

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF INVENTEC CORPORATION AND SHALL NOT BE REPRODUCED, COPIED, OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION, INVENTEC CORPORATION, 2013. ALL RIGHT RESERVED.

HSF Property: ROHS or Halogen-Free

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
FILE NAME	CYCLONE DB BUILD		
PIN	XXXX		
SIZE	A4	VER	X01
CODE	CS	DOC NUMBER	1310A25564-0-ALG
SHEET	1	REV	X01

TABLE OF CONTENTS

1. PROJECT NAME	29. DDR3_SO-DIMM0	57. DOCKING CNTR	85. MARS-6
2. TABLE OF CONTENTS	30. DDR3_SO-DIMM1	58. AUDIO	86. MARS-7
3. BLOCK DIAGRAM	31. LYNX POINT_1 (RTC,JTAG,SATA)	59. EXT. MIC / MIC / HP	87 MARS-8
4. POWER DIAGRAM	32. LYNX POINT_2 (SPI,SMBUS,CL)	60. SCREW	88. VRAM-1
5. SYSTEM POWER(CHARGER)	33. LYNX POINT_3 (CLK)	61. RF SOLUTION	89. VRAM-2
6. SYSTEM POWER(OCF)	34. LYNX POINT_4 (DMI,FDI,SPM)	62. MB SIDE CONN	
7. SYSTEM POWER(P3V3A&P5V0A)	35. LYNX POINT_5 (CRT,DP)	63. SMART CARD	
8. P3V3A&P5V0A_CHG PORT	36. LYNX POINT_6 (PCIE,USB)	64. POWER BUTTON BOARD	
9. SYSTEM POWER(PVDDQ)	37. LYNX POINT_7 (GPIO,VSS,MISC)	65. FUNCTION BUTTON BOARD	
10. SYSTEM POWER(P1V05_M)	38. LYNX POINT_8 (POWER)	66. 14 B TO B CONNECTOR	
11. SYSTEM POWER(P1V5S)	39. LYNX POINT_9 (POWER)	67. 14" USB3.0 REDRIVER	
12. SYSTEM POWER(PVCORE1)	40. LYNX POINT_10 (GND)	68. 14" USB CONN (CHARGE)	
13. SYSTEM POWER(PVCORE2)	41. VGA SWITCH / CRT	69. 14" USB CONN	
14. SYSTEM POWER(PVCORE DGPU1)	42. DISPLAY PORT CNTR	70. 14" CARD READER	
15. SYSTEM POWER(P1V5S DGPU)	43. EDP& WEBCAM	71. 14" LAN CONN	
16. SYSTEM POWER (P1V8S)	44. SATA HDD&ODD CNTR	72. 15 B TO B CONNECTOR	
17. SYSTEM POWER(PVPCIE)	45. USB CONN(RIGHT)	73. 15" USB3.0 REDRIVER	
18. SYSTEM POWER(SELECT)	46. FINGER PRINTER CNTR	74 15" USB CONN (CHARGE)	
19. POWER (SLEEP)	47. ACCELEMETOR	75. 15" USB CONN	
20. POWER (SEQUENCE)	48. KBC & SPI	76. 15" CARD READER	
21.FAN & THERMAL	49. KEYBOARD	77. 15" LAN CONN / SERIAL PORT	
22. XDP CONN	50. SUPER I/O	78. 15" SATA ODD DB	
23. HASWELL_1 (CLK,MISC,JTAG)	51. TPM	79. MIC BOARD	
24. HASWELL_2 (POWER)	52. NIC	80. MARS-1	
25. HASWELL_3 (DMI,DP,PEG,FDI)	53. LAN(SWITCH , TRANSFORMER)	81. MARS-2	
26. HASWELL_4 (DDR3)	54. WLAN	82. MARS-3	
27. HASWELL_5 (CFG)	55. WWAN NGFF	83. MARS-4	
28. HASWELL_6 (GND,RESERVED)	56. NFC	84. MARS-5	

INVENTEC

TITLE

CYCLONE DIS

TABLE OF CONTENTS

SIZE

A3

CODE

CS

DOC.NUMBER

1310A2566401-0-ALG

REV

X01

SHEET 2 of 90

CHANGE BY

XXX

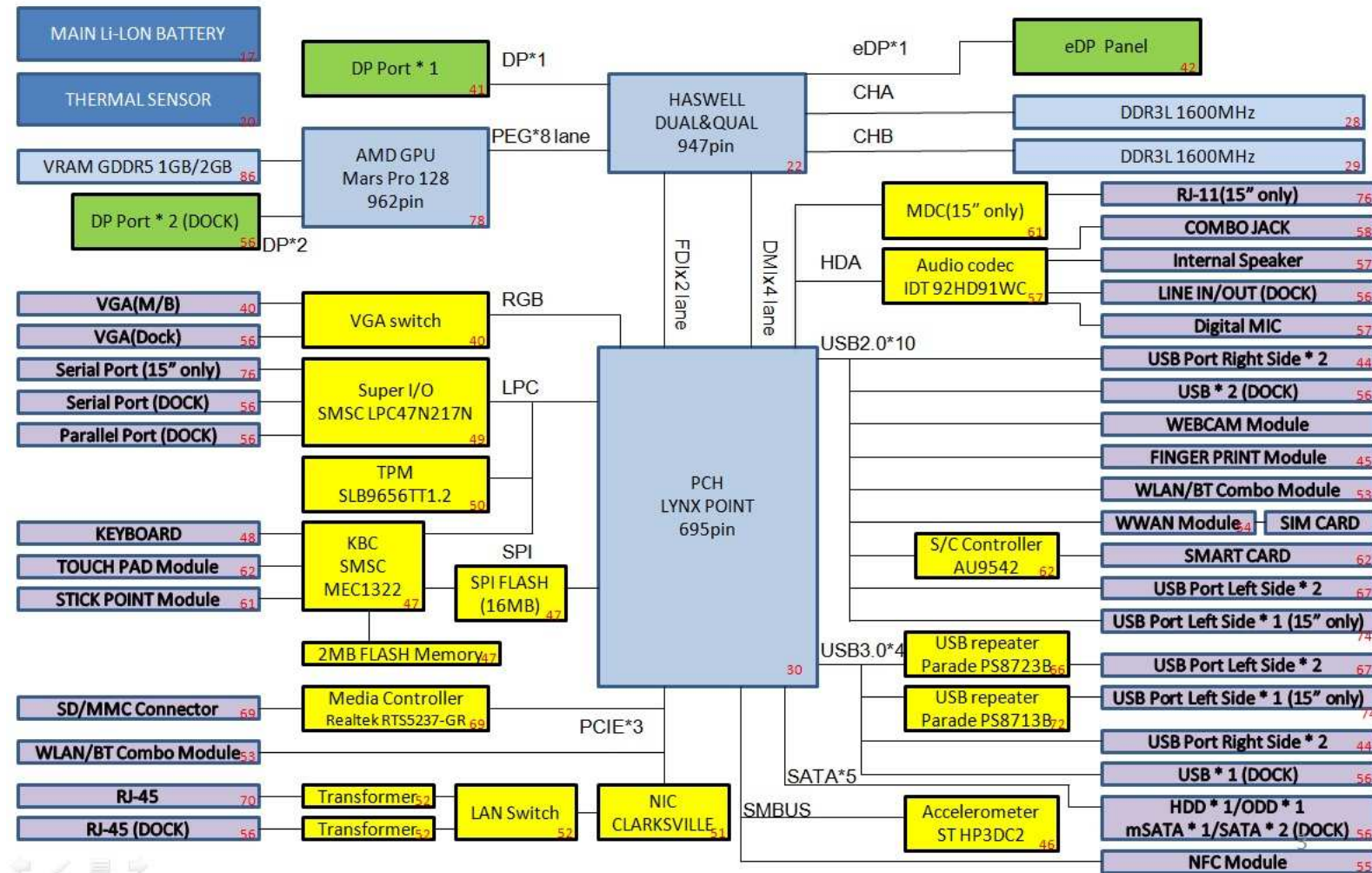
DATE

26-NOV-2012

SHEET 2 of 90

1

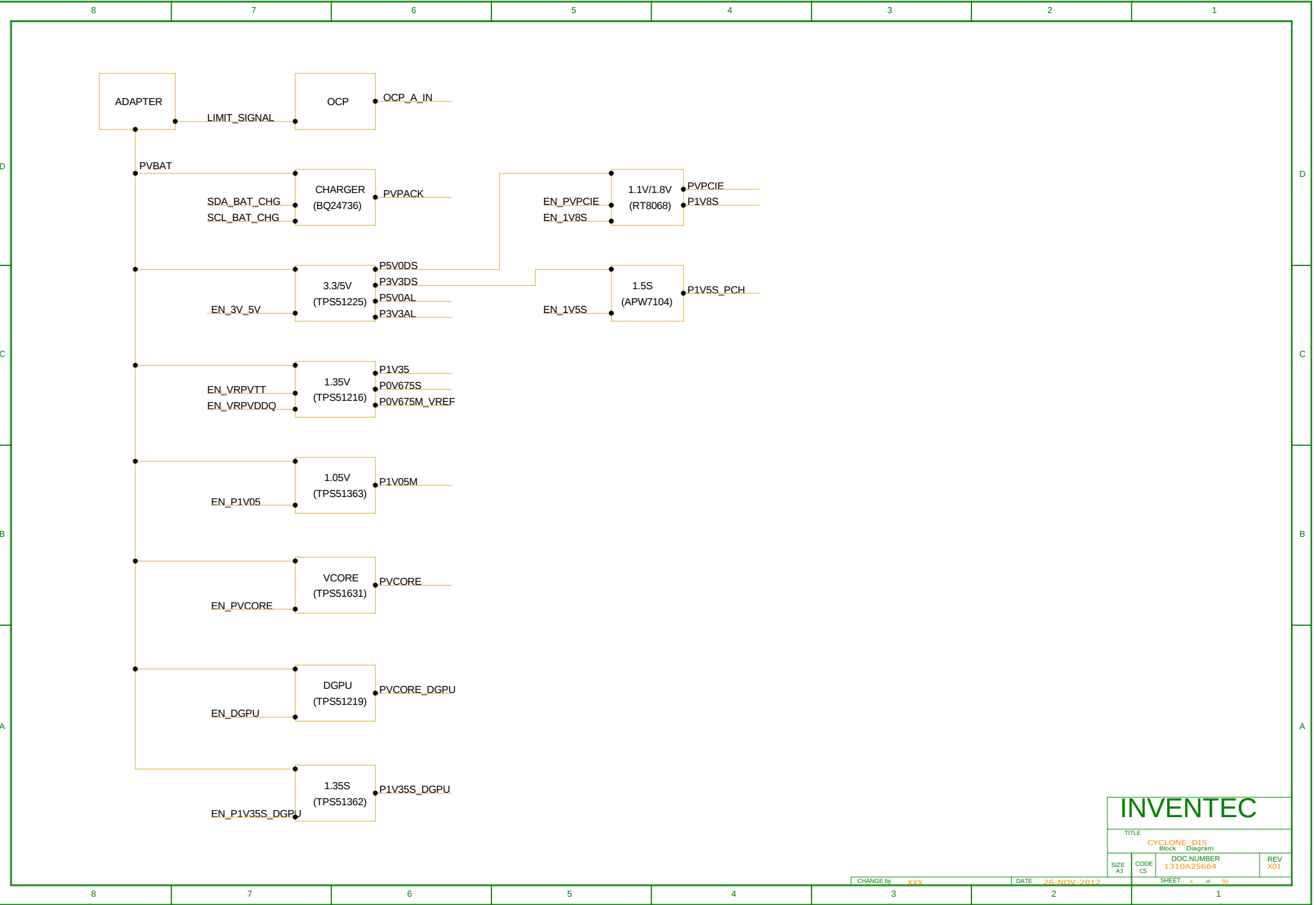
DIS – Block Diagram



INVENTEC

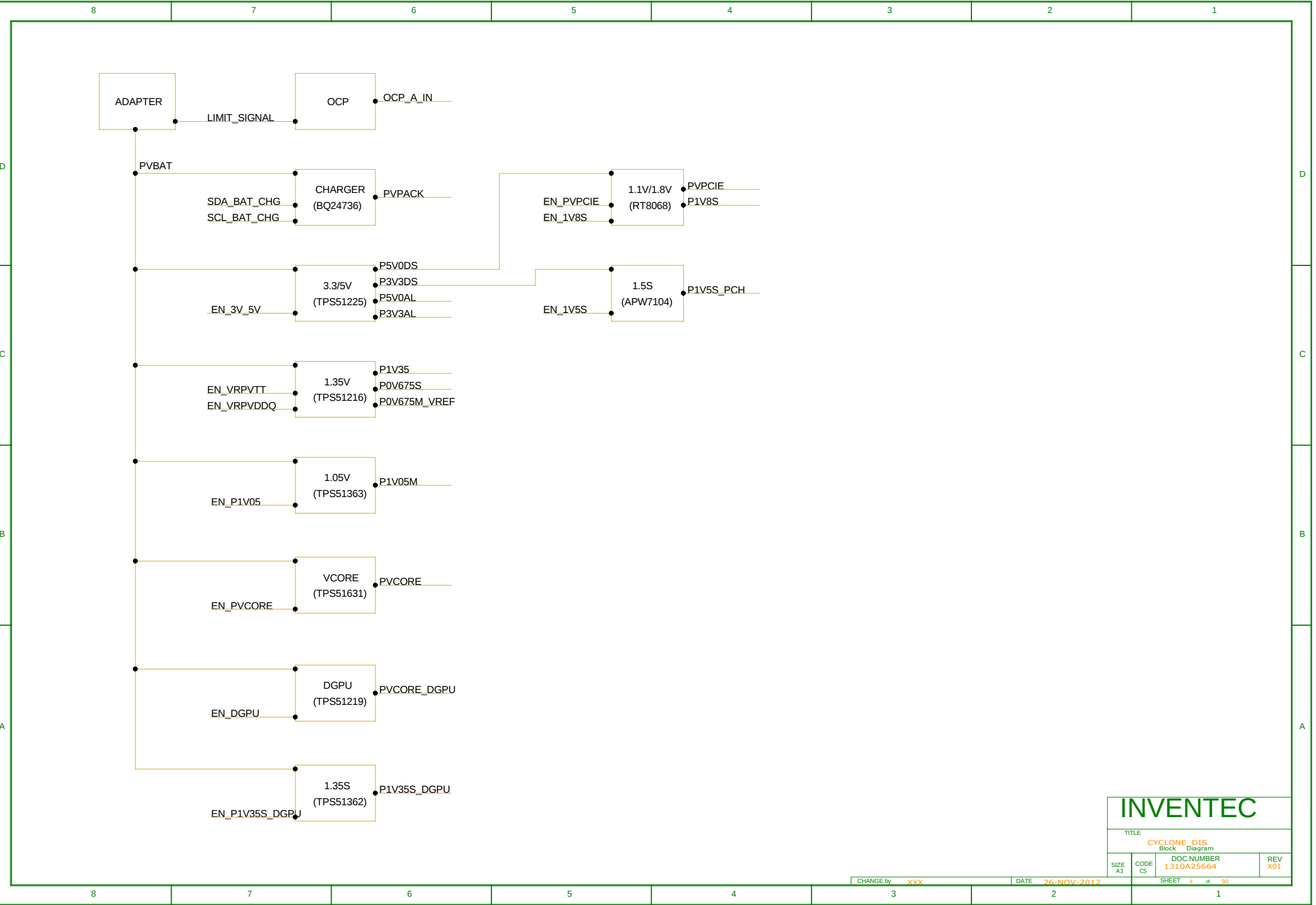
CYCLONE_DIS			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
C	CS	1310A/C35004	201
SHEET		1 of 10	

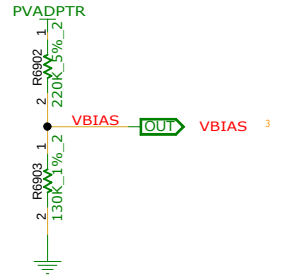
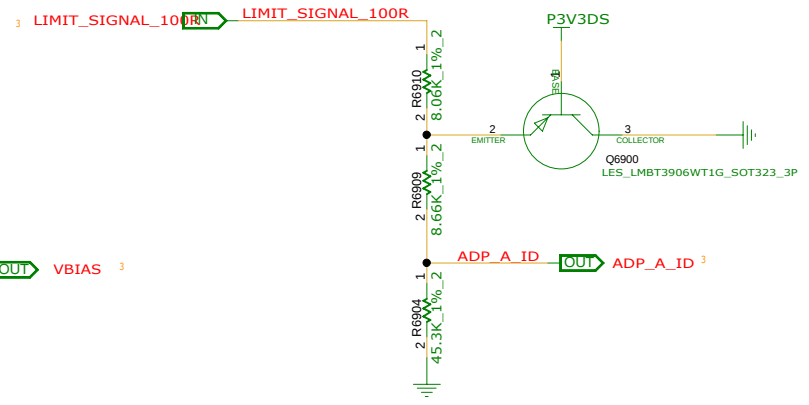
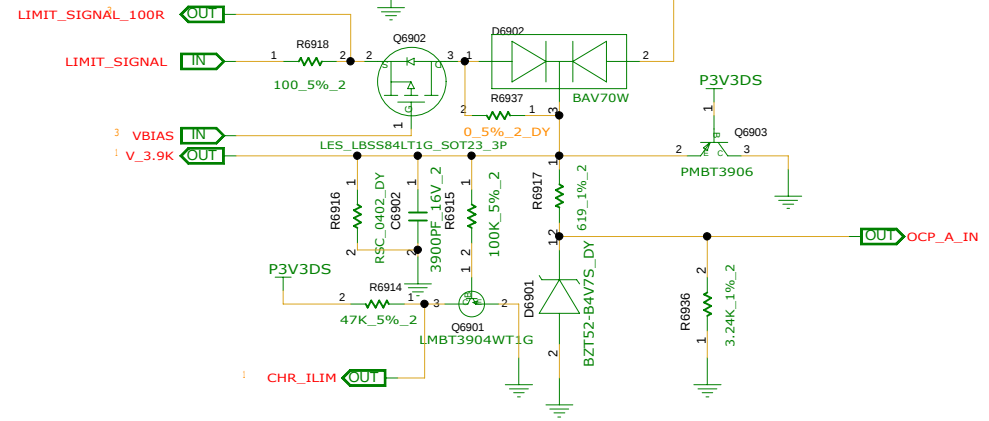
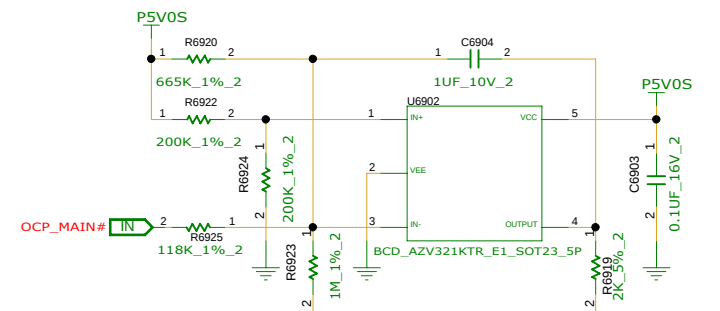
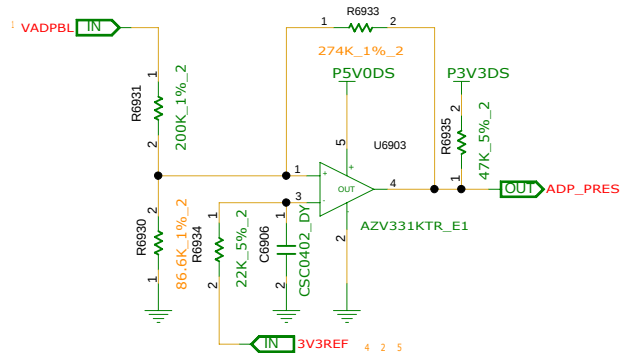
CHANGE BY: xxx DATE: 26/01/2012



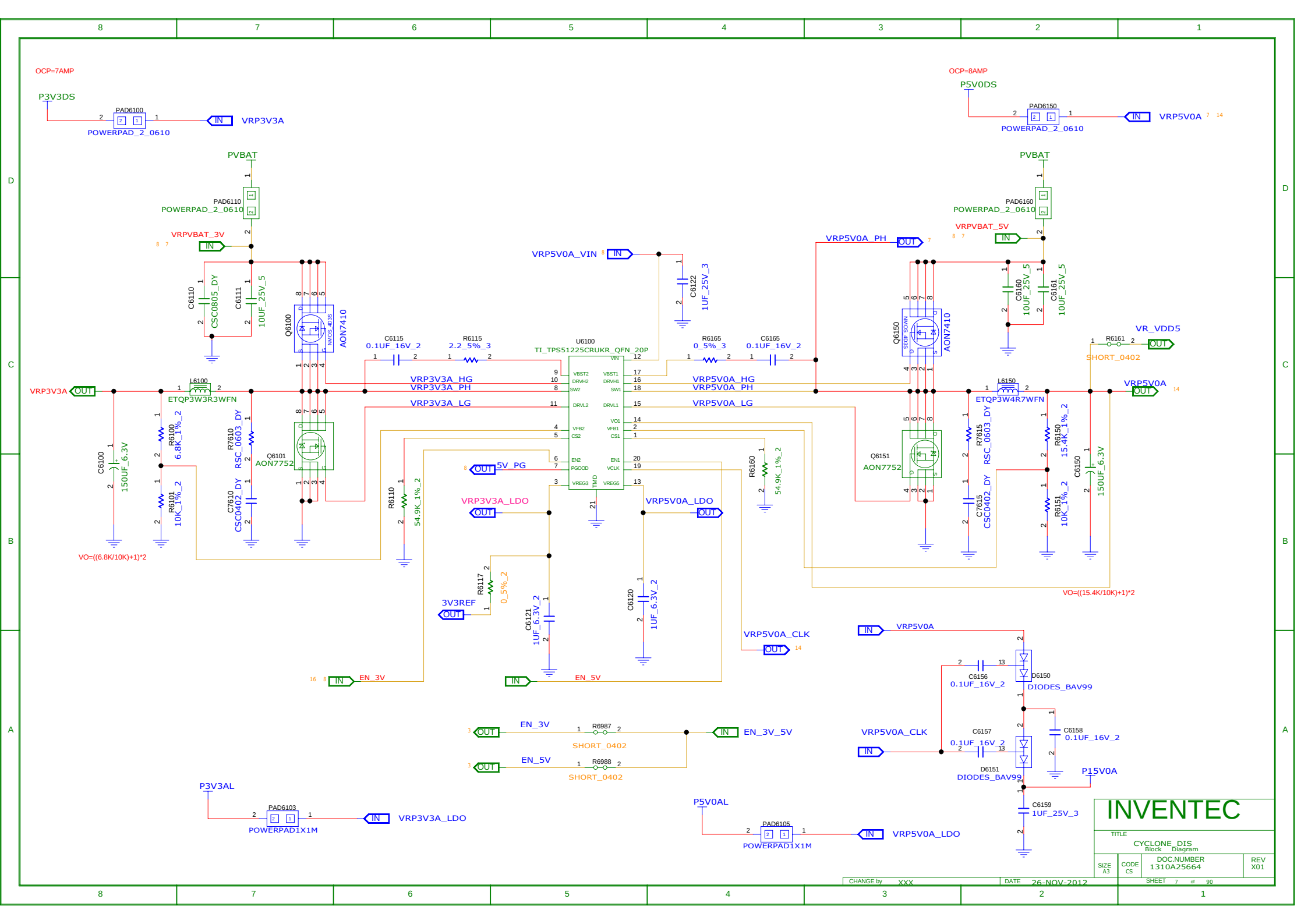
INVENTEC

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

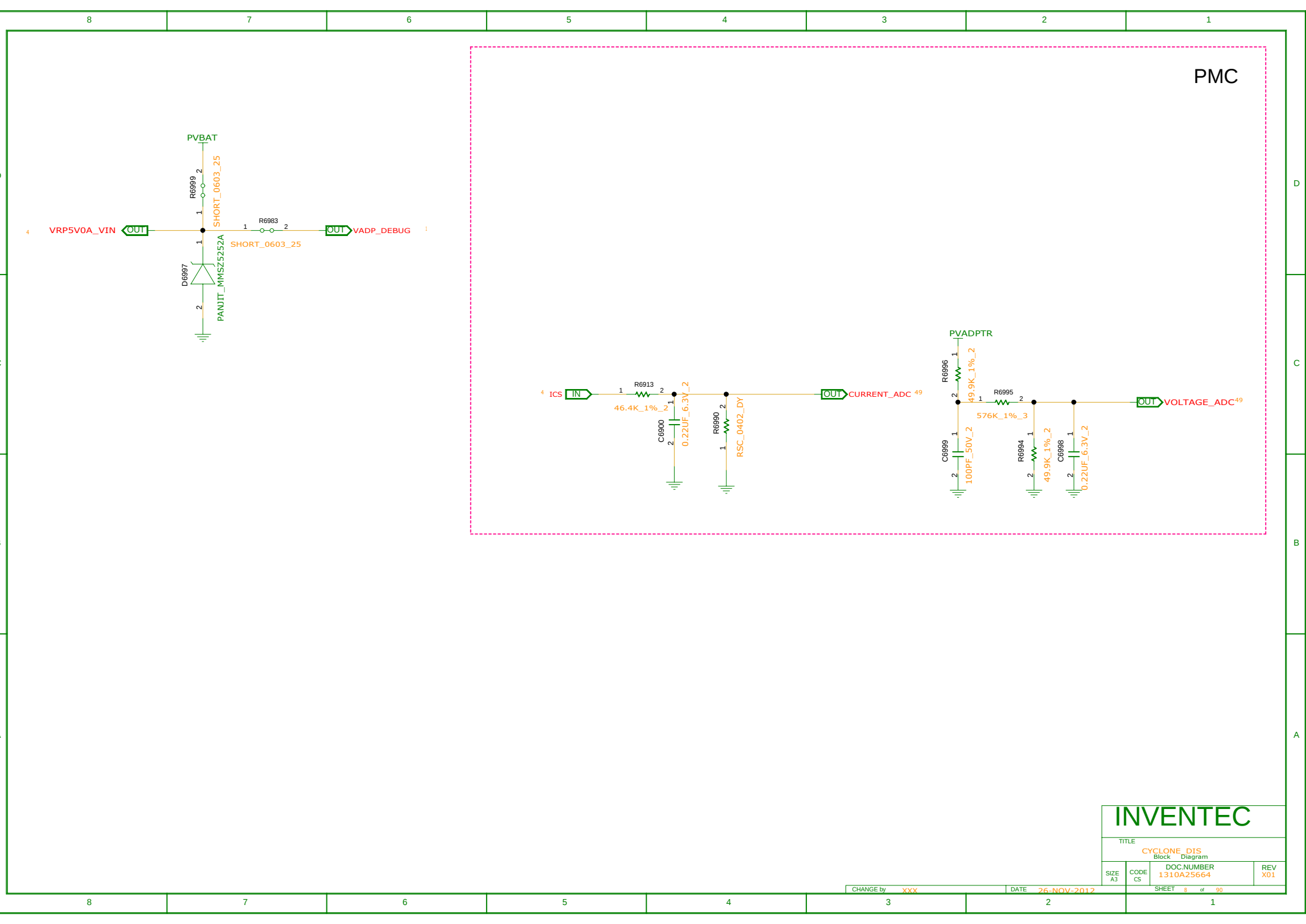




INVENTEC			
TITLE			
CYCLONE DIS Block Diagram			
SIZE A3		DOC NUMBER 1310A25664	REV X01
CODE CS		SHEET 6 of 90	



INVENTEC			
TITLE CYCLONE_D1S Block Diagram			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
CHANGE by XXX DATE 26-NOV-2012 SHEET 7 of 90			



INVENTEC

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

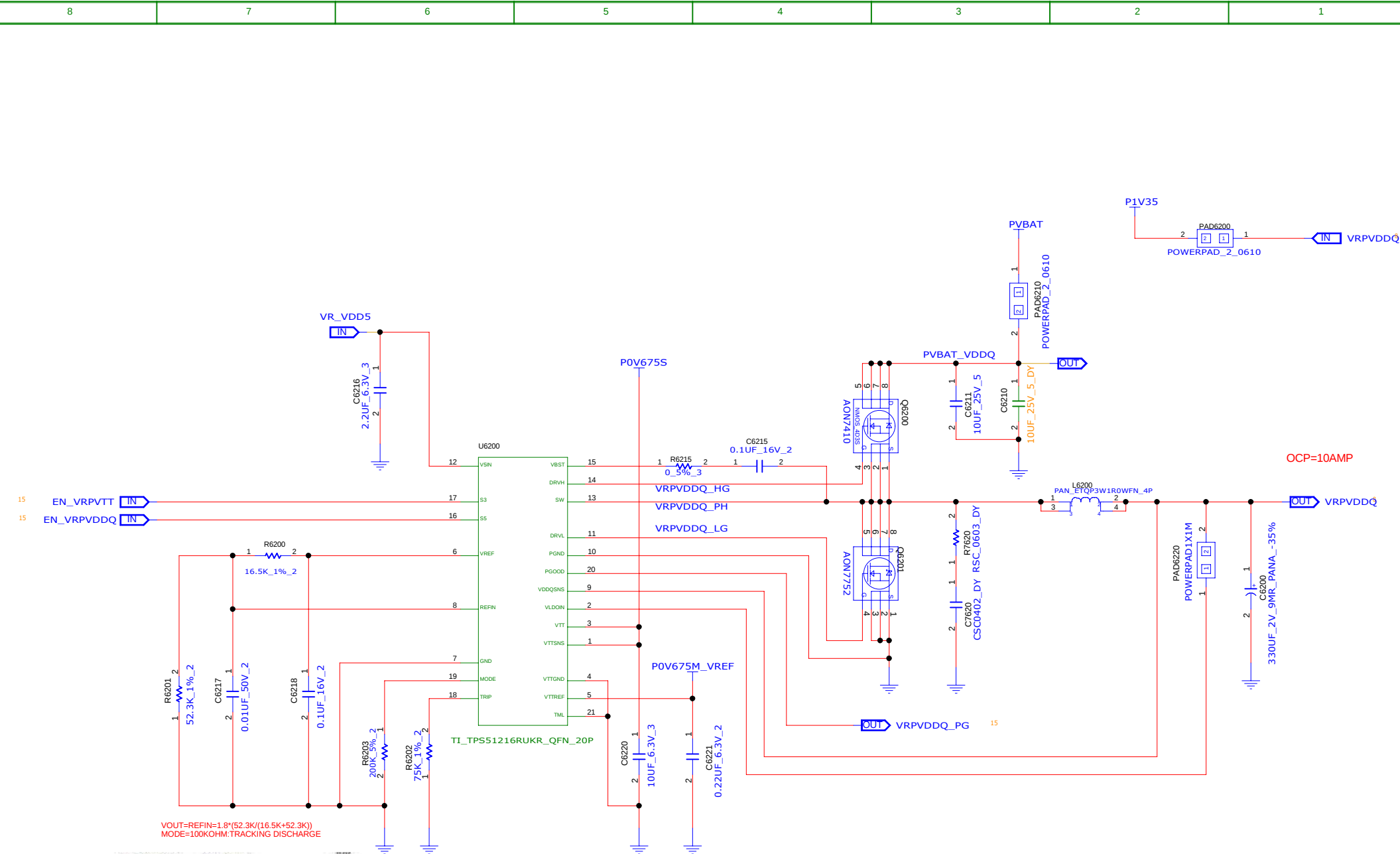


Table 1. S3/S5 Power State Control

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)

