

BeagleBone Black Commercial BOM (Revision C3)

Summary

This is the Bill of Materials for the BeagleBone Black Commercial board (RevC).

Components

Cables & Assemblies

QTY	Reference	Description	Manufacturer	Part Number	Notes
1	-	3' USB Cable, 5pin AB to Type A	CableWholesale	10UM-02103BK	Assembly marked as RevC3
			LingLongDa	321010005	Alt
			Molex	887328602	Alt
1	-	ESD Bag	3M	10035	3/24/13
1	-	BOX	-	-	-

PCB

QTY	Reference	Description	Manufacturer	Part Number	Notes
1	PCB1	PCB; BeagleBone Black Commercial PCB RevC1 - Black Soldermask, white Silkscreen - 6 layers, Immersion gold - 86.36×54.61×1.6mm	Various	BeagleBone Black Commercial RevC PCB	-

Capacitors

QTY	Reference	Description	Manufacturer	Part Number	Notes
24	C1,C2,C4,C7-C15,C39,C40,C55,C62,C77,C95,C96,C118,C122,C126,C133,C153	CAP CER 10UF 10V Y5V 0805	TDK	C2012Y5V1A106Z	Soon to be obsoleted
		Murata	GRM21BR71A106KE51L	Alt	
		YAGEO	CC0805ZKY5V6BB106	Alt	
		Samsung	CL21A106KOQNNNE	Alt	
6	C89,C90,C91,C104,C106,C134	CAP CER 1UF 6.3V 10% X5R 0402	Tayo Yuden	JMK105BJ105KV-F	-
		TDK	C1005X5R0J105K	Alt	
		NIC	NMC0402X5R105K6.3TRPF	Alt	
		Murata	GRM155R60J105KE19D	Alt	
8	C16,C17,C18,C125,C144,C146,C148,C151	YAGEO	CC0402KRX5R6BB105	Alt	
		CAP CER 2.2UF 6.3V 10% X5R 0402	TDK	C1005X5R0J225K	Soon to be obsoleted
		TDK	C1005X5R0J225K050BC	Alt	
		YAGEO	CC0402MRX5R5BB225	Alt	
2	C19,C136	AVX	04026D225KAT2A	Alt	
		YAGEO	CC0402KRX5R5BB225	Alt	
		YAGEO	CC0402KRX5R6BB225	Alt	
		CAP CER 470PF 50V	Yageo	CC0402KRX7R9BB471	-

QTY Reference	Description	Manufacturer	Part Number	Notes
	10% X7R 0402	Murata	GRM155R71H471KA01D	Alt
100	C3,C20,C23,C27-C31,C33,C35-C38,C41-C61,C63-C76,C78-C88,C92-C94,C97-C103,C105,C107-C117,C119-C121,C124,C127-C132,C135,C145,C147,C149,C150,C152,C154,C155,C158,C159	CAP CER 0.1UF 6.3V 10% X5R 0402	TDK	C1005X5R0J104K Soon to be obsoleted
		Murata	GRM155R60J104KA01D	Alt
		NIC	NMC0402X5R104K6.3TRPF	Alt
		Kemet	C0402C104K9PACTU	Alt
		TDK	C1005X5R0J104K050BA	Alt
		YAGEO	CC0402KRX7R7BB104	Alt
4	C21,C22,C25,C26	CAP CER 18PF 50V C0G 5% 0402	TDK	C1005C0G1H180J -
		Murata	GRM1555C1H180JZ01D	Alt (Soon to be obsoleted)
		NIC	NMC0402NPO180J50TRPF	Alt
		Murata	GRM1555C1H180JA01D	Alt
		YAGEO	CC0402JRNPO9BN180	Alt
2	C32,C123	CAP CER 0.001UF 16V X7R 0402	Yageo	CC0402KRX7R7BB102 -
		Yageo	CC0402KRX7R9BB102	Alt
1	C34	Aluminum Electrolytic Capacitors - SMD Cornell Dublier 100uF 6.3V 85C		AVE107M06D16T-F -
		ST	CS1A101M-CRE54	Alt
1	C141	CAP CER 0.022UF 10V 10% X7R 0402	Tayo Yuden	LMK105B7223KV-F -
		YAGEO	CC0402KRX7R9BB223	Alt
2	C142,C143	CAP CER 30PF 50V 5% NP0 0402	TDK	C1005C0G1H300J -
		Murata	GRM1555C1H300JA01D	Alt
		YAGEO	CC0402JRNPO9BN330	Alt
16	C156,C157,C160-C173	CAP CER 47PF 50V 5% NPO 0402	Yageo	CC0402JRNPO9BN470 -
		Tayo Yuden	UMK105CG470JV-F	Alt
4	C137,C138,C139,C140	CAP CER 10PF 50V 5% NPO 0402	YAGEO	CC0402JRNPO9BN100 -
1	C174	CAP CER 4.7UF 10V	YAGEO	CC0402KRX5R6BB475 -

