

[illegible]

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Purism SPC

Sheet: /USB-C/

File: usb-c.sch

Title: USB Type C

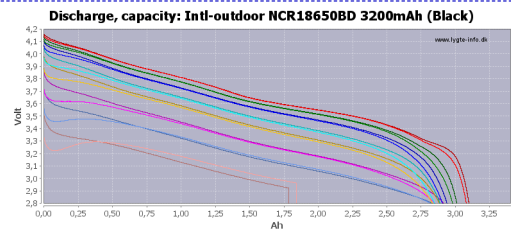
Size: A3

Date: 2018-05-02

Rev: v0.1.0

KiCad E.D.A. kicad 4.0.7

Id: 2/17

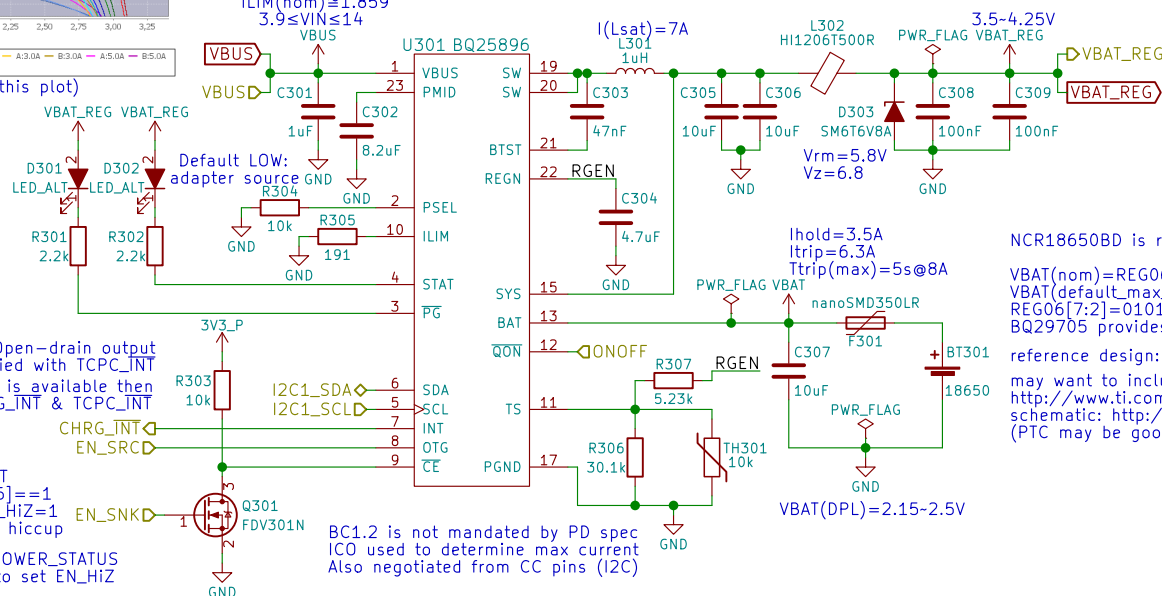


(interpret RSOC% based on this plot)

use AUTO_DPDM_EN
to auto-detect IINLIM

$1.658 \leq I_{LIM} \leq 2.063$
 $I_{LIM}(nom) \approx 1.859$
 $3.9 \leq V_{IN} \leq 14$

Battery Charge Controller



NCR18650BD is recommended

$V_{BAT}(nom) = REG06[7:2]$
 $V_{BAT}(default_max_ovp) = (REG06[7:2] \times 1.005) \times 1.04 = 4.3982016V$
 $REG06[7:2] = 010111 \Rightarrow V_{BAT}(max_ovp) = 4.3814784$
 BQ29705 provides 4.425V as OVP!!!

reference design: <http://www.ti.com/lit/ug/sluuba2b/sluuba2b.pdf>
 may want to include BQ29705 protection as in:
<http://www.ti.com/lit/ug/tiduc1/tiduc1.pdf>
 schematic: <http://www.ti.com/lit/df/tidrp70/tidrp70.pdf>
 (PTC may be good enough)

