

Revision : 1.01

| PAGE | TITLE |
|------|----------------------------------|
| 01 | COVER SHEET |
| 02 | BOM & PCB MODIFY HISTORY |
| 03 | BLOCK DIAGRAM |
| 04 | CPU HYPER TRANSPORT |
| 05 | CPU DDRIII MEMORY |
| 06 | CPU CONTROL |
| 07 | CPU POWER & GND |
| 08 | DDRIII CHANNEL A |
| 09 | DDRIII CHANNEL B |
| 10 | RD980 HT-LINK I/F |
| 11 | RD980 PCIE I/F ,SWITCH |
| 12 | RD980 SYSTEM I/F |
| 13 | RD980 STRAPS ,SPMEM, POWER, GND |
| 14 | 9LPR477D |
| 15 | SB950 PCIE/PCI/CPU/LPC |
| 16 | SB950 ACPI/USB/GPIO/AUDIO |
| 17 | SB950 SATA/SPI/IDE/HWM |
| 18 | SB950 POWER & GND |
| 19 | PCI EXPRESS x16 |
| 20 | PCI_E x8 ,PCI_E x1 SLOT 1,2 |
| 21 | PCI SLOT 1, 2 |
| 22 | IT8720 JX LPC IO ,Dual-BIOS ,TPM |
| 23 | ALC889R CODEC |
| 24 | AUDIO JACK |
| 25 | FAN/HWMO/COM/ KB_MS |

[illegible]

Model Name:GA-990XA-UD3

Component value change history

Version: 1.01

4 Layer, 4mil 50ohm +/- 15% L

P-Code: U98094-0

[illegible]

Circuit or PCB layout change for next version

[illegible]

Title

BOM & PCB HISTORY

| | |
|--------|---|
| Size | 1 |
| Custom | |

| |
|-----------------|
| Document Number |
|-----------------|

GA-990XA-UD3

| | |
|-----|------|
| Rev | 1.01 |
|-----|------|

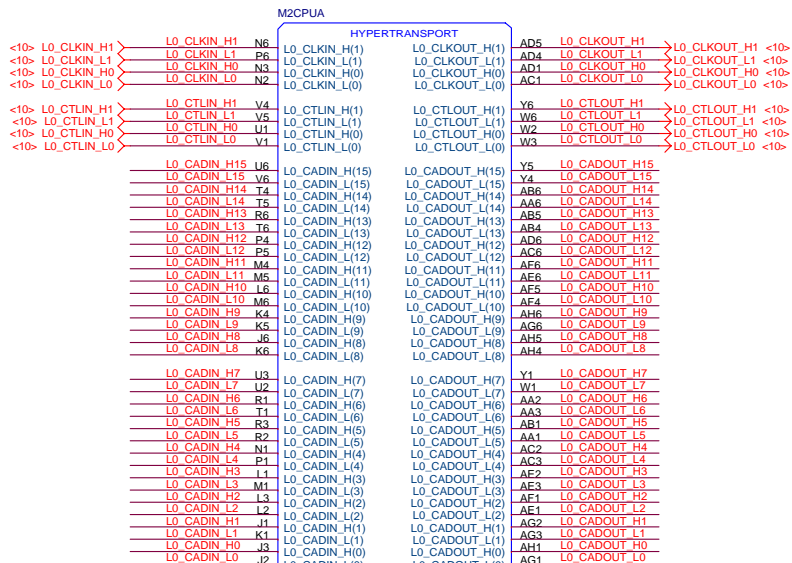
Date: Friday, April 29, 2011

Sheet 2 of 35

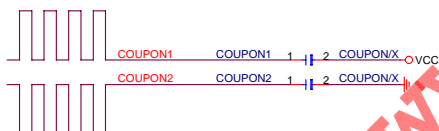
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L0_CADIN_H[0..15] <L0_CADIN_H[0..15] <10>
L0_CADOUT_L[0..15] <L0_CADOUT_L[0..15] <10>
L0_CADOUT_H[0..15] <L0_CADOUT_H[0..15] <10>

CPU_VDD_RUN = VCORE
CPU_VDDA_RUN = VDDA25
VLDT_RUN = VCC12_HT
CPU_VDDIO_SUS = DDR15V
CPU_VDDR = CPU_VDDR12

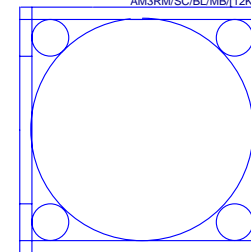
VLDT_A = VCC12_HT
VLDT_B = HT12B



CPU-SK/941AM3/S/GF/[10SC1-A01942-01R_10SC1-A01942-02R]



M2CPU
AM3RM/SC/BL/MB[12KRC-04K812-21R_12KRC-04K812-22R]



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| Title | | | |
|---------------------|------------------------|-------|---------|
| CPU HYPER TRANSPORT | | | |
| Size | Document Number | Rev | |
| Custom | GA-990XA-UD3 | 1.01 | |
| Date: | Monday, April 25, 2011 | Sheet | 4 of 35 |

VCCORE_NB

ABC5 22uB/X5R6

ABC6 22uB/X5R6 3V/M

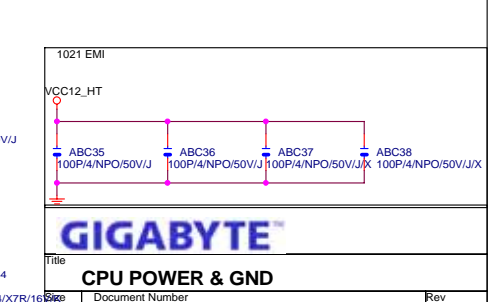
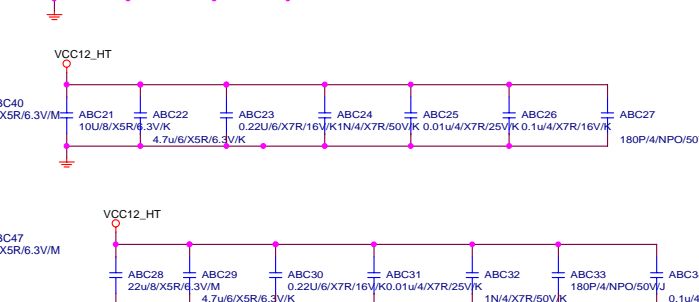
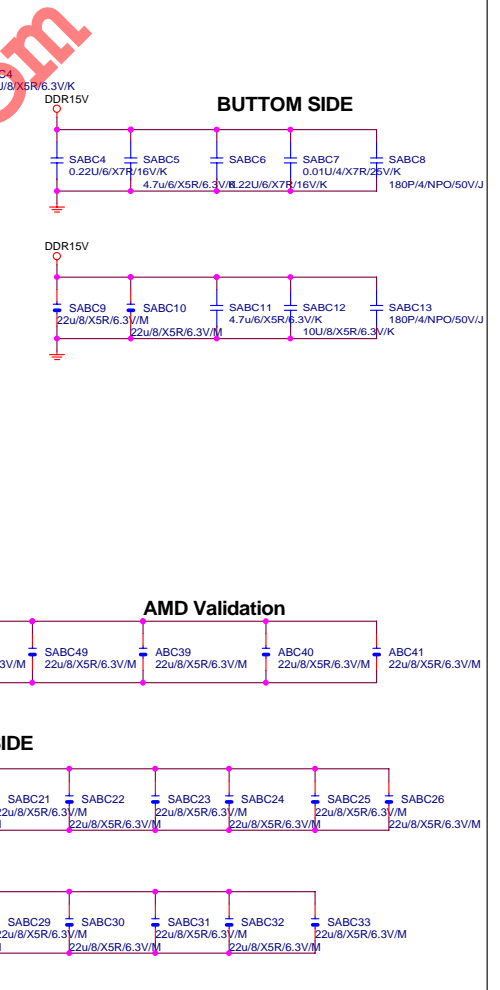
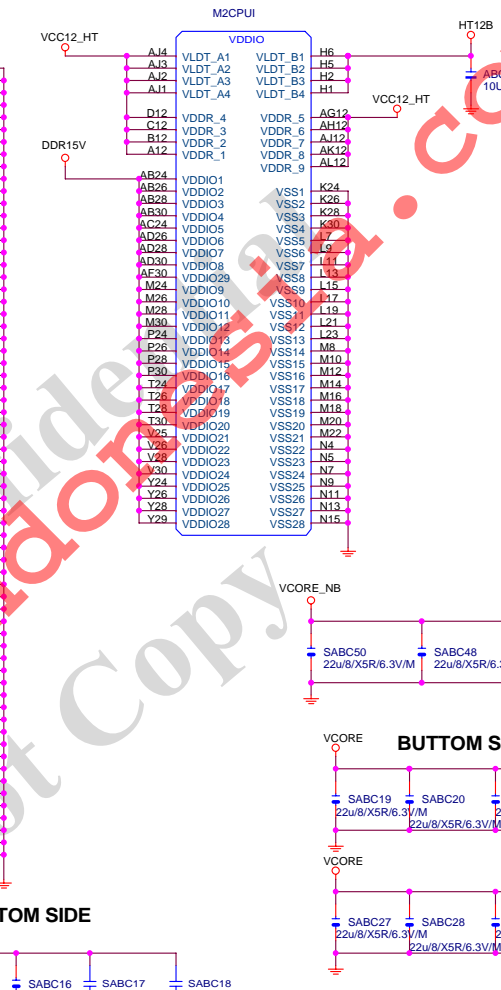
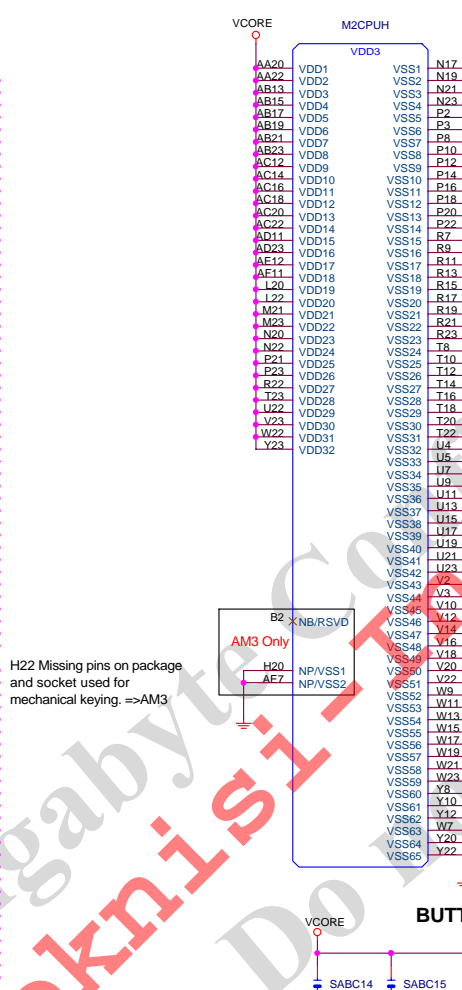
ABC7 4.7uB/X5R6 3V/K

