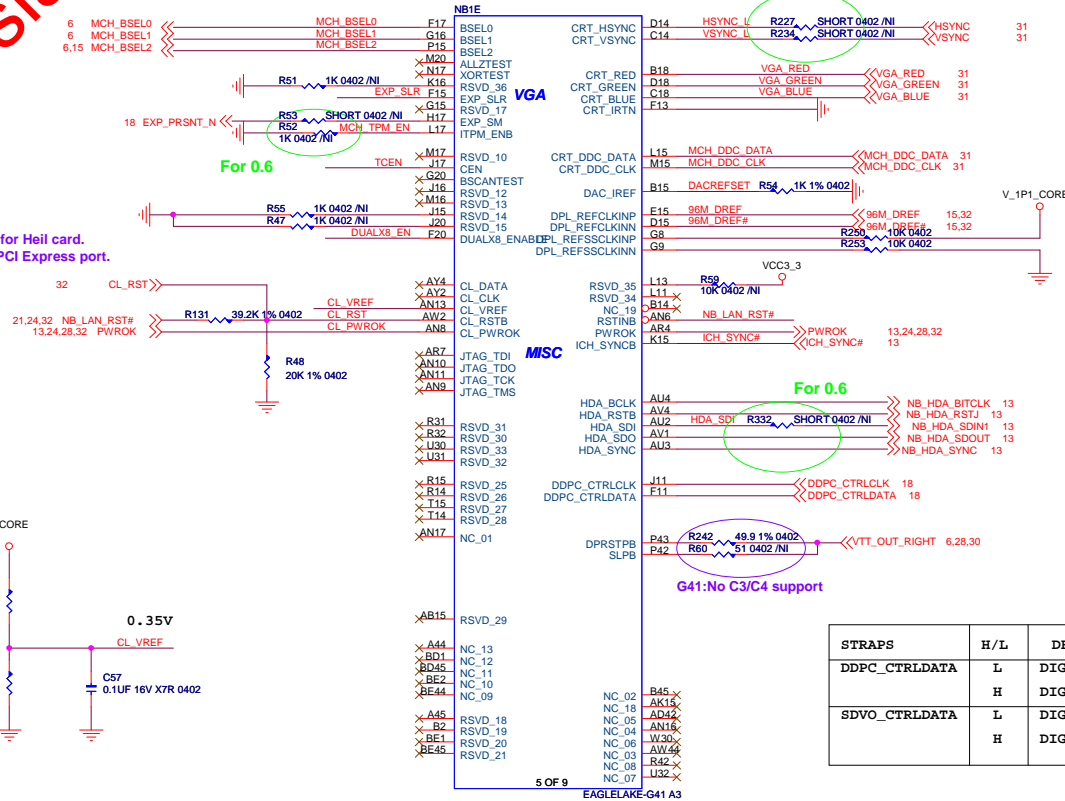
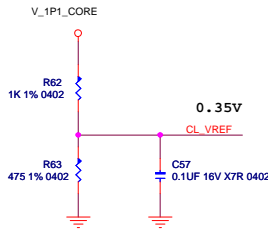
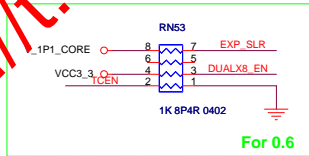
0 = (G)MCH PCI Express lane numbers are reversed (BTX)

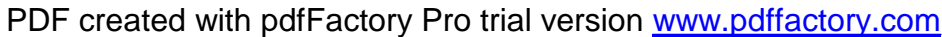
1 = Normal operation (ATX)

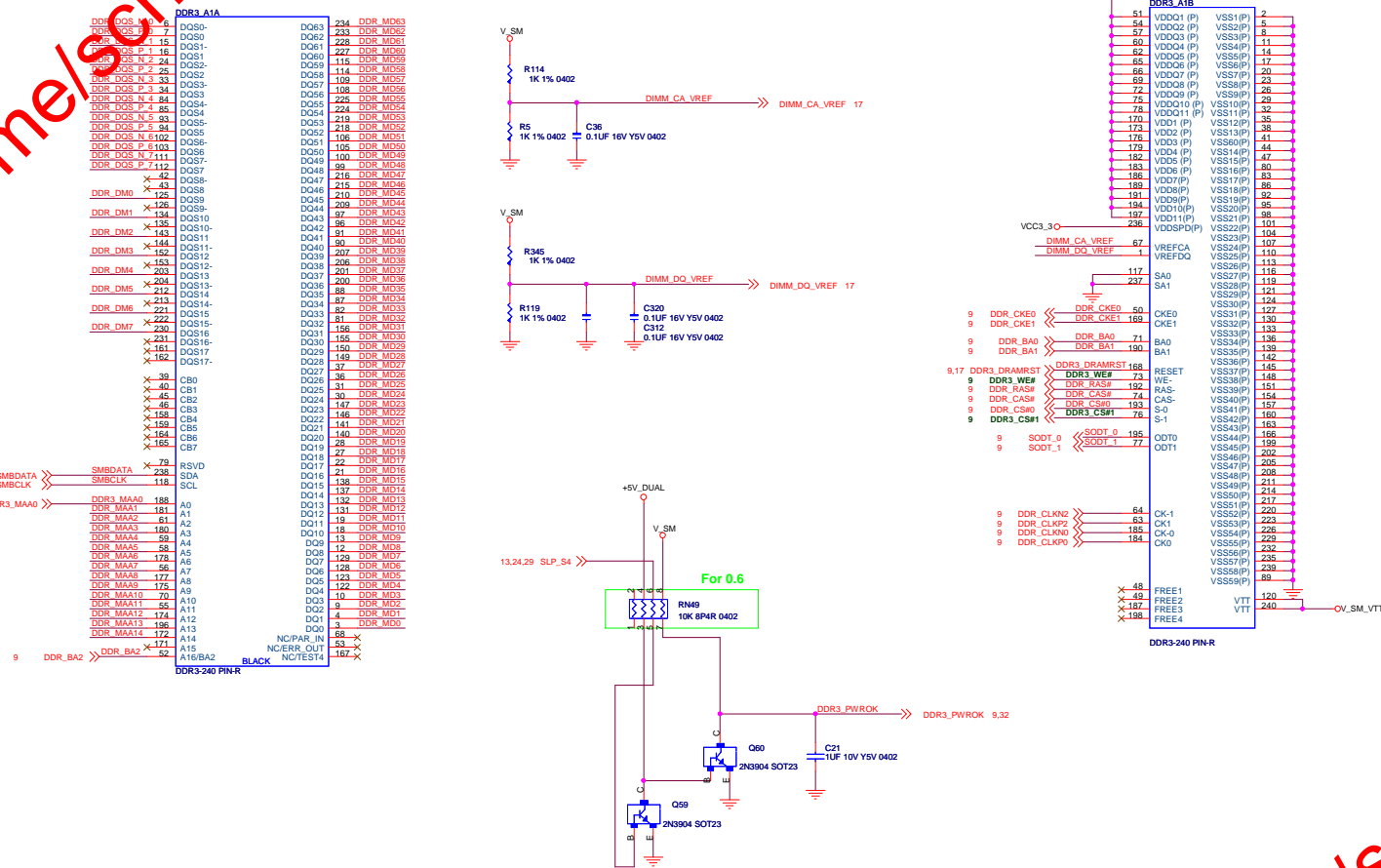
EXP_SM[H17](Input)

