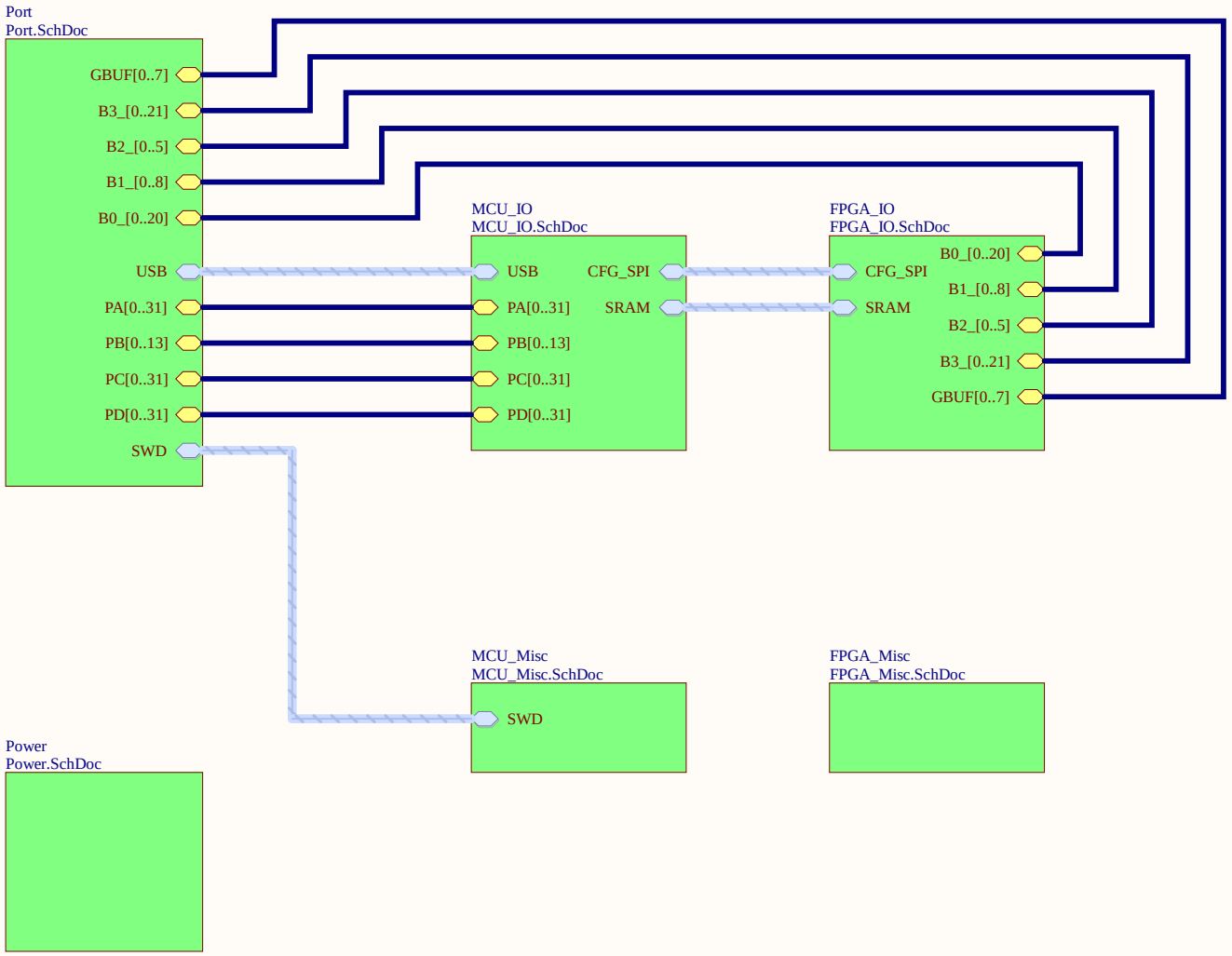
