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HSF Property: ROHS or Halogen-Free

BANDIT M2 HD+

MV BUILD

2013.01.04

2012/09/10	2012-ECO-017507	A
DATE	CHANGE NO.	REV

INVENTEC					
DRAWER	EE	DATE	POWER	DATE	TITLE
DESIGN	xxx	21-OCT-2002	RAY CHEN	21-OCT-2002	MODEL PROJECT FUNCTION
CHECK	xxx	21-OCT-2002	RAY CHEN	21-OCT-2002	ULTRABOOK MAIN BOARD
RESPONSIBLE	xxx	21-OCT-2002	RAY CHEN	21-OCT-2002	
SIZE: A3				VER: A02	SIZE: A3
FILE TYPE: BANDIT.MB-13108252460K				CODE: CS	DOC NUMBER: 13108252460K
PIN	gspksc2460k			SHEET	REV: 001

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6. SYSTEM POWER(BATT SELECTOR)
7. SYSTEM POWER(OCF)
8. SYSTEM POWER(P3V3A&P5V0A)
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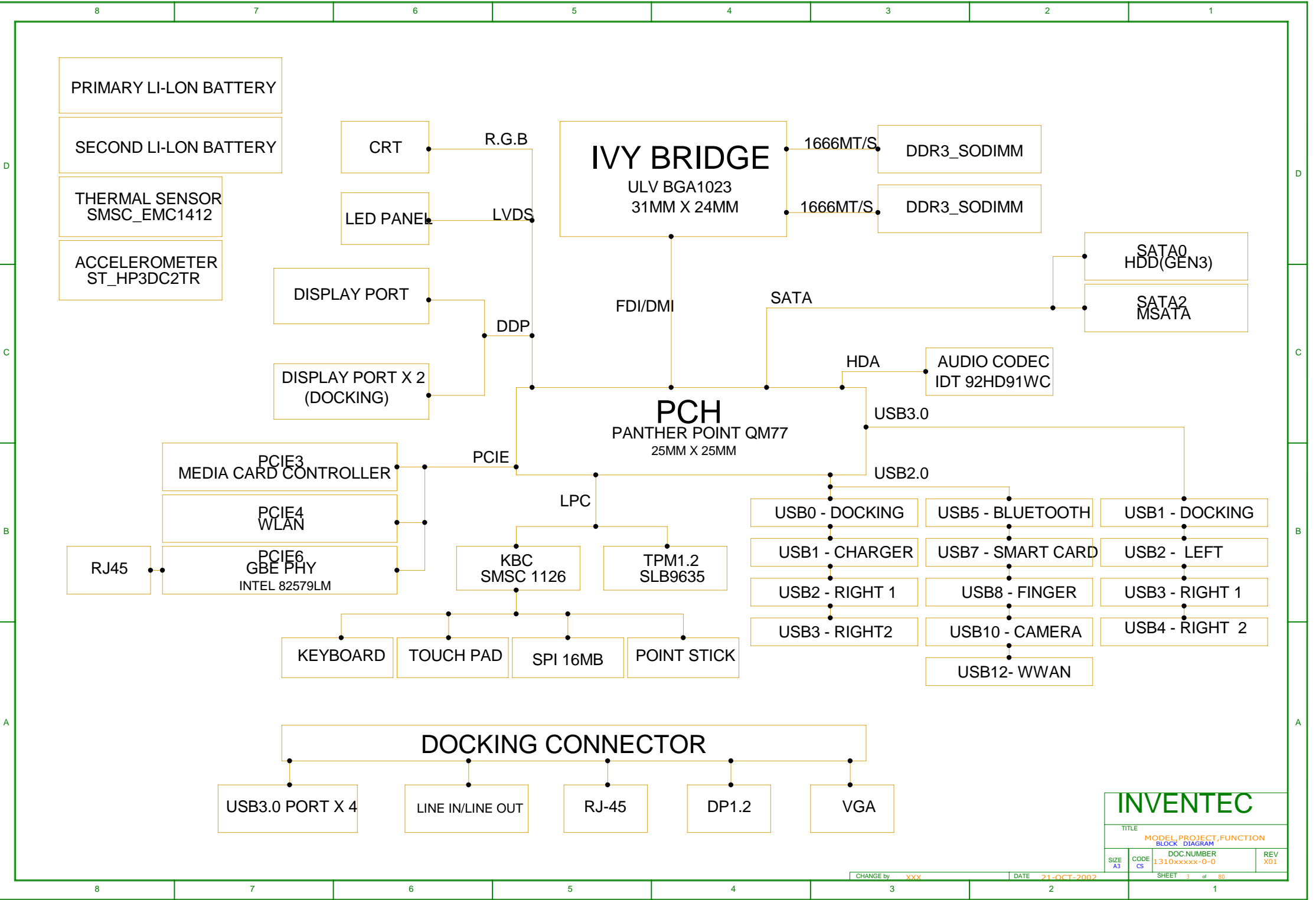
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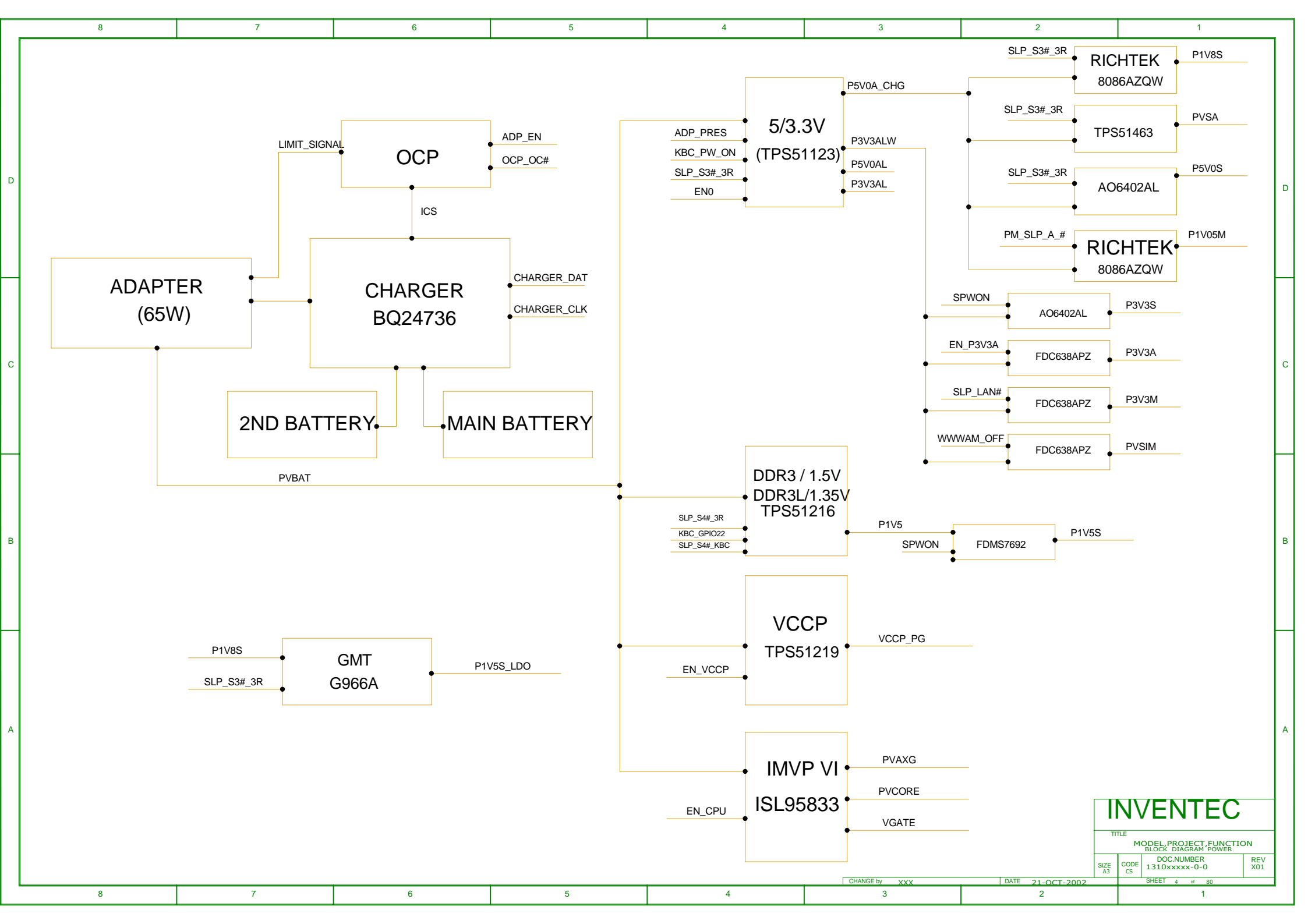
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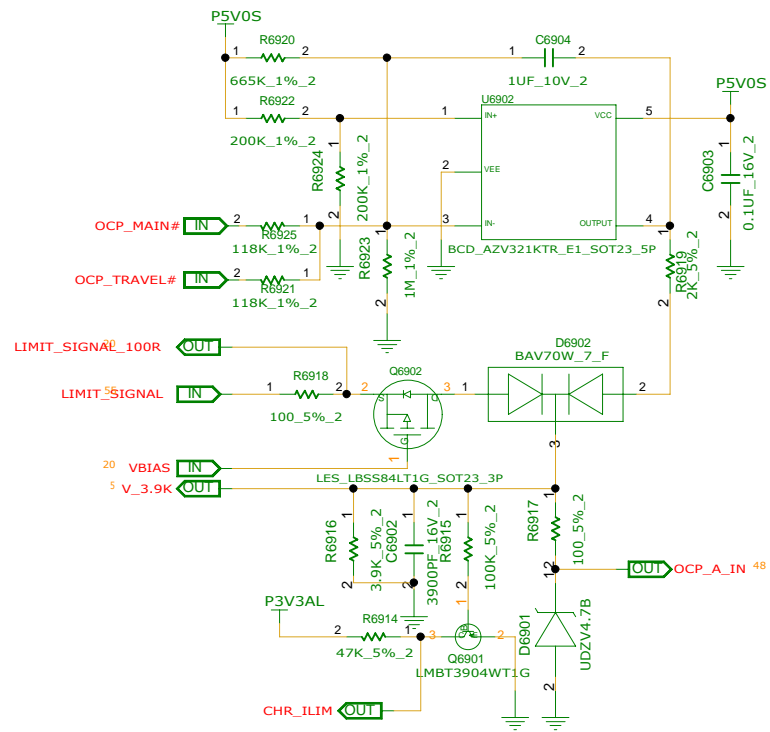
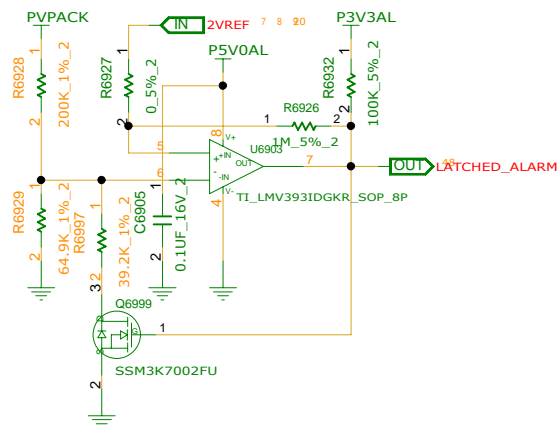
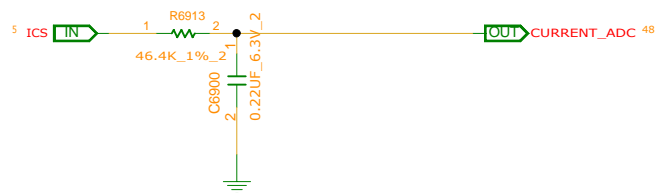
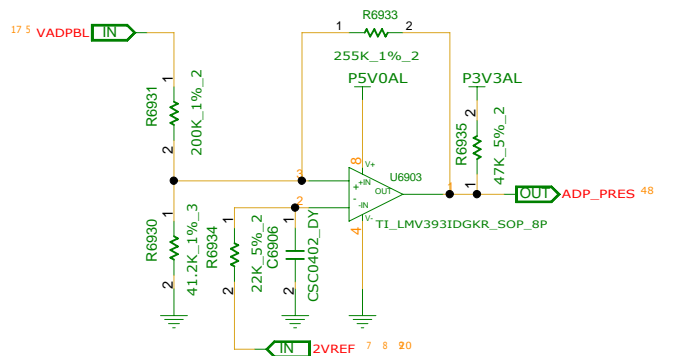
INVENTEC

TITLE
MODEL PROJECT FUNCTION
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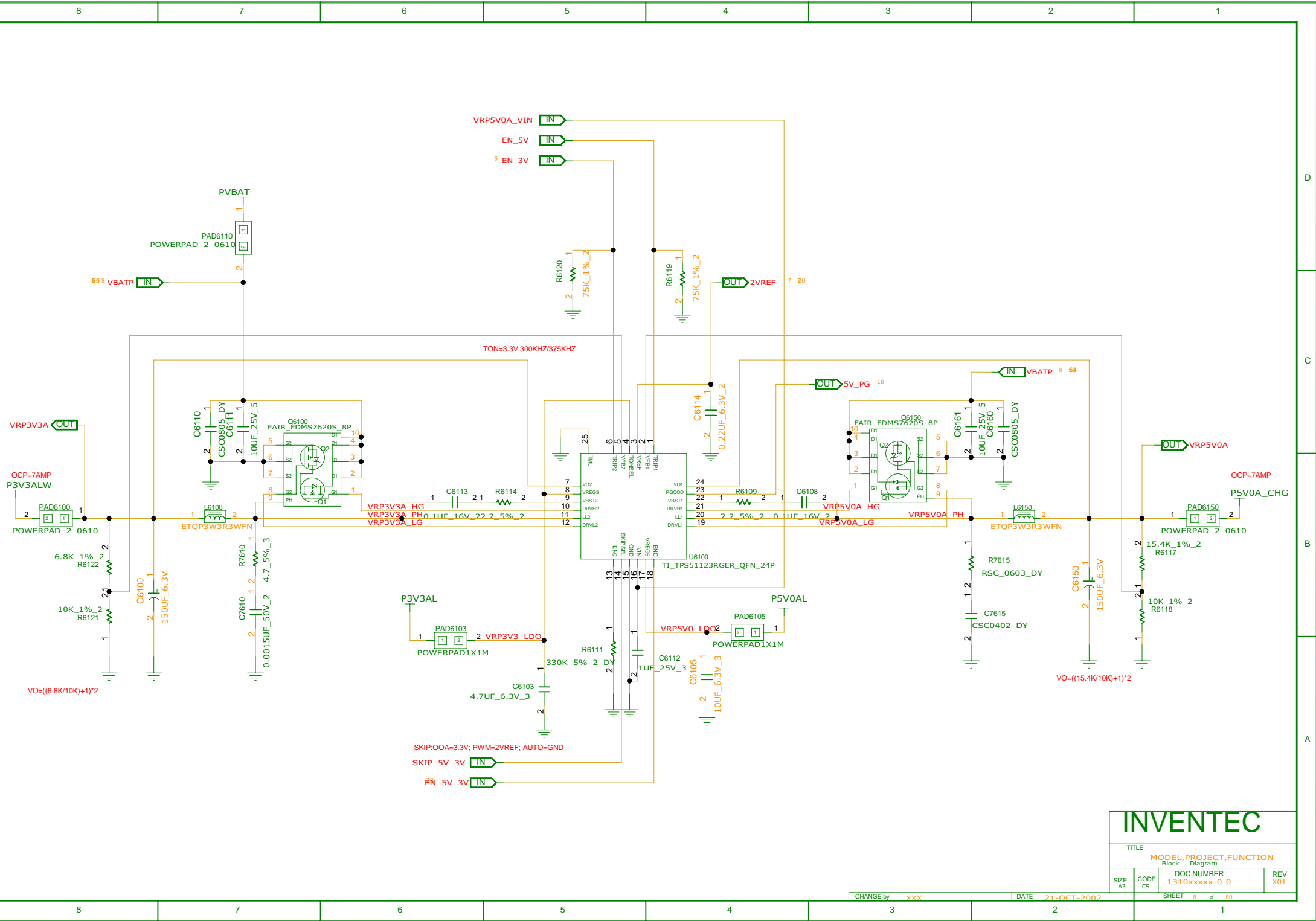
TITLE
MODEL,PROJECT,FUNCTION
Block Diagram

DOC NUMBER
1310xxxxx-0-0

REV
X01

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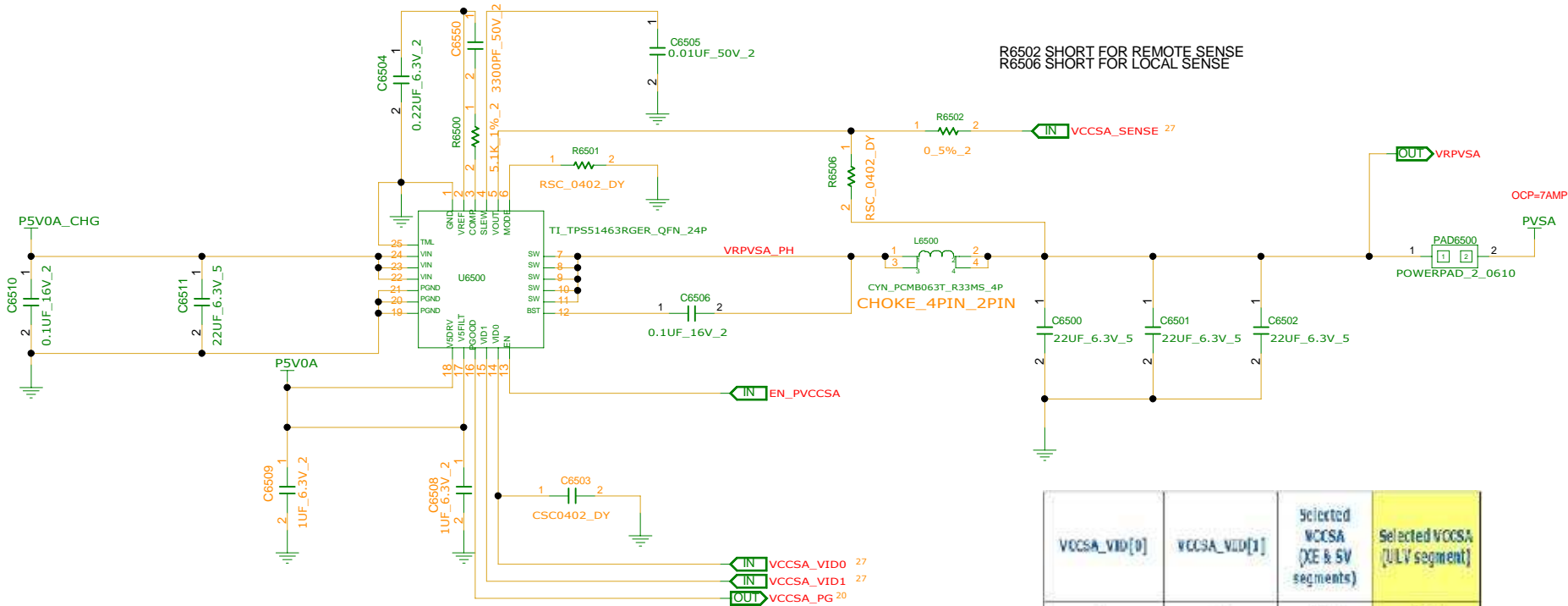




VTT
ON
F(High-Z)
(Discharge)

STATE	S3	S5	VREF	VDDQ	VTTREF	VTT
S0	HI	HI	ON	ON	ON	ON
S3	LO	HI	ON	ON	ON	OFF(High-Z)
S4/S5	LO	LO	OFF	OFF(Discharge)	OFF(Discharge)	OFF(Discharge)

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VCCSA_VID[0]	VCCSA_VID[1]	Selected VCCSA (XE & 5V segments)	Selected VCCSA (ULV segment)
0	0	0.9 V	0.9 V
0	1	0.8 V	0.85 V
1	0	0.725 V	0.775 V
1	1	0.675 V	0.75 V

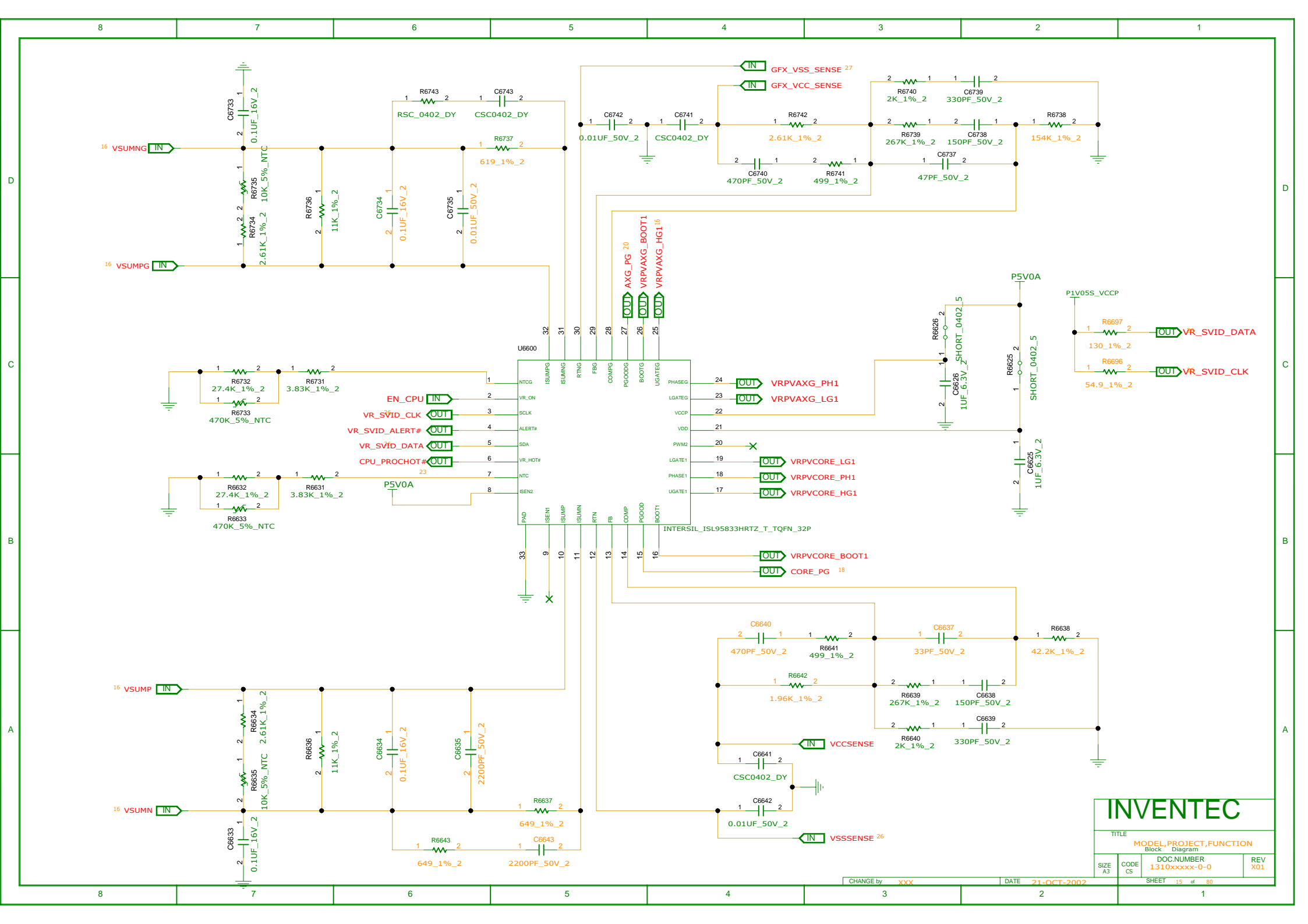
INVENTEC

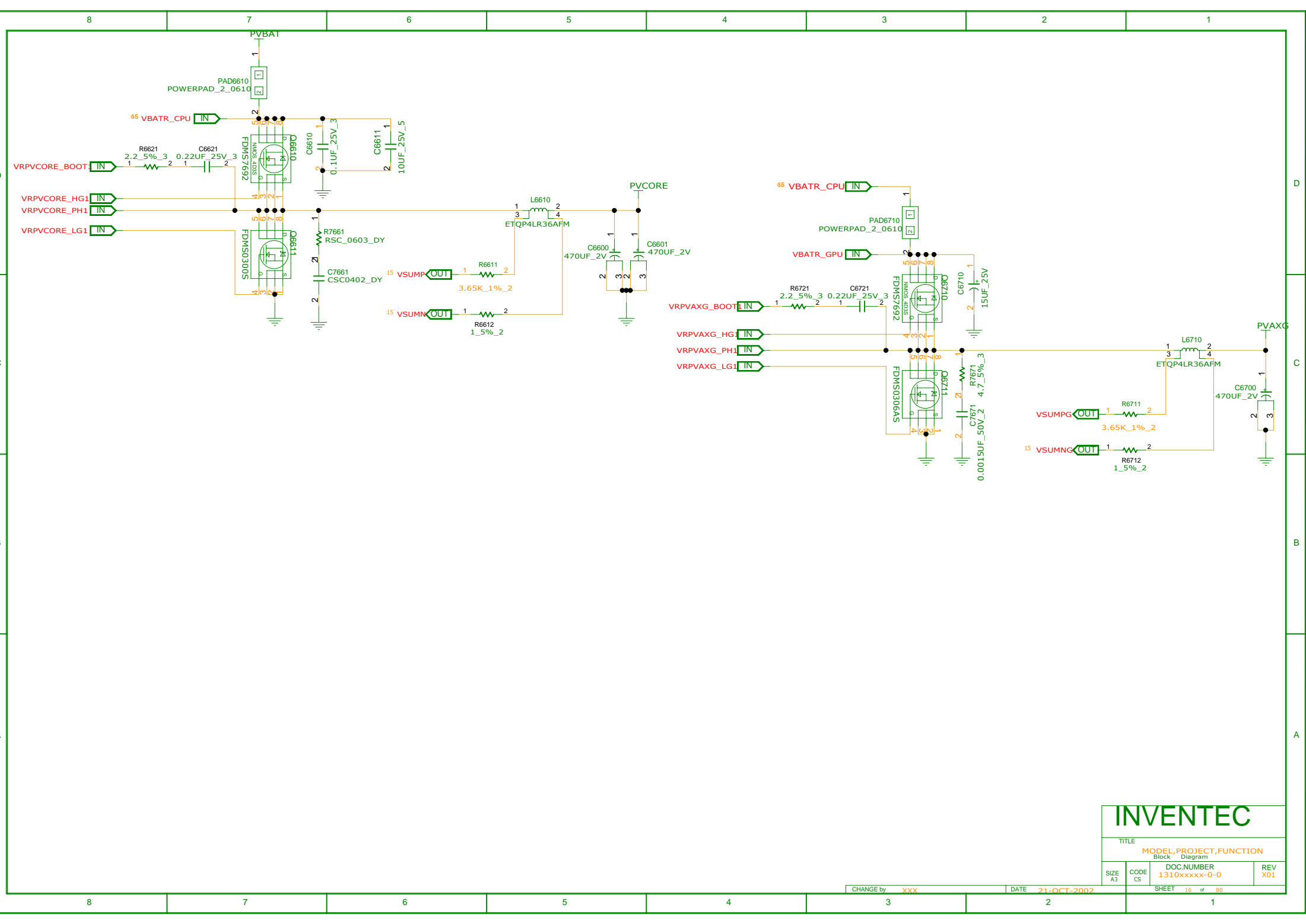
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MODEL,PROJECT,FUNCTION

