

Yoda-1 SVT Logic Schematics

YD1KL-3
VER 3.08
Nov/11/2016

BASE LOGIC :
Yoda-1 SIT VER 2.16 Sep/06/2016

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- 68.DC/DC VCCCPUCORE (NCP81382)
- 69.DC/DC VCCGFXCORE_I (NCP81382)
- 70.DC/DC VCCSA (NCP81382)

- 71.BLANK
- 72.DC/DC VCCCPUIO (NB682)
- 73.DC/DC VCC1R0_SUS (BD91364BMUU)
- 74.LOAD SW VCCST & VCCSTG
- 75.DC/DC VCC1R2A (SN1409027)
- 76.DC/DC VCC0R6B (TPS51206)
- 77.DC/DC VCC1R8A (BU90104GWZ)
- 78.DC/DC VCC1R8_SUS (BU90104GWZ)
- 79.DC/DC VCCPCHCORE (NB695)
- 80.BLANK
- 81.BLANK
- 82.LOAD SW PCH SUS
- 83.LOAD SW LAN & LDO HDMI
- 84.LOAD SW B
- 85.LOAD SW WLAN
- 86.PTH FOR SCREW HOLES

EC HISTORY

YD1KL-3
(BASE LOGIC : Yoda-1 SIT VER 2.16 Sep/06/2016)

- VER.3.00 09/16/2016 APPLIED Yoda1_SVT_EC001,002
- VER.3.01 09/20/2016 APPLIED Yoda1_SVT_EC004
- VER.3.02 09/23/2016 APPLIED Yoda1_SVT_EC005-007
- VER.3.03 09/28/2016 APPLIED Yoda1_SVT_EC008,009
- VER.3.04 10/13/2016 APPLIED Yoda1_SVT_EC010,011
- VER.3.05 10/14/2016 APPLIED Yoda1_SVT_EC013
- VER.3.06 10/20/2016 APPLIED Yoda1_SVT_EC014
- VER.3.07 10/31/2016 APPLIED Yoda1_SVT_EC018
- VER.3.08 11/11/2016 APPLIED Yoda1_SVT_EC019



TABLE: Chip Capacitor Thermal Characteristics

| | | Code |
|----------------|---------------|------|
| -55 to 150degC | +/-30ppm/degC | NPO |
| -55 to 125degC | +/-30ppm/degC | C0G |
| -55 to 125degC | +/-15% | X7R |
| -55 to 105degC | +/-22% | X6S |
| -55 to 85degC | +/-15% | X5R |

TABLE: Chip Capacitor Tolerance

| Tolerance | Code |
|-----------|------|
| +/-0.25pF | C |
| +/-0.5pF | D |
| +/-5% | J |
| +/-10% | K |
| +/-20% | M |
| +80/-20% | Z |

TABLE: Chip Part Dimension

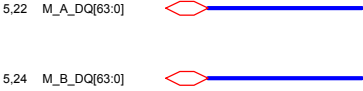
| Size [mm] | mm Size Code | Inch Size Code |
|-------------|--------------|----------------|
| 0.40 x 0.20 | 0402 | 01005 |
| 0.60 x 0.30 | 0603 | 0201 |
| 1.00 x 0.50 | 1005 | 0402 |
| 1.60 x 0.80 | 1608 | 0603 |
| 2.00 x 1.25 | 2125 | 0805 |
| 2.00 x 1.60 | 2016 | 0806 |
| 2.50 x 2.00 | 2520 | 1008 |
| 3.20 x 1.60 | 3216 | 1206 |
| 3.20 x 2.50 | 3225 | 1210 |
| 4.50 x 1.60 | 4516 | 1806 |
| 4.50 x 2.50 | 4525 | 1810 |
| 4.50 x 3.20 | 4532 | 1812 |
| 5.00 x 2.50 | 5025 | 2010 |
| 6.40 x 3.20 | 6432 | 2512 |

↑
LOGIC



Project Name : Yoda-1 SVT Title : EC HISTORY

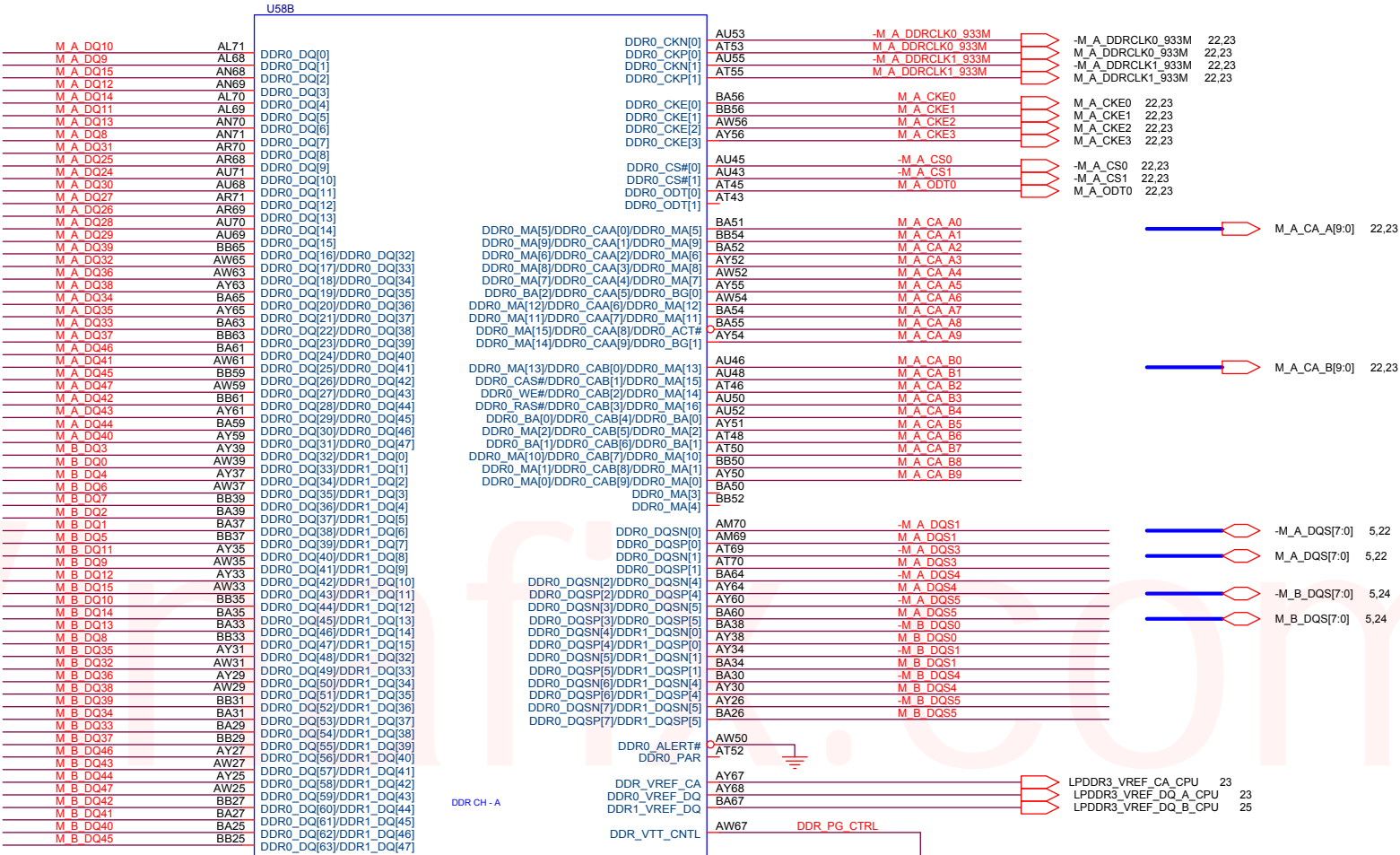
Size : C Document Number : Rev : 3.08



TABLE

| | Pin | Interleave | Non-Interleave |
|---------|------|-------------|----------------|
| Block 0 | AL71 | DDR0_DQ[0] | DDR0_DQ[0] |
| | AL68 | DDR0_DQ[1] | DDR0_DQ[1] |
| | AN68 | DDR0_DQ[2] | DDR0_DQ[2] |
| | AN69 | DDR0_DQ[3] | DDR0_DQ[3] |
| | AL70 | DDR0_DQ[4] | DDR0_DQ[4] |
| | AL69 | DDR0_DQ[5] | DDR0_DQ[5] |
| | AN70 | DDR0_DQ[6] | DDR0_DQ[6] |
| | AN71 | DDR0_DQ[7] | DDR0_DQ[7] |
| | AR70 | DDR0_DQ[8] | DDR0_DQ[8] |
| | AR68 | DDR0_DQ[9] | DDR0_DQ[9] |
| | AU71 | DDR0_DQ[10] | DDR0_DQ[10] |
| | AU68 | DDR0_DQ[11] | DDR0_DQ[11] |
| | AR71 | DDR0_DQ[12] | DDR0_DQ[12] |
| | AR69 | DDR0_DQ[13] | DDR0_DQ[13] |
| | AU70 | DDR0_DQ[14] | DDR0_DQ[14] |
| | AU69 | DDR0_DQ[15] | DDR0_DQ[15] |
| Block 2 | BB65 | DDR0_DQ[16] | DDR0_DQ[32] |
| | AW65 | DDR0_DQ[17] | DDR0_DQ[33] |
| | AW63 | DDR0_DQ[18] | DDR0_DQ[34] |
| | AY63 | DDR0_DQ[19] | DDR0_DQ[35] |
| | BA65 | DDR0_DQ[20] | DDR0_DQ[36] |
| | AY65 | DDR0_DQ[21] | DDR0_DQ[37] |
| | BA63 | DDR0_DQ[22] | DDR0_DQ[38] |
| | BB63 | DDR0_DQ[23] | DDR0_DQ[39] |
| | BA61 | DDR0_DQ[24] | DDR0_DQ[40] |
| | AW61 | DDR0_DQ[25] | DDR0_DQ[41] |
| | BB59 | DDR0_DQ[26] | DDR0_DQ[42] |
| | AW59 | DDR0_DQ[27] | DDR0_DQ[43] |
| | BB61 | DDR0_DQ[28] | DDR0_DQ[44] |
| | AY61 | DDR0_DQ[29] | DDR0_DQ[45] |
| | BA59 | DDR0_DQ[30] | DDR0_DQ[46] |
| | AY59 | DDR0_DQ[31] | DDR0_DQ[47] |
| Block 4 | AY39 | DDR0_DQ[32] | DDR1_DQ[0] |
| | AW39 | DDR0_DQ[33] | DDR1_DQ[1] |
| | AY37 | DDR0_DQ[34] | DDR1_DQ[2] |
| | AW37 | DDR0_DQ[35] | DDR1_DQ[3] |
| | BB39 | DDR0_DQ[36] | DDR1_DQ[4] |
| | BA39 | DDR0_DQ[37] | DDR1_DQ[5] |
| | BA37 | DDR0_DQ[38] | DDR1_DQ[6] |
| | BB37 | DDR0_DQ[39] | DDR1_DQ[7] |
| | AY35 | DDR0_DQ[40] | DDR1_DQ[8] |
| | AW35 | DDR0_DQ[41] | DDR1_DQ[9] |
| | AY33 | DDR0_DQ[42] | DDR1_DQ[10] |
| | AW33 | DDR0_DQ[43] | DDR1_DQ[11] |
| | BB35 | DDR0_DQ[44] | DDR1_DQ[12] |
| | BA35 | DDR0_DQ[45] | DDR1_DQ[13] |
| | BA33 | DDR0_DQ[46] | DDR1_DQ[14] |
| | BB33 | DDR0_DQ[47] | DDR1_DQ[15] |
| Block 6 | AY31 | DDR0_DQ[48] | DDR1_DQ[32] |
| | AW31 | DDR0_DQ[49] | DDR1_DQ[33] |
| | AY29 | DDR0_DQ[50] | DDR1_DQ[34] |
| | AW29 | DDR0_DQ[51] | DDR1_DQ[35] |
| | BB31 | DDR0_DQ[52] | DDR1_DQ[36] |
| | BA31 | DDR0_DQ[53] | DDR1_DQ[37] |
| | BA29 | DDR0_DQ[54] | DDR1_DQ[38] |
| | BB29 | DDR0_DQ[55] | DDR1_DQ[39] |
| | AY27 | DDR0_DQ[56] | DDR1_DQ[40] |
| | AW27 | DDR0_DQ[57] | DDR1_DQ[41] |
| | AY25 | DDR0_DQ[58] | DDR1_DQ[42] |
| | AW25 | DDR0_DQ[59] | DDR1_DQ[43] |
| | BB27 | DDR0_DQ[60] | DDR1_DQ[44] |
| | BA27 | DDR0_DQ[61] | DDR1_DQ[45] |
| | BA25 | DDR0_DQ[62] | DDR1_DQ[46] |
| | BB25 | DDR0_DQ[63] | DDR1_DQ[47] |

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TABLE

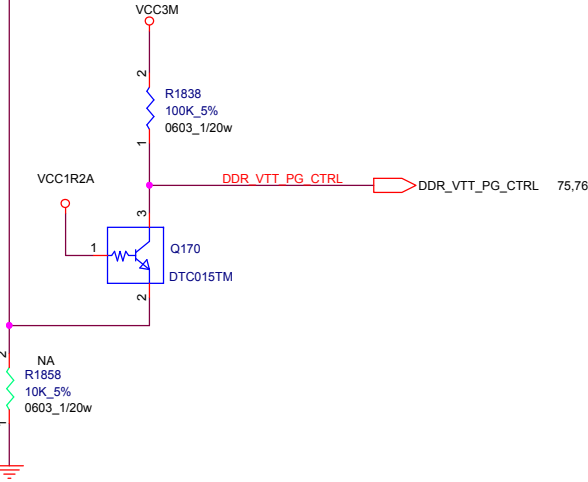
| | Pin | Interleave | Non-Interleave |
|---------|------|--------------|----------------|
| Block 0 | AM70 | DDR0_DQSN[0] | DDR0_DQSN[0] |
| | AM69 | DDR0_DQSP[0] | DDR0_DQSP[0] |
| | AT69 | DDR0_DQSN[1] | DDR0_DQSN[1] |
| | AT70 | DDR0_DQSP[1] | DDR0_DQSP[1] |
| Block 2 | BA64 | DDR0_DQSN[2] | DDR0_DQSN[4] |
| | AY64 | DDR0_DQSP[2] | DDR0_DQSP[4] |
| | AY60 | DDR0_DQSN[3] | DDR0_DQSN[5] |
| | BA60 | DDR0_DQSP[3] | DDR0_DQSP[5] |
| Block 4 | BA38 | DDR0_DQSN[4] | DDR1_DQSN[0] |
| | AY38 | DDR0_DQSP[4] | DDR1_DQSP[0] |
| | AY34 | DDR0_DQSN[5] | DDR1_DQSN[1] |
| | BA34 | DDR0_DQSP[5] | DDR1_DQSP[1] |
| Block 6 | BA30 | DDR0_DQSN[6] | DDR1_DQSN[4] |
| | AY30 | DDR0_DQSP[6] | DDR1_DQSP[4] |
| | AY26 | DDR0_DQSN[7] | DDR1_DQSN[5] |
| | BA26 | DDR0_DQSP[7] | DDR1_DQSP[5] |

LOGIC

TABLE

| Pin | DDR3L | LPDDR3 | DDR4 |
|------|-------------|-------------|-------------|
| BA51 | DDR0_MA[5] | DDR0_CAA[0] | DDR0_MA[5] |
| BB54 | DDR0_MA[9] | DDR0_CAA[1] | DDR0_MA[9] |
| BA52 | DDR0_MA[6] | DDR0_CAA[2] | DDR0_MA[6] |
| AY52 | DDR0_MA[8] | DDR0_CAA[3] | DDR0_MA[8] |
| AW52 | DDR0_MA[7] | DDR0_CAA[4] | DDR0_MA[7] |
| AY55 | DDR0_BA[2] | DDR0_CAA[5] | DDR0_BG[0] |
| AW54 | DDR0_MA[12] | DDR0_CAA[6] | DDR0_MA[12] |
| BA54 | DDR0_MA[11] | DDR0_CAA[7] | DDR0_MA[11] |
| BA55 | DDR0_MA[15] | DDR0_CAA[8] | DDR0_ACT# |
| AY54 | DDR0_MA[14] | DDR0_CAA[9] | DDR0_BG[1] |
| AU46 | DDR0_MA[13] | DDR0_CAB[0] | DDR0_MA[13] |
| AU48 | DDR0_CAS# | DDR0_CAB[1] | DDR0_MA[15] |
| AT46 | DDR0_WE# | DDR0_CAB[2] | DDR0_MA[14] |
| AU50 | DDR0_RAS# | DDR0_CAB[3] | DDR0_MA[16] |
| AU52 | DDR0_BA[0] | DDR0_CAB[4] | DDR0_BA[0] |
| AY51 | DDR0_MA[2] | DDR0_CAB[5] | DDR0_MA[2] |
| AT48 | DDR0_BA[1] | DDR0_CAB[6] | DDR0_BA[1] |
| AT50 | DDR0_MA[10] | DDR0_CAB[7] | DDR0_MA[10] |
| BB50 | DDR0_MA[1] | DDR0_CAB[8] | DDR0_MA[1] |
| AY50 | DDR0_MA[0] | DDR0_CAB[9] | DDR0_MA[0] |
| BA50 | DDR0_MA[3] | Not Used | DDR0_MA[3] |
| BB52 | DDR0_MA[4] | Not Used | DDR0_MA[4] |

LOGIC

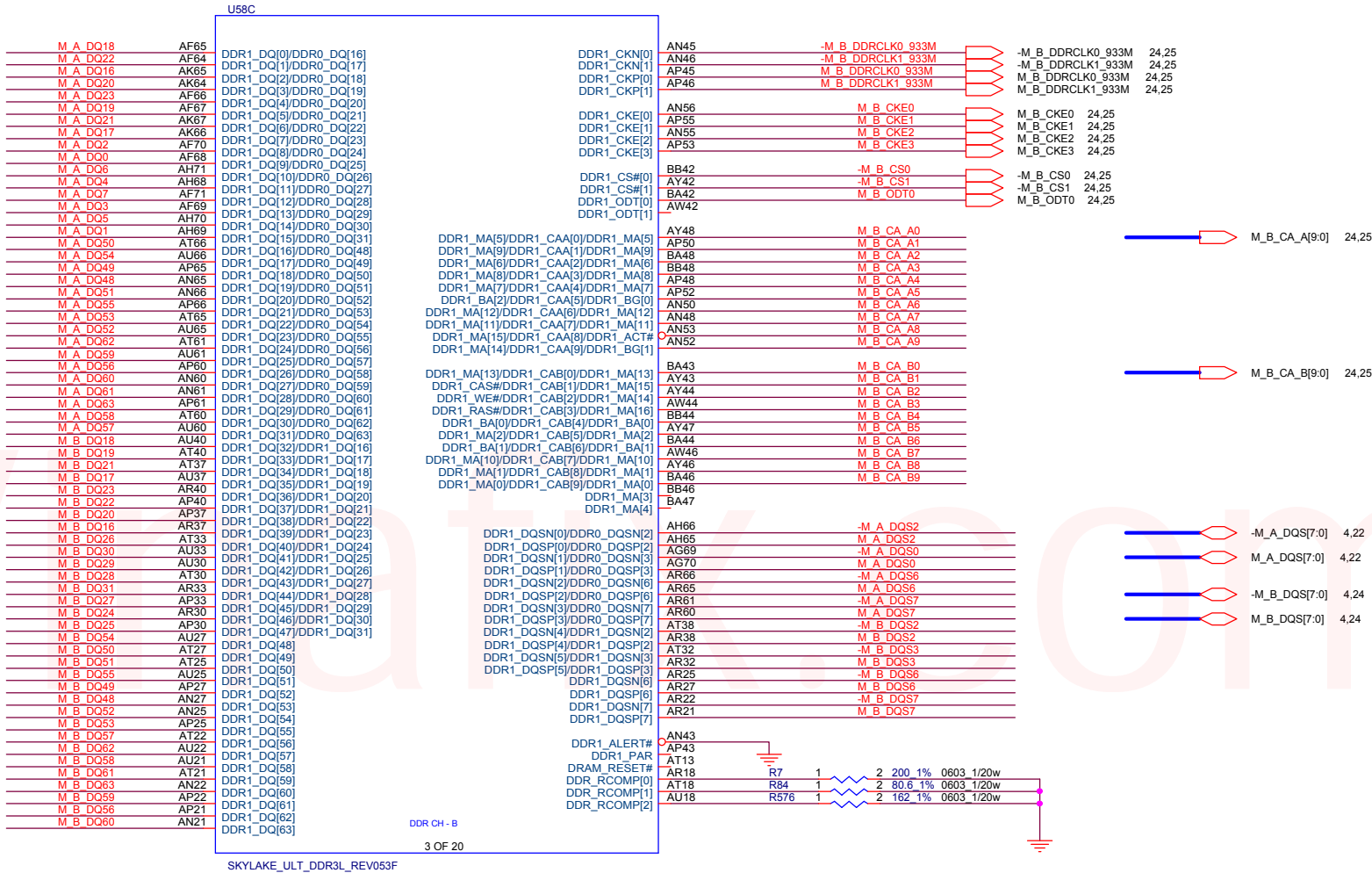


Lenovo

TABLE

| | Pin | Interleave | Non-Interleave |
|---------|------|-------------|----------------|
| Block 1 | AF65 | DDR1_DQ[0] | DDR0_DQ[16] |
| | AF64 | DDR1_DQ[1] | DDR0_DQ[17] |
| | AK65 | DDR1_DQ[2] | DDR0_DQ[18] |
| | AK64 | DDR1_DQ[3] | DDR0_DQ[19] |
| | AF66 | DDR1_DQ[4] | DDR0_DQ[20] |
| | AF67 | DDR1_DQ[5] | DDR0_DQ[21] |
| | AK67 | DDR1_DQ[6] | DDR0_DQ[22] |
| | AK66 | DDR1_DQ[7] | DDR0_DQ[23] |
| | AF70 | DDR1_DQ[8] | DDR0_DQ[24] |
| | AF68 | DDR1_DQ[9] | DDR0_DQ[25] |
| | AH71 | DDR1_DQ[10] | DDR0_DQ[26] |
| | AH68 | DDR1_DQ[11] | DDR0_DQ[27] |
| | AF71 | DDR1_DQ[12] | DDR0_DQ[28] |
| | AF69 | DDR1_DQ[13] | DDR0_DQ[29] |
| | AH70 | DDR1_DQ[14] | DDR0_DQ[30] |
| | AH69 | DDR1_DQ[15] | DDR0_DQ[31] |
| Block 3 | AT66 | DDR1_DQ[16] | DDR0_DQ[48] |
| | AU66 | DDR1_DQ[17] | DDR0_DQ[49] |
| | AP65 | DDR1_DQ[18] | DDR0_DQ[50] |
| | AN65 | DDR1_DQ[19] | DDR0_DQ[51] |
| | AN66 | DDR1_DQ[20] | DDR0_DQ[52] |
| | AP66 | DDR1_DQ[21] | DDR0_DQ[53] |
| | AT65 | DDR1_DQ[22] | DDR0_DQ[54] |
| | AU65 | DDR1_DQ[23] | DDR0_DQ[55] |
| | AT61 | DDR1_DQ[24] | DDR0_DQ[56] |
| | AU61 | DDR1_DQ[25] | DDR0_DQ[57] |
| | AP60 | DDR1_DQ[26] | DDR0_DQ[58] |
| | AN60 | DDR1_DQ[27] | DDR0_DQ[59] |
| | AN61 | DDR1_DQ[28] | DDR0_DQ[60] |
| | AP61 | DDR1_DQ[29] | DDR0_DQ[61] |
| | AT60 | DDR1_DQ[30] | DDR0_DQ[62] |
| | AU60 | DDR1_DQ[31] | DDR0_DQ[63] |
| Block 5 | AU40 | DDR1_DQ[32] | DDR1_DQ[16] |
| | AT40 | DDR1_DQ[33] | DDR1_DQ[17] |
| | AT37 | DDR1_DQ[34] | DDR1_DQ[18] |
| | AU37 | DDR1_DQ[35] | DDR1_DQ[19] |
| | AR40 | DDR1_DQ[36] | DDR1_DQ[20] |
| | AP40 | DDR1_DQ[37] | DDR1_DQ[21] |
| | AP37 | DDR1_DQ[38] | DDR1_DQ[22] |
| | AR37 | DDR1_DQ[39] | DDR1_DQ[23] |
| | AT33 | DDR1_DQ[40] | DDR1_DQ[24] |
| | AU33 | DDR1_DQ[41] | DDR1_DQ[25] |
| | AU30 | DDR1_DQ[42] | DDR1_DQ[26] |
| | AT30 | DDR1_DQ[43] | DDR1_DQ[27] |
| | AR33 | DDR1_DQ[44] | DDR1_DQ[28] |
| | AP33 | DDR1_DQ[45] | DDR1_DQ[29] |
| | AR30 | DDR1_DQ[46] | DDR1_DQ[30] |
| | AP30 | DDR1_DQ[47] | DDR1_DQ[31] |
| Block 7 | AU27 | DDR1_DQ[48] | DDR1_DQ[48] |
| | AT27 | DDR1_DQ[49] | DDR1_DQ[49] |
| | AT25 | DDR1_DQ[50] | DDR1_DQ[50] |
| | AU25 | DDR1_DQ[51] | DDR1_DQ[51] |
| | AP27 | DDR1_DQ[52] | DDR1_DQ[52] |
| | AN27 | DDR1_DQ[53] | DDR1_DQ[53] |
| | AN25 | DDR1_DQ[54] | DDR1_DQ[54] |
| | AP25 | DDR1_DQ[55] | DDR1_DQ[55] |
| | AT22 | DDR1_DQ[56] | DDR1_DQ[56] |
| | AU22 | DDR1_DQ[57] | DDR1_DQ[57] |
| | AU21 | DDR1_DQ[58] | DDR1_DQ[58] |
| | AT21 | DDR1_DQ[59] | DDR1_DQ[59] |
| | AN22 | DDR1_DQ[60] | DDR1_DQ[60] |
| | AP22 | DDR1_DQ[61] | DDR1_DQ[61] |
| | AP21 | DDR1_DQ[62] | DDR1_DQ[62] |
| | AN21 | DDR1_DQ[63] | DDR1_DQ[63] |

LOGIC



TABLE

| | Pin | Interleave | Non-Interleave |
|---------|------|--------------|----------------|
| Block 1 | AH66 | DDR1_DQSN[0] | DDR0_DQSN[2] |
| | AH65 | DDR1_DQSP[0] | DDR0_DQSP[2] |
| | AG69 | DDR1_DQSN[1] | DDR0_DQSN[3] |
| | AG70 | DDR1_DQSP[1] | DDR0_DQSP[3] |
| Block 3 | AR66 | DDR1_DQSN[2] | DDR0_DQSN[6] |
| | AR65 | DDR1_DQSP[2] | DDR0_DQSP[6] |
| | AR61 | DDR1_DQSN[3] | DDR0_DQSN[7] |
| | AR60 | DDR1_DQSP[3] | DDR0_DQSP[7] |
| Block 5 | AT38 | DDR1_DQSN[4] | DDR1_DQSN[2] |
| | AR38 | DDR1_DQSP[4] | DDR1_DQSP[2] |
| | AT32 | DDR1_DQSN[5] | DDR1_DQSN[3] |
| | AR32 | DDR1_DQSP[5] | DDR1_DQSP[3] |
| Block 7 | AR25 | DDR1_DQSN[6] | DDR1_DQSN[6] |
| | AR27 | DDR1_DQSP[6] | DDR1_DQSP[6] |
| | AR22 | DDR1_DQSN[7] | DDR1_DQSN[7] |
| | AR21 | DDR1_DQSP[7] | DDR1_DQSP[7] |

LOGIC

TABLE

| Pin | DDR3L | LPDDR3 | DDR4 |
|------|-------------|-------------|-------------|
| AY48 | DDR1_MA[5] | DDR1_CAA[0] | DDR1_MA[5] |
| AP50 | DDR1_MA[9] | DDR1_CAA[1] | DDR1_MA[9] |
| BA48 | DDR1_MA[6] | DDR1_CAA[2] | DDR1_MA[6] |
| BB48 | DDR1_MA[8] | DDR1_CAA[3] | DDR1_MA[8] |
| AP48 | DDR1_MA[7] | DDR1_CAA[4] | DDR1_MA[7] |
| AP52 | DDR1_BA[2] | DDR1_CAA[5] | DDR1_BG[0] |
| AN50 | DDR1_MA[12] | DDR1_CAA[6] | DDR1_MA[12] |
| AN48 | DDR1_MA[11] | DDR1_CAA[7] | DDR1_MA[11] |
| AN53 | DDR1_MA[15] | DDR1_CAA[8] | DDR1_ACT# |
| AN52 | DDR1_MA[14] | DDR1_CAA[9] | DDR1_BG[1] |
| BA43 | DDR1_MA[13] | DDR1_CAB[0] | DDR1_MA[13] |
| AY43 | DDR1_CAS# | DDR1_CAB[1] | DDR1_MA[15] |
| AY44 | DDR1_WE# | DDR1_CAB[2] | DDR1_MA[14] |
| AW44 | DDR1_RAS# | DDR1_CAB[3] | DDR1_MA[16] |
| BB44 | DDR1_BA[0] | DDR1_CAB[4] | DDR1_BA[0] |
| AY47 | DDR1_MA[2] | DDR1_CAB[5] | DDR1_MA[2] |
| BA44 | DDR1_BA[1] | DDR1_CAB[6] | DDR1_BA[1] |
| AW46 | DDR1_MA[10] | DDR1_CAB[7] | DDR1_MA[10] |
| AY46 | DDR1_MA[1] | DDR1_CAB[8] | DDR1_MA[1] |
| BA46 | DDR1_MA[0] | DDR1_CAB[9] | DDR1_MA[0] |
| BB46 | DDR1_MA[3] | Not Used | DDR1_MA[3] |
| BA47 | DDR1_MA[4] | Not Used | DDR1_MA[4] |

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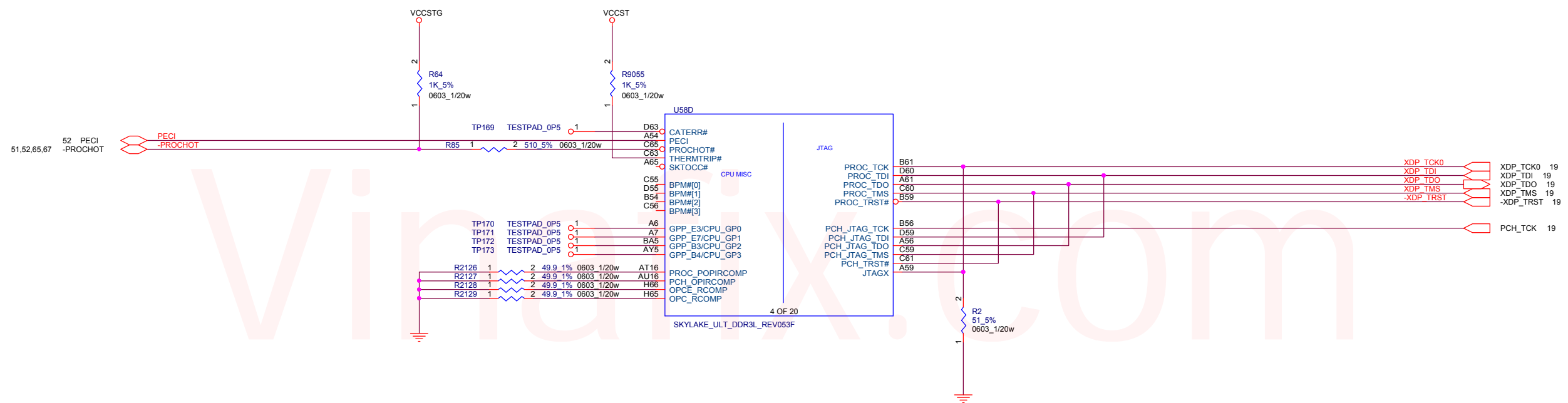


TABLE : Functional Strap

| SPI0_MOSI (Boot Halt) | |
|-----------------------|--------------------|
| HIGH | Disabled (Default) |
| LOW | Enabled |

TABLE : Functional Strap

| SPI0_MISO (JTAG ODT Disable) | |
|------------------------------|-------------------|
| HIGH | Enabled (Default) |
| LOW | Disabled |

TABLE : Functional Strap

| GPP_C5/SML0ALERT# (LPC or eSPI) | |
|---------------------------------|---------------------------|
| HIGH | eSPI is selected |
| LOW | LPC is selected (Default) |

← LOGIC

TABLE : Functional Strap

| GPP_C2/SMBALERT# (TLS Confidentiality) | |
|--|---|
| HIGH | Enable ME Crypto TLS with Confidentiality |
| LOW | Disable ME Crypto TLS (Default) |

