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ADD5051-868-2-GEVK: Add-on kit for DVK-2 Evaluation Kit

Evaluation/Development Tool Description

Universal low power RF transceiver

AX5051 is a universal single-chip RF transceiver for the 433/868/915 MHz SRD bands. It is typically used for medium distances up to 1 km. The supported data rates for this transceiver are 1 - 600 kbps.

The AX5051 transceiver consists of an integrated RF front-end with modulator and demodulator, flexible communication controller and integrated voltage regulator. Base band data processing is implemented in the integrated communication controller for user-friendly communication and configuration via SPI interface. The integrated framing enables the use of low cost external micro-controllers.

Higher data rates of up to 350 kbps for FSK modulated data and 600 kbps for ASK/PSK modulated data differentiate this chip from the AXSEM narrow-band line of transceivers. The receiver sensitivities are -116 dBm at 1.2 kbps and -103 dBm at 100 kbps, the values can be reached for operation at 433 MHz, 868 MHz and 915 MHz. Together with an output power of up to 16 dBm this allows to build a system with an attractive link budget.

Designed for low power and direct battery operation

An integrated voltage regulation system allows the direct use of batteries and short start-up times enable time- and energy-efficient protocols. RX wake-on-radio operation with 1s duty-cycle at 100 kbps consumes just 5 ?A. The high efficiency PA has a flat output power characteristic over supply voltage and temperature. These performance details make the AX5051 ideal for battery powered portable applications.

Advanced receiver, transmitter and radio controller

The AX5051 supports FSK, MSK, PSK and ASK modulations. In transmit mode all modulations are shaped. The AX5051 features an easy to use protocol implemented in hardware. This guarantees shortest code size and lowest CPU usage of a microcontroller. CRCs are calculated automatically both in RX and TX. Digital spread spectrum is possible on all modulations.

External components are only a crystal, an antenna and a few passive components. All parameters of the AX5051 including modulation, frequency, deviation and output power can be programmed via an SPI interface. Systems built with the AX5051 provide cost-efficient, longest range bi-directional communication links.

Development kit comes with productivity enhancing complete development tool suite

AX5051 is supported by the DVK-2 kit. This is a complete and flexible ready-to-go solution for easy testing, evaluation and development with AXSEM RF ICs. It is suited for real performance tests using professional lab equipment, as well as for application code development.

The DVK-2 is based on the AX8052F100 MCU and AXSEM offers both the AXGen2-RadioLab for AX5051 GUI as well as the advanced graphic integrated development environment AX8052-IDE together with the open source and freely usable SDCC compiler to go with it.

Operation in the Chinese SRD band 470 - 510 MHz

AX5051 supports extended operation up to 510 MHz carrier frequency for a limited operation voltage range. All other features are equivalent.

Evaluation/Development Tool Information

Product	Status	Compliance	Short Description	Parts Used	Action
ADD5051-868-2-GEVK	Active	Pb-free	Add-on kit for DVK-2 Evaluation Kit	AX5051-1-TA05 , AX5051-1-TW30 , AX5051-1-WD1	