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CYCLONE DISCRETE

DB BUILD

2012.11.26

26-NOV-2012	2012-ECO-XXXXXX	A
DATE	CHANGE NO.	REV

INVENTEC			
DRAWER	EE	DATE	POWER
DESIGN	EDWARD YU (EYU)	30-NOV-2012	100W ALAN
CHECK	TRISTE PARR	26-NOV-2012	100W ALAN
RESPONSIBLE	VERA ALBA	30-NOV-2012	100W ALAN
	EDWARD YU	30-NOV-2012	100W ALAN
TITLE			
CYCLONE DIS			
SHARKBAY MAIN BOARD			
SIZE	A4	VER	X01
FILE NAME	CYCLONE DISCRETE DB BUILD		
PIN	9999999999	XXXX	
SIZE	A4	CODE	CS
SHEET		DOC NUMBER	1310A25564-0-ALG
		REV	X01

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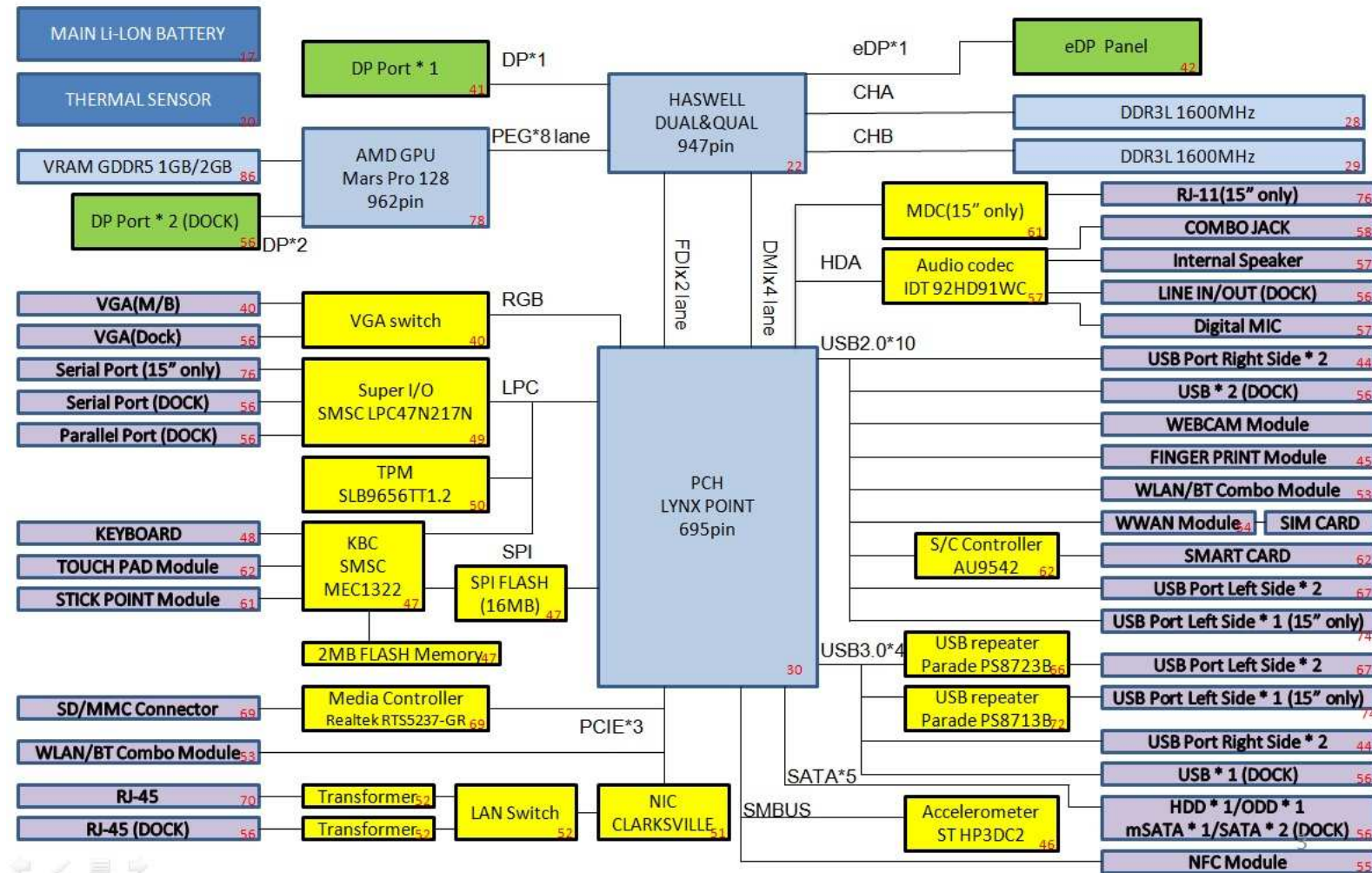
INVENTEC

TITLE
CYCLONE DIS
TABLE OF CONTENTS

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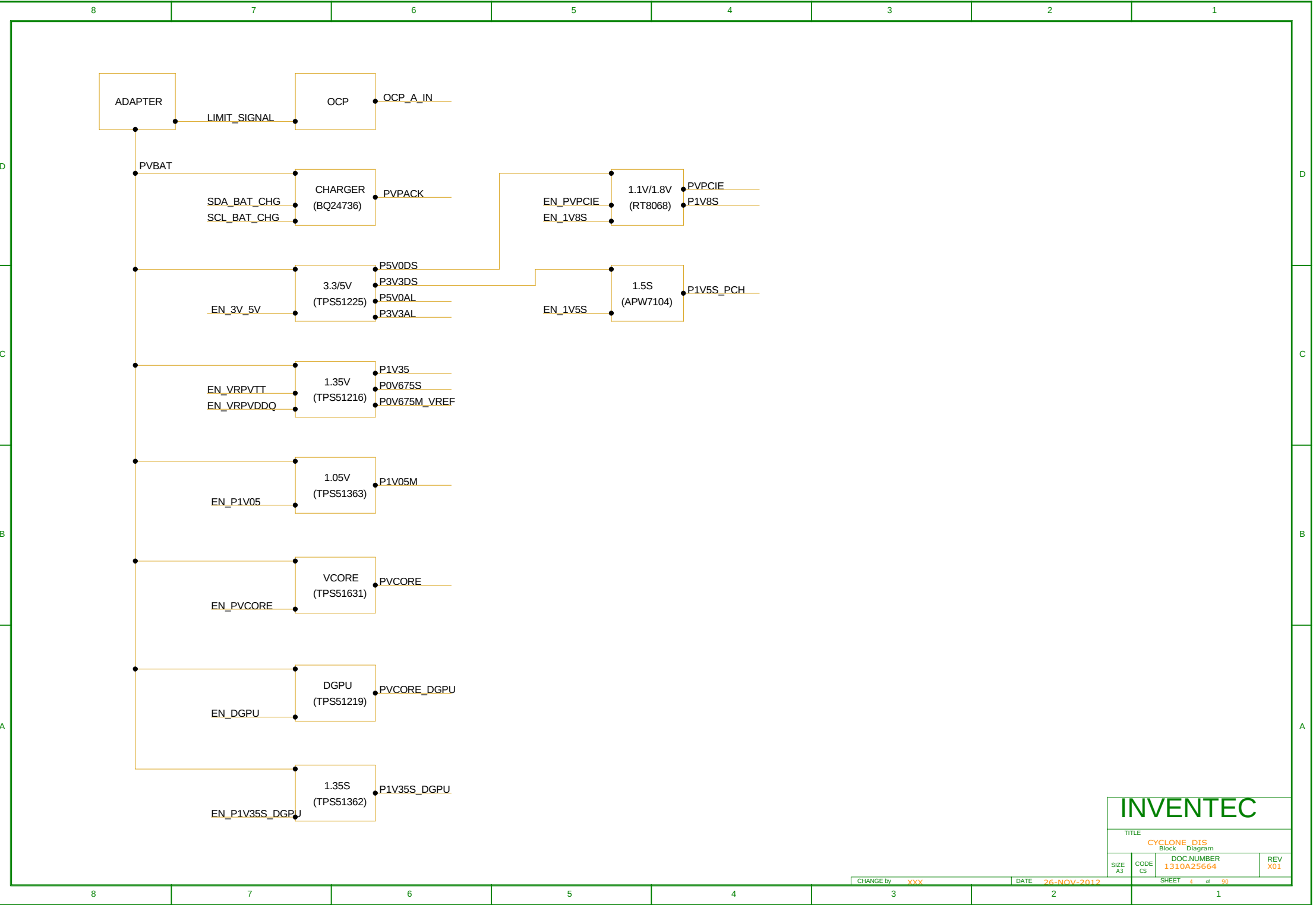
DIS – Block Diagram

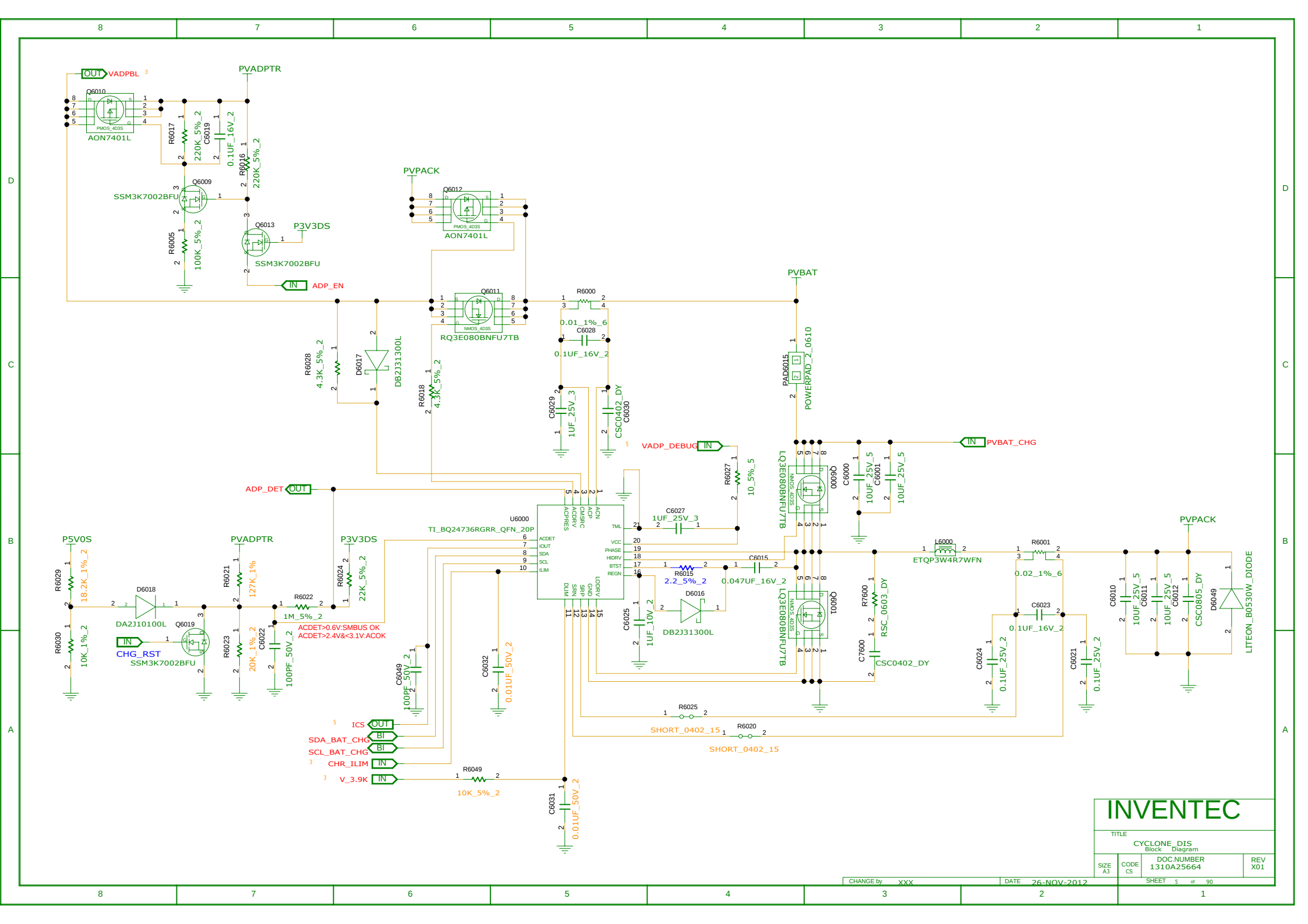


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CYCLONE_DIS			
Block Diagram			
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C	CS	1310A/C35004	201
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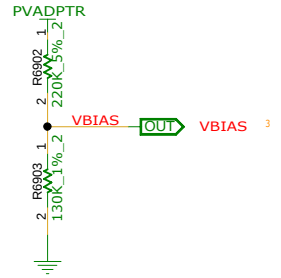
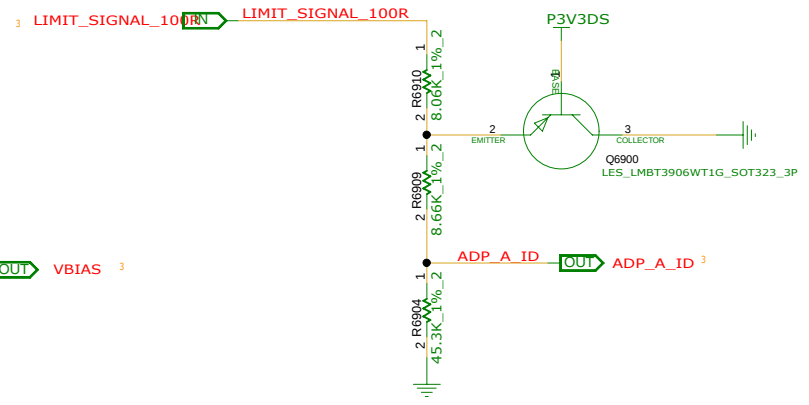
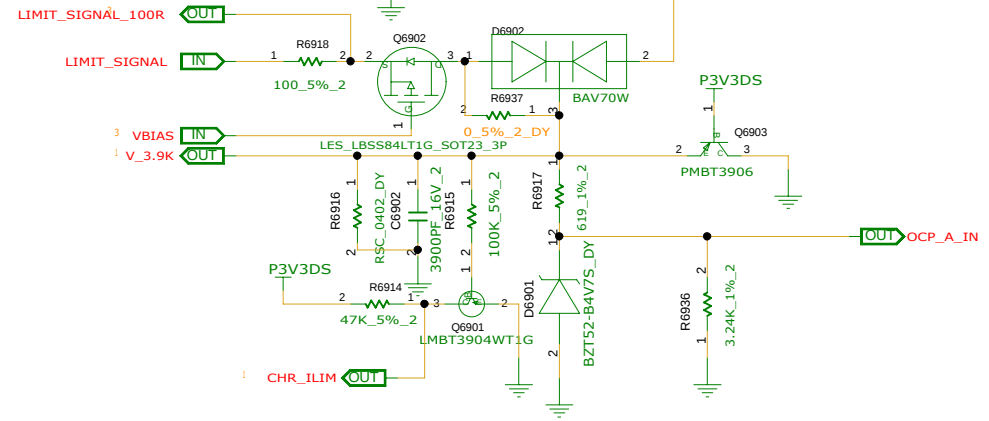
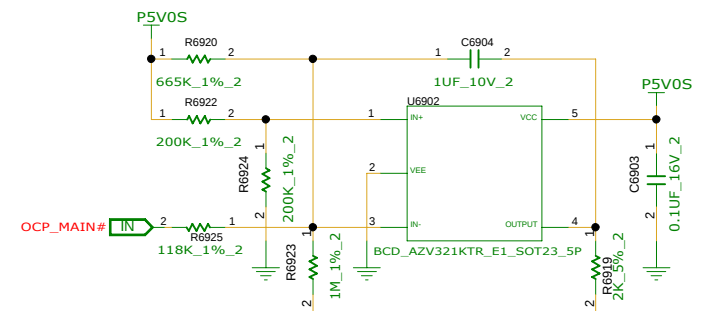
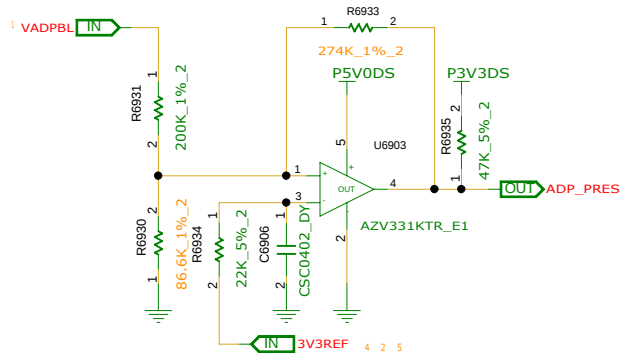
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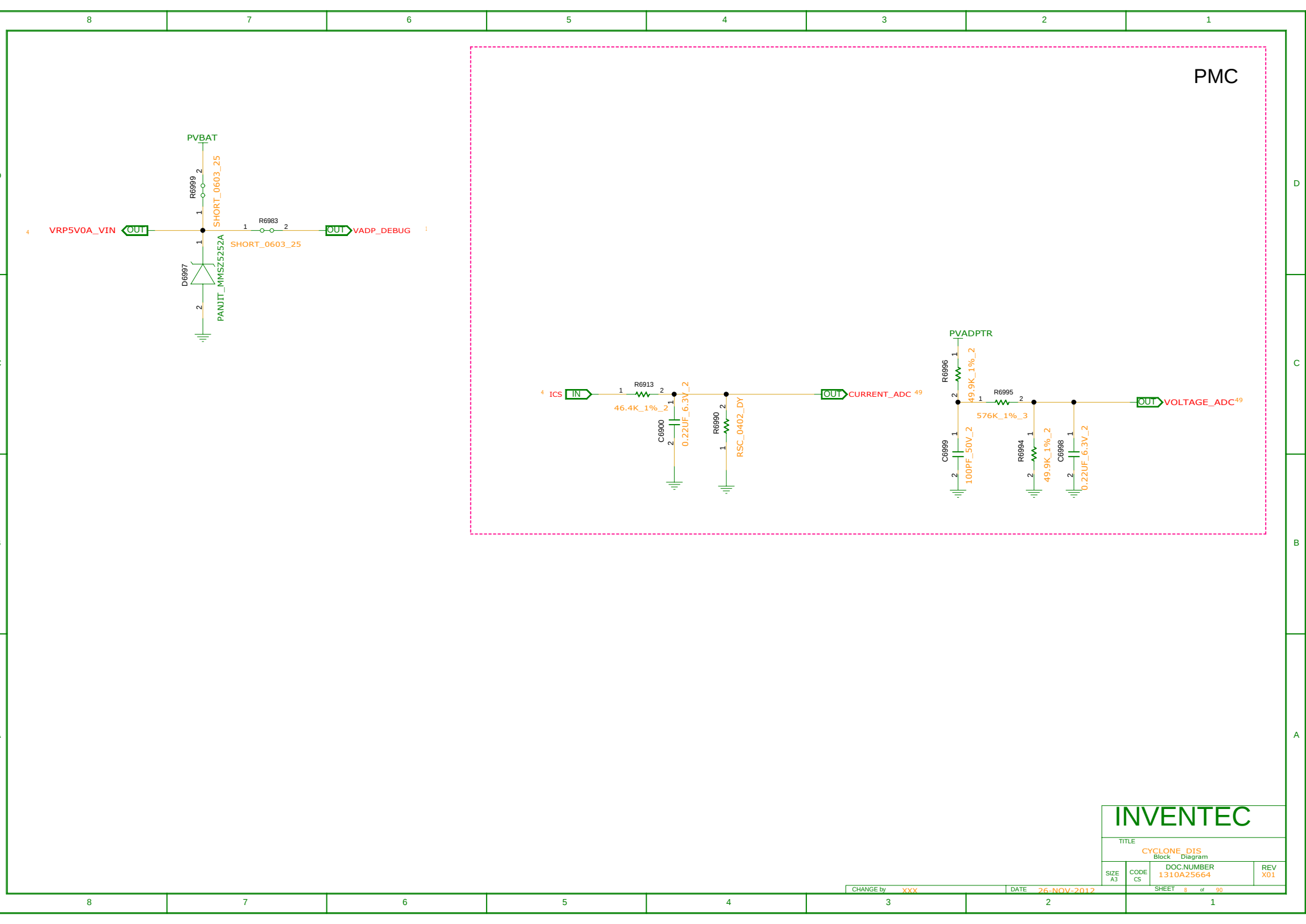


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SIZE A3		DOC NUMBER 1310A25664	REV X01
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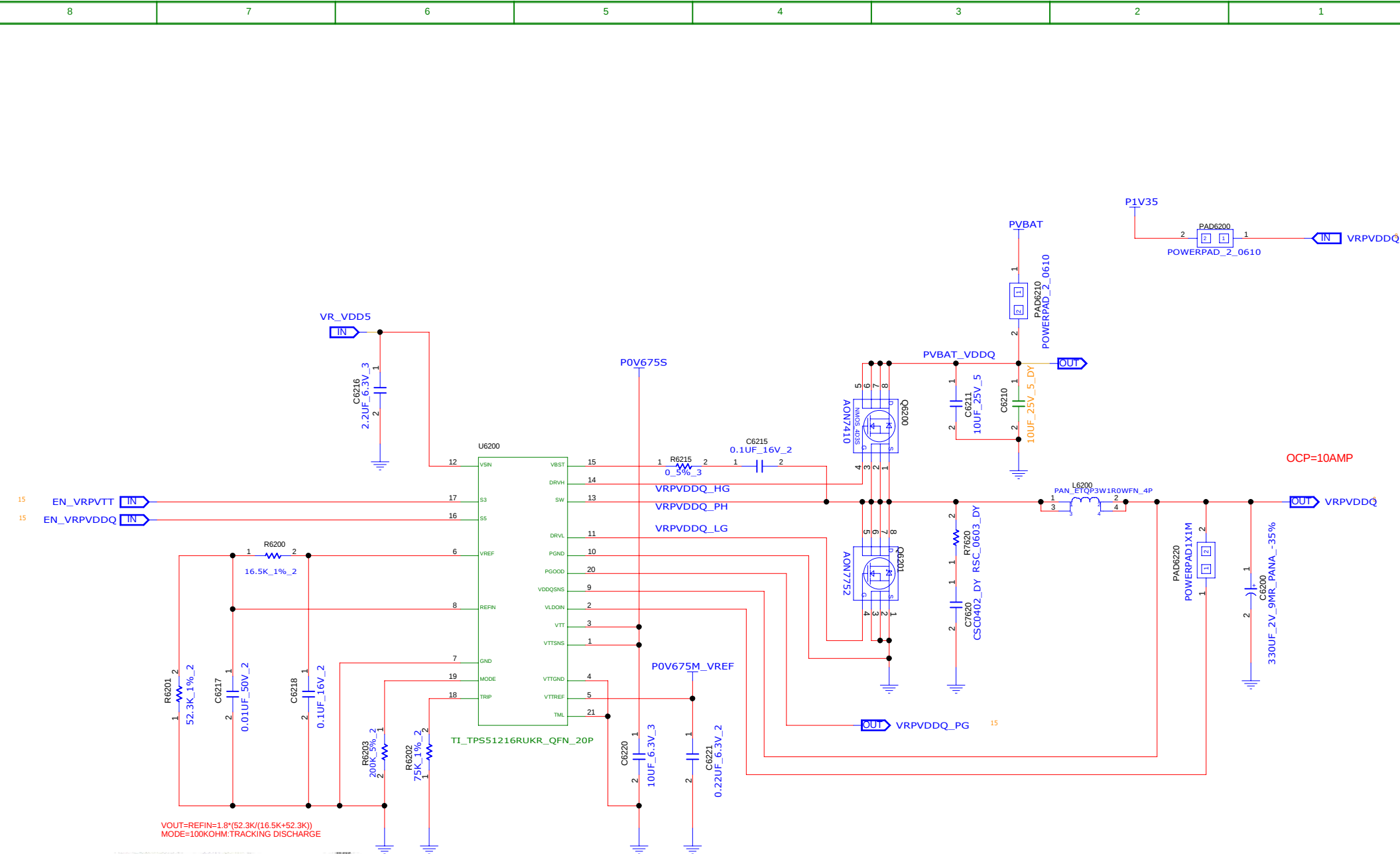


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TITLE			
CYCLONE_DIS Block Diagram			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
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TITLE			
CYCLONE_DIS Block Diagram			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 8 of 90			



VOUT=REFIN*1.8*(52.3K/(16.5K+52.3K))
MODE=100KOHM:TRACKING DISCHARGE

Table 1. S3/S5 Power State Control

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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TITLECYCLONE DIS Block Diagram

SIZEA3

CODECS

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REVX01

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D

C

B

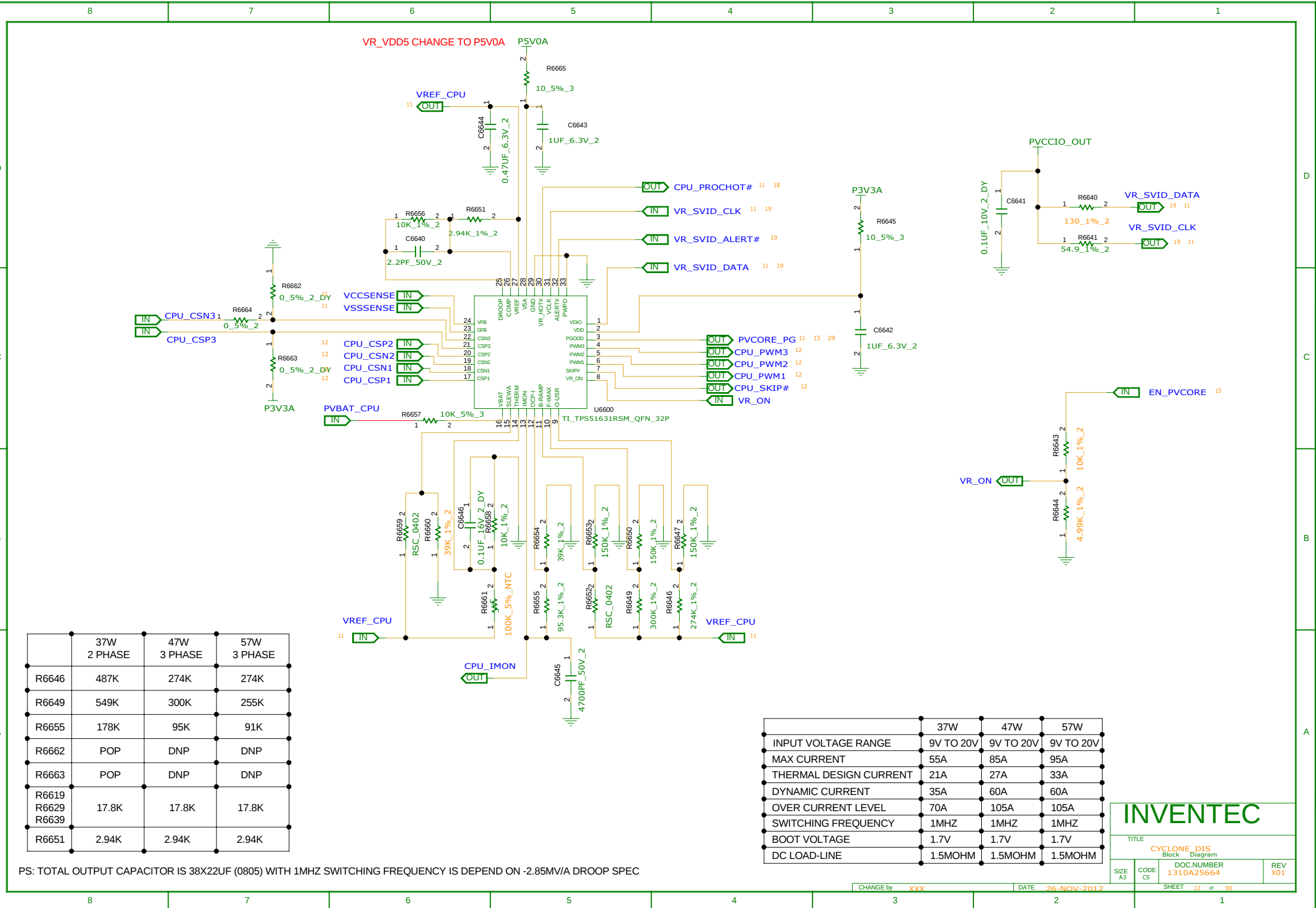
A

D

C

B

A



	37W 2 PHASE	47W 3 PHASE	57W 3 PHASE
R6646	487K	274K	274K
R6649	549K	300K	255K
R6655	178K	95K	91K
R6662	POP	DNP	DNP
R6663	POP	DNP	DNP
R6619	17.8K	17.8K	17.8K
R6629	17.8K	17.8K	17.8K
R6639	17.8K	17.8K	17.8K
R6651	2.94K	2.94K	2.94K

PS: TOTAL OUTPUT CAPACITOR IS 38X22UF (0805) WITH 1MHZ SWITCHING FREQUENCY IS DEPEND ON -2.85MV/A DROOP SPEC

	37W	47W	57W
INPUT VOLTAGE RANGE	9V TO 20V	9V TO 20V	9V TO 20V
MAX CURRENT	55A	85A	95A
THERMAL DESIGN CURRENT	21A	27A	33A
DYNAMIC CURRENT	35A	60A	60A
OVER CURRENT LEVEL	70A	105A	105A
SWITCHING FREQUENCY	1MHZ	1MHZ	1MHZ
BOOT VOLTAGE	1.7V	1.7V	1.7V
DC LOAD-LINE	1.5MOHM	1.5MOHM	1.5MOHM

