BAP/BXP30

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A02 Build

2010.05.22

INVENTEC			
TITLE: BAP/BXP30			
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: X01
CHANGE by: IEC	DATE: Saturday, May 22, 2010	SHEET: 1 of 41	

1. Schematic Page Description :

BAP30/BXP30 Schematic Ver : X01

2. PCI & IRQ & DMA Description :

IDSEL	CHIP
None	

PCIINT	CHIP	Interface
None		

REQ	CHIP
None	

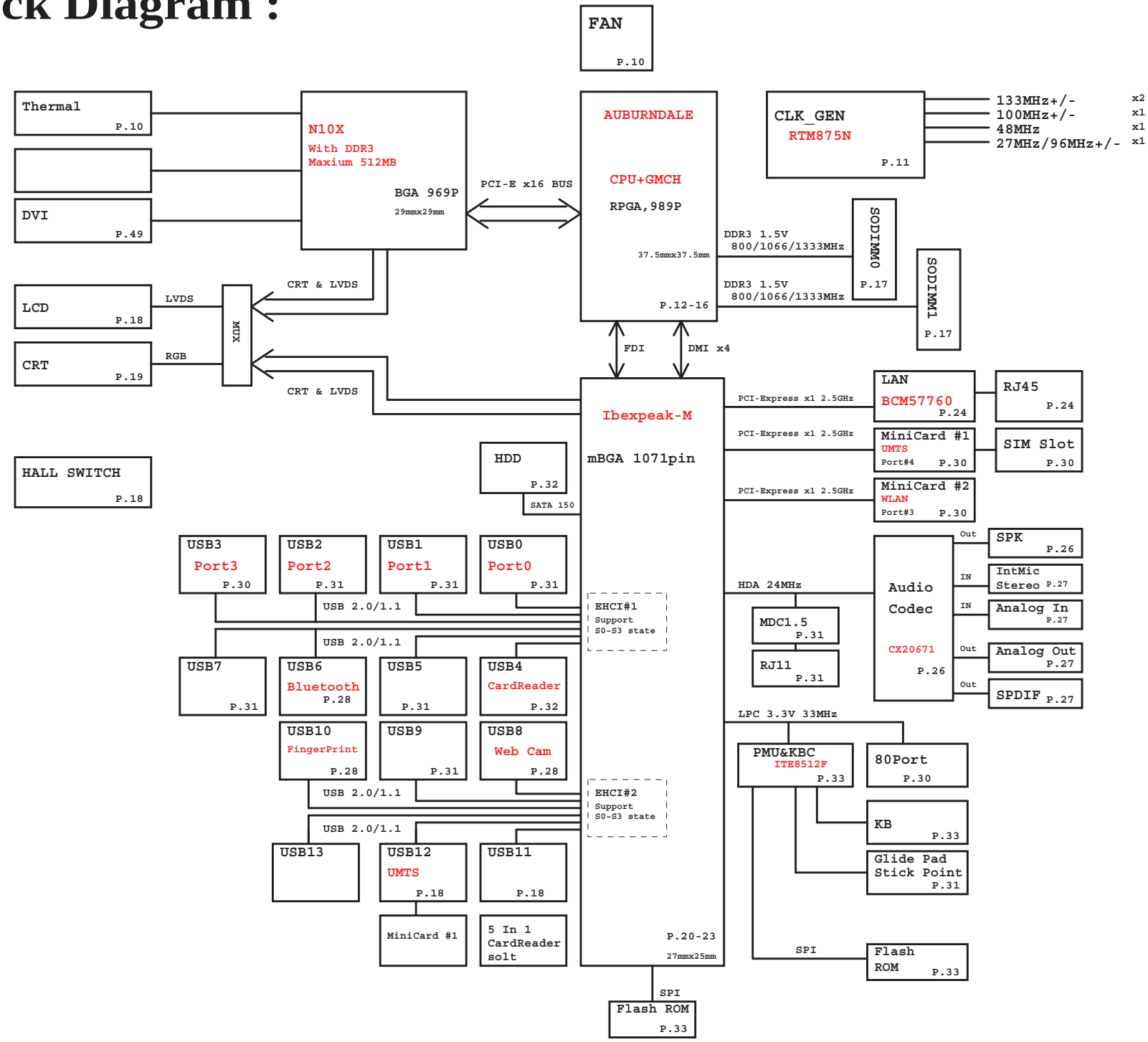
3. USB & PCI-Express & SATA Description :

USB Port	DEVICE	USB Port	DEVICE
Port 0	System (ESATA)	Port 7	Bluetooth
Port 1	System	Port 8	
Port 2	System	Port 9	Web Cam
Port 3	System	Port 10	
Port 4	CardReader	Port 11	FingerPrint
Port 5		Port 12	
Port 6		Port 13	3G

PCI-E	DEVICE
Port 1	New Card
Port 2	Docking
Port 3	Mini Card(WLAN)
Port 4	Mini Card(3G)
Port 5	Mini Card(ROBSON)
Port 6	Giga-LAN

SATA	DEVICE
Port 1	HDD
Port 2	E-SATA
Port 4	BAY
Port 5	None

3. Block Diagram :



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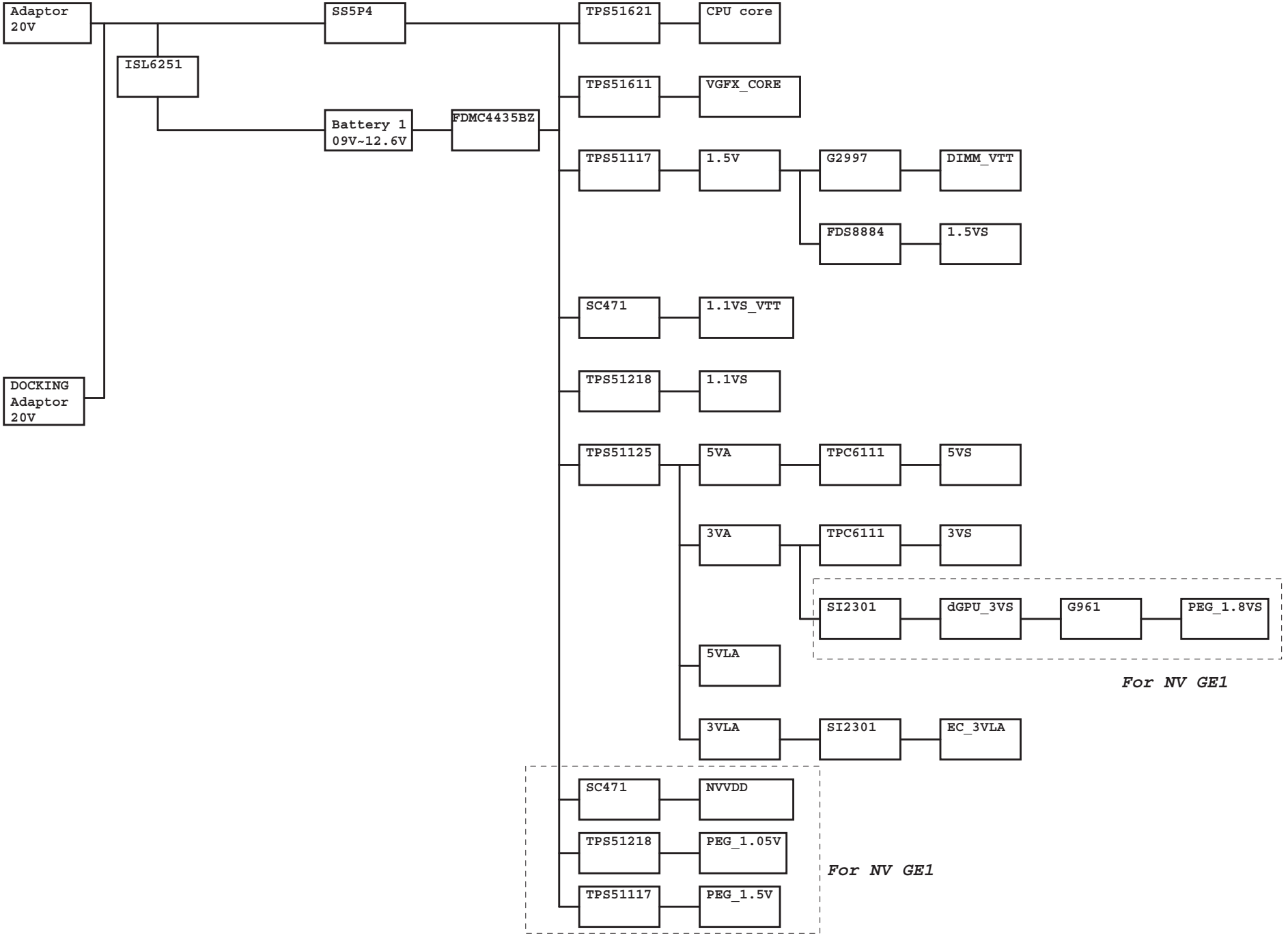
INVENTEC

TITLE: BAP/BXP30
Block Diagram

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

CHANGE by IEC | DATE Friday, May 21, 2010 | SHEET 3 of 41

Power Block Diagram :



INVENTEC

TITLE: BAP/BXP30
Power Block Diagram

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X02

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4. Net name Description :

Voltage Rails

DCIN	Primary DC system power supply
3VLA	3.3V always on power rail by DCIN
5VLA	5.0V always on power rail by DCIN
EC_3VLA	3.3V always on power rail by 5VAUXON
3VA	3.3V always on power rail by LATCH_ON
5VA	5.0V always on power rail by LATCH_ON
3VM	3.3V power rail by SUSM#
1.05VM	1.05V switched power rail by SUSM#
1.5V	1.5V switched power rail by SUSC#
1.8V	1.8V power rail by SUSC#
3VS	3.3V power rail by SUSB#
5VS	5.0V power rail by SUSB#
1.5VS	1.5V power rail by SUSB#
1.05VS	1.05V power rail by SUSB#
PWR_DIMM_VTT	0.75V DDR Termination Voltage by SUSB#
VGFX_CORE	1.05V power rail for UMA by SUSB#
PEG_1.8VS	1.8V switched power rail for NB9x by SUSB#
PEG_PEX_1.1VS	1.1V switched power rail for NB9x by SUSB#
PEG_NVDD	Variable switched power rail for NB9x by SUSB#
Vcore_CPU	Core switched power rail for CPU

Part Naming Conventions

C	=	Capacitor	Q	=	Transistor
CN	=	Connector	R	=	Resistor
D	=	Diode	RP	=	Resistor Pack
F	=	Fuse	U	=	Arbitrary Logic Device
L	=	Inductor	Y	=	Crystal and Osc

Name Suffix

#	=	Active Low signal
NU	=	No Stuff

5. Board Stack up Description

PCB Layers

Layer 1	Component Side, Microstrip signal Layer
Layer 2	Ground Plane
Layer 3	Stripline Layer
Layer 4	Power Plane
Layer 5	Stripline Layer
Layer 6	Stripline Layer
Layer 7	Ground Plane
Layer 8	Solder Side,Microstrip signal Layer

	Differential Impedance for Microstrip(5-mils)	Differential Impedance for Stripline(4-mils)
Host Clock	95 ohm +/- 20%	100 ohm +/- 20%
PCI-E Clock	95 ohm +/- 20%	100 ohm +/- 20%
DDR2 CLK	70 ohm +/- 20%	70 ohm +/- 20%
DDR2 Strobe	85 ohm +/- 20%	90 ohm +/- 20%
DMI Bus	95 ohm +/- 20%	100 ohm +/- 20%
PCIE Bus	95 ohm +/- 20%	100 ohm +/- 20%
SDVO	95 ohm +/- 20%	100 ohm +/- 20%
SATA	95 ohm +/- 20%	100 ohm +/- 20%
USB	90 ohm +/- 20%	95 ohm +/- 20%
LVDS		100 ohm +/- 20%
Lan	95 ohm +/- 20%	100 ohm +/- 20%

Power Rail	Destination	Voltage	S0 Current
VCC_CORE	Penryn HFM:	1.3319V~1.4375V~1.4591V	36A
	LFM:	0.9221V~0.9625V~0.9739V	
1.05VS	Penryn: AGTL+ termination	1V~1.05V~1.10V	4.5A
	Cantiga GM: Core	0.997V~1.05V~1.102V	8.7A
	Cantiga GM: PCIE	0.9975V~1.05V~1.1025V	1.78A
	Cantiga GM:Core+IMEL+HSIO	0.9975V~1.05V~1.1025V	2.898A
	Cantiga GM:VCC_GMCH	0.997V~1.05V~1.102V	10.154A
	Cantiga GM:VCCA_SM_CK and NCTF	0.997V~1.05V~1.102V	37.95mA
	Cantiga GM:VCC_DMI	0.997V~1.05V~1.102V	456mA
	Cantiga GM:VCCA_SM	0.997V~1.05V~1.102V	747.5mA
	Cantiga GM:VTT	0.997V~1.05V~1.102V	852mA
	ICH9M:VCC1_05	0.997V~1.05V~1.102V	1.634A
	ICH9M:DMI	0.997V~1.05V~1.102V	48mA
	ICH9M:CPU_IO	0.997V~1.05V~1.102V	2mA
1.5VS	Penryn PLL	1.425V~1.5V~1.575V	130mA
	Cantiga GM: QDAC	1.425V~1.5V~1.575V	0.5mA
	Cantiga GM: LVDS	1.71V~1.8V~1.89V	60.31mA
	Cantiga GM: TVDAC	1.425V~1.5V~1.575V	35mA
	Cantiga GM: Various PLLS analog supply	1.425V~1.5V~1.575V	485mA
	Cantiga GM: VCC_SM_CK	1.425V~1.5V~1.575V	149.5mA
	Cantiga GM: VCC_SM	1.425V~1.5V~1.575V	3.1625A
	ICH9M:PCIE_ICH	1.425V~1.5V~1.575V	646mA
	ICH9M:SATA_ICH	1.425V~1.5V~1.575V	1.342A
	ICH9M:VCC_GLAN	1.425V~1.5V~1.575V	80mA
	Mini Card:		
	Express Card:	1.425V~1.5V~1.575V	650mA
1.5V	Cantiga GM: DDRIII System Memory	1.425V~1.5V~1.575V	3.1A(800M) 4.1A(1067M)
0.75VDDT_DDRIII	DDRIII Terminator:	0.7125V~0.75V~0.7875V	1.0A
3VS	Cantiga GM: HV CMOS	3.135V~3.3V~3.465V	105.3mA
	Cantiga GM: VCCS_TVDAC	3.135V~3.3V~3.465V	78mA
	ICH9M:VCC3_3	3.135V~3.3V~3.465V	308mA
	ICH9M:VCCGLAN3_3	3.135V~3.3V~3.465V	1mA
	Thermal Sensor:	3.0V~3.3V~3.6V	5mA
	Mini Card: UMTS		
	Express Card:	3.135V~3.3V~3.465V	1.3A
	CLK Generator: ICS9LPRS397BKLFT	3.135V~3.3V~3.465V	500mA
	Mini Card: WirelessLan		
	Bluetooth:	3.0V~3.3V~3.6V	
	Super I/O: IT8305E		
	Azalia Codec: ALC262		
	Azalia MDC:		
	http://hobi-elektronika.net/		
1.8VS	DVI	3.0V~3.3V~3.6V	120mA
3VA	ICH9M: RTC	2V~3.3V~3.465V	6uA
	ICH9M:VCCSUS3_3	3.135V~3.3V~3.465V	212mA
	ICH9M:VCCCL3_3	3.135V~3.3V~3.465V	73mA
	ICH9M:VCCLAN3_3	3.135V~3.3V~3.465V	78mA
	LCD:	3.0V~3.3V~3.6V	2A
	Lan:82567LM	1.0V and 1.8V	Each 1A
	Azalia MDC:		
	Flash ROM: BIOS	3.0V~3.3V~3.6V	
5VS	Cardreader: GL827	3.0V~3.3V~3.6V	
	Azalia Codec: ALC262	3.0V~3.3V~3.6V	
	HDD: SATA	4.75V~5.0V~5.25V	Max: 1.5A ; R/W: 460mA ; STDBY: 70mA
	ODD: SATA	4.75V~5.0V~5.25V	Max: 1.5A ; R/W: 900mA ; STDBY: 45mA
	Audio AMP: G1432		
	Inverter:		
	WebCam	4.75V~5.0V~5.25V	1A
5VA	USB: x 2 ports	5VA	1.5A
	USB and ESATA	5VA	2A
5VLA	Control Power		
3VLA	EC: ITE8512E	3.0V~3.3V~3.6V	300mA

INVENTEC

TITLE: BAP/BXP30
Annotations

SIZE	CODE	DOC.NUMBER	REV
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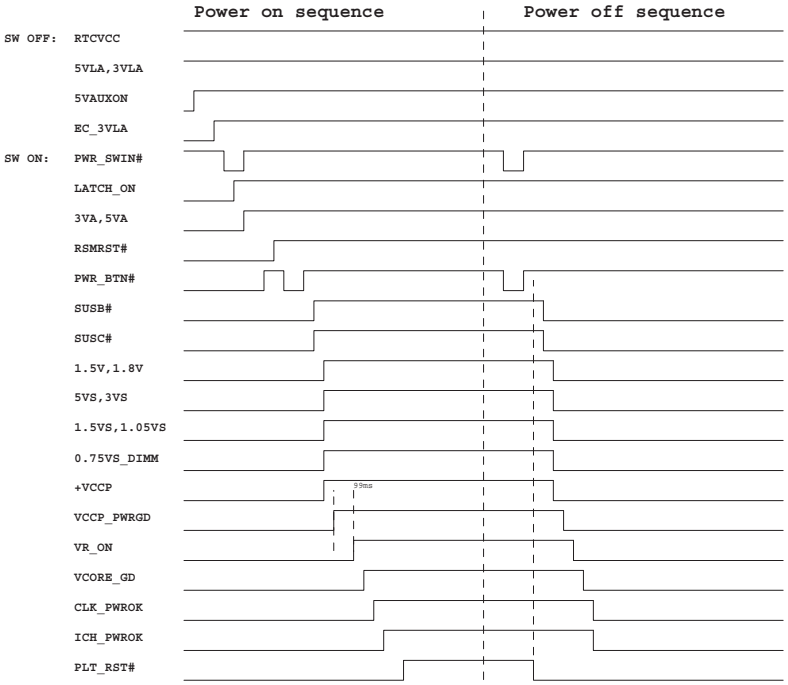
6.Schematic modify Item and History :

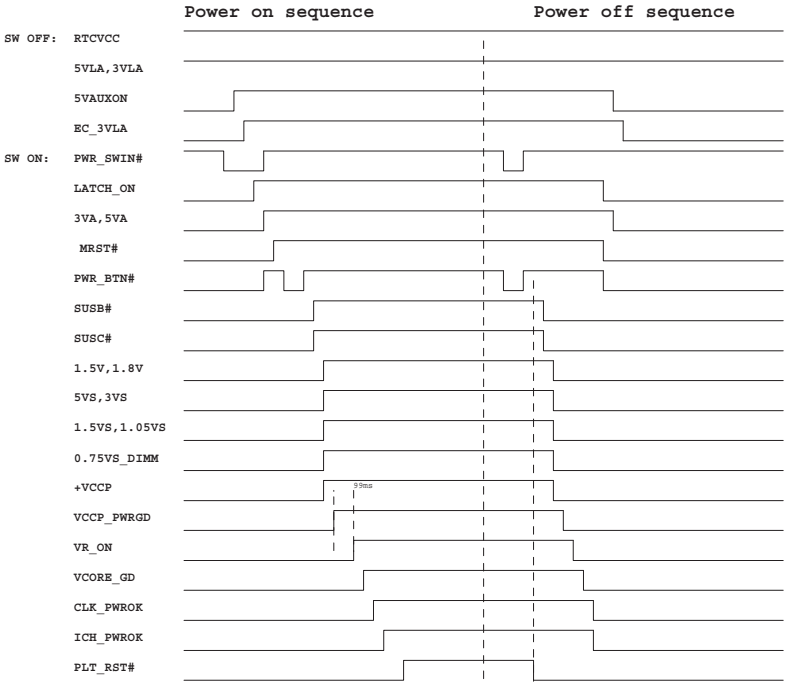
INVENTEC			
TITLE: BAP/BXP30 schematics modify			
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: X01
CHANGE by: IEC	DATE: Friday, May 21, 2010	SHEET: 6 of 41	

8.SYSTEM POWER SEQUENCE :

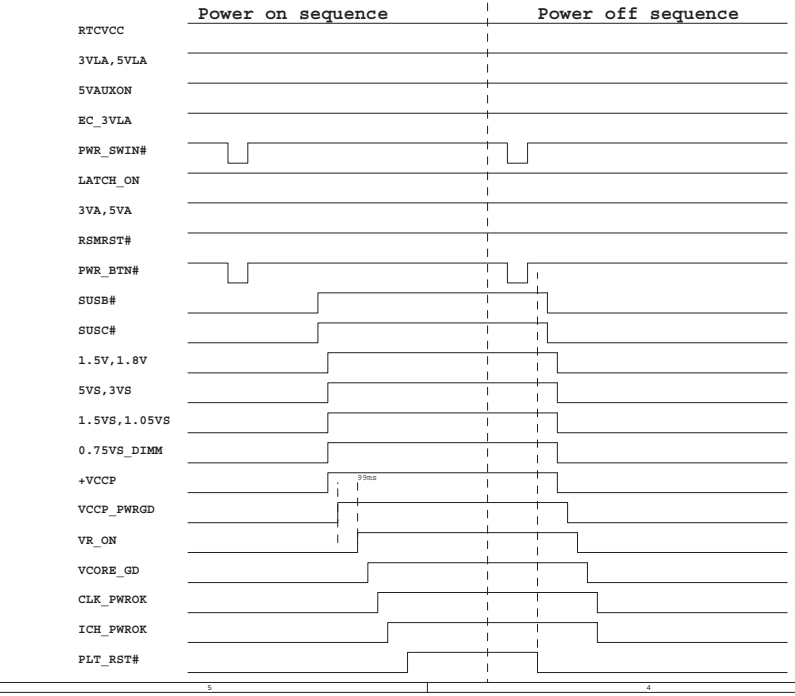
Power on/off sequence AC insert(First)



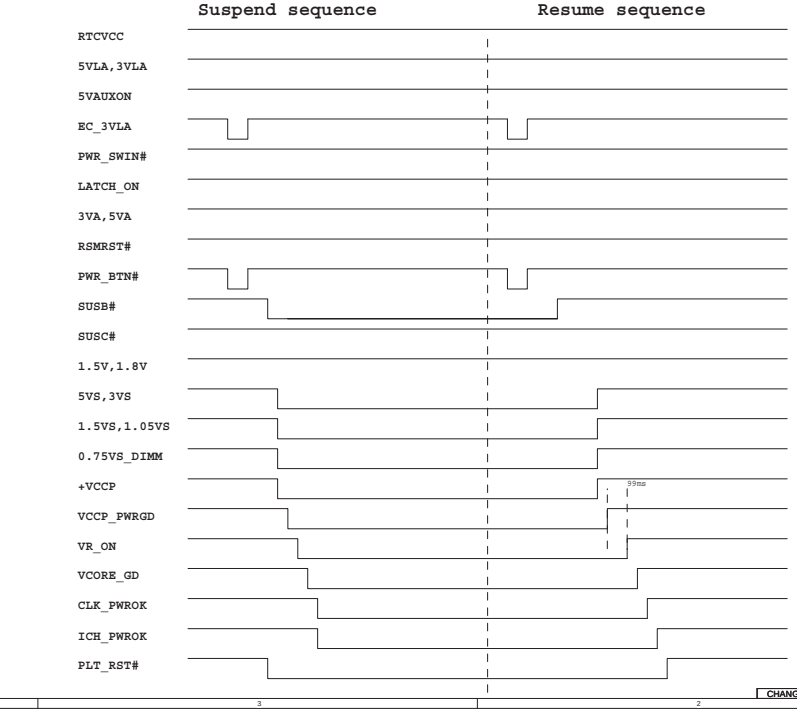
Battery only Power on/off sequence



Power on/off sequence AC insert(S4)