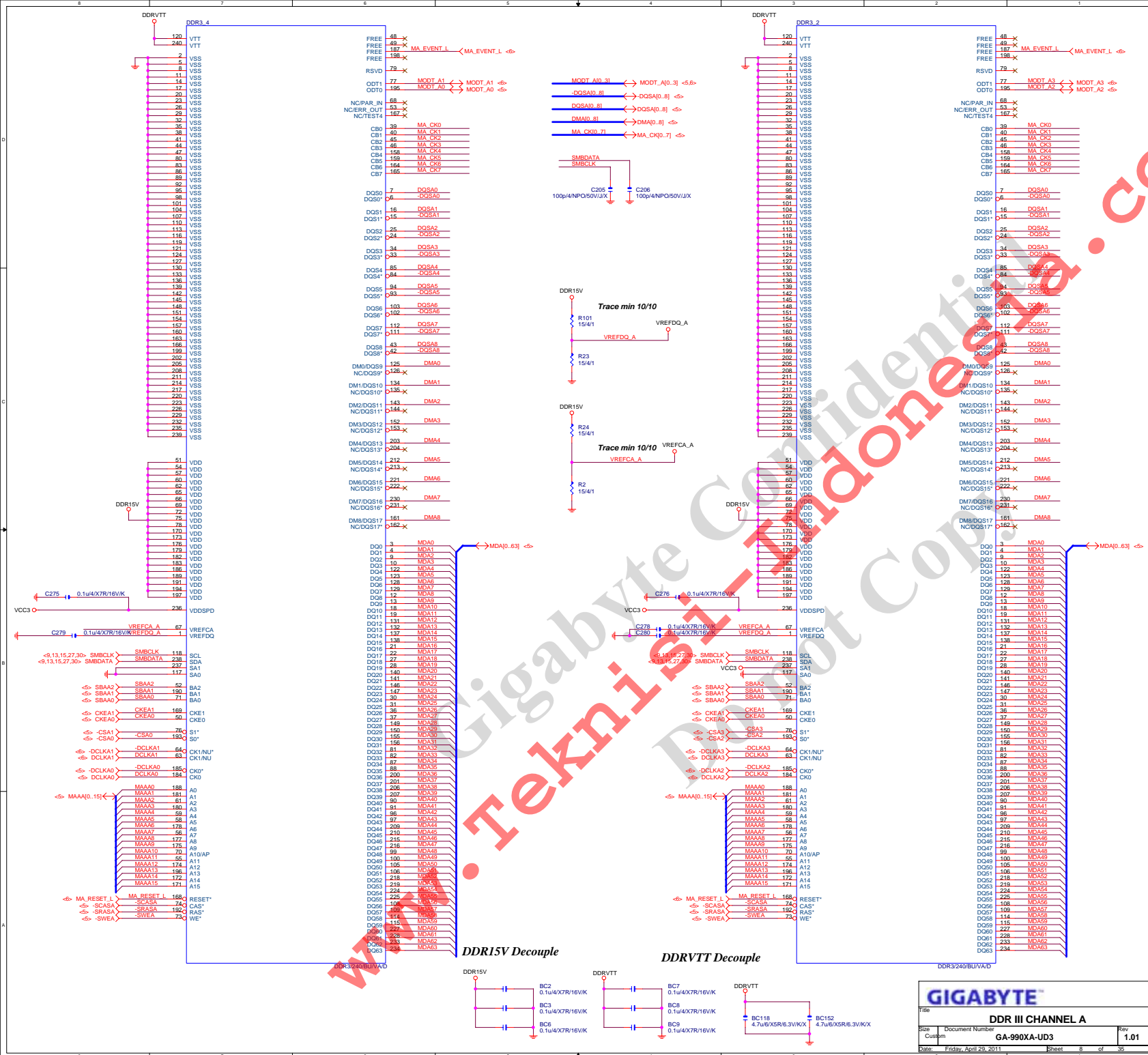
ABC8 0.22uB/X7R16V/K

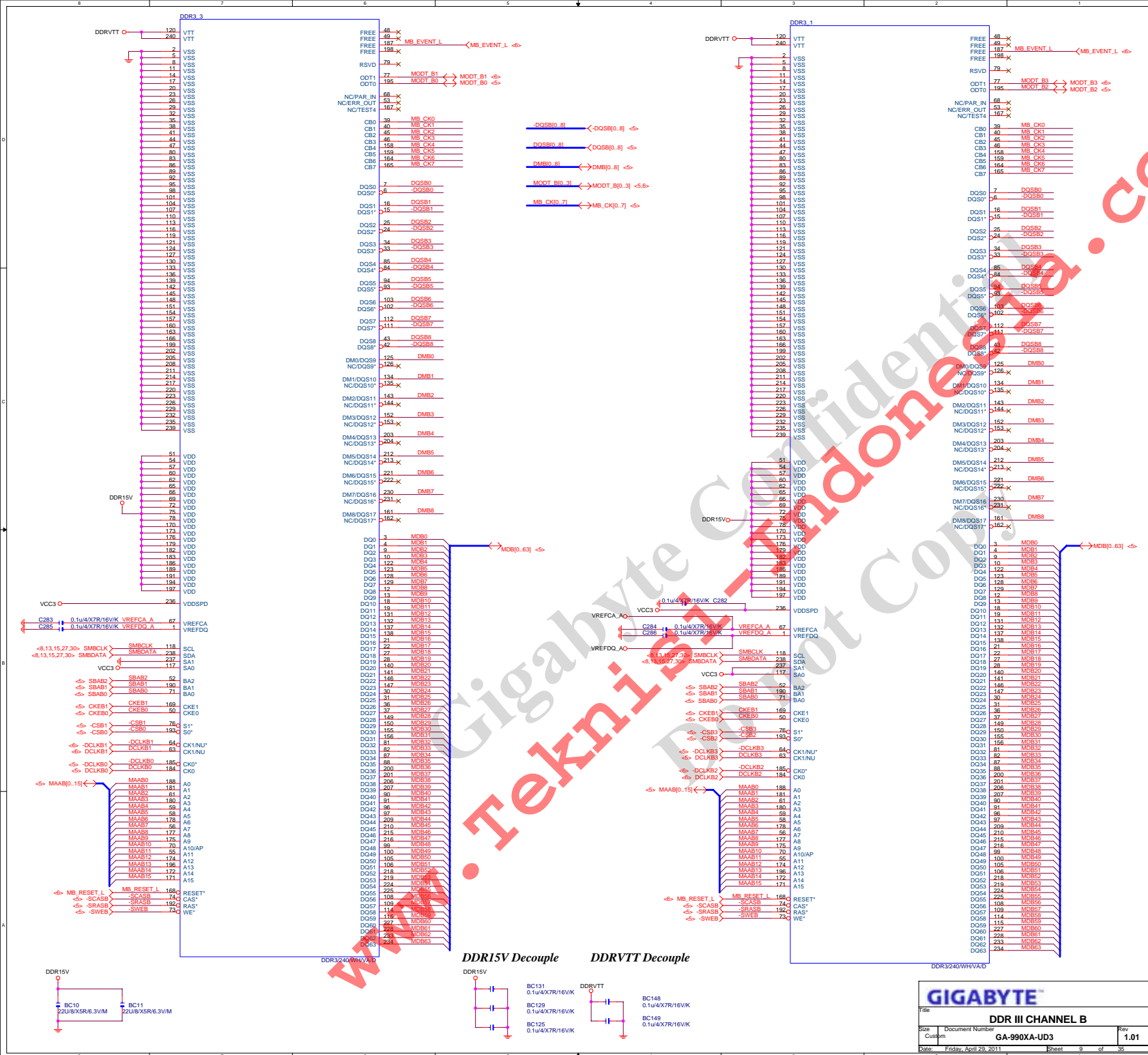
ABC9 0.01uA/X7R25V/K

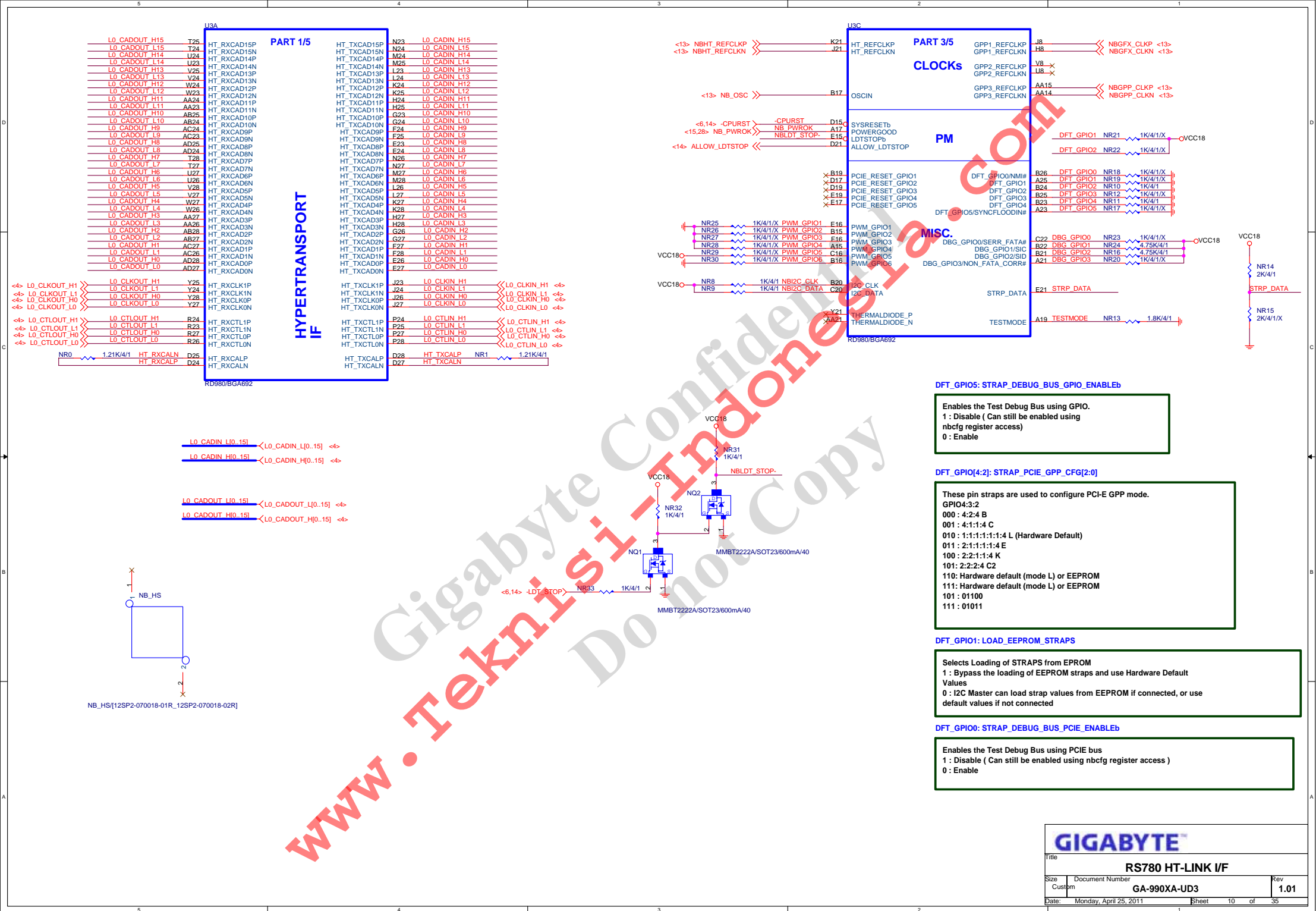
ABC10 160P/NPO/50V/J

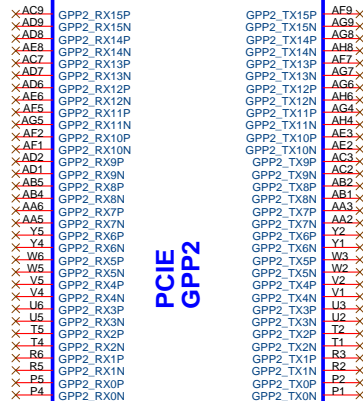
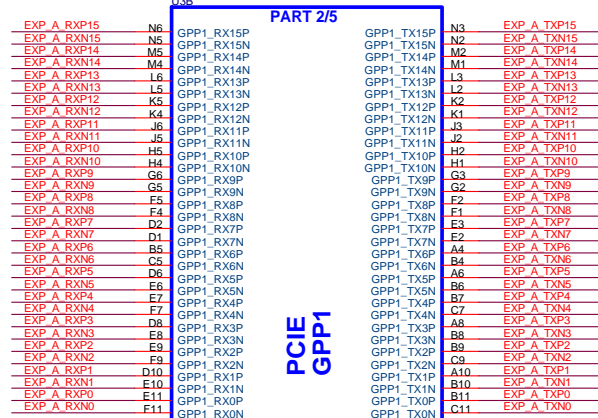
GND



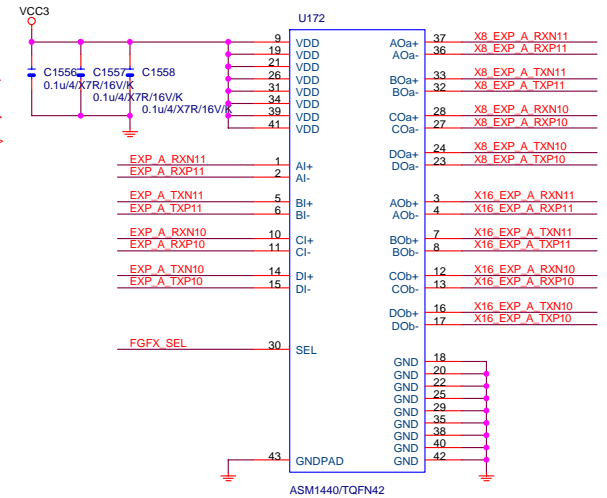
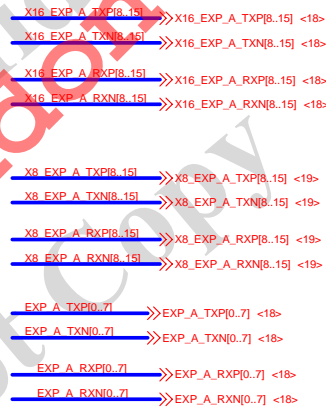
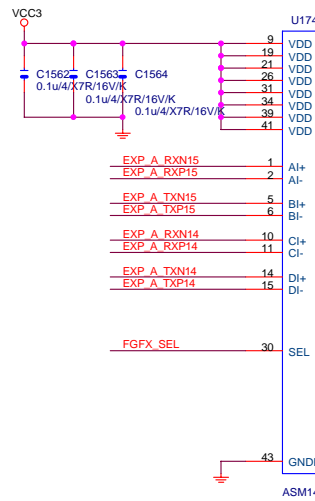








