

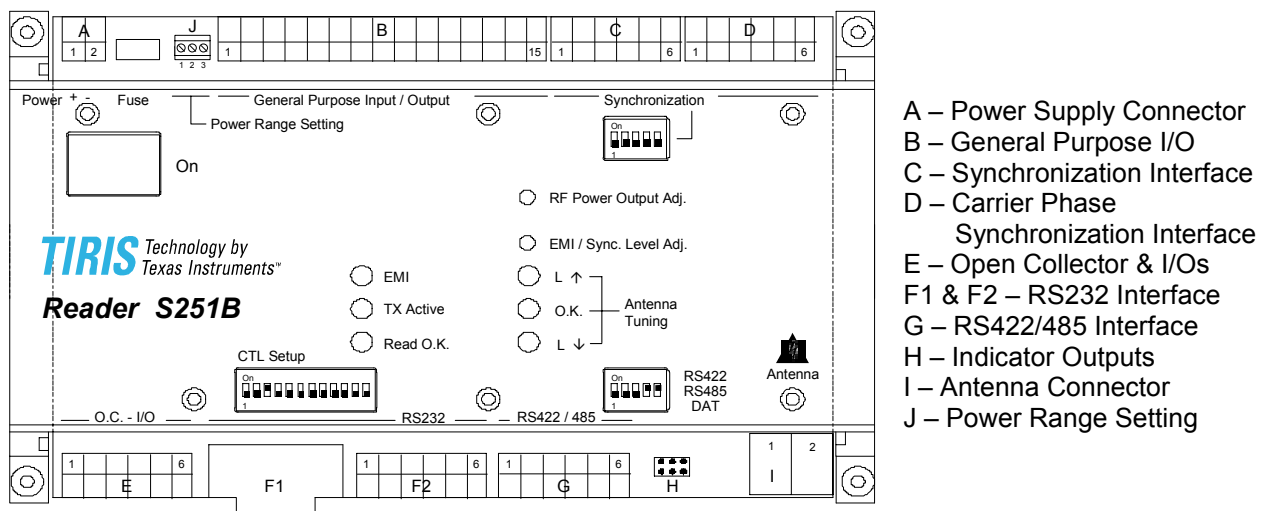


Getting Started

Series 2000 Reader System Reader S251B (RI-STU-251B)

For detailed operating, connection and set-up instructions, please refer to the corresponding Reference Guide (11-06-21-054) available from our TIRIS Document Center at <http://www.ti-rfid.com>

Connectors



The default switch settings for “CTL Setup”, “Synchronization” and “RS422/RS485/DAT” are shown in the figure above.

In order to gain access to the fuse and connectors J, H and I, please remove the upper and lower plastic cover strips. (remove the four screws holding the front panel)

Power Supply

Connect a regulated dc power supply (between 10 and 24V providing a minimum of 2A) to the reader – the polarity of the connection is shown on the front panel of the reader.

Set the Power Range Setting wire bridge to match your input voltage.
(Default setting pin 2+3 connected – input power 18 – 24V, operating temperature range –20°C to +70°C)

We recommend to use a linear power supply. If this is not possible and you wish to use a switched mode power supply, DO NOT use one that operates below 200kHz.
(Switched mode power supplies that operate below 200kHz might interfere with transponder signals and thus reduce the reading range.)

Default Configuration

CTL Setup switch 8 is in the OFF position; standard TIRIS default parameters are used. These are:

- Hardware interface RS232C, ASCII Protocol
- 9600 baud, eight data bits, no parity, one stop bit, X_{on}/X_{off} enabled
- Normal Mode, Wireless synchronization
- I/O 0 to 3 defined as input, I/O 4 to 7 defined as output and logic high

Antenna

The Reader S251B can be used together with an antenna which applies to the following specifications:

Parameter	Minimum	Maximum
Antenna Resonance Voltage	-	380 V _{peak}
Antenna Inductance	26μH	27.9μH
Antenna Q-factor	40	350

Operating Conditions

Exceeding any of the recommended operating conditions (especially supply voltage, supply current, operating temperature and antenna resonance voltage) may cause permanent damage to the Reader.

