

# SRM-5A, SRM-5D

Short-Range Async Modem



**data communications**  
The Access Company

- Asynchronous transmission rate of up to 19.2 kbps
- Transmission range (max):  
SRM-5A: 12 km (7.5 miles)  
SRM-5D: 27.5 km (17 miles)
- No AC power required
- Transformer isolated (SRM-5A only)
- V.24/RS-232-C interface
- Compact, lightweight, easy to install
- DCE/DTE switch
- Internal filter protection against conducted or radiated noise
- Two line connectors: terminal block plus RJ-45 or RJ-11 connector

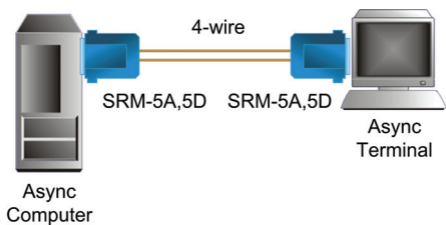


Figure 1. Typical Application

SRM-5A and SRM-5D are miniature asynchronous short-range modems for local data distribution, connecting full-duplex asynchronous DTEs to computers.

SRM-5A and SRM-5D operate at distances of up to 12 km (7.5 miles) and 27.5 km (17 miles), respectively, depending on the wire gauge and data rate (see *Table 1*). Both modems ensure integrity of data transmission, using unconditioned 4-wire dedicated lines at data rates up to 19.2 kbps. An internal filter overcomes both radiated and conducted noise, and provides surge protection.

The modems operate without connection to the mains supply, by using ultra low power from the V.24/RS-232 data and control signals. The modems will operate even if only transmit data is connected, i.e. without any control signals. Both positive and negative signals are generated, irrespective of constantly high or constantly low transmit data.

The low transmit level minimizes crosstalk onto adjacent circuits within the same cable. Data is transmitted and received at a balanced interface, ensuring high immunity to circuit noise.

SRM-5A and SRM-5D feature a switch-selectable DCE/DTE option. This allows the modems to operate as DTE for connection to a DCE (such as a multiplexer port) without the need for a cross-cable.

The SRM-5A model is coupled to the dedicated line via isolation transformers rated at over 1,500 VRMS. The transformers, together with other circuitry, protect against AC or DC overvoltages. This makes SRM-5A suitable for connection to local circuits provided by most national telephone administrations (P.T.T.s).

Two connectors are provided for the line interface: a five-screw terminal block, and either an RJ-45 or RJ-11 connector (see *Ordering*).

**Note:** Pins 1 and 6 are grounded on the RJ-11 connector.

Table 1. Approximate Range

Data Rate kbps	19 AWG (0.9 mm)		24 AWG (0.5 mm)		26 AWG (0.4 mm)	
	km	miles	km	miles	km	miles
<b>SRM-5A</b>						
19.2	5.0	3.0	2.0	1.0	1.5	1.0
9.6	10.0	6.0	4.5	2.5	3.0	2.0
4.8	11.5	7.0	5.0	3.0	4.0	2.5
2.4	12.0	7.5	5.5	3.5	4.0	2.5
1.2	12.0	7.5	5.5	3.5	4.0	2.5
<b>SRM-5D</b>						
19.2	13.0	8.0	5.5	3.5	4.0	2.5
9.6	14.5	9.0	6.5	4.0	4.5	3.0
4.8	16.0	10.0	7.0	4.5	5.0	3.0
2.4	19.5	12.0	8.5	5.5	6.5	4.0
1.2	27.5	17.0	12.0	7.5	9.0	5.5

# Specifications

## Data Rate

Up to 19.2 kbps

## Transmission Line

4-wire, unconditioned dedicated line  
(two twisted pairs)

## Transmission Mode

Asynchronous, full-duplex

## Transmission Controls

**DSR** (Circuit 107) turns on immediately after the DTE raises DTR (Circuit 108/2);

**CTS** (Circuit 106) and **DCD** (Circuit 109) turn on immediately after the DTE raises RTS (Circuit 105).

## Transmission Level

SRM-5A: 0 dBm

SRM-5D: -6dBm

## Transmission Range

SRM-5A: up to 12.0 km (7.5 miles)

SRM-5D: up to 27.5 km (17.0 miles)

(See *Table 1*)

## Digital Interface

ITU V.24/EIA RS-232 25-pin, male or female integral connector

## Line Interface

5-screw terminal block and either an RJ-45 or an RJ-11 socket

## Power

None required; uses ultra-low power from the V.24/RS-232 data and control signals

