Schematic: reComputer J401

SHEET	SHEET NAME
01	Table of Contents
02	Block Diagram
03	Power Tree
04	SODIMM Connector 1/3
05	SODIMM Connector 2/3
06	SODIMM Connector 3/3
07	Power In & 5V & 3.3V_MCU
08	3.3V & 1.8V & 1.05V
09	Button MCU For Power Up
10	USB3.2 HUB
11	USB3.2 Type-A x2 (A)
12	USB3.2 Type-A x2 (B)
13	HDMI
14	CAM Connector
15	Gigabit Ethernet, Type C
16	M.2 KEY-E (WIFI/BT)
17	M.2 KEY-M (NVME)
18	40Pin GPIO Expansion Header
19	Fan, Debug and EEPROM

Revision History

DATE	REVISION	DESCRIPTION
01/05/2023	reComputer J401_V1.0_SCH_230105	Initial Release.

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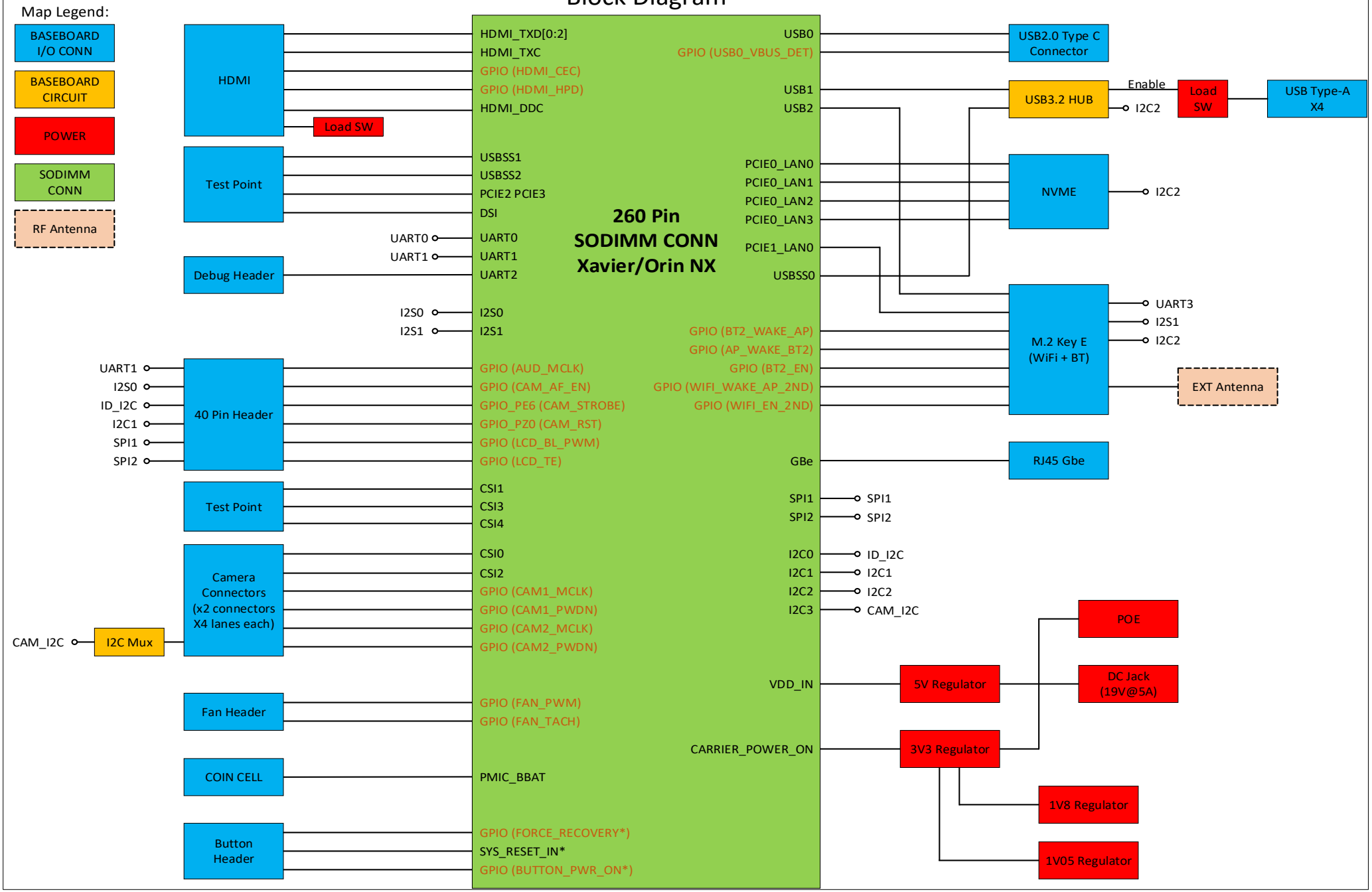
Title: reComputer J401

Size: A3	Document Number: 01 Table of Contents	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 1 of 19

Block Diagram



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Title: reComputer J401		
Size: A3	Document Number: 02 Block Diagram	Rev: V1.0
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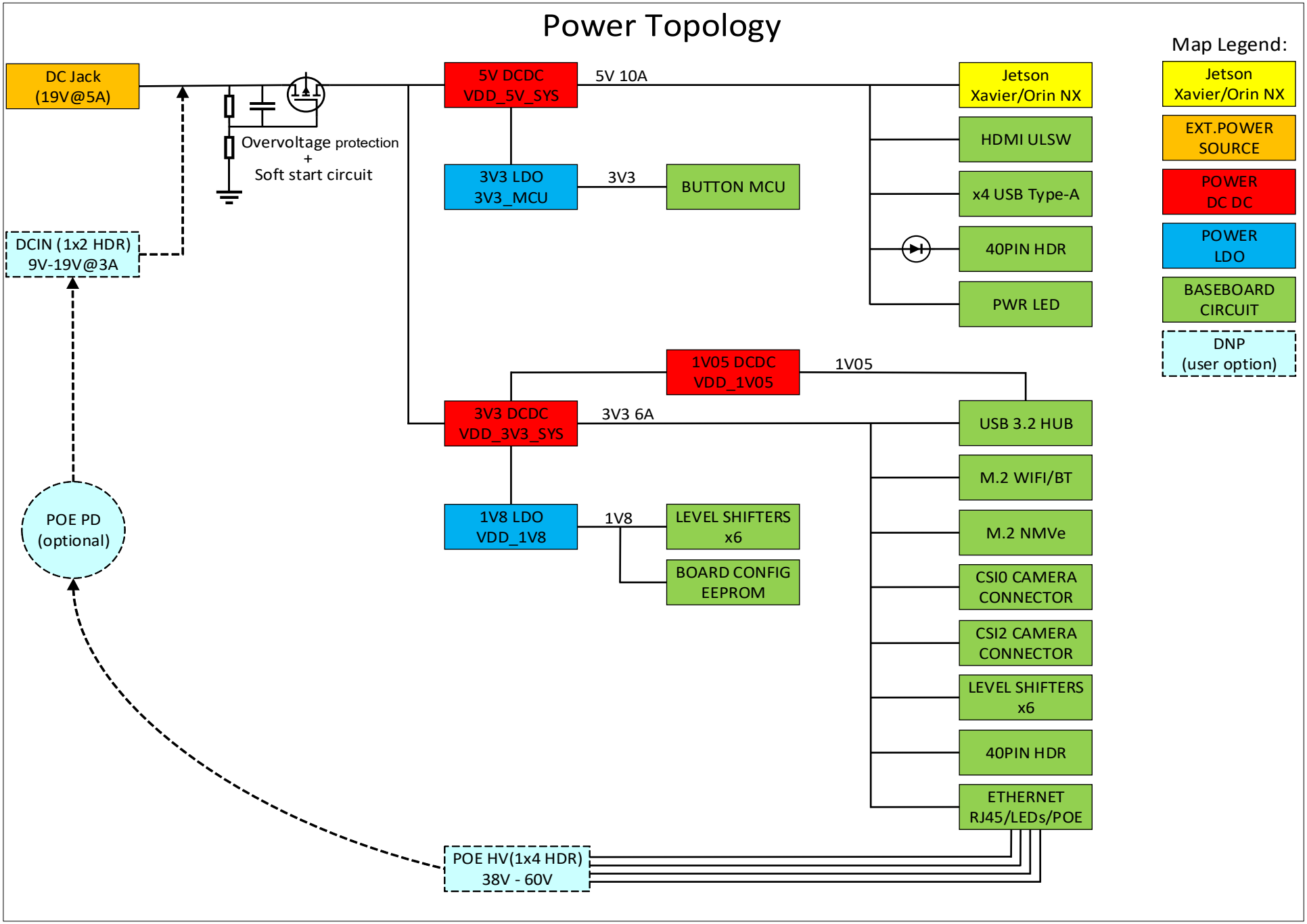
Power Topology



