



A2530E24CZ1

Anaren Integrated Radio 2530 System on Chip Series

The A2530E24CZ1 is a high-performance, FCC & IC certified and ETSI-compliant connectorized radio module that incorporates the Texas Instruments CC2530 SOC with a CC2591 Range Extender, all in the industry's smallest package: 11 x 19 x 2.5 mm. The module comes pre-loaded with Anaren's AIR-ZNP firmware for the ZigBee® Standard.

Features

General:

- 2.4-GHz IEEE 802.15.4 compliant RF transceiver
- Excellent receiver sensitivity and robustness to interference (-95dBm average)
- Wide input voltage range (2.2V – 3.6V)
- 100% RF tested in production
- Industry-standard U.FL connector
- Module weight approximately 0.7 grams

Current Consumption: (TC = 25°C, VDD = 3.0V)

- Active mode RX (CPU Idle): 28 mA
- Active mode TX (CPU Idle): 68 mA @1dBm, 78mA @8dBm (limit for ETSI compliance), 106mA @ 13dBm (limit for FCC/IC compliance)
- 3 Low power/sleep modes from 1uA to 200 uA

Microcontroller:

- High-performance and low-power 8051 Microcontroller core with code prefetch
- 256KB in-system programmable flash and 8KB RAM with retention in all power modes

Firmware:

- Preloaded with Anaren's AIR-ZNP firmware, based on the TI Z-Stack™ for the ZigBee® Standard
- Supports SPI and UART communication
- Driver library included for MSP430™ and Stellaris® MCUs, which abstracts functionality
- Over 30 code examples for a paired MCU included to demonstrate functionality, including:

Button Blink: Blinks LED when button pressed

Hello World: Outputs 'Hello World' to the PC via USB

Get Module Version: Displays module version

Get MAC Address: Displays internal MAC address

Write NV Items: Writes to user-accessible non-volatile memory

Read NV Items: Reads user-accessible non-volatile memory

Read Radio GPIO: Displays value of module GPIO 1-4

Write Radio GPIO: Writes values to module GPIO 1-4

Coordinator Function: AF/ZDO, Simple API, or Secure

Router Function: AF/ZDO, Simple API, or Secure

End Point Function: AF/ZDO

RF Tester: RF test utility

Range Test: Test utility to show link quality (LQI)

Packet Error Test: Test utility to show packet error rate (PER)

AND MANY MORE!

Benefits

- Minimal RF engineering experience necessary
- Minimal ZigBee® experience necessary
- Easy to program and implement, short design cycle
- No additional "Intentional Radiator" certification required (FCC CFR 47 Part 15, IC RSS-210)
- Minimal real estate required
- Easily implemented on a two layer PCB
- No additional harmonic filtering required
- 100% RF-tested in production
- Common footprint for similar products in family
- No additional DC decoupling required
- Includes IEEE 802.15.4 MAC Timer
- CSMA/CA hardware support
- Accurate Digital RSSI/LQI support
- Battery monitor and temperature sensor
- AES Security co processor
- Operating temperature -40 to +85°C

Applications

ZigBee® Light Link control systems, ZigBee® systems, Home/building automation, lighting systems, low power wireless sensor networks, consumer electronics, industrial control and monitoring.

PLEASE NOTE: Additional information on the Texas Instruments CC2530 and CC2591 devices can be found in the company's latest datasheet release at <http://www.ti.com>



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