

Genesis-1 Block Diagram

LGS-1 91.4RQ01.001

JULY. 18, 2011

PCB Layer Stackup

L1:Component
L2:GND
L3:Signal 1
L4:VCC
L5:Signal 2
L6:Signal 3
L7:VCC
L8:Signal 4
L9:GND
L10:Component

Battery Charger/Selector

BQ24760 75

| INPUTS | OUTPUTS |
|--------|---------------|
| VINT20 | CHARGER_OUT12 |

System DC/DC

TPS51220ARSN 79

| | |
|--------|-------|
| VINT20 | VCC5M |
| | VCC3M |

CPU DC/DC

VT1318M/VT1324S 80

| | |
|-----------|------------|
| VCC5M_OUT | VCCCPUCORE |
|-----------|------------|

GMCH GFX CORE

VT1324S 81

| | |
|-----------|------------|
| VCC5M_OUT | VCCGFXCORE |
|-----------|------------|

VCC1R5B

VT355FCX 86

| | |
|-----------|---------|
| VCC5M_OUT | VCC1R5B |
|-----------|---------|

VCC0R675B

MAX1510 87

VCC1R35A

VT356FCX 88

| | |
|-----------|----------|
| VCC5M_OUT | VCC1R35A |
|-----------|----------|

| | |
|----------|-----------|
| VCC1R35A | VCC0R675B |
|----------|-----------|

VCC1R8B

BD9139 89

| | |
|-----------|---------|
| VCC5M_OUT | VCC1R8B |
|-----------|---------|

VCC1R05AMT

VT356FCX 85

| | |
|-----------|------------|
| VCC5M_OUT | VCC1R05LAN |
|-----------|------------|

VCC1R05B_VTT

VT356 84

| | |
|-----------|--------------|
| VCC5M_OUT | VCC1R05B_VTT |
|-----------|--------------|

VCCSA

VT371 90

| | |
|-----------|-------|
| VCC5M_OUT | VCCSA |
|-----------|-------|

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Title

Block Diagram

Size
A3

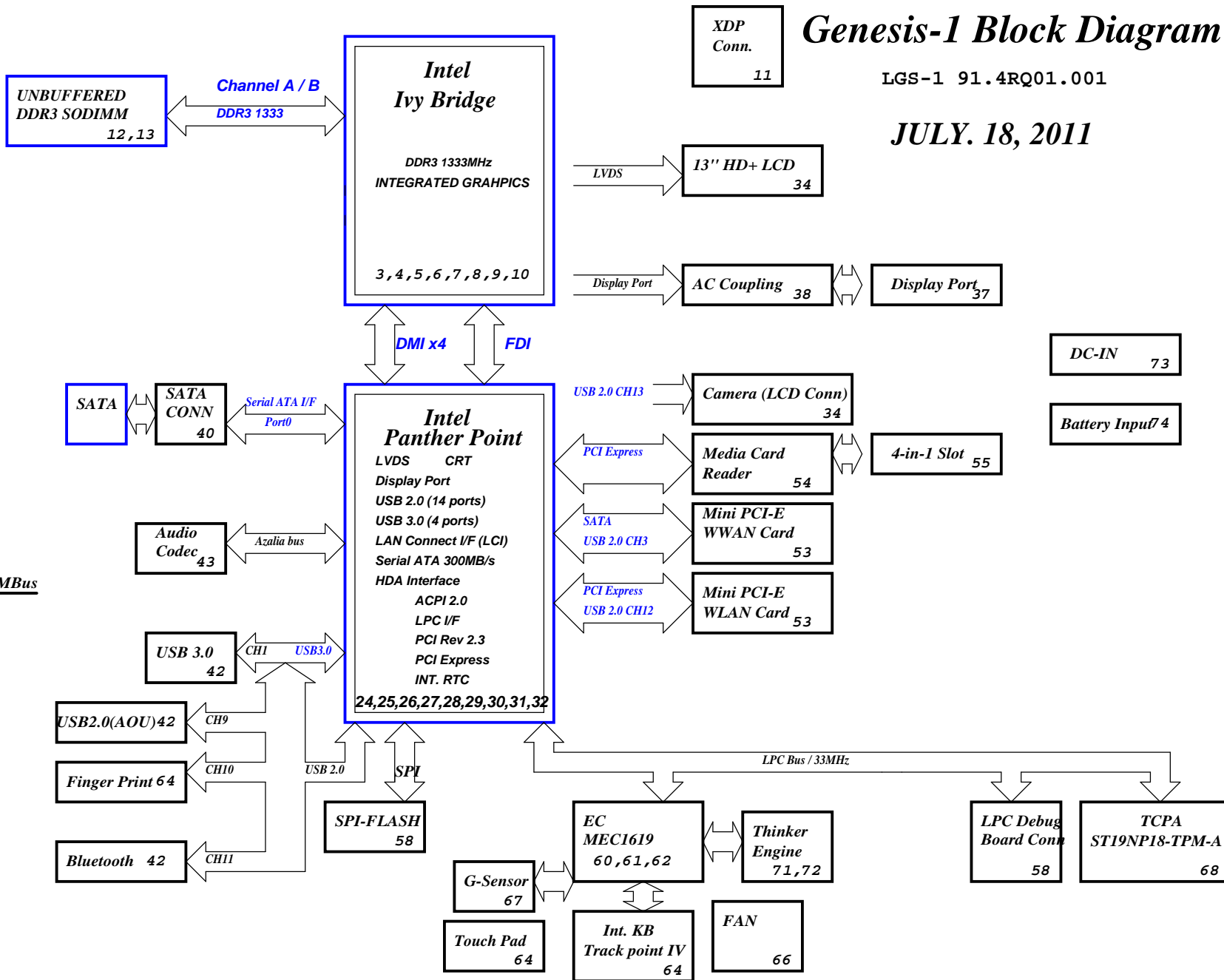
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RESISTOR

| Symbol name | Value | Tolerance (J: 5%, F: 1%, D: 0.5%, B: 0.1 %) | Rating 0402=> 1/16W, 25V 0603 => 1/16W, 75V 0805 => 1/10W, 100V | Size 2=>0402, 3=>0603, 5=>0805, 6=>1206, 0=>1210 |
|-------------|-------|--|--|--|
| | | | | |
| | | | | |
| | | | | |

The naming rule is value + R + size + tolerance
 For the value, it can be read by the number before R. (R means resistor)
 For the tolerance, it can be read from the last letter.
 For the rating, we don't show on the symbol name.
 For the size, R2=>0402, R3=>0603, R5=>0805,....

CAPACITOR

| Symbol name | Value | Tolerance (M: +/-20, K: +/-10, Z: +80/-20) | Rating | Size 2=>0402, 3=>0603, 5=>0805, 6=>1206, 0=>1210 |
|-------------|-------|---|--------|--|
| | | | | |
| | | | | |
| | | | | |

The naming rule is
Capacitor type + value + rating + size + tolerance + material
SCD1U10V2MX-1
SC=> SMT Ceramic, TC=> POS cap or SP cap
D1U => 0.1uF
10V => the voltage rating is 10V
2=> 0402, 3=>0603, 5=>0805
M=>tolerance M, K, Z
X=> X7R/X5R, Y=> Y5V
-1 => symbol version, nonsense to EE characteristic

PLANAR_ID[3..0]

| IBEXPEAK-M | 39 | 38 | 48 | 49 | Planar ID Version | Planar PCB Version |
|------------|----|----|----|----|-------------------|--------------------|
| PLANAR_IDn | 3 | 2 | 1 | 0 | | |
| | 0 | 0 | 0 | 0 | Genesis-1 initial | N/A |
| | 0 | 0 | 0 | 1 | FVT | N/A |
| | 0 | 0 | 1 | 0 | SIT | SC |
| | 0 | 0 | 1 | 1 | | |
| | 0 | 1 | 0 | 0 | | |
| | 0 | 1 | 0 | 1 | | |
| | 0 | 1 | 1 | 0 | | |
| | 0 | 1 | 1 | 1 | | |
| | 1 | 0 | 0 | 0 | | |
| | 1 | 0 | 0 | 1 | | |
| | 1 | 0 | 1 | 0 | | |

EC HISTORY

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Reference

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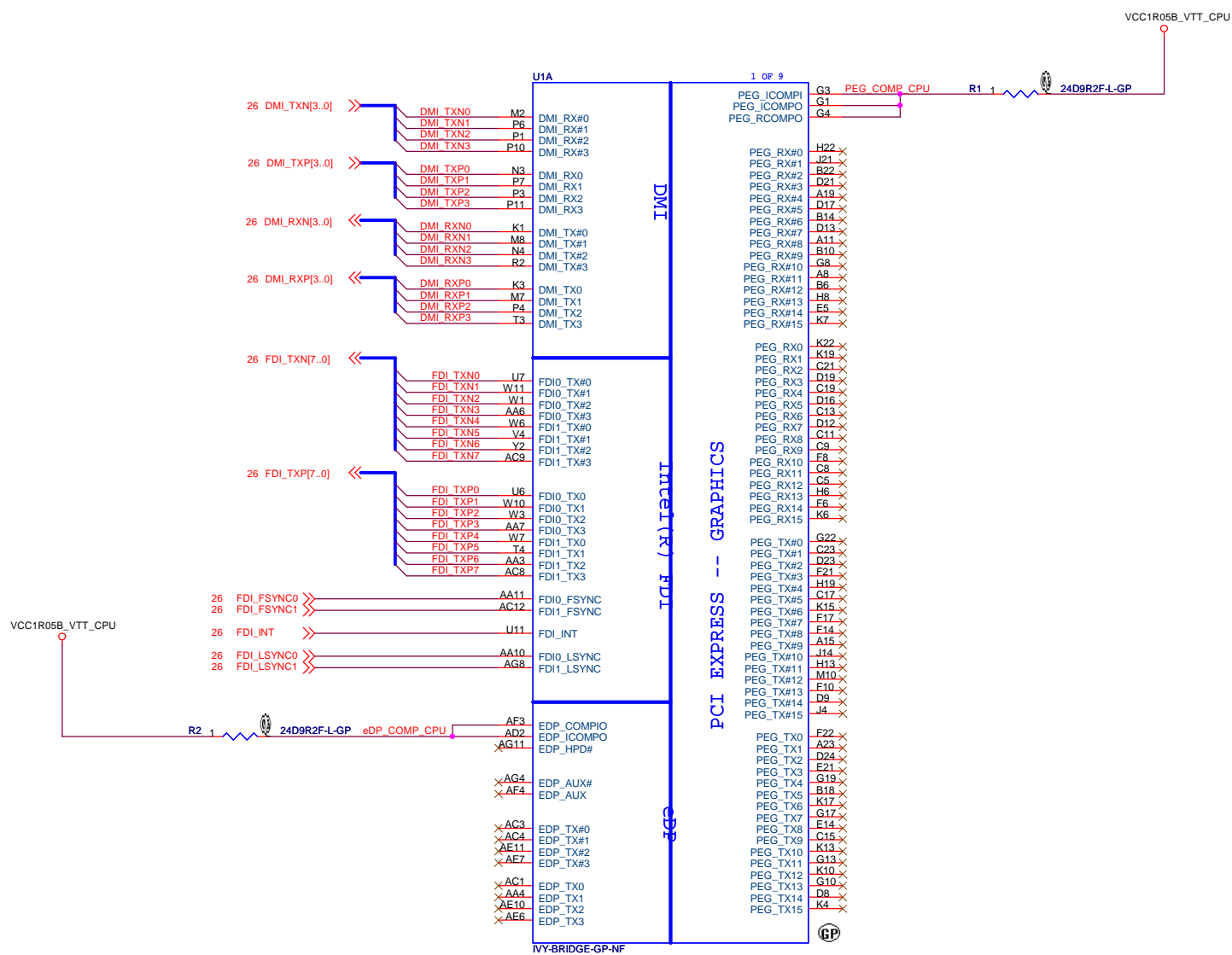
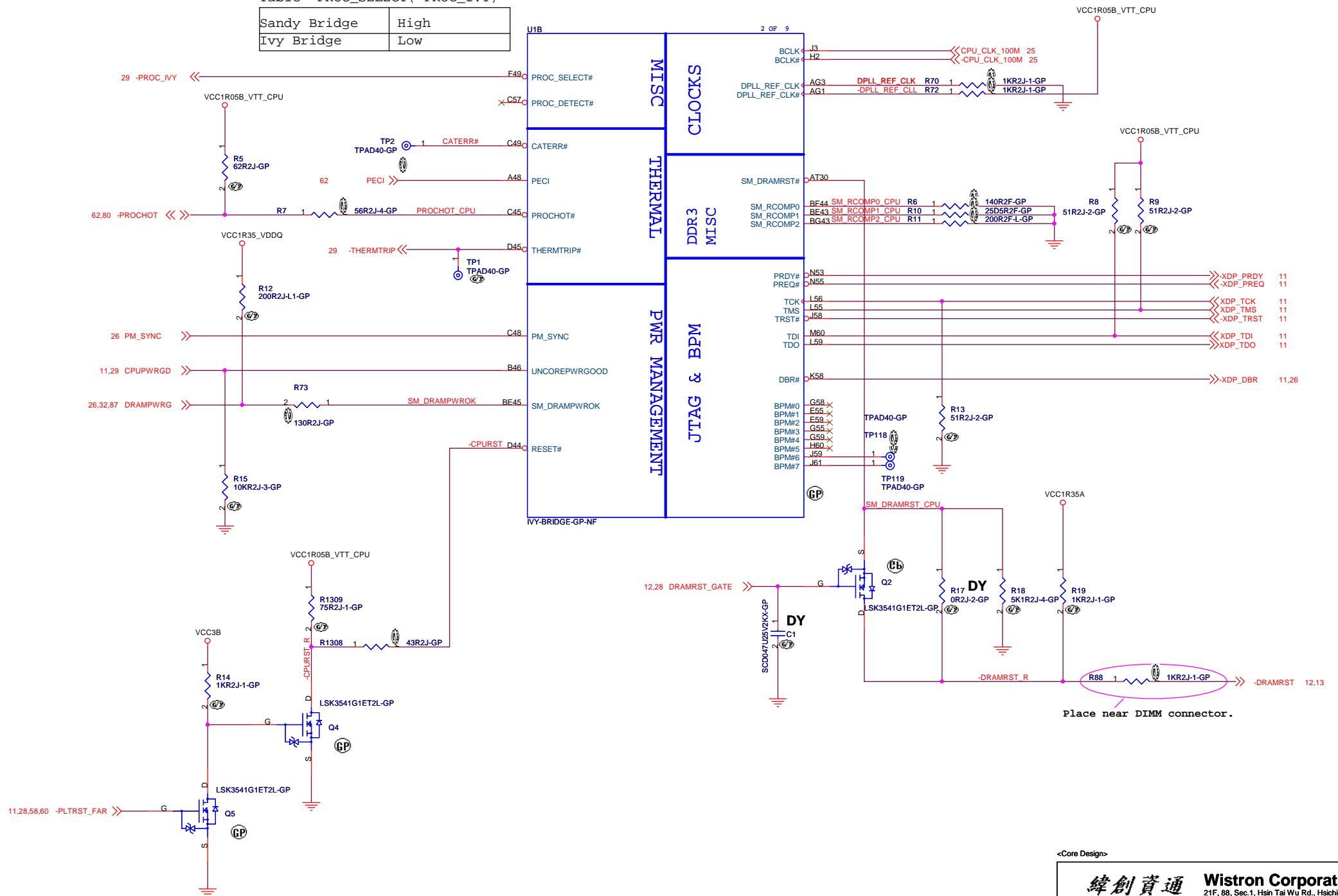


Table -PROC_SELECT(-PROC_IVY)

| | |
|--------------|------|
| Sandy Bridge | High |
| Ivy Bridge | Low |



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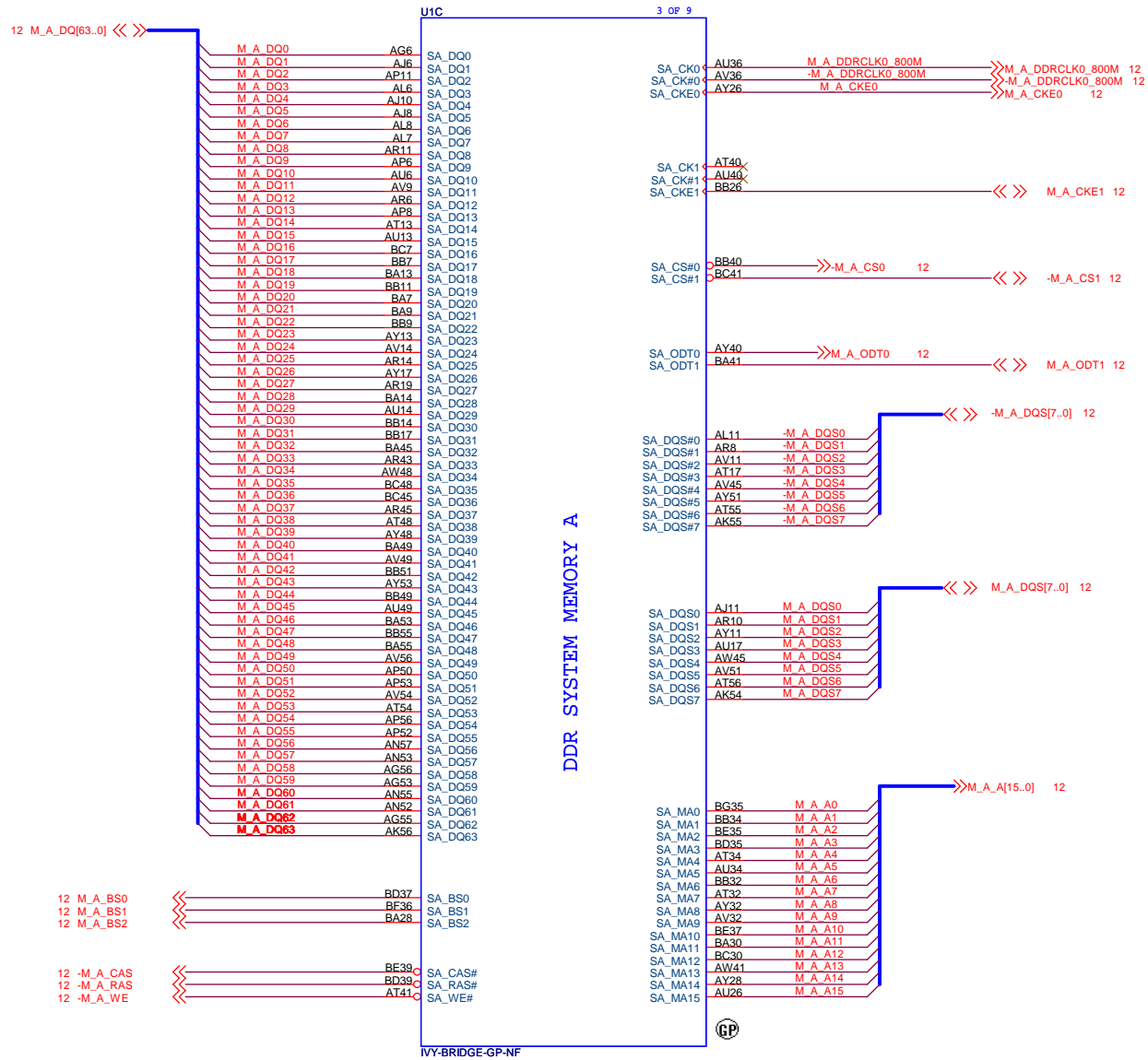
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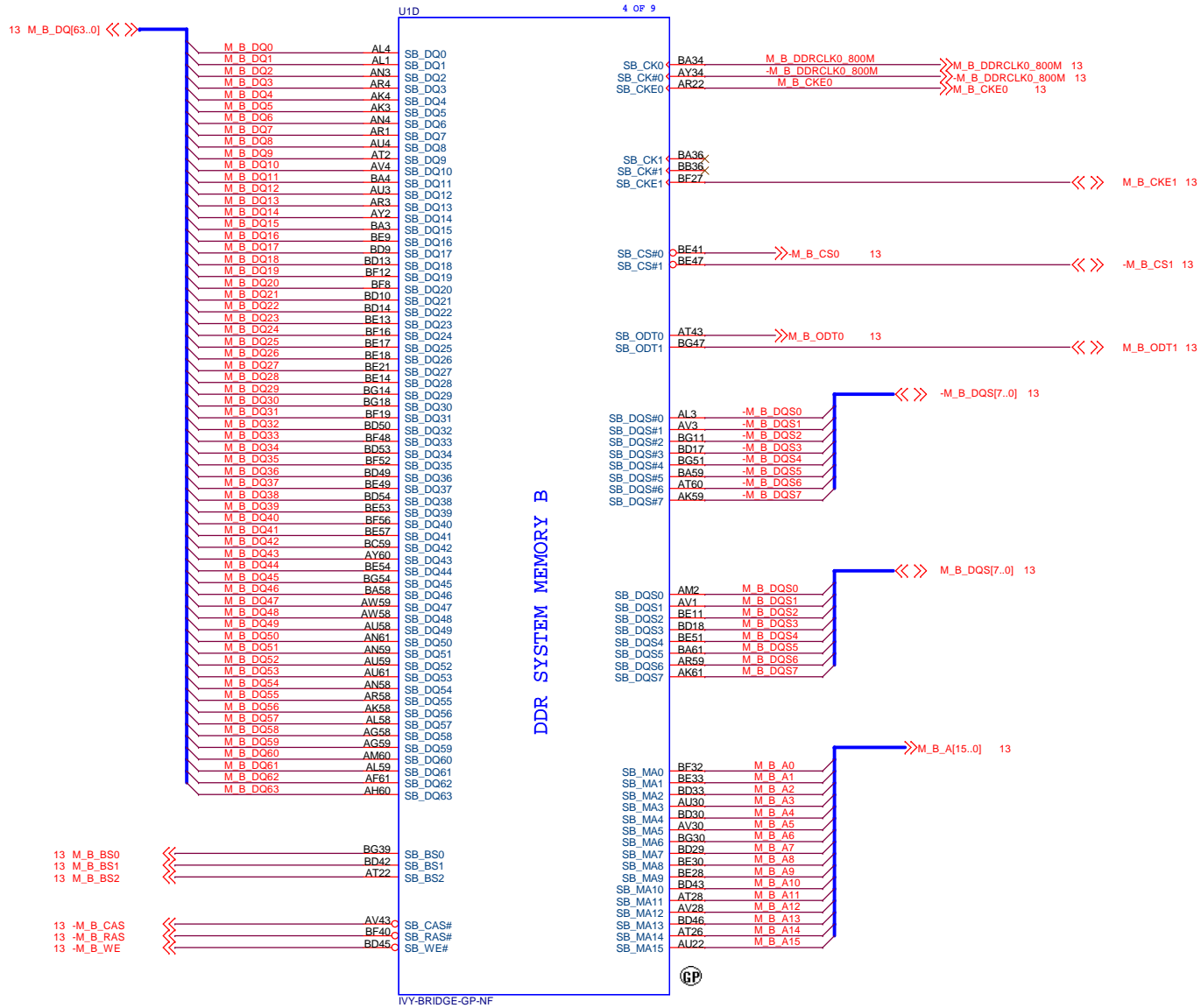
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Genesis-1Rev **SC**

