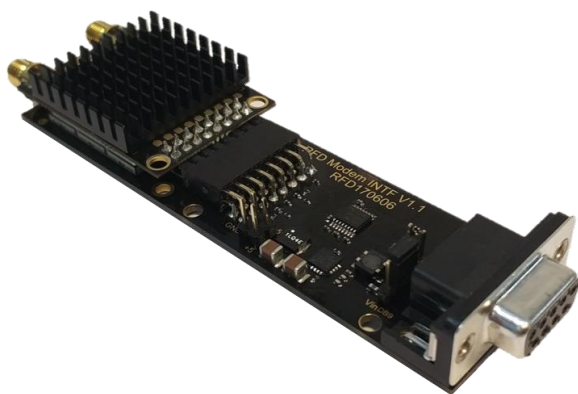


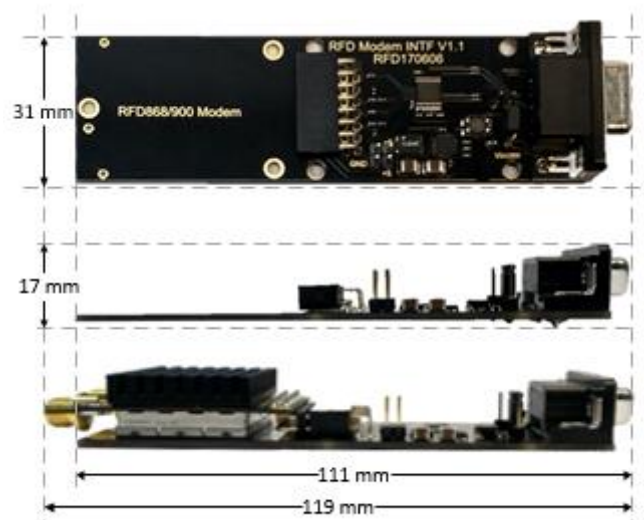


# RS232/TTL Modem Interface Data Sheet

Product Specifications and Performance



\*Modem not included



## Features

- RS232/TTL translation
- DB9 female serial port connector
- Selectable external power supply input
- (2X) 5 V fixed output voltage connectors
- Weight of 22g

## Applications

- RS232/TTL modem interface

## Operational

- Recommended Operating Voltage Supply:  
6V to 17 V
- Temperature range:  
-40°C to +85°C
- Dimensions (Length x Width x Height):  
111 mm x 31 mm x 12.8 mm
- Output current:  
Up to 1.5 A

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## 1 Features

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The RFDesign RS232/TTL modem interface presents an inexpensive, compact and low weight solution to enable RS232 communication with the RFD 868+/x and RFD 900+/x radio modems of RFDesign. (The different modem datasheets can be found in [Section 6 - Useful Links](#).)

Furthermore, it offers users the flexibility to choose whether to supply the board through the DB9 connector or from an input 0.1" header connector with a wide range of input voltages. In addition, two 5 V fixed output voltage 0.1" header connectors have been placed to supply external circuitry if required.

The key features are summarized below:

- Selectable external power supply input between 6 V and 17 V.
- (2X) 5 V fixed output voltage connectors
- Output current up to 1.5 A.
- Temperature range: -40°C to +85°C
- Dimensions (Length x Width x Height): 111 mm x 31 mm x 12.8 mm
- Weight of 22g

## 2 Choosing Input Power Supply

Two different input power supply paths can be chosen through the connector J2 using a jumper (See images below). If the jumper is set as seen in the image B, power will be supplied to the board through the pin 9 of the DB9 female connector; on the other hand, if the jumper is in the position of the image C, it will be supplied through an external power supply connected to the connector P4. (Refer to [Section 3 – Maximum Ratings](#) for supply range values). From here on, the two different input power paths will be referred as VinDB9 and Vin2 respectively.