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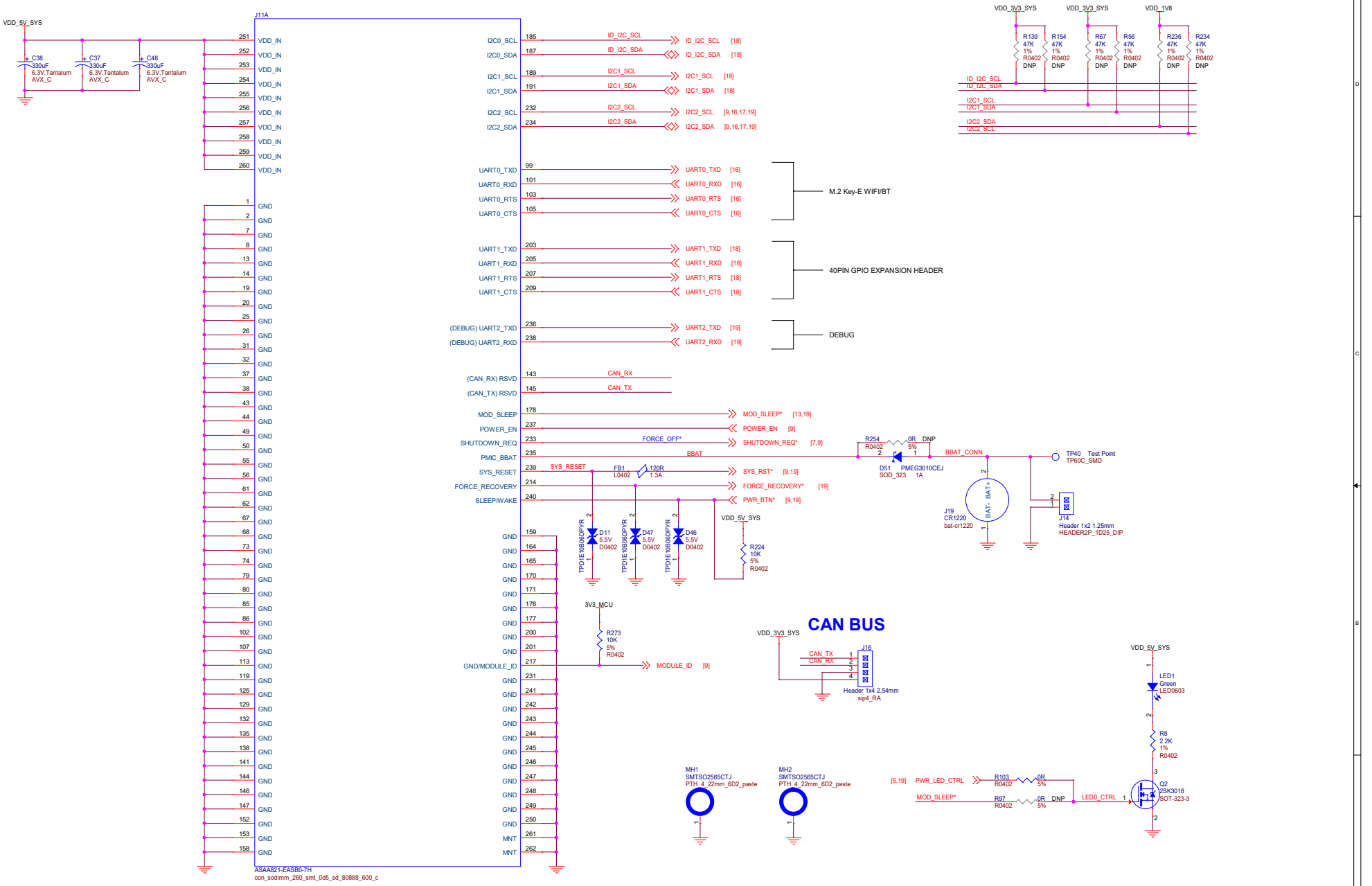
	Title: reComputer J401	
Size: A3	Document Number: 03 Power Tree	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 3 of 19

UART, I2C, CAN and GPIOs



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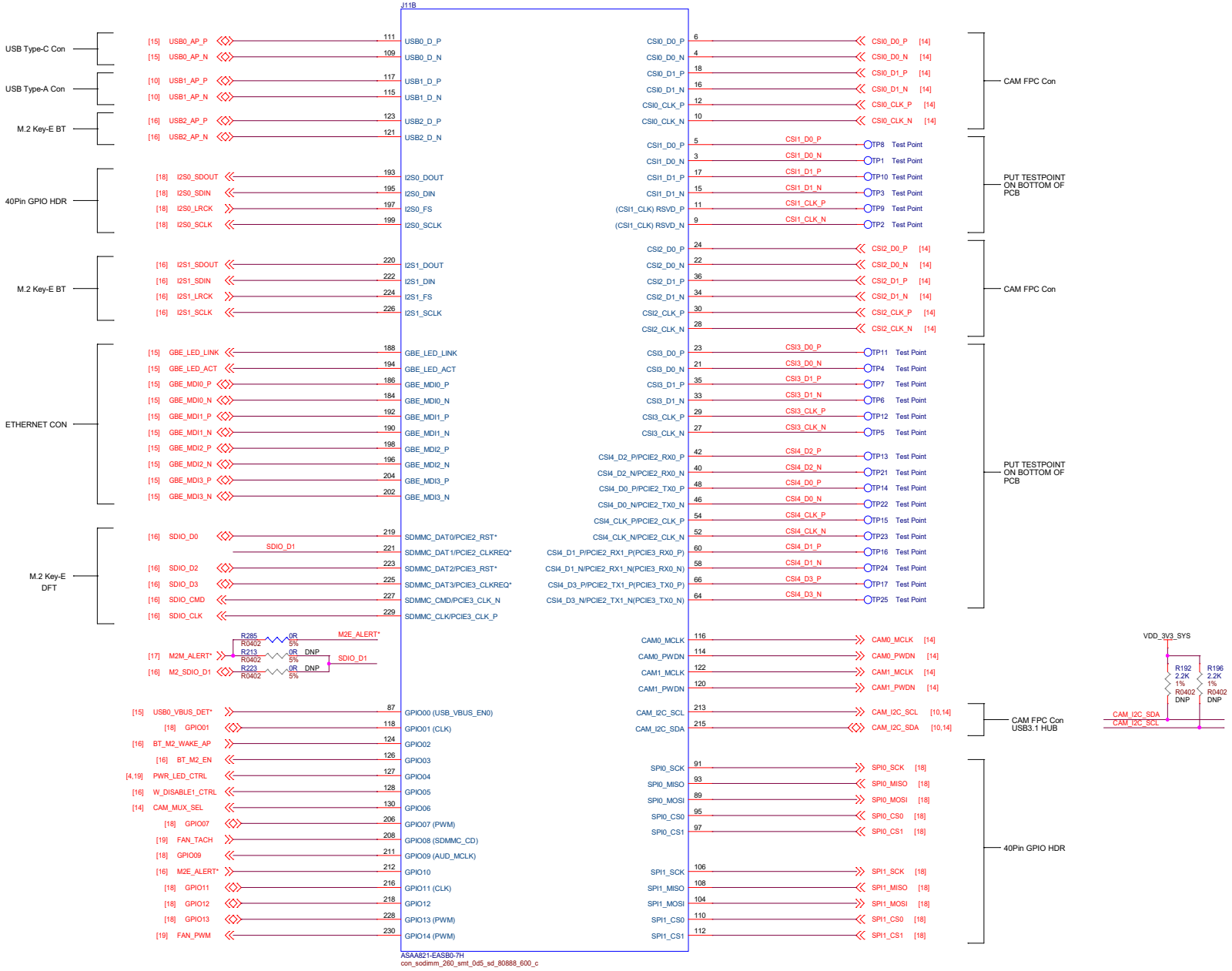
	Title: reComputer J401		
Size: C	Document Number: 04 SODIMM Connector 1/3		Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023		Sheet: 4 of 19

GPIOs, USB2.0, I2S, SPI, GBe and CSI



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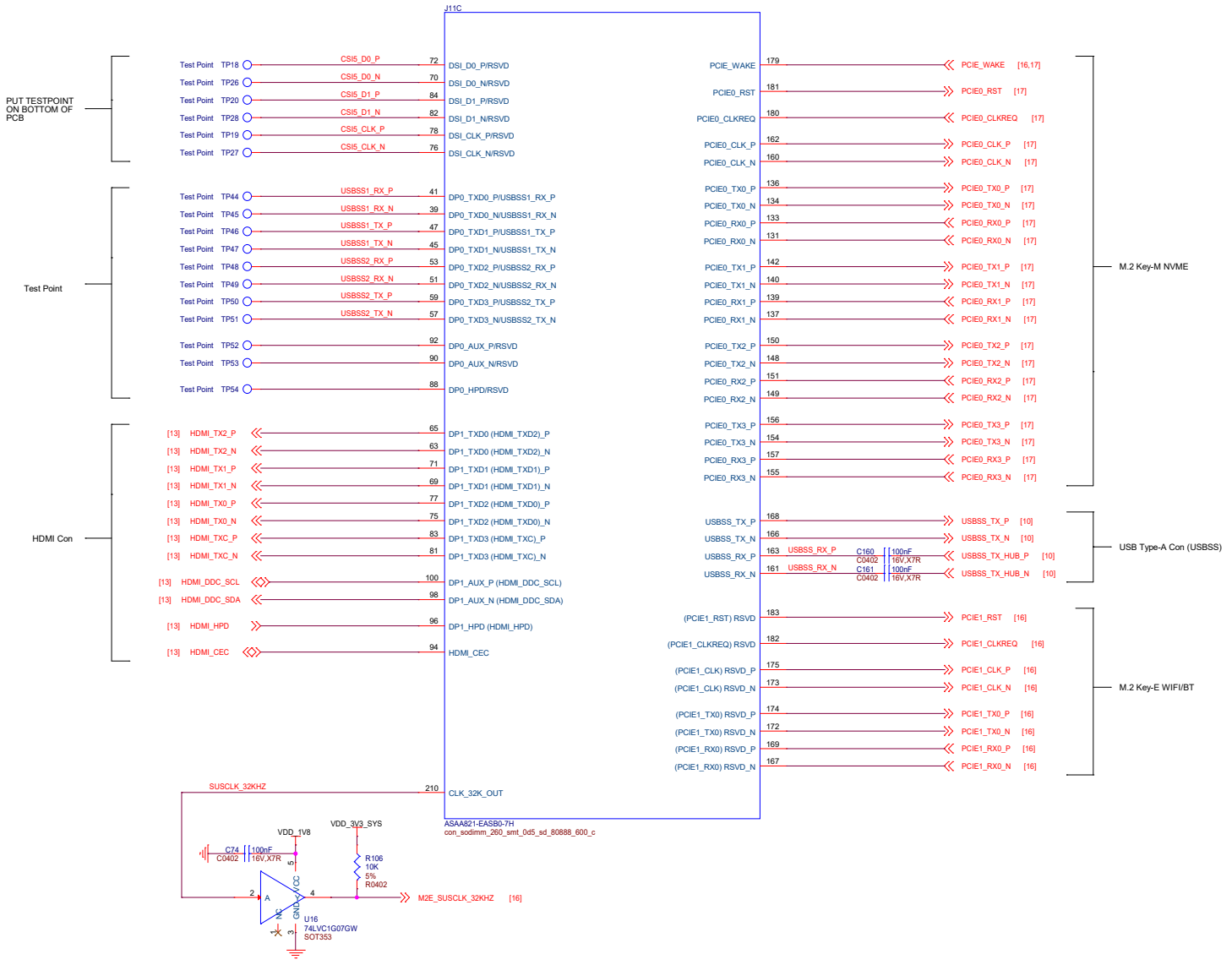
	Title: reComputer J401	
Size: C	Document Number: 05 SODIMM Connector 2/3	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 5 of 19

