



Bill of Materials for the BB-GEVK Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
C1	1	10µF ±20% 50V Ceramic Capacitor X7R	10µF 50V	±20%	1210	Taiyo Yuden	UMK325AB7106MM-T	Yes	Yes
C2,C3,C5,C7,C72	5	0.10µF ±10% 16V Ceramic Capacitor X7R	0.10µF 16V	±10%	0603	Würth Electronics	885012206046	Yes	Yes
C4,C6,C9,C10,C20,C22,C66,C69	8	0.10µF ±10% 16V Ceramic Capacitor X7R	0.10µF 16V	±10%	0603	Würth Electronics	885012206046	Yes	Yes
C8,C11,C28,C29,C45,C50,C52,C74,C75	9	10µF ±20% 16V Ceramic Capacitor X5R	10µF 16V	±20%	0805	Würth Electronics	885012107014	Yes	Yes
C12,C42,C46	3	0.10µF ±10% 16V Ceramic Capacitor X7R	0.10µF 16V	±10%	0402	Murata Electronics	GRM155R7C104KA88J	Yes	Yes
C13,C18	2	10µF ±10% 25V Ceramic Capacitor X7R	10µF 25V	±10%	1206	Würth Electronics	885012208069	Yes	Yes
C14,C17,C39	3	1µF ±10% 16V Ceramic Capacitor X7R	1µF 16V	±10%	0603	Würth Electronics	885012206052	Yes	Yes
C15,C34,C37,C38	4	0.22µF ±10% 16V Ceramic Capacitor X7R	0.22µF 16V	±10%	0603	TDK Corporation	C1608X7R1C224K080AC	Yes	Yes
C16	1	0.033µF ±10% 16V Ceramic Capacitor X7R	0.033µF 16V	±10%	0402	Würth Electronics	885012205034	Yes	Yes
C19,C24,C26,C30,C33	5	0.10µF ±10% 16V Ceramic Capacitor X7R	0.10µF 16V	±10%	0402	Murata Electronics	GRM155R7C104KA88J	Yes	Yes
C20	1	10000µF ±10% 16V Ceramic Capacitor X7R	10000µF 16V	±10%	0402	Würth Electronics	885012205031	Yes	Yes
C23,C25,C27	3	0.033µF ±10% 10V Ceramic Capacitor X7R	0.033µF 10V	±10%	0402	Murata Electronics	GRM155R7A133KA01D	Yes	Yes
C31	1	22µF ±20% 50V Ceramic Capacitor X7R Stacked, SMD J-Lead	22µF 50V	±20%	Stacked, SMD J-Lead	Murata Electronics	KRM55WR7H226MH01K	Yes	Yes
C32,C36,C48,C49,C64,C65,C67,C68,C70,C71	10	22µF ±20% 10V Ceramic Capacitor X5R	22µF 10V	±20%	0805	Würth Electronics	885012107011	Yes	Yes
C35,C73	2	22µF ±20% 50V Ceramic Capacitor X7R Stacked, SMD J-Lead	22µF 50V	±20%	Stacked, SMD J-Lead	Murata Electronics	KRM55WR7H226MH01K	Yes	Yes
C40,C41	2	0.10µF ±10% 16V Ceramic Capacitor X7R	0.10µF 16V	±10%	0603	Würth Electronics	885012206046	Yes	Yes
C43	1	10µF ±20% 50V Ceramic Capacitor X7R	10µF 50V	±20%	1210	Taiyo Yuden	UMK325AB7106MM-T	Yes	Yes
C44	1	4700µF ±10% 50V Ceramic Capacitor X7R	4700µF 50V	±10%	0603	Murata Electronics	GRM188R7H472KA01D	Yes	Yes
C47	1	2200µF ±10% 50V Ceramic Capacitor X7R	2200µF 50V	±10%	0603	Würth Electronics	885012206085	Yes	Yes
