

RF Transceiver Module 868 MHz

Evaluation Module / Development Tool

Key Features

- RF transceiver module for the 868 MHz SRD band
- Data rates of up to 500 kbps
- Compact dimensions: 16 x 19.5 x 3.5 mm
- Integrated ceramic antenna, optional: external antenna connection
- Supports low-power applications and WOR (Wake-On Radio)
- Operating supply voltage: 1.8 to 3.6 V
- Designed exclusively for the European market
- For development purposes only



Description

The AMB8400-EM transceiver module (radio-only) is a radio solution based on the highly integrated TI CC1101 RF transceiver. The AMB8400-EM is an evaluation module / development tool and is designed for engineering prototyping only. The AMB8400-EM allows the design engineer to control the radio at the physical level using any microprocessor.

Integrated functions, including automatic appending and checking of a 16-bit checksum, address analysis and the option of using FEC (Forward Error Correction) in combination with interleaving, take much of the work from the host system in handling radio-specific tasks. In standard operating mode, the module provides two FIFOs each of 64 bytes for sending and receiving radio data.

Using an integrated timer the transceiver can also wake up automatically from low-power mode and process data via the radio interface (Wake-On Radio).

Measured field strength (RSSI value) offers the option of enhancing the quality of the radio link and a function to record the ambient temperature via a built-in sensor is also included. A software stack to form small radio networks (up to several hundred nodes) is provided free of charge.

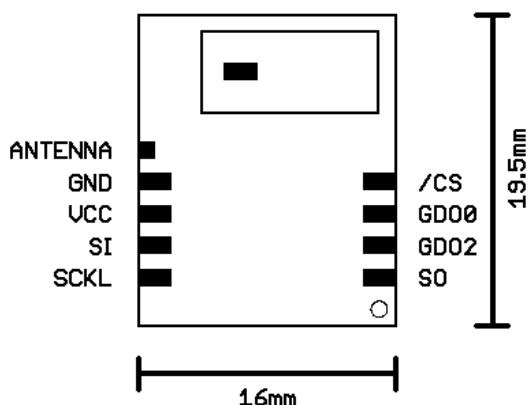
Interfaces

The AMB8400-EM is connected to a host system via SPI interface with bit rates of up to 10 Mbps. Two additional pins can be freely programmed to provide a variety of functions such as Clear Channel Assessment, CRC analysis and FIFO operations.

Range of Application

The AMB8400-EM evaluation module is designed for development purposes only.

Dimensions



Pin Assignment

Pad Name	Description
ANTENNA	Optional antenna connection
VCC	Positive supply voltage
GND	Ground
SI	SPI data input
SCLK	SPI clock
SO	SPI data output
GDO0	General-purpose pin
GDO2	General-purpose pin
/CS	SPI chip select

Specifications

Performance	Range ¹	Up to 300 m (integrated antenna) Up to 500 m (external antenna)
	RF data rate	1.2 to 500 kbps
	Interface data rate	Up to 10 Mbps (SPI)
	RF output power	Typ. 2 dBm e.i.r.p (10 dBm at 50 Ω)
	RF sensitivity ²	Up to -102 dBm (-110 dBm at 50 Ω)
General	Supply voltage	1.8 – 3.6 V
	Current consumption	TX: typ. 42 mA (integrated antenna) TX: typ. 31 mA (50 Ω) RX: typ. 17 mA Low Power: typ. < 1 μ A
	Dimensions	16.0 x 19.5 x 3.5 mm
	Operating temperature	-30 to +85 °C
	Weight	< 1 g
	Antenna	Integrated ceramic-antenna External antenna connection (optional)
	RF transceiver	Texas Instruments CC1101
RF technology	Integrated functions	Address handling, CRC check, FEC, Interleaving, Clear Channel Assessment, Digital RSSI-measurement
	FIFO	64 Byte each with TX and RX
	Frequency range	779 – 928 MHz
	Supported modulation	OOK / ASK, 2-FSK, 4-FSK, GFSK, MSK

¹ Range stated is calculated assuming line-of-sight. Actual range will vary based upon specific board integration, antenna selection, register set-up and environment.

² Depending on register set-up.

Related Products

- **AMB8420** (868 MHz) short range radio module

Important Notice

This development tool is intended for use for **ENGINEERING DEVELOPMENT, DEMONSTRATION, OR EVALUATION PURPOSES ONLY** and is not considered by AMBER wireless to be a finished end-product fit for general consumer use.

Persons handling the product must have electronics training and observe good engineering practice standards. As such, this product is not intended to be complete in terms of required conformity to directives, design-, marketing-, and/or manufacturing-related protective considerations, including product safety and environmental measures typically found in end products that incorporate such semiconductor components or circuit boards. Operation of this product may cause interference with radio communications, in which case the user at his own expense will be required to take whatever measures may be required to correct this interference.

This development tool does not fall within the scope of the European Union directives regarding electromagnetic compatibility, recycling (WEEE) or CE, and therefore may not meet the technical requirements of these directives or other related directives.

Ordering information

Article no.	Description
AMB8400-EM	Evaluation Module: 868 MHz RF transceiver module with integrated ceramic-antenna
AMB8400-1-EM	Evaluation Module: 868 MHz RF transceiver module to connect with external antenna

Contact

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