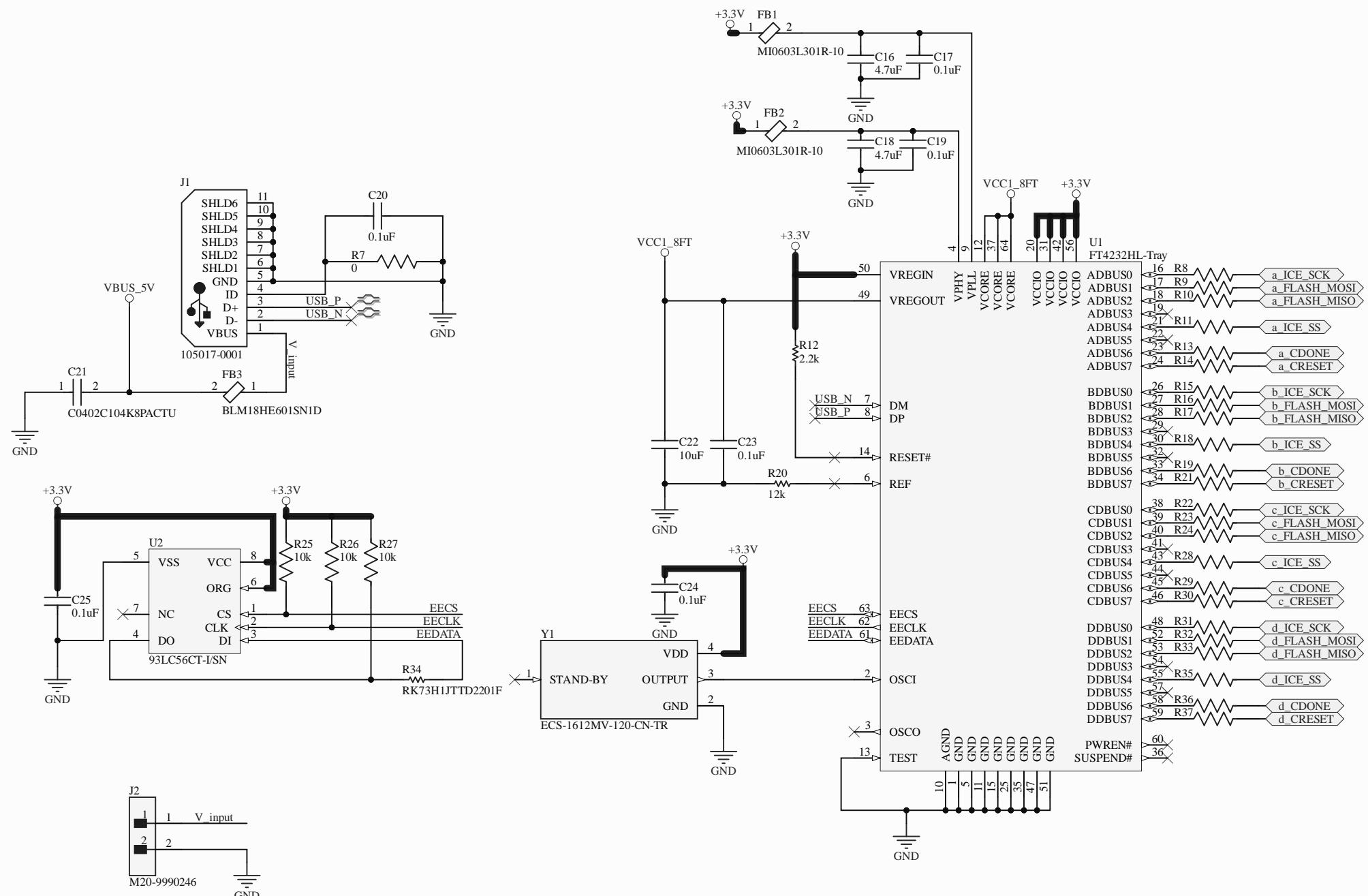


A



B

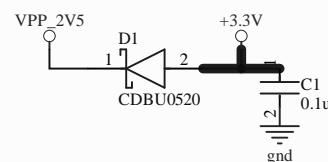
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Date: 12/12/2022	Sheet of	
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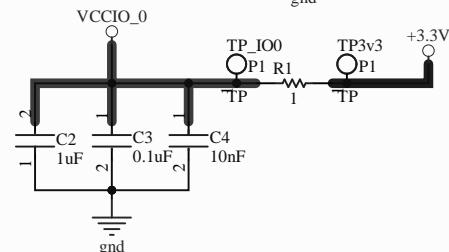
D

