ACER_BAP10/BXP10
MAIN BOARD---A01

2010.04.02

INVENTEC

TITLE: ACER_BAP10/BXP10
Title

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 1 of 45

1. Schematic Page Description :

Montavina Schematic Ver : X01

1. Title
2. Schematic Page DESCR
3. Block Diagram
4. Power Block Diagram
5. Annotations
6. Schematic Modify
7. Timing Diagram
8. PWR_Adaptor in/Charge
9. PWR_CPU Core Power
10. PWR_Graphics Core
11. PWR_DDR PWR
12. PWR_1.1VS_VTT/1.1VS
13. PWR_5VA/5VLA/3VA/3VLA
14. PWR_3VS/5VS/1.8VS/5VUSB
15. PWR_Reserve
16. Processor(1/4)
17. Processor(2/4)
18. Processor(3/4)
19. Processor(4/4)
20. PCH_RTC,SATA,PCI-E,CLK
21. PCH_DMI,MISC,LVDS,CRT
22. PCH_USB, PCI,NVRAM,XDP
23. PCH Power 1
24. PCH Power 2
25. PCH Power 3 (GND)
26. Clock Generator
27. DDR3 SDRAM SO-DIMM 0/1
28. LCD,CMA,CRT PLUG
29. USB/MDC
30. LAN(BCM57760)
31. CX20672-11Z / MIC / SPK
32. UMTS/WLAN
33. HDD/BT/TPM/GP/FP/LID
34. CR_AU6437-GEF
35. KBC ITE8502E*
36. EASY PORT
37. Hybrid Switch (1/2)
38. POWER SEQUENCE
39. SW/LED
40. FP board
41. GP Button board
42. SW Button/BAP10 board
43. SW Button/BXP10 board
44. LED Board/BXP10 board
41. TPM board

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

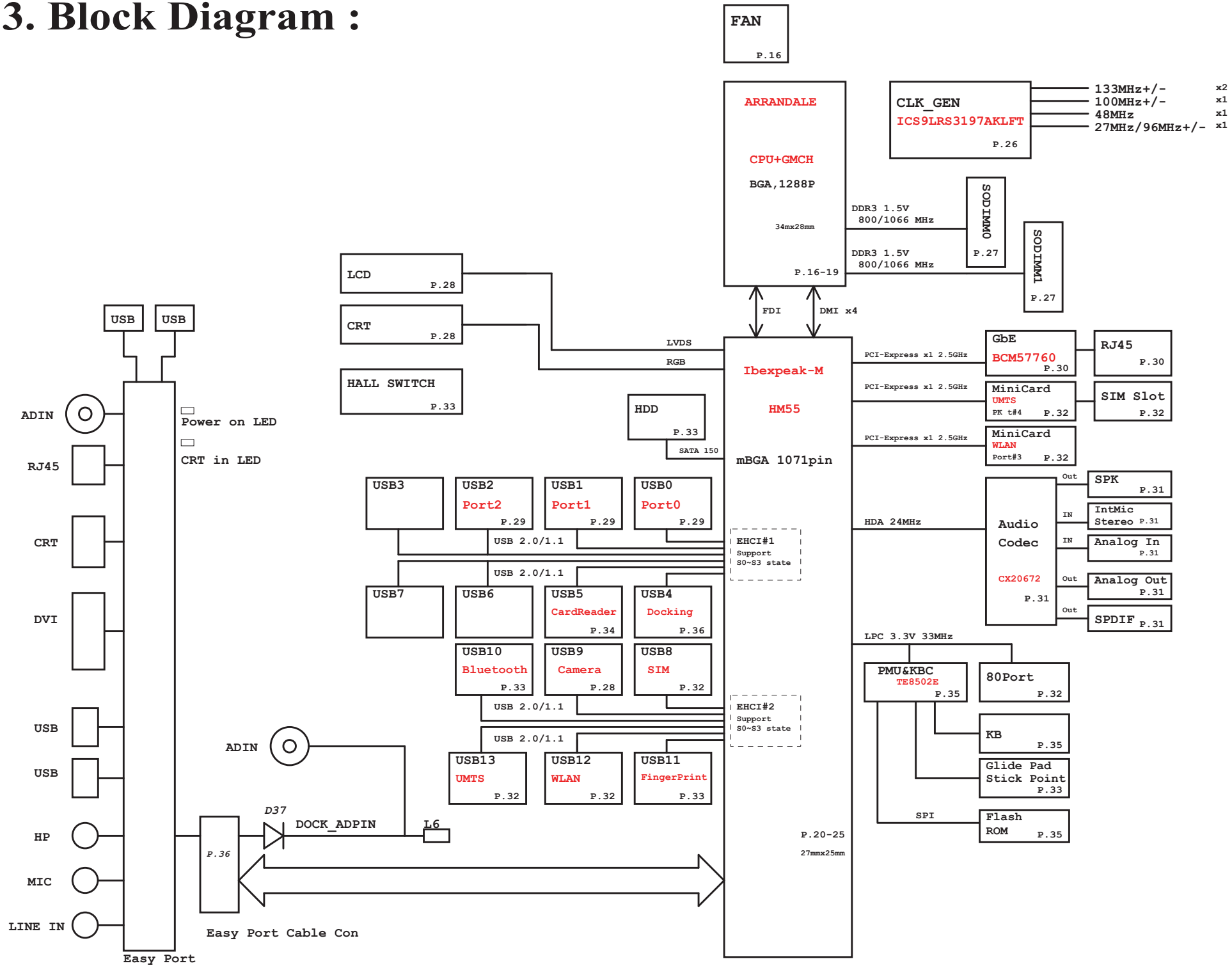
INVENTEC

TITLE: ACER BAP10/BXP10
schematics page DESCR

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

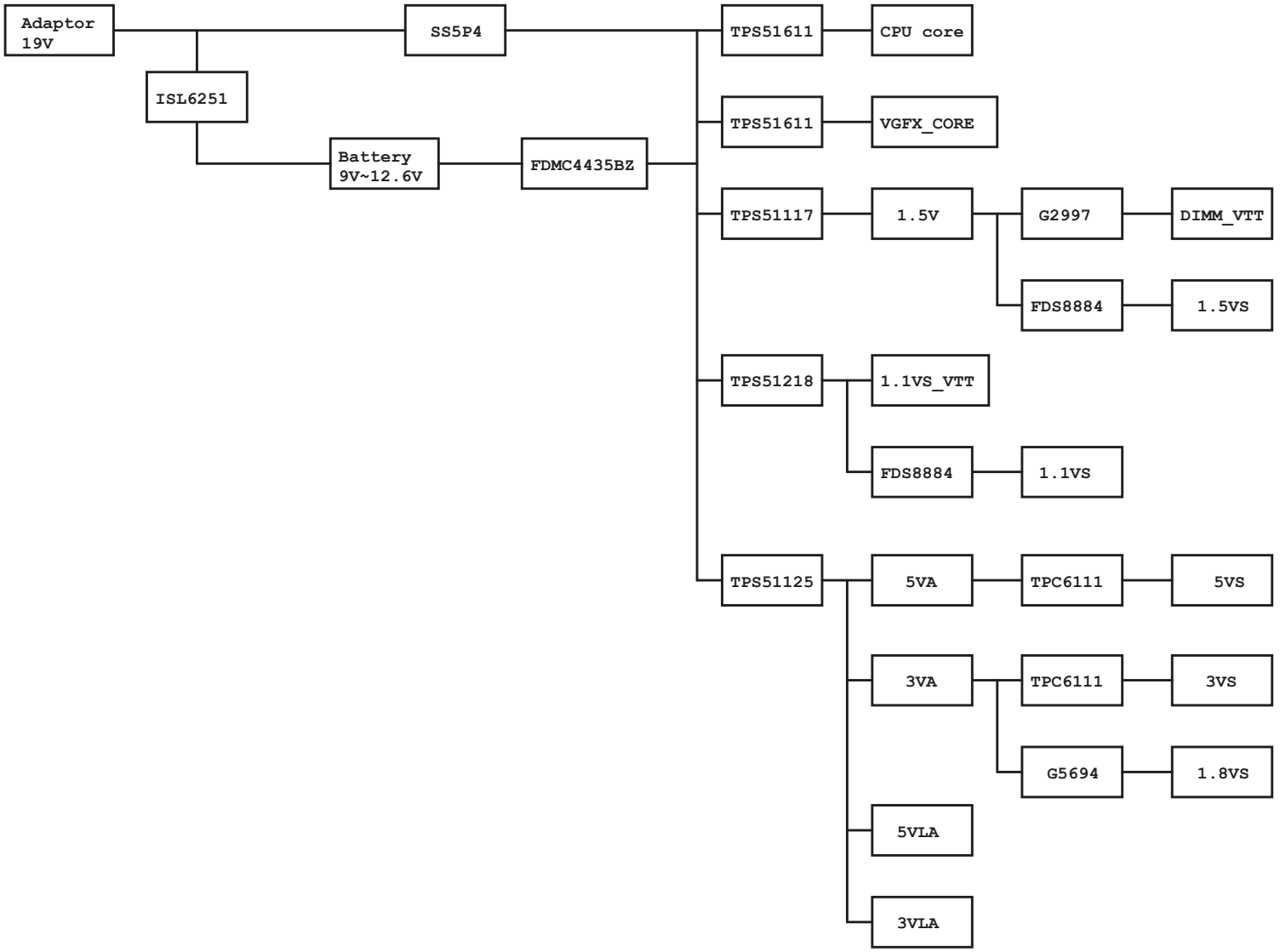
CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 2 of 45

3. Block Diagram :



INVENTEC			
TITLE: Celpalla demo board) Block Diagram			
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: A01
CHANGE by: IEC	DATE: Friday, April 02, 2010	SHEET: 3 of 45	

Power Block Diagram :



INVENTEC

TITLE: ACER_BAP10/BXP10
Power Block Diagram

SIZE	CODE	DOC NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 4 of 45

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: ACER BAP10/BXP10
Annotations

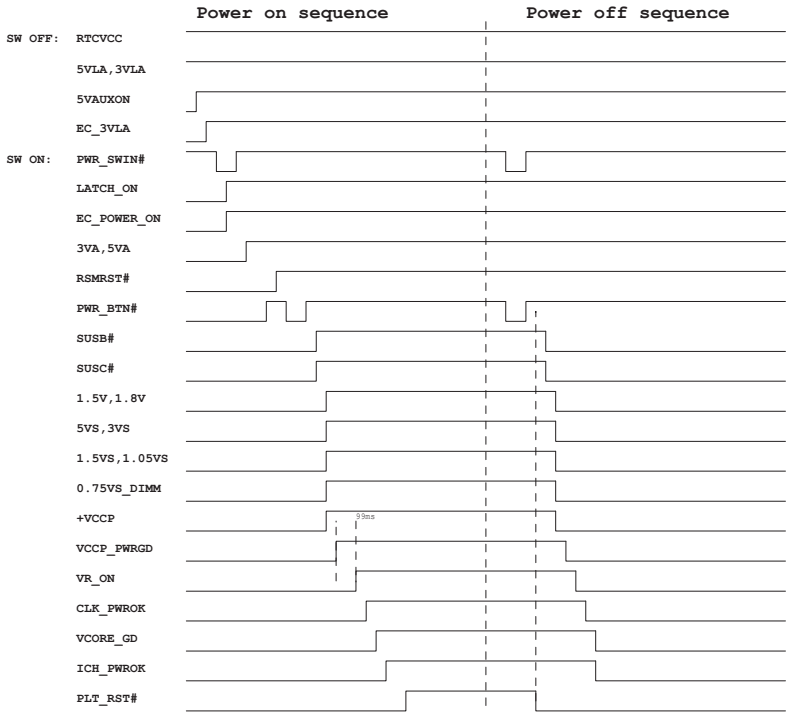
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 5 of 45

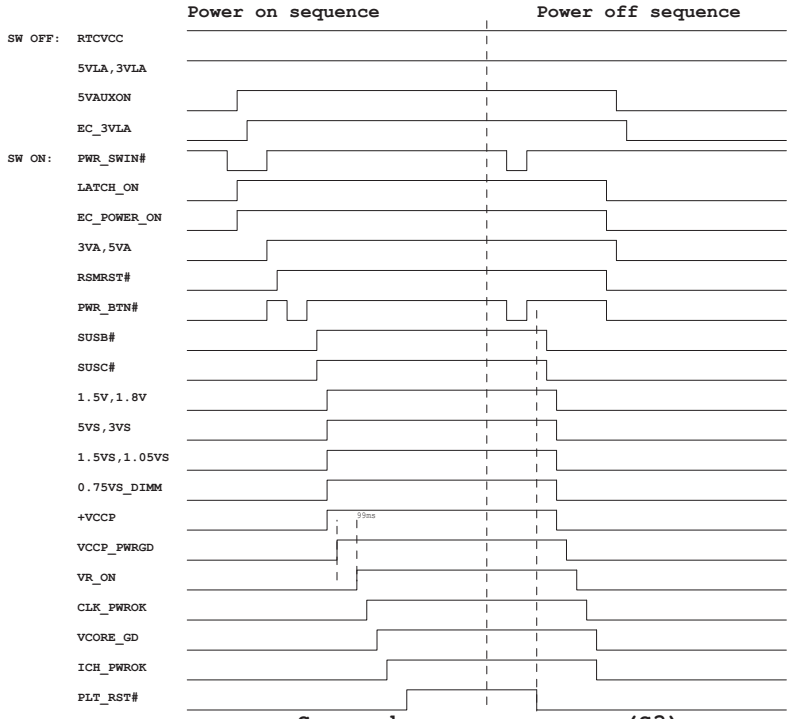
6.Schematic modify Item and History :

8.SYSTEM POWER SEQUENCE :

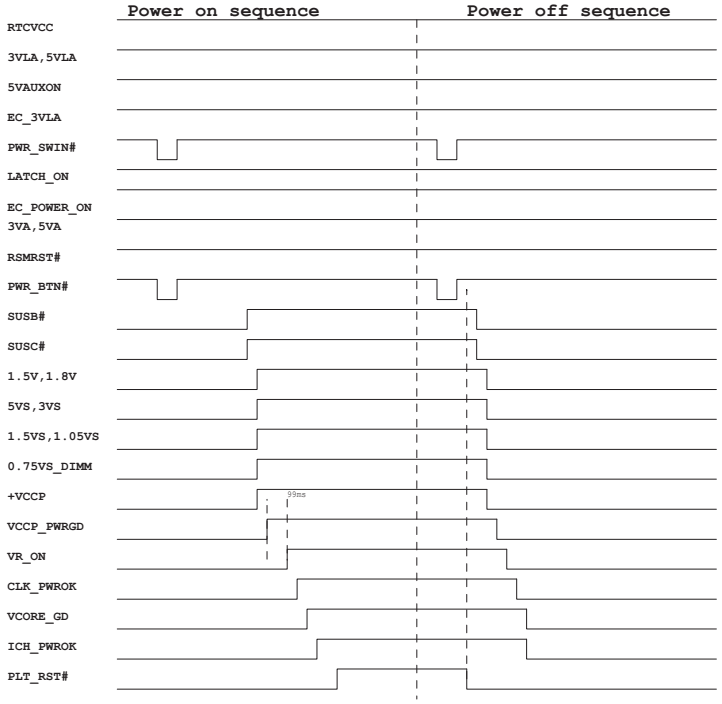
Power on/off sequence AC insert(First)



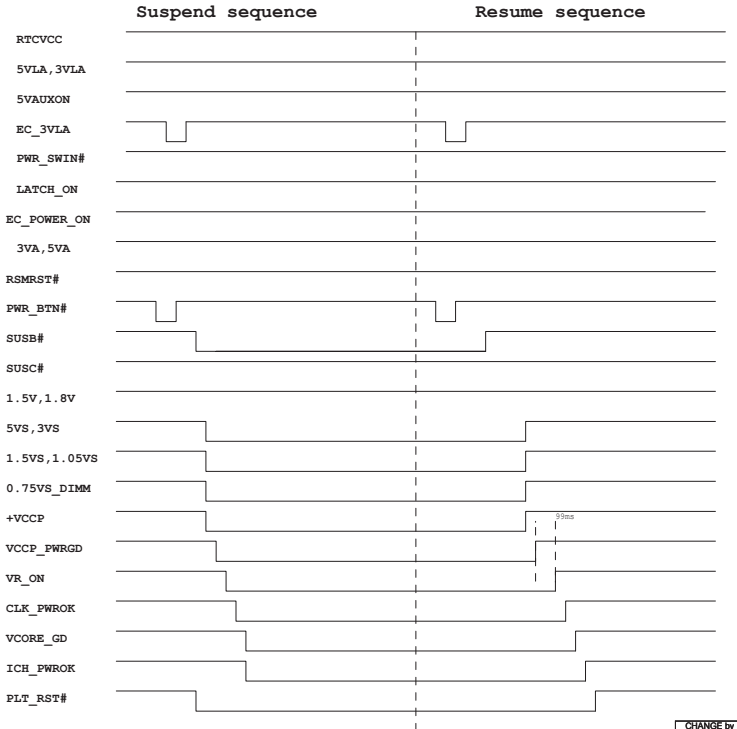
Battery only Power on/off sequence



Power on/off sequence AC insert(S4)



Suspend resume sequence(S3)