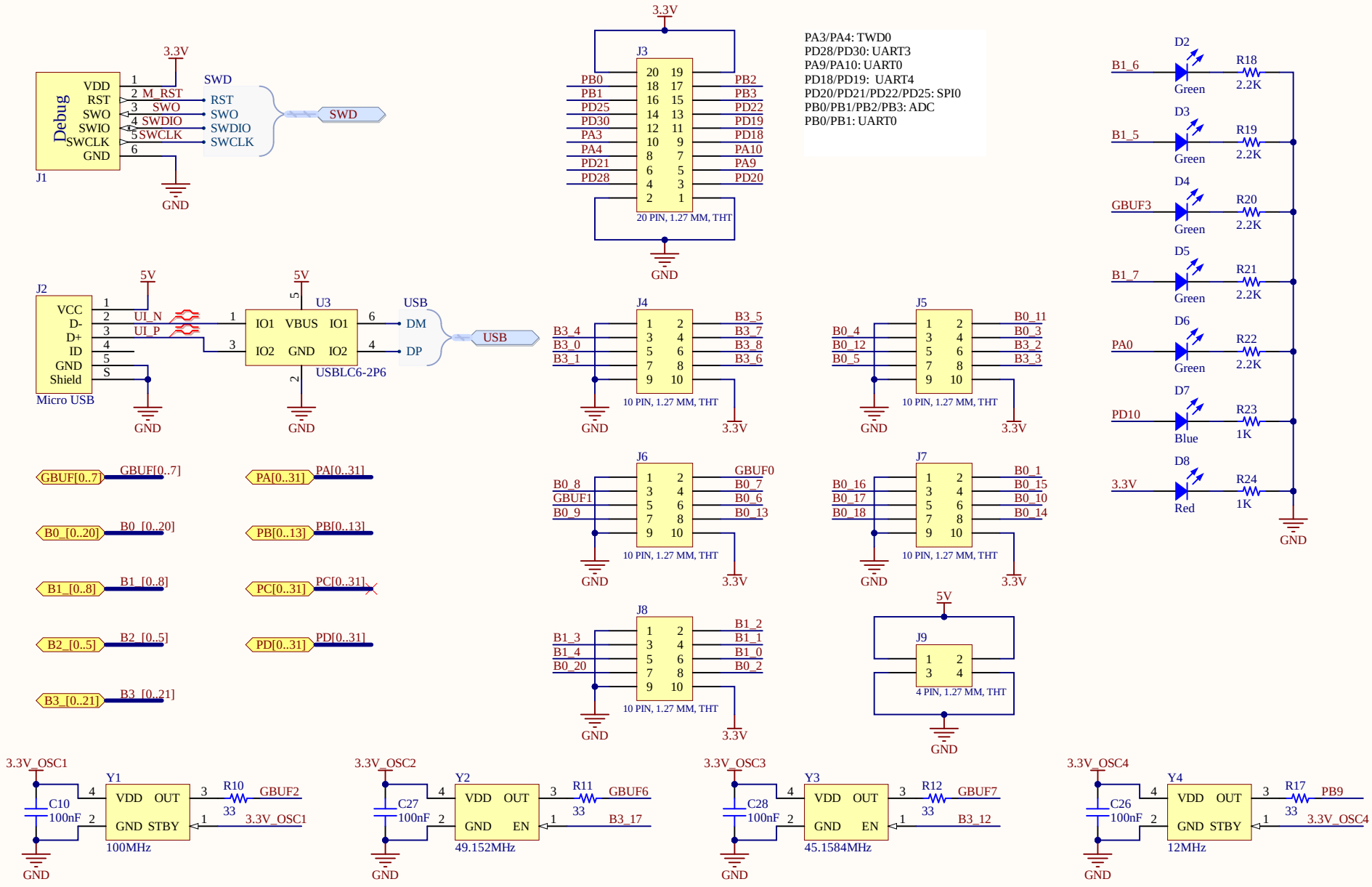