HDMI, DP, DSI, USBSS and PCIe



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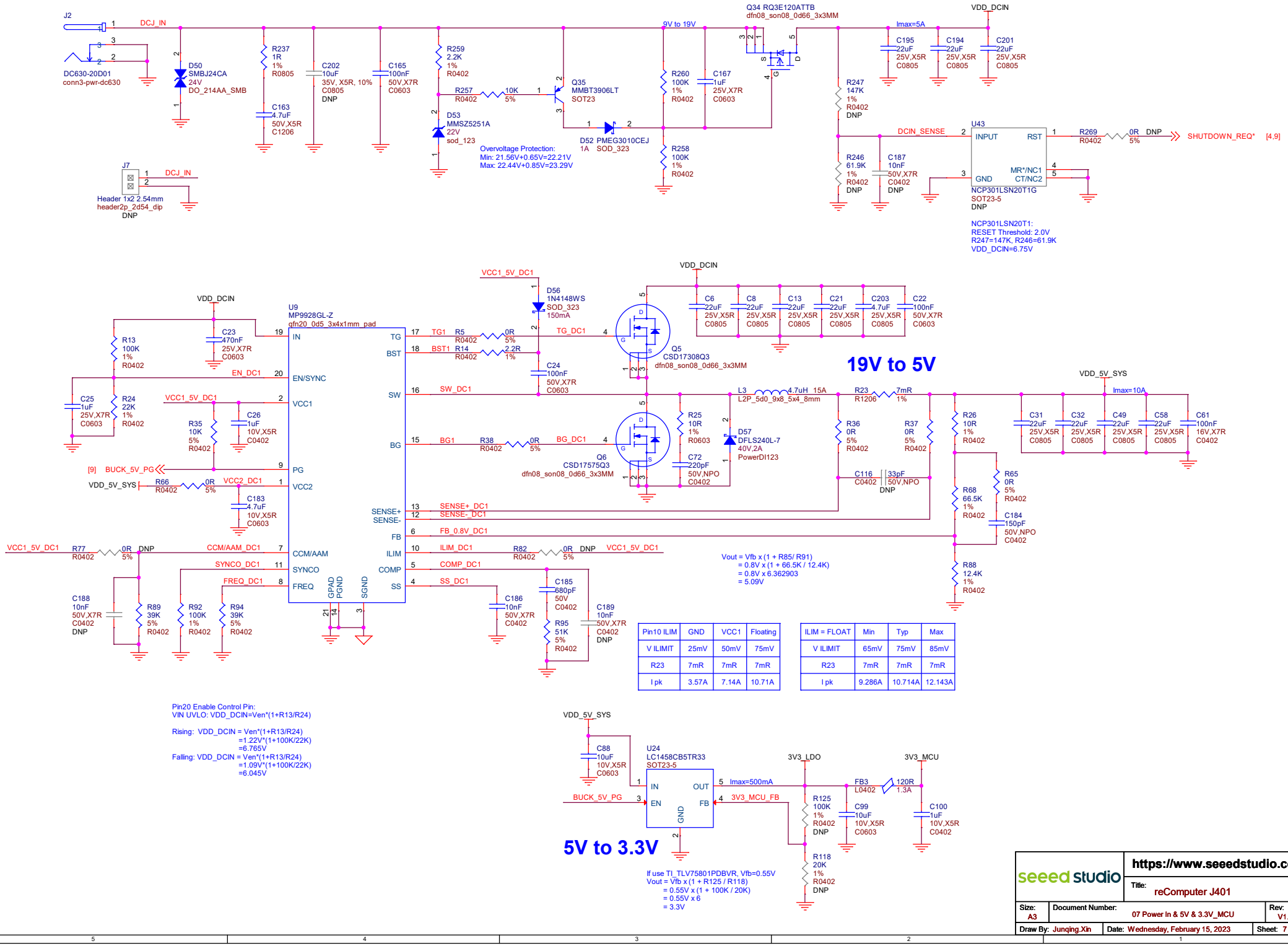
	Title: reComputer J401	
Size: C	Document Number: 06 SODIMM Connector 3/3	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 6 of 19



Pin10 ILIM	GND	VCC1	Floating
V ILIMIT	25mV	50mV	75mV
R23	7mR	7mR	7mR
I pk	3.57A	7.14A	10.71A

ILIM = FLOAT	Min	Typ	Max
V ILIMIT	65mV	75mV	85mV
R23	7mR	7mR	7mR
I pk	9.286A	10.714A	12.143A

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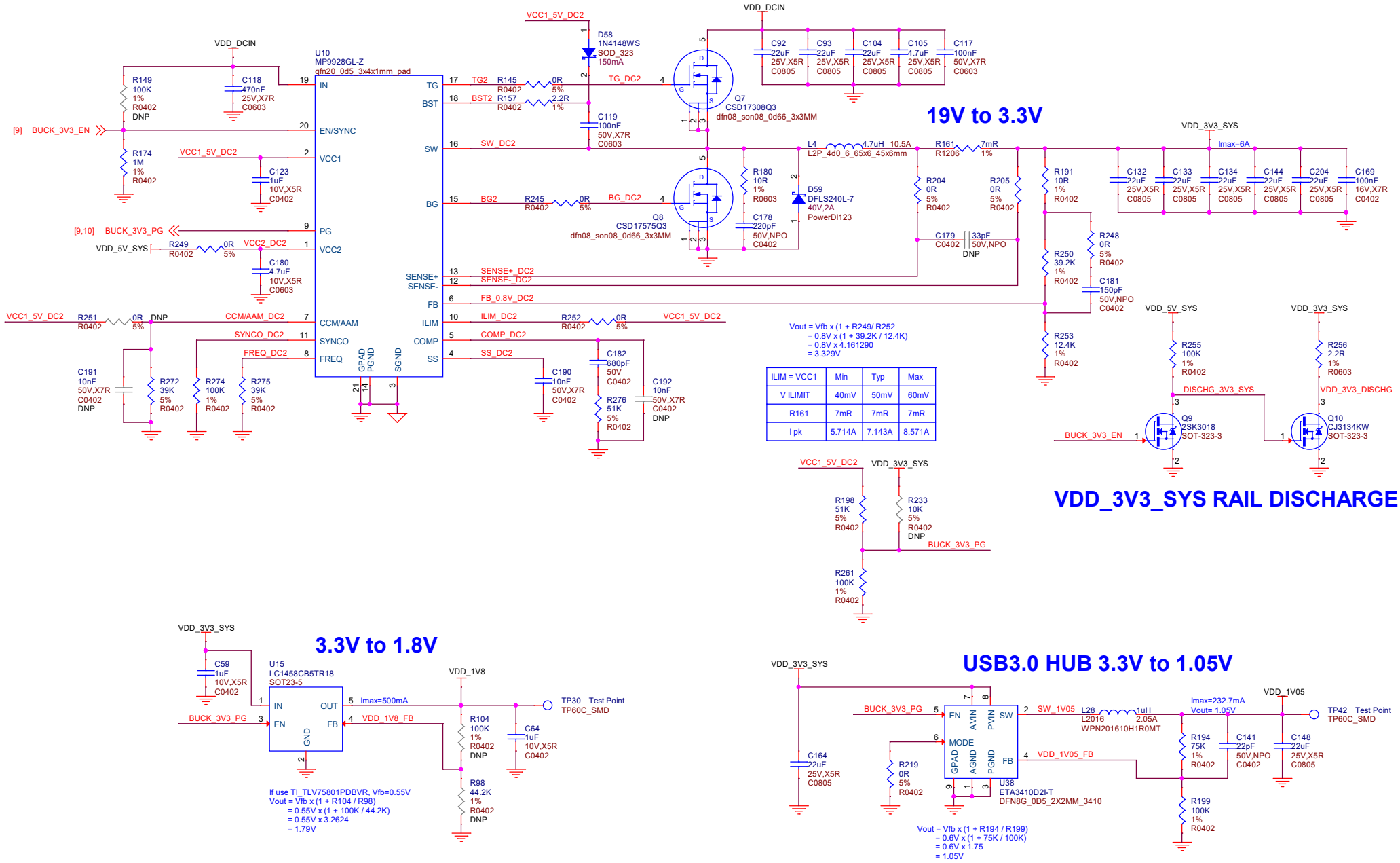
	Title: reComputer J401		
Size: A3	Document Number: 07 Power In & 5V & 3.3V_MCU		Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023		Sheet: 7 of 19


