

S-SERIES 2009

INVICTA (Intel-Discrete)

MV Build (A03) - Final

2009.03.18

| DATE | CHANGE NO. | REV |
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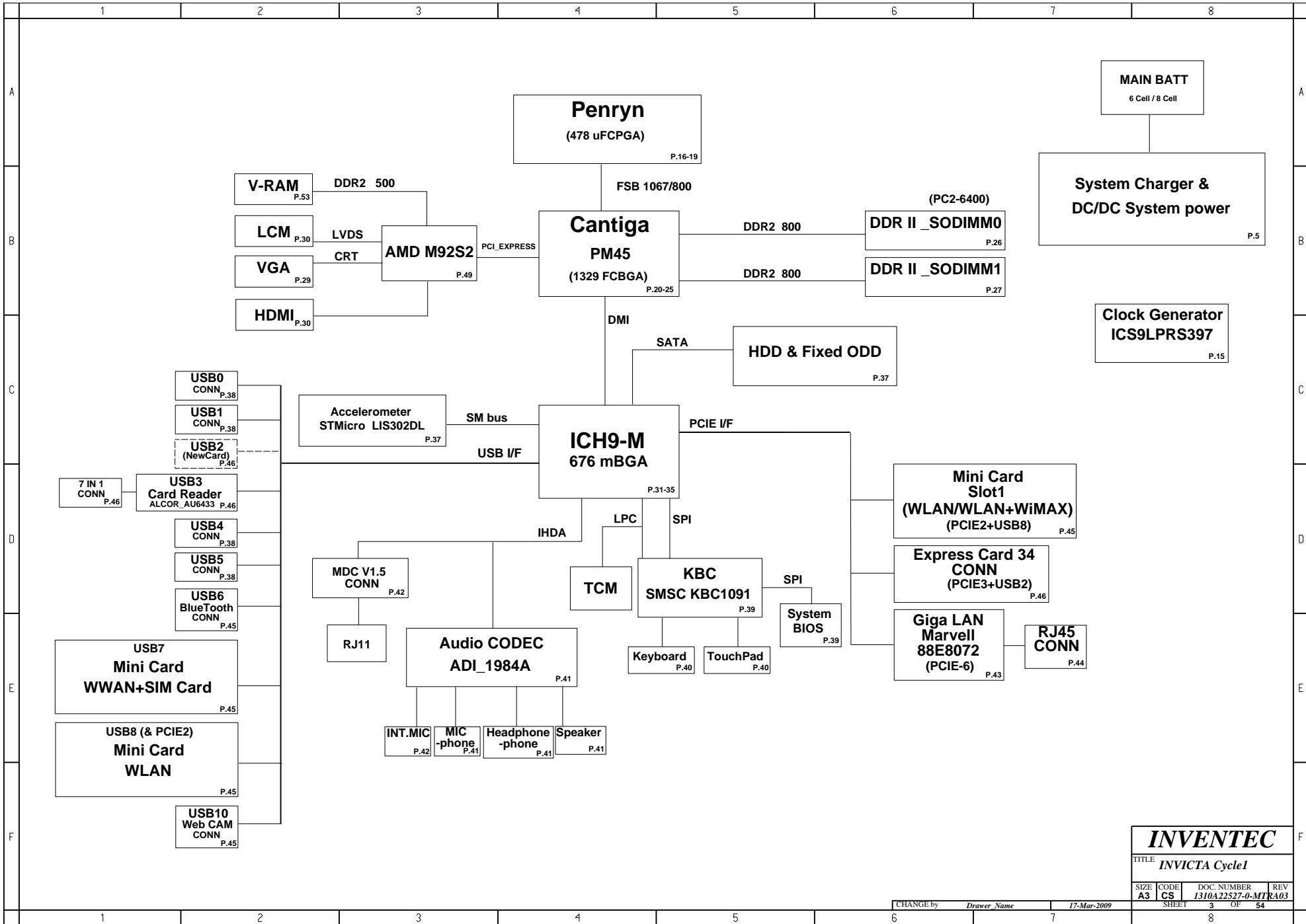
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| DRAWER | EE | DATE | POWER | DATE | INVENTEC | | |
| DESIGN | | | | | | | |
| CHECK | | | | | | | |
| RESPONSIBLE | | | | | | | |
| TITLE | | | | | <i>INVICTA Cycle1</i> | | |
| SIZE = | 3 | VER : | | | | | |
| FILE NAME : | XXXX-XXXXXX-XX | | | SIZE | CODE | DOC. NUMBER | REV |
| P/N | XXXXXXXXXXXX | | | A3 | CS | J310A22527-0-MTR | A03 |
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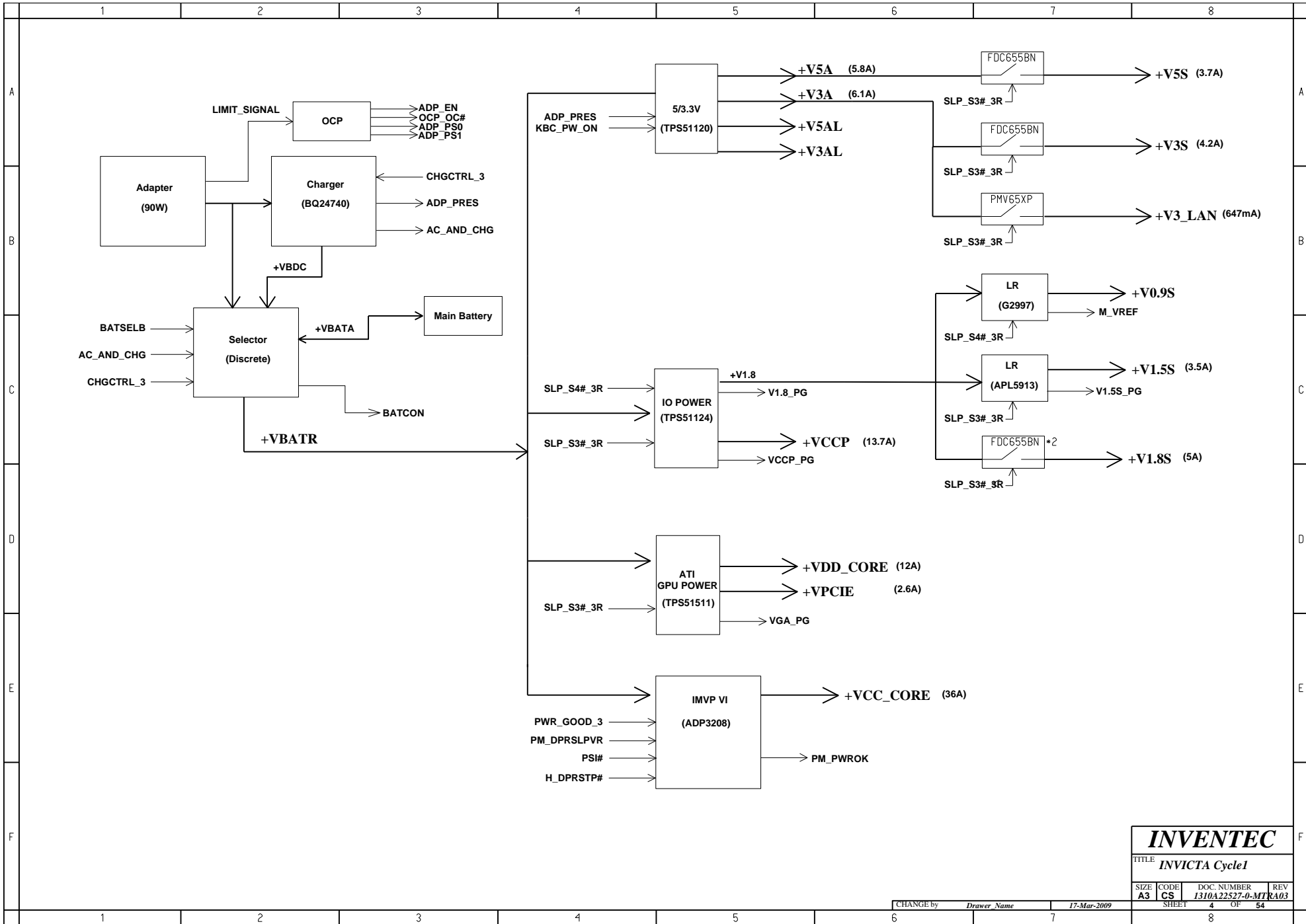
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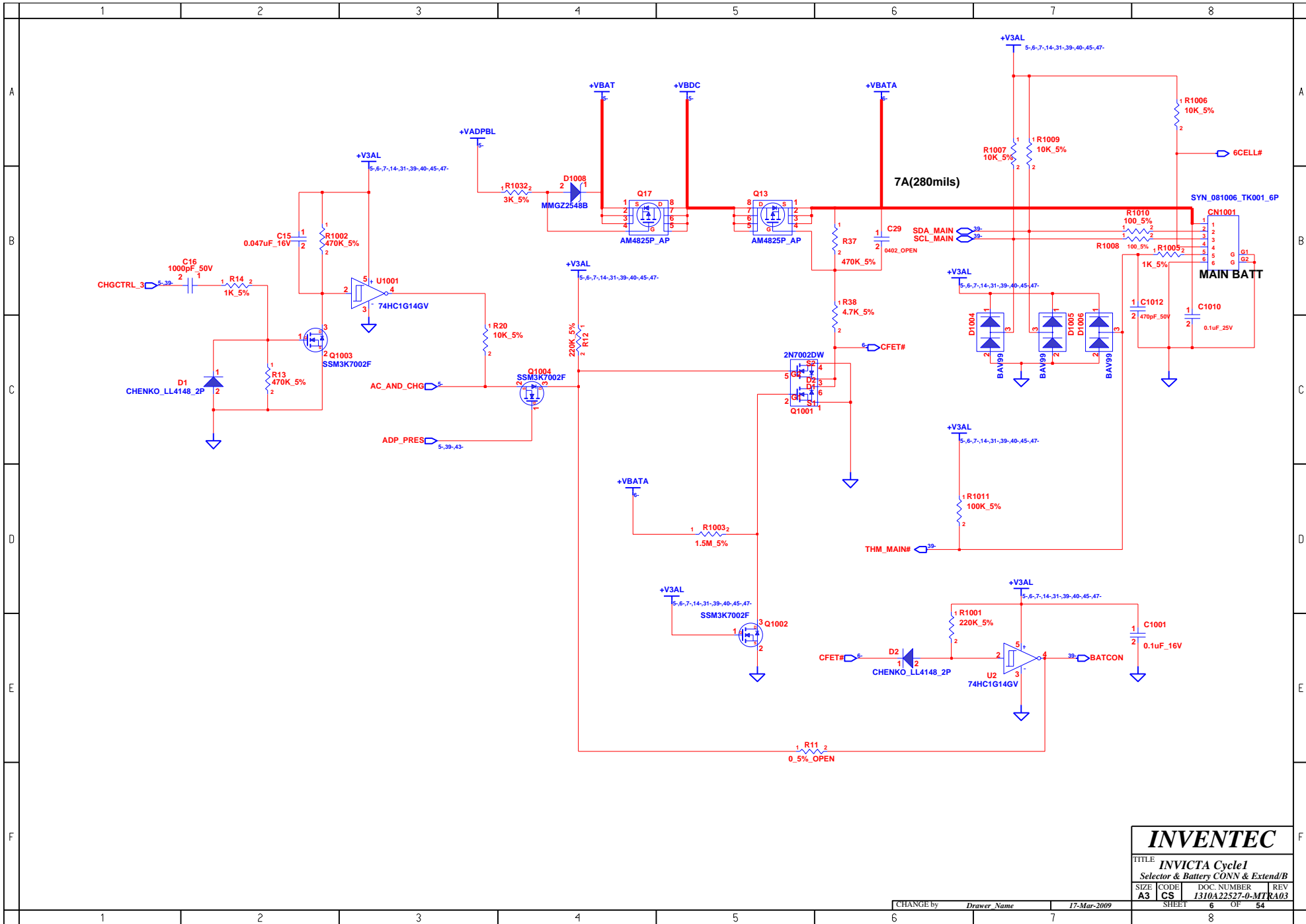
INVENTEC

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| TITLE INVICTA Cycle1 | | | |
| Contents | | | |
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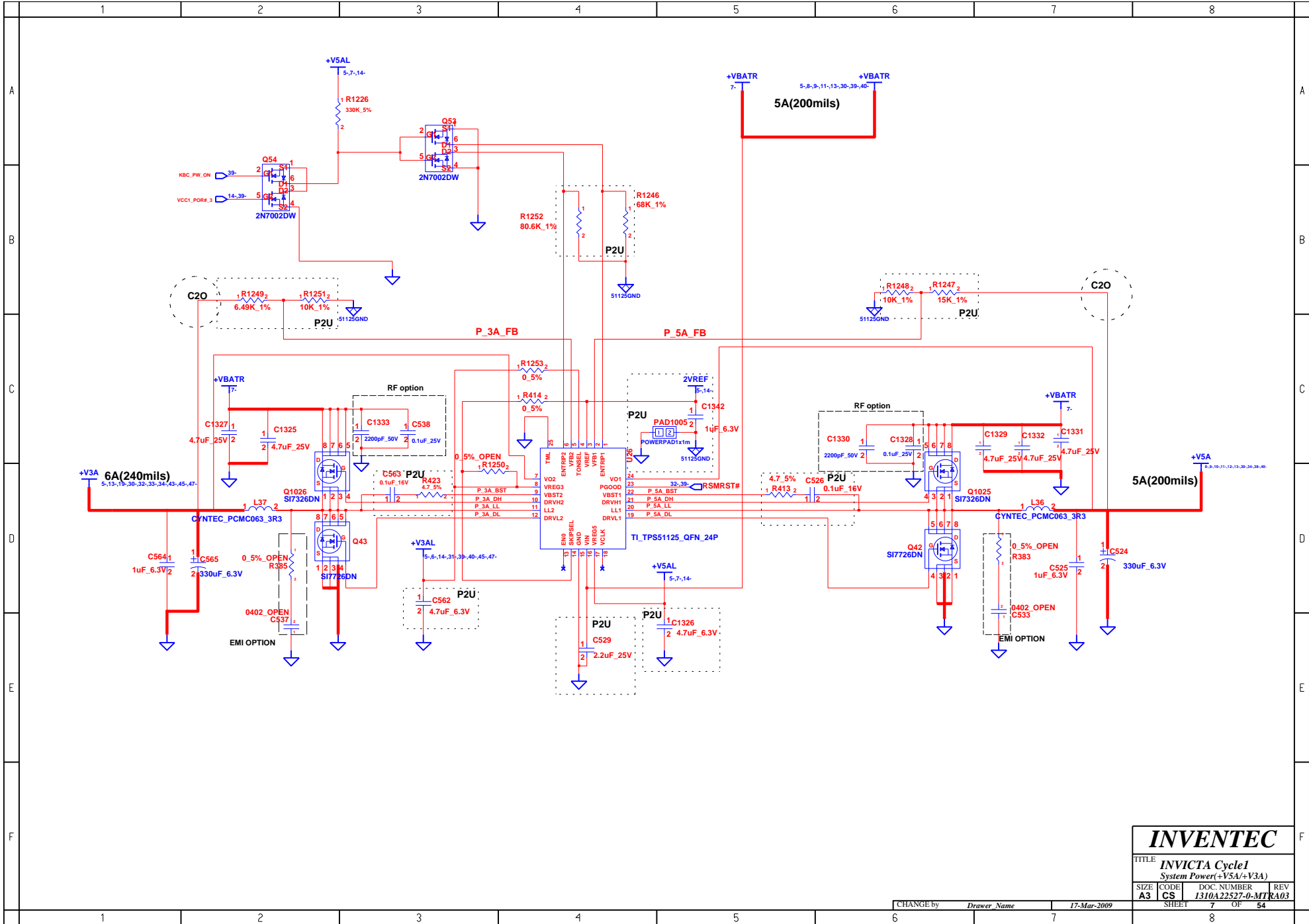




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| INVENTEC | | | |
| TITLE <i>INVICTA Cycle 1</i> | | | |
| SIZE | CODE | DOC. NUMBER | REV |
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| | | | |
|------------------------------------|------|-----------------|-------------|
| INVENTEC | | | |
| TITLE <i>INVICTA Cycle 1</i> | | | |
| Selector & Battery CONN & Extend/B | | | |
| SIZE | CODE | DOC NUMBER | REV |
| A3 | CS | 1310A22527-0-MT | A03 |
| CHANGE by | | Drawer Name | 17-Mar-2009 |
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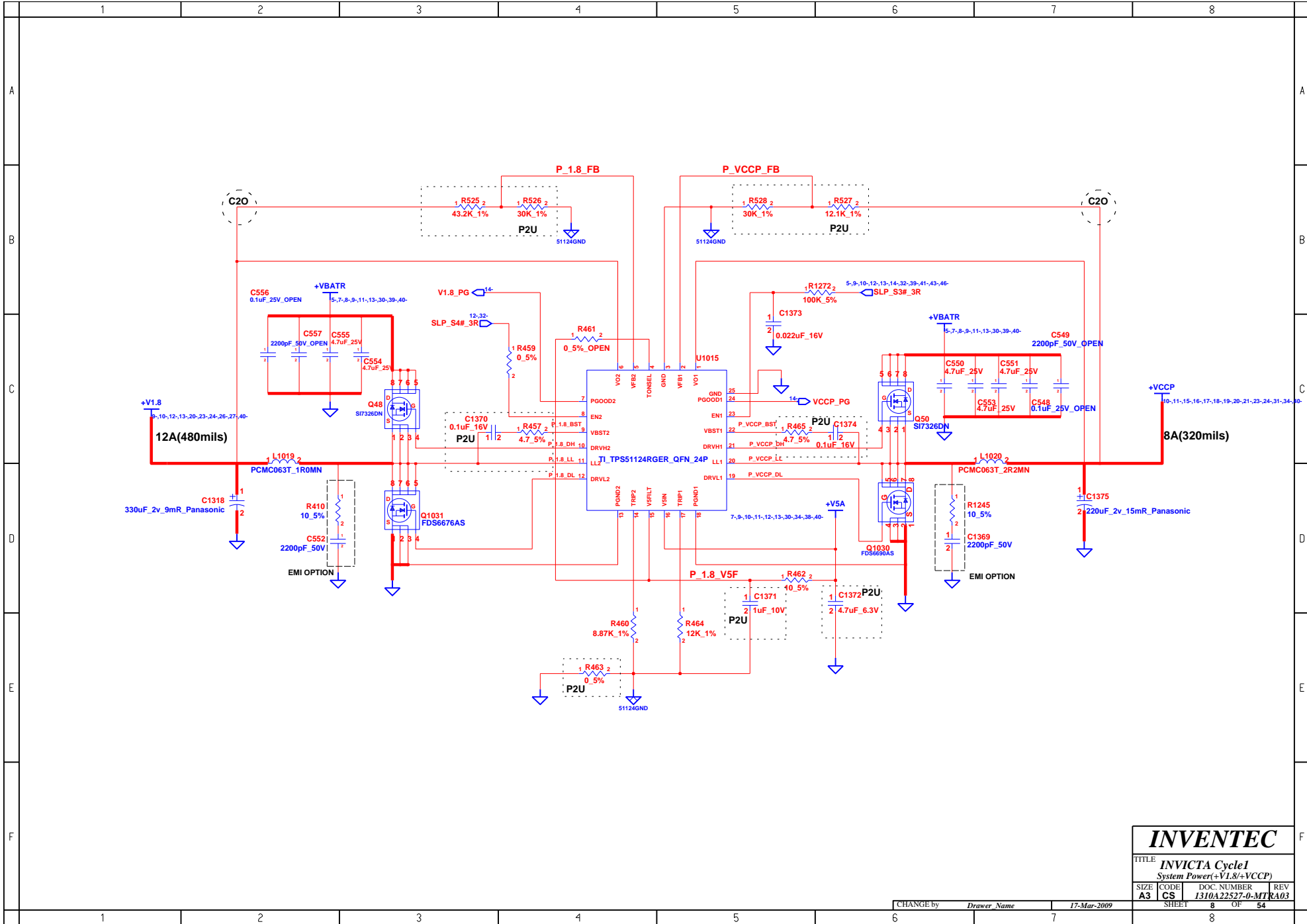
INVENTEC

TITLE: **INVICTA Cycle 1**
System Power(+V5A/+V3A)

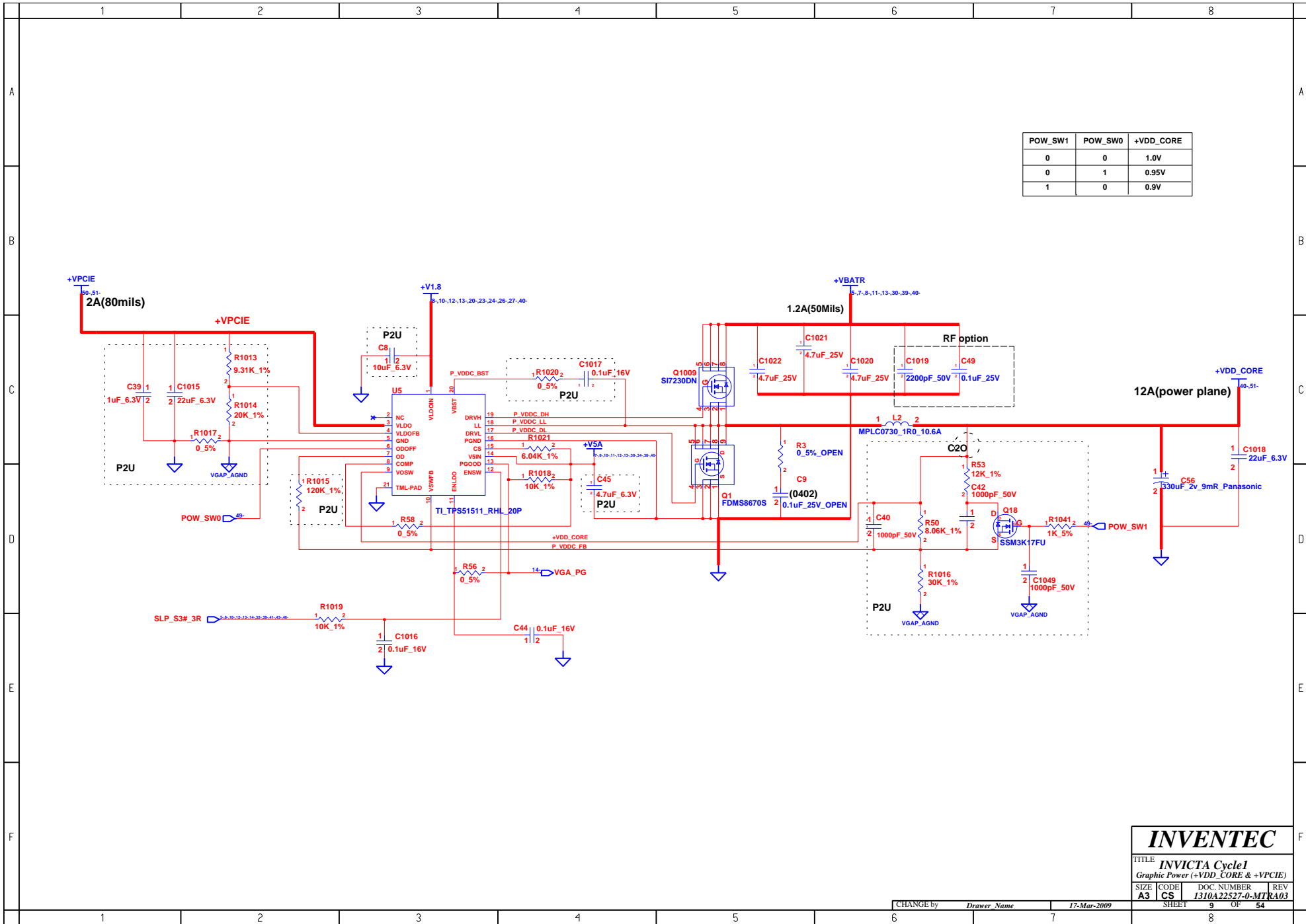
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| INVENTEC | | | |
| TITLE INVICTA Cycle 1 | | | |
| System Power(+V1.8/+VCCP) | | | |
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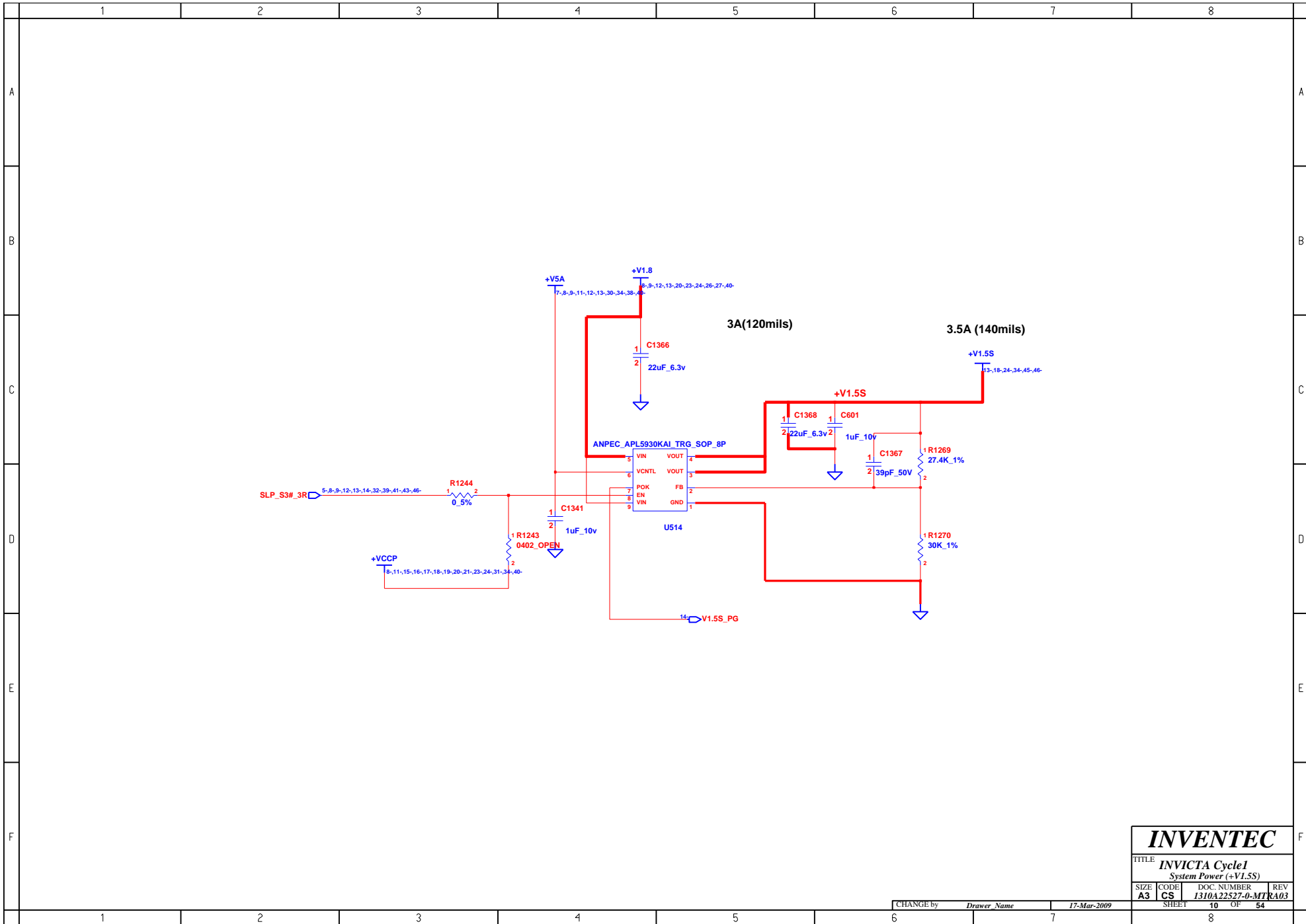