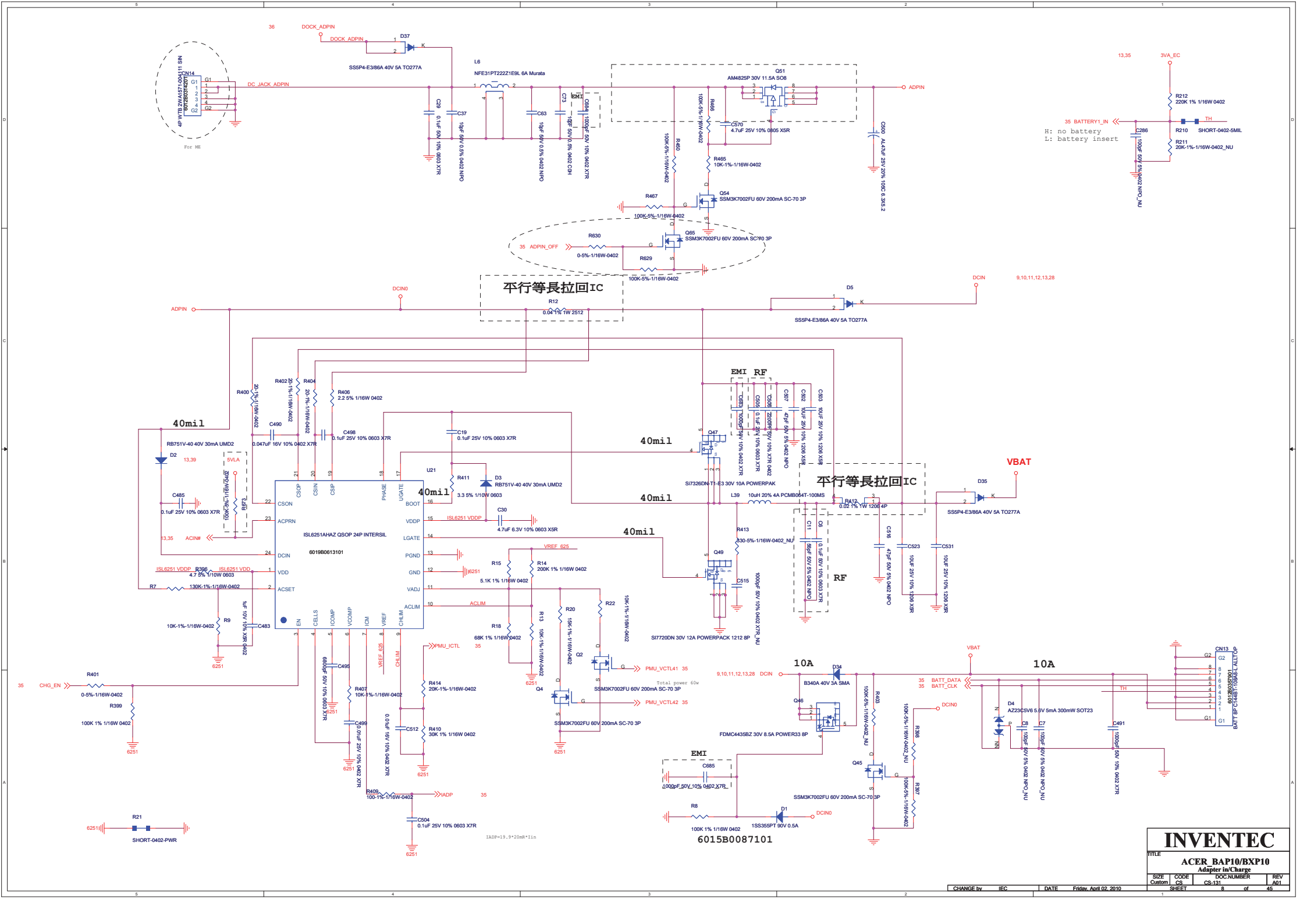


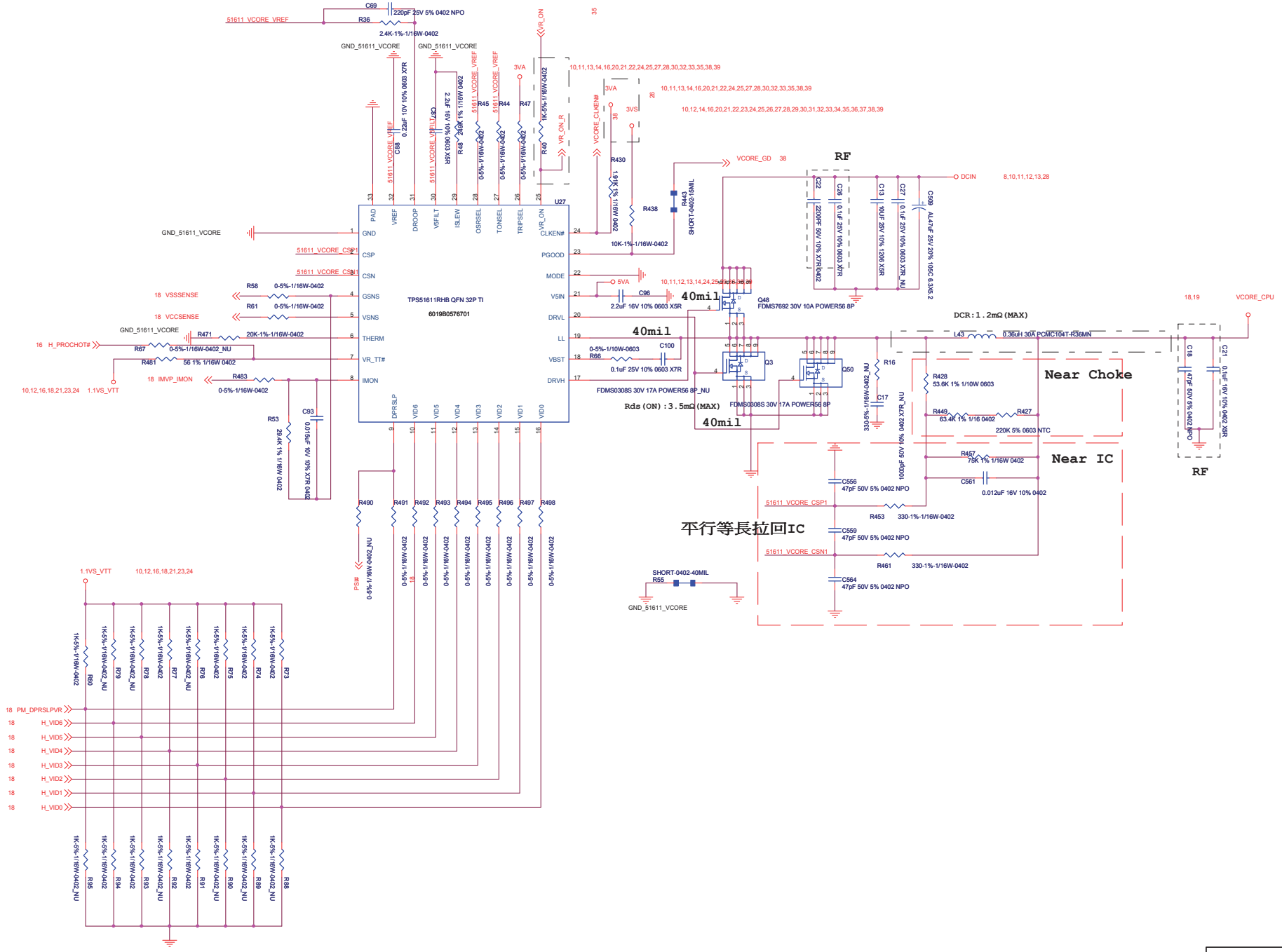
INVENTEC

TITLE: ACER_BAP10/BXP10
Timing Diagram

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 7 of 45


DOCK_ADPIN
DC_JACK_ADPIN
SS5P4-E3/86A 40V 5A TO277A
L6
NFE31PT222Z1E9L 6A Murata
Q51
AM4825P 30V 11.5A SO8
ADPIN
R212 220K 1% 1/16W 0402
R210 SHORT-0402-5MIL
R211 20K-1%-1/16W-0402_NU
H: no battery
L: battery insert
平行等長拉回IC
R12 0.04 1% 1W 2512
DCIN
SS5P4-E3/86A 40V 5A TO277A
ISL6251AHAZ QSOP 24P INTERSIL
6019B0613101
SI7326DN-T1-E3 30V 10A POWERPAK
SI7720DN 30V 12A POWERPACK 1212 8P
VBAT
10A
B340A 40V 3A SMA
FDMC4435BZ 30V 8.5A POWER33 8P
SSM3K7002FU 60V 200mA SC-70 3P
1SS355PT 90V 0.5A
6015B0087101
INVENTEC
ACER_BAP10/BXP10
Adapter in/Charge
CHANGE by IEC
DATE Friday, April 02, 2010
SHEET 8 of 45

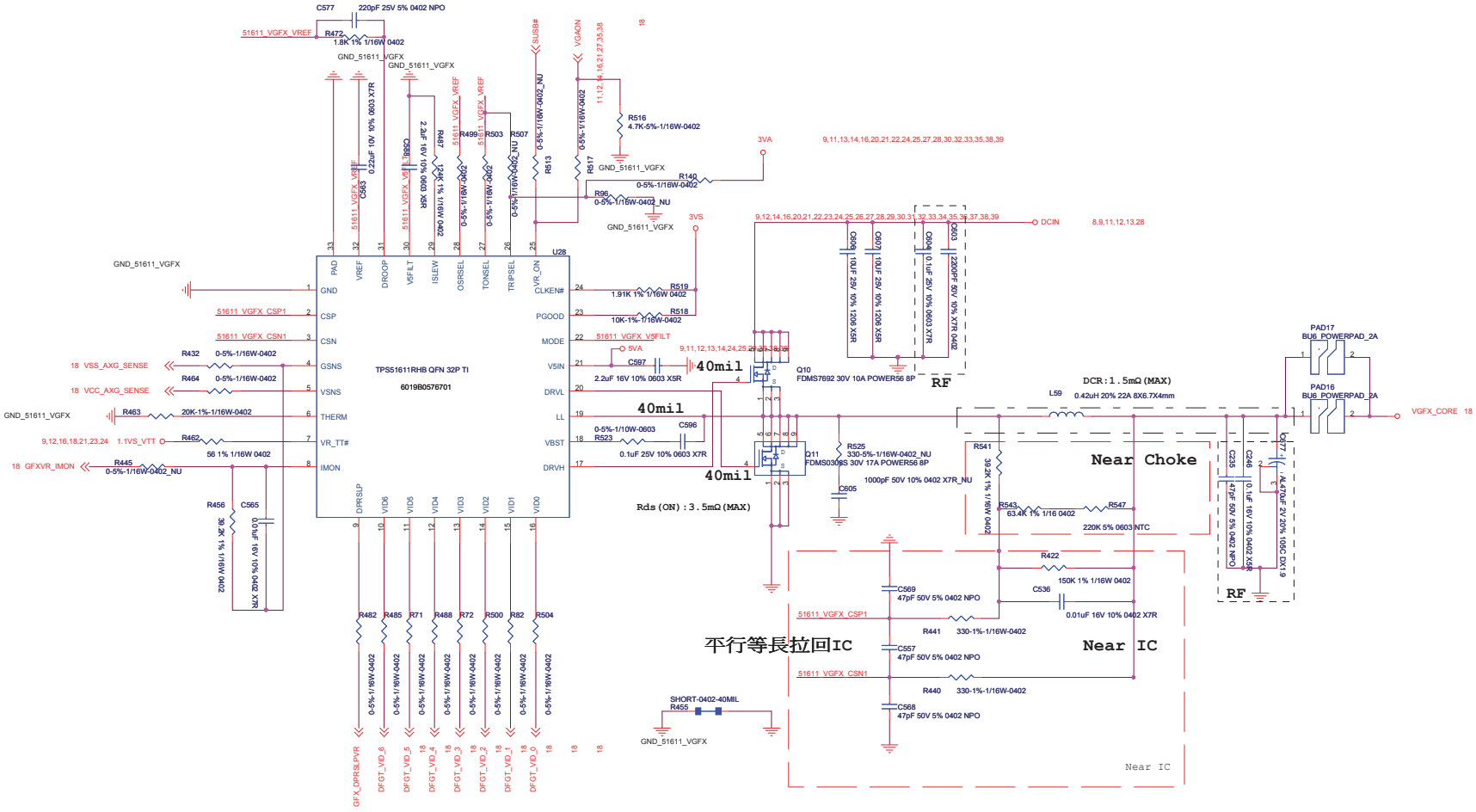


CHANGE by	IEC	DATE	Friday, April 02, 2010	SHEET	9 of 45

INVENTEC

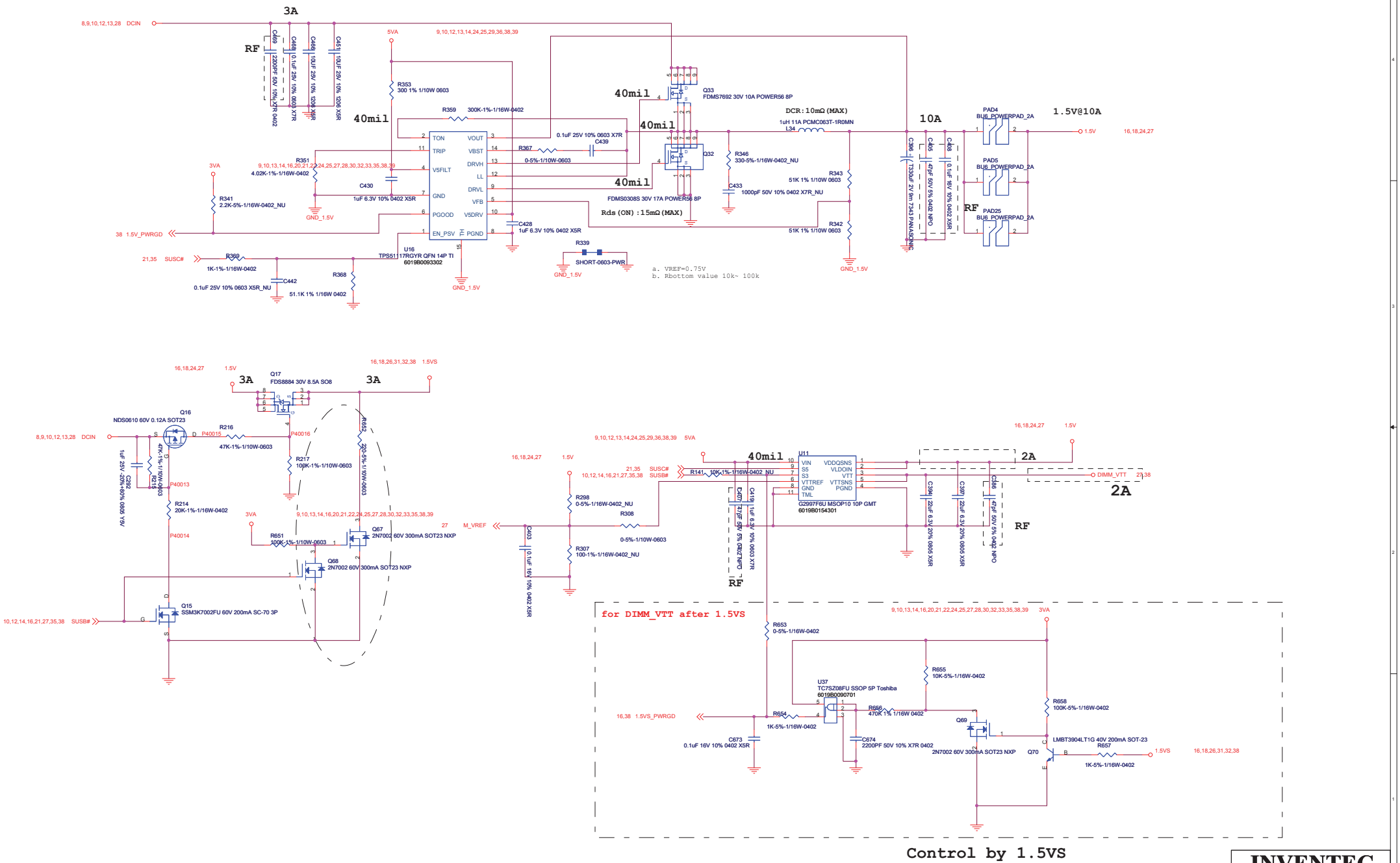
TITLE: ACER BAP10/BXP10
CPU core Power

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

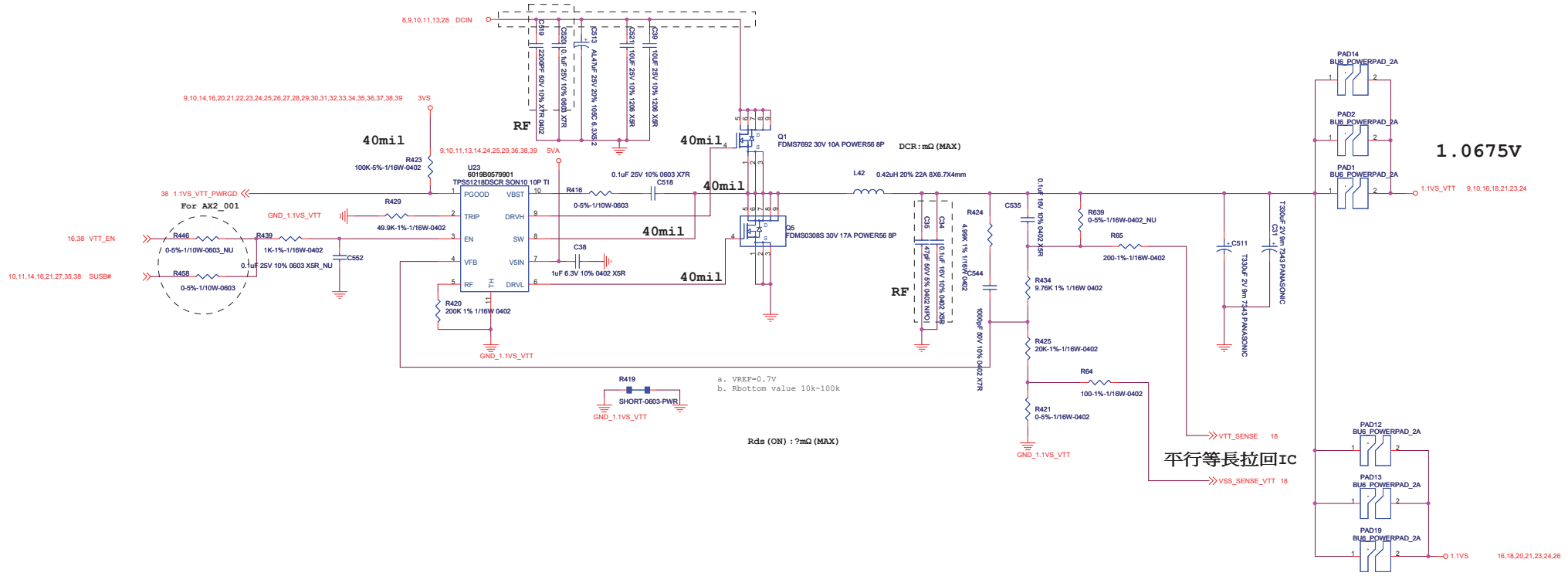


INVENTEC			
TITLE: ACER_BAP10/BXP10 VGFX			
SIZE: Custom	CODE: CS	DOC NUMBER: CS-131	REV: A01
CHANGE by: IEC	DATE: Friday, April 02, 2010	SHEET: 10 of 45	

DDR POWER



INVENTEC			
TITLE: ACER BAP10/BXP10 DDR PWR			
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: A01
CHANGE by: IEC	DATE: Friday, April 02, 2010	SHEET: 11 of 45	



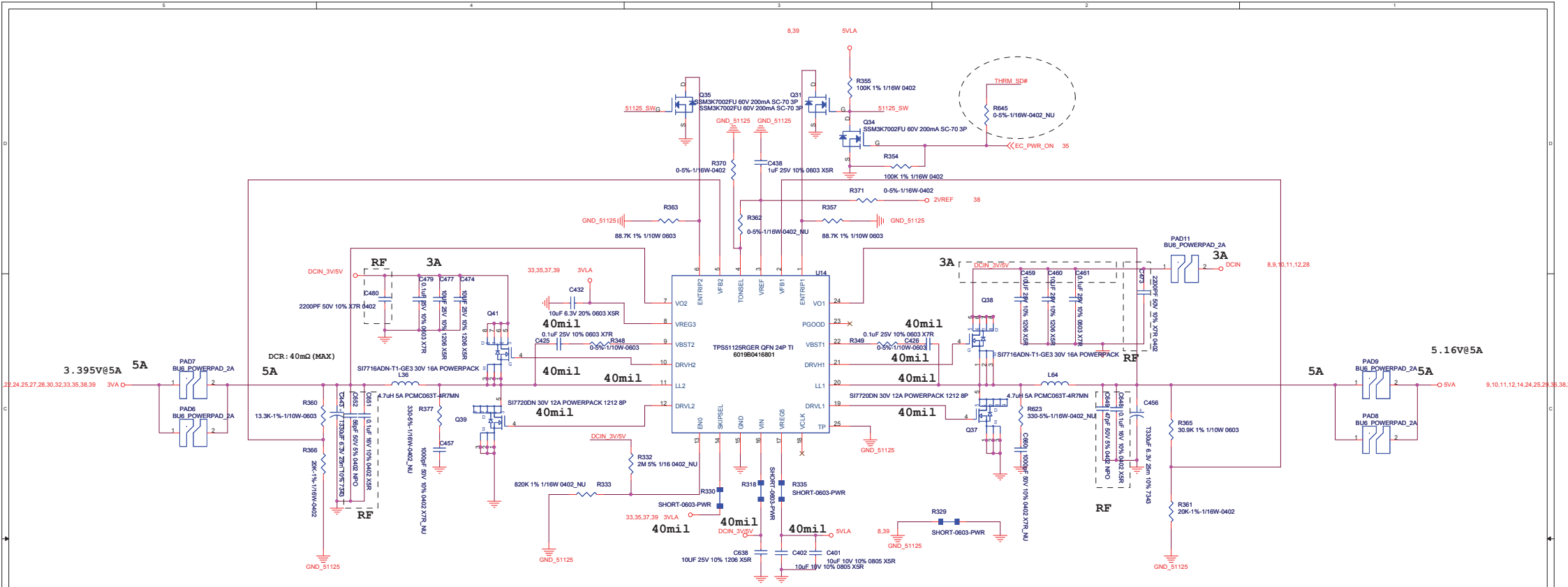
CHANGE by	IEC	DATE	Friday, April 02, 2010

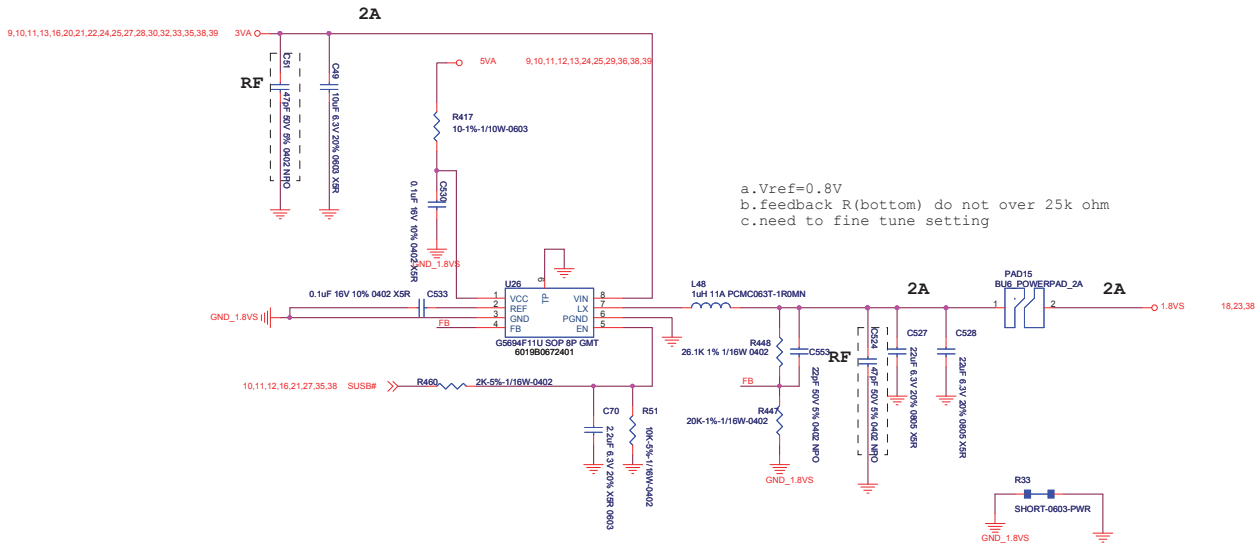
INVENTEC

TITLE: ACER_BAP10/BXP10
1.1VS_VTT/1.1VS

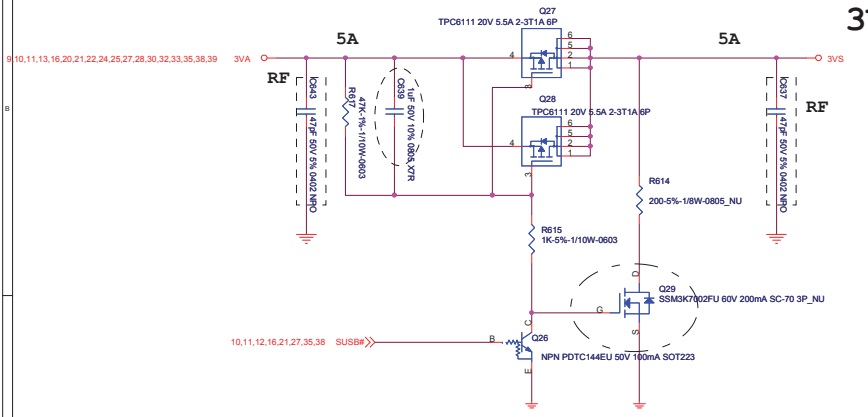
SIZE	CODE	DOC NUMBER	REV
Custom	CS	CS-131	A01

