

Definition Package

Shield Nucleo board

Document summary:

This document contains the general PCB layers arrangement, the drill map and the components layout of this electronic board.

Diffusion : External

Date	Revision	Creator	Reviewer	Approver	Document status
	D				
	C				
	B				
	A				
07/06/2021	-	Benmouffok Amine	Alinei Jean	Villa Luiz	

Preliminary PREL, Good For Execution GFE, As Built ASB

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First Intern Copper Layer : 10

Second Intern Copper Layer : 11

Bottom Copper Layer : 12

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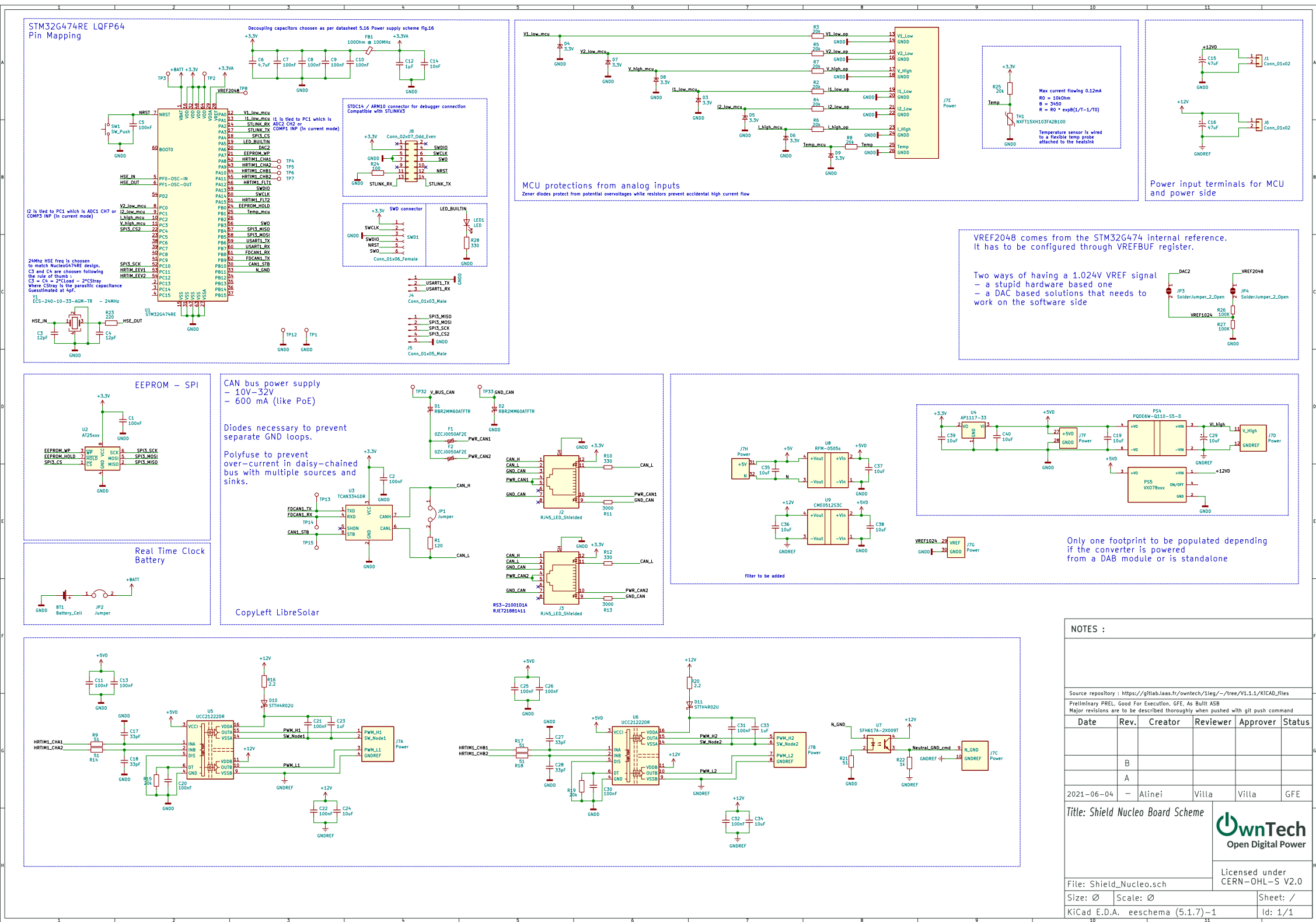
Bottom Mask Layer : 14

Bill of materials : 15

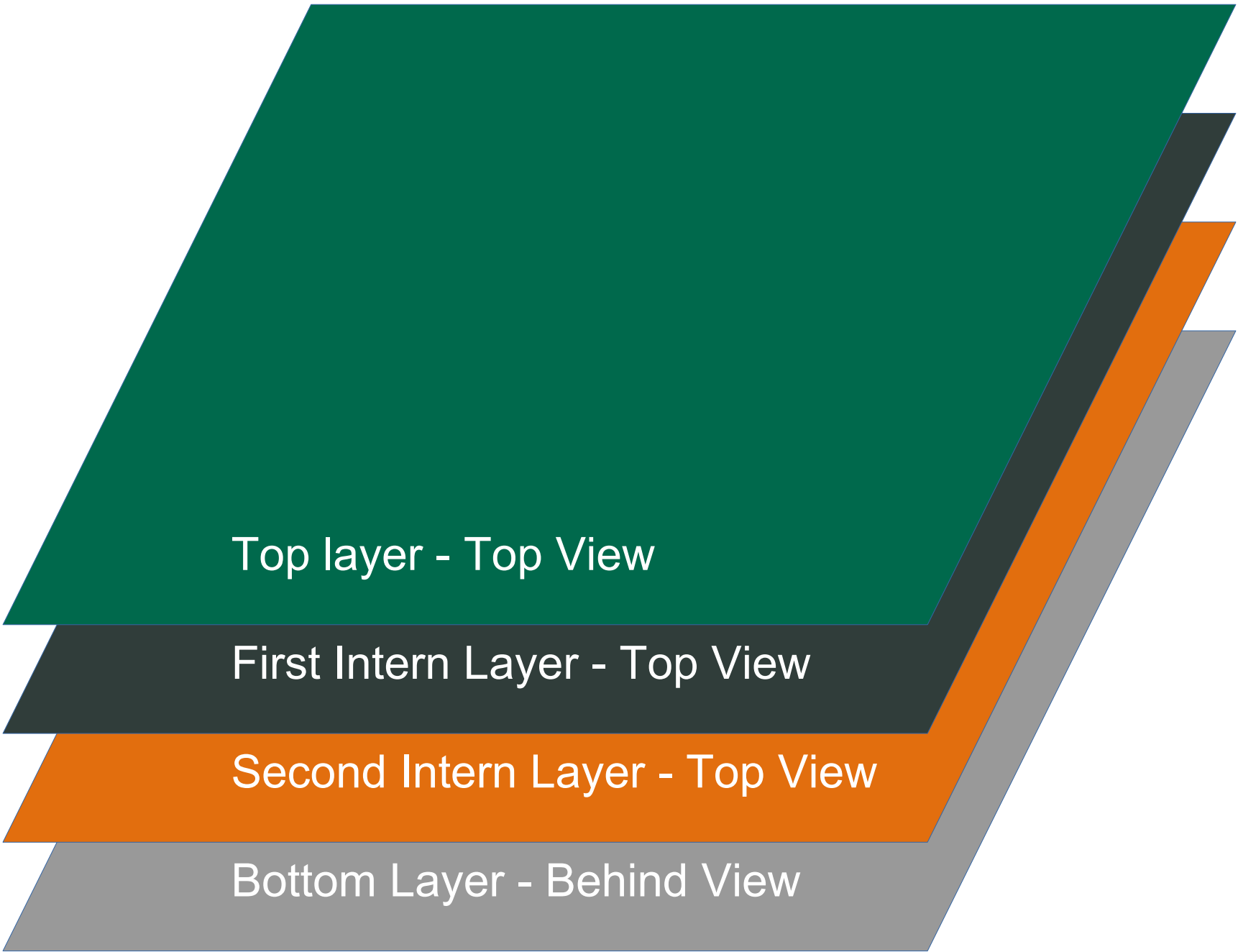


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Board Scheme :

