Overview
The SRM-5A is an asynchronous modem used for local communication between a datalogger and a computer. Two SRM-5A Short Haul RAD® Modems\(^1\) are required; one at the datalogger end and one at the computer end. Each short haul modem transmits over an unconditioned 4-wire telephone line or the CABLE2TP two-twisted pair cable. Data rates up to 9,600 bps are possible.

Benefits and Features
- Provides the easiest link for communicating with one datalogger over longer distances
- Low voltage transmission levels minimize crosstalk between adjacent lines within the same cable
- Data are transmitted and received at a balanced impedance, providing excellent immunity to circuit noise
- Transmits up to 10 km (6.2 miles) at 9600 bps
- Transmits up to 12.2 km (7.6 miles) at 1200 bps

PC-to-Datalogger Hookup

\(^1\)RAD is a registered trademark of RAD Data Communications, Inc. Rochelle Park, NJ.

\(^2\)The SC932A is used to connect the modem to the datalogger’s CS I/O port. Configuration is more complicated when connecting the modem to the datalogger’s RS-232 port; contact Campbell Scientific for more information.

(1) PC running PC200W, PC400, or LoggerNet Software.
(2) 7026 serial cable, which is a DB-25 male to DB-9 female.
(3) SRM-5A Short Haul modem, two required.
(4) Joslyn 4-wire surge protector model 6536 for use with PC.
(5) 4-wire unconditioned phone line or the CABLE2TP-L Santoprene-jacketed, 2-twisted-pair cable with shield.
(6) 6361 Joslyn 4-wire surge protector for use in an enclosure.
(7) SC932A DCE Interface\(^2\) and a 9-to-25 pin adapter. The 15770 Rad Modem Interface Kit includes the SC932A, adapter, and a mounting bracket.
(8) SC12 cable (provided with SC932A).
(9) Campbell Scientific datalogger.
Specifications

- Data Rates: up to 9,600 bps
- Transmission Mode: Asynchronous, full duplex, 4-wire operation
- Transmission Range: up to 12.2 km (7.6 miles) depending on data rate and wire gage; see Approximate Range Table
- Line Interface: 5-screw (4-wire and ground) connector block with cable strain relief inside plastic cover
- Transmission Line: CABLE2TP (for short RS-232 or prewired enclosures) or unconditioned, 4-wire telephone line
- Transmission Level: 6 dBm
- Terminal Interface: EIA RS-232-C/CCITT V.24, female integral 25-pin connector
- Operating Temperature Range: 0° to 60°C
- Altitude: up to 3000 m (10,000 ft)
- Humidity: up to 95% non-condensing
- Length: 5.2 cm (2.1 in)
- Width: 5.2 cm (2.1 in)
- Height: 1.8 cm (0.7 in)
- Weight: 38 g (1.3 oz)

Power Requirements

- At Computer: uses low power from the EIA RS-232-C/CCITT V.24 data and control signals
- At Datalogger: combined current drain of the SRM-5A modem and SC932A, which is 2.2 mA quiescent, and 10 to 15 mA active
- Protection: ac/dc over voltage connected via isolation transformers rated at 1,500 V RMS

Approximate Range, miles and km

<table>
<thead>
<tr>
<th>Data Rate</th>
<th>19 Gage (0.9 mm)</th>
<th>24 Gage (0.5 mm)</th>
<th>26 Gage (0.4 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bps</td>
<td>miles</td>
<td>km</td>
<td>miles</td>
</tr>
<tr>
<td>9,600</td>
<td>6.2</td>
<td>10.0</td>
<td>2.8</td>
</tr>
<tr>
<td>1,200</td>
<td>7.6</td>
<td>12.2</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Manufacturer's operating temperature range specification is listed. Limited tests conducted by Campbell Scientific has shown the SRM-5A to perform