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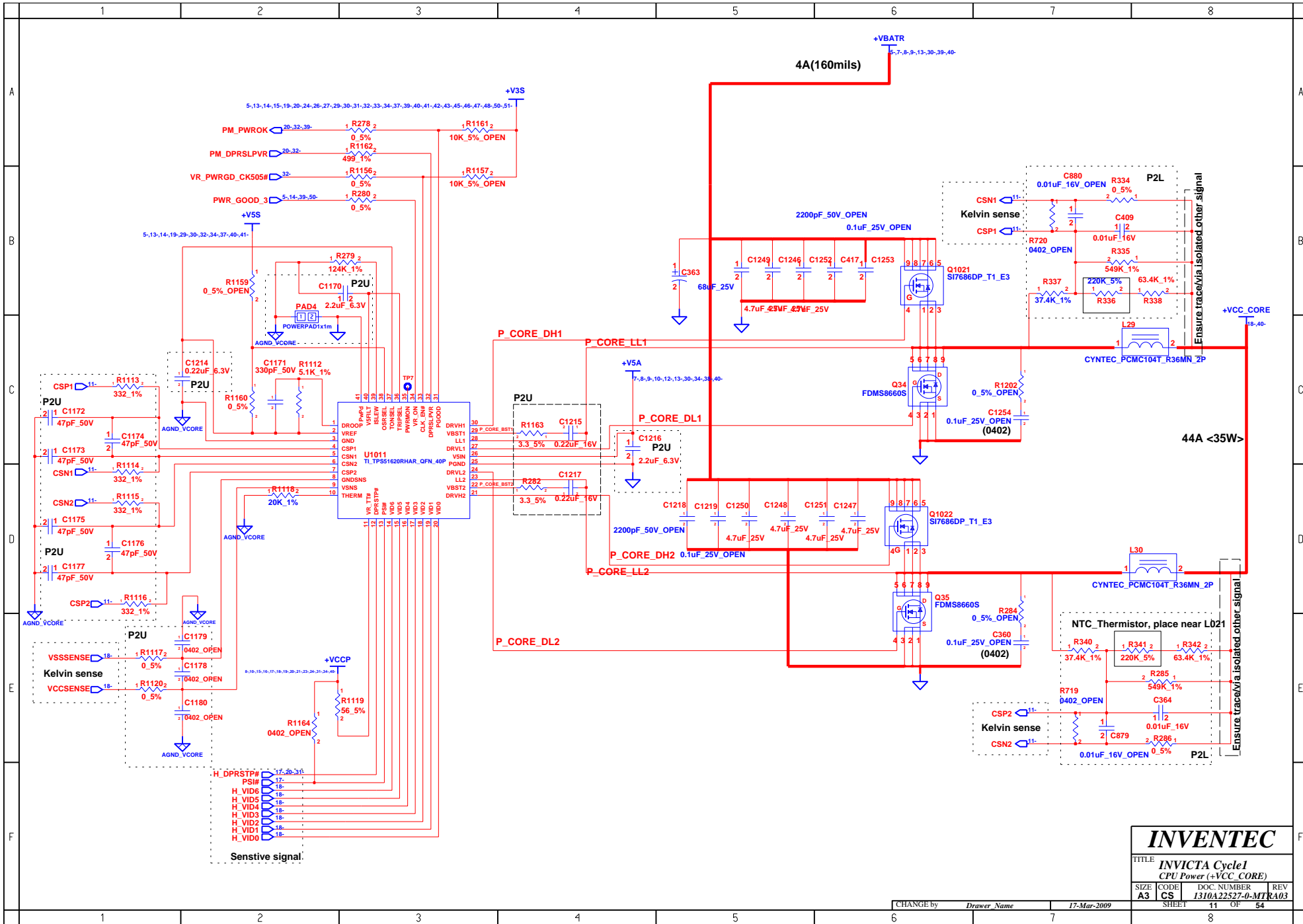
TITLE: **INVICTA Cycle1**
 Graphic Power (+VDD_CORE & +VPCIE)

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| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | I310A22527-0-MTR | A03 |

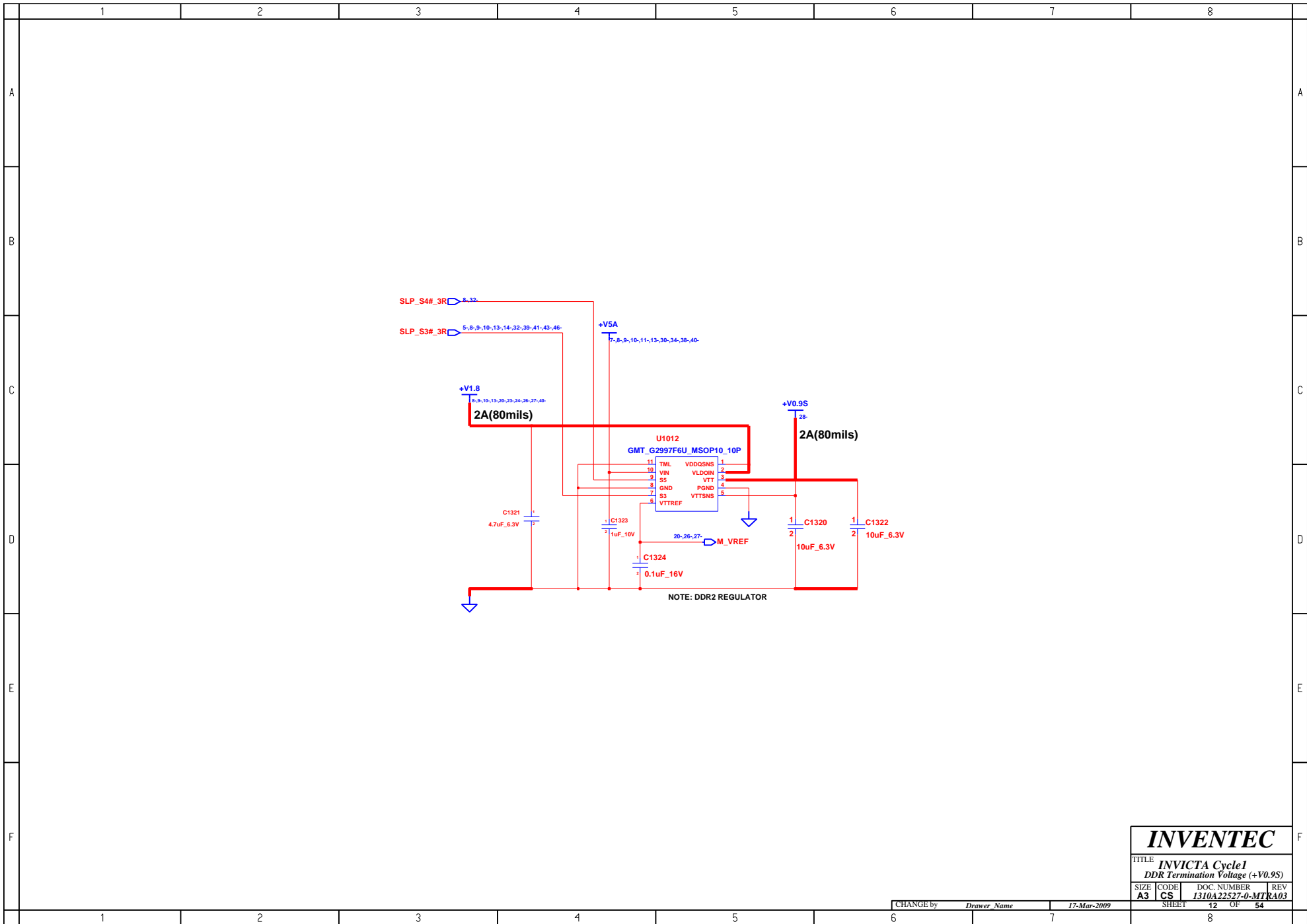
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| INVENTEC | | | |
| TITLE <i>INVICTA Cycle1</i> System Power (+V1.5S) | | | |
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| INVENTEC | | | |
| TITLE: INVICTA Cycle1 CPU Power (+VCC_CORE) | | | |
| SIZE: A3 | CODE: CS | DOC. NUMBER: I310A22527-0-MTR | REV: R03 |
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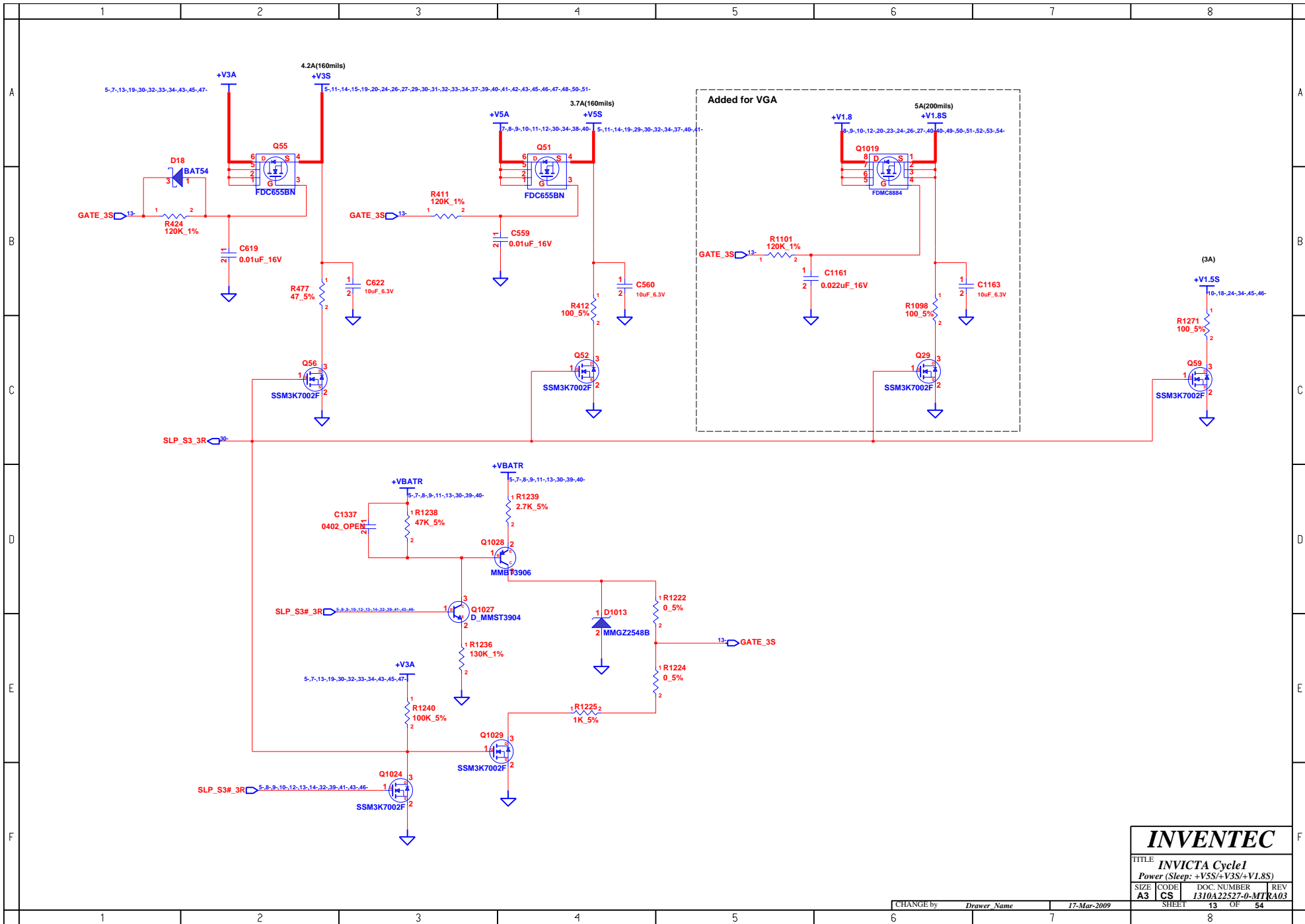


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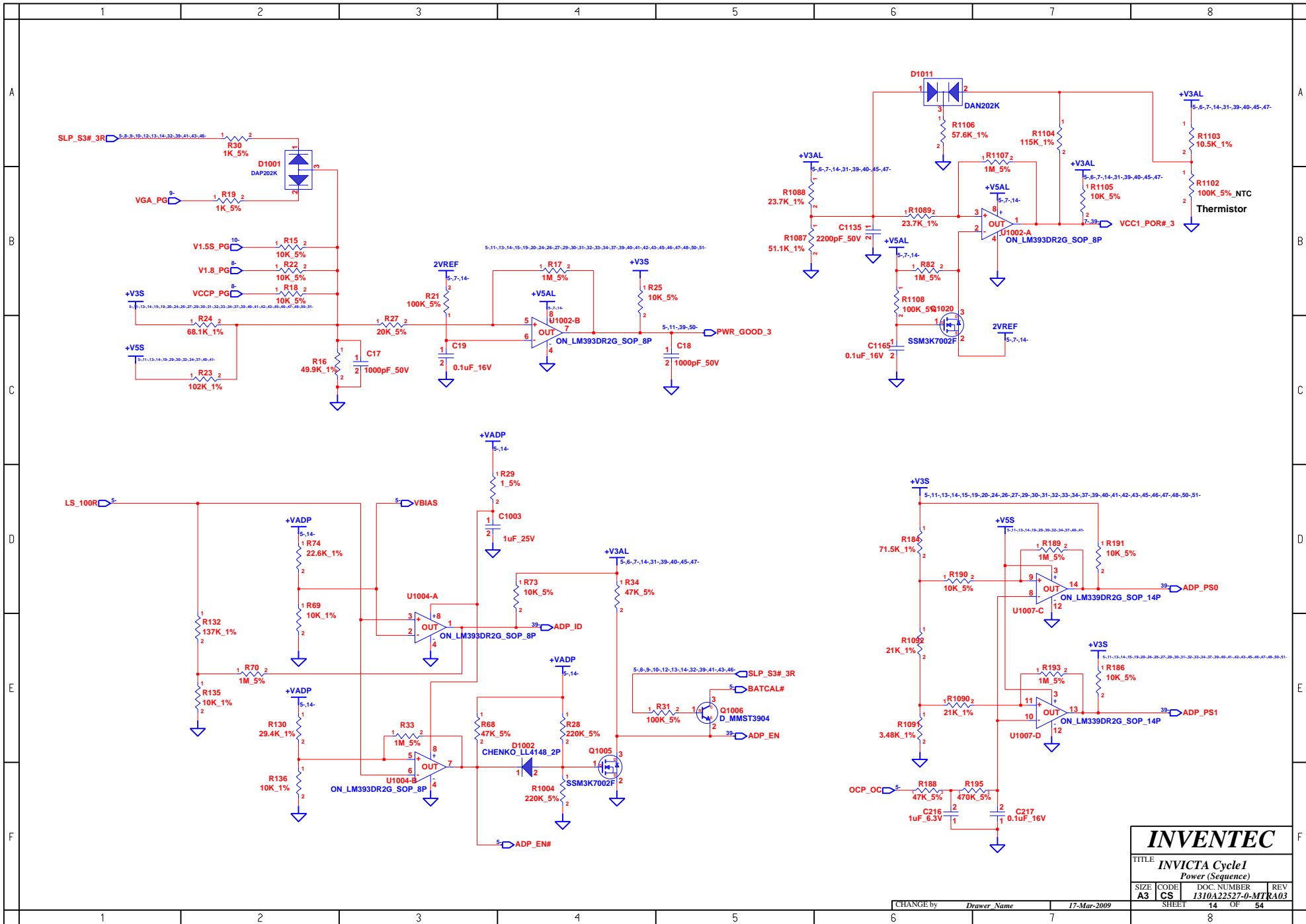
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| TITLE | | | |
| INVICTA Cycle1 | | | |
| DDR Termination Voltage (+V0.9S) | | | |
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | I310A22527-0-MT | RA03 |

CHANGE by *Drawer Name* 17-Mar-2009

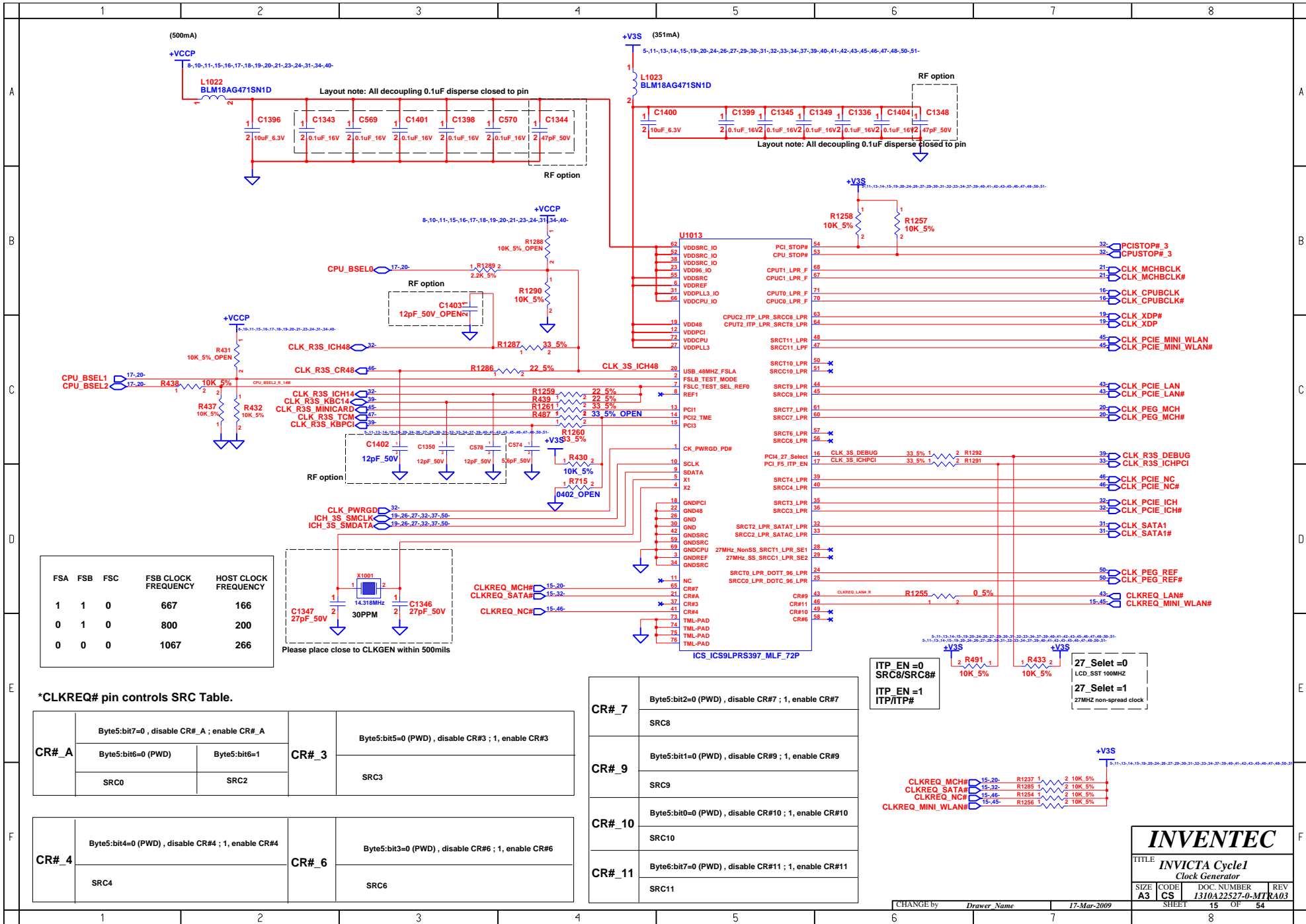
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| | | | |
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| INVENTEC | | | |
| TITLE <i>INVICTA Cycle 1</i> | | | |
| Power (Sleep: +VSS/+V3S/+V1.8S) | | | |
| SIZE | CODE | DOC NUMBER | REV |
| A3 | CS | I310A22527-0-MT | R403 |
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|--------------------------------|------------|--------------------------------|------------|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 | | | |
| Power (Sequence) | | | |
| SIZE A3 | CODE CS | DOC NUMBER 1310A22527-0-MTR | REV A03 |
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| FSB | FSB | FSC | FSB CLOCK FREQUENCY | HOST CLOCK FREQUENCY |
|-----|-----|-----|---------------------|----------------------|
| 1 | 1 | 0 | 667 | 166 |
| 0 | 1 | 0 | 800 | 200 |
| 0 | 0 | 0 | 1067 | 266 |

*CLKREQ# pin controls SRC Table.

| CR#_A | Byte5:bit7=0 (PWD), disable CR#_A; enable CR#_A | | CR#_3 | Byte5:bit5=0 (PWD), disable CR#3; 1, enable CR#3 | |
|-------|--|--------------|-------|--|------|
| | Byte5:bit6=0 (PWD) | Byte5:bit6=1 | | SRC0 | SRC2 |
| CR#_4 | Byte5:bit4=0 (PWD), disable CR#4; 1, enable CR#4 | | CR#_6 | Byte5:bit3=0 (PWD), disable CR#6; 1, enable CR#6 | |
| SRC4 | | | | SRC6 | |

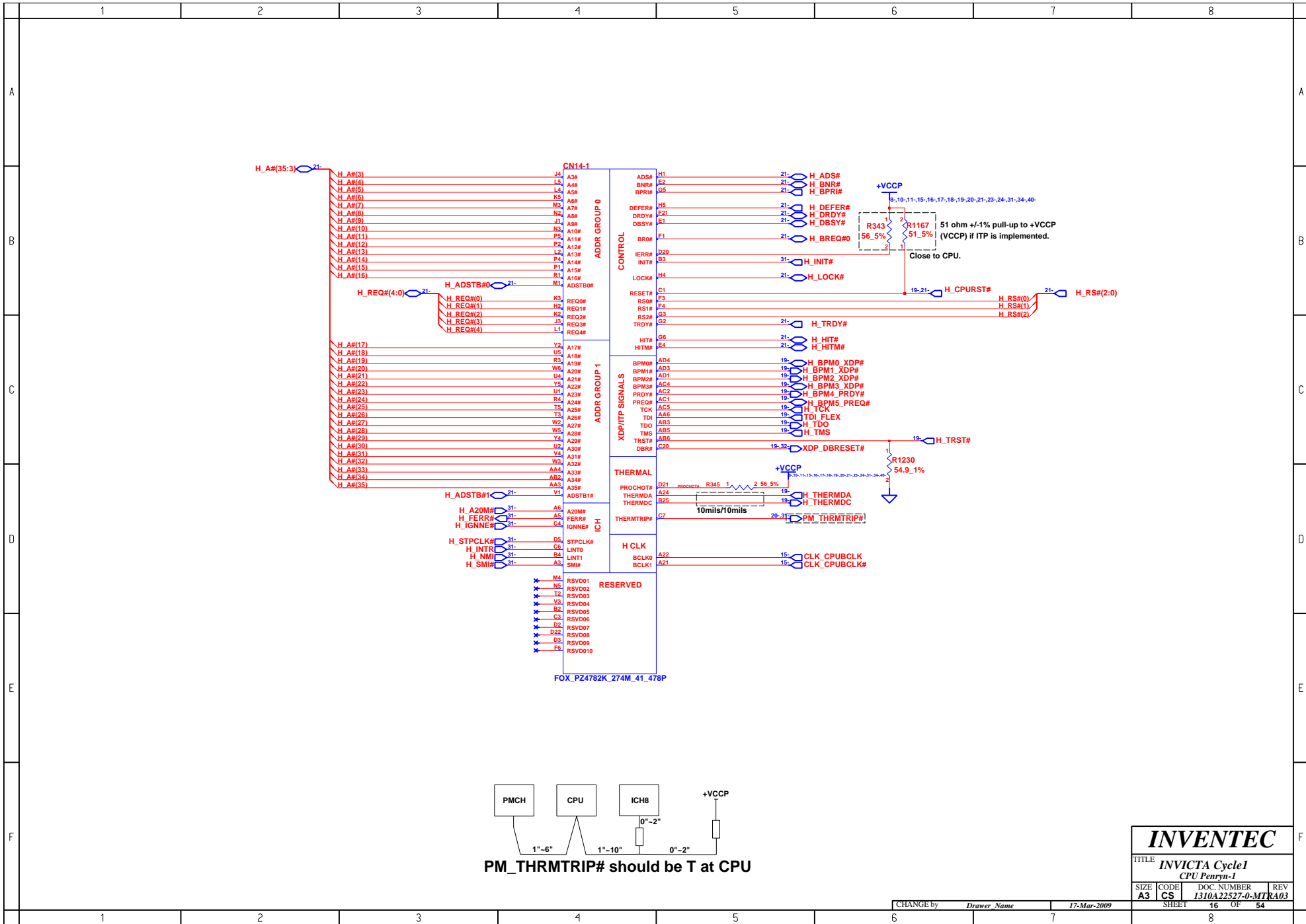
| | |
|--------|--|
| CR#_7 | Byte5:bit2=0 (PWD), disable CR#7; 1, enable CR#7 |
| SRC8 | |
| CR#_9 | Byte5:bit1=0 (PWD), disable CR#9; 1, enable CR#9 |
| SRC9 | |
| CR#_10 | Byte5:bit0=0 (PWD), disable CR#10; 1, enable CR#10 |
| SRC10 | |
| CR#_11 | Byte6:bit7=0 (PWD), disable CR#11; 1, enable CR#11 |
| SRC11 | |

| | | |
|------------|------------|------------------------|
| ITP_EN = 0 | SRC8/SRC9# | 27_Select = 0 |
| ITP_EN = 1 | ITP/ITP# | 27_Select = 1 |
| | | 27MHz non-spread clock |

