ZLE70250

Product Preview

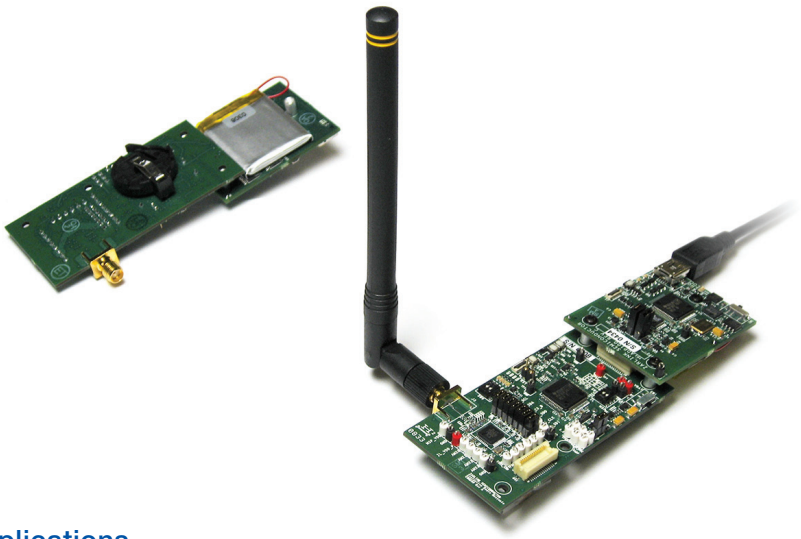
Application Development Kit for the ULP Sub-GHz RF Transceiver

Microsemi's ZLE70250 Application Development Kit (ADK) enables rapid evaluation, prototyping, and development of radio frequency (RF) telemetry systems that use the company's ZL70250 ultra-low-power (ULP) Industrial Scientific and Medical (ISM) transceiver technology.

The ZLE70250 ADK combines hardware and software to create an end-to-end ISM communication system using the ZL70250, operating in either the 863- to 870-MHz band (EU) or the 902- to 928-MHz band (US) with only 2 mA peak current draw at a range of up to 100 meters.

The kit demonstrates the ZL70250's exceptional energy efficiency, high integration, and high data rate capable of supporting continuous monitoring and voice applications.

Using the ZLE70250 ADK, customers can quickly create their own custom board designs and use Microsemi software as a starting point for software development for specific ZL70250-enabled ISM-band RF telemetry systems. We also offer the Z-Star protocol stack, which supports wireless sensor networks (see the Product Brief for the ZL70250 WSN Evaluation Platform with Z-Star Protocol).



Applications

The ZLE70250 ADK facilitates rapid development and evaluation of ZL70250-based RF communication systems used in power-critical applications including:

- Medical telemetry
- Wireless Sensor Networks (WSNs)
- Wireless blood glucose monitoring
- Voice communication
- Applications relying on energy harvesting or battery miniaturization
- Remote controls

Supports Rapid Product Development of RF Telemetry Systems

- ADK includes ZL70250 transceiver, enables industry's lowest peak power and highest efficiency RF communication solutions
- Common application microcontroller enables rapid integration of customer-specific designs
- Optimized matching circuit to standard 50 Ω and provided antenna showcases a 2-mA RF system solution with a range up to 100 meters
- Extensive hardware documentation including board schematics, layout, Gerber files, and Bill of Material (BOM) enables faster development of customer-specific systems
- Software (written in C) with thoroughly commented source code available to support product development
- Periodic software upgrades to enhance functionality and support advanced features
- Out-of-the-box solution—all hardware and software provided to operate the ADK, only requires PC to run graphical user interface (GUI) software

Ordering Information

The ZLE70250 ADK is available for qualified customers (order number ZLE70250BADA). For ordering information, contact Microsemi's Medical Product Group sales (http://www.microsemi.com/cmpg/hs/sales_medicalproducts.htm). For detailed information on Microsemi's ISM-band radio transceiver technology, please refer to our website (http://www.microsemi.com/cmpg/hs/82_ZL70250.htm).

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The ZLE70250 ADK includes all hardware and software required to quickly and easily design RF communication systems based on the ZL70250 ULP RF transceiver.

Application Development Platform (ADP100) board: Bridge board with integrated USB2.0 support to allow for interfacing between a PC running the ADK software and a Microsemi RF evaluation mezzanine board. The ADP100 provides two programmable power supplies with measurement capability to its mezzanine board. The USB-rechargeable Li-Ion battery allows the ADP100 and its mezzanine board to run disconnected from the host PC for hours.