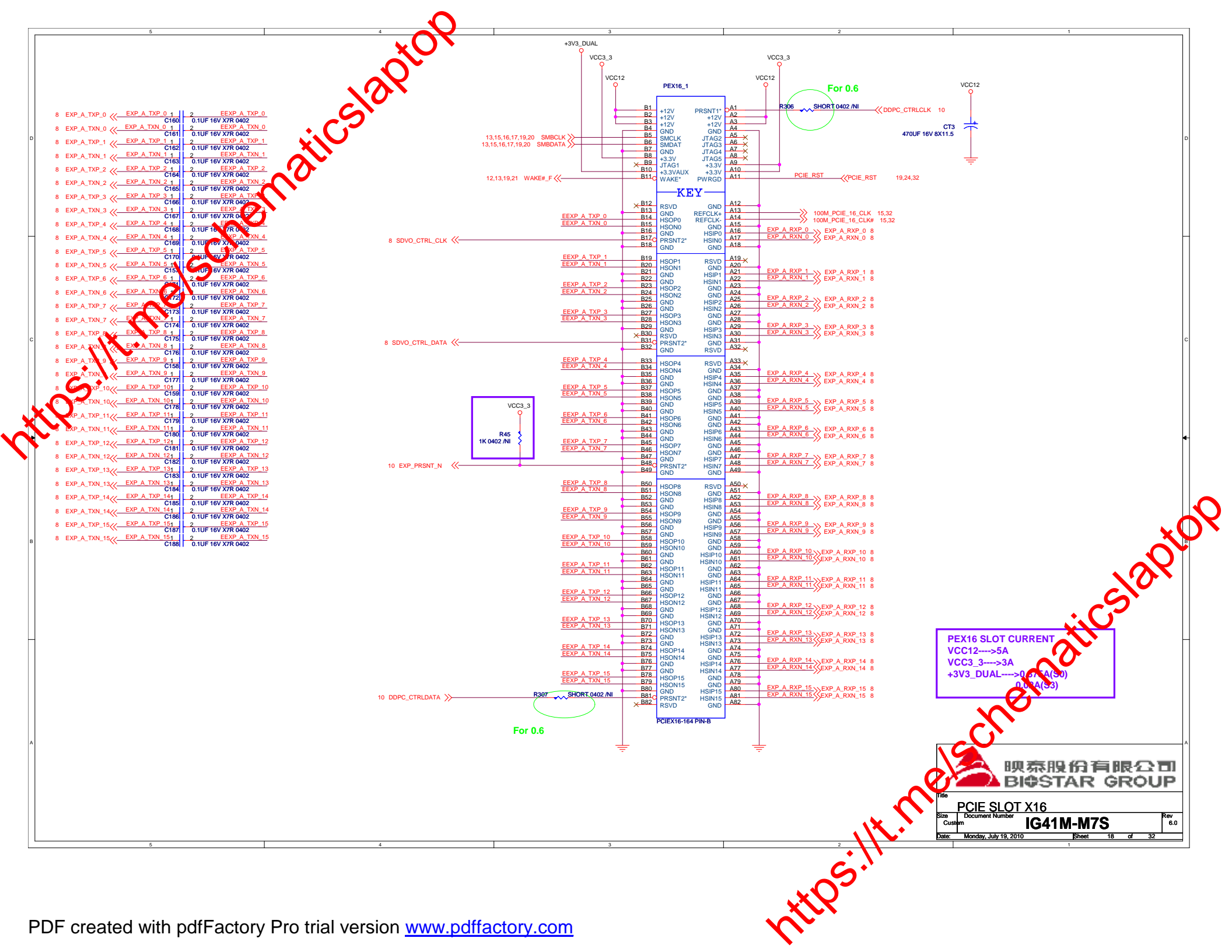
0 = Only SDVO or PCI Express is operational.HDA&HDMI are reserved for Heil card.

