Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

## Contact us

Compact Low-Cost Radio Module

868 MHz ISM Band

Key Features

- Low-cost OEM radio module in 868 MHz ISM 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 EU RED 2014/53/EU

- Can be delivered in tape and reel
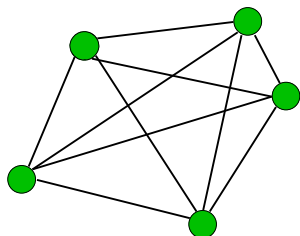
- Integrated ceramic antenna, optional: RF pin

Network Topologies
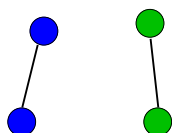
Point-to-point
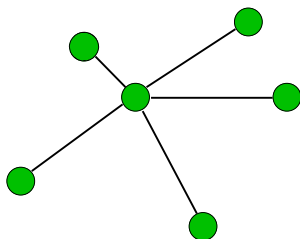
Point-to-Multipoint

Peer-to-Peer

Description

The AMB8420 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 and resending unreceived 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.

The AMB8420 is constructed on an SMD design and suitable for automatic component mounting. It can also be delivered in tape and reel packaging.

The AMB2520 and AMB4420 provide pin-compatible modules for the frequency ranges 2.4 GHz and 433 MHz. AMBER wireless also offers customer-specific solutions based on the AMB8420.

Interfaces

The AMB8420 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 can be implemented upon request (separate firmware). 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
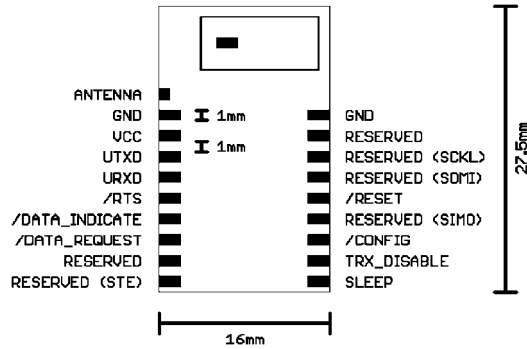
Pin Assignment

Pad Name	Description
VCC	Positive supply voltage
GND	Negative supply voltage
ANTENNA	Antenna connection (optional)
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 400 m (integrated antenna) up to 1000 m (external antenna)
	RF data rate	up to 100 kbps
	UART data rate	up to 115.2 kBaud
	Output power	typ. 2 dBm e.r.p (10 dBm at 50 Ω)
	RF sensitivity	down to -100 dBm (@4.8kbps, radiated), down to -108 dBm (@4.8kbps, 50 Ω)
General	Power supply	2.7 – 3.6 V
	Power consumption	TX: typ. 45 mA RX: typ. 20 mA Low Power: typ. 6 µA
	Dimensions	16.0 x 27.5 x 3.5 mm
	Operating temperature	-30 to +85 °C
	Weight	< 2 g
	Antenna	integrated ceramic-antenna RF pin (optional)
RF technology	Addressing	up to 255 nodes on 255 networks
	Frequency range	863.0 – 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

- **AMB8420-EV**
- **AMB8465**
- **AMB2520**

Ordering information

Item no.	Description
AMB8420	868 MHz RF module with integrated ceramic-antenna
AMB8420-TR	on Tape & Reel, Reflow solderable, packing unit 400pcs
AMB8420-2	868 MHz RF module with RF pin
AMB8420-2-TR	on Tape & Reel, Reflow solderable, packing unit 400pcs

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