← LOGIC

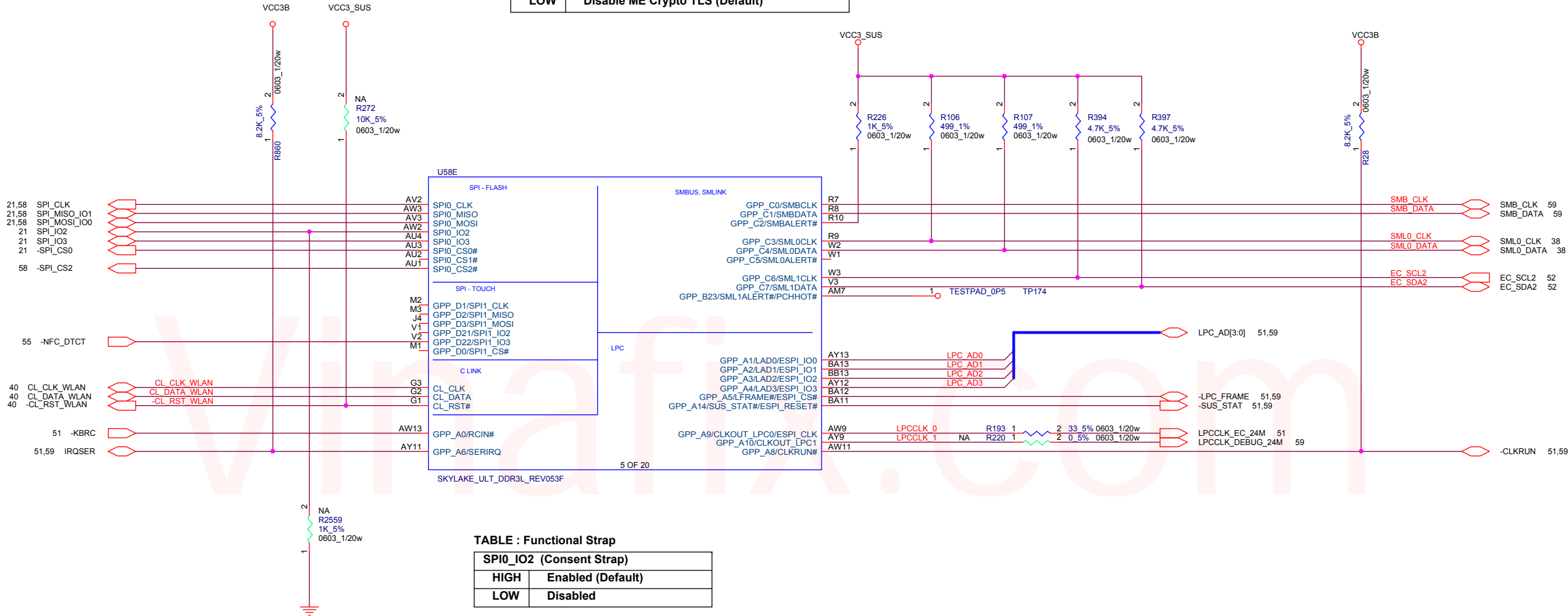


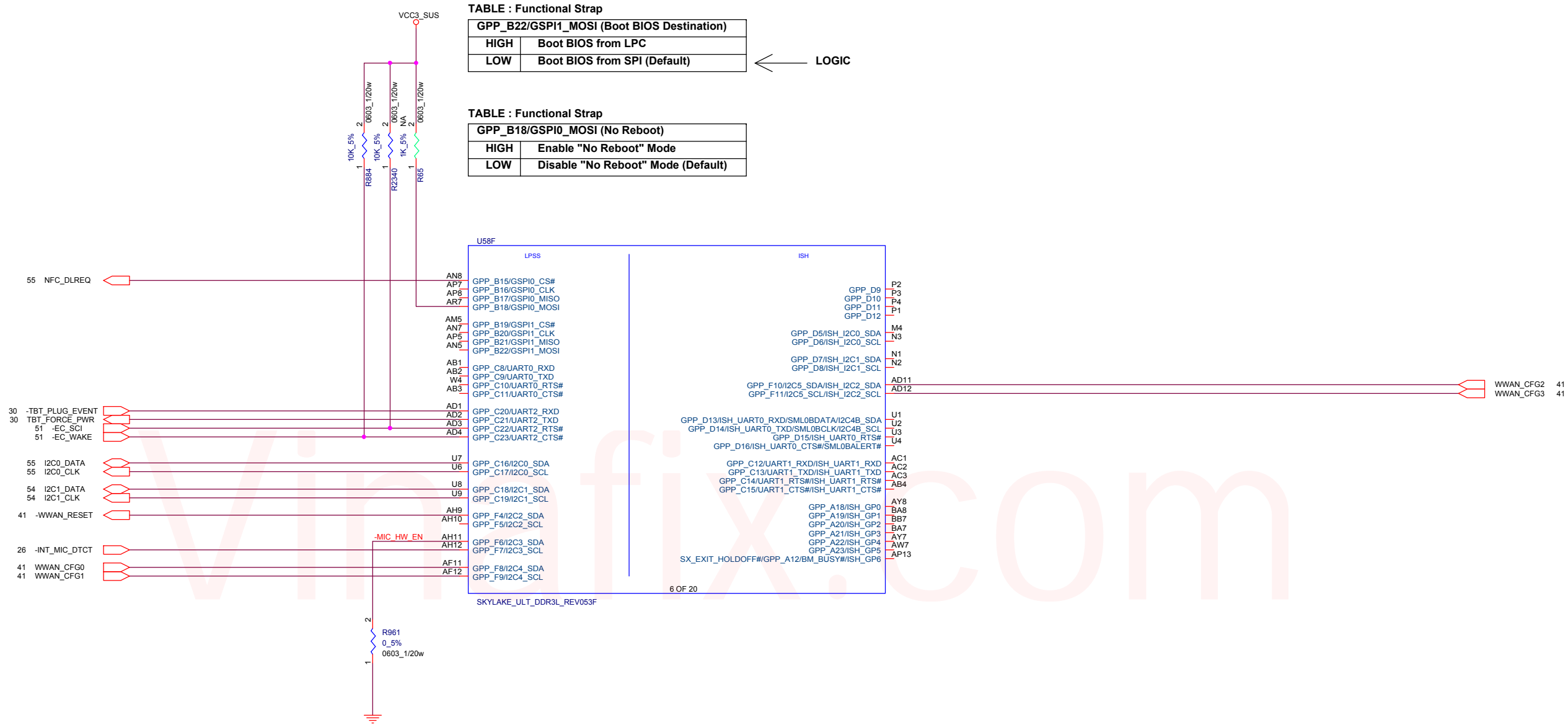
TABLE : Functional Strap

| SPI0_IO2 (Consent Strap) | |
|--------------------------|-------------------|
| HIGH | Enabled (Default) |
| LOW | Disabled |

TABLE : Functional Strap

| SPI0_IO3 (A0 Personality Strap) | |
|---------------------------------|--------------------|
| HIGH | Disabled (Default) |
| LOW | Enabled |

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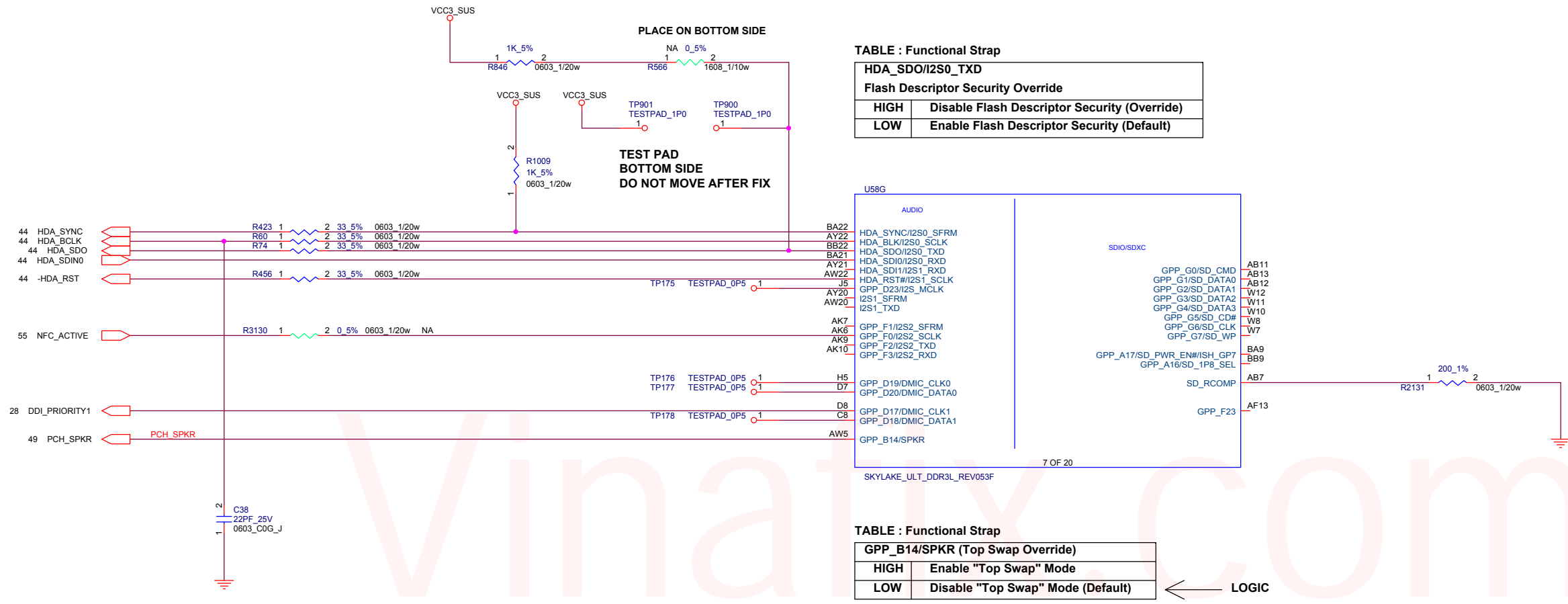


TABLE : Functional Strap

| HDA_SDO/I2S0_TXD | |
|------------------------------------|--|
| Flash Descriptor Security Override | |
| HIGH | Disable Flash Descriptor Security (Override) |
| LOW | Enable Flash Descriptor Security (Default) |

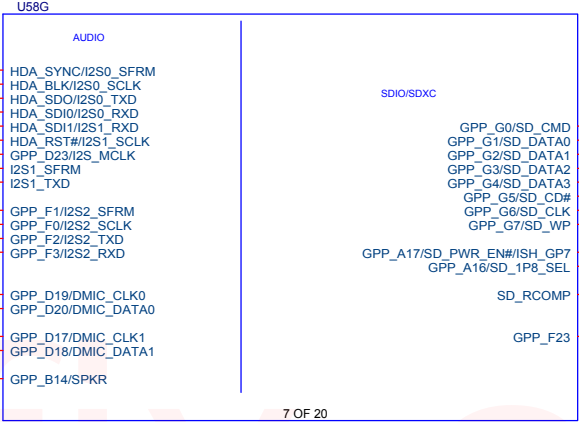


TABLE : Functional Strap

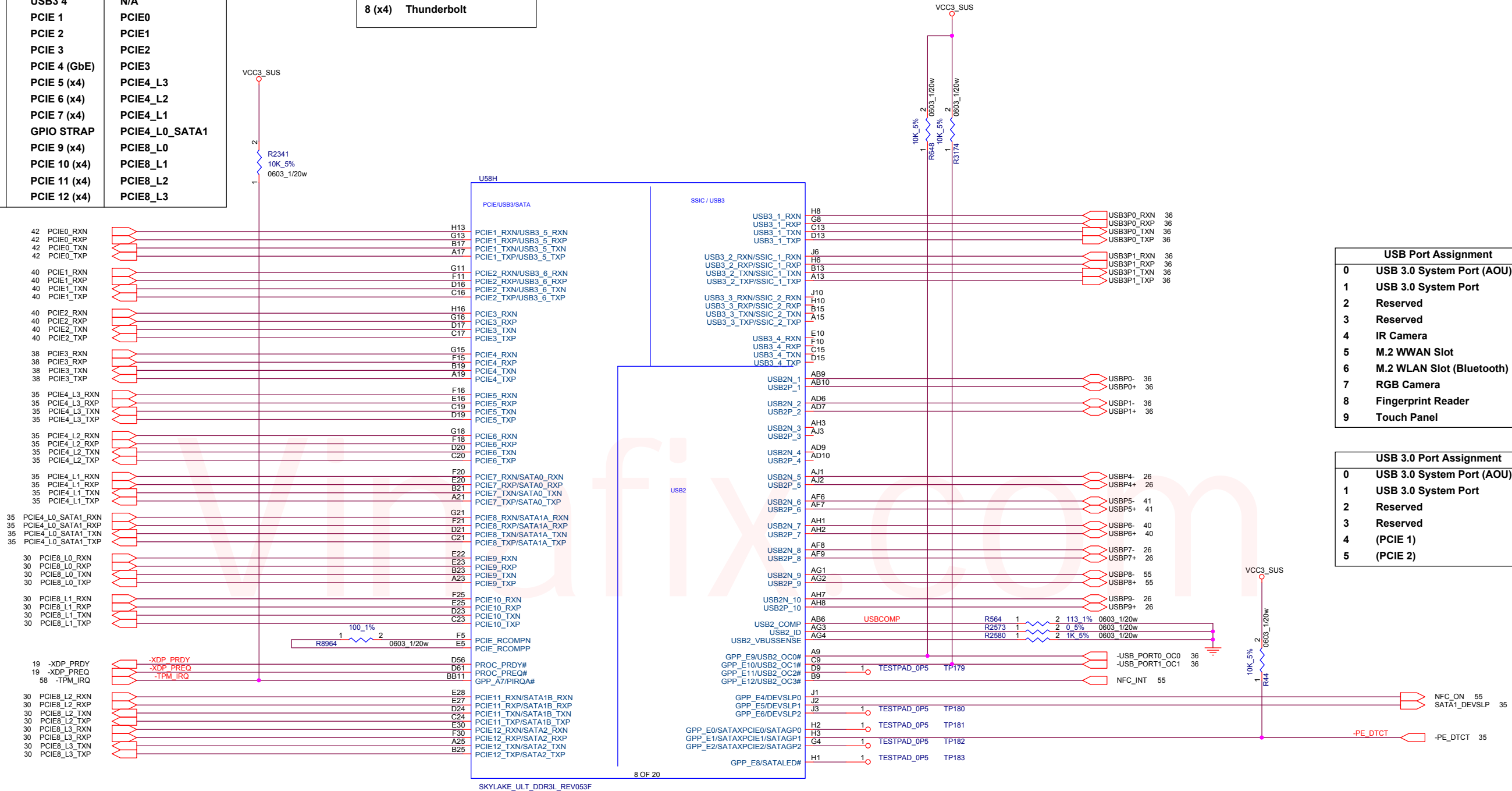
| GPP_B14/SPKR (Top Swap Override) | |
|----------------------------------|-----------------------------------|
| HIGH | Enable "Top Swap" Mode |
| LOW | Disable "Top Swap" Mode (Default) |

LOGIC

| Flexible I/O Configuration | | | |
|----------------------------|--------------------|---------------|----------------|
| I/O | High Speed Signals | Configuration | Net Name |
| Port 1 | USB3 1 | USB3 1 | USB3P0 |
| Port 2 | USB3 2/SSIC | USB3 2 | USB3P1 |
| Port 3 | USB3 3 | USB3 3 | N/A |
| Port 4 | USB3 4 | USB3 4 | N/A |
| Port 5 | USB3 5/PCIE 1 | PCIE 1 | PCIE0 |
| Port 6 | USB3 6/PCIE 2 | PCIE 2 | PCIE1 |
| Port 7 | PCIE 3 (GbE) | PCIE 3 | PCIE2 |
| Port 8 | PCIE 4 (GbE) | PCIE 4 (GbE) | PCIE3 |
| Port 9 | PCIE 5 (GbE) | PCIE 5 (x4) | PCIE4_L3 |
| Port 10 | PCIE 6 | PCIE 6 (x4) | PCIE4_L2 |
| Port 11 | PCIE 7/SATA 0 | PCIE 7 (x4) | PCIE4_L1 |
| Port 12 | PCIE 8/SATA 1A | GPIO STRAP | PCIE4_L0_SATA1 |
| Port 13 | PCIE 9 (GbE) | PCIE 9 (x4) | PCIE8_L0 |
| Port 14 | PCIE 10 (GbE) | PCIE 10 (x4) | PCIE8_L1 |
| Port 15 | PCIE 11/SATA 1B | PCIE 11 (x4) | PCIE8_L2 |
| Port 16 | PCIE 12/SATA 2 | PCIE 12 (x4) | PCIE8_L3 |

| PCIe Port Assignment | |
|----------------------|-----------------------|
| 0 | Media Card Controller |
| 1 | M.2 WLAN Slot Port 1 |
| 2 | M.2 WLAN Slot Port 0 |
| 3 | GbE PHY |
| 4 (x4) | PCIe SSD |
| 8 (x4) | Thunderbolt |

| SATA Port Assignment | |
|----------------------|-----------|
| 0 | (PCIe 7) |
| 1A | SATA SSD |
| 1B | (PCIe 11) |
| 2 | (PCIe 12) |

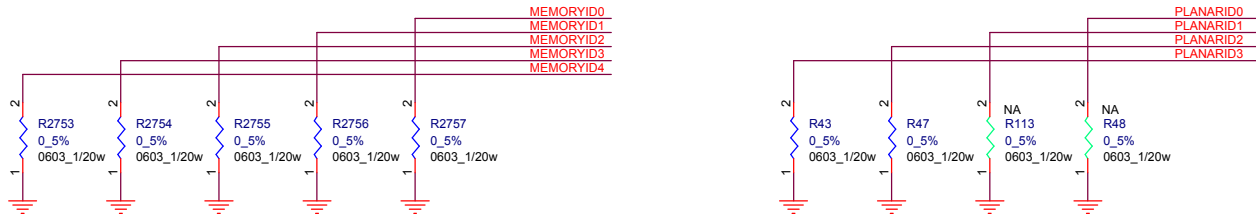


| USB Port Assignment | |
|---------------------|---------------------------|
| 0 | USB 3.0 System Port (AOU) |
| 1 | USB 3.0 System Port |
| 2 | Reserved |
| 3 | Reserved |
| 4 | IR Camera |
| 5 | M.2 WWAN Slot |
| 6 | M.2 WLAN Slot (Bluetooth) |
| 7 | RGB Camera |
| 8 | Fingerprint Reader |
| 9 | Touch Panel |

| USB 3.0 Port Assignment | |
|-------------------------|---------------------------|
| 0 | USB 3.0 System Port (AOU) |
| 1 | USB 3.0 System Port |
| 2 | Reserved |
| 3 | Reserved |
| 4 | (PCIe 1) |
| 5 | (PCIe 2) |

TABLE: MEMORYID

| MEMORYID[4..0] | U170 , U171 , U172 , U173 | | | |
|----------------|---------------------------|-------------------------|------|------|
| 00000b | Micron | MT52L256M32D1PF-107WT:B | 8Gb | 4GB |
| 00001b | | MT52L512M32D2PF-107WT:B | 16Gb | 8GB |
| 00010b | | MT52L1G32D4PG-107WT:B | 32Gb | 16GB |
| 00011b | Samsung | K4E8E324EB-EGCF | 8Gb | 4GB |
| 00100b | | K4E6E304EB-EGCF | 16Gb | 8GB |
| 00101b | | K4EBE304EB-EGCF | 32Gb | 16GB |
| 00110b | SK hynix | H9CCNNN8GTALAR-NUD | 8Gb | 4GB |
| 00111b | | H9CCNNNBJTALAR-NUD | 16Gb | 8GB |
| 01000b | | H9CCNNNCLGALAR-NUD | 32Gb | 16GB |



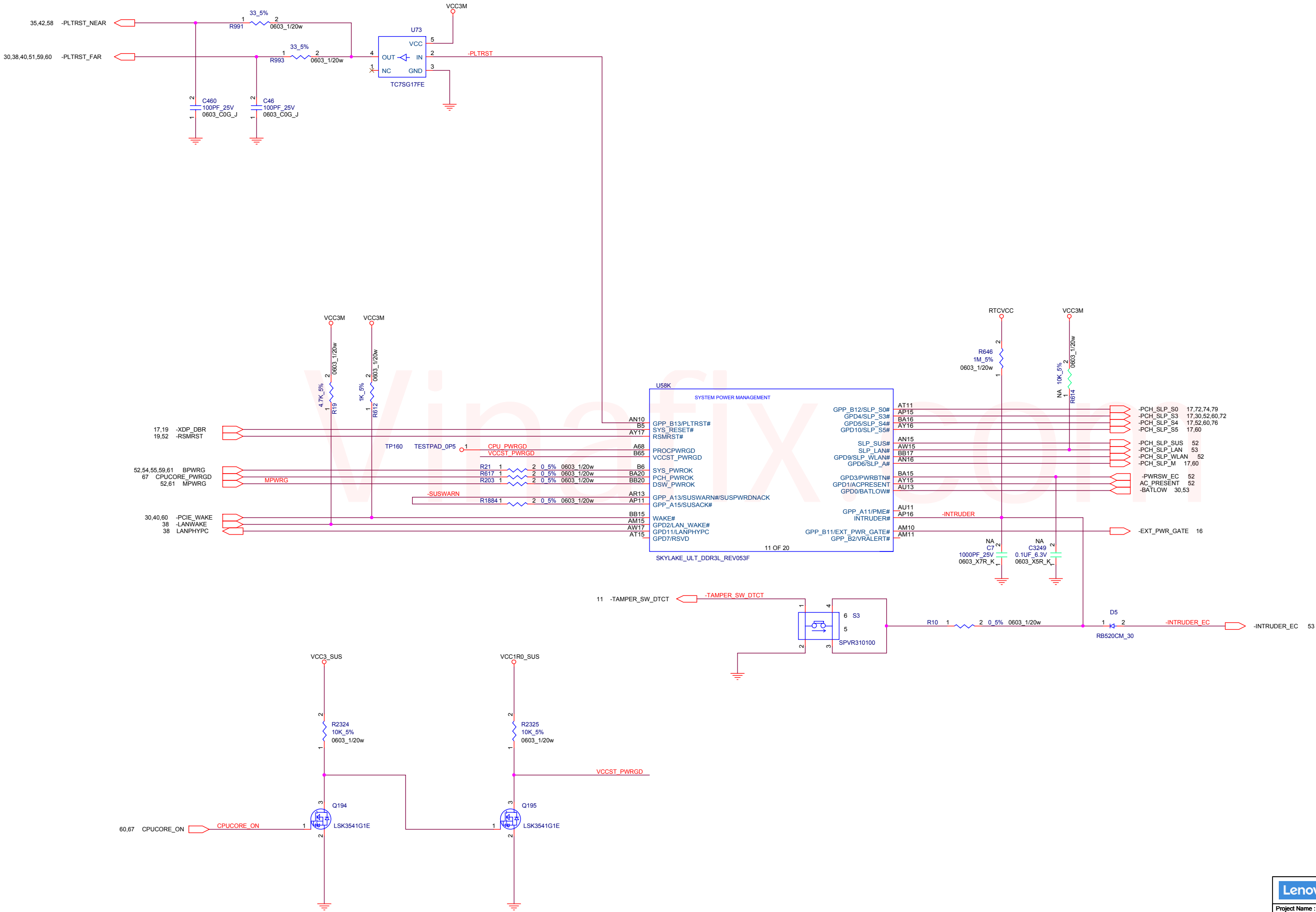
TABLE

| LEVEL | PLANAR ID | | | |
|-------|-----------|-----|------|-----|
| | 3 | 2 | 1 | 0 |
| | R43 | R47 | R113 | R48 |
| 1 | NA | NA | NA | NA |
| 0 | ASM | ASM | ASM | ASM |

TABLE

| LEVEL | PLANARID[3..0] |
|-------|----------------|
| SDV | 0000B |
| FVT | 0001B |
| SIT | 0010B |
| SVT | 0011B |

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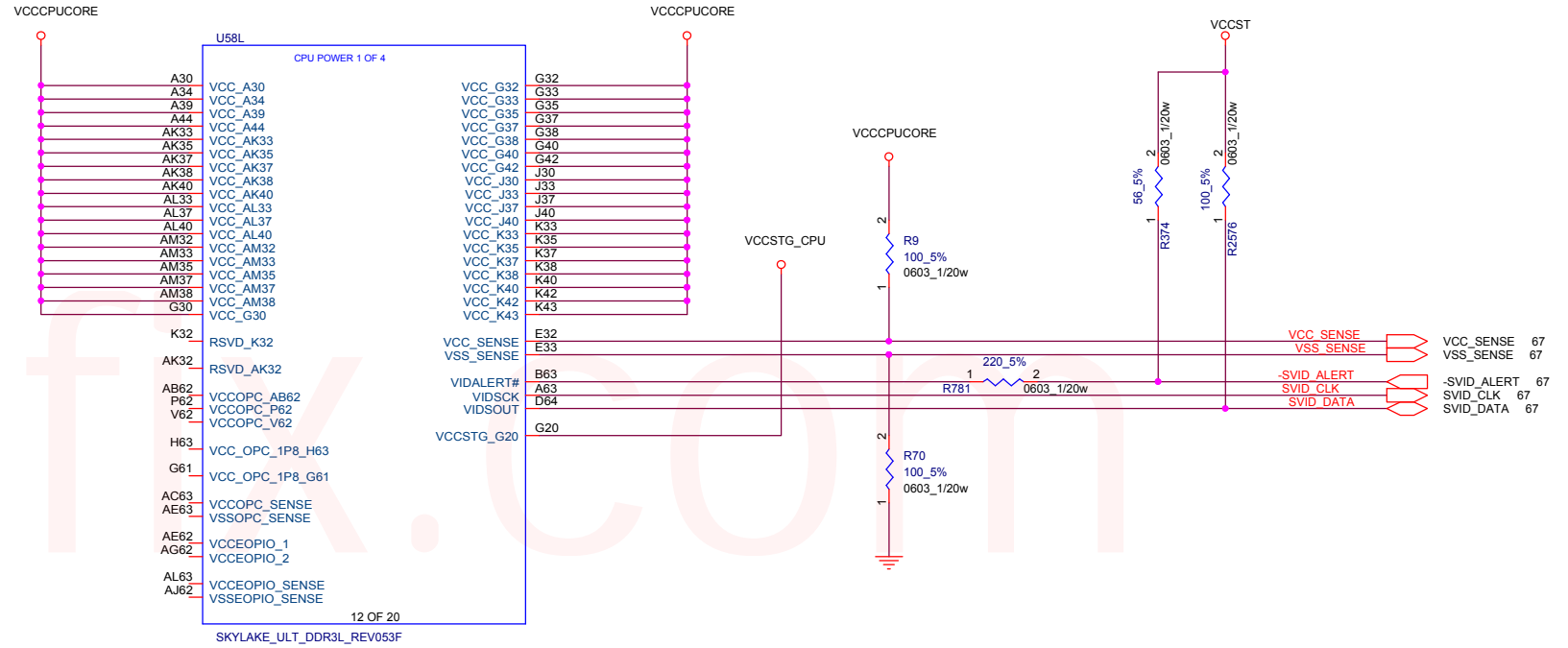
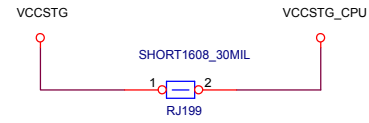
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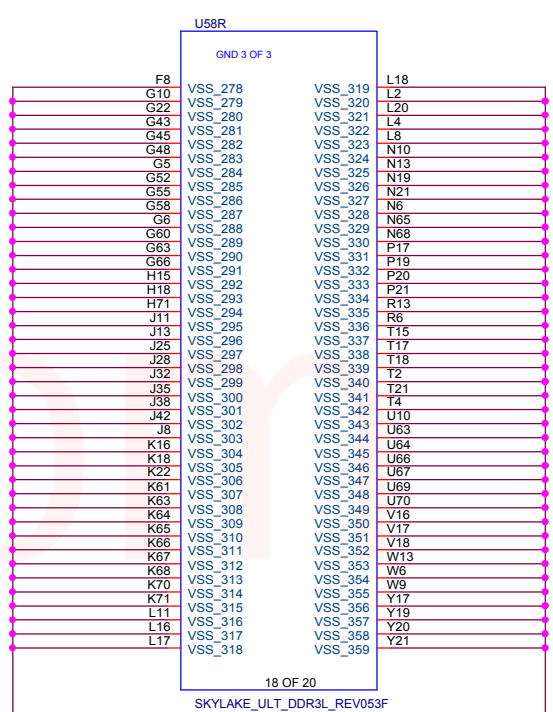
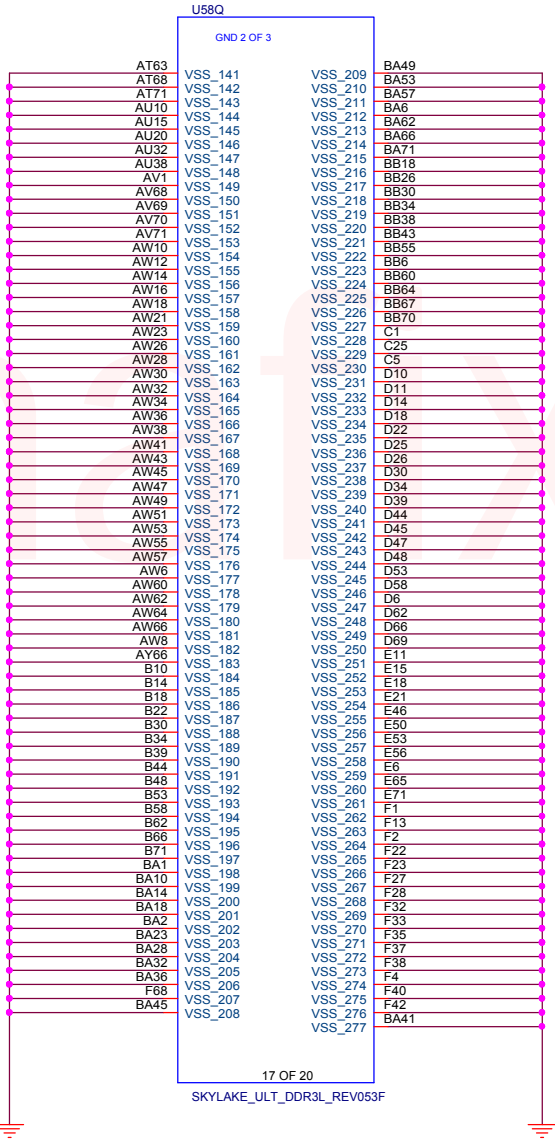
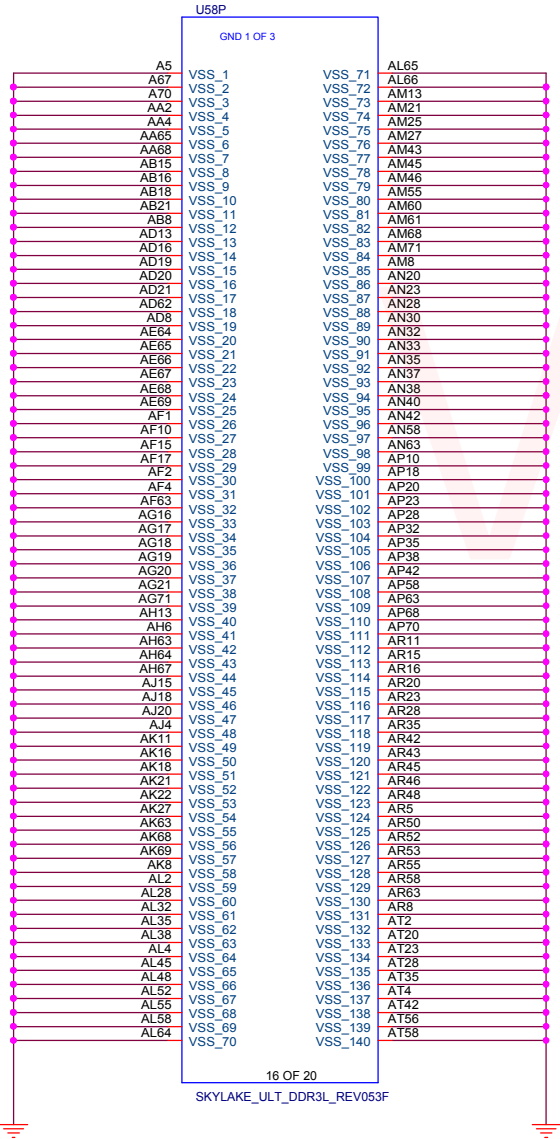
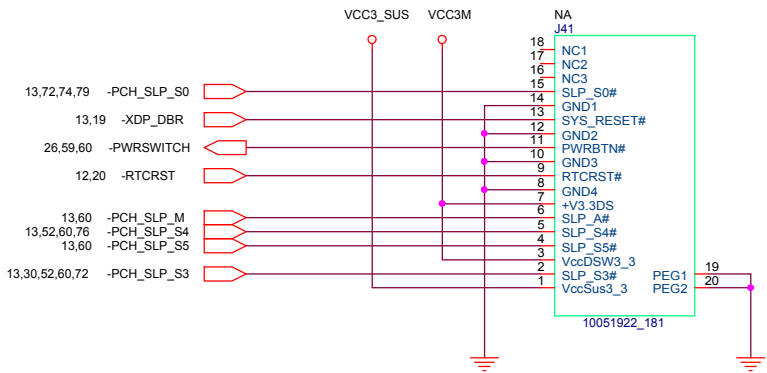
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A

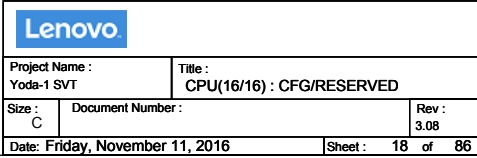
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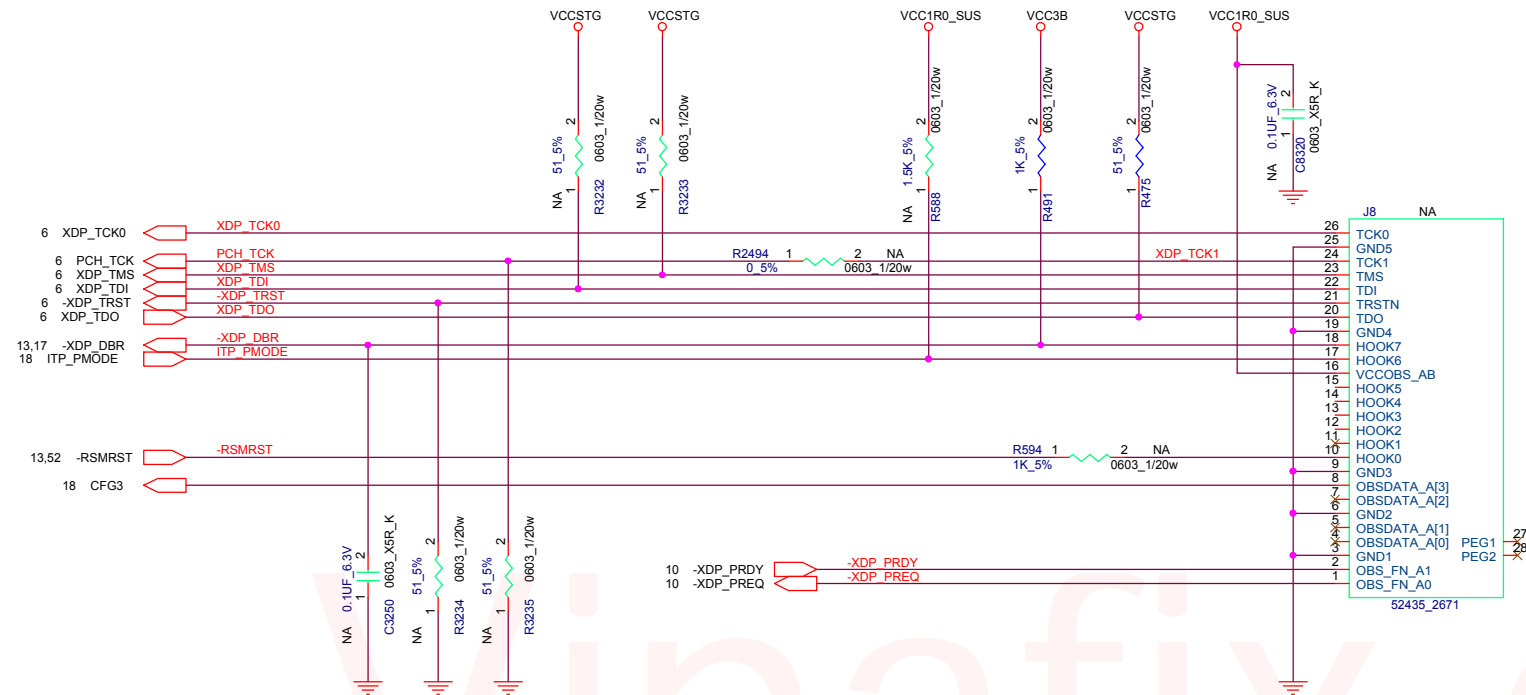