SIZE A3 CODE CS DDC NUMBER 1310xxxx-0-0 REV X01

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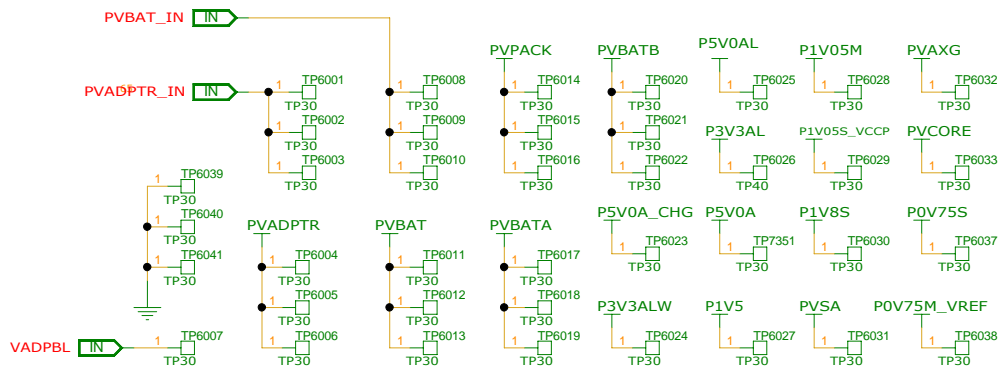


INVENTEC

TITLE
MODEL,PROJECT,FUNCTION
Block Diagram

SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
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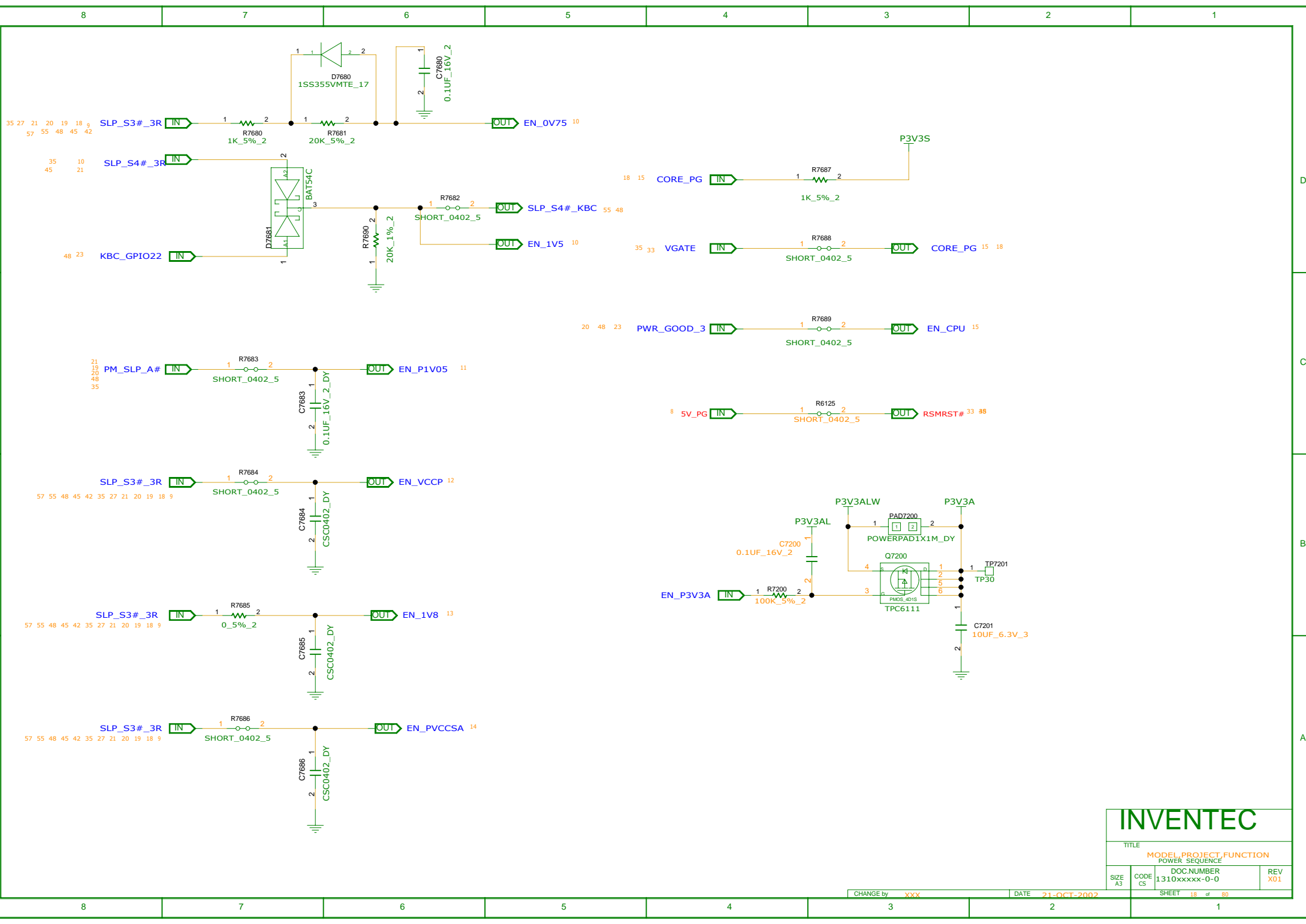
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TITLE
MODEL,PROJECT,FUNCTION
Block Diagram

SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
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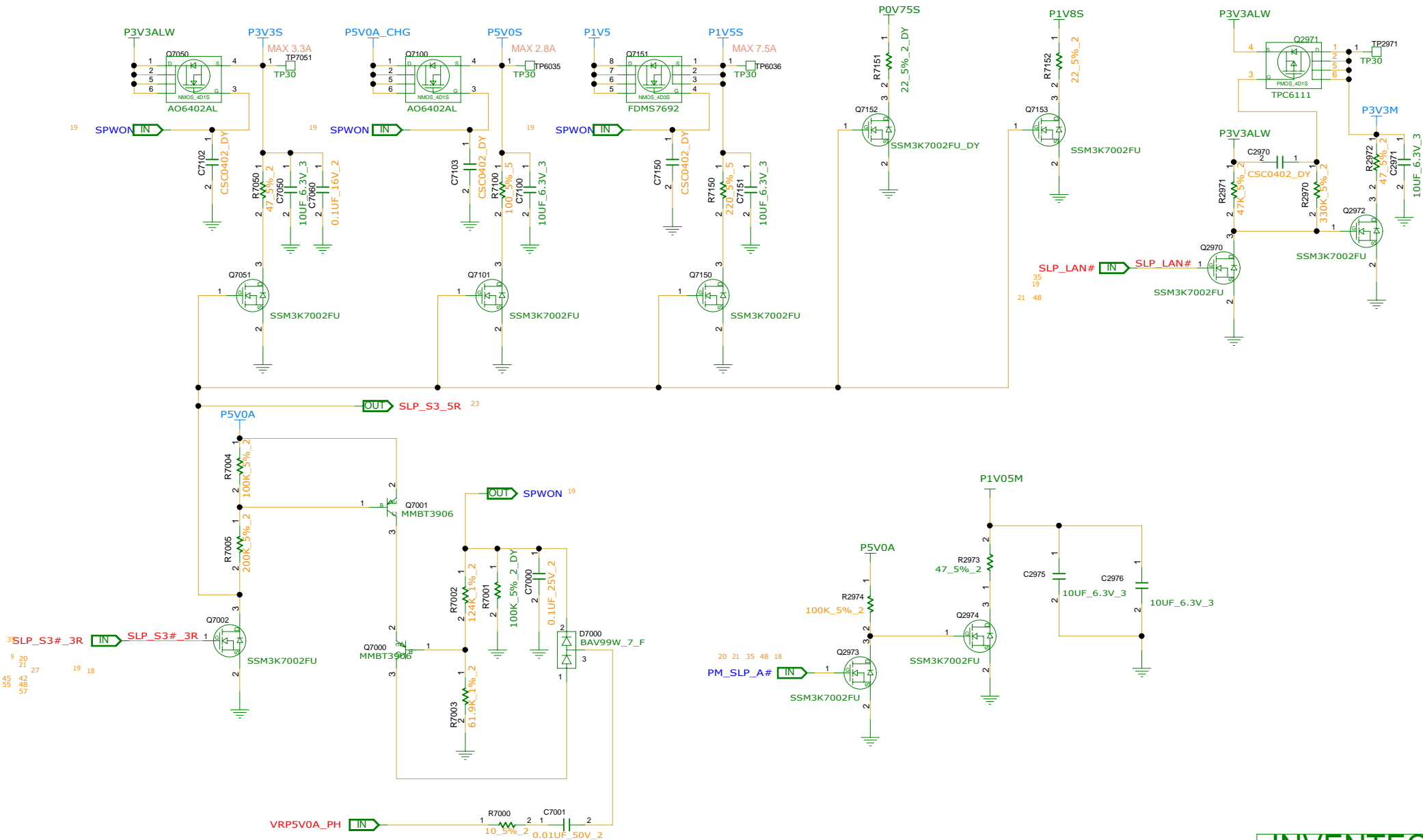
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INVENTEC

TITLE			
MODEL PROJECT FUNCTION			
POWER SEQUENCE			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
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REFERENCE NUMBER : 7000~7350



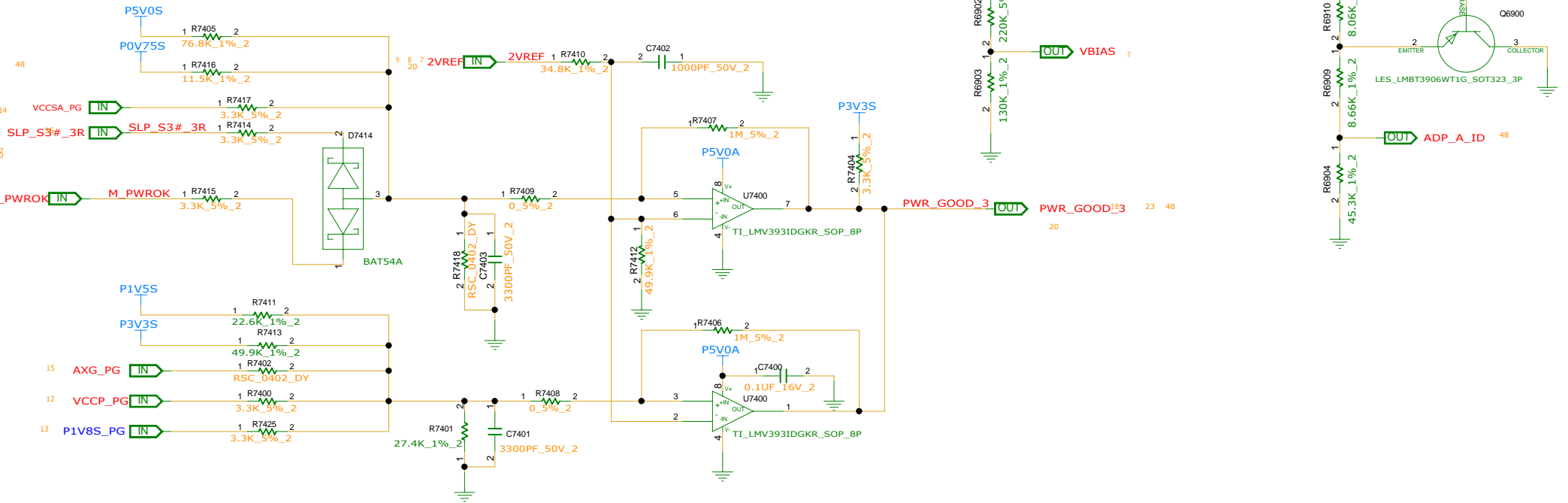
Q2971 WHETHER CAN CHANGE TO
6015B0017101 PMV65XP OR NOT

REFERENCE NUMBER : 2950~2999

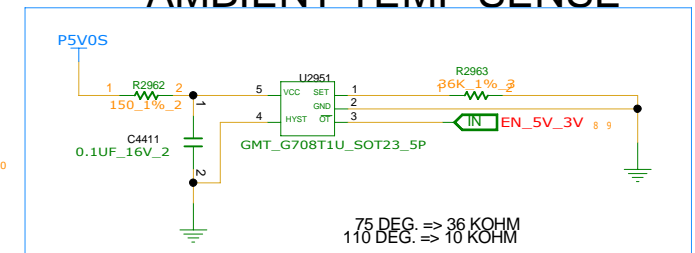
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TITLE			
MODEL,PROJECT,FUNCTION POWER(SLEEP)			
SIZE A3	CODE CS	DOC.NUMBER 1310xxxxx-0-0	REV X01
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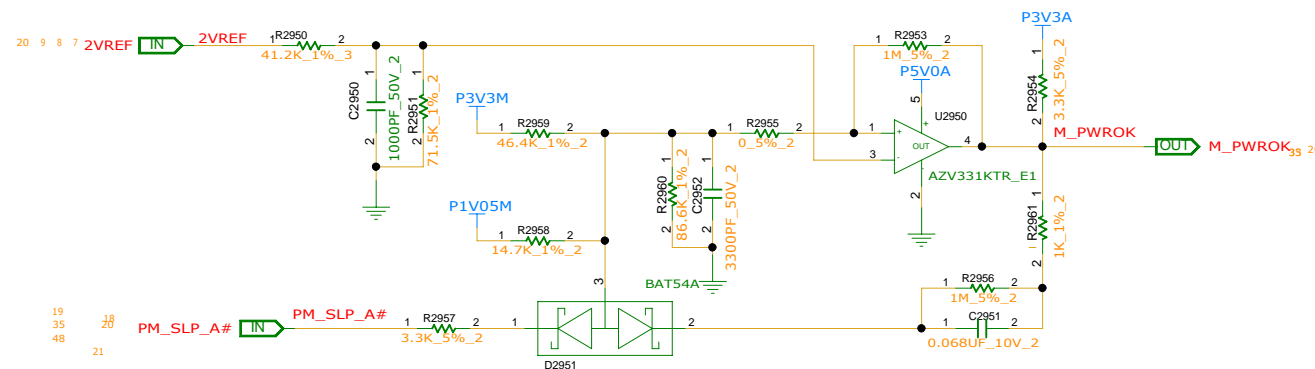
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AMBIENT TEMP SENSE



REFERENCE NUMER : 2950~2999

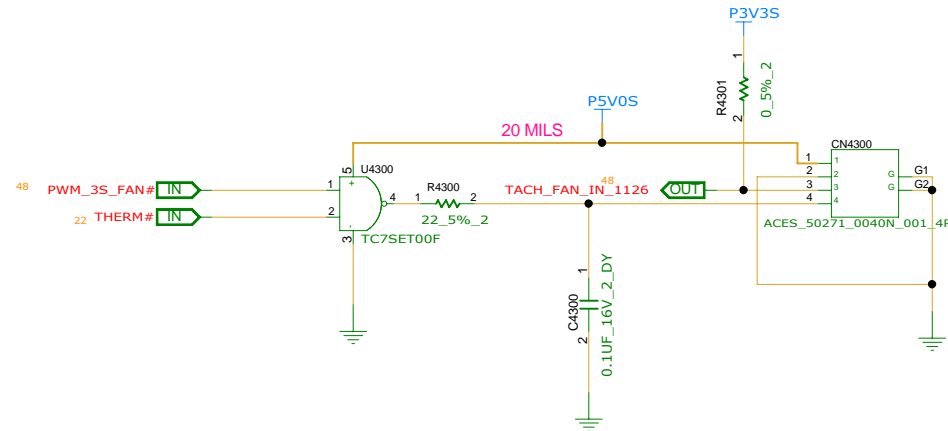


INVENTEC

TITLE			
MODEL PROJECT FUNCTION POWER (SEQUENCE)			
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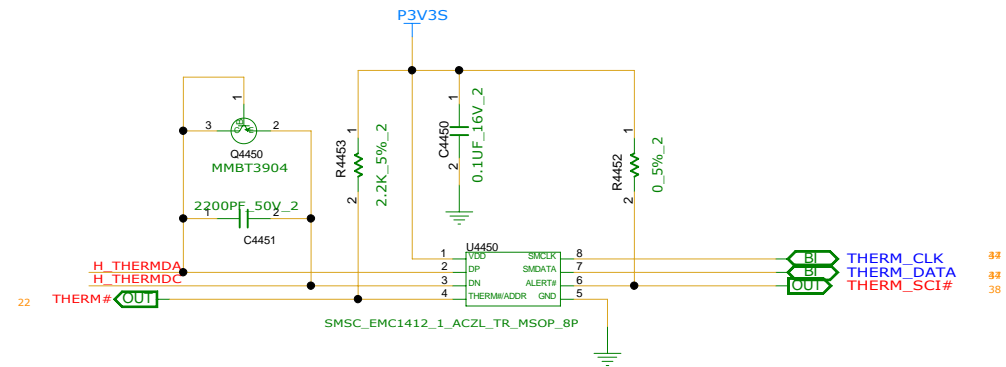
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REFERENCE NUMBER:4400~4349



REFERENCE NUMBER:4450~4499

THERM SENSOR

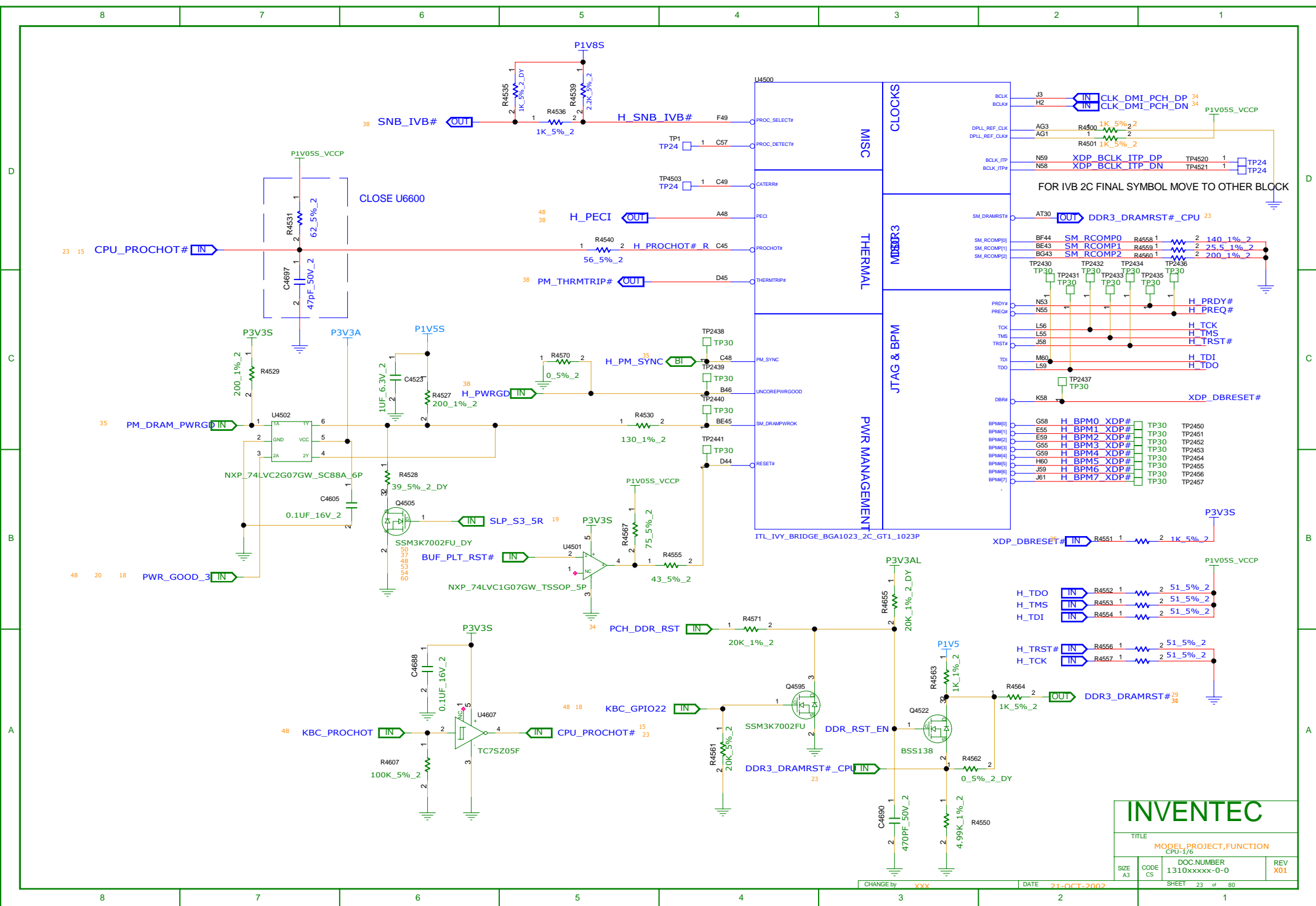


REFERENCE NUMBER:4411~4449

INVENTEC

TITLE			
MODEL PROJECT,FUNCTION			
FAN & THERMAL			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
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CHANGE by XXX DATE 21-OCT-2002



