

TOP

MPP4_PBBR
PBBR

VLED

BP_TAKE_OFF_LANDING

GND

K_GREEN
K_RED
K_BLUE

K_GREEN
K_RED
K_BLUE

BASIC

DATE	BoM	AUTHOR	HISTORY

Schematic

statut

☒ Draft

☐ Reviewed

☐ Approved



Parrot

Confidential

Author
M. NGUEMA

Size
A4

Project Name_Gerber_BoM

MPP4_PBBR_HW01

Date:

Monday, November 30, 2020

Sheet

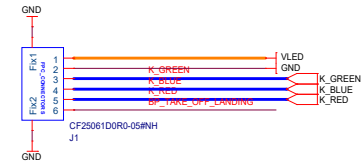
1

of

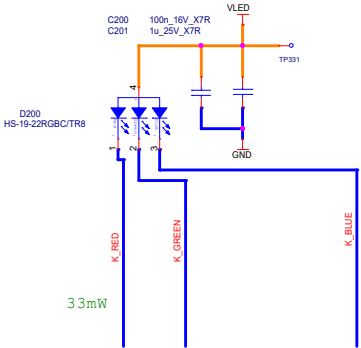
5

BOLD Orange: 75 mA TRACK MINIMUM
BOLD BLUE : 25 mA TRACK MINIMUM

BUTTONS



ON/OFF LEDs



VLED

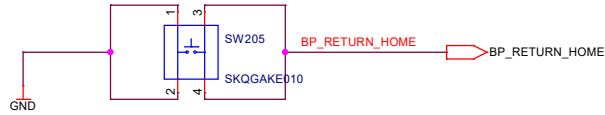
GND

BASIC			
DATE	BoM	AUTHOR	HISTORY
Schematic status			
☒ Draft ☐ Reviewed ☐ Approved			
 Parrot		Confidential	
Size A4		Author M. NGUEMA	
Project Name_Gerber_BoM		MPP4_PBBR_HW01	
Date: Monday, November 30, 2020		Sheet 2 of 5	

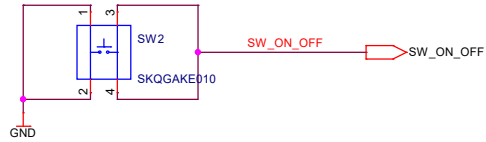
MPP4_PBBL_HW02_20201113

GND  GND

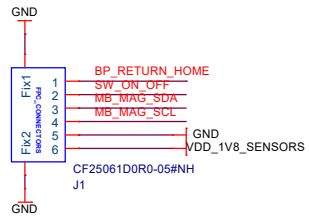
BUTTONS RETURN HOME



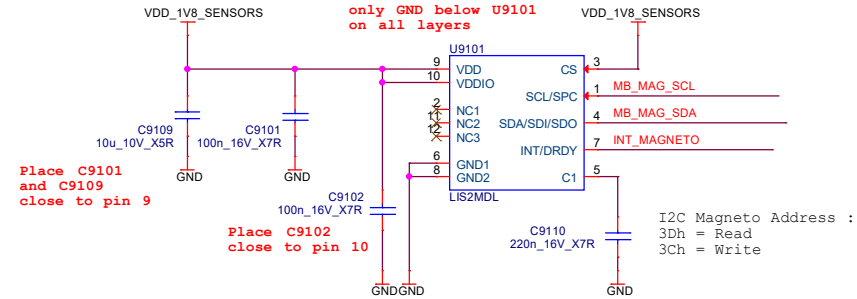
ON/OFF DETECTOR SWITCH



TO JBL BOARD



MAGNETOMETER



BASIC

DATE	BoM	AUTHOR	HISTORY

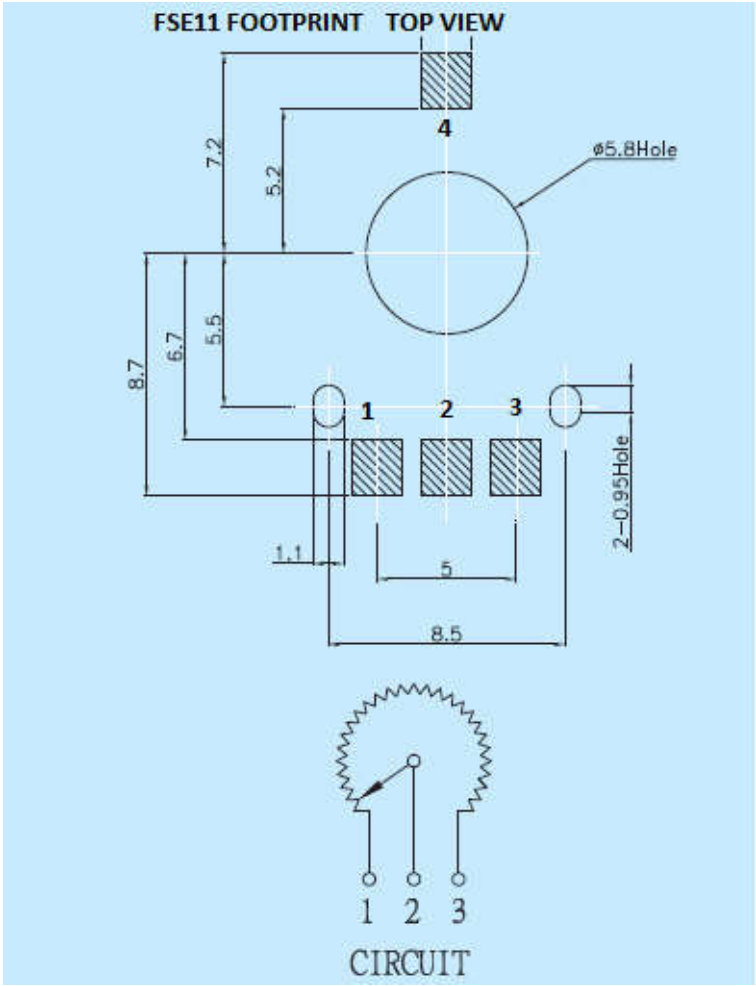
Schematic statut ☒ Draft ☐ Reviewed ☐ Approved

 **Parrot**
Author **C. BOUTIN**

Size **A4** Project Name_Gerber_BoM **MPP4_PBBL_HW01**

Date: Monday, November 30, 2020 Sheet 2 of 5

MPP4_SBL_01



<Variant Name>

DATE	BoM	AUTHOR	HISTORY
12/12/2017		G. DOGAN	Delete JP1 Add H1,H2 and H3
12/12/2017		G. DOGAN	Delete JP1 Add H1,H2 and H3

Schematic statut ☒ Draft ☐ Reviewed ☐ Approved

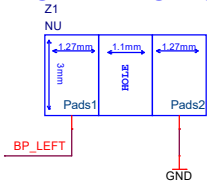


Parrot

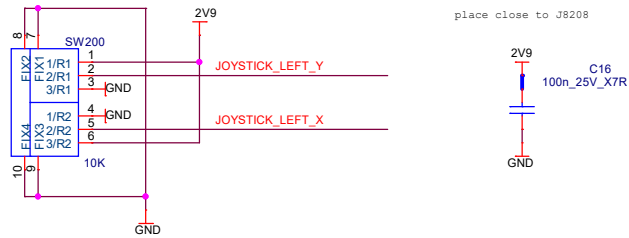
Confidential

Author Marck NGUEMA

CONNECTOR OF BUTTONS LEFT

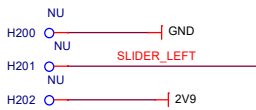


JOYSTICKS

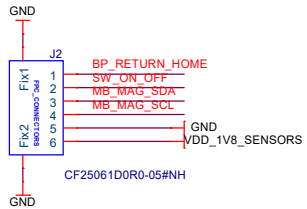


SLIDERS LEFT

SLIDER SOLDERED ON SBL BOARD
SLIDER REFERENCE: FSE11-01DB10KF5

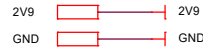
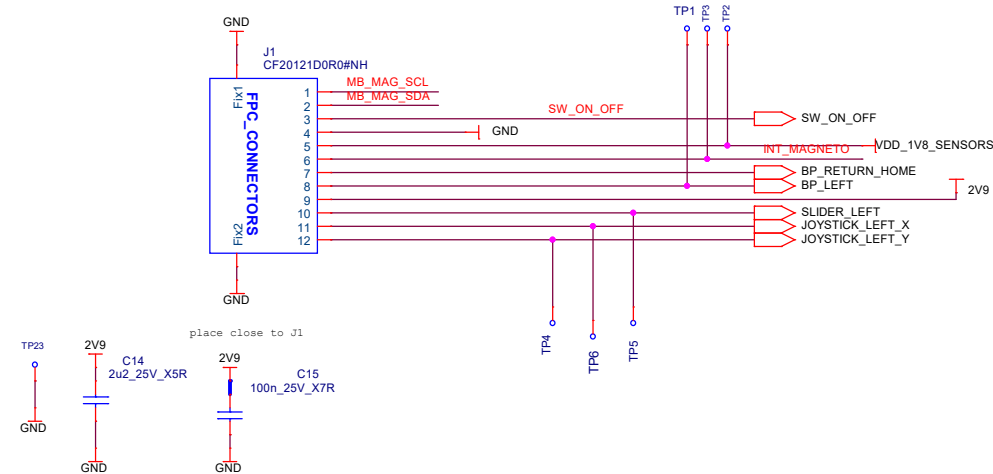


to PBBL BOARD



MPP4_JBL_HW02_20201113

BB connector Left



BASIC

DATE	BoM	AUTHOR	HISTORY

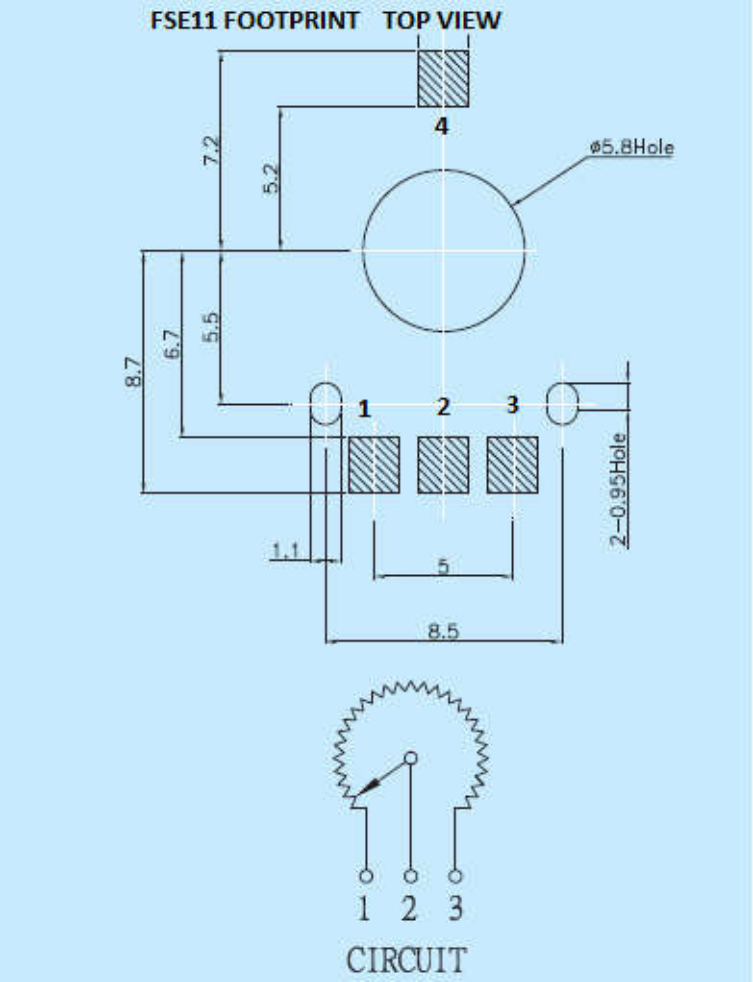
Schematic statut ☒ Draft ☐ Reviewed ☐ Approved

 **Parrot**
Author **C. BOUTIN**

Size **A4** Project Name_Gerber_BoM **MPP4_JBL_HW01**

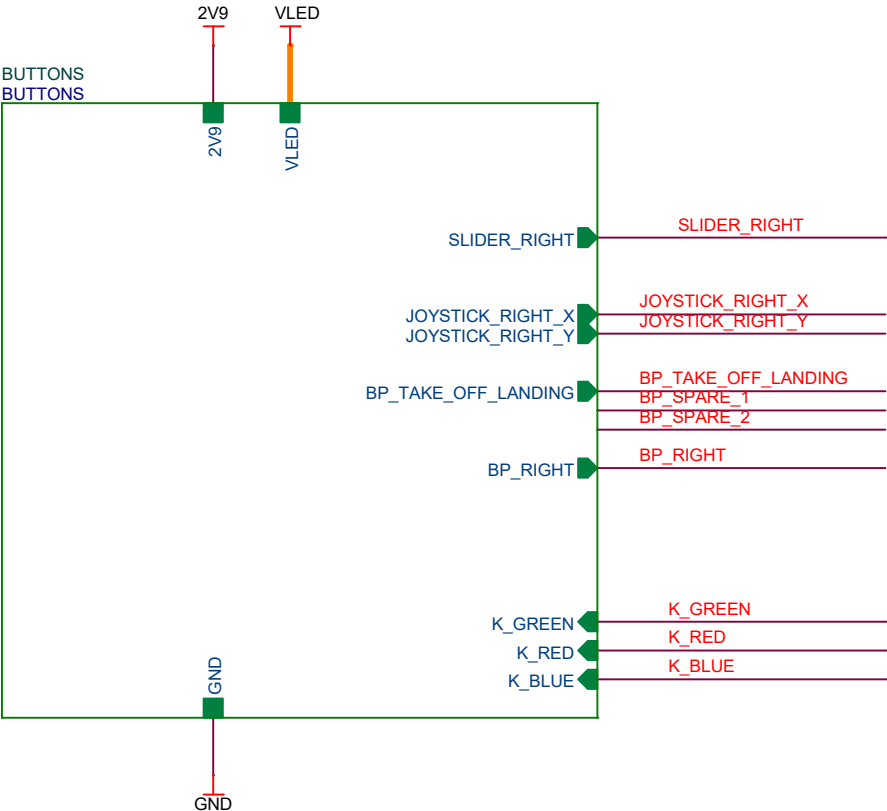
Date: Monday, November 30, 2020 Sheet 2 of 5