APS/PETS Interface



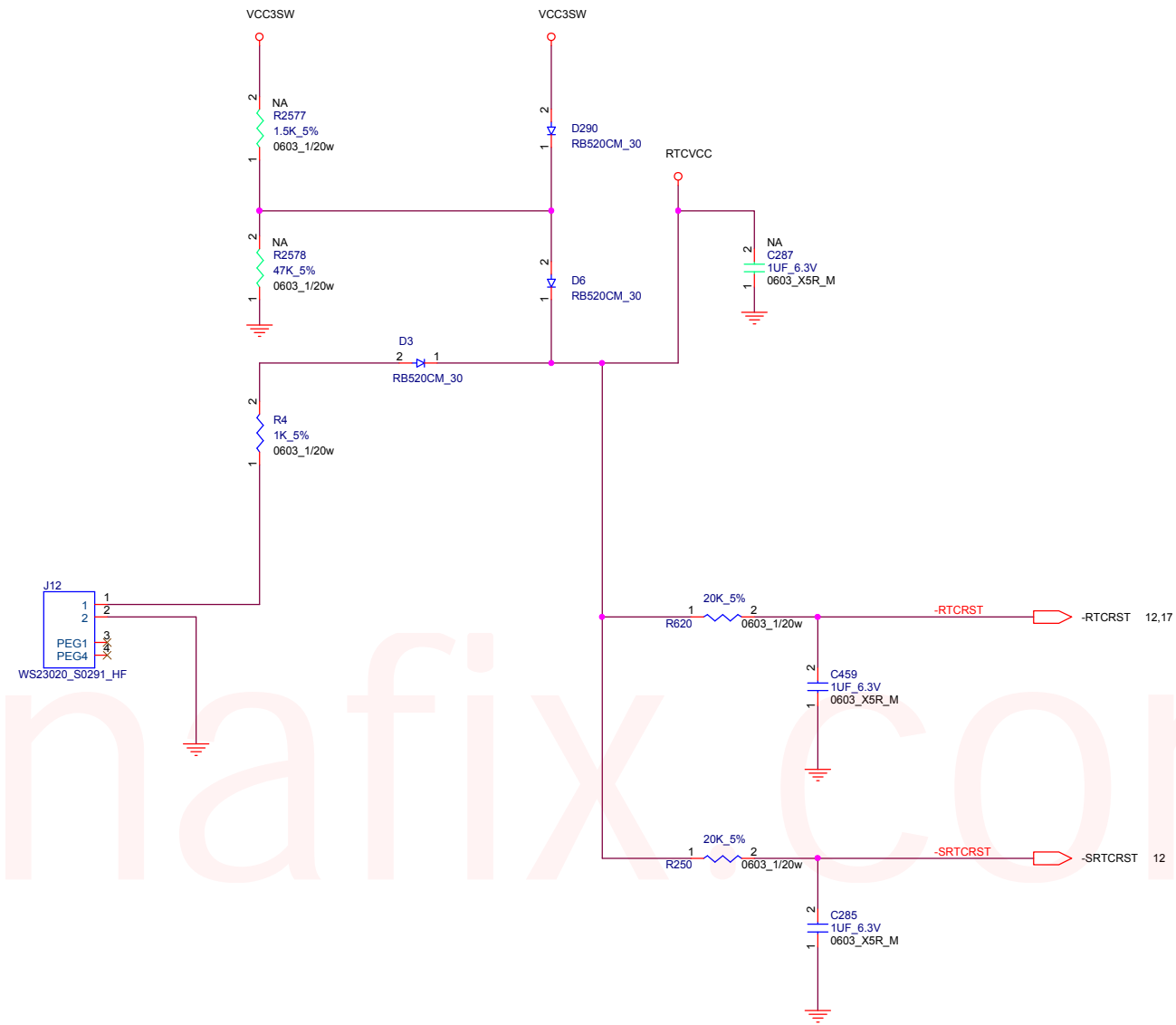
| |
|---|
| <p>CFG0 : Stall Reset Sequence after PCU PLL Lock until de-asserted 1 : No Stall 0 : Stall</p> |
| <p>CFG3 : MSR Privacy Bit Feature 1 : MSR (C80h) bit[0] setting 0 : MSR (C80h) bit[0] overridden</p> |
| <p>CFG4 : eDP Enable 1 : Disabled 0 : Enabled</p> |
| <p>CFG9 : SVID Bus Communication 1 : Enabled 0 : Disabled</p> |





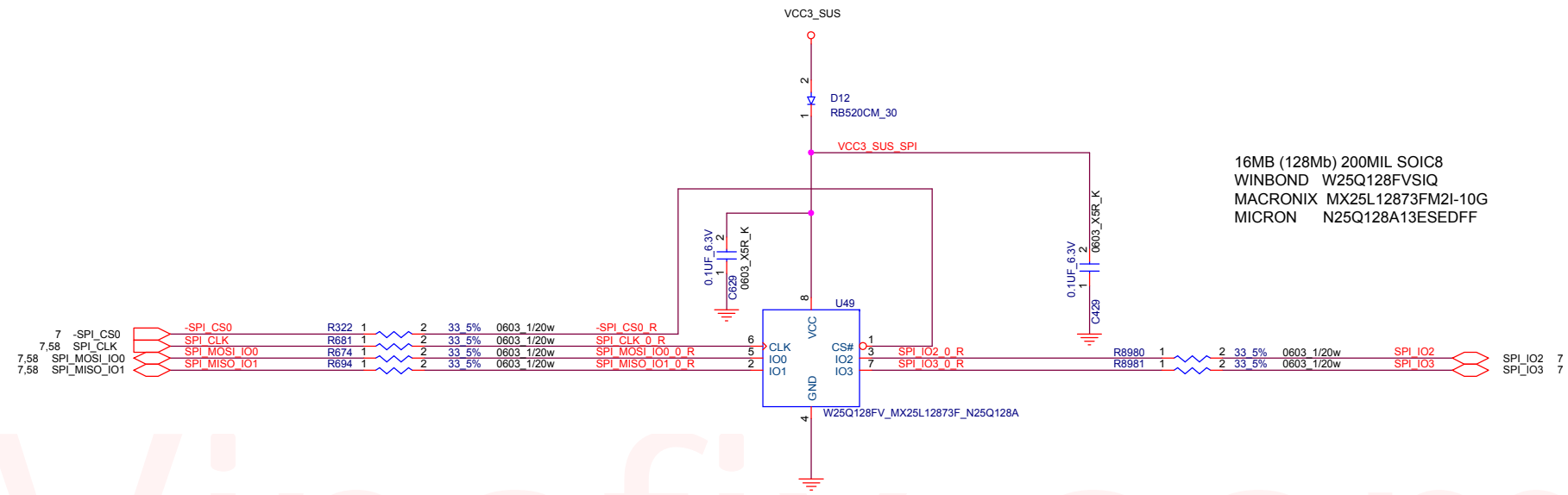
| TABLE | | | |
|---------|---------|--------|---------|
| Logic | Ref Des | Merged | DCI 2.0 |
| Page 7 | R2559 | ASM | NO_ASM |
| Page 18 | R1892 | ASM | NO_ASM |
| Page 19 | J8 | ASM | NO_ASM |
| | C8320 | ASM | NO_ASM |
| | R475 | ASM | ASM |
| | R491 | ASM | ASM |
| | R588 | ASM | NO_ASM |
| | R594 | ASM | NO_ASM |
| | R2494 | ASM | NO_ASM |

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| | | | |
|---------------------------------|-------------------|------------------------|---------------|
| Project Name : Yoda-1 SVT | | Title : RTC BATTERY | |
| Size : C | Document Number : | | Rev : 3.08 |
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| SF100 PIN HEADER INTERFACE (TOP VIEW) | | | | | | | |
|---------------------------------------|-------|--------|--------|---------|---|--|--|
| 1 | VCC | D12.1 | GND | GND | 2 | | |
| 3 | CS# | R322.2 | R681.2 | CLK | 4 | | |
| 5 | MISO | R694.2 | R674.2 | MOSI | 6 | | |
| 7 | (KEY) | N/A | N/A | (RESET) | 8 | | |

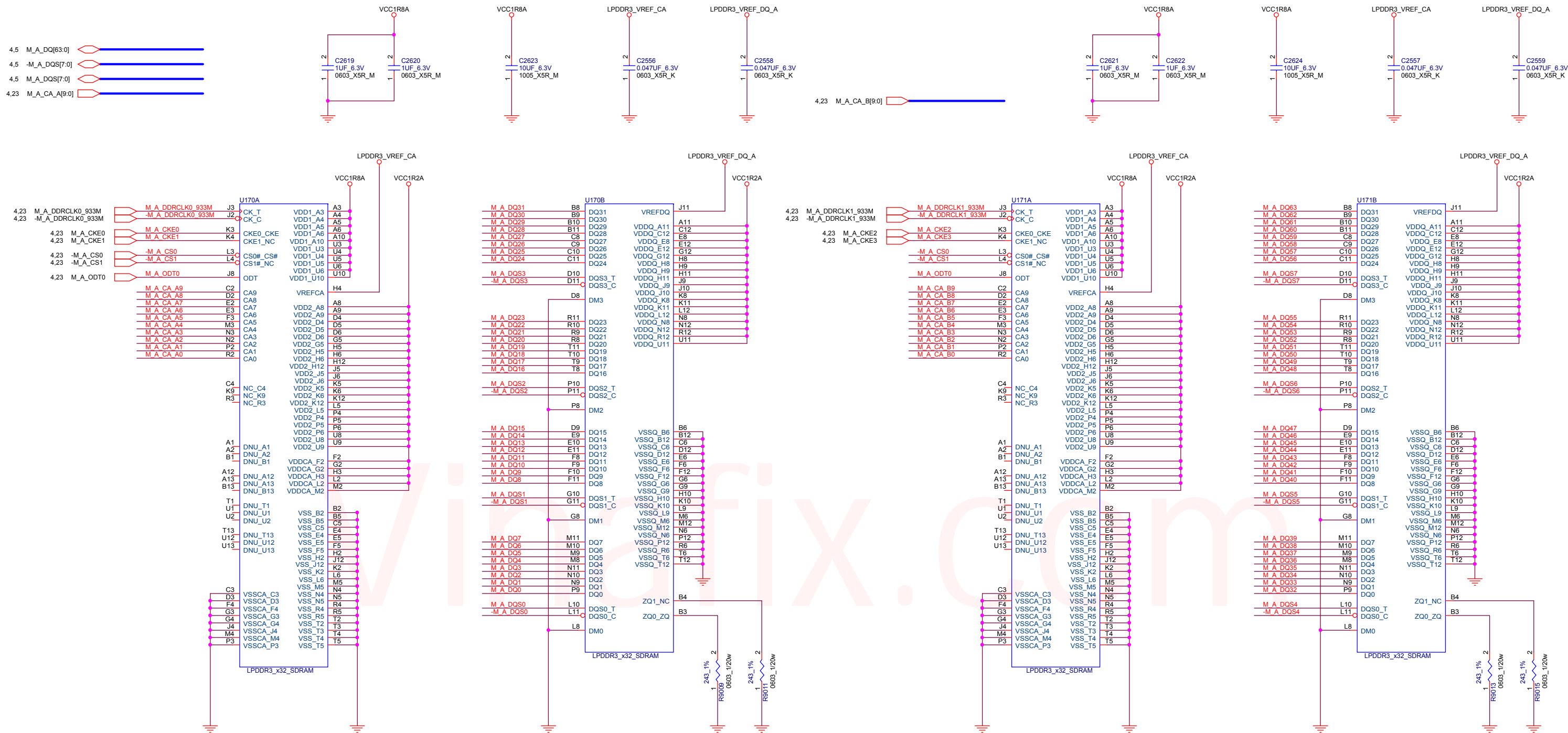
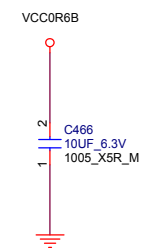
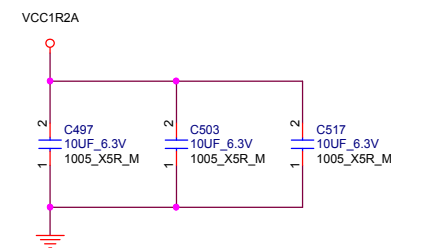
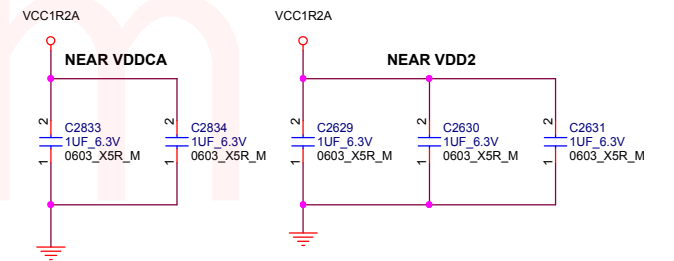
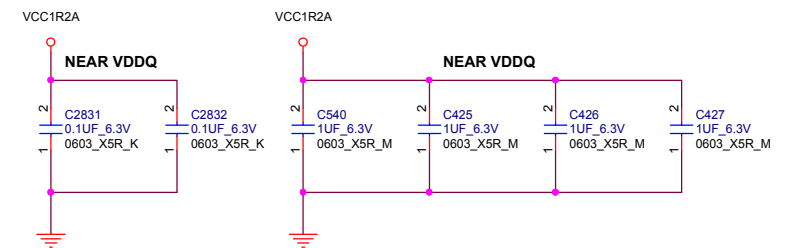
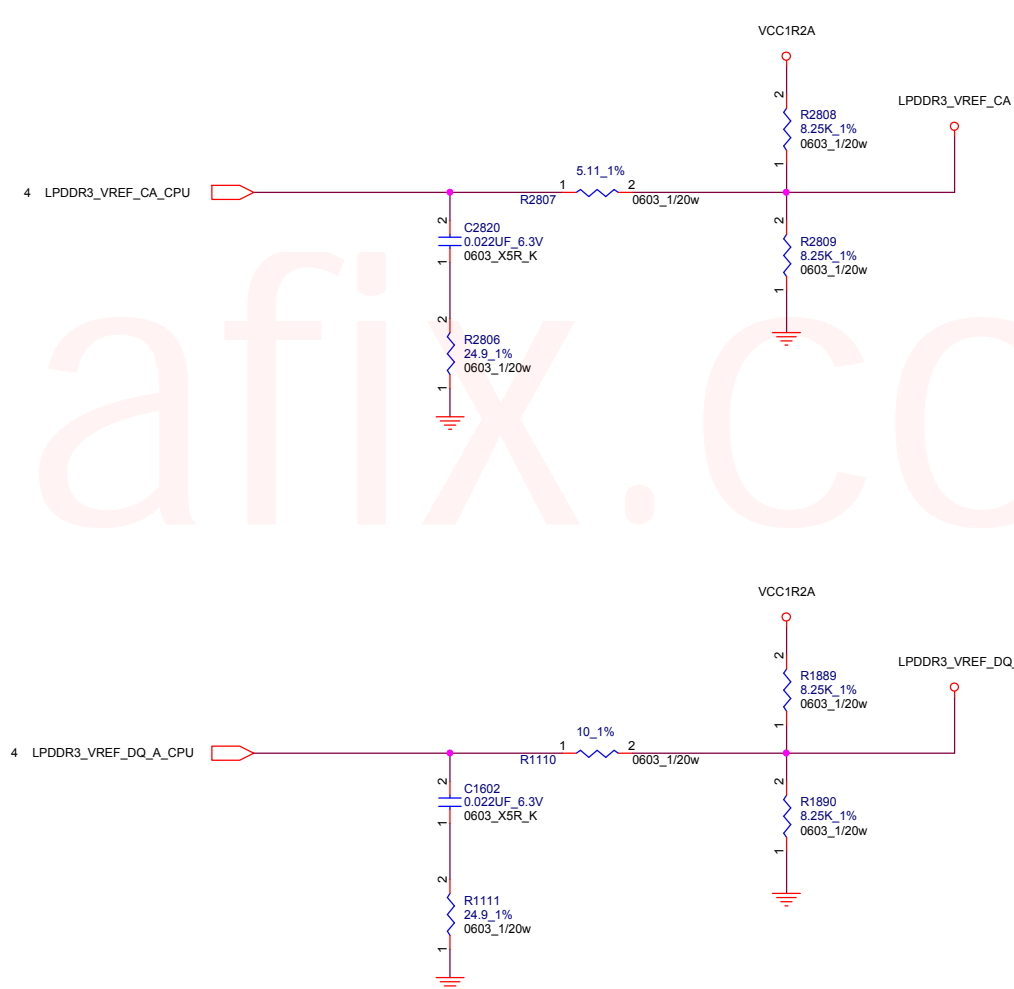
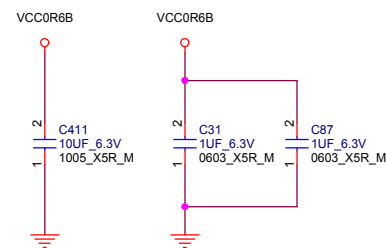
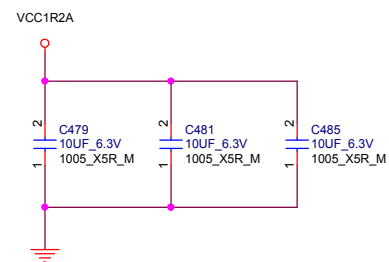
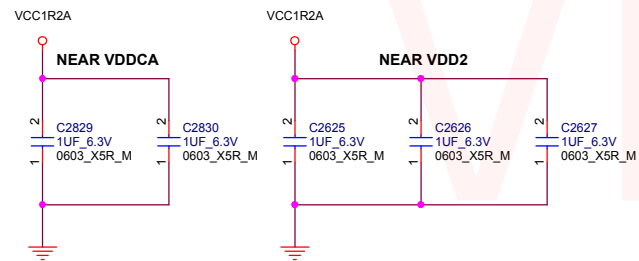
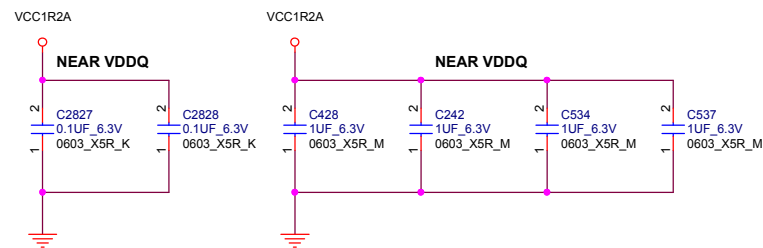
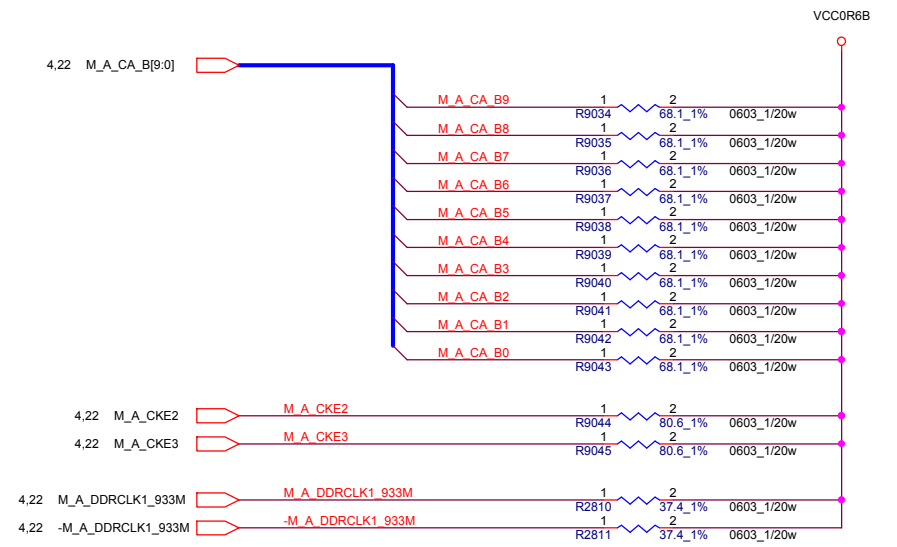
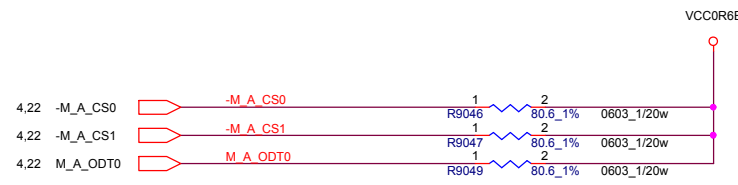
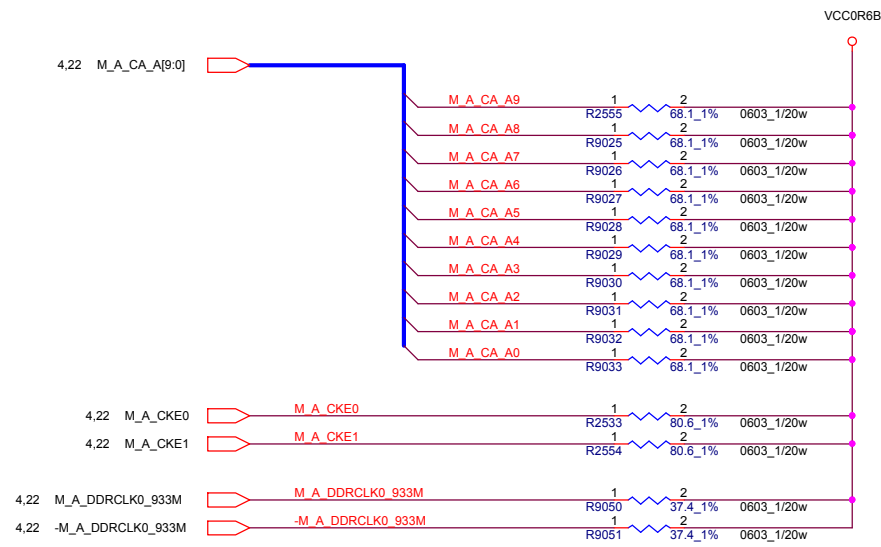


TABLE: LPDDR3 SDRAM Source

| Supplier | Capacity | Supplier's P/N | Package Size | | Die | Configuration | ZQ0 / ZQ | ZQ1 / NC | CKE0 / CKE | CKE1 / NC | CS0# / CS# | CS1# / NC | Single Ch | Dual Ch |
|----------|----------|-------------------------|----------------|-----|---------------|--------------------|----------|----------|------------|-----------|------------|-----------|-----------|---------|
| Micron | 8Gb | MT52L256M32D1PF-107WT:B | 11.0 x 11.5 mm | SDP | 8Gb (256Mx32) | 1 Rank x (256Mx32) | ZQ | NC | CKE | NC | CS# | NC | 2GB | 4GB |
| | 16Gb | MT52L512M32D2PF-107WT:B | 11.0 x 11.5 mm | DDP | 8Gb (256Mx32) | 2 Rank x (256Mx32) | ZQ | NC | CKE0 | CKE1 | CS0# | CS1# | 4GB | 8GB |
| | 32Gb | MT52L1G32D4PG-107WT:B | 12.0 x 11.5 mm | QDP | 8Gb (512Mx16) | 2 Rank x (512Mx32) | ZQ0 | ZQ1 | CKE0 | CKE1 | CS0# | CS1# | 8GB | 16GB |
| Samsung | 8Gb | K4E8E324EB-EGCF | 11.0 x 11.5 mm | SDP | 8Gb (256Mx32) | 1 Rank x (256Mx32) | ZQ | NC | CKE | NC | CS# | NC | 2GB | 4GB |
| | 16Gb | K4E6E304EB-EGCF | 11.0 x 11.5 mm | DDP | 8Gb (256Mx32) | 2 Rank x (256Mx32) | ZQ | NC | CKE0 | CKE1 | CS0# | CS1# | 4GB | 8GB |
| | 32Gb | K4EBE304EB-EGCF | 11.0 x 11.5 mm | QDP | 8Gb (512Mx16) | 2 Rank x (512Mx32) | ZQ0 | ZQ1 | CKE0 | CKE1 | CS0# | CS1# | 8GB | 16GB |
| SK hynix | 8Gb | H9CCNNN8GTALAR-NUD | 11.0 x 11.5 mm | SDP | 8Gb (256Mx32) | 1 Rank x (256Mx32) | ZQ | NC | CKE | NC | CS# | NC | 2GB | 4GB |
| | 16Gb | H9CCNNNBJTALAR-NUD | 11.0 x 11.5 mm | DDP | 8Gb (256Mx32) | 2 Rank x (256Mx32) | ZQ | NC | CKE0 | CKE1 | CS0# | CS1# | 4GB | 8GB |
| | 32Gb | H9CCNNNCLGALAR-NUD | 11.0 x 11.5 mm | QDP | 8Gb (512Mx16) | 2 Rank x (512Mx32) | ZQ0 | ZQ1 | CKE0 | CKE1 | CS0# | CS1# | 8GB | 16GB |

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Project Name : Yoda-1 SVT
Title : LPDDR3 BASE MEMORY CH-A (1/2)
Size : C Document Number : Rev : 3.08
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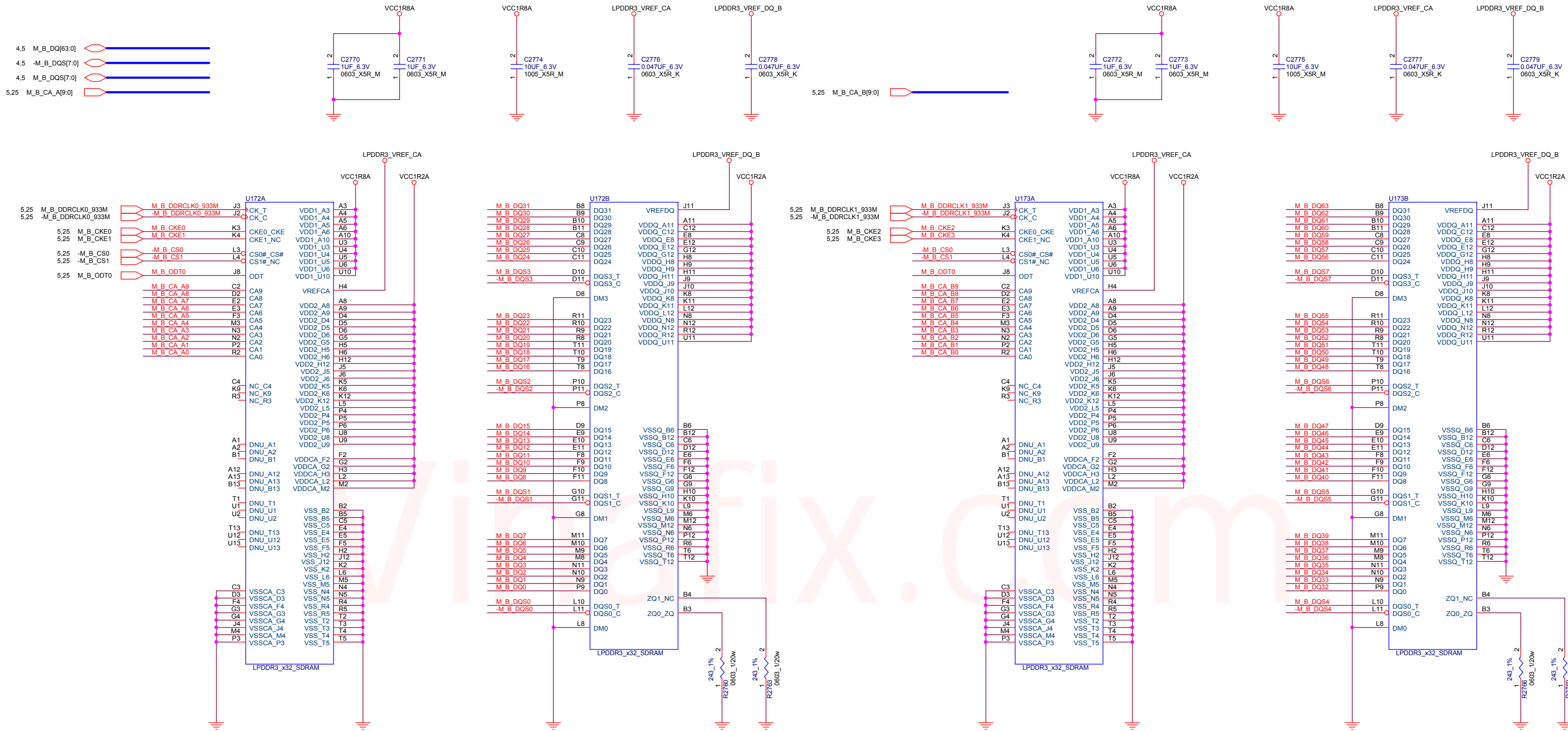
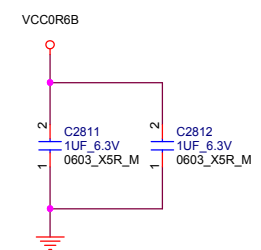
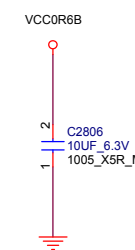
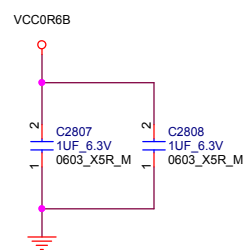
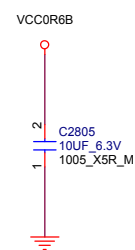
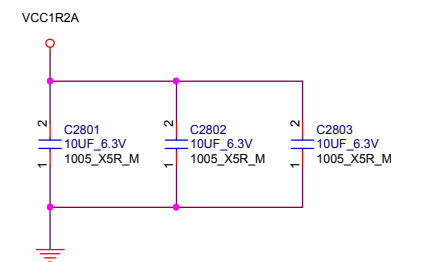
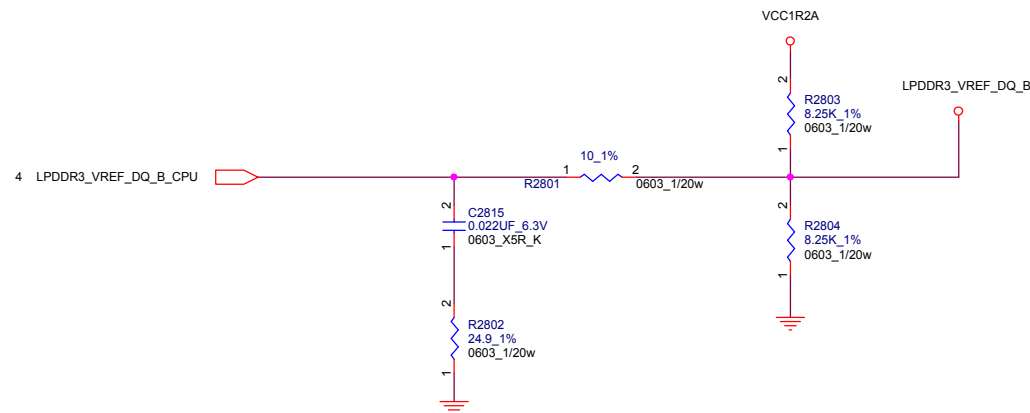
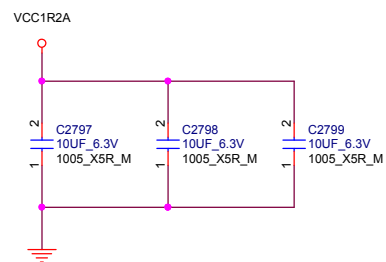
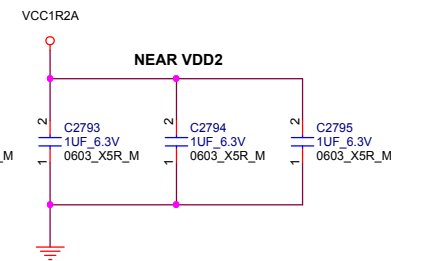
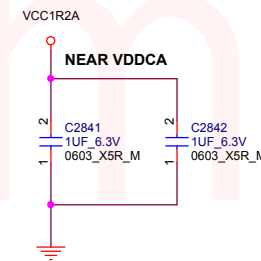
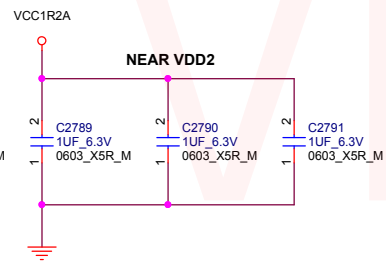
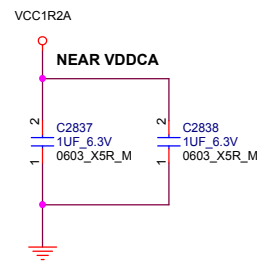
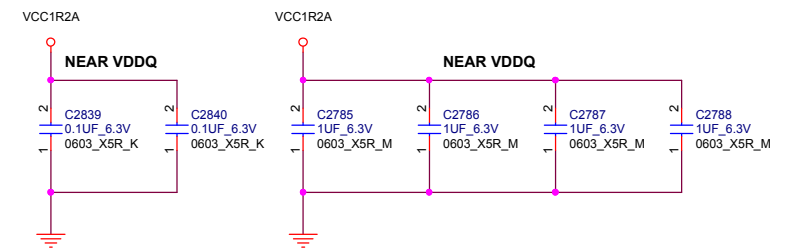
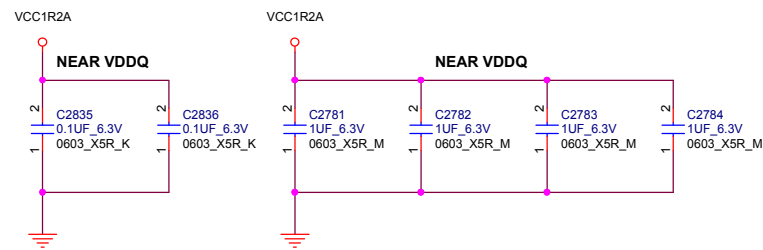
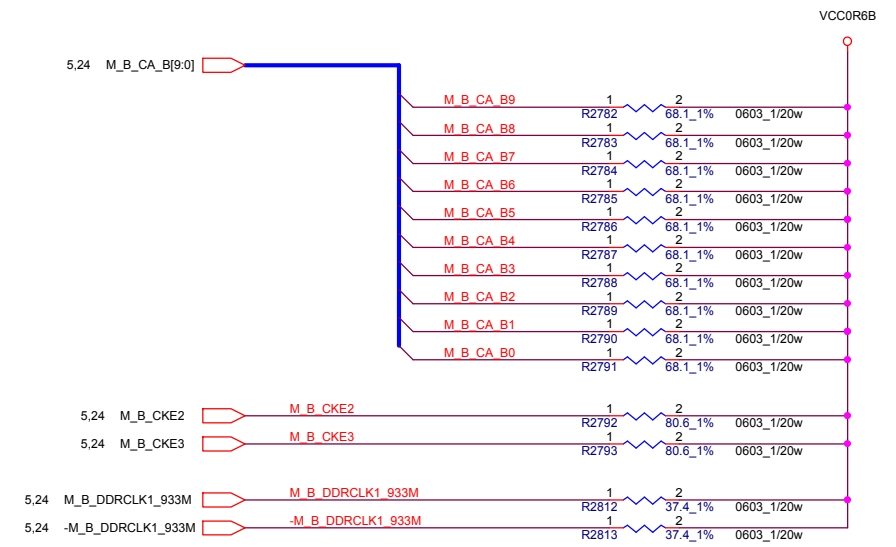
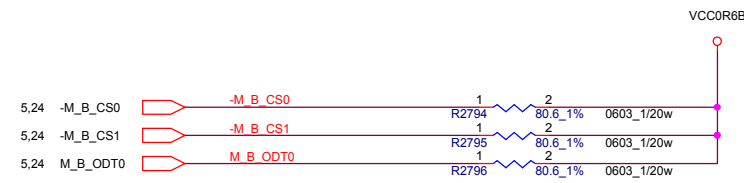
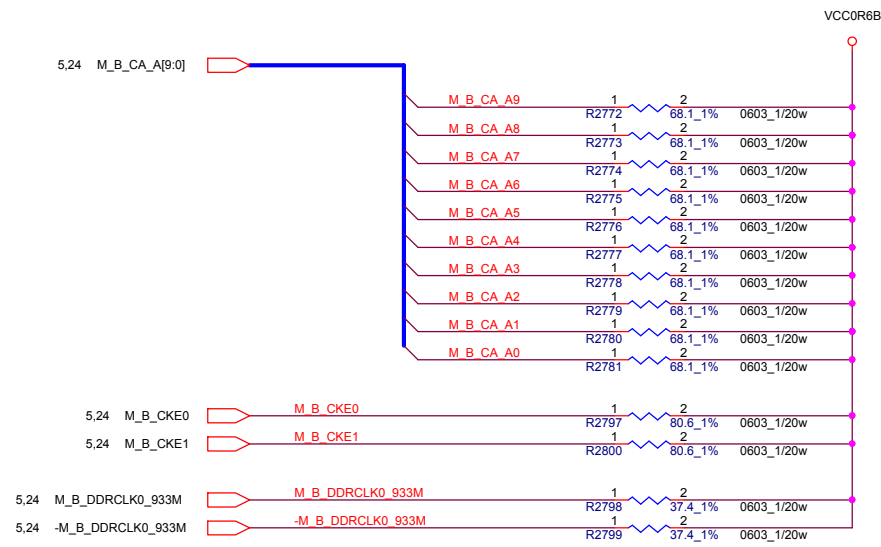


