

ACER_BAP31

MAIN BOARD

2008.12.29

Tuesday, March 10, 2009		X01
DATE	CHANGE NO.	REV

	EE	DATE	POWER	DATE	INVENTEC			
DRAWER					TITLE ACER_JM31			
DESIGN								
CHECK								
RESPONSIBLE								
SIZE=					SIZE	CODE	DOC NUMBER	REV
FILE NAME: XXXX-XXXXXXX					C	X01	D-CS-1310A2264501.ALG	X01
PNL	JX0000000000				SHEET	1	of	126

1. Schematic Page Description :

Montevina Schematic Ver : X01

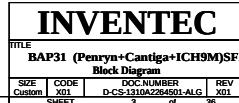
- | | |
|----------------------------------|---------------------------------|
| 1. Title | 24. Clock Generator |
| 2. Schematic Page DESCR | 25. DDR3 SDRAM SO-DIMM0 |
| 3. Block Diagram | 26. DDR3 SDRAM SO-DIMM1 |
| 4. Annotations | 27. ICH9M CPU/IDE/SATA(1/4) |
| 5. Schematic Modify | 28. ICH9M PCI/PCIE/DMI/USB(2/4) |
| 6. Timing Diagram | 29. ICH9M GPIO(3/4) |
| 7. Power Block Diagram | 30. ICH9M Power/GND(4/4) |
| 8. Adaptor in/Charge | 31. LCD CNN/SATA/3G/WLAN |
| 9. 5VLA/5VA/3VA | 32. KBC ITE8512F |
| 10. 3VS/5VS/1.5V (DDR3) | 33. IO CN |
| 11. 1.05VS/1.5S/1.8V/1.5VA | |
| 12. Power Latch/1.5VS/SCREW HOLE | |
| 13. CPU Core Power | |
| 14. GPU Core Power | |
| 15. Penryn Processor(1/2) | |
| 16. Penryn Processor(2/2) | |
| 17. CPU Thermal | |
| 18. Cantiga Host(1/6) | |
| 19. Cantiga DMI/Graph(2/6) | |
| 20. Cantiga DDRII(3/6) | |
| 21. Cantiga Power(4/6) | |
| 22. Cantiga Power(5/6) | |
| 23. Cantiga Ground(6/6) | |

INVENTEC

TITLE			
BAP31 (Penryn+Cantiga+ICH9M)SFF			
Schematic Page			
SIZE	CODE	DOC NUMBER	REV
Custom	X01	D-CS-1310A2264501-ALG	X01
SHEET		1	2 of 38

CHANGE by	Mitch Liu	DATE	Tuesday, March 10, 2009
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PDF 檔案以 "PDF 製作工廠" 試用版建立 <http://www.fineprint.com>



4. Net name Description :

Voltage Rails

DCIN	Primary DC system power supply
+5VLA	5.0V always on power rail by LATCH or ACIN
+5VA	5.0V always on power rail by ECPWON
+3VA	3.3V always on power rail by ECPWON
+5VS	5.0V switched power rail by SLP_S3#_3R
+3VS	3.3V switched power rail by SLP_S3#_3R
+1.8VS	1.8V switched power rail by SLP_S3#_3R
VCC_CORE	Core Voltage for CPU
+1.05VS	1.05V power rail for AGTL+ termination/Core for GMCH by SLP_S3#_3R
+1.25VS	1.25V switched power rail by SLP_S3#_3R
+1.5VS	1.5V power rail for CPU PLL/DMI;PCIE;DDRIII DLLs for GMCH/Core;PCIE for ICH9M by SLP_S3#_3R
+1.5V	1.5V power rail for DDRII by SLP_S5#_3R
0.75VDDT_DDRIII	0.75V DDRII Termination Voltage by SLP_S3#_3R

Part Naming Conventions

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

Net Name Suffix

#	=	Active Low signal
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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	Differential Impedance for Stripline
Host Clock	95 ohm +/- 20%	95 ohm +/- 20%
PCI-E Clock	95 ohm +/- 20%	95 ohm +/- 20%
DDR3 CLK	75 ohm +/- 20%	75 ohm +/- 20%
DDR3 Strobe	90 ohm +/- 20%	90 ohm +/- 20%
DMI Bus	95 ohm +/- 20%	95 ohm +/- 20%
PCIE Bus	95 ohm +/- 20%	95 ohm +/- 20%
SDVO	95 ohm +/- 20%	95 ohm +/- 20%
SATA	95 ohm +/- 20%	95 ohm +/- 20%
USB	90 ohm +/- 20%	90 ohm +/- 20%
LVDS	95 ohm +/- 20%	95 ohm +/- 20%
Lan	95 ohm +/- 20%	95 ohm +/- 20%

Power Rail	Destination	Voltage	S0 Current
VCC_CORE	Penryn SFF HFM: LFM:	1.3319V~1.4375V~1.4591V 0.9221V~0.9625V~0.9739V	18A
1.05VS	Penryn SFF : AGTL+ termination Cantiga GS: Core Cantiga GS: PCIE Cantiga GS:Core+HMEI+HSIO Cantiga GS:VCC_GMCH Cantiga GS:VCCA_SM_CK and NCTF Cantiga GS:VCC_DMI Cantiga GS:VCCA_SM Cantiga GS:VTT ICH9M:VCC1_05 ICH9M:DMI ICH9M:CPU_IO	1V~1.05V~1.10V 0.997V~1.05V~1.102V 0.9975V~1.05V~1.1025V 0.9975V~1.05V~1.1025V 0.997V~1.05V~1.102V 0.997V~1.05V~1.102V 0.997V~1.05V~1.102V 0.997V~1.05V~1.102V 0.997V~1.05V~1.102V 0.997V~1.05V~1.102V	4.5A 8.7A 1.78A 2.898A 10.154A 37.95mA 456mA 747.5mA 852mA 1.634A 48mA 2mA
1.5VS	Penryn SFF PLL Cantiga GS: QDAC Cantiga GS: LVDS Cantiga GS: TVDAC Cantiga GS: Various PLLS analog supply Cantiga GS: VCC_SM_CK Cantiga GS: VCC_SM ICH9M:PCIE_ICH ICH9M:SATA_ICH ICH9M:VCC_GLAN Mini Card: Express Card:	1.425V~1.5V~1.575V 1.425V~1.5V~1.575V 1.71V~1.8V~1.89V 1.425V~1.5V~1.575V 1.425V~1.5V~1.575V 1.425V~1.5V~1.575V 1.425V~1.5V~1.575V 1.425V~1.5V~1.575V 1.425V~1.5V~1.575V 1.425V~1.5V~1.575V	130mA 0.5mA 60.31mA 35mA 485mA 149.5mA 3.1625A 646mA 1.342A 80mA 650mA
1.5V	Cantiga GS: 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 GS: HV CMOS Cantiga GS: VCCS_TV DAC ICH9M:VCC3_3 ICH9M:VCCGLAN3_3 Thermal Sensor: Mini Card: UMTS Express Card: CLK Generator: ICS9LPRS365BKLFT Mini Card: WirelessLan Bluetooth: Super I/O: IT8305E Azalia Codec: ALC262 Azalia MDC:	3.135V~3.3V~3.465V 3.135V~3.3V~3.465V 3.135V~3.3V~3.465V 3.135V~3.3V~3.465V 3.0V~3.3V~3.6V 3.135V~3.3V~3.465V 3.135V~3.3V~3.465V 3.0V~3.3V~3.6V 3.0V~3.3V~3.6V	105.3mA 78mA 308mA 1mA 5mA 1.3A 500mA
1.8VS	DVI	3.0V~3.3V~3.6V	120mA
3VA	ICH9M: RTC ICH9M:VCCSUS3_3 ICH9M:VCCCL3_3 ICH9M:VCCLAN3_3 LCD: Lan:AR8131 Azalia MDC: Flash ROM: BIOS	2V~3.3V~3.465V 3.135V~3.3V~3.465V 3.135V~3.3V~3.465V 3.135V~3.3V~3.465V 3.0V~3.3V~3.6V 3.0V~3.3V~3.6V 3.0V~3.3V~3.6V	6uA 212mA 73mA 78mA 2A 1A
5VS	Cardreader: RTS5159 Azalia Codec: ALC269 HDD: SATA ODD: SATA Audio AMP: G1432 Inverter: WebCam	3.0V~3.3V~3.6V 3.0V~3.3V~3.6V 4.75V~5.0V~5.25V 4.75V~5.0V~5.25V	Max: 1.5A ; R/W: 460mA ; STDBY: 70mA Max: 1.5A ; R/W: 900mA ; STDBY: 45mA
5VA	USB: x 2 ports USB	4.75V~5.0V~5.25V 5VA 5VA	1A 2A 1.5A
5VLA	Control Power		
3VLA	EC: ITE8512E	3.0V~3.3V~3.6V	300mA

INVENTEC			
BAP31 (Penryn+Cantiga+ICH9M)SFF			
ANNOTATIONS			
SIZE	CODE	DOC NUMBER	REV
Custom	X01	D-CS-1310A264501-ALG	X01
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6.Schematic modify Item and History :

2009.0108

- 1. ADD USB P3 for Docking, USB P5 for Finger printer, Modify CN5 -----P28
- 2. Modify CN20 to 50pin-----P33
- 3. Move PWR_SWIN# from CN14 to CN20
- 4. ADD TPM module-----P34

2009.0109

- 1. ADD DOCK_USB_EN, DOCK_CRT_IN#-----P32,33

2009.0112

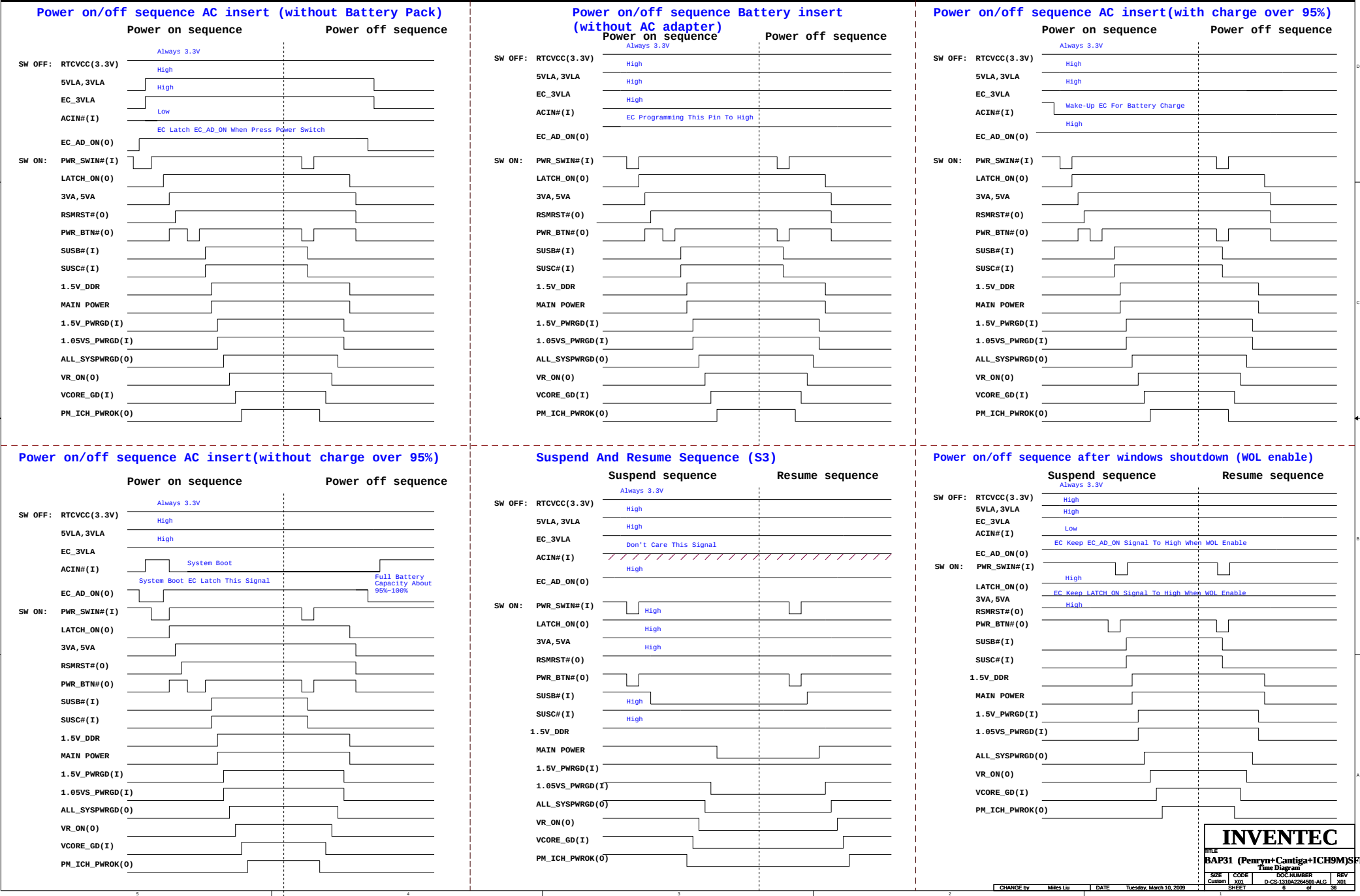
- 1. Change power item: R490,R291,BAT CNN TH PIN

INVENTEC			
TITLE BAP31 (Penryn+Cantiga+ICH9M)SFF			
Schematic Modify			
SIZE Custom	CODE X01	DOC NUMBER D-CS-1310A264501-ALG	REV X01
SHEET		5	38

