

EFR32xG22 Low Cost Reference Design  
EFR32xG22\_LC\_REF\_DES, Revision A01

Bill of Materials

ITEM	QTY	REFDES	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	C1	CAPACITOR, CERAMIC, 1.7PF, ±0.1PF, 50V, 0201 (0603 METRIC)	MURATA	GRM0335C1H1R7BA01D
2	1	C2	CAPACITOR, CERAMIC, 1.3PF, ±0.1PF, 50V, 0201 (0603 METRIC)	MURATA	GRM0335C1H1R3BA01D
3	1	Z1	CAPACITOR, CERAMIC, 18PF, ±1%, 25V, 0201 (0603 METRIC)	MURATA	GJM0335C1E180GB01D
4	5	C4, C6, C9, C13, C15	CAPACITOR, CERAMIC, 0.1UF, ±10%, 25V, 0201 (0603 METRIC)	MURATA	GRM033C81E104KE14D
5	2	C5, C7	CAPACITOR, CERAMIC, 120PF, 50V, ±5% 0201 (0603 METRIC)	MURATA	GRM0335C1H121FA01D
6	1	C8	CAPACITOR, CERAMIC, 10UF, ±10%, 25V, 0603 (1608 METRIC)	MURATA	GRM188R61E106KA73D
7	1	C10	CAPACITOR, CERAMIC, 1UF, ±10%, 25V, 0402 (1005 METRIC)	MURATA	GRM155R61E105KA12D
8	1	C11	CAPACITOR, CERAMIC, 10NF, ±10%, 25V, 0201 (0603 METRIC)	MURATA	GRM033R71E103KE14D
9	1	C12	CAPACITOR, CERAMIC, 1UF, ±10%, 25V, 0603 (1608 METRIC)	MURATA	GCM188R71E105KA64D
10	1	C14	CAPACITOR, CERAMIC, 4.7UF, ±10%, 6.3V, 0603 (1608 METRIC)	SAMSUNG ELECTRO-MECHANICS	CL10B475KQ8NQNC
11	1	C16	CAPACITOR, CERAMIC, 1UF, ±10%, 25V, 0201 (0603 METRIC)	SAMSUNG ELECTRO-MECHANICS	CL03A105KP3N5NC
12	1	C18	CAPACITOR, CERAMIC, 1UF, ±10%, 25V, 0805 (2012 METRIC)	SAMSUNG ELECTRO-MECHANICS	CL21B105KAFNNNE
13	1	L1	INDUCTOR, THICK FILM, 2.7NH, ±0.1NH, 500MA 200mOhm Max 0201 (0603 METRIC)	MURATA	LQP03TN2N7B02D
14	2	L2, L3	FERRITE BEAD, 1 KOMHS @ 100MHZ, 350MA, 0402 (1005 METRIC)	MURATA	BLM15AX102SZ1D
15	1	L5	INDUCTOR, MULTILAYER, 2.2UH, 750MA 300mOHMS 0603 (1608 METRIC)	TDK	CIG10W2R2MNC
16	1	P1	CONN HEADER SMD 10POS 1.27MM	SAMTEC INC.	FTSH-105-01-F-DV-K
17	1	P2	CONNECTOR, U.FL ,RF COAXIAL, SMT	TE CONNECTIVITY	1909763-1
18	1	PCB1	PRINTED CIRCUIT BOARD		
19	7	R1, R2, R4, Z2, R8, R10, R13	RESISTOR, THICK FILM, 0 OHM, JUMPER, 0.05W, 1/20W, 0201 (0603 METRIC)	PANASONIC	ERJ-1GN0R00C
20	1	U1	IC, COMMUNICATIONS, EFR32MG22, -40C TO 125C, SOC, ARM CORTEX-M33, 32K RAM, 512K FLASH, 32-QFN	SILICON LABS	EFR32MG22A224F512GN32 - C
21	1	X1	OSCILLATOR, CRYSTAL, 38.4MHZ, ±10PPM, 10PF	TAI-SAW	TZ2205E
22	1	X2	OSCILLATOR, CRYSTAL, 32.768KHZ, ±20PPM, 7PF, 2-SMD	EPSON	FC-135 32.7680KA-AG5
23	1	BAT1	BATTERY HOLDER COIN 20MM SMD	MPD (MEMORY PROTECTION DEVICES)	BU20325M-JJ-GTR
24	1	L4	INDUCTOR, THICK FILM, 5.1NH, ±3%, 350MA 400mOhm Max 0201 (0603 METRIC)	MURATA	LQP03TN5N1H02
25	1	C19	CAPACITOR, CERAMIC, 0.7PF, ±0.05PF, 50V, 0201 (0603 METRIC)	MURATA	GRM0335C1HR70WA01

