


<div> <div>FPGA wars</div>  <div>Icezum Alhambra V1.0K (Kicad-edition) BILL OF MATERIALS</div> </div>										
ITEM	Reference	Description	Ordering Code	Manufacturer	Supplier	Footprint	Qty	OrderingCode 2	Manufacturer 2	Value
1	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10 C12,C13,C14,C15,C16,C18,C19 C20,C21,C23,C25,C26,C27,C28,C29 C30,C32,C33,C34,C35,C36,C37 C45,C46,C47,C48,C49,C50,C58	SMD Capacitor	C0402C104K4RAC	Kemet		C_0402	39			100nF ±10% 16V
2	C11	SMD Capacitor	EMK1078BJ106MA-T	Taiyo Yuden		C_0603	1	C1608X5R1C106M080AB	TDK	10uF ±20% 16V
3	C17,C24,C31,C41,C59,C64,C65	SMD Capacitor	C1608X5R1C475K080AC	TDK		C_0603	7			4.7uF ±10% 16V
4	C22	SMD Capacitor	C0603C103K3RAC	Kemet		C_0603	1			10nF ±10% 25V
5	C38,C39,C40,C42,C43,C44,C51, C52,C53,C54,C55,C56,C57,C58	SMD Capacitor	C0402C101K4RAC	Kemet		C_0402	14			100pF ±10% 16V
6	C60,C62,C66,C70	SMD Capacitor	C0603C104K3RAC	Kemet		C_0603	4			100nF ±10% 25V
7	C67	SMD Capacitor	TMK316B7106KL-TD	Kemet		C_1206	1			10uF ±10% 25V
8	C69	SMD Capacitor	LMK316ABJ226ML-T	Taiyo Yuden		C_1206	1			22uF ±20% 10V
9	C71	SMD Capacitor	GRM1885C1E621JA01D	Murata		C_0603	1			620pF ±5% 25V
10	D1	Schottky Diode	MMDL101T1G	On Semiconductor		SOD-323	1			100mA 7V
11	D2,D3,D4,D5,D6,D7,D8,D9	LED	LY Q971-H1L2-36	OSRAM Opto		LED_0603	8	HSMY-C190	Avago Technologies	Yellow
12	D10	Protection, Bidirectional Transient suppression Diode	SMAJ17CA	Bourns		DO-214AC	1	SMAJ17CA	Littelfuse	
13	D11	Dual Schottky Diode Common Cathode	BAT54C-G3-08	Vishay		SOT-23	1	BAT54C	Fairchild	200mA 30V
14	D12	LED	LW Q38C-Q2R2-3K5L-1	OSRAM Opto		LED_0603	1			White
15	D13	Zener Diode	BZX84C5V1-E3	Vishay		SOD-323	1			5V1
16	F1	PTC Resettable Fuse	MF-MSMF050-2	Bourns	Abacus	F_1812	1			
17	F2	Protection, USB ESD	82400152	Würth	Würth	SOT-563	1	CDSOT563-0502	Bourns	
18	J1	Connector, USB Micro B	10118192-0001LF	FCI	Abacus	USB_Micro-B	1	ZX62-B-5PA-11	Hirose Connector	
19	J2,J13	1x6 pin Header 2.54mm	TSW-106-07-T-S-RED	Samtec	Samtec	1x6-pin-header-2.54mm	2			Red
20	J3,J14	1x6 pin Header 2.54mm	TSW-106-07-T	Samtec	Samtec	1x6-pin-header-2.54mm	2	613 006 111 21	Würth Elektronik	Black
21	J6,J12	1x6 pin Header 2.54mm	TSW-106-07-T-NATURAL	Samtec	Samtec	1x6-pin-header-2.54mm	2			White
22	J4	Connector, 10 pin Socket Header	SSW-110-01-T-S	Samtec	Samtec	1x10_socket-header-2.54mm	1	613 010 118 21	Würth Elektronik	