TABLE: LPDDR3 SDRAM Source

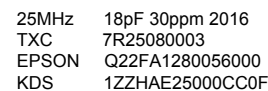
| Supplier | Capacity | Supplier's P/N | Package Size | | Die | Configuration | ZQ0 / ZQ | ZQ1 / NC | CKE0 / CKE | CKE1 / NC | CS0# / CS# | CS1# / NC | Single Ch | Dual Ch |
|----------|----------|-------------------------|----------------|-----|---------------|--------------------|----------|----------|------------|-----------|------------|-----------|-----------|---------|
| Micron | 8Gb | MT52L256M32D1PF-107WT:B | 11.0 x 11.5 mm | SDP | 8Gb (256Mx32) | 1 Rank x (256Mx32) | ZQ | NC | CKE | NC | CS# | NC | 2GB | 4GB |
| | 16Gb | MT52L512M32D2PF-107WT:B | 11.0 x 11.5 mm | DDP | 8Gb (256Mx32) | 2 Rank x (256Mx32) | ZQ | NC | CKE0 | CKE1 | CS0# | CS1# | 4GB | 8GB |
| | 32Gb | MT52L1G32D4PG-107WT:B | 12.0 x 11.5 mm | QDP | 8Gb (512Mx16) | 2 Rank x (512Mx32) | ZQ0 | ZQ1 | CKE0 | CKE1 | CS0# | CS1# | 8GB | 16GB |
| Samsung | 8Gb | K4E8E324EB-EGCF | 11.0 x 11.5 mm | SDP | 8Gb (256Mx32) | 1 Rank x (256Mx32) | ZQ | NC | CKE | NC | CS# | NC | 2GB | 4GB |
| | 16Gb | K4E6E304EB-EGCF | 11.0 x 11.5 mm | DDP | 8Gb (256Mx32) | 2 Rank x (256Mx32) | ZQ | NC | CKE0 | CKE1 | CS0# | CS1# | 4GB | 8GB |
| | 32Gb | K4EBE304EB-EGCF | 11.0 x 11.5 mm | QDP | 8Gb (512Mx16) | 2 Rank x (512Mx32) | ZQ0 | ZQ1 | CKE0 | CKE1 | CS0# | CS1# | 8GB | 16GB |
| SK hynix | 8Gb | H9CCNNN8GTALAR-NUD | 11.0 x 11.5 mm | SDP | 8Gb (256Mx32) | 1 Rank x (256Mx32) | ZQ | NC | CKE | NC | CS# | NC | 2GB | 4GB |
| | 16Gb | H9CCNNNBJTALAR-NUD | 11.0 x 11.5 mm | DDP | 8Gb (256Mx32) | 2 Rank x (256Mx32) | ZQ | NC | CKE0 | CKE1 | CS0# | CS1# | 4GB | 8GB |
| | 32Gb | H9CCNNNCLGALAR-NUD | 11.0 x 11.5 mm | QDP | 8Gb (512Mx16) | 2 Rank x (512Mx32) | ZQ0 | ZQ1 | CKE0 | CKE1 | CS0# | CS1# | 8GB | 16GB |





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|---------------------------------|-------------------|------------------|
| | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
| Size : C | Document Number : | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 27 of 86 |



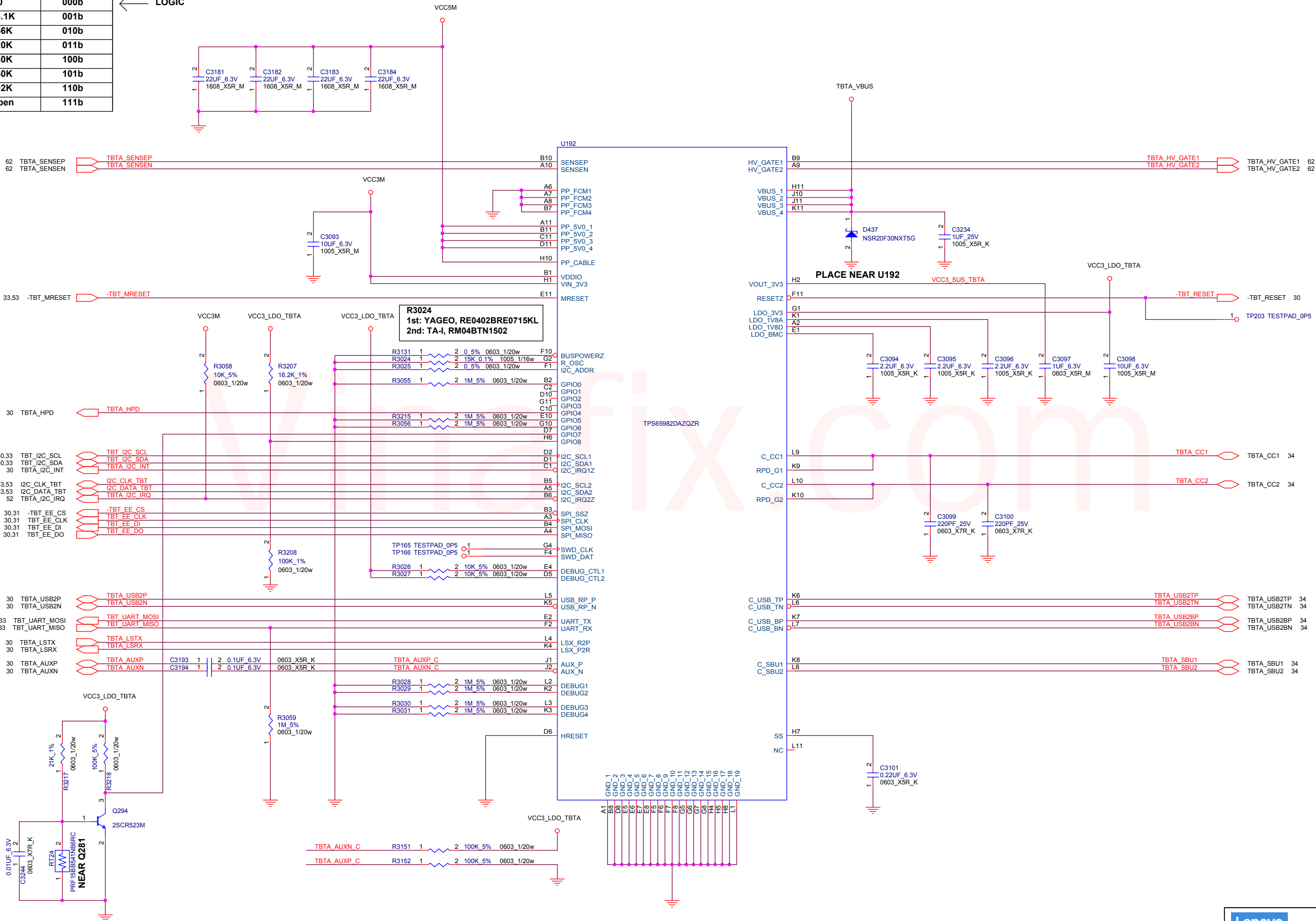
Date: Friday, November 11, 2016 Sheet : 31 of

TABLE: TPS65982 I2C Address

| Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|-------|-------|------------|------------|----------|-------|-------|-------|
| 0 | 1 | DEBUG_CTL2 | DEBUG_CTL1 | I2C_ADDR | | | R/W |

| U192 | R3025 | I2C_ADDR |
|----------|-------|----------|
| Master 0 | 0 | 000b |
| Slave 1 | 93.1K | 001b |
| Slave 2 | 156K | 010b |
| Slave 3 | 220K | 011b |
| Slave 4 | 280K | 100b |
| Slave 5 | 340K | 101b |
| Slave 6 | 402K | 110b |
| Slave 7 | Open | 111b |

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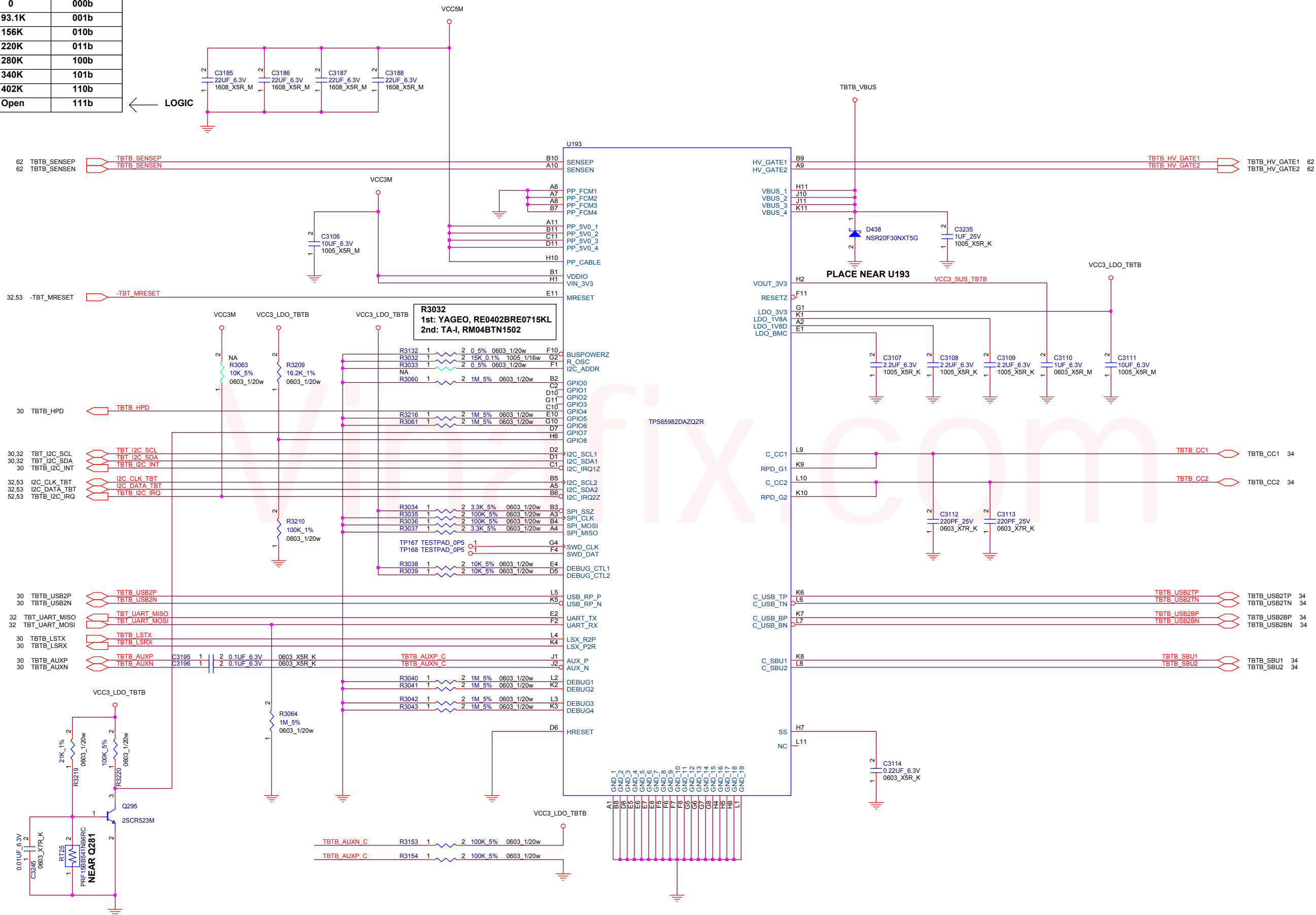
Project Name : Yoda-1 SVT
Title : THUNDERBOLT PORT A

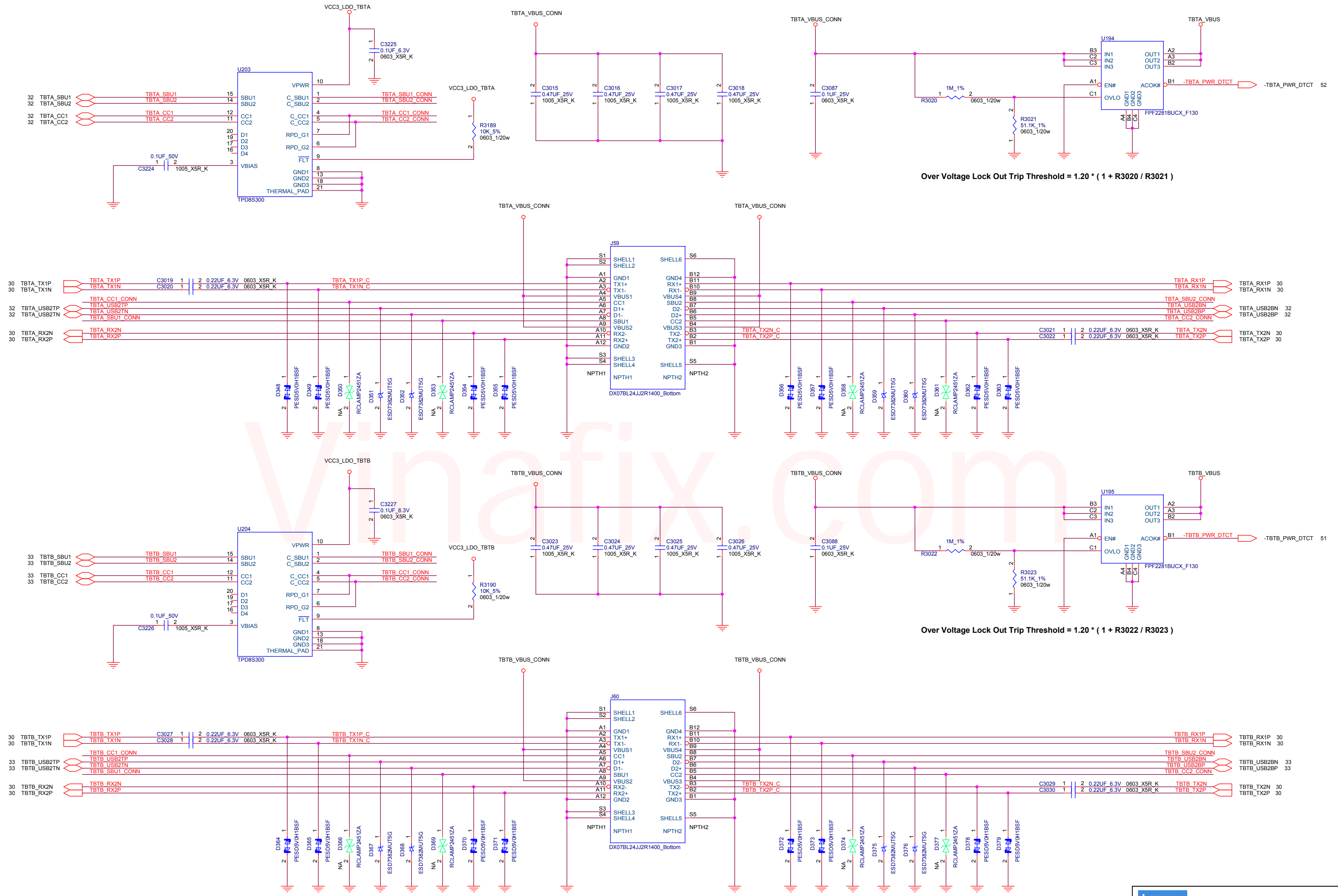
Size : C
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| Bit 7 | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 |
|-------|-------|------------|------------|----------|-------|-------|-------|
| 0 | 1 | DEBUG_CTL2 | DEBUG_CTL1 | I2C_ADDR | | | R/W |

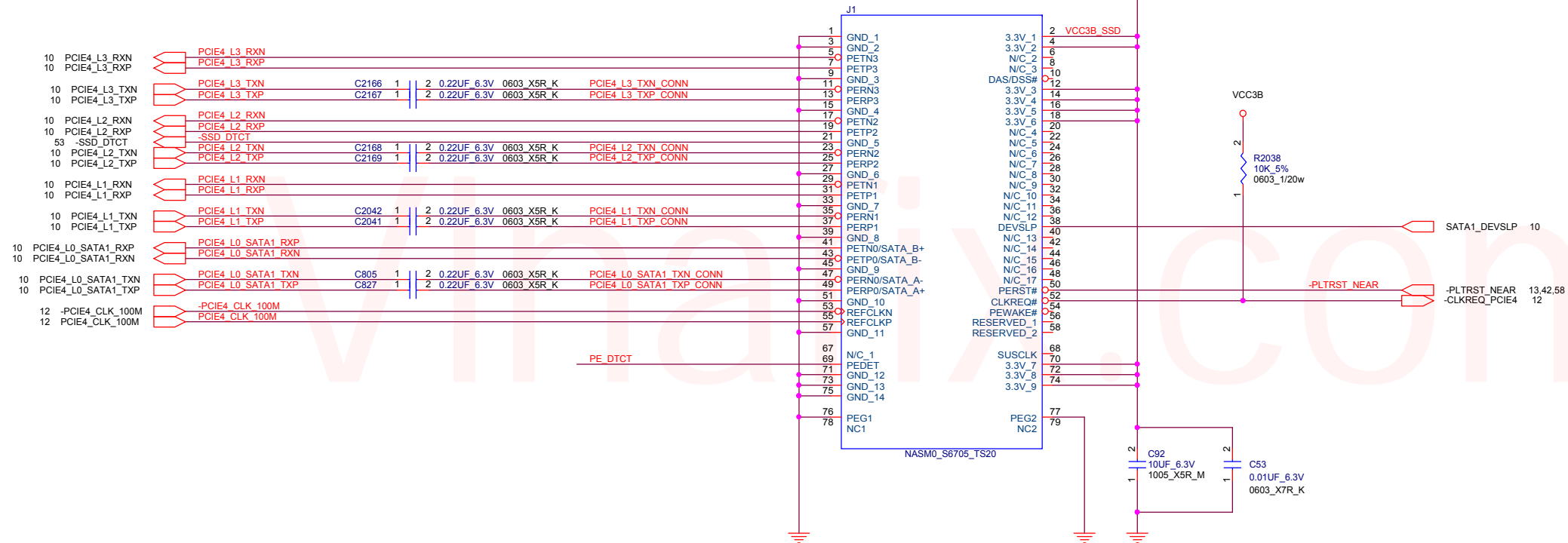
| U193 | R3033 | I2C_ADDR |
|----------|-------|----------|
| Master 0 | 0 | 000b |
| Slave 1 | 93.1K | 001b |
| Slave 2 | 156K | 010b |
| Slave 3 | 220K | 011b |
| Slave 4 | 280K | 100b |
| Slave 5 | 340K | 101b |
| Slave 6 | 402K | 110b |
| Slave 7 | Open | 111b |



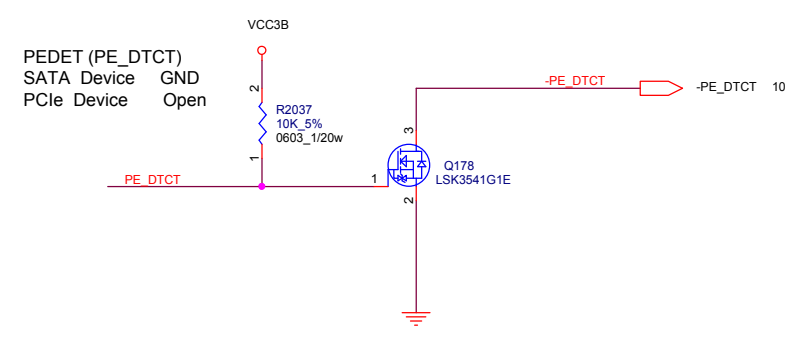


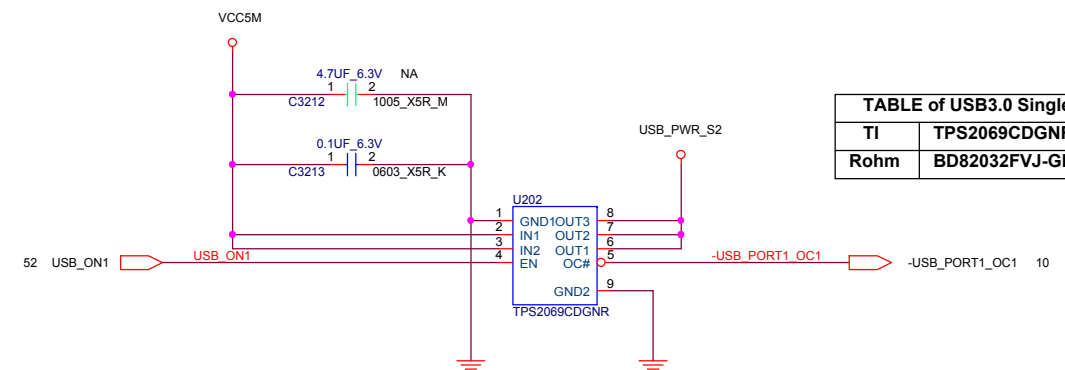
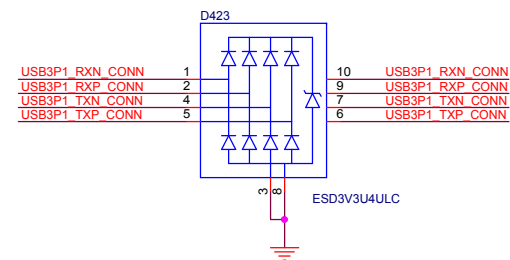
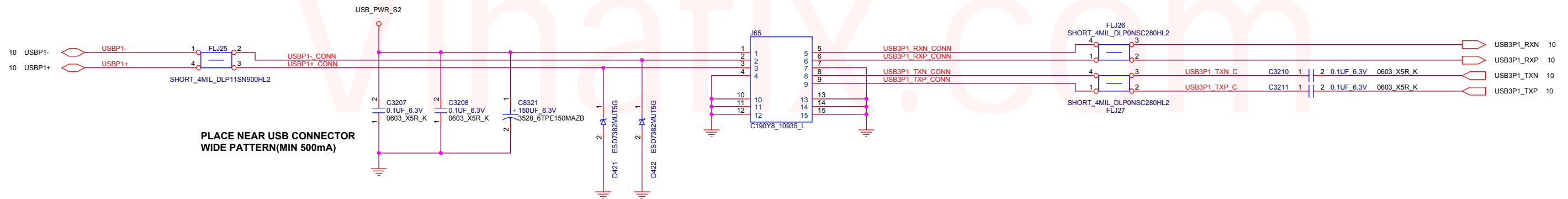
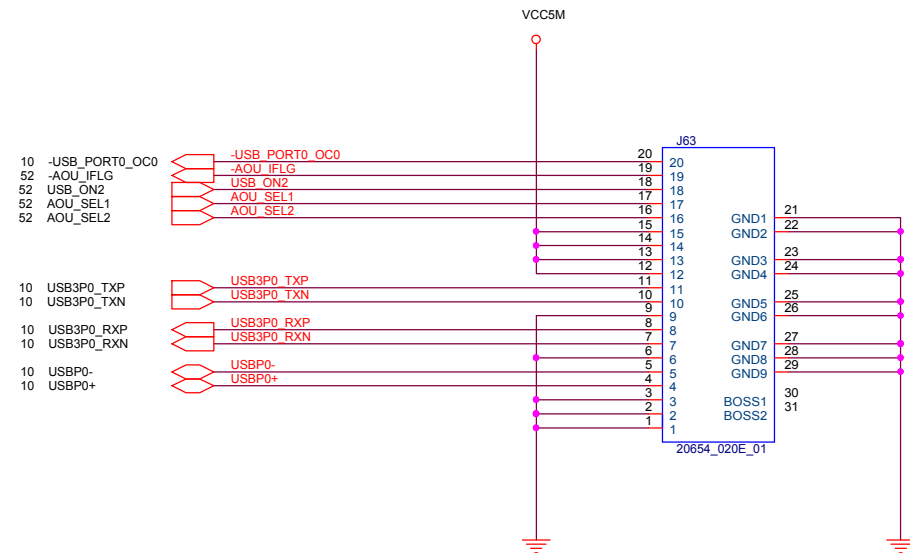
Over Voltage Lock Out Trip Threshold = $1.20 * (1 + R3020 / R3021)$

Over Voltage Lock Out Trip Threshold = $1.20 * (1 + R3022 / R3023)$



M.2 Socket 3 (Key-M) for 2280 S3 SSD
H=2.00mm Connector






| TABLE of USB3.0 Single | |
|------------------------|----------------|
| T1 | TPS2069CDGNR |
| Rohm | BD82032FVJ-GE2 |

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|  | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
| Size : C | Document Number : | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 37 of 86 |

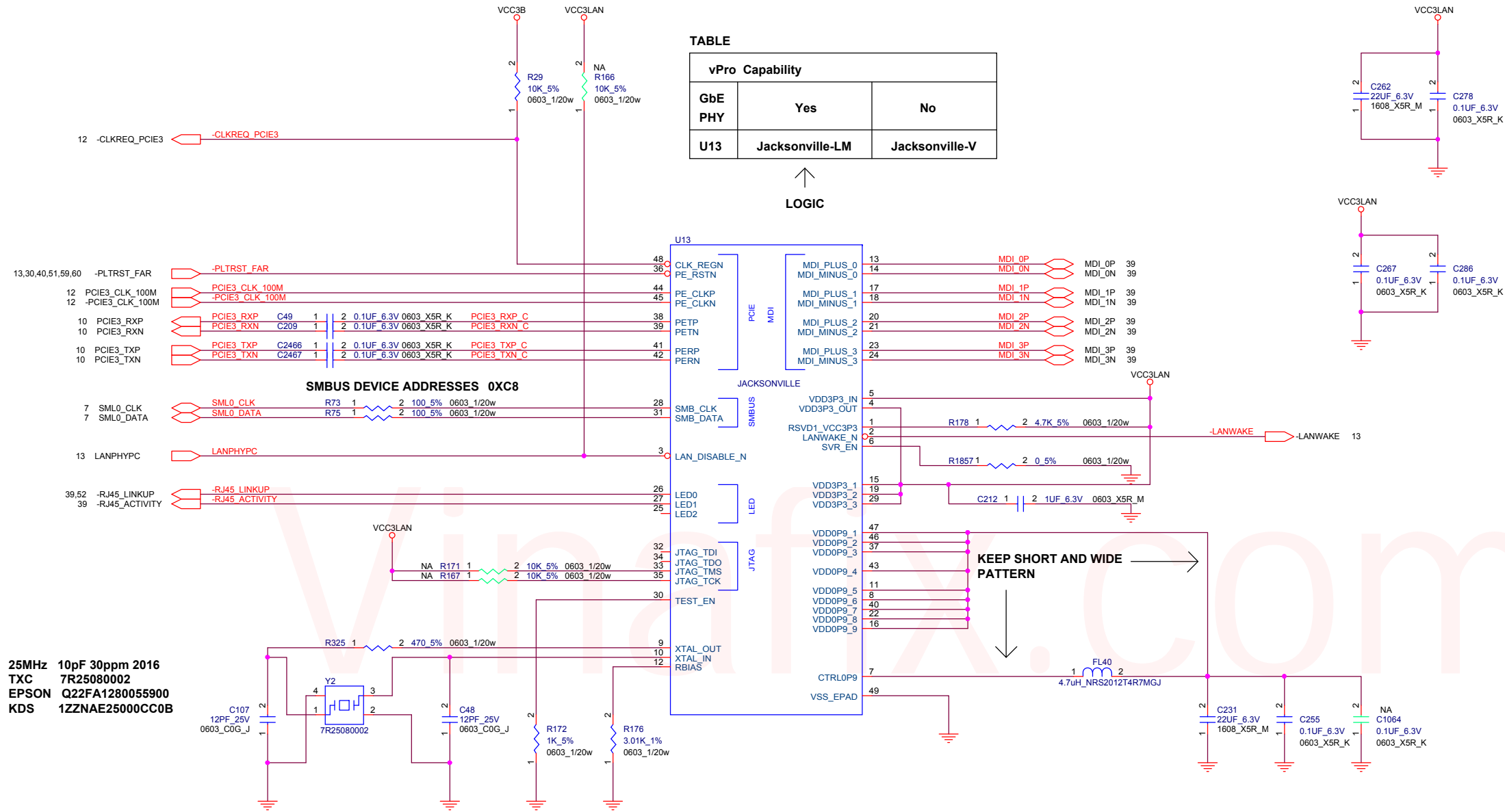


TABLE FL85-FL88

| |
|------------------------------|
| 1st: Murata, DLP11SN900HL2 |
| 2nd: TDK, MCZ1210AH900L2TA0G |

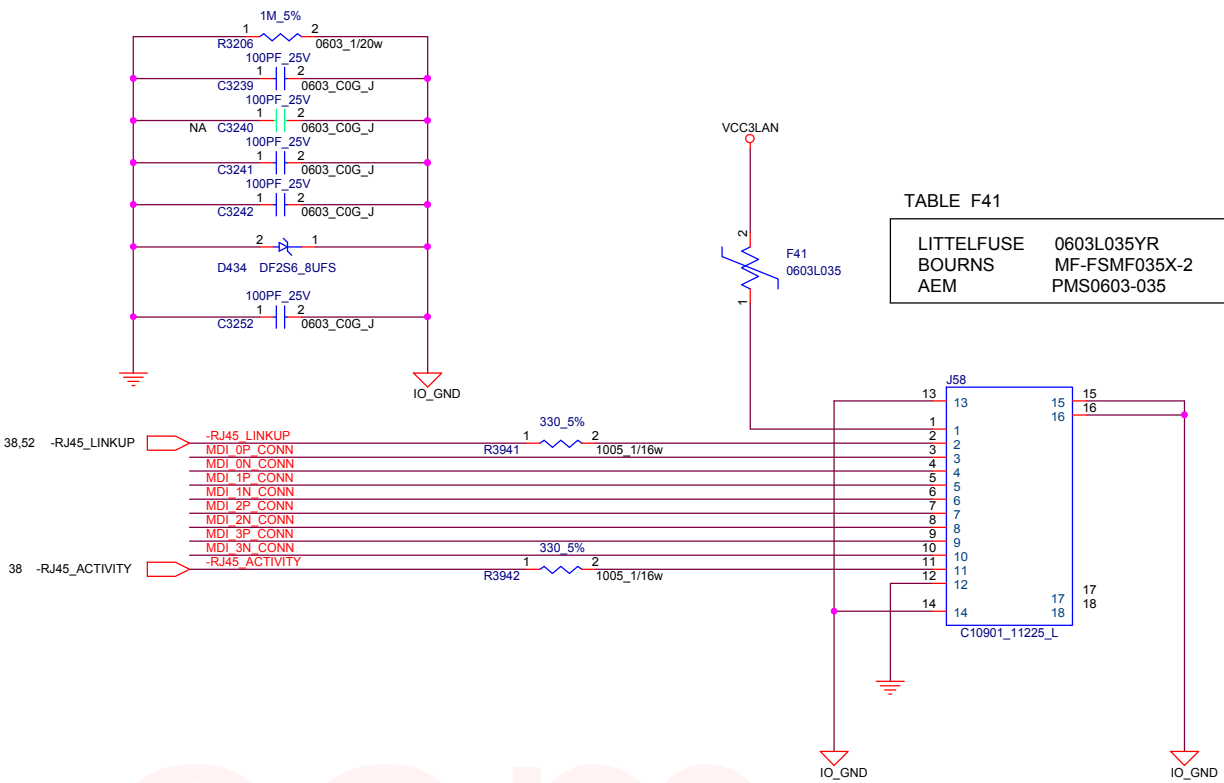
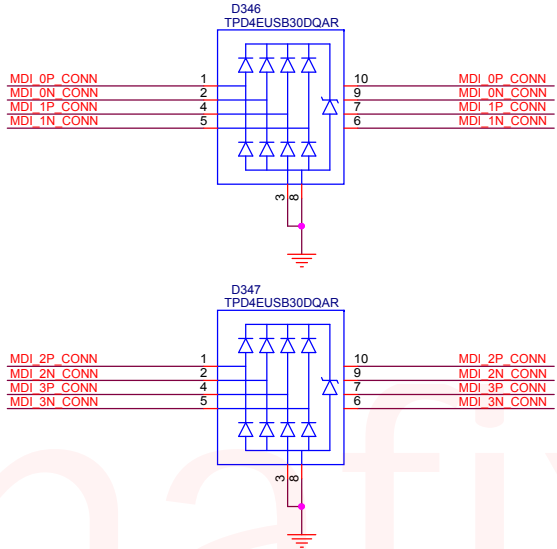
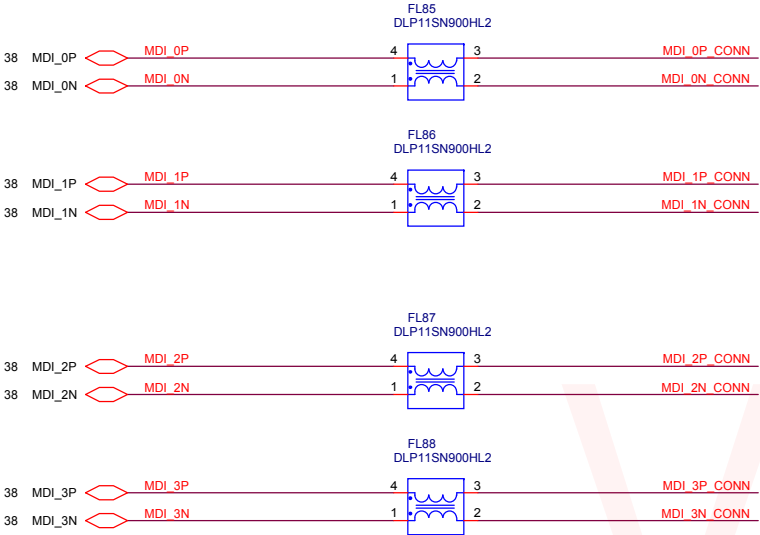
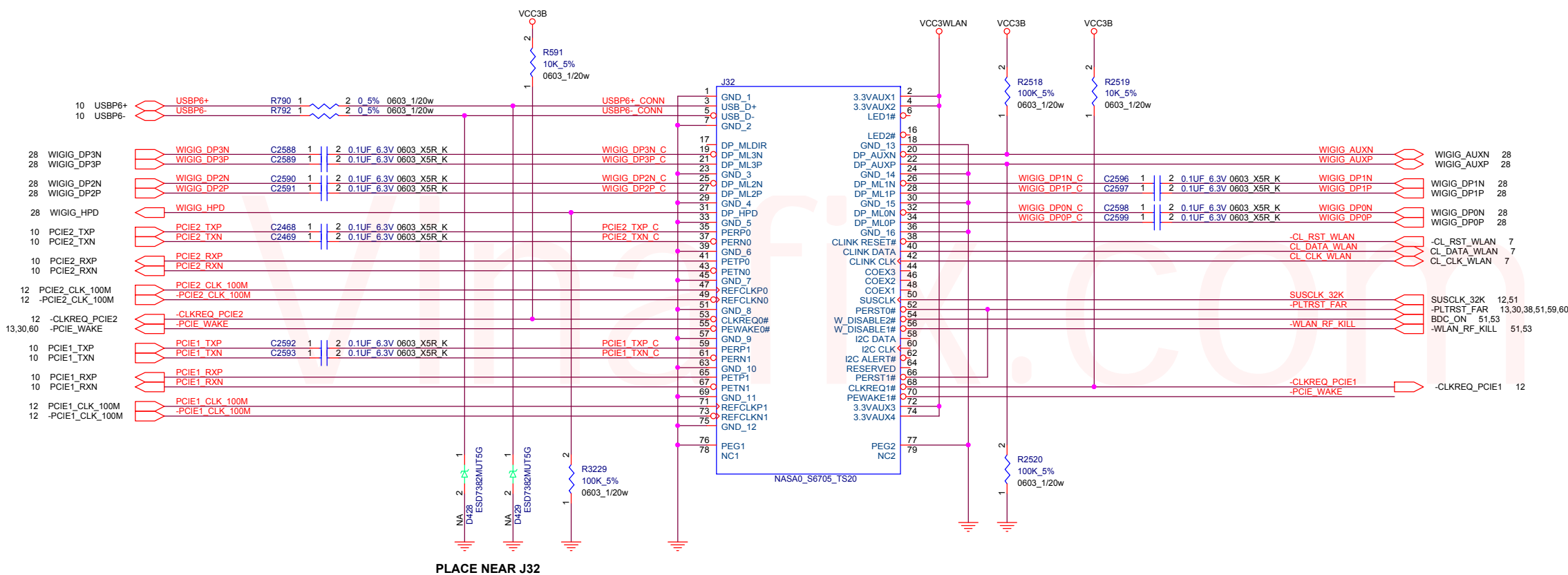