QTY Reference	Description	Manufacturer	Part Number	Notes
	10% X5R 0402			

Diodes

QTY Reference	Description	Manufacturer	Part Number	Notes
5	D1,D2,D3,D4,D5	Lite-On	LTST-C191TBKT	-
		Everlight	19-217/BHC-ZL1M2RY/3T	Alt
2	D6,D7	NXP	IP4283CZ10-TT,118	Soon to be obsoleted
		TI	TPD4S009DGSR	Alt
1	D8	NXP	RB751V40,115	-

Inductors & Ferrite Beads

QTY Reference	Description	Manufacturer	Part Number	Notes
6	FB1,FB2,FB3,FB4,FB5,FB7	Laird-Signal Integrity	LI0805H151R-10	-
3	L1,L2,L3	Murata	LQM2HPN2R2MG0L	-

Passive Components - Switches & Transistors

QTY	Reference	Description	Manufacturer	Part Number	Notes
3	S1,S2,S3	SWITCH TACTILE SPST-NO 0.05A 32V	C&K	KMR231GLFS	-
2	Q1,Q2	TRANS NPN/NPN W/RES 50V SMINI6	Panasonic	DMC564040R	-
			Diodes, Inc	DDC114YU-7-F	Alt
1	RT1	POLYSWITCH RXE SERIES 0.10A HOLD	TE Connectivity	RXEFO10	-

Resistors

QTY Reference	Description	Manufacturer	Part Number	Notes
6	R23,R24,R25,R26,R163,R164	Stackpole	RMCF0402FT4K75	-
	RES 4.75K OHM 1/16W 1% 0402 SMD	KOA	RK73H1ETTP4751F	Alt
		Vishay	CRCW04024K75FKED	Alt
		NIC	NRC04F4751TRF	Alt
		YAGEO	RC0402JR-074K7L	Alt
		YAGEO	RC0402FR-074K7L	Alt
4	R71,R72,R73,R74	YAGEO	RC0402JR-072K2L	-
1	R144	Yageo	RC0402FR-0712K1L	-
1	R136	CTS	73L3R10J	-
		YAGEO	RL0805JR-070R1L	Alt
9	R3,R4,R97,R112-R114,R119,R146,R147	Yageo	RC0402FR-071K5L	-
		NIC	NRC04F1501TRF	Alt
3	R12,R130,R132	Panasonic	ERJ-2GEJ471X	-
		YAGEO	RC0402JR-07470RL	Alt

QTY	Reference	Description	Manufacturer	Part Number	Notes
22	R1,R56,R65-R68,R76-R80,R82-R89,R94,R95,R165	Resistor 100Kohm 1/16W 1% 0402	Stackpole	RMCF0402FT100K	-
		Vishay	CRCW0402100KFKED	Alt	
		Yageo	RC0402FR-07100KL	Alt	
		NIC	NRC04F1003TRF	Alt	
11	R75,R125-R129,R131,R133,R134,R138,R139	RES 100 OHM 1/16W 5% 0402 SMD	Yageo	RC0402FR-07100RL	-
		KOA	RK73B1ETTP101J	Alt	
		ROHM	MCR01MZPF1000	Alt	
		STACKPOLE	RMCF0402JT100R	Alt	
		NIC	NRC04J101TRF	Alt	
1	R143	RES 10.0 OHM 1/16W 1% 0402 SMD	Yageo	RC0402FR-0710RL	-
		KOA	RK73H1ETTP10R0F	Alt	
		STACKPOLE	RMCF0402FT10R0	Alt	
		NIC	NRC04F10R0TRF	Alt	
23	R5-R8,R19,R20,R27,R29,R30,R37,R46-R51,R137,R142,R149,R159-R162	Resistor Zero ohm Jumper 0402	Yageo	RC0402JR-070RL	-
		VISHAY TECHNOLOGY	CRCW04020000Z0ED	Alt	
		STACKPOLE	RMCF0402ZT0R00	Alt	
		ROHM	MCR01MZPJ000	Alt	
		KOA	RK73Z1ETTP	Alt	
		NIC	NRC040TRF	Alt	
1	R45	Resistor 22ohm 1/16W 1% 0402	Yageo	RC0402FR-0722RL	-
		KOA	RK73B1ETTP220J	Alt	
		Stackpole	RMCF0402JT33R0	Alt	
		Vishay	CRCW040222R0JNED	Alt	
		NIC	NRC04J220TRF	Alt	
36	R14,R33,R34,R52-R54,R96,R98,R100-R111,R115-R118,R135,R145,R148,R150-R158	Resistor 10Kohm 1/16W 5% 0402	Rohm	MCR01MZPJ103	-
		KOA	RK73B1ETTP103J	Alt	
		ROHM	MCR01MRTJ103	Alt	
		Stackpole	RMCF0402JT10K0	Alt	
		Vishay	CRCW040210K0JNED	Alt	
		YAGEO	RC0402FR-0710KL	Alt	
1	R17	Resistor 1Mohm 1/16W 1% 0402	Stackpole	RMCF0402FT1M00	-
		Vishay	CRCW04021M00FKED	Alt	
		Yageo	RC0402FR-071ML	Alt	
		NIC	NRC04F1004TRF	Alt	
5	R22,R120-R123	RES 49.9 OHM 1/16W 1% 0402 SMD	Yageo	RC0402FR-0749R9L	-
		KOA	RK73H1ETTP49R9F	Alt	
		NIC	NRC04F49R9TRF	Alt	
1	R11	RES TF 1/16W 280K OHM 1% 0402	Stackpole	RMCF0402FT280K	-