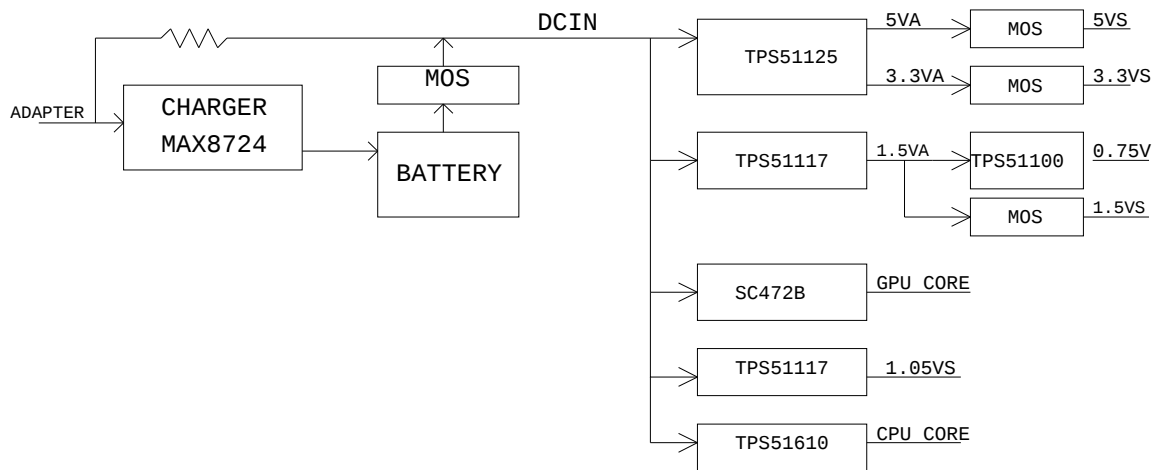
CHANGE by Milen Liu DATE Tuesday, March 10, 2009

SYSTEM POWER ON/OFF SEQUENCE

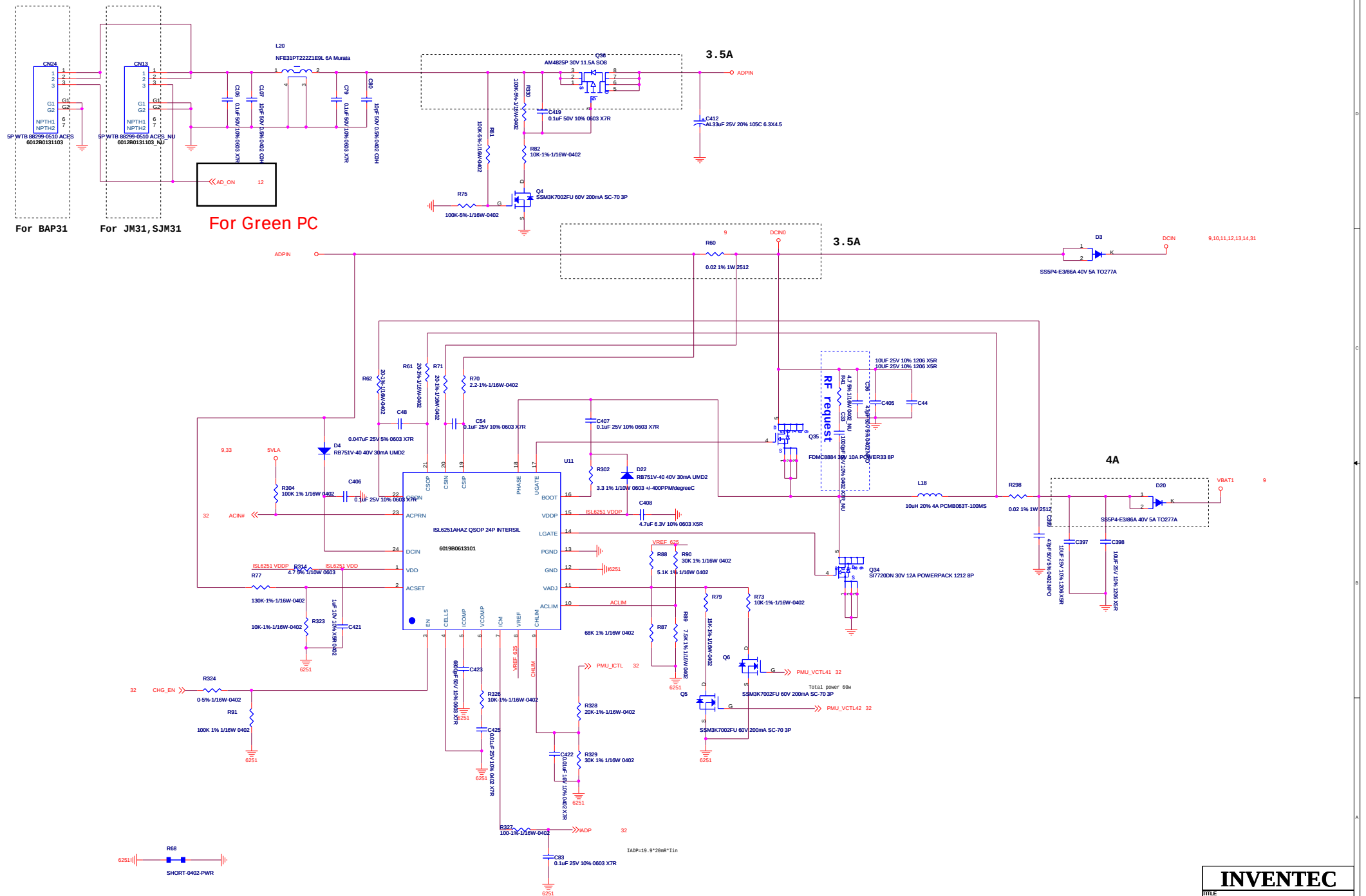
Drawing : Wendy, Huang



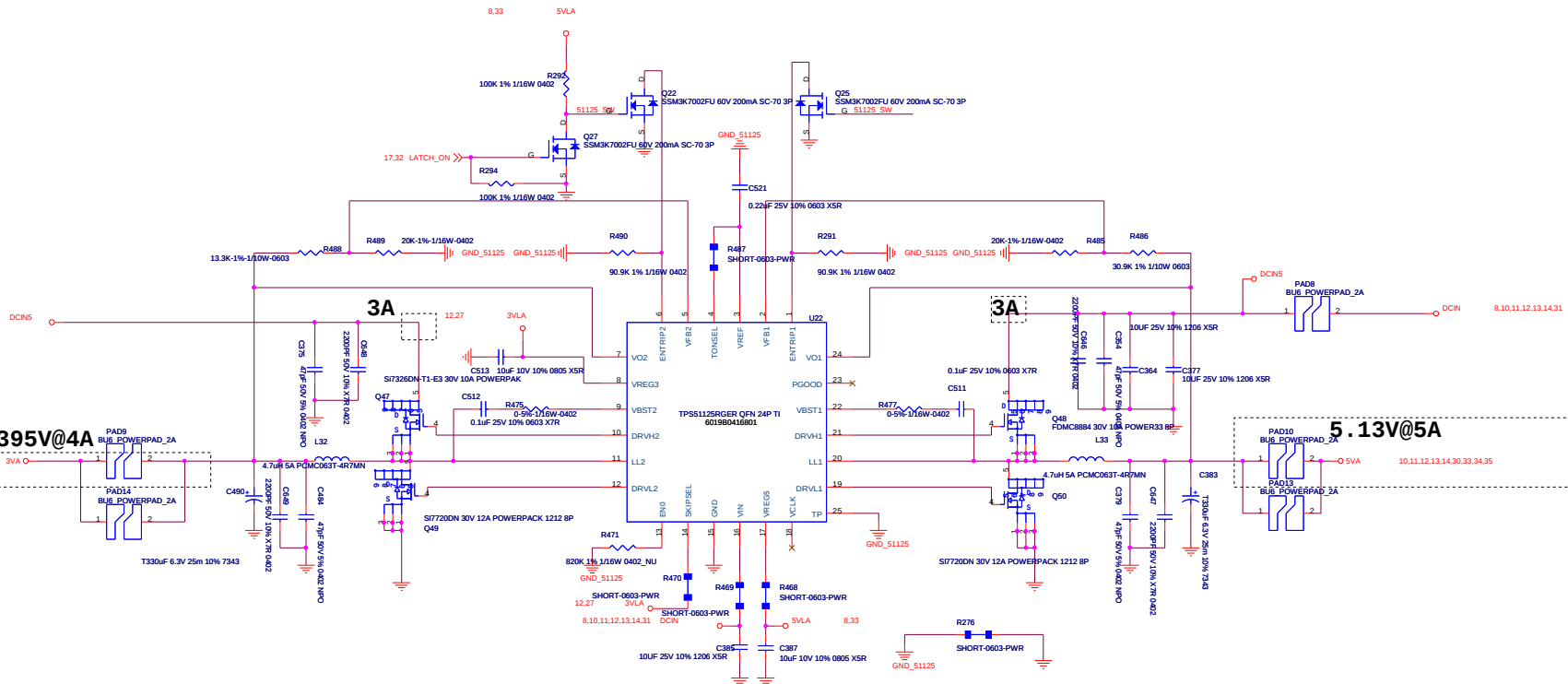
Power Block Diagram :



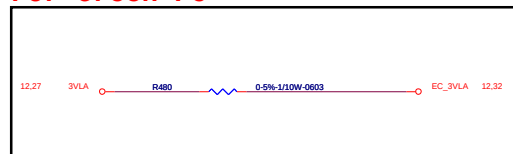
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TITLE BAP31 (Penryn+Cantiga+ICH9M)SFF			
Power Block Diagram			
SIZE C	CODE X01	DOC NUMBER D-CS-1310A264501-ALG	REV X01
SHEET		1	38



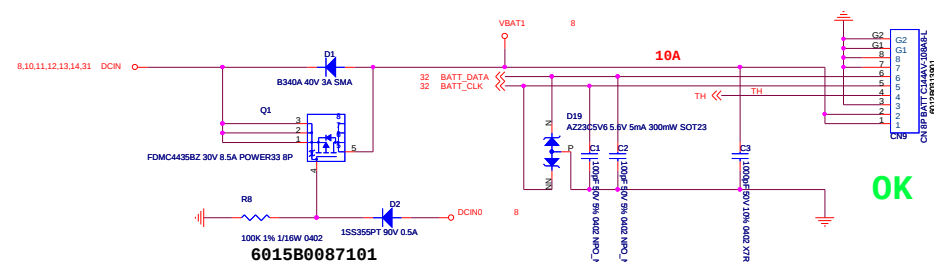
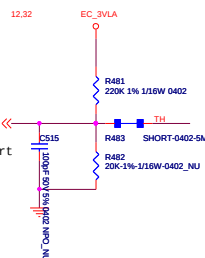
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TITLE BAP31 (Penryn+Cantiga+ICH9M)SE			
Adapter in / Charge			
SIZE Custom	CORE X01	DOC NUMBER D-CS-1310A2264501-ALG	REV X01
CHANGE by Miller Liu		DATE Tuesday, March 10, 2009	
SHEET 8		of 36	



For Green PC

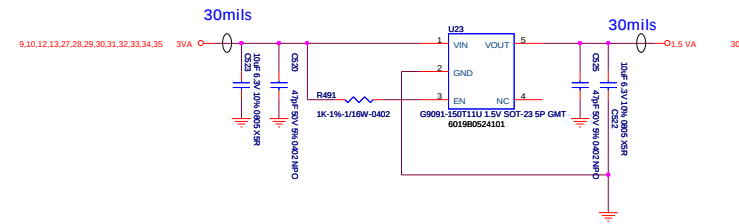


H: no battery
L: battery insert

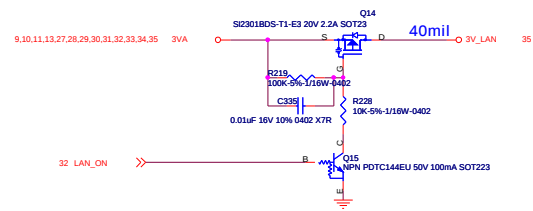
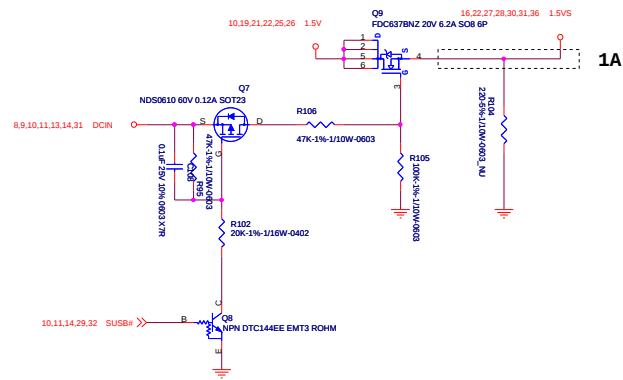


