

GA-M68MT-S2

SHEET

TITLE

P-Code:U96133-0

| | |
|----|---------------------------------|
| 01 | COVER SHEET |
| 02 | BOM & PCB MODIFY HISTORY |
| 03 | BLOCK DIAGRAM |
| 04 | PROCESSOR HT INTERFACE |
| 05 | PROCESSOR DDR INTERFACE |
| 06 | PROCESSOR CONTROL & DEBUG |
| 07 | PROCESSOR Power & Gnd |
| 08 | DIMM 1,2 |
| 09 | MCP61-CPU |
| 10 | MCP61-PCIE |
| 11 | MCP61-DAC, RGMII |
| 12 | MCP61-PCI |
| 13 | MCP61-SATA, IDE |
| 14 | MCP61-USB, HD-Audio, GPIO |
| 15 | MCP61-Power, Gnd |
| 16 | PCI EXPRESS x16, x1 SLOT |
| 17 | PCI SLOT COM,LPT |
| 18 | ITE 8720GB/JX |
| 19 | Realtek 8211 CL |
| 20 | H/W MONITOR & FAN CONTROL USB |
| 21 | ALC888B HD-AUDIO AUDIO JACK |
| 22 | POWER SEQ |
| 23 | ATX, VCC12_DUAL, VDDA25 F_PANEL |
| 24 | DDR POWER |
| 25 | PWM ISL6324A |

SHEET

TITLE

Revision: 1.35

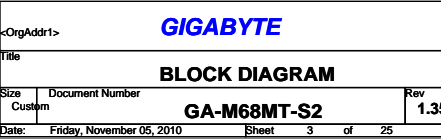
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P-Code: U96133-0

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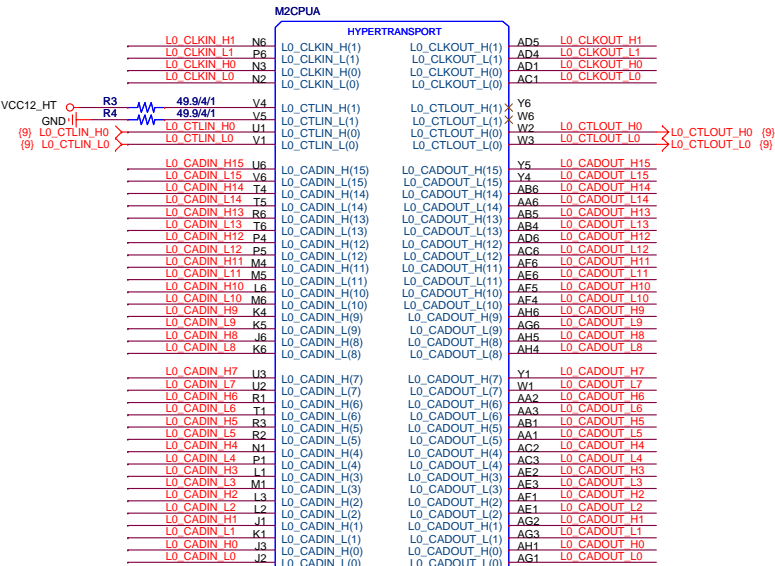
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| Title BOM & PCB MODIFY HISTORY | | | |
| Size Custom | Document Number GA-M68MT-S2 | | Rev 1.35 |
| Date: | Friday, November 05, 2010 | Sheet | 2 of 25 |

www.schematic-x.blogspot.com

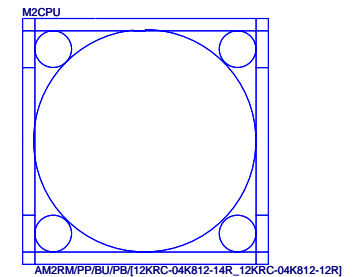
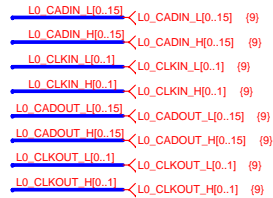


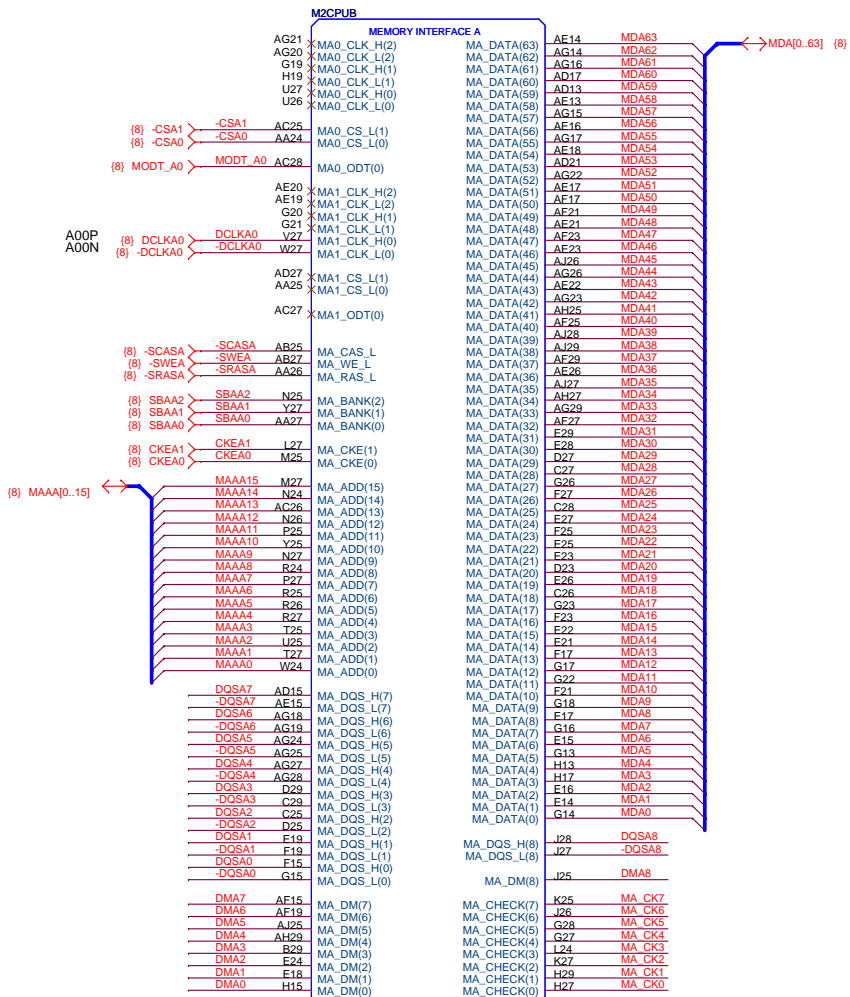
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VLDT_RUN = VCC12_HT
CPU_VDDIO_SUS = DDR18V
CPU_VTT_SUS = DDRVTT

VLDT_A = VCC12_HT
VLDT_B = HT12B



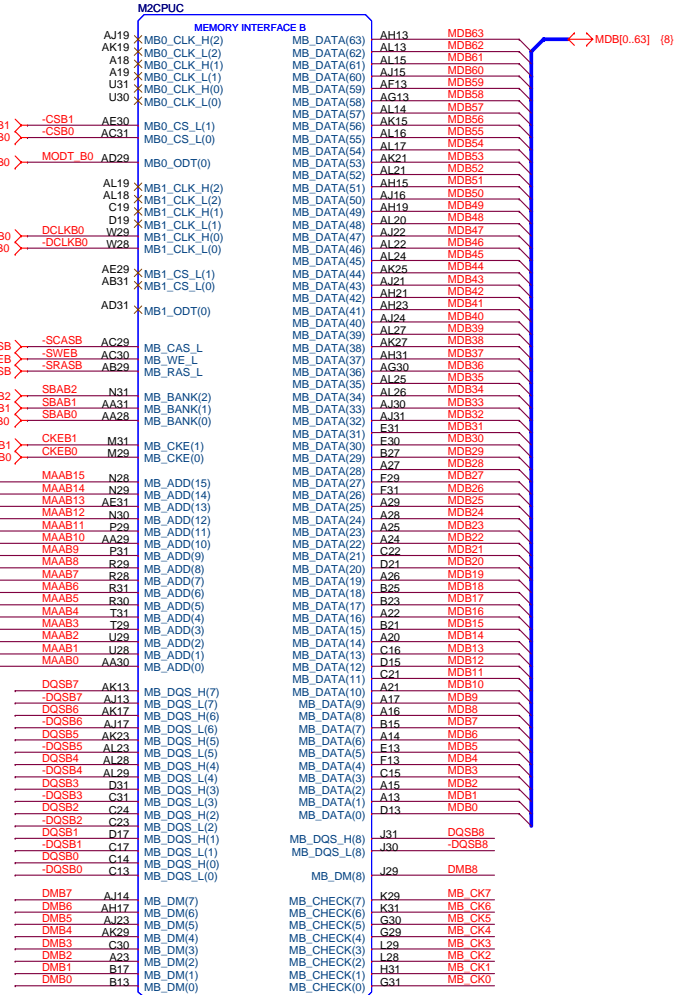
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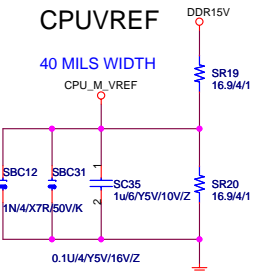
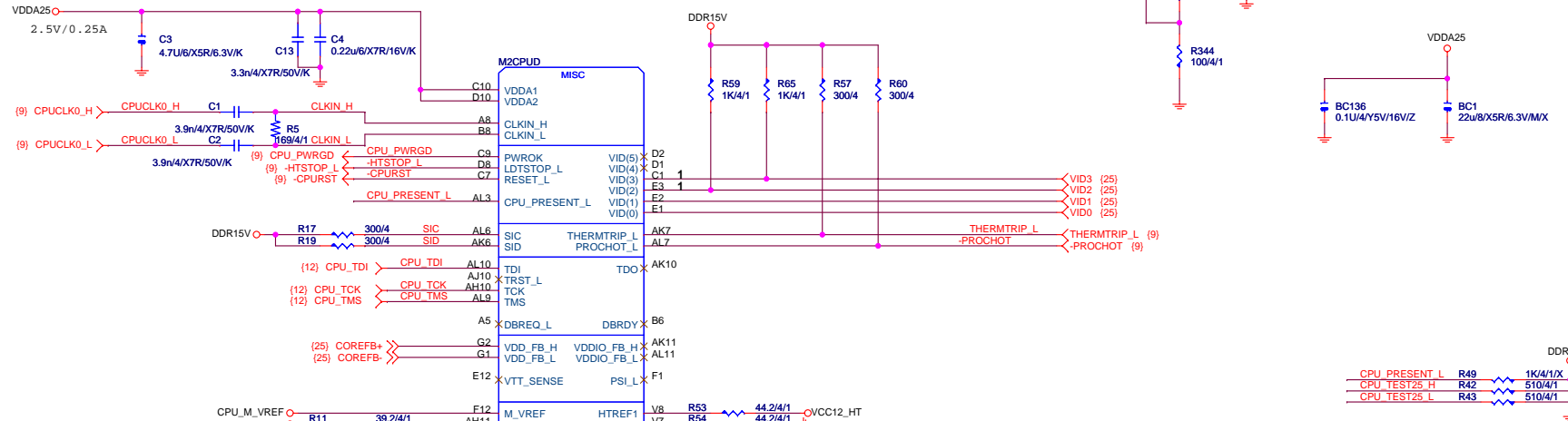
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MA0A[0..8] ← → MAA[0..8] (8)
MA0A[0..8] ← → MAA[0..8] (8)
MA0A[0..8] ← → MAA[0..8] (8)
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MA0A[0..15] ← → MAA[0..15] (8)



MA0A[0..8] ← → MAA[0..8] (8)
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|------------------|---------------------------|-------|---------|
| GIGABYTE | | | |
| CPU DDRII MEMORY | | | |
| Size | Document Number | Rev | |
| Custom | GA-M68MT-S2 | 1.35 | |
| Date: | Friday, November 05, 2010 | Sheet | 5 of 25 |



Erratum 133, Revision Guide for AMD NPT 0Fh Processors

The diagram illustrates the pinmux configuration for the AM335x, showing the internal M2CPUE and M2CPUE blocks and their connections to various external signals.

