

# S-SERIES 2009

## INVICTA (Intel-Discrete)

### MV Build (A03) - Final

2009.03.18

DATE	CHANGE NO.	REV

DRAWER		EE	DATE	POWER	DATE	<div>INVENTEC</div> <div>TITLE</div> <div>INVICTA Cycle1</div>
DESIGN						
CHECK						
RESPONSIBLE						
SIZE = 3						
FILE NAME : XXXX-XXXXXX-XX				VER :		
P/N : XXXXXXXXXX						<div>SIZE</div> <div>A3</div>
						<div>CODE</div> <div>CS</div>
						<div>DOC. NUMBER</div> <div>J310A22527-0-MTR</div>
						<div>REV</div> <div>A03</div>

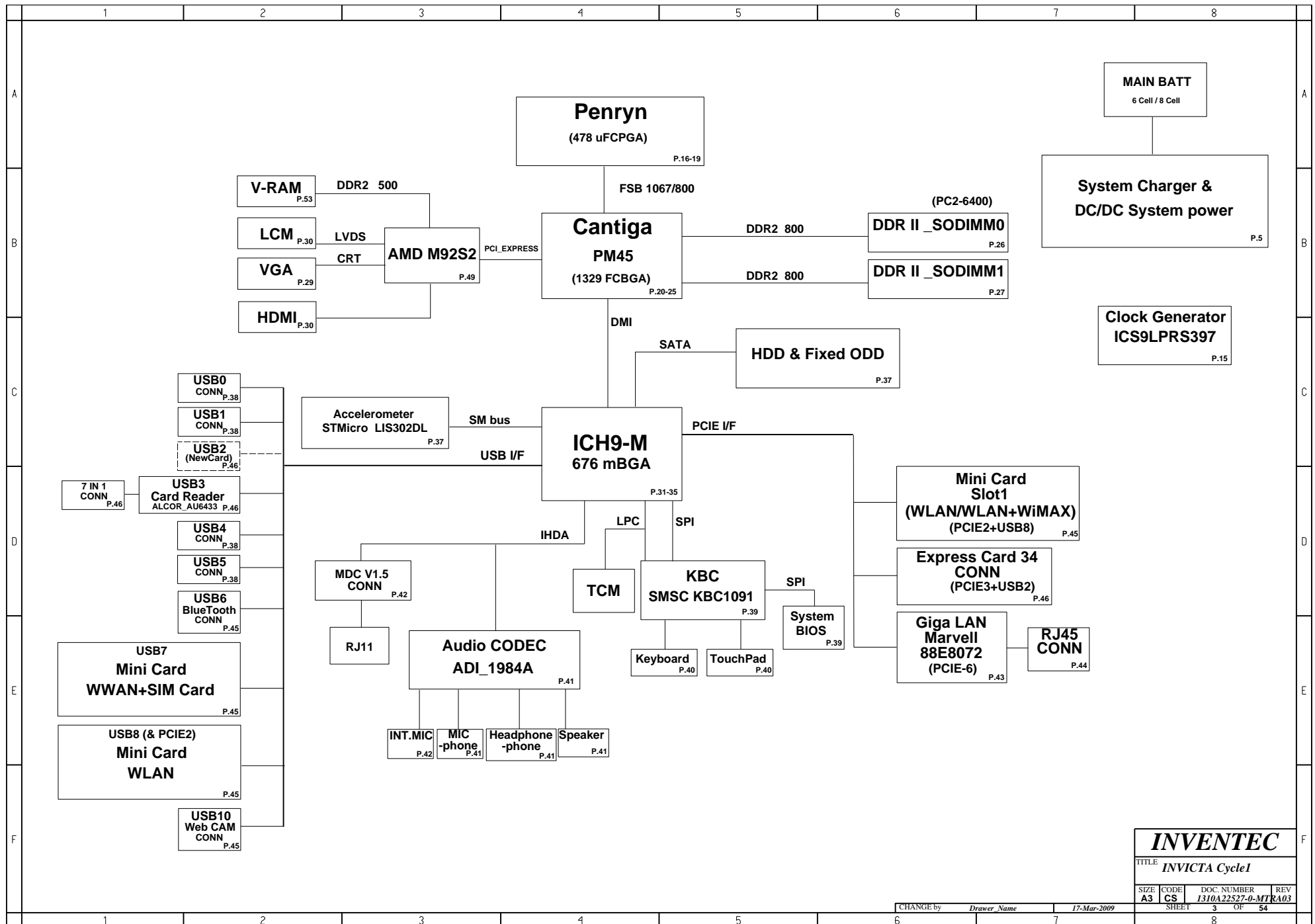
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**INVENTEC**

TITLE <b>INVICTA Cycle1</b> Contents			
SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>1310A22527-0-MTR</b>	REV <b>A03</b>
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CHANGE by *Drawer Name* 17-Mar-2009



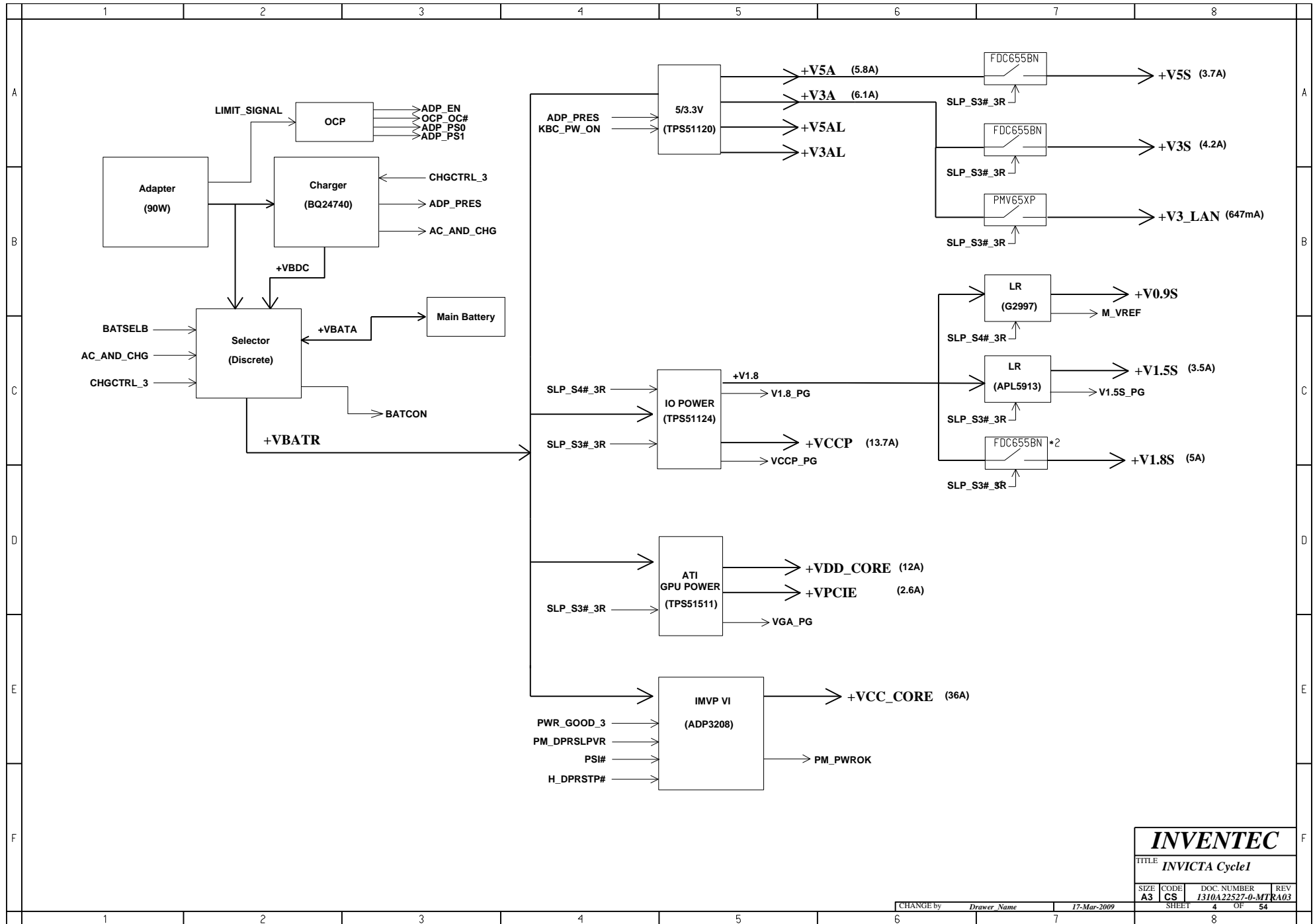
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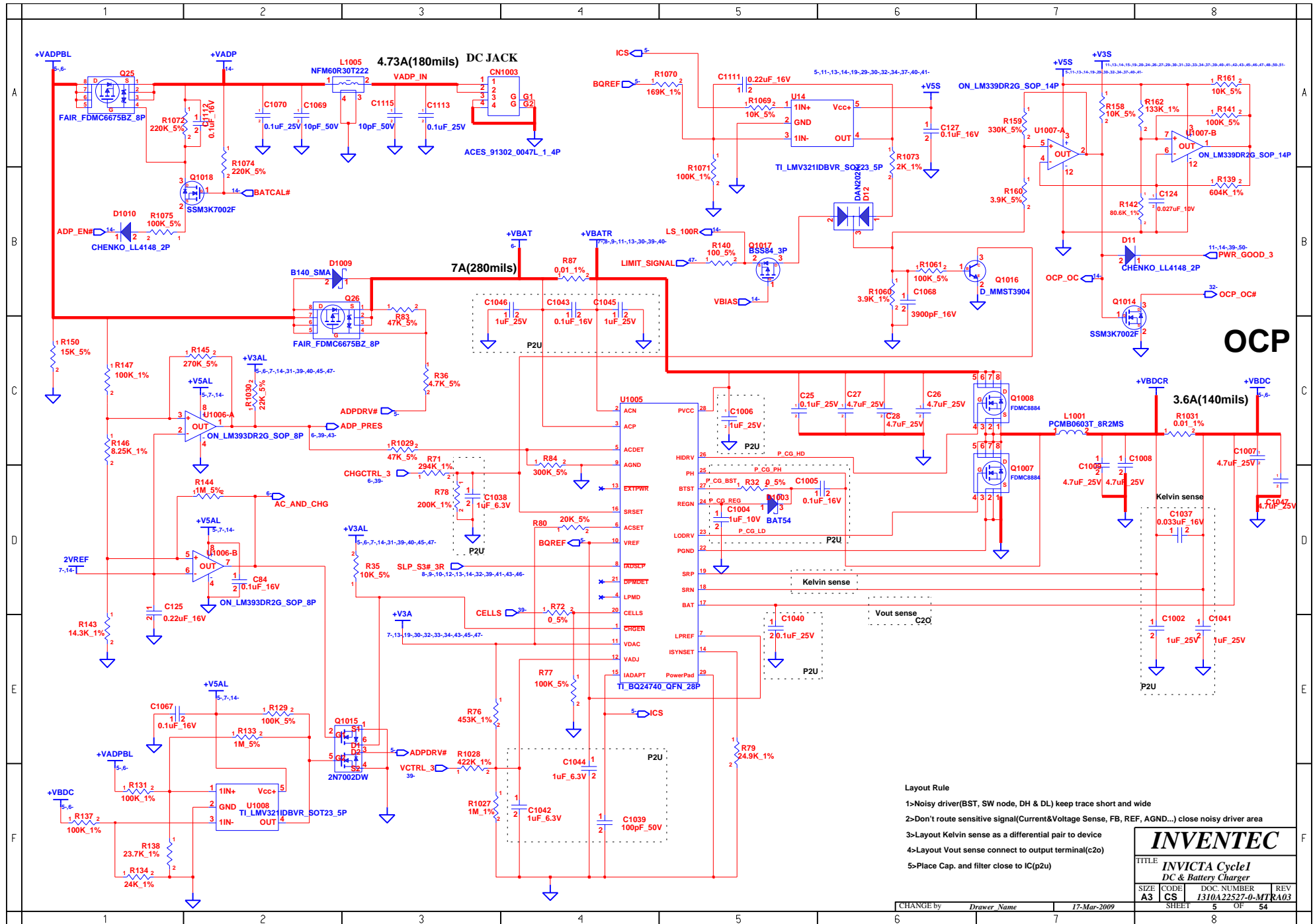
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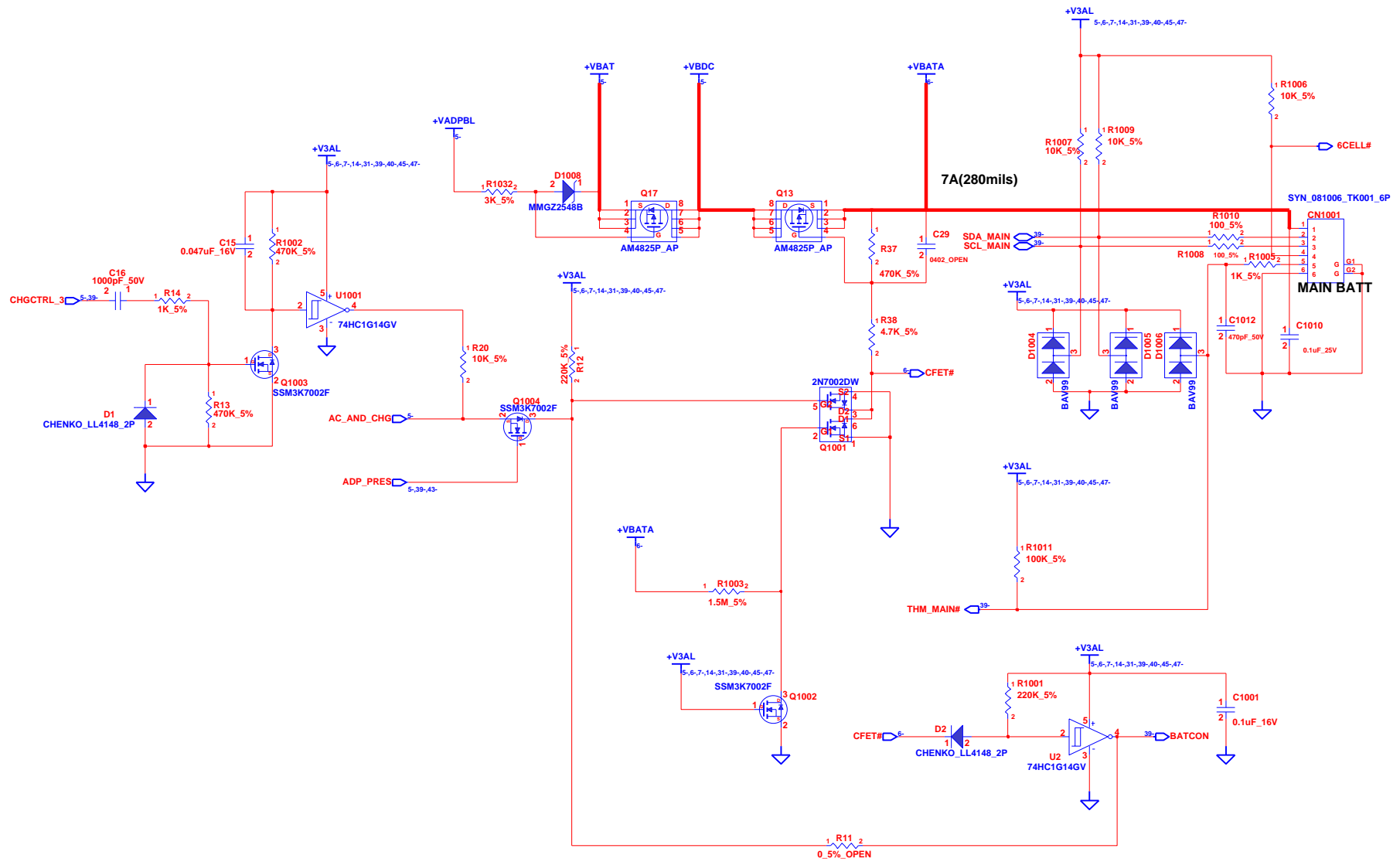
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CHANGE by: Drawer Name 17-Mar-2009

