SimpleLink™ ZigBee® Network Range Extender Reference Design

TIDesigns

(ACTIVE) CC2530-CC2592EMK-RD

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Description

ZigBee applications such as home and industrial automation, lighting, metering, and sensor networks could need longer RF transmission range and better sensitivity than the stand-alone CC2530 can offer. TI's new SimpleLink CC2530-CC2592 reference design pairs the cost-effective SimpleLink ZigBee CC2530 wireless MCU with SimpleLink CC2592 range extender improving the receiver sensitivity by 2-3 dB and increasing the total link budget to 120 dB, enabling significant improvements in the range of each node in the ZigBee network.

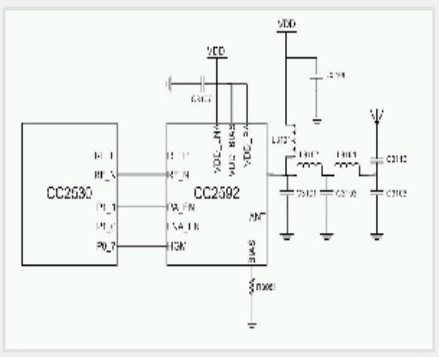
Features

- Optimized integrated power amplifier and low-noise amplifier to increase the transmission range of CC2530 by 4x
- Up to +22dBm output power to achieve more stable system with longer range
- 3dB increased sensitivity which means -100dBm sensitivity for CC2530 in ZigBee applications to reach longer distance between nodes
- A complete radio + range extender combo solution
- A complete system reference design including both the SimpleLink CC2530 ZigBee radio and the SimpleLink CC2592 Range Extender

Fully assembled board (shown above) developed for testing and performance validation only, not available for sale.

Schematic/Block Diagram

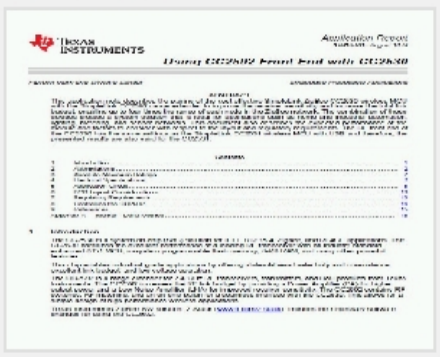
Quickly understand overall system functionality.



Download Schematic

Design Guide

Get results faster with test and simulation data that's been verified.



Download Design Guide

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

TI Devices (2)

Order samples, get tools and find more information on the TI products in this reference design.

Part Number	Name	Product Family	Sample & Buy	Design Kits & Evaluation Modules
CC2530	Second Generation System-on-Chip Solution for 2.4 GHz IEEE 802.15.4 / RF4CE / ZigBee	SimpleLink Solutions	Sample & Buy	View Design Kits & Evaluation Modules
CC2592	2.4 GHz Range Extender	SimpleLink Solutions	Sample & Buy	View Design Kits & Evaluation Modules

CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
CC2530	VQFN (RHA) | 40	Download	-

Texas Instruments and Accelerated Designs Inc. have collaborated together to provide TI customers with schematic symbols and PCB layout footprints for TI products.

Step 1: Download and install the Ultra Librarian software ZIP: 62MB

Step 2: Download the Symbol and Footprint .bxl file.

- read more -

Technical Documents

Application Notes (1)

Title	Abstract	Type	Size (KB)	Date	Views
Using CC2592 Front End with CC2530	Read Abstract	Multiple Files		18 Aug 2014	1,082

Design Files (2)

Title	Abstract	Type	Size (KB)	Date	Views
SimpleLink ZigBee Network Range Extender Reference Design Bill of Materials		PDF	62	19 Aug 2014	186
SimpleLink ZigBee Network Range Extender Reference Design Schematic		PDF	54	19 Aug 2014	565

Related Tools & Software

Software (1)

Name	Part Number	Software Type
A fully compliant ZigBee 2012 solution: Z-Stack	Z-STACK	Software Libraries

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