D

C

B

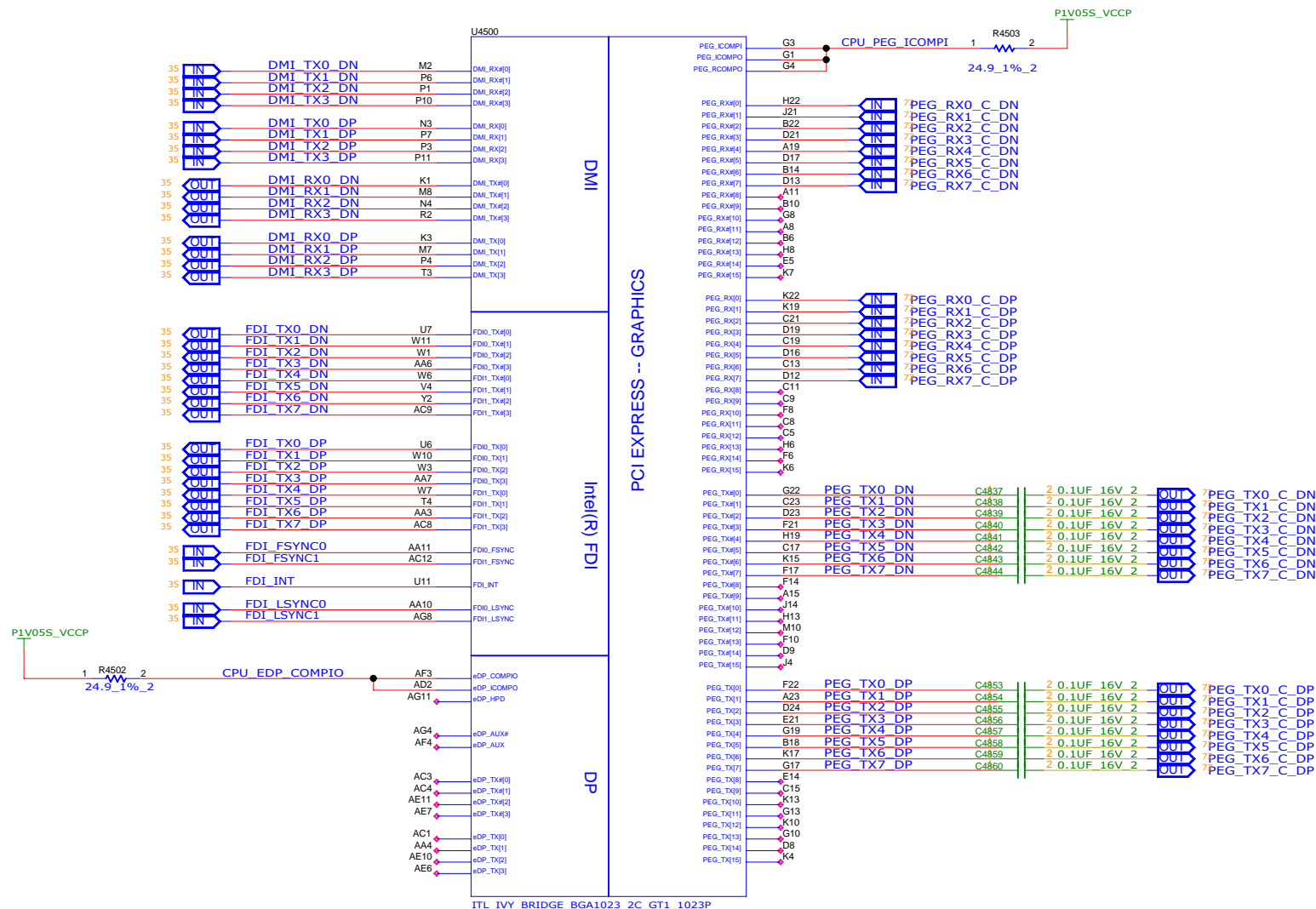
A

D

C

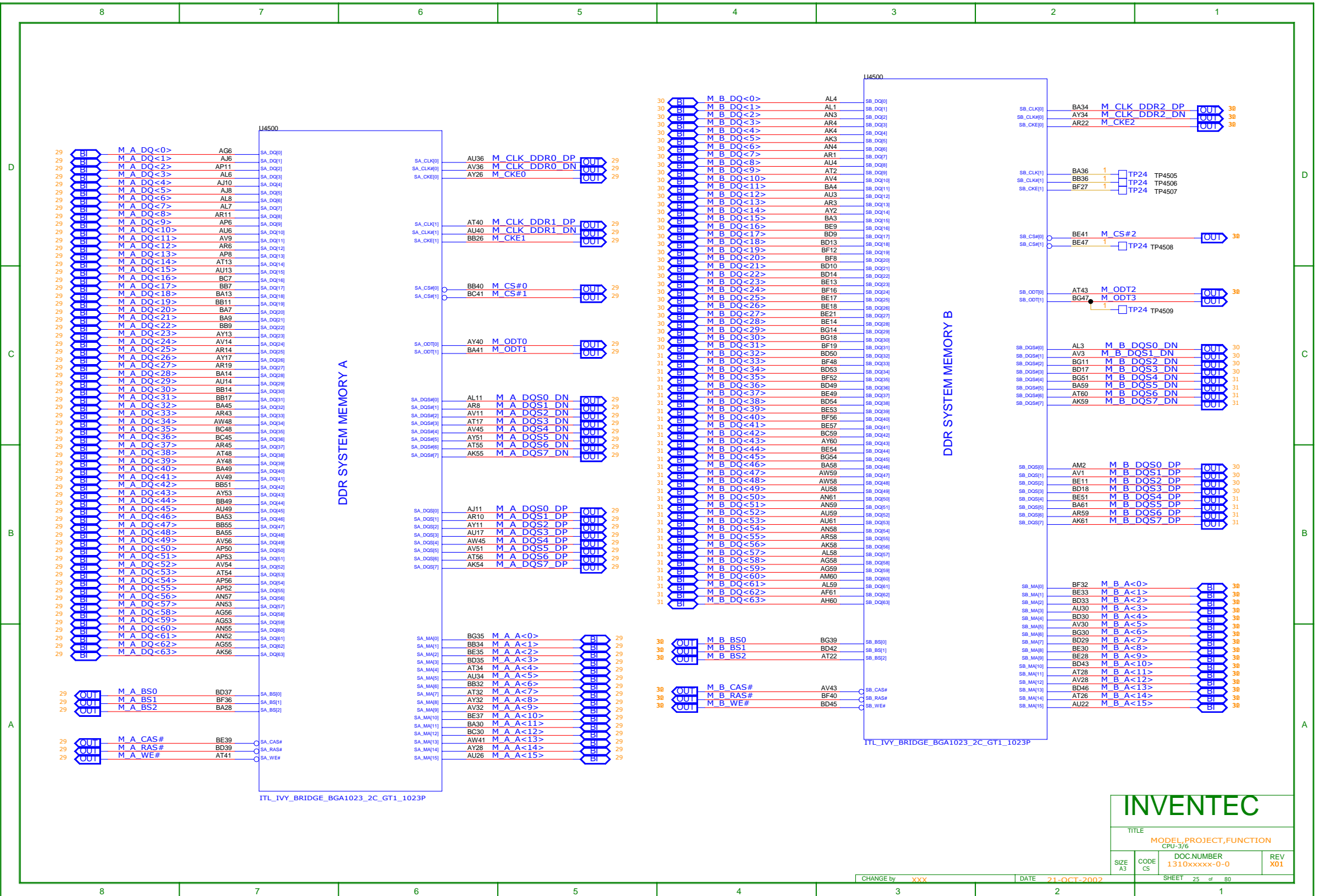
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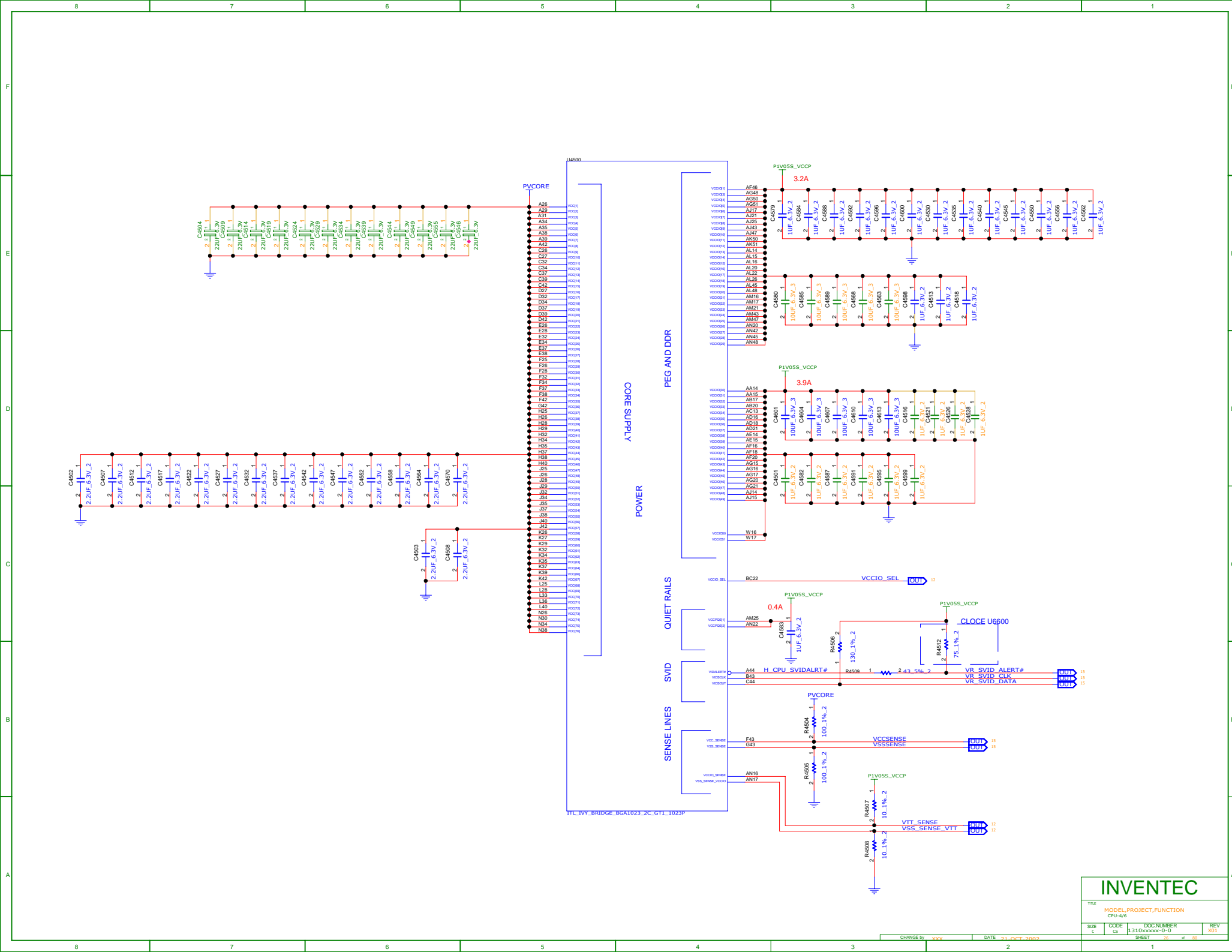
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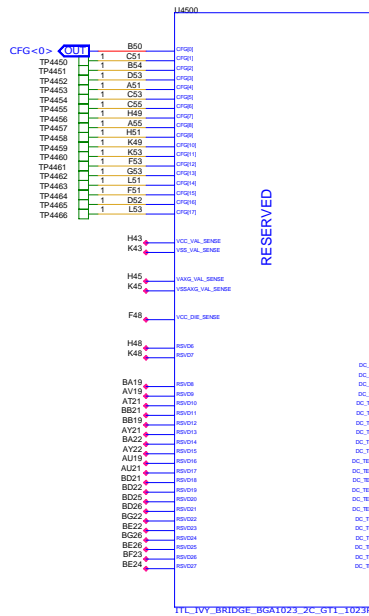
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MODEL PROJECT,FUNCTION
CPU-2/5SIZE A3
CODE CS
DOC.NUMBER 1310xxxxx-0-0
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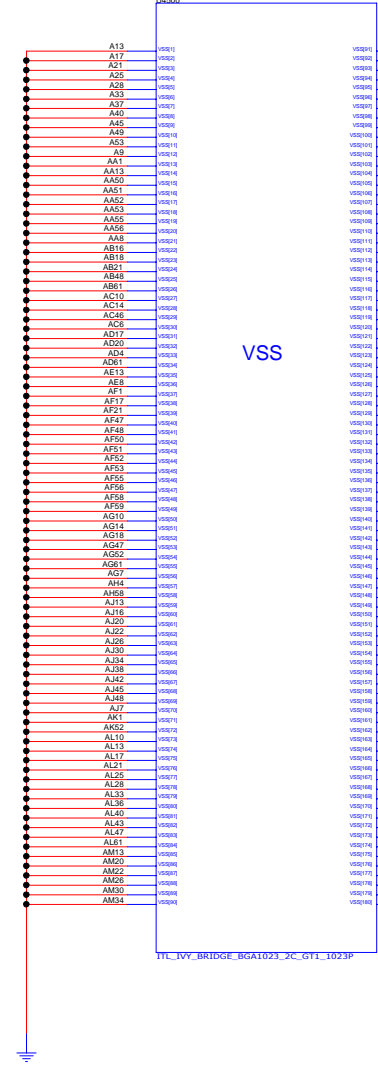
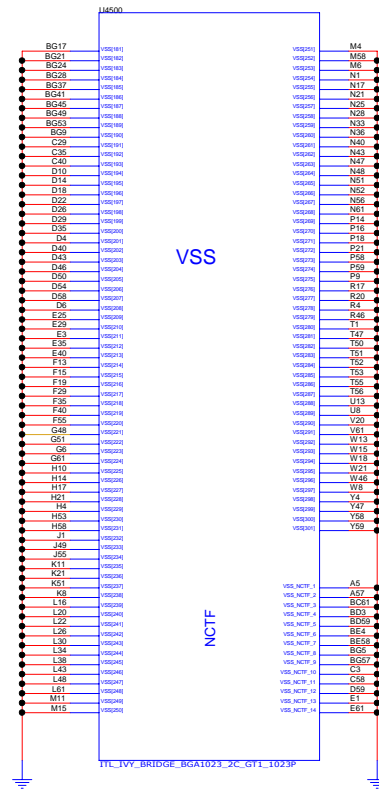




CFG[2] : PCI Express* Static x16 Lane Numbering Reversal.
 1 = NORMAL MODE
 0 = LANE REVERSED

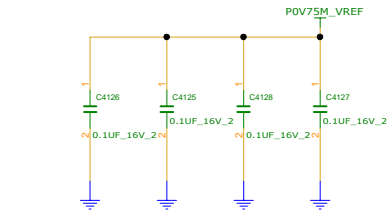
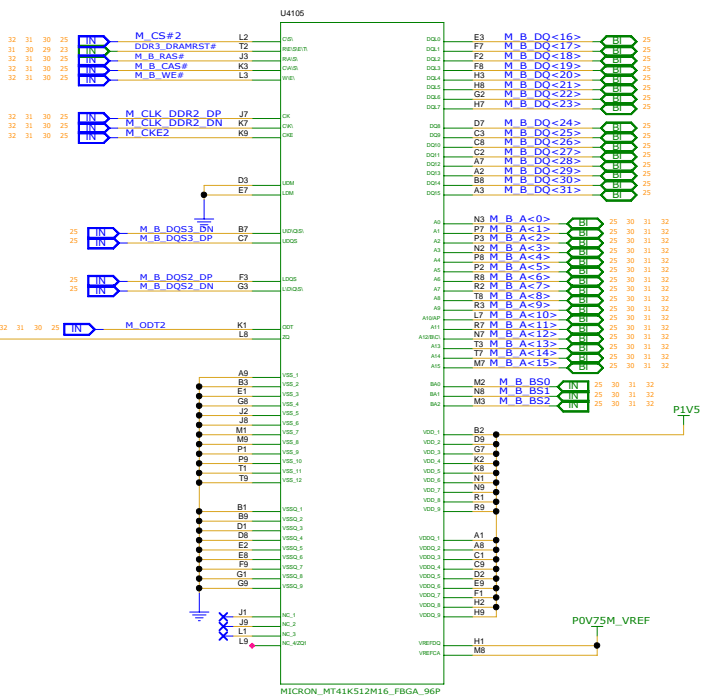
CFG[4] : eDP enable
 1 = Enabled
 0 = Disabled
 CFG[6:5] : PCI Express Bifurcation:
 00 = 1 x8, 2 x4 PCI Express
 01 = 1 x8, 1 x4 PCI Express
 10 = 1 x8, 1 x4 PCI Express
 11 = 1 x16 PCI Express

CFG[7] : PEG DEFER TRAINING
 1: Default PEG Train immediately following RESETB deassertion
 0: PEG Wait for BIOS for training

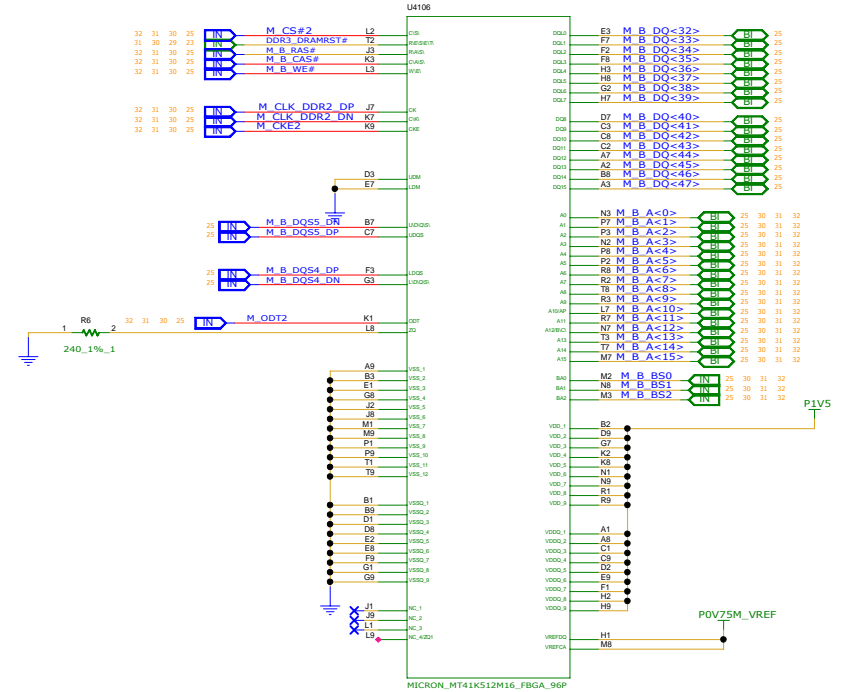




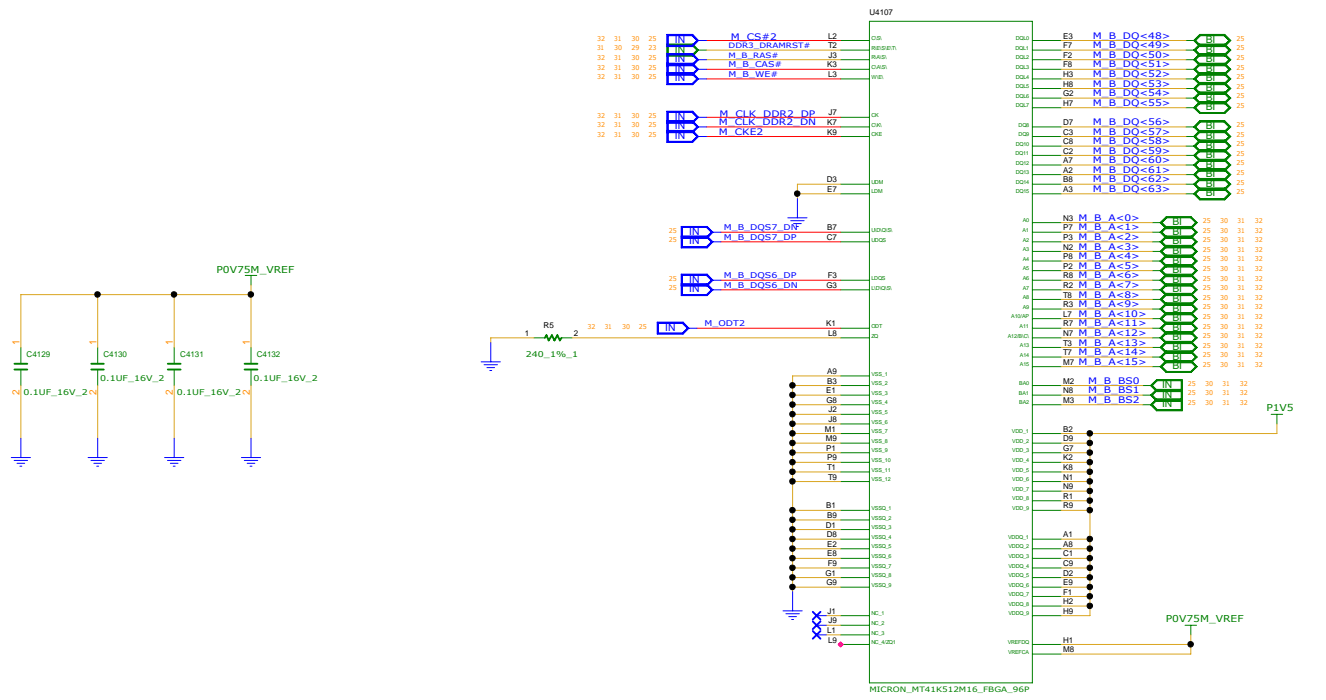
DDR3_B_1



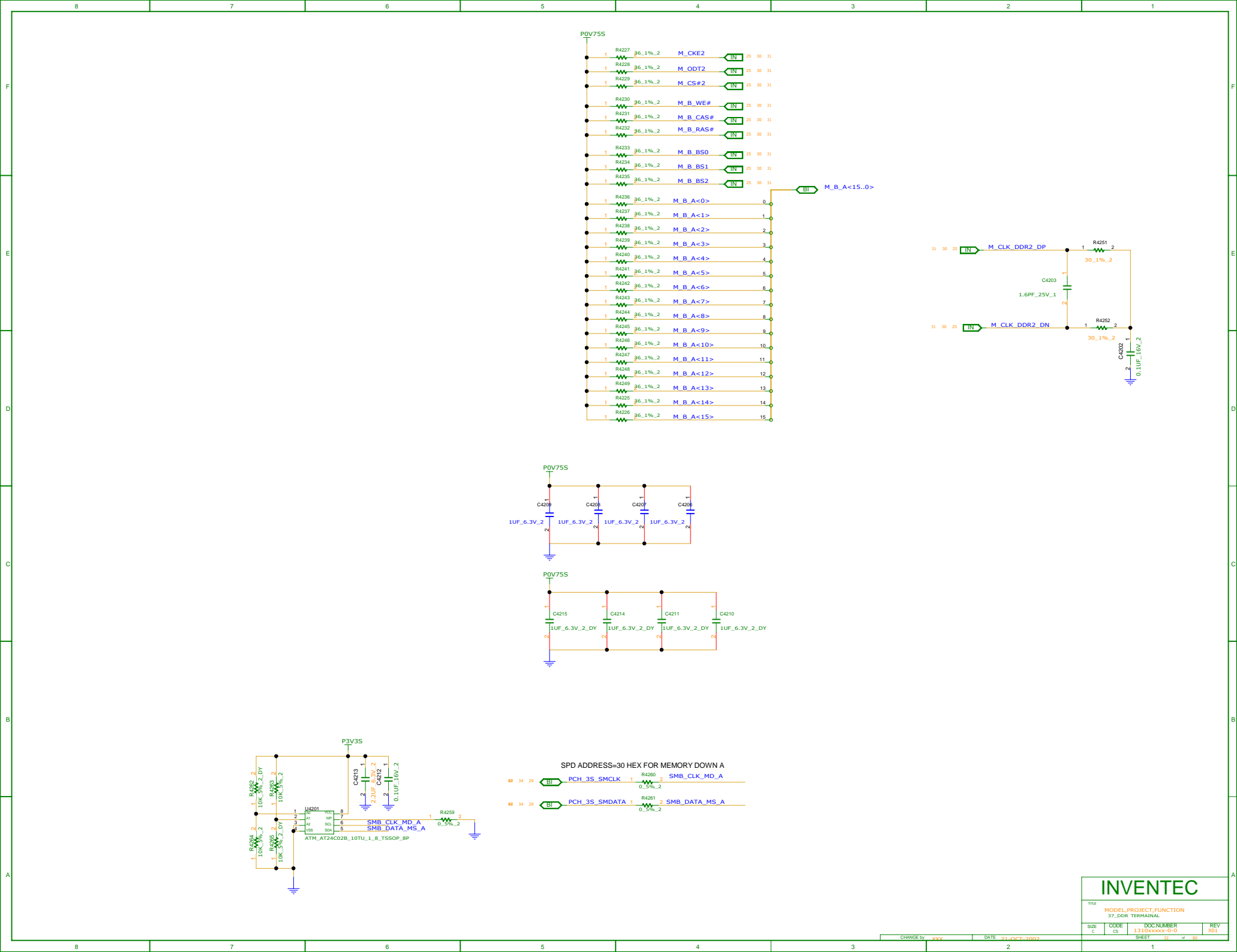
DDR3L_B_2



DDR3L_B_3

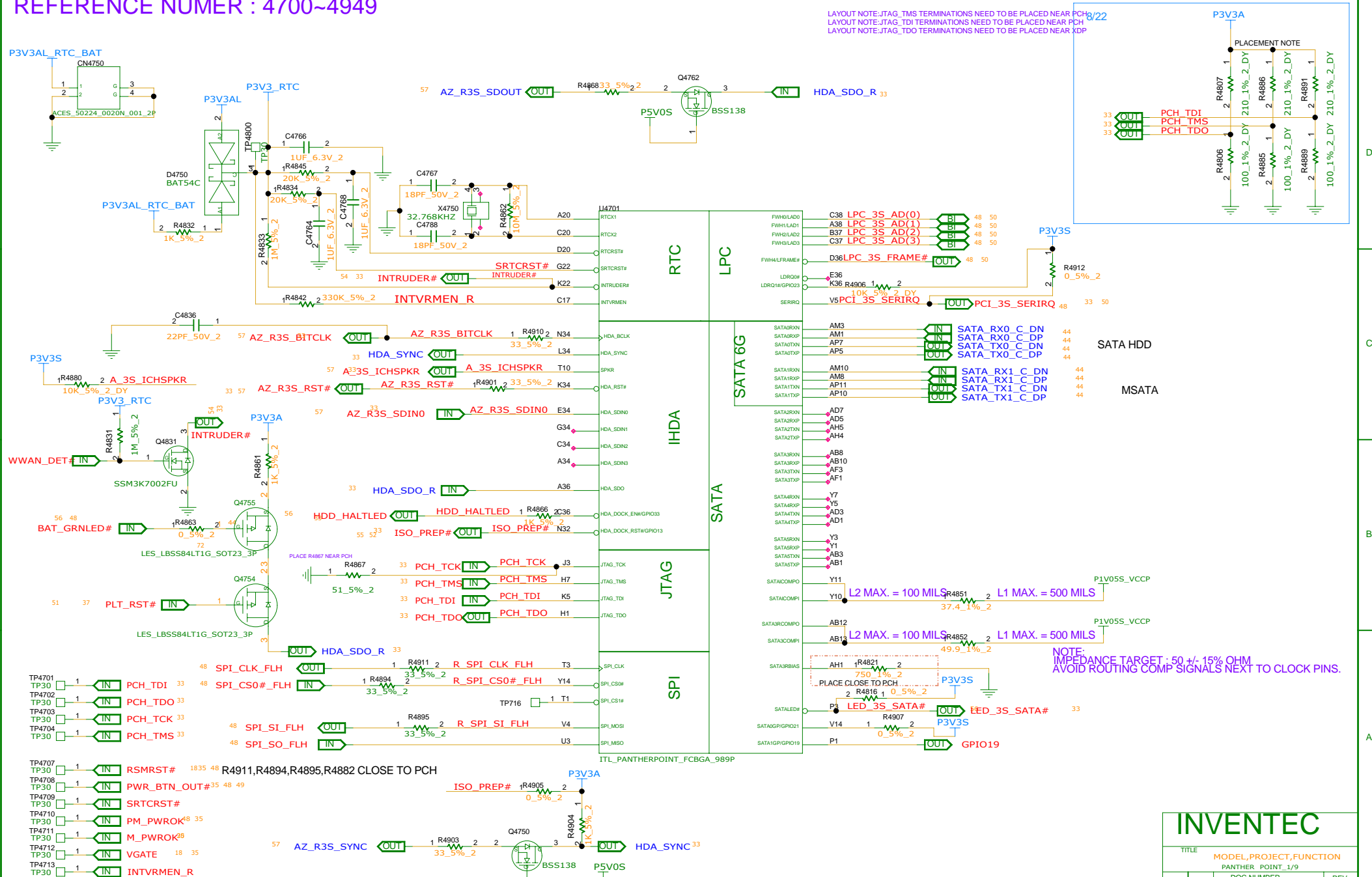


INVENTEC			
TITLE MODEL,PROJECT,FUNCTION 36_DDR3L-3			
SIZE C	CODE CS	DOC NUMBER 1310XXXX-0-0	REV X01
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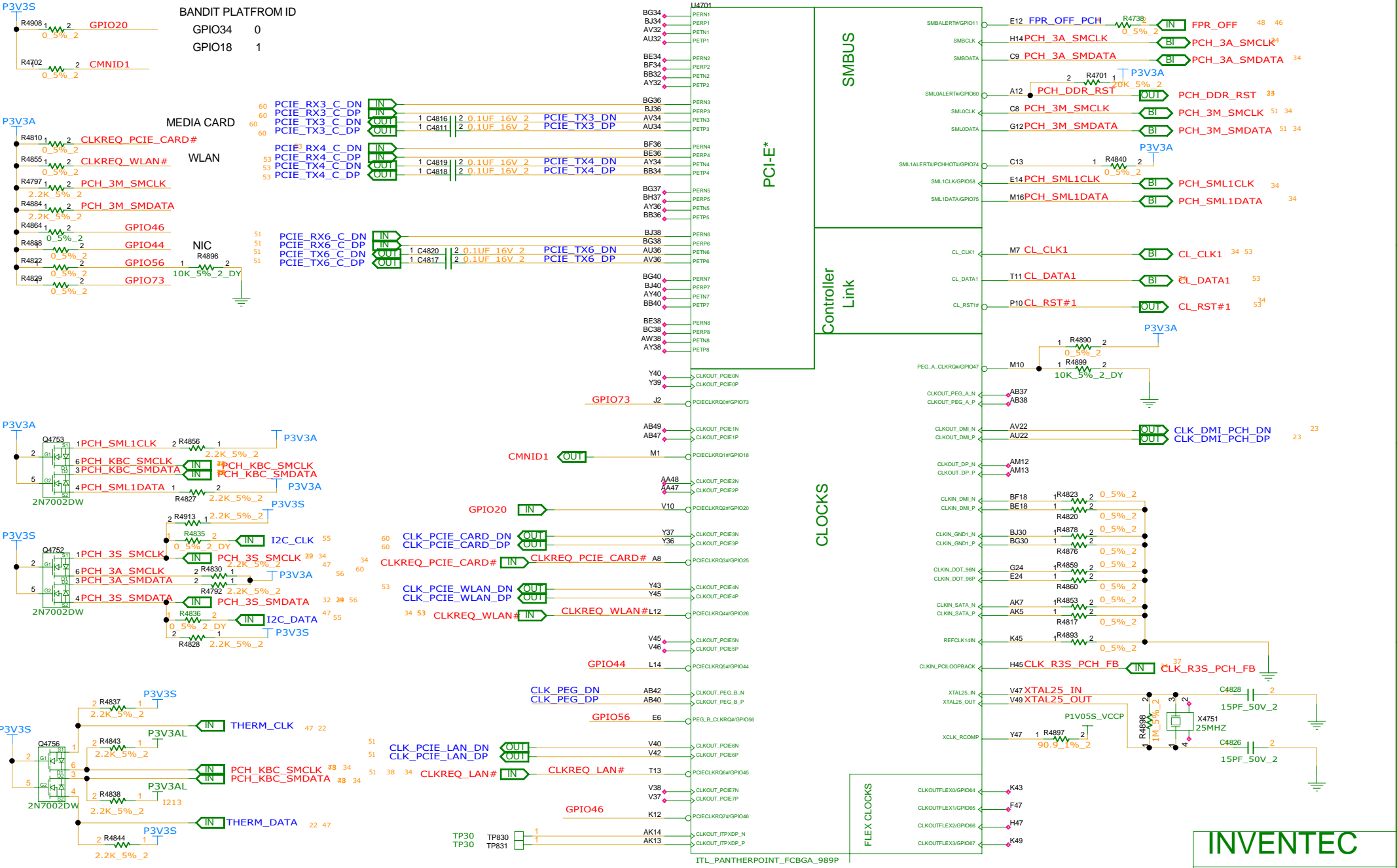
INVENTEC			
TITLE			
MODEL,PROJECT,FUNCTION			
37_DDR TERMINAL			
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REFERENCE NUMBER : 4700~4949