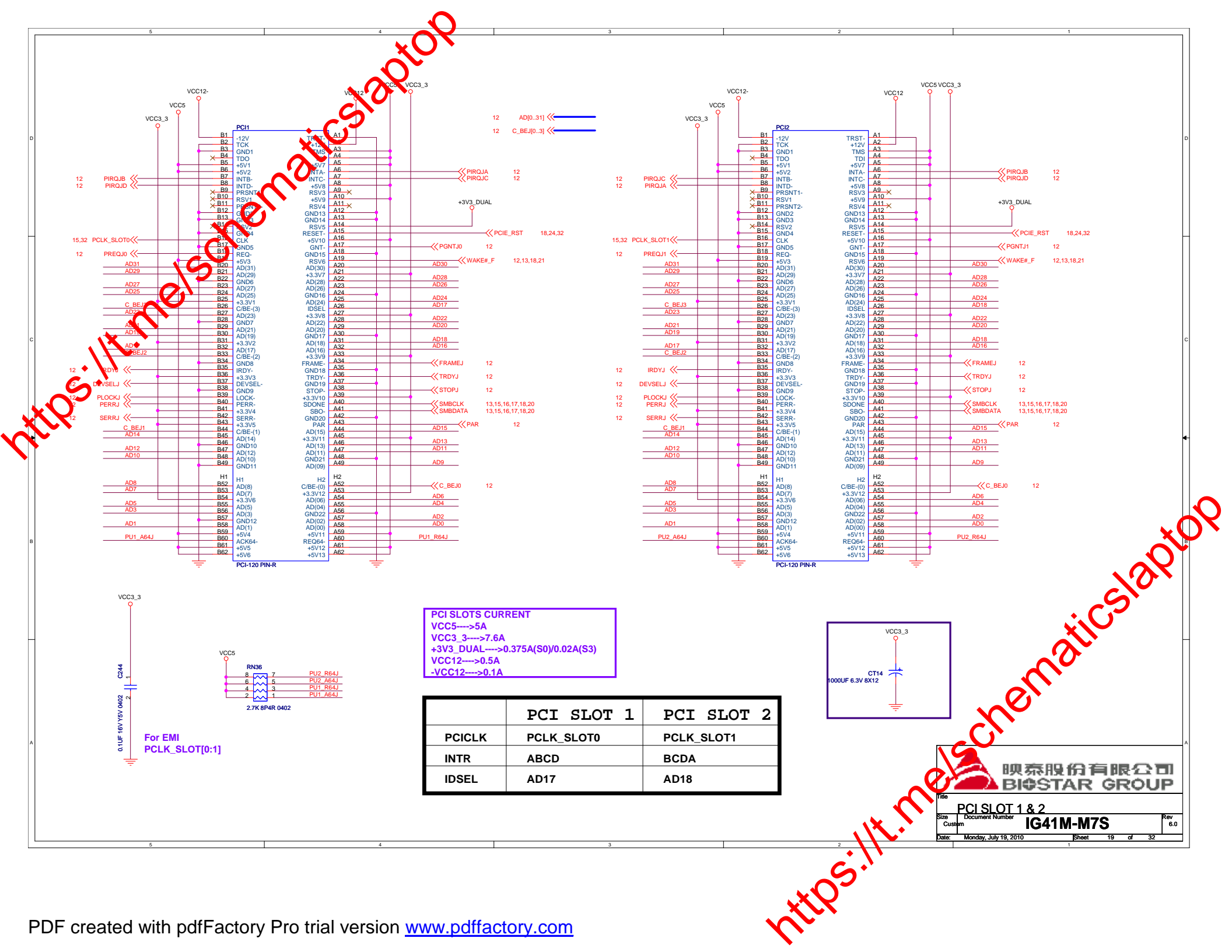
1 = Both SDVO and PCI Express are operating simultaneously via the PCI Express port.





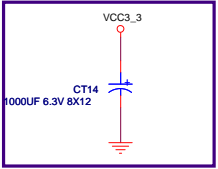







PCI SLOTS CURRENT
VCC5---->5A
VCC3_3---->7.6A
+3V3_DUAL---->0.375A(S0)/0.02A(S3)
VCC12---->0.5A
-VCC12---->0.1A

| | PCI SLOT 1 | PCI SLOT 2 |
|--------|------------|------------|
| PCICLK | PCLK_SLOT0 | PCLK_SLOT1 |
| INTR | ABCD | BCDA |
| IDSEL | AD17 | AD18 |





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Title
PCI SLOT 1 & 2

Size
Custom

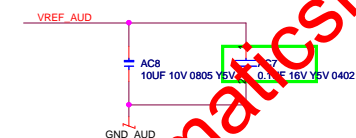
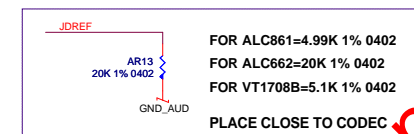
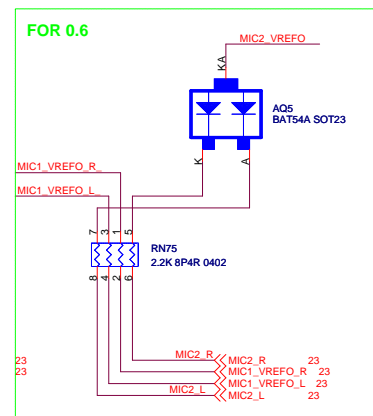
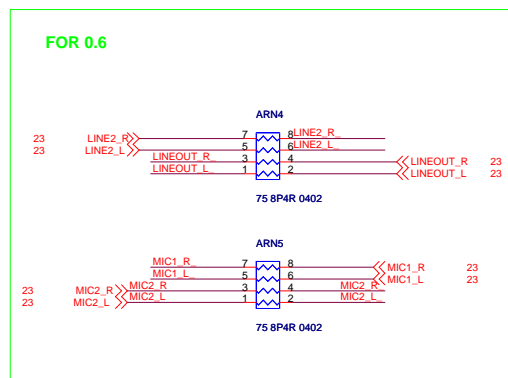
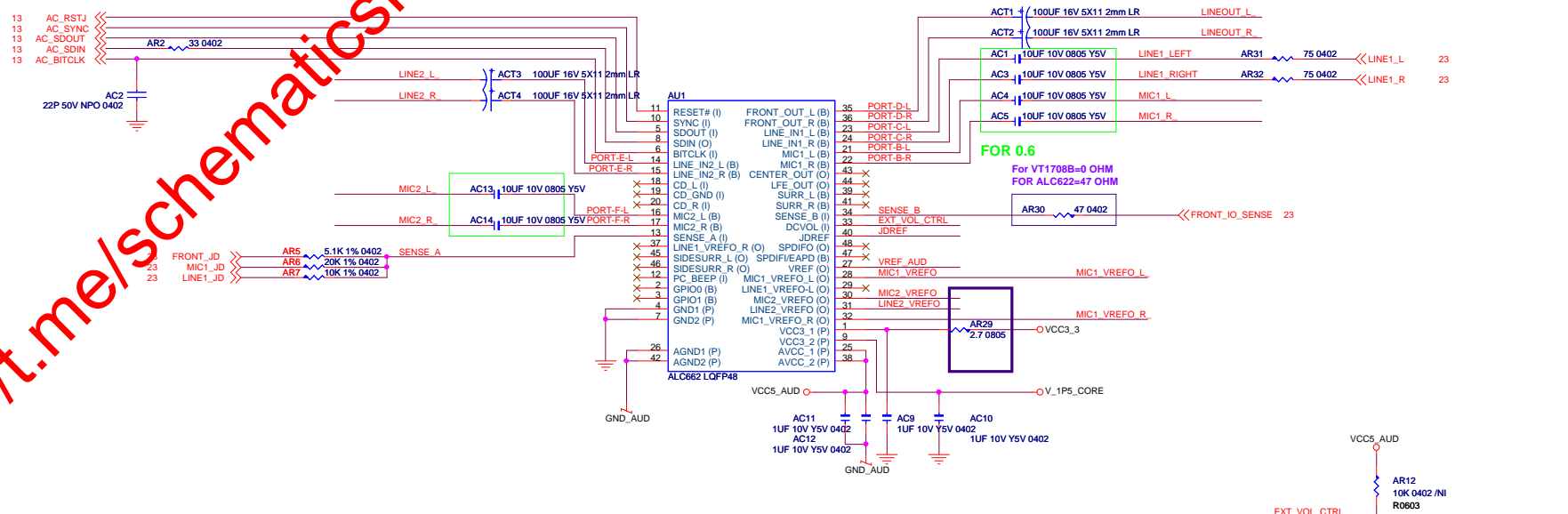
Document Number
IG41M-M7S