Evaluation RF Mezzanine (ERM250) board: Mezzanine board that plugs into an ADP and provides all capabilities to develop a ZL70250-based wireless sensor. The RF section includes the ZL70250 clocked at 24.576 MHz, probe points of key digital and analog signals, a matching network for 863- to 928-MHz operation, and an SMA-based interface to a standard 50-Ω antenna. A commonly used microcontroller with JTAG debug interface controls the ZL70250. A light sensor, a temperature sensor, and a 32-kHz RTC crystal connected to the microcontroller provide all the functionality required for the development of a wireless sensor. The ERM250 can either be powered by the ADP100 for convenience or by its own on-board power supply from any 2.7- to 10-volt source, including a battery (a CR2032 holder is provided on the back of the board) or an energy harvester, to allow for standalone operation.

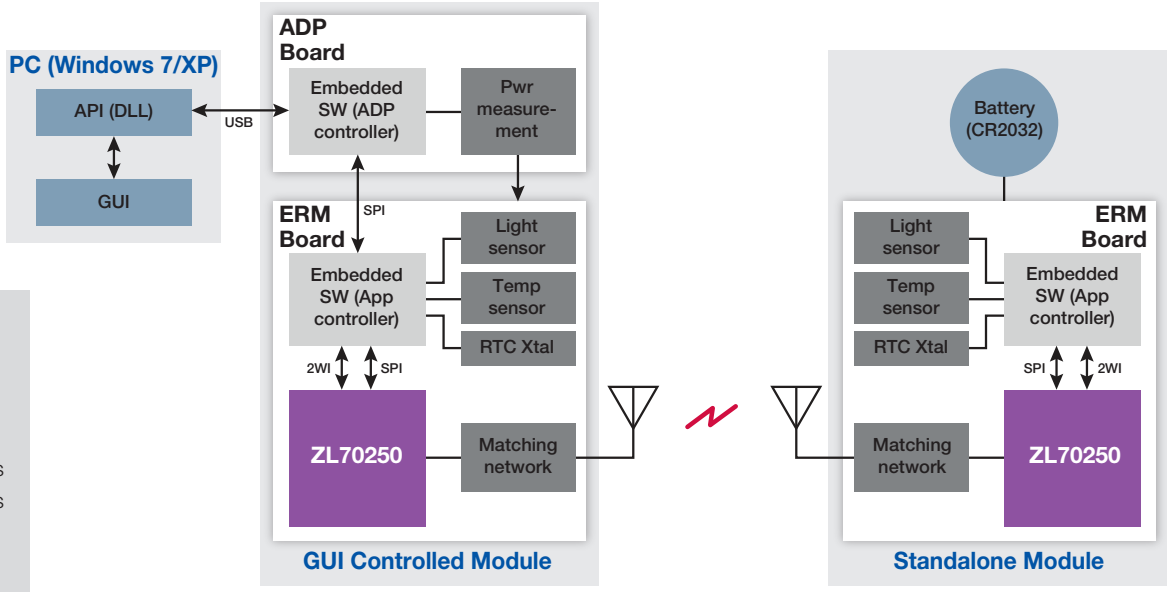
Programmer Cable Adapter (PCA100): Adapter board to enable programming/code download and debugger support to the ADP and application microcontrollers.

Antennas: A pair of 868-MHz and 915-MHz whip antennas are provided in the kit.

Embedded Firmware: For the ADP100 and ERM250, enables setup and control of the ZL70250 residing on the ERM250. It runs on each board's commonly used microcontroller. This example code may be modified for specific customer systems incorporating the ZL70250 device.

PC Software: Software compatible with Windows-based PCs included on CD-ROM in the ADK with an easy-to-run installation executable. The GUI application provides a user-friendly visual interface for controlling and demonstrating the capabilities of a ZL70250-enabled RF system including trim and tune, Clear Channel Assessment (CCA), Bit Error Rate (BER), and missed packets, as well as accessing ZL70250-specific registers. It communicates through a well-defined application programming interface (API) realized through a Windows DLL to the embedded firmware running within the application microcontroller on the ERM250 via the ADP100 board.

Full Documentation: Provided on CD-ROM, includes ADK Getting Started Guide, Source Code Overview, and Board-Level Documents (schematics, layouts, Gerbers, and BOM for all included boards).



Kit contents:

- 2 ADP100 boards
- 2 ERM250 boards
- 1 PCA100 board
- 2 868-MHz antennas
- 2 915-MHz antennas
- 2 USB cables
- 1 CD-ROM

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Microsemi Corporation (NASDAQ: MSCC) offers a comprehensive portfolio of semiconductor solutions for: aerospace, defense and security; enterprise and communications; and industrial and alternative energy markets. Products include high-performance, high-reliability analog and RF devices, mixed signal and RF integrated circuits, customizable SoCs, FPGAs, and complete subsystems. Microsemi is headquartered in Aliso Viejo, Calif. Learn more at www.microsemi.com.

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