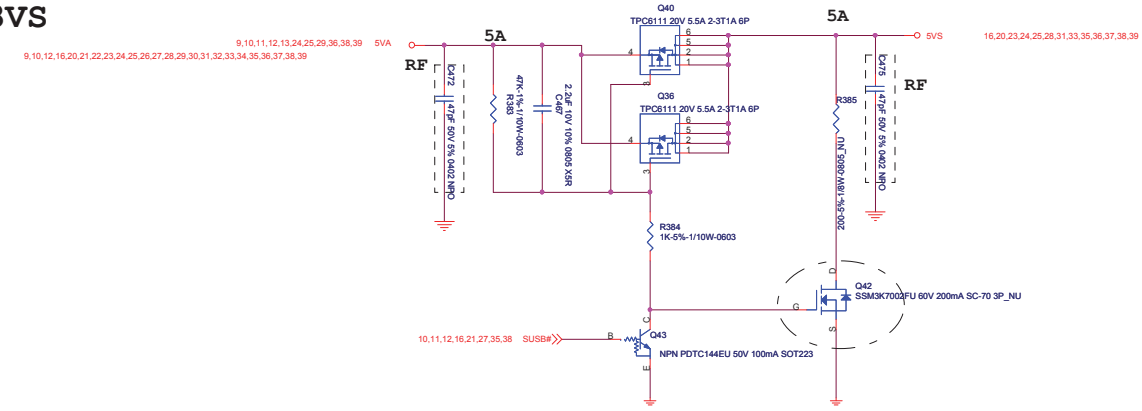
SHEET 12 of 45


TPS51125RGER QFN 24P TI
6019B0416801
3.395V@5A
5.16V@5A
DCR: 40mΩ (MAX)
Other Trace>12mil
Temperature Security
INVENTEC
ACER_BAP10/BXP10
5VA/5VLA/3VA/3VLA
CHANGE by IEC
DATE Friday, April 02, 2010
SHEET 13 of 45



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





5VS

INVENTEC

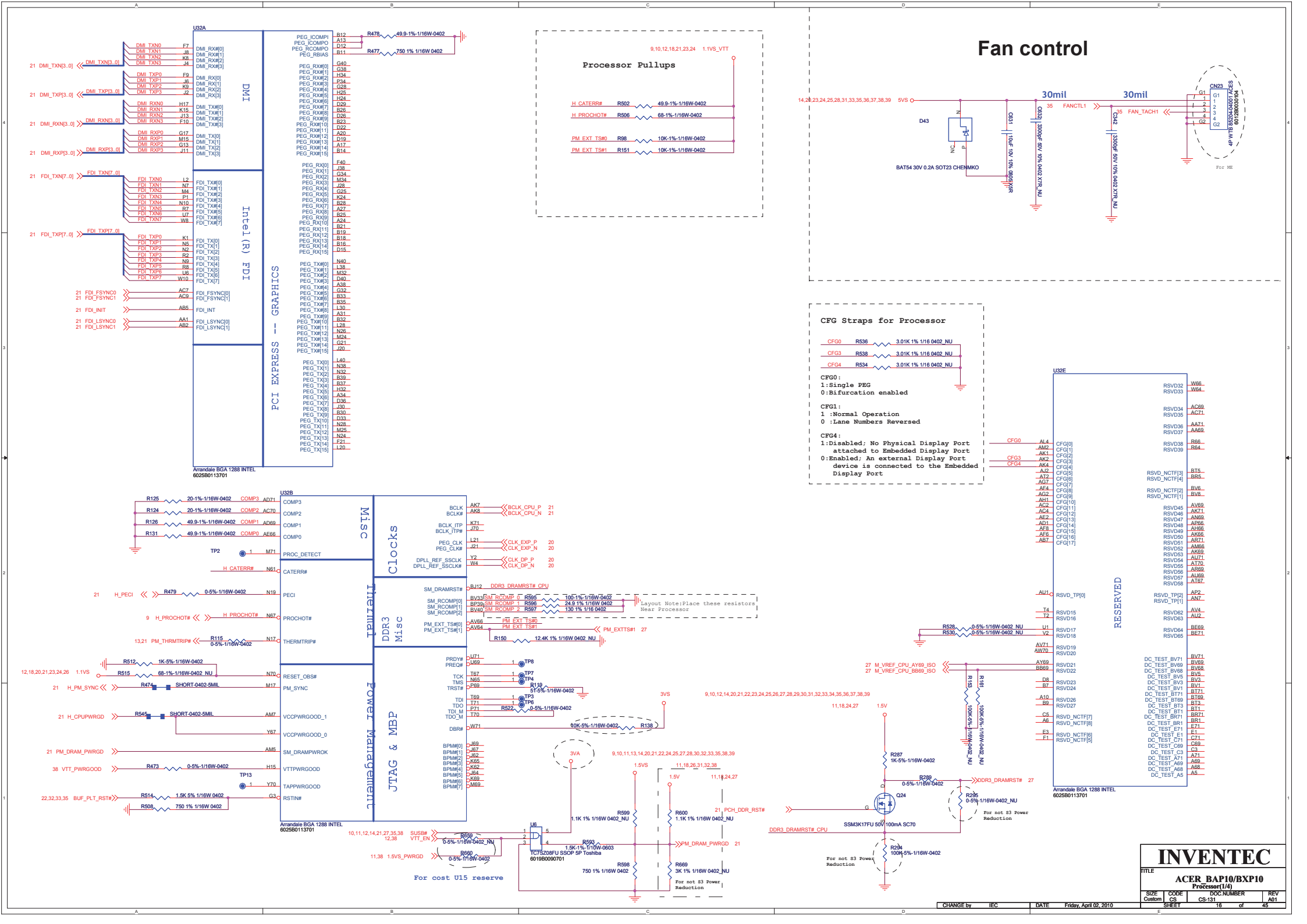
TITLE
ACER_BAP10/BXP10
3VS/5VS/1.8VS/3VM

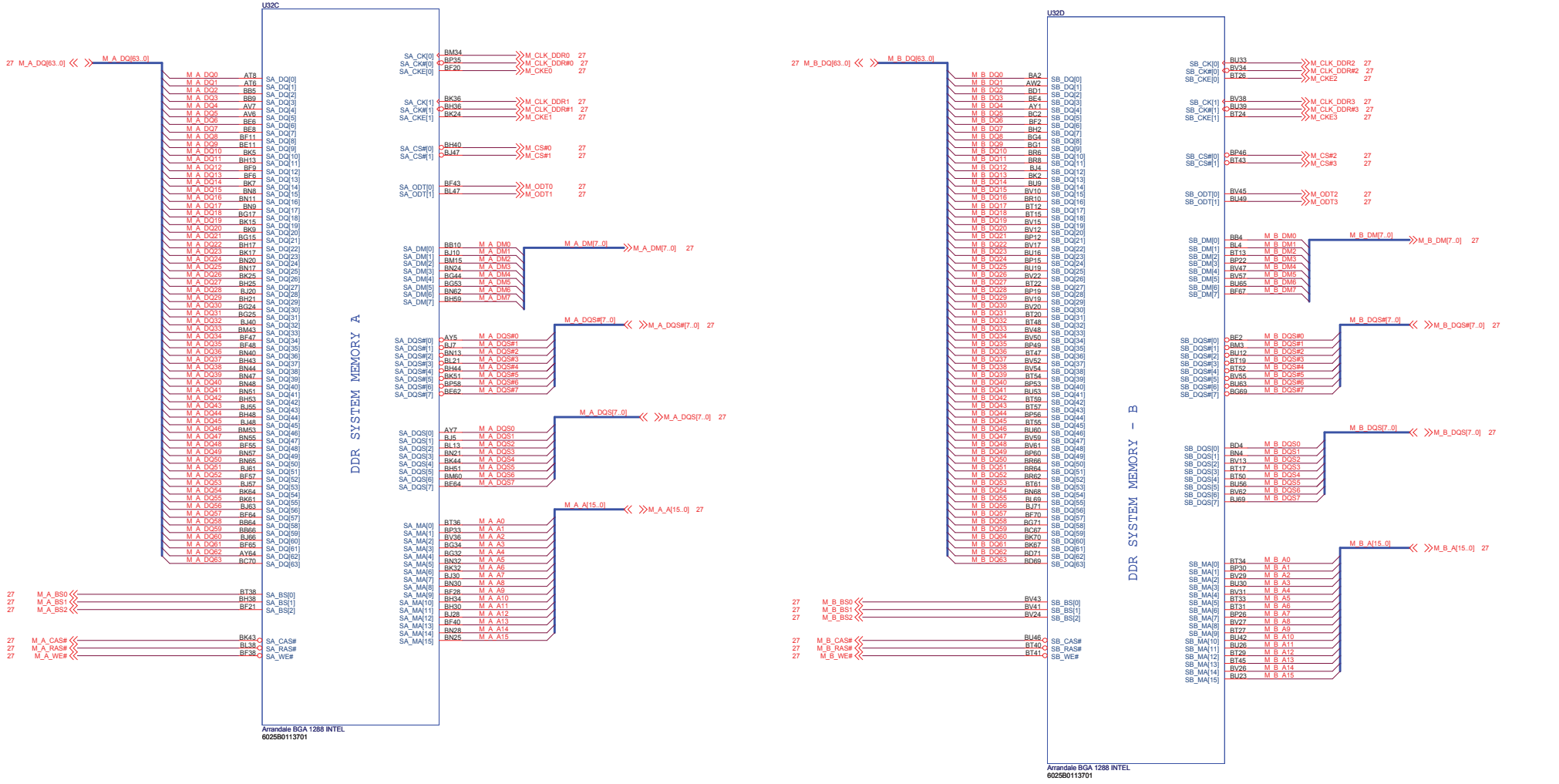
SIZE	CODE	DOC NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 14 of 45

Blank

Title	ACER_BAP10/BXP10	
Size: Custom	Document Number: <Doc>	Rev: <RevCode>
Date: Friday, April 02, 2010	Sheet 15 of 45	


Fan control
30mil
30mil
5VS
FANCTL1
FAN_TACH1
D43
BAT54 30V 0.2A SOT23 CHENMKO
C831
10uF 10V 10% 0805X5R
C832
3300pF 50V 10% 0402 X7R_NU
C842
3300pF 50V 10% 0402 X7R_NU
CN23
4P WAFER 6050404007 SCSB
For ME
Processor Pullups
H_CATERR#
H_PROCHOT#
PM_EXT_TS#0
PM_EXT_TS#1
CFG Straps for Processor
CFG0:
1:Single PEG
0:Bifurcation enabled
CFG1:
1 :Normal Operation
0 :Lane Numbers Reversed
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
U32A
DMI
Intel(R) FDI
PCI EXPRESS -- GRAPHICS
Arrandale BGA 1288 INTEL
6025B0113701
U32B
Misc
Clocks
Internal
DDR3 Misc
Power Management
JTAG & MBP
Arrandale BGA 1288 INTEL
6025B0113701
U32E
RESERVED
Arrandale BGA 1288 INTEL
6025B0113701
Layout Note:Place these resistors Near Processor
For cost U15 reserve
U6
TC7SZ08FU SSOP 5P Toshiba
6019B0090701
Q24
SSM3K17FU 50V 100mA SC70
For not S3 Power Reduction
INVENTEC
ACER BAP10/BXP10
Processor(1/4)
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV A01
CHANGE by IEC
DATE Friday, April 02, 2010
SHEET 16 of 45



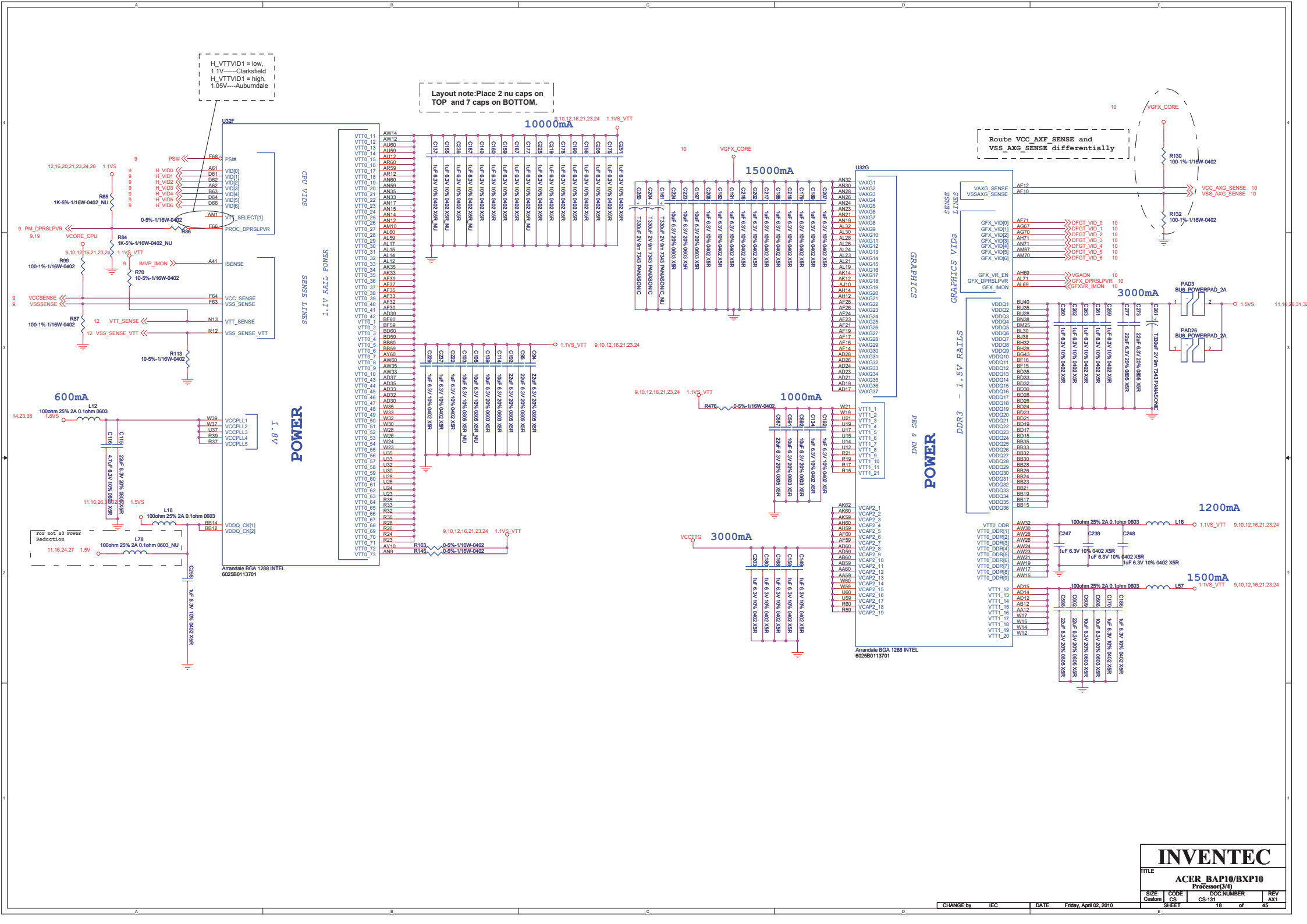
CHANGE by	IEC	DATE	Friday, April 02, 2010

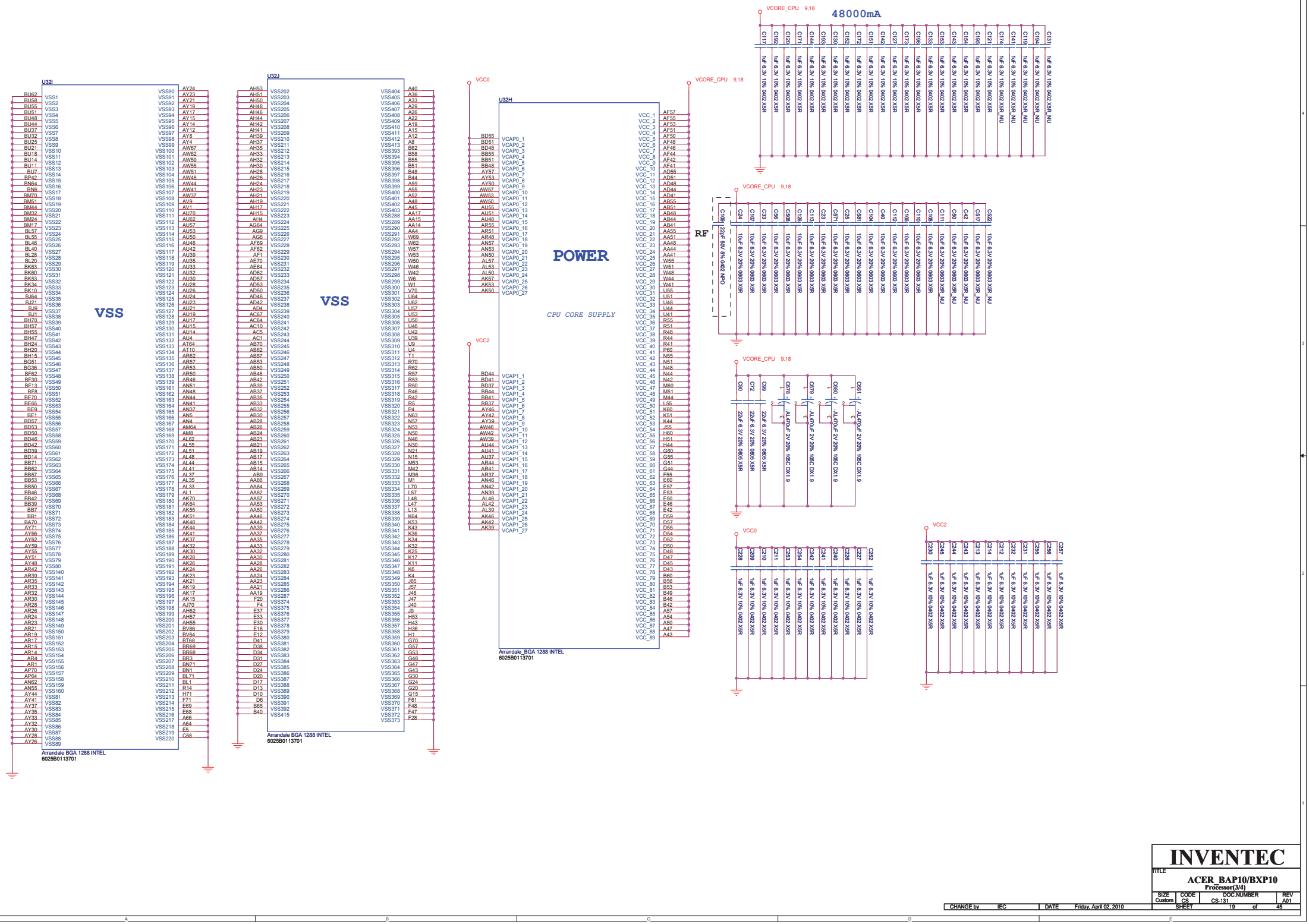
INVENTEC

TITLE: **ACER_BAP10/BXP10**
Processer(2/4)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

SHEET 17 of 45


H_VTTVID1 = low, 1.1V-------Clarksfield
H_VTTVID1 = high, 1.05V----Auburndale
Layout note:Place 2 nu caps on TOP and 7 caps on BOTTOM.
Route VCC_AXF_SENSE and VSS_AXG_SENSE differentially
U32F
U32G
CPU VIDS
SENSE SENSES
1.1V RAIL POWER
1.8V POWER
GRAPHICS VIDs
SENSE LINES
GRAPHICS
PEG & DMI
DDR3 - 1.5V RAILS
POWER
10000mA
15000mA
1000mA
3000mA
600mA
1200mA
1500mA
Arrandale BGA 1288 INTEL
6025B0113701
For not S3 Power Reduction
INVENTEC
ACER BAP10/BXP10
Processor(3/4)
SIZE Custom
CODE CS
DOC.NUMBER CS-131
REV AX1
CHANGE by IEC
DATE Friday, April 02, 2010
SHEET 18 of 45



INVENTEC			
TITLE: ACER_BAP10/BXP10 Processor(3/4)			
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131	REV: A01
CHANGE by: IEC	DATE: Friday, April 02, 2010	SHEET: 19 of 45	

