OFFPAGE - PIC - EE

PH on EE Side

EC_SMB_SCL_BAT
EC_SMB_SDA_BAT

PH on EE Side

PROCHOT_CPU_N

CHGR_PSYS_IMVP
AC_IN_N
AD_IA

Device will be transition from normal Buck-Boost operation to PTM operation by:
- Set REG0x17[7:6] = 0, to disable the EN_EXTILIM.
- Set REG0x30[0] = 1
- Set REG0x30[2] = 1
- Ground ILIM_HIZ pin

Device will transition out of PTM mode with host control by:
- Set REG0x30[2] = 0
- Pull ILIM_HIZ pin to high.
- Device exits PTM to buck-boost operation if tripping VINDPM or IINDPM.
- Device exits PTM to buck-boost operation under fault conditions (ACOC, TSHUT, BATOC).

EC_SMB_SCL_BAT — PR4459 Do Not Stuff — PWR_CHG_SCL
EC_SMB_SDA_BAT — PR4460 Do Not Stuff — PWR_CHG_SDA
AD_IA — PR4457 Do Not Stuff — PWR_CHG_IADP
PROCHOT_CPU_N — PR4458 Do Not Stuff — PWR_PROCHOT#_CPU
CHGR_PSYS_IMVP — PR4461 Do Not Stuff — PWR_CHGR_CHG_PSYS

BOM Control Table

LOGIC	PU4401	PU4403 PU4405	PC4431 PC4432	PR4423	PC4401	PR4424	PC4473	PC4403	PR4412 (For PL4401 = 2.2uH)	PC4472	PC4412	PR4430 (For PL4401 = 2.2uH)	PC4421
	BQ25710RSNR	Follow TABLE	0.047uF (78.47322.2FL)	280K Ohm (64.28035.6DL)	1uF (78.10523.5FL)	16.9K Ohm (64.16925.6DL)	2200pF (78.22244.L0L)	33pF (78.33034.15L)	10K Ohm (64.10025.6DL)	220pF (778.22122.25L)	18pF (78.18034.15L)	137K Ohm (64.13735.6DL)	1000pF (78.10222.20L)
	SC88885SQDER	AONY36304 Only 075.36304.0073	DY	226K Ohm (64.22635.6DL)	1uF (78.10523.5FL)	100K Ohm (64.10035.6DL)	DY	10pF (78.10034.10L)	680K Ohm (64.68035.6DL)	DY	100pF (78.10134.15L)	137K Ohm (64.13735.6DL)	470pF (78.47122.25L)

For Adapter IN Confirm with EE

	PR4419
Main	064.R010L.L004
2nd	064.R010L.L005

TABLE PU4403 PU4405

Vender	Vender P/N	Wistron P/N
NIKO	PKC46DY	075.00046.0073
AOS	AONY36304	075.36304.0073
SINOPOWER	SM7321ESKPC-TRG	075.07321.0073
ROHM	HP8S36TB	075.08536.0073

2.2uH, DCR=8~9 mohm, Idc=13A, Isat=16A 11.2*10.3*3mm

ZZ.00215.037 1st = 075.36304.0073 — PU4403,PU4405 will use BOM control

ZZ.00215.037 1st = 075.36304.0073 — PU4403,PU4405 will use BOM control

Acoustic noise reserve

	PR4402
Main	064.R010L.L004
2nd	064.R010L.L005

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

# of CELL	VCELL_PREQ	PR4413
1-CELL	1.5V	301K
2-CELL	2.5V	140K
3-CELL	3.5V	71.5K
4-CELL	4.5V	33.2K

Reserve for Power test

Reserve for PTM If it hasn't more GPIO

$$V_{PSYS} = R_{PSYS} \times K_{PSYS}(V_{ACP} \times I_{IN} + V_{BAT} \times I_{BAT})$$

0505 buyer: 7"

OFF-PAGE for SIV TEST POINT: (Page 98)