19V to 3.3V
VDD_3V3_SYS RAIL DISCHARGE
3.3V to 1.8V
USB3.0 HUB 3.3V to 1.05V
U10
MP9928GL-Z
qfn20_0d5_3x4x1mm_pad
VDD_DCIN
VCC1_5V_DC2
VDD_5V_SYS
VDD_3V3_SYS
VDD_1V8
VDD_1V05
[9] BUCK_3V3_EN
[9,10] BUCK_3V3_PG
D58 1N4148WS SOD_323 150mA
Q7 CSD17308Q3 dfn08_son08_0d66_3x3MM
Q8 CSD17575Q3 dfn08_son08_0d66_3x3MM
D59 DFLS240L-7 40V,2A PowerDI123
L4 4.7uH 10.5A L2P_4d0_6_65x6_45x6mm
L28 1uH 2.05A WPN201610H1R0MT
Vout = Vfb x (1 + R249/ R252
= 0.8V x (1 + 39.2K / 12.4K)
= 0.8V x 4.161290
= 3.329V
ILIM = VCC1 | Min | Typ | Max
V ILIMIT | 40mV | 50mV | 60mV
R161 | 7mR | 7mR | 7mR
I pk | 5.714A | 7.143A | 8.571A
U15
LC1458CB5TR18
SOT23-5
If use TI_TLV75801PDBVR, Vfb=0.55V
Vout = Vfb x (1 + R104 / R98)
= 0.55V x (1 + 100K / 44.2K)
= 0.55V x 3.2624
= 1.79V
U38
ETA3410D2I-T
DFN8G_0D5_2X2MM_3410
Vout = Vfb x (1 + R194 / R199)
= 0.6V x (1 + 75K / 100K)
= 0.6V x 1.75
= 1.05V
Q9 2SK3018 SOT-323-3
Q10 CJ3134KW SOT-323-3
TP30 Test Point TP60C_SMD
TP42 Test Point TP60C_SMD
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Title: reComputer J401
Size: A3
Document Number: 08 3.3V & 1.8V & 1.05V
Rev: V1.0
Draw By: Junqing.Xin
Date: Wednesday, February 15, 2023
Sheet: 8 of 19

Button MCU For Power Up

MCU

U29A RP2040 — 1 of 2

Project	GPIO20	GPIO23
reComputer J101	1	1
reComputer J202	0	1
reComputer J401	1	0

VDD_DCIN	MCU_ADC2
9V	0.993V
12V	1.324V
19V	2.096V
23V	2.537V

U29B RP2040 — 2 of 2

QSPI Flash

U22 GD25Q40ETIGR soic8_1d27_4_9x3_9mm

U23 GD25Q40EEIGR uson8_0d5_3x2x0_6mm DNP

USB BOOT

VDD_DCIN	FORCE_OFF*
9V	1.725V
12V	2.029V
19V	2.354V
23V	XXXXX

Debug - SWD

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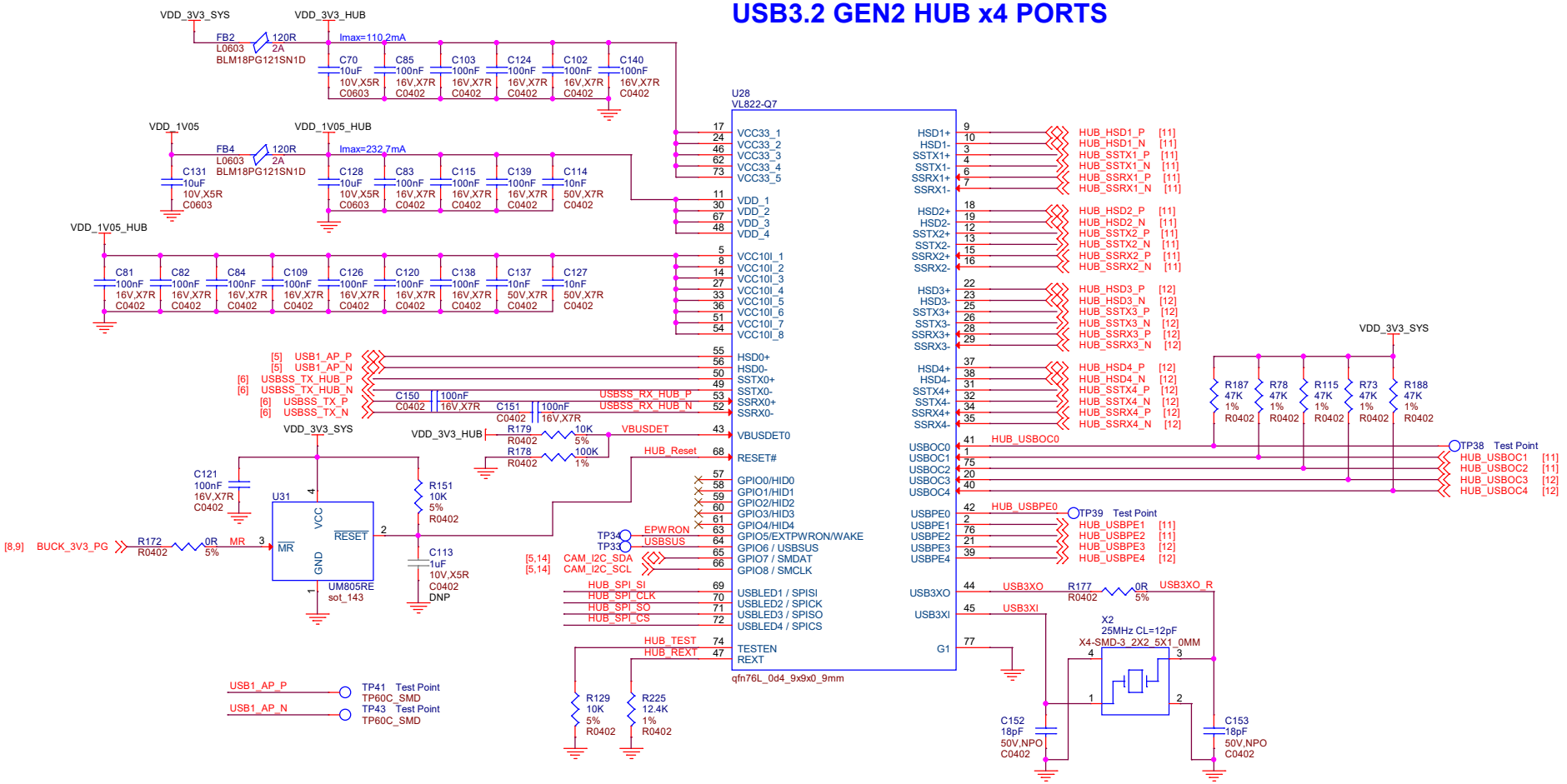
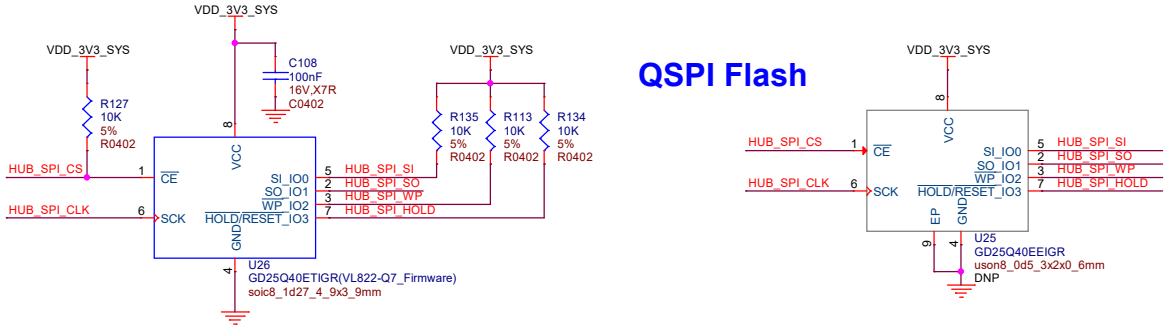
Title:	reComputer J401
Size: A3	Document Number: 09 Button MCU For Power Up
Rev: V1.0	
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023
Sheet: 9 of 19	

USB3.2 GEN2 HUB x4 PORTS



QSPI Flash



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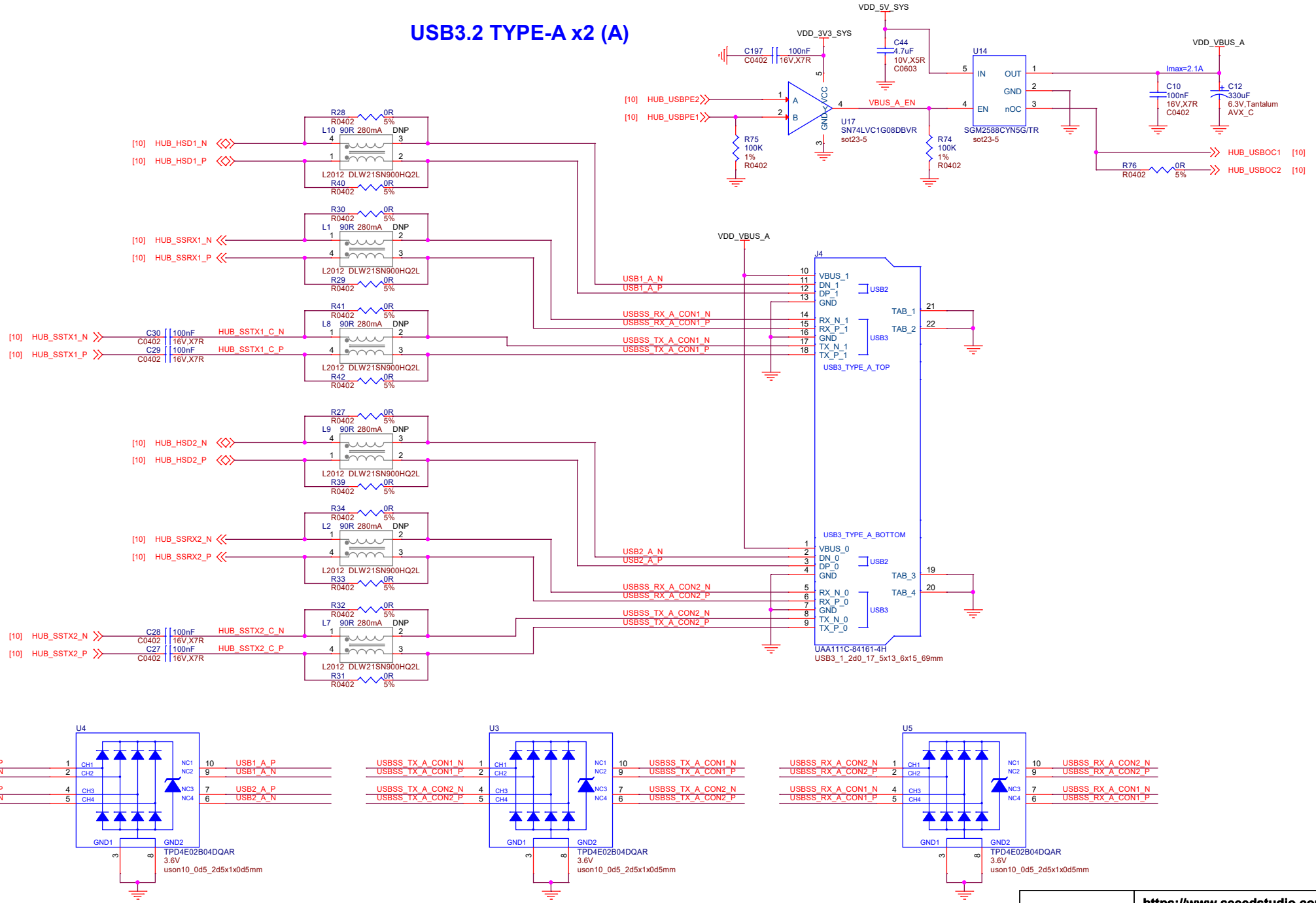
Title: reComputer J401		
Size: A3	Document Number: 10 USB3.2 HUB	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 10 of 19