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TITLE

CYCLONE DIS
Block Diagram

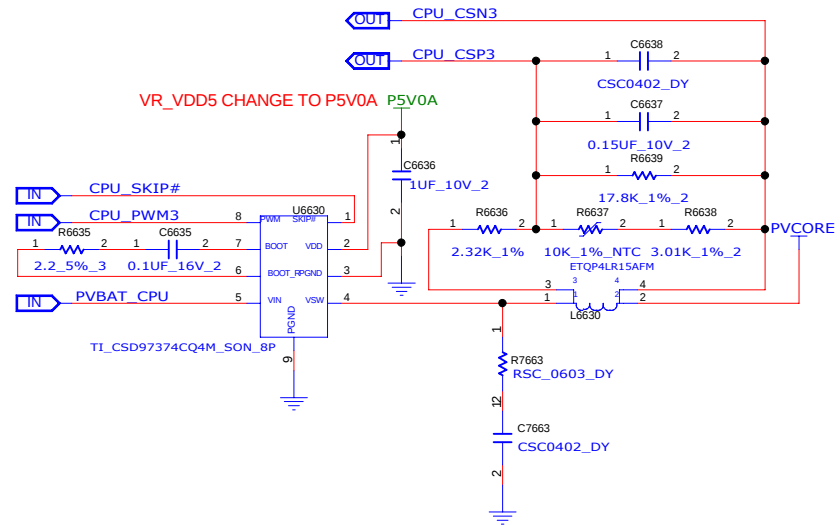
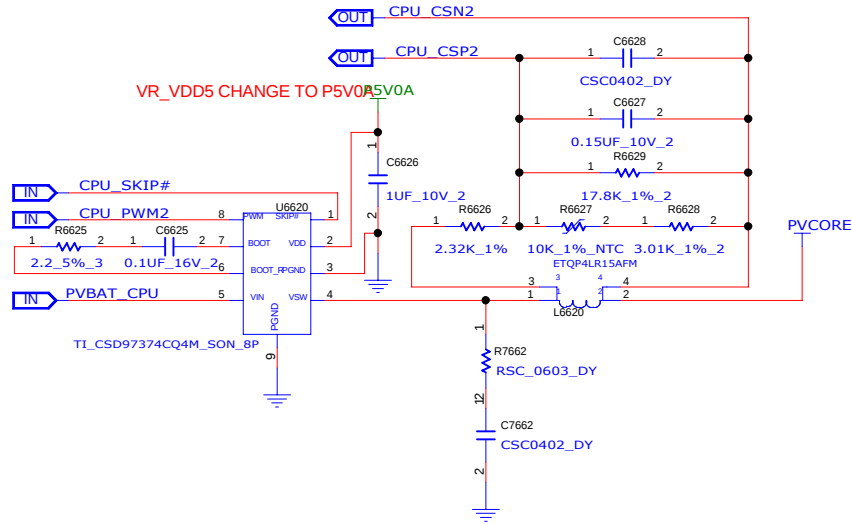
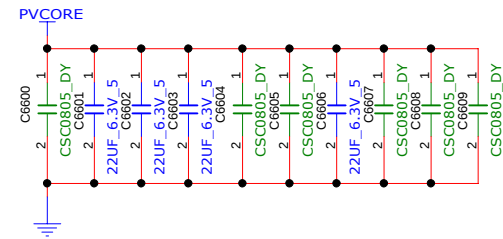
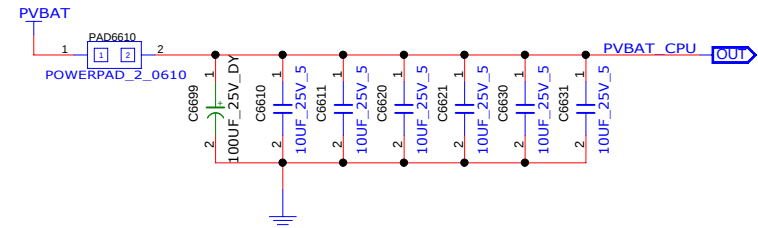
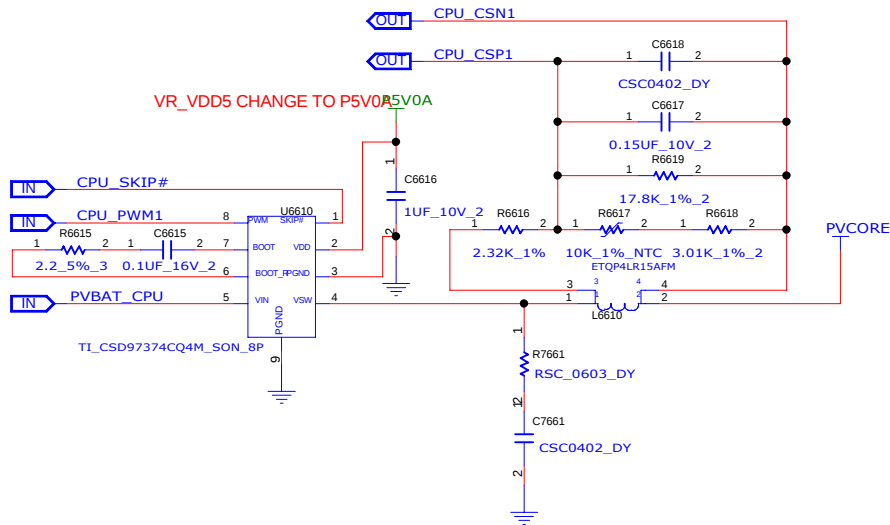
SIZE
A3

CODE
CS

DOC NUMBER
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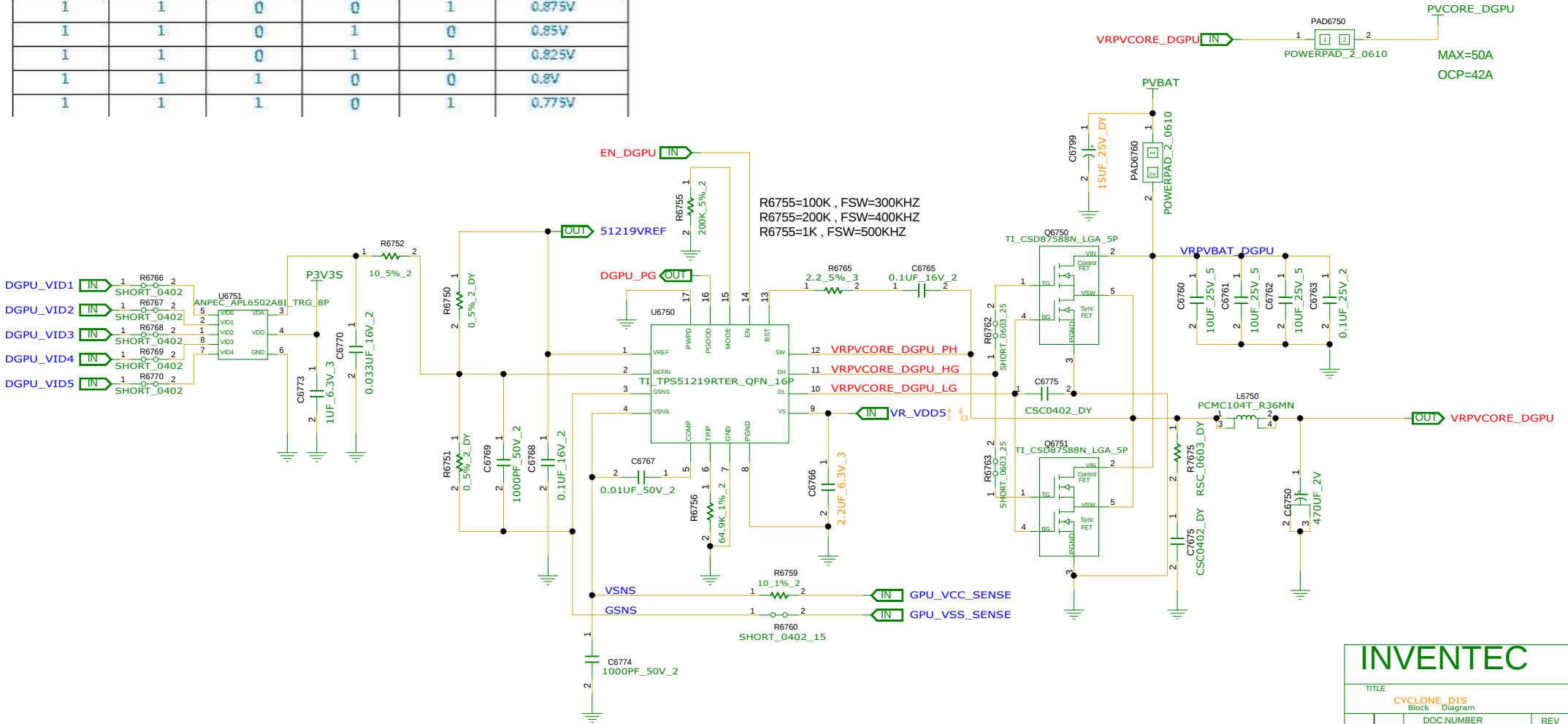


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TITLE			
CYCLONE DIS Block Diagram			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01

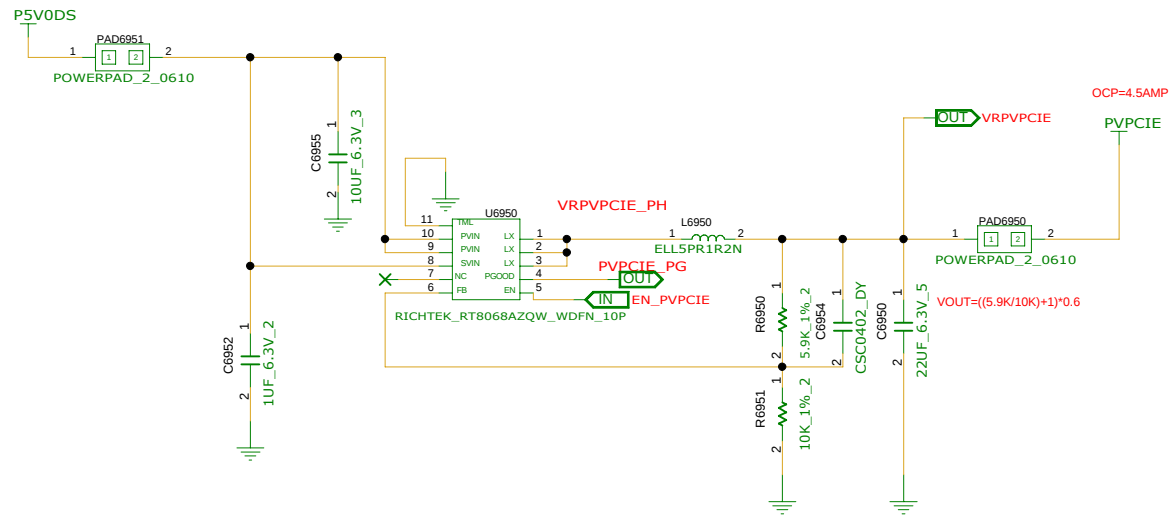
GPU_VID5 GPIO_10	GPU_VID4 GPIO_14	GPU_VID3 GPIO_15	GPU_VID2 GPIO_16	GPU_VID1 GPIO_20	Core Voltage Level
0	1	1	1	1	1.125V
1	0	0	0	0	1.1V
1	0	0	0	1	1.075V
1	0	0	1	0	1.05V
1	0	0	1	1	1.025V
1	0	1	0	0	1.0V
1	0	1	0	1	0.975V
1	0	1	1	0	0.95V
1	0	1	1	1	0.925V
1	1	0	0	0	0.9V
1	1	0	0	1	0.875V
1	1	0	1	0	0.85V
1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



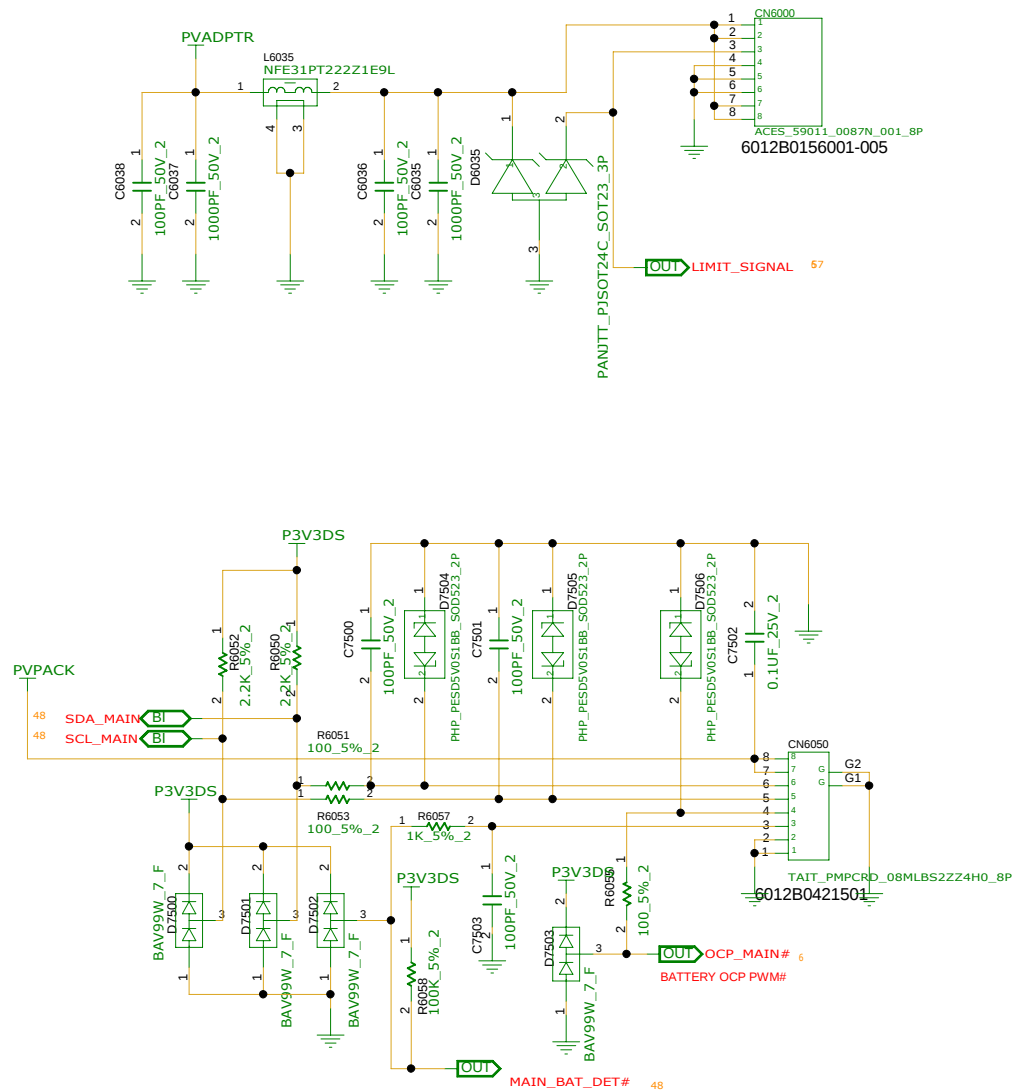
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CYCLONE_DIS Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01



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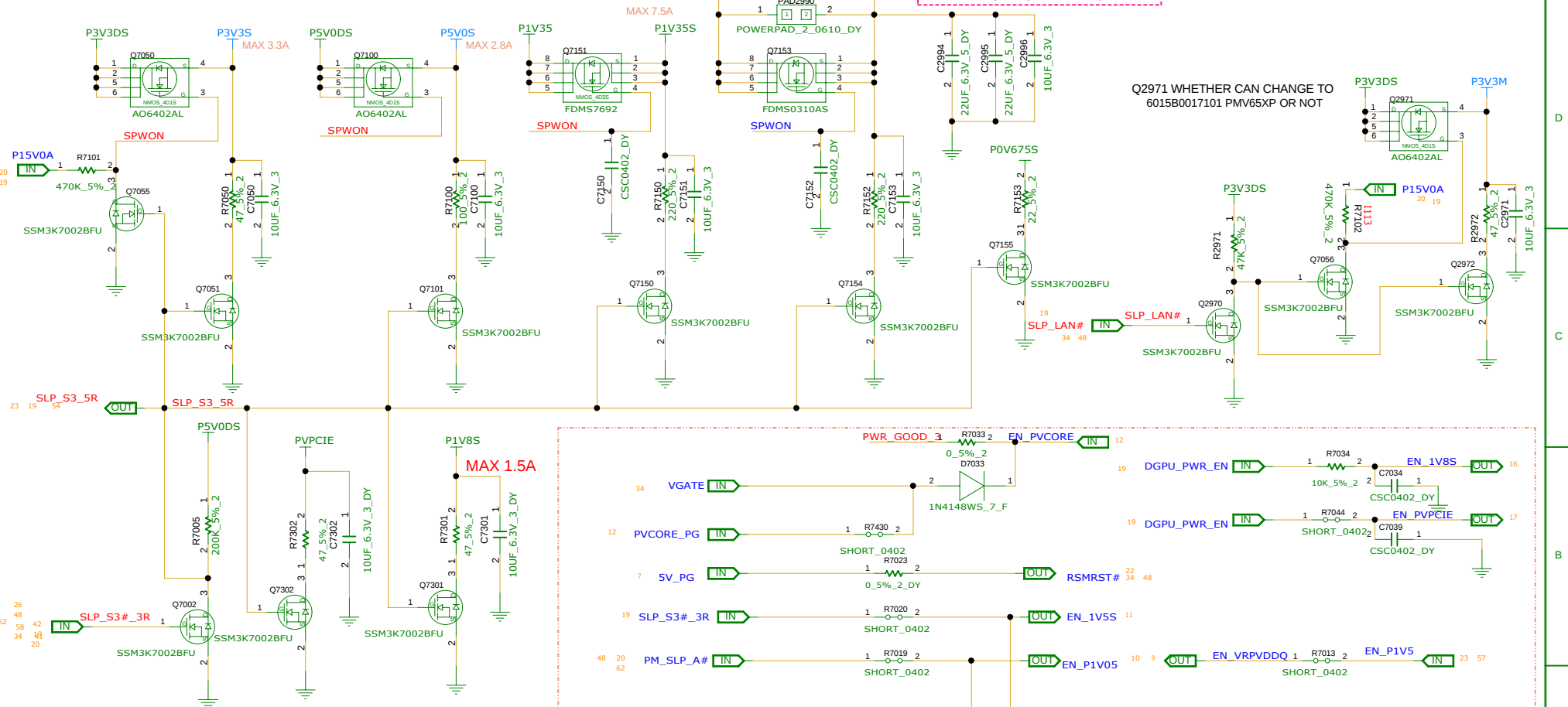
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CYCLONE DIS Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01



INVENTEC

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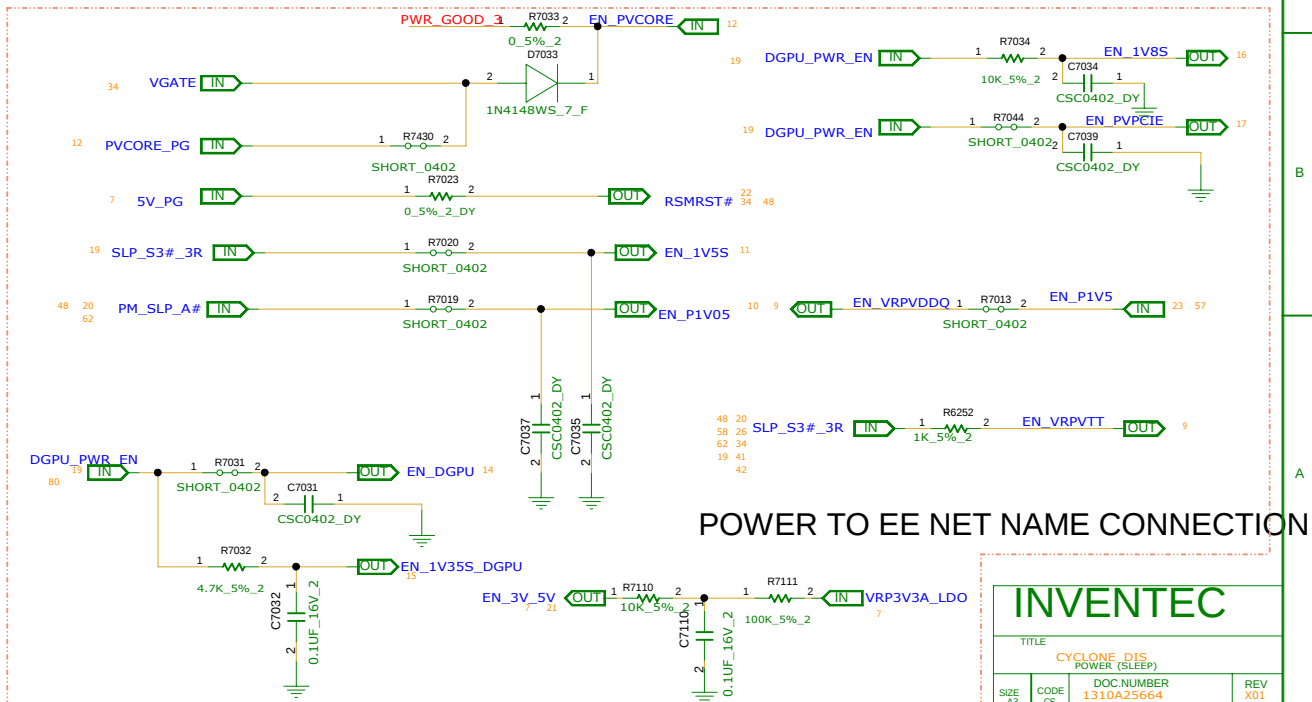
REFERENCE NUMER : 7000~7350



FOR IAMT

PAD2990	Q2992, Q2993
NON-IAMT	UN-INSTALL
IAMT	UN-INSTALL
UN-INSTALL	INSTALL

REFERENCE NUMER : 2950~2999



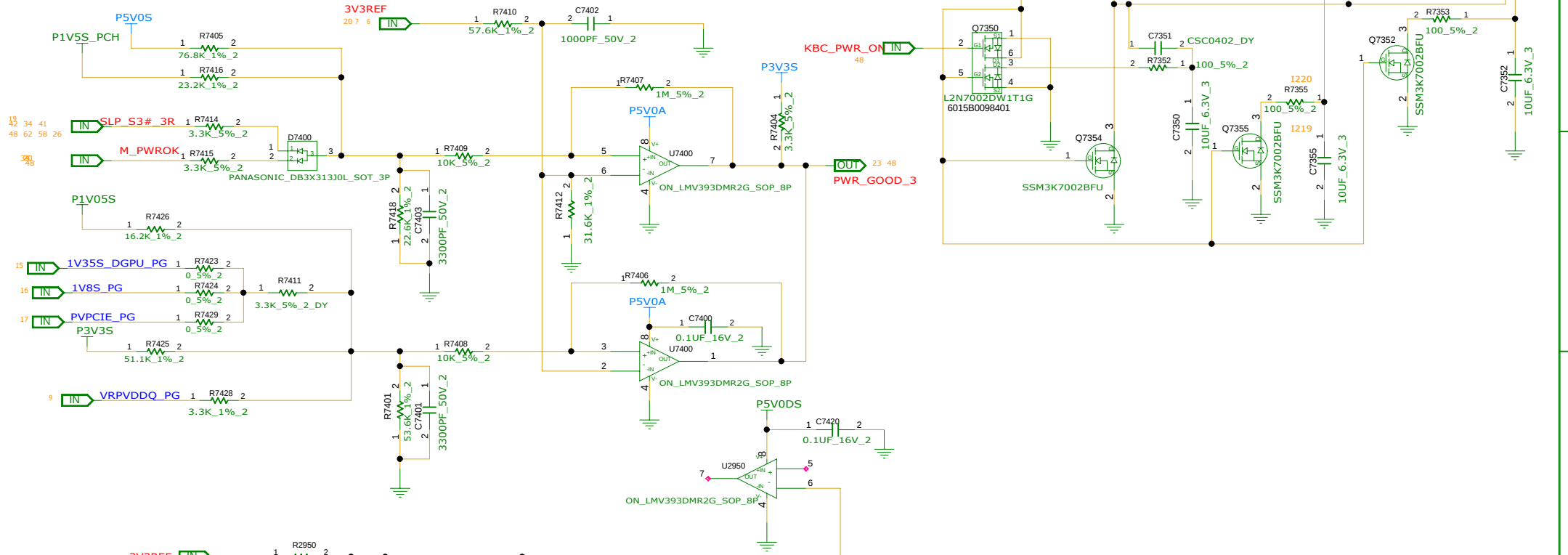
POWER TO EE NET NAME CONNECTION

INVENTEC

TITLE			
CYCLONE D1S POWER (SLEEP)			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01

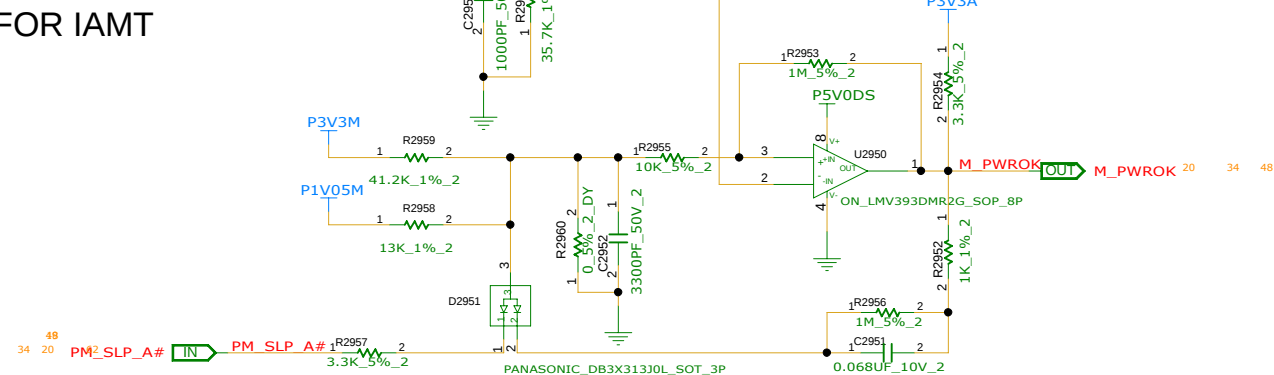
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REFERENCE NUMER : 7400~7450



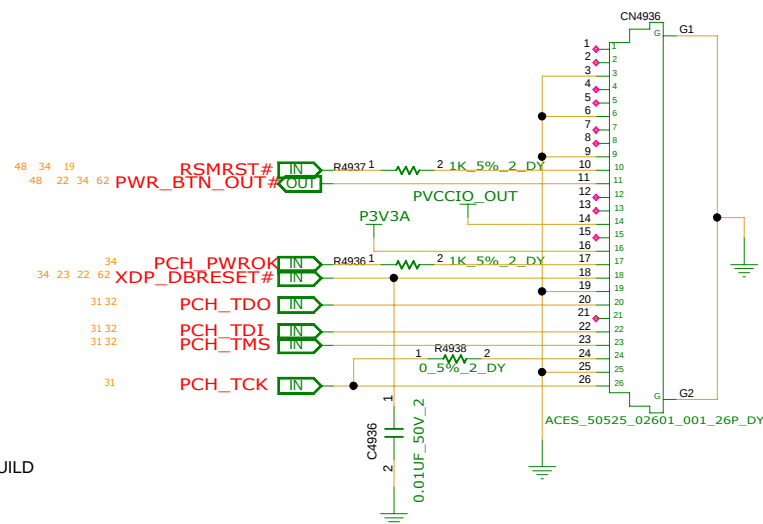
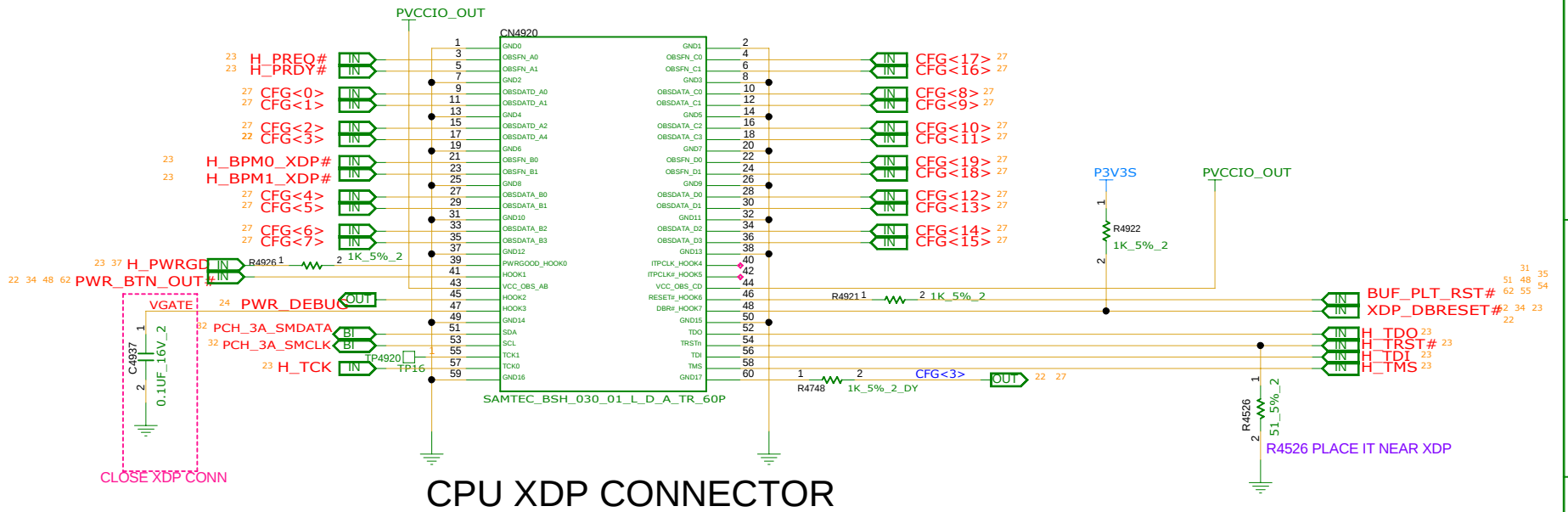
FOR IAMT