TABLE F41

| | |
|------------|---------------|
| LITTELFUSE | 0603L035YR |
| BOURNS | MF-FSMF035X-2 |
| AEM | PMS0603-035 |

M.2 Socket 1 (Key-A) for 2230 S3 WLAN / Bluetooth / WiGig

H=2.00mm Connector



Lenovo

Project Name : Yoda-1 SVT Title : M.2 SOCKET 1 MODULE I/F

Size : C Document Number : Rev : 3.08

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M.2 Socket 2 (Key-B) for 3042 S3 WWAN

H=2.00mm Connector

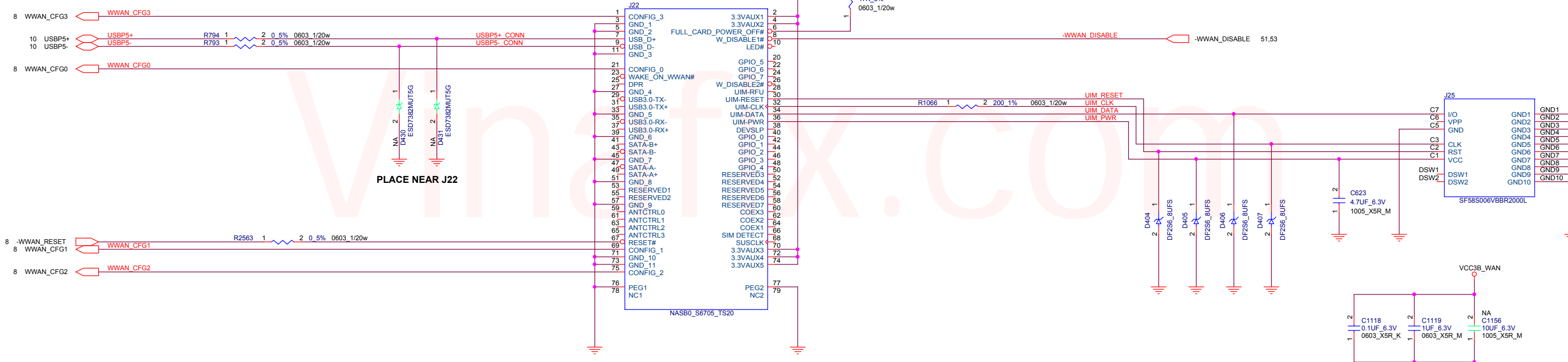
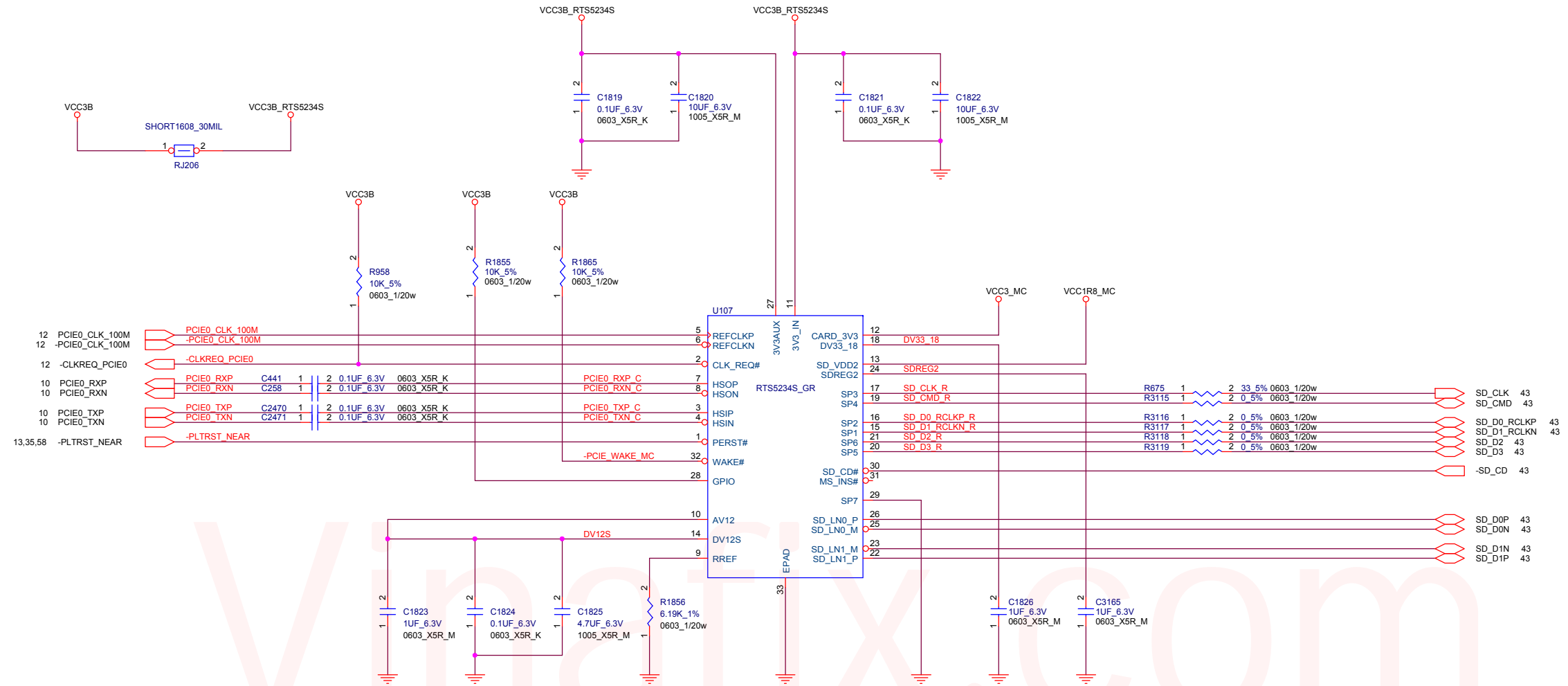


TABLE:

| State # | Module Configuration Decodes | | | | Module Type and Main Host Interface | Port Configuration |
|---------|------------------------------|---------------------|----------------------|----------------------|---|-----------------------|
| | CONFIG_0 (Pin 21) | CONFIG_3 (Pin 1) | CONFIG_2 (Pin 75) | CONFIG_1 (Pin 69) | | |
| 0 | GND | GND | GND | GND | SSD - SATA | N/A |
| 1 | GND | GND | GND | NC | SSD - PCIe | N/A |
| 2 | GND | GND | NC | GND | WWAN - PCIe | 0 |
| 3 | GND | GND | NC | NC | WWAN - PCIe | 1 |
| 4 | GND | NC | GND | GND | WWAN - USB 3.0 | 0 |
| 5 | GND | NC | GND | NC | WWAN - USB 3.0 | 1 |
| 6 | GND | NC | NC | GND | WWAN - USB 3.0 | 2 |
| 7 | GND | NC | NC | NC | WWAN - USB 3.0 | 3 |
| 8 | NC | GND | GND | GND | WWAN - SSIC | 0 |
| 9 | NC | GND | GND | NC | WWAN - SSIC | 1 |
| 10 | NC | GND | NC | GND | WWAN - SSIC | 2 |
| 11 | NC | GND | NC | NC | WWAN - SSIC | 3 |
| 12 | NC | NC | GND | GND | WWAN - PCIe | 2 |
| 13 | NC | NC | GND | NC | WWAN - PCIe | 3 |
| 14 | NC | NC | NC | GND | RFU | N/A |
| 15 | NC | NC | NC | NC | No Module Present | N/A |



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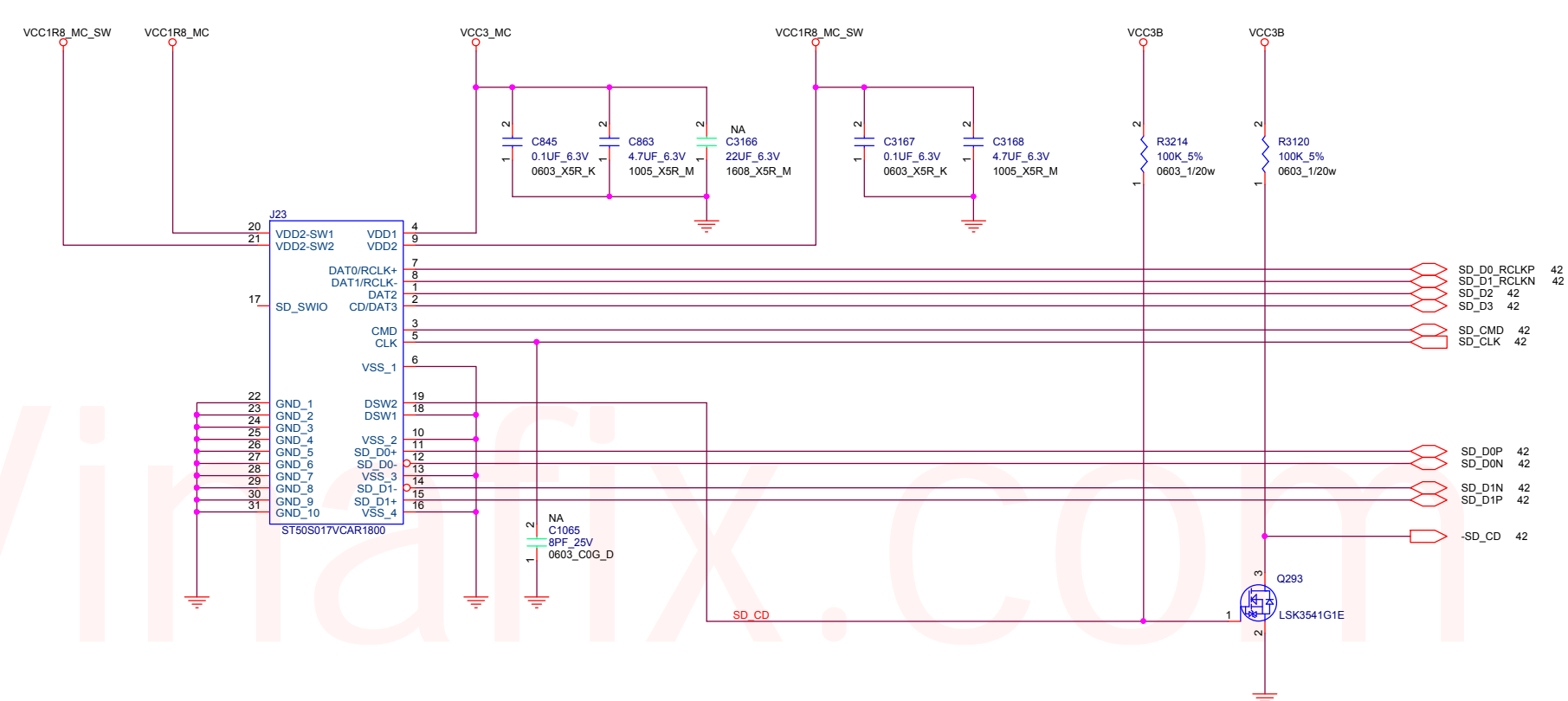


TABLE MIC HW ENABLE/DISABLE

| | ENABLE | DISABLE |
|------|--------|---------|
| R961 | ASM | NO_ASM |
| R119 | ASM | NO_ASM |

LOGIC

11 -PSENSE_DTCT
53 -PSENSE_OUTPUT

51 -SPK_MUTE
51 HP_JACK_IN

9 -HDA_RST
9 HDA_BCLK
9 HDA_SYNC
9 HDA_SDO
9 HDA_SDI0

26 MIC_DATA
26 MIC_CLK
49 BEEP_MIX_ATT

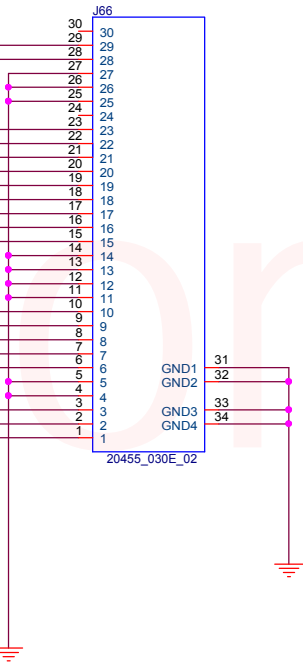
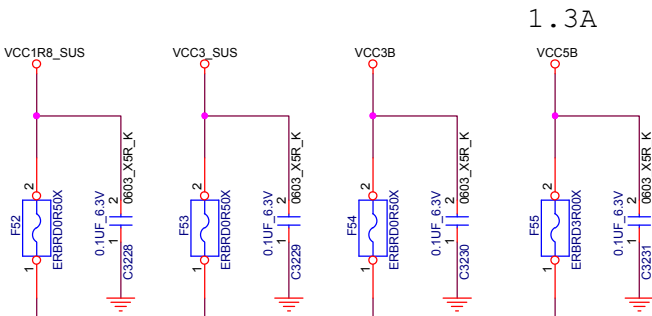
-PSENSE_DTCT
-PSENSE_OUTPUT

-SPK_MUTE
HP_JACK_IN

+HDA_RST
HDA_BCLK
HDA_SYNC
HDA_SDO
HDA_SDI0

MIC_DATA
MIC_CLK
BEEP_MIX_ATT

R119 1 2 0.5% 0603 1/20w MIC_CLK_CONN






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| Lenovo | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
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| Project Name : Yoda-1 SVT | | Title : BLANK |
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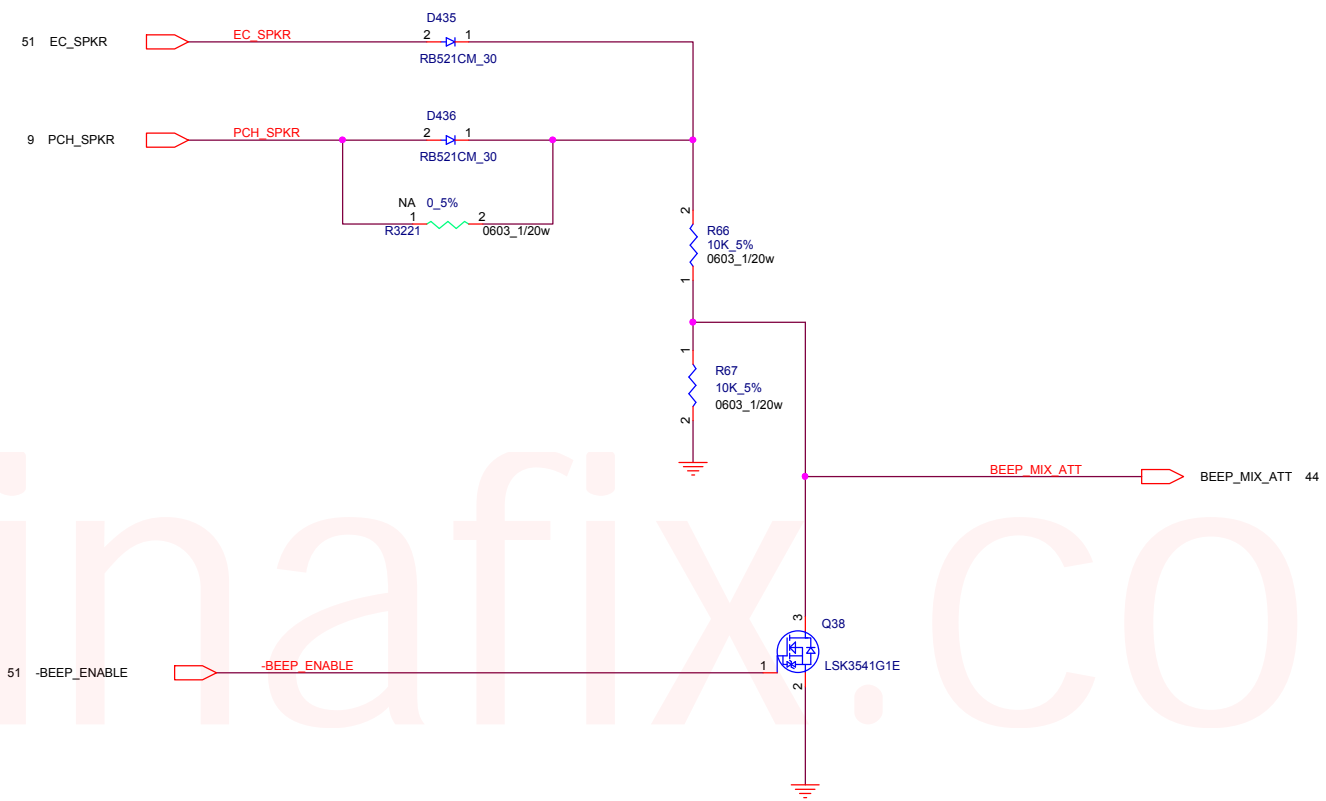
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|  | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
| Size : C | Document Number : | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 47 of 86 |




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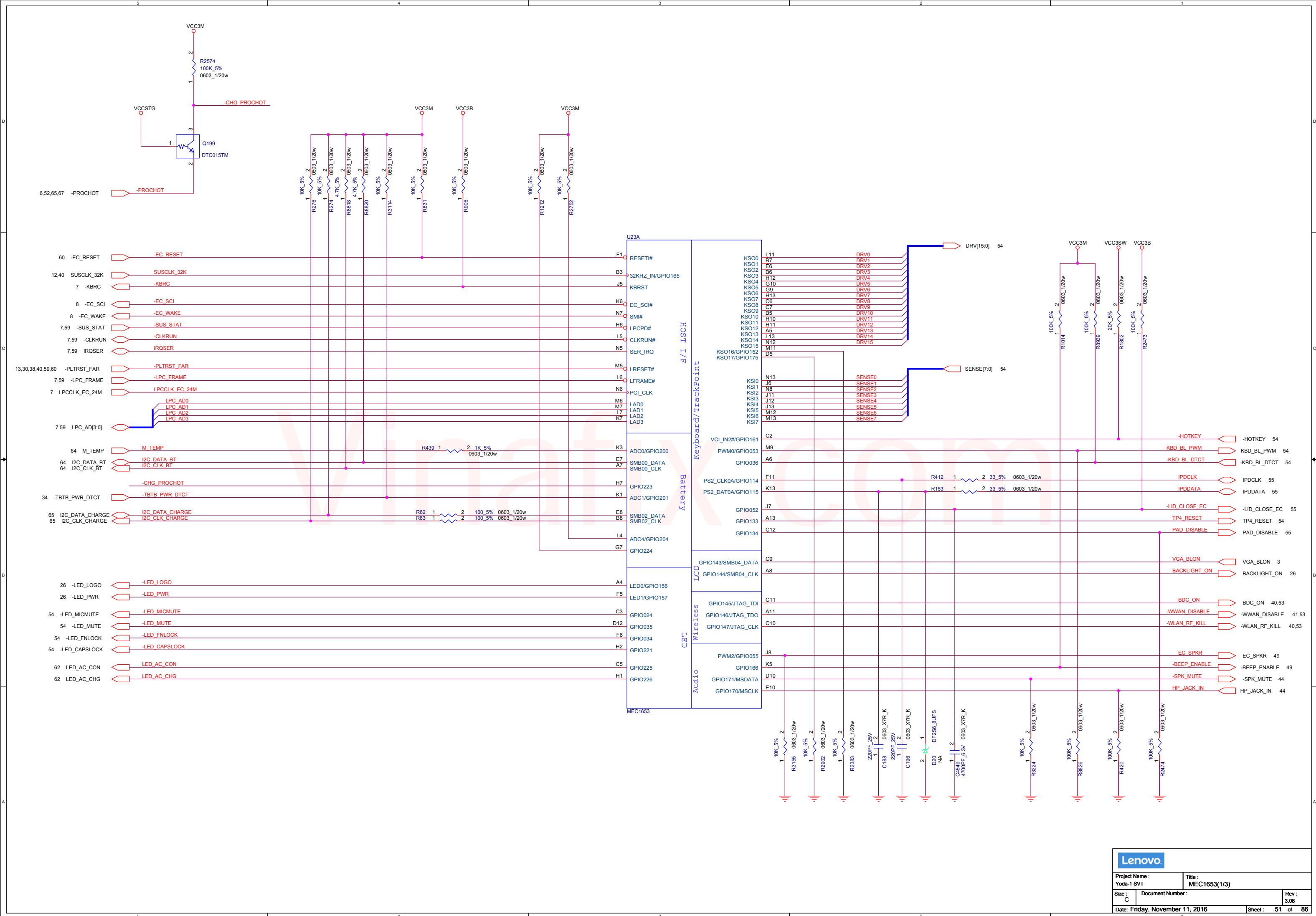
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|  | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
| Size : C | Document Number : | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 48 of 86 |

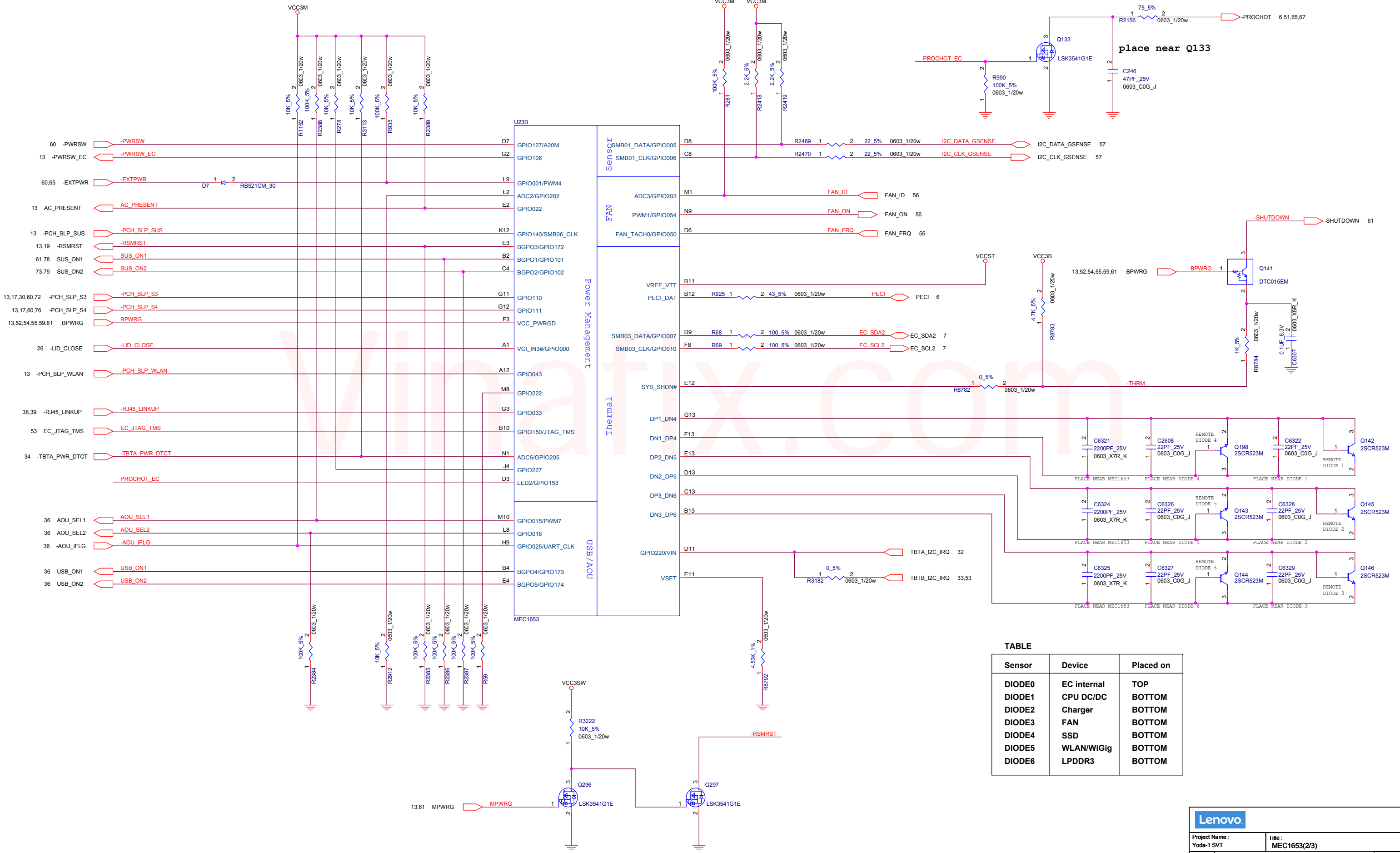




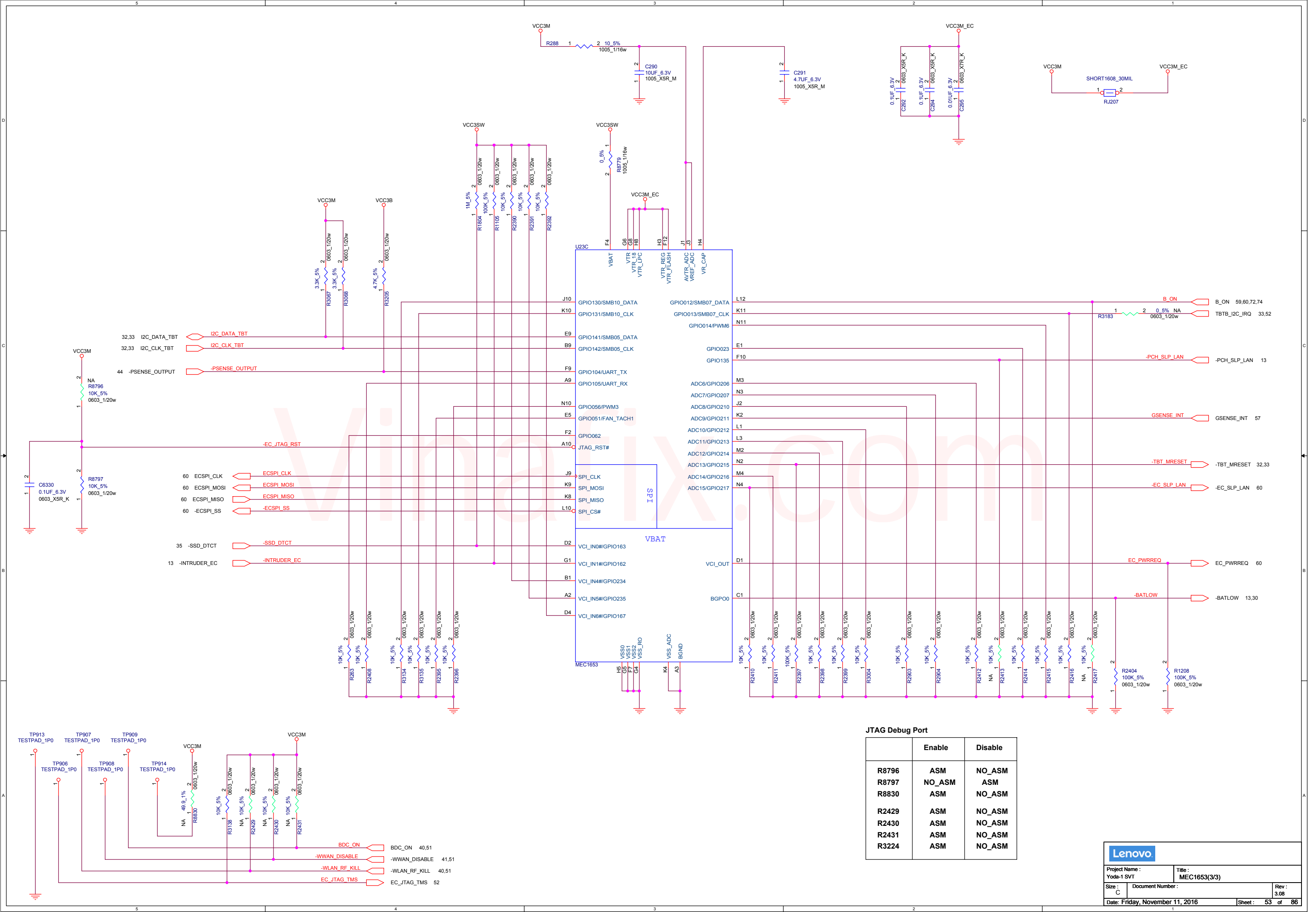
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|---|-------------------|------------------|
|  | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
| Size : C | Document Number : | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 50 of 86 |





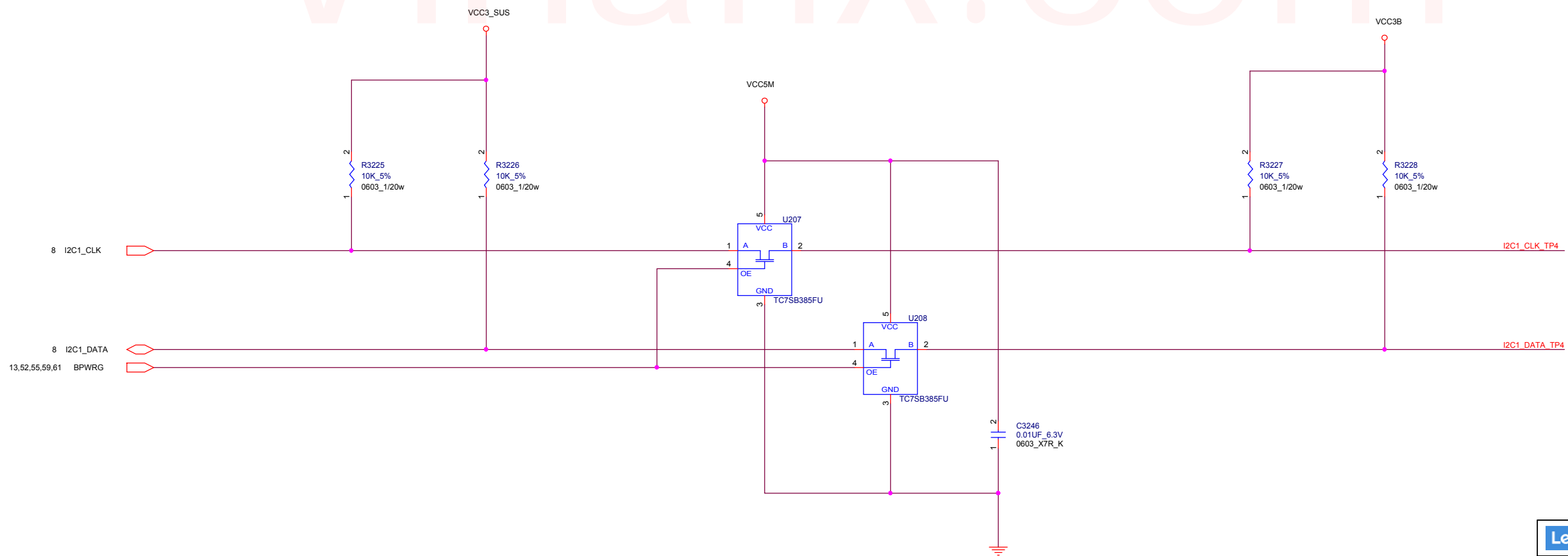
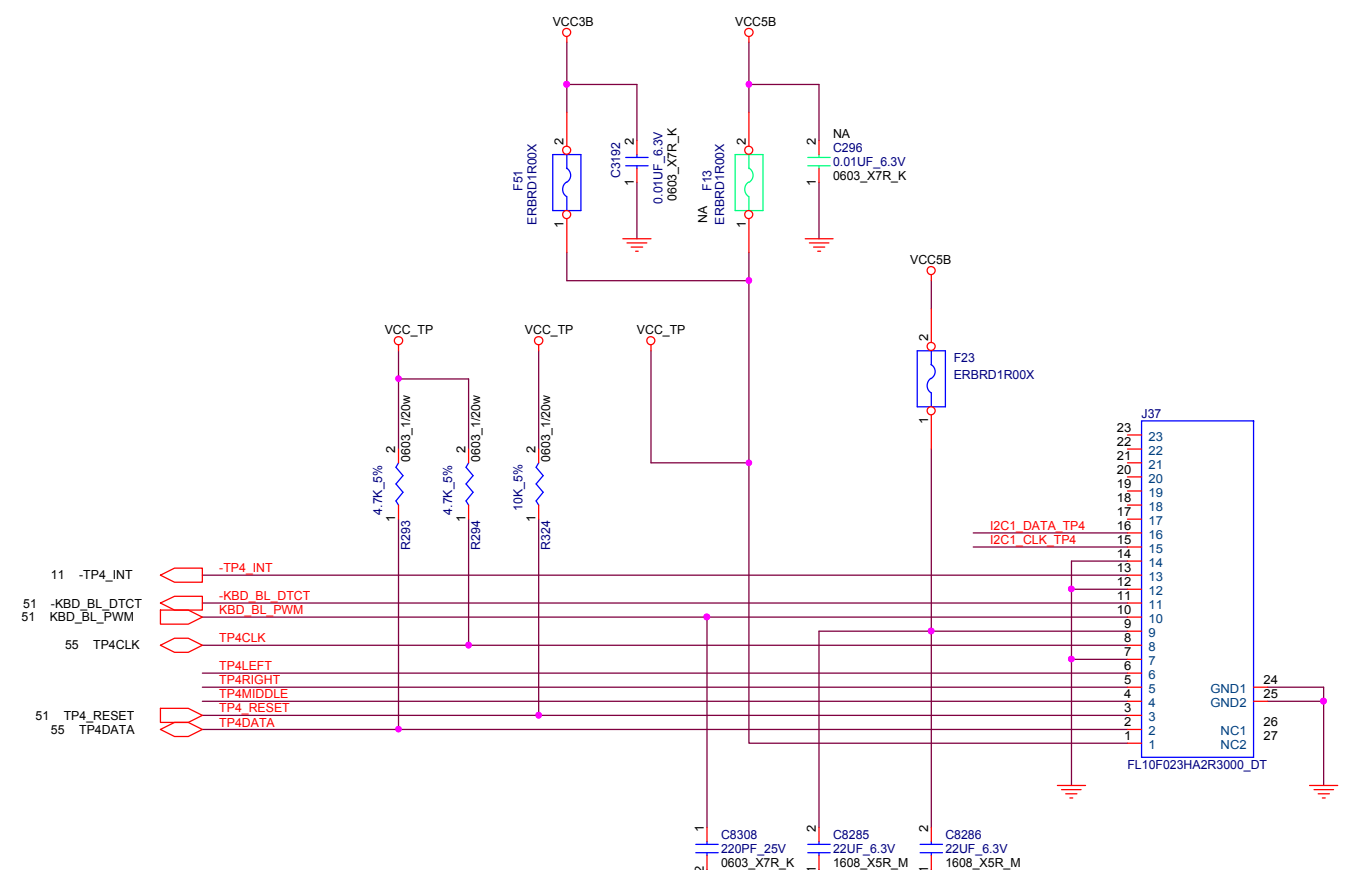
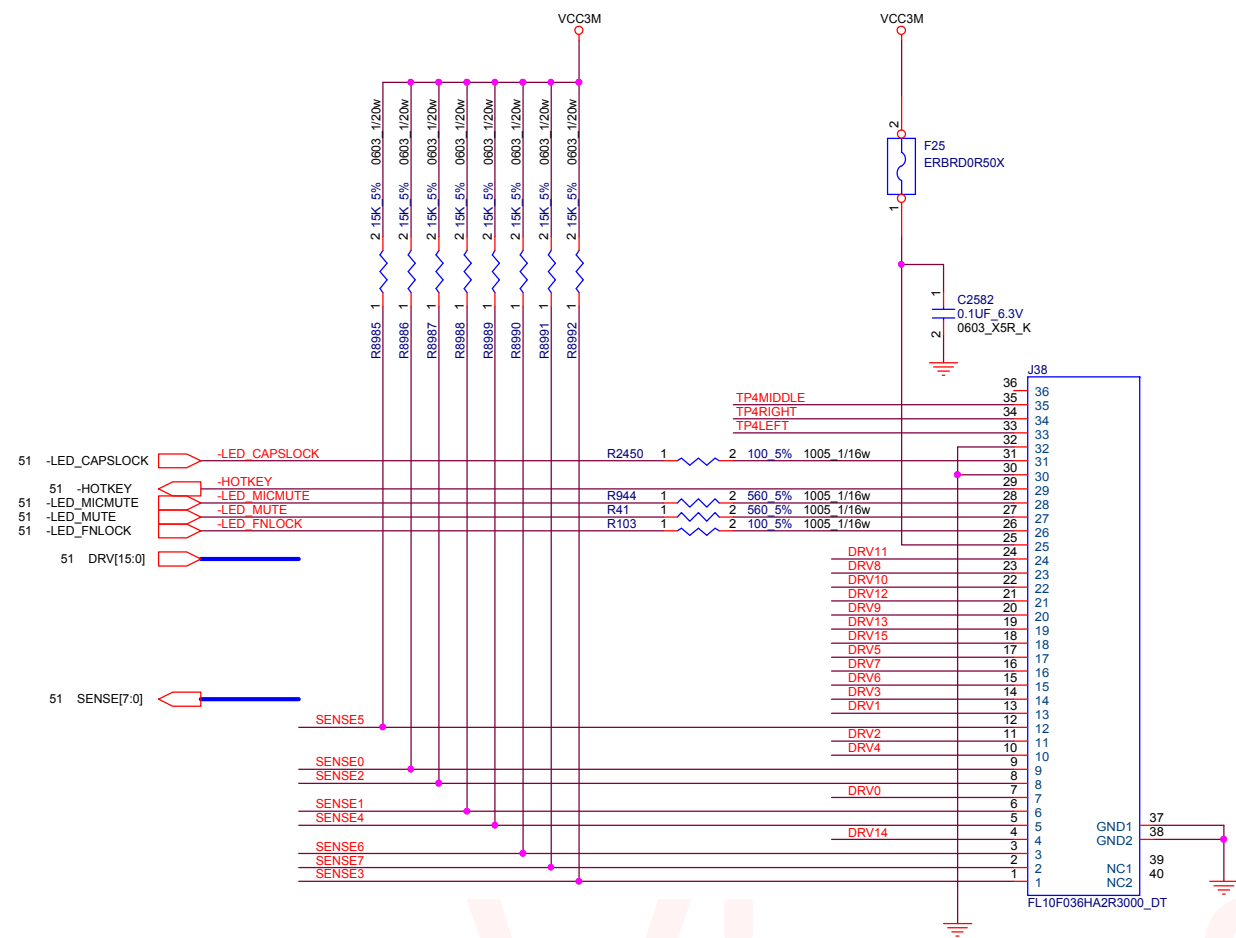
| TABLE | | |
|--------|-------------|-----------|
| Sensor | Device | Placed on |
| DIODE0 | EC internal | TOP |
| DIODE1 | CPU DC/DC | BOTTOM |
| DIODE2 | Charger | BOTTOM |
| DIODE3 | FAN | BOTTOM |
| DIODE4 | SSD | BOTTOM |
| DIODE5 | WLAN/WiGig | BOTTOM |
| DIODE6 | LPDDR3 | BOTTOM |