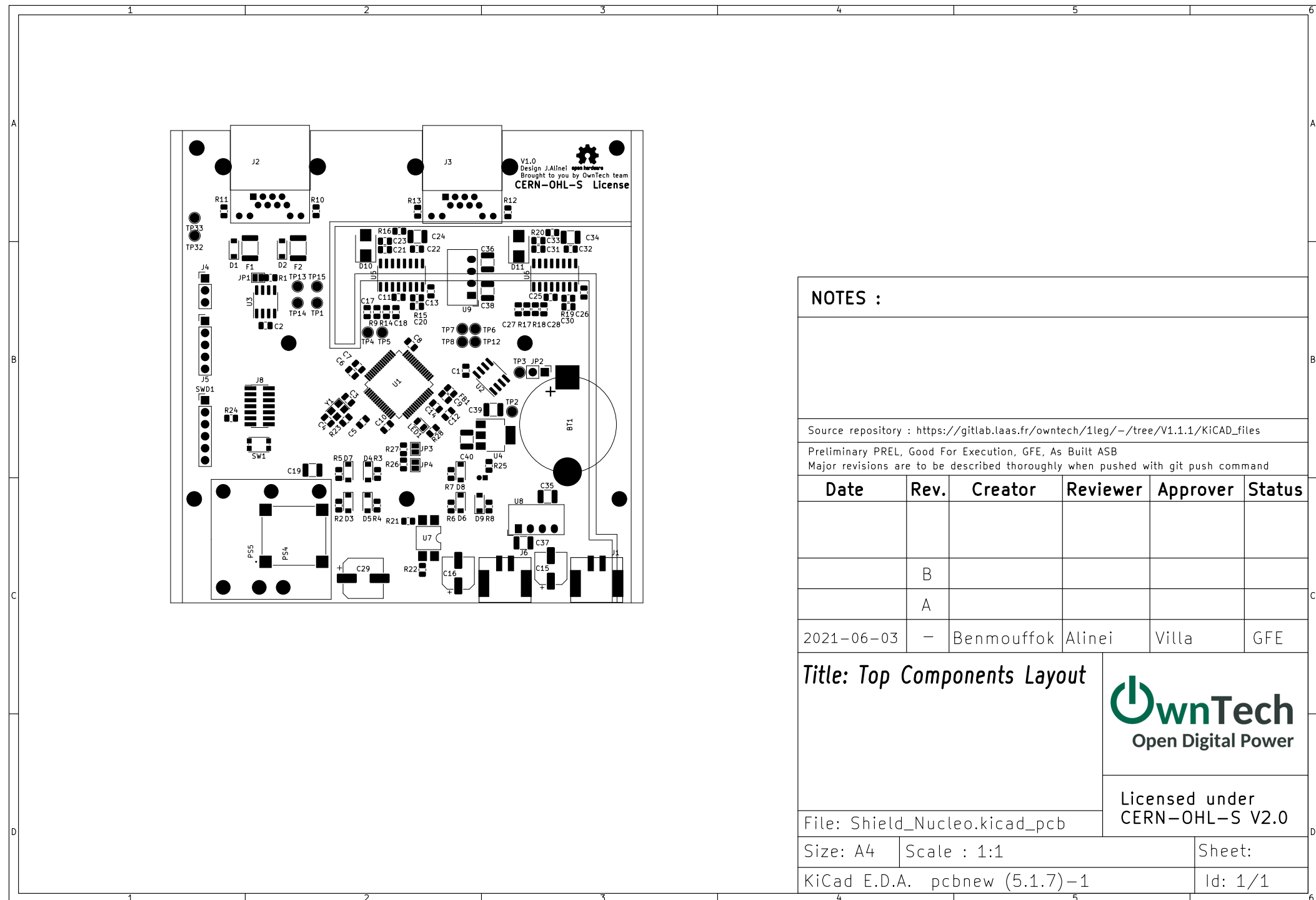


Layers Arrangement :