98 PWR_CHG_SCL
95 PWR_CHG_SDA

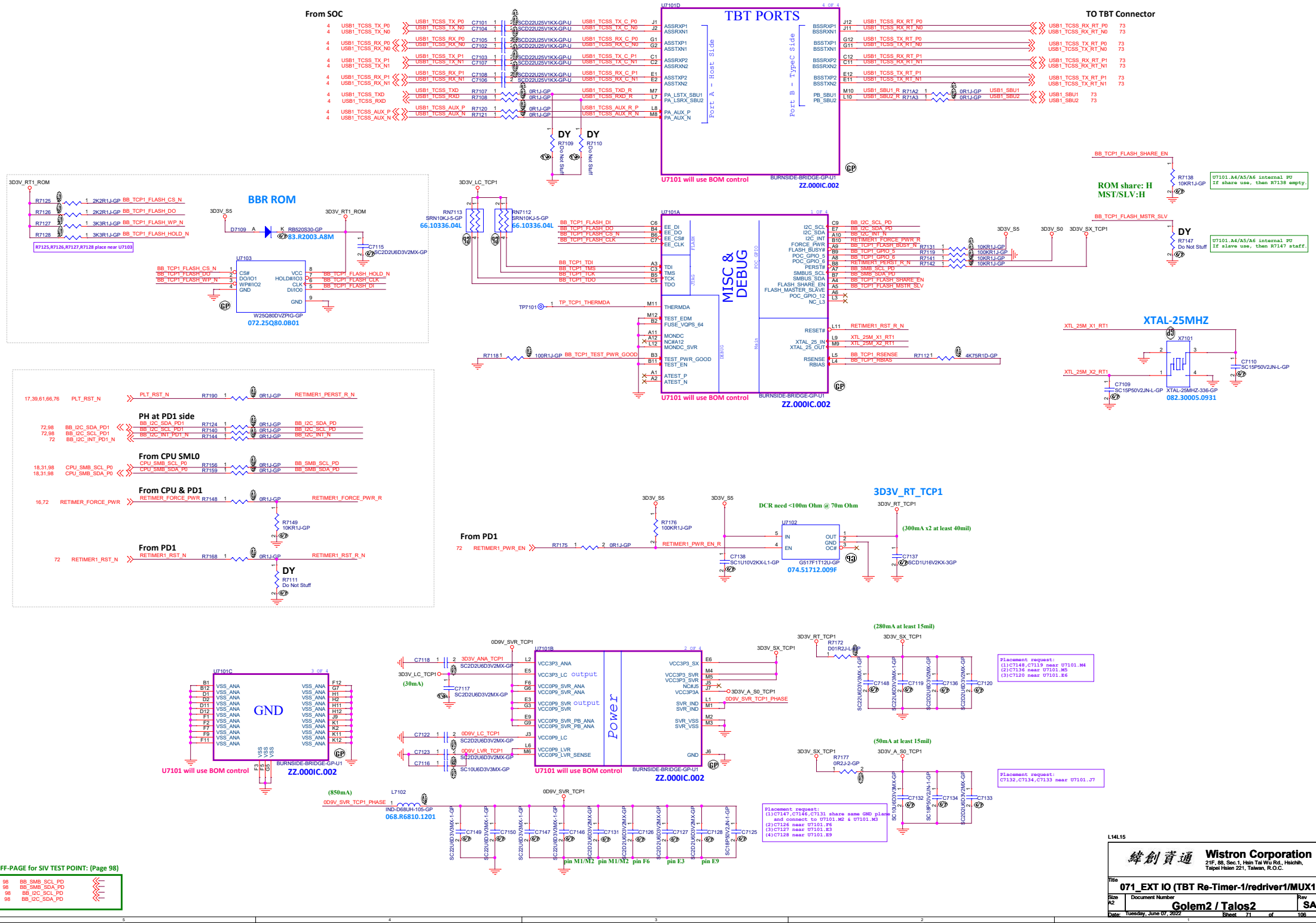
L14L1S

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

Title: POWER (CHARGER_BQ25710)

Size: A3 | Document Number: Golem2 / Talos2 | Rev: SA

Date: Tuesday, June 07, 2022 | Sheet 44 of 98



L14L15

緯創資通 Wistron Corporation 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.		
Title: 071_EXT IO (TBT Re-Timer-1/redriver1/MUX1)		
Size: A2	Document Number: Golem2 / Talos2	Rev: SA
Date: Tuesday, June 07, 2022	Sheet 71 of 106	