M2CPUE Internal MISC:

- L25: RSV1D1
- L26: RSV2D2
- L31: RSV3D3
- L30: RSV4D4
- W26: DCLKA2
- W25: DCLKA2
- AE27: MODT_A3
- U24: DCLKA1
- U24: DCLKA1
- AE28: MODT_A1
- Y31: DCLKB2
- Y30: DCLKB2
- AC31: DCLKB2
- Y31: DCLKB3
- W31: DCLKB1
- W31: DCLKB1
- AF31: MODT_B1
- AF31: MODT_B1

M2CPUE Internal MISC:

- MA_RESET_L
- MB_RESET_L
- RSVD19
- RSVD20
- RSVD21
- RSVD22
- M_VDDIO_PWRGD
- COREFB_NB4
- COREFB_NB2
- CORE_TYP_DET
- AD25
- RSVD28
- AE24
- AE25
- AJ18
- RSVD29
- AJ20
- RSVD30
- RSVD31
- RSVD32
- C18
- RSVD33
- G24
- RSVD34
- G25
- RSVD35
- H25
- RSVD36
- Y29
- RSVD37
- W30
- MB_EVENT_L
- MA_EVENT_L

AM3 only:

- E20: MA_RESET_L
- B19: MB_RESET_L
- AK4
- AK3
- F2
- F3
- G4
- G3
- G5
- CORE_TYPE_DET
- R86
- 1KJ/4I
- DDR15V

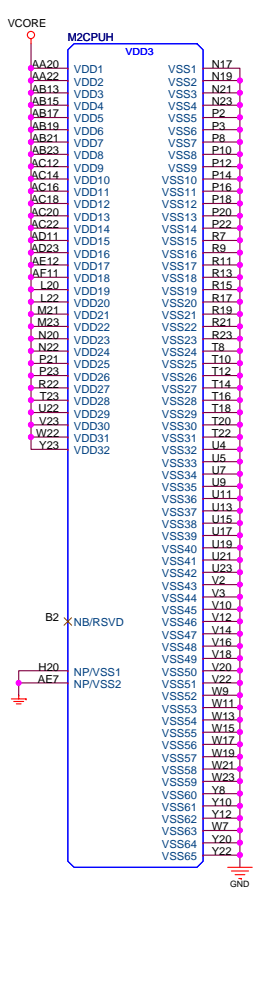
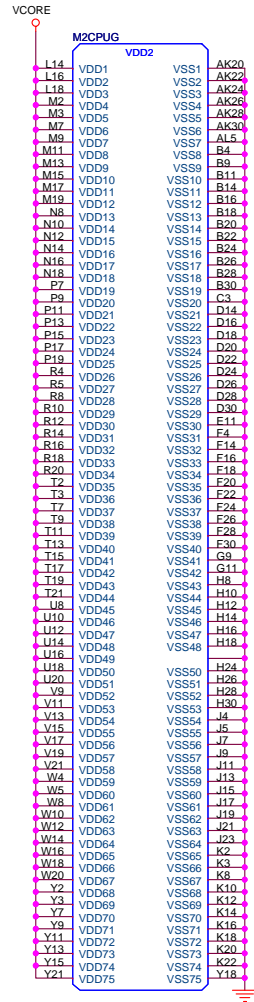
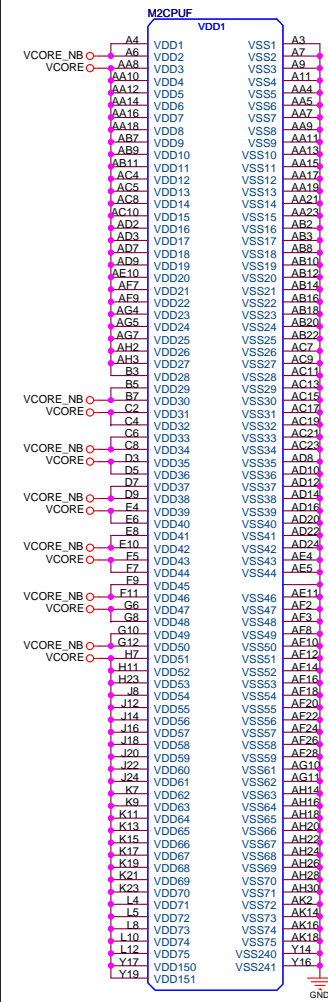
AM2: high, AM2R2: low

AM3 => DRAM Thermal Event Status

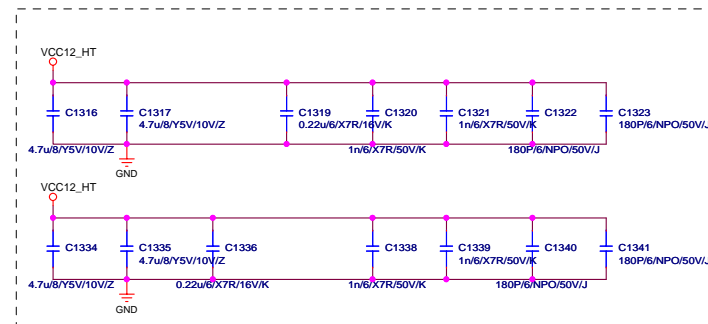
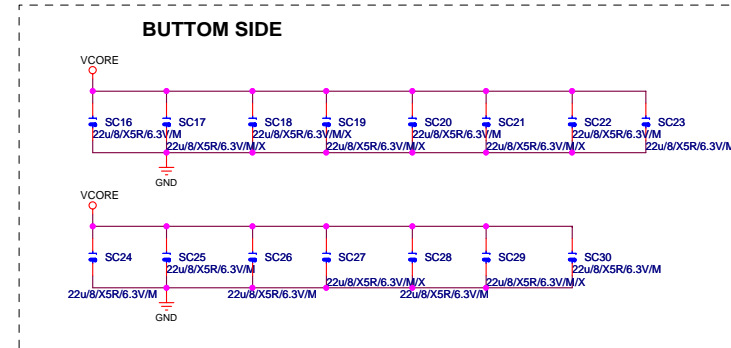
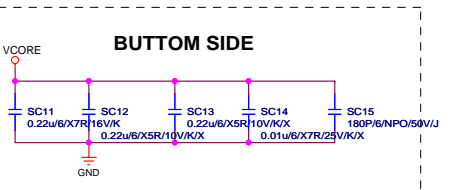
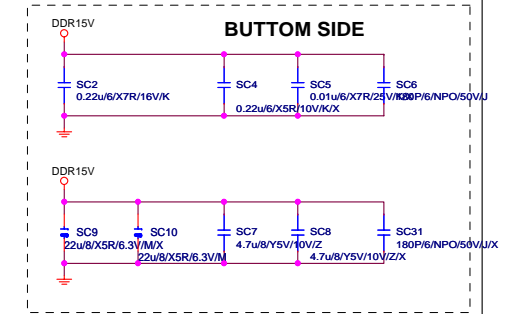
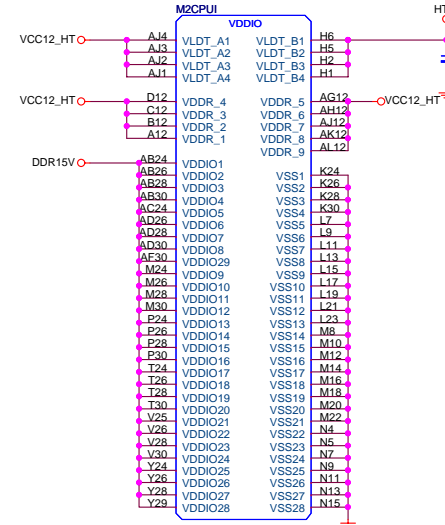
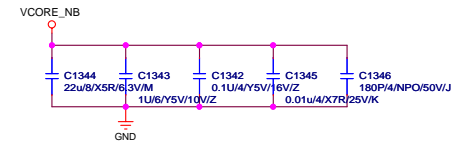
- R103
- 1KJ/4I
- DDR15V
- MB_EVENT_L
- MA_EVENT_L
- R102
- 1KJ/4I
- DDR15V