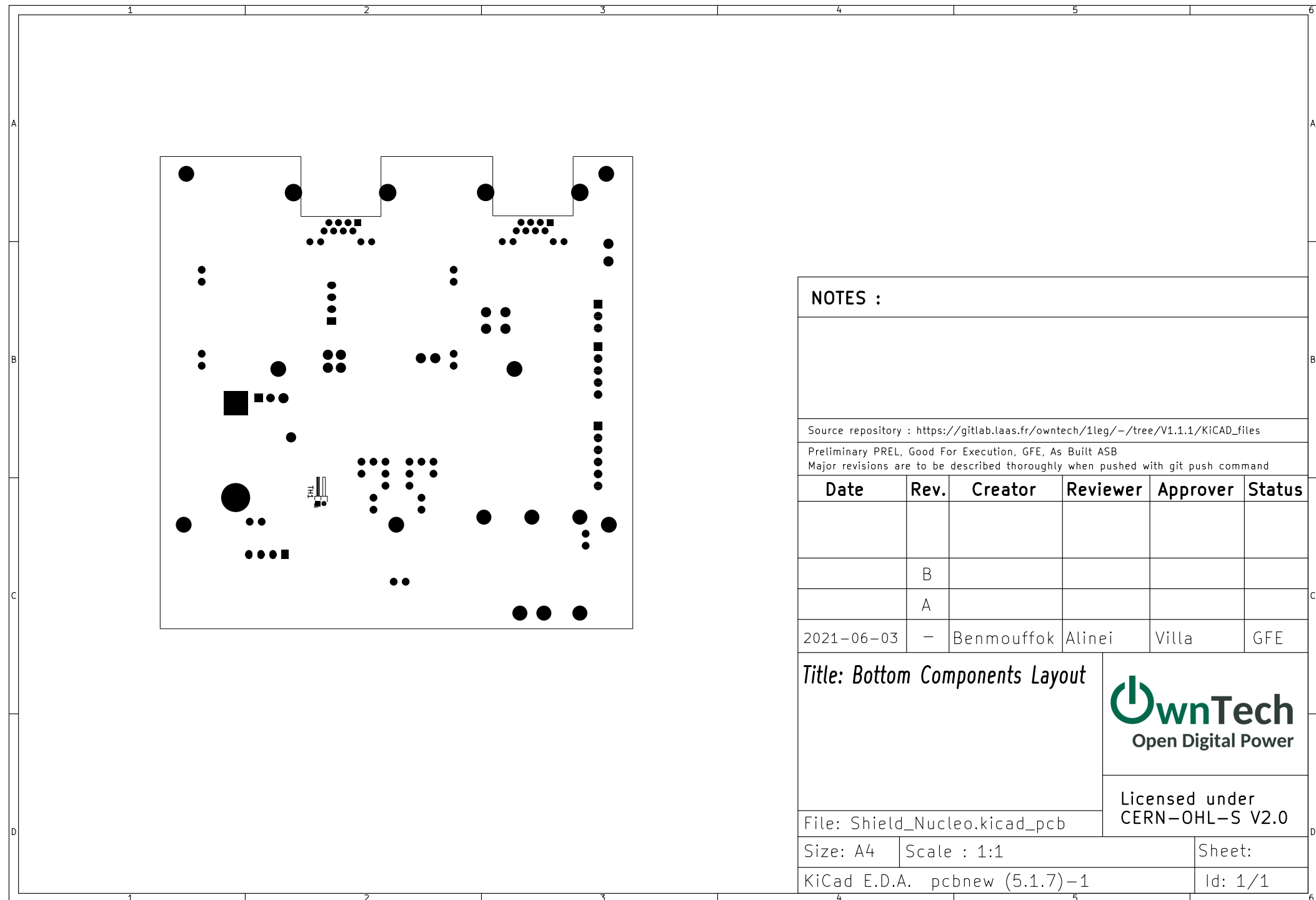
Shield Nucleo board

Top Components Layout :



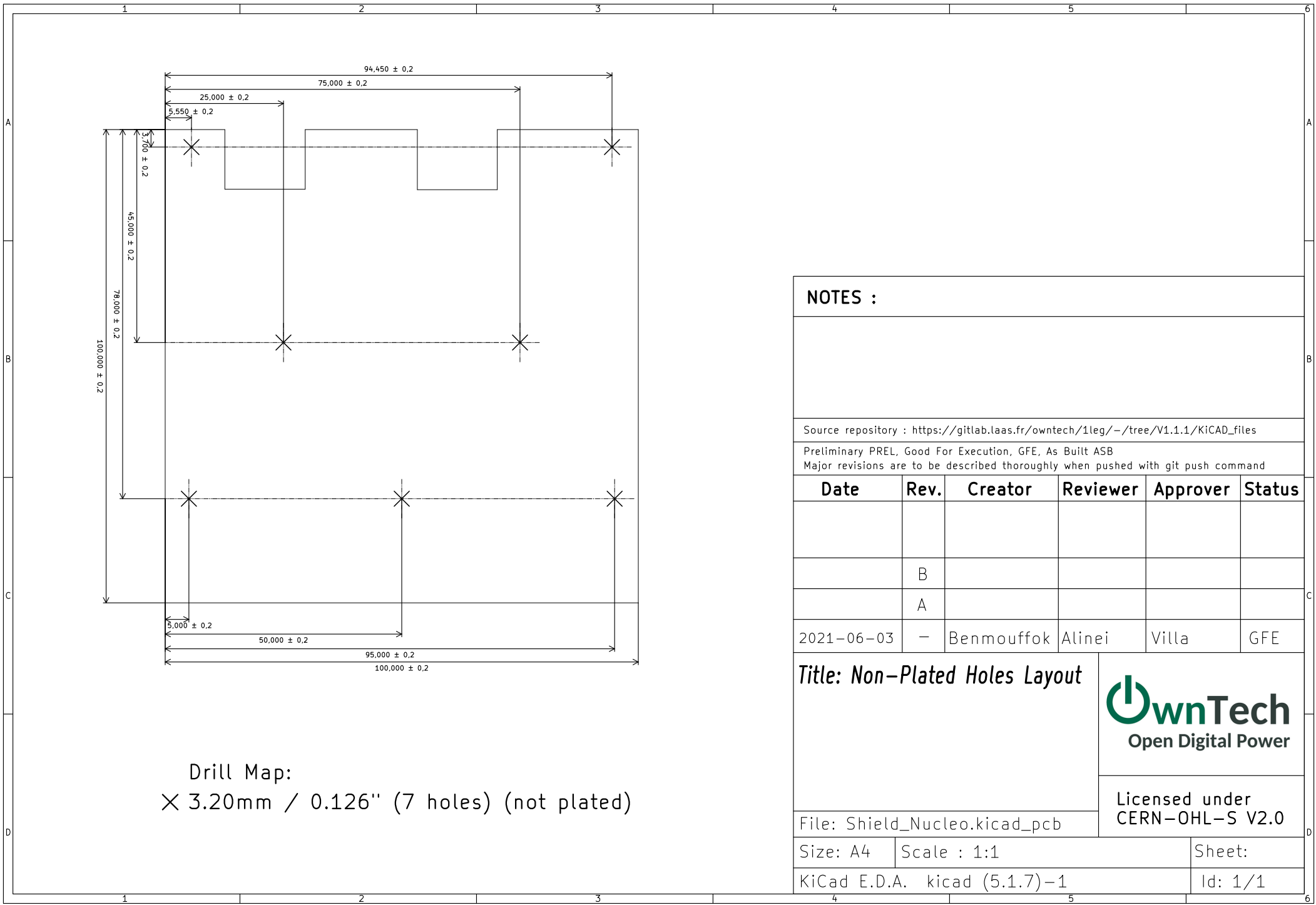
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Bottom Components Layout :



