

LS40 ICL Schematics

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 |
|-------------|----------|--|--|--|
| 10KR3 | 10K Ohm | If no letter, it means J: 5% | 1/16W, 75V | 0603 |
| 33D3R5 | 33.3 Ohm | If no letter, it means J: 5% | 1/10W, 100V | 0805 |
| 1KR3F | 1K Ohm | F: 1% | 1/16W, 75V | 0603 |

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 |
|---------------|-------|---|--------|--|
| SCD1U10V2MX-1 | 0.1uF | M/X5R | 10V | 0402 |
| SC10U6D3V5MX | 10uF | M/X5R | 6.3V | 0805 |
| SC2D2U16V5ZY | 2.2uF | Z/Y5V | 16V | 0805 |

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

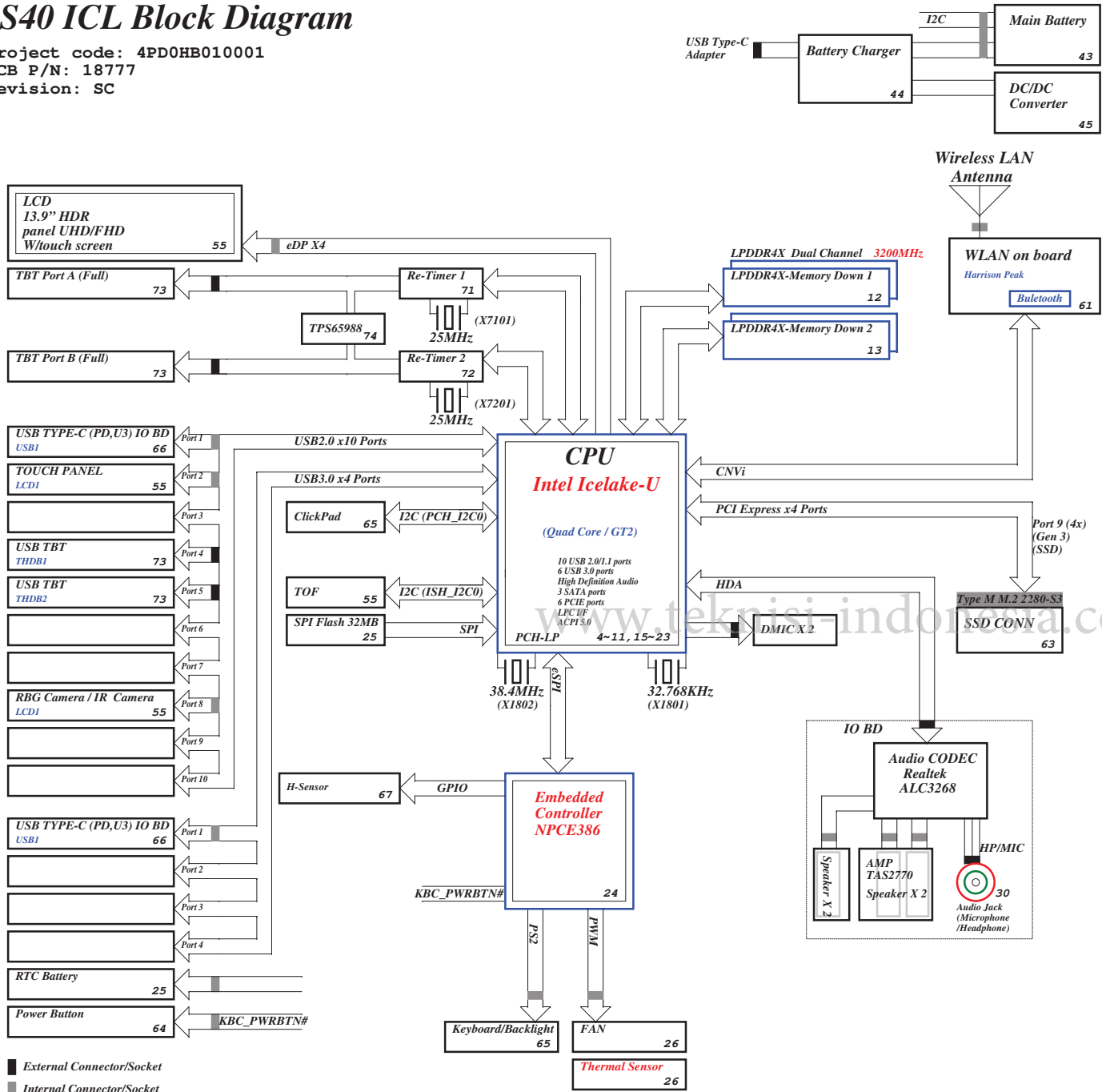
| | |
|--------------------|--|
| DY | DUMMY |
| 386 | NPCE386 |
| 388 | NPCE388 |
| 68AL | NPCE68AL |
| PSL | Power Switched Logic |
| Non-PSL | Non Power Switched Logic |
| BYPASS | Internal Voltage Regulator |
| Non-BYPASS | External Voltage Regulator |
| BC1.2 | USB Battery Charging 1.2 |
| Non-BC1.2 | Non USB Battery Charging 1.2 |
| WLAN-PS | Power Saving Mode |
| WLAN-NonPS | Non Power Saving Mode |
| MEM_ID | Memory ID (BOM Control) |
| Model_ID | Model ID (BOM Control) |
| PCB_VERSION | PCB VERSION (BOM Control) |
| FIP | Flexible Instrumented Platform - For power consumption test |

BOM1

| | | | |
|--------------------------------|-----------------|--|------------------|
| 緯創資通 | | Wistron Corporation | |
| | | 21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title COVER PAGE | | | |
| Size A3 | Document Number | LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 1 | of 106 | |

LS40 ICL Block Diagram

Project code: 4PD0HB010001
PCB P/N: 18777
Revision: SC



| PCB Layer Stackup | |
|-------------------|--|
| L1 : Signal | |
| L2: GND/POWER | |
| L3: Signal | |
| L4: GND/POWER | |
| L5: Signal | |
| L6: GND/POWER | |
| L7: Signal | |
| L8: Signal | |
| L9: GND/POWER | |
| L10: Signal | |
| L11: GND/POWER | |
| L12: Signal | |

| Battery Charger/Selector | |
|--------------------------|------------------|
| BQ25710RSNR-GP | 44 |
| 20V_IN | 19V_DCBATOUT BT+ |

| System DC/DC | |
|----------------|-----------------|
| TPS51393RJR-GP | |
| TPS51395RJR-GP | 45 |
| 19V_DCBATOUT | PWR_5V PWR_3D3V |

| CPU_VCORE | |
|---------------------------|----|
| MP2940AGRT-0055-C669-Z-GP | 46 |

| DC/DC VCCPCUCORE | |
|------------------------|-------------|
| MP86902-BGLT-C669-Z-GP | 47 |
| 19V_DCBATOUT | 1V_CPU_CORE |

| DC/DC VCCAUX | |
|--------------------|----------------|
| MP2941GL-C669-Z-GP | 50 |
| 19V_DCBATOUT | 1D8V_VCCIN_AUX |

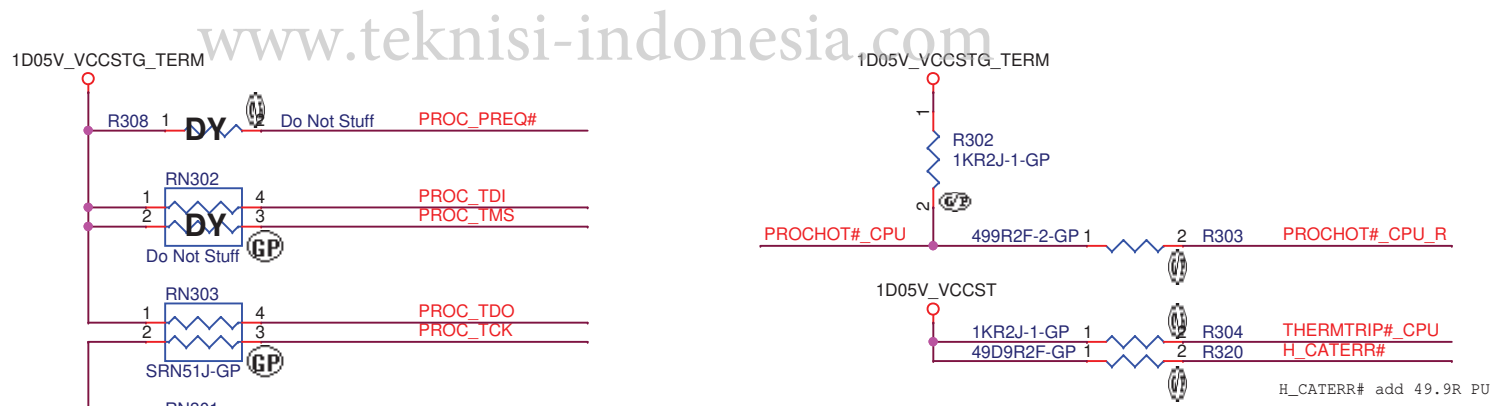
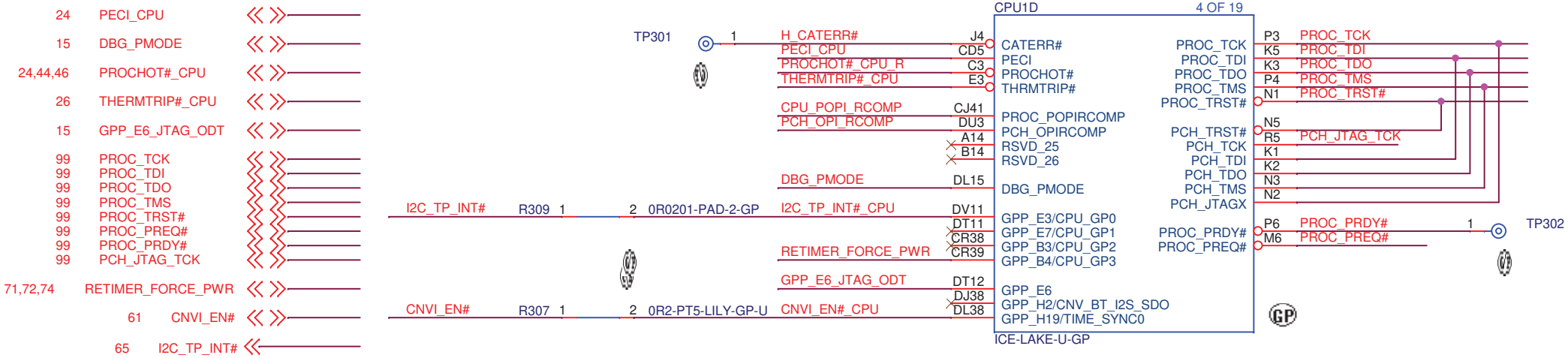
| DC/DC ID1V_S3 | |
|----------------|---------|
| TPS51396RJR-GP | 51 |
| 19V_DCBATOUT | ID1V_S3 |

| DC/DC 0D6V_VREF_S0 | |
|--------------------|--------------|
| RT9048GSP-GP | 51 |
| ID8V_S5 | 0D6V_VREF_S0 |

| DC/DC ID8V_S5 | |
|---------------------|---------|
| NB591GG-C669-Z-1-GP | 53 |
| 19V_DCBATOUT | ID8V_S5 |

| DC/DC ID05V_S5 | |
|----------------------|----------------------------------|
| APW8738AQB1-TRG-1-GP | 54 |
| 5V_S5 | ID05V_VNN_BYPASS ID05V_S3_BYPASS |

- External Connector/Socket
- Internal Connector/Socket
- Internal Switch



BOM1

緯創資通

Wistron Corporation

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

Title

CPU (THML/JTAG)

Size

A4

Document Number

LS40IC

Date

Tuesday, August 06, 2019

Sheet

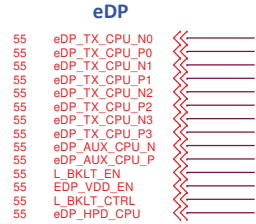
3

of

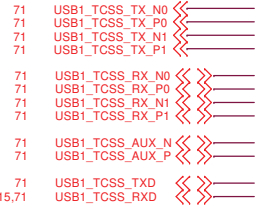
106

Rev

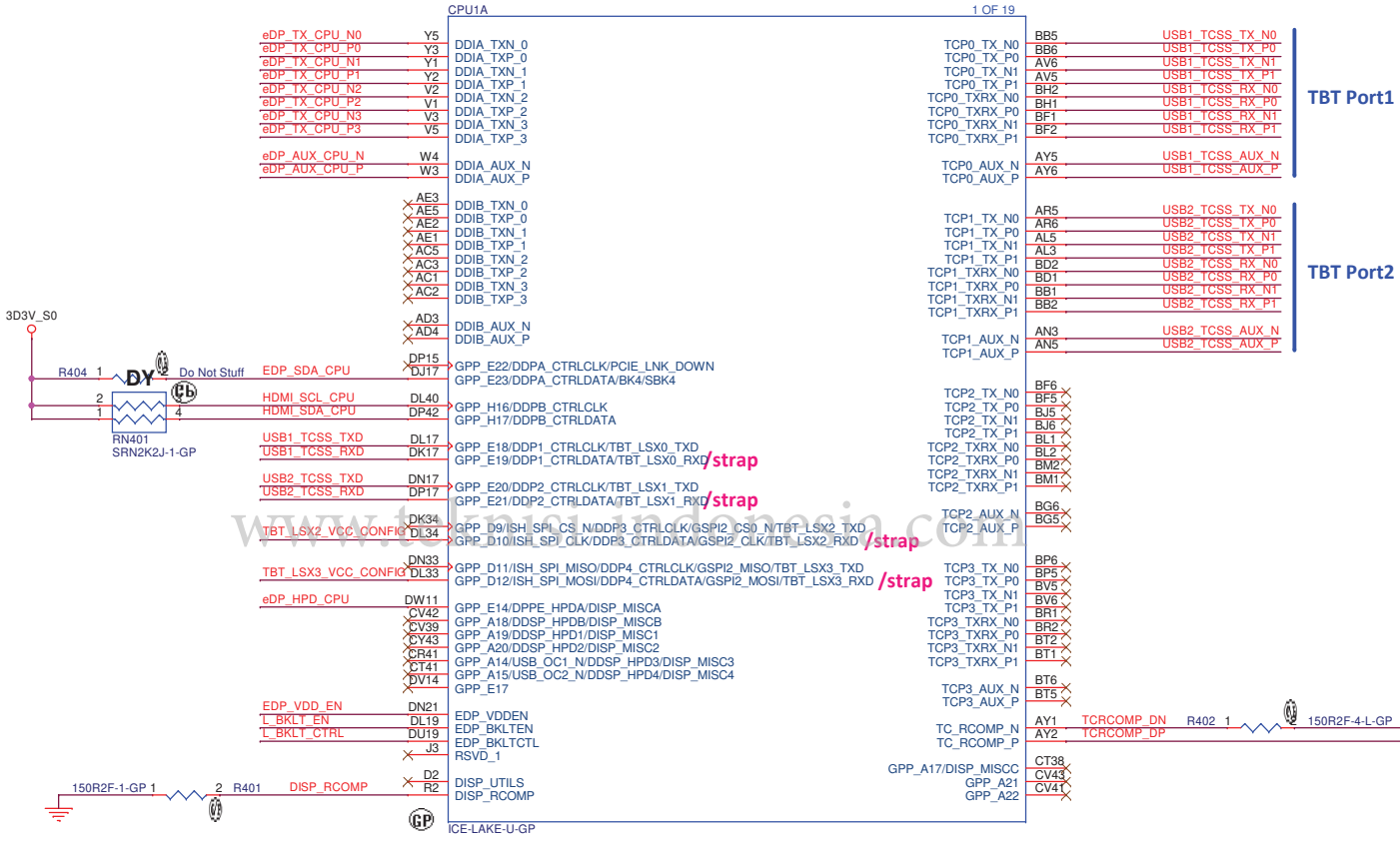
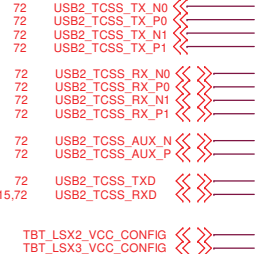
-1



TBT Port1 (TBT/USB3.1/DP/PD)



TBT Port2 (TBT/USB3.1/DP/PD)



TBT Port1 (TBT/USB3.1/DP/PD)

TBT Port2 (TBT/USB3.1/DP/PD)

LPDDR4x ball type: Non-Interleaved



PCI EXPRESS STATIC LANE REVERSAL FOR ALL PEG PORTS

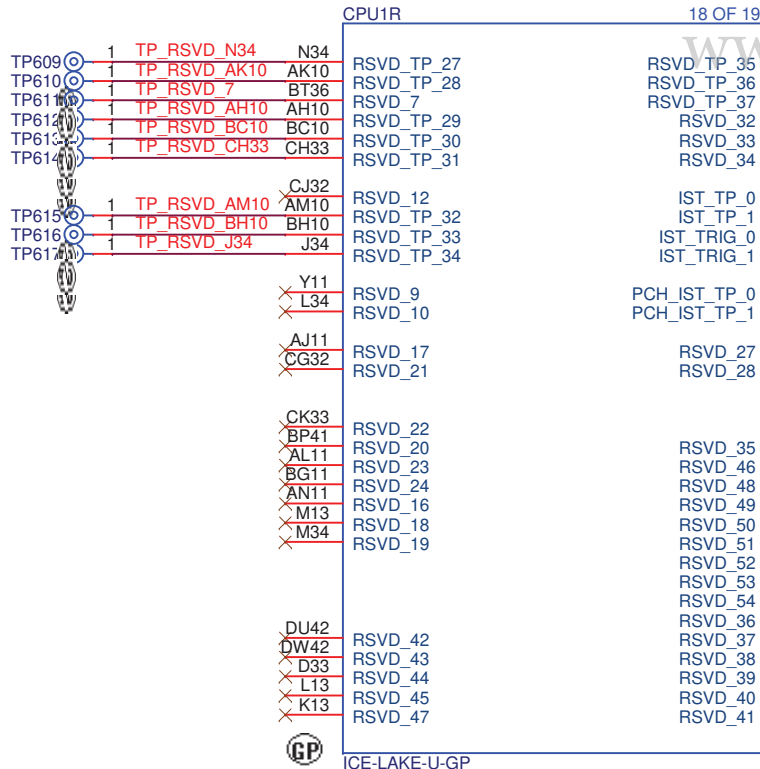
CFG2
1: (DEFAULT) NORMAL OPERATION;
0: LANE REVERSAL

DISPLAY PORT PRESENCE STRAP

CFG4
0: ENABLED
AN EXTERNAL DISPLAY PORT DEVICE IS CONNECTED TO THE EMBEDDED DISPLAY PORT
1: DISABLED
NO PHYSICAL DISPLAY PORT ATTACHED TO EMBEDDED DISPLAY PORT

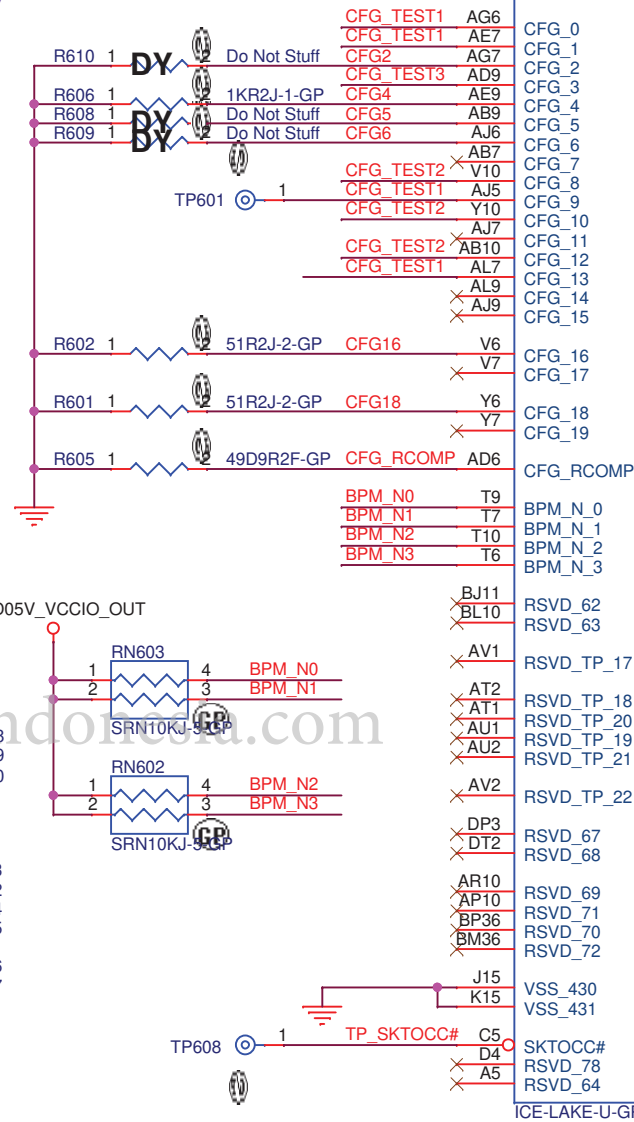
PCIE PORT BIFURCATION STRAPS

CFG[6:5]
11: DEVICE1 FUNTION 1, DEVICE 1 FUNCTION2 DISABLED
10: DEVICE1 FUNCTION1 ENABLED DEVICE1 FUNCTION 2 DISABLED
01: DEVICE 1 FUNCTION 1 DISABLED, DEVICE 1 FUNCTION 2 ENABLED
00: DEVICE 1 FUNCTION 1 ENABLED, DEVICE 1 FUNCTION 2 ENABLED



1D05V_VCCIO_OUT

1D05V_VCCIO_OUT



BOM1

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

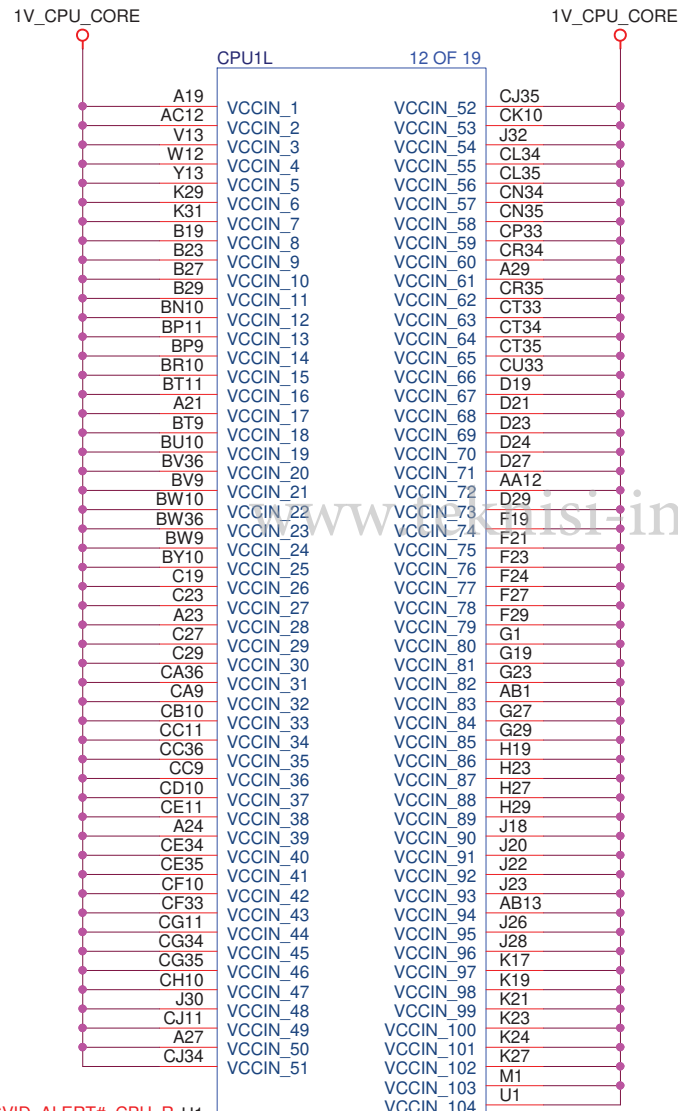
Title
CPU (CFG/IST)

Size A4 Document Number **LS40IC**

Rev
-1

Date: Tuesday, August 06, 2019 Sheet 6 of 106

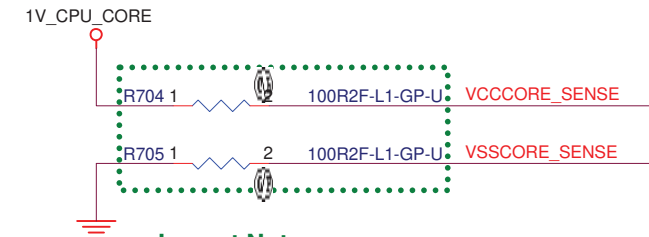
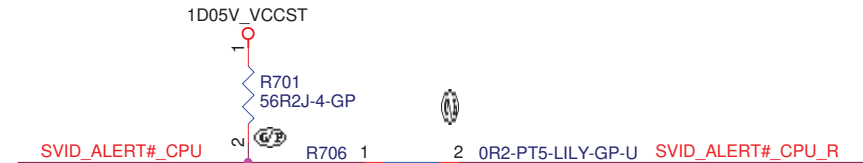
46 VCCCORE_SENSE
46 VSSCORE_SENSE
46 SVID_CLK_CPU
46 SVID_DATA_CPU
46 SVID_ALERT#_CPU



SVID DATA



SVID ALERT



Layout Note:

1. Place close to CPU
2. VCC_SENSE/ VSS_SENSE impedance=50 ohm
3. Length match<25mil

www.teknisi-indonesia.com

BOM1

緯創資通

Wistron Corporation

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

Title
CPU (VCCIN/VID)

Size A4 Document Number
LS40IC

Rev
-1

Date: Tuesday, August 06, 2019 Sheet 7 of 106



B

A

| | |
|--|--|
| | |
|--|--|

[illegible]

| | |
|--|--|
| | |
|--|--|

BLANK

www.teknisi-indonesia.com

BOM1

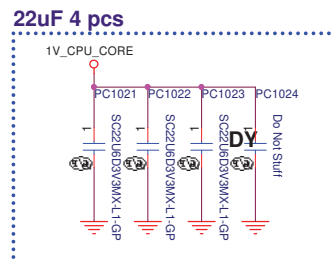
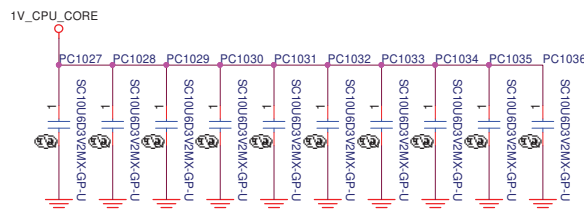
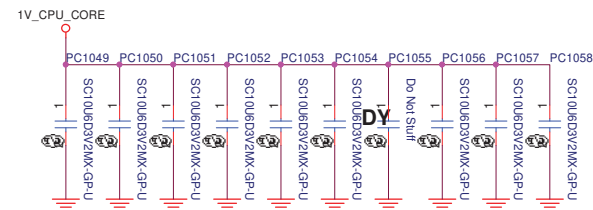
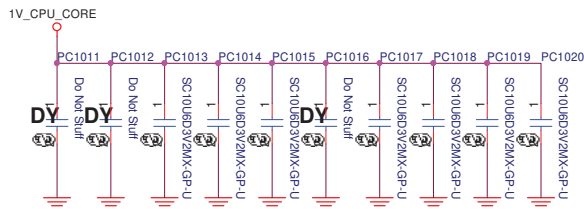
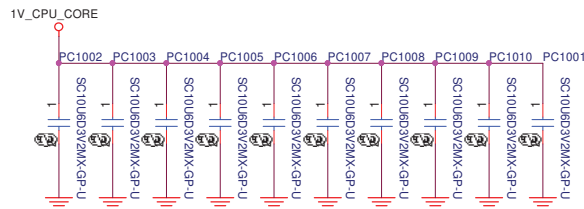
| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title CPU (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 9 of | 106 |

