BAP/BXP30

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

INVENTEC

TITLE: BAP/BXP30
schematics page DESCR

SIZE	CODE	DOC.NUMBER	REV
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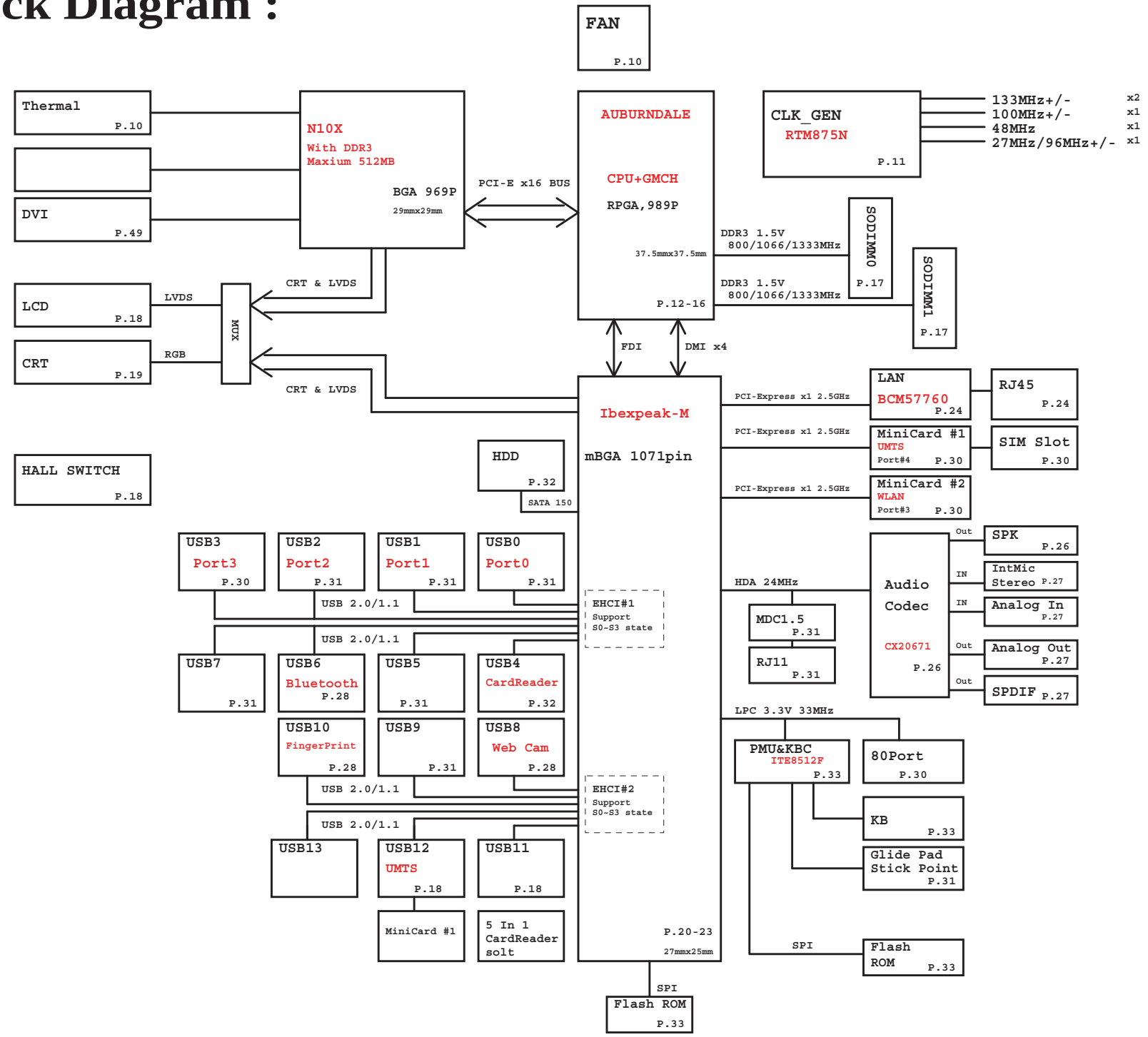
3. Block Diagram :



INVENTEC

TITLE: BAP/BXP30
Block Diagram

SIZE	CODE	DOC.NUMBER	REV
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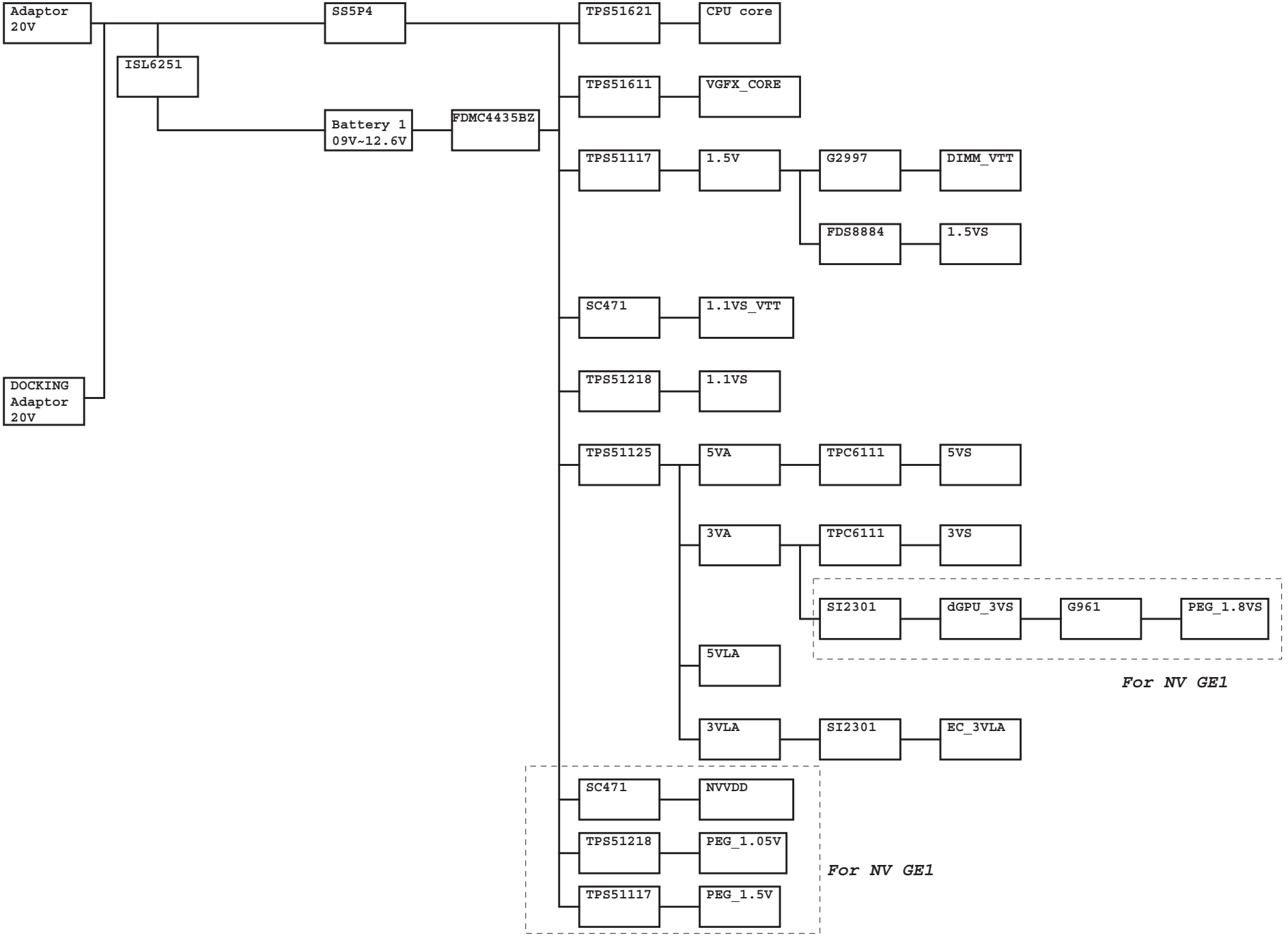
Power Block Diagram :



INVENTEC

TITLE: BAP/BXP30
Power Block Diagram

SIZE	CODE	DOC.NUMBER	REV
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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:		
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

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6.Schematic modify Item and History :

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SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: X01
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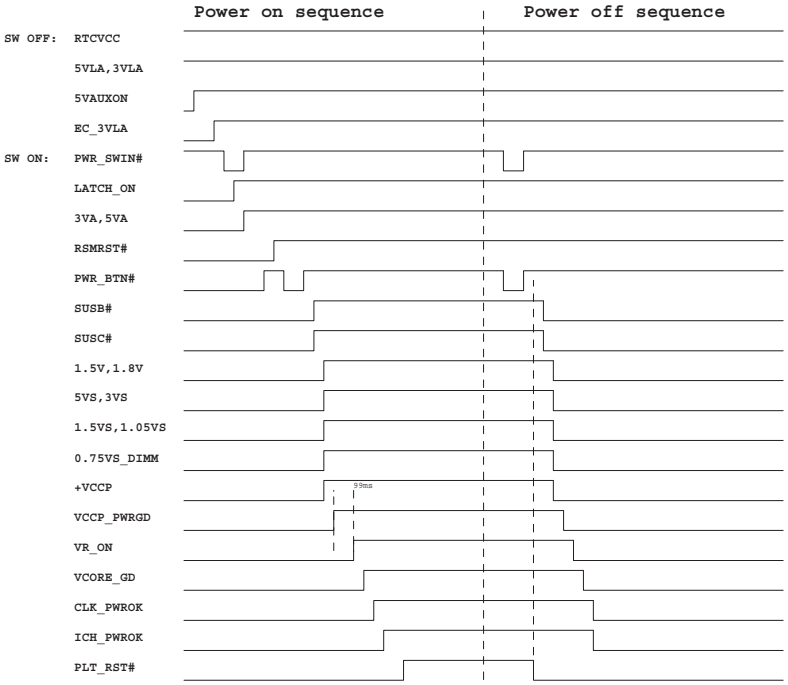
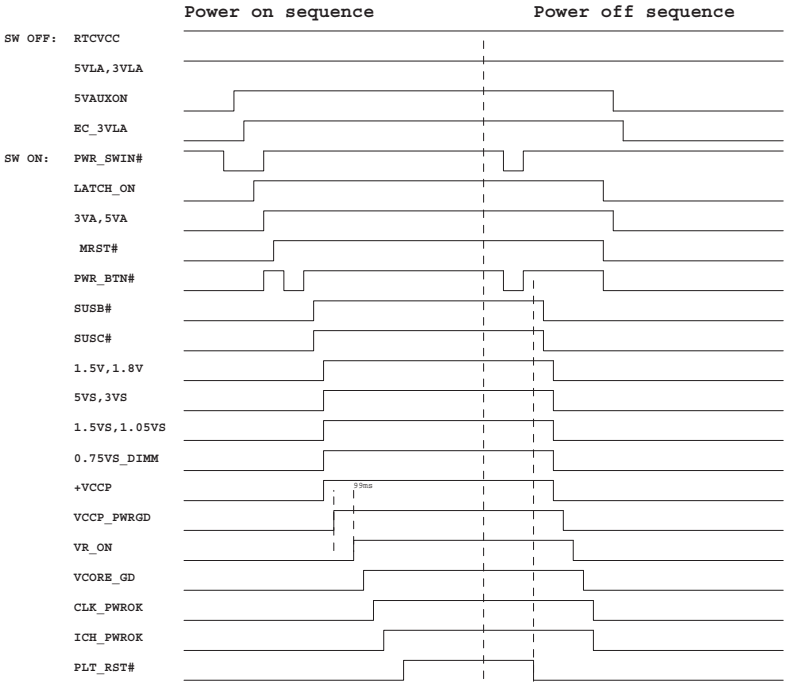
8.SYSTEM POWER SEQUENCE :

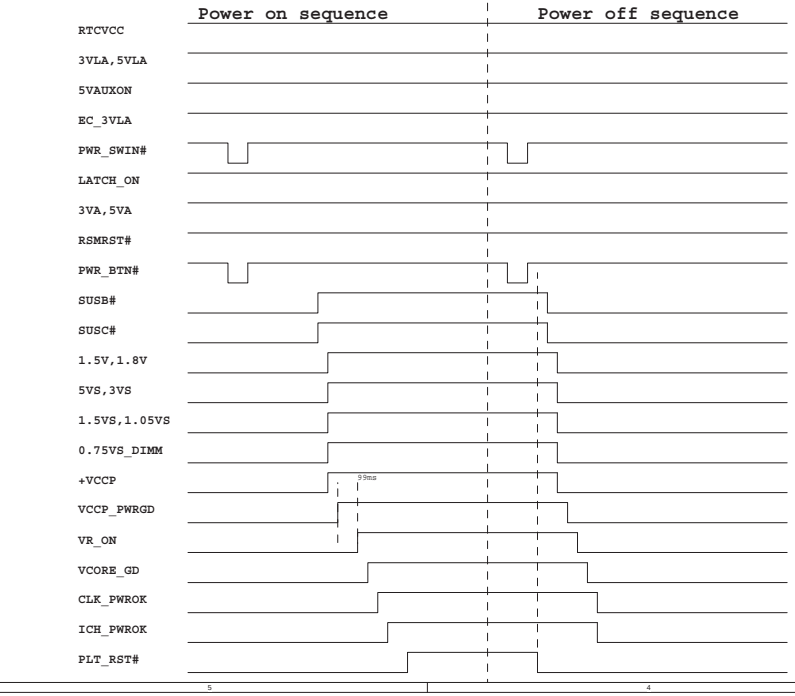
Power on/off sequence AC insert(First)



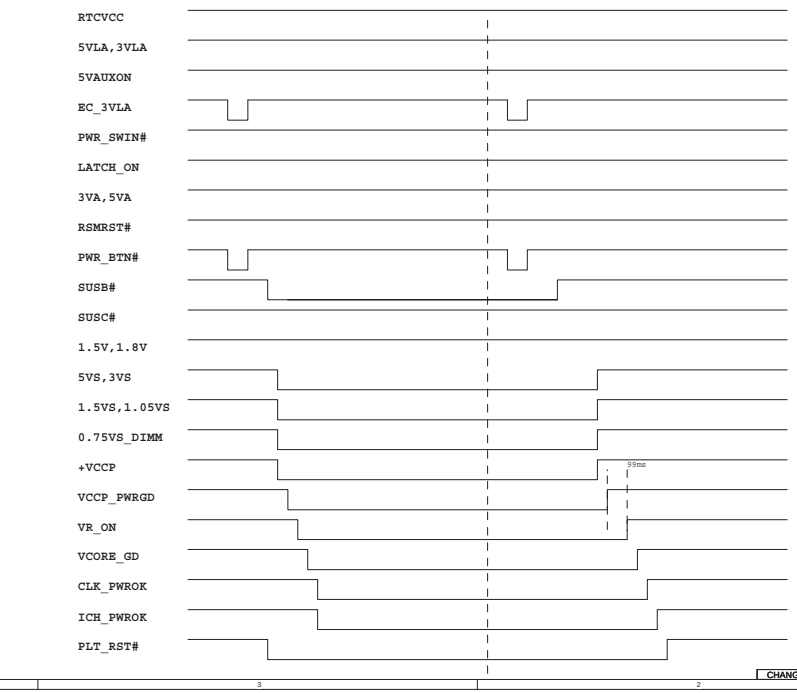
Battery only Power on/off sequence



Power on/off sequence AC insert(S4)



Suspend resume sequence(S3)



INVENTEC

TITLE: BAP/BXP30
Timing Diagram

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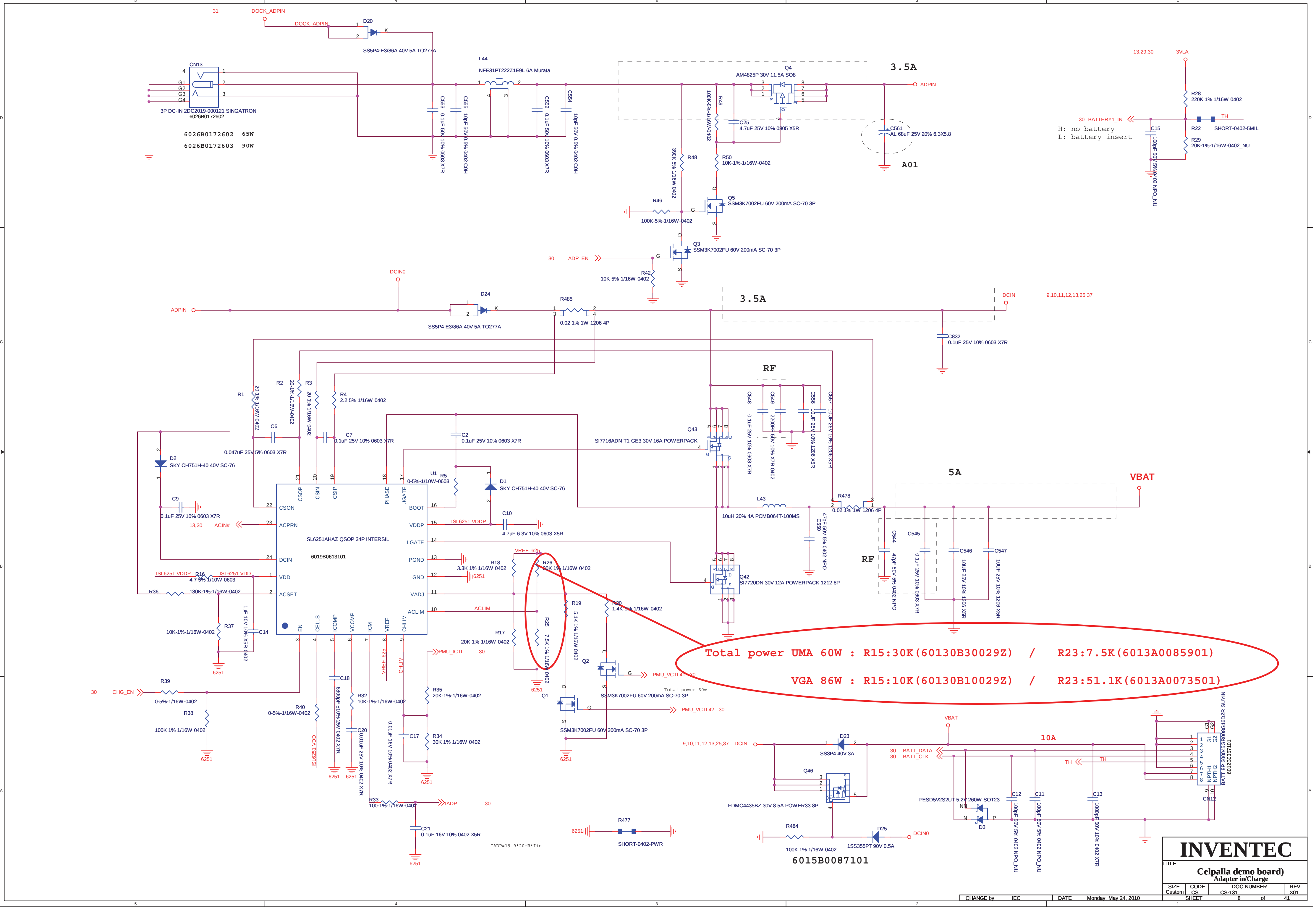