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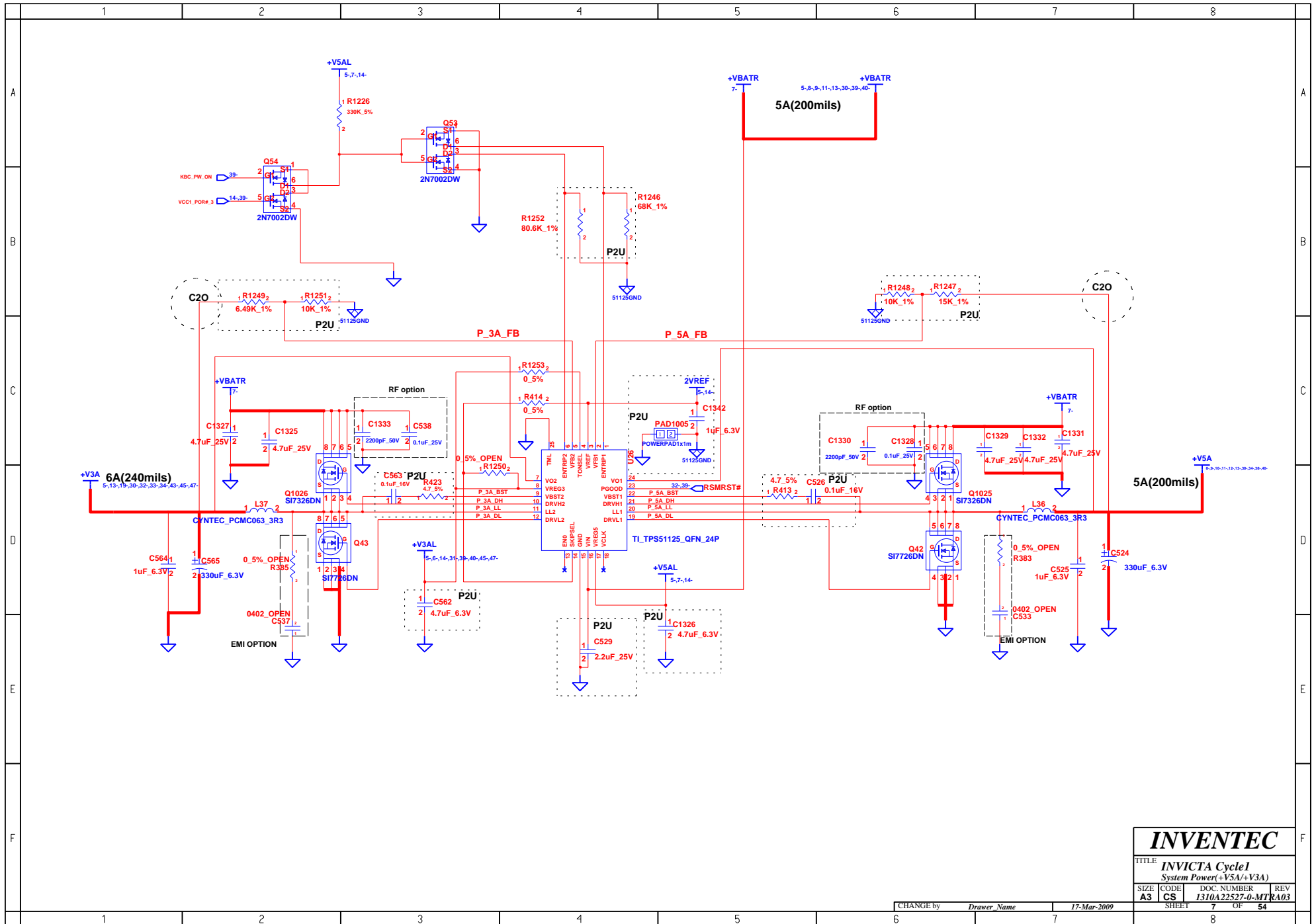


**INVENTEC**

TITLE			
INVICTA Cycle1			
Selector & Battery CONN & Extend/B			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A22527-0-MT	RA03

CHANGE by: Drawer Name 17-Mar-2009

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# INVENTEC

TITLE INVICTA Cycle1 System Power(+V5A/+V3A)			
SIZE A3	CODE CS	DOC. NUMBER I310A22527-0-MTR	REV A03

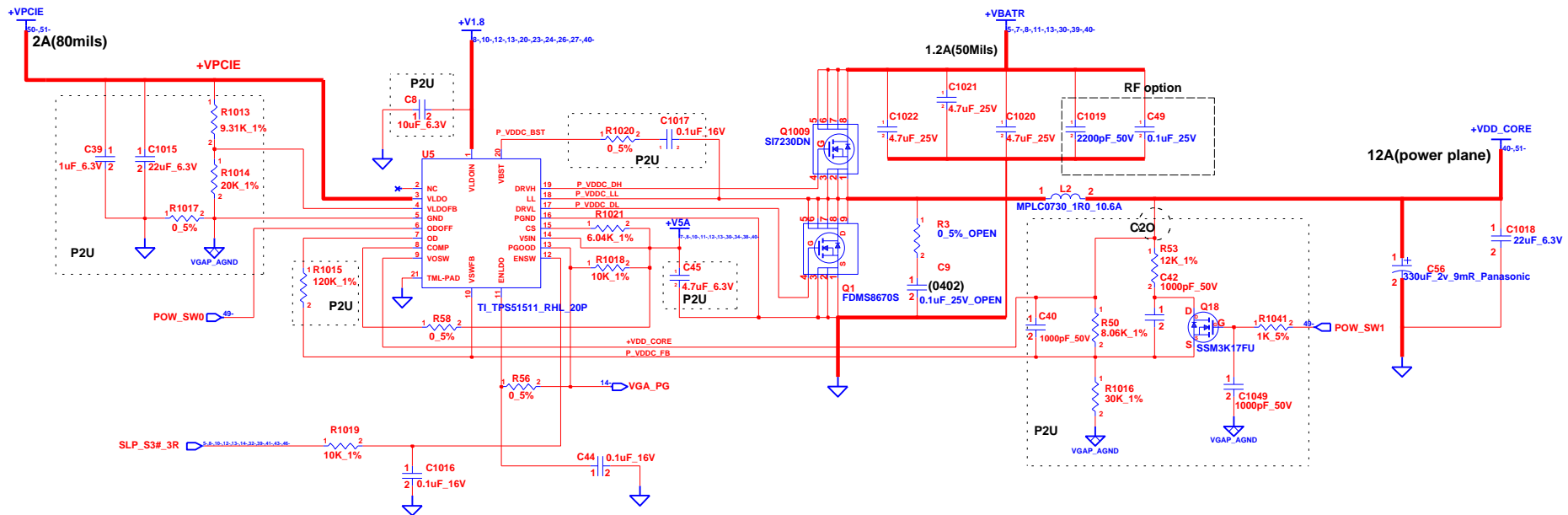
CHANGE by *Drawer Name* 17-Mar-2009

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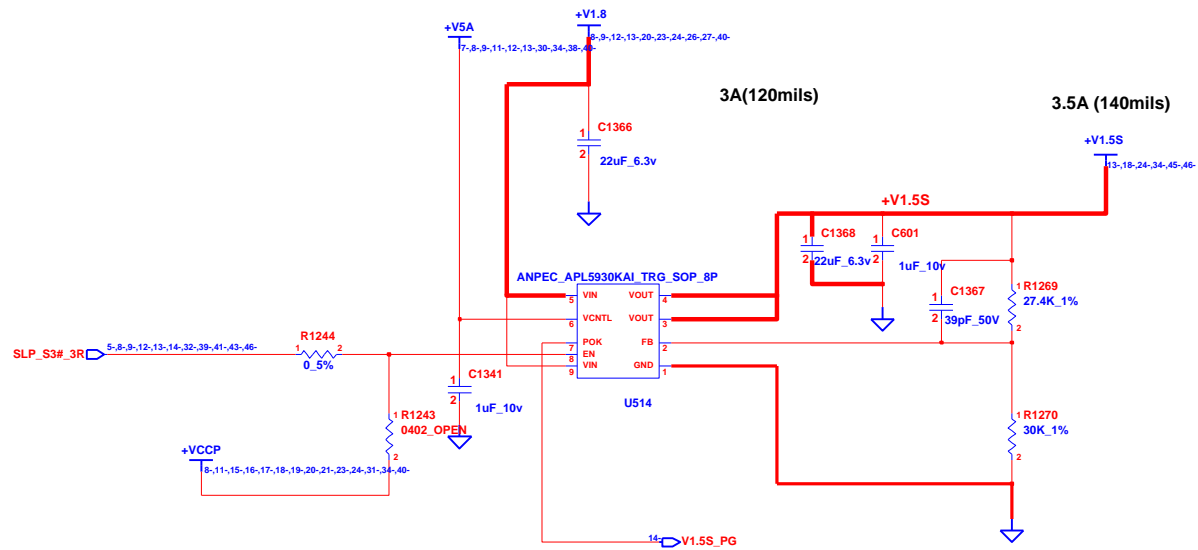
POW_SW1	POW_SW0	+VDD_CORE
0	0	1.0V
0	1	0.95V
1	0	0.9V

**INVENTEC**

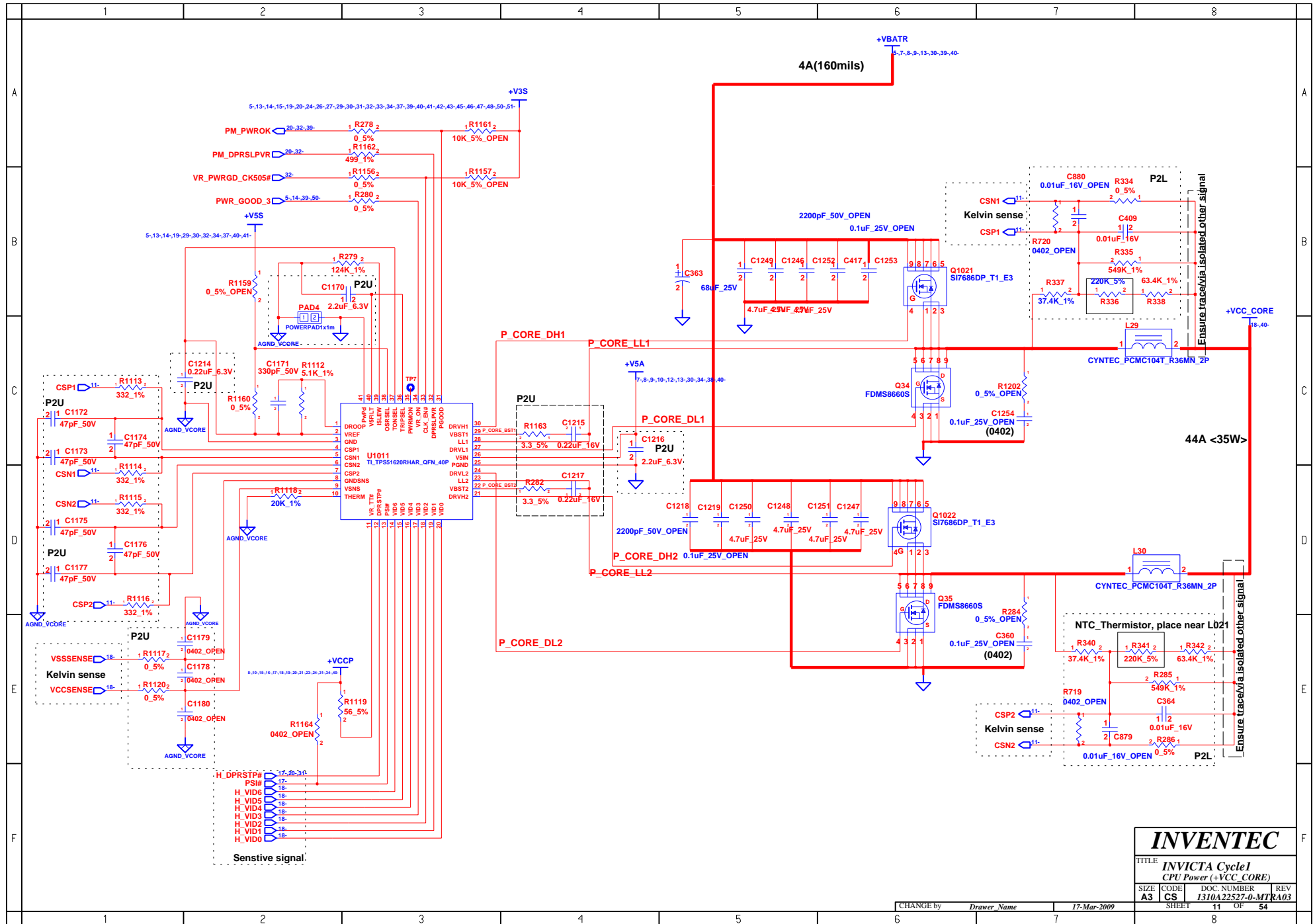
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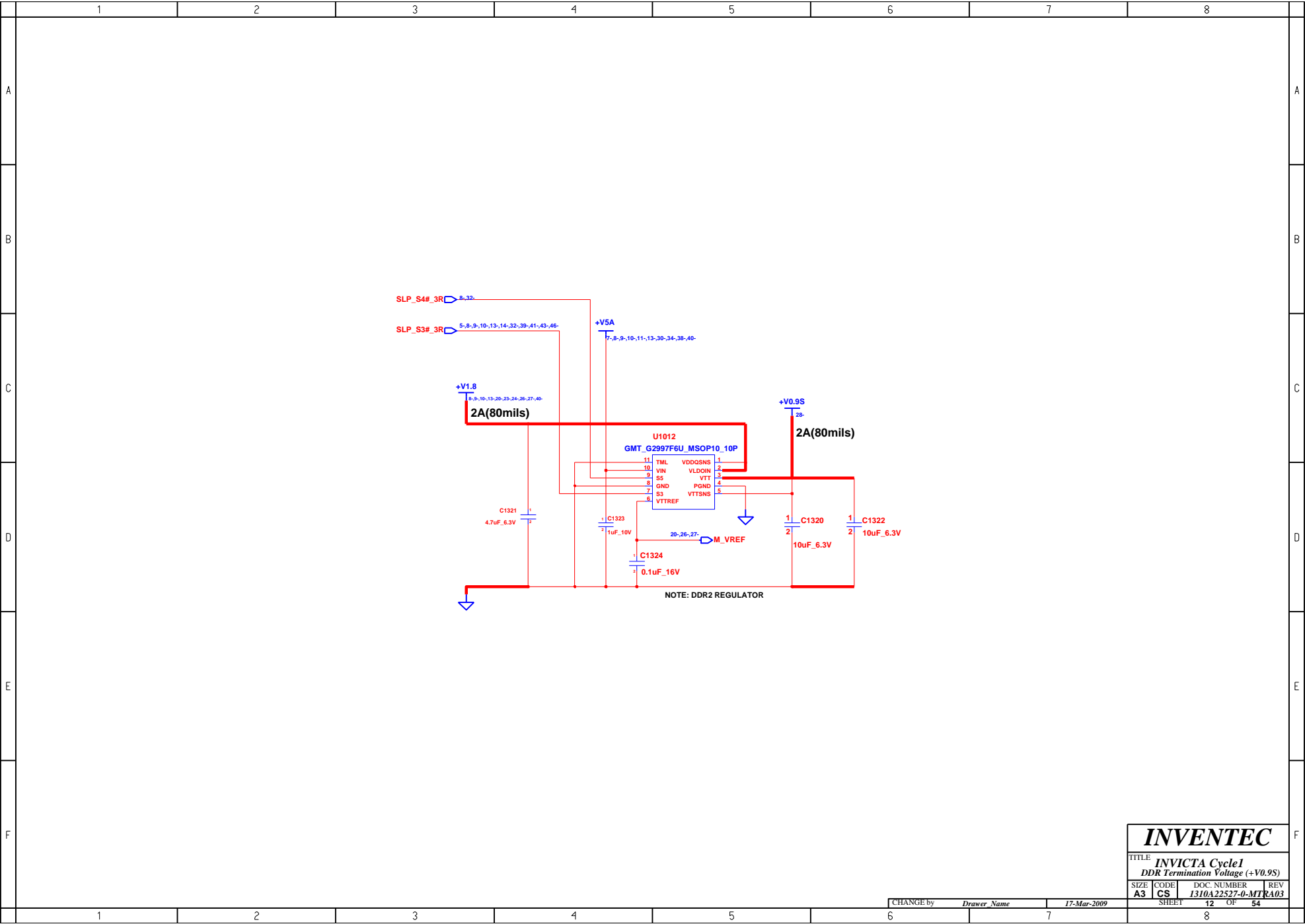
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CHANGE by	<i>Drawer Name</i>	<i>17-Mar-2009</i>	SHEET	9	OF	54
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INVENTEC			
TITLE INVICTA Cycle1 System Power (+V1.5S)			
SIZE A3	CODE CS	DOC. NUMBER I310A22527-0-MTR	REV A03
CHANGE by Drawer Name		17-Mar-2009	
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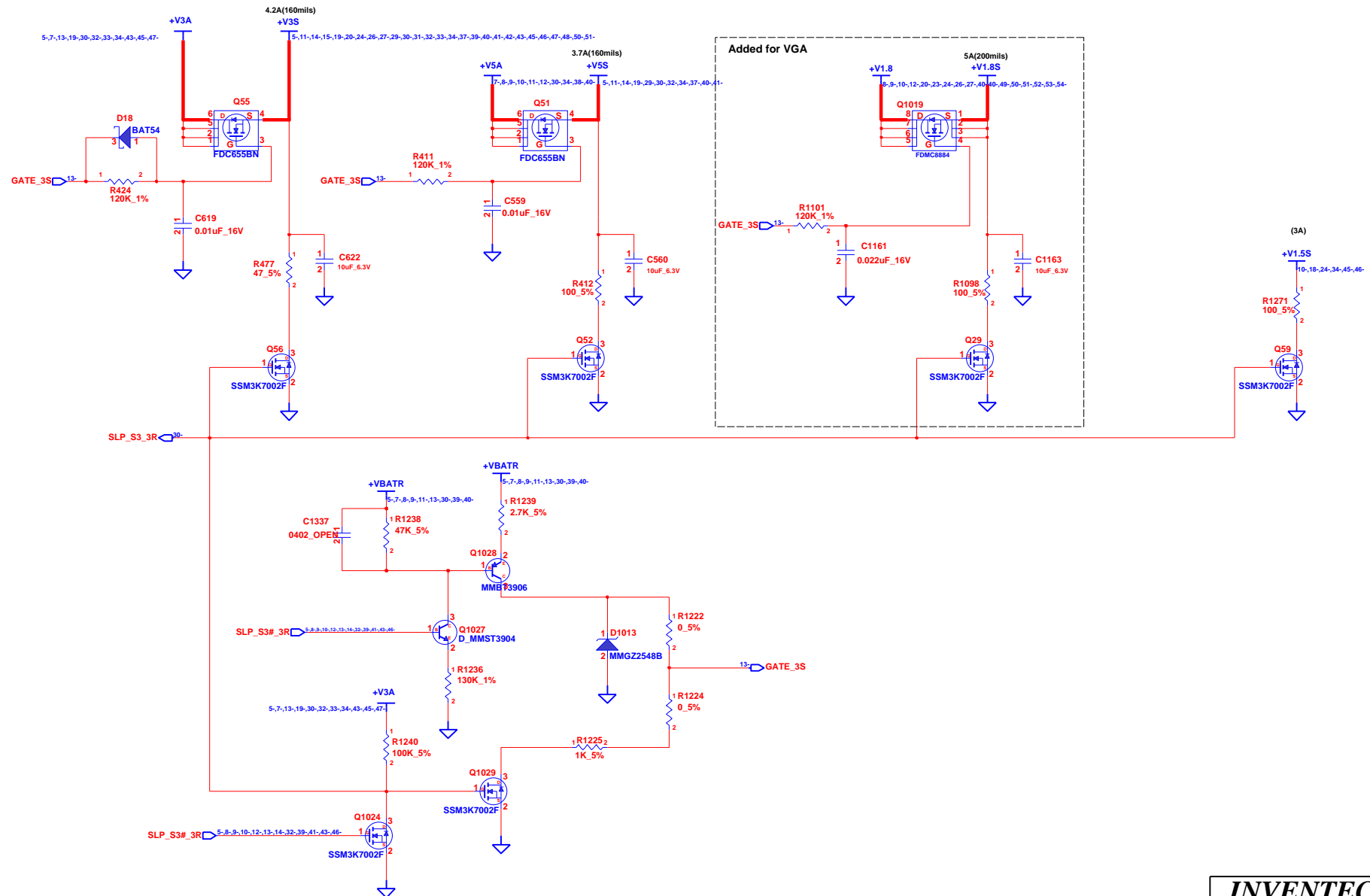
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TITLE **INVICTA Cycle1**  
DDR Termination Voltage (+V0.9S)