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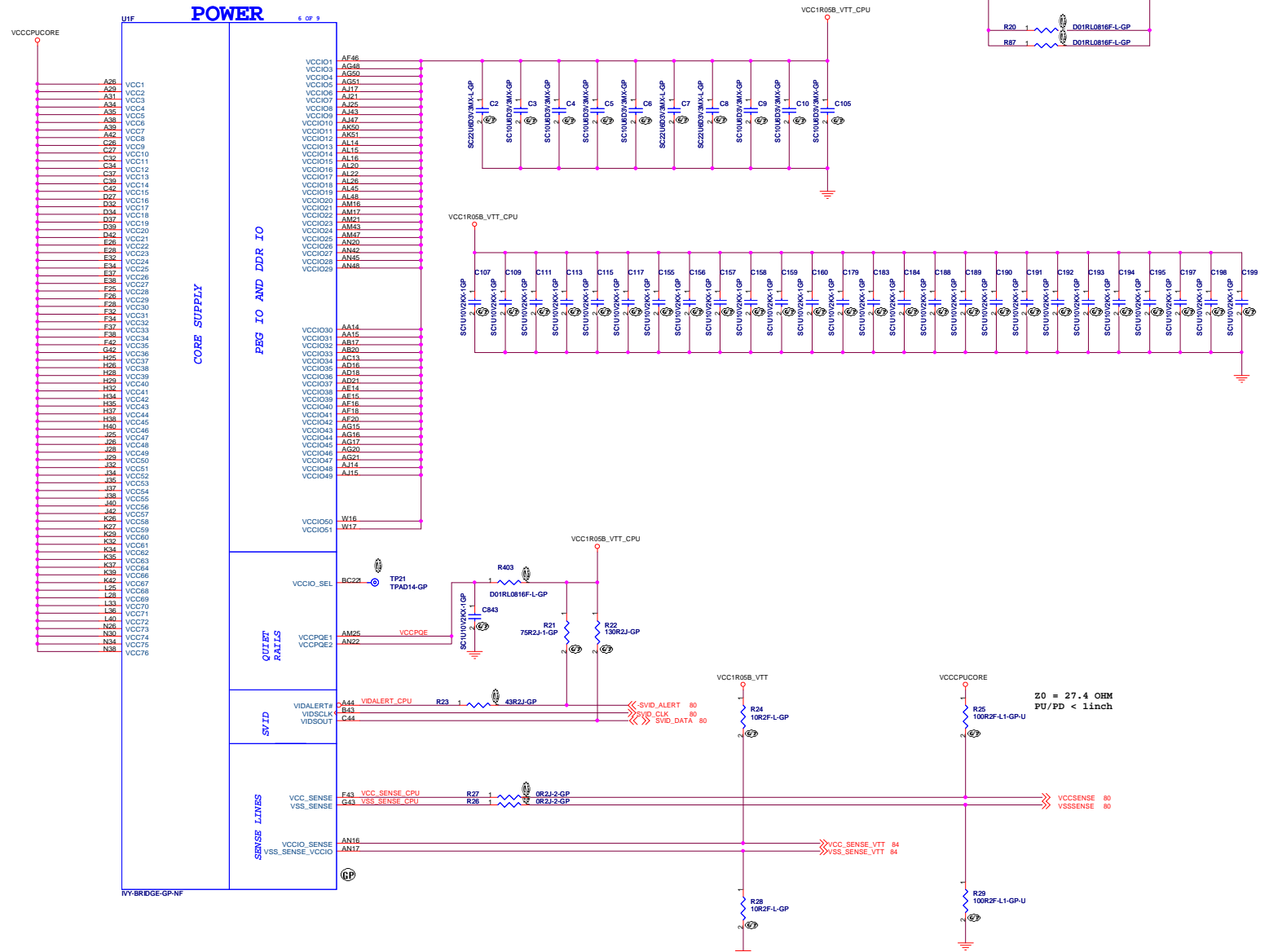
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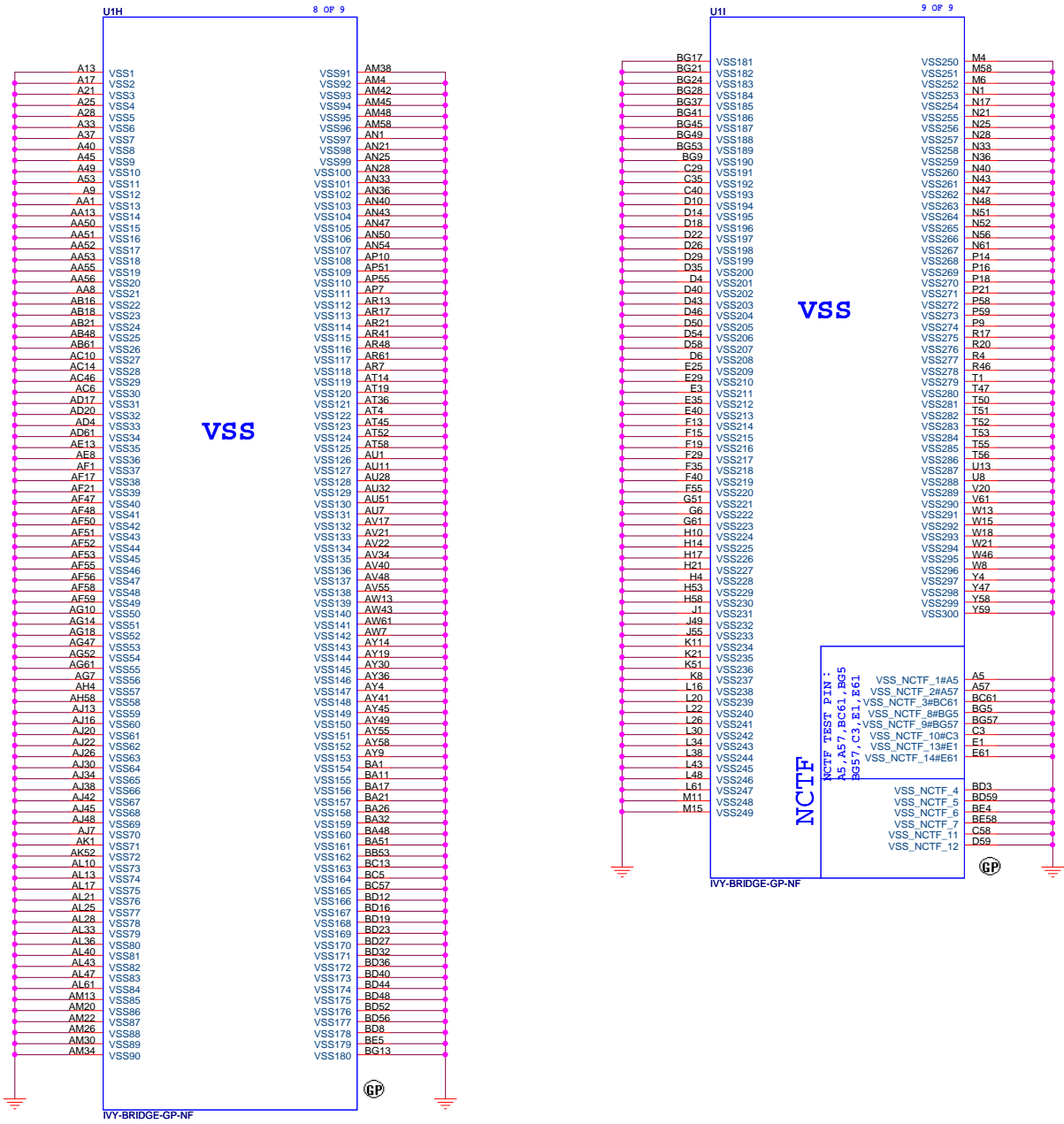




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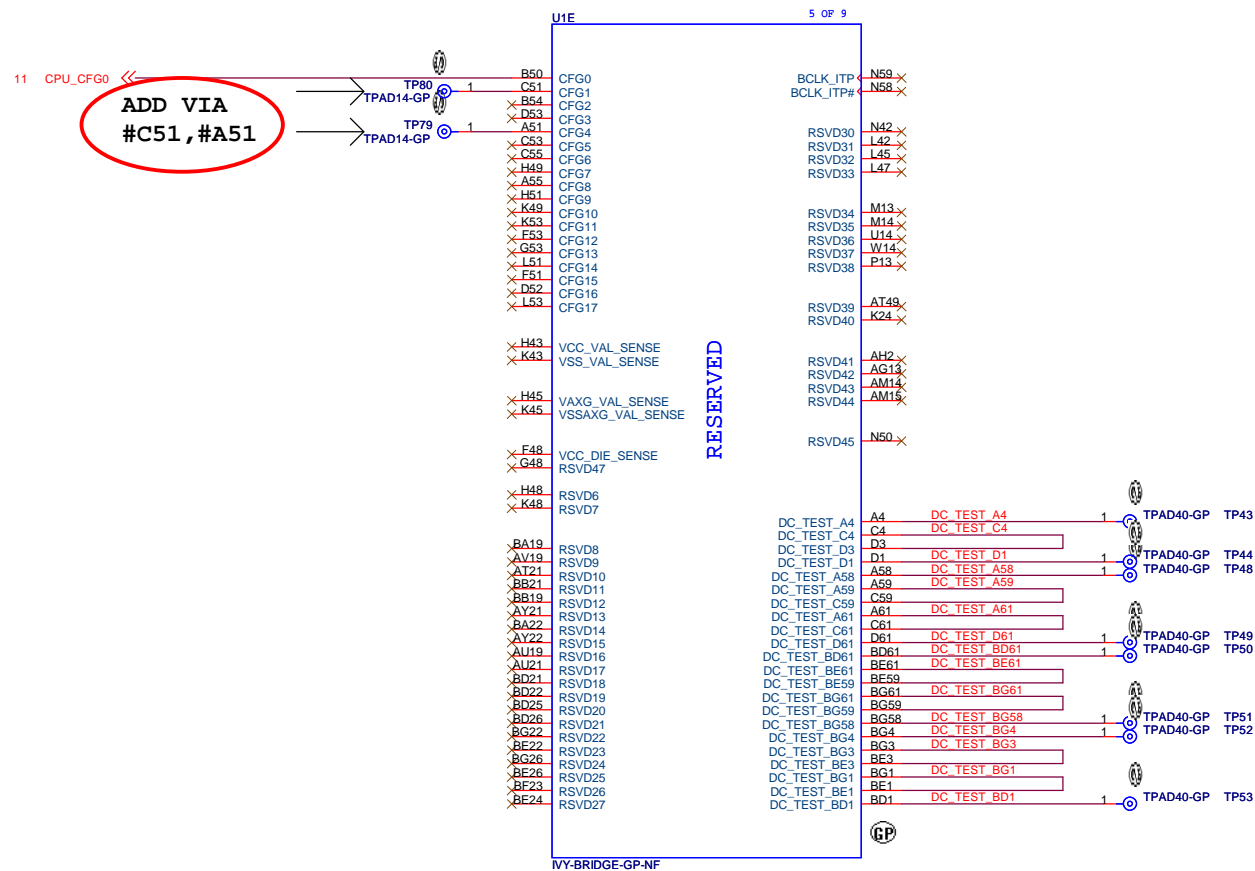
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| Title CPU(4/8):DDR3 Channel-B | | | |
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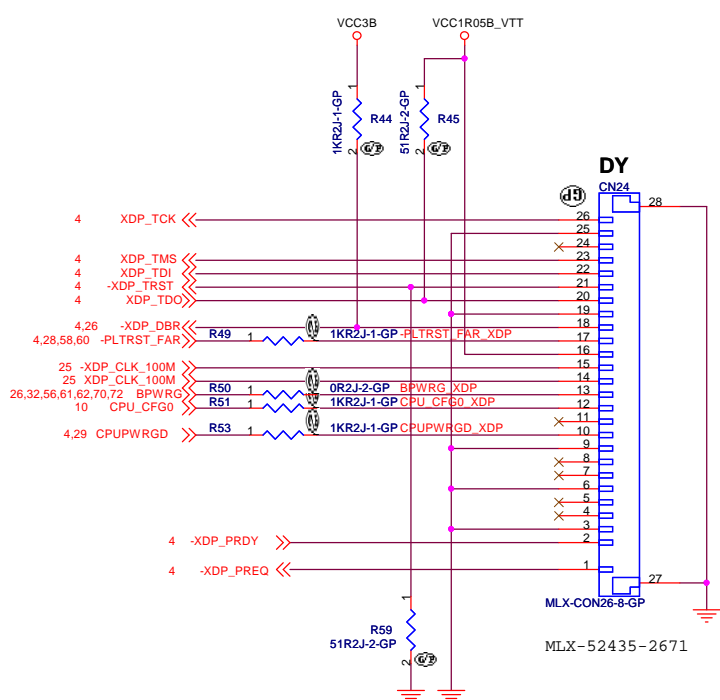


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| Title CPU(7/8):GND | | | | | |
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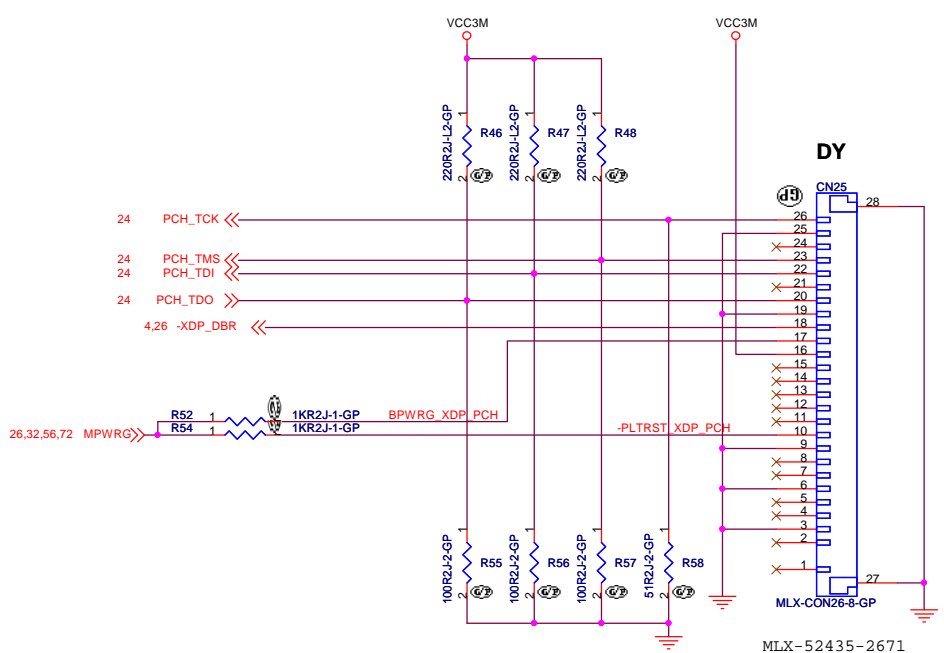


DEBUG Interface for Processor.

XDP1 NOTE:"ASM" FOR PDV/SDV ONLY

| | | ENABLE | DISABLE |
|--------|------|--------|---------|
| TDO | R45 | ASM | DY |
| TRST# | R59 | ASM | ASM |
| DBRST# | R44 | ASM | ASM |
| RESET# | R49 | ASM | DY |
| CFG0 | R51 | ASM | DY |
| PWRGD | R53 | ASM | DY |
| BPWRG | R50 | ASM | DY |
| | CN24 | ASM | DY |

PDV Logic

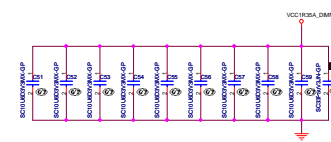
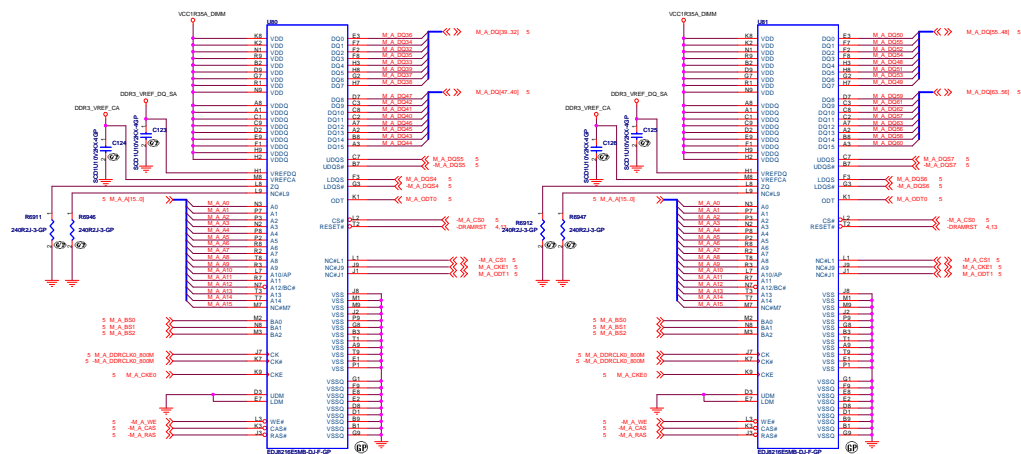
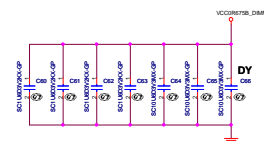
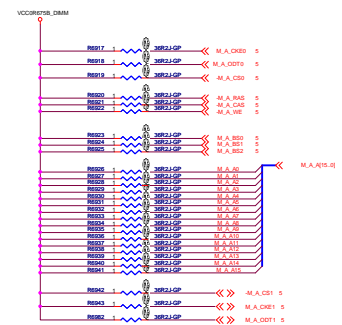