Title	***Top Design***	
Size: A4	Number: 1.	Revision: 1
Date: 26/02/2021 Time: 10:56:32		Sheet 1 of 7
File: IceStorm.SchDoc		



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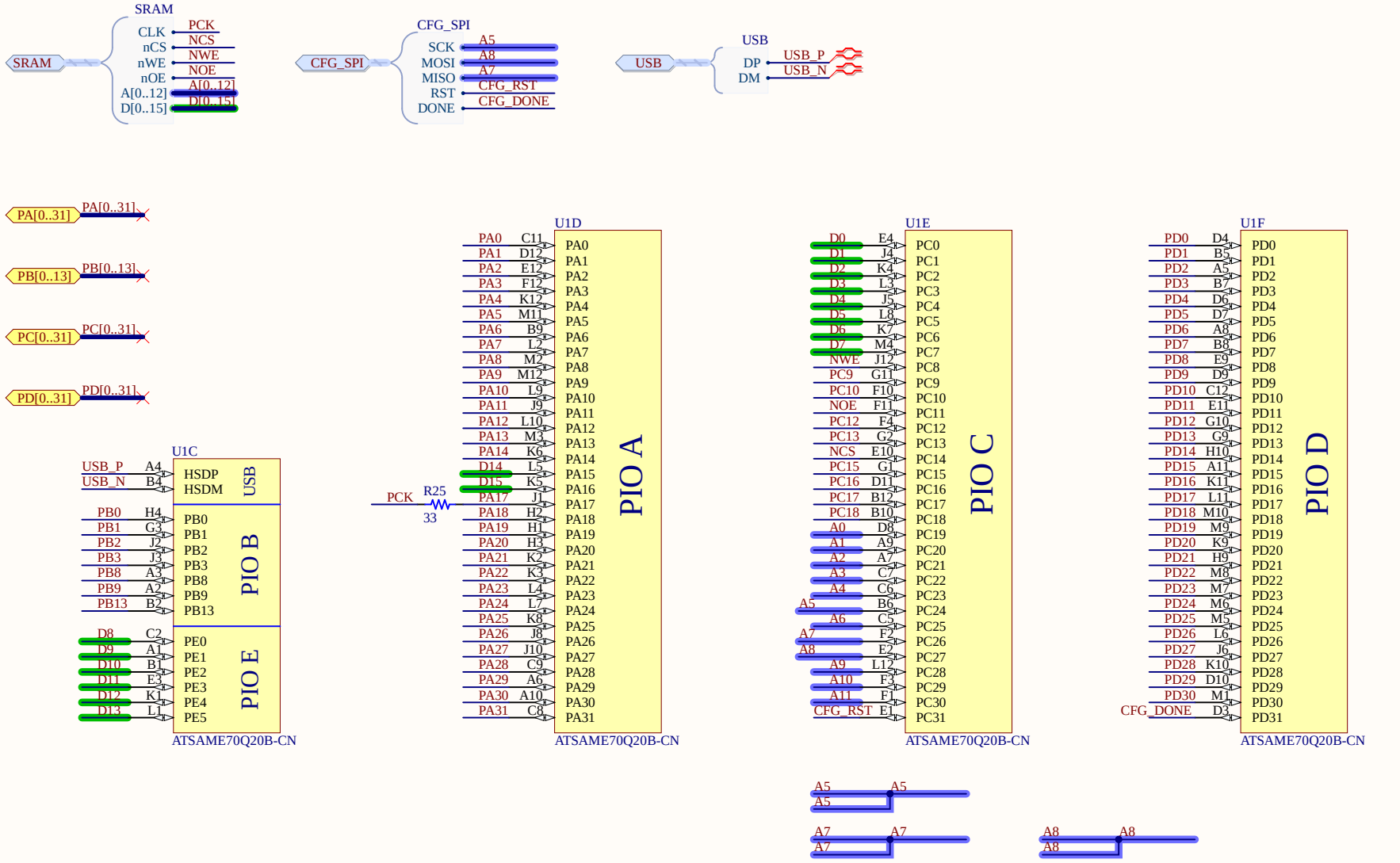