INVENTEC

TITLE: **INVICTA Cycle1**
Clock Generator

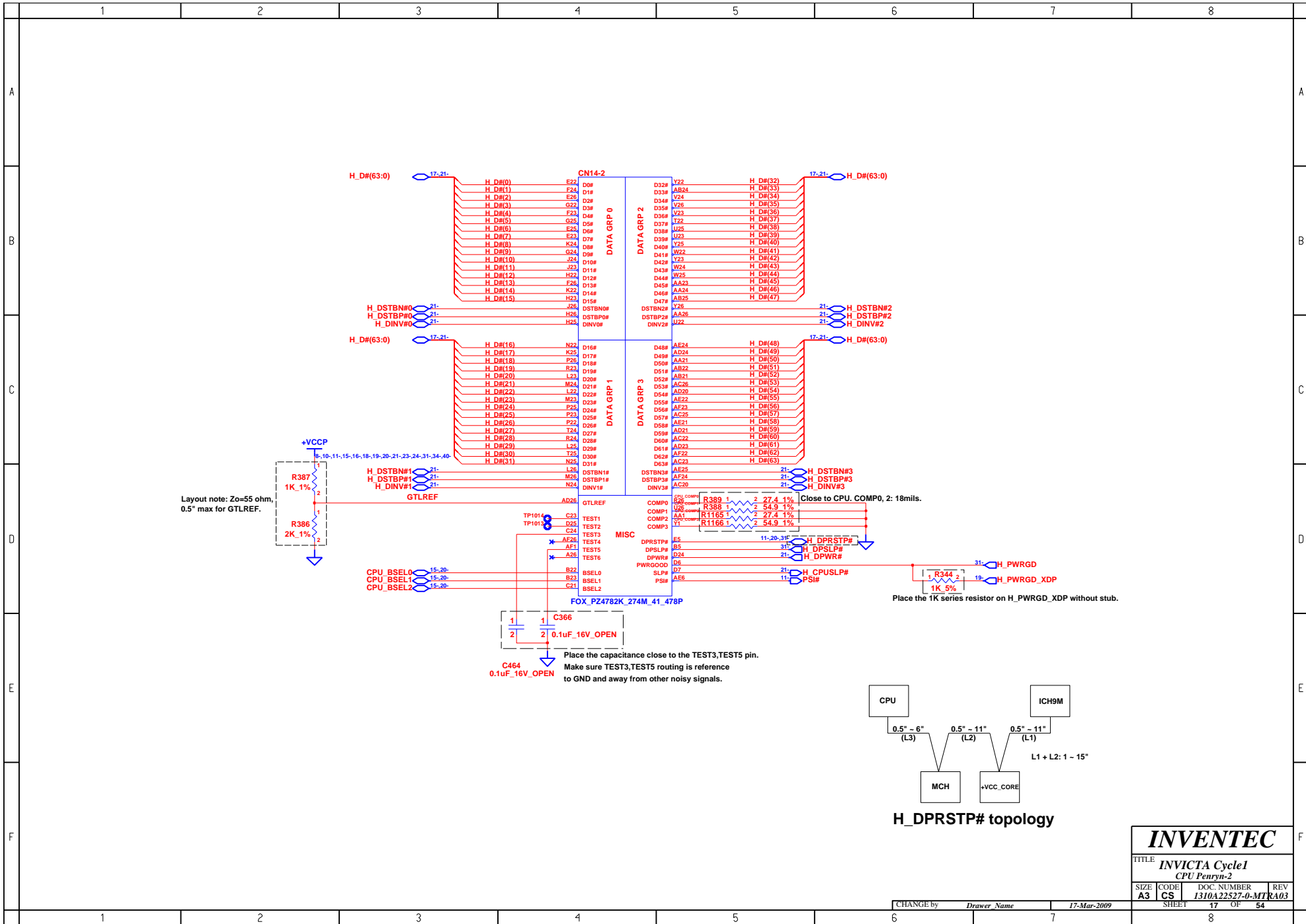
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| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | 1310A22527-0-MTR | A03 |



INVENTEC

TITLE **INVICTA Cycle1**
CPU Penryn-1

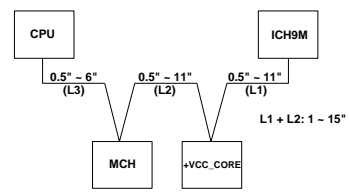
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Layout note: Zo=55 ohm,
0.5" max for GTLREF.

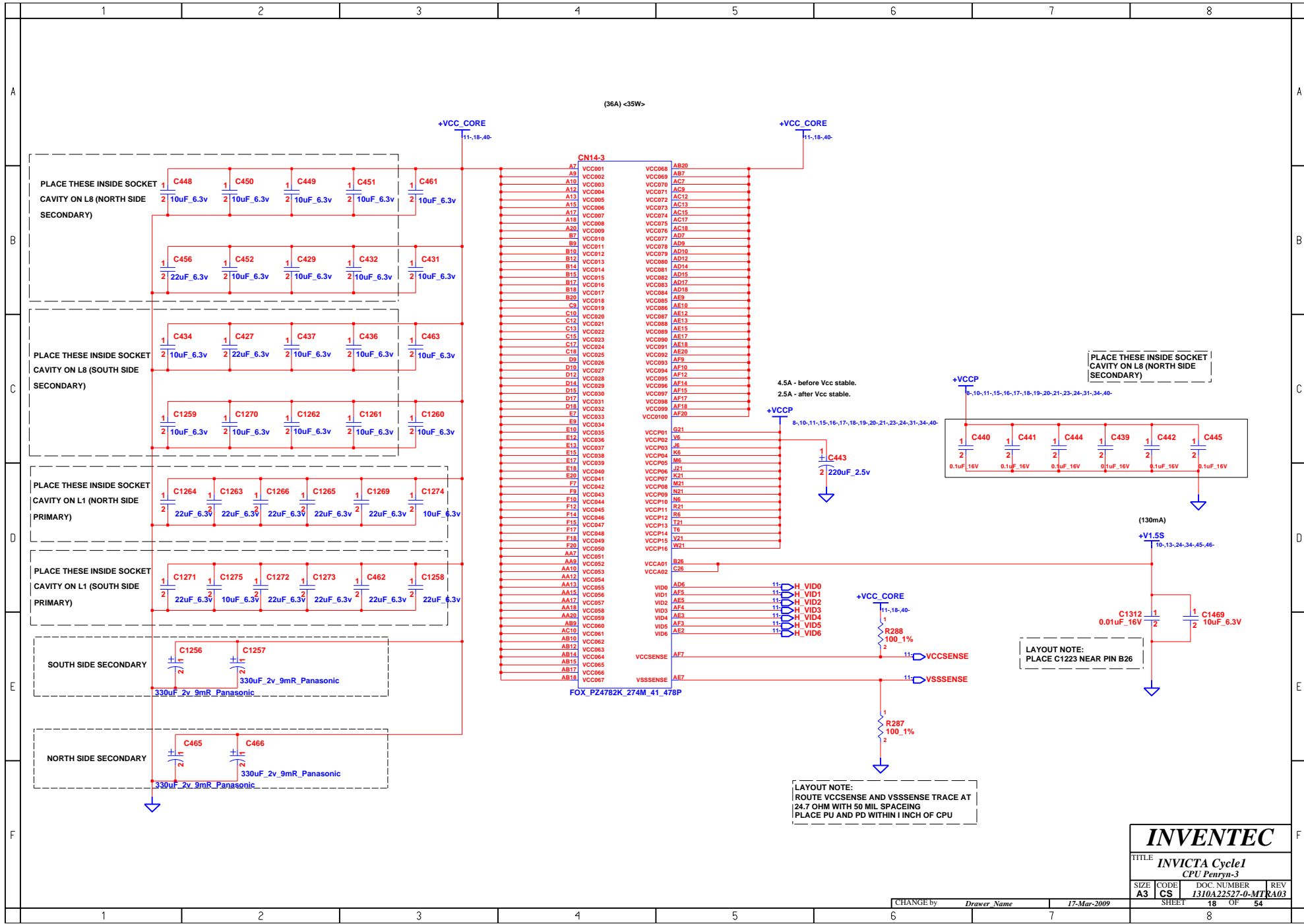
Place the capacitance close to the TEST3, TEST5 pin.
Make sure TEST3, TEST5 routing is reference
to GND and away from other noisy signals.

Close to CPU_COMP0, 2: 18milis.
Place the 1K series resistor on H_PWRGD_XDP without stub.



H_DPRSTP# topology

| | | | |
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| INVENTEC | | | |
| TITLE INVICTA Cycle1 | | | |
| CPU Penryn-2 | | | |
| SIZE | CODE | DOC NUMBER | REV |
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| CHANGE by | | Drawer Name | 17-Mar-2009 |
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(36A) <35W>

+VCC CORE
11,18,40

+VCC CORE
11,18,40

PLACE THESE INSIDE SOCKET CAVITY ON L8 (NORTH SIDE SECONDARY)

PLACE THESE INSIDE SOCKET CAVITY ON L8 (SOUTH SIDE SECONDARY)

PLACE THESE INSIDE SOCKET CAVITY ON L1 (NORTH SIDE PRIMARY)

PLACE THESE INSIDE SOCKET CAVITY ON L1 (SOUTH SIDE PRIMARY)

SOUTH SIDE SECONDARY

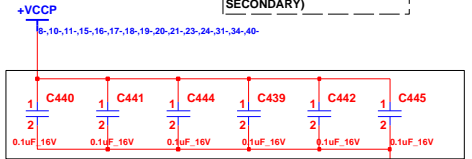
NORTH SIDE SECONDARY

- CN14-3**
 A7 VCC001
 A9 VCC002
 A19 VCC003
 A14 VCC004
 A13 VCC005
 A15 VCC006
 A17 VCC007
 A18 VCC008
 A20 VCC009
 B7 VCC010
 B9 VCC011
 B10 VCC012
 B12 VCC013
 B14 VCC014
 B15 VCC015
 B16 VCC016
 B18 VCC017
 B20 VCC018
 C9 VCC019
 C10 VCC020
 C12 VCC021
 C13 VCC022
 C15 VCC023
 C17 VCC024
 C18 VCC025
 D9 VCC026
 D10 VCC027
 D12 VCC028
 D14 VCC029
 D15 VCC030
 D17 VCC031
 D18 VCC032
 E7 VCC033
 E9 VCC034
 E10 VCC035
 E12 VCC036
 E13 VCC037
 E15 VCC038
 E17 VCC039
 F18 VCC040
 F20 VCC041
 F7 VCC042
 F9 VCC043
 F10 VCC044
 F12 VCC045
 F14 VCC046
 F15 VCC047
 F17 VCC048
 F18 VCC049
 F20 VCC050
 AA7 VCC051
 AA9 VCC052
 AA10 VCC053
 AA12 VCC054
 AA13 VCC055
 AA15 VCC056
 AA17 VCC057
 AA18 VCC058
 AA20 VCC059
 AB9 VCC060
 AB10 VCC061
 AB12 VCC062
 AB14 VCC064
 AB15 VCC065
 AB17 VCC066
 AB18 VCC067
 VCC068
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 VCC995
 VCC996
 VCC997
 VCC998
 VCC999
 VCC1000

FOX PZ4782K 274M 41 478P

4.5A - before Vcc stable.
2.5A - after Vcc stable.

+VCCP
8,10,11,15,16,17,18,19,20,21,23,24,31,34,40

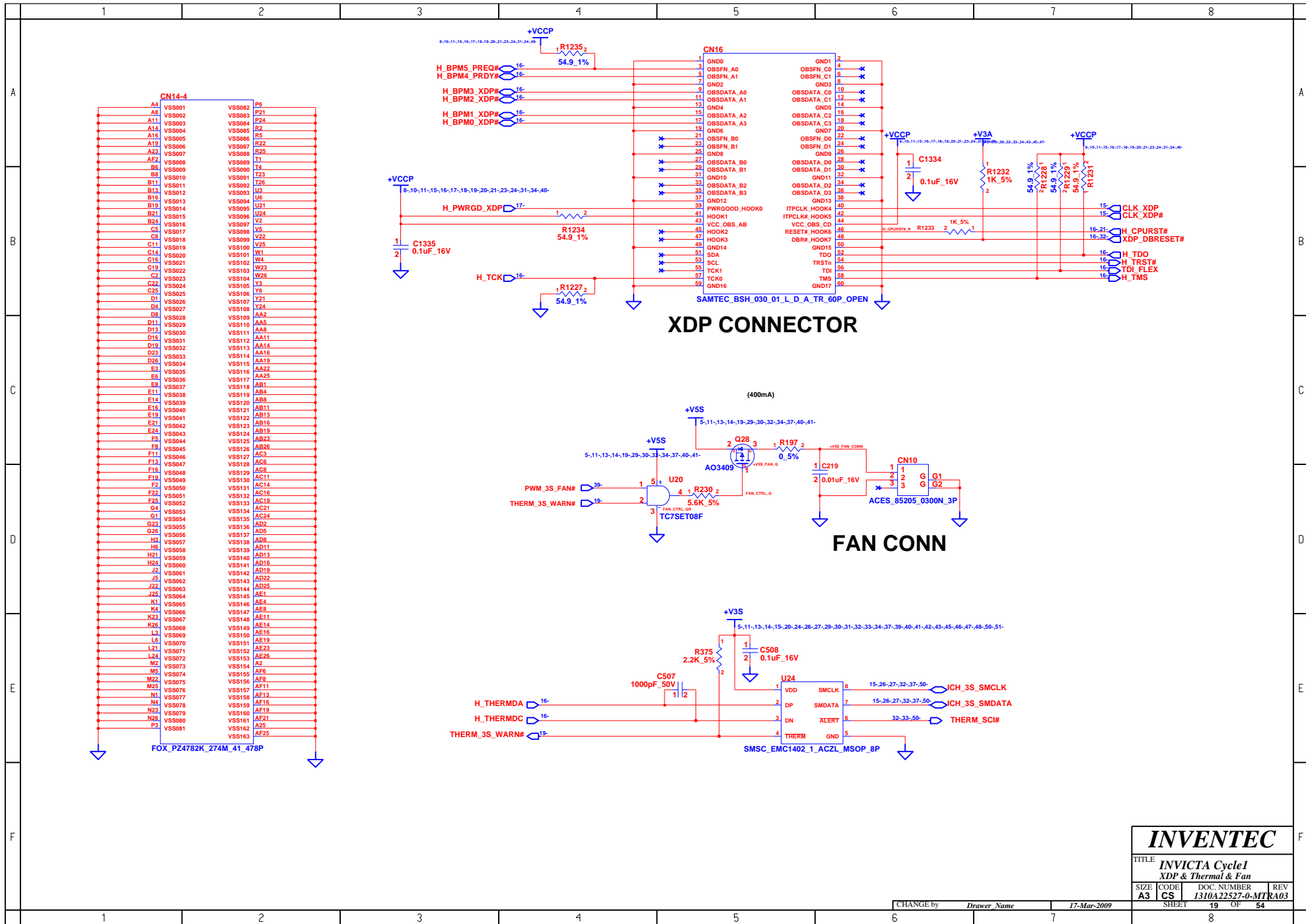


PLACE THESE INSIDE SOCKET CAVITY ON L8 (NORTH SIDE SECONDARY)

LAYOUT NOTE:
PLACE C1223 NEAR PIN B26

LAYOUT NOTE:
ROUTE VCCSENSE AND VSSSENSE TRACE AT 24.7 OHM WITH 50 MIL SPACING
PLACE PU AND PD WITHIN 1 INCH OF CPU

| | | | |
|---------------------------------|-------------------|--|-------------------|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 | | | |
| CPU Penryn-3 | | | |
| SIZE A3 | CODE CS | DOC. NUMBER I310A22527-0-MTR | REV A03 |
| CHANGE by <i>Drawer Name</i> | | 17-Mar-2009 | |
| SHEET 18 | | OF 54 | |



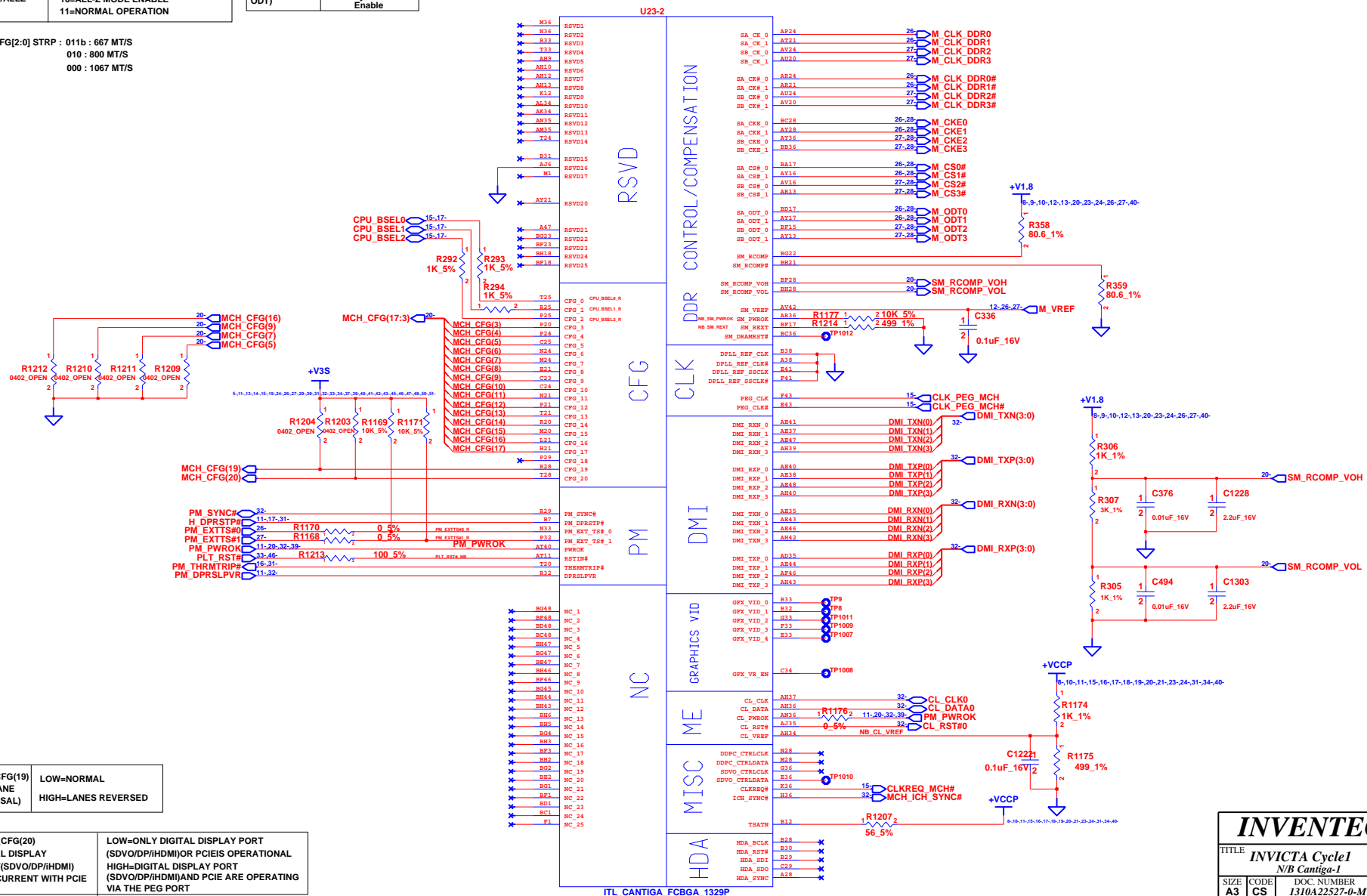
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|--|-------------------|--|-------------------|
| INVENTEC | | | |
| TITLE <i>INVICTA Cycle1</i> <i>XDP & Thermal & Fan</i> | | | |
| SIZE A3 | CODE CS | DOC. NUMBER <i>1310A22527-0-MTR</i> | REV A03 |
| CHANGE by <i>Drawer Name</i> | | 17-Mar-2009 | |
| SHEET 19 | | OF 54 | |

| | | | | | |
|------------|-------------------------|---------------------------|-----------------------------|----------------------------------|---|
| MCH_CFG(5) | LOW=DMix2 HIGH=DMix4 | MCH_CFG(7) (CPU Strap) | LOW=RSVD HIGH=Mobile CPU | MCH_CFG(9) PCIe Graphics Lane | LOW=Reverse Lane HIGH=Normal operation |
|------------|-------------------------|---------------------------|-----------------------------|----------------------------------|---|

| | | | |
|----------------|--|----------------------------------|--|
| MCH_CFG(13:12) | 00=PARTIAL CLOCK GATING DISABLE 01=XOR MODE ENABLE 10=ALL-Z MODE ENABLE 11=NORMAL OPERATION | MCH_CFG(16) (FSB Dynamic ODT) | LOW=Dynamic ODT Disable HIGH=Dynamic ODT Enable |
|----------------|--|----------------------------------|--|

NOTE: CFG[2:0] STRP : 011b : 667 MT/S
010 : 800 MT/S
000 : 1067 MT/S

NOTE : USE 4K-OHM RESISTOR WHEN INSTALLING
PULL-UP/PULL-DOWN RESISTOR ON ANY
MCH-CFG CONNECTION/PINS.



| | |
|------------------------------------|-----------------------------------|
| MCH_CFG(19) (DMI LANE REVERSAL) | LOW=NORMAL HIGH=LANES REVERSED |
|------------------------------------|-----------------------------------|

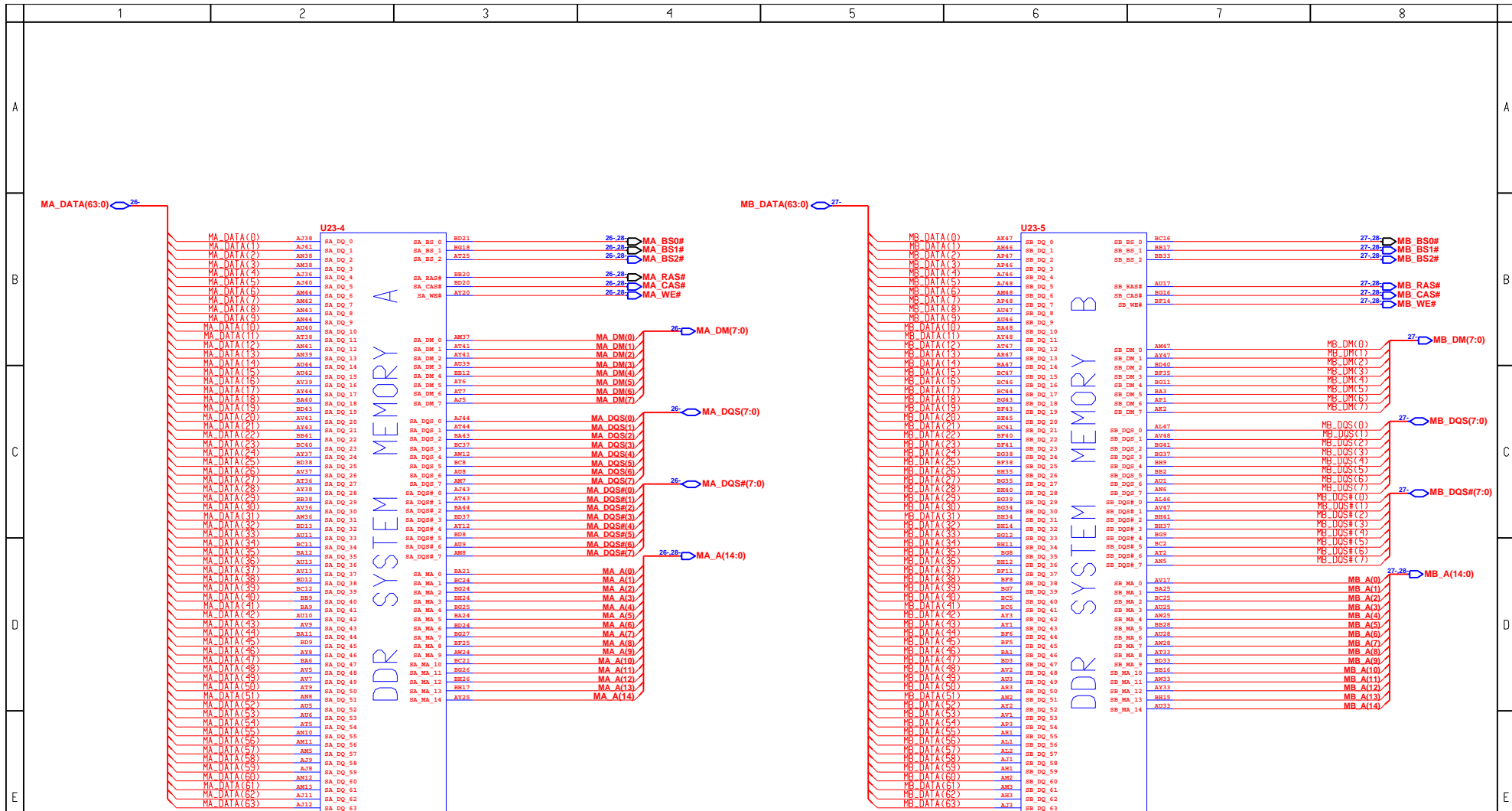
| | |
|---|--|
| MCH_CFG(20) DIGITAL DISPLAY PORT (SDVO/DP/HDMI) OR PCI-E OPERATIONAL PORT (SDVO/DP/HDMI) CONCURRENT WITH PCI-E | LOW=ONLY DIGITAL DISPLAY PORT DIGITAL DISPLAY PORT (SDVO/DP/HDMI) OR PCI-E OPERATIONAL PORT (SDVO/DP/HDMI) AND PCI-E ARE OPERATING VIA THE PEG PORT |
|---|--|

INVENTEC

TITLE
INVICTA Cycle1
N/B Cantiga-1

| | | | |
|------------|------------|-------------------------------|------------|
| SIZE A3 | CODE CS | DOC NUMBER 1310A22527-0-MR | REV A03 |
|------------|------------|-------------------------------|------------|