Main Func = CPU

U42
IccMax current-10ms max = 62A

| U42 | PCS | Cap |
|------|-----|---------|
| 22uF | 4 | 330uF*2 |
| 10uF | 40 | |

VCORE

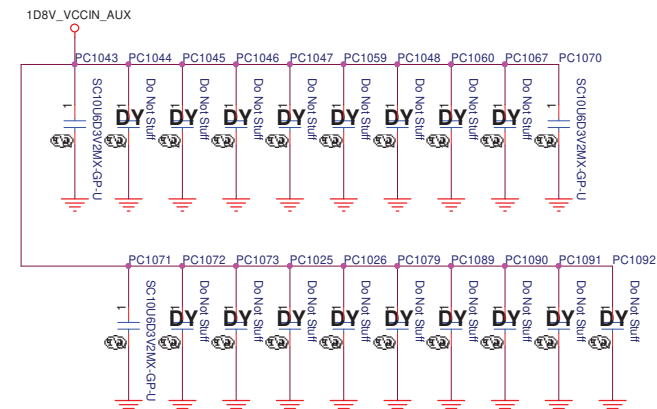
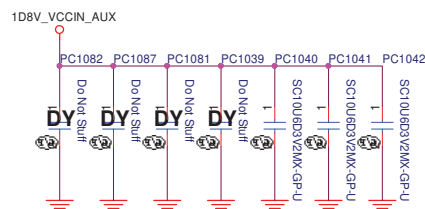
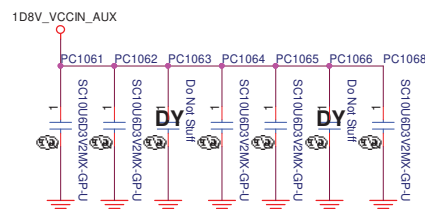
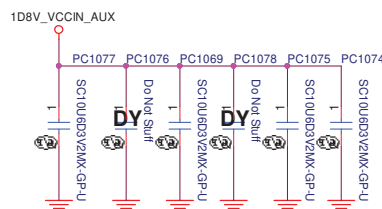


www.teknisi-indonesia.com

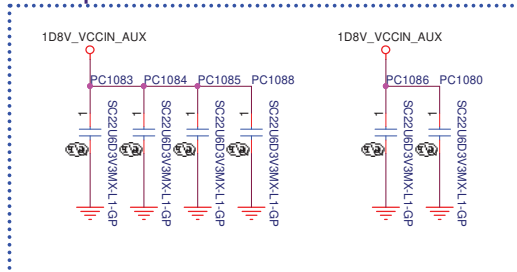
1D8V_VCCIN_AUX

U42
IccMax current-10ms max = 31A

| U42 | PCS | Cap |
|------|-----|---------|
| 22uF | 6 | 220uF*1 |
| 10uF | 40 | |



22uF 6 pcs



BOM1

緯創資通 Wistron Corporation
21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

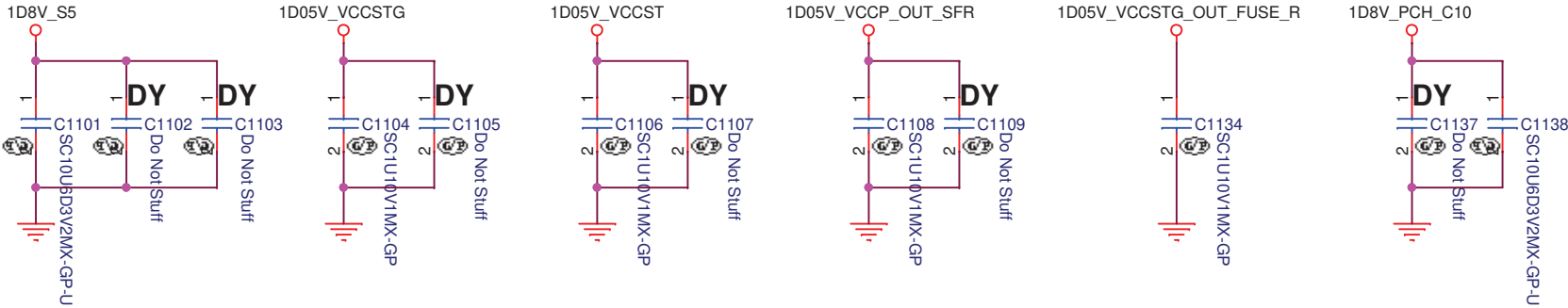
Title CPU (Power CAP1)

Size A3 Document Number LS40IC

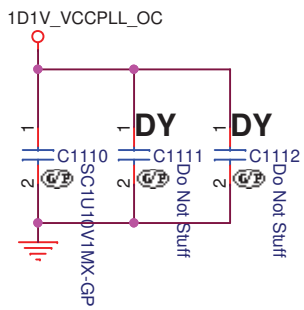
Date: Tuesday, August 06, 2019

Sheet 10 of 106

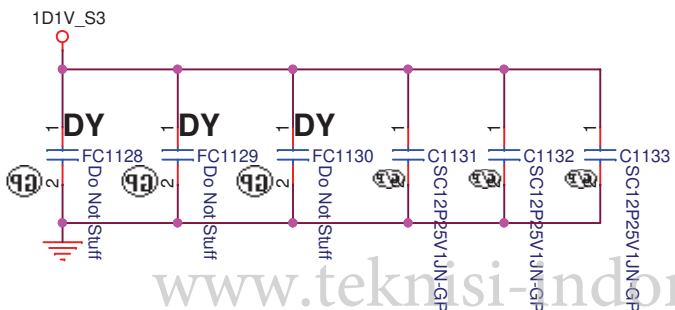
Rev -1



For VCCPLL_OC
pin-CG38,CG41,CG42,CG49

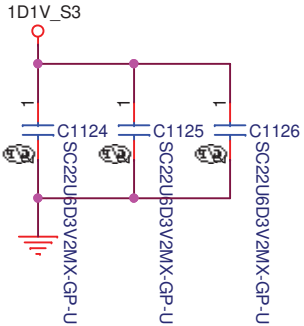


EMC CAPS - PLACE <4mm FROM SOC VDDQ,
WITH EACH PAIR <12mm APART

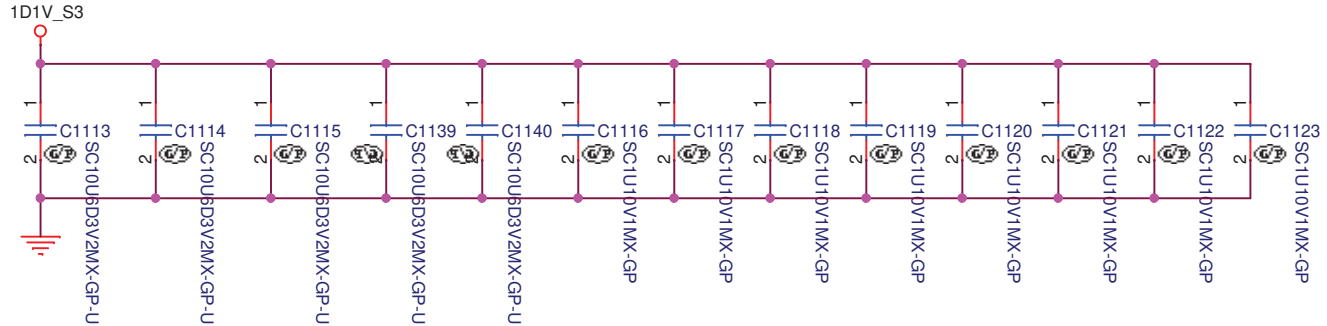


www.teknsi-indonesia.com

PLACE on CPU Same Side



PLACE on BACK SIDE



BOM1

| | | |
|---|----------------------------------|------------------|
|  Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | | |
| Title CPU (Power CAP2) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 11 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|---------------------------|-----------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title DDR (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 14 of | 106 |

(Off-Page)

need check

| GPIO | GPP_C5 | SPI_SI | GPP_E6 | GPP_B23 | SPI_WP | ME_UNLOCK | M.2 CNVI MODES | |
|-----------|------------|------------------|------------|------------|---|-----------|---------------------------------|-------------------------|
| Schematic | | | | | | | | |
| | High | Disable | Disable | Enable | 19.2MHZ CLOCK FROM DIVIDER (DERIVED FROM 38.4MHZ CRYSTAL) | Disable | OVERRIDEN | INTEGRATED CNVI DISABLE |
| | Low | Enable =default= | Enable | Disable | 38.4MHZ CLOCK FROM DIRECT CRYSTAL (DEFAULT) | Enable | SECURITY MEASURES NOT OVERRIDEN | INTEGRATED CNVI ENABLE |
| GPIO | TBT LSX #0 | TBT LSX #1 | TBT LSX #2 | TBT LSX #3 | A0 | | | |
| Schematic | | | | | | | | |
| | High | 3.3V | 3.3V | 3.3V | 3.3V | Disable | DFXTESTMODE DISABLED (DEFAULT) | |
| | Low | 1.8V | 1.8V | 1.8V | 1.8V | Enable | DFXTESTMODE ENABLED | |

www.teknisi-indonesia.com

Original Ref.

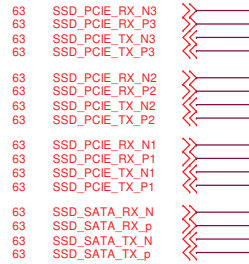
| GPP_C5 | SPI_SI | GPP_E6 | GPP_B23 | SPI_WP | ME_UNLOCK | M.2 CNVI MODES | TBT LSX #0 |
|--|--|--|---|---|---|--|--|
| ESPI OR EC LESS HIGH: ESPI DISABLED LOW: ESPI SELECTED WEAK INTERNAL PD 20K | BOOT HALT HIGH - DISABLED LOW- ENABLED NO INTERNAL PUPD | JTAG ODT DISABLE LOW: JTAG ODT DISABLED HIGH: JTAG ODT ENABLED NO INTERNAL PUPD | CPUNBSC CLOCK FREQ HIGH: 19.2MHZ CLOCK FROM DIVIDER (DERIVED FROM 38.4MHZ CRYSTAL) LOW: 38.4MHZ CLOCK FROM DIRECT CRYSTAL (DEFAULT) WEAK INTERNAL PD 20K | CONSENT STRAP HIGH: DISABLED LOW: ENABLED NO INTERNAL PUPD | FLASH DESCRIPTOR SECURITY OVERRIDE HIGH: OVERRIDEN LOW: SECURITY MEASURES NOT OVERRIDEN WEAK INTERNAL PD 20K | M.2 CNVI MODES LOW-> INTEGRATED CNVI ENABLE HIGH-> INTEGRATED CNVI DISABLE NO INTERNAL PUPD | TBT LSX #0 PINS VCCIO CONFIGURATION HIGH: 3.3V LOW: 1.8V NO INTERNAL PUPD |
| TBT LSX #1 | TBT LSX #2 | TBT LSX #3 | A0 | | | | |
| TBT LSX #1 PINS VCCIO CONFIGURATION HIGH: 3.3V LOW: 1.8V NO INTERNAL PUPD | TBT LSX #2 PINS VCCIO CONFIGURATION HIGH: 3.3V LOW: 1.8V NO INTERNAL PUPD | TBT LSX #3 PINS VCCIO CONFIGURATION HIGH: 3.3V LOW: 1.8V NO INTERNAL PUPD | A0 PERSONALITY STRAP HIGH: DISABLED LOW: ENABLED NO INTERNAL PUPD | | | | |

www.teknisi-indonesia.com

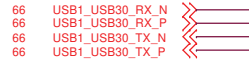
BOM1

(Off-Page)

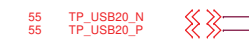
M.2 PCIe SSD



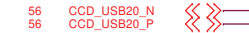
USB3.1 TYPE-C (PD/DP)



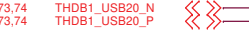
TOUCH PANEL



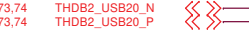
RGB Camera



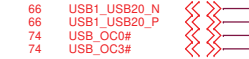
USB2.0 TBT PARTA



USB2.0 TBT PARTB

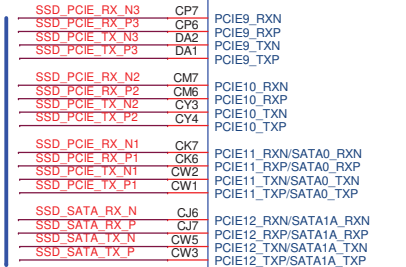


USB2.0 TYPE-C (PD/DP)



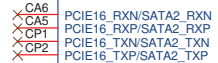
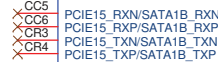
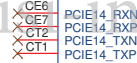
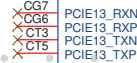
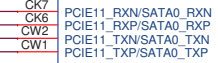
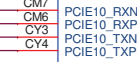
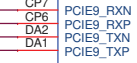
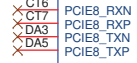
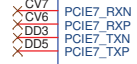
add USB_OC3# connect to PD GP1012
20181130_Thomas

M.2 PCIe SSD



CPU1H

8 OF 19

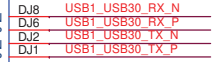


ICE-LAKE-U-GP

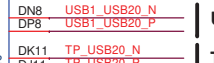


For TYPE C, Tony wants to follow S940(WHL) which is connected to USB but has not yet determined that it is still tracking this item. (S940(ICL) may be connected to TCP signal.)

USB3.1 TYPE-C (PD/DP)



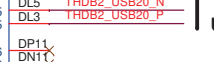
USB2.0 TYPE-C (PD/DP)



TOUCH PANEL



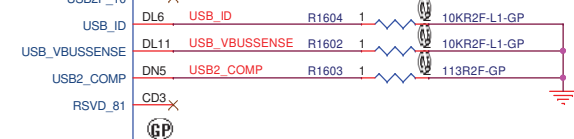
USB2.0 TBT PARTA



USB2.0 TBT PARTB



RGB Camera



BOM1

緯創資通 Wistron Corporation
21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsinchi,
Taipei Hsien 221, Taiwan, R.O.C.

Title CPU (PCIe/SATA/USB)

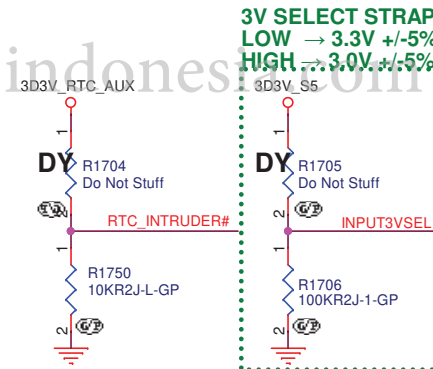
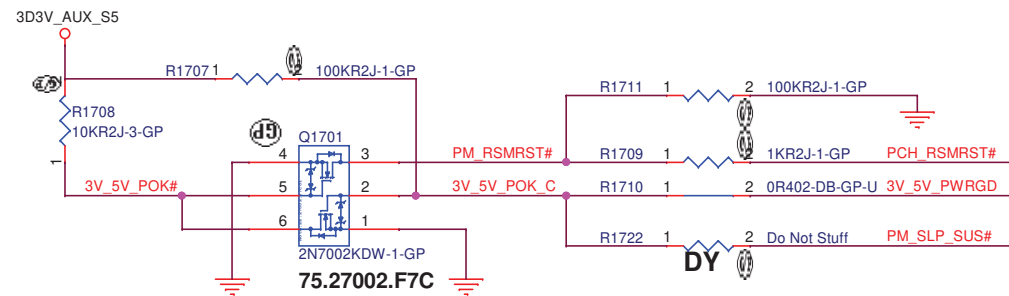
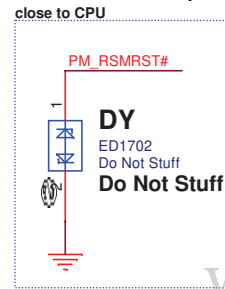
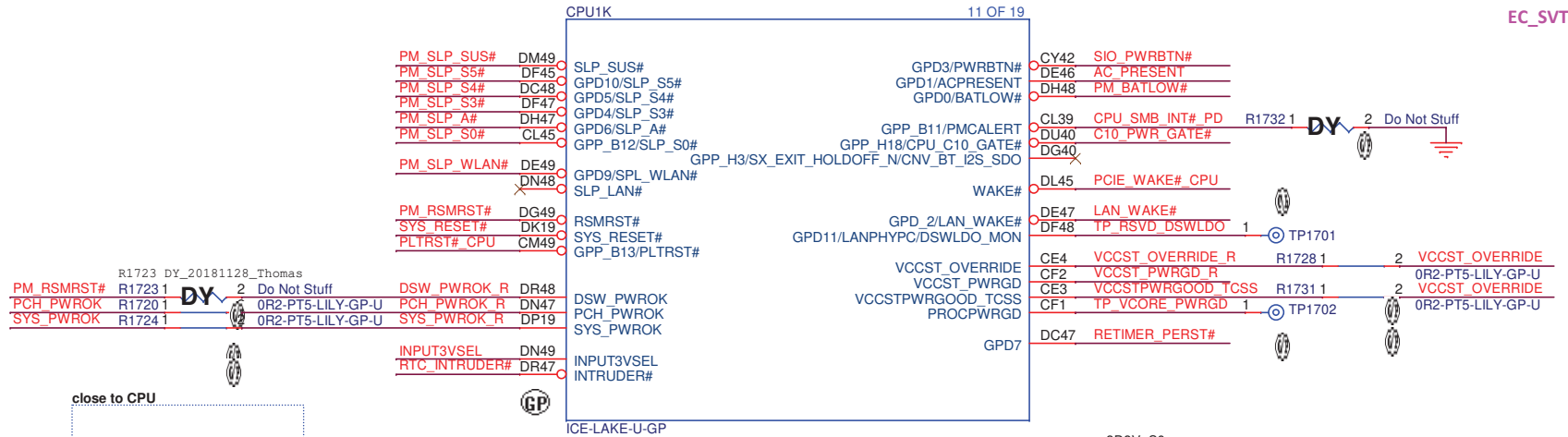
Size A3 Document Number LS40IC

Date: Tuesday, August 06, 2019

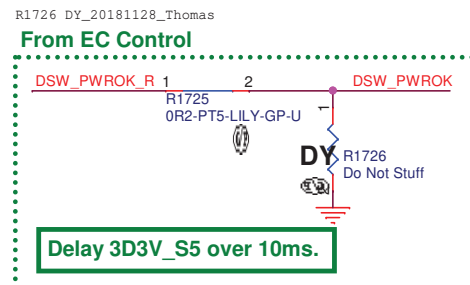
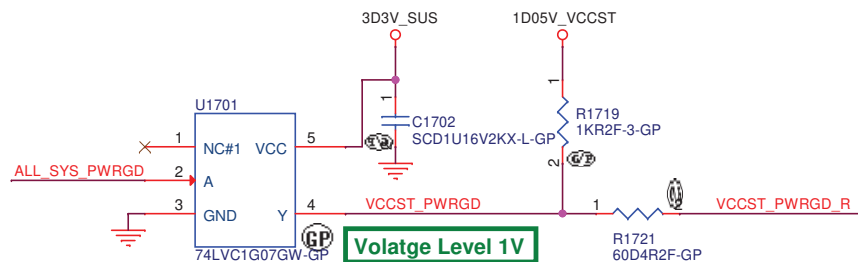
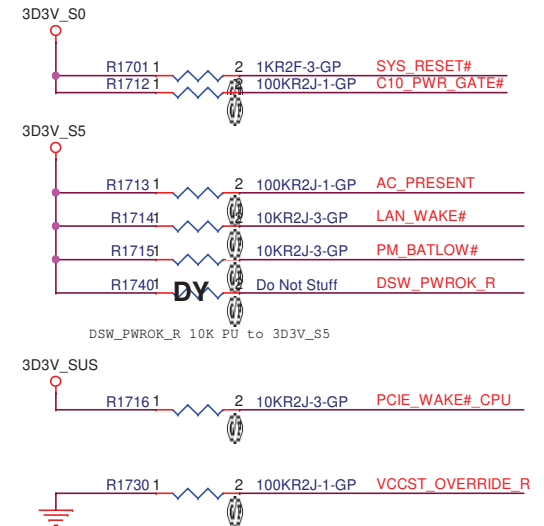
Sheet 16 of 106

Rev -1

EC_FVT_008
EC_FVT_067
EC_FVT_078
EC_SVT_002



The VCCSPI voltage (3.3V or 1.8V) is selected via a hard strap on the INTRUDER#. 0 = SPI interface operation voltage is 3.3V (ground through a 10 kohm resistor) 1 = SPI interface operation voltage is 1.8V (pulled up with 1 Mohm to VCCRTC)



緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

| | | | |
|------------------|--------------------------|-------------|-----------|
| Title | | | |
| CPU (PMU) | | | |
| Size | Document Number | | Rev |
| Custom | LS40IC | | -1 |
| Date: | Tuesday, August 06, 2019 | Sheet 17 of | 106 |

SPI ROM



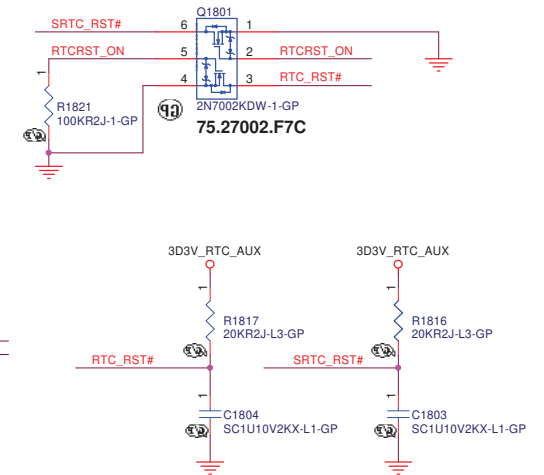
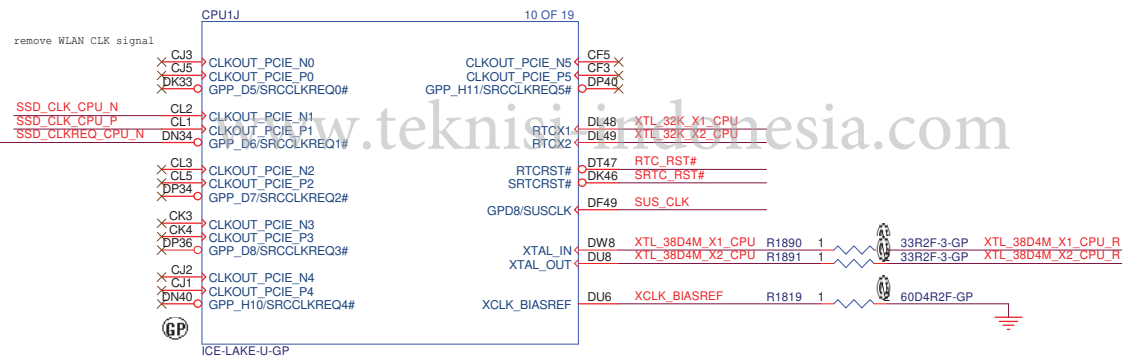
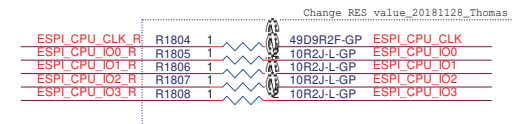
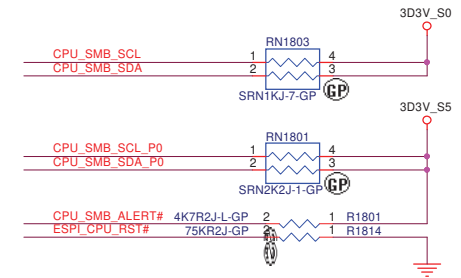
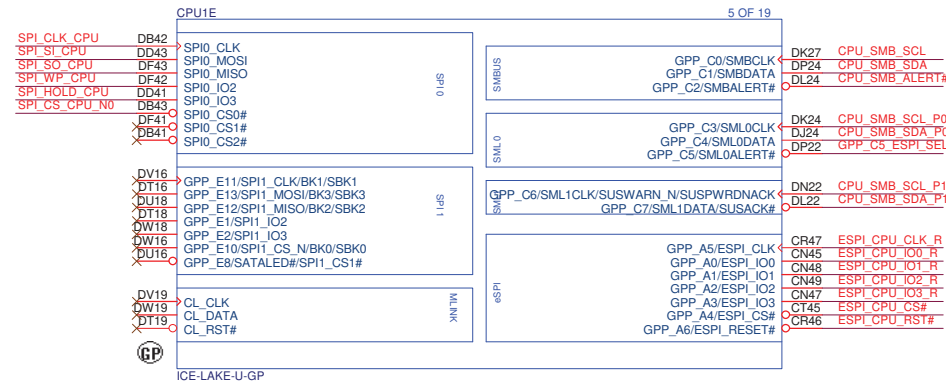
SSD



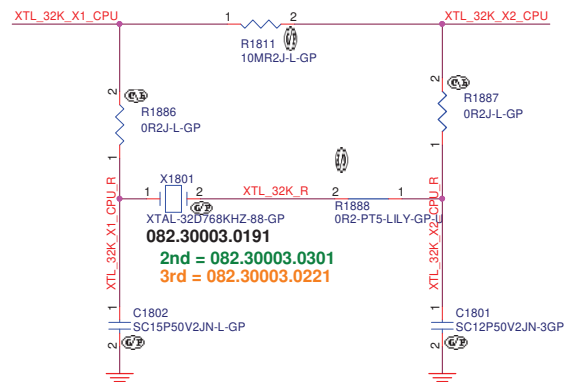
ESPI



OTHER

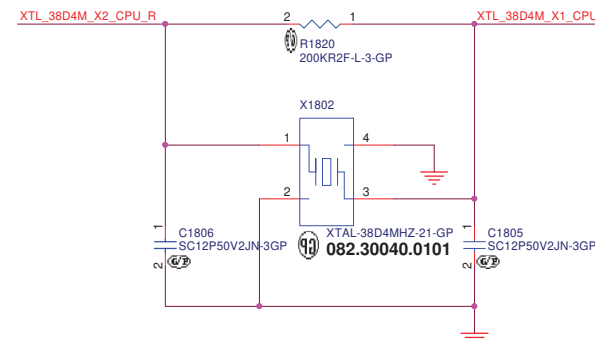


www.teknisi-indonesia.com



BOM Control

| X1801 (32.768KHz) | C1801(Cd) | C1802(Cg) |
|----------------------|-----------|-----------|
| EPSON 082.30003.0191 | 12pF | 15pF |
| SEIKO 082.30003.0301 | 12pF | 15pF |
| NDK 082.30003.0221 | 15pF | 15pF |



| X1802 (38.4MHZ) | C1806 | C1805 |
|------------------------|-------|-------|
| HOSONIC 082.30040.0101 | 12pF | 12pF |
| | | |
| | | |