Suspend resume sequence(S3)



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TITLE: BAP/BXP30
Timing Diagram

SIZE	CODE	DOC.NUMBER	REV
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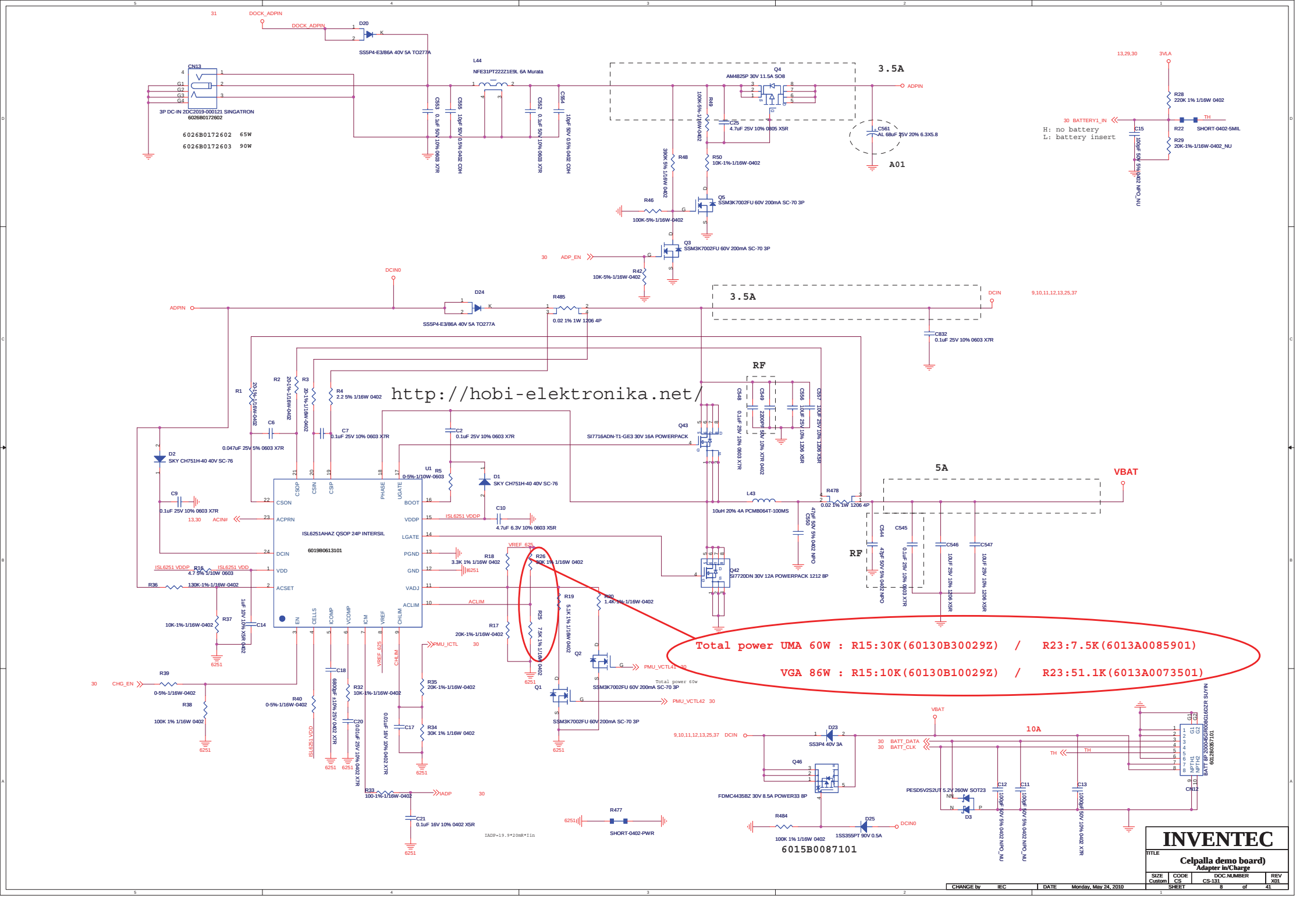
http://hobi-elektronika.net/
Total power UMA 60W : R15:30K(60130B30029Z) / R23:7.5K(6013A0085901)
VGA 86W : R15:10K(60130B10029Z) / R23:51.1K(6013A0073501)
ISL6251AHAZ QSOP 24P INTERSIL
6019B0613101
SSP4-E3/86A 40V 5A TO277A
SI7716ADN-T1-GE3 30V 16A POWERPACK
SSM3K7002FU 60V 200mA SC-70 3P
AM4825P 30V 11.5A SO8
SI7720DN 30V 12A POWERPACK 1212 8P
FDMC4435BZ 30V 8.5A POWER33 8P
SS3P4 40V 3A
1SS355PT 90V 0.5A
PESD5V2S2UT 5.2V 260W SOT23
3P DC-IN 2DC2019-000121 SINGATRON
6026B0172602
6026B0172602 65W
6026B0172603 90W
6015B0087101
3.5A
5A
10A
RF
ADPIN
DCIN
VBAT
DCIN0
3VLA
H: no battery
L: battery insert
Celpalla demo board)
Adapter in/Charge
INVENTEC
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DATE Monday, May 24, 2010
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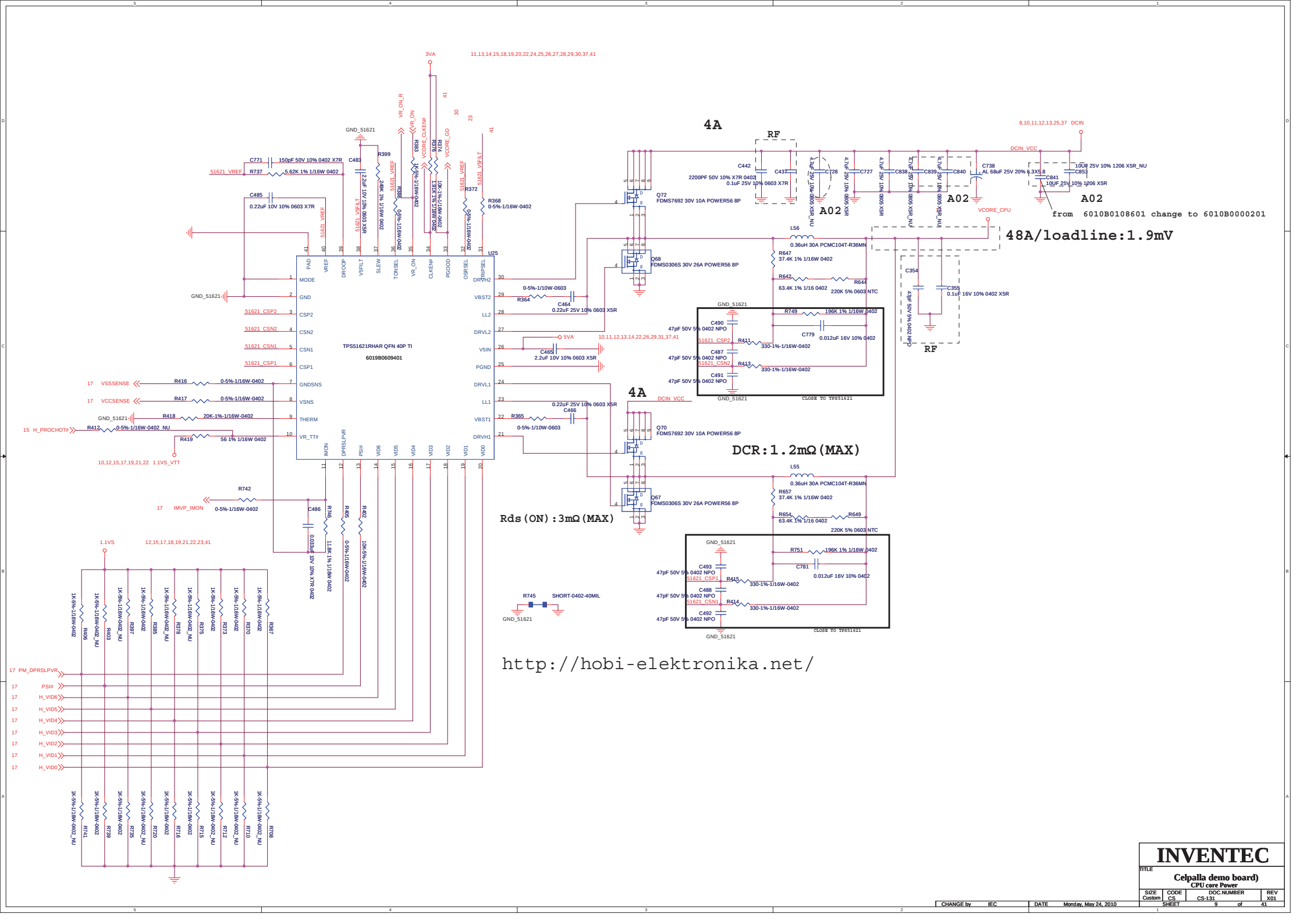
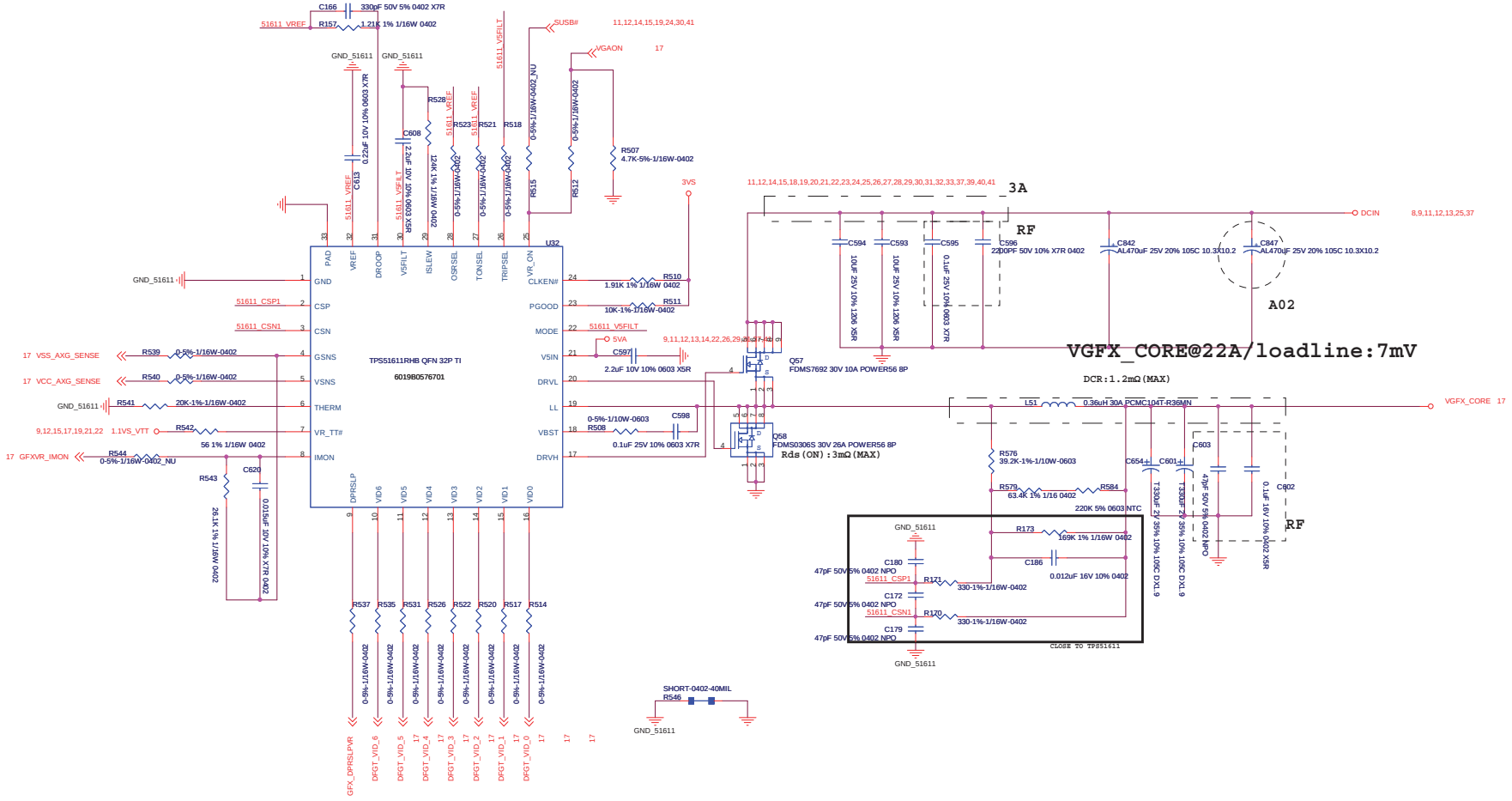

TPS51621RHAR QFN 40P TI
6019B0609401
U25
4A
RF
A02
Q72 FDMS7692 30V 10A POWER56 8P
Q68 FDMS0306S 30V 26A POWER56 8P
Q70 FDMS7692 30V 10A POWER56 8P
Q67 FDMS0306S 30V 26A POWER56 8P
L56 0.36uH 30A PCMC104T-R36MN
L55 0.36uH 30A PCMC104T-R36MN
48A/loadline:1.9mV
DCR:1.2mΩ(MAX)
Rds(ON):3mΩ(MAX)
from 6010B0108601 change to 6010B0000201
CLOSE TO TPS51621
http://hobi-elektronika.net/
INVENTEC
Celpalla demo board)
CPU core Power
Monday, May 24, 2010



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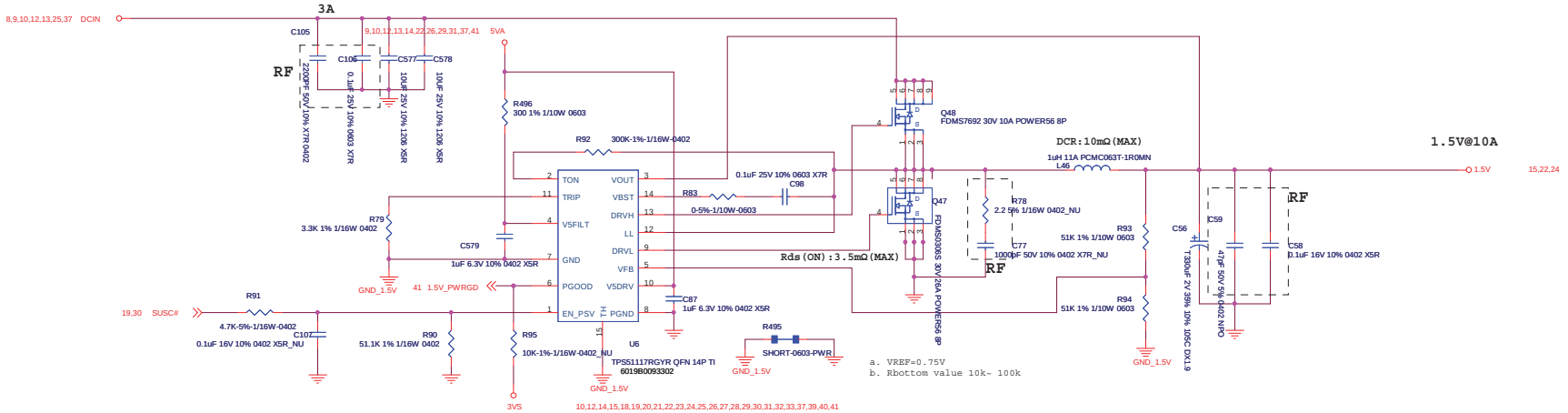
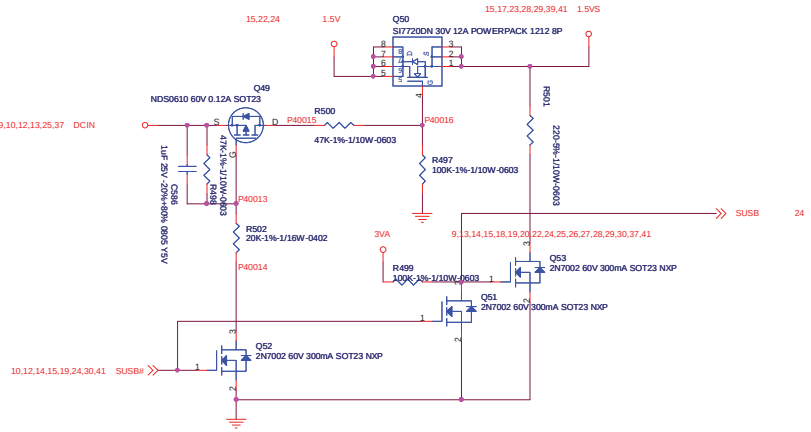
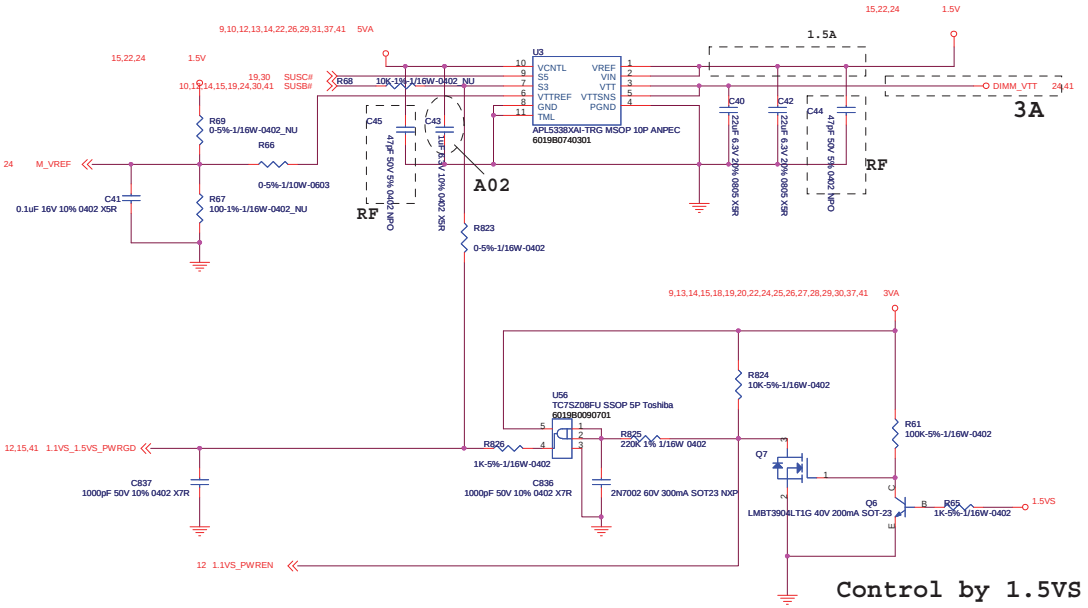
INVENTEC			
TITLE: Celpalla demo board) VGFX			
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: X01
CHANGE by: IEC	DATE: Monday, May 24, 2010	SHEET: 10 of 41	

DDR POWER







CHANGE by	IEC	DATE	Monday, May 24, 2010

INVENTEC

TITLE: Celpalla demo board)
DDR PWR

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

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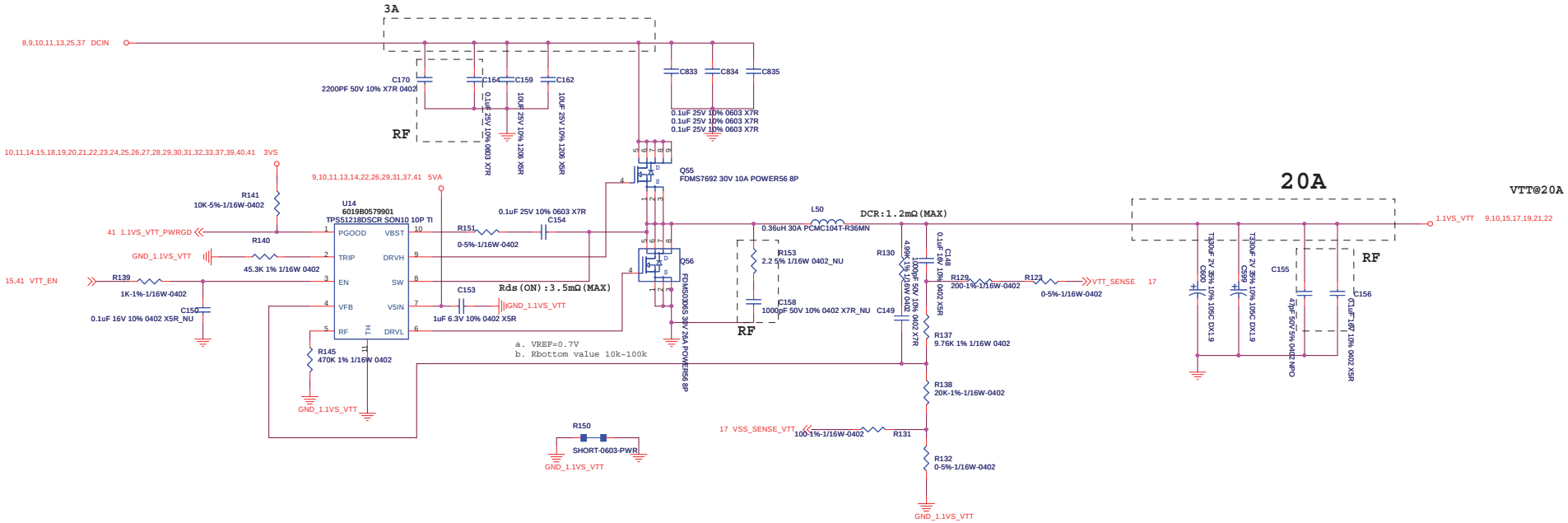
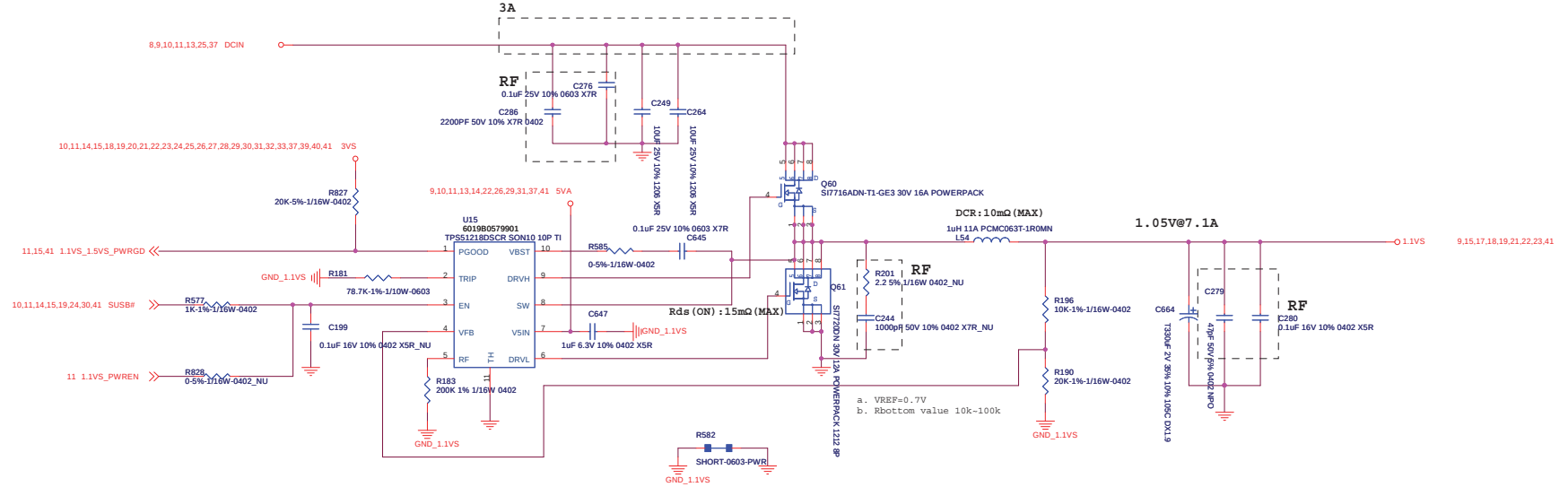


