

Bill of Materials

CC2530 - CC2592EMK-RD

Item	Qty	Reference	Value	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint
1	1	A2	2.4GHz	MECHANIC, 2.4GHz INVERTED F ANTENNA, SMD		DN007	
2	2	C2 C5	2.2uF	CAPACITOR, CERAMIC X5R, 2.2uF, 10V, -20%/+20%, -55DEGC/+85DEGC, 0603, SMD	Murata	GRM188R61A225ME34D	0603
3	11	C4 C3051 C3061 C3071 C3081 C3102 C3109 C3111 C3133 C3134 C3135	DNM	CAPACITOR, DO NOT MOUNT, 0402, SMD		DNM	0402
4	5	C101 C211 C241 C271 C311	100nF	CAPACITOR, CERAMIC X7R, 100nF, 6.3V, -10%/+10%, -55DEGC/+125DEGC, 0402, SMD	Murata	GRM155R70J104KA01D	0402
5	4	C221 C231 C3106 C3131	12pF	CAPACITOR, CERAMIC C0G/NP0, 12pF, 50V, -5%/+5%, -55DEGC/+125DEGC, 0402, SMD	Murata	GRM1555C1H120JA01D	0402
6	1	C272	220pF	CAPACITOR, CERAMIC C0G/NP0, 220pF, 50V, -5%/+5%, -55DEGC/+125DEGC, 0402, SMD	Murata	GRM1555C1H221JA01D	0402
7	2	C321 C331	22pF	CAPACITOR, CERAMIC C0G/NP0, 22pF, 50V, -5%/+5%, -55DEGC/+125DEGC, 0402, SMD	Murata	GRM1555C1H220JA01D	0402
8	3	C391 C401 C3108	1uF	CAPACITOR, CERAMIC X5R, 1uF, 10V, -10%/+10%, -55DEGC/+85DEGC, 0402, SMD	Murata	GRM155R61A105KE15D	0402
9	1	C3101	1.8pF	CAPACITOR, CERAMIC C0G/NP0, 1.8pF, 50V, -0.25pF, +0.25pF, -55DEGC/+125DEGC, 0402, SMD	Murata	GRM1555C1H1R8CA01D	0402
10	1	C3103	2.2pF	CAPACITOR, CERAMIC C0G/NP0, 2.2pF, 50V, -0.25pF/+0.25pF, -55DEGC/+125DEGC, 0402, SMD	Murata	GRM1555C1H2R2CA01D	0402
11	1	C3105	1pF	CAPACITOR, CERAMIC C0G/NP0, 1pF, 50V, -0.25pF/+0.25pF, -55DEGC/+125DEGC, 0402, SMD	Murata	GRM1555C1H1R0CA01D	0402
12	1	C3107	1nF	CAPACITOR, CERAMIC C0G/NP0, 1nF, 50V, -5%/+5%, -55DEGC/+125DEGC, 0402, SMD	Manufacturer selection	CAPACITOR 0402 1nF C0G/NP0 M +/-5% 50V	0402
13	1	C3110	18pF	CAPACITOR, CERAMIC C0G/NP0, 18pF, 50V, -55DEGC/+125DEGC, 0402, SMD	Murata	GRM1555C1H180JA01D	0402
14	1	C3132	1nF	CAPACITOR, CERAMIC X7R, 1nF, 50V, -5%/+5%, -55DEGC/+125DEGC, 0402, SMD	Manufacturer selection	CAPACITOR 0402 1nF X7R M +/-5% 50V	0402
15	6	FIDU1 FIDU2 FIDU3 FIDU4 FIDU5 FIDU6	FIDU 1MM	FIDUCIAL MARK, ROUND 1MM			
16	2	FL1 FL2	BLM18HE152SN1	FILTER, EMI, 1500@100MHz, -55DEGC/+125DEGC, 0603, SMD	Murata	BLM18HE152SN1D	0603
17	1	J3	SMA-10V21-TGG	CONNECTOR, COAX RF, STRAIGHT, FEMALE, 1 PIN, SMD	Hus-Tsan Group Taiwan	SMA-10V21-TGG	
18	1	L3101	15nH	INDUCTOR, CHIP, 15nH, -5%/+5%, 0.3A, -55DEGC/+125DEGC, 0402, SMD	Murata	LOG15HS15N0J2D	0402
19	1	L3102	1nH	INDUCTOR, CHIP, 1nH, -0.3nH/+0.3nH, 0.3A, -55DEGC/+125DEGC, 0402, SMD	Murata	LOG15HS1N0S02D	0402
20	1	L3104	3nH	INDUCTOR, CHIP, 3nH, -0.3nH, +0.3nH, 0.3A, -55DEGC/+125DEGC, 0402, SMD	Murata	LQG15HS3N0S02D	0402
21	2	P1 P2	SFM-110-02-S-D-A-K-TR	CONNECTOR, HEADER, FEMALE, STRAIGHT, 2 ROWS, 20 PINS, PITCH 1.27mm, SMD	Samtec	SFM-110-02-SM-D-A-K-TR	
22	1	R301	56k	RESISTOR, THICK FILM, 56k, -5%/+5%, 0.063W, 50V, -55DEGC/+155DEGC, 0402, SMD	Vishay	CRCW040256K0JNED	0402
23	3	R3051 R3061 R3071	10k	RESISTOR, THICK FILM, 10k, -5%/+5%, 0.063W, 50V, -55DEGC/+155DEGC, 0402, SMD	Vishay	CRCW040210K0JNED	0402
24	1	R3081	3.9k	RESISTOR, THICK FILM, 3.9k, -1%/+1%, 0.1W, 50V, -55DEGC/+155DEGC, 0402, SMD	Panasonic	ERJ2RKF3901X	0402