SIZE	CODE	DOC. NUMBER	REV
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CHANGE by *Drawer Name* 17-Mar-2009

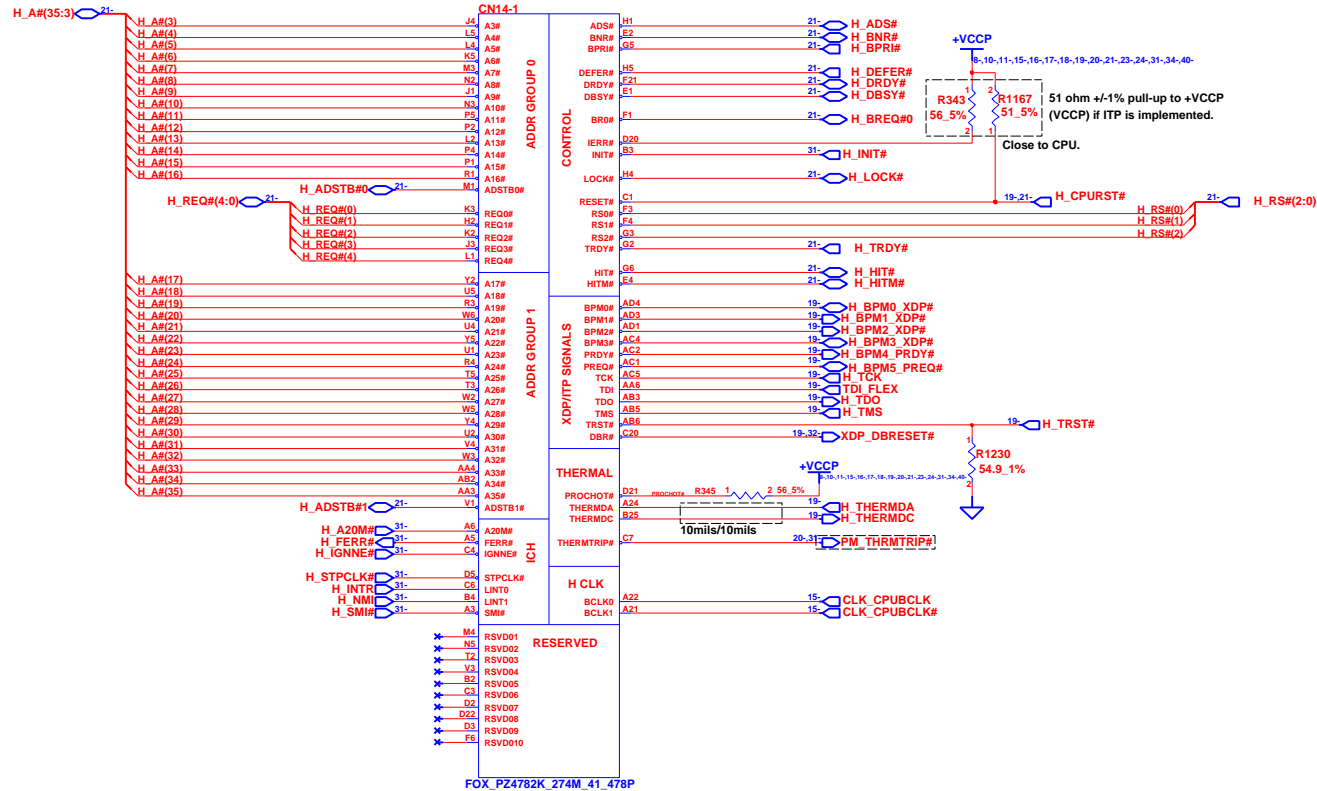
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INVENTEC			
TITLE: INVICTA Cycle 1			
Power (Sleep): +VSS/+V3S/+V1.8S			
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A3	CS	I310A22527-0-MTR	A03
CHANGE by		Drawer Name	17-Mar-2009
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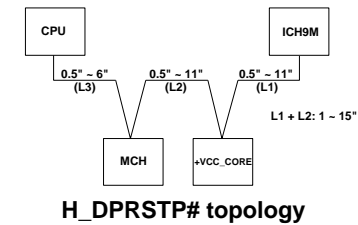
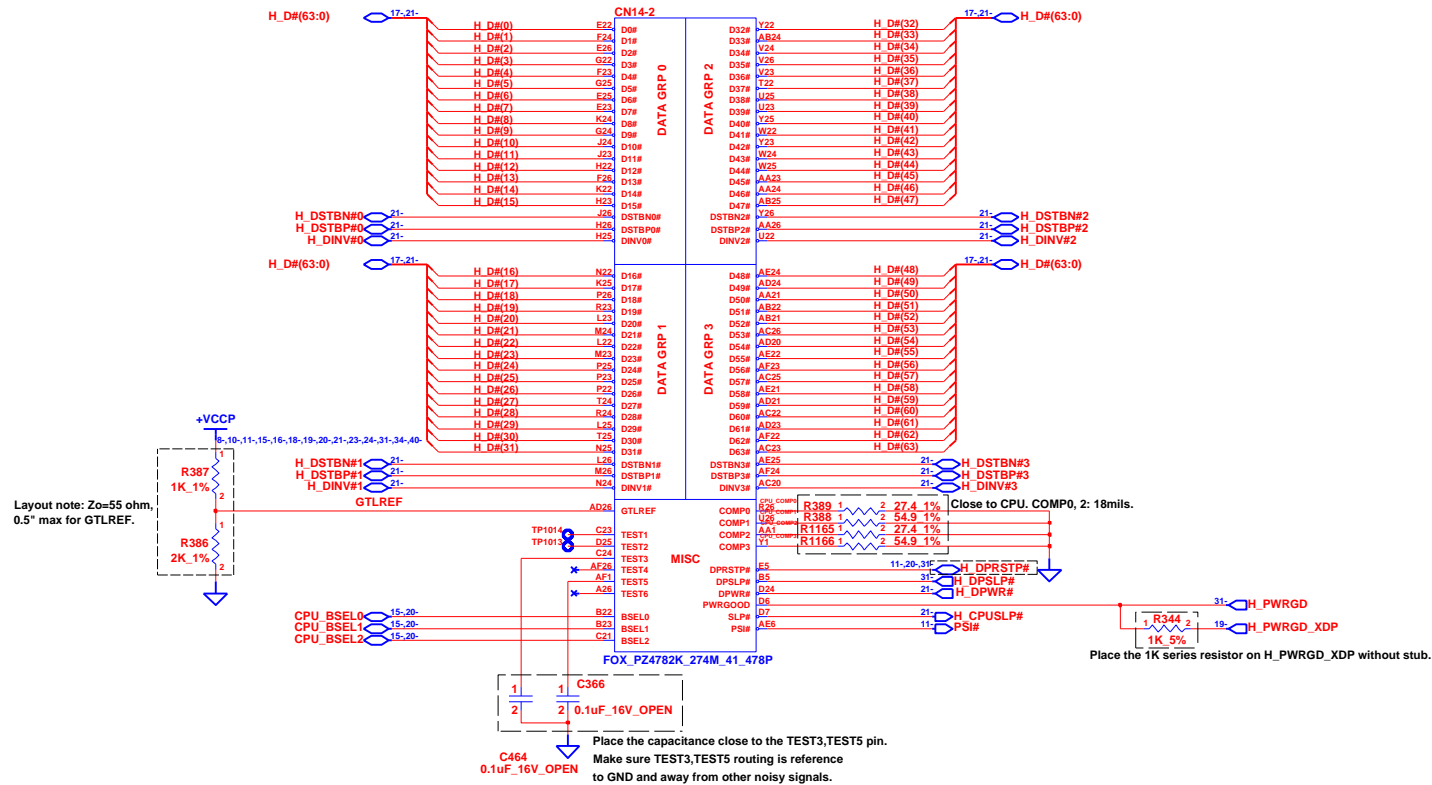




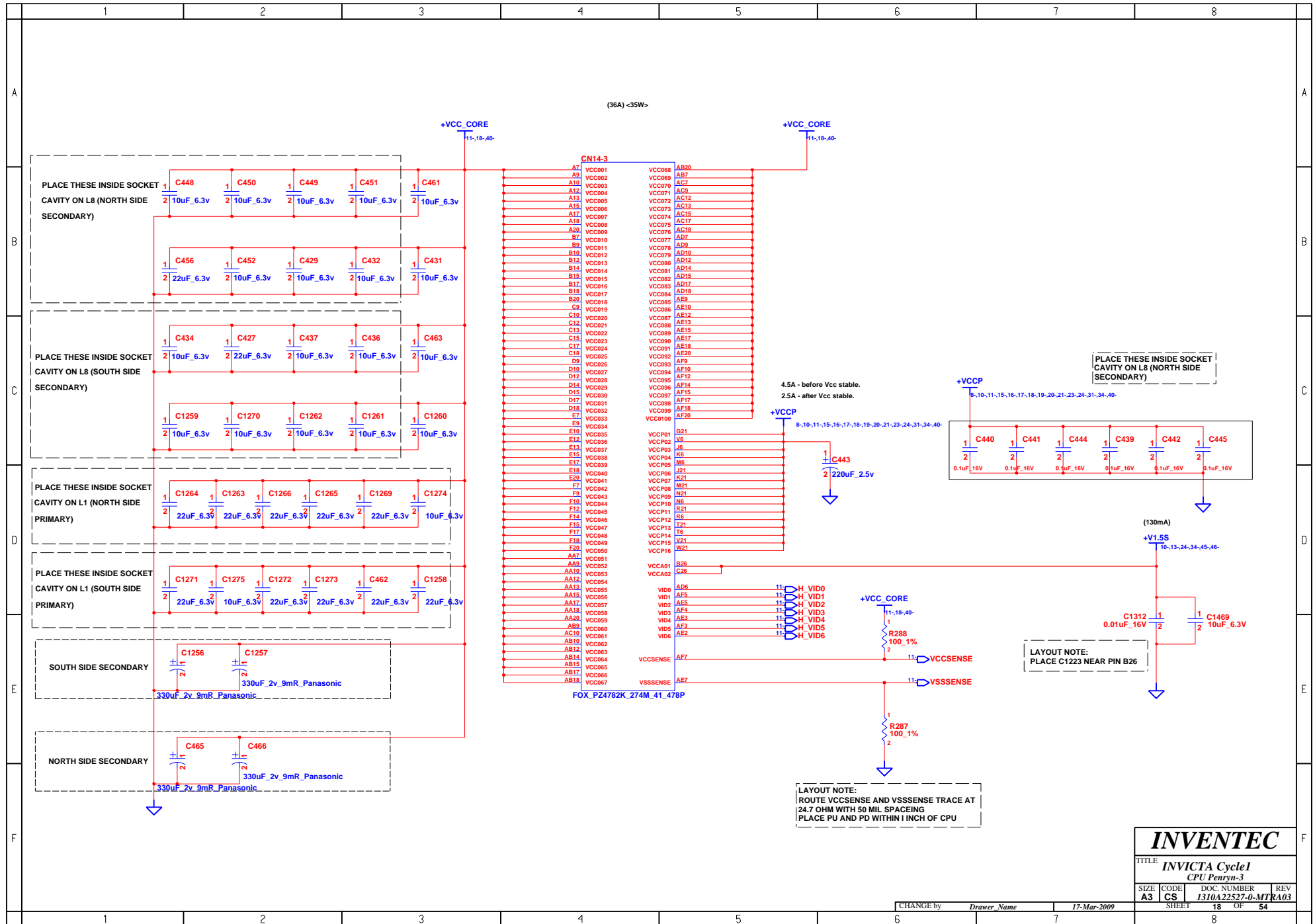


INVENTEC			
TITLE INVICTA Cycle1 CPU Penryn-1			
SIZE A3	CODE CS	DOC. NUMBER 1310A22527-0-MTR	REV A03
CHANGE by		Drawer Name	17-Mar-2009
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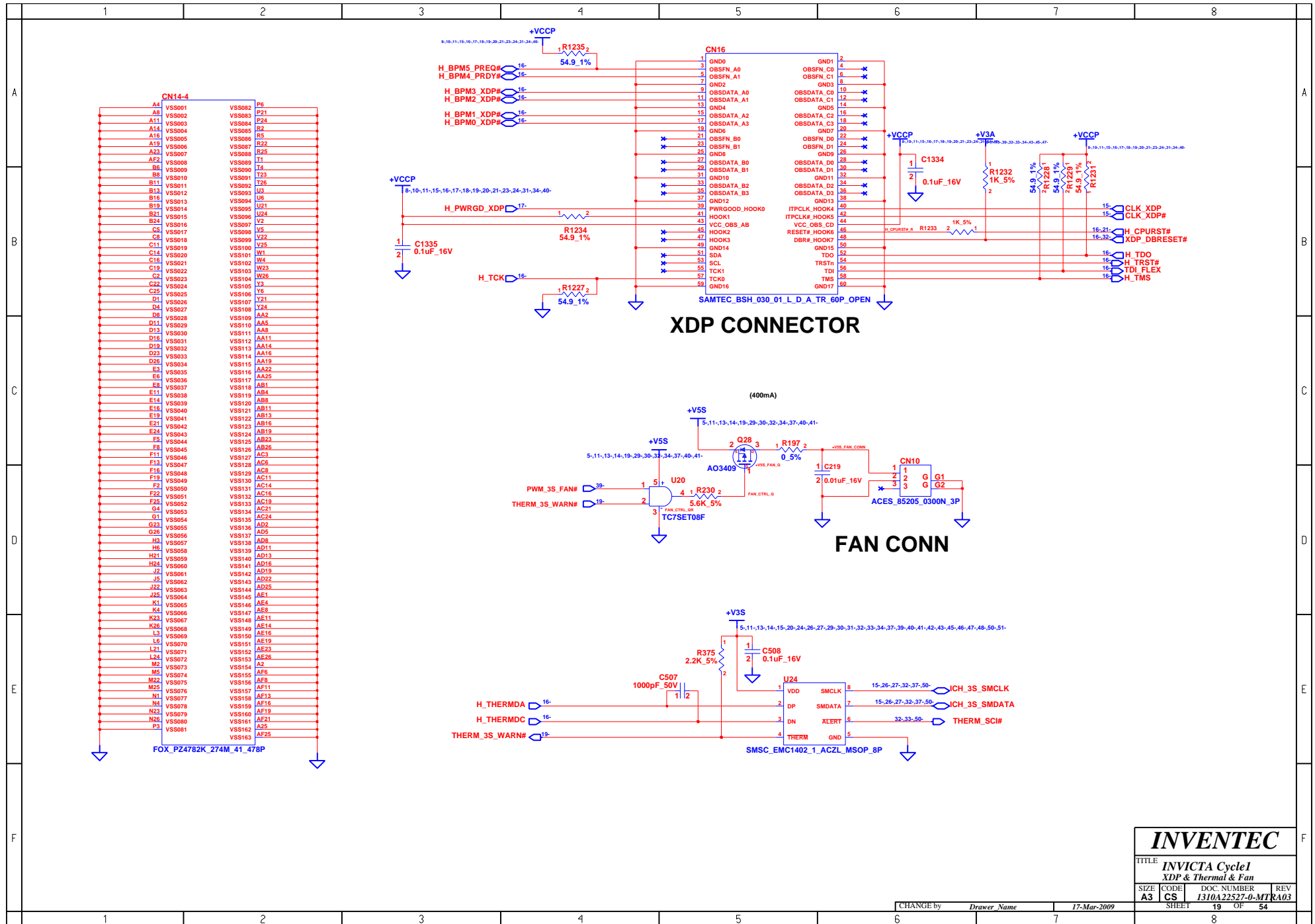