INVENTEC			
TITLE PANTHER POINT_1/9			
SIZE A3	CODE CS	DOC.NUMBER 1310xxxxx-0-0	REV X01
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REFERENCE NUMBER : 4700~4949

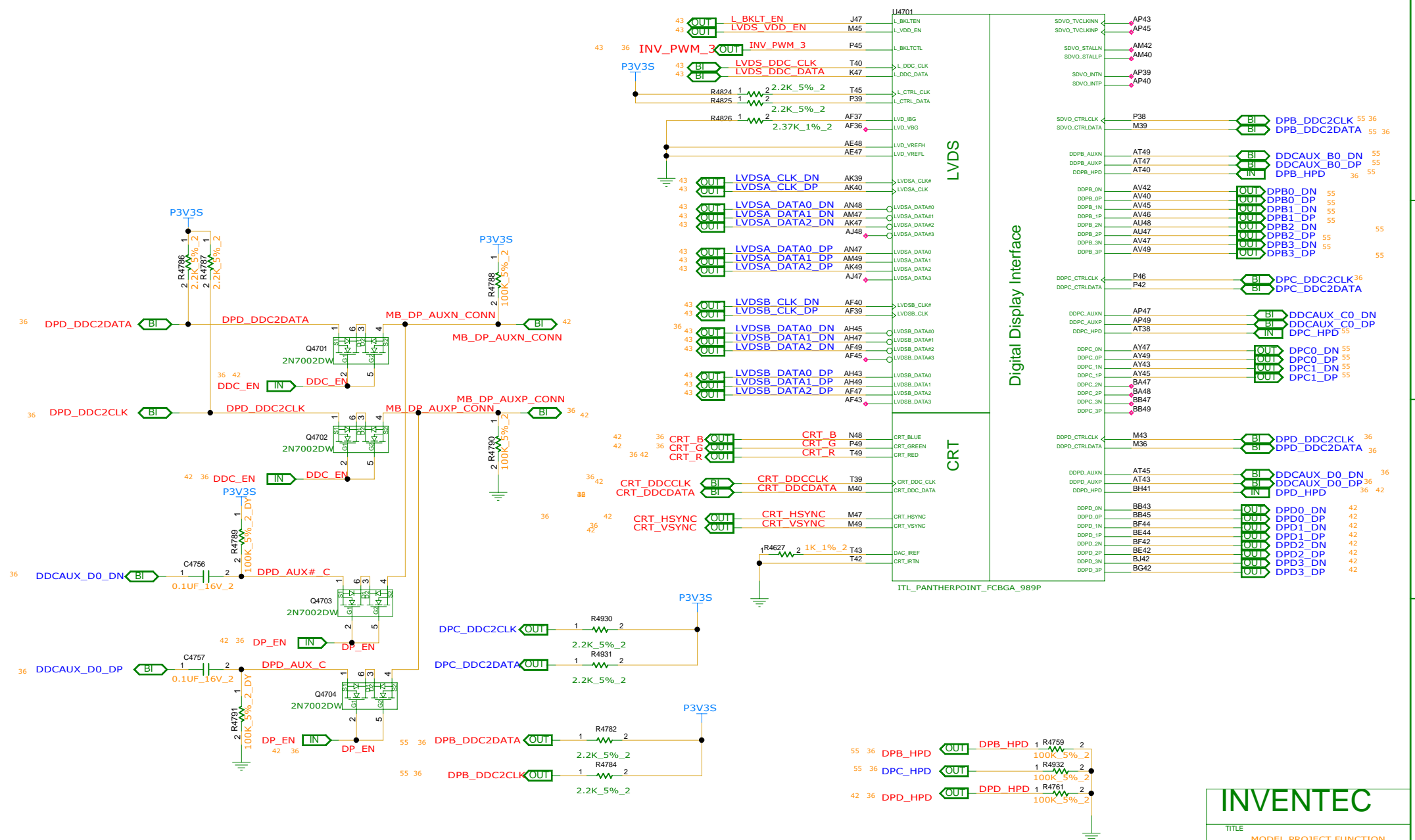


- 1.SLP_SUS AND SUSACK# ARE NC IF DSW IS NOT SUPPORTED
- 2.DPWROK SHOULD CONNECT TO RSMRST# IF DSW NOT SUPPORTED
- 3.PCH_DPWROK PULL UP TO P3V3S ENABLES DSW WUPPORT. NO INSTALL R4752 TO DISABLE DSW



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INVENTEC			
TITLE			
MODEL PROJECT FUNCTION			
PANTHER POINT_4/9			
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SIZE	CODE	SHEET	
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D

D

C

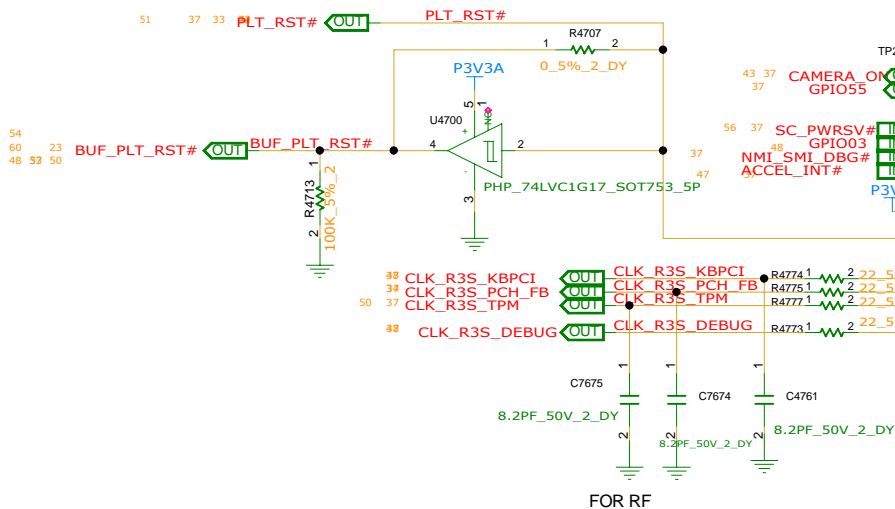
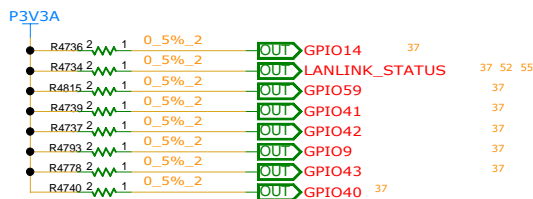
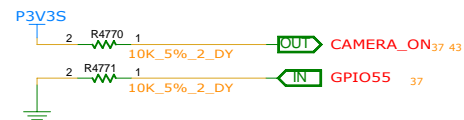
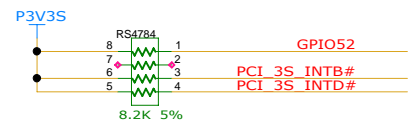
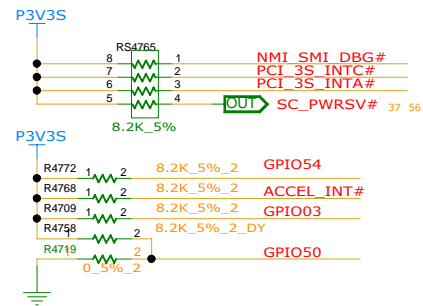
C

B

B

A

A

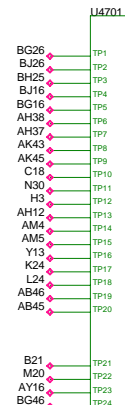
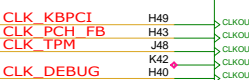
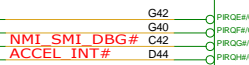
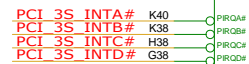
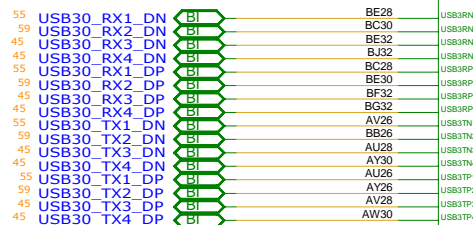


PORT1:DOCKING

PORT2:LEFT USB2.0(CHARGE PORT)+USB3.0

PORT3:RIGHT1 USB2.0+USB3.0

PORT4:RIGHT2 USB2.0+USB3.0

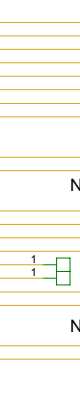
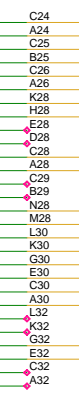
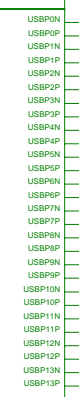


RSVD

NVRAM

PCI

USB



INVENTEC

TITLE

MODEL PROJECT FUNCTION

PANTHER POINT_5/6

DOC NUMBER

1310xxxx-0-0

REV

X01

SIZE

A3

CODE

CS

CHANGE by

XXX

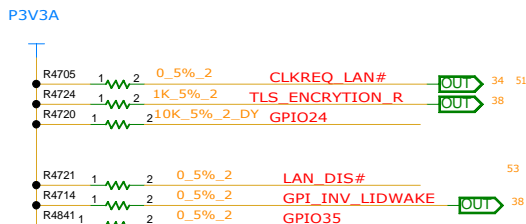
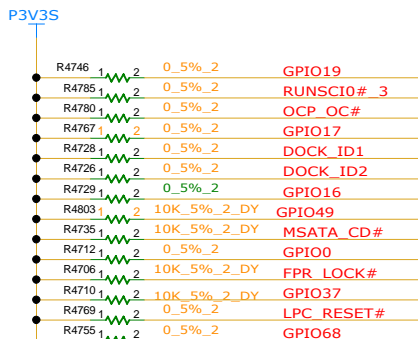
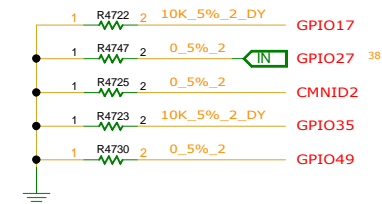
DATE

21-OCT-2002

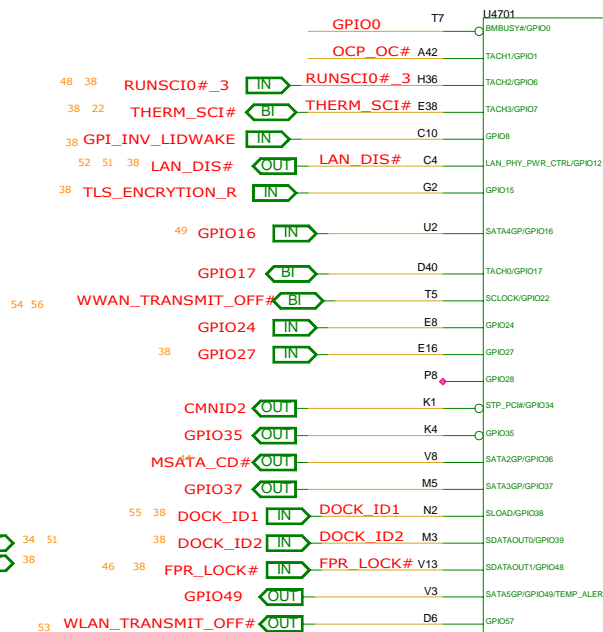
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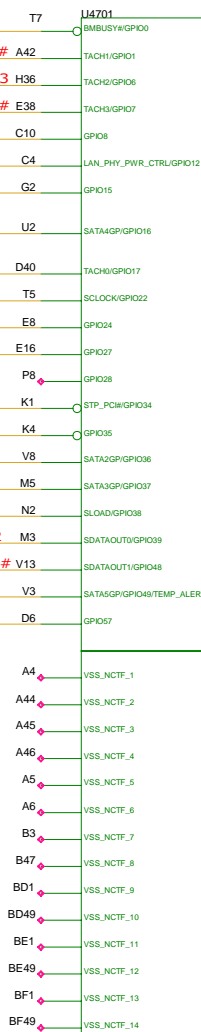
GPIO17	GPIO35	GPIO49	GPIO50	
R4767	R4841	R4803	R4758	H
R4722	R4723	R4730	R4719	L
0	1	0	0	SI 1
0	1	0	1	SI 1B
0	1	1	0	SI 2
1	0	0	0	PV 1
1	1	0	0	MV



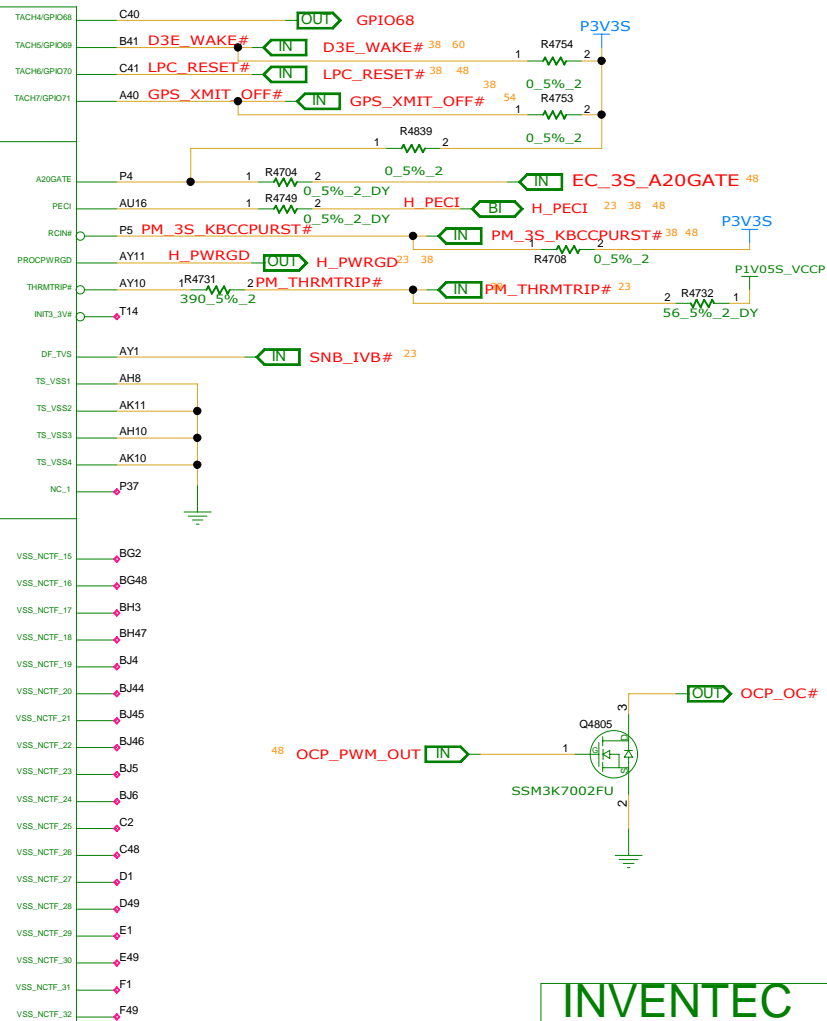
GPIO

CPU/MISC

NCTF



ITL_PANTHERPOINT_FCBGA_989P

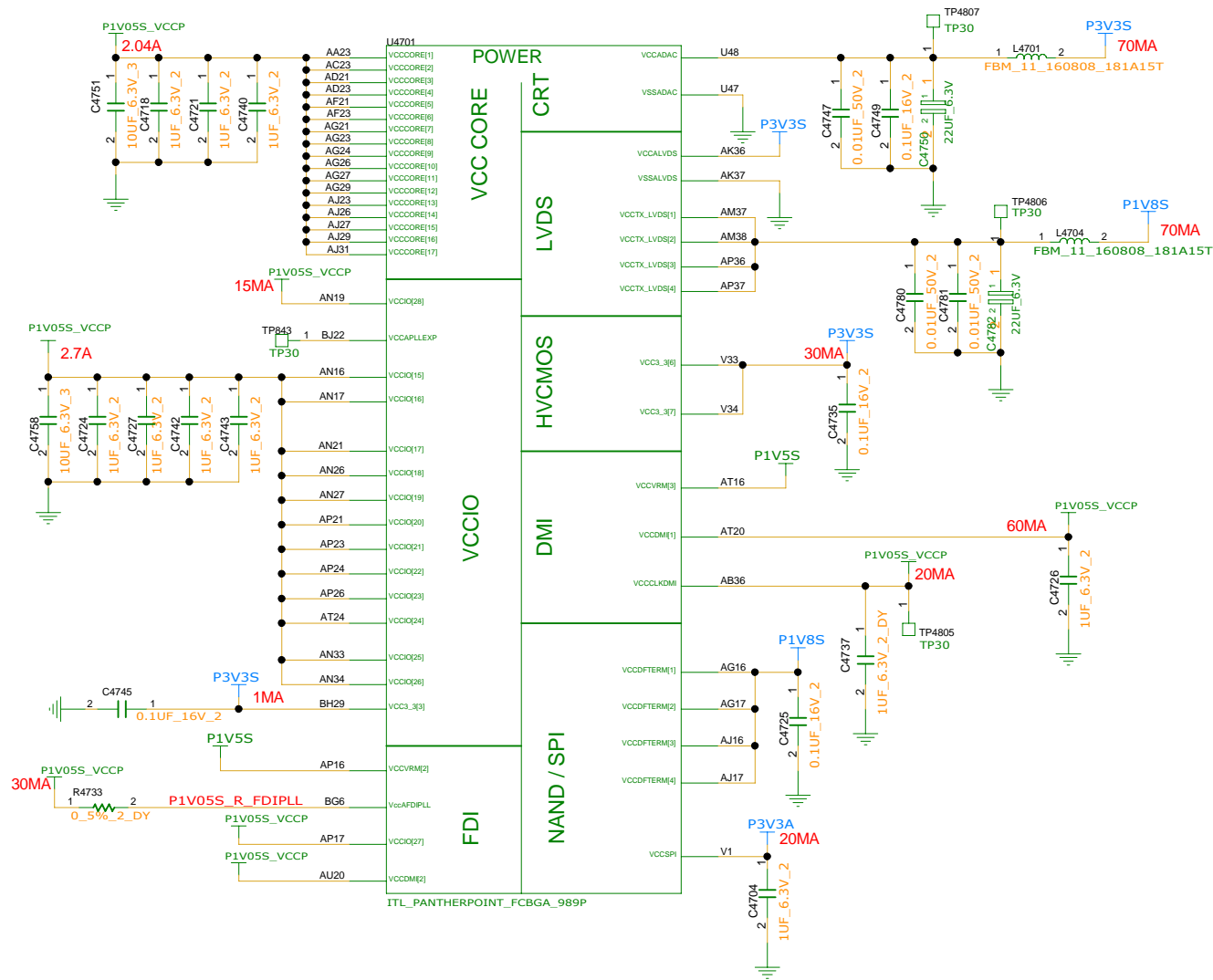


INVENTEC

TITLE			
MODEL PROJECT FUNCTION			
PANTHER POINT_6/9			
SIZE	CODE	DOC NUMBER	REV
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TITLE
MODEL PROJECT FUNCTION
PANTHER POINT_7/9

DOC NUMBER
1310xxxx-0-0

REV
X01

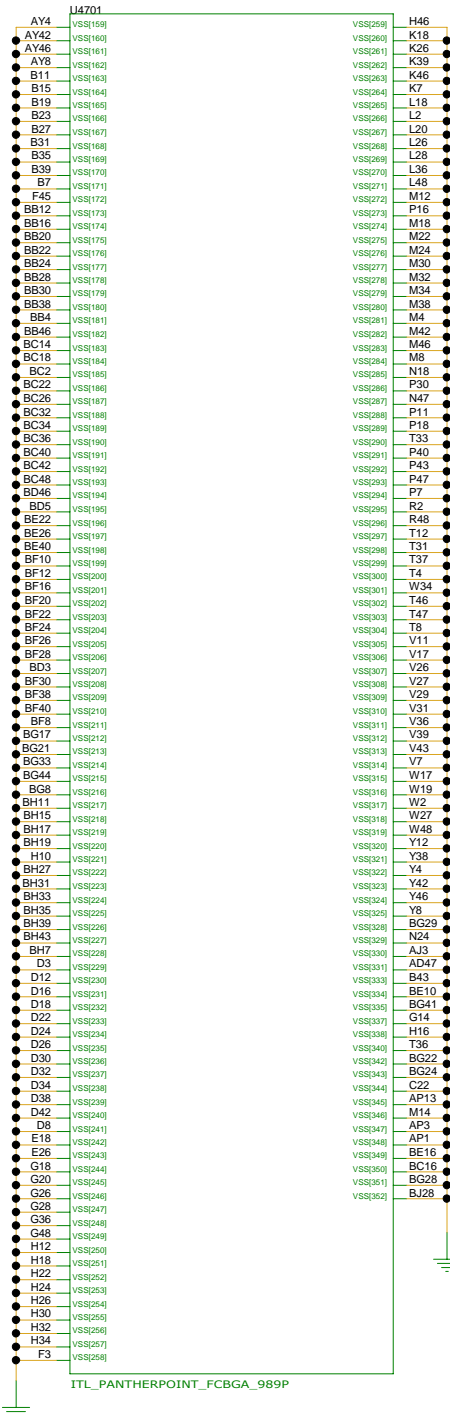
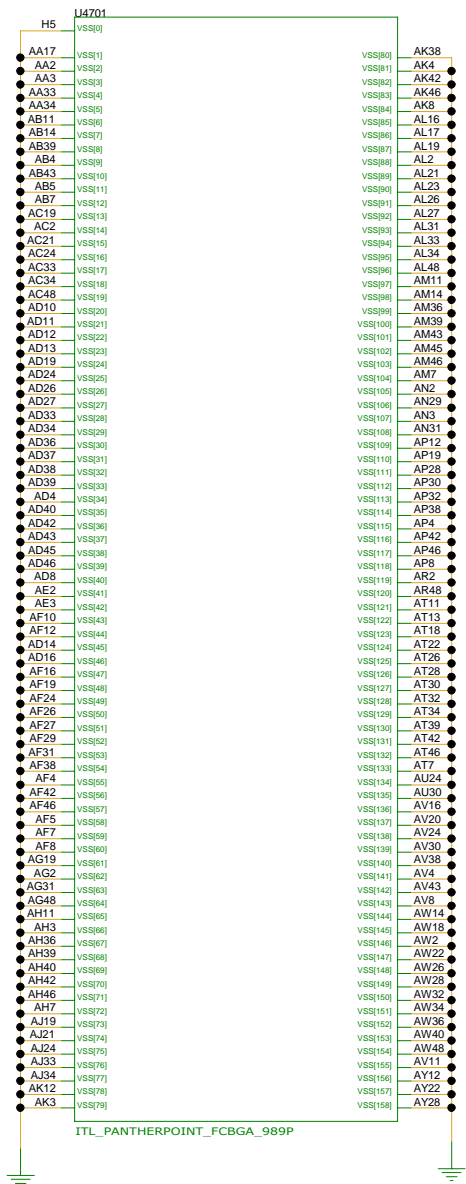
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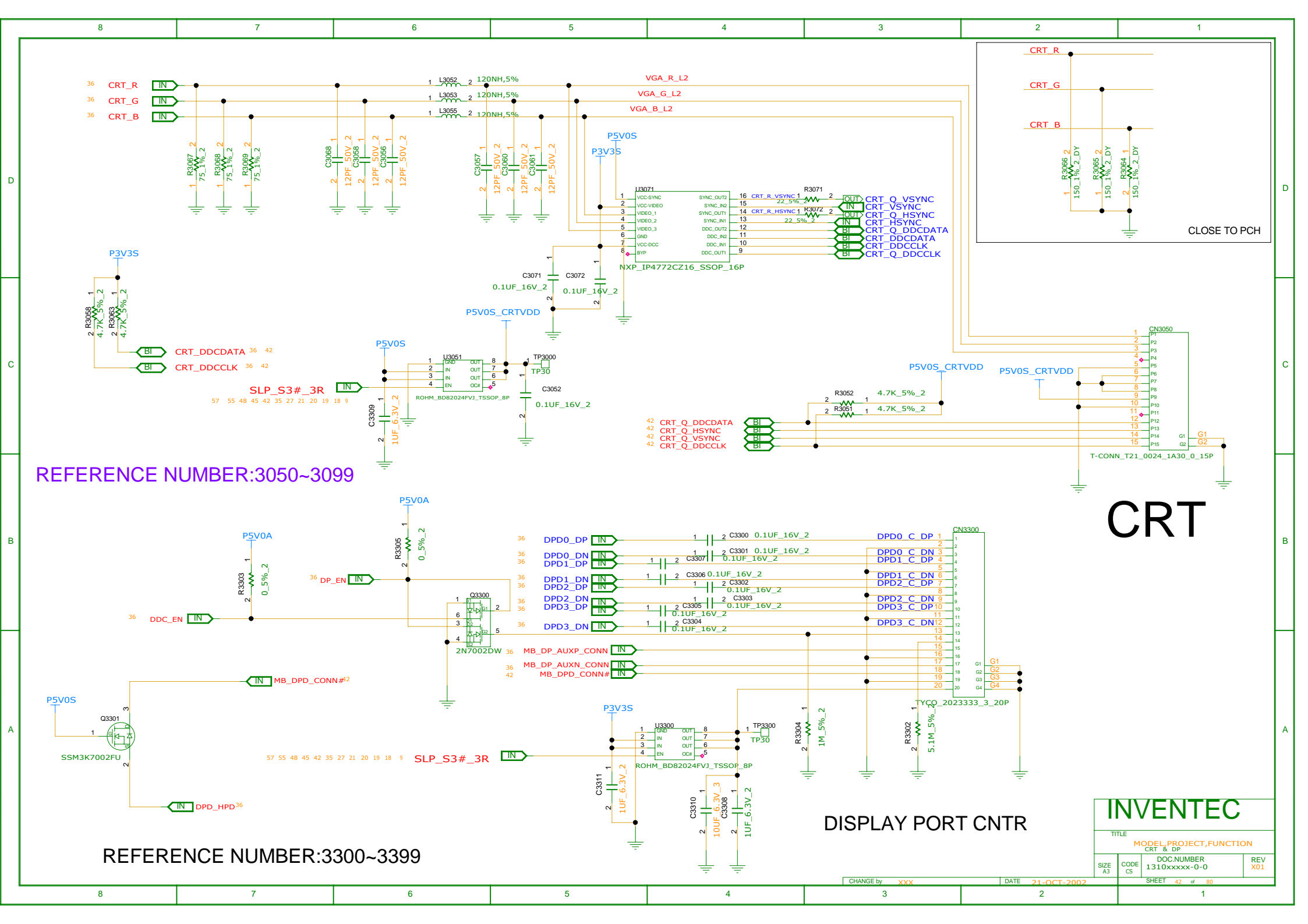