Copied from eval board data sheet

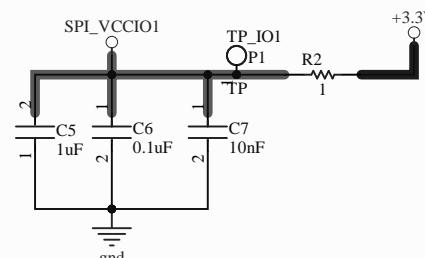
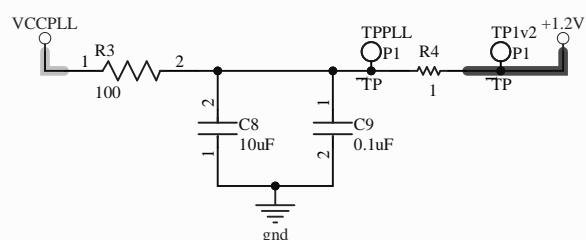
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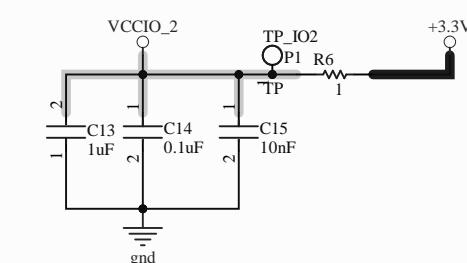
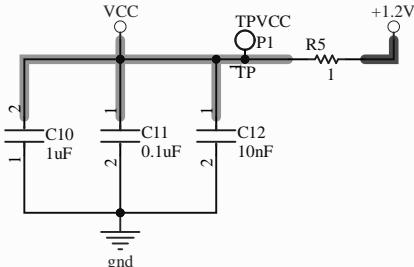
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Title

Size

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Revision

Date:

12/12/2022

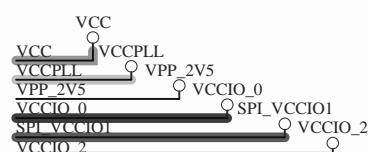
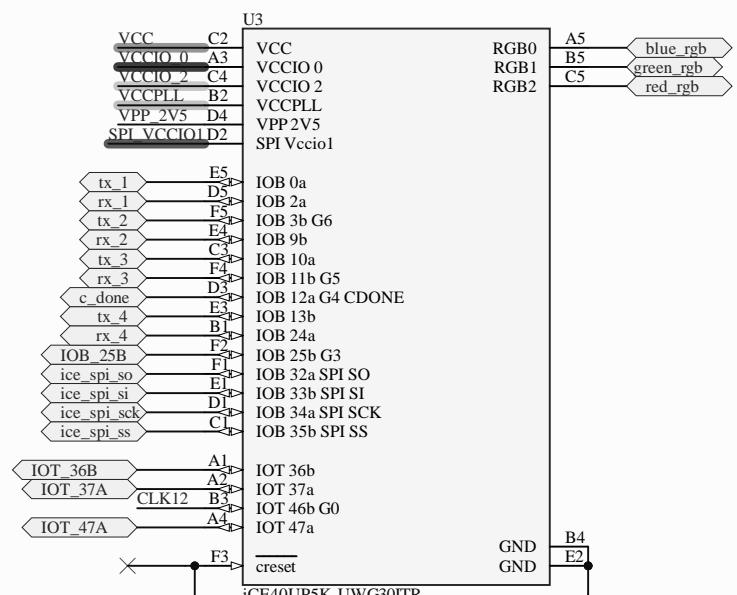
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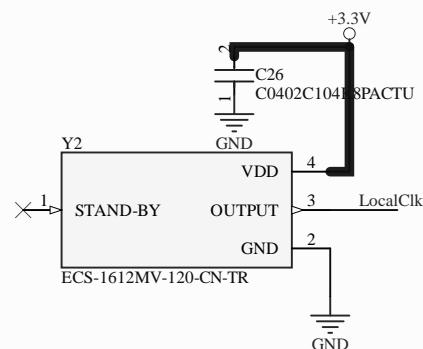
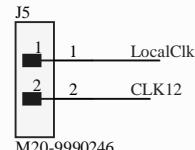
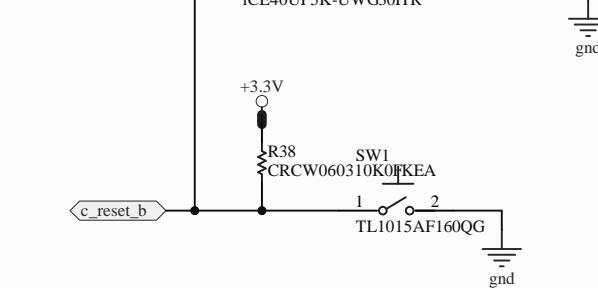
C:\Users\...\fpga_power.SchDoc

