

Announcing a compact 2.4 GHz radio transceiver module for industrial applications

Circuit Design, Inc, the leading supplier of low power radio modules, has announced the release of the STD-503, a 2.4 GHz radio transceiver module for embedding in industrial equipment.

With the globalization of the marketplace, there is a growing demand for industrial radio equipment that meets the requirements of a global market. The STD-503 operates in the 2.4 GHz band available worldwide. Designed to be embedded in equipment, this compact radio transceiver module was developed for industrial applications that require stable and reliable operation. With battery operation, it achieves line of sight radio communication beyond 300 m.

To ensure highly reliable radio communication in the congested 2.4 GHz ISM band, the module uses highly noise-resistant direct-sequence spread spectrum (DSSS) modulation, as well as a true diversity^{*1} receiver function for preventing signal dropout due to multi-path fading.

The data interface of the STD-503 is transparent, enabling users with proprietary protocols to use them without modification. In addition, the interface offers a high degree of freedom, enabling continuous transmission of LOW or HIGH signals without restriction.

Compared with Circuit Design's earlier models, the STD-503 is 50% smaller in volume through the use of smaller components and appropriate layout. In addition to frequency channel switching using command control inherited from earlier models, the STD-503 allows channel switching according to a preset channel plan using H/L control of dedicated channel switching pins. A maximum of 20 frequency channels can be saved in the plan.

Circuit Design developed its own ASIC with DSSS modulation and true diversity processing in order to guarantee the long-term supply of key radio components.

Shipment of samples will start from November 2014, with mass production scheduled to start from the first quarter of 2015.

Circuit Design will exhibit the product at the Electronica trade fair in Munich, Germany from November 11 to 14, 2014.

The technical features and applications of the STD-503 are as follows.

Technical features

- Direct sequence spread spectrum (DSSS)
- True diversity receiving
 - *1 True diversity: Two antennas, each with its own receiving circuit
- Communication range 300 m (LOS)
- Small and thin 40 × 29 × 5.5 mm



- RF connector MHF
- Low power operation 10 mW 3.3 V 65 mA
- Data rate 19.2 kbps
- Built-in data frame detection function
- Operating temperature range -20 to +65 °C
- European EN 300 440, American FCC Part 15.247, and Japan ARIB STD-T66 certification is scheduled

Applications

- Remote control of industrial equipment
- Industrial telemetry and monitoring systems

Download the image

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About Circuit Design

Circuit Design, Inc. designs and supplies low power radio modules for various application fields such as telecontrol, telemetry, alarms, serial data transmission and audio. The products comply with European ETSI, US FCC and Japanese ARIB standard.

Quality is assured with an ISO9001-certified design and manufacturing process based in Japan.

Enquiries | Development | Manufacturing

Circuit Design, Inc., Sales Division

7557-1 Hotaka, Azumino, Nagano 399-8303, Japan

TEL: +81 (0)263-82-1024 / FAX: +81 (0)263-82-1016

e-mail: info@circuitdesign.jp URL: <http://www.circuitdesign.jp>