


Anaren Integrated Radio

# BoosterPack Series



## A2530R24A-LPZ

**The A2530R24A-LPZ is an AIR Module BoosterPack kit for the MSP430™ Value Line or Stellaris® LaunchPad Development Kit. This kit eases the development of products intended to wirelessly communicate in compliance with the ZigBee® Standard*. The BoosterPacks feature an A2530R24AZ1 AIR module (based on TI's CC2530 low-power -RF chip) and are loaded with the Anaren AIR-ZNP firmware (based on TI's Z-Stack™ for the ZigBee Standard).**

## Features

Kit:

- Includes three A2530R24A AIR Module BoosterPacks, for connection to TI's MSP430 or Stellaris LaunchPad development tool (not included)
- Each BoosterPack includes an on-board MSP430G2553IN20 Value Line microprocessor, pre -flashed with Anaren's AIR-ZNP firmware (based on TI's Z-Stack for the ZigBee Standard)
- For Stellaris operation, simply remove the MSP430 MCUs, and load the Stellaris firmware via USB from the included CD
- CD contains all the software, MSP430 & Stellaris drivers, application notes, Quick Start Guide, and more to get started
- Includes one 2xAA Battery Holder for remote operation

AIR Module:

- Incorporates TI's CC2530 SOC
- Tiny 11x19x2.5 mm footprint
- Choice of integral antenna or connector
- Pre-certified to FCC/IC and ETSI compliant
- Low power consumption
- Low cost, starting at $12/ea for 10K+ (see back for more details)

Firmware:

- Based on TI Z-Stack, Anaren's AIR-ZNP firmware solution includes time-saving API, driver library, and 30+ code examples (see back for more details)

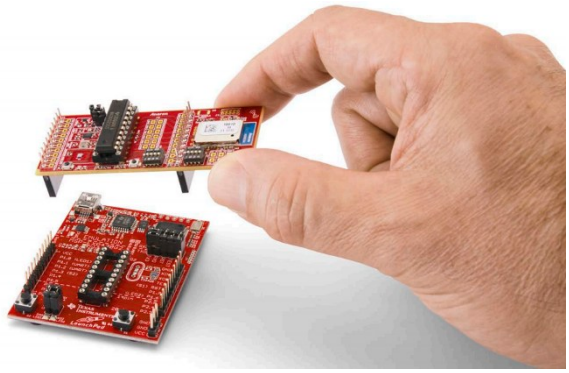


## Benefits

- Provides "out of the box" wireless connectivity for easier development of applications based on the ZigBee Standard
- Includes AIR-ZNP firmware solution (based on TI's Z-Stack), which compresses time to market by greatly reducing the learning curve and development time
- Provides an excellent learning/development tool for all levels of ZigBee expertise – as well as a clear, easy-to-understand migration path from development to production
- Part of the *AIR Support—for ZigBee*, a total solution from Anaren that includes development tools, free firmware and applications support, and more

## Applications

The A2530R24A-LPZ BoosterPack kit eases the implementation of wireless for a wide range of applications, including: ZigBee Light Link control systems, Home/building automation, lighting systems, low power wireless sensor networks, consumer electronics, industrial control, monitoring, among many others.



*The A2530R24A BoosterPack snaps onto the MSP430 LaunchPad (shown) or the Stellaris LaunchPad (each sold separately).*

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## Product overview



General:

- 2.4-GHz IEEE 802.15.4 compliant RF transceiver
- Excellent receiver sensitivity and robustness to interference (-90dBm average)
- Wide input voltage range (2.2V – 3.6V)
- 100% RF tested in production
- Module weight approximately 0.7 grams

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

- Active mode RX (CPU Idle): 25 mA
- Active mode TX (CPU Idle): 29 mA @0dBm, 34mA @4dBm *(module MAX output power, complies with FCC, IC, and ETSI limits)*
- 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

AIR-ZNP Firmware:

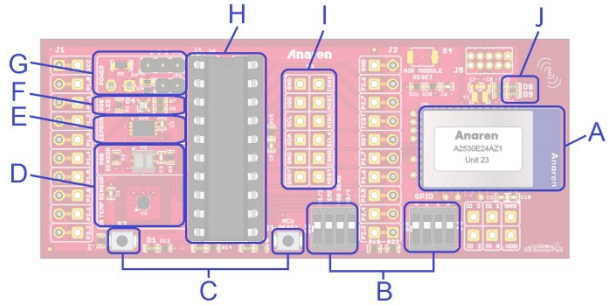
- Preloaded with Anaren's AIR-ZNP firmware, based on the TI Z-Stack™ for the ZigBee® Standard
- Supports SPI and UART communication
- Driver library included for MSP430™ and Stellaris® MCUs, which abstracts functionality
- Over 30 code examples for a paired MCU included to demonstrate functionality,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

*This product is not to be used in any implantable medical device or external medical device intended to regulate or monitor biological functions, including but not limited to devices such as pacemakers, defibrillators, cardiac resynchronization devices, pressure sensors, biochemical stimulators and neurostimulators. ANAREN MAKES NO WARRANTY OF FITNESS OR MERCHANTABILITY OF THIS PRODUCT FOR ANY USE OF THIS TYPE. Anaren shall not be responsible for any consequential damages arising from the sale or use of this product for any use of this type. The ultimate user of the product assumes all risk of personal injury or death arising from a prohibited use.*

***IMPORTANT:*** *The A2530R24A-LPZ BoosterPack is a tool to aid in the development and testing of wireless communication applications; it is not to be used in the actual production of wireless end-products or for resale as a wireless communications network.*

## Layout Information

BoosterPack features shown below; see User's Manual for more information.




| | | | |
|---|---|---|---|
| A | AIR Radio Module | F | Tri-color LED |
| B | Control switches | G | Current sensor *(module or full-board)* |
| C | "LaunchPad" Switches & LED's | H | MCU (pre-mounted & flashed) |
| D | Sensors *(IR temperature, RGB light)* | I | $I^2C$ and SPI external connection |
| E | EEPROM | J | AIR Module LEDs (2) |

*To view the entire family of AIR modules & development tools, please visit our website at:*

http://www.anaren.com/air



**PLEASE NOTE:** Additional information on the Texas Instruments CC2530, MSP430 & Stellaris LaunchPads, and Z-Stack firmware for the Zigbee Standard can be found at http://www.ti.com

## Nomenclature

**A2530R24A-LPZ**

1 2 3 4 5

| | | |
|---|---|---|
| A | | (Anaren) |
| 1 | Chip series | (CC1101, CC110L, CC2500, CC2530) |
| 2 | Function | (R = radio only, E=Range Extender) |
| 3 | Frequency band | (x100MHz) |
| 4 | Form factor | (A = Internal Antenna) |
| 5 | Module Type | (EM1 = Eval Module, EZ4x = EZ-430 Module, LPx = BoosterPack) |

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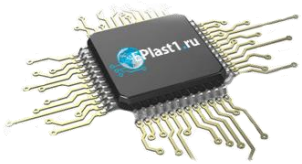
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- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Экспресс доставка в любую точку России;
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Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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