INVENTEC			
TITLE INVICTA Cycle1			
CPU Penryn-2			
SIZE A3	CODE CS	DOC. NUMBER 1310A22527-0-MTR	REV A03
CHANGE by Drawer Name		17-Mar-2009	
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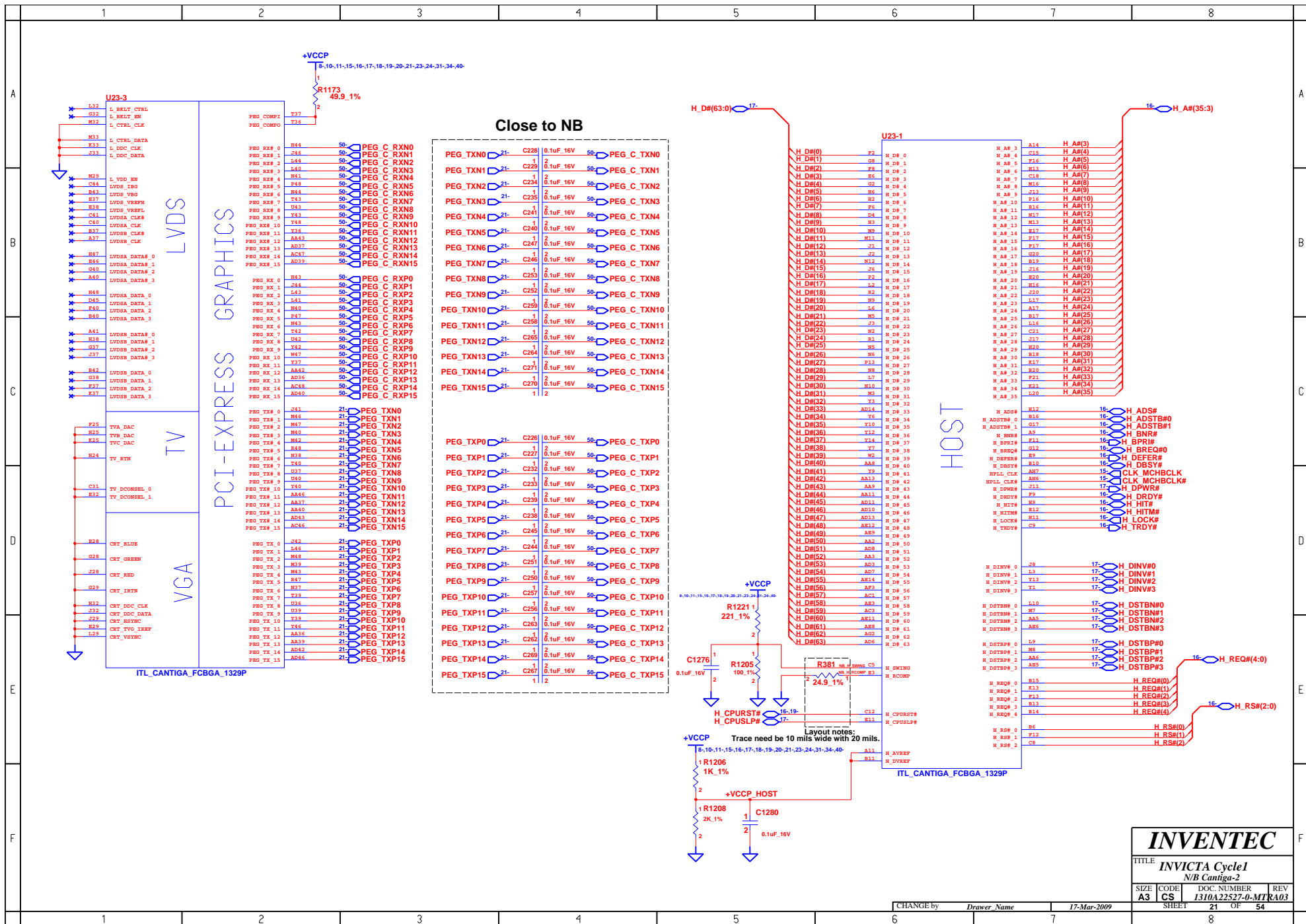


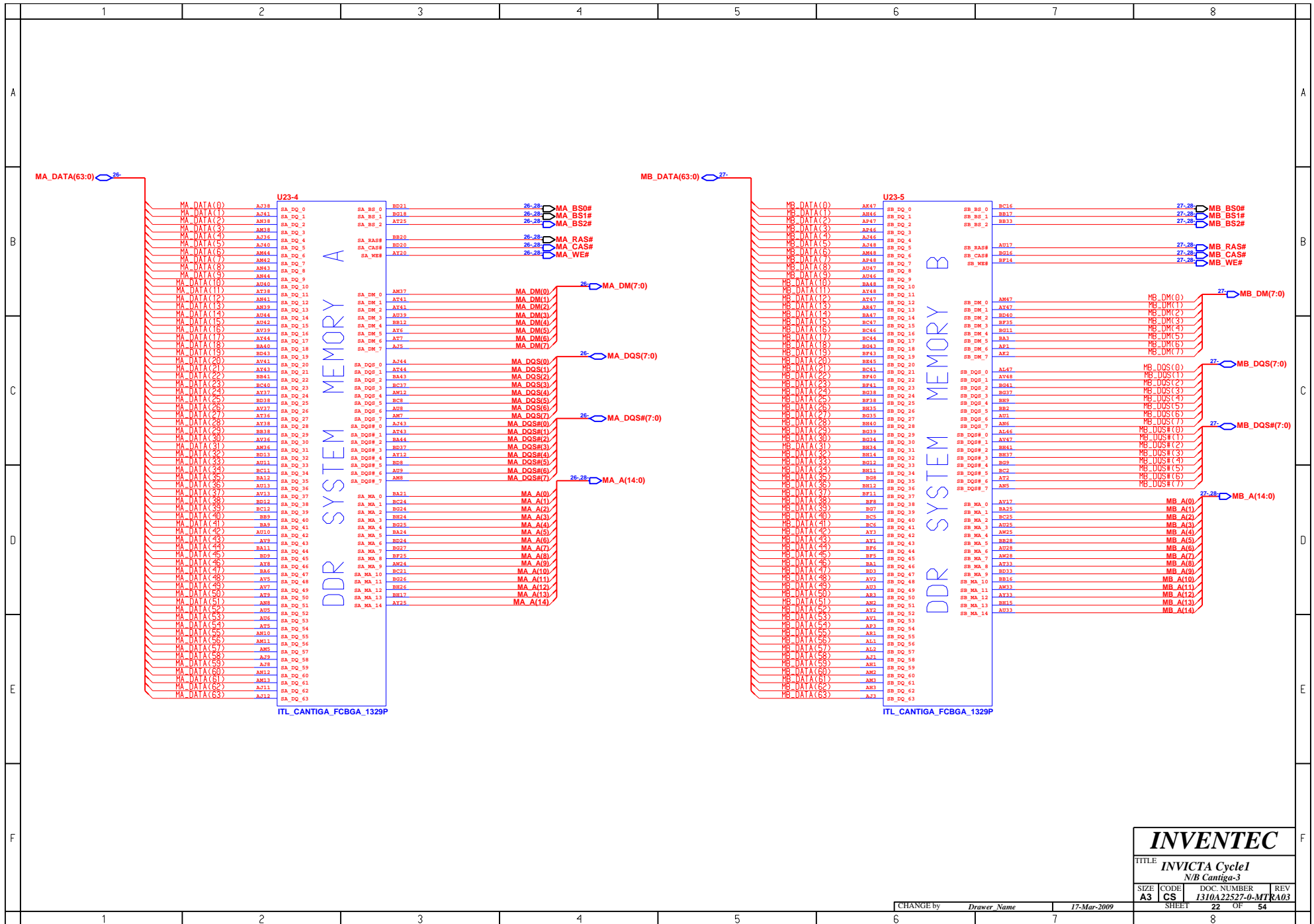
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CHANGE by <i>Drawer Name</i>		17-Mar-2009	
SHEET <b>18</b>		OF <b>54</b>	









**INVENTEC**

TITLE  
**INVICTA Cycle1**  
**N/B Cantiga-3**

SIZE <b>A3</b>	CODE <b>CS</b>	DOC. NUMBER <b>1310A22527-0-MTR</b>	REV <b>A03</b>
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CHANGE by **Drawer Name** 17-Mar-2009

