

# Bill of Materials

Project: Ultra96  
 Project Name: PRJ-US1DEV  
 Revision: 1  
 BOM: 01  
 Variant: 01



Report Date: 15-Mar-2018

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#	Quantity	Designator	Device	Package	Value	Voltage	Tolerance	Dielectric	Power	Manufacturer 1	Manufacturer Part Number 1	Fitted	Notes
1	1	BRKT1	THERMAL_BRACKET		THERMAL_BRACKET					IM Technology	10039	Fitted	
2	2	C1,C2	2 2UF_0402	402	2.2UF	6.3V	20%	X5R		TDK	C1005X5R0J225M	Fitted	
3	4	C3,C4,C5,C6	0 01UF_0201	201	0.01UF	16V	10%	X5R		TDK	C0603X5R1C103K030BA	Fitted	
4	4	C7,C8,C9,C10	22UF_0603	603	22UF	6.3V	20%	X5R		TDK	C1608X5R0J228M080AC	Fitted	
5	1	C11	0 01UF_0402	402	0.01UF	25V	10%	X5R		AVX	04023D103KAT2A	Fitted	
6	2	C12,C13	12PF_0402	402	12PF	50V	5%	NPO		KEMET	C0402C120J5GACTU	Fitted	
7	1	C14	8PF_0201	201	8PF	25V	0.25PF	COG, NPO		MURATA	GRM0335C1E6R0CA01D	Fitted	
8	4	C15,C68,C189,C197	DNP_C_0201	201	DNP	DNP	DNP	DNP		DNP	DNP	Not Fitted	
9	1	C16	DNP_C_0402	402	DNP	DNP	DNP	DNP		DNP	DNP	Not Fitted	
10	85	C17,C41,C55,C56,C57,C58,C59,C60,C61,C62,C63,C64,C65,C66,C67,C69,C70,C71,C72,C73,C74,C75,C76,C77,C78,C79,C80,C81,C82,C83,C84,C85,C86,C87,C88,C89,C90,C91,C92,C93,C94,C95,C96,C97,C98,C99,C100,C101,C102,C103,C104,C105,C106,C107,C110,C111,C112,C113,C114,C115,C116,C117,C118,C119,C120,C121,C122,C123,C124,C125,C126,C127,C128,C130,C131,C132,C133,C134,C135,C190,C191,C193,C194,C195,C196	0 1UF_0201	201	0.1UF	25V	10%	X5R		SAMSUNG EM	CL03A104KA3N3NNC	Fitted	
11	12	C18,C20,C21,C23,C24,C25,C26,C27,C28,C29,C30,C31	4 7UF_0402	402	4.7UF	6.3V	20%	X5R		TDK	C1005X5R0J475M	Fitted	
12	1	C19	2 2PF_0402	402	2.2PF	50V	10%	COG		TAIYO YUDEN	UVK105CH2R2JW-F	Fitted	
13	1	C22	10PF_0201	201	10PF	50V	5%	COG, NPO		MURATA	GRM0335C1H100JA01D	Fitted	
14	3	C32,C33,C34	1UF_0402	402	1UF	35V	10%	X5R		MURATA	GRM155R6YA105KE11D	Fitted	
15	2	C35,C36	0 068UF_0201	201	0.068UF	16V	10%	X5R		MURATA	GRM033R61C683KE84D	Fitted	
16	1	C37	47UF_0805	805	47UF	6.3V	20%	X5R		TAIYO YUDEN	JMK212BJ476MG-T	Fitted	
17	2	C38,C39	0 22UF_0201	201	0.22UF	25V	10%	X5R		TDK	C0603X5R1E224K030BC	Fitted	
18	1	C40	DNP_C_0402	402	DNP	DNP	DNP	DNP		DNP	DNP	Not Fitted	
