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# COMET DIS

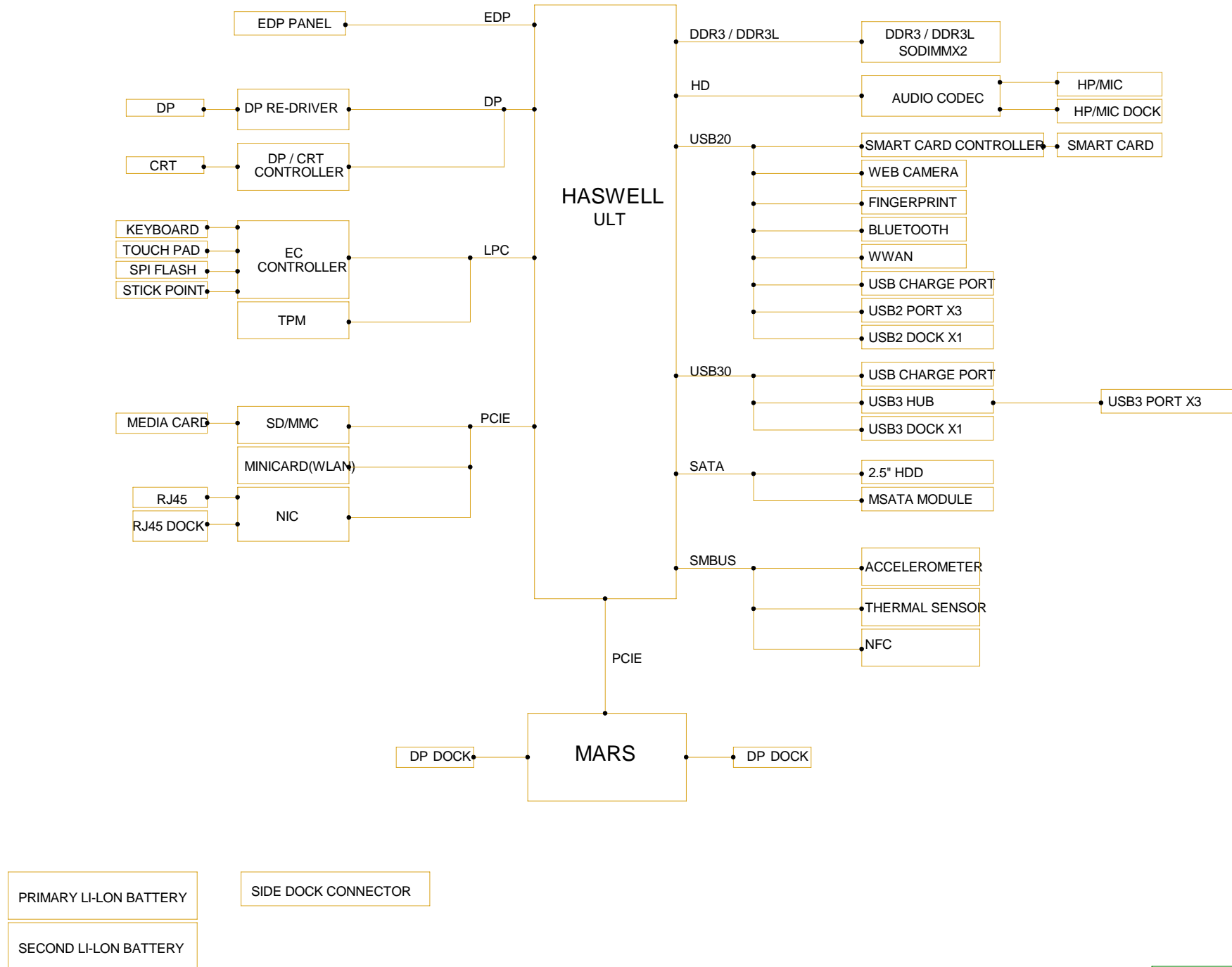
## SI1 BUILD

2012.11.30

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| 21-OCT-2002 |            |     |
| DATE        | CHANGE NO. | REV |

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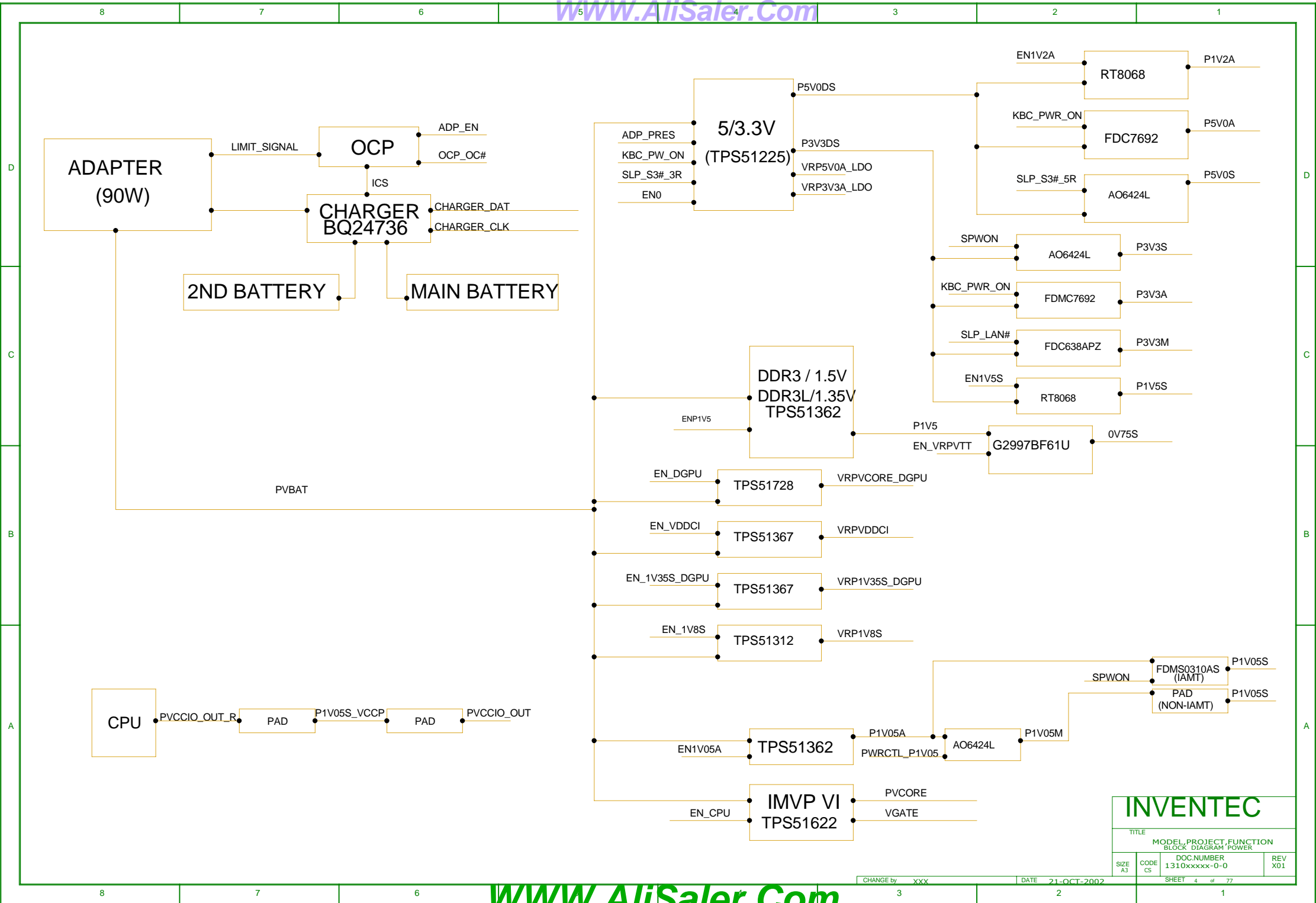
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| DRAWER               | EE       | DATE       | POWER    | DATE                      | TITLE                    |          |                          |          |  |
| DESIGN               | isa chen | 2012/10/24 | isa chen | 2012/10/24                | MODEL, PROJECT, FUNCTION |          |                          |          |  |
| CHECK                | isa chen | 2012/10/24 | isa chen | 2012/10/24                | COMET                    |          |                          |          |  |
| RESPONSIBLE          | isa chen | 2012/10/24 | isa chen | 2012/10/24                |                          |          |                          |          |  |
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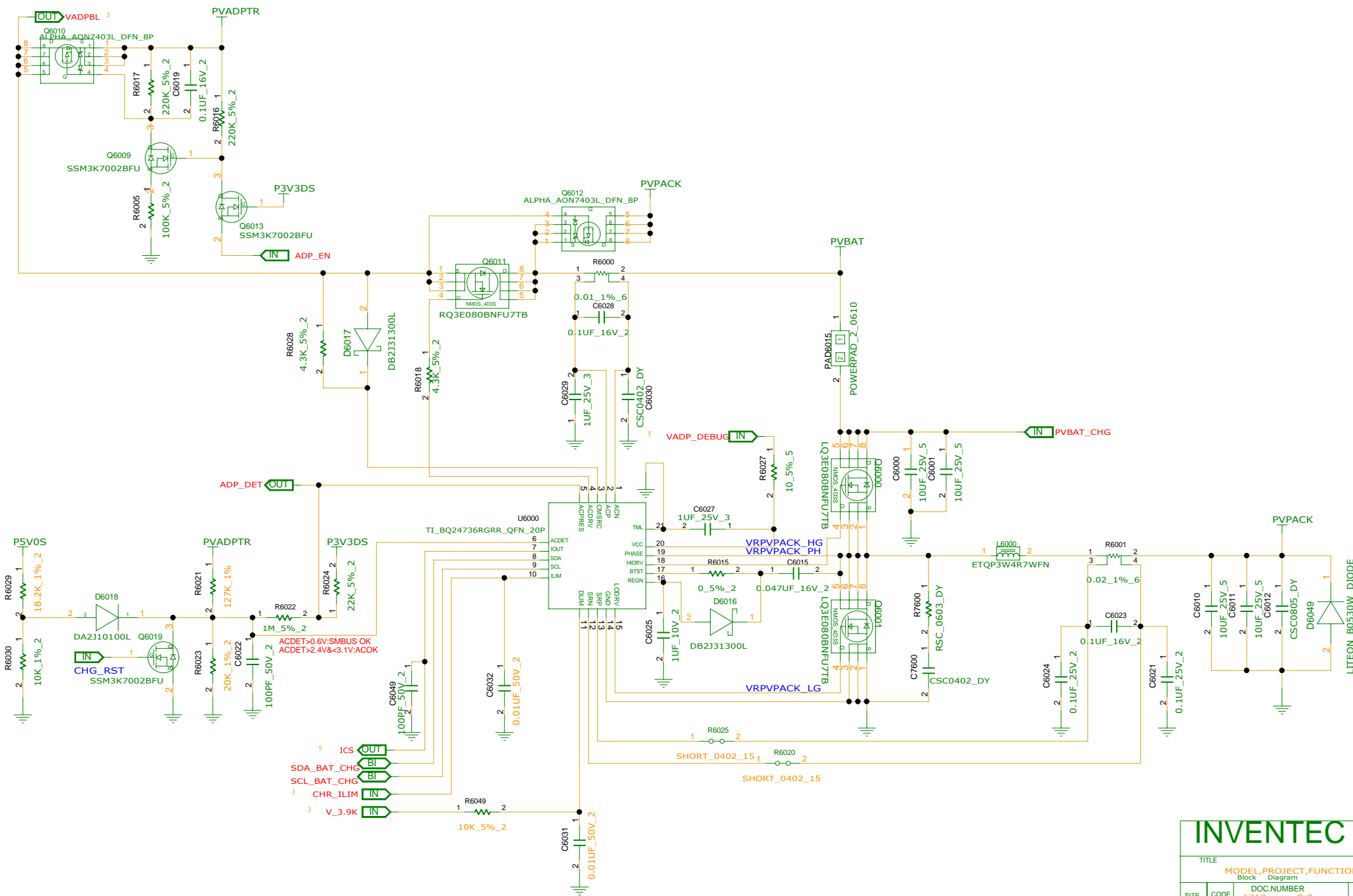
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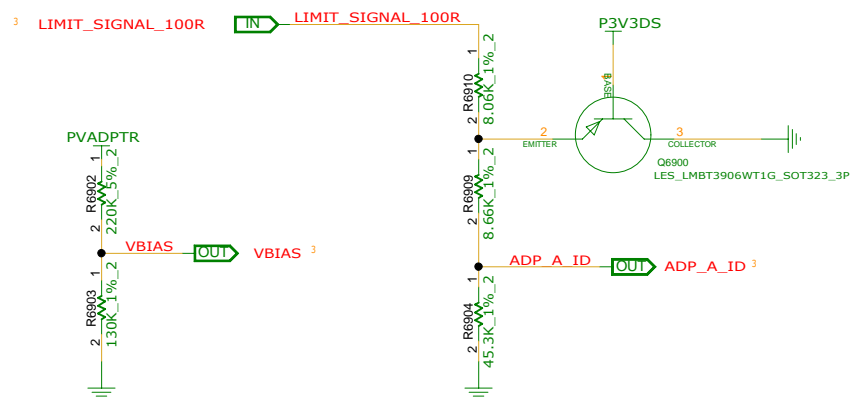


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| MODEL PROJECT FUNCTION BLOCK DIAGRAM POWER |      |              |     |
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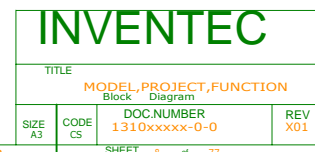


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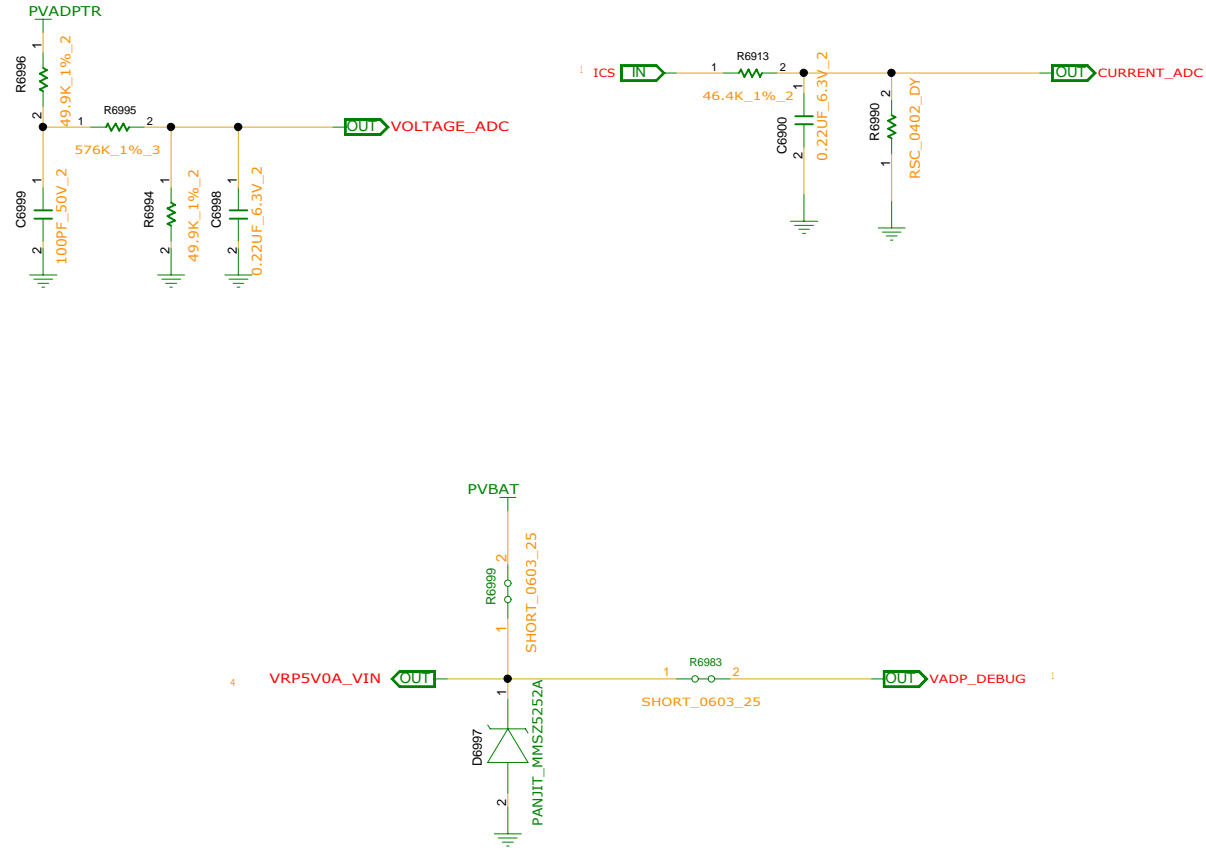




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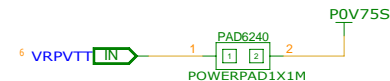


INVENTEC

TITLE  
MODEL,PROJECT,FUNCTION  
Block Diagram

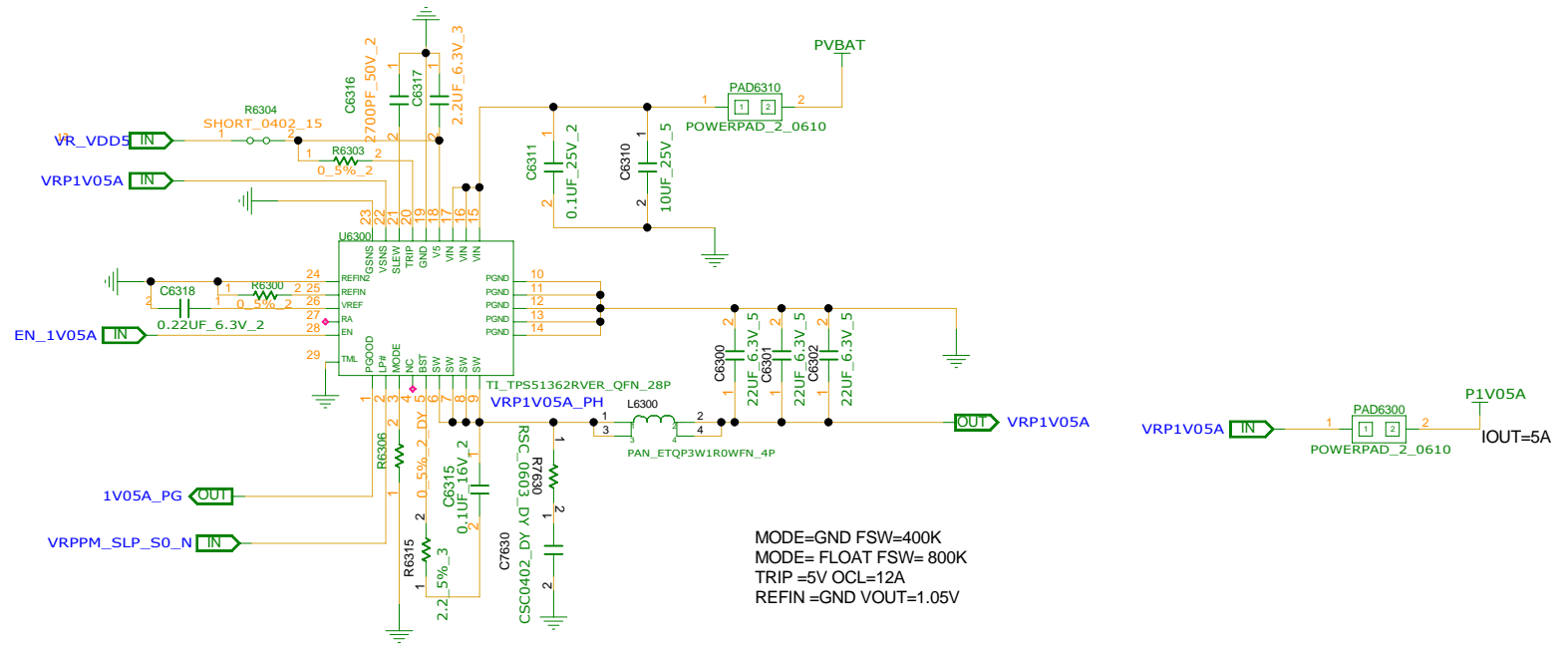
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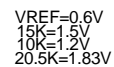
MODE= OPEN FSW= 800K  
MODE= GND FSW= 400K  
TRIP =5V OCL=12A  
REFIN =GND VOUT=1.05V  
VREF=2V  
 $V_{OUT}=(107K)X2V/(107K+51K)=1.354V$

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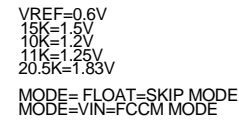