http://hobi-elektronika.net/



INVENTEC			
TITLE: Celpalla demo board)			
1.1VS_VTT/1.1VS			
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: X01
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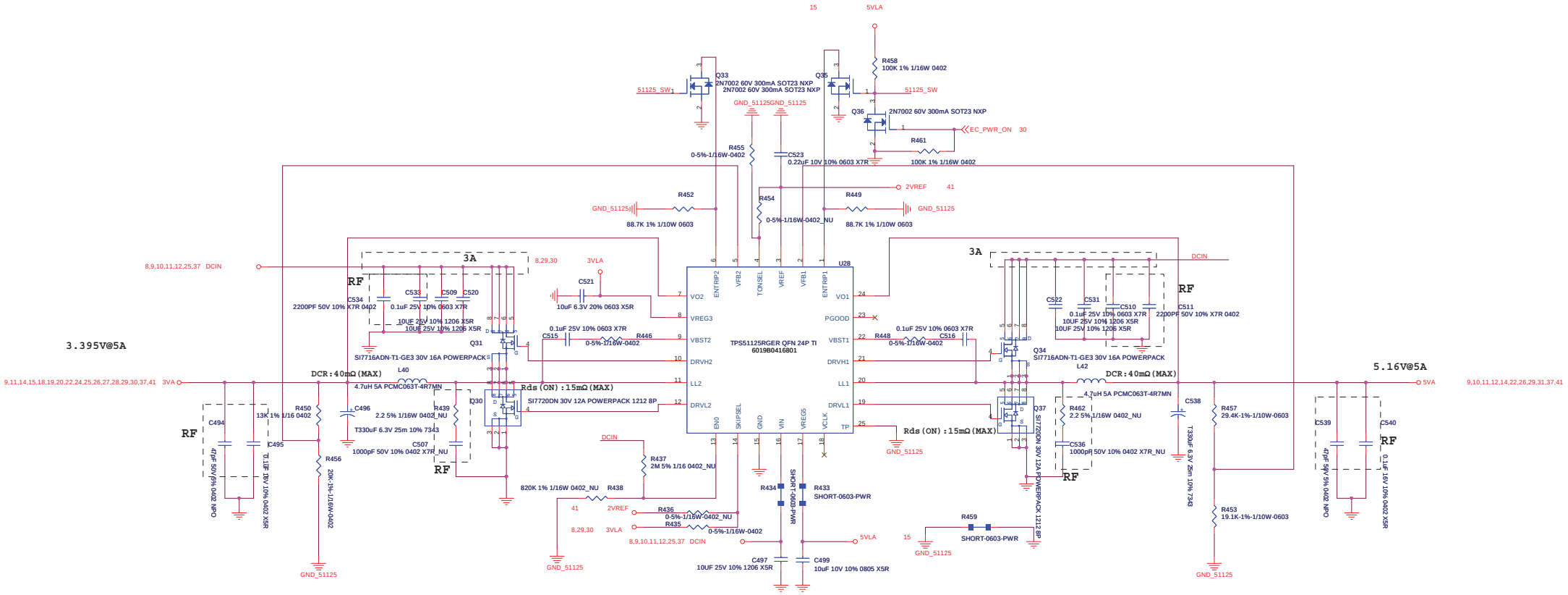

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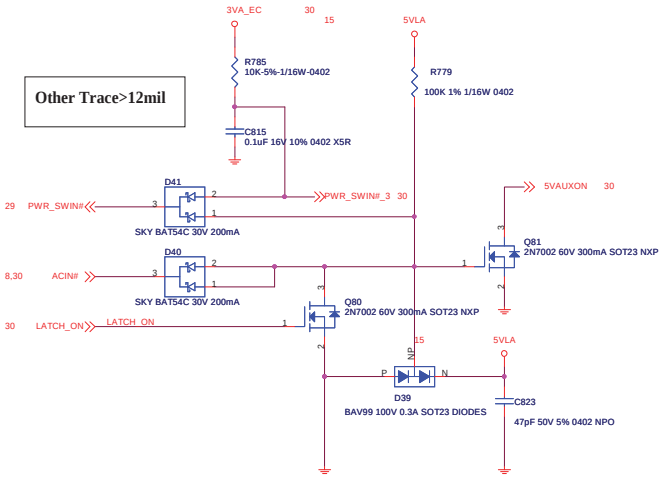
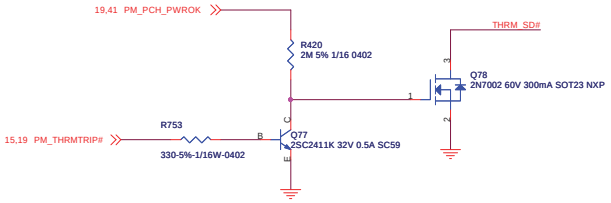
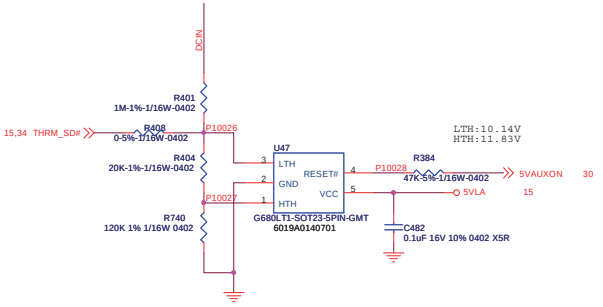


Temperature Security





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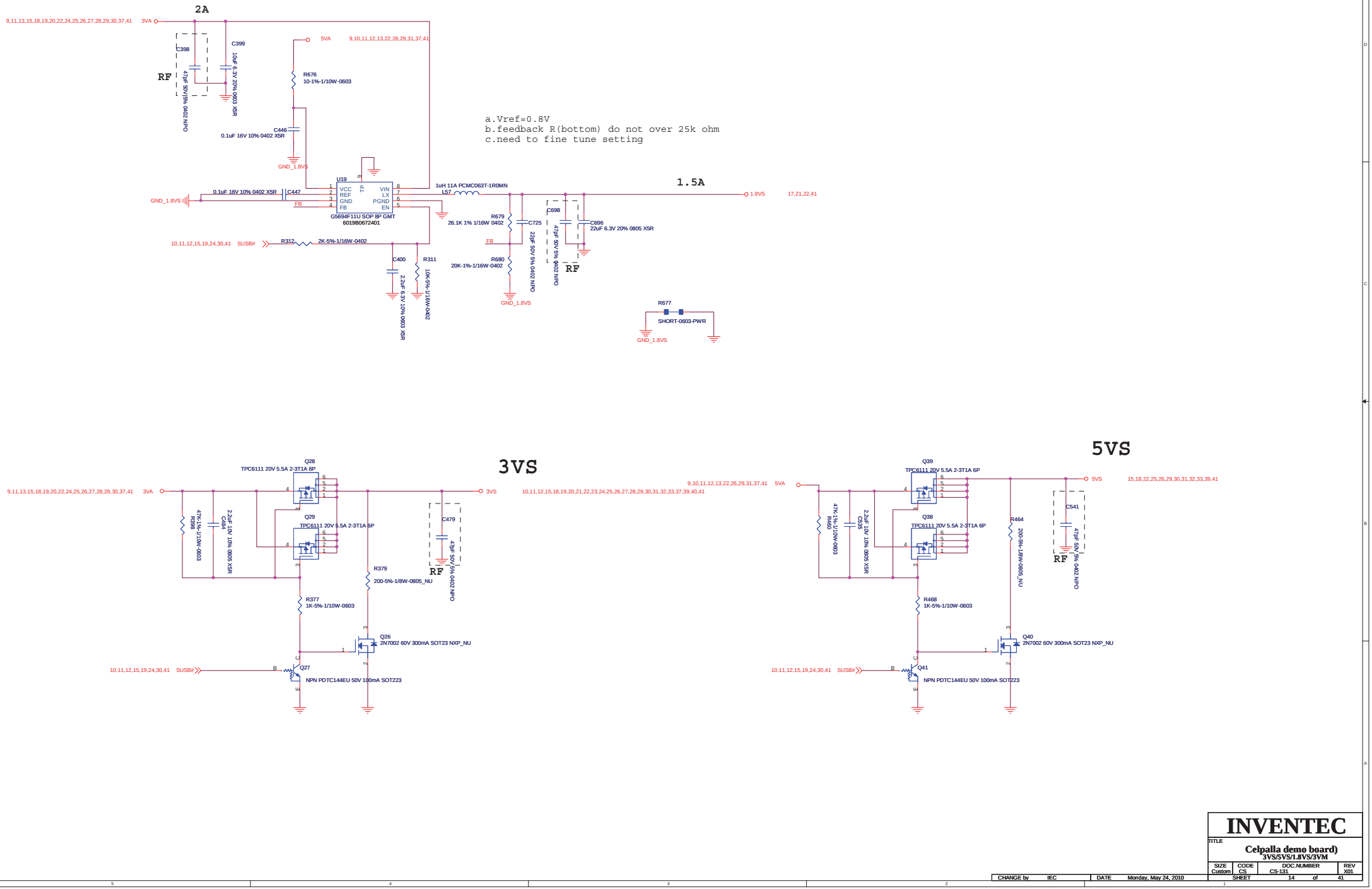
INVENTEC

TITLE: Celpalla demo board)
5VA/5VLA/3VA/3VLA

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01


2A
9,11,13,15,18,19,20,22,24,25,26,27,28,29,30,37,41
3VA
C398
RF
47pF 50V 5% 0402 NPO
C399
10uF 6.3V 20% 0603 X5R
5VA
9,10,11,12,13,22,26,29,31,37,41
R676
10-1%-1/10W-0603
C446
0.1uF 16V 10% 0402 X5R
GND_1.8VS
a.Vref=0.8V
b.feedback R(bottom) do not over 25k ohm
c.need to fine tune setting
U19
TP
VCC
REF
GND
FB
VIN
LX
PGND
EN
G5694F11U SOP 8P GMT
6019B0672401
0.1uF 16V 10% 0402 X5R
C447
GND_1.8VS
FB
1uH 11A PCMC063T-1R0MN
L57
1.5A
1.8VS
17,21,22,41
R679
26.1K 1% 1/16W 0402
C725
22pF 50V 5% 0402 NPO
C698
47pF 50V 5% 0402 NPO
RF
C696
22uF 6.3V 20% 0805 X5R
10,11,12,15,19,24,30,41
SUSB#
R312
2K-5%-1/16W-0402
C400
2.2uF 6.3V 10% 0603 X5R
R311
10K-5%-1/16W-0402
R680
20K-1%-1/16W-0402
GND_1.8VS
R677
SHORT-0603-PWR
GND_1.8VS
3VS
9,11,13,15,18,19,20,22,24,25,26,27,28,29,30,37,41
3VA
Q28
TPC6111 20V 5.5A 2-3T1A 6P
Q29
TPC6111 20V 5.5A 2-3T1A 6P
R398
47K-1%-1/10W-0603
C484
2.2uF 10V 10% 0805 X5R
C479
47pF 50V 5% 0402 NPO
RF
R379
200-5%-1/8W-0805_NU
R377
1K-5%-1/10W-0603
Q26
2N7002 60V 300mA SOT23 NXP_NU
10,11,12,15,19,24,30,41
SUSB#
Q27
NPN PDTC144EU 50V 100mA SOT223
3VS
10,11,12,15,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,37,39,40,41
9,10,11,12,13,22,26,29,31,37,41
5VA
5VS
Q39
TPC6111 20V 5.5A 2-3T1A 6P
Q38
TPC6111 20V 5.5A 2-3T1A 6P
R460
47K-1%-1/10W-0603
C535
2.2uF 10V 10% 0805 X5R
R464
200-5%-1/8W-0805_NU
C541
47pF 50V 5% 0402 NPO
RF
R468
1K-5%-1/10W-0603
Q40
2N7002 60V 300mA SOT23 NXP_NU
10,11,12,15,19,24,30,41
SUSB#
Q41
NPN PDTC144EU 50V 100mA SOT223
5VS
15,18,22,25,26,29,30,31,32,33,39,41
INVENTEC
TITLE
Celpalla demo board)
3VS/5VS/1.8VS/3VM
SIZE
Custom
CODE
CS
DOC.NUMBER
CS-131
REV
X01
CHANGE by
IEC
DATE
Monday, May 24, 2010
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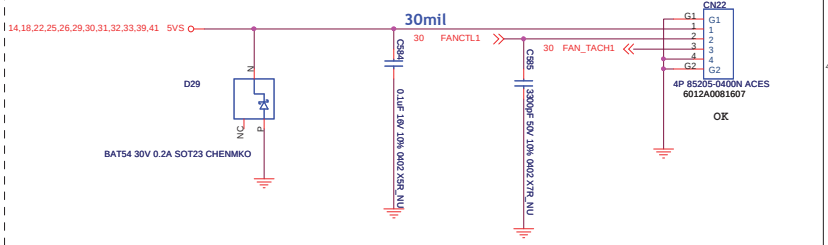
of
41

Fan control



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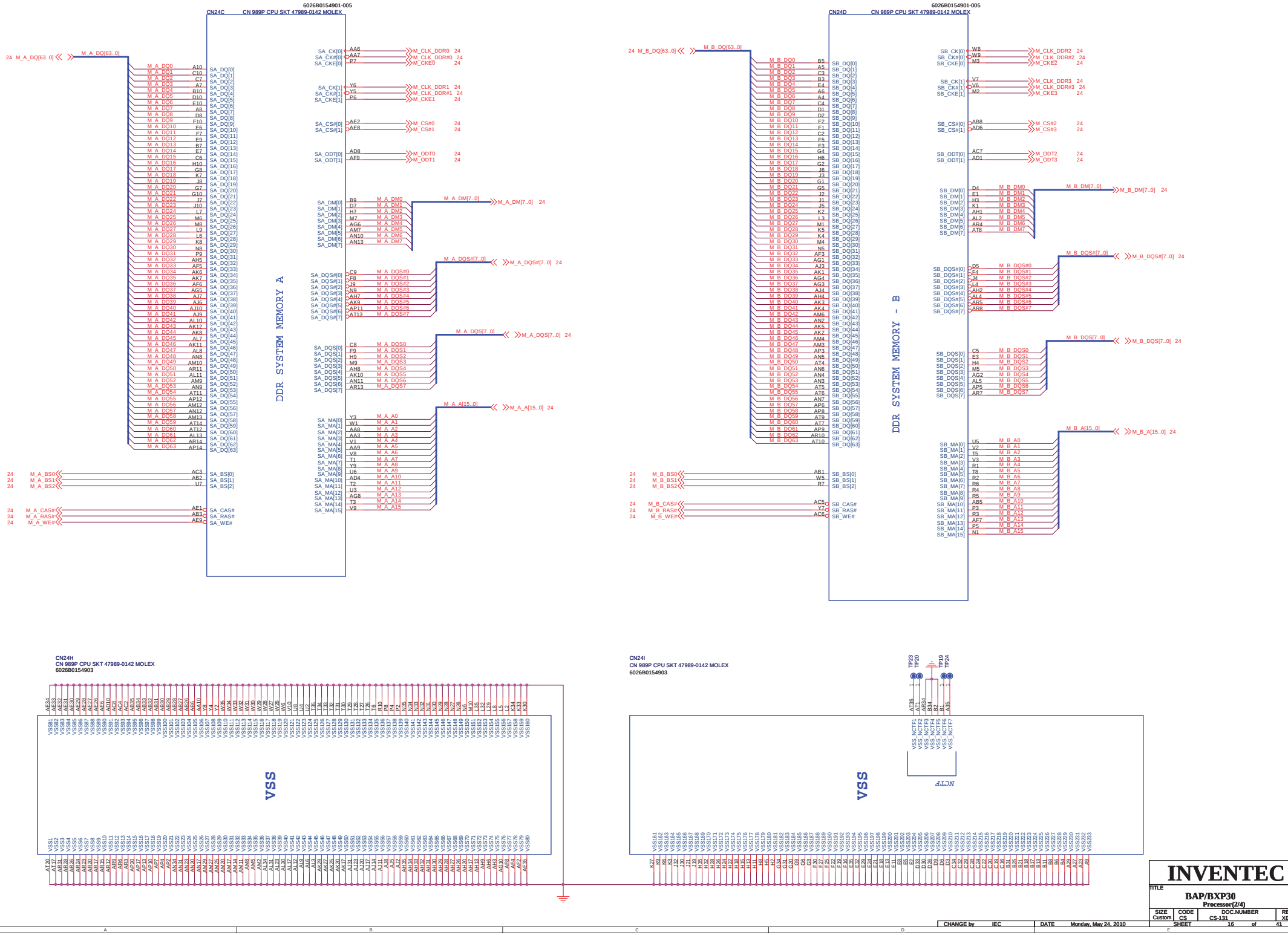
INVENTEC

TITLE: **BAP/BXP30**
Processor(1/4)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

SHEET 15 of 41



CHANGE by	IEC	DATE	Monday, May 24, 2010

INVENTEC

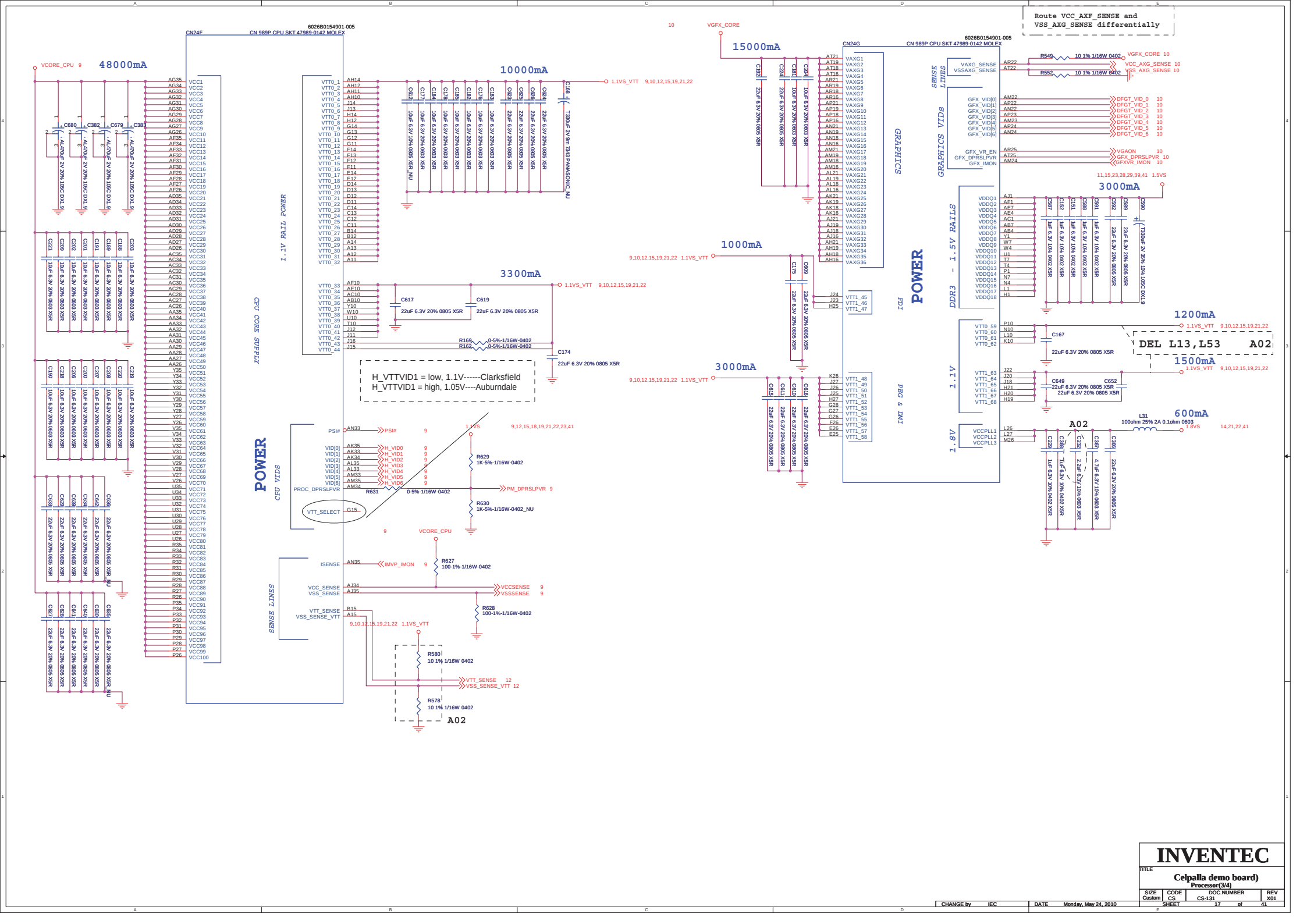
TITLE

BAP/BXP30

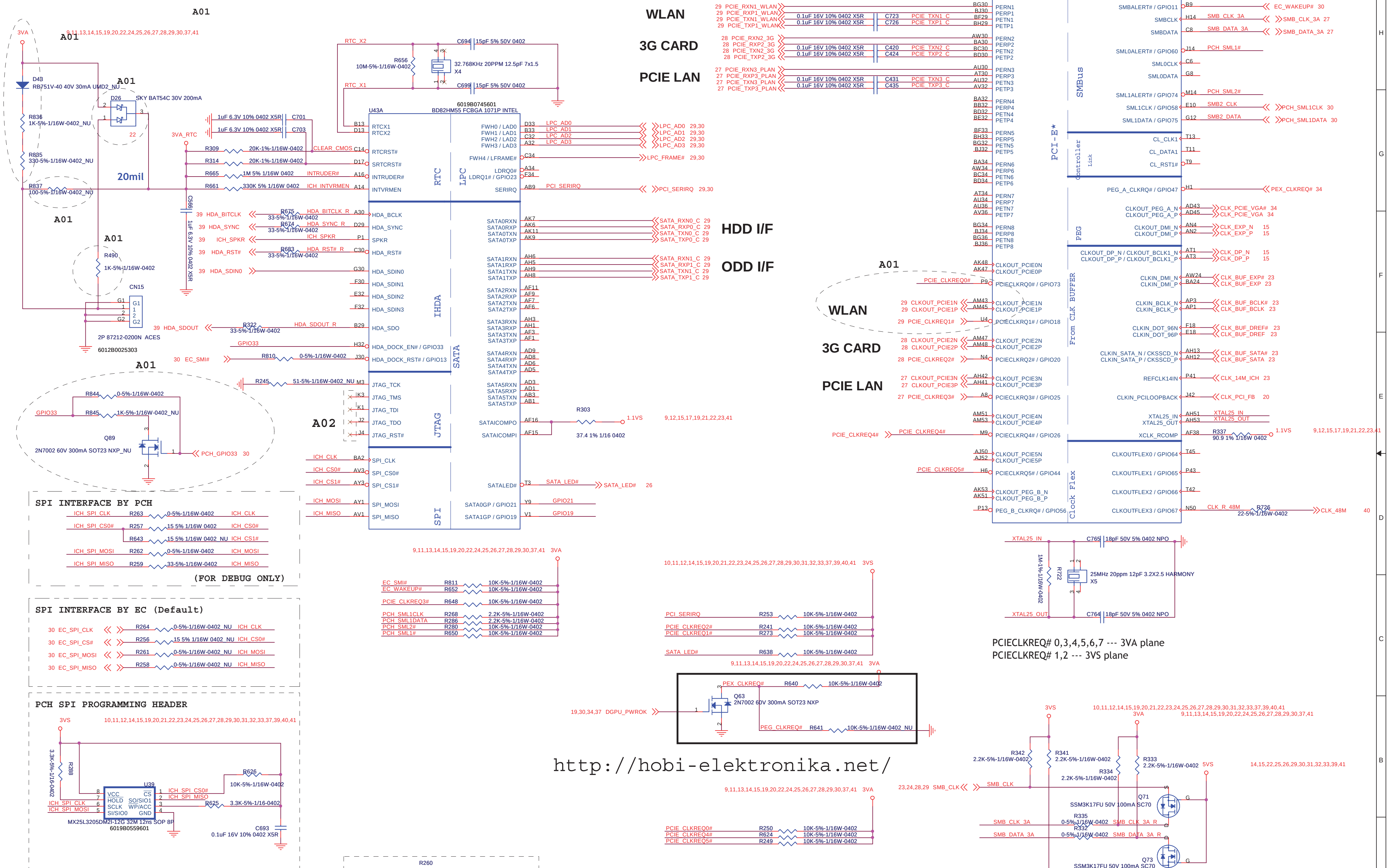
Processor(2/4)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