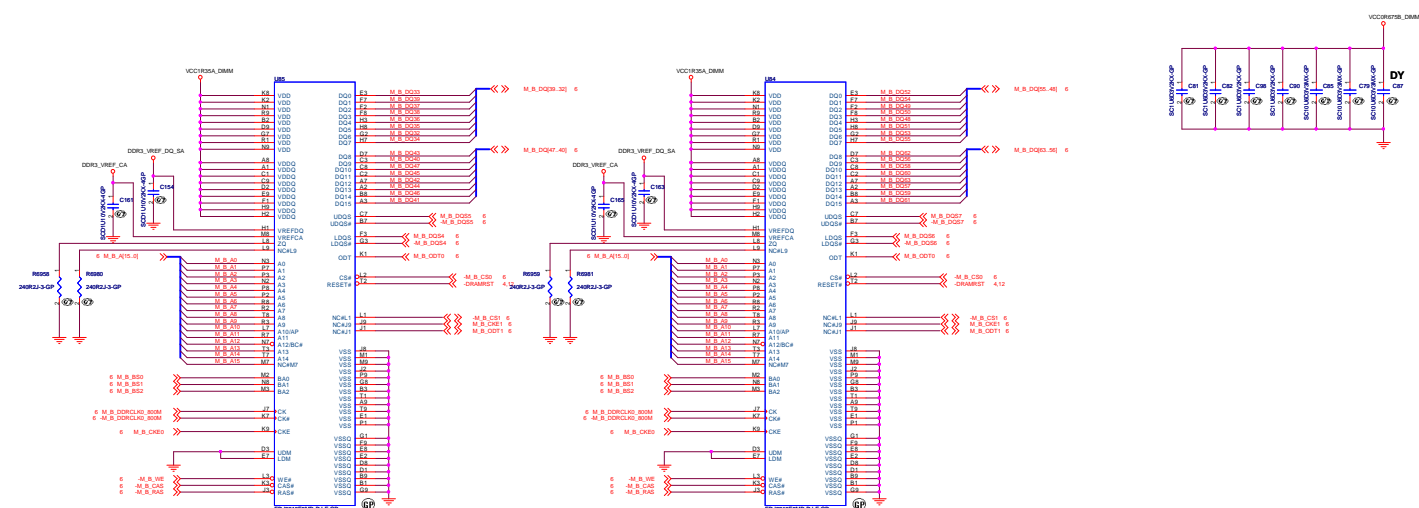
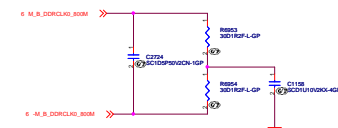
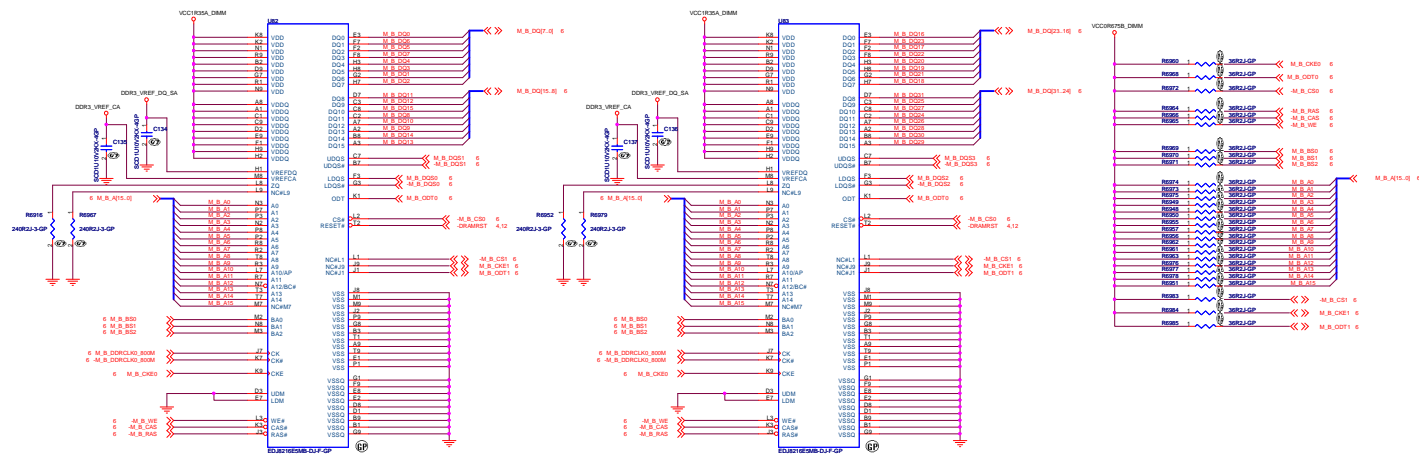
DEBUG Interface for PCH.

XDP2 NOTE:"ASM" FOR PDV/SDV ONLY

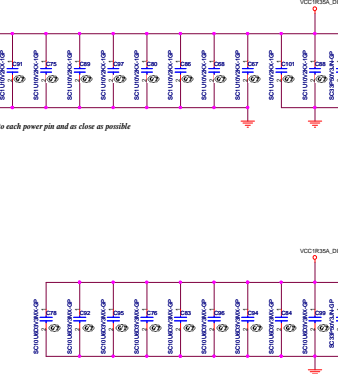
| | | ENABLE | DISABLE |
|-------|------|--------|---------|
| TDO | R46 | 220 | DY |
| | R55 | 100 | DY |
| TMS | R48 | 220 | DY |
| | R57 | 100 | DY |
| TDI | R47 | 220 | DY |
| | R56 | 100 | DY |
| TCK | R58 | 51 | 51 |
| MPWRG | R52 | ASM | DY |
| | R54 | ASM | DY |
| | CN25 | ASM | DY |

PDV Logic





Place one cap to each power pin and as close as possible



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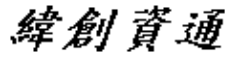
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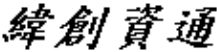
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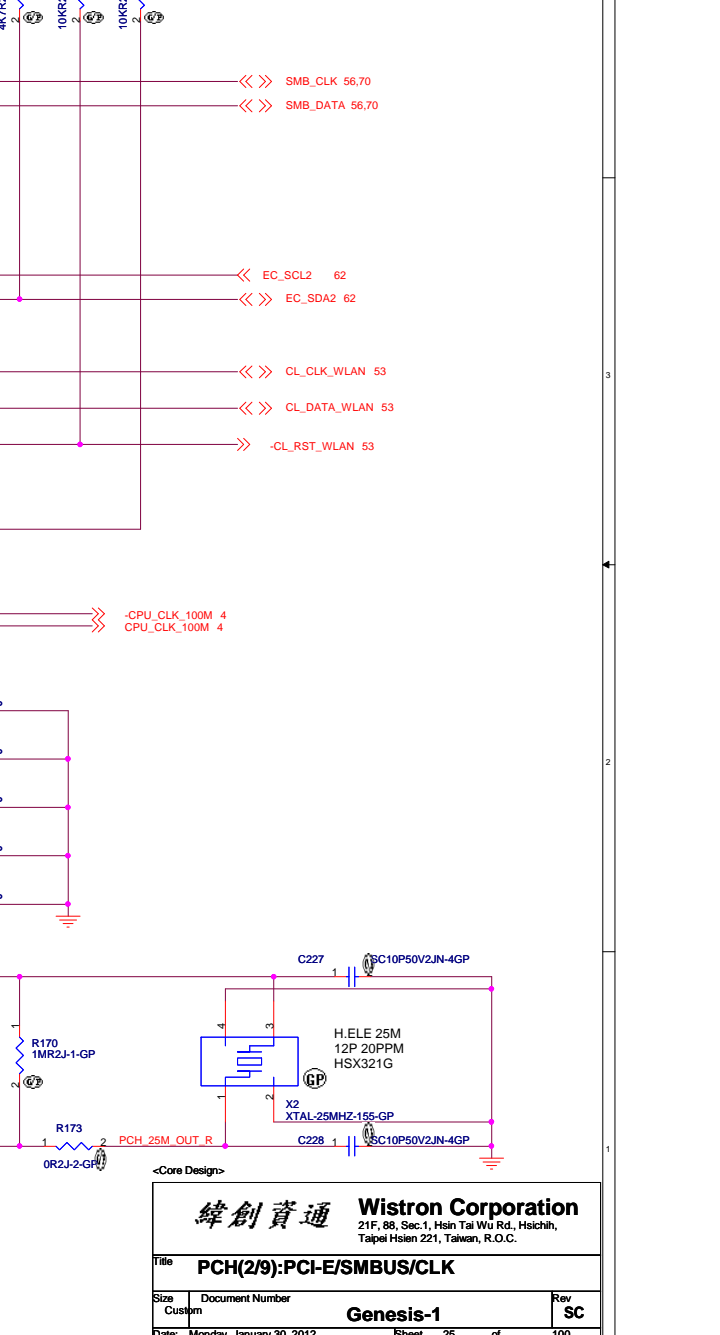
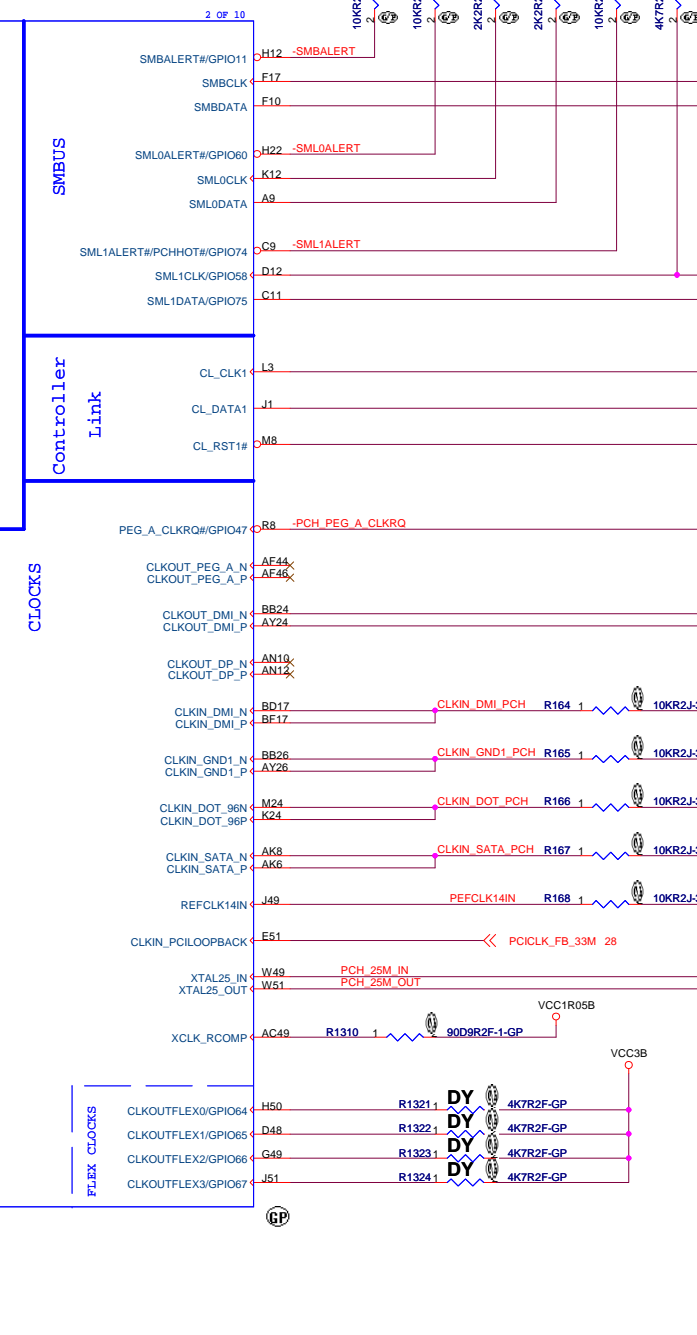
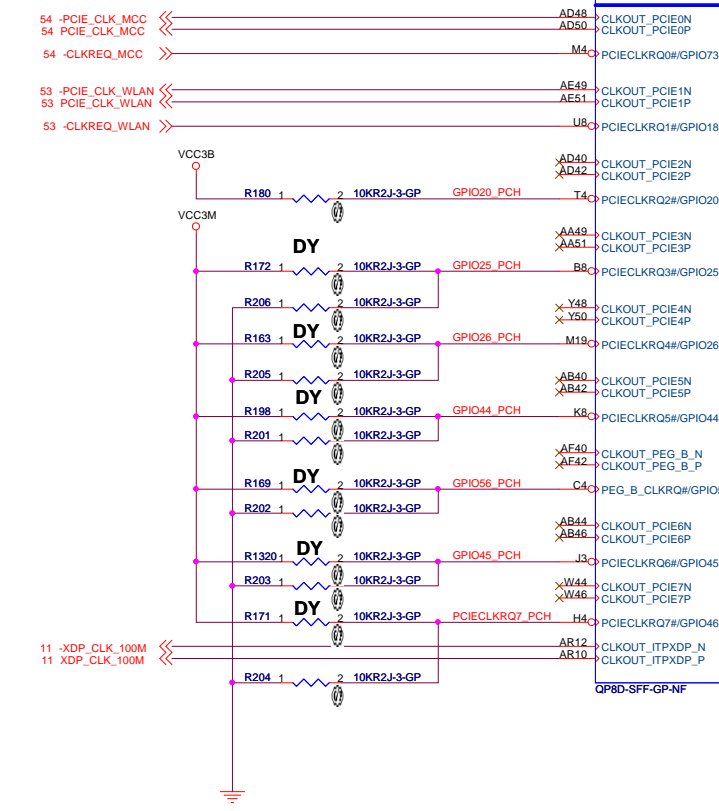
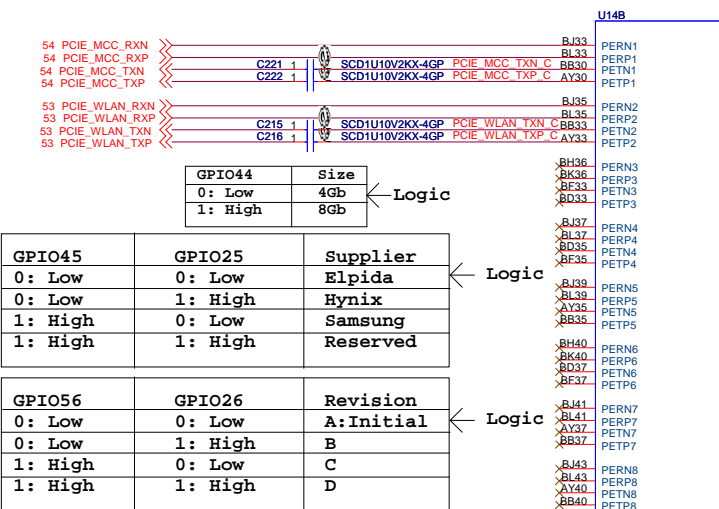
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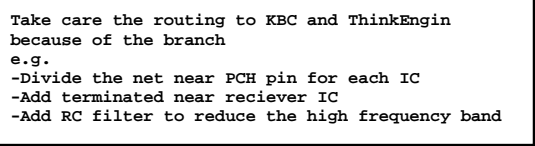
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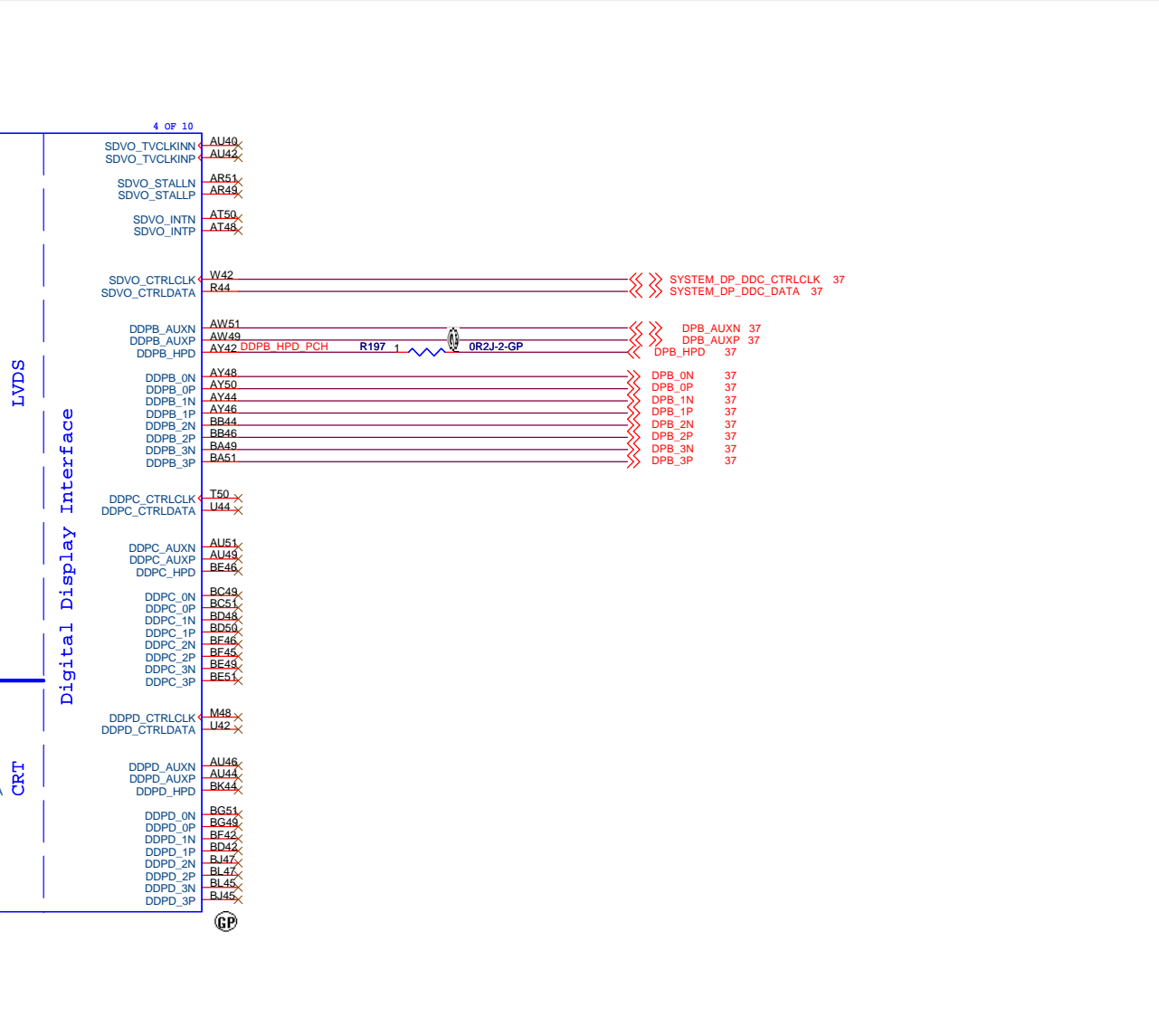
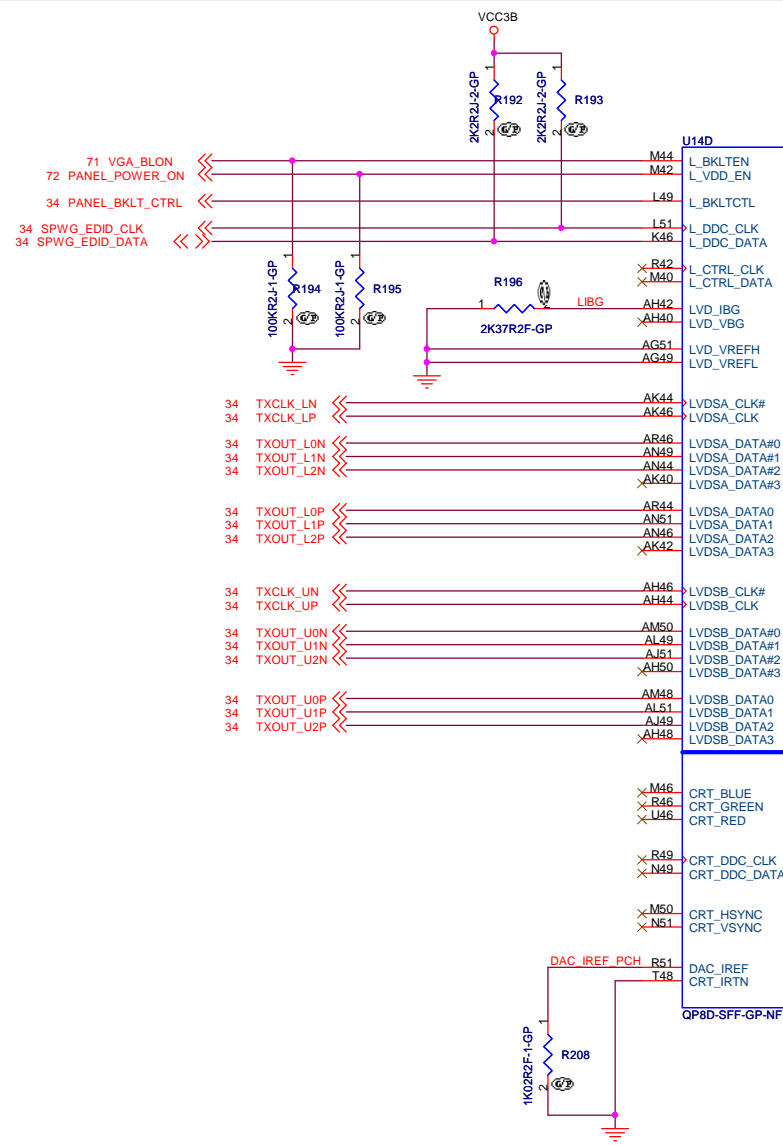
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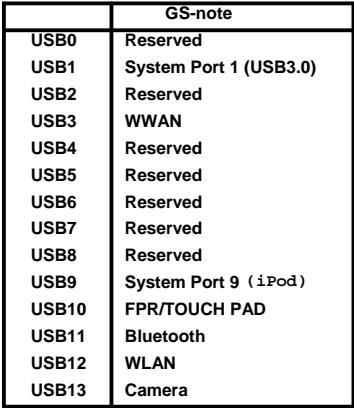
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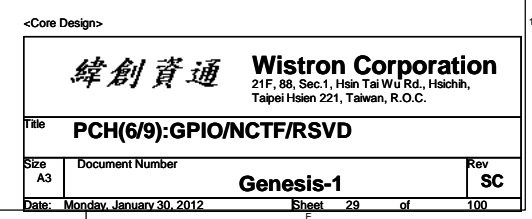