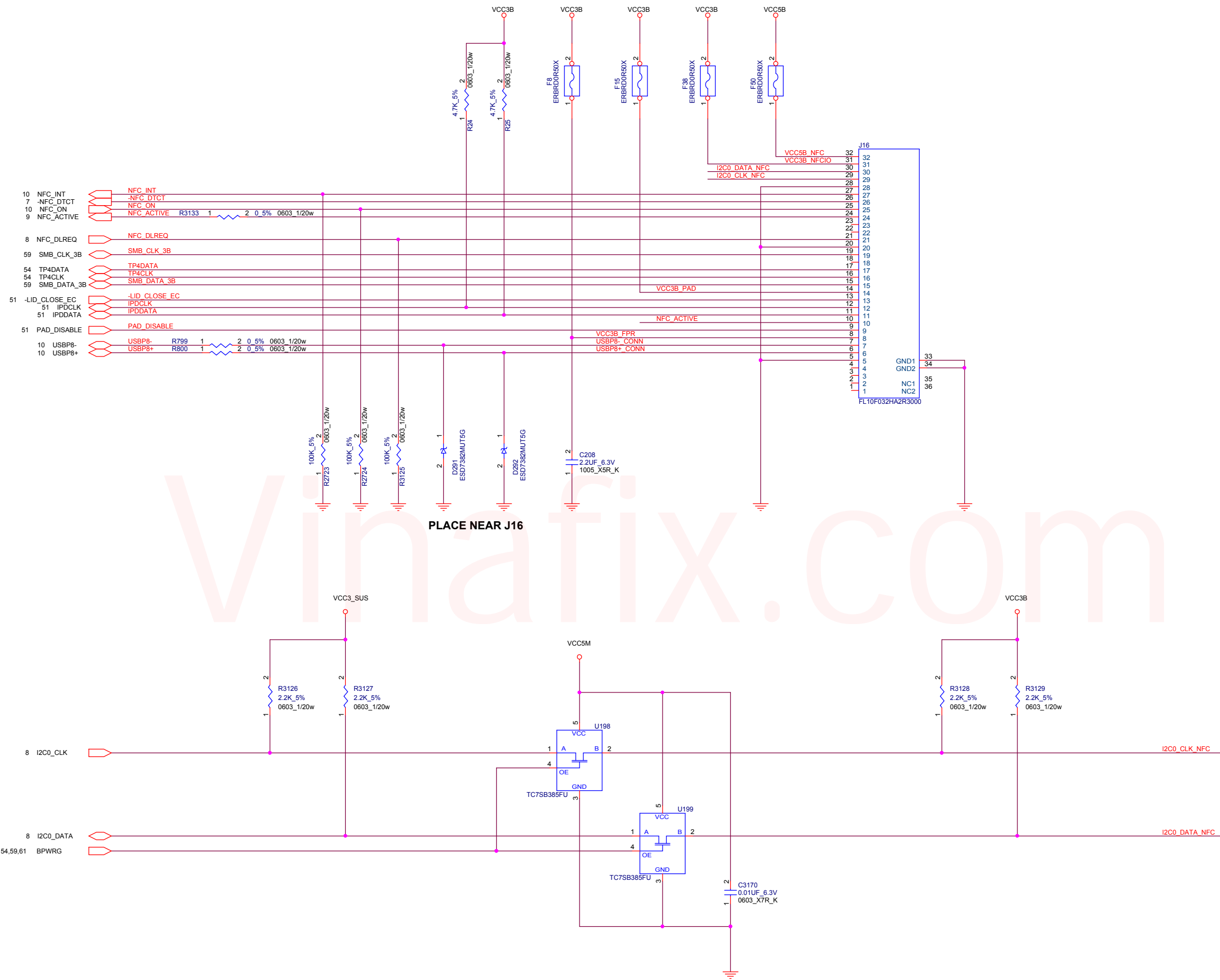


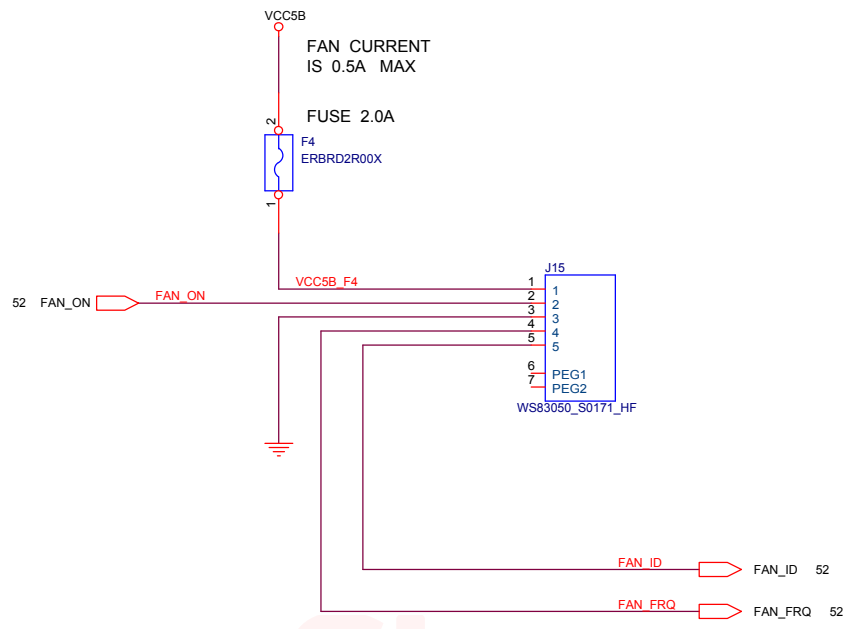
JTAG Debug Port

| | Enable | Disable |
|-------|--------|---------|
| R8796 | ASM | NO_ASM |
| R8797 | NO_ASM | ASM |
| R8830 | ASM | NO_ASM |
| R2429 | ASM | NO_ASM |
| R2430 | ASM | NO_ASM |
| R2431 | ASM | NO_ASM |
| R3224 | ASM | NO_ASM |





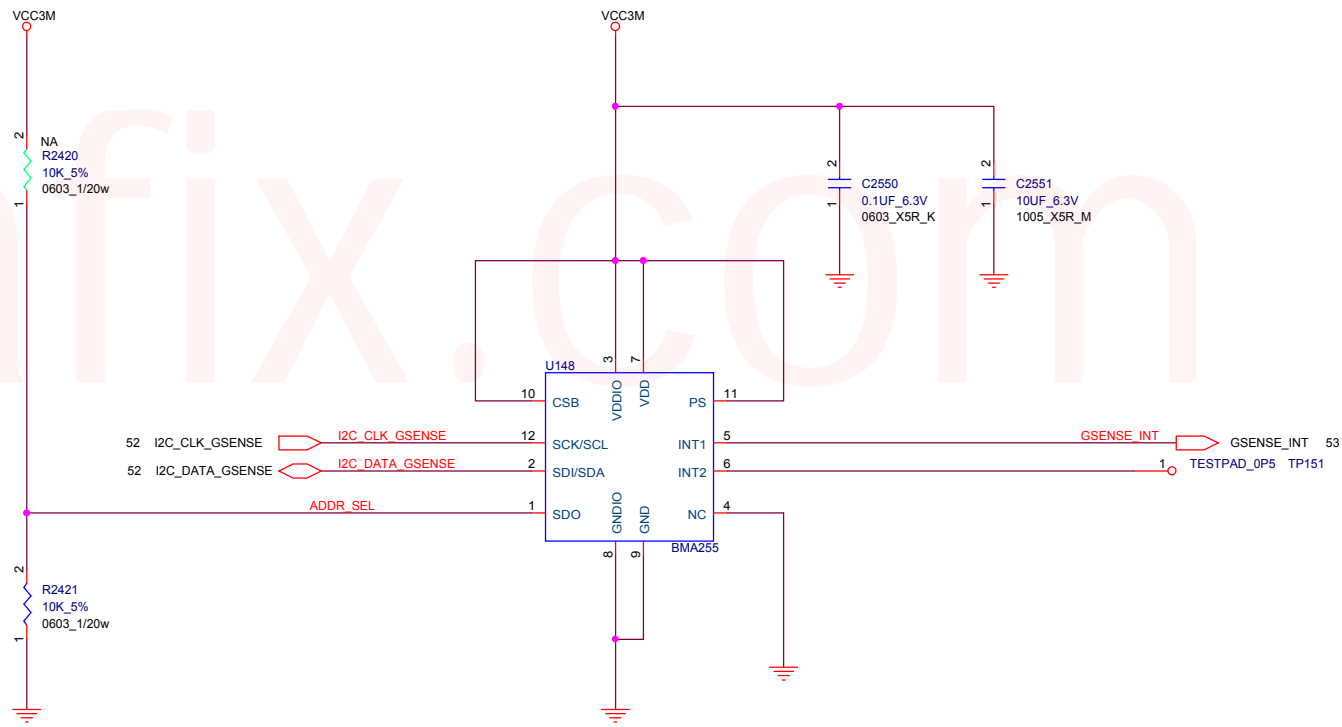


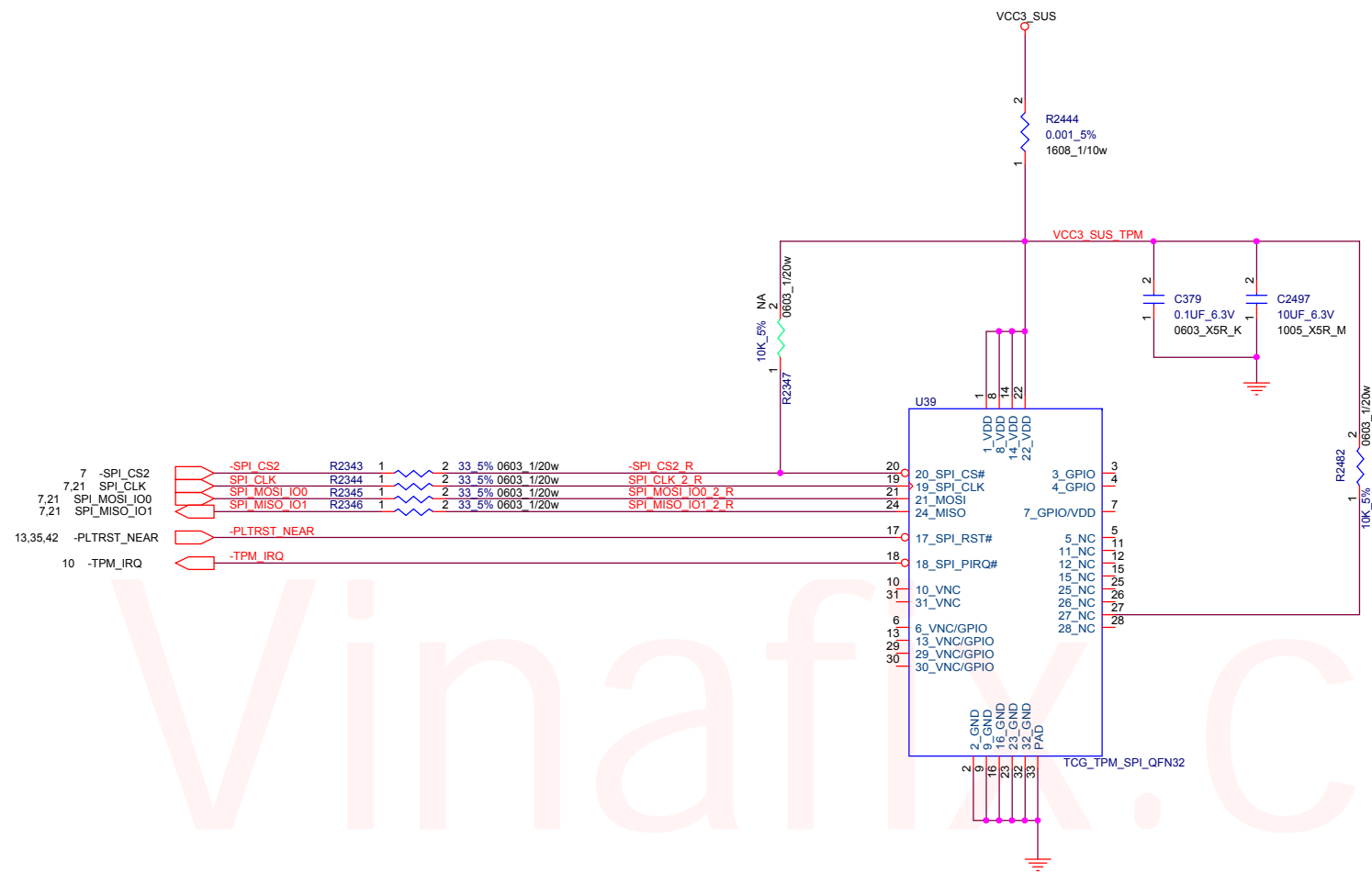


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TABLE

| P/N | ADDR_SEL | Address |
|------------|----------|-------------------|
| BMA255 | H | 30h (W) & 31h (R) |
| | L | 32h (W) & 33h (R) |
| KX022-1020 | H | 3Eh (W) & 3Fh (R) |
| | L | 3Ch (W) & 3Dh (R) |





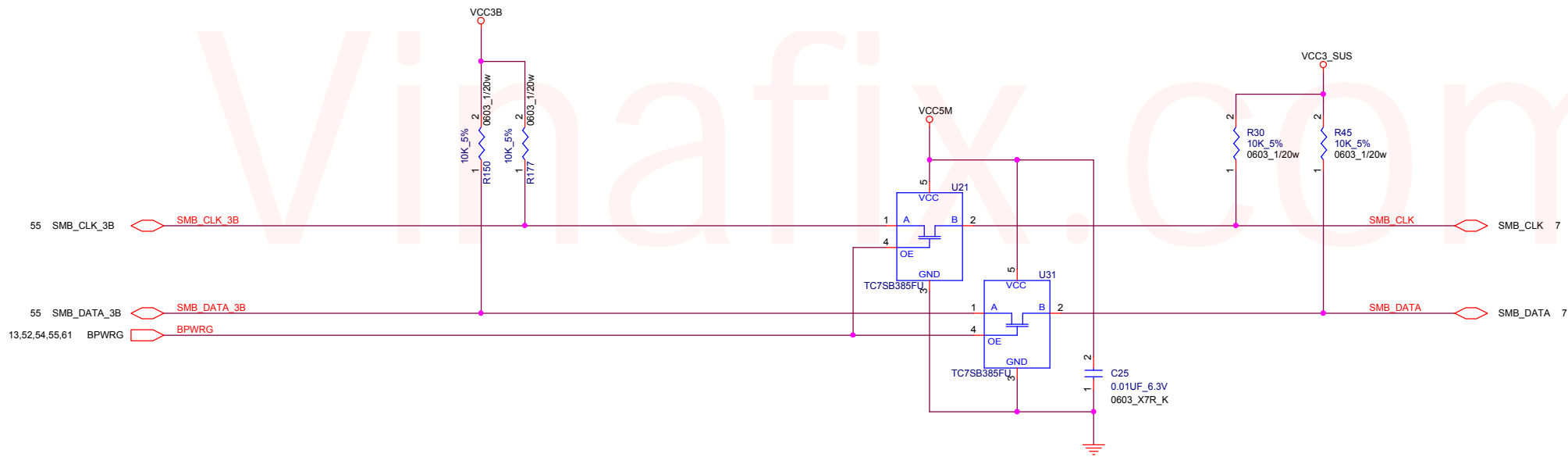
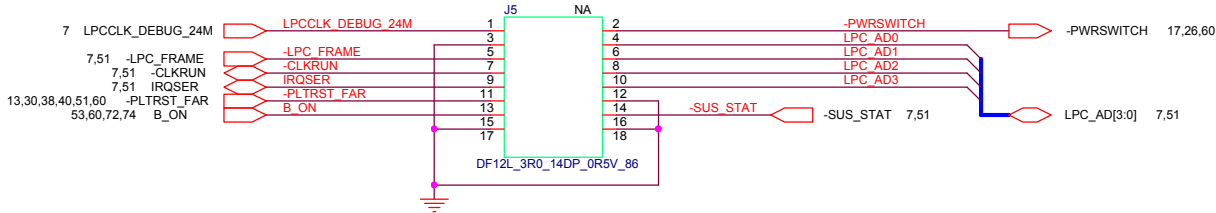
TABLE

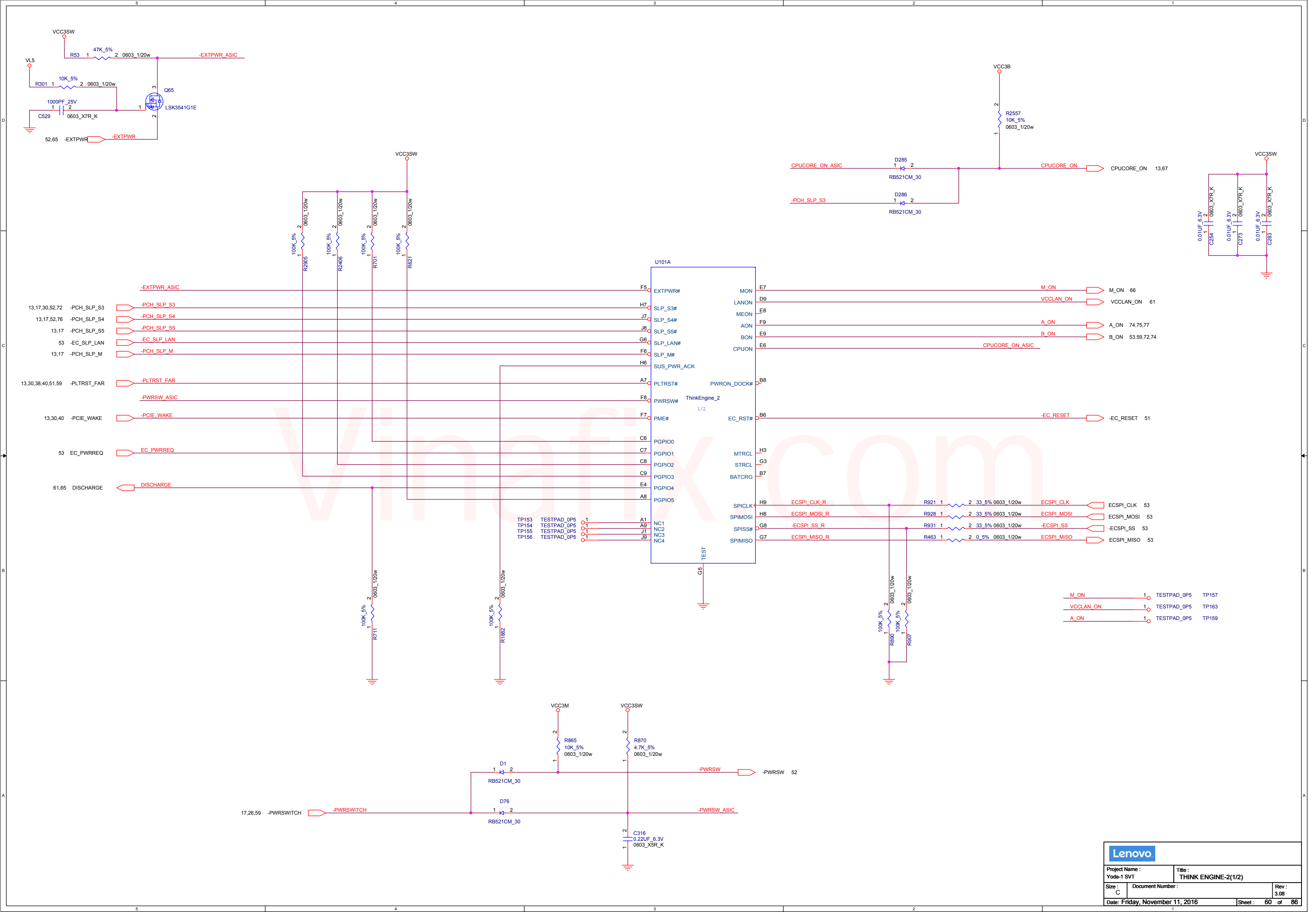
| Pin No | TCG PTP Spec (v38) | Infineon SLB 9670VQ2.0 FW7.60 | ST Micro ST33HTPH2E32AHA6 |
|--------|--------------------|-------------------------------|---------------------------|
| 1 | VDD | VDD | NC |
| 2 | GND | GND | GND |
| 3 | GPIO | NC | NC |
| 4 | GPIO | NC | PP |
| 5 | NC | NC | NC |
| 6 | VNC/GPIO | GPIO | NC |
| 7 | GPIO/VDD | PP | GPIO |
| 8 | VDD | VDD | NC |
| 9 | GND | GND | NC |
| 10 | VNC | NC | NC |
| 11 | NC | NC | NC |
| 12 | NC | NC | NC |
| 13 | VNC/GPIO | NC | NC |
| 14 | VDD | NC | NC |
| 15 | NC | NC | NC |
| 16 | GND | NC | NC |
| 17 | SPI_RST# | RST# | SPI_RST# |
| 18 | SPI_PIRQ# | PIRQ# | SPI_PIRQ# |
| 19 | SPI_CLK | SCLK | SPI_CLK |
| 20 | SPI_CS# | CS# | SPI_CS# |
| 21 | MOSI | MOSI | MOSI |
| 22 | VDD | VDD | VPS |
| 23 | GND | GND | NC |
| 24 | MISO | MISO | MISO |
| 25 | NC | NC | NC |
| 26 | NC | NC | NC |
| 27 | NC | NC | NC |
| 28 | NC | NC | NC |
| 29 | VNC/GPIO | NC | NC |
| 30 | VNC/GPIO | NC | NC |
| 31 | VNC | NC | NC |
| 32 | GND | GND | NC |

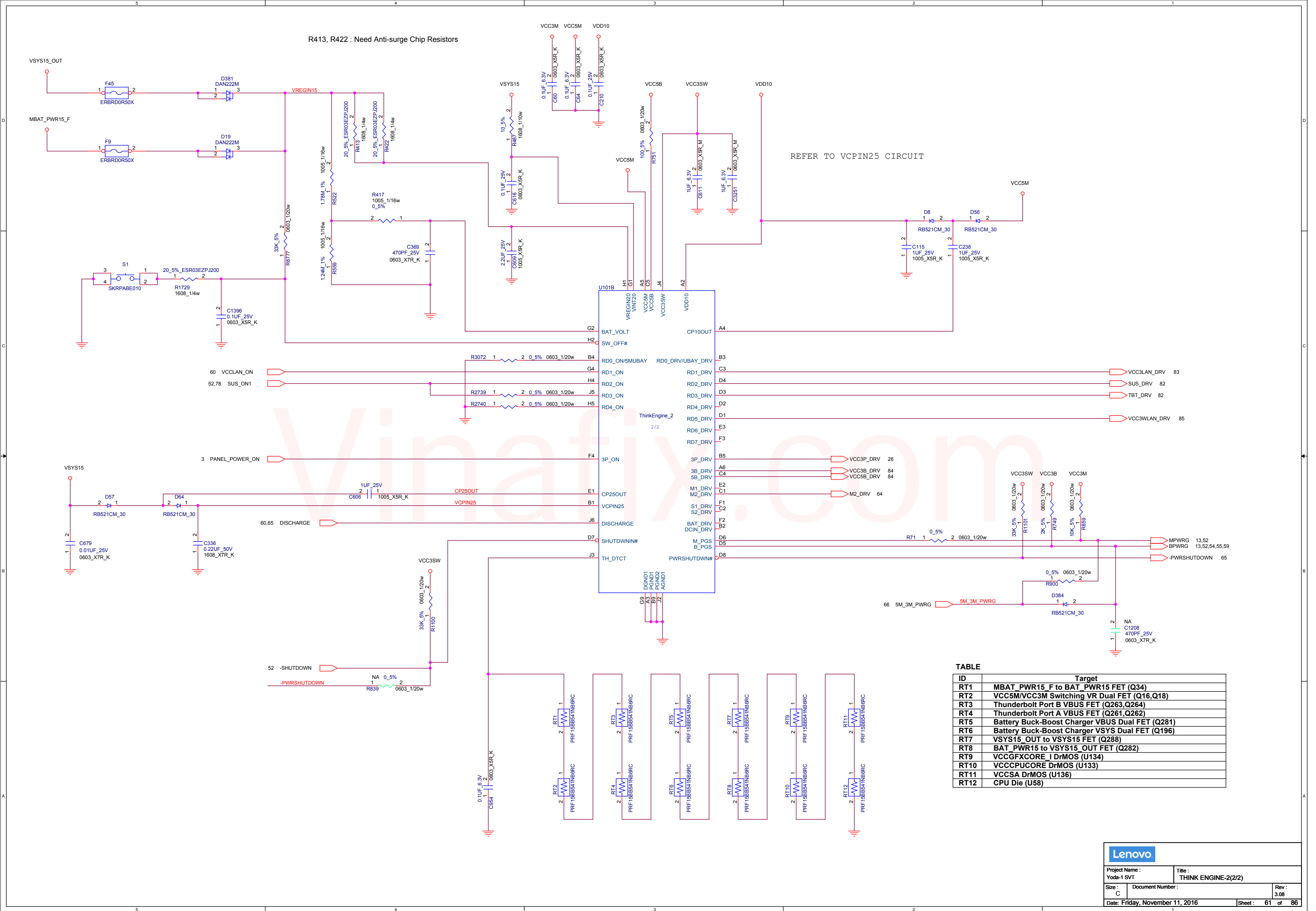
TABLE

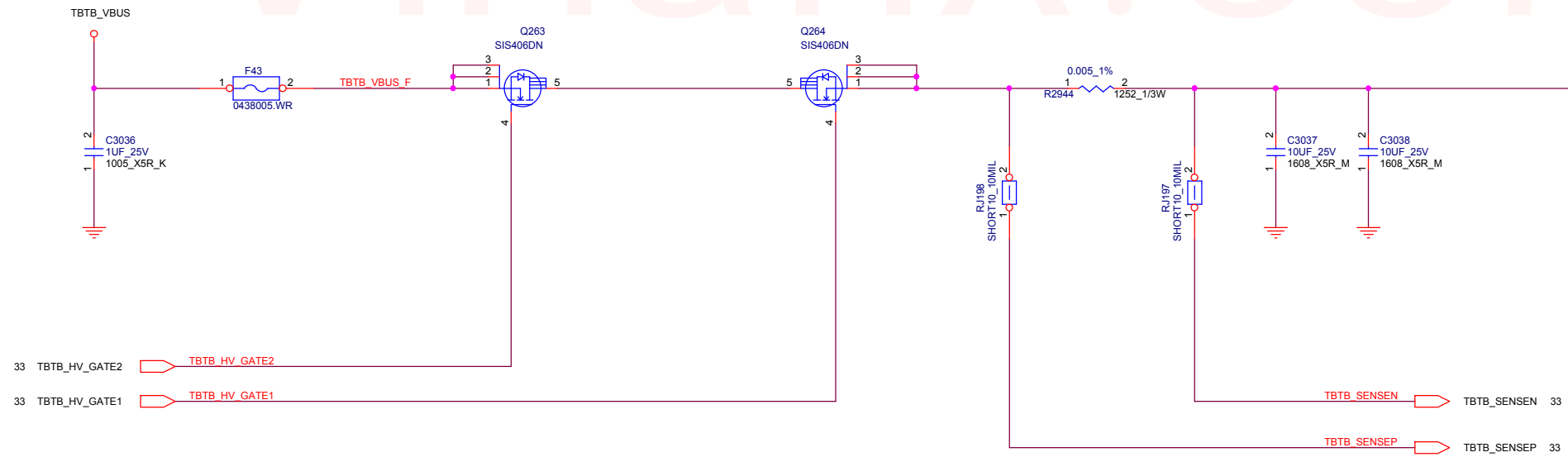
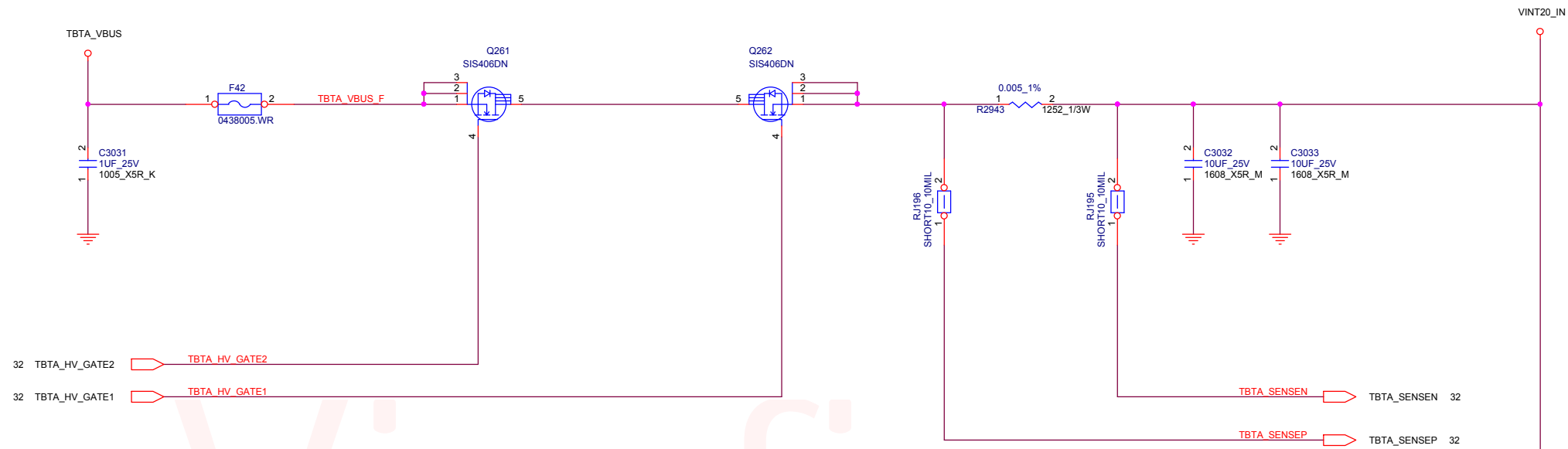
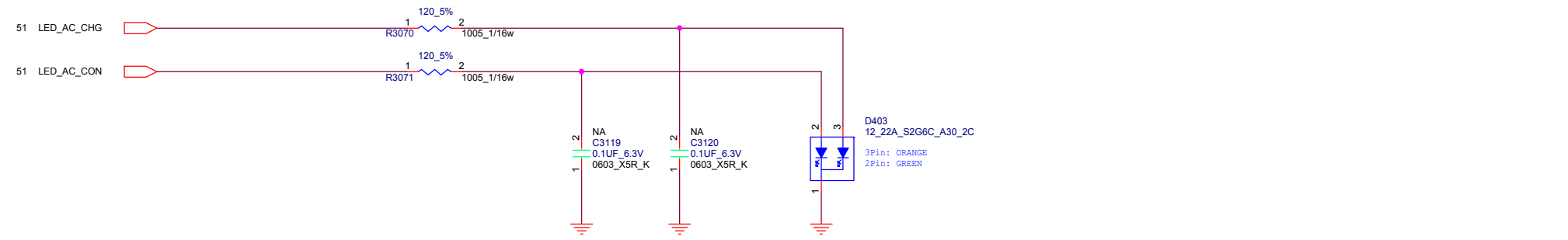
| REF DES | ENABLE | DISABLE |
|---------|--------|---------|
| J5 | ASM | NO_ASM |
| R220 | ASM | NO_ASM |

LOGIC









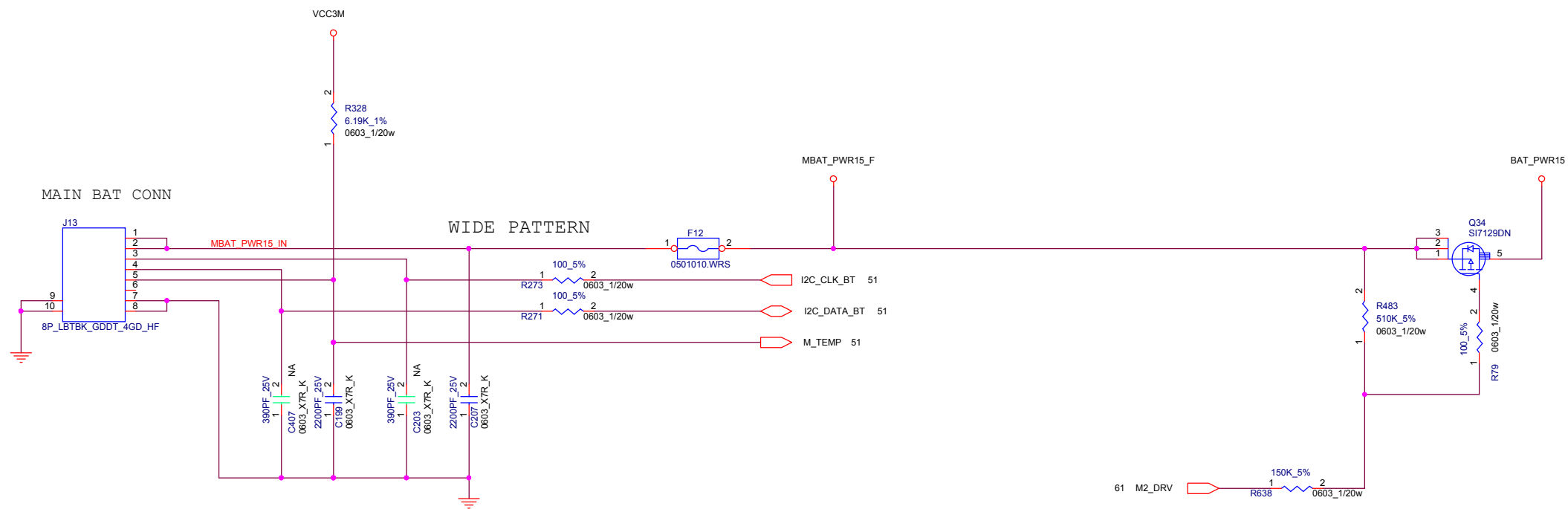
Lenovo

| | | | |
|---------------------------------|-------------------|------------------|---------------|
| Project Name : Yoda-1 SVT | | Title : DC-IN | |
| Size : C | Document Number : | | Rev : 3.08 |
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| Project Name : Yoda-1 SVT | | Title : BLANK | |
| Size : C | Document Number : | | Rev : 3.08 |
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Lenovo