MPP4_SBR_01



<Variant Name>

DATE	BoM	AUTHOR	HISTORY
12/12/2017		G. DDOGAN	Delete JP2 Add H1, H2 and H3
Schematic statut			
☒ Draft ☐ Reviewed ☐ Approved			
 Parrot		Confidential	
		Author Marck NGUEMA	
Size A4	Project Name_Gerber_BoM		
MPP4_SBR_HW01			
Date:	Monday, August 03, 2020		Sheet 1 of 1

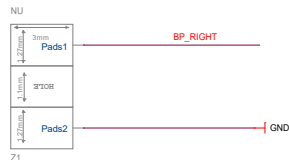
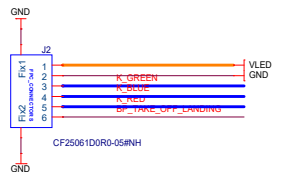


BASIC

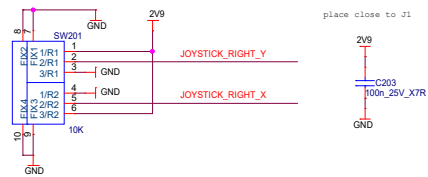
DATE	BoM	AUTHOR	HISTORY
Schematic statut ☒ Draft ☐ Reviewed ☐ Approved			
 Parrot			Confidential
			Author M. NGUEMA
Size A4	Project Name_Gerber_BoM		
MPP4_JBR_HW01			
Date: Friday, August 28, 2020	Sheet 1 of 5		

BOLD Orange: 75 mA TRACK MINIMUM

BUTTONS

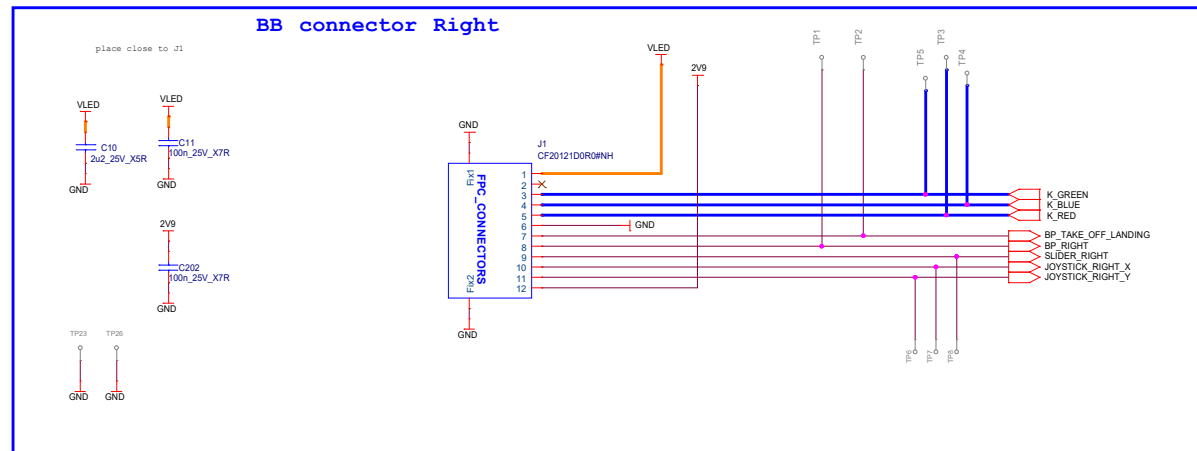
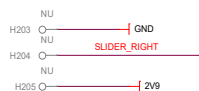


JOYSTICKS



SLIDERS RIGHT

SLIDER SOLDERED ON SBR BOARD
SLIDER REFERENCE: FSE11-01DB10Kh3



BASIC

DATE	BoM	AUTHOR	HISTORY

Schematic statut ☒ Draft ☐ Reviewed ☐ Approved



Parrot

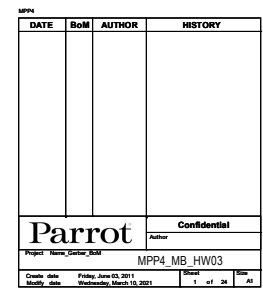
Confidential

Author **M. NGUEMA**

Size	Project Name_Gerber_BoM
A4	MPP4_JBR_HW01

Date: Friday, August 28, 2020 Sheet 2 of 5

A2

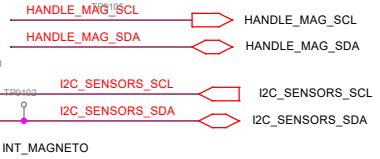
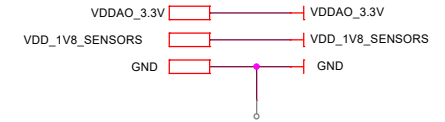
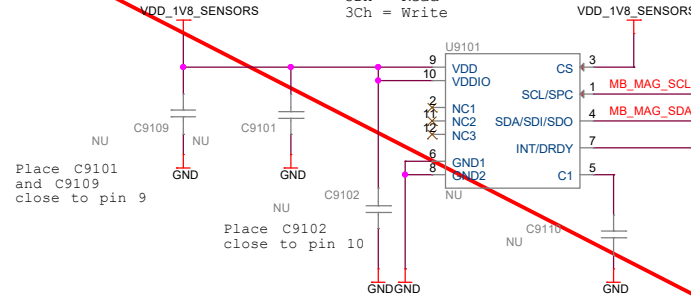


INERTIAL

NOT POPULATED

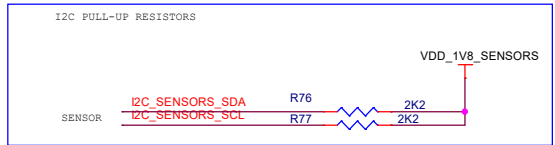
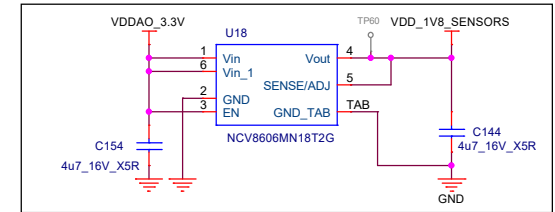
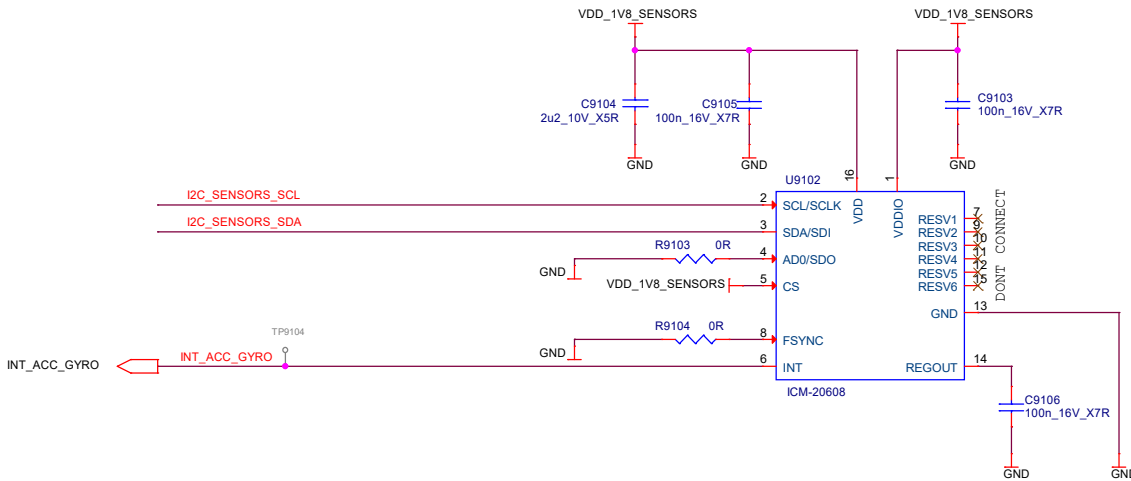
3-axis magnetometer

I2C Magneto Address :
3Dh = Read
3Ch = Write



9 AXIS GYRO/ACCEL INVENSENSE

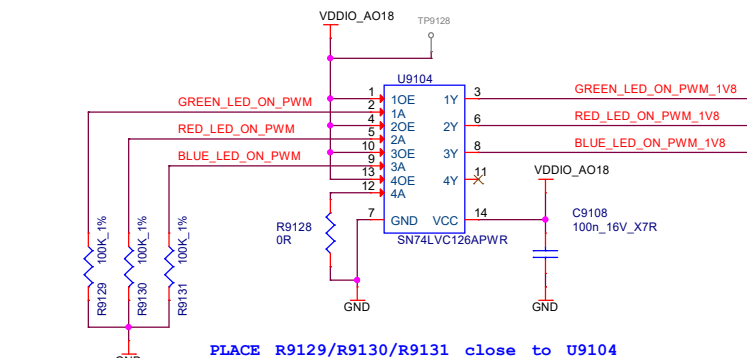
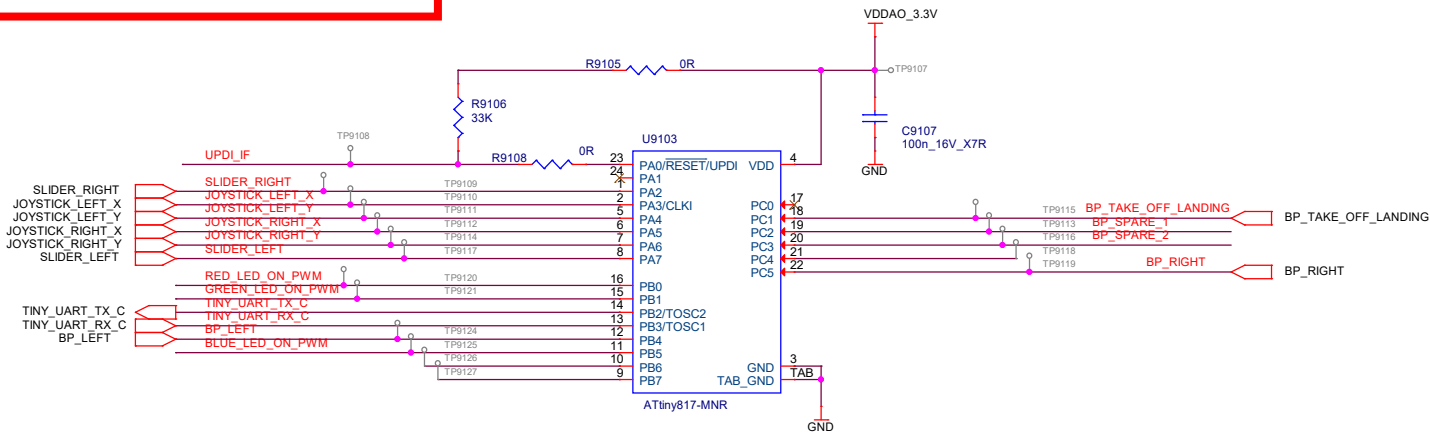
I2C gyro address : 68h



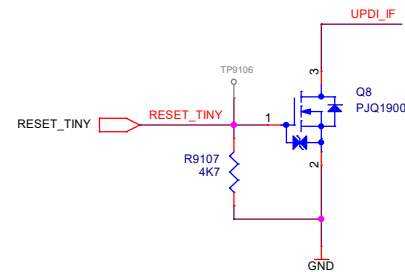
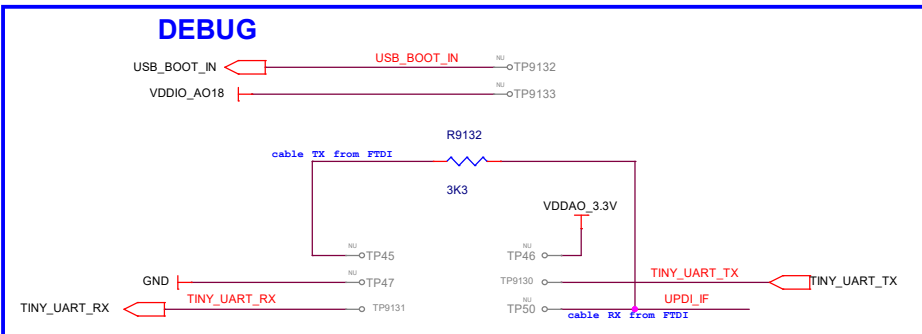
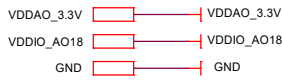
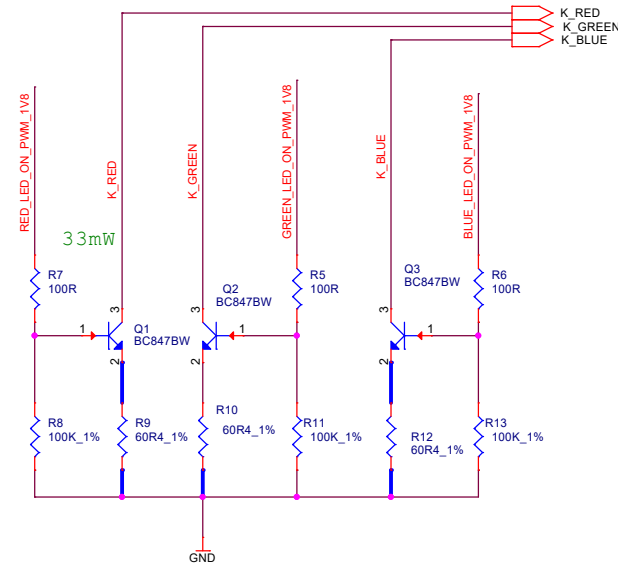
MPP4

DATE	BoM	AUTHOR	HISTORY
Parrot®			Confidential
Project Name_Gerber_BoM			Author
MPP4_MB_HW03			
Create date	Tuesday, December 10, 2019	Sheet 2 of 24	Size A3
Modify date	Wednesday, March 10, 2021		

USER INTERFACE



PLACE R9129/R9130/R9131 close to U9104



MPP4			
DATE	BoM	AUTHOR	HISTORY
Parrot[®] Author			Confidential
Project Name_Gerber_BoM			
MPP4_MB_HW03			
Create date	Tuesday, December 10, 2019		Sheet 3 of 24
Modify date	Wednesday, March 10, 2021		Size A3

