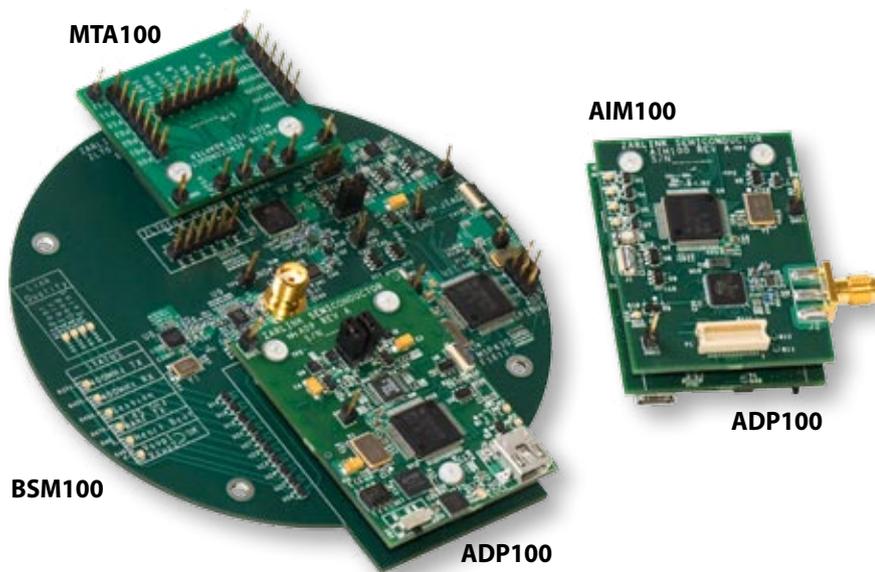


PRODUCT PREVIEW

Zarlink's ZLE70101 Application Development Kit (ADK) enables rapid evaluation, prototyping and development of medical telemetry systems using the company's ZL70101 Medical Implant Communication Services (MICS) implantable transceiver technology.

The ZLE70101 ADK combines hardware and software to create an end-to-end MICS communication system using the ZL70101 integrated media access controller (MAC) and physical layer (PHY) device and operating in the 402 – 405 MHz band for normal transmit and receive data operation with only 5 mA current draw at a range of 2 meters. The kit demonstrates the ZL70101 IC's high data rate and reliable communications link via support for operation at 800/400/200 kbps bi-directionally with forward error correction (FEC) and cyclical redundancy check (CRC) error detection. The ADK also supports the use of Zarlink's novel 2.45 GHz wake-up link to achieve ultra-low power consumption of 250 nA during sleep/listen mode.

Using the ZLE70101 ADK, customers can quickly create custom board designs and use Zarlink software as a starting point for software development for specific ZL70101 enabled MICS RF telemetry systems.



Applications

The ZLE70101 ADK facilitates faster development and evaluation of ZL70101 MICS-based RF telemetry systems used in implantable medical devices and external monitoring and programming equipment, including:

- ➔ Pacemakers
- ➔ Implantable cardioverter defibrillators (ICDs)
- ➔ Neurostimulators
- ➔ Implantable drug pumps
- ➔ Bladder control devices
- ➔ Implantable physiologic monitors

Speeding Design of Medical Telemetry Systems

- ➔ ADK includes ZL70101 transceiver IC with integrated MAC & PHY, enables industry's lowest power and highest data rate MICS compatible RF telemetry solutions
- ➔ Common applications micro-controller for both the base station and implant systems enables rapid integration of customer-specific designs
- ➔ Optimized matching circuit and antenna included on board designs showcases MICS system solution with a range of 2+ meters in air
- ➔ Extensive hardware documentation including board schematics, layout, Gerber files, and bill of material (BOM) enables faster development of customer-specific systems incorporating MICS functionality
- ➔ Large base of software (written in C) with thoroughly commented source code available to speed understanding and reuse for custom development
- ➔ Periodic software upgrades to 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 ZLE70101 ADK is available for qualified customers. Contact Zarlink's [Medical Communication sales](http://ulp.zarlink.com/ulp_sales_contacts.htm) (http://ulp.zarlink.com/ulp_sales_contacts.htm) for information (order number ZLE70101 BADA). For detailed information on Zarlink's MICS transceiver IC technology, please refer to the ZL70101 Product Preview and Data Sheet.

ZLE70101 MEDICAL TELEMETRY APPLICATION DEVELOPMENT KIT

APPLICATION

The ZLE70101 ADK includes all hardware and software required to quickly and easily design medical telemetry systems based on the ZL70101 Medical Implantable RF Transceiver IC.

Applications Development Platform (ADP100) board: Bridge board with integrated USB2.0 support to allow for interfacing between a PC running the ADK GUI software and an implant or base station board.

Applications Implant Mezzanine (AIM100) board: Daughter card that plugs into an ADP and performs all implant MICS related communications processing. It includes the ZL70101 IC, discrete components including matching circuits for 400 MHz/2.45 GHz operation, a commonly used application microcontroller with JTAG debug interface connected to the ZL70101 IC over an industry-standard SPI bus, and an SMA-based interface to an antenna. It runs via an included battery to simulate normal implant operation.

Base Station Mezzanine (BSM100) board: Daughter card that plugs into the ADP100 and performs all base station MICS related communications processing. It includes the ZL70101 IC, 2.45 GHz wake-up transmitter sub-system, discrete components including matching circuits for 400 MHz/2.45 GHz operation, a commonly used application microcontroller with JTAG debug interface connected to the ZL70101 IC over an industry-standard SPI bus, and an antenna interface.

MICS Test Adapter (MTA100): Adapter board enables the probing of key digital and analog signals from the ZL70101 IC on either the BSM100 or AIM100.

Programmer Cable Adapter (PCA100): Adapter board to enable programming/code download and debugger support to the Application Microcontroller.

Antennas: Zarlink has designed custom antennas for optimal performance in air over the MICS 402 – 405 MHz band as well as the 2.45 GHz band used for wake-up.

Embedded Firmware: For the ADP100, BSM100, and AIM100, enables setup and control of the ZL70101 residing in the BSM100 as well as the AIM100. It runs on each board's commonly used application microcontroller interfaced over a SPI bus to the ZL70101. This

example code could be modified for specific customer systems incorporating the ZL70101 IC.

PC GUI: 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 the ZL70101 enabled MICS RF Telemetry system including clear channel assessment (CCA), wake-up, link setup and termination, calibration, as well as accessing ZL70101 specific registers. It communicates through a well-defined application programming interface (API) realized through a Windows DLL to embedded firmware running within the application microcontroller on either the BSM100 or AIM100 via the ADP100 board.

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