BOM1

| | | |
|--|-------------------------------|---------------|
| 緯創資通 Wistron Corporation 21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | | |
| Title CPU (SPI/LPC/SMBS/XTAL/CLK) | | |
| Size A3 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 18 | of 106 |

EC_FVT_033
EC_FVT_053
EC_FVT_078
EC_FVT_086
EC_FVT_094
EC_SVT_002
EC_SVT_008



| | | | |
|-------|-----------------------|-------|--|
| 15 | GPP_B23_CLK_FREQ | << >> | |
| 25 | RTC_DET# | << >> | |
| 24,66 | SPKR | << >> | |
| 61 | BLUETOOTH_EN | << >> | |
| 24,61 | WIFI_RF_EN | << >> | |
| 24,67 | LID_CLOSE# | << >> | |
| 24,46 | EC_I2C_SDA4 | << >> | |
| 24,46 | EC_I2C_SCL4 | << >> | |
| 24,55 | CPU_I2C_SDA_TOF | << >> | |
| 24,55 | CPU_I2C_SCL_TOF | << >> | |
| 55 | TOF_HPDI_XSHUT#_EN#_R | << >> | |
| 55 | TOF_HPDI_INT# | << >> | |
| 65 | CPU_I2C_SDA_P0 | << >> | |
| 65 | CPU_I2C_SCL_P0 | << >> | |
| 66 | CPU_I2C_SDA_AUD_AMP | << >> | |
| 66 | CPU_I2C_SCL_AUD_AMP | << >> | |
| 68 | CPU_UART2_TXD | << >> | |
| 68 | CPU_UART2_RXD | << >> | |
| 24 | EC_SMI# | << >> | |
| 24 | EC_SCI# | << >> | |

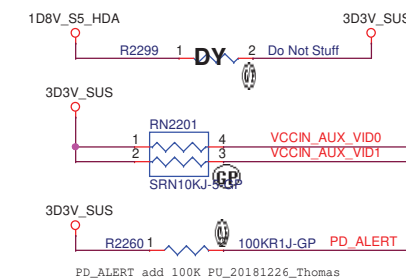
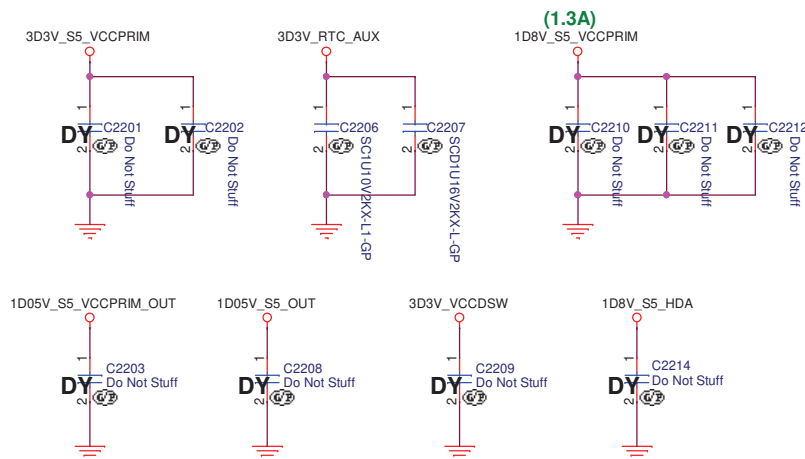
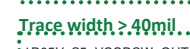
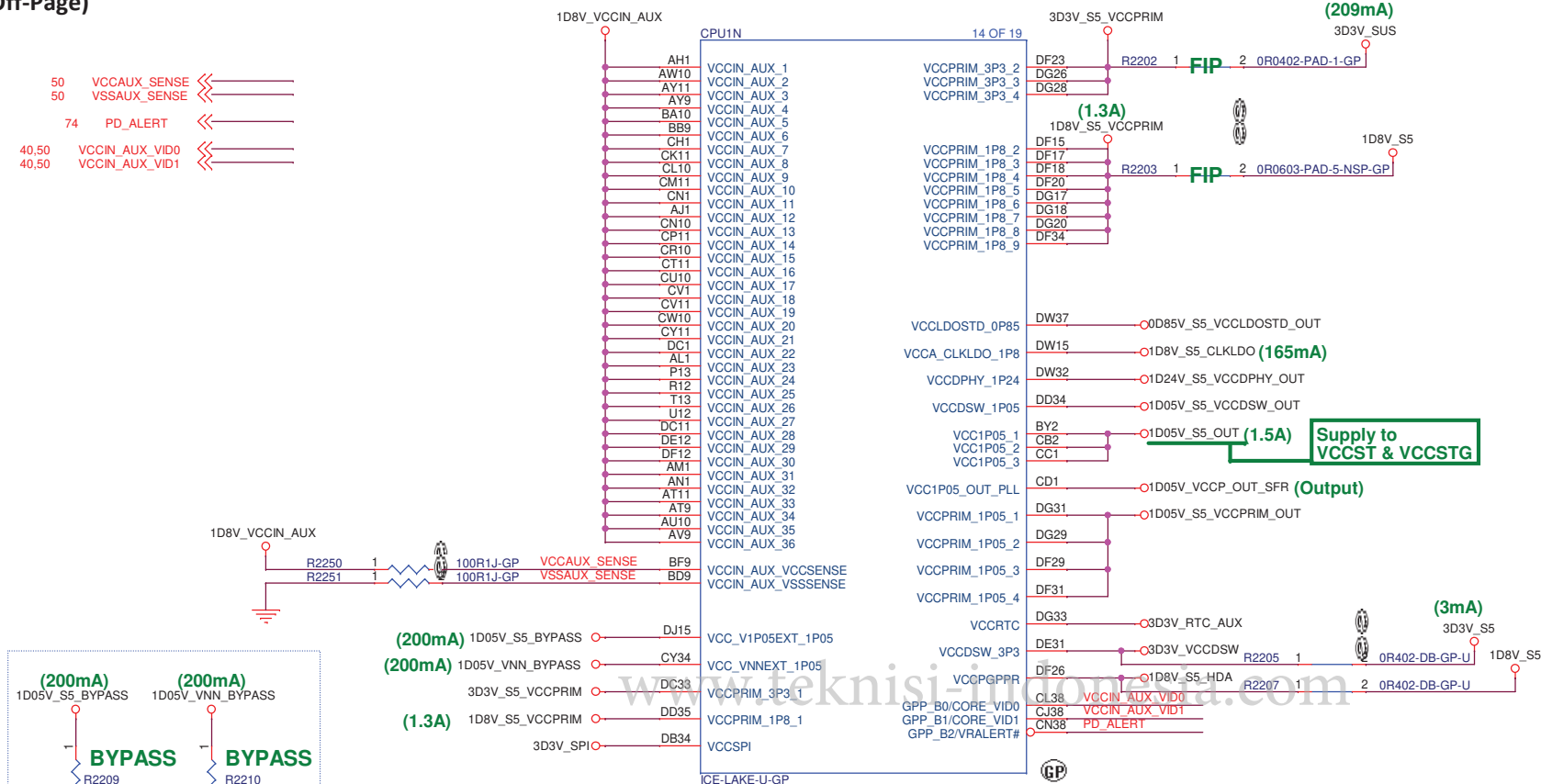




| Value | Part Number |
|-------|--------------|
| 1K | 63.10234.L0L |
| 1M | 63.10534.L1L |
| 1.2K | 63.12234.1DL |
| 1.2M | 63.12534.1DL |
| 2K | 63.20234.1DL |
| 2M | 63.20534.1DL |
| 2.2K | 63.22234.L0L |
| 2.2M | 63.22534.1DL |
| 10K | 63.10334.L0L |
| 10M | 63.10634.1DL |



(Off-Page)





www.teknisi-indonesia.com

BOM1



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

Title

CPU (VSS)

Size

A4

Document Number

LS40IC

Rev

-1

Date

Tuesday, August 06, 2019

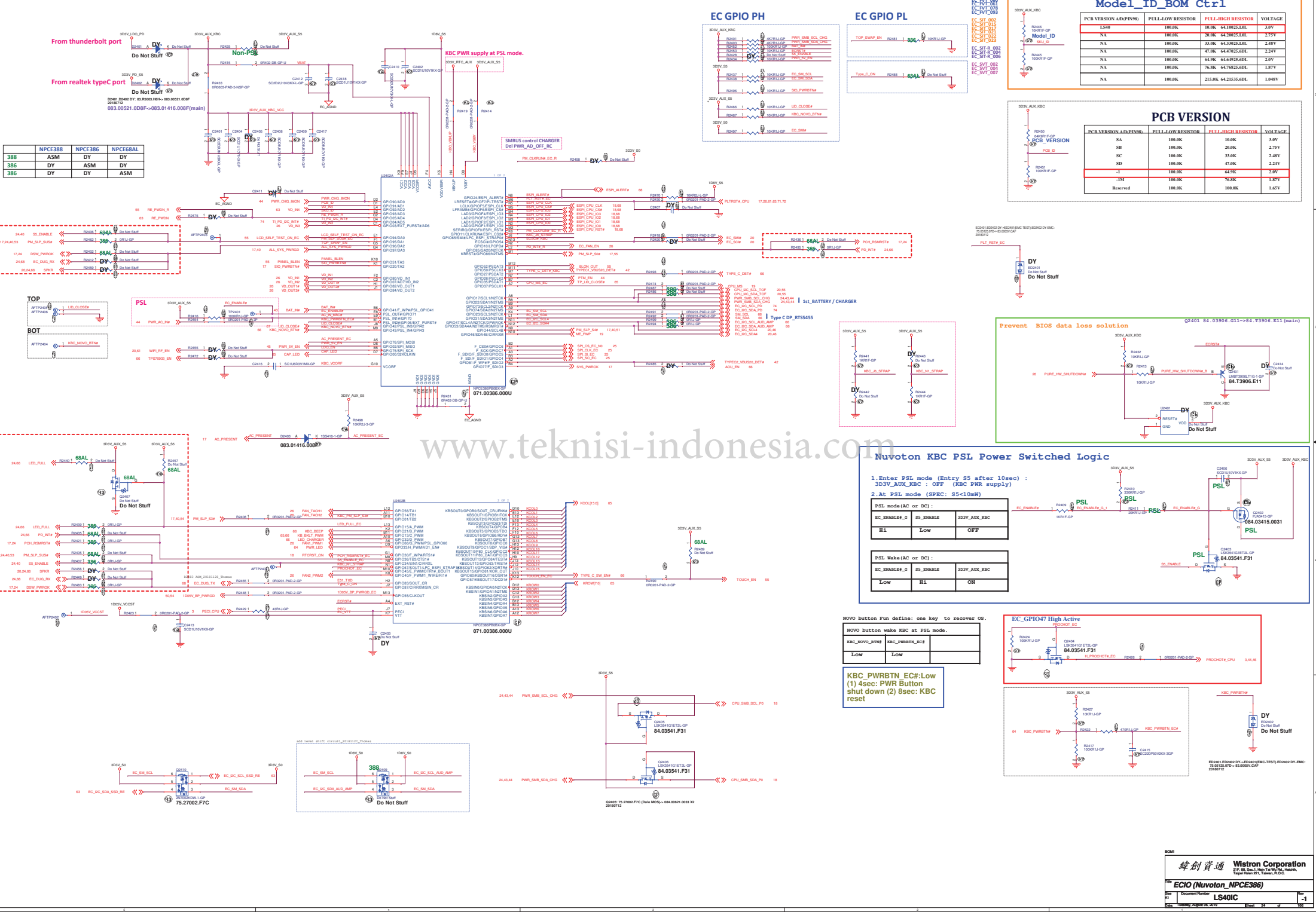
Sheet

23

of

106

SSID = KBC



| | NPC388 | NPC386 | NPC688AL |
|-----|--------|--------|----------|
| 388 | ASM | DY | DY |
| 386 | DY | ASM | DY |
| 385 | DY | DY | ASM |

| Model_ID_BOM Ctrl | | | |
|---------------------|-------------------|--------------------|---------|
| PCB VERSION AD(PIN) | PULL-LOW RESISTOR | PULL-HIGH RESISTOR | VOLTAGE |
| LSH0 | 100.0K | 10.0K | 3.0V |
| NA | 100.0K | 20.0K | 2.75V |
| NA | 100.0K | 33.0K | 2.48V |
| NA | 100.0K | 47.0K | 2.24V |
| NA | 100.0K | 64.0K | 1.87V |
| NA | 100.0K | 75.0K | 1.65V |

| PCB VERSION | | | |
|---------------------|-------------------|--------------------|---------|
| PCB VERSION AD(PIN) | PULL-LOW RESISTOR | PULL-HIGH RESISTOR | VOLTAGE |
| SA | 100.0K | 10.0K | 3.0V |
| SB | 100.0K | 20.0K | 2.75V |
| SC | 100.0K | 33.0K | 2.48V |
| SD | 100.0K | 47.0K | 2.24V |
| -1M | 100.0K | 75.0K | 1.87V |
| Reserved | 100.0K | 100.0K | 1.65V |

Nuvoton KBC PSL Power Switched Logic

| | | | |
|---|-----------|--------------|--|
| 1. Enter PSL mode (Entry S5 after 10sec): | | | |
| 303V_AUX_KBC = OFF (KBC PWR supply) | | | |
| 2. At PSL mode (SPEC: S5<10mW) | | | |
| PSL mode (AC or DC): | | | |
| EC_ENABLE#_G | SS_ENABLE | 303V_AUX_KBC | |
| H1 | Low | OFF | |
| PSL Wake (AC or DC): | | | |
| EC_ENABLE#_G | SS_ENABLE | 303V_AUX_KBC | |
| Low | H1 | ON | |

| | | | |
|---|----------------|--|--|
| NOVO button Fun define: one key to recover OS | | | |
| NOVO button wake KBC at PSL mode | | | |
| KBC_NOVO_BTN | KBC_PWRBTN_ECH | | |
| Low | Low | | |

| | | | |
|--|--|--|--|
| KBC PWRBTN ECH: Low (t) 4sec: PWR Button shut down (2) 8sec: KBC reset | | | |
|--|--|--|--|

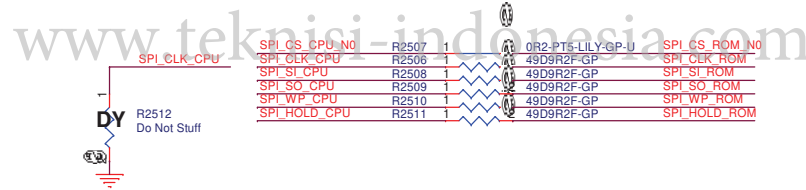
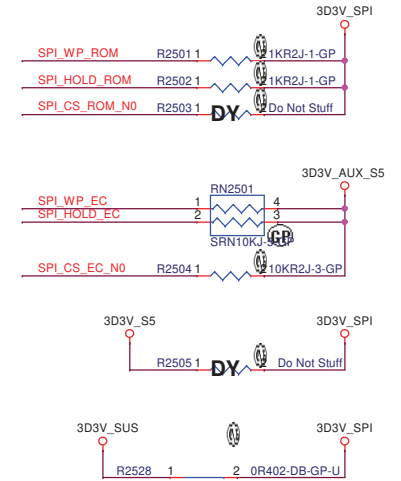
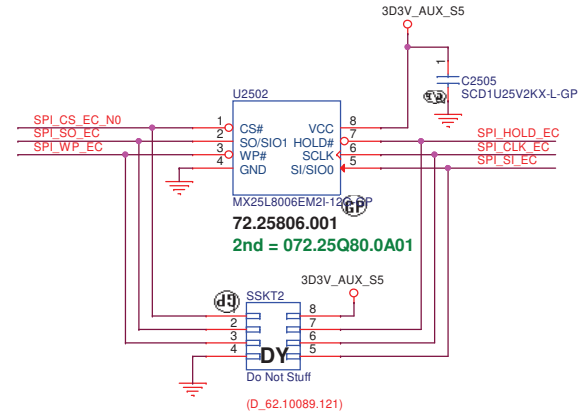
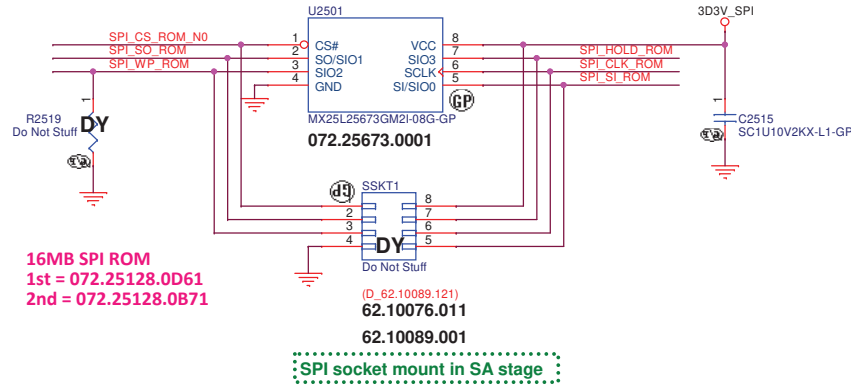
SPI ROM

(Off-Page)

18 SPI_CS_CPU_N0
18 SPI_CLK_CPU
18 SPI_SO_CPU
15,18 SPI_SI_CPU
15,18 SPI_WP_CPU
15,18 SPI_HOLD_CPU

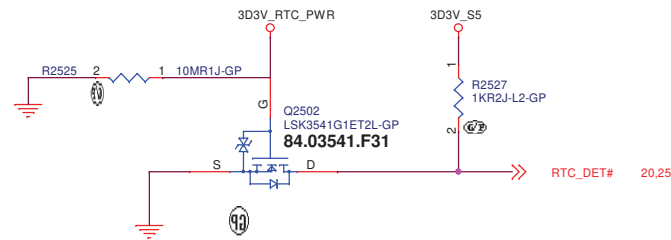
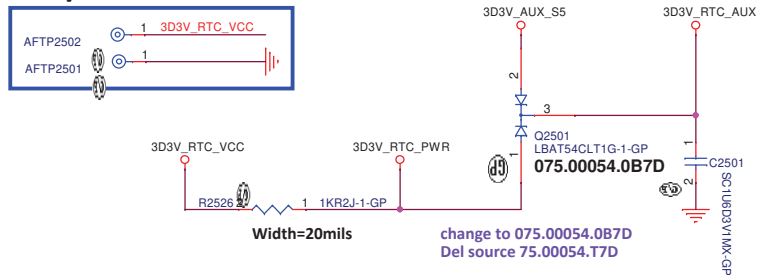
24 SPI_CS_EC_N0
24 SPI_CLK_EC
24 SPI_SO_EC
24 SPI_SI_EC

20,25 RTC_DET#



SSID = RBATT

Test point



BOM1

緯創資通 Wistron Corporation
21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title FLASH/RTC

Size A3 Document Number LS40IC

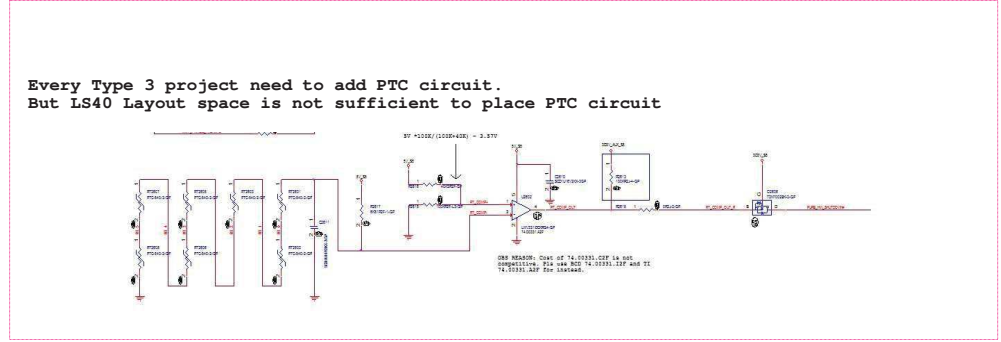
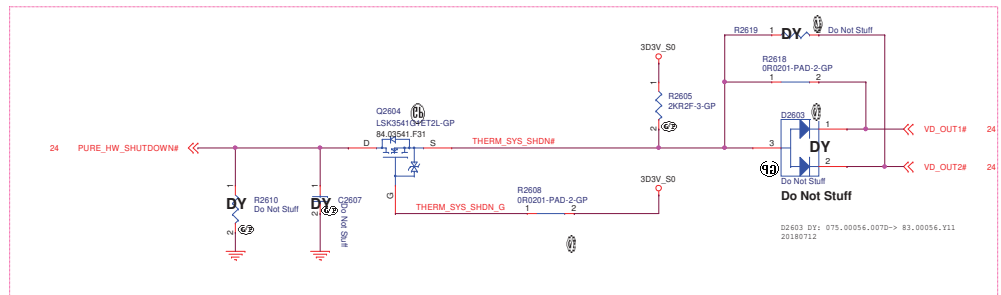
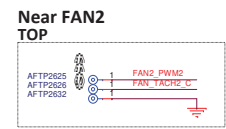
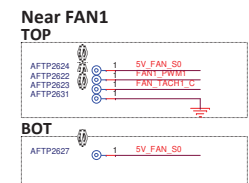
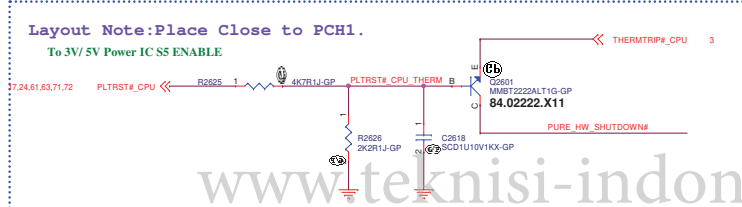
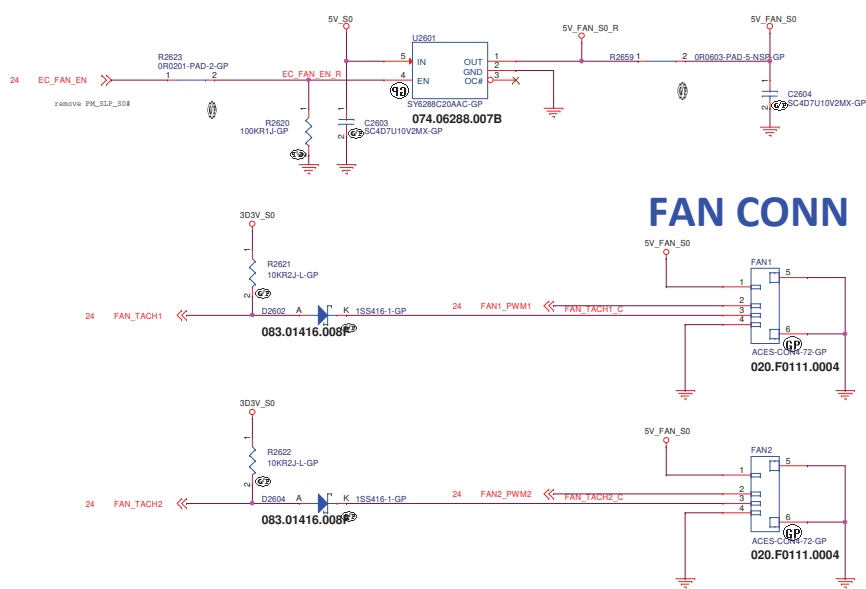
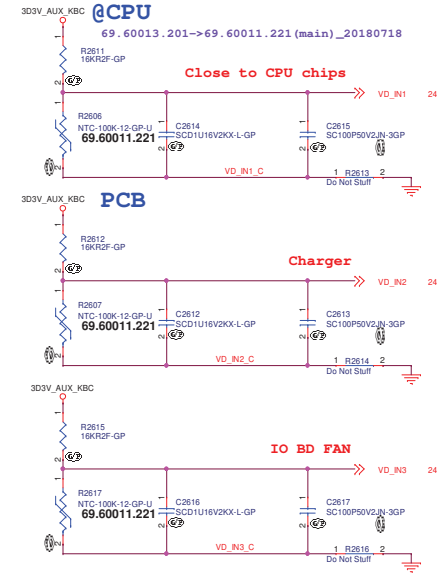
Date: Tuesday, August 06, 2019

Sheet 25 of 106

Rev -1

Main Func = Thermal Sensor

Close to thermal sensor

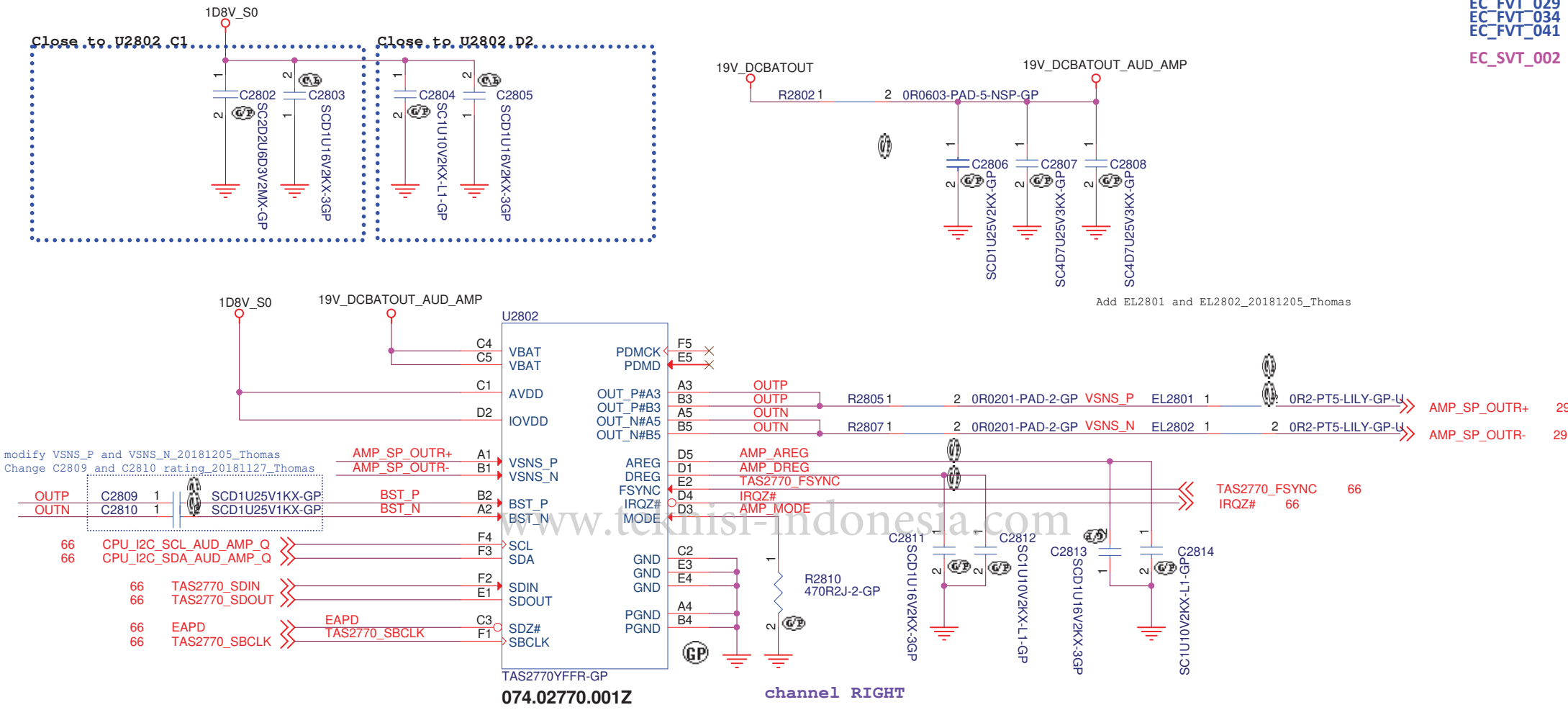


BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|---|----------------------------------|---|
|  | | Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. |
| Title Audio (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 27 of 106 |