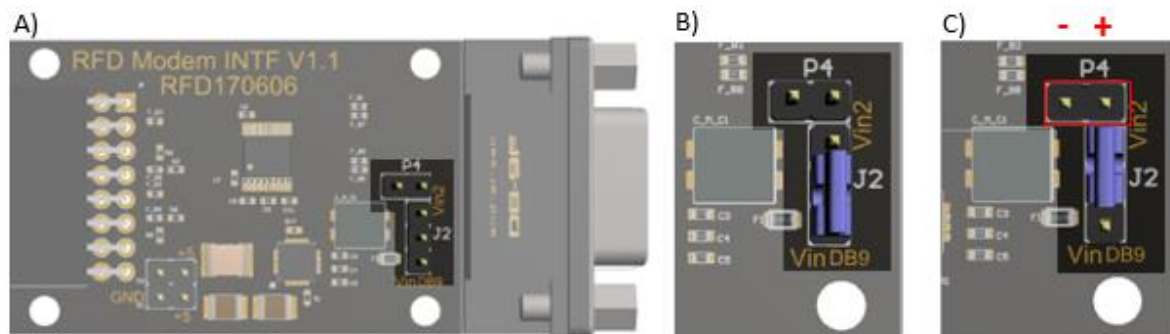


Figure 2-1: Input power supply path choice through jumper J2.

## 3 Maximum Ratings

The recommended operating conditions are specified below. Any other conditions beyond those indicated in the next table are no implied and damage to the device may occur.

Power Requirements	
<b>Supply Input Voltage (VinDB9 and Vin2)</b>	6 V to 17 V
<b>Max Output Current</b> <sup>1</sup>	If: Vin < 8 V → 1200 mA If: Vin ≥ 8 V → 1500 mA
<b>Output voltage</b> <sup>2</sup>	3.5 V to 5.15 V

<sup>1</sup> Modem consumption must be taken into account to determine the load current available through connectors P1 and P2. Modem consumption will vary depending on modem configuration and can be estimated from the modem datasheets (see links in the [Section 6 Useful Links](#)).

<sup>2</sup> Fixed output voltage will be reduced for high output currents and low input voltages.

Communications	
<b>Serial Interface Data Rates</b>	2400, 4800, 9600, 19200, 38400, 57600, 115200bps

## 4 Pin Configuration

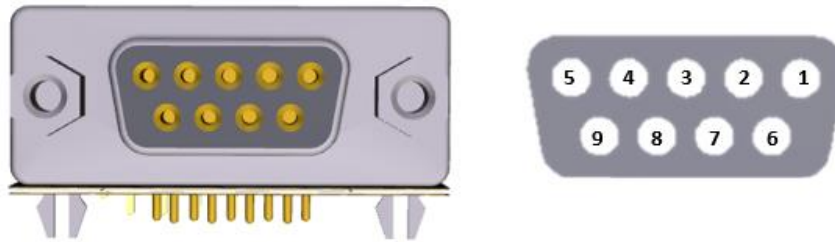


Figure 4-1: modified DB9 pinout.

Pin #	Name	Direction	Description	Max Voltage [V]
1	-	-	-	-
2	Rx	Output	RS232 Data Out	3.3
3	Tx	Input	RS232 Data In	3.3
4	-	-	-	-
5	GND_in <sup>1,2</sup>	-	Ground	0
6	-	-	-	-
7	RTS	Input	Request to send	3.3
8	CTS	Output	Clear to send	3.3
9	Vin_DB9	-	Power supply from DB9	17

<sup>1</sup> External GND\_in and GND\_out connection must be avoided to ensure proper common mode noise suppression.

<sup>2</sup> DB9 connector 5th pin is electrically connected to the ground pin of the external power supply input connector P4.