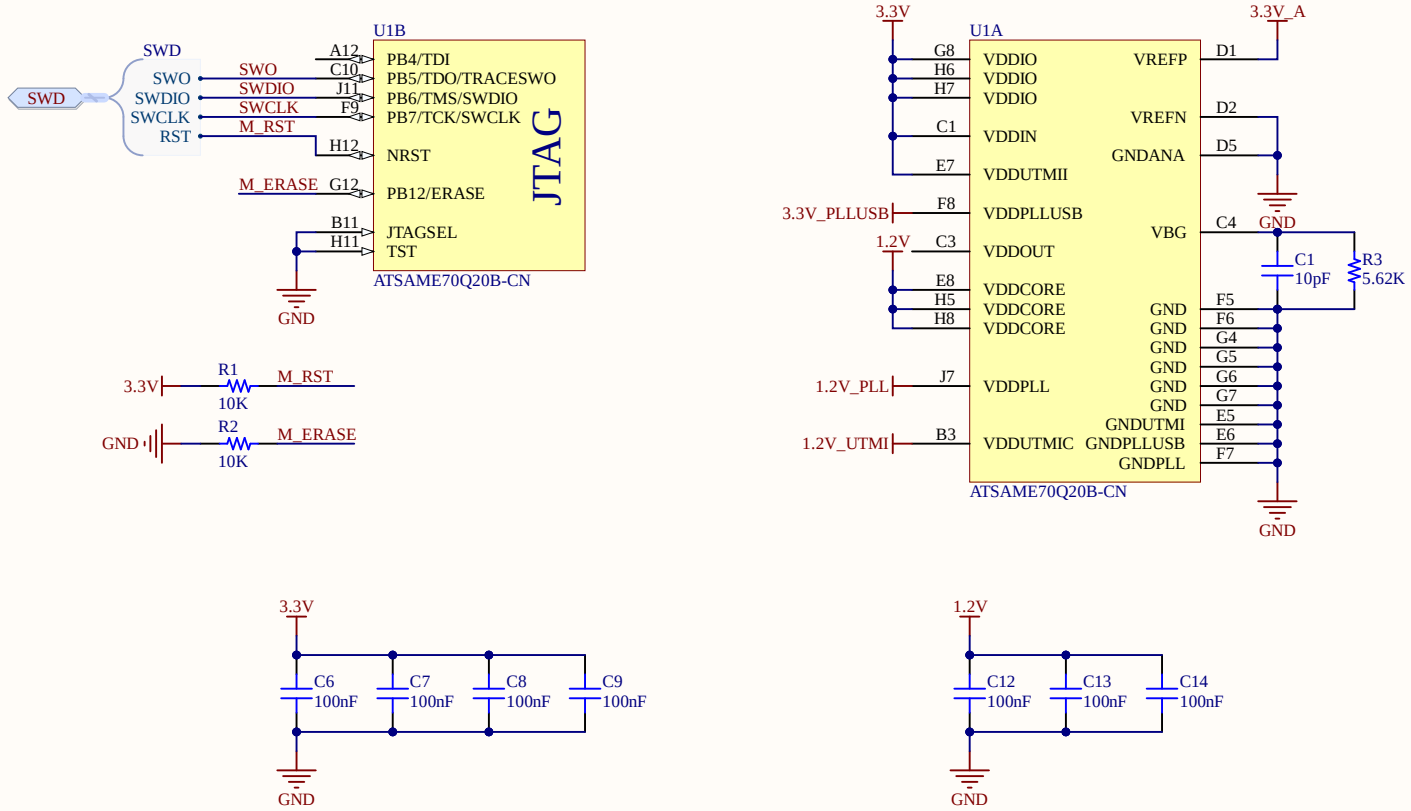
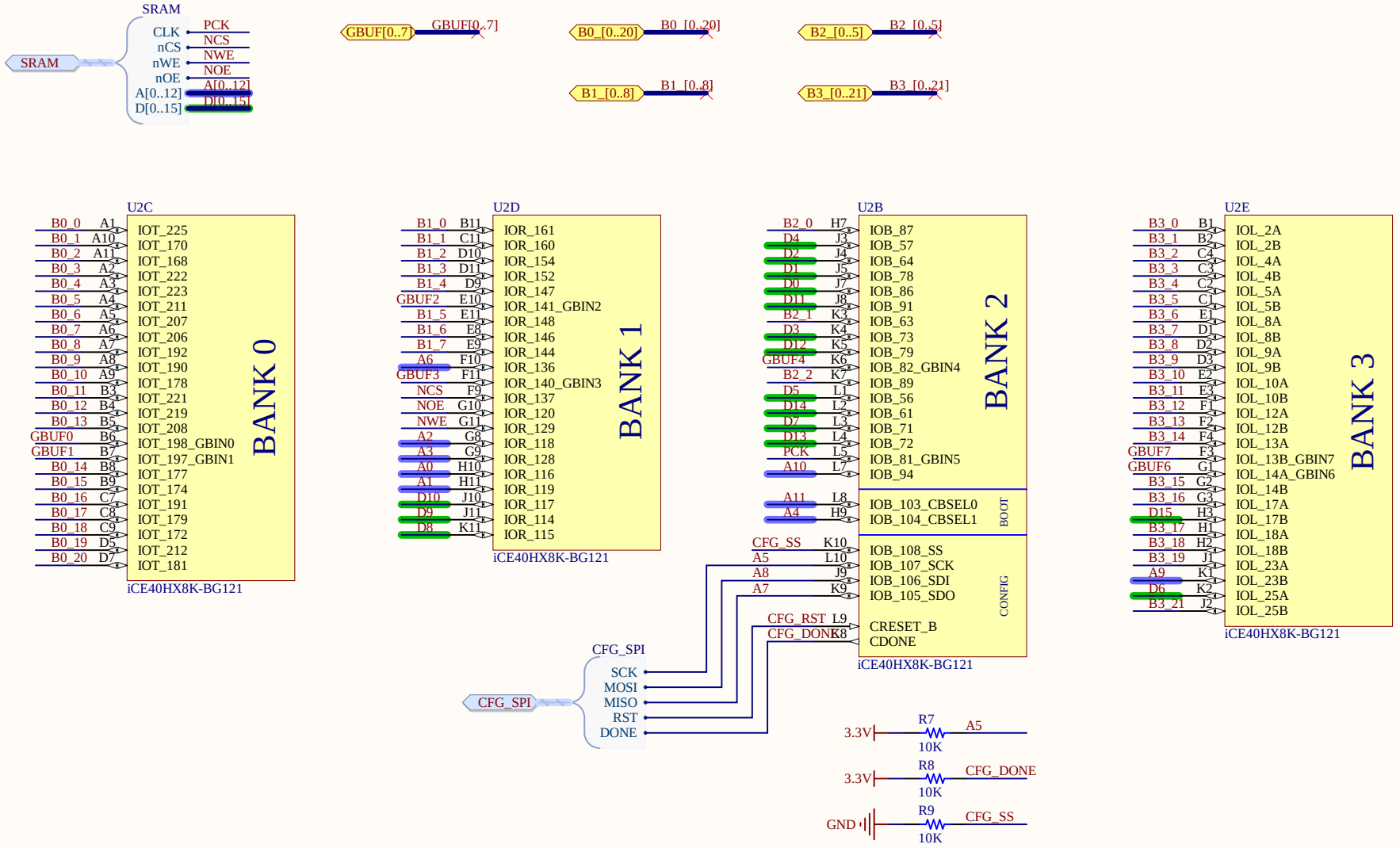
Size: A4	Number: 2.	Revision: 1
Date: 26/02/2021	Time: 10:56:32	Sheet 2 of 7
File: Port.SchDoc		



