

SRM-3A

Ultra-Miniature Isolated
Short-Range Async Modem

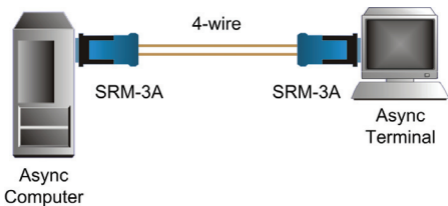


data communications

The Access Company

Features

- Asynchronous transmission of up to 19.2 kbps
- Transmission range of up to 13 km (8 miles)
- Ultra-miniature modem using hybrid technology
- No AC power required, transformer isolated
- 9-pin RS-232-C/V.24 connector



SRM-3A is an ultra-miniature, transformer isolated, short-range, async modem. It is used for local data distribution and connecting full-duplex asynchronous DTEs to computers. SRM-3A ensures the integrity of data transmission, using unconditioned 4-wire dedicated lines at data rates of up to 19.2 kbps. It has a range of up to 13 km (8 miles) depending on the wire gauge and data rate (see *Table 1*).

The SRM-3A connector is 9-pin D-type. SRM-3A is compatible with SRM-5A and SRM-6A, allowing the connection of equipment using a 9-pin connector to equipment using a 25-pin connector (see *Figures 1 and 2*).

The low transmit level minimizes cross-talk between adjacent circuits in the same cable. Data is transmitted and received at a balanced impedance, ensuring excellent immunity to circuit noise.

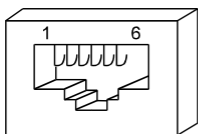
The modem operates without need for connection to the mains supply, by using ultra-low power from the standard EIA RS-232-C/ITU V.24 data and control signal voltages. The modem operates fully even if only Transmit Data is connected (i.e. without the DTE sending Request to Send or Data Terminal Ready signals). Both positive and negative signals are generated in compliance with EIA RS-232-C/ITU V.24 standards, regardless of constantly high or constantly low Transmit Data.

SRM-3A is coupled to the line through isolation transformers which, in conjunction with electronic circuitry, protect against AC or DC overvoltages. As the transformers are rated at over 1,500 VRMS, SRM-3A is suitable for connection to the local circuits provided by most national telephone administrations (P.T.T.s).

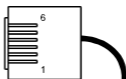
The line side of SRM-3A connects to the ground of the RS-232-C plug that can be connected to the shield of the STP wiring to provide end-to-end ground continuity.

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
19.2	2.5	1.5	1.0	0.5	0.5	0.3
9.6	9.5	6.0	4.5	2.5	3.5	2.0
4.8	12.0	7.5	6.0	3.5	4.5	2.5
2.4	13.0	8.0	7.0	4.0	5.5	3.5
1.2	13.0	8.0	7.0	4.0	5.5	3.5



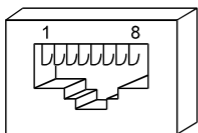
RJ-11 socket (female)
external view



RJ-11 plug (male)
Clip at rear

6 NC
5 Receive +
4 Transmit +
3 Transmit -
2 Receive -
1 NC

Figure 1. RJ-11 Pin Assignment



RJ-45 socket (female)
external view



RJ-45 plug (male)
Clip at rear

8 NC
7 NC
6 Receive +
5 Transmit +
4 Transmit -
3 Receive -
2 GND
1 NC

Figure 2. RJ-45 Pin Assignment

SPECIFICATIONS

Data Rate

Up to 19.2 kbps

Transmission Line

4-wire unconditioned dedicated line
(two twisted pairs)

Transmission Mode

Asynchronous, full-duplex, 4-wire operation

Transmission Controls

DSR (Circuit 107) and **DCD** (Circuit 109) turn on immediately after DTE raises DTR (Circuit 108/2);
CTS (Circuit 106) turns on immediately after DTE raises RTS (Circuit 105).

Transmission Level

-6 dBm

Transmission Range

Up to 13 km (8 miles) (See *Table 1*)

Terminal Interface

EIA RS-232-C/ITU V.24, choice of male or female integral 9-pin connector

Line Interface

4-screw terminal block, RJ-11 jack, or RJ-45 jack (see *Ordering*)

Protection

AC/DC overvoltage protection circuits connected via isolation transformers rated at 1,500 VRMS

Power

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

Physical

Length: 61.0 mm (2.4 in)

Width: 31.0 mm (1.2 in)

Height: 19.8 mm (0.8 in)

Weight: 30.0 g (1.0 oz)

Environment

Temperature: 0° to 50°C (32° to 122°F)

Humidity: up to 90%, non-condensing

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-3A

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, 12 November 2007



Haim Karshen

Quality Manager

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Ottobrunn-Riemerling, Germany

Installation

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

1. Connect the 4-wire dedicated line to the line connector; transmit pair to 'XMT' and receive pair to 'RCV'.
2. Observe the following pin polarity between the local SRM-3A and remote SRM-3A:
 - Connect local +XMT to remote +RCV
 - Connect local -XMT to remote -RCV
 - Connect local +RCV to remote +XMT
 - Connect local -RCV to remote -XMT

Caution

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

Attention

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

3. Connect the modem directly to the 9-pin connector of the terminal or the computer and fasten the modem with the screws on each side of the connector (see *Table 2*).

Table 2. Connector Pinout

Pin	Name	Function
1	DCD	Data Carrier Detect
2	RD	Receive Data
3	TD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	(+V)

Ordering

SRM-3A/*/+

Legend

- * Connector type:
 - F** female 9-pin
 - M** male 9-pin

- + Line interface type:
 - RJ-11** RJ-11 jack
 - RJ-45** RJ-45 jack

(Leave blank for terminal block)

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