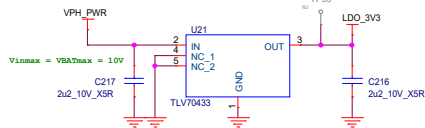
Charger



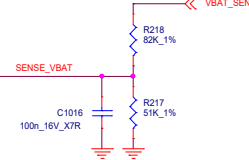
MP4			
DATE	BoM	AUTHOR	HISTORY
29/02/2016	A	G. Lamotte	First draft
23175817	B	C. ROUTIN	Changed comparators compensation
23171002	B	C. ROUTIN	Changed all the stuff in orange
23170315	B	C. ROUTIN	Removed B3
Schematic status: ☒ Draft ☐ Reviewed ☐ Approved			
 Parrot			Confidential Author: M. NGUEMA
Size A4	Project Name: Gerber,BoM		MP4_MB_HW03 Date: Wednesday, March 10, 2021 Sheet 5 of 24

3V3 LDO

i²c PULLUPS



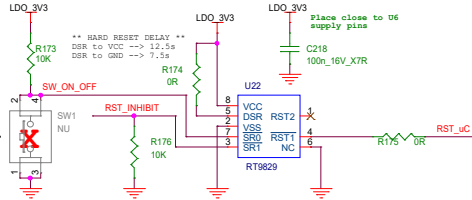
***** VBAT SENSING *****
Vbat max = 8.4V (with 0.2V margin)
Vadc max = 3.298V



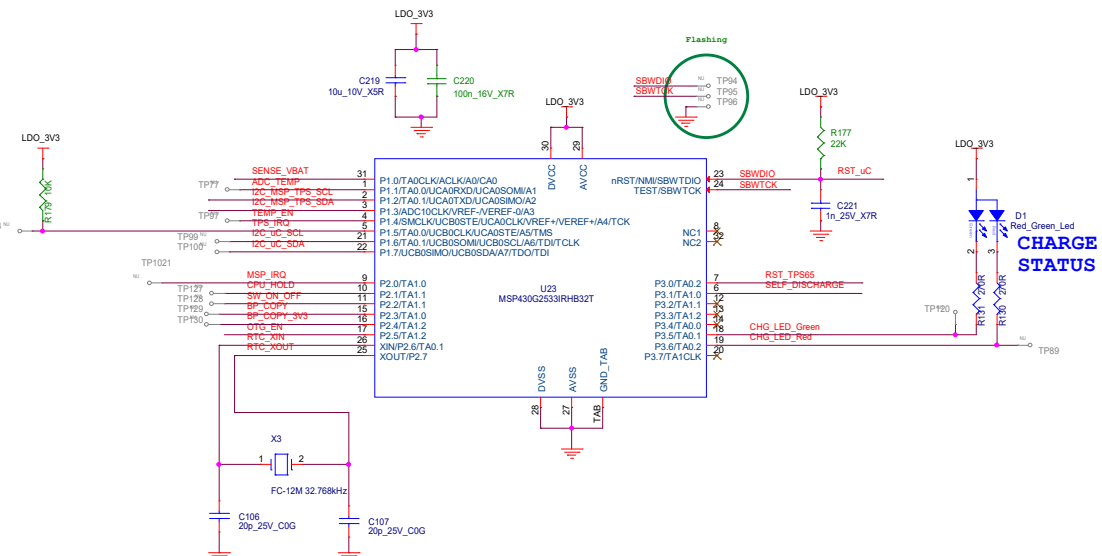
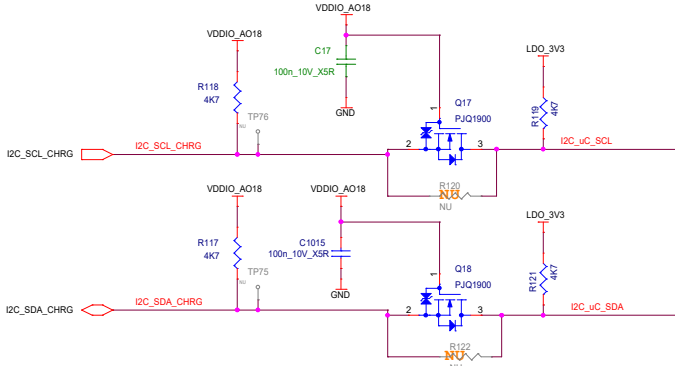
MCU RESET

Silkscreen label : ON/OFF/RST

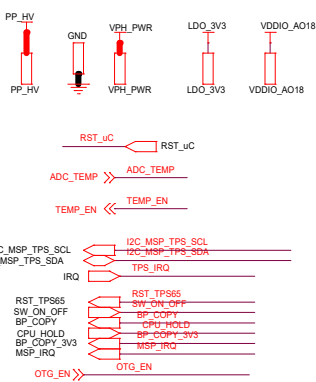
Place on BOTTOM



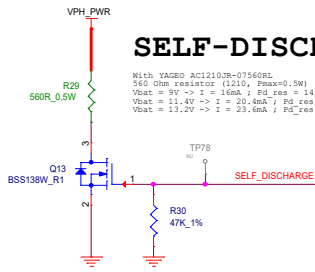
I2C Level Translator/Isolator



CHARGE STATUS LEDS

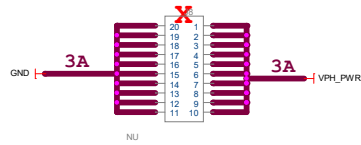
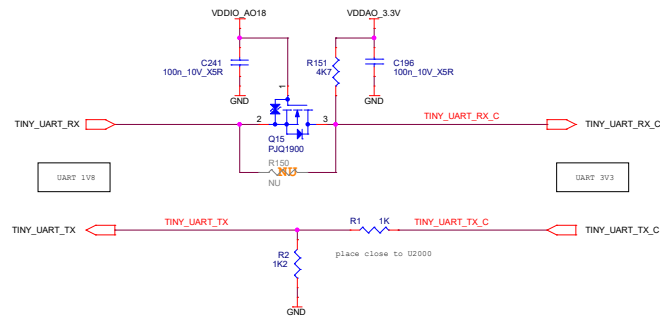
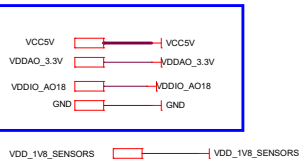


SELF-DISCHARGE

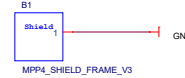
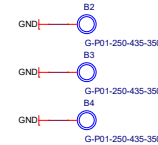
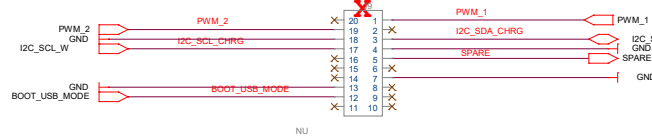


MPP4			
DATE	BoM	AUTHOR	HISTORY
29/02/2016	A	G. Lamotte	First draft
20170523	A	C. BOUTIN	Changed IRQ signal direction
20171002	B	C. BOUTIN	Changed all the stuff in orange
Schematic status ☒ Draft ☐ Reviewed ☐ Approved			
		Confidential	
Size A4		Author <Author>	
Project Name_Gerber_BoM		MPP4_MB_HW03	
Date: Wednesday, March 10, 2021		Sheet 6 of 24	

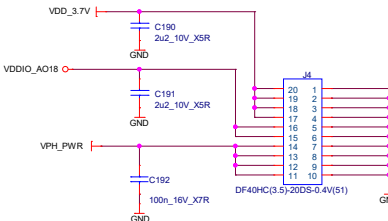
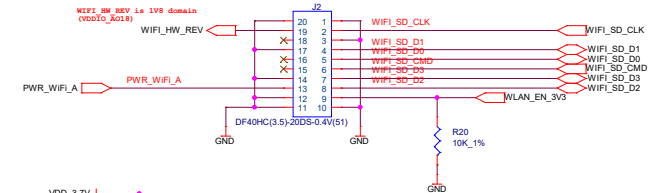
IHM-connector



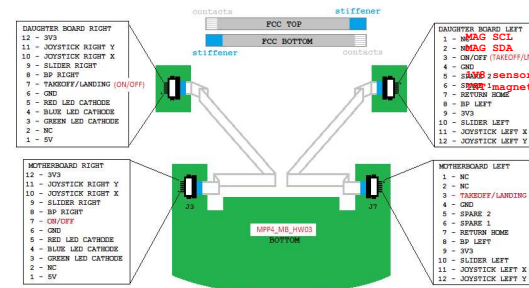
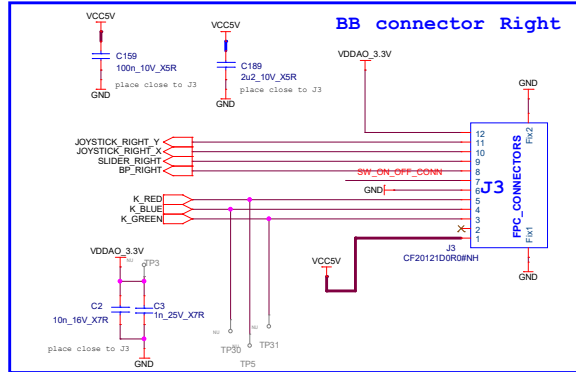
Silkscreen label :
BOOT MODE



WLAN - IO

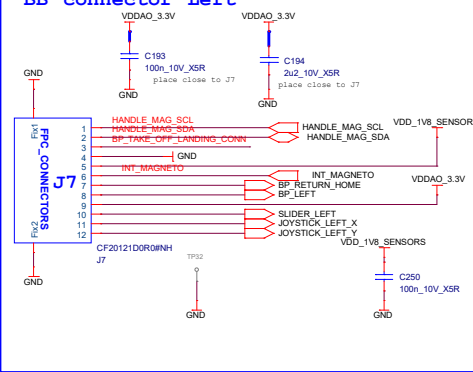


BB connector Right



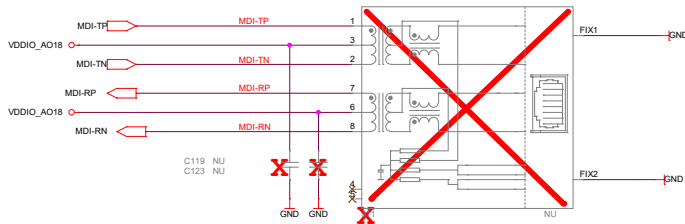
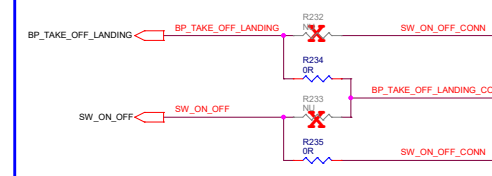
ON/OFF and TAKEOFF are now swapped on MB, so ON/OFF is near RGB LED. Signals on daughter boards have not been renamed, so:
* ON/OFF on J8 and P8B is in fact TAKEOFF/LANDING
* TAKEOFF/LANDING on J8R and P8B is in fact ON/OFF

BB connector Left



to put back ON/OFF and TAKEOFF/LANDING as it ws on HW02, populate R232 and R233, and remove R234 and R235

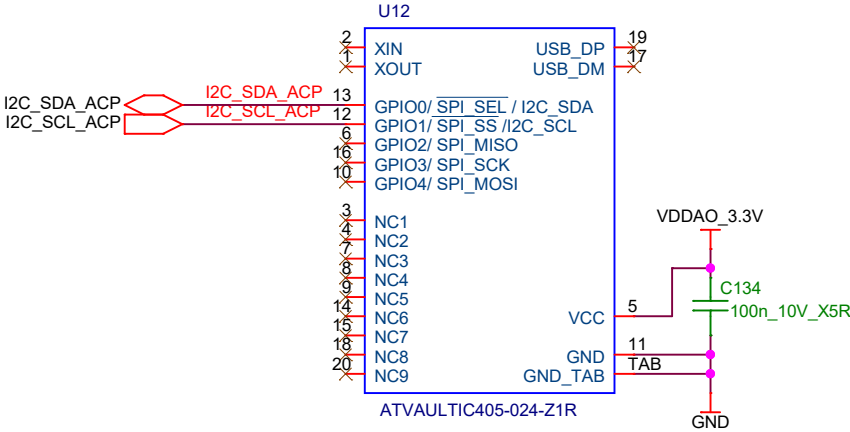
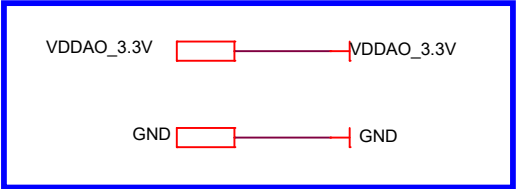
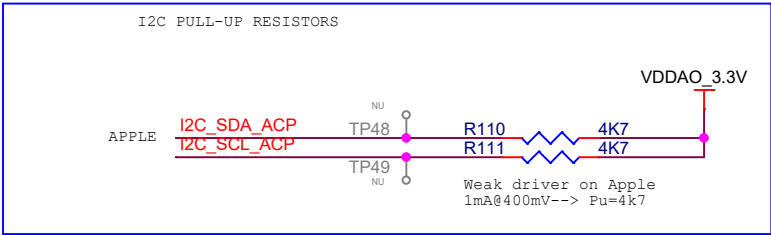
REMAP ON/OFF on TAKEOFF/LANDING



MPP4

DATE	BoM	AUTHOR	HISTORY
Parrot			Confidential
Project Name_Gerber BoM			MPP4_MB_HW03
Create date	Thursday, December 19, 2019	Sheet	7 of 24
Modify date	Wednesday, March 10, 2021	Size	A2