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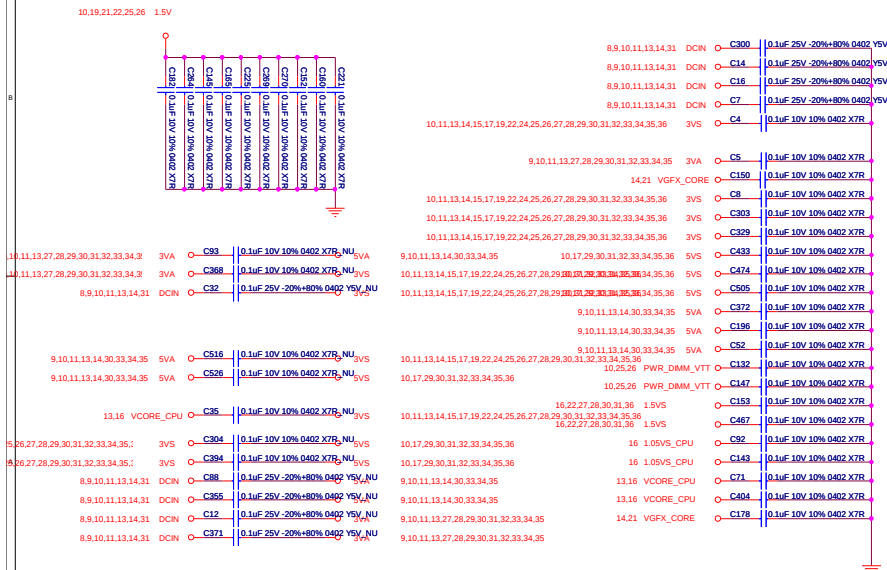
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TITLE			
BAP31 (Penryn+Caniga+ICH9M)SF			
SVLA5VA/3VLA3VA			
SIZE			
Custom	X01	DOC NUMBER	D-CS-1310A2264501-ALG
SHEET			
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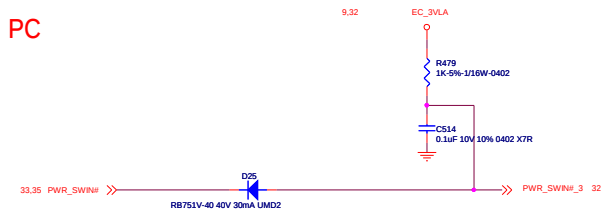
1.5VS



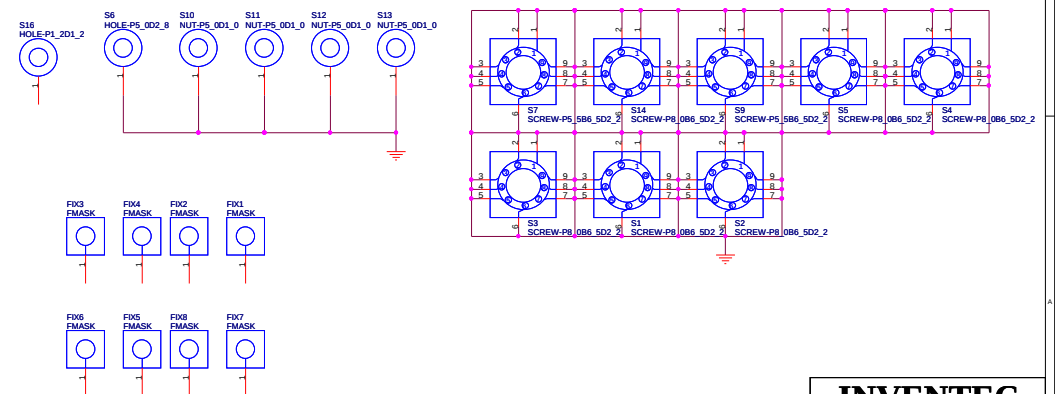
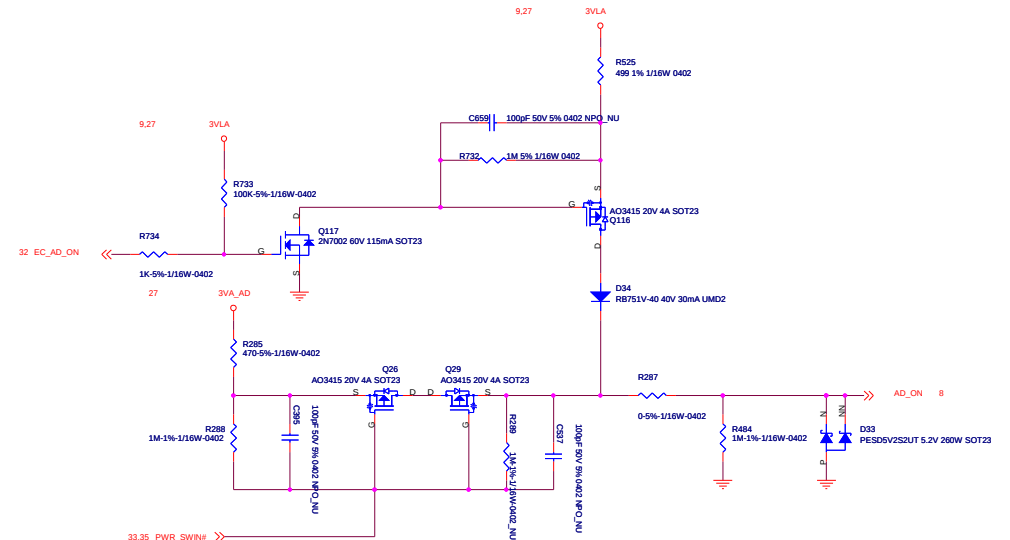
EMI Cap



For Green PC



None Green PC ---- NU

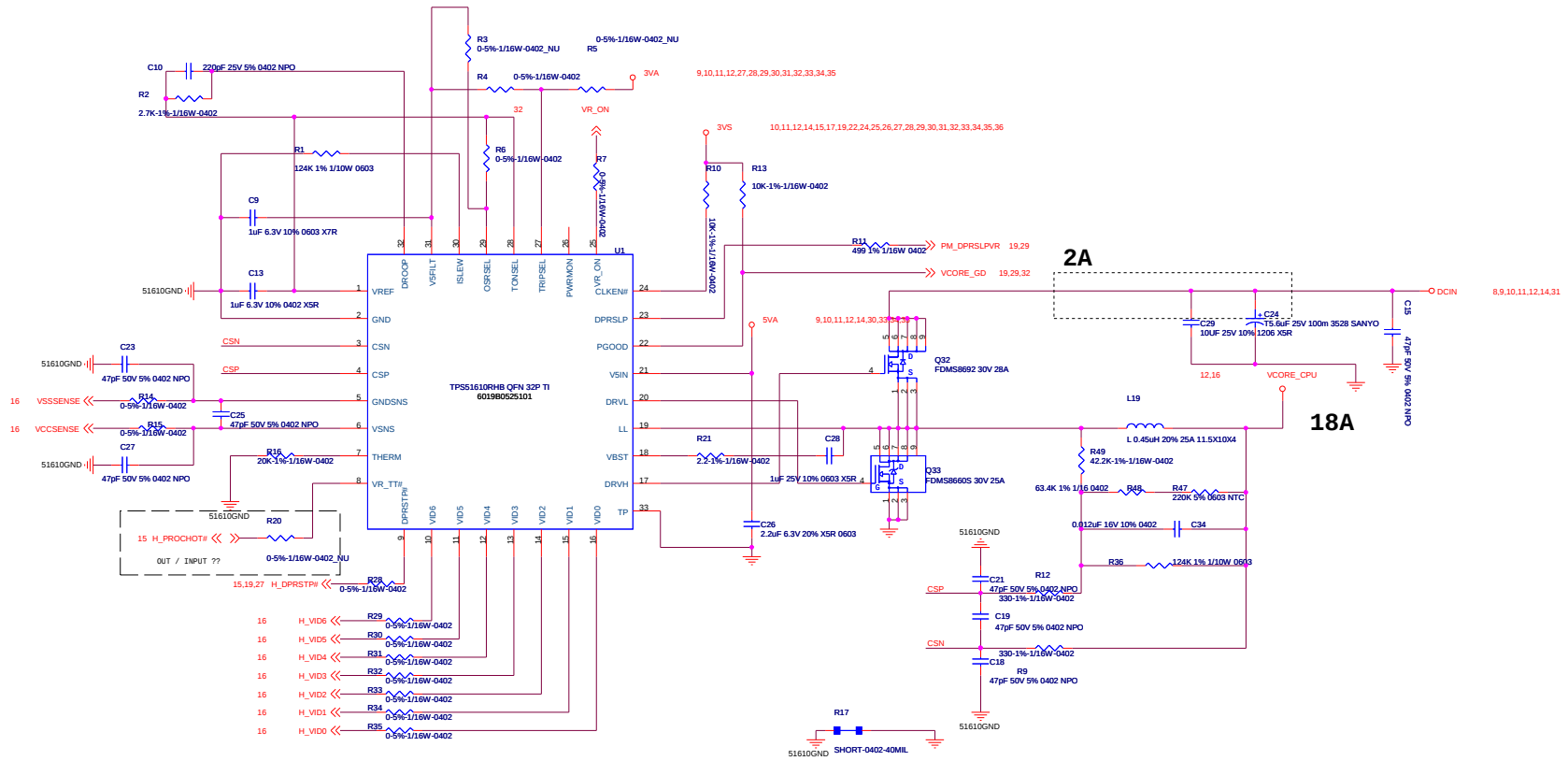


INVENTEC

TITLE	BAP31 (Penryn+Cantiga+ICH9M)SFI
	Power on latch

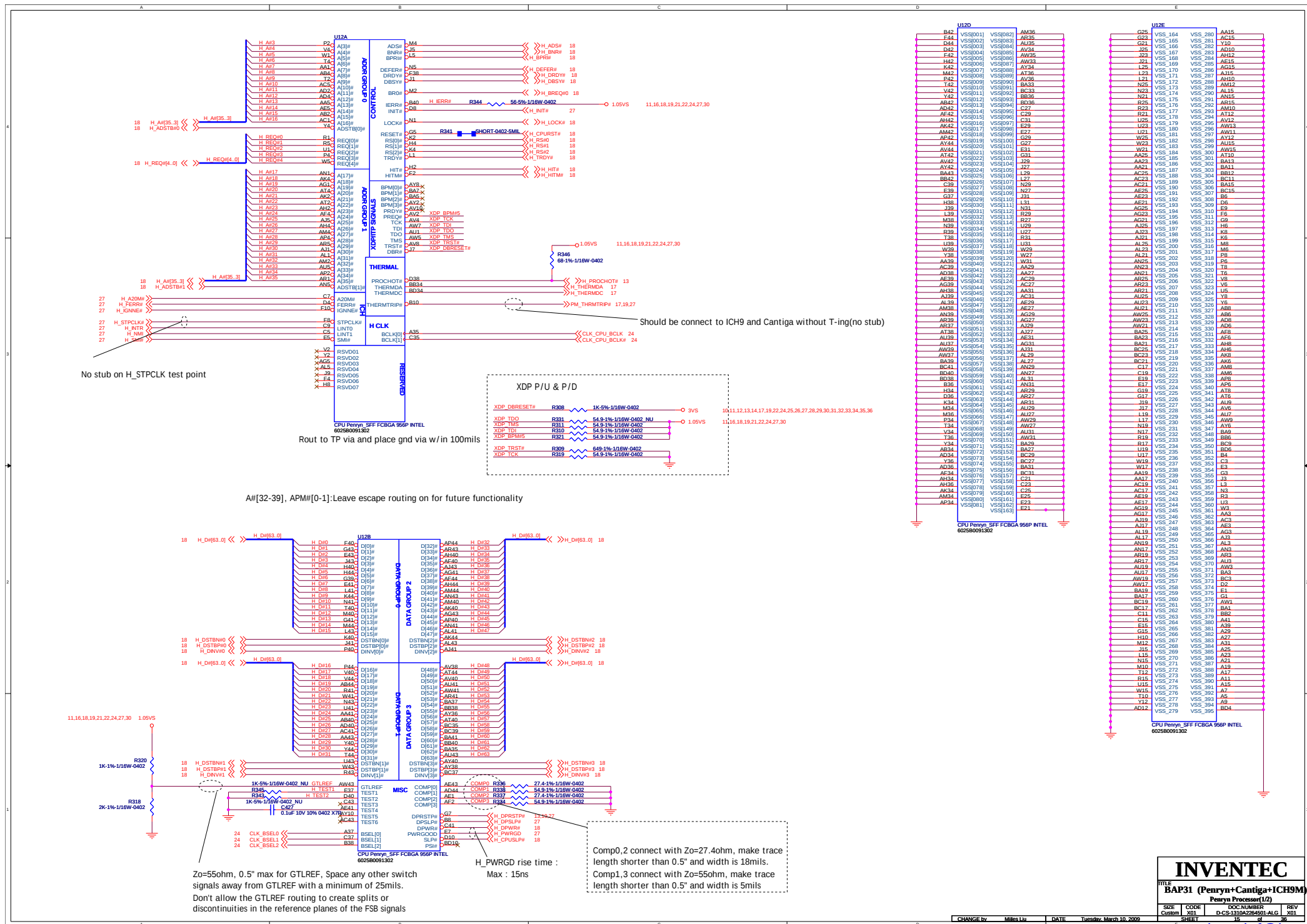
SIZE Custom	CODE X01	DOC. NUMBER D-CS-1310A2264501-ALG	REV X01
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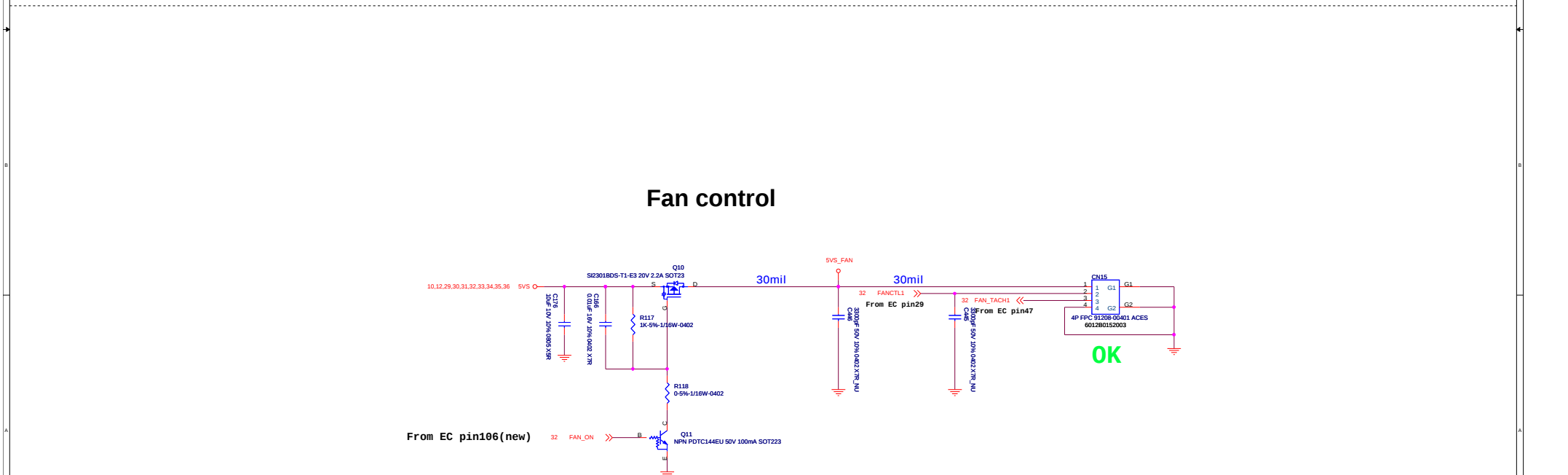
CHANGE by	Miles Liu	DATE	Tuesday, March 10, 2009
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INVENTEC				
TITLE BAP31 (Penryn+Cantiga+ICH9M)SFF				
CPU Core Power				
SIZE	CODE	DOC NUMBER	REV	
C	Y01	D-CS-1310A2264501ALG	Y01	
SHEET			13	of 13