USB3.2 TYPE-A x2 (A)



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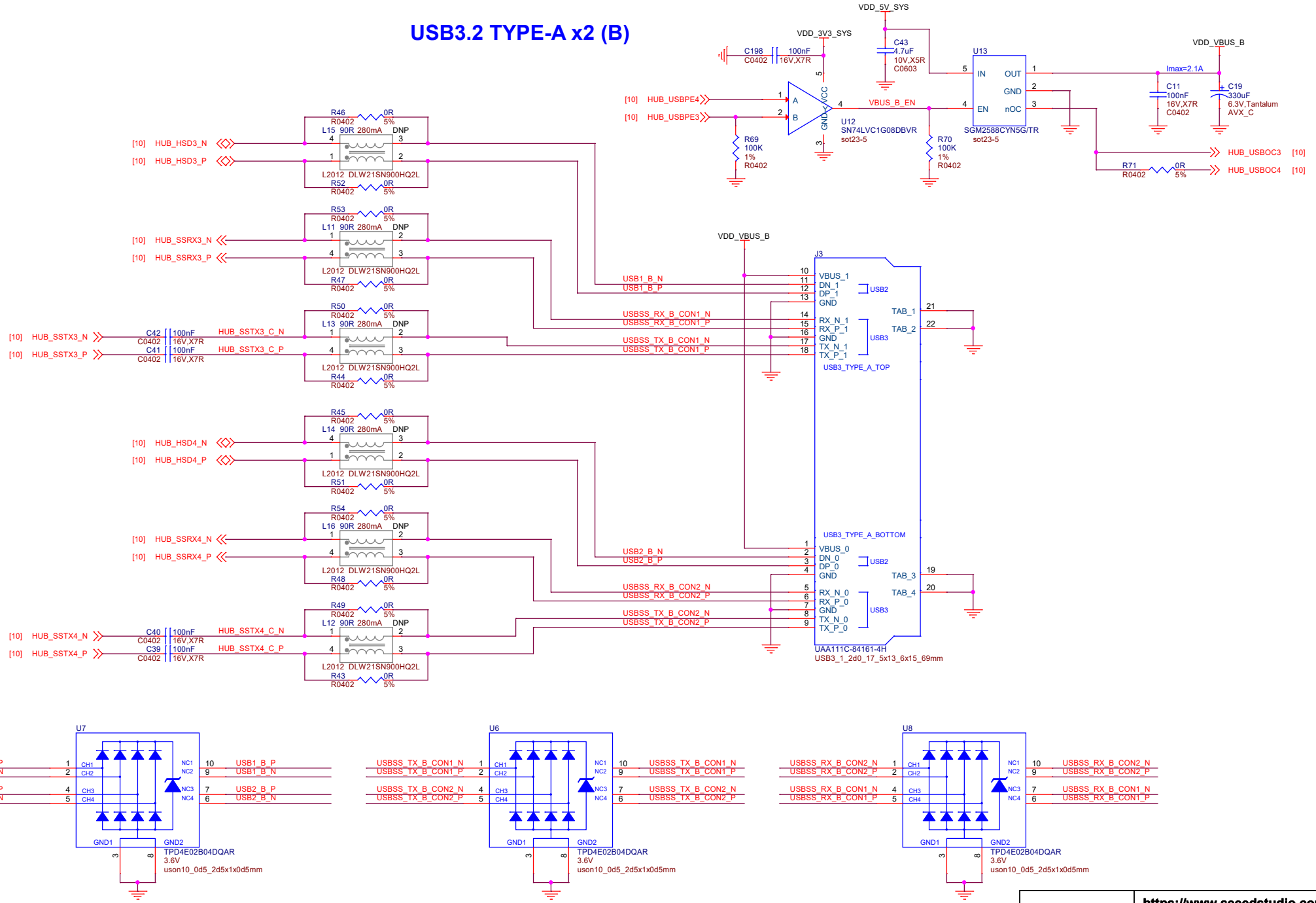
	Title: reComputer J401		
Size: A3	Document Number: 11 USB3.2 Type-A x2 (A)		Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023		Sheet: 11 of 19

USB3.2 TYPE-A x2 (B)



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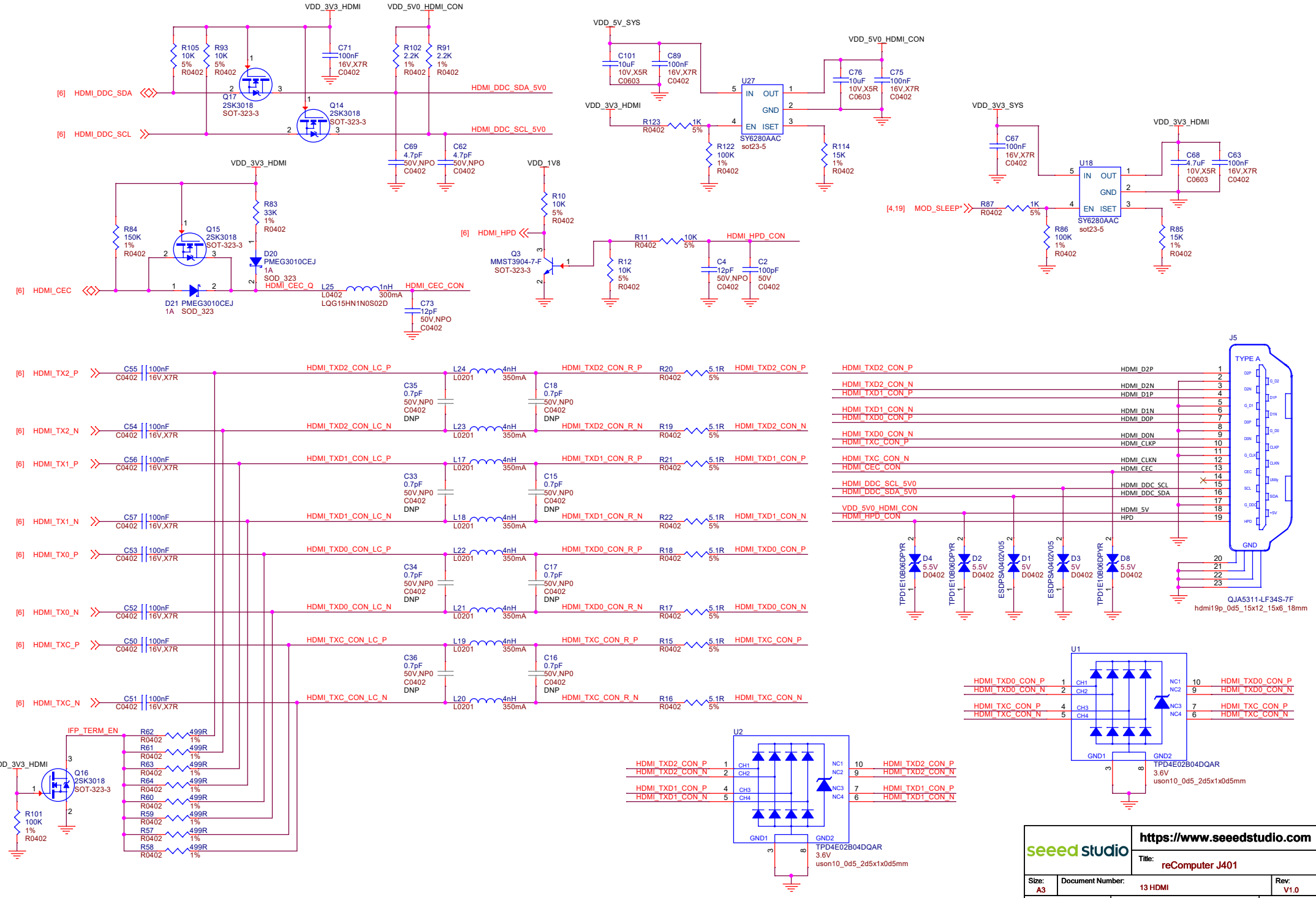
Size: A3	Document Number: 12 USB3.2 Type-A x2 (B)		Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023		Sheet: 12 of 19