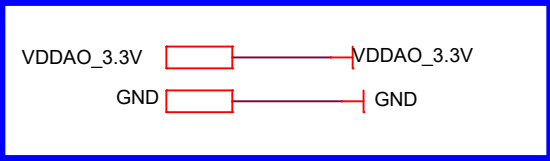
CRYPTO-AUTHENTICATION



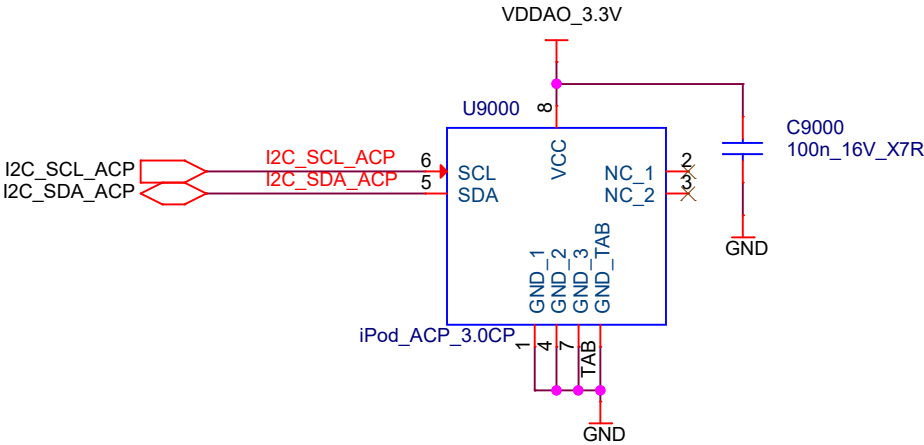
MPP4

DATE	BoM	AUTHOR	HISTORY
Parrot®			Confidential
Project Name_Gerber_BoM			Author
MPP4_MB_HW03			
Create date	Monday, January 27, 2020	Sheet	Size
Modify date	Wednesday, March 10, 2021	8 of 24	A4

IPOD Controller

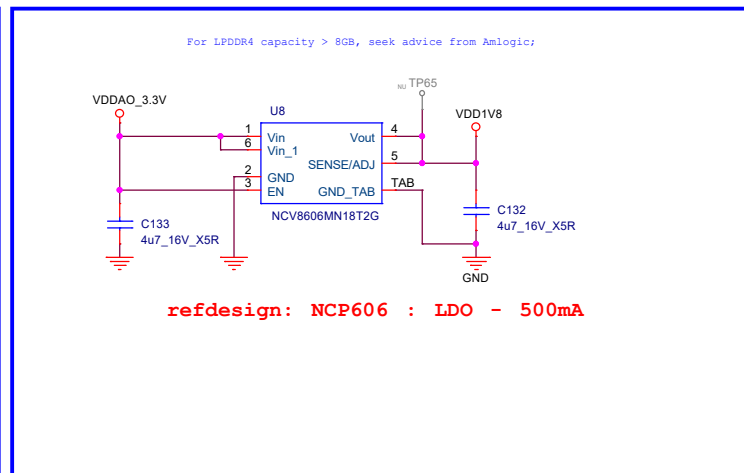
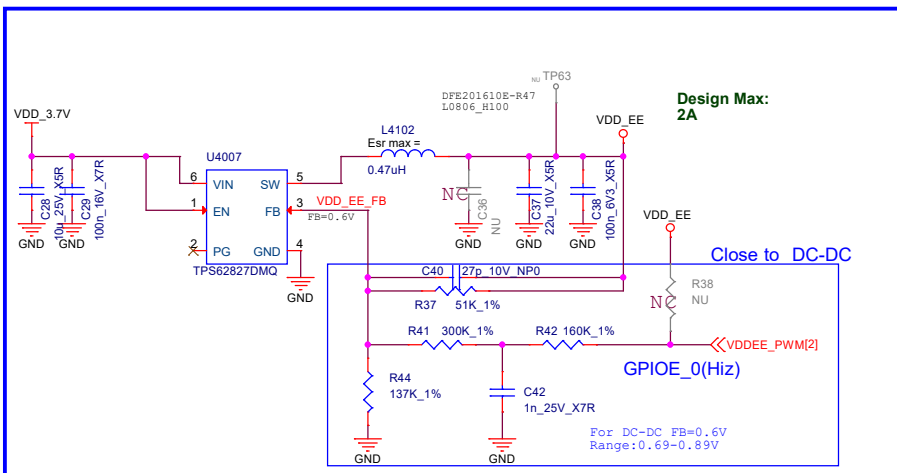
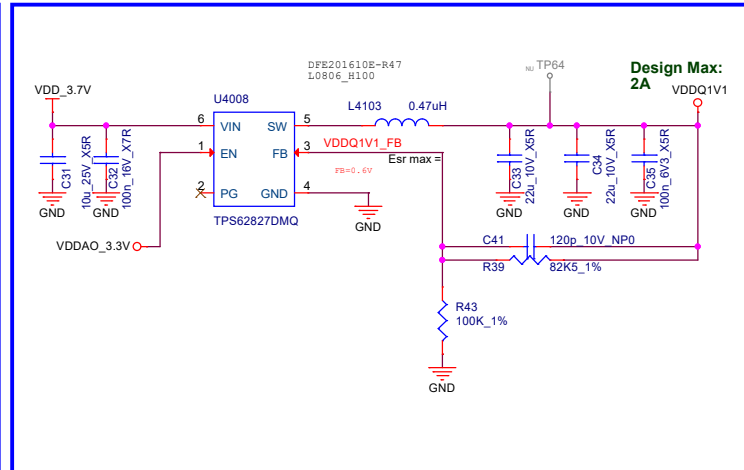
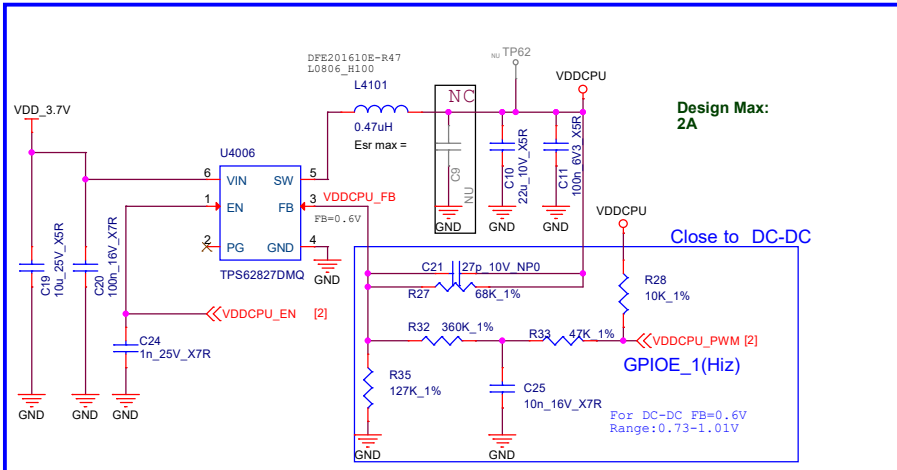
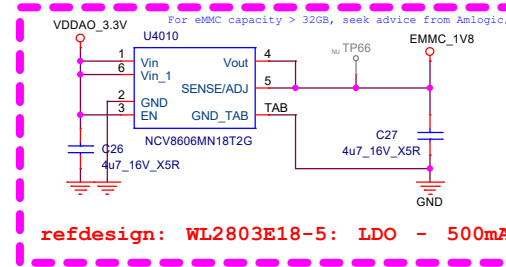
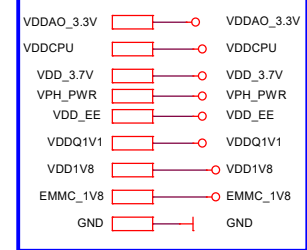
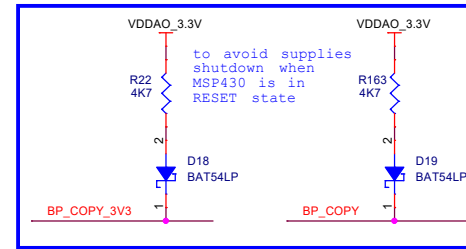
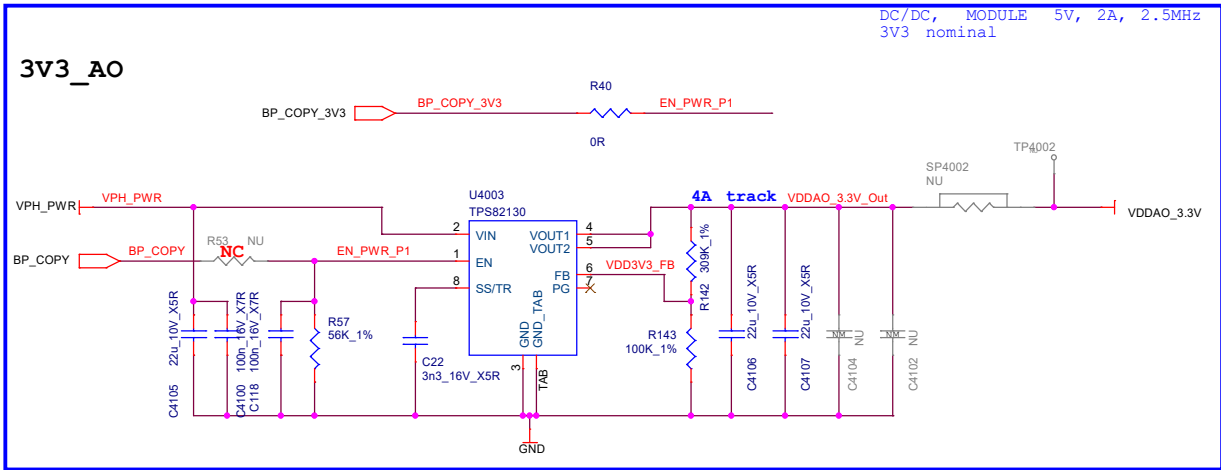


I2C address : 0x20/0x21



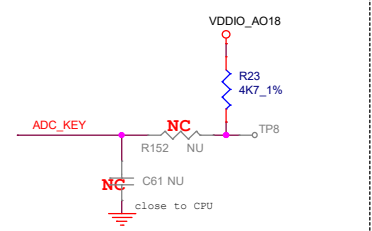
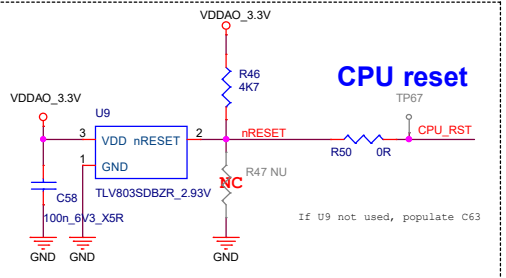
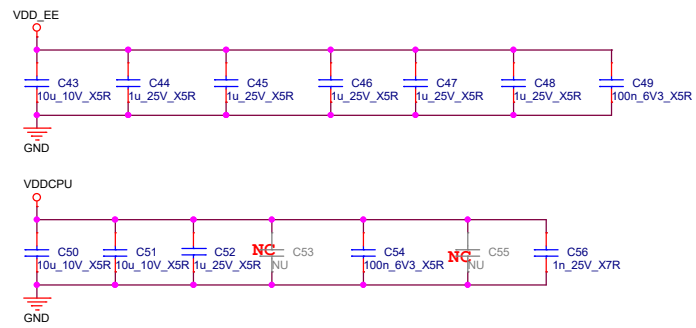
MPP4

DATE	BoM	AUTHOR	HISTORY
Parrot®			Confidential
			Author <OrgAddr1>
Project Name_Gerber_BoM MPP4_MB_HW03			
Create date	Tuesday, December 10, 2019		Sheet
Modify date	Wednesday, March 10, 2021		9 of 24
			Size A



MPP4

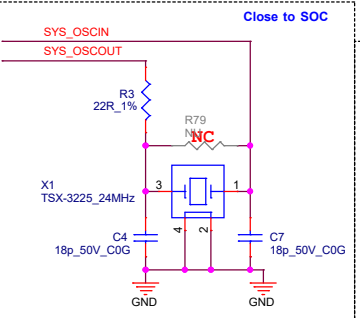
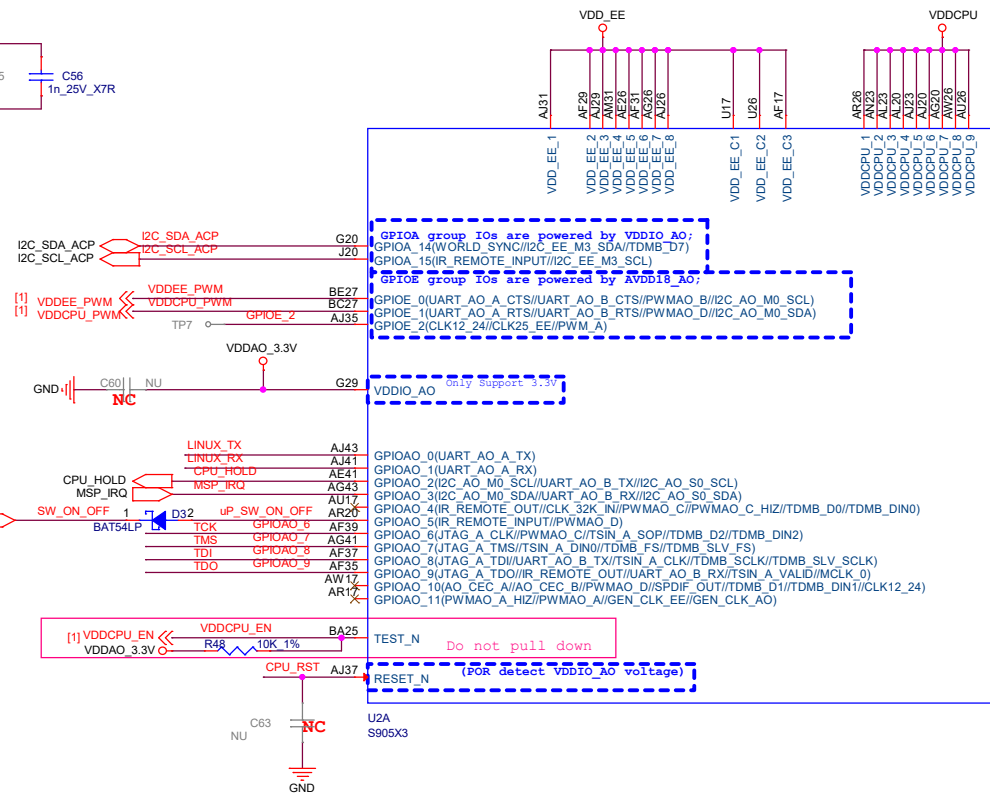
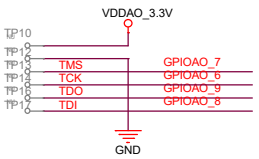
DATE	BoM	AUTHOR	HISTORY
Parrot			Confidential
Project Name_Gerber BoM			Author
MPP4_MB_HW03			
Create date	Tuesday, December 03, 2019	Sheet	Size
Modify date	Wednesday, March 10, 2021	10 of 24	A3