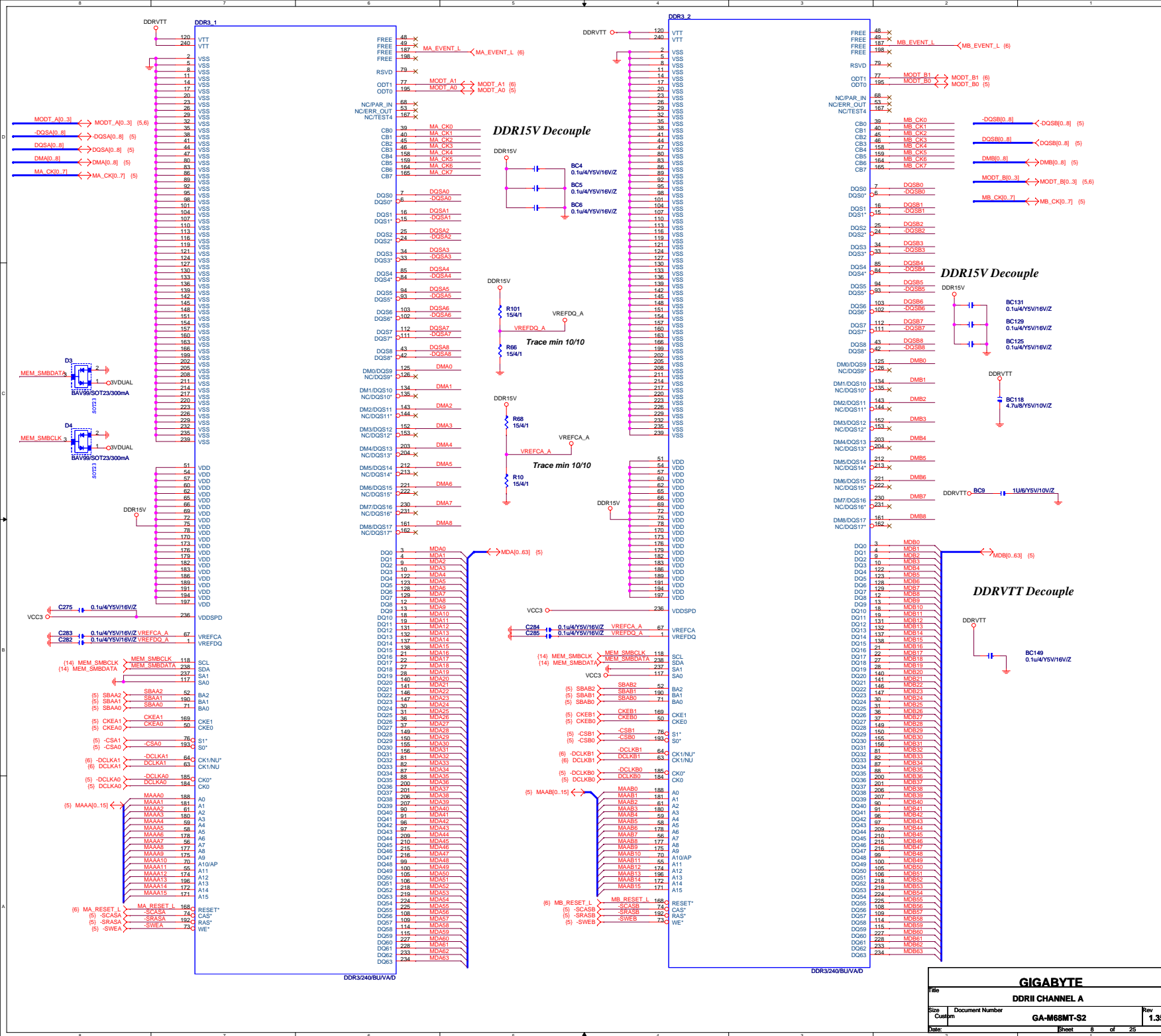
Layout: R0 with 5/10 VIO

| | | |
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| Title | | |
| CPU CONTROL | | |
| Size | Document Number | Rev |
| Custom | GA-M68MT-S2 | 1.35 |
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VLD1_RUN_B is connected to the VLD1_RUN power supply through the package or on the die. It is only connected on the board to decoupling near the CPU package.





MCP61 1 of 8

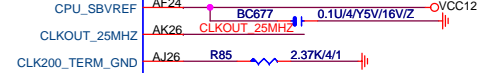
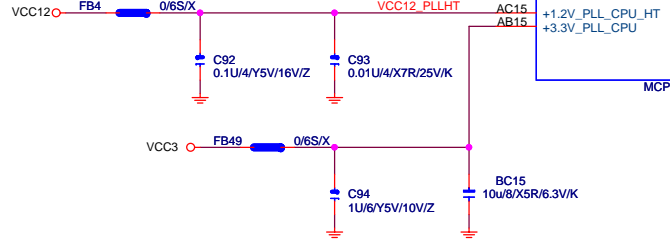
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|---------------|------|----------------|----------------|------|--------------|
| L0 CADOUT H0 | AG8 | HT_MCP_RXD0_P | HT_MCP_TXD0_P | AH23 | L0 CADIN H0 |
| L0 CADOUT H1 | AG9 | HT_MCP_RXD1_P | HT_MCP_TXD1_P | AH22 | L0 CADIN H1 |
| L0 CADOUT H2 | AK9 | HT_MCP_RXD2_P | HT_MCP_TXD2_P | AJ21 | L0 CADIN H2 |
| L0 CADOUT H3 | AJ10 | HT_MCP_RXD3_P | HT_MCP_TXD3_P | AH21 | L0 CADIN H3 |
| L0 CADOUT H4 | AG12 | HT_MCP_RXD4_P | HT_MCP_TXD4_P | AH19 | L0 CADIN H4 |
| L0 CADOUT H5 | AG13 | HT_MCP_RXD5_P | HT_MCP_TXD5_P | AH18 | L0 CADIN H5 |
| L0 CADOUT H6 | AK13 | HT_MCP_RXD6_P | HT_MCP_TXD6_P | AJ17 | L0 CADIN H6 |
| L0 CADOUT H7 | AJ14 | HT_MCP_RXD7_P | HT_MCP_TXD7_P | AH17 | L0 CADIN H7 |
| L0 CADOUT H8 | AB10 | HT_MCP_RXD8_P | HT_MCP_TXD8_P | AE22 | L0 CADIN H8 |
| L0 CADOUT H9 | AD10 | HT_MCP_RXD9_P | HT_MCP_TXD9_P | AB20 | L0 CADIN H9 |
| L0 CADOUT H10 | AE10 | HT_MCP_RXD10_P | HT_MCP_TXD10_P | AC20 | L0 CADIN H10 |
| L0 CADOUT H11 | AC12 | HT_MCP_RXD11_P | HT_MCP_TXD11_P | AE20 | L0 CADIN H11 |
| L0 CADOUT H12 | AB11 | HT_MCP_RXD12_P | HT_MCP_TXD12_P | AD18 | L0 CADIN H12 |
| L0 CADOUT H13 | AB13 | HT_MCP_RXD13_P | HT_MCP_TXD13_P | AE18 | L0 CADIN H13 |
| L0 CADOUT H14 | AE14 | HT_MCP_RXD14_P | HT_MCP_TXD14_P | AB17 | L0 CADIN H14 |
| L0 CADOUT H15 | AD14 | HT_MCP_RXD15_P | HT_MCP_TXD15_P | AC16 | L0 CADIN H15 |
| L0 CADOUT L0 | AH8 | HT_MCP_RXD0_N | HT_MCP_TXD0_N | AJ23 | L0 CADIN L0 |
| L0 CADOUT L1 | AH9 | HT_MCP_RXD1_N | HT_MCP_TXD1_N | AJ22 | L0 CADIN L1 |
| L0 CADOUT L2 | AJ9 | HT_MCP_RXD2_N | HT_MCP_TXD2_N | AK21 | L0 CADIN L2 |
| L0 CADOUT L3 | AH10 | HT_MCP_RXD3_N | HT_MCP_TXD3_N | AG21 | L0 CADIN L3 |
| L0 CADOUT L4 | AH12 | HT_MCP_RXD4_N | HT_MCP_TXD4_N | AJ19 | L0 CADIN L4 |
| L0 CADOUT L5 | AH13 | HT_MCP_RXD5_N | HT_MCP_TXD5_N | AJ18 | L0 CADIN L5 |
| L0 CADOUT L6 | AJ13 | HT_MCP_RXD6_N | HT_MCP_TXD6_N | AK17 | L0 CADIN L6 |
| L0 CADOUT L7 | AH14 | HT_MCP_RXD7_N | HT_MCP_TXD7_N | AG17 | L0 CADIN L7 |
| L0 CADOUT L8 | AC10 | HT_MCP_RXD8_N | HT_MCP_TXD8_N | AG22 | L0 CADIN L8 |
| L0 CADOUT L9 | AE10 | HT_MCP_RXD9_N | HT_MCP_TXD9_N | AB19 | L0 CADIN L9 |
| L0 CADOUT L10 | AG10 | HT_MCP_RXD10_N | HT_MCP_TXD10_N | AD20 | L0 CADIN L10 |
| L0 CADOUT L11 | AD12 | HT_MCP_RXD11_N | HT_MCP_TXD11_N | AE20 | L0 CADIN L11 |
| L0 CADOUT L12 | AC11 | HT_MCP_RXD12_N | HT_MCP_TXD12_N | AE18 | L0 CADIN L12 |
| L0 CADOUT L13 | AB12 | HT_MCP_RXD13_N | HT_MCP_TXD13_N | AG18 | L0 CADIN L13 |
| L0 CADOUT L14 | AG14 | HT_MCP_RXD14_N | HT_MCP_TXD14_N | AB16 | L0 CADIN L14 |
| L0 CADOUT L15 | AD14 | HT_MCP_RXD15_N | HT_MCP_TXD15_N | AD16 | L0 CADIN L15 |

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|------------------|--------------|------|------------------|------------------|------|-------------|
| (4) L0_CLKOUT_H0 | L0_CLKOUT_H0 | AJ11 | HT_MCP_RX_CLK0_P | HT_MCP_TX_CLK0_P | AH20 | L0 CLKIN H0 |
| (4) L0_CLKOUT_L0 | L0_CLKOUT_L0 | AH11 | HT_MCP_RX_CLK0_N | HT_MCP_TX_CLK0_N | AG20 | L0 CLKIN L0 |
| (4) L0_CLKOUT_H1 | L0_CLKOUT_H1 | AE12 | HT_MCP_RX_CLK1_P | HT_MCP_TX_CLK1_P | AC18 | L0 CLKIN H1 |
| (4) L0_CLKOUT_L1 | L0_CLKOUT_L1 | AF12 | HT_MCP_RX_CLK1_N | HT_MCP_TX_CLK1_N | AB18 | L0 CLKIN L1 |

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|------------------|--------------|------|-----------------|-----------------|------|-------------|
| (4) L0_CTLOUT_H0 | L0_CTLOUT_H0 | AJ15 | HT_MCP_RXCTL0_P | HT_MCP_TXCTL0_P | AH16 | L0 CTLIN H0 |
| (4) L0_CTLOUT_L0 | L0_CTLOUT_L0 | AH15 | HT_MCP_RXCTL0_N | HT_MCP_TXCTL0_N | AG16 | L0 CTLIN L0 |
| | | AB14 | RESERVED35 | RESERVED33 | AE16 | |
| | | AC14 | RESERVED36 | RESERVED34 | AF16 | |