HDMI Connector



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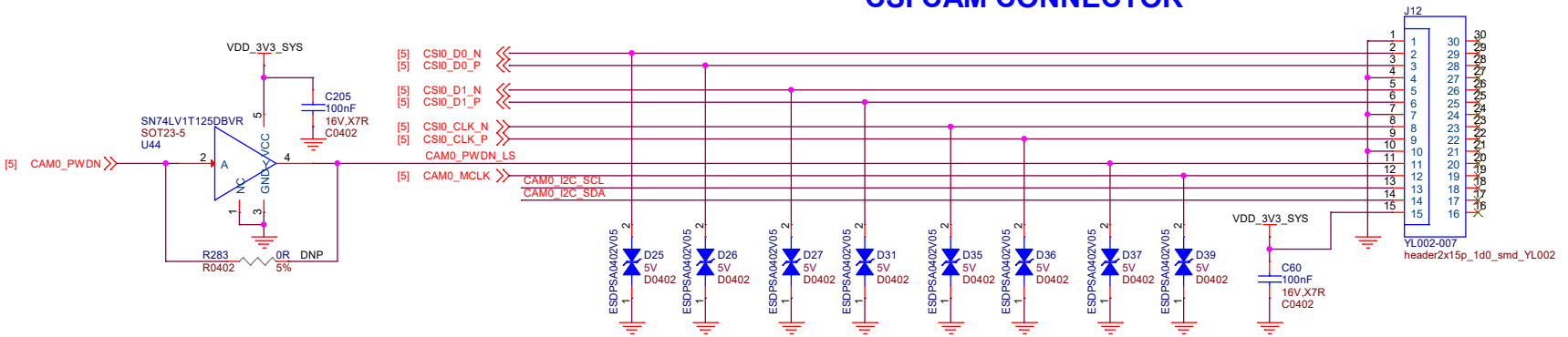
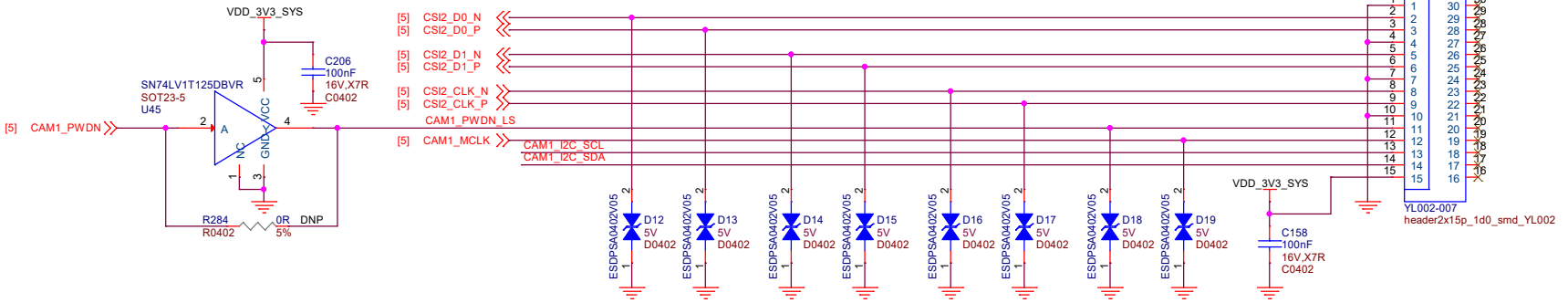
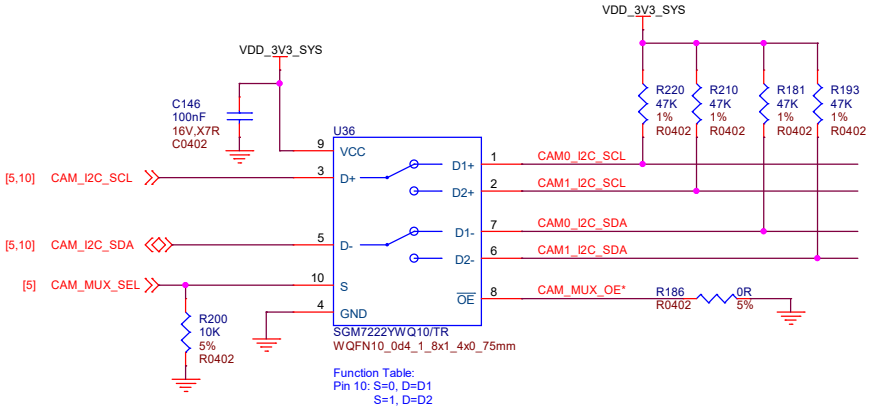
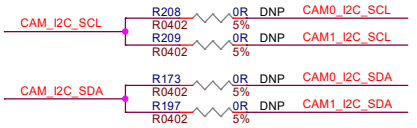
	Title: reComputer J401		
Size: A3	Document Number: 13 HDMI		Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023		Sheet: 13 of 19

CSI CAM CONNECTOR









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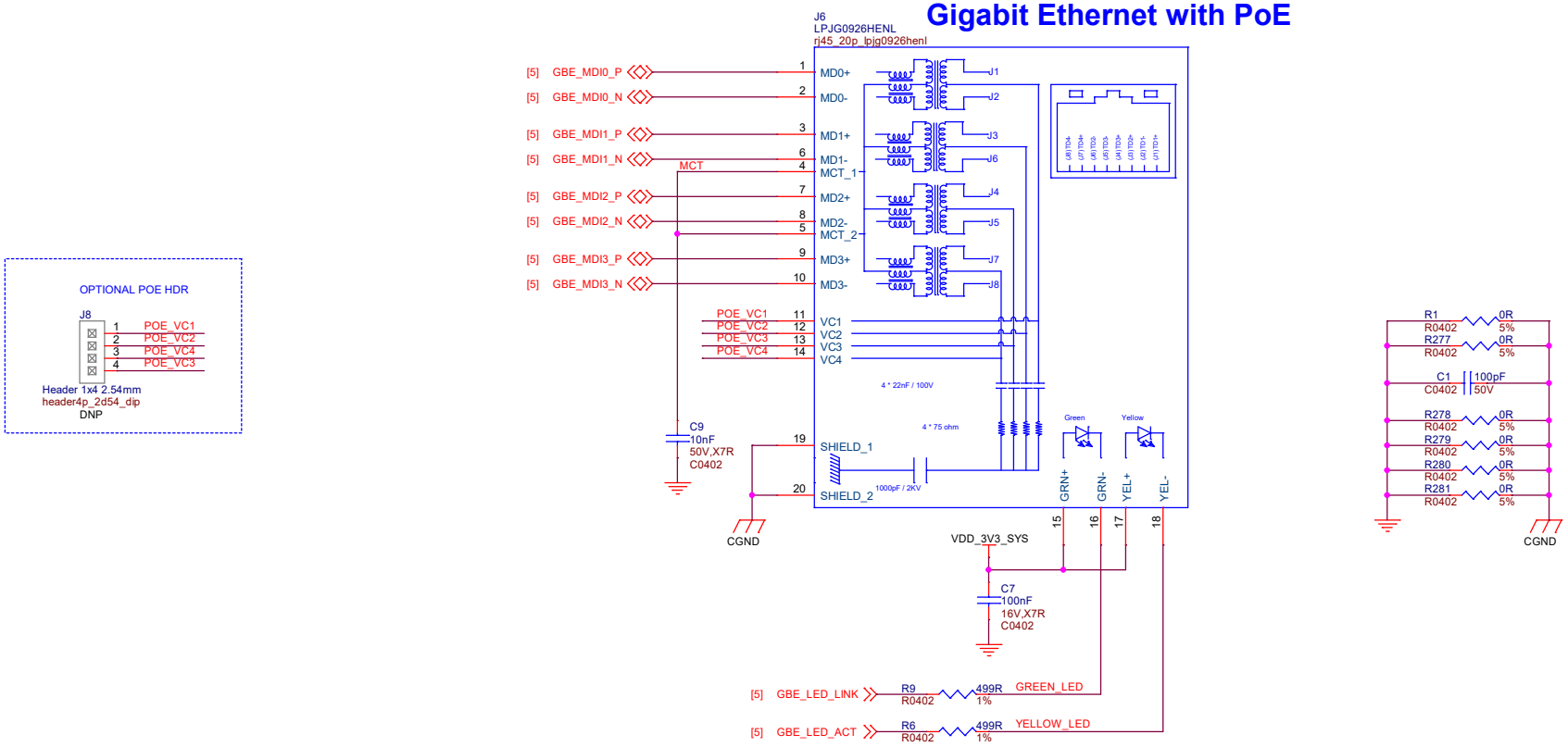
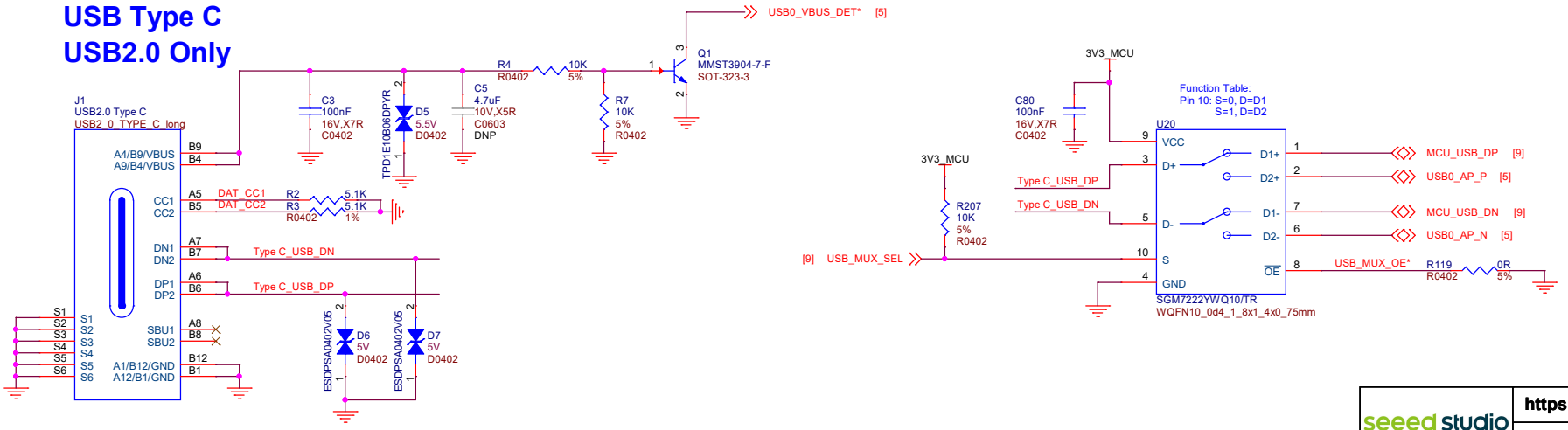
	Title: reComputer J401	
Size: A3	Document Number: 14 CAM Connector	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 14 of 19