INVENTEC

TITLECYCLONE DIS Block Diagram

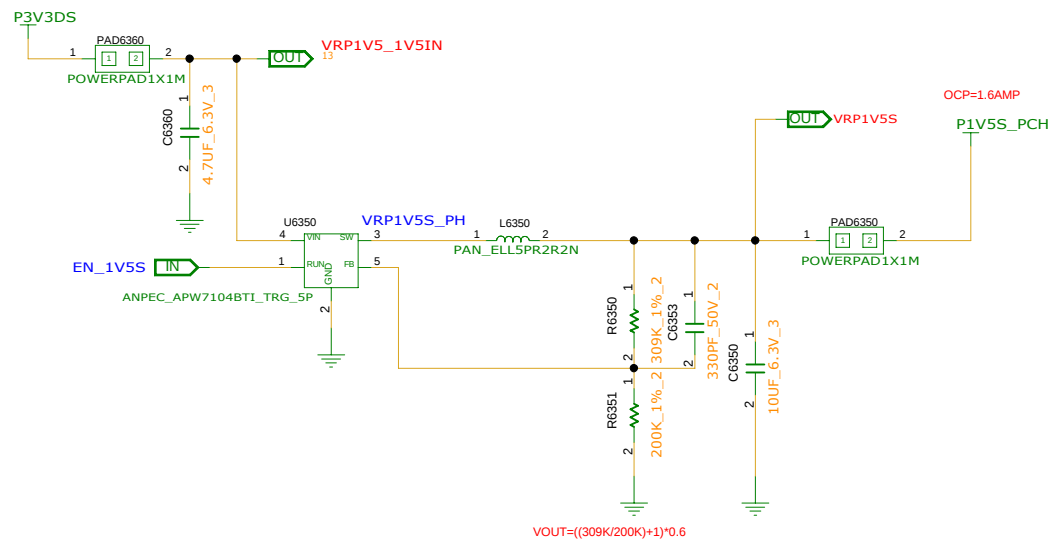
SIZEA3

CODECS

DOCNUMBER1310A25664

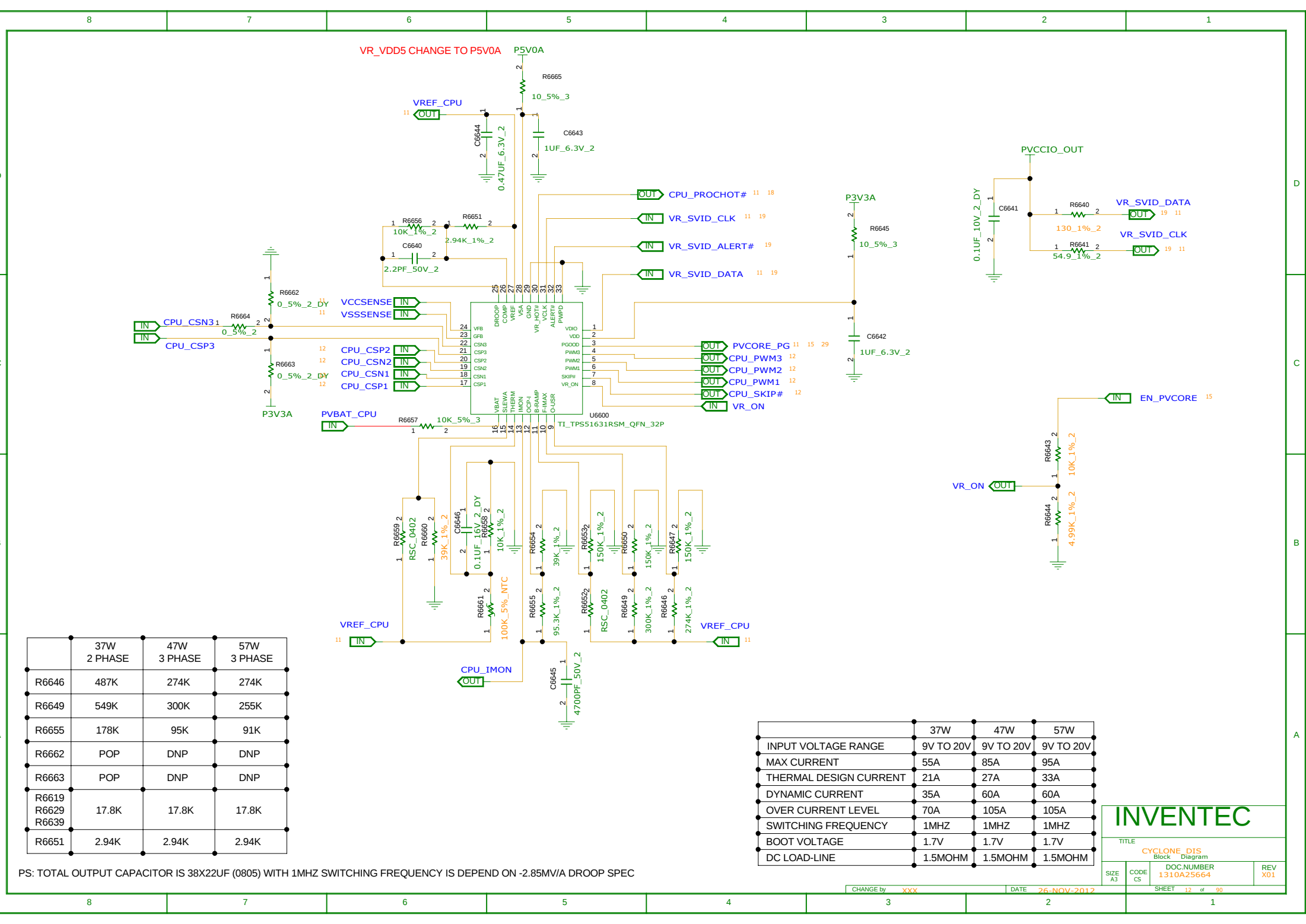
REVX01

SHEET 8 of 90



INVENTEC

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



	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

INVENTEC

TITLE

CYCLONE DIS
Block Diagram

SIZE
A3

CODE
CS

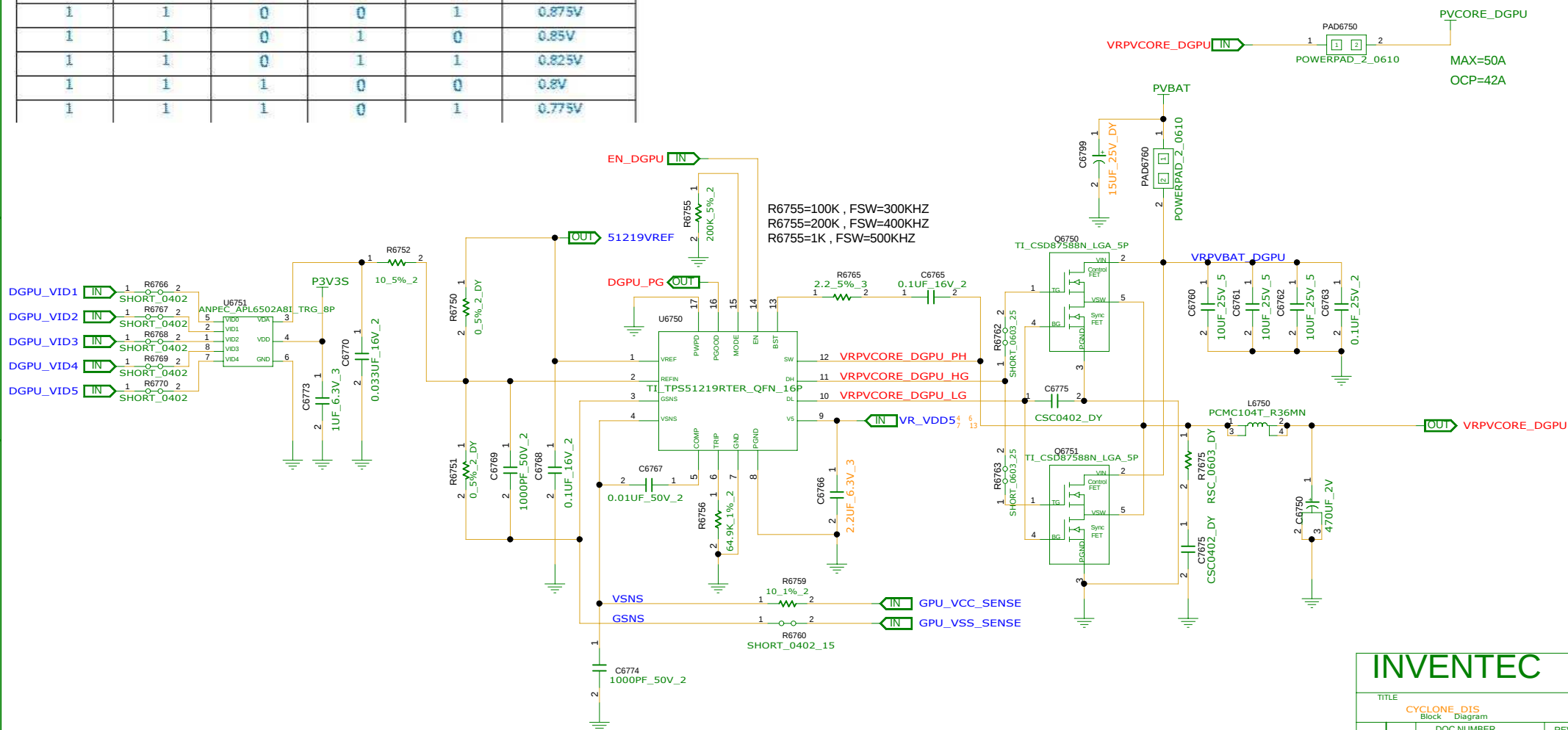
DOC NUMBER
1310A25664

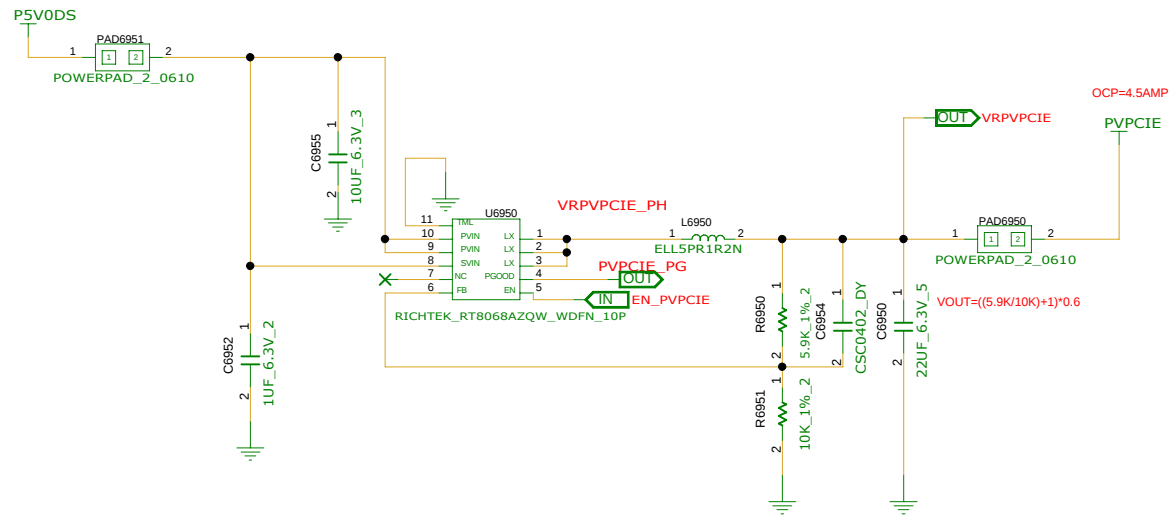
REV
X01

SHEET 12 of 90

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





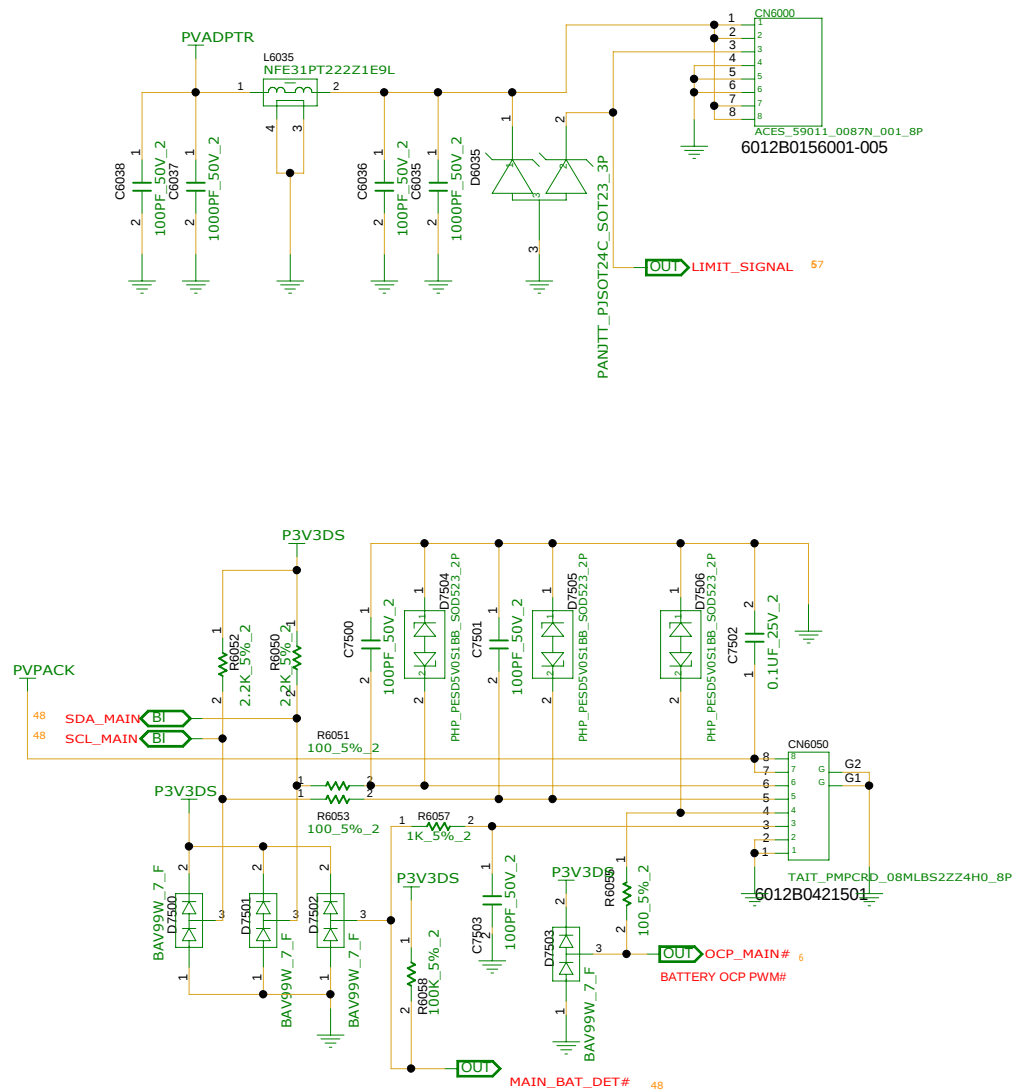
INVENTEC

TITLE
CYCLONE DIS
Block Diagram

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

CHANGE by: XXX DATE: 26-NOV-2012

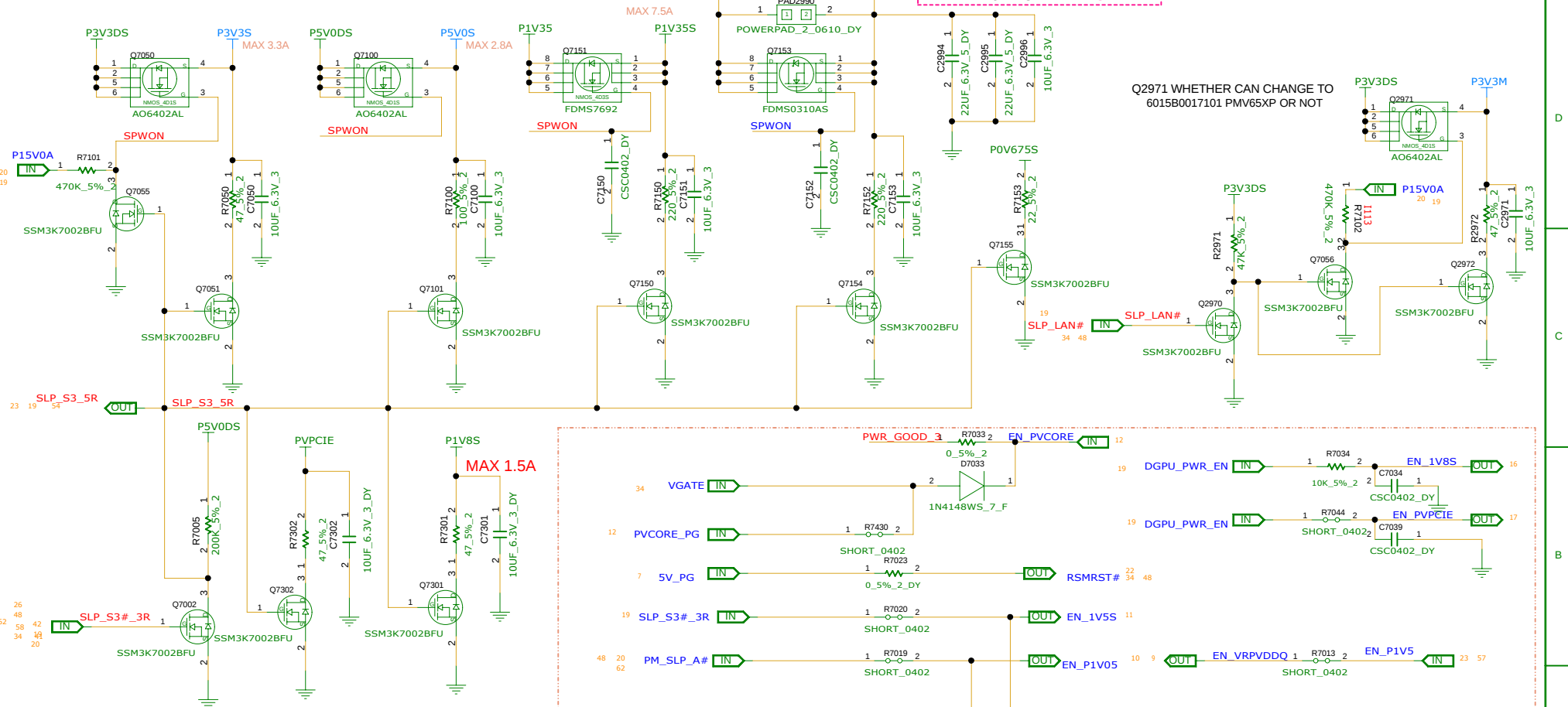
SHEET 17 of 90



INVENTEC

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

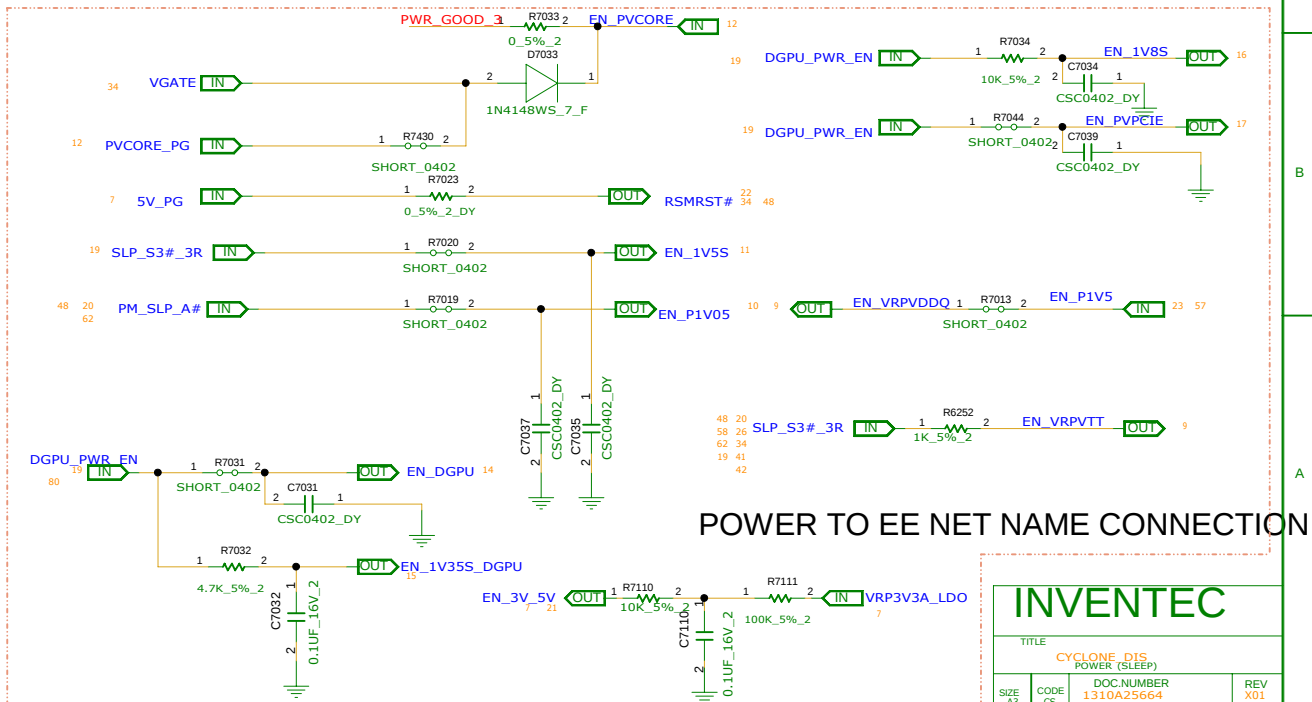
REFERENCE NUMER : 7000~7350



FOR IAMT

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

REFERENCE NUMER : 2950~2999



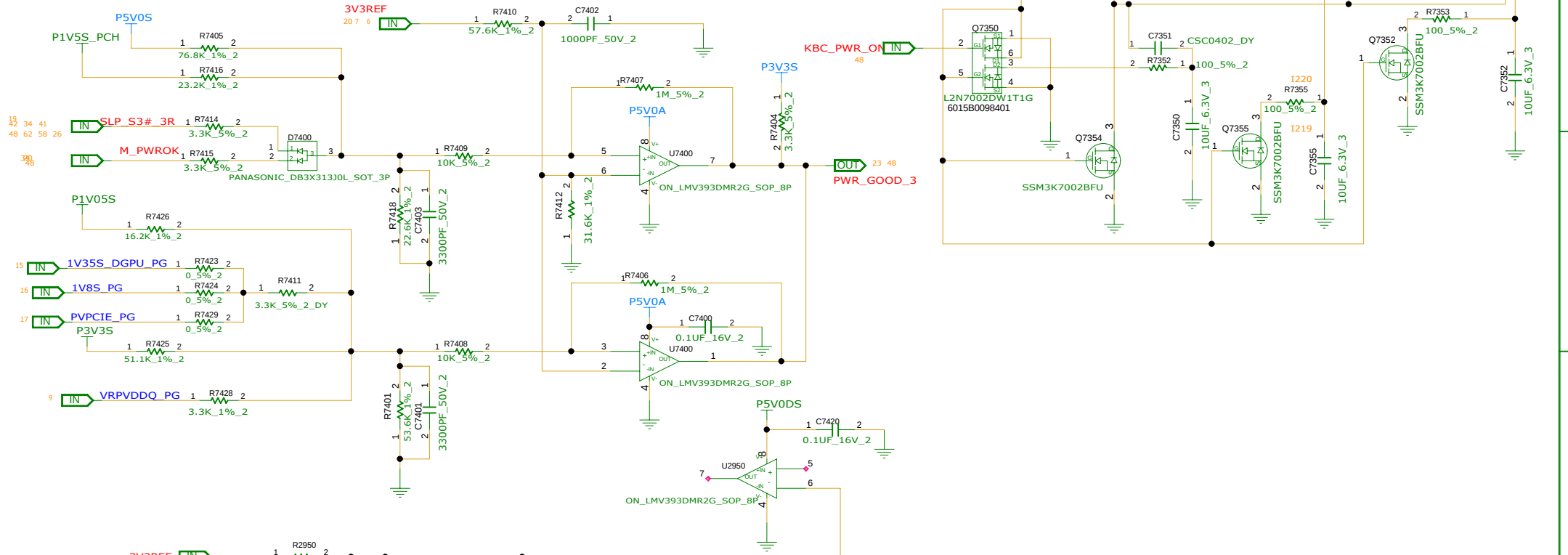
POWER TO EE NET NAME CONNECTION

INVENTEC

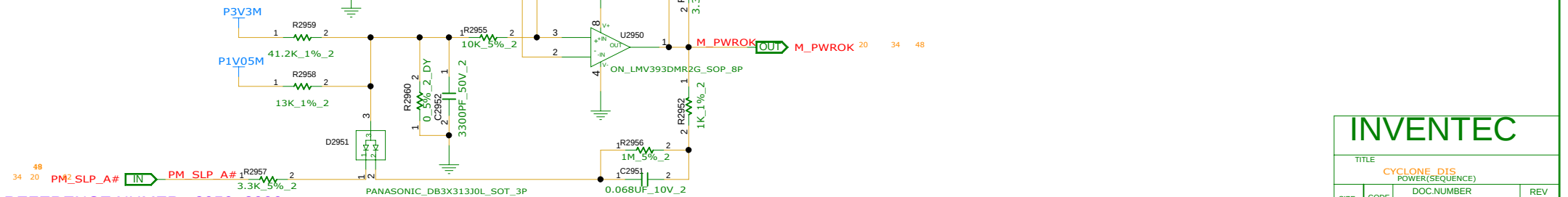
TITLE			
CYCLONE D1S POWER (SLEEP)			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01

CHANGE by XXX DATE 26-NOV-2012 SHEET 19 of 90

REFERENCE NUMER : 7400~7450



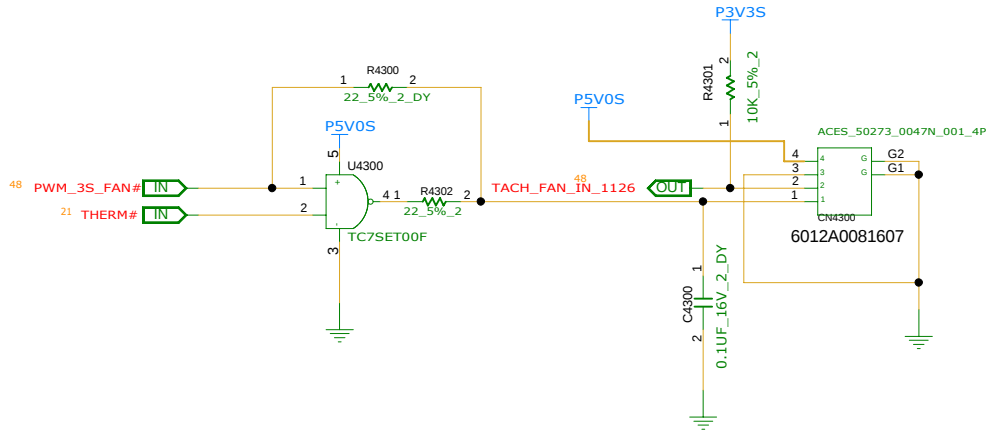
FOR IAMT



REFERENCE NUMER : 2950~2999

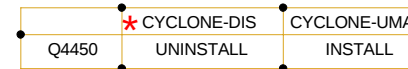
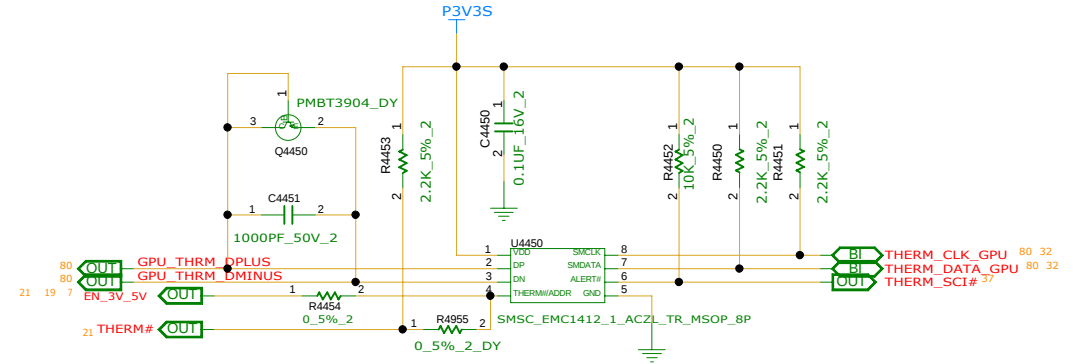
INVENTEC			
TITLE			
CYCLONE DIS POWER(SIQUENCE)			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 20 of 90			

REFERENCE NUMBER:4400~4349

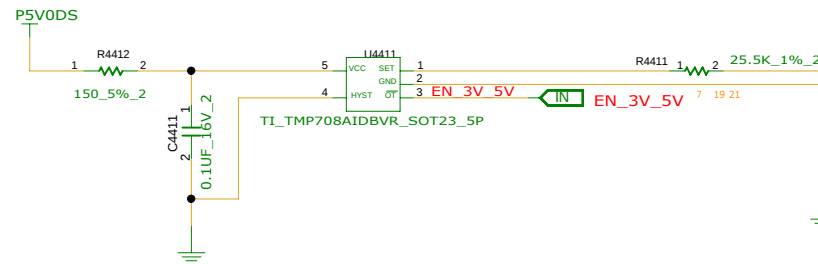


REFERENCE NUMBER:4450~4499

THERM SENSOR



AMBIENT TEMP SENSE

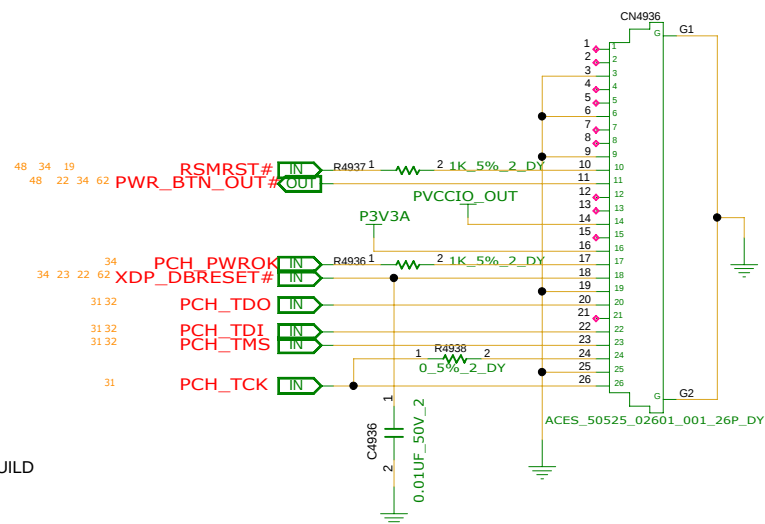
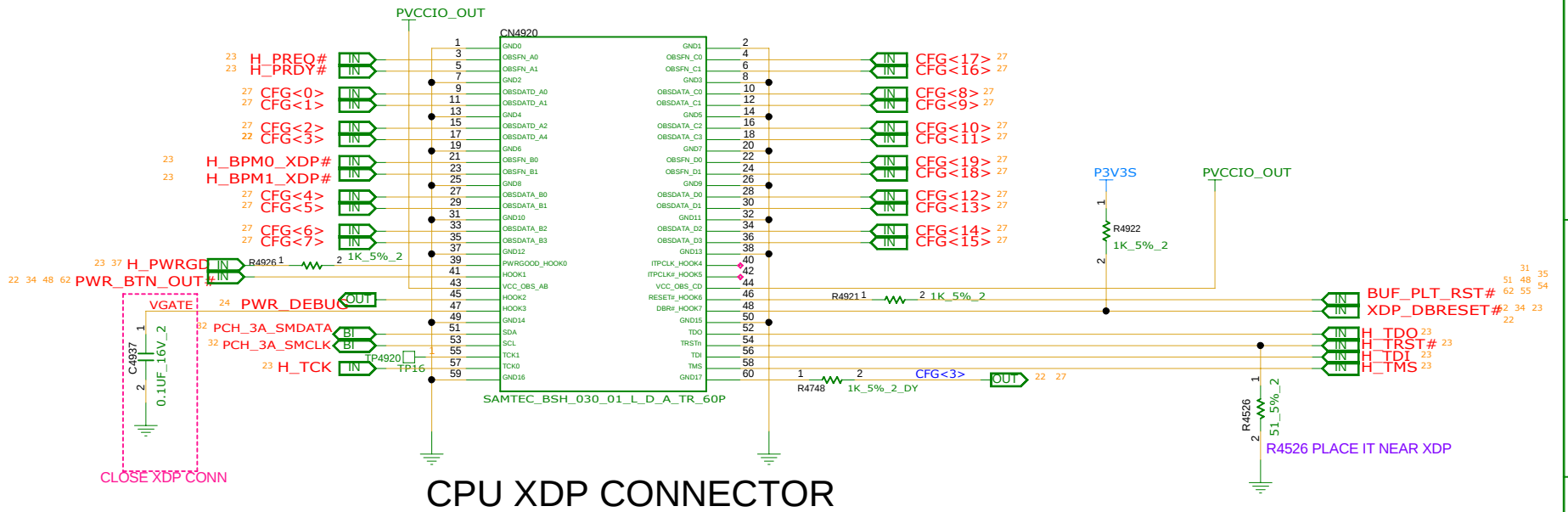


RSET (K OHM) = 0.0012T^2 - 0.9308T + 96.147
THERMAL SHUTDOWN AT 85 DEG.