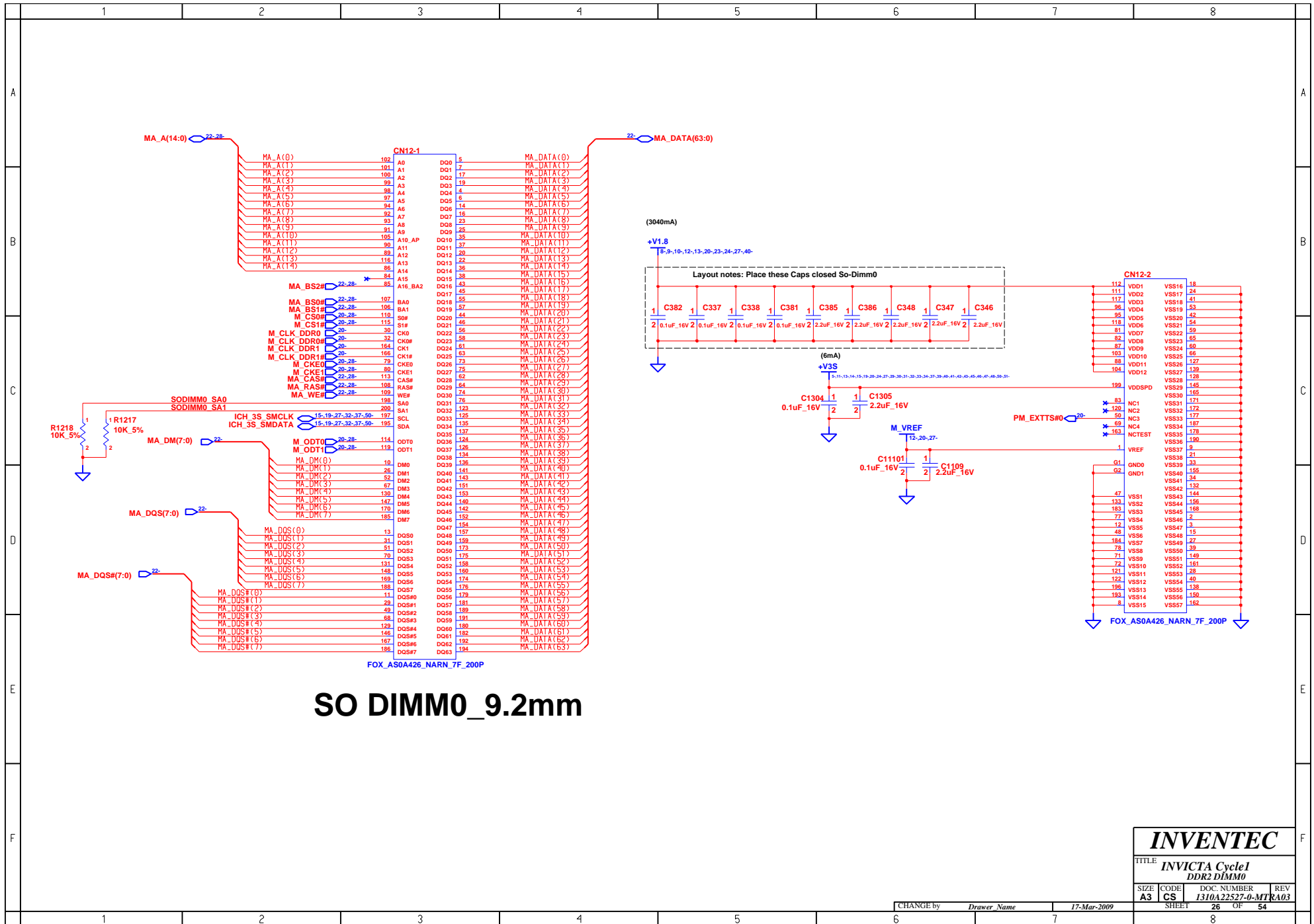
SHEET 22 OF 54







	1	2	3	4	5	6	7	8	
A			<div>U23-9</div> <div>AV48 VSS 1 AM16 VSS 100</div> <div>AR48 VSS 2 AR16 VSS 101</div> <div>AL48 VSS 3 V26 VSS 102</div> <div>BR47 VSS 4 V26 VSS 103</div> <div>AM17 VSS 5 V26 VSS 104</div> <div>AM47 VSS 6 V26 VSS 105</div> <div>AZ47 VSS 7 VSS 106</div> <div>AR47 VSS 8 VSS 107</div> <div>AD47 VSS 9 VSS 108</div> <div>AB47 VSS 10 VSS 109</div> <div>Y47 VSS 11 VSS 110</div> <div>T47 VSS 12 VSS 111</div> <div>RA7 VSS 13 VSS 112</div> <div>U47 VSS 14 VSS 113</div> <div>Q47 VSS 15 VSS 114</div> <div>DA46 VSS 16 VSS 115</div> <div>BA16 VSS 17 VSS 116</div> <div>AY46 VSS 18 VSS 117</div> <div>AV46 VSS 19 VSS 118</div> <div>AR46 VSS 20 VSS 119</div> <div>AM46 VSS 21 VSS 120</div> <div>V46 VSS 22 VSS 121</div> <div>PA6 VSS 23 VSS 122</div> <div>RA6 VSS 24 VSS 123</div> <div>HA6 VSS 25 VSS 124</div> <div>FA6 VSS 26 VSS 125</div> <div>BP44 VSS 27 VSS 126</div> <div>AB44 VSS 28 VSS 127</div> <div>AD44 VSS 29 VSS 128</div> <div>AA44 VSS 30 VSS 129</div> <div>T44 VSS 31 VSS 130</div> <div>DA4 VSS 32 VSS 131</div> <div>T44 VSS 33 VSS 132</div> <div>HA4 VSS 34 VSS 133</div> <div>BP43 VSS 35 VSS 134</div> <div>BC43 VSS 36 VSS 135</div> <div>AY43 VSS 37 VSS 136</div> <div>AV43 VSS 38 VSS 137</div> <div>AR43 VSS 39 VSS 138</div> <div>AM43 VSS 40 VSS 139</div> <div>C43 VSS 41 VSS 140</div> <div>RG42 VSS 42 VSS 141</div> <div>AY42 VSS 43 VSS 142</div> <div>AT42 VSS 44 VSS 143</div> <div>AM42 VSS 45 VSS 144</div> <div>AT42 VSS 46 VSS 145</div> <div>AR42 VSS 47 VSS 146</div> <div>HA2 VSS 48 VSS 147</div> <div>U42 VSS 49 VSS 148</div> <div>BP41 VSS 50 VSS 149</div> <div>AB41 VSS 51 VSS 150</div> <div>AM41 VSS 52 VSS 151</div> <div>AD41 VSS 53 VSS 152</div> <div>AA41 VSS 54 VSS 153</div> <div>Y41 VSS 55 VSS 154</div> <div>T41 VSS 56 VSS 155</div> <div>RA1 VSS 57 VSS 156</div> <div>HA1 VSS 58 VSS 157</div> <div>BP41 VSS 59 VSS 158</div> <div>GA1 VSS 60 VSS 159</div> <div>BA1 VSS 61 VSS 160</div> <div>RG40 VSS 62 VSS 161</div> <div>BB40 VSS 63 VSS 162</div> <div>AV40 VSS 64 VSS 163</div> 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563</div> <div>NC_199 VSS 564</div> <div>NC_200 VSS 565</div> <div>NC_201 VSS 566</div> <div>NC_202 VSS 567</div> <div>NC_203 VSS 568</div> <div>NC_204 VSS 569</div> <div>NC_205 VSS 570</div> <div>NC_206 VSS 571</div> <div>NC_207 VSS 572</div> <div>NC_208 VSS 573</div> <div>NC_209 VSS 574</div> <div>NC_210 VSS 575</div> <div>NC_211 VSS 576</div> <div>NC_212 VSS 577</div> <div>NC_213 VSS 578</div> <div>NC_214 VSS 579</div> <div>NC_215 VSS 580</div> <div>NC_216 VSS 581</div> <div>NC_217 VSS 582</div> <div>NC_218 VSS 583</div> <div>NC_219 VSS 584</div> <div>NC_220 VSS 585</div> <div>NC_221 VSS 586</div> <div>NC_222 VSS 587</div> <div>NC_223 VSS 588</div> <div>NC_224 VSS 589</div> <div>NC_225 VSS 590</div> <div>NC_226 VSS 591</div> <div>NC_227 VSS 592</div> <div>NC_228 VSS 593</div> <div>NC_229 VSS 594</div> <div>NC_230 VSS 595</div> <div>NC_231 VSS 596</div> <div>NC_232 VSS 597</div> <div>NC_233 VSS 598</div> <div>NC_234 VSS 599</div> <div>NC_235 VSS 600</div> <div>NC_236 VSS 601</div> 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678</div> <div>NC_314 VSS 679</div> <div>NC_315 VSS 680</div> <div>NC_316 VSS 681</div> <div>NC_317 VSS 682</div> <div>NC_318 VSS 683</div> <div>NC_319 VSS 684</div> <div>NC_320 VSS 685</div> <div>NC_321 VSS 686</div> <div>NC_322 VSS 687</div> <div>NC_323 VSS 688</div> <div>NC_324 VSS 689</div> <div>NC_325 VSS 690</div> <div>NC_326 VSS 691</div> <div>NC_327 VSS 692</div> <div>NC_328 VSS 693</div> <div>NC_329 VSS 694</div> <div>NC_330 VSS 695</div> <div>NC_331 VSS 696</div> <div>NC_332 VSS 697</div> <div>NC_333 VSS 698</div> <div>NC_334 VSS 699</div> <div>NC_335 VSS 700</div> <div>NC_336 VSS 701</div> <div>NC_337 VSS 702</div> <div>NC_338 VSS 703</div> <div>NC_339 VSS 704</div> <div>NC_340 VSS 705</div> <div>NC_341 VSS 706</div> <div>NC_342 VSS 707</div> <div>NC_343 VSS 708</div> <div>NC_344 VSS 709</div> <div>NC_345 VSS 710</div> <div>NC_346 VSS 711</div> <div>NC_347 VSS 712</div> <div>NC_348 VSS 713</div> <div>NC_349 VSS 714</div> <div>NC_350 VSS 715</div> <div>NC_351 VSS 716</div> 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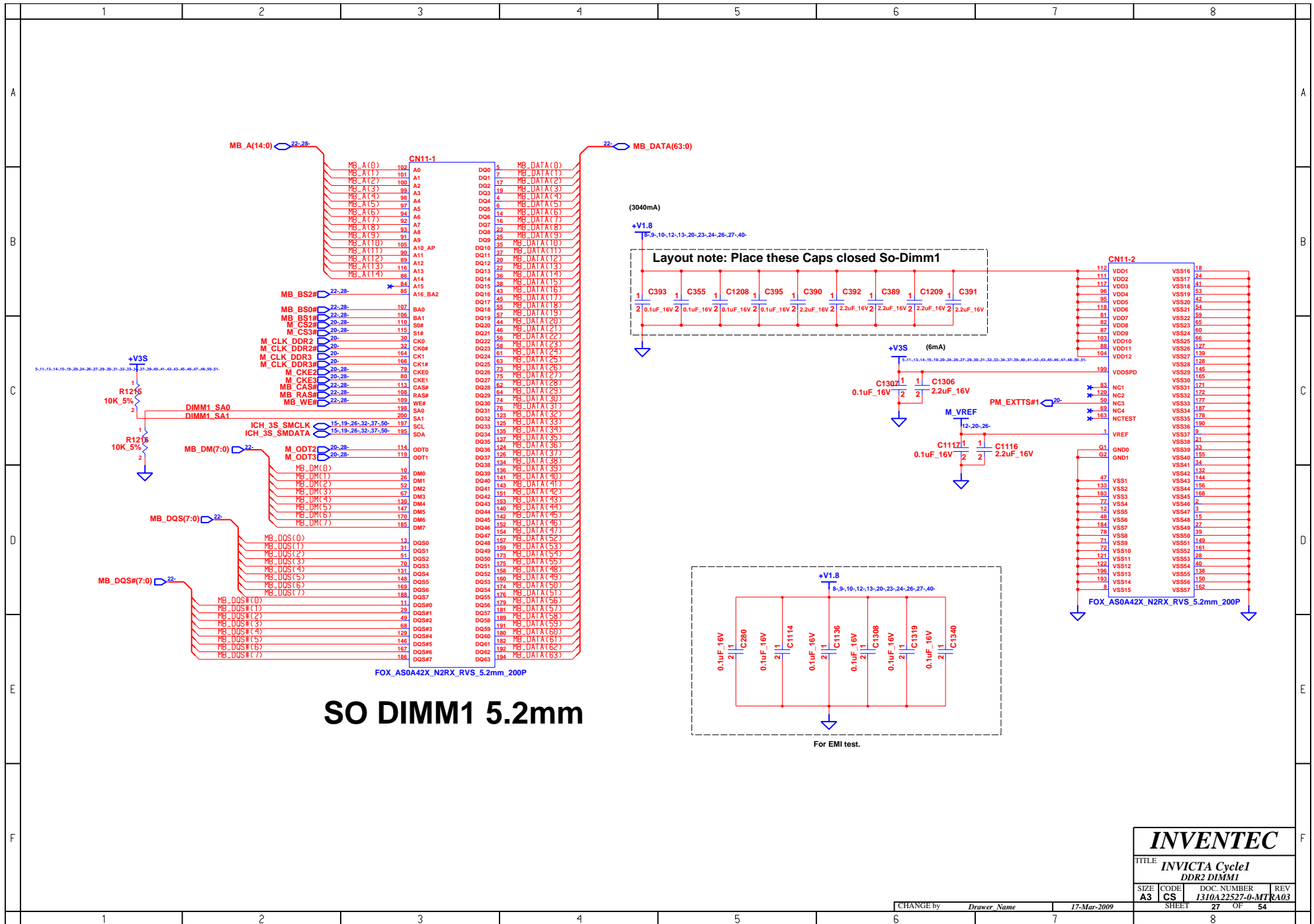
**INVENTEC**

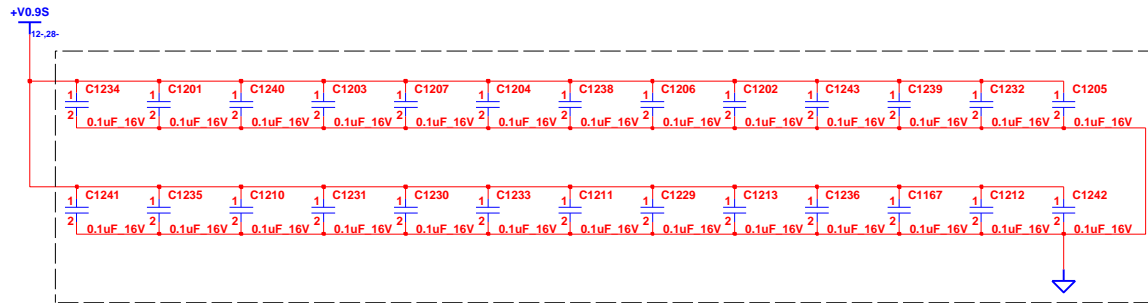
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DDR2 DIMM0

SIZE	CODE	DOC. NUMBER	REV
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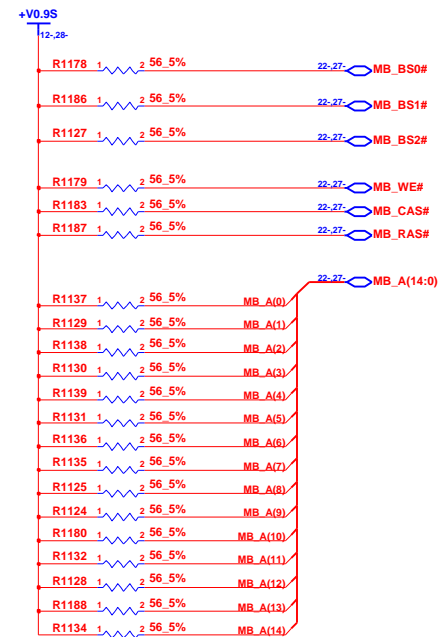
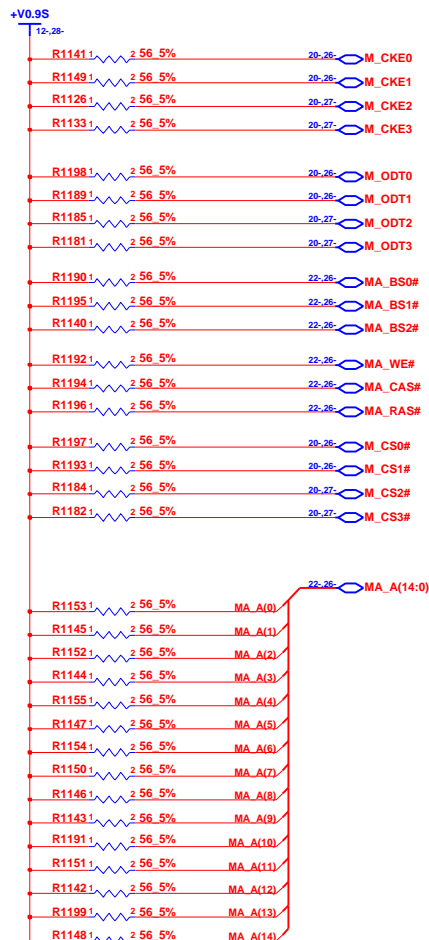
CHANGE by: Drawer Name 17-Mar-2009

SHEET 26 OF 54



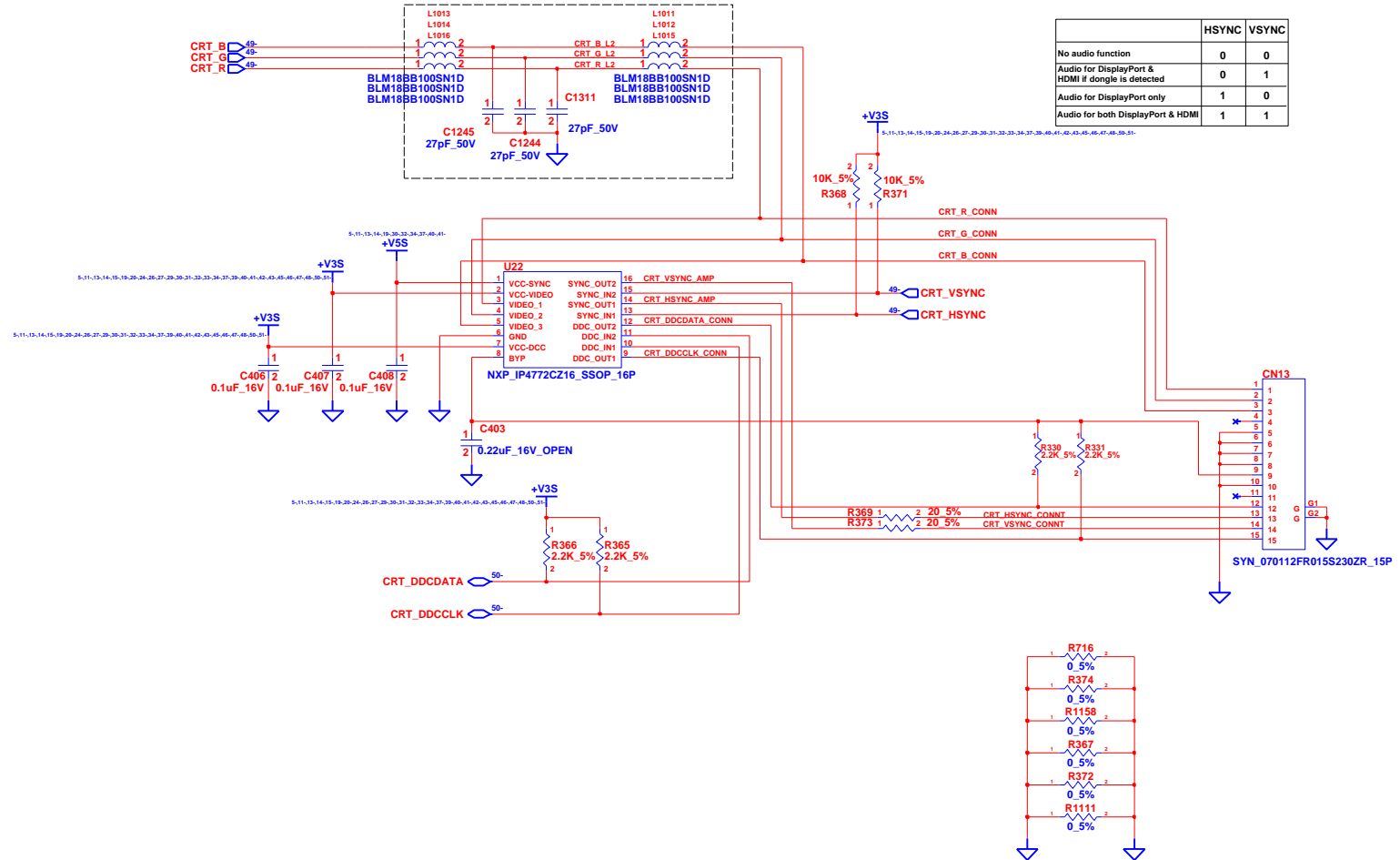


Layout notes : Place one Cap close to every 2 pull up resistor terminated to +V0.9S.

