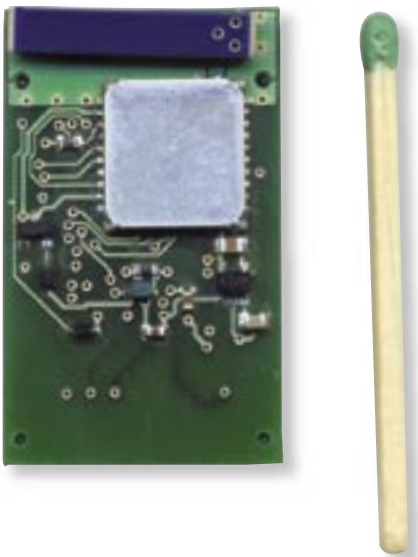


BluesenseAD

The solution for mobile wireless transmission of serial and analog signals



BluesenseAD is a miniaturized module for the simple integration of Bluetooth communication in mobile sensor-actuator-networks. Via AT-commands, Bluetooth connections can be established analog to a classical modem, and digital and analog data can be transmitted. It has been optimized with regard to range and current consumption for medical and mobile applications. Thanks to the special antenna design, a 25 m range is possible under normal conditions. Even if there is shadowing by people in the vicinity, the transmission range is still 15 m. The current consumption is 6 mA when data is transmitted with active sniff mode (1.28 s interval), which is especially advantageous for battery-operated applications.

BluesenseAD can be operated either as a Bluetooth master or slave. In slave mode, it waits for a connection query from a master. After the connection has been successfully established, data is exchanged between the master and the slave. In master mode, by means of commands which are sent from a host controller via the UART to BluesenseAD, modules in the vicinity can be searched for and a connection established to them. BluesenseAD has over two Bluetooth channels, over which analog or digital signals can be transmitted. For transmitting analog signals, a 12-bit A/D converter is integrated with 8 inputs. When one channel is used, the sampled values can be transmitted at up to 4000 Hz. The module can either be configured via Bluetooth or via the serial interface. With BluesenseAD, you can upgrade your own application to become a wireless one, quickly and cost-effectively, without having to become familiar with the technical details of Bluetooth technology.

Technical specifications

1. Functional description

- Can be used as master or slave (configurable)
- Bluetooth cable replacement up to 115.2 kbit/s
- Integrated 12-bit A/D converter with 8 inputs for data acquisition
- Configurable via Bluetooth and UART interface
- Current-saving modes can be activated
- Optimized for sensor applications and medical engineering
- Transmission Class 2
- Bluetooth Profil SPP

2. Technical data

- Power supply: 3.3 V +/- 0.1 V
- Current consumption: 220 µA stand-by
1.4 mA idle mode
35 mA TX 115.2 kbit/s
<6 mA current-saving mode active
- Dimensions: 37.6 mm x 21.5 mm x 7.4 mm
- Range: > 25 m, 15 m when shielded by nearby persons
- Interface: UART, 8 * 12-bit A/D converter

3. Fulfilled standards and regulations

- EN 60601-1-2: Medical electrical equipment – Part 1-2: General requirements for safety – Collateral standard: Electromagnetic compatibility – Requirements and tests
- R&TTE Directive 99/5/EC: Directive 99/5/EC on Radio Equipment and Telecommunications Terminal Equipment and the Mutual Recognition of Their Conformity
- EN 300328: Electromagnetic compatibility and Radio spectrum Matters (ERM) – Wideband transmission systems
- EN 301489-1,-17: Electromagnetic compatibility and Radio spectrum Matters (ERM) – Electromagnetic Compatibility (EMC) standard for radio equipment and services – Part 1: Common technical requirements, Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

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