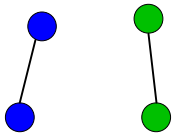
Long-Range Data Modem

868 MHz Band

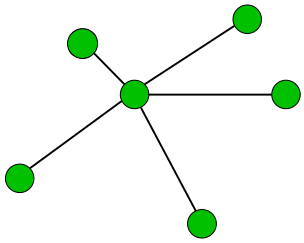
Key Features

- Multi-channel, narrowband RF data modem
- Transmit power 500 mW
- Range up to 20km (line of sight)
- RF data rates up to 19.2 kbps
- Integrated microcontroller (8 kbyte data buffer)
- Flexible software stack to suit a wide range of applications
- Complies with R&TTE directive 1999/5/EC
- Licence-free within Europe

Network Topologies



Point-to-Point



Point-to-Multipoint

Description

The AMB8355 is a powerful OEM radio data modem enabling cable-free and reliable transmission of data over long distances. The embedded microprocessor controls the complete wireless data communication, thus handling packet and checksum formation, addressing, monitoring of channel access and resending of unacknowledged data packets. A buffer memory is provided to enable transmission and reception of data independently of the connected host controller. The radio modem can be used as a transparent cable replacement.

The AMB8355 features a command set of various transmission modes to meet the requirements of the respective application. It provides a broadcast operation mode and it enables the user to address up to 255 devices per channel.

The GUI for the freely available Windows application AMBER-ACC makes it easy to set the operating parameters. The configuration of the parameters can alternatively be realised by means of AT-commands.

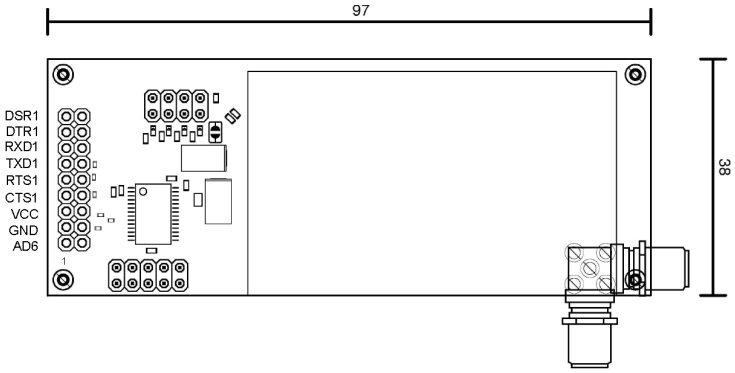
Interface

The AMB8355 is connected to a host system via RS-232 or 3.3V-TTL UART-interface with data rates of up to 115.2 kbaud. Alternative host interface options: RS-485 or USB.

Scope of Application

Telemetry, wide-ranging data collection, monitoring, surveying, remote control and sensor networks.

Dimensions



Pin Assignment ST1

Pin	Name	Description
1	AD6	Reserved
2	GND	Negative supply voltage
3	VCC	Positive supply voltage
4	CTS1	Clear to send
5	RTS1	Request to send
6	TXD1	Transmit data
7	RXD1	Receive data
8	DTR1	Data terminal ready
9	DSR1	Data set ready

Specifications

Performance	Range*	≥ 20 km (line of sight)
	RF data rate	2.4 / 4.8 / 9.6 and 19.2 kbaud
	Interface data rate	Up to 115.2 kbaud (UART)
	Output power	27dBm (@ 50 Ω, adjustable)
	RF sensitivity	-110 dBm (@ 50 Ω, 4.8 kbaud)
General	Power supply	7 to 30 Volt
	Current consumption	TX: 530 mA (7 V), 125mA (30 V) RX: 75 mA (7 V), 30mA (30 V)
	Dimensions	97 x 38 x 19 mm³
	Operating temperature	-30 to +70 °C
	Weight	45 g
	Antenna connector	SMA female
	Status indication	4 LEDs (Power, Status, RX, TX)
	Microprocessor	ATMEL AT91SAM7S64
	RF transceiver	500 mW transceiver AMB8315
RF technology	Addressing	Up to 255 nodes
	Frequency range	869.40 to 869.65 MHz
	Channel spacing	25, 50 and 100 kHz (depending on RF data rate)
	Number of channels	Up to 8 (depending on RF data rate)
	Modulation	2-GFSK
	Supported topologies	Point-to-Point, Point-to-Multipoint

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

Related Products (868 MHz)

- **AMB8420** Low-Cost RF module
- **AMB8350** RF Data Modem
- **AMB8400** Low-Cost RF Transceiver
- **AMB8310** Medium-Range RF Transceiver
- **AMB8315** Long-Range RF Transceiver

Ordering Information

Item no.	Description
AMB8355	868 MHz Long Range Data Modem

Contact

AMBER wireless GmbH
Albin-Köbis-Straße 18
D-51147 Cologne
Tel.: +49 (0) 2203-699195-0
E-mail: info@amber-wireless.de
Internet: www.amber-wireless.de