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Sheet: /Battery/

File: battery.sch

Title: Battery

Size: A4 Date: 2018-05-02

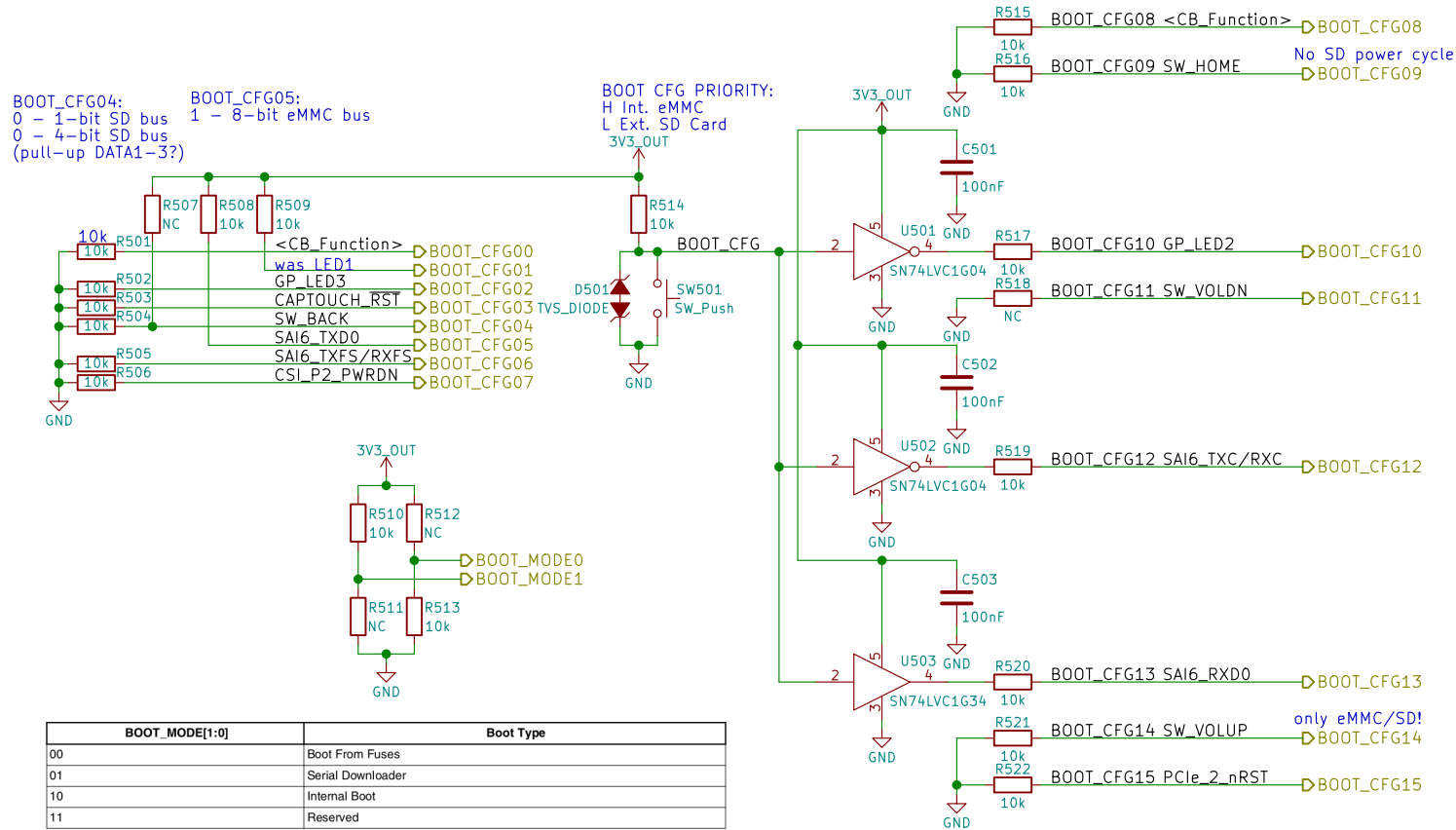
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Rev: v0.1.0

Id: 3/17

BOOT_CFG04:
0 - 1-bit SD bus
0 - 4-bit SD bus
(pull-up DATA1-3?)

BOOT_CFG05:
1 - 8-bit eMMC bus



BOOT_MODE[1:0]	Boot Type
00	Boot From Fuses
01	Serial Downloader
10	Internal Boot
11	Reserved

BOOT_CFG[14:12]		Boot device			
001		SD/eSD			
010		MMC/eMMC			
011		NAND			
Fuse	Config	Definition	GPIO ¹	Shipped value	Settings
BOOT_CFG[11:10]	OEM	USDHC port selection	Yes	00	00 - USDHC-1 01 - USDHC-2 10 - USDHC-3 else - reserved

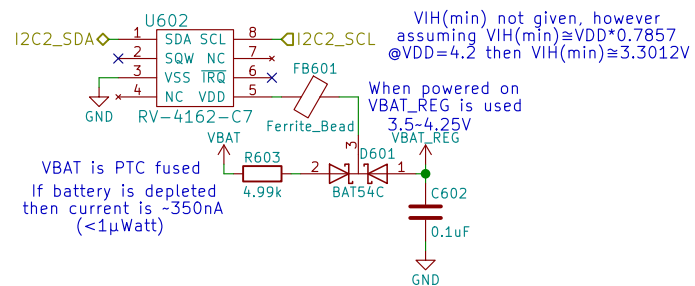
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Sheet: /Boot Config/
File: boot.sch

Title: Boot Configuration

Size: A4 Date: 2018-05-02
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Rev: v0.1.0
Id: 5/17



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Sheet: /RTC/
File: rtc.sch

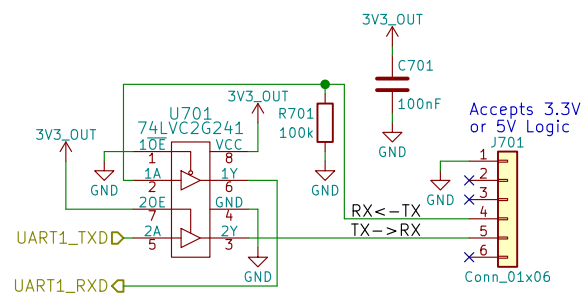
Title: RTC

Size: A4 Date: 2018-05-02

KiCad E.D.A. kicad 4.0.7

Rev: v0.1.0

Id: 6/17



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Sheet: /UART Debug/
File: uart.sch