REFERENCE NUMBER:4411~4449

INVENTEC

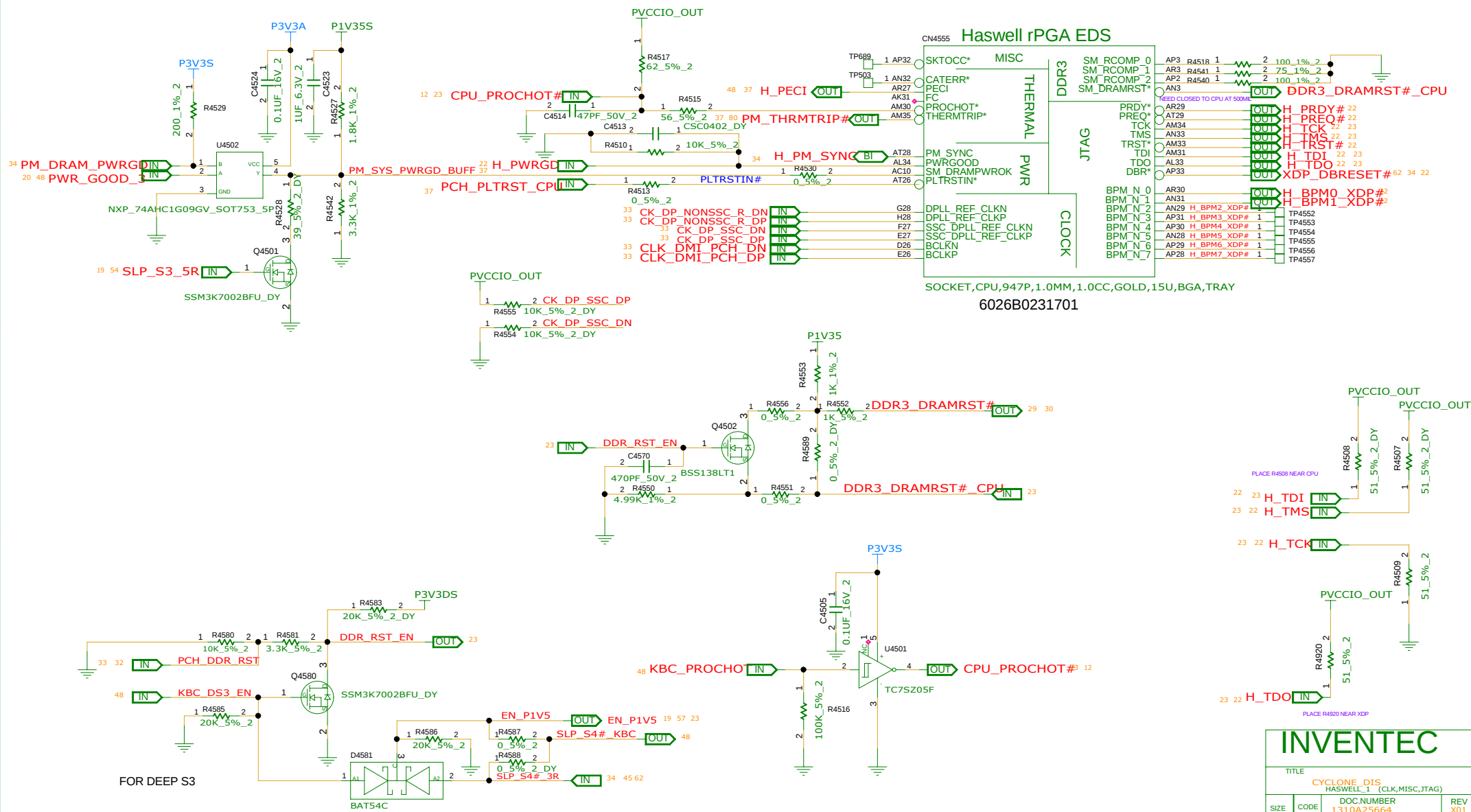
TITLE			
CYCLONE DIS FAN & THERMAL			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01



PCH XDP CONNECTOR

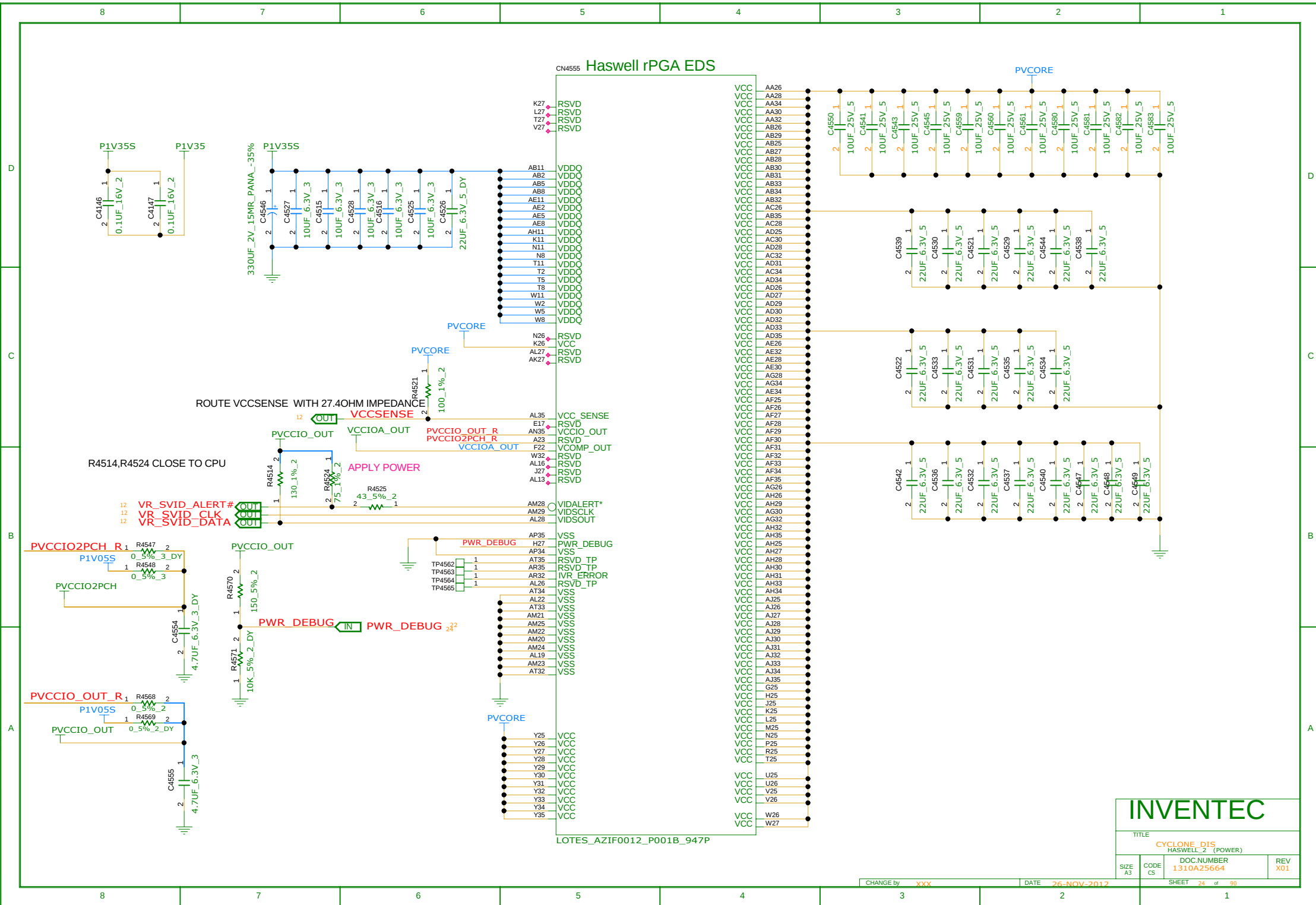
INVENTEC

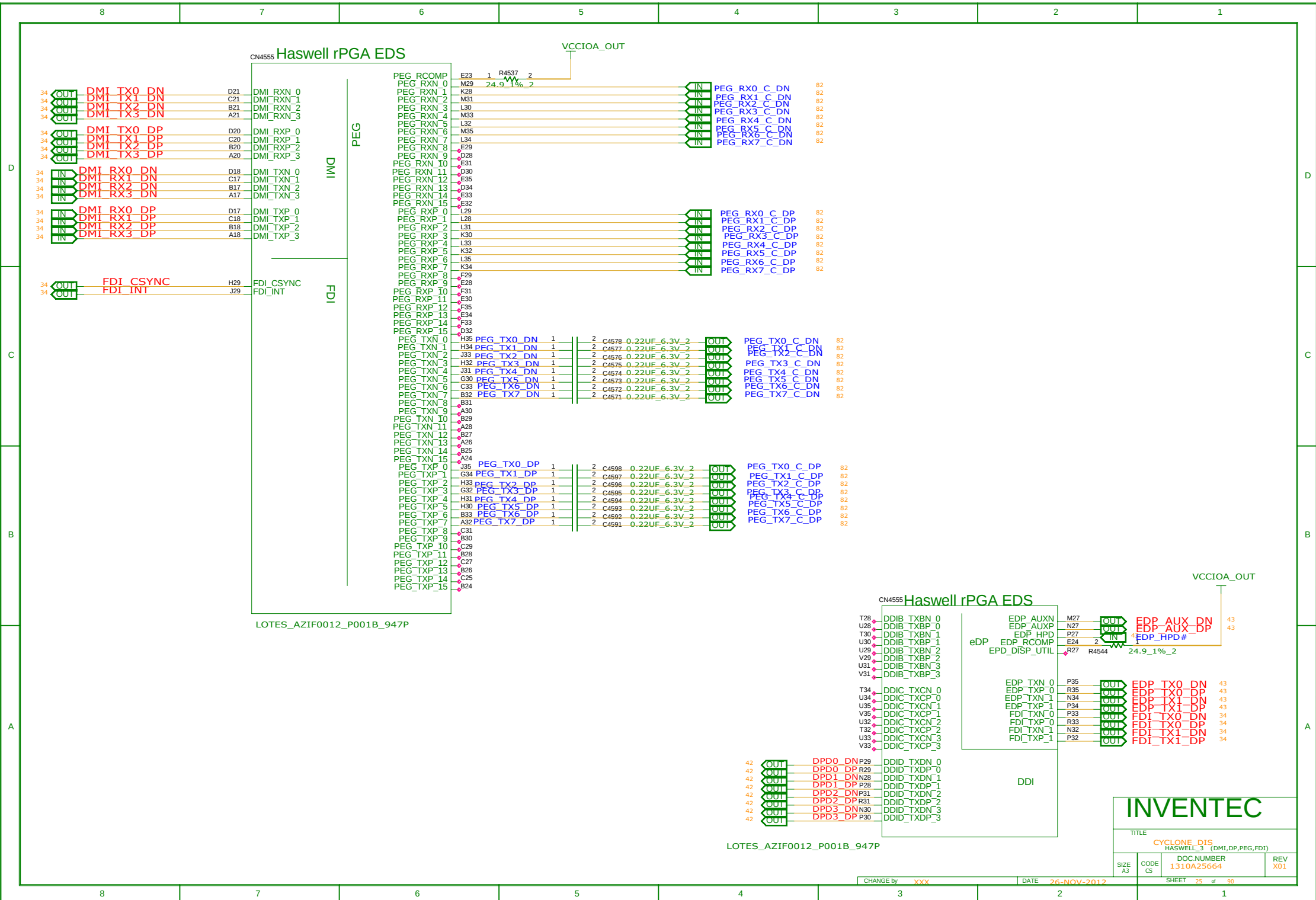
TITLE			
CYCLONE DIS XDP CONN			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01
SHEET 22 of 90			

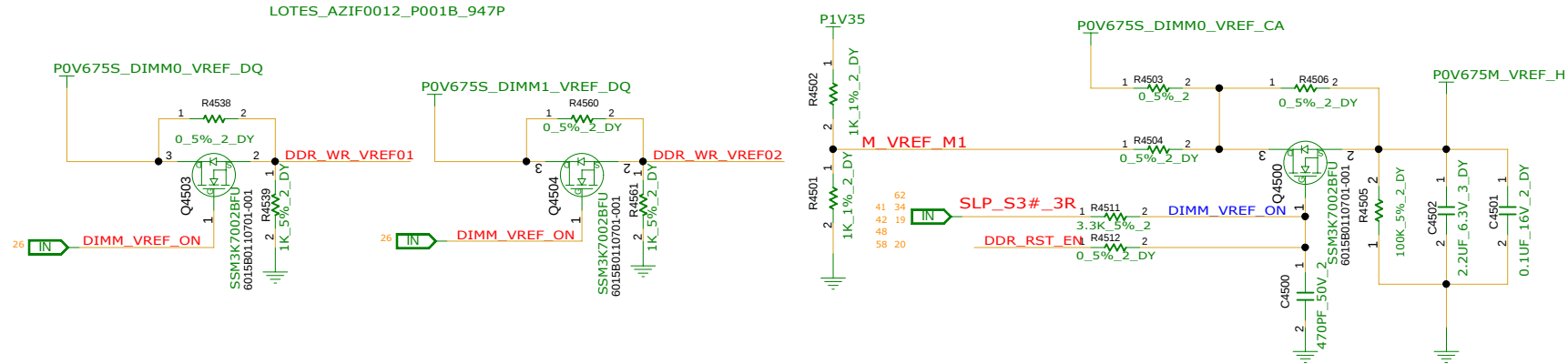
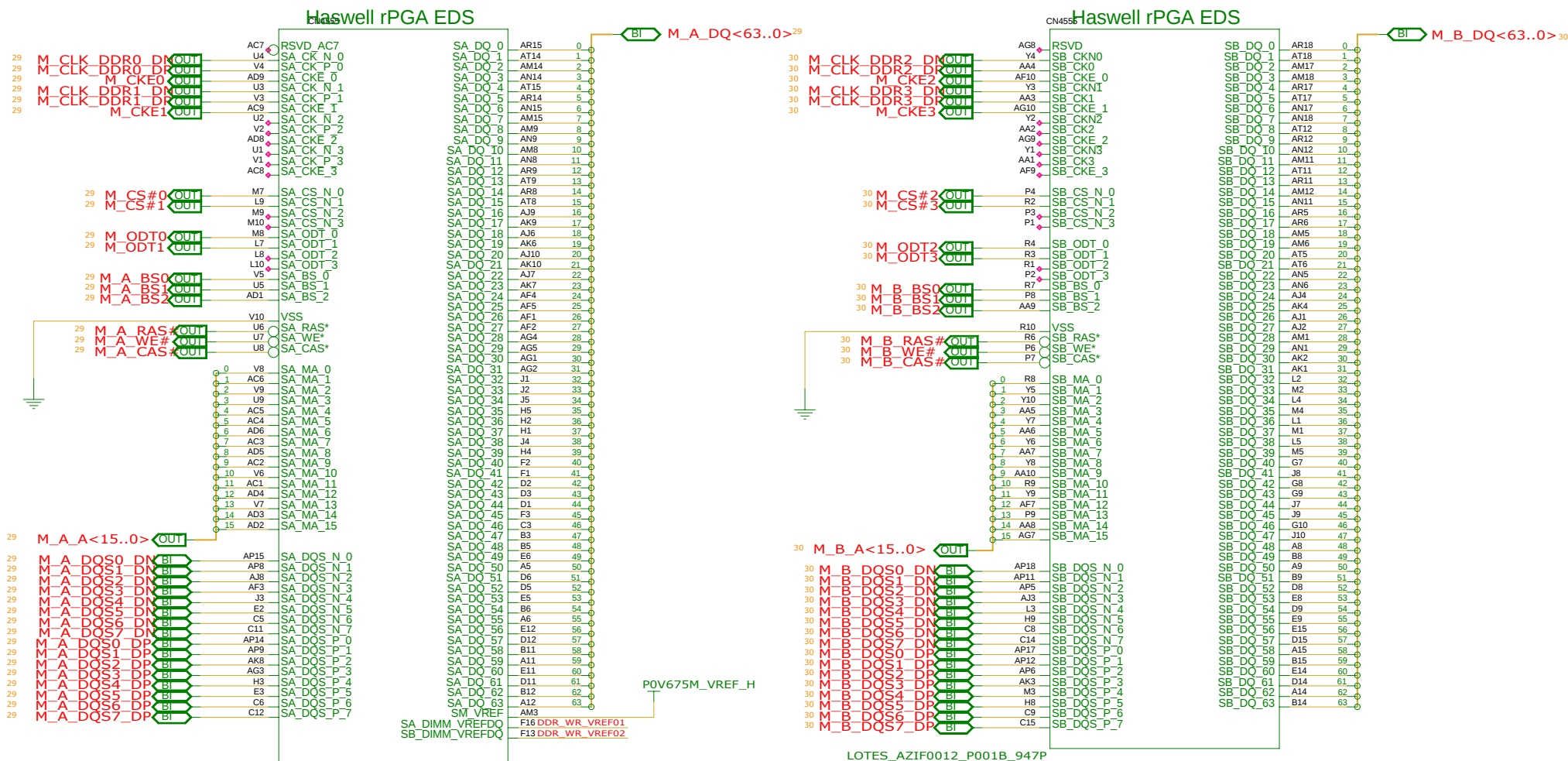


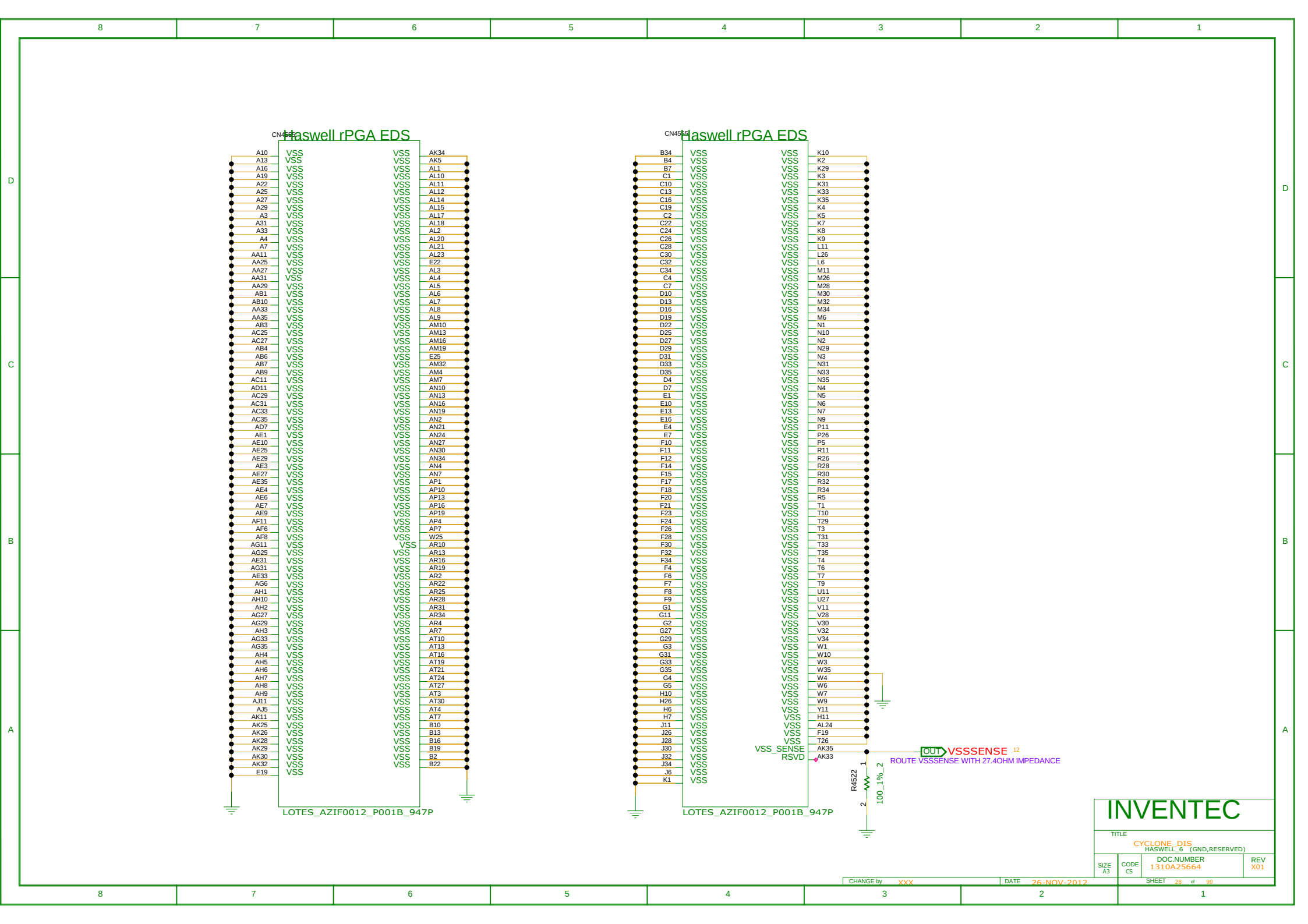
INVENTEC

TITLE			
CYCLONE_DIS HASWELL_1 (CLK,MISC,JTAG)			
SIZE A3	CODE CS	DOC.NUMBER 1310A25664	REV X01
SHEET 23 of 90			









INVENTEC

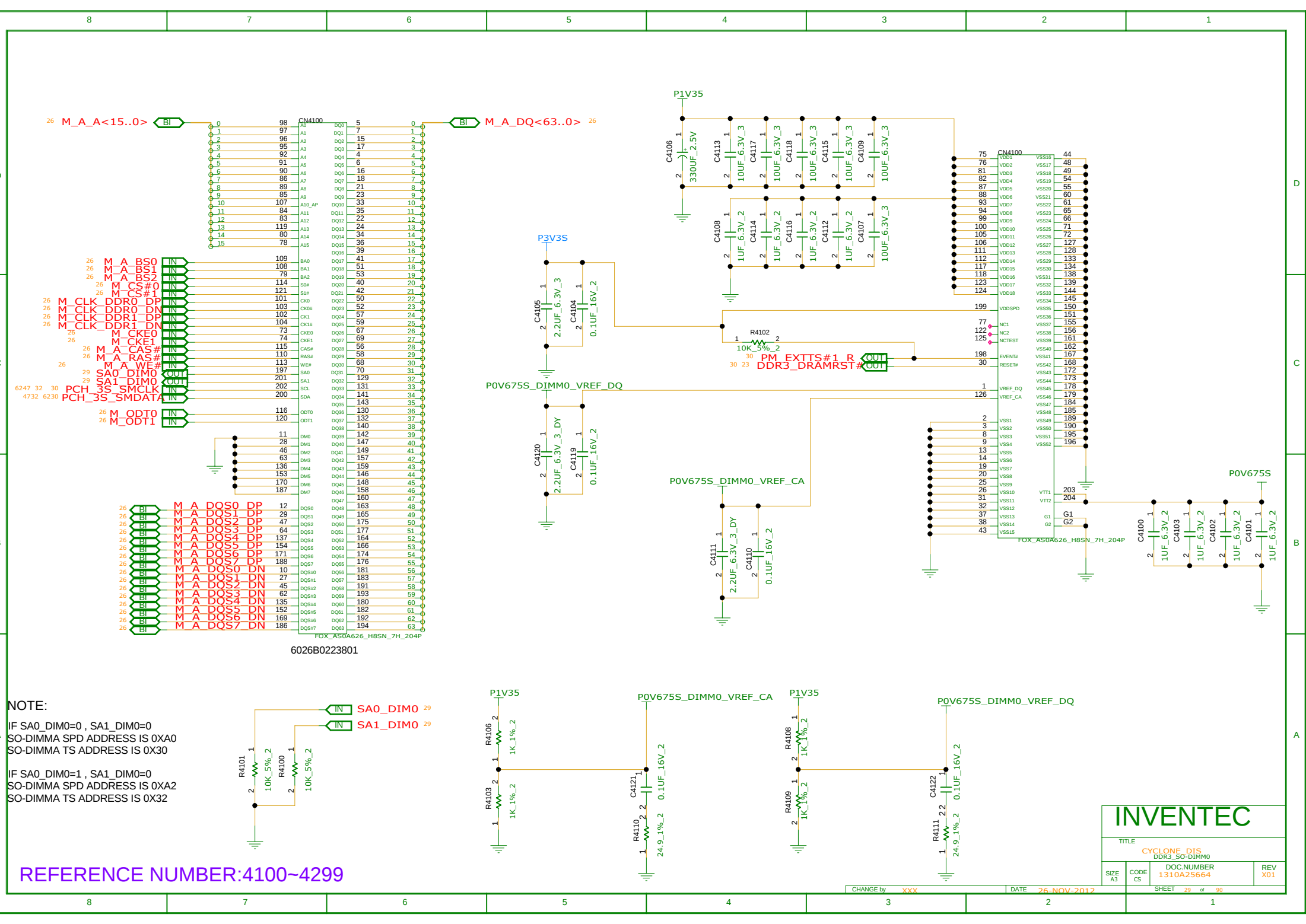
TITLE CYCLONE D1S HASWELL_6 (GND,RESERVED)