REFERENCE NUMER : 2950~2999



INVENTEC

TITLE			
CYCLONE_DIS POWER(SIQUENCE)			
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A3	CS	1310A25664	X01

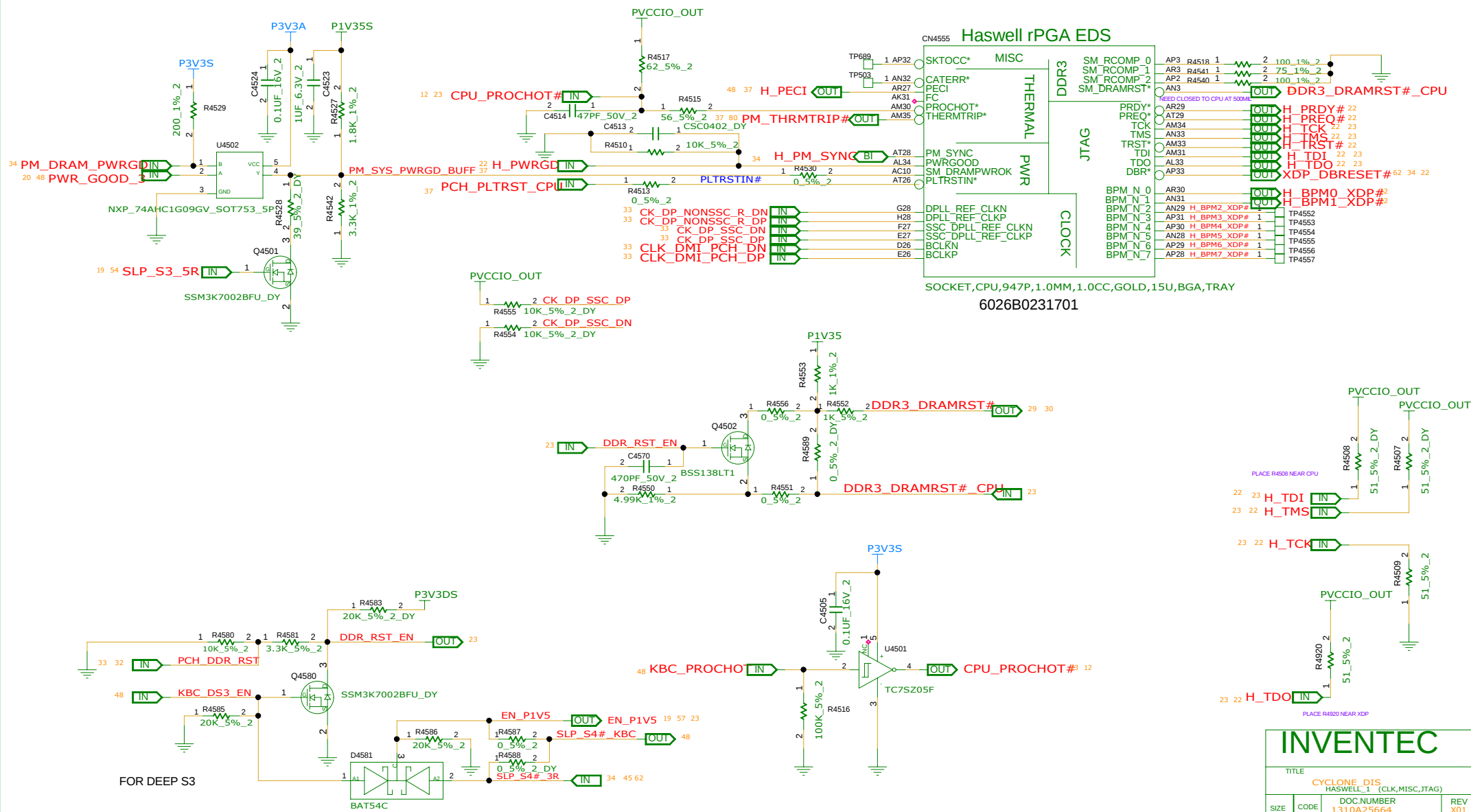


NON-INSTALL CN4936,R4937,R4936 ON PV BUILD

PCH XDP CONNECTOR

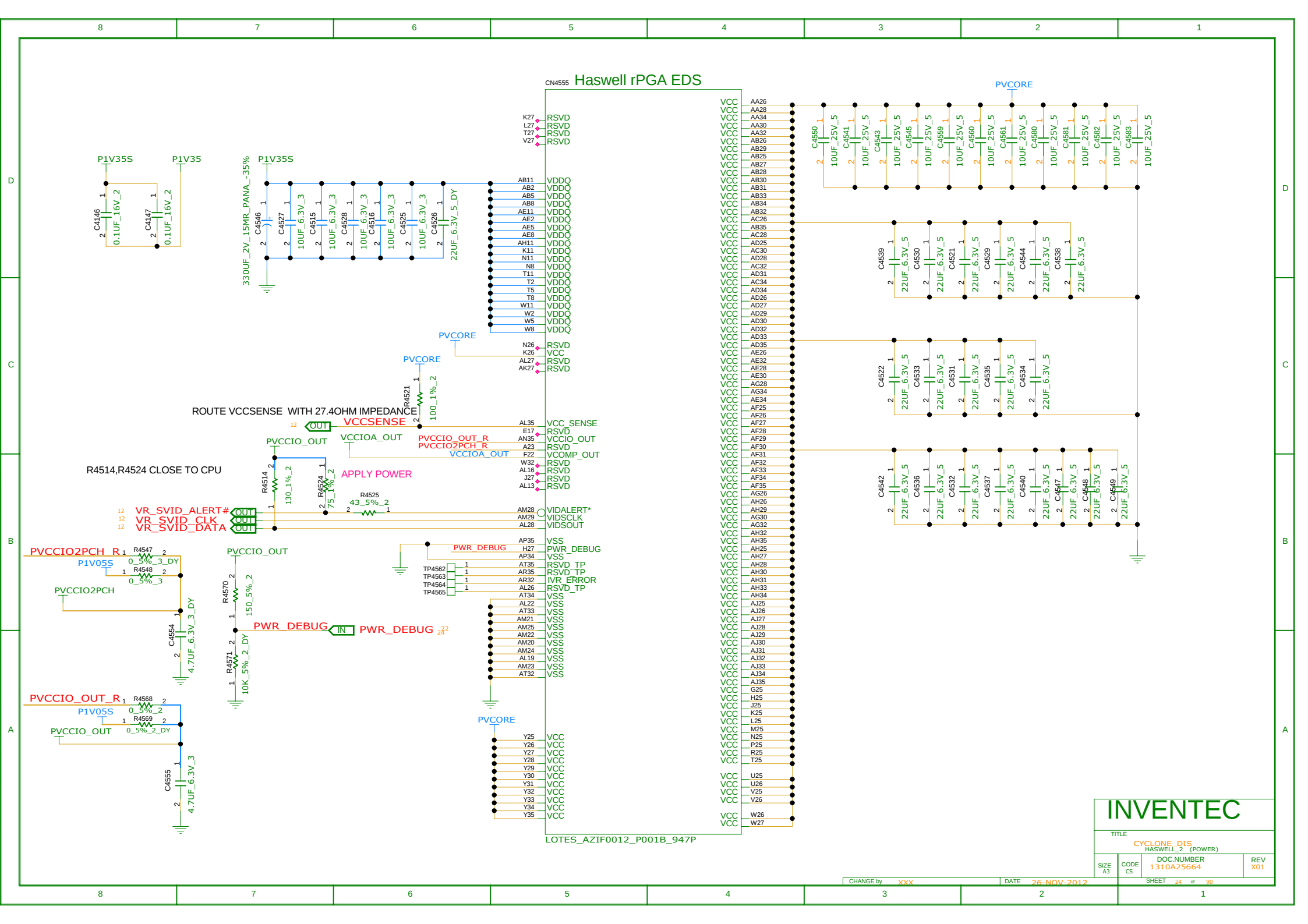
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CYCLONE DIS XDP CONN			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01
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INVENTEC

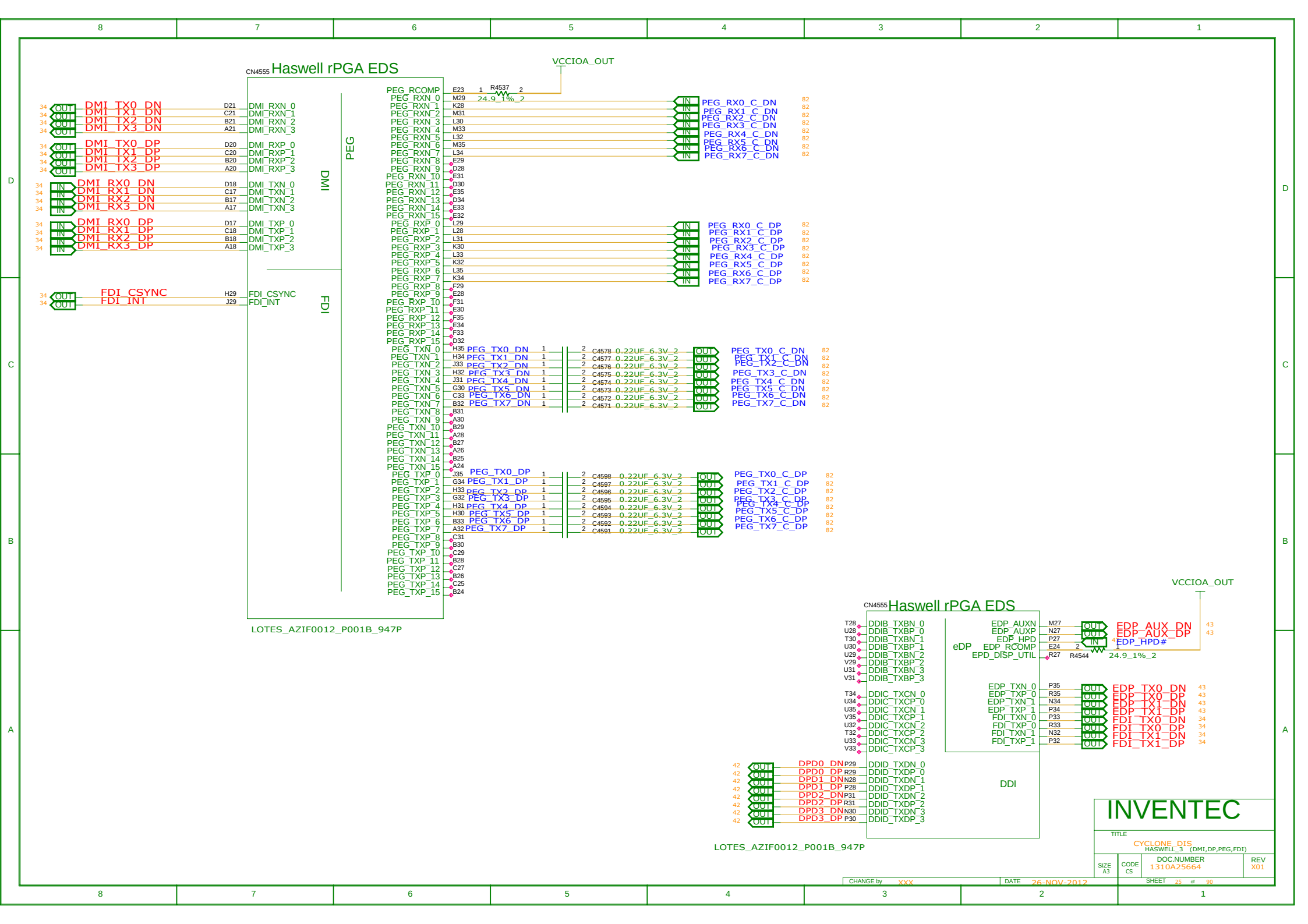
TITLE			
CYCLONE_DIS HASWELL_1 (CLK,MISC,JTAG)			
SIZE A3	CODE CS	DOC.NUMBER 1310A25664	REV X01
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INVENTEC

TITLE
CYCLONE DIS
HASWELL 2 (POWER)

SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01



INVENTEC

TITLE

CYCLONE_DIS (DMI,DP,PEG,FDI)

DOC NUMBER

1310A25664

REV

X01

SIZE

A3

CODE

CS

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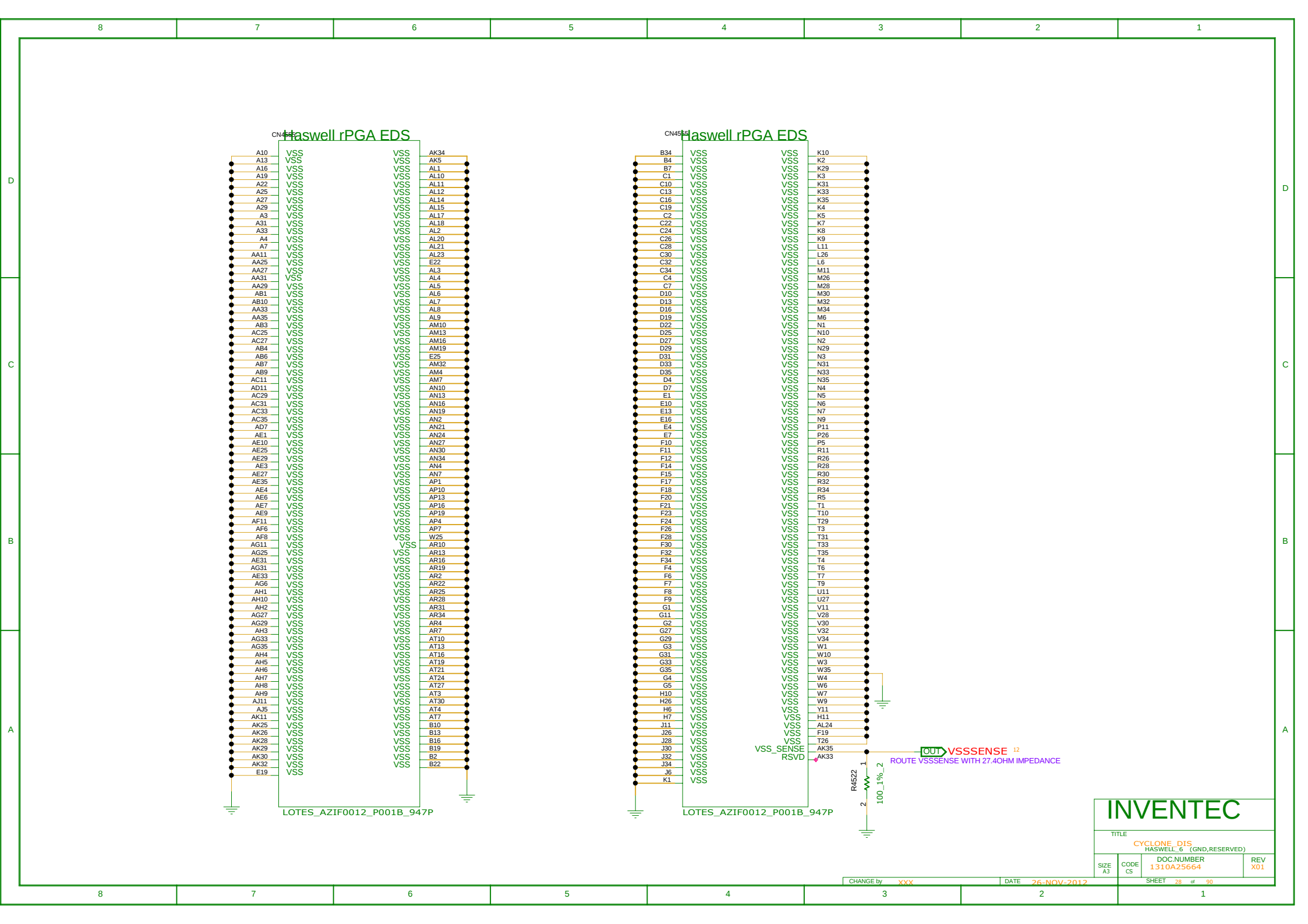
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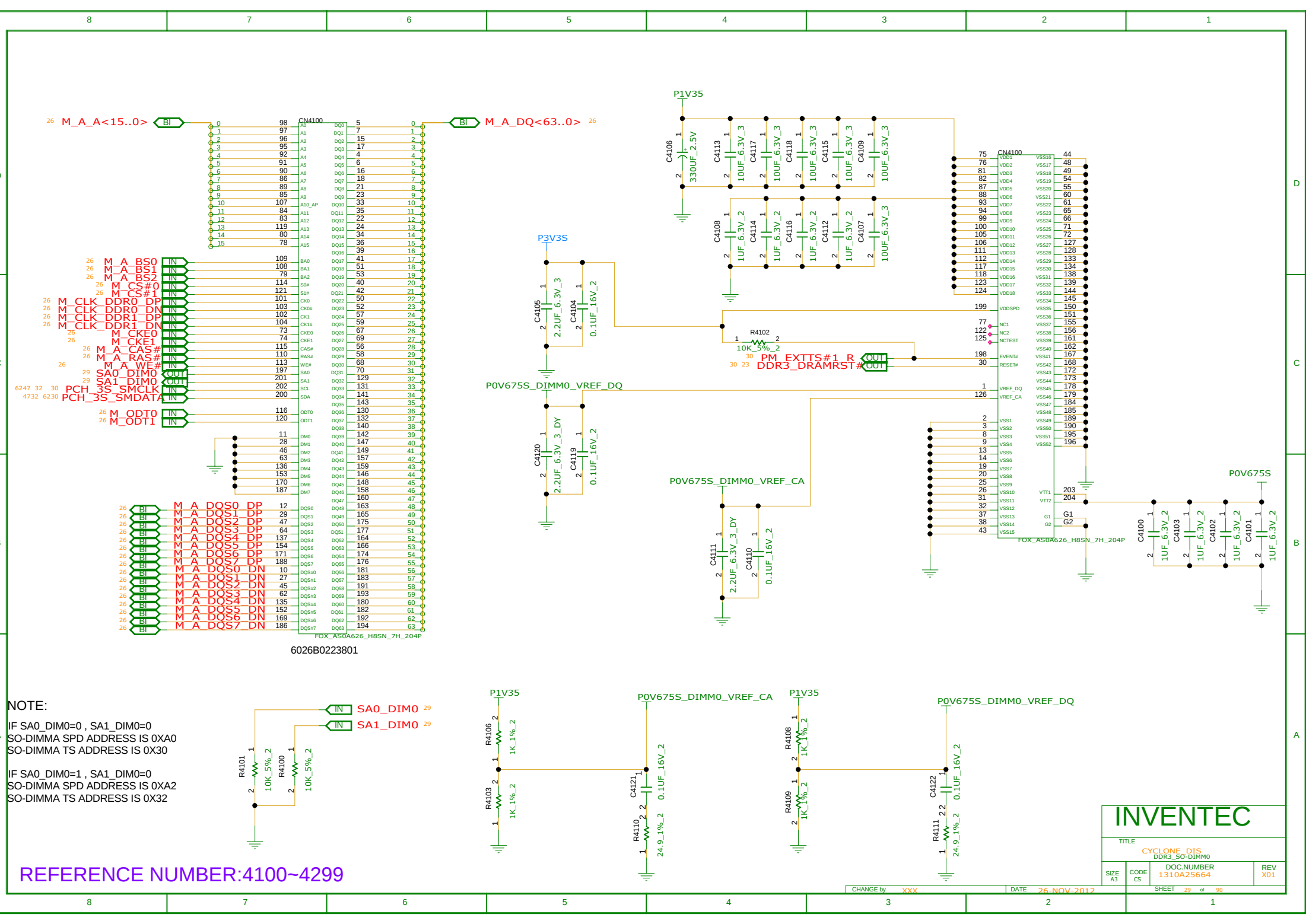
CHANGE by

XXX

DATE

26-NOV-2012





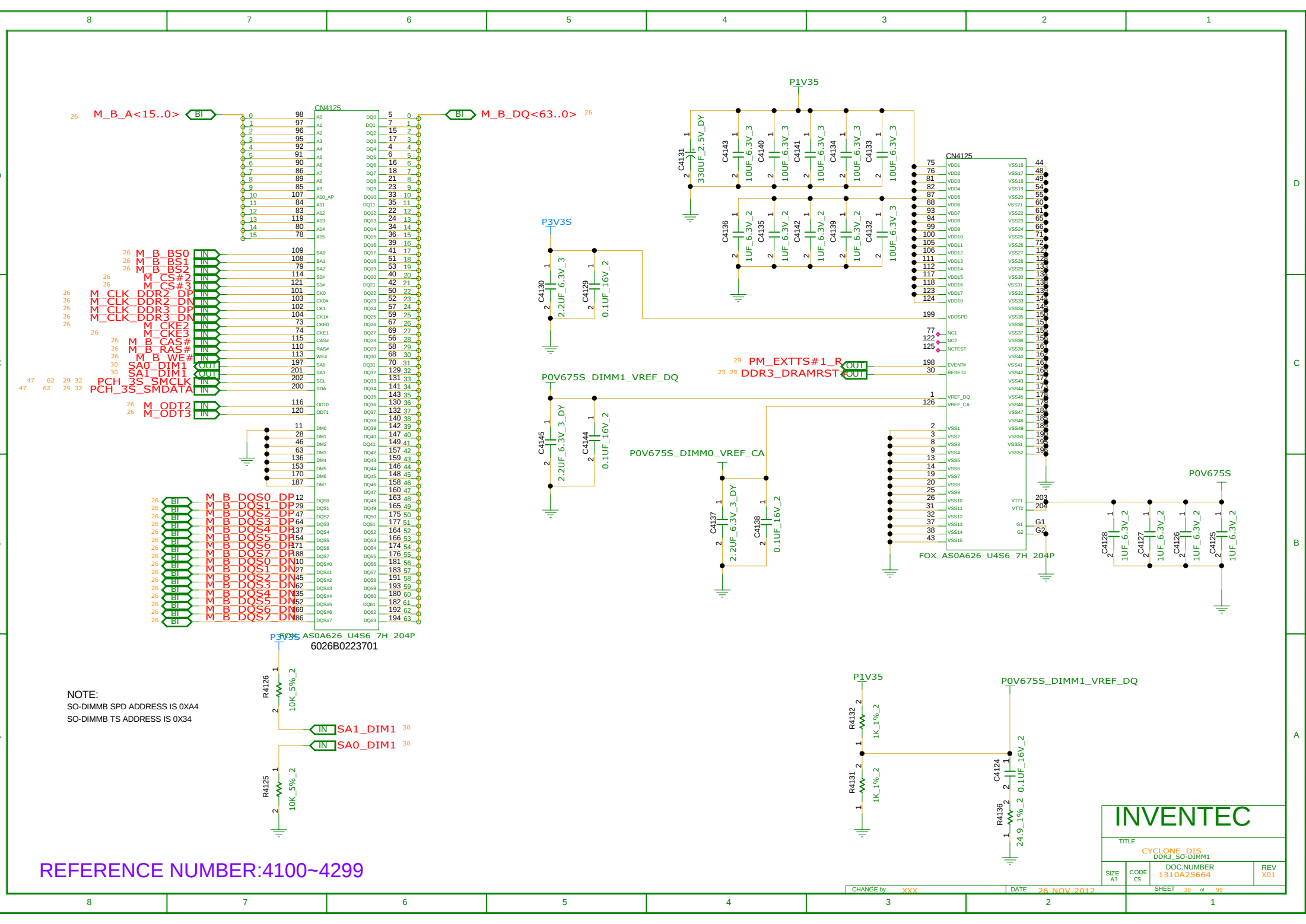
NOTE:

IF SA0_DIM0=0 , SA1_DIM0=0
SO-DIMMA SPD ADDRESS IS 0XA0
SO-DIMMA TS ADDRESS IS 0X30

IF SA0_DIM0=1 , SA1_DIM0=0
SO-DIMMA SPD ADDRESS IS 0XA2
SO-DIMMA TS ADDRESS IS 0X32

REFERENCE NUMBER:4100~4299

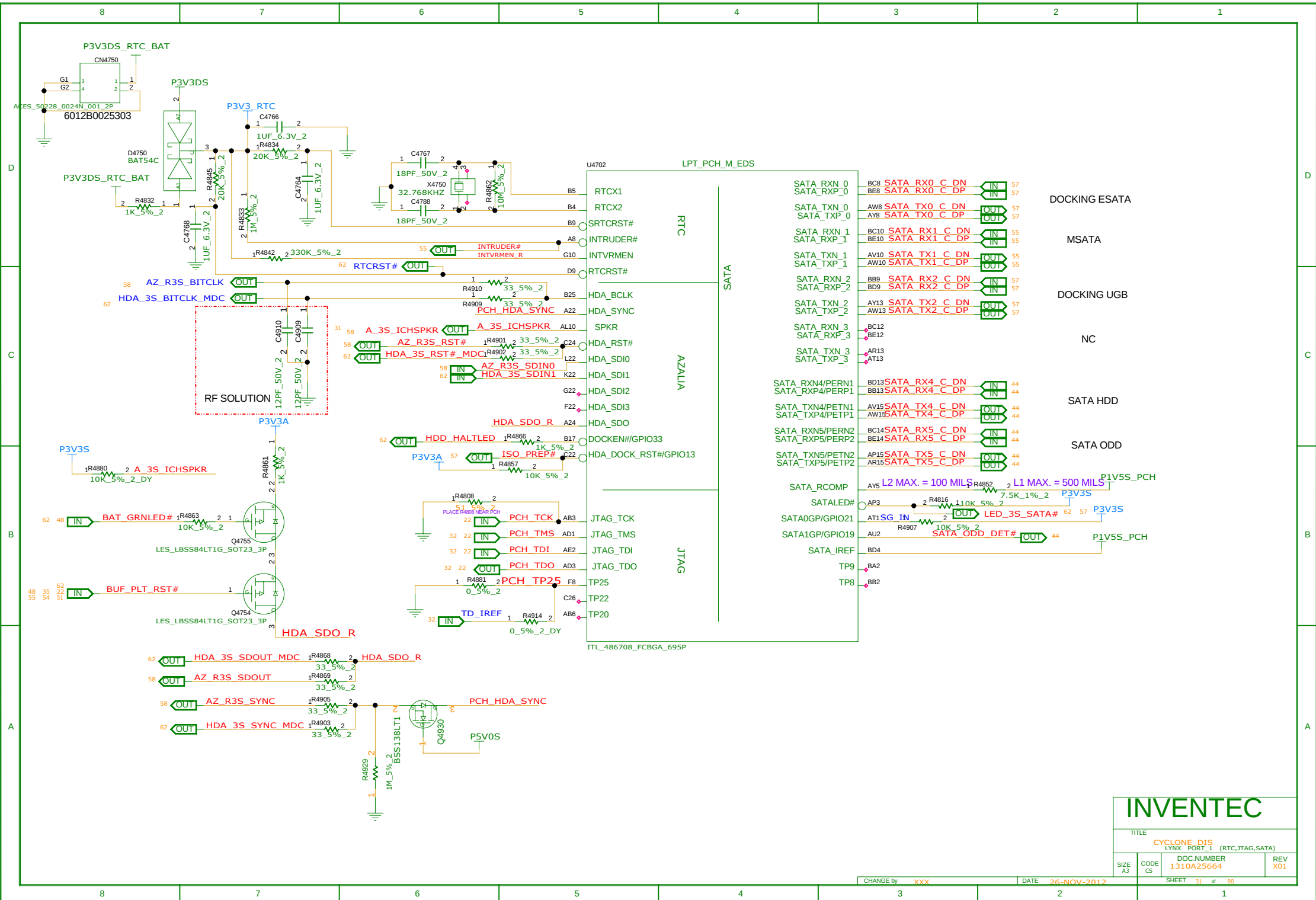
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TITLE			
CYCLONE DIS DDR3 SO-DIMM0			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01