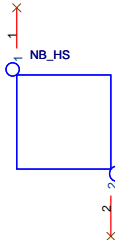
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| VCC12_HT | R146 | 150/4/1 | HT_COMP1 | AB9 | HT_MCP_COMP_VDD | HT_MCP_REQ* | AH25 | -HT_REQ | R71 | 8.2K/4 | OVC3 |
| | R150 | 150/4/1 | HT_COMP2 | AB8 | HT_MCP_COMP_GND | HT_MCP_STOP* | AH24 | -HTSTOP_L | | | HTSTOP_L (6) |
| | | | | | | HT_MCP_RST* | AG23 | -CPURST | | | CPURST (6) |
| | | | | | | HT_MCP_PWRGD | AG24 | CPU_PWRGD | | | CPU_PWRGD (6) |

| | | | | | | | |
|-----------------|-------------|-----|-------------------|-----------------|------|-----------|---------------|
| (6) -PROCHOT | -PROCHOT | AD8 | PROCHOT/GPIO20* | CLKOUT_200MHZ_P | AK25 | CPUCLK0_H | CPUCLK0_H (6) |
| (6) THERMTRIP_L | THERMTRIP_L | AE8 | THERMTRIP/GPIO58* | CLKOUT_200MHZ_N | AJ25 | CPUCLK0_L | CPUCLK0_L (6) |

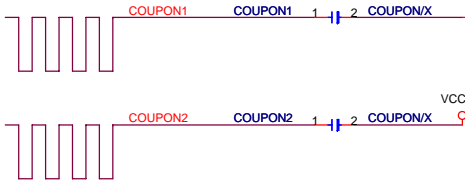


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N.B HEATSINK

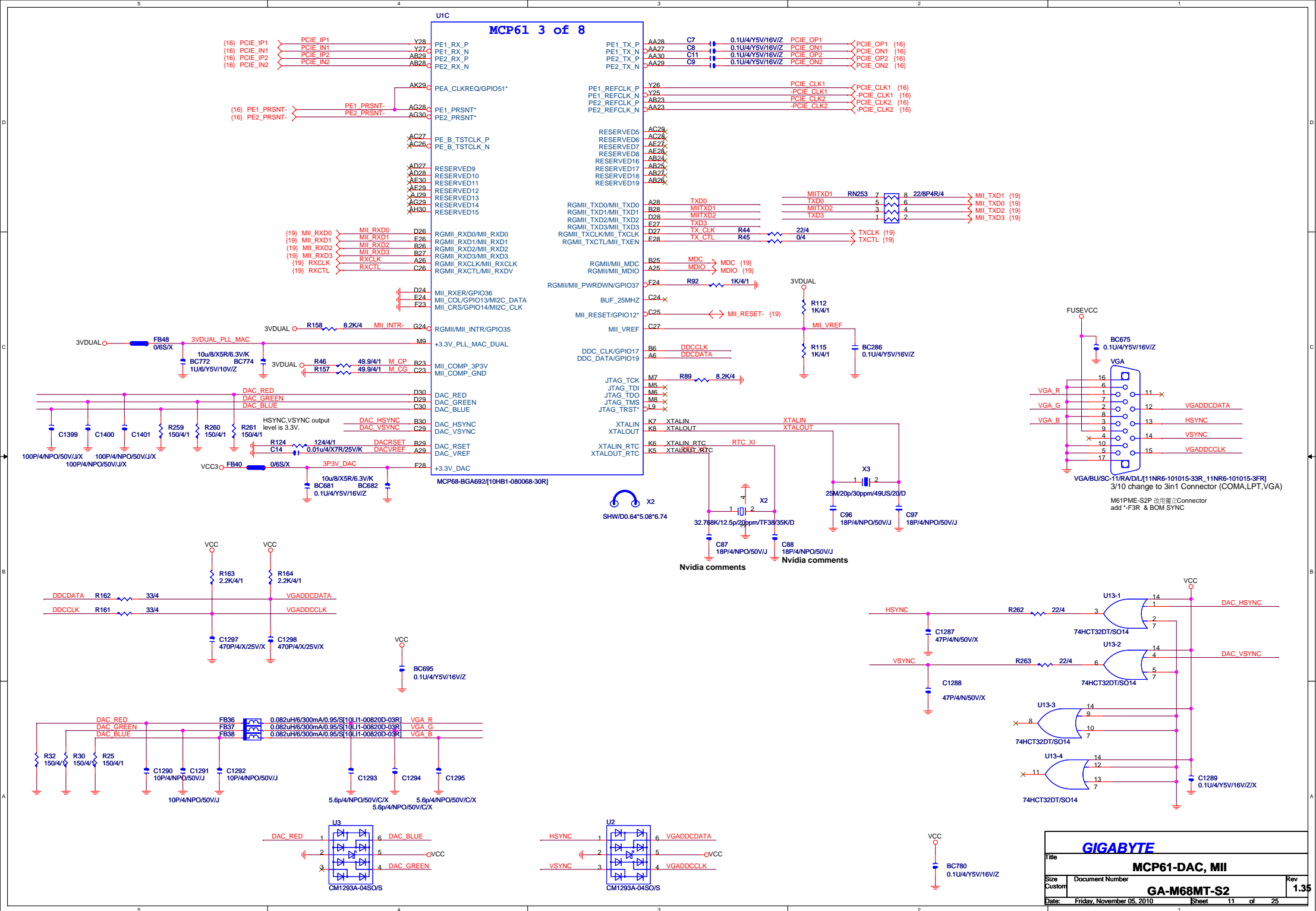


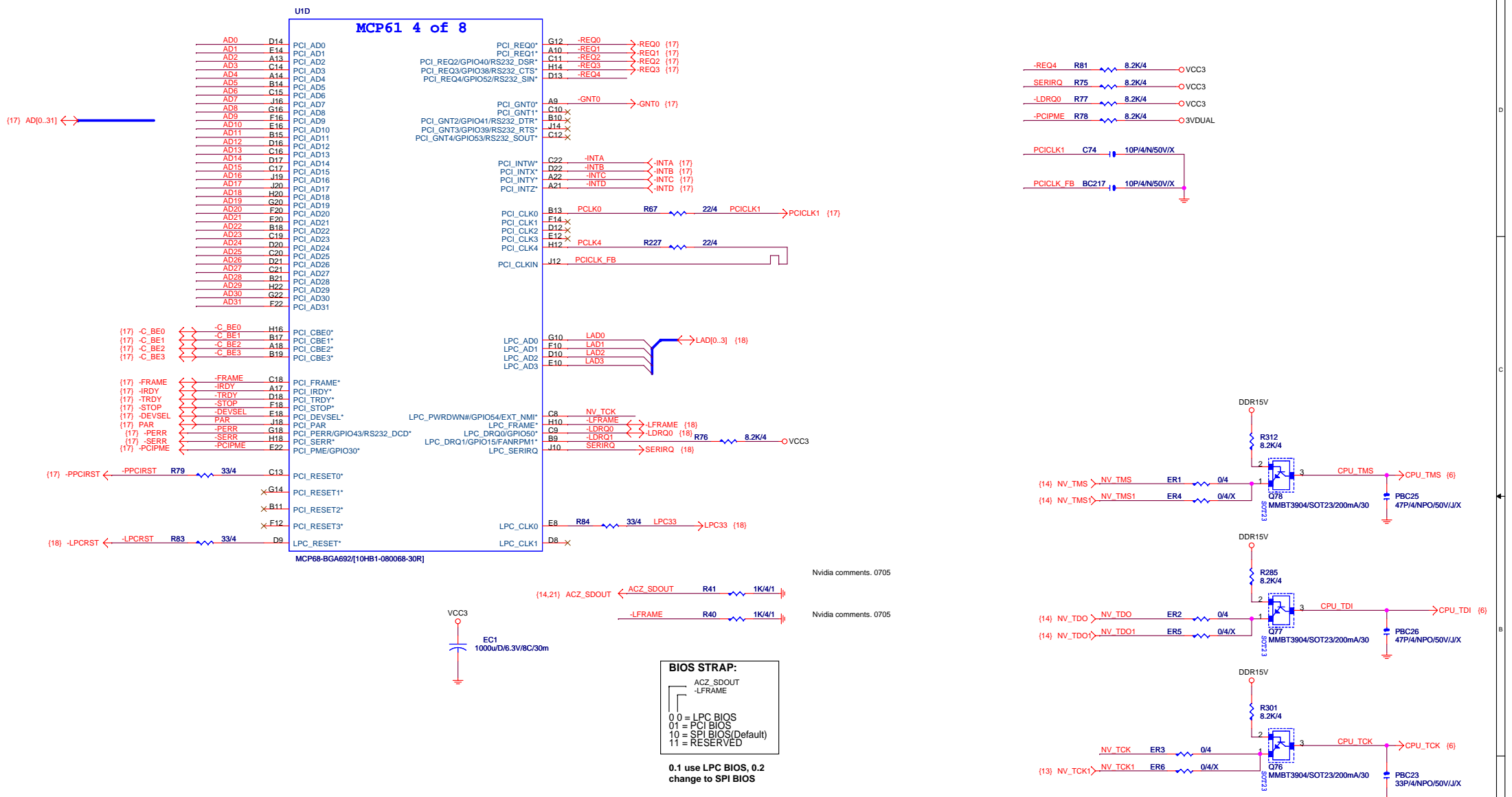
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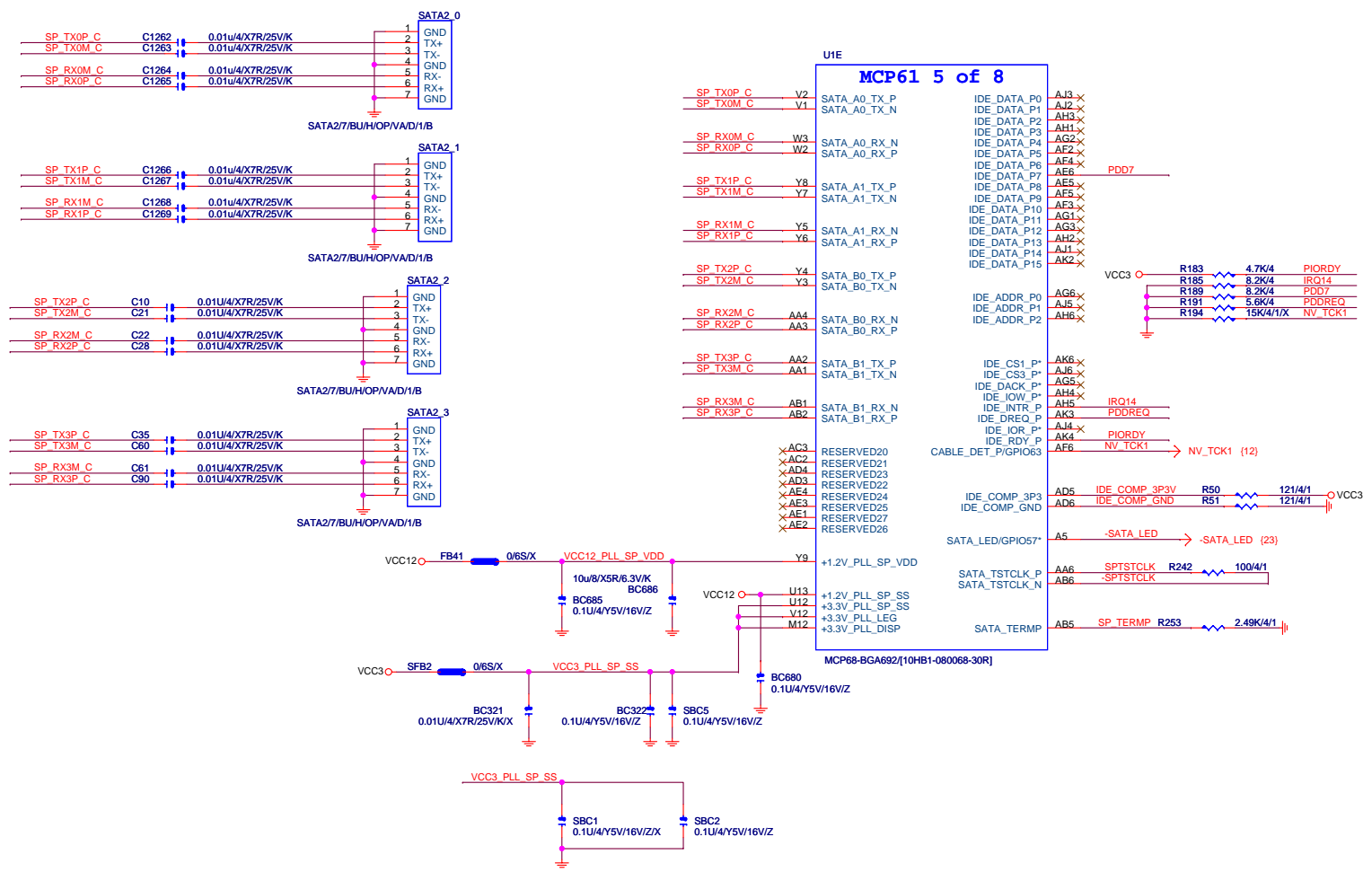