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Title

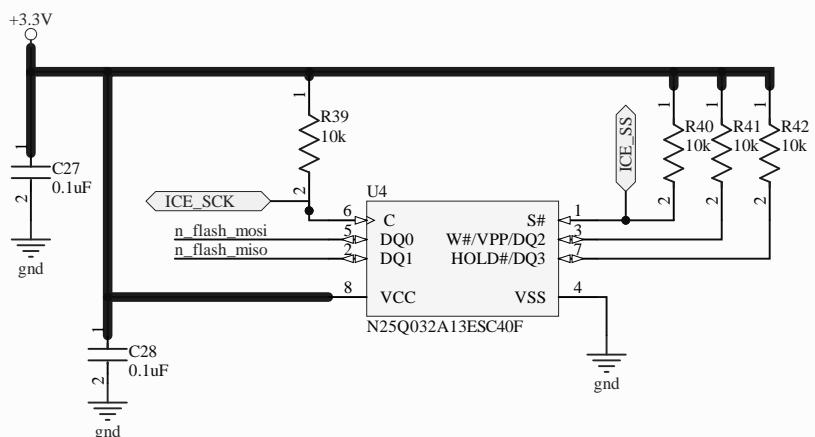
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Date:	12/12/2022	Sheet of
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A

A

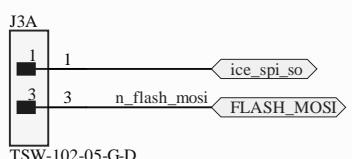
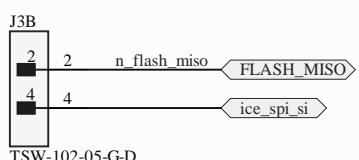
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B



C

C



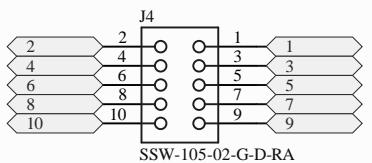
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Size	Number	Revision
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Date:	12/12/2022	Sheet of
File:	C:\Users\.\flash_single.SchDoc	Drawn By:

A

A

Female Connector, bottom and right



B

B

C

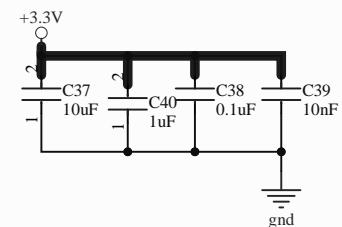
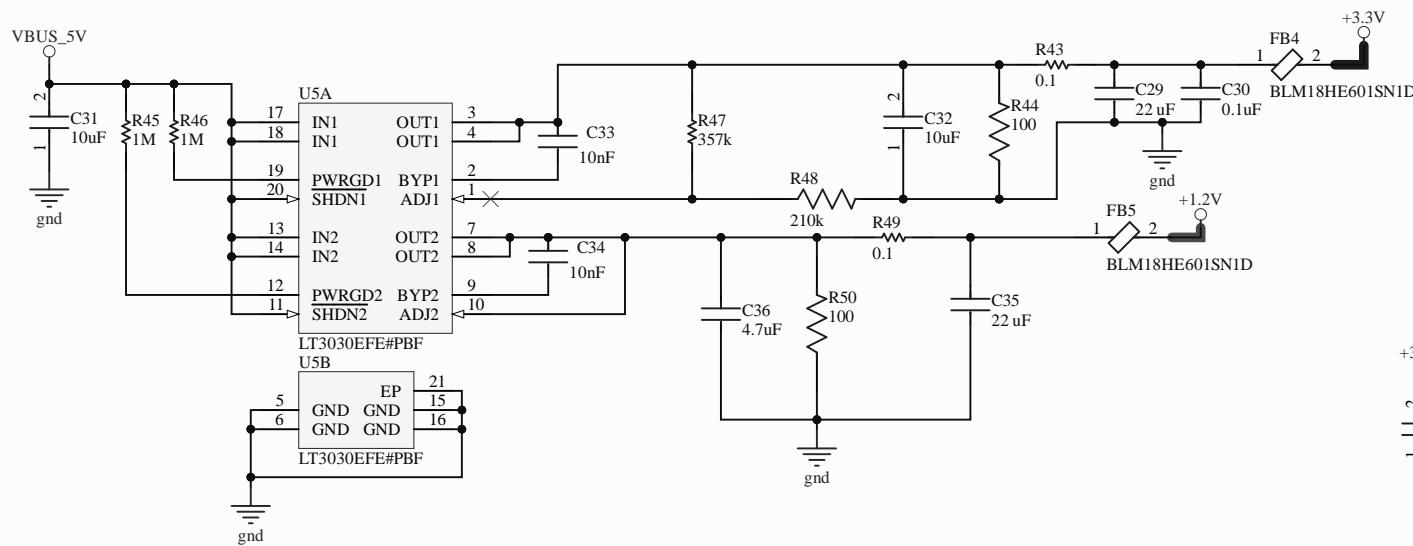
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Title		
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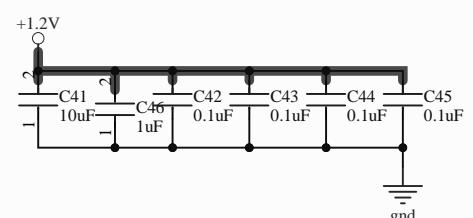


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Title		
Size	Number	Revision
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Date:	12/12/2022	Sheet of
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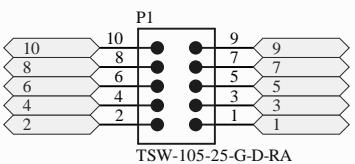
C

C

D

D

Male Connector, top and left



Title

Size	Number	Revision
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Date:	12/12/2022	Sheet of
File:	C:\Users\...\maleConnector.SchDoc	Drawn By:

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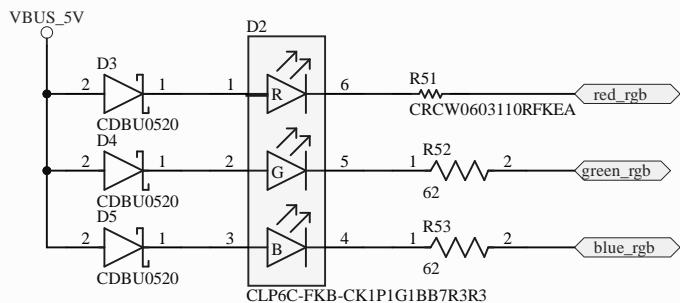
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Title		
Size	Number	Revision
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Date:	12/12/2022	Sheet of
File:	C:\Users\...\prototype_LED.SchDoc	Drawn By:

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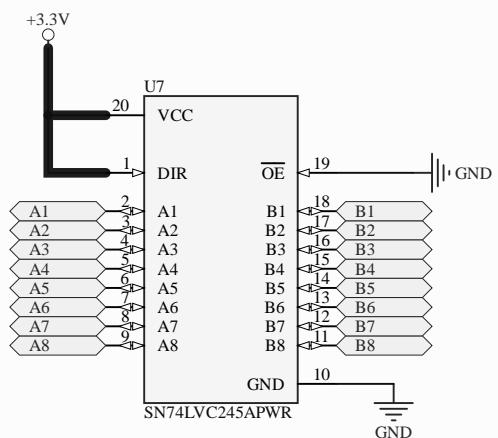
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Title		
Size	Number	Revision
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Date:	12/12/2022	Sheet of
File:	C:\Users\...\translator.SchDoc	Drawn By:

Design Rules Verification Report

Filename : C:\Users\Public\Documents\Altium\QPix_digital_pcb_01\QpixDigitalPrototypeV00.PcbDoc

Warnings 0
Rule Violations 0

Warnings	
Total	0
Rule Violations	
Clearance Constraint (Gap=3mil) (All),(All)	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Un-Routed Net Constraint (All)	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Width Constraint (Min=4mil) (Max=20mil) (Preferred=4mil) (All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=19.685mil) (Conductor Width=29.528mil) (Air Gap=9.842mil)	0
Minimum Annular Ring (Minimum=4.921mil) (HasFootprint('632723100011'))	0
Minimum Annular Ring (Minimum=1mil) (All)	0
Acute Angle Constraint (Minimum=60.000) (All)	0
Hole Size Constraint (Min=6mil) (Max=300mil) (All)	0
Hole To Hole Clearance (Gap=6mil) (All),(All)	0
Minimum Solder Mask Sliver (Gap=3.937mil) (IsVia),(All)	0
Minimum Solder Mask Sliver (Gap=1.496mil) (All),(All)	0
Minimum Solder Mask Sliver (Gap=1.378mil) (HasFootprint('632723100011')), (HasFootprint('632723100011'))	0
Silk To Solder Mask (Clearance=3mil) (IsVia),(IsText)	0
Silk To Solder Mask (Clearance=3mil) (IsPad),(All)	0
Silk To Solder Mask (Clearance=0mil) (IsPad),((IsTrack or IsArc) and OnSilkscreen)	0
Silk To Solder Mask (Clearance=3mil) (IsPad),(IsText)	0
Silk to Silk (Clearance=5mil) (All),(All)	0
Net Antennae (Tolerance=39.37mil) (All)	0
Board Clearance Constraint (Gap=0mil) ((HasFootprint('JOG-0003NL-Footprint-1') or HasFootprint('CN_	0
Board Clearance Constraint (Gap=0mil) (All)	0
Matched Lengths(Tolerance=19.685mil) (InDifferentialPairClass('FPGA'))	0
Matched Lengths(Tolerance=19.685mil) (InNet('CLK1') or InNet('CLK2'))	0
Matched Lengths(Tolerance=19.685mil) (InNet('FTDI_CLK1') or InNet('FTDI_CLK2'))	0
Matched Lengths(Tolerance=19.685mil) (Disabled)(InNetClass('NIT'))	0
Matched Lengths(Tolerance=19.685mil) (InDifferentialPairClass('ETH'))	0
Height Constraint (Min=0mil) (Max=1000mil) (Preferred=500mil) (All)	0
Total	0

