

SRM-5AC

Short-Range Async Modem



data communications

The Access Company

- Asynchronous, full- or half-duplex
- Data rates up to 19.2 kbps
- Point-to-point or multipoint applications
- Transmission range up to 6.8 km (4.1 miles)
- Internal filter for high noise immunity and surge protection
- DCE/DTE mode
- Transformer isolated
- No AC power required
- LED indicator for carrier detection

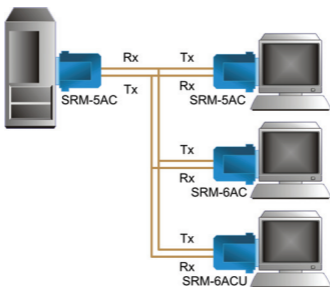


Figure 1. Typical Application

SRM-5AC is a short-range asynchronous modem used for local data distribution. It connects full- or half-duplex asynchronous DTEs to DTEs operating over unconditioned 4-wire lines (two twisted pairs). SRM-5AC ensures integrity of data transmission for distances of up to 6.8 km (4.1 miles) depending on the wire gauge (see *Table 1*).

For high noise immunity, SRM-5AC is equipped with an internal filter that overcomes both radiated and conducted interference. It is recommended for noisy environments such as industrial locations.

SRM-5AC features a switch-selectable DTE/DCE interface and switch-selectable printer support mode. It also includes a jumper for configuring the modem's carrier to be constantly ON or controlled by RTS (see *Figure 1*).

When set to DCE, the modem carrier can be set to constantly ON, or controlled by the RTS signal (Circuit 105). Operation by controlled carrier enables connection of SRM-5AC in a multipoint configuration. Controlled carrier is used in applications requiring the passing of a control signal end-to-end where RTS on one SRM-5AC is passed to DCD on the other unit. A LED indicates carrier detection.

When set to DTE, the modem operates as a DTE for connection to a DCE (such as a multiplexer port), without the use of a cross-cable.



Figure 2. Printer Application

When set to printer support mode, SRM-5AC supports printer flow control by transmitting DTR on the printer side (busy signal) to CTS on the other side. As a result, CTS at the computer side drops when the printer becomes busy.

Isolation transformers (and other circuitry) couple SRM-5AC to the line to protect against AC or DC overvoltages. The transformers are rated at over 1,500V RMS, so the modem is suitable for connection to local circuits provided by most national telephone administrations.

SRM-5AC operates without connection to the mains supply by using ultra-low power from the data and control signals. The modem will operate even if only TD (Circuit 103), RD (Circuit 104), and RTS (Circuit 105) are connected.

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

Two connectors are available for the line connection: a five-screw terminal block, and an additional modular socket for either RJ-11, RJ-12 or RJ-45 (see *Ordering*).

Table 1. Approximate Range

Data Rate	19 AWG (0.9 mm)		24 AWG (0.5 mm)		26 AWG (0.4 mm)	
	km	miles	km	miles	km	miles
1.2-19.2	5.4	3.4	3.0	1.9	2.4	1.5

Specifications

Data Rates

Up to 19.2 kbps

Transmission Format

Asynchronous

Transmission Line

4-wire unconditioned line (two twisted pairs)

Transmission Mode

Full- or half-duplex 4-wire operation

Transmission Controls

DSR (Circuit 107), turns On immediately after DTE raises DTR (Circuit 108)

DCD turns On after recognizing the receive signal from the line

CTS (Circuit 106) turns On 40 msec (typical) after DTE raises RTS (Circuit 105).

Carrier Control

The carrier is user-selectable for either continuous operation or switched operation, controlled by the RTS (Circuit 105) indicator.

Transmission Level

0 dBm

Transmission Range

Up to 6.8 km (4.1 miles) (see *Table 1*)

DTE Interface

RS-232/V.24, integral 25-pin connector, male or female (see *Ordering*)

Line Interface

5-screw (4-wire and ground) terminal block and RJ-11, RJ-12, or RJ-45 jack (see *Ordering*)

Power

For proper operation, at least two of the following DTE interface connector pins must be active:

DCE mode: 2, 4, 20, 24

DTE mode: 3, 6, 8

The typical power drawn from DTE is 40 mW (at least +6V signal level).