DOC NUMBER 1310A25664

REV X01

SHEET 28 of 90

CHANGE by XXX DATE 26-NOV-2012

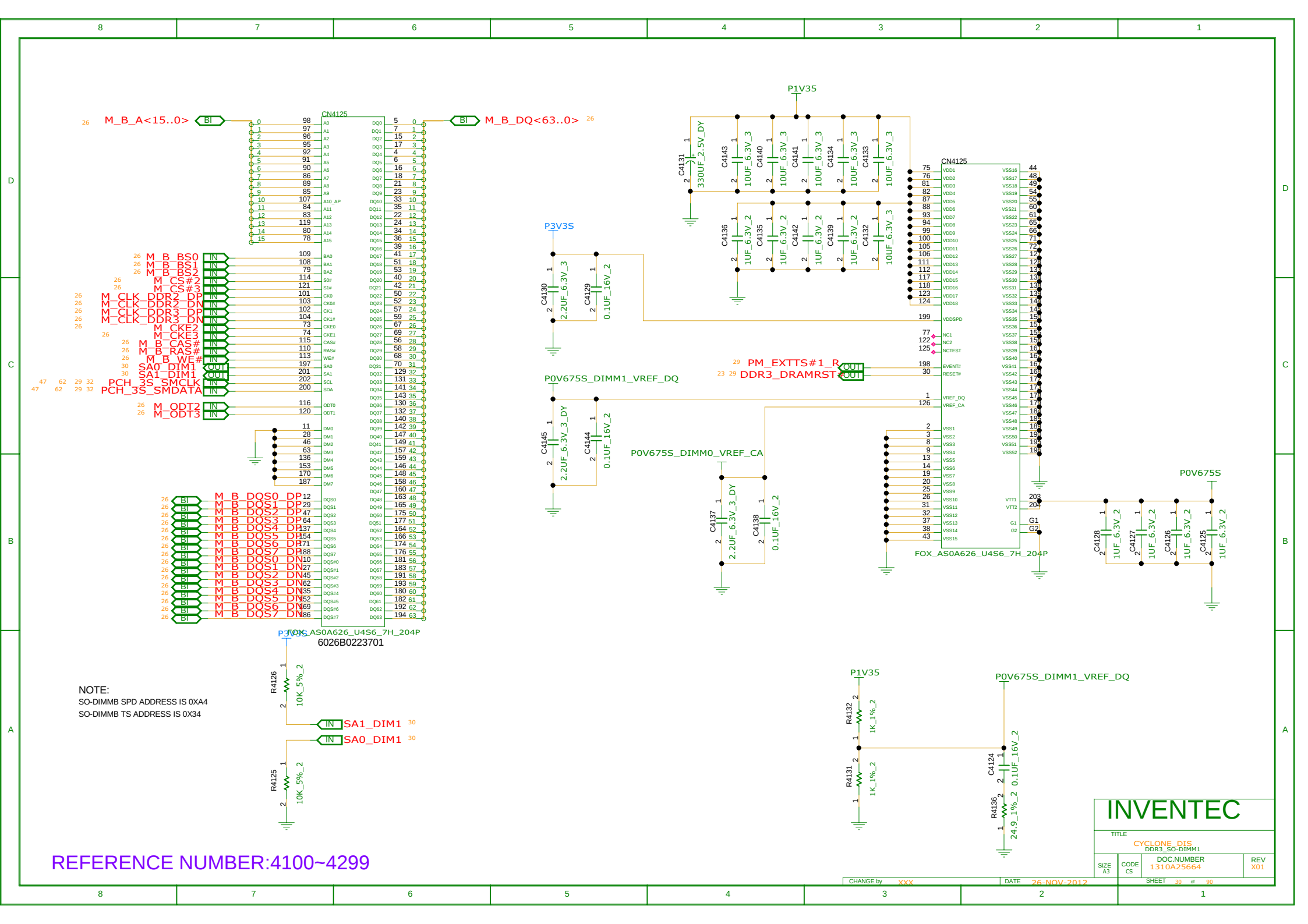


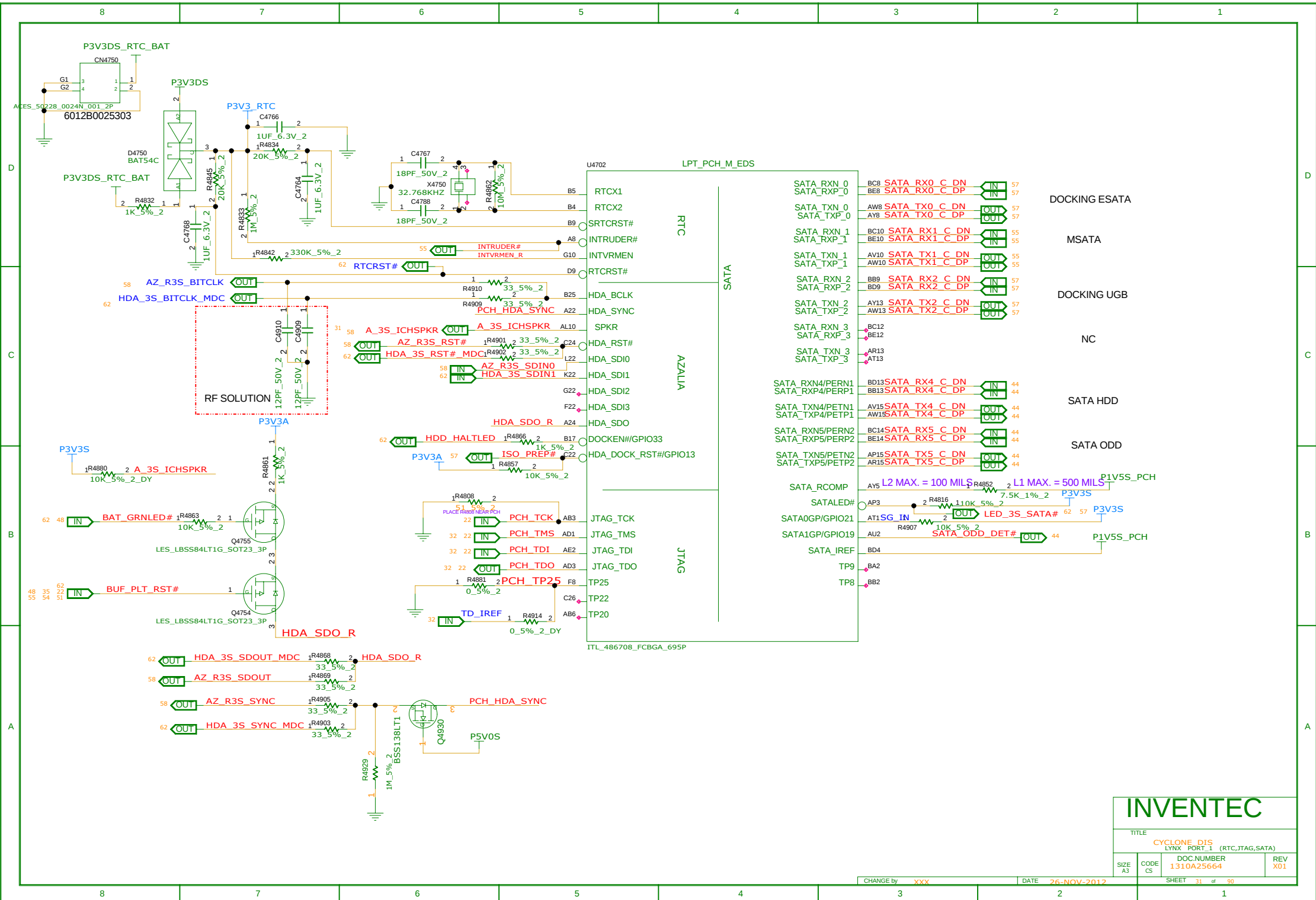
NOTE:
IF SA0_DIM0=0 , SA1_DIM0=0
SO-DIMMA SPD ADDRESS IS 0XA0
SO-DIMMA TS ADDRESS IS 0X30

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

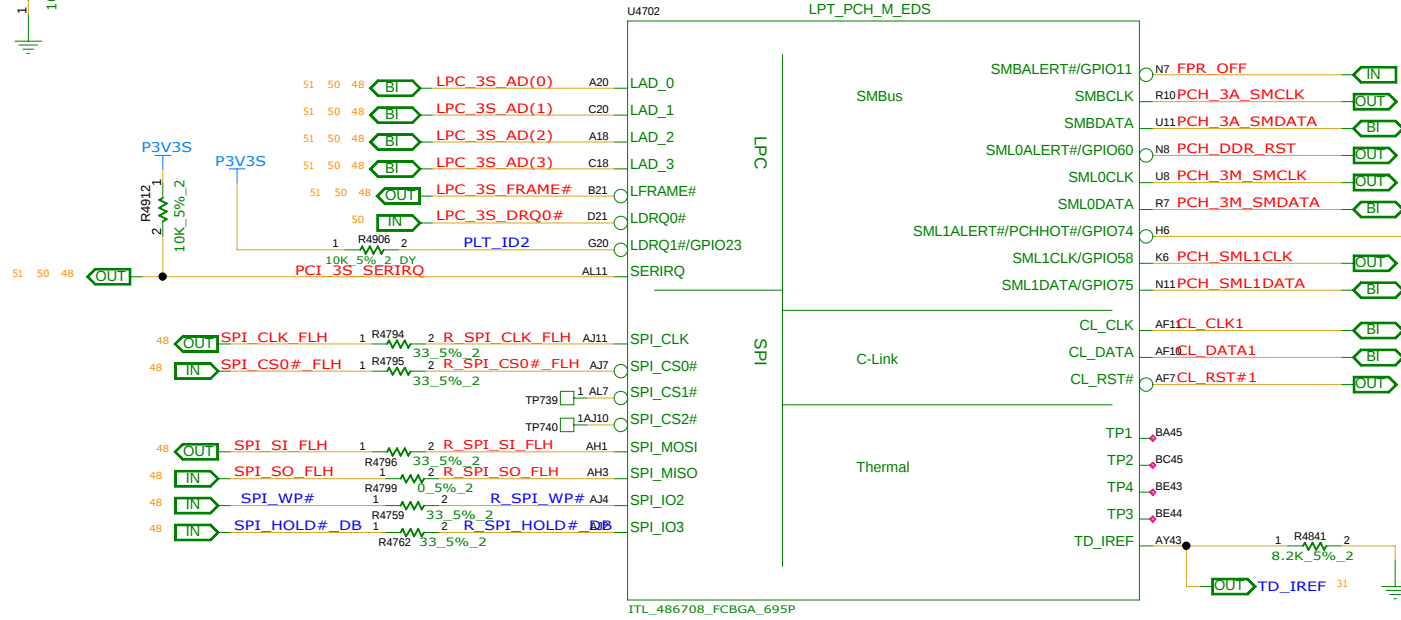
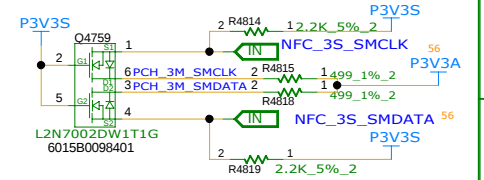
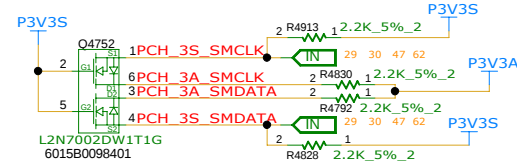
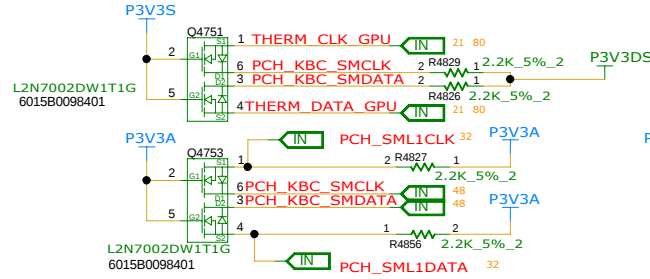
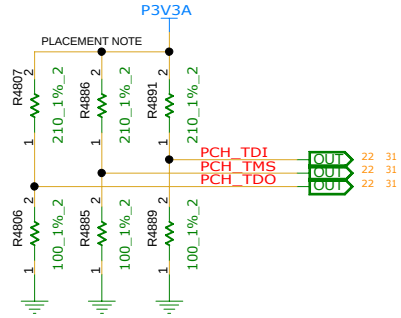
REFERENCE NUMBER:4100~4299

INVENTEC			
TITLE			
CYCLONE DIS DDR3 SO-DIMM0			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 29 of 90			



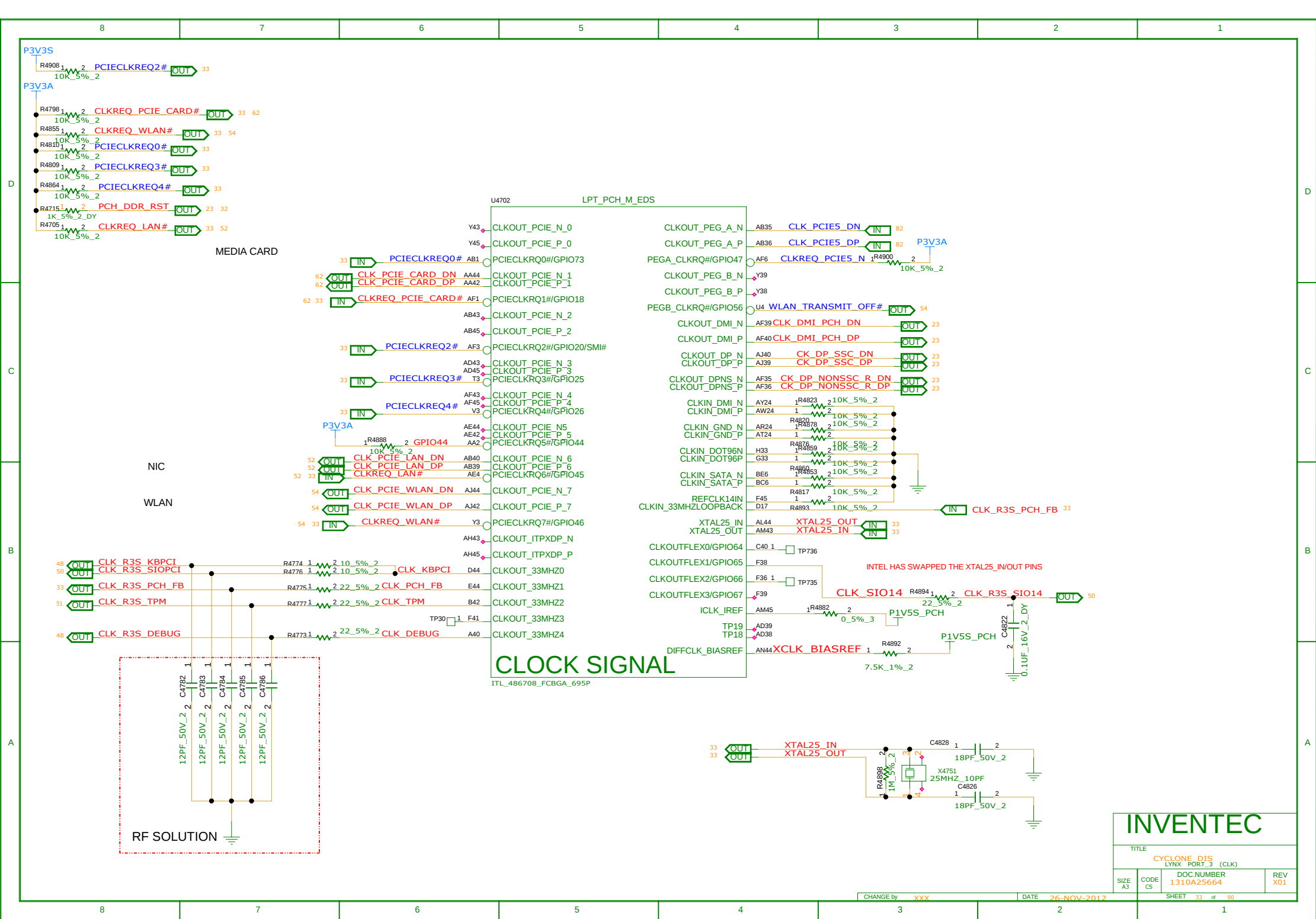


LAYOUT NOTE: JTAG_TMS TERMINATIONS NEED TO BE PLACED NEAR PCH
LAYOUT NOTE: JTAG_TDI TERMINATIONS NEED TO BE PLACED NEAR PCH
LAYOUT NOTE: JTAG_TDO TERMINATIONS NEED TO BE PLACED NEAR XDP

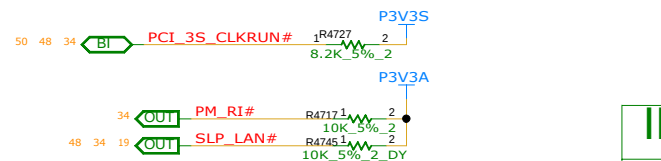
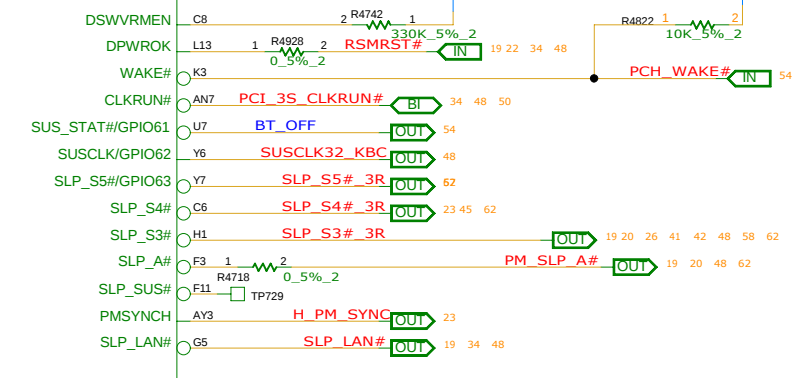
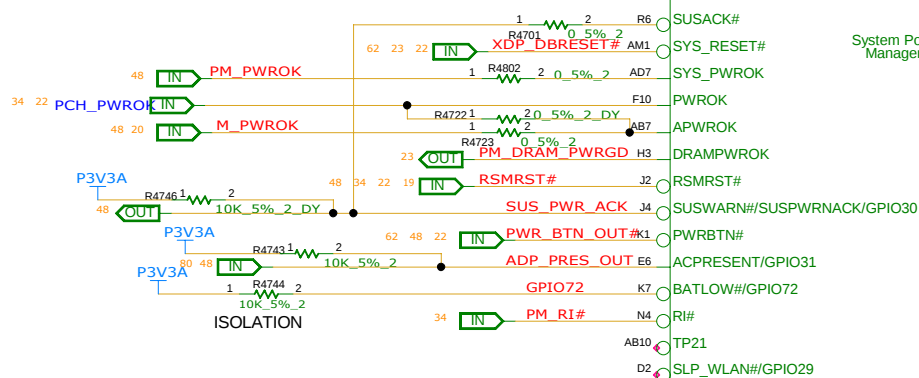
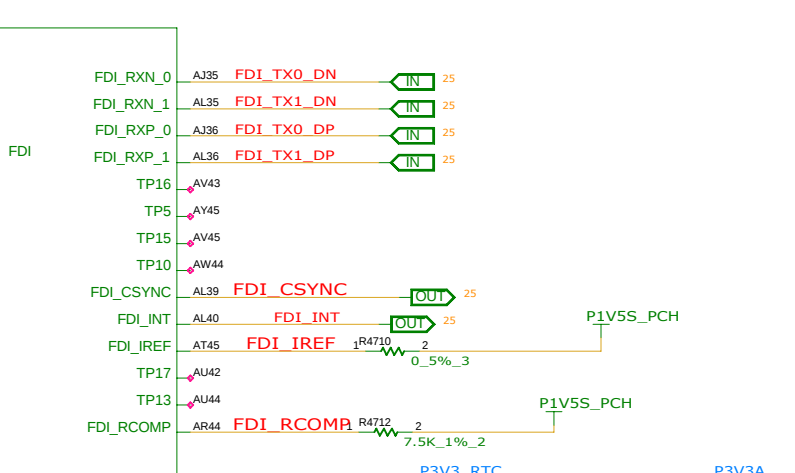
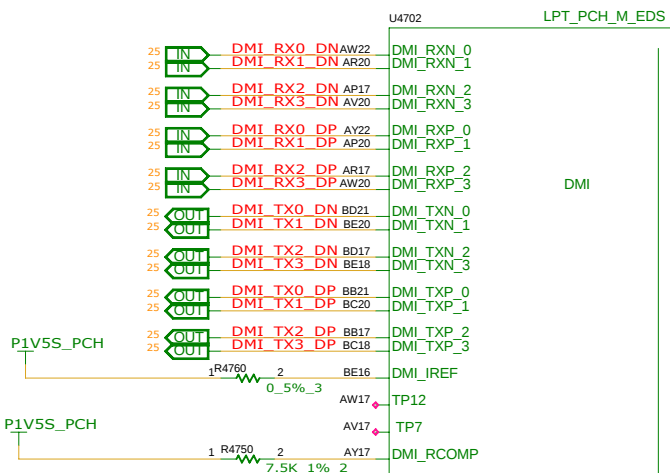
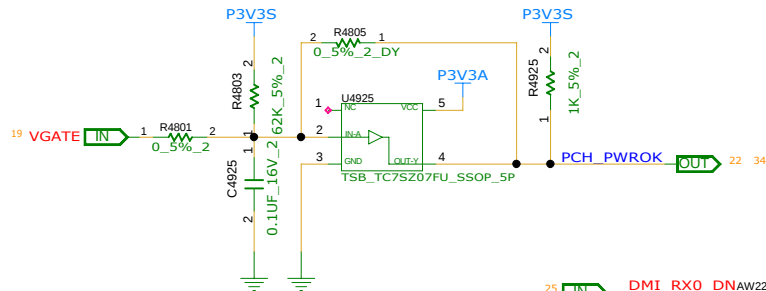


INVENTEC

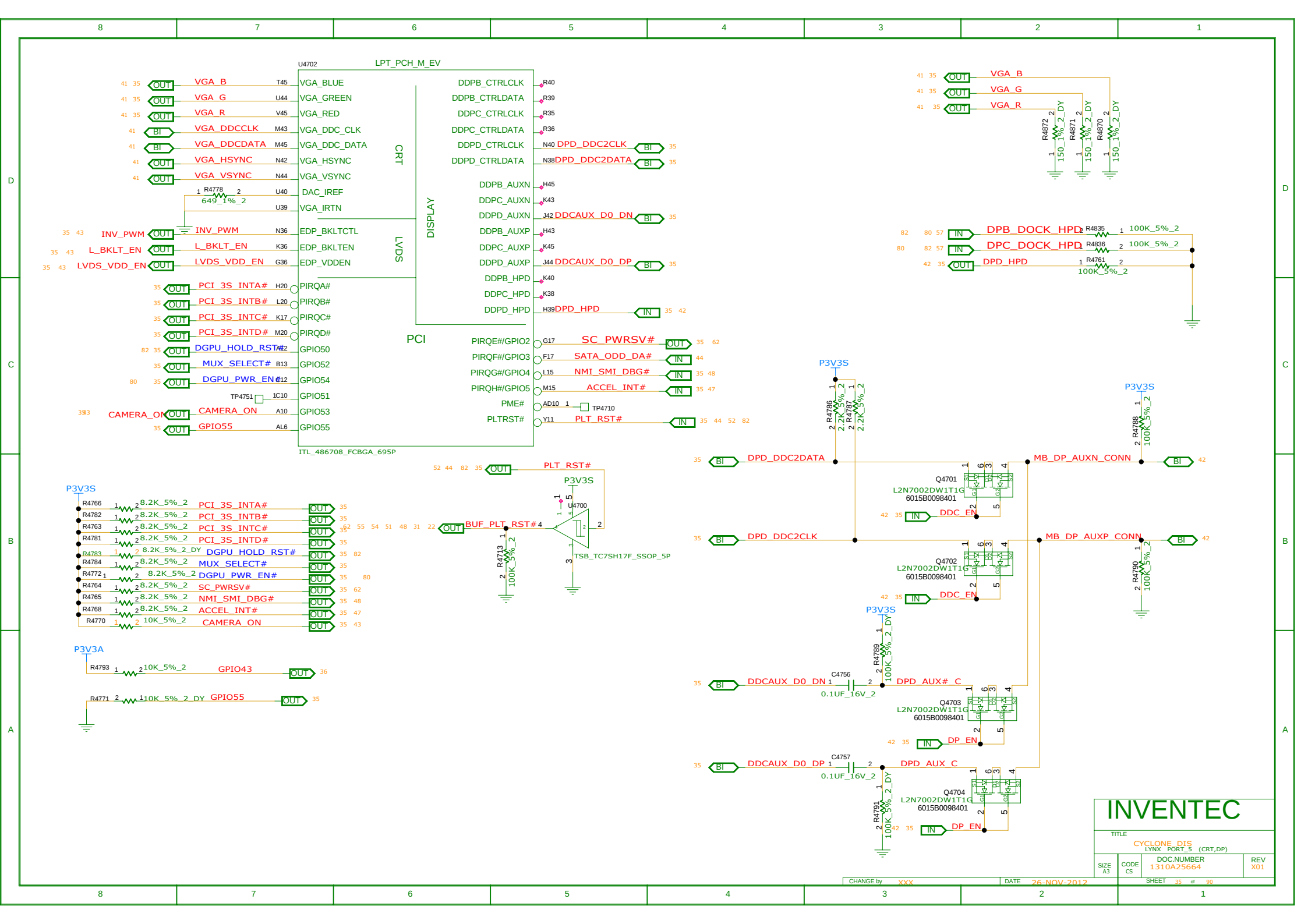
TITLE			
CYCLONE_DIS			
LWXX_PORT_2 (SPI,SMBUS,CL)			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01

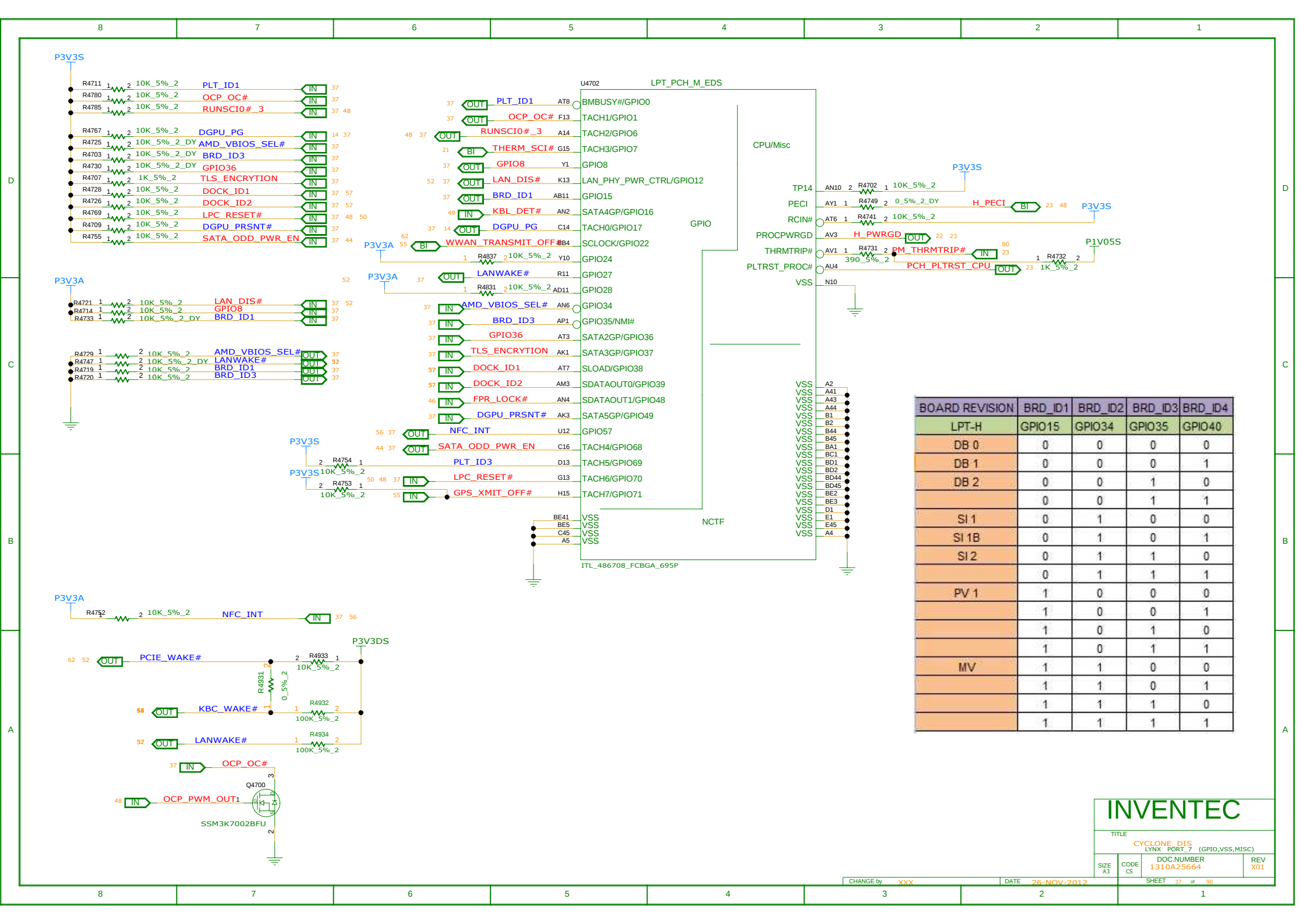


	IAMT	NON-IAMT
R4718	INSTALL	UNINSTALL
R4723	INSTALL	UNINSTALL
R4722	UNINSTALL	INSTALL



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

SIZE A3

CODE CS

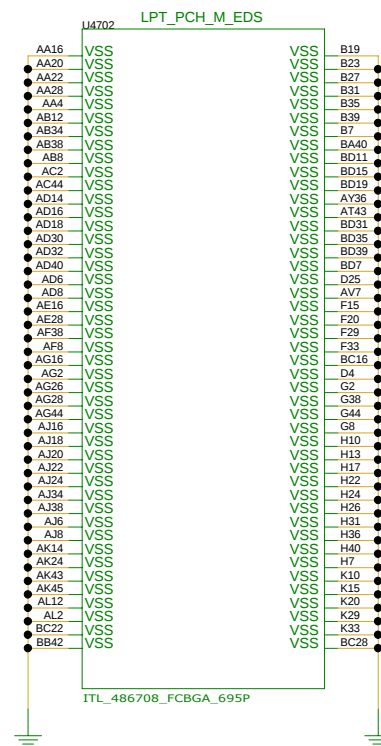
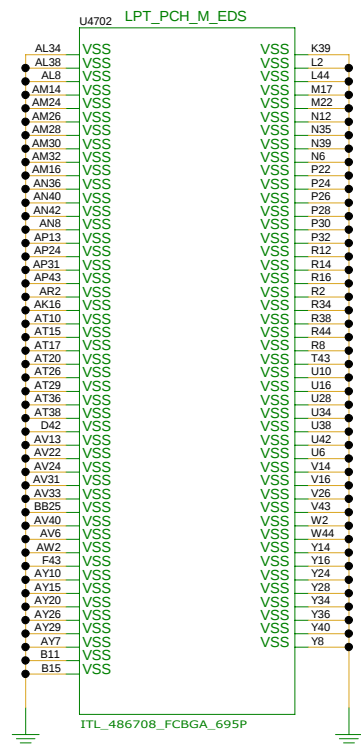
DOC NUMBER 1310A25664

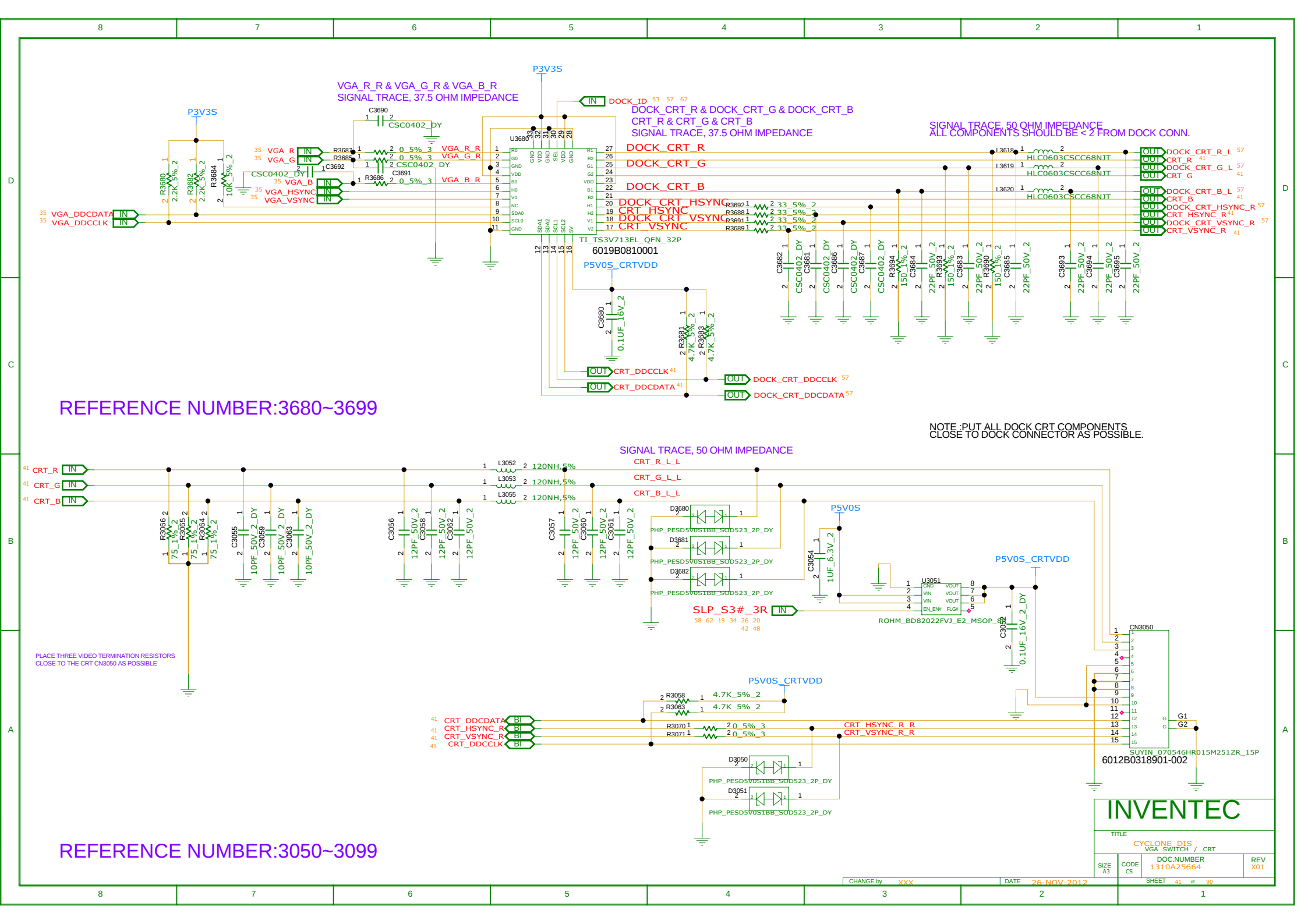
REV X01

DATE 26-NOV-2012

CHANGE by XXX

SHEET 37 of 90





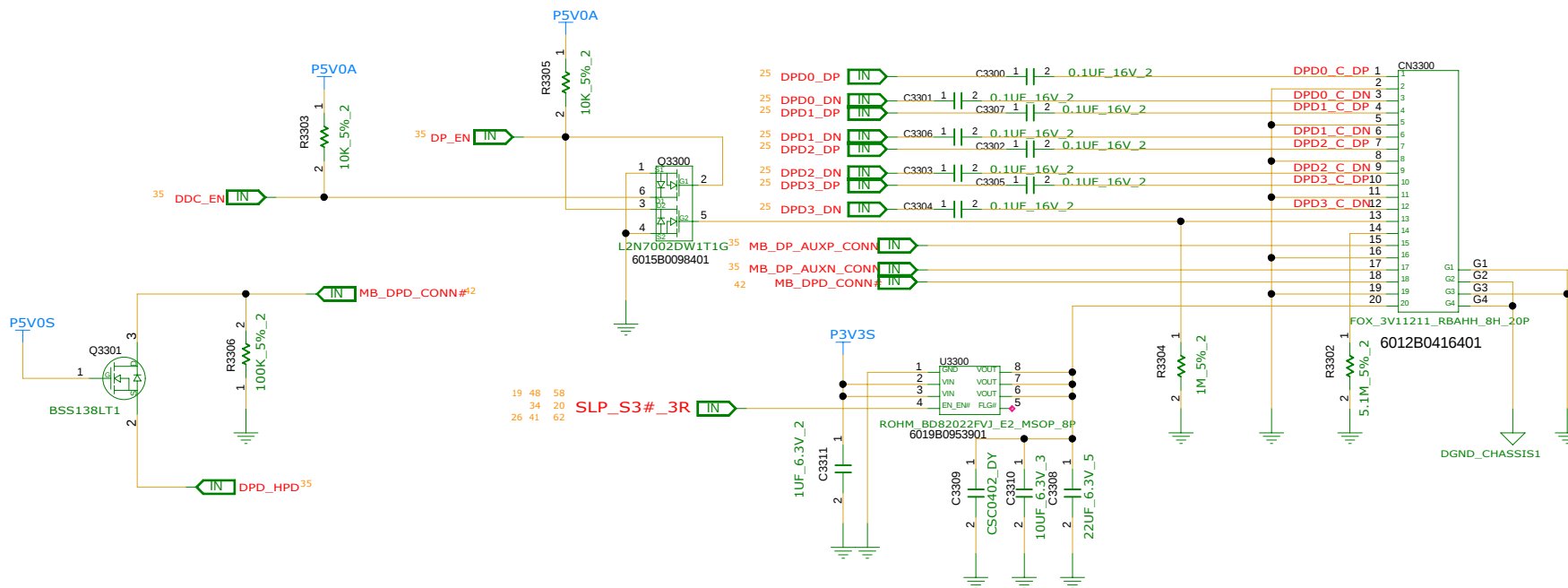
REFERENCE NUMBER:3680~3699

REFERENCE NUMBER:3050~3099

NOTE: PUT ALL DOCK CRT COMPONENTS
CLOSE TO DOCK CONNECTOR AS POSSIBLE.