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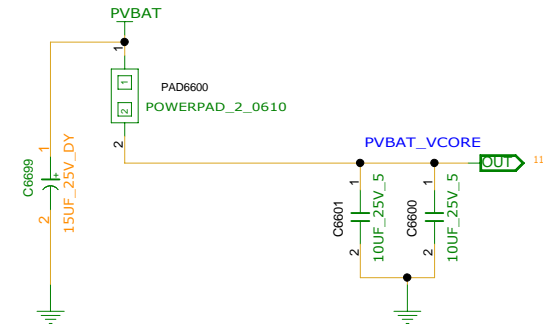
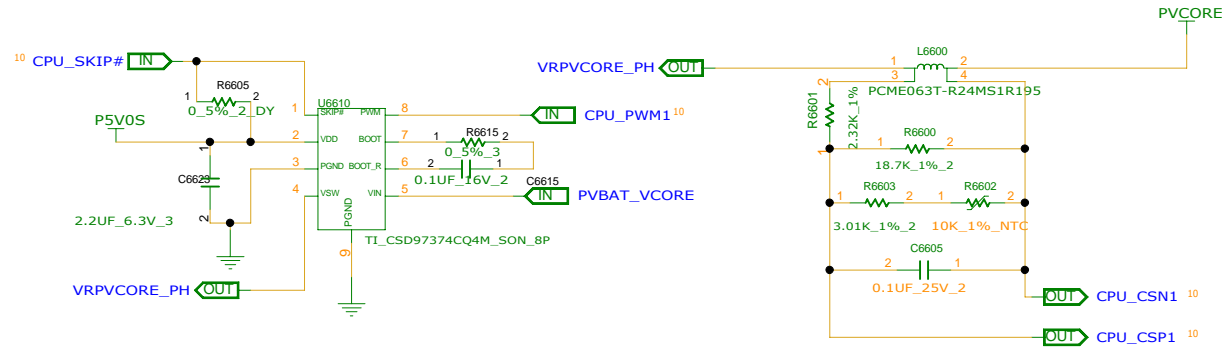


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TITLE  
MODEL,PROJECT,FUNCTION  
Block Diagram

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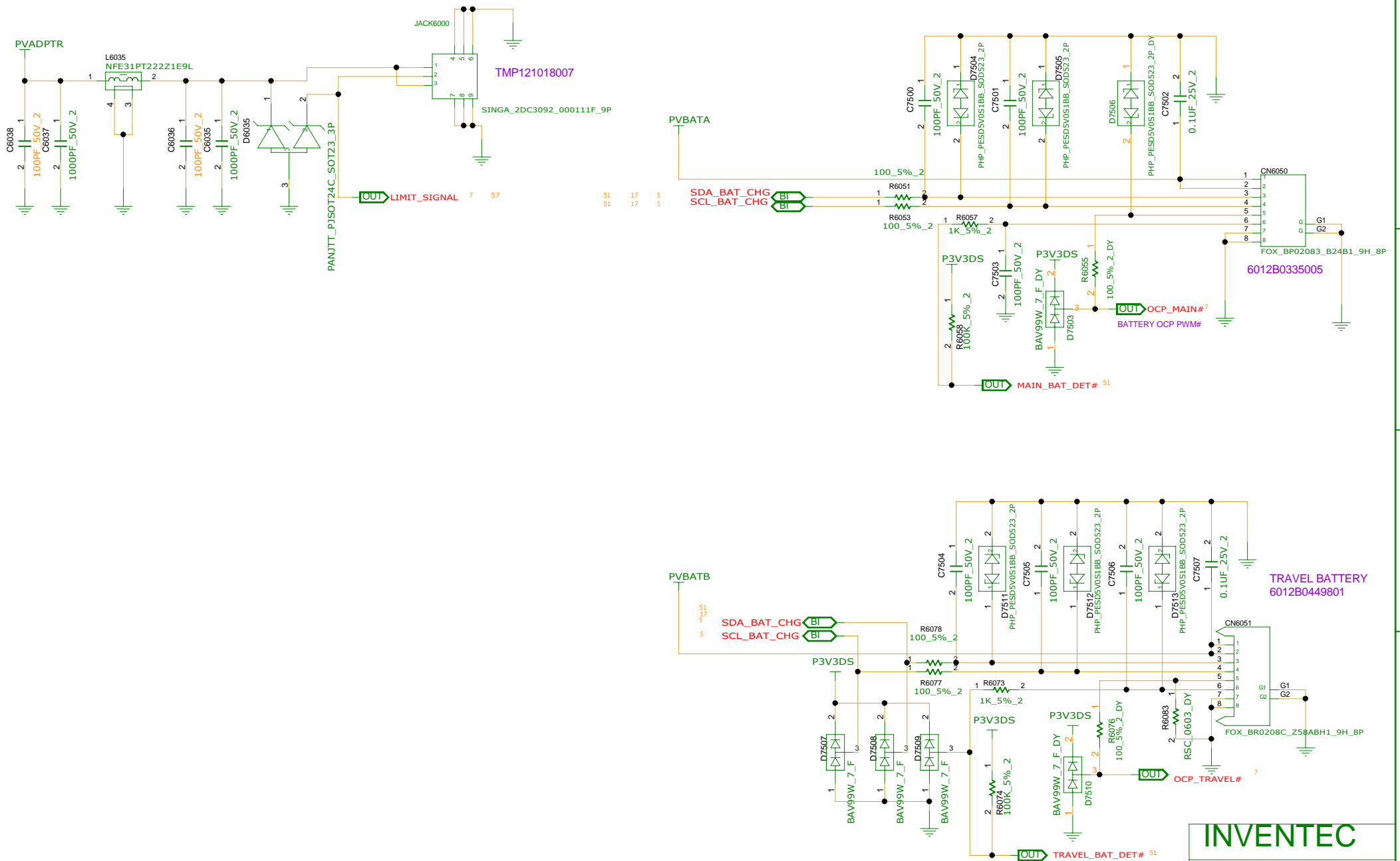
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| IAMT     | UN-INSTALL | INSTALL    | INSTALL    | INSTALL    | INSTALL    | INSTALL    | INSTALL    |



INVENTEC

|   |            |                             |            |
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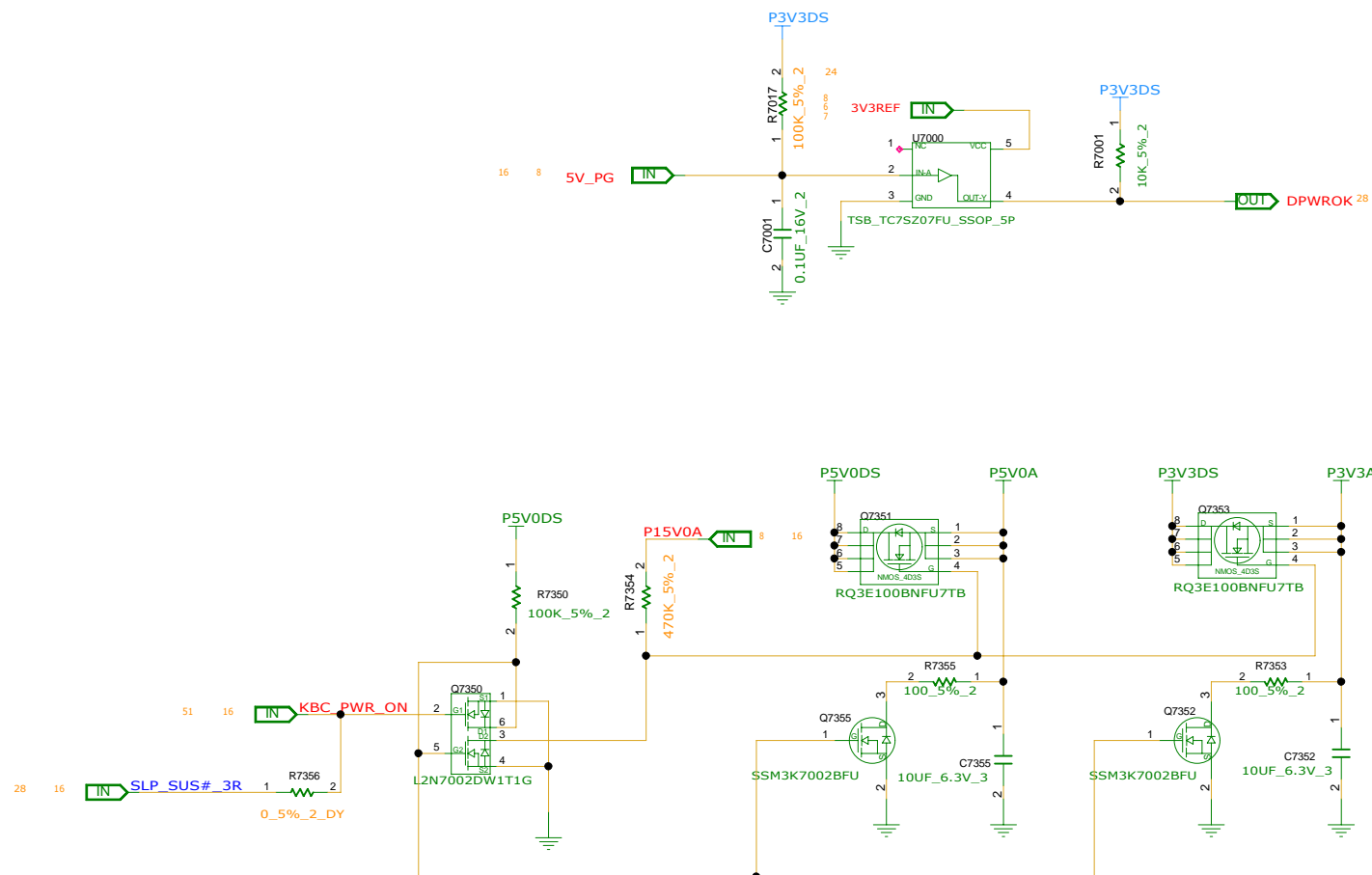


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TITLE  
MODEL, PROJECT, FUNCTION

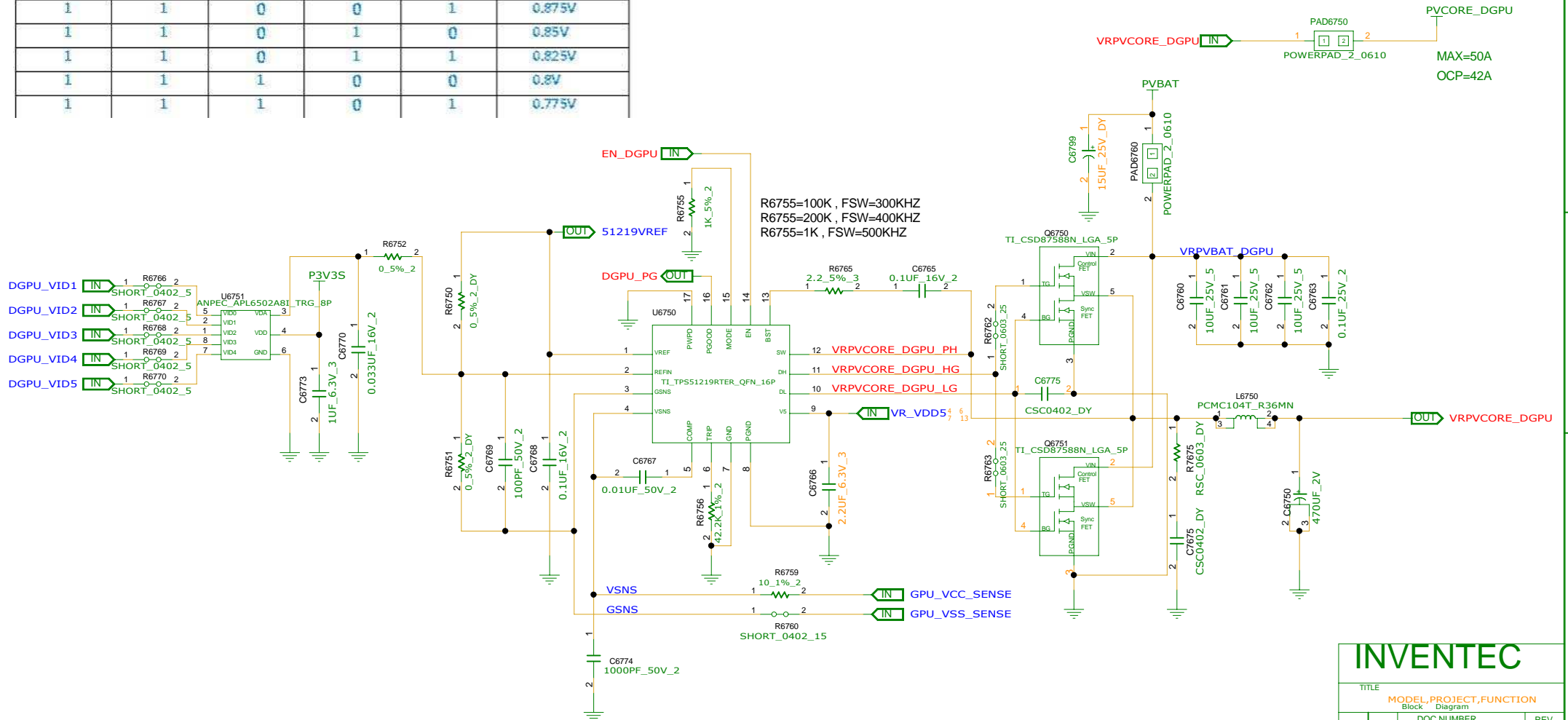
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X01

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|     | C6762   | C6752   | L6750                          | Q6751   | R6756                    |
|-----|---------|---------|--------------------------------|---------|--------------------------|
| 17W | OPEN    | OPEN    | ETQP4LR36AFM<br>6014B0164501   | OPEN    | 80.6K_1%<br>6013A0072901 |
| 25W | install | install | PCMC104T-R36MN<br>6014B0024003 | install | 42.2K_1%<br>6013A0017701 |



# INVENTEC

| TITLE                                    | MODEL PROJECT FUNCTION                   |
|--|--|
| 1. <b>Project Overview</b>               | 1. <b>Project Overview</b>               |
| 2. <b>Project Objectives</b>             | 2. <b>Project Objectives</b>             |
| 3. <b>Project Scope</b>                  | 3. <b>Project Scope</b>                  |
| 4. <b>Project Organization</b>           | 4. <b>Project Organization</b>           |
| 5. <b>Project Schedule</b>               | 5. <b>Project Schedule</b>               |
| 6. <b>Project Budget</b>                 | 6. <b>Project Budget</b>                 |
| 7. <b>Project Risk Management</b>        | 7. <b>Project Risk Management</b>        |
| 8. <b>Project Communication</b>          | 8. <b>Project Communication</b>          |
| 9. <b>Project Monitoring and Control</b> | 9. <b>Project Monitoring and Control</b> |
| 10. <b>Project Closure</b>               | 10. <b>Project Closure</b>               |

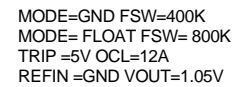
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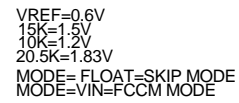
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INVENTEC

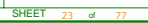
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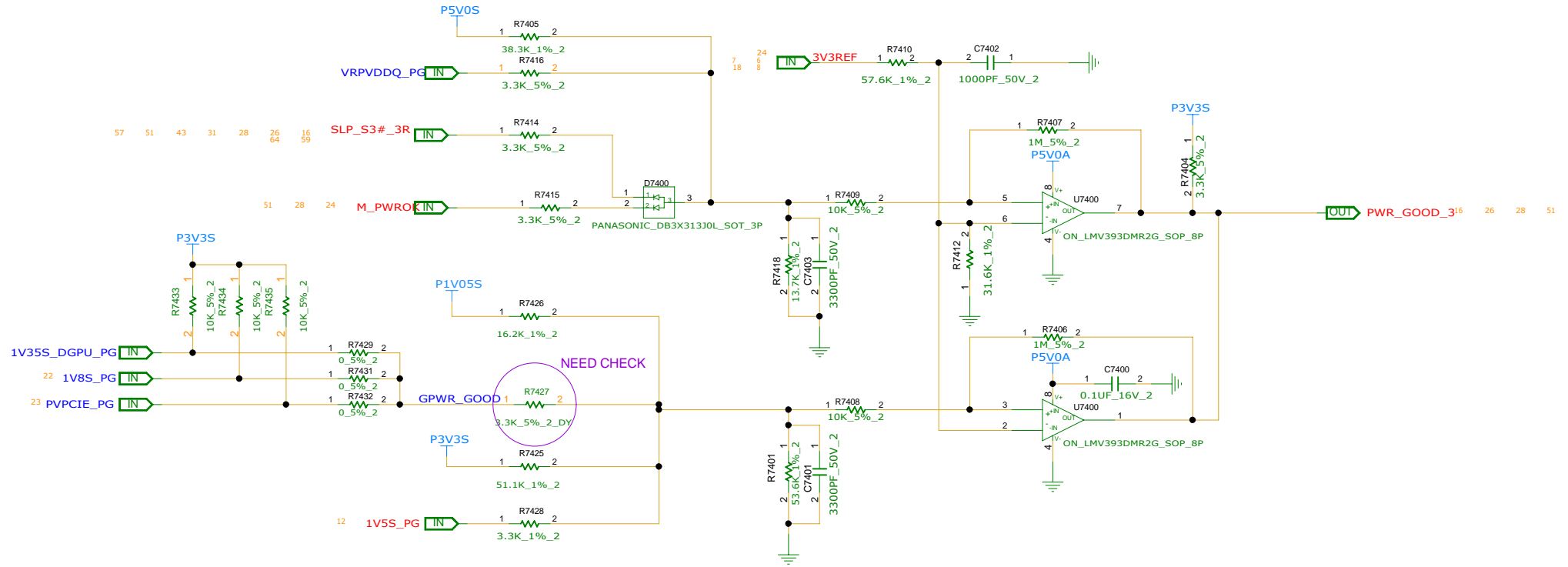
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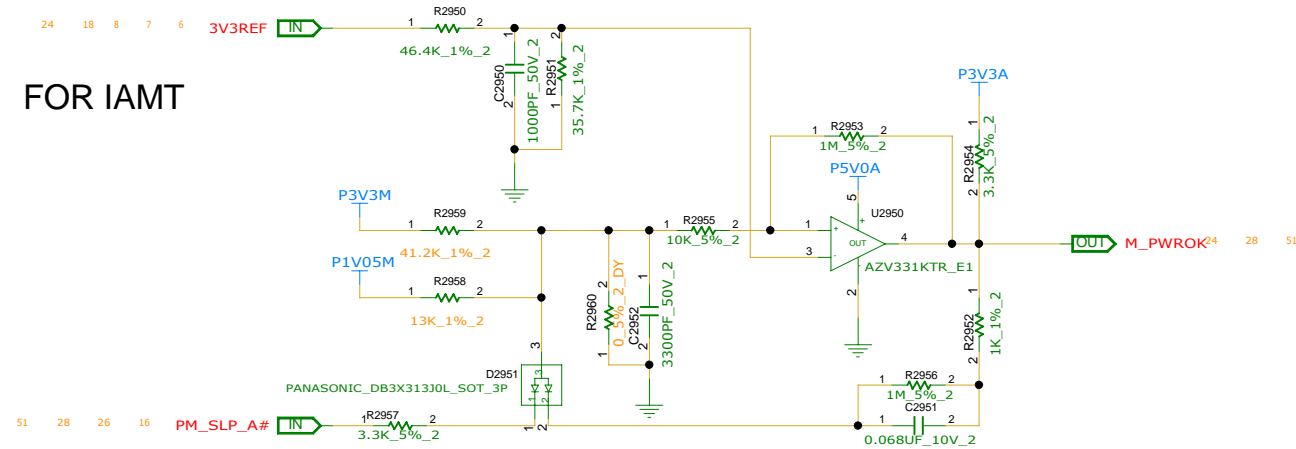
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# REFERENCE NUMER : 7400~7450



## FOR IAMT



REFERENCE NUMER : 2950~2999

INVENTEC

| TITLE                                      |            |                             |            |
|--|------------|-----------------------------|------------|
| MODEL PROJECT FUNCTION<br>POWER (SEQUENCE) |            |                             |            |
| SIZE<br>A3                                 | CODE<br>CS | DOC NUMBER<br>1310xxxxx-0-0 | REV<br>X01 |