C51	1	10µF ±5% 50V Ceramic Capacitor COG, NP0	10µF 50V	±5%	0603	Würth Electronics	885012060051	Yes	Yes
C53	1	0.022µF ±10% 25V Ceramic Capacitor X7R	0.022µF 25V	±10%	0402	TDK	C1005X7R1E223K050BB	Yes	Yes
C54	1	10µF ±5% 50V Ceramic Capacitor COG, NP0	10µF 50V	±5%	0603	Würth Electronics	885012060051	Yes	Yes
C55	1	0.22µF ±20% 16V Ceramic Capacitor X5R	0.22µF 16V	±20%	0402	Würth Electronics	885012105017	Yes	Yes
C56	1	0.10µF ±10% 16V Ceramic Capacitor X7R	0.10µF 16V	±10%	0603	Würth Electronics	885012206046	Yes	Yes
C57	1	0.10µF ±10% 16V Ceramic Capacitor X7R	0.10µF 16V	±10%	0603	Würth Electronics	885012206046	Yes	Yes
C58,C59,C60,C61	4	-	-	-	-	-	-	Yes	Yes
C62,C63	2	-	-	-	-	-	-	Yes	Yes
C76	1	22µF ±5% 50V Ceramic Capacitor COG, NP0	22µF 50V	±5%	0603	Würth Electronics	885012060053	Yes	Yes
D1,D2	2	Red 625nm LED Indication - Discrete 2V	Red 625nm	-	0603	Würth Electronics	150060RS75000	Yes	Yes
D3,D4,D8,D11,D12	5	Green 570nm LED Indication - Discrete 2V	Green 570nm	-	0603	Würth Electronics	150060VS75000	Yes	Yes
D5	1	Diode Schottky 40V 1.5A	40V 1.5A	-	SMB	ON Semiconductor	MBRS1540T3G	No	Yes
D6	1	Diode Standard 100V 200mA (DC)	100V 200mA (DC)	-	SOD-323	ON Semiconductor	BAS16HT1G	No	Yes
D7	1	Diode Schottky 30V 2A	30V 2A	-	SOD-123L	ON Semiconductor	MBR120L30L3FT1G	No	Yes
D10	1	Diode Schottky 20V 1A	20V 1A	-	SOD-123FL	ON Semiconductor	MBR120VL30L3FT1G	No	Yes
D11	1	FERRITE BEAD 100 OHM 0603 1LN	-	-	-	TDK Corporation	TBDMF21608D101BTA00	Yes	Yes
J1,J2	2	12 Position Header Connector 0.100" (2.54mm) Through Hole, Right Angle Gold	-	-	-	Würth Electronics	613012243121	Yes	Yes
J3,J4,J5,J6,J12,J15,J16,J17,J22,J33	10	2 Positions Through-Hole Gold Header Connector	-	-	0.100" (2.54mm)	Würth Electronics	61300211121	Yes	Yes
J7	1	STACKING HEADER ARDUINO SHIELD	-	-	-	Adafruit Industries LLC	85	Yes	Yes
J8	1	STACKING HEADER ARDUINO SHIELD	-	-	-	Adafruit Industries LLC	85	Yes	Yes
J9,J10,J24,J29	4	2 Positions Through-Hole Gold Header Connector	-	-	0.100" (2.54mm)	Würth Electronics	61300211121	Yes	Yes
J11	1	3 Position Right Angle Through-Hole Terminal Block Header, Male Pins, Shrouded (4 Side)	-	-	0.150" (3.81mm)	Würth Electronics Inc	691322310003	Yes	Yes
J13,J19	2	2 Positions Through-Hole Gold Header Connector	-	-	0.100" (2.54mm)	Würth Electronics	61300211121	Yes	Yes