INVENTEC			
TITLE CYCLONE DIS VGA SWITCH / CRT			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 41 of 90			

REFERENCE NUMBER:3300~3399



INVENTEC

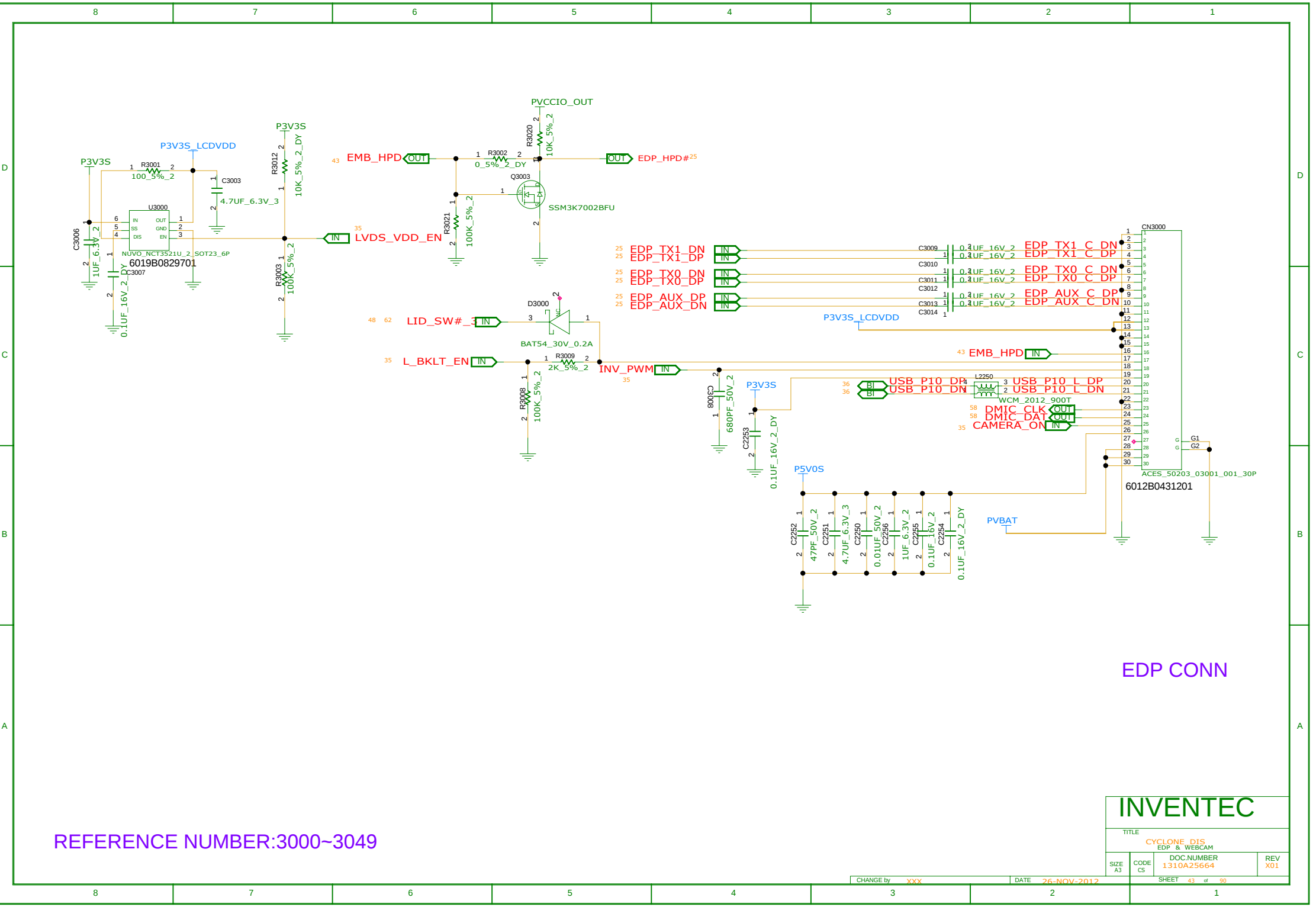
TITLE
CYCLONE_DISPLAY_PORT_CNTR

DOC NUMBER
1310A25664

REV
X01

CHANGE by XXX DATE 26-NOV-2012

SHEET 42 of 90



REFERENCE NUMBER:3000~3049

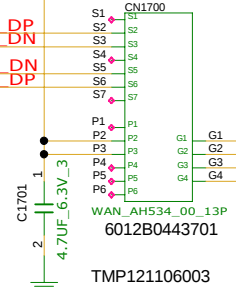
EDP CONN

INVENTEC			
TITLE CYCLONE DIS EDP & WEBCAM			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
CHANGE by XXX DATE 26-NOV-2012 SHEET 43 of 90			

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

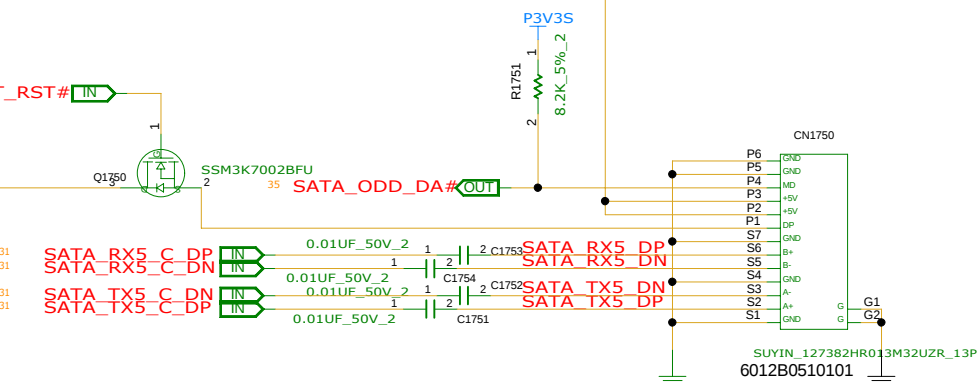
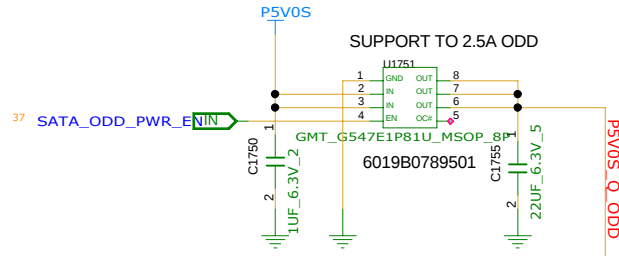
44 31 SATA_RX4_C_DP OUT 0.01UF_50V_2 1 2 C1706 SATA_C_RXP4_I 9
31 44 SATA_RX4_C_DN OUT 0.01UF_50V_2 1 2 C1707 SATA_C_RXN4_I 7
44 31 SATA_TX4_C_DN IN 0.01UF_50V_2 1 2 C1708 SATA_C_TXN4_I 2
31 44 SATA_TX4_C_DP IN 0.01UF_50V_2 1 2 C1709 SATA_C_TXP4_I 4

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



SATA HDD CONN

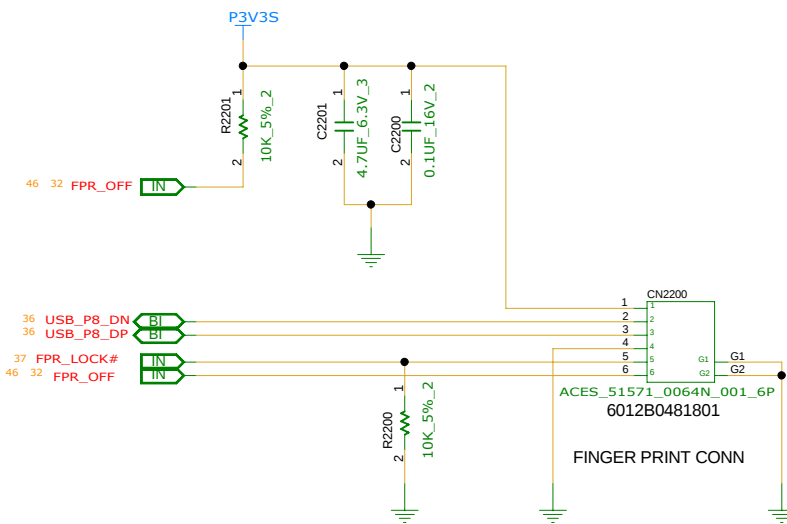
REFERENCE NUMBER:1700~1749



REFERENCE NUMBER:1750~1799

SATA ODD

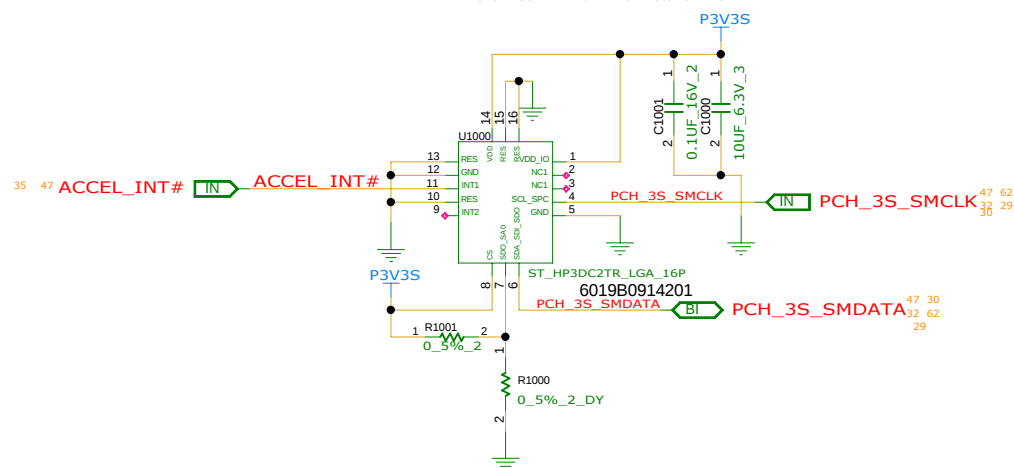
INVENTEC			
TITLE			
CYCLONE_D1S SATA HDD 8. ODD CNTR			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 44 of 90			



REFERENCE:2200~2249

INVENTEC			
TITLE			
CYCLONE DIS FINGER PRINTER CNTR			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 46 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

REFERENCE NUMBER : 300-399



INVENTEC			
TITLE			
CYCLONE_DIS			
KBC			
SIZE	CODE	DOC NUMBER	REV
C	CS	1310A23504	X01
SHEET		48	OF 48

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>

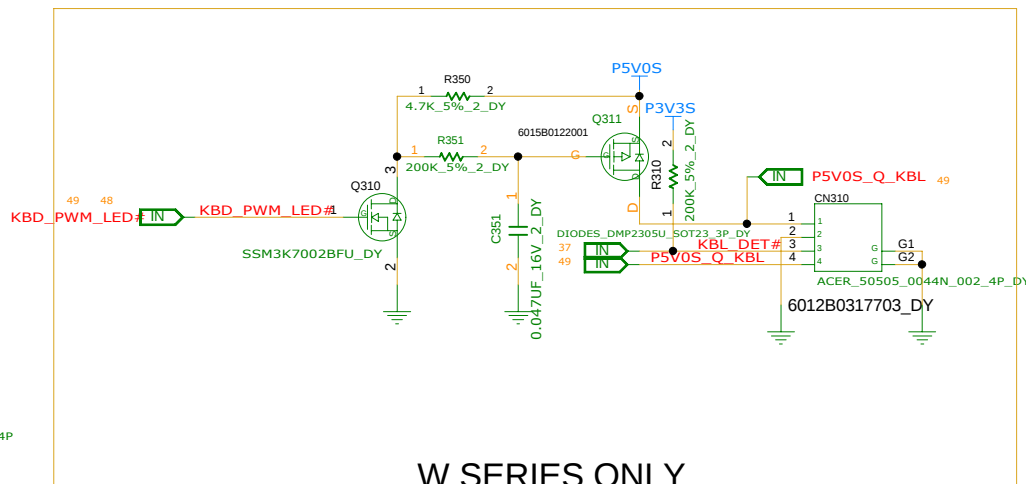
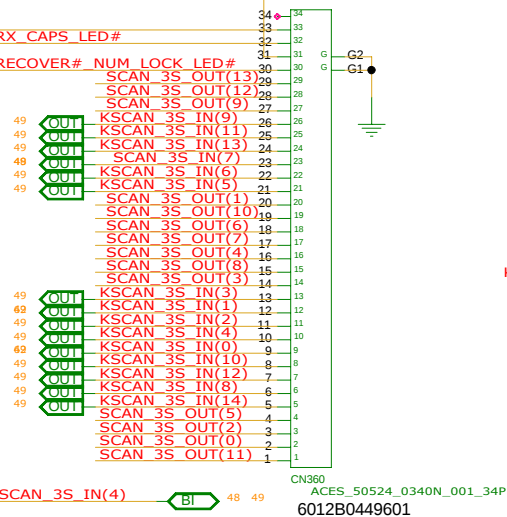
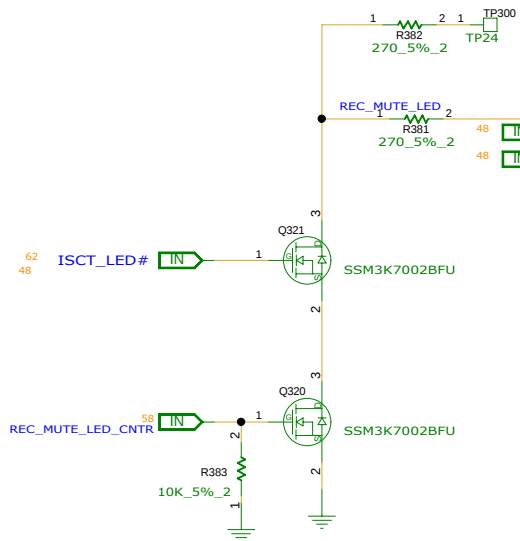
SCAN_3S_IN<7..0> OUT

SCAN_3S_IN<7..0>

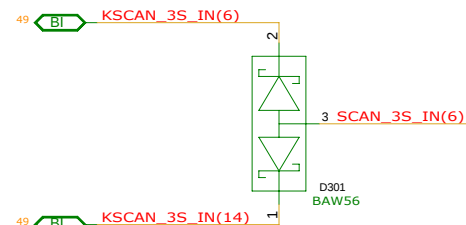
0 SCAN_3S_IN<0>
1 SCAN_3S_IN<1>
2 SCAN_3S_IN<2>
3 SCAN_3S_IN<3>
4 SCAN_3S_IN<4>
5 SCAN_3S_IN<5>
6 SCAN_3S_IN<6>
7 SCAN_3S_IN<7>

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



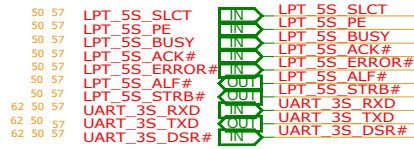
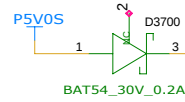
W SERIES ONLY



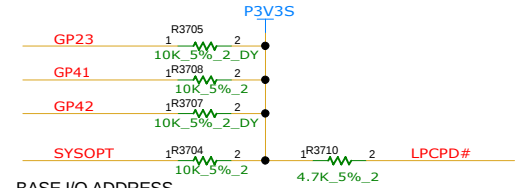
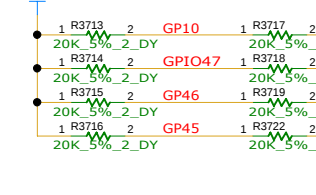
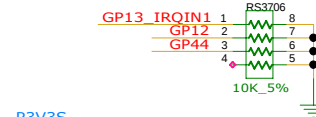
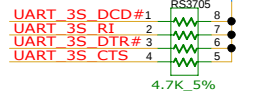
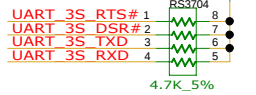
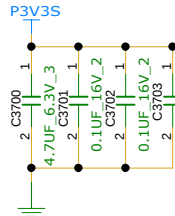
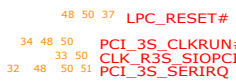
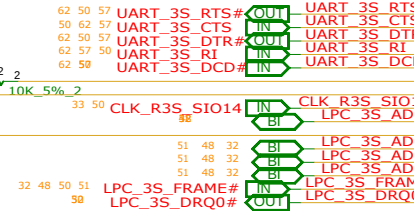
REFERENCE NUMER : 300~389

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

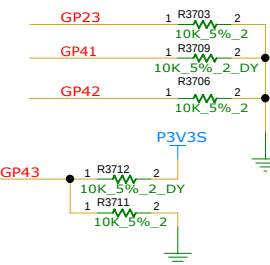
CHANGE by XXX DATE 26-NOV-2012



P3V3S



BASE I/O ADDRESS
0 = 02EH
*1 = 04EH



REFERENCE NUMER : 3700~3799

INVENTEC

TITLE			
CYCLONE DIS SUPER I/O			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01



INVENTEC

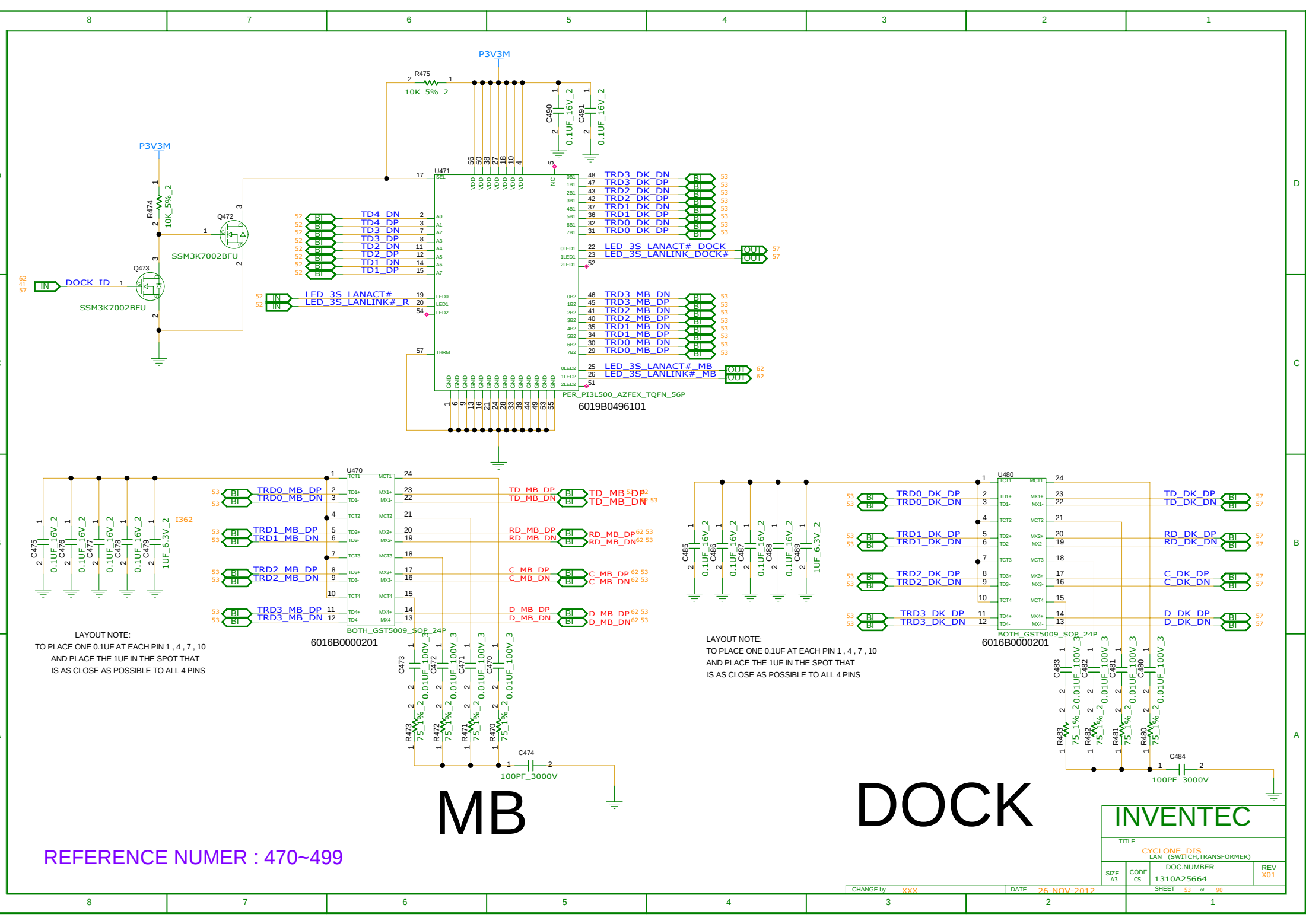
CHANGE by	XXX	DATE	26-NOV-2012
-----------	-----	------	-------------

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			



MB

DOCK

INVENTEC

TITLE
CYCLONE-DIS
LAN (SWITCH, TRANSFORMER)