DOCK_ADPIN
D20
SS5P4-E3/86A 40V 5A TO277A
CN13
G1
G2
G3
G4
3P DC-IN 2DC2019-000121 SINGATRON
6026B0172602
6026B0172602 65W
6026B0172603 90W
L44
NFE31PT222Z1E9L 6A Murata
C553 0.1uF 50V 10% 0603 X7R
C555 10pF 50V 0.5% 0402 C0H
C552 0.1uF 50V 10% 0603 X7R
C554 10pF 50V 0.5% 0402 C0H
3.5A
Q4
AM4825P 30V 11.5A SO8
ADPIN
R49 100K-5%-1/16W-0402
C25 4.7uF 25V 10% 0805 X5R
C561
AL 68uF 25V 20% 6.3X5.8
A01
R48 390K 5% 1/16W 0402
R50 10K-1%-1/16W-0402
Q5
SSM3K7002FU 60V 200mA SC-70 3P
R46 100K-5%-1/16W-0402
Q3
SSM3K7002FU 60V 200mA SC-70 3P
ADP_EN
R42 10K-5%-1/16W-0402
3VLA
R28 220K 1% 1/16W 0402
BATTERY1_IN
TH
R22 SHORT-0402-5MIL
C15 100pF 50V 5% 0402 NPO_NU
R29 20K-1%-1/16W-0402_NU
H: no battery
L: battery insert
DCIN0
D24
SS5P4-E3/86A 40V 5A TO277A
R485 0.02 1% 1W 1206 4P
3.5A
DCIN
9,10,11,12,13,25,37
C832 0.1uF 25V 10% 0603 X7R
RF
R1 20-1%-1/16W-0402
R2 20-1%-1/16W-0402
R3 20-1%-1/16W-0402
R4 2.2 5% 1/16W 0402
C6 0.047uF 25V 5% 0603 X7R
C7 0.1uF 25V 10% 0603 X7R
C2 0.1uF 25V 10% 0603 X7R
Q43 SI7716ADN-T1-GE3 30V 16A POWERPACK
C548 0.1uF 25V 10% 0603 X7R
C549 2200PF 50V 10% X7R 0402
C556 10UF 25V 10% 1206 X5R
C557 10UF 25V 10% 1206 X5R
D2 SKY CH751H-40 40V SC-76
C9 0.1uF 25V 10% 0603 X7R
ACIN#
U1
R5 0-5%-1/10W-0603
D1 SKY CH751H-40 40V SC-76
CSOP CSIN CSIP PHASE UGATE
CSON ACPRN DCIN VDD ACSET
BOOT VDDP LGATE PGND GND VADJ ACLIM
EN CELLS ICOMP VCOMP ICM VREF CHLIM
ISL6251AHAZ QSOP 24P INTERSIL
6019B0613101
ISL6251 VDDP
C10 4.7uF 6.3V 10% 0603 X5R
L43 10uH 20% 4A PCMB064T-100MS
C550 47pF 50V 5% 0402 NPO
R478 0.02 1% 1W 1206 4P
5A
VBAT
RF
C544 47pF 50V 5% 0402 NPO
C545 0.1uF 25V 10% 0603 X7R
C546 10UF 25V 10% 1206 X5R
C547 10UF 25V 10% 1206 X5R
Q42 SI7720DN 30V 12A POWERPACK 1212 8P
VREF_625
R18 3.3K 1% 1/16W 0402
R26 30K 1% 1/16W 0402
R19 5.1K 1% 1/16W 0402
R20 1.4K-1%-1/16W-0402
R25 7.5K 1% 1/16W 0402
R17 20K-1%-1/16W-0402
ISL6251 VDD
R16 4.7 5% 1/10W 0603
R36 130K-1%-1/16W-0402
R37 10K-1%-1/16W-0402
C14 1uF 10V 10% X5R 0402
ACLIM
Total power UMA 60W : R15:30K(60130B30029Z) / R23:7.5K(6013A0085901)
VGA 86W : R15:10K(60130B10029Z) / R23:51.1K(6013A0073501)
Total power 60w
Q2
SSM3K7002FU 60V 200mA SC-70 3P
PMU_VCTL41
Q1
SSM3K7002FU 60V 200mA SC-70 3P
PMU_VCTL42
PMU_ICTL
R39 0-5%-1/16W-0402
CHG_EN
R38 100K 1% 1/16W 0402
R40 0-5%-1/16W-0402
C18 6800pF ±10% 25V 0402 X7R
R32 10K-1%-1/16W-0402
C20 0.01uF 25V 10% 0402 X7R
C17 0.01uF 16V 10% 0402 X7R
R35 20K-1%-1/16W-0402
R34 30K 1% 1/16W 0402
R33 100-1%-1/16W-0402
IADP
C21 0.1uF 16V 10% 0402 X5R
IADP=19.9*20mR*Iin
R477 SHORT-0402-PWR
6251
VBAT
10A
D23 SS3P4 40V 3A
BATT_DATA
BATT_CLK
Q46 FDMC4435BZ 30V 8.5A POWER33 8P
PESD5V2S2UT 5.2V 260W SOT23
D3
C12 100pF 50V 5% 0402 NPO_NU
C11 100pF 50V 5% 0402 NPO_NU
C13 1000pF 50V 10% 0402 X7R
CN12
BATT 8P 20004SGR008G16DZR SUYIN
6012B0357101
R484 100K 1% 1/16W 0402
D25 1SS355PT 90V 0.5A
DCIN0
6015B0087101
INVENTEC
TITLE
Celpalla demo board)
Adapter in/Charge
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV X01
CHANGE by IEC
DATE Monday, May 24, 2010
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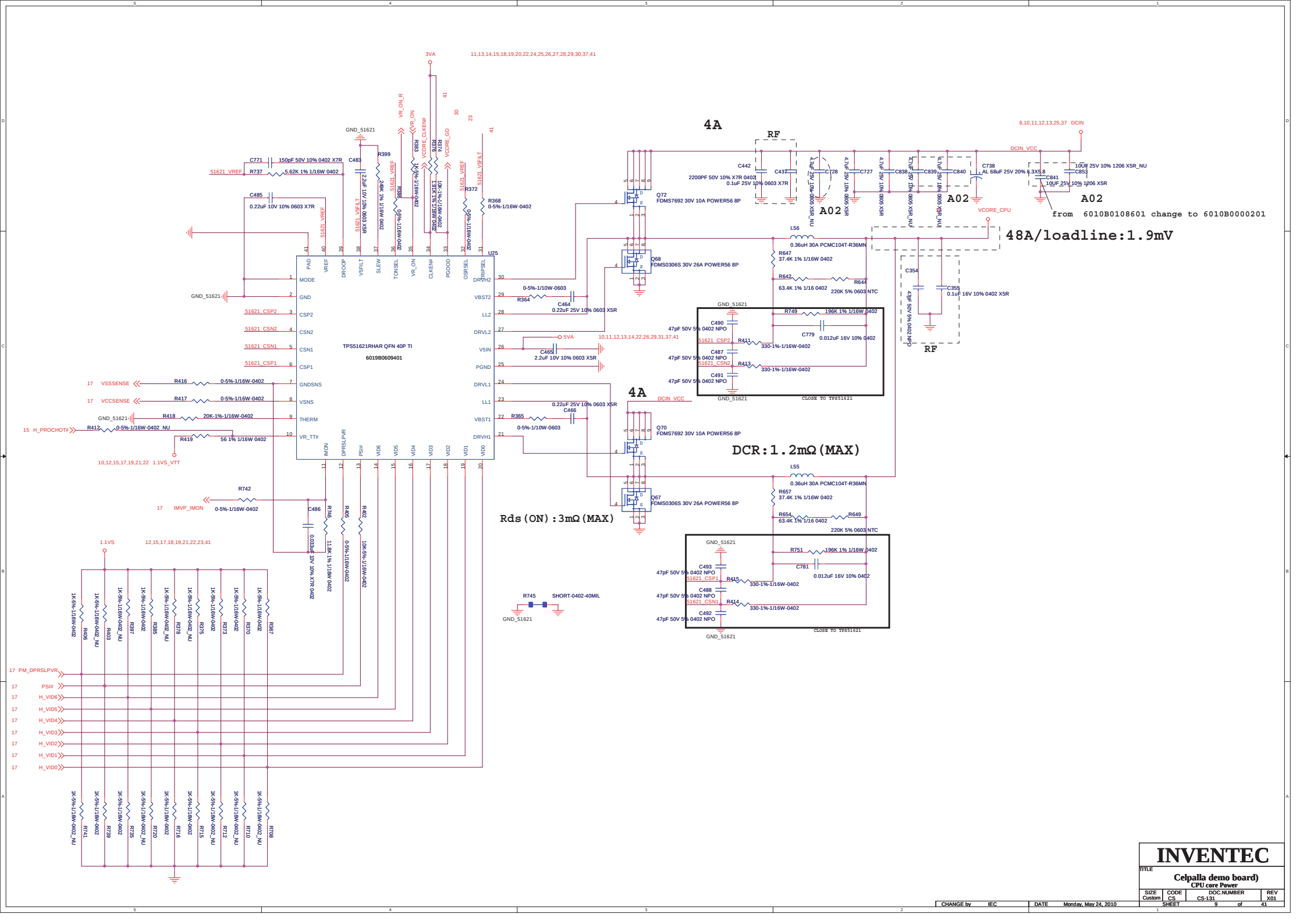
TPS51621RHAR QFN 40P TI
6019B0609401
U25
4A
RF
A02
Q72 FDMS7692 30V 10A POWER56 8P
Q68 FDMS0306S 30V 26A POWER56 8P
Q70 FDMS7692 30V 10A POWER56 8P
Q67 FDMS0306S 30V 26A POWER56 8P
L56 0.36uH 30A PCMC104T-R36MN
L55 0.36uH 30A PCMC104T-R36MN
48A/loadline:1.9mV
DCR:1.2mΩ(MAX)
Rds(ON):3mΩ(MAX)
from 6010B0108601 change to 6010B0000201
CLOSE TO TPS51621
INVENTEC
Celpalla demo board)
CPU core Power
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV X01
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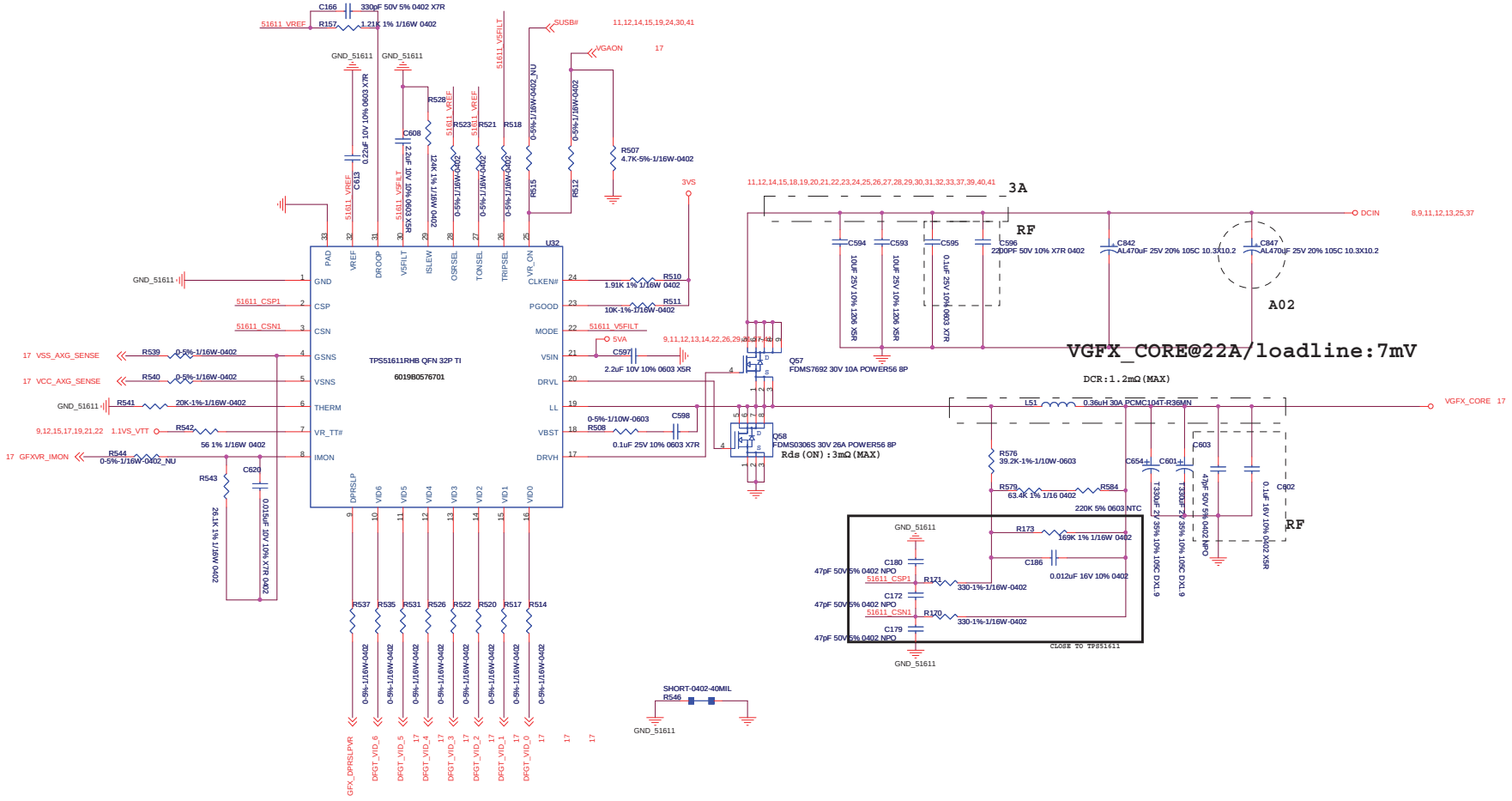

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INVENTEC

TITLE: Celpalla demo board) VGFX

SIZE	CODE	DOC.NUMBER	REV
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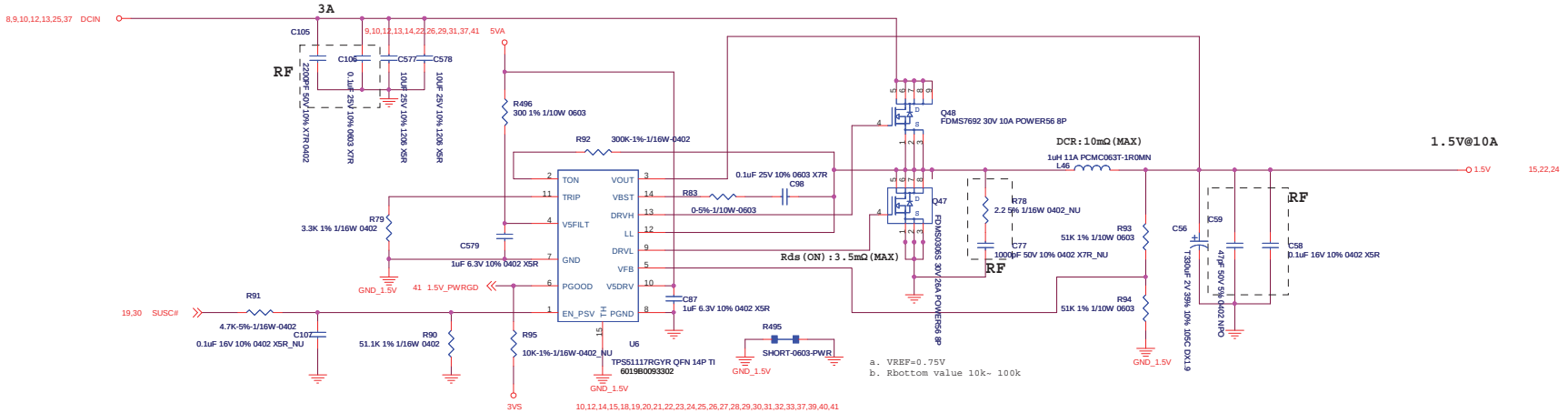
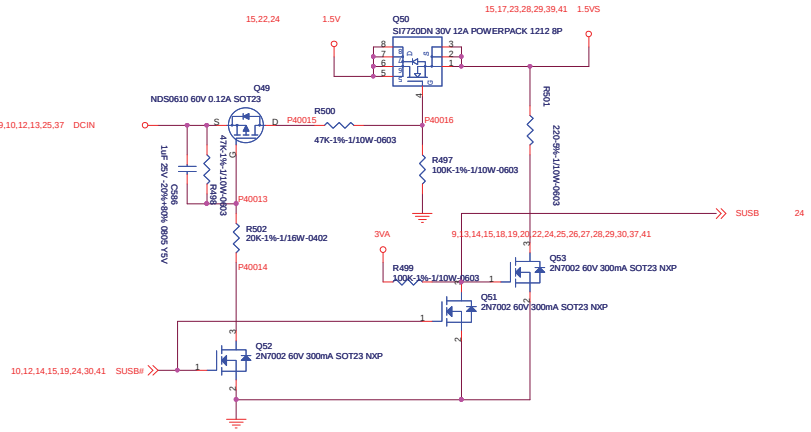
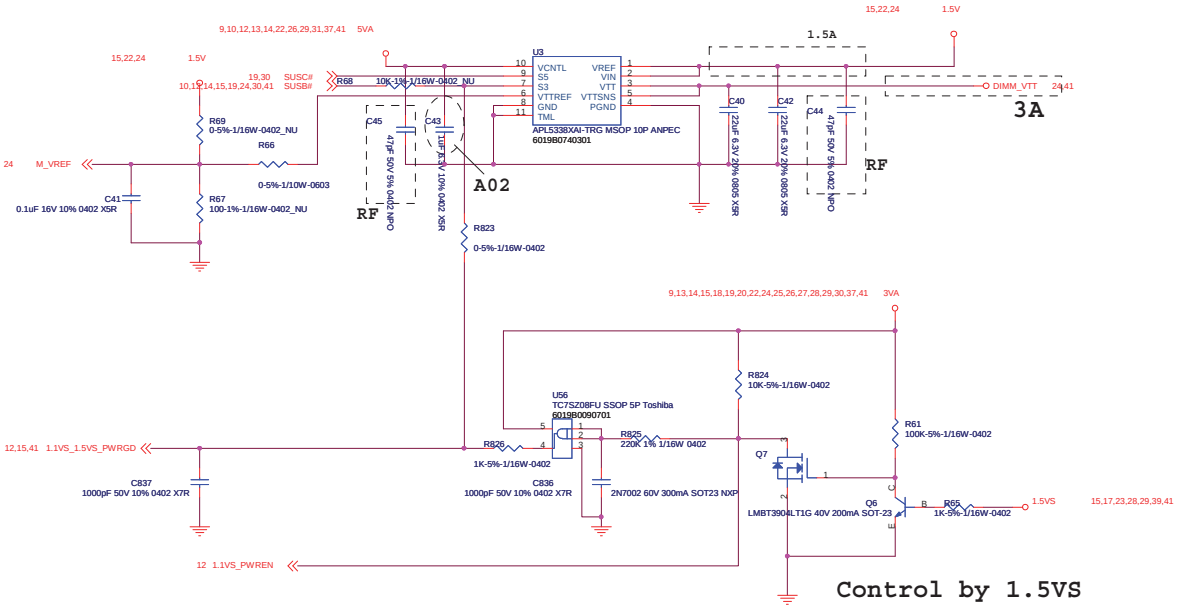
DDR POWER