SHEET 16 of 41


Route VCC_AXF_SENSE and VSS_AXG_SENSE differentially
CN24F
6026B0154901-005
CN 989P CPU SKT 47989-0142 MOLEX
CN24G
6026B0154901-005
CN 989P CPU SKT 47989-0142 MOLEX
VCORE_CPU 9
48000mA
10000mA
3300mA
15000mA
1000mA
3000mA
1200mA
1500mA
600mA
VGFX_CORE
1.1VS_VTT 9,10,12,15,19,21,22
1.1VS 9,12,15,18,19,21,22,23,41
1.8VS 14,21,22,41
11,15,23,28,29,39,41 1.5VS
H_VTTVID1 = low, 1.1V------Clarksfield
H_VTTVID1 = high, 1.05V----Auburndale
DEL L13,L53 A02
A02
1.1V RAIL POWER
CPU CORE SUPPLY
CPU VIDS
SENSE LINES
GRAPHICS VIDS
DDR3 - 1.5V RAILS
1.1V
1.8V
GRAPHICS
FDI
PEG & DMI
POWER

RTC Circuit



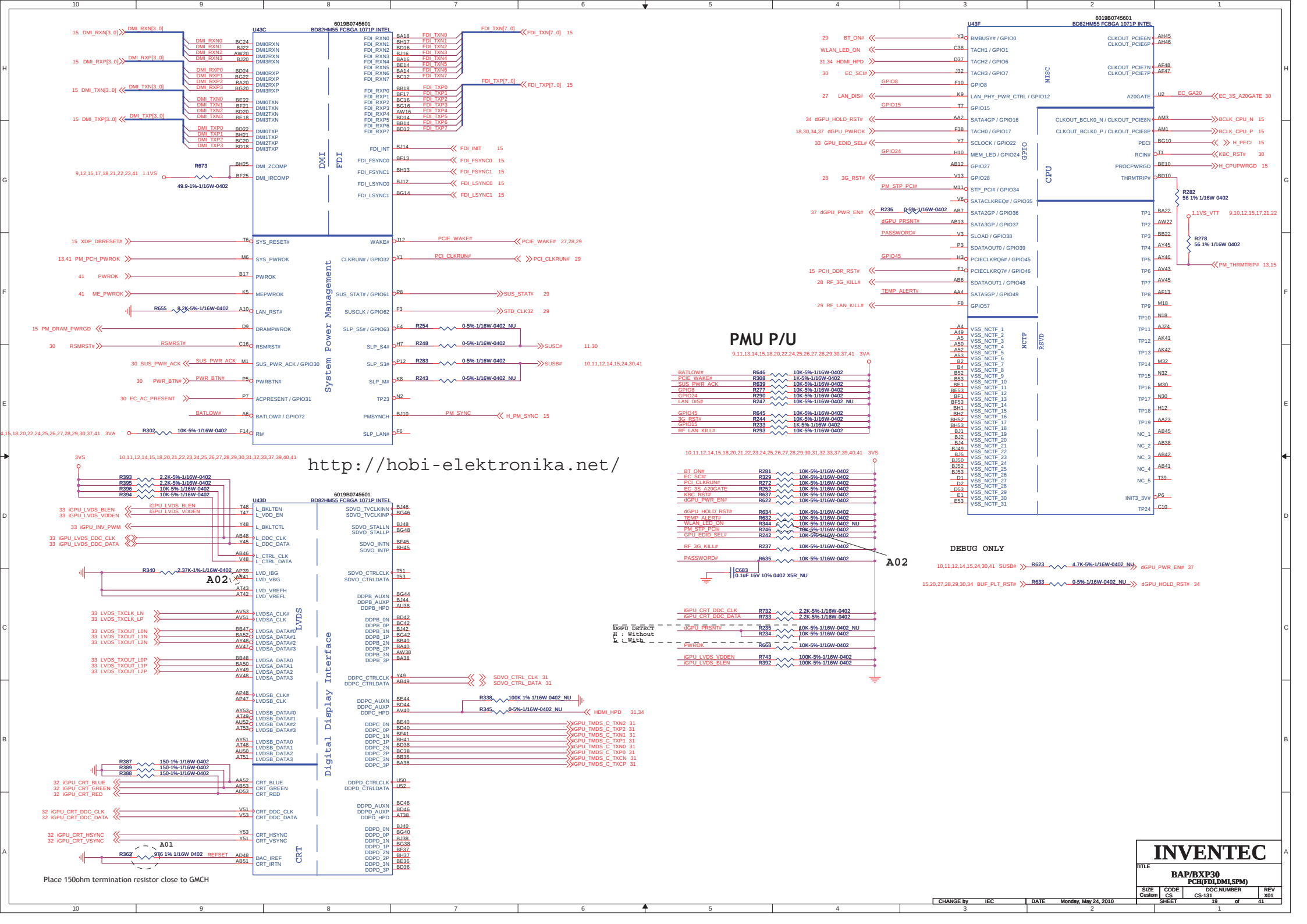
Flash Descriptor Security Overide	
PCH_GPIO33	Low : Enable High : Disable

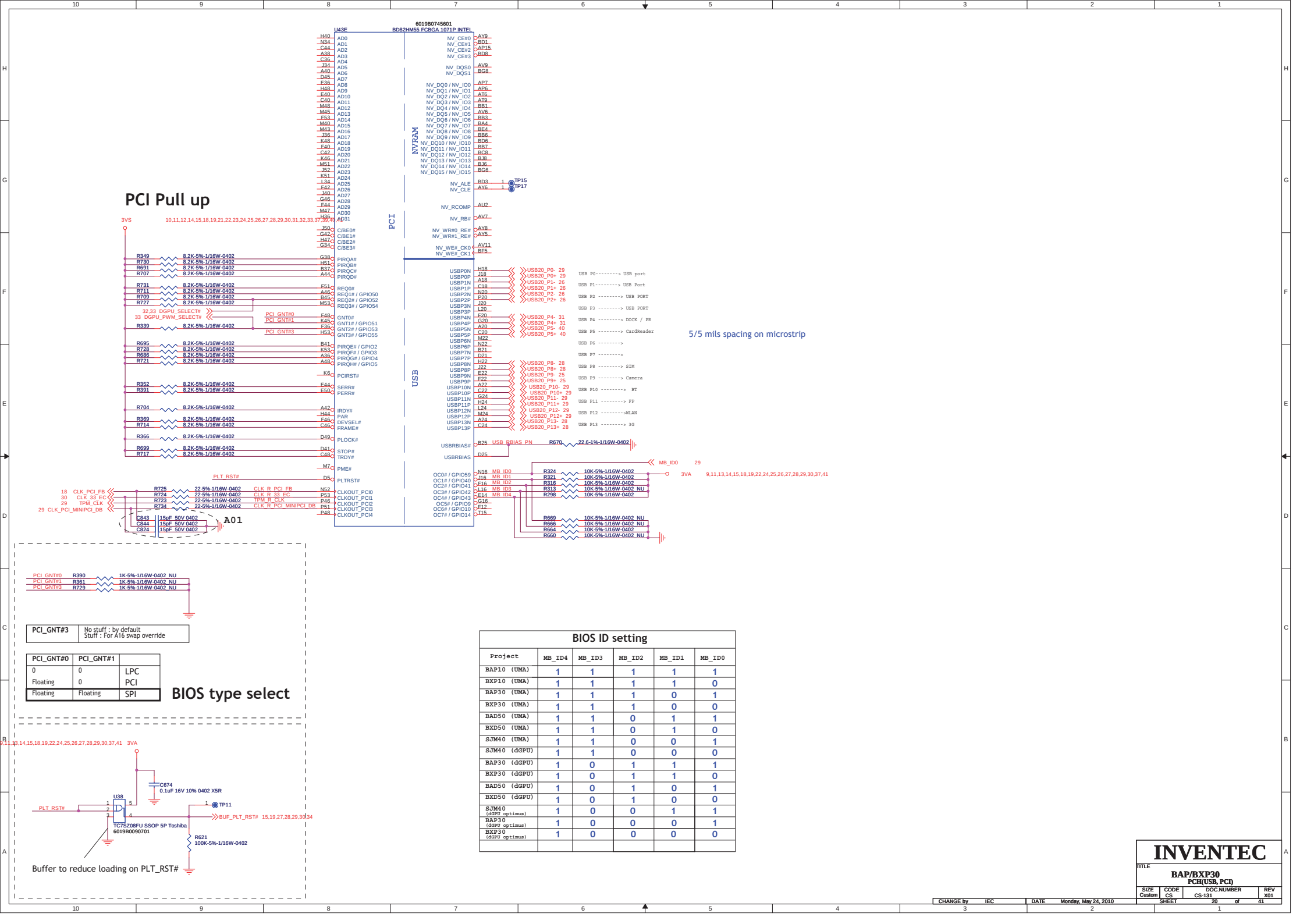
INVENTEC

TITLE: BAP/BXP30 — PCH(HDA,JTAG,SATA)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

CHANGE by IEC — DATE Monday, May 24, 2010 — SHEET 18 of 41


U43C
6019B0745601
BD82HM55 FCBGA 1071P INTEL
DMI
FDI
System Power Management
U43D
LVDS
Digital Display Interface
CRT
U43F
CPU
GPIO
MISC
NCTF
RSVD
PMU P/U
A02
A01
DEBUG ONLY
http://hobi-elektronika.net/
Place 150ohm termination resistor close to GMCH
INVENTEC
BAP/BXP30
PCH(FDI,DMI,SPM)
Monday, May 24, 2010
SHEET 19 of 41



BIOS ID setting

Project	MB_ID4	MB_ID3	MB_ID2	MB_ID1	MB_ID0
BAP10 (UMA)	1	1	1	1	1
BXP10 (UMA)	1	1	1	1	0
BAP30 (UMA)	1	1	1	0	1
BXP30 (UMA)	1	1	1	0	0
BAD50 (UMA)	1	1	0	1	1
BXD50 (UMA)	1	1	0	1	0
SJM40 (UMA)	1	1	0	0	1
SJM40 (dGPU)	1	1	0	0	0
BAP30 (dGPU)	1	0	1	1	1
BXP30 (dGPU)	1	0	1	1	0
BAD50 (dGPU)	1	0	1	0	1
BXD50 (dGPU)	1	0	1	0	0
SJM40 (dGPU optimus)	1	0	0	1	1
BAP30 (dGPU optimus)	1	0	0	0	1
BXP30 (dGPU optimus)	1	0	0	0	0

INVENTEC

TITLE: BAP/BXP30
PCH(USB, PCI)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

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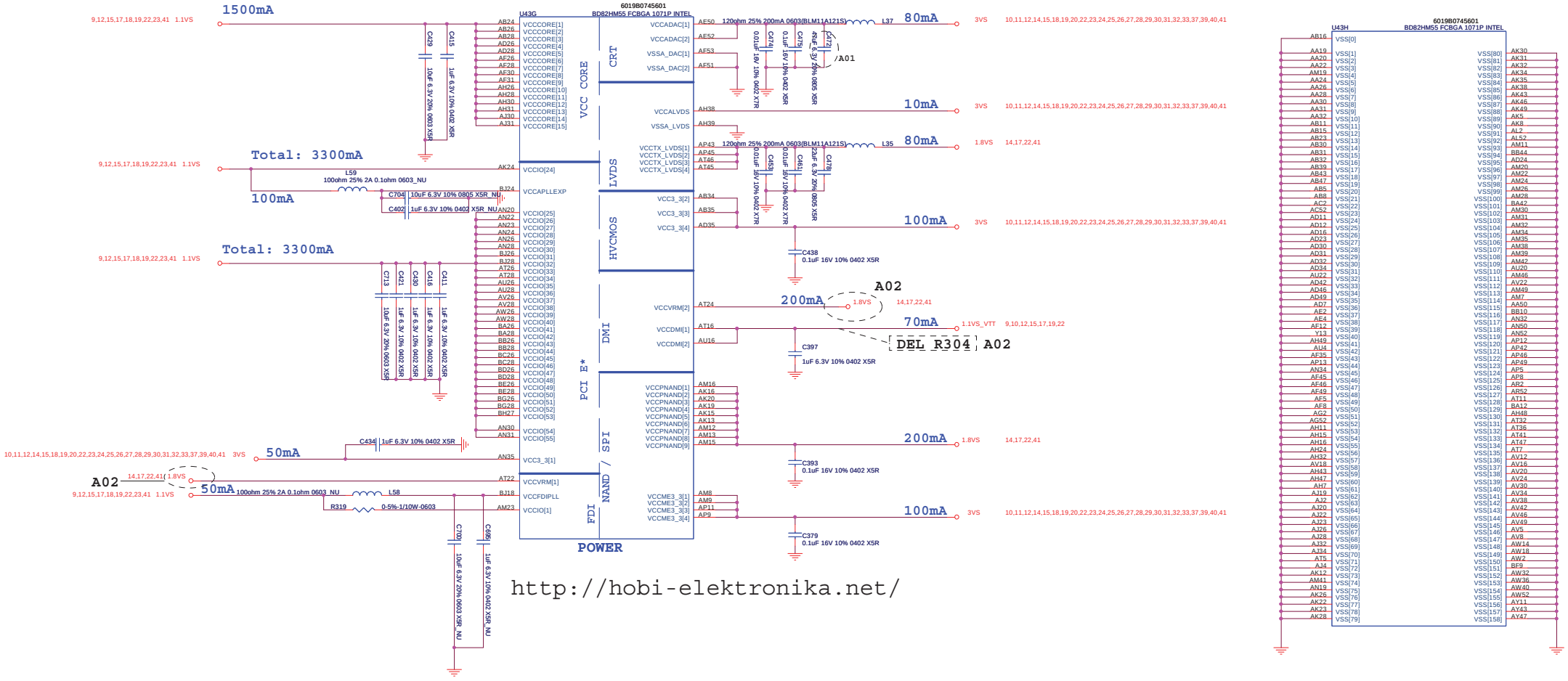
CHANGE by IEC | DATE Monday, May 24, 2010

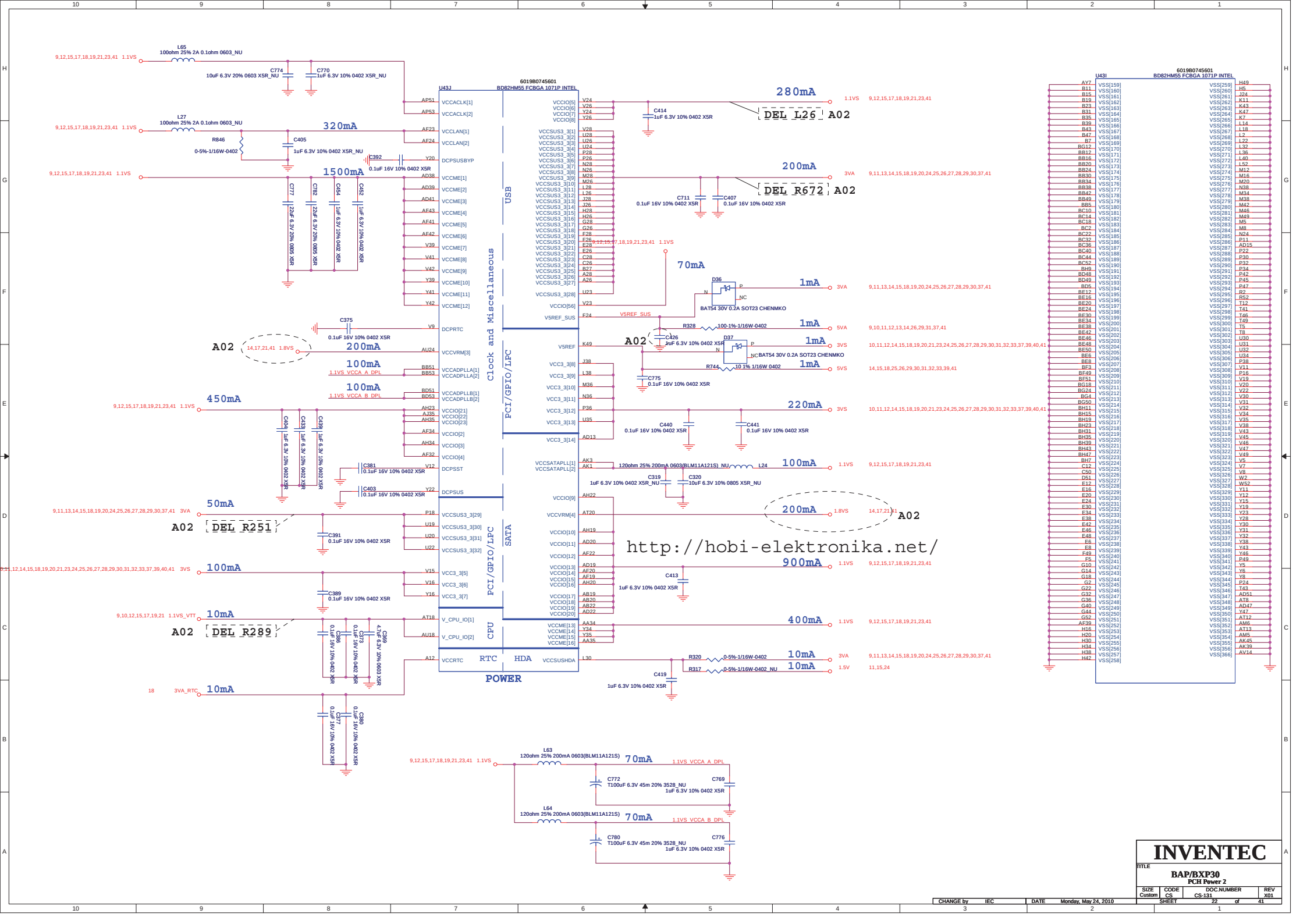


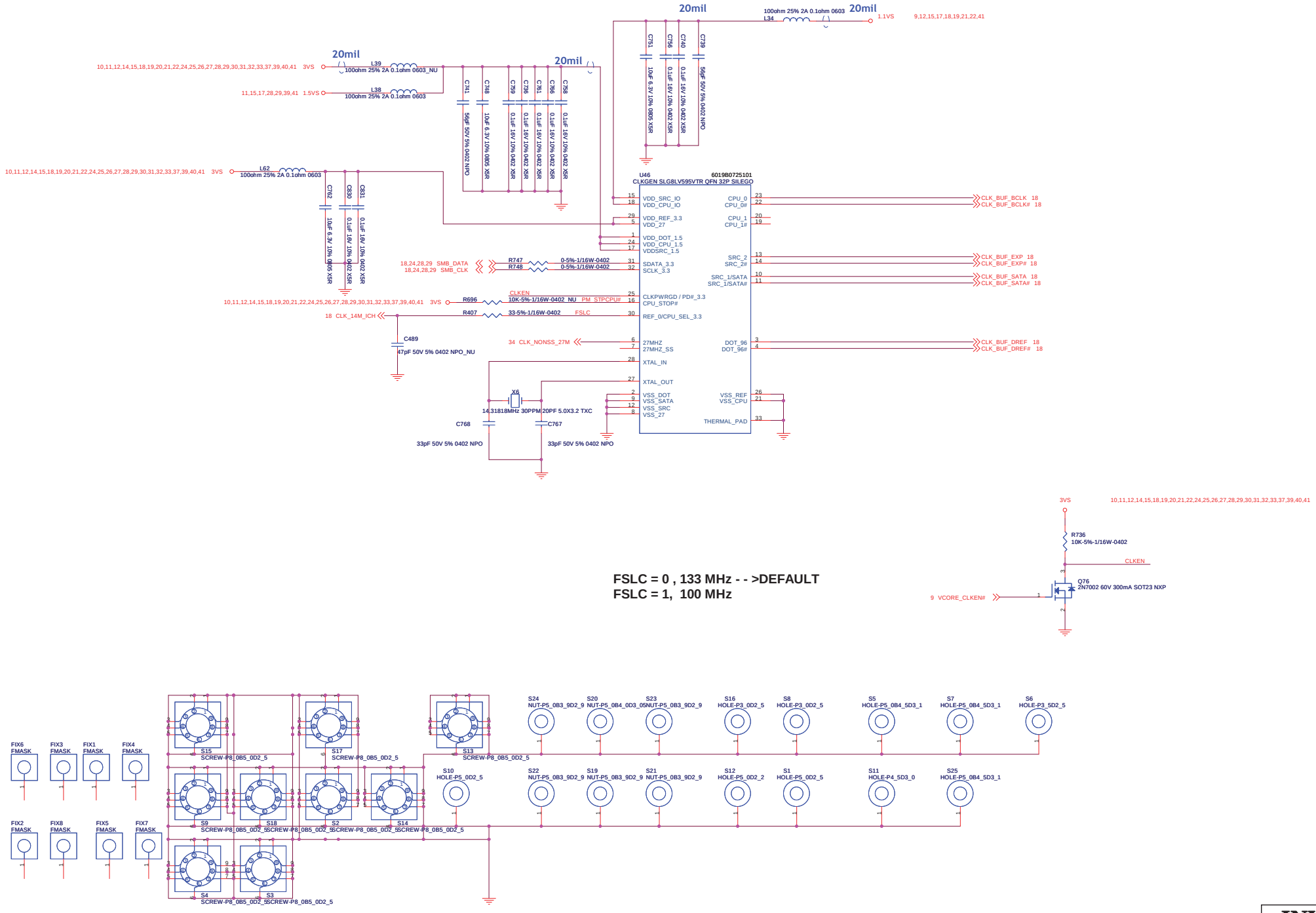
CHANGE by	IEC	DATE	Monday, May 24, 2010

INVENTEC

TITLE: **BAP/BXP30**
PCH Power 1

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01
SHEET	21	of	41


L65
100ohm 25% 2A 0.1ohm 0603_NU
C774
10uF 6.3V 20% 0603 X5R_NU
C770
1uF 6.3V 10% 0402 X5R_NU
L27
100ohm 25% 2A 0.1ohm 0603_NU
R846
0-5%-1/16W-0402
C405
1uF 6.3V 10% 0402 X5R_NU
C392
0.1uF 16V 10% 0402 X5R
C777
22uF 6.3V 20% 0805 X5R
C782
22uF 6.3V 20% 0805 X5R
C454
1uF 6.3V 10% 0402 X5R
C452
1uF 6.3V 10% 0402 X5R
C375
0.1uF 16V 10% 0402 X5R
C404
1uF 6.3V 10% 0402 X5R
C433
1uF 6.3V 10% 0402 X5R
C439
1uF 6.3V 10% 0402 X5R
C381
0.1uF 16V 10% 0402 X5R
C403
0.1uF 16V 10% 0402 X5R
C391
0.1uF 16V 10% 0402 X5R
C389
0.1uF 16V 10% 0402 X5R
C386
0.1uF 16V 10% 0402 X5R
C373
0.1uF 16V 10% 0402 X5R
C369
4.7uF 6.3V 10% 0603 X5R
C377
0.1uF 16V 10% 0402 X5R
C380
0.1uF 16V 10% 0402 X5R
U43J
6019B0745601
BD82HM55 FCBGA 1071P INTEL
USB
Clock and Miscellaneous
PCI/GPIO/LPC
SATA
CPU
RTC
HDA
POWER
320mA
1500mA
200mA
100mA
100mA
450mA
50mA
100mA
10mA
10mA
A02
DEL R251
A02
DEL R289
A02
C414
1uF 6.3V 10% 0402 X5R
280mA
DEL L26
A02
C711
0.1uF 16V 10% 0402 X5R
C407
0.1uF 16V 10% 0402 X5R
200mA
DEL R672
A02
70mA
D36
BAT54 30V 0.2A SOT23 CHENMKO
1mA
R328
100-1%-1/16W-0402
1mA
C426
1uF 6.3V 10% 0402 X5R
D37
BAT54 30V 0.2A SOT23 CHENMKO
1mA
R744
10 1% 1/16W 0402
1mA
C775
0.1uF 16V 10% 0402 X5R
220mA
C440
0.1uF 16V 10% 0402 X5R
C441
0.1uF 16V 10% 0402 X5R
C319
1uF 6.3V 10% 0402 X5R_NU
C320
10uF 6.3V 10% 0805 X5R_NU
100mA
L24
120ohm 25% 200mA 0603(BLM11A121S)_NU
200mA
A02
900mA
C413
1uF 6.3V 10% 0402 X5R
400mA
C419
1uF 6.3V 10% 0402 X5R
10mA
R320
0-5%-1/16W-0402
10mA
R317
0-5%-1/16W-0402_NU
L63
120ohm 25% 200mA 0603(BLM11A121S)
70mA
C772
T100uF 6.3V 45m 20% 3528_NU
C769
1uF 6.3V 10% 0402 X5R
L64
120ohm 25% 200mA 0603(BLM11A121S)
70mA
C780
T100uF 6.3V 45m 20% 3528_NU
C776
1uF 6.3V 10% 0402 X5R
U43I
6019B0745601
BD82HM55 FCBGA 1071P INTEL
http://hobi-elektronika.net/
INVENTEC
BAP/BXP30
PCH Power 2
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV X01
SHEET 22 of 41
CHANGE by IEC
DATE Monday, May 24, 2010