Designator	Name	Description	Revision ID	Revision Status	Quantity	Supplier Stock 1	Manufacturer 1	Manufacturer Part Number 1	Manufacturer Lifecycle 1	Supplier 1	Supplier Unit Price 1	Supplier Subtotal 1
C1, C3, C6, C9, C11, C14, C17, C19, C20, C21, C23, C4, C25, C26_U_fpga_single_a, C26_U_fpga_single_b, C26_U_fpga_single_c, C26_U_fpga_single_d, C27_U_flash_single_a, C27_U_flash_single_b, C27_U_flash_single_c, C27_U_flash_single_d, C28_U_flash_single_a, C28_U_flash_single_b, C28_U_flash_single_c, C28_U_flash_single_d, C30, C38, C42, C43, C44, C45			CMP-2008-02046-2	Up to date	31	8980556	TDK	C1005XR1C104K050BC	Volume Production	Digi-Key	0.0328	1.64
C2, C5, C10, C13, C40, C46	04026D105KA12A	General Purpose Ceramic Capacitor, 0402, 1uF, 10%, X5R, 15%, 6.3V	CMP-1034-02113-3	Up to date	6	103997	Yageo	CC0402ZRY5V5BB105	Unknown	Digi-Key	0.059	0.59
C4, C7, C12, C15, C33, C34, C39	CC0402KRX7R7BB103	CAP CER 1000PF 16V X7R 0402	CMP-03422-000501-1	Up to date	7	7521317	Yageo	CC0402KRX7R7BB103	Volume Production	Digi-Key	0.016	0.16
C8, C22, C31, C32, C37, C41	C1608X5R1A106K080AC 0603	Multilayer Ceramic Capacitors 10uF ±10% 10V X5R SMD	CMP-2009-04797-3	Up to date	6	1095706	TDK	C1608X5R1A106K080AC	Volume Production	Digi-Key	0.4	2.4
C16, C18, C36	GRM115R604J75ME47D	Chip Multilayer Ceramic Capacitors for General Purpose, 0402, 4.7uF, X5R, 15%, 20%, 6.3V	CMP-2008-04549-2	Up to date	3	534814	TDK	C1005XR1A475K050BC	Volume Production	Digi-Key	0.44	1.32
C29, C35	GRM188R61A226ME15D	Chip Multilayer Ceramic Capacitors for General Purpose, 0603, 22uF, X5R, 15%, 20%, 10V	CMP-2009-06337-3	Up to date	2	2501658	Samsung	CL10A226MIP8UNUE	Volume Production	Digi-Key	0.18	0.36
D1, D3_U_prototype_LED_a, D2_U_prototype_LED_b1, D3_U_prototype_LED_b2, D3_U_prototype_LED_c, D4_U_prototype_LED_a, D4_U_prototype_LED_b1, D4_U_prototype_LED_b2, D4_U_prototype_LED_c, D5_U_prototype_LED_a, D5_U_prototype_LED_b1, D5_U_prototype_LED_b2, D5_U_prototype_LED_c	CDBU0520	DIODE SCHOTTKY 20V 500MA 0603	CMP-20227-000003-1	Up to date	13	218714	Comchip	CDBU0520	Unknown	Digi-Key	0.322	4.19
D2_U_prototype_LED_a, D2_U_prototype_LED_b1, D2_U_prototype_LED_b2, D2_U_prototype_LED_c	CLP6C-FKB-CK1P1G1BB7R3R3	LED RGB DIFFUSED 6PLCC SMD	CMP-13977-000020-2	Up to date	4	2471	Cree	CLP6C-FKB-CK1P1G1BB7R3R3	Unknown	Digi-Key	0.56	2.24
F81, F82	MI0603L301R-10	FERRITE BEAD 300 OHM 0603 1LN	CMP-19111-000099-1	Up to date	2	285218	Laird	H10603P600R-10	Volume Production	Digi-Key	0.21	0.42
FB3, FB4, FB5	BLUM18HE601SN1D	Chip Ferrite Bead, 0603, 600nΩ @ 100MHz, 0.25Ω, 25%, 800mA	CMP-0686-0374-3	Up to date	3	115310	Wurth Electronics	782633601	Volume Production	Digi-Key	0.25	0.75
J1	105017-0001	Micro-USB B Receptacle, Right Angle, Bottom Mount, Surface Mount, with Solder Tabs, -30 to 85 degC, 5-Pin USB, RoHS, Tape and Reel	CMP-2000-05827-1	Up to date	1	63117	Molex	1050170001	Volume Production	Digi-Key	1.01	1.01