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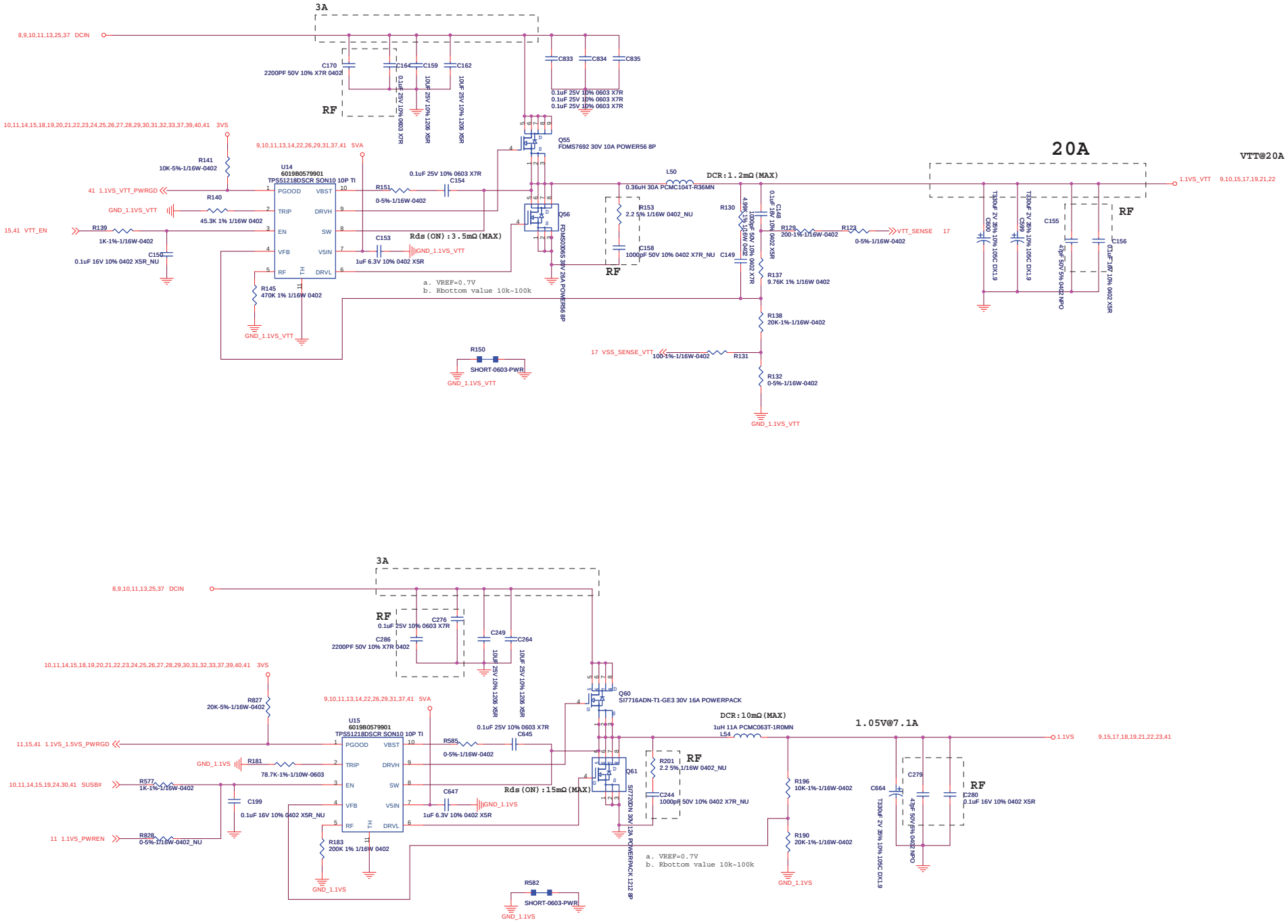
INVENTEC

TITLE: Celpalla demo board)
DDR PWR



INVENTEC

TITLE: Celpalla demo board)

1.1VS_VTT/1.1VS

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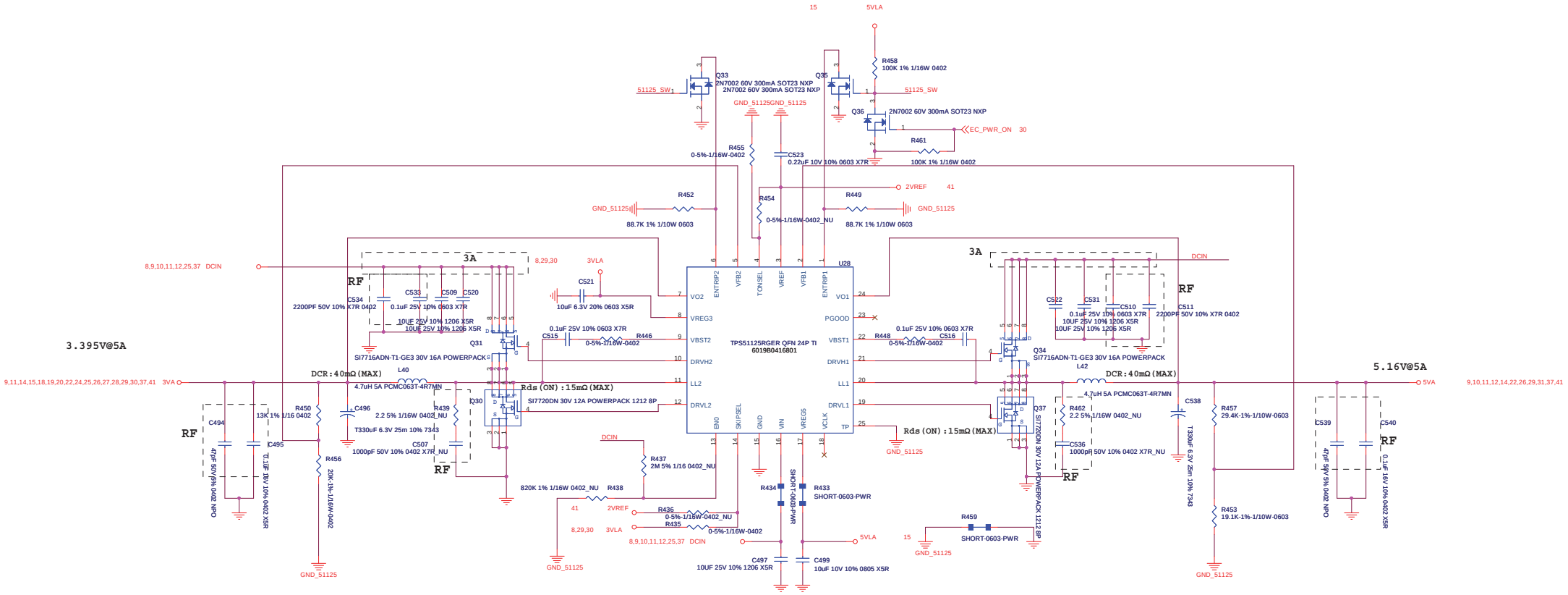
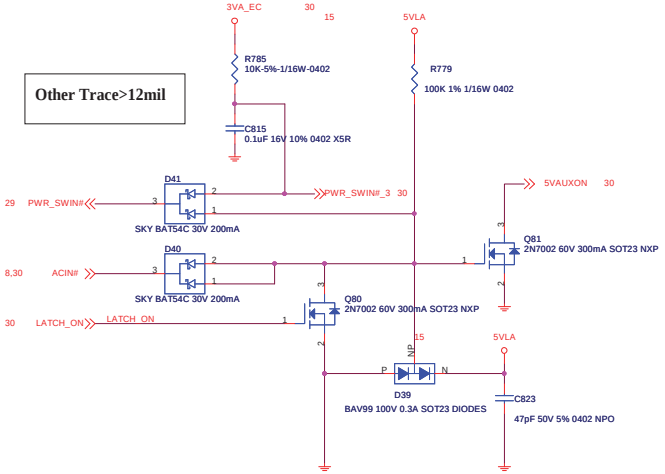
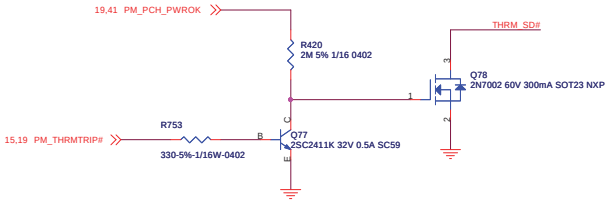
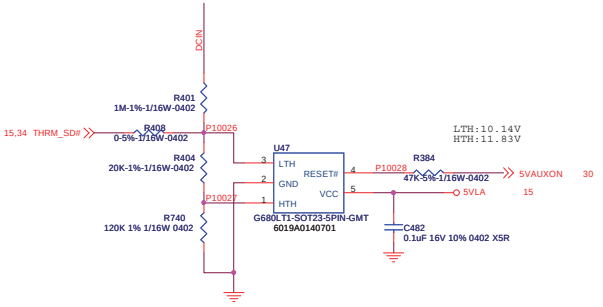




Temperature Security





INVENTEC			
TITLE: Celpalla demo board) 5VA/5VLA/3VA/3VLA			
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: X01
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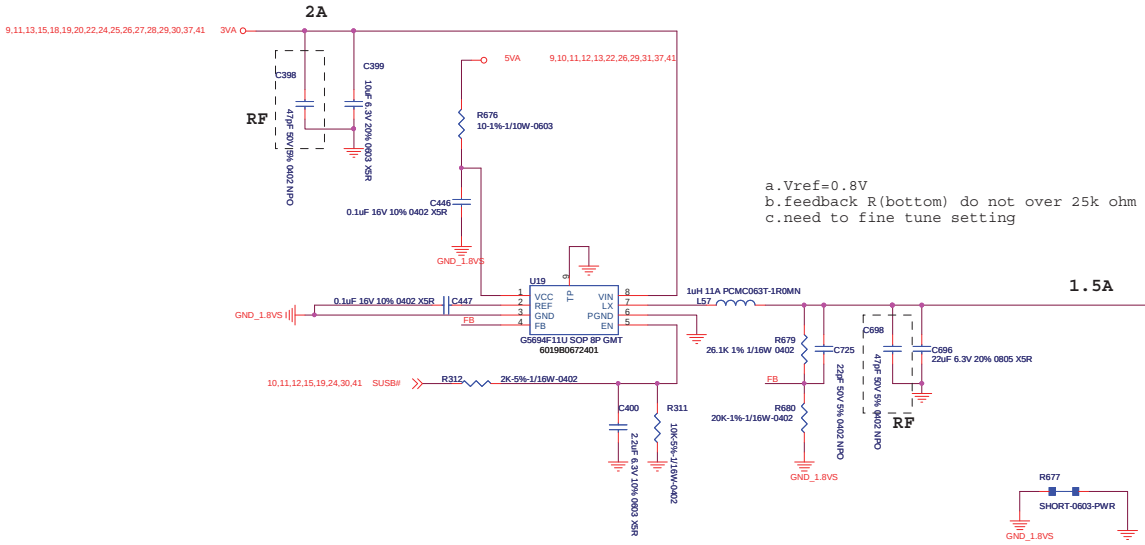
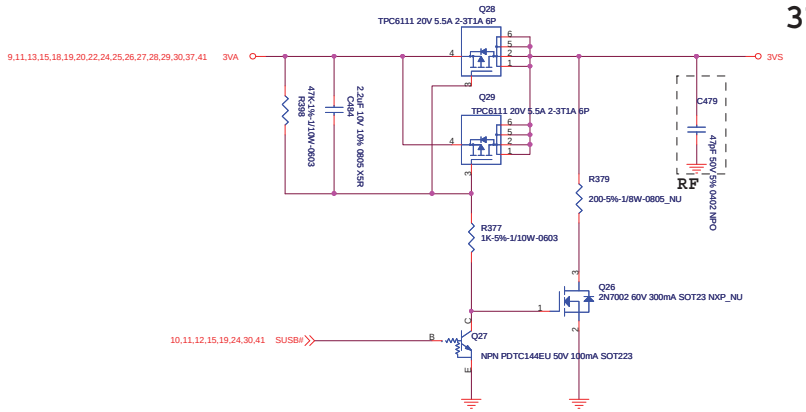
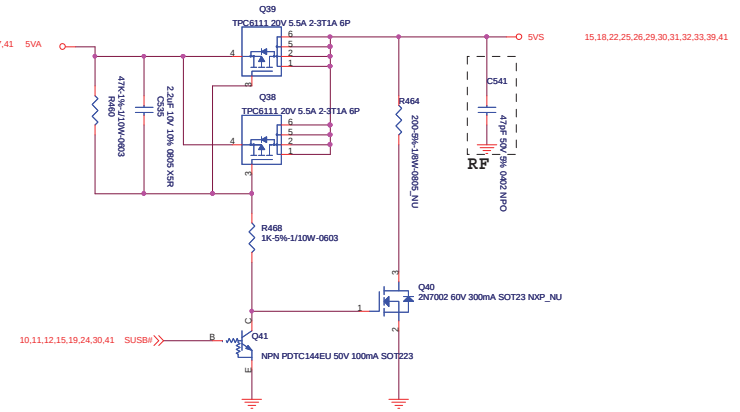


a.Vref=0.8V
b.feedback R(bottom) do not over 25k ohm
c.need to fine tune setting





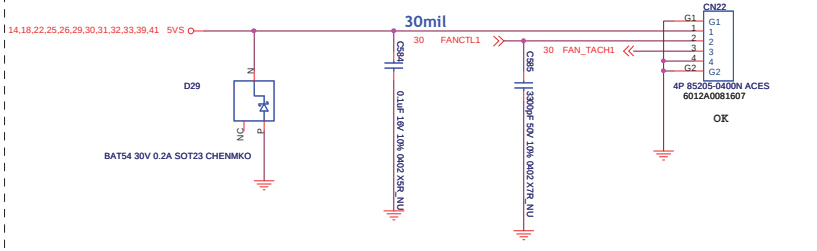
INVENTEC

TITLE: Celpalla demo board) '3VS/5VS/1.8VS/3VM

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

CHANGE by	IEC	DATE	Monday, May 24, 2010	SHEET	14	of	41

Fan control


14,18,22,25,26,29,30,31,32,33,39,41 5VS
30mil
30 FANCTL1
30 FAN_TACH1
CN22
G1
G2
4P 85205-0400N ACES
6012A0081607
OK
C584
0.1uF 16V 10% 0402 X5R_NU
C585
3300pF 50V 10% 0402 X7R_NU
D29
BAT54 30V 0.2A SOT23 CHENMKO

6026B0154901-005
CN24A
CN 989P CPU SKT 47989-0142 MOLEX
DMI
Intel(R) FDI
PCI EXPRESS -- GRAPHICS
Processor Pullups
9,10,12,17,19,21,22 1.1VS_VTT
H_CATERR# R533 49.9-1%-1/16W-0402
H_PROCHOT# R601 68-1%-1/16W-0402
PM_EXT_TS#0 R519 10K-1%-1/16W-0402
PM_EXT_TS#1 R529 10K-1%-1/16W-0402
CFG Straps for Processor
CFG0 R616 3.01K 1% 1/16 0402_NU
CFG3 R619 3.01K 1% 1/16 0402
CFG4 R614 3.01K 1% 1/16 0402_NU
CFG0:
1:Single PEG
0:Bifurcation enabled
CFG3:
1 :Normal Operation
0 :Lane Numbers Reversed
15->0,14->1
CFG4:
1:Disabled; No Physical Display Port
attached to Embedded Display Port
0:Enabled; An external Display Port
device is connected to the Embedded
Display Port
A01
A02
CN24B
MISC
THERMAL
CLOCKS
DDR3 MISC
PWR MANAGEMENT
JTAG & BPM
RESERVED
U57
G708T1U SOT23-5 5P
6019B0158401
THRM_SD#
Layout Note:Place these resistors
Near Processor
PM_EXTTS#1 24
XDP_DBRESET# 19
DDR3_DRAMRST# 24
PM_DRAM_PWRGD 19
SSM3K17FU 50V 100mA SC70
TC7SZ08FU SSOP 5P Toshiba
6019B0090701
INVENTEC
BAP/BXP30
Processor(1/4)
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV X01
CHANGE by IEC
DATE Monday, May 24, 2010
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6026B0154901-005