DOC.NUMBER
1310A25664

REV
X01

D

C

B

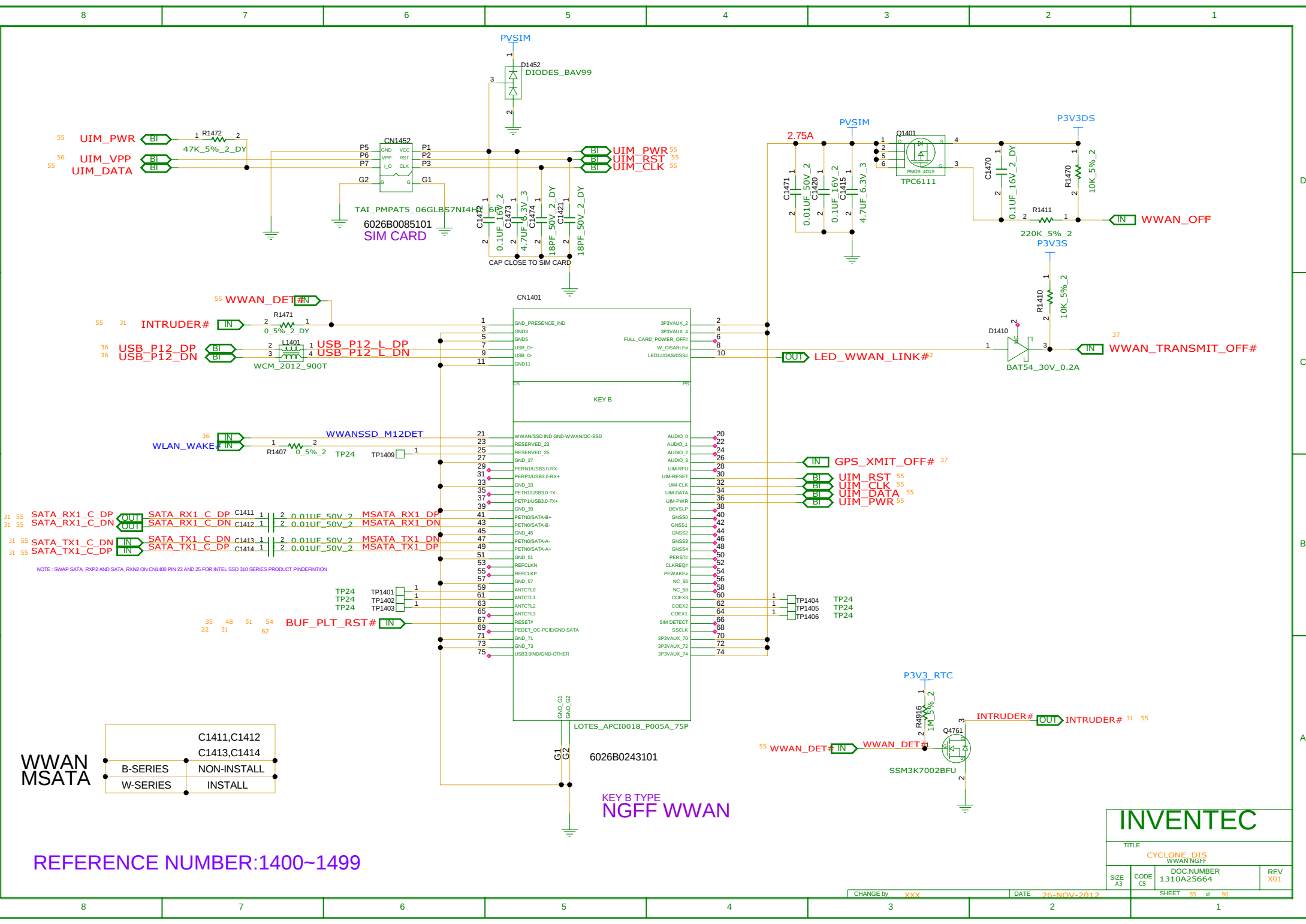
A

D

C

B

A



8

7

6

5

4

3

2

1

8

7

6

5

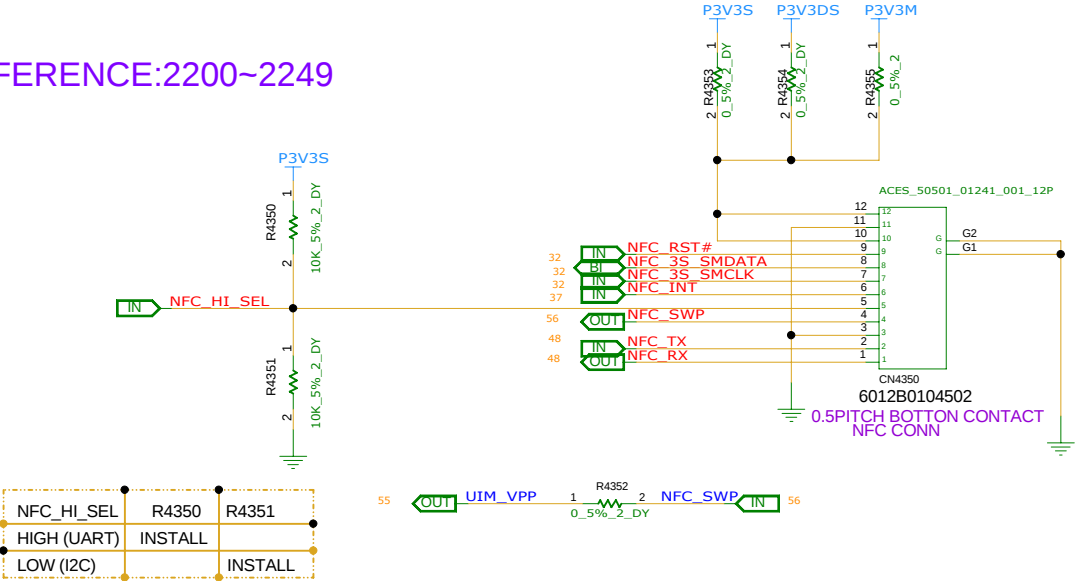
4

3

2

1

REFERENCE:2200~2249



REFERENCE:4350~4399

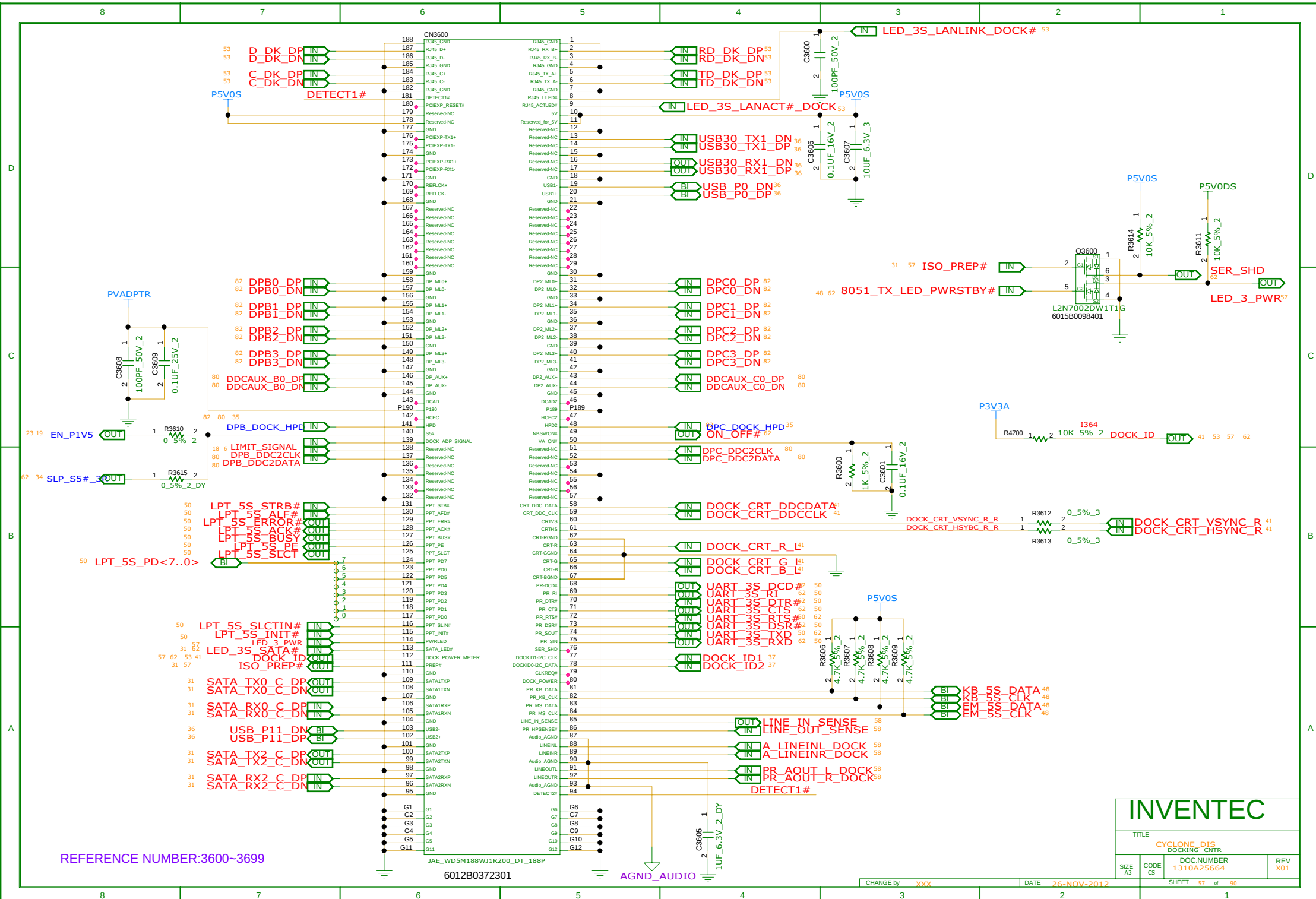
INVENTEC

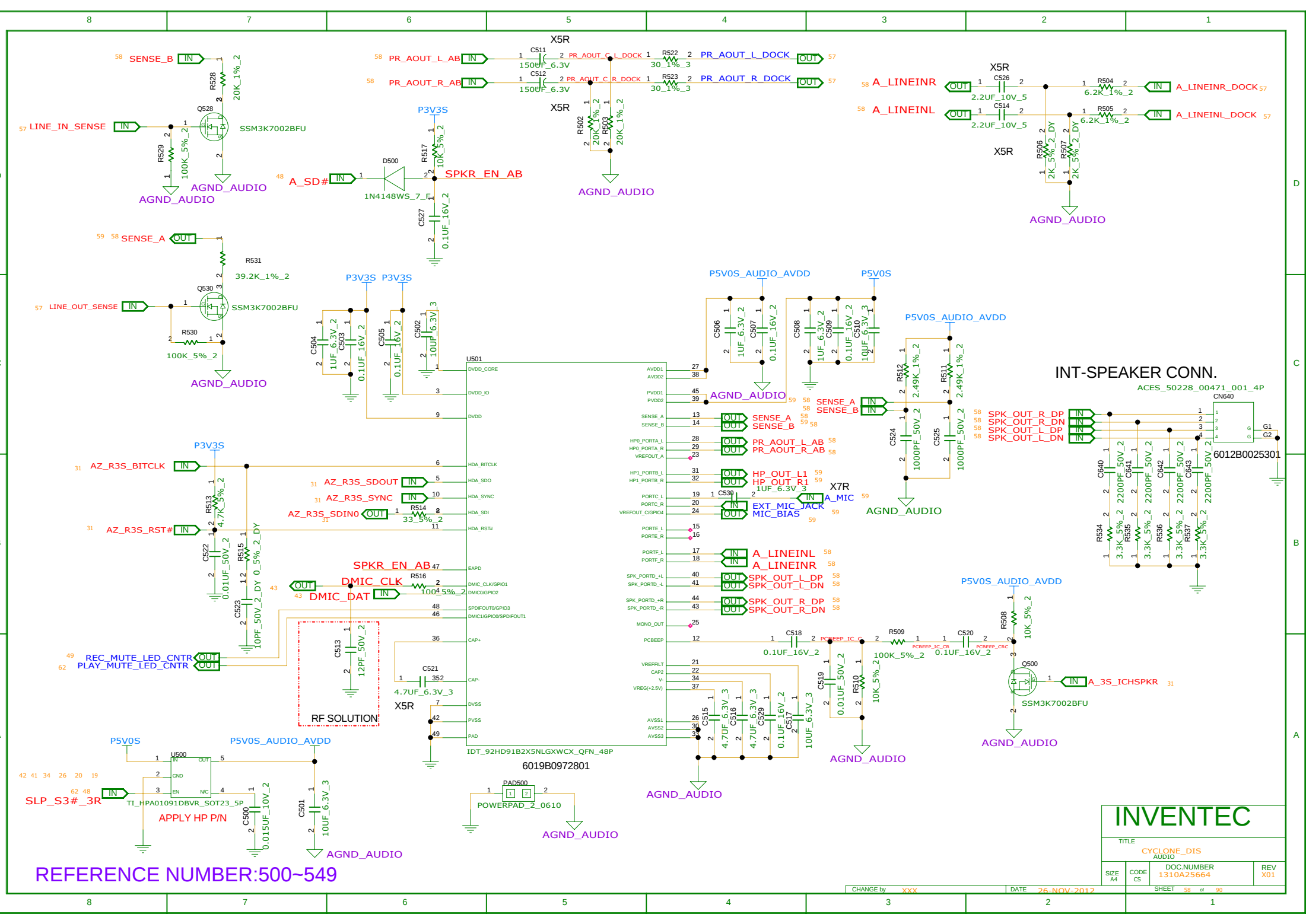
TITLE
CYCLONE_DIS

SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A25664	X01

CHANGE by XXX DATE 26-NOV-2012

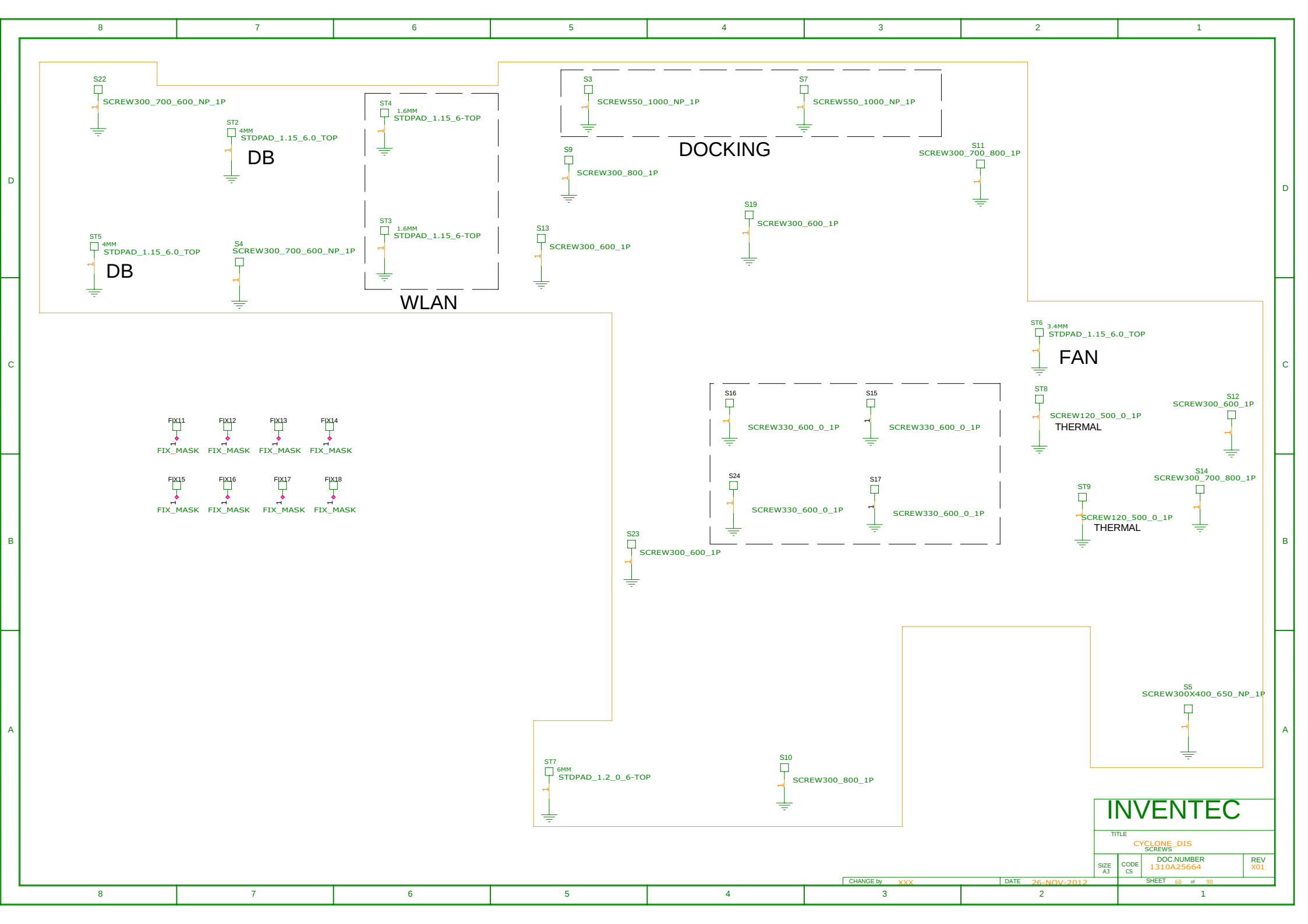
SHEET 56 of 90





REFERENCE NUMBER:500~549

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

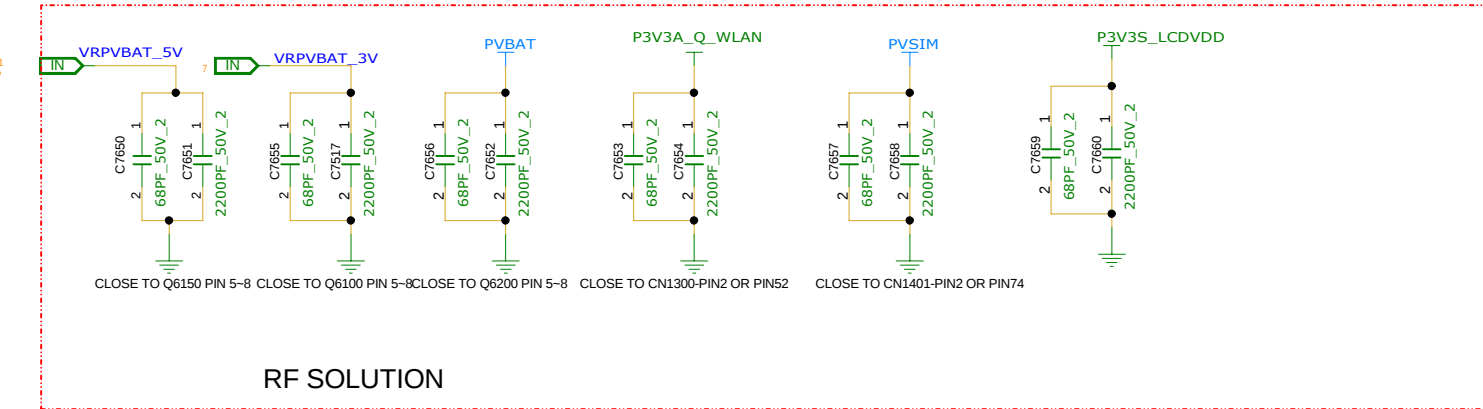
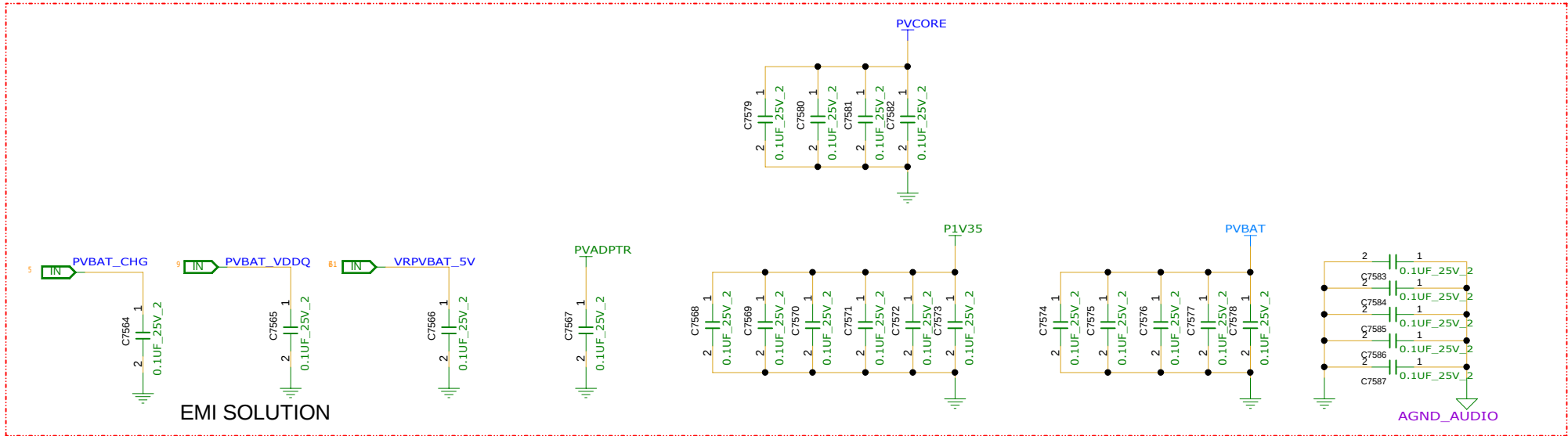


INVENTEC

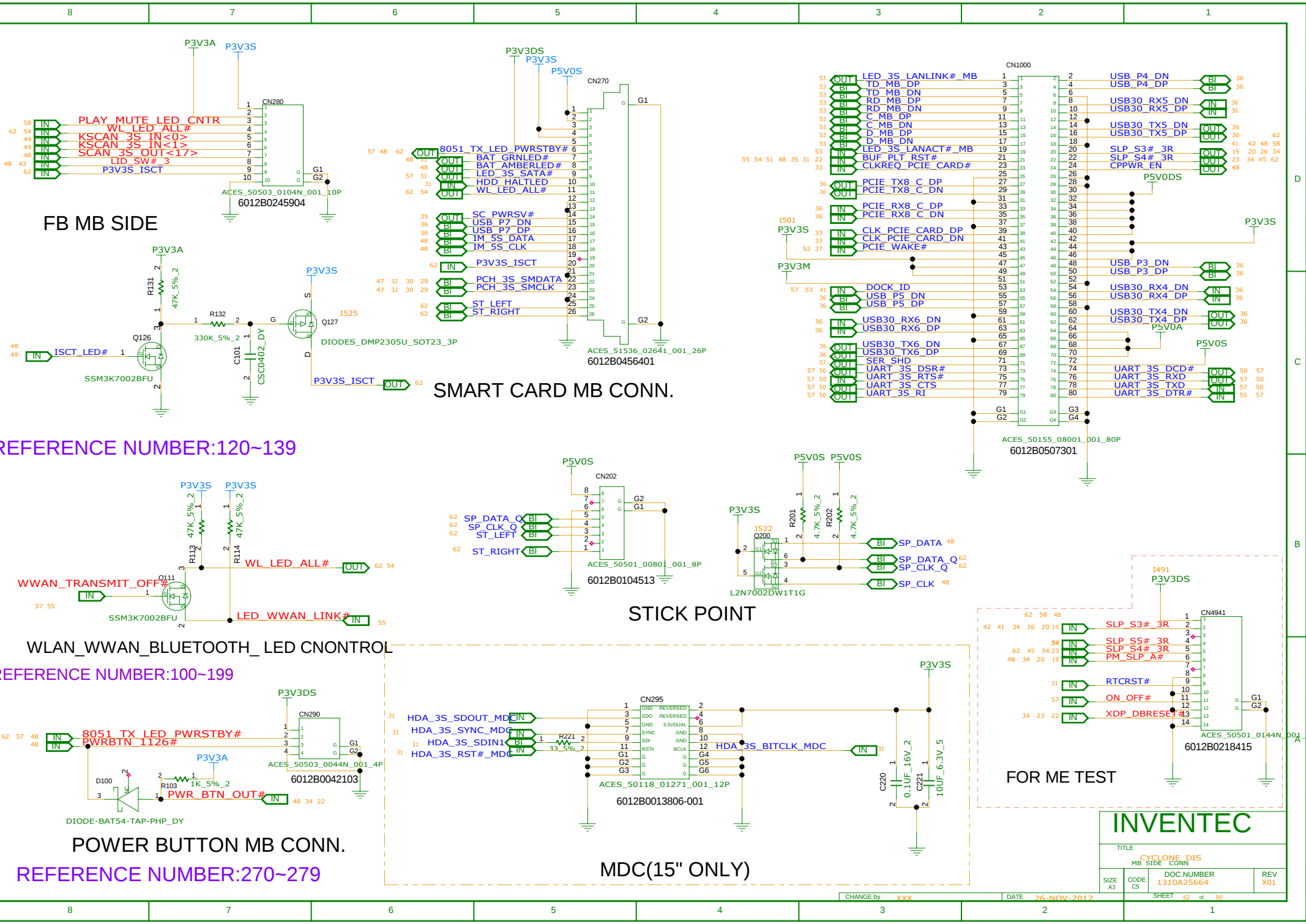
TITLE
CYCLONE_DIS
SCREWS

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	DOCNUMBER 1310A25664	
			REV X01



FB MB SIDE

SMART CARD MB CONN.

REFERENCE NUMBER:120~139

STICK POINT

REFERENCE NUMBER:100~199

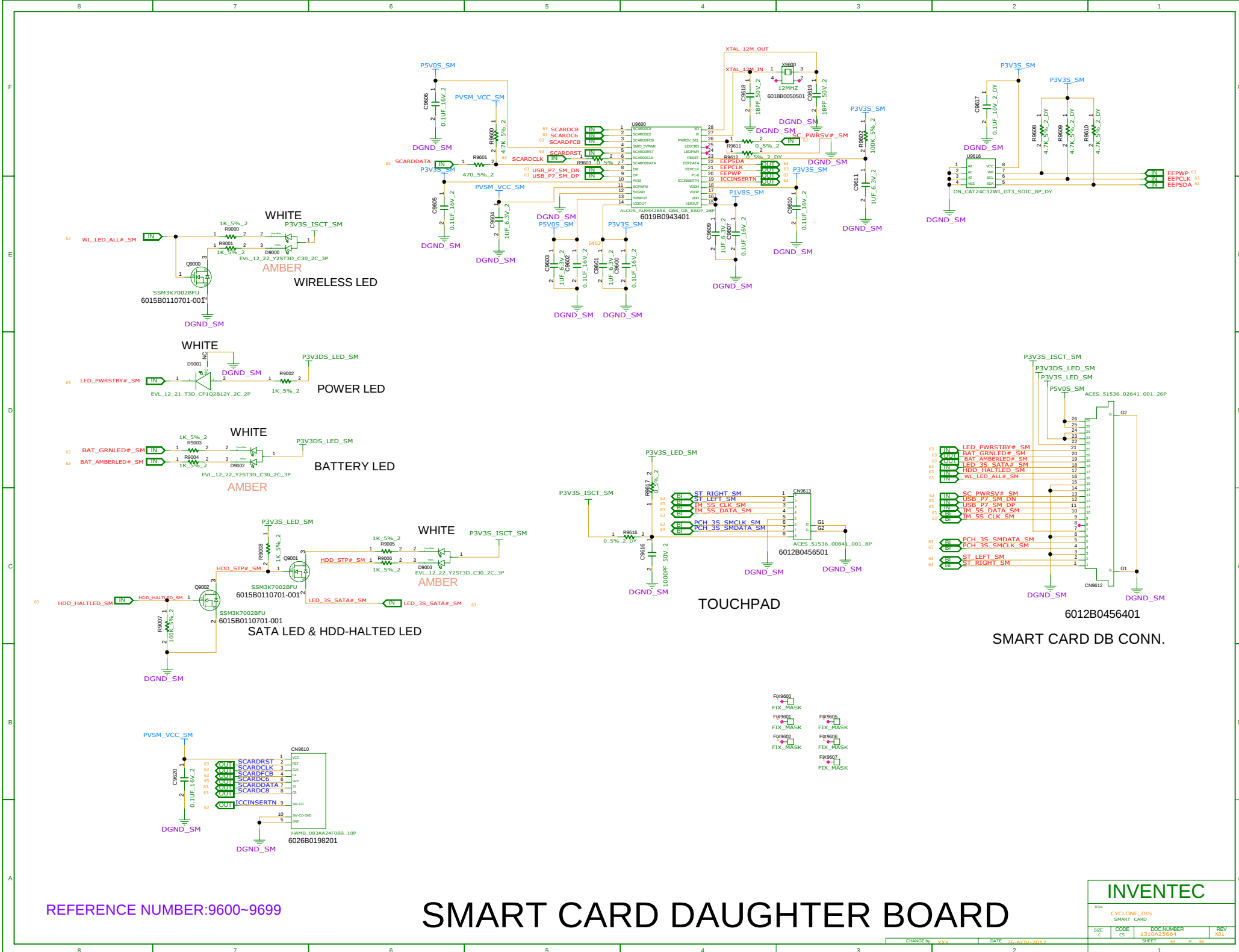
MDC(15" ONLY)

FOR ME TEST

INVENTEC

POWER BUTTON MB CONN.

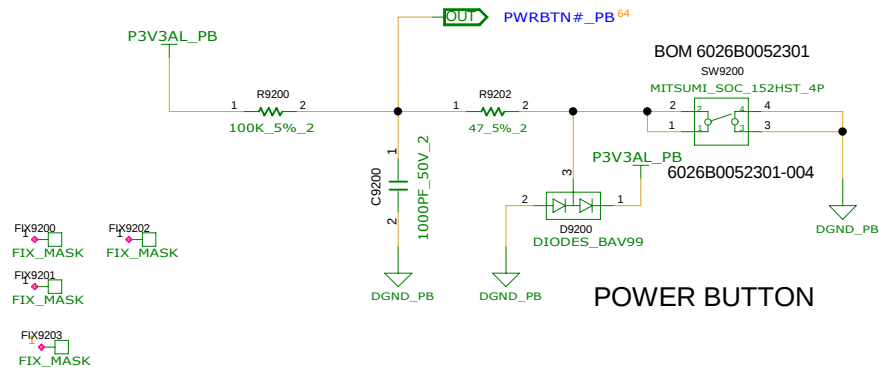
REFERENCE NUMBER:270~279



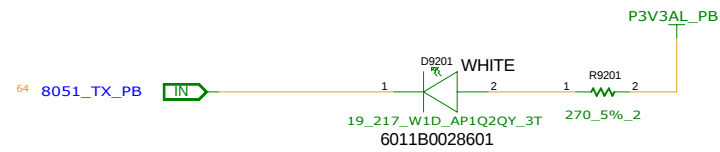
REFERENCE NUMBER:9600-9699

SMART CARD DAUGHTER BOARD

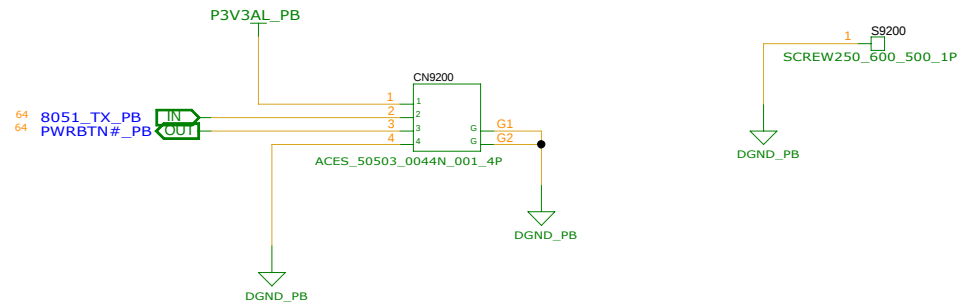
INVENTEC			
TITLE			
CYCLONE_DIS			
SMART CARD			
SIZE	CODE	DOC NUMBER	REV
C	CS	1310A25664	201
SHEET		61	of 66