RTC Circuit

BATT1
CR2032
VIC-DAWN RTC 3V BATTORY CR2032
6027B0072201

RTC Battery Life :
35mAh(35000uAh) / 6uA = 0.666 year

SKY BATS4C 30V 200mA
6012B0069901
2P WTB 87213-0200G ACES
CN29
Pin 1 GND FOR BCR2032W4 Modify

U30A
6019B0745601
BD82HM55 FCBGA 1071P INTEL

RTC
LPC
IHDA
SATA
JTAG
SPI

WLAN
3G CARD
PCIE LAN
HDD I/F

U30B
6019B0745601
BD82HM55 FCBGA 1071P INTEL

SMBus
PCI-E*
Controller Link
PEG
From Clk BUFFER
Clock Flex

WLAN
3G CARD
PCIE LAN

PCIECLKREQ# 0,3,4,5,6,7 --- 3VA plane
PCIECLKREQ# 1,2 --- 3VS plane

SPI INTERFACE BY PCH

ICH_SPI_CLK R480 0-5%-1/16W-0402 ICH_CLK
ICH_SPI_CS# R509 15.5% 1/16W 0402 ICH_CS0#
ICH_SPI_MOSI R489 0-5%-1/16W-0402 ICH_MOSI
ICH_SPI_MISO R521 0-5%-1/16W-0402 ICH_MISO

(FOR DEBUG ONLY)

SPI INTERFACE BY EC (Default)

EC_SPI_CLK R486 0-5%-1/16W-0402_NU ICH_CLK
EC_SPI_CS# R510 15.5% 1/16W 0402_NU ICH_CS0#
EC_SPI_MOSI R505 0-5%-1/16W-0402_NU ICH_MOSI
EC_SPI_MISO R520 0-5%-1/16W-0402_NU ICH_MISO

PCH SPI PROGRAMMING HEADER

U29
MX25L3205DMZI-12G 32M 12ns SOP 8P
6019B0559601

ME CODE WRITE STRAP

PCH_GPIO33 R186 1K-5%-1/16W-0402_NU

Flash Descriptor Security Overide	
PCH_GPIO33	Low : Enable High : Disable

	Q62	R260	R285
Switchable	Install	Install	NU
Only DIS	NU	NU	Install
Only UMA	NU	Install	NU

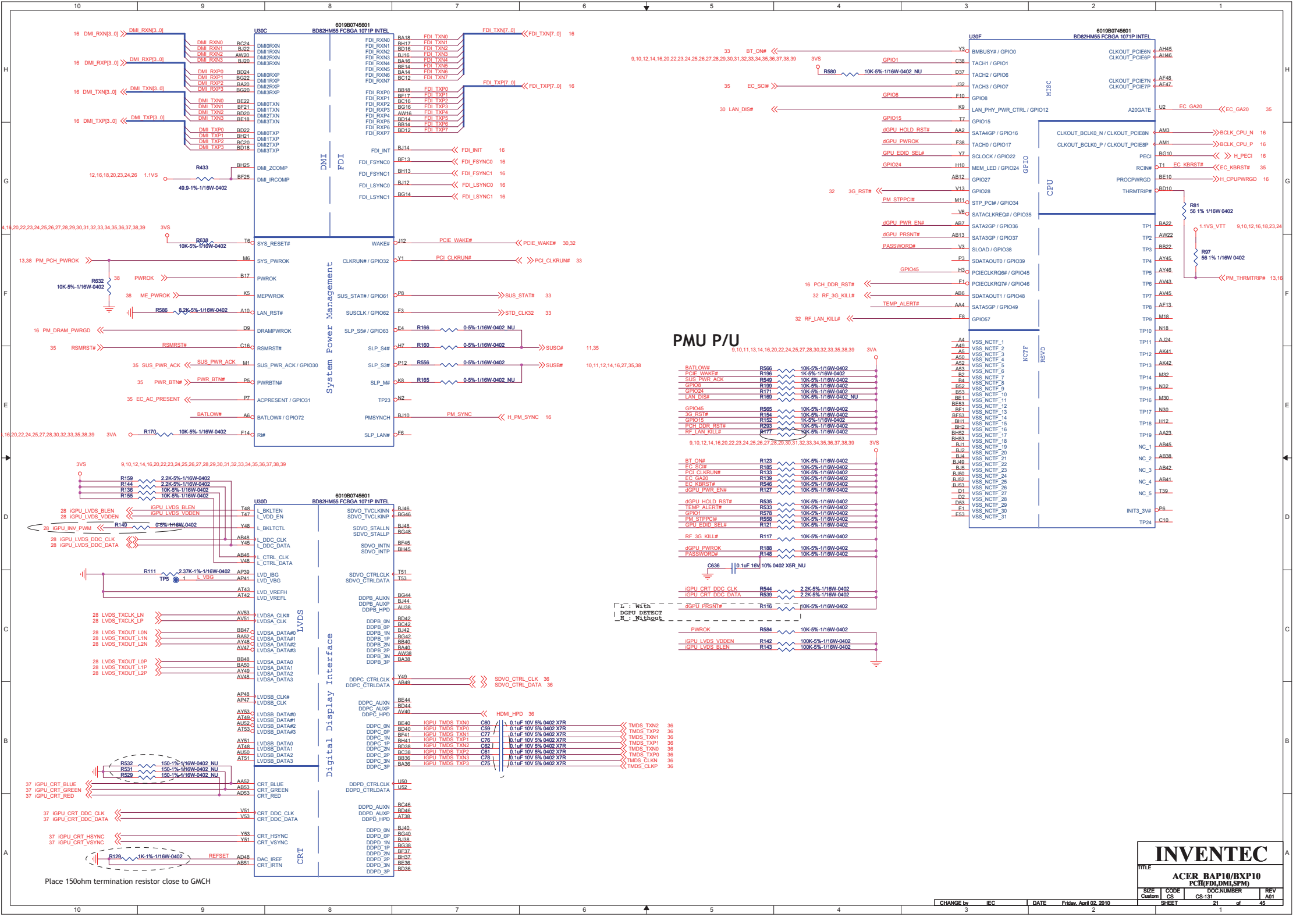
STUFF for iTPM enable

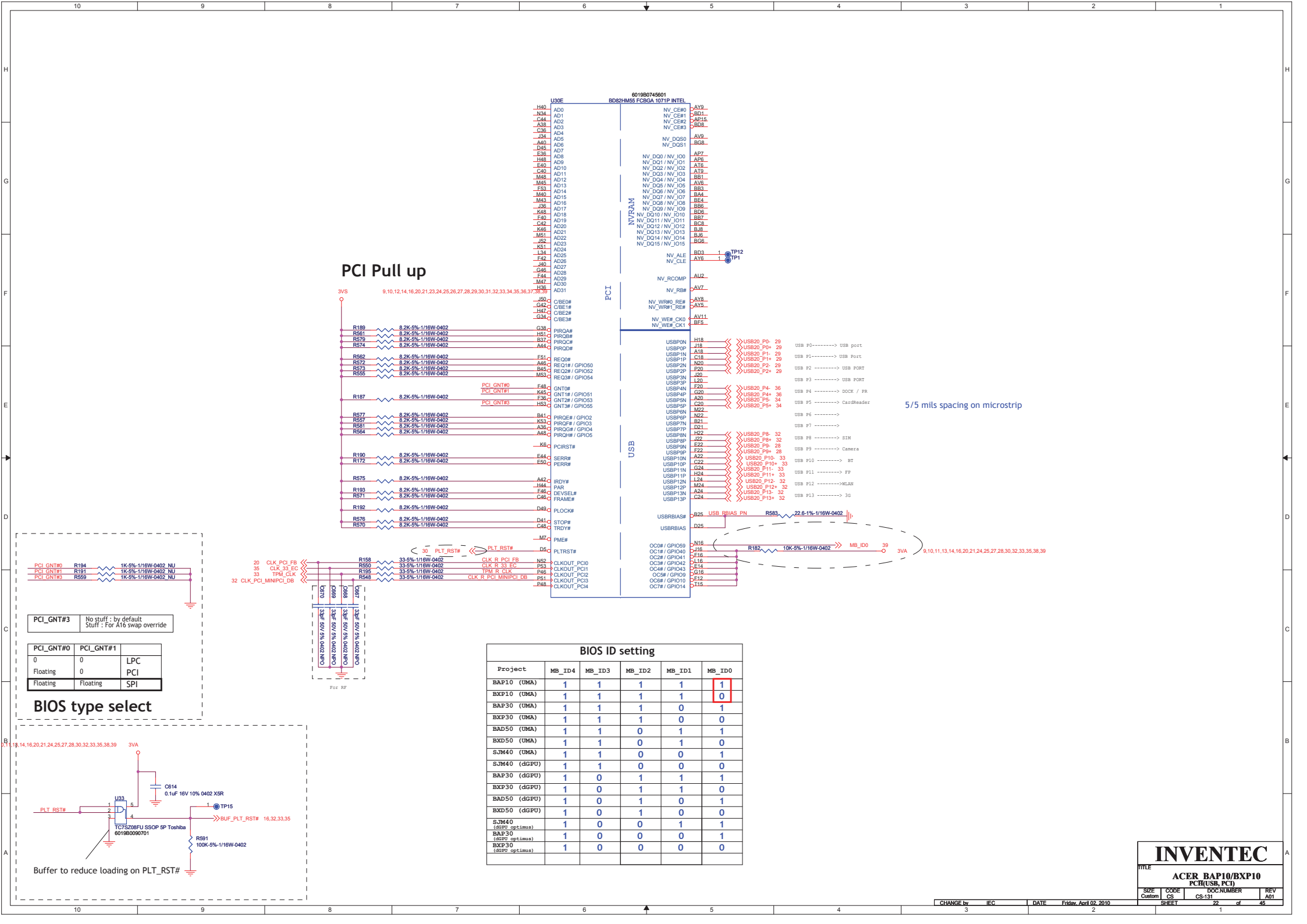
R501 1K-5%-1/16W-0402_NU ICH_MOSI

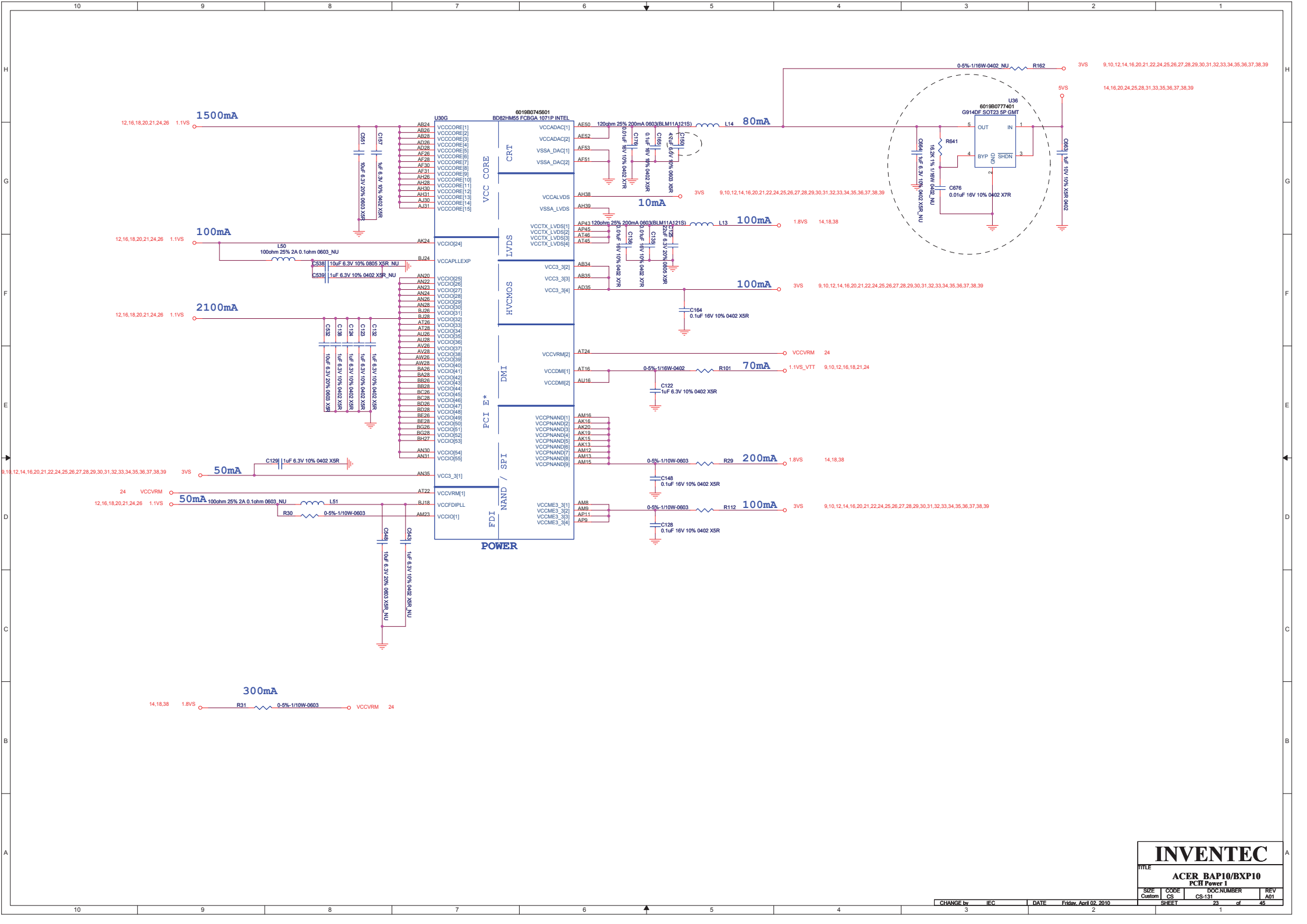
Q13 Q12 SSM3K17FU 50V 100mA SC70

CHANGE by	IEC
DATE	Friday, April 02, 2010

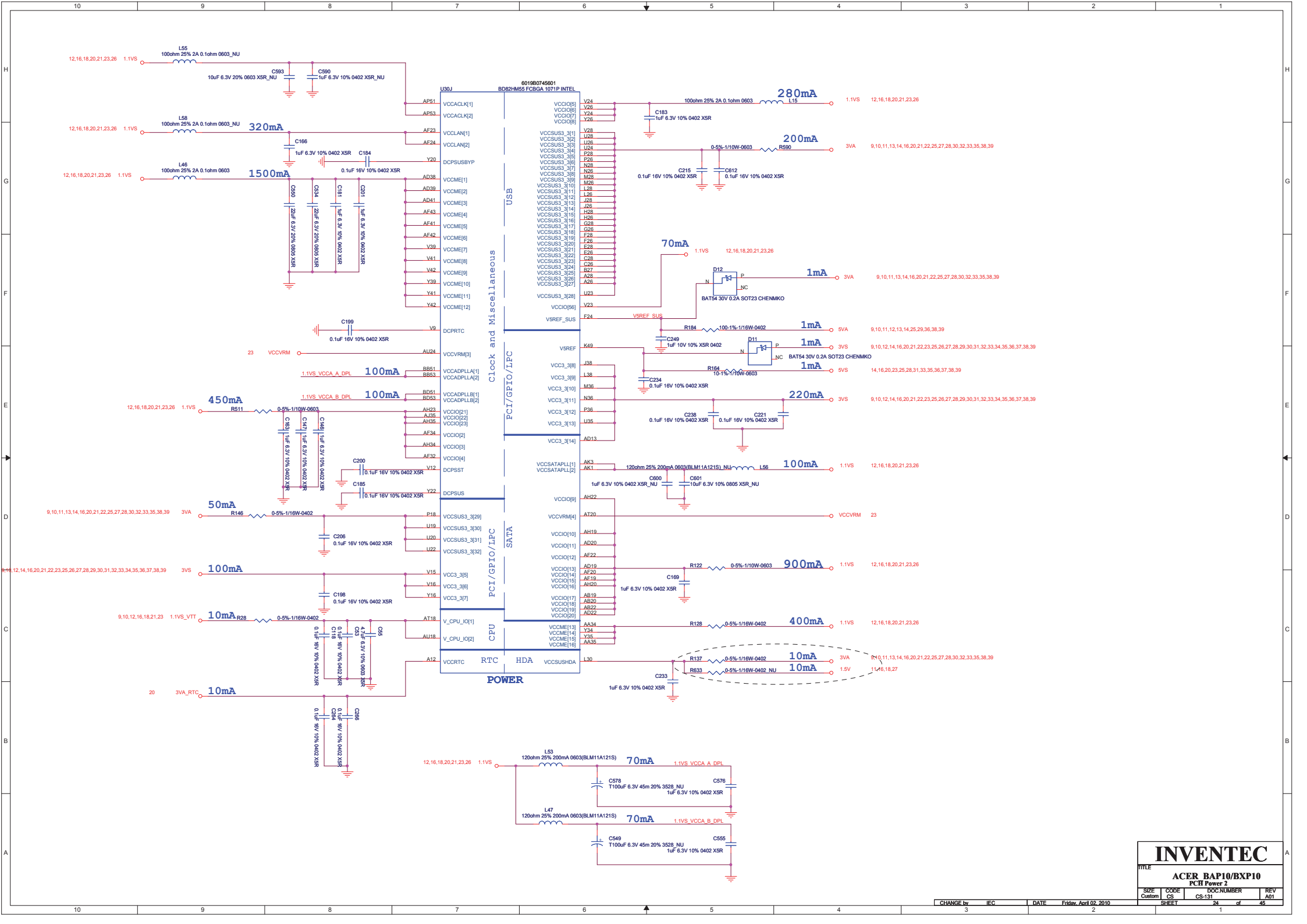
INVENTEC
TITLE: ACER BAP10/BXP10
PCH(HDA,JTAG,SATA)
SIZE: Custom | CODE: CS | DOC NUMBER: CS-131 | REV: A01
SHEET 20 of 45

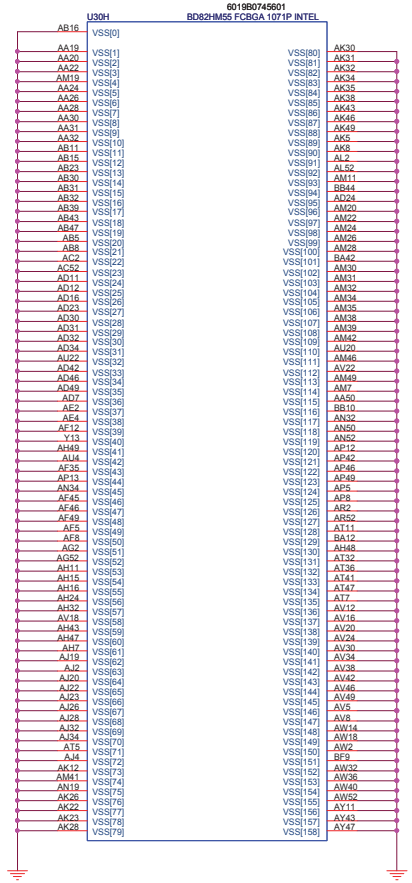

U30C
6019B0745601
BD82HM55 FCBGA 1071P INTEL
DMI
FDI
System Power Management
DMI_RXN[3..0]
DMI_RXP[3..0]
DMI_TXN[3..0]
DMI_TXP[3..0]
FDI_TXN[7..0]
FDI_TXP[7..0]
R433
49.9-1%-1/16W-0402
R638
10K-5%-1/16W-0402
R632
10K-5%-1/16W-0402
R586
8.2K-5%-1/16W-0402
R170
10K-5%-1/16W-0402
R166
0-5%-1/16W-0402_NU
R160
0-5%-1/16W-0402
R556
0-5%-1/16W-0402
R165
0-5%-1/16W-0402_NU
U30D
Digital Display Interface
LVDS
CRT
R159
2.2K-5%-1/16W-0402
R144
2.2K-5%-1/16W-0402
R136
10K-5%-1/16W-0402
R155
10K-5%-1/16W-0402
R149
0-5%-1/16W-0402
R111
2.37K-1%-1/16W-0402
TP5
R532
150-1%-1/16W-0402_NU
R531
150-1%-1/16W-0402_NU
R529
150-1%-1/16W-0402_NU
R129
1K-1%-1/16W-0402
Place 150ohm termination resistor close to GMCH
U30F
6019B0745601
BD82HM55 FCBGA 1071P INTEL
MISC
GPIO
CPU
NCTF
RSVD
R580
10K-5%-1/16W-0402_NU
PMU P/U
C636
0.1uF 16V 10% 0402 X5R_NU
L : With DGPU DETECT
H : Without
0.1uF 10V 5% 0402 X7R
R81
56 1% 1/16W 0402
R97
56 1% 1/16W 0402
INVENTEC
ACER BAP10/BXP10
PCH(FDI,DMI,SPM)
Size: Custom
Code: CS
Doc Number: CS-131
Rev: A01
Sheet 21 of 45
CHANGE by IEC
DATE Friday, April 02, 2010