CN24C CN 989P CPU SKT 47989-0142 MOLEX

DDR SYSTEM MEMORY A

6026B0154901-005

CN24D CN 989P CPU SKT 47989-0142 MOLEX

DDR SYSTEM MEMORY - B

CN24H
CN 989P CPU SKT 47989-0142 MOLEX
6026B0154903

VSS

CN24I
CN 989P CPU SKT 47989-0142 MOLEX
6026B0154903

VSS

NCTF

CHANGE by	IEC	DATE	Monday, May 24, 2010

INVENTEC

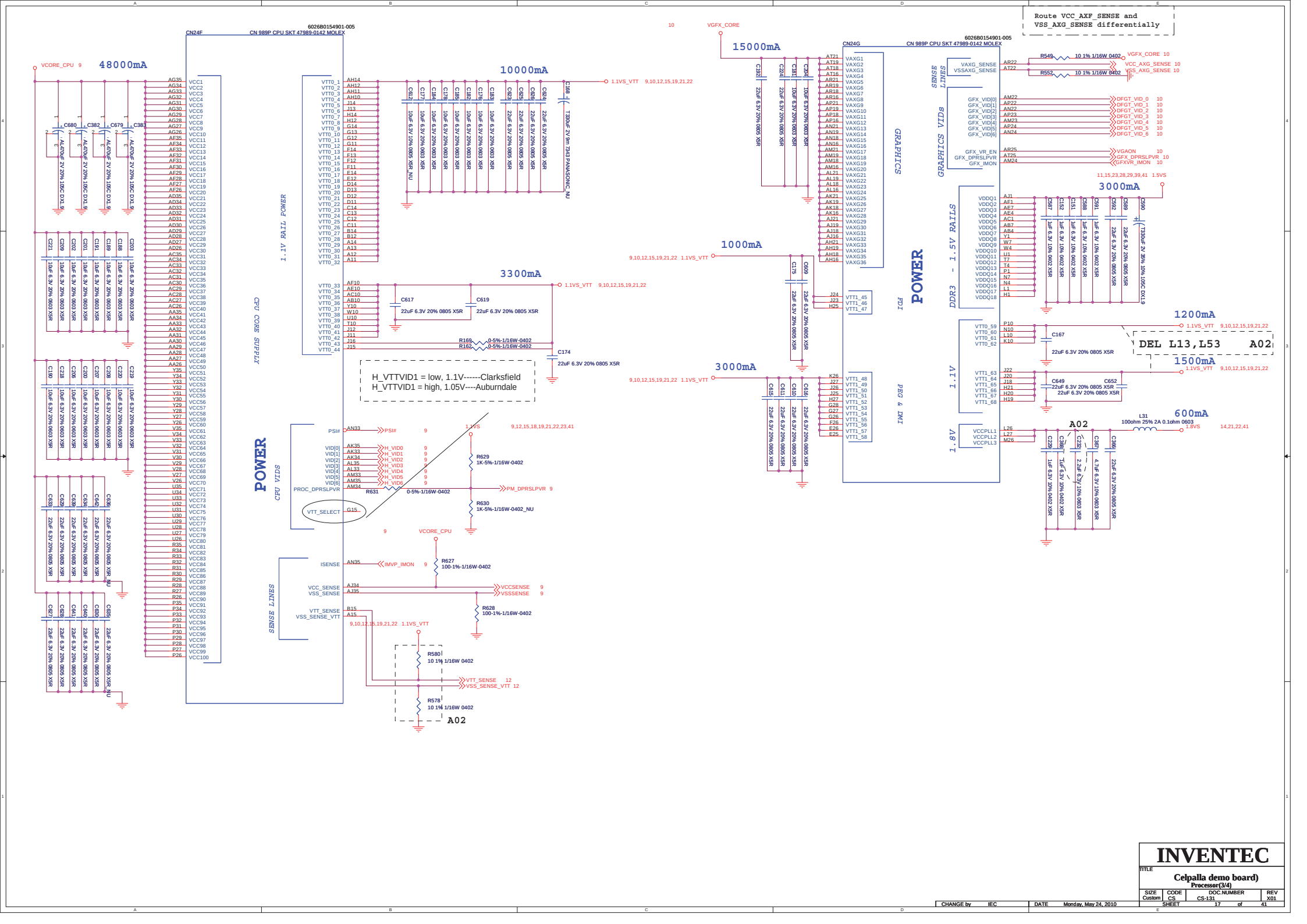
TITLE

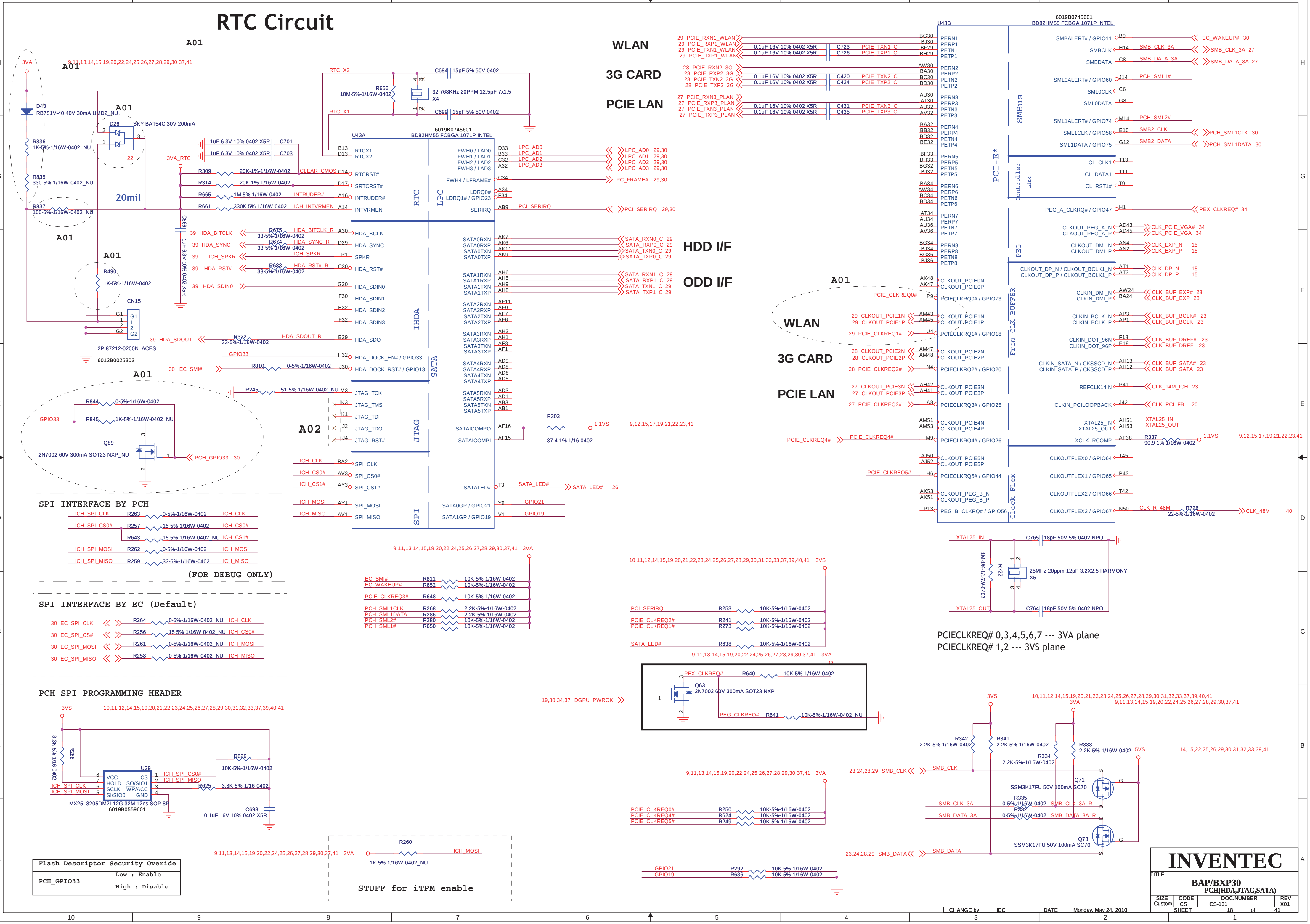
BAP/BXP30

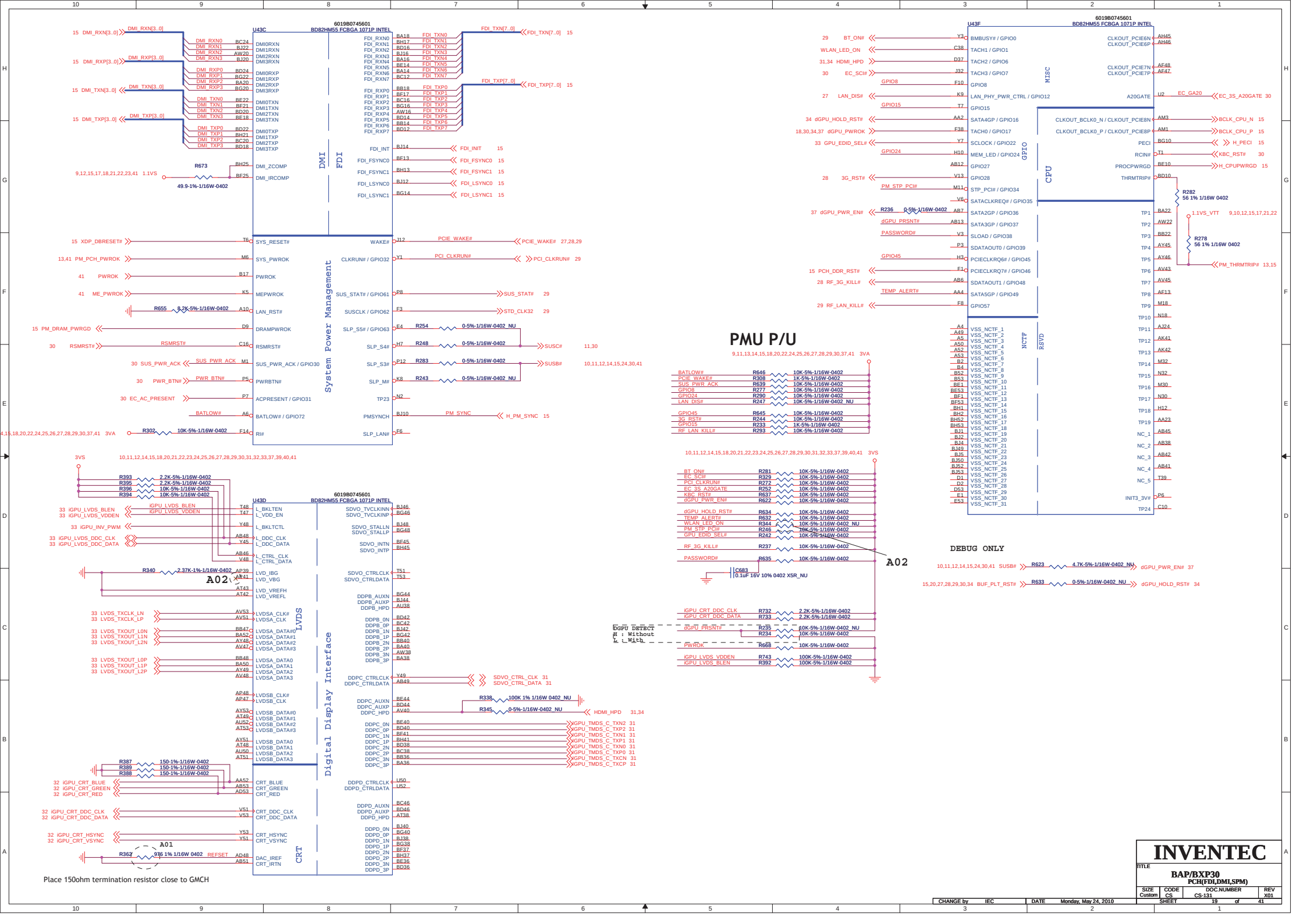
Processor(2/4)

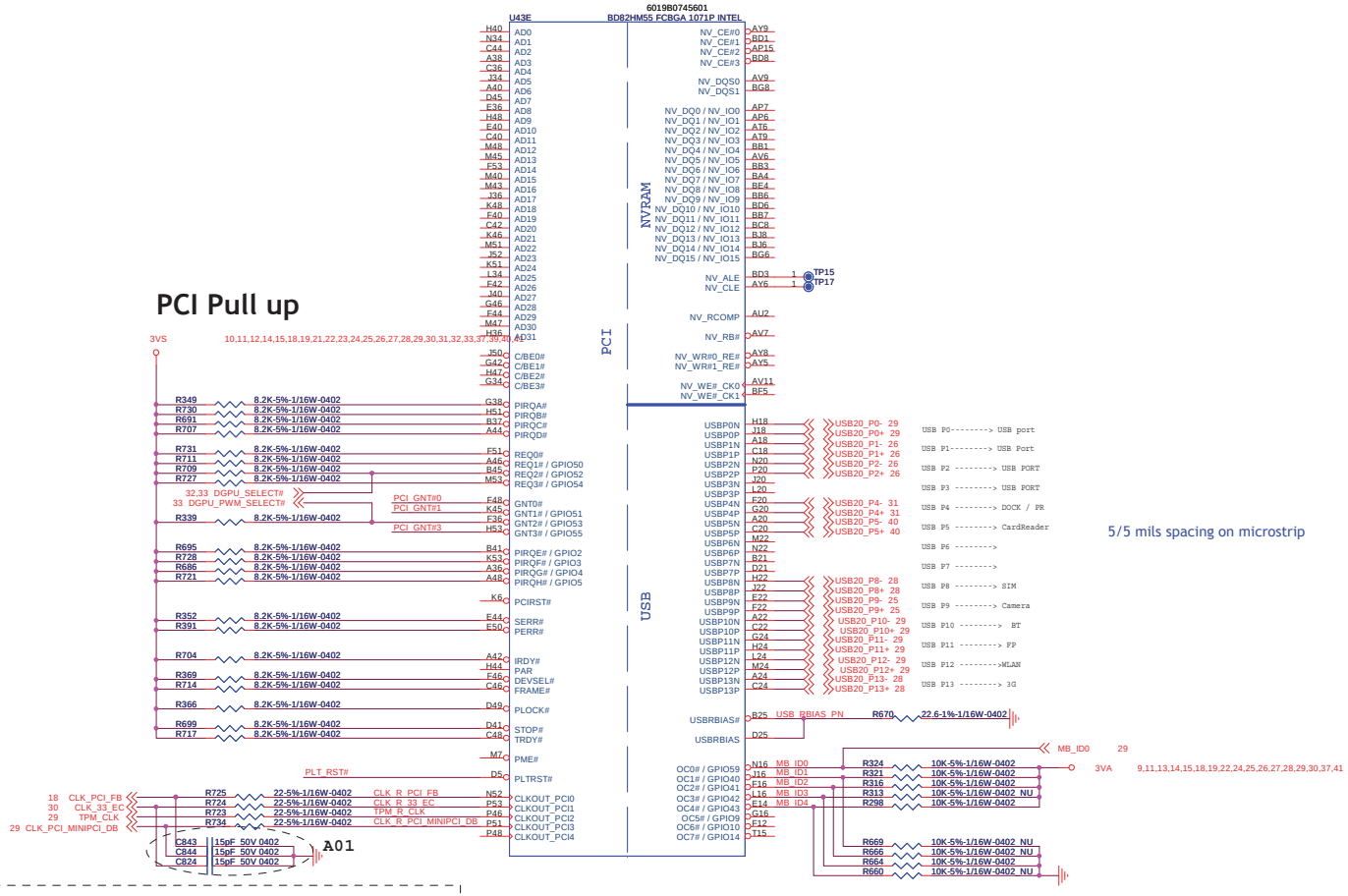
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	X01

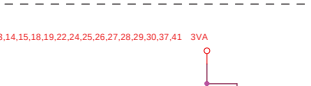
SHEET 16 of 41


Route VCC_AXF_SENSE and VSS_AXG_SENSE differentially
POWER
CPU VIDS
CPU CORE SUPPLY
1.1V RAIL POWER
SENSE LINES
GRAPHICS VIDs
DDR3 - 1.5V RAILS
1.1V
1.8V
GRAPHICS
FDI
PEG & DMI
48000mA
10000mA
15000mA
3300mA
1000mA
3000mA
1200mA
1500mA
600mA
H_VTTVID1 = low, 1.1V------Clarksfield
H_VTTVID1 = high, 1.05V----Auburndale
DEL L13,L53 A02
A02
INVENTEC
Celpalla demo board)
Processor(3/4)
CHANGE by IEC
DATE Monday, May 24, 2010
SHEET 17 of 41


RTC Circuit
A01
WLAN
3G CARD
PCIE LAN
HDD I/F
ODD I/F
A02
20mil
U43A
BD82HM55 FCBGA 1071P INTEL
6019B0745601
U43B
RTC
LPC
IHDA
SATA
JTAG
SPI
SMBus
PCI-E*
PEG
From CLK BUFFER
Clock Flex
32.768KHz 20PPM 12.5pF 7x1.5
25MHz 20ppm 12pF 3.2X2.5 HARMONY
SPI INTERFACE BY PCH
(FOR DEBUG ONLY)
SPI INTERFACE BY EC (Default)
PCH SPI PROGRAMMING HEADER
MX25L3205DM2I-12G 32M 12ns SOP 8P
6019B0559601
Flash Descriptor Security Overide
PCH_GPIO33
Low : Enable
High : Disable
STUFF for iTPM enable
PCIECLKREQ# 0,3,4,5,6,7 --- 3VA plane
PCIECLKREQ# 1,2 --- 3VS plane
2N7002 60V 300mA SOT23 NXP
SSM3K17FU 50V 100mA SC70
INVENTEC
TITLE
BAP/BXP30
PCH(HDA,JTAG,SATA)
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV 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
Place 150ohm termination resistor close to GMCH
INVENTEC
BAP/BXP30
PCH(FDI,DMI,SPM)
CHANGE by IEC
DATE Monday, May 24, 2010
SHEET 19 of 41





PCI_GNT#3	No stuff : by default Stuff : For A16 swap override

PCI_GNT#0	PCI_GNT#1	
0	0	LPC
Floating	0	PCI
Floating	Floating	SPI

BIOS type select

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

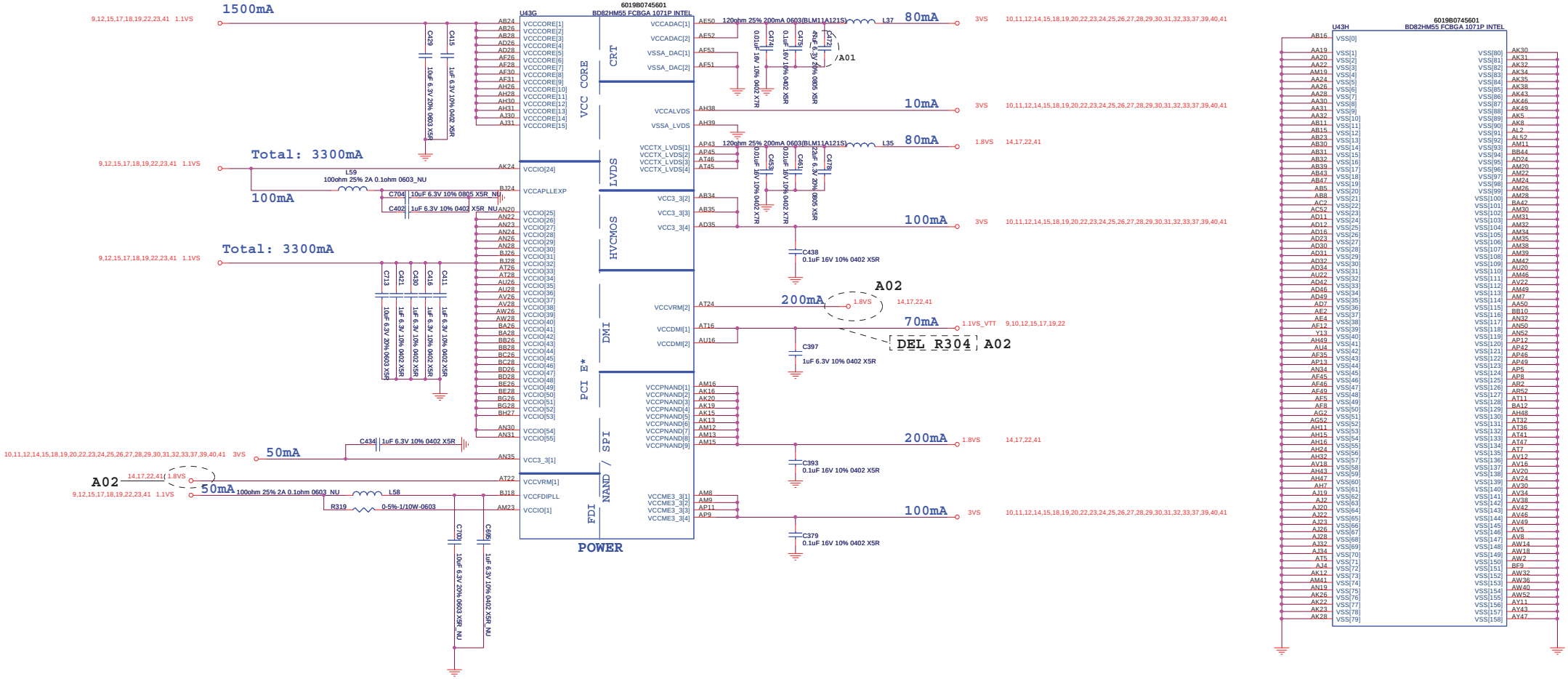
INVENTEC

TITLE: BAP/BXP30
PCH(USB, PCI)

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

SHEET 20 of 41

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

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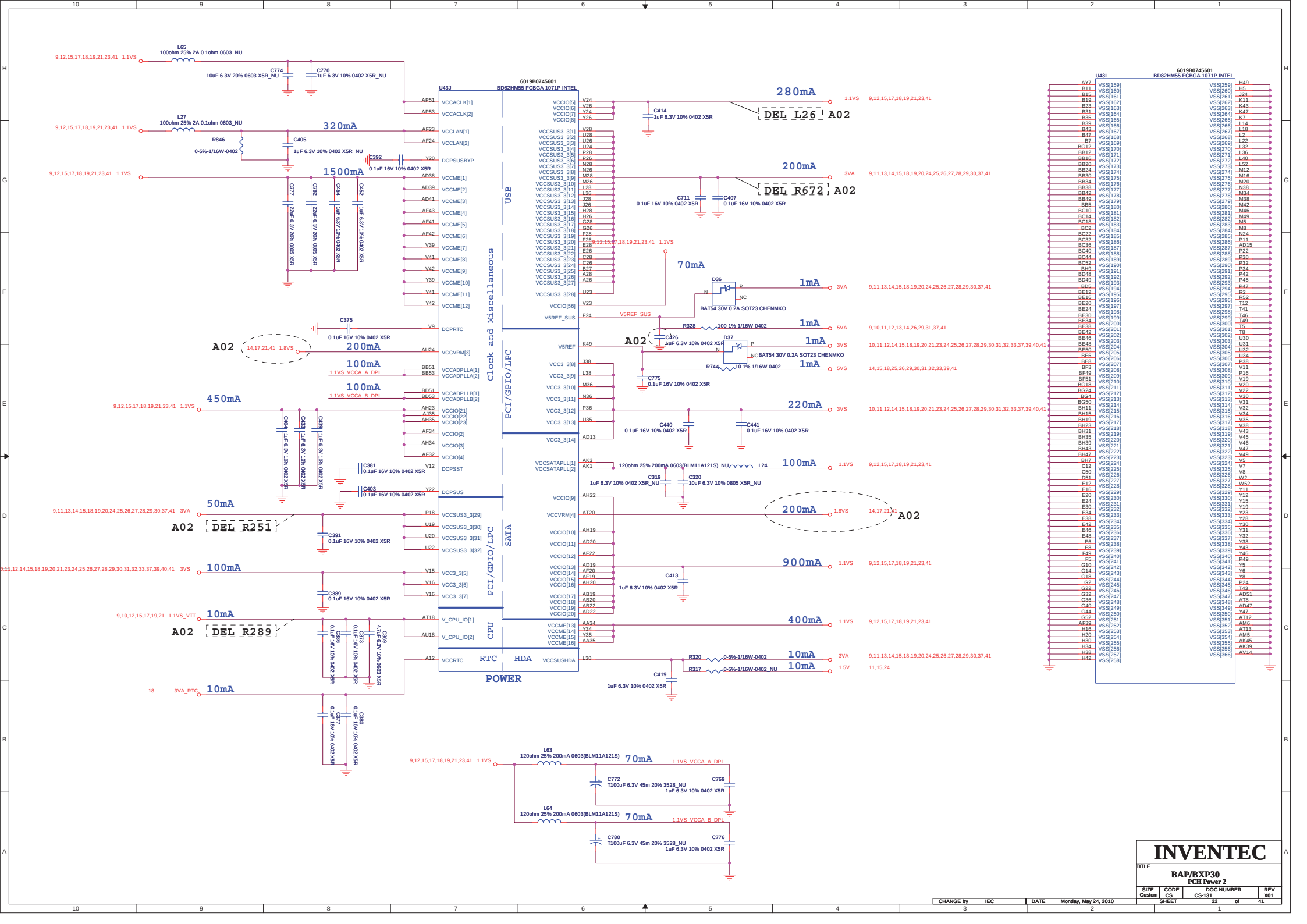
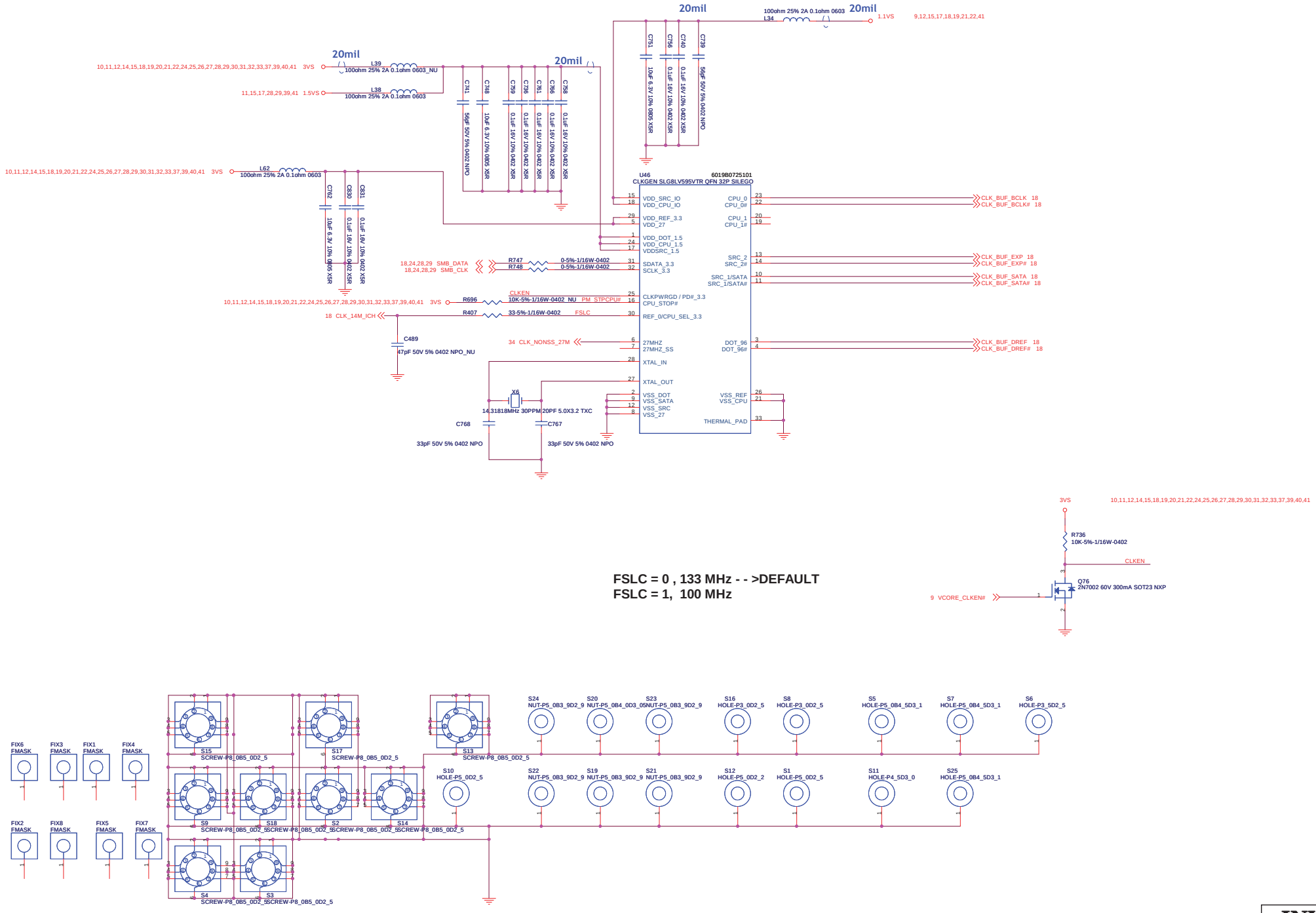