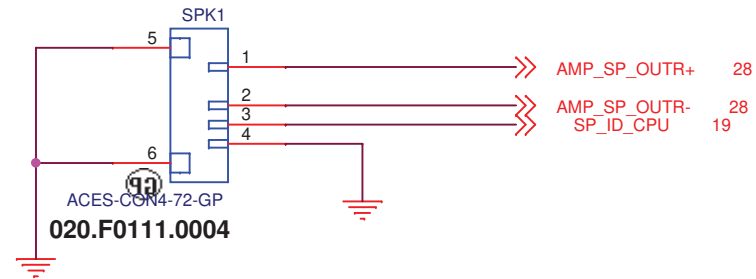


modify VSNS_P and VSNS_N_20181205_Thomas
Change C2809 and C2810 rating_20181127_Thomas

www.teknisi-indonesia.com


BOM1

| | | |
|--|----------------------------------|------------------|
| 緯創資通 Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | | |
| Title Audio (Audio AMP TAS2770) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 28 | of 106 |



www.teknisi-indonesia.com


BOM1

| | | | |
|---|----------------------------------|---|------------------|
|  | | Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title | | | |
| Audio (HP/SPK/MIC Jack) | | | |
| Size A4 | Document Number LS40IC | | Rev -1 |
| Date: | Tuesday, August 06, 2019 | Sheet 29 of | 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|---|----------------------------------|---|
|  | | Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. |
| Title Audio (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 30 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title LAN (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 31 of | 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title LAN (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 32 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title CARDREADER (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 33 of 106 |

BLANK

www.teknisi-indonesia.com


BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title USB (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 34 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | | |
|---|-------------------------------|---|------------------|
|  | | Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title USB (RSVD) | | | |
| Size A4 | Document Number LS40IC | | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 35 of | 106 |

BLANK

www.teknisi-indonesia.com


BOM1

| | | | |
|-------------------------|----------------------------------|---|------------------|
| 緯創資通 | | Wistron Corporation | |
| | | 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title USB (RSVD) | | | |
| Size A4 | Document Number LS40IC | | Rev -1 |
| Date: | Tuesday, August 06, 2019 | Sheet 37 of | 106 |

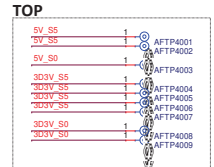
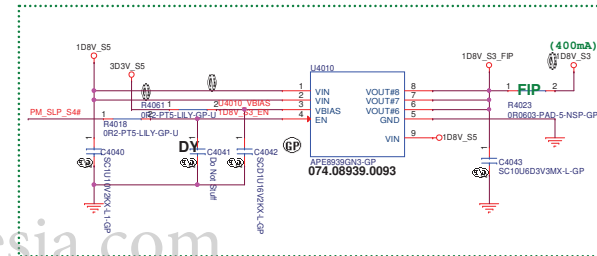
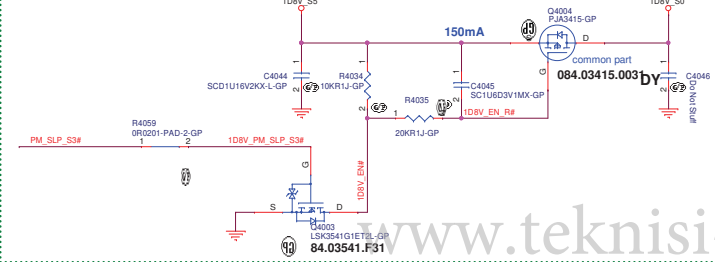
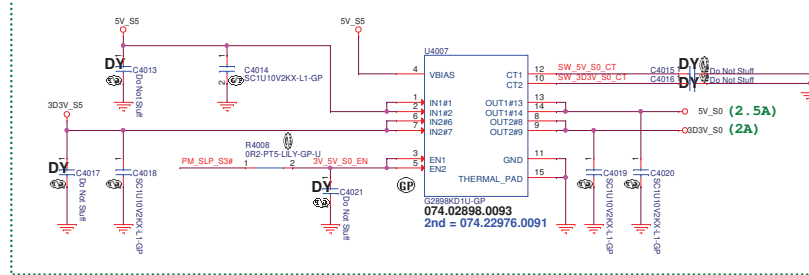
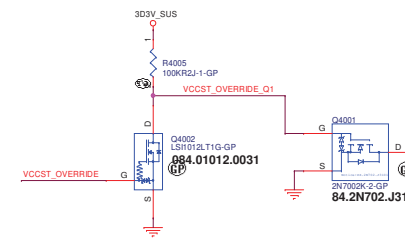
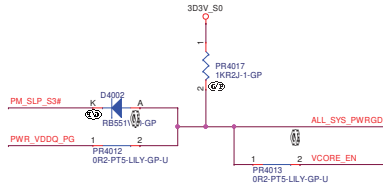
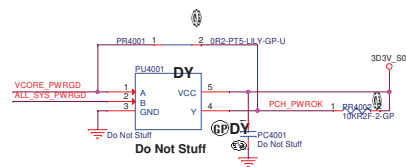
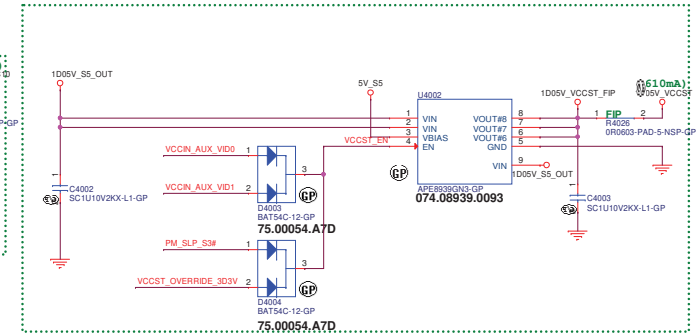
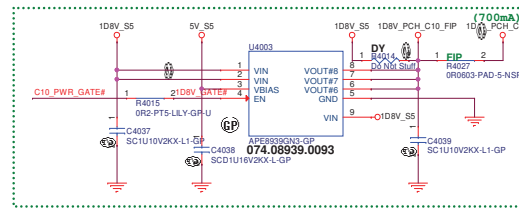
BLANK

www.teknisi-indonesia.com

BOM1

| | | | |
|---|-------------------------------|---|------------------|
|  | | Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title Sequence (RSVD) | | | |
| Size A4 | Document Number LS40IC | | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 39 of | 106 |

| | | | |
|----|-------|--------------------|------|
| 17 | 24.51 | PM_SLP_S4# | <<>> |
| 17 | 24.54 | PM_SLP_S3# | <<>> |
| 17 | 24.53 | PM_SLP_SUS# | <<>> |
| 17 | | VCSTC_OVERRIDE | <<>> |
| 17 | 24 | ALL_SYS_PWRGD | <<>> |
| 22 | 50 | VCIN_AUX_VID0 | <<>> |
| 22 | 50 | VCIN_AUX_VID1 | <<>> |
| 17 | | PCH_PWROK | <<>> |
| 17 | | C10_PWR_GATE# | <<>> |
| 46 | | PWR_VCORE_VR_READY | <<>> |
| 46 | | PWR_VCORE_VR_EN | <<>> |
| 51 | | PWR_VDDO_PG | <<>> |
| | 45 | 3V_5V_EN | <<>> |
| | 24 | SS_ENABLE | <<>> |

[illegible]

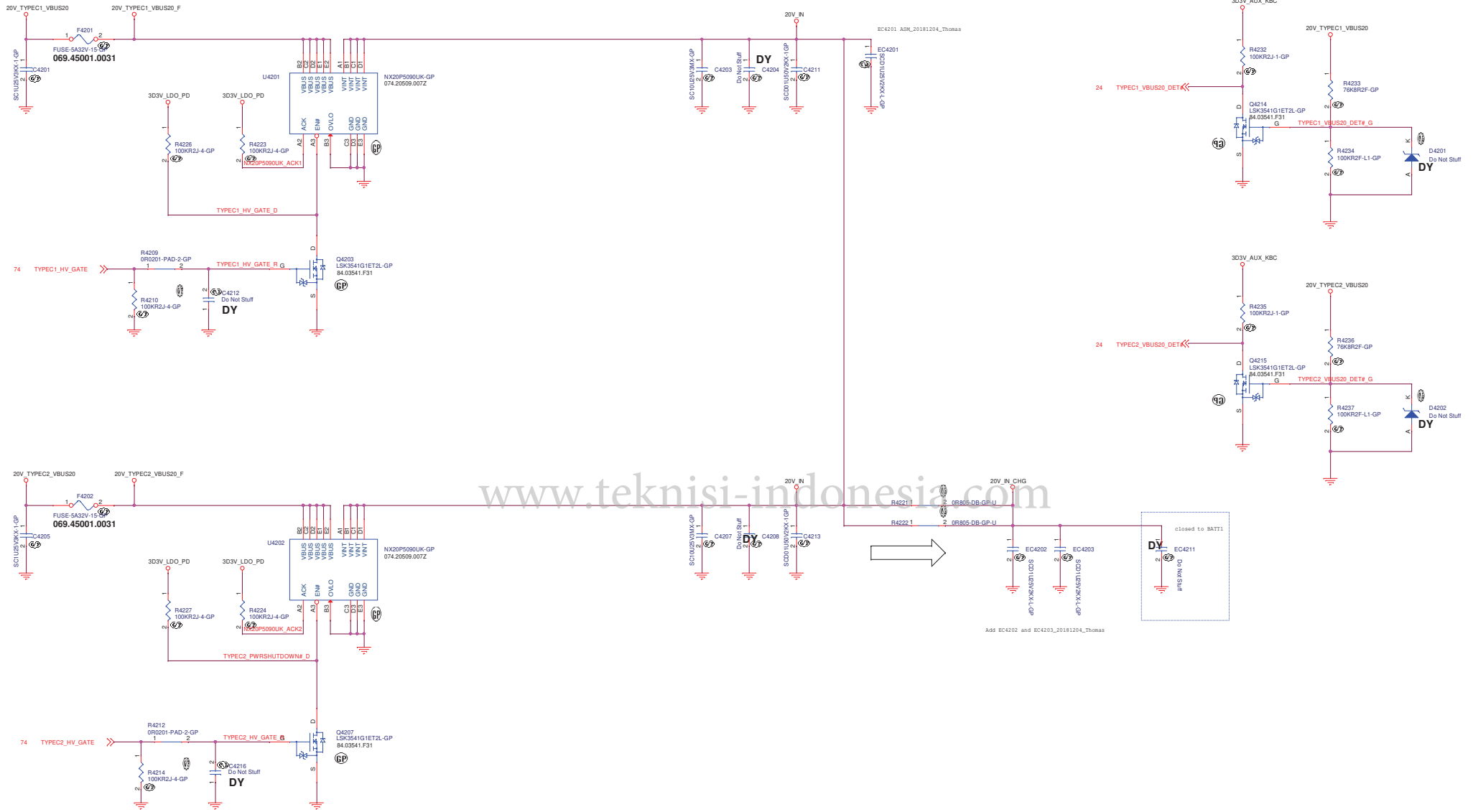
BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Sequence (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 41 of 106 |

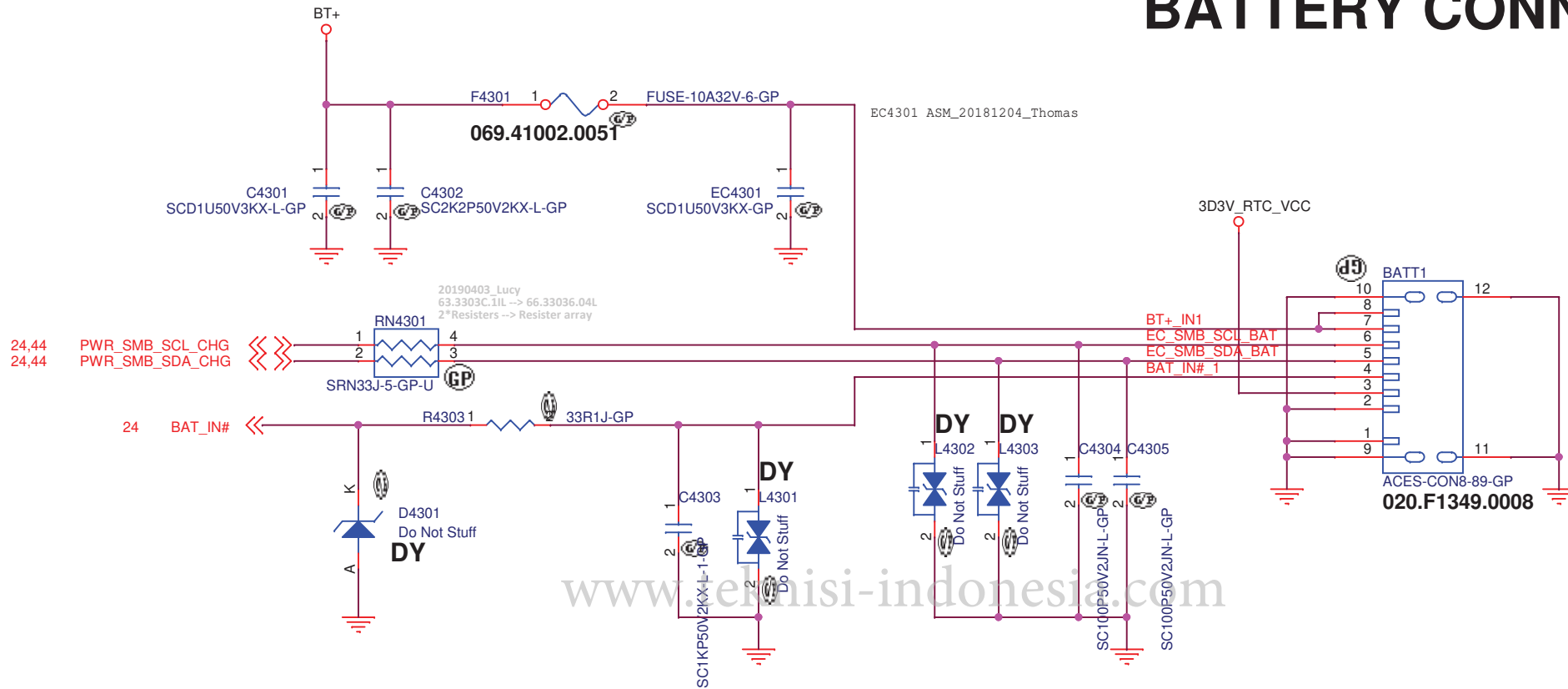
| Table | | | |
|-------------------------|-----------------|---------|--|
| Q4201,Q4202,Q4203,Q4204 | | | |
| 1st | SI7153DN-T1-GE3 | VISHAY | Need to apply WPN and symbol 084.08103.M001 |
| 2nd | TPC8103 | TOSHIBA | |



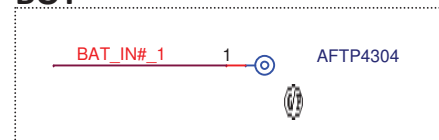
BATTERY CONNECTOR

EC_FVT_086
EC_FVT_089

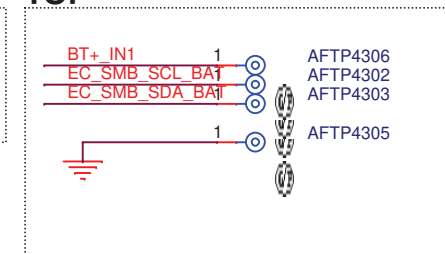
EC_SIT_023
EC_SIT_024



BOT



TOP



BOM1

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

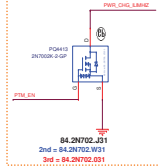
Title INT IO (ATX/ DC/ BATT Conn)

Size A4 Document Number LS40IC

Rev -1

Date: Tuesday, August 06, 2019 Sheet 43 of 106

Figure 1: Schematic representation of the 16 channels of the 16-channel system. The diagram shows 16 channels arranged in two columns of eight. Each channel is represented by a horizontal line with a label on the left and a label on the right. The labels are: PWR_SMB_SCL_CHG, PWR_CHG_SCL, PWR_SMB_SDA_CHG, PWR_CHG_SDA, PWR_CHG_MON, PWR_CHG_RSP, FROCHOTw_CPU, PWR_FROCHOTw_CPU, CHGR_PSY5_MVP, and CHGR_CHGR_PSY5. Each channel has a small icon of a person with a speech bubble next to it, indicating a communication or status check. The channels are numbered 1 through 16, with 1-8 on the left and 9-16 on the right.

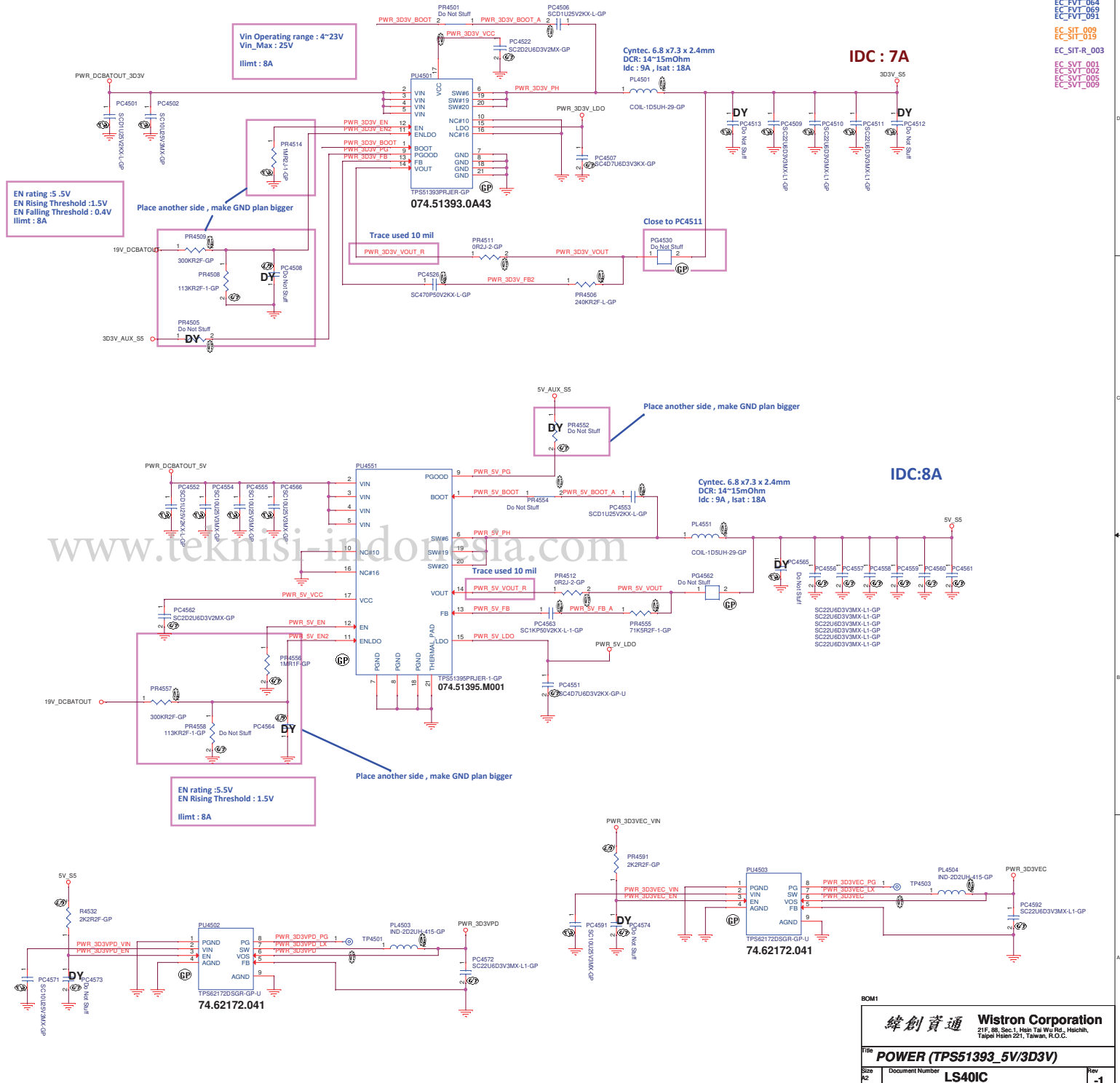
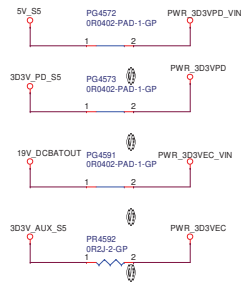
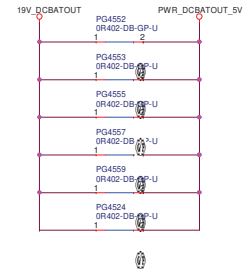
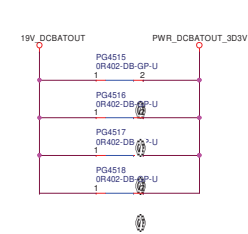
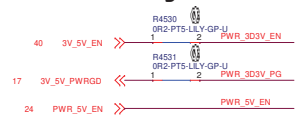


| | V(IL120) | PR6622 |
|-------|----------|--------|
| 500mA | 1.2V | 402K |
| 1.0A | 1.4V | 332K |
| 1.5A | 1.6V | 280K |
| 2.0A | 1.8V | 237K |
| 3.0A | 2.2V | 174K |
| 3.25A | 2.3V | 162K |

- | Inductor | R(IADP) | Fsw at POR |
|----------|----------|------------|
| 1.0uH | 93K ohm | 1200KHz |
| 1.5uH | 110K ohm | 800KHz |
| 2.2uH | 137K ohm | 800KHz |
| 3.3uH | 169K ohm | 800KHz |

0505
buyer: 7"

OFFPAGE-GAP



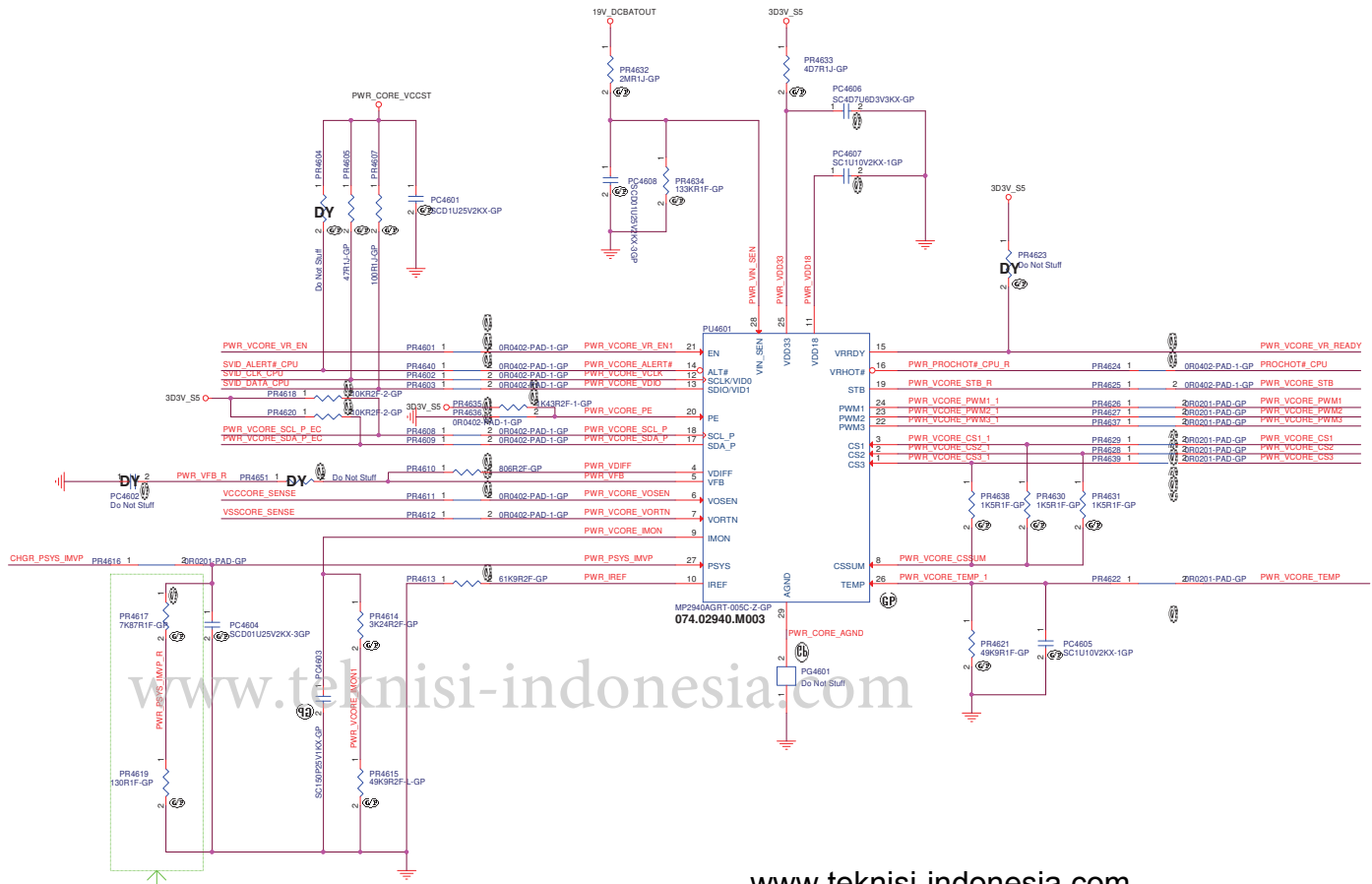
OFFPAGE
Check PIC-EE

| | | | |
|---------|--------------------|----|--------------------|
| 3,24,44 | PROCHOT#_CPU | << | PROCHOT#_CPU |
| 7 | SVD_CLK_CPU | << | SVD_CLK_CPU |
| 7 | SVD_DATA_CPU | << | SVD_DATA_CPU |
| 7 | SVD_ALERT#_CPU | << | SVD_ALERT#_CPU |
| 40 | PWR_VCORE_VR_EN | << | PWR_VCORE_VR_EN |
| 47 | PWR_VCORE_PWM1 | << | PWR_VCORE_PWM1 |
| 47 | PWR_VCORE_PWM2 | << | PWR_VCORE_PWM2 |
| 47 | PWR_VCORE_PWM3 | << | PWR_VCORE_PWM3 |
| 40 | PWR_VCORE_VR_READY | << | PWR_VCORE_VR_READY |
| 47 | PWR_VCORE_TEMP | << | PWR_VCORE_TEMP |
| 47 | PWR_VCORE_STB | << | PWR_VCORE_STB |
| 47 | PWR_VCORE_CS1 | << | PWR_VCORE_CS1 |
| 47 | PWR_VCORE_CS2 | << | PWR_VCORE_CS2 |
| 47 | PWR_VCORE_CS3 | << | PWR_VCORE_CS3 |
| 7 | VCCORE_SENSE | << | VCCORE_SENSE |
| 7 | VSSCORE_SENSE | << | VSSCORE_SENSE |
| 44 | CHGR_PSYS_MVP | << | CHGR_PSYS_MVP |

| | | | | | |
|-------|------------|----|----------|--------------|--------------------|
| 20,24 | EC_EC_SCL4 | << | PR4680 1 | Do Not Stuff | PWR_VCORE_SCL_P_EC |
| 20,24 | EC_EC_SDA4 | << | PR4681 1 | Do Not Stuff | PWR_VCORE_SDA_P_EC |