Title: UART Debug

Size: A4 Date: 2018-05-02

KiCad E.D.A. kicad 4.0.7

Rev: v0.1.0

Id: 7/17



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Sheet: /JTAG/

File: jtag.sch

Title: JTAG

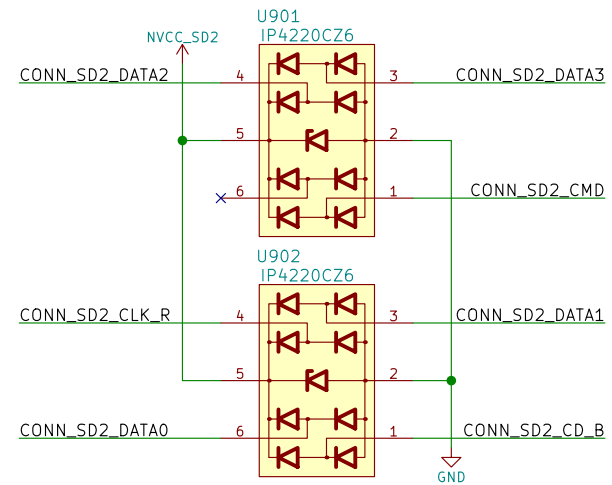
Size: A4

KiCad E.D.A. kicad 4.0.7

Date: 2018-05-02

Rev: v0.1.0

Id: 8/17



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Sheet: /uSD Card/

File: sd.sch

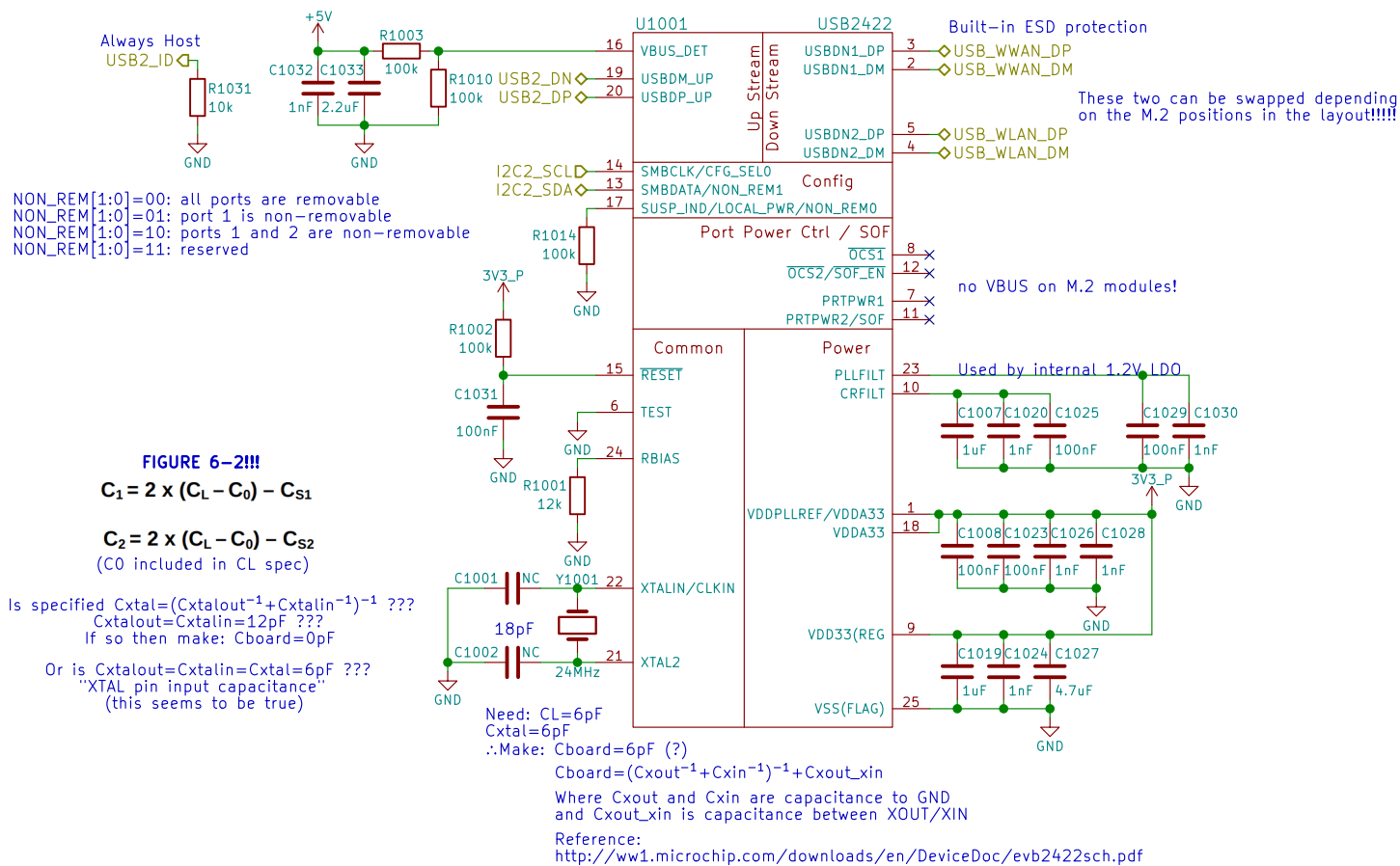
Title: uSD Card

Size: A4 Date: 2018-05-02

KiCad E.D.A. kicad 4.0.7

Rev: v0.1.0

Id: 9/17



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Sheet: /USB Hub/

File: usb_hub.sch

Title:

Size: A4

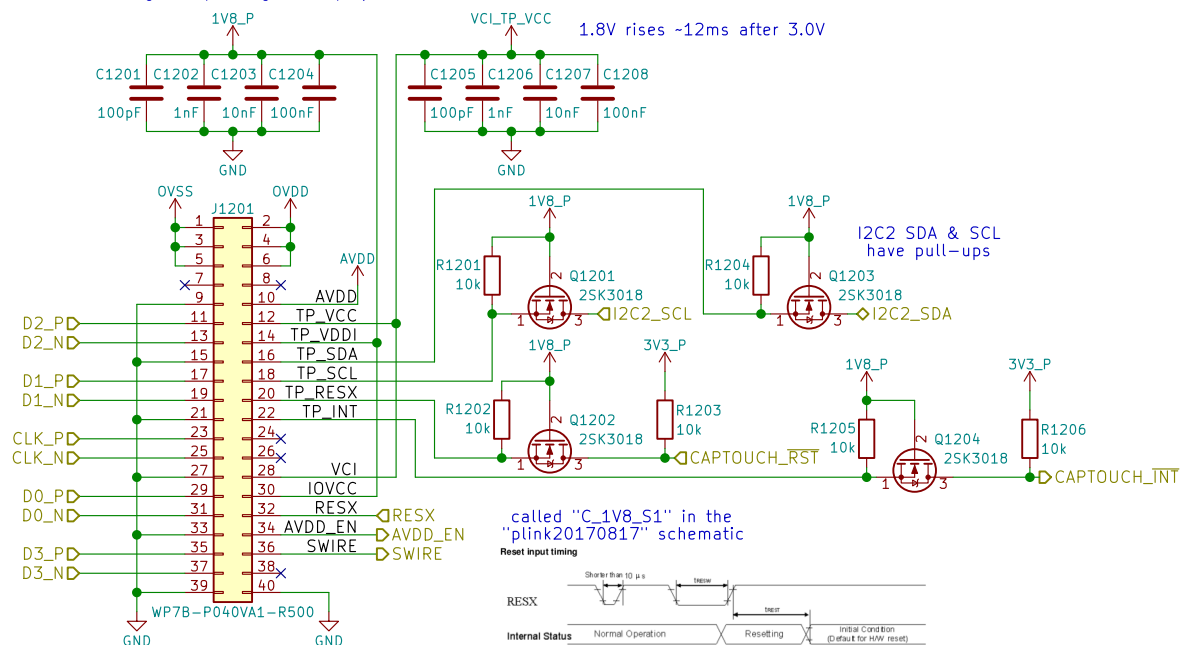
Date: 2018-05-02

Rev: v0.1.0

KiCad E.D.A. kicad 4.0.7

Id: 10/17

Using H546DLB01.1 pin assignment may need to be changed depending on display used



TODO: low power state signal??

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Sheet: /MIPI DSI/
File: mipi_dsi.sch