Date: Monday, July 19, 2010

Rev
6.0

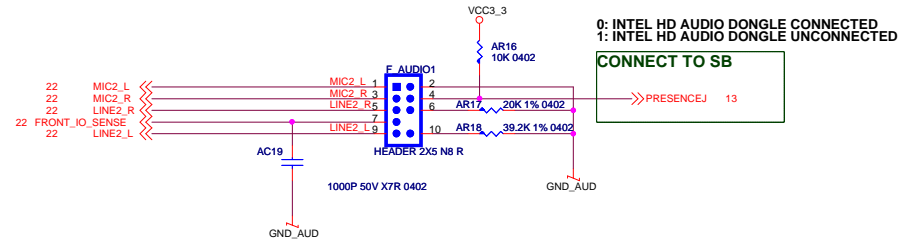
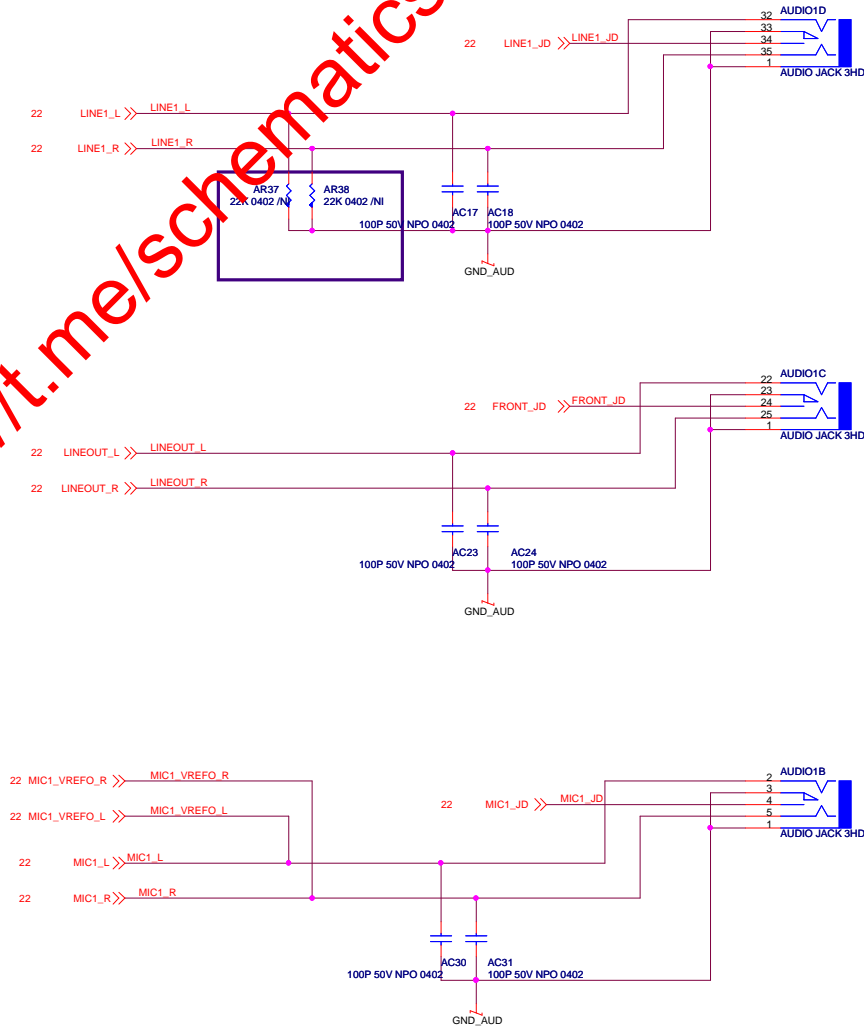
Sheet 19 of 32

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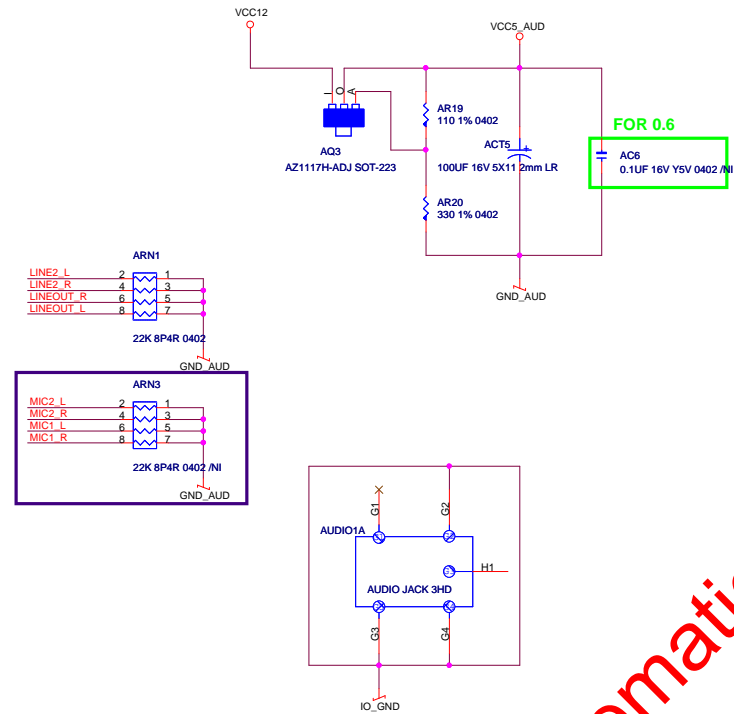