Gigabit Ethernet with PoE



USB Type C
USB2.0 Only



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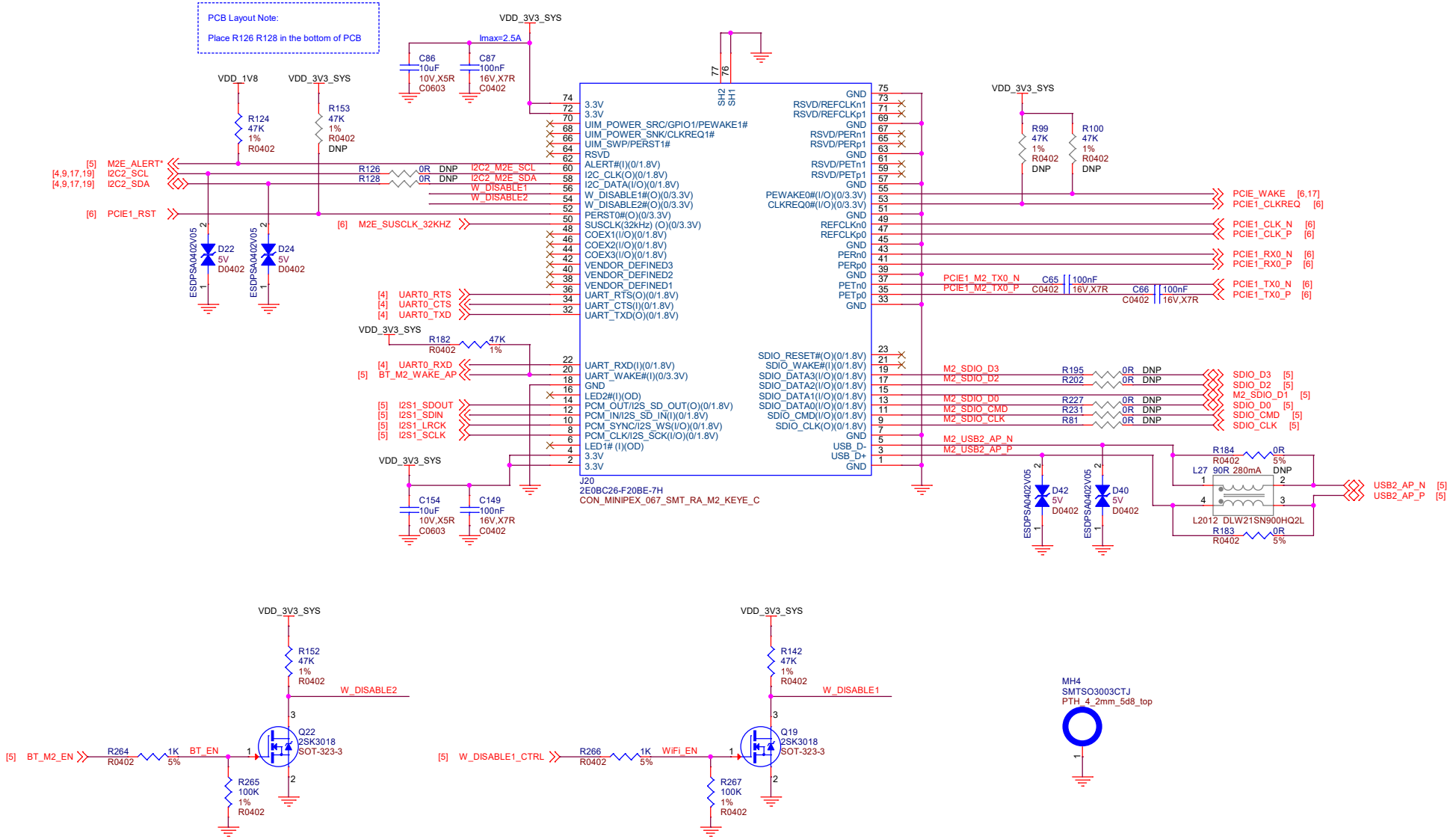
Title: reComputer J401		
Size: A3	Document Number: 15 Gigabit Ethernet, Type C	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 15 of 19

M.2 KEY-E (WIFI/BT)



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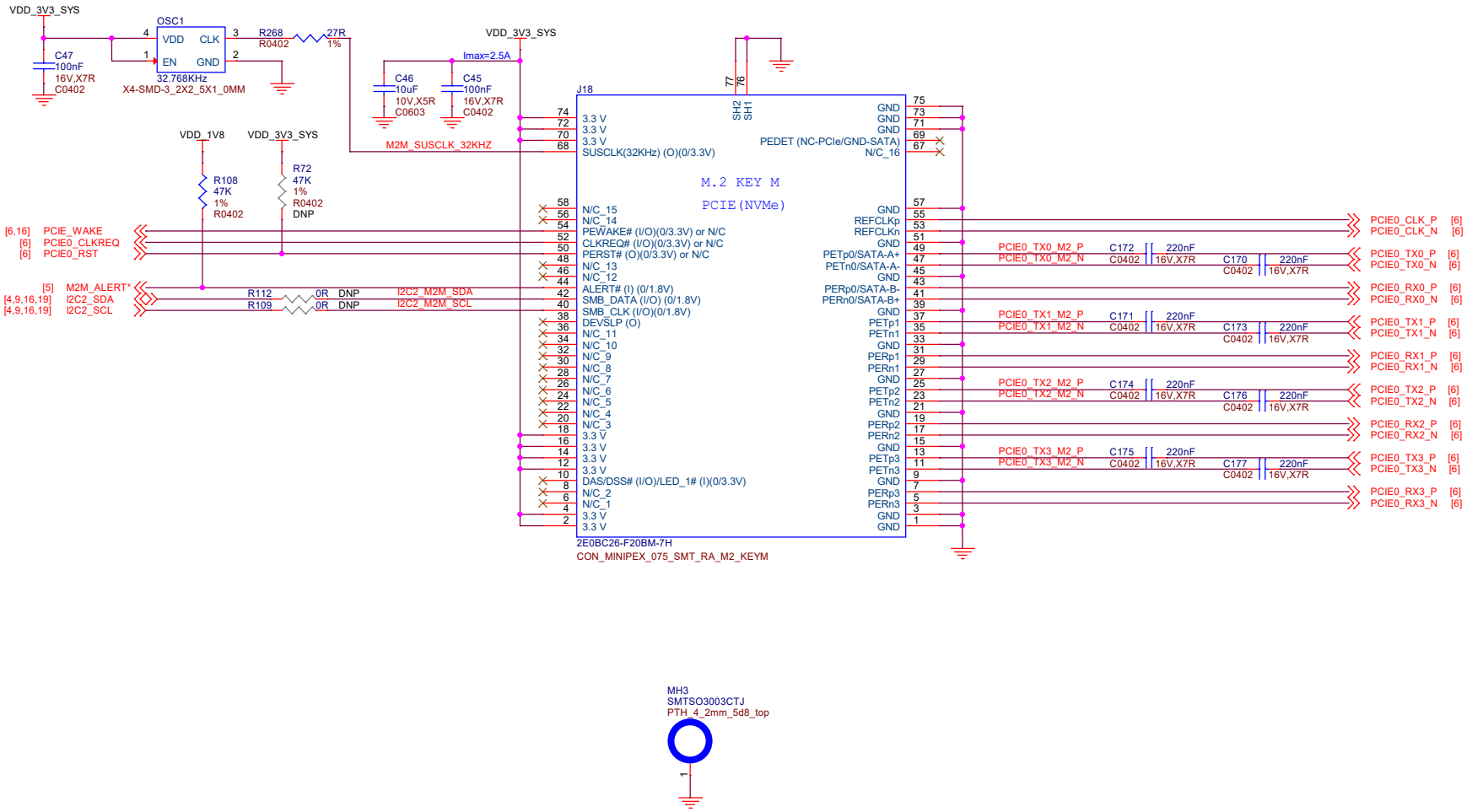
	Title: reComputer J401	
Size: A3	Document Number: 16 M.2 KEY-E (WIFI/BT)	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 16 of 19

M.2 KEY-M (NVME)