Total 37

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Reduced Bill of Materials

ITEM	QTY	REFDES	DESCRIPTION	MANUFACTURER	PART NUMBER
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2	1	C2	CAPACITOR, CERAMIC, 1.3PF, ±0.1PF, 50V, 0201 (0603 METRIC)	MURATA	GRM0335C1H1R3BA01D
3	1	Z1	CAPACITOR, CERAMIC, 18PF, ±1%, 25V, 0201 (0603 METRIC)	MURATA	GJM0335C1E180GB01D
4	1	C4	CAPACITOR, CERAMIC, 0.1UF, ±10%, 25V, 0201 (0603 METRIC)	MURATA	GRM033C81E104KE14D
5	2	C5,C7*	CAPACITOR, CERAMIC, 120PF, 50V, ±5% 0201 (0603 METRIC)	MURATA	GRM0335C1H121FA01D
6	1	C8	CAPACITOR, CERAMIC, 10UF, ±10%, 25V, 0603 (1608 METRIC)	MURATA	GRM188R61E106KA73D
7	1	C10	CAPACITOR, CERAMIC, 1UF, ±10%, 25V, 0402 (1005 METRIC)	MURATA	GRM155R61E105KA12D
8	1	C14	CAPACITOR, CERAMIC, 4.7UF, ±10%, 6.3V, 0603 (1608 METRIC)	SAMSUNG ELECTRO-MECHANICS	CL10B475KQ8NQNC
9	1	C16	CAPACITOR, CERAMIC, 1UF, ±10%, 25V, 0201 (0603 METRIC)	SAMSUNG ELECTRO-MECHANICS	CL03A105KP3NSNC
10	1	C18	CAPACITOR, CERAMIC, 1UF, ±10%, 25V, 0805 (2012 METRIC)	SAMSUNG ELECTRO-MECHANICS	CL21B105KAFNNNE
11	1	L1	INDUCTOR, THICK FILM, 2.7NH, ±0.1NH, 500MA 200mOhm Max 0201 (0603 METRIC)	MURATA	LQP03TN2N7B02D
12	1	L2	FERRITE BEAD, 1 KOMHS @ 100MHZ, 350MA, 0402 (1005 METRIC)	MURATA	BLM15AX102SZ1D
13	1	L5	INDUCTOR, MULTILAYER, 2.2UH, 750MA 300mOHMS 0603 (1608 METRIC)	TDK	CIG10W2R2MNC
14	1	P1	CONN HEADER SMD 10POS 1.27MM	SAMTEC INC.	FTSH-105-01-F-DV-K
15	1	P2	CONNECTOR, U.FL ,RF COAXIAL, SMT	TE CONNECTIVITY	1909763-1
16	1	PCB1	PRINTED CIRCUIT BOARD		
17	7	R1, R2, R4, Z2, R8, R10,R13	RESISTOR, THICK FILM, 0 OHM, JUMPER, 0.05W, 1/20W, 0201 (0603 METRIC)	PANASONIC	ERJ-1GN0R00C
18	1	U1	IC, COMMUNICATIONS, EFR32MG22, -40C TO 125C, SOC, ARM CORTEX-M33, 32K RAM, 512K FLASH, 32-QFN	SILICON LABS	EFR32MG22A224F512GN32 - C
19	1	X1	OSCILLATOR, CRYSTAL, 38.4MHZ, ±10PPM, 10PF	TAI-SAW	TZ2205E
20	1	X2	OSCILLATOR, CRYSTAL, 32.768KHZ, ±20PPM, 7PF, 2-SMD	EPSON	FC-135 32.7680KA-AG5
21	1	BAT1	BATTERY HOLDER COIN 20MM SMD	MPD (MEMORY PROTECTION DEVICES)	BU2032SM-JJ-GTR
22	1	L3	RESISTOR, THICK FILM, 0 OHM, JUMPER, 0402 (1005 METRIC)		
23	1	L4	INDUCTOR, THICK FILM, 5.1NH, ±3%, 350MA 400mOhm Max 0201 (0603 METRIC)	MURATA	LQP03TN5N1H02
24	1	C19	CAPACITOR, CERAMIC, 0.7PF, ±0.05PF, 50V, 0201 (0603 METRIC)	MURATA	GRM0335C1HR70WA01

Total 31

Notes:

\*C7 is not needed for devices with maximum output power of 0 dBm