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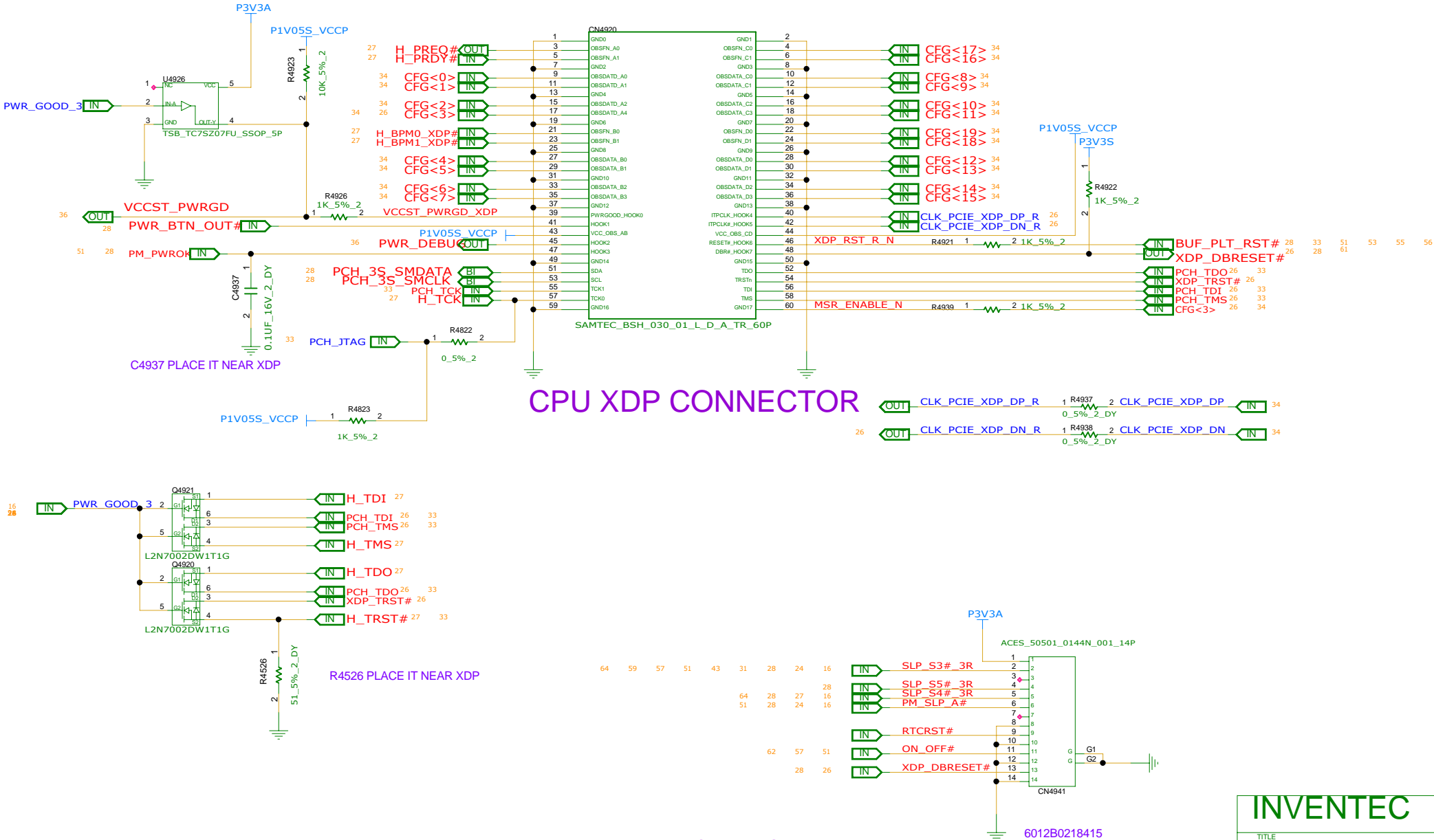
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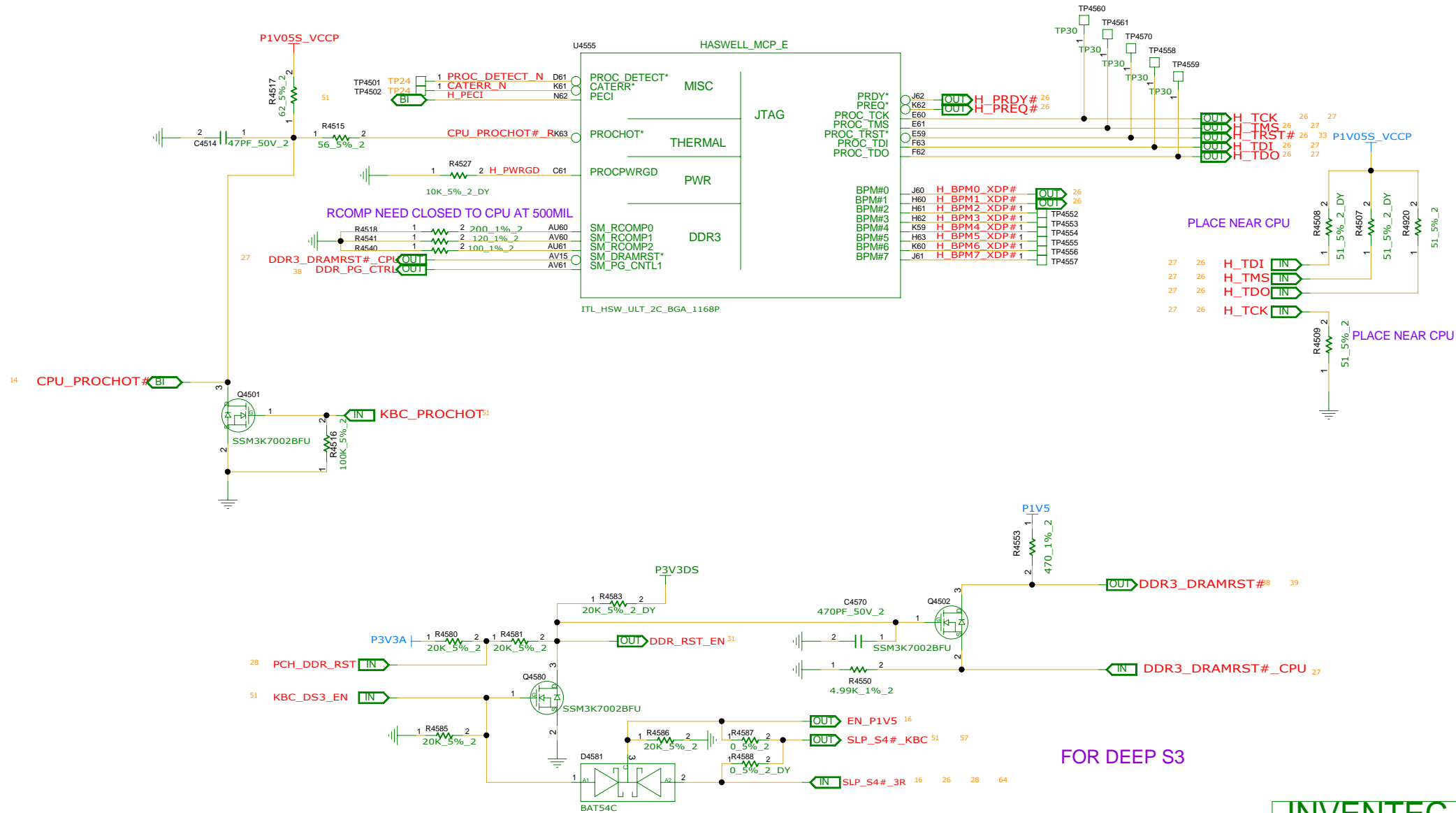
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# CPU XDP CONNECTOR



| INVENTEC               |      |               |     |
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| TITLE                  |      |               |     |
| MODEL PROJECT,FUNCTION |      |               |     |
| XDP & ME CONN          |      |               |     |
| SIZE                   | CODE | DOC NUMBER    | REV |
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REFERENCE:4500~4949

INVENTEC

| TITLE                  |      |               |     |
|------------------------|------|---------------|-----|
| MODEL PROJECT,FUNCTION |      |               |     |
| MCP1-MISC              |      |               |     |
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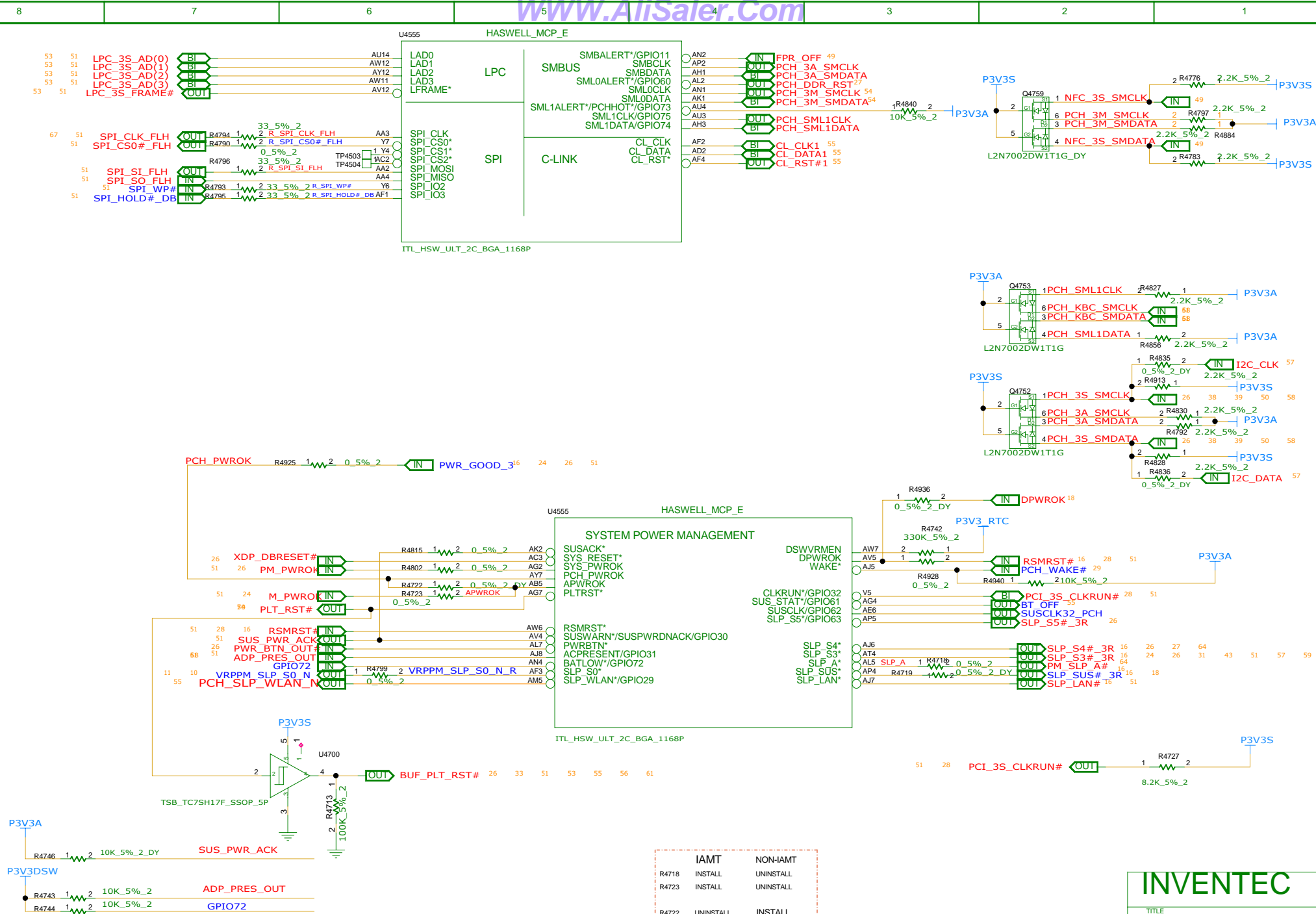
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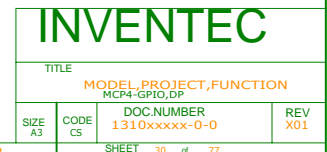
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REFERENCE:4500~4949

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| MODEL PROJECT FUNCTION         |      |               |     |
| MCP2-SPI,SMBUS,SYSTEM SRQUENCE |      |               |     |
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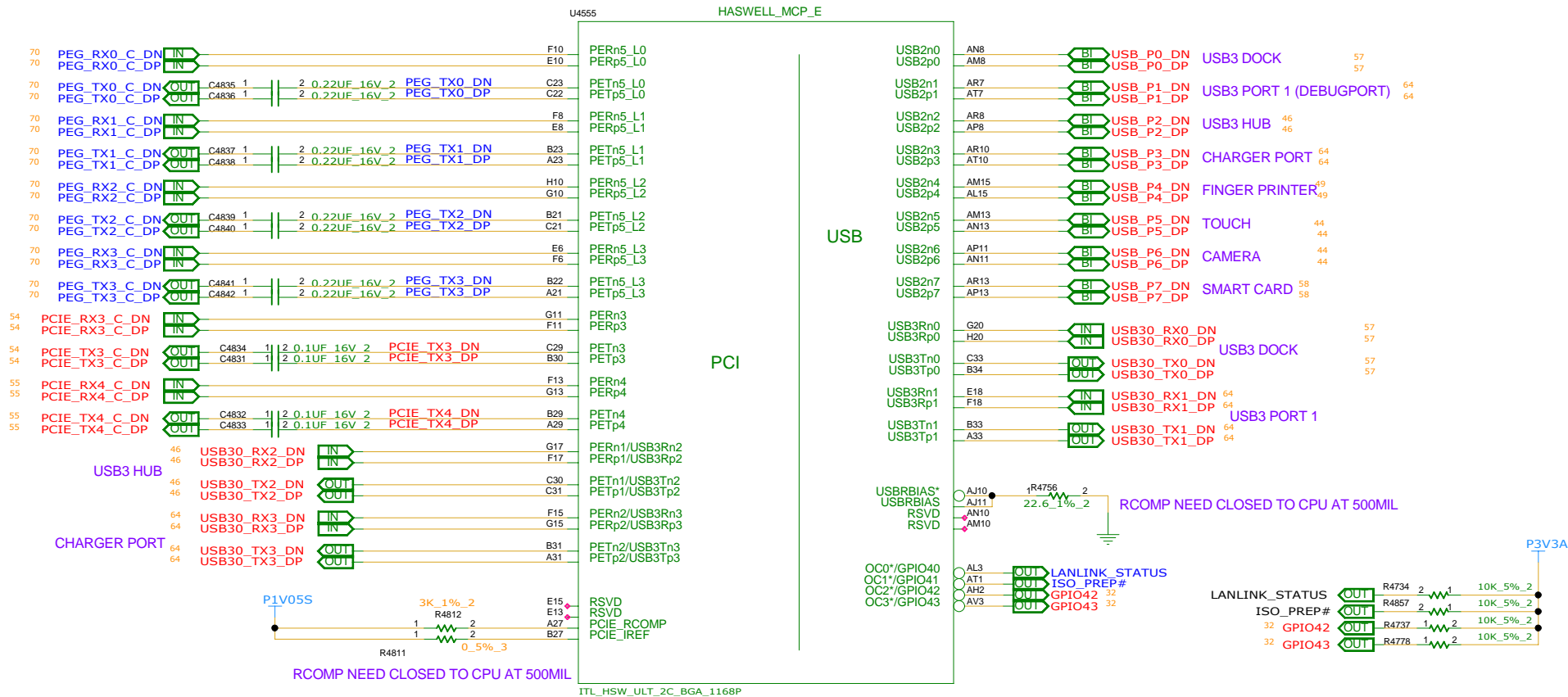
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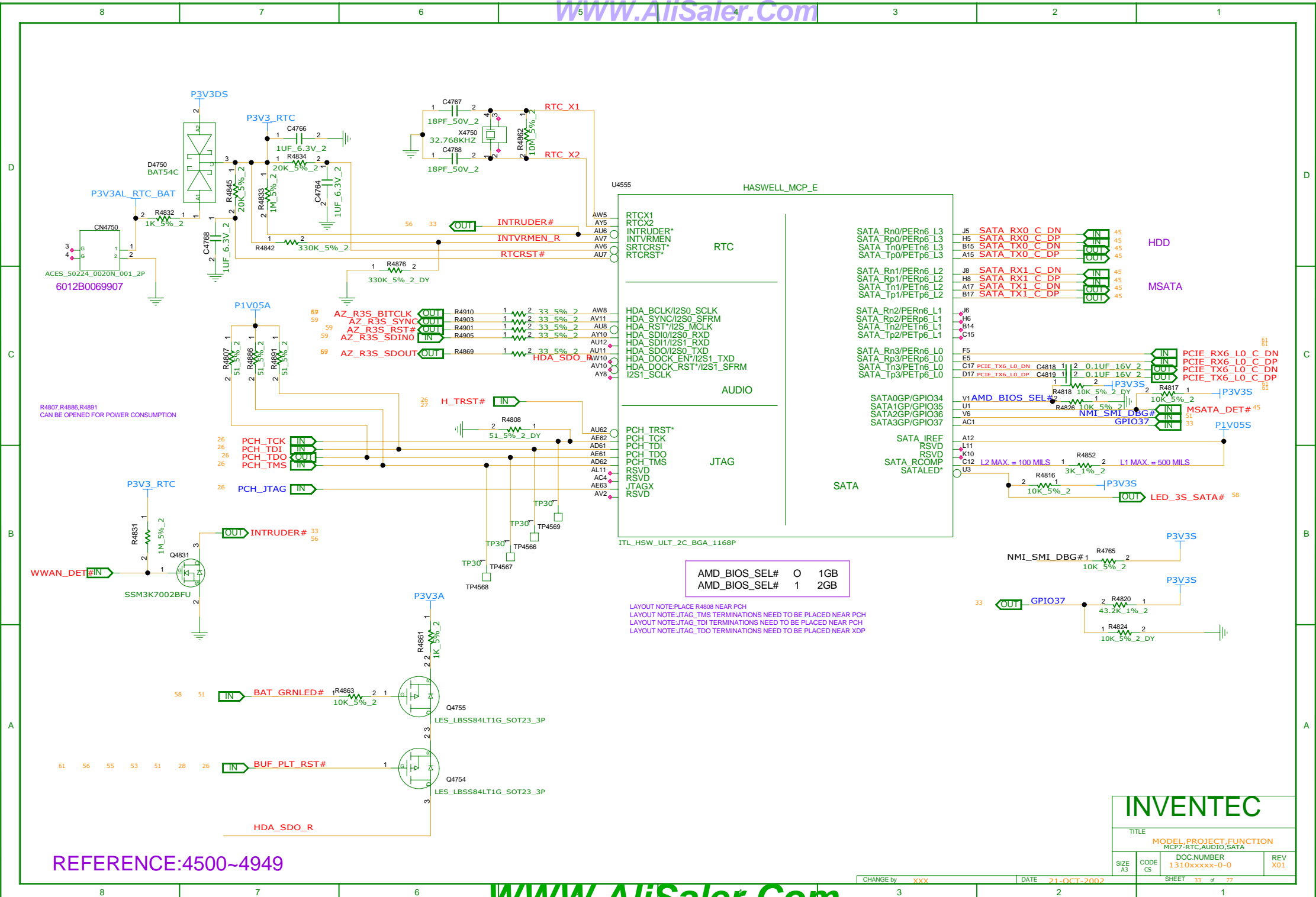


REFERENCE:4700~4949

INVENTEC

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| MCP6-PCIE,USB          |      |               |     |
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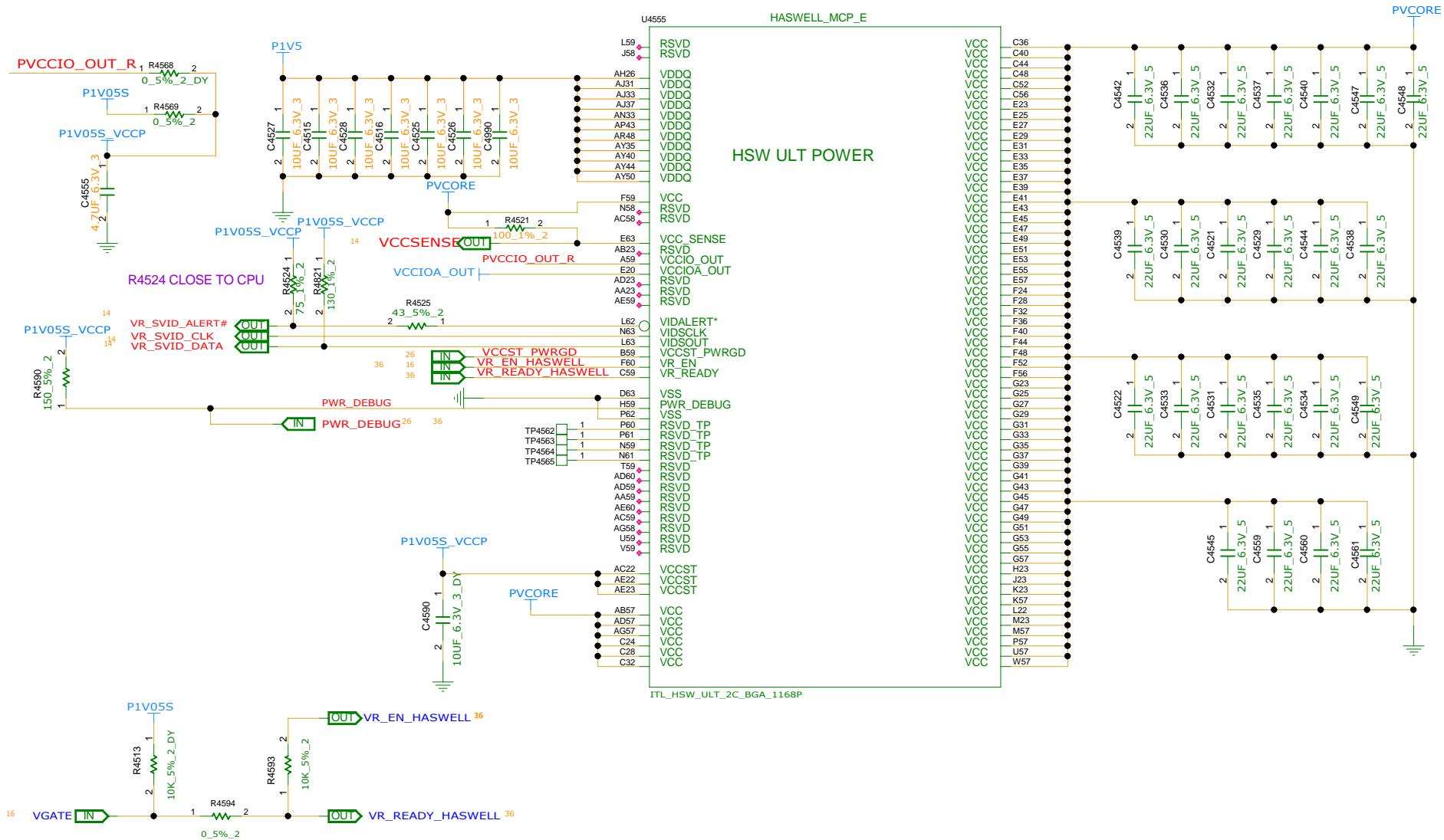


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| TITLE                  |      |              |          |
| MODEL PROJECT FUNCTION |      |              |          |
| MCP7-RTC,AUDIO,SATA    |      |              |          |
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# INVENTEC