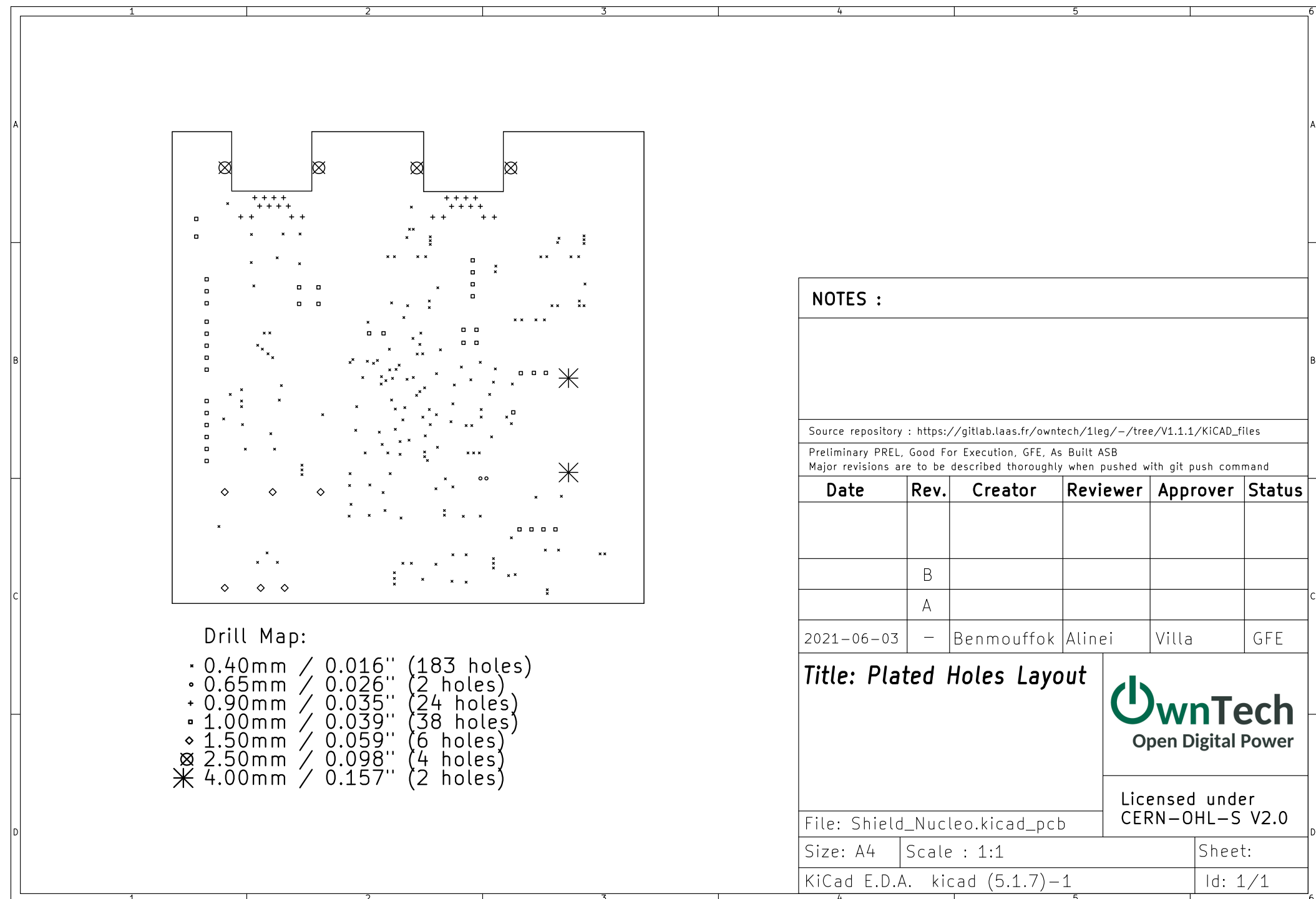
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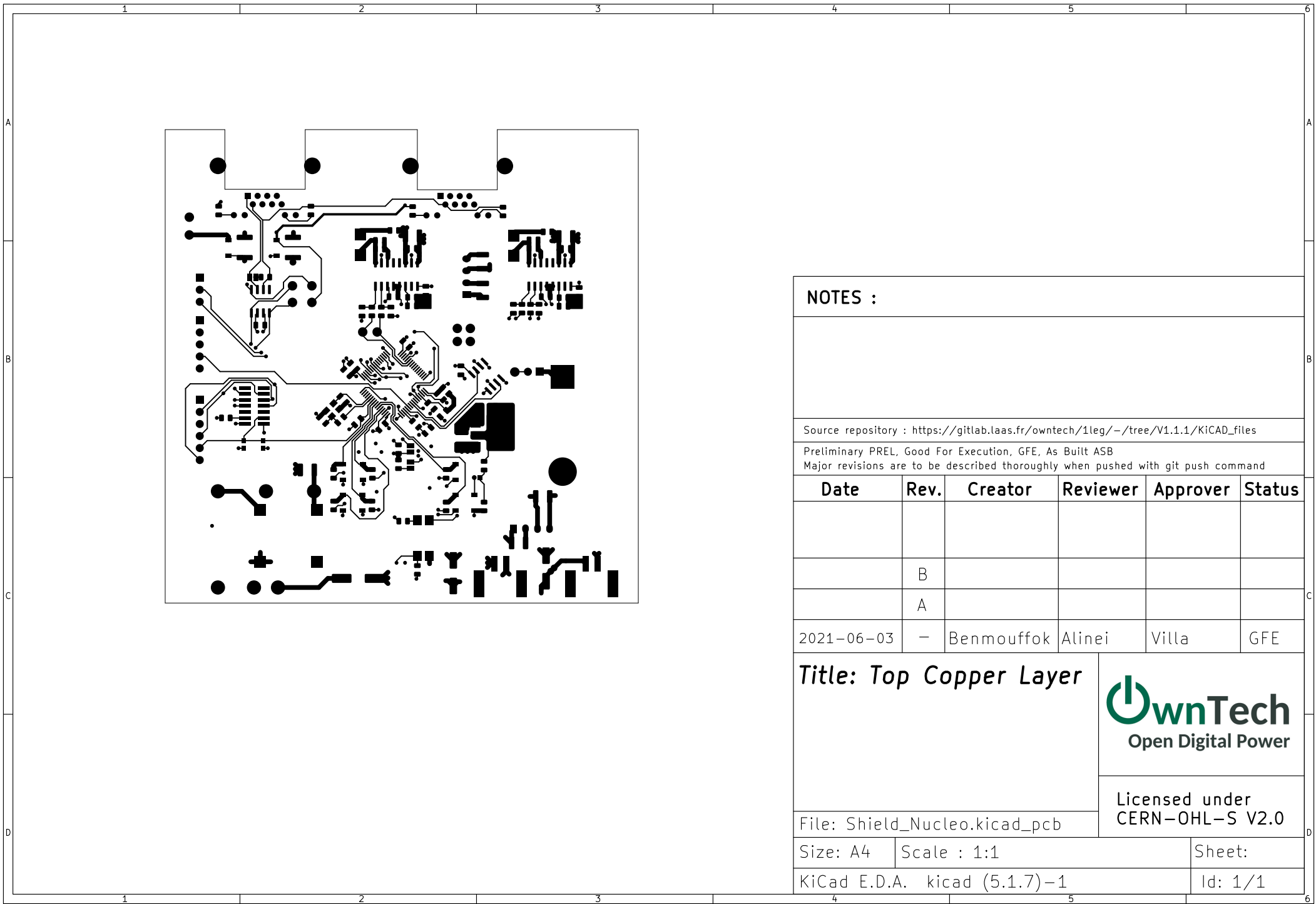
Non-Plated Holes Layout :