Title	*MCU I/O*	
Size: A4	Number: 3.	Revision: 1
Date: 26/02/2021 Time: 10:56:32	Sheet 3 of 7	
File: MCU_IO.SchDoc		



Title	***MCU Misc***	
Size: A4	Number: 4.	Revision: 1
Date: 26/02/2021 Time: 10:56:32	Sheet 4 of 7	
File: MCU_Misc.SchDoc		



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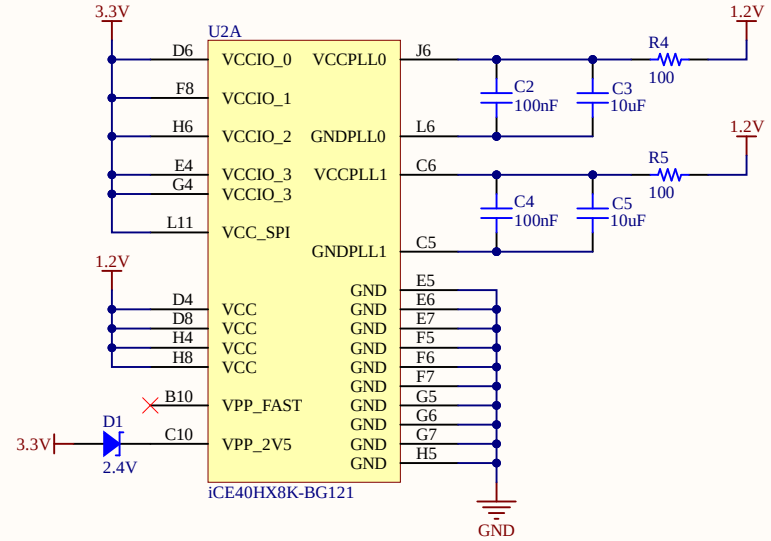
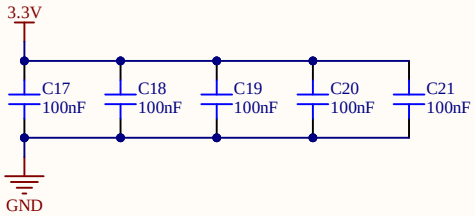
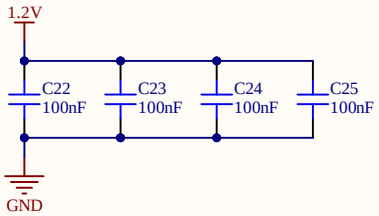
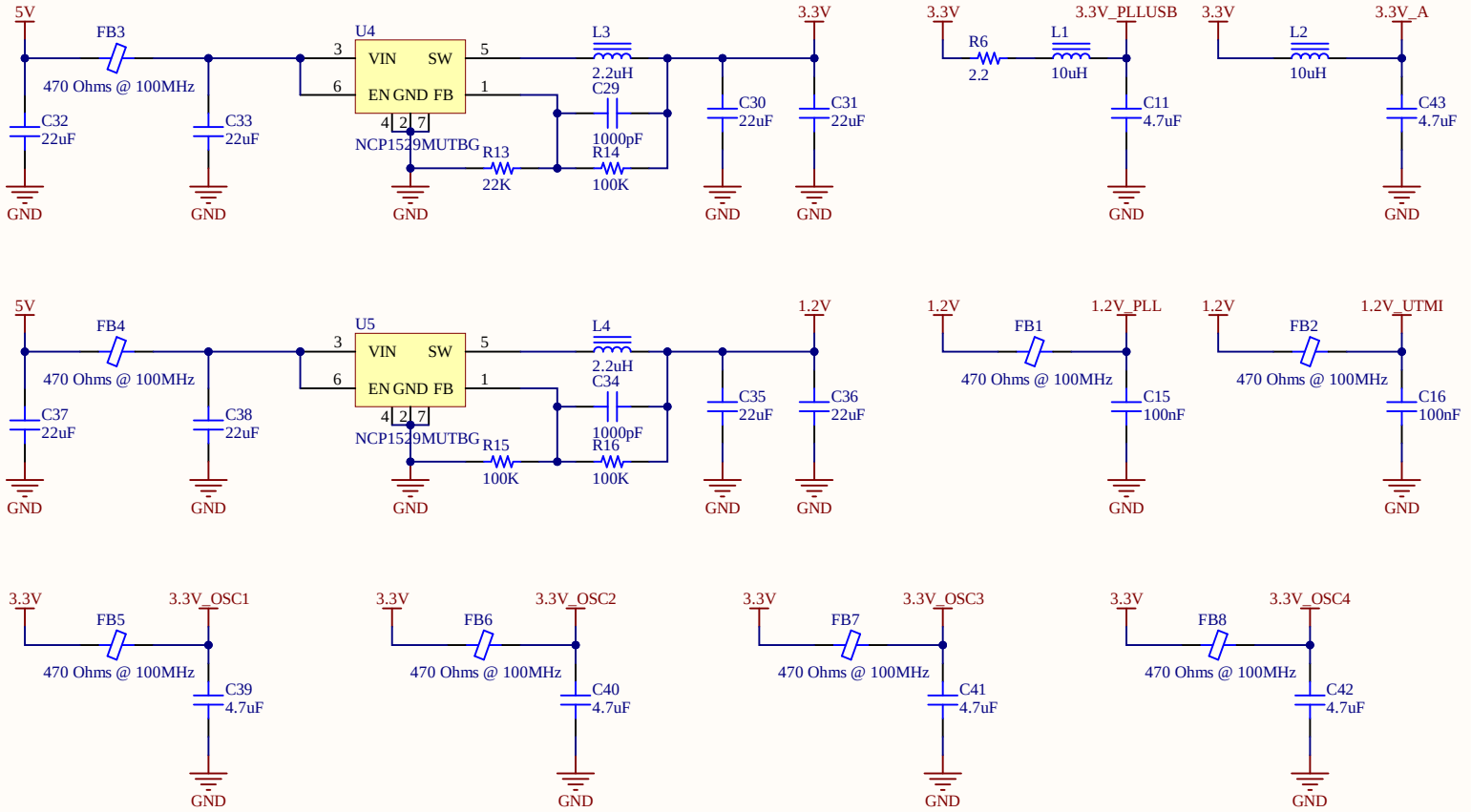
Size: A4	Number: 5.	Revision: 1
Date: 26/02/2021 Time: 10:56:32		Sheet 5 of 7
File: FPGA_IO.SchDoc		