SIZE A3	CODE CS	DOC.NUMBER 1310xxxxx-0-0	REV X01
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INVENTEC			
TITLE			
MODEL PROJECT FUNCTION			
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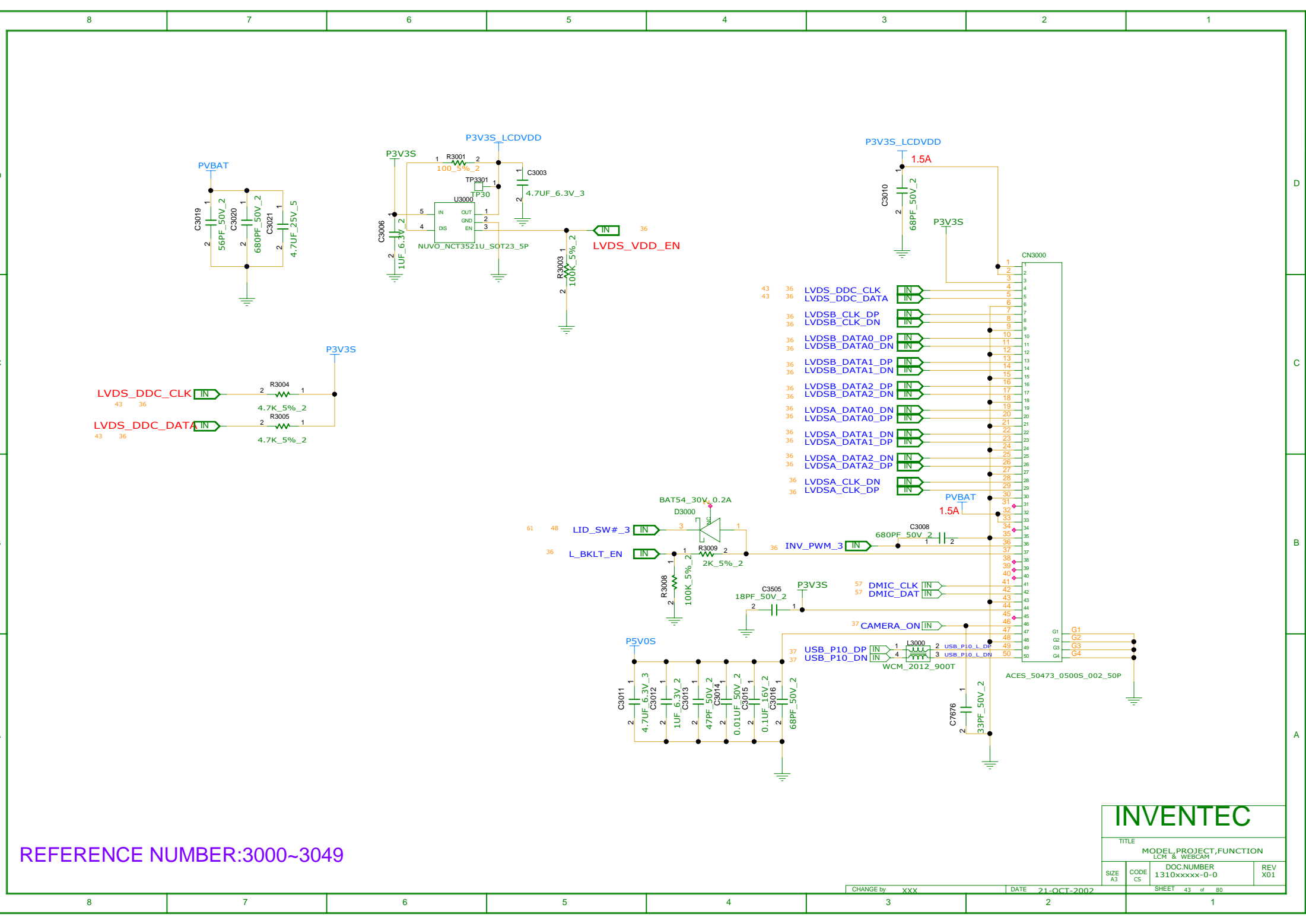
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CRT

REFERENCE NUMBER:3300~3399

DISPLAY PORT CNTR

INVENTEC			
TITLE			
MODEL PROJECT,FUNCTION			
CRT & DP			
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1310xxxxx-0-0			
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A3	CS	21-OCT-2002	
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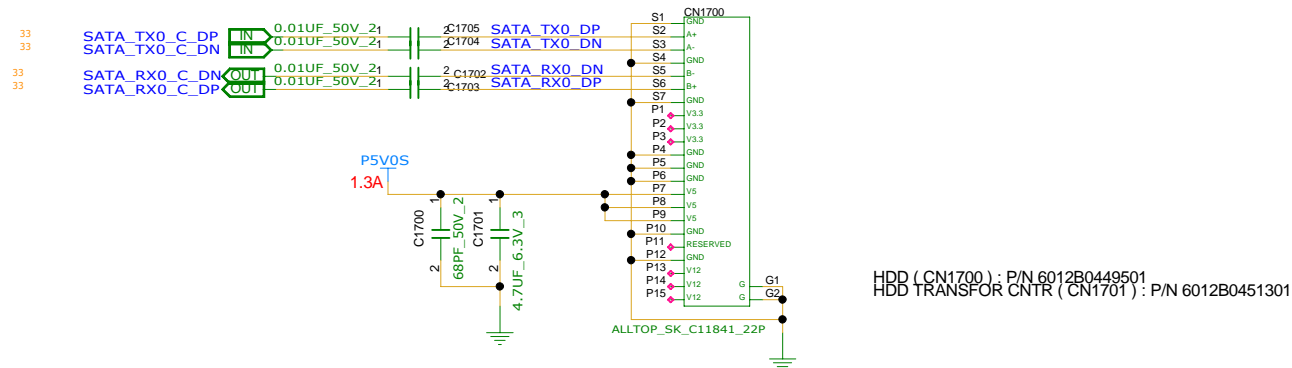


REFERENCE NUMBER:3000~3049

INVENTEC

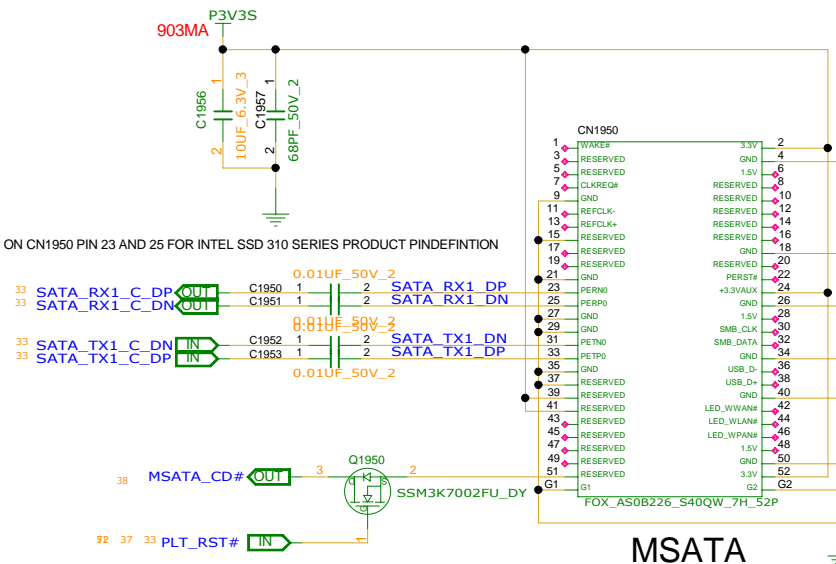
TITLE			
MODEL PROJECT,FUNCTION			
LCM & WEBCAM			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxx-0-0	X01

REFERENCE NUMBER:1700~1749



SATA HDD

NOTE : SWAP SATA_RXP2 AND SATA_RXN2 ON CN1950 PIN 23 AND 25 FOR INTEL SSD 310 SERIES PRODUCT PINDEFINTION



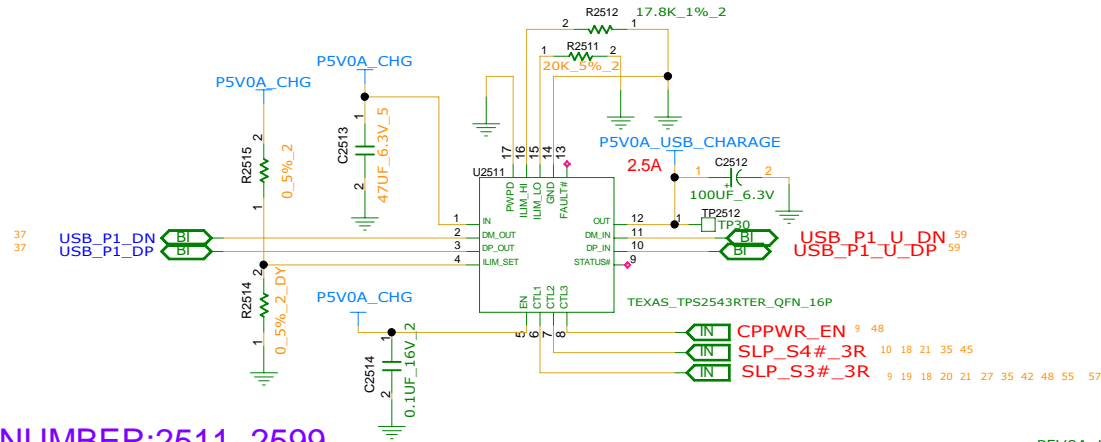
REFERENCE NUMBER:1950~1999

INVENTEC			
TITLE			
MODEL PROJECT FUNCTION SATA HDD & M-SATA CNTR			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01

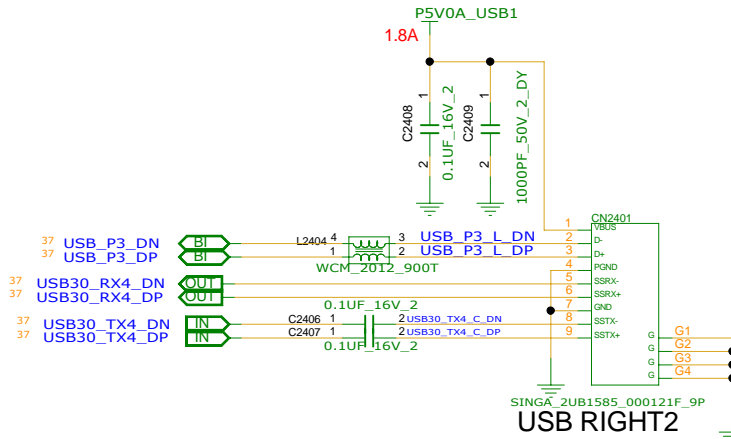
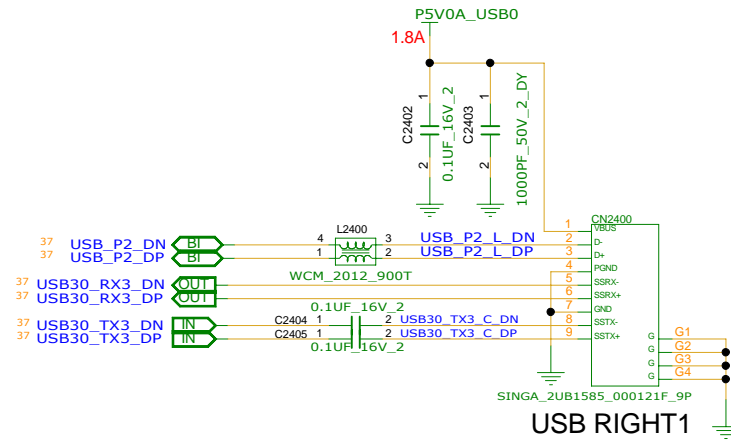
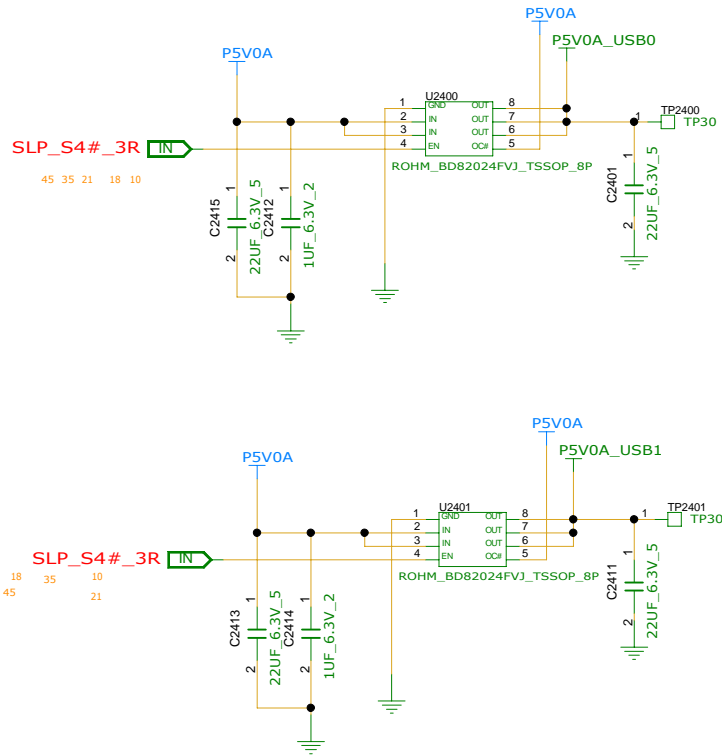
CHANGE by XXX DATE 21-OCT-2002

SHEET 44 of 80

REFERENCE NUMBER:2511~2599



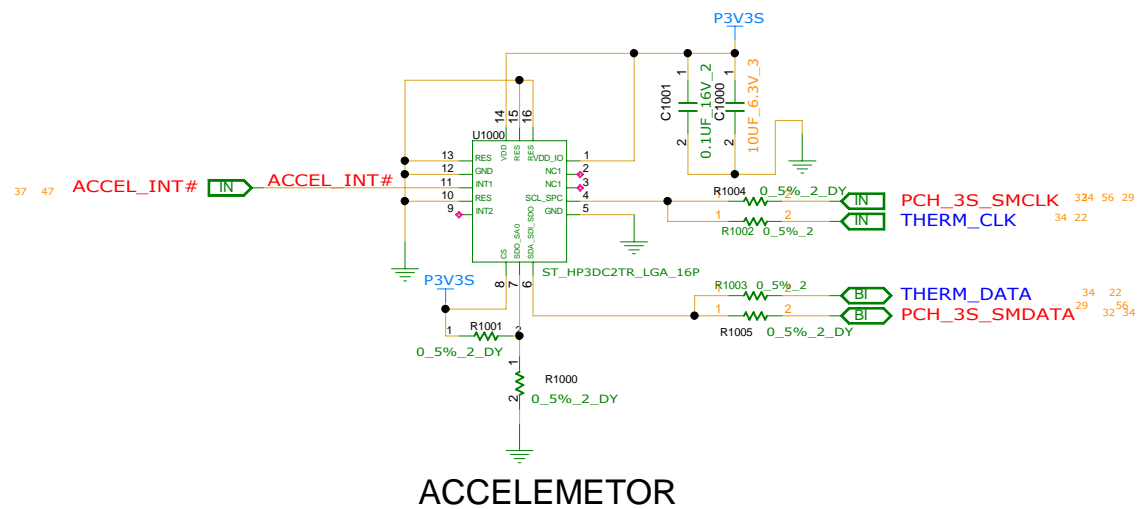
	R2511	R2515	R2514
TPS2543	20K	10K	NI
TPS2540/A PI5USB2543	NI	NI	0



REFERENCE NUMBER:2400~2499

INVENTEC			
TITLE			
MODEL PROJECT FUNCTION			
USB & USB CHARGER			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01
SHEET 45 of 80			

CHANGE by XXX DATE 21-OCT-2002



REFERENCE NUMER : 1000~1099

INVENTEC

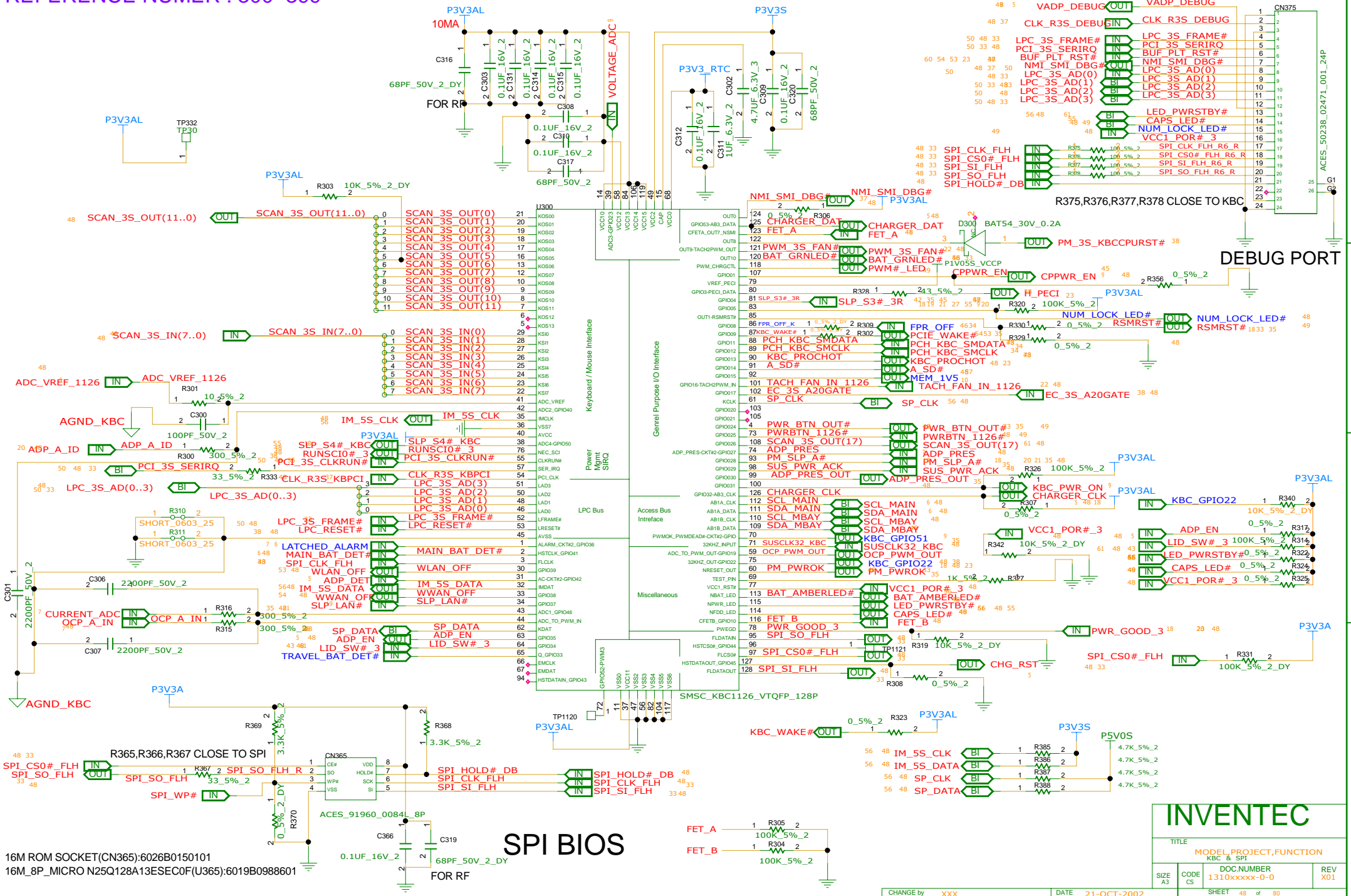
TITLE MODEL PROJECT,FUNCTION
ACCELEMATOR

SIZE CODE DOC NUMBER REV
A3 CS 1310xxxxx-0-0 X01

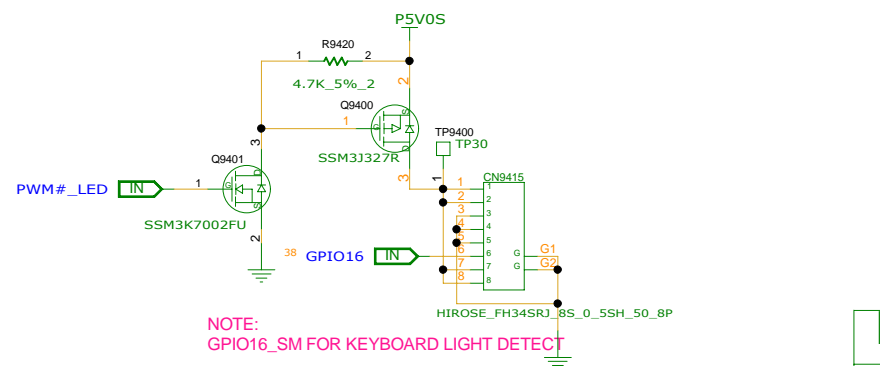
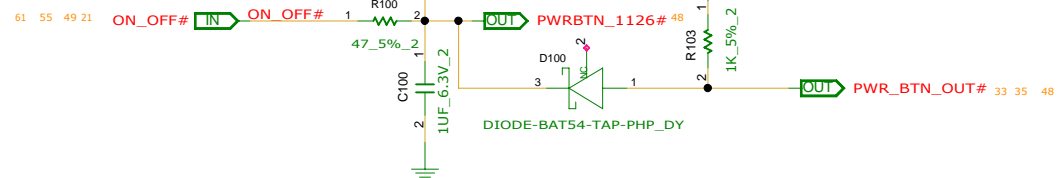
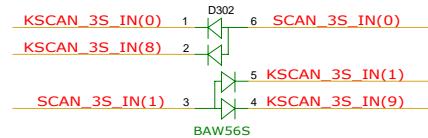
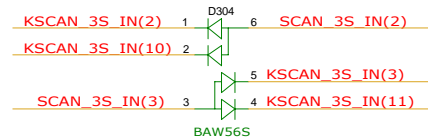
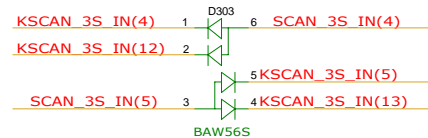
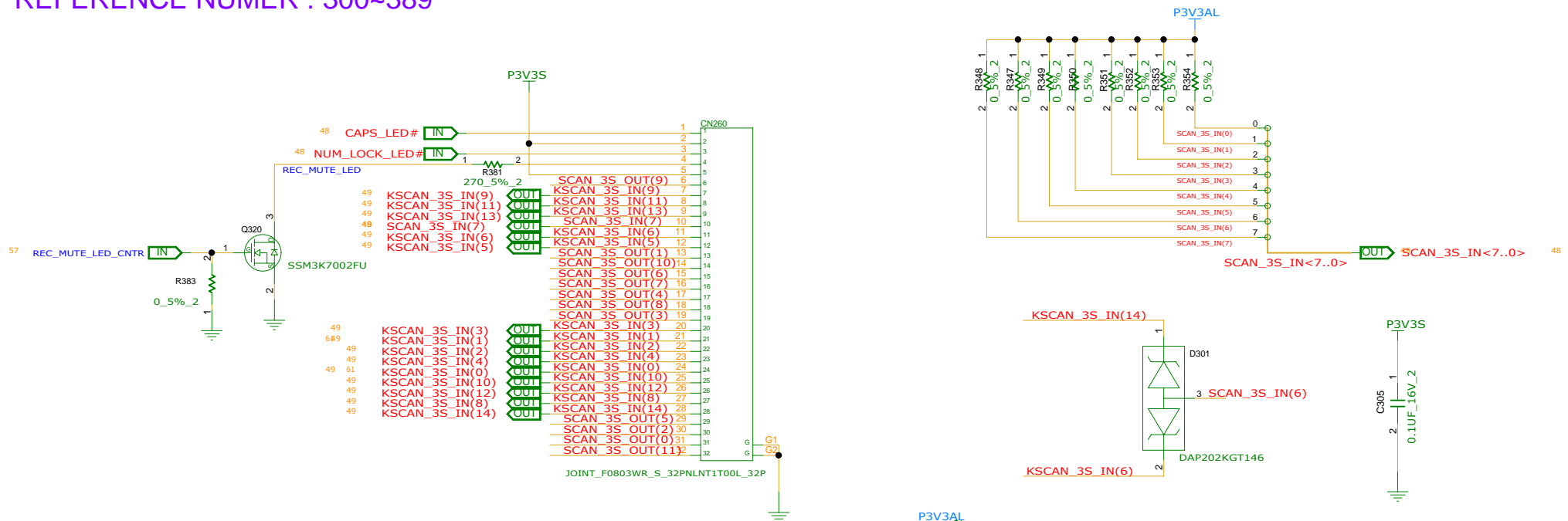
CHANGE by XXX DATE 21-OCT-2002