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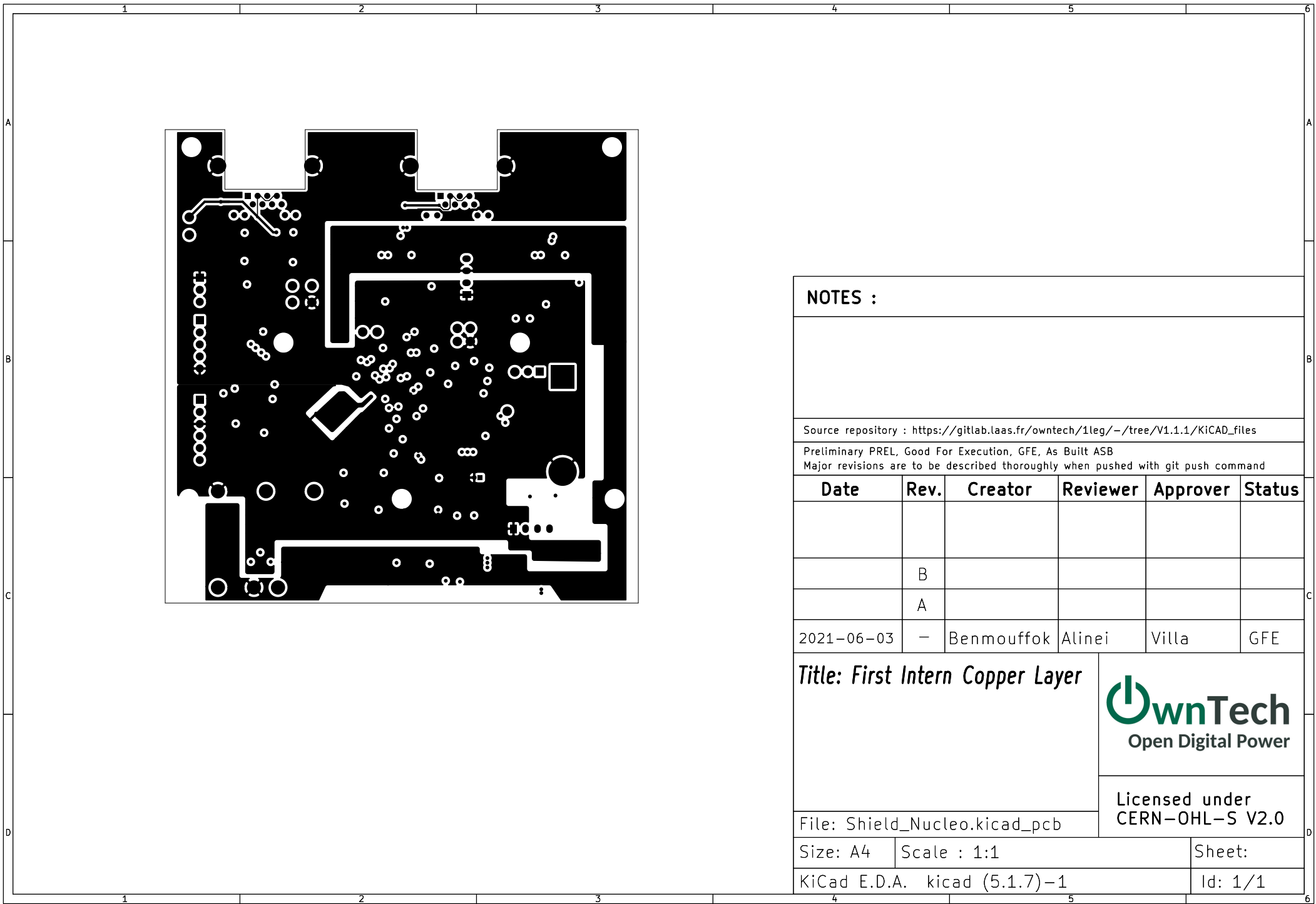
Plated Holes Layout :





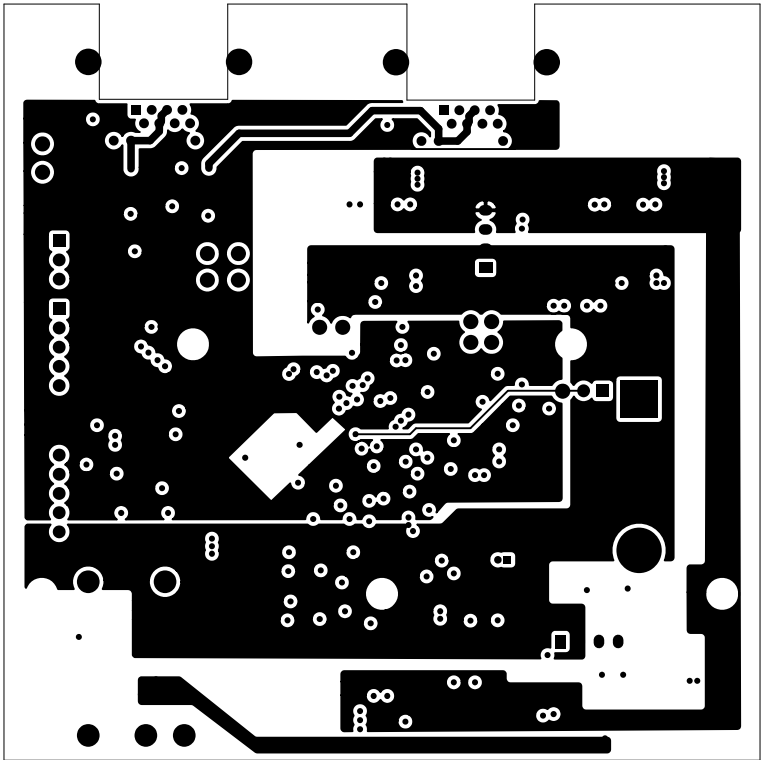
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First Intern Copper Layer :



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Second Intern Copper Layer :




NOTES :

Source repository : https://gitlab.laas.fr/owntech/1leg/-/tree/V1.1.1/KiCAD_files

Preliminary PREL, Good For Execution, GFE, As Built ASB
Major revisions are to be described thoroughly when pushed with git push command

Date	Rev.	Creator	Reviewer	Approver	Status
	B				
	A				
2021-06-03	-	Benmouffok	Alinei	Villa	GFE

Title: *Second Intern Copper Layer*



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File: Shield_Nucleo.kicad_pcb

Size: A4

Scale : 1:1

Sheet:

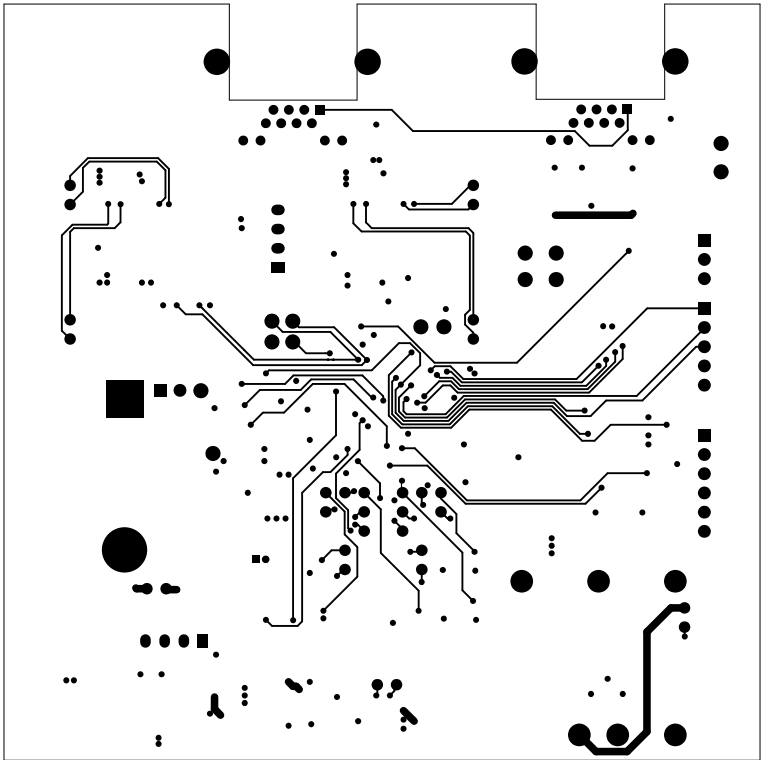
KiCad E.D.A. kicad (5.1.7)-1

Id: 1/1



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Bottom Copper Layer :