SHEET 20 OF 54



ITL_CANTIGA_FCBGA_1329P

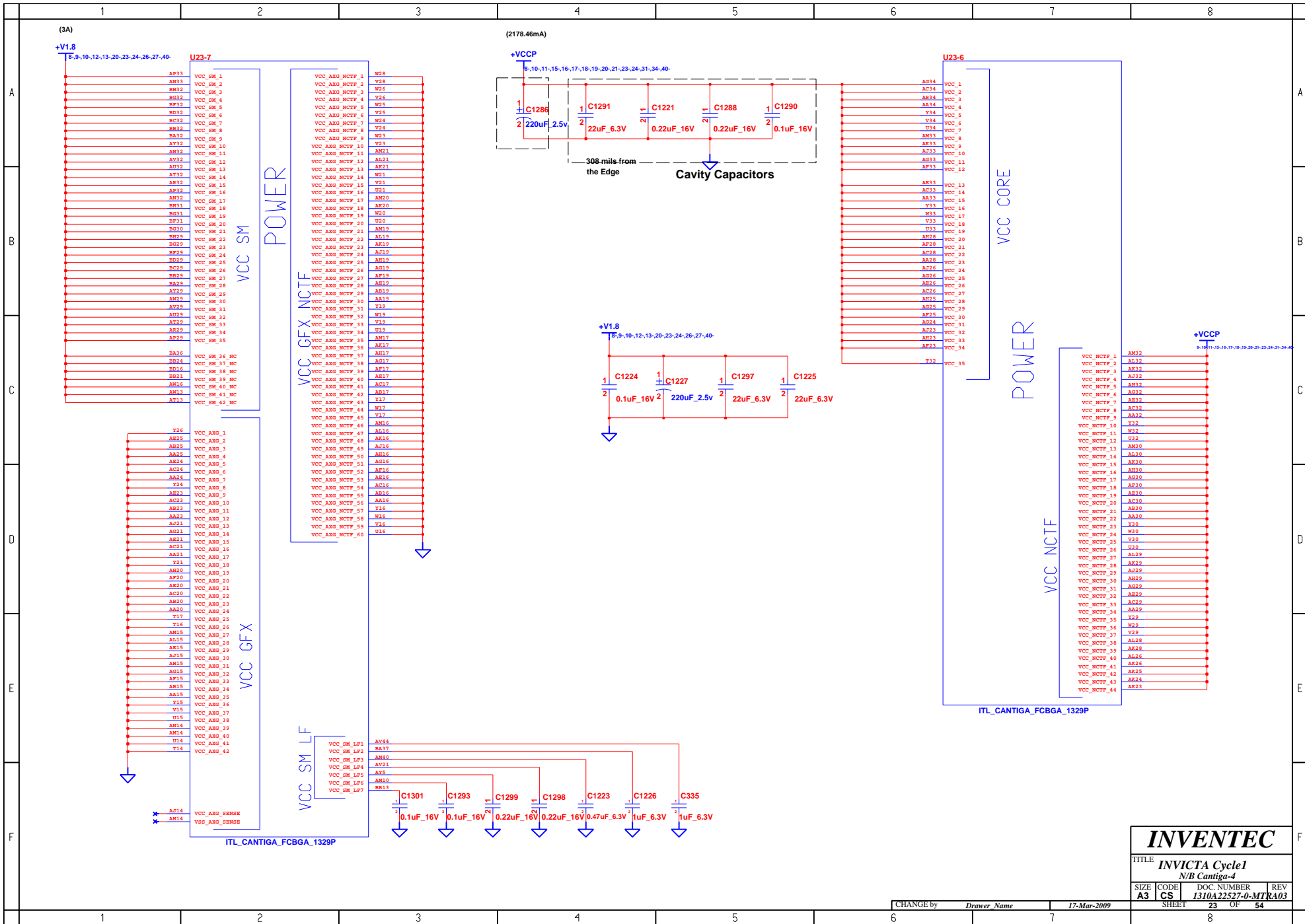
ITL_CANTIGA_FCBGA_1329P

INVENTEC

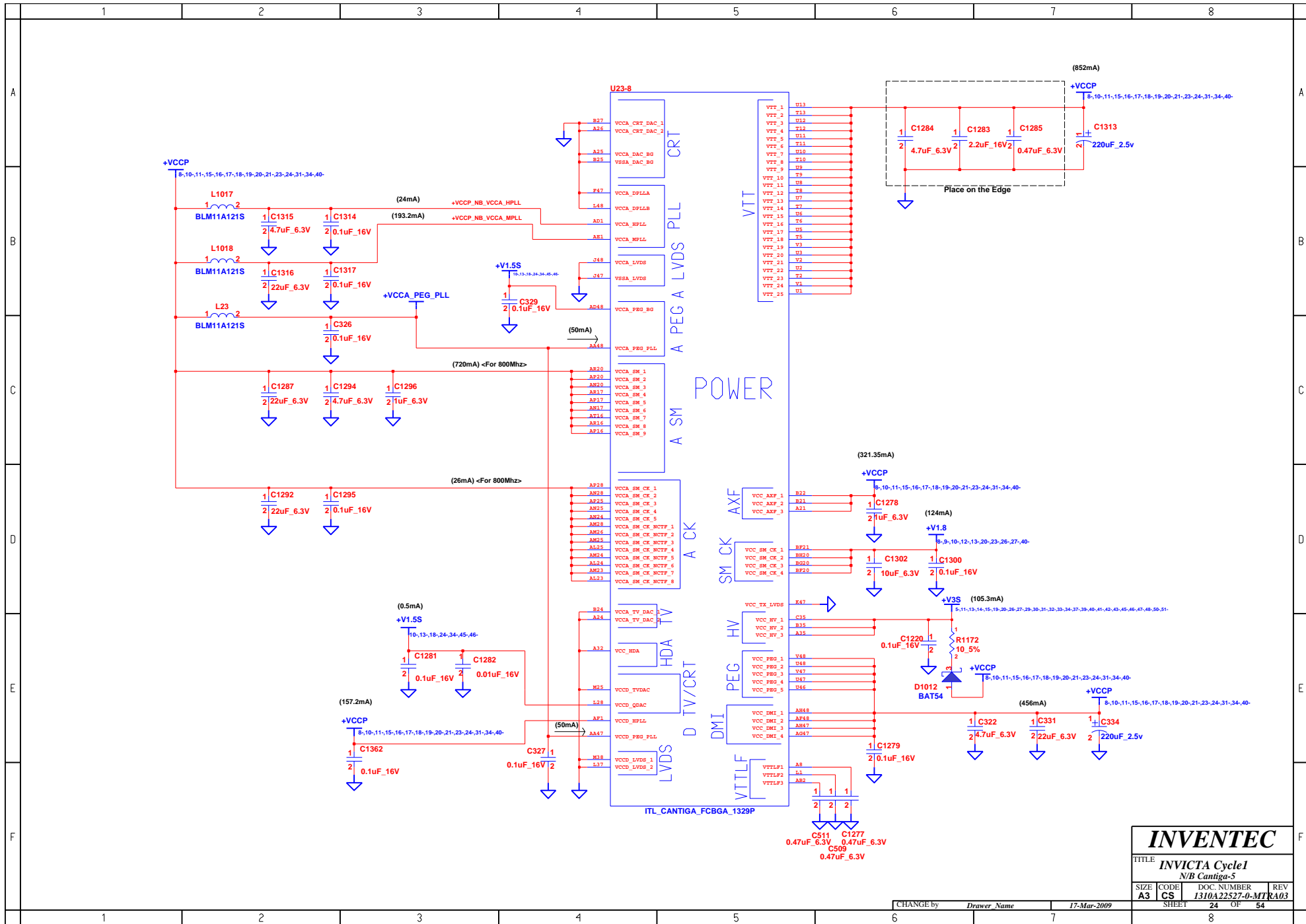
TITLE: **INVICTA Cycle1**
N/B Cantiga-3

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

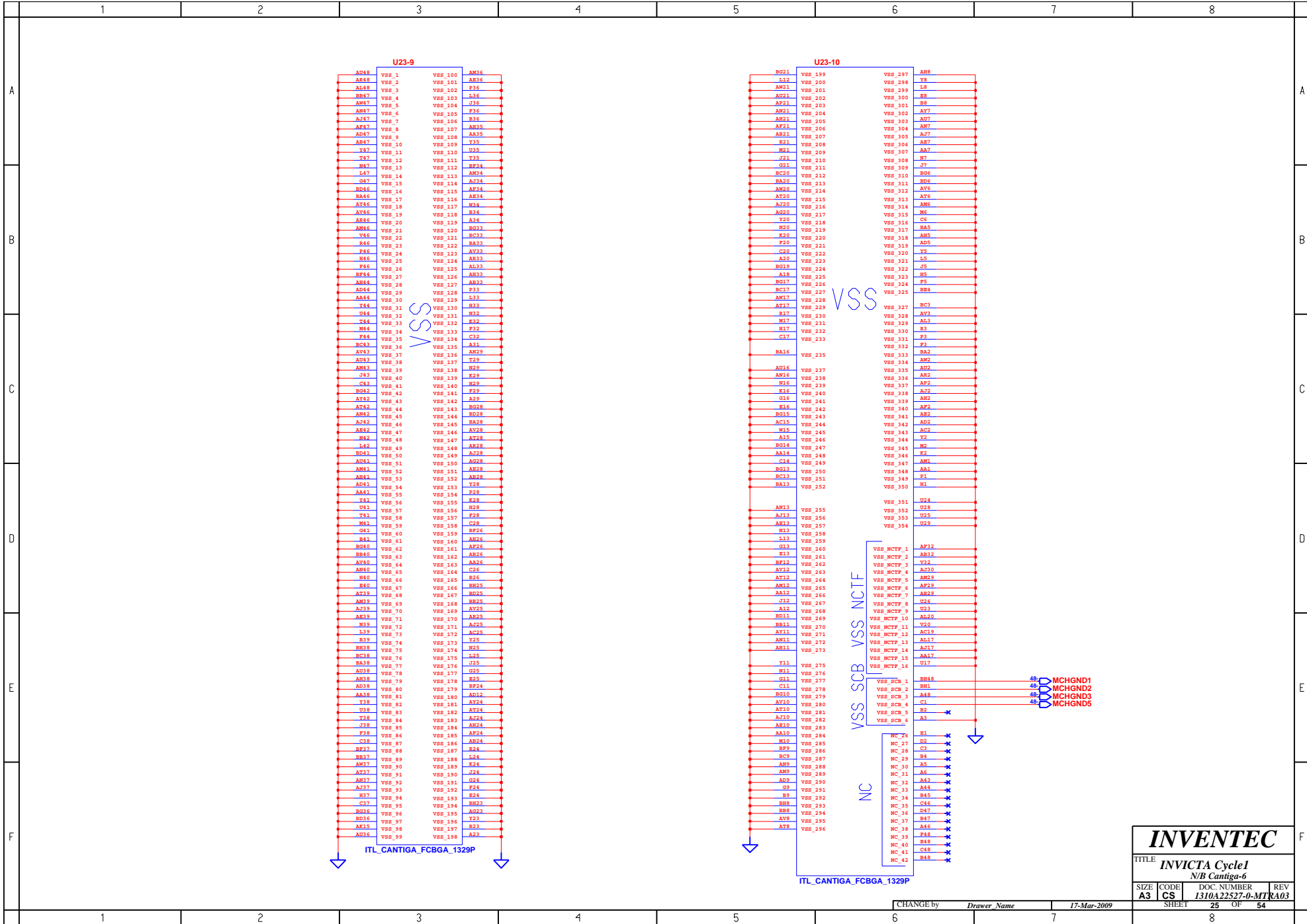
SHEET 22 OF 54



| | | | |
|--|-------------------|---------------------------------------|-------------------|
| INVENTEC | | | |
| TITLE <i>INVICTA Cycle1</i> <i>N/B Cantiga-4</i> | | | |
| SIZE A3 | CODE CS | DOC NUMBER <i>1310A22527-0-MTR</i> | REV A03 |
| CHANGE by <i>Drawer Name</i> | | 17-Mar-2009 | |
| SHEET 23 | | OF 54 | |



| | | | |
|--|-------------------|---------------------------------------|--------------------|
| INVENTEC | | | |
| TITLE <i>INVICTA Cycle1</i> <i>N/B Cantiga-5</i> | | | |
| SIZE A3 | CODE CS | DOC NUMBER <i>1310A22527-0-MIT</i> | REV R403 |
| CHANGE by <i>Drawer Name</i> | | 17-Mar-2009 | |
| SHEET 24 | | OF 54 | |



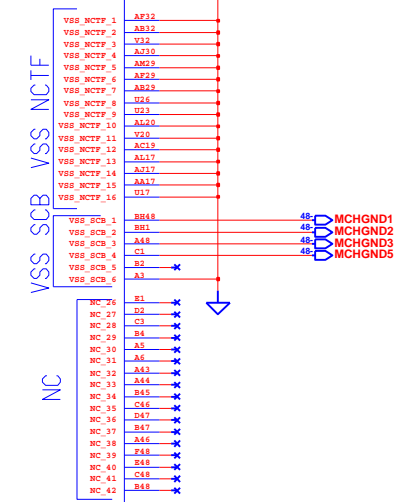
U23-9

| | | |
|------|--------|------|
| AR48 | VSS_1 | AM16 |
| AR48 | VSS_2 | AR16 |
| AR48 | VSS_3 | F16 |
| BR47 | VSS_4 | V16 |
| AM17 | VSS_5 | F16 |
| AM17 | VSS_6 | F16 |
| AR47 | VSS_7 | R16 |
| AR47 | VSS_8 | AM15 |
| AR47 | VSS_9 | AM15 |
| AB47 | VSS_10 | Y15 |
| Y47 | VSS_11 | V15 |
| AR7 | VSS_12 | V15 |
| AR7 | VSS_13 | BF14 |
| AR7 | VSS_14 | AM14 |
| AR7 | VSS_15 | A14 |
| AR16 | VSS_16 | AR14 |
| AR16 | VSS_17 | AR14 |
| AY46 | VSS_18 | W14 |
| AY46 | VSS_19 | R14 |
| AR16 | VSS_20 | R14 |
| AM16 | VSS_21 | RG13 |
| Y46 | VSS_22 | BC13 |
| R46 | VSS_23 | BA13 |
| FA6 | VSS_24 | AV13 |
| R46 | VSS_25 | AR13 |
| FA6 | VSS_26 | AL13 |
| BF44 | VSS_27 | AM13 |
| AR44 | VSS_28 | AR13 |
| AD44 | VSS_29 | P13 |
| AM44 | VSS_30 | L13 |
| Y44 | VSS_31 | AR13 |
| Y44 | VSS_32 | R12 |
| Y44 | VSS_33 | K12 |
| Y44 | VSS_34 | F12 |
| BC43 | VSS_35 | C12 |
| AY43 | VSS_36 | A11 |
| AM43 | VSS_37 | AM19 |
| AM43 | VSS_38 | F12 |
| AM43 | VSS_39 | AR12 |
| AR43 | VSS_40 | K12 |
| C43 | VSS_41 | H12 |
| AY42 | VSS_42 | F12 |
| AR42 | VSS_43 | A11 |
| AR42 | VSS_44 | RG11 |
| AM42 | VSS_45 | BD11 |
| AR42 | VSS_46 | AR11 |
| AR42 | VSS_47 | AV11 |
| R42 | VSS_48 | AT11 |
| Y42 | VSS_49 | AR11 |
| BD41 | VSS_50 | AD11 |
| AD41 | VSS_51 | AM11 |
| AM41 | VSS_52 | AR11 |
| AD41 | VSS_53 | AR11 |
| AD41 | VSS_54 | F11 |
| Y41 | VSS_55 | F11 |
| Y41 | VSS_56 | K11 |
| D41 | VSS_57 | R11 |
| Y41 | VSS_58 | V11 |
| M41 | VSS_59 | C11 |
| G41 | VSS_60 | BF11 |
| R41 | VSS_61 | AR11 |
| RG10 | VSS_62 | AT11 |
| BB10 | VSS_63 | AR11 |
| AY40 | VSS_64 | AA11 |
| AM40 | VSS_65 | V11 |
| R40 | VSS_66 | R11 |
| R40 | VSS_67 | AR11 |
| AT19 | VSS_68 | AD11 |
| AM19 | VSS_69 | AR11 |
| AD19 | VSS_70 | AV11 |
| AR19 | VSS_71 | AR11 |
| N19 | VSS_72 | A11 |
| L19 | VSS_73 | AC11 |
| R19 | VSS_74 | V11 |
| BB18 | VSS_75 | N11 |
| BC18 | VSS_76 | V11 |
| BA18 | VSS_77 | V11 |
| AD18 | VSS_78 | G11 |
| AR18 | VSS_79 | R11 |
| AD18 | VSS_80 | BF11 |
| AA18 | VSS_81 | AD11 |
| Y18 | VSS_82 | AV11 |
| Y18 | VSS_83 | AT11 |
| F18 | VSS_84 | AR11 |
| F18 | VSS_85 | AR11 |
| F18 | VSS_86 | AR11 |
| C18 | VSS_87 | AR11 |
| BF17 | VSS_88 | R11 |
| BR17 | VSS_89 | R11 |
| AM17 | VSS_90 | R11 |
| AT17 | VSS_91 | V11 |
| AM17 | VSS_92 | R11 |
| AD17 | VSS_93 | R11 |
| H17 | VSS_94 | R11 |
| C17 | VSS_95 | R11 |
| BR16 | VSS_96 | AR11 |
| BR16 | VSS_97 | V11 |
| AK15 | VSS_98 | R11 |
| AD16 | VSS_99 | A11 |

ITL_CANTIGA_FCBGA_1329P

U23-10

| | | |
|------|---------|---------|
| RG21 | VSS_199 | AM8 |
| L12 | VSS_200 | Y8 |
| AM21 | VSS_201 | L8 |
| AM21 | VSS_202 | BR |
| AM21 | VSS_203 | BR |
| AM21 | VSS_204 | VSS_300 |
| AM21 | VSS_205 | VSS_301 |
| AM21 | VSS_206 | VSS_304 |
| AM21 | VSS_207 | VSS_305 |
| AM21 | VSS_208 | VSS_306 |
| AM21 | VSS_209 | VSS_307 |
| AM21 | VSS_210 | VSS_308 |
| AM21 | VSS_211 | VSS_309 |
| BC20 | VSS_212 | VSS_310 |
| BA20 | VSS_213 | VSS_311 |
| AM20 | VSS_214 | VSS_312 |
| AT20 | VSS_215 | VSS_313 |
| AT20 | VSS_216 | VSS_314 |
| AG20 | VSS_217 | VSS_315 |
| T20 | VSS_218 | VSS_316 |
| R20 | VSS_219 | VSS_317 |
| F20 | VSS_220 | VSS_318 |
| F20 | VSS_221 | VSS_319 |
| C20 | VSS_222 | VSS_320 |
| A20 | VSS_223 | VSS_321 |
| RG19 | VSS_224 | VSS_322 |
| A19 | VSS_225 | VSS_323 |
| BR19 | VSS_226 | VSS_324 |
| EC17 | VSS_227 | VSS_325 |
| AM17 | VSS_228 | BC3 |
| AM17 | VSS_229 | AY3 |
| AR17 | VSS_230 | VSS_326 |
| M17 | VSS_231 | AL3 |
| R17 | VSS_232 | VSS_330 |
| C17 | VSS_233 | VSS_331 |
| BA16 | VSS_235 | VSS_332 |
| AM16 | VSS_237 | VSS_333 |
| AM16 | VSS_238 | VSS_334 |
| N16 | VSS_239 | VSS_335 |
| R16 | VSS_240 | VSS_336 |
| C16 | VSS_241 | VSS_337 |
| RG15 | VSS_242 | VSS_338 |
| A15 | VSS_243 | VSS_339 |
| Y15 | VSS_244 | VSS_340 |
| RG14 | VSS_247 | VSS_341 |
| AM14 | VSS_248 | VSS_342 |
| C14 | VSS_249 | VSS_343 |
| RG13 | VSS_250 | VSS_344 |
| BC13 | VSS_251 | VSS_345 |
| BA13 | VSS_252 | VSS_346 |
| AM13 | VSS_255 | VSS_351 |
| F13 | VSS_256 | VSS_352 |
| AM13 | VSS_257 | VSS_353 |
| N13 | VSS_258 | VSS_354 |
| L13 | VSS_259 | VSS_355 |
| G13 | VSS_260 | VSS_356 |
| R13 | VSS_261 | VSS_357 |
| BF12 | VSS_262 | VSS_358 |
| AT12 | VSS_263 | VSS_359 |
| AT12 | VSS_264 | VSS_360 |
| AM12 | VSS_265 | VSS_361 |
| AM12 | VSS_266 | VSS_362 |
| J12 | VSS_267 | VSS_363 |
| A12 | VSS_268 | VSS_364 |
| BD11 | VSS_269 | VSS_365 |
| BB11 | VSS_270 | VSS_366 |
| AT11 | VSS_271 | VSS_367 |
| AM11 | VSS_272 | VSS_368 |
| AM11 | VSS_273 | VSS_369 |
| Y11 | VSS_275 | VSS_370 |
| R11 | VSS_276 | VSS_371 |
| G11 | VSS_277 | VSS_372 |
| C11 | VSS_278 | VSS_373 |
| RG10 | VSS_279 | VSS_374 |
| AT10 | VSS_281 | VSS_375 |
| AT10 | VSS_282 | VSS_376 |
| AM10 | VSS_283 | VSS_377 |
| AM10 | VSS_284 | VSS_378 |
| M10 | VSS_285 | VSS_379 |
| BP9 | VSS_286 | VSS_380 |
| BC9 | VSS_287 | VSS_381 |
| AM9 | VSS_288 | VSS_382 |
| AM9 | VSS_289 | VSS_383 |
| AD9 | VSS_290 | VSS_384 |
| SE | VSS_291 | VSS_385 |
| B9 | VSS_292 | VSS_386 |
| B8E | VSS_293 | VSS_387 |
| AV8 | VSS_294 | VSS_388 |
| V11 | VSS_295 | VSS_389 |
| AT8 | VSS_296 | VSS_390 |



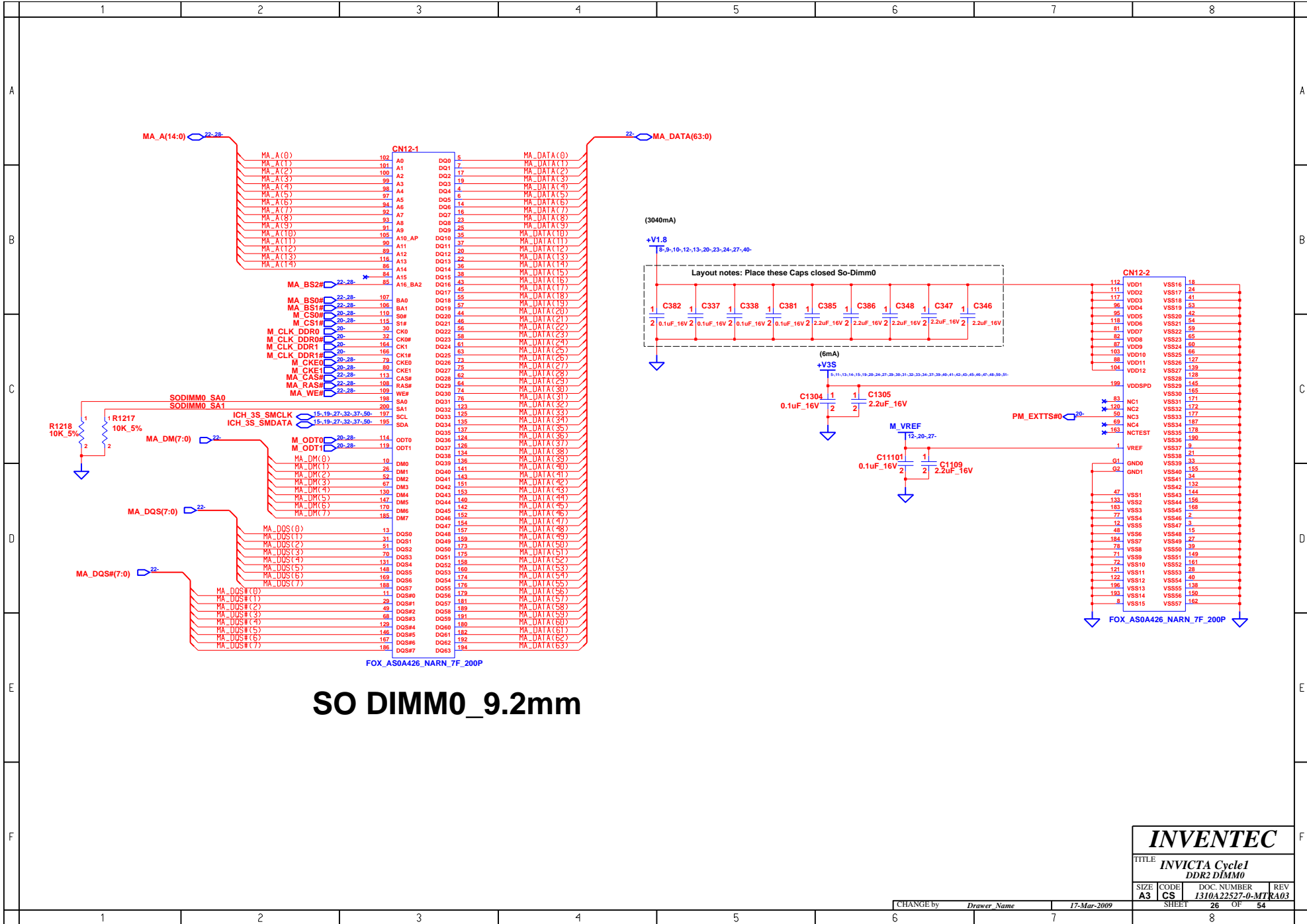
INVENTEC

TITLE: INVICTA Cycle1
N/B Cantiga-6

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

CHANGE by: Drawer Name 17-Mar-2009

SHEET 25 OF 54

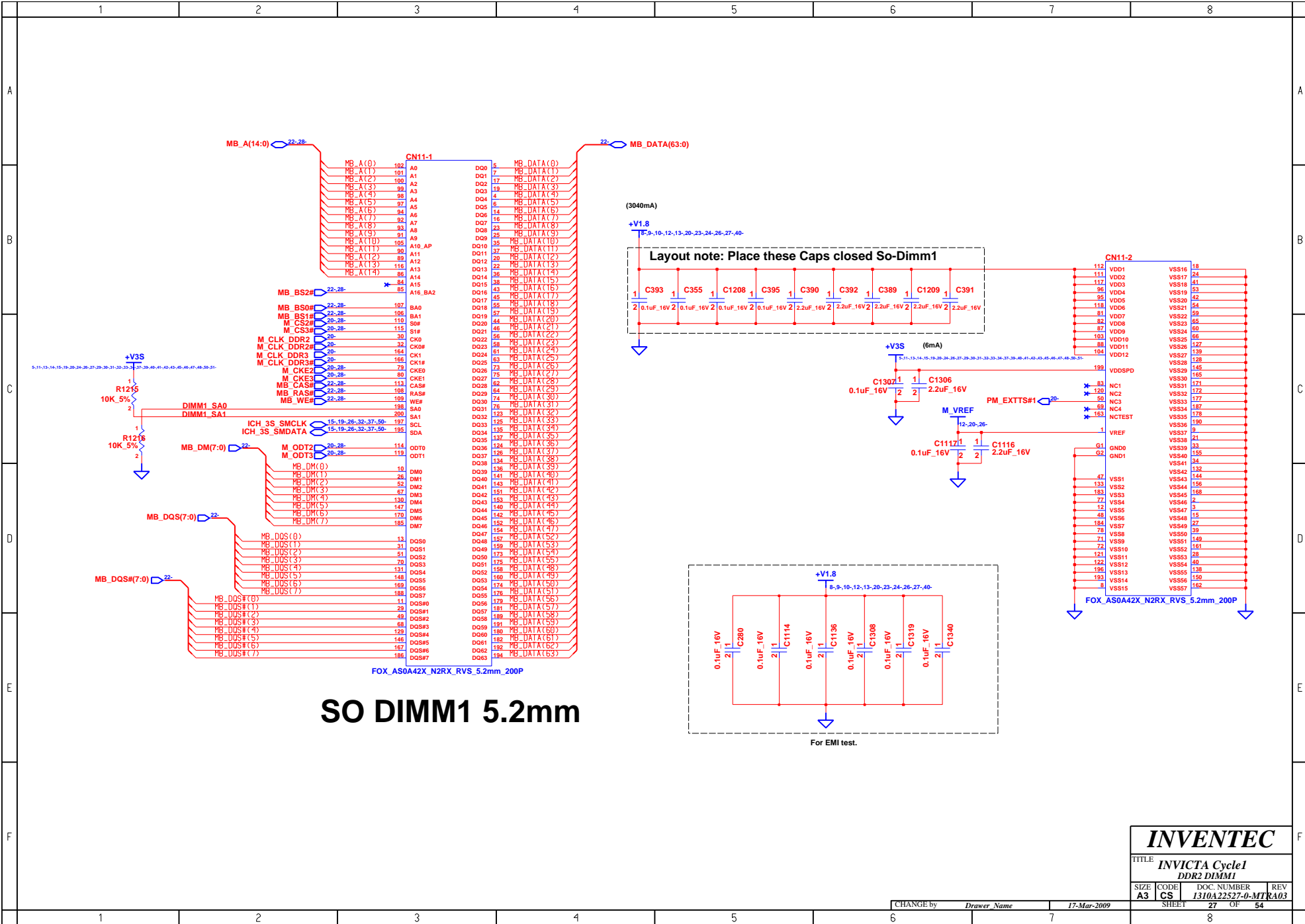


INVENTEC

TITLE: INVICTA Cycle1
DDR2 DIMM0

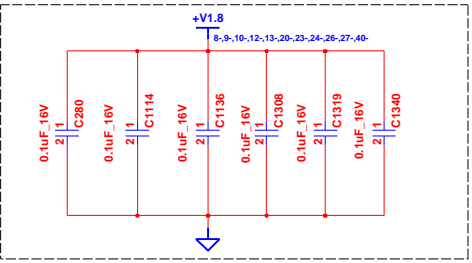
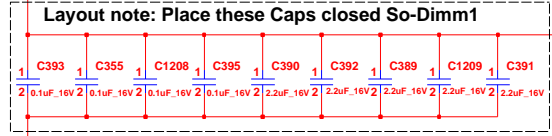
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|------|------|------------------|-----|
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | 1310A22527-0-MTR | A03 |