J14,J31,J32,J35,J36	3	3 Positions Through-Hole Gold Header Connector	-	-	0.100" (2.54mm)	Würth Electronics	61301311121	Yes	Yes
J18	1	Through Hole, Right Angle Power Barrel Connector Jack	24V 2.5A	-	2.5 x 5.5 mm	PI-2012B	CUI Inc.	Yes	Yes
J20	1	STACKING HEADER ARDUINO SHIELD	-	-	-	Adafruit Industries LLC	85	Yes	Yes
J21	1	STACKING HEADER ARDUINO SHIELD	-	-	-	Adafruit Industries LLC	85	Yes	Yes
J23	1	2 Positions Through-Hole Gold Header Connector	-	-	0.100" (2.54mm)	Würth Electronics	61300211121	Yes	Yes
J25	1	Through Hole Gold 10 Position Box Header Connector	-	-	0.050" (1.27mm)	CNC Tech	3220-10-0100-00	Yes	Yes
J26	1	1 Positions Header Connector Through Hole Gold	-	-	0.236"	Würth Electronics	61300111121	Yes	Yes
J27,J28	2	22 Surface Mount Gold Position Receptacle Connector	-	-	0.150"	Amphenol PCI	20021521-00022T4LP	Yes	Yes
L1	1	22µH Shielded Multilayer Inductor 300mA 87A mOhm Max	22µH 300mA	±20%	0805	TDK Corporation	MLZ2012N22M1000	Yes	Yes
L2	1	4.7µH Shielded Wirewound Inductor 2.65A 78 mOhm Max Nonstandard	4.7µH 2.65A	±25%	0.244" L x 0.232" W	Würth Electronics Inc	744785004	Yes	Yes
L3	1	10µH Shielded Inductor 1.7A 65 mOhm Max Nonstandard	10µH 1.7A	±30%	0.264" L x 0.264" W	Sumida America	CDRH6D28NP-100NC	Yes	Yes
MH1,MH2,MH3,MH4	4	Mounting Hole	-	-	-	-	-	Yes	Yes
Q1	1	MOSFET P-CH 20V 3.2A	20V 3.2A	-	SOT23	ON Semiconductor	NTR1401PTH1T	Yes	Yes
R1,R2,R3,R4,R55,R70,R71	7	1k Ohm ±1% 0.1W, 1/10W Chip Resistor	1k Ohm 0.1W	±1%	0603	Vishay Dale	RC0603FR-071KL	Yes	Yes
R5,R6,R7,R8,R9,R11,R15,R17,R19,R22,R23,R29,R32,R34,R66,R67	16	10k Ohm ±1% 0.1W, 1/10W Chip Resistor	1k Ohm 0.1W	±1%	0603	Vishay Dale	RCRC060310K0FKEA	Yes	Yes
R10,R24,R25,R26	4	10k Ohm ±1% 0.1W, 1/10W Chip Resistor	10k Ohm 0.1W	±1%	0603	Vishay Dale	RCRC060310K0FKEA	Yes	Yes
R12,R16,R28,R31,R35,R37,R38,R40,R42,R60,R61,R62,R63,R64,R65,R72	16	0.0 Ohm Jumper 0.1W, 1/10W Chip Resistor	0.0 Ohm 0.1W	Jumper	0603	Yageo	RCW0603R-070RL	Yes	Yes
R13	1	1.5k Ohm ±1% 0.1W, 1/10W Chip Resistor	1.5k Ohm 0.1W	±1%	0603	Yageo	RC0603FR-071K5L	Yes	Yes
R14	1	470 Ohm ±1% 0.1W, 1/10W Chip Resistor	470 Ohm 0.1W	±1%	0603	Yageo	RC0603FR-0710RL	Yes	Yes
R18,R21,R30,R59	4	0.0 Ohm Jumper 0.1W, 1/10W Chip Resistor	0.0 Ohm 0.1W	Jumper	0603	Yageo	RC0603R-070RL	Yes	Yes
R20	1	0.0 Ohm Jumper 0.1W, 1/10W Chip Resistor	0.0 Ohm 0.1W	Jumper	0603	Yageo	RC0603R-070RL	Yes	Yes