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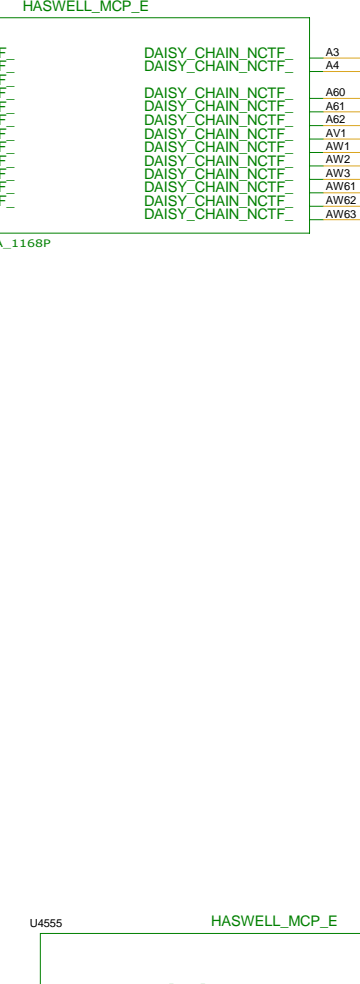
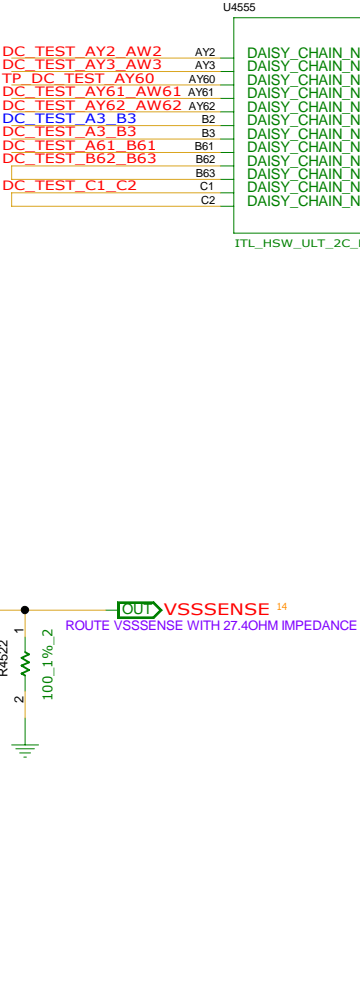
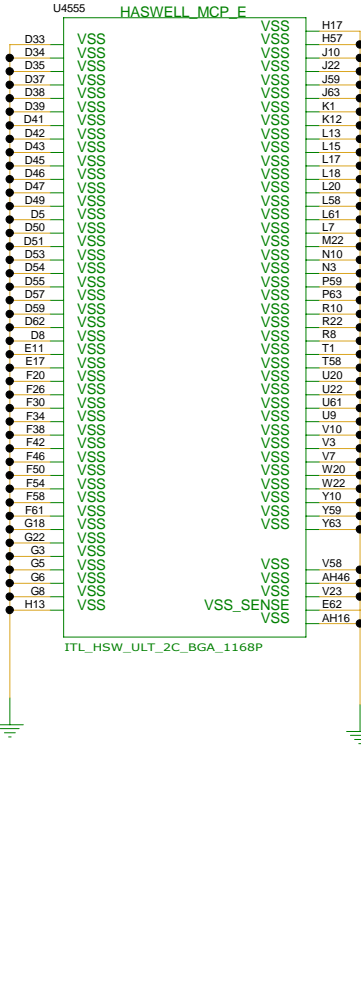
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REFERENCE:4500~4949

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| MODEL PROJECT FUNCTION        |      |               |     |
| MCP11-GND,DAISY_CHAIN,RESERVE |      |               |     |
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| TITLE                                   |            |                             |            |
| MODEL,PROJECT,FUNCTION<br>DDR3_SO-DIMM0 |            |                             |            |
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INVENTEC

TITLE  
MODEL PROJECT FUNCTION  
DPB DEMUX1 TO DP

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|------------|------------|-----------------------------|------------|
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RESERVED

INVENTEC

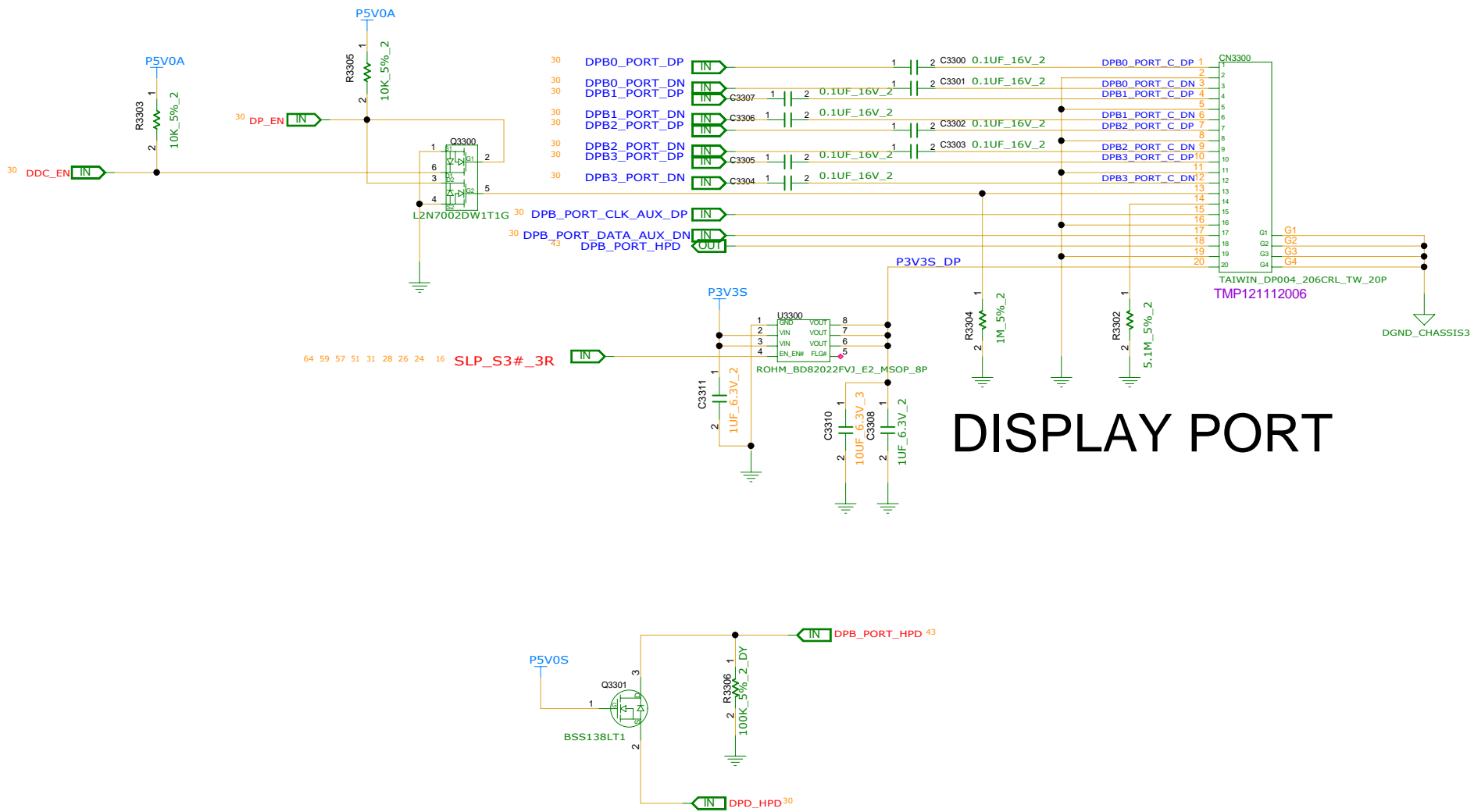
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MODEL PROJECT FUNCTION  
DPC DEMUX2 TO VGA

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INVENTEC

TITLE MODEL PROJECT,FUNCTION

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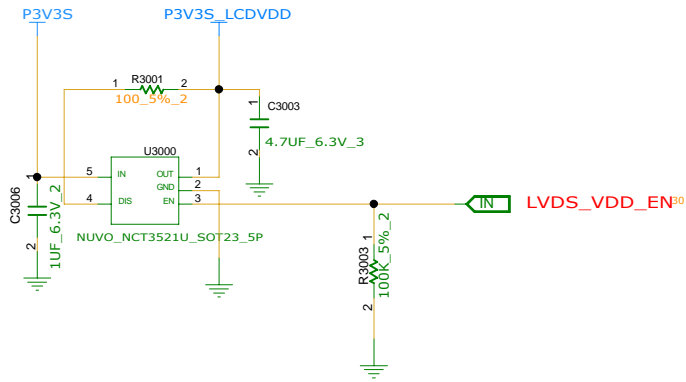
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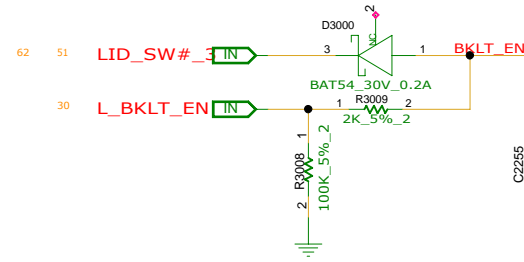
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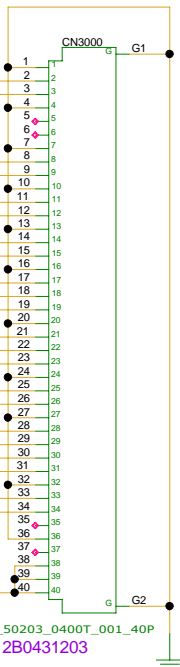
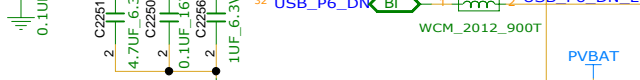
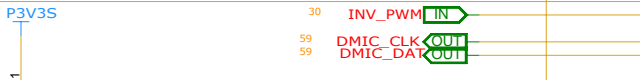
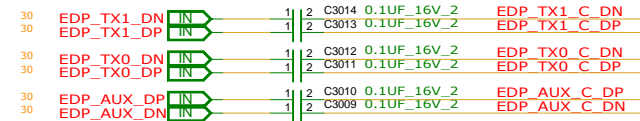
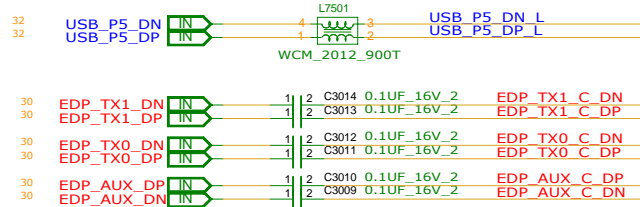
A



CHECK IF TOUCH PANEL NEED OTHER POWER RAIL



25-34 WEBCAM  
35-36 LOGO LIGHT



INVENTEC

REFERENCE NUMBER:3000~3049

| TITLE                                  |      |               |     |
|--|------|---------------|-----|
| MODEL PROJECT,FUNCTION<br>LCM & WEBCAM |      |               |     |
| SIZE                                   | CODE | DOC NUMBER    | REV |
| A3                                     | CS   | 1310xxxxx-0-0 | X01 |
| SHEET 44 of 77                         |      |               |     |

CHANGE by XXX DATE 21-OCT-2002



D

C

B

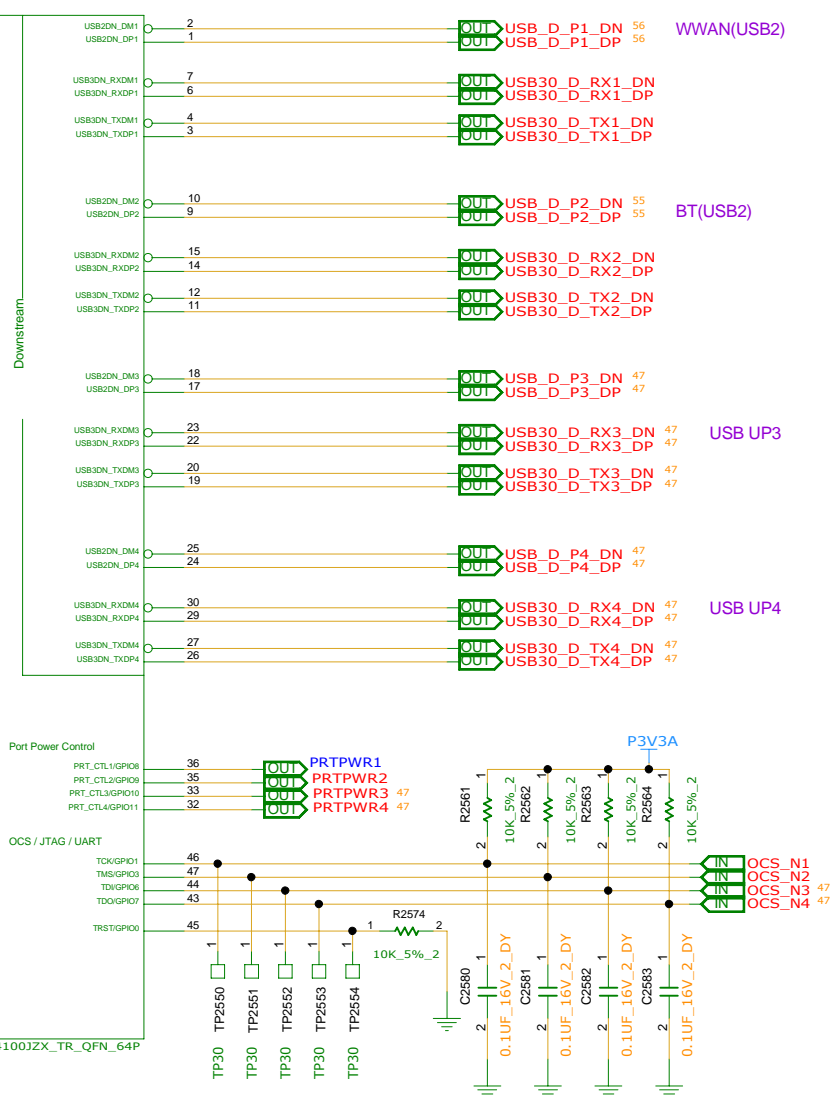
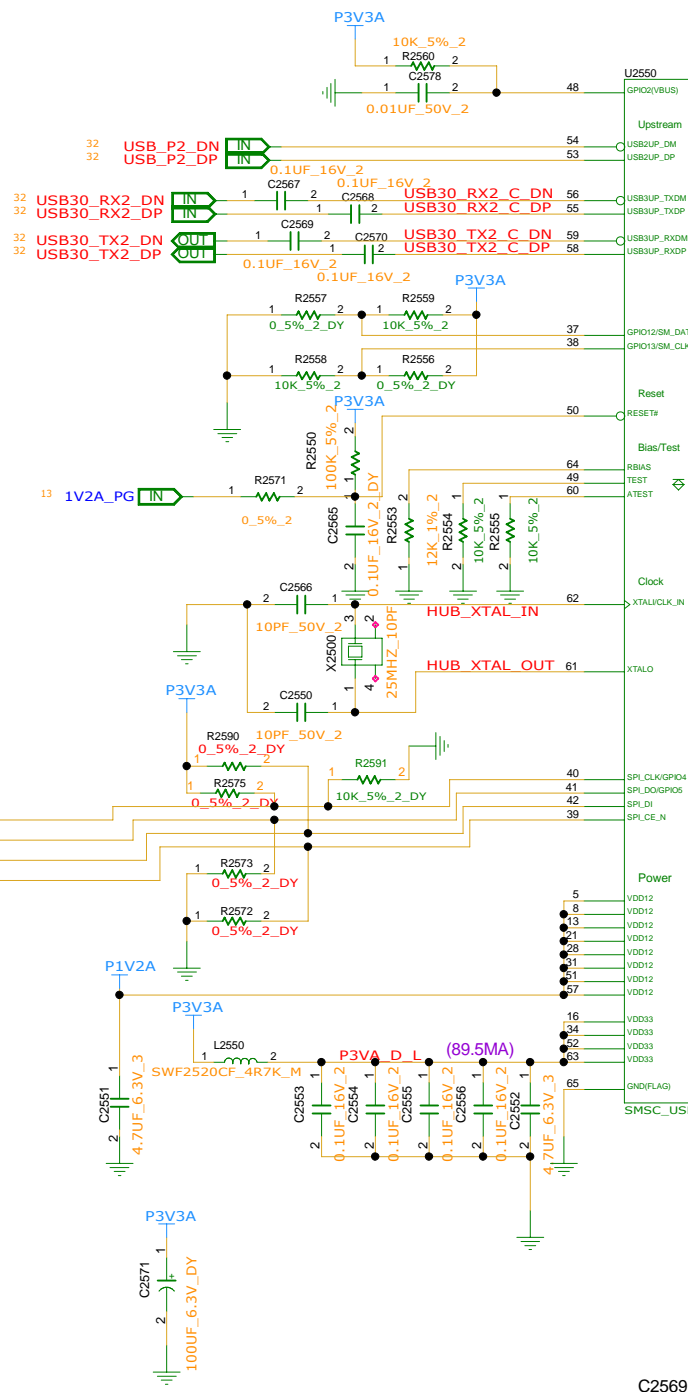
A

D

C

B

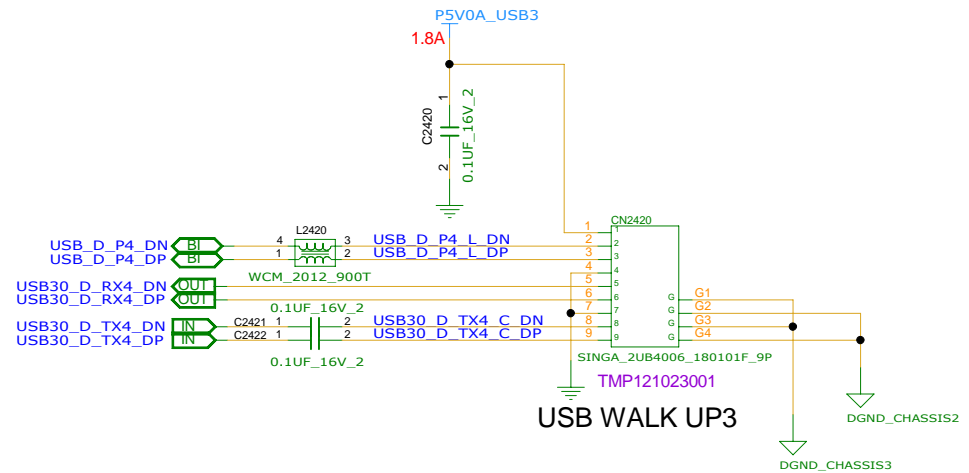
A



REF  
2550~2599

|   |            |                             |            |
|---|------------|-----------------------------|------------|
| INVENTEC                                      |            |                             |            |
| TITLE<br>MODEL PROJECT FUNCTION<br>USB3.0 HUB |            |                             |            |
| SIZE<br>A3                                    | CODE<br>CS | DOC NUMBER<br>1310xxxxx-0-0 | REV<br>X01 |
| SHEET 46 of 77                                |            |                             |            |

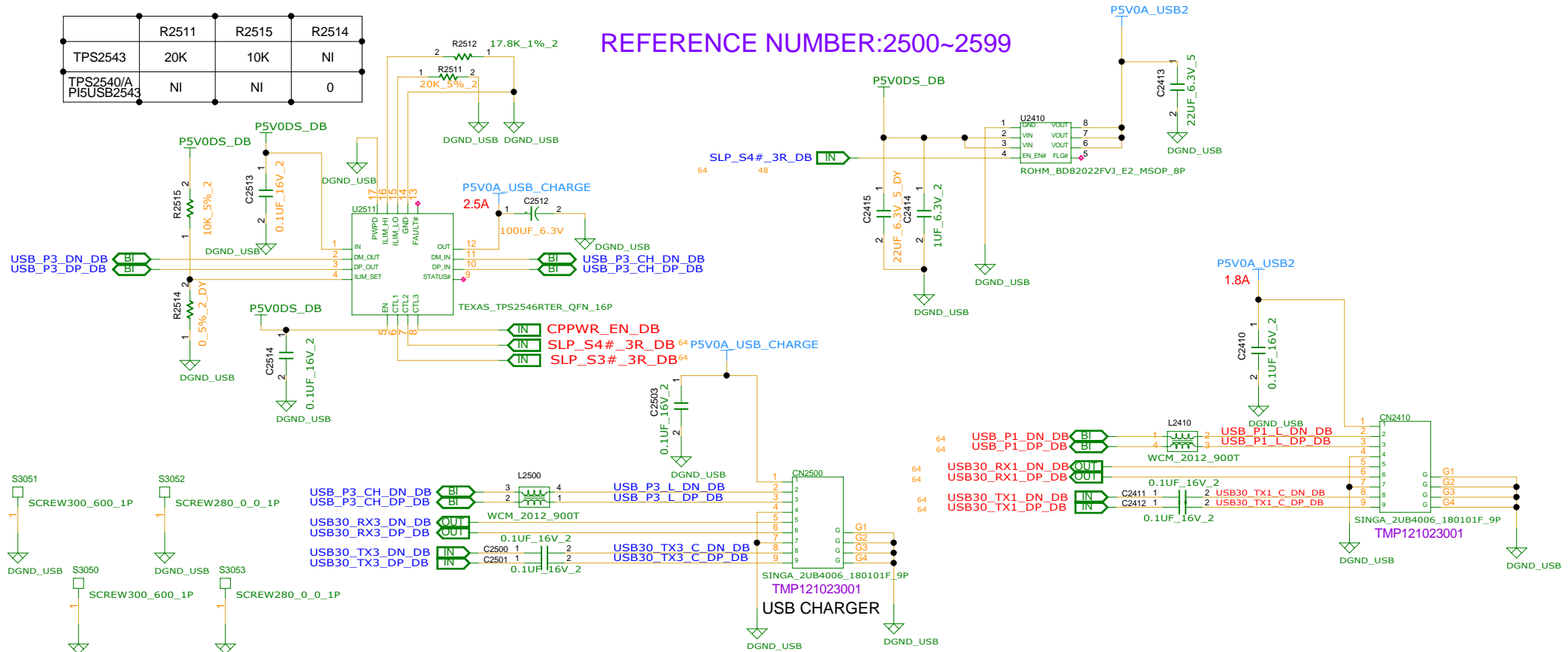
C2569 RESEVE FOR THAT IF USB3.0 SSC FAIL