INVENTEC

TITLE: BAP/BXP30
Clock Generator

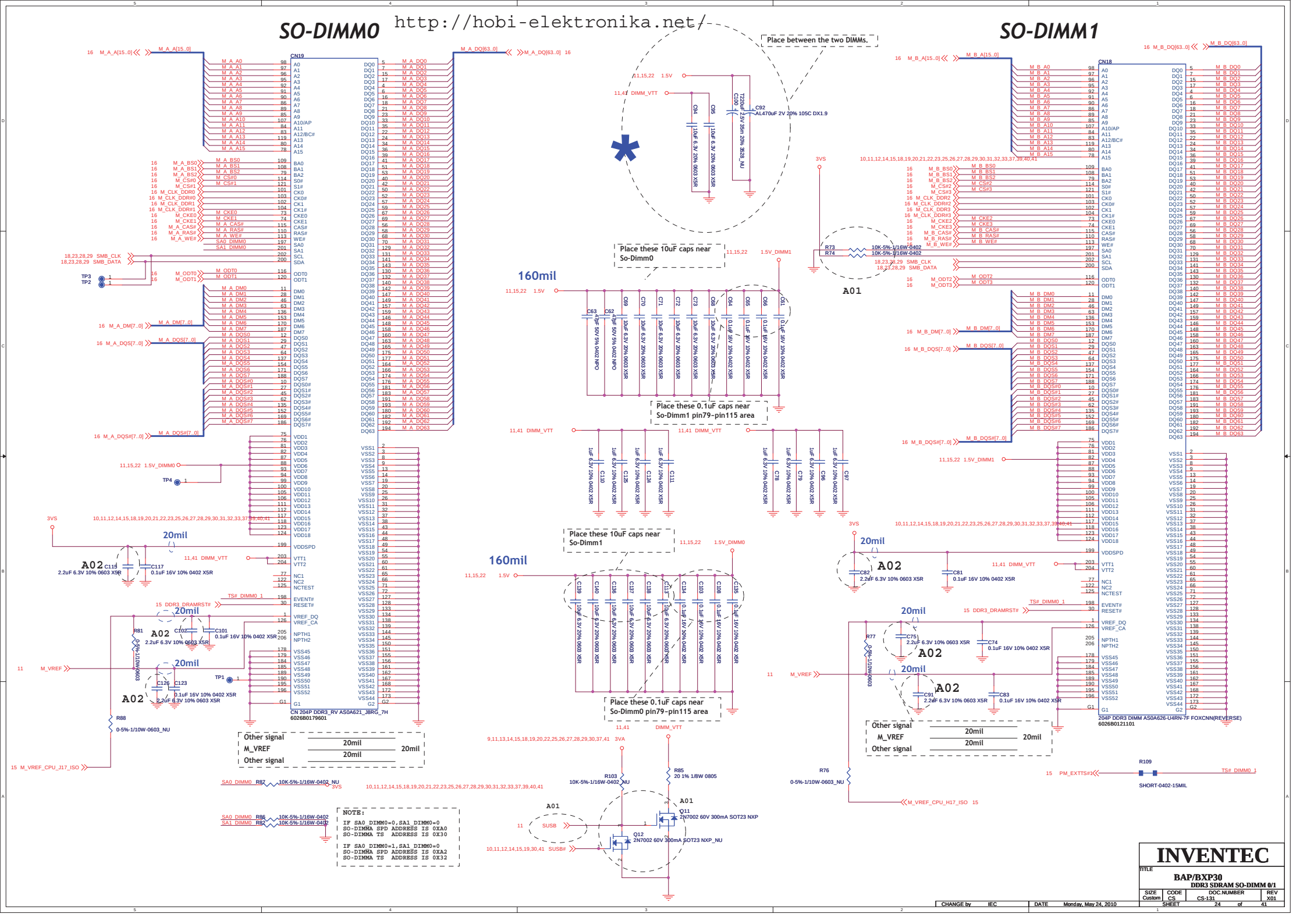
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

CHANGE by IEC | DATE Monday, May 24, 2010 | SHEET 23 of 41

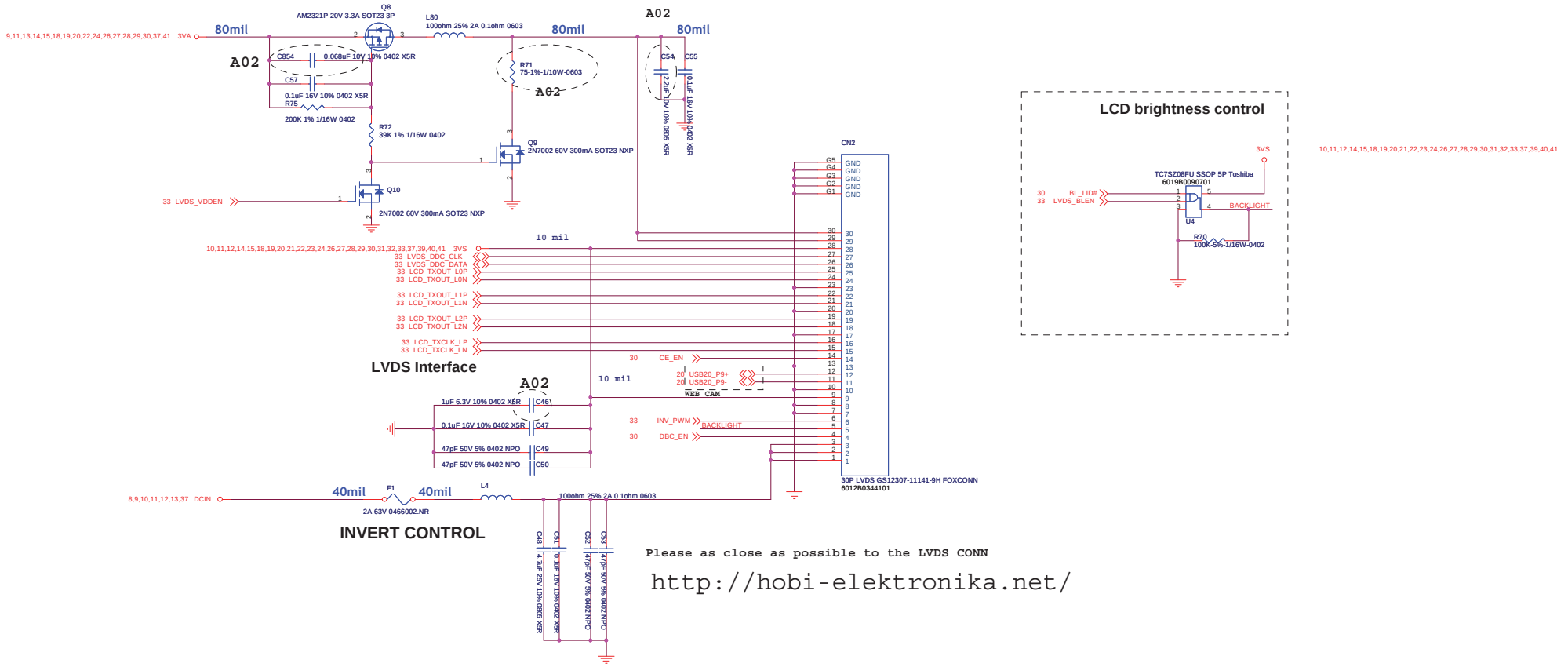
http://hobi-elektronika.net/

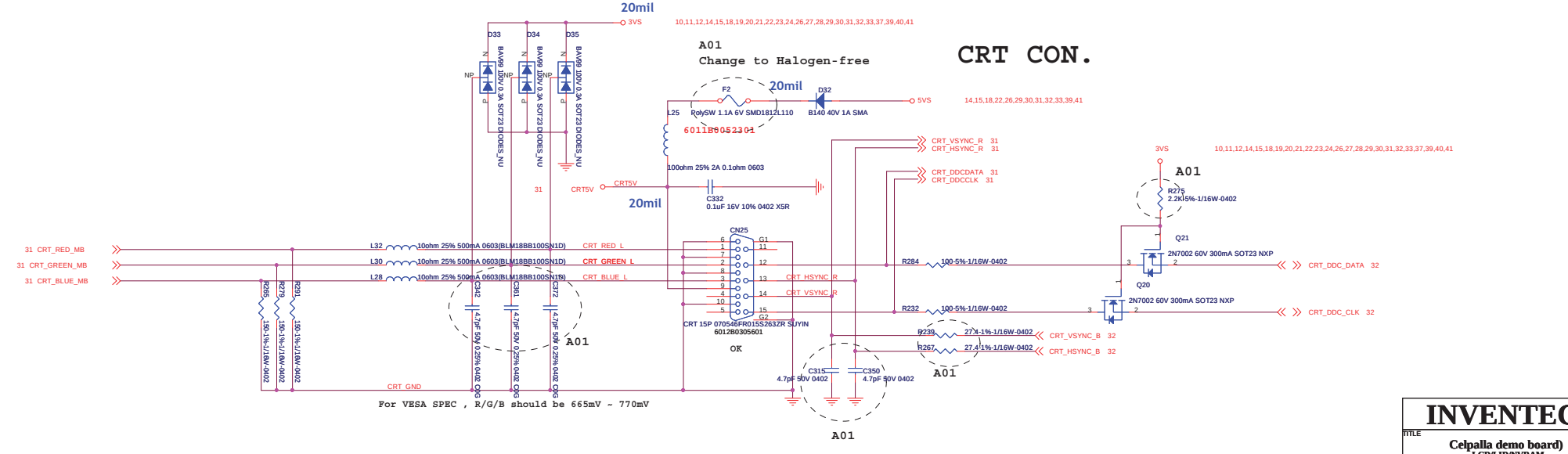
SO-DIMM0

SO-DIMM1



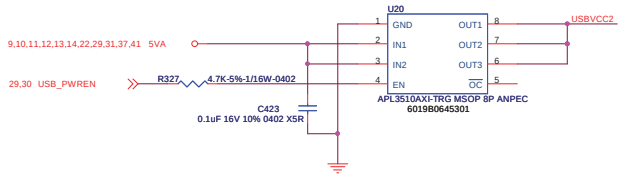
TITLE	INVENTEC
	BAP/BXP30
	DDR3 SDRAM SO-DIMM 0/1
SIZE	Custom
CODE	CS
DOC.NUMBER	CS-131
REV	X01
SHEET	24 of 41
CHANGE by	IEC
DATE	Monday, May 24, 2010

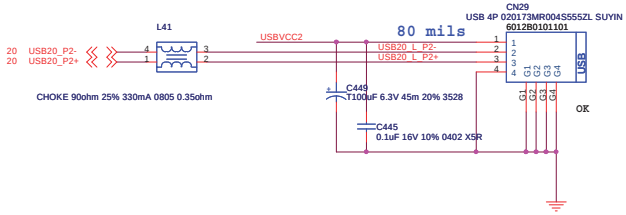




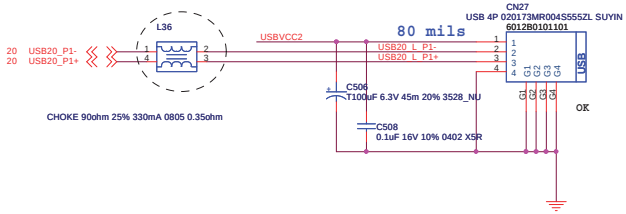
INVENTEC				
TITLE: Celpalla demo board) LCD/LID/NVRAM				
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131		REV: X01
CHANGE by: IEC	DATE: Monday, May 24, 2010	SHEET: 25 of 41		

USB

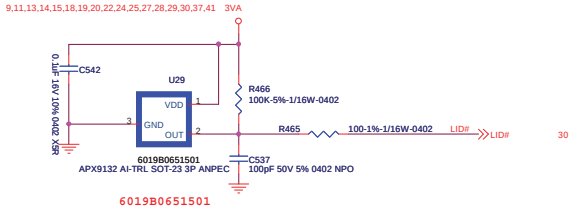


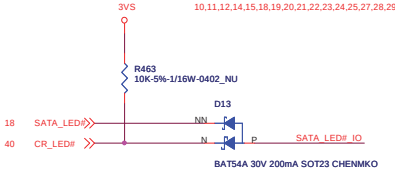


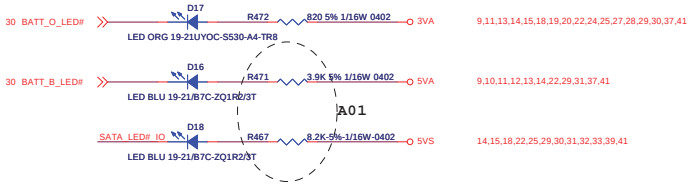
move to bottom side

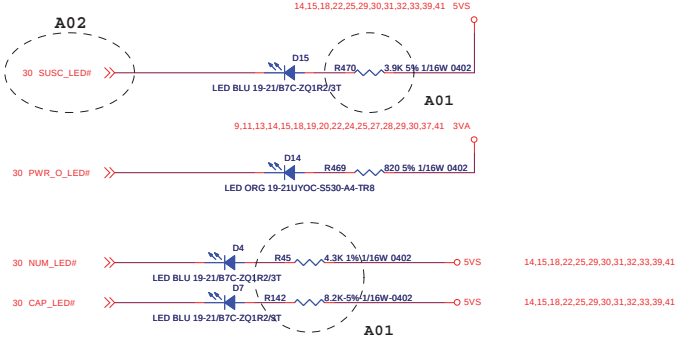


HALL Switch

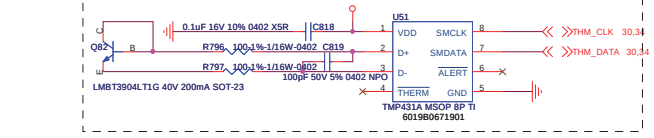




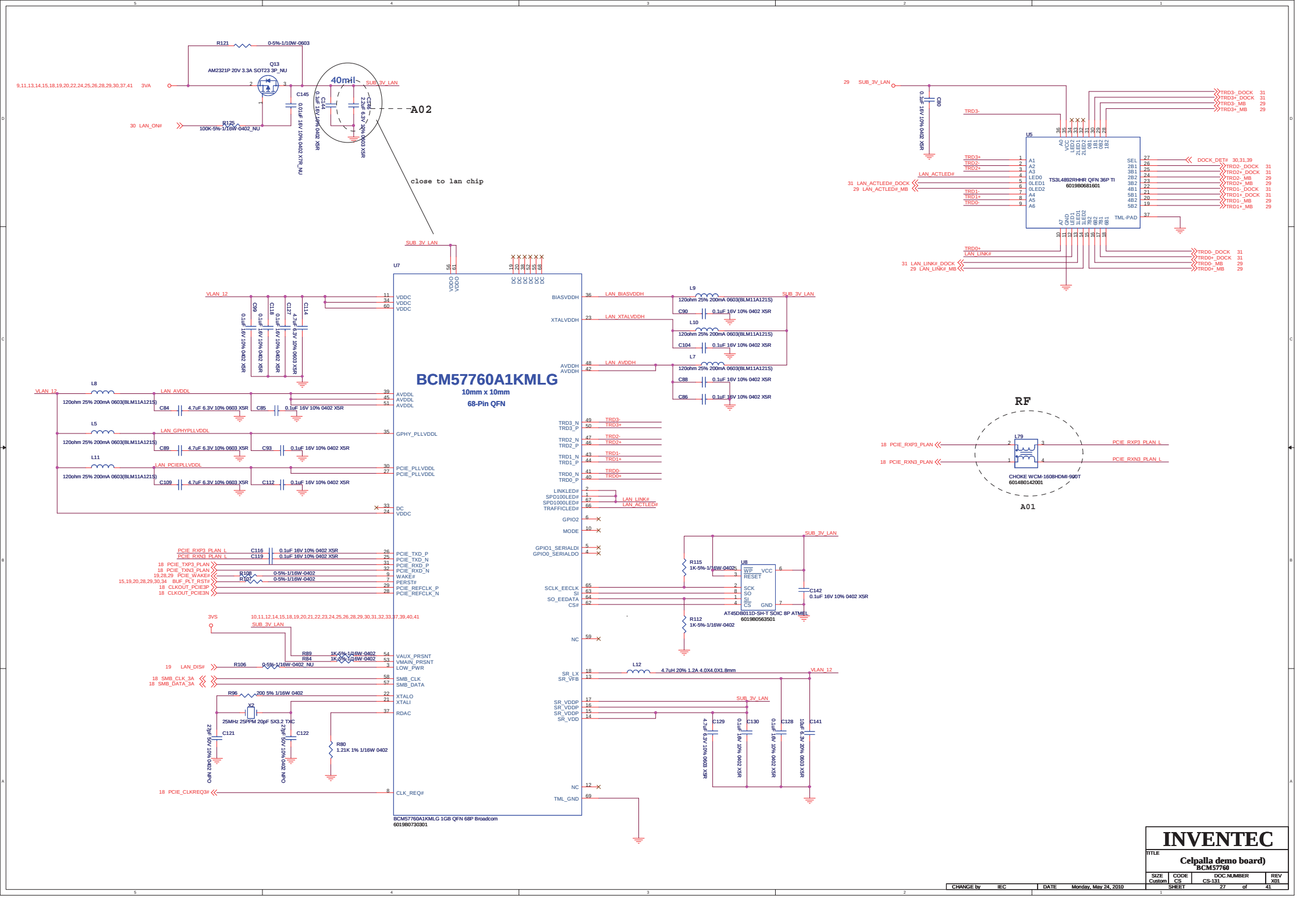




REMOTE thermal sensor
Place near the hottest spot area under Palm-rest



CHANGE by	IEC	DATE	Monday, May 24, 2010	
INVENTEC				
TITLE	BAP/BXP30			
	HDD/DAUGHTER CONNECTOR			
SIZE	CODE	DOC.NUMBER		REV
Custom	CS	CS-131		X01
		SHEET	26 of 41	



CHANGE by	IEC	DATE	Monday, May 24, 2010

INVENTEC

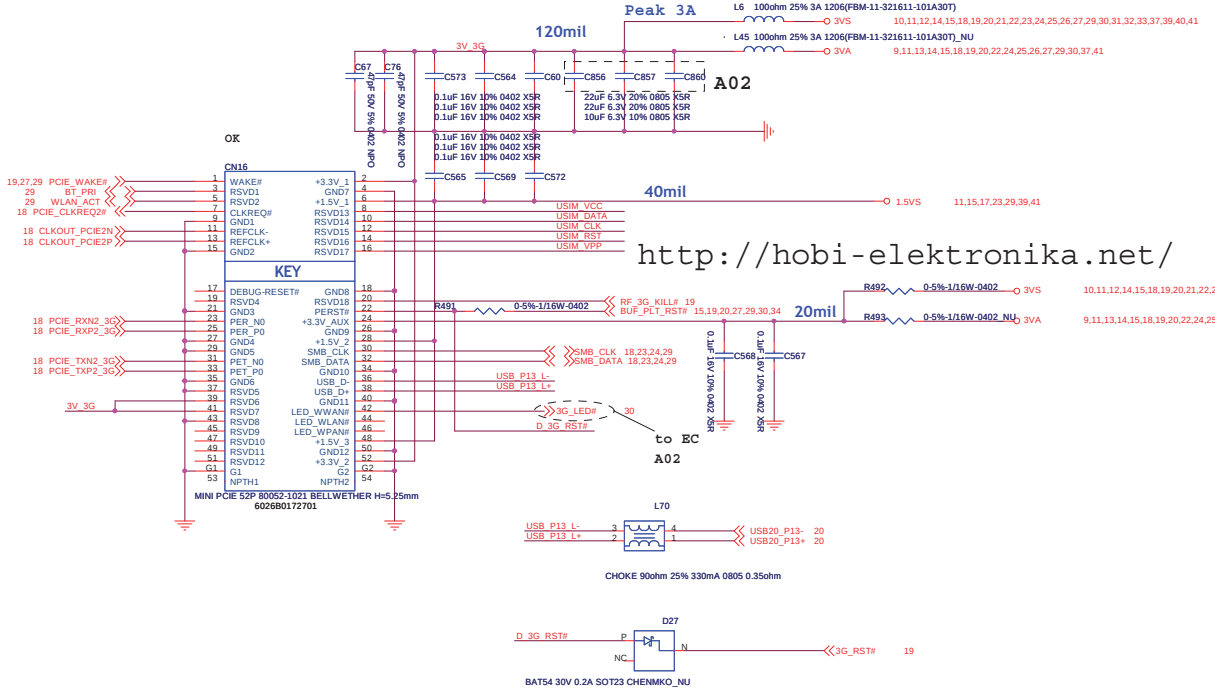
TITLE: Celpalla demo board)
BCM57760

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

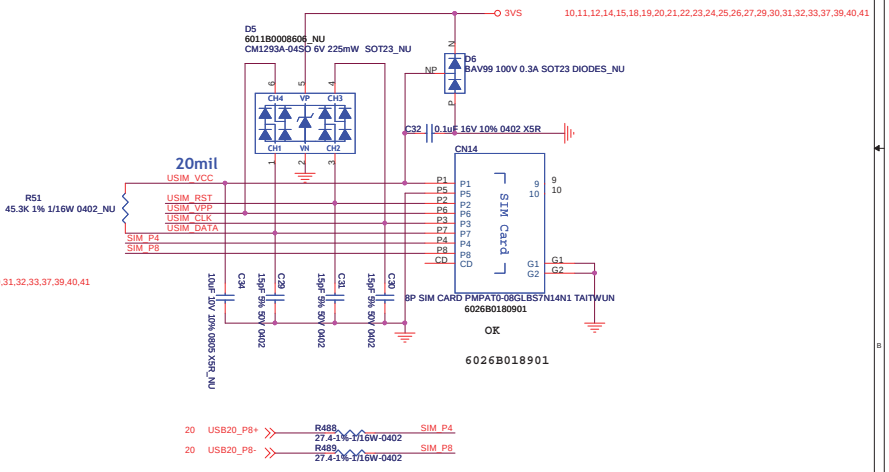
SHEET 27 of 41

PCIE Mini Card for 3G

On Chip 5V to 3.3V regulator. No external regulator required
On-Chip power MOSFETs for supplying flash media card power.