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| AUDIO CODEC ALC662 | | IG41M-M7S | |
| Rev | Document Number | Rev | |
| Custom | | 6.0 | |
| Date | Monday, July 19, 2010 | Sheet | 22 of 32 |

Rear Panel Onboard Analog I/O

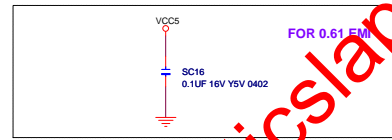
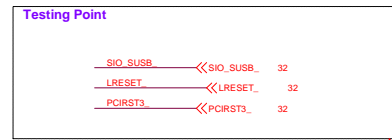
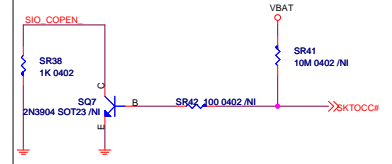
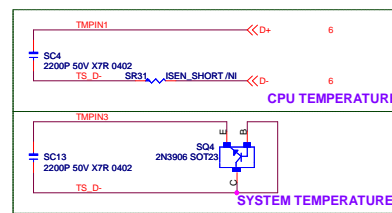
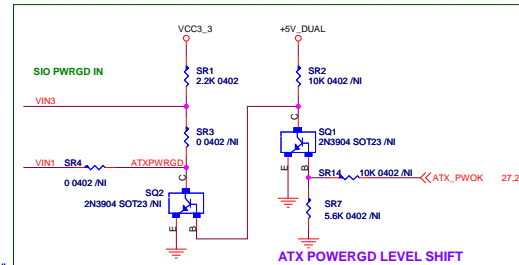
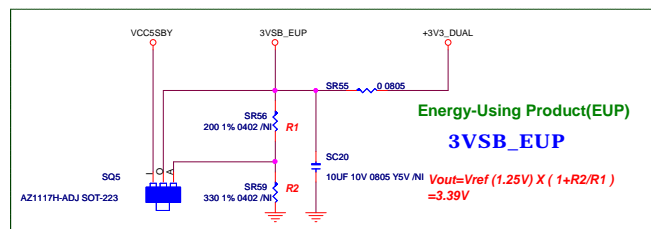
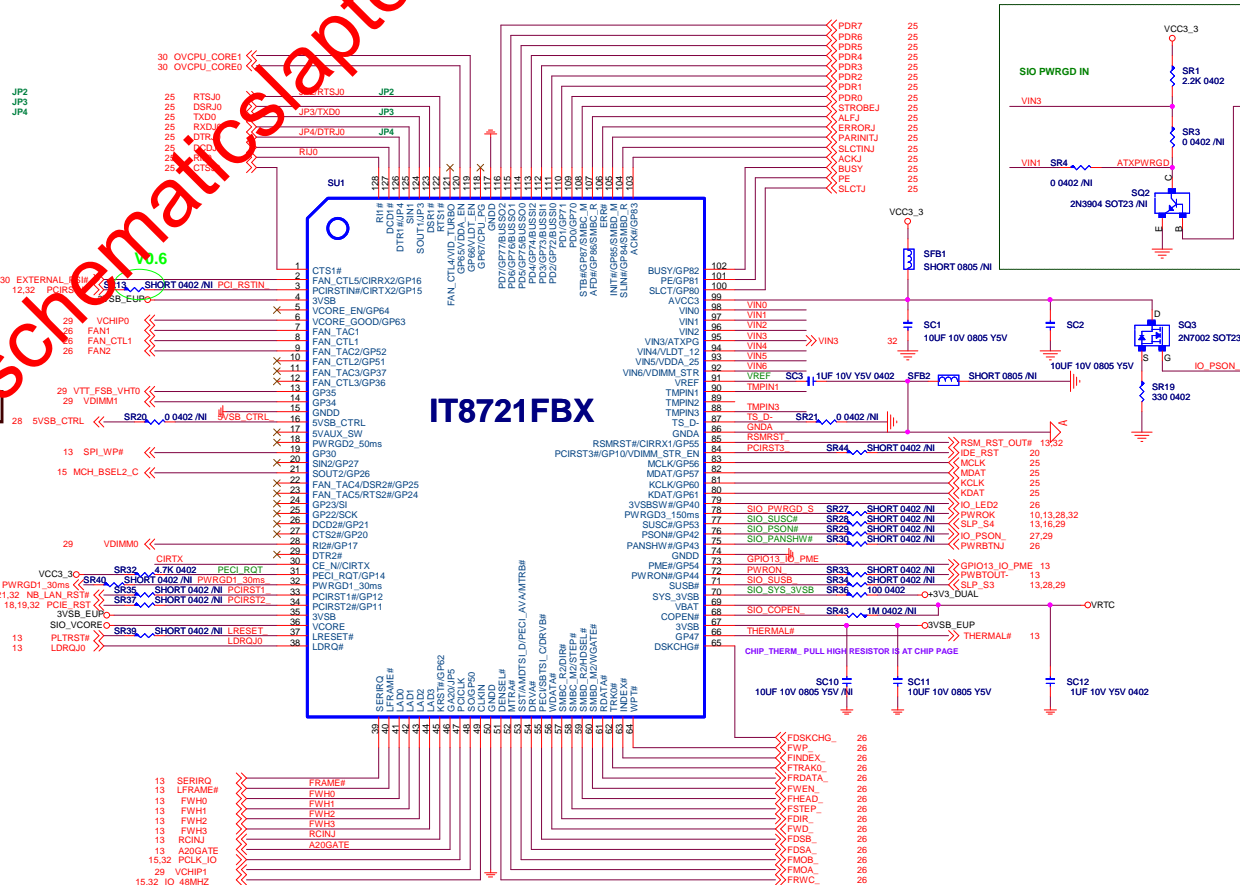
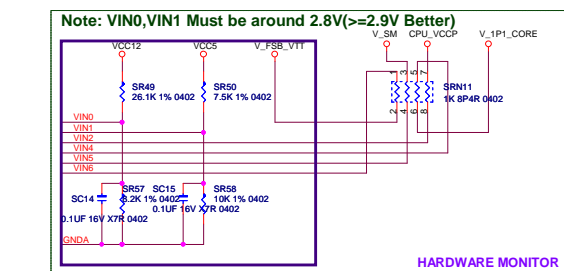