19	9	C42,C43,C44,C45,C46,C47,C48,C49,C50	1000PF_0201	201	1000PF	25V	10%	X5R		TDK	C0603X5R1E102K030BA	Fitted	
20	4	C51,C52,C53,C54	1UF_0201	201	1UF	4V	10%	X5R		TDK	C0603X5R0G105M030BC	Fitted	
21	1	C129	1 5UF_0201	201	1.5UF	6.3V	20%	X5R		Murata	GRM033R60J155ME14D	Fitted	
22	2	C136,C137	150UF_1210	1210	150UF	6.3V	20%	X5R		SAMSUNG EM	CL32A157MQVNNNE	Fitted	
23	4	C139,C141,C143,C144	22UF_0805	805	22UF	35V	10%	X5R		TDK	C2012X5R1V226M125AC	Fitted	
24	2	C146,C147	2 2UF_0603	603	2.2UF	10V	10%	X5R		TAIYO YUDEN	LMK107BJ225KA-T	Fitted	
25	2	C148,C149	22PF_0402	402	22PF	50V	5%	COG, NPO		MURATA	GRM1535C1H220JDD5D	Fitted	
26	1	C150	33PF_0402	402	33PF	50V	5%	COG, NPO		MURATA	GRM1535C1H330JDD5D	Fitted	
27	19	C151,C152,C153,C157,C158,C159,C160,C161,C162,C163,C179,C180,C181,C182,C183,C184,C185,C186,C187	0 47UF_0201	201	0.47UF	6.3V	20%	X5R		TDK	C0603X5R0J474M030BC	Fitted	
28	1	C164	4 7UF_0603	603	4.7UF	10V	10%	X5R		TDK	C1608X5R1A475K	Fitted	
29	2	C165,C166	18PF_0402	402	18PF	50V	5%	NPO		MURATA	GRM1555C1H180JA01D	Fitted	
30	2	C167,C168	8PF_0402	402	8PF	50V	6%	COG, NPO		TDK	C1005COG1H080C050BA	Fitted	
31	8	C169,C170,C171,C172,C174,C175,C177,C192	10UF_0402	402	10UF	10V	20%	X5R		SAMSUNG EM	CL05A106MP5NUNC	Fitted	
32	1	C178	47UF_6 6MMX6 6MM	CAP D	47UF	35V	20%	ELEC		PANASONIC	EEH-ZA1V470P	Fitted	
33	1	D1	MSS2P3-M3_89A	MSS2P3_MICROSPM	MSS2P3	30V	NA		2A	VISHAY	MSS2P3-M3/89A	Fitted	
34	1	D2	DL4148	MINIMELF	DL4148	100V			500MW	MCC	DL4148-TP	Fitted	
35	1	DS1	LED-BLUE-SMT	LED_0603	LED-BLUE-SMT	2.85V			15MA	OSRAM	LB_Q39G-L200-35-1	Fitted	
36	6	DS2,DS3,DS4,DS5,DS6,DS9	LED-GRN-SMT_LED_0603	LED_0603	LED-GRN-SMT	2.2V			2.2-20MA	LUMEX	SML-LX0603GW-TR	Fitted	
37	1	DS7	LED-RED-SMT_LED_0603	LED_0603	LED-RED-SMT	2.0V			2.0-20MA	LUMEX	SML-LX0603IW-TR	Fitted	
38	1	DS8	HSMY-C190	LED_0603	LED-YELLOW-SMT	2.2V			20MA	BROADCOM LIMITED	HSMY-C190	Fitted	
39	1	F9	1206L300SLTHYR	1206						LITTELFUSE	1206L300SLTHYR	Fitted	
40	1	FAN?	FAN_5V		FAN_5V					SUNON	MC30060V1-000U-A99	Fitted	
41	1	J1	6.92622E+11	CON_WURTH_MICRO_USB_HOZ B	6.92622E+11					WURTH	6.92622E+11	Fitted	