SIM CARD slot



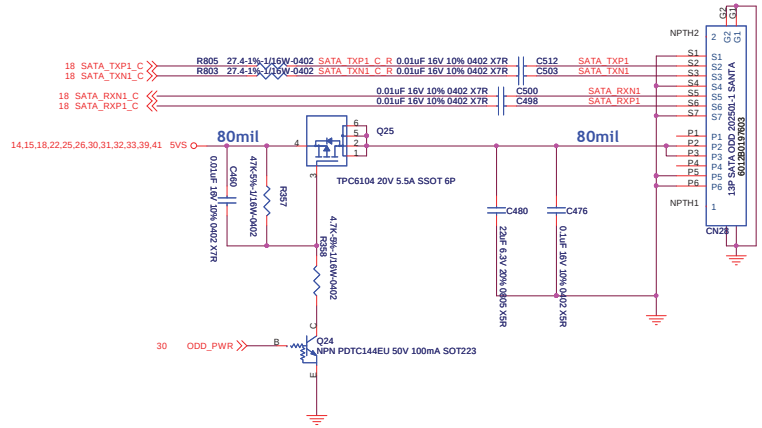
CHANGE by	IEC	DATE	Monday, May 24, 2010	
		SHEET	28 of 41	

INVENTEC

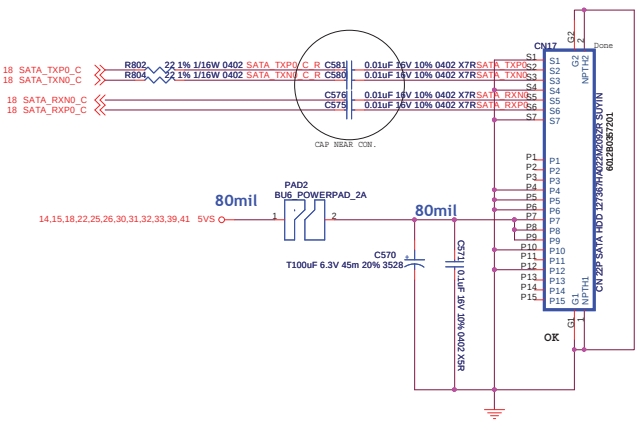
TITLE: BAP/BXP30 WLAN/3G

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

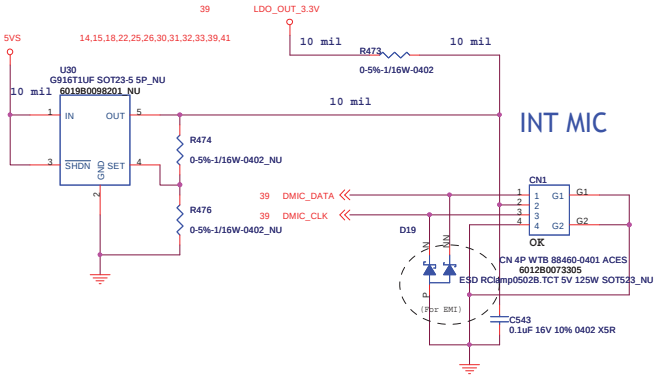
ODD I/F



HDD I/F

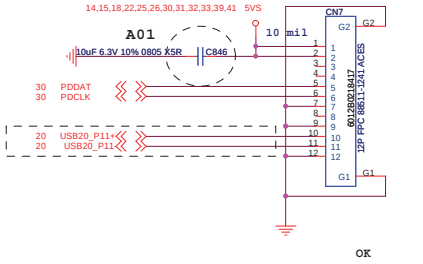


DMIC CNN

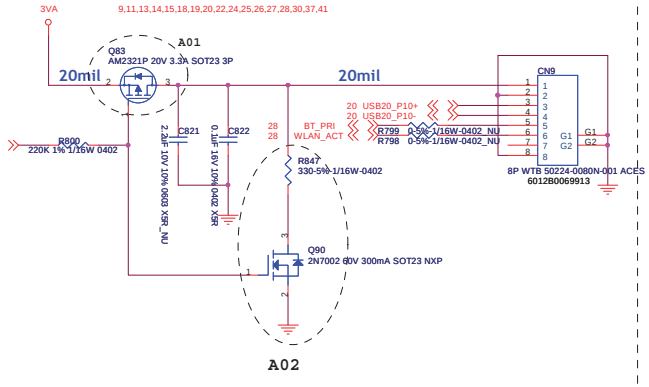


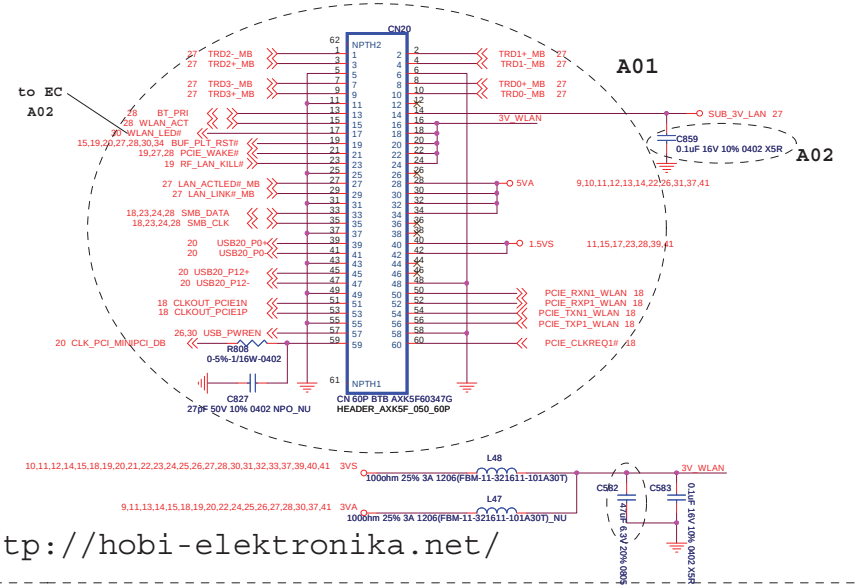
TO USB/WLAN BOARD

GP + FP CNN.



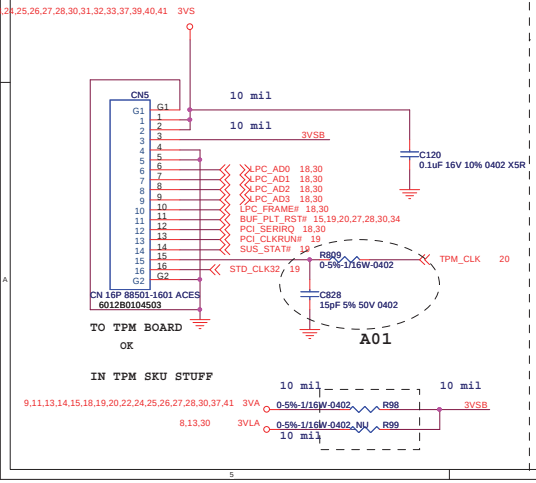
Bluetooth CNN.



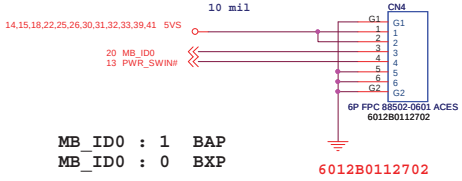


http://hobi-elektronika.net/

TPM CNN



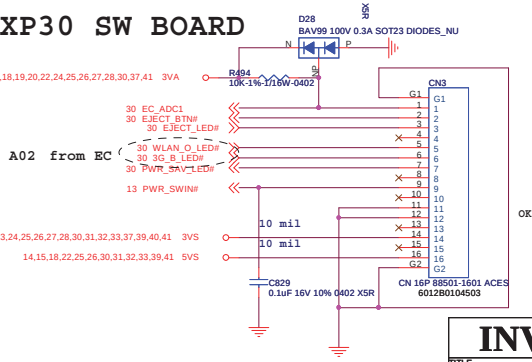
FOR BXP30 POWER BUTTON BOARD



MB_ID0 : 1 BAP
MB_ID0 : 0 BXP

6012B0112702

FOR BAP/BXP30 SW BOARD



CHANGE by	IEC	DATE	Monday, May 24, 2010

INVENTEC

TITLE: Celpalla demo board)
USB/eSATA/G-sensor/CON

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

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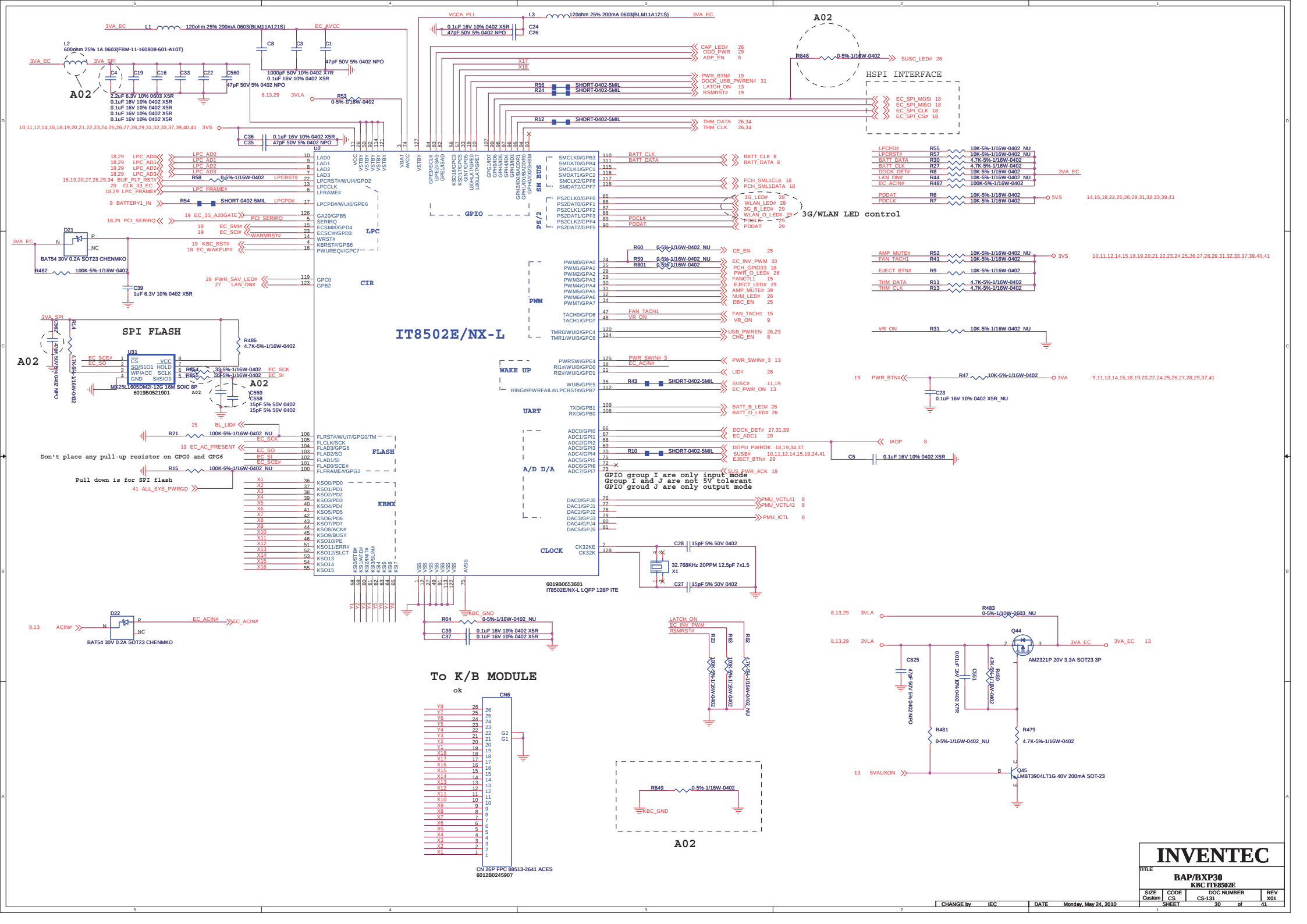
IT8502E/NX-L
SPI FLASH
To K/B MODULE
HSPI INTERFACE
3G/WLAN LED control
Don't place any pull-up resistor on GPG0 and GPG6
Pull down is for SPI flash
GPIO group I are only input mode
Group I and J are not 5V tolerant
GPIO groud J are only output mode
6019B0653601
IT8502E/NX-L LQFP 128P ITE
CN 26P FPC 88513-2641 ACES
6012B0245907
INVENTEC
BAP/BXP30
KBC ITE8502E
Monday, May 24, 2010
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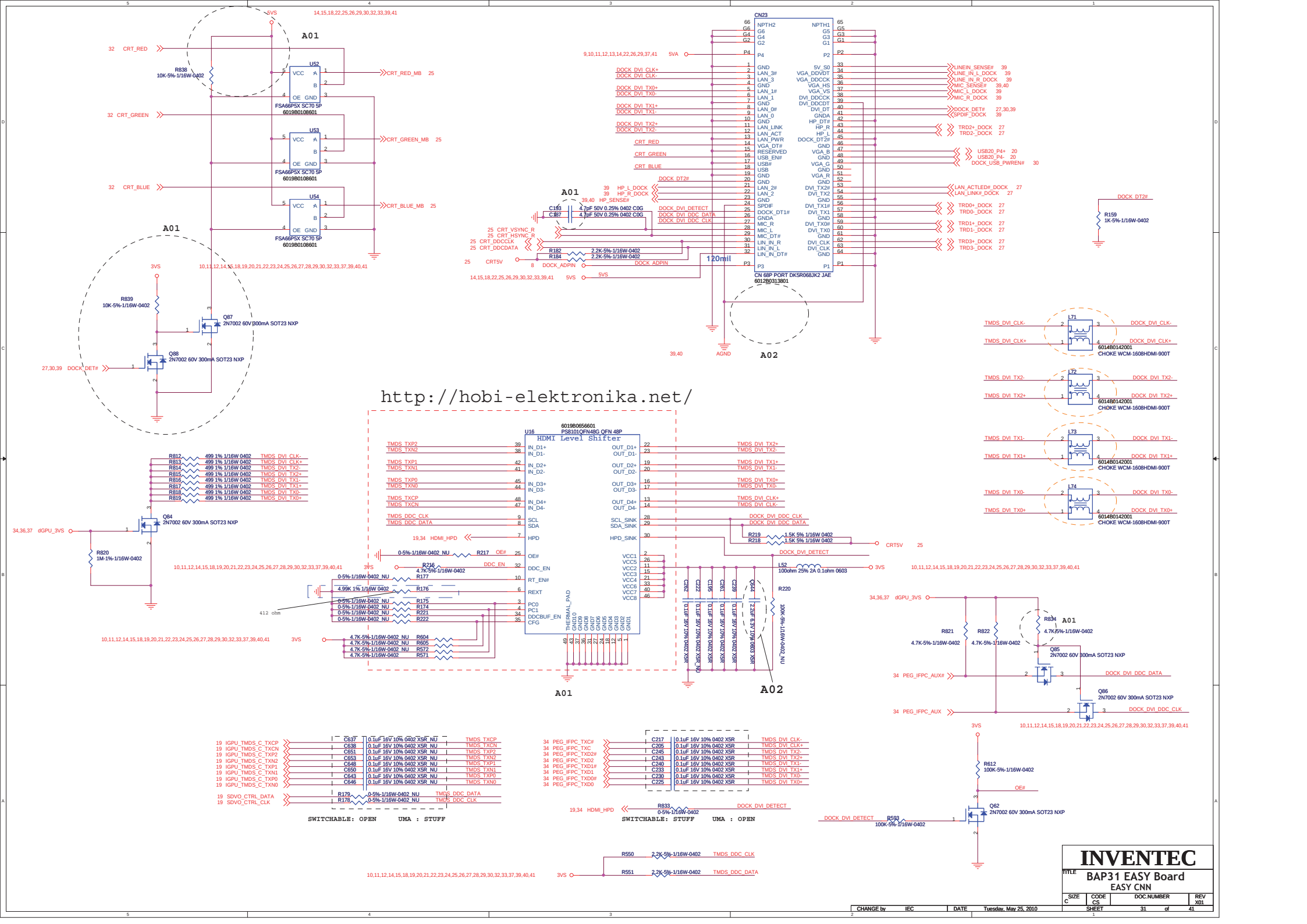
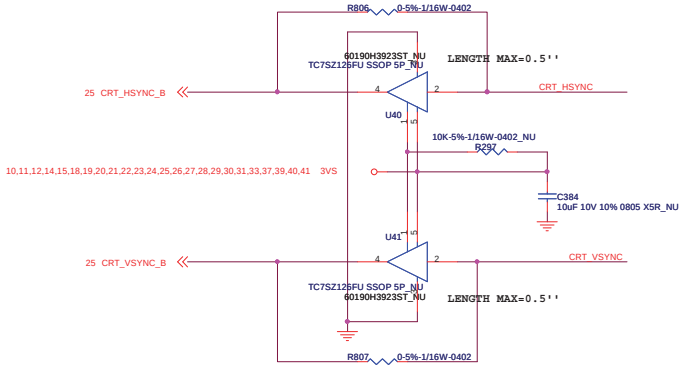
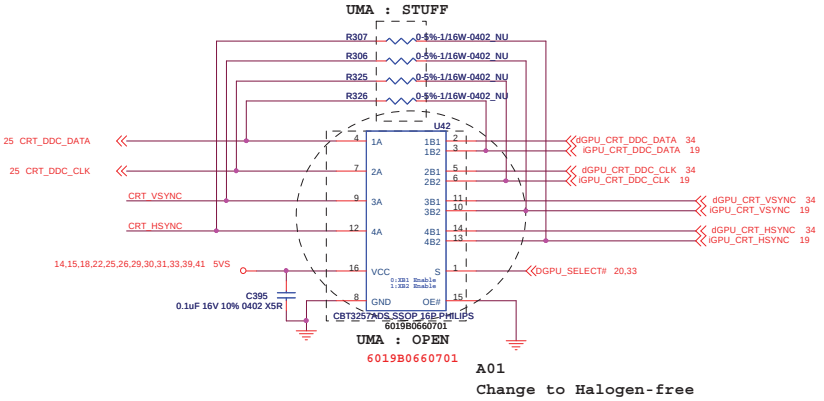

A01
A02
U52
U53
U54
FSA66P5X SC70 5P
6019B0108601
R838
10K-5%-1/16W-0402
CRT_RED_MB 25
CRT_GREEN_MB 25
CRT_BLUE_MB 25
Q87
2N7002 60V 300mA SOT23 NXP
Q88
R839
CN23
CN 68P PORT DK5R068JK2 JAE
6012B0313801
120mil
http://hobi-elektronika.net/
U16
6019B0656601
PS8101QFN48G QFN 48P
HDMI Level Shifter
L71
L72
L73
L74
6014B0142001
CHOKE WCM-1608HDMI-900T
Q84
R820
1M-1%-1/16W-0402
Q85
Q86
Q62
R834
R821
R822
R612
100K-5%-1/16W-0402
R593
R159
1K-5%-1/16W-0402
L52
100ohm 25% 2A 0.1ohm 0603
SWITCHABLE: OPEN UMA : STUFF
SWITCHABLE: STUFF UMA : OPEN
INVENTEC
BAP31 EASY Board
EASY CNN
SIZE C
CODE CS
DOC.NUMBER
REV X01
SHEET 31 of 41
CHANGE by IEC
DATE Tuesday, May 25, 2010

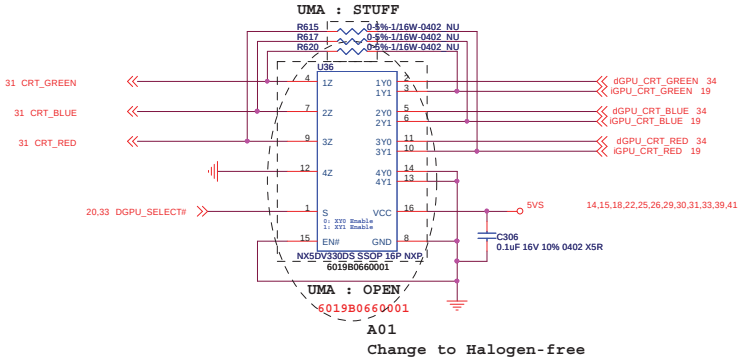
CRT HSYNC/VSYNC SW For Dock



CRT HSYNC/VSYNC/DDC SW



CRT R/G/B SW



Signal	During Reset	After Reset	Description
DGPU_PWR_EN#	High	High	0 : dGPU power switch turned on 1 : power switch turned off
DGPU_PWROK			0 : dGPU power is not stable 1 : dGPU power is stable
DGPU_HOLD_RST#	Low	Low	0 : Keep dGPU in reset 1 : Reset is released
DGPU_SELECT#	High	High	0 : Display switch enabled for dGPU 1 : Display switch enabled for iGPU
HPD_INT#			0 : DVI insertion 1 : No DVI insertion
DGPU_PWM_SELECT#		High	0 : PWM switch enabled for dGPU 1 : PWM switch enabled for iGPU
GPU_EDID_SEL#		High	0 : EDID/DDC switch enabled for dGPU 1 : EDID/DDC switch enabled for iGPU

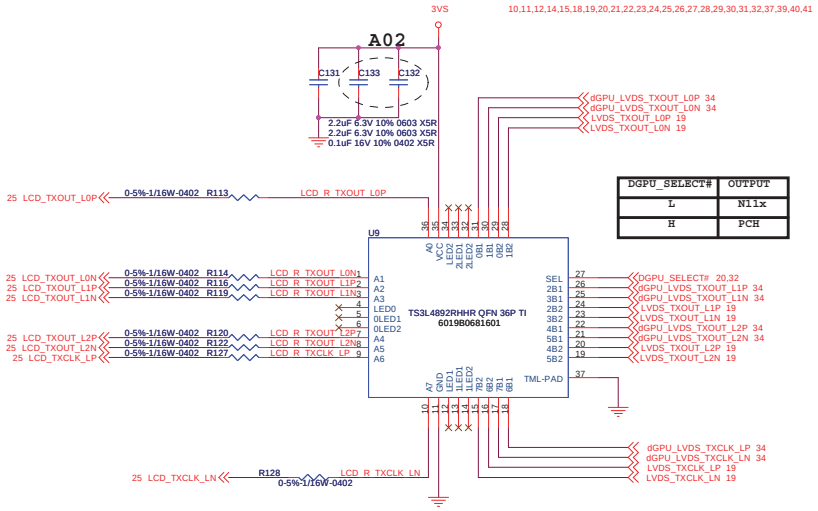
INVENTEC

TITLE: BAP/BXP30
Hybird Switch (1/2)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

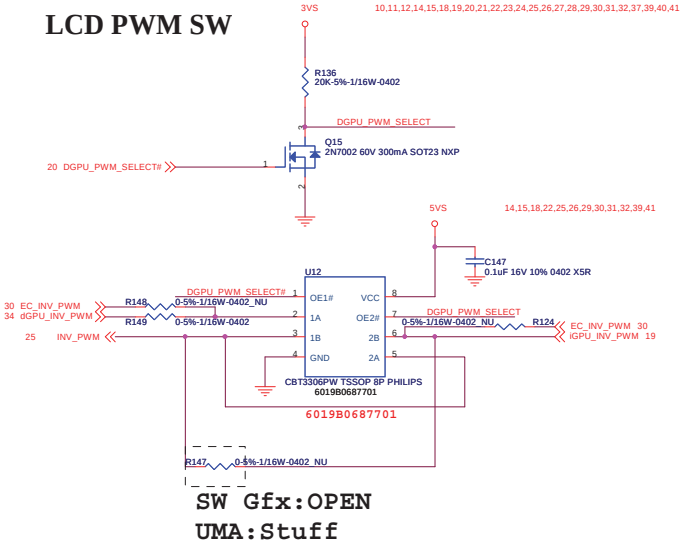
CHANGE by IEC | DATE Monday, May 24, 2010 | SHEET 32 of 41