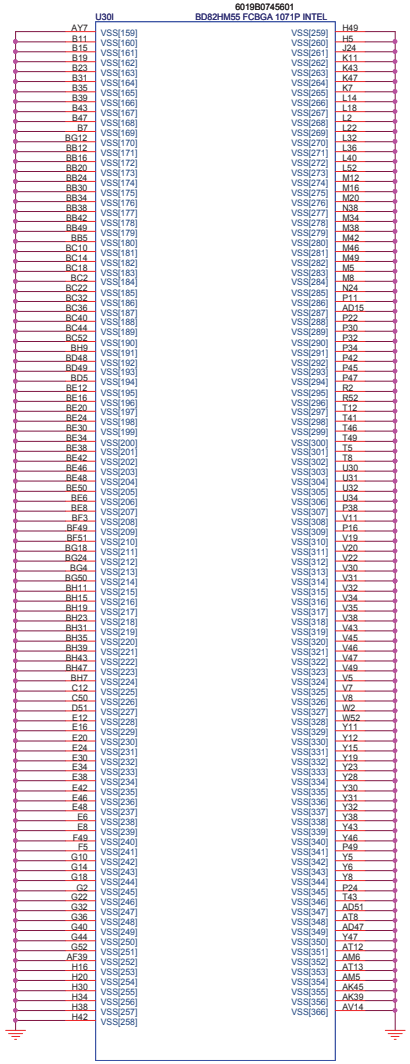

PCI Pull up
6019B0745601
BD82HM55 FCBGA 1071P INTEL
U30E
NVRAM
PCI
USB
5/5 mils spacing on microstrip
BIOS type select
PCI_GNT#3
No stuff : by default
Stuff : For A16 swap override
PCI_GNT#0
PCI_GNT#1
0
0
LPC
Floating
0
PCI
Floating
Floating
SPI
BIOS ID setting
Project
MB_ID4
MB_ID3
MB_ID2
MB_ID1
MB_ID0
BAP10 (UMA)
BXP10 (UMA)
BAP30 (UMA)
BXP30 (UMA)
BAD50 (UMA)
BXD50 (UMA)
SJM40 (UMA)
SJM40 (dGPU)
BAP30 (dGPU)
BXP30 (dGPU)
BAD50 (dGPU)
BXD50 (dGPU)
SJM40 (dGPU optimus)
BAP30 (dGPU optimus)
BXP30 (dGPU optimus)
Buffer to reduce loading on PLT_RST#
TC7SZ08FU SSOP 5P Toshiba
6019B0090701
INVENTEC
ACER_BAP10/BXP10
PCH(USB, PCI)
CHANGE by IEC
DATE Friday, April 02, 2010
SHEET 22 of 45

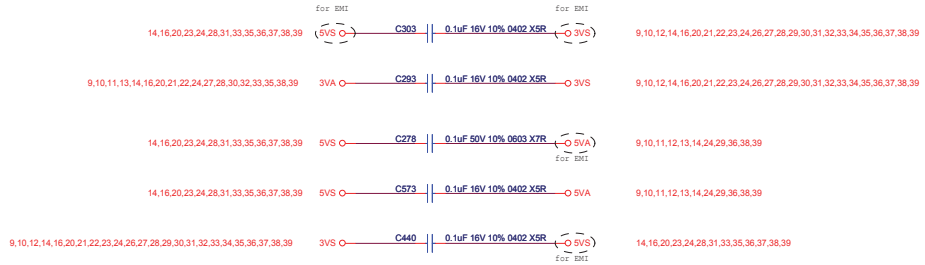


TITLE	ACER_BAP10/BXP10 PCH Power 1
SIZE	Custom
CODE	CS
DOC.NUMBER	CS-131
REV	A01
CHANGE by	IEC
DATE	Friday, April 02, 2010
SHEET	23 of 45


L55
100ohm 25% 2A 0.1ohm 0603_NU
12,16,18,20,21,23,26 1.1VS
C593
10uF 6.3V 20% 0603 X5R_NU
C590
1uF 6.3V 10% 0402 X5R_NU
L58
100ohm 25% 2A 0.1ohm 0603_NU
320mA
C166
1uF 6.3V 10% 0402 X5R
C184
0.1uF 16V 10% 0402 X5R
L46
100ohm 25% 2A 0.1ohm 0603
1500mA
C560
22uF 6.3V 20% 0805 X5R
C534
22uF 6.3V 20% 0805 X5R
C181
1uF 6.3V 10% 0402 X5R
C201
1uF 6.3V 10% 0402 X5R
C199
0.1uF 16V 10% 0402 X5R
23 VCCVRM
1.1VS_VCCA_A_DPL
100mA
1.1VS_VCCA_B_DPL
100mA
450mA
R511
0-5%-1/10W-0603
C153
1uF 6.3V 10% 0402 X5R
C147
1uF 6.3V 10% 0402 X5R
C146
1uF 6.3V 10% 0402 X5R
C200
0.1uF 16V 10% 0402 X5R
C185
0.1uF 16V 10% 0402 X5R
50mA
R146
0-5%-1/16W-0402
C206
0.1uF 16V 10% 0402 X5R
100mA
C198
0.1uF 16V 10% 0402 X5R
10mA
R28
0-5%-1/16W-0402
C118
0.1uF 16V 10% 0402 X5R
C53
4.7uF 6.3V 10% 0603 X5R
C55
0.1uF 16V 10% 0402 X5R
20 3VA_RTC
10mA
C204
0.1uF 16V 10% 0402 X5R
C206
0.1uF 16V 10% 0402 X5R
6019B0745601
U30J
BD82HM55 FCBGA 1071P INTEL
USB
Clock and Miscellaneous
PCI/GPIO/LPC
SATA
CPU
RTC
HDA
POWER
AP51 VCCACLK[1]
AP53 VCCACLK[2]
AF23 VCCLAN[1]
AF24 VCCLAN[2]
Y20 DCPSUSBYP
AD38 VCCME[1]
AD39 VCCME[2]
AD41 VCCME[3]
AF43 VCCME[4]
AF41 VCCME[5]
AF42 VCCME[6]
V39 VCCME[7]
V41 VCCME[8]
V42 VCCME[9]
Y39 VCCME[10]
Y41 VCCME[11]
Y42 VCCME[12]
V9 DCPRTC
AU24 VCCVRM[3]
BB51 VCCADPLLA[1]
BB53 VCCADPLLA[2]
BD51 VCCADPLLB[1]
BD53 VCCADPLLB[2]
AH23 VCCIO[21]
AJ35 VCCIO[22]
AH35 VCCIO[23]
AF34 VCCIO[2]
AH34 VCCIO[3]
AF32 VCCIO[4]
V12 DCPSST
Y22 DCPSUS
P18 VCCSUS3_3[29]
U19 VCCSUS3_3[30]
U20 VCCSUS3_3[31]
U22 VCCSUS3_3[32]
V15 VCC3_3[5]
V16 VCC3_3[6]
Y16 VCC3_3[7]
AT18 V_CPU_IO[1]
AU18 V_CPU_IO[2]
A12 VCCRTC
VCCSUS3_3[1]
VCCSUS3_3[2]
VCCSUS3_3[3]
VCCSUS3_3[4]
VCCSUS3_3[5]
VCCSUS3_3[6]
VCCSUS3_3[7]
VCCSUS3_3[8]
VCCSUS3_3[9]
VCCSUS3_3[10]
VCCSUS3_3[11]
VCCSUS3_3[12]
VCCSUS3_3[13]
VCCSUS3_3[14]
VCCSUS3_3[15]
VCCSUS3_3[16]
VCCSUS3_3[17]
VCCSUS3_3[18]
VCCSUS3_3[19]
VCCSUS3_3[20]
VCCSUS3_3[21]
VCCSUS3_3[22]
VCCSUS3_3[23]
VCCSUS3_3[24]
VCCSUS3_3[25]
VCCSUS3_3[26]
VCCSUS3_3[27]
VCCSUS3_3[28]
VCCIO[56]
V5REF_SUS
V5REF
VCC3_3[8]
VCC3_3[9]
VCC3_3[10]
VCC3_3[11]
VCC3_3[12]
VCC3_3[13]
VCC3_3[14]
VCCSATAPLL[1]
VCCSATAPLL[2]
VCCIO[9]
VCCVRM[4]
VCCIO[10]
VCCIO[11]
VCCIO[12]
VCCIO[13]
VCCIO[14]
VCCIO[15]
VCCIO[16]
VCCIO[17]
VCCIO[18]
VCCIO[19]
VCCIO[20]
VCCME[13]
VCCME[14]
VCCME[15]
VCCME[16]
VCCSUSHDA
280mA
100ohm 25% 2A 0.1ohm 0603
L15
C183
1uF 6.3V 10% 0402 X5R
200mA
0-5%-1/10W-0603
R590
C215
0.1uF 16V 10% 0402 X5R
C612
0.1uF 16V 10% 0402 X5R
70mA
D12
BAT54 30V 0.2A SOT23 CHENMKO
1mA
R184
100-1%-1/16W-0402
C249
1uF 10V 10% X5R 0402
D11
BAT54 30V 0.2A SOT23 CHENMKO
R164
10-1%-1/10W-0603
C234
0.1uF 16V 10% 0402 X5R
220mA
C238
0.1uF 16V 10% 0402 X5R
C221
0.1uF 16V 10% 0402 X5R
100mA
120ohm 25% 200mA 0603(BLM11A121S)_NU
L56
C600
1uF 6.3V 10% 0402 X5R_NU
C601
10uF 6.3V 10% 0805 X5R_NU
900mA
R122
0-5%-1/10W-0603
C169
1uF 6.3V 10% 0402 X5R
400mA
R128
0-5%-1/16W-0402
10mA
R137
0-5%-1/16W-0402
10mA
R633
0-5%-1/16W-0402_NU
C233
1uF 6.3V 10% 0402 X5R
L53
120ohm 25% 200mA 0603(BLM11A121S)
70mA
C578
T100uF 6.3V 45m 20% 3528_NU
C576
1uF 6.3V 10% 0402 X5R
L47
120ohm 25% 200mA 0603(BLM11A121S)
70mA
C549
T100uF 6.3V 45m 20% 3528_NU
C555
1uF 6.3V 10% 0402 X5R
INVENTEC
ACER_BAP10/BXP10
PCH Power 2
SIZE Custom
CODE CS
DOC NUMBER CS-131
REV A01
CHANGE by IEC
DATE Friday, April 02, 2010
SHEET 24 of 45







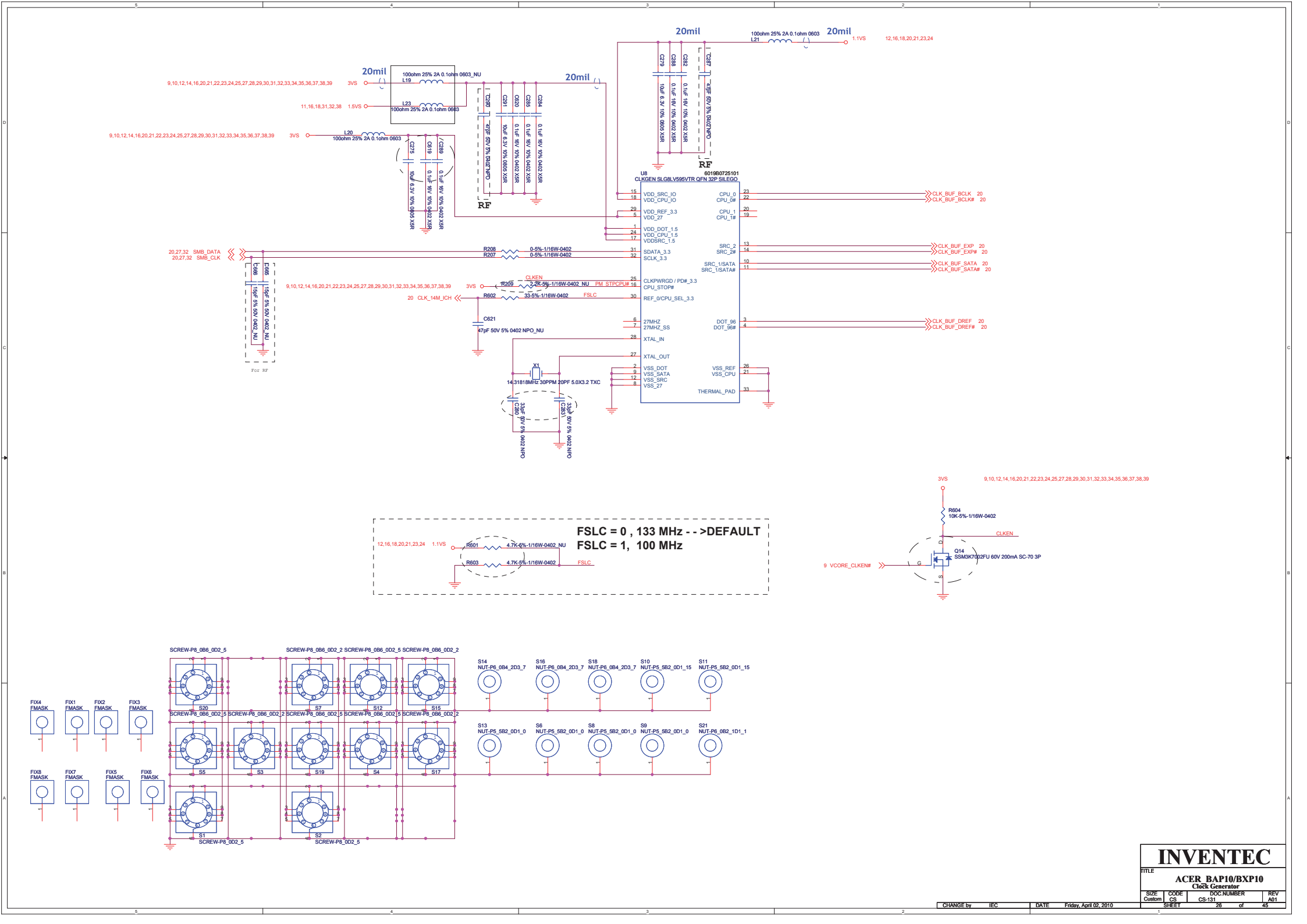
FOR EMI Suggest

INVENTEC

TITLE: ACER BAP10/BXP10
PCH Power 2

SIZE	CODE	DOC NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC DATE Friday, April 02, 2010 SHEET 25 of 45



CHANGE by	IEC	DATE	Friday, April 02, 2010		

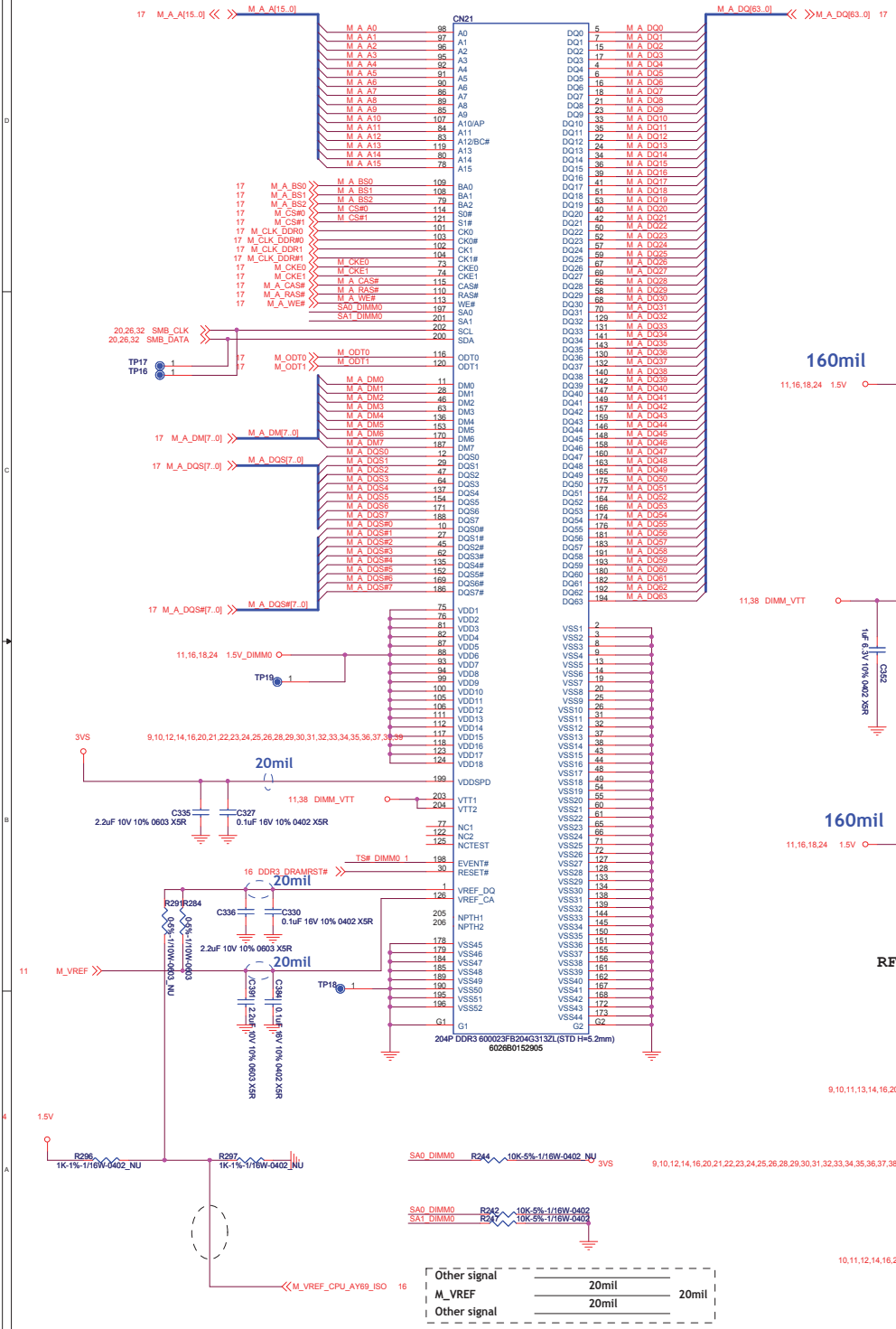
INVENTEC

TITLE: **ACER BAP10/BXP10**
Clock Generator

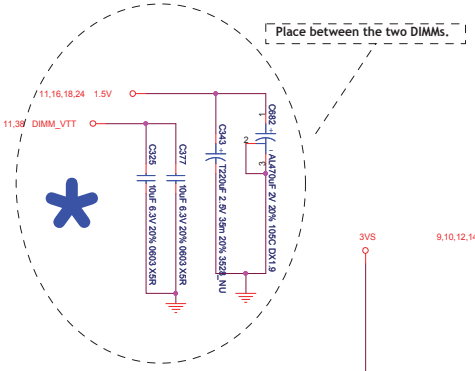
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

SHEET 26 of 45

SO-DIMM0

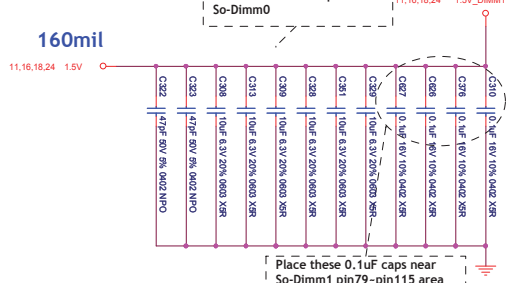


Place between the two DIMMs.