The Reader itself generates heat. Therefore - if incorporated into a housing - you must ensure (by proper design or cooling) that the temperature directly surrounding the reader does not exceed the operating temperature range.

Warning

Always ensure that the reader is switched off when making or breaking connections to it. Care must be taken when handling the reader. High voltage across the antenna terminals could be harmful to your health. If the antenna insulation is damaged, the antenna should not be connected to the reader.

Regulatory Notes

Prior to operating the RF-Module together with antenna(s), power supply and a control module or other devices, the required FCC or relevant government agency (CE) approvals must be obtained. Sale, lease or operation in some countries may be subject to prior approval by government or other organizations. It is the responsibility of the system integrators to get their complete system tested and to obtain approvals from the appropriate local authorities before operating or selling this system.

FCC Notices (U.S.A)

A typical system configuration containing the RF-Module has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules.

FCC ID: A92S251B

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Modification to this device shall not be made without the written consent of Texas Instruments Inc. Unauthorized modifications may void the authority granted under Federal Communications Commission Rules permitting the operation of this device.

CE Conformity (Europe)

A CE Declaration of Conformity is available for the RFM at TI*RFID Sales Offices. The equipment complies with the essential requirements of the Telecommunication Terminal Equipment Act (FTEG) and the R&TTE Directive 99/5/EC when used for its intended purpose.



Any device or system incorporating this module in any other than the originally tested configuration needs to be verified against the requirements of the Telecommunication Terminal Equipment Act (FTEG) and the R&TTE Directive 99/5/EC. A separate Declaration of Conformity must be issued by the system integrator or user of such a system prior to marketing it and operating it in the European Community.

It is the responsibility of the system integrators to get their complete system tested and obtain approvals from the appropriate local authorities before operating or selling the system.

Data Sheet

Series 2000 Reader S251B

Description

The Series 2000 Reader S251B provides all RF and Control Functions to communicate with 134.2 kHz HDX/FSK transponders. It sends an energizing signal to the transponder, modulates the RF signal to send data to the transponder, decodes and checks the received transponder data and transmits it via a standard serial interface (RS232, RS422/485). The reader includes a Dynamic Auto Tuning (DAT) function that automatically tunes a standard antenna to resonance and keeps it tuned during operation.



Specifications:

	RI-STU-251B
Operating Temperature	-20 to +70°C (depending on power consumption)
Storage Temperature	-40 to +85°C
Relative Humidity	<97% non-condensing, IEC 68-2-30 Test Db, 21 cycles
RF Transmit Frequency	134.2 kHz
Power Supply	10 to 24 Vdc, regulated
Memory	64 kByte EPROM for Firmware 1kBit EEPROM for Configuration 32 kByte RAM for Data
Data Storage	909 ID Codes (each 64bit)
Communications Interface	RS232, RS422/485
System Architecture	Point-to-point and point-to-multipoint
Communications Parameters	600 - 57600 baud, 7/8 data bits, even/odd parity
Communications Protocol	ASCII with Xon/Xoff handshake, TIRIS Bus Protocol
Inputs/Outputs	8 configurable digital I/Os, 2 open collector outputs
Antenna Tuning Range	26 to 27.9 μ H (Dynamic Auto Tuning)
Antenna Resonance Voltage	Max. 380 Vpeak
Transponder Types	134.2 kHz HDX/FSK
Dimensions (L*W*H)	(200 mm x 120mm x 120 mm) $\pm$ 1.5 mm
Weight	900 grams
Mounting	DIN rail TS35

For more information, contact the sales office or distributor nearest you. This contact information can be found on our web site at: <http://www.ti-rfid.com>

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