L65
100ohm 25% 2A 0.1ohm 0603_NU
C774
10uF 6.3V 20% 0603 X5R_NU
C770
1uF 6.3V 10% 0402 X5R_NU
L27
100ohm 25% 2A 0.1ohm 0603_NU
R846
0-5%-1/16W-0402
C405
1uF 6.3V 10% 0402 X5R_NU
C392
0.1uF 16V 10% 0402 X5R
C777
22uF 6.3V 20% 0805 X5R
C782
22uF 6.3V 20% 0805 X5R
C454
1uF 6.3V 10% 0402 X5R
C452
1uF 6.3V 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
6019B0745601
U43J
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
DEL R289
280mA
DEL L26 A02
200mA
DEL R672 A02
70mA
1mA
1mA
1mA
220mA
100mA
200mA
A02
900mA
400mA
10mA
10mA
D36
BAT54 30V 0.2A SOT23 CHENMKO
D37
BAT54 30V 0.2A SOT23 CHENMKO
R328
100-1%-1/16W-0402
R744
10 1% 1/16W 0402
C426
1uF 6.3V 10% 0402 X5R
C775
0.1uF 16V 10% 0402 X5R
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
C413
1uF 6.3V 10% 0402 X5R
R320
0-5%-1/16W-0402
R317
0-5%-1/16W-0402_NU
C419
1uF 6.3V 10% 0402 X5R
L63
120ohm 25% 200mA 0603(BLM11A121S)
C772
T100uF 6.3V 45m 20% 3528_NU
C769
1uF 6.3V 10% 0402 X5R
L64
120ohm 25% 200mA 0603(BLM11A121S)
C780
T100uF 6.3V 45m 20% 3528_NU
C776
1uF 6.3V 10% 0402 X5R
6019B0745601
U43I
BD82HM55 FCBGA 1071P INTEL
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



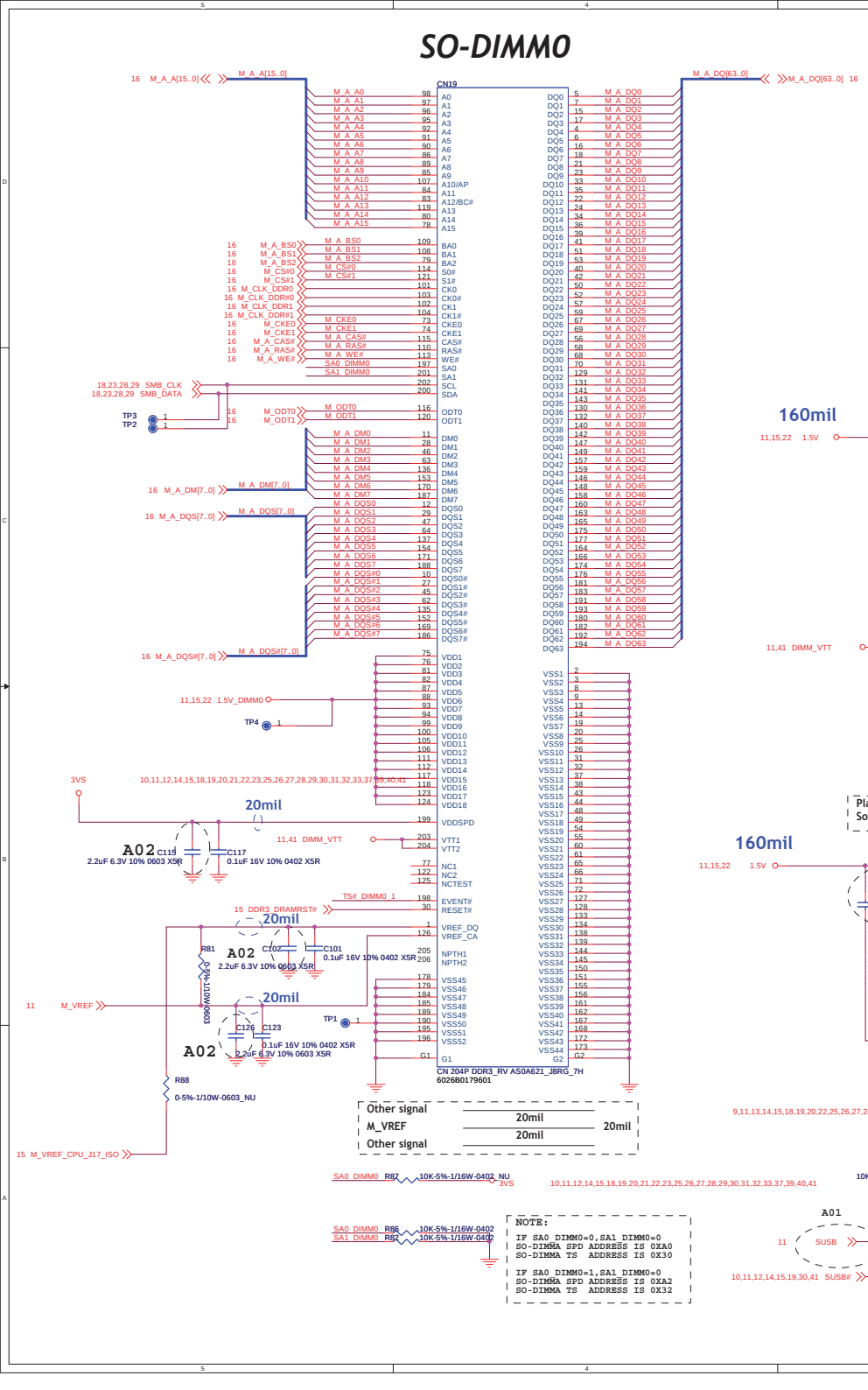
INVENTEC

TITLE: BAP/BXP30
Clock Generator

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

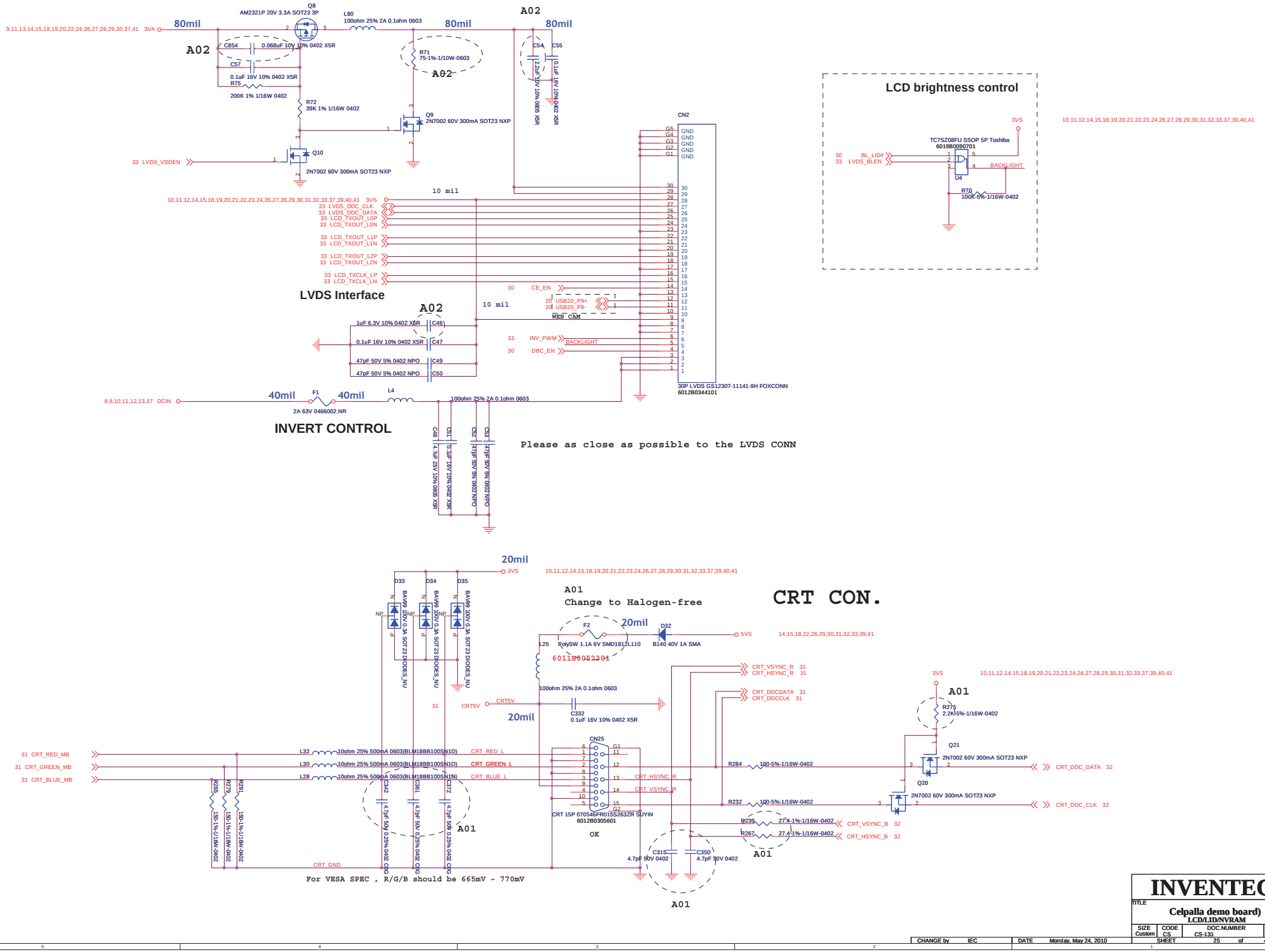
CHANGE by IEC | DATE Monday, May 24, 2010 | SHEET 23 of 41

SO-DIMM0



SO-DIMM1

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


LCD brightness control
3VS
TC7SZ08FU SSOP 5P Toshiba
6019B0090701
BL_LID#
LVDS_BLEN
BACKLIGHT
U4
R70
100K-5%-1/16W-0402
LVDS Interface
INVERT CONTROL
Please as close as possible to the LVDS CONN
30P LVDS GS12307-11141-9H FOXCONN
6012B0344101
WEB CAM
CRT CON.
A01
Change to Halogen-free
For VESA SPEC , R/G/B should be 665mV ~ 770mV
CRT 15P 070546FR015S263ZR SUYIN
6012B0305601
OK
INVENTEC
Celpalla demo board)
LCD/LID/NVRAM
CHANGE by IEC
DATE Monday, May 24, 2010
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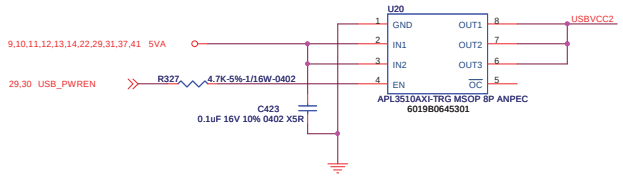
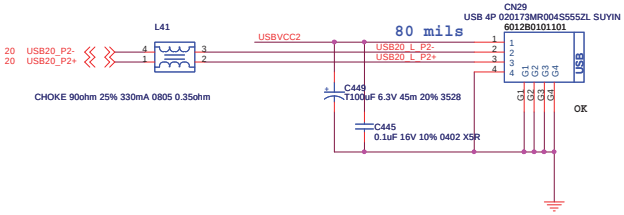
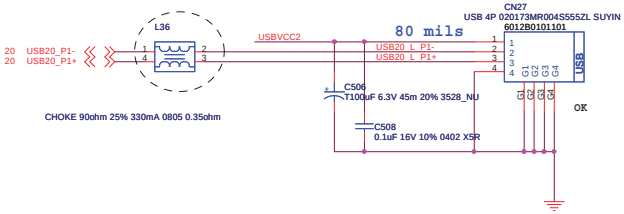
USB