SHEET 47 of 80

REFERENCE NUMBER : 300~399



REFERENCE NUMBER : 300~389

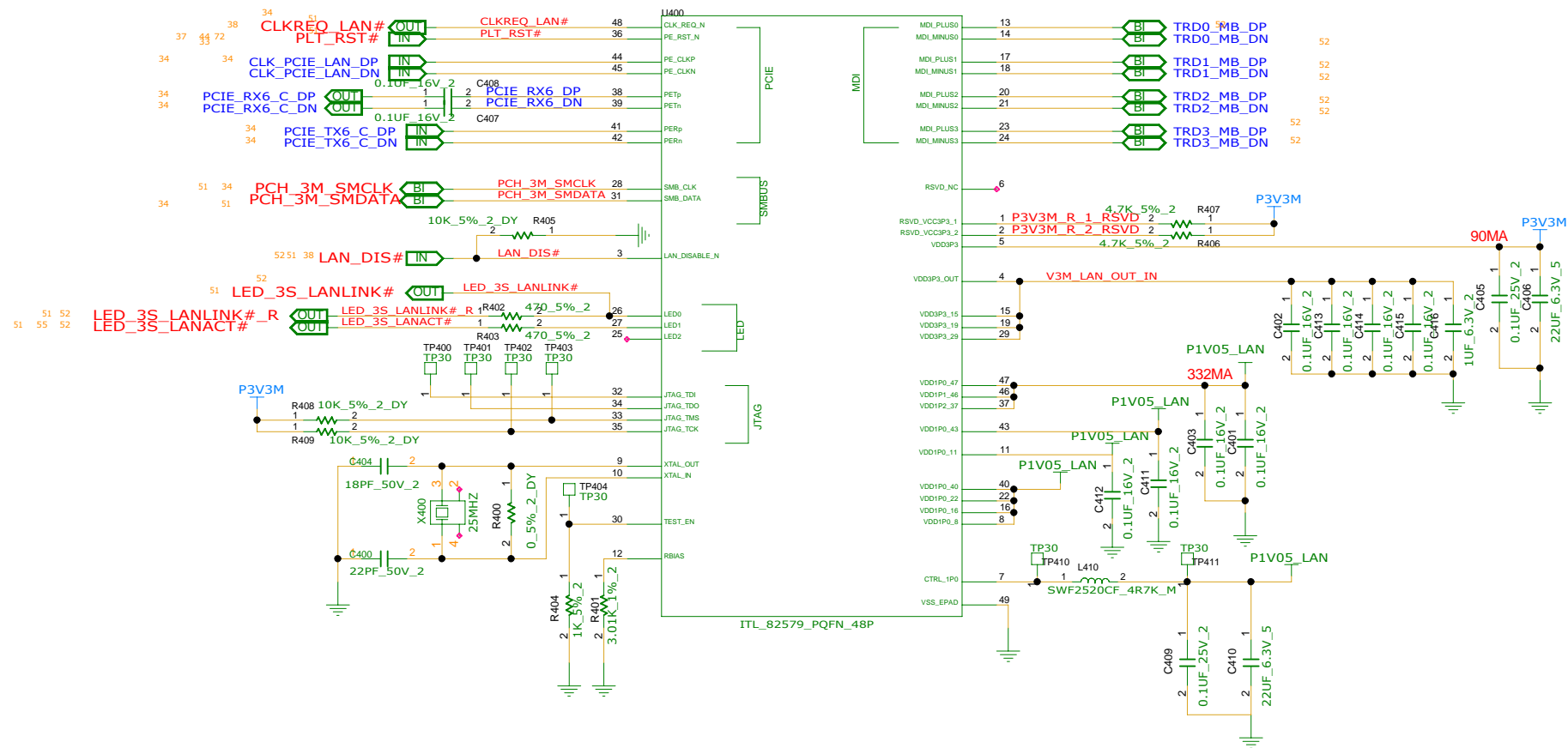


NOTE:
GPIO16_SM FOR KEYBOARD LIGHT DETECT

KEYBOARD BACK LIGHT CNTR

INVENTEC			
TITLE MODEL,PROJECT,FUNCTION KEYBOARD			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
SHEET 49 of 80			

REFERENCE NUMER : 400~469



INVENTEC

TITLE
MODEL,PROJECT,FUNCTION

DOC NUMBER
1310xxxx-0-0

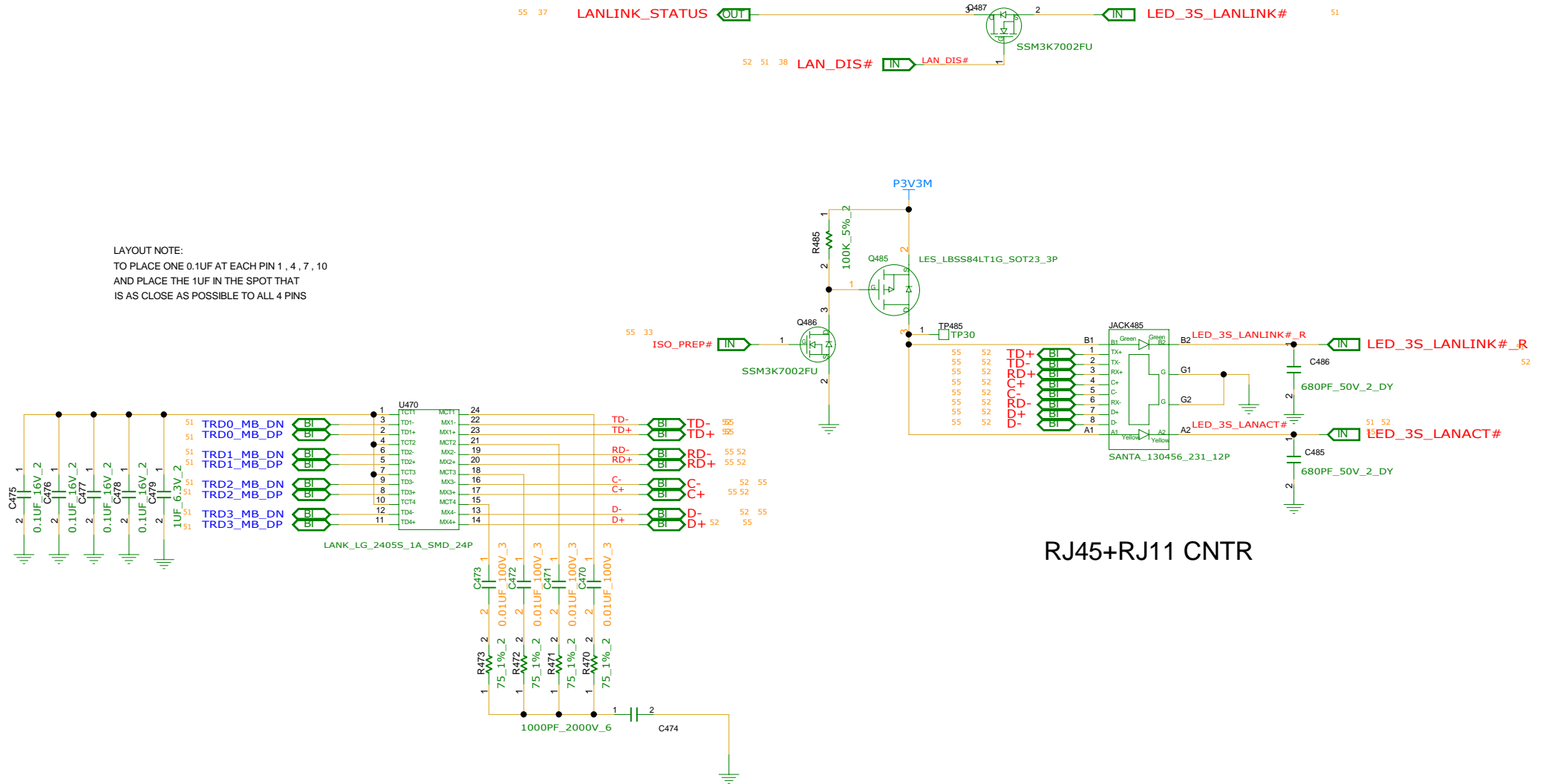
REV
X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 51 of 80

REFERENCE NUMER : 470~499

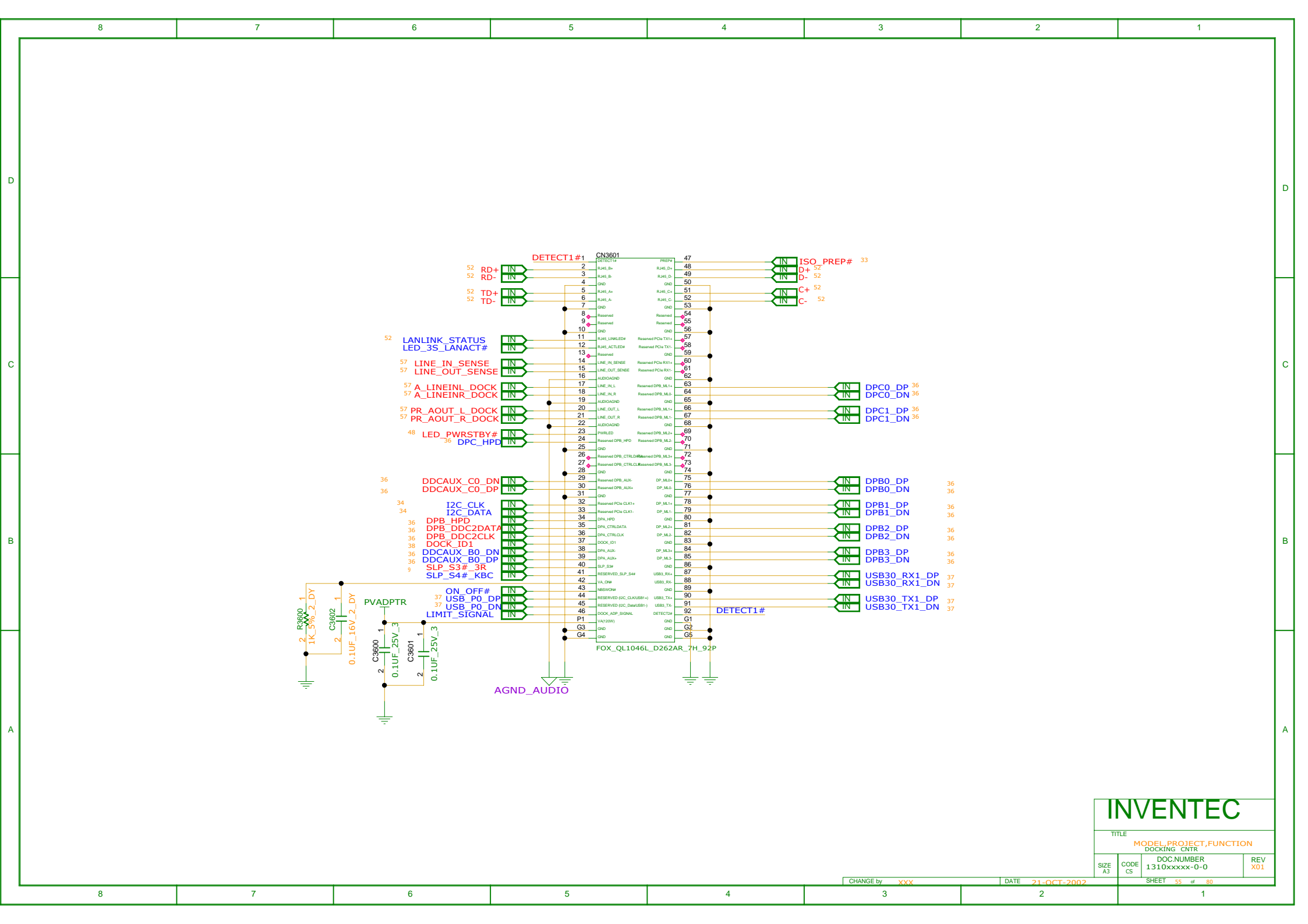
LAYOUT NOTE:
TO PLACE ONE 0.1UF AT EACH PIN 1 , 4 , 7 , 10
AND PLACE THE 1UF IN THE SPOT THAT
IS AS CLOSE AS POSSIBLE TO ALL 4 PINS



RJ45+RJ11 CNTR

INVENTEC

TITLE			
MODEL PROJECT,FUNCTION			
LAN RJ45+RJ11 CNTR			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxx-0-0	X01
SHEET 52 of 80			



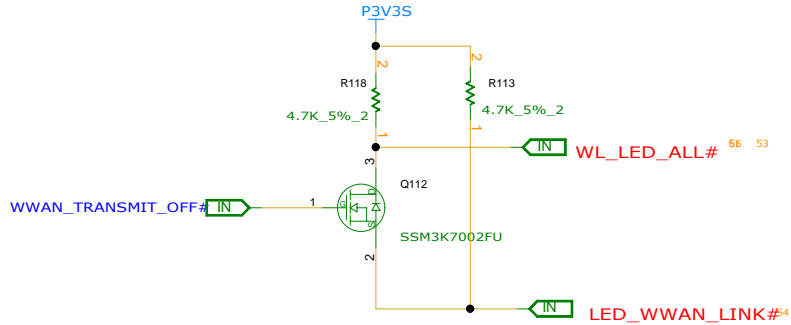
INVENTEC

TITLE
MODEL PROJECT,FUNCTION
DOCKING CNTR

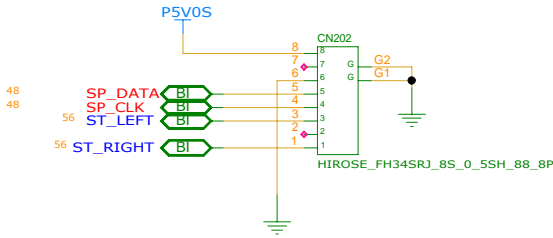
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
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SHEET 55 of 80

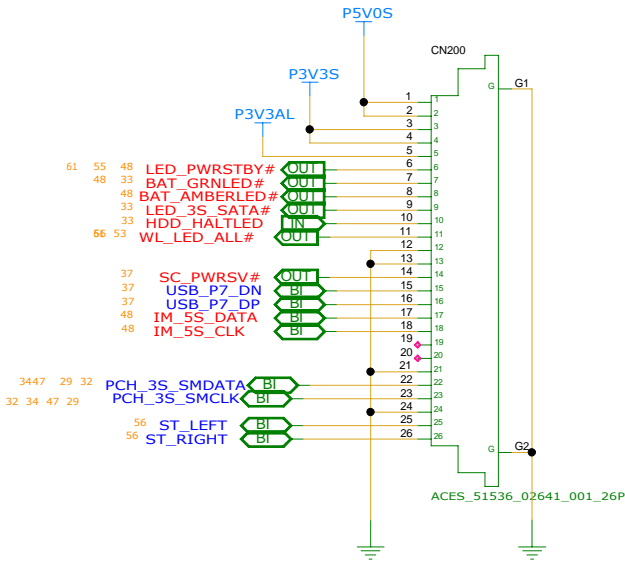
CHANGE by XXX DATE 21-OCT-2002



WLAN_WWAN_BLUETOOTH_LED



POINT STICK

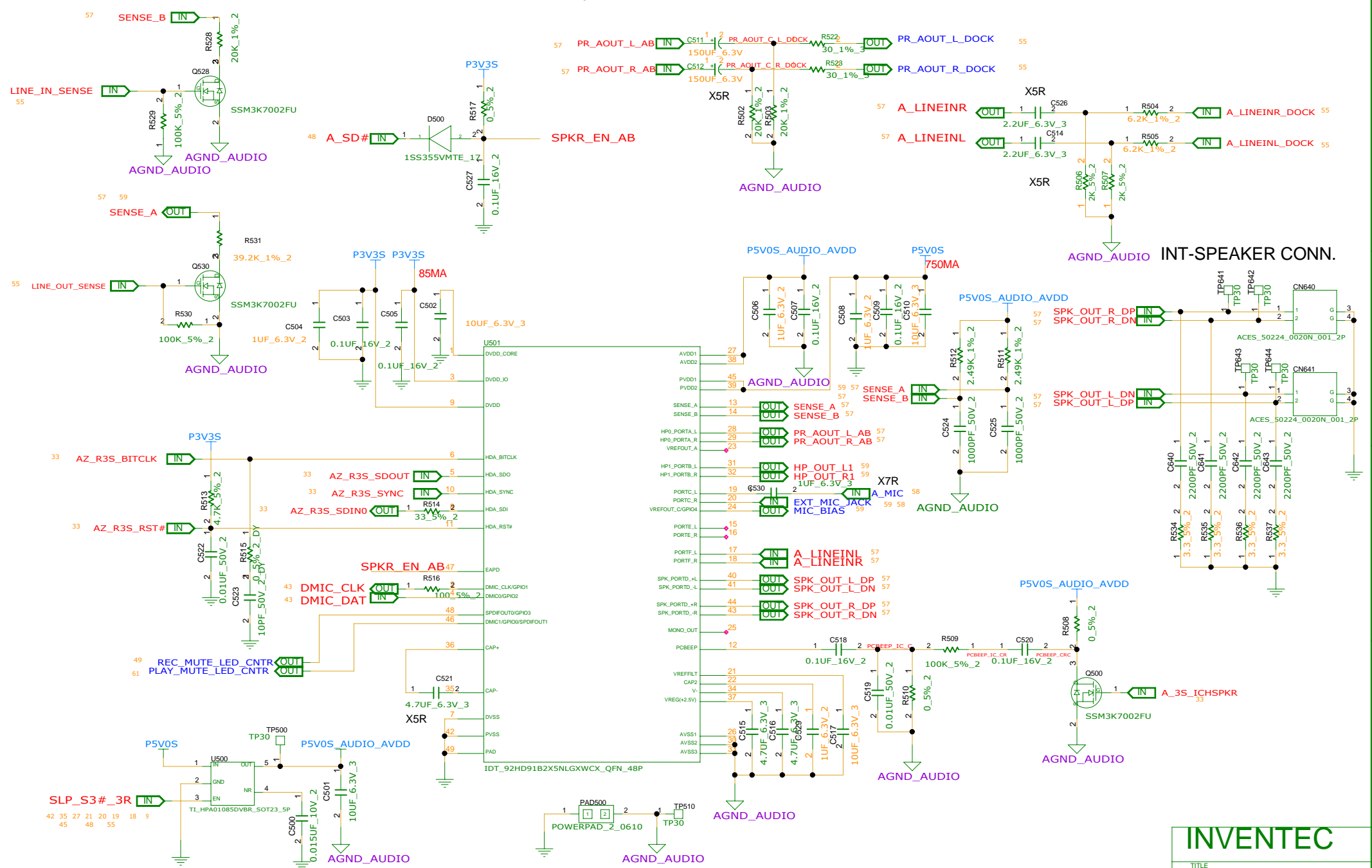


SMART CARD

REFERENCE NUMBER:100~199

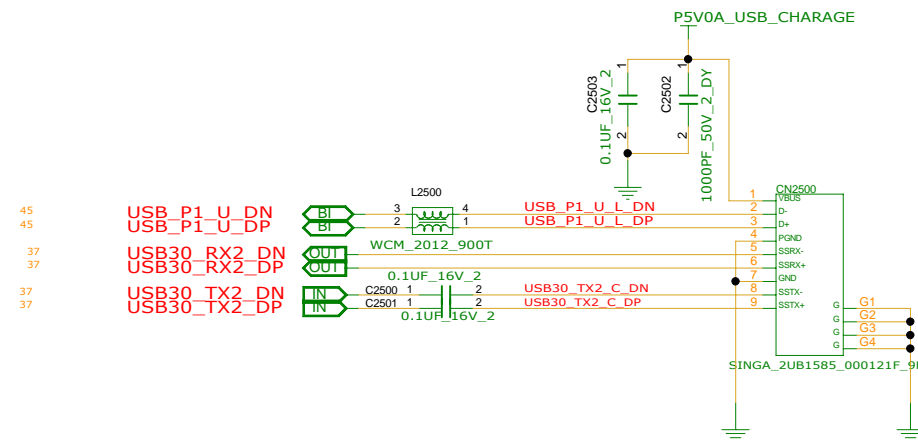
INVENTEC			
TITLE			
MODEL PROJECT FUNCTION STICK POINT & B2B CNTR			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
SHEET 56 of 80			

REFERENCE NUMBER:500~549



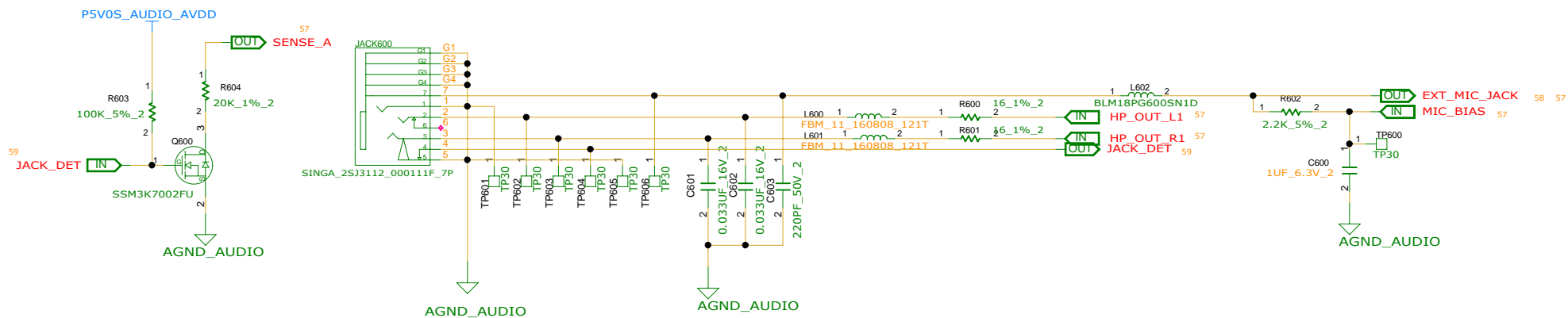
INVENTEC			
TITLE			
MODEL PROJECT,FUNCTION			
AUDIO CODEC			
SIZE	CODE	DOC NUMBER	REV
A4	CS	1310xxxxx-0-0	X01
SHEET 57 of 80			

REFERENCE NUMBER:2500~2510



USB CHARGER

REFERENCE NUMBER:600~610



INVENTEC

TITLE MODEL PROJECT FUNCTION DB

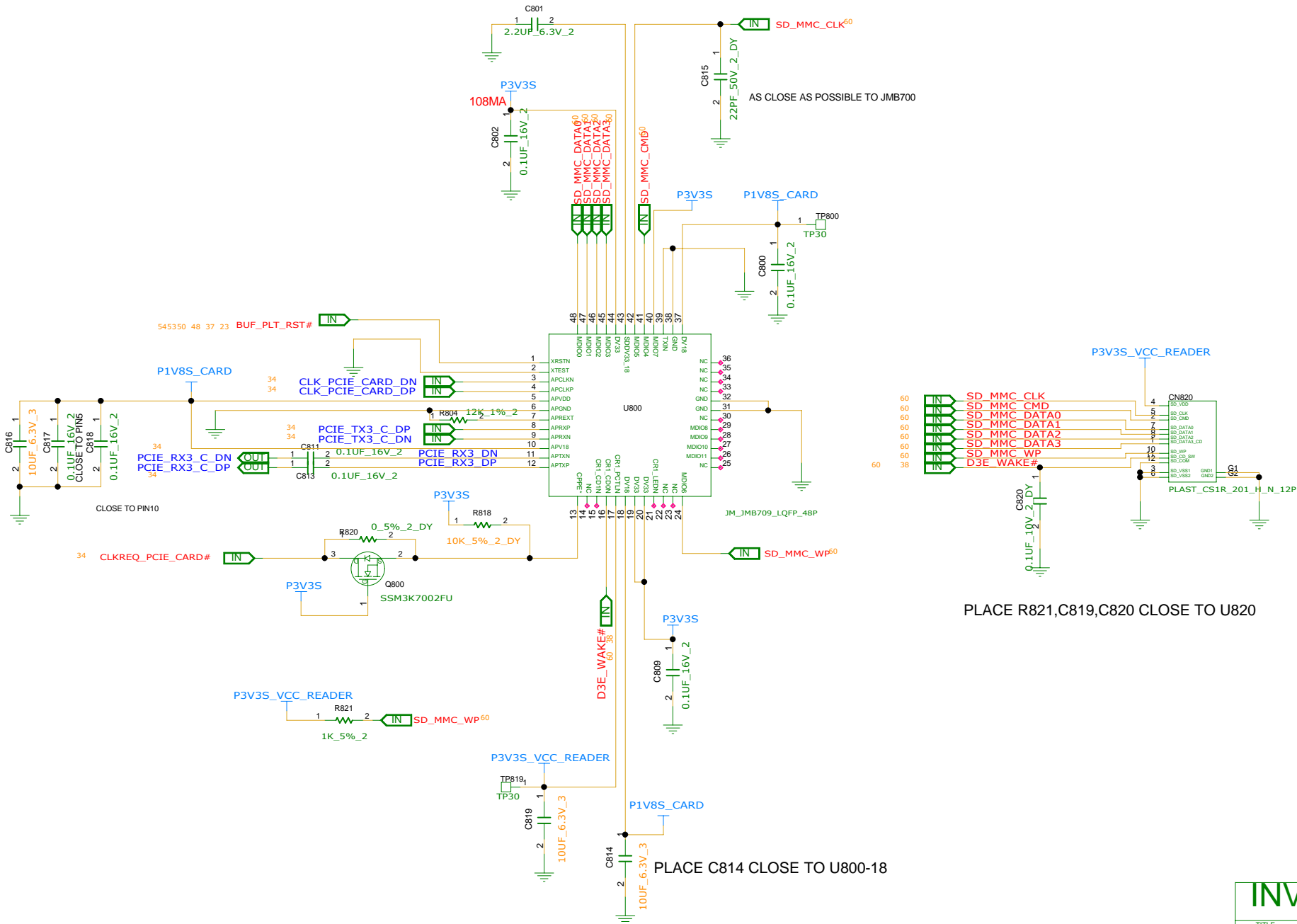
DOC NUMBER 1310xxxxx-0-0

REV X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 59 of 80

REFERENCE NUMBER:800~899



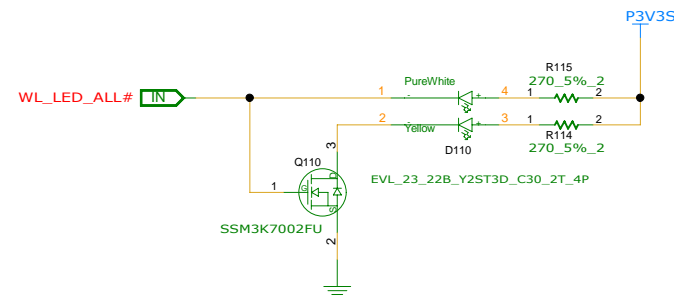
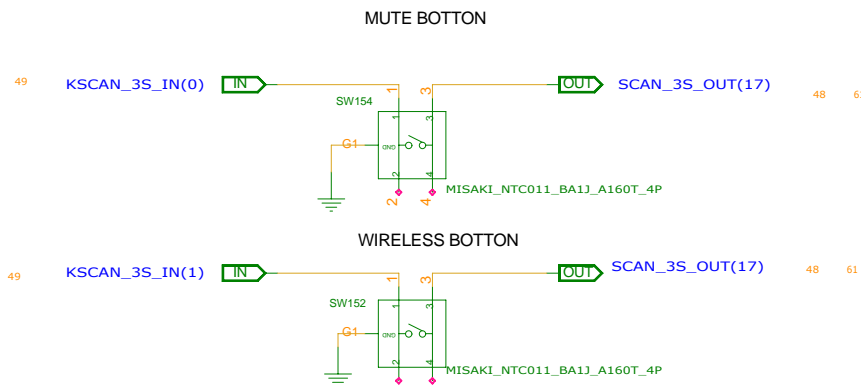
INVENTEC