CHANGE by: Miles Liu DATE: Tuesday, March 10, 2009



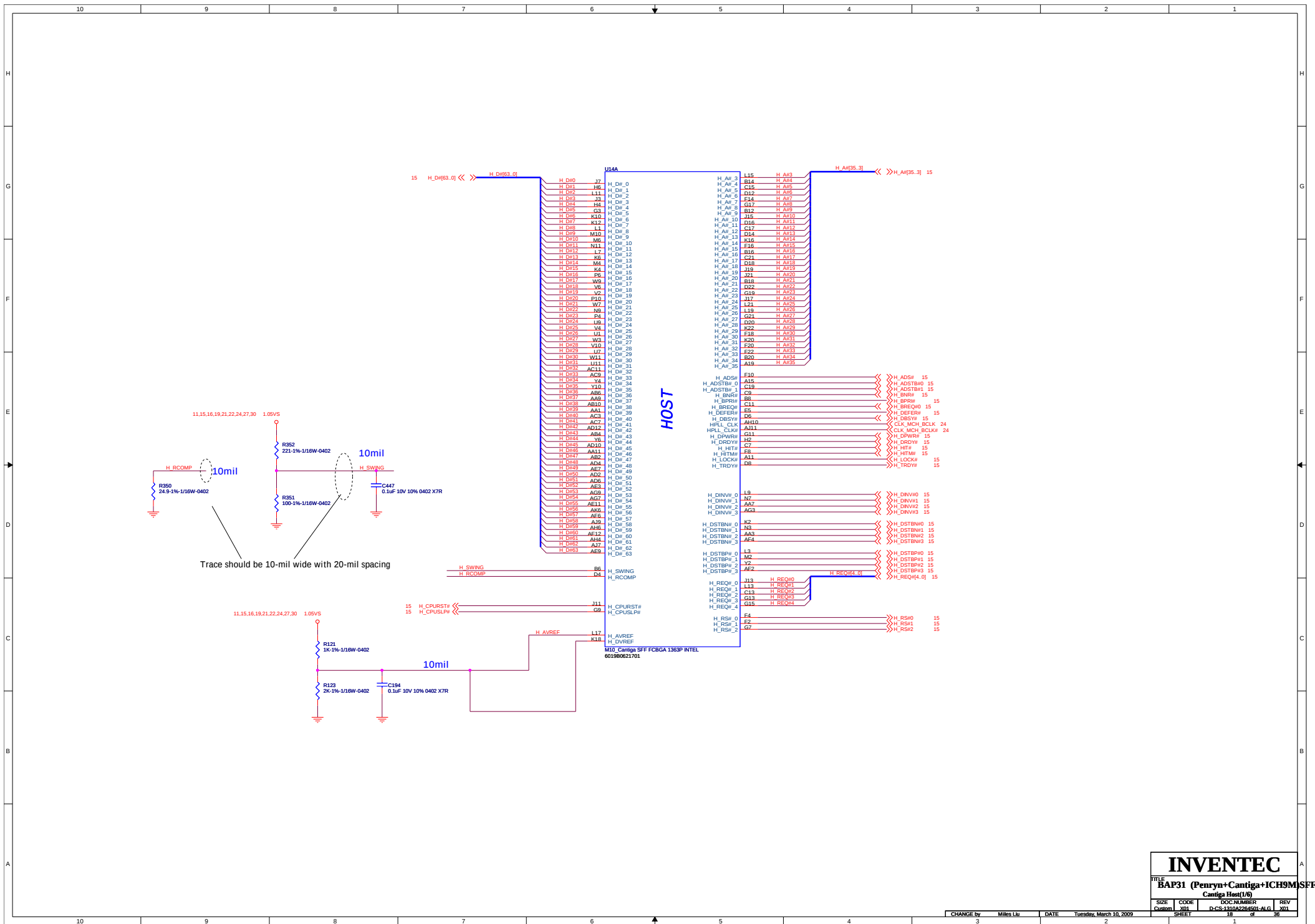
[illegible]

The schematic diagram illustrates the fan driver circuit for the ACES 601280152003. Key components and connections include:

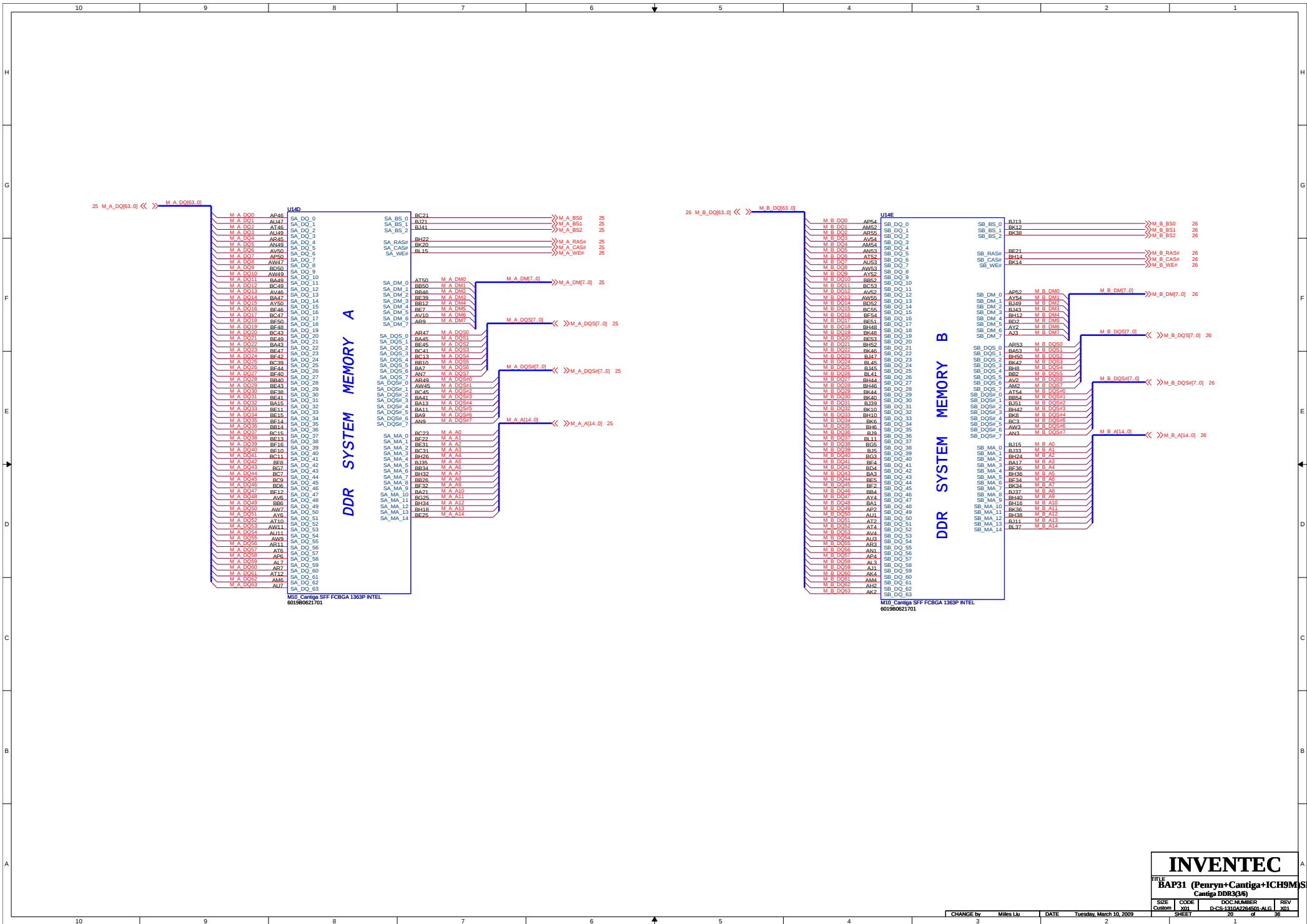
- 5V5_FAN**: Power supply for the fan.
- 30mil**: Trace width specification for the main power and signal lines.
- 32 FANCTL1**: Fan control signal from EC pin29.
- 32 FAN_TACH1**: Fan tachometer signal from EC pin47.
- 32 FAN_ON**: Fan on signal from EC pin106(new).
- 4P FPC 91208 00401 ACES 601280152003**: Fan connector.
- OK**: Confirmation of the circuit design.

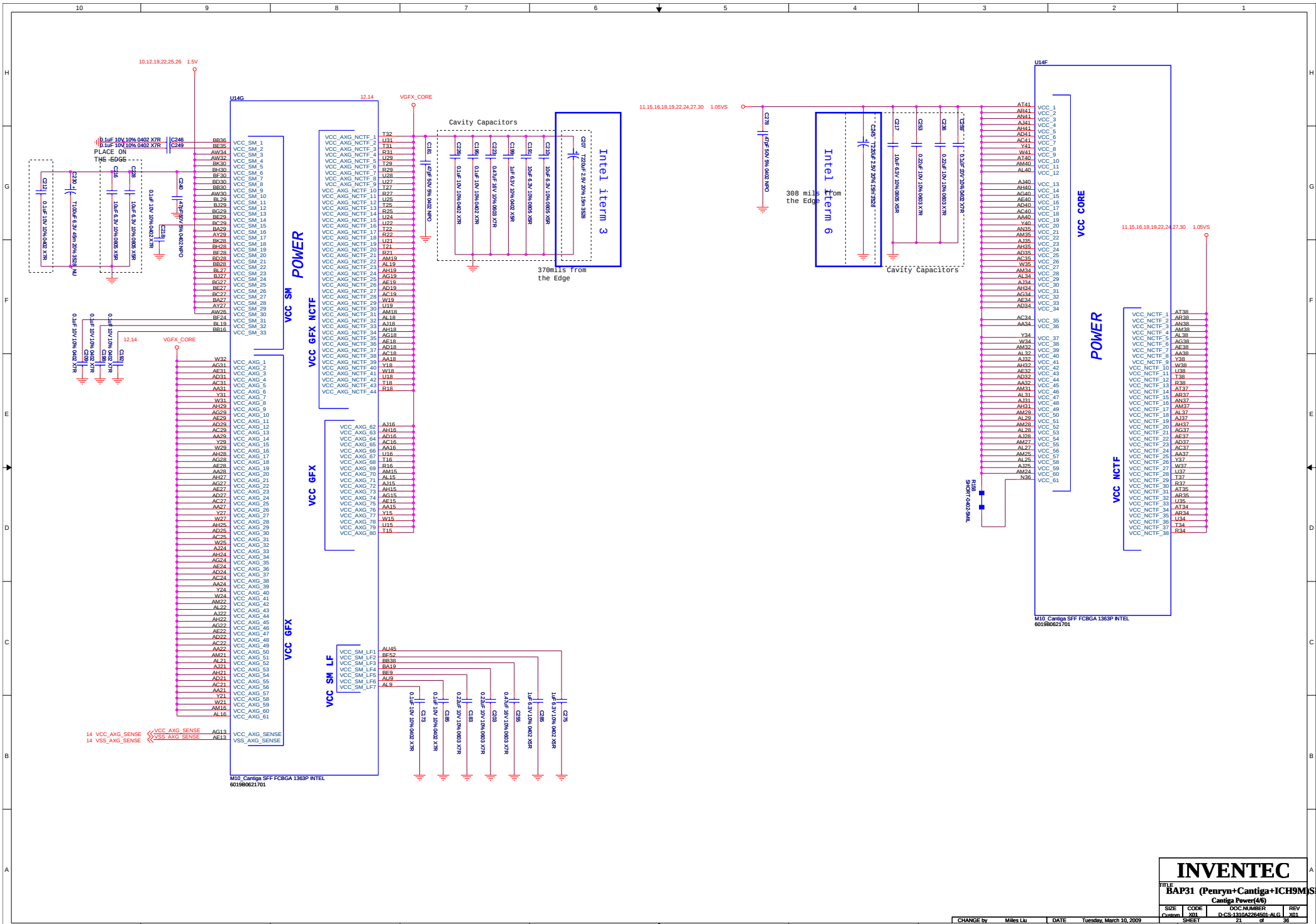


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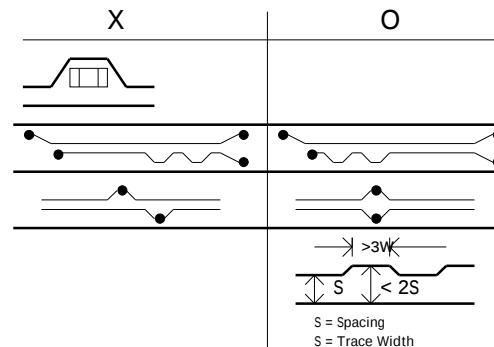
INVENTEC			
TITLE: BAP31 (Penryn+Contiga+ICH9M) SFF			
Contiga Power(46)			
SIZE: Custom	CODE: 101	DOC NUMBER: D-CS-1310A2264501-ALG	REV: 1
CHANGE By: Miles Lu		DATE: Tuesday, March 10, 2009	SHEET: 21 of 36