AUDIO ANALOG POWER



| | | | |
|-----------------|-----------------------|---------------|----------|
| | | | |
| Title | | | |
| AUDIO CONNECTOR | | | |
| Size | Document Number | Rev | |
| Custom | Monday, July 19, 2010 | IG41M-M7S 6.0 | |
| Date: | Monday, July 19, 2010 | Sheet | 23 of 32 |

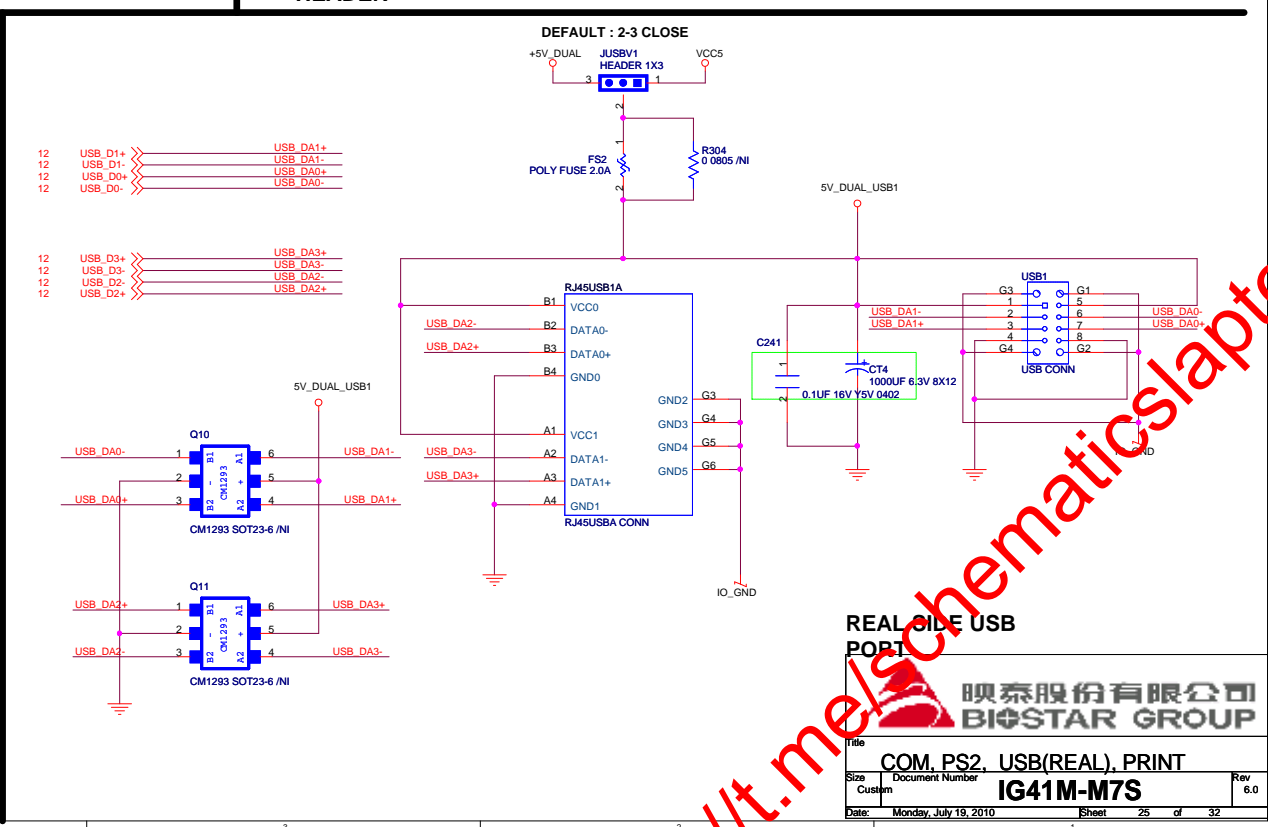
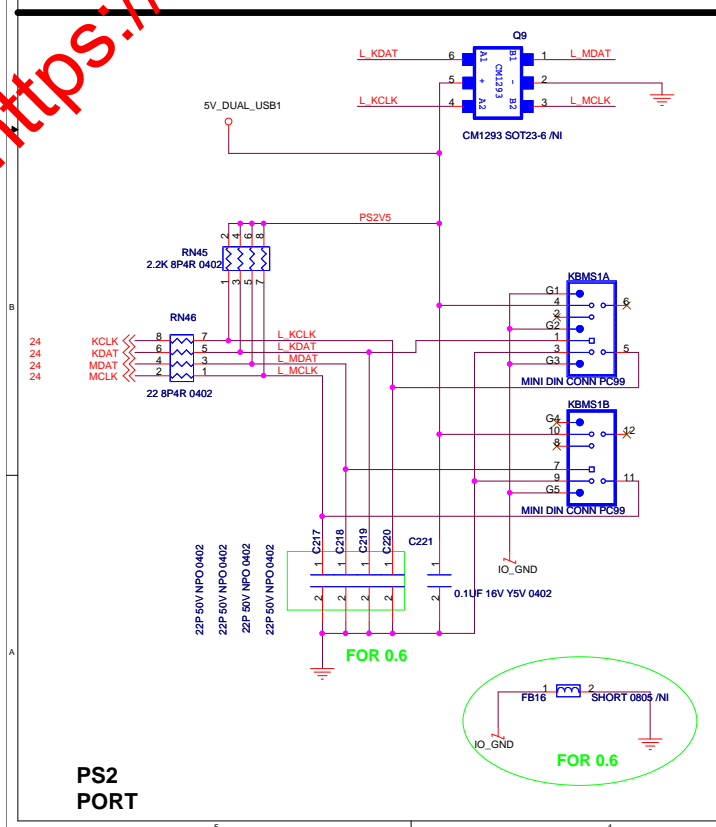
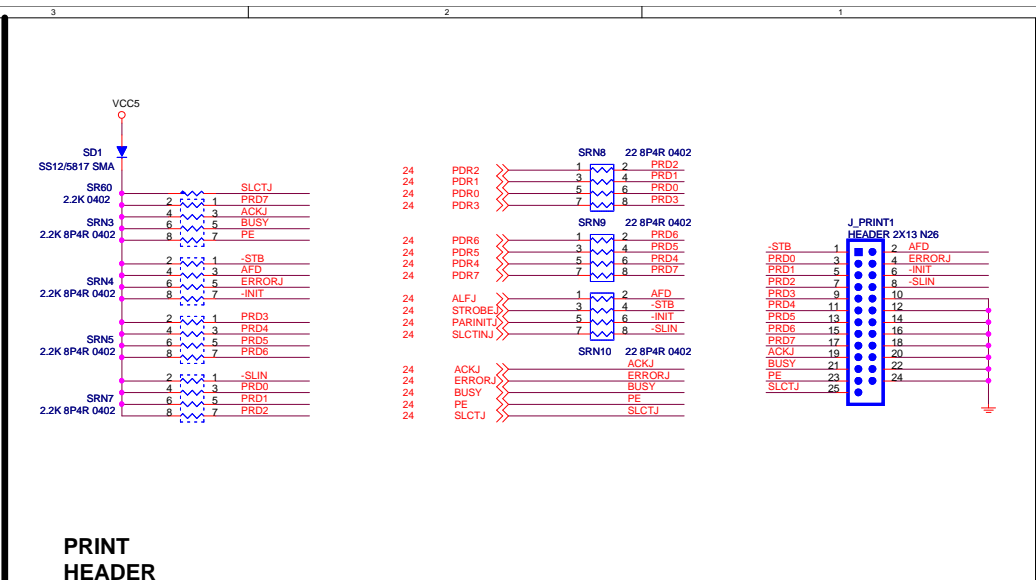
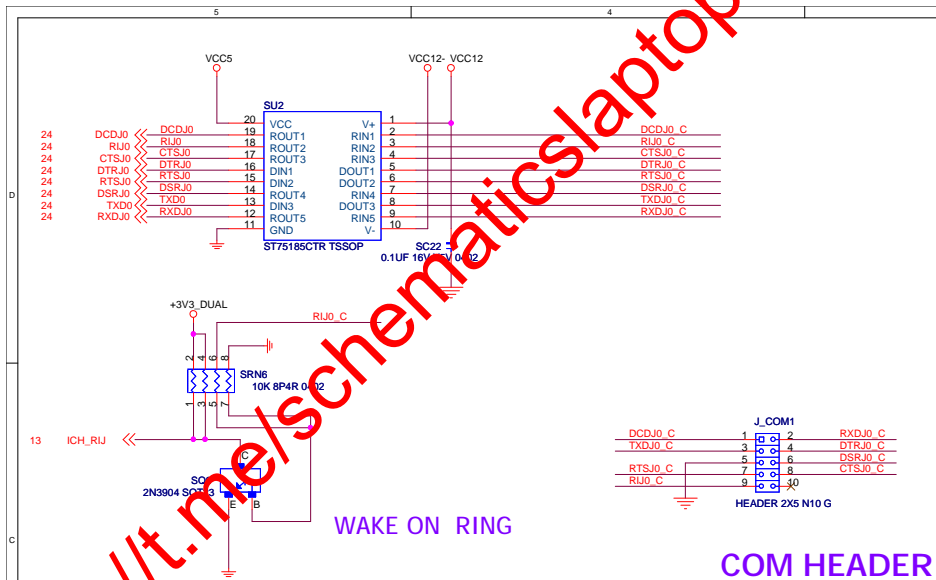
S+Reference