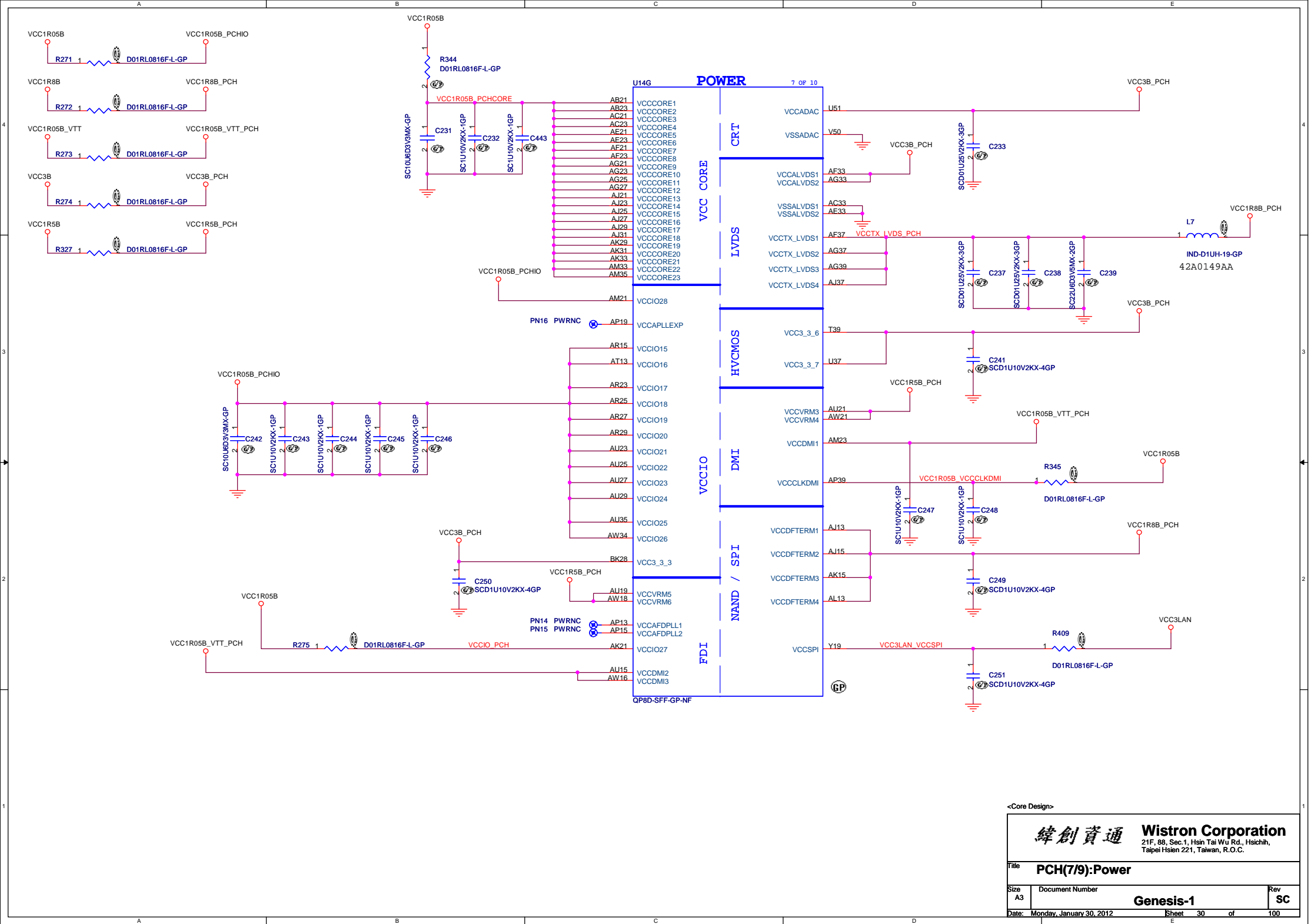


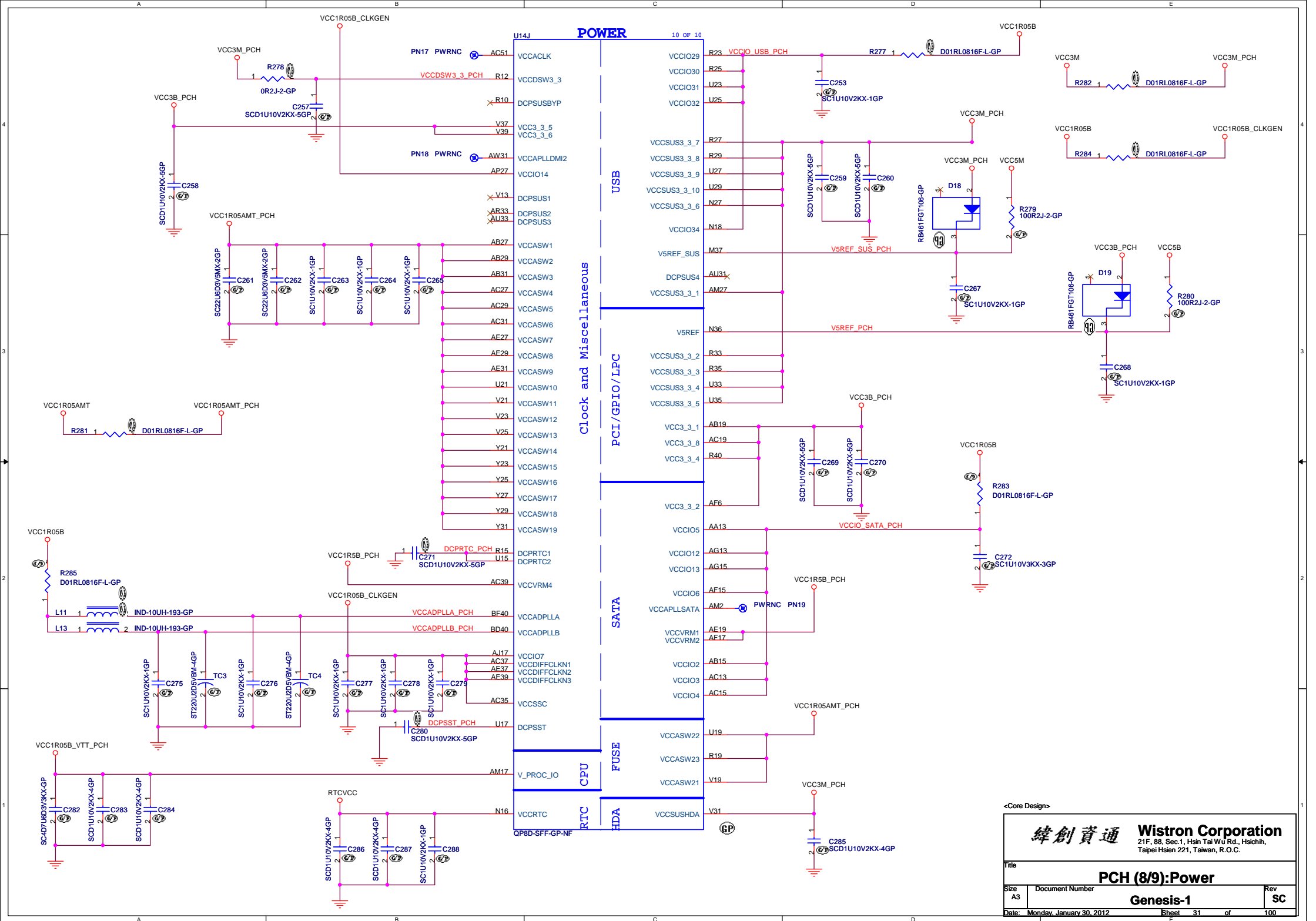




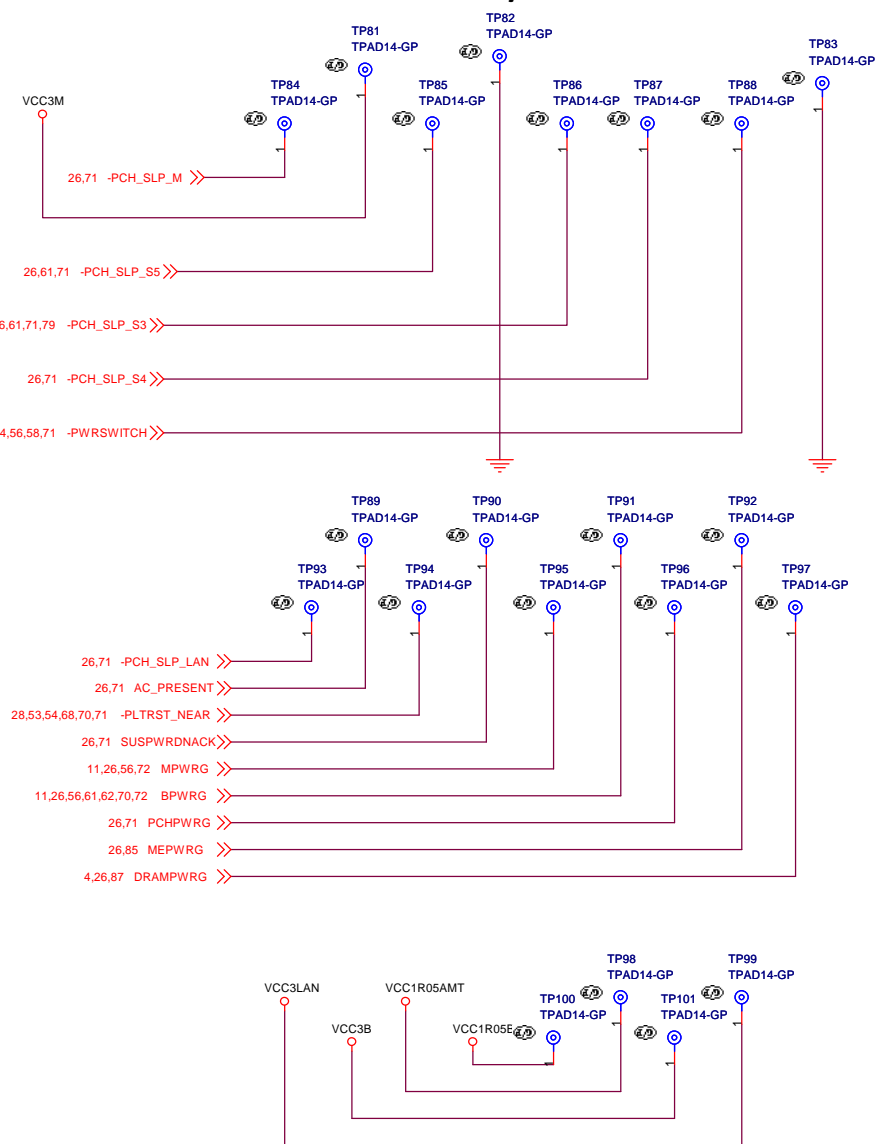
| | |
|---------------|-----------------------------|
| GPIO15 | ME CRYPTO STRAP |
| HIGH | WITH CONFIDENTIALITY |
| LOW | NO CONFIDENTIALITY |







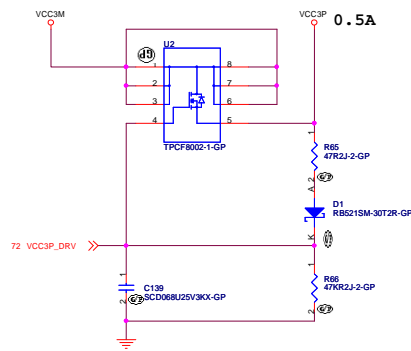
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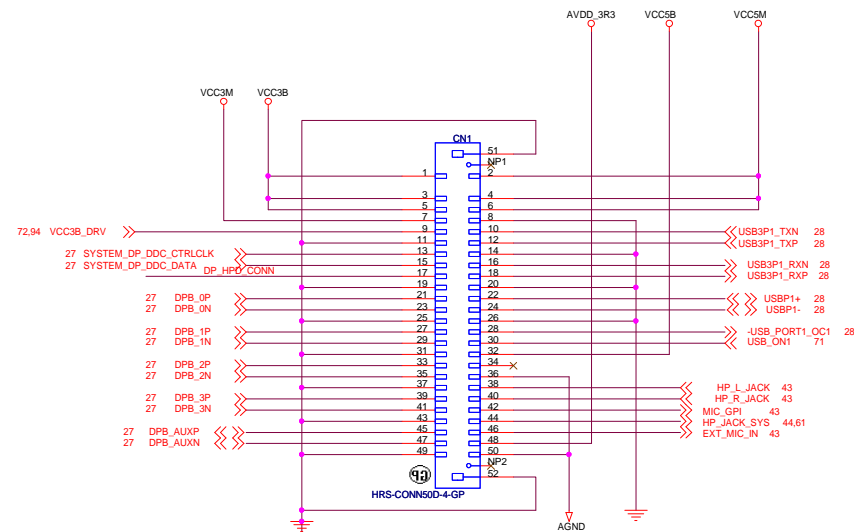
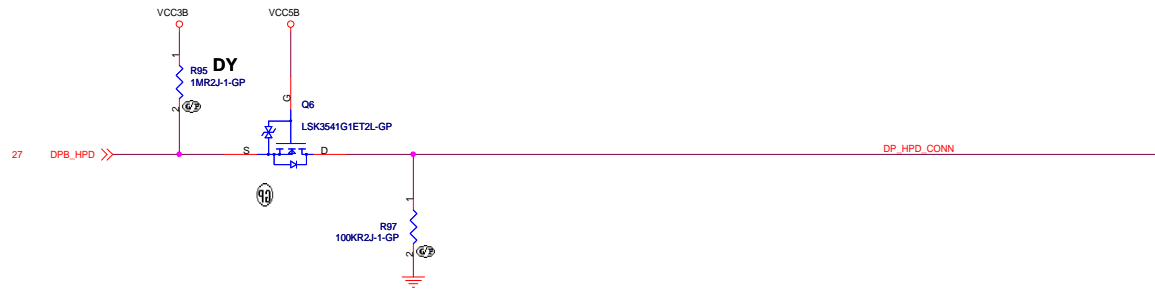
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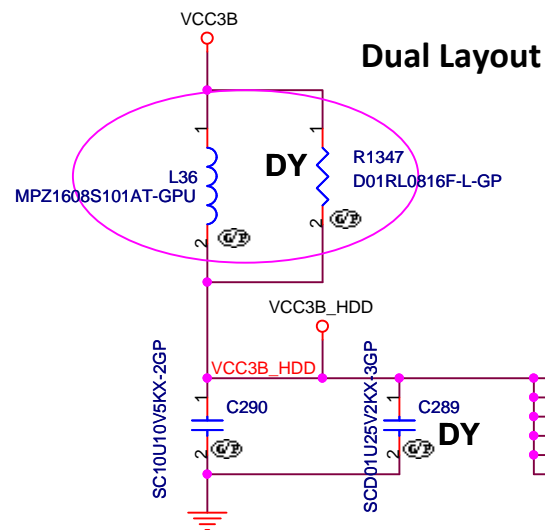
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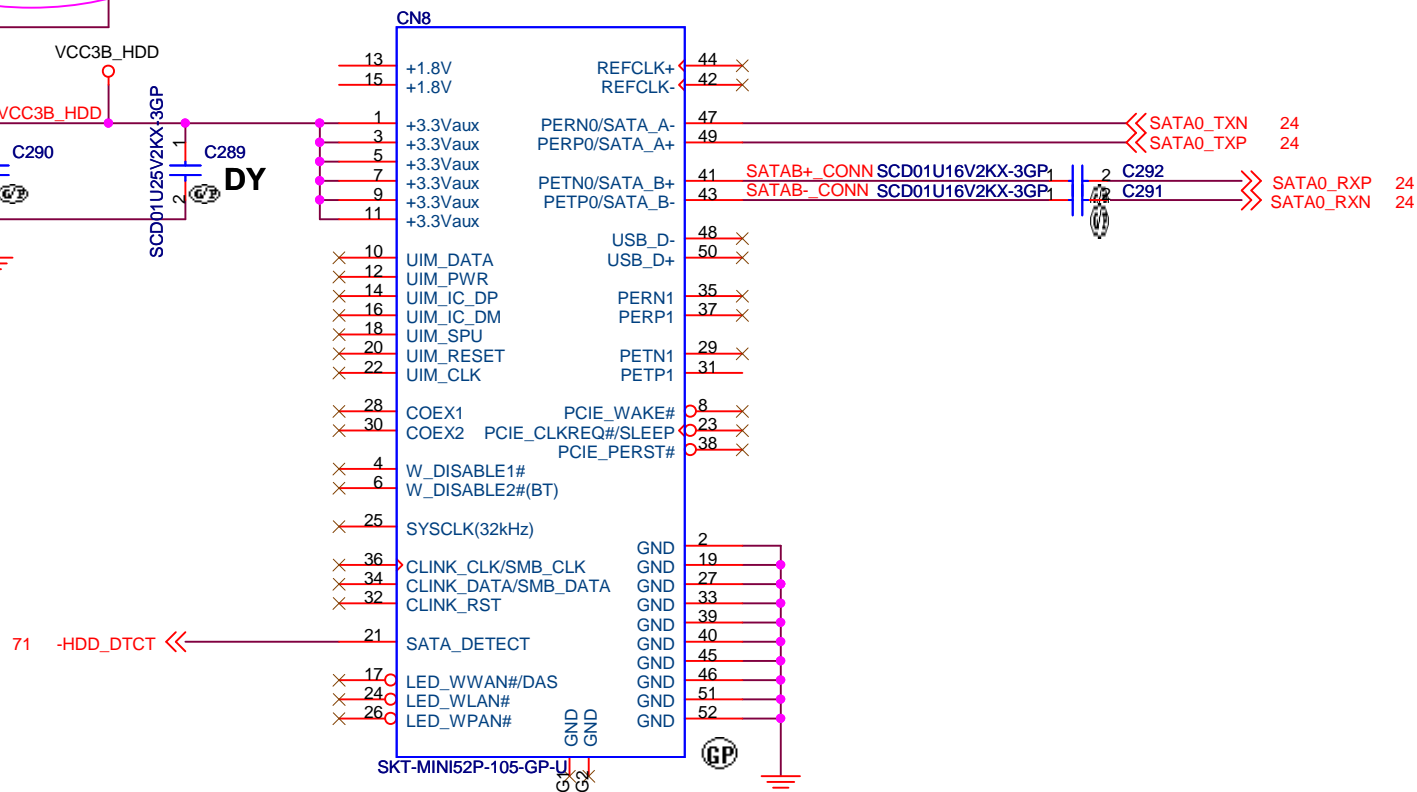
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SATA CONN



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Title

SATA Connector

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A4

Document Number

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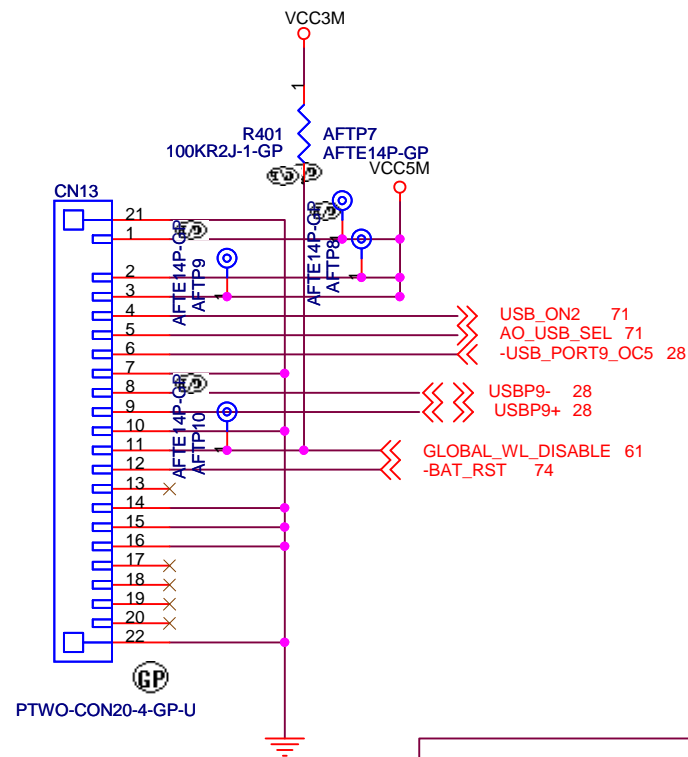
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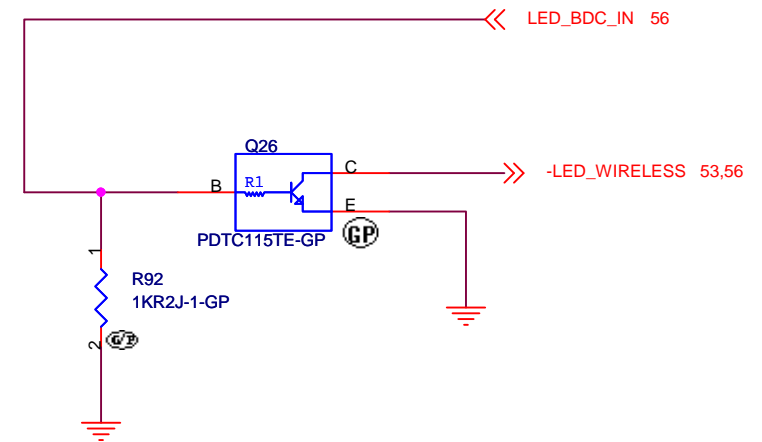
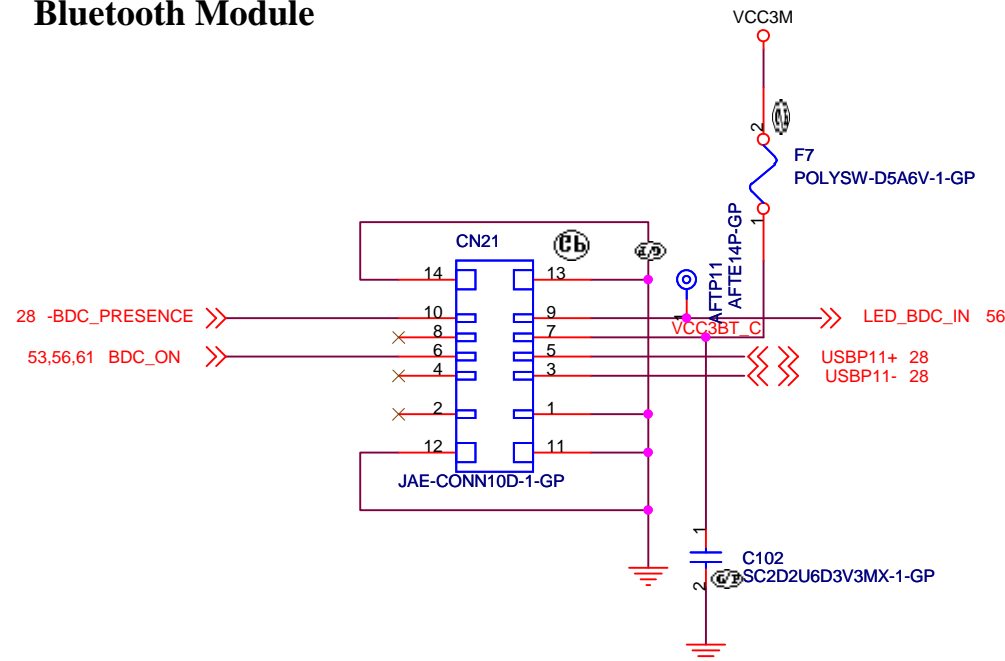
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Bluetooth Module