Breakout/in LA/LZ	Main Route LB/LV		Breakout/in LE/LV
Microstrip	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Microstrip
Microstrip	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Stripline
Microstrip	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Microstrip
Microstrip	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Stripline
Stripline	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Stripline
Stripline	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Microstrip
Stripline	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Stripline
Stripline	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Microstrip

Parameter	Main Route Guideline	Breakout Guideline
Uncoupled Single End Impedance	55 +/- 15%	55 +/- 15%
Nominal Trace Width	Inner Layer : 4 mils Outer Layer : 5 mils	
Nominal Diddifferential Pair-Pitch	Inner Layer : 7 mils Outer Layer : 7 mils	Inner Layer : 4 mils Outer Layer : 5 mils
Pair-to-Pair Pitch	Inner Layer : 37 mils Outer Layer : 37 mils	Inner Layer : 27 mils Outer Layer : 27 mils
Bus-to-Bus Pitch	Inner Layer : 22 mils Outer Layer : 20 mils	Inner Layer : 15 mils Outer Layer : 12 mils
Reference Plane	Ground	Ground
Splits/Voids	No routing over plane splits No routing over voids	
Trace Length-LA (GMCH Breakout)	Max = 250 mils	
Trace Length-LB (GMCH Breakout to Via2)	Max = 3600 mils	
Trace Length-LC (Via2 to Via3)	Max = 5900 mils	
Trace Length-LD (Via3 to ICH7m Breakout)	Max = 3600 mils	
Trace Length-LE (ICH7m Breakout)	Max = 400 mils	
Trace Length-L1 (LA+LB+LC+LD+LE)	Max = 8000 mils	
Trace Length-LV (ICH7m Breakout)	Max = 400 mils	
Trace Length-LW (ICH7m Breakout to Via2)	Max = 3600 mils	
Trace Length-LX (Via2 to Via3)	Max = 5900 mils	
Trace Length-LY (Via3 to GMCH Breakout)	Max = 3600 mils	
Trace Length-LZ (GMCH Breakout)	Max = 400 mils	
Trace Length-L2 (LV+LW+LX+LY+LZ)	Max = 8000 mils	

*** When routing near the edge of their reference plane , trace should maintain at least 40 mils space to the edge of the plane