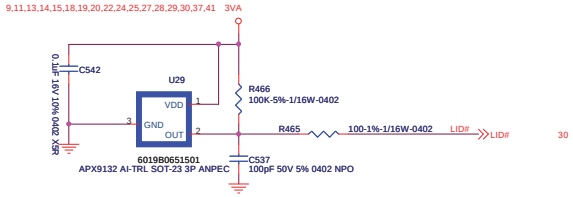


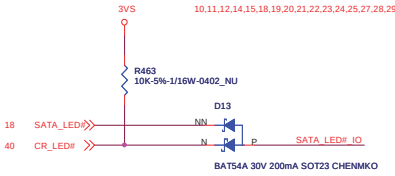


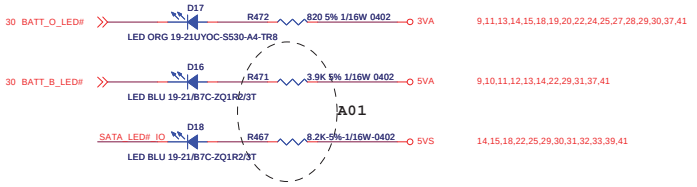
move to bottom side

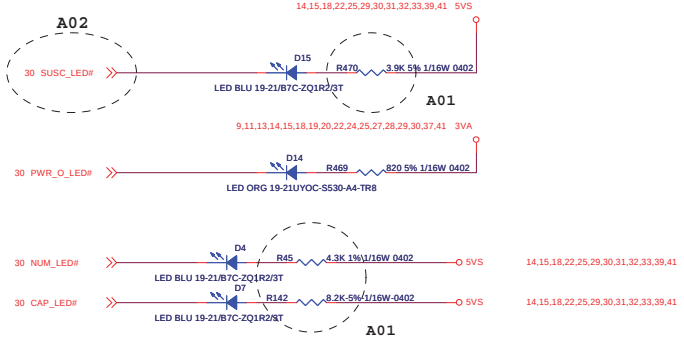


HALL Switch

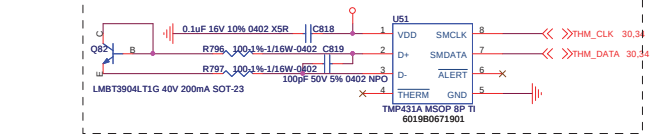




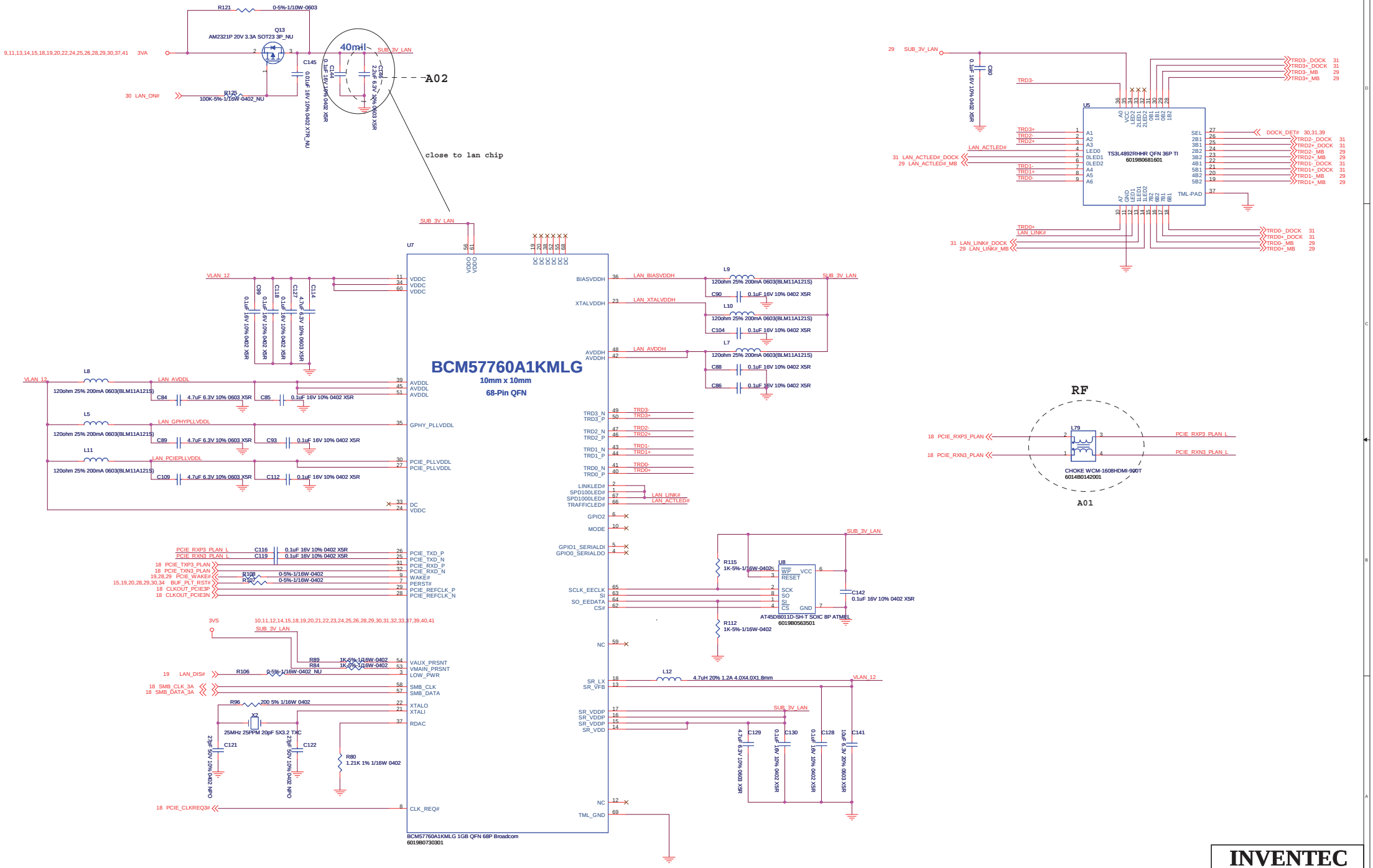




REMOTE thermal sensor
Place near the hottest spot area under Palm-rest



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

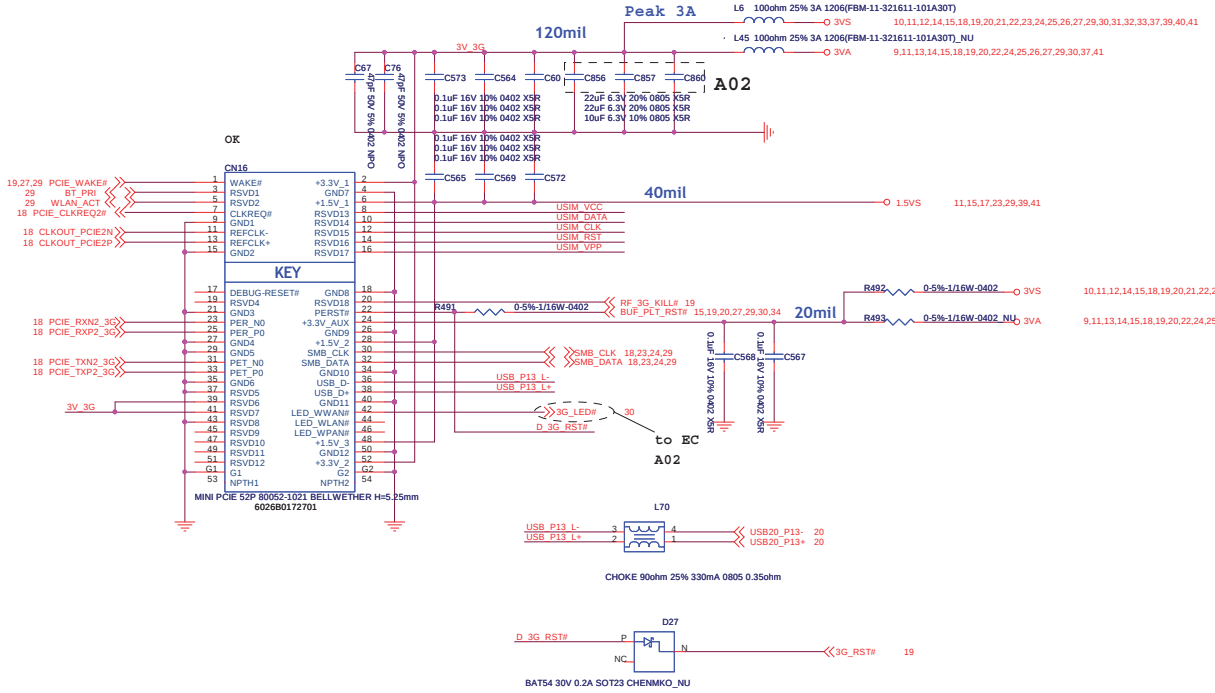
INVENTEC

TITLE: Celpalla demo board)
BCM57760

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

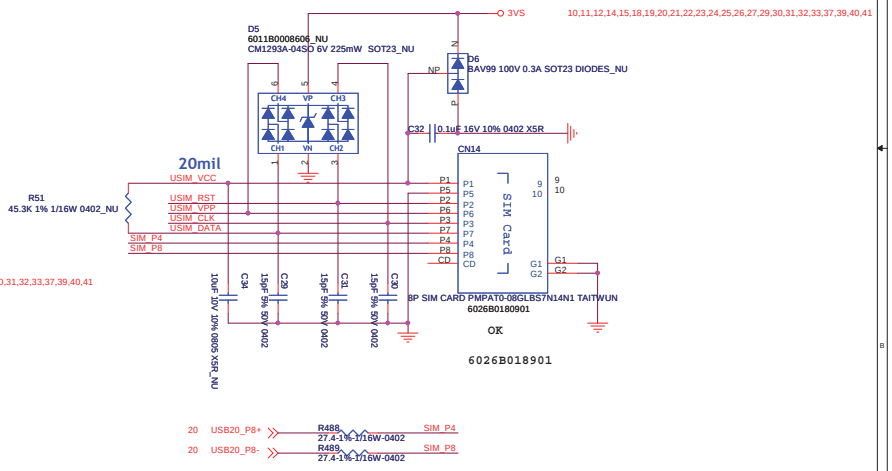
SHEET 27 of 41

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



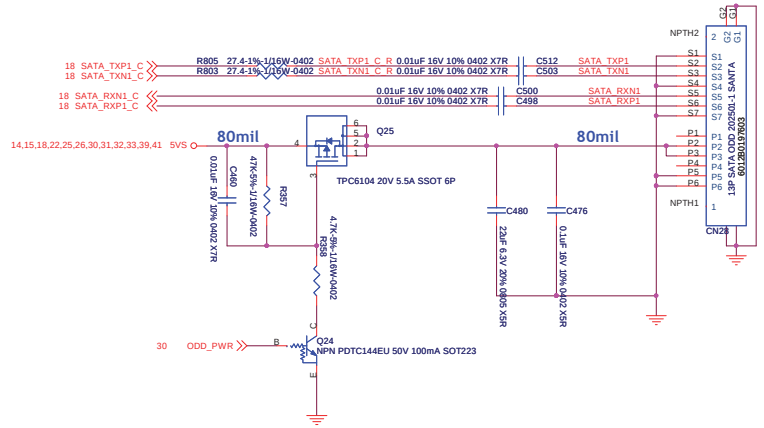
CHANGE by	IEC	DATE	Monday, May 24, 2010	SHEET	28 of 41

INVENTEC

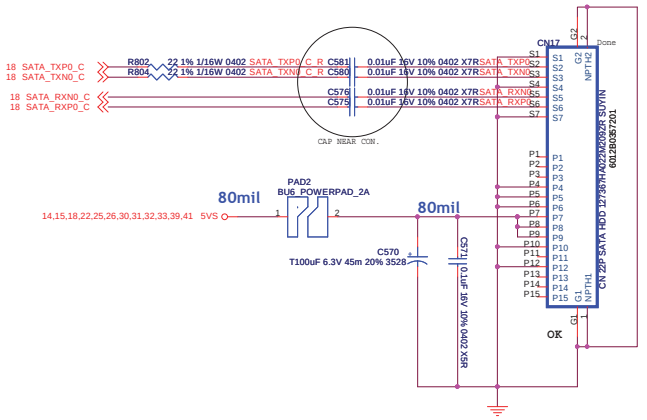
TITLE: BAP/BXP30 WLAN/3G

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

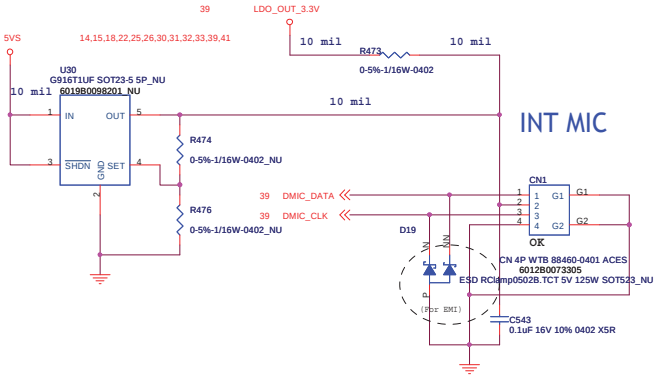
ODD I/F



HDD I/F

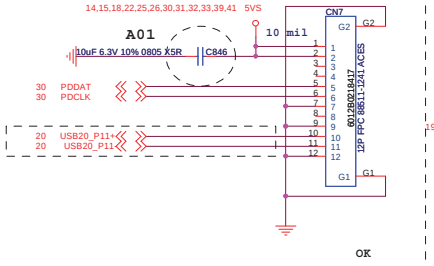


DMIC CNN

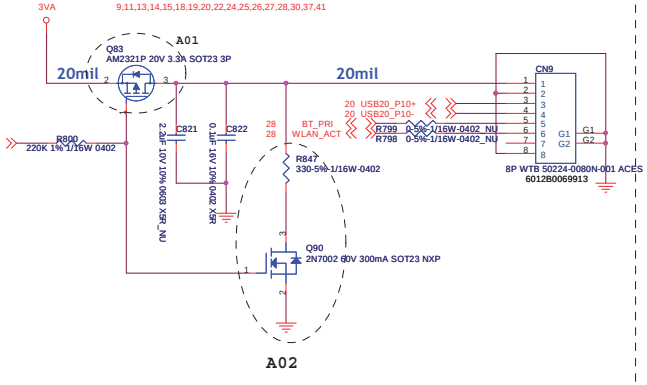


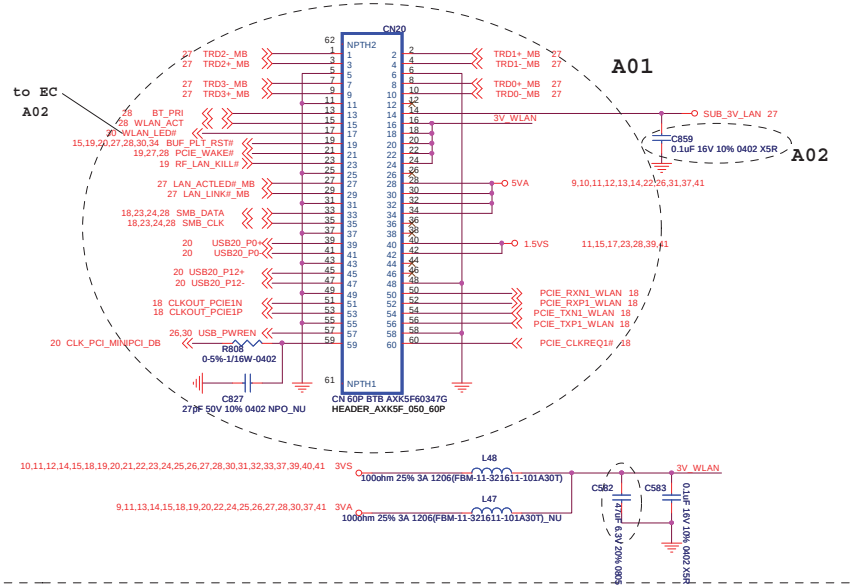
TO USB/WLAN BOARD

GP + FP CNN.

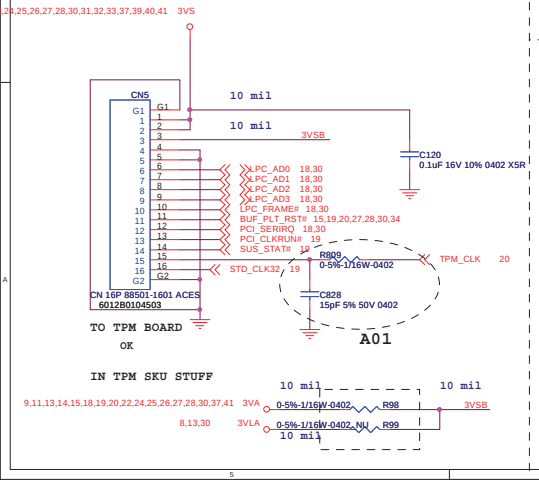


Bluetooth CNN.