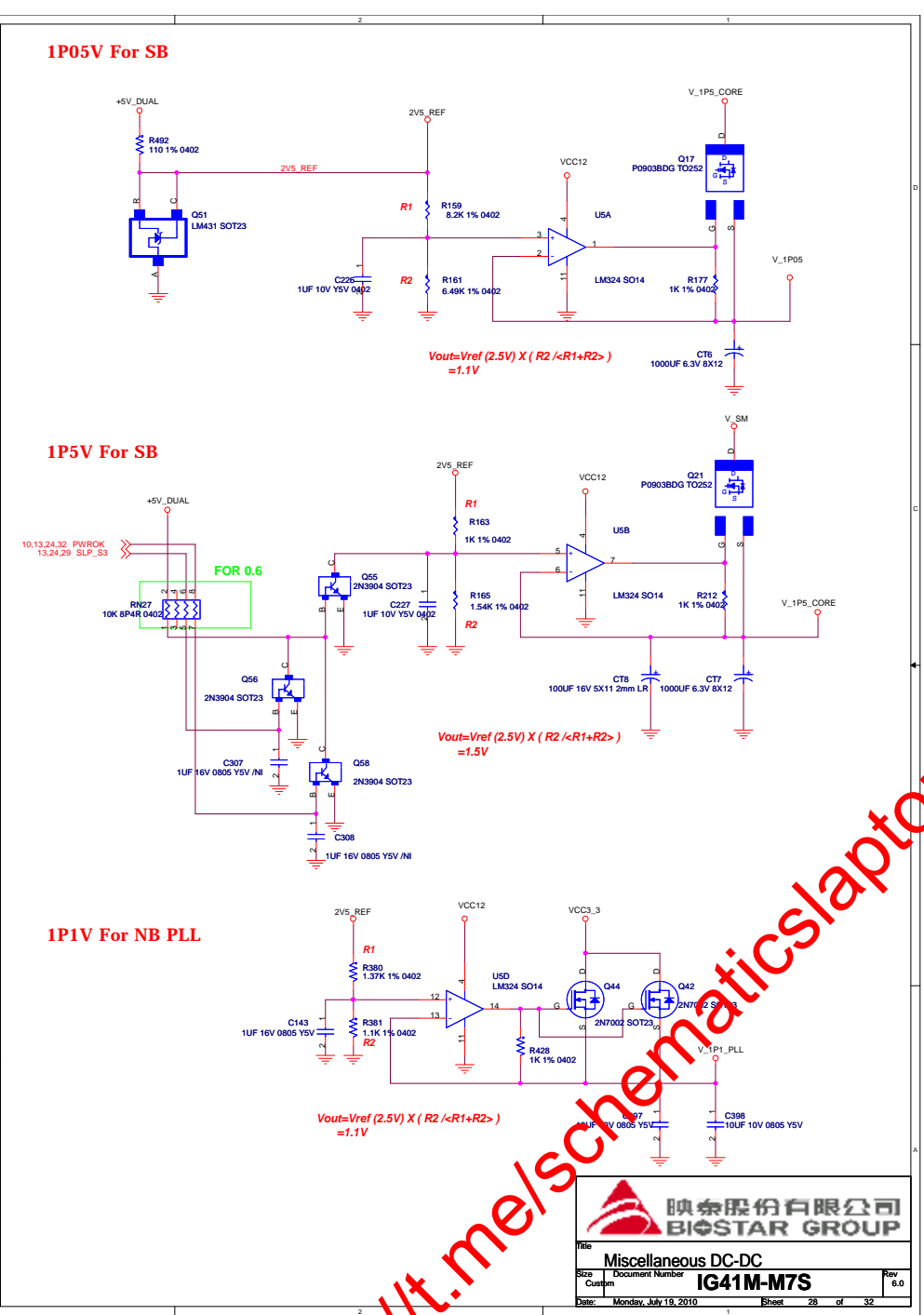
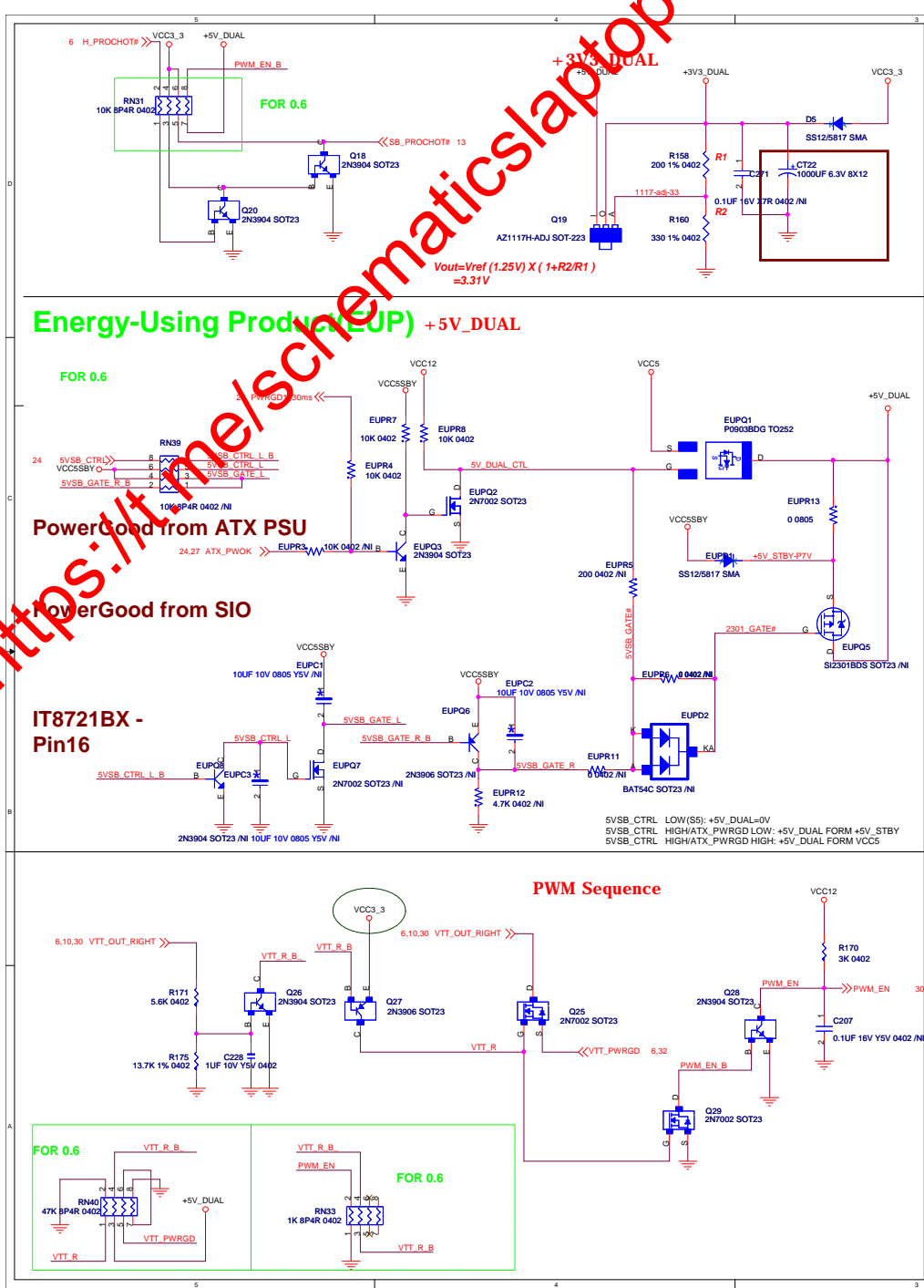
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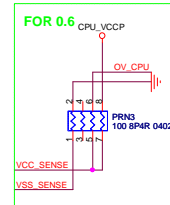
LPC SUPER I/O 8718FHX
 Size: **IG41M-M7S** Rev: 6.0
 Date: Monday, July 19, 2010 Sheet 24 of 32

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| COM, PS2, USB(REAL), PRINT | |
| IG41M-M7S | |
| Date: Monday, July 19, 2010 | Sheet 25 of 32 |

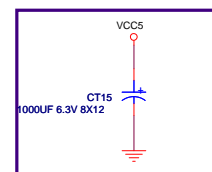


[illegible]

- PCT[2-4] 肱BOM桶突て蛸甥働働
"1500UF 16V 10X20X5 LR O" (Default)
摩椒突蛸"270UF-S 16V 8X11.5"

Netin天略"1500UF 16V 10X20X5 LR O" 麼
270UF-S 16V 8X11 ELITE 10X20

| | |
|---|-----------------------|
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| Title | |
| CPU VCCP DC-DC Converter | |
| Size | Document Number |
| Custom | IG41M-M7S |
| Date | Monday, July 19, 2010 |
| Sheet | 30 of 32 |
| Rev | 6.0 |



RGB TRACE mismatch 200 mils

~~R close GMCH less 500mils~~

chipset breakout 12mils to first R less 500mils , 1R to 2R route 7 mils, after 2R all 4 mils