Reserve for Power test



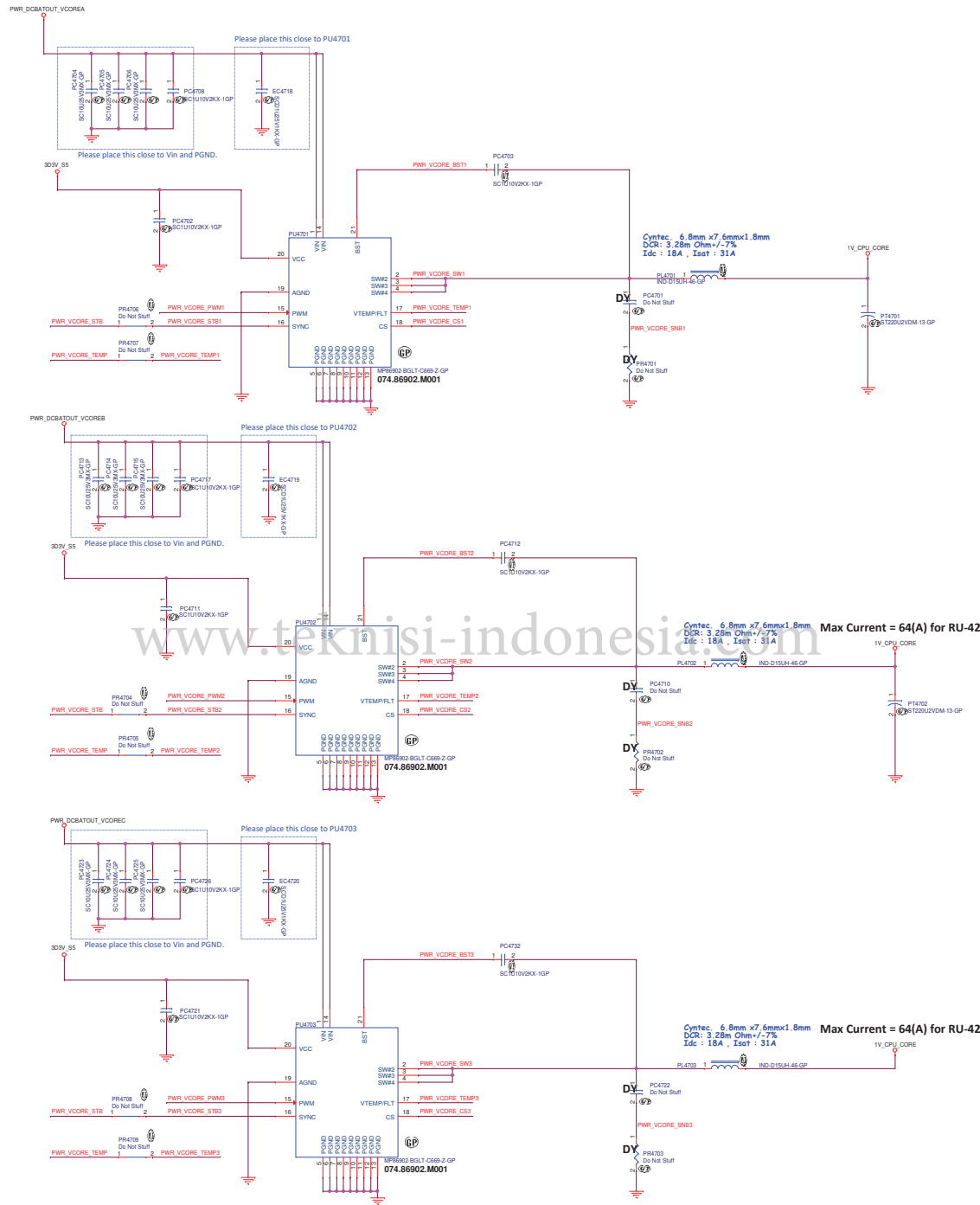
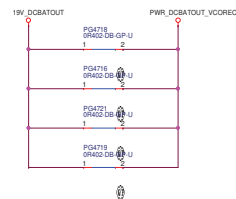
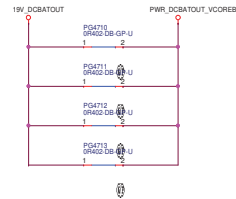
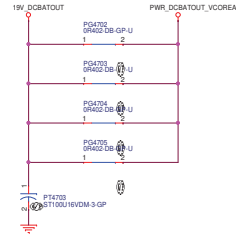
| TABLE : PSYS Pull Down Resistor (RPSYS) | | | | |
|---|-------|-----------|--------|--|
| ADC_VREF | IPSYS | PSYS_PMAX | RPSYS | |
| 0.8V | 1uA/W | 100W | 8K-ohm | |

www.teknisi-indonesia.com

EC_FVT_011
EC_FVT_029
EC_FVT_060
EC_FVT_065
EC_FVT_085
EC_SIT_001
EC_SIT_010
EC_SVT_001
EC_SVT_004

OFFPAGE

| | | | |
|----|----------------|----|----------------|
| 46 | PWR_VCORE_TEMP | >> | PWR_VCORE_TEMP |
| 46 | PWR_VCORE_STB | >> | PWR_VCORE_STB |
| 46 | PWR_VCORE_CS1 | >> | PWR_VCORE_CS1 |
| 46 | PWR_VCORE_CS2 | >> | PWR_VCORE_CS2 |
| 46 | PWR_VCORE_CS3 | >> | PWR_VCORE_CS3 |
| 46 | PWR_VCORE_PWM1 | >> | PWR_VCORE_PWM1 |
| 46 | PWR_VCORE_PWM2 | >> | PWR_VCORE_PWM2 |
| 46 | PWR_VCORE_PWM3 | >> | PWR_VCORE_PWM3 |



BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title POWER (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 48 of | 106 |

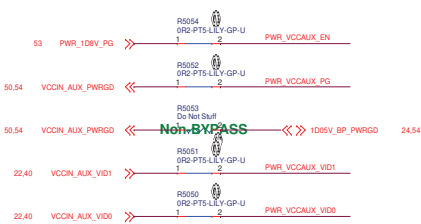
BLANK

www.teknisi-indonesia.com

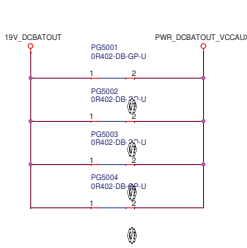
BOM1

| | |
|--|----------------------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | |
| Title POWER (RSVD) | |
| Size A4 | Document Number LS40IC |
| Date: Tuesday, August 06, 2019 | Rev -1 |
| Sheet 49 of 106 | |

OFFPAGE

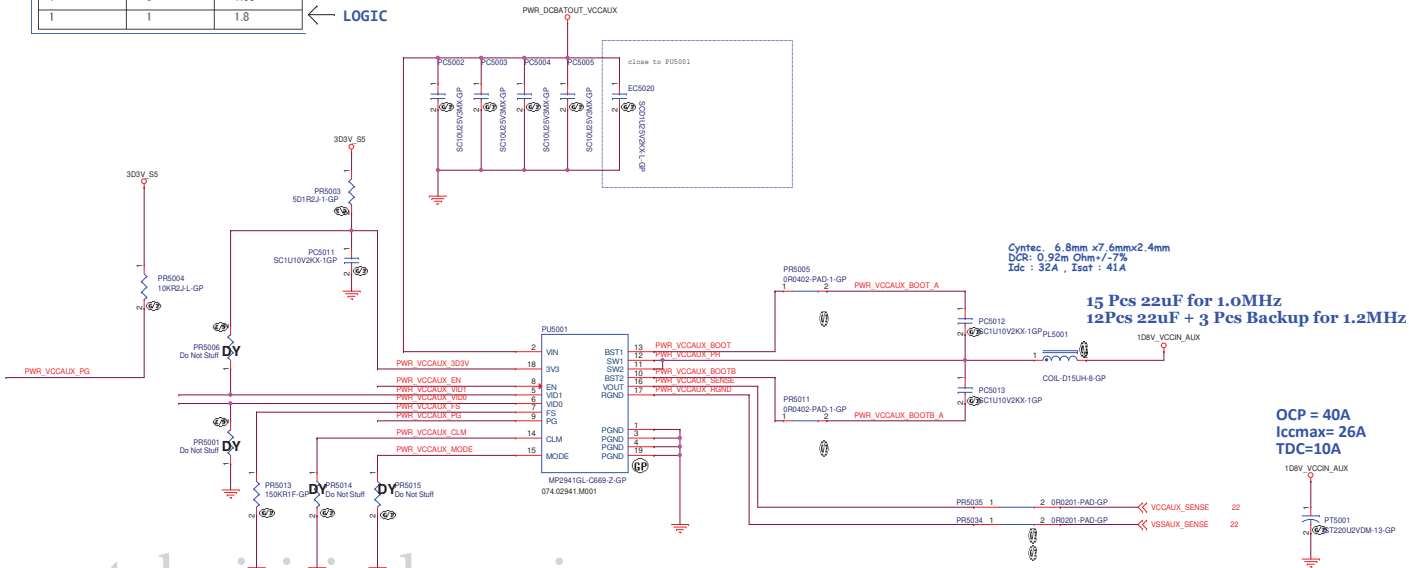


OFFPAGE_GAP



| VID1 | VID0 | VOUT(V) |
|------|------|---------|
| 0 | 0 | 0 |
| 0 | 1 | 1.1 |
| 1 | 0 | 1.65 |
| 1 | 1 | 1.8 |

← LOGIC



| RMode | Fs |
|----------------|---------|
| 0 | 500kHz |
| 90.9K | 700kHz |
| 150K | 1000kHz |
| >230K or float | 1200kHz |

→ LOGIC

| RCLM | CLM |
|----------------|-----|
| 0 | 7A |
| 90.9K | 10A |
| 150K | 13A |
| >230K or float | 16A |

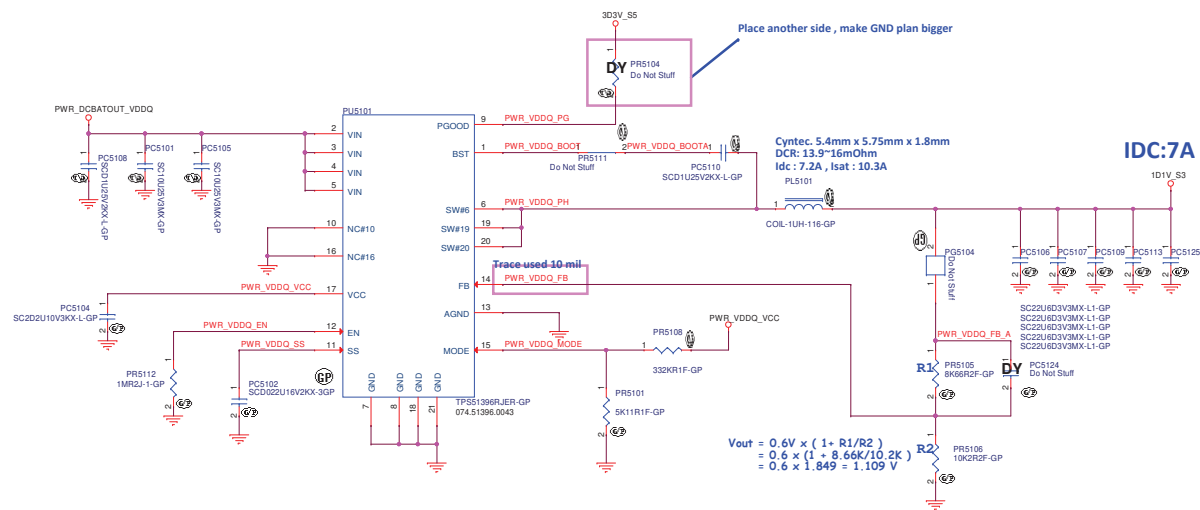
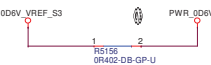
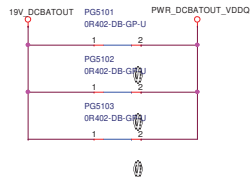
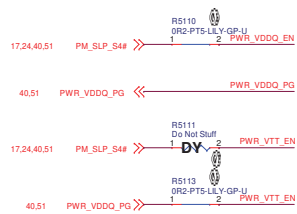
LOGIC

| RMode | Interleaving | VID Down |
|----------------|--------------|-----------|
| 0 | N | Slew down |
| 90.9K | Y | Slew down |
| 150K | Y | Decay |
| >230K or float | N | Decay |

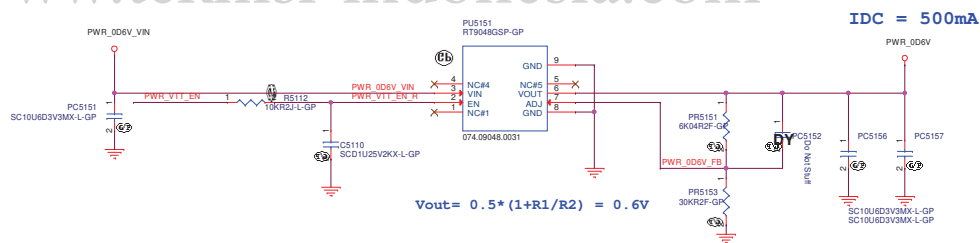
← LOGIC

| Item | R0 sample | R1 sample |
|---------------|-------------|---------------------------------|
| VOUT | 1.65V fixed | Defined by VCCPCHCORE_VID1/VID0 |
| RMode | 0 ohm | Float |
| RFS | Float | Float or 150K |
| 1Kohm bleeder | Necessary | Not necessary |

OFFPAGE-Signal



www.teknisi-indonesia.com



BLANK

www.teknisi-indonesia.com

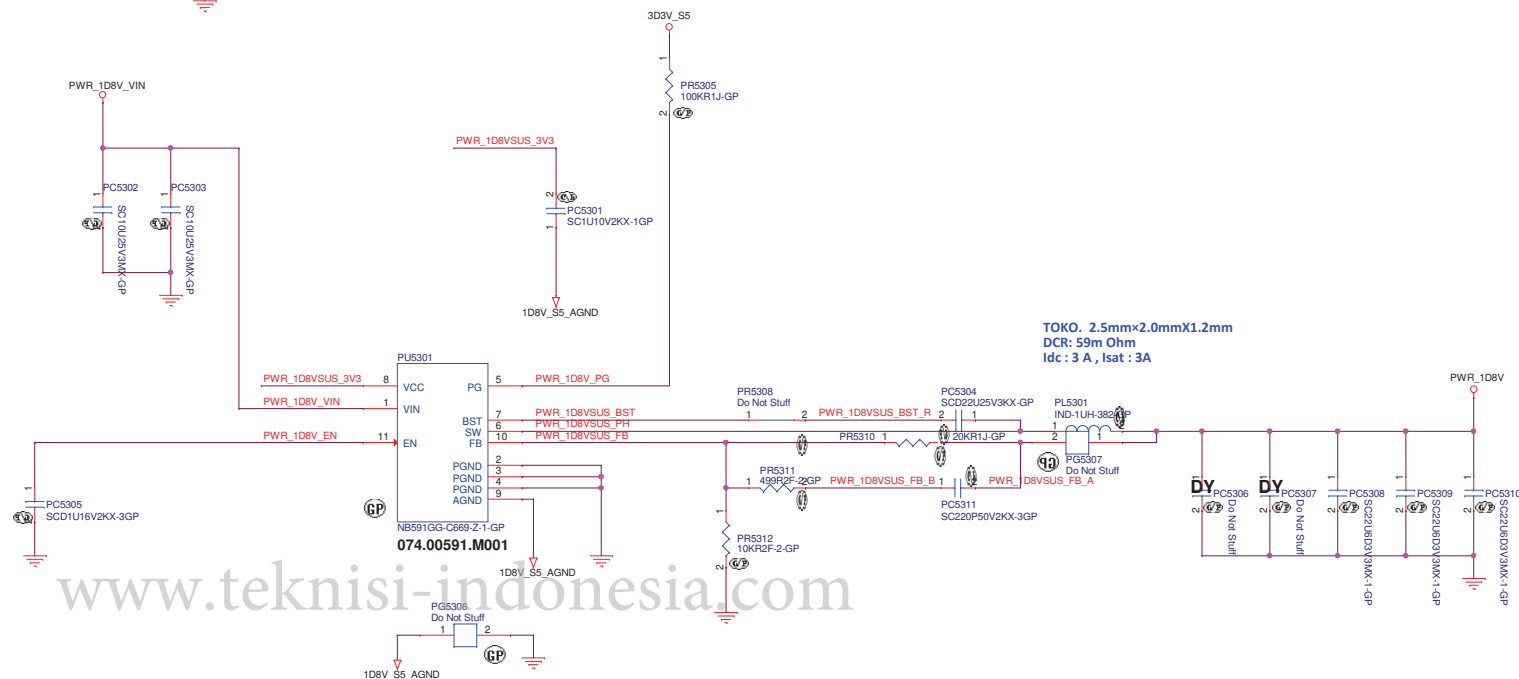
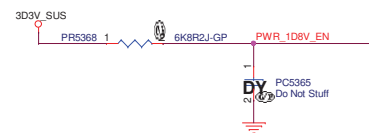
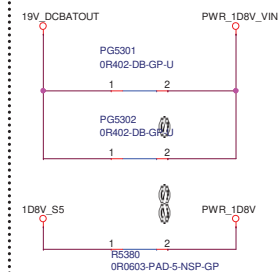
BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title POWER (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 52 of 106 |

OFFPAGE

50 PWR_1D8V_PG << PWR_1D8V_PG
17,24,40 PM_SLP_SUS# << PM_SLP_SUS#

OFFPAGE_GAP



www.teknisi-indonesia.com

BOM1

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichü, Taipei Hsien 221, Taiwan, R.O.C.

Title POWER (NB591/1D8V)

Size Custom Document Number LS401C

Date: Tuesday, August 06, 2019

Sheet 53 of 106

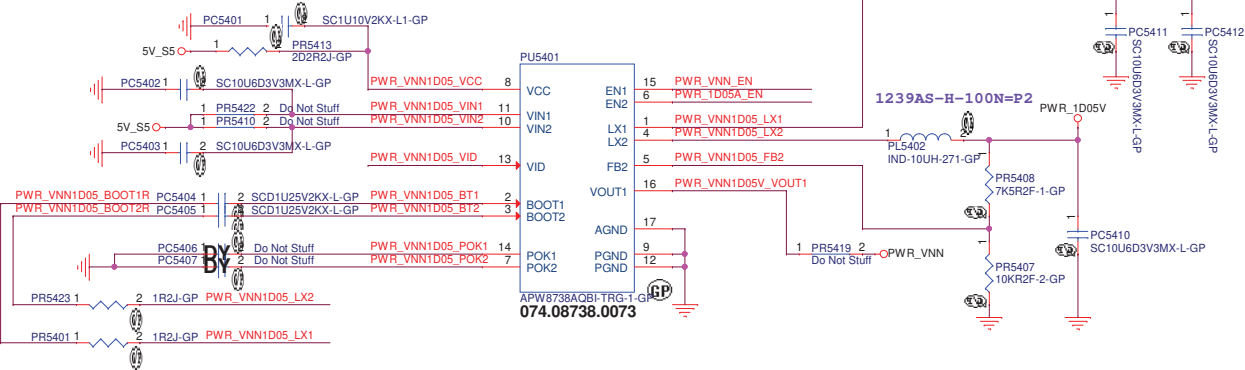
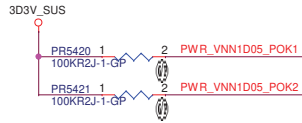
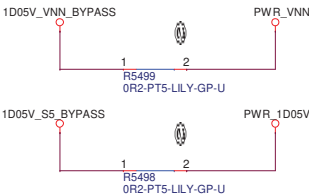
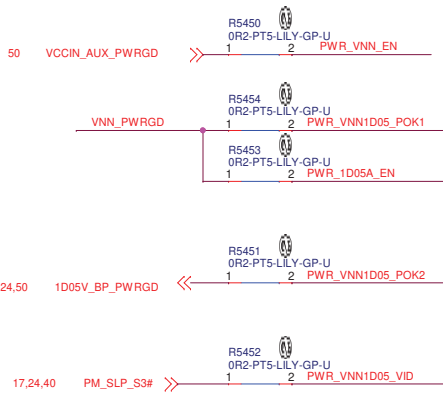
Rev -1

EC_FVT_010
EC_FVT_021
EC_FVT_029
EC_FVT_032
EC_FVT_048
EC_SVT_001
EC_SVT_004

OFFPAGE

OFFPAGE-GAP

EC_SVT_002
EC_SVT_004



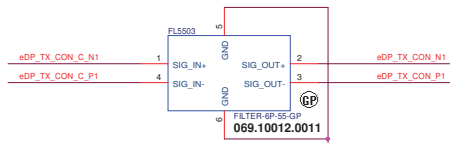
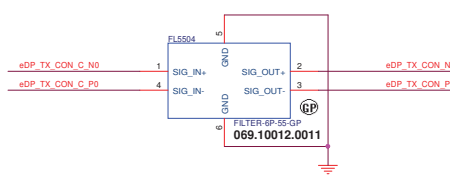
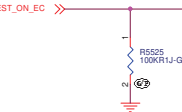
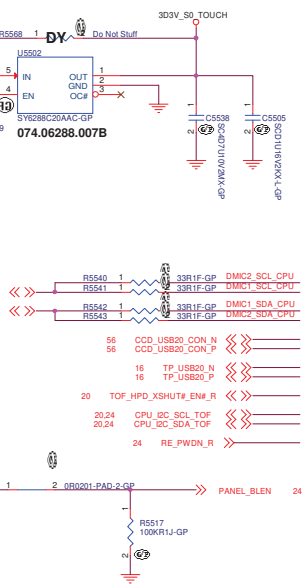
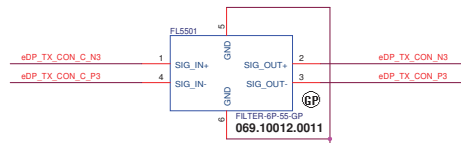
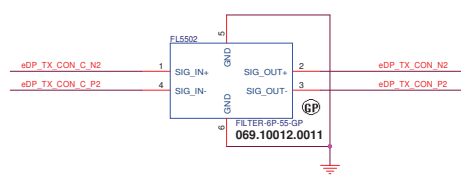
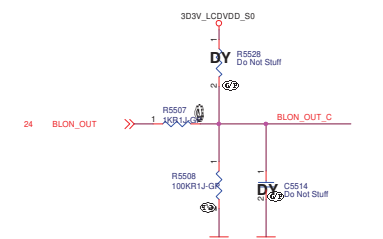
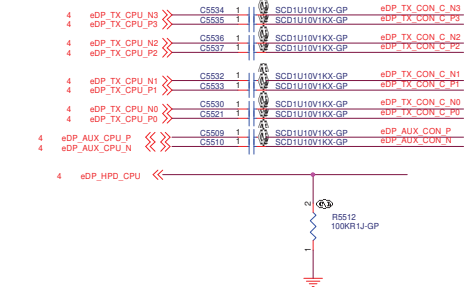
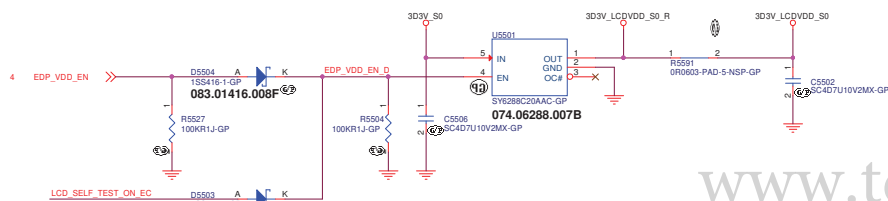
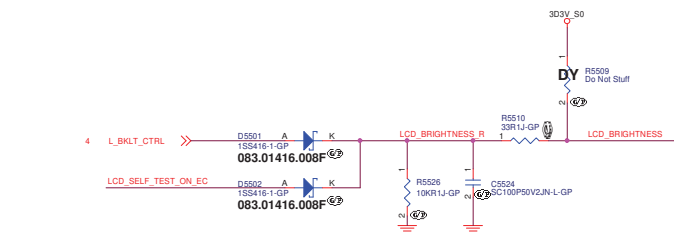
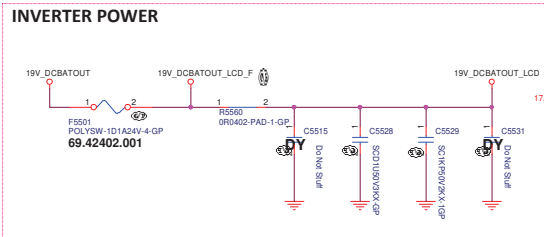
www.teknisi-indonesia.com