RD980/BGA692

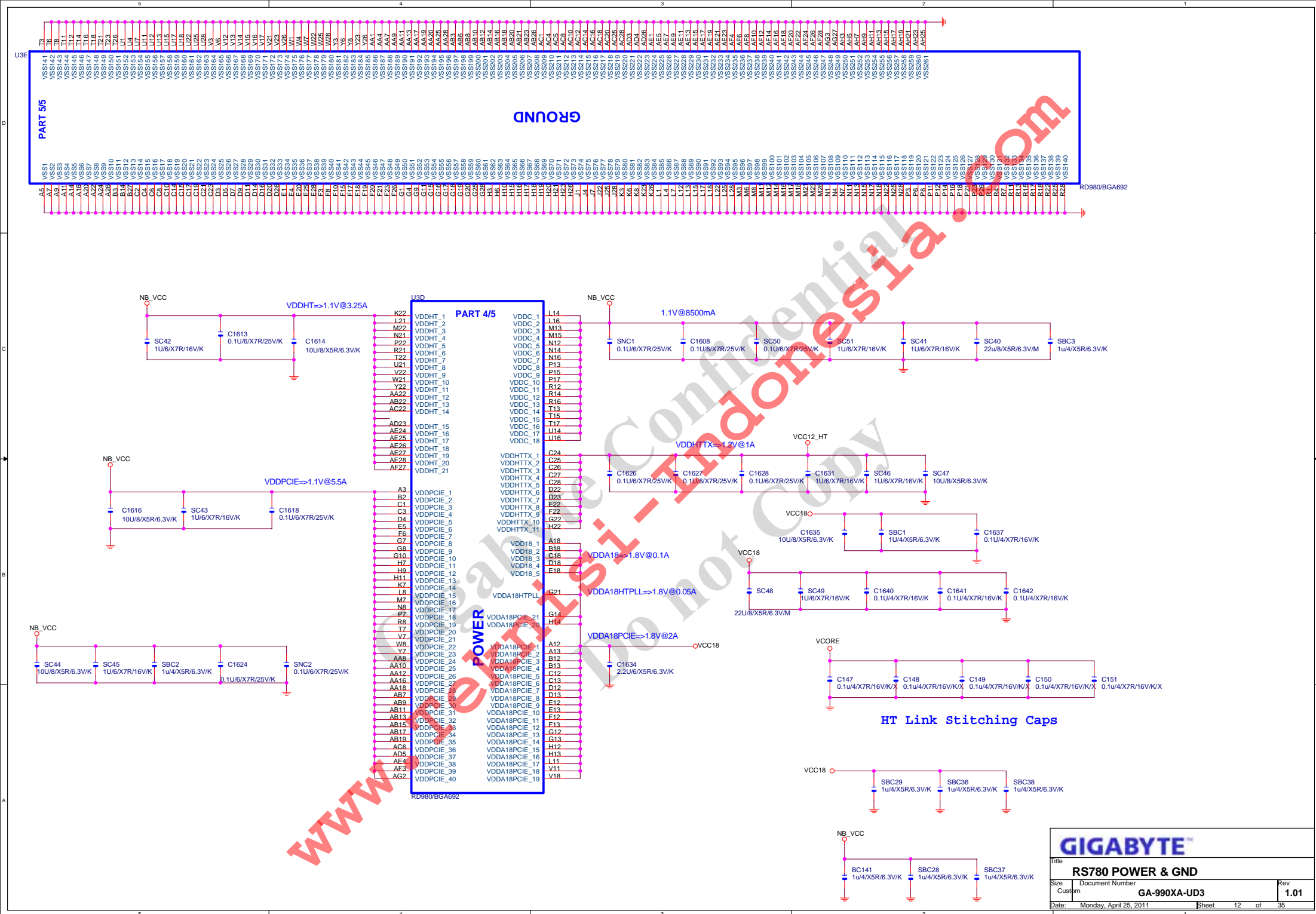


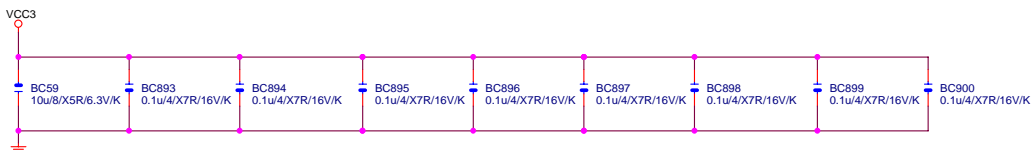
| Function | SEL |
|-----------|------------|
| xI--> xOa | L (X 8) |
| xI--> xOb | H (X 16) |

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RS780 PCIE I/F ,Switch

Rev 1.01
Date: Monday, April 25, 2011





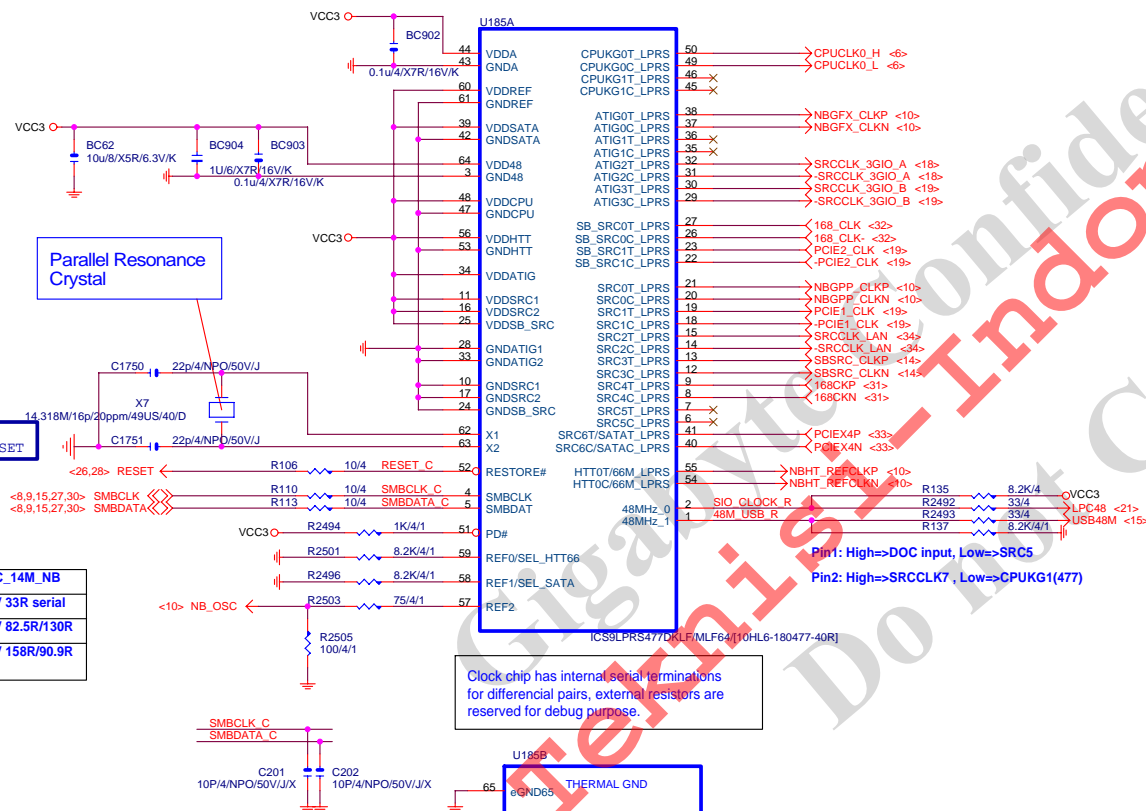
- 1- PLACE ALL THE SERIES TERMINATION RESISTORS AS CLOSE TO U800 AS POSSIBLE
- 2- ROUTE ALL SRCCLKTx AND SRCCLKCx AS DIFFERENT PAIR RULE
- 3- PUT DECOUPLING CAPS CLOSE TO U800 POWER PIN

Place R800/801 less than 500 mills away from U800
R851 less than 100 mills away from R800/801
route CPU clock as 100ohm differential pair

NB CLOCK INPUT TABLE

| NB CLOCKS | RS740 | RX780 | RS780 | |
|--------------|---------------|---------------|----------------|-----------|
| HT_REFCLKP | 66M SE(SE) | 100M DIFF | 100M DIFF | |
| HT_REFCLKN | NC | 100M DIFF | 100M DIFF | |
| REFCLK_P | 14M SE (3.3V) | 14M SE (1.8V) | 14M SE (1.1V) | 100M DIFF |
| REFCLK_N | NC | NC | vref | 100M DIFF |
| GFX_REFCLK* | 100M DIFF | 100M DIFF | 100M DIFF | 100M DIFF |
| GPP_REFCLK | NC | 100M DIFF | 100M DIFF(OUT) | |
| GPPSB_REFCLK | 100M DIFF | 100M DIFF | 100M DIFF | |

* the GFX_REFCLK input is required for all cases



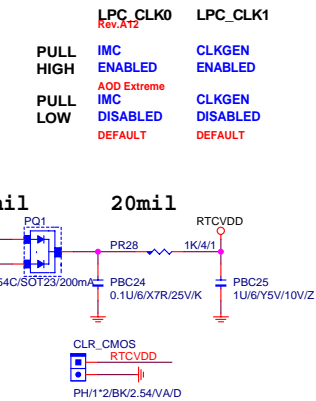
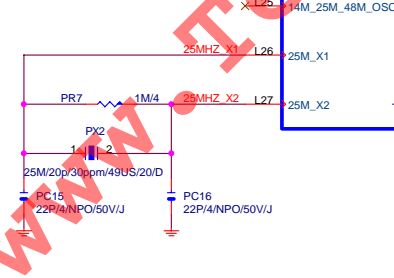
| | OSC_14M_NB |
|----------------------|-----------------|
| RS740 | 3.3V 33R serial |
| RX780 | 1.8V 82.5R/130R |
| RS780 (Single-ended) | 1.1V 158R/90.9R |

| REF0/SEL_HTT66 | HTT CLOCK |
|----------------|---------------------|
| 0 | 100.00 DIFFERENTIAL |
| 1 | 66.66 SINGLE END |

| REF1/SEL_SATA | SRC6/SATA |
|---------------|--|
| 0 | 100.00 DIFFERENTIAL SPREADING SRC CLOCK |
| 1 | 100.00 NON-SPREADING DIFFERENTIAL SATA CLOCK |



SB HS/12SP2-S06510-11R 12SP2-S06510-12R 12SP2-S06510-13R)



| | |
|----------|------------|
| CLR_CMOS | |
| SHORT | CLEAR CMOS |
| OPEN | NORMAL |

NOT ADD ICT FOR RTCVDD PIN

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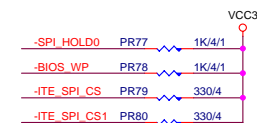
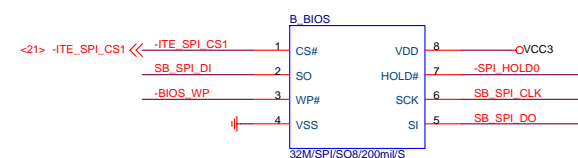
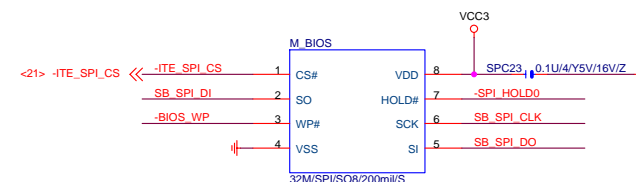
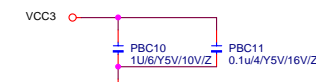
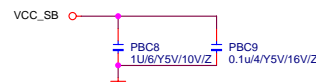
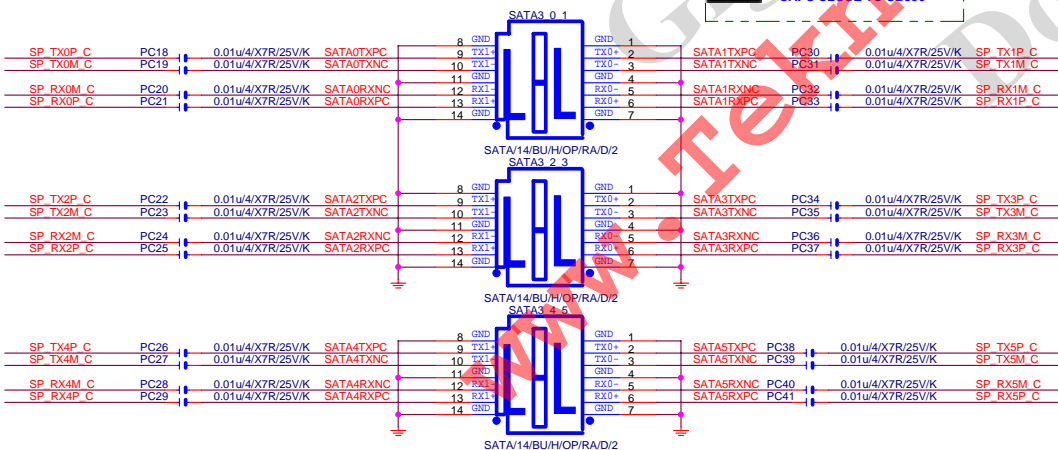
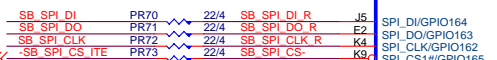
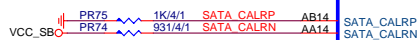
| | |
|-------|----------------------------|
| Title | ATI SB700 PCIE/PCI/CPU/LPC |
|-------|----------------------------|

| | | |
|--------|------------------------|----------------|
| Size | Document Number | Rev |
| Custom | GA-990XA-UD3 | 1.01 |
| Date: | Monday, April 25, 2011 | Sheet 14 of 35 |