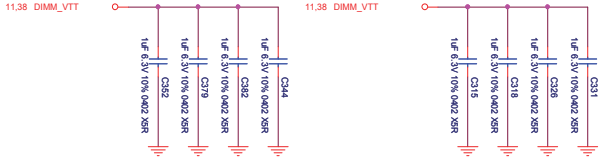


Place these 10uF caps near So-Dimm0

160mil

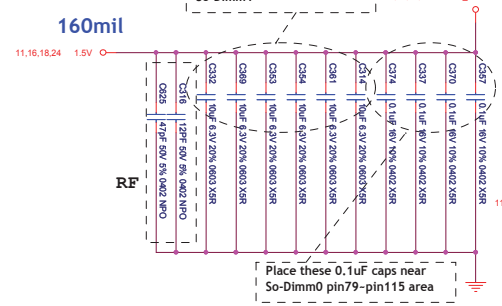


Place these 0.1uF caps near So-Dimm1 pin79~pin115 area



Place these 10uF caps near So-Dimm1

160mil



RF

Place these 0.1uF caps near So-Dimm0 pin79~pin115 area

9,10,11,13,14,16,20,21,22,24,25,28,30,32,33,35,38,39

11,38 3VA DIMM_VTT

R610 10K-5%-1/16W-0402

R607 20 1% 1/8W 0805

Q62 BSS138 50V 200mA SOT23

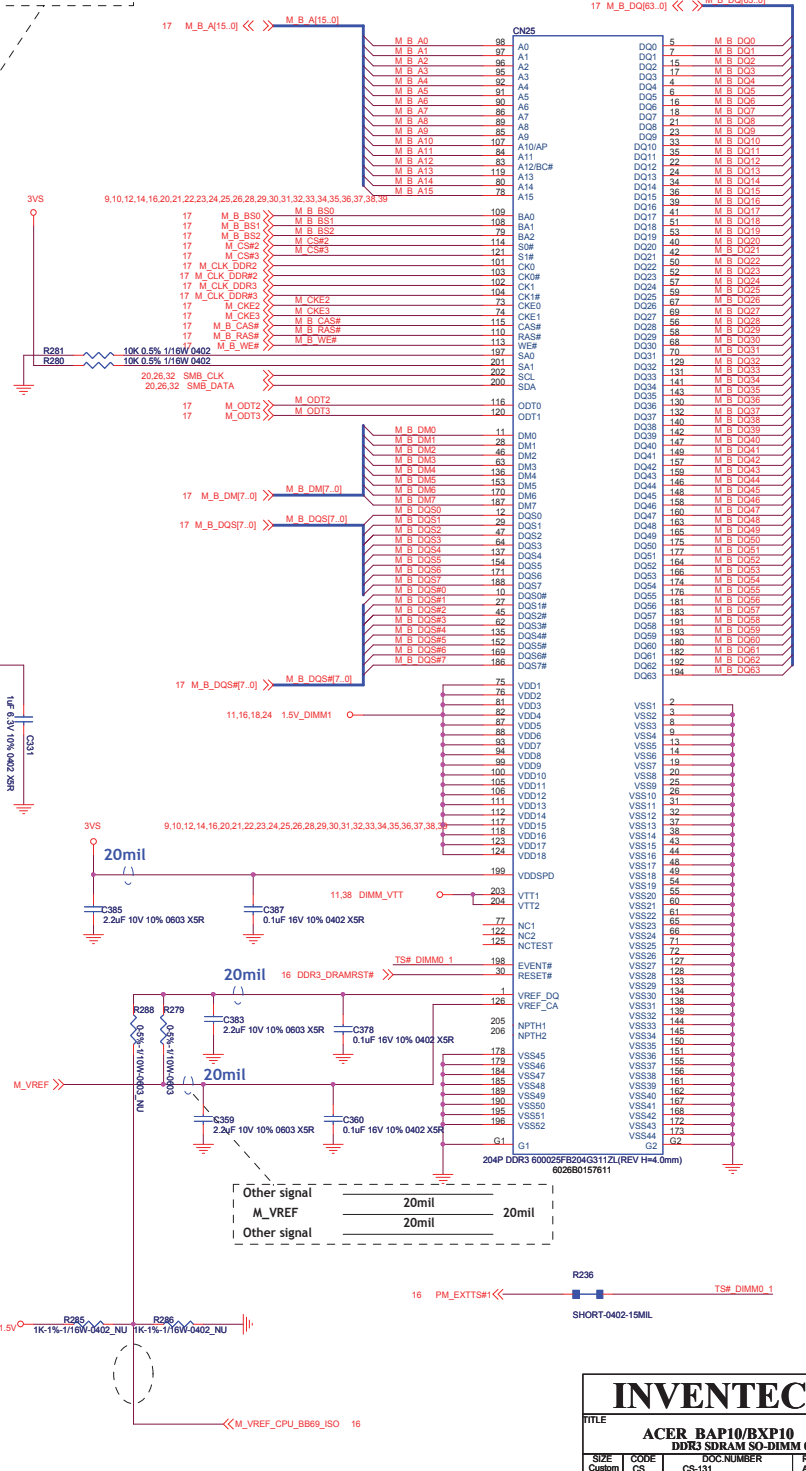
Q63 BSS138 50V 200mA SOT23

10,11,12,14,16,21,35,38 SUSB#

11,16,18,24

M_VREF_CPU_BB69_ISO 16

SO-DIMM1



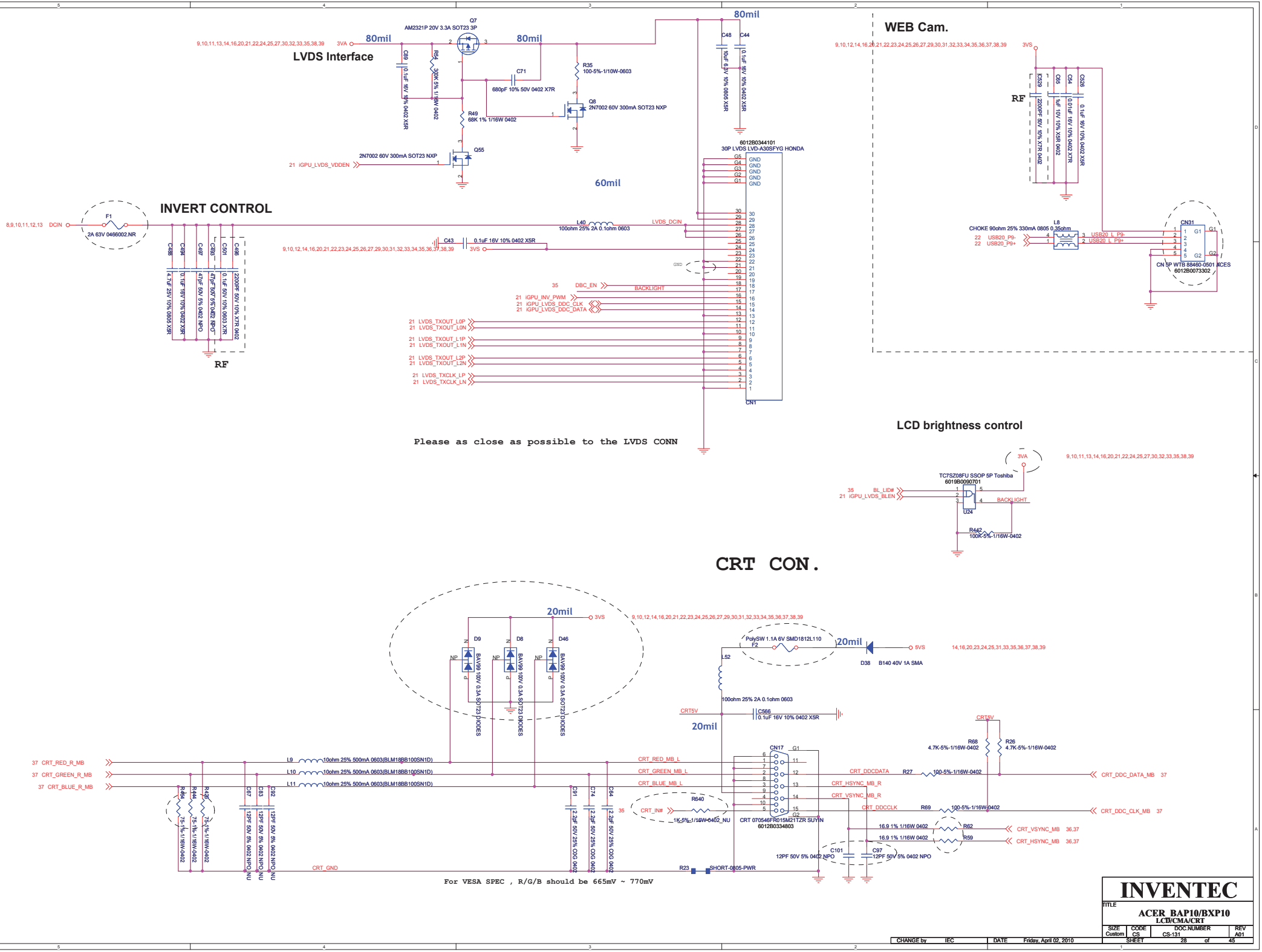
CHANGE by	IEC	DATE	Friday, April 02, 2010

INVENTEC

TITLE: ACER BAP10/BXP10
DDR3 SDRAM SO-DIMM 0/1

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

SHEET 27 of 45



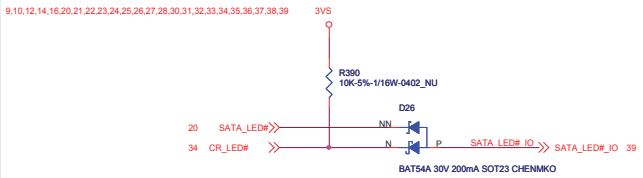
CHANGE by	IEC	DATE	Friday, April 02, 2010		

INVENTEC

TITLE: ACER BAP10/BXP10
LCD/CMA/CRT

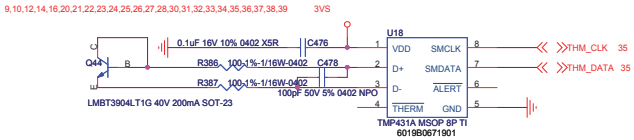
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

SHEET 28 of 45

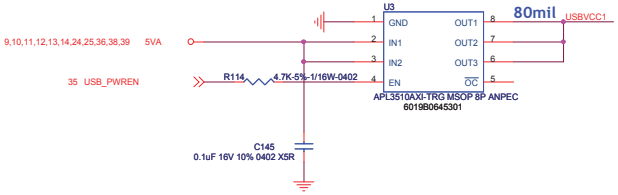


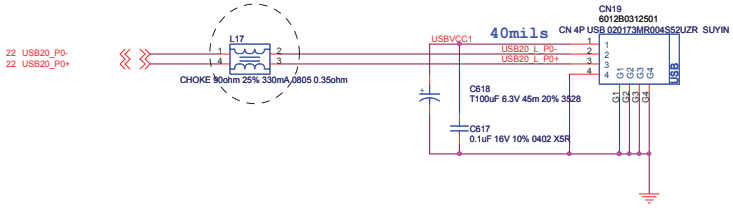
Thermal Sensor

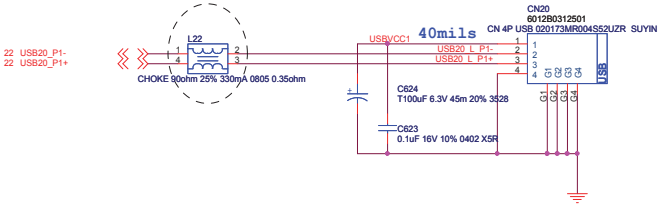
REMOTE thermal sensor
Place near the hottest spot area under Palm-rest

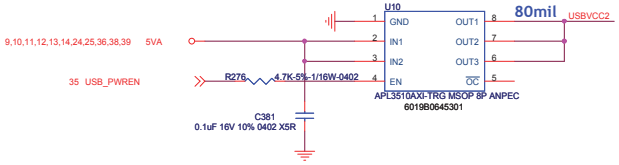


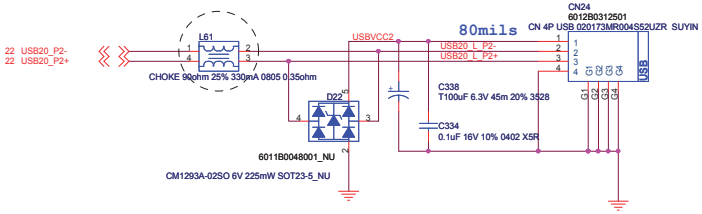
USB



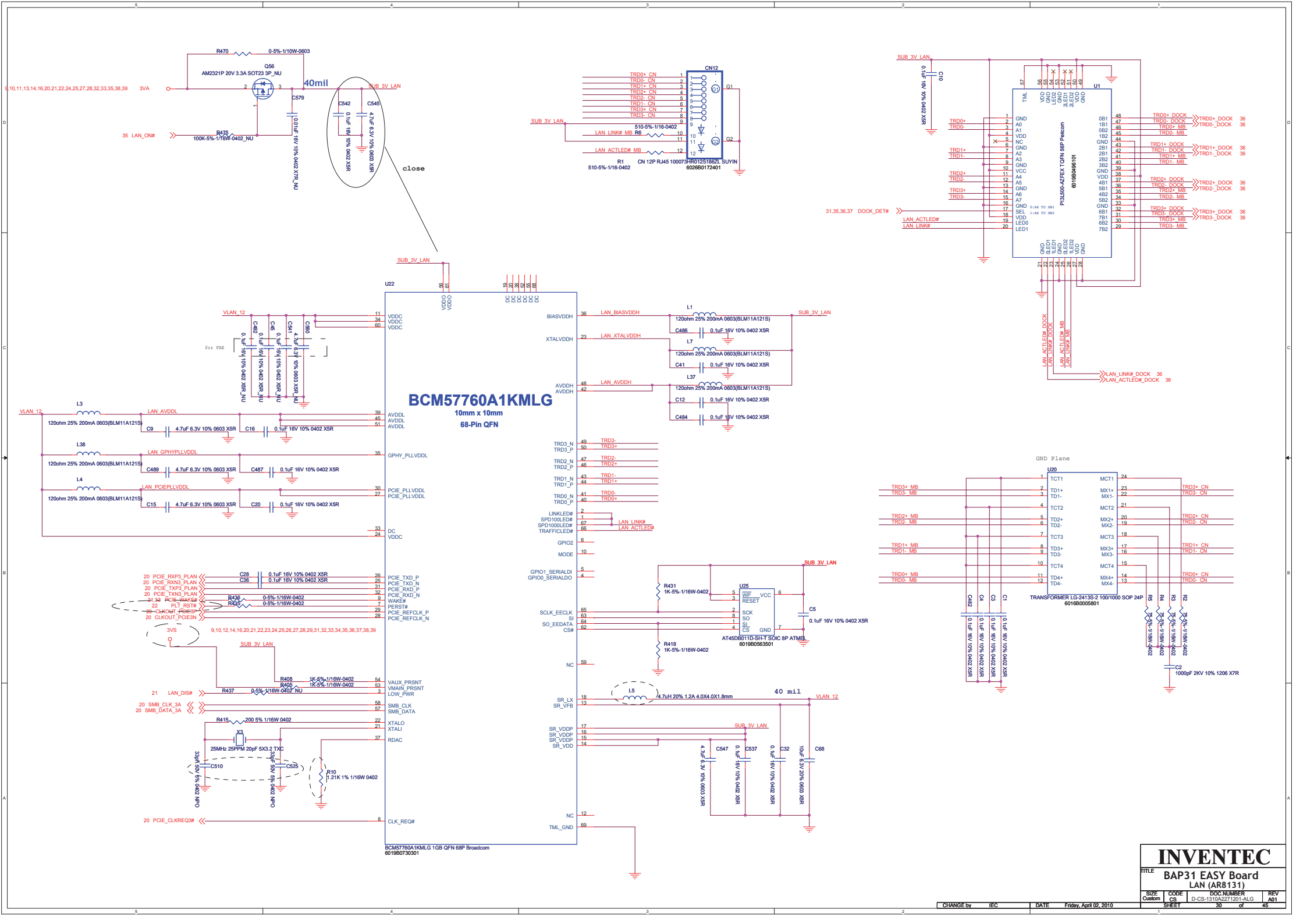








TITLE	INVENTEC		
	ACER BAP10/BXP10		
	USB/SENSOR		
SIZE Custom	CODE CS	DOC.NUMBER CS-131	REV A01
CHANGE by IEC	DATE Friday, April 02, 2010	SHEET 29 of 45	


BCM57760A1KMLG
10mm x 10mm
68-Pin QFN
U22
BCM57760A1KMLG 1GB QFN 68P Broadcom
6019B0730301
SUB_3V_LAN
VLAN_12
3VA
3VS
R470 0-5%-1/10W-0603
Q56
AM2321P 20V 3.3A SOT23 3P_NU
40mil
C579
C542
C545
close
R475
100K-5%-1/16W-0402_NU
35 LAN_ON#
CN12
510-5%-1/16-0402
LAN_LINK# MB R6
LAN_ACTLED# MB
R1
510-5%-1/16-0402
CN 12P RJ45 100073HR012S1862L SUYIN
6026B0172401
SUB_3V_LAN
C10
0.1uF 16V 10% 0402 X5R
U1
PI3L500-AZFEX TQFN 56P Pericom
6019B0496101
31,35,36,37 DOCK_DET#
LAN_ACTLED#
LAN_LINK#
TRD0+ DOCK
TRD0- DOCK
TRD0+ MB
TRD0- MB
TRD1+ DOCK
TRD1- DOCK
TRD1+ MB
TRD1- MB
TRD2+ DOCK
TRD2- DOCK
TRD2+ MB
TRD2- MB
TRD3+ DOCK
TRD3- DOCK
TRD3+ MB
TRD3- MB
LAN_LINK#_DOCK 36
LAN_ACTLED#_DOCK 36
L1
120ohm 25% 200mA 0603(BLM11A121S)
L7
L37
L38
L3
L4
C486
C41
C12
C484
C489
C487
C15
C20
C16
C9
C28
C36
C45
C46
C361
C360
0.1uF 16V 10% 0402 X5R
4.7uF 6.3V 10% 0603 X5R
for FAE
LAN_BIASVDDH
LAN_XTALVDDH
LAN_AVDDH
LAN_GPHYPLLVDDL
LAN_PCIEPLLVDDL
LAN_AVDDL
BIASVDDH
XTALVDDH
AVDDH
AVDDL
GPHY_PLLVDDL
PCIE_PLLVDDL
DC
VDDC
TRD3_N
TRD3_P
TRD2_N
TRD2_P
TRD1_N
TRD1_P
TRD0_N
TRD0_P
LINKLED#
SPD100LED#
SPD1000LED#
TRAFFICLED#
GPIO2
MODE
GPIO1_SERIALDI
GPIO0_SERIALDO
SCLK_EECLK
SI
SO_EEDATA
CS#
NC
SR_LX
SR_VFB
SR_VDDP
SR_VDD
TML_GND
R431
1K-5%-1/16W-0402
R418
1K-5%-1/16W-0402
U25
AT45DB011D-SH-T SOIC 8P ATMEL
6019B0563501
C5
0.1uF 16V 10% 0402 X5R
L5
4.7uH 20% 1.2A 4.0X4.0X1.8mm
40 mil
VLAN_12
C547
C537
C32
C68
4.7uF 6.3V 10% 0603 X5R
0.1uF 16V 10% 0402 X5R
10uF 6.3V 20% 0603 X5R
GND Plane
U20
TRANSFORMER LG-2413S-2 100/1000 SOP 24P
6016B0005801
TRD3+ CN
TRD3- CN
TRD2+ CN
TRD2- CN
TRD1+ CN
TRD1- CN
TRD0+ CN
TRD0- CN
C482
C4
C3
C1
R5
R4
R3
R2
75-5%-1/16W-0402
C2
1000pF 2KV 10% 1206 X7R
20 PCIE_RXP3_PLAN
20 PCIE_RXN3_PLAN
20 PCIE_TXP3_PLAN
20 PCIE_TXN3_PLAN
21,32 PCIE_WAKE#
22 PLT_RST#
20 CLKOUT_PCIE3P
20 CLKOUT_PCIE3N
PCIE_TXD_P
PCIE_TXD_N
PCIE_RXD_P
PCIE_RXD_N
WAKE#
PERST#
PCIE_REFCLK_P
PCIE_REFCLK_N
C28
C36
R436
R435
0-5%-1/16W-0402
9,10,12,14,16,20,21,22,23,24,25,26,27,28,29,31,32,33,34,35,36,37,38,39
SUB_3V_LAN
R408
R405
1K-5%-1/16W-0402
21 LAN_DIS#
R437
0-5%-1/16W-0402_NU
VAUX_PRSNT
VMAIN_PRSNT
LOW_PWR
20 SMB_CLK_3A
20 SMB_DATA_3A
SMB_CLK
SMB_DATA
R415
200 5% 1/16W 0402
X3
25MHz 25PPM 20pF 5X3.2 TXC
C510
C525
33pF 50V 5% 0402 NPO
R10
1.21K 1% 1/16W 0402
XTALO
XTALI
RDAC
20 PCIE_CLKREQ3#
CLK_REQ#
INVENTEC
BAP31 EASY Board
LAN (AR8131)
SIZE Custom
CODE CS
DOC.NUMBER D-CS-1310A2271201-ALG
REV A01
CHANGE by IEC
DATE Friday, April 02, 2010
SHEET 30 of 45

AUDIO CODEC

Note:

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

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.

R350 only needed if supply to VAUX_3.3 is removed during system re-start.