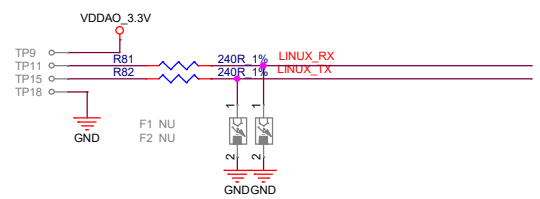
Please follow below resistor value

KEY	1	2	3	4	5	6	7	8
Value	0%	14%	26%	38%	50%	62%	75%	87%
Resistor	750R	10R	1.2K	1.8K	3K	6.2K	18K	
pull-up: 4.7K 1% MAX 8 ADC KEYS								

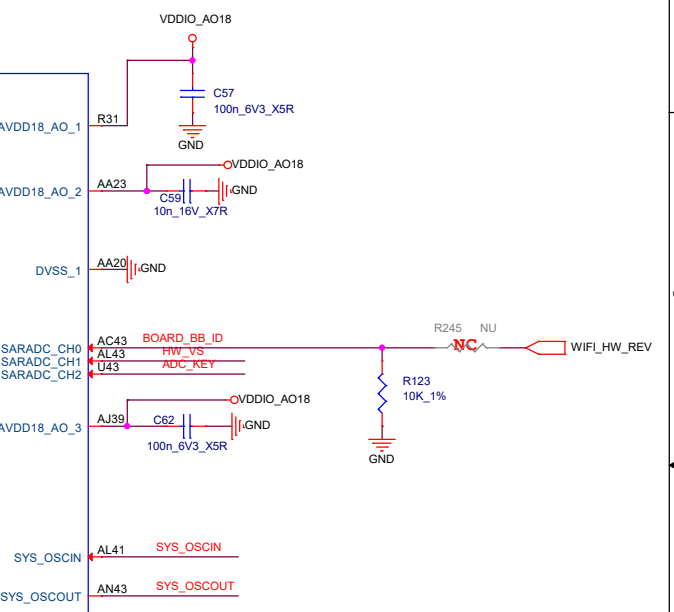
ARM JTAG debug



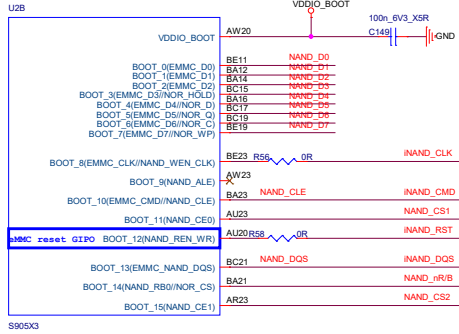
Linux JTAG debug



HW ID	0	1	2	3	4	5	6	7	8	9	10	11	12
ADC Data	0	85	167	248	334	420	512	603	689	775	856	938	1023
pull-up	x	91K	82K	75K	68K	56K	47K	39K	33K	24K	16K	8.2K	100K
pull-down	100K	8.2K	16K	24K	33K	39K	47K	56K	68K	75K	82K	91K	x
Version	Reserved			v3									

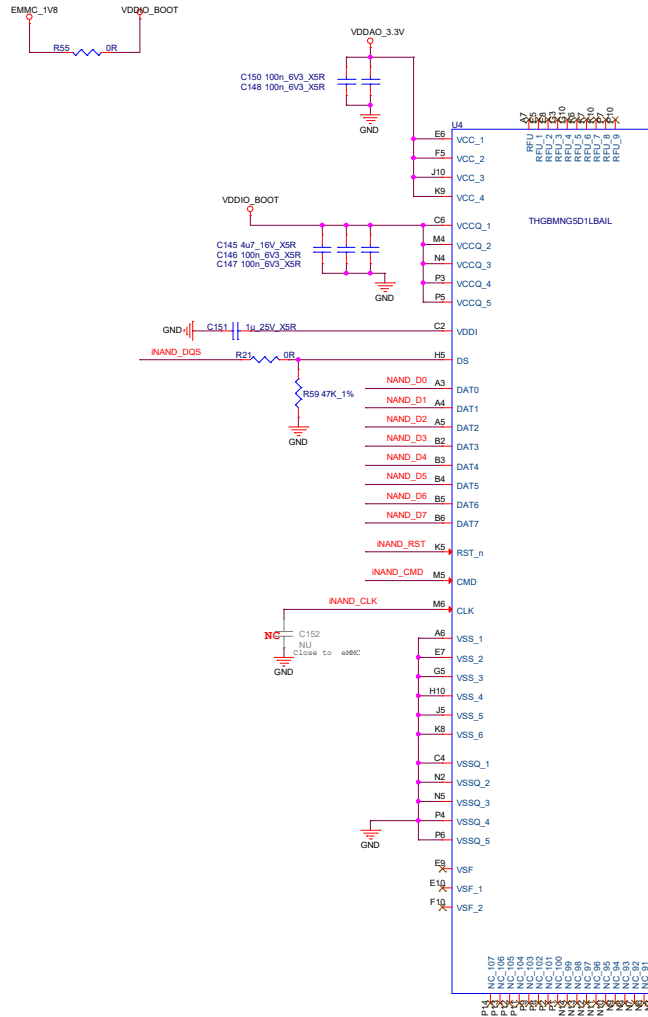
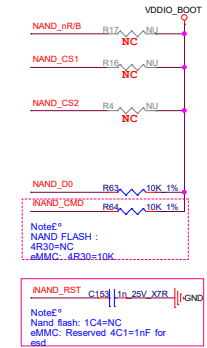
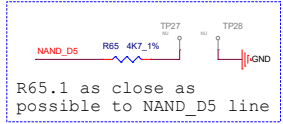


MPP4			
DATE	BoM	AUTHOR	HISTORY
Parrot			Confidential
Project Name_Gerber_BoM			MPP4_MB_HW03
Create date	Tuesday, December 03, 2019	Sheet 11 of 24	Size
Modify date	Wednesday, March 10, 2021		Custom



Power ON Config

BOOT_5[NAND_D5]: 0= USB Boot First

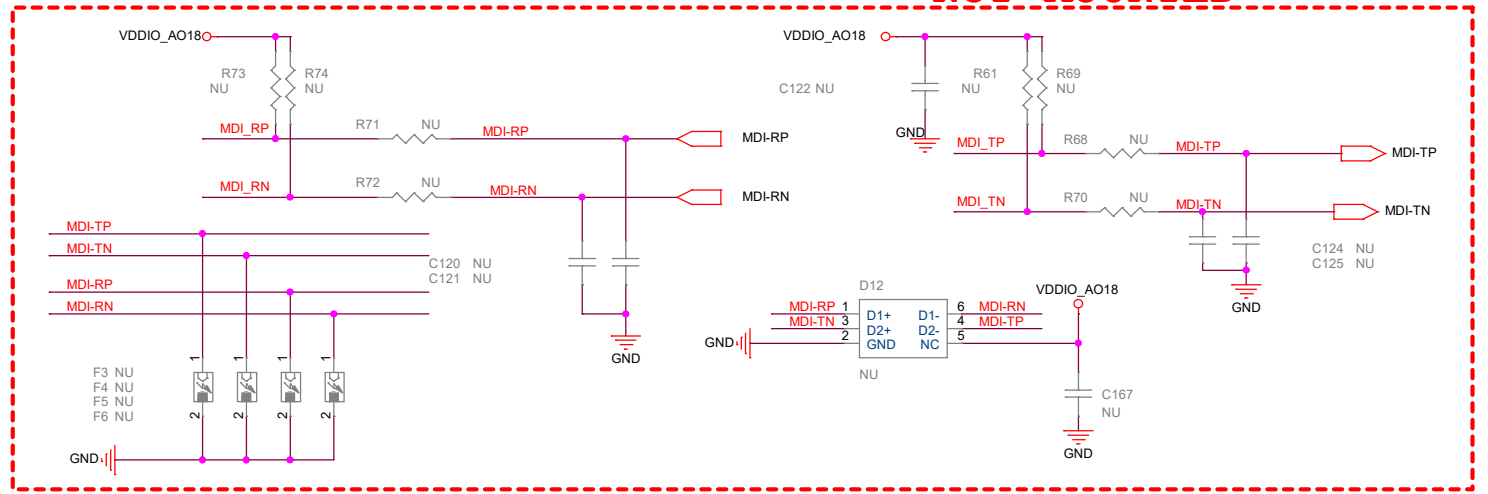
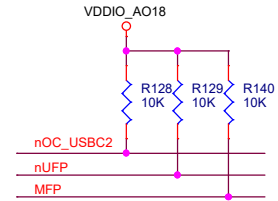
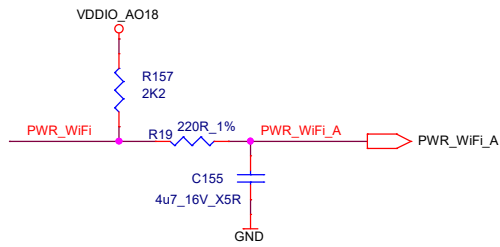


eMMC/iNAND
PCB Decal:153pin balls Type(BGA)
VCC = 2.7 ~3.0V

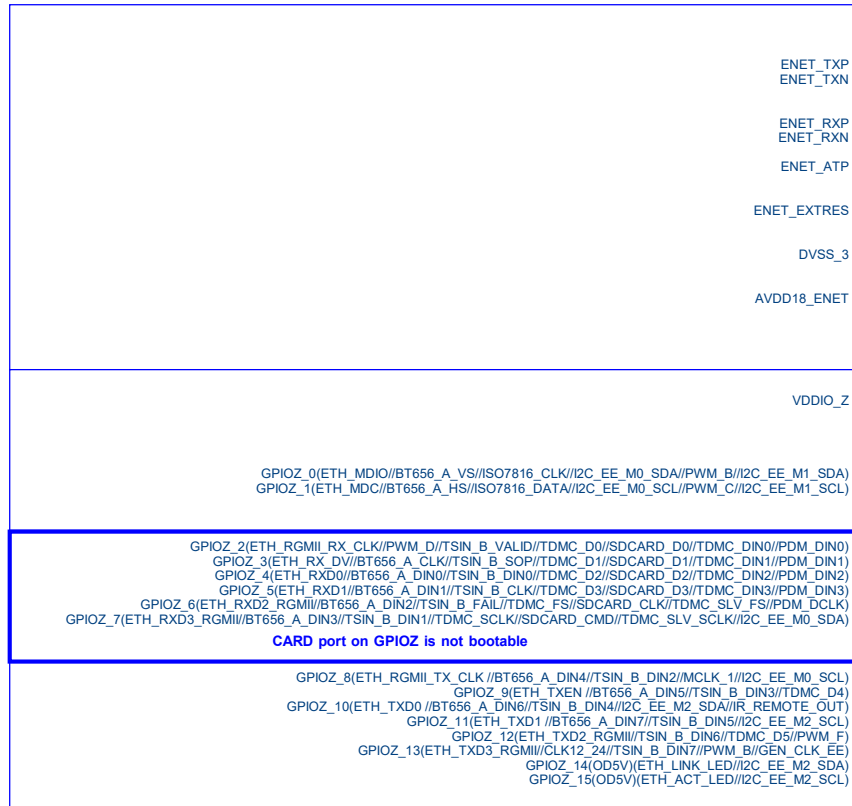
eMMC FLASH
BGA153-INAND

eMMC V5.0
eMMC NC PIN FOR ALLEGRO

MPP4			
DATE	BoM	AUTHOR	HISTORY
			Confidential
Project Name_Gerber_Bom			
			MPP4 MB_HW03
Create date	Tuesday, December 03, 2019	Sheet	Size
Modify date	Wednesday, March 10, 2021	12 of 24	A2



U2G



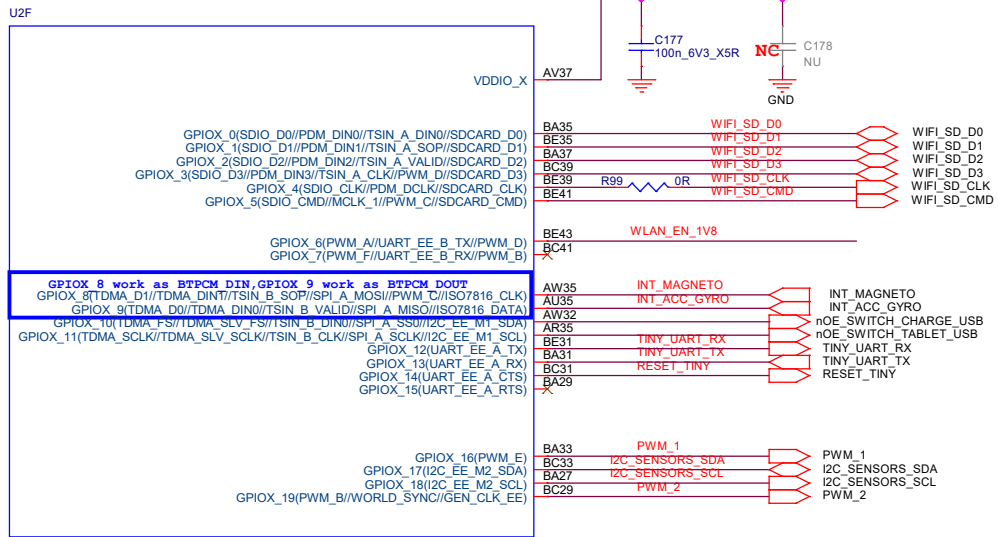
S905X3

GPIOZ 14/15 cannot be used as general purpose output :
 they would be at "0" regardless of the output register value.
 To have "1", configure as input with a pullup at VDDIO_Z

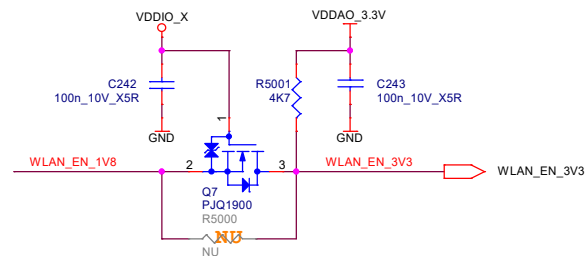
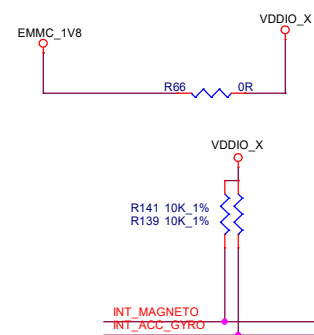
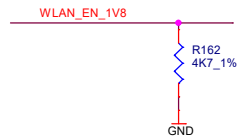
NOT MOUNTED