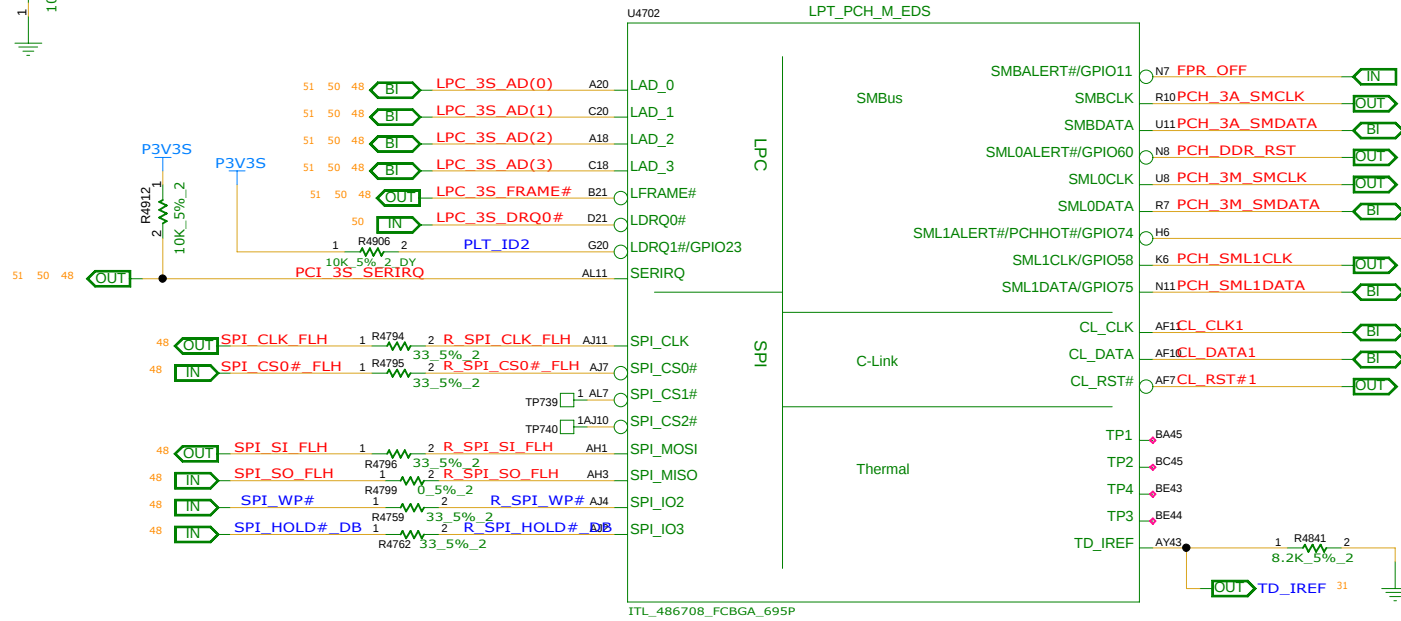
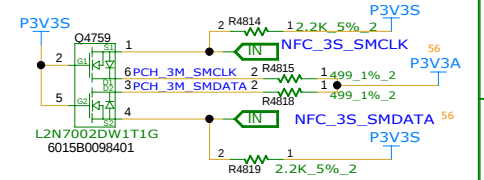
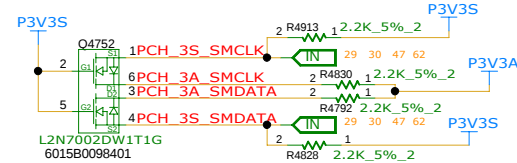
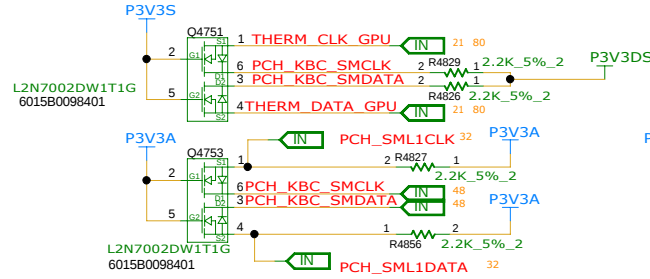
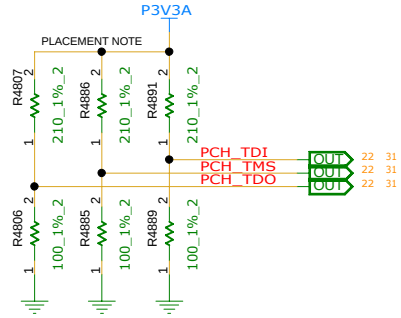
NOTE:
SO-DIMMB SPD ADDRESS IS 0XA4
SO-DIMMB TS ADDRESS IS 0X34

REFERENCE NUMBER:4100~4299

INVENTEC			
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CYCLONE DIS DDR3 SO-DIMM1			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01

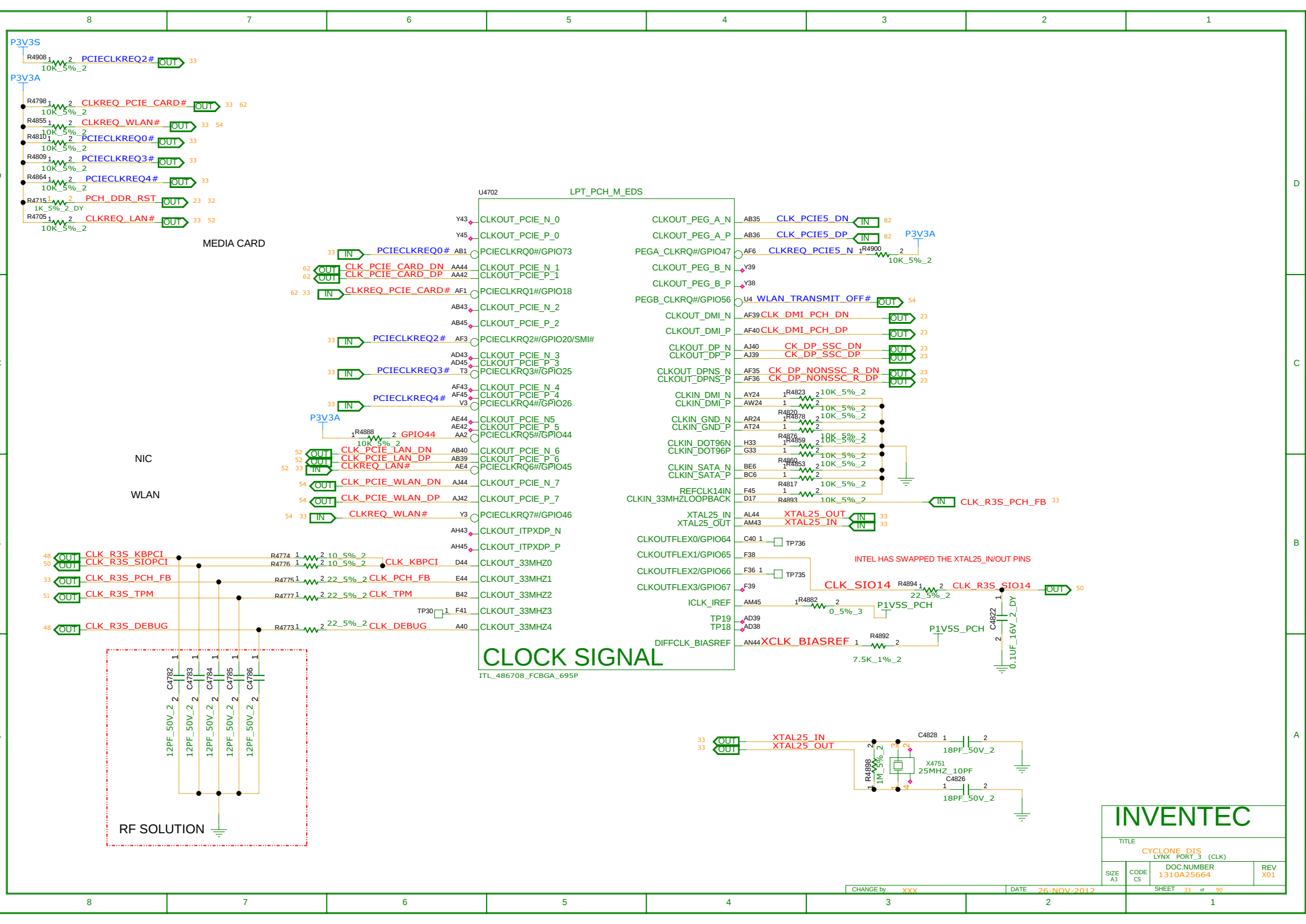


LAYOUT NOTE: JTAG_TMS TERMINATIONS NEED TO BE PLACED NEAR PCH
LAYOUT NOTE: JTAG_TDI TERMINATIONS NEED TO BE PLACED NEAR PCH
LAYOUT NOTE: JTAG_TDO TERMINATIONS NEED TO BE PLACED NEAR XDP

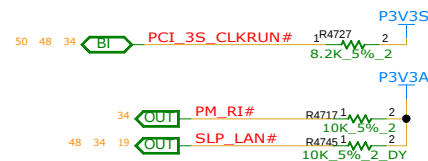
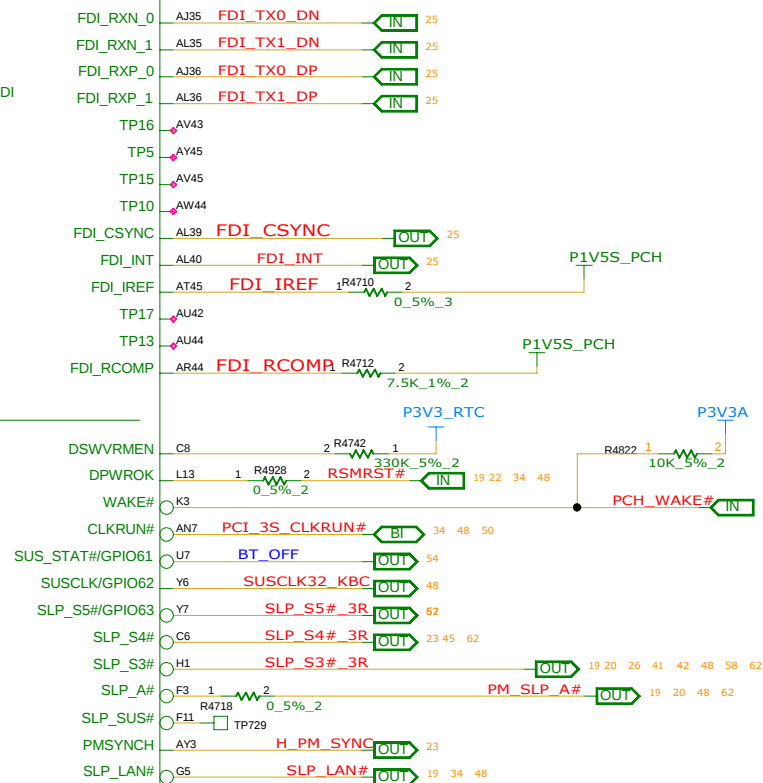
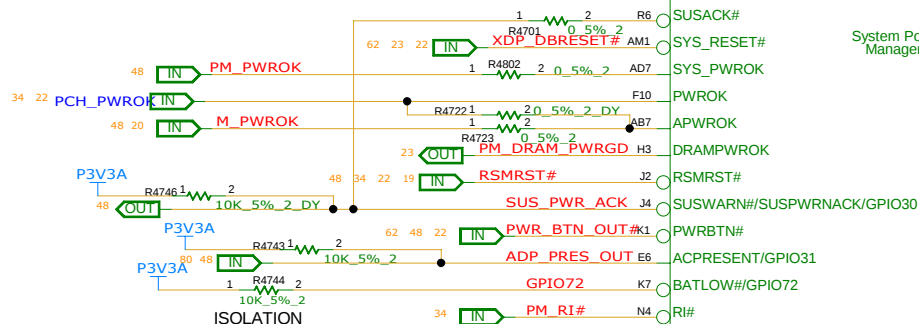
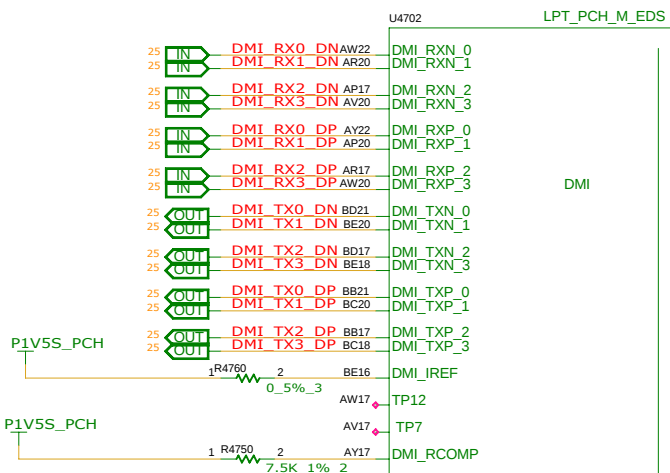
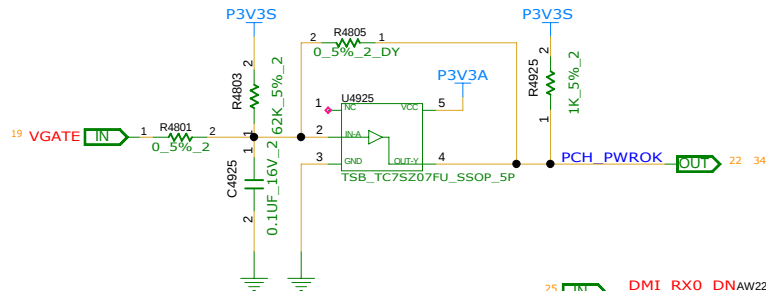


INVENTEC

TITLE			
CYCLONE_DIS			
LWXX_PORT_2 (SPI,SMBUS,CL)			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01

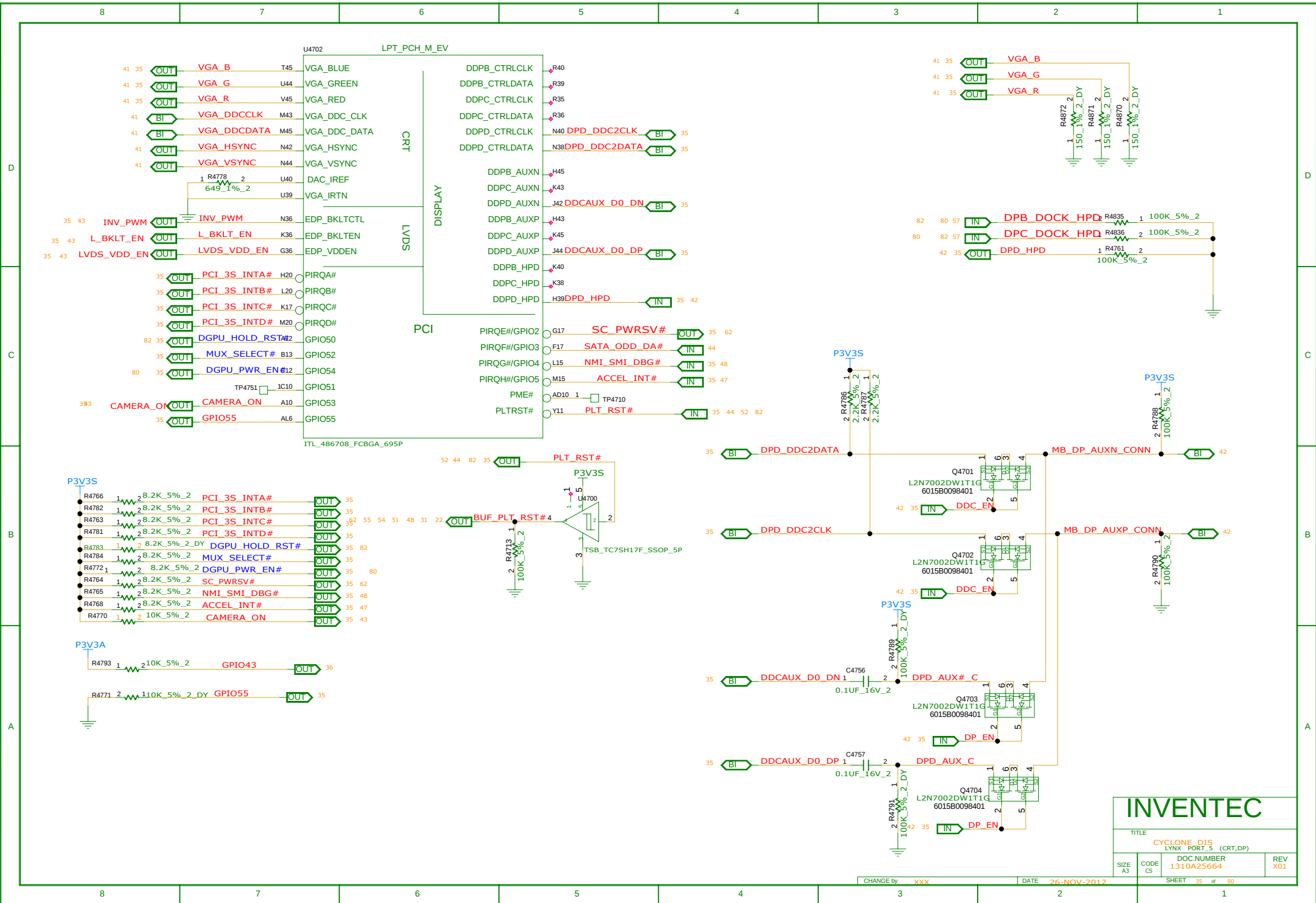


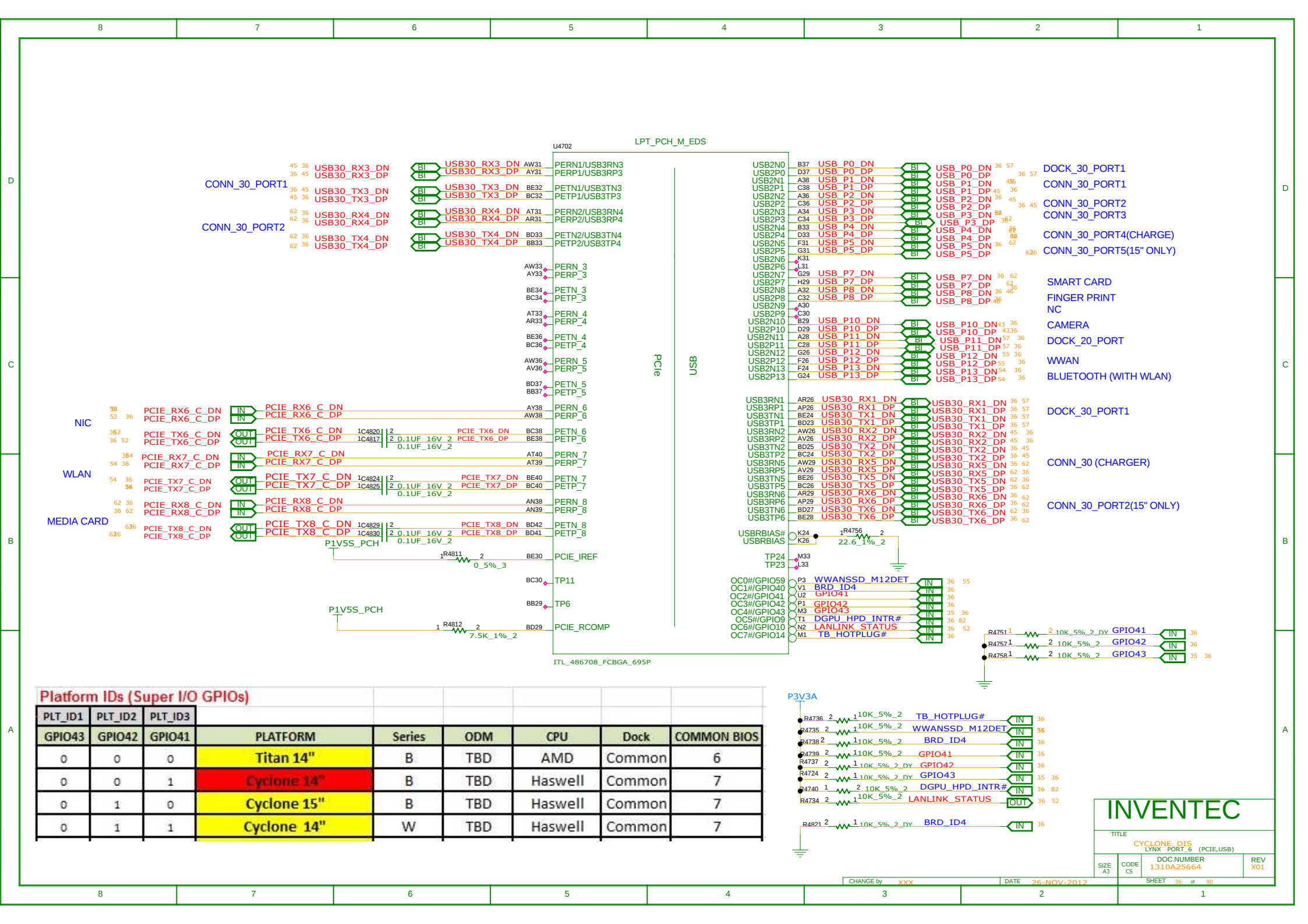
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R4718	INSTALL	UNINSTALL
R4723	INSTALL	UNINSTALL
R4722	UNINSTALL	INSTALL

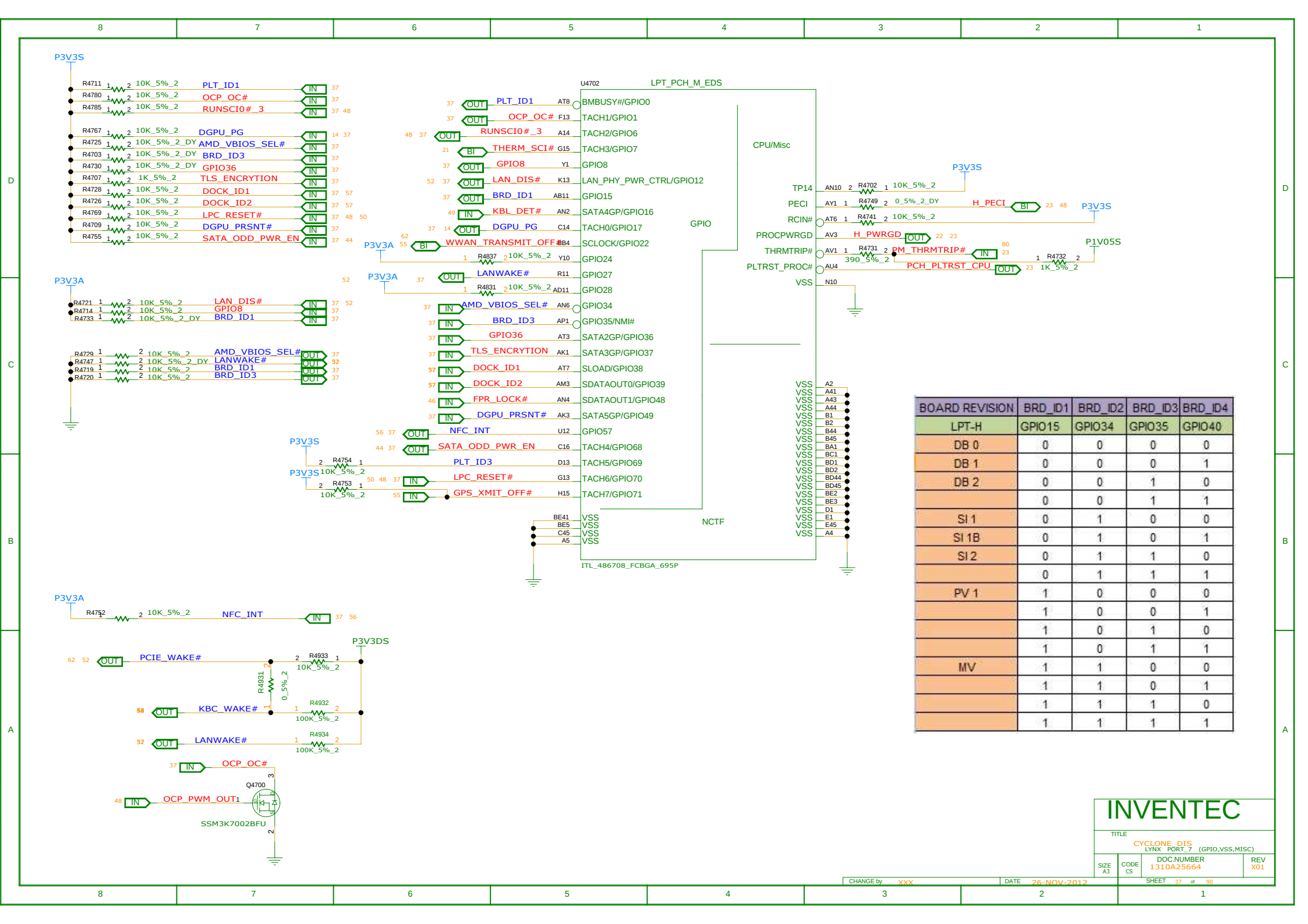


INVENTEC

TITLE			
CYCLONE_DIS			
LYNX_FORT_4(DMI,FDI,SPM)			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01







BOARD REVISION	BRD_ID1	BRD_ID2	BRD_ID3	BRD_ID4
LPT-H	GPIO15	GPIO34	GPIO35	GPIO40
DB 0	0	0	0	0
DB 1	0	0	0	1
DB 2	0	0	1	0
SI 1	0	1	0	0
SI 1B	0	1	0	1
SI 2	0	1	1	0
PV 1	1	0	0	0
	1	0	0	1
	1	0	1	0
	1	0	1	1
MV	1	1	0	0
	1	1	0	1
	1	1	1	0
	1	1	1	1

INVENTEC

TITLE CYCLONE DIS (GPIO,VSS,MISC)

LYNX PORT 7

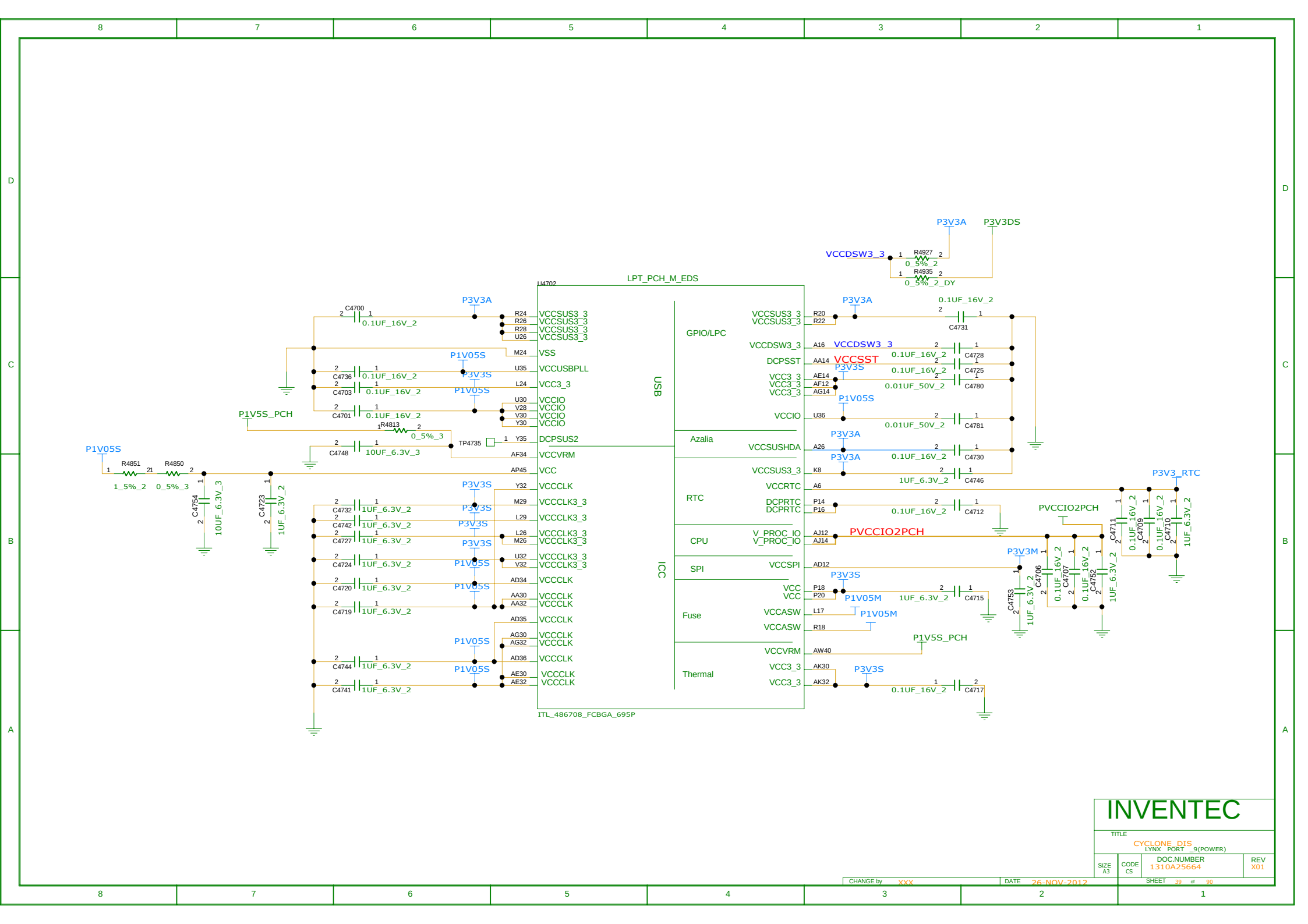
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REV X01

SIZE A3 CODE CS

SHEET 37 of 90

CHANGE by XXX DATE 26-NOV-2012



INVENTEC

TITLE			
CYCLONE_DIS			
LYNX_PORT_9(POWER)			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01