# INVENTEC

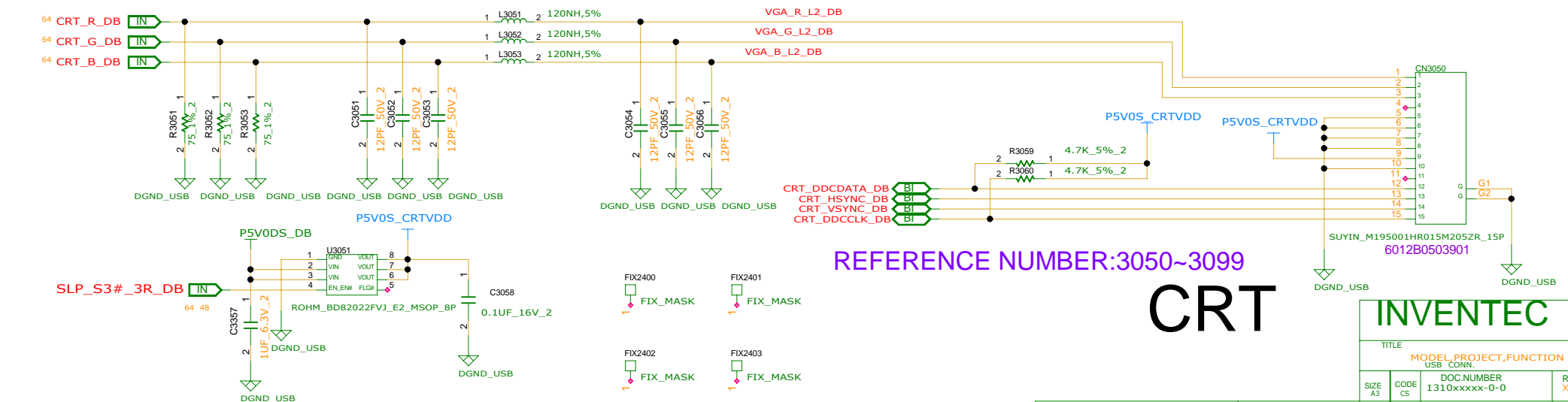
|           |     |      |             |
|-----------|-----|------|-------------|
| CHANGE by | XXX | DATE | 21-OCT-2002 |
|-----------|-----|------|-------------|

REFERENCE NUMBER:2500~2599



REFERENCE NUMBER:3050~3099

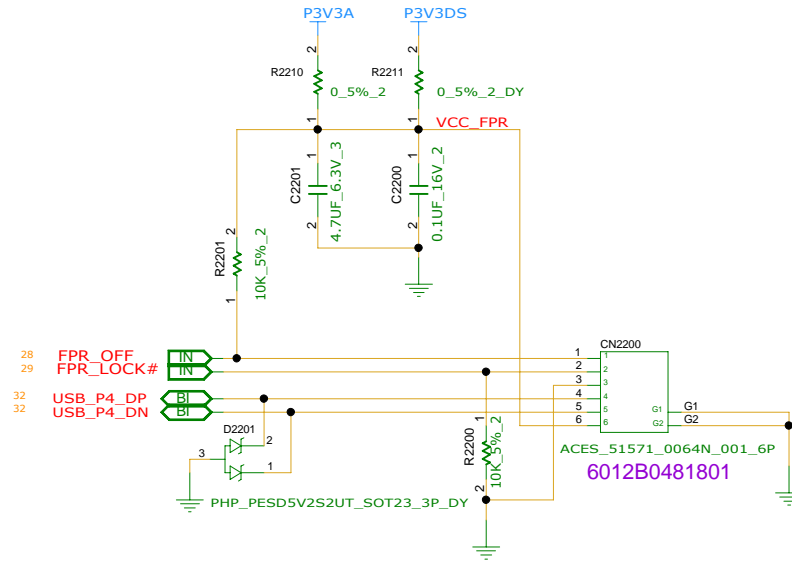
CRT



INVENTEC

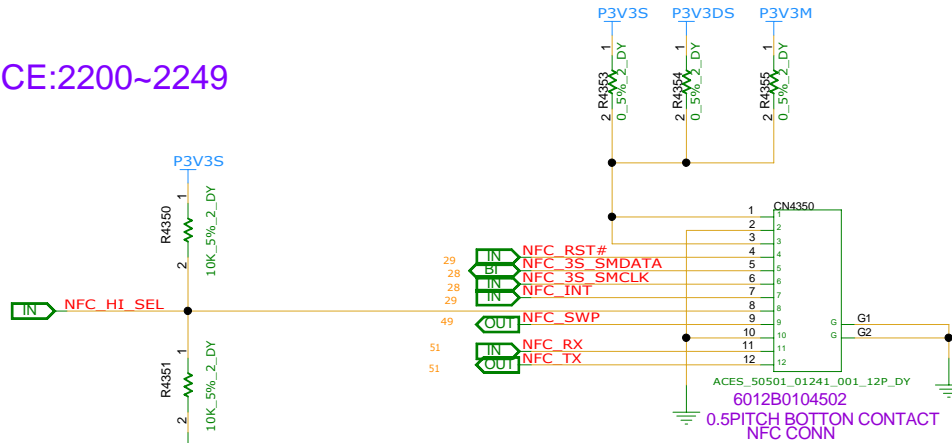
| TITLE                  |      |              |     |
|------------------------|------|--------------|-----|
| MODEL PROJECT,FUNCTION |      |              |     |
| USB CONN.              |      |              |     |
| SIZE                   | CODE | DOC NUMBER   | REV |
| A3                     | CS   | 1310xxxx-0-0 | X01 |
| SHEET 48 of 77         |      |              |     |



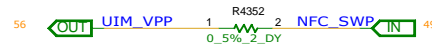


FINGER PRINT CONN

REFERENCE:2200~2249



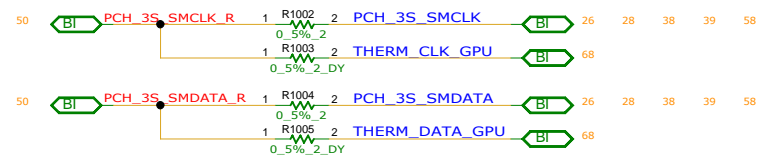
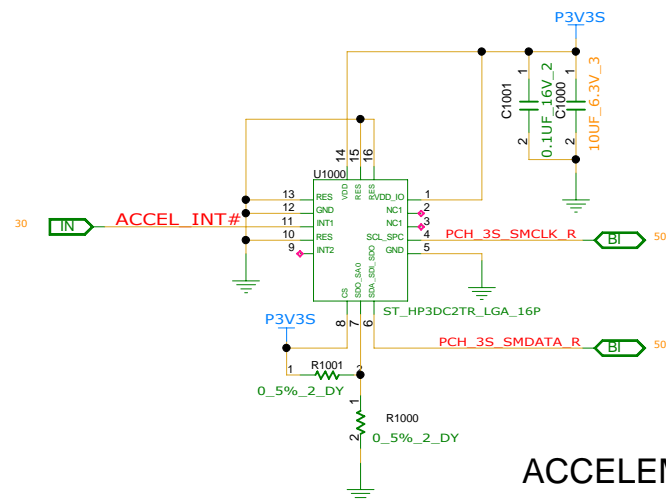
NFC\_HI\_SEL R4350 R4351  
HIGH (UART) INSTALL  
LOW (I2C) INSTALL



REFERENCE:4350~4399

INVENTEC

| TITLE                  |      |               |     |
|------------------------|------|---------------|-----|
| MODEL PROJECT FUNCTION |      |               |     |
| FINGER PRINTER & NFC   |      |               |     |
| SIZE                   | CODE | DOC NUMBER    | REV |
| A3                     | CS   | 1310xxxxx-0-0 | X01 |
| SHEET 49 of 77         |      |               |     |



REFERENCE NUMER : 1000~1099

INVENTEC

TITLE MODEL PROJECT,FUNCTION

ACCELEMATOR

DOC NUMBER 1310xxxxx-0-0

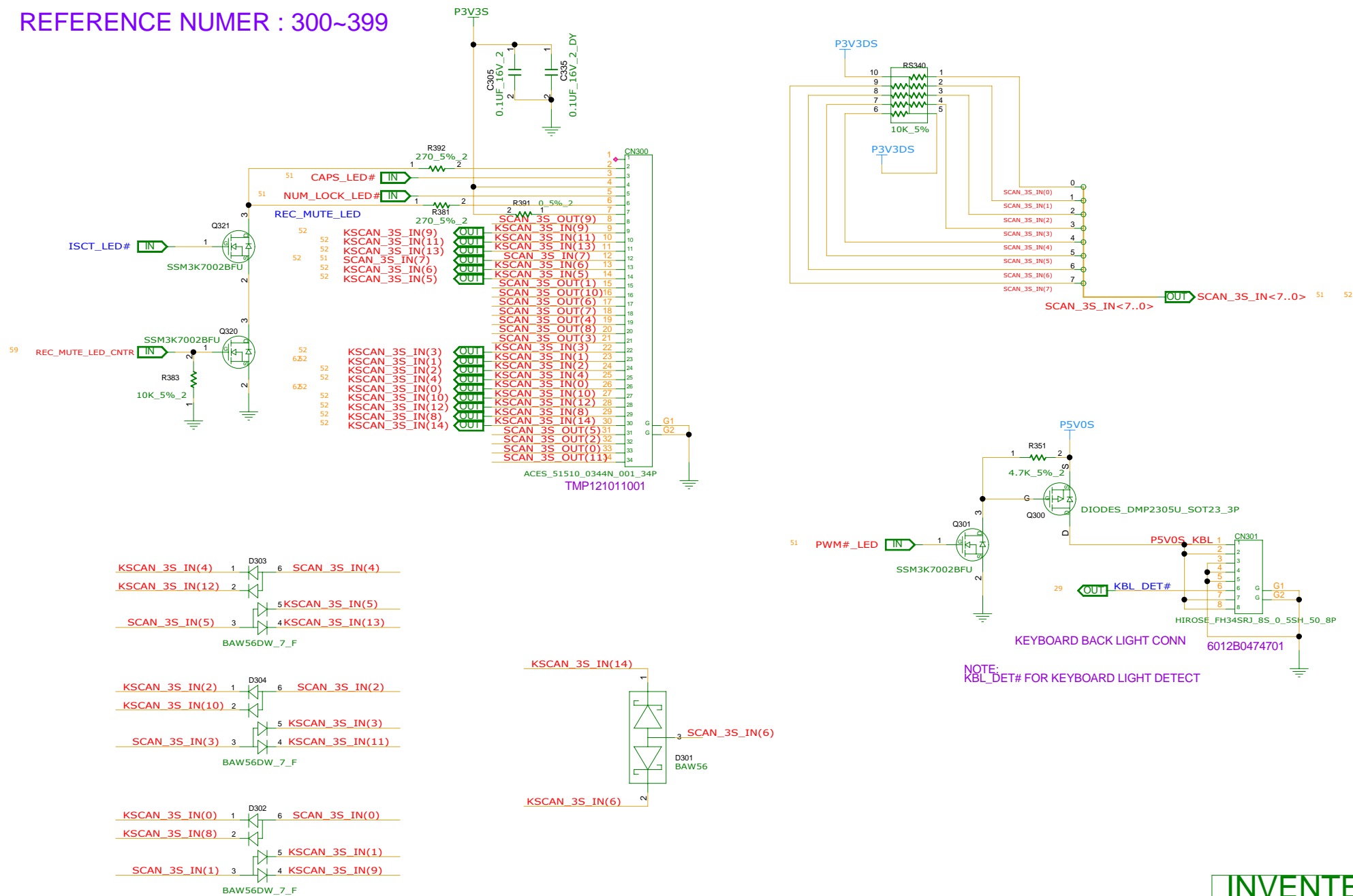
REV X01

SHEET 50 of 77

CHANGE by XXXX DATE 21-OCT-2002



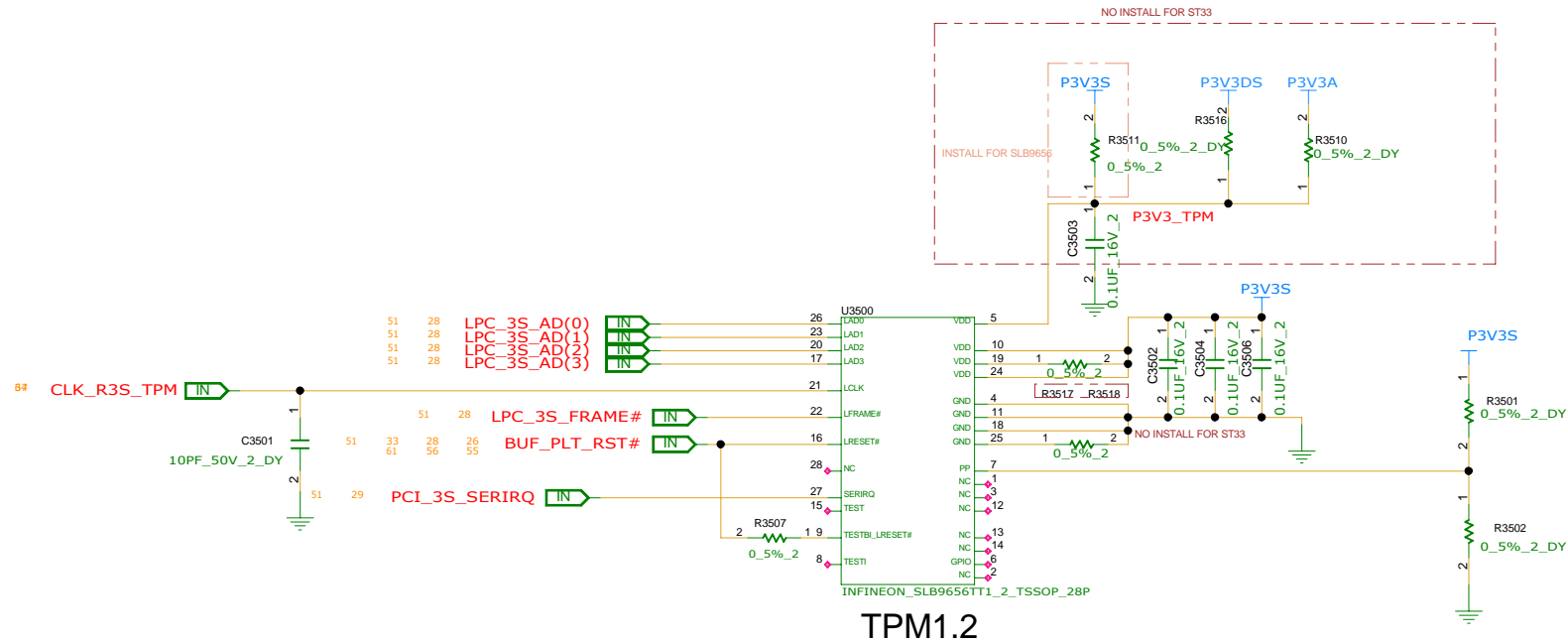
REFERENCE NUMBER : 300~399



INVENTEC

| TITLE                  |         |                         |         |
|------------------------|---------|-------------------------|---------|
| MODEL PROJECT,FUNCTION |         |                         |         |
| SIZE A3                | CODE CS | DOC NUMBER 1310xxxx-0-0 | REV X01 |
| SHEET 52 of 77         |         |                         |         |

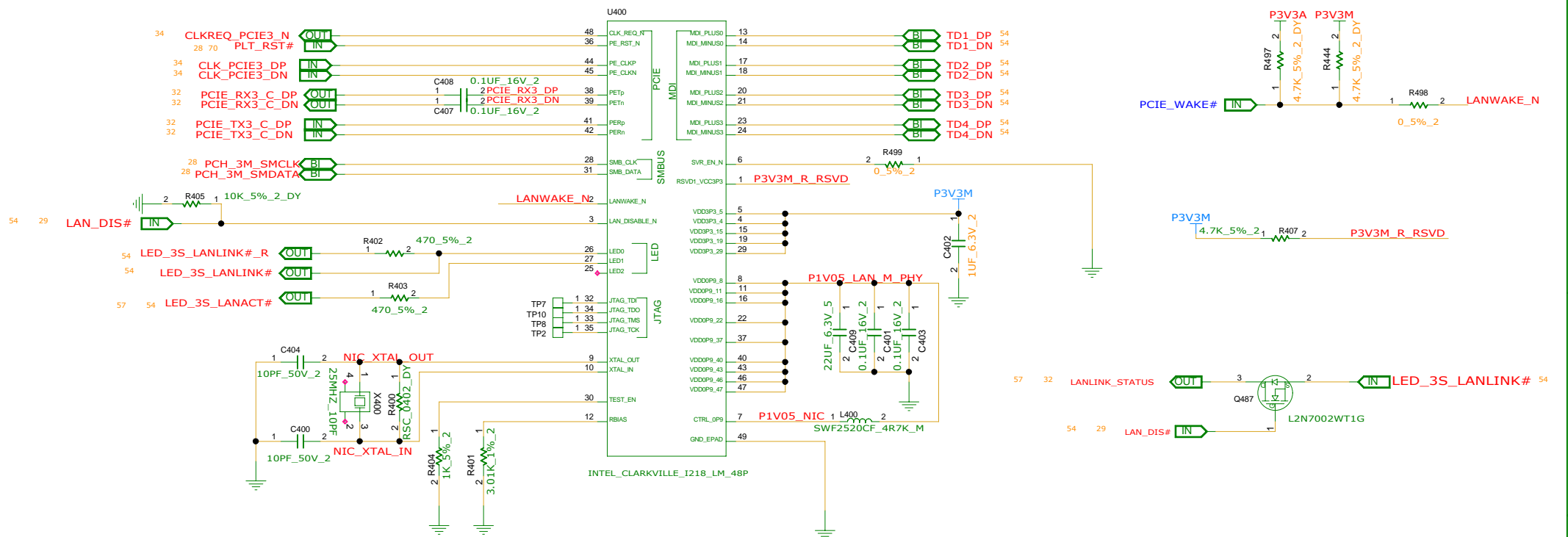
CHANGE by XXX DATE 21-OCT-2002



| SLB9656TT1.2 |         | ST33 |
|--------------|---------|------|
| C3503        | INSTALL | OPEN |
| R3507        | INSTALL | OPEN |
| R3511        | INSTALL | OPEN |
| R3517        | INSTALL | OPEN |
| R3518        | INSTALL | OPEN |

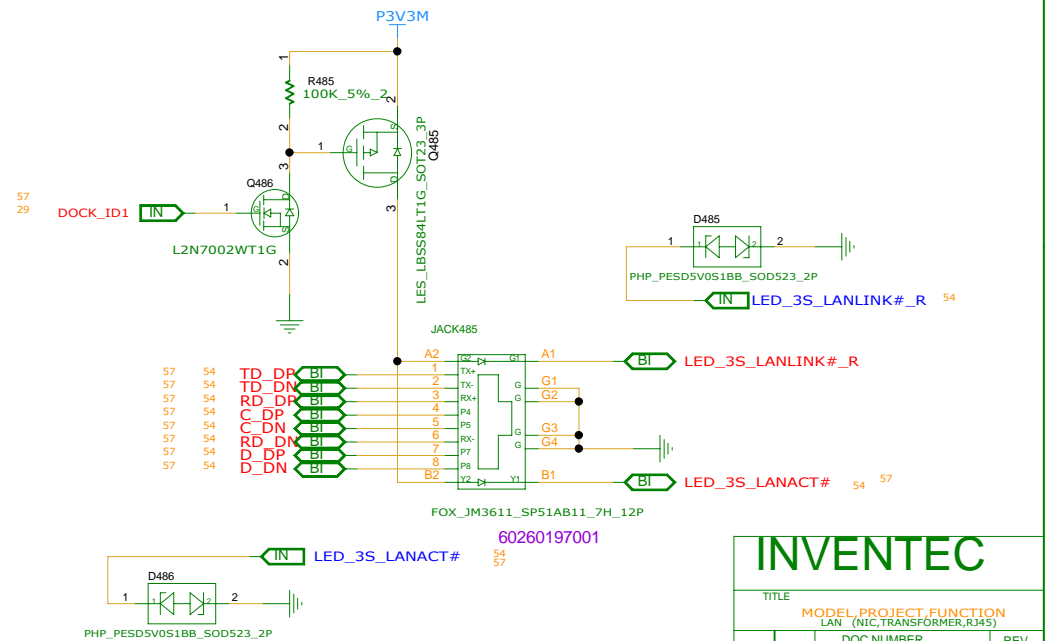
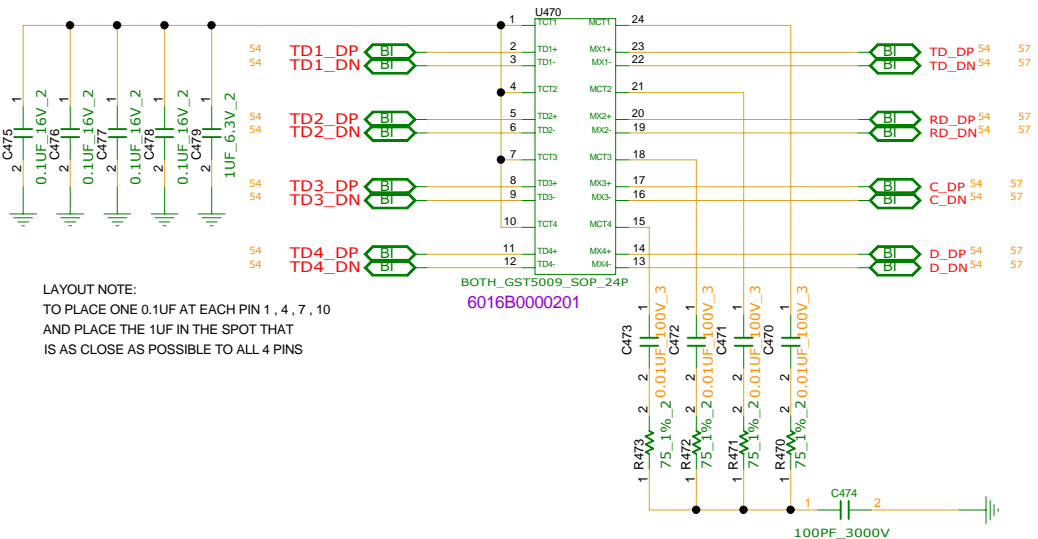
REFERENCE NUMER : 3500~3549

| INVENTEC                               |            |                             |            |
|--|------------|-----------------------------|------------|
| TITLE<br>MODEL,PROJECT,FUNCTION<br>TPM |            |                             |            |
| SIZE<br>A3                             | CODE<br>CS | DOC NUMBER<br>1310xxxxx-0-0 | REV<br>X01 |
| SHEET 53 of 77                         |            |                             |            |