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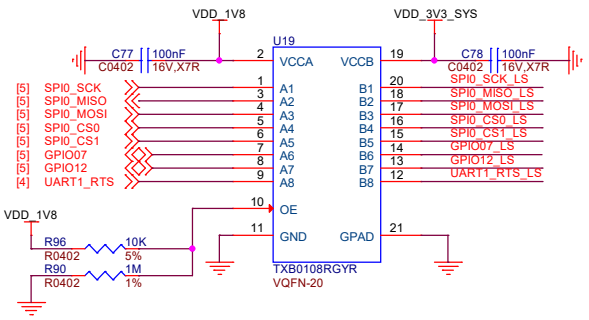
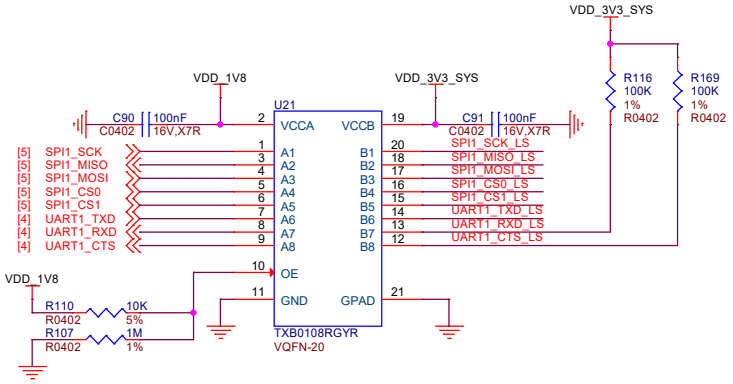
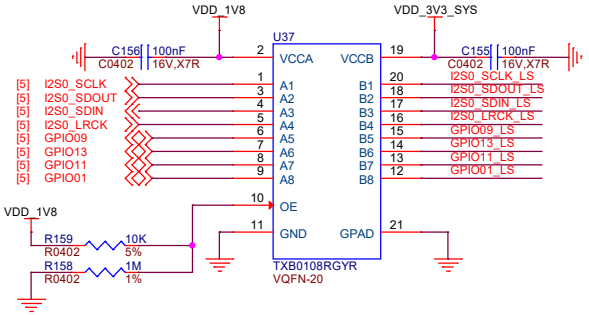
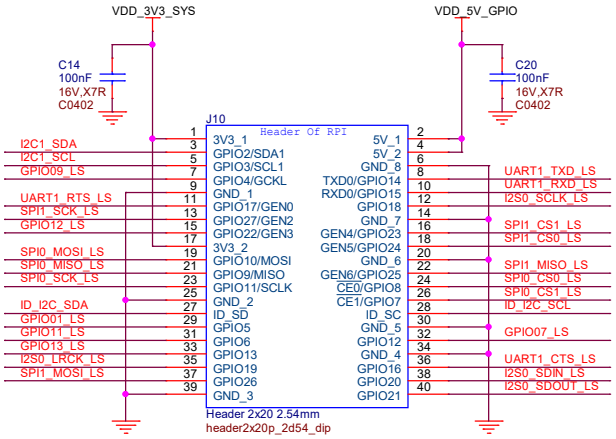
Title: reComputer J401		
Size: A3	Document Number: 17 M.2 KEY-M (NVME)	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 17 of 19

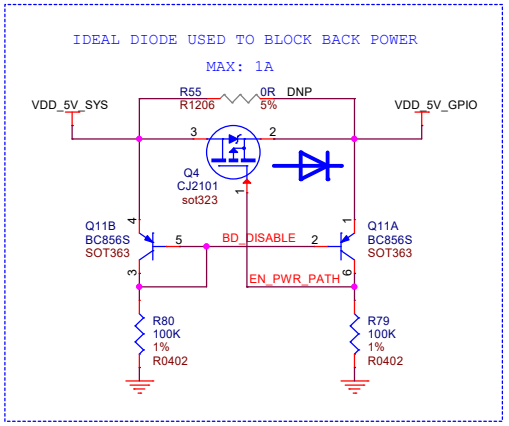
40PIN GPIO EXPANSION HEADER & LEVEL SHIFTERS

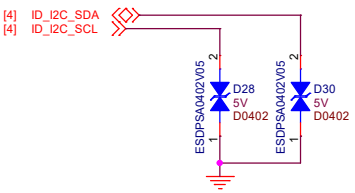


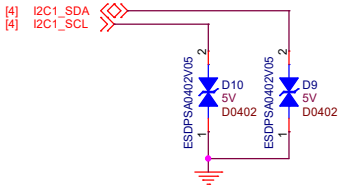












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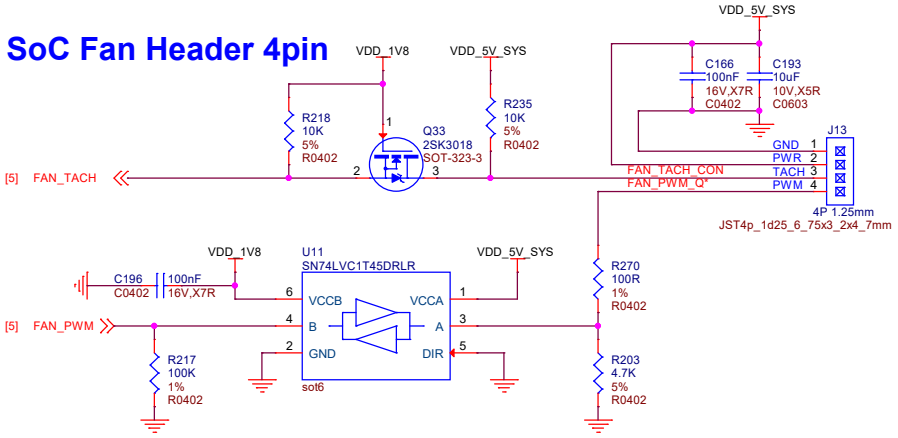
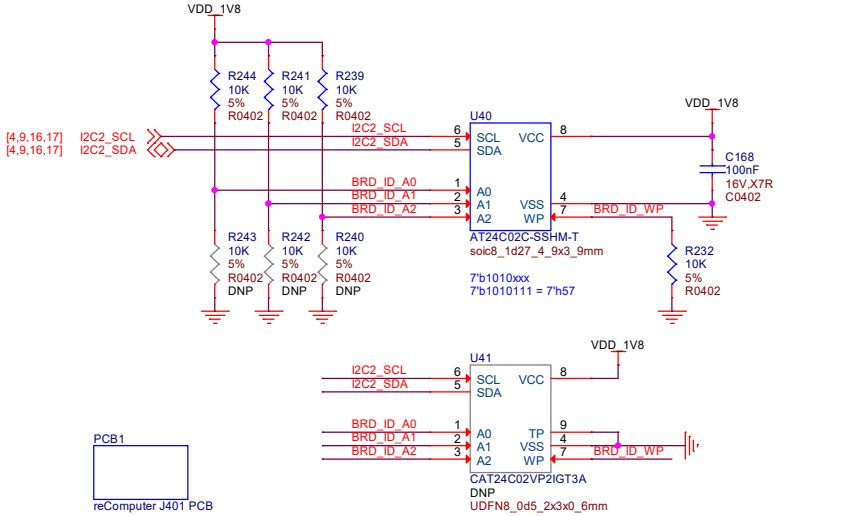
Title: reComputer J401

Size: A3	Document Number: 18 40Pin GPIO Expansion Header	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 18 of 19

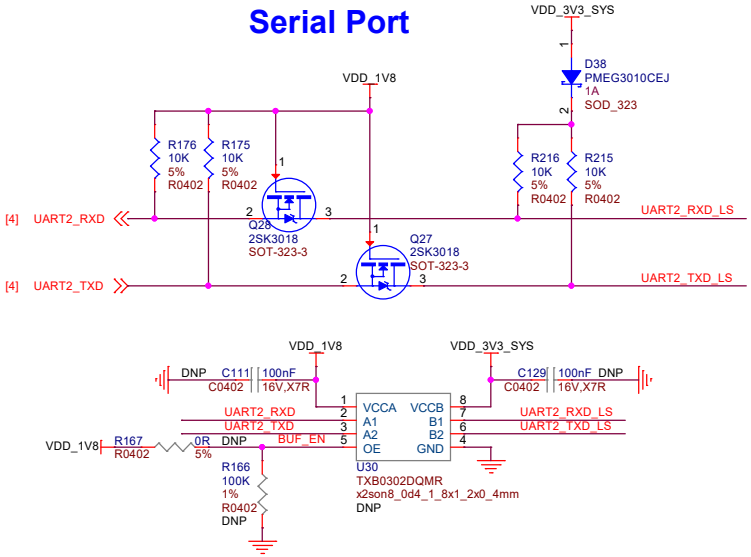
SoC Fan Header 4pin



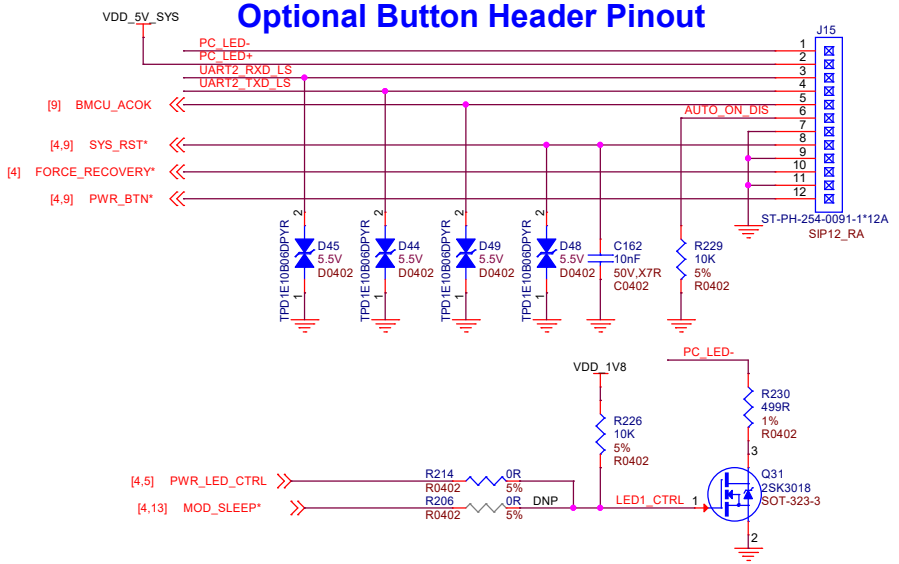
Carrier Board Config



Serial Port



Optional Button Header Pinout



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Title: reComputer J401		
Size: A3	Document Number: 19 Fan, Debug and EEPROM	Rev: V1.0
Draw By: Junqing.Xin	Date: Wednesday, February 15, 2023	Sheet: 19 of 19