U17 — CX20672-11Z QFN 40P Conexant 6019B0730901

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

6012B0069910
4P WTB 50224-00401-001 ACES
CN11

For ME

L67 150ohm 25% 2A 0603(FBMA-11-160808-151A20T) SPKOUTR+
L68 150ohm 25% 2A 0603(FBMA-11-160808-151A20T) SPKOUTR-
L65 150ohm 25% 2A 0603(FBMA-11-160808-151A20T) SPKOUTL-
L66 150ohm 25% 2A 0603(FBMA-11-160808-151A20T) SPKOUTL+

INT MIC

L60 120ohm 25% 200mA 0603(BLM11A121S)

CN5
CN 4P WTB 88460-0401 ACES
6012B0073305

ESD RClamp0502B.TCT 5V 125W SOT523

Ext MIC JACK

6026B0191101
JACK 6P 2SJ2285-212252 SINGATRON
CN22

L27 600OHM-25%-200mA-0603
L28 600OHM-25%-200mA-0603

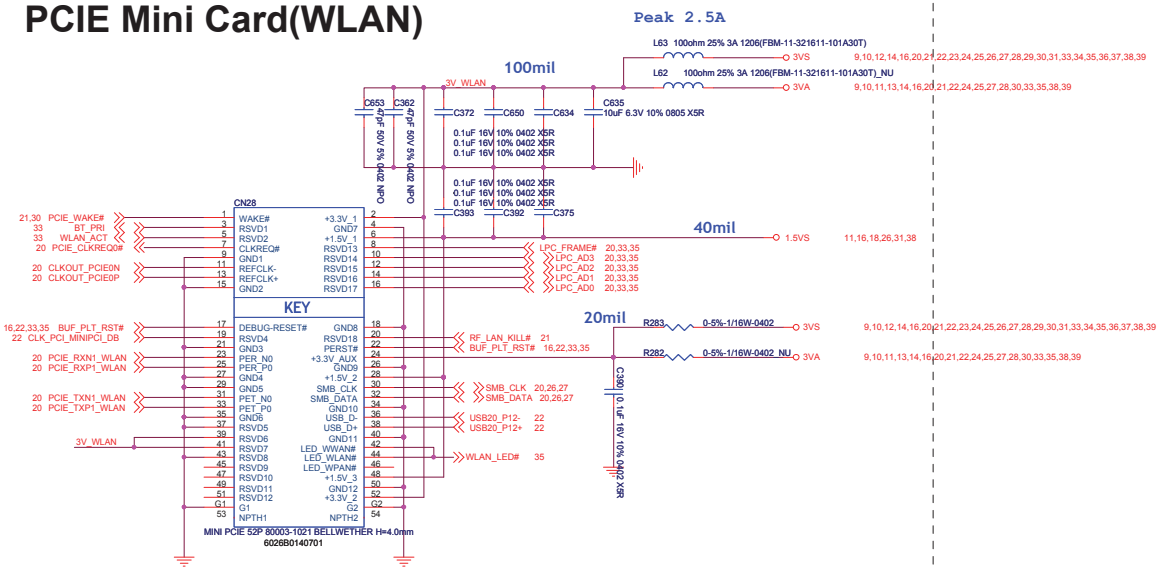
MB(AUDIO) To MB /B

6012A0101101
CN 8P WTB 87213-0800 ACES
CN8

CN7
CN 8P WTB 87213-0800 ACES
6012A0101101

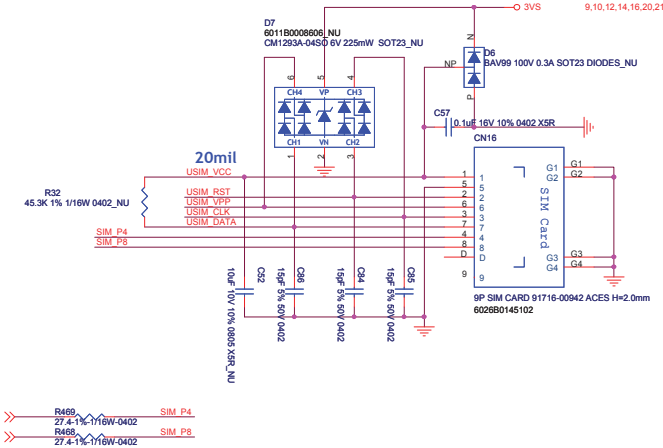
For EMC

PCIE Mini Card(WLAN)

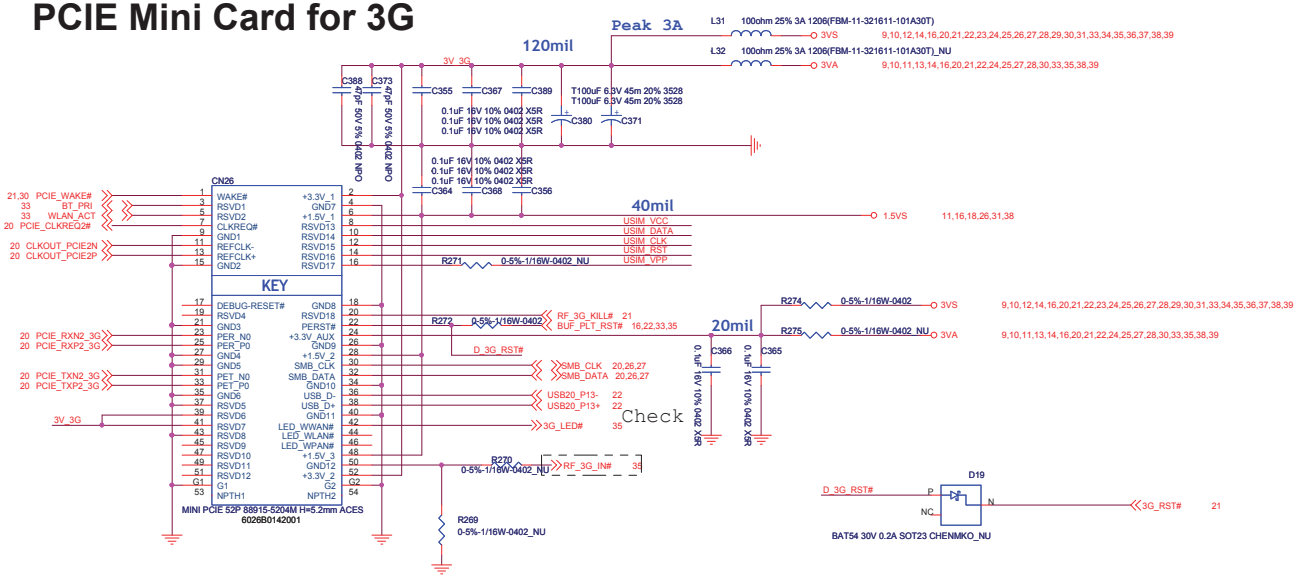


On Chip 5V to 3.3V regulator. No external regulator required
On-Chip power MOSFETs for supplying flash media card power.

SIM CARD slot



PCIE Mini Card for 3G



CHANGE by	IEC	DATE	Friday, April 02, 2010		

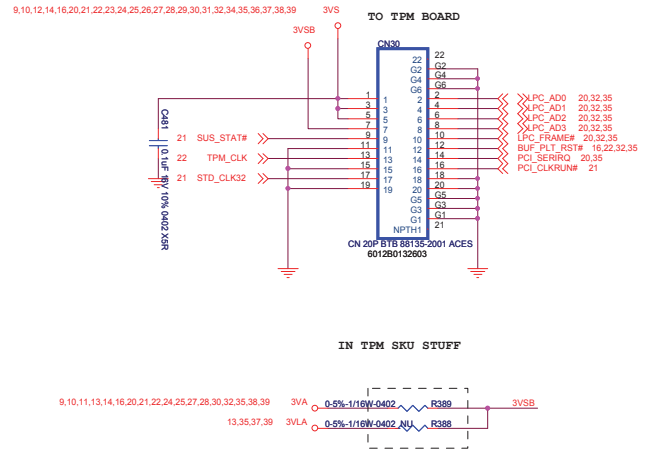
INVENTEC

TITLE: ACER BAP10/BXP10 3G/WLAN

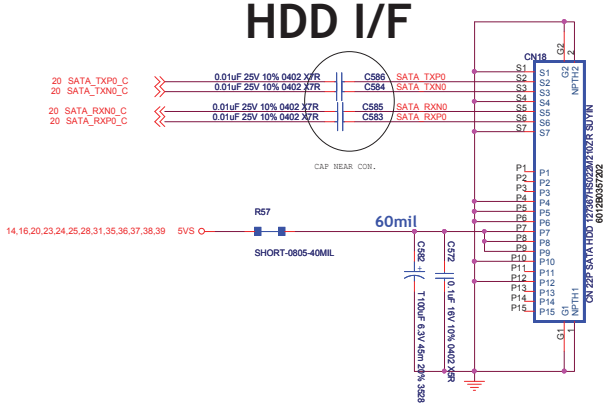
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

SHEET 32 of 45

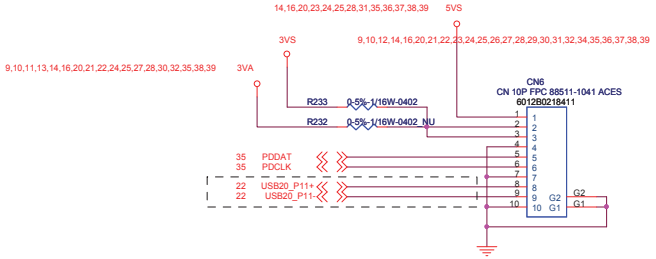
TO TPM CNN.



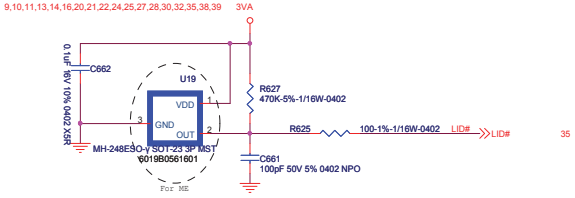
HDD I/F



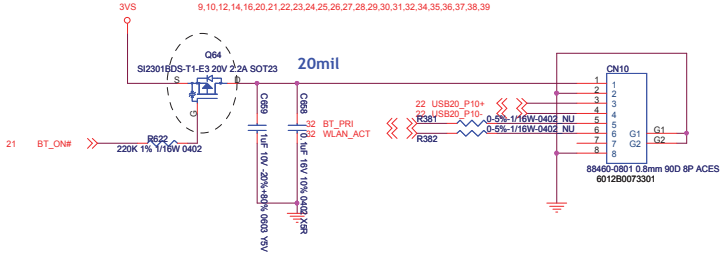
GP + FP CNN.



HALL Switch



Bluetooth CNN.



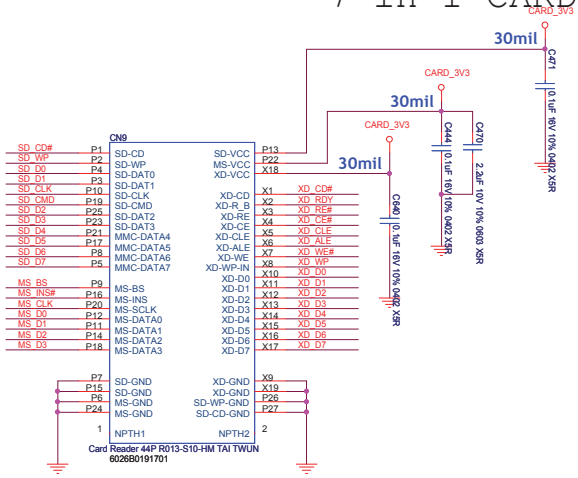
CHANGE by	IEC	DATE	Friday, April 02, 2010	SHEET	33 of 45

INVENTEC

TITLE: ACER BAP10/BXP10
USB/eSATA/G-sensor/CON

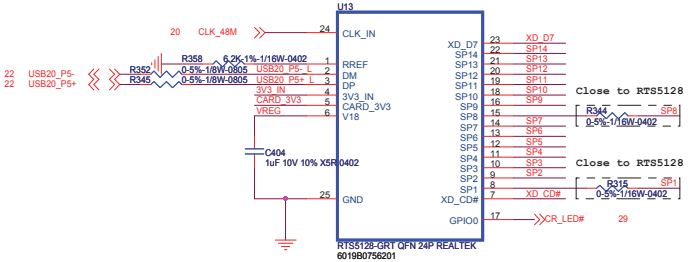
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

7 in 1 CARDREADER

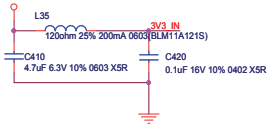


SP1	XD_RDY	SD_WP	MS_CLK
SP2	XD_RE#		MS_INS#
SP3	XD_CE#	SD_D1	
SP4	XD_CLE	SD_D0	MS_D7
SP5	XD_ALE	SD_D7	MS_D3
SP6	XD_WE#	SD_CD#	
SP7	XD_WP	SD_D6	MS_D6
SP8	XD_D0	SD_CLK	MS_D2
SP9	XD_D1	SD_D5	MS_D0
SP10	XD_D2	SD_CMD	
SP11	XD_D3	SD_D4	MS_D4
SP12	XD_D4	SD_D3	MS_D1
SP13	XD_D5	SD_D2	MS_D5
SP14	XD_D6		MS_BS

Close to connector



9,10,12,14,16,20,21,22,23,24,25,26,27,28,29,30,31,32,33,35,36,37,38,39

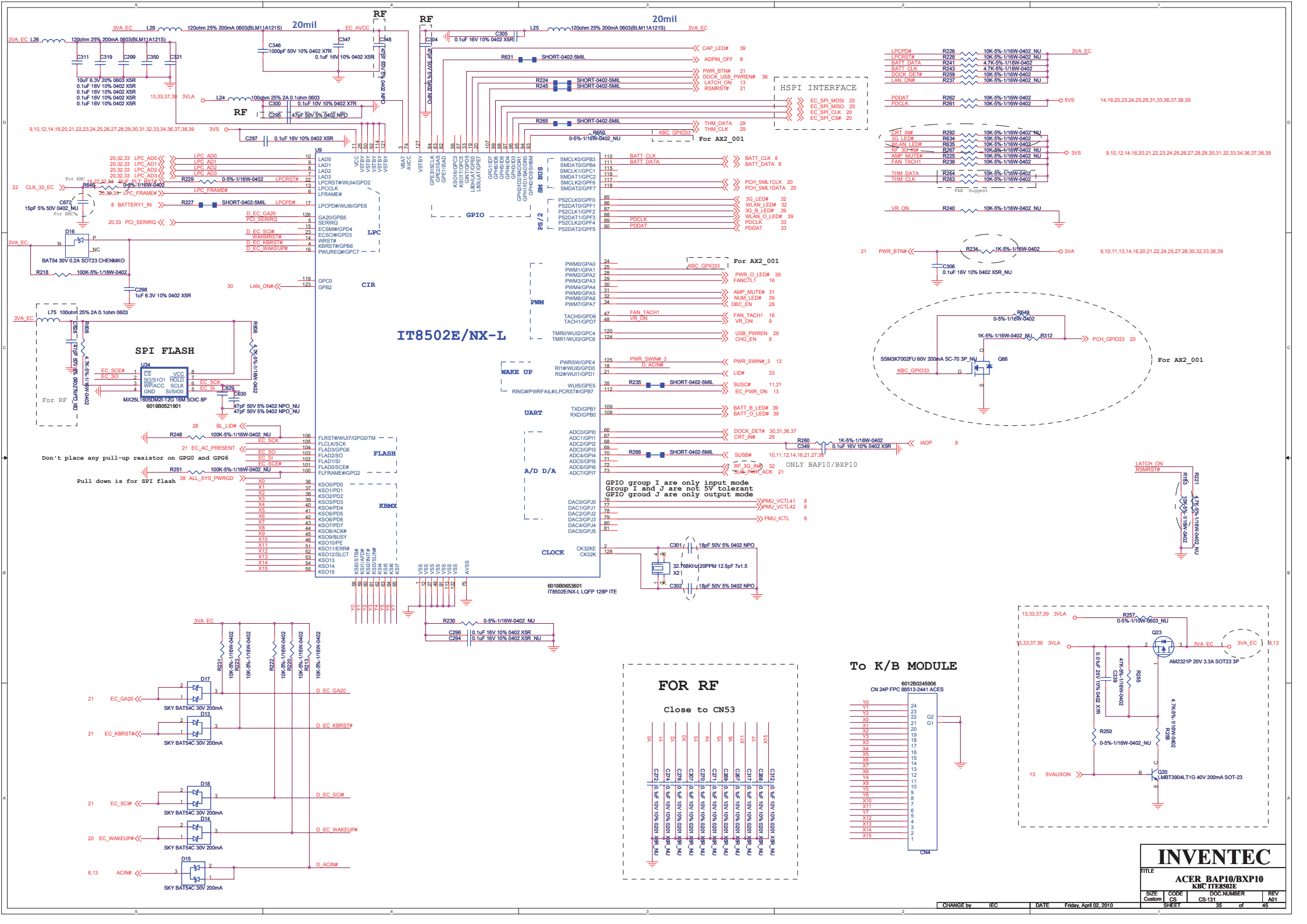


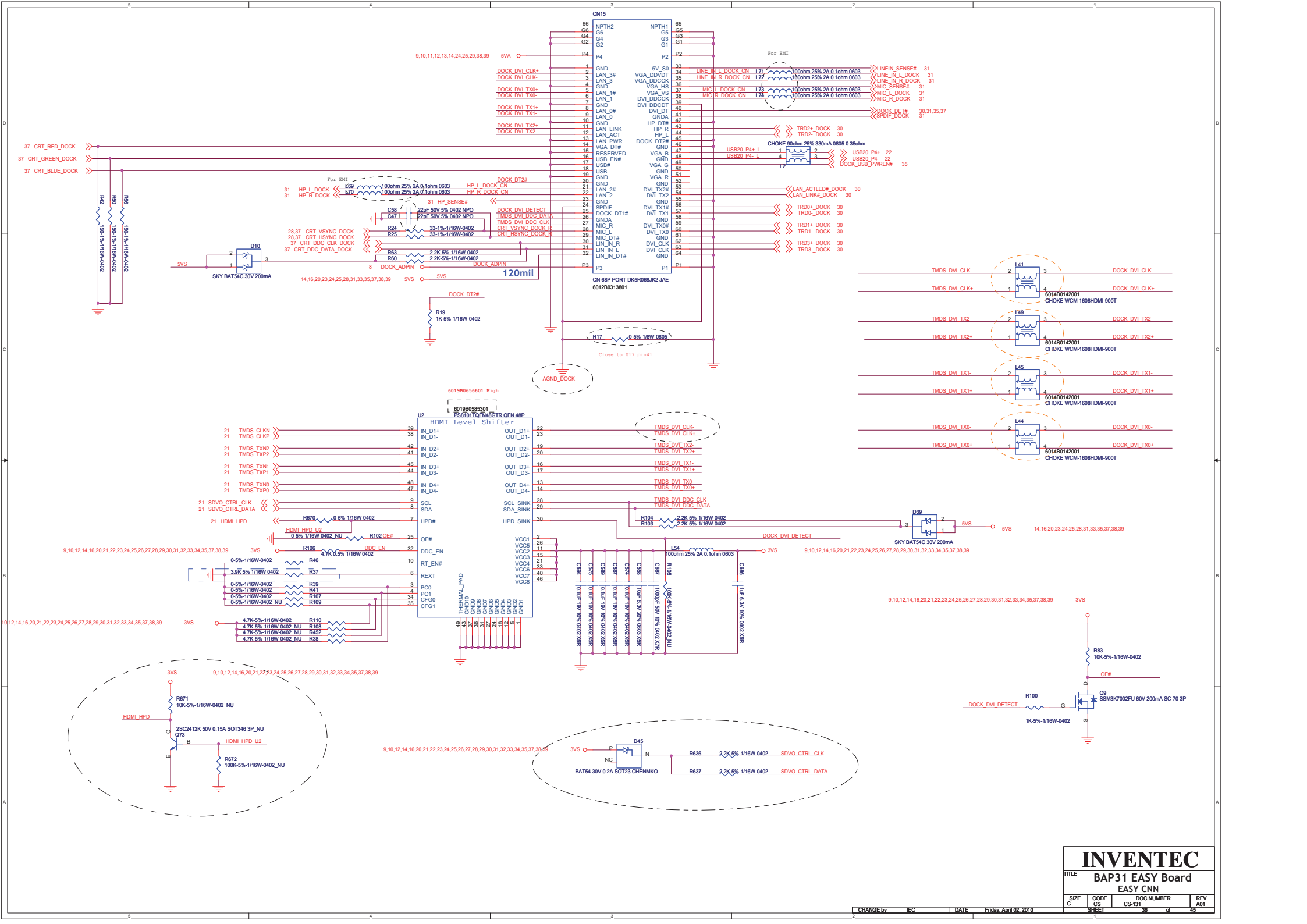
INVENTEC

TITLE: BAP10 EASY Board
CARD READER

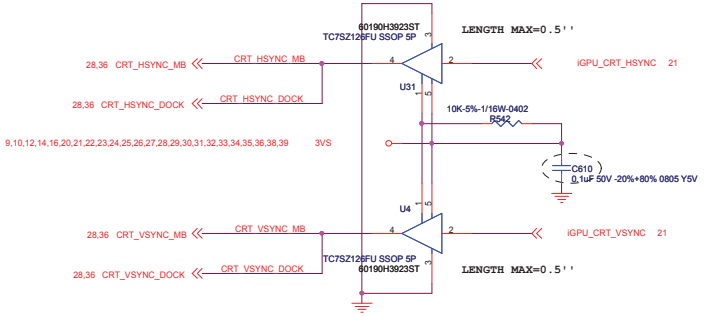
SIZE	CODE	DOC.NUMBER	REV
C	A03		A01

CHANGE by <CHANGE by> DATE Friday, April 02, 2010 SHEET 34 of 45

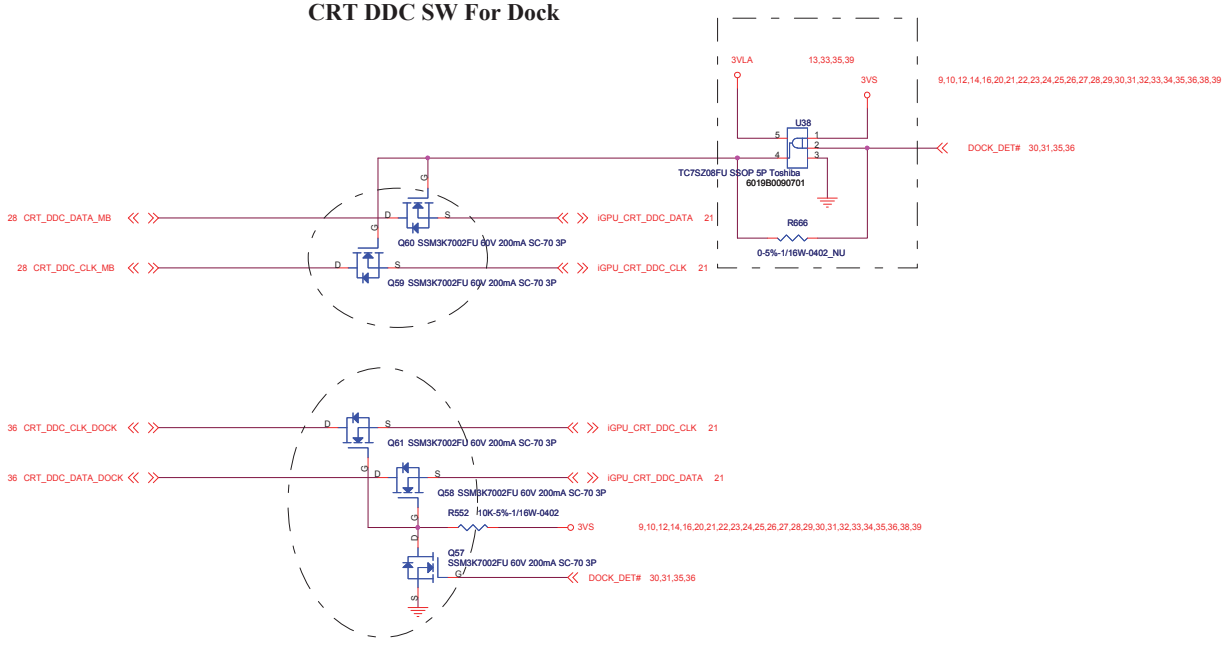

IT8502E/NX-L
SPI FLASH
HSPI INTERFACE
FOR RF
Close to CN53
To K/B MODULE
INVENTEC
ACER BAP10/BXP10
KBC ITE8502E
Don't place any pull-up resistor on GPG0 and GPG6
Pull down is for SPI flash
GPIO group I are only input mode
Group I and J are not 5V tolerant
GPIO groud J are only output mode
ONLY BAP10/BXP10
For AX2_001
SKY BAT54C 30V 200mA
BAT54 30V 0.2A SOT23 CHENMKO
AM2321P 20V 3.3A SOT23 3P
SSM3K7002FU 60V 200mA SC-70 3P_NU
LMBT3904LT1G 40V 200mA SOT-23
6019B0653601
IT8502E/NX-L LQFP 128P ITE
6019B0521901
MX25L1605DM2I-12G 16M SOIC 8P
6012B0245906
CN 24P FPC 88513-2441 ACES
CN4
20mil
RF