23	J5,J10	8 pin Socket Header 2.54mm	SSW-108-01-T-S	Samtec	Samtec	1x8_Socket_header-2.54mm	2	613 008 118 21	Würth Elektronik	
24	J7	1x8 pin Header 2.54mm	TSW-108-07-T-S-RED	Samtec	Samtec	1x8_pin_header-2.54mm	1			Red
25	J8	1x8 pin Header 2.54mm	TSW-108-07-T-S	Samtec	Samtec	1x8_pin_header-2.54mm	1	613 008 111 21	Würth Elektronik	Black
26	J9	1x8 pin Header 2.54mm	TSW-108-07-T-S-NATURAL	Samtec	Samtec	1x8_pin_header-2.54mm	1			White
27	J11	6 pin Socket Header 2.54mm	SSW-106-01-T-S	Samtec	Samtec	1x6-Socket-header-2.54mm	1	613 006 118 21	Würth Elektronik	
28	J15	Connector, 1x4 pin Header 2.54mm	TSW-104-07-T-S-RED	Samtec	Samtec	1x04-pin-header-2.54mm	1			Red
29	J16	Connector, 1x4 pin Header 2.54mm	TSW-104-07-T-S	Samtec	Samtec	1x04-pin-header-2.54mm	1	613 004 111 21	Würth Elektronik	Black
30	J17	Connector, 1x4 pin Header 2.54mm	TSW-104-07-T-S-BLUE	Samtec	Samtec	1x04-pin-header-2.54mm	1	613 004 111 21	Würth Elektronik	Cyan
31	J18	Connector, Power, DC Power Jack	KLDHCX0202A	Kycon	Avnet	JACK_2.1	1	RAPC722X	Switchcraft	
32	J19	Connector, 8 pin Dual Header 2.54mm	TSW-104-07-T-D	Samtec	Samtec	2x04-pin-header-2.54mm	1	613 008 211 21	Würth Elektronik	
33	JP1	3 pin Male Header 2.54mm	613 003 111 21	Würth	Würth	1x03-pin-header-2.54mm	1			
34	JPM1	1x2 Jumper 2.54mm	609 002 136 21	Würth	Würth		1			
35	L1	Inductor SMD	LQM21FN100M70L	Murata		L_0805	1			10uH 0.1A
36	L2,L4	Ferrite Bead	BLM185G121TN1D	Murata		L_0603	2			120R 0.025R 3000mA
37	L3	Ferrite Bead	MPZ160S221A	TDK		L_0603	1			220R 0.05R 2200mA
38	L5	Inductor SMD	74438356022	Würth	Würth	L_4040	1	XAL4020-222MEB	Coilcraft	2.2uH 4.7A
39	Q1,Q2,Q4	P-Channel MOSFET, 6 pin	DMP3017SF-7	Diodes Inc.	Silica	DFN-2523-6	3			
40	Q3	PFET	DMP2035U-7	Diodes Inc.	Silica	SOT-23	1			
41	Q5	PMP	PMBT3906,215	NXP		SOT-23	1			
42	R1,R3,R4,R5,R6,R7,R8, R12,R13,R14 R20,R21,R28,R37,R38	Resistor, SMD	CRCW040210K0JN	Vishay		R_0402	15			10k±5% 0.063W
43	R2	Resistor, SMD	CRCW0402470RJN	Vishay		R_0402	1			470R ±5% 0.063W
44	R9	Resistor, SMD	CRCW0402100RJN	Vishay		R_0402	1			100R ±5% 0.063W
45	R10,R25,R39	Resistor, SMD	CRCW04021K0JN	Vishay		R_0402	3			1k ±5% 0.063W
46	R11	Resistor, SMD	CRCW040212K0FK	Vishay		R_0402	1			12k ±1% 0.063W
47	R15	Resistor, SMD	CRCW04022K20JN	Vishay		R_0402	1			2k2 ±5% 0.063W