MPP4

DATE	BoM	AUTHOR	HISTORY
Parrot			Confidential
			Author
Project Name_Gerber_BoM			
MPP4 MB HW03			
Create date	Tuesday, December 03, 2019	Sheet	Size
Modify date	Wednesday, March 10, 2021	13 of 24	B



S905X3

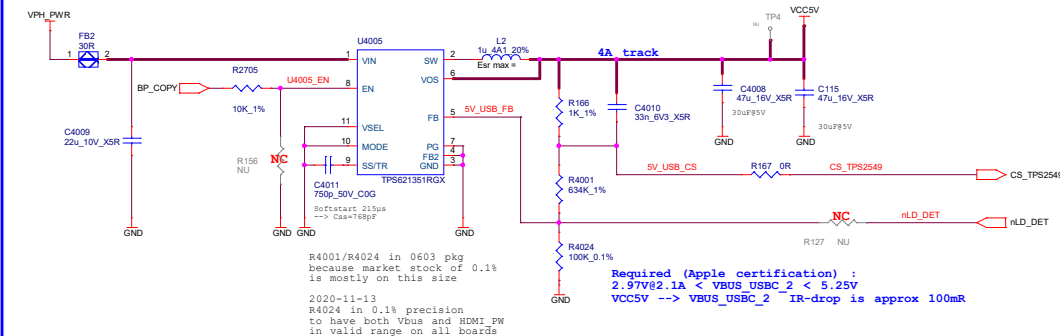


MPP4

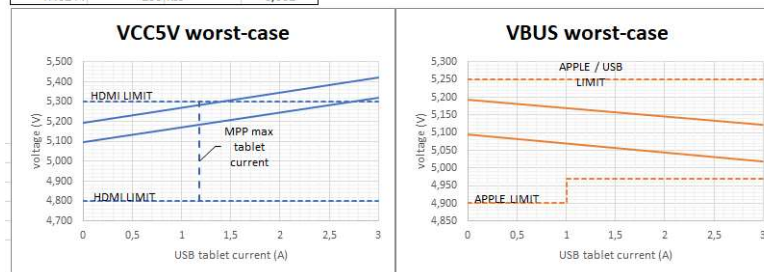
DATE	BoM	AUTHOR	HISTORY
Parrot®			Confidential
Project Name_Gerber_BoM			Author
			MPP4_MB_HW03
Create date	Tuesday, December 03, 2019	Sheet 15 of 24	Size A3
Modify date	Wednesday, March 10, 2021		

POWER SUPPLY

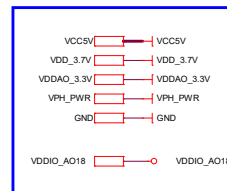
5V USB HDMI



	New resistors	tolerance
R166 :	1 kΩ	0,01
R4001 :	634 kΩ	0,01
R4024 :	100 kΩ	0,001

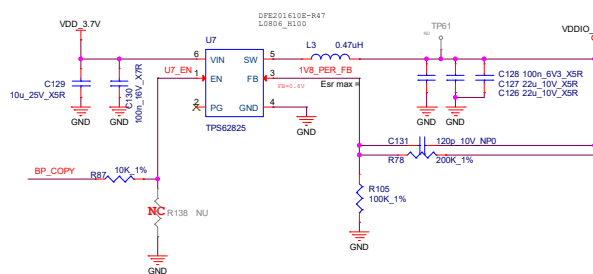


Dotted lines : limits
plain lines : min-max voltages due to feedback resistors tolerance



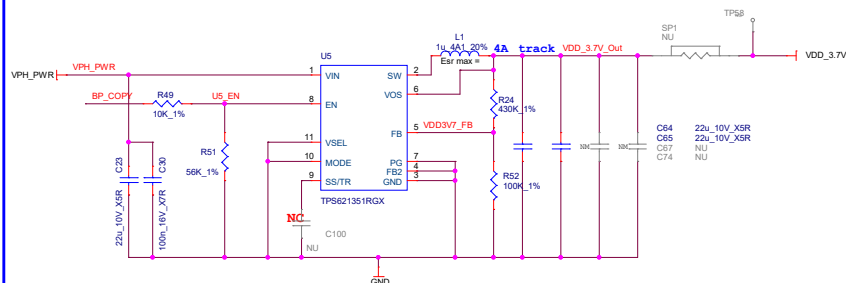
1V8 WiFi

Design Max: 2A



3V7

DC/DC, MODULE 12V, 3.5A, 2.5MHz
3V7 nominal



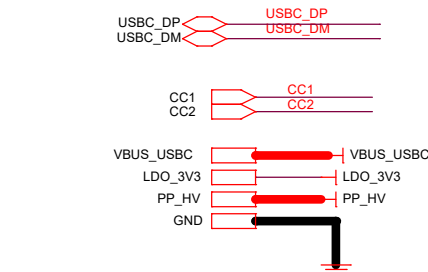
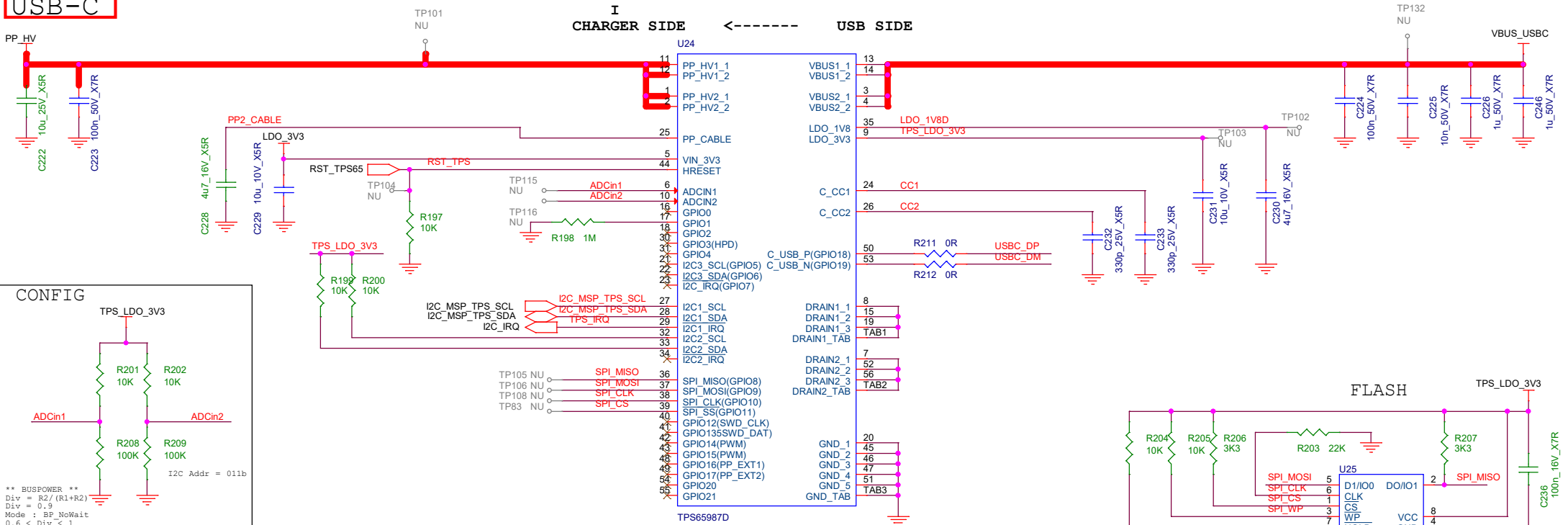
DATE	BoM	AUTHOR	HISTORY

Parrot	Confidential
	<i>Author</i>

Project Name_Gerber_BoM	MPP4_MB_HW03
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Create date	Tuesday, December 10, 2019	Sheet		
Modify date	Wednesday, March 10, 2021	18 of 24	Size	A2

USB-C



MPP4

DATE	BoM	AUTHOR	HISTORY
29/02/2016	A	G. Lamotte	First draft
20170529	A	C. BOUTIN	Changed VSYS label to Vbat Changed IRQ signal direction Tied U4 NC pins to GND for thermal improvement U4 supplied by VSYS OR Vbat
20170719	A	C. BOUTIN	SBU used as USB_IDN for flashing
20171006	A	A. SZALAI	updt. to TPS6988 3-pad Flash 2Mbit->1Mbit
20171026 201710102	A	C. BOUTIN	reverted to 1Mbit for security U8 pin swap for better routing

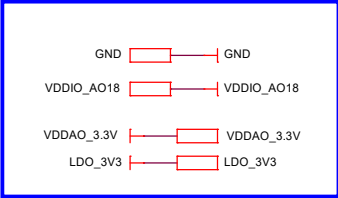
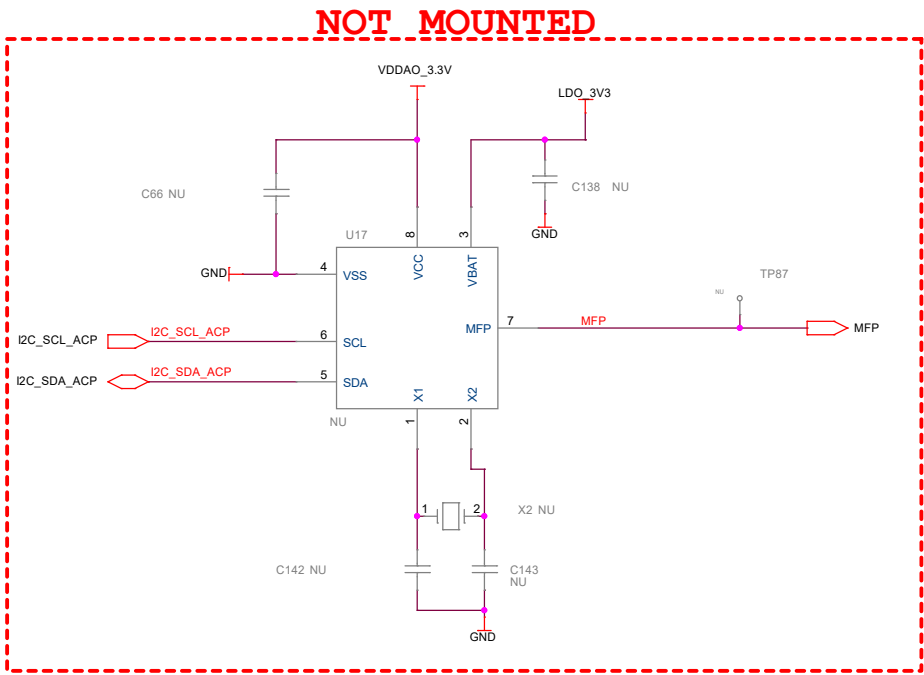
Schematic status ☒ Draft ☐ Reviewed ☐ Approved

 **Parrot** **Confidential**

Author <Author>

Size A4 Project Name_Gerber_BoM MPP4_MB_HW03

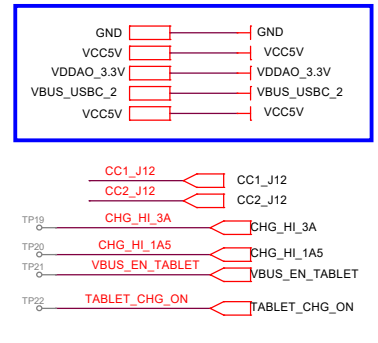
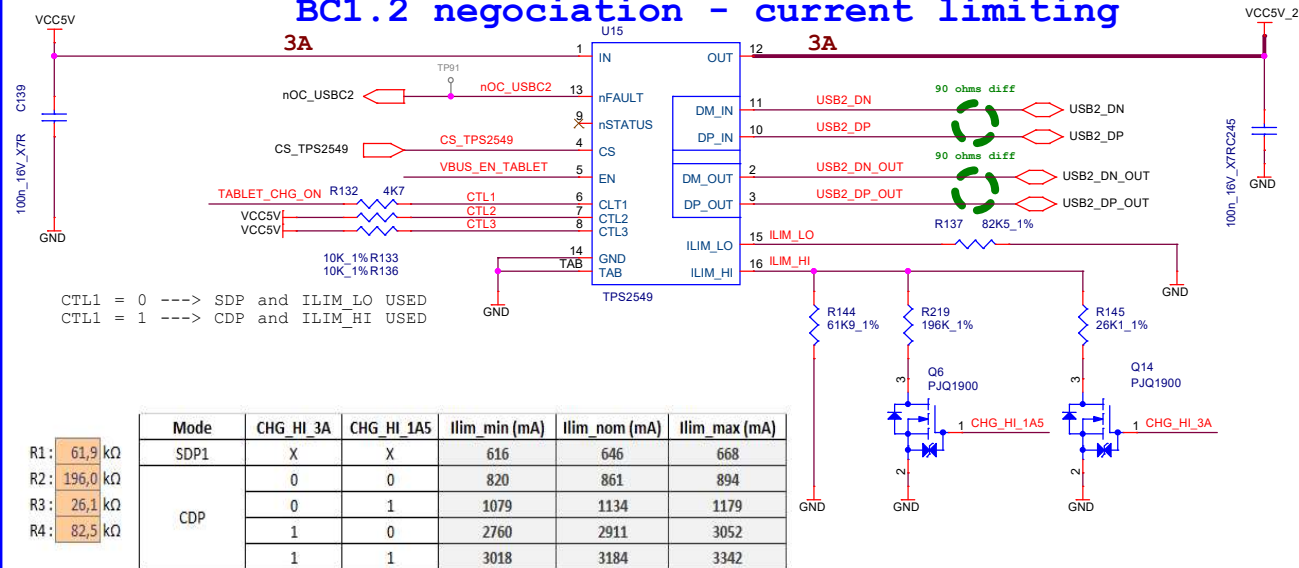
Date: Wednesday, March 10, 2021 Sheet 19 of 24