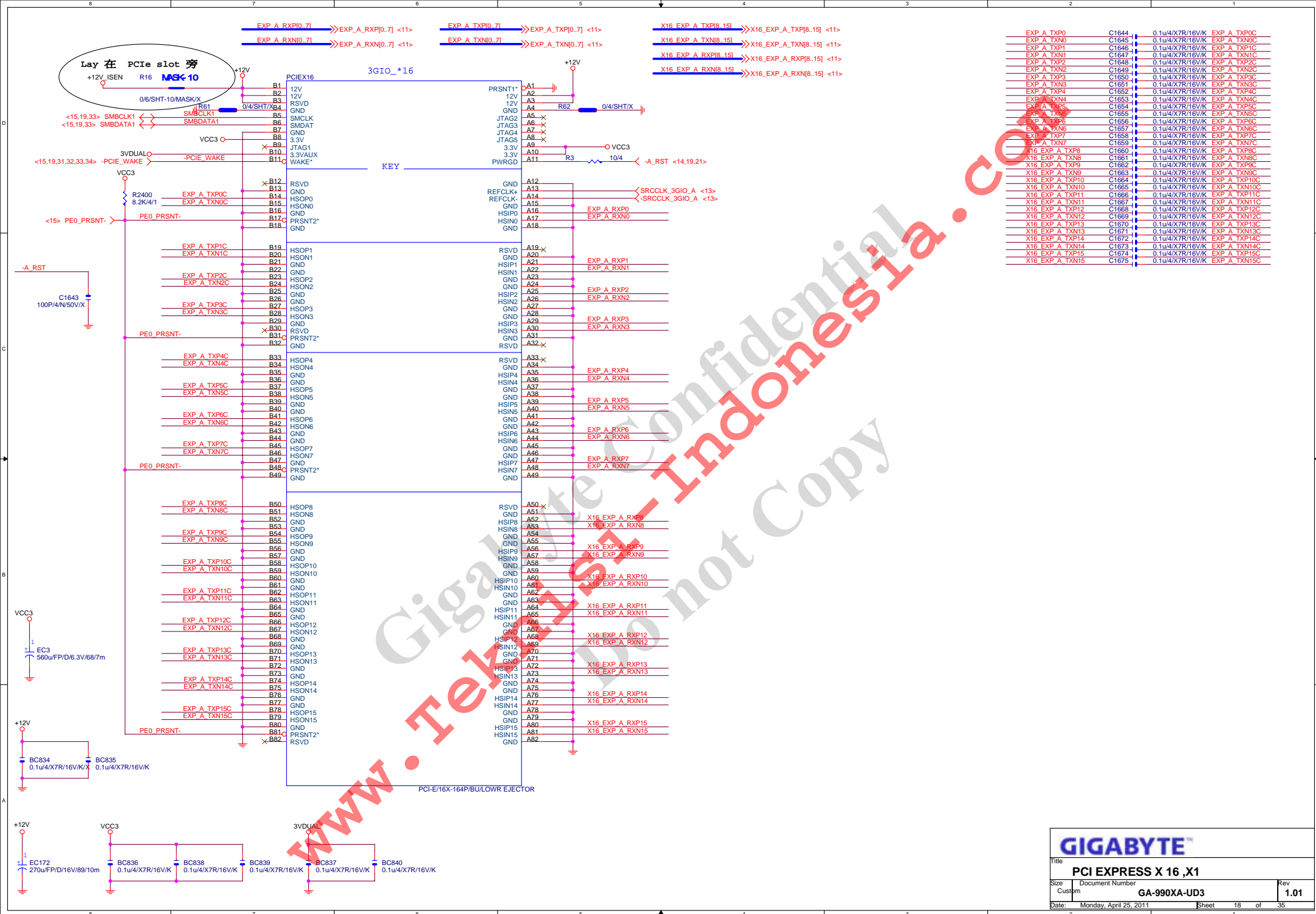


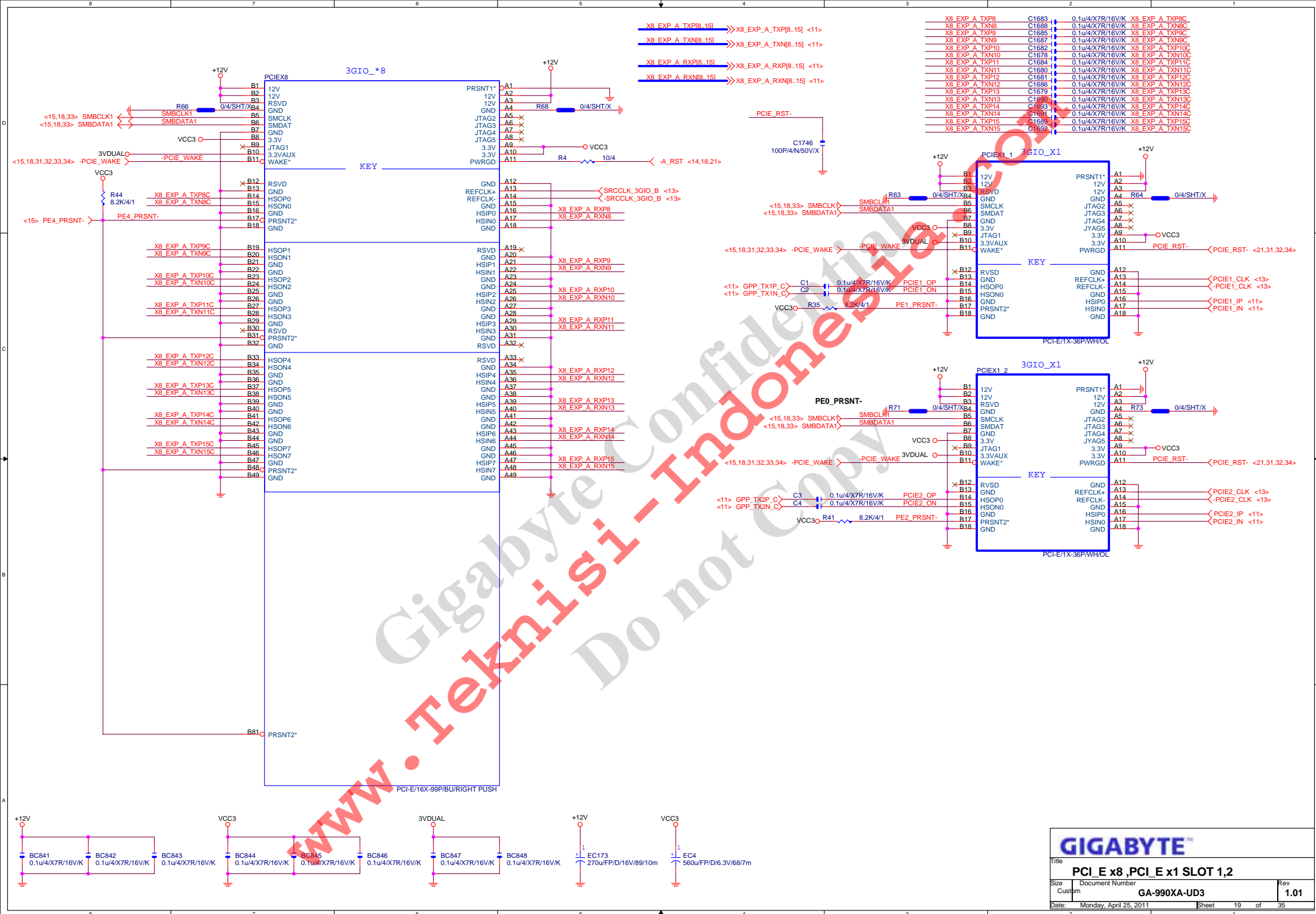
NOTE:

**R650 IS 1K 1% FOR 25MHz
XTAL, 4.99K 1% FOR 100MHz
INTERNAL CLOCK**

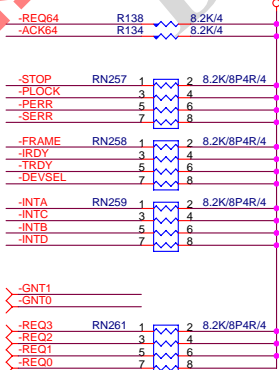
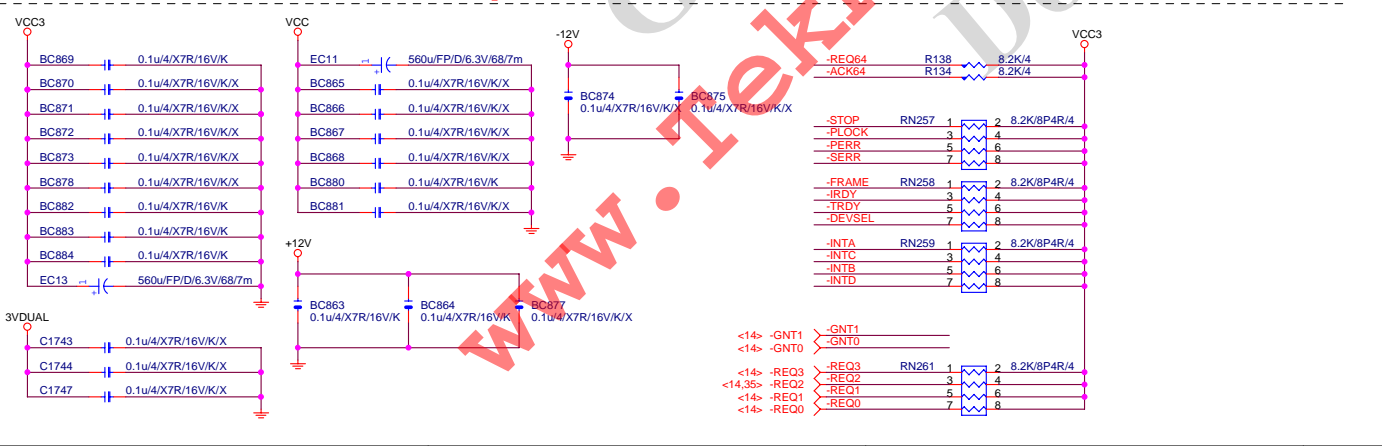






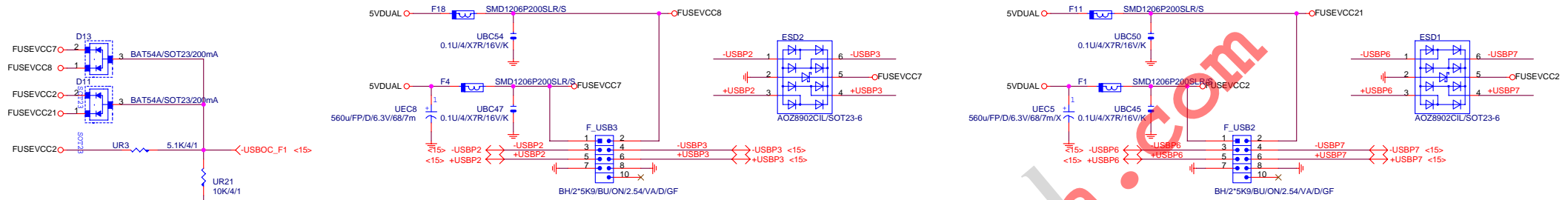


<14,35> AD[0..31] \longleftrightarrow AD[0..31]

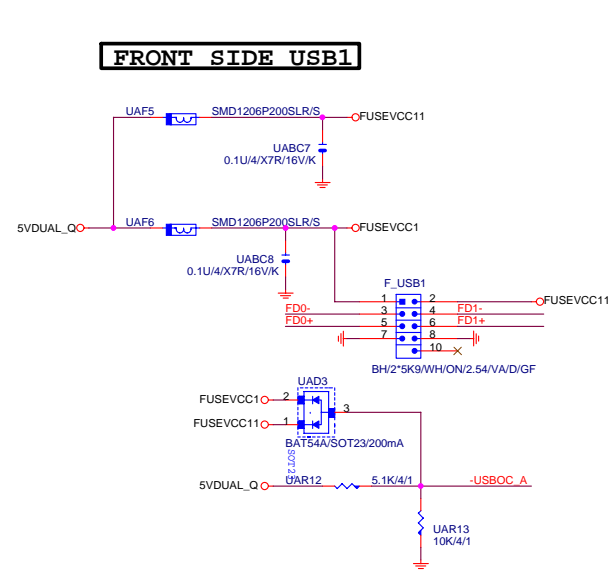


| | | | |
|----------------|------------------------|-------|----------|
| Title | | | |
| PCI SLOT 1,2,3 | | | |
| Size | Document Number | Rev | |
| Custom | GA-990XA-UD3 | 1.01 | |
| Date: | Monday, April 25, 2011 | Sheet | 20 of 35 |