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Title

USB Connector & BT

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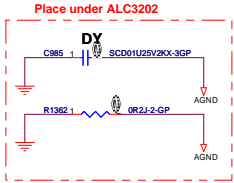
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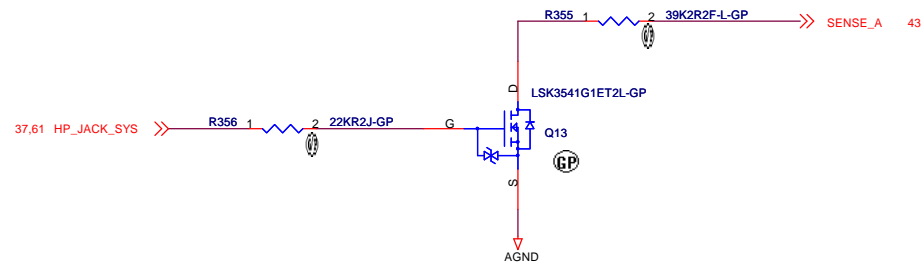
Genesis-1

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SC

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<Core Design>

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| Size A3 | Document Number | Genesis-1 | Rev SC |
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Wistron Corporation

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Document Number

Genesis-1

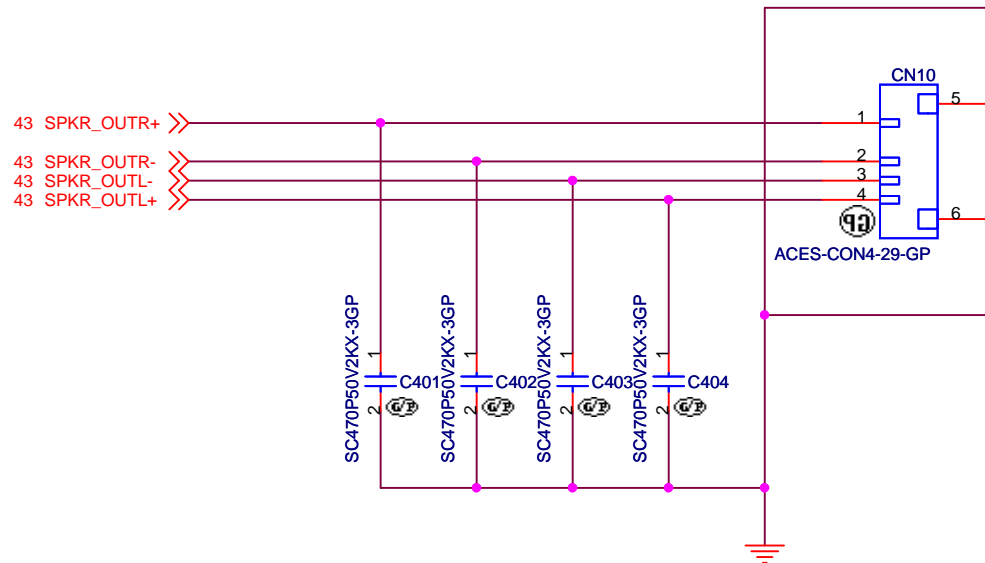
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Date: Monday, January 30, 2012

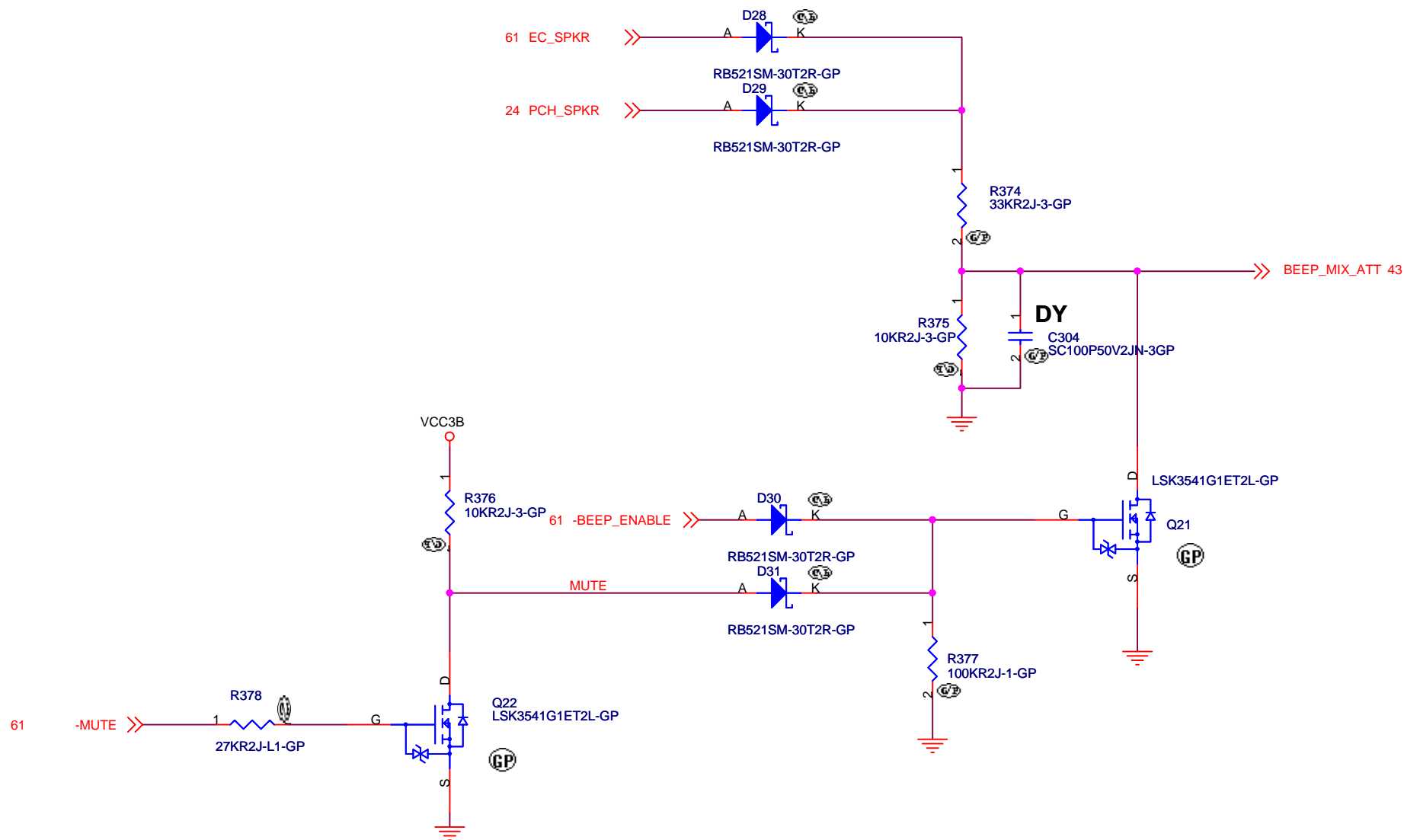
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| Size <div>A4</div> | Document Number <div>Genesis-1</div> | Rev <div>SC</div> |
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| Title | | | |
| Audio BEEP | | | |
| Size A4 | Document Number Genesis-1 | | Rev SC |
| Date: | Monday, January 30, 2012 | Sheet 48 of | 100 |

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| Size A4 | Document Number Genesis-1 | | Rev SC |
| Date: Monday, January 30, 2012 | | Sheet 49 of | 100 |

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Taipei Hsien 221, Taiwan, R.O.C.

Title

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Document Number

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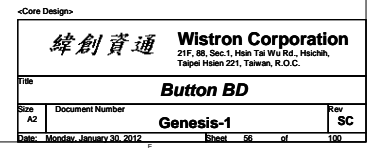
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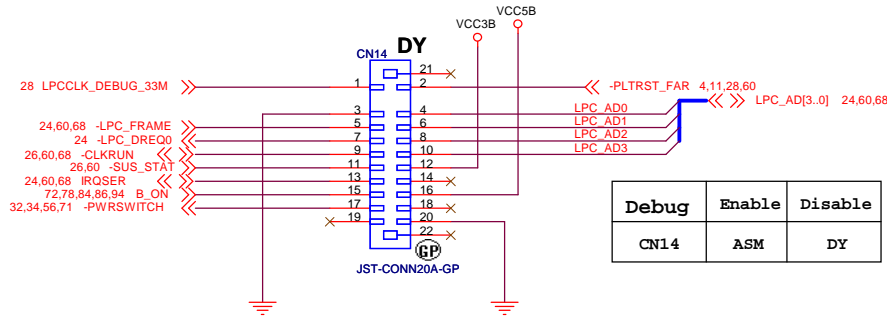


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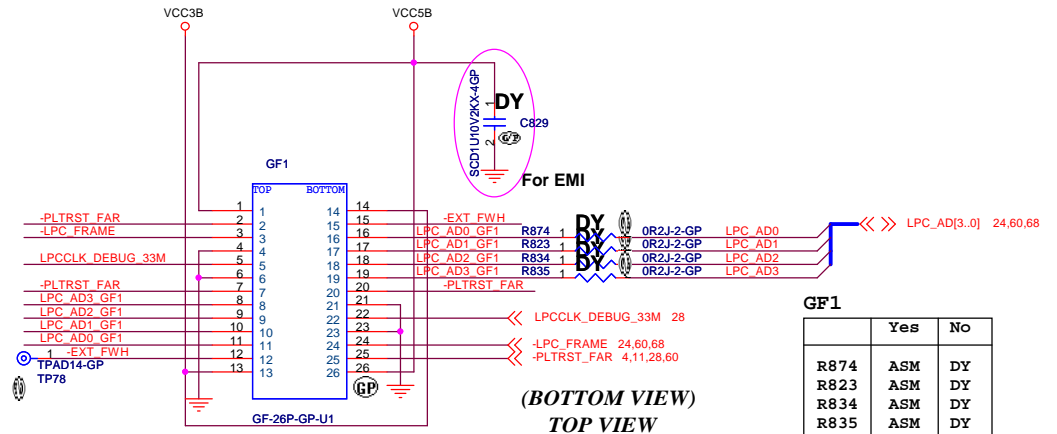
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Debug card connector



Put "easy-to -access" place

Golden Finger for Debug Board



(BOTTOM VIEW)
TOP VIEW

(26) (25)....(15) (14)
13 12 2 1

| GF1 | Yes | No |
|------|-----|----|
| R874 | ASM | DY |
| R823 | ASM | DY |
| R834 | ASM | DY |
| R835 | ASM | DY |
| R235 | ASM | DY |

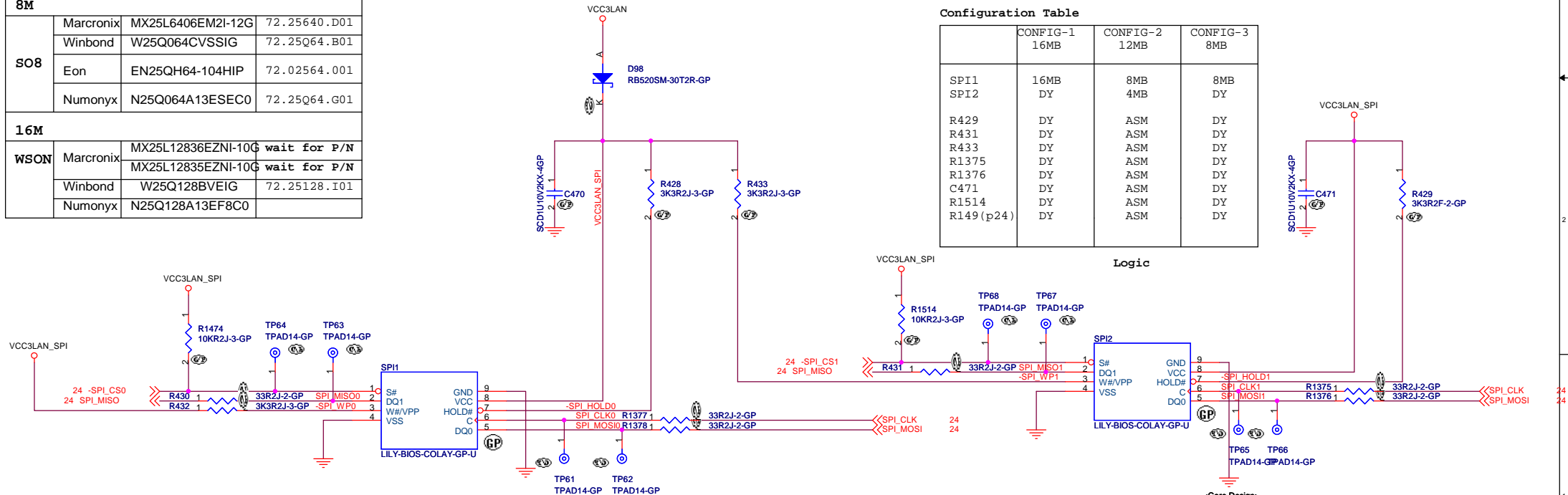
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| 4M | | | | |
|------|-----------|--------------------|--------------|--|
| SO8 | Marcronix | MX25L3206EM2I-12G | 72.25320.C01 | |
| | Winbond | W25Q032BVSSIG | 72.25Q32.A01 | |
| | Eon | EN25QH32-104HIP | 72.02532.B01 | |
| | Numonyx | N25Q032A13ESEC0 | 72.25Q32.C01 | |
| 8M | | | | |
| SO8 | Marcronix | MX25L6406EM2I-12G | 72.25640.D01 | |
| | Winbond | W25Q064CVSSIG | 72.25Q64.B01 | |
| | Eon | EN25QH64-104HIP | 72.02564.001 | |
| | Numonyx | N25Q064A13ESEC0 | 72.25Q64.G01 | |
| 16M | | | | |
| WS08 | Marcronix | MX25L12836EZNI-10G | wait for P/N | |
| | Winbond | W25Q128BVEIG | 72.25128.I01 | |
| | Numonyx | N25Q128A13EF8C0 | | |

Configuration Table

| | CONFIG-1 16MB | CONFIG-2 12MB | CONFIG-3 8MB |
|------------|------------------|------------------|-----------------|
| SPI1 | 16MB | 8MB | 8MB |
| SPI2 | DY | 4MB | DY |
| R429 | DY | ASM | DY |
| R431 | DY | ASM | DY |
| R433 | DY | ASM | DY |
| R1375 | DY | ASM | DY |
| R1376 | DY | ASM | DY |
| R1514 | DY | ASM | DY |
| R149 (p24) | DY | ASM | DY |

Logic



SO8 and WSON8 are both supported!

<Core Design>

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Title: **SPI&LPC debug card**

Size: A3 Document Number: **Genesis-1** Rev: **SC**

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21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title

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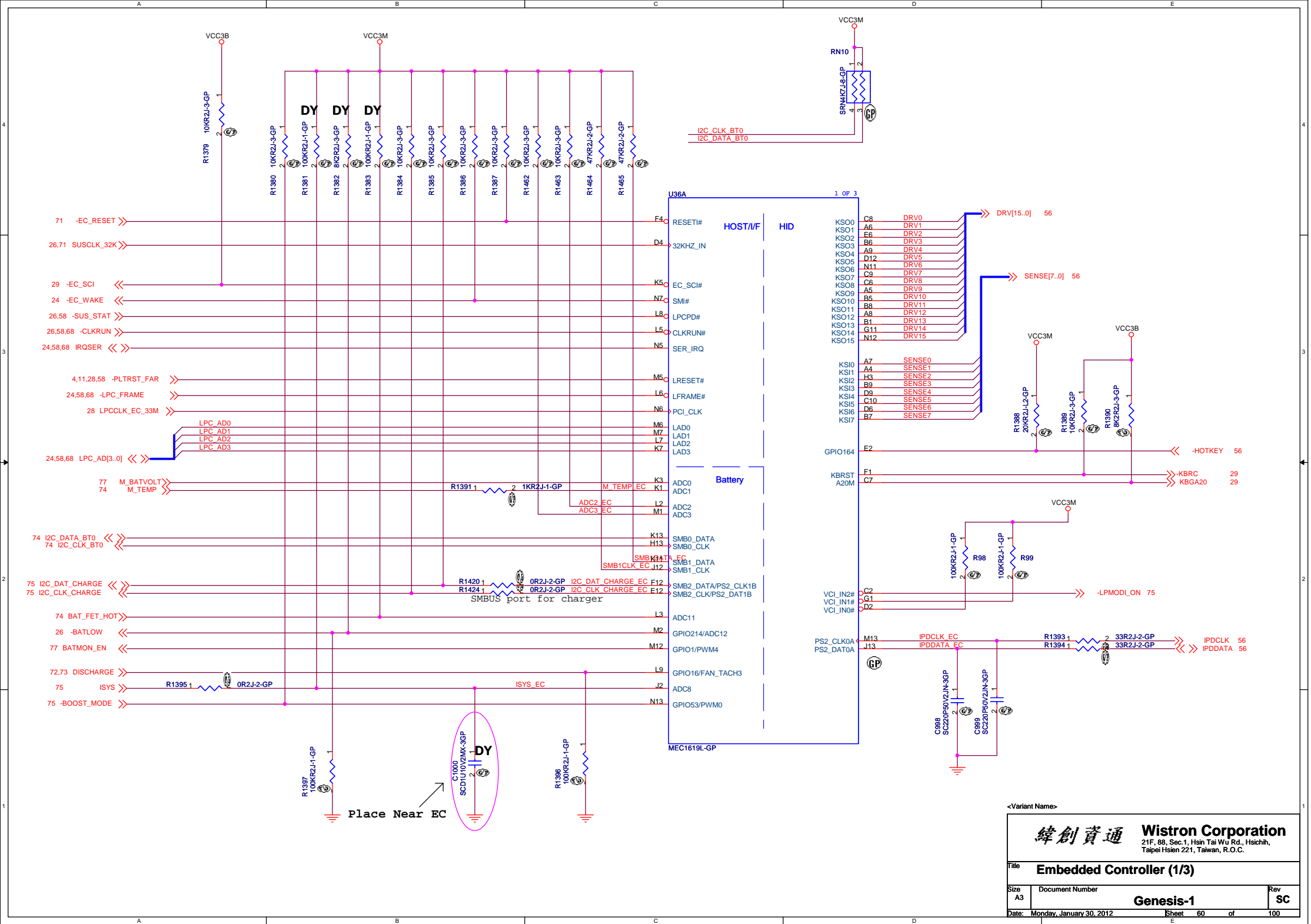
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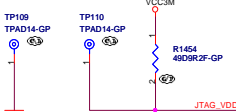
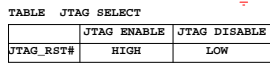
Genesis-1