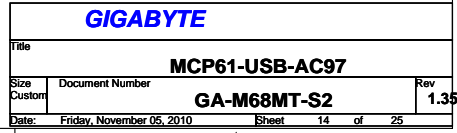
GIGABYTE

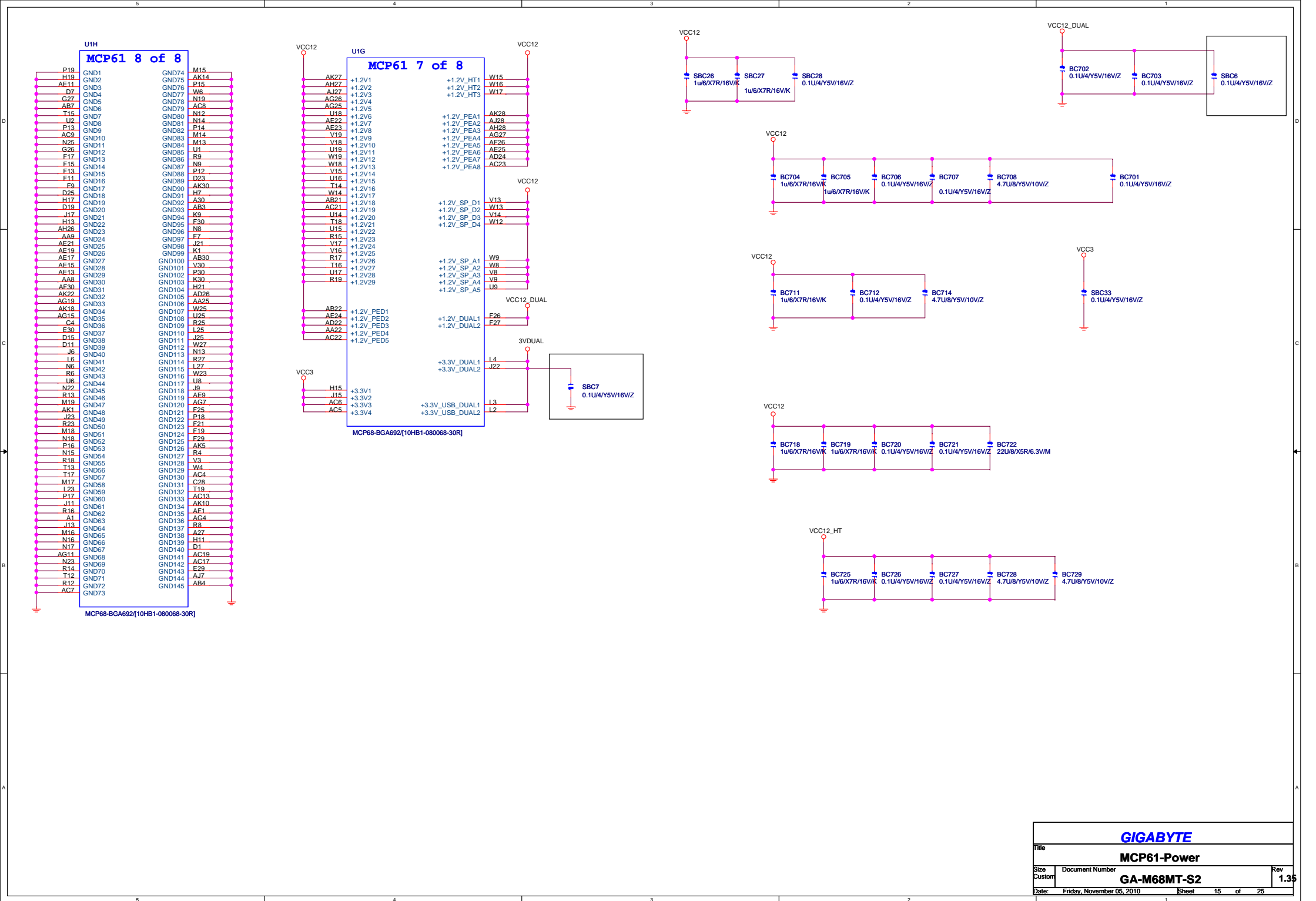
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| Size | | | | GA-M68MT-S2 | |
| Document Number | | | | Rev 1.35 | |
| Date: | | | | Friday, November 05, 2010 | |
| Sheet | | | | 9 of 25 | |