Project Name : Yoda-1 SVT Title : BATTERY INPUT

Size : C Document Number : Rev : 3.08

Date: Friday, November 11, 2016 Sheet : 64 of 86

TABLE : ILIM_HIZ

| IDPM | V (ILIM) | R720 |
|-------|----------|------|
| 500mA | 1.2V | 402K |
| 1.0A | 1.4V | 332K |
| 1.5A | 1.6V | 280K |
| 2.0A | 1.8V | 237K |
| 3.0A | 2.2V | 174K |
| 3.25A | 2.3V | 162K |

LOGIC

TABLE : CELL_BATPRES

| # of CELL | V (CELL_PRES) | R3079 |
|-----------|---------------|-------|
| 1-CELL | 1.5V | 301K |
| 2-CELL | 2.5V | 140K |
| 3-CELL | 3.5V | 71.5K |
| 4-CELL | 4.5V | 33.2K |

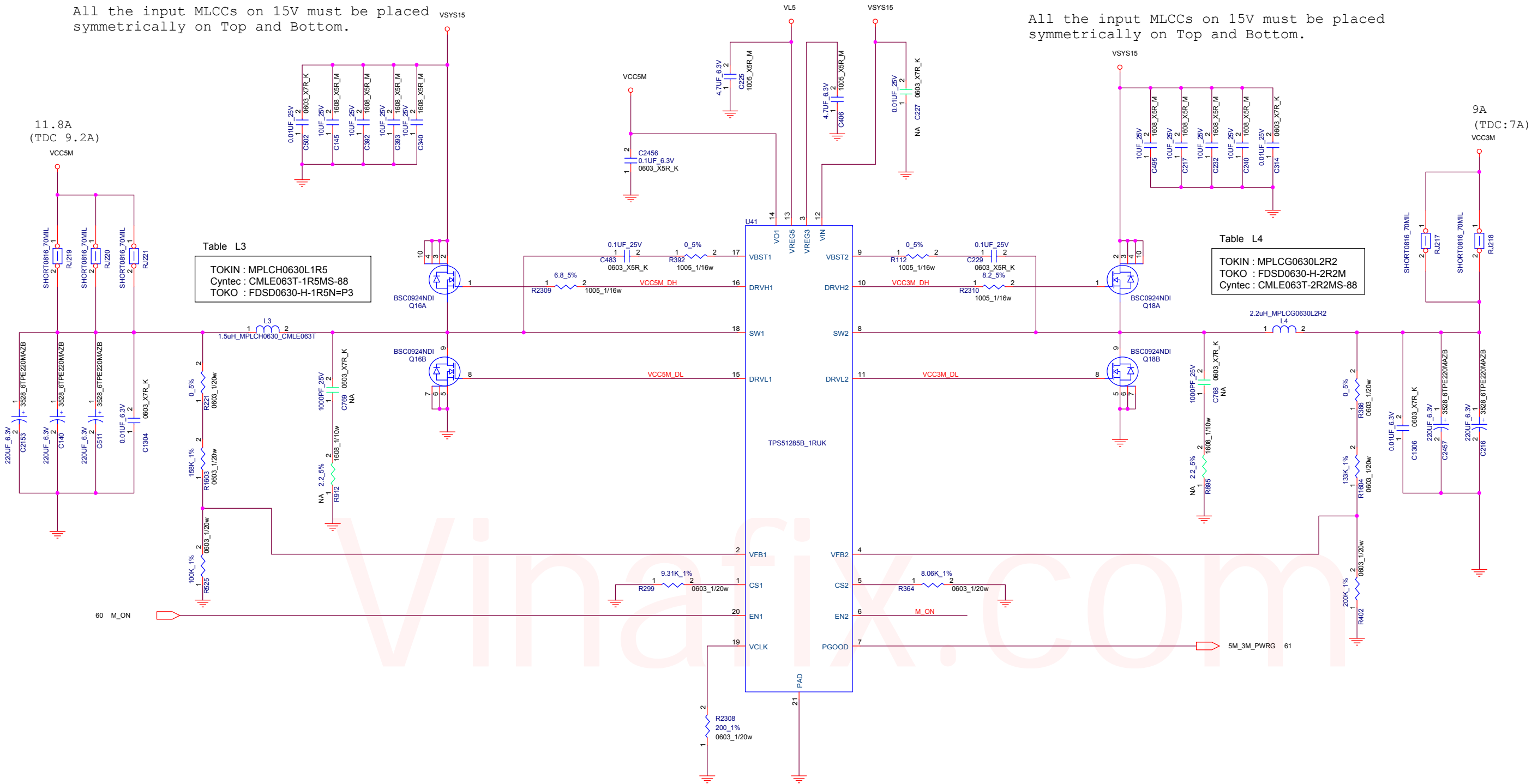
LOGIC

TABLE

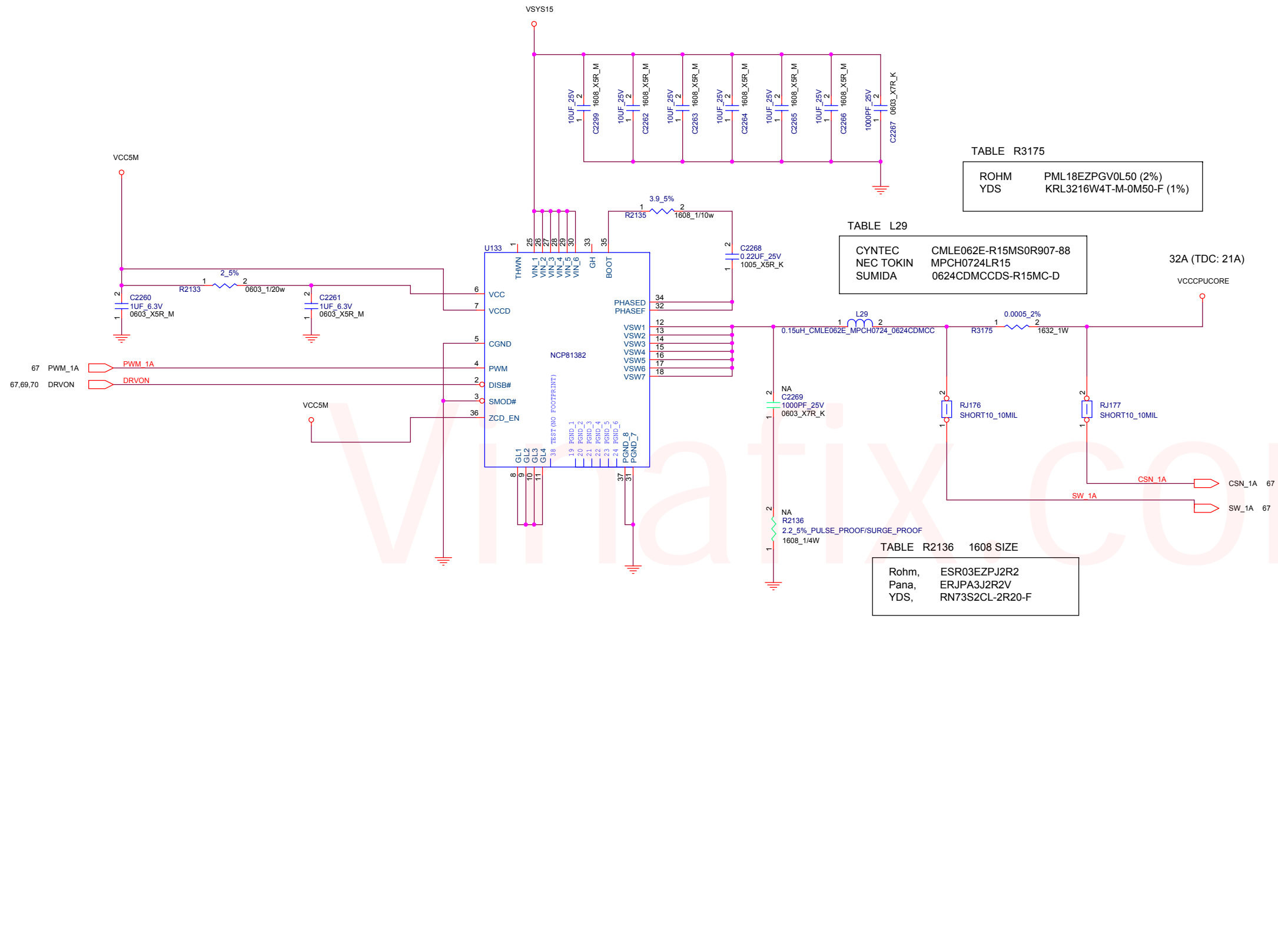
| Inductor | R(IADP) | fsw@POR |
|----------|---------|---------|
| 1.0uH | 74kohm | 1200kHz |
| 1.5uH | 86kohm | 1200kHz |
| 2.2uH | 100kohm | 1200kHz |

Lenovo

All the input MLCCs on 15V must be placed symmetrically on Top and Bottom.



All the input MLCCs on 15V must be placed symmetrically on Top and Bottom.



20pcs 22uF for VCCCPUCORE

| | |
|---------------|--------------------|
| Table for C77 | |
| Panasonic | ETPE330MA9L |
| NEC TOKIN | PSGB20E337M9 |
| KEMET | T520B337M2R5ATE009 |

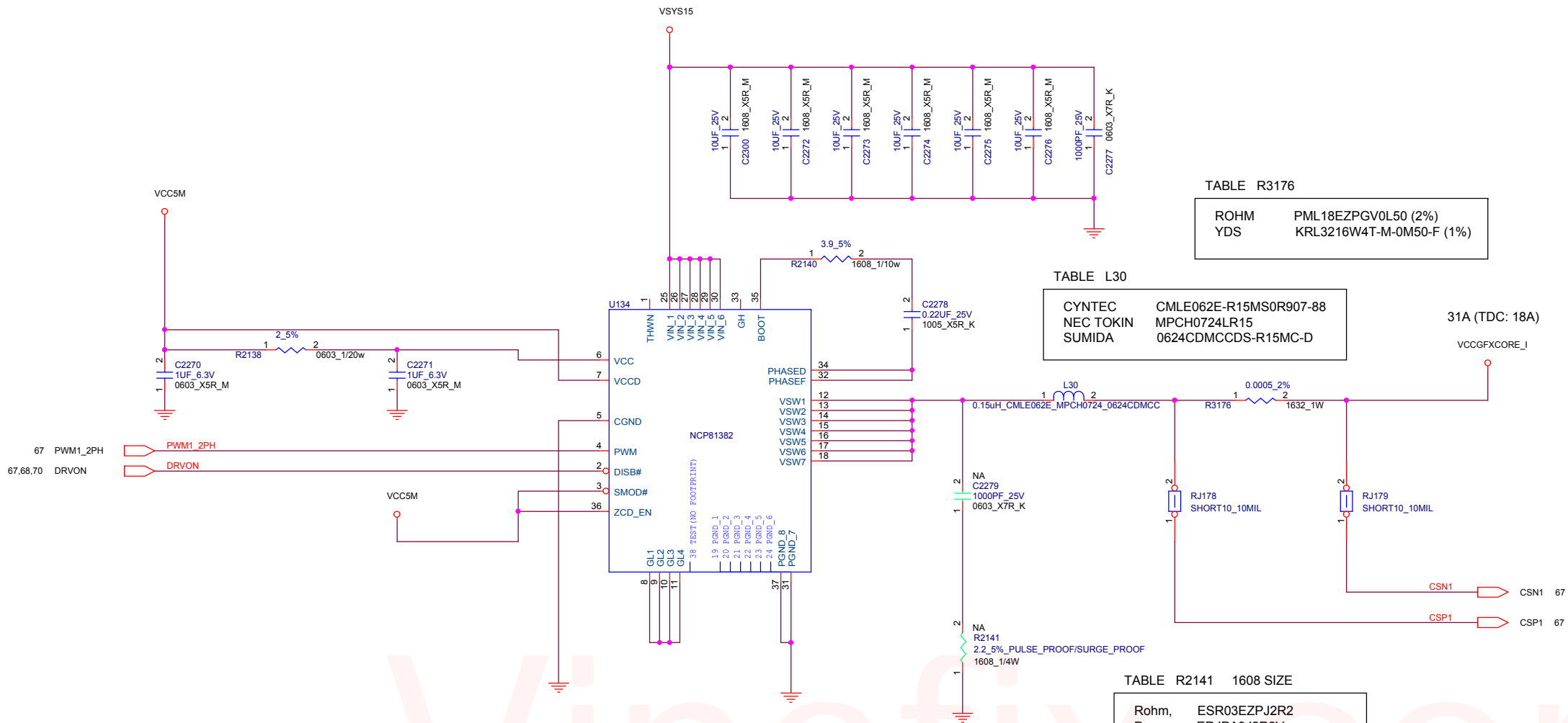


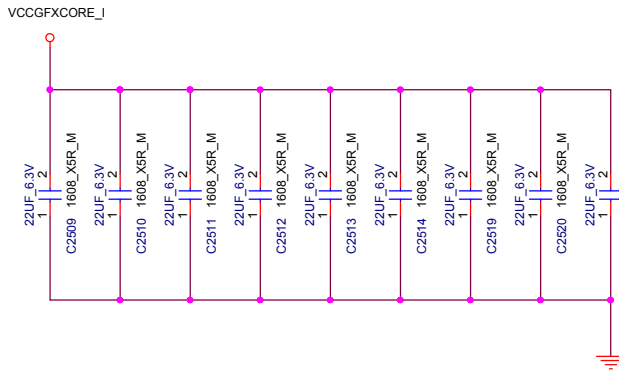
TABLE R3176

| | |
|------|--------------------------|
| ROHM | PML18EZPGV0L50 (2%) |
| YDS | KRL3216W4T-M-0M50-F (1%) |

TABLE L30

| | |
|-----------|------------------------|
| CYNTec | CMLE062E-R15MS0R907-88 |
| NEC TOKIN | MPCH0724LR15 |
| SUMIDA | 0624CDMCCDS-R15MC-D |

31A (TDC: 18A)



33pcs 22uF for VCCGFXCORE_I

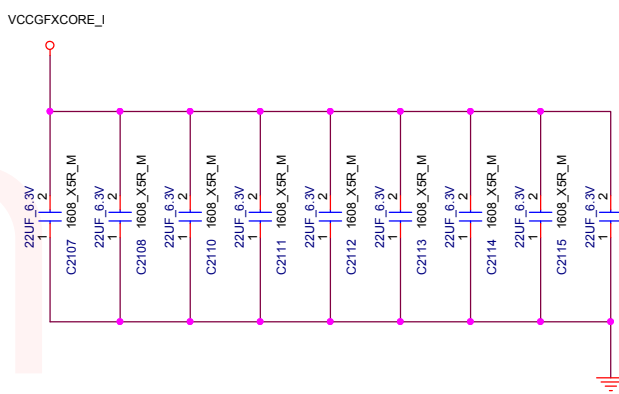
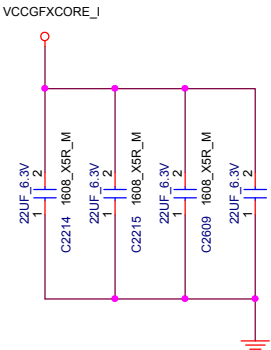
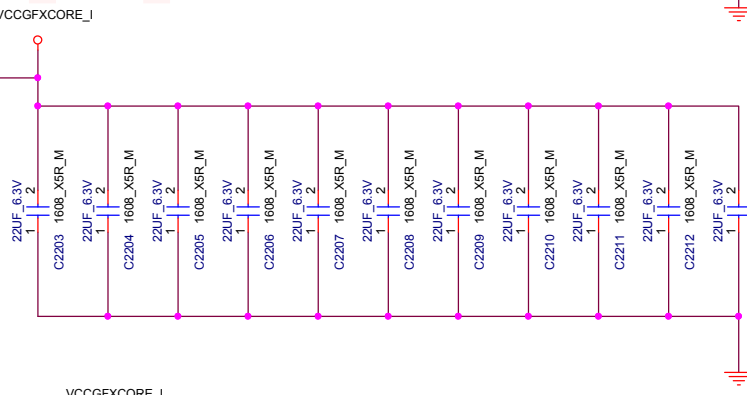
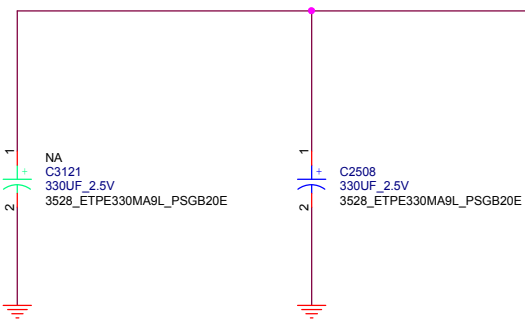


TABLE R2141 1608 SIZE

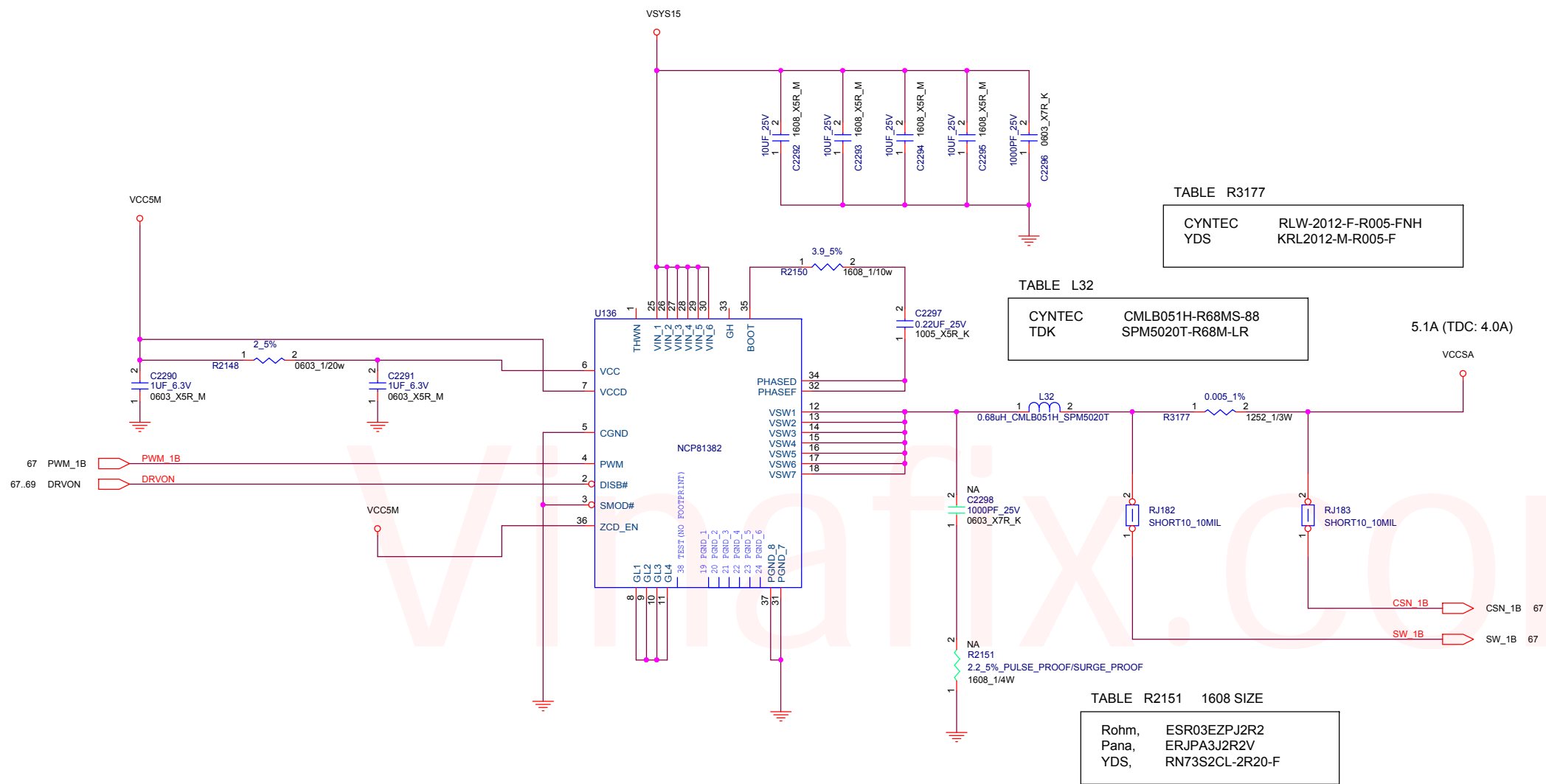
| | |
|-------|-----------------|
| Rohm, | ESR03EZPJ2R2 |
| Pana, | ERJPA3J2R2V |
| YDS, | RN73S2CL-2R20-F |

Table for C2508 and C3121

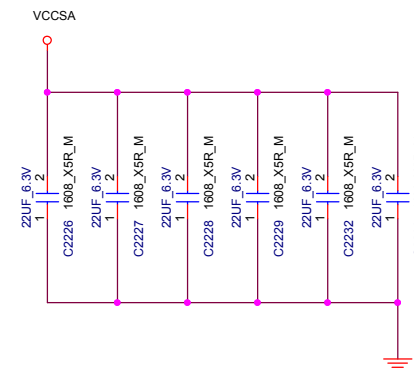
| | |
|------------|--------------------|
| Panasonic, | ETPE330MA9L |
| NEC TOKIN, | PSGB20E337M9 |
| KEMET | T520B337M2R5ATE009 |



Lenovo



6pcs 22uF for VCCSA

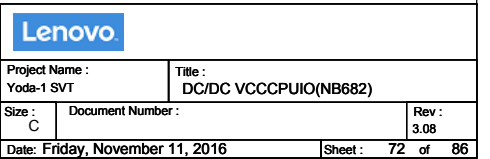




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| Lenovo | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
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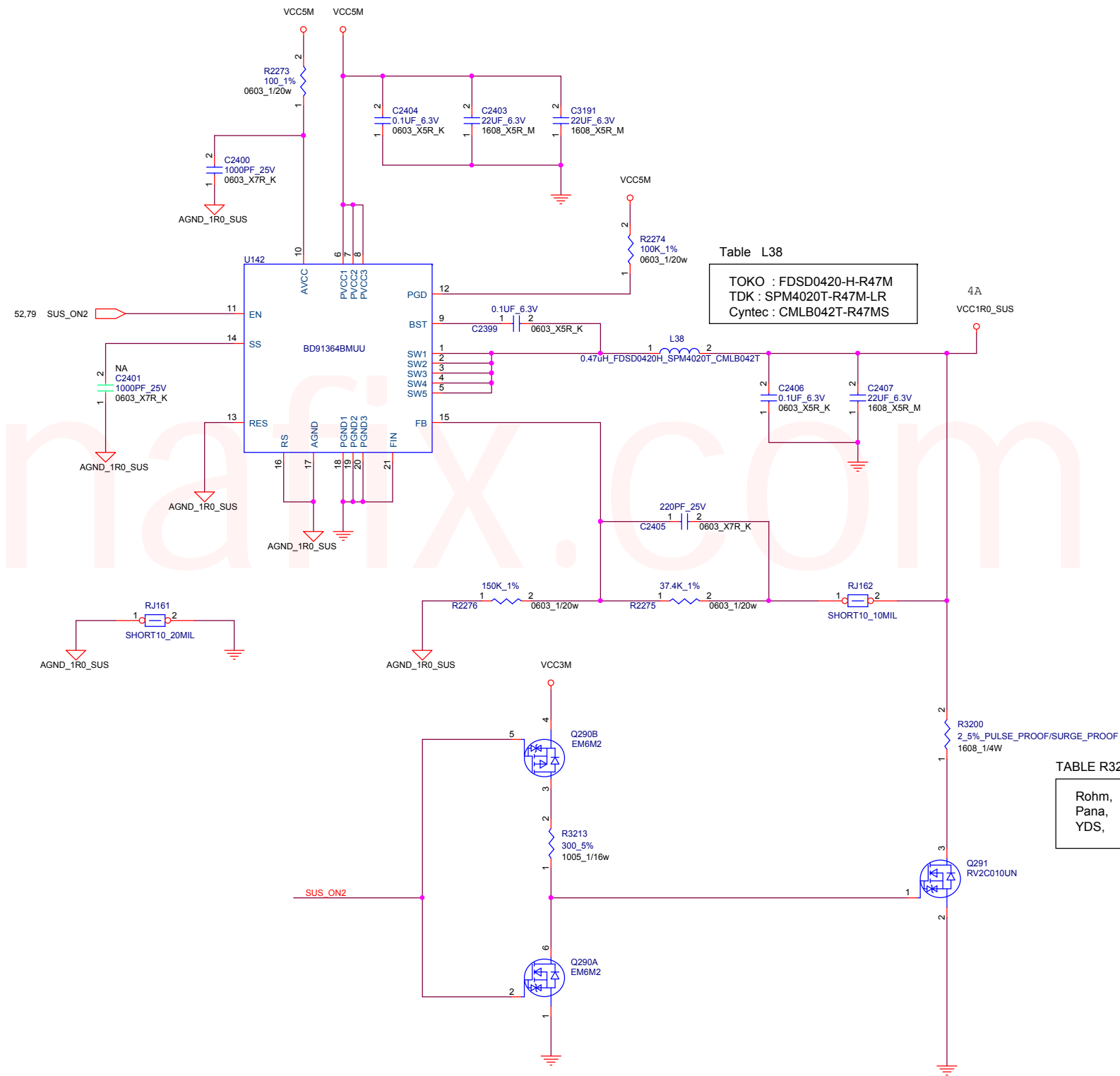
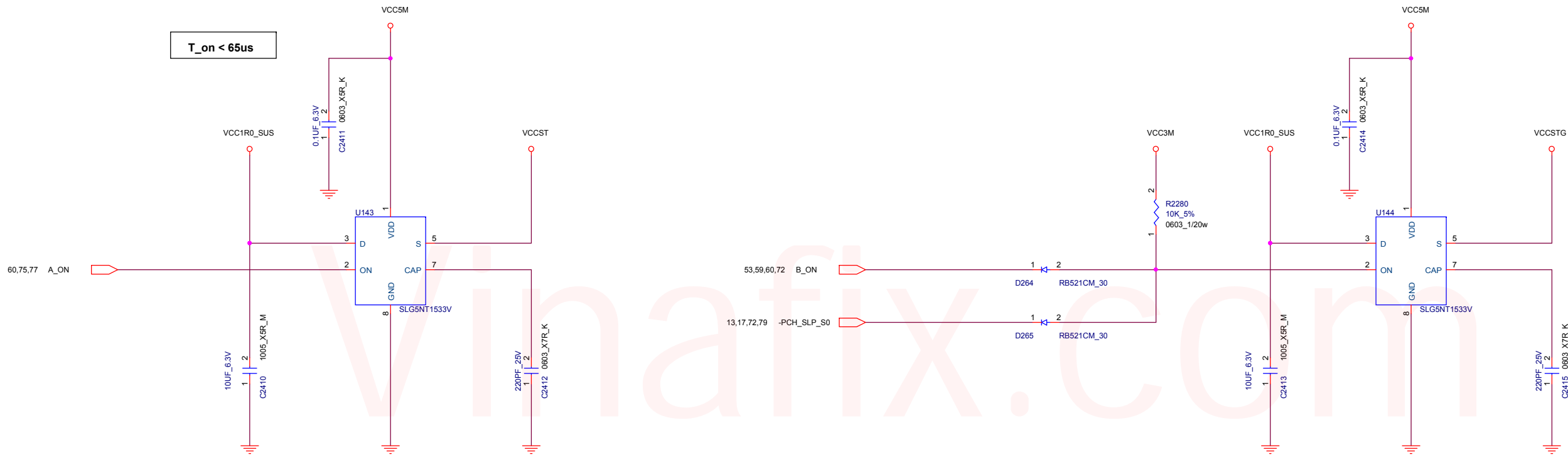


Table L38

| | |
|--------|--------------------|
| TOKO | : FDSD0420-H-R47M |
| TDK | : SPM4020T-R47M-LR |
| Cyntec | : CMLB042T-R47MS |

TABLE R3200 1608 SIZE

| | |
|-------|-----------------|
| Rohm, | ESR03EZPJ2R0 |
| Pana, | ERJPA3J2R0V |
| YDS, | RN73S2CL-2R00-F |



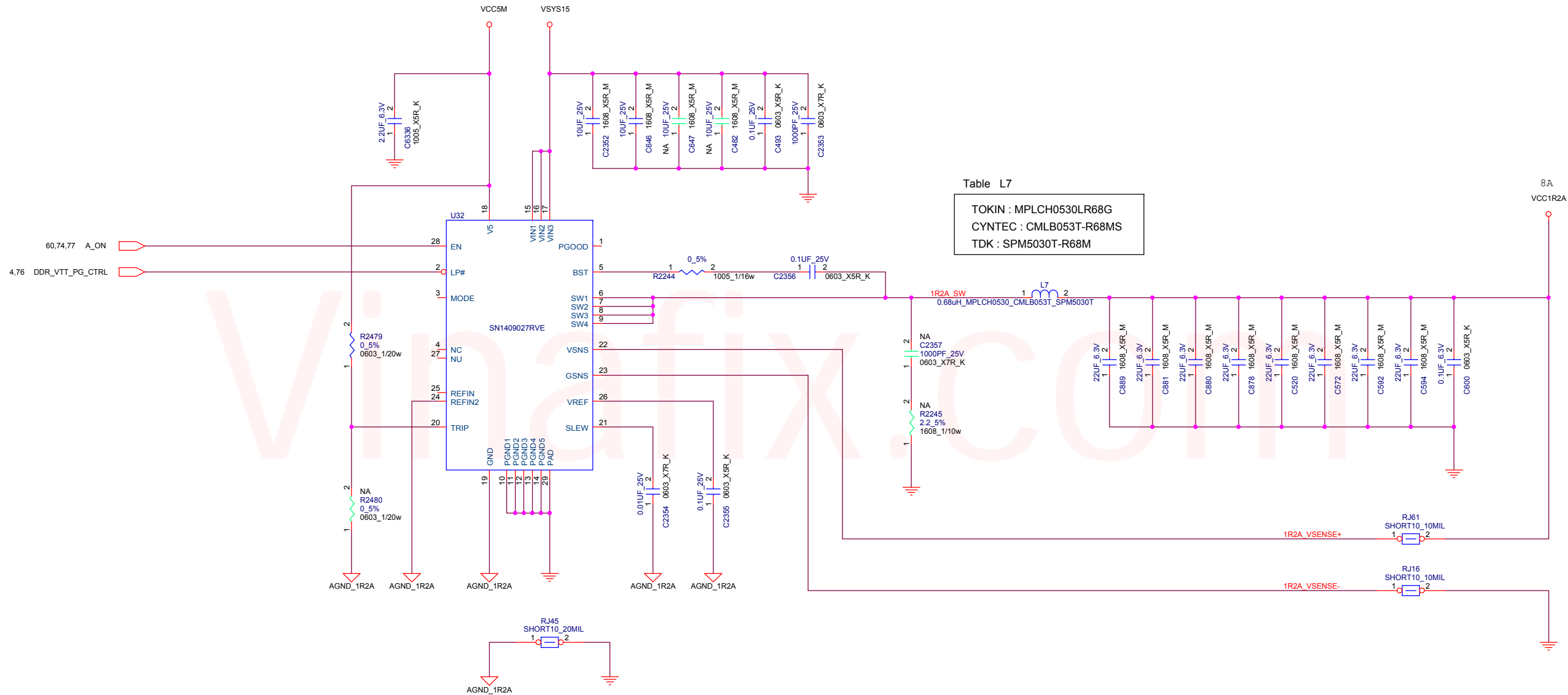


Table L7

| |
|-------------------------|
| TOKIN : MPLCH0530LR68G |
| CYNTEC : CMLB053T-R68MS |
| TDK : SPM5030T-R68M |

TABLE : TPSS1362 (SN1409027RVE)

| REFIN | REFIN2 | VOUT |
|-------|--------|-------|
| GND | GND | 1.05V |
| Float | GND | 1.20V |
| GND | Float | 1.50V |
| Float | Float | 1.35V |

← LOGIC

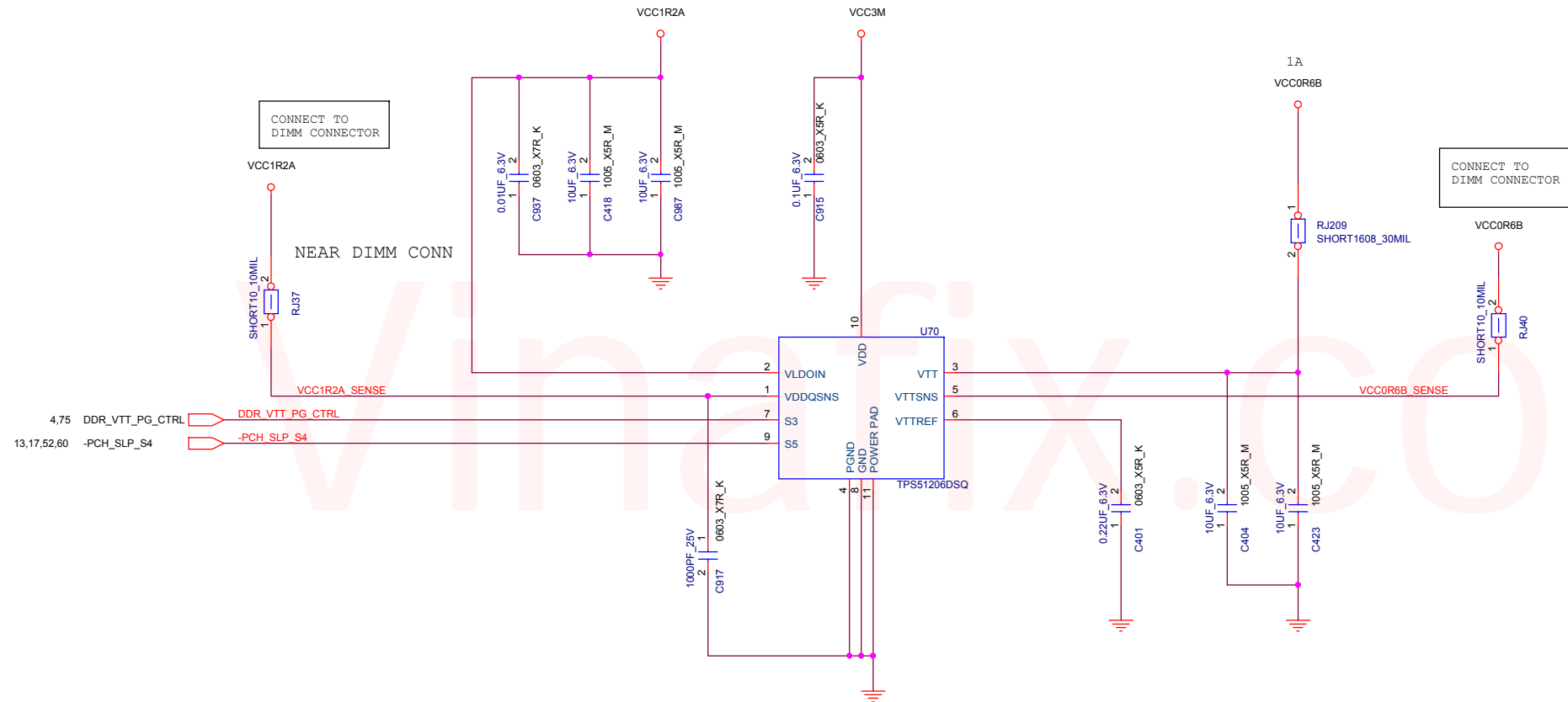
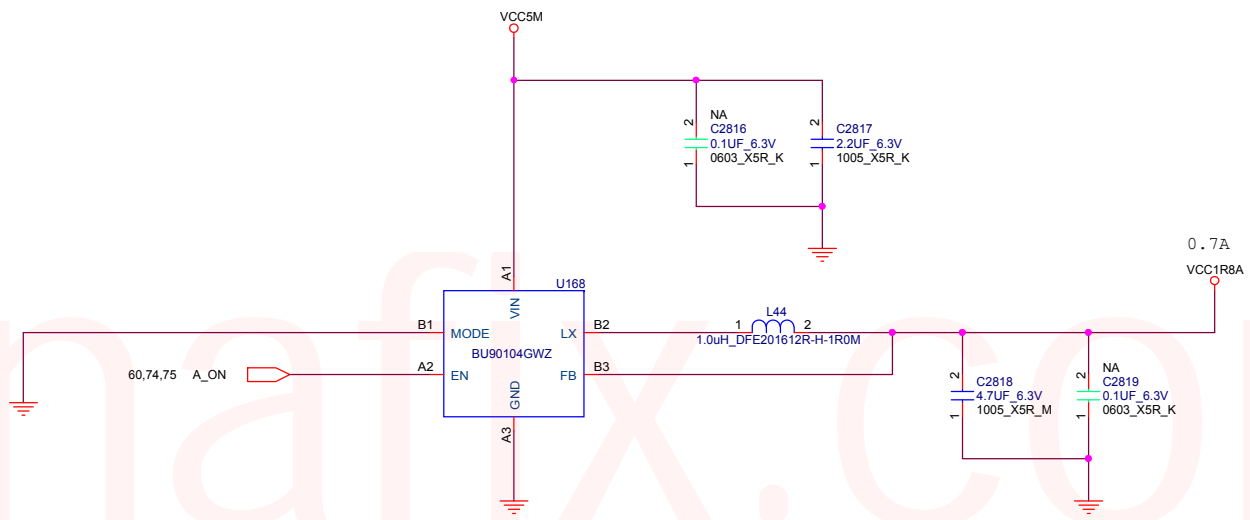