D

C

B

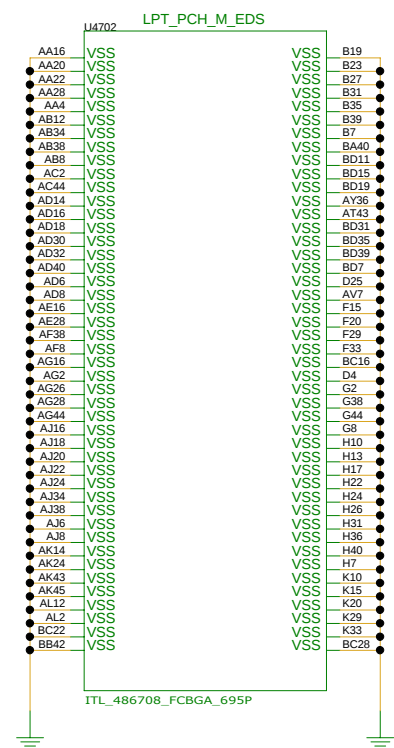
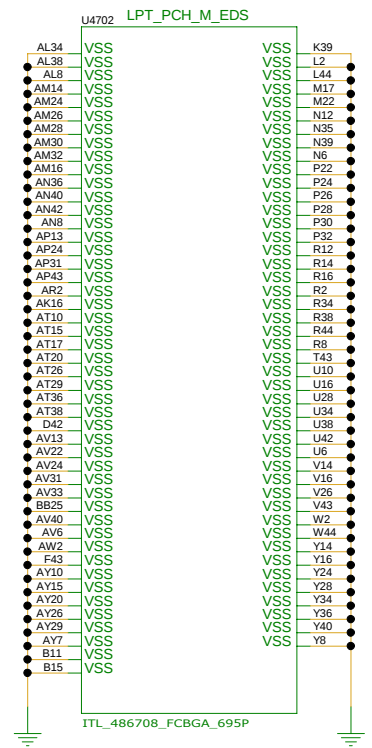
A

D

C

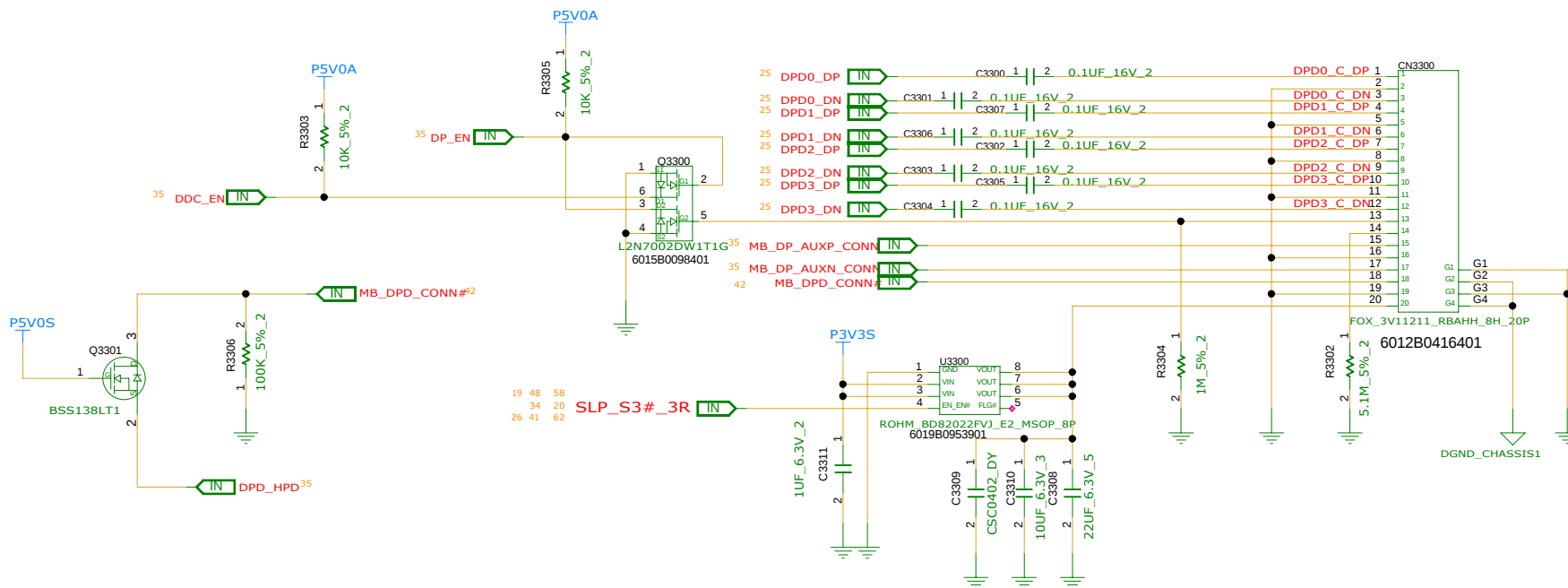
B

A



INVENTEC			
TITLE			
CYCLONE DIS LYNX PORT 10 (GND)			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01

REFERENCE NUMBER:3300~3399

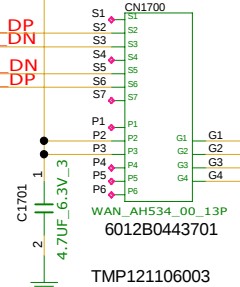


INVENTEC			
TITLE			
CYCLONE_DISPLAY_PORT_CNTR			
DOC NUMBER			
1310A25664			
REV			
X01			
SIZE	CODE	SHEET	
A3	CS	42 of 90	

31 44 SATA_RX4_C_DP OUT R1710 1 2 0.5%_2_DY 44 31 SATA_C_RXP4_O IN 44
44 31 SATA_RX4_C_DN OUT R1711 1 2 0.5%_2_DY 44 31 SATA_C_RXN4_O IN 44
44 31 SATA_TX4_C_DN IN R1712 1 2 0.5%_2_DY 44 31 SATA_C_TXN4_O OUT 44
44 31 SATA_TX4_C_DP IN R1713 1 2 0.5%_2_DY 44 31 SATA_C_TXP4_O OUT 44

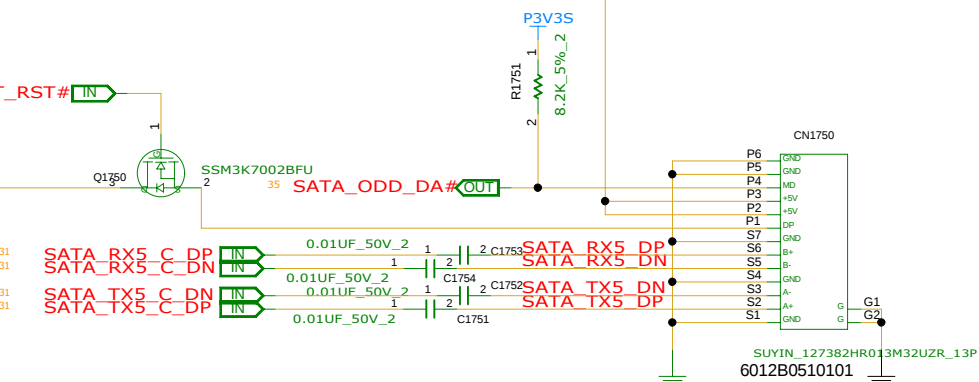
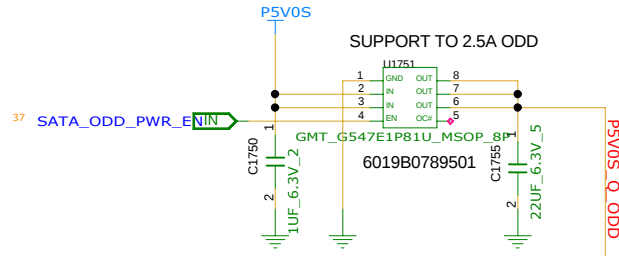
44 31 SATA_RX4_C_DP OUT 0.01UF_50V_2 1 2 C1706 SATA_C_RXP4_I 9 44 31 SATA_C_RXN4_I 7 44
31 44 SATA_RX4_C_DN OUT 0.01UF_50V_2 1 2 C1707 SATA_C_TXN4_I 2 44 31 SATA_C_TXP4_I 2 44
44 31 SATA_TX4_C_DN IN 0.01UF_50V_2 1 2 C1708 SATA_C_TXN4_O OUT 44
31 44 SATA_TX4_C_DP IN 0.01UF_50V_2 1 2 C1709 SATA_C_TXP4_O OUT 44

44 SATA_C_TXP4_O OUT 0.01UF_50V_2 1 2 C1705 SATA_TX4_DP 51 44
44 SATA_C_TXN4_O OUT 0.01UF_50V_2 1 2 C1704 SATA_TX4_DN 52 44
44 SATA_C_RXN4_O IN 0.01UF_50V_2 1 2 C1702 SATA_RX4_DN 53 44
44 SATA_C_RXP4_O IN 0.01UF_50V_2 1 2 C1703 SATA_RX4_DP 54 44



SATA HDD CONN

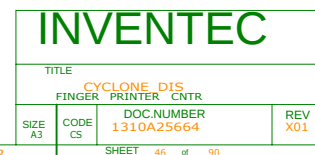
REFERENCE NUMBER:1700~1749



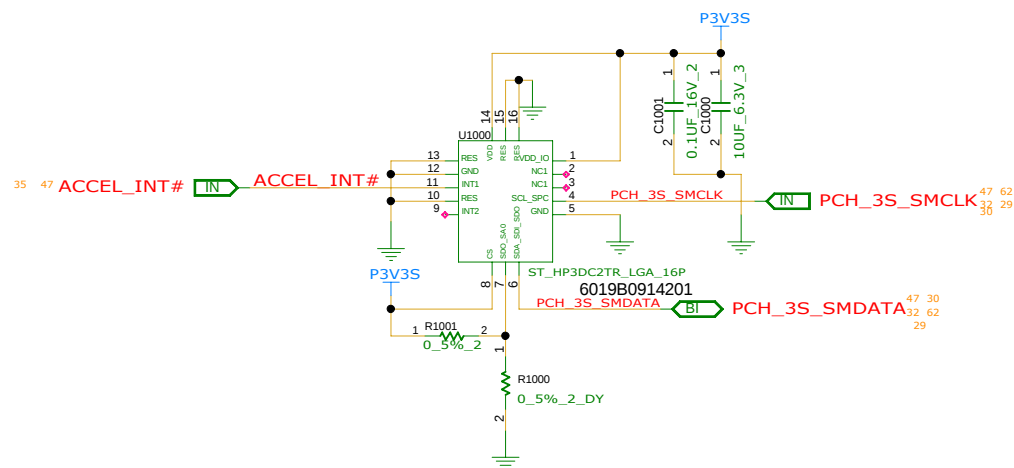
SATA ODD

REFERENCE NUMBER:1750~1799

INVENTEC			
TITLE			
CYCLONE_D1S SATA HDD 8. ODD CNTR			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 44 of 90			



LAYOUT NOTE
FOLLOW DESIGNATED PIN1 ORIENTATION WITH SUPPORT APPS



ACCELEMETOR

REFERENCE NUMER : 1000~1099

INVENTEC

TITLE CYCLONE_DIS ACCELEMETOR			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 47 of 90			



SCAN_3S_OUT<13..0> IN

SCAN_3S_OUT<13..0>

0 SCAN_3S_OUT<0>
1 SCAN_3S_OUT<1>
2 SCAN_3S_OUT<2>
3 SCAN_3S_OUT<3>
4 SCAN_3S_OUT<4>
5 SCAN_3S_OUT<5>
6 SCAN_3S_OUT<6>
7 SCAN_3S_OUT<7>
8 SCAN_3S_OUT<8>
9 SCAN_3S_OUT<9>
10 SCAN_3S_OUT<10>
11 SCAN_3S_OUT<11>
12 SCAN_3S_OUT<12>
13 SCAN_3S_OUT<13>

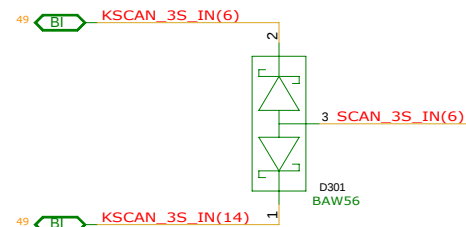
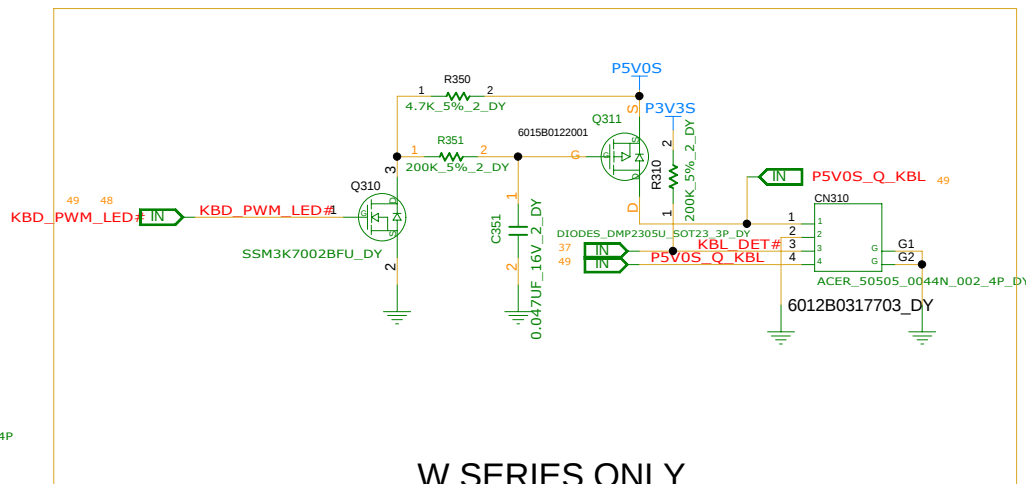
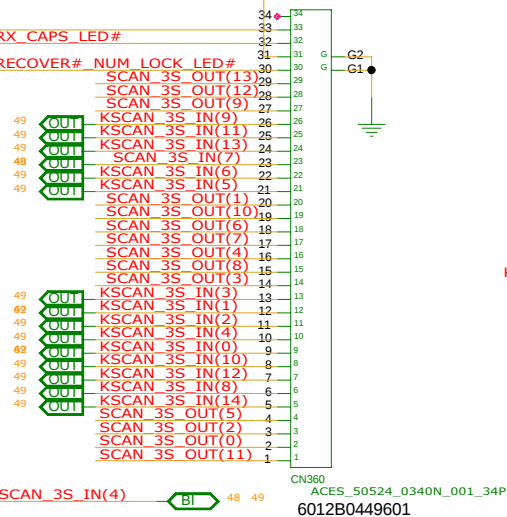
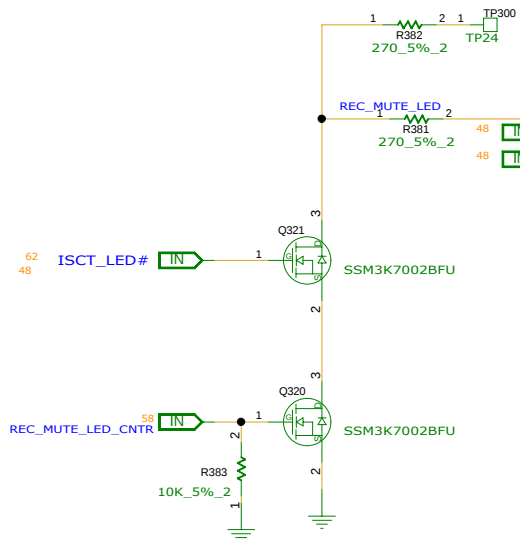
SCAN_3S_IN<7..0> OUT

SCAN_3S_IN<7..0>

0 SCAN_3S_IN<0>
1 SCAN_3S_IN<1>
2 SCAN_3S_IN<2>
3 SCAN_3S_IN<3>
4 SCAN_3S_IN<4>
5 SCAN_3S_IN<5>
6 SCAN_3S_IN<6>
7 SCAN_3S_IN<7>

P3V3DS

49 48 BI SCAN_3S_IN<4> 1 R373 2 10K_5%_2
49 48 BI SCAN_3S_IN<5> 1 R374 2 10K_5%_2
49 48 BI SCAN_3S_IN<6> 1 R375 2 10K_5%_2
49 48 BI SCAN_3S_IN<7> 1 R376 2 10K_5%_2
49 48 BI SCAN_3S_IN<3> 1 R377 2 10K_5%_2
49 48 BI SCAN_3S_IN<2> 1 R378 2 10K_5%_2
49 48 BI SCAN_3S_IN<1> 1 R379 2 10K_5%_2
49 48 BI SCAN_3S_IN<0> 1 R384 2 10K_5%_2



REFERENCE NUMER : 300~389

INVENTEC			
TITLE CYCLONE_DIS KEYBOARD			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 49 of 90			

CHANGE by XXX DATE 26-NOV-2012



INVENTEC

CHANGE by	XXX	DATE	26-NOV-2012
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NOTE:
NON-VPRO SKU U400 MOUNT 6019B0836601
VPRO SKU U400 MOUNT 6019B0746801

REFERENCE NUMER : 400~469

INVENTEC

TITLE			
CYCLONE_DIS LAN (NIC)			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01
SHEET 52 of 90			

D

C

B

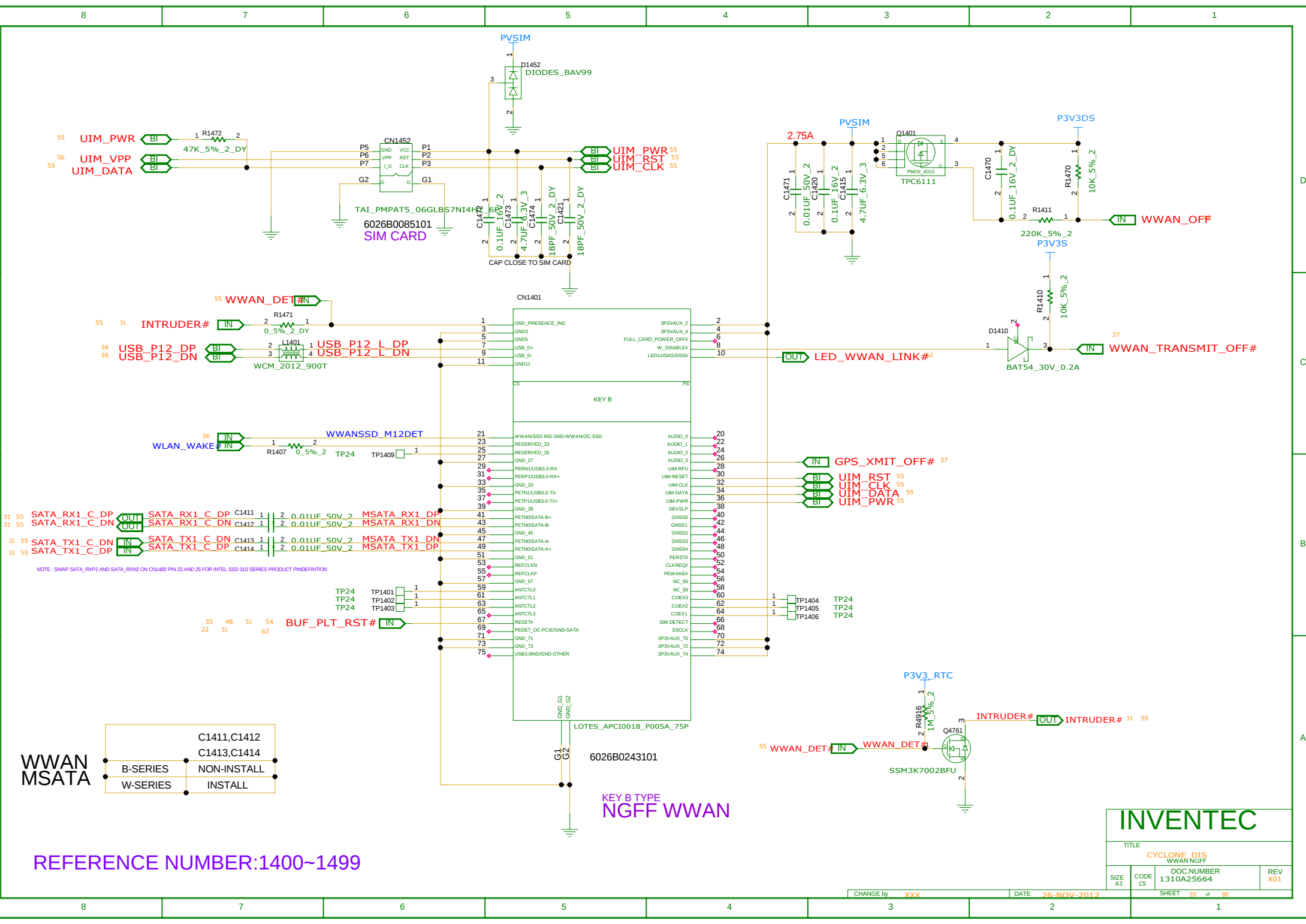
A

D

C

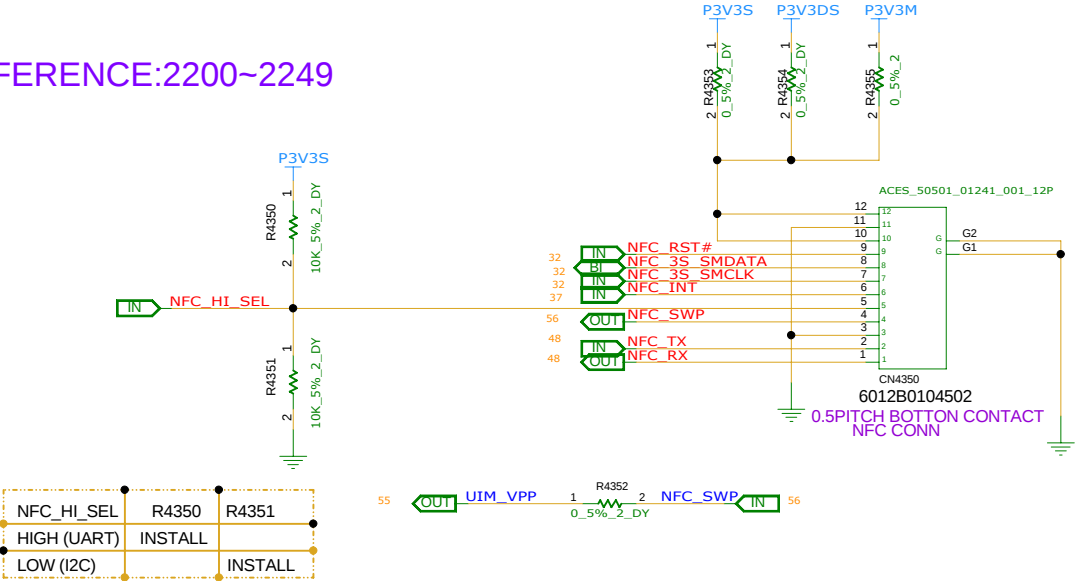
B

A



INVENTEC			
TITLE			
CYCLONE DIS WWAN/NGFF			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 55 of 90			