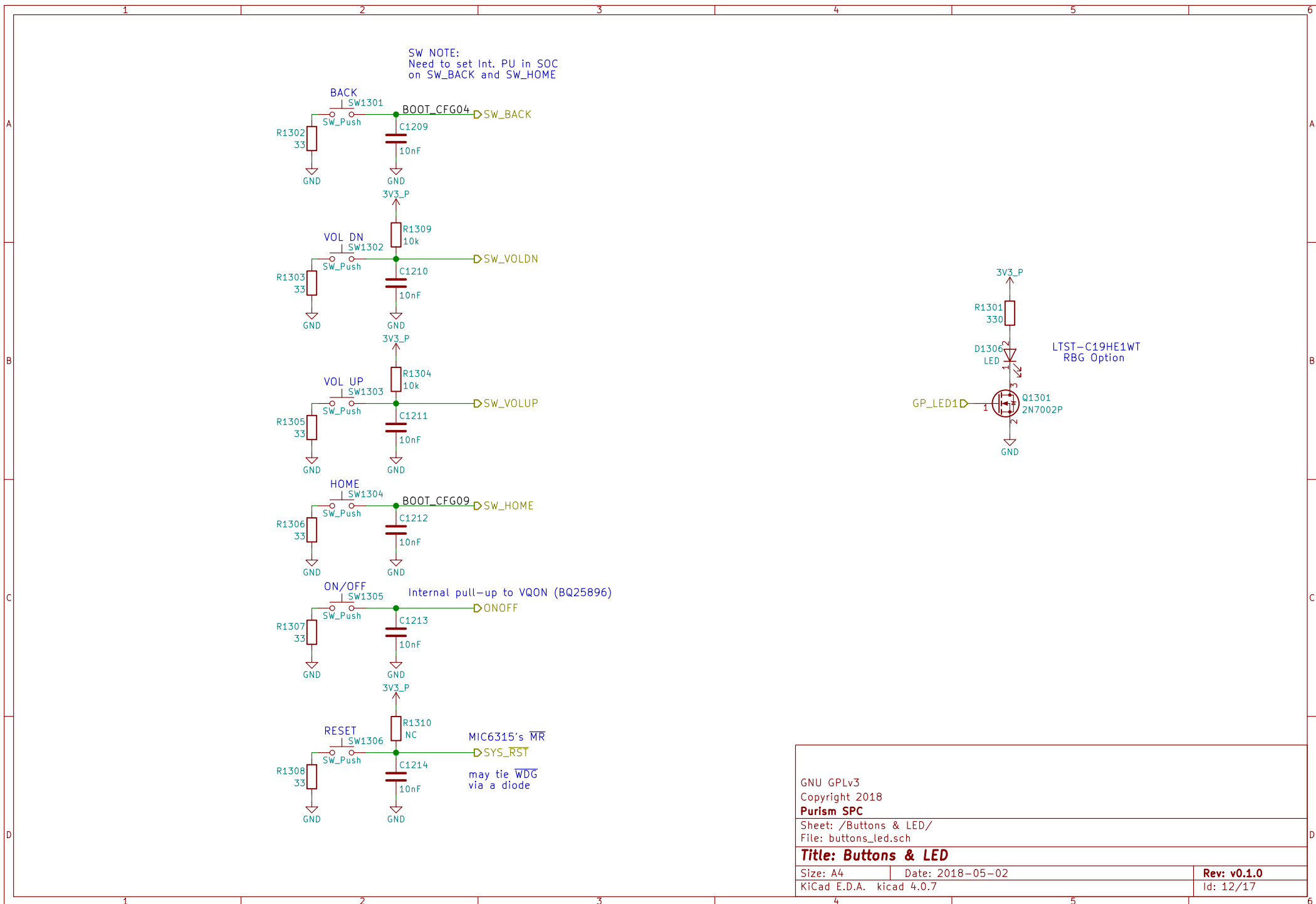
Title: MIPI DSI

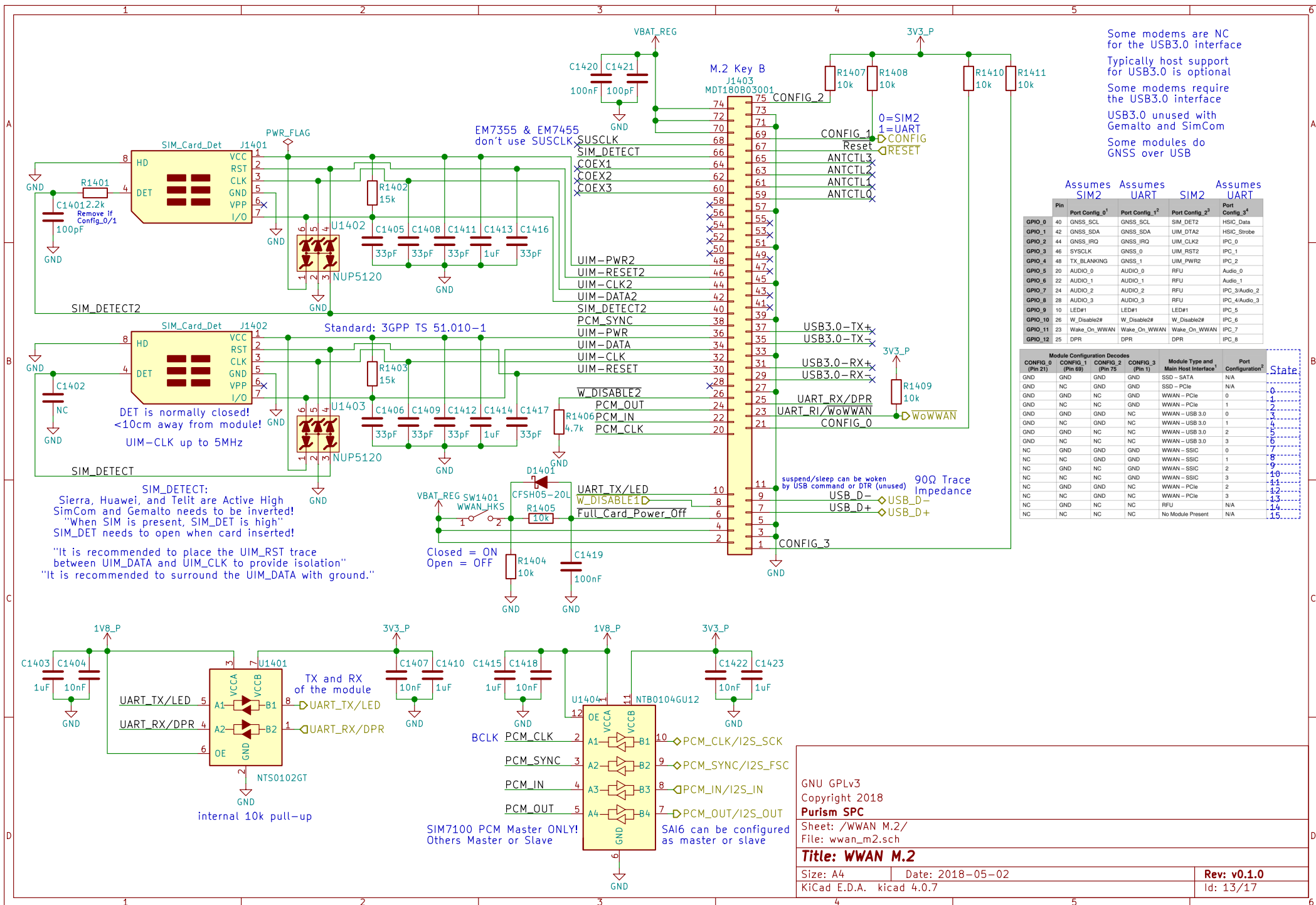
Size: A4 Date: 2018-05-02

KiCad E.D.A. kicad 4.0.7

Rev: v0.1.0

Id: 11/17

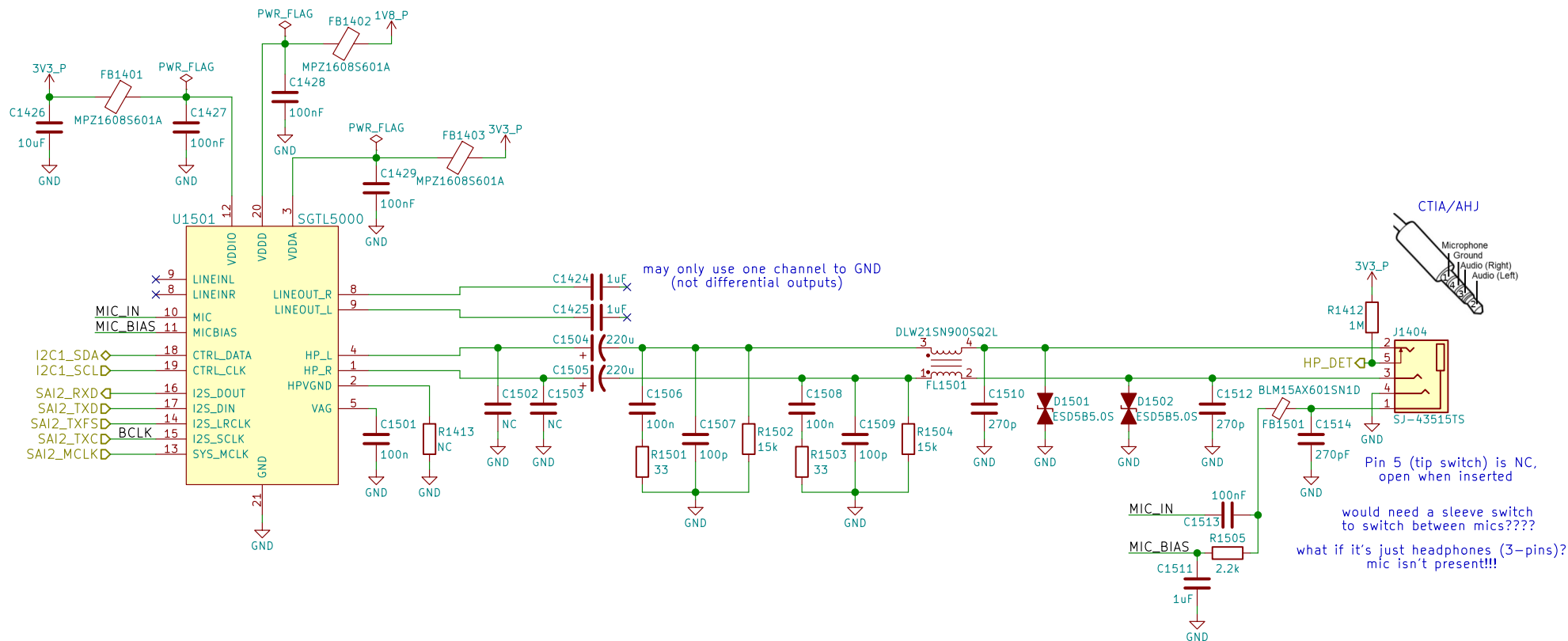




Some modems are NC for the USB3.0 interface
Typically host support for USB3.0 is optional
Some modems require the USB3.0 interface
USB3.0 unused with Gemalto and SimCom
Some modules do GNSS over USB

		Assumes SIM2	Assumes UART	Assumes SIM2	Assumes UART
Pin		Port Config. 0 ¹	Port Config. 1 ²	Port Config. 2 ³	Port Config. 3 ⁴
GPIO_0	40	GNSS_SCL	GNSS_SCL	SIM_DET2	HSIC_Data
GPIO_1	42	GNSS_SDA	GNSS_SDA	UIM_DTA2	HSIC_Strobe
GPIO_2	44	GNSS_IRQ	GNSS_IRQ	UIM_CLK2	IPC_0
GPIO_3	46	SYSClk	GNSS_0	UIM_RST2	IPC_1
GPIO_4	48	TX_BLANKING	GNSS_1	UIM_PWR2	IPC_2
GPIO_5	20	AUDIO_0	AUDIO_0	RFU	Audio_0
GPIO_6	22	AUDIO_1	AUDIO_1	RFU	Audio_1
GPIO_7	24	AUDIO_2	AUDIO_2	RFU	IPC_3/Audio_2
GPIO_8	28	AUDIO_3	AUDIO_3	RFU	IPC_4/Audio_3