POWER BUTTON



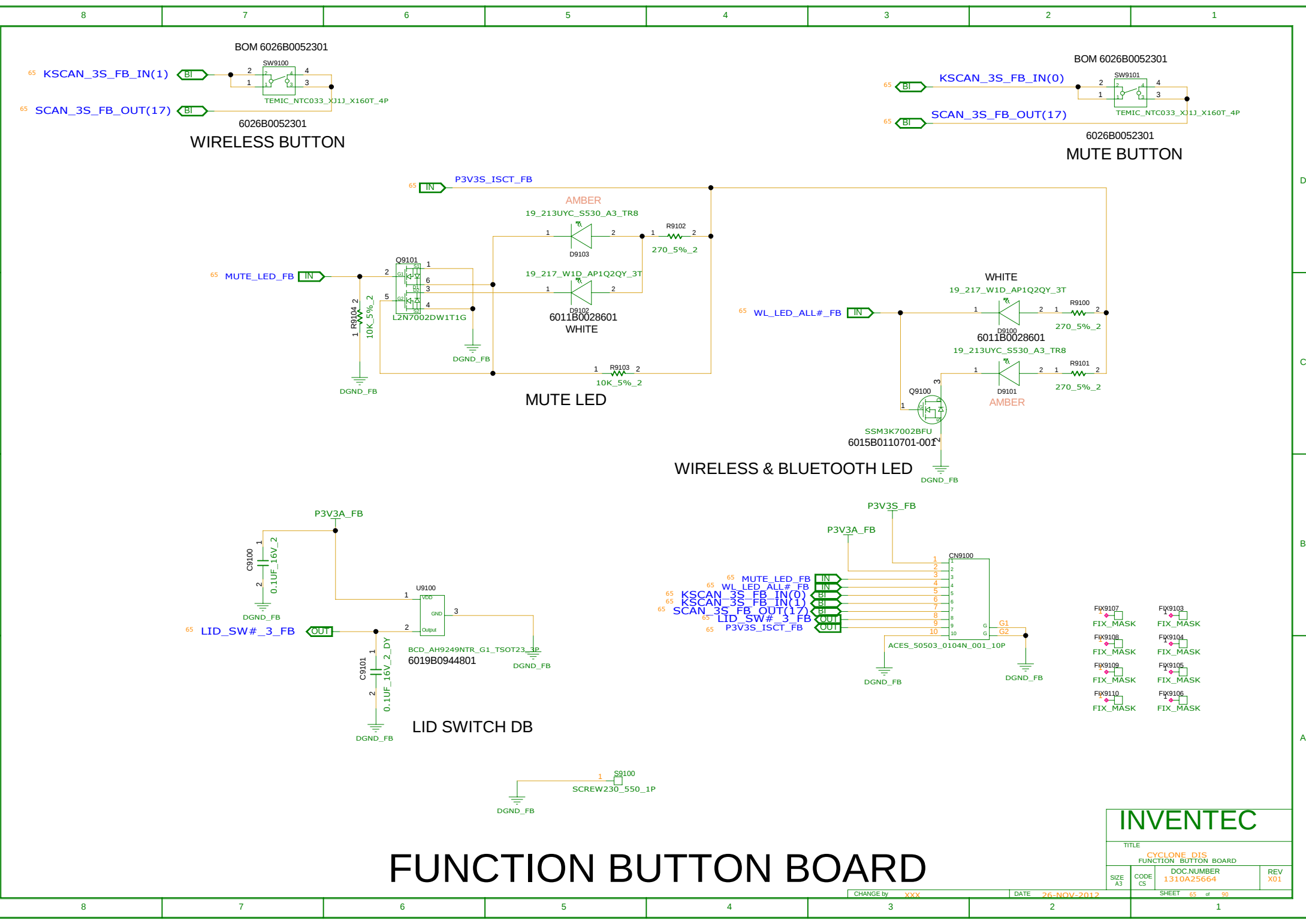
POWER LED



POWER BUTTON BOARD

INVENTEC

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



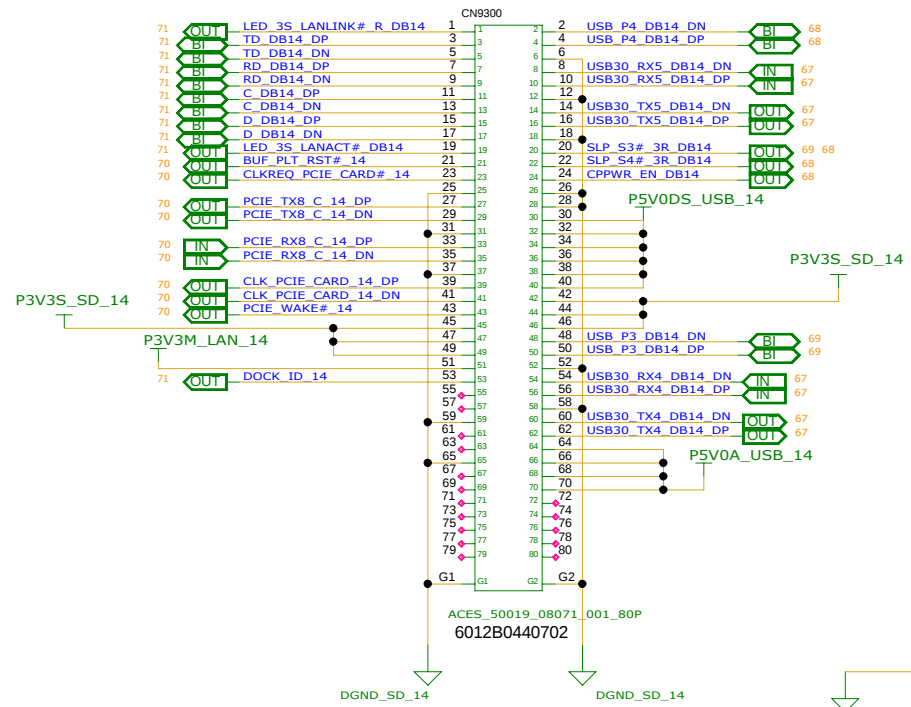
FUNCTION BUTTON BOARD

INVENTEC

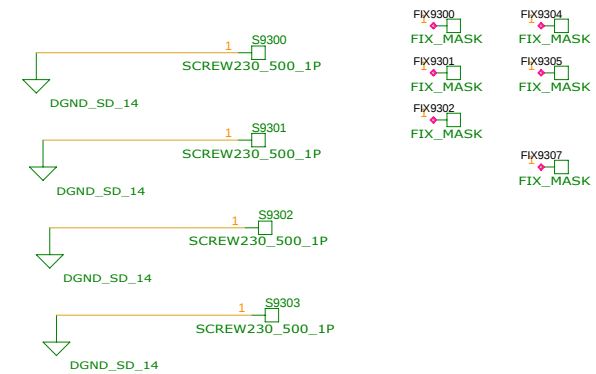
TITLE CYCLONE DIS
FUNCTION BUTTON BOARD

SIZE CODE DOC NUMBER REV
A3 CS 1310A25664 X01

CHANGE by XXX DATE 26-NOV-2012 SHEET 65 of 90

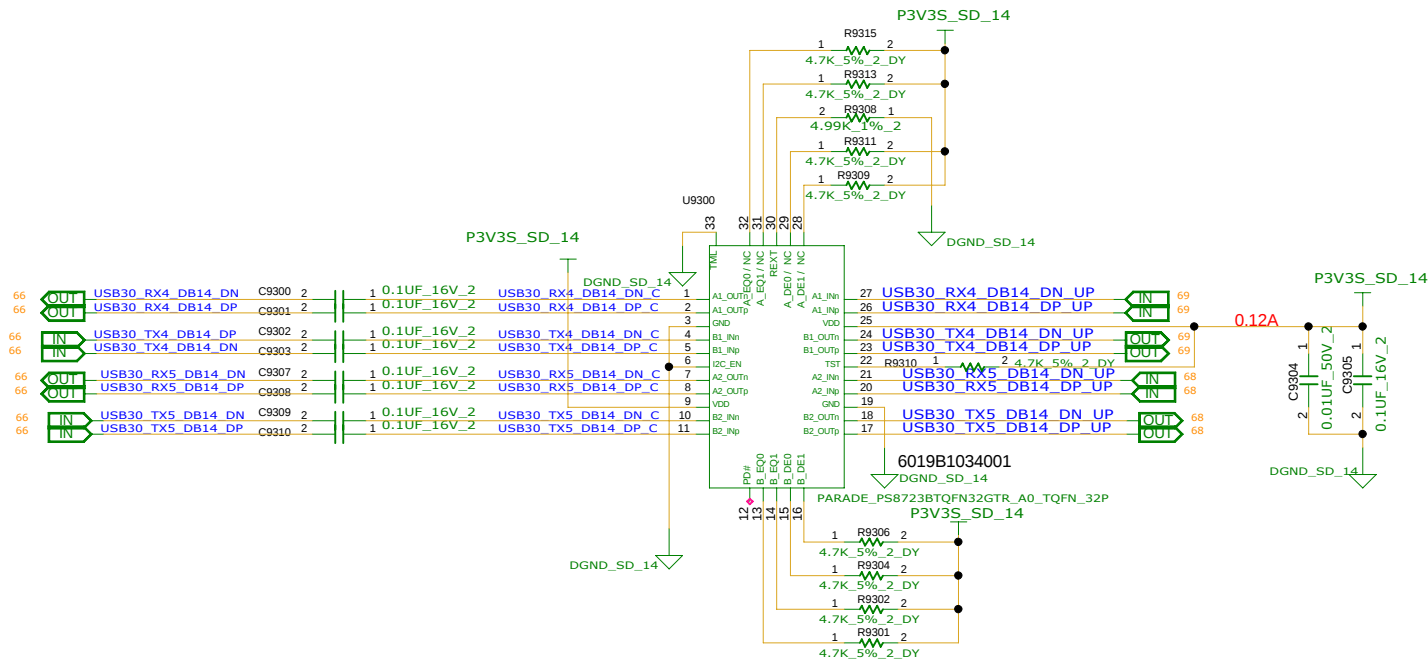


REFERENCE NUMBER:9300-9339



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

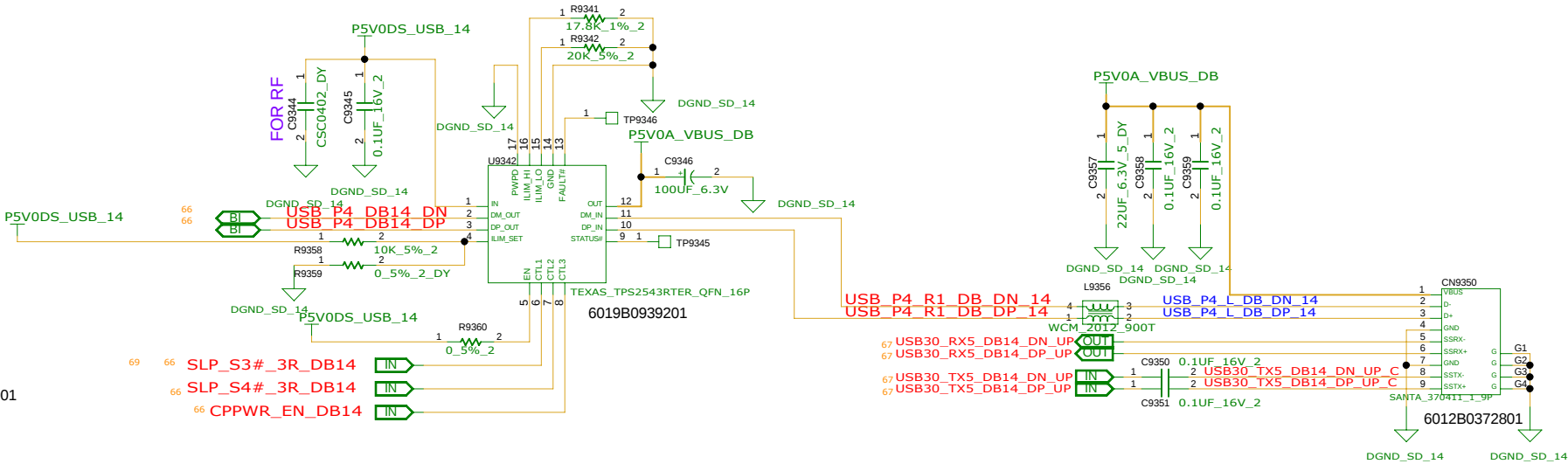
SHEET 67 of 90

1

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

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

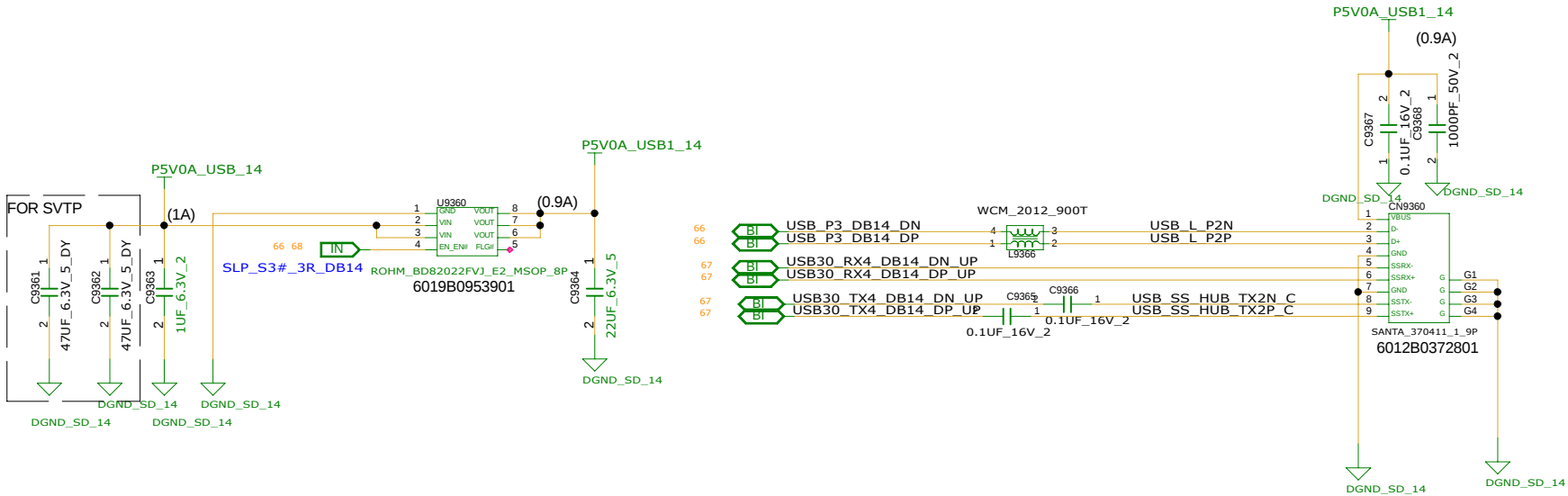
REFERENCE NUMBER:9340~9359



USB CNTR

14" USB DAUGHTER BOARD

INVENTEC			
TITLE CYCLONE DIS 14 USB CHARGER			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
SHEET 68 of 90			



REFERENCE NUMBER: 9360~9369

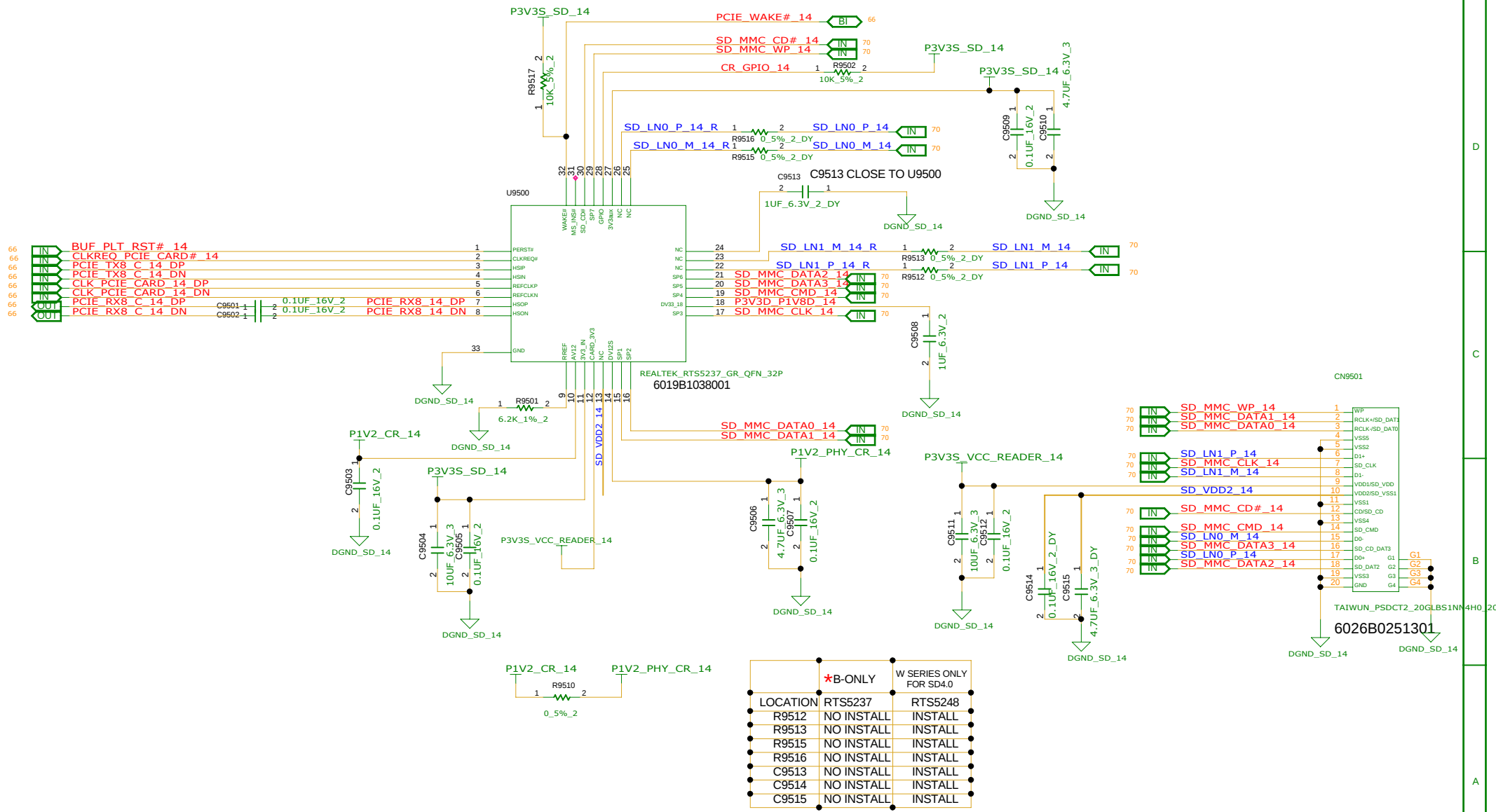
14" USB DAUGHTER BOARD

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:9500~9529

14" USB DAUGHTER BOARD

	*B-ONLY	W SERIES ONLY FOR SD4.0
LOCATION	RTS5237	RTS5248
R9512	NO INSTALL	INSTALL
R9513	NO INSTALL	INSTALL
R9515	NO INSTALL	INSTALL
R9516	NO INSTALL	INSTALL
C9513	NO INSTALL	INSTALL
C9514	NO INSTALL	INSTALL
C9515	NO INSTALL	INSTALL

INVENTEC

TITLE

CYCLONE D15 14 CARD READER

SIZE A3

CODE CS

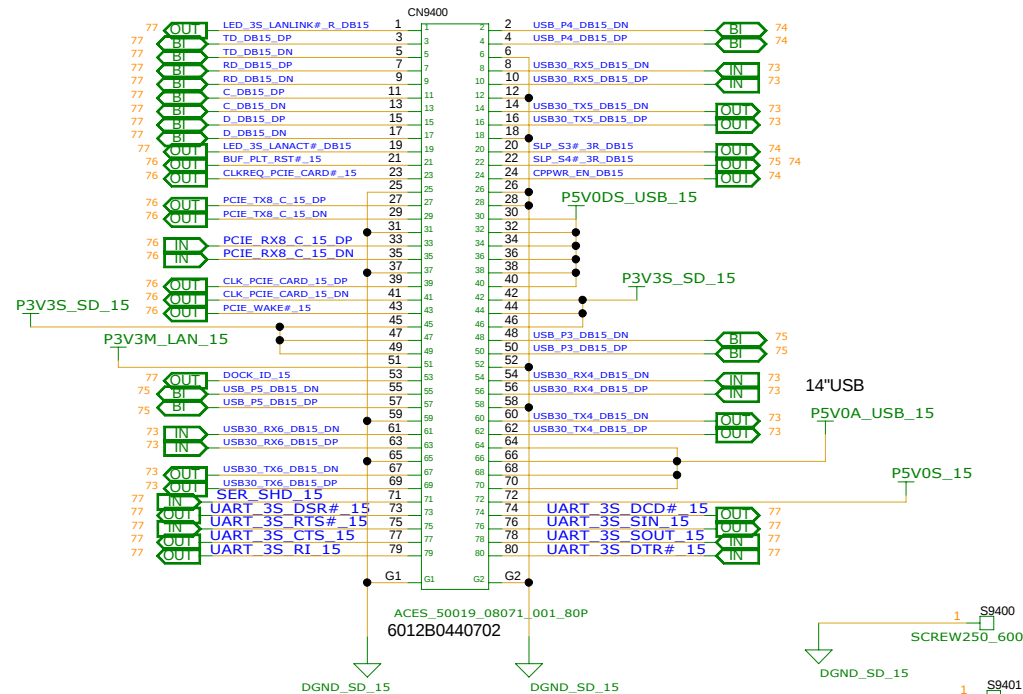
DOC NUMBER 1310A25664

REV X01

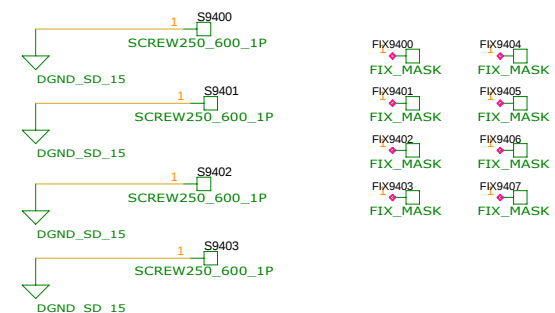
CHANGE by XXX

DATE 26-NOV-2012

SHEET 70 of 90



REFERENCE NUMBER:9400-9449



15" USB DAUGHTER BOARD

INVENTEC

TITLE CYCLONE_DIS

15 B TO B CONN

DOCNUMBER 1310A25664

REV X01

SIZE A3 CODE CS SHEET 72 of 90

CHANGE by XXXX DATE 26-NOV-2012

D

C

B

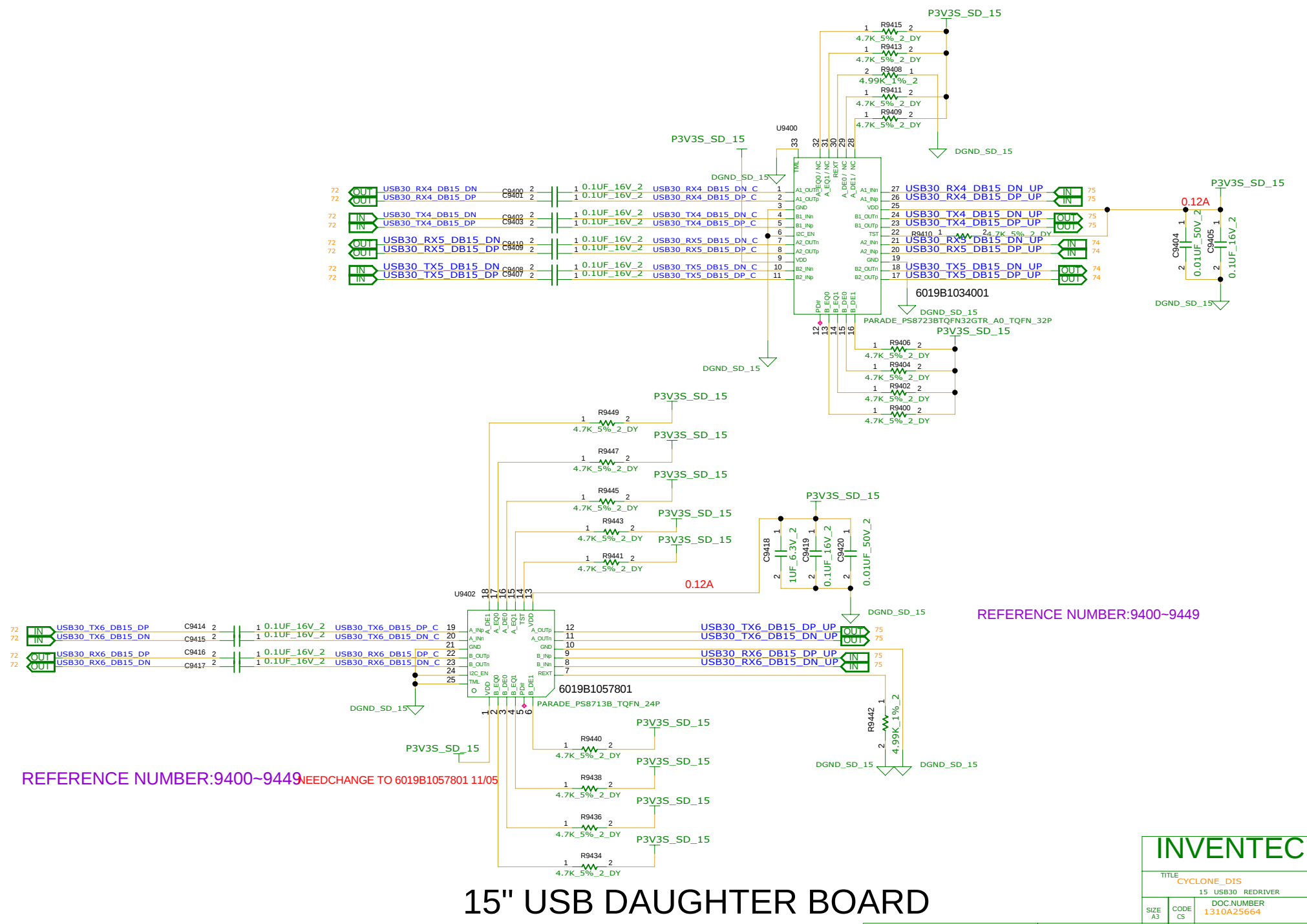
A

D

C

B

A

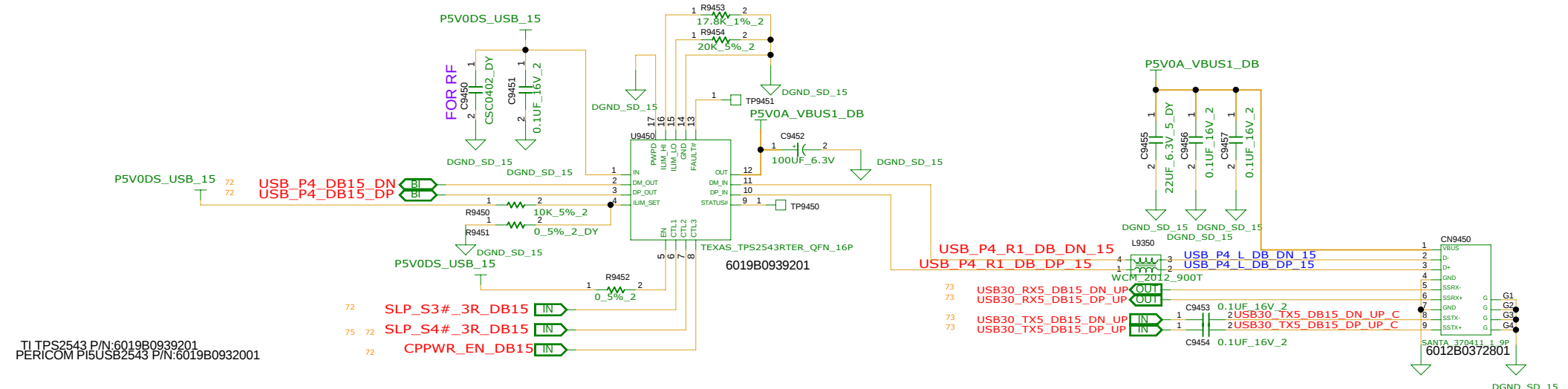


REFERENCE NUMBER:9400~9449NEEDCHANGE TO 6019B1057801 11/05

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			



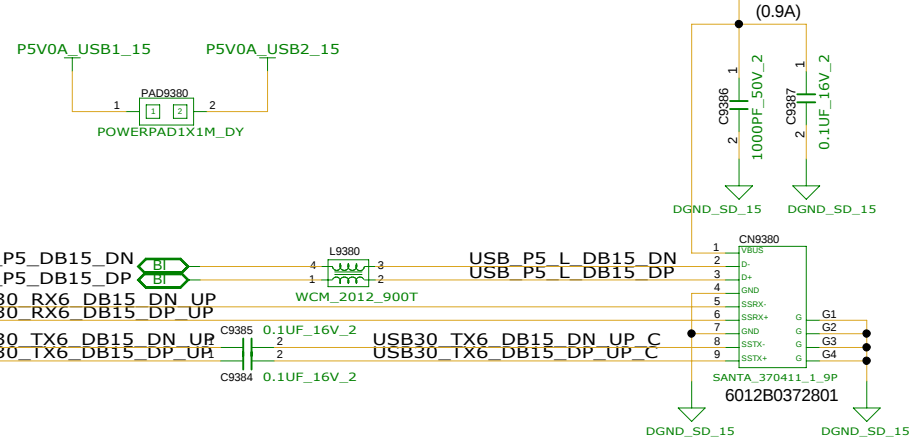
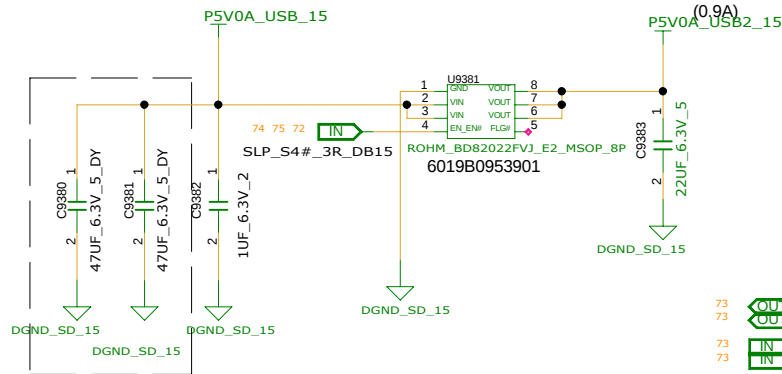
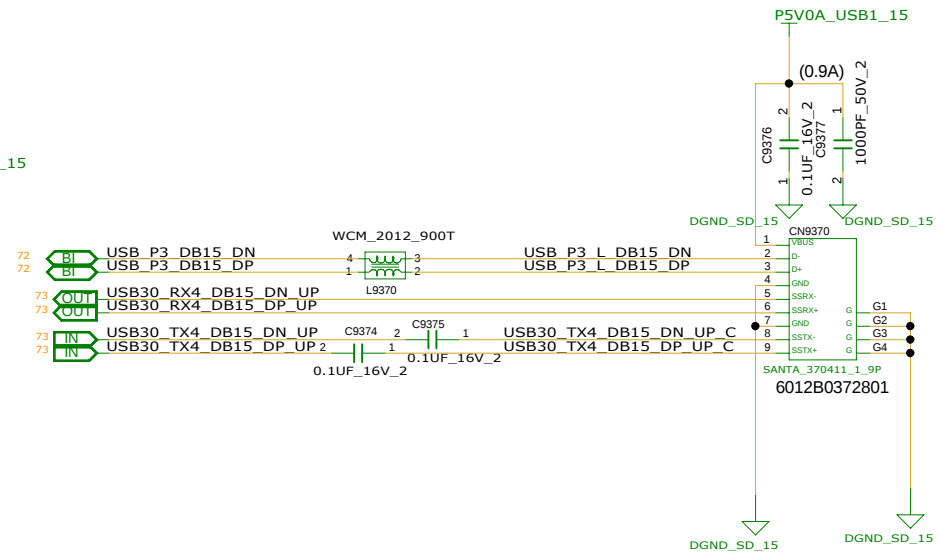
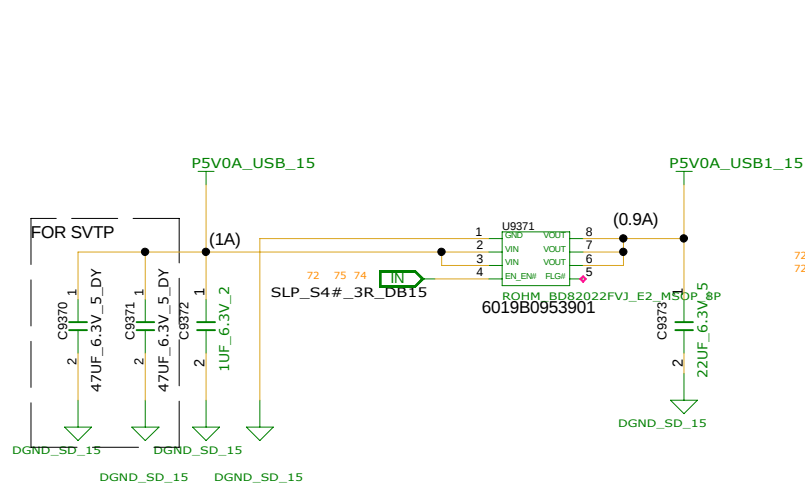
TI TPS2543 P/N:6019B0939201
PERICOM PI5USB2543 P/N:6019B0932001

	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			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01
CHANGE by XXXX DATE 26-NOV-2012 SHEET 74 of 90			