QTY	Reference	Description	Manufacturer	Part Number	Notes
		Vishay	CRCW0402280KFKED	Alt	
		NIC	NRC04F2803TRF	Alt	
		YAGEO	RC0402FR-07280KL	Alt	
1	R99	RES 240 OHM 1/16W 1% 0402 SMD	Yageo	RC0402FR-07240RL	-
		Stackpole	RMCF0402FT240R	Alt	
		ROHM	MCR01MZPF2400	Alt	
		Vishay	CRCW0402240RFKED	Alt	
		NIC	NRC04F2400TRF	Alt	
1	R10	RES 470K OHM 1/16W 1% 0402 SMD	Yageo	RC0402FR-07470KL	-
		Stackpole	RMCF0402FT470K	Alt	
		Vishay	CRCW0402470KFKED	Alt	
		NIC	NRC04F4703TRF	Alt	
1	R166	RES 27K OHM 1/16W 1% 0402 SMD	Yageo	RC0402FR-0727KL	-
		NIC	NRC04F2702TRF	Alt	
25	R2,R13,R15,R16,R18,R21,R28,R31,R32,R35,R36,R38-R44,R167-R173	RES 33 OHM 1/16W 5% 0402 SMD	Yageo	RC0402JR-0733RL	-
		KOA	RK73B1ETTP330J	Alt	
		Stackpole	RMCF0402JT33R0	Alt	
		Vishay	CRCW040233R0JNED	Alt	
		NIC	NRC04J330TRF	Alt	

Integrated Circuits

QTY	Reference	Description	Manufacturer	Part Number	Notes
1	U1	IC OPEN DRAIN AND GATE	TI	SN74AHC1G09DCKR	-
1	U2	Integrated Power Management Unit	TI	TPS65217CRSLR	-
1	U5	AM3358B, SubArctic Cortex A8 Processor 15x15, 1GHz, 2.1	TI	AM3358BZCZ100	-
2	U9,U10	IC 4CH ESD SOLUTION W/CLAMP 6SON	TI	TPD4S012DRYR	-
1	U4	IC LDO VOLT REG 500MA 8-SOIC	TI	TL5209DR	-
1	U8	IC 1.5A PWR DIST SWITCH 8-SOIC	TI	TPS2051BDGNR	-
1	U6	IC SGL POS EDG TRIG D F-F SM8	TI	SN74LVC1G74DCTR	-
1	U15	IC BUFF/DVR TRI-ST DL 8VSSOP	TI	SN74LVC2G241DCUR	-
1	U3	IC INVERTER SINGLE 1INPUT SC705	TI	SN74LVC1G06DCKR	-
1	U12	DDR3 Memory 4Gb, 256Mx16	Micron	MT41K256M16HA-125:E	-
			Micron	MT41K256M16TW-107:P	Alt
			Kingston	D2516EC4BXGGB	Alt
			Kingston	D2516EC4BXGGB-U	Alt
			Kingston	D2516ECMDXGJD-U	Alt
1	U13	IC MEMORY, 4GB eMMC	Micron	MTFC4GLDEA 0M WT	-
			Micron	MTFC4GMCDM-1M WT	Alt
			Micron	MTFC4GACAJCN-1M WT	Alt
			Kingston	EMMC04G-S100-A08U	Alt
			Kingston	KE4CN2H5A-A58	Alt
			Kingston	EMMC04G-M627-X02U	Alt