25	3	RP07 RP10 RP11	DNM	RESISTOR, THICK FILM, 0, -0/+0.02R, 0.1W, -55DEGC/+155DEGC, 0402, SMD		RESISTOR 0402 0 50V 0.1W M DNM	0402
26	1	RP12	0	RESISTOR, THICK FILM, JUMPER, 0/+0.05R, 0.063W, 50V, -55DEGC/+155DEGC, 0402, SMD	KOA Speer	RK73Z1ETTP	0402
27	1	SC1	BMI-S-209-F	MACHANIC, STANDARD SURFACE MOUNT SHIELD FRAMES, TWO PIECE, SMD	Laird Technologies	BMI-S-209-F	
28	1	U5	CC2592	IC, ANALOG, 2.4GHz RF FRONT END, 2V TO 3.7V, QFN16, SMD	Texas Instruments	CC2592RGVT	QFN16
29	1	U7	CC2530F256	IC, ANALOG, A TRUE SYSTEM-ON-CHIP SOLUTION FOR 2.4GHz IEEE 802.15.4 AND ZigBee APPLICATIONS, 250KB, 2V TO 3.6V, VQFN40, SMD	Texas Instruments	CC2530F256RHAR	VQFN40
30	1	Y1	32MHz	CRYSTAL, OSCILATOR, 32MHz, 10pF, -10PPM/+10PPM, -40DEGC/+85DEGC, SMD	Epson	FA-128 32MHz 10pF 10PPM	SMD
31	1	Y2	32.768kHz	CRYSTAL, OSCILATOR, 32.768kHz, -20PPM/+20PPM, -40DEGC/+85DEGC, 12.5pF, SMD	Epson	FC-12M 32.7680KA-A3	

IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated ("TI") reference designs are solely intended to assist designers ("Buyers") who are developing systems that incorporate TI semiconductor products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products.

TI reference designs have been created using standard laboratory conditions and engineering practices. **TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design.** TI may make corrections, enhancements, improvements and other changes to its reference designs.

Buyers are authorized to use TI reference designs with the TI component(s) identified in each particular reference design and to modify the reference design in the development of their end products. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

TI REFERENCE DESIGNS ARE PROVIDED "AS IS". TI MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. TI DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO TI REFERENCE DESIGNS OR USE THEREOF. TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY BUYERS AGAINST ANY THIRD PARTY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON A COMBINATION OF COMPONENTS PROVIDED IN A TI REFERENCE DESIGN. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY AND WHETHER OR NOT TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING IN ANY WAY OUT OF TI REFERENCE DESIGNS OR BUYER'S USE OF TI REFERENCE DESIGNS.

TI reserves the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques for TI components are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers' products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers' products and applications, Buyers should provide adequate design and operating safeguards.

Reproduction of significant portions of TI information in TI data books, data sheets or reference designs is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in Buyer's safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed an agreement specifically governing such use.

Only those TI components that TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components that have **not** been so designated is solely at Buyer's risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.