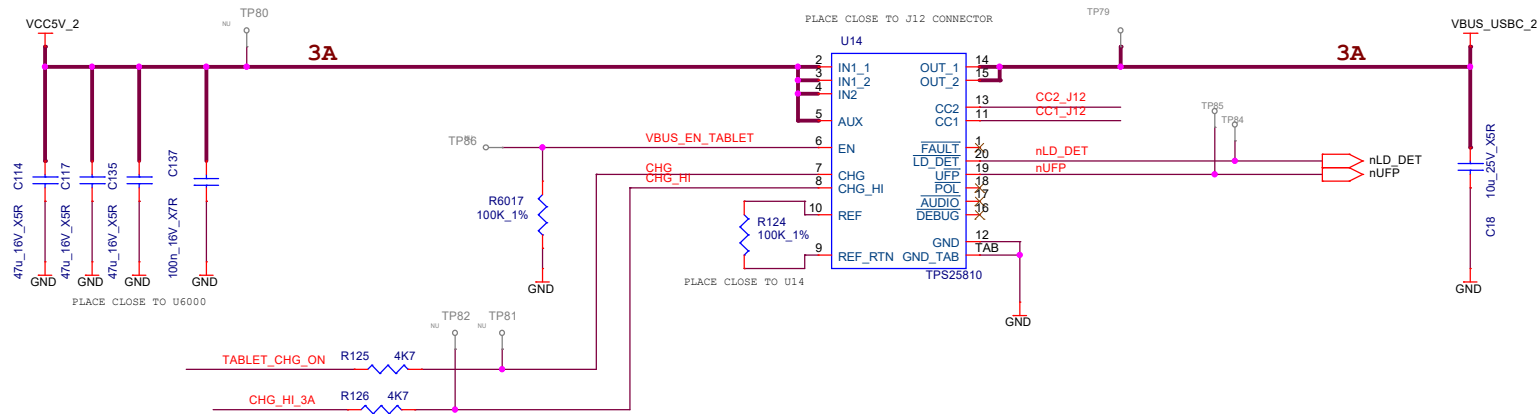
MPP4

DATE	BoM	AUTHOR	HISTORY
Parrot			Confidential
			Author
Project Name_Gerber_BoM			
MPP4_MB_HW03			
Create date	Friday, February 07, 2020		Sheet
Modify date	Wednesday, March 10, 2021		20 of 24
			Size A3

BC1.2 negotiation - current limiting



PD negotiation - load switch

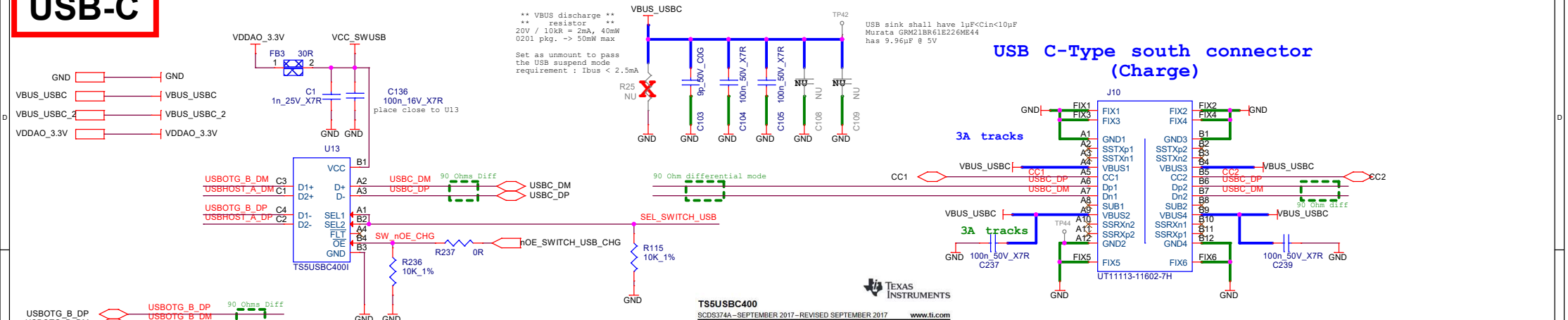


HW03						
GPIOH_5 (TABLET_CHG_ON)	GPIOZ_10 (CHG_HI_3A)	GPIOZ_13 (CHG_HI_1A5)	TPS2549 MODE	TPS2549 CURRENT LIMIT (mA)	TPS25810 CC BROADCAST (mA)	TPS25810 CURRENT LIMIT (mA)
0	X	X	SDP (500mA)	646	500	1700
1	0	0	CDP (1500mA)	861	1500	1700
	0	1		1134	1500	1700
	1	0		2911	3000	3400
	1	1		3184	3000	3400

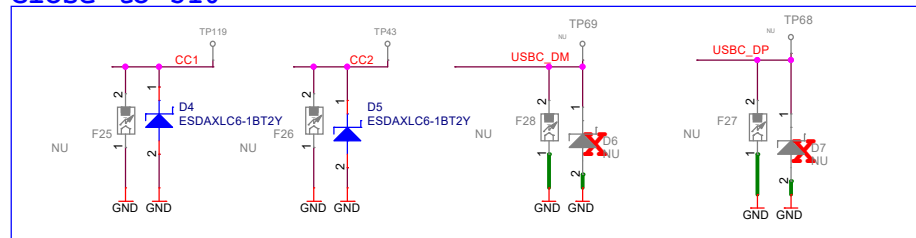
MPP4

DATE	BoM	AUTHOR	HISTORY
Parrot			Confidential
Project Name_Gerber_BoM			Author <OrgAddr1>
MPP4 MB HW03			
Create date	Tuesday, December 10, 2019	Sheet 22 of 24	Size A3
Modify date	Wednesday, March 10, 2021		

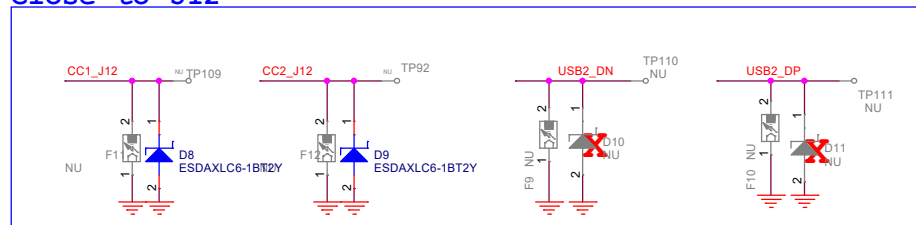
USB-C



Close to J10



Close to J12



MPP4

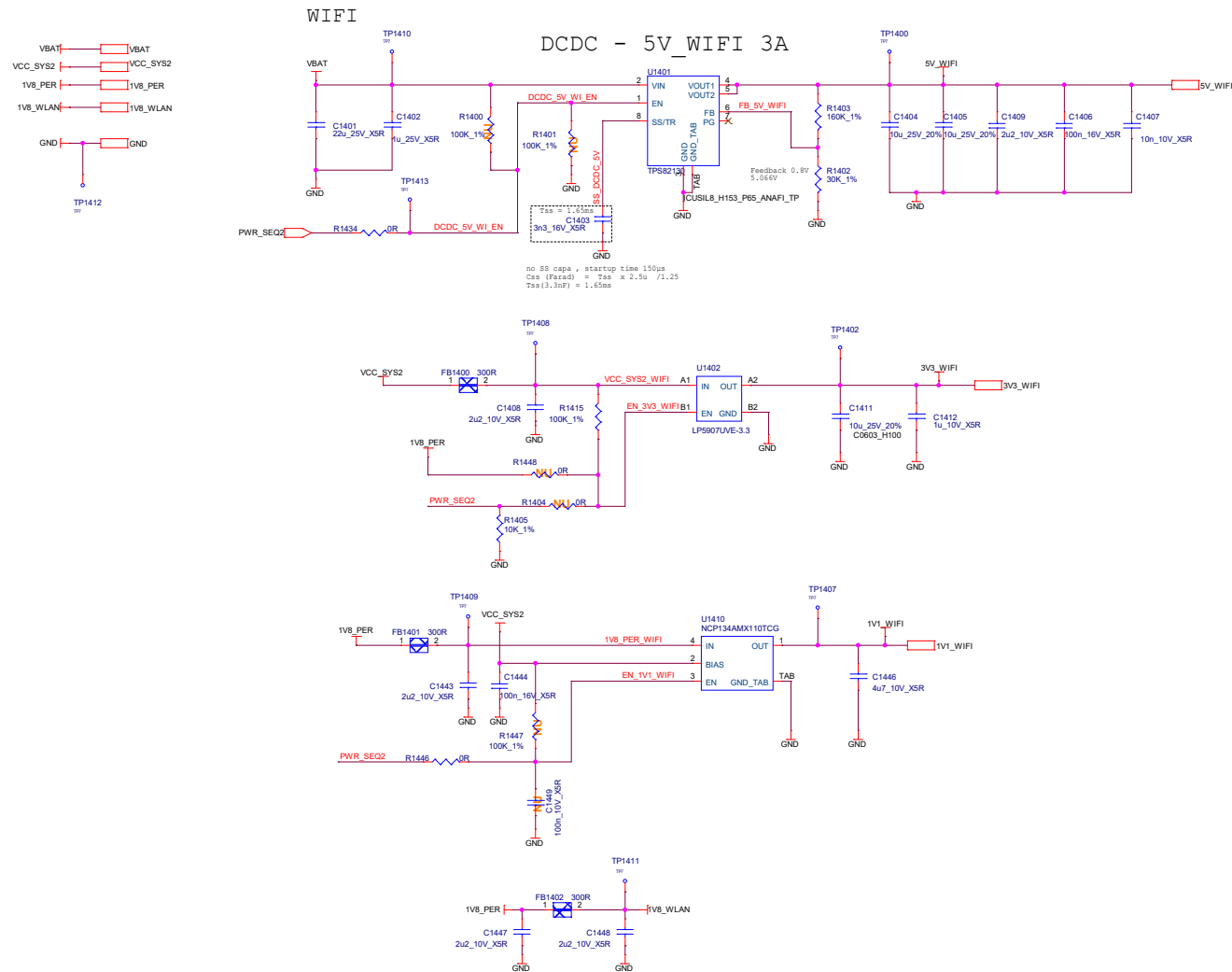
DATE	BoM	AUTHOR	HISTORY
Parrot			Confidential
Project Name_Gerber_BoM			Author
MPP4 MB HW03			
Create date	Thursday, February 06, 2020	Sheet	Size
Modify date	Wednesday, March 10, 2021	24 of 24	A3

ROOT



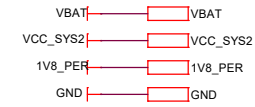
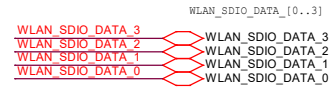
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DATE	BoM	AUTHOR	HISTORY
Parrot			Confidential
Project Name_Gerber_BoM			Author
MPP4_DB_WIFI_HW03			
Create date	Friday, March 15, 2019	Sheet	Size
Modify date	Tuesday, November 10, 2020	2 of 31	A3

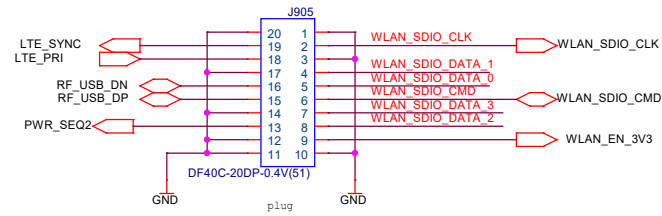


◀Core Design▶			
DATE	BoM	AUTHOR	HISTORY
Schematic status			
☒ Draft ☐ Reviewed ☐ Approved			
		Confidential Author	
Size A4	Project Name_Gerber_BoM		MPP4_DB_WIFI HW03
Date:	Wednesday, November 11, 2020		Sheet 6 of 31

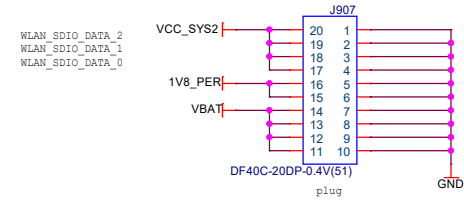
RF Daughter Board SIDE : Plug



Should be place in the left side in Layout according to J900 position in Mother Board



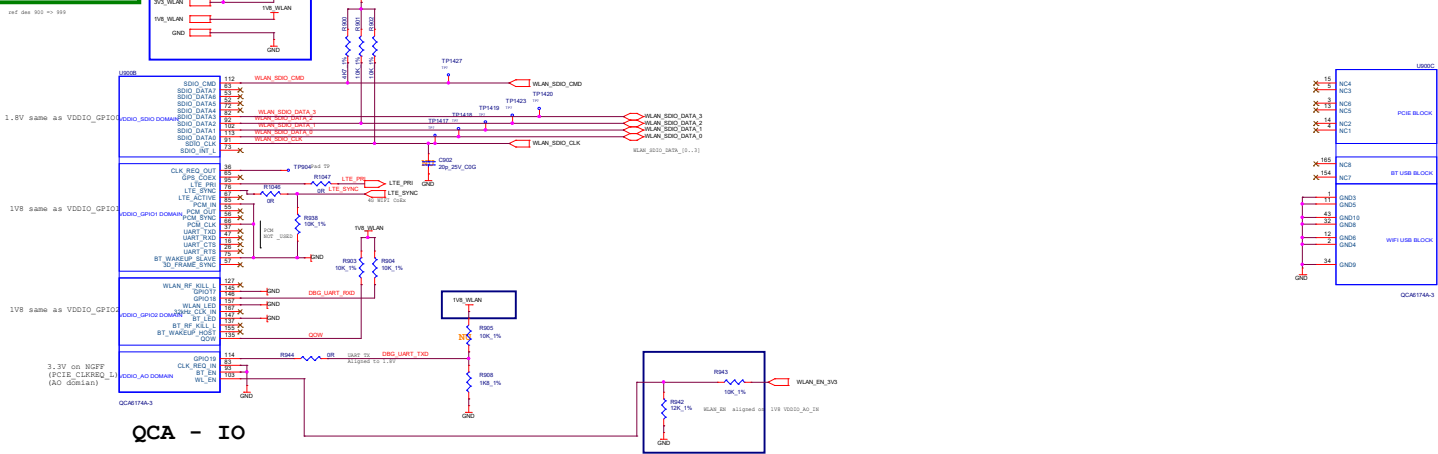
Should be place in the right side in Layout according to J901 position in Mother Board