GPIO_9	10	LED#1	LED#1	LED#1	IPC_5
GPIO_10	26	W_Disable2#	W_Disable2#	W_Disable2#	IPC_6
GPIO_11	23	Wake_On_WWAN	Wake_On_WWAN	Wake_On_WWAN	IPC_7
GPIO_12	25	DPR	DPR	DPR	IPC_8

		Module Configuration Decodes	Module Type and Main Host Interface ¹	Port Configuration ²	State
CONFIG_0 (Pin 21)	CONFIG_1 (Pin 69)	CONFIG_2 (Pin 75)	CONFIG_3 (Pin 1)		
GND	GND	GND	GND	SSD - SATA	N/A
GND	NC	GND	GND	SSD - PCIe	N/A
GND	GND	NC	GND	WWAN - PCIe	0
GND	NC	NC	GND	WWAN - PCIe	1
GND	GND	GND	NC	WWAN - USB 3.0	2
GND	NC	GND	NC	WWAN - USB 3.0	3
GND	GND	NC	NC	WWAN - USB 3.0	4
GND	NC	NC	NC	WWAN - USB 3.0	5
GND	NC	NC	NC	WWAN - USB 3.0	6
NC	GND	GND	GND	WWAN - SSIC	7
NC	NC	GND	GND	WWAN - SSIC	8
NC	GND	NC	GND	WWAN - SSIC	9
NC	NC	NC	GND	WWAN - SSIC	10
NC	GND	NC	GND	WWAN - SSIC	11
NC	NC	GND	NC	WWAN - PCIe	12
NC	NC	GND	NC	WWAN - PCIe	13
NC	GND	NC	NC	RFU	14
NC	NC	NC	NC	No Module Present	15



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Sheet: /Audio/
File: audio.sch