R27	1	40.2k Ohm ±1% 0.1W, 1/10W Chip Resistor	40.2k Ohm 0.1W	±1%	0603	Yageo	RC0603FR-0740K2L	Yes	Yes
R33,R52	2	100k Ohm ±5% 0.063W, 1/16W Chip Resistor	100k Ohm 0.063W	±5%	0402	Stackpole	RMCF0402JT100K	Yes	Yes
R36	1	360 Ohm ±1% 0.1W, 1/10W Chip Resistor	360 Ohm 0.1W	±1%	0603	Yageo	RC0603FR-07360RL	Yes	Yes
R39	1	220 Ohm ±1% 0.1W, 1/10W Chip Resistor	220 Ohm 0.1W	±1%	0603	Yageo	RC0603FR-07220RL	Yes	Yes
R41	1	110 Ohm ±1% 0.1W, 1/10W Chip Resistor	110 Ohm 0.1W	±1%	0603	Yageo	RC0603FR-07110RL	Yes	Yes
R43	1	31.6 Ohm ±1% 0.1W, 1/10W Chip Resistor	31.6 Ohm 0.1W	±1%	0603	Vishay Dale	RCRC0603316KFKEA	Yes	Yes
R44	1	22k Ohm ±1% 0.1W, 1/10W Chip Resistor	22k Ohm 0.1W	±1%	0603	Yageo	RC0603FR-0722KL	Yes	Yes
R45	1	10k Ohm ±1% 0.1W, 1/10W Chip Resistor	10k Ohm 0.1W	±1%	0603	Vishay Dale	RCRC060310K0FKEA	Yes	Yes
R46	1	100k Ohm ±5% 0.063W, 1/16W Chip Resistor	100k Ohm 0.063W	±5%	0402	Stackpole	RMCF0402JT100K	Yes	Yes
R47,R48	2	100k Ohm ±5% 0.063W, 1/16W Chip Resistor	100k Ohm 0.063W	±5%	0402	Stackpole	RMCF0402JT100K	Yes	Yes
R49	1	1k Ohm ±5% 0.063W, 1/16W Chip Resistor	1k Ohm 0.063W	±5%	0402	Vishay Dale	CRCW04021K000JED	Yes	Yes
R50	1	100 Ohm ±5% 0.063W, 1/16W Chip Resistor	100 Ohm 0.063W	±5%	0402	Stackpole	RMCF0402JT100R	Yes	Yes
R51	1	470k Ohm ±1% 0.1W, 1/10W Chip Resistor 0603	470k Ohm 0.1W	±1%	0603	Vishay Dale	RCRC0603470KFKEA	Yes	Yes
R54	1	147k Ohm ±1% 0.1W, 1/10W Chip Resistor	147k Ohm 0.1W	±1%	0603	Yageo	RC0603FR-07147KL	Yes	Yes
R55	1	1.5k Ohm ±1% 0.1W, 1/10W Chip Resistor	1.5k Ohm 0.1W	±1%	0603	Yageo	RC0603FR-071K5L	Yes	Yes
R56	1	220k Ohm ±1% 0.1W, 1/10W Chip Resistor	220k Ohm 0.1W	±1%	0603	Yageo	RC0603FR-07220KL	Yes	Yes
R57	1	1k Ohm ±5% 0.063W, 1/16W Chip Resistor	1k Ohm 0.063W	±5%	0402	Vishay Dale	CRCW04021K000JED	Yes	Yes
R58	1	100k Ohm ±5% 0.063W, 1/16W Chip Resistor	100k Ohm 0.063W	±5%	0402	Stackpole	RMCF0402JT100K	Yes	Yes
R74	1	4.7k Ohm ±1% 0.1W, 1/10W Chip Resistor	4.7k Ohm 0.1W	±1%	0603	Yageo	RC0603FR-074K7L	Yes	Yes
SW1,SW2,SW3,SW4,SW5,SW6,SW7	7	Tactile Switch SPST-NO Top Actuated Surface Mount	0.06A 12V	-	6.20mm x 6.20mm	Würth Electronics	430182043816	Yes	Yes
TP1,TP3	2	1 Positions Header Connector Through Hole Gold	-	-	0.236"	Würth Electronics	61300111121	Yes	Yes

TP2,TP4,TP5,TP6,TP7,TP8,TP9,TP10,TP11,TP12,TP13	11	-	-	-	-	-	-	-	-	-	Yes	Yes
U1	1	IC IO EXPANDER I2C 16B QFN-24	-	-	-	QFN-24	-	ON Semiconductor	PCA9655EMITXG	No	Yes	Yes