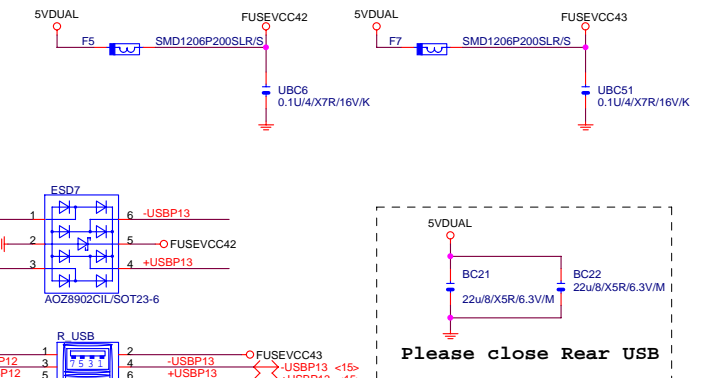
FRONT SIDE USB2



FRONT SIDE USB1

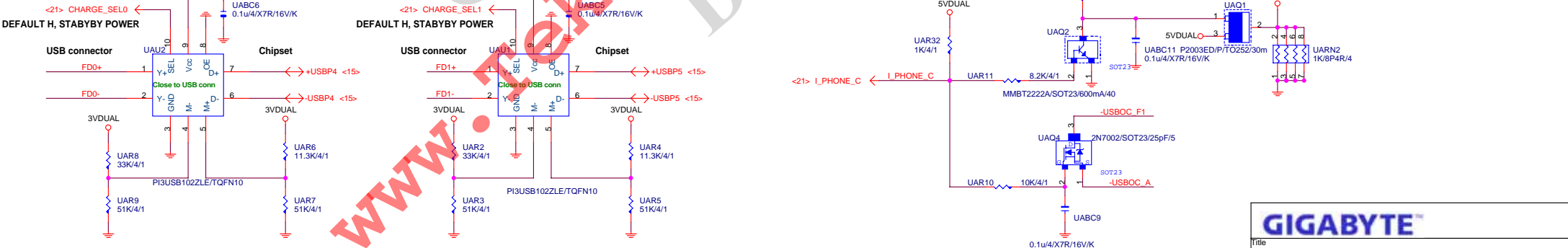


REAR USB

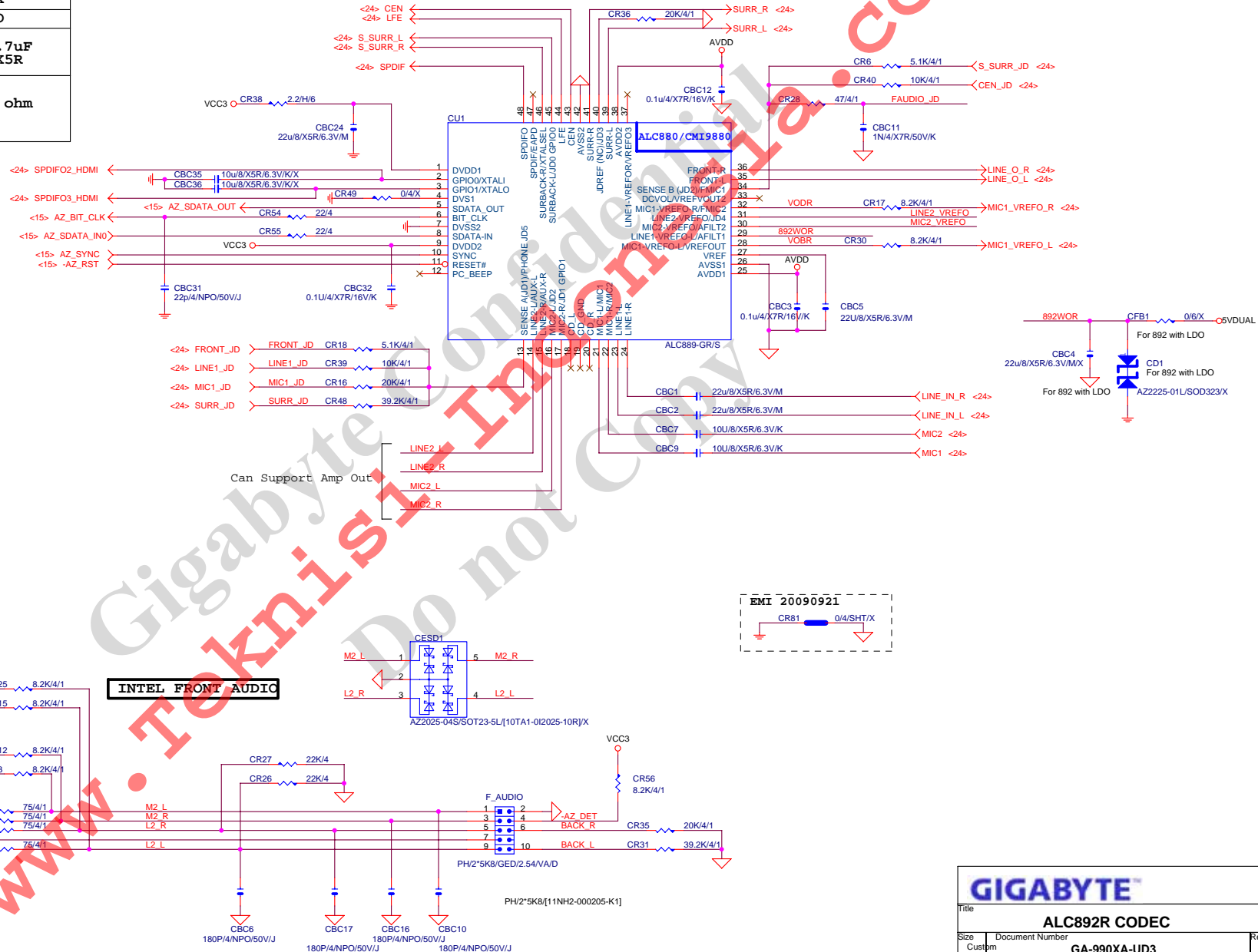


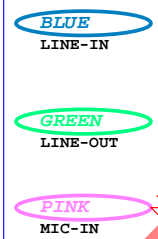
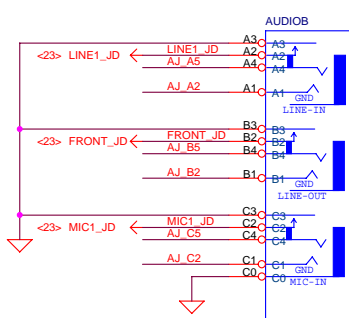
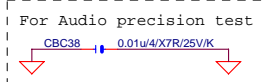
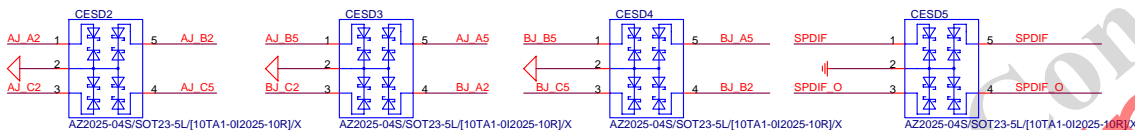
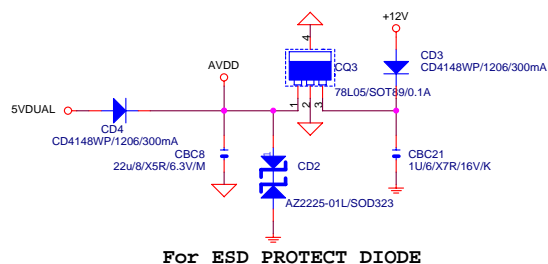
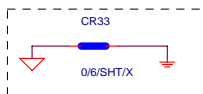
Please close Rear USB

I-Phone charger circuit



| | ALC892R | ALC889 | ALC889A |
|---|---------------|-----------------------|---------------|
| CR16 | X | X | O |
| CR24 | X | X | O |
| CR25 | X | O | O |
| CBC42 | 10uF/X5R | X | X |
| CR2 | 20K/1% | 20K/1% | 20K/0.1% |
| CR9 | O | O | X |
| CR10 | X | X | O |
| CBC10/CBC11/CBC12/ CBC13/CBC44/CBC45 | 4.7uF /X5R | 10uF /X5R | 4.7uF /X5R |
| CR4/CR8/CR18/CR23/ CR11/CR12/CR27/CR29/ CR49/CR50/CR43/CR44/ CR45/CR48/CR59/CR60 | 75 ohm | 66 ohm or lower | 75 ohm |

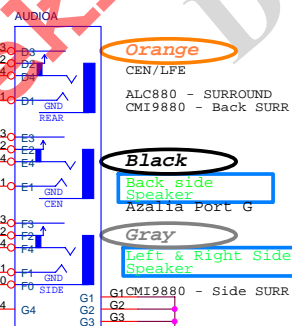
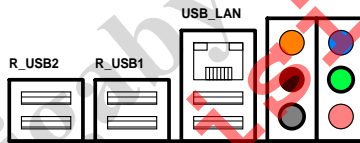
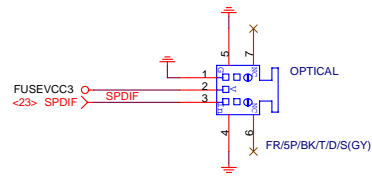
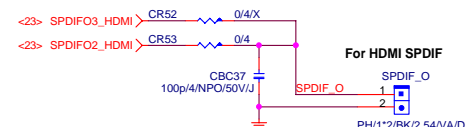




2X3RP/26P/0R,BK,GY,BU,GE,PK/RA

A3R7/13P/B/[11NR6-403006-01_11NR6-403006-02]
3R7+15P/[11NR6-403004-11]

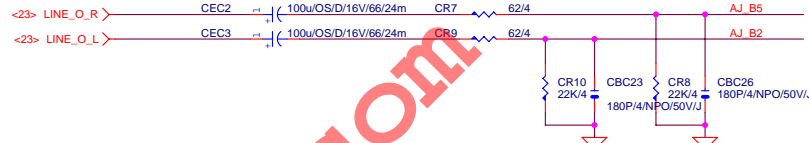
SPDIF



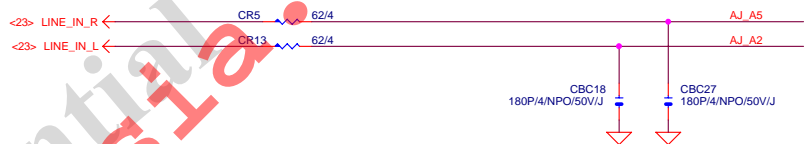
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A3R7/13P/0BG/[11NR6-403006-71]
3R7+15P/[11NR6-403004-31]

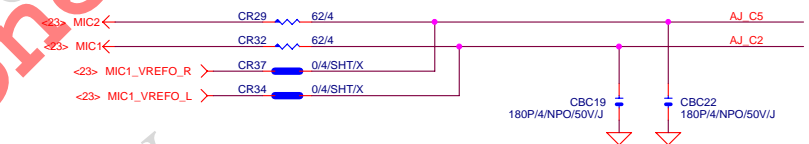
LINE OUT FRONT OUT



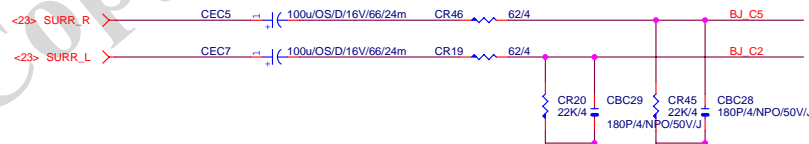
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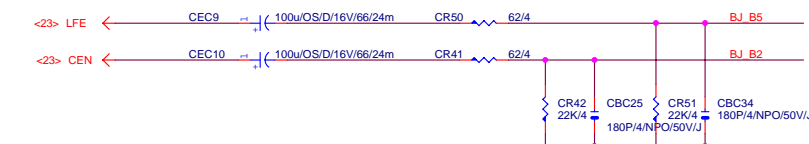
MIC