BOM1

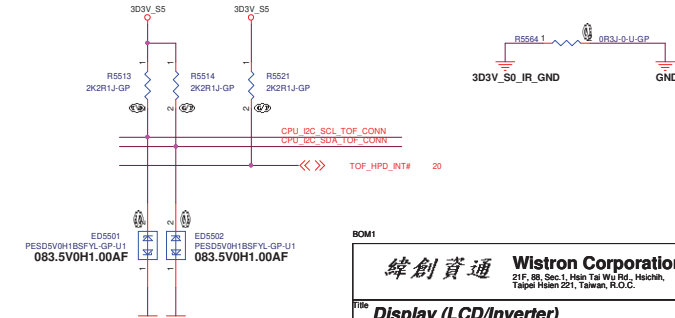
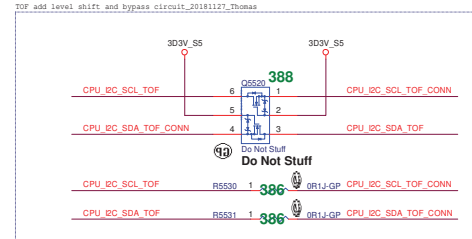
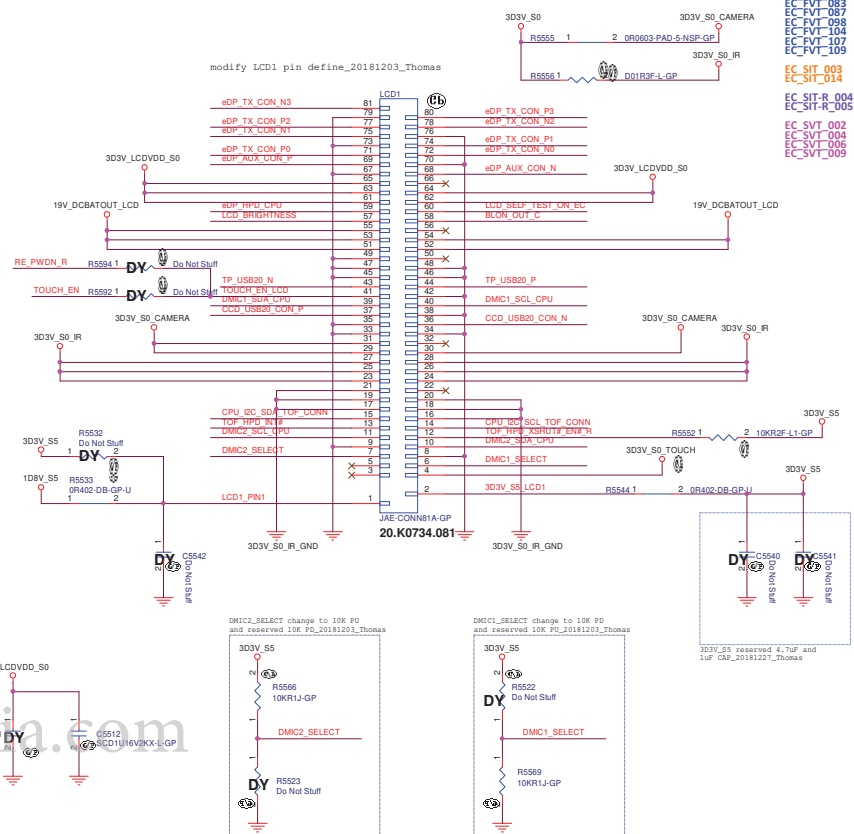
| | |
|--|------------------------|
| 偉創資通 Wistron Corporation | |
| 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title POWER(APW8738A_VNN1D05) | |
| Size Custom | Document Number LS401C |
| Date: Tuesday, August 06, 2019 | Sheet 54 of 106 |
| Rev -1 | |

Main Func = LCD

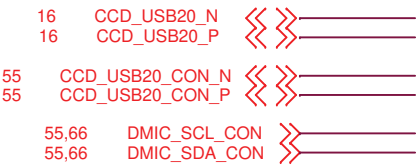
INVERTER POWER



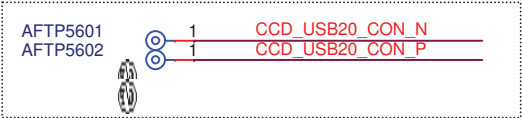
LCD Connector



(Off-Page)



TOP

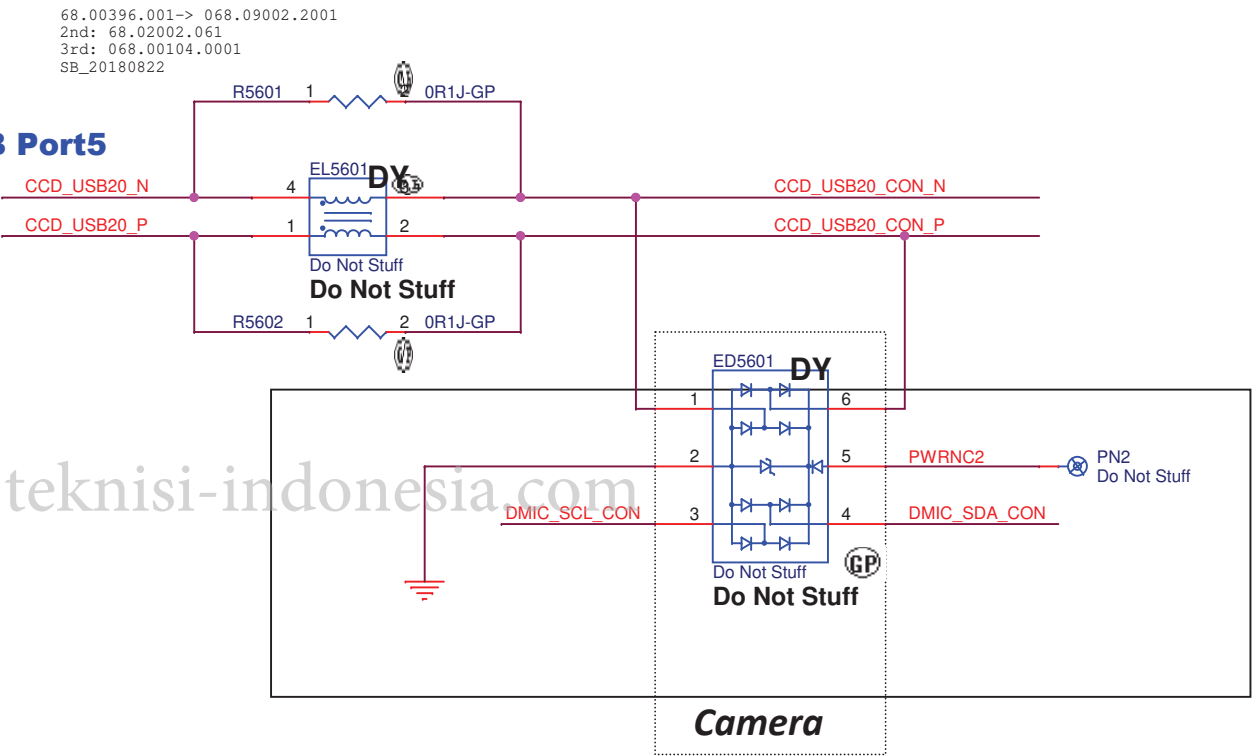


CCD CONN

EC_FVT_027

EC_SIT_016
EC_SIT_023

CAMERA_USB Port5



BOM1

| | | | |
|--------------------------------|----------------------------------|---|------------------|
| 緯創資通 | | Wistron Corporation | |
| | | 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title | | | |
| Display (CRT/IR Camera) | | | |
| Size A4 | Document Number LS40IC | | Rev -1 |
| Date: | Tuesday, August 06, 2019 | Sheet 56 of | 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Display (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 57 of | 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Display (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 58 of | 106 |

BLANK

www.teknisi-indonesia.com


BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Display (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 59 of 106 |

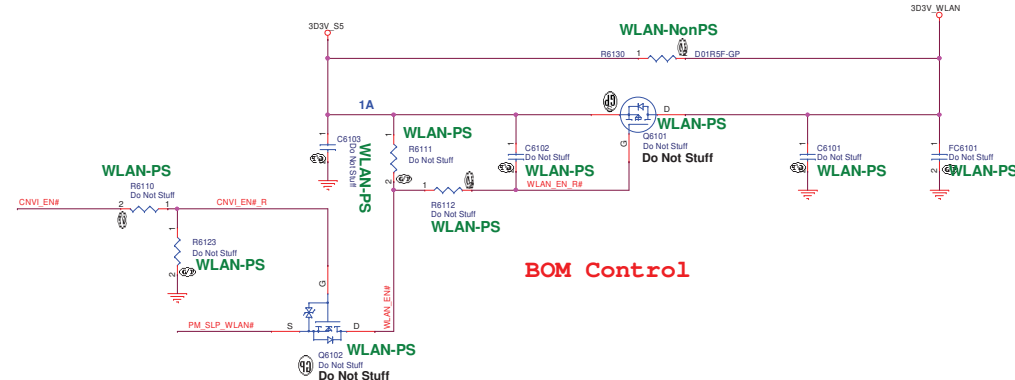
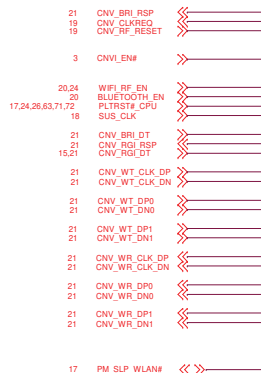
BLANK

www.teknisi-indonesia.com

BOM1

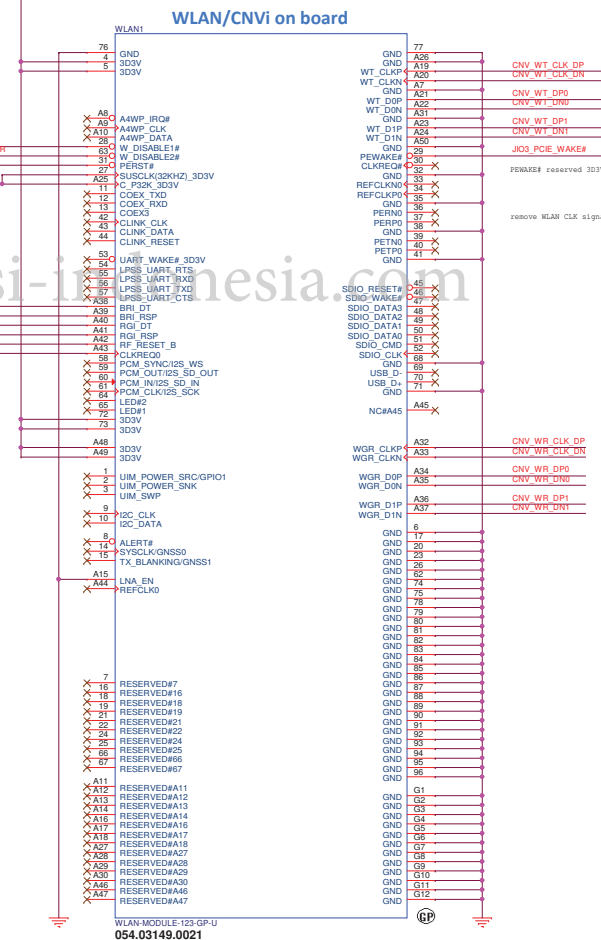
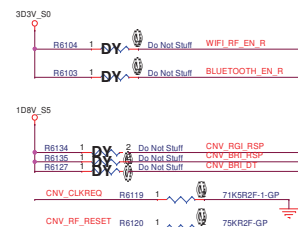
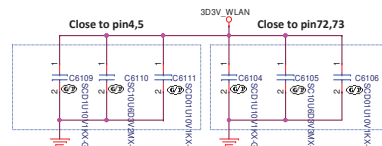
| | | |
|---|----------------------------------|---|
|  | | Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. |
| Title INT IO (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 60 of 106 |

(Off-Page)



BOM Control

C6110 change size to 0402 20181203 Thomas



054.03149.0021

BOM1

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.


Title **INT IO (WLAN /CNVI)**

| | | |
|------------|---------------------------|-----|
| Size A2 | Document Number LS401C | Rev |
|------------|---------------------------|-----|

Date: Tuesday, August 06, 2019 Sheet: 61 of 106

BLANK
www.teknisi-indonesia.com

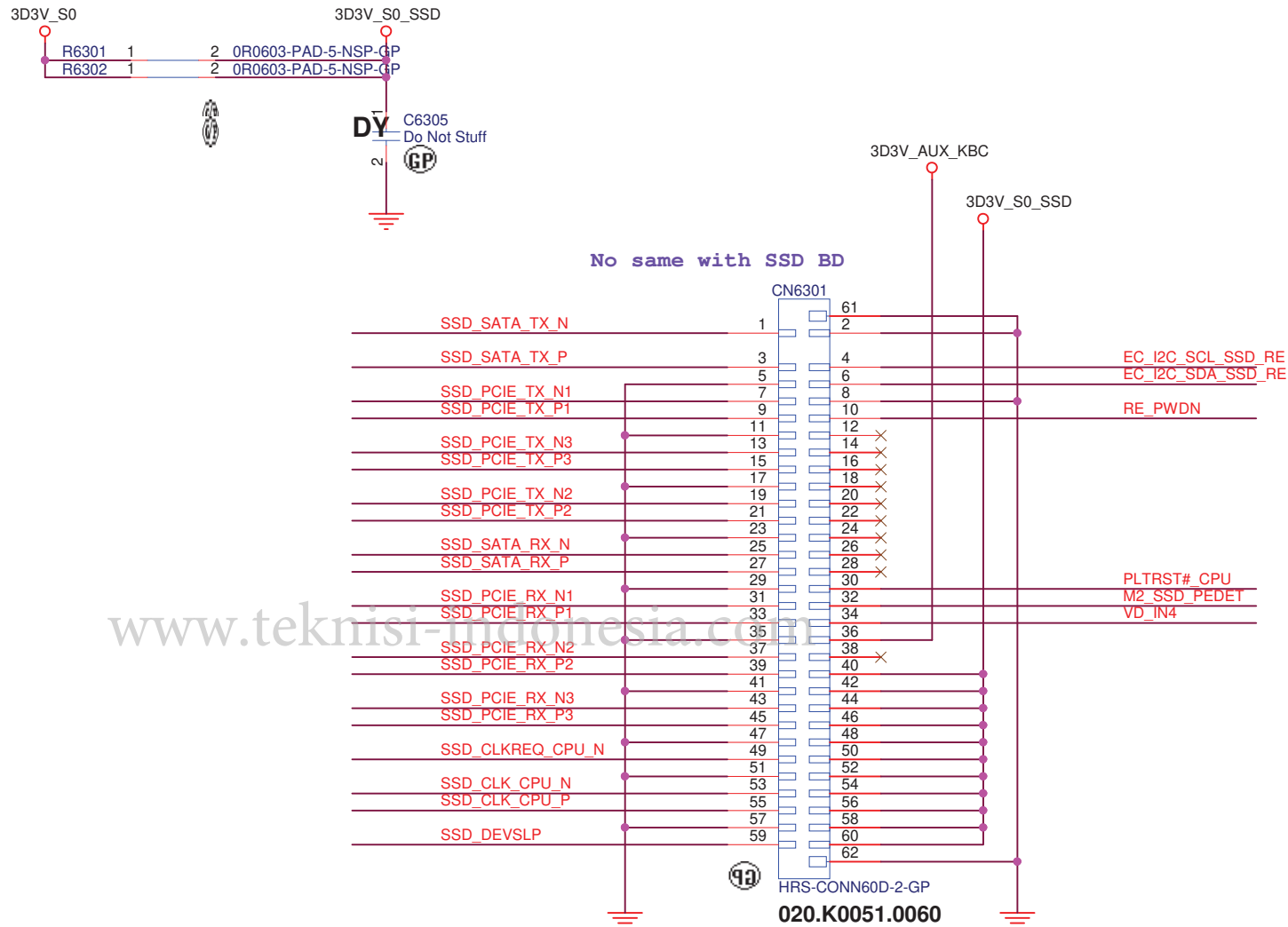
BOM1

| | | |
|---|----------------------------------|---|
|  | | Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. |
| Title INT IO (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 62 of 106 |

SSD CONN

(Off-Page)

| | | | | |
|-------------------|-------------------|----|----|--|
| 24 | EC_I2C_SCL_SSD_RE | << | >> | |
| 24 | EC_I2C_SDA_SSD_RE | << | >> | |
| 18 | SSD_CLK_CPU_N | << | >> | |
| 18 | SSD_CLK_CPU_P | << | >> | |
| 18 | SSD_CLKREQ_CPU_N | << | >> | |
| 17,24,26,61,71,72 | PLTRST#_CPU | << | >> | |
| 16 | SSD_DEVSLP | << | >> | |
| 16 | M2_SSD_PEDET | << | >> | |
| 24 | VD_IN4 | << | >> | |
| 16 | SSD_SATA_TX_P | << | >> | |
| 16 | SSD_SATA_TX_N | << | >> | |
| 16 | SSD_SATA_RX_P | << | >> | |
| 16 | SSD_SATA_RX_N | << | >> | |
| 16 | SSD_PCIE_TX_P1 | << | >> | |
| 16 | SSD_PCIE_TX_N1 | << | >> | |
| 16 | SSD_PCIE_RX_P1 | << | >> | |
| 16 | SSD_PCIE_RX_N1 | << | >> | |
| 16 | SSD_PCIE_TX_P2 | << | >> | |
| 16 | SSD_PCIE_TX_N2 | << | >> | |
| 16 | SSD_PCIE_RX_P2 | << | >> | |
| 16 | SSD_PCIE_RX_N2 | << | >> | |
| 16 | SSD_PCIE_TX_P3 | << | >> | |
| 16 | SSD_PCIE_TX_N3 | << | >> | |
| 16 | SSD_PCIE_RX_P3 | << | >> | |
| 16 | SSD_PCIE_RX_N3 | << | >> | |
| 24 | RE_PWDN | << | >> | |



www.teknisi-indonesia.com

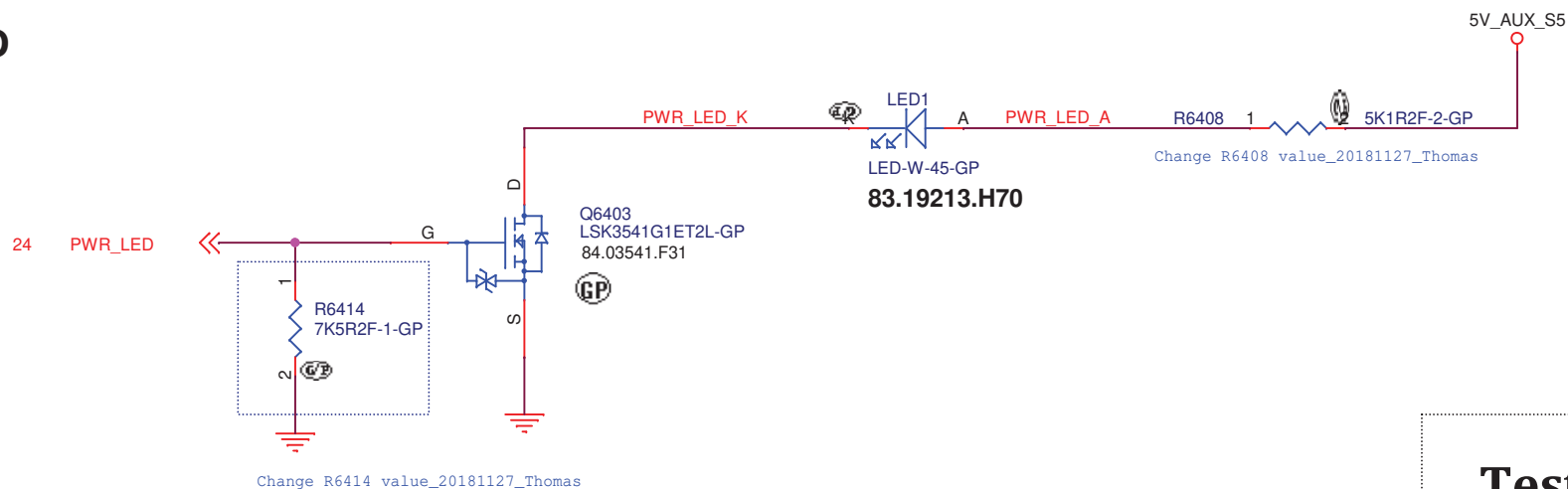
BOM1

| | | | |
|--|---|---|-------------------------|
| 緯創資通 | | Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title <i>INT IO (SSD M.2/ eMMC)</i> | | | |
| Size A4 | Document Number LS40IC | | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 63 | of 106 |

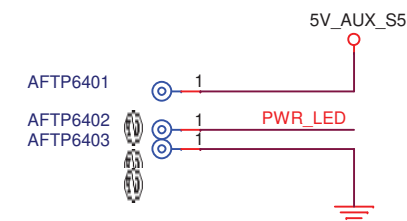
LED

EC_FVT_015

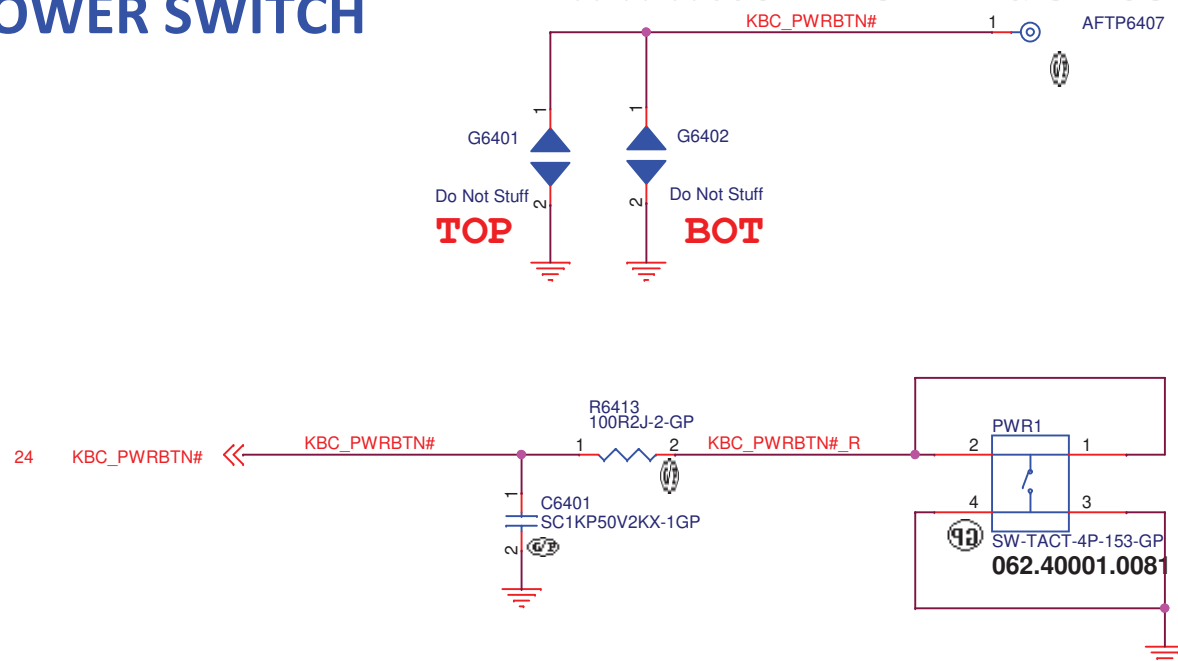
PWR LED



Test point



KBC_PWRBTN# POWER SWITCH



BOM1

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

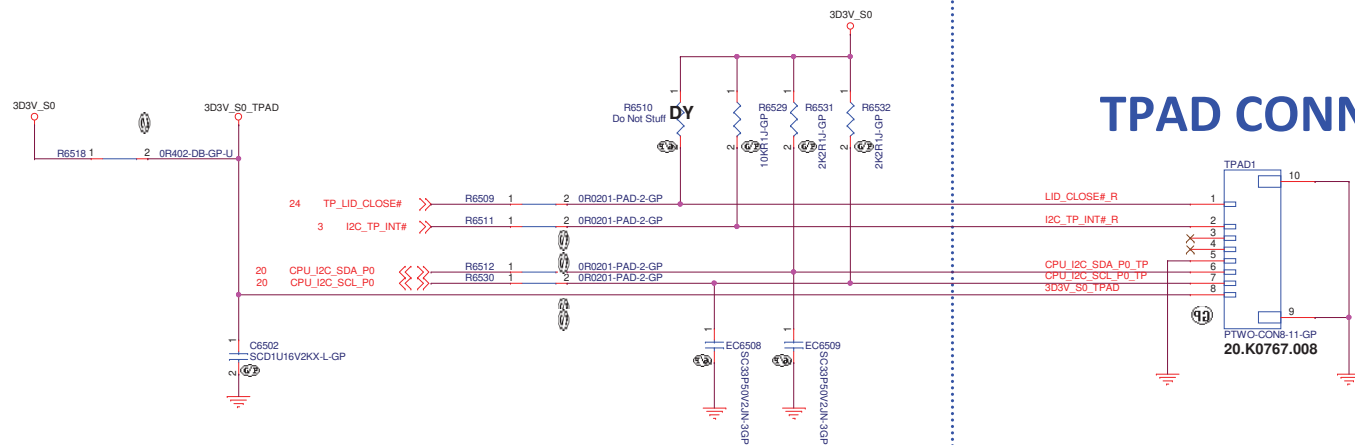
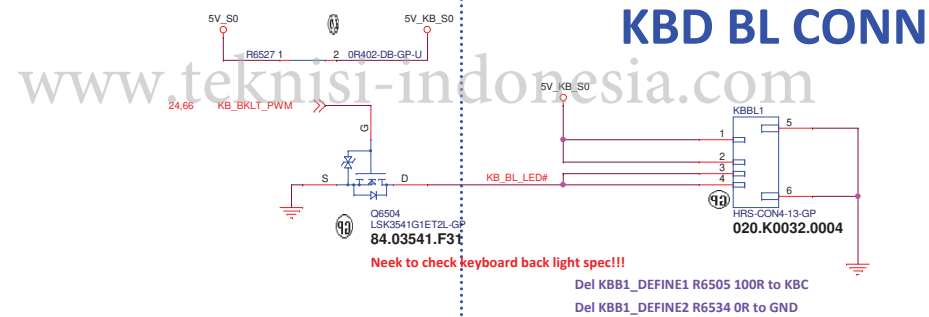
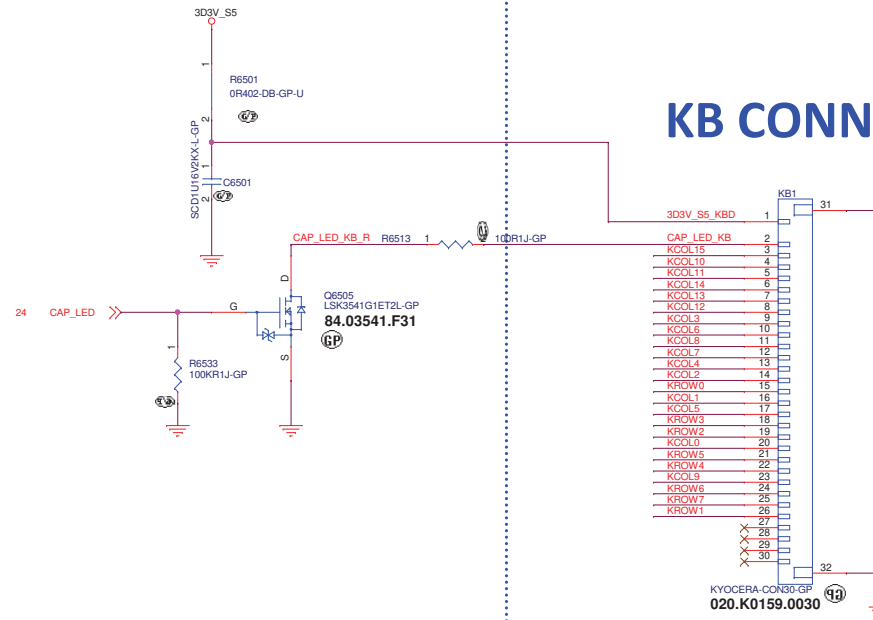
Title **LED / Power Button / NOVO**

Size A4 Document Number **LS40IC**

Date: Tuesday, August 06, 2019 Sheet 64 of 106 Rev -1

(Off-Page)

24 KCOL[15:0] >>>
24 KROW[7:0] <<<



BOM1

緯創資通 Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title **INT IO (KB/TP)**