Title *FPGA Misc*		
Size: A4	Number: 6.	Revision: 1
Date: 26/02/2021 Time: 10:56:33		Sheet 6 of 7
File: FPGA_Misc.SchDoc		



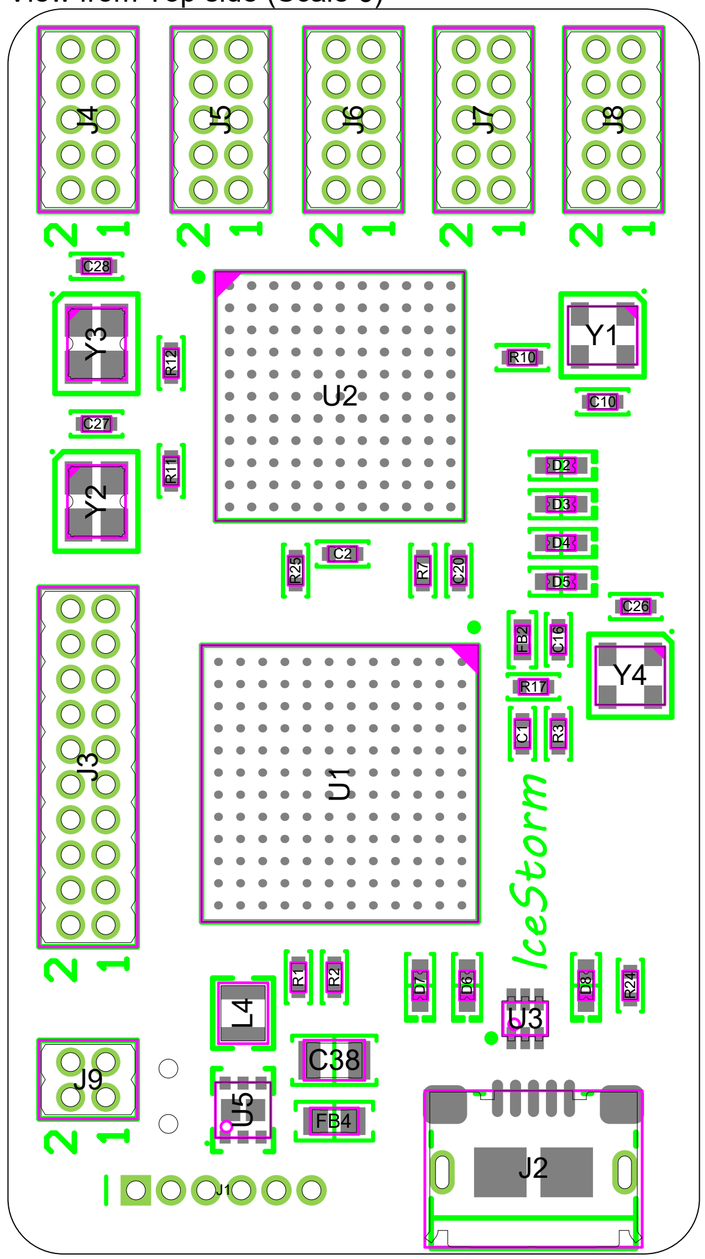
Title **Power**		
Size: A4	Number: 7.	Revision: 1
Date: 26/02/2021 Time: 10:56:33		Sheet 7 of 7
File: Power.SchDoc		