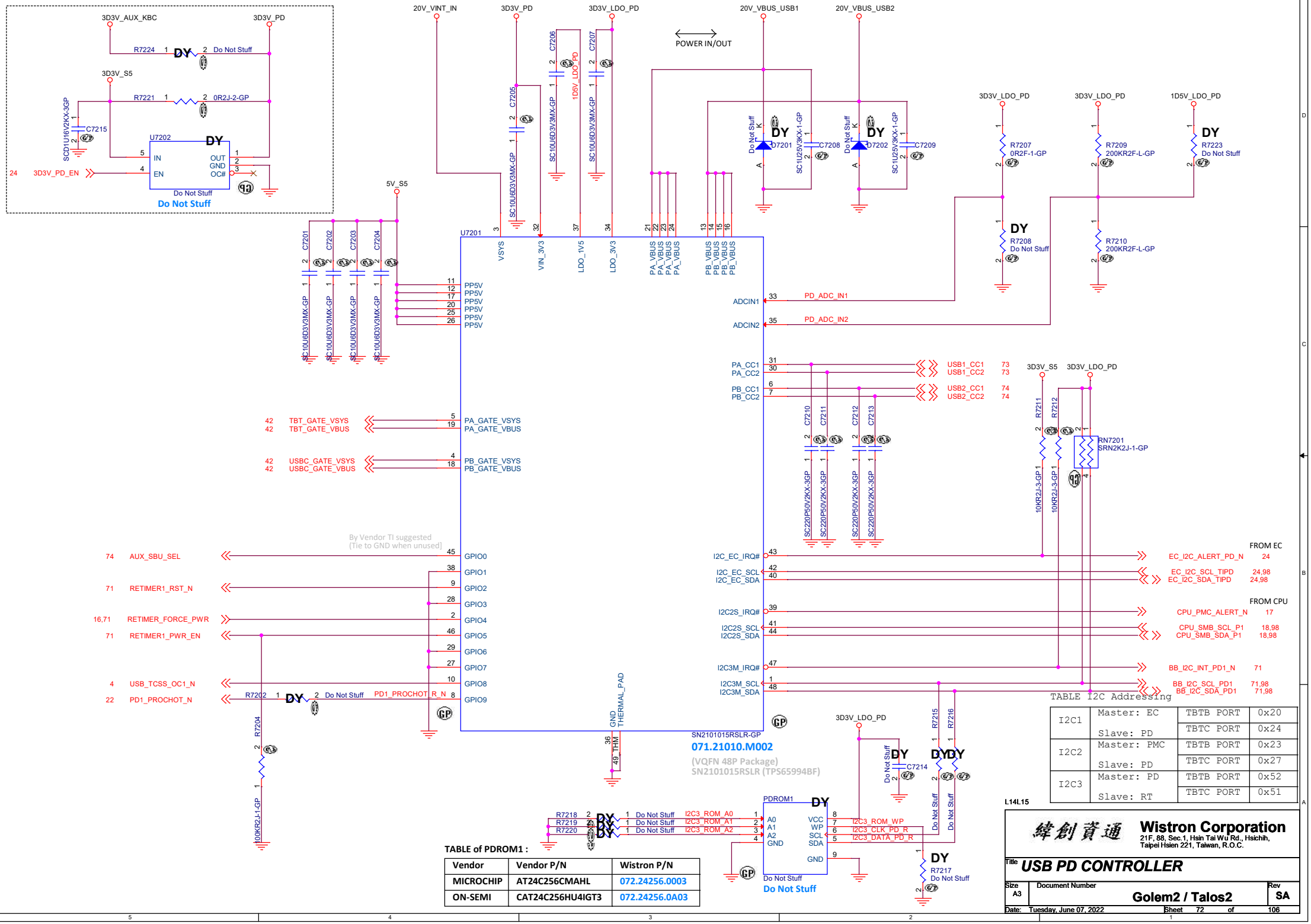


TABLE of PDROM1 :