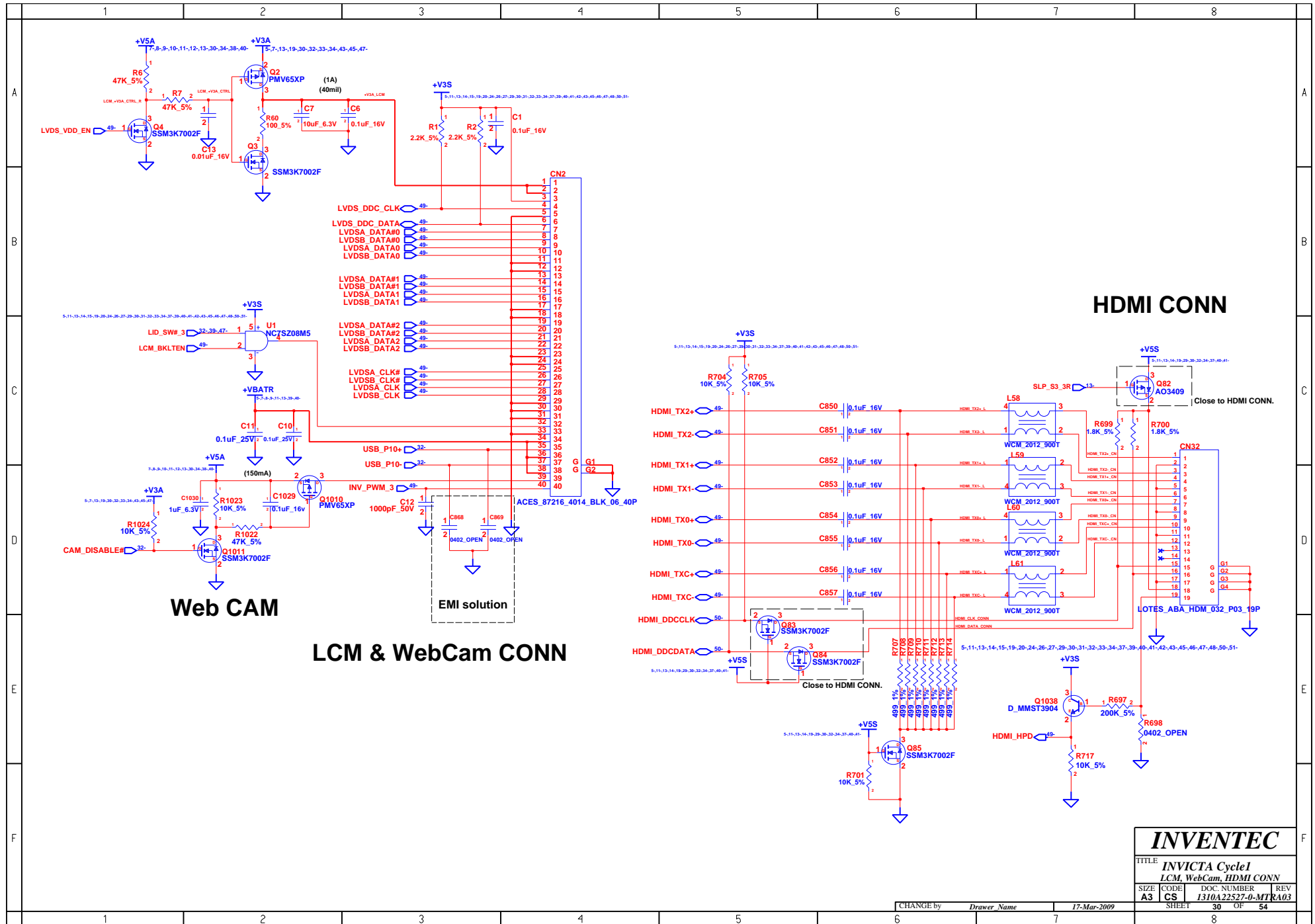


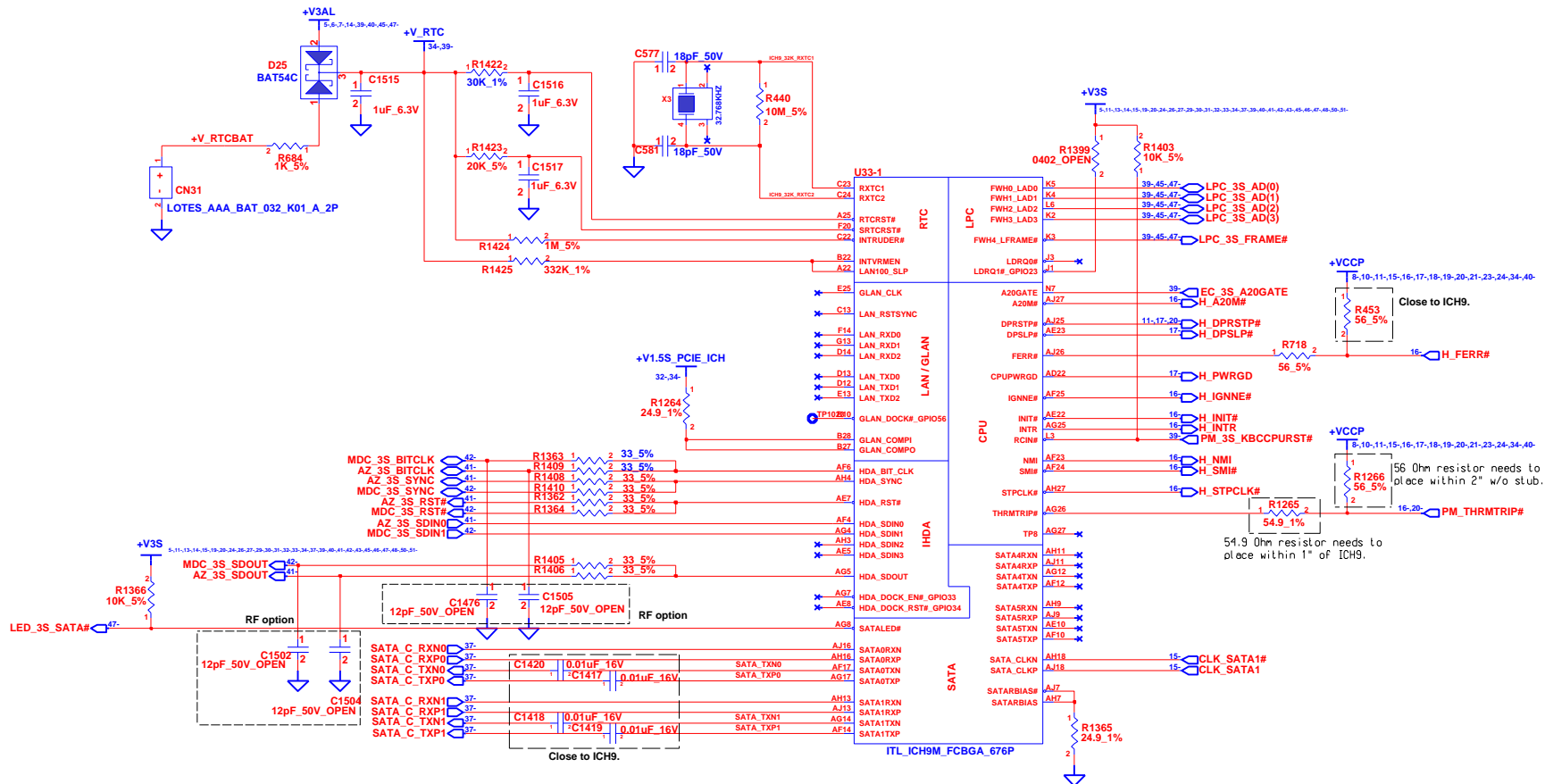
INVENTEC			
TITLE INVICTA Cycle1 DDR2 termination			
SIZE A3	CODE CS	DOC. NUMBER I310A22527-0-MTR	REV A03
CHANGE by Drawer Name		27-Sep-2003	
SHEET 28		OF 54	

Close to VGA CONN.



INVENTEC			
TITLE INVICTA Cycle1 VGA CONN			
SIZE A3	CODE CS	DOC. NUMBER I310A22527-0-MTR	REV A03
CHANGE by Drawer Name		17-Mar-2009	
SHEET		29	OF 54





**INVENTEC**

TITLE  
INVICTA Cycle1  
S/B ICH9-1

SIZE	CODE	DOC. NUMBER	REV
A3	CS	1310A22527-0-MTR	A03

CHANGE by: Drawer Name 17-Mar-2009

SHEET 31 OF 54



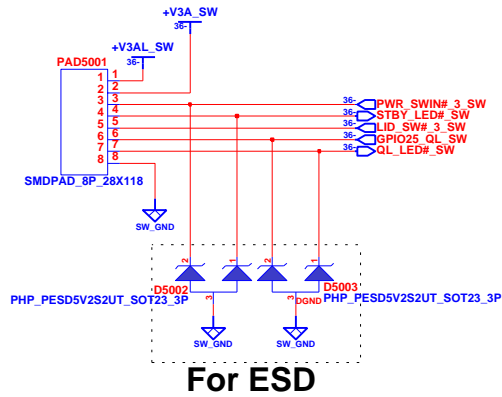




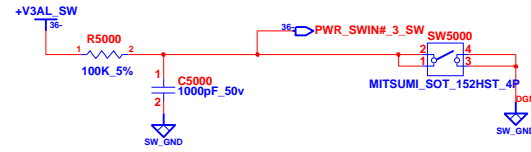




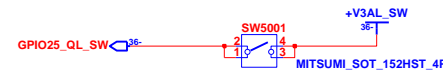
# PWR SW B/B CONN



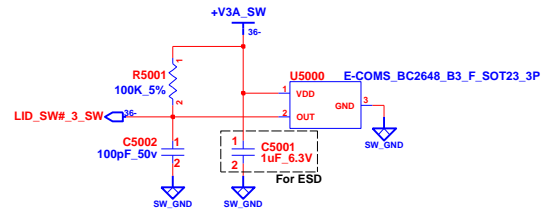
# Power Button



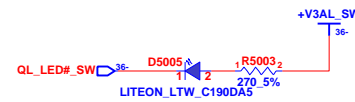
# Quick Look Button



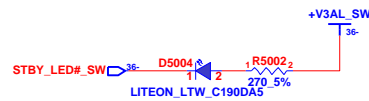
# LID Switch



# Quick Look LED

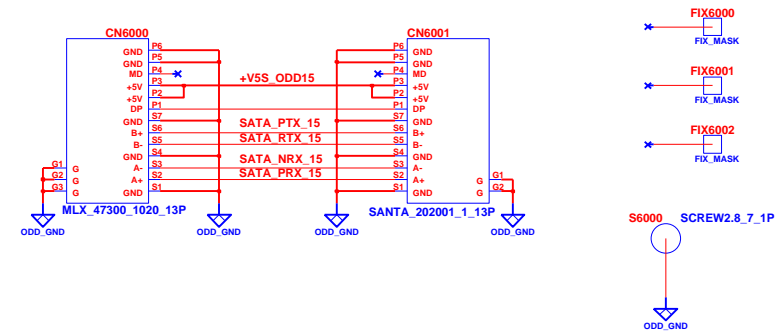
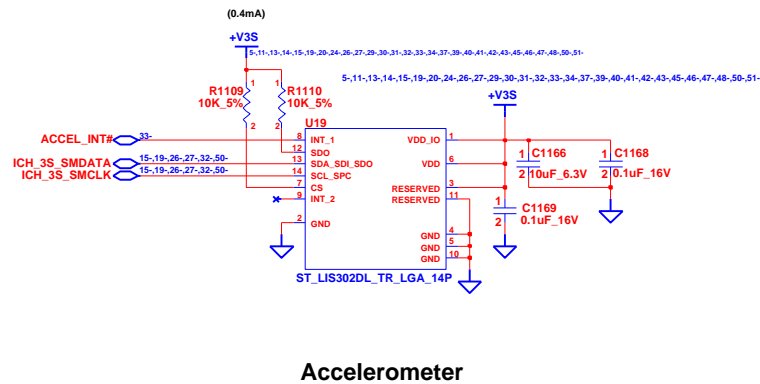
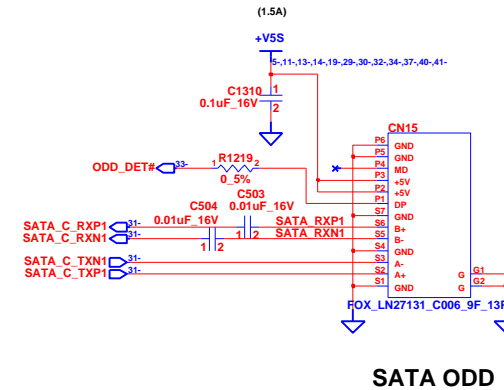
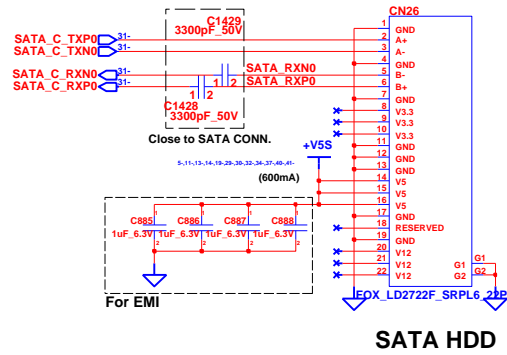


# Power / Standby LED

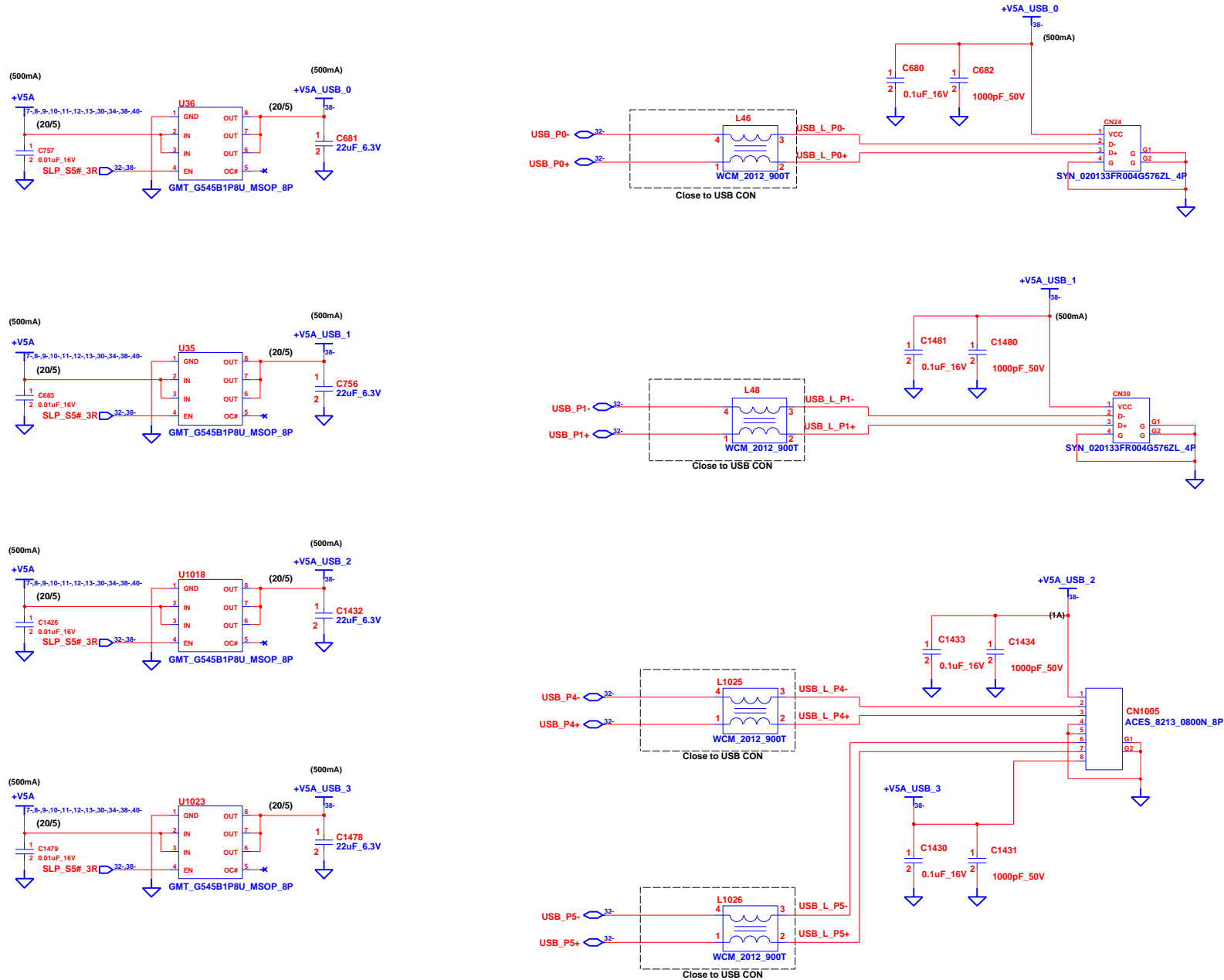


# Power & LID Switch Board

INVENTEC			
TITLE INVICTA Cycle1 PWR, LID, APP SW/Bs			
SIZE A3	CODE CS	DOC. NUMBER I310A22527-0-MTR	REV A03
CHANGE by Drawer Name		17-Mar-2009	
SHEET		36	OF 54



INVENTEC			
TITLE			
INVICTA Cycle1			
HDD & ODD CONN & Accelerometer & 15" ODD EXT/B			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310A22527-0-MTR	A03
CHANGE by		Drawer Name	17-Mar-2009
SHEET		37	OF 54



INVENTEC			
TITLE: INVICTA Cycle1 USB CONN			
SIZE: A3	CODE: CS	DOC. NUMBER: 1310A22527-0-MTR	REV: A03
CHANGE by: Drawer Name		17-Mar-2009	
SHEET: 38		OF: 54	







	Install TPA6045	Install TPA6041
TPA6045	6019B0621901	NI
TPA6041	NI	6019B0386401
Q74	7002	NI
R624	10K	NI
R625	NI	0

TITLE			
<b>INVICTA Cycle1</b> <i>Audio CODEC &amp; Earphone &amp; Speaker</i>			
SIZE	CODE	DOC. NUMBER	REV
<b>A3</b>	<b>CS</b>	<b>1310A22527-0-MTR</b>	<b>A03</b>
SHEET		41	OF 54

1 2 3 4 5 6 7 8

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C

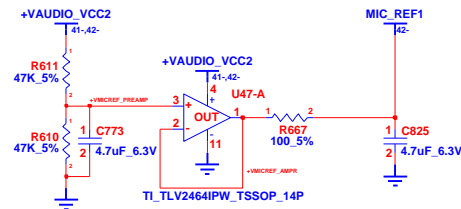
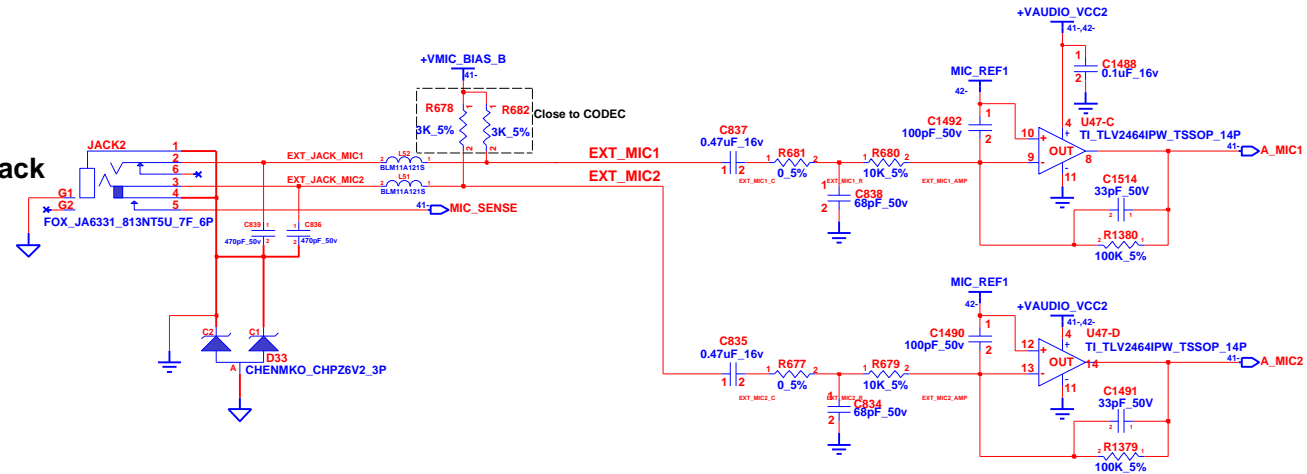
D