LVDS SW



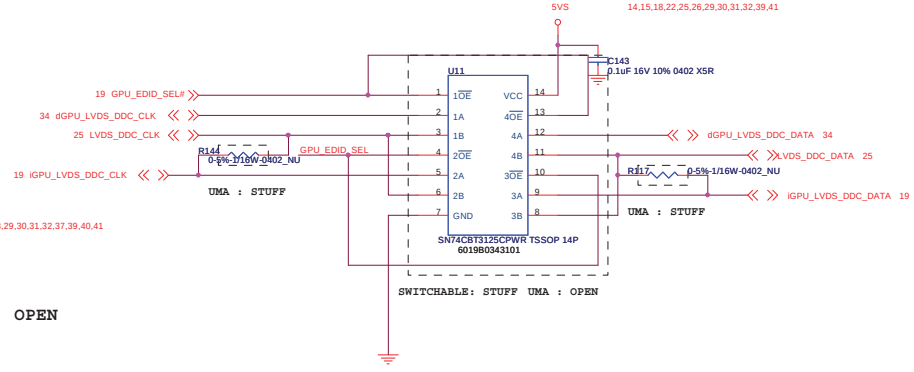
DGPU_SELECT#	OUTPUT
L	N11x
H	PCH

LCD PWM SW



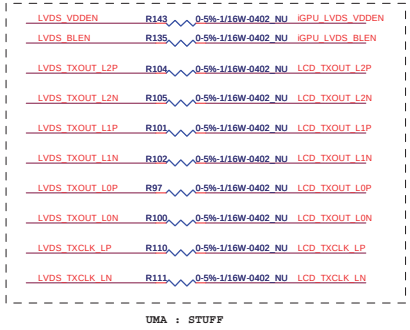
SW Gfx:OPEN
UMA:Stuff

LCD DDC SW

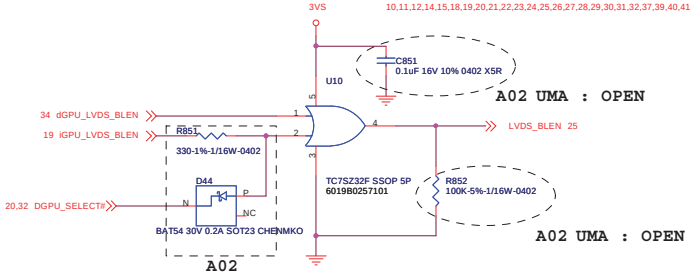


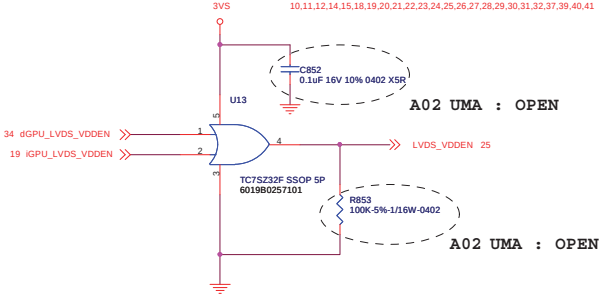
SWITCHABLE: STUFF UMA : OPEN

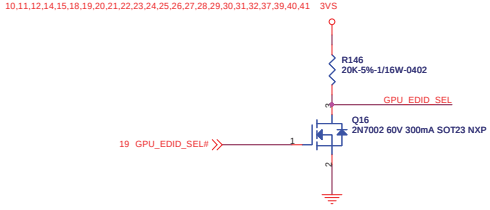
http://hobi-elektronika.net/



UMA : STUFF







CHANGE by	IEC	DATE	Monday, May 24, 2010

INVENTEC

TITLE: **BAP/BXP30**
Hybird Switch (2/2)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

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GPU Thermal Sensor
Please close GPU side

U34
TMP431BDGKR MSOP 8P TI
6019B0671902

Q19
SSM3K7002FU 60V 200mA SC-70 3P

D31
BAT54A 30V 200mA SOT23 CHENMKO

U37A
N11M-GE1 BGA 969P NVIDIA
6019B0730401

U37D
N11M-GE1 BGA 969P NVIDIA
6019B0730401

Reserve for Optimus

U17
TC7SZ08FU SSOP 5P Toshiba
6019B0090701

DVI

A01

A02

Physical Ttrapping Pin	N11M-GE 1 Hynix H5TQ1G63BFR-12C	N11M-GE 1 SAMSUNG K4W1G1646E-HC12	N11M-GE 2 Hynix H5TQ1G63BFR-12C	N11M-GE 2 SAMSUNG K4W1G1646E-HC12
PEG_ROM_SO	10K:pull-down	10K:pull-down	10K:pull-down	10K:pull-down
PEG_ROM_SI	15K:pull-down	20K ohm Pull-Down	15K:pull-down	20K ohm Pull-Down
PEG_ROM_SCLK	15K:pull-Up	15K:pull-Up	15K:pull-Up	15K:pull-Up
PEG_MIOB_STRAP2	30K:pull-down	30K:pull-down	5K:pull-down	5K:pull-down
PEG_MIOB_STRAP1	35K:pull-up	35K:pull-up	35K:pull-up	35K:pull-up
PEG_MIOB_STRAP0	45K:pull-up	45K:pull-up	45K:pull-up	45K:pull-up

Device	Interface	I2C Bus
CRT	DAC A	I2C A
LVDS	LVDS	I2C C
DVI	IFP C	IFPC_AUX

INVENTEC

TITLE: BAP/BXP30
N10P PCIE I/O (1/5)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X02

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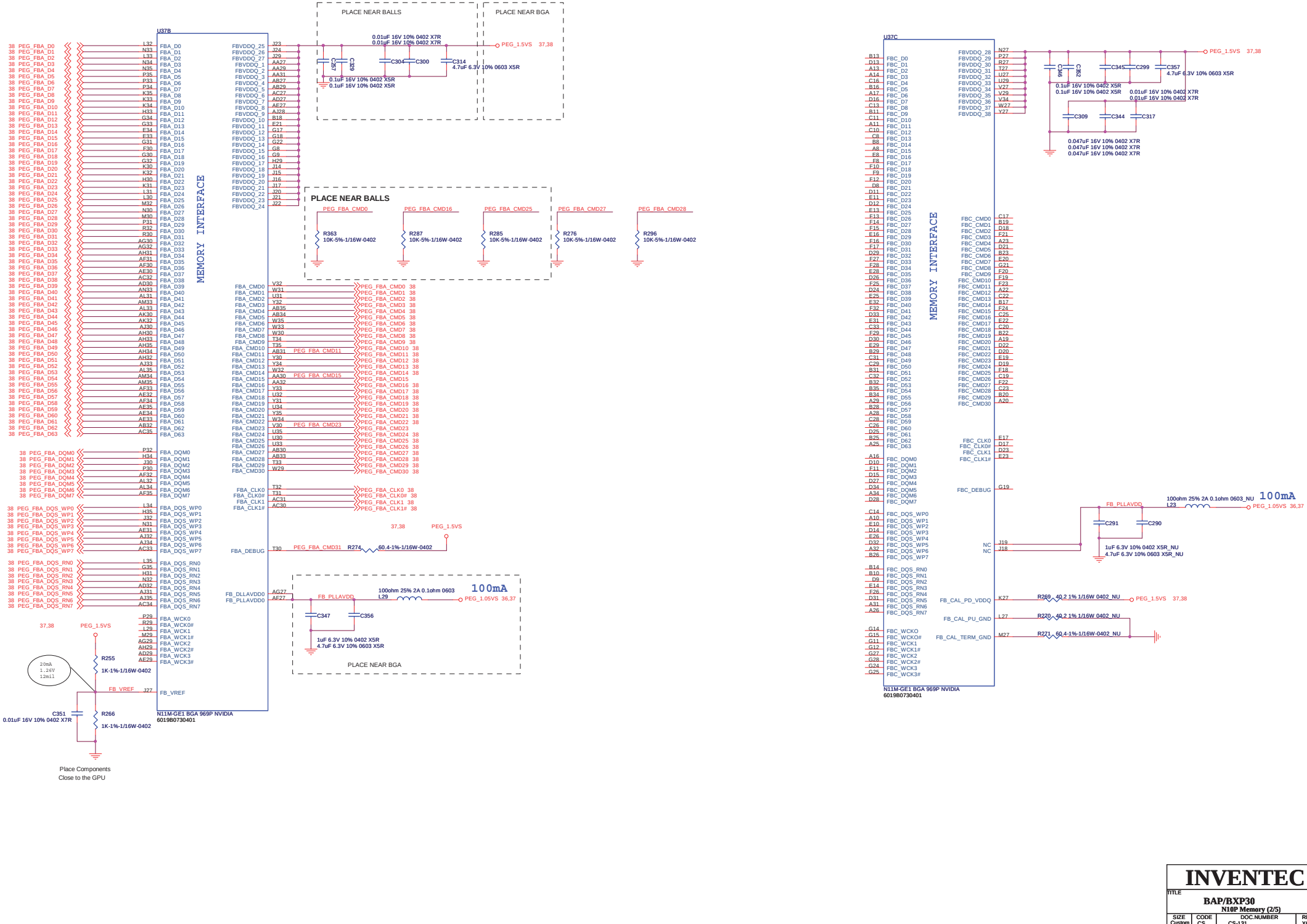
CHANGE by IEC | DATE Monday, May 24, 2010

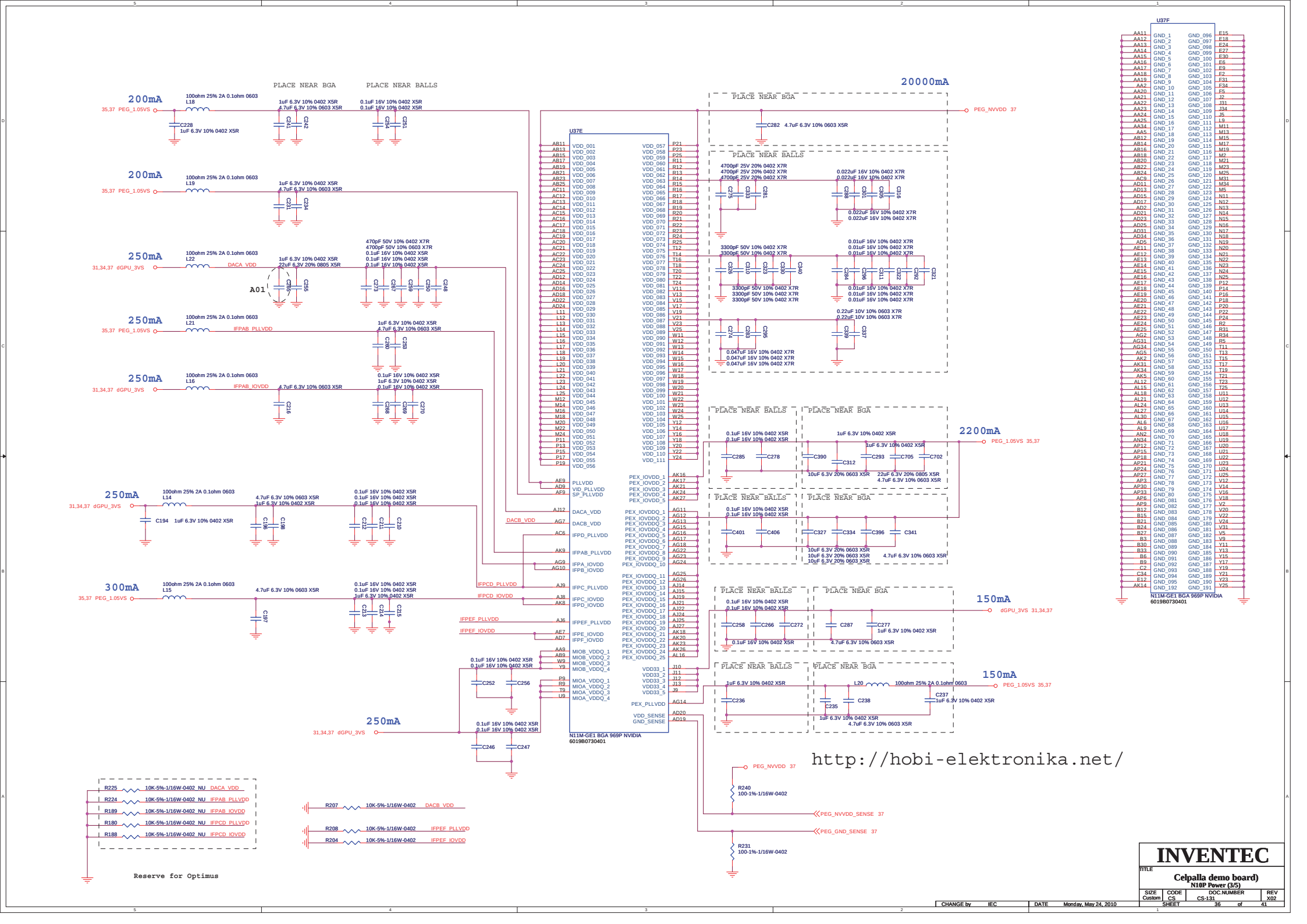


CHANGE by	IEC	DATE	Monday, May 24, 2010	SHEET	35 of 41

INVENTEC

TITLE: BAP/BXP30
N10P Memory (2/5)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X02


PLACE NEAR BGA
PLACE NEAR BALLS
200mA
100ohm 25% 2A 0.1ohm 0603
L18
35,37 PEG_1.05VS
C228
1uF 6.3V 10% 0402 X5R
1uF 6.3V 10% 0402 X5R
4.7uF 6.3V 10% 0603 X5R
C241
C242
0.1uF 16V 10% 0402 X5R
0.1uF 16V 10% 0402 X5R
C254
C251
200mA
L19
C231
C234
250mA
L22
31,34,37 dGPU_3VS
DACA_VDD
A01
470pF 50V 10% 0402 X7R
4700pF 50V 10% 0603 X7R
0.1uF 16V 10% 0402 X5R
22uF 6.3V 20% 0805 X5R
C255
C273
C267
C259
C250
C248
250mA
L21
IFPAB_PLLVDD
C260
C253
250mA
L16
IFPAB_IOVDD
C216
C268
C269
C270
250mA
L14
C194
C196
C198
C212
C211
C210
300mA
L15
35,37 PEG_1.05VS
C197
C213
C214
C215
250mA
31,34,37 dGPU_3VS
C246
C247
U37E
N11M-GE1 BGA 969P NVIDIA
6019B0730401
20000mA
PEG_NVVDD 37
C282 4.7uF 6.3V 10% 0603 X5R
4700pF 25V 20% 0402 X7R
0.022uF 16V 10% 0402 X7R
C275
C233
C281
C288
C291
C295
C316
3300pF 50V 10% 0402 X7R
0.01uF 16V 10% 0402 X7R
C328
C310
C323
C330
C340
C294
C296
C311
C322
C292
C321
0.22uF 10V 10% 0603 X7R
C274
C283
C295
C289
C287
0.047uF 16V 10% 0402 X7R
2200mA
PEG_1.05VS 35,37
0.1uF 16V 10% 0402 X5R
1uF 6.3V 10% 0402 X5R
C285
C278
C390
C312
C293
C705
C702
10uF 6.3V 20% 0603 X5R
22uF 6.3V 20% 0805 X5R
4.7uF 6.3V 10% 0603 X5R
C401
C406
C327
C334
C396
C341
150mA
dGPU_3VS 31,34,37
C258
C266
C272
C287
C277
1uF 6.3V 10% 0402 X5R
1uF 6.3V 10% 0402 X5R
L20
100ohm 25% 2A 0.1ohm 0603
150mA
PEG_1.05VS 35,37
C236
C235
C238
C237
C252
C256
C246
C247
R225 10K-5%-1/16W-0402 NU DACA_VDD
R224 10K-5%-1/16W-0402 NU IFPAB_PLLVDD
R189 10K-5%-1/16W-0402 NU IFPAB_IOVDD
R180 10K-5%-1/16W-0402 NU IFPCD_PLLVDD
R188 10K-5%-1/16W-0402 NU IFPCD_IOVDD
Reserve for Optimus
R207 10K-5%-1/16W-0402 DACB_VDD
R208 10K-5%-1/16W-0402 IFPEF_PLLVDD
R204 10K-5%-1/16W-0402 IFPEF_IOVDD
PEG_NVVDD 37
R240
100-1%-1/16W-0402
PEG_NVVDD_SENSE 37
PEG_GND_SENSE 37
R231
100-1%-1/16W-0402
http://hobi-elektronika.net/
U37F
N11M-GE1 BGA 969P NVIDIA
6019B0730401
INVENTEC
TITLE
Celpalla demo board)
N10P Power (3/5)
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV X02
CHANGE by IEC
DATE Monday, May 24, 2010
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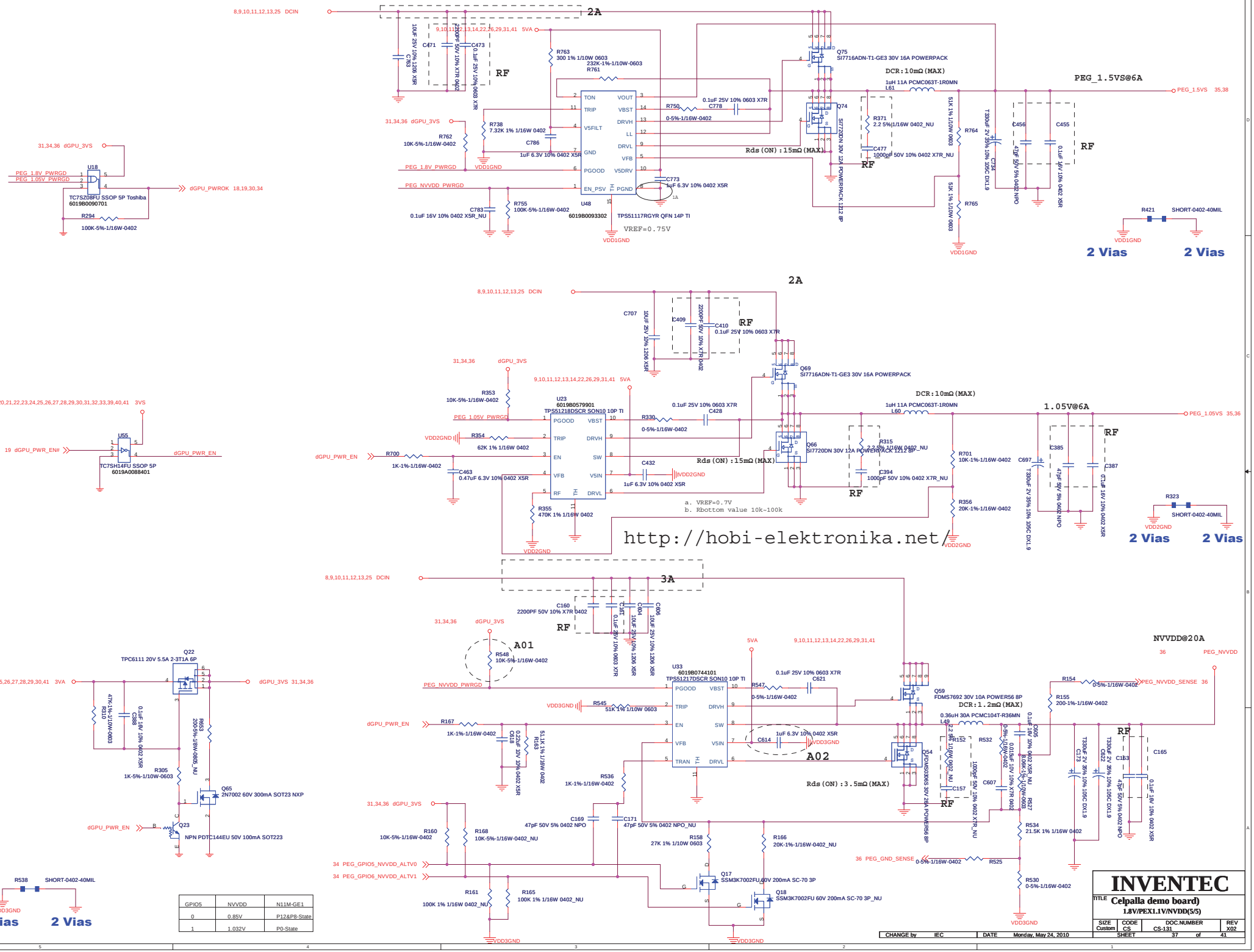
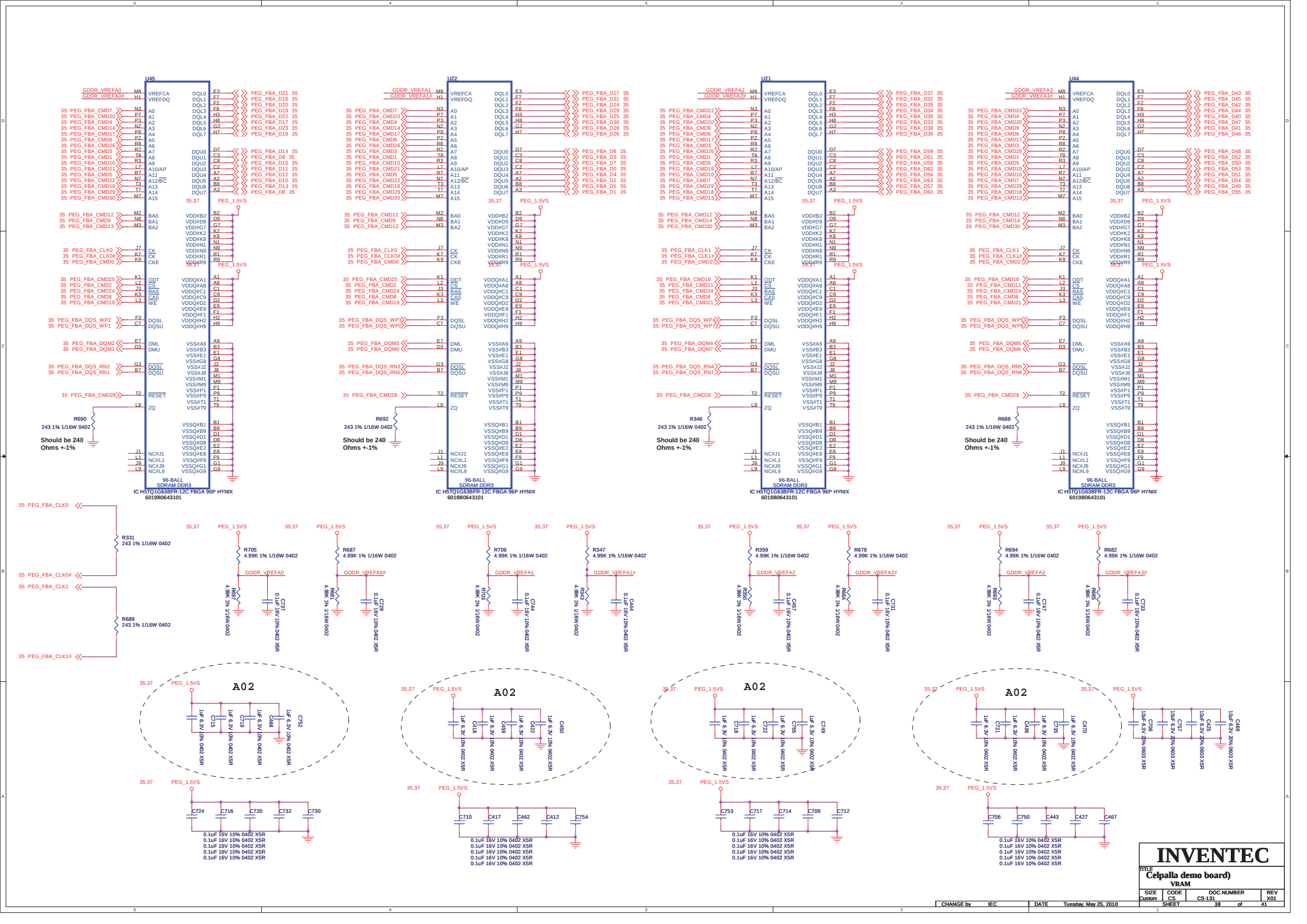
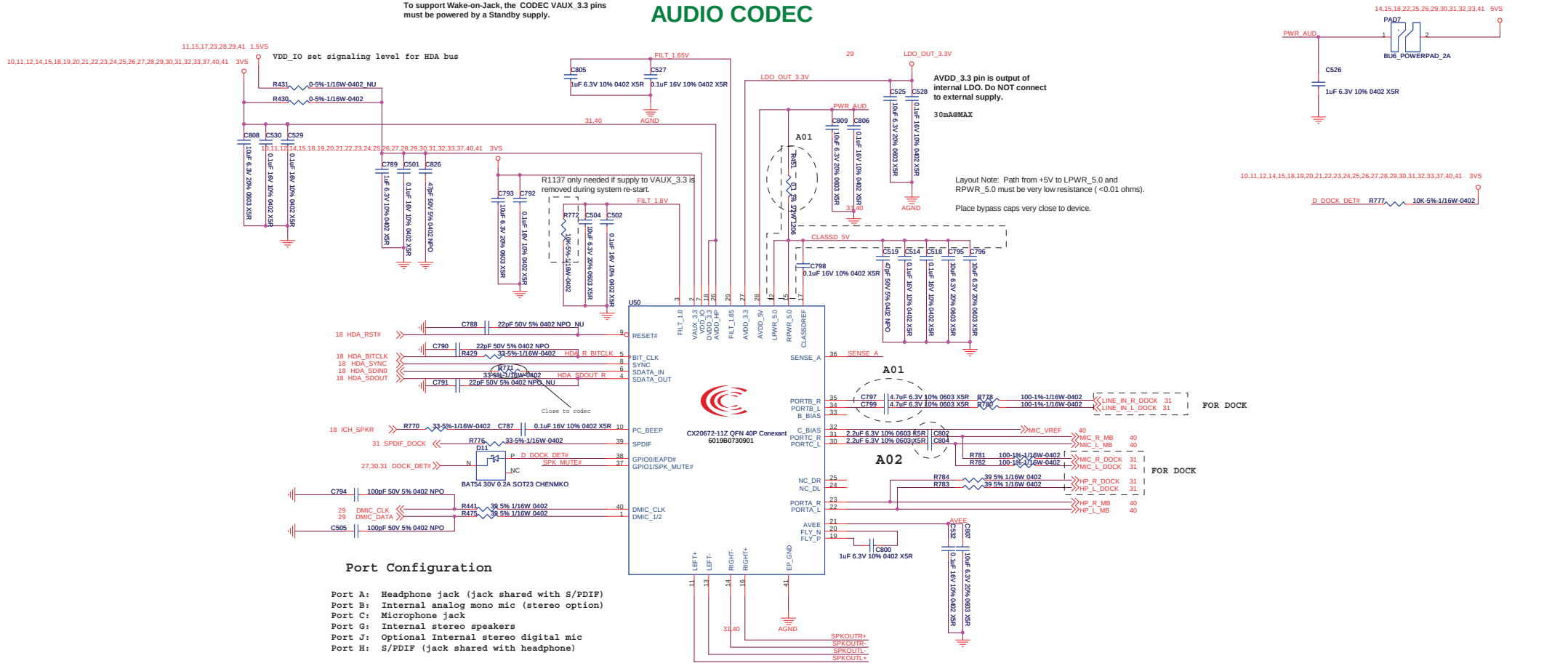