NOTES :

Source repository : https://gitlab.laas.fr/owntech/1leg/-/tree/V1.1.1/KiCAD_files

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Date	Rev.	Creator	Reviewer	Approver	Status
	B				
	A				
2021-06-03	-	Benmouffok	Alinei	Villa	GFE

Title: Bottom Copper Layer



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File: Shield_Nucleo.kicad_pcb

Size: A4

Scale : 1:1

Sheet:

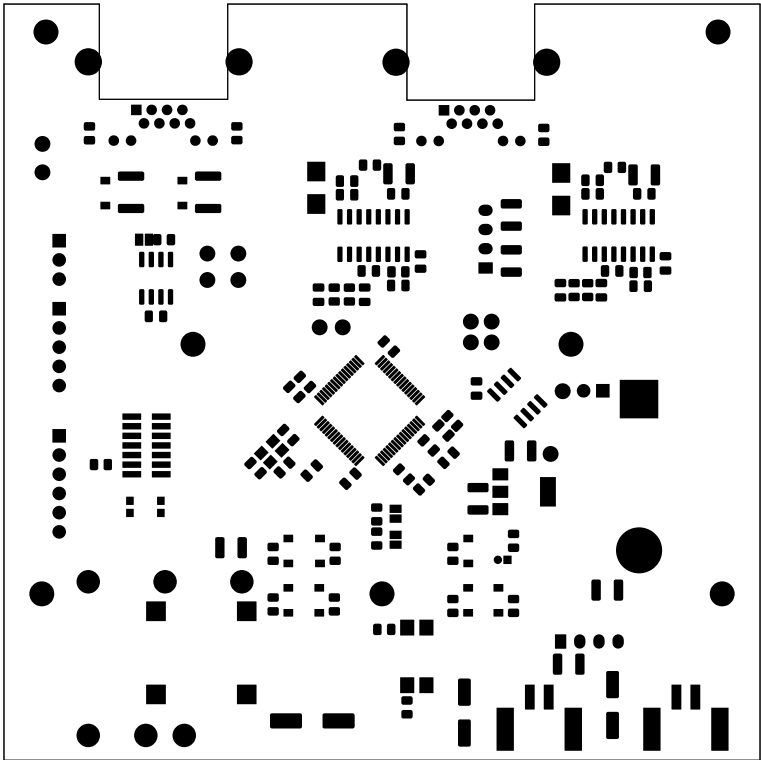
KiCad E.D.A. kicad (5.1.7)-1

Id: 1/1



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Top Mask Layer :




NOTES :

Source repository : https://gitlab.laas.fr/owntech/1leg/-/tree/V1.1.1/KiCAD_files

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Major revisions are to be described thoroughly when pushed with git push command

Date	Rev.	Creator	Reviewer	Approver	Status
	B				
	A				
2021-06-03	-	Benmouffok	Alinei	Villa	GFE

Title: Top Mask Layer


Open Digital Power

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File: Shield_Nucleo.kicad_pcb

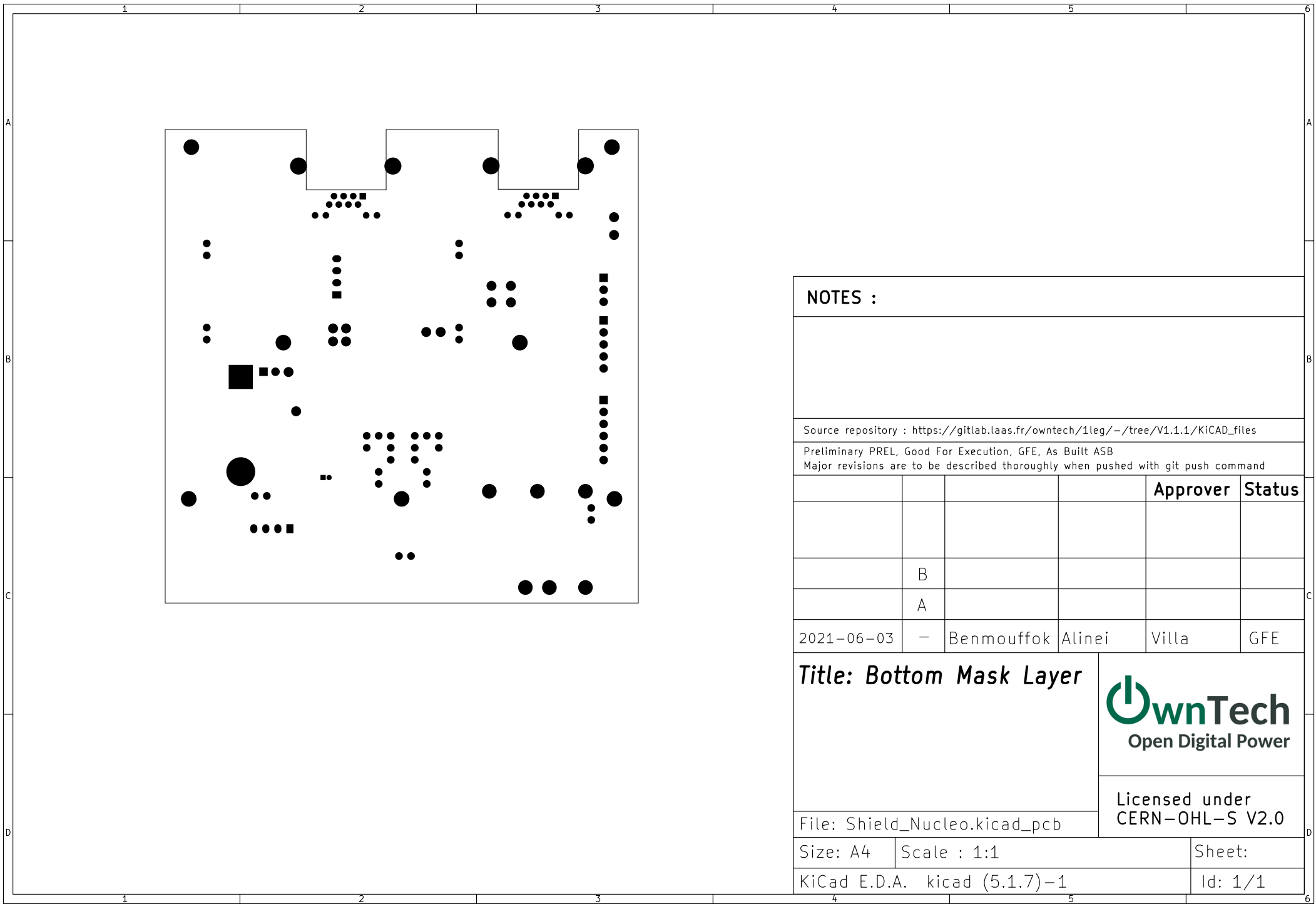
Size: A4 Scale : 1:1 Sheet:


KiCad E.D.A. kicad (5.1.7)-1 Id: 1/1



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Bottom Mask Layer :