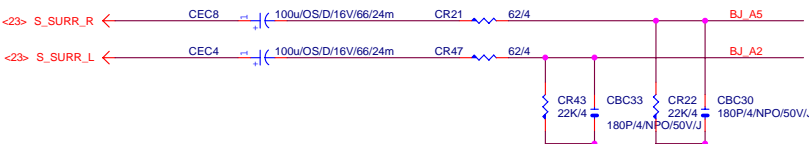
SURROUND



CEN/LFE

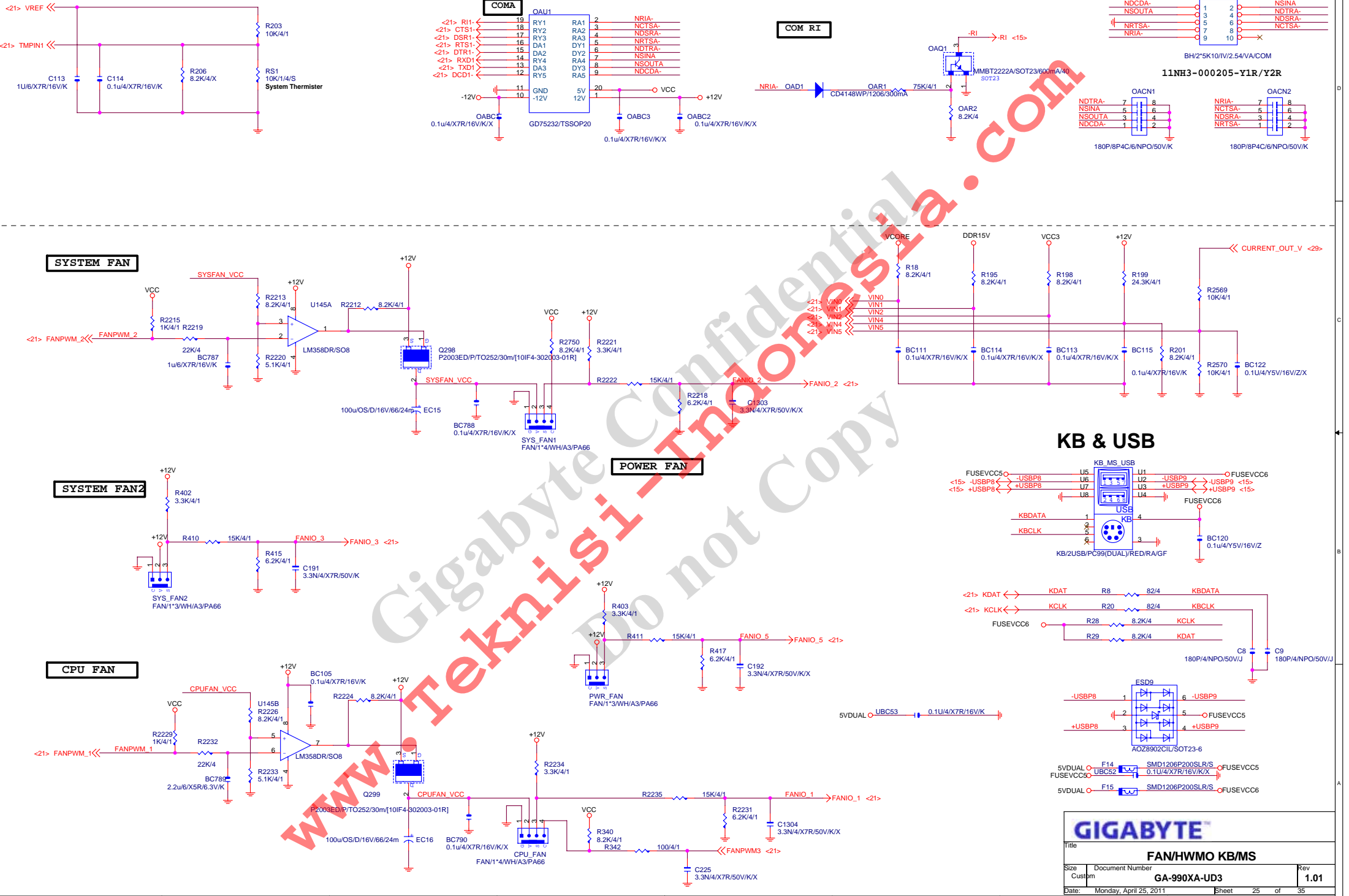


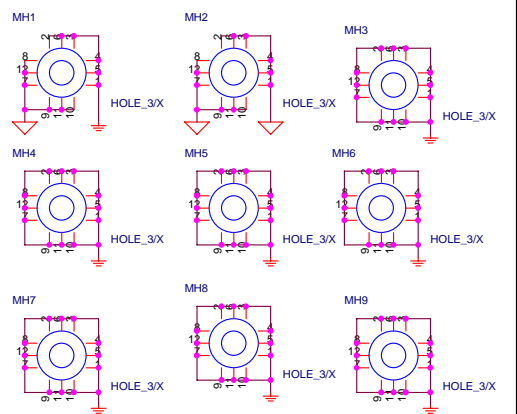
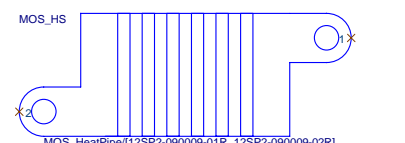
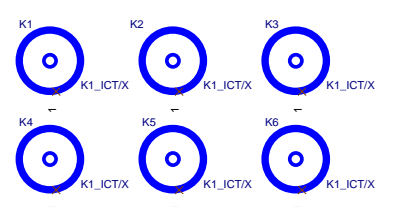
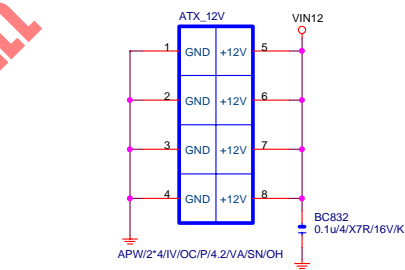
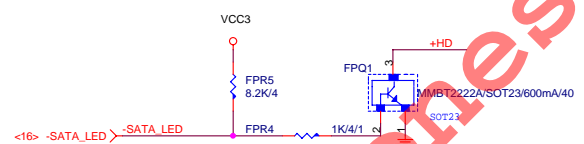
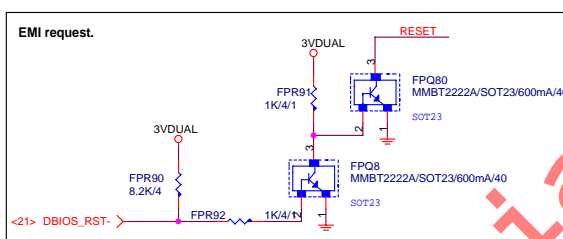
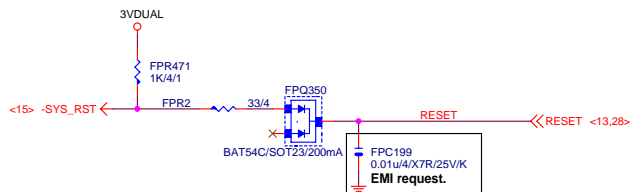
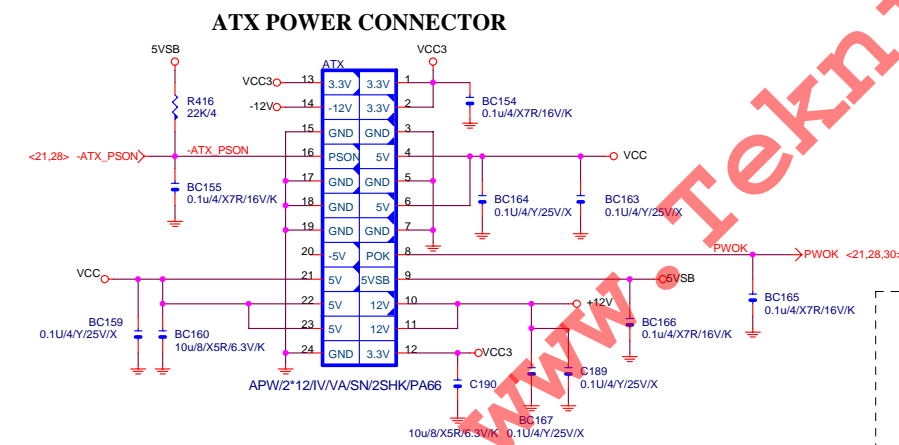
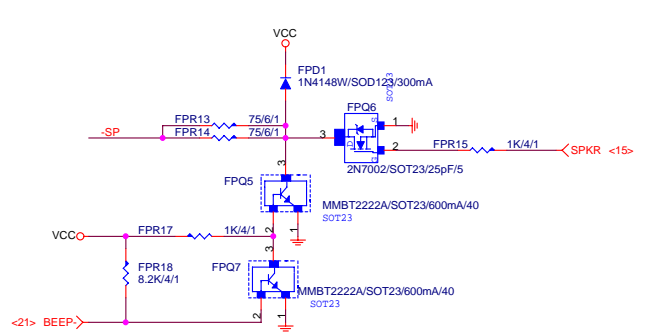
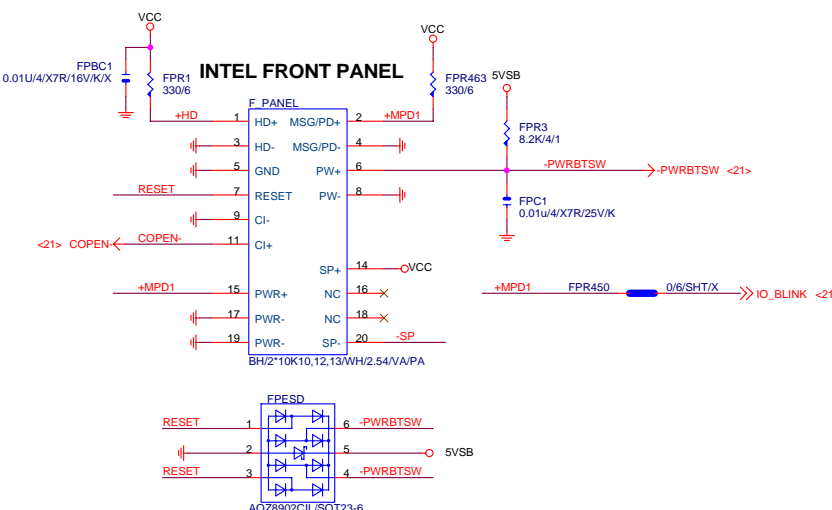
SURR BACK



| GIGABYTE | | | |
|----------|------------------------|-------|----------|
| Title | AUDIO JACK | | |
| Size | Document Number | Rev | |
| Cust | GA-990XA-UD3 | 1.01 | |
| Date: | Monday, April 25, 2011 | Sheet | 24 of 35 |