Title: Audio

Size: A4 Date: 2018-05-02

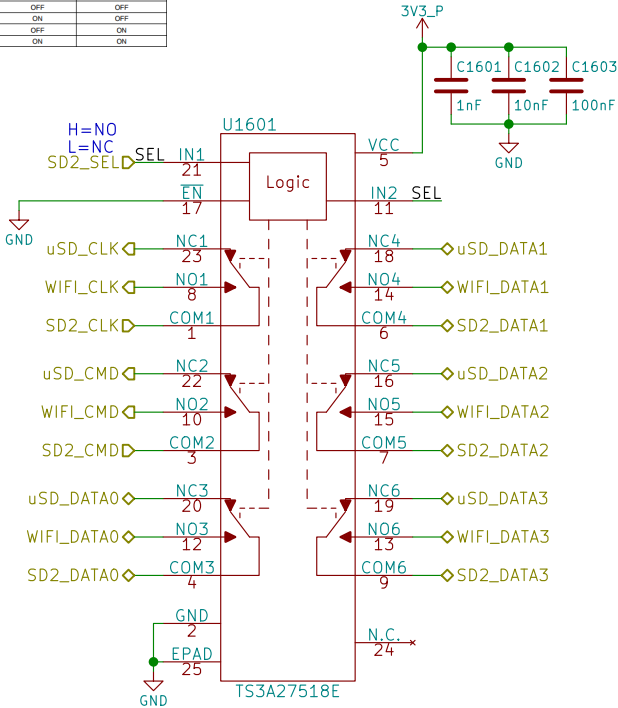
KiCad E.D.A. kicad 4.0.7

Rev: v0.1.0

Id: 14/17

Can swap around signals in the layout:

EN	IN1	IN2	NC1123 TO COM1123, COM1123 TO NC1123	NC456 TO COM456, COM456 TO NC456	NC1123 TO COM1123, COM1123 TO NC1123	NC456 TO COM456, COM456 TO NC456
H	X	X	OFF	OFF	OFF	OFF
L	L	L	ON	ON	OFF	OFF
L	H	L	OFF	ON	ON	OFF
L	L	H	ON	OFF	OFF	ON
L	H	H	OFF	OFF	ON	ON



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Purism SPC

Sheet: /SDIO DEMUX/

File: sdio_demux.sch

Title: SDIO Demultiplexer

Size: A4

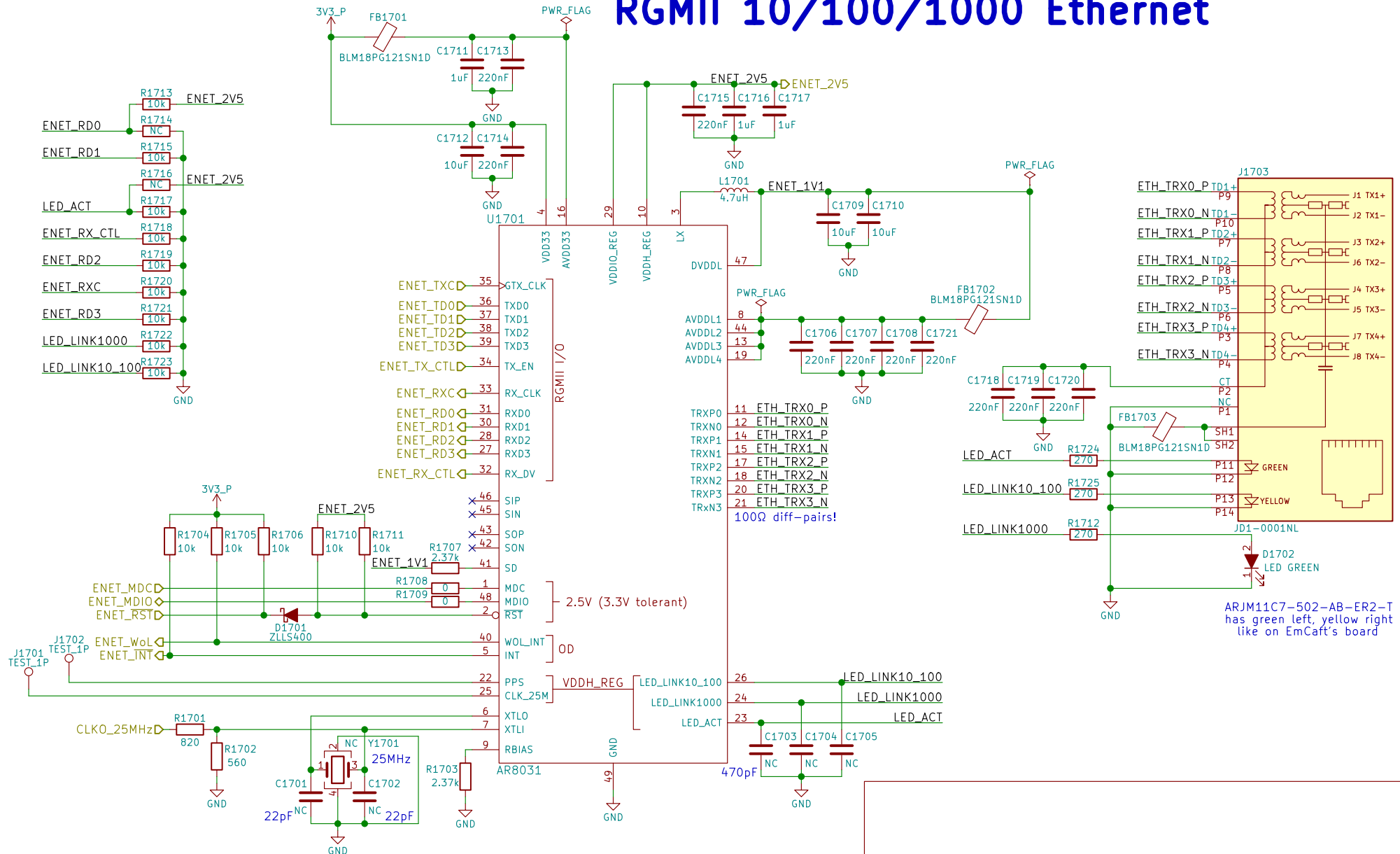
Date: 2018-05-02

KiCad E.D.A. kicad 4.0.7

Rev: v0.1.0

Id: 15/17

RGMII 10/100/1000 Ethernet



Sheet: /Ethernet/
File: ethernet.sch

Title:

Size: A4
KiCad E.D.A. kicad 4.0.7

Date:

Rev:

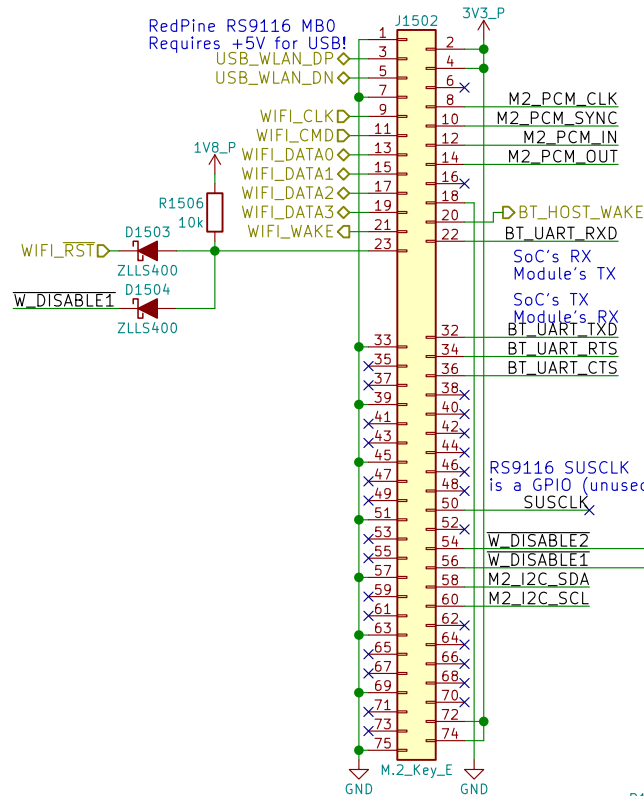
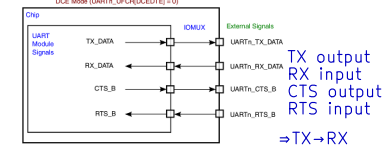
Id: 16/17

RS9116 NC:
RTS, CTS, BT_HOST_WAKE, WIFI_WAKE

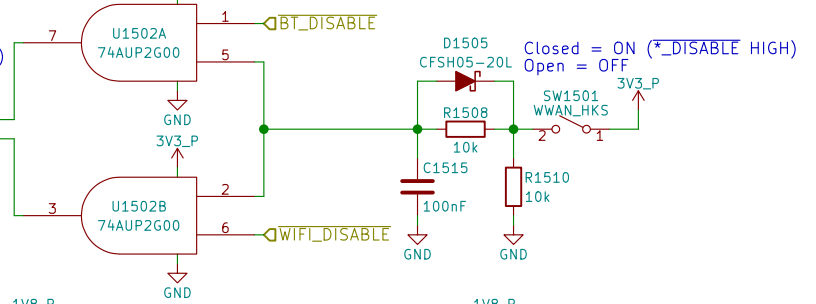
6.2 M.2 Signal Directions

Module: Table 23
Socket: Table 46

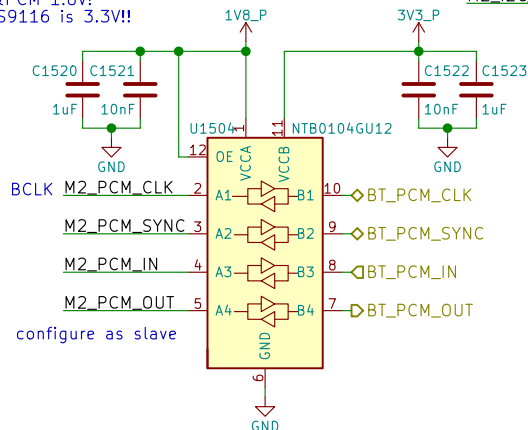
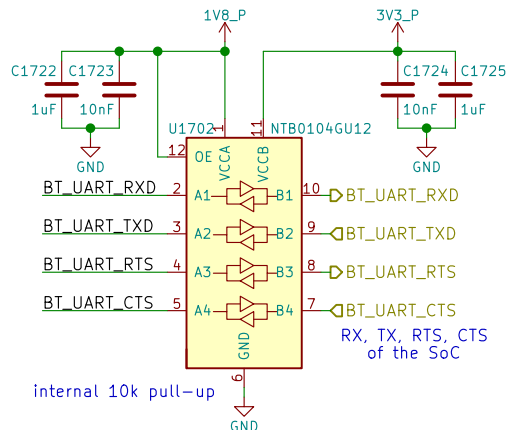
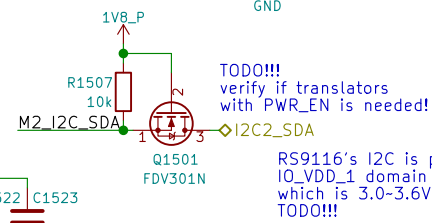
UARTn_UFCR[DCEDTE]=0 on POR



i.MX8M in DCE mode has
CTS output, RTS input



TODO:
M.2 spec defines
UART&PCM 1.8V!
but RS9116 is 3.3V!!



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Sheet: /WLAN+BT M.2/

File: wifi_bt_m2.sch

Title: WLAN+BT M.2

Size: A4 Date: 2018-05-02

KiCad E.D.A. kicad 4.0.7

Rev: v0.1.0

Id: 17/17