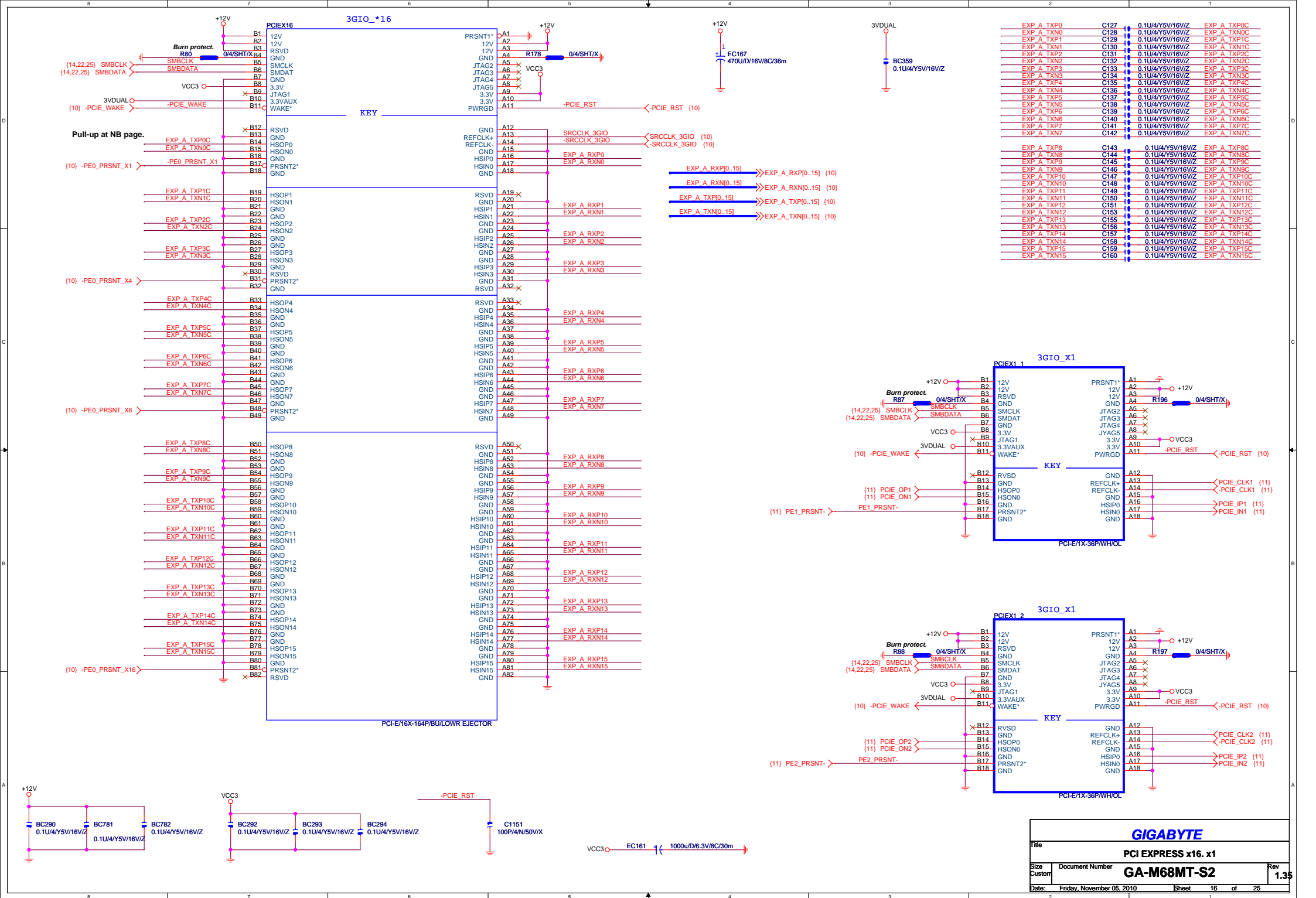


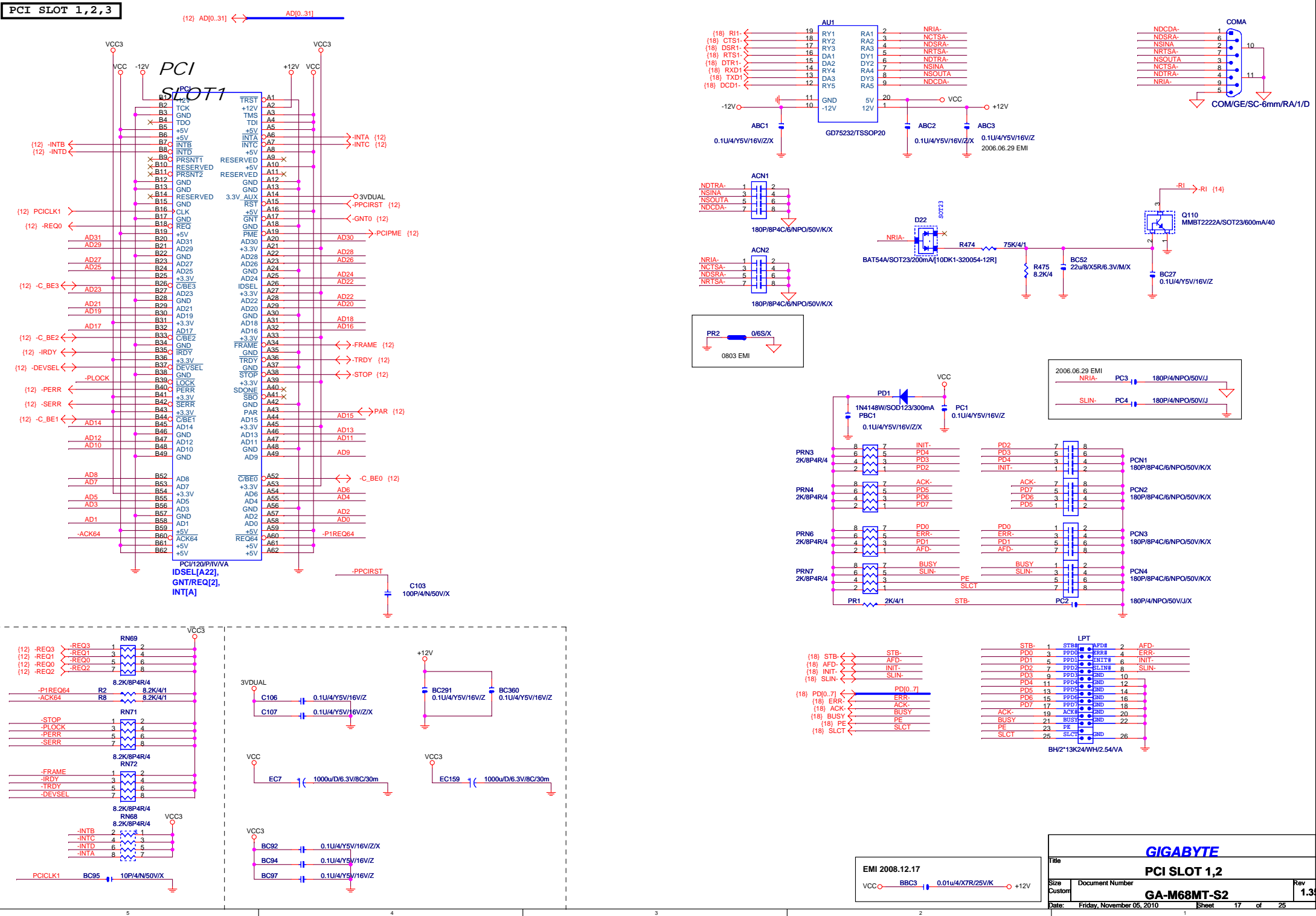


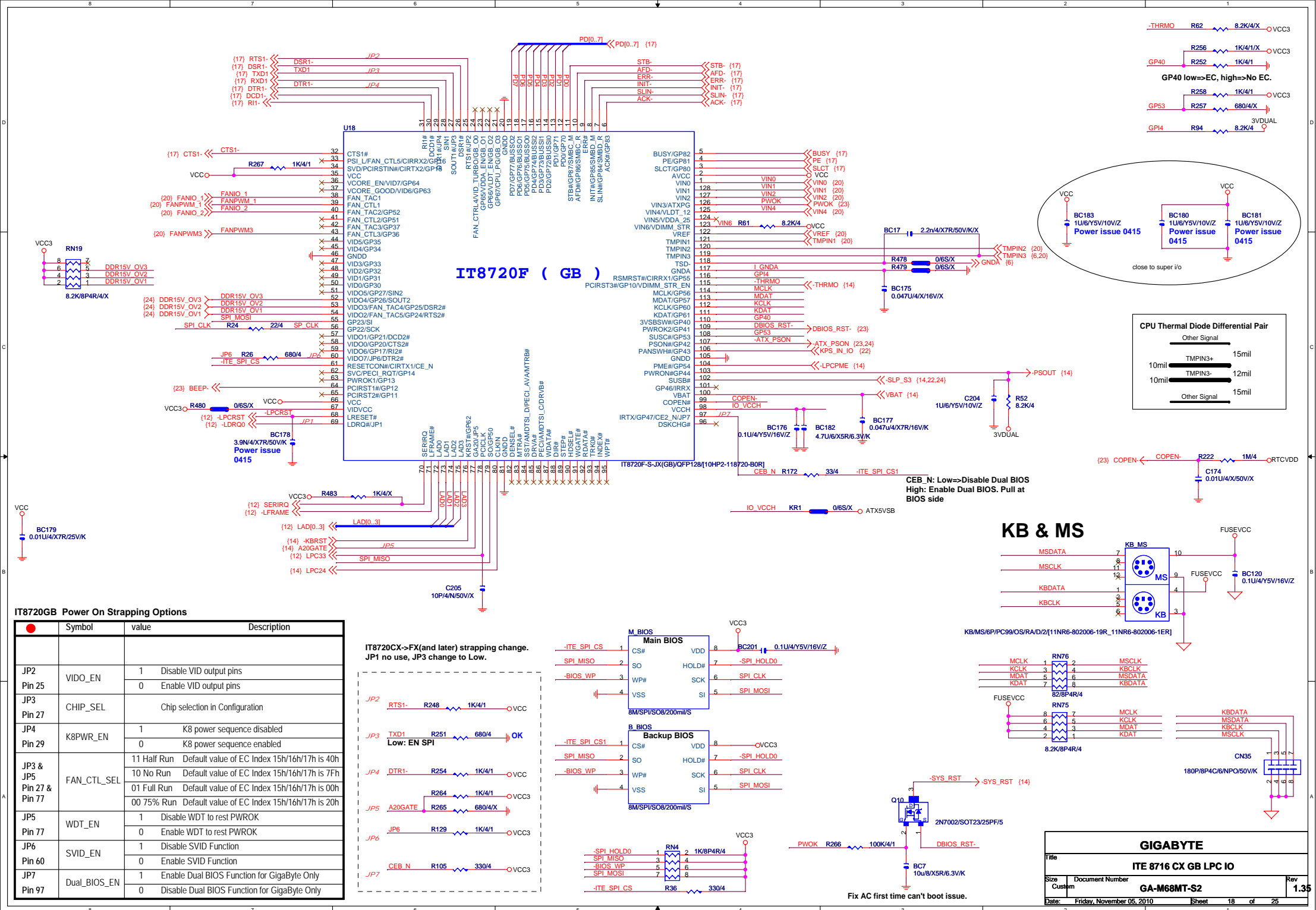


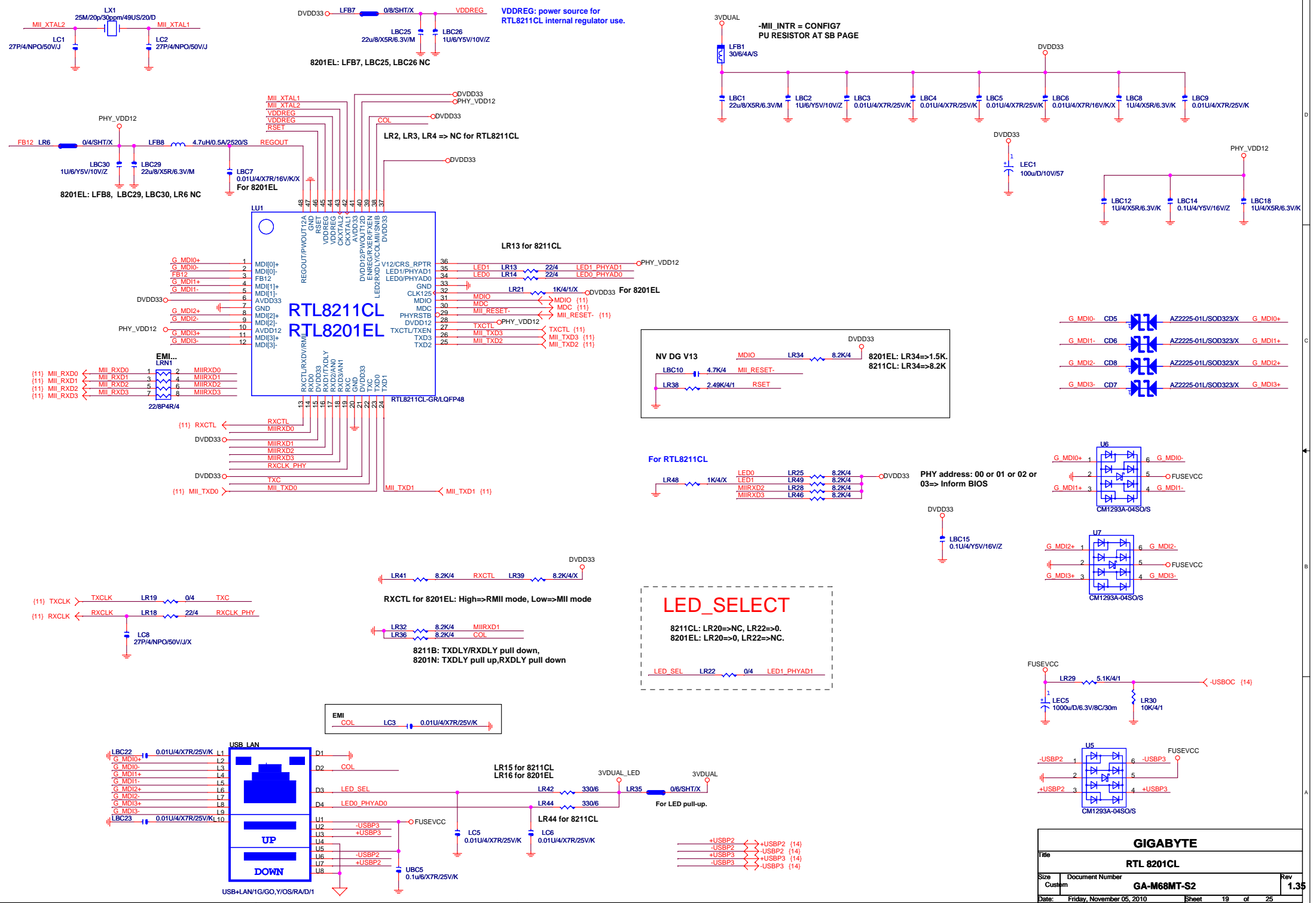






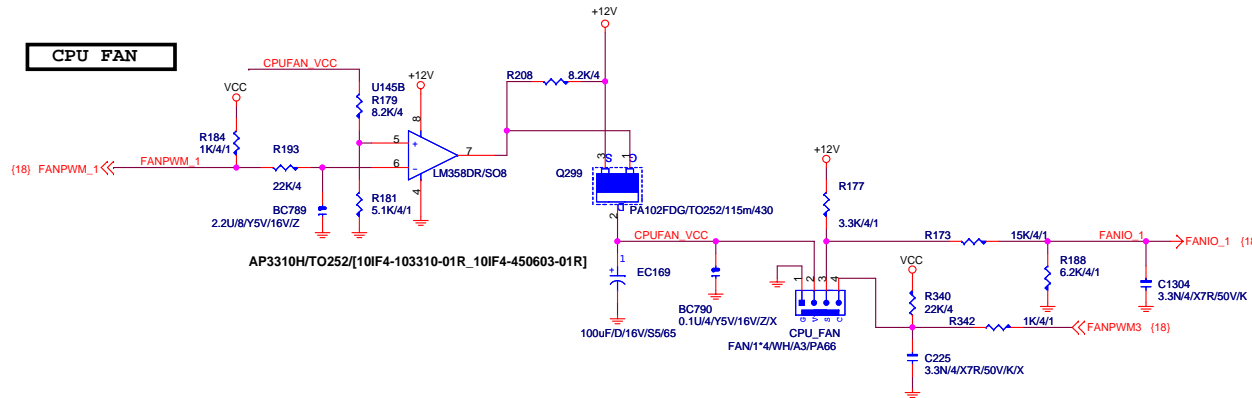
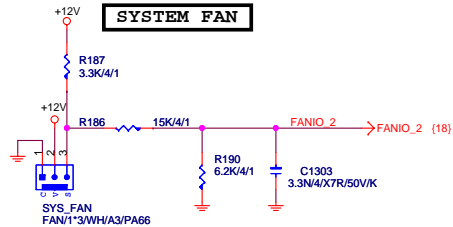
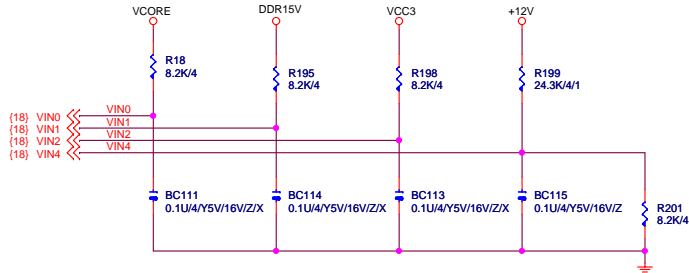
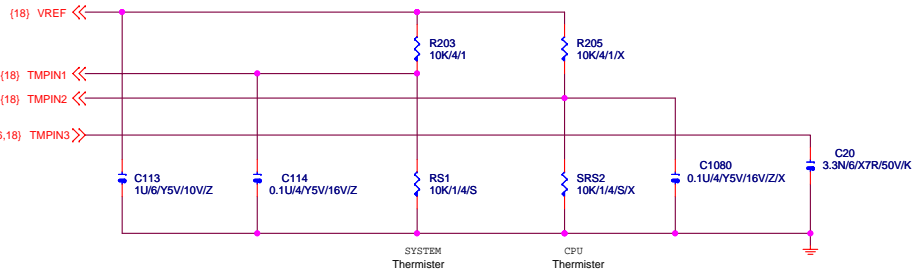




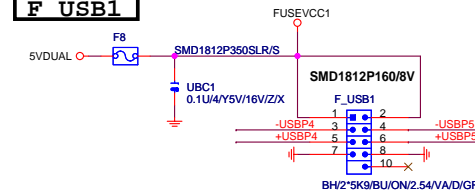


| GIGABYTE | | | |
|------------|---------------------------|-------|----------|
| RTL 8201CL | | | |
| Size | Document Number | Rev | |
| Custom | GA-M68MT-S2 | 1.35 | |
| Date: | Friday, November 05, 2010 | Sheet | 19 of 25 |