Vendor	Vendor P/N	Wistron P/N
MICROCHIP	AT24C256CMAHL	072.24256.0003
ON-SEMI	CAT24C256HU4IGT3	072.24256.0A03

TABLE I2C Addressing

I2C1	Master: EC	TBTB PORT	0x20
	Slave: PD	TBTC PORT	0x24
I2C2	Master: PMC	TBTB PORT	0x23
	Slave: PD	TBTC PORT	0x27
I2C3	Master: PD	TBTB PORT	0x52
	Slave: RT	TBTC PORT	0x51

L14L15

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

Title: USB PD CONTROLLER

Size	Document Number	Rev
A3	Golem2 / Talos2	SA

Date: Tuesday, June 07, 2022 Sheet 72 of 106

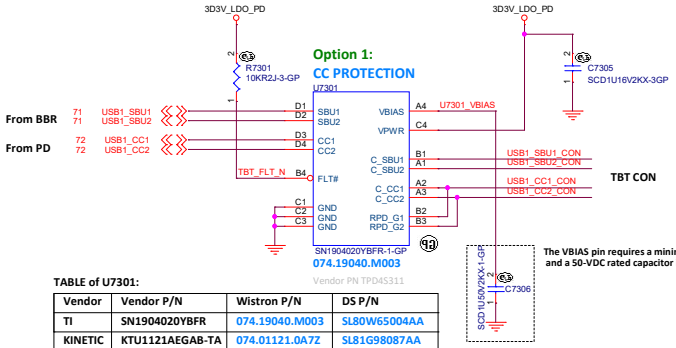
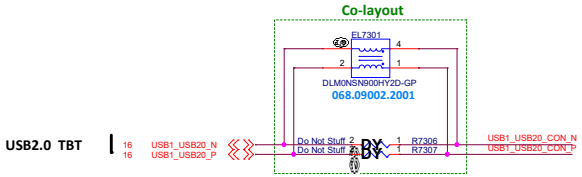
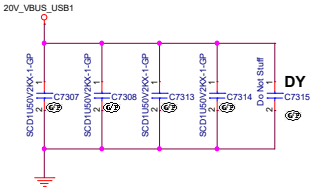
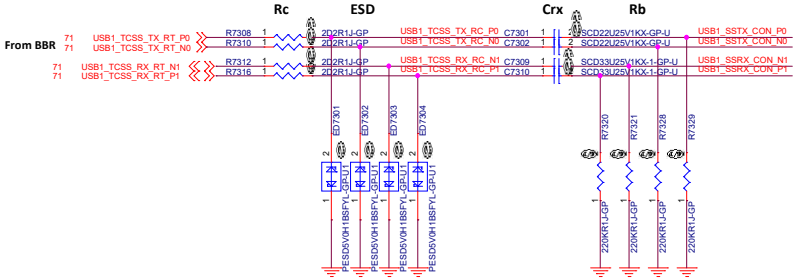


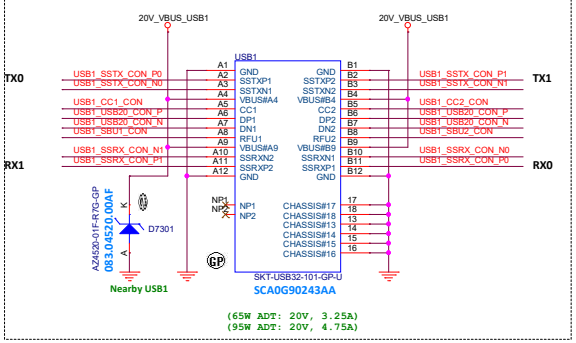
TABLE of U7301:

Vendor	Vendor P/N	Wistron P/N	DS P/N
TI	SN1904020YBFR	074.19040.M003	SL80W65004AA
KINETIC	KTU1121AEGAB-TA	074.01121.0A7Z	SL81G98087AA
RICHTEK	LVJ1701WSC	074.01701.M001	SL81G98088AA
TI	SN1904020AYBFR	074.19040.M004	SL81F38020AA



