Westline Electronic Engineering

Radio to RS485 ATB Protocol Converter

RDB9-2.4G

The **RDB9-2.4G** radio module is a cable replacement device used in ATB communication networks. It will transparently convert ATB frames between the radio side and the RS485 port of master and slave ATB devices. The **RDB9-2.4G** module can be combined with the **USBRF-2.4G** variant which replaces the RS485 port with a USB interface. The module is typically connected to the RS485 port of a slave device.

The converter uses a fixed radio channel which is user configurable and must be used by all modules in the same network.

The module complies with the operating requirements of EN 300 328 V2.2.2 and AS/NZS 4268:2017 as demonstrated in EXT-220223-002-02 RDB9-2.4G Radio test report, 2103038STO-111.

Features

- 2.4 GHz ISM band
- Radio activity signaling
- Half-duplex, master-slave architecture

Applications

- Cable replacement in ATB networks

Principles of operation

A typical ATB network uses a RS485 differential bus topology. When cabling is difficult or undesirable the whole or part of the network can be replaced with an equivalent radio link.

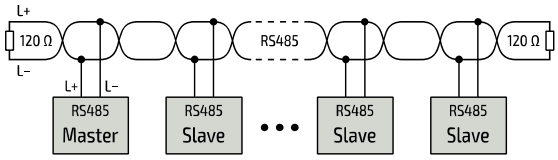


Figure 1 — Typical RS485 ATB network.

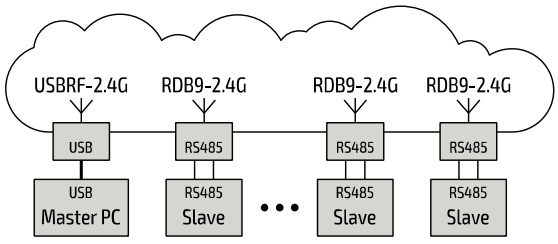


Figure 2 — Pure radio ATB network.

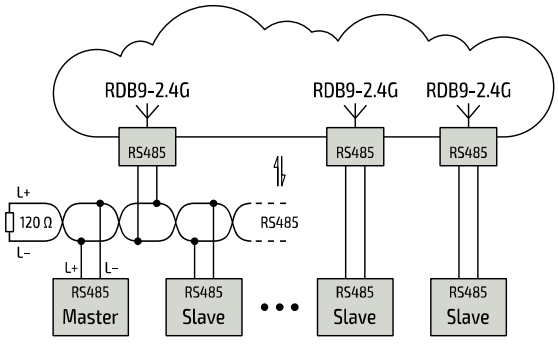


Figure 3 — Hybrid ATB network.

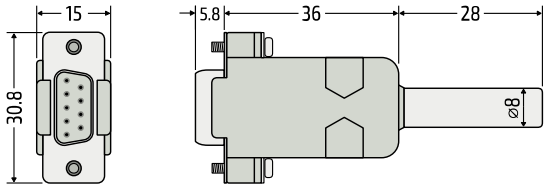
Technical specifications

Power supply	5 V_{DC} ±10% / 20 mA max.
Modulation	GFSK
Operating frequency	2402 MHz ÷ 2480 MHz
Channel bandwidth	1 MHz
Channel separation	1 MHz
Number of channels	79
First channel	2 (2402 MHz)
Operating temperature	–10 — 50 °C
Weight	15 g

External connections

DB9 connector	Function
1	+5 V_{DC} power supply
5	Ground
8	L+ (high for logic 1, low for logic 0)
9	L- (low for logic 1, high for logic 0)

Mechanical data



Dimensions in mm

Ordering code

RDB9-2.4G	Standard module

NCC statement

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