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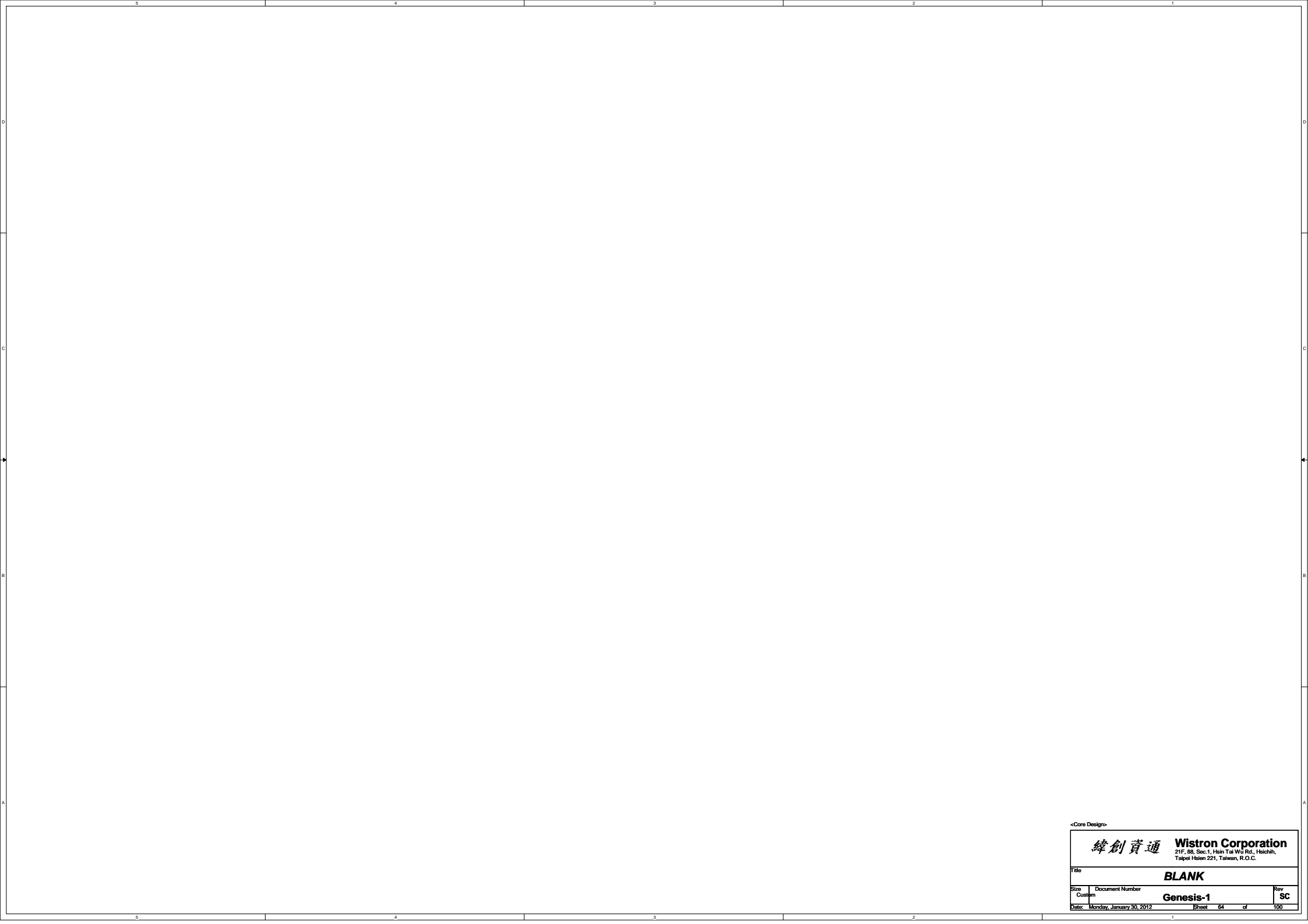




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| Size A3 | Document Number | | Rev |
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Taipet Hsien 221, Taiwan, R.O.C.

Title

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Document Number

Rev

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Genesis-1

SC

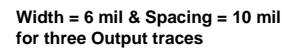
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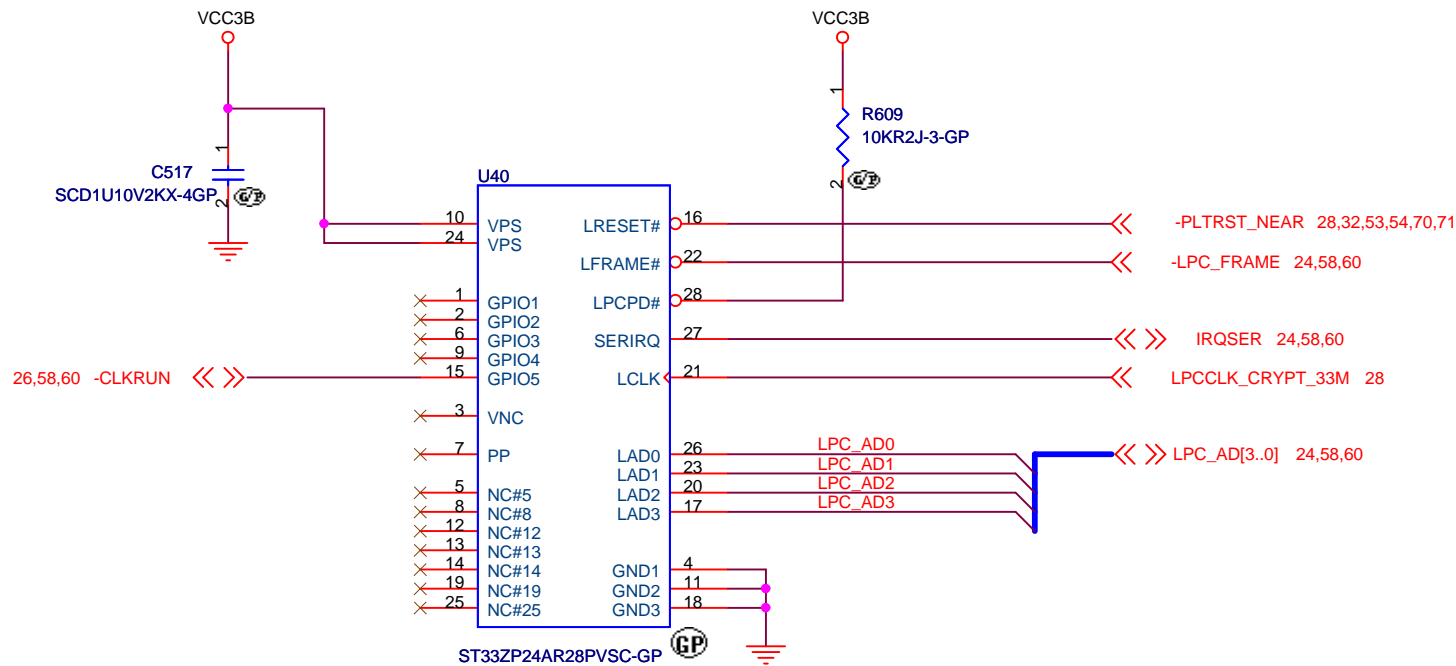
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| TPM P/N | | Firmware |
|-----------|------------------|----------|
| SDV / FVT | ST33ZP24AR28PVRC | 1.2.C.0 |
| SIT | ST33ZP24AR28PVSC | 1.2.D.0 |

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Title

TPM

Size
A4

Document Number

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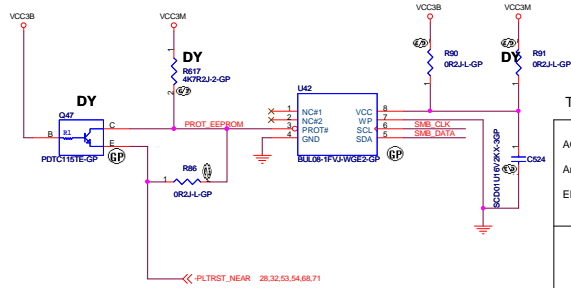
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| Date <div>Monday, January 30, 2012</div> | <div>Rev</div> <div>SC</div> |
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EEPROM

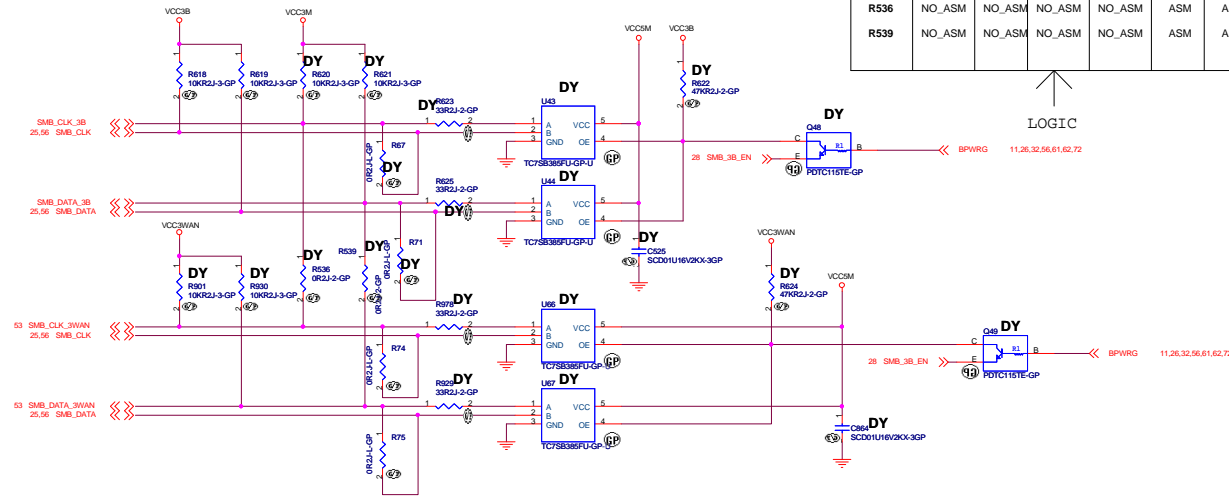
| EEPROM | U42 | U36 |
|--------|-----|-----|
| U42 | ASM | DY |
| C524 | ASM | DY |
| Q47 | ASM | DY |
| R617 | ASM | DY |



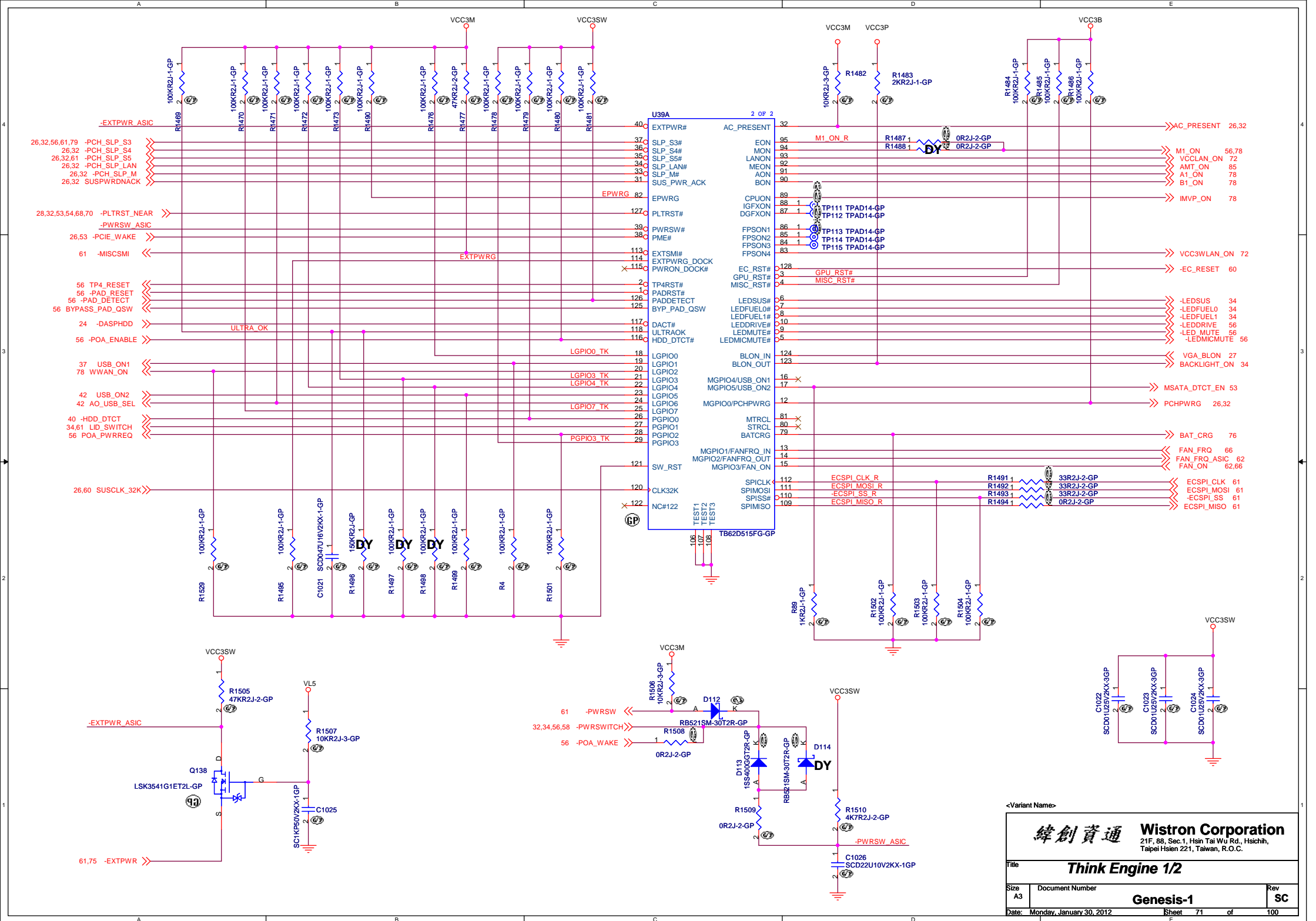
| | Vendor | U42 | Part Number |
|-----|---------|--------------|--------------|
| 1st | ROHM | BUL08-1FVJ-W | 72.BUL08.A0Q |
| 2nd | PHILIPS | PCA24S08ADP | 72.24S08.A0Q |
| 3rd | Sanyo | LE26CAP08TT | 72.26C08.00R |

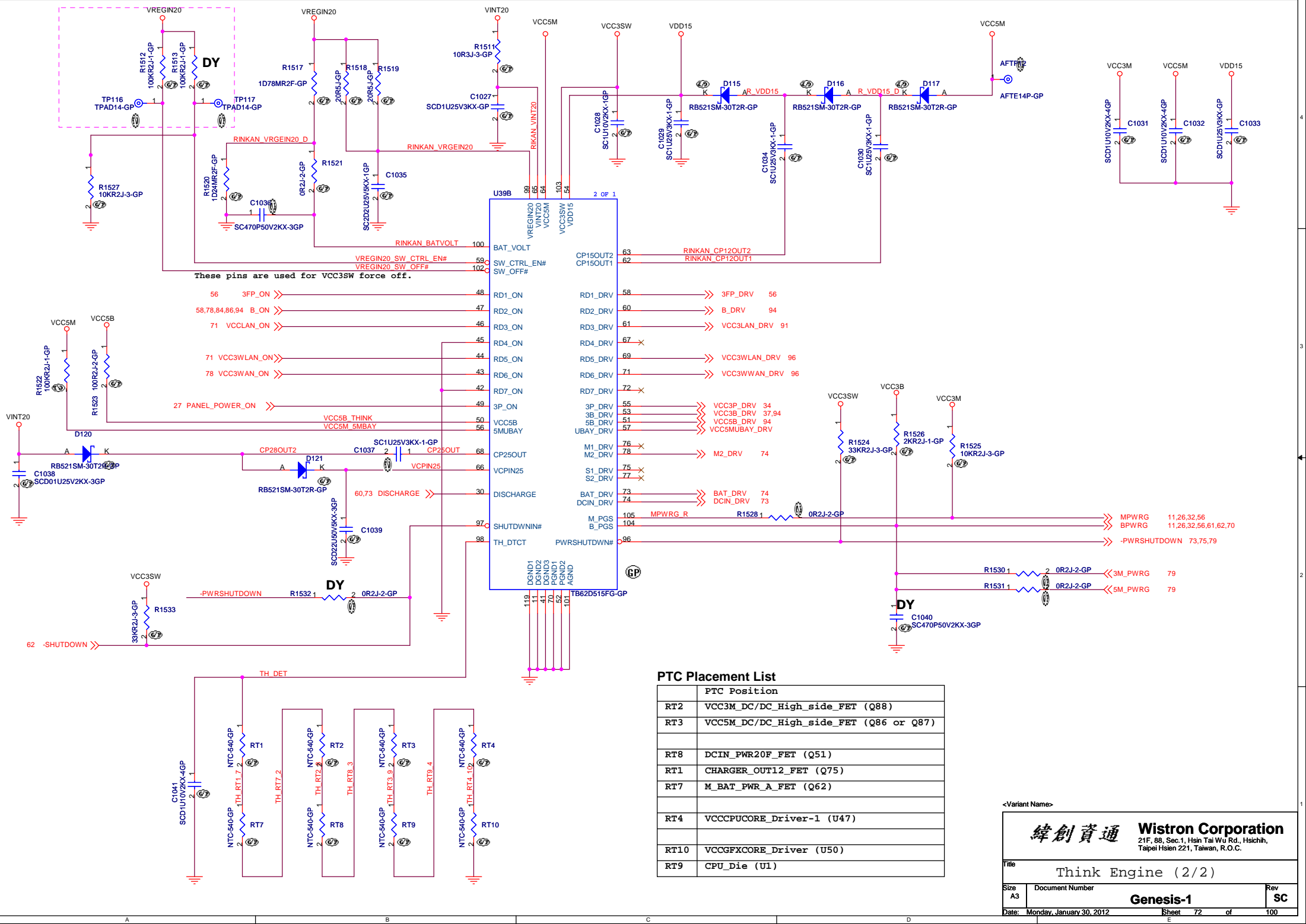
TABLE

| AOAC | YES | YES | YES | YES | NO | NO | NO | NO |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Anti Theft | YES | YES | NO | NO | YES | YES | NO | NO |
| EEPROM | U42 | U36 | U42 | U36 | U42 | U36 | U42 | U36 |
| U66 | ASM | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| U67 | ASM | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| C664 | ASM | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| R978 | ASM | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| R929 | ASM | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| R901 | ASM | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| R930 | ASM | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| R624 | ASM | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| Q49 | ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM | NO_ASM |
| Q48 | ASM | NO_ASM | ASM | NO_ASM | ASM | NO_ASM | ASM | NO_ASM |
| R536 | NO_ASM | NO_ASM | NO_ASM | NO_ASM | ASM | ASM | NO_ASM | NO_ASM |
| R539 | NO_ASM | NO_ASM | NO_ASM | NO_ASM | ASM | ASM | NO_ASM | NO_ASM |



LOGIC





PTC Placement List

| | PTC Position |
|------|--|
| RT2 | VCC3M_DC/DC_High_side_FET (Q88) |
| RT3 | VCC5M_DC/DC_High_side_FET (Q86 or Q87) |
| RT8 | DCIN_PWR20F_FET (Q51) |
| RT1 | CHARGER_OUT12_FET (Q75) |
| RT7 | M_BAT_PWR_A_FET (Q62) |
| RT4 | VCCCPUCORE_Driver-1 (U47) |
| RT10 | VCCGFXCORE_Driver (U50) |
| RT9 | CPU_Die (U1) |

<Variant Name>

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Wistron Corporation

Title

Think Engine (2/2)

Size

Document Number

Rev

A3

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Date:

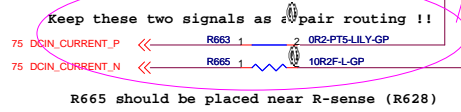
Monday, January 30, 2012

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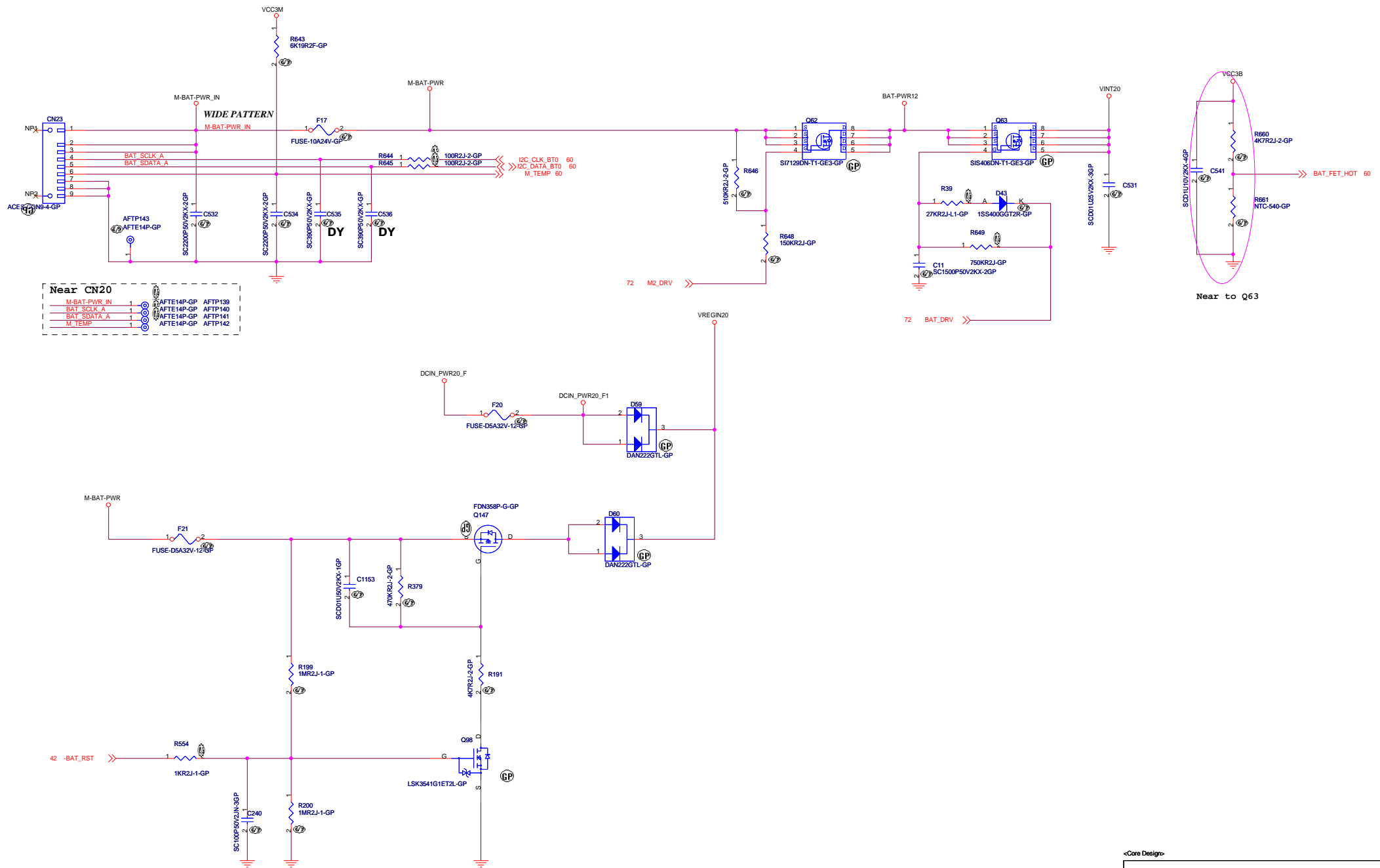
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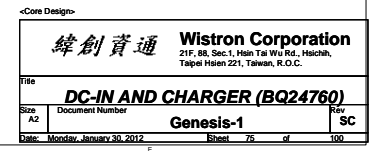


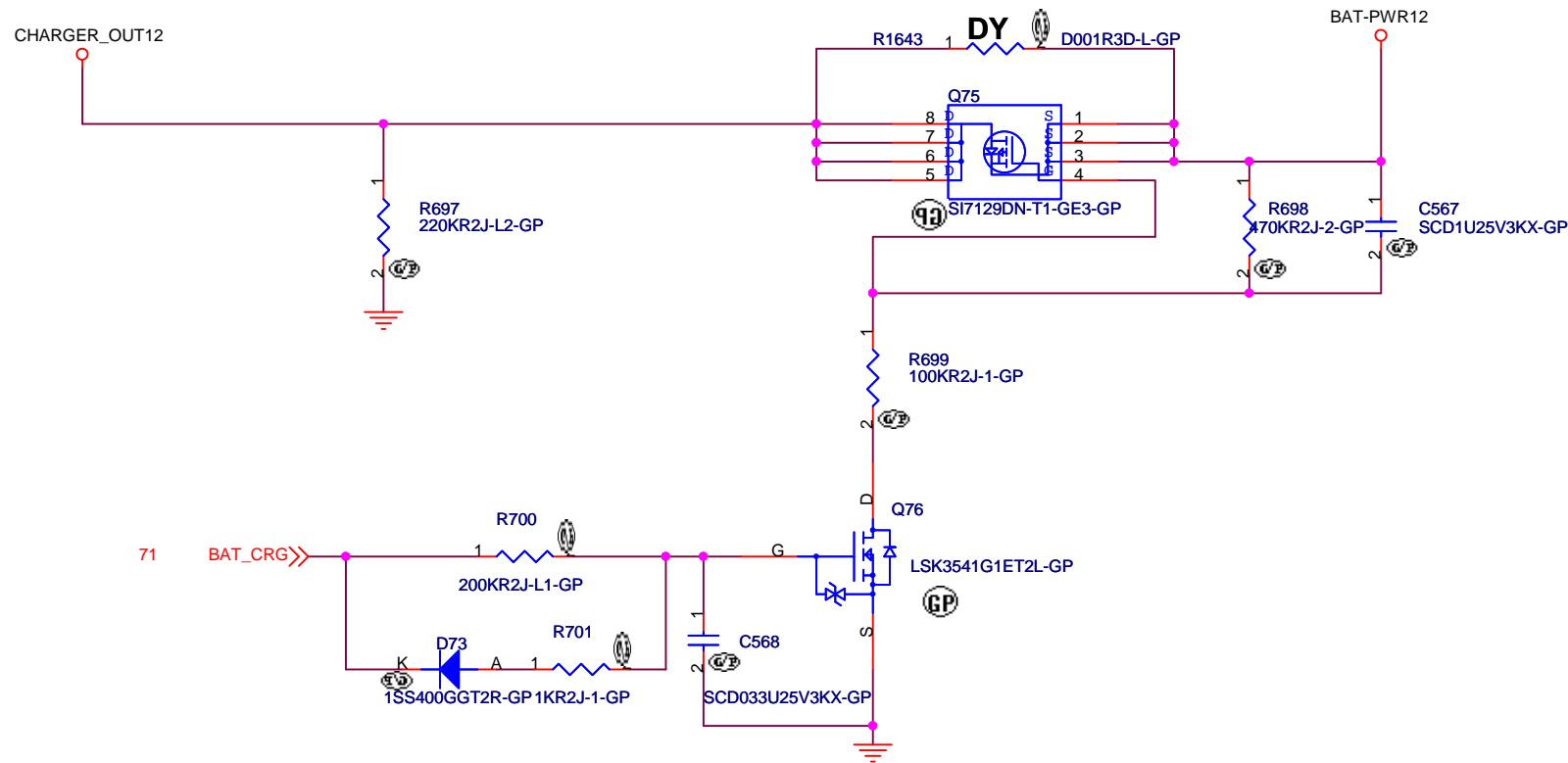
| PEAK SHIFT | YES | NO |
|------------|--------|--------|
| R641 | NO-ASM | ASM |
| R629 | ASM | NO-ASM |
| Q58 | ASM | NO-ASM |
| Q55 | ASM | NO-ASM |

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| Title | | | |
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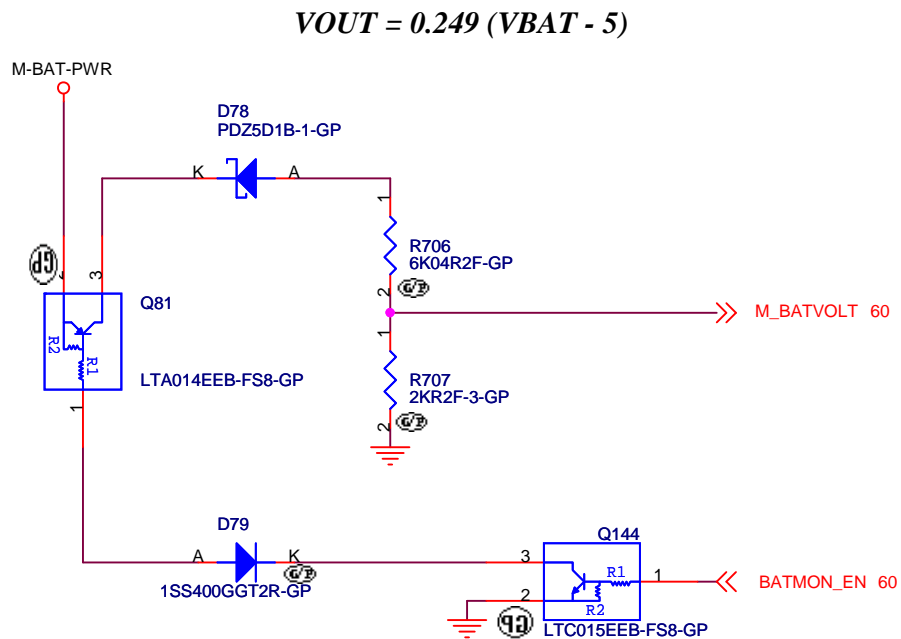
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Taipei Hsien 221, Taiwan, R.O.C.

Title

BATTERY MONITOR

Size
A4

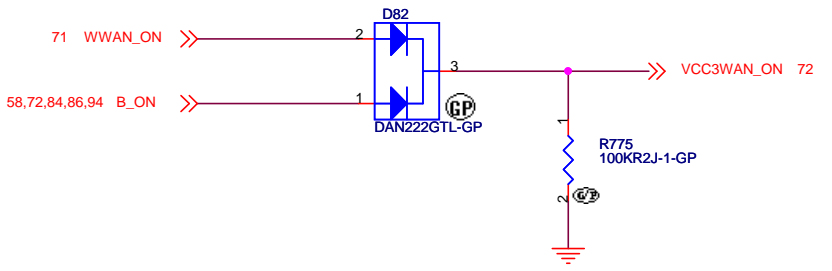
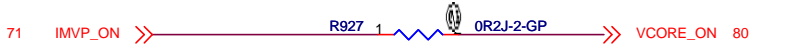
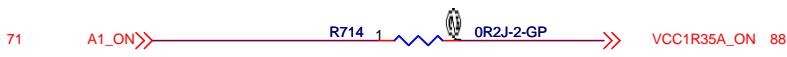
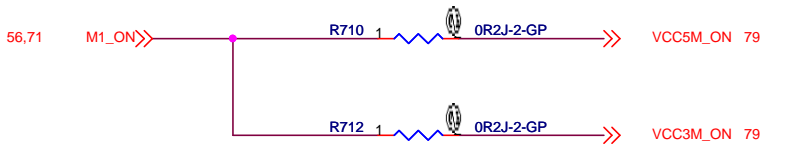
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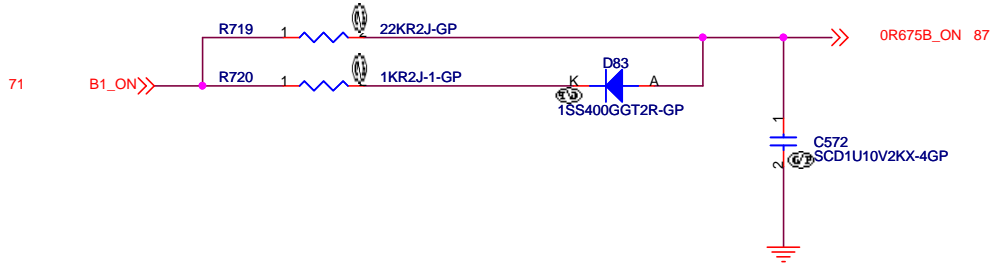
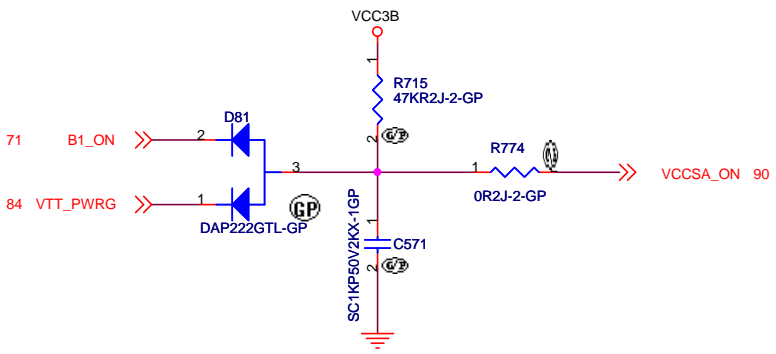
Date: Monday, January 30, 2012

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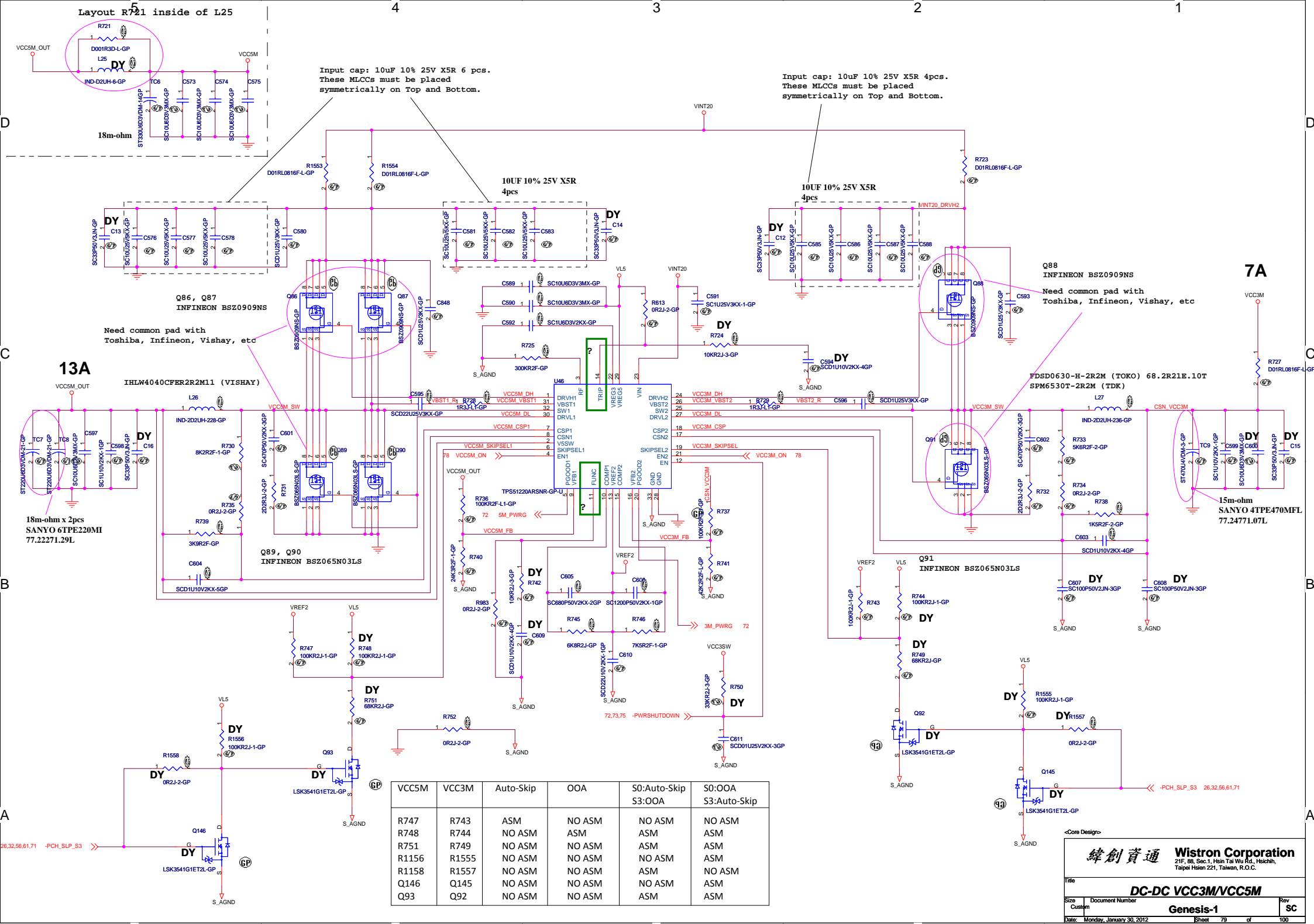
| AOAC | YES | NO |
|------|---------|------|
| D82 | ASM | DY |
| R775 | ASM | ASM |
| | 100Kohm | 0ohm |

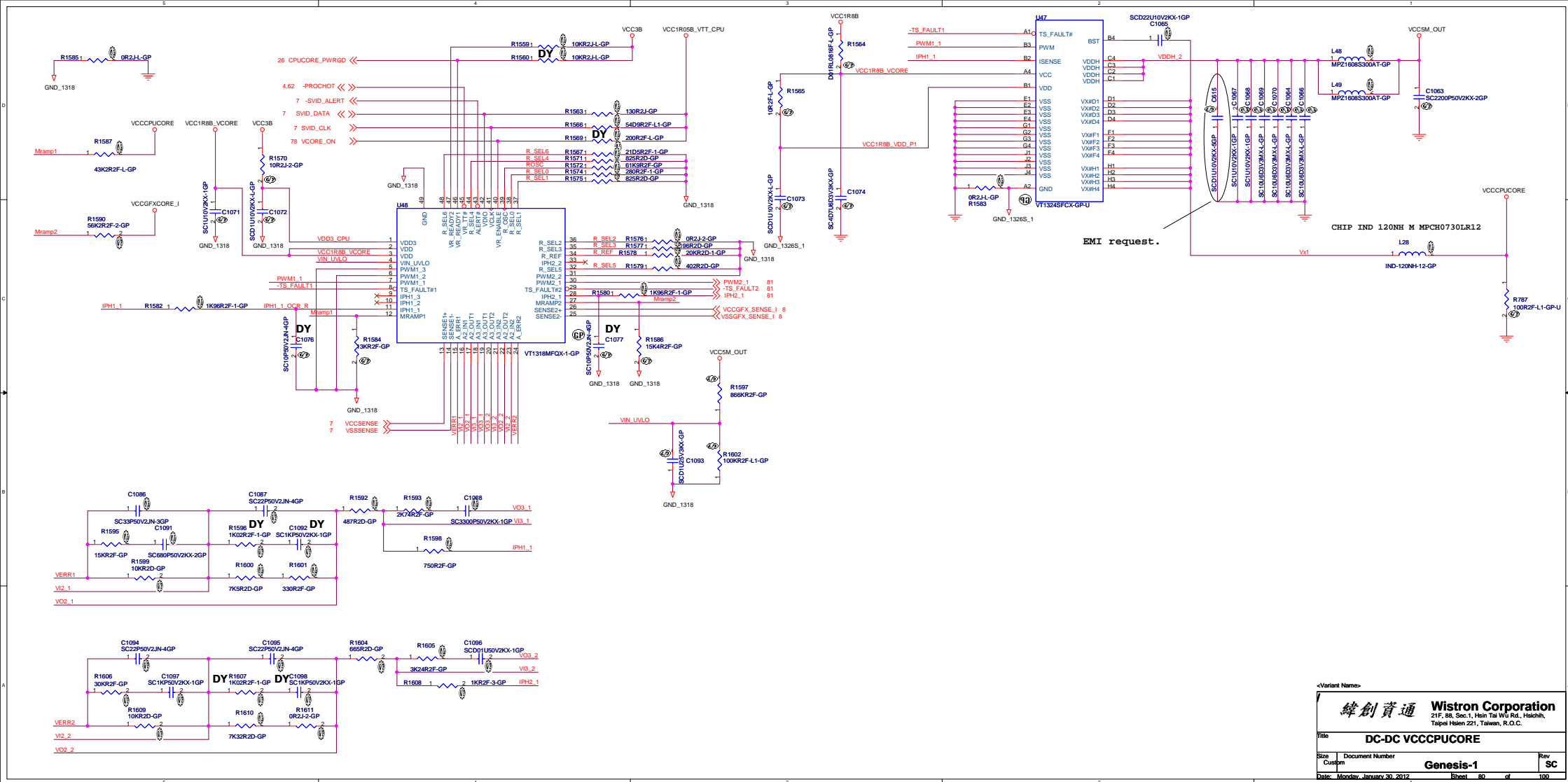
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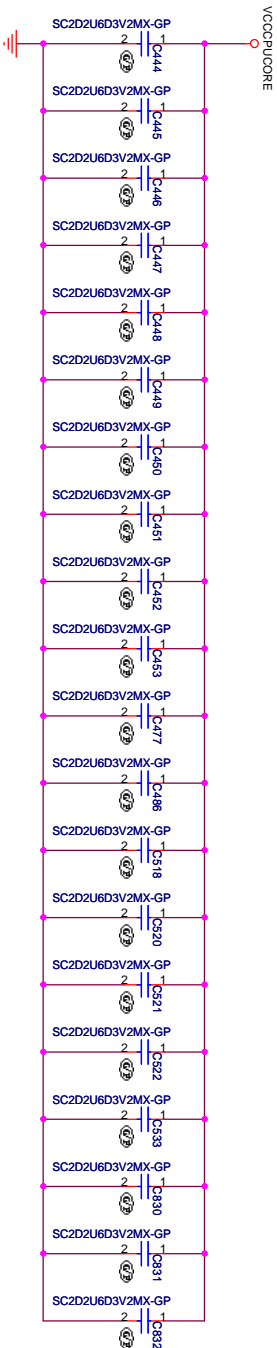
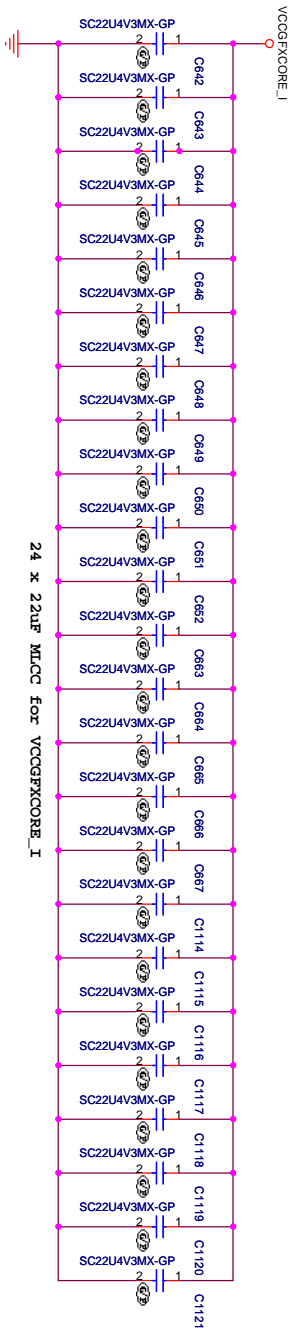
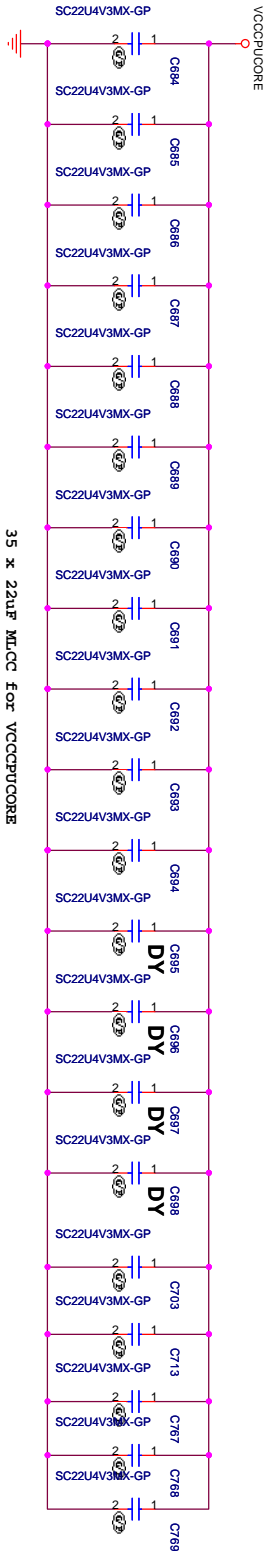
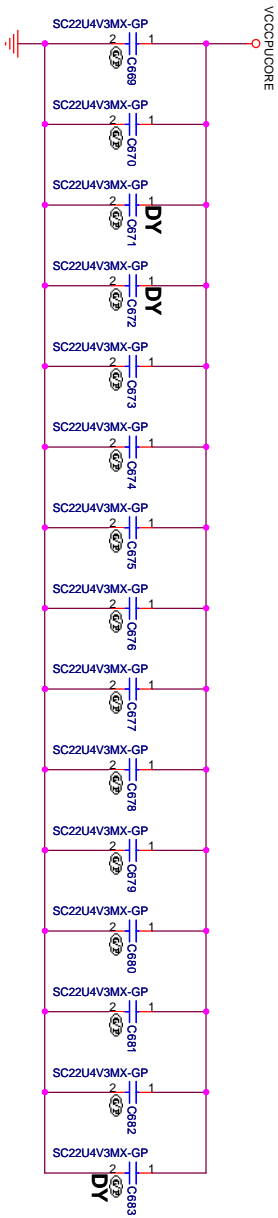