Bill of Materials

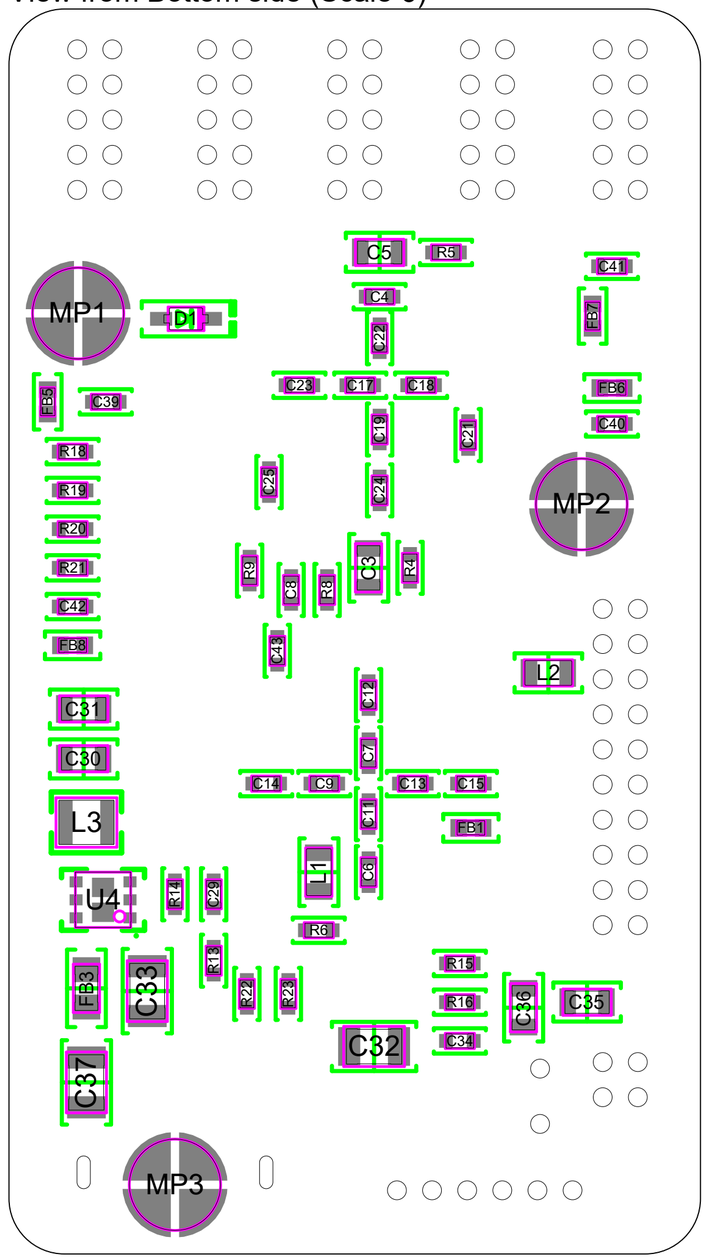
PCB Design IceStorm.PrjPcb
Project IceStorm.PrjF Variant None Report Date 26/02/2021