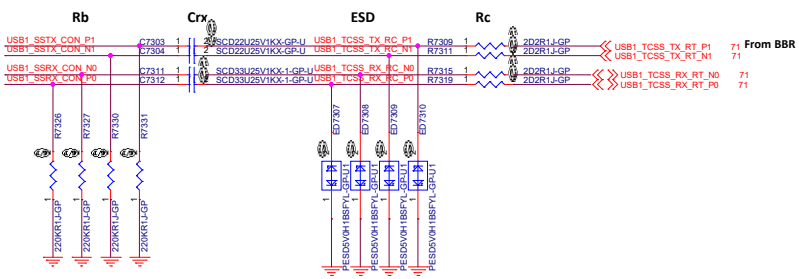




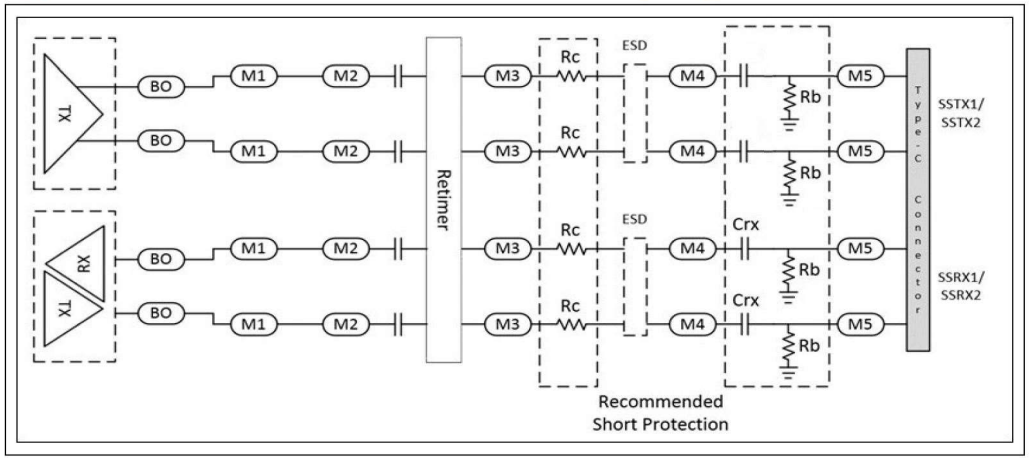


ED7312,ED7313,ED7314,ED7315

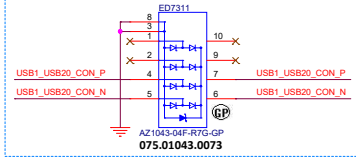
SEMTECH	RClamp2451ZA (working voltage = 24V)	083.02451.00A0



Type-C TBT+USB+DP - Retimer TBT+USB+DP Topology



L14/L15:
Layout Impact --> Change to 10 pin TVS Diode
083.58017.00AF can't use on CC/USB2/SBU pin because latch up issue.