*** Match the trace lengths of the complementary signals within each differential pair to +/- 5 mils



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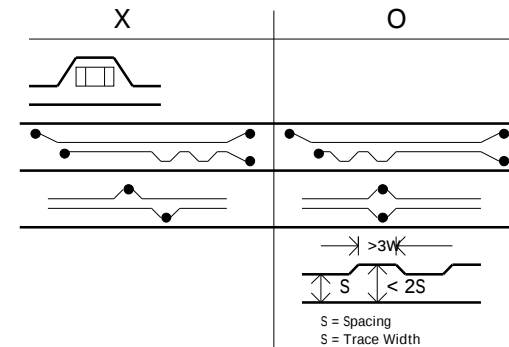
graph LR
    subgraph GMCH
        Tx1[Tx]
        Rx1[Rx]
    end
    subgraph ExpressMiniCard [Express/Mini Card]
        Rx2[Rx]
        Tx2[Tx]
    end
    Tx1 --- LA[LA]
    LA --- LB[LB]
    LB --- LC[LC]
    LC --- Rx2
    Rx1 --- LZ[LZ]
    LZ --- LY[LY]
    LY --- Tx2
  
```

Breakout/in LA/LZ	Main Route LB/LC/LY	Main Route LD/LW	Breakout/in LE/LV
Stripline	Microstrip	Same Routing layer as LE/LV	Microstrip

Parameter	Main Route Guideline	Breakout Guideline
Uncoupled Single End Impedance	55 +/- 15%	55 +/- 15%
Nominal Trace Width	Inner Layer : 4 mils Outer Layer : 5 mils	Inner Layer : 4 mils Outer Layer : 5 mils
Nominal Differential Trace Space	Inner Layer : 7 mils Outer Layer : 7 mils	Inner Layer : 4 mils Outer Layer : 5 mils
Pair-to-Pair Pitch	Inner Layer : 37 mils Outer Layer : 37 mils	Inner Layer : 27 mils Outer Layer : 27 mils
Bus-to-Bus Pitch	Inner Layer : 20 mils Outer Layer : 20 mils	Inner Layer : 15 mils Outer Layer : 12 mils
Reference Plane	Ground	Ground
Splits/Voids	No routing over plane splits No routing over voids	
Trace Length-LA (ICH7m Breakout)	Max = 400 mils	
Trace Length-LB (ICH7m Breakout to AC cap)	Max = 10750 mils	
Trace Length-LC (AC cap to PCIe CN)	Max = 10750 mils	
Trace Length-L1 (LA+LB+LC)	Max = 12000 mils	
Trace Length-LY (PCIe CN to ICH7m Breakout)	Max = 11950 mils	
Trace Length-LZ (ICH7m Breakout)	Max = 400 mils	
Trace Length-L2 (LY+LZ)	Max = 12000 mils	

*** When routing near the edge of their reference plane , trace should maintain at least 40 mils space to the edge of the plane

*** Match the trace lengths of the complementary signals within each differential pair to ± 5 mils



TITLE	BAP31 (Penryn+Cantiga+ICH9M)SFF
	Cantiga Ground(6/6)

SIZE	CODE	DOC. NUMBER	REV
Custom	X01	D-CS-1310A2264501-ALG	X01
SHEET		23	of 36

The diagram illustrates the PCB layout for the SO-DIMM0 module. It includes a detailed pinout table on the right side, listing signals such as M_A, M_Q, M_D, M_C, M_S, M_W, M_V, M_P, M_T, M_R, M_N, M_M, M_L, M_K, M_J, M_I, M_H, M_G, M_F, M_E, M_D, M_C, M_B, M_A, M_0, M_1, M_2, M_3, M_4, M_5, M_6, M_7, M_8, M_9, M_10, M_11, M_12, M_13, M_14, M_15, M_16, M_17, M_18, M_19, M_20, M_21, M_22, M_23, M_24, M_25, M_26, M_27, M_28, M_29, M_30, M_31, M_32, M_33, M_34, M_35, M_36, M_37, M_38, M_39, M_40, M_41, M_42, M_43, M_44, M_45, M_46, M_47, M_48, M_49, M_50, M_51, M_52, M_53, M_54, M_55, M_56, M_57, M_58, M_59, M_60, M_61, M_62, M_63, M_64, M_65, M_66, M_67, M_68, M_69, M_70, M_71, M_72, M_73, M_74, M_75, M_76, M_77, M_78, M_79, M_80, M_81, M_82, M_83, M_84, M_85, M_86, M_87, M_88, M_89, M_90, M_91, M_92, M_93, M_94, M_95, M_96, M_97, M_98, M_99, M_100, M_101, M_102, M_103, M_104, M_105, M_106, M_107, M_108, M_109, M_110, M_111, M_112, M_113, M_114, M_115, M_116, M_117, M_118, M_119, M_120, M_121, M_122, M_123, M_124, M_125, M_126, M_127, M_128, M_129, M_130, M_131, M_132, M_133, M_134, M_135, M_136, M_137, M_138, M_139, M_140, M_141, M_142, M_143, M_144, M_145, M_146, M_147, M_148, M_149, M_150, M_151, M_152, M_153, M_154, M_155, M_156, M_157, M_158, M_159, M_160, M_161, M_162, M_163, M_164, M_165, M_166, M_167, M_168, M_169, M_170, M_171, M_172, M_173, M_174, M_175, M_176, M_177, M_178, M_179, M_180, M_181, M_182, M_183, M_184, M_185, M_186, M_187, M_188, M_189, M_190, M_191, M_192, M_193, M_194, M_195, M_196, M_197, M_198, M_199, M_200, M_201, M_202, M_203, M_204, M_205, M_206, M_207, M_208, M_209, M_210, M_211, M_212, M_213, M_214, M_215, M_216, M_217, M_218, M_219, M_220, M_221, M_222, M_223, M_224, M_225, M_226, M_227, M_228, M_229, M_230, M_231, M_232, M_233, M_234, M_235, M_236, M_237, M_238, M_239, M_240, M_241, M_242, M_243, M_244, M_245, M_246, M_247, M_248, M_249, M_250, M_251, M_252, M_253, M_254, M_255, M_256, M_257, M_258, M_259, M_260, M_261, M_262, M_263, M_264, M_265, M_266, M_267, M_268, M_269, M_270, M_271, M_272, M_273, M_274, M_275, M_276, M_277, M_278, M_279, M_280, M_281, M_282, M_283, M_284, M_285, M_286, M_287, M_288, M_289, M_290, M_291, M_292, M_293, M_294, M_295, M_296, M_297, M_298, M_299, M_300, M_301, M_302, M_303, M_304, M_305, M_306, M_307, M_308, M_309, M_310, M_311, M_312, M_313, M_314, M_315, M_316, M_317, M_318, M_319, M_320, M_321, M_322, M_323, M_324, M_325, M_326, M_327, M_328, M_329, M_330, M_331, M_332, M_333, M_334, M_335, M_336, M_337, M_338, M_339, M_340, M_341, M_342, M_343, M_344, M_345, M_346, M_347, M_348, M_