CHANGE by: Drawer Name 17-Mar-2009 SHEET 26 OF 54



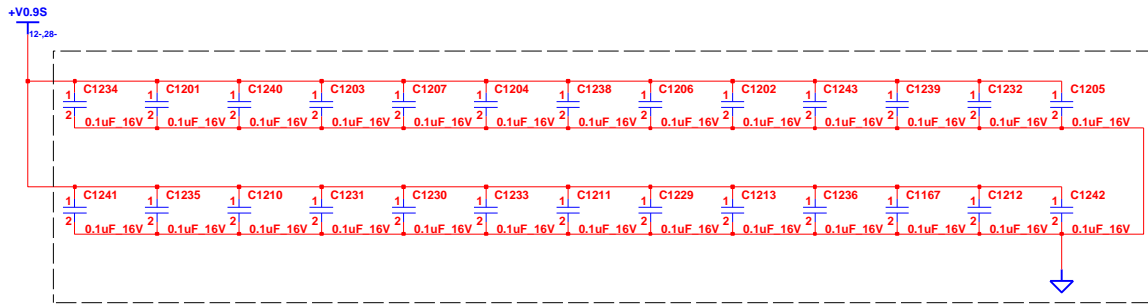
SO DIMM 5.2mm

FOX_AS0A42X_N2RX_RVS_5.2mm_200P

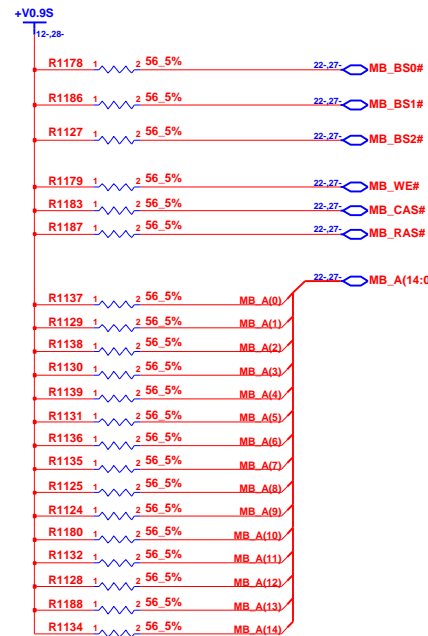
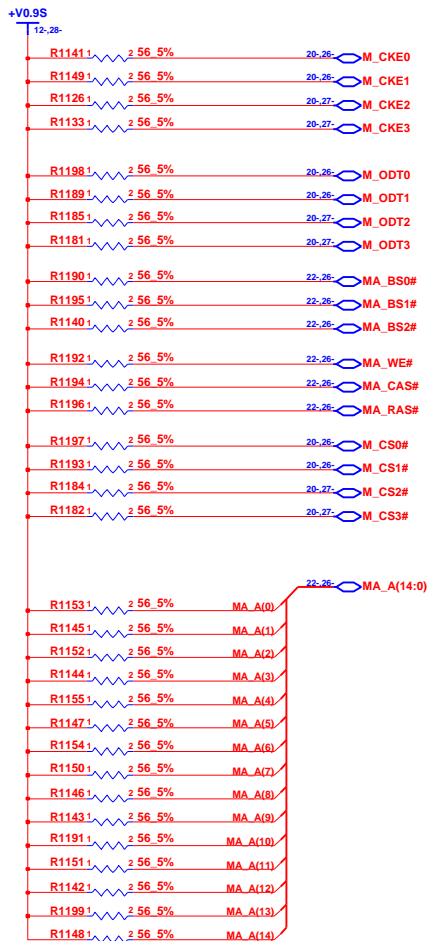


| INVENTEC | | | |
|-------------------------------------|------|------------------|-----|
| TITLE: INVICTA Cycle1 DDR2 DIMM1 | | | |
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | 1310A22527-0-MT1 | A03 |
| SHEET | | OF | |
| 27 | | 54 | |

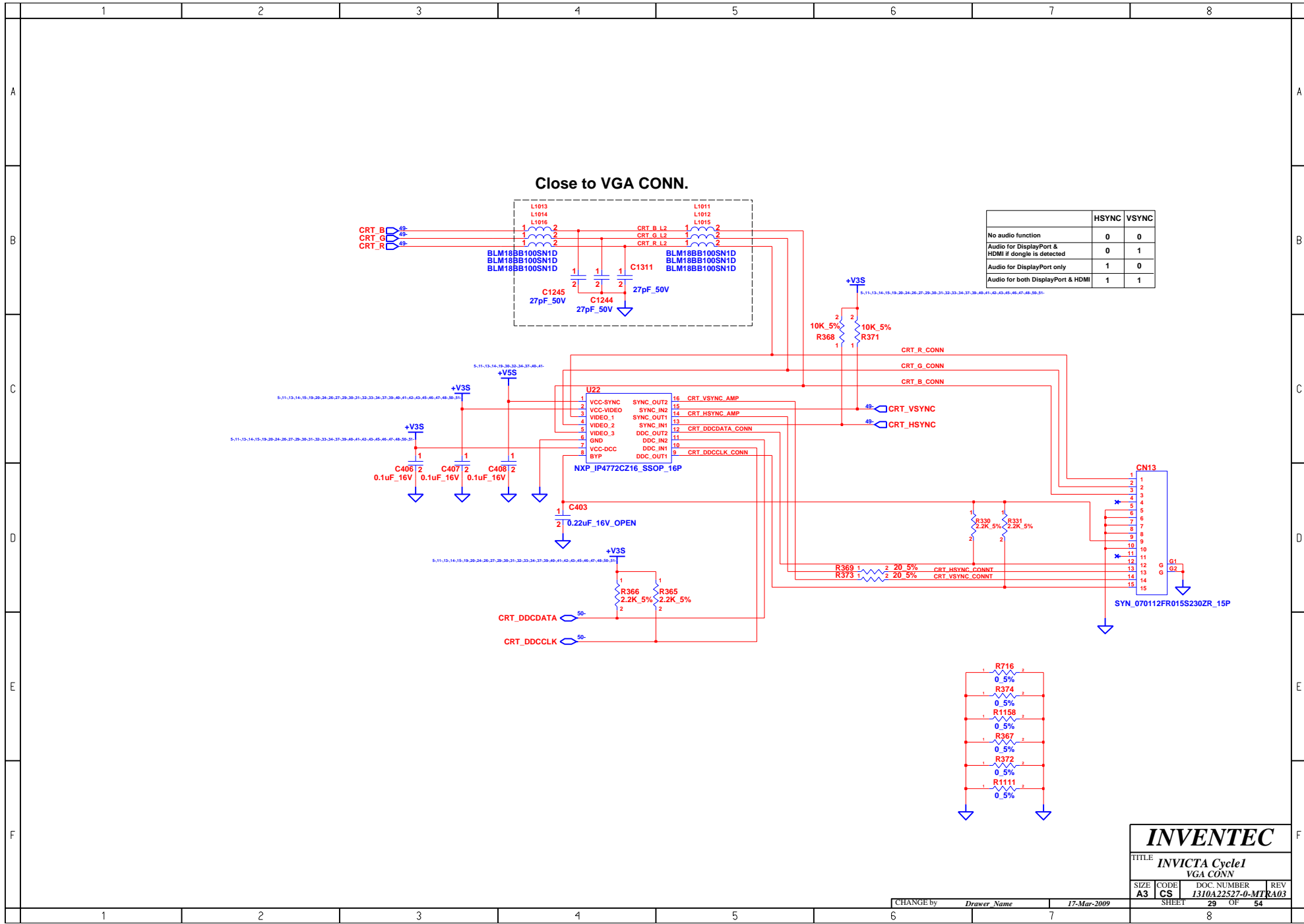
CHANGE by: Drawer Name 17-Mar-2009



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



| | | | |
|-----------------------------|------|------------------|-----|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 | | | |
| DDR2 termination | | | |
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | I310A22527-0-MTR | A03 |
| CHANGE by | | 27-Sep-2003 | REV |
| Drawer Name | | | 54 |
| SHEET | | 28 | OF |
| | | 8 | |



| | HSYNC | VSYNC |
|--|-------|-------|
| No audio function | 0 | 0 |
| Audio for DisplayPort & HDMI if dongle is detected | 0 | 1 |
| Audio for DisplayPort only | 1 | 0 |
| Audio for both DisplayPort & HDMI | 1 | 1 |

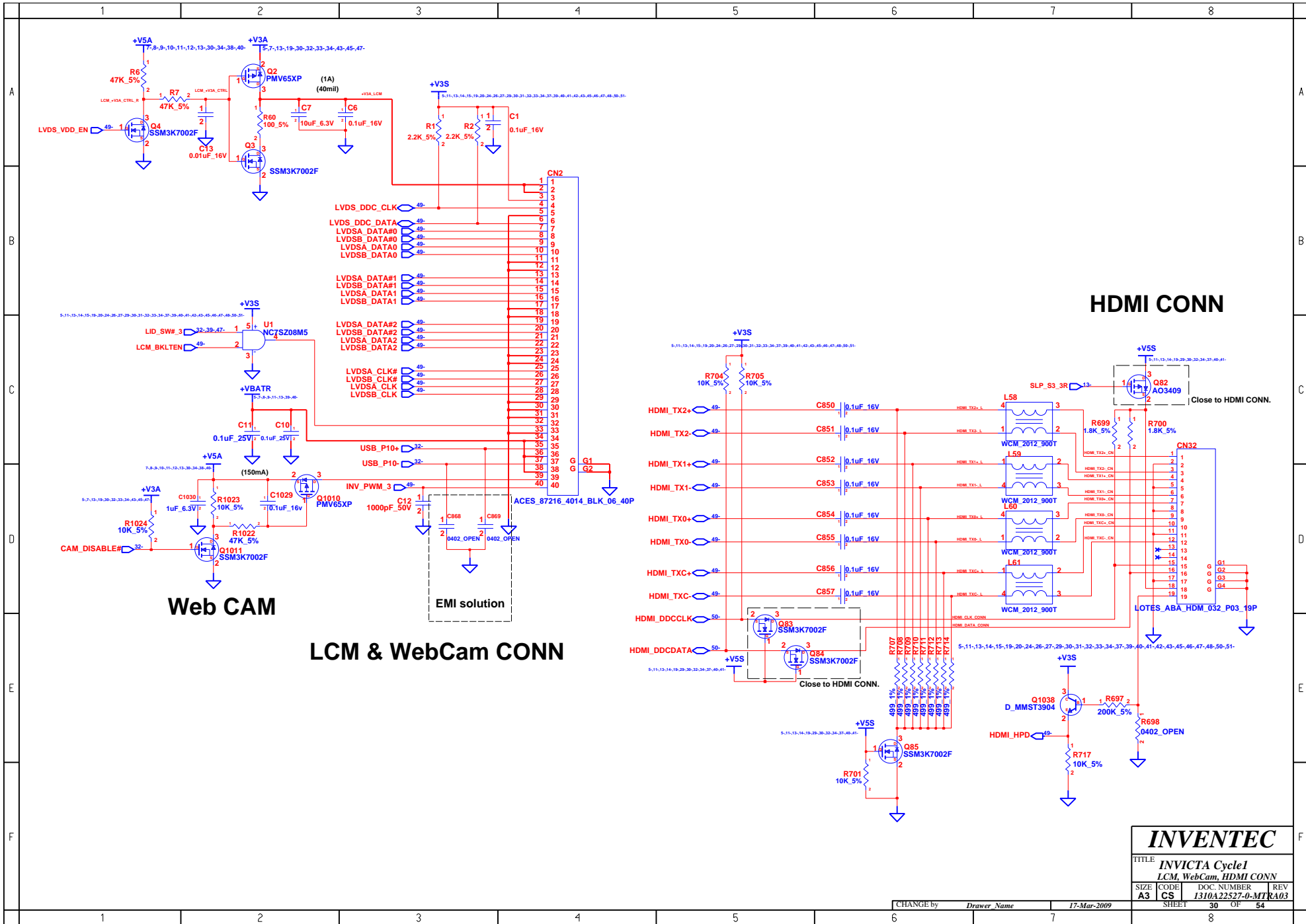
INVENTEC

TITLE: **INVICTA Cycle1
VGA CONN**

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

CHANGE by: *Drawer Name* 17-Mar-2009

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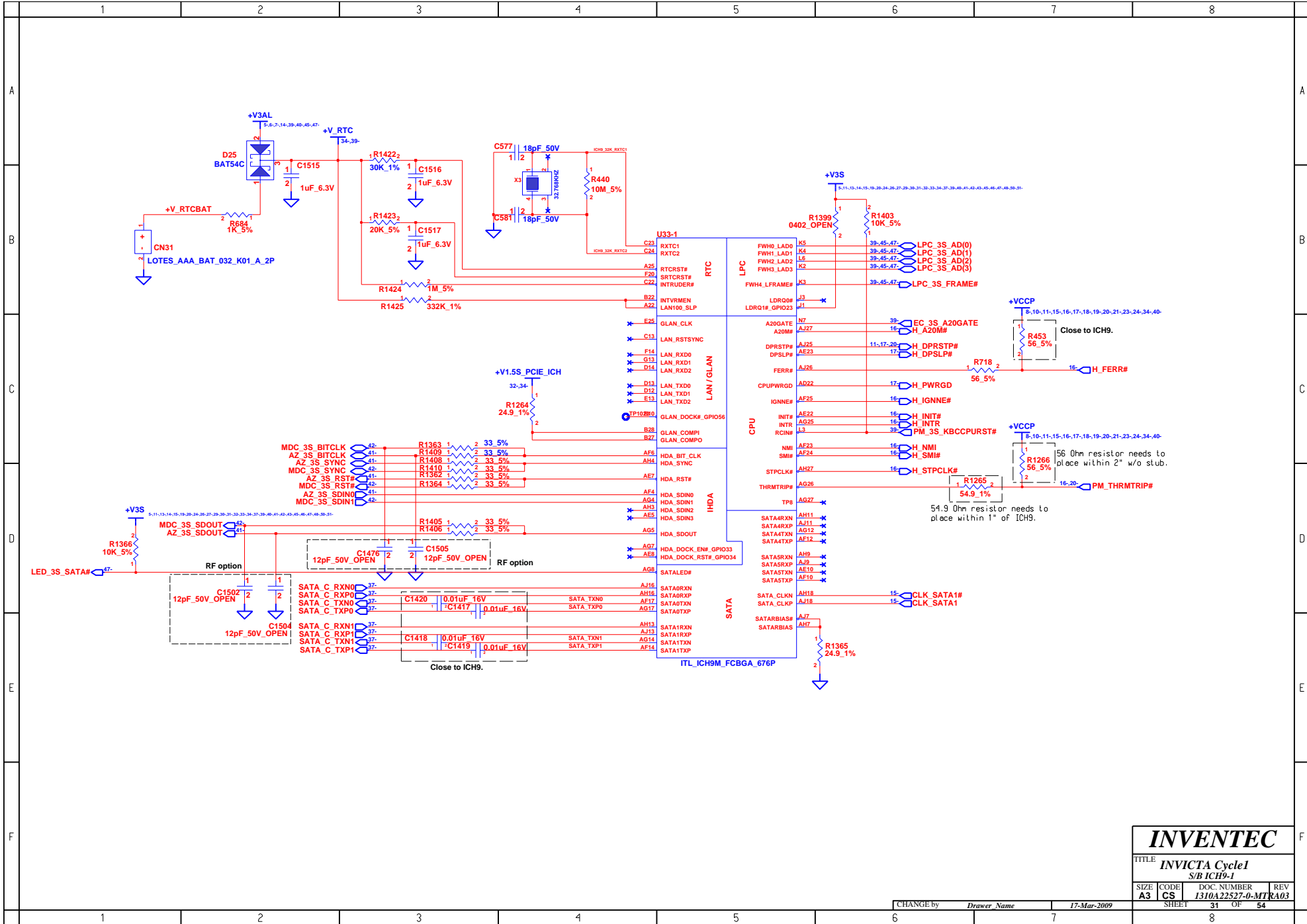


Web CAM

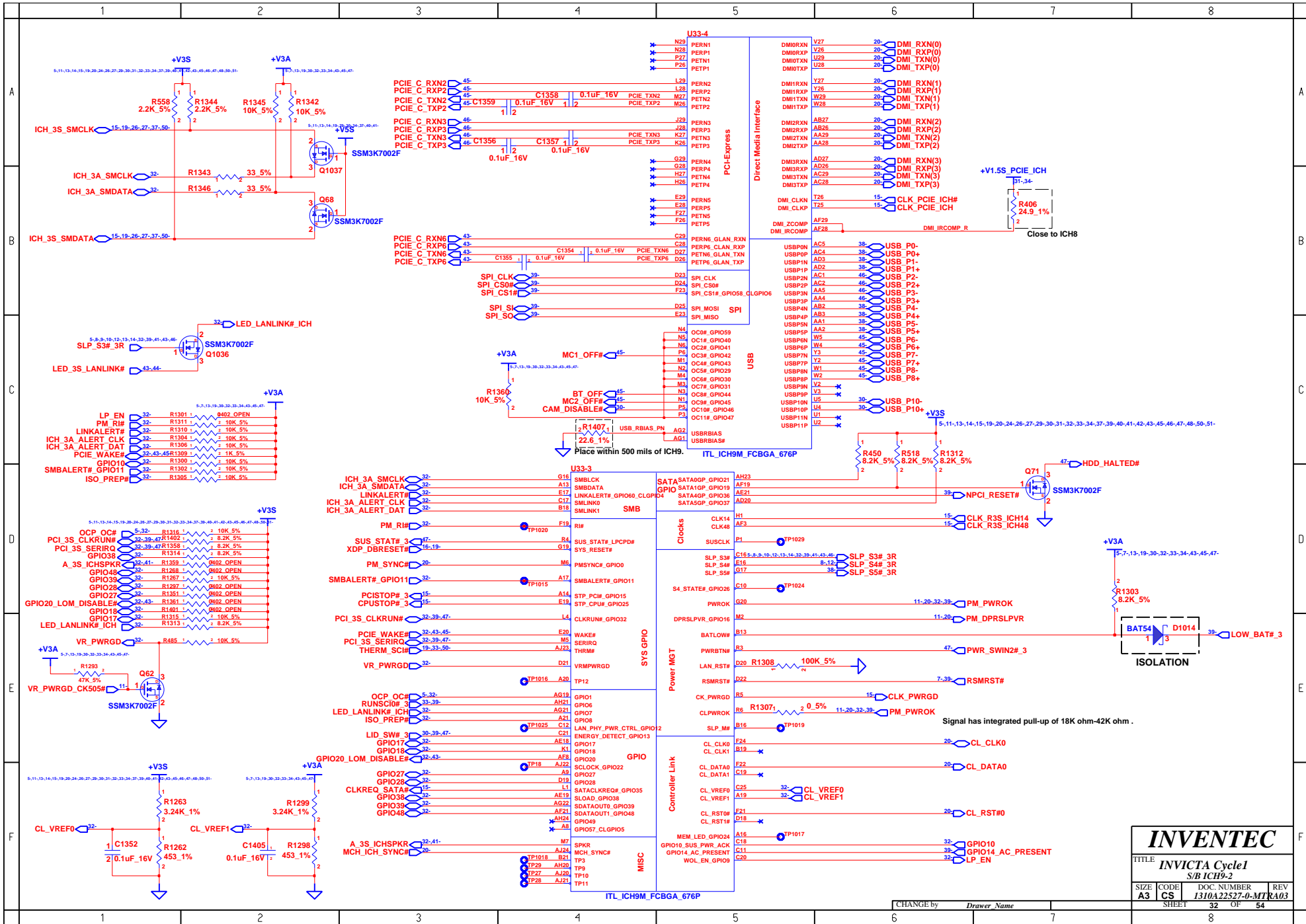
LCM & WebCam CONN

HDMI CONN

| | | | |
|-------------------------------|-----------------|--------------------------------------|-----------------|
| INVENTEC | | | |
| TITLE: INVICTA Cycle1 | | | |
| LCM, WebCam, HDMI CONN | | | |
| SIZE: A3 | CODE: CS | DOC. NUMBER: I310A22527-0-MTR | REV: A03 |
| CHANGE by: <i>Drawer Name</i> | | 17-Mar-2009 | |
| SHEET: 30 | | OF: 54 | |

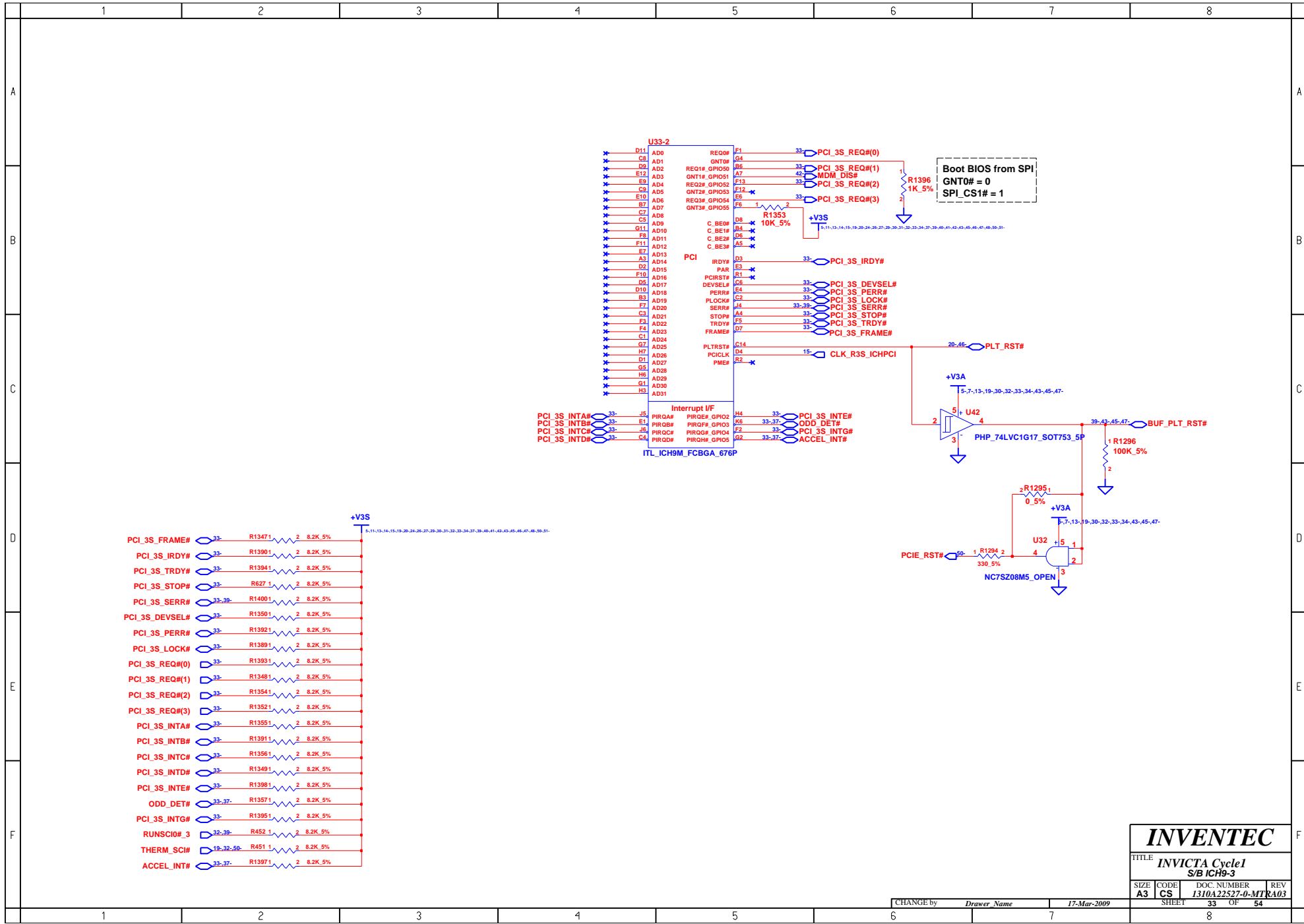


| | | | |
|---|------|-----------------|-----|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 S/B ICH9-1 | | | |
| SIZE | CODE | DOC NUMBER | REV |
| A3 | CS | 1310A22527-0-MT | A03 |
| CHANGE by <i>Drawer Name</i> | | 17-Mar-2009 | |
| SHEET 31 | | OF 54 | |