REFERENCE:2200~2249



REFERENCE:4350~4399

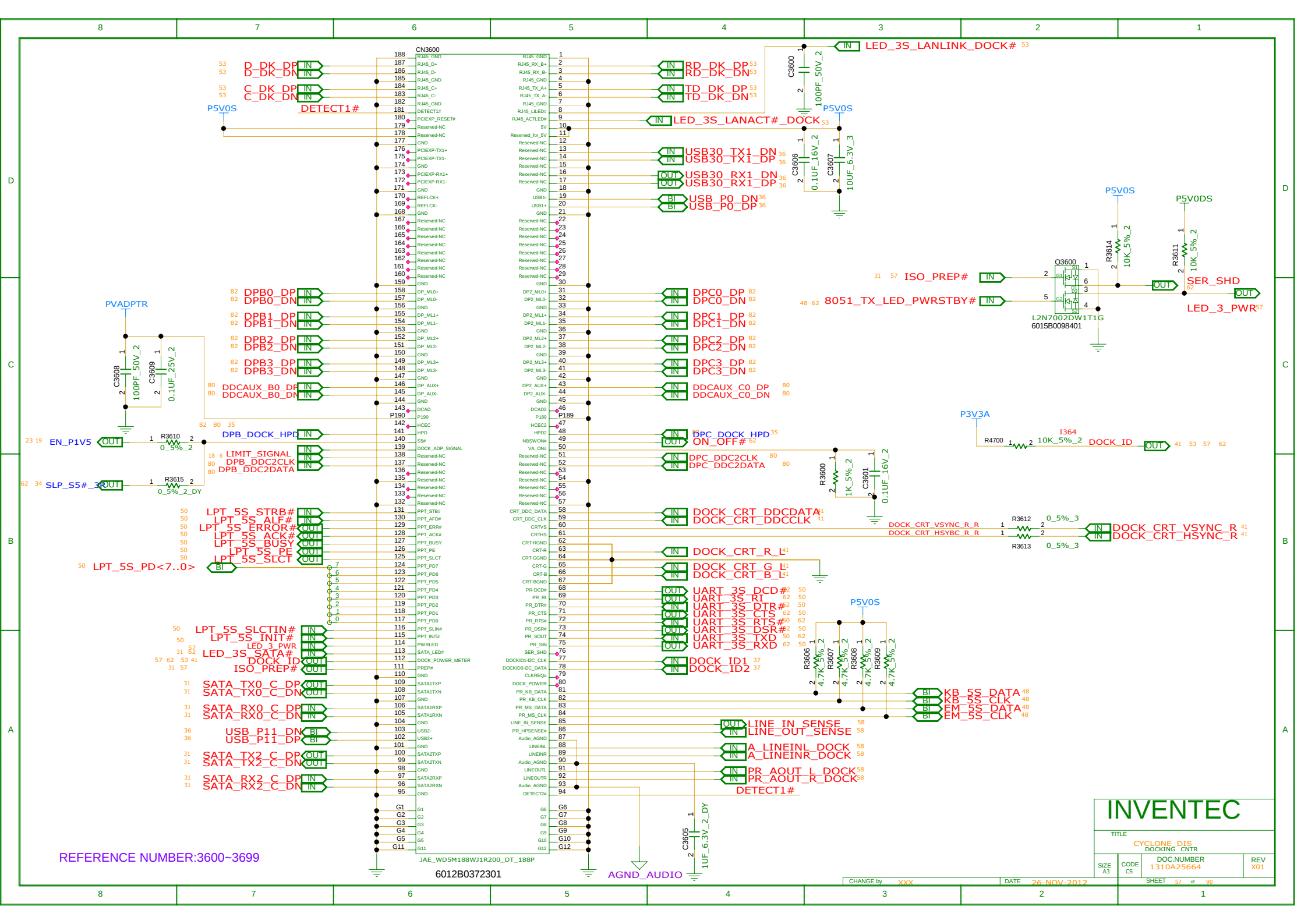
INVENTEC

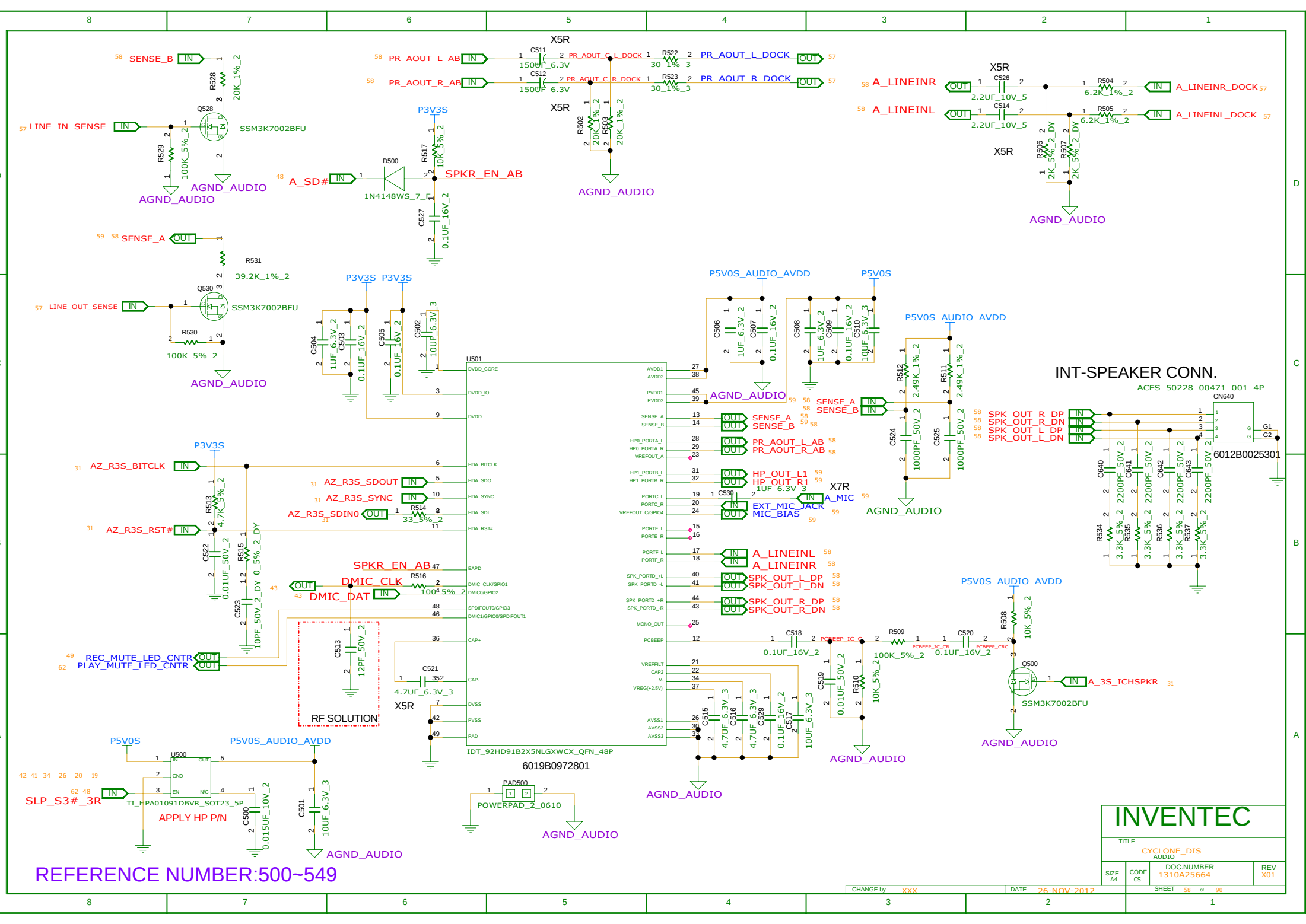
TITLE
CYCLONE_DIS

SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01

SHEET 56 of 90

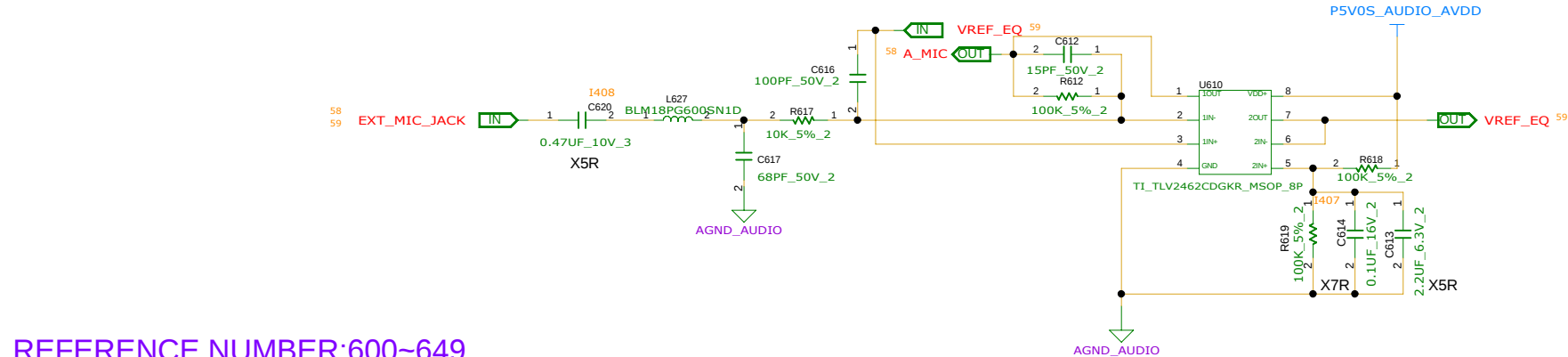
CHANGE by XXX DATE 26-NOV-2012



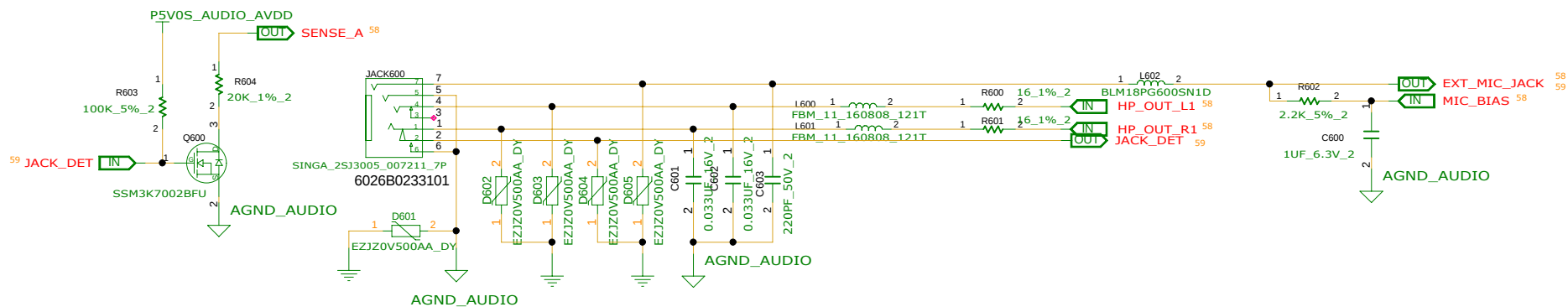


REFERENCE NUMBER:500~549

INVENTEC			
TITLE			
CYCLONE_DIS AUDIO			
SIZE A4	CODE CS	DOC NUMBER 1310A25664	REV X01

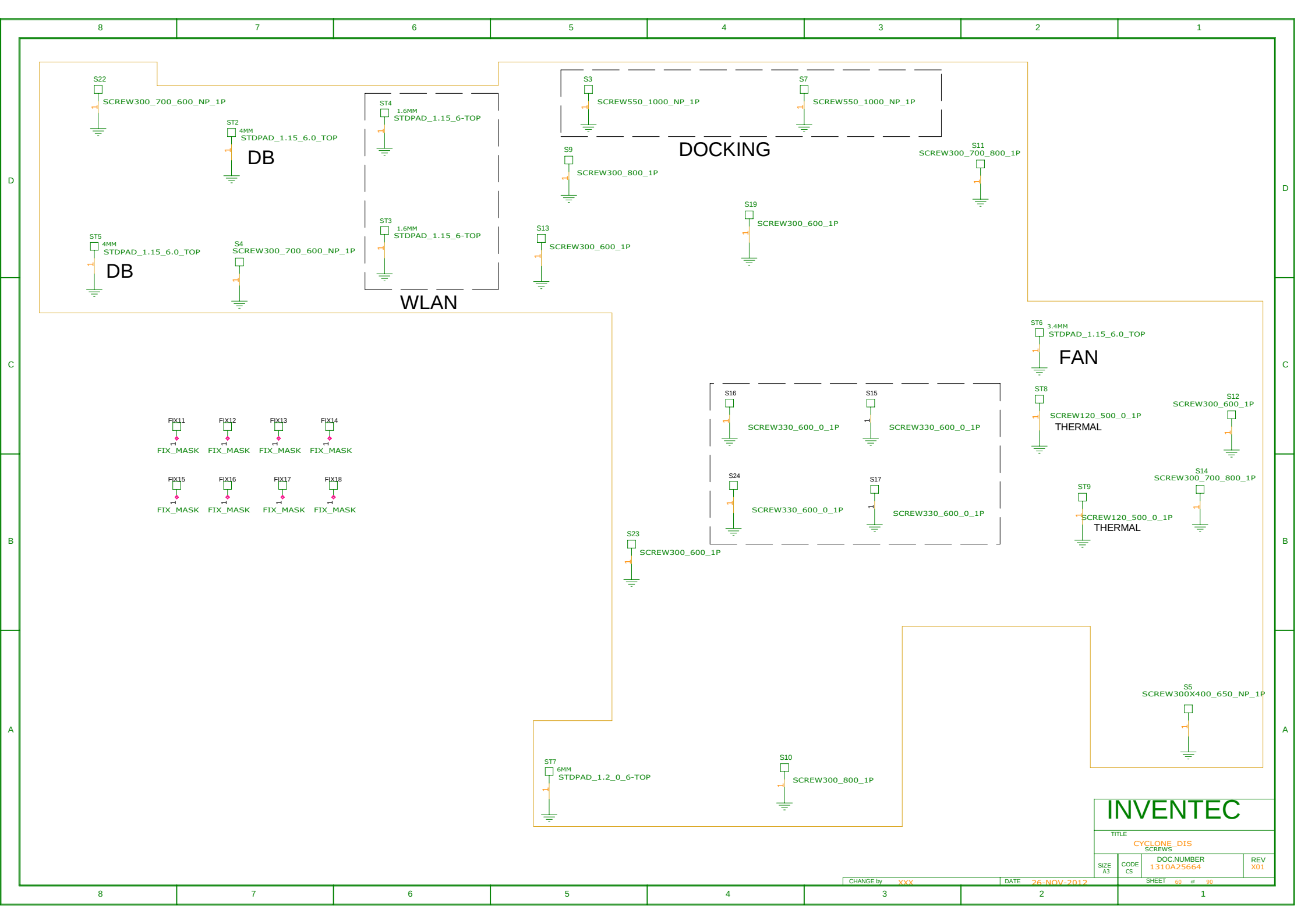


REFERENCE NUMBER:600~649



REFERENCE NUMBER:600~610

INVENTEC			
TITLE			
CYCLONE_DIS EXT.MIC / MIC / HP			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
CHANGE by XXX		DATE 26-NOV-2012	SHEET 59 of 90

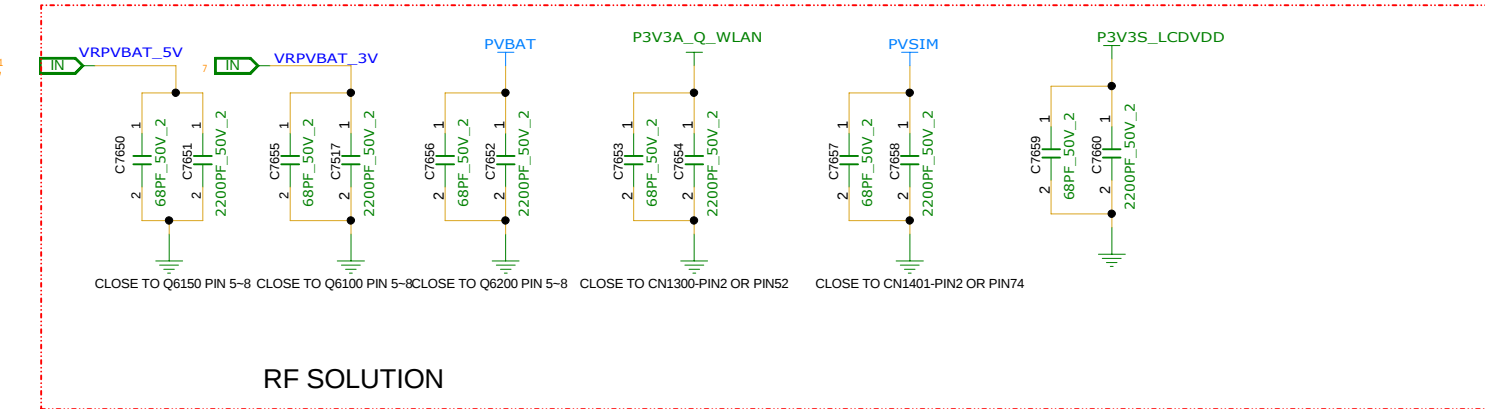
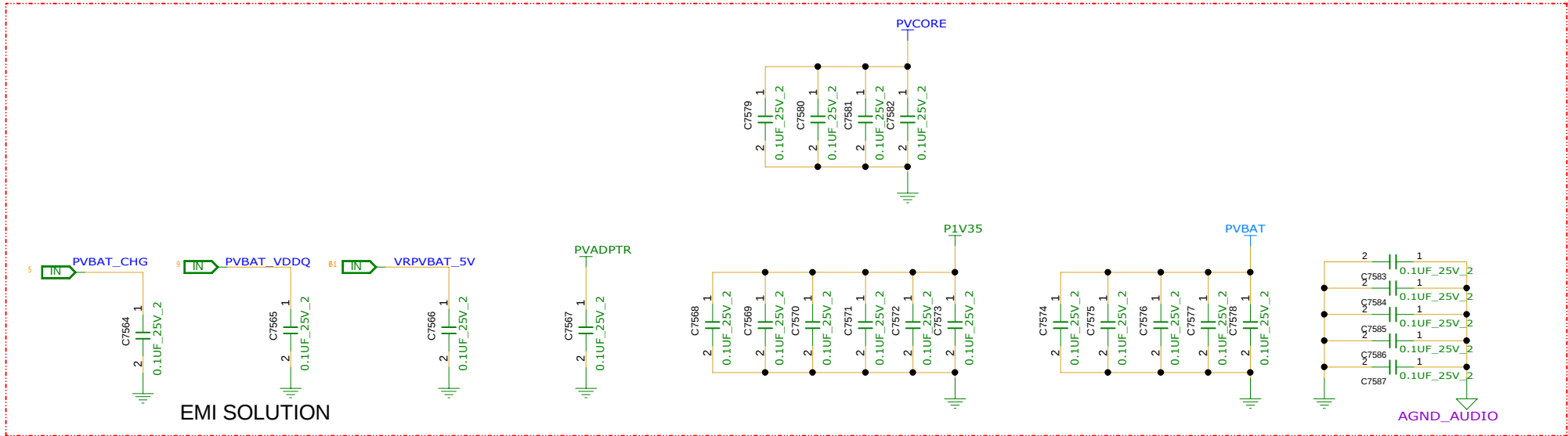


INVENTEC

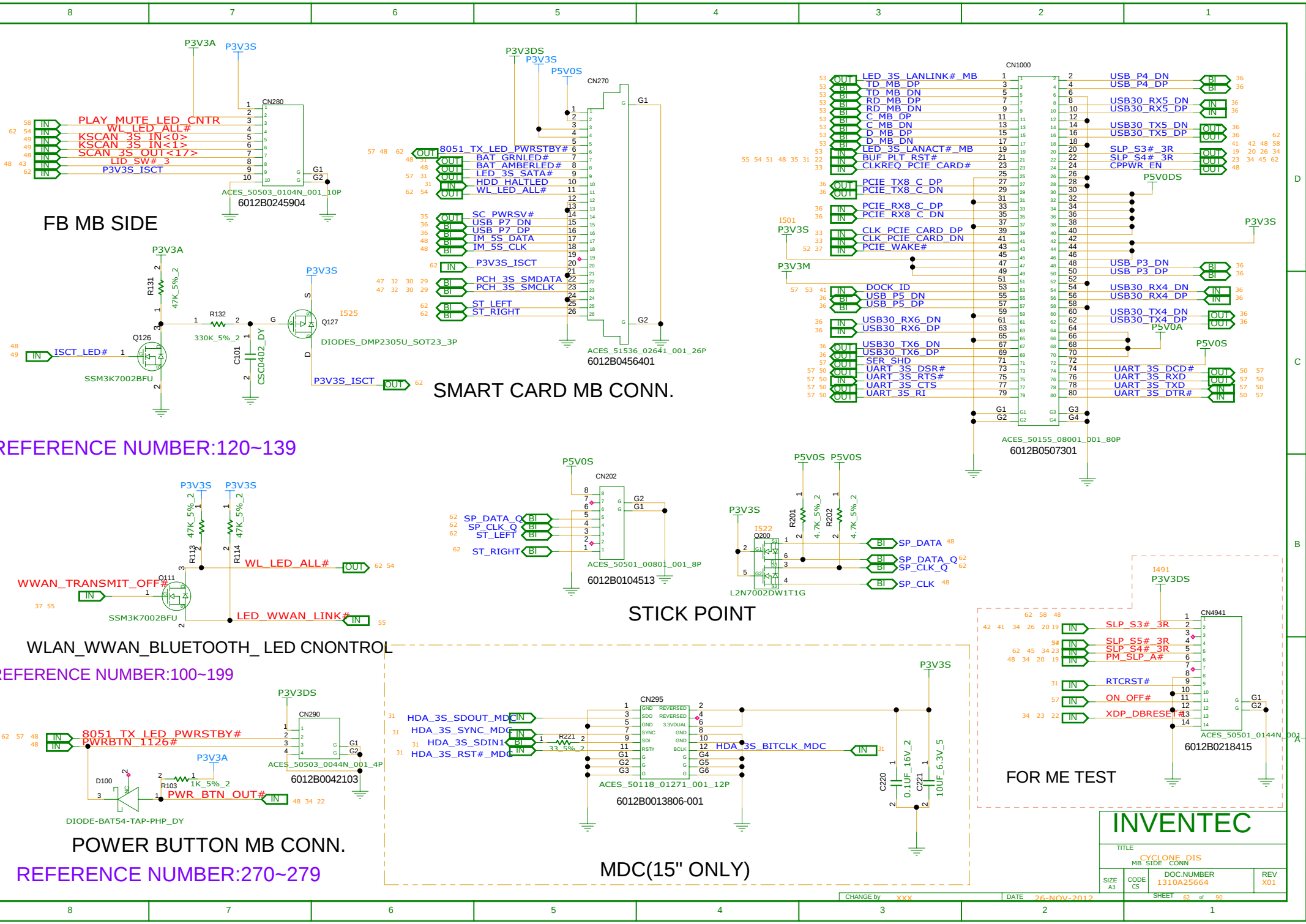
TITLE
CYCLONE_DIS
SCREWS

SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
------------	------------	--------------------------	------------

CHANGE by XXX DATE 26-NOV-2012 SHEET 60 of 90



INVENTEC			
TITLE CYCLONE_DIS EMI & RF SOLUTION			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	
		REV X01	
CHANGE by XXX		DATE 26-NOV-2012	SHEET 61 of 90



FB MB SIDE

SMART CARD MB CONN.

STICK POINT

FOR ME TEST

INVENTEC

TITLE CYCLONE_D1S MB SIDE_CONN

SIZE A3 CODE CS DOC NUMBER 1310A25664 REV X01

SHEET 62 of 90

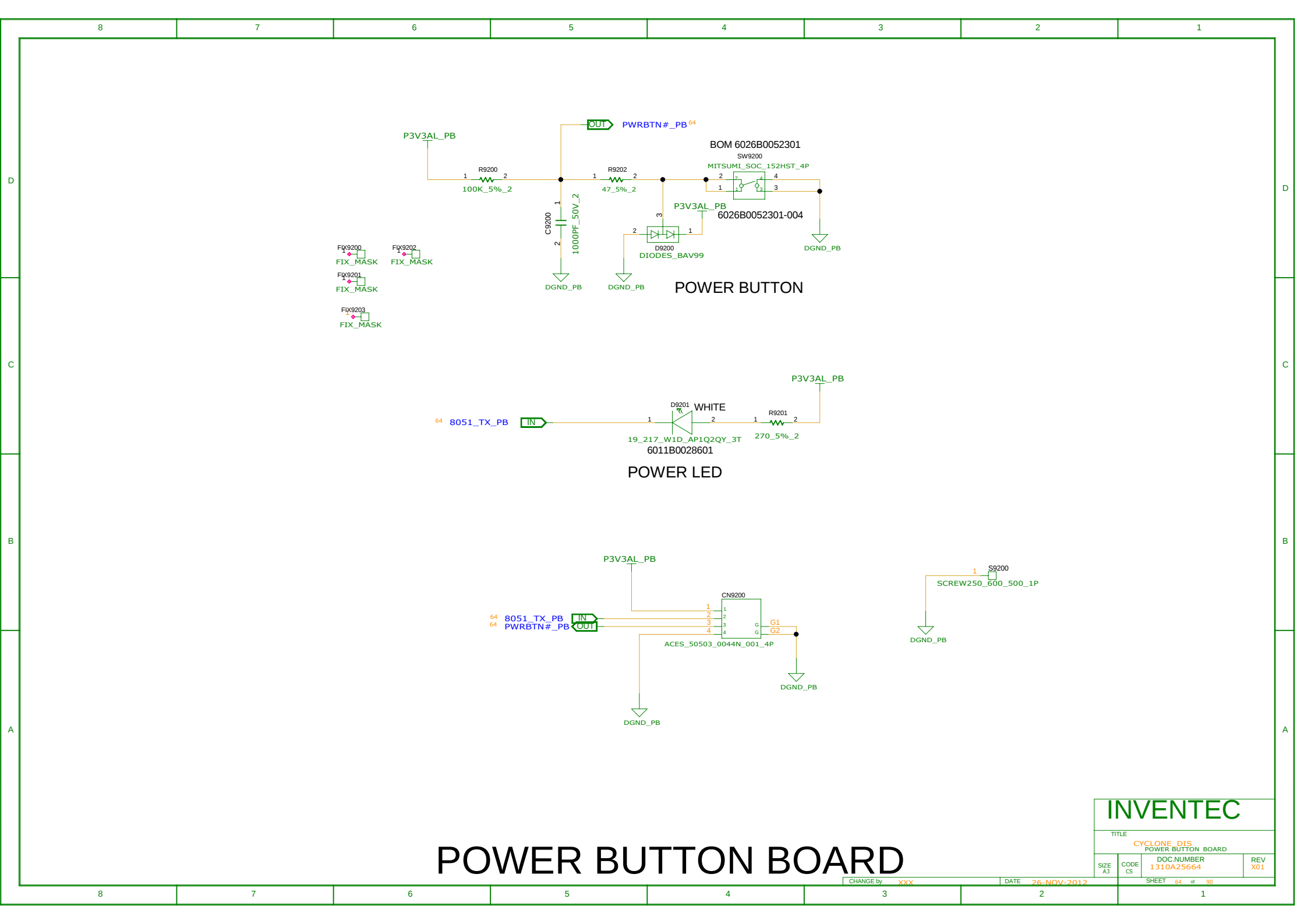
REFERENCE NUMBER:120~139

REFERENCE NUMBER:100~199

POWER BUTTON MB CONN.

REFERENCE NUMBER:270~279

MDC(15" ONLY)



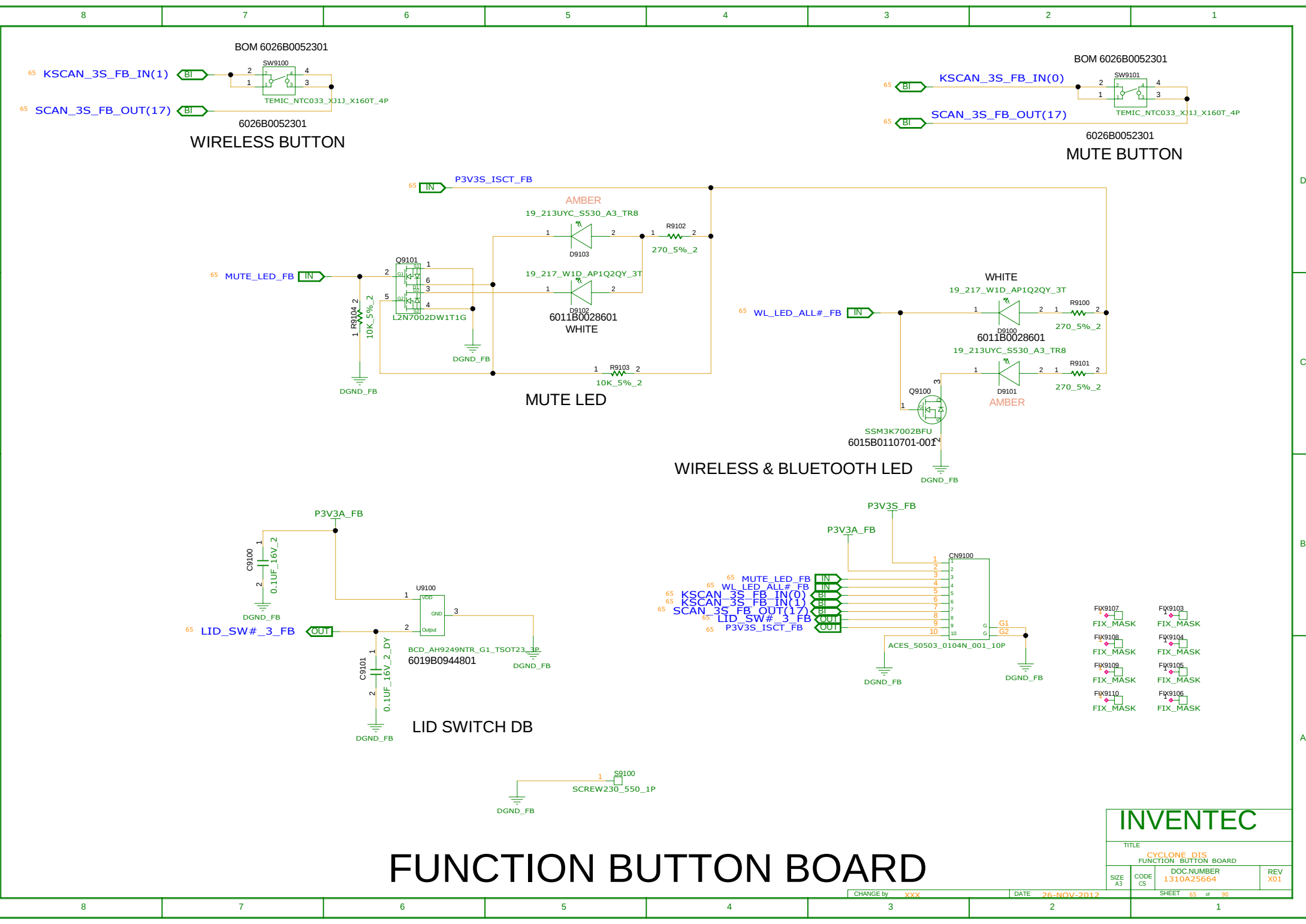
POWER BUTTON BOARD

INVENTEC

TITLE CYCLONE DIS POWER BUTTON BOARD			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01

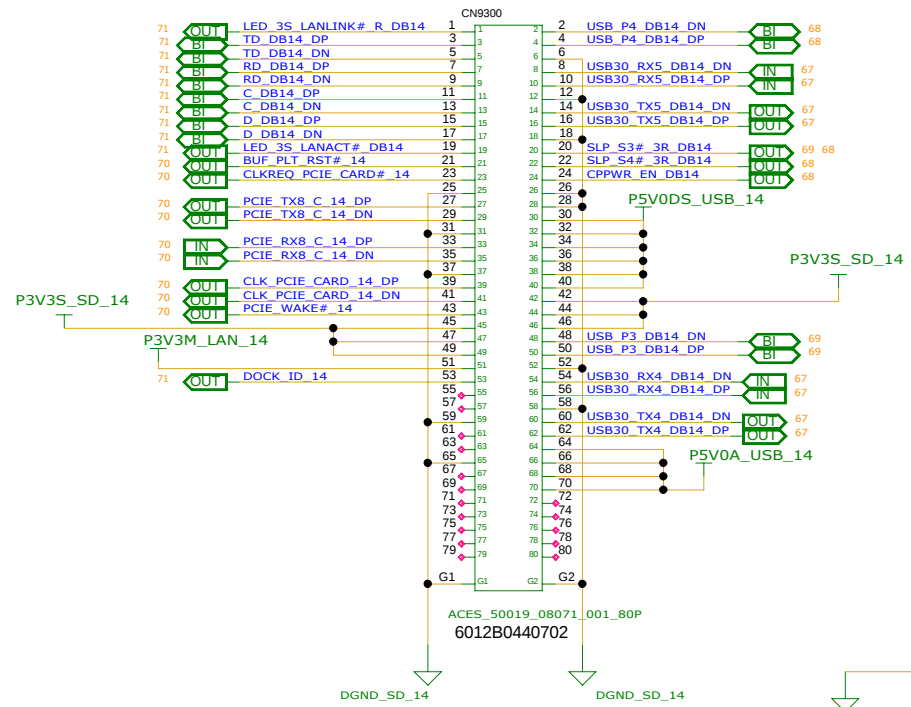
CHANGE by XXX DATE 26-NOV-2012

SHEET 64 of 90

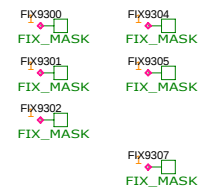
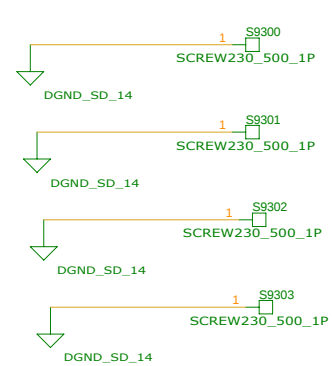


FUNCTION BUTTON BOARD

INVENTEC			
TITLE			
CYCLONE DIS FUNCTION BUTTON BOARD			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
CHANGE by XXX DATE 26-NOV-2012 SHEET 65 of 90			

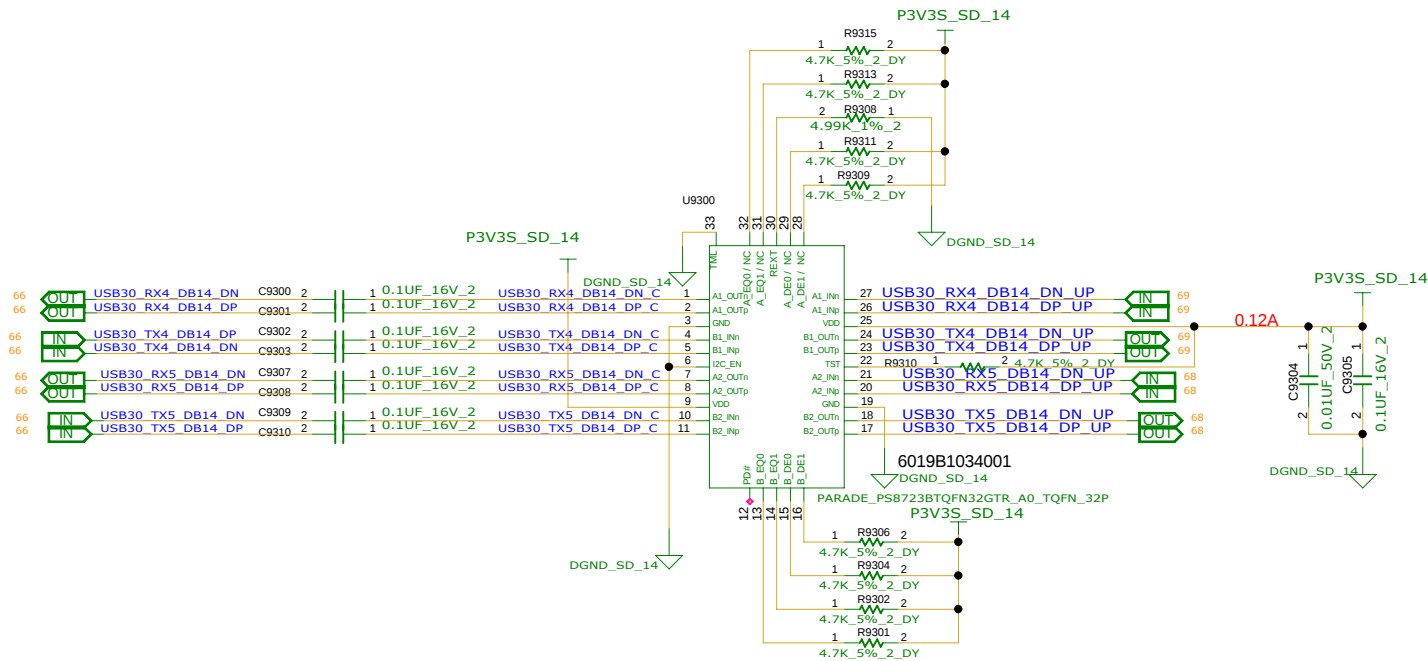


REFERENCE NUMBER:9300-9339



14" USB DAUGHTER BOARD

INVENTEC			
TITLE			
CYCLONE_DIS			
14 B TO B CONN			
DOC NUMBER			
1310A25664			
REV			
X01			
SIZE	CODE	SHEET	
A3	CS	66 of 90	