J2, J5_U_fpga_single_a, J5_U_fpga_single_b, J5_U_fpga_single_c, J5_U_fpga_single_d	M20-9990246	CONN HEADER VERT 2POS 2.54MM	CMP-15831-000099-1	Up to date	5	271287	Harwin	M20-9990246	Volume Production	Digi-Key	0.14	0.7
J3_U_flash_single_a, J3_U_flash_single_b, J3_U_flash_single_c, J3_U_flash_single_d	T5W-102-05-G-D	CONN HEADER VERT 4POS 2.54MM	CMP-02766-001389-1	Up to date	4	706	Samtec	T5W-102-05-G-D	Volume Production	Digi-Key	0.73	2.92
J4, U_femaliconnector_1, U_femaliconnector_2, U_femaliconnector_3, U_femaliconnector_4	SSW-105-02-G-D-RA	SO Post Socket, Through-hole, Right Angle, -55 to 125 degC, 2.54mm Pitch, 10-Pin, Female, RoHS	CMP-1023-00348-1	Up to date	4	695	Samtec	SSW-105-02-G-D-RA	Volume Production	Digi-Key	2.54	10.16
P1_U_maleConnector_1, P1_U_maleConnector_2, P1_U_maleConnector_3, P1_U_maleConnector_4	TSW-105-25-G-D-RA	0.025° SO Post Header, Through-hole, Right Angle, -55 to 125 degC, 2.54 mm Pitch, 10-Pin, Male, RoHS	CMP-1024-00375-1	Up to date	4	1915	Wurth Electronics	61301021021	Volume Production	Digi-Key	1.58	6.32
R1, R2, R4, R5, R6	RC0603FR-07150RL	Chip Resistor, 150 Ohm, +/- 1%, 0.1 W, -55 to 155 degC, 0603 (1608 Metric), RoHS, Tape and Reel	CMP-1659-00057-1	Up to date	5	97187	Yageo	RC0603FR-07150RL	Volume Production	Mouser	0.02	0.2
R3, R44, R50	GRCW0402100RFKEA	RES Thick Film, 100Ω, 1%, 0.036W, 100ppm/°C, 0402	CMP-1011-00397-3	Up to date	3	3373050	Stackpole Electronics	RMCF0402FT100R	Volume Production	Digi-Key	0.013	0.13
R7, R8, R9, R10, R11, R13, R14, R15, R16, R17, R18, R19, R21, R22, R23, R24, R28, R29, R30, R31, R32, R33, R35, R36, R37	AC0402FR-070RL	RESISTOR 0402 JUMPER ZERO OHM	CMP-2002-01772-2	Up to date	25	290619	Yageo	AC0402FR-070RL	Volume Production	Digi-Key	0.0132	0.33
R12, R34	RK73H1JTID2201F		CMP-2000-01205-1	Up to date	2	1074601	TE Connectivity	CRGCQ0603F2K2	Unknown	Digi-Key	0.1	0.2
R20	RC0603FR-0712KL	Chip Resistor, 12 Kohm, +/- 1%, 100 mW, -55 to 155 degC, 0603 (1608 Metric), RoHS, Tape and Reel	CMP-1659-00047-1	Up to date	1	1026487	Yageo	RC0603FR-0712KL	Volume Production	Digi-Key	0.1	0.1
R25, R26, R27, R39_U_flash_single_a, R39_U_flash_single_b, R39_U_flash_single_c, R39_U_flash_single_d, R40_U_flash_single_a, R40_U_flash_single_b, R40_U_flash_single_c, R40_U_flash_single_d, R41_U_flash_single_a, R41_U_flash_single_b, R41_U_flash_single_c, R41_U_flash_single_d, R42_U_flash_single_a, R42_U_flash_single_b, R42_U_flash_single_c, R42_U_flash_single_d	CRCW040210K0JNED	RES Thick Film, 10kΩ, 5%, 0.063W, 200ppm/°C, 0402	CMP-2002-08136-3	Up to date	19	5329163	Stackpole Electronics	RMCF0402FT10K0	Volume Production	Digi-Key	0.01	0.19
R38_U_fpga_single_a, R38_U_fpga_single_b, R38_U_fpga_single_c, R38_U_fpga_single_d	CRCW060310K0FKEA	Chip Resistor, 10 Ohm, +/- 1%, 100 mW, -55 to 155 degC, 0603 (1608 Metric), RoHS, Tape and Reel	CMP-1466-00005-4	Up to date	4	20428765	Stackpole Electronics	RMCF0603FT10K0	Volume Production	Digi-Key	0.013	0.13