REFERENCE NUMER : 400~469

REFERENCE NUMER : 470~499



| INVENTEC                   |      |          |  |
|----------------------------|------|----------|--|
| TITLE                      |      |          |  |
| MODEL PROJECT FUNCTION     |      |          |  |
| LAN (NIC TRANSFORMER RJ45) |      |          |  |
| DOC NUMBER                 |      |          |  |
| 1310xxxxx-0-0              |      |          |  |
| REV                        |      |          |  |
| X01                        |      |          |  |
| SIZE                       | CODE | SHEET    |  |
| A3                         | CS   | 54 of 77 |  |



## A

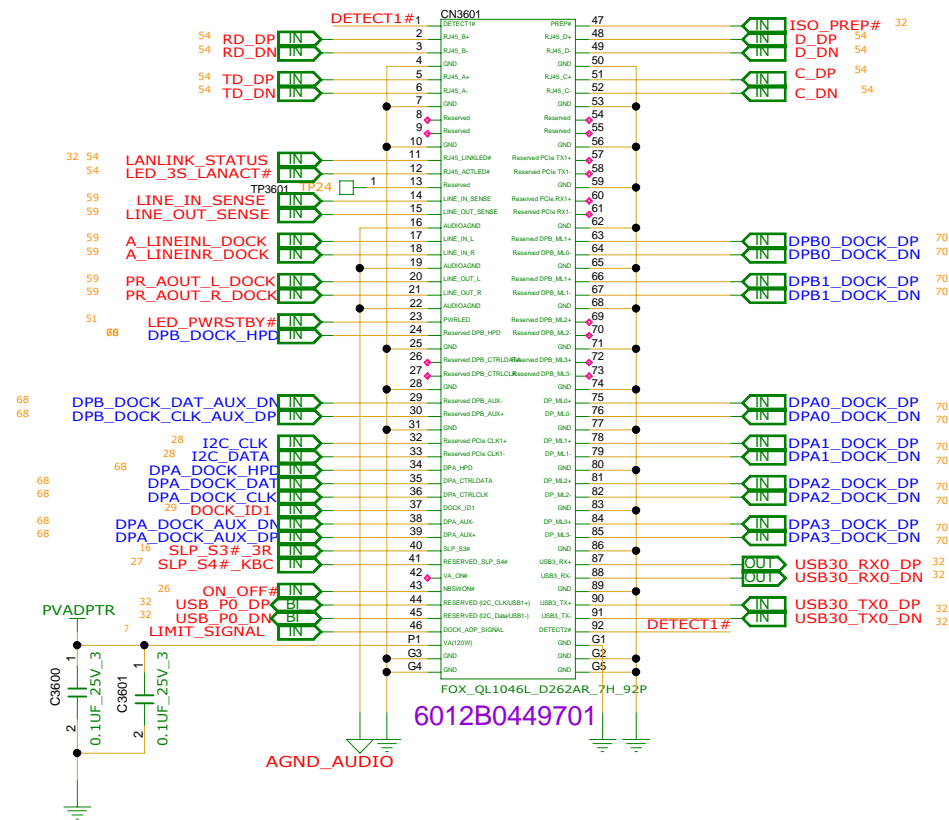
|           |     |      |             |
|-----------|-----|------|-------------|
| CHANGE by | XXX | DATE | 21-OCT-2002 |
|-----------|-----|------|-------------|

|            |            |                             |            |
|------------|------------|-----------------------------|------------|
| SIZE<br>A3 | CODE<br>CS | DOC.NUMBER<br>1310xxxxx-0-0 | REV<br>X01 |
|            |            | SHEET 55 of 77              |            |

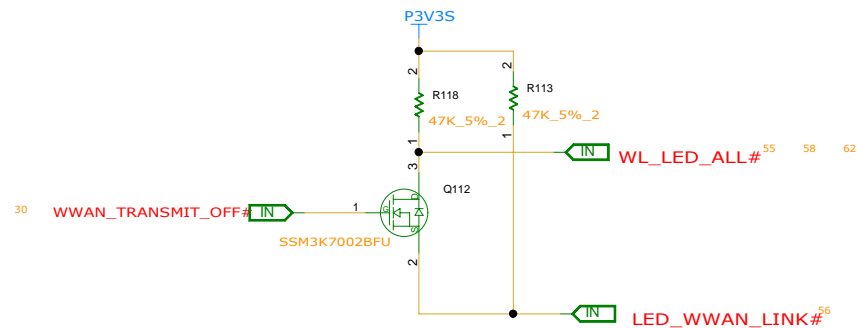


|           |     |      |             |
|-----------|-----|------|-------------|
| CHANGE by | XXX | DATE | 21-OCT-2002 |
|-----------|-----|------|-------------|

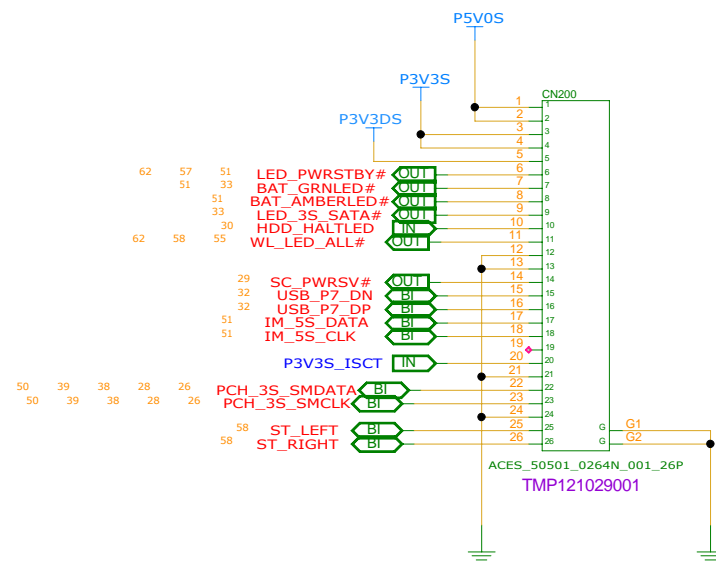




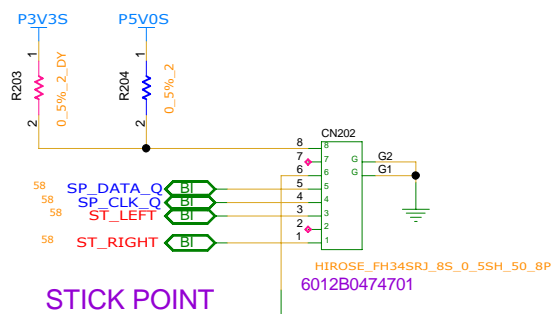
| INVENTEC                                |      |               |     |
|---|------|---------------|-----|
| TITLE                                   |      |               |     |
| MODEL PROJECT,FUNCTION<br>DOCKING CONN. |      |               |     |
| SIZE                                    | CODE | DOC NUMBER    | REV |
| A3                                      | CS   | 1310xxxxx-0-0 | X01 |
| SHEET 57 of 77                          |      |               |     |



WLAN\_WWAN\_BLUETOOTH\_LED

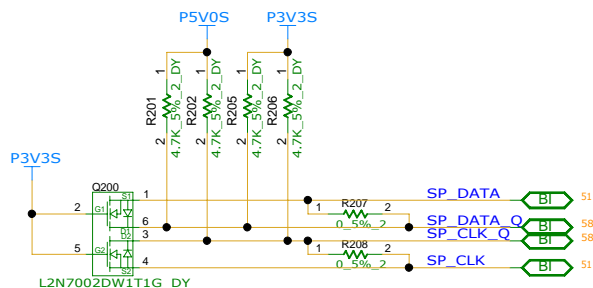


SMART CARD AND TOUCHPAD D/B W TO B CONN



STICK POINT

|      |           |           |
|------|-----------|-----------|
| R201 | 5V        | 3.3V      |
| R202 | INSTALL   | UNINSTALL |
| R203 | UNINSTALL | INSTALL   |
| R204 | INSTALL   | UNINSTALL |



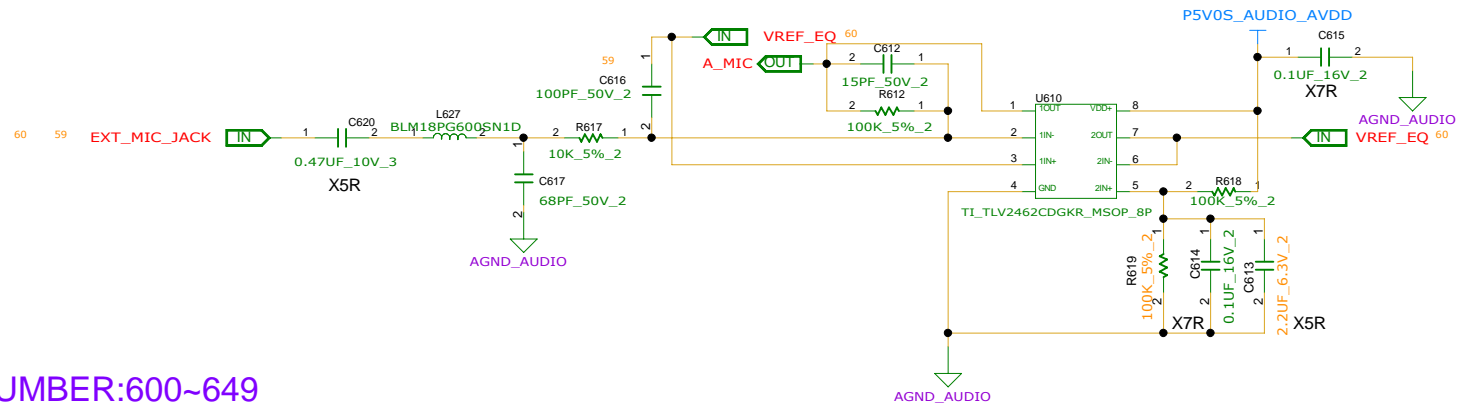
STICK POINT OPTION

REFERENCE NUMBER:100~199

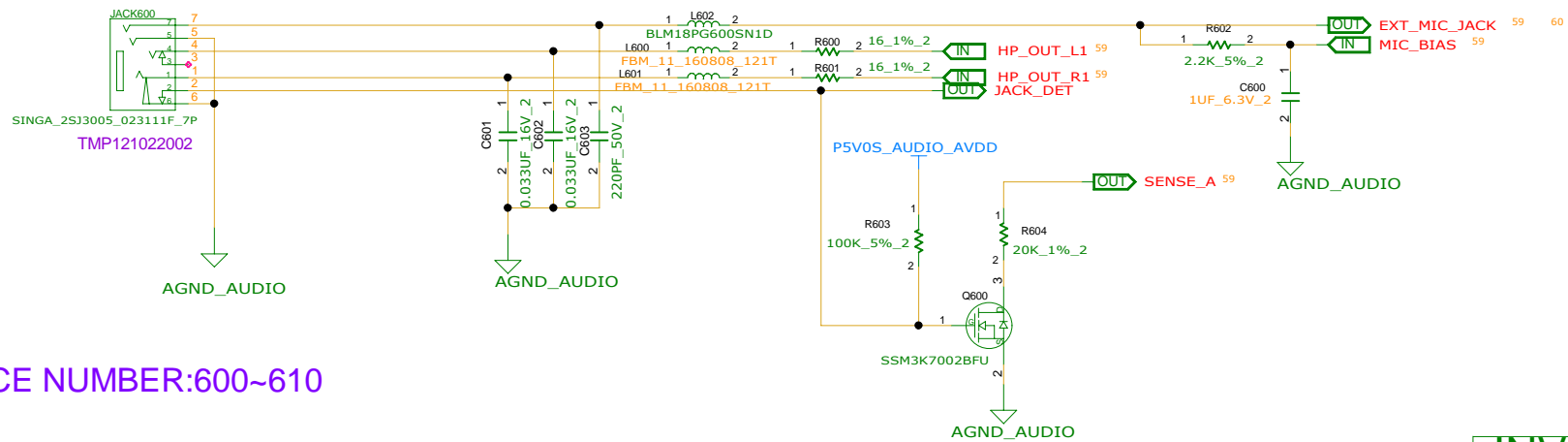
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|------------------------|------|---------------|-----|
| INVENTEC               |      |               |     |
| TITLE                  |      |               |     |
| MODEL PROJECT FUNCTION |      |               |     |
| STICK POINT & B2B CNTR |      |               |     |
| SIZE                   | CODE | DOC NUMBER    | REV |
| A3                     | CS   | 1310xxxxx-0-0 | X01 |
| SHEET 58 of 77         |      |               |     |



|           |     |      |             |       |    |    |    |
|-----------|-----|------|-------------|-------|----|----|----|
| CHANGE by | XXX | DATE | 21-OCT-2002 | SHEET | 59 | of | 77 |
|-----------|-----|------|-------------|-------|----|----|----|



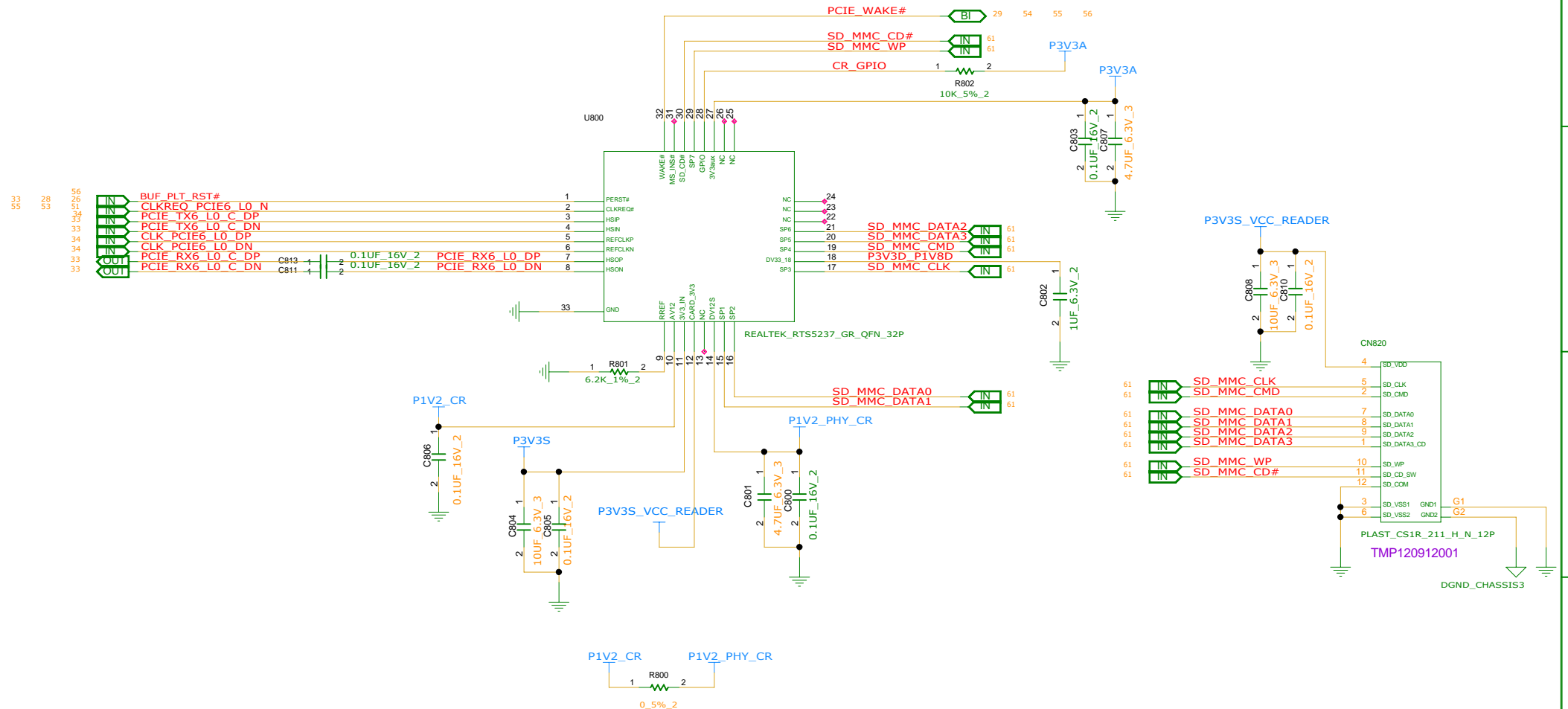
REFERENCE NUMBER:600~649



REFERENCE NUMBER:600~610

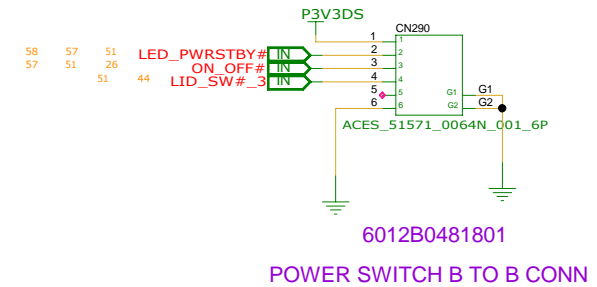
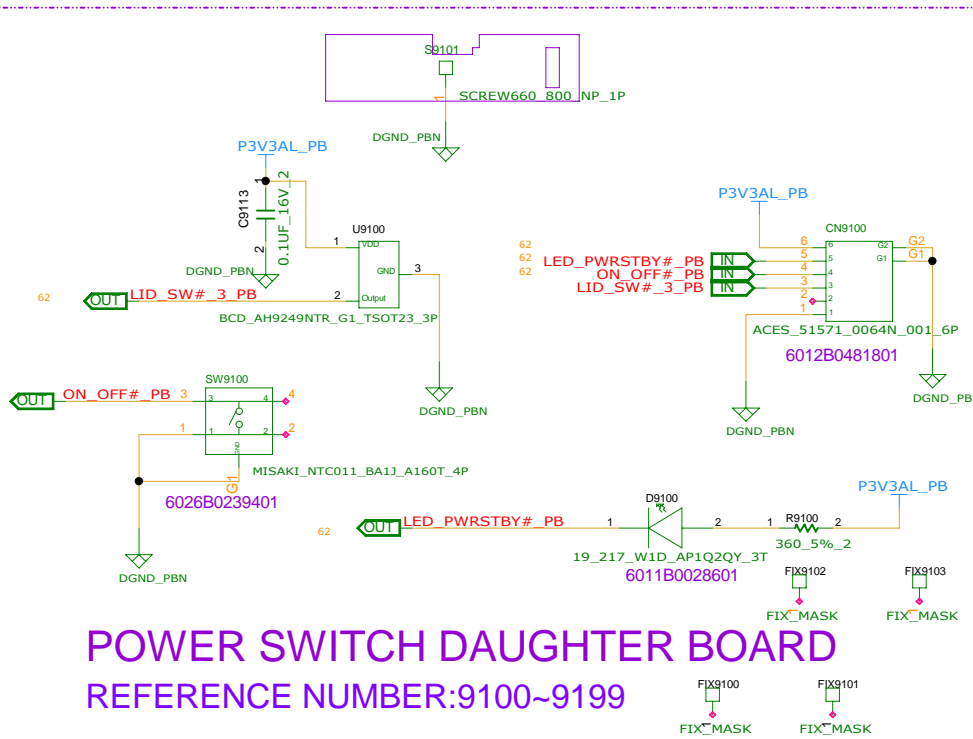
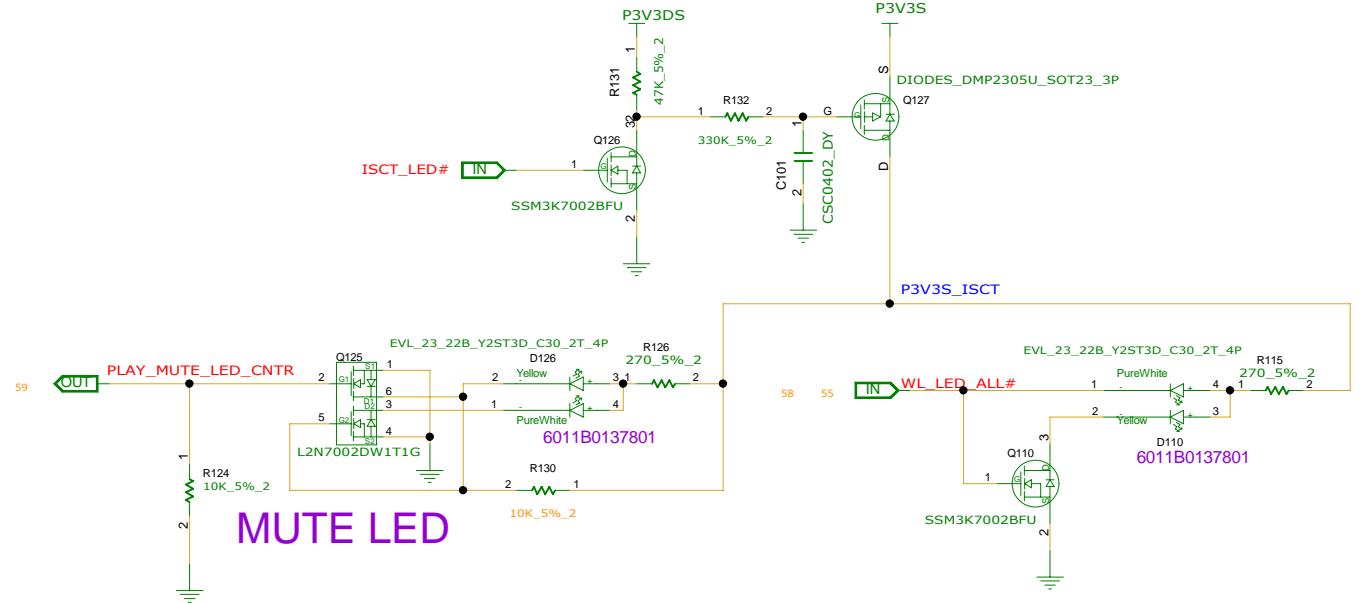
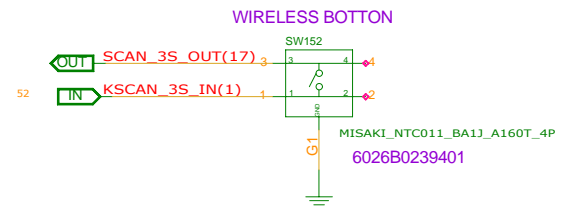
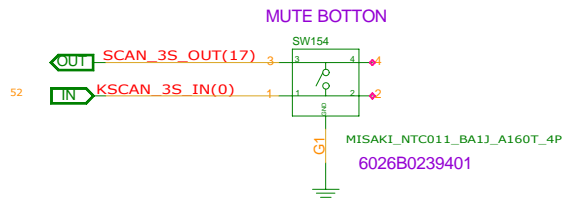
INVENTEC