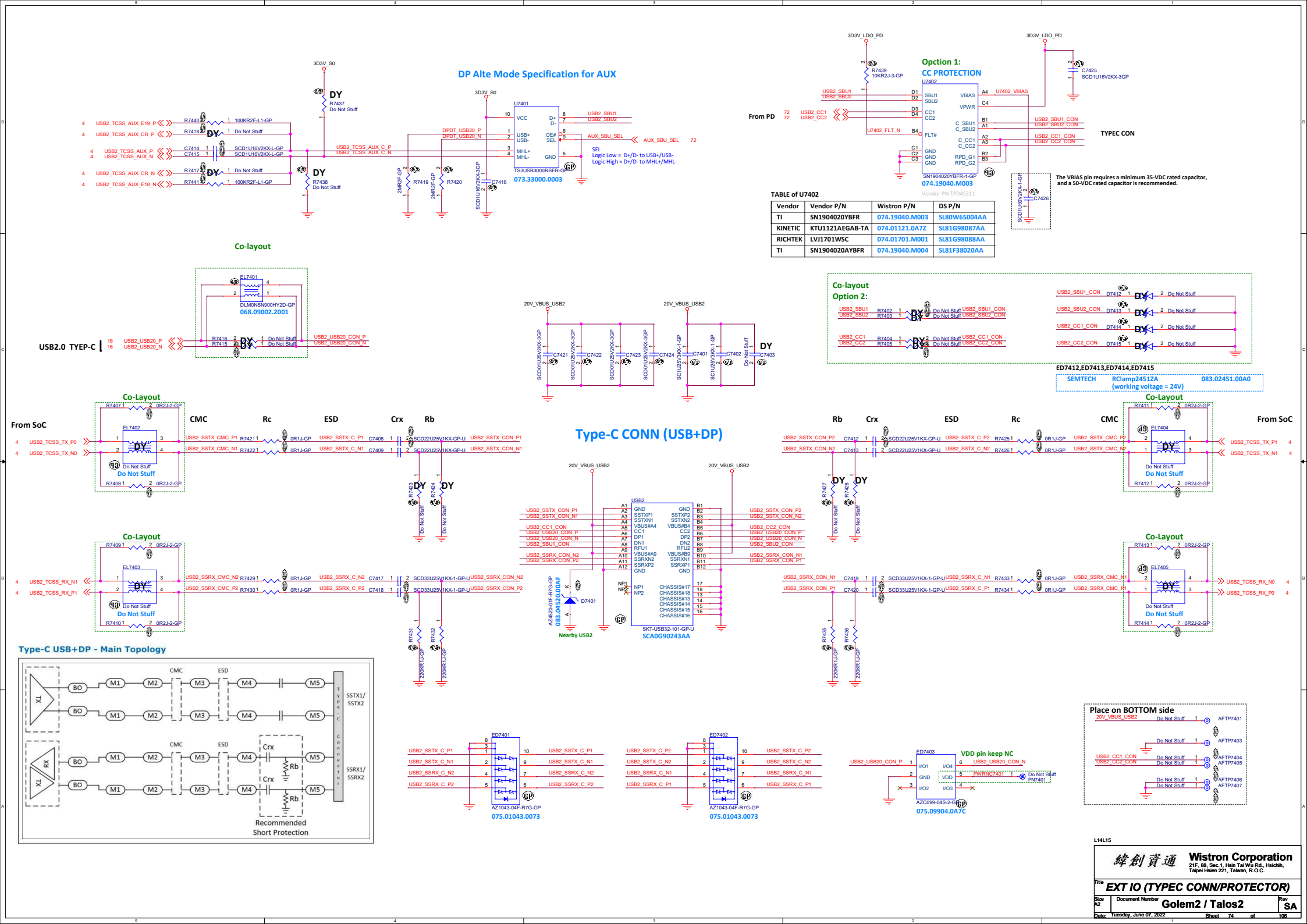
L14L15

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

Title: EXT IO (TBT CONN)