42	1	J2	HDR_SMT_LC_1X7_SAMTEC	HDR_SMT_LC_1X7	HDR_SMT_LC_1X7					SAMTEC	MMT-107-01-T-SH-LC-TR	Fitted	
43	1	J3	HDR_2X30_SMT	CON_TE_2X30_0P8MM_SMT	HDR_2X30_SMT					TE CONNECTIVITY	5177983-2	Fitted	
44	1	J4	SCHA4B0419_SDMICRO	SCHA4B0419	SCHA4B0419					ALPS	SCHA4B0419	Fitted	
45	1	J5	PJ-041H	CON_CUI_PJ_3P	PJ-041H					MOLEX	PJ-041H	Fitted	
46	1	J6	HDR_SMT_LC_1X3_SAMTEC	HDR_SMT_LC_1X3	HDR_SMT_LC_1X3					SAMTEC	MMT-103-01-T-SH-LC-TR	Fitted	
47	1	J7	HDR_2X20_SMT	CON_FCI_2X20_2MM	HDR_2X20_SMT					AMPHENOL	55510-140LF	Fitted	
48	2	J8,J9	6.92122E+11	CON_WURTH_USB3_HOZ_TYP E_A	6.92121E+11					WURTH	6.92121E+11	Fitted	

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49	9	J10,J11,J12,J13,J14,J15,J16,J17,J20	TP_PAD	TP_PAD	TP_PAD							Not Fitted	
50	2	J18,J19	TP_5001_BLACK	TP_KEY_MINI	DNP					DNP	DNP	Not Fitted	
51	4	L1,L2,L3,L4	FERRITE-600	805	FERRITE-600		XXX			LAIRD	H20805E601R-10	Fitted	
52	1	L5	INDUCTOR_1_0UH	IND_74479275210	1.0UH		20%			WURTH	74479275210	Fitted	
53	3	L6,L7,L8	74479262147	603	470NH		20%			WURTH	74479262147	Fitted	
54	1	L9	74438356022	IND_WURTH_74438356022	2.2UH		20%			WURTH	74438356022	Fitted	
55	1	L10	7.44383E+11	IND_WURTH_3020	470NH		20%			WURTH	7.44383E+11	Fitted	
56	3	L11,L12,L17	FERRITE-220_0603	603	FERRITE-220		XXX			TDK	MPZ1608S221A	Fitted	
57	1	L13	744784015A	402	1.5NH		20%			WURTH	744784015A	Fitted	
58	4	MH1,MH2,MH3,MH4	HOLE_MH_111_200	MH_200H111	MH_111_200					DNP	DNP	Not Fitted	
59	2	MS1,MS2	NYLON_SCREW		NYLON_SCREW					MCMMASTER	94735A154	Fitted	
60	4	MS3,MS4,MS5,MS6	M2_5_SCREW		MACHINE_SCREW_M2_5					MCMMASTER	92000A105	Fitted	
61	4	MSO1,MSO2,MSO3,MSO4	STANDOFF_MF		STANDOFF_4_5MM					OLANDER	25S7H4MS	Fitted	
62	1	P1	2129320-3	CON_TE_2129320	2129320-3					TE CONNECTIVITY	2129320-3	Fitted	
63	8	Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8	RUM001L02T2CL_SOT723	SOT_723	RUM001L02T2CL	20V			150MW	ROHM	RUM001L02T2CL	Fitted	
64	1	Q9	NDS331N_SOT23	SOT_23	NDS331N	20V			460MW	ON SEMICONDUCTOR	NDS331N	Fitted	
65	8	R1,R2,R69,R138,R139,R140,R141,R142	DNP_R_0201	201	DNP		DNP		DNP	DNP	DNP	Not Fitted	
66	12	R3,R4,R5,R6,R7,R8,R9,R10,R11,R12,R13,R14	2_21K_0201	201	2.21K		1%		1/20W	PANASONIC	ERJ-1GEF2211C	Fitted	
