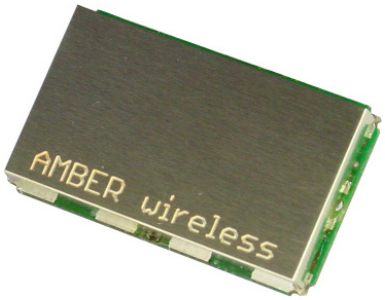
Compact Low-Cost Radio Module

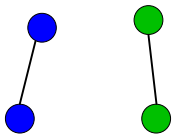
868 MHz SRD Band

Key Features

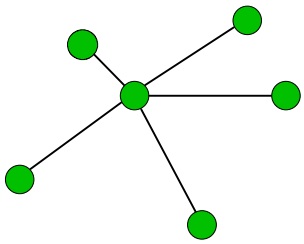


- Low-cost OEM radio module in 868 MHz SRD band
- Compact dimensions: 16 x 27.5 x 3.5 mm
- Supports low-power applications and WOR (wake-on radio)
- Integrated software stack with extensive functions
- Flexible addressing with up to 255 nodes in 255 networks
- Complies with requirements in R&TTE Directive 1999/5/EC
- Tape & Reel packaging for automatic component placement
- Also available as wireless USB adapter (AMB8465)

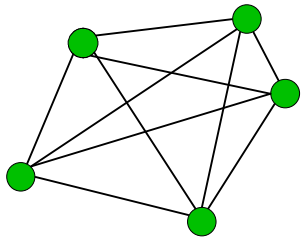
Network Topologies



Point-to-point



Point-to-Multipoint



Peer-to-Peer

Description

The AMB8425 is a compact and low-cost radio data transmission module for wireless half-duplex communication. The integrated microprocessor controls data communication, handling packet and checksum formation, addressing, monitoring of channel access and resending not-received packets. The host system does not have to perform any radio-specific tasks.

The module can be configured in many ways and supports data transfer with fast channel and address switching. Measured field strength (RSSI value) offers the option of enhancing quality of the radio link.

The GUI for the freely available Windows application AMBER-ACC makes it easy to set operating parameters. A USB stick version is available to easily connect the AMB8425 to a PC system.

The AMB8425 is constructed on an SMD design. If delivered in tape and reel packaging, the module is suitable for automatic component placement.

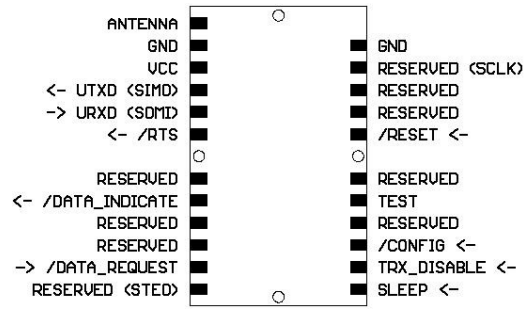
Interfaces

The AMB8425 is connected to a host system via the UART interface with bit rates of up to 115.2 kbaud. Other pins can be used for data flow control and to switch between operating modes. An SPI interface is included. Using appropriate firmware, the module is also suitable for autonomously recording digital or analogue signals.

Range of Application

Data collection, monitoring, remote control and sensor networks. Its compact dimensions and low power consumption make the radio module ideal for battery-powered devices.

Dimensions



Pin Assignment

Pad Name	Description
VCC	Positive supply voltage
GND	Negative supply voltage
ANTENNA	Antenna connection
UTXD, URXD	UART transmit , UART receive
/RTS	Ready to send/receive
/DATA_INDICATE	Signals incoming data
/DATA_REQUEST	Starts transmitting
SLEEP, TRX_DISABLE	Selection of low-power mode
/CONFIG	Change into command-mode
/RESET*	Reset-Input

Specifications

Performance	Range*	Up to 700 metres
	RF data rate	Up to 250 kbps
	Interface data rate	Up to 115.2 kbps (UART)
	Output power	10 dBm (50 Ω)
	RF sensitivity	up to. -112 dBm (50 Ω)
General	Power supply	2.2 – 3.6 V
	Power consumption	TX: typ. 36 mA RX: typ. 24 mA Low Power: typ. < 1µA
	Dimensions	16 x 27 x 3.5 mm
	Operating temperature	-30 to +85 °C
	Weight	< 2 g
	Antenna	External antenna connector
	Microprocessor	Texas Instruments MSP430F22xx
	RF transceiver	Texas Instruments CC1101
RF technology	Addressing	up to 255 nodes on 255 networks
	Frequency range	865.0 – 868.6 MHz
	Channel spacing	50 kHz
	Modulation	2-FSK, MSK
	Supported topologies	Point-to-Point, Point-to-Multipoint, Peer-to-Peer
Conformity	Europe	EN 300220, EN 301489, EN 60950, EN 50371

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

Related Products

- **AMB8425-EV** Evaluation-Kit
- **AMB8465** USB Stick based on AMB8425

Ordering information

Item no.	Description
AMB8425	Low-Cost Radio Module868 MHz RF module
AMB8425-TR	Low-Cost Radio Module868 MHz RF module, Tape & Reel

Contact

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