| TITLE  |            |                             |            |
|--|------------|-----------------------------|------------|
| MODEL,PROJECT,FUNCTION<br>EXT. MIC AMP. & AUDIO JACK |            |                             |            |
| SIZE<br>A3   | CODE<br>CS | DOC NUMBER<br>1310xxxxx-0-0 | REV<br>X01 |
| SHEET 60 of 77                                       |            |                             |            |



REFERENCE NUMBER:800~899

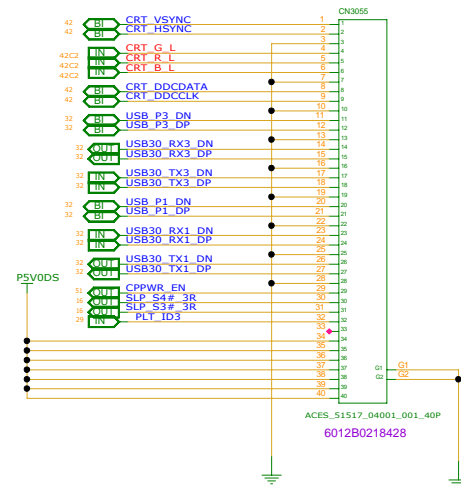
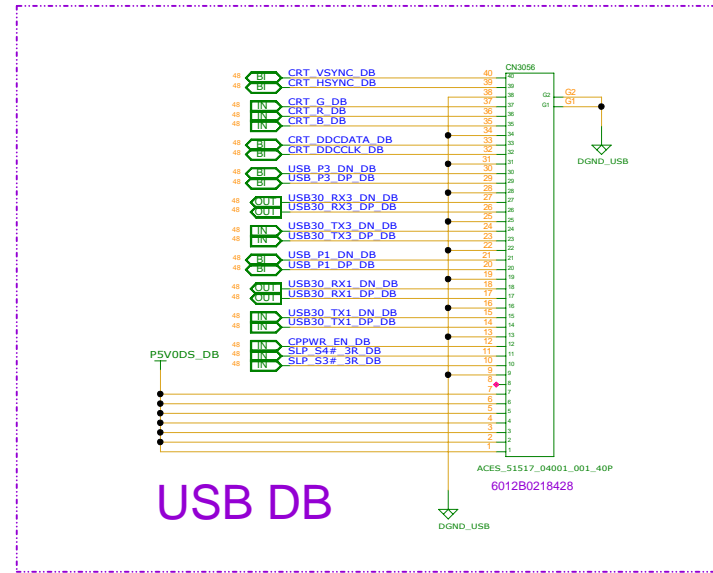
| INVENTEC               |      |               |     |
|------------------------|------|---------------|-----|
| TITLE                  |      |               |     |
| MODEL PROJECT,FUNCTION |      |               |     |
| SIZE                   | CODE | DOC.NUMBER    | REV |
| A3                     | CS   | 1310xxxxx-0-0 | X01 |
| SHEET 61 of 77         |      |               |     |



**POWER SWITCH DAUGHTER BOARD**  
REFERENCE NUMBER:9100~9199

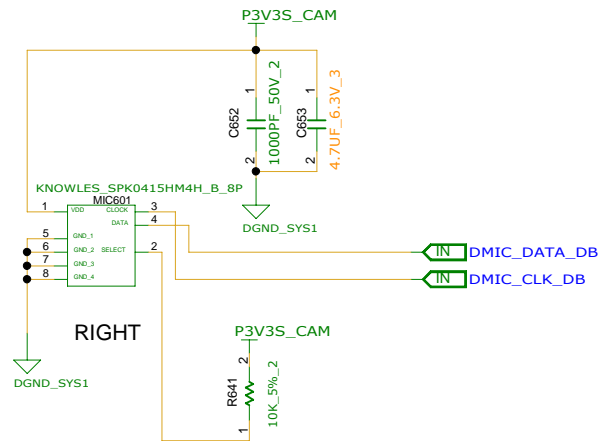
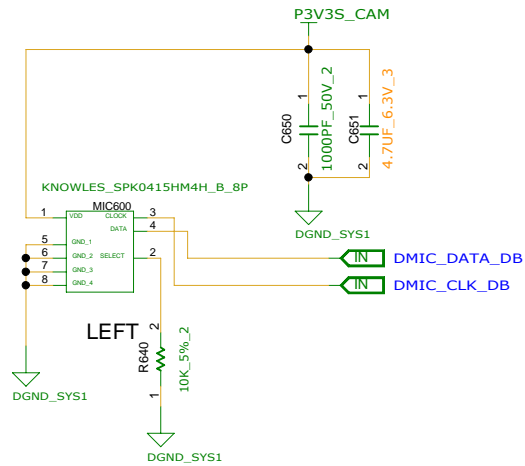
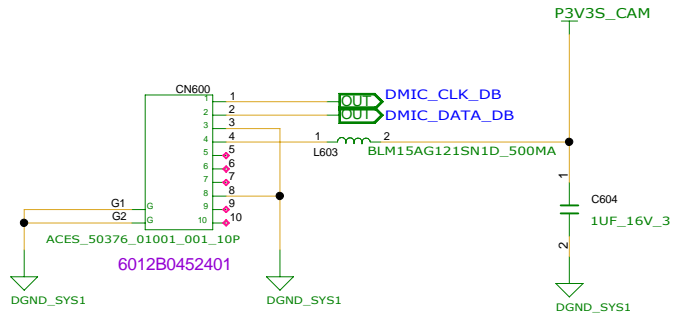
| INVENTEC               |         |                          |         |
|------------------------|---------|--------------------------|---------|
| TITLE                  |         |                          |         |
| MODEL PROJECT,FUNCTION |         |                          |         |
| BUTTON LED             |         |                          |         |
| SIZE A3                | CODE C3 | DOC.NUMBER 1310xxxxx-0-0 | REV X01 |
| SHEET 62 of 77         |         |                          |         |





| INVENTEC               |      |              |     |    |
|------------------------|------|--------------|-----|----|
| TITLE                  |      |              |     |    |
| MODEL,PROJECT,FUNCTION |      |              |     |    |
| RESERVE                |      |              |     |    |
| SIZE                   | CODE | DOC NUMBER   | REV |    |
| C                      | CS   | 1310XXXX-0-0 | X01 |    |
| SHEET                  |      | 64           | of  | 67 |

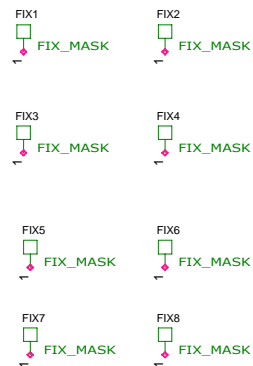
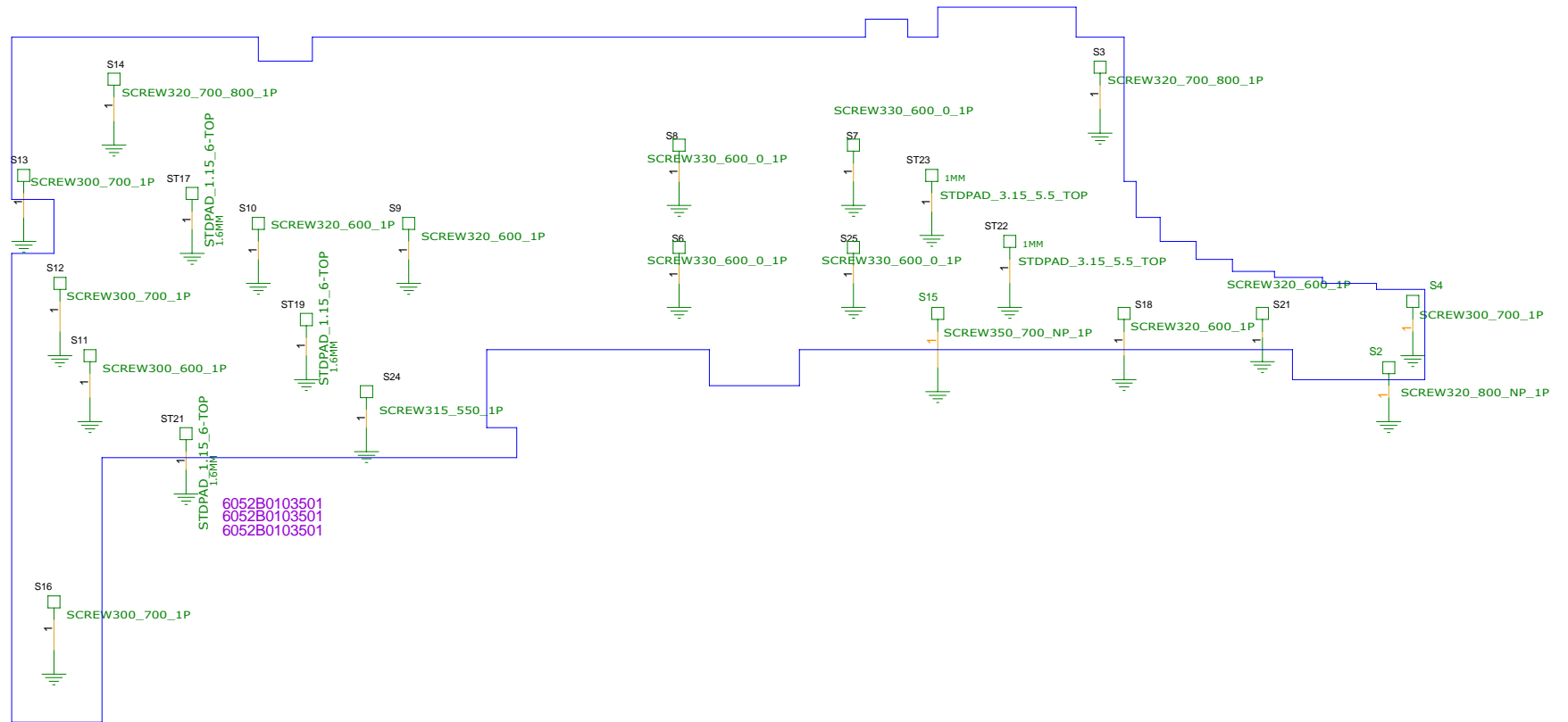




REFERENCE NUMBER:600-649  
MIC DOUGHTER BOARD

INVENTEC

| TITLE                                   |            |                             |            |
|---|------------|-----------------------------|------------|
| MODEL,PROJECT,FUNCTION<br>Block Diagram |            |                             |            |
| SIZE<br>A3                              | CODE<br>CS | DOC NUMBER<br>1310xxxxx-0-0 | REV<br>X01 |
| SHEET 65 of 77                          |            |                             |            |



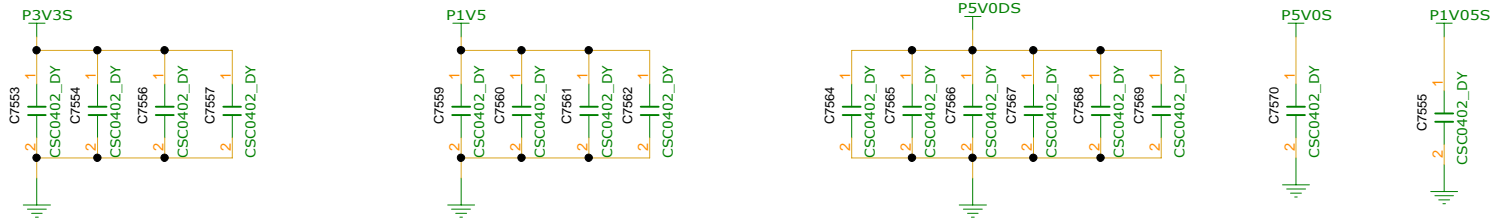
INVENTEC

| TITLE                  |            |                             |            |
|------------------------|------------|-----------------------------|------------|
| MODEL PROJECT,FUNCTION |            |                             |            |
| SCREW                  |            |                             |            |
| SIZE<br>A3             | CODE<br>CS | DOC NUMBER<br>1310xxxxx-0-0 | REV<br>X01 |
| SHEET 66 of 77         |            |                             |            |

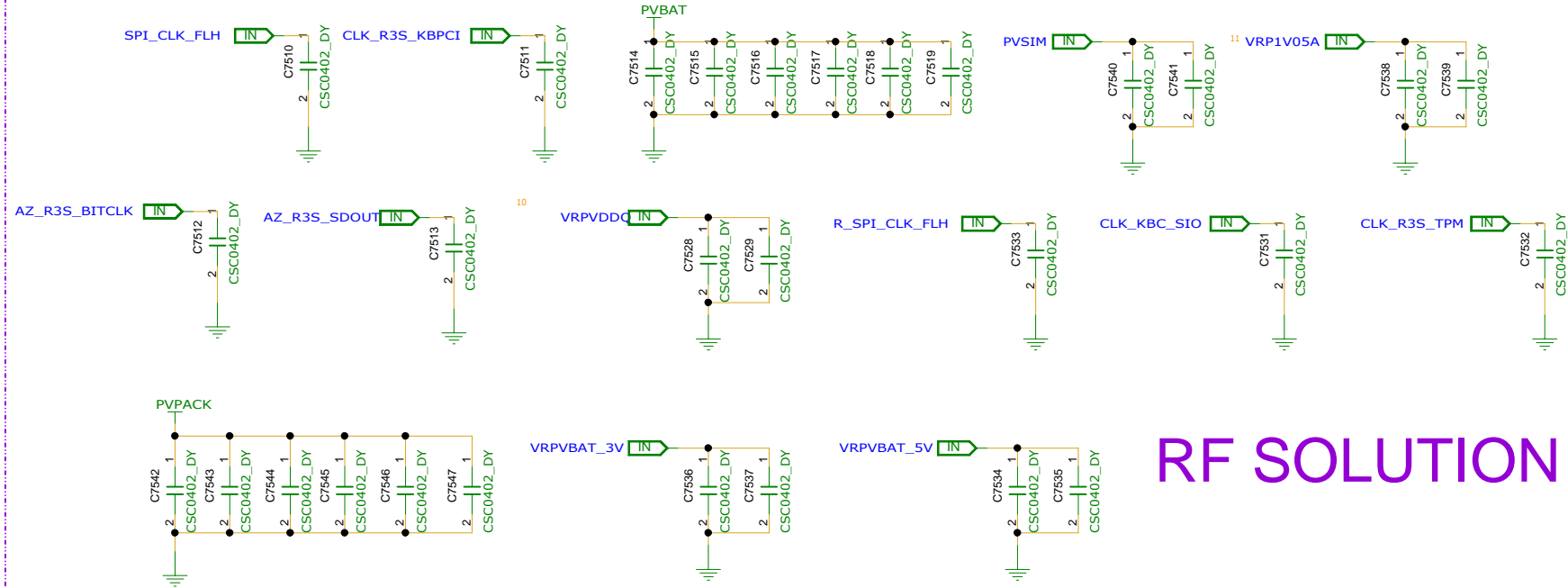
INVENTEC

| TITLE                  |      |               |     |
|------------------------|------|---------------|-----|
| MODEL PROJECT FUNCTION |      |               |     |
| EMI & RF SOLUTION      |      |               |     |
| SIZE                   | CODE | DOC NUMBER    | REV |
| A3                     | CS   | 1310xxxxx-0-0 | X01 |

## EMI SOLUTION



## RF SOLUTION



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| R <sub>pu</sub> (Ω)                          | R <sub>pd</sub> (Ω) | Bits [3:1] | Capacitor Value (nF) | Bits [5:4] |
|--|---------------------|------------|----------------------|------------|
| NC   | 4750                | 000        | 680                  | 00         |
| 8450   | 2000                | 001        | 82                   | 01         |
| 4530   | 2000                | 010        | 10                   | 10         |
| 6980   | 4990                | 011        | NC                   | 11         |
| 4530   | 4990                | 100        |                      |            |
| 3240   | 5620                | 101        |                      |            |
| 3400   | 10000               | 110        |                      |            |
| 4750   | NC                  | 111        |                      |            |
| <b>Note:</b> 0402 1% resistors are required. |                     |            |                      |            |

The schematic diagram illustrates the internal components and connections of the AMD Mars M2 PCBGA 962P. Key functional blocks include:

- GPU:** Contains various pins for data, address, and control signals, as well as power and ground connections.
- DPA, DPB, DPC, DPD:** Display Processing Array blocks, each with multiple pins for data and control signals.
- DAC1:** Digital-to-Analog Converter block with pins for input and output signals.
- MLPS:** Memory Logic Processing Subsystem with pins for memory and control signals.
- BACO:** Base Address Control block with pins for memory and control signals.
- DEBUG:** Debug block with pins for test and control signals.
- THERMAL:** Thermal sensor block with pins for temperature measurement and control signals.