Size: A2 | Document Number: Golem2 / Talos2 | Rev: SA

Date: Tuesday, June 07, 2022 | Sheet 73 of 106


DP Alte Mode Specification for AUX
3D3V_S0
DY
R7437
Do Not Stuff
USB2_TCSS_AUX_E19_P
USB2_TCSS_AUX_E19_N
USB2_TCSS_AUX_CR_P
USB2_TCSS_AUX_CR_N
USB2_TCSS_AUX_E18_P
USB2_TCSS_AUX_E18_N
R7440
R7418
R7417
R7441
100KR2F-L1-GP
Do Not Stuff
SCD1U16V2KX-L-GP
C7414
C7415
R7438
U7401
TS3USB3000RSER-GP
073.33000.0003
DPDT_USB20_P
DPDT_USB20_N
USB2_TCSS_AUX_C_P
USB2_TCSS_AUX_C_N
AUX_SBU_SEL
SEL
Logic Low = D+/D- to USB+/USB-
Logic High = D+/D- to MHL+/MHL-
R7419
R7420
2MR2F-GP
C7416
SCD1U16V2KX-3GP
Opction 1:
CC PROTECTION
From PD
U7402
SN1904020YBFR-1-GP
074.19040.M003
Vendor PN TPD4S311
U7402_FLT_N
U7402_VBIAS
USB2_SBU1_CON
USB2_SBU2_CON
USB2_CC1_CON
USB2_CC2_CON
TYPEC CON
C7425
C7426
SCD1U16V2KX-1-GP
The VBIAS pin requires a minimum 35-VDC rated capacitor, and a 50-VDC rated capacitor is recommended.
TABLE of U7402
Vendor | Vendor P/N | Wistron P/N | DS P/N
TI | SN1904020YBFR | 074.19040.M003 | SL80W65004AA
KINETIC | KTU1121AEGAB-TA | 074.01121.0A7Z | SL81G98087AA
RICHTEK | LVJ1701WSC | 074.01701.M001 | SL81G98088AA
TI | SN1904020AYBFR | 074.19040.M004 | SL81F38020AA
Co-layout
USB2.0 TYEP-C
EL7401
DLM0NSN900HY2D-GP
068.09002.2001
USB2_USB20_P
USB2_USB20_N
USB2_USB20_CON_P
USB2_USB20_CON_N
R7416
R7415
Do Not Stuff
20V_VBUS_USB2
C7421
C7422
C7423
C7424
C7401
C7402
C7403
SCD01U25V2KX-3GP
SC1U25V3KX-1-GP
Co-layout
Option 2:
USB2_SBU1
USB2_SBU2
USB2_CC1
USB2_CC2
R7402
R7403
R7404
R7405
D7412
D7413
D7414
D7415
ED7412,ED7413,ED7414,ED7415
SEMTECH
RClamp2451ZA
(working voltage = 24V)
083.02451.00A0
From SoC
CMC
Rc
ESD
Crx
Rb
Co-Layout
EL7402
EL7403
EL7404
EL7405
Do Not Stuff
USB2_TCSS_TX_P0
USB2_TCSS_TX_N0
USB2_TCSS_TX_P1
USB2_TCSS_TX_N1
USB2_TCSS_RX_N1
USB2_TCSS_RX_P1
USB2_TCSS_RX_N0
USB2_TCSS_RX_P0
USB2_SSTX_CMC_P1
USB2_SSTX_CMC_N1
USB2_SSTX_C_P1
USB2_SSTX_C_N1
USB2_SSTX_CON_P1
USB2_SSTX_CON_N1
USB2_SSTX_CON_P2
USB2_SSTX_CON_N2
USB2_SSTX_C_P2
USB2_SSTX_C_N2
USB2_SSTX_CMC_P2
USB2_SSTX_CMC_N2
USB2_SSRX_CMC_N2
USB2_SSRX_CMC_P2
USB2_SSRX_C_N2
USB2_SSRX_C_P2
USB2_SSRX_CON_N2
USB2_SSRX_CON_P2
USB2_SSRX_CMC_N1
USB2_SSRX_CMC_P1
USB2_SSRX_C_N1
USB2_SSRX_C_P1
USB2_SSRX_CON_N1
USB2_SSRX_CON_P1
SCD22U25V1KX-GP-U
SCD33U25V1KX-1-GP-U
0R1J-GP
0R2J-2-GP
220KR1J-GP
Type-C CONN (USB+DP)
USB2
SKT-USB32-101-GP-U
SCA0G90243AA
AZ4520-01F-R7G-GP
083.04520.00AF
D7401
Nearby USB2
Type-C USB+DP - Main Topology
TX
RX
BO
M1
M2
M3
M4
M5
CMC
ESD
Crx
Rb
Type-C Connector
SSTX1/ SSTX2
SSRX1/ SSRX2
Recommended Short Protection
ED7401
ED7402
AZ1043-04F-R7G-GP
075.01043.0073
ED7403
AZC099-04S-2-GP
075.09904.0A7C
VDD pin keep NC
PWRNC7401
PN7401
Place on BOTTOM side
AFTP7401
AFTP7403
AFTP7404
AFTP7405
AFTP7406
AFTP7407
L14L15
緯創資通
Wistron Corporation
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C.
Title
EXT IO (TYPEC CONN/PROTECTOR)
Size A2
Document Number
Golem2 / Talos2
Rev SA
Date: Tuesday, June 07, 2022
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