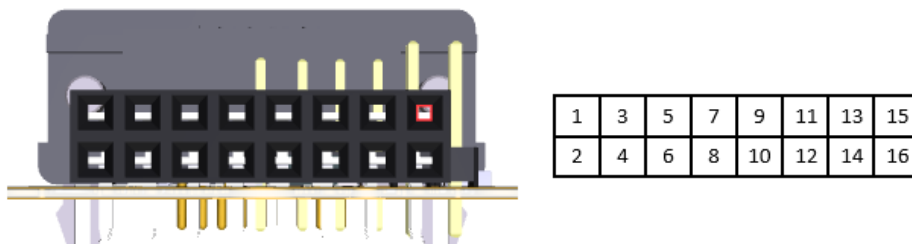


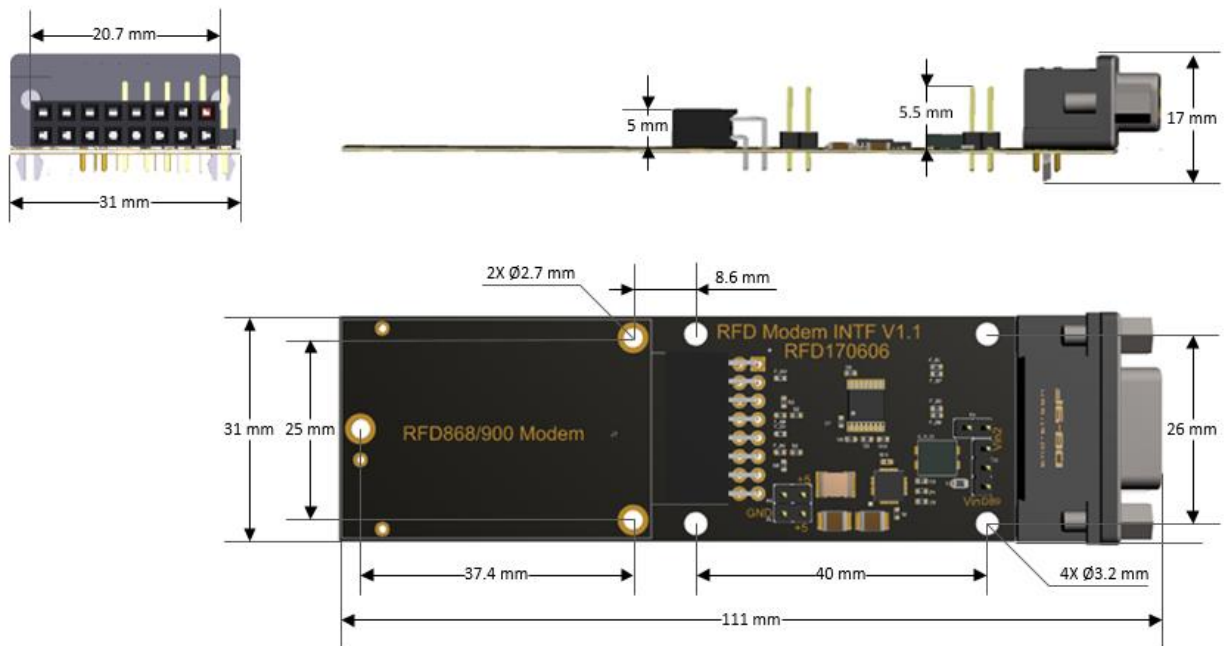
Figure 4-2: Female double row header pinout (to modem).

Pin #	Name	Direction	Description	Max Voltage [V]
1	GND	-	Ground	0
2	GND	-	Ground	0
3	CTS	Either	Clear to send	3.3
4	Vcc	-	Power supply	5
5	Vusb	-	Power supply from USB	5
6	Vusb	-	Power supply from USB	5

7	RX	Input	UART Data In	3.3
8	P3.4	Either	Digital I/O	3.3
9	TX	Output	UART Data Out	3.3
10	P3.3	Either	Digital I/O	3.3
11	RTS	Either	Request to send	3.3
12	P1.3	Either	Digital I/O	3.3
13	P1.0	Either	Digital I/O	3.3
14	P1.2	Either	Digital I/O	3.3
15	P1.1	Either	Digital I/O, PPM I/O	3.3
16	GND	-	Ground	0

Note 1: RFD Modems should be connected with the heat sink facing upwards for proper heat dissipation and electrical compatibility with the interface board.

## 5 Physical Dimensions



## 6 Useful Links

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### RFDesign Modems Datasheets

<http://files.rfdesign.com.au/docs/>

## 7 Document Revision History

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Version	Date	Changes
1.0		Release document