48	R16,R32,R33,R35	Resistor, SMD	ERJ-2GE0R00X	Panasonic		R_0402	4	CRCW04020000Z0	Vishay	0R ±5% 0.063W
49	R17,R18	Array of 4xResistors, SMD	CAY16-271J4LF	Bourns		R_Array_Convex_4x0603	2			270R ±0.5% 0.0625W
50	R19	Resistor, SMD	CRCW040210R0JN	Vishay		R_0402	1			10R ±5% 0.063W
51	R22,R23	Resistor, SMD	CRCW04024K70JN	Vishay		R_0402	2			4k7 ±5% 0.063W
52	R24,R27	Resistor, SMD	CRCW040247K0JN	Vishay		R_0402	2			47k ±5% 0.063W
53	R26,R29,R30,R31	Resistor, SMD	CRCW0402100KJN	Vishay		R_0402	4			100k ±5% 0.063W
54	R34	Resistor, SMD	CRCW04025K60JN	Vishay		R_0402	1			5k6 ±5% 0.063W
55	R36	Resistor, SMD	CRCW0402220KJN	Vishay		R_0402	1			220k ±5% 0.063W
56	SW1,SW2	Micro miniature pushbutton Surface Switch	434 121 025 816	Würth	Würth	SW_SMD_60X3.8	2	KSR231GLFS	Cannon, ITT ind.	
57	SW3	SPDT Switch, Right Angle	450 302 014 072	Würth	Würth	slide-sw-spdt-right-angle	1	MMP101DD-RA	Knitter-Switch	
58	SW4	Micro miniature pushbutton Surface Switch	PTS645VL39-2 LFS	C&K Components	Abacus	SW_vert_tht_7.5x6x6.5	1			
59	U1	ICE40 HX1K Series FPGA Family, 1280 Logic Cells, 1.2 V Core, 64 K Embedded RAM Bits, 144-pin TQFP. Pb-Free, Tray	ICE40HX1K-TQ144	Lattice		TQFP-144_IPC-MD	1			
60	U2	NOR Flash Memory, serial	N25Q032A13EF40E	Micron	Silica	DFN-8-6x5mm	1	S25FL032P0XNF011	Spansion	32Mb
61	U3	Dual High Speed USB to Multipurpose (UART/FIFO) IC	FT232RLH-QREEL	FTDI	Silica	FTDI-QFN-64	1			
62	U4	Oscillator, Low-Power CMOS, 4 pin, 1.8-3.3V	DSC11001CL2-012.0000	Microchip		Xtal-3_2x2_5	1			12MHz
63	U5	EEPROM, 2K Microwire Compatible Serial, 8 or 16 bit word size, 2.5-5.5 Vcc range	93LC56CT-IMS	Microchip	Silica	MSOP-8_3x3mm_Pitch0.65mm	1			2Kb
64	U6	Voltage Translator, Hex	TXB0106RGYR	Texas Instruments	Silica	VQFN16	1			
65	U7	ADC Converter, 12-Bit, 4-Ch. I2C	ADS7924IRTER	Texas Instruments	Silica	QFN16	1			
66	U8	Voltage Level Translator, 8-Bit Bidir., TP	TXS0108RGYR	Texas Instruments	Silica	VQFN20	1			
67	U9	Voltage Level Translator, 8-Bit Bidir., TP	TXB0108RGYR	Texas Instruments	Silica	VQFN20	1			
68	U10	LDO Regulator, 8 pin, adjustable And fixed mode with enable	AP7361-33FG-7	Diodes Inc.	Silica	DFN-3030-8	1			
69	U11	LDO Regulator, Dual, 6 pin	TLV7111233DSER	Texas Instruments	Silica	WS0N-6	1			
70	U12	3A High Efficient Synchronous Step Down Converter with DCS™ Control	TPS62133RGTR	Texas Instruments	Silica	QFN16	1			