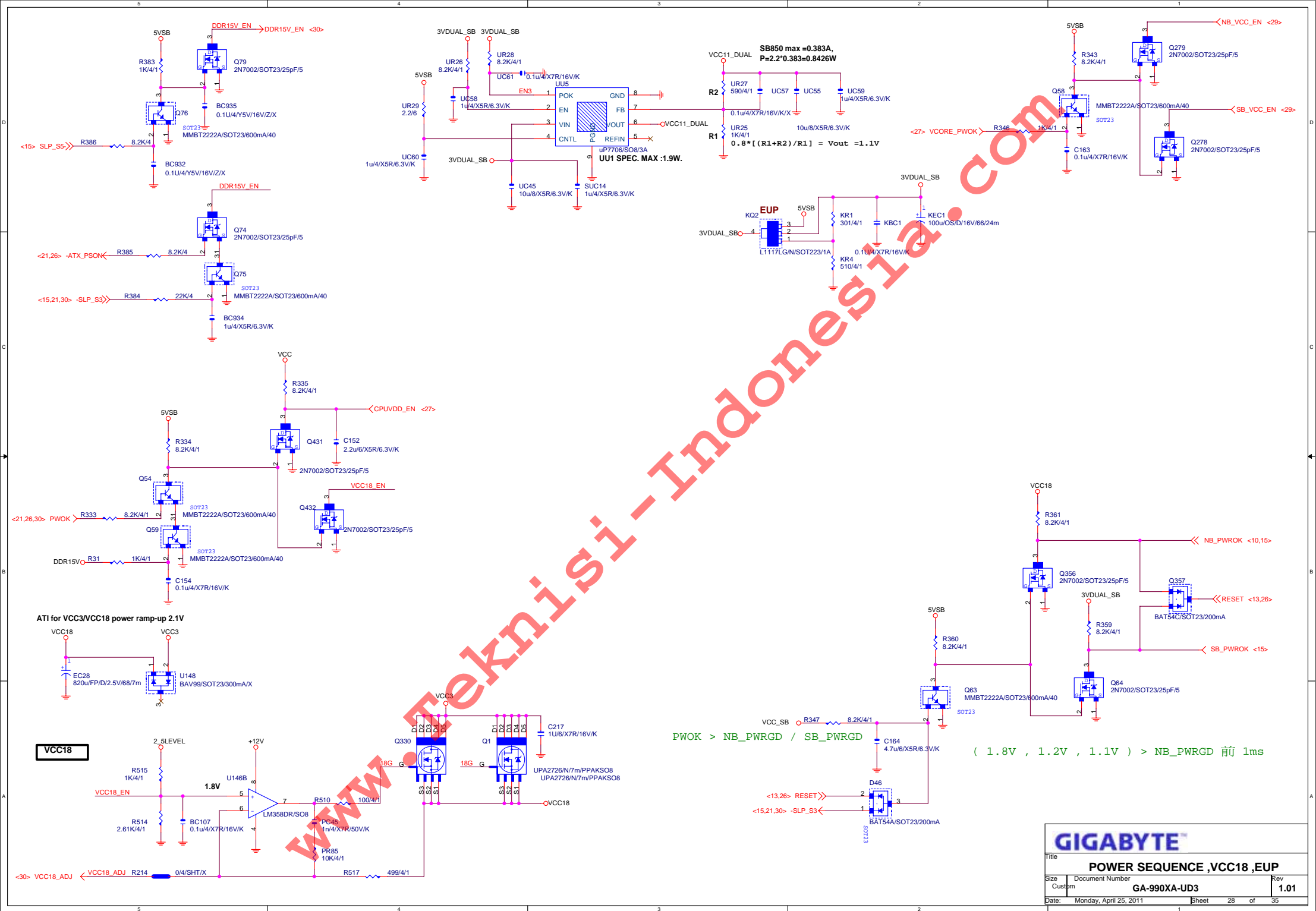
Hardware Monitor circuits

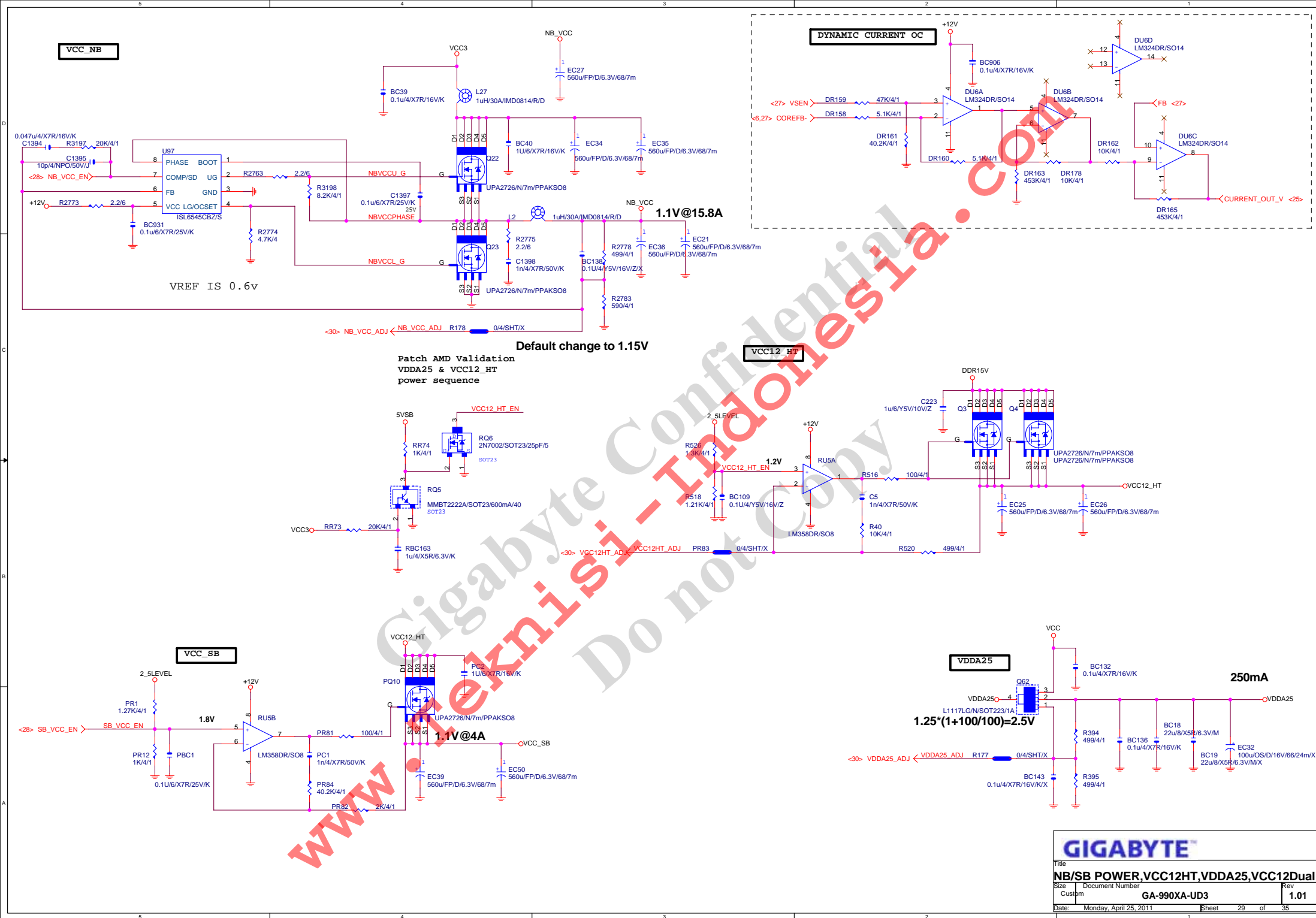


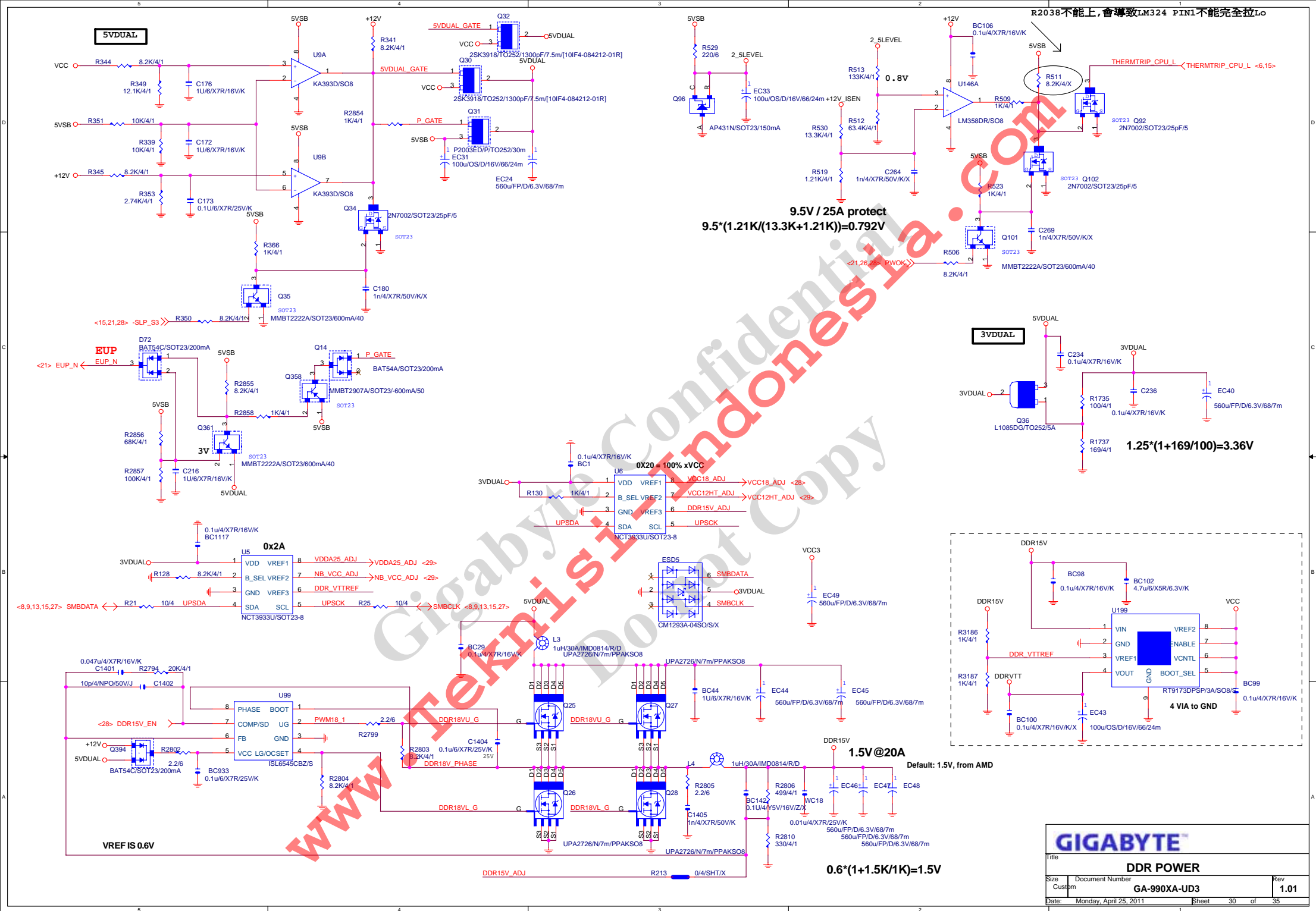


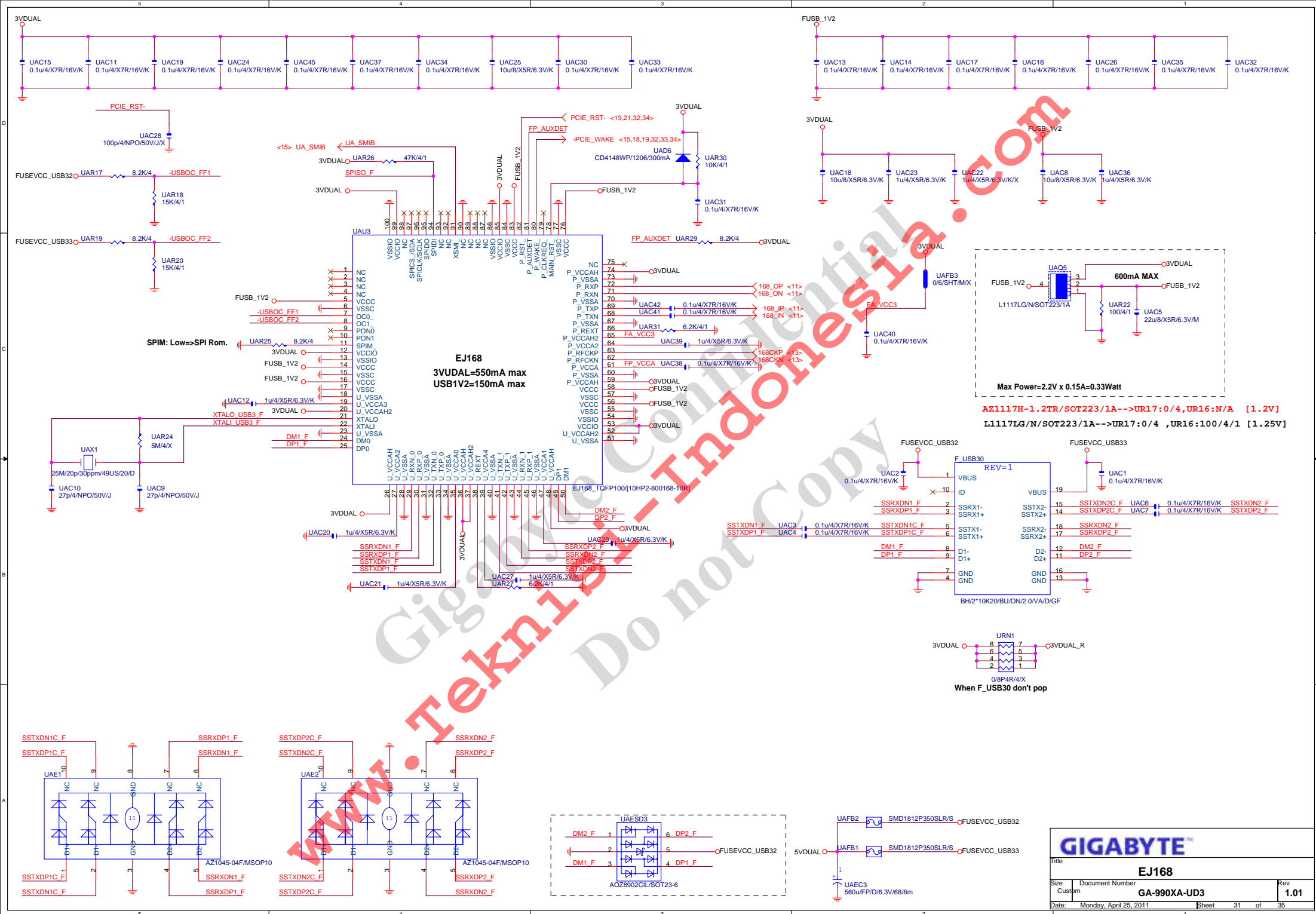
For Seasonic 900W Power supply cant Boot issue