67	1	R15	4_02K_0201	201	4.02K		1%		1/20W	PANASONIC	ERJ-1GEF4021C	Fitted	
68	1	R16	1_50K_0201	201	1.50K		1%		1/20W	PANASONIC	ERJ-1GEF1501C	Fitted	
69	20	R17,R18,R19,R20,R23,R26,R27,R28,R29,R30,R31,R32,R33,R34,R35,R37,R38,R106,R158,R160	4_70K_0201	201	4.70K		1%		1/20W	PANASONIC	ERJ-1GEF4701C	Fitted	
70	1	R21	18_2K_0201	201	18.2K		1%		1/20W	PANASONIC	ERJ-1GEF1822C	Fitted	
71	11	R22,R46,R78,R79,R80,R82,R95,R123,R143,R144,R147	DNP_R_0201	201	DNP		DNP		DNP	DNP	DNP	Not Fitted	
72	1	R24	9_31K_0201	201	9.31K		1%		1/20W	PANASONIC	ERJ-1GEF9311C	Fitted	
73	1	R25	20_0201	201	20		1%		1/20W	PANASONIC	ERJ-1GEF20R0C	Fitted	
74	15	R36,R39,R68,R71,R72,R73,R74,R75,R76,R77,R83,R84,R119,R121,R122	10_0K_0201	201	10.0K		1%		1/20W	PANASONIC	ERJ-1GEF1002C	Fitted	
75	2	R42,R43	20_5K_0201	201	20.5K		1%		1/20W	PANASONIC	ERJ-1GEF2052C	Fitted	
76	3	R44,R135,R136	10_0201	201	10		1%		1/20W	PANASONIC	ERJ-1GEF10R0C	Fitted	
77	1	R45	4_7M_0402	402	4.7M		5%		1/10W	PANASONIC	ERJ-2GEJ475X	Fitted	
78	2	R47,R148	1_00K_0201	201	1.00K		1%		1/20W	PANASONIC	ERJ-1GEF1001C	Fitted	
79	2	R50,R51	499_0201	201	499		1%		1/20W	PANASONIC	ERJ-1GEF4990C	Fitted	
80	1	R52	24_9_0201	201	24.9		1%		1/20W	PANASONIC	ERJ-1GEF2499C	Fitted	
81	8	R54,R55,R56,R81,R96,R120,R159,R161	0_0201	201	0		NA		1/20W	PANASONIC	ERJ-1GN0R00C	Fitted	
82	2	R58,R59	8_06K_0201	201	8.06K		1%		1/20W	PANASONIC	ERJ-1GEF8061C	Fitted	
83	2	R60,R61	49_9_0201	201	49.9		1%		1/20W	PANASONIC	ERJ-1GEF4999C	Fitted	
84	1	R62	2_37K_0402	402	2.37K		1%		1/10W	PANASONIC	ERJ-2RKF2371X	Fitted	
85	1	R63	0R01_1206	1206	0.01		1%		1W	PANASONIC	ERJ-8BWF0R10V	Fitted	
86	1	R64	2_49K_0201	201	2.49K		1%		1/20W	PANASONIC	ERJ-1GEF2491C	Fitted	
87	1	R65	500_0402	402	500		0.10%		1/20W	VISHAY	PNM0402E5000BST1	Fitted	
88	1	R85	11_0K_0201	201	11.0K		1%		1/20W	PANASONIC	ERJ-1GEF1102C	Fitted	
89	1	R86	12_0K_0201	201	12.0K		1%		1/20W	PANASONIC	ERJ-1GEF1202C	Fitted	
90	4	R87,R88,R89,R124	100K_0201	201	100K		1%		1/20W	PANASONIC	ERJ-1GEF1003C	Fitted	
91	5	R90,R91,R92,R93,R145	240_0201	201	240		1%		1/20W	PANASONIC	ERJ-1GEF2400C	Fitted	