REFERENCE NUMBER:9300-9339

14" USB DAUGHTER BOARD

INVENTEC

TITLE CYCLONE_DIS

14 USB30 REDRIVER

DOC NUMBER

1310A25664

SIZE

A3

CODE

CS

REV

X01

CHANGE by XXX

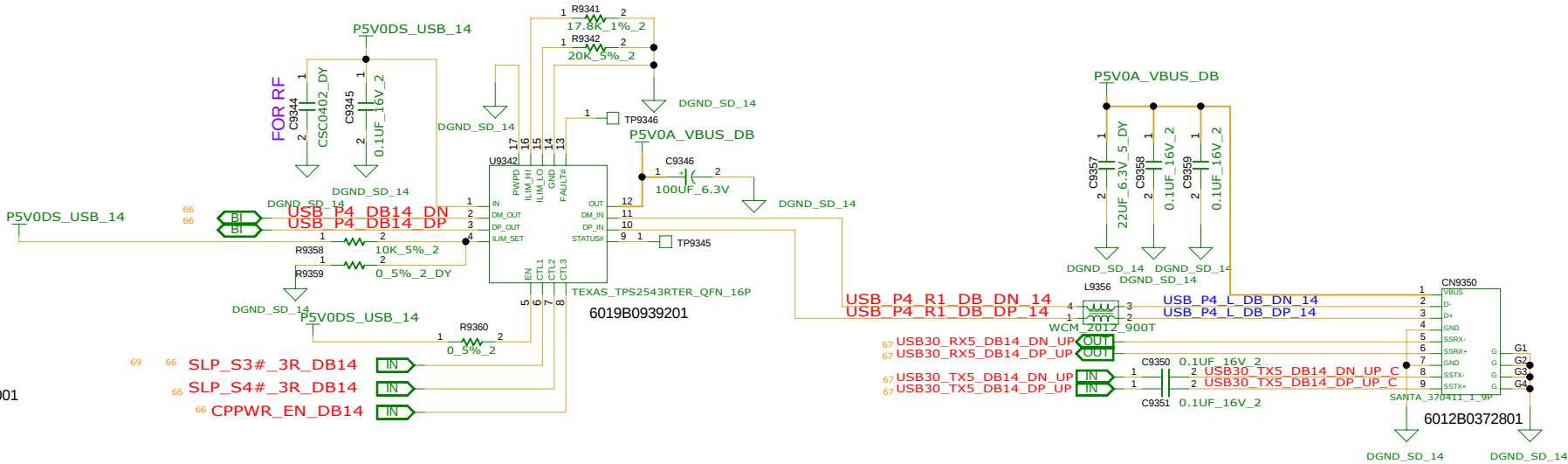
DATE 26-NOV-2012

SHEET 67 of 90

TI TPS2543 P/N:6019B0939201
PERICOM PI5USB2543 P/N:6019B0932001

	R9358	R9359	R9342
* TPS2543	10K	NI	20K
PI5USB2543	NI	0	0

REFERENCE NUMBER:9340~9359

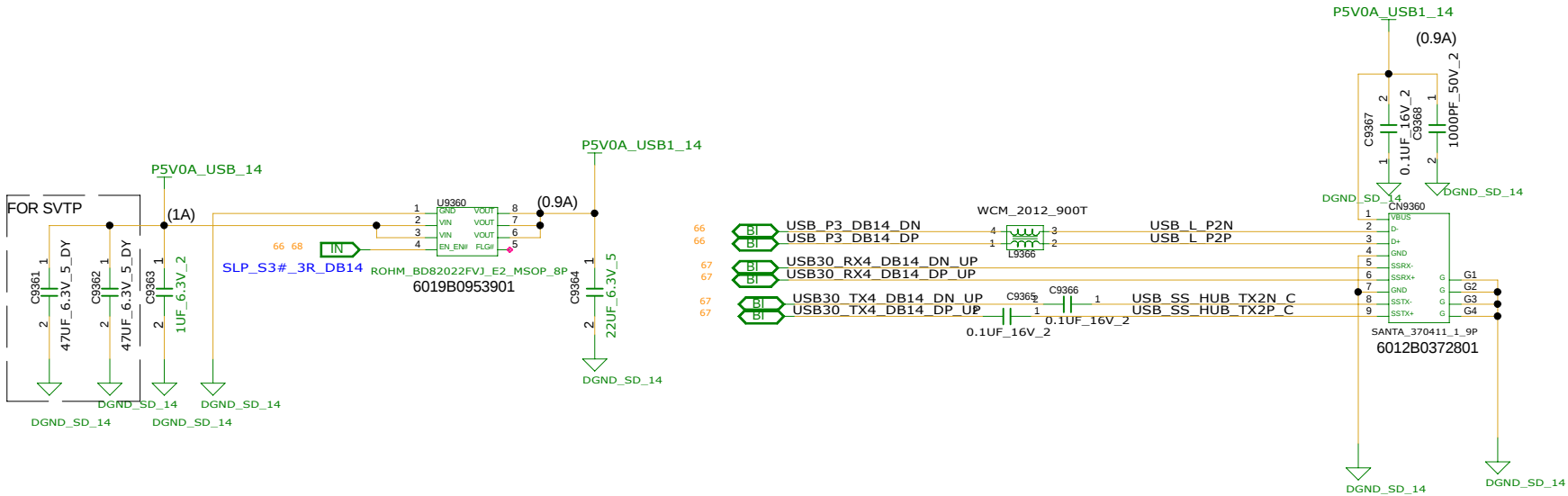


USB CNTR

14" USB DAUGHTER BOARD

INVENTEC

TITLE CYCLONE DIS 14 USB CHARGER			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01



REFERENCE NUMBER: 9360~9369

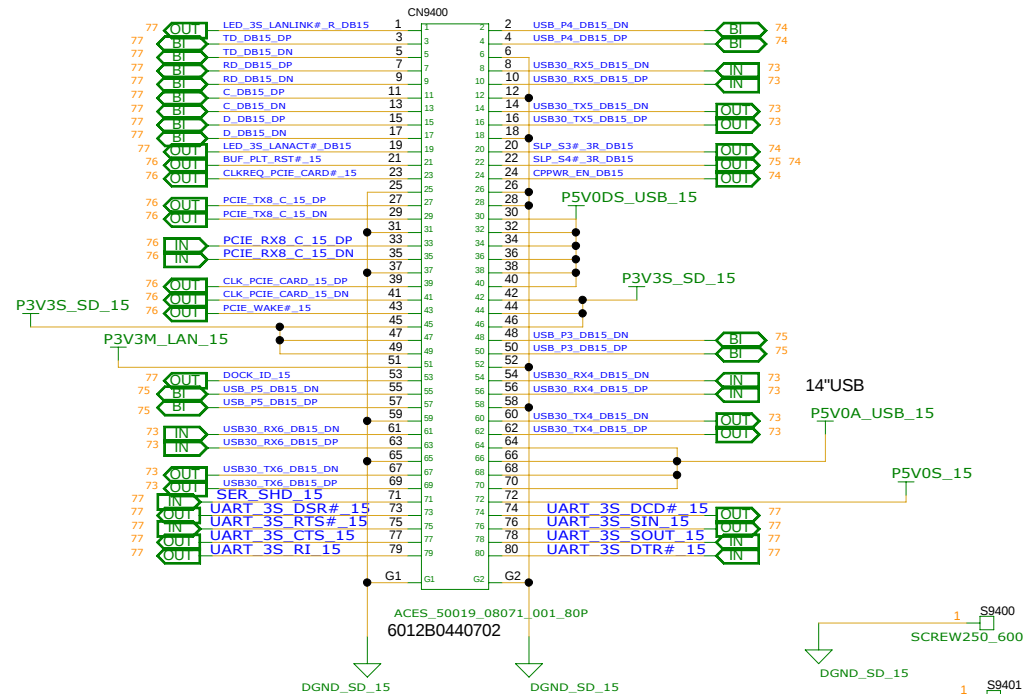
14" USB DAUGHTER BOARD

INVENTEC

TITLE CYCLONE_DIS
14 USB CONN

SIZE A3 CODE CS DOC NUMBER 1310A25664 REV X01

CHANGE by XXX DATE 26-NOV-2012 SHEET 69 of 90



REFERENCE NUMBER:9400-9449

15" USB DAUGHTER BOARD

INVENTEC

TITLE			CYCLONE_DIS
15 B TO B CONN			
DOC NUMBER			1310A25664
SIZE	CODE	REV	
A3	CS	X01	

D

C

B

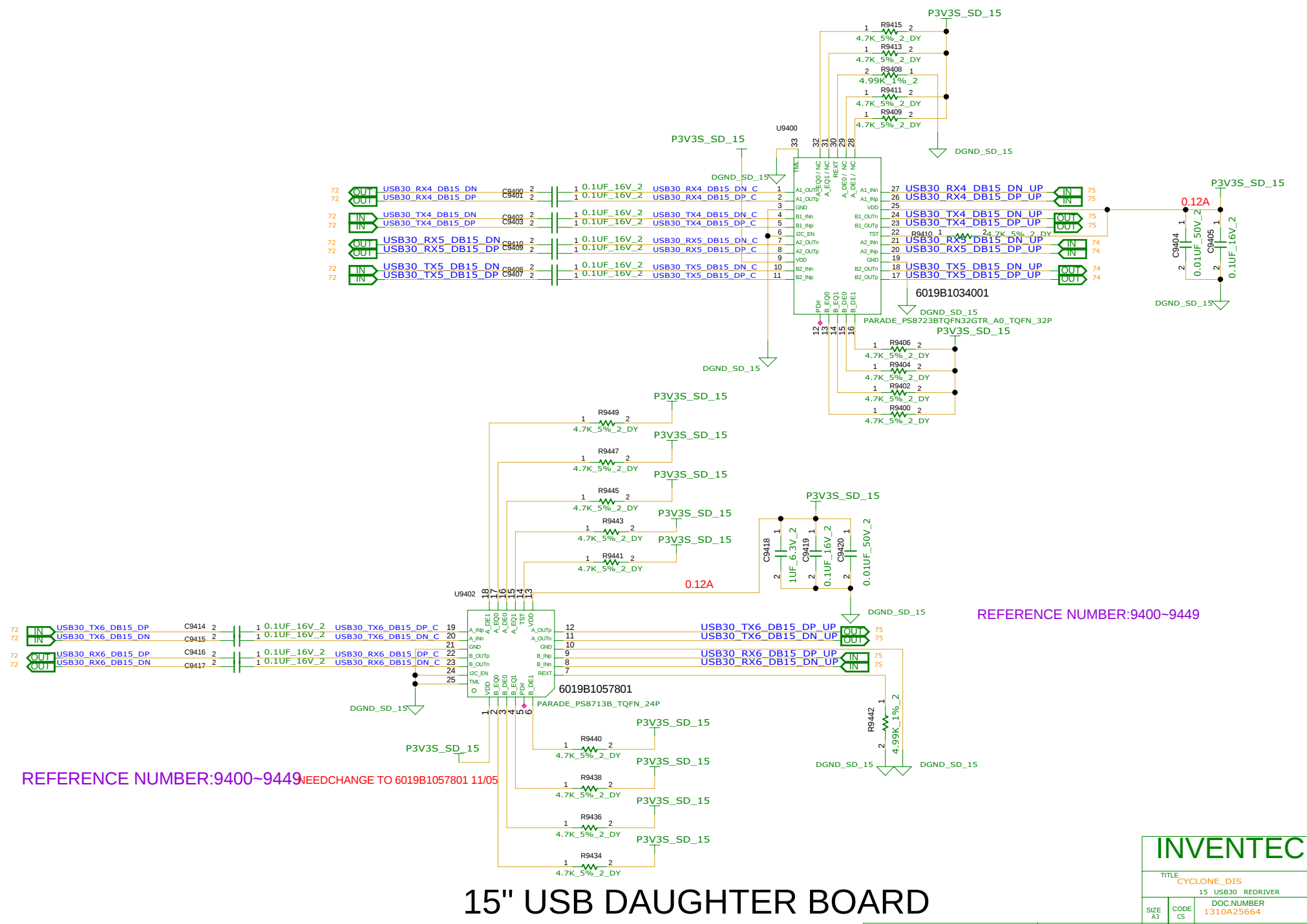
A

D

C

B

A

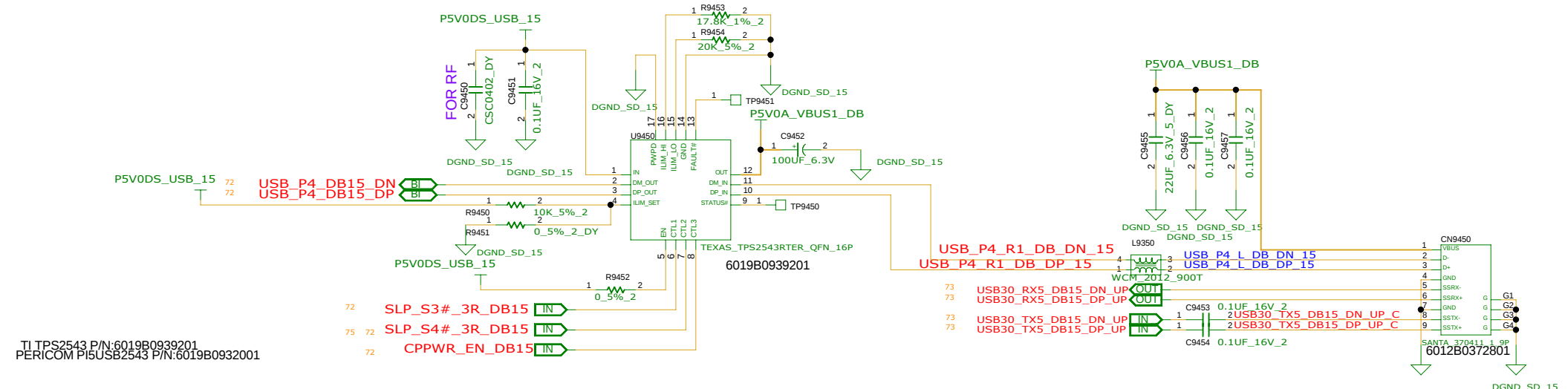


REFERENCE NUMBER:9400~9449NEEDCHANGE TO 6019B1057801 11/05

REFERENCE NUMBER:9400~9449

15" USB DAUGHTER BOARD

INVENTEC			
TITLE CYCLONE_DIS			
15 USB30 REDRIVER			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
CHANGE by XXX DATE 26-NOV-2012 SHEET 73 of 90			



TI TPS2543 P/N:6019B0939201
PERICOM PI5USB2543 P/N:6019B0932001

	R9450	R9451	R9454
* TPS2543	10K	NI	20K
PI5USB2543	NI	0	0

REFERENCE NUMBER:9450~9499

15" USB DAUGHTER BOARD

INVENTEC

TITLE

CYCLONE DIS 15 USB CHARGER

DOC NUMBER

1310A25664

REV

X01

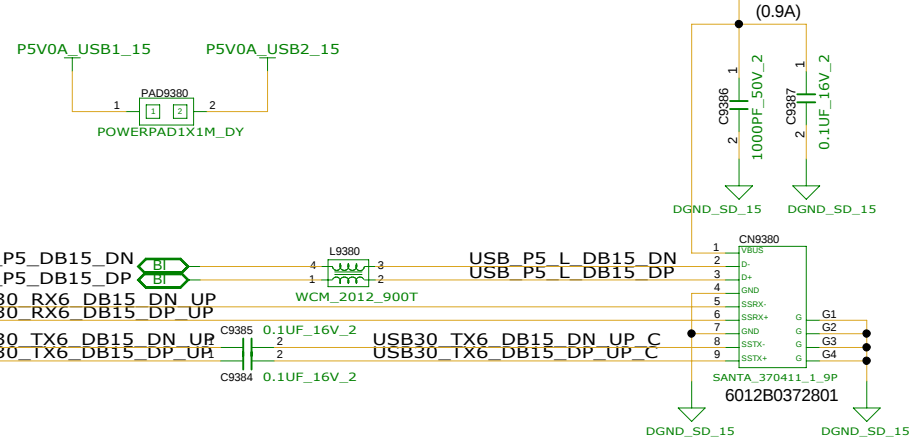
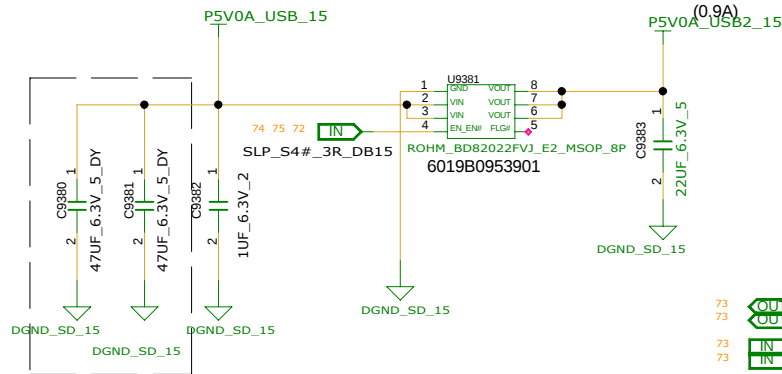
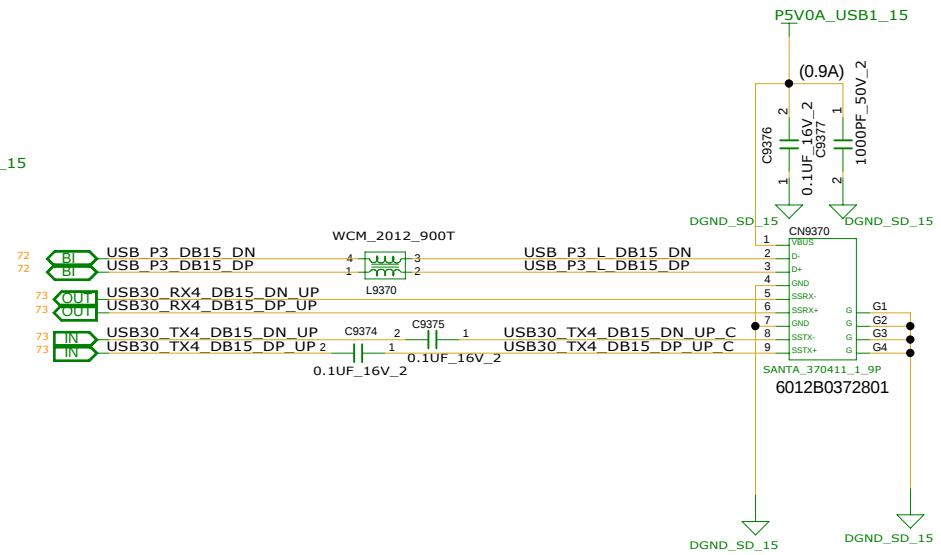
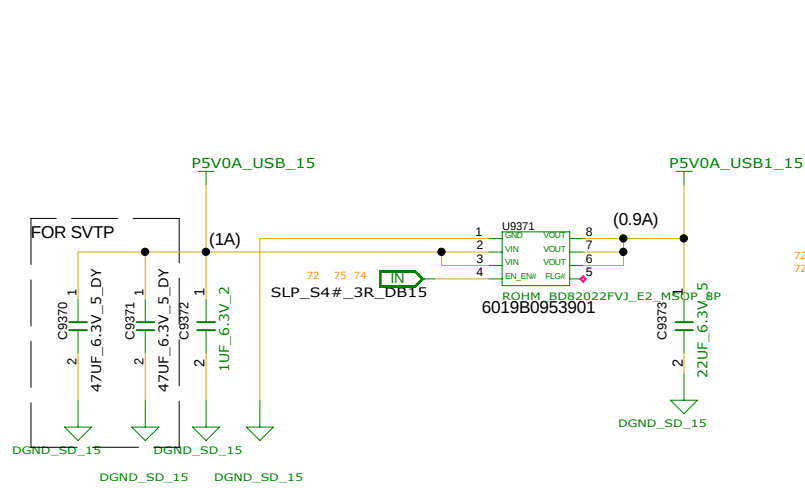
SIZE A3

CODE CS

CHANGE by XXX

DATE 26-NOV-2012

SHEET 74 of 90



REFERENCE NUMBER:9370~9399

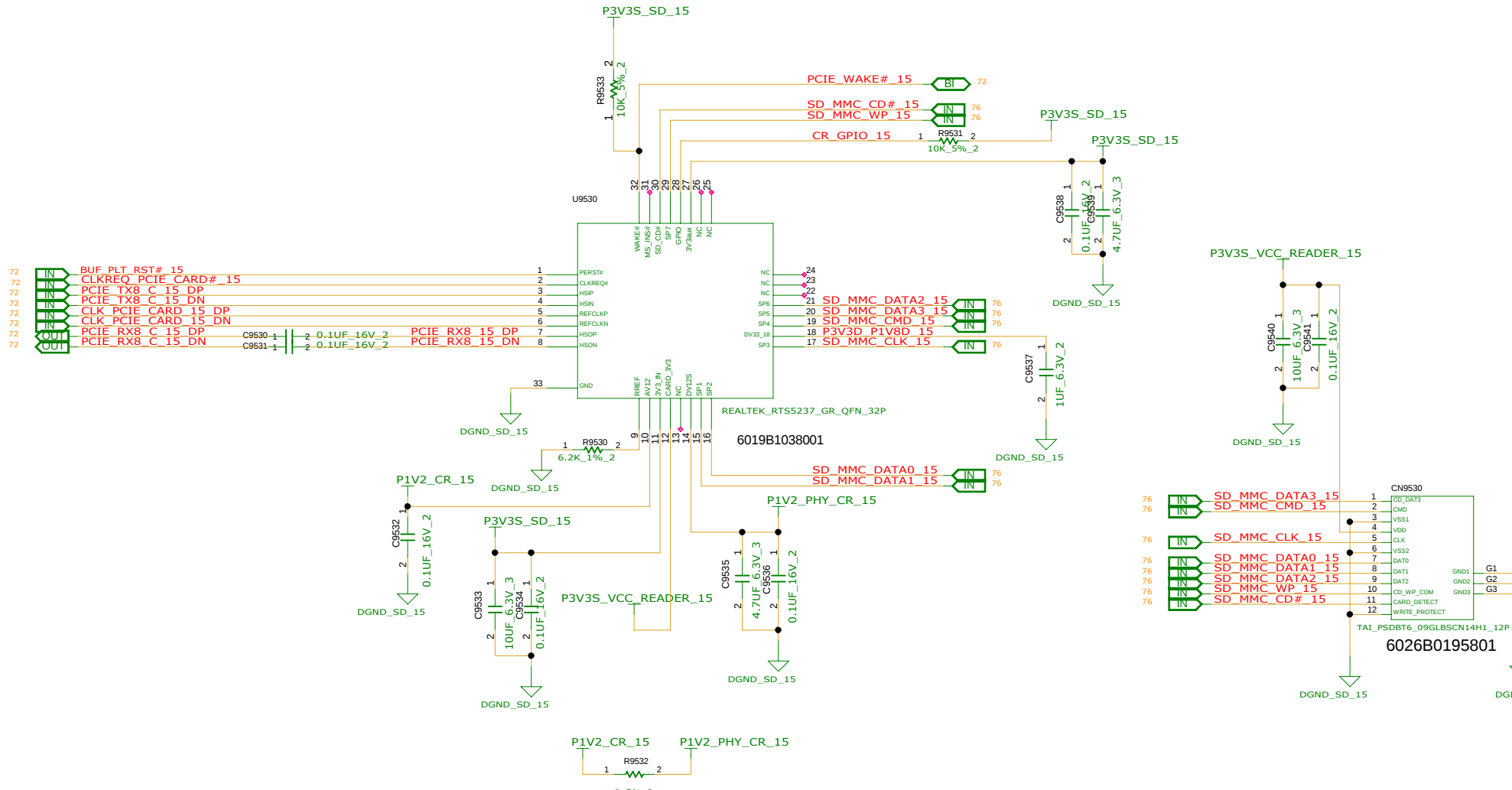
15" USB DAUGHTER BOARD

INVENTEC

TITLE			
CYCLONE DIS 15" USB DAUGHTER BOARD			
SHEET	CODE	DOC NUMBER	REV
75	A3	1310A25664	X01

CHANGE BY: XXX DATE: 26-NOV-2012

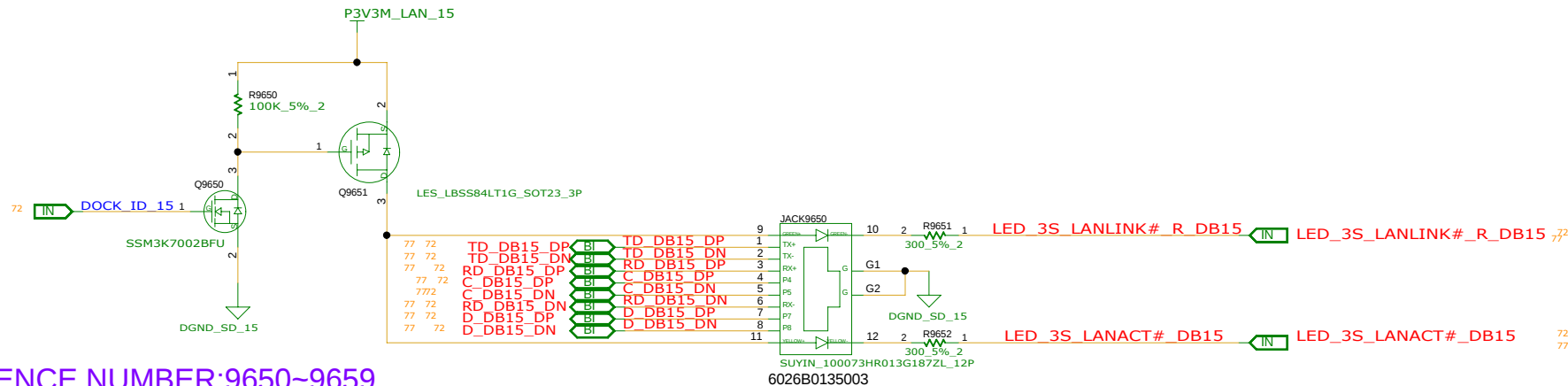
SHEET 75 of 90



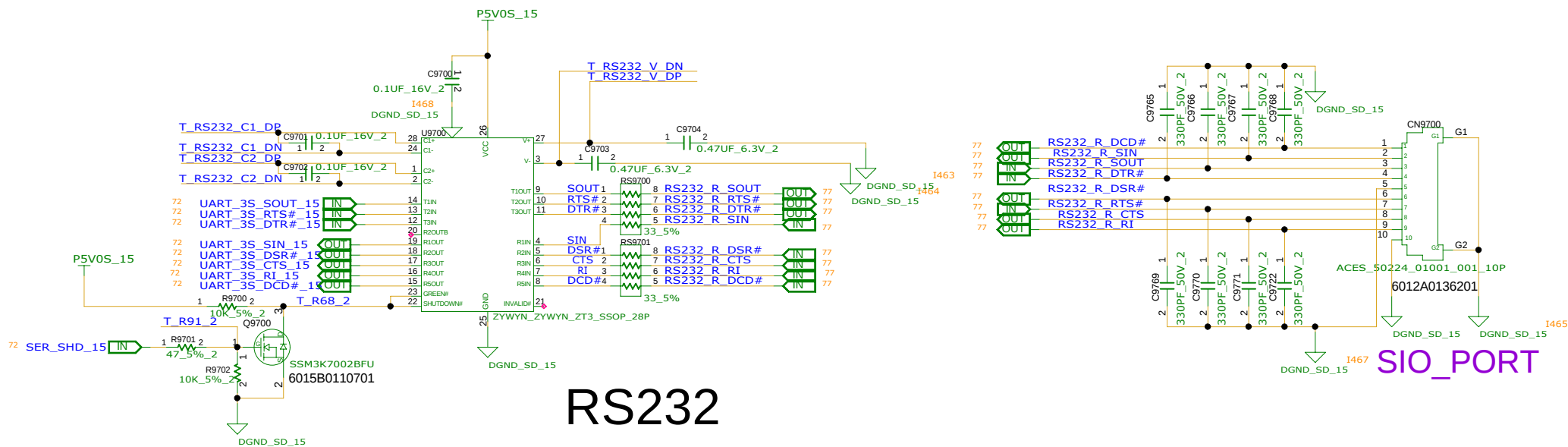
REFERENCE NUMBER:9530~9549

15" USB DAUGHTER BOARD

INVENTEC			
TITLE			
CYCLONE DIS 15 CARD READER			
DOC.NUMBER			
1310A25664			
REV			
X01			
SIZE	CODE	SHEET	
A3	CS	76 of 90	