TITLE
MODEL PROJECT,FUNCTION
CARD READER

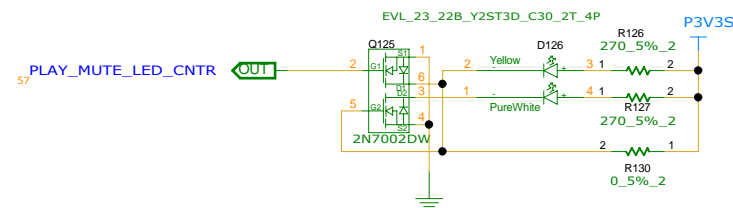
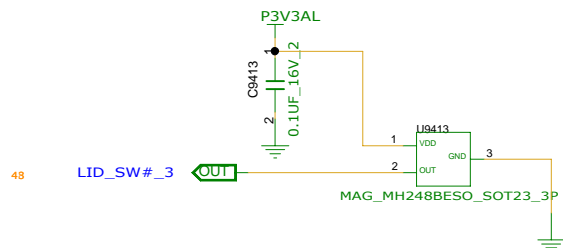
SIZE	CODE	DOC.NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

SHEET 60 of 80

CHANGE by XXX DATE 21-OCT-2002

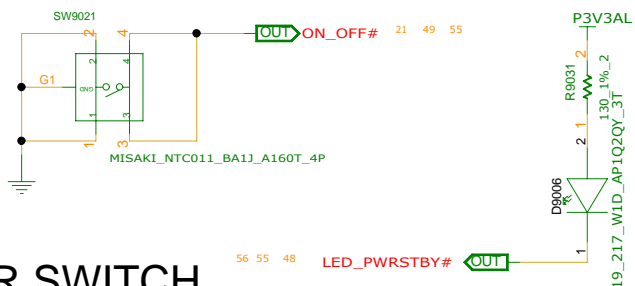


WIRELESS/BLUETOOTH LED



MUTE LED

POWER SWITCH



INVENTEC

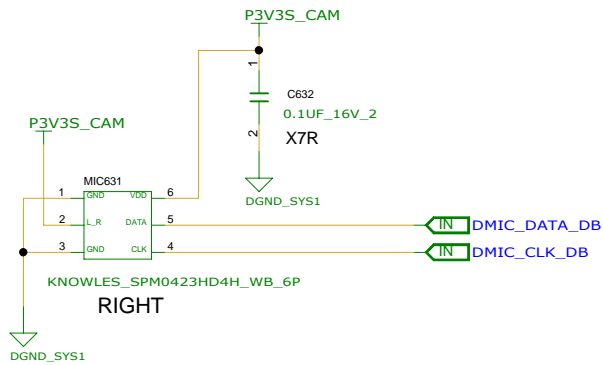
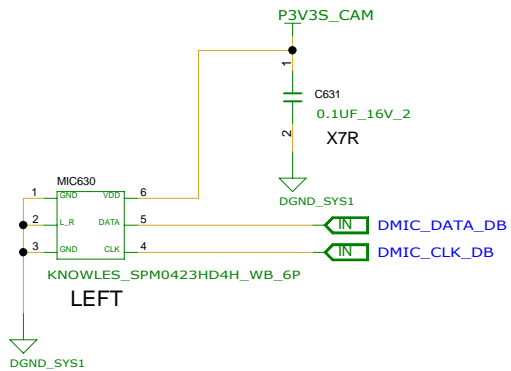
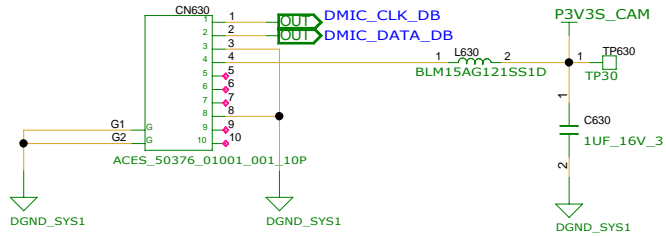
TITLE MODEL PROJECT,FUNCTION

SIZE CODE DOC NUMBER REV

A3 CS 1310xxxxx-0-0 X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 61 of 80



REFERENCE NUMBER:630-639
MIC DOUGHTER BOARD

FIX630
FIX_MASK_0.8

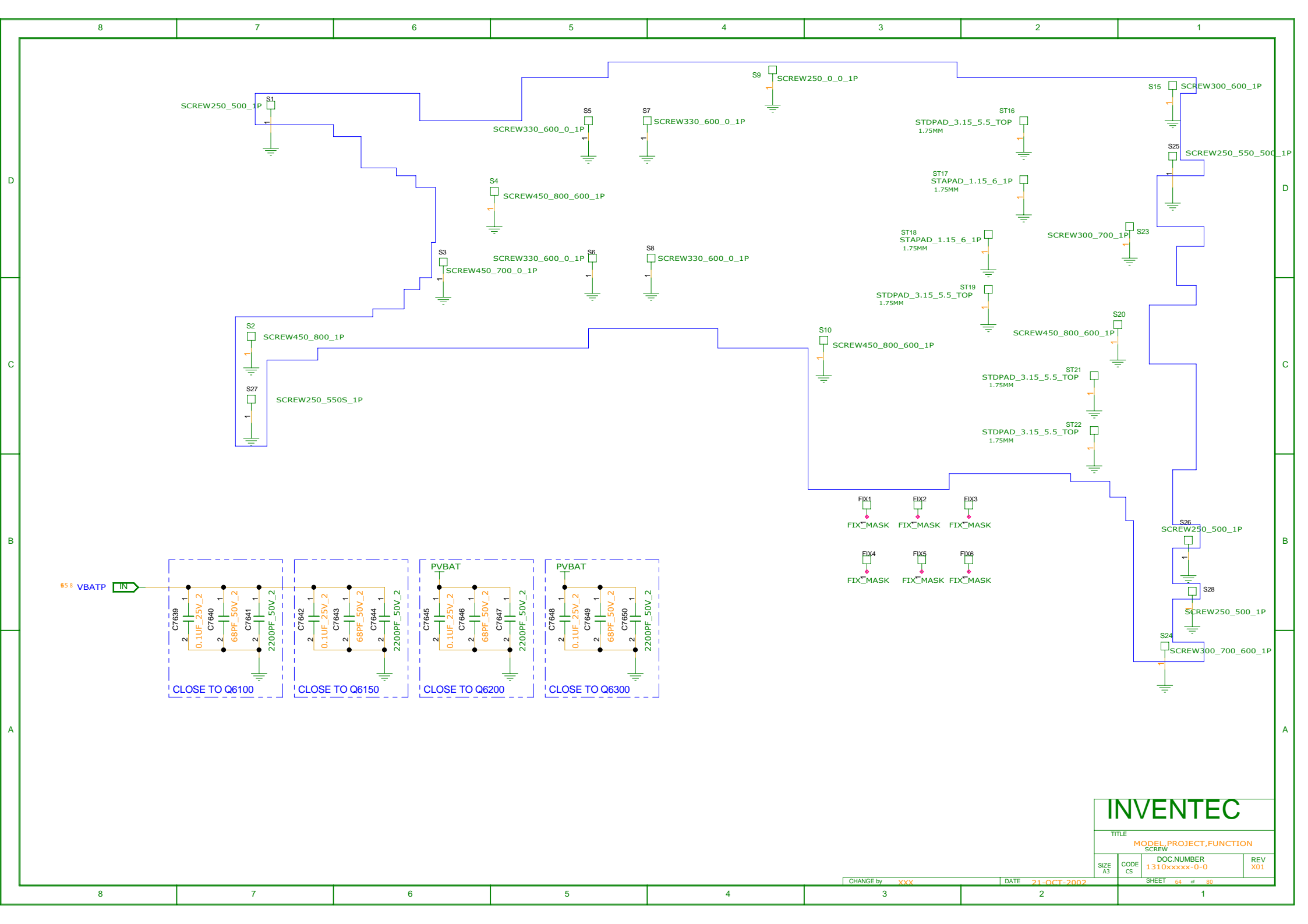
FIX631
FIX_MASK_0.8

FIX632
FIX_MASK_0.8

INVENTEC

TITLE			
MODEL PROJECT,FUNCTION			
MIC DB			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01
SHEET 63 of 80			

CHANGE by XXX DATE 21-OCT-2002



INVENTEC

TITLE			
MODEL PROJECT,FUNCTION SCREW			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
SHEET 64 of 80			

CHANGE by XXX DATE 21-OCT-2002

D

C

B

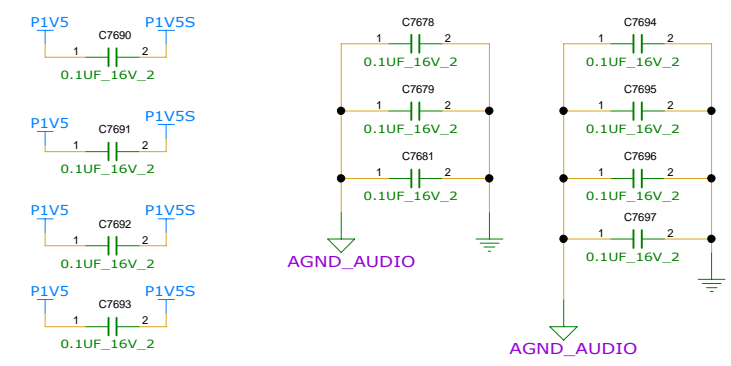
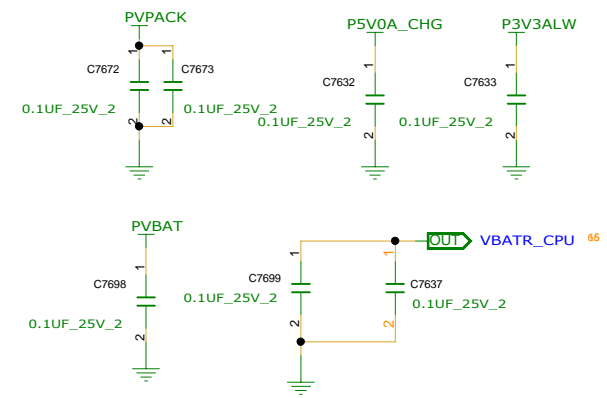
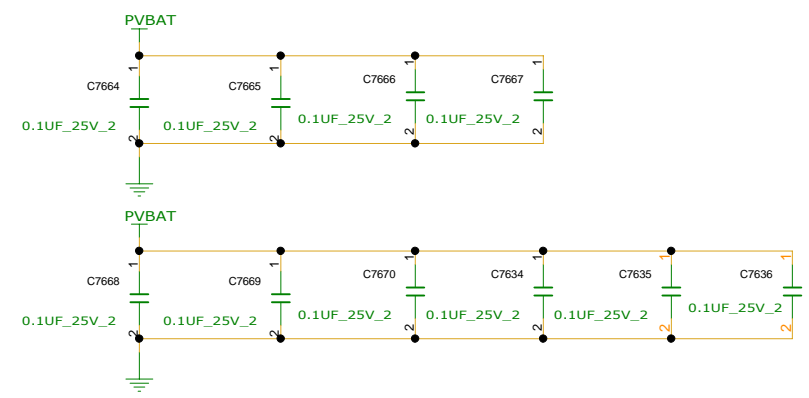
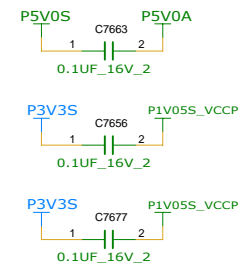
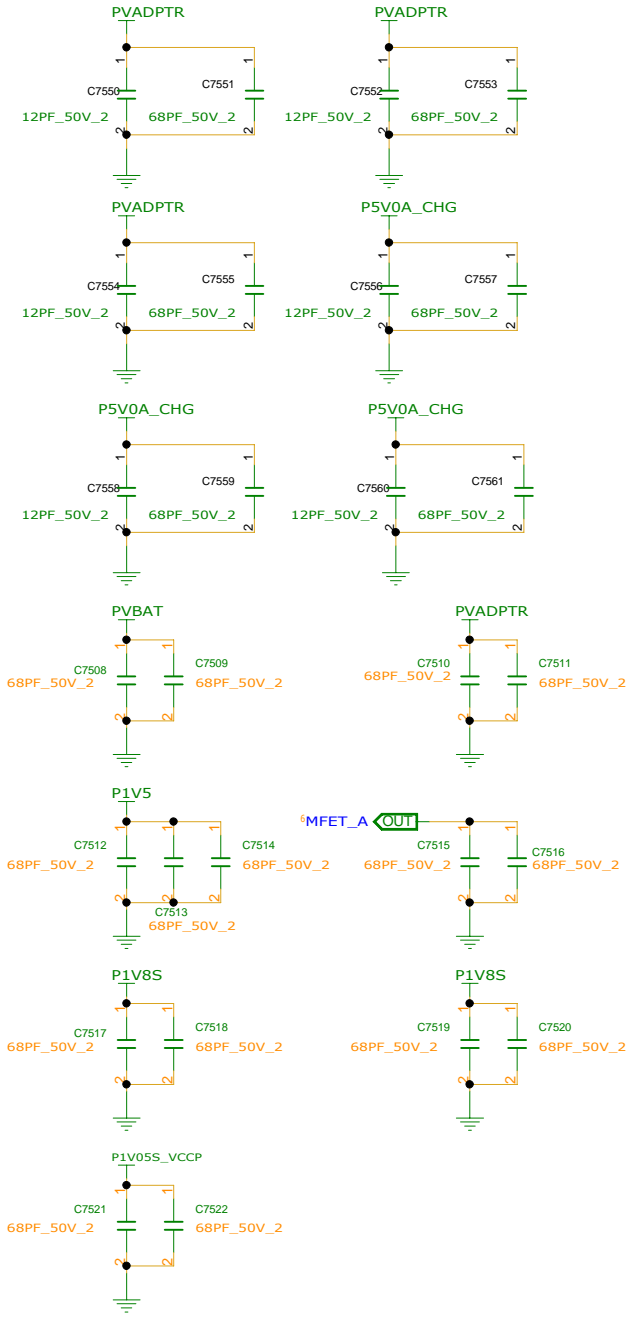
A

D

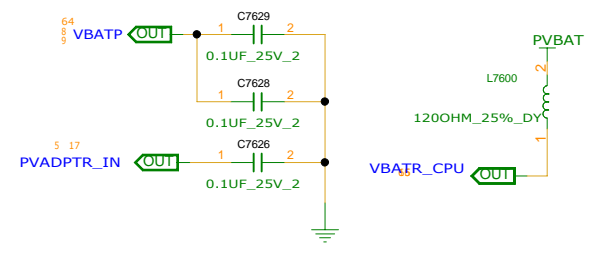
C

B

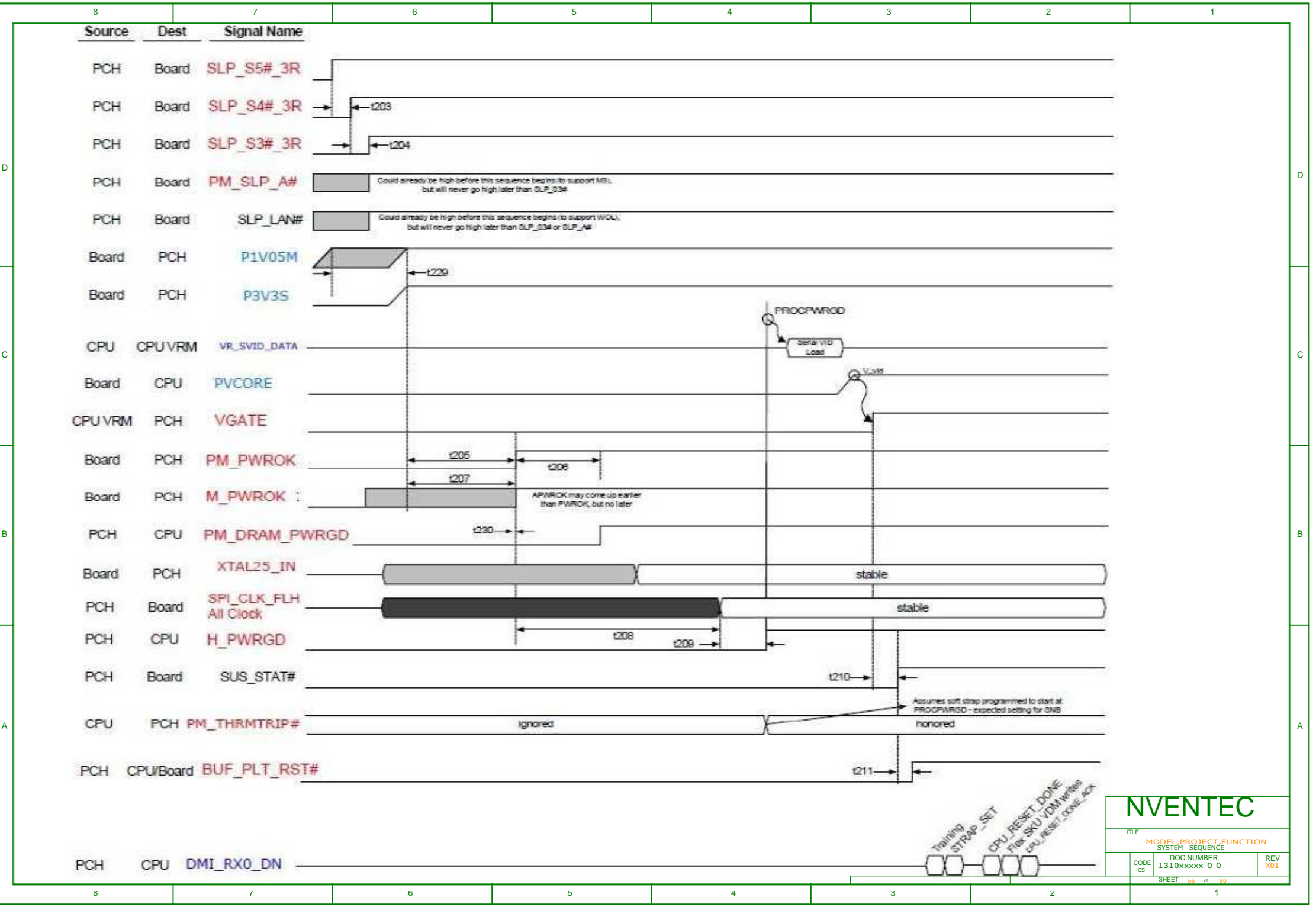
A



EMI SOLUTION

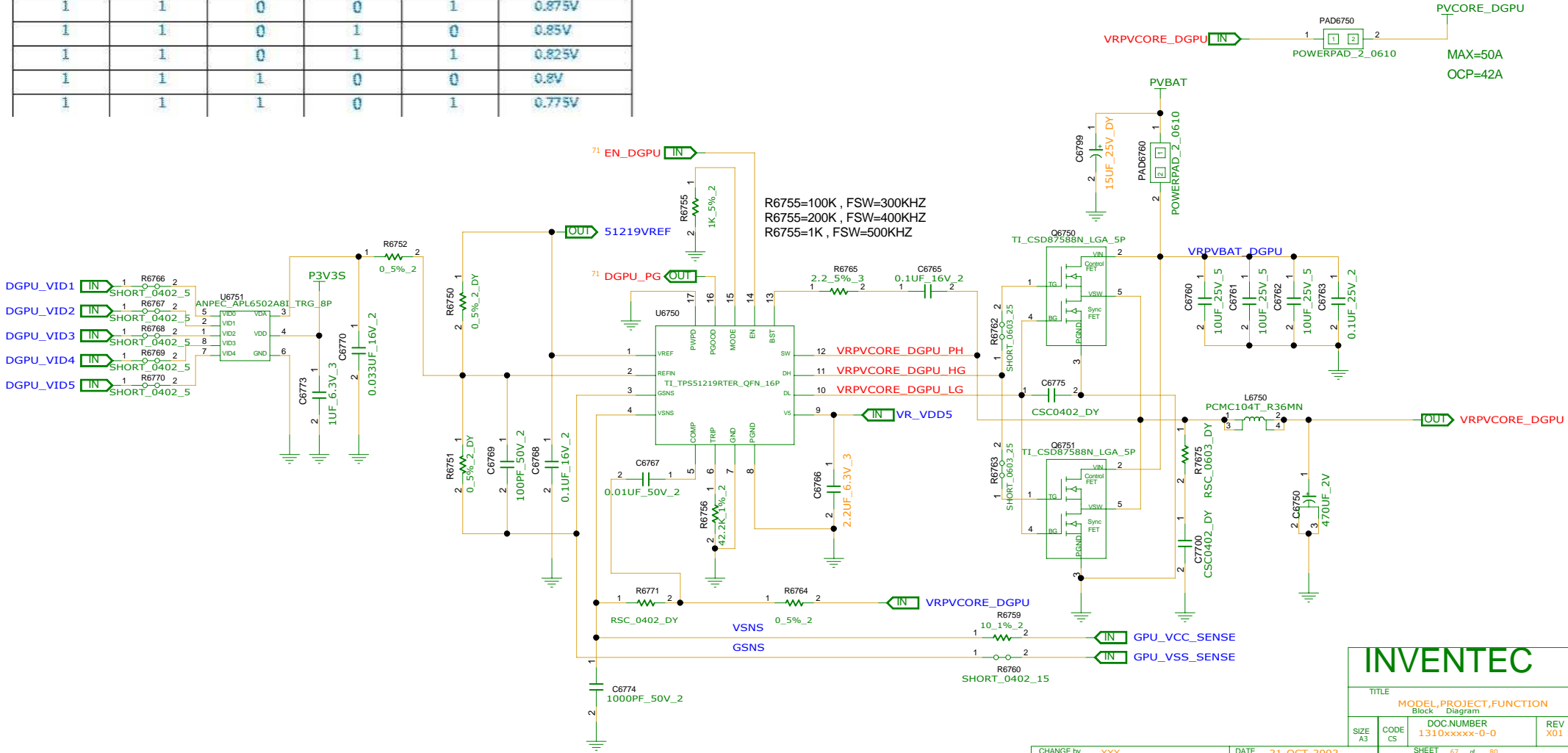


INVENTEC			
TITLE			
MODEL PROJECT FUNCTION			
EMI & RF SOLUTION			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01
SHEET 65 of 80			



GPU_VID5 GPIO_10	GPU_VID4 GPIO_14	GPU_VID3 GPIO_15	GPU_VID2 GPIO_16	GPU_VID1 GPIO_20	Core Voltage Level
0	1	1	1	1	1.125V
1	0	0	0	0	1.1V
1	0	0	0	1	1.075V
1	0	0	1	0	1.05V
1	0	0	1	1	1.025V
1	0	1	0	0	1.0V
1	0	1	0	1	0.975V
1	0	1	1	0	0.95V
1	0	1	1	1	0.925V
1	1	0	0	0	0.9V
1	1	0	0	1	0.875V
1	1	0	1	0	0.85V
1	1	0	1	1	0.825V
1	1	1	0	0	0.8V
1	1	1	0	1	0.775V