Designator	Quantity	Description	Manufactur	Part Number	Supplier 1	Supplier Part Number 1	Supplier 2	Supplier Part Number 2
C1	1	CAP CER 10PF 25V NP0 0402	Murata Electroni	GRM1555C1E100JA01D	Digi-Key	490-6168-2-ND		
C2, C4, C6, C7, C8, C9, C10, C12, C1	24	CAP CER 100NF 16V X7R 0402	Murata Electroni	GRM155R71C104KA88D	Digi-Key	490-3261-2-ND		
C3, C5	2	CAP CER 10UF 25V X5R 0603	Murata Electroni	GRM188R61E106MA73D	Digi-Key	490-7202-2-ND		
C11, C39, C40, C41, C42, C43	6	CAP CER 4.7UF 6.3V X5R 0402	Murata Electroni	GRM155R60J475ME87D	Digi-Key	490-5408-2-ND		
C29, C34	2	CAP CER 1000PF 50V NP0 0402	Murata Electroni	GRM1555C1H102JA01D	Digi-Key	490-3244-2-ND		
C30, C31, C35, C36	4	CAP CER 22UF 6.3V X5R 0603	Murata Electroni	GRM188R60J226MEA0J	Digi-Key	490-7612-2-ND		
C32, C33, C37, C38	4	CAP CER 22UF 10V X5R 0805	Murata Electroni	GRM219R61A226MEA0D	Digi-Key	490-9951-2-ND		
D1	1	DIODE ZENER 2.4V 350MW SOD523	Diodes Incorpor	BZT585B2V4T-7	Digi-Key	BZT585B2V4T-7DICT-ND		
D2, D3, D4, D5, D6	5	LED GREEN CLEAR 0402 SMD	Rohm Semicond	SML-P11MTT86	Digi-Key	511-1652-2-ND		
D7	1	LED BLUE 0402 SMD	Vishay Semicon	VLMB1500-GS08	Digi-Key	VLMB1500-GS08TR-ND		
D8	1	LED RED CLEAR 0402 SMD	Rohm Semicond	SML-P11UTT86	Digi-Key	511-1653-2-ND		
FB1, FB2, FB5, FB6, FB7, FB8	6	FERRITE BEAD 470 OHM 0402 1LN	TDK	MMZ1005Y471CT000	Digi-Key	445-2155-1-ND		
FB3, FB4	2	FERRITE BEAD 470 OHM 0603 1LN	TDK	MPZ1608B471ATA00	Digi-Key	445-5218-1-ND		
J2	1	CONN USB MICRO B RECPT SMT R/A	FCI	10118193-0001LF	Digi-Key	609-4616-2-ND		
J3	1	Pin Header WR-PHD, pitch 1.27 mm, THT, Vertical, dual	Wurth	62202021121				
J4, J5, J6, J7, J8	5	Pin Header WR-PHD, pitch 1.27 mm, THT, Vertical, dual	Wurth	62201021121				
J9	1	Pin Header WR-PHD, pitch 1.27 mm, THT, Vertical, dual	Wurth	62200421121				
L1, L2	2	FIXED IND 10UH 300MA 600 MOHM	TDK	MLZ1608N100LT000	Digi-Key	445-6755-1-ND		
L3, L4	2	FIXED IND 2.2UH 1.85A 137 MOHM	TDK	VLS201612HBX-2R2M-1	Digi-Key	445-173012-1-ND		
MP1, MP2, MP3	3	SMT Steel Spacer with internal Thread M1.6 Bottom closed	WA-SMSI, he	97730606330	Mouser	710-97730606330		
R1, R2, R7, R8, R9	5	RES SMD 10K OHM 5% 1/16W 0402	Yageo	RC0402JR-0710KL	Mouser	603-RC0402JR-0710KL		
R3	1	RES SMD 5.62K OHM 1% 1/16W 0402	Yageo	RC0402FR-075K62L	Mouser	603-RC0402FR-075K62L		
R4, R5	2	RES SMD 100 OHM 5% 1/16W 0402	Yageo	RC0402JR-07100RL	Mouser	603-RC0402JR-07100RL		
R6	1	RES SMD 2.2 OHM 5% 1/16W 0402	Yageo	RC0402JR-072R2L	Mouser	603-RC0402JR-072R2L		
R10, R11, R12, R17, R25	5	RES SMD 33 OHM 5% 1/16W 0402	Yageo	RC0402JR-0733RL	Mouser	603-RC0402JR-0733RL		
R13	1	RES SMD 22K OHM 1% 1/16W 0402	Yageo	RC0402FR-0722KL	Mouser	603-RC0402FR-0722KL		
R14, R15, R16	3	RES SMD 100K OHM 1% 1/16W 0402	Yageo	RC0402FR-07100KL	Mouser	603-RC0402FR-07100KL		
R18, R19, R20, R21, R22	5	RES SMD 2.2K OHM 5% 1/16W 0402	Yageo	RC0402JR-072K2L	Mouser	603-RC0402JR-072K2L		
R23, R24	2	RES SMD 1000 OHM 1% 1/16W 0402	Yageo	RC0402FR-071KL	Mouser	603-RC0402FR-071KL		
U1	1	IC MCU 32BIT 1MB FLASH 144LFBGA	Microchip	ATSAME70Q20B-CN	Digi-Key	ATSAME70Q20B-CN-ND	Mouser	556-ATSAME70Q20B-CN
U2	1	FPGA, iCE40HX, 7680 LUTs	Lattice	iCE40HX8K-BG121	Digi-Key	220-2148-ND	Mouser	842-ICE40HX8K-BG121
U3	1	TVS ARRAY SOT666	ST	USBLC6-2P6	Digi-Key	497-5026-1-ND	Farnell	1295310
U4, U5	2	1.7MHz, 1A, High Efficiency, Low Ripple, Adjustable Out	ON	NCP1529MUTBG	Digi-Key	NCP1529MUTBGOSCT-ND	Mouser	863-NCP1529MUTBG
Y1	1	OSC MEMS 100.000MHZ CMOS SMD	Abracon LLC	ASDMB-100.000MHZ-XY-	Digi-Key	535-11147-2-ND		
Y2	1	OSC XO 49.152MHZ CMOS SMD	NDK	NZ2520SD-49.152MHZ-NS	A3449D			
Y3	1	OSC XO 45.1584MHZ CMOS SMD	NDK	NZ2520SD-45.1584MHZ-NS	A3449D			
Y4	1	OSC MEMS 12.000MHZ CMOS SMD	Abracon LLC	ASDMB-12.000MHZ-LC-T	Digi-Key	535-11724-2-ND		

View from Top side (Scale 6)



View from Bottom side (Scale 6)



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PROPRIETARY AND CONFIDENTIAL

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL± ANGULAR: MACH± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		26/02/2021
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

TITLE: Assembly View

SIZE	DWG. NO.	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1