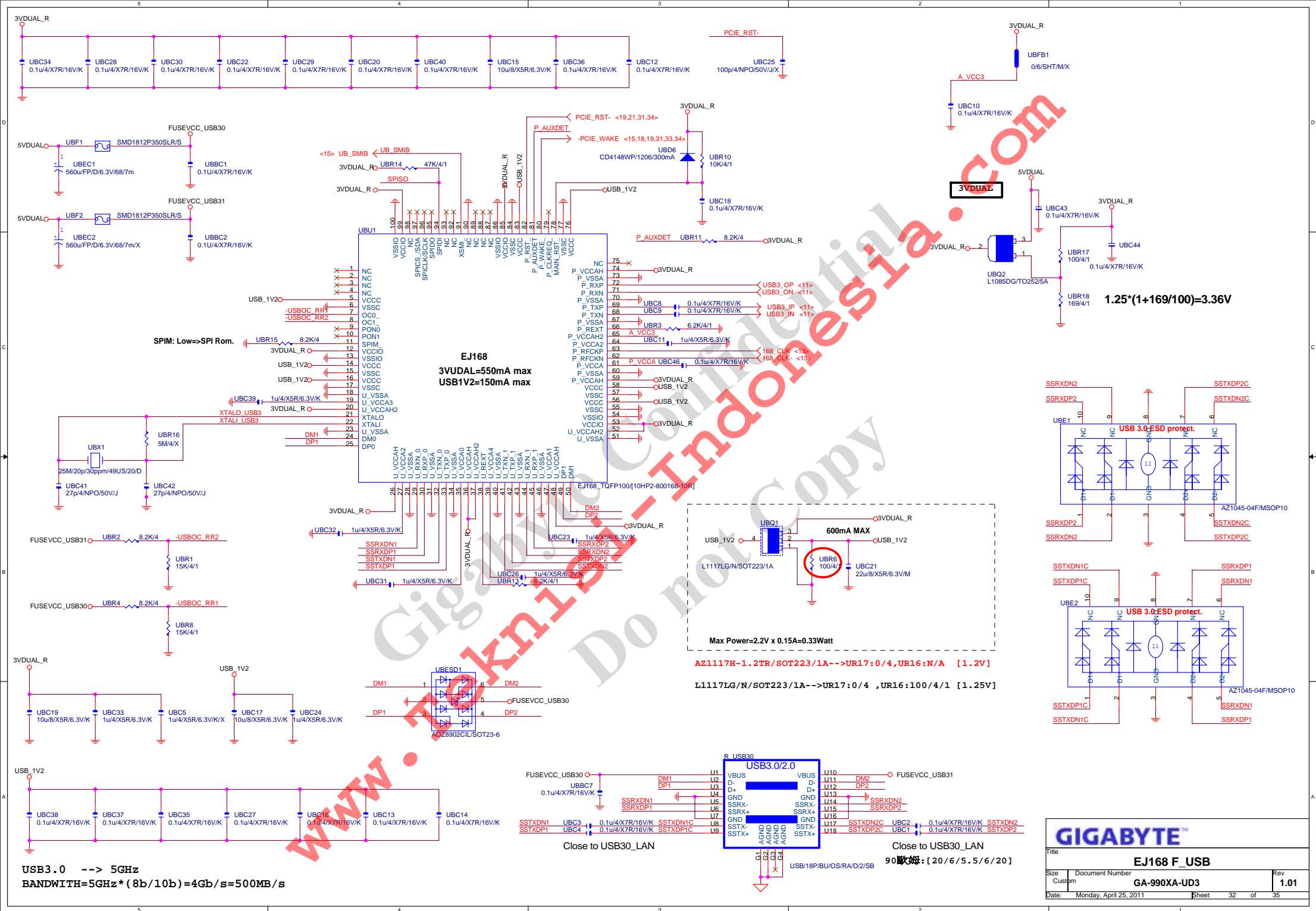








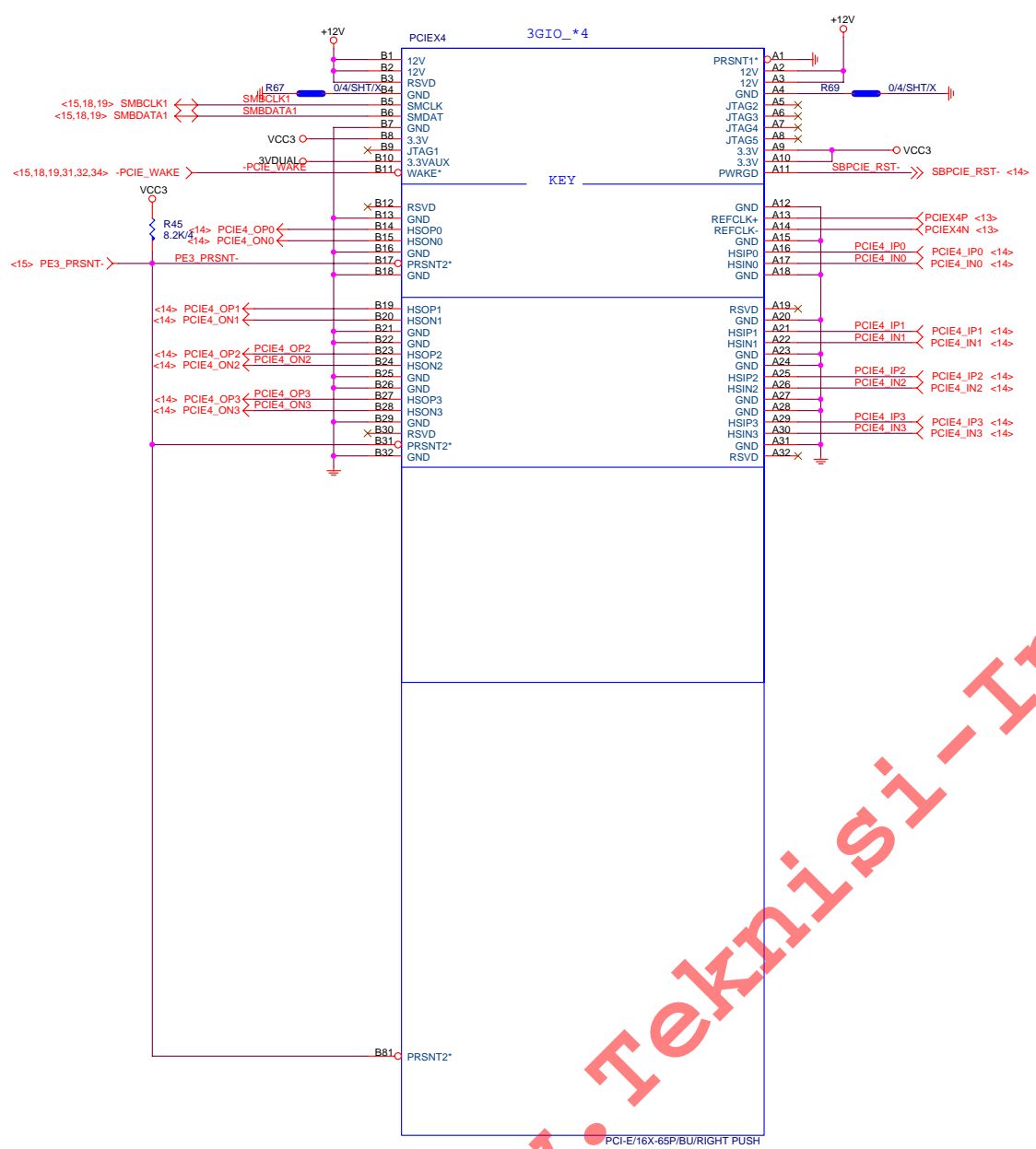




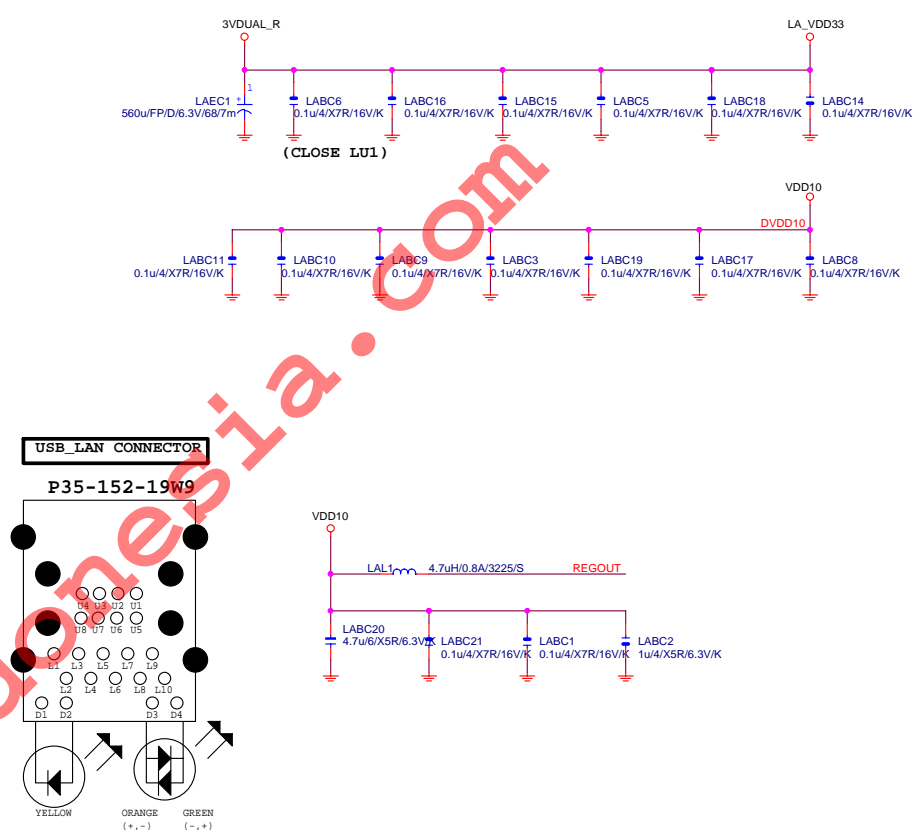
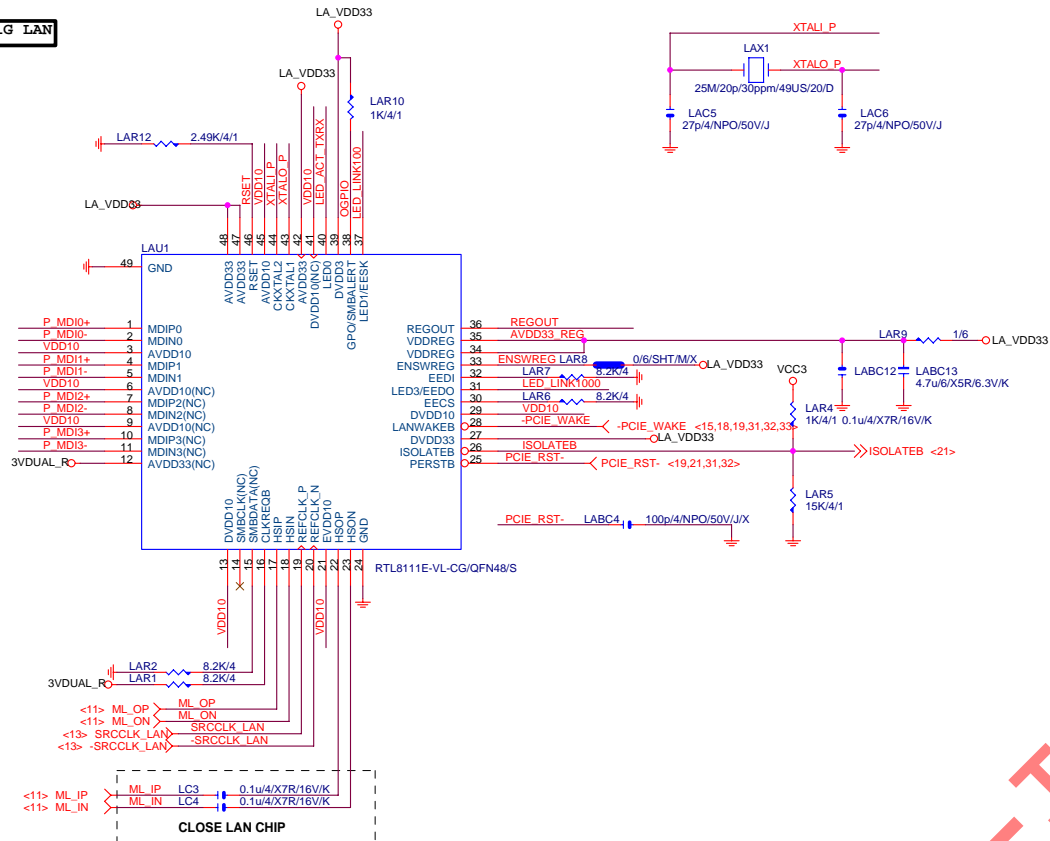
USB3.0 --> 5Ghz
BANDWITH=5Ghz*(8b/10b)=4Gb/s=500MB/s

Max Power=2.2V x 0.15A=0.33Watt
AZ1117H-1.2TR/SOT223/1A-->UR17:0/4, UR16:N/A [1.2V]
L1117LG/N/SOT223/1A-->UR17:0/4, UR16:100/4/1 [1.25V]

| | | |
|-------------|------------------------|----------------|
| GIGABYTE® | | |
| EJ168 F_USB | | |
| Size | Document Number | Rev |
| Custom | GA-990XA-UD3 | 1.01 |
| Date: | Monday, April 25, 2011 | Sheet 32 of 35 |

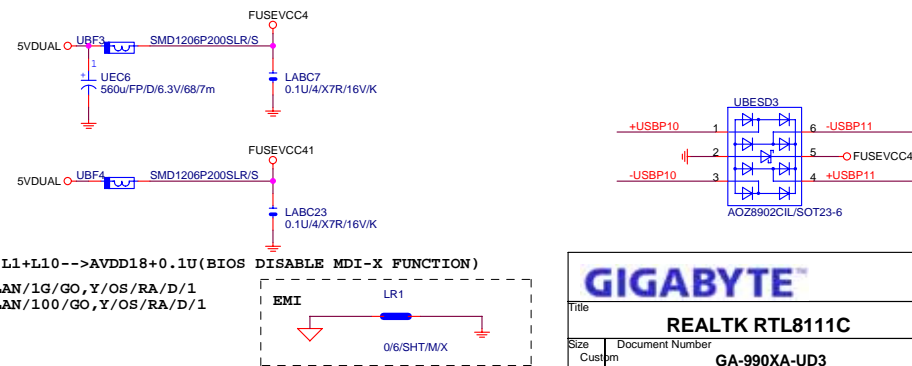
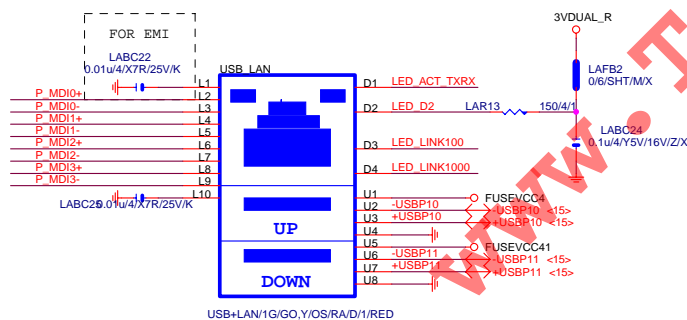


PCIE-1G LAN



USB_LAN

```
RTL8101E:LR38/LC5/LR43/LC6-->O
RTL8111C:LC6-->O
RTL8102E:LC5/LC6-->O
```



```
RTL8101E :L1+L10-->AVDD18+0.1U(BIOS DISABLE MDI-X FUNCTION)
1G :USB+LAN/1G/GO,Y/OS/RA/D/1
100M:USB+LAN/100/GO,Y/OS/RA/D/1
```

| | |
|---|-----------------|
|  | |
| Title | REALTK RTL8111C |

| | | |
|------------------------------|--|--------------------|
| Size Custom | Document Number GA-990XA-UD3 | Rev 1.01 |
| Date: Monday, April 25, 2011 | Sheet 34 of 35 | |