QTY	Reference	Description	Manufacturer	Part Number	Notes
1	U7	IC EEPROM 32KBIT 400KHZ SOT23-5	Kingston	EMMC04G-M627	Alt
1	U14	ETHERNET PHY	MicroChip	24LC32AT-I/OT	-
			FMD	FT24C32A-ELRT	Alt
1	U11	IC HDMI INTERFACE HVQFN64	SMSC	LAN8710A-EZC-TR	-
1	U16	IC BUFF/DVR NON-INVERT SC705	Microchip	LAN8710A-EZC-TR	Alt
			NXP	TDA19988BHN/C1,557	-
			TI	SN74LVC1G07DCKR	-

Connectors

QTY	Reference	Description	Manufacturer	Part Number	Notes
1	J1	CONN HEADER 6POS, VERTICAL, .100 STR TIN	FCI	68000-406HLF	-
			YUXI	P125-1106A1BS116A1	Alt
2	P8,P9	NN HEADER FMAL 46PS.1" DL GOLD	MLE	SSHS-123-D-02-GT-LFÙÙÙÙ	-
			SINOTOP	FF-1236	Alt
			Sullins	PPPC232LFBN-RC	Alt
1	P1	CONN POWER JACK 2.1MM	CUI	PJ-002A	-
			CUI	PJ-002AH	Alt
			MTCONN	DC630-20D01	Alt
1	P4	CONN RCPT USB MINI B R/A SMD	Hirose	UX60SC-MB-5ST(80)	-
1	P5	RJ-45 10/100 W/Magnetics	Link PP	LPJ0011BBNL	-
1	P3	CONN RCPT USB TYPE A R/A PCB	FCI	87520-0010BLF	-
			Foxconn	UB11123-4H9-4F	Alt
			SUNGTECH	ST-USB-003AT-30	Part change on 27-Apr-2023
1	P10	Connector SD/MMC	YU LIANG	YL004-030-001	-
			Molex	502774-0891	Alt
1	P6	HDMI / Displayport / DVI Connectors MICRO HDMI RCPT SMT DIP+ SMT LEG TYPE D	FCI	10118241-001RLF	-

Crystals & Oscillators

QTY	Reference	Description	Manufacturer	Part Number	Notes
1	Y1	CRYSTAL 32.768KHZ 12.5PF SMD	Citizen	CM200C-32.768KAZF-UT	-
			Abraccon	ABS25-32.768KHZ-T	Alt
1	Y3	CRYSTAL 25.000 MHZ 18PF SMD	TXC	7A-25.000MAAJ-T	-
			TXC	7A25000007	Alt
			CTS	445C33D25M00000	Alt
			ILS	ILCX03-25.000000M-TBA	Alt
			INTERQUIP	5XBB25000202TF40Q3	Alt
1	Y2	CRYSTAL 24.000 MHZ 18PF SMD	TXC	7A-24.000MAAJ-T	-
			TXC	7A24000014	Alt
			CTS	445C33D24M00000	Alt
			ILS	ILCX03-24.000000M-TBA	Alt
			INTERQUIP	5XBB24000202TF50Q3	Alt
1	Y4	Oscillator, 24.576MHZ, 3.3V	Abracom	ASDMB-24.576MHZ-LC-T	-
			ECS	ECS-2033-24.576-B	Alt
			ILSI	ISM95-3161BH-24.576	Alt
			TXC	8W24500007	Alt

QTY	Reference	Description	Manufacturer	Part Number	Notes
			INTERQUIP	1651-24575-BTBQYA	Alt

Do Not Install

The following components are **NOT** to be installed:

Do Not Install Components

- **P2, C24, FB8, R55, R57, R58, R59, R60, R61, R62, R63, R64, R69, R70, R81, R90, R91, R92, R93, R124, R140, R141, R9**

Unused Reference Designators

- **P7, FB6**

Notes

- Multiple manufacturer options are listed for most components as alternatives (Alt)
- Some components are marked as “Soon to be obsoleted”
- Component values and tolerances follow standard electronics notation (e.g., 10UF = 10 microfarads, 0402 = 0402 SMD package size)
- The main processor (U5) is the AM3358B SubArctic Cortex A8 running at 1GHz
- Memory includes 4GB DDR3 (U12) and 4GB eMMC (U13)