NOTES :					
Source repository : https://gitlab.laas.fr/owntech/1leg/-/tree/V1.1.1/KiCAD_files					
Preliminary PREL, Good For Execution, GFE, As Built ASB Major revisions are to be described thoroughly when pushed with git push command					
				Approver	Status
	B				
	A				
2021-06-03	-	Benmouffok	Alinei	Villa	GFE
Title: Bottom Mask Layer			 Open Digital Power		
			Licensed under CERN-OHL-S V2.0		
File: Shield_Nucleo.kicad_pcb					
Size: A4	Scale : 1:1				Sheet:
KiCad E.D.A. kicad (5.1.7)-1				Id: 1/1	



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Bill of materials :

Reference	Value	Footprint	Datasheet	Manf#(Manufacturer Reference)
BT1	Battery_Cell	Footprints:CR2032	https://www.murata.com/-/media/webrene-wal/products/batteries/micro/cr/test_summary/test_summary_pdf/tab-high-drain/test-summary-un38-3-cr2032r-ho6aaww-97384199.ashx?la=en-gb&cvid=20210218001039000000	97384199
U3	TCAN334GDR	Footprints:SOIC-8_3.9x4.9mm_P1.27mm	https://www.ti.com/lit/ds/symlink/tcan334g.pdf?ts=1622552431960&ref_url=https%253A%252F%252Fwww.ti.com%252Fproduct%252FTCAN334G	TCAN334GDR
R1	120	Resistor_SMD:R_0805_2012Metric	~	CR0805-FX-1200ELF
C2	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
JP1	Jumper	Jumper:SolderJumper-2_P1.3mm_Open_Pad1.0x1.5mm	~	x
D1	RBR2MM60ATFTR	Diode_SMD:D_SOD-123	https://fscdn.rohm.com/en/products/data-book/datasheet/discrete/diode/schottky_barrier/rbr2mm60atftr-e.pdf	RBR2MM60ATFTR
D2	RBR2MM60ATFTR	Diode_SMD:D_SOD-123	https://fscdn.rohm.com/en/products/data-book/datasheet/discrete/diode/schottky_barrier/rbr2mm60atftr-e.pdf	RBR2MM60ATFTR
F1	0ZCJ0050AF2E	Fuse:Fuse_1812_4532Metric	https://www.belfuse.com/resources/data-sheets/circuitprotection/ds-cp-0zcyj-series.pdf	0ZCJ0050AF2E
F2	0ZCJ0050AF2E	Fuse:Fuse_1812_4532Metric	https://www.belfuse.com/resources/data-sheets/circuitprotection/ds-cp-0zcyj-series.pdf	0ZCJ0050AF2E
TP13	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP14	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP15	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP2	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP3	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
U2	AT25xxx	Footprints:SOIC-8_3.9x4.9mm_P1.27mm	https://ww1.microchip.com/downloads/en/DeviceDoc/AT25128B-AT25256B-SPI-Serial-EEPROM-Data-Sheet-20006193A.pdf	AT25256B-SSPDGV-T
C1	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104



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Reference	Value	Footprint	Datasheet	Manf#(Manufacturer Reference)
JP2	Jumper	Connector_PinHeader_2.54mm:PinHeader_1x02_P2.54mm_Vertical	https://www.samtec.com/products/tsw-102-07-t-s	TSW-102-07-T-S
TP1	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP12	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP7	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP6	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP5	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP4	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP32	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
TP33	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
J2	RJ45_LED_Shielded	Footprints:ethernet_RJE721881411	https://cdn.amphenol-icc.com/media/wysiwyg/files/documentation/datasheet/input-output/io-modjack-rje72.pdf	RJE721881411
J3	RJ45_LED_Shielded	Footprints:ethernet_RJE721881411	https://cdn.amphenol-icc.com/media/wysiwyg/files/documentation/datasheet/input-output/io-modjack-rje72.pdf	RJE721881411
R10	330	Resistor_SMD:R_0805_2012Metric	~	CRCW0805330RFKEAC
R11	3000	Resistor_SMD:R_0805_2012Metric	~	CR0805-FX-3001ELF
R12	330	Resistor_SMD:R_0805_2012Metric	~	CRCW0805330RFKEAC
R13	3000	Resistor_SMD:R_0805_2012Metric	~	CR0805-FX-3001ELF
C6	4,7uF	Capacitor_SMD:C_0805_2012Metric	~	CGA4J1X7R1H475K125AE
C10	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C9	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C8	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C7	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C14	10nF	Capacitor_SMD:C_0805_2012Metric	~	C0805X103K5RAC3316
C12	1ÂµF	Capacitor_SMD:C_0805_2012Metric	~	CL21B105KBFNFNE
FB1	100Ohm @Â 100MHz	Resistor_SMD:R_0805_2012Metric	https://www.vishay.com/docs/34025/ilbb0805.pdf	ILBB0805ER101V
C3	12pF	Capacitor_SMD:C_0805_2012Metric	~	C0805C120K5HACTU
C4	12pF	Capacitor_SMD:C_0805_2012Metric	~	C0805C120K5HACTU
C5	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
SW1	SW_Push	Button_Switch_SMD:SW_Push_1P1T_NO	https://www.ckswitches.com/media/1479/	KMR241NGLFS



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Reference	Value	Footprint	Datasheet	Manf#(Manufacturer Reference)
		CK_KMR2	kmr2.pdf	
U1	STM32G474RE	Package_QFP:LQFP-64_10x10mm_P0.5mm	https://my2.st.com/resource/en/datasheet/stm32g474re.pdf	STM32G474RET6
D8	3.3V	Diode_SMD:D_SOD-123	https://www.vishay.com/docs/85774/mm-sz5225.pdf	MMSZ5226C-HE3-08
D7	3.3V	Diode_SMD:D_SOD-123	https://www.vishay.com/docs/85774/mm-sz5225.pdf	MMSZ5226C-HE3-08
D4	3.3V	Diode_SMD:D_SOD-123	https://www.vishay.com/docs/85774/mm-sz5225.pdf	MMSZ5226C-HE3-08
J6	Conn_01x02	Footprints:PTSM-0,5-2-HH0-SMD	https://www.phoenixcontact.com/online/port/fr?uri=pxc-oc-itemdetail:pid=1814919&library=frfr&tab=1	1814919
C16	47uF	Capacitor_SMD:CP_Elec_6.3x7.7	~	865080645012
J1	Conn_01x02	Footprints:PTSM-0,5-2-HH0-SMD	https://www.phoenixcontact.com/online/port/fr?uri=pxc-oc-itemdetail:pid=1814919&library=frfr&tab=1	1814919
C15	47uF	Capacitor_SMD:CP_Elec_6.3x7.7	~	865080645012
PS4	PQDE6W-Q110-S5-D	Footprints:PQDE6W-Q110-S5-D	https://www.cui.com/product/resource/pqde6w-q110-d.pdf	PQDE6W-Q110-S5-D
PS5	VXO78xxx	Footprints:CONV_VXO78012-500-M	https://www.cui.com/product/resource/vxo78-500-m.pdf	VXO78012-500-M-TR
U4	AP1117-33	Package_TO_SOT_SMD:SOT-223-3_Tab-Pin2	https://www.diodes.com/assets/Datasheets/AP1117.pdf	AP1117E33G-13
U5	UCC21222DR	Footprints:SOIC-16_3.9x9.9mm_P1.27mm	https://www.ti.com/lit/ds/symlink/ucc21222.pdf?ts=1622551800777&ref_url=https%253A%252F%252Fwww.ti.com%252Fproduct%252FUCC21222	UCC21222DR
C17	33pF	Capacitor_SMD:C_0805_2012Metric	~	C0805C330J5GACTU
C18	33pF	Capacitor_SMD:C_0805_2012Metric	~	C0805C330J5GACTU
R9	51	Resistor_SMD:R_0805_2012Metric	~	RT0805FRE0751RL
R14	51	Resistor_SMD:R_0805_2012Metric	~	RT0805FRE0751RL
R15	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
C20	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C13	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C11	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
D10	STTH4R02U	Diode_SMD:D_SMB	https://www.st.com/resource/en/datasheet/stth4r02.pdf	STTH4R02U
R16	2.2	Resistor_SMD:R_0805_2012Metric	~	CR0805AF/-2R20EAS
C24	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E
C22	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104