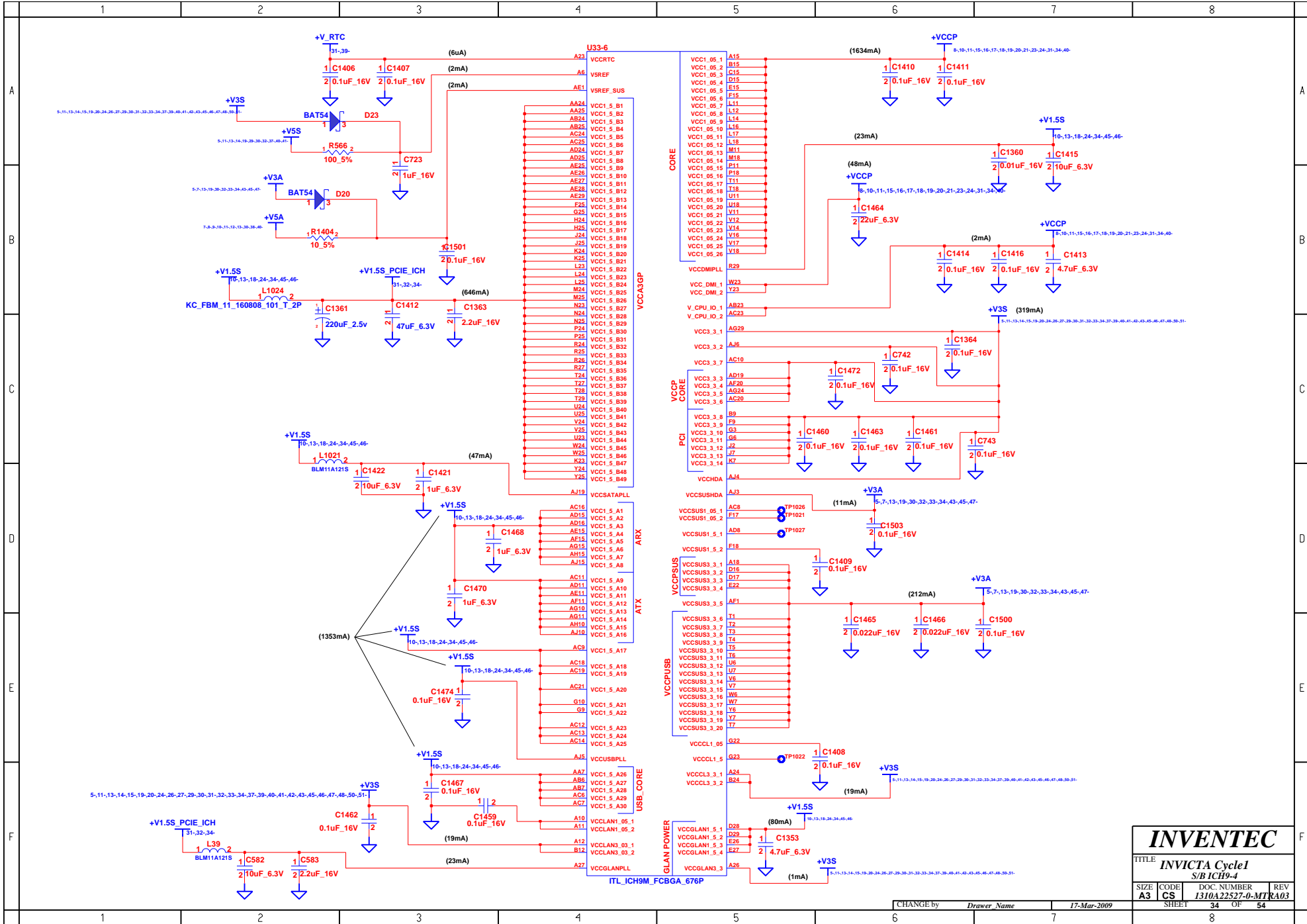


| | | | |
|-------------------------------------|------------|---------------------------------|------------|
| INVENTEC | | | |
| TITLE: INVICTA Cycle1 S/B ICH9-2 | | | |
| SIZE A3 | CODE CS | DOC. NUMBER I310A22527-0-MTR | REV R03 |
| SHEET | | 32 OF 54 | |

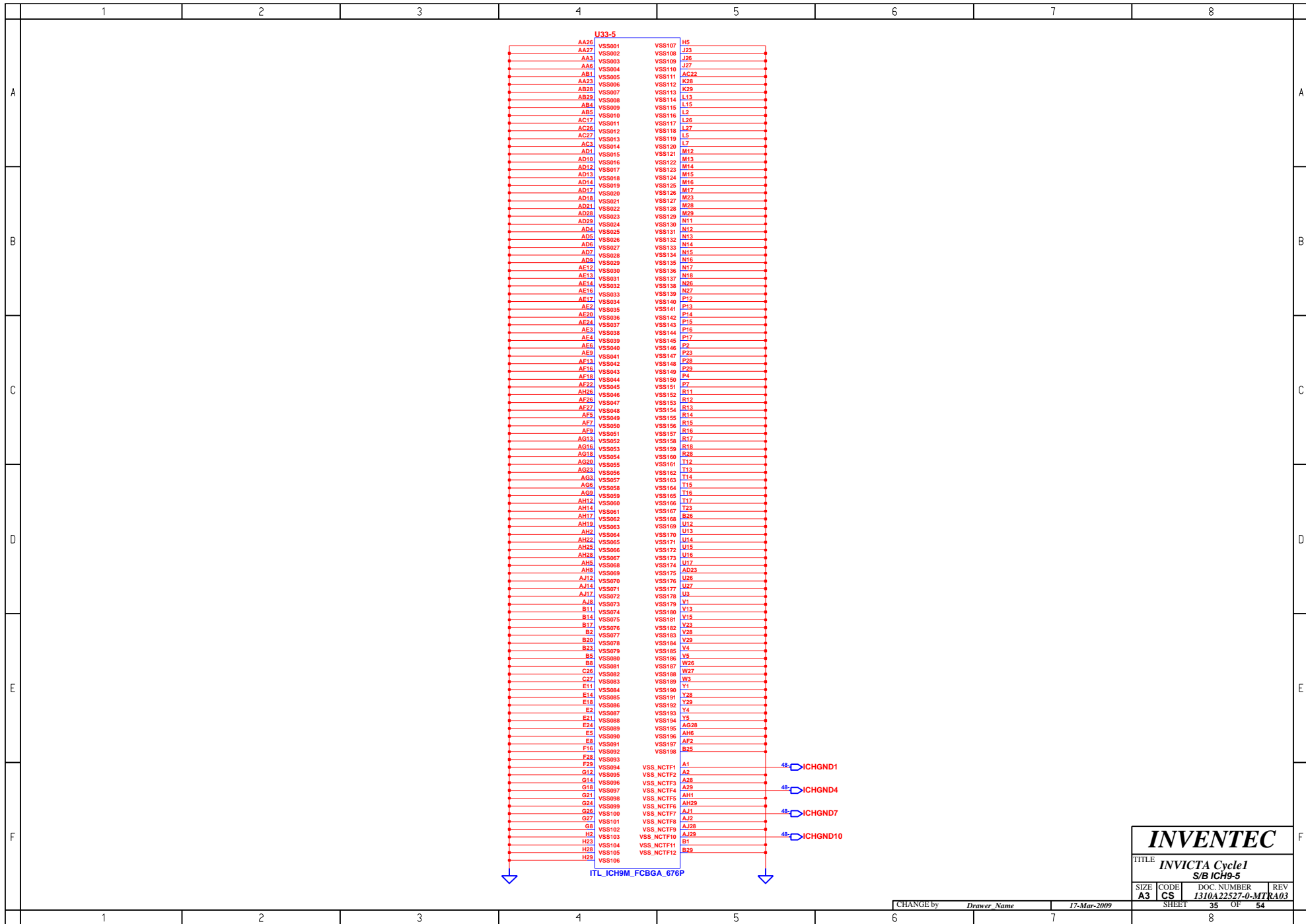
CHANGE by *Drawer Name*



| | | | |
|---------------------------------|---------|-----------------------------|----------------|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 S/B ICH9-3 | | | |
| SIZE A3 | CODE CS | DOC NUMBER 1310A22527-0-MTR | REV RA03 |
| CHANGE by Drawer Name | | 17-Mar-2009 | SHEET 33 OF 54 |

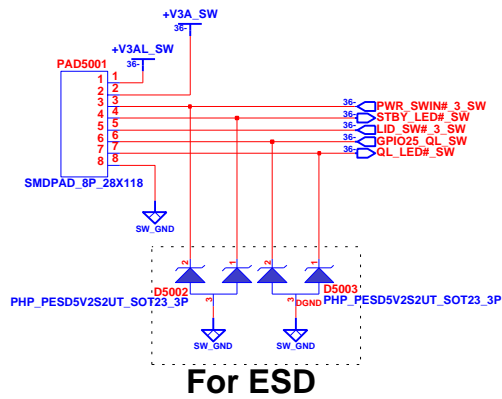


| | | | |
|---|-------------------|--|-------------------|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 S/B ICH9-4 | | | |
| SIZE A3 | CODE CS | DOC. NUMBER I310A22527-0-MTR | REV A03 |
| CHANGE by <i>Drawer Name</i> | | 17-Mar-2009 | |
| SHEET 34 | | OF 54 | |



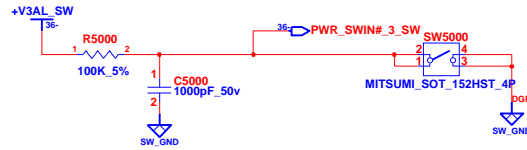
| | | | |
|------------------------------|------|------------------|-------------|
| INVENTEC | | | |
| TITLE <i>INVICTA Cycle 1</i> | | | |
| S/B <i>ICH9-5</i> | | | |
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | 1310A22527-0-MTR | A03 |
| CHANGE by | | Drawer Name | 17-Mar-2009 |
| SHEET | | 35 | OF 54 |

PWR SW B/B CONN

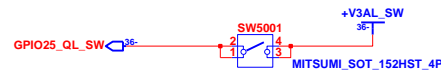


For ESD

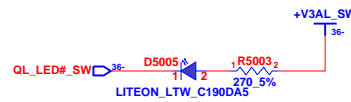
Power Button



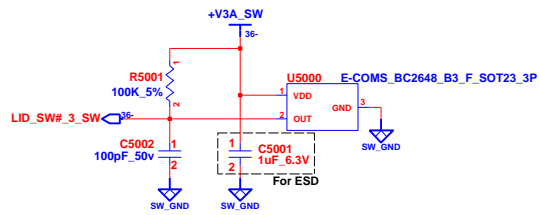
Quick Look Button



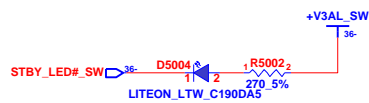
Quick Look LED



LID Switch



Power / Standby LED

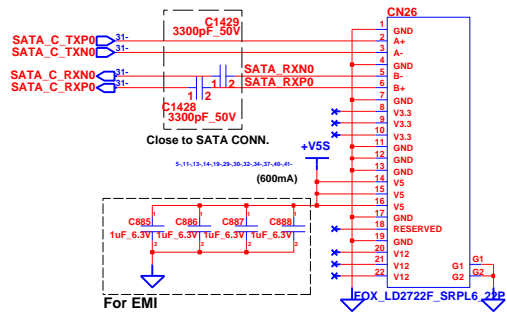


- FIX5000
- FIX_MASK
- FIX5001
- FIX_MASK
- FIX5002
- FIX_MASK
- FIX5003
- FIX_MASK
- FIX5004
- FIX_MASK
- FIX5005
- FIX_MASK

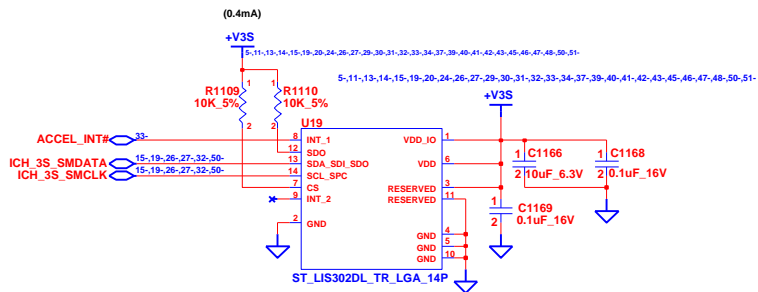
Power & LID Switch Board

INVENTEC

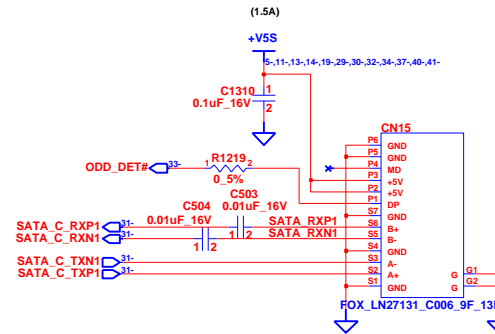
| | | | |
|-----------------------------|------|------------------|-------------|
| TITLE INVICTA Cycle1 | | | |
| PWR, LID, APP SW/Bs | | | |
| SIZE | CODE | DOC NUMBER | REV |
| A3 | CS | 1310A22527-0-MTR | A03 |
| CHANGE by | | Drawer Name | 17-Mar-2009 |
| SHEET | | 36 | OF 54 |



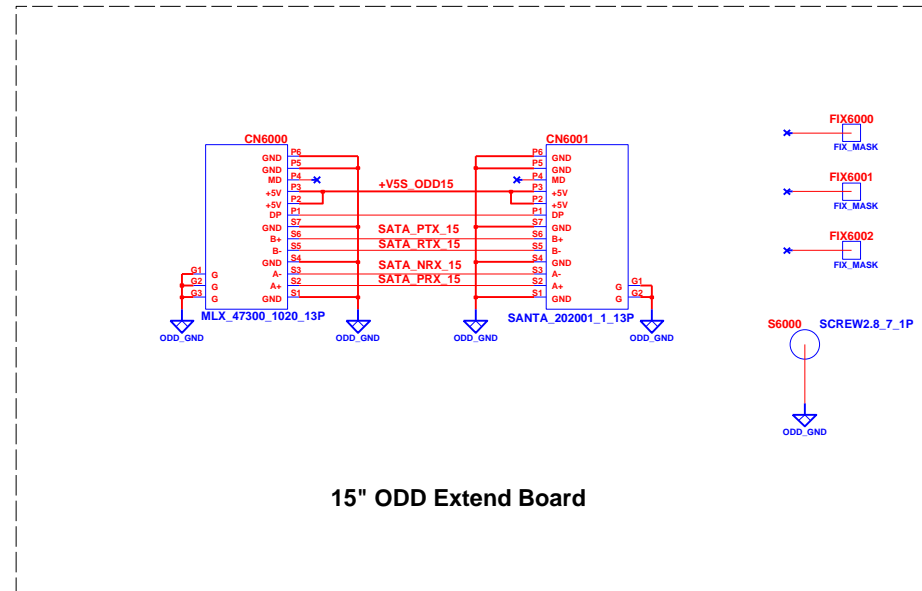
SATA HDD



Accelerometer

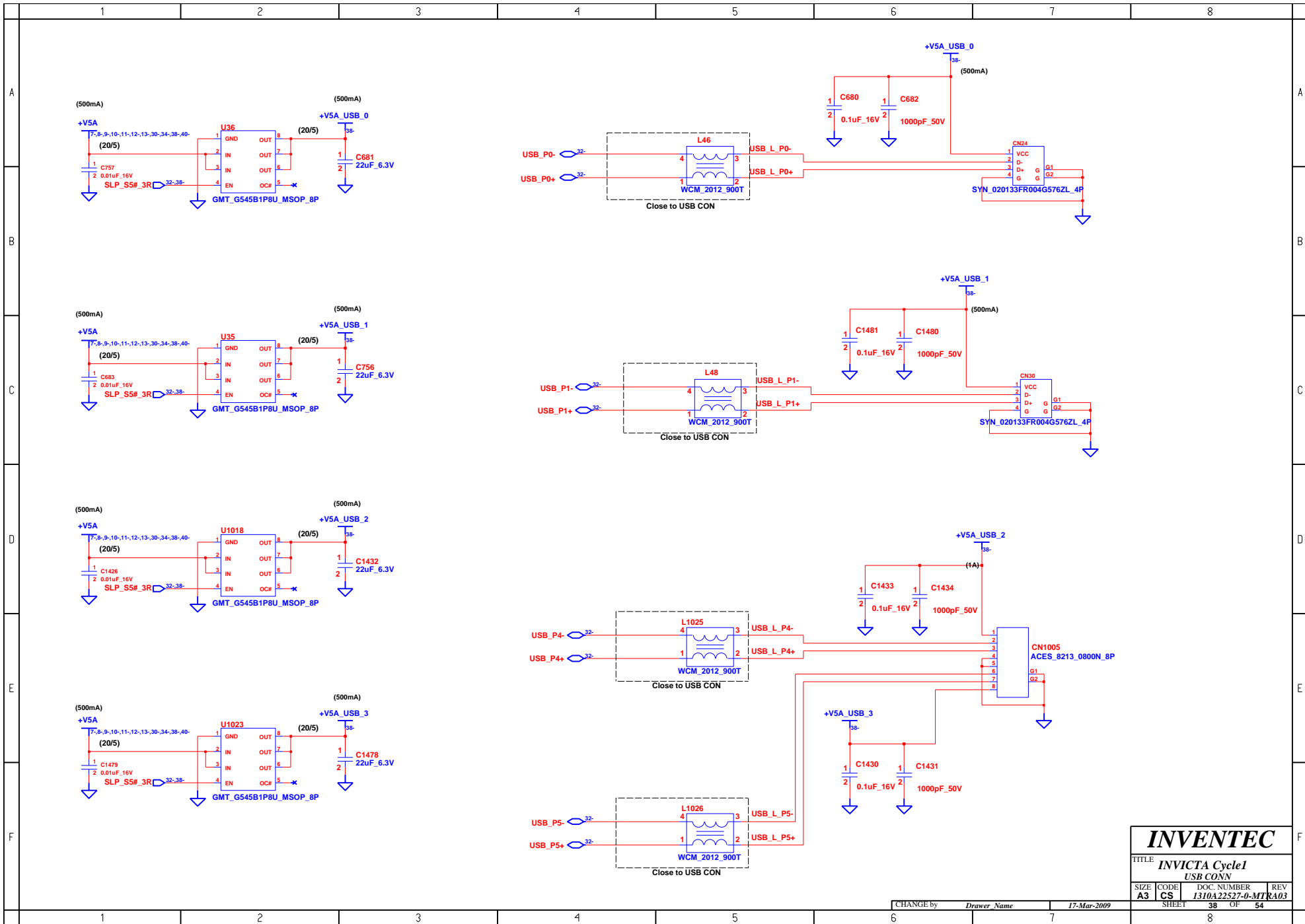


SATA ODD

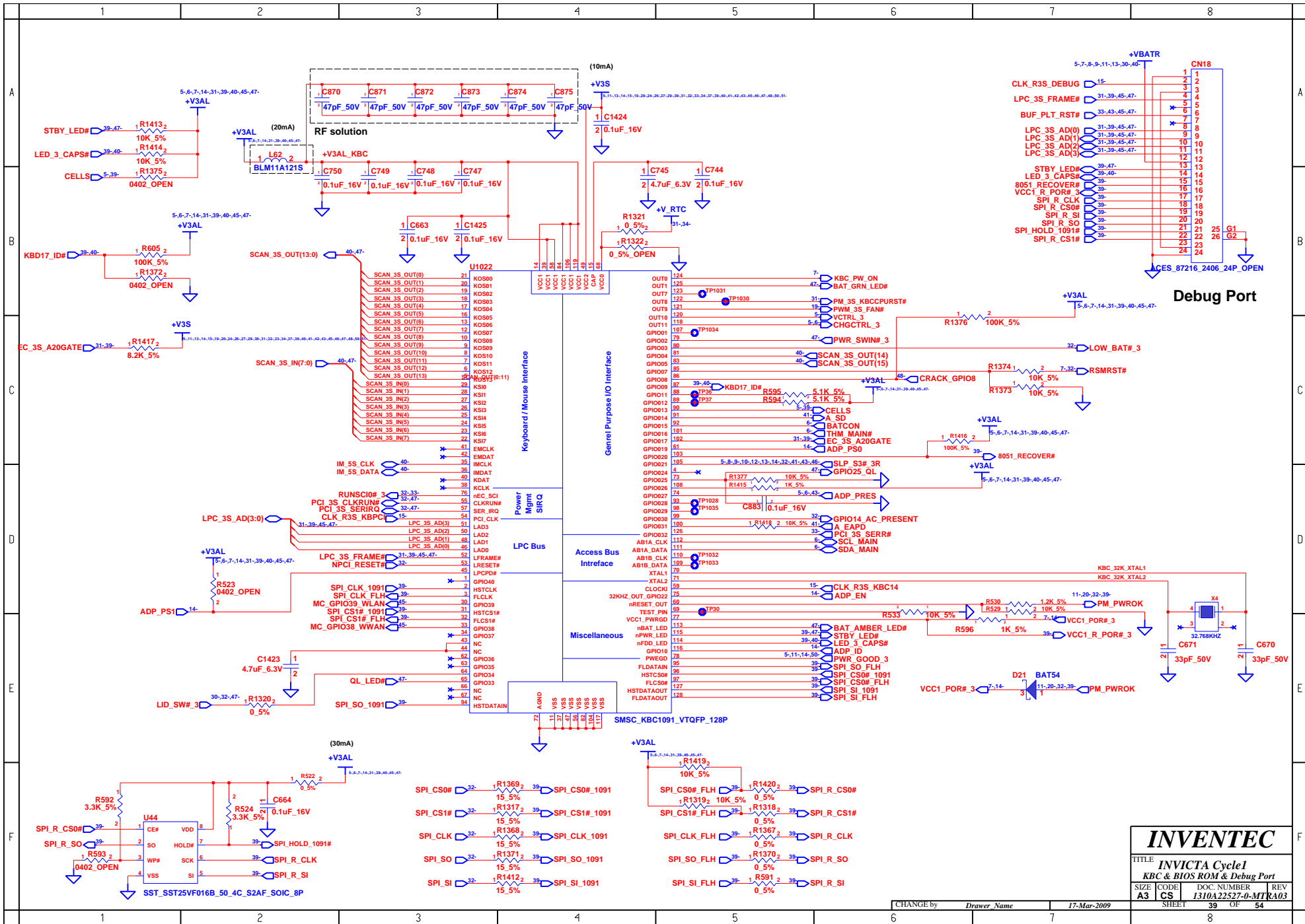


15" ODD Extend Board

| | | | |
|--|----------------|------------------------------------|----------------|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 | | | |
| HDD & ODD CONN & Accelerometer & 15" ODD EXT B | | | |
| 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 | | | |
| USB CONN | | | |
| SIZE | CODE | DOC NUMBER | REV |
| A3 | CS | 1310A22527-0-MTR | A03 |
| CHANGE by | | Drawer Name | 17-Mar-2009 |
| SHEET | | 38 | OF 54 |



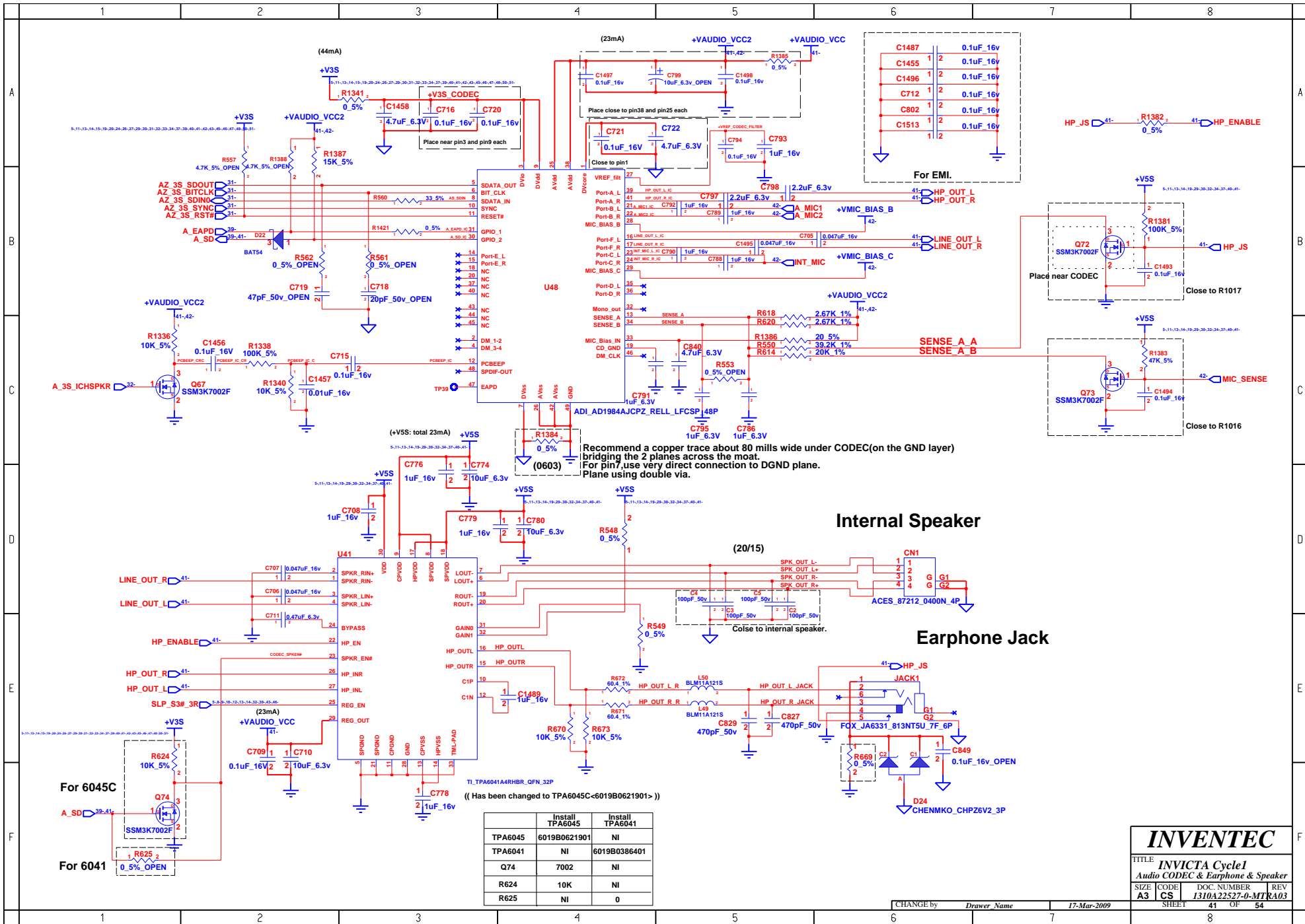
INVENTEC

TITLE: **INVICTA Cycle1**
KBC & BIOS ROM & Debug Port

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

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CHANGE by *Drawer Name* 17-Mar-2009



Recommend a copper trace about 80 mills wide under CODEC (on the GND layer) bridging the 2 planes across the moat.
 For pin7, use very direct connection to DGND plane.
 Plane using double via.