TABLE: TPS51206

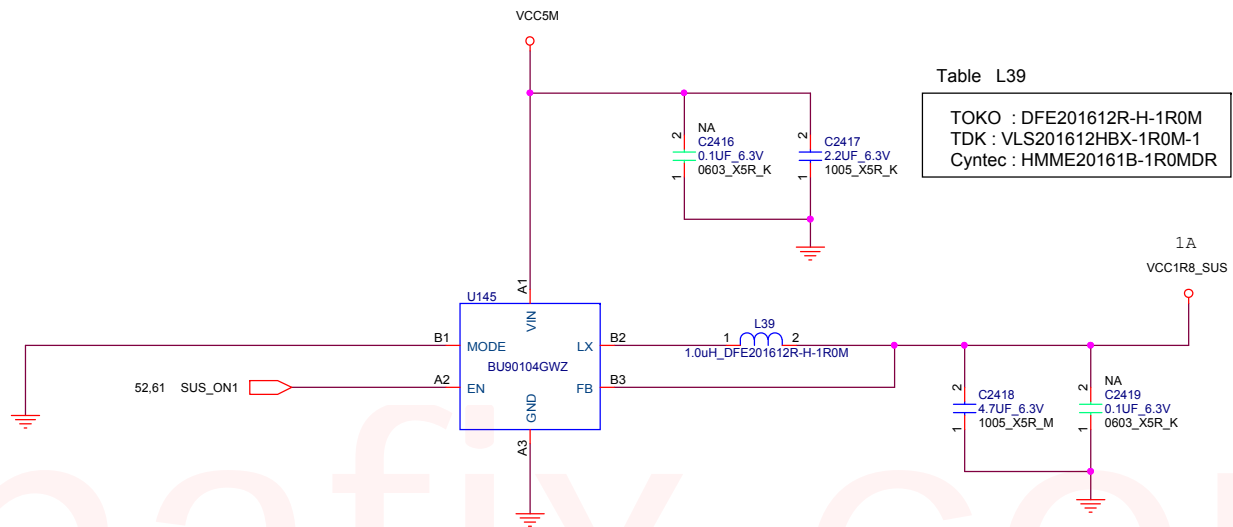
| S3 | S5 | VTT | VTTREF |
|------|------|----------------|----------------|
| High | High | ON | ON |
| Low | High | OFF(High-Z) | ON |
| Low | Low | OFF(Discharge) | OFF(Discharge) |

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| | | | |
|---------------------------------|-------------------|---------------------------|--|
| Project Name : | | Title : | |
| Yoda-1 SVT | | DC/DC VCC1R8A(BU90104GWZ) | |
| Size : | Document Number : | Rev : | |
| C | | 3.08 | |
| Date: Friday, November 11, 2016 | | Sheet : 77 of 86 | |



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| | | | |
|---------------------------------|-------------------|---|---------------|
| Project Name : Yoda-1 SVT | | Title : DC/DC VCC1R8_SUS(BU90104GWZ) | |
| Size : C | Document Number : | | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 78 of 86 | |

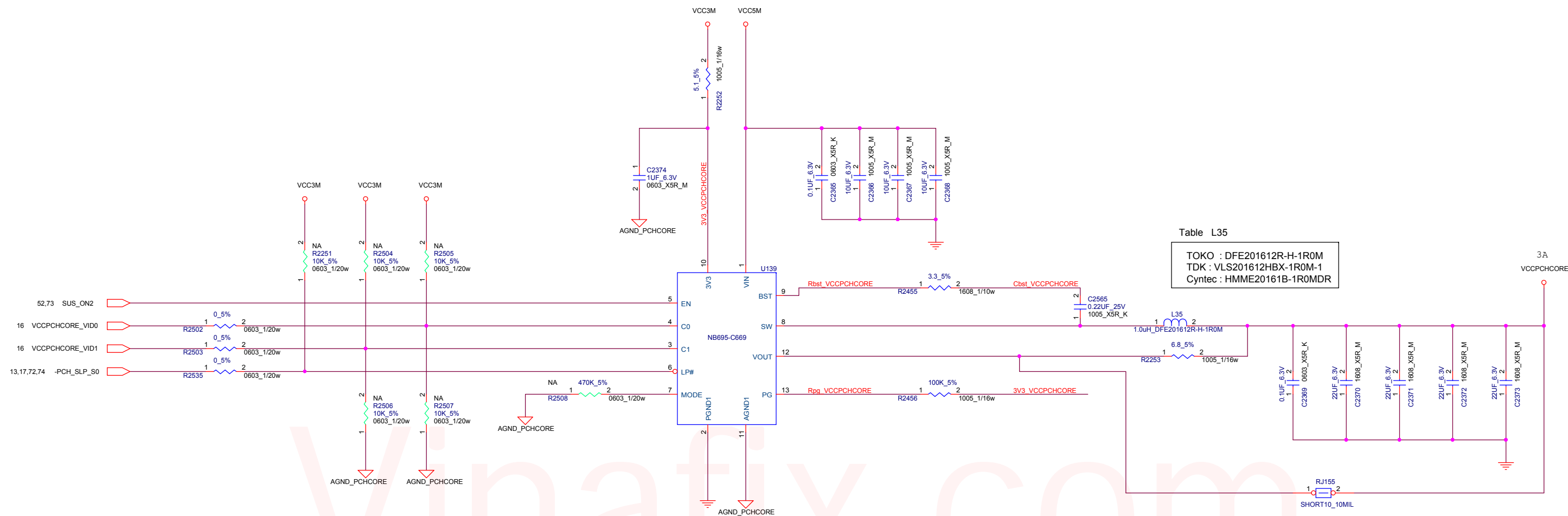


Table L35

| |
|----------------------------|
| TOKO : DFE201612R-H-1R0M |
| TDK : VLS201612HBX-1R0M-1 |
| Cyntec : HMME20161B-1R0MDR |

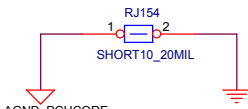
Note: R2253 should be 0ohm if J155 is not short.

TABLE : NB695 MODE M2 (Float)


| LP# | C1 | C0 | VOUT |
|-----|----|----|--------|
| 0 | X | X | 0.700V |
| 1 | 0 | 0 | 0.850V |
| 1 | 0 | 1 | 0.900V |
| 1 | 1 | 0 | 0.950V |
| 1 | 1 | 1 | 1.000V |

← SLP_S0#

← DEFAULT




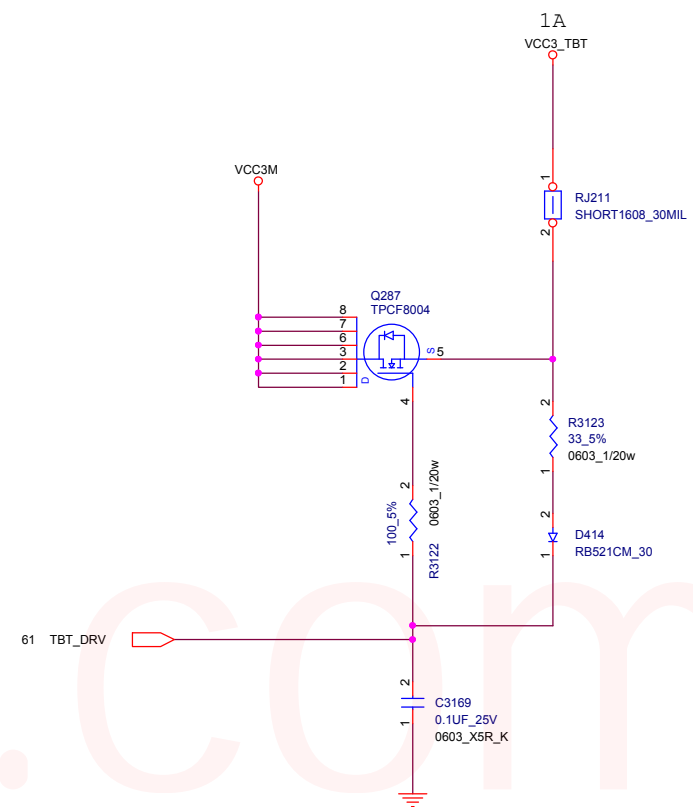


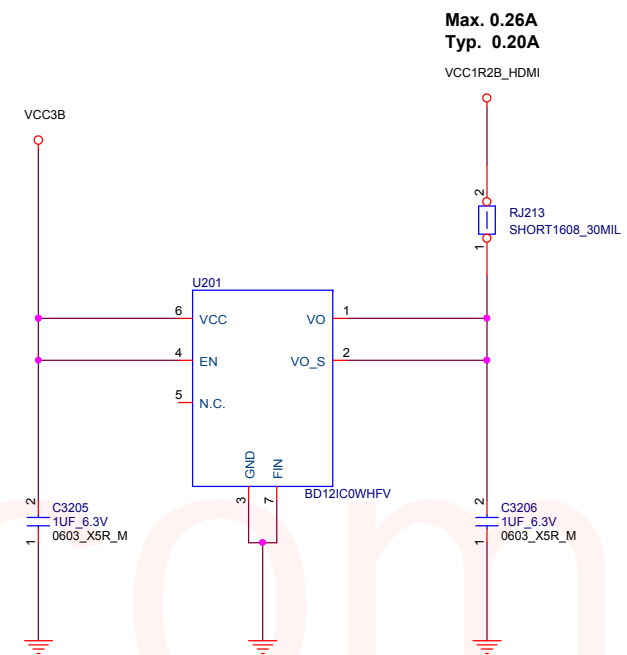
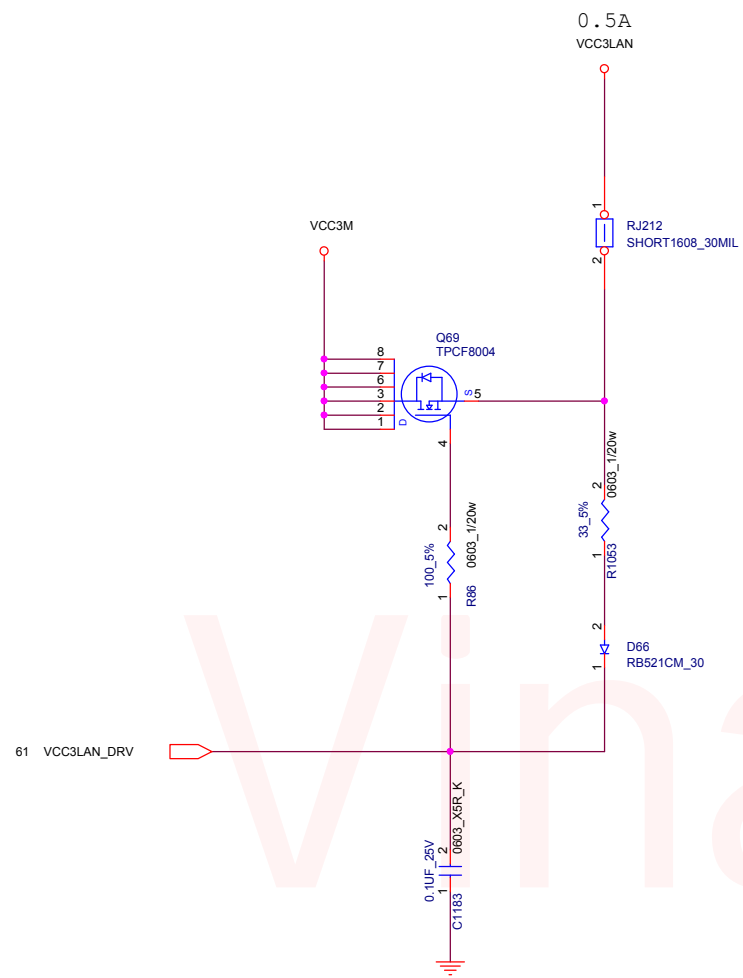
| | | |
|---|-------------------|------------------|
|  | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
| Size : C | Document Number : | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 80 of 86 |

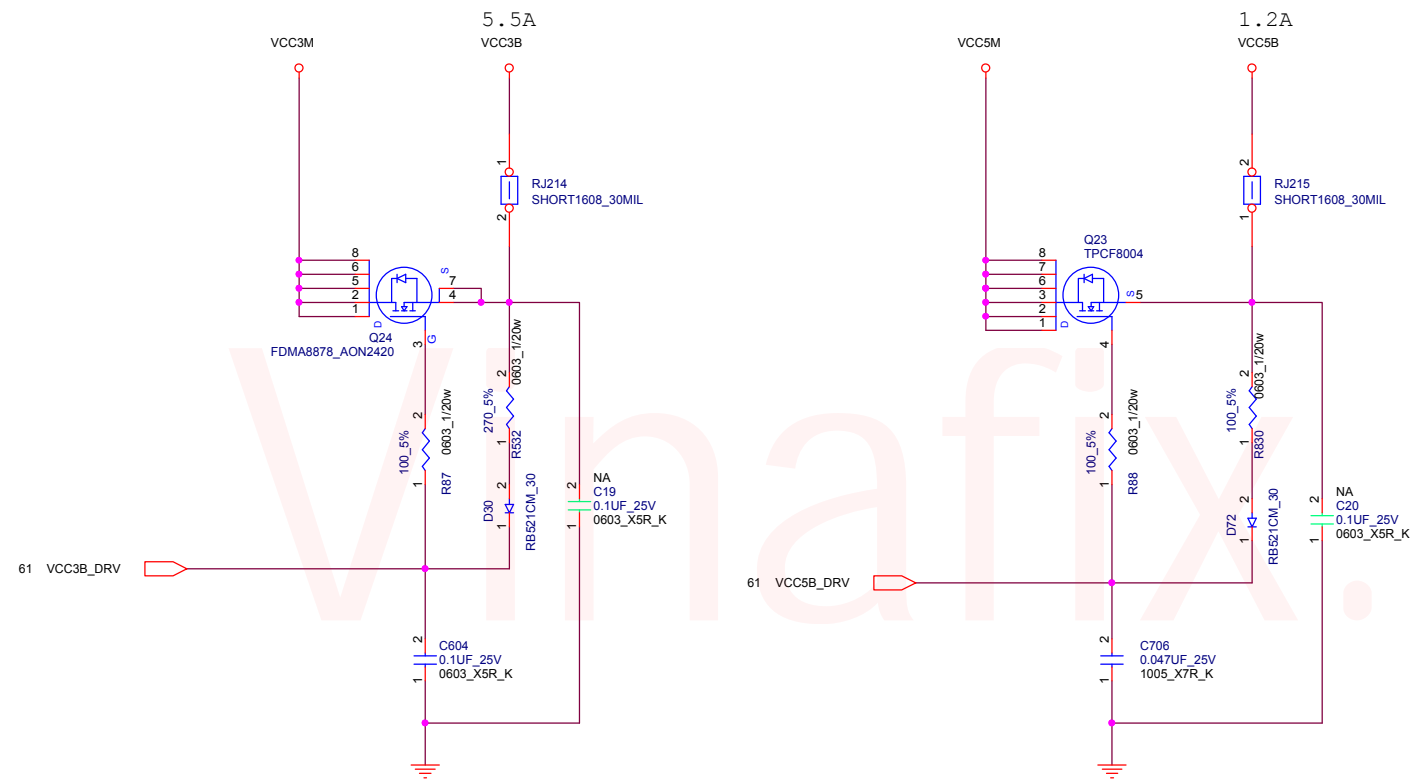


BLANK

| | | |
|---|-------------------|------------------|
|  | | |
| Project Name : Yoda-1 SVT | | Title : BLANK |
| Size : C | Document Number : | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 81 of 86 |





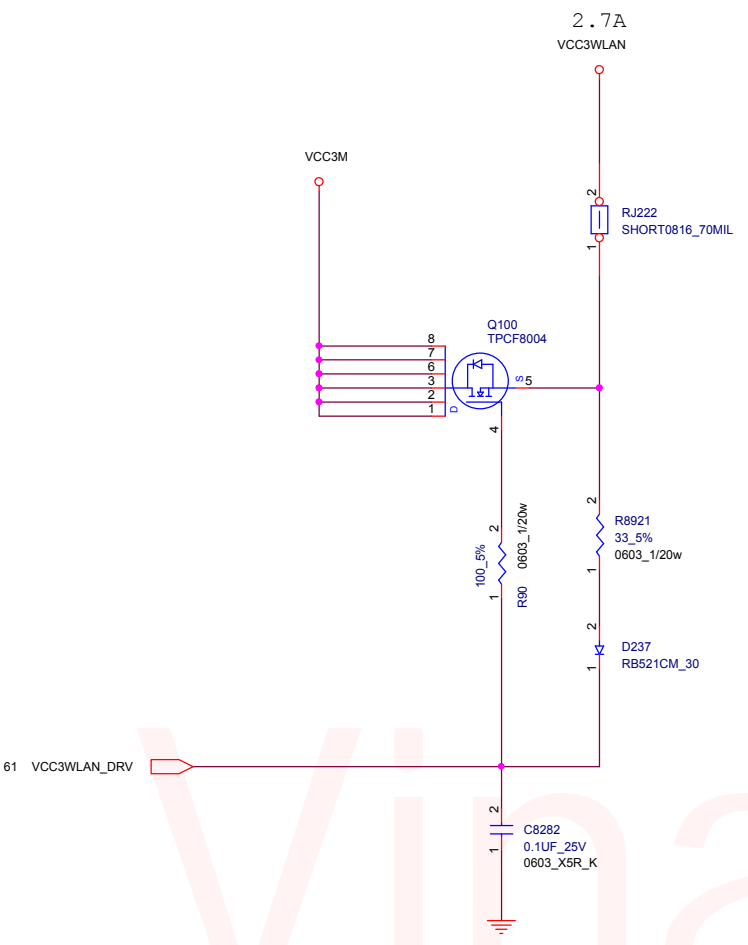


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Project Name : Yoda-1 SVT Title : LOAD SW B

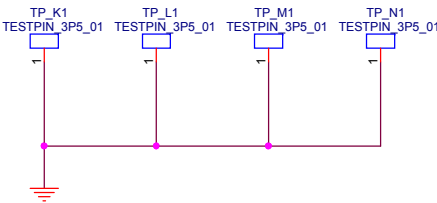
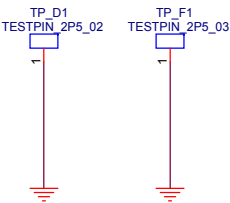
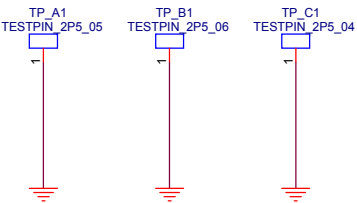
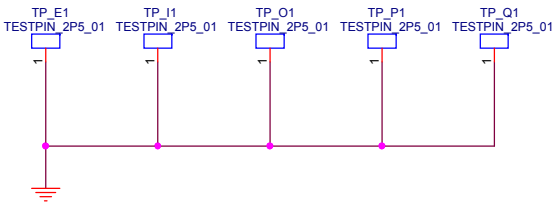
Size : C Document Number : Rev : 3.08

Date: Friday, November 11, 2016 Sheet : 84 of 86

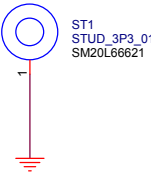


PTH FOR SCREW HOLE

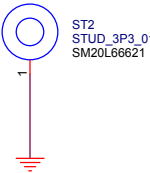
| Value | Hole Dia | Pad Dia | | QTY |
|--------------------------|----------|---------|--------|-----|
| | | TOP | BOTTOM | |
| TESTPIN_2P5_01 | 2.5 | 6.5 | 6.5 | 5 |
| TESTPIN_2P5_02 | 2.5 | 6.5 | 6.0 | 1 |
| TESTPIN_2P5_03 | 2.5 | 6.0 | 6.0 | 1 |
| TESTPIN_2P5_04 | 2.5 | 6.5 | 5.6 | 1 |
| TESTPIN_2P5_05 | 2.5 | 6.5 | sha | 1 |
| TESTPIN_2P5_06 | 2.5 | 6.5 | shb | 1 |
| TESTPIN_3P5_01 | 3.5 | 6.5 | 6.5 | 4 |
| STUD_3P3_01 (SM20L66621) | 3.3 | 6.5 | 6.5 | 3 |



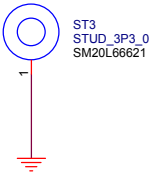
STUD



STUD



STUD



FID
Board Area

- FD1

1 NC, NO CONNECT TO ANY.
- FD2

1 NC, NO CONNECT TO ANY.
- FD3

1 NC, NO CONNECT TO ANY.
- FD4

1 NC, NO CONNECT TO ANY.
- FD5

1 NC, NO CONNECT TO ANY.
- FD6

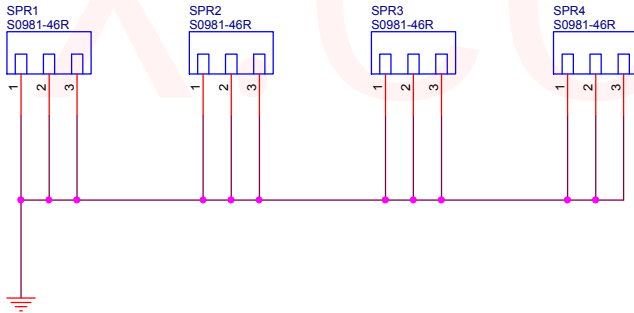
1 NC, NO CONNECT TO ANY.

FID
Component Area

- CF1

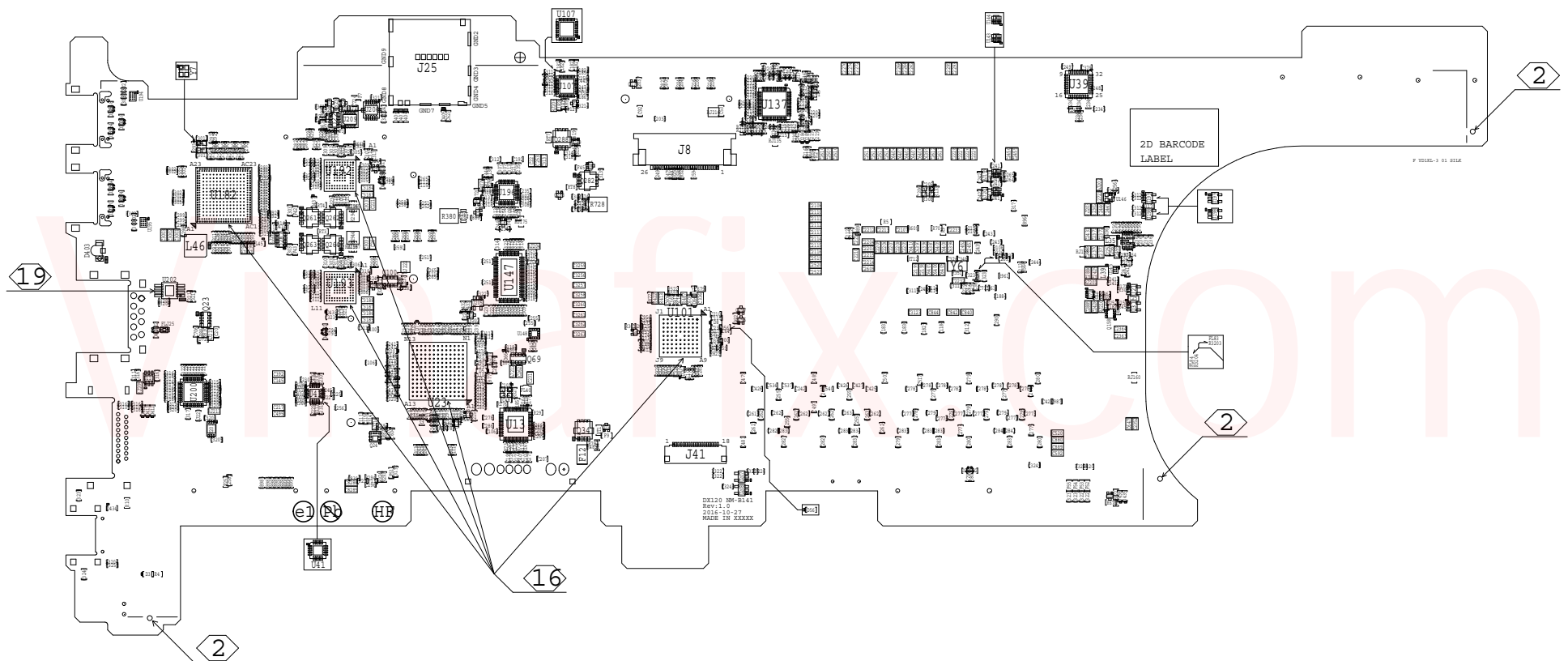
1 NC, NO CONNECT TO ANY.
- CF2

1 NC, NO CONNECT TO ANY.

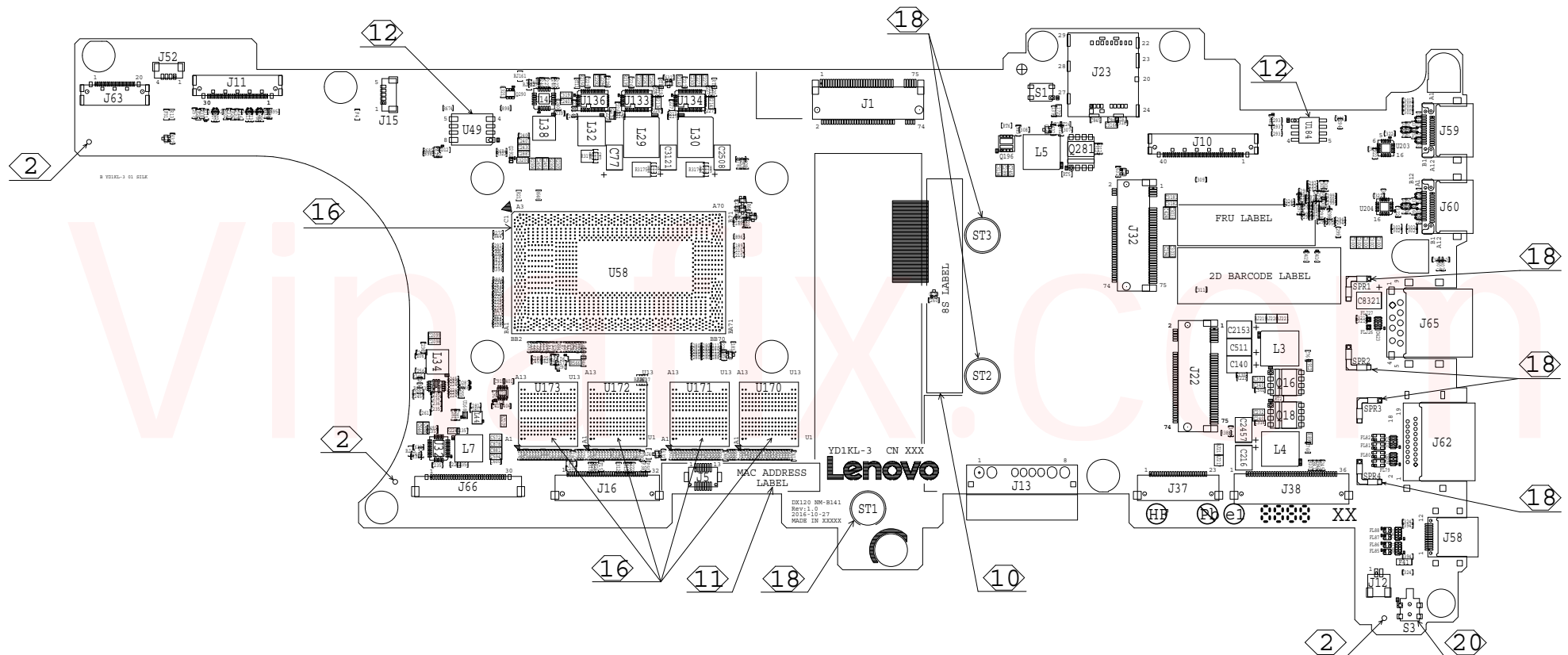



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|---------------------------------|-------------------|--------------------------------|---------------|
| Project Name : Yoda-1 SVT | | Title : PTH FOR SCREW HOLES | |
| Size : C | Document Number : | | Rev : 3.08 |
| Date: Friday, November 11, 2016 | | Sheet : 86 of 86 | |



| Lenovo | | |
|--------|------------|-------|
| Model | YDIKL-3 | SVT |
| Date | 2016/10/28 | Ver 3 |
| Layer | | |



| | | | |
|---|------------|-----|---|
|  | | | |
| Model | YD1KL-3 | SVT | |
| Date | 2016/10/28 | Ver | 3 |
| Layer | | | |

SHEET 3 OF 3

NOTES

1 RAW CARD P/N IS YD1KL-3

② ASSEMBLY FIDUCIAL POINT
REFER TO COMPONENT REPORT

3 UL FLAMMABILITY OF THIS RAW CARD MUST BE UL 94V-0 OR BETTER.
TEMPERATURE CLASS OF THIS RAW CARD IS 130 deg C.

4 WARNING:
PROPER ESD PROCEDURES AND PROTECTION MUST BE IN PLACE WHEREVER CARDS ARE HANDLED.
ELECTROSTATIC DISCHARGES MAY DESTROY MODULES.

5 WARNING:
THE MANUFACTURING PROCESS OF THIS PRINTED CIRCUIT CARD MAY REQUIRE SPECIAL SAFETY
AND/OR HEALTH PRECAUTIONS.

6 CAPACITORS WITH POLARITY ARE AS FOLLOWS.
- BOT C77,C140,C216,C511,C2153,C2457,C2508,C3121,C8321 (TOTAL:9)

7 CONNECTORS SHOULD BE SOLDERED FLUSH WITHIN 0.3mm MAX ON THE SURFACE OF THE CARD.

8 GROUND PADS SHOULD HAVE NO SOLDER.
IN CASE OF SOLDER FROM VIAS WITH OPPOSITE SIDE SOLDERED AND/OR SOLDER ACCIDENTALLY ADHERED,
SUCH SOLDER THICKNESS MUST NOT EXCEED 0.05mm.

9 2,3,10PIN DIODE WITH POLARITY ARE AS FOLLOWS.

2PIN -TOP

D1 D20 D237 D252 D264 D265 D285 D286 D291 D292 D3 D30 D348 D349 D353
D354 D355 D358 D364 D365 D369 D370 D371 D374 D384 D404 D405 D406 D407 D411
D412 D413 D414 D421 D422 D428 D429 D430 D431 D432 D433 D434 D435 D436 D437
D438 D5 D56 D57 D63 D64 D66 D7 D72 D76 D8 (TOTAL:56)

-BOT

D11 D12 D287 D288 D290 D311 D312 D350 D351 D352 D356 D357 D359 D360 D361
D362 D363 D366 D367 D368 D372 D373 D375 D376 D377 D378 D379 D415 D416 D420
D424 D425 D426 D427 D6 (TOTAL:35)

3PIN -TOP

D19 D381 D403 (TOTAL:3)

10PIN -BOT

D346 D347 D409 D410 D423 (TOTAL:5)

⑩ APPLY 8S LABEL TO THE INDICATED AREA.
THE BARCODE HEADER : XXXXX (ASSIGNED BY NB ECAT PE)
NOTE : IDENTIFICATION OF FRU P/N IS NOT REQUIRED AT THIS PLANAR LEVEL.

⑪ PRINT 2 MAC LABELS BY USING CODE 39 AND APPLY 1 LABEL TO THE INDICATED AREA.
ALSO ATTACH OTHER ONE LABEL ON THE PLANAR.
LOCATION WILL BE SPECIFIED BY NB ECAT PE.
MAC ADDRESS : XX XX XX XX XX XX

⑫ U49,U184 (BLANK SPI FLASH) SHOULD BE PROGRAMMED. (REFER TO NB ECAT PE)

13 COUNTRY OF ORIGIN MARKING SHOULD BE APPLIED IN THE BARCODE LABEL OR WITH OTHER WAY.
COUNTRY OF ORIGIN : ASSEMBLY MADE IN XXXXX.
(WHERE XXXXX IS A FULL NAME OF THE ASSEMBLY COUNTRY)

14 PART SELECTION RULE.
GENERAL INFORMATION.
ON ONE LINE BOM ITEM WITH MULTIPLE USAGE QUANTITY.
ECAT SHOULD HAVE SAME SUPPLIER COMPONENTS ON ONE PLANAR.

15 FOLLOW VISUAL INSPECTION CRITERIA FOR MOBILE PLANAR (PN=39T0261)

⑬ APPLY GLUE TO U23 U58 U101 U170 U171 U172 U173 U182 U192 U193 (REFER TO NB ECAT PE)

17 DO NOT APPLY ADHESIVE TO ANY INDUCTORS.

⑮ SOLDER STUD ST1,ST2,ST3 (TOTAL:3)
EMI CLIP SPR1,SPR2,SPR3,SPR4 (TOTAL:4)

⑯ PAD PATTERN OF U202 IS DESIGNED FOR BOTH MSOP8 AND MSOP8 W/EP PACKAGES.
SOLDER ON CENTER PAD UNDER MSOP8 PACKAGE IS ACCEPTED BY NB ECAT PE.

U202 CENTER PAD



⑰ APPLY SIDE-FILL GLUE TO S3.(MATERIAL WILL BE SPECIFIED BY NB ECAT PE)

| | | | |
|--------|------------|-----|---|
| Lenovo | | | |
| Model | YD1KL-3 | SVT | |
| Date | 2016/10/28 | Ver | 3 |
| Layer | | | |