92	2	R97,R98	100_0201	201	100		5%		1/20W	PANASONIC	ERJ-1GEJ101C	Fitted	
93	8	R99,R100,R101,R102,R103,R104,R105,R146	261_0201	201	261		1%		1/20W	PANASONIC	ERJ-1GEF2610C	Fitted	
94	4	R107,R108,R109,R110	1_0M_0201	201	1.0M		1%		1/20W	PANASONIC	ERJ-1GEF1004C	Fitted	
95	2	R111,R112	330_0201	201	330		1%		1/20W	PANASONIC	ERJ-1GEF3300C	Fitted	
96	6	R113,R114,R115,R116,R117,R118	4_99K_0201	201	4.99K		1%		1/20W	PANASONIC	ERJ-1GEF4991C	Fitted	
97	2	R125,R126	200K_0201	201	200K		1%		1/20W	PANASONIC	ERJ-1GEF2003C	Fitted	
98	2	R129,R130	4_70K_0402	402	4.70K		1%		1/16W	PANASONIC	ERJ-2RKF4701X	Fitted	
99	1	R132	31_6K_0201	201	31.6K		1%		1/20W	PANASONIC	ERJ-1GEF3162C	Fitted	
100	1	R133	357K_0201	201	357K		1%		1/20W	PANASONIC	ERJ-1GEF3573C	Fitted	
101	1	R134	6_49K_0201	201	6.49K		1%		1/20W	PANASONIC	ERJ-1GEF6491C	Fitted	
102	1	R149	1_00K_0402	402	1.00K		1%		1/16W	ROHM	MCR01MZPF1001	Fitted	
103	4	R150,R162,R163,R164	0_0603	603	0		5%		1/10W	PANASONIC	ERJ-3GEY0R00V	Fitted	
104	1	R151	DNP_R_0603	603	DNP		DNP		DNP	DNP	DNP	Not Fitted	
105	6	R152,R153,R154,R155,R156,R157	30_0201	201	30		1%		1/20W	PANASONIC	ERJ-1GEF30R0C	Fitted	
106	3	SW1,SW3,SW4	B3U-1000P	SW_OMRON_2P	B3U-1000P					OMRON	B3U-1000P	Fitted	
107	1	SW2	218-2LPSTRF	218-2LPSTRF	218-2LPSTRF					CTS	218-2LPSTRF	Fitted	
108	1	U1	XCZU3-SBVA484B	FBGA_484_0P8MM	XCZU3-SBVA484B					XILINX	XCZU3-SBVA484	Fitted	
109	1	U2	MT53B512M32D2_16GBIT	FBGA_LPDDR4_200P	MT53B512M32D2	1.1V				MICRON	MT53B512M32D2NP-062 WT.C	Fitted	
110	1	U3	WL1831MODGBMOCR	QFN_MOC_100	WL1831MODGBMOCR	2.35-3.6V				TI	WL1831MODGBMOCR	Fitted	
111	1	U4	SN74AVC2T245	QFN_RSW_10	SN74AVC2T245	1.2V-3.6V				TI	SN74AVC2T245RSWR	Fitted	
112	1	U5	USB5744_56VQFN	SQFN_56_EP	USB5744	1.2V,3.3V				MICROCHIP	USB5744/2G	Fitted	
113	2	U6,U29	SN74AVC1T45	SC70_6	SN74AVC1T45	1.2V-3.6V				TI	SN74AVC1T45DCKR	Fitted	

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114	1	U7	LTC2954CDDDB-1TRMPBF	DFN_3X2MM_8P_EP	LTC2954	2.7-26.4V				LINEAR TECH	LTC2954CDDDB-1#TRMPBF	Fitted	
115	2	U8,U9	USB3320_QFN32	USB3320_QFN32	USB3320	3.3V				MICROCHIP	USB3320C-EZK-TR	Fitted	