Internal Speaker

Earphone Jack

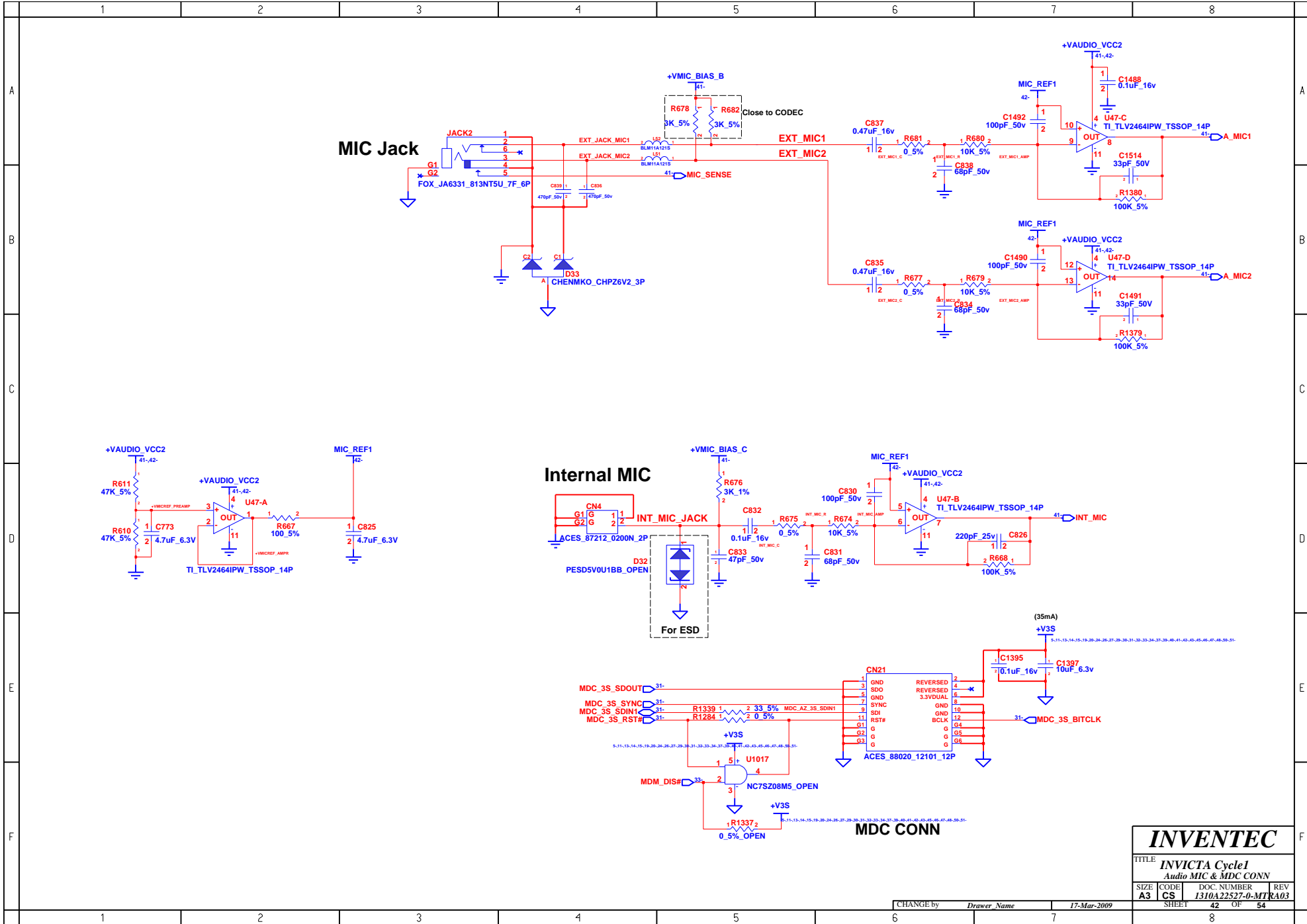
| | Install TPA6045 | Install TPA6041 |
|---------|-----------------|-----------------|
| TPA6045 | 6019B0621901 | NI |
| TPA6041 | NI | 6019B0386401 |
| Q74 | 7002 | NI |
| R624 | 10K | NI |
| R625 | NI | 0 |

INVENTEC

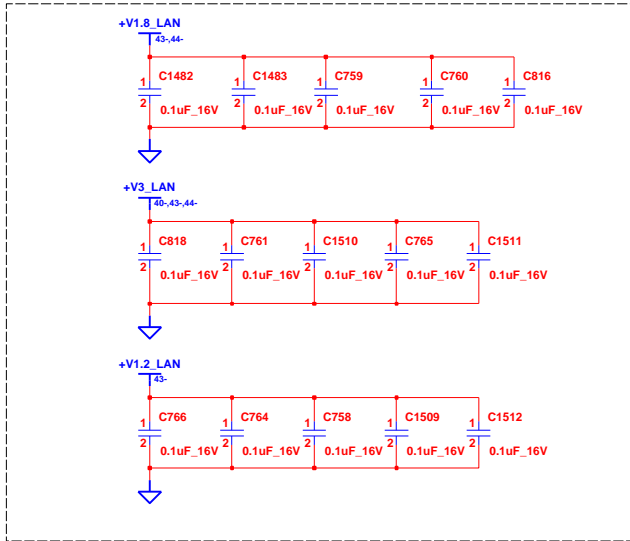
TITLE: INVICTA Cycle1
 Audio CODEC & Earphone & Speaker

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

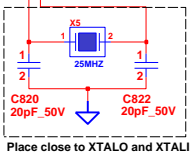
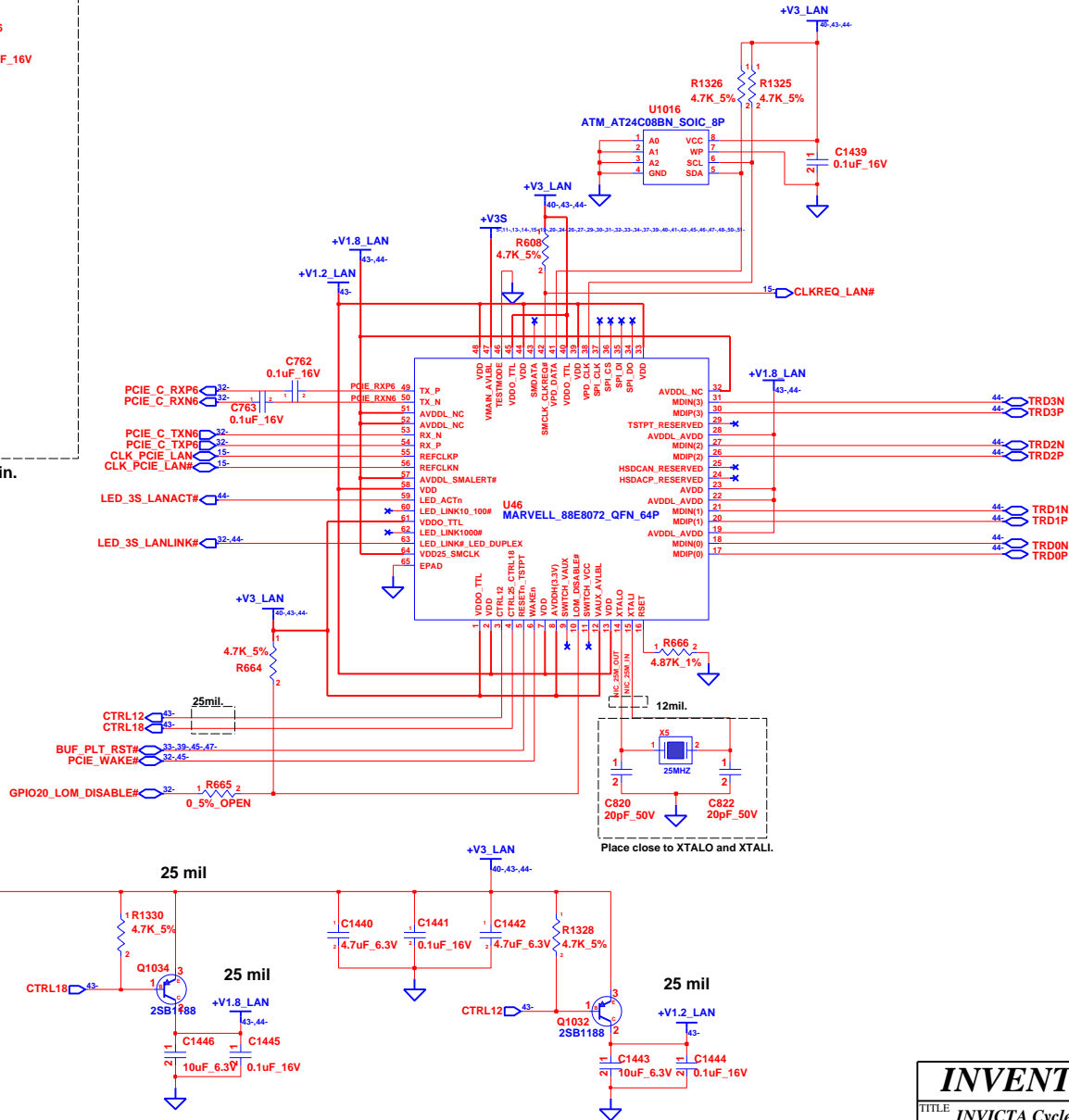
CHANGE by: Drawer Name 17-Mar-2009 SHEET 41 OF 54



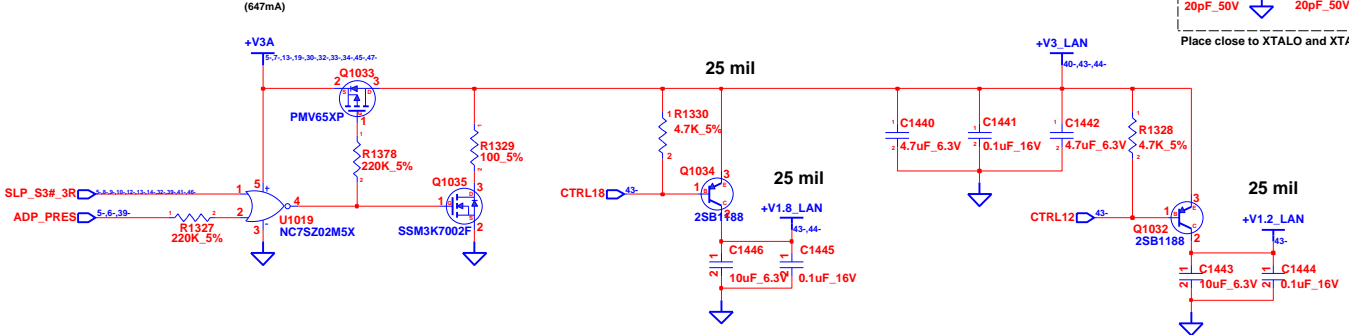
| | | | |
|------------------------------|----------------|------------------------------------|----------------|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 | | | |
| Audio MIC & MDC CONN | | | |
| SIZE A3 | CODE CS | DOC NUMBER I310A22527-0-MTR | REV A03 |
| CHANGE by <i>Drawer Name</i> | | 17-Mar-2009 | |
| SHEET 42 | | OF 54 | |



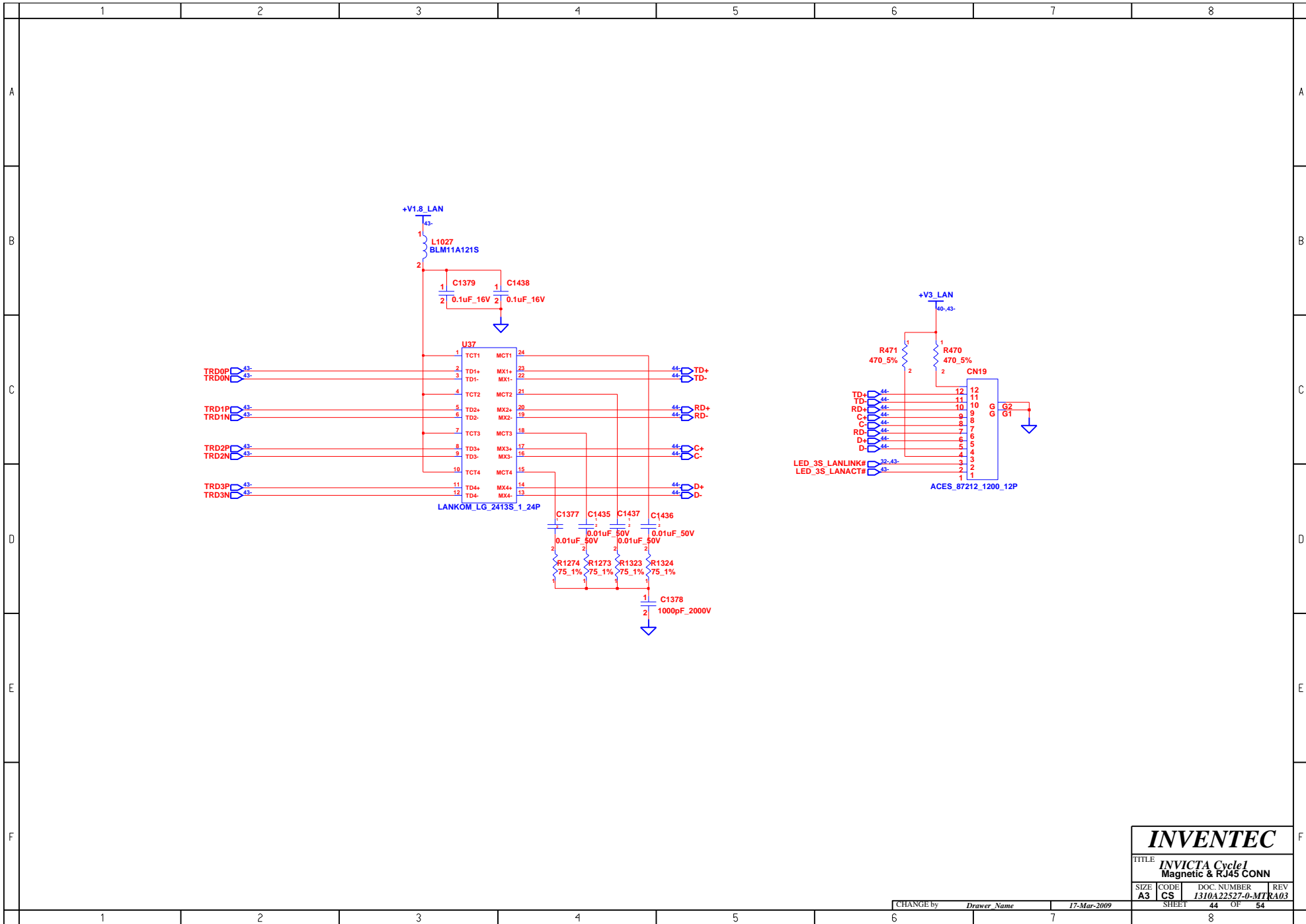
Place bypass cap as close as possible with every power pin.



Place close to XTAL0 and XTAL1.



| | | | |
|------------------------------|------|------------------|-------------|
| INVENTEC | | | |
| TITLE: INVICTA Cycle1 | | | |
| Giga LAN Controller | | | |
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | 1310A22527-0-MIT | R403 |
| CHANGE by | | Drawer Name | 17-Mar-2009 |
| SHEET | | 43 | OF 54 |

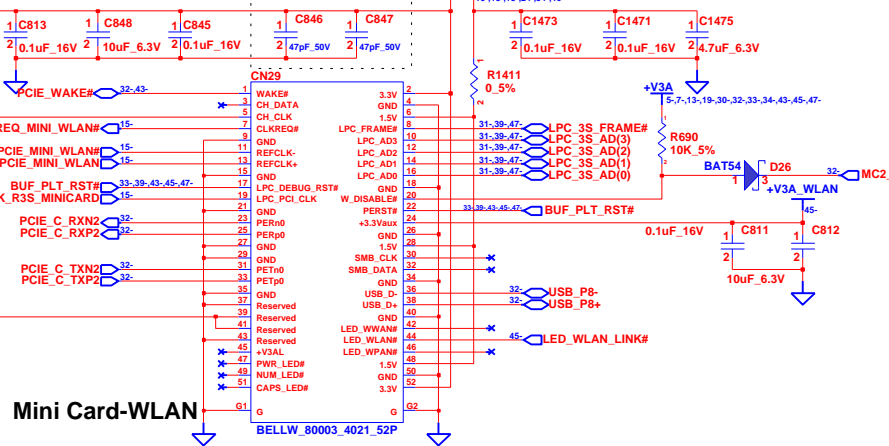
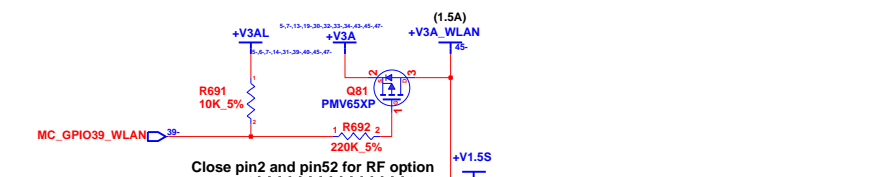
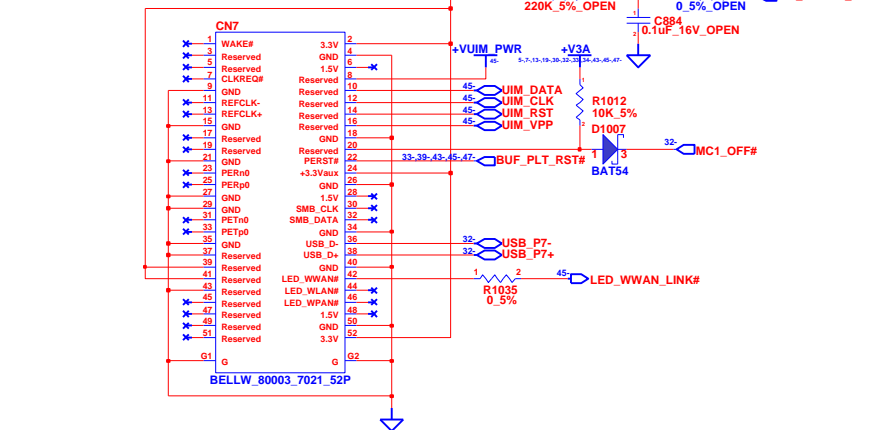
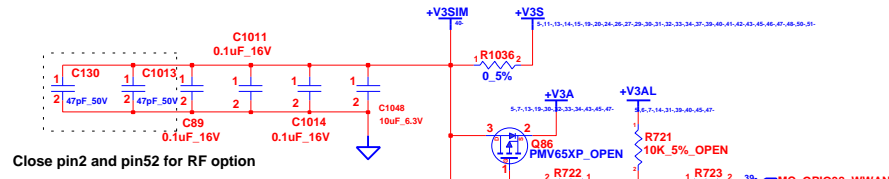


INVENTEC

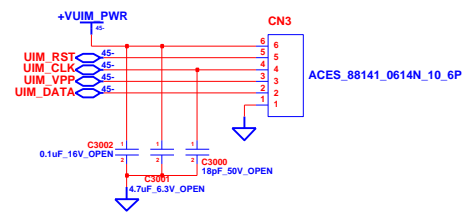
TITLE *INVICTA Cycle1*
Magnetic & RJ45 CONN

| | | | |
|-------------------|-------------------|--|--------------------|
| SIZE A3 | CODE CS | DOC. NUMBER 1310A22527-0-MTR | REV RA03 |
|-------------------|-------------------|--|--------------------|

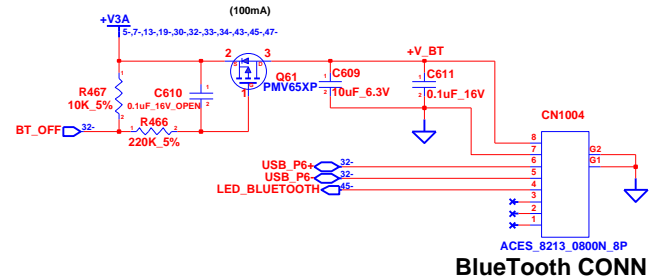
MINI Card-WWAN



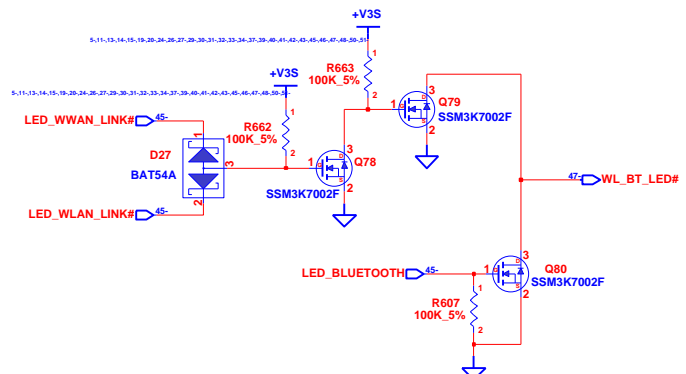
Mini Card-WLAN



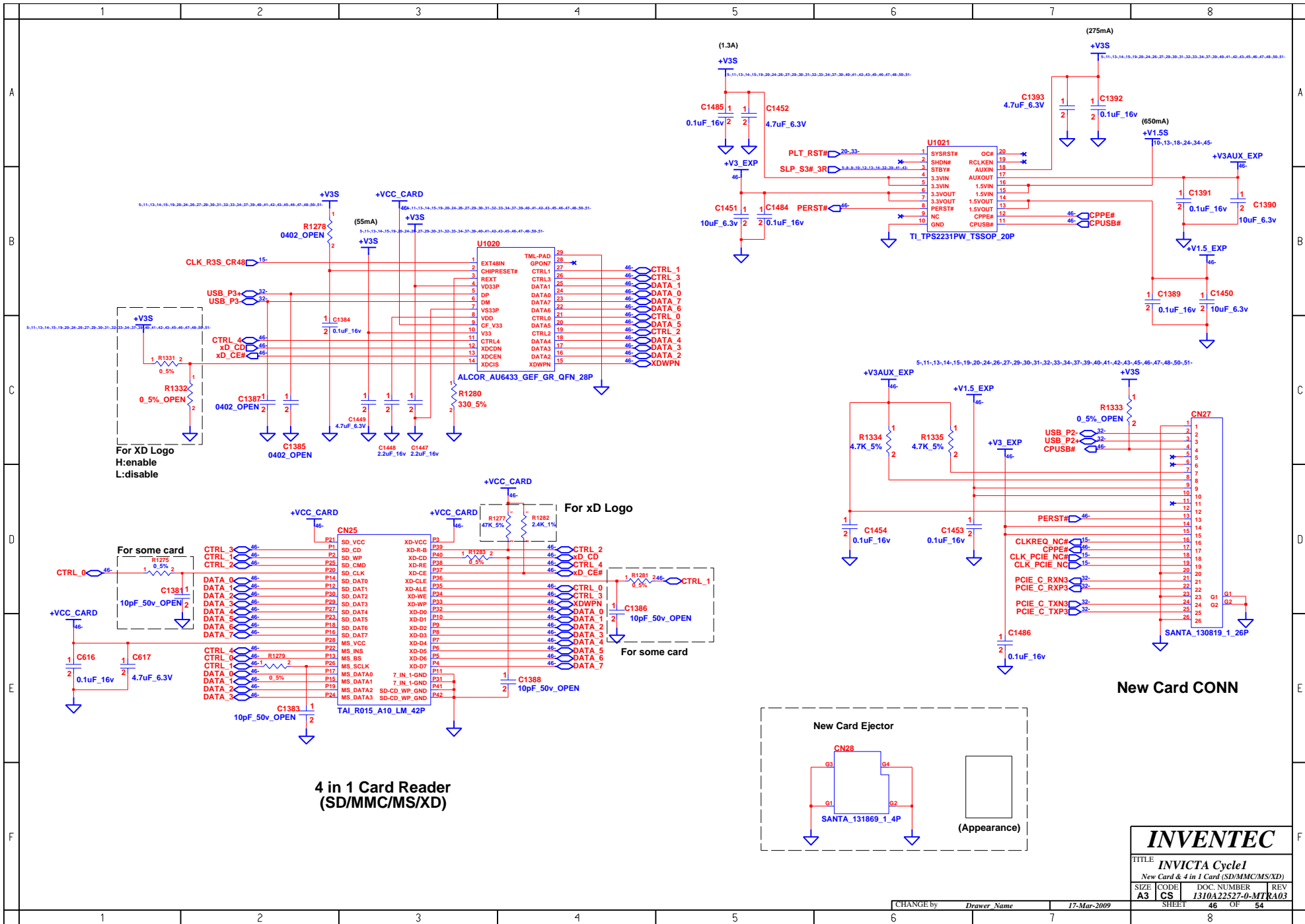
SIM Card B2B MB side CONN

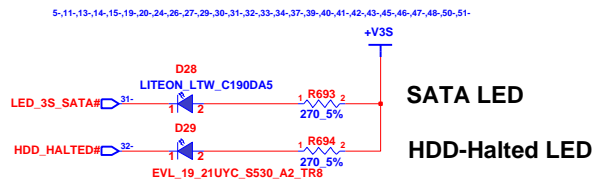
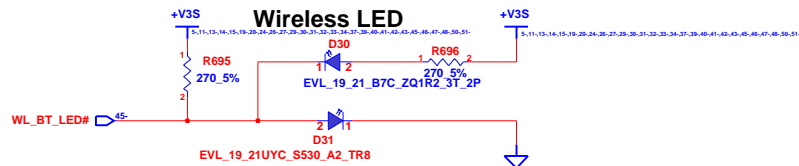
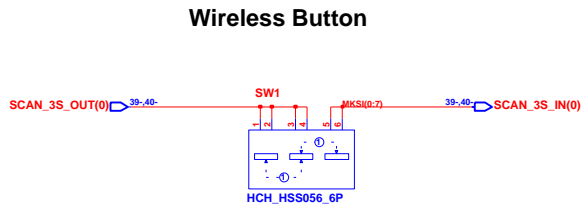