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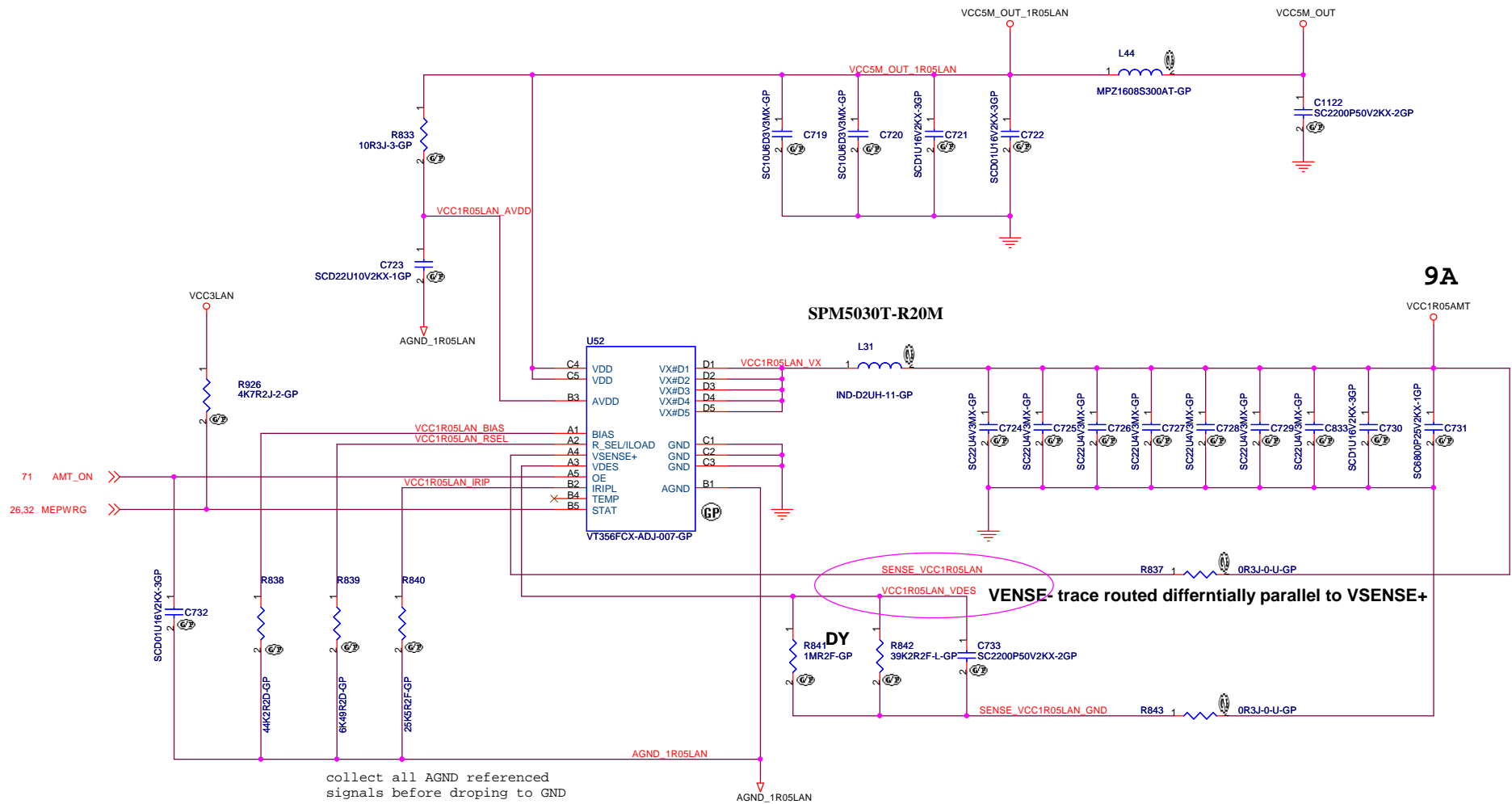
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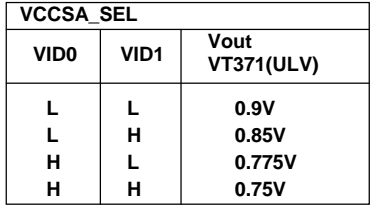




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| Title | | | |
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| DC-DC VCC1R05AMT | | | |
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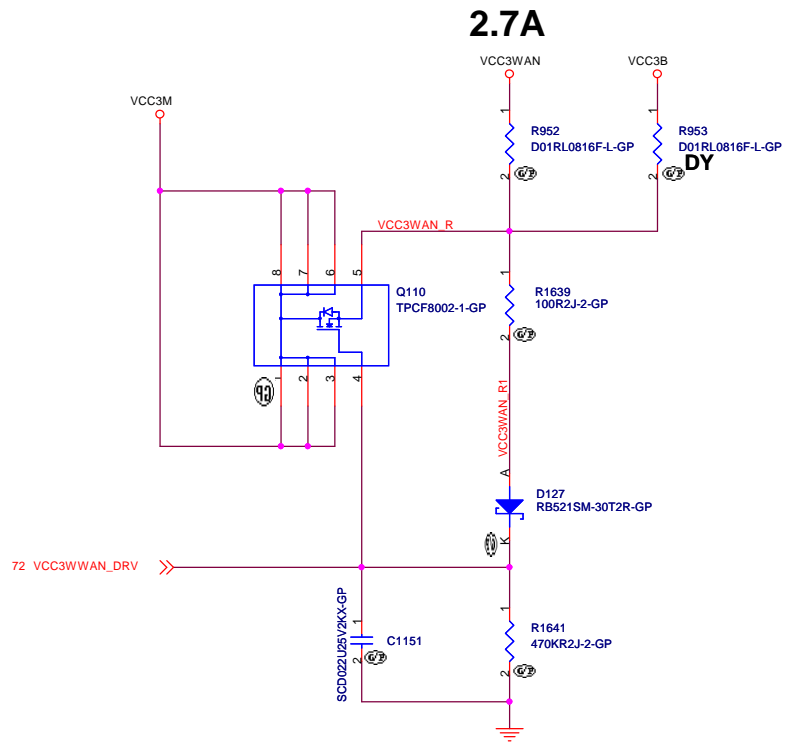
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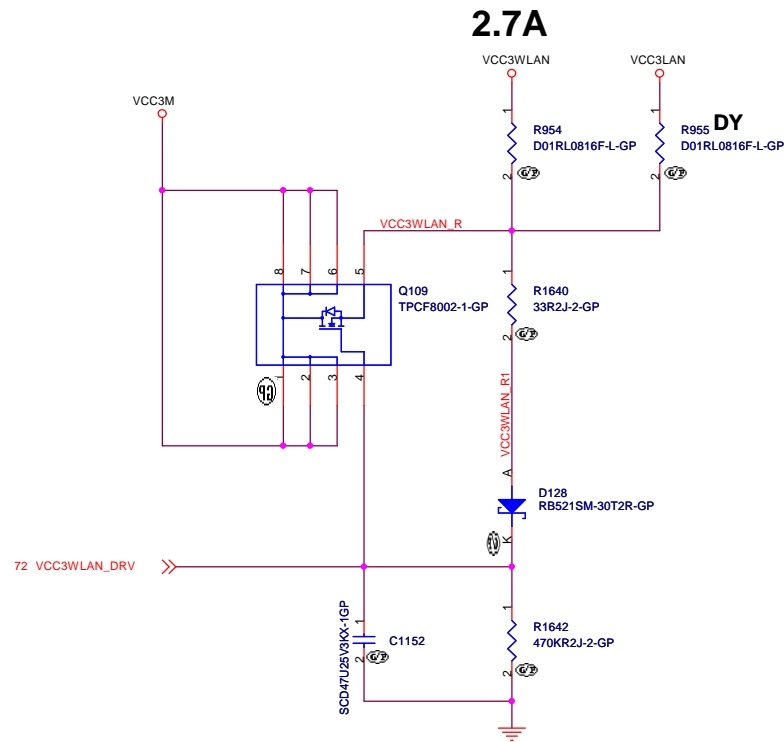
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| AOAC | YES | NO |
|-------|-----|-----|
| R952 | ASM | ASM |
| R953 | DY | ASM |
| Q110 | ASM | DY |
| R1639 | ASM | DY |
| D127 | ASM | DY |
| R1641 | ASM | DY |
| C1151 | ASM | DY |

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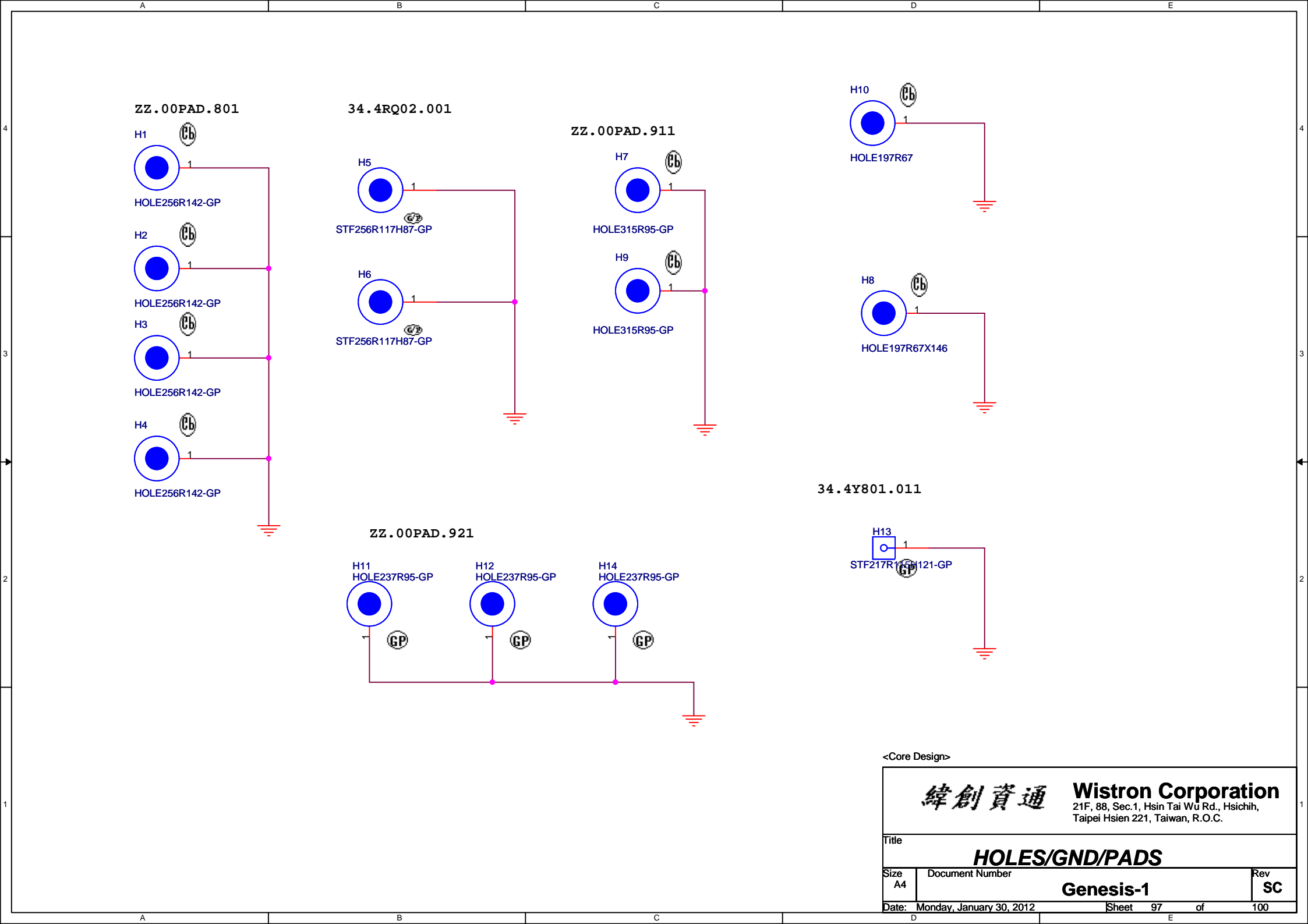
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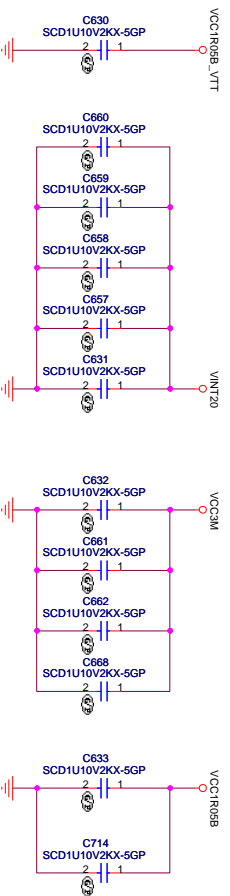
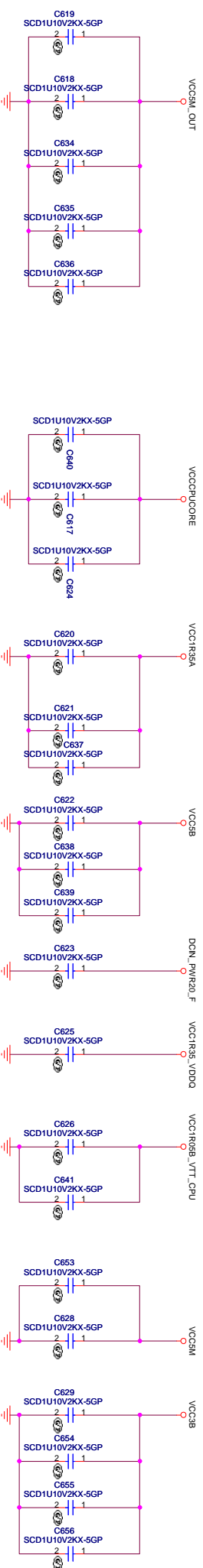
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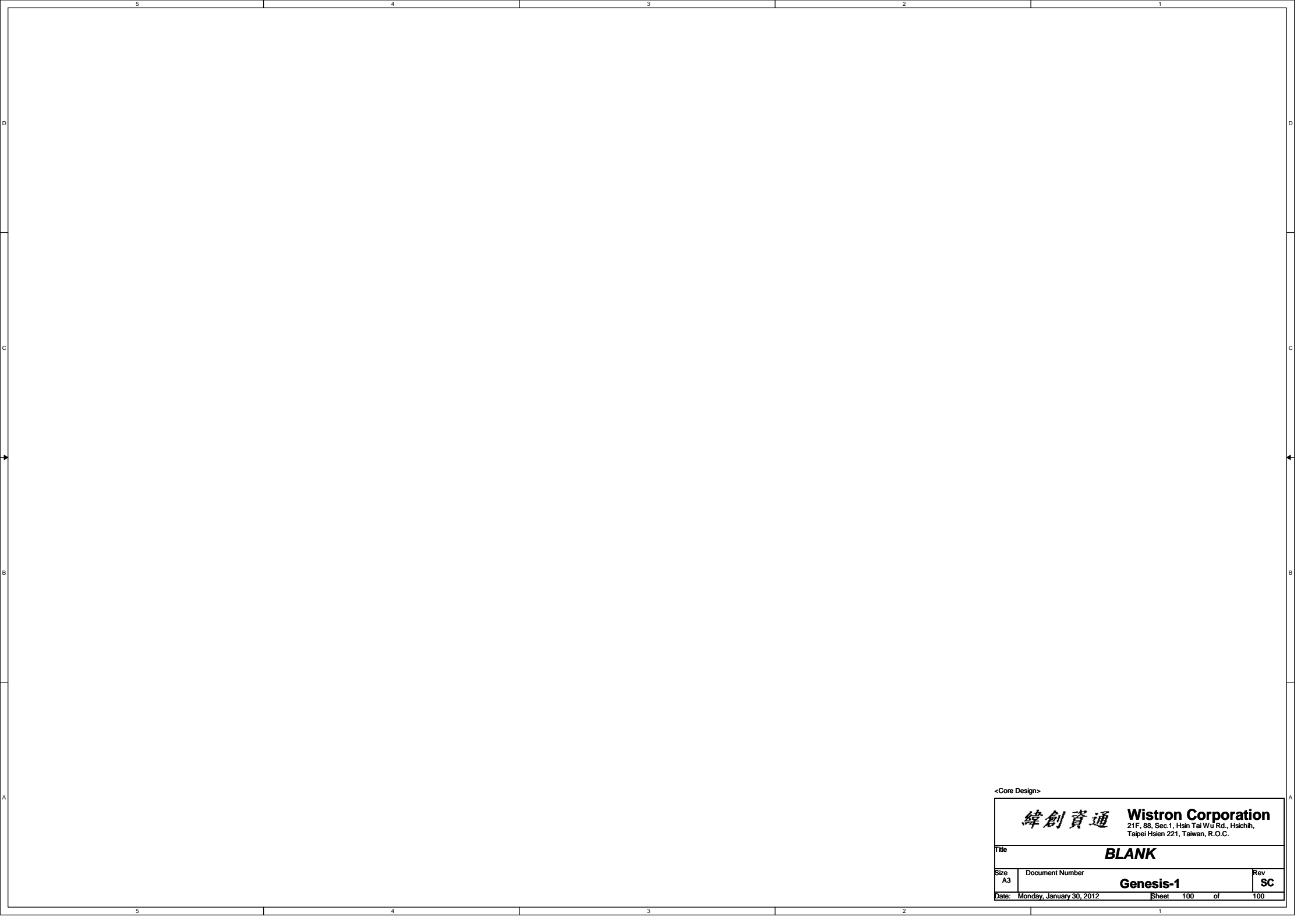
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RF decoupling caps

named as RFCxxx

Long power trace EMI decoupling caps





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