Physical

Length: 69 mm (2.7 in)

Height: 18 mm (0.7 in)

Width: 53 mm (2.1 in)

Weight: 50g (1.8 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-5AC 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-5AC

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.*

Install the SRM-5AC modem as follows:

1. Snap the SRM-5AC nameplate out of the plastic cover of the unit.
2. Set the modem carrier jumper to **ON** (Constantly ON) or **CTRL** (RTS control) (see *Figure 3* and *Table 2*).
3. Set the operation mode switch to **DTE** or **DCE** (see *Figure 3*, *Figure 4*, and *Table 2*).
4. Set the Printer Support switch to **Printer** or **Normal** (see *Figure 3* and *Table 2*).

Note: *Set the Normal/Printer switch in both modems to the same position. When set to Printer operation, the DCE/DTE switch must be set to DCE operation.*

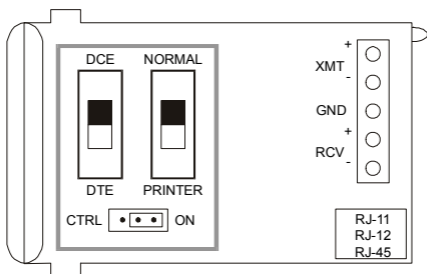


Figure 3. Switch/Jumper Locations

Table 2. Switch/Jumper Settings

Switch/Jumper	Function	Possible Settings (factory settings are bold)
DCE/DTE Switch	Selects the DTE or DCE operation mode	DTE – SRM-5AC operates as DTE DCE – SRM-5AC operates as DCE
Normal/Printer Switch	Controls the Printer Support Mode	Normal – Normal operation Printer – Printer Support mode
CARR Jumper	Controls the carrier operation	ON – Constantly ON CTRL – Controlled by RTS

- Close the unit by inserting the two tabs of the SRM-5AC nameplate and pressing the plate down.

- Connect the 4-wire line using either the terminal block or RJ connector:

Terminal block connector:

- Connect +XMT of the local SRM-5AC to +RCV of the remote modem

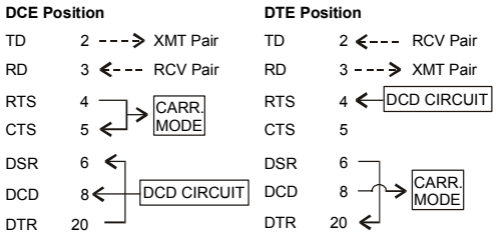


Figure 4. DCE/DTE Switch Configuration

- Connect -XMT of the local SRM-5AC to -RCV of the remote mode.
- Connect - RCV of the local SRM-5AC to - XMT of the remote mode.

RJ-11, RJ-12 or RJ-45 connector:

- Plug the cable into the RJ-11 or RJ-45 jack. Make sure that the correct polarity is maintained throughout the cabling system (see *Figure 5* and *Figure 6* for the pinouts).

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.

Note: When operating in a noisy environment, use shielded cables and connect one end of the cable shield to "Ground".

7. Plug the modem directly into the 25-pin connector of the DTE or computer port.
8. Fasten the screws on each side of the connector.

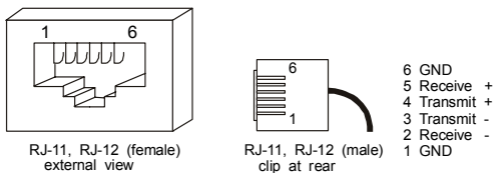


Figure 5. RJ-11 and RJ-12 Connector Pinout

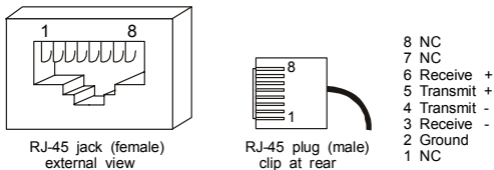


Figure 6. RJ-45 Connector Pinout

Ordering

SRM-5AC/*/+

Short-Range Async Modem

Legend

- * DTE connector:
 - F** female 25-pin
 - M** male 25-pin
- + Line connector:
 - RJ-11** RJ-11
 - RJ-12** RJ-12
 - RJ-45** RJ-45

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