R43, R49	ERJ-2B5FR10X		CMP-2002-04635-1	Up to date	2	5598	CTS	73M1R100F	Volume Production	Digi-Key	0.81	1.62
R45, R46	ERJ1GNF1004C		CMP-2004-03447-1	Up to date	2	264353	Panasonic	ERJ-1GNF1004C	Volume Production	Digi-Key	0.1	0.2
R47	RC0603FR-07357KL		CMP-2000-04022-1	Up to date	1	53476	Yageo	RC0603FR-07357KL	Volume Production	Digi-Key	0.1	0.1
R48	RPT3PFI2120KBTDF	RES SMD 210K OHM 0.1% 1/W 0603	CMP-03211-002514-1	Up to date	1	22000	TE Connectivity	RPT3PFI2120KBTDF	Volume Production	Digi-Key	0.66	0.66
R51_U_prototype_LED_a, R51_U_prototype_LED_b1, R51_U_prototype_LED_b2, R51_U_prototype_LED_c	CRCW060310RFKEA		CMP-2000-03854-1	Up to date	4	892499	Stackpole Electronics	RMCF0603FT110R	Volume Production	Digi-Key	0.015	0.15
R52_U_prototype_LED_a, R52_U_prototype_LED_b, R52_U_prototype_LED_c, R53_U_prototype_LED_a, R53_U_prototype_LED_b1, R53_U_prototype_LED_b2, R53_U_prototype_LED_c	CRCW06032R0FKEA	RES Thick Film, 62Ω, 1%, 0.1W, 100ppm/°C, 0603	CMP-2000-03873-3	Up to date	8	764980	Stackpole Electronics	RMCF0603FT62R0	Volume Production	Digi-Key	0.015	0.15
SW1_U_fpga_single_a, SW1_U_fpga_single_b, SW1_U_fpga_single_c, SW1_U_fpga_single_d	TL1015FA160QG	SWITCH TACTILE SPST-NO 0.05A 12V	CMP-17879-000003-1	Up to date	4	151639	E-Switch	TL1015FA160QG	Volume Production	Digi-Key	0.54	2.16
U1	FT4232HL-Tray	Quad High Speed USB To Multipurpose UART/PS2/SE IC, 64-pin LQFP Tray	CMP-0078-000001-1	Up to date	1	FTDI	FT4232HL-TRAY	Volume Production				
U2	93LC56CT/VSN	2K, 256x8 or 128x16-bit, 2.5V Microcell Serial EEPROM, 8-Bit SOIC, 150mL, Industrial Temperature, Tape and Reel	CMP-0142-000095-1	Up to date	1	860	Microchip	93LC56CT-I/SN	Volume Production	Mouser	0.33	0.33
U3_U_fpga_single_a, U3_U_fpga_single_b, U3_U_fpga_single_c, U3_U_fpga_single_d	ICE40UP5K-UWG301TR	CE40-ULTRAPLUS, 520LUTS, 1.2V	CMP-17932-000002-1	Up to date	4	1072	Lattice Semiconductor	ICE40UP5K-UWG301TR1K	Unknown	Digi-Key	8.85	35.4
U4_U_flash_single_a, U4_U_flash_single_b, U4_U_flash_single_c, U4_U_flash_single_d	N25Q032A13E5C40F	32 Mb (17x2x4) Serial NOR Flash Memory with Multi I/O, 108 MHz, 2.7 to 3.6 V, 8-pin SO8 Narrow (SC), Tape & Reel	CMP-0357-00152-1	Up to date	4	17838	Alliance Memory	N25Q032A13E5C40F	Unknown	Digi-Key	1.62	6.48
U5	LT3030EE#PBF	Micropower Linear Regulator, 1.7 to 20 V Vin, Adjustable Vout, 20-pin SOP (FE-20-LP-V(CB)) -40 to 125 degC, Pb-Free	CMP-0476-00093-1	Out of date	1	3310	Analog Devices / Linear Technology	LT3030EE#PBF	Volume Production	Digi-Key	9.89	9.89
U7_U_translator1, U7_U_translator2	SN74LVC245APWR	IC TXRX NON-INVERT 3.6V 20TSSOP	CMP-1620-00595-3	Up to date	2	3745	Texas Instruments	SN74LVC245APWR	Volume Production	Digi-Key	0.5	1
Y1, Y2_U_fpga_single_a, Y2_U_fpga_single_b, Y2_U_fpga_single_c, Y2_U_fpga_single_d	ECS-1612MV-120-CN-TR	12MHz XO (Standard) CMOS Oscillator 1.6V - 3.6V Standby (Power Down) 4.5MD, No Lead	CMP-003-000000-1	Up to date	5	5331	ECS International	ECS-1612MV-120-CN-TR	Unknown	Digi-Key	1.83	9.15