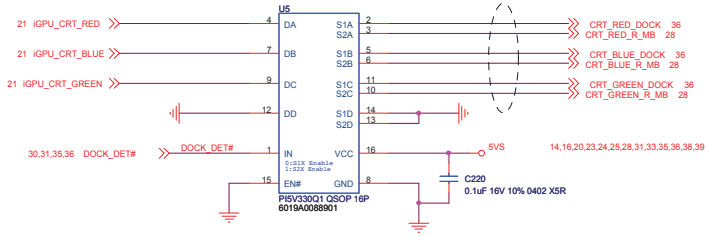

CN15
CN 68P PORT DK5R068JK2 JAE
6012B0313801
120mil
SKY BAT54C 30V 200mA
U2
PS8101TQFN48GTR QFN 48P
HDMI Level Shifter
6019B0656601 High
6019B0585301
THERMAL_PAD
CHOKE 90ohm 25% 330mA 0805 0.35ohm
CHOKE WCM-1608HDMI-900T
6014B0142001
SKY BAT54C 30V 200mA
BAT54 30V 0.2A SOT23 CHENMKO
2SC2412K 50V 0.15A SOT346 3P_NU
SSM3K7002FU 60V 200mA SC-70 3P
AGND_DOCK
Close to U17 pin41
For EMI
INVENTEC
BAP31 EASY Board
EASY CNN
SIZE C
CODE CS
DOC.NUMBER CS-131
REV A01
SHEET 36 of 45
CHANGE by IEC
DATE Friday, April 02, 2010

CRT HSYNC/VSYNC SW For Dock



CRT DDC SW For Dock



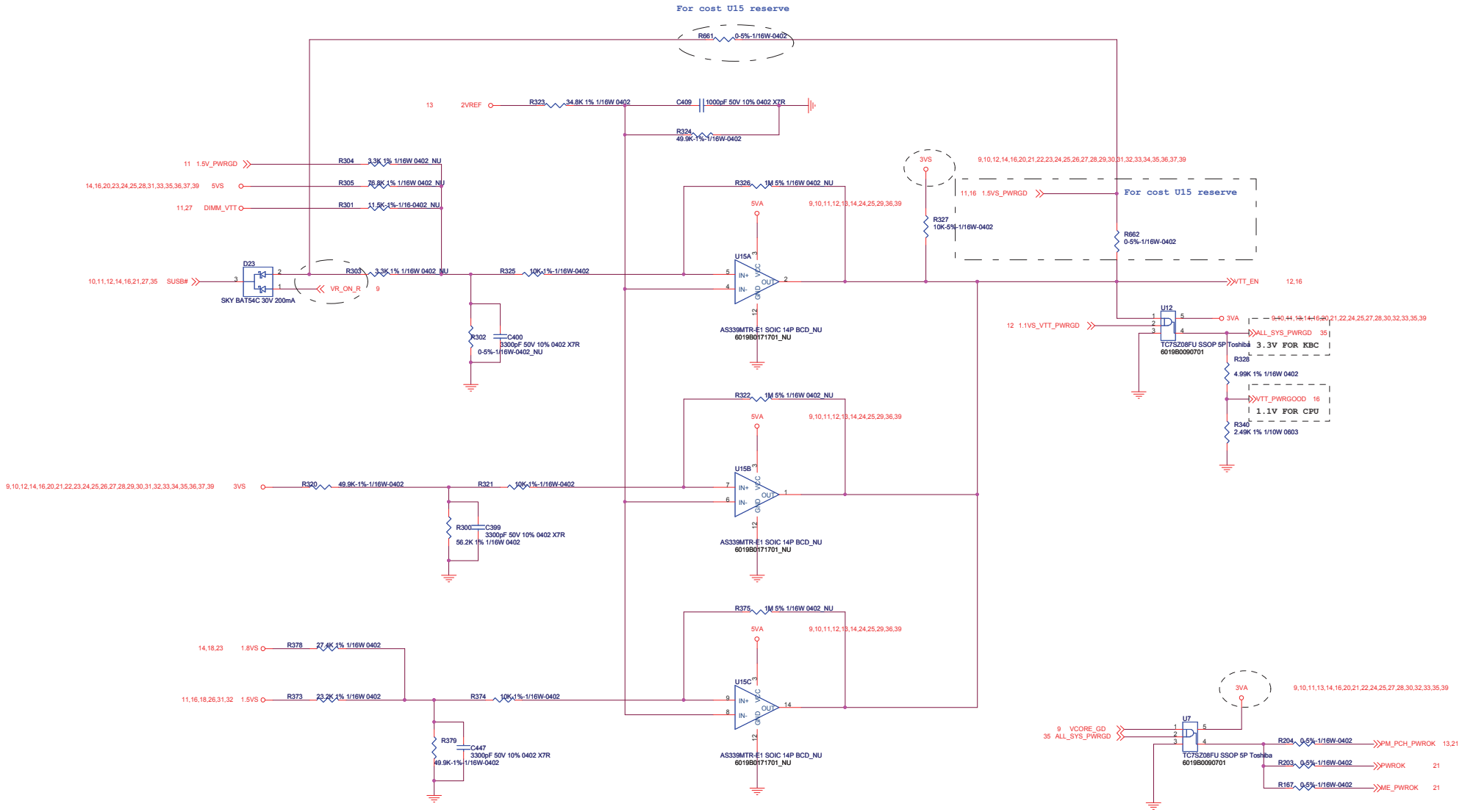


INVENTEC

TITLE: ACER_BAP10/BXP10
Hybird Switch (1/2)

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 37 of 45



INVENTEC

TITLE: ACER BAP10/BXP10
Hybird Switch (2/2)

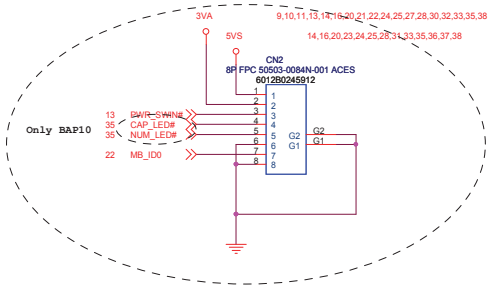
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 38 of 45

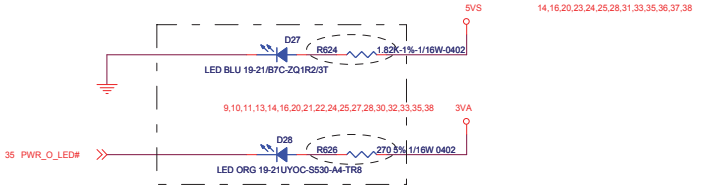
For BAP10 SW BOARD and BXP10 LED

Pin2 for BIOS ID setting

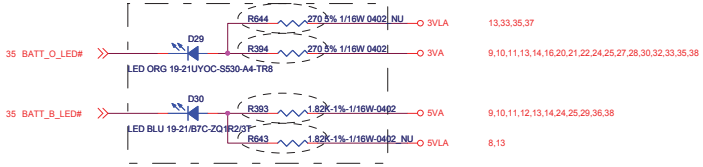
Project	MB_ID0
BAP10 (UMA)	1
BXP10 (UMA)	0



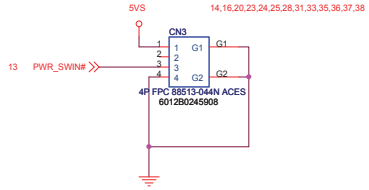
System Power / Sleep status indicator: Blue/Orange



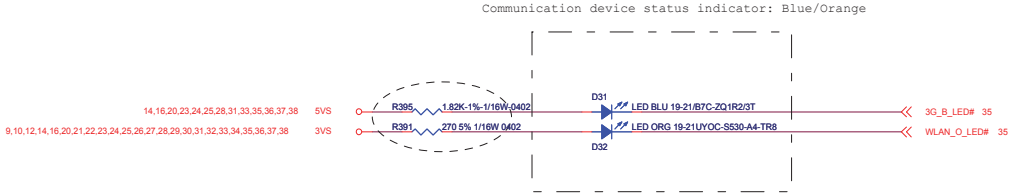
Battery Charging status indicator: Blue/Orange

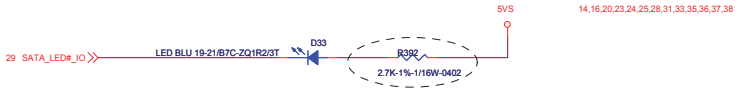


For BXP10 SW BOARD



Communication device status indicator: Blue/Orange



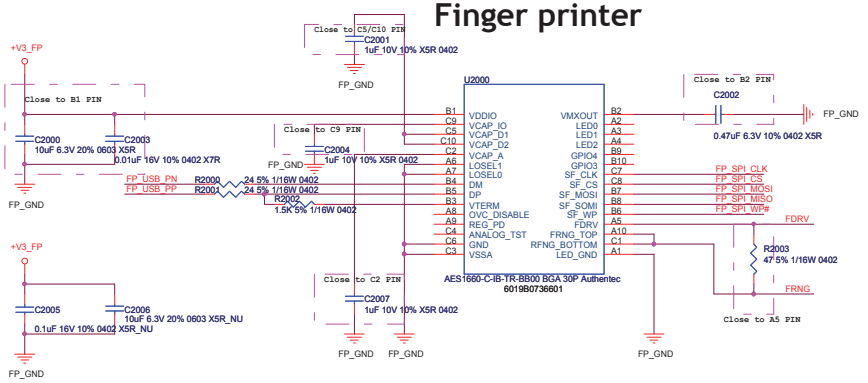


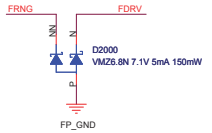
INVENTEC					
TITLE: ACER BAP10/BXP10 CRT/DVI					
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131		REV: A01	
CHANGE by: IEC	DATE: Friday, April 02, 2010	SHEET: 39 of 45			

Finger printer Board

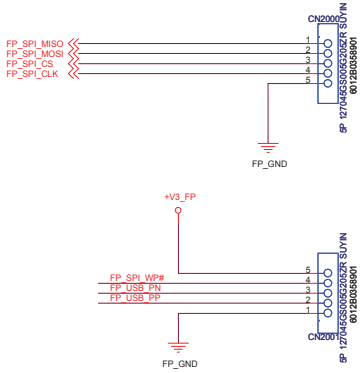
w/ Fingerprint: Stuff
w/o Fingerprint: OPEN

Finger printer





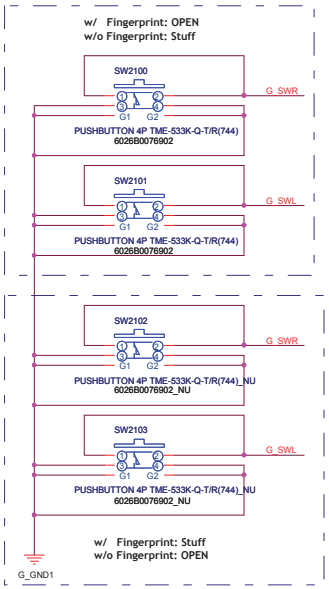
TO GP PIN HEADER



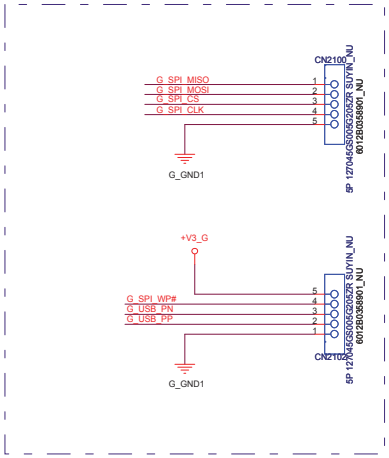
INVENTEC					
TITLE: ACER BAP10/BXP10 GP Button					
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131		REV: A01	
CHANGE by: IEC	DATE: Friday, April 02, 2010	SHEET: 40 of 45			

GP Board

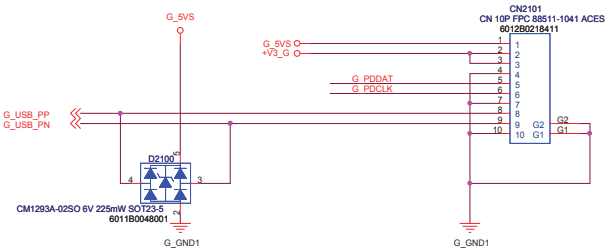
GP Button



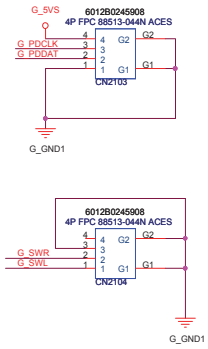
TO FP PIN HEADER

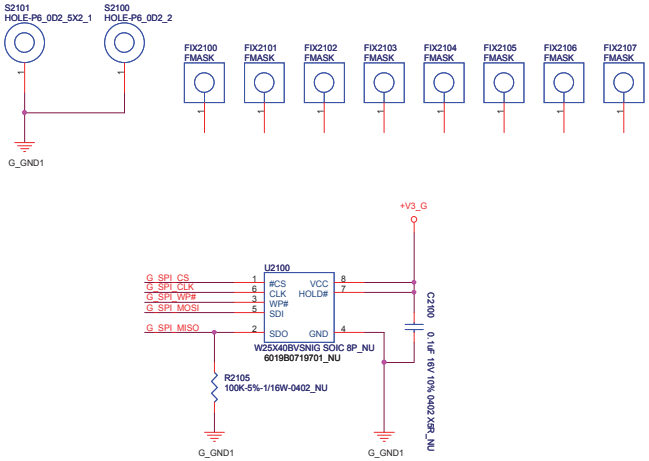


TO MB



TO touch Pad



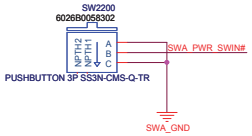


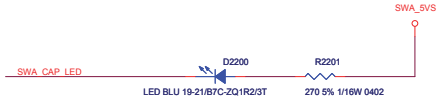
INVENTEC					
TITLE: ACER_BAP10/BXP10 GP					
SIZE: Custom	CODE: CS	DOC.NUMBER: CS-131		REV: A01	
CHANGE by: IEC	DATE: Friday, April 02, 2010	SHEET: 41 of 45			

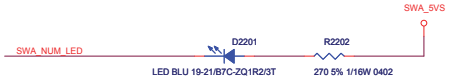
BAP10 1 SW+3 LED Board

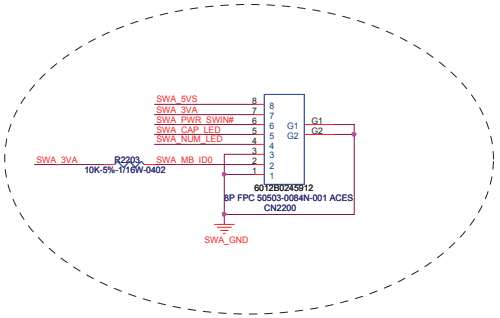
Pin2 for BIOS ID setting

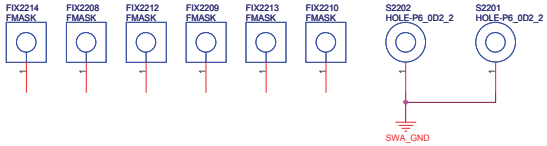
Project	MB_ID0
BAP10 (UMA)	1
BXP10 (UMA)	0











INVENTEC

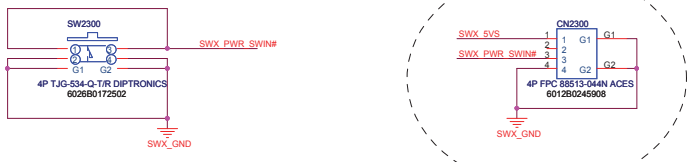
TITLE ACER_BAP10

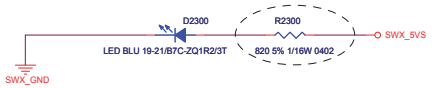
SW

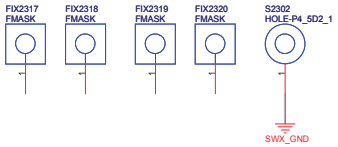
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 42 of 45

BXP10 1 SW+1 LED Board







INVENTEC

TITLE
ACER_BXP10
SW

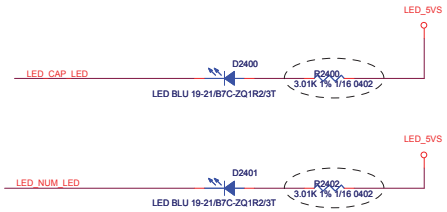
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

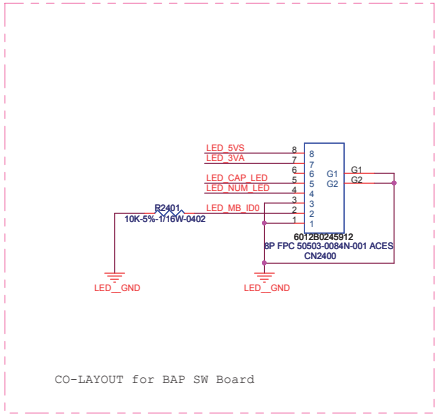
CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 43 of 45

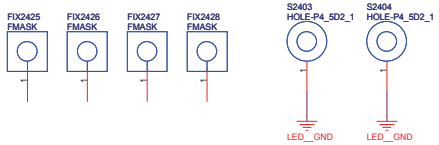
BXP10 2 LED Board

Pin2 for BIOS ID setting

Project	MB_ID0
BAP10 (UMA)	1
BXP10 (UMA)	0







INVENTEC

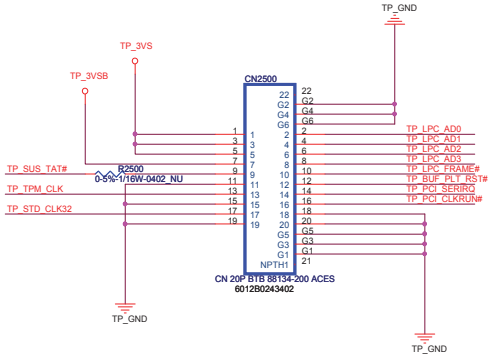
TITLE: ACER BXP10
LED

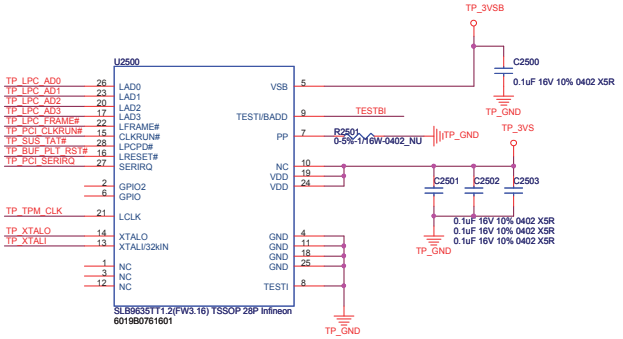
SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

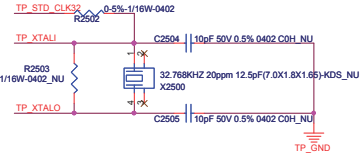
CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 44 of 45

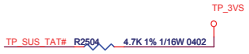
TPM Board

TO MB BOARD

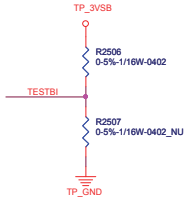


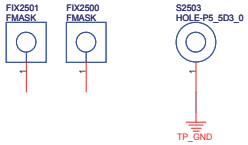






TESTBI	I/O ADDRESS
	CONFIG REGISTER
HIGH	4EH
LOW	2EH





INVENTEC

TITLE ACER_BAP10/BXP10

TPM

SIZE	CODE	DOC.NUMBER	REV
Custom	CS	CS-131	A01

CHANGE by IEC | DATE Friday, April 02, 2010 | SHEET 45 of 45