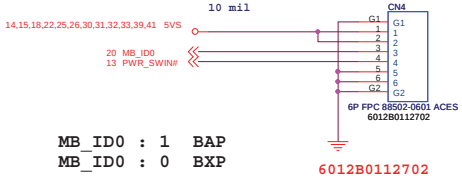




TPM CNN



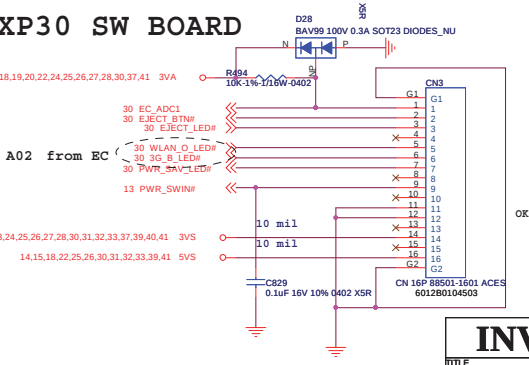
FOR BXP30 POWER BUTTON BOARD



MB_ID0 : 1 BAP
MB_ID0 : 0 BXP

6012B0112702

FOR BAP/BXP30 SW BOARD

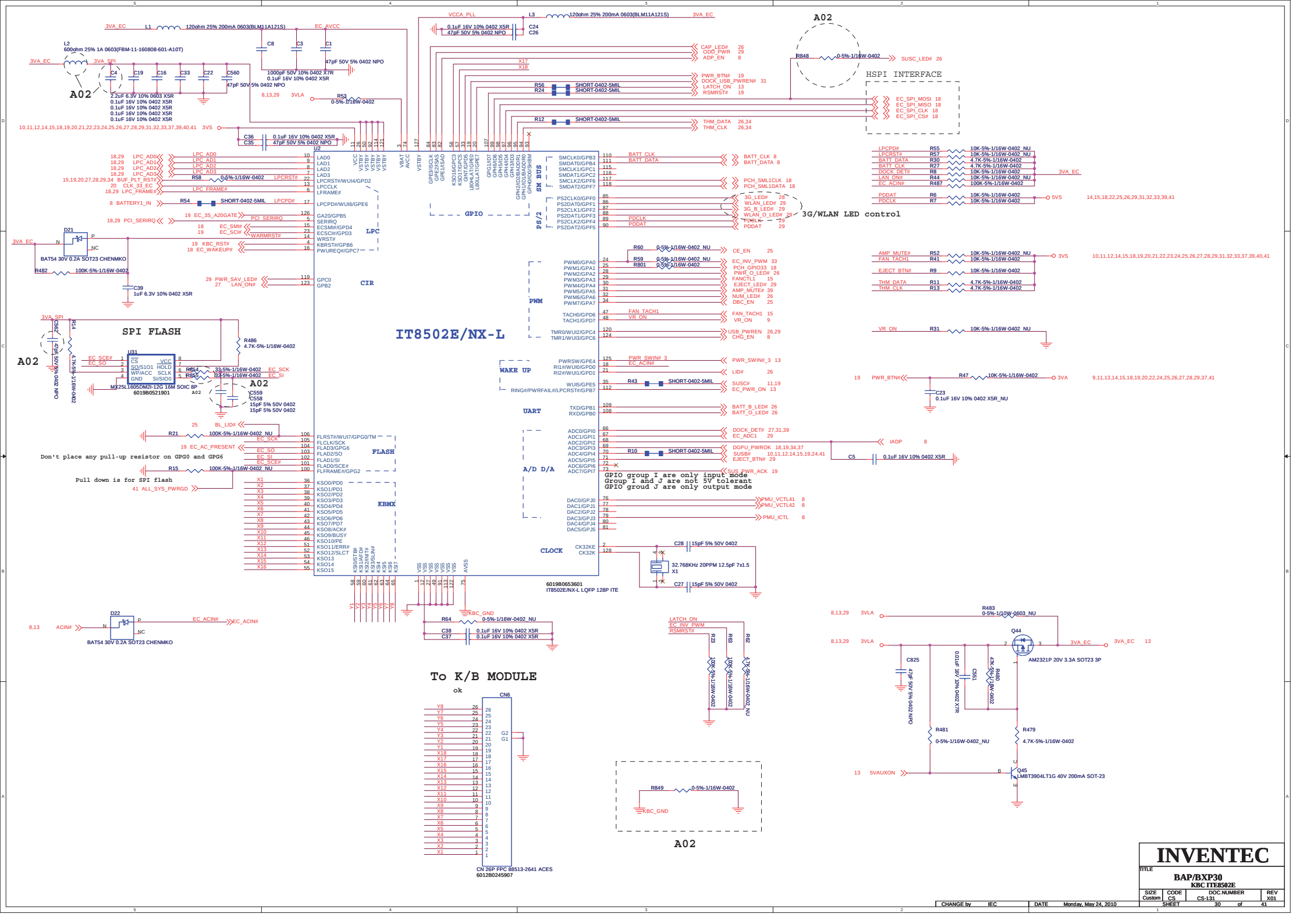


INVENTEC

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

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

CHANGE by IEC | DATE Monday, May 24, 2010 | SHEET 29 of 41


IT8502E/NX-L
SPI FLASH
HSPI INTERFACE
3G/WLAN LED control
To K/B MODULE
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
6019B0521901
MX25L1605DM2I-12G 16M SOIC 8P
CN 26P FPC 88513-2641 ACES
6012B0245907
BAT54 30V 0.2A SOT23 CHENMKO
AM2321P 20V 3.3A SOT23 3P
LMBT3904LT1G 40V 200mA SOT-23
32.768KHz 20PPM 12.5pF 7x1.5
INVENTEC
BAP/BXP30
KBC ITE8502E
Monday, May 24, 2010
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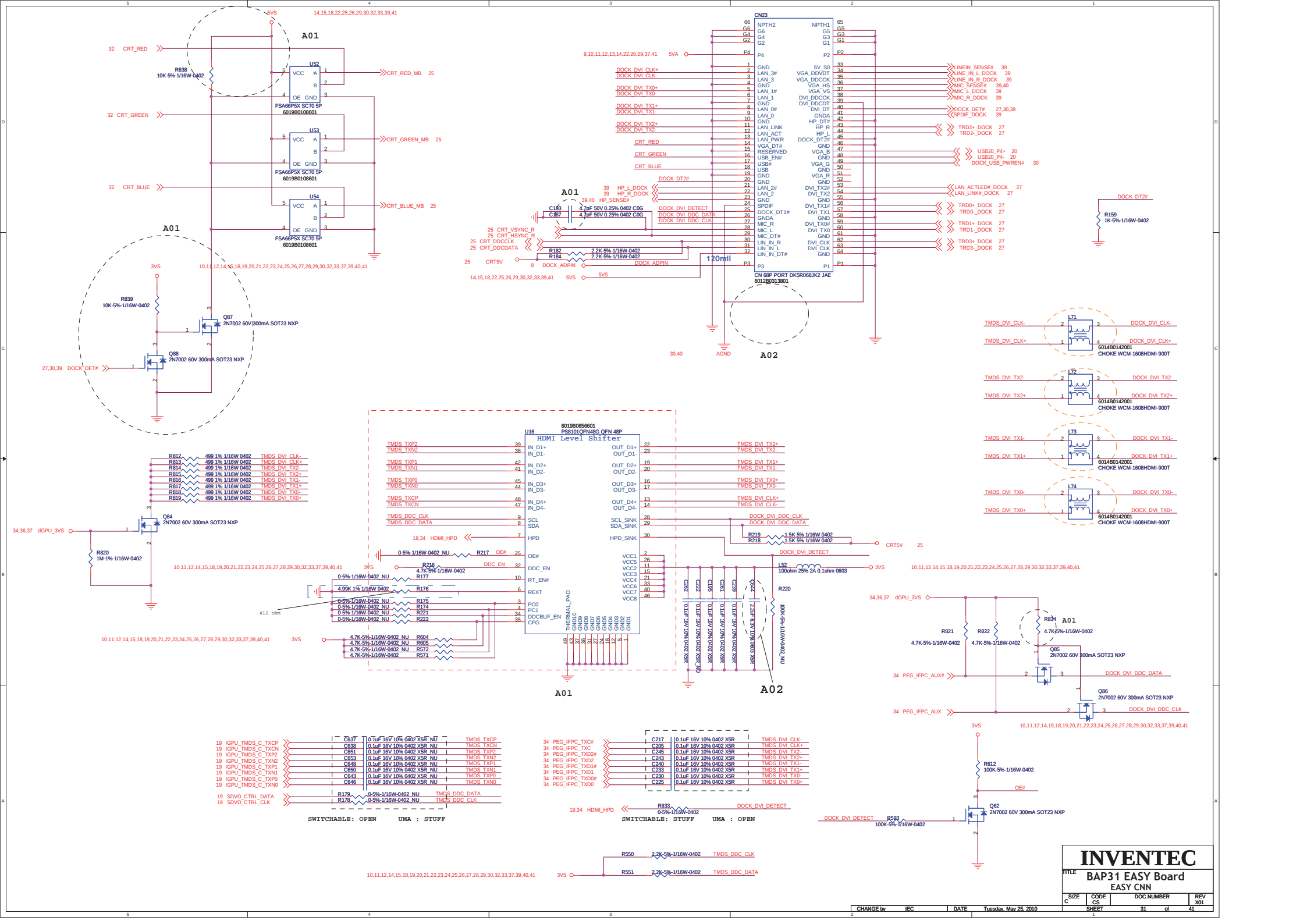
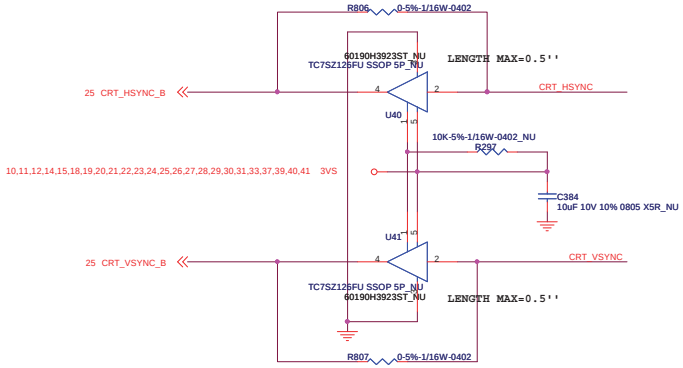
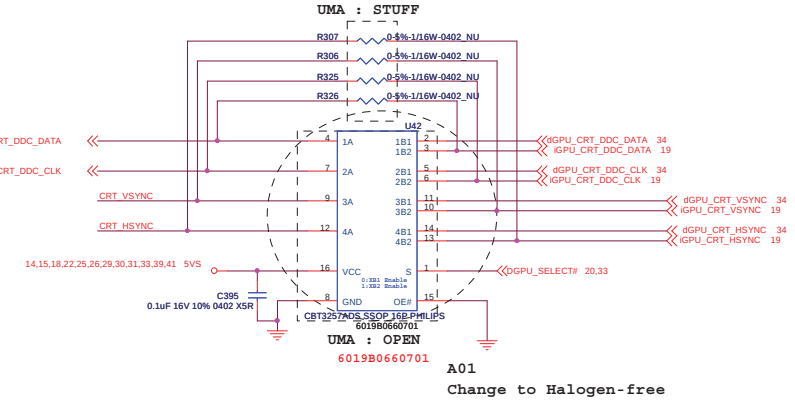

A01
A02
U52
U53
U54
FSA66P5X SC70 5P
6019B0108601
R838
10K-5%-1/16W-0402
CRT_RED_MB 25
CRT_GREEN_MB 25
CRT_BLUE_MB 25
R839
10K-5%-1/16W-0402
Q87
2N7002 60V 300mA SOT23 NXP
Q88
2N7002 60V 300mA SOT23 NXP
27,30,39 DOCK_DET#
CN23
CN 68P PORT DK5R068JK2 JAE
6012B0313801
120mil
R159
1K-5%-1/16W-0402
C193
C187
4.7pF 50V 0.25% 0402 C0G
R182
R184
2.2K-5%-1/16W-0402
U16
6019B0656601
PS8101QFN48G QFN 48P
HDMI Level Shifter
R812
R813
R814
R815
R816
R817
R818
R819
499 1% 1/16W 0402
Q84
2N7002 60V 300mA SOT23 NXP
R820
1M-1%-1/16W-0402
R216
4.7K-5%-1/16W-0402
R177
4.99K 1% 1/16W 0402
R176
R175
R174
R221
R222
R604
R605
R572
R571
R217
0-5%-1/16W-0402_NU
412 ohm
L52
100ohm 25% 2A 0.1ohm 0603
R219
R218
1.5K 5% 1/16W 0402
L71
L72
L73
L74
6014B0142001
CHOKE WCM-1608HDMI-900T
R821
R822
4.7K-5%-1/16W-0402
R834
Q85
Q86
2N7002 60V 300mA SOT23 NXP
R612
100K-5%-1/16W-0402
Q62
R593
C637
C638
C651
C653
C648
C650
C643
C646
0.1uF 16V 10% 0402 X5R_NU
R179
R178
0-5%-1/16W-0402_NU
C217
C205
C245
C243
C240
C233
C230
C225
0.1uF 16V 10% 0402 X5R
R833
R550
R551
2.2K-5%-1/16W-0402
SWITCHABLE: OPEN UMA : STUFF
SWITCHABLE: STUFF UMA : OPEN
INVENTEC
BAP31 EASY Board
EASY CNN
SIZE C
CODE CS
DOC.NUMBER
REV X01
CHANGE by IEC
DATE Tuesday, May 25, 2010
SHEET 31 of 41

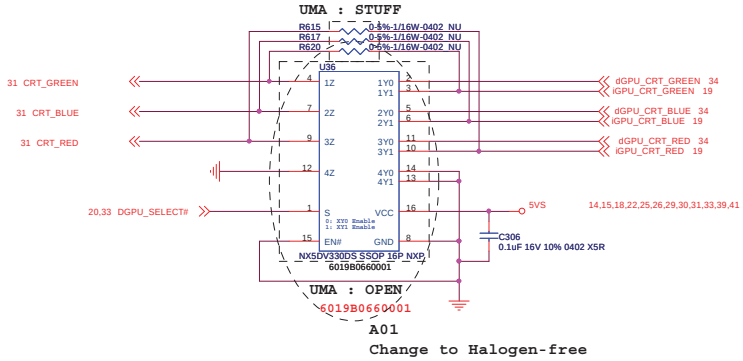
CRT HSYNC/VSYNC SW For Dock



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

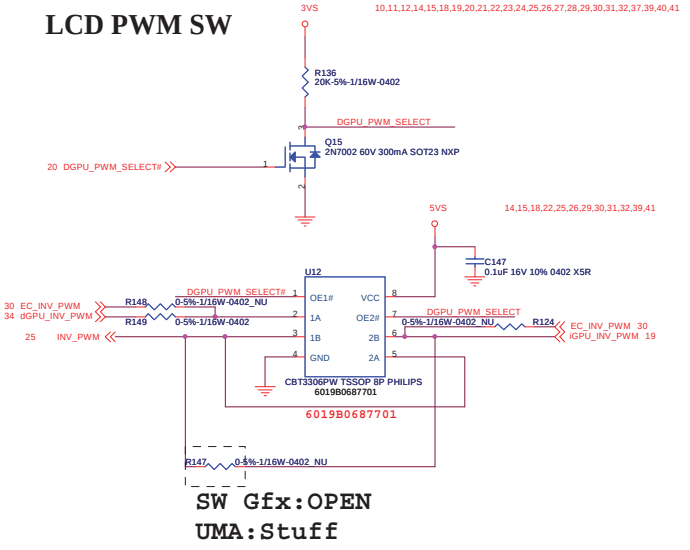
INVENTEC

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

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

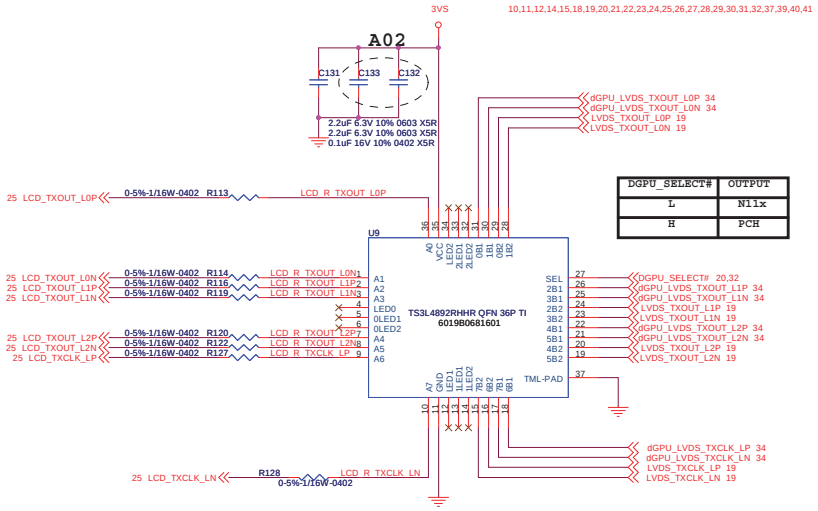
CHANGE by IEC | DATE Monday, May 24, 2010 | SHEET 32 of 41

LCD PWM SW



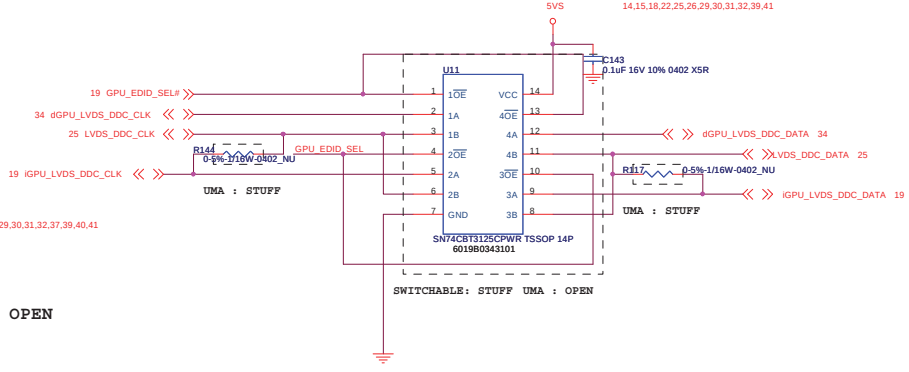
SW Gfx:OPEN
UMA:Stuff

LVDS SW



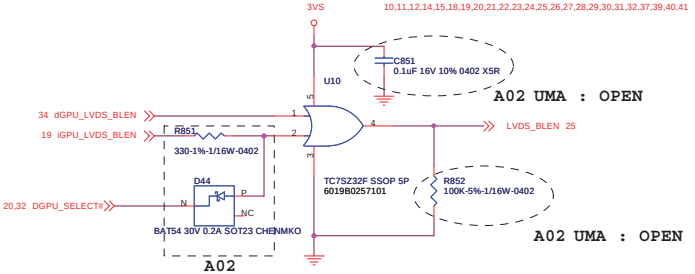
DGPU_SELECT#	OUTPUT
L	N11x
H	PCH

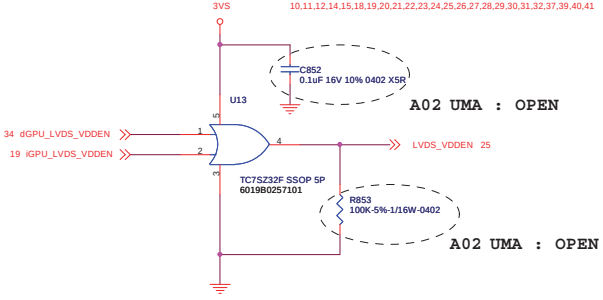
LCD DDC SW

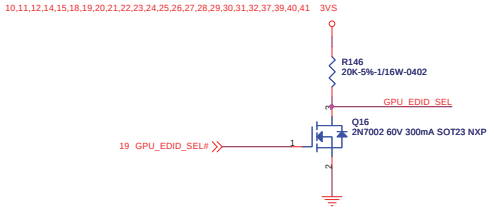


SWITCHABLE: STUFF UMA : OPEN

UMA : STUFF







TITLE	BAP/BXP30 Hybird Switch (2/2)		
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: X01
CHANGE by: IEC	DATE: Monday, May 24, 2010	SHEET: 33 of 41	

INVENTEC

GPU Thermal Sensor
Please close GPU side

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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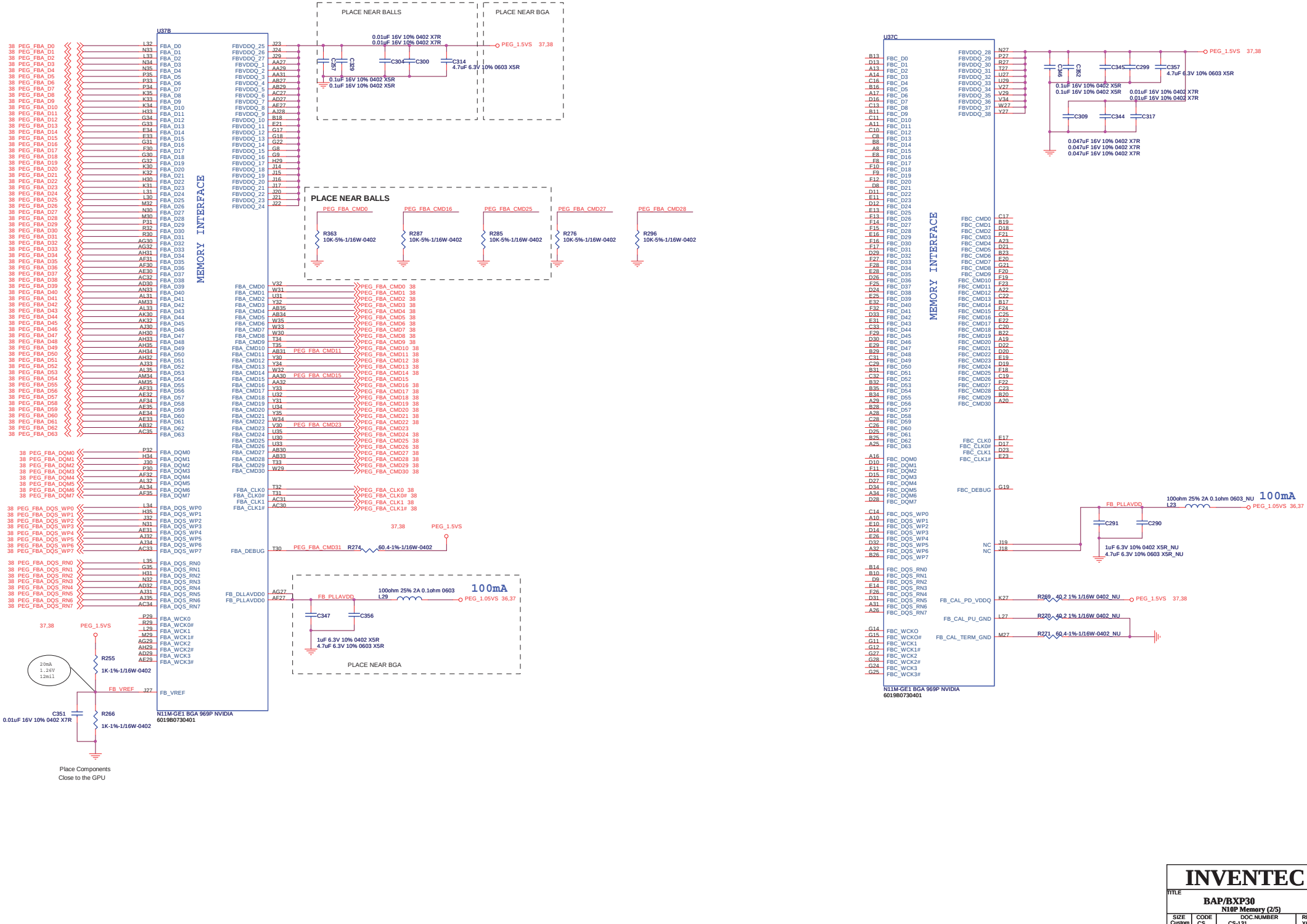
CHANGE by IEC | DATE Monday, May 24, 2010