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



INVENTEC

TITLE

MODEL,PROJECT,FUNCTION

Block Diagram

DOC NUMBER

1310xxxxx-0-0

REV

X01

SIZE

A3

CODE

CS

CHANGE by

XXX

DATE

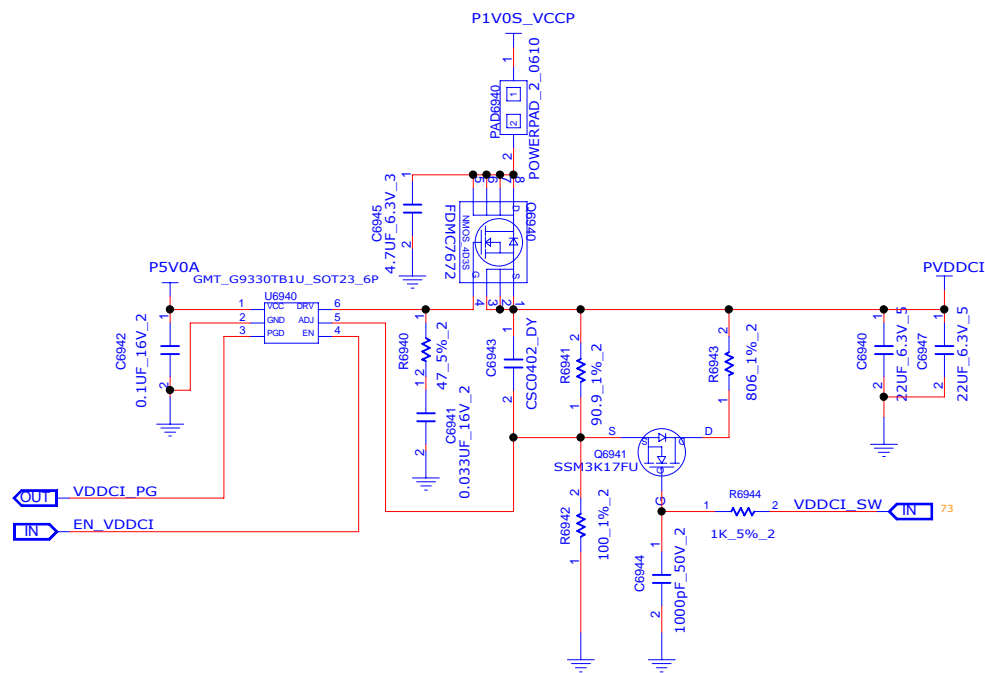
21-OCT-2002

SHEET

67

of

80



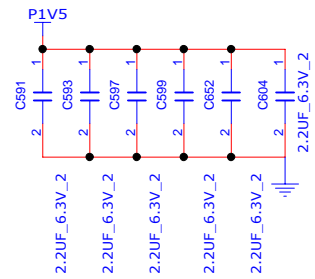
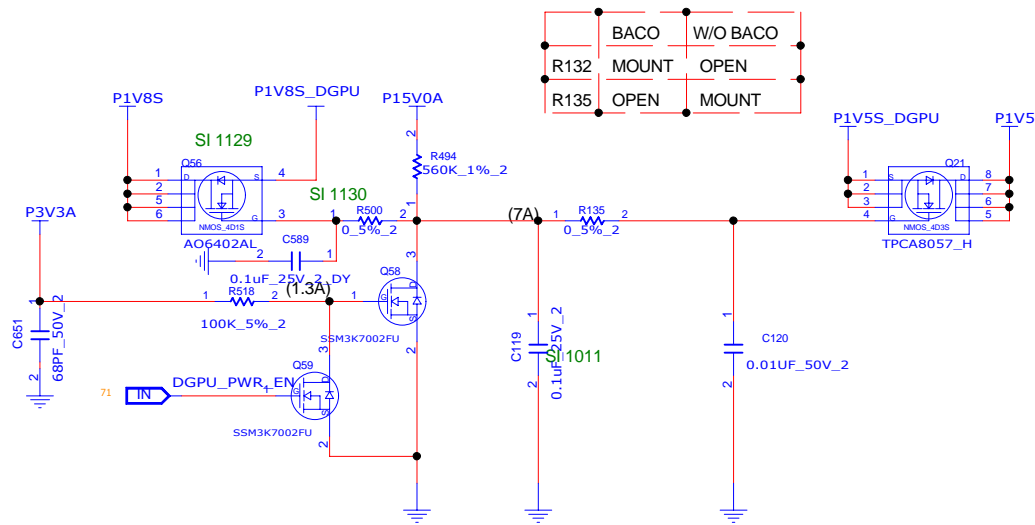
OCP=8AMP
HIGH : $0.908V = 0.5 [1 + ((R6941 / R6943) / R6942)]$
LOW : $0.954V = 0.5 (1 + R6941 / R6942)$

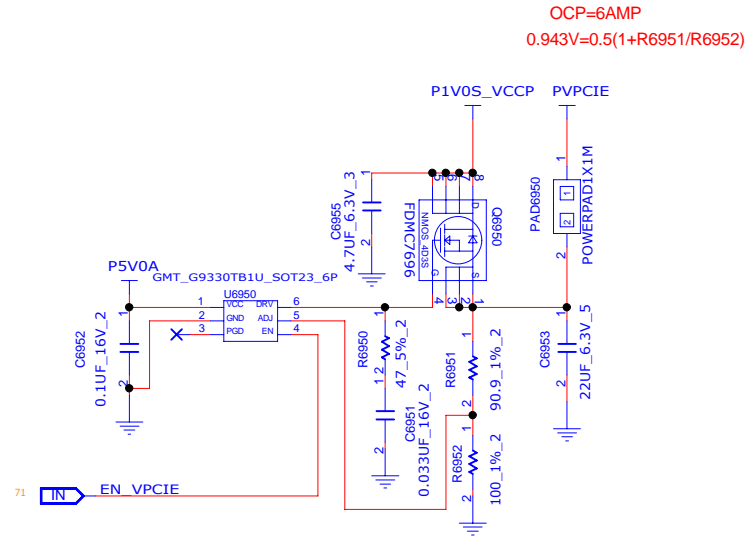
INVENTEC

TITLE			
MODEL, PROJECT, FUNCTION			
Block Diagram			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01

CHANGE by XXX DATE 21-OCT-2002

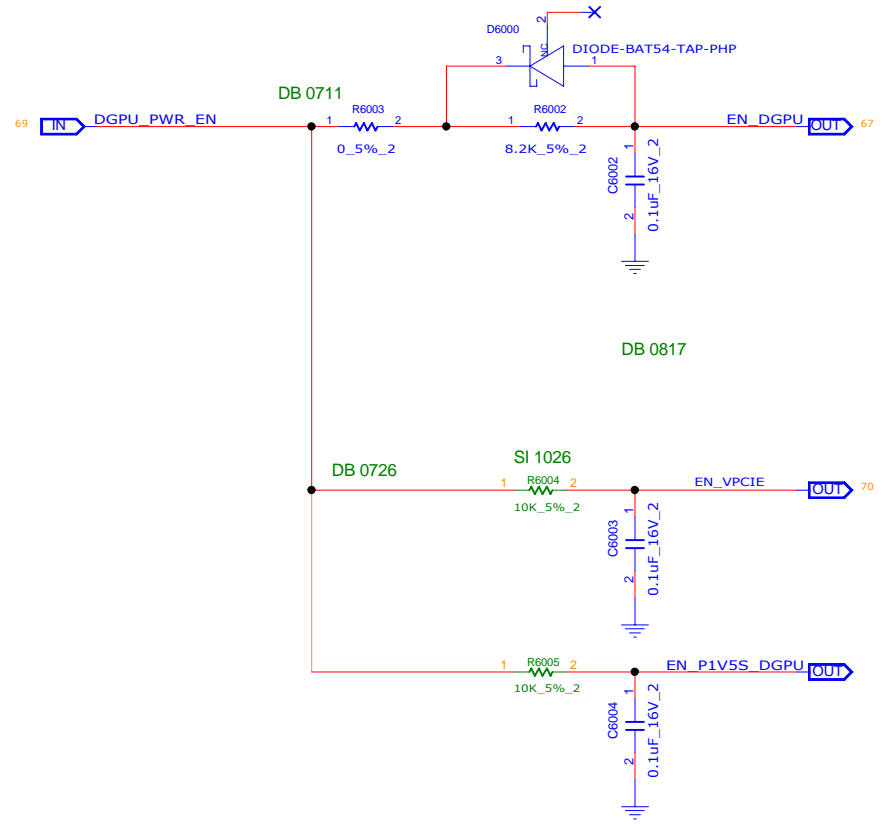
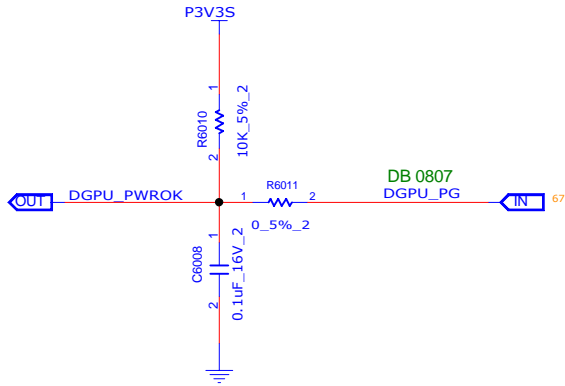
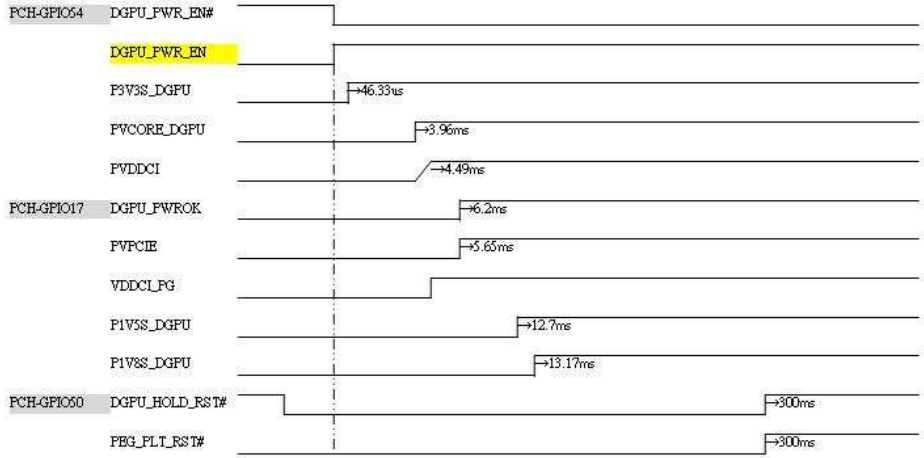
SHEET 68 of 80





INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxx-0-0	X01

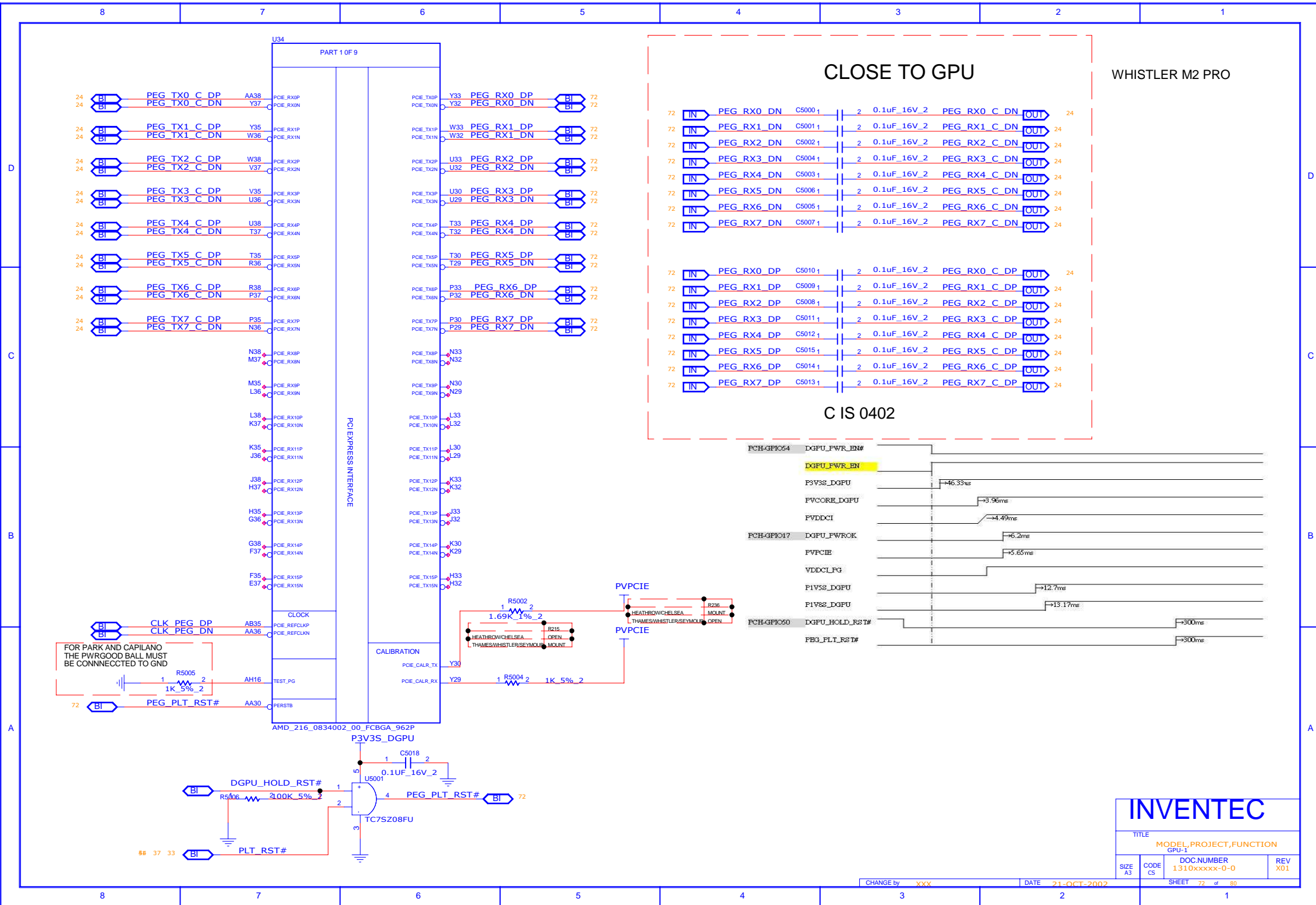


INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 21 of 80



MV 0313

—



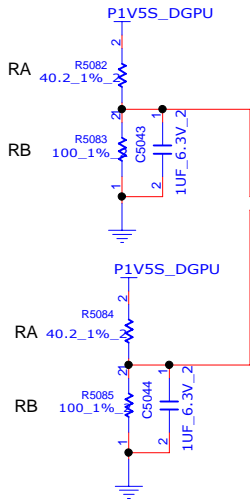
1

1

CHANNEL A

DDR3/GDDR3MEMORY STUFF OPTION

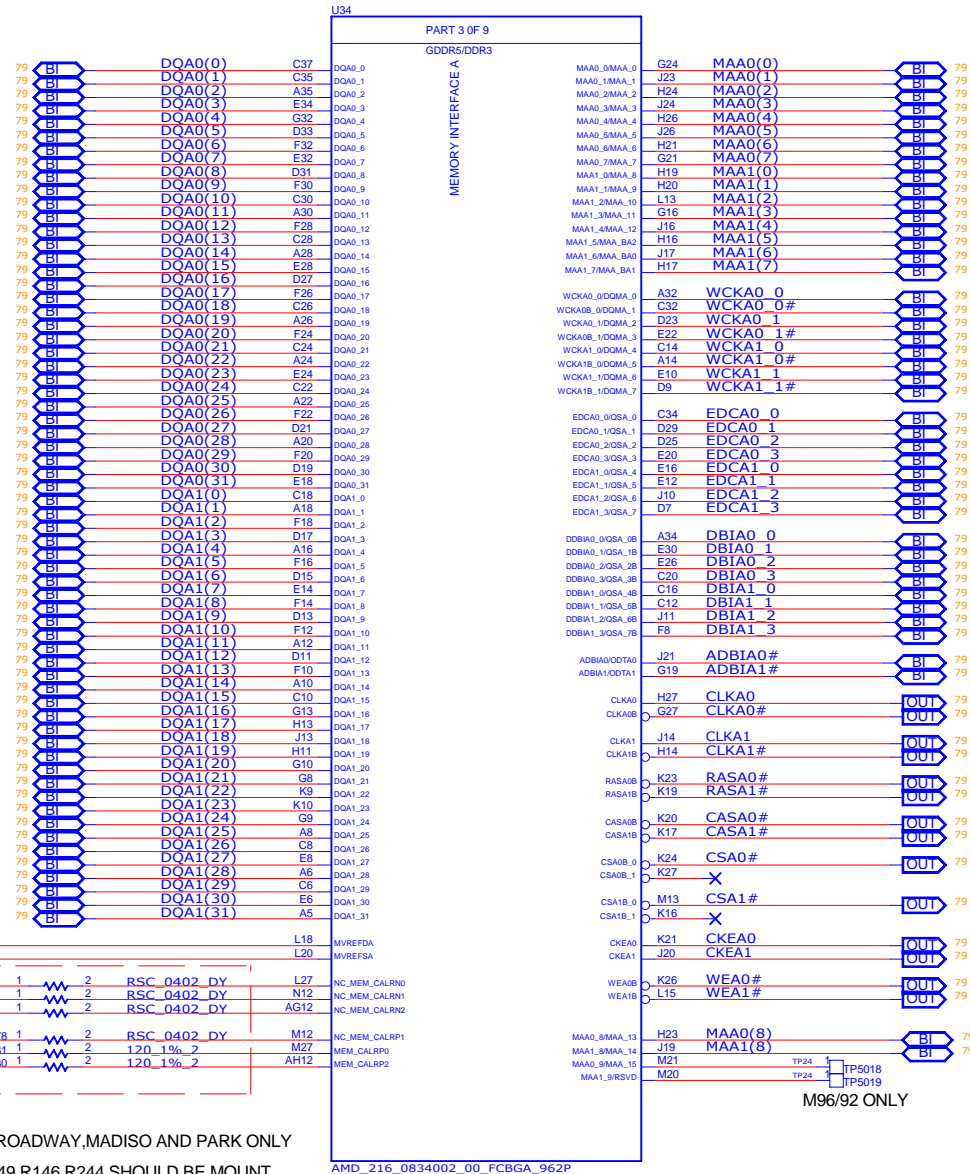
	GDDR5	GDDR3	DDR3
MVDDQ	1.5V	1.8V/1.5V	1.5V
RA	40.2R	40.2R	40.2R
RB	100R	100R	100R



MVREFDA_GPU
MVREFSA_GPU

P1V5S_DGPU

FOR M97,BROADWAY,MADISO AND PARK ONLY
IF R258,R249,R146,R244 SHOULD BE MOUNT,
P/N 6013A0087806 (243OHM,1%)



AMD_216_0834002_00_FCBGA_962P

INVENTEC

TITLE			
MODEL PROJECT,FUNCTION			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01

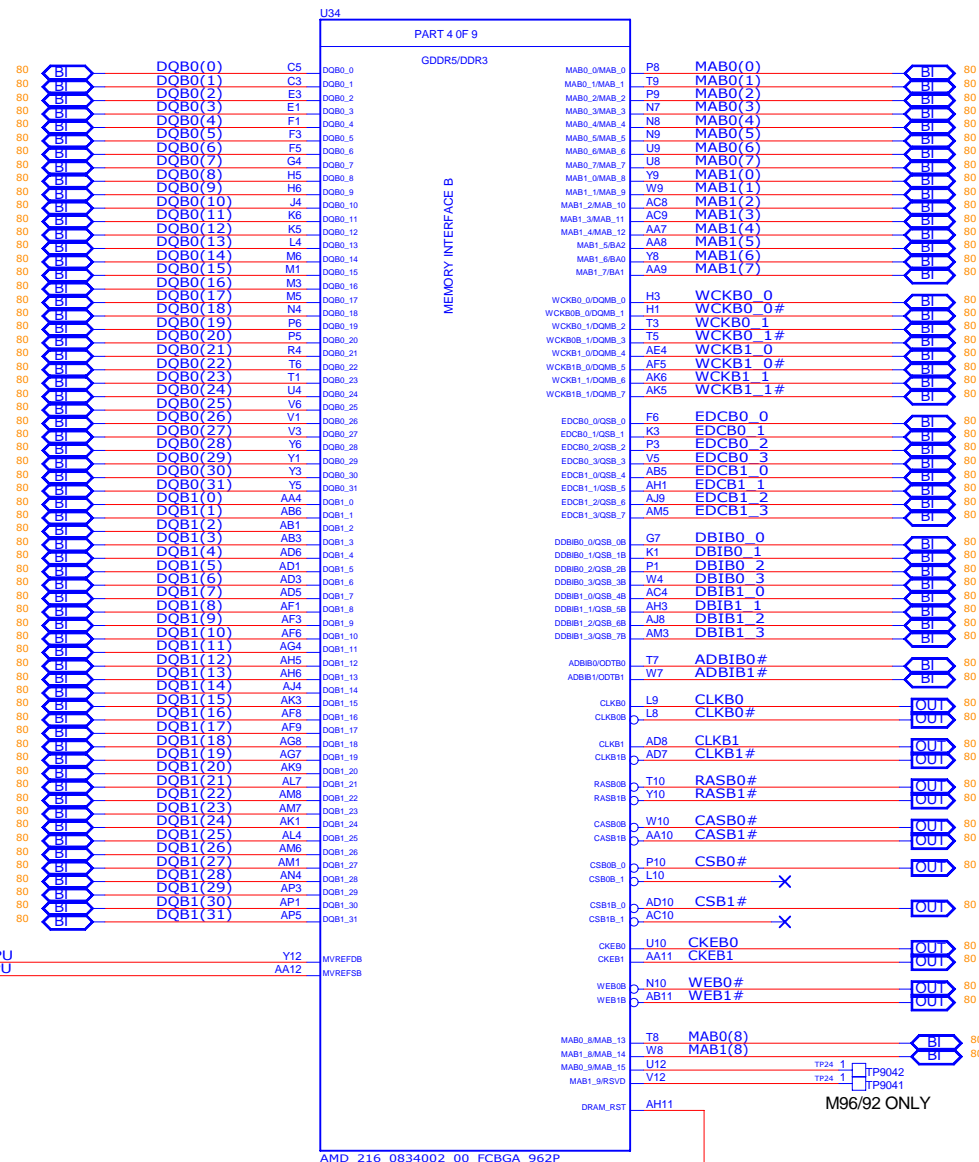
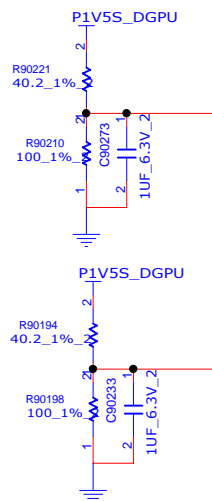
CHANGE by XXX DATE 21-OCT-2002

SHEET 74 of 80

CHANNEL B

DDR3/GDDR3MEMORY STUFF OPTION

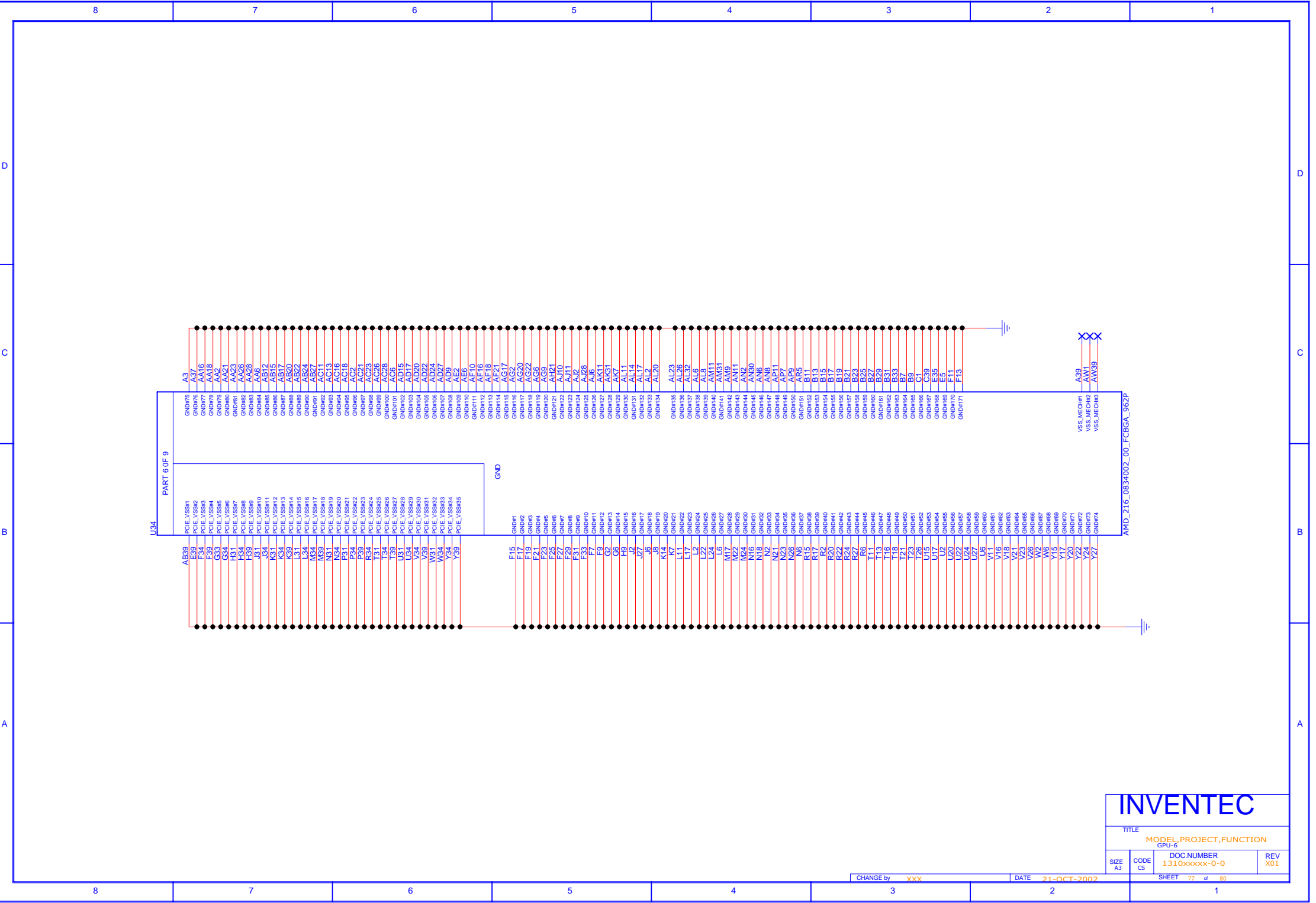
	GDDR5	GDDR3	DDR3
MVDDQ	1.5V	1.8V/1.5V	1.5V
RA	40.2R	40.2R	40.2R
RB	100R	100R	100R



Place all these components vry close to GPU (Within 25mm)
and keep all component close to each other (within 5mm) except Rser2
* This basic topology should be used for DDR3/GDDR3/GDDR5
These Capacitors and Resistor values are an example only.
The Series R and || Cap values will depend on the DRAM load and will have to be
calculated for different Memory , DRAM Load and board to pass Reset Signal Spec.

INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01



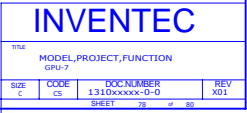
INVENTEC

TITLE
MODEL,PROJECT,FUNCTION

SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
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SHEET 77 of 80

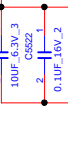
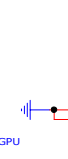
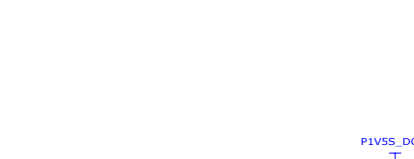
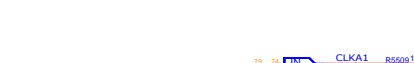
CHANGE by XXX DATE 21-OCT-2002



CHANNEL A MEMORY

VENDER	DENSITY	VENDER PN	IEC PN
SAMSUNG	64MX32	K4G20325FD-FC04	6019B0971801
HYNIX	64MX32	H5GQ2H24AFR-T2C	6019B0971701
SAMSUNG	64MX32	K4G20325FC-HC04	6019B0842201
HYNIX	64MX32	H5GQ2H24MFR-T2C	6019B0843001

MOV 0313



INVENTEC

SIZE	CODE	DOC NUMBER	REV
C	CS	1310100000-0-0	001

CHANGE BY: VXX DATE: 21-JULY-2002

SHEET 24 OF 84