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Reference	Value	Footprint	Datasheet	Manf#(Manufacturer Reference)
C23	1uF	Capacitor_SMD:C_0805_2012Metric	~	CL21B105KBFNFNE
C21	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
U6	UCC21222DR	Footprints:SOIC-16_3.9x9.9mm_P1.27mm	https://www.ti.com/lit/ds/symlink/ucc21222.pdf?ts=1622551800777&ref_url=https%253A%252F%252Fwww.ti.com%252Fproduct%252FUCC21222	UCC21222DR
C27	33pF	Capacitor_SMD:C_0805_2012Metric	~	C0805C330J5GACTU
C28	33pF	Capacitor_SMD:C_0805_2012Metric	~	C0805C330J5GACTU
R17	51	Resistor_SMD:R_0805_2012Metric	~	RT0805FRE0751RL
R18	51	Resistor_SMD:R_0805_2012Metric	~	RT0805FRE0751RL
R19	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
C30	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C26	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C25	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
D11	STTH4R02U	Diode_SMD:D_SMB	https://www.st.com/resource/en/datasheet/stth4r02.pdf	STTH4R02U
R20	2.2	Resistor_SMD:R_0805_2012Metric	~	CR0805AF/-2R20EAS
C34	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E
C32	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
C33	1uF	Capacitor_SMD:C_0805_2012Metric	~	CL21B105KBFNFNE
C31	100nF	Capacitor_SMD:C_0805_2012Metric	~	CC0805KRX7R9BB104
U7	SFH617A-2X009T	Package_DIP:SMDIP-4_W7.62mm	http://www.vishay.com/docs/83740/sfh617a.pdf	SFH617A-2X009T
R21	51	Resistor_SMD:R_0805_2012Metric	~	RT0805FRE0751RL
R22	1k	Resistor_SMD:R_0805_2012Metric	~	RC0805FR-071KL
Y1	ECS-240-10-33-AGM-TR - 24MHz	Crystal:Crystal_SMD_3225-4Pin_3.2x2.5mm	https://ecsxtal.com/store/pdf/ecx-32.pdf	ECS-240-10-33-AGM-TR
R23	220	Resistor_SMD:R_0805_2012Metric	~	CRCW0805220RFKEAC
SWD1	Conn_01x06_Female	Connector_PinHeader_2.54mm:PinHeader_1x06_P2.54mm_Vertical	https://www.samtec.com/products/tsw-106-07-t-s	TSW-106-07-T-S
R24	100	Resistor_SMD:R_0805_2012Metric	~	CR0805-FX-1000ELF
J8	Conn_02x07_Odd_Even	Connector_PinHeader_1.27mm:PinHeader_2x07_P1.27mm_Vertical_SMD	https://www.samtec.com/products/ftsh-107-01-f-dv-k	FTSH-107-01-F-DV-K
R25	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
TH1	NXFT15XH103FA2B100	Connector_PinHeader_1.27mm:PinHeader_1x02_P1.27mm_Horizontal	https://www.murata.com/en-eu/products/productdetail?partno=NXFT15XH103-FA2B100	NXFT15XH103FA2B100
C29	10uF	Capacitor_SMD:CP_Elec_8x11.9	~	EEE-FN2A100P
C19	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E
C35	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E



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Reference	Value	Footprint	Datasheet	Manf#(Manufacturer Reference)
C38	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E
C37	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E
C36	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E
C40	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E
C39	10uF	Capacitor_SMD:C_1210_3225Metric	~	CL32B106KBJZW6E
J7	Power	Footprints:3D_Footprint_Power		x
D3	3.3V	Diode_SMD:D_SOD-123	https://www.vishay.com/docs/85774/mm-sz5225.pdf	MMSZ5226C-HE3-08
D9	3.3V	Diode_SMD:D_SOD-123	https://www.vishay.com/docs/85774/mm-sz5225.pdf	MMSZ5226C-HE3-08
R8	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
TP8	TestPoint	TestPoint:TestPoint_THTPad_D2.0mm_Drill1.0mm	https://www.keyelco.com/product.cfm/product_id/1310	5001
R26	100K	Resistor_SMD:R_0805_2012Metric	~	APC0805B100KN
R27	100K	Resistor_SMD:R_0805_2012Metric	~	APC0805B100KN
JP4	SolderJumper_2_Open	Jumper:SolderJumper-2_P1.3mm_Open_Pad1.0x1.5mm	~	x
JP3	SolderJumper_2_Open	Jumper:SolderJumper-2_P1.3mm_Open_Pad1.0x1.5mm	~	x
U8	RFM-0505s	Converter_DCDC:Converter_DCDC_mu-Rata_CRE1xxxxxx3C_THT	https://recom-power.com/pdf/Econoline/ROE.pdf	ROE0505S
U9	CME0512S3C	Converter_DCDC:Converter_DCDC_mu-Rata_CRE1xxxxxx3C_THT	https://www.murata.com/products/product-data/8807029342238/kdc-cme.pdf?1614569448000	CME0512S3C
J4	Conn_01x03_Male	Connector_PinHeader_2.54mm:PinHeader_1x03_P2.54mm_Vertical	https://www.samtec.com/products/tsw-103-07-t-s	TSW-103-07-T-S
J5	Conn_01x05_Male	Connector_PinHeader_2.54mm:PinHeader_1x05_P2.54mm_Vertical	https://www.samtec.com/products/tsw-105-07-t-s	TSW-105-07-T-S
R28	330	Resistor_SMD:R_0805_2012Metric	~	CRCW0805330RFKEAC
LED1	LED	LED_SMD:LED_0805_2012Metric	https://www.we-online.com/catalog/data-sheet/150080RS75000.pdf	150080RS75000
D5	3.3V	Diode_SMD:D_SOD-123	https://www.vishay.com/docs/85774/mm-sz5225.pdf	MMSZ5226C-HE3-08
R4	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
D6	3.3V	Diode_SMD:D_SOD-123	https://www.vishay.com/docs/85774/mm-sz5225.pdf	MMSZ5226C-HE3-08
R3	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
R5	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
R7	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
R6	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT
R2	20k	Resistor_SMD:R_0805_2012Metric	~	PCF-W0805LF-03-2002-B-P-LT