349, M_350, M_351, M_352, M_353, M_354, M_355, M_356, M_357, M_358, M_359, M_360, M_361, M_362, M_363, M_364, M_365, M_366, M_367, M_368, M_369, M_370, M_371, M_372, M_373, M_374, M_375, M_376, M_377, M_378, M_379, M_380, M_381, M_382, M_383, M_384, M_385, M_386, M_387, M_388, M_389, M_390, M_391, M_392, M_393, M_394, M_395, M_396, M_397, M_398, M_399, M_400, M_401, M_402, M_403, M_404, M_405, M_406, M_407, M_408, M_409, M_410, M_411, M_412, M_413, M_414, M_415, M_416, M_417, M_418, M_419, M_420, M_421, M_422, M_423, M_424, M_425, M_426, M_427, M_428, M_429, M_430, M_431, M_432, M_433, M_434, M_435, M_436, M_437, M_438, M_439, M_440, M_441, M_442, M_443, M_444, M_445, M_446, M_447, M_448, M_449, M_450, M_451, M_452, M_453, M_454, M_455, M_456, M_457, M_458, M_459, M_460, M_461, M_462, M_463, M_464, M_465, M_466, M_467, M_468, M_469, M_470, M_471, M_472, M_473, M_474, M_475, M_476, M_477, M_478, M_479, M_480, M_481, M_482, M_483, M_484, M_485, M_486, M_487, M_488, M_489, M_490, M_491, M_492, M_493, M_494, M_495, M_496, M_497, M_498, M_499, M_500, M_501, M_502, M_503, M_504, M_505, M_506, M_507, M_508, M_509, M_510, M_511, M_512, M_513, M_514, M_515, M_516, M_517, M_518, M_519, M_520, M_521, M_522, M_523, M_524, M_525, M_526, M_527, M_528, M_529, M_530, M_531, M_532, M_533, M_534, M_535, M_536, M_537, M_538, M_539, M_540, M_541, M_542, M_543, M_544, M_545, M_546, M_547, M_548, M_549, M_550, M_551, M_552, M_553, M_554, M_555, M_556, M_557, M_558, M_559, M_560, M_561, M_562, M_563, M_564, M_565, M_566, M_567, M_568, M_569, M_570, M_571, M_572, M_573, M_574, M_575, M_576, M_577, M_578, M_579, M_580, M_581, M_582, M_583, M_584, M_585, M_586, M_587, M_588, M_589, M_590, M_591, M_592, M_593, M_594, M_595, M_596, M_597, M_598, M_599, M_600, M_601, M_602, M_603, M_604, M_605, M_606, M_607, M_608, M_609, M_610, M_611, M_612, M_613, M_614, M_615, M_616, M_617, M_618, M_619, M_620, M_621, M_622, M_623, M_624, M_625, M_626, M_627, M_628, M_629, M_630, M_631, M_632, M_633, M_634, M_635, M_636, M_637, M_638, M_639, M_640, M_641, M_642, M_643, M_644, M_645, M_646, M_647, M_648, M_649, M_650, M_651, M_652, M_653, M_654, M_655, M_656, M_657, M_658, M_659, M_660, M_661, M_662, M_663, M_664, M_665, M_666, M_667, M_668, M_669, M_670, M_671, M_672, M_673, M_674, M_675, M_676, M_677, M_678, M_67

PDF 檔案以 "PDF 製作工廠" 試用版建立 <http://www.fineprint.com>

TITLE			
BAP31 (Penryn+Cantiga+ICH9M)SFF			
DDR3 SDRAM SO-DIMM0			
SIZE	CODE	DOC NUMBER	REV
Custom	X01	D-CS-1310A264501-ALG	X01
SHEET		25	of 26

			Custom	X01	D-CS-1310A2264501-ALG	X01
CHANGE by	Miles Liu	DATE	Tuesday, March 10, 2009	SHEET	25	of 36

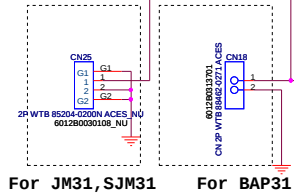
The image displays a detailed PCB layout for an SO-DIMM1 module. The layout includes a central component labeled 'SO-DIMM1' with various pins and connections. Key components and their values are listed in the table below:

Component	Value	Notes
C151	2.2uF 6.3V 20% XSR 0603	
C146	0.1uF 10V 10% 0402 X7R	
C172	2.2uF 6.3V 20% XSR 0603	
C174	0.1uF 10V 10% 0402 X7R	
C307	2.2uF 6.3V 20% XSR 0603	
C314	0.1uF 10V 10% 0402 X7R	
C137	0.1uF 10V 10% 0402 X7R	
C138	0.1uF 10V 10% 0402 X7R	
C139	0.1uF 10V 10% 0402 X7R	
C140	0.1uF 10V 10% 0402 X7R	
C141	0.1uF 10V 10% 0402 X7R	
C142	0.1uF 10V 10% 0402 X7R	
C143	0.1uF 10V 10% 0402 X7R	
C144	0.1uF 10V 10% 0402 X7R	
C145	0.1uF 10V 10% 0402 X7R	
C146	0.1uF 10V 10% 0402 X7R	
C147	0.1uF 10V 10% 0402 X7R	
C148	0.1uF 10V 10% 0402 X7R	
C149	0.1uF 10V 10% 0402 X7R	
C150	0.1uF 10V 10% 0402 X7R	
C151	0.1uF 10V 10% 0402 X7R	
C152	0.1uF 10V 10% 0402 X7R	
C153	0.1uF 10V 10% 0402 X7R	
C154	0.1uF 10V 10% 0402 X7R	
C155	0.1uF 10V 10% 0402 X7R	
C156	0.1uF 10V 10% 0402 X7R	
C157	0.1uF 10V 10% 0402 X7R	
C158	0.1uF 10V 10% 0402 X7R	
C159	0.1uF 10V 10% 0402 X7R	
C160	0.1uF 10V 10% 0402 X7R	
C161	0.1uF 10V 10% 0402 X7R	
C162	0.1uF 10V 10% 0402 X7R	
C163	0.1uF 10V 10% 0402 X7R	
C164	0.1uF 10V 10% 0402 X7R	
C165	0.1uF 10V 10% 0402 X7R	
C166	0.1uF 10V 10% 0402 X7R	
C167	0.1uF 10V 10% 0402 X7R	
C168	0.1uF 10V 10% 0402 X7R	
C169	0.1uF 10V 10% 0402 X7R	
C170	0.1uF 10V 10% 0402 X7R	
C171	0.1uF 10V 10% 0402 X7R	
C172	0.1uF 10V 10% 0402 X7R	
C173	0.1uF 10V 10% 0402 X7R	
C174	0.1uF 10V 10% 0402 X7R	
C175	0.1uF 10V 10% 0402 X7R	
C176	0.1uF 10V 10% 0402 X7R	
C177	0.1uF 10V 10% 0402 X7R	
C178	0.1uF 10V 10% 0402 X7R	
C179	0.1uF 10V 10% 0402 X7R	
C180	0.1uF 10V 10% 0402 X7R	
C181	0.1uF 10V 10% 0402 X7R	
C182	0.1uF 10V 10% 0402 X7R	
C183	0.1uF 10V 10% 0402 X7R	
C184	0.1uF 10V 10% 0402 X7R	
C185	0.1uF 10V 10% 0402 X7R	
C186	0.1uF 10V 10% 0402 X7R	
C187	0.1uF 10V 10% 0402 X7R	
C188	0.1uF 10V 10% 0402 X7R	