E

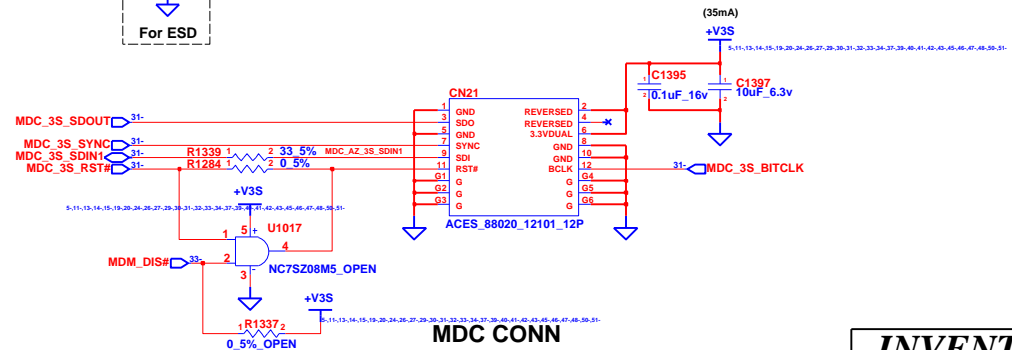
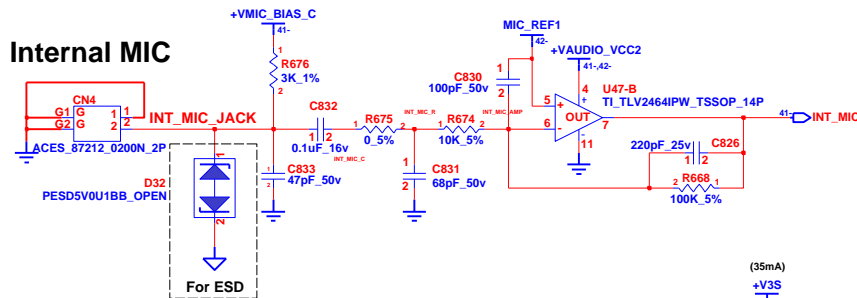
F

1 2 3 4 5 6 7 8

## MIC Jack



## Internal MIC

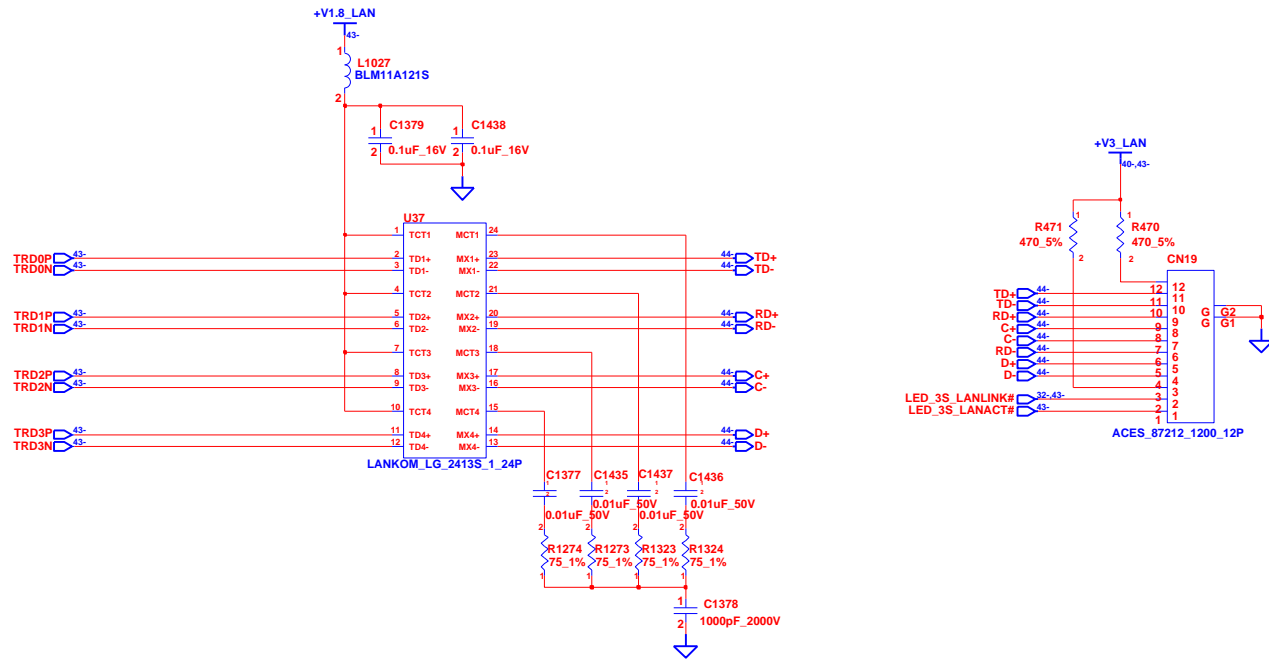


**INVENTEC**

TITLE: INVICTA Cycle1			
Audio MIC & MDC CONN			
SIZE: A3	CODE: CS	DOC. NUMBER: I310A22527-0-MTR	REV: A03
SHEET: 42		OF: 54	

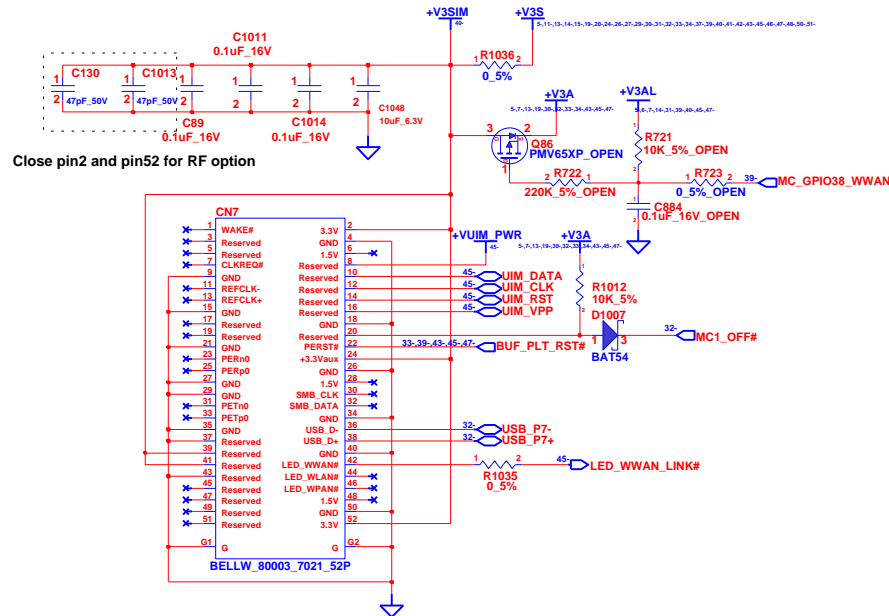
CHANGE by: Drawer Name 17-Mar-2009



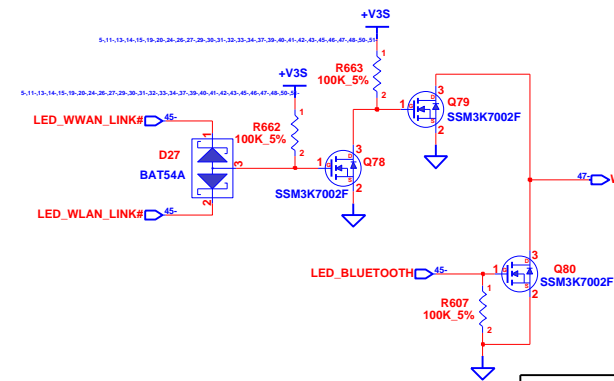
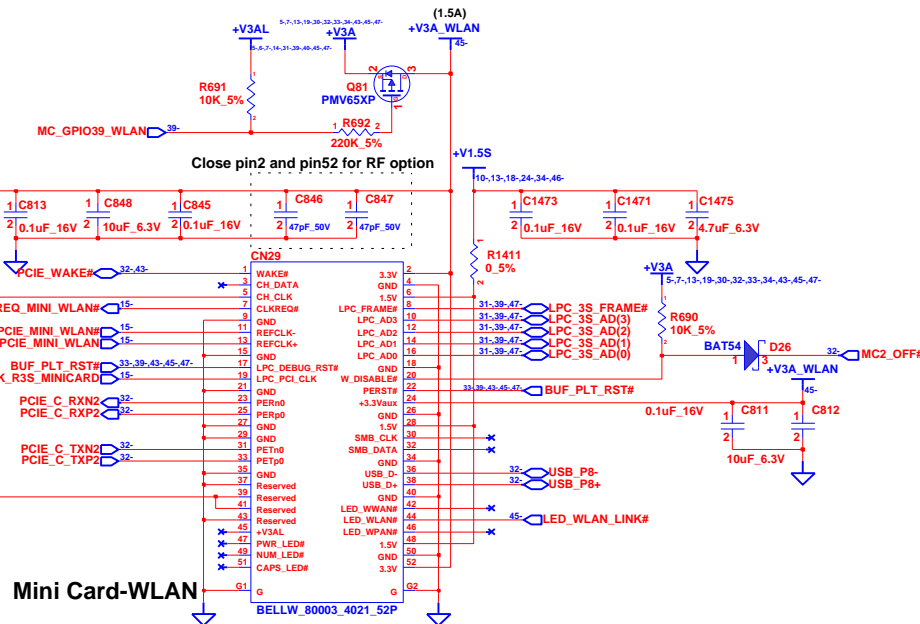
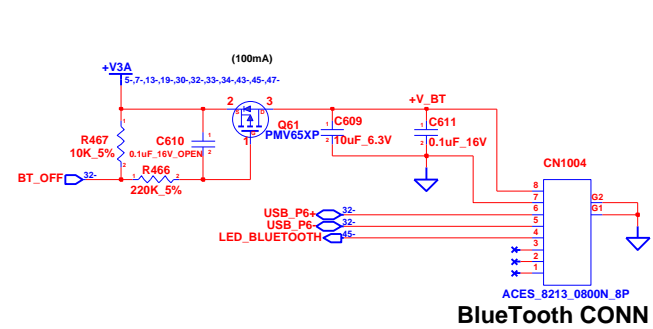


INVENTEC			
TITLE: INVICTA Cycle1 Magnetic & RJ45 CONN			
SIZE A3	CODE CS	DOC. NUMBER I310A22527-0-MTR	REV A03
CHANGE by: Drawer Name		17-Mar-2009	
SHEET 44		OF 54	

# MINI Card-WWAN



# SIM Card B2B MB side CONN

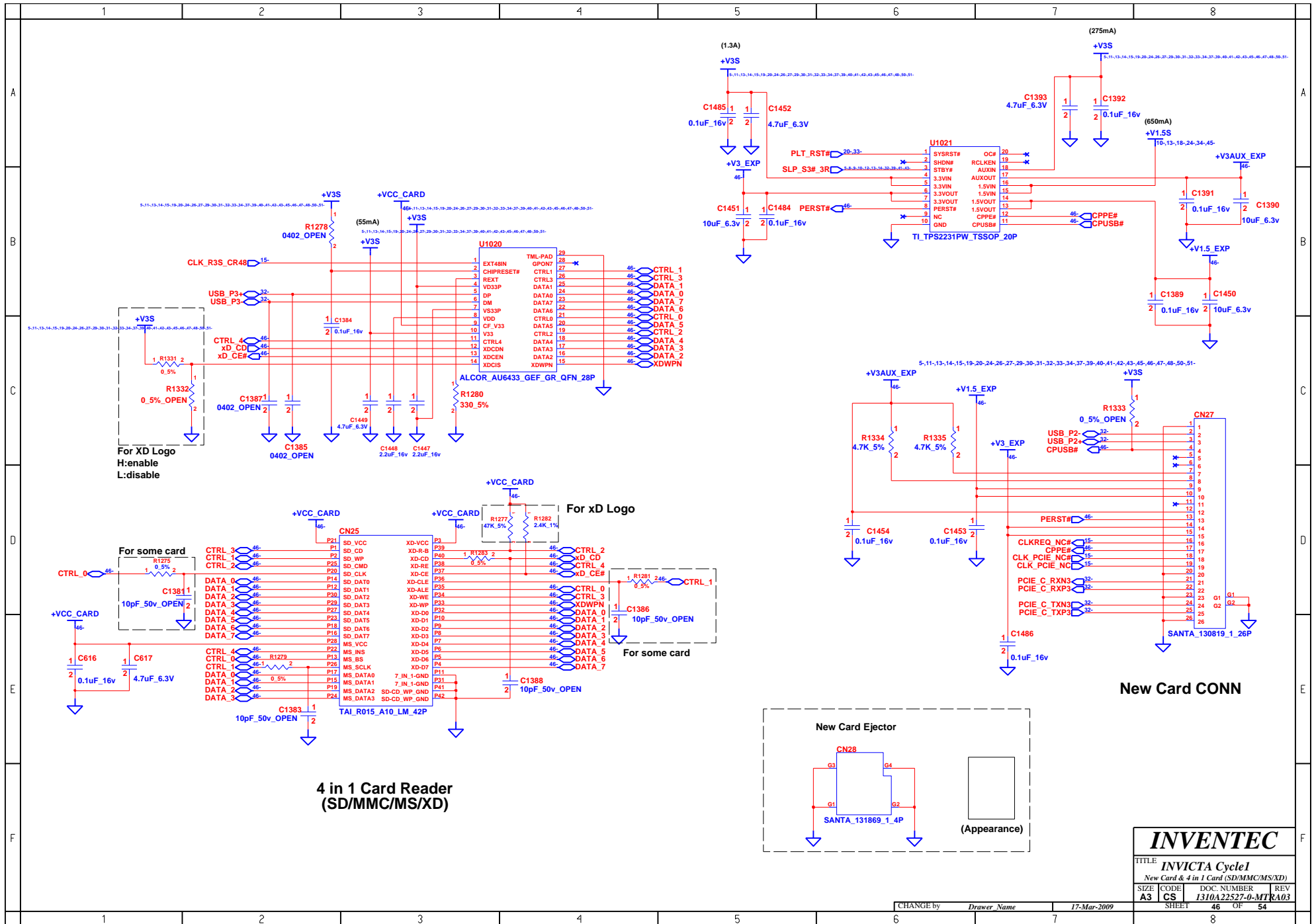


# Mini Card-WLAN

**INVENTEC**

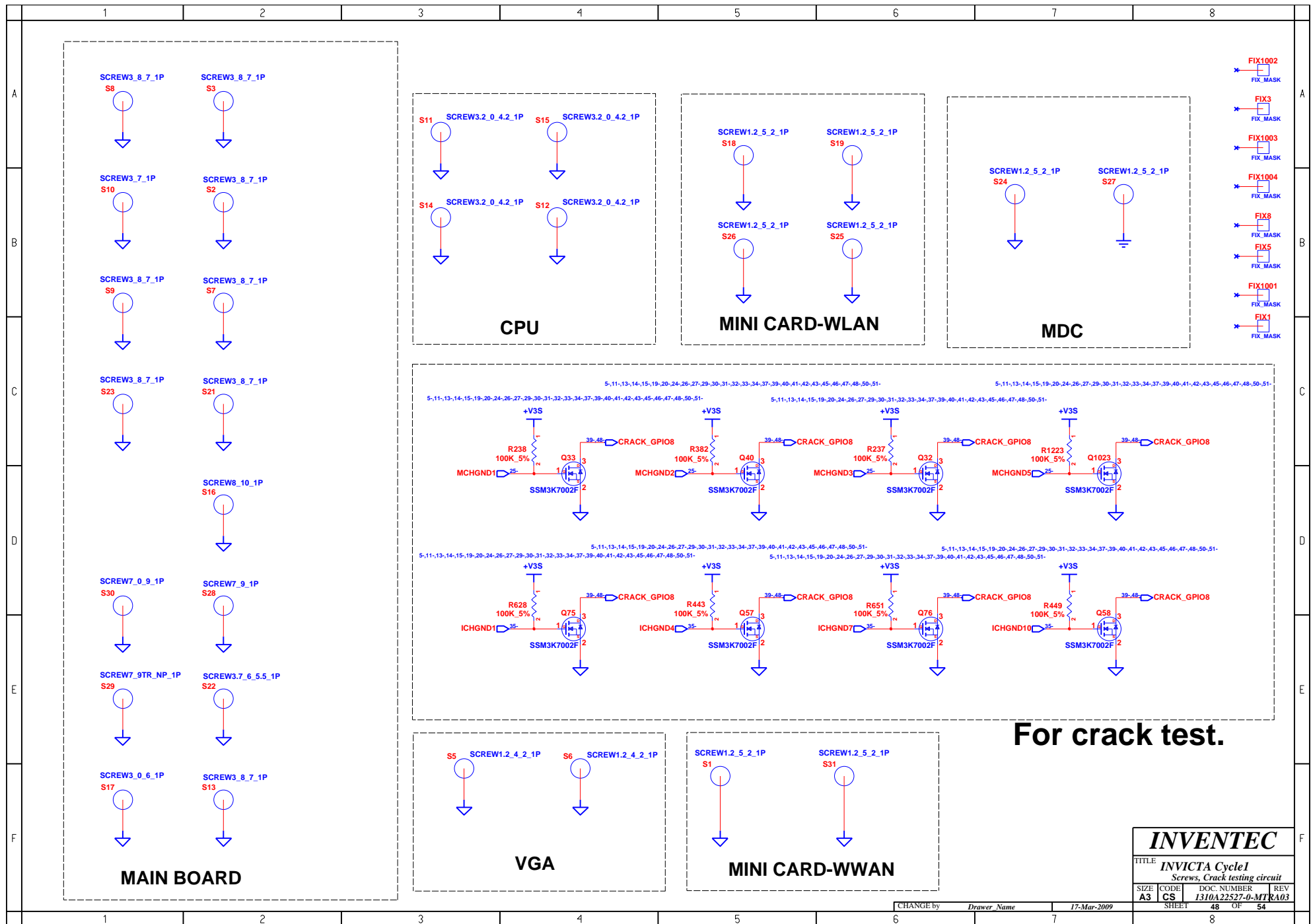
TITLE INVICTA Cycle1 Mini Card (WLAN/WWAN) / BT			
SIZE A3	CODE CS	DOC. NUMBER I310A22527-0-MTR	REV A03
SHEET		45	OF 54