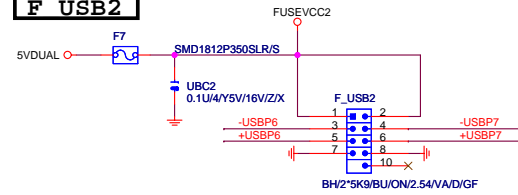
Hardware Monitor circuits



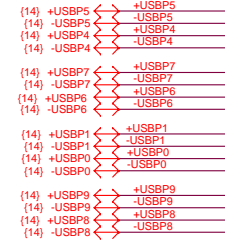
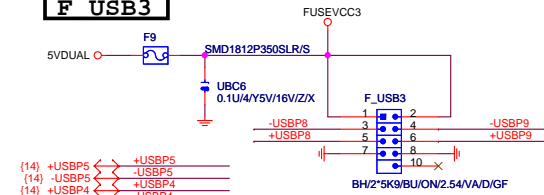
F USB1



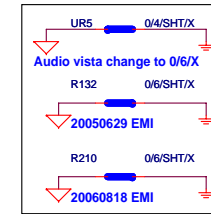
F USB2



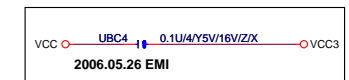
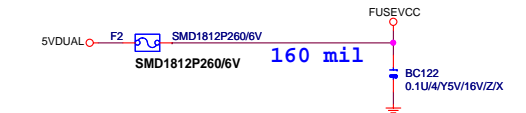
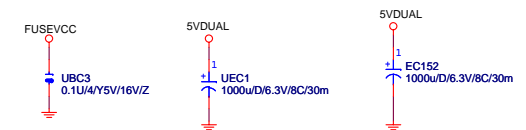
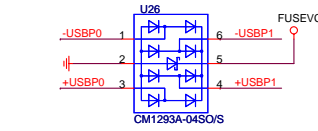
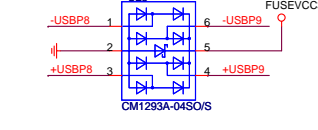
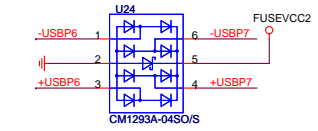
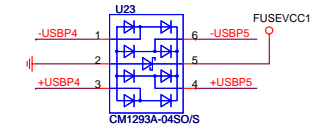
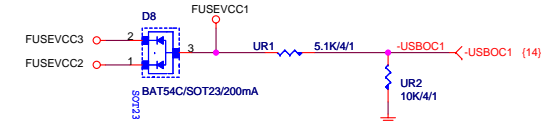
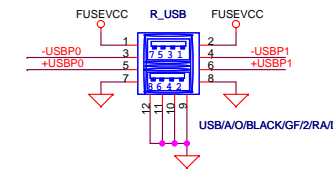
F USB3