<Core Design>

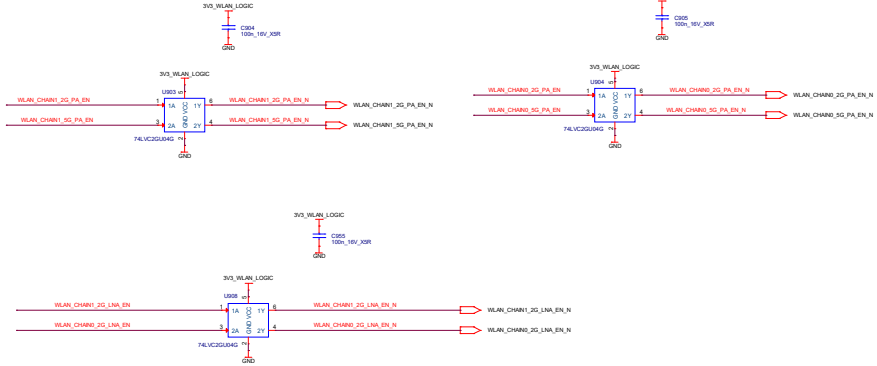
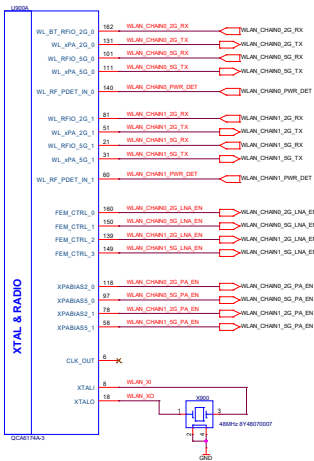
DATE	BoM	AUTHOR	HISTORY
Schematic statut ☒ Draft ☐ Reviewed ☐ Approved			
		Confidential	
Size A4		Author	
Project Name_Gerber_BoM		MPP4_DB_WIFI_HW03	
Date: Wednesday, November 11, 2020		Sheet 6 of 31	

WLAN - IO



QCA - IO

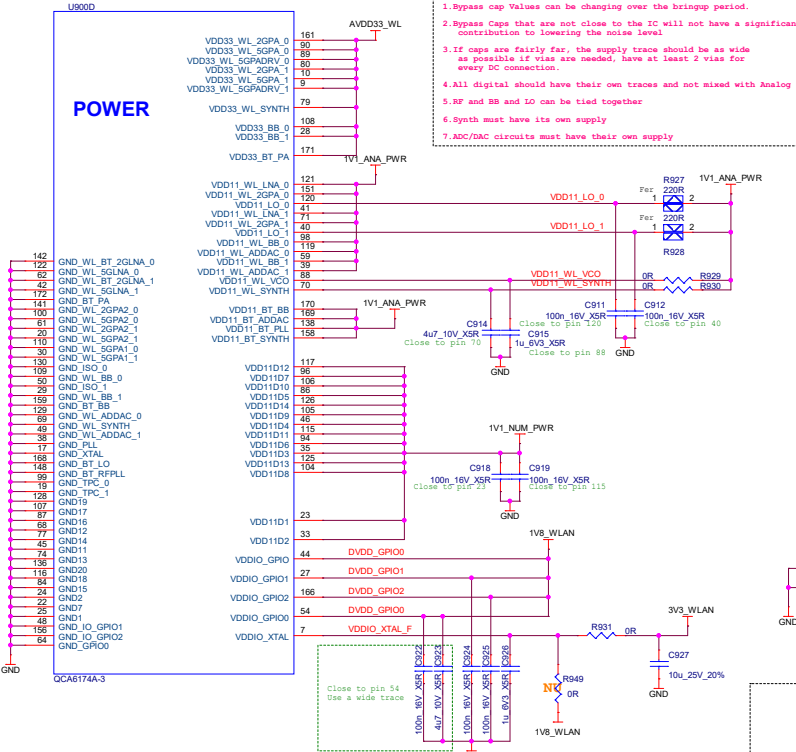
QCA - LOGIC



20240104
Rev: 1.0
Project: MPP4_DB_WIFL_HW03
Author: [Name]
Date: 2024-01-04

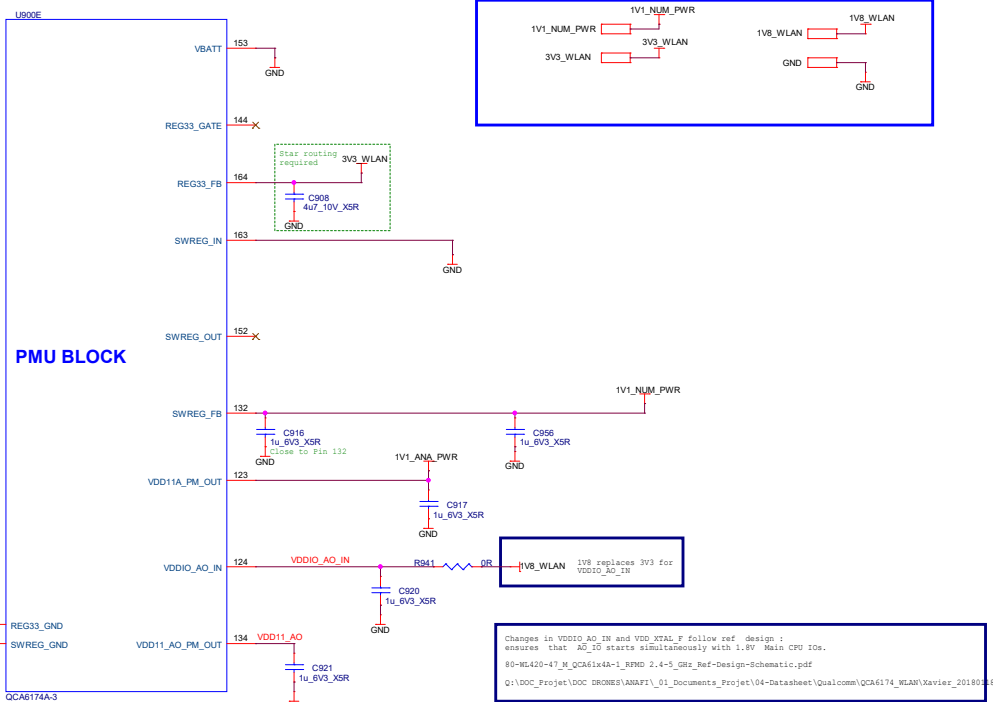
©Gee Design				
DATE	Rev	AUTHOR	HISTORY	
			Confidential	
Project Name: MPP4_DB_WIFL_HW03			MPP4_DB_WIFL_HW03	
Created Date	Thursday, July 26, 2024	Sheet	25	of 31
Modify Date	Wednesday, November 11, 2025	Rev		A1

WLAN - POWER

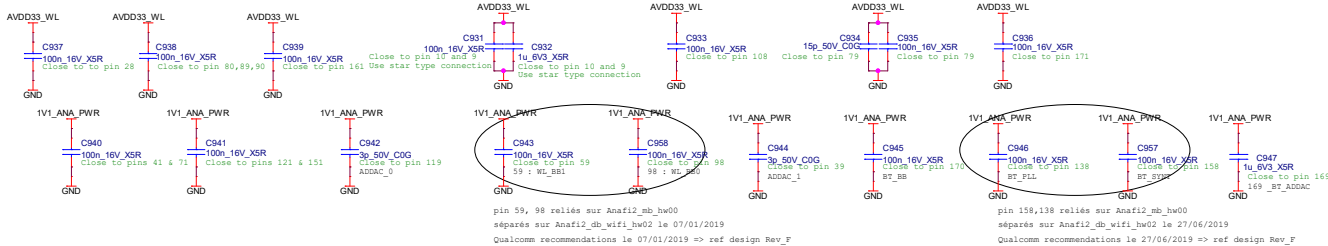


General Remarks about D-CAPS Placement Rule for QCA6174(A) IC:

- 1. Bypass cap values can be changing over the bringup period.
- 2. Bypass Caps that are not close to the IC will not have a significant contribution to lowering the noise level.
- 3. If caps are fairly far, the supply trace should be as wide as possible and if needed, have at least 2 vias for every DC connection.
- 4. All digital should have their own traces and not mixed with Analog
- 5. RF and SB and IO can be tied together
- 6. Synth must have its own supply
- 7. ADC/DAC circuits must have their own supply



Bypass capacitors to be placed as close as possible to QCA6174 chip



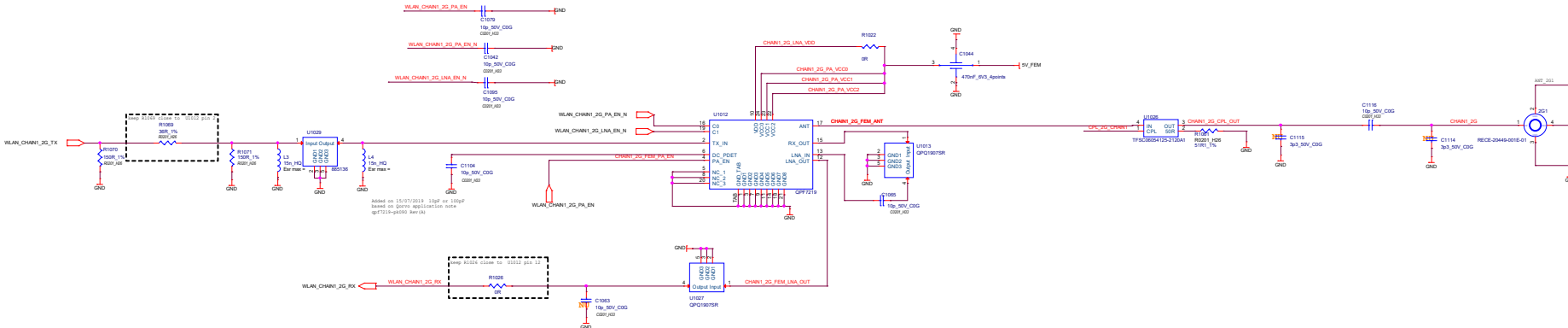
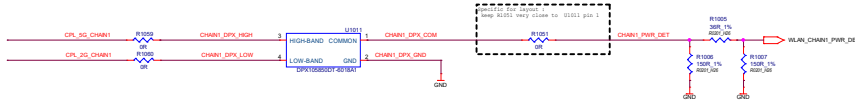
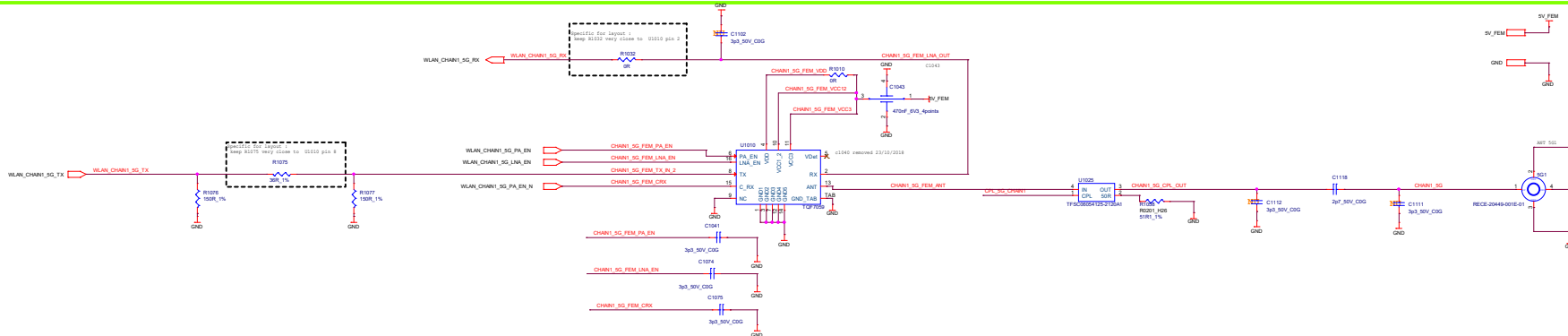
DATE	Bolt	AUTHOR	HISTORY
01/10/2018 23/01/2019	DJ_A 01	JY CASTETS JY CASTETS	Initiale release remove internal DDCD Ivl
			Confidential Author
Parrot Create date Tuesday, July 30, 2018 Modify date Tuesday, November 10, 2020 MPP4_DB_WIFI_HW03 Sheet 27 of 31 Size A2			

FEM CHAIN1

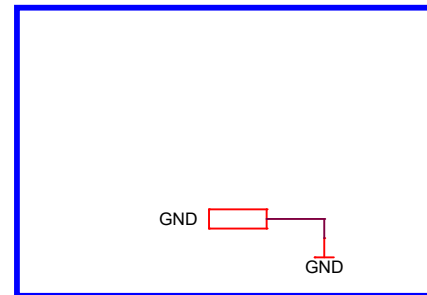
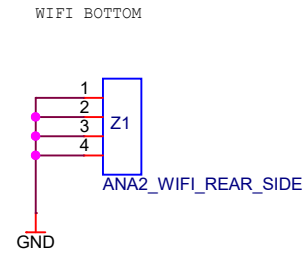
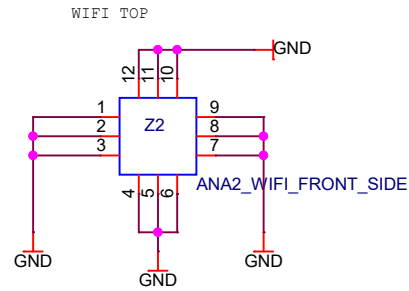
WIFI CHAIN1 : 5Ghz

WIFI CHAIN1 :
2.4 & 5 Ghz

WIFI CHAIN1 : 2.4Ghz



Core Design			
DATE	BoM	AUTHOR	HISTORY
19 Oct2019	A	RF TEAM	First Draft
Schematic: ☒ Draft ☐ Reviewed ☐ Approved			
			Confidential RF Team
Rev: A4	Project Name: Gopher_Rail		MPP4_DB_WIFI_HW03



<Core Design>

DATE	BoM	AUTHOR	HISTORY
10/2018	00_A		Creation
Parrot®		Confidential	
Project Name_Gerber_BoM		Author	
Create date		Monday, August 08, 2016	
Modify date		Wednesday, November 11, 2020	
MPP4_DB_WIFI_HW03		Sheet	Size
		31 of 31	A4