BlueTooth CONN

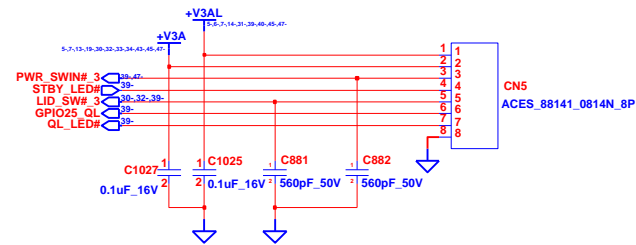
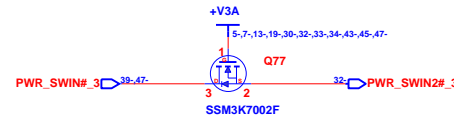
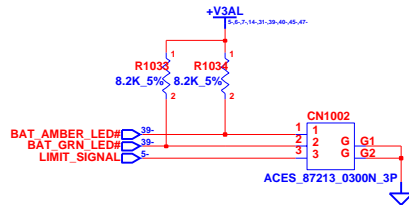


| | | | |
|--|------|-----------------|-------------|
| INVENTEC | | | |
| TITLE: <i>INVICTA Cycle1</i> Mini Card (WLAN/WWAN) / BT | | | |
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | I310A22527-0-MT | A03 |
| CHANGE by | | Drawer Name | 17-Mar-2009 |
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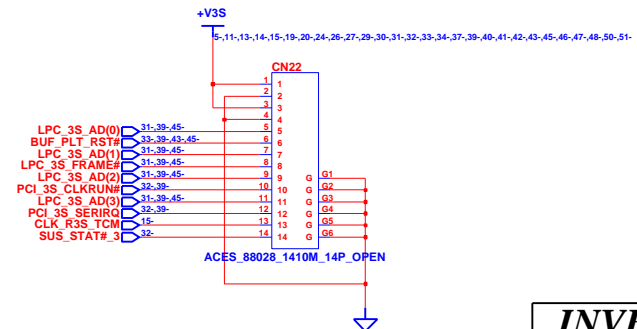




Battery Charge LED CONN

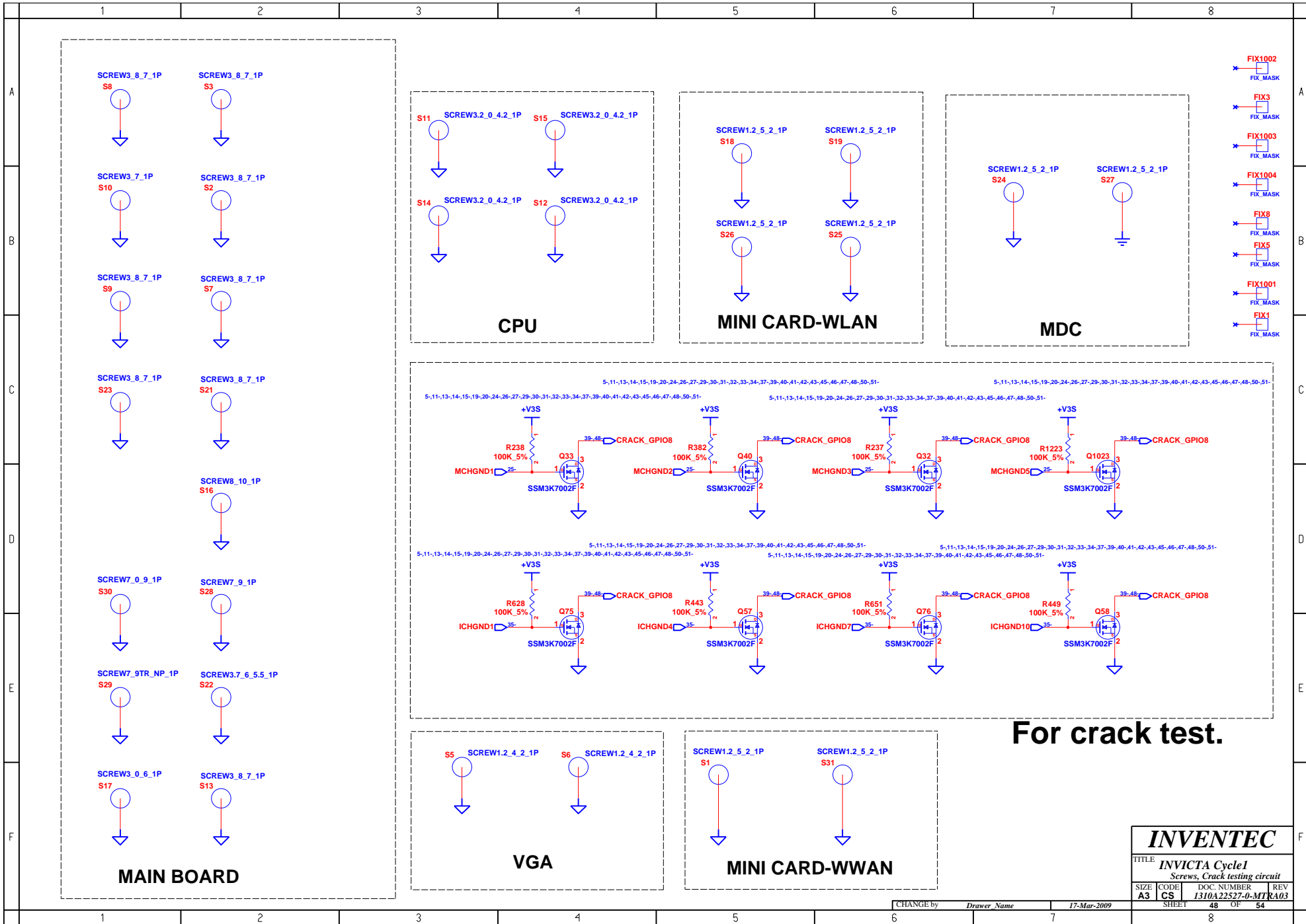


TCM CONN



INVENTEC

| | | | |
|-----------------|------|------------------|-----|
| TITLE | | | |
| INVICTA Cycle1 | | | |
| LEDs & TCM CONN | | | |
| SIZE | CODE | DOC NUMBER | REV |
| A3 | CS | 1310A22527-0-MTR | A03 |
| CHANGE by | | 17-Mar-2009 | |
| Drawer Name | | SHEET 47 OF 54 | |



| | | | |
|-------------------------------|------------|--------------------------------|----------------|
| INVENTEC | | | |
| TITLE: <i>INVICTA Cycle1</i> | | | |
| Screws, Crack testing circuit | | | |
| SIZE A3 | CODE CS | DOC NUMBER 1310A22527-0-MTR | REV A03 |
| CHANGE by Drawer Name | | 17-Mar-2009 | SHEET 48 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

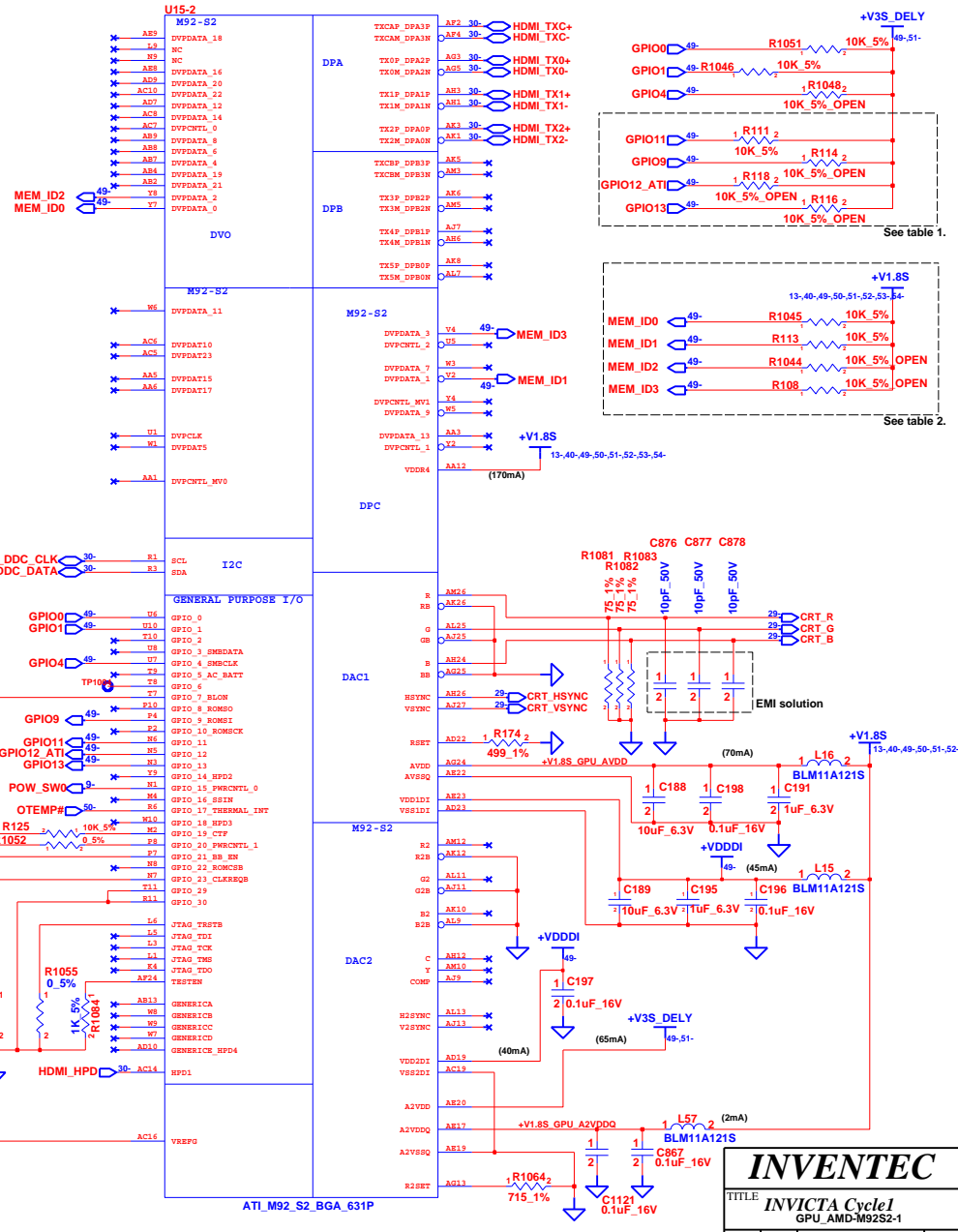
Table 1

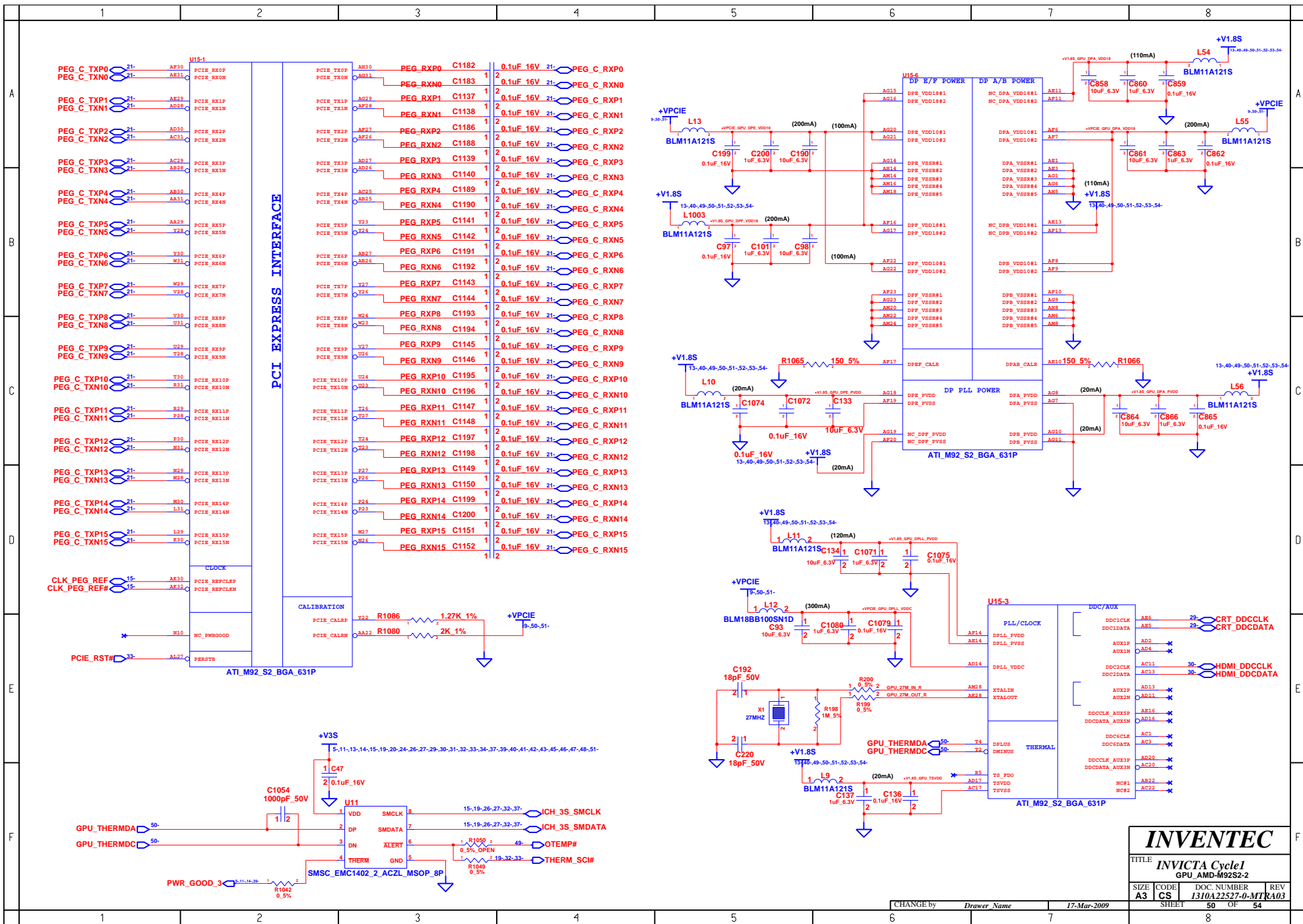
| GPIO_13 | GPIO_12 | GPIO_11 | For DIS-GDDR2 |
|---------|---------|---------|---------------------------------------|
| 0 | 0 | 1 | 512MB/256MB memory aperture (Default) |
| 1 | 1 | 0 | reserved |

| 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) |





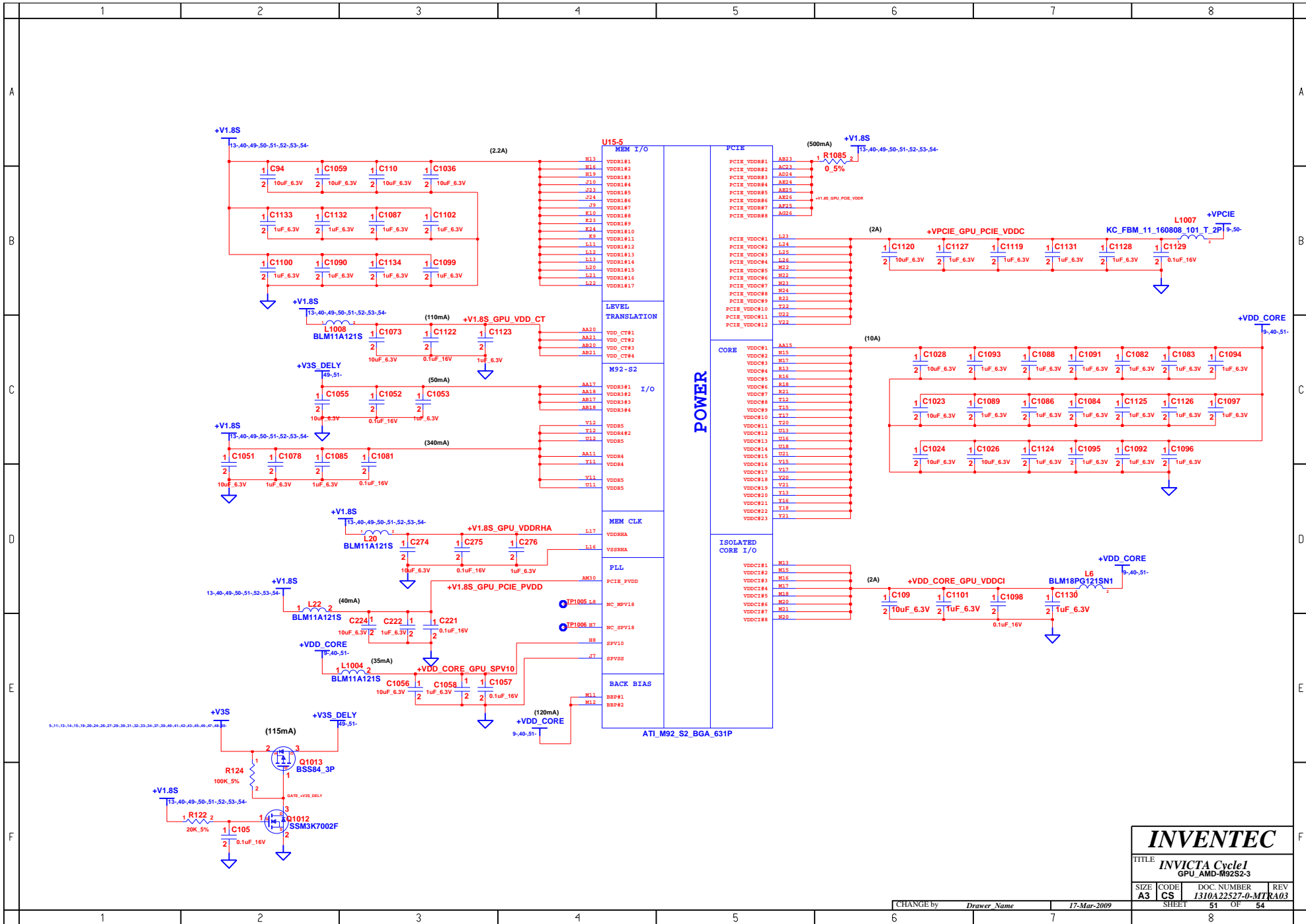
INVENTEC

TITLE: INVICTA Cycle1
GPU_AMD-M92S2-2

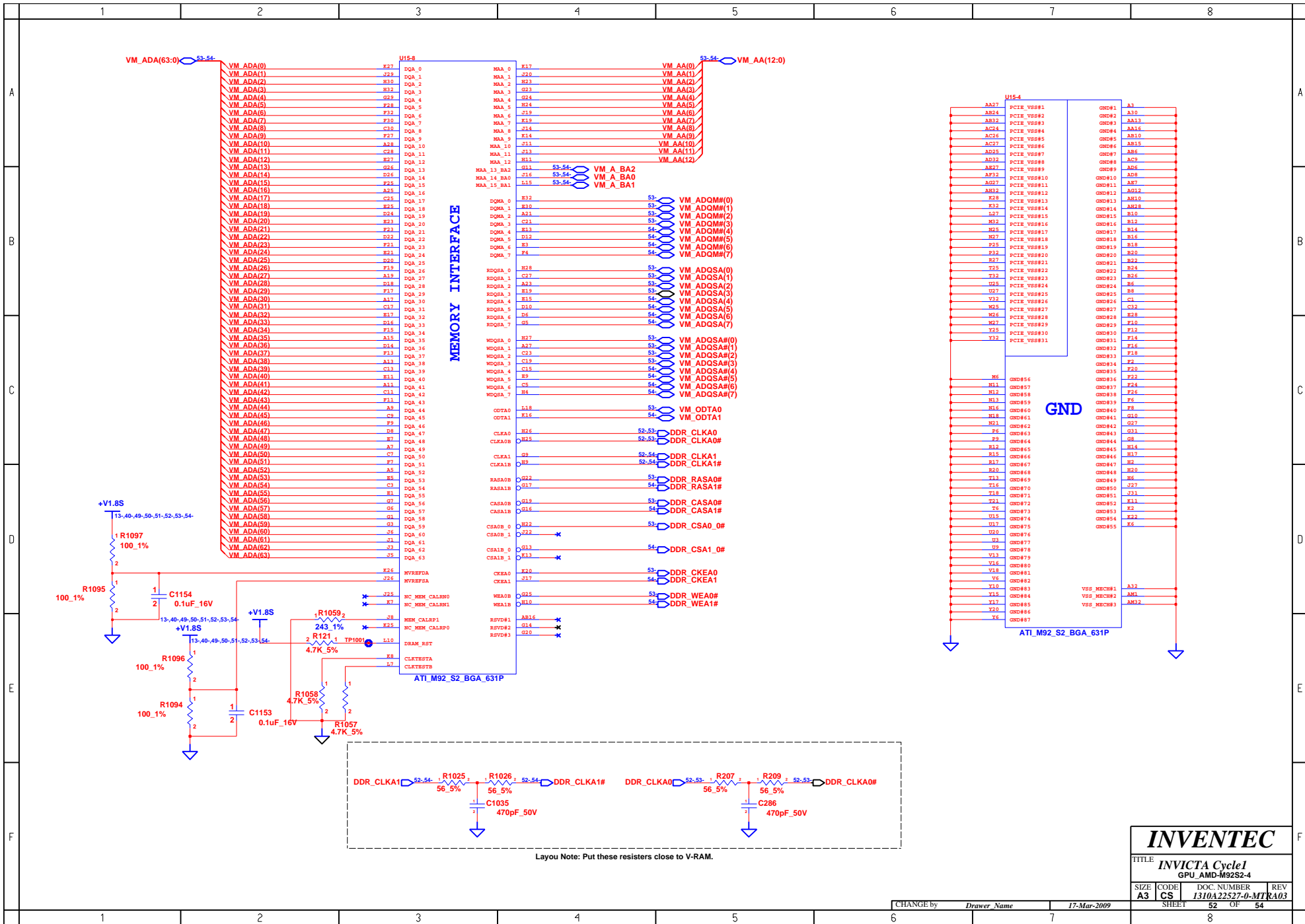
| | | | |
|------|------|-----------------|------|
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | I310A2327-0-MIT | R403 |

CHANGE by *Drawer Name* 17-Mar-2009

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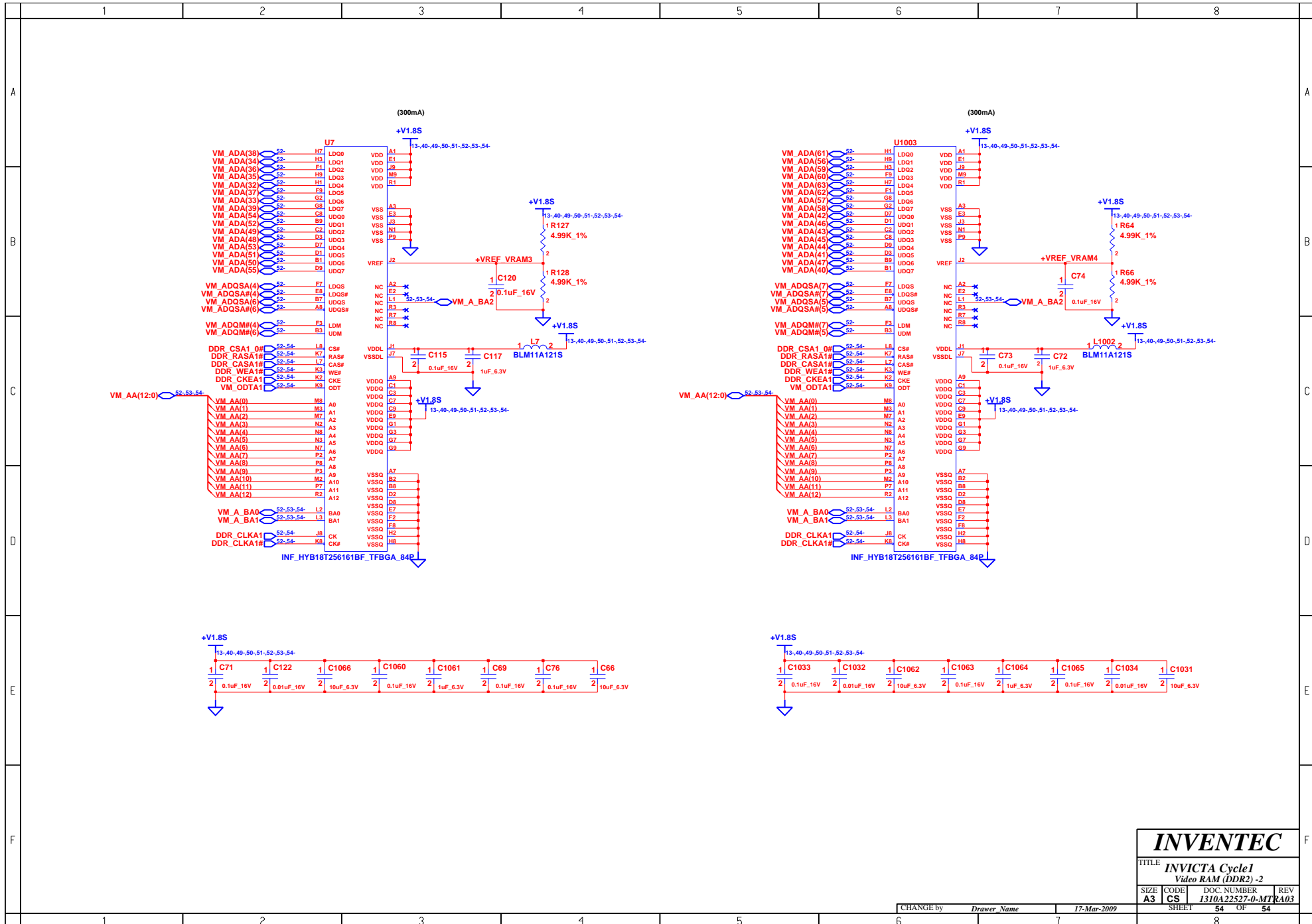


| | | | |
|---------------------------------------|----------|-------------------------------|----------|
| INVENTEC | | | |
| TITLE: INVICTA Cycle1 GPU_AMD-M92S2-3 | | | |
| SIZE: A3 | CODE: CS | DOC. NUMBER: I310A22527-0-MTR | REV: A03 |
| CHANGE by: Drawer Name | | 17-Mar-2009 | |
| SHEET: 51 | | OF: 54 | |



| | | | |
|---|------|-----------------|-------|
| INVENTEC | | | |
| TITLE: INVICTA Cycle1 GPU_AMD-M92S2-4 | | | |
| SIZE | CODE | DOC. NUMBER | REV |
| A3 | CS | 1310A22527-0-MT | A03 |
| SHEET | | 52 | OF 54 |

CHANGE by *Drawer Name* 17-Mar-2009



| | | | |
|---|-------------------|--|-------------------|
| INVENTEC | | | |
| TITLE INVICTA Cycle1 Video RAM (DDR2) -2 | | | |
| SIZE A3 | CODE CS | DOC. NUMBER I310A22527-0-MTR | REV A03 |
| CHANGE by <i>Drawer Name</i> | | 17-Mar-2009 | |
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