U2	1	CONN RECEPT MINI USB2.0 5POS	-	-	-	-	-	Hirose Electric Co Ltd	UX60-MB-5ST	Yes	Yes	Yes
U3	1	EMI Filter, Upstream Terminator with ESD Protection	-	-	-	SOT-563	-	ON Semiconductor	NUP2042XV6T1G	No	Yes	Yes
U4	1	2 Line Common Mode Choke Surface Mount 90 Ohm @ 100MHz 370mA DCR 300 mOhm	370mA 90 Ohm	-	-	0.126" L x 0.063" W	-	Murata Electronics	DLW31SN900SQ2L	Yes	Yes	Yes
U5	1	IC EEPROM 2MB SPI SER 8SOIC	-	-	-	-	-	SOIC-8	CAT25M02V1-GT3	No	Yes	Yes
U6	1	2 Line Common Mode Choke Surface Mount 90 Ohm @ 100MHz 370mA DCR 300 mOhm	370mA 90 Ohm	-	-	0.126" L x 0.063" W	-	Murata Electronics	DLW31SN900SQ2L	Yes	Yes	Yes
U7	1	USB Bridge, USB to UART USB 2.0 UART Interface 32-LQFP	-	-	-	32-LQFP	-	FTDI	FT232BL	Yes	Yes	Yes
U8	1	General Purpose Amplifier 2 Circuit Rail-to-Rail Micro8™	-	-	-	8-TSSOP	-	ON Semiconductor	LMV358DMR2G	No	Yes	Yes
U9	1	Character LCD Display Module Transflective 5 x 8 Dots FSTN - Film Super-Twisted Nematic LED - White Serial	-	-	-	41.40mm x 24.30mm x 4.00mm	-	Newhaven Display	NHD-C0216CZ-FSW-FBW-3V3	Yes	Yes	Yes
U10	1	Low Power System-on-Chip For 2.4 GHz	-	-	-	QFN-40	-	ON Semiconductor	NCS36510MNTXG	No	Yes	Yes
U11	1	IC REG LDO ADJ 1A	-	-	-	SOT-223	-	ON Semiconductor	NCV1117STAT3G	No	Yes	Yes
U12	1	IC REG BUCK ADJ 1.2A	-	-	-	8-SOIC	-	ON Semiconductor	NCV890100PDR2G	No	Yes	Yes
U13	1	IC REG BST ADJ 1.5A SYNC	-	-	-	8-MICRO	-	ON Semiconductor	NCPI421DMR2G	No	Yes	Yes
U14	1	IC REG LDO 3V 0.3A	3V, 0.3A	-	-	SOT-223	-	ON Semiconductor	MC33375ST-3.0T3G	No	Yes	Yes
Y1	1	6MHz ±20ppm Crystal 16pF 100 Ohm	6MHz	±20ppm	-	0.449" L x 0.185" W	-	Abracon LLC	ABLSG-6.000MHZ-D2Y-T	Yes	Yes	Yes
Y2	1	32MHz ±20ppm Crystal 8pF 50 Ohm	32MHz	±20ppm	-	0.126" L x 0.089" W	-	AVX Corp/Kyocera Corp	CX3225GB32000D0HPQCC	Yes	Yes	Yes
Y3	1	32.768kHz ±20ppm Crystal 6pF 70 kOhm	32.768kHz	±20ppm	-	0.126" L x 0.061" W	-	Abracon Corporation	ABS07-32.768KHZ-6-T	Yes	Yes	Yes
J11, Female	1	3 Position Terminal Block Plug, Female Sockets	-	-	-	0.150"	-	Würth Electronics Inc	691361300003	Yes	Yes	Yes
NA	13	Multi-Jumper with Test Point WR-PHD	-	-	-	2.54mm	-	Würth Electronics	60900213421	Yes	Yes	Yes
N/A	4	Hex Standoff Threaded M3 Nylon Natural	-	-	-	1.575"	-	Essentra Components	CBT5140A	Yes	Yes	Yes
N/A	4	MACHINE SCREW PAN PHILLIPS M3	-	-	-	-	-	NMS-306	Essentra Components	Yes	Yes	Yes