116	1	U10	ANT016008LCD2442MA1	WIFI_ANT016008LCD2442MA1	ANT016008LCD2442M A1					TDK	ANT016008LCD2442MA1	Fitted	
117	1	U11	TCA9548APWR_TSSOP_24	TSSOP_24	TCA9548APWR	1.65-5.5V				TI	TCA9548APWR	Fitted	
118	1	U12	FIN1019	TSSOP_14	FIN1019	3.3V				ON SEMICONDUCTOR	FIN1019MTC	Fitted	
119	1	U13	MAX13035E	TQFN_16	MAX13035E	1.62V- 3.2V,2.2- 3.6V				MAXIM	MAX13035EETE+	Fitted	
120	1	U14	SN74LVC1G08	SC70_5	SN74LVC1G08	1.65V- 5.5V				TI	SN74LVC1G08DCKR	Fitted	
121	1	U15	TPD8S009DSMR	SON_15P	TPD8S009DSMR	0-6V				TI	TPD8S009DSMR	Fitted	
122	1	U16	SIT1552AI	BGA4_ULP_TCXO	32.768KHZ		10PPM			SITIME	SIT1552AI-JF-DCC-32.768D	Fitted	
123	2	U18,U19	MIC2009_MLF6	MLF6_2X2MM_EP	MIC2009_MLF6	2.5-5.5V				MICROCHIP	MIC2009YML-TR	Fitted	
124	1	U20	MAX8902B	TDFN_8_EP	MAX8902B	1.7V-5.5V				MAXIM	MAX8902BATA+T	Fitted	
125	1	U21	U_FL_R_SMT_1	CON_U_FL_R_3P_SMT	DNP					HIROSE	DNP	Not Fitted	
126	1	U22	TPD4E05U06DQAR	DQA_R_PSON_N10	TPD4E05U06DQAR	6.5V				TI	TPD4E05U06DQAR	Fitted	
127	1	U23	SI5335A-B07834-GM	QFN24_4X4MM	SI5335A-B07834-GM	1.5V-3.3V				SILABS	SI5335A-B07834-GM	Fitted	
128	1	U24	SN74AVC4T245	QFN_RSV_16	SN74AVC4T245	1.2V-3.6V				TI	SN74AVC4T245RSVR	Fitted	
129	1	U25	TPD4E001DRLR	DRL_R_PDSO_N6	TPD4E001DRLR	0.9-5.5V				TI	TPD4E001DRLR	Fitted	
130	3	U26,U27,U28	CSD87381P	TI_CSD87381P	CSD87381P	30V			4W	TI	CSD87381P	Fitted	
131	2	U31,U32	TPS22920YZPRB	BGA8_TI_YZP	TPS22920	0.75-3.6V				TI	TPS22920YZPRB	Fitted	
132	1	U33	TPS6508641	QFN_64_8X8MM_EP	TPS6508641	5.6V-21V				TI	TPS6508641	Fitted	
133	1	U34	ELK-EA221FA	FILTER_PAN_E_3218	220PF					PANASONIC	ELK-EA221FA	Fitted	
134	1	U35	INA226	DGS_MSOP_10	INA226	36V				TI	INA226AIDGS	Fitted	
135	1	X1	25MHZ_FA238	XTAL_EPSON_FA238	25MHZ		50PPM			EPSON	FA-238_25,0000MB-C3	Fitted	
136	2	X2,X3	XRCHA24M000F0A01R0	XTAL_XRCHA	24.000MHZ		100PPM			MURATA	XRCHA24M000F0A01R0	Fitted	
137	1	X4	XRCGB25M000F3M00R0	XTAL_XRCGB25M000F3M00R0	25.00MHZ		40PPM			MURATA	XRCGB25M000F3M00R0	Fitted	
138	1	X5	9HT10	XTAL_TXC_9HT10	32.768KHZ		20PPM			TXC	9HT10-32.768KZDF-T	Fitted	
139	10	Z2,Z3,Z4,Z5,Z6,Z7,Z8,Z9,Z10,Z11	0201_SHORT	0201_SHORT	0201_SHORT					NA	NA	Fitted	
<b>Approved</b>											<b>Notes</b>		