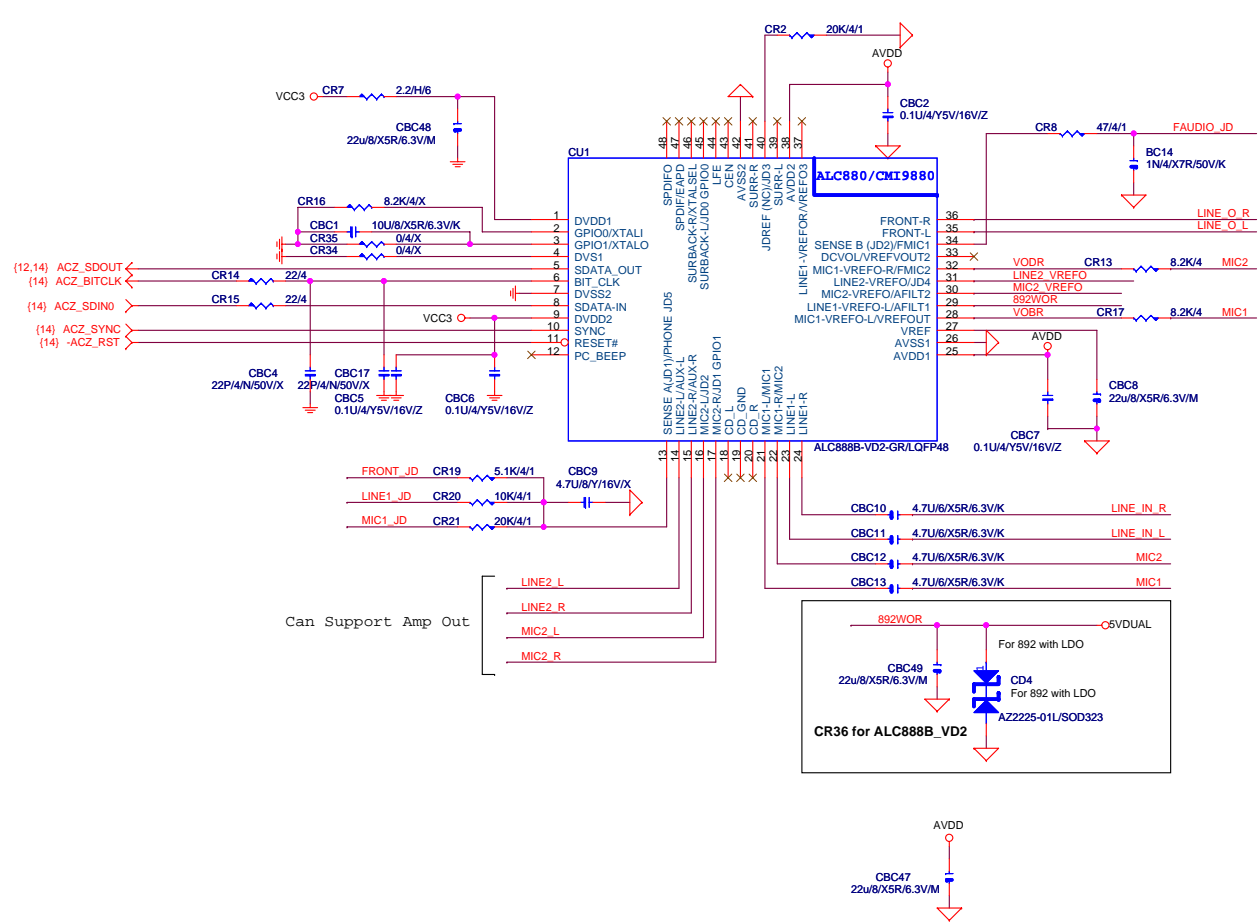
1012 EMI



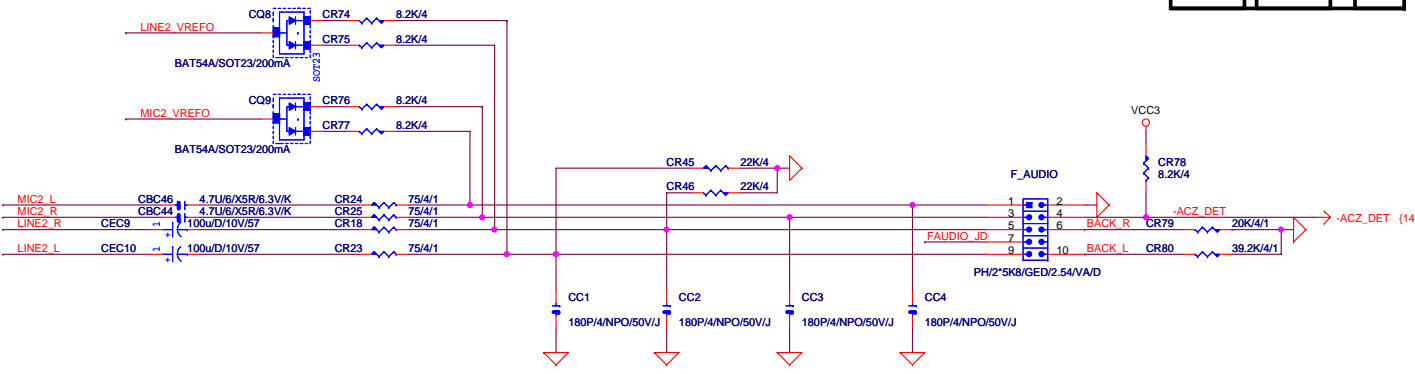
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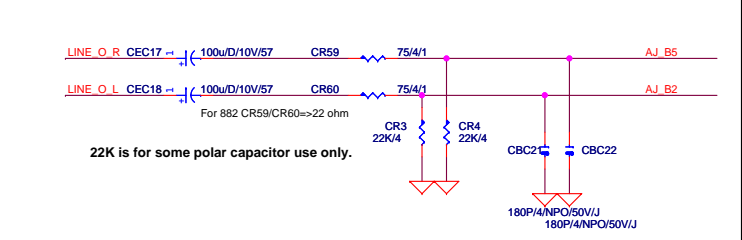
| GIGABYTE | | | |
|----------------|---------------------------|-------------|----------|
| FAN/HWMO KB/MS | | | |
| File | Document Number | Rev | 1.35 |
| Size | Custom | GA-M68MT-S2 | |
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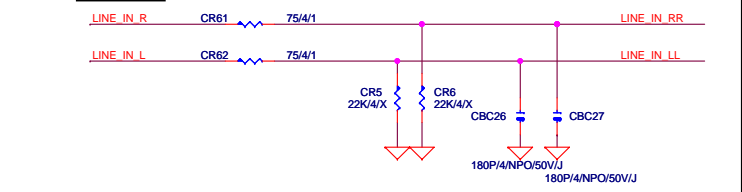
INTEL FRONT AUDIO



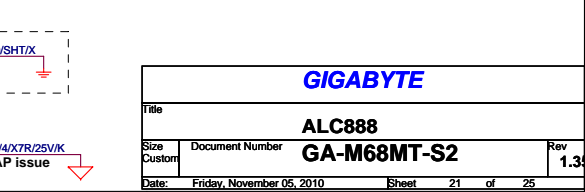
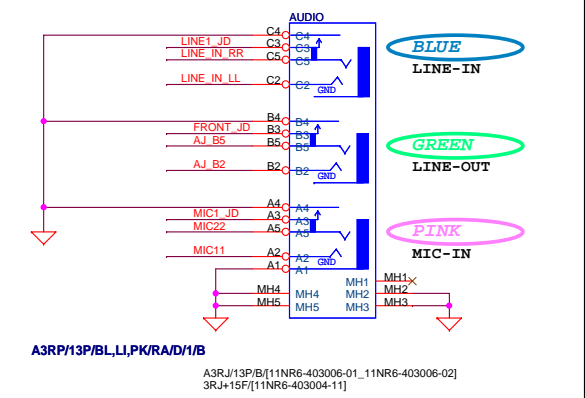
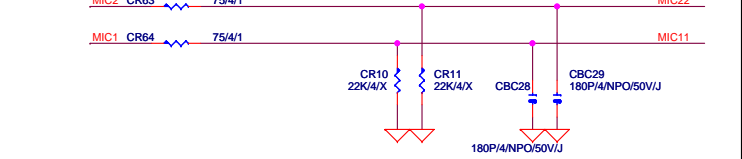
**LINE OUT
FRONT OUT**

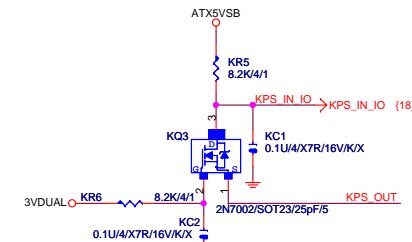
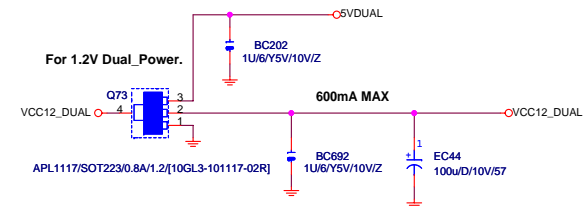
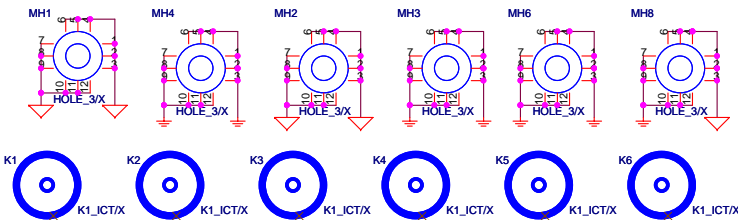
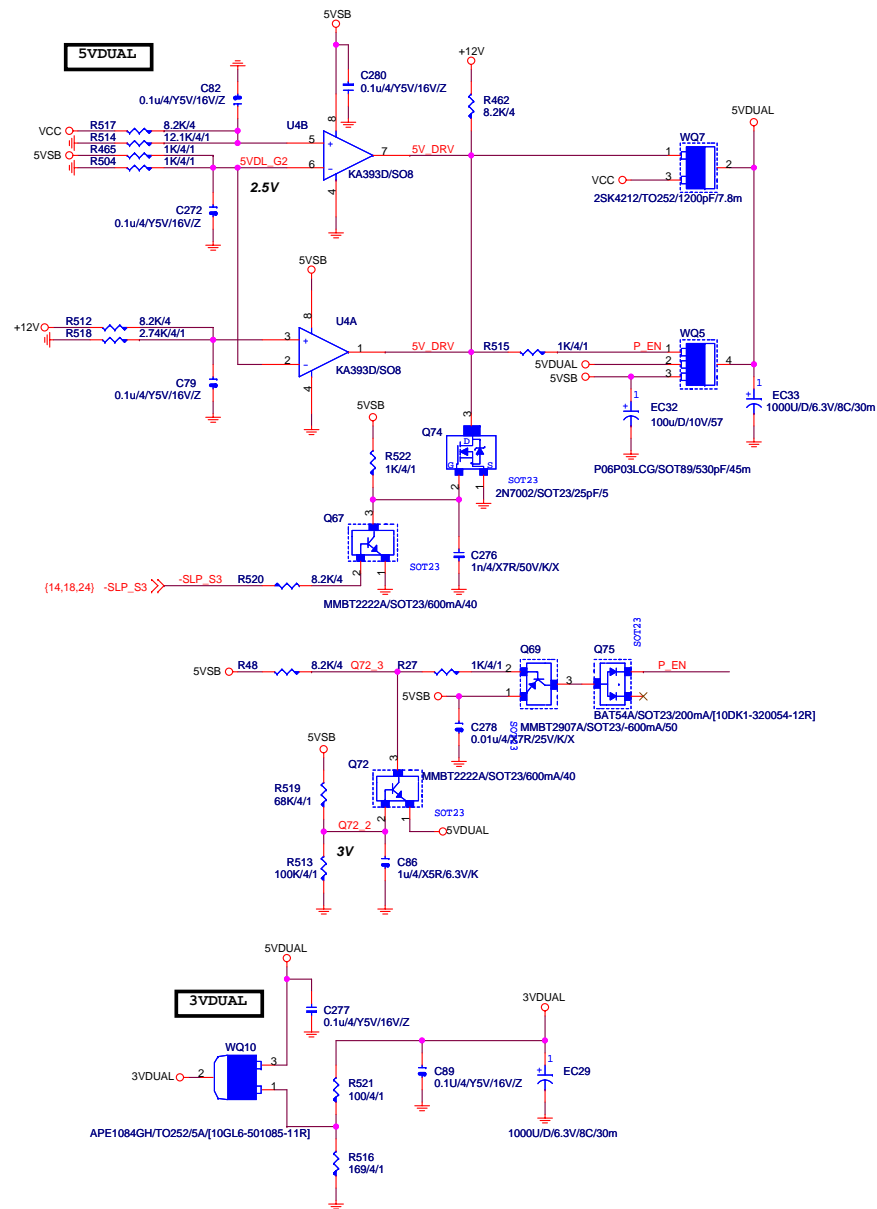


LINE-IN

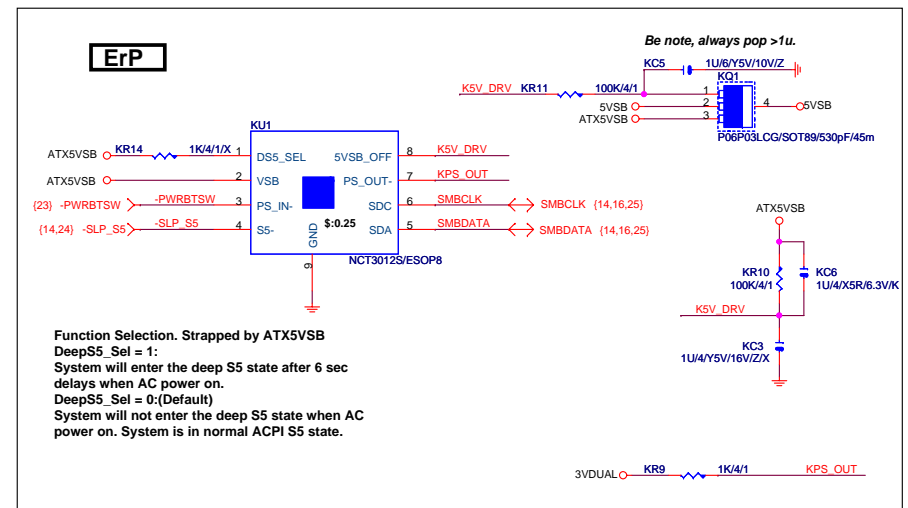


MIC





For 8720 power bottom 10 secs clear CMOS issue.



| GIGABYTE | | | |
|----------|---------------------------|-------------|----------|
| Title | | AUDIO JACK | |
| Size | Document Number | GA-M68MT-S2 | |
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