2A
8,9,10,11,12,13,25 DCIN
9,10,11,12,13,14,22,26,29,31,41 5VA
C471 2200PF 50V 10% X7R 0402
C473 0.1uF 25V 10% 0603 X7R
C763 10UF 25V 10% 1206 X5R
RF
R763 300 1% 1/10W 0603
R761 232K-1%-1/10W-0603
TON VOUT
TRIP VBST
V5FILT DRVH
LL
GND DRVL
VFB
PGOOD V5DRV
EN_PSV PGND
U48 6019B0093302 TPS51117RGYR QFN 14P TI
VREF=0.75V
VDD1GND
31,34,36 dGPU_3VS
R762 10K-5%-1/16W-0402
R738 7.32K 1% 1/16W 0402
C786 1uF 6.3V 10% 0402 X5R
PEG_1.8V_PWRGD
PEG_NVVDD_PWRGD
R755 100K-5%-1/16W-0402
C783 0.1uF 16V 10% 0402 X5R_NU
C773 1uF 6.3V 10% 0402 X5R
R750 0-5%-1/16W-0402
C778 0.1uF 25V 10% 0603 X7R
Q75 SI7716ADN-T1-GE3 30V 16A POWERPACK
Q74 SI7720DN 30V 12A POWERPACK 1212 8P
DCR:10mΩ(MAX)
Rds(ON):15mΩ(MAX)
1uH 11A PCMC063T-1R0MN L61
R371 2.2 5% 1/16W 0402_NU
C477 1000pF 50V 10% 0402 X7R_NU
R764 51K 1% 1/10W 0603
R765 51K 1% 1/10W 0603
C734 T330uF 2V 35% 10% 105C DX1.9
C456 47pF 50V 5% 0402 NPO
C455 0.1uF 16V 10% 0402 X5R
PEG_1.5VS@6A
PEG_1.5VS 35,38
R421 SHORT-0402-40MIL
2 Vias
2 Vias
31,34,36 dGPU_3VS
PEG_1.8V_PWRGD
PEG_1.05V_PWRGD
U18
TC7SZ08FU SSOP 5P Toshiba
6019B0090701
R294 100K-5%-1/16W-0402
dGPU_PWROK 18,19,30,34
2A
8,9,10,11,12,13,25 DCIN
C707 10UF 25V 10% 1206 X5R
C409 2200PF 50V 10% X7R 0402
C410 0.1uF 25V 10% 0603 X7R
RF
31,34,36 dGPU_3VS
9,10,11,12,13,14,22,26,29,31,41 5VA
R353 10K-5%-1/16W-0402
U23 6019B0579901 TPS51218DSCR SON10 10P TI
PGOOD VBST
TRIP DRVH
EN SW
VFB V5IN
RF DRVL
PEG_1.05V_PWRGD
VDD2GND
R354 62K 1% 1/16W 0402
R330 0-5%-1/16W-0402
C428 0.1uF 25V 10% 0603 X7R
C432 1uF 6.3V 10% 0402 X5R
R355 470K 1% 1/16W 0402
R356 20K-1%-1/16W-0402
R700 1K-1%-1/16W-0402
C463 0.47uF 6.3V 10% 0402 X5R
dGPU_PWR_EN
Q69 SI7716ADN-T1-GE3 30V 16A POWERPACK
Q66 SI7720DN 30V 12A POWERPACK 1212 8P
DCR:10mΩ(MAX)
Rds(ON):15mΩ(MAX)
1uH 11A PCMC063T-1R0MN L60
R315 2.2 5% 1/16W 0402_NU
C394 1000pF 50V 10% 0402 X7R_NU
R701 10K-1%-1/16W-0402
1.05V@6A
PEG_1.05VS 35,36
C697 T330uF 2V 35% 10% 105C DX1.9
C385 47pF 50V 5% 0402 NPO
C387 0.1uF 16V 10% 0402 X5R
R323 SHORT-0402-40MIL
2 Vias
2 Vias
a. VREF=0.7V
b. Rbottom value 10k~100k
http://hobi-elektronika.net/
10,11,12,14,15,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,39,40,41 3VS
19 dGPU_PWR_EN#
U55 TC7SH14FU SSOP 5P 6019A0088401
dGPU_PWR_EN
3A
8,9,10,11,12,13,25 DCIN
C160 2200PF 50V 10% X7R 0402
C161 0.1uF 25V 10% 0603 X7R
C804 10UF 25V 10% 1206 X5R
C805 10UF 25V 10% 1206 X5R
RF
31,34,36 dGPU_3VS
A01
R548 10K-5%-1/16W-0402
PEG_NVVDD_PWRGD
U33 6019B0744101 TPS51217DSCR SON10 10P TI
PGOOD VBST
TRIP DRVH
EN SW
VFB VSIN
TRAN DRVL
VDD3GND
R545 51K 1% 1/10W 0603
R547 0-5%-1/16W-0402
C621 0.1uF 25V 10% 0603 X7R
dGPU_PWR_EN
R167 1K-1%-1/16W-0402
C618 0.22uF 10V 10% 0402 X5R
R163 51K 1% 1/16W 0402
C614 1uF 6.3V 10% 0402 X5R
A02
Rds(ON):3.5mΩ(MAX)
R536 1K-1%-1/16W-0402
31,34,36 dGPU_3VS
R160 10K-5%-1/16W-0402
R168 10K-5%-1/16W-0402_NU
C169 47pF 50V 5% 0402 NPO
C171 47pF 50V 5% 0402 NPO_NU
R158 27K 1% 1/10W 0603
R166 20K-1%-1/16W-0402_NU
34 PEG_GPIO5_NVVDD_ALTV0
34 PEG_GPIO6_NVVDD_ALTV1
R161 100K 1% 1/16W 0402_NU
R165 100K 1% 1/16W 0402_NU
Q17 SSM3K7002FU 60V 200mA SC-70 3P
Q18 SSM3K7002FU 60V 200mA SC-70 3P_NU
Q59 FDMS7692 30V 10A POWER56 8P
DCR:1.2mΩ(MAX)
0.36uH 30A PCMC104T-R36MN L49
R152 2.2 5% 1/16W 0402_NU
C157 1000pF 50V 10% 0402 X7R_NU
Q54 FDMS0308S 30V 28A POWER56 8P
R532 0-5%-1/16W-0402
C607 0.015uF 10V 10% X7R 0402
R527 8.06K-1%-1/16W-0603
R534 21.5K 1% 1/16W 0402
R525 0-5%-1/16W-0402
R530 0-5%-1/16W-0402
36 PEG_GND_SENSE
R154 0-5%-1/16W-0402
R155 200-1%-1/16W-0402
C165 0.1uF 16V 10% 0402 X5R
C163 47pF 50V 5% 0402 NPO
C123 T330uF 2V 35% 10% 105C DX1.9
C122 T330uF 2V 35% 10% 105C DX1.9
NVVDD@20A
36 PEG_NVVDD
PEG_NVVDD_SENSE 36
VDD3GND
Q22 TPC6111 20V 5.5A 2-3T1A 6P
9,11,13,14,15,18,19,20,22,24,25,26,27,28,29,30,41 3VA
dGPU_3VS 31,34,36
R310 47K-1%-1/10W-0603
C388 0.1uF 16V 10% 0402 X5R
R653 200-5%-1/8W-0805_NU
R305 1K-5%-1/10W-0603
Q65 2N7002 60V 300mA SOT23 NXP
dGPU_PWR_EN
Q23 NPN PDTC144EU 50V 100mA SOT223
R538 SHORT-0402-40MIL
2 Vias
2 Vias
VDD3GND
GPIO5 | NVVDD | N11M-GE1
0 | 0.85V | P12&P8-State
1 | 1.032V | P0-State
INVENTEC
TITLE Celpalla demo board)
1.8V/PEX1.1V/NVDD(5/5)
SIZE Custom | CODE CS | DOC.NUMBER CS-131 | REV X02
SHEET 37 of 41
CHANGE by IEC | DATE Monday, May 24, 2010


U45
U22
U21
U44
96-BALL SDRAM DDR3
IC H5TQ1G63BFR-12C FBGA 96P HYNIX
6019B0643101
Should be 240 Ohms +-1%
R690 243 1% 1/16W 0402
R692 243 1% 1/16W 0402
R346 243 1% 1/16W 0402
R688 243 1% 1/16W 0402
R331 243 1% 1/16W 0402
R689 243 1% 1/16W 0402
R705 4.99K 1% 1/16W 0402
R687 4.99K 1% 1/16W 0402
R706 4.99K 1% 1/16W 0402
R347 4.99K 1% 1/16W 0402
R359 4.99K 1% 1/16W 0402
R678 4.99K 1% 1/16W 0402
R694 4.99K 1% 1/16W 0402
R682 4.99K 1% 1/16W 0402
A02
0.1uF 16V 10% 0402 X5R
1uF 6.3V 10% 0402 X5R
10uF 6.3V 20% 0603 X5R
INVENTEC
Celpalla demo board)
VRAM
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV X01
CHANGE by IEC
DATE Tuesday, May 25, 2010
SHEET 38 of 41

AUDIO CODEC

Note:

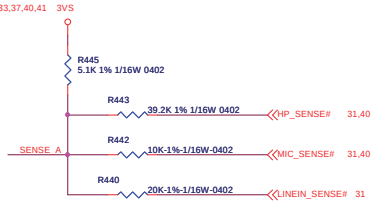
To support Wake-on-Jack, the CODEC VAUX_3.3 pins must be powered by a Standby supply.

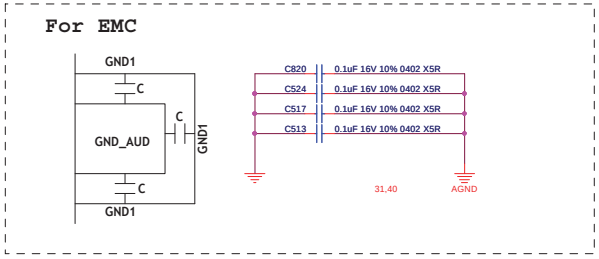


Port Configuration

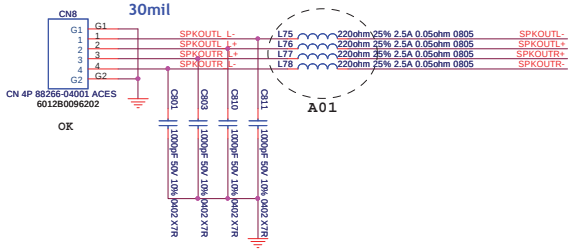
Port A: Headphone jack (jack shared with S/PDIF)
Port B: Internal analog mono mic (stereo option)
Port C: Microphone jack
Port G: Internal stereo speakers
Port J: Optional Internal stereo digital mic
Port H: S/PDIF (jack shared with headphone)

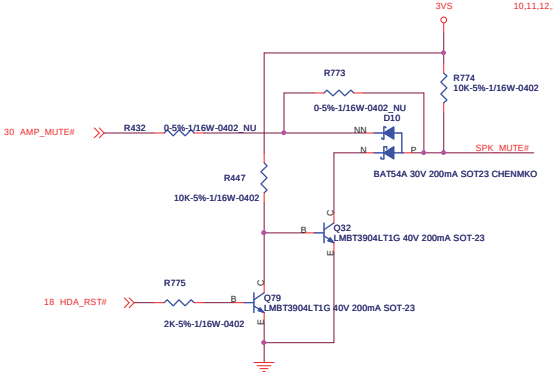
http://hobi-elektronika.net/





SPEAKER





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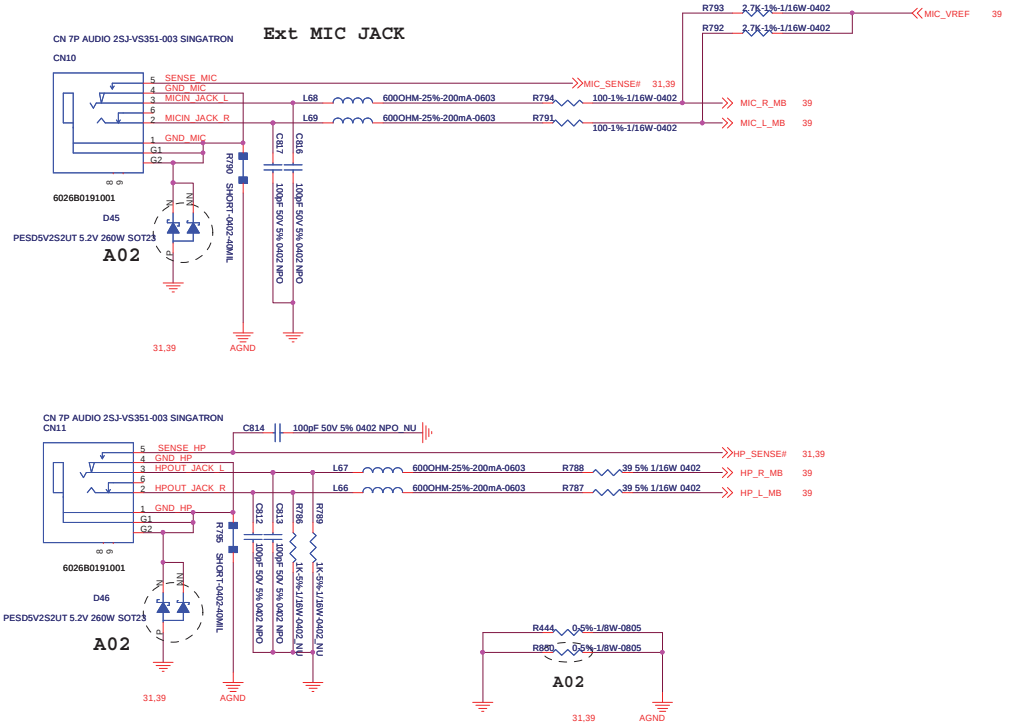
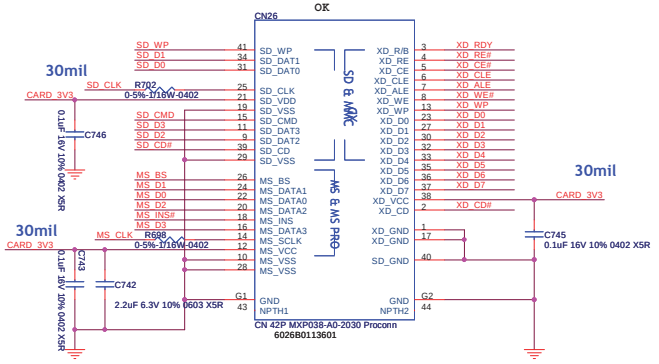
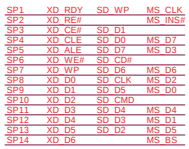
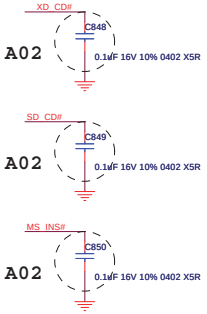
CHANGE by: IEC	DATE: Monday, May 24, 2010	SHEET: 39 of 41	

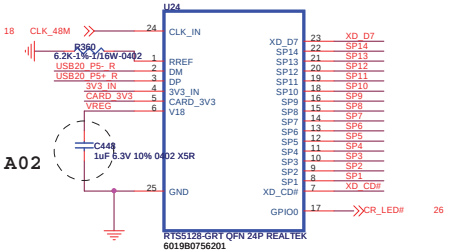


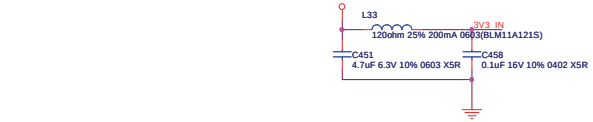
5 in 1 CARDREADER

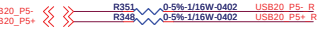












INVENTEC

TITLE: BAP/BXP30
CARD READER/AUDIO BOARD

SIZE	CODE	DOC.NUMBER	REV
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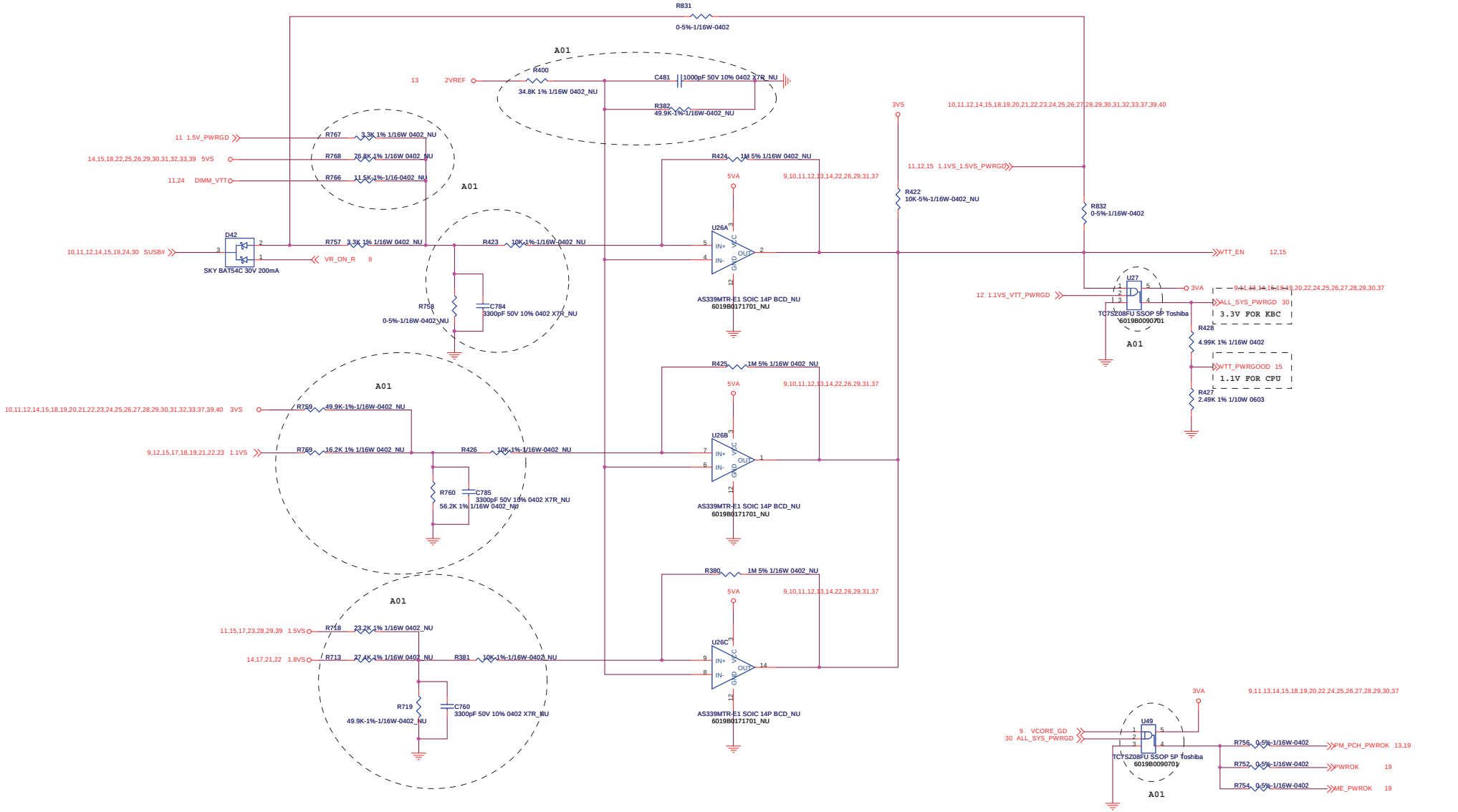

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TITLE: BAP/BXP30
POWER SEQUENCE

SIZE	CODE	DOC.NUMBER	REV
Custom	A03		A03

CHANGE by <CHANGE by> | DATE Monday, May 24, 2010 | SHEET 41 of 41