CHANGE by	IEC	DATE	Monday, May 24, 2010

INVENTEC

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

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

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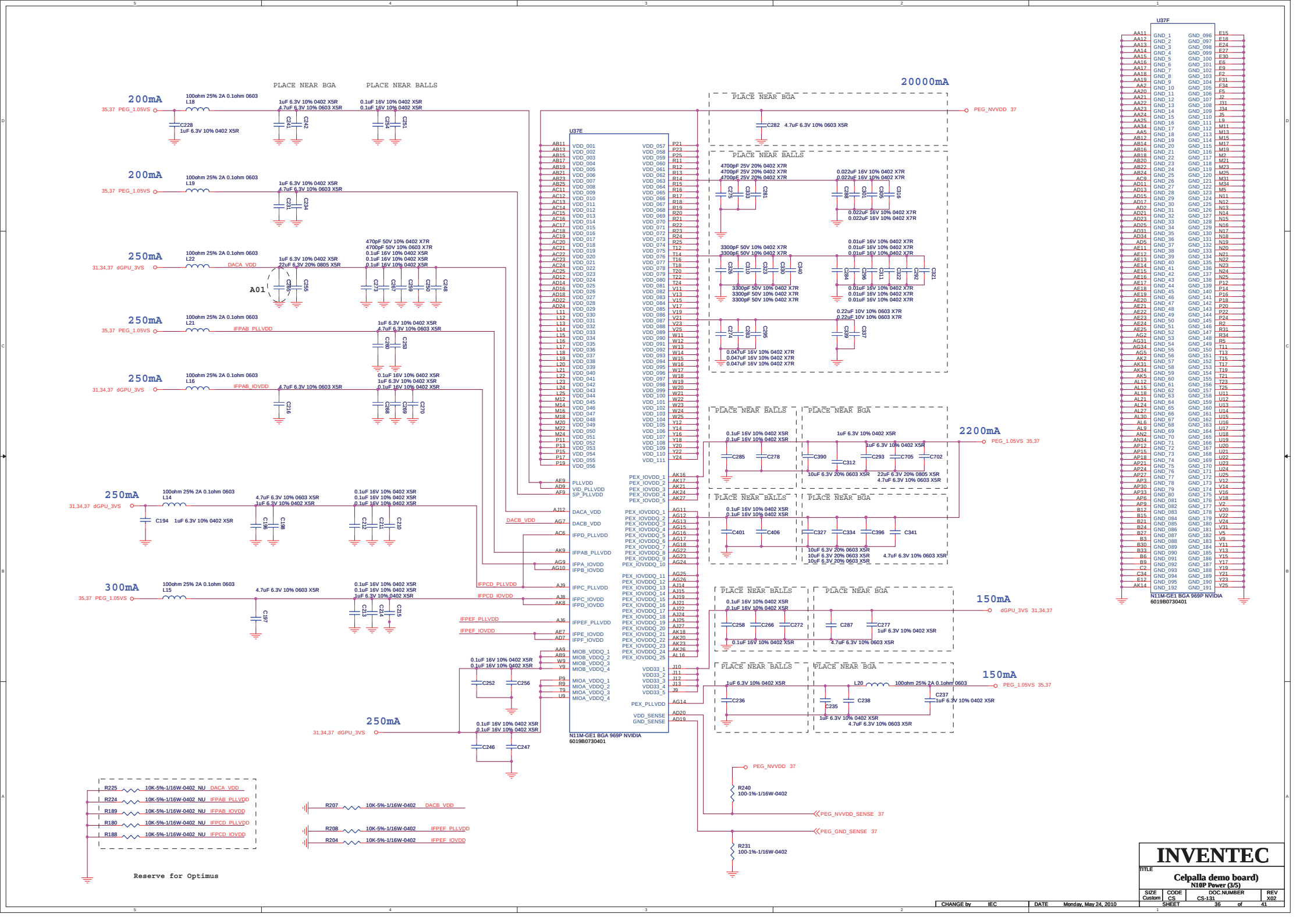
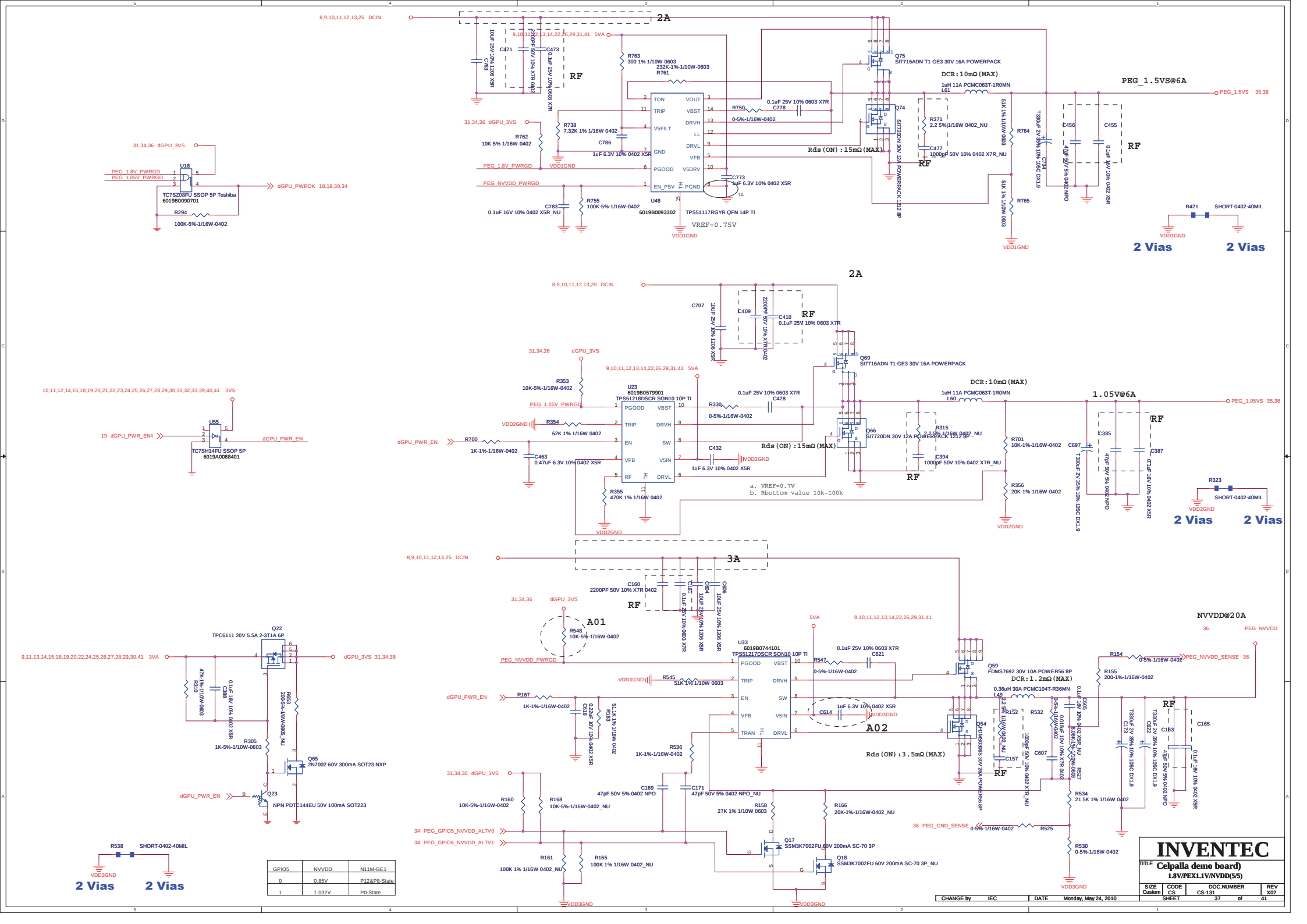

PLACE NEAR BGA
PLACE NEAR BALLS
200mA
100ohm 25% 2A 0.1ohm 0603
L18
35,37 PEG_1.05VS
C228
1uF 6.3V 10% 0402 X5R
1uF 6.3V 10% 0402 X5R
4.7uF 6.3V 10% 0603 X5R
C241
C242
0.1uF 16V 10% 0402 X5R
0.1uF 16V 10% 0402 X5R
C254
C251
200mA
L19
C231
C234
250mA
L22
31,34,37 dGPU_3VS
DACA_VDD
470pF 50V 10% 0402 X7R
4700pF 50V 10% 0603 X7R
0.1uF 16V 10% 0402 X5R
22uF 6.3V 20% 0805 X5R
A01
C255
C248
250mA
L21
IFPAB_PLLVDD
C260
C253
250mA
L16
IFPAB_IOVDD
C216
C268
C269
C270
300mA
L15
C197
C213
C214
C215
IFPCD_PLLVDD
IFPCD_IOVDD
IFPEF_PLLVDD
IFPEF_IOVDD
250mA
C194
C196
C198
C212
C211
C210
L14
DACB_VDD
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
3300pF 50V 10% 0402 X7R
0.01uF 16V 10% 0402 X7R
0.22uF 10V 10% 0603 X7R
0.047uF 16V 10% 0402 X7R
2200mA
PEG_1.05VS 35,37
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
C236
C238
C235
C237
L20
100ohm 25% 2A 0.1ohm 0603
PEG_1.05VS 35,37
250mA
C252
C256
C246
C247
R225
R224
R189
R180
R188
10K-5%-1/16W-0402_NU
DACA_VDD
IFPAB_PLLVDD
IFPAB_IOVDD
IFPCD_PLLVDD
IFPCD_IOVDD
Reserve for Optimus
R207
R208
R204
DACB_VDD
IFPEF_PLLVDD
IFPEF_IOVDD
R240
100-1%-1/16W-0402
R231
PEG_NVVDD_SENSE 37
PEG_GND_SENSE 37
U37F
N11M-GE1 BGA 969P NVIDIA
6019B0730401
INVENTEC
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
SHEET 36 of 41



GPIO5	NVVDD	N11M-GE1
0	0.85V	P12&P8-State
1	1.032V	P0-State

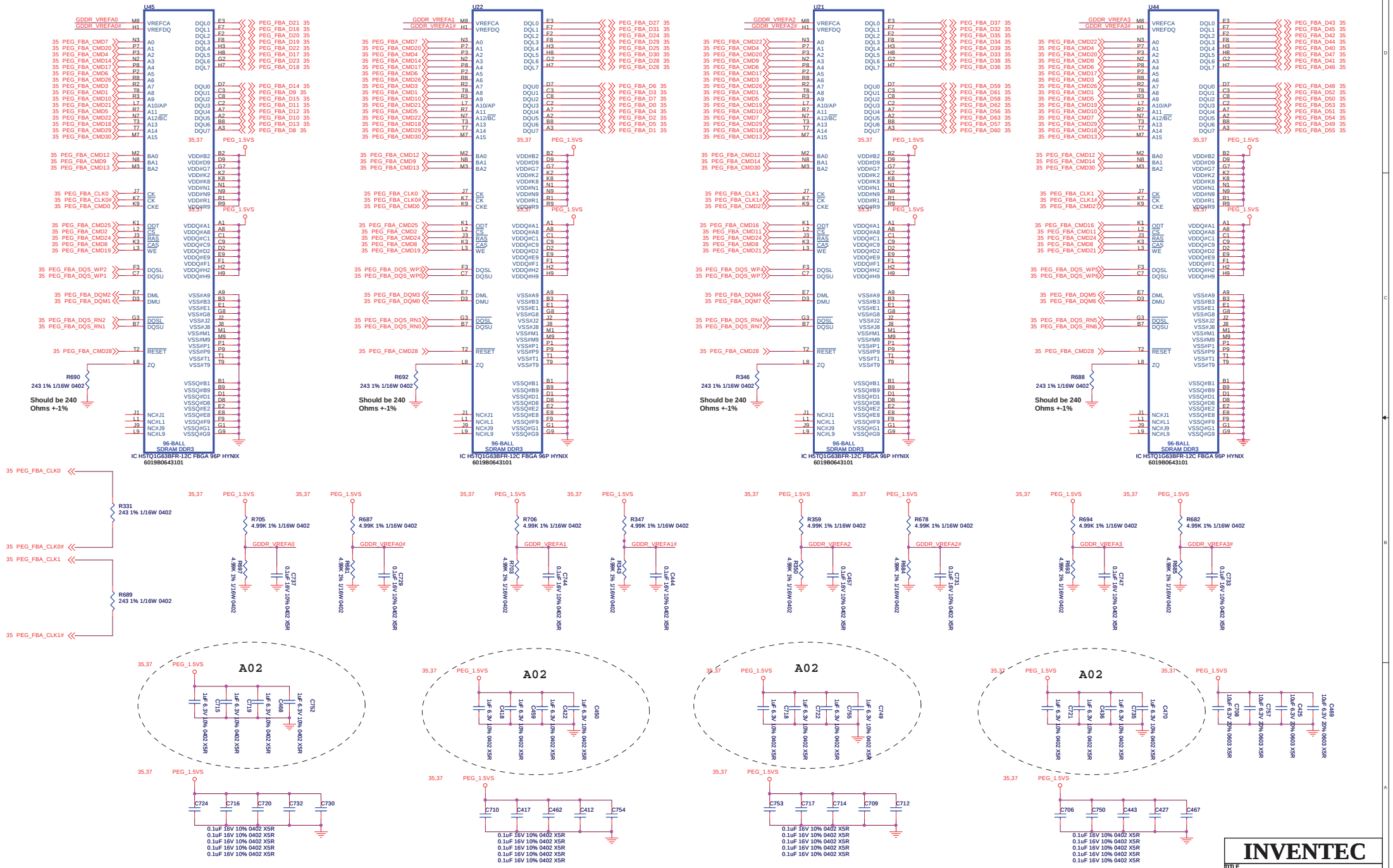
INVENTEC

TITLE: Celpalla demo board)
1.8V/PEX1.1V/NVDD(5/5)

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

SHEET 37 of 41

CHANGE by IEC | DATE Monday, May 24, 2010



INVENTEC

TITLE: Celpalla demo board)
VRAM

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

VDD_IO set signaling level for HDA bus

R1137 only needed if supply to VAUX_3.3 is removed during system re-start.

AVDD_3.3 pin is output of internal LDO. Do NOT connect to external supply.

30mA@MAX

Layout Note: Path from +5V to LPWR_5.0 and RPWR_5.0 must be very low resistance (<0.01 ohms).

Place bypass caps very close to device.

CX20672-11Z QFN 40P Conexant
6019B0730901

BAT54 30V 0.2A SOT23 CHENMKO

BAT54A 30V 200mA SOT23 CHENMKO

LMBT3904LT1G 40V 200mA SOT-23

FOR DOCK

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)

SPEAKER

30mil

CN 4P 88266-04001 ACES
6012B0096202

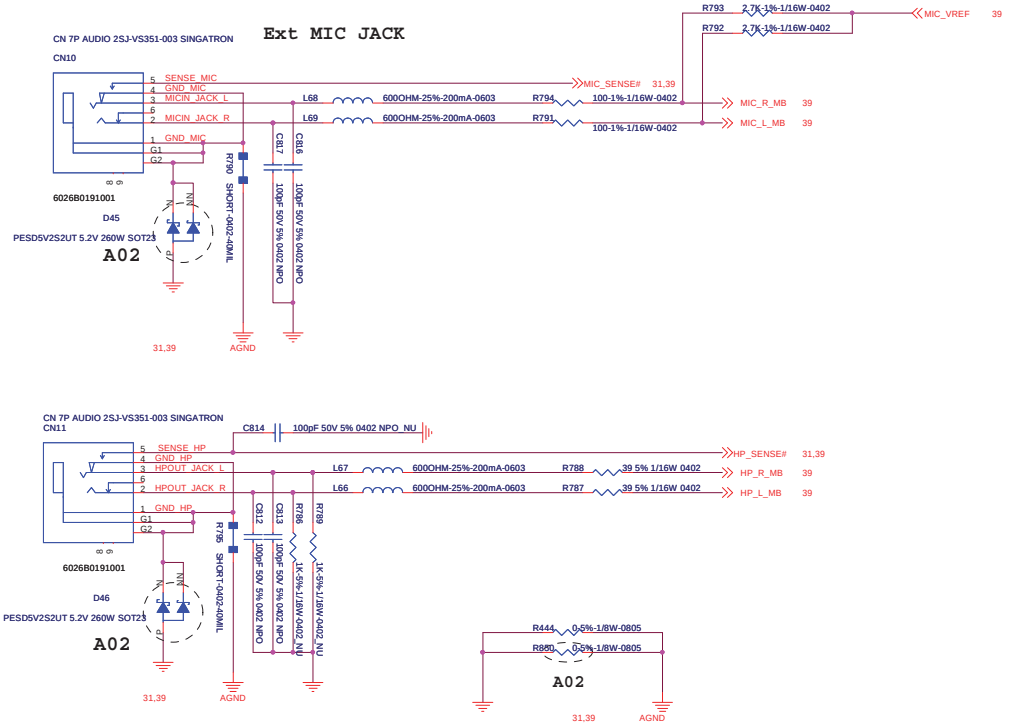
OK

For EMC

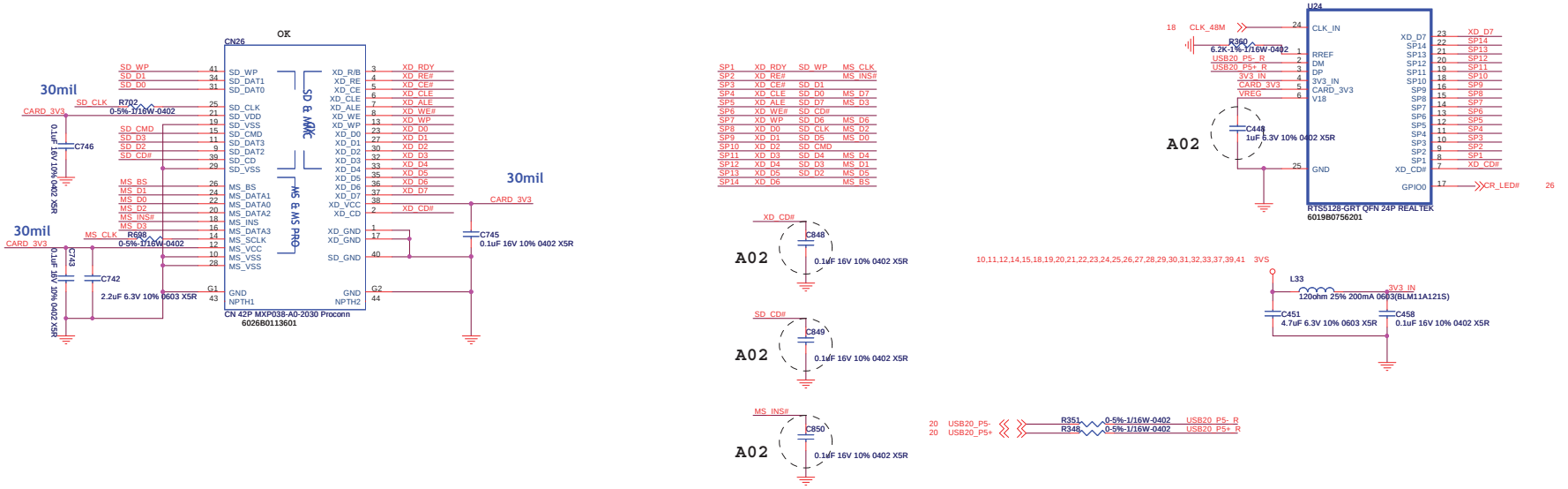
GND1
GND_AUD

Project	Celpalla demo board)
Title	Audio Codec /AMP
Size	Custom
Code	CS
Doc.Number	CS-131
Rev	X01
Sheet	39 of 41
Change by	IEC
Date	Monday, May 24, 2010

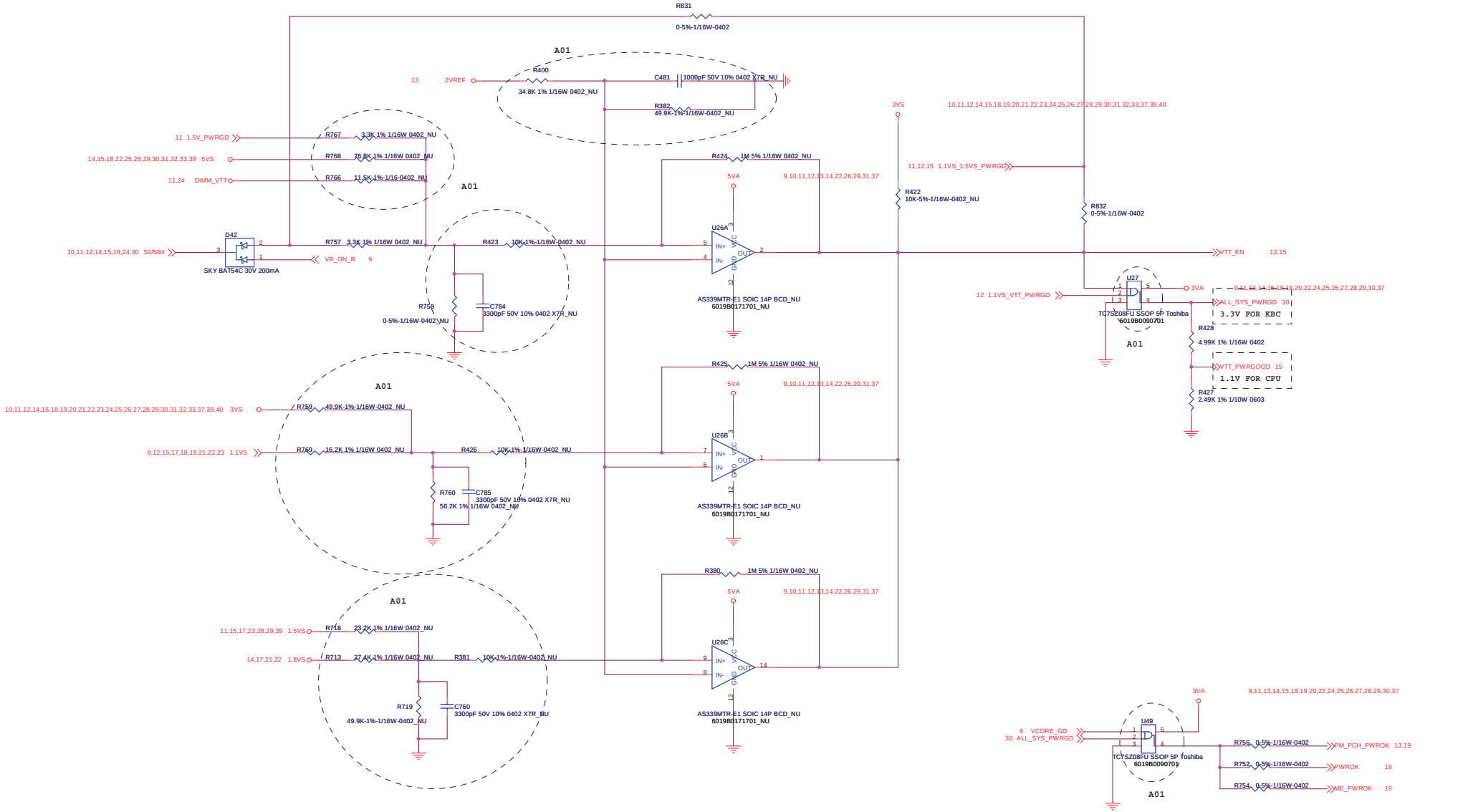
INVENTEC



5 in 1 CARDREADER



INVENTEC			
TITLE: BAP/BXP30 CARD READER/AUDIO BOARD			
SIZE: Custom	CODE: A03	DOC.NUMBER: D-CS-1310A2271201-ALG	REV: A03
CHANGE by: <CHANGE by>	DATE: Monday, May 24, 2010	SHEET: 40 of 41	



INVENTEC

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