## Physical

Length: 52 mm (2.1 in)

Width: 53 mm (2.1 in)

Height: 18 mm (0.7 in)

Weight: SRM-5A 42 g (1.5 oz)

SRM-5D 34 g (1.2 oz)

## Environment

Temperature: 0°-50°C (32°-122°F)

Humidity: up to 90%, non-condensing

## Safety



The exclamation point within an equilateral triangle alerts the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

All connections should only be performed by a skilled technician who is aware of the hazards involved. The digital interface of the SRM-5A, SRM-5D must be connected to equipment that is connected to protective earth at all times, or to equipment that has double or reinforced insulation between the mains and the protective earth.

## DECLARATION OF CONFORMITY

**Mfr. Name:** RAD Data Communications Ltd.

**Mfr. Address:** 24 Raoul Wallenberg St.  
Tel Aviv 69719, Israel

declares that the product:

**Product Name: SRM-5A, SRM-5D**

Conforms to the following standard(s) or other normative document(s):

**EMC:** EN 55022:1998 + A1:2000 + A2:2003

EN 55024:1998 + A1:2001 + A2:2003

EN61000-3-2:2000 + A2:2005

EN61000-3-3:1995 + A1:2001

**Safety:** EN 60950-1:2001

### **Supplementary information:**

The products herewith comply with the requirements of the Low Voltage Directive 2006/96EC and R&TTE Directive 99/5/EC for wired equipment. The products were tested in a typical configuration.

Tel Aviv, 8 November 2007



Haim Karshen

Quality Manager

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# Installation

**Caution.** *When setting the jumpers or performing any actions inside the open product, be careful not to bend or break any components.*

## Installing the modem:

1. Set the DCE/DTE switch to the position required by the application. (The factory setting is DCE.)

## Connecting the line to a terminal block:

- a. Connect the 4-wire dedicated line to the line connector; transmit pair to XMT and receive pair to RCV.

## Caution

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*To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cords.*

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## Attention

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*Pour réduire les risques d'incendie, utiliser seulement des conducteurs de télécommunications 26 AWG ou de section supérieure.*

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- b. Verify that the pin polarity between the local modem and the remote modem is as follows:
  - Local +XMT connects to remote +RCV
  - Local -XMT connects to remote -RCV
  - Local +RCV connects to remote +XMT
  - Local -RCV connects to remote -XMT(see *Figure 1*).

## Connecting the line to an RJ-11 or RJ-45 connector:

- a. Verify that the cable matches the polarity detailed in the pin assignment figures.

- b. Plug the cable into the RJ socket  
(see *Figure 2* and *Figure 3*).
2. Connect the modem directly to the 25-pin connector of the DTE or computer and fasten the modem with the screws on each side of the connector.

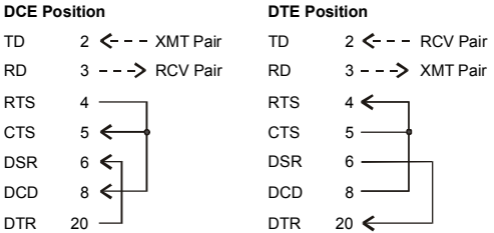


Figure 1. DCE/DTE Switch Configuration

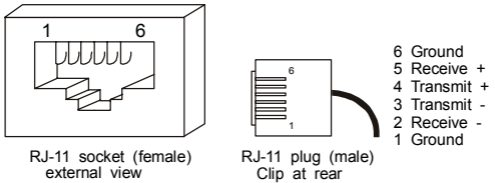


Figure 2. RJ-11 Pin Assignment

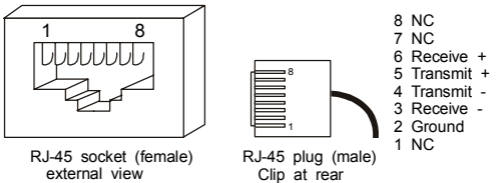


Figure 3. RJ-45 Pin Assignment

## Ordering

SRM-5A/\*/+ /NEW

SRM-5D/\*/+ /NEW

### *Legend*

\* Digital interface connector type:

**F** female 25-pin

**M** male 25-pin

+ Line interface connectors:

**RJ-11** RJ-11

**RJ-45** RJ-45

**TB** Terminal block (SRM-5A only)

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