LAN



RS232

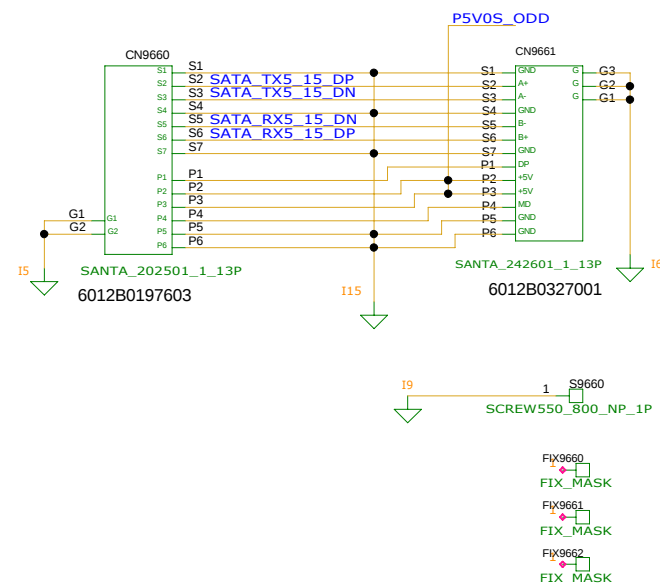
SIO_PORT

15" USB DAUGHTER BOARD

INVENTEC			
TITLE			
CYCLONE DIS 15 RJ45 CONN/SERIAL PORT			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 77 of 90			

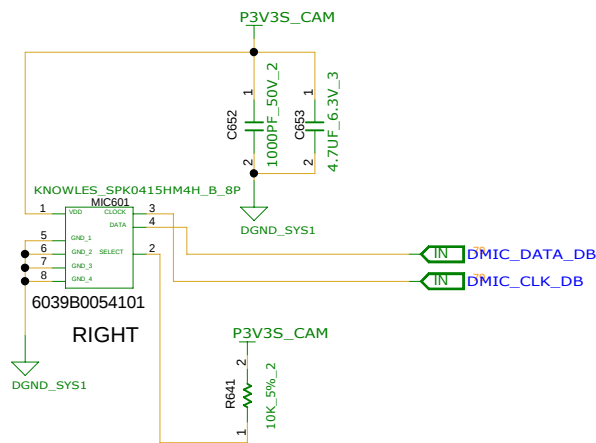
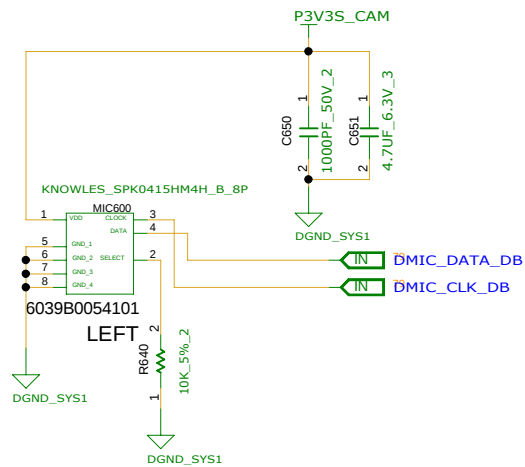
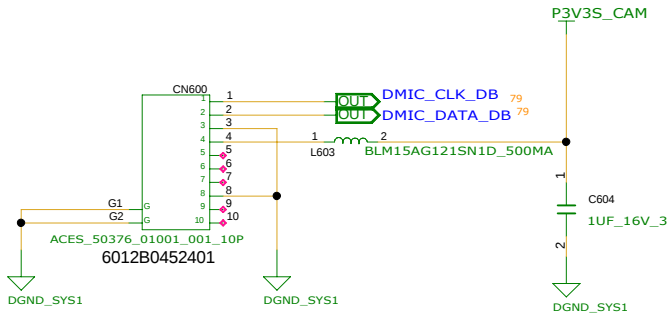
REFERENCE NUMBER:9660~9669

15" SATA ODD BOARD



INVENTEC

TITLE			
CYCLONE DIS 15 SATA ODD DB			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01



REFERENCE NUMBER:600~649

FIX600
FIX_MASK

FIX601
FIX_MASK

MIC DOUGHTER BOARD

INVENTEC

TITLE			
CYCLONE DIS MIC BOARD			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01

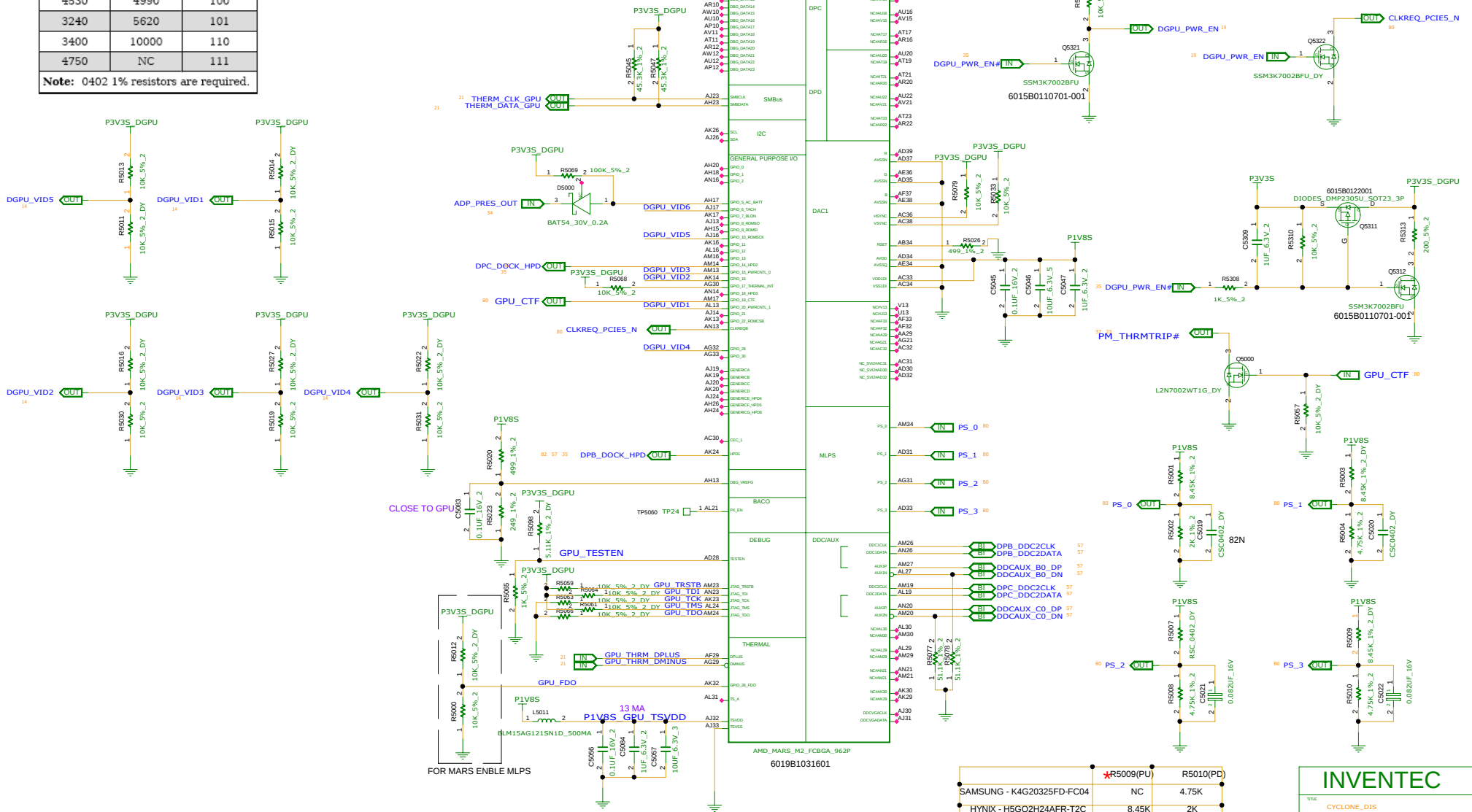
MLPS TABLE

Therm Sensor

Size of the Primary Memory Apertures	ROM_CONFIG[2:0]
128 MB	000
256 MB	001
64 MB	010
Reserved	011

R _{pu} (Ω)	R _{pd} (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		

Note: 0402 1% resistors are required.



INVENTEC

AMD-MARS-1

1310A25564

REV 001

SAMSUNG - K4G20325FD-FC04	NC	4.75K
HYNIX - H5GQ2H24AFR-T2C	8.45K	2K

CHANGE BY: VXX DATE: 26/NOV/2012

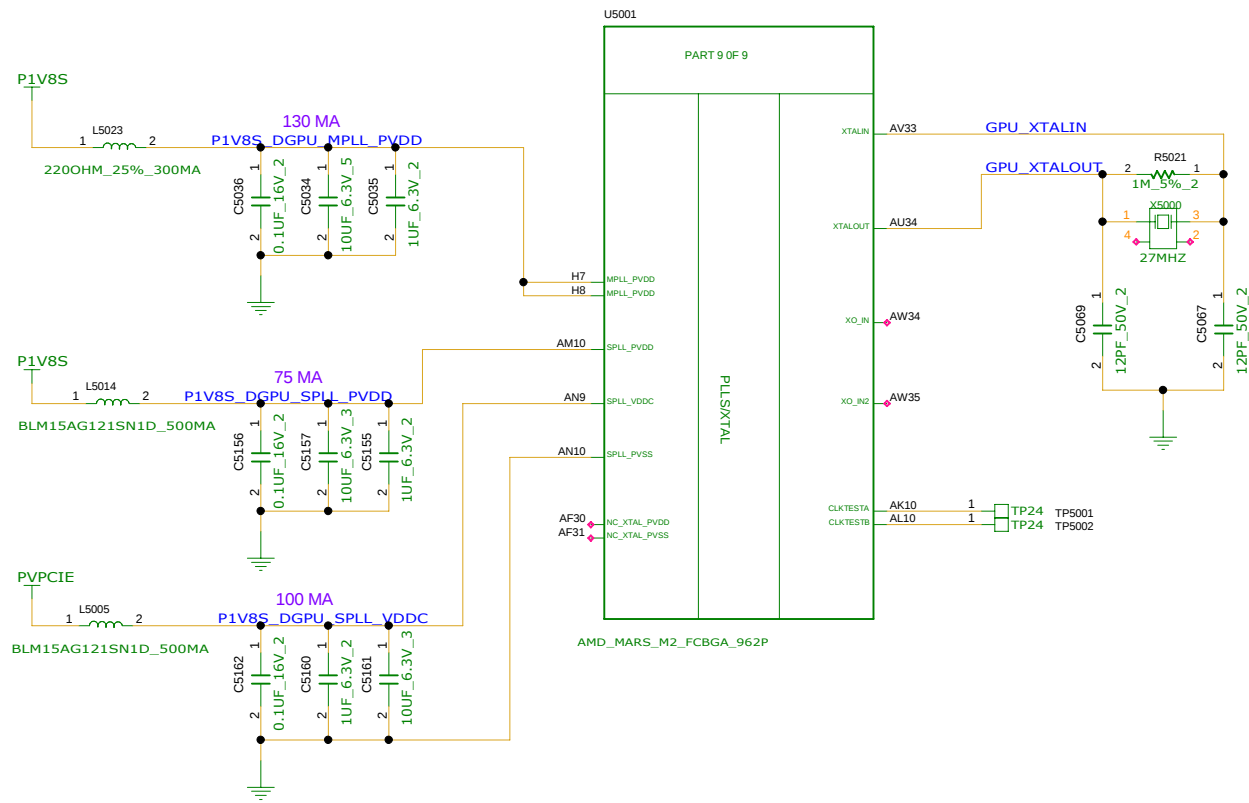
SHEET 00 OF 00

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. Must be 1 at reset.
PS_0[5]	AUD_PORT_CONN_PINSTRAP[0]	The LSB (least significant bit) of the strap option that indicates the number of audio-capable display outputs.
PS_1[1]	STRAP_BIF_GEN3_EN_A	PCIe GEN3 capability. 1 = PCIe GEN3 is supported.
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). 0 = The CLKREQB power management capability is disabled
PS_1[3]	N/A	Reserved for internal use only. Must be 0 at reset.
PS_1[4]	STRAP_TX_CFG_DRV_FULL_SWING	Control the transmitter full-/half-swing mode 1 = The transmitter full-swing is enabled
PS_1[5]	STRAP_TX_DEEMPH_EN	PCI EXPRESS® transmitter, de-emphasis enable. 1 = Tx deemphasis enabled.
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. 0 = Disable the external BIOS ROM device.
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). 0 = VGA controller capacity enabled.
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. 0 = Disable the external BIOS ROM device.
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). 0 = VGA controller capacity enabled.
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.
PS_3[5]	AUD_PORT_CONN_PINSTRAP[2]	111 = No usable endpoints. 110 = One usable endpoint. 101 = Two usable endpoints. 100 = Three usable endpoints. 011 = Four usable endpoints. 010 = Five usable endpoints. 001 = Six usable endpoints. 000 = All endpoints are usable.
Note : AUD[1] (on HYSNC) and AUD[0] (on VSYNC) still need to be properly pin strapped even in a MLPS-based design.		

LPT-LP GPIO 34	MARS MLPS Bit: PS_3 [3:1]			R_pu (Ω)	R_pd (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 : 0 : VBIOS 1, 64Mx32 for 1GB sku 1 : VBIOS 2, 128Mx32 for 2GB sku	Vram configuration 00: 64Mx32 (2Gb) 11: 128Mx32 (4Gb)	Vendor ID 0: Samsung 1: Hynix	Resistor Divider Lookup Table	Vram information * 2GB sku, TBD				

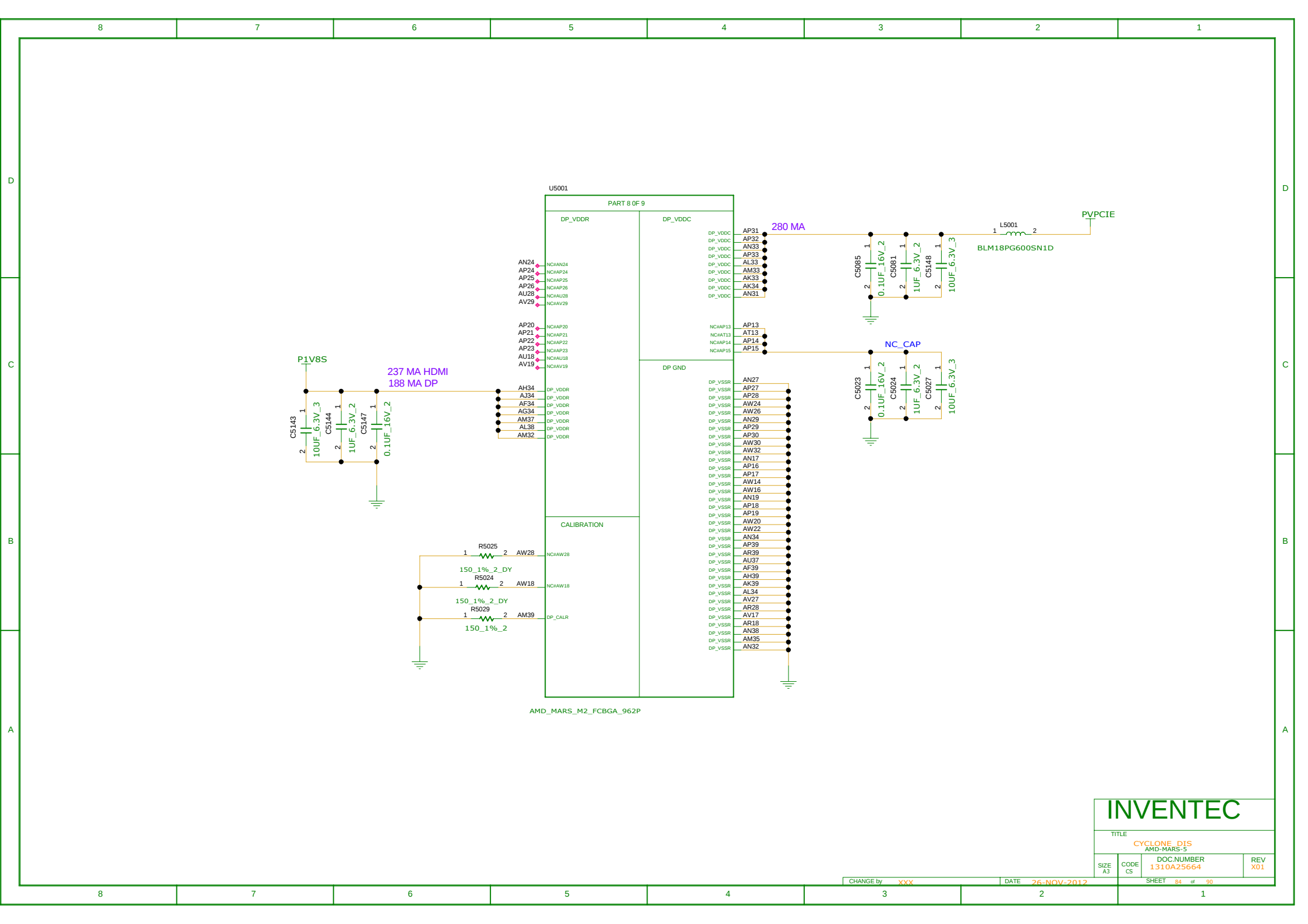
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SIZE C	CODE CS	DOC NUMBER 1310A25564	REV 201
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TITLE			
CYCLONE_D1S AMD_MARS-4			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01



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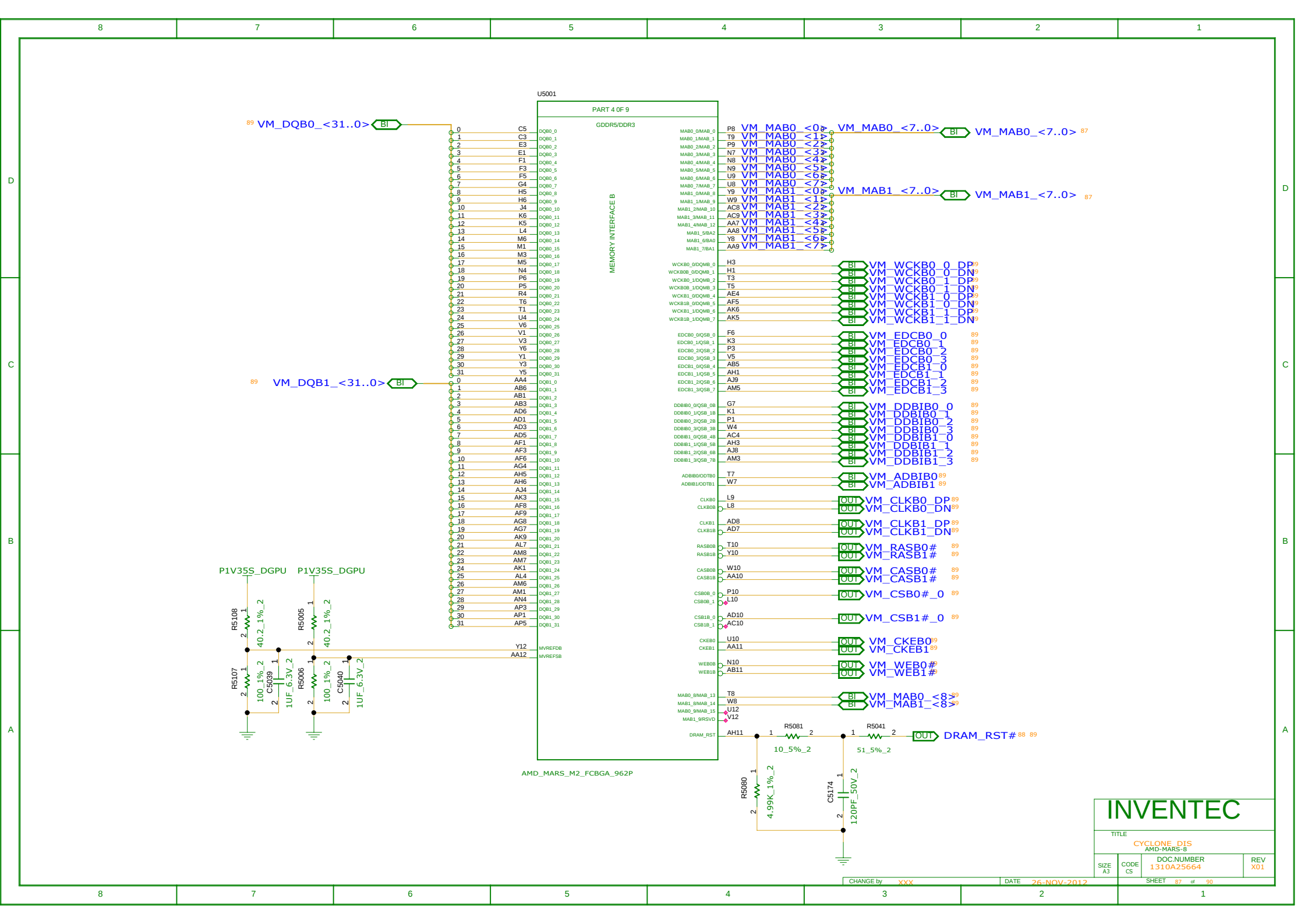
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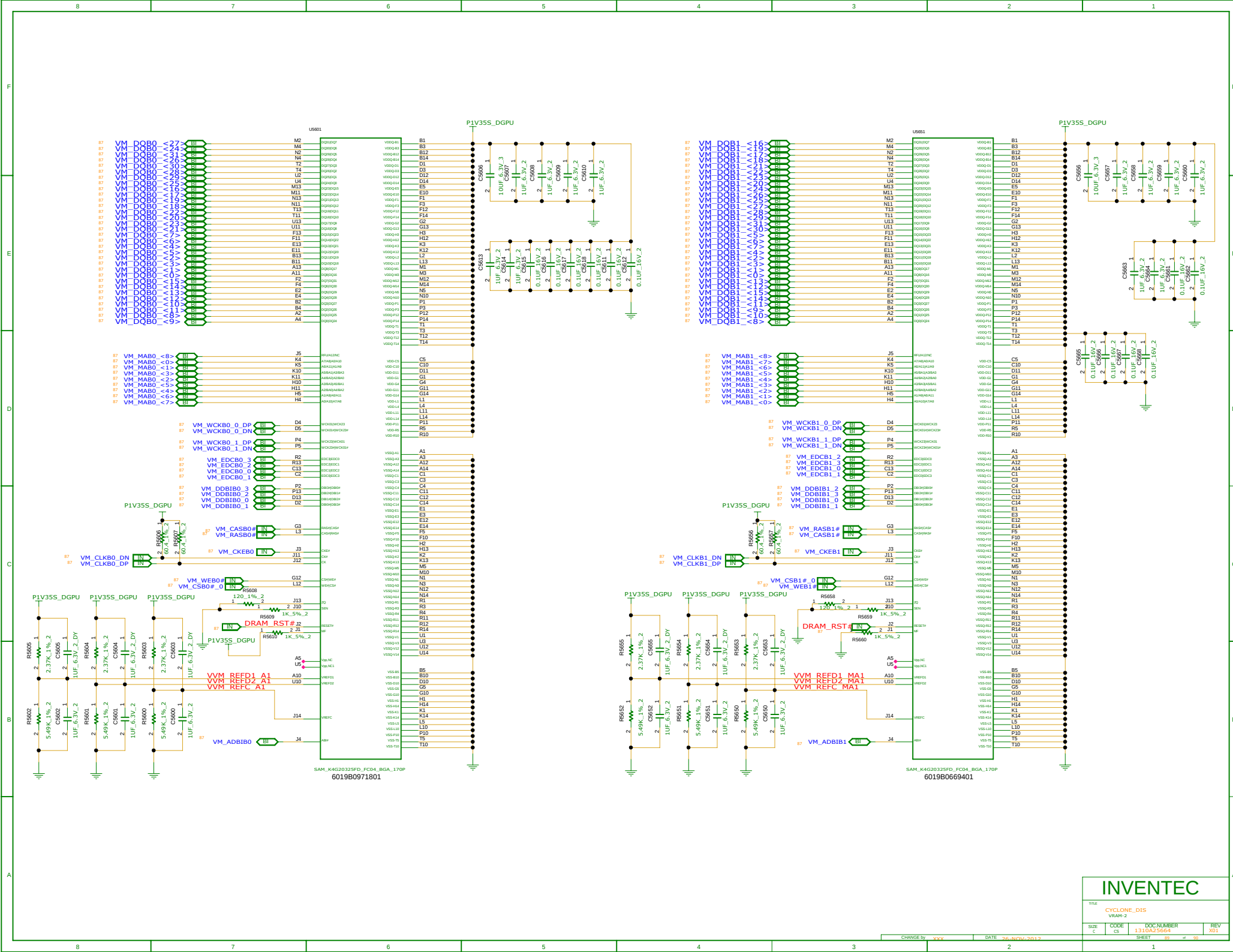
AMD-MARS-5

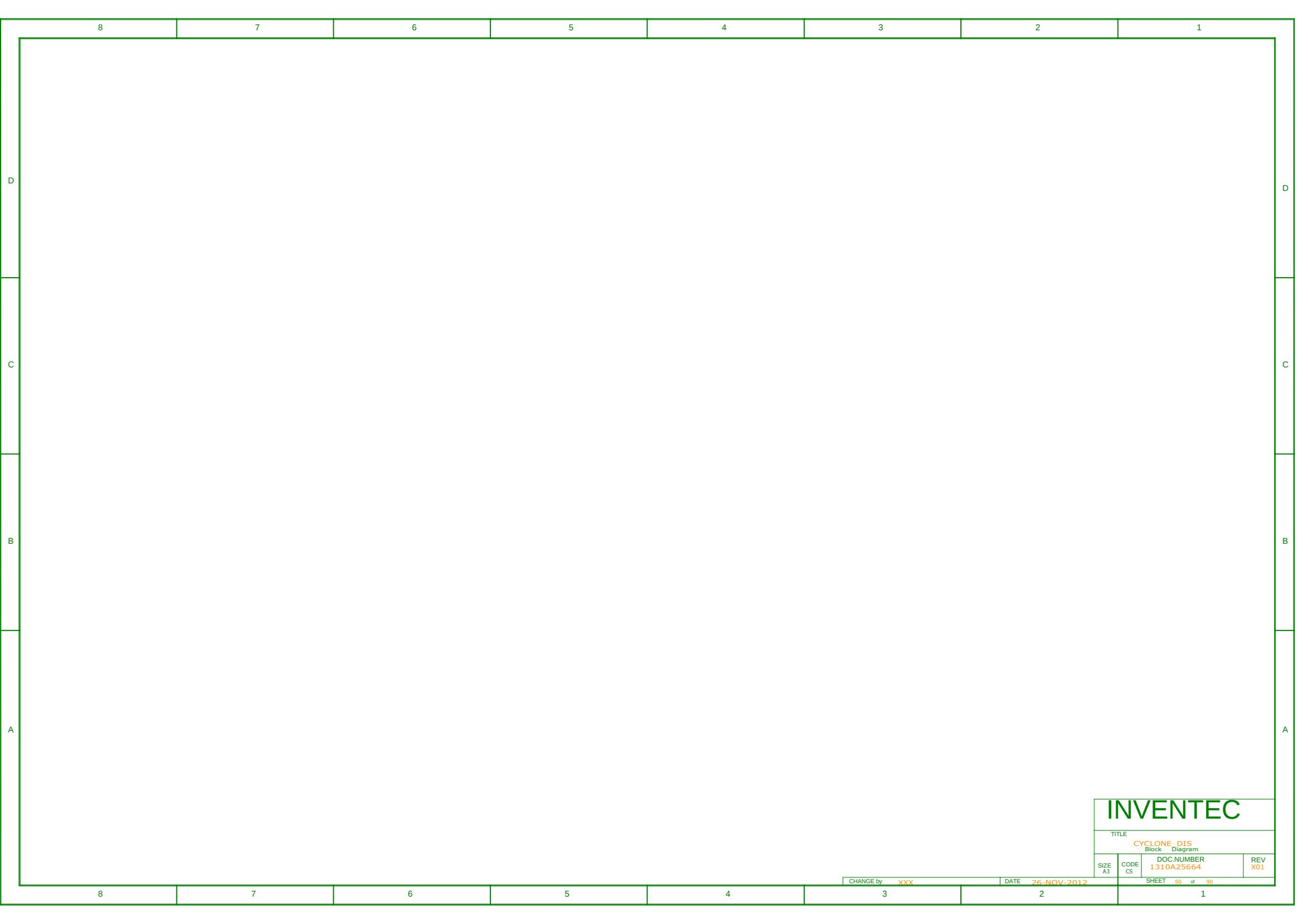
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CYCLONE DIS
Block Diagram

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