REFERENCE NUMBER:9370~9399

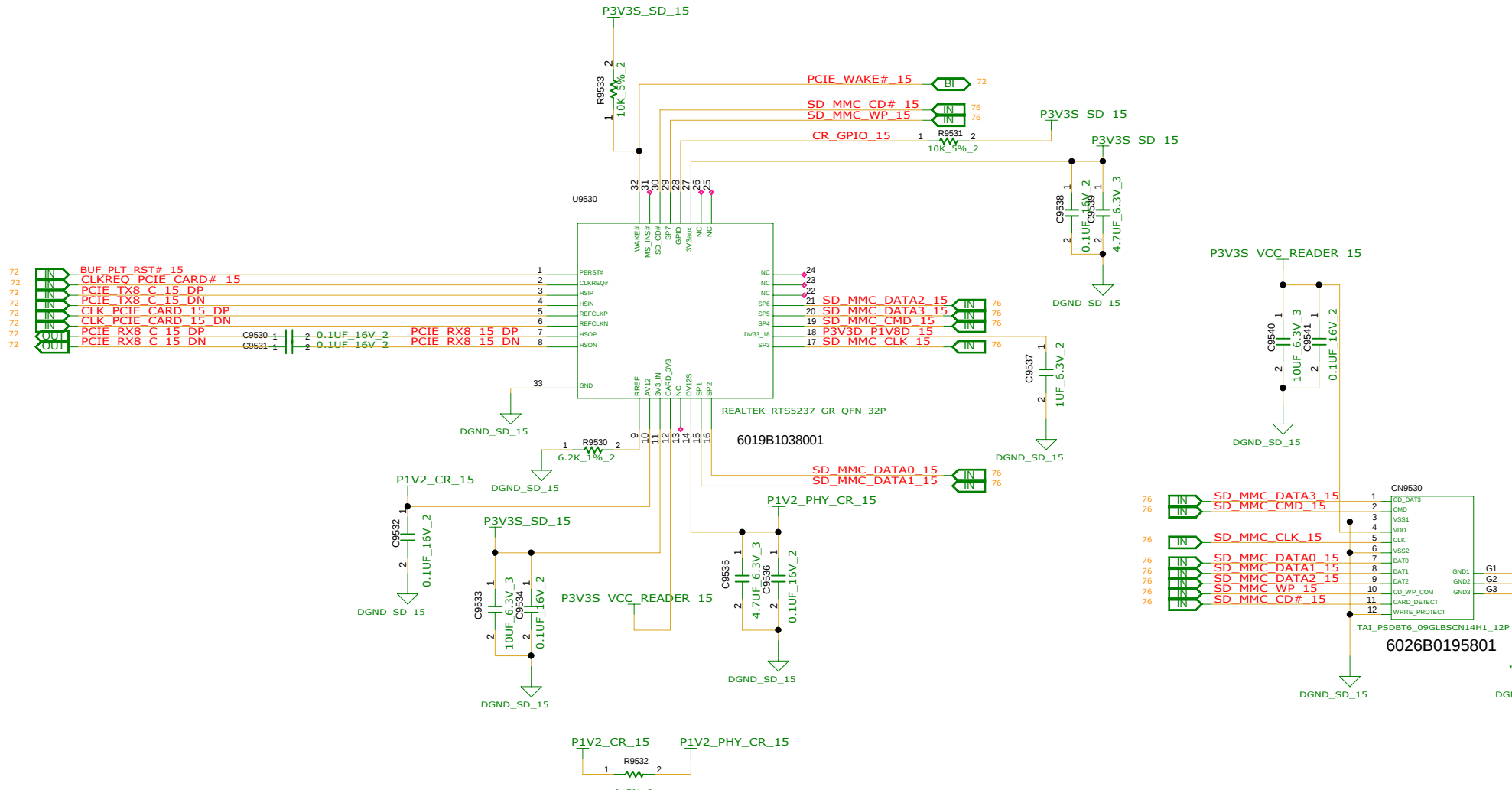
15" USB DAUGHTER BOARD

INVENTEC

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

CHANGE BY: XXX DATE: 26-NOV-2012

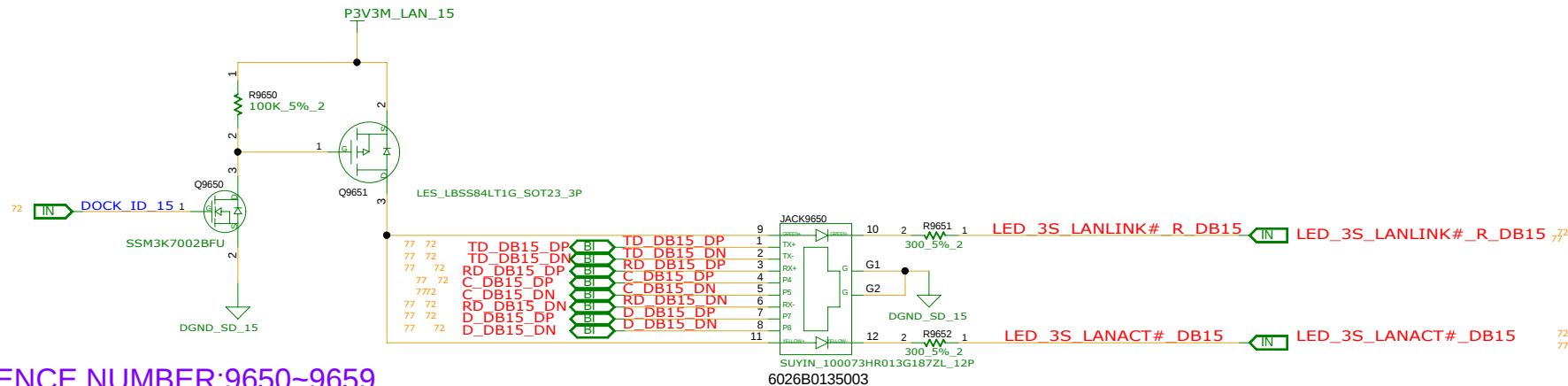
SHEET 75 of 90



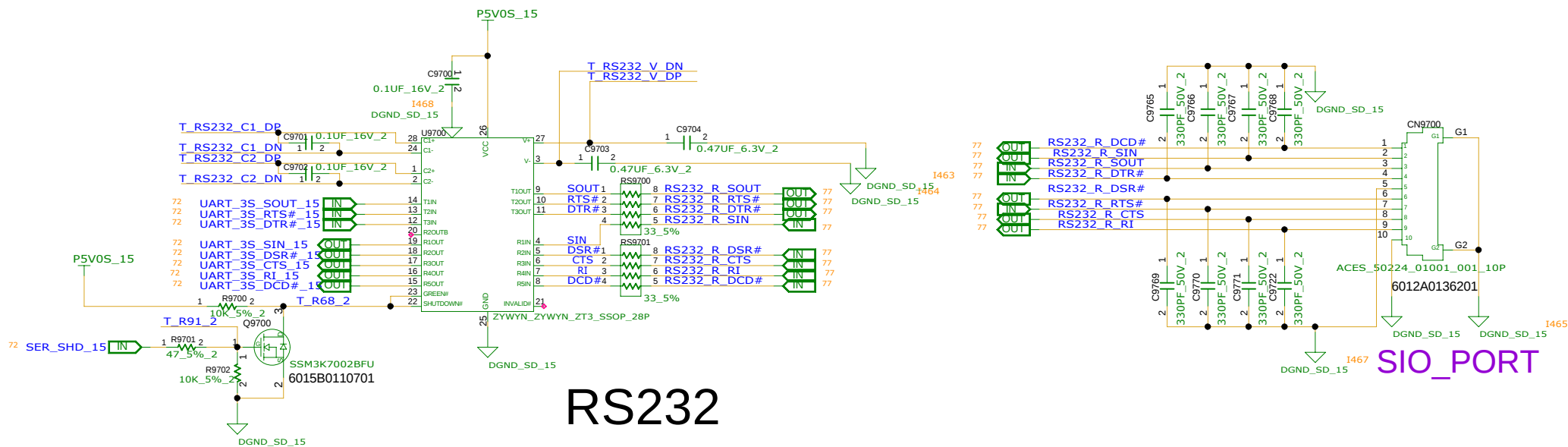
REFERENCE NUMBER:9530~9549

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

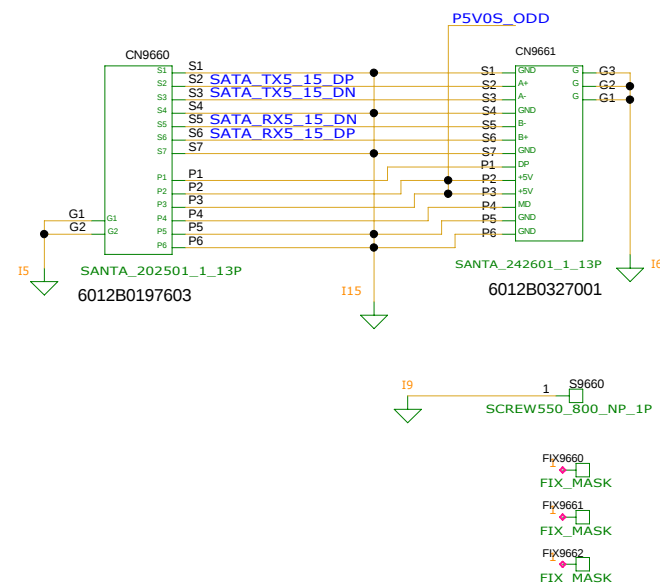
15" USB DAUGHTER BOARD

INVENTEC

TITLE			
CYCLONE DIS 15 RJ45 CONN/SERIAL PORT			
SIZE A3	CODE CS	DOC NUMBER 1310A25664	REV X01

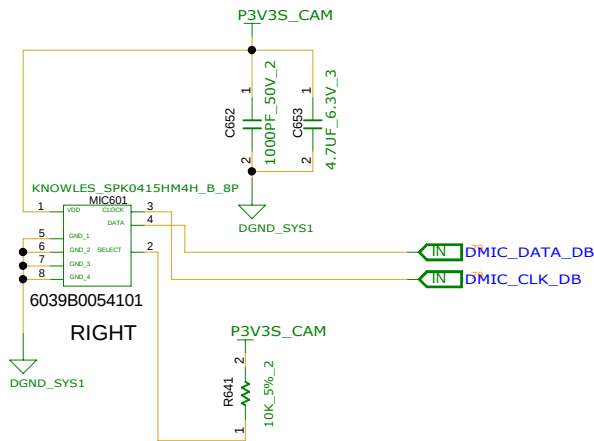
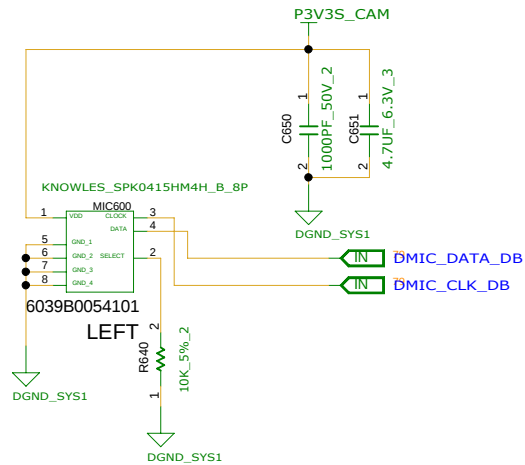
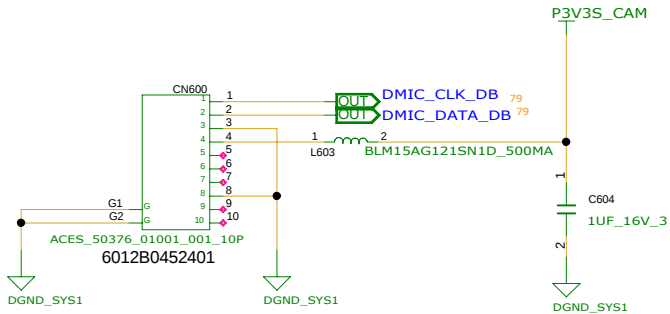
REFERENCE NUMBER:9660~9669

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

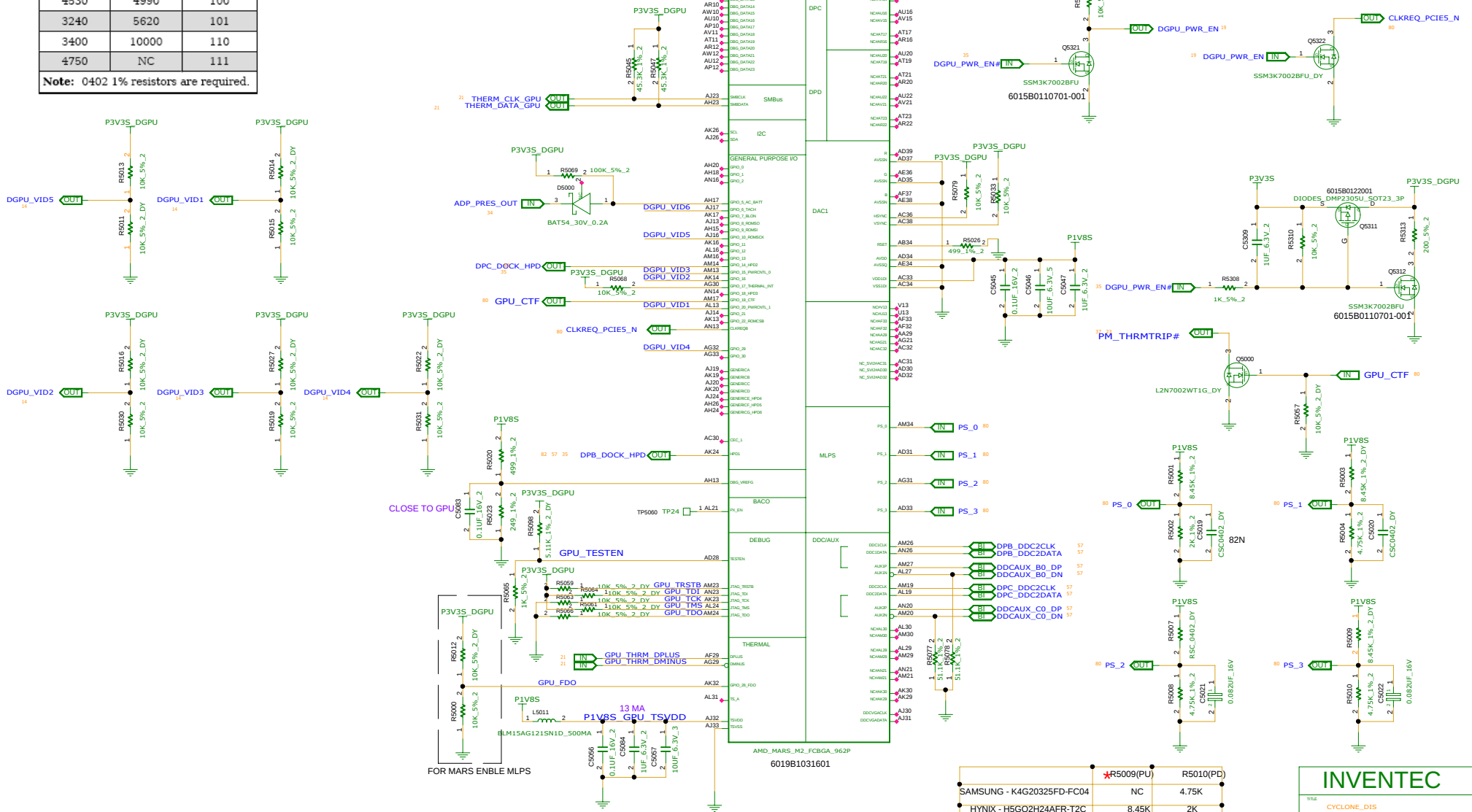
MLPS TABLE

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

SIZE	CODE	DOC NUMBER	REV
1310A25564	1310A25564	1310A25564	101

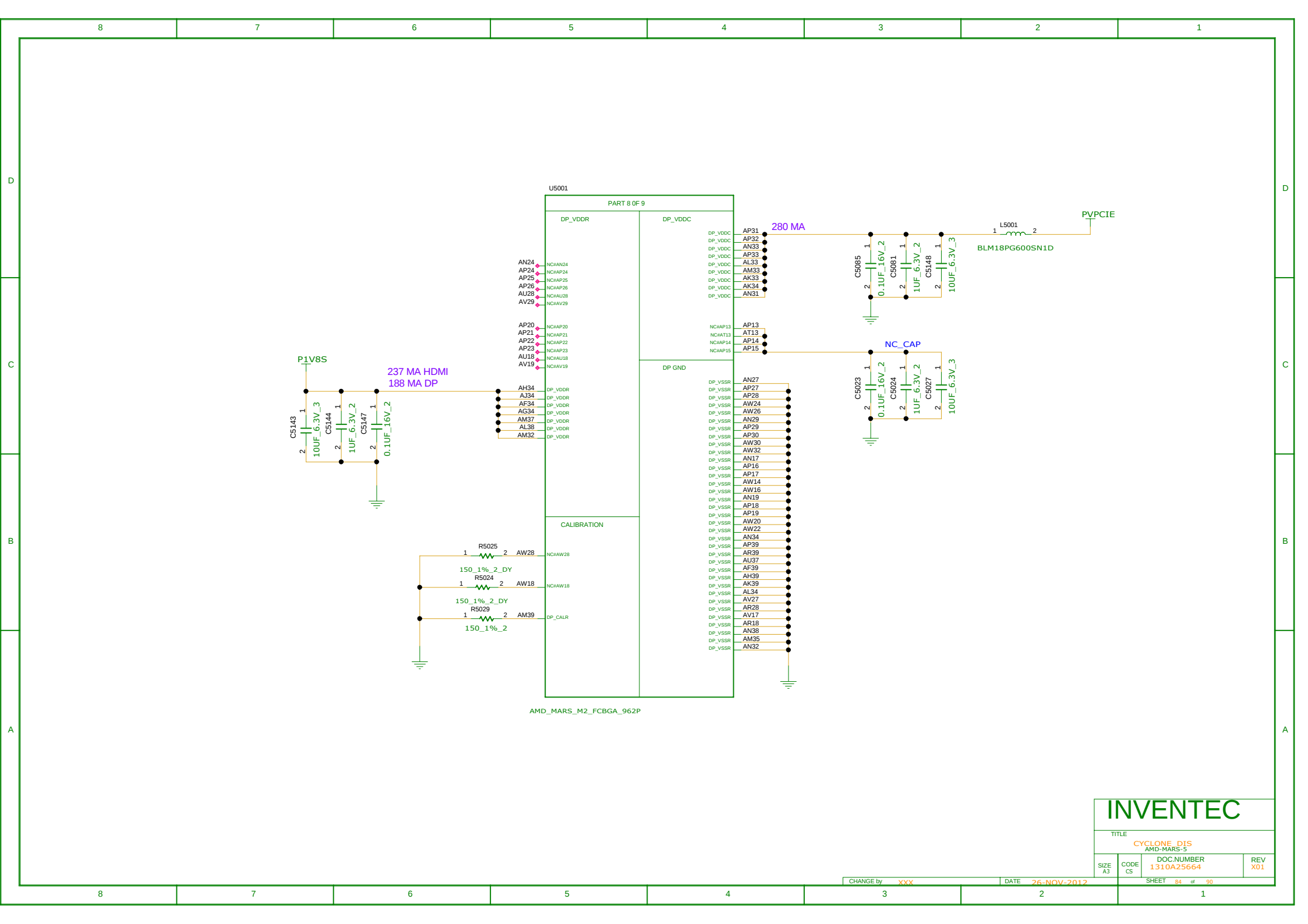
SAMSUNG - K4G20325FD-FC04	NC	4.75K
HYNIX - H5GQ2H24AFR-T2C	8.45K	2K

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				

INVENTEC

TITLE CYCLONE_DIS AMD-MARS-2			
SIZE C	CODE CS	DOC NUMBER 1310A25564	REV 201
SHEET 51		of 60	



INVENTEC

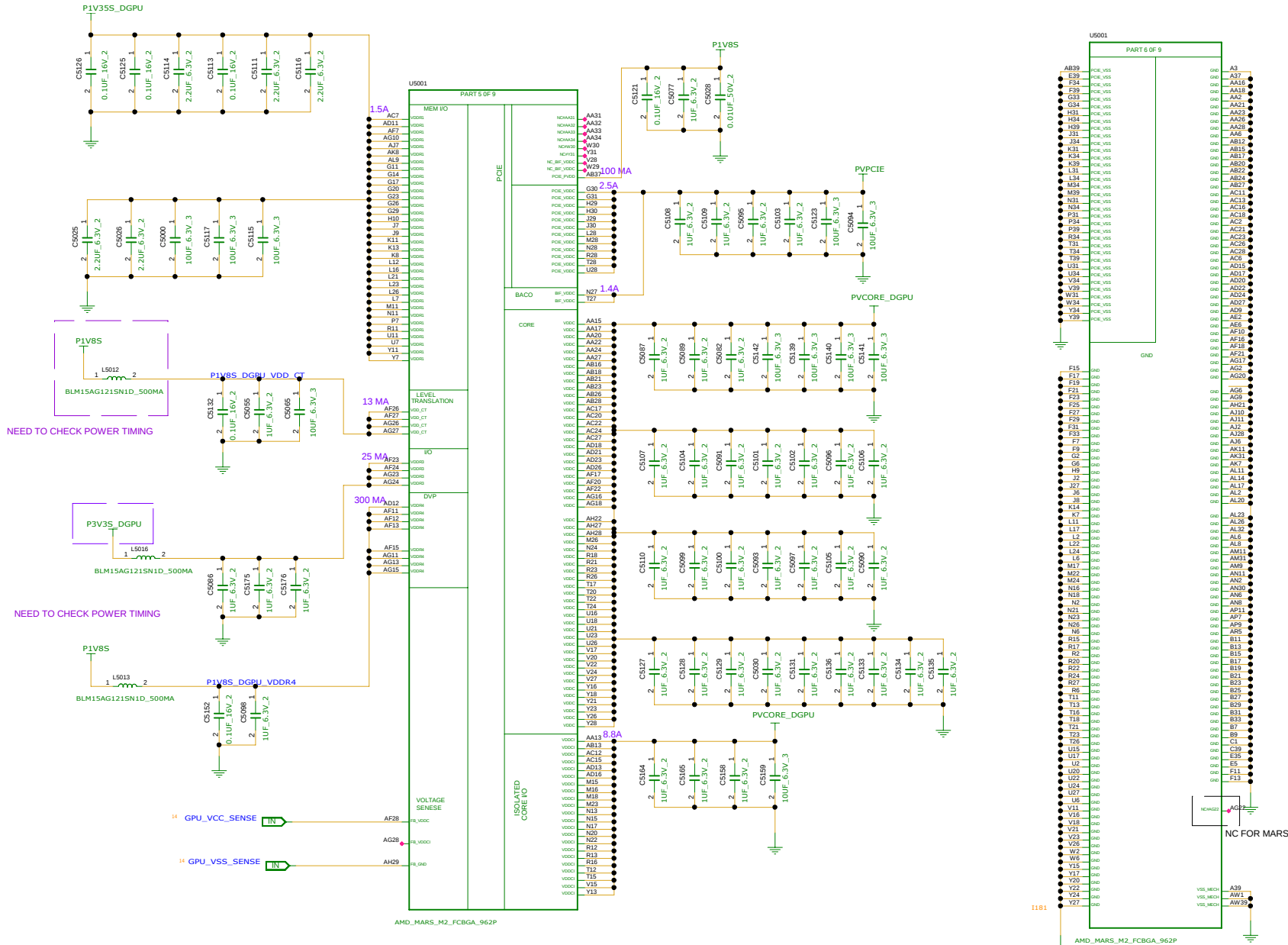
TITLE

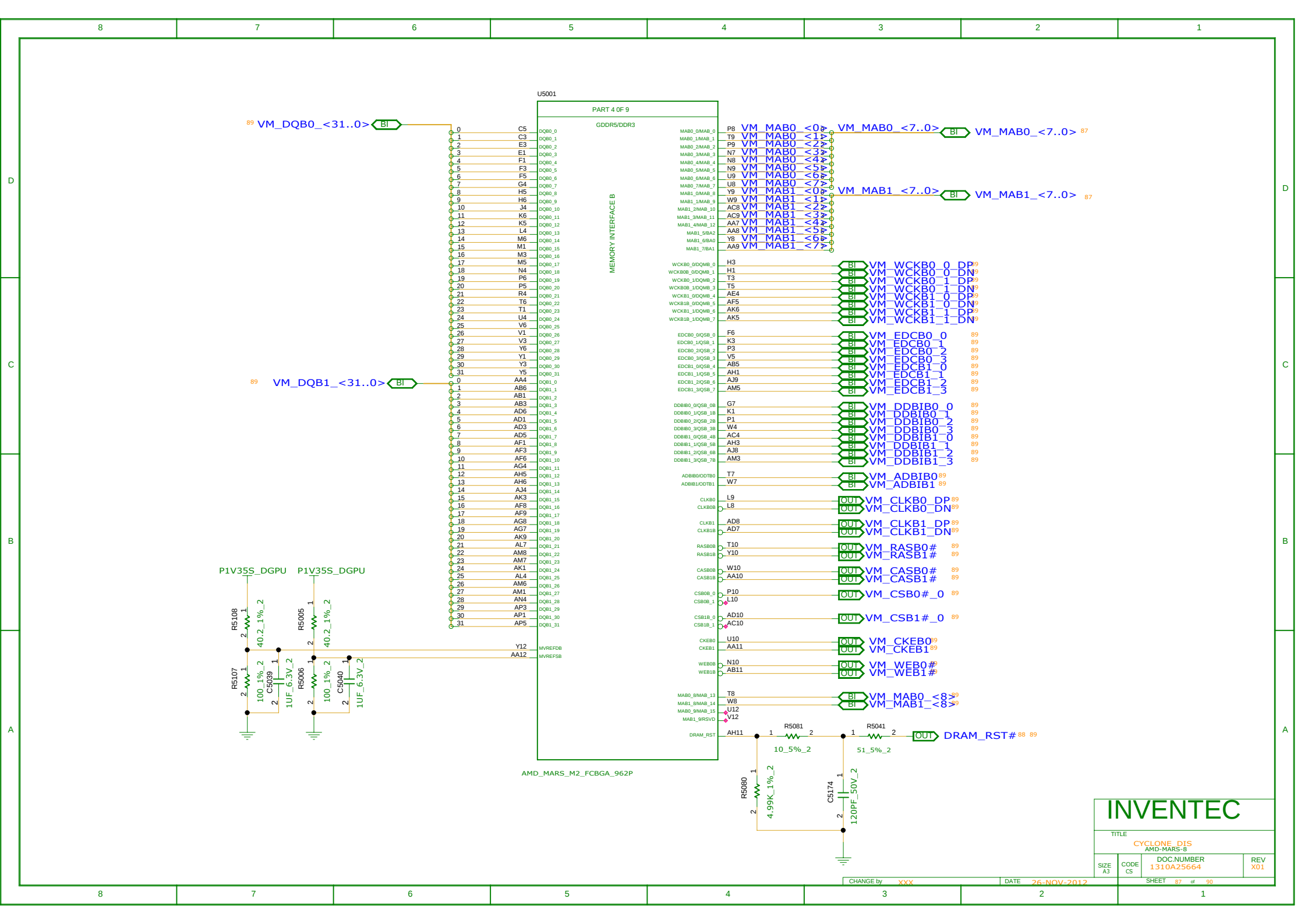
CYCLONE_DIS

AMD-MARS-5

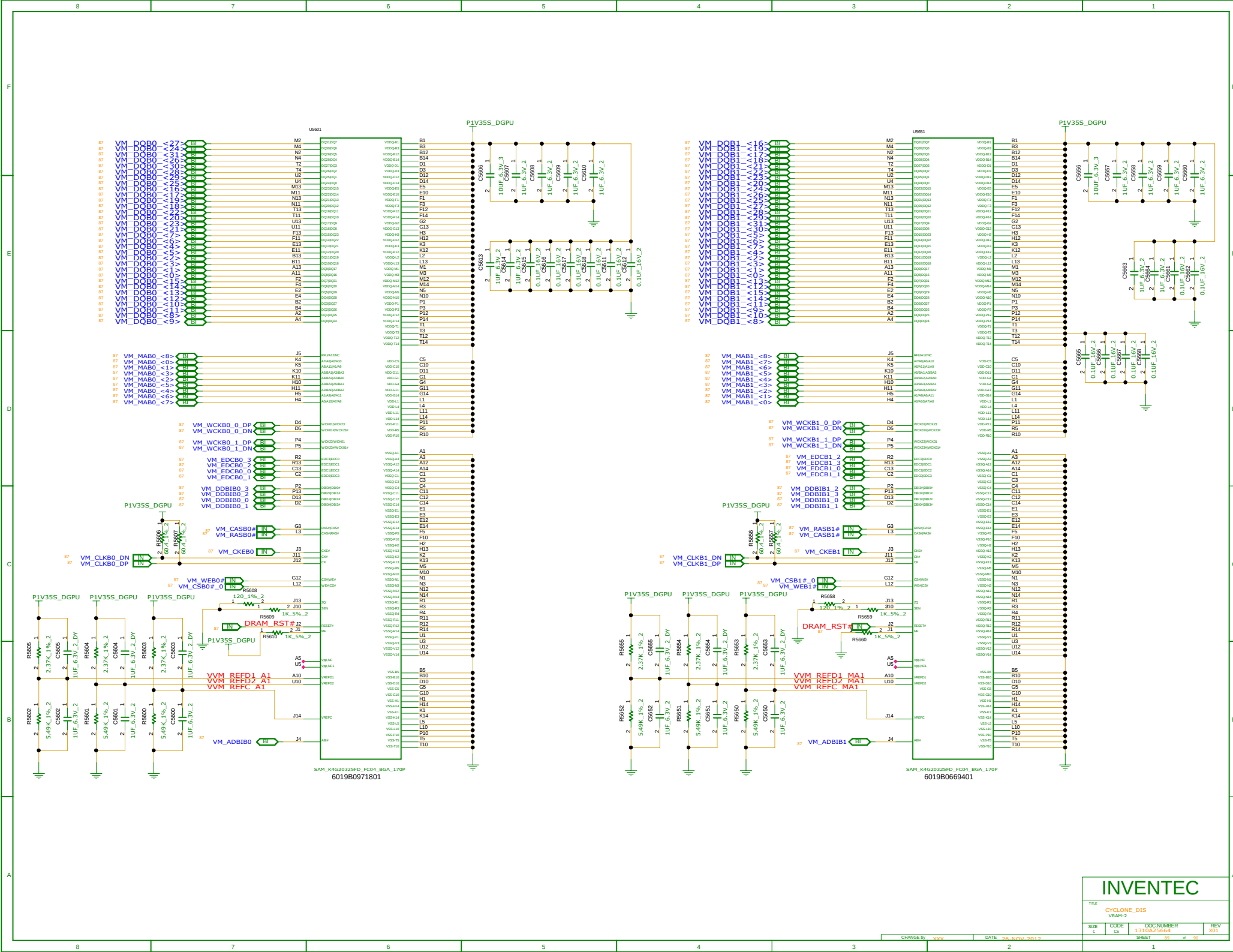
SIZE CODE DOC NUMBER REV
A3 CS 1310A25664 X01

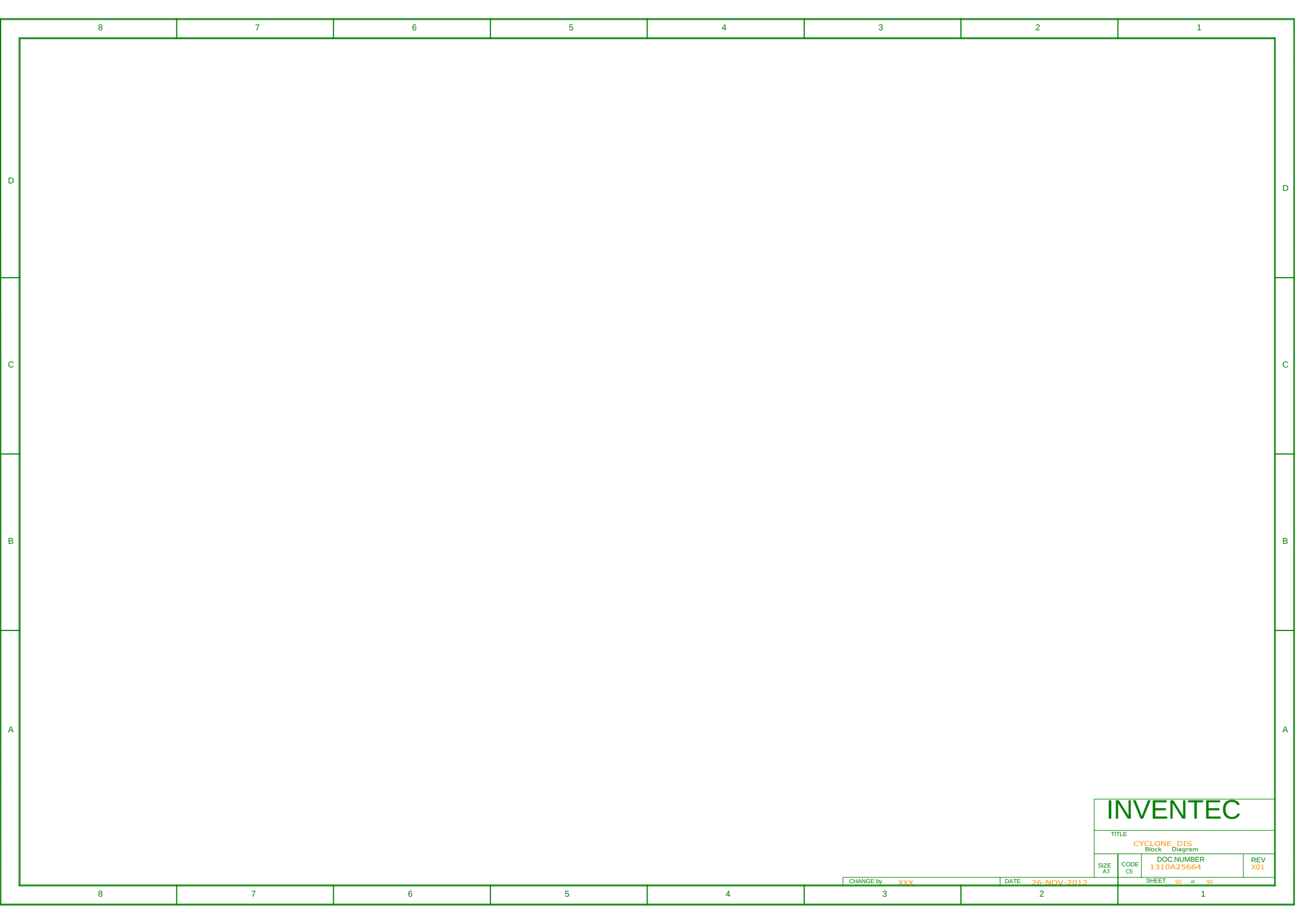
CHANGE by XXX DATE 26-NOV-2012 SHEET 84 of 90











INVENTEC

TITLE

CYCLONE DIS
Block Diagram

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

CHANGE by XXX DATE 26-NOV-2012

SHEET 90 of 90