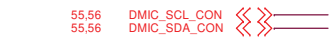
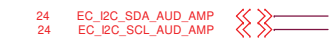
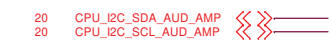
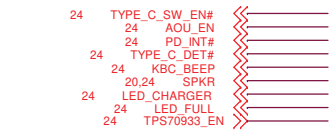
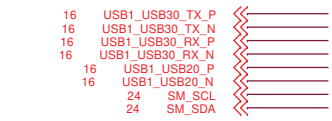
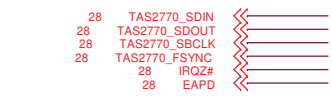
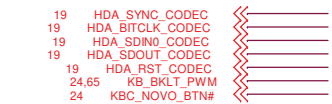
Size Custom Document Number **LS401C**

Date: Tuesday, August 06, 2019

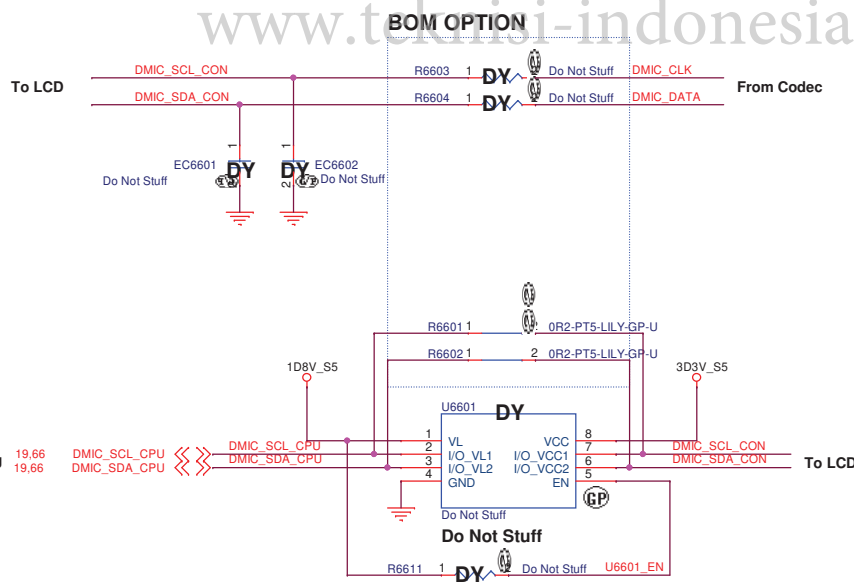
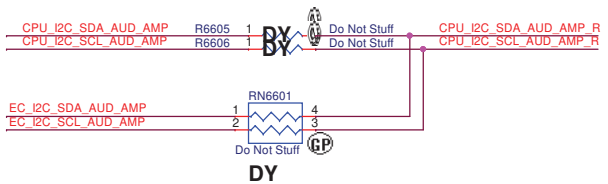
Sheet 65 of 106

Rev -1

(Off-Page)

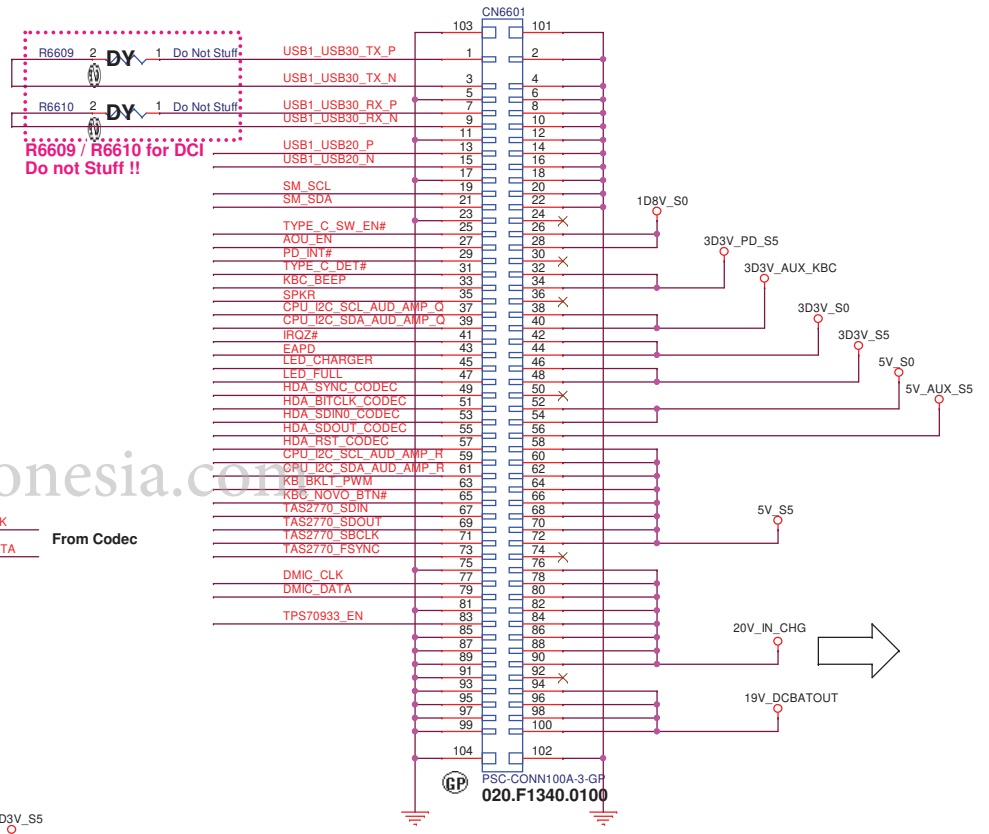


TOP



TO IOBD CONN

modify CN6601 pin define_20181127_Thomas



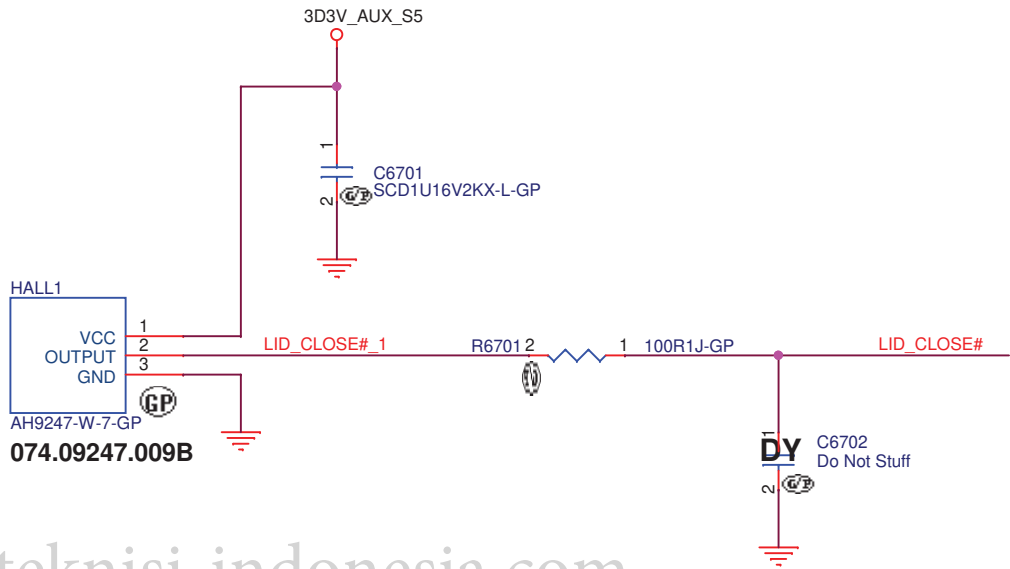
BOM1

| | |
|---|------------------------|
| 緯創資通 Wistron Corporation | |
| 21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title IO Board Conn (TYPEC/AUDIO) | |
| Size A3 | Document Number LS40IC |
| Date: Tuesday, August 06, 2019 | Sheet 66 of 106 |
| Rev -1 | |

(Off-Page)

24 LID_CLOSE# <<—

HALL SENSOR



www.teknisi-indonesia.com

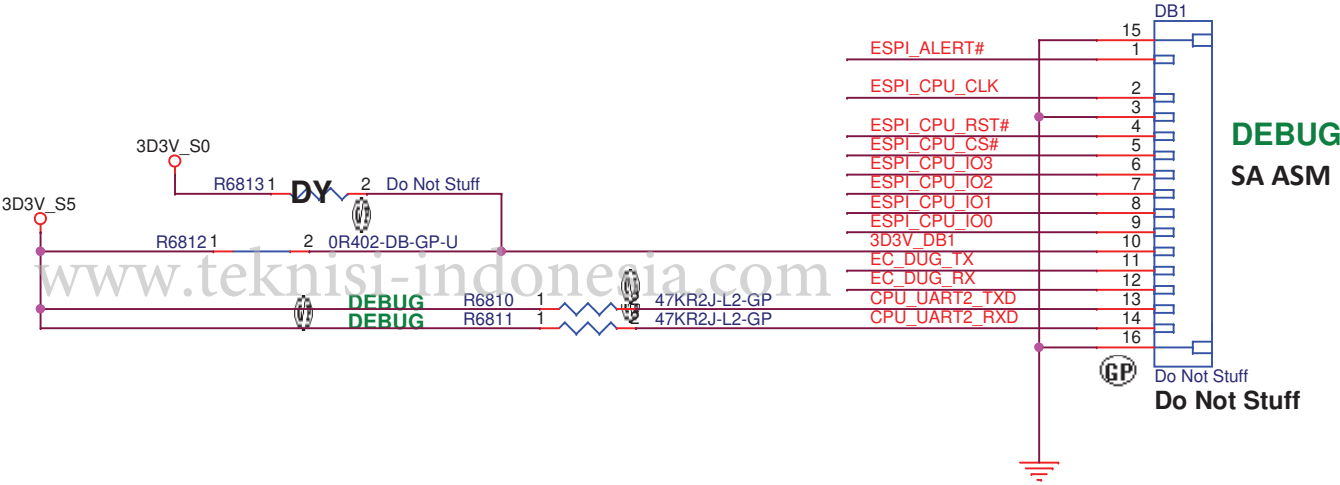
BOM1

| | | | |
|-----------------------------|----------------------------------|---|------------------|
| 緯創資通 | | Wistron Corporation | |
| | | 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | |
| Title | | | |
| Sensor (Hall-Sensor) | | | |
| Size A4 | Document Number LS40IC | | Rev -1 |
| Date: | Tuesday, August 06, 2019 | Sheet 67 of | 106 |

(Off-Page)

| | | | |
|-------|---------------|--------|--|
| 20 | CPU_UART2_TXD | <<<>>> | |
| 20 | CPU_UART2_RXD | <<<>>> | |
| 24 | ESPI_ALERT# | <<<>>> | |
| 18,24 | ESPI_CPU_CLK | <<<>>> | |
| 18,24 | ESPI_CPU_RST# | <<<>>> | |
| 24 | EC_DUG_RX | <<<>>> | |
| 24 | EC_DUG_TX | <<<>>> | |
| 18,24 | ESPI_CPU_CS# | <<<>>> | |
| 18,24 | ESPI_CPU_IO3 | <<<>>> | |
| 18,24 | ESPI_CPU_IO2 | <<<>>> | |
| 18,24 | ESPI_CPU_IO1 | <<<>>> | |
| 18,24 | ESPI_CPU_IO0 | <<<>>> | |

EC_FVT_046
EC_FVT_050
EC_FVT_090
EC_FVT_099
EC_SVT_002



BOM1

| | | | | | |
|---------------------------------|-------------------------------|--|--|----|------------------|
| 緯創資通 | | | Wistron Corporation | | |
| | | | 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. | | |
| Title Debug (ESPI debug) | | | | | |
| Size A4 | Document Number LS40IC | | | | Rev -1 |
| Date: | Tuesday, August 06, 2019 | | Sheet | 68 | of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Sensor (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 69 of 106 |

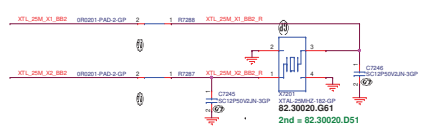
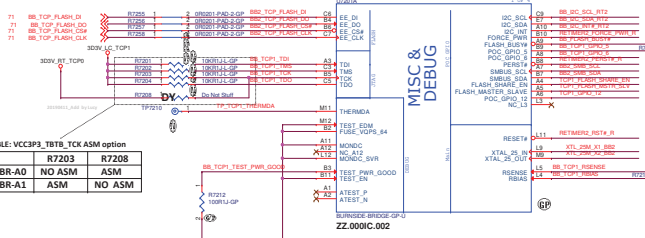
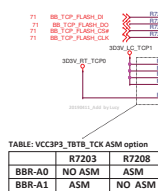
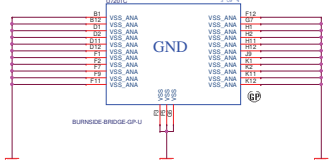
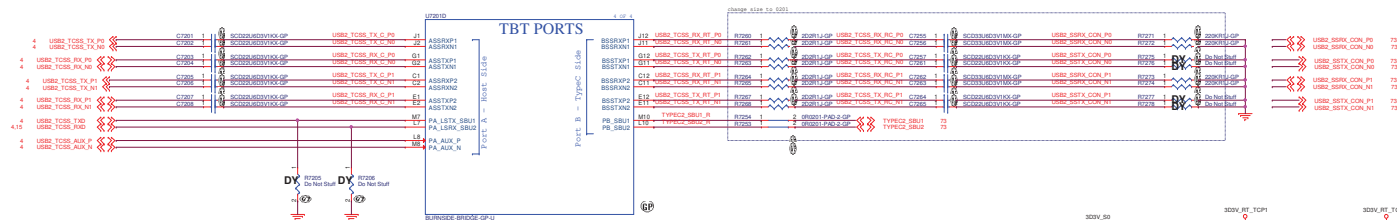
BLANK

www.teknisi-indonesia.com

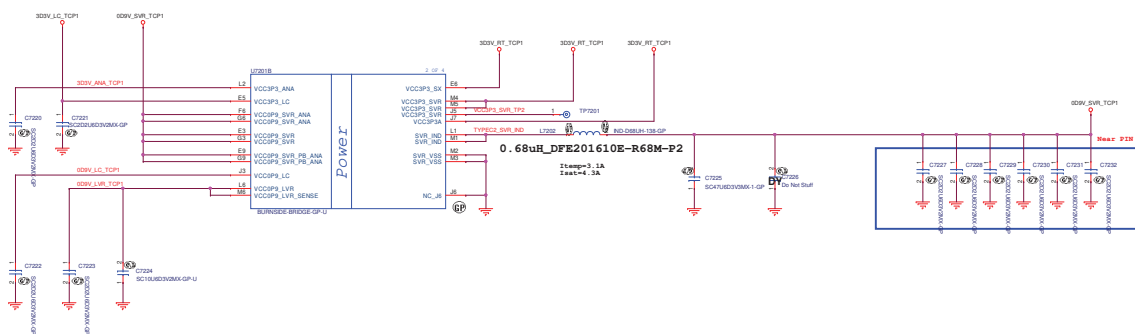
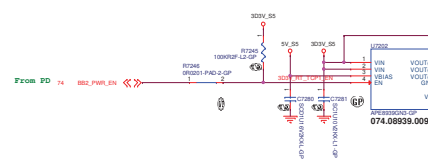
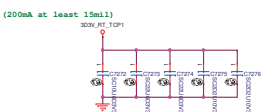
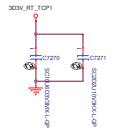
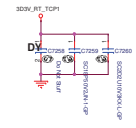
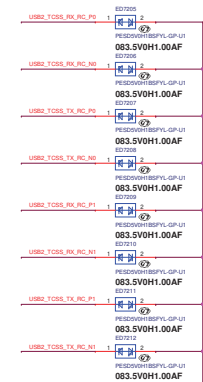
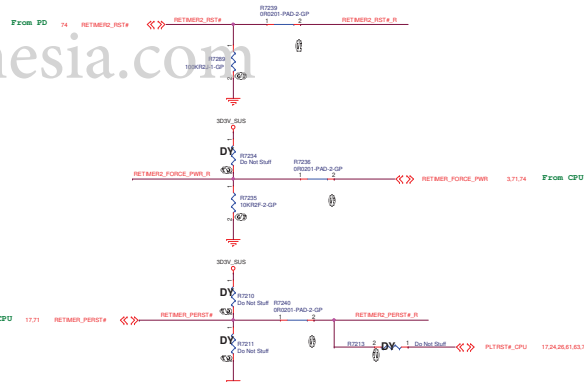
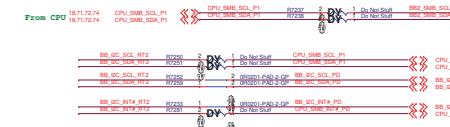
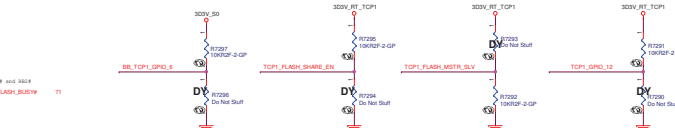
BOM1

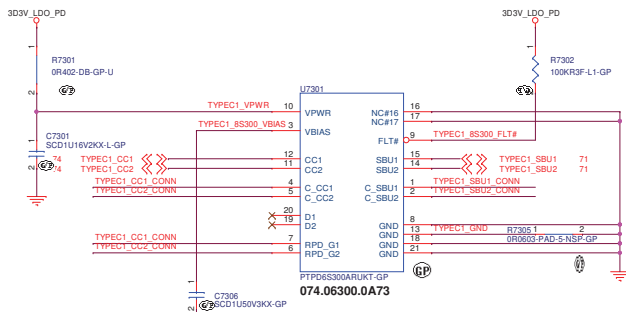
| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Sensor (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 70 of 106 |





| X7201 (25MHz) | C7245 | C7246 |
|---------------------|-------|-------|
| TXC 82.30020.G61 | 12pF | 12pF |
| TXC 82.30020.D51 | 12pF | 12pF |

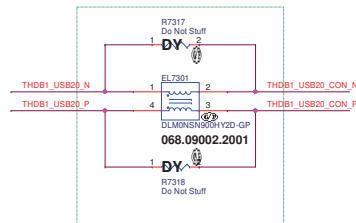




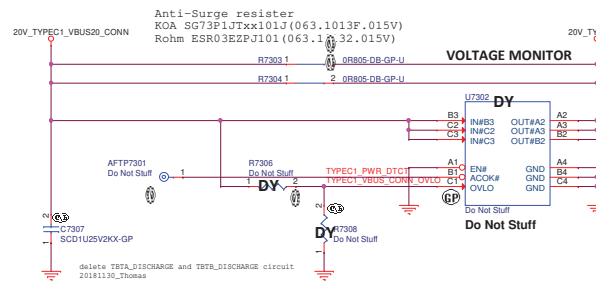
The VBIAS pin requires a minimum 35-VDC rated capacitor, and a 50-VDC rated capacitor is recommended.

Pre-MP version : 074.06300.0A73 PTPD6S300ARUKT
MP version : 074.17100.0073 SN1710033RUKR

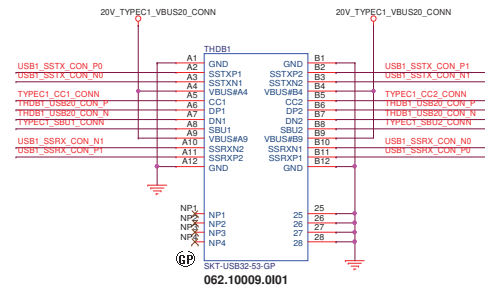
Co-layout



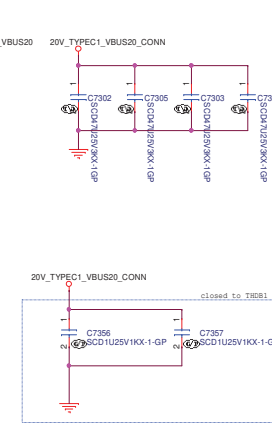
- 71 USB1_SSRX_CON_P0
- 71 USB1_SSRX_CON_N0
- 71 USB1_SSTX_CON_N0
- 71 USB1_SSTX_CON_P0
- 71 USB1_SSRX_CON_P1
- 71 USB1_SSRX_CON_N1
- 71 USB1_SSTX_CON_N1
- 71 USB1_SSTX_CON_P1
- 16,74 THTB1_USB20_N
- 16,74 THTB1_USB20_P



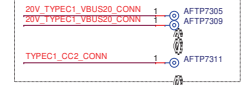
TBT Port1 (TBT/USB3.1/DP/PD)



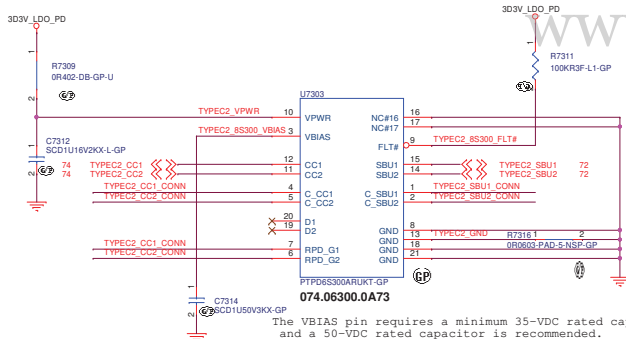
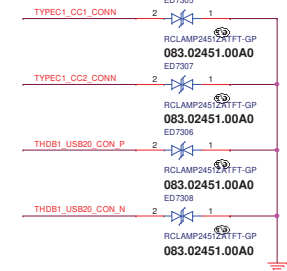
062.10009.0101



TOP



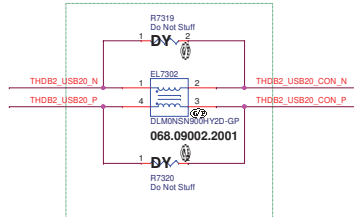
BOT



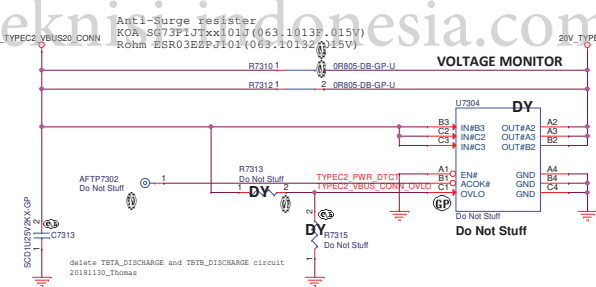
The VBIAS pin requires a minimum 35-VDC rated capacitor, and a 50-VDC rated capacitor is recommended.

Pre-MP version : 074.06300.0A73 PTPD6S300ARUKT
MP version : 074.17100.0073 SN1710033RUKR

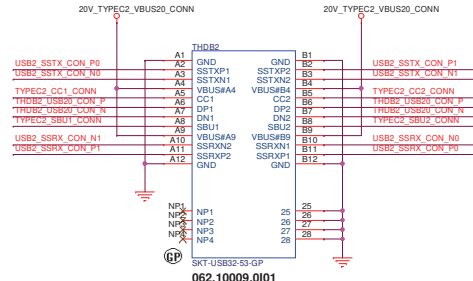
Co-layout



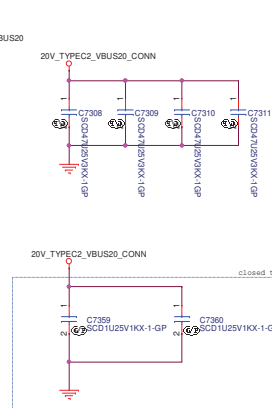
- 72 USB2_SSRX_CON_P0
- 72 USB2_SSRX_CON_N0
- 72 USB2_SSTX_CON_N0
- 72 USB2_SSTX_CON_P0
- 72 USB2_SSRX_CON_P1
- 72 USB2_SSRX_CON_N1
- 72 USB2_SSTX_CON_N1
- 72 USB2_SSTX_CON_P1
- 16,74 THTB2_USB20_N
- 16,74 THTB2_USB20_P



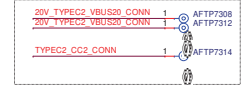
TBT Port2 (TBT/USB3.1/DP/PD)



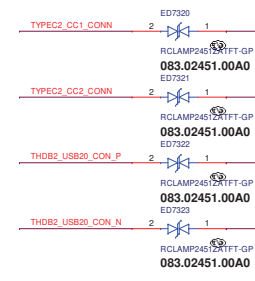
062.10009.0101



TOP



BOT

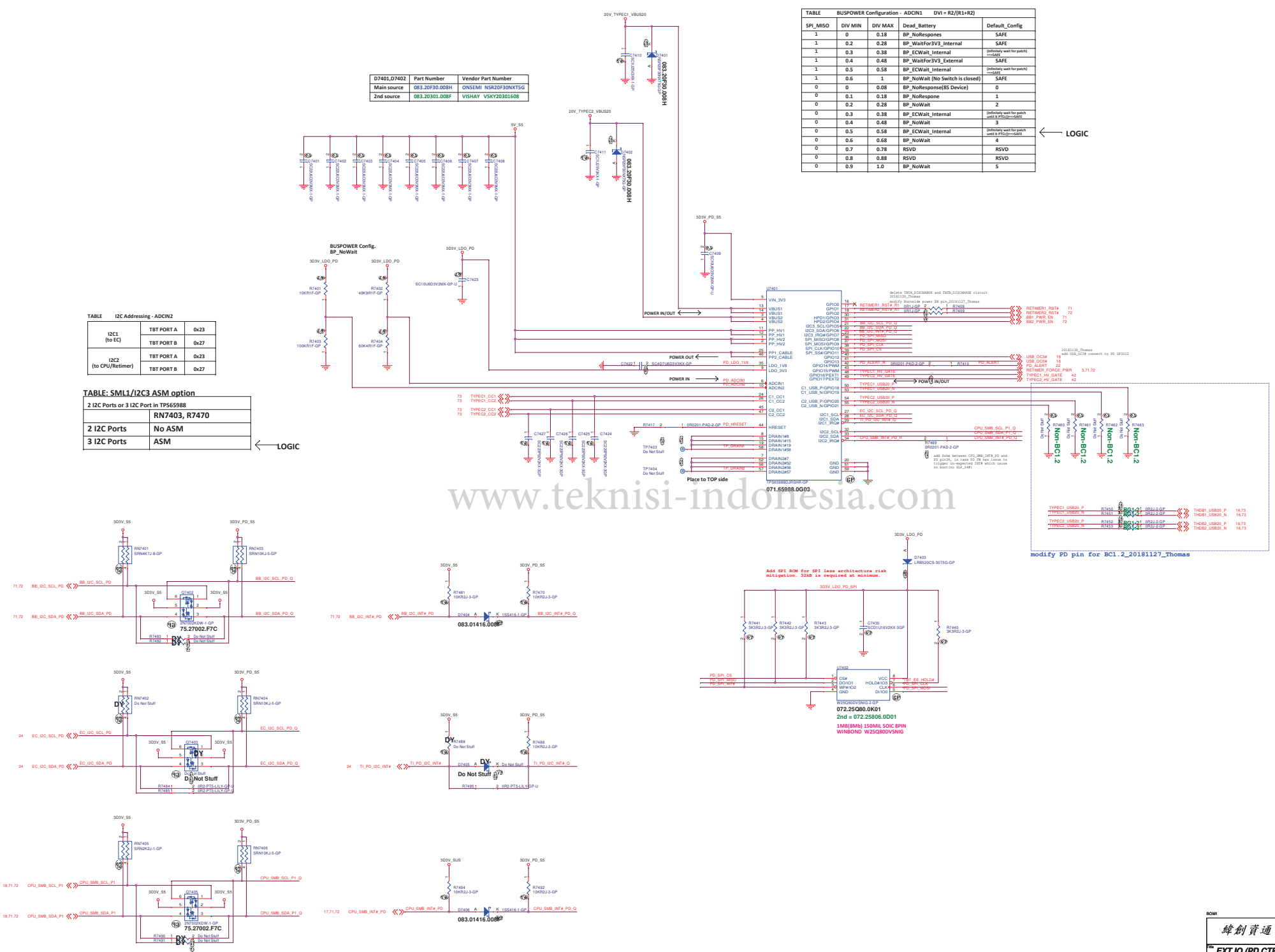


BOM1

| | |
|--|-------------------------------|
| 緯創資通 Wistron Corporation 21F, 8B, Sec.1, Hsin Tai Wu Rd., Hsuehchu, Taichung Hsien 421, Taiwan, R.O.C. | |
| EXT IO (TBT Conn) | |
| Size A2 | Document Number LS40IC |
| Date: Tuesday, August 06, 2019 | Sheet 72 of 108 |

| TABLE | BUSPOPPER Configuration | | | ADOC11 | DVI = R2/(R1+R2) | Default_Config |
|----------|-------------------------|---------|---------------------------------|--------------------------|------------------|----------------------------------|
| SPR_MISO | DIV_MIN | DIV_MAX | DIV_MAD | BP_NoResponse | | |
| 1 | 0 | 0 | 0.18 | BP_NoResponses | | SAFE |
| 1 | 0.2 | 0.28 | BP_NoWaitFor3S_Internal | | | SAFE |
| 1 | 0.3 | 0.38 | BP_ECWait_Internal | | | (SAFE with per patch = 0.000) |
| 1 | 0.4 | 0.48 | BP_NoWaitFor3S_External | | | (SAFE with per patch = 0.000) |
| 1 | 0.5 | 0.58 | BP_ECWait_Internal | | | (SAFE with per patch = 0.000) |
| 1 | 0.6 | 0.6 | BP_NoWait (No Switch is closed) | | | SAFE |
| 0 | 0 | 0 | 0.08 | BP_NoResponse(ES Device) | | 0 |
| 0 | 0 | 0.1 | 0.18 | BP_NoResponse | | 0 |
| 0 | 0.2 | 0.28 | BP_NoWait | | | 1 |
| 0 | 0.3 | 0.38 | BP_ECWait_Internal | | | (SAFE with per patch = 0.000) |
| 0 | 0.4 | 0.48 | BP_NoWait | | | 3 |
| 0 | 0.5 | 0.58 | BP_ECWait_Internal | | | (SAFE with per patch = 0.000) |
| 0 | 0.6 | 0.6 | BP_NoWait | | | 4 |
| 0 | 0.7 | 0.78 | RSVD | | | RSVD |
| 0 | 0.8 | 0.88 | RSVD | | | RSVD |
| 0 | 0.9 | 0.9 | BP_NoWait | | | 5 |

| | |
|---------------------------------------|---------------|
| 2 I2C Ports or 3 I2C Port in TPS65988 | |
| | RN7403, R7470 |
| 2 I2C Ports | No ASM |
| 3 I2C Ports | ASM |



BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|---------------------------|-----------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title EXT IO (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 75 of | 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|---------------------------|-----------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title GPU (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 76 of | 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|---------------------------|-----------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title GPU (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 78 of | 106 |

LENOVO CONFIDENTIAL

BLANK

www.teknisiindonesia.com

Wistron Taipei to CSD team Review

| | | |
|---|------------------------|-----------------|
| BOM1 | | |
| <div>緯創資通Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title GPU (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 79 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|---------------------------|-----------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title GPU (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 81 of | 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | |
|--|---------------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | |
| Title GPU (RSVD) | |
| Size A4 | Document Number LS40IC |
| Date Tuesday, August 06, 2019 | Rev -1 |
| Sheet 84 of 106 | |

BLANK

www.teknisi-indonesia.com

BOM1

| | |
|--|---------------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | |
| Title GPU (RSVD) | |
| Size A4 | Document Number LS40IC |
| Date Tuesday, August 06, 2019 | Rev -1 |
| Sheet 85 of 106 | |

BLANK

www.teknisi-indonesia.com

BOM1

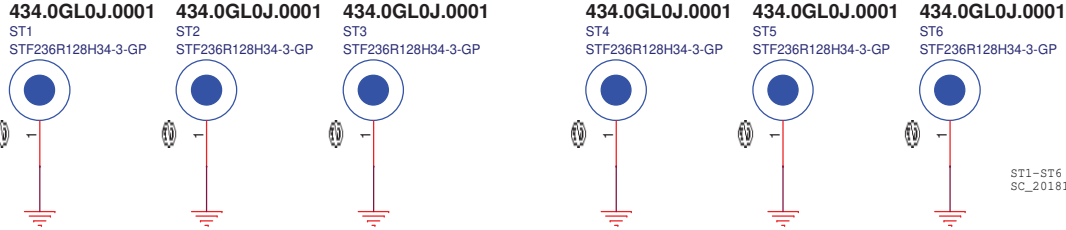
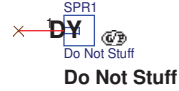
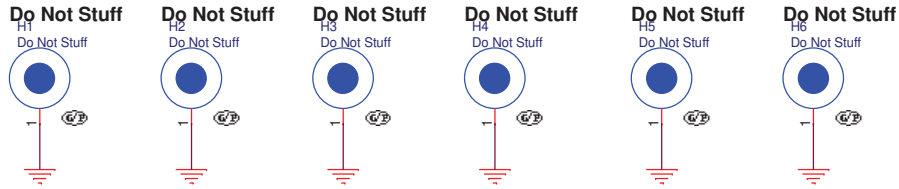
| | |
|--|---------------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | |
| Title GPU (RSVD) | |
| Size A4 | Document Number LS40IC |
| Date Tuesday, August 06, 2019 | Rev -1 |
| Sheet 86 of 106 | |

BLANK

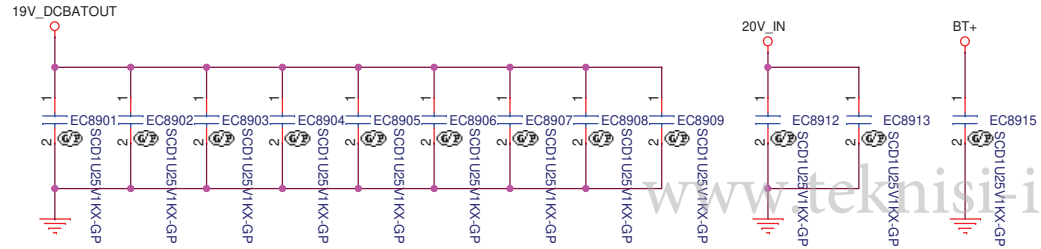
www.teknisi-indonesia.com

BOM1

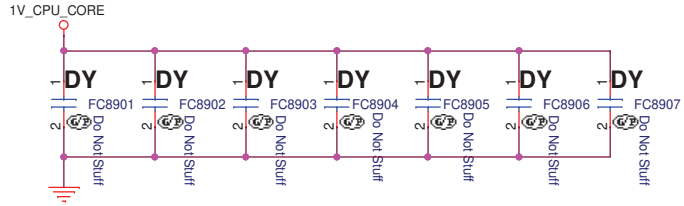
| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title GPU (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 88 of 106 |



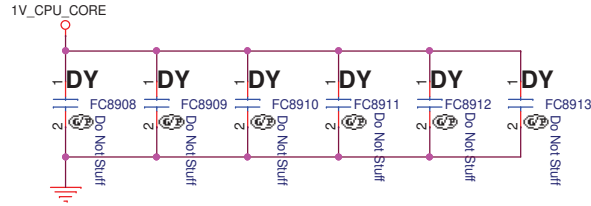
ST1-ST6 34.4YP25.001 DY-> 434.0GL0J.0001
SC_20181009



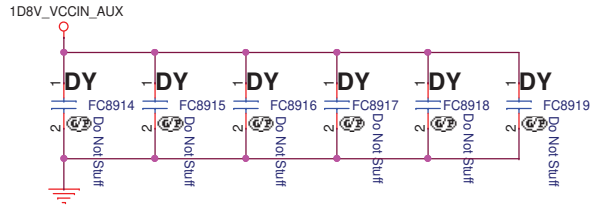
PLACE on TOP SIDE <5mm FROM SOC



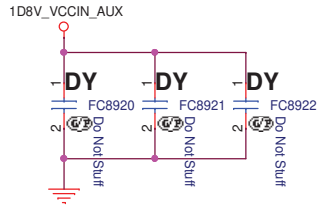
PLACE on BOTTOM SIDE <5mm FROM SOC



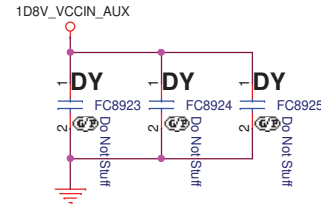
PLACE on TOP SIDE <5mm FROM SOC



PLACE on BOTTOM SIDE <5mm FROM SOC



PLACE on BOTTOM SIDE <5mm FROM SOC



BOM1

緯創資通 **Wistron Corporation**
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title **UNUSED PARTS (RF/EMI CAP)**

Size Custom Document Number **LS40IC** Rev **-1**

Date: Tuesday, August 06, 2019 Sheet 89 of 106

BLANK

www.teknisi-indonesia.com

BOM1

緯創資通

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

Title **INT IO (RSVD)**

Size
A4

Document Number
LS40IC

Rev
-1

Date: Tuesday, August 06, 2019

Sheet 90 of 106

BLANK

www.teknisi-indonesia.com

BOM1

緯創資通

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

Title **INT IO (RSVD)**

Size
A4

Document Number
LS40IC

Rev
-1

Date: Tuesday, August 06, 2019

Sheet 91 of 106

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title INT IO (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 92 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title INT IO (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 93 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title INT IO (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 94 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title INT IO (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 95 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Commercial (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 96 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

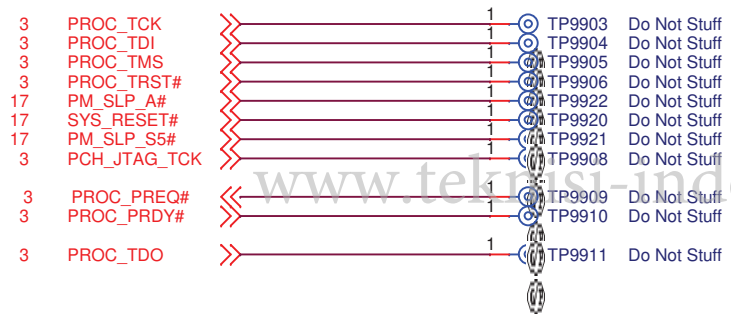
| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Commercial (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 97 of 106 |

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Commercial (RSVD) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 98 of 106 |



BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title Debug (XDP debug) | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 99 of | 106 |

BLANK

www.teknisi-indonesia.com

BOM1

緯創資通

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

Title **Table of Content**

| | | |
|------------|----------------------------------|------------------|
| Size A4 | Document Number LS40IC | Rev -1 |
|------------|----------------------------------|------------------|

| | |
|--------------------------------|------------------|
| Date: Tuesday, August 06, 2019 | Sheet 100 of 106 |
|--------------------------------|------------------|

BLANK
www.teknisi-indonesia.com

BOM1

緯創資通

Wistron Corporation

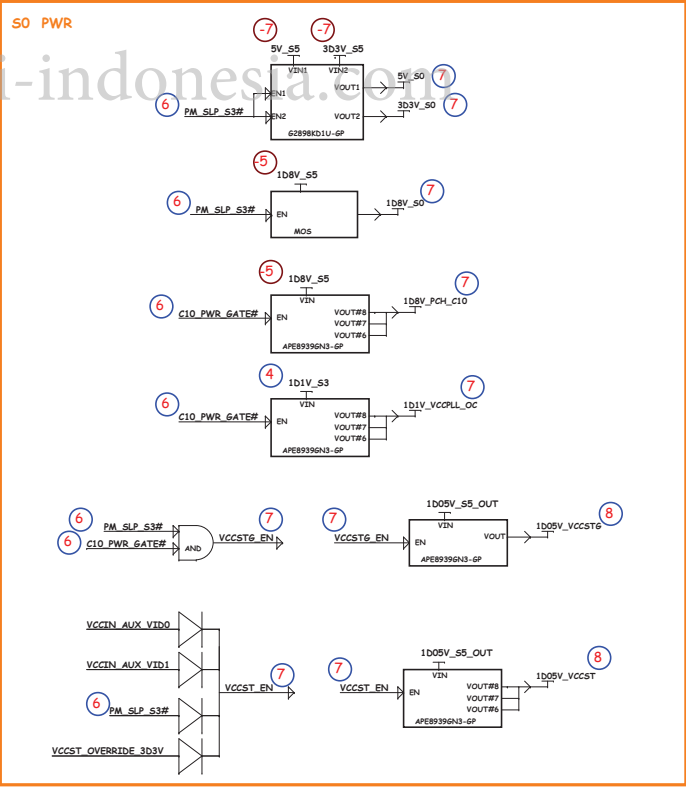
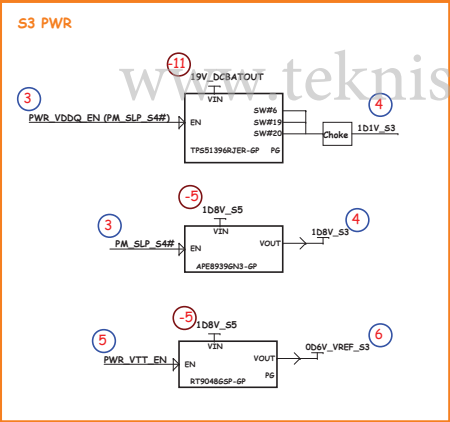
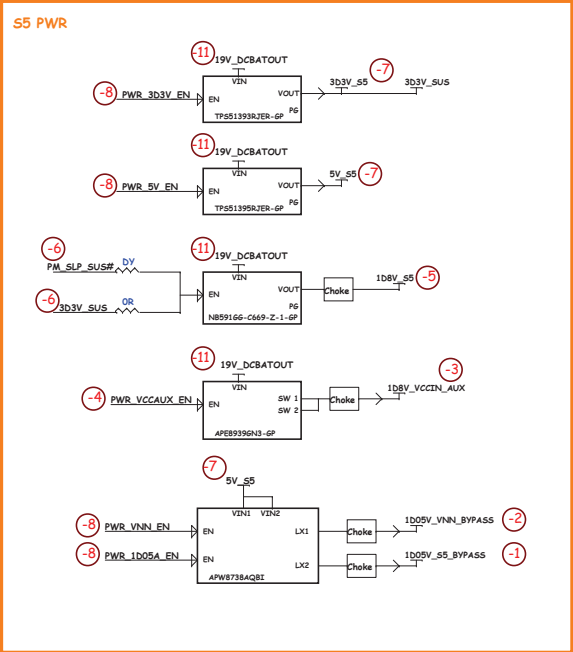
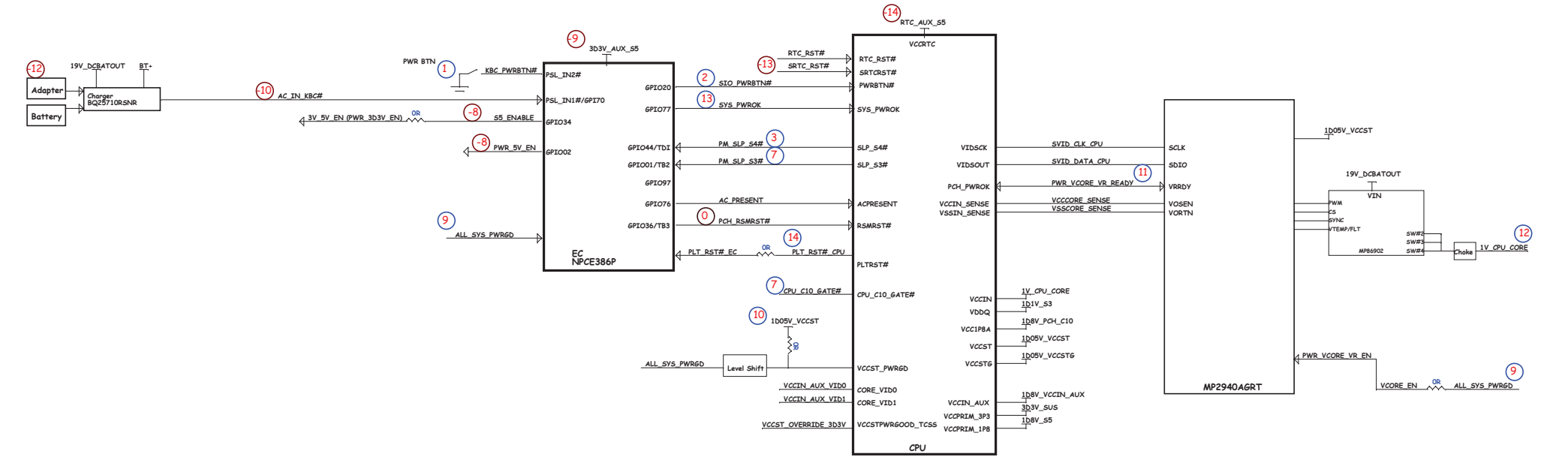
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,
Taipei Hsien 221, Taiwan, R.O.C.

Title

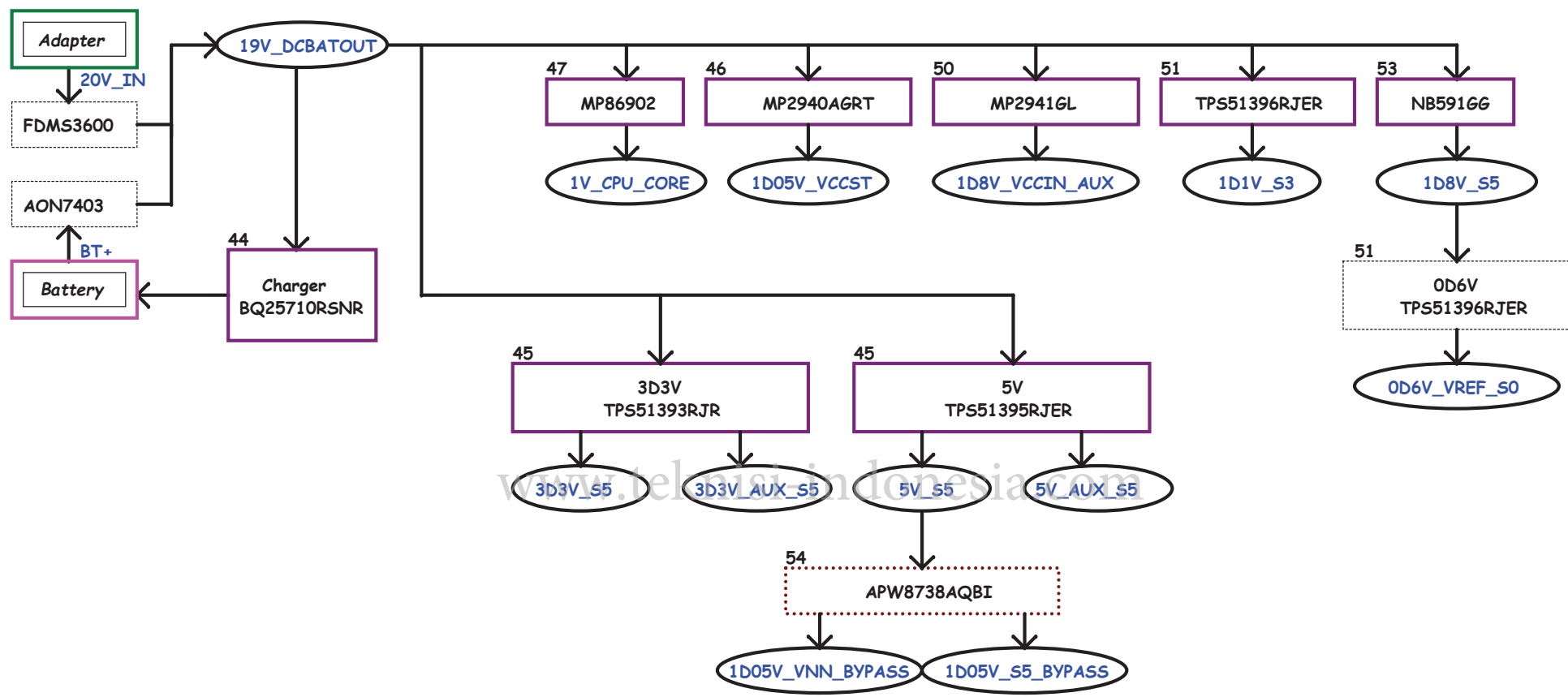
Change History

| | | |
|--------------------------------|---------------------------|-----------|
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | Sheet 101 of | 106 |

LS40 ICL SEQUENCE & BLOCK DIAGRAM

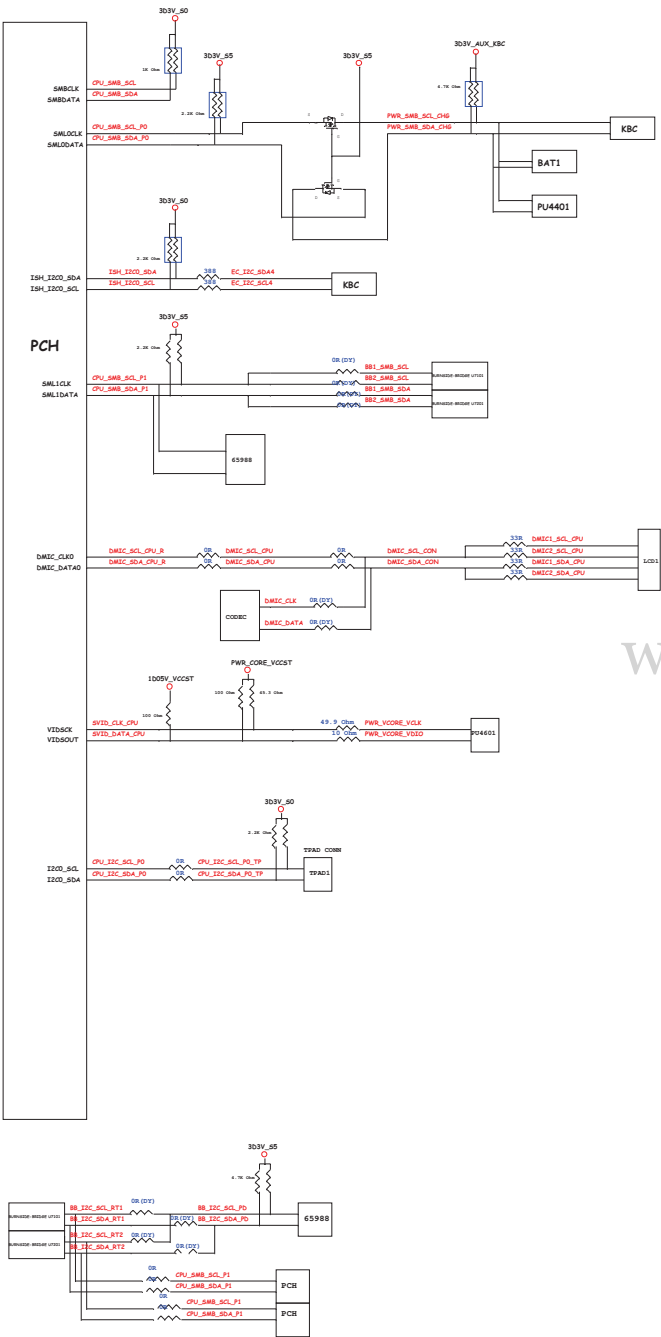


LS40 ICL Power Block Diagram

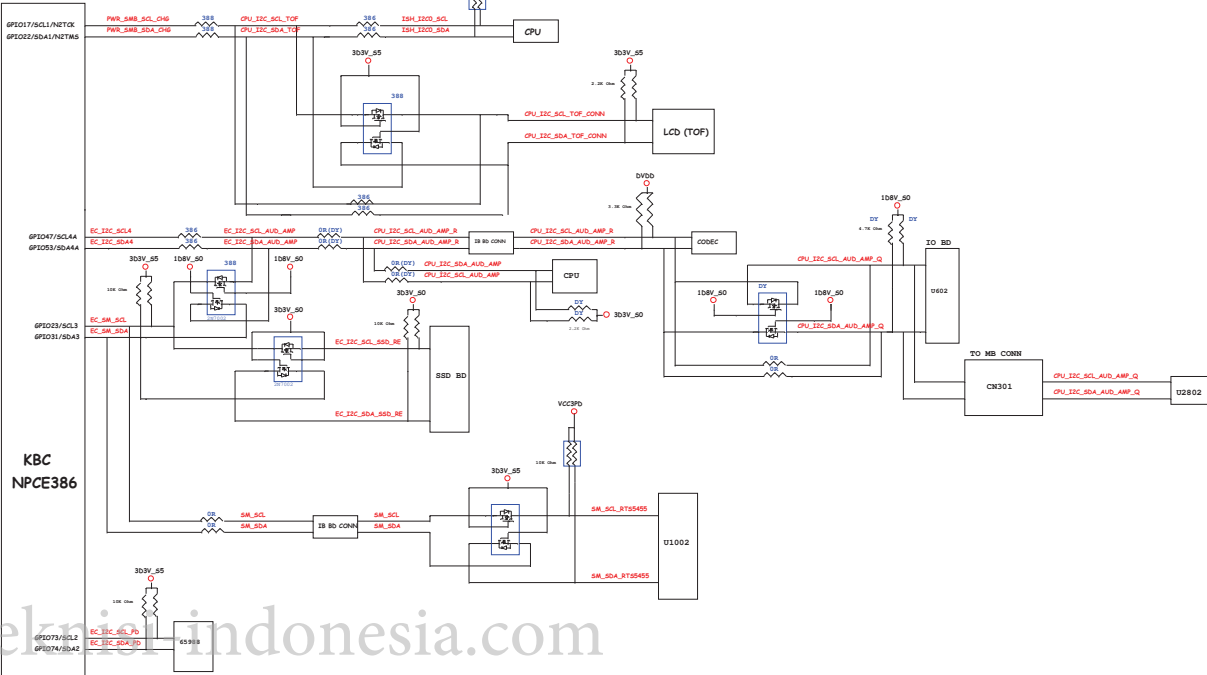


LS40 ICL SMBUS/I2C BLOCK DIAGRAM

PCH SMBus Block Diagram



KBC SMBus Block Diagram



www.telkomindonesia.com

BLANK

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation</div> <div>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title THERMAL/AUDIO BLOCK DIAGRAM | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 105 of 106 |

5

4

3

2

1

D

D

C

C

B

B

A

A

BLANK
www.teknisi-indonesia.com

www.teknisi-indonesia.com

BOM1

| | | |
|--|----------------------------------|------------------|
| <div>緯創資通</div> <div>Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.</div> | | |
| Title CLK Block | | |
| Size A4 | Document Number LS40IC | Rev -1 |
| Date: Tuesday, August 06, 2019 | | Sheet 106 of 106 |