C189	0.1uF 10V 10% 0402 X7R	
C190	0.1uF 10V 10% 0402 X7R	
C191	0.1uF 10V 10% 0402 X7R	
C192	0.1uF 10V 10% 0402 X7R	
C193	0.1uF 10V 10% 0402 X7R	
C194	0.1uF 10V 10% 0402 X7R	
C195	0.1uF 10V 10% 0402 X7R	
C196	0.1uF 10V 10% 0402 X7R	
C197	0.1uF 10V 10% 0402 X7R	
C198	0.1uF 10V 10% 0402 X7R	
C199	0.1uF 10V 10% 0402 X7R	
C200	0.1uF 10V 10% 0402 X7R	
C201	0.1uF 10V 10% 0402 X7R	
C202	0.1uF 10V 10% 0402 X7R	
C203	0.1uF 10V 10% 0402 X7R	
C204	0.1uF 10V 10% 0402 X7R	
C205	0.1uF 10V 10% 0402 X7R	
C206	0.1uF 10V 10% 0402 X7R	
C207	0.1uF 10V 10% 0402 X7R	
C208	0.1uF 10V 10% 0402 X7R	
C209	0.1uF 10V 10% 0402 X7R	
C210	0.1uF 10V 10% 0402 X7R	
C211	0.1uF 10V 10% 0402 X7R	
C212	0.1uF 10V 10% 0402 X7R	
C213	0.1uF 10V 10% 0402 X7R	</

RTC Circuit

1. RC delay time should be in the range of 18-25ms
2. It is recommended that this larger capacitor and small resistor value in order to reduce the likelihood of glitching of RTCRST#

1. The ICH7m requires a length less than 1 inch on each branch (from crystal's terminal to RTCXn ball)
2. Routing the RTC circuit should be kept simple to simplify the trace length measurement and increase accuracy on calculating trace capacitances
3. On FR-4, a 5-mils trace has approximately 2pF per inch
4. Trace signal coupling must limited as much as possible by avoiding the routing of adjacent PCI signals close to RTCX1 and RTCX2
5. Ground guard plane is highly recommended

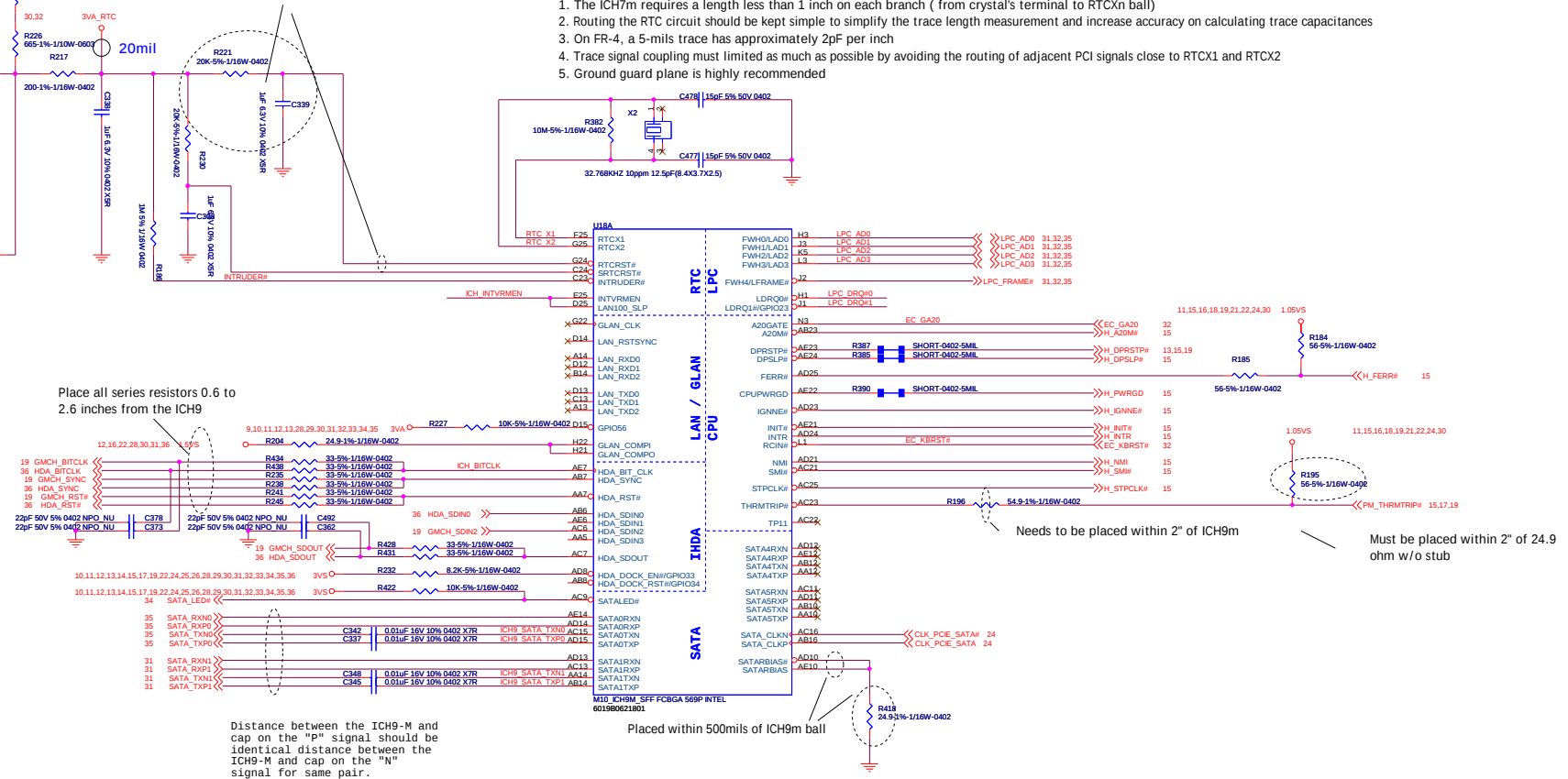


For Green PC



123
CABLE_ROUND_3POS_75mm.I_RTC_NU
6027B0066801

RTC Battery Life :
220mAh(220000uAh) / 6uA = 4.2 year



ICH8m internal VR enable strap

	Enable	Disable
INTVRMEN	1(Default)	0

Internal VRM enabled for
VccSus1_05, VccSus1_5,
VccCL1_5, VccLAN1_05 and
VccCL1_05

ACZ_SDATA0 strap functionality base on RSV9 strap
XOR chain entrance (RSV9 pulled low)
PCIe port config bit 1(RSV9 not pulled low)

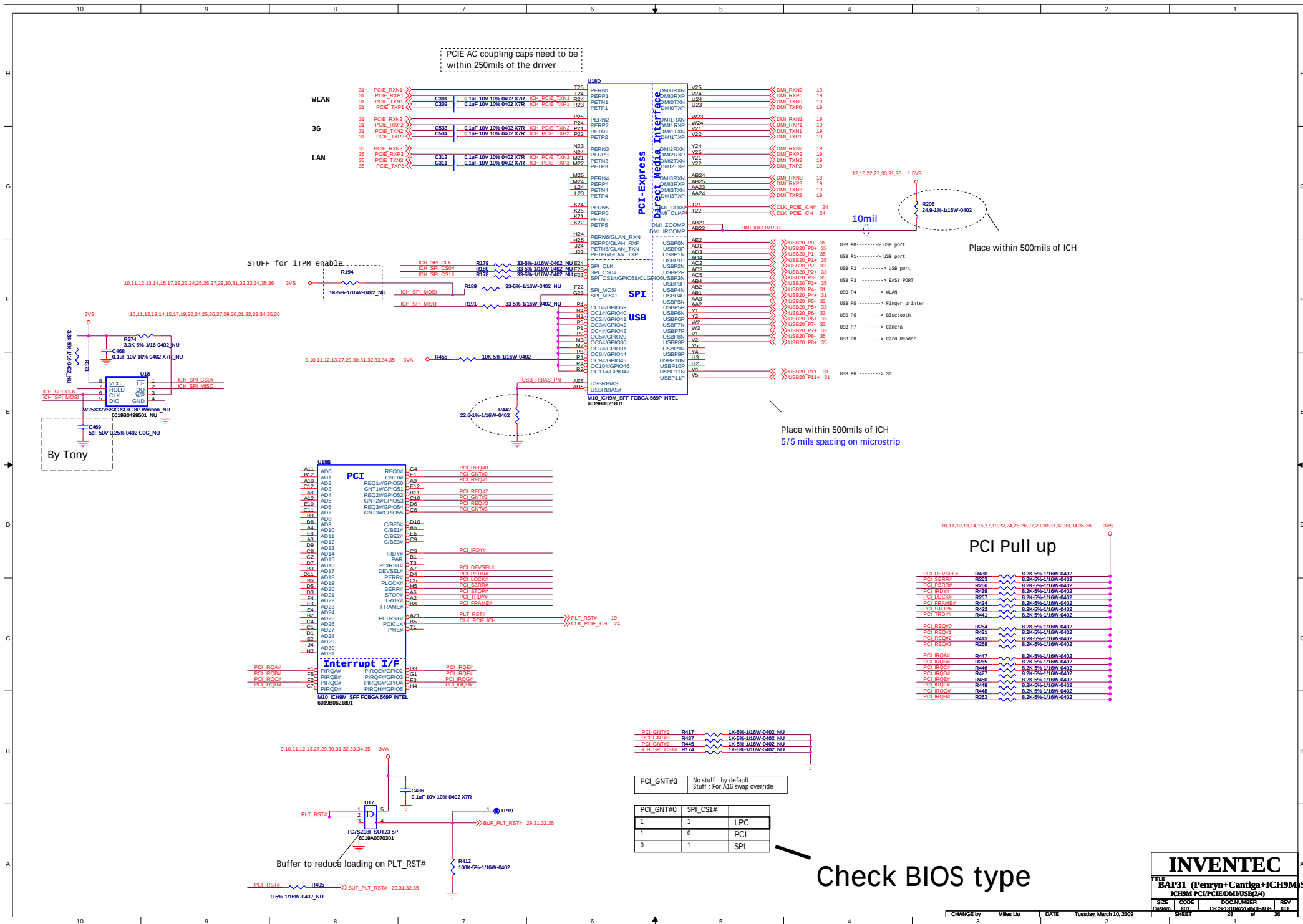
ICH TP3	HDA S000	Description
0	0	Normal
0	1	Enter XOR Chain
1	0	Normal Operation (Default)
1	1	Set PCIe port config bit 1

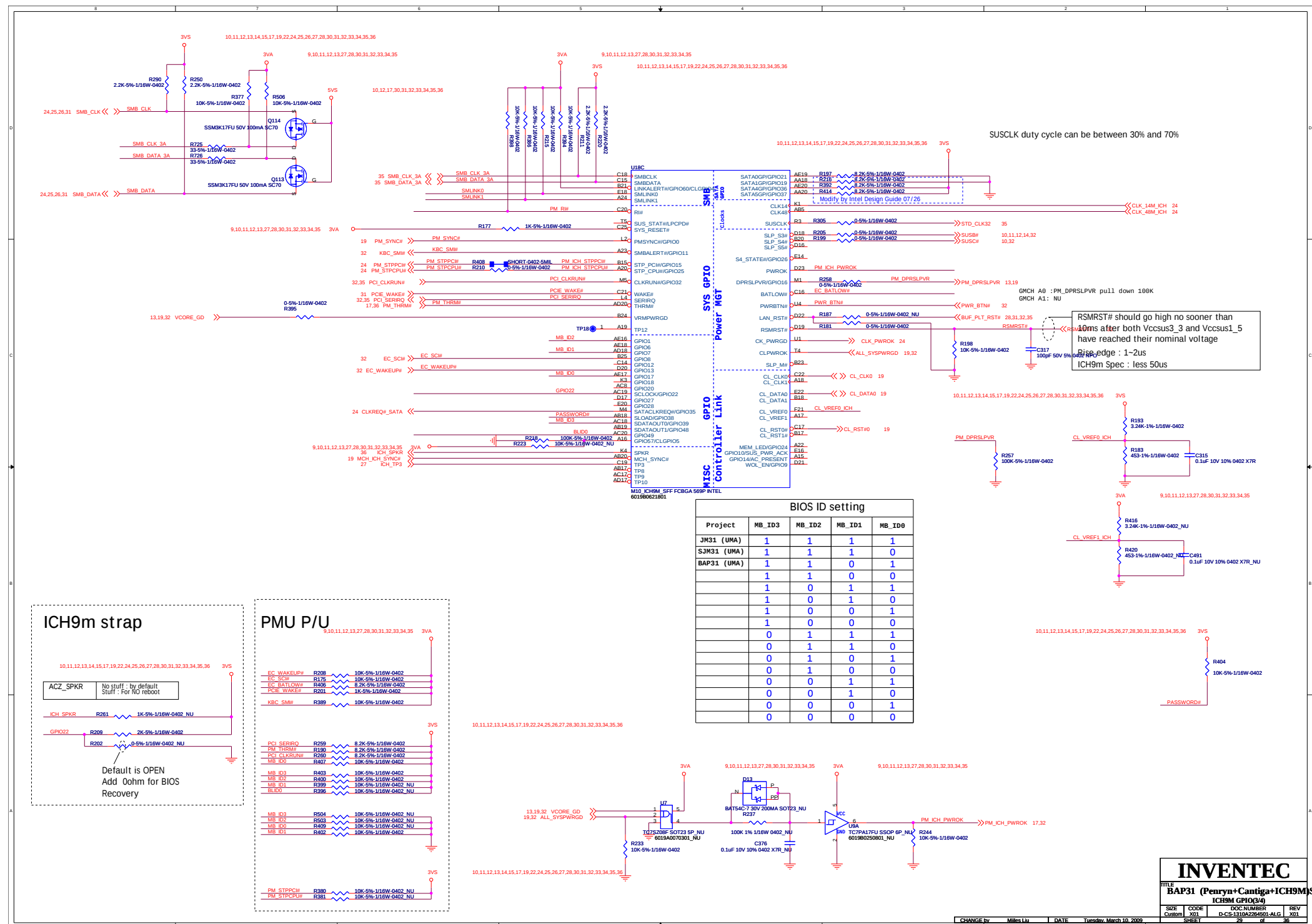
INVENTEC

TITLE
BAP31 (Penryn+Contiga+ICH9M)SFF
ICH9M CPU/IDE/SATA(1/4)

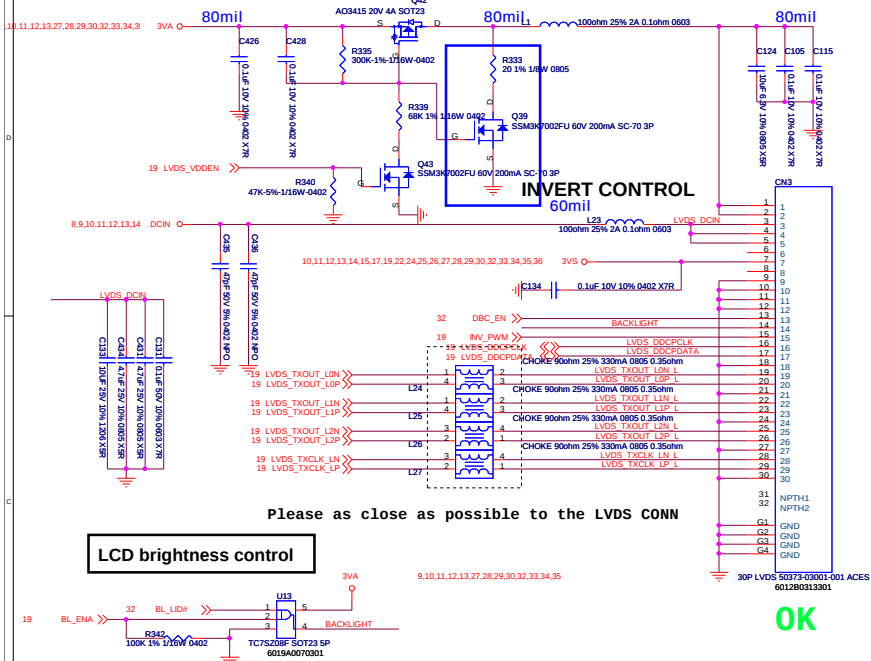
SIZE	CODE	DOC NUMBER	REV
Custom	X01	D-CS-1310A2264501-ALG	X01

SHEET 27 of 36

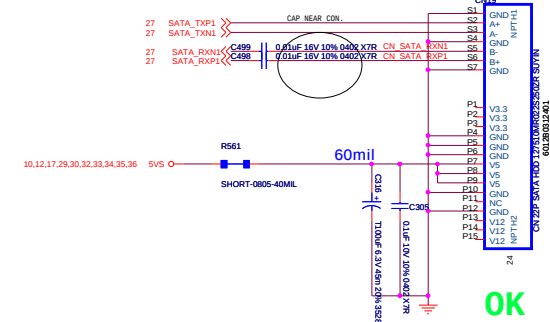




LVDS Interface

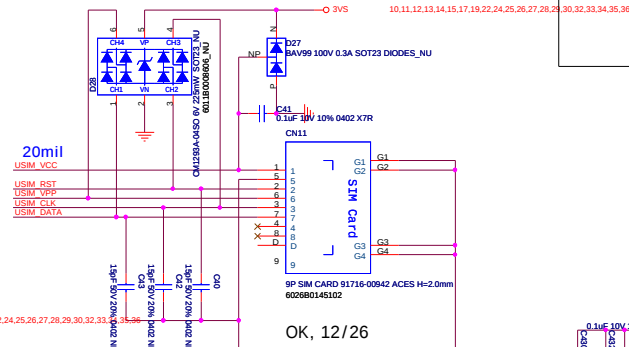


HDD I/F

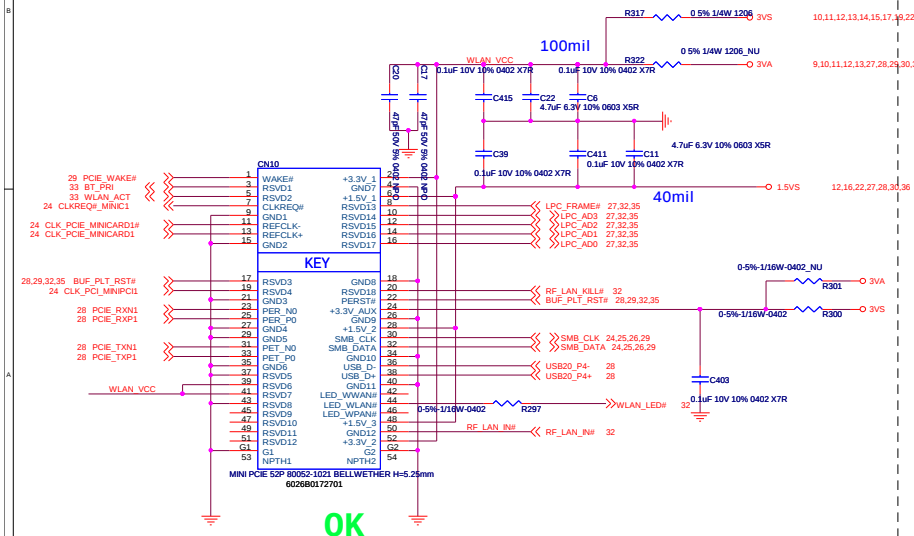


SIM CARD slot

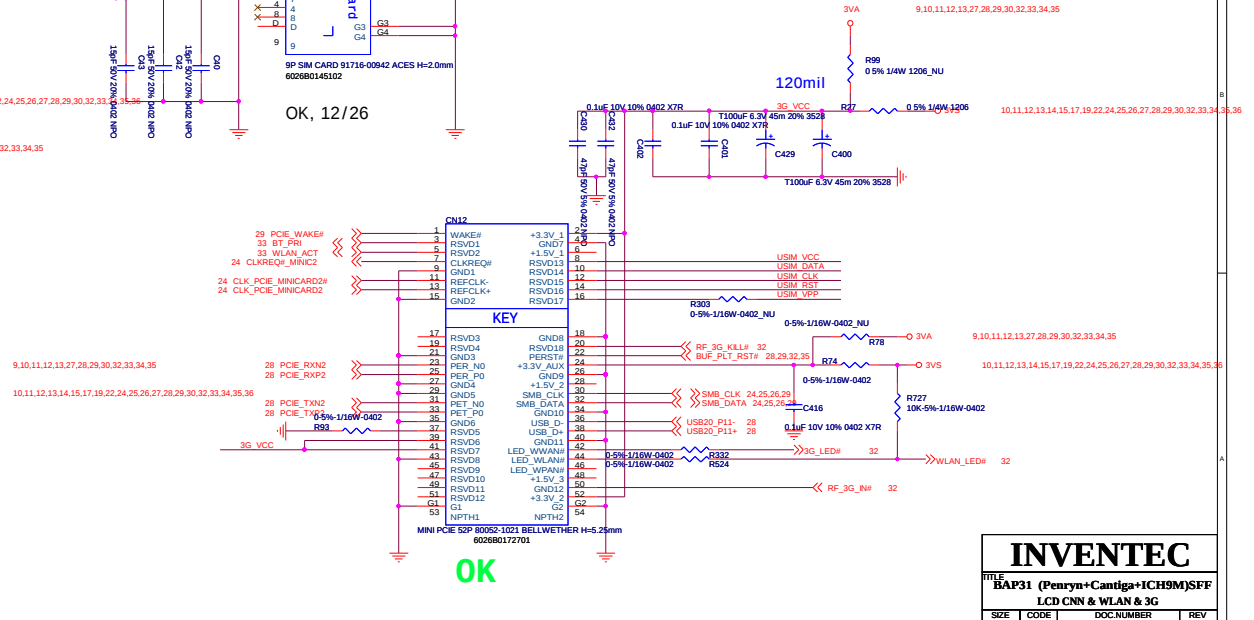
On Chip 5V to 3.3V regulator. No external regulator required
On-chip power MOSFETs for supplying flash media card power.



PCIE Mini Card(WLAN)

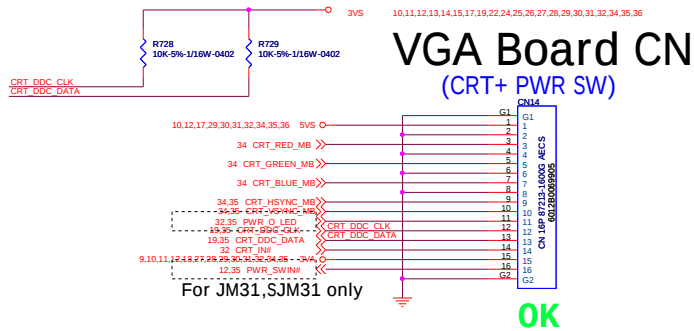


PCIE Mini Card for 3G

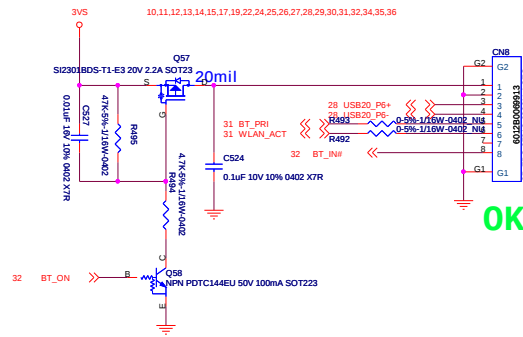


INVENTEC

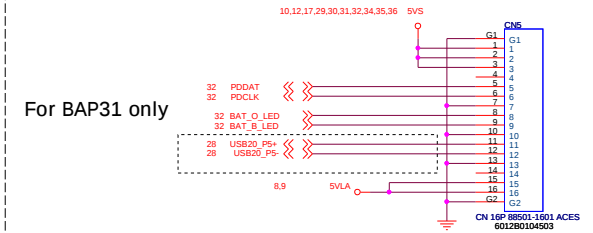
MODEL: BAP31 (Penryn+Centiga+ICH9M)SFP
LCD CNN & WLAN & 3G
SIZE: Custom
SHEET: 31 of 36



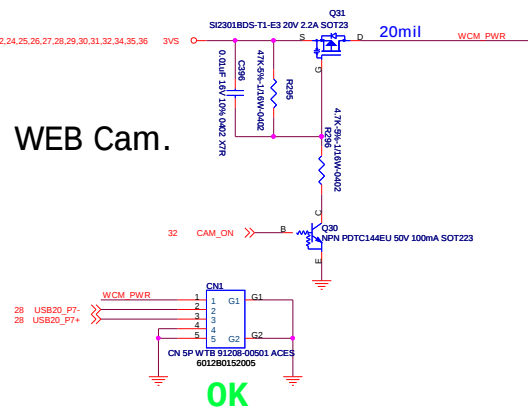
Bluetooth CON.



GLIDE PAD Board

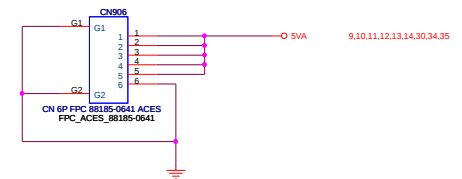
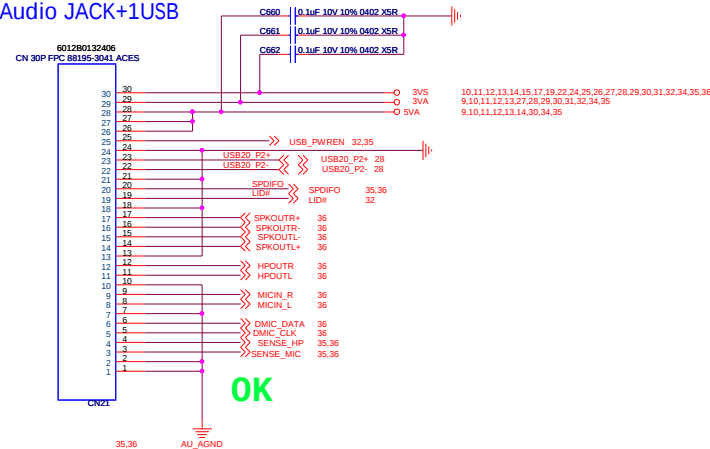


WEB Cam.



AUDIO Board CN

(Audio JACK+1USB)



INVENTEC

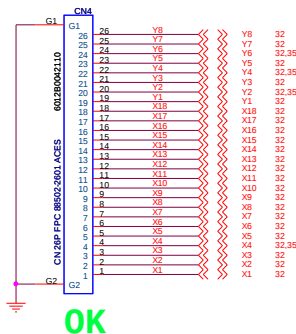
BAP31 (Penryn+Cantiga+ICH9M) Motherboard

SIZE: Custom CODE: X01 DOC NUMBER: D-CS-1310A2264501-ALG REV: X01

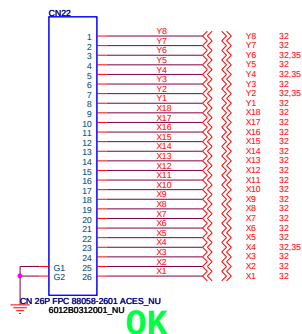
CHANGE by: Millis Lin DATE: Tuesday, March 10, 2009 SHEET: 33 of 36

To K/B(For JM31,BAP31)

To K/B (For SJM31)



OK

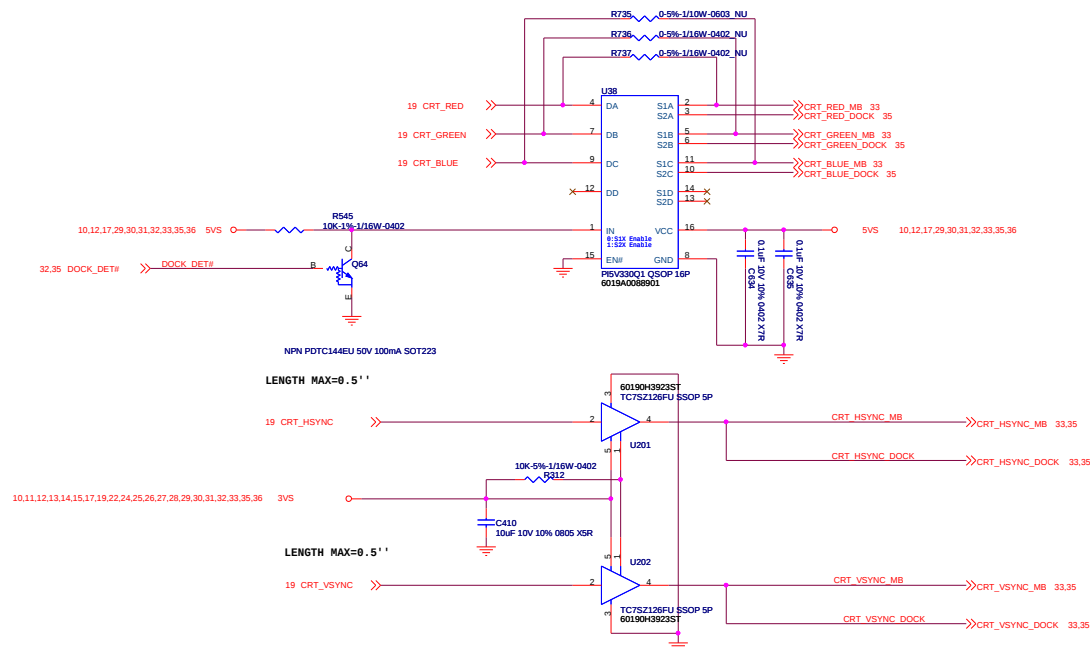
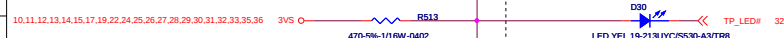


OK

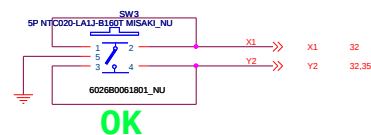
GP lock Button / LED(FOR SJM31)

GP lock Button / LED(FOR BAP31)

GP lock Button / LED(FOR JM31)

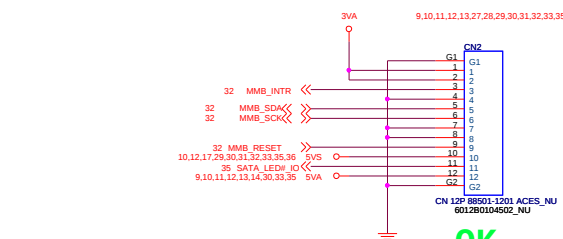
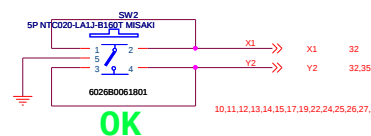


SW (FOR SJM31)



SW Sensor BOARD(For JM31,SJM31)

SW (FOR JM31,BAP31)



INVENTEC

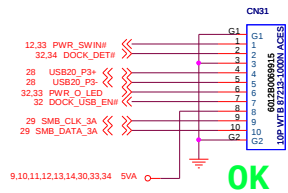
BAP31 (Penryn+Camtiga+ICH9M)SFF

DOC NUMBER D-CS-1310A264501-ALG

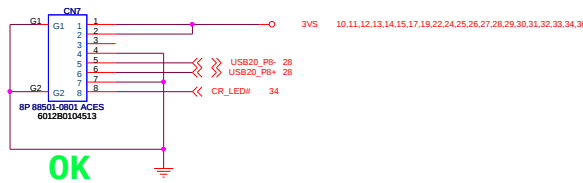
REV X01

CHANGE by Millis Lin DATE Tuesday, March 10, 2009

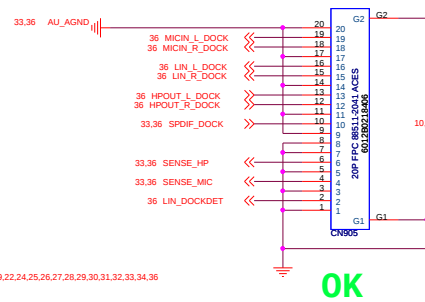
MB(USB) TO EASY/B



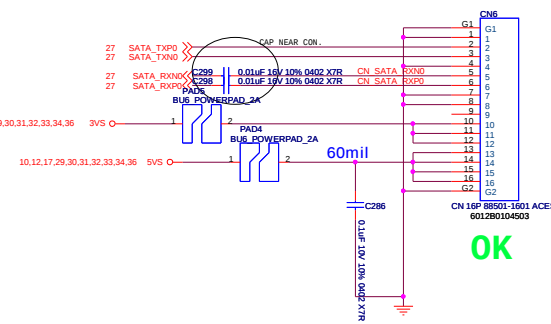
Card Reader BOARD CN



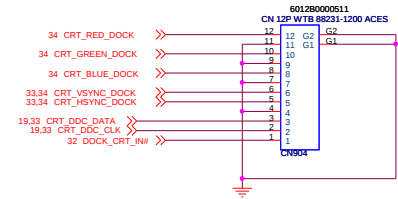
MB(AUDIO) TO EASY/B(For BAP31)



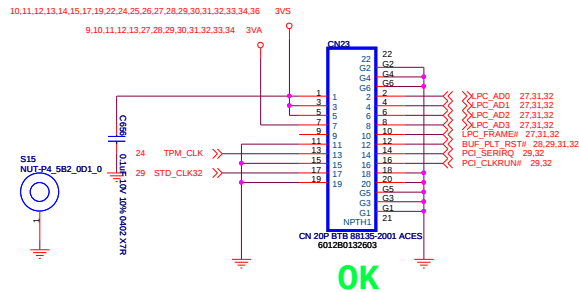
SSD I/F



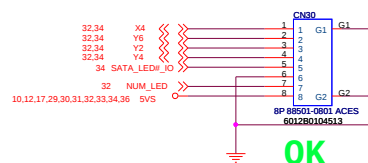
MB(RGB) TO EASY/B



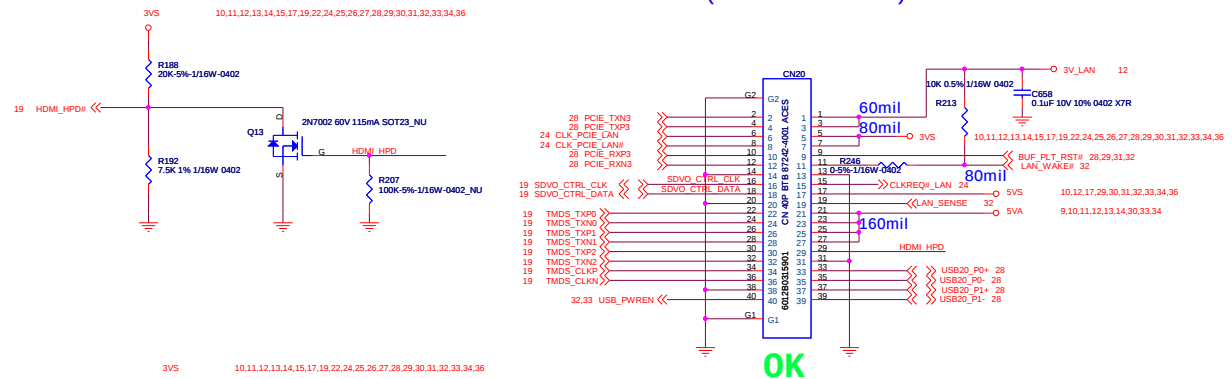
TPM CN



SW/B CN



USB Board CN (LAN+HDMI+2USB)



INVENTEC

TITLE
BAP31 (Penryn+Cantiga+ICH9M)SFF

SIZE CODE DOC NUMBER REV
Custom X01 D-CS-1310A2264501-ALG X01

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