CHANGE by: Drawer Name 17-Mar-2009



INVENTEC			
TITLE: INVICTA Cycle1			
New Card & 4 in 1 Card (SD/MMC/MS/XD)			
SIZE: A3	CODE: CS	DOC. NUMBER: I310A22527-0-MTR	REV: A03
CHANGE by: Drawer Name		17-Mar-2009	
SHEET: 46		OF: 54	







STRAPS	PIN	Description of default settings	
TX_PWRS_ENB	GPIO0	PCIe full TX output swing.	1
TX_DEEMPH_EN	GPIO1	PCIe transmitter de-emphasis enabled.	1
BIF_DEBUG_ACCESS	GPIO4	Debug signals muxed out.	0
ROMIDCFG(0:3)	GPIO[11:13,9]	Memory aperture type	X X X X

X = DESIGN DEPENDANT

0 = DO NOT INSTALL RESISTOR

1 = INSTALL 10K RESISTOR

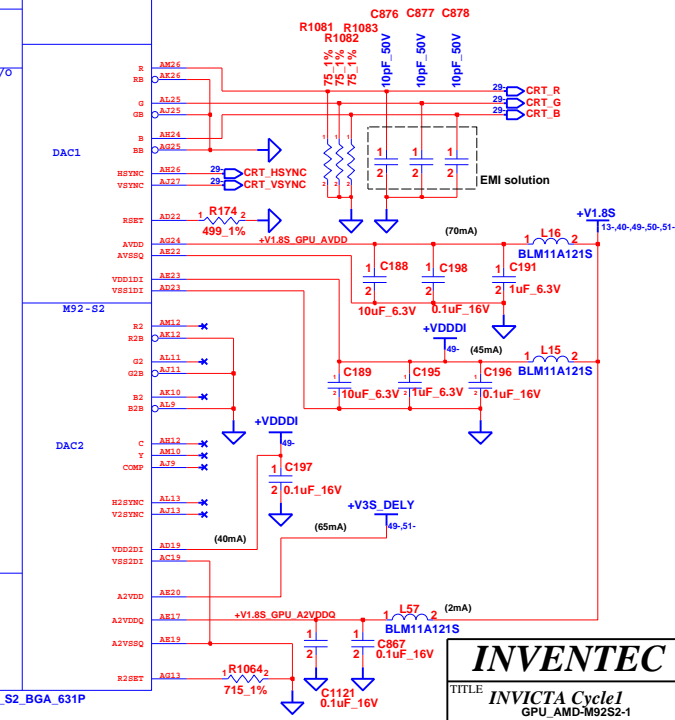
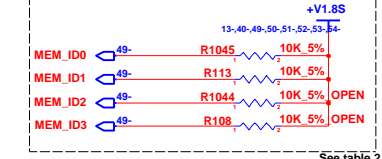
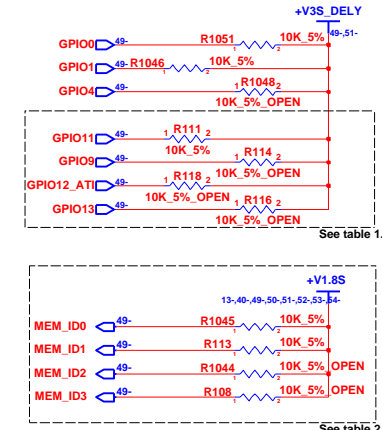
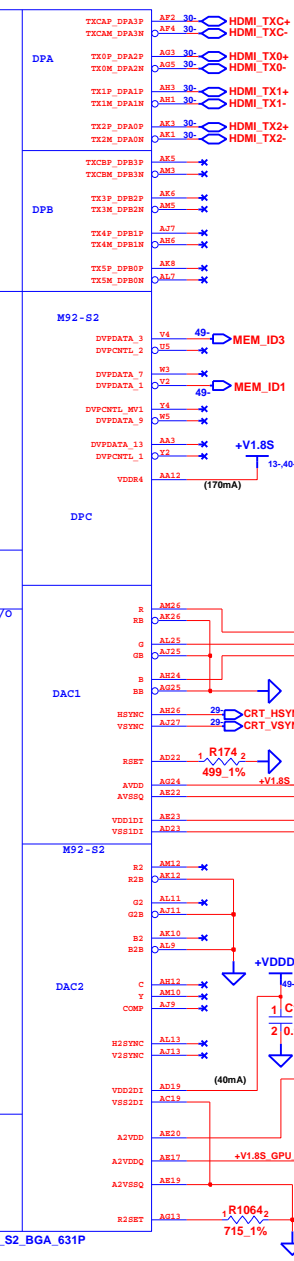
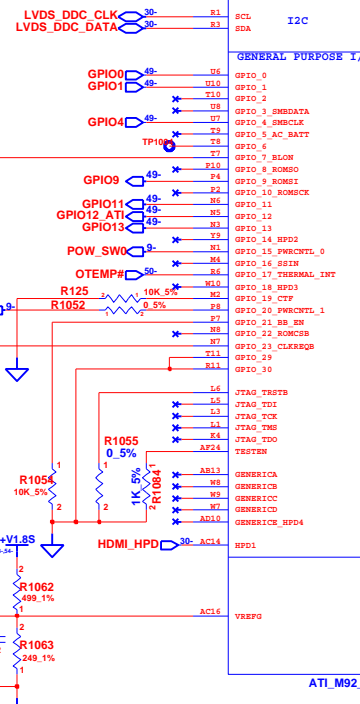
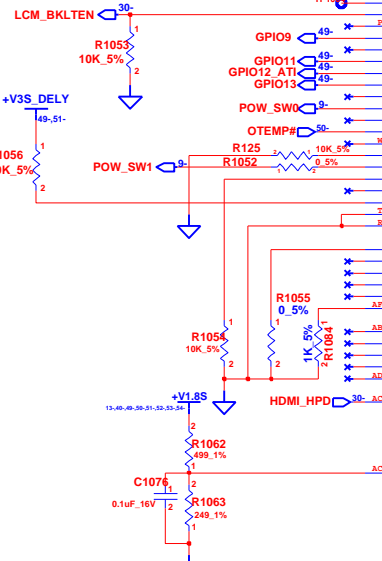
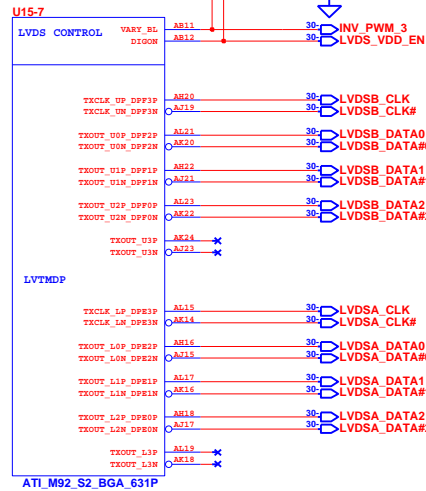
Table 1

GPIO_13	GPIO_12	GPIO_11	For DIS-GDDR2
0	0	1	512MB/256MB memory aperture (Default)
1	1	0	reserved

POW_SW1	POW_SW0	+VDD_CORE
0	0	1.0V
0	1	0.95V
1	0	0.9V

Table 2

For DIS-VRAM DDR2				
MEM_ID3	MEM_ID2	MEM_ID1	MEM_ID0	vendor
0	0	0	1	Samsung (512MB)
0	0	1	0	Qimonda (512MB)
0	0	1	1	Hynix (512MB) (Default)

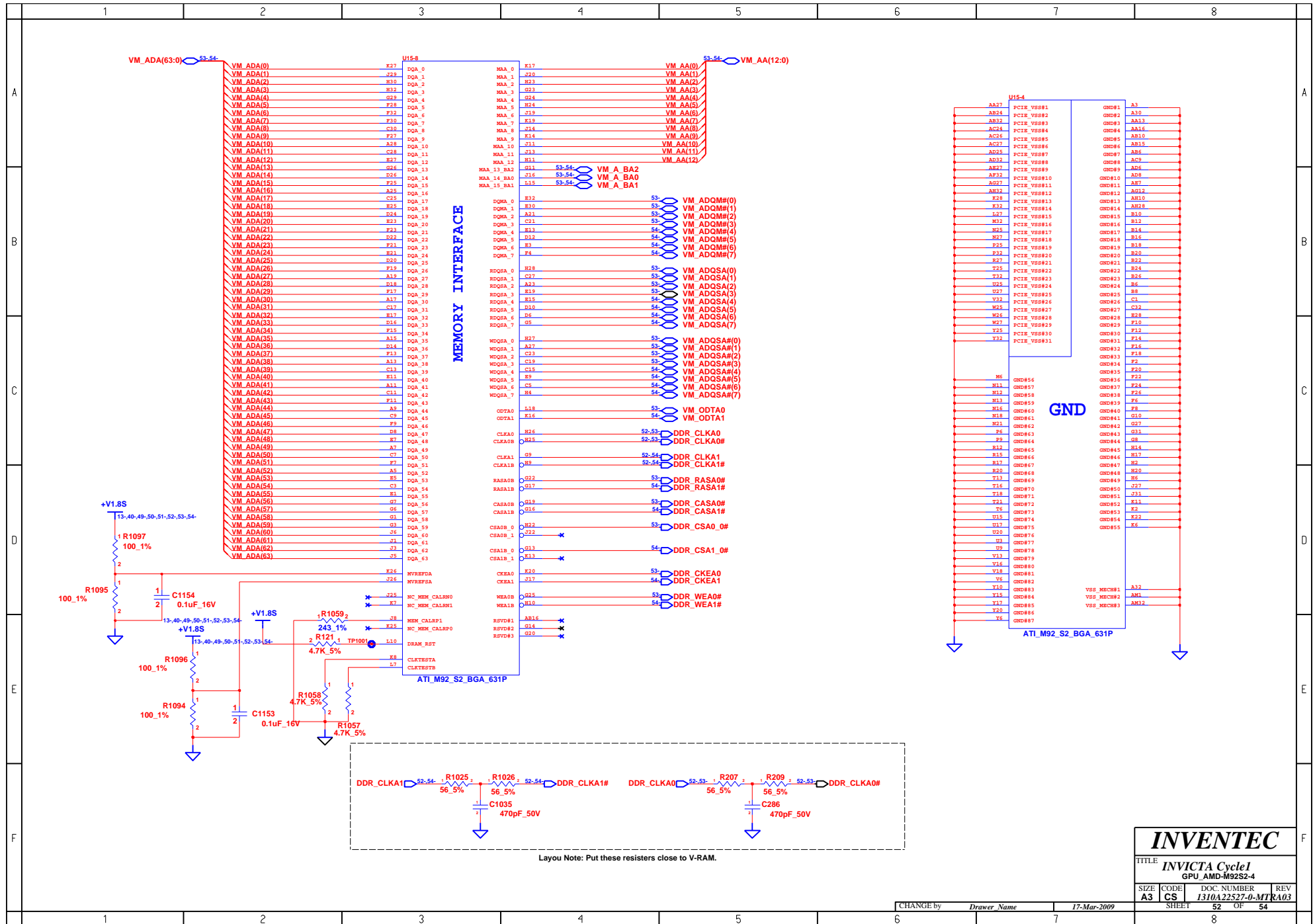


INVENTEC			
TITLE: INVICTA Cycle1 GPU_AMD-M92S2-1			
SIZE: A3	CODE: CS	DOC. NUMBER: I310A22527-0-MTR	REV: A03
SHEET: 49		OF: 54	

CHANGE by: Drawer Name 17-Mar-2009







**INVENTEC**

TITLE INVICTA Cycle1 GPU_AMD-M92S2-4			
SIZE A3	CODE CS	DOC. NUMBER I310A22527-0-MTR	REV A03
SHEET 52		OF 54	

CHANGE by: Drawer Name 17-Mar-2009



1 2 3 4 5 6 7 8

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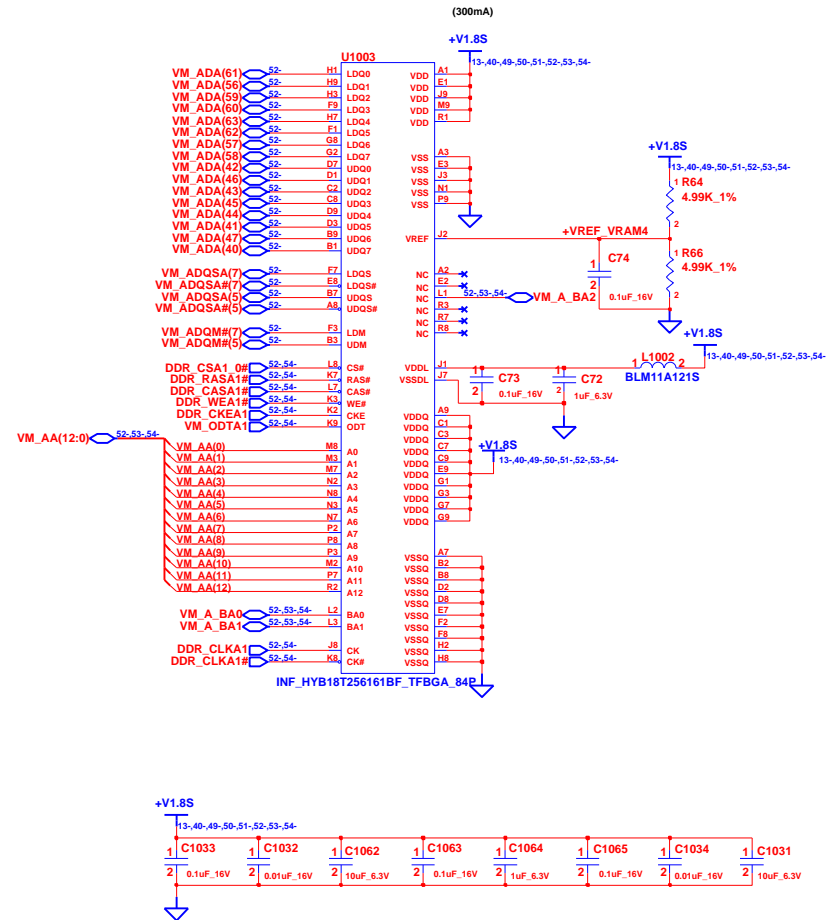
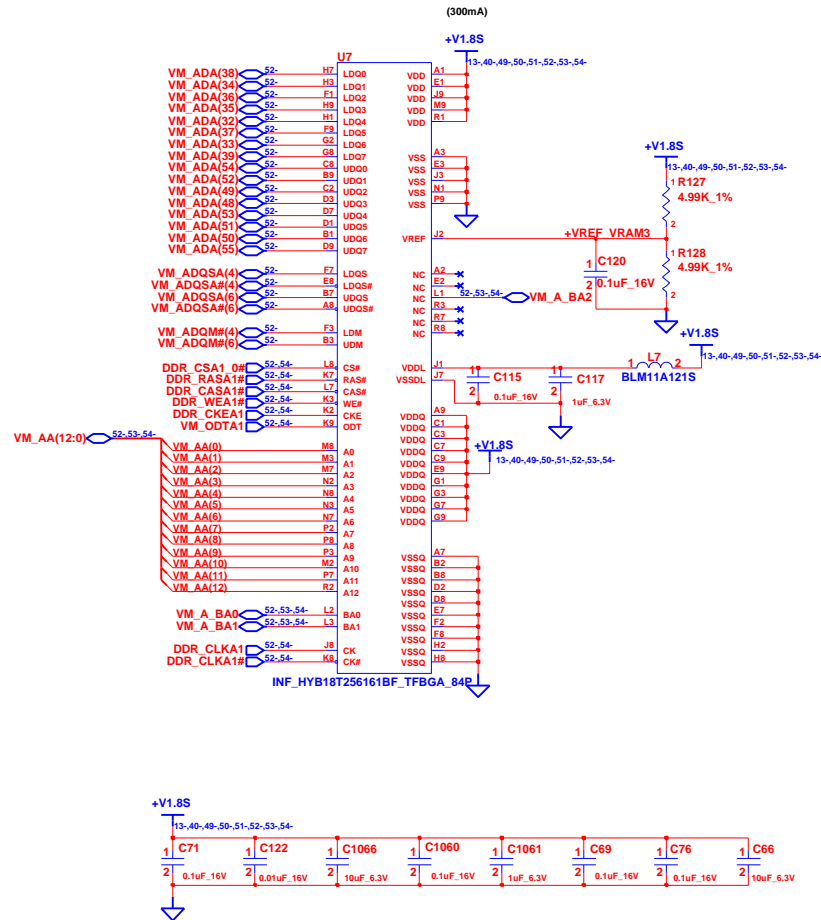
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INVENTEC

TITLE  
INVICTA Cycle1  
Video RAM (DDR2) -2

SIZE CODE DOC. NUMBER REV  
A3 CS 1310A22527-0-MTR A03

CHANGE by Drawer Name 17-Mar-2009

SHEET 54 OF 54

1 2 3 4 5 6 7 8