The diagram also shows various power and ground planes (e.g., P3V3S, P1V8S, P1V5S) and the placement of numerous passive components like resistors and capacitors. Signal labels such as THERM\_CLK\_GPU, GPU\_THRM\_DPLUS, and GPU\_THRM\_DMINUS are used to identify specific signals. A table on the left provides the pin configuration for the GPU, and a table on the right provides the pin configuration for the THERMAL sensor.

|  |            |                              |            |
|--|------------|------------------------------|------------|
| TITLE                                  |            |                              |            |
| MODEL,PROJECT,FUNCTION<br>AMD-THAMES-1 |            |                              |            |
| SIZE<br>C                              | CODE<br>CS | DOC NUMBER<br>1310xxxxxx-0-0 | REV<br>X01 |

**WWW.AliSaler.Com**

| LPT-LP GPIO 34                   | MARS MLPS Bit: PS_3 [3:1] |   |   | R <sub>pu</sub> (Ω) | R <sub>pd</sub> (Ω) | Vendor & PN                | Die Ver.  |   |
|----------------------------------|---------------------------|---|---|---------------------|---------------------|----------------------------|-----------|---|
| 0                                | 0                         | 0 | 0 | NC                  | 4750                | Samsung - K4G20325FD-FC04  | D         | GDDR5 - 64Mx32/128Mx16, 1.5V/1.35V, 5.0Gbps/4Gbps   |
|                                  | 0                         | 0 | 1 | 8450                | 2000                | Hynix - H5GQ2H24AFR-T2C    | A (Gemma) | GDDR5 - 64Mx32/128Mx16, 1.5V/1.35V, 5.0Gbps/4Gbps   |
| 1                                | 1                         | 1 | 0 | 3400                | 10000               | *Samsung - K4G41325FC-HC04 | C         | *GDDR5 - 128Mx32/256Mx16, 1.5V/1.35V, 5.0Gbps/4Gbps |
|                                  | 1                         | 1 | 1 | 4759                | NC                  | *Hynix - H5GC4H24MFR-T0C   | Huma      | *GDDR5 - 128Mx32/256Mx16, 1.5V/1.35V, 5.0Gbps/4Gbps |
| VBIOS selection :                | Vram configuration        |   |   | Vendor ID           |                     | Resistor Divider           |           |   |
| 0 : VBIOS 1, 64Mx32 for 1GB sku  | 00: 64Mx32 (2Gb)          |   |   | 0: Samsung          |                     | Lookup Table               |           |   |
| 1 : VBIOS 2, 128Mx32 for 2GB sku | 11: 128Mx32 (4Gb)         |   |   | 1: Hynix            |                     | Vram information           |           |   |
|                                  |                           |   |   |                     |                     | * 2GB sku, TBD             |           |   |

### MLPS Implementation

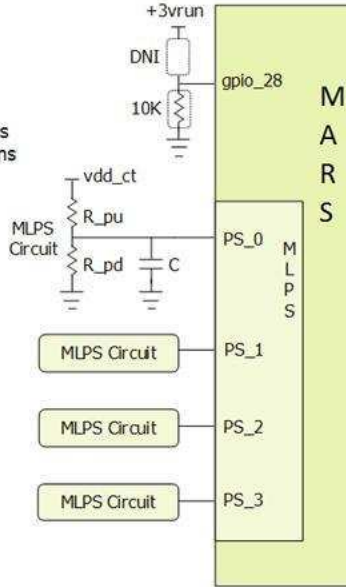
- Connect GPIO\_28 to 10K pulldown to enable MLPS
- If any of PS\_0/1/2/3 is not used, leave "no connect"
- R<sub>pu</sub>, R<sub>pd</sub> and C must be properly populated per tables below
- Place MLPS circuit components as close to the ASIC as possible
- Total DC resistance of trace between PS pin and C should be less than 2 ohms
- Total DC resistance of trace between C and ground should be less than 2 ohms
- Trace capacitance should be less than 100pF. Resistors should be of +/-1% tolerance

Capacitor Lookup Table

| C (nF) | Bits(5,4) |
|--------|-----------|
| 680    | 00        |
| 82     | 01        |
| 10     | 10        |
| NC     | 11        |
|        |           |
|        |           |
|        |           |
|        |           |
|        |           |
|        |           |

Resistor Divider Lookup Table

| R <sub>pu</sub> (Ohm) | R <sub>pd</sub> (Ohm) | Bits(3,2,1) |
|-----------------------|-----------------------|-------------|
| NC                    | 4750                  | 000         |
| 8450                  | 2000                  | 001         |
| 4530                  | 2000                  | 010         |
| 6980                  | 4990                  | 011         |
| 4530                  | 4990                  | 100         |
| 3240                  | 5620                  | 101         |
| 3400                  | 10000                 | 110         |
| 4750                  | NC                    | 111         |



| MLPS Bit | Strap Name                  | Description   |
|----------|-----------------------------|---|
| PS_0[1]  | ROM_CONFIG[0]               | See Primary Memory Aperture Sizes.  |
| PS_0[2]  | ROM_CONFIG[1]               |   |
| PS_0[3]  | ROM_CONFIG[2]               |   |
| PS_0[4]  | N/A                         | Reserved for internal use only.<br><b>Must be 1 at reset.</b>   |
| PS_0[5]  | AUD_PORT_CONN_PINSTRAP[0]   | The LSB (least significant bit) of the strap that indicates the number of audio-capable display outputs.  |
| PS_1[1]  | STRAP_BIF_GEN3_EN_A         | PCIe GEN3 capability.<br><b>1 = PCIe GEN3 is supported.</b>   |
| PS_1[2]  | STRAP_BIF_CLK_PM_EN         | Determines whether or not the PCIe reference clock power management capability is reported in the PCI configuration space (otherwise known as CLKREQB).<br><b>0 = The CLKREQB power management capability is disabled</b>   |
| PS_1[3]  | N/A                         | Reserved for internal use only.<br><b>Must be 0 at reset.</b>   |
| PS_1[4]  | STRAP_TX_CFG_DRV_FULL_SWING | Control the transmitter full-/half-swing mode<br><b>1 = The transmitter full-swing is enabled</b>   |
| PS_1[5]  | STRAP_TX_DEEMPH_EN          | PCI EXPRESS® transmitter, de-emphasis enable.<br><b>1 = Tx deemphasis enabled.</b>  |
| PS_2[1]  | N/A                         | Reserved.   |
| PS_2[2]  | N/A                         | Reserved.   |
| PS_2[3]  | STRAP_BIOS_ROM_EN           | To enable the external BIOS ROM device.<br><b>0 = Disable the external BIOS ROM device.</b>   |
| PS_2[4]  | STRAP_BIF_VGA_DIS           | VGA disable determines whether or not the card will be recognized as the system's VGA controller (through the SUBCLASS field in the PCI configuration space).<br><b>0 = VGA controller capacity enabled.</b>  |
| PS_2[5]  | N/A                         | Reserved.   |
| PS_2[1]  | N/A                         | Reserved.   |
| PS_2[2]  | N/A                         | Reserved.   |
| PS_2[3]  | STRAP_BIOS_ROM_EN           | To enable the external BIOS ROM device.<br><b>0 = Disable the external BIOS ROM device.</b>   |
| PS_2[4]  | STRAP_BIF_VGA_DIS           | VGA disable determines whether or not the card will be recognized as the system's VGA controller (through the SUBCLASS field in the PCI configuration space).<br><b>0 = VGA controller capacity enabled.</b>  |
| PS_2[5]  | N/A                         | Reserved.   |
| PS_3[1]  | BOARD_CONFIG[0]             | See Board configuration related strapping, such as for memory ID.   |
| PS_3[2]  | BOARD_CONFIG[1]             |   |
| PS_3[3]  | BOARD_CONFIG[2]             |   |
| PS_3[4]  | AUD_PORT_CONN_PINSTRAP[1]   | Determines the maximum number of digital display audio endpoints that will be presented to the OS and user.<br>111 = No usable endpoints. 110 = One usable endpoint.<br>101 = Two usable endpoints. 100 = Three usable endpoints.<br>011 = Four usable endpoints. 010 = Five usable endpoints.<br>001 = Six usable endpoints. 000 = All endpoints are usable. |
| PS_3[5]  | AUD_PORT_CONN_PINSTRAP[2]   |   |

Note : AUD[1] (on HYSNC) and AUD[0] (on VSYNC) still need to be properly pin strapped even in a MLPS-based design.

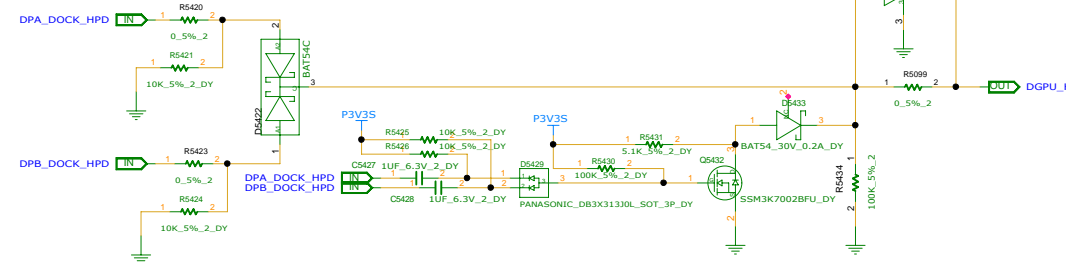
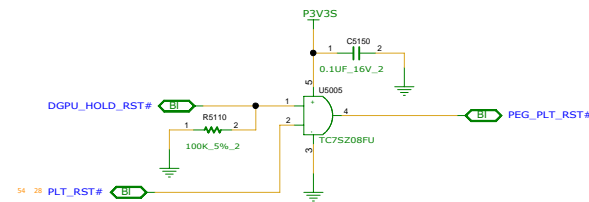
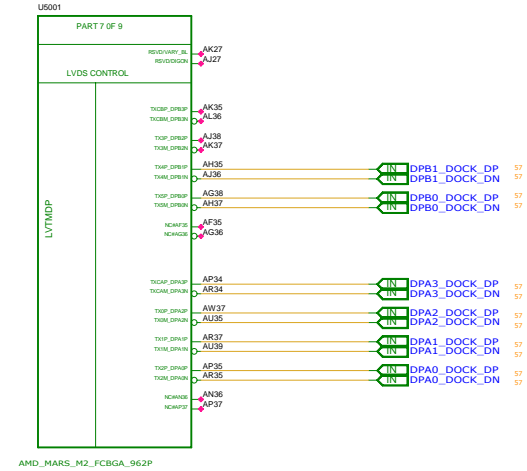
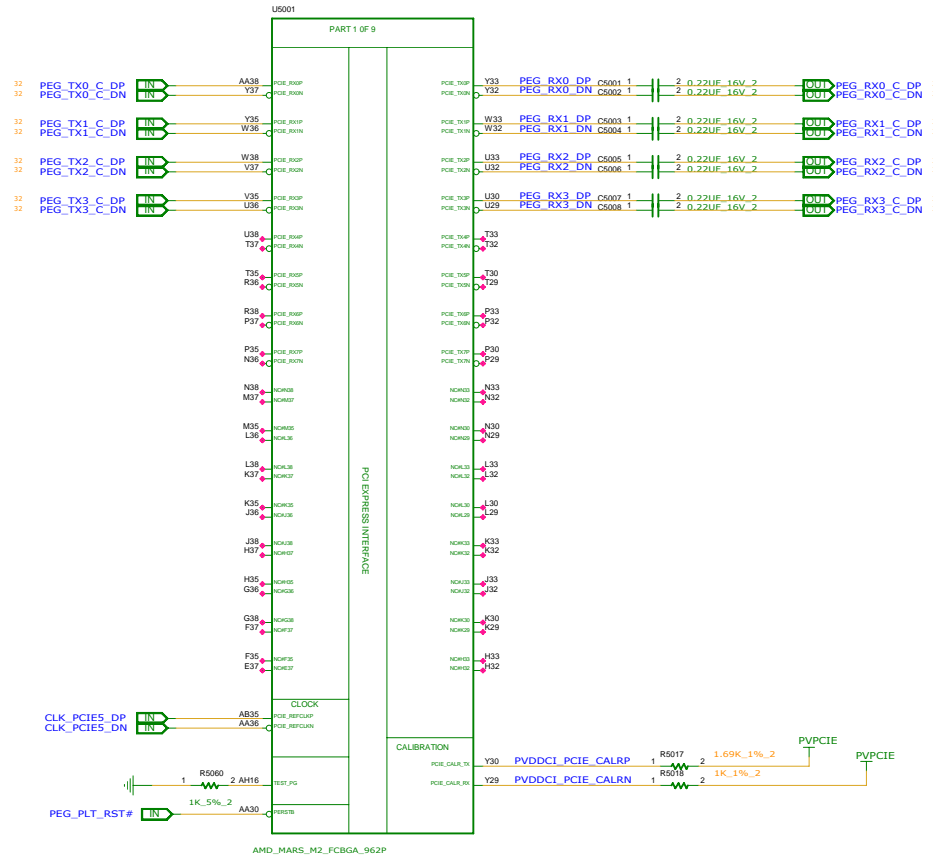
| Pin/Bit   | Name           | Description  | Default | Legacy                        |
|-----------|----------------|--|---------|-------------------------------|
| PS_0[3:1] | romidcfg[2:0]  | Memory aperture size or ROM type select:<br>If bios_rom_en = 0, romidcfg[2:0] define memory aperture size<br>If bios_rom_en = 1, romidcfg[2:0] define ROM type | xxx     | gpio_13<br>gpio_12<br>gpio_11 |
| PS_0[4]   | n/a            | Reserved   | 1       | genlk_vsync                   |
| PS_1[1]   | bif_gen3_en_a  | PCIe Gen3 capability: 1=Gen3 supported, 0=Gen3 not supported   | x       | gpio_2                        |
| PS_1[2]   | bif_clk_pm_en  | PCIe Clk PM capability: 1 = CLKREQB supported  | x       | gpio_8                        |
| PS_1[3]   | n/a            | Reserved   |         | genlk_clk                     |
| PS_1[4]   | tx_pwrs_enb    | PCIe Tx power savings: 0=50% swing, 1=full swing   | x       | gpio_0                        |
| PS_1[5]   | tx_deemph_en   | PCIe Tx de-emphasis: 1=Tx de-emphasis enabled  | x       | gpio_1                        |
| PS_2[1]   | n/a            | Reserved   |         | n/a                           |
| PS_2[2]   | n/a            | Reserved   |         | n/a                           |
| PS_2[3]   | bios_rom_en    | Enable external BIOS ROM: 1=External ROM connected   | x       | gpio_22                       |
| PS_2[4]   | vga_dis        | VGA disable: 1=Disable this GPU as the system's VGA controller   | 0       | gpio_9                        |
| PS_2[5]   | n/a            | Reserved   |         | n/a                           |
| PS_3[1]   | MEM Vendor ID  | MEM Vendor ID  | 0       | n/a                           |
| PS_3[2]   | MEM Vendor ID  | MEM Vendor ID  | 0       | n/a                           |
| PS_3[3]   | MEM Vendor ID  | MEM Vendor ID  | 0       | n/a                           |
| PS_3[5]   | aud_port_cp[2] | 3-bit field indicating number of audio-capable display outputs   | xxx     | n/a                           |
| PS_3[4]   | aud_port_cp[1] |  |         |                               |
| PS_0[5]   | aud_port_cp[0] |  |         |                               |

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|--------------------------|------|--------------|-----|
| MODEL, PROJECT, FUNCTION |      |              |     |
| Block Diagram            |      |              |     |
| SIZE                     | CODE | DOC NUMBER   | REV |
| C                        | CS   | 1310XXXX-0-0 | 201 |
| SHEET                    |      | of           | 07  |

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| TITLE                  |      |                |       |
|------------------------|------|----------------|-------|
| MODEL,PROJECT,FUNCTION |      |                |       |
| Block Diagram          |      |                |       |
| SIZE                   | CODE | DOC NUMBER     | REV   |
| C                      | CS   | 1310100000-0-0 | 201   |
| SHEET                  |      | 36             | of 37 |



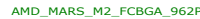
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|            |            | SHEET 71 of 77              |            |



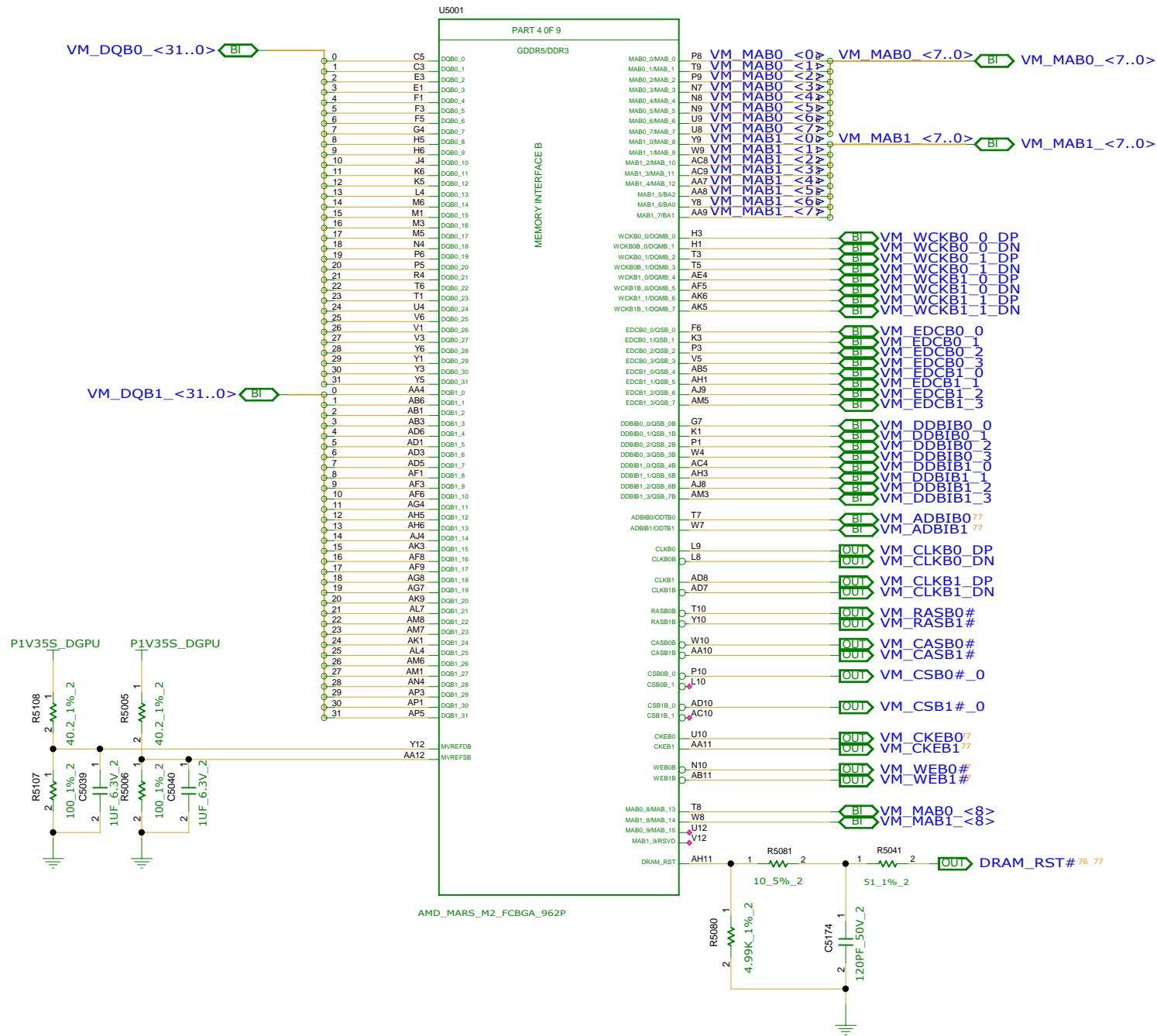




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|-----------|-----|------|-------------|
| CHANGE by | xxx | DATE | 21-OCT-2002 |
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| CHANGE by | XXX | DATE | 21-OCT-2002 |
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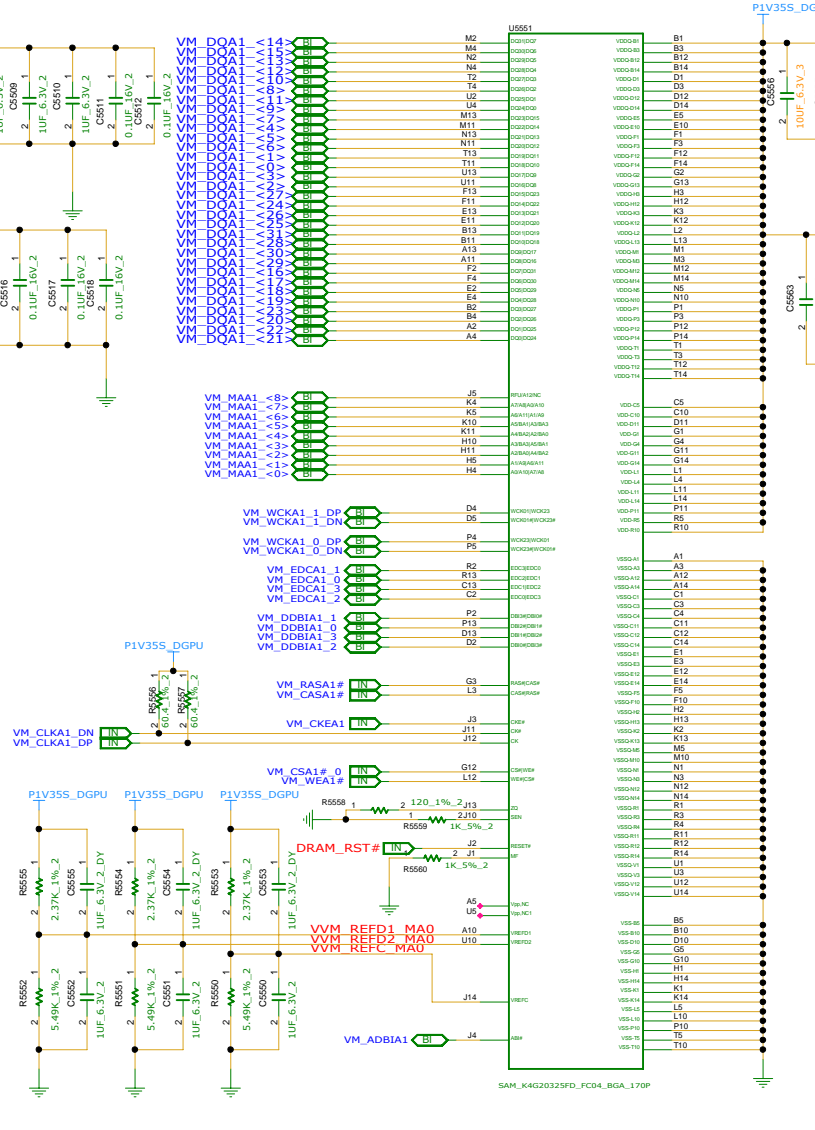


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TITLE  
MODEL,PROJECT,FUNCTIONDOC NUMBER  
1310xxxxx-0-0REV  
X01

SHEET 75 of 77

CHANGE by XXX DATE 21-OCT-2002





|                        |      |               |     |
|------------------------|------|---------------|-----|
| TITLE                  |      |               |     |
| MODEL,PROJECT,FUNCTION |      |               |     |
| VRAM-2                 |      |               |     |
| SIZE                   | CODE | DOC NUMBER    | REV |
| C                      | CS   | 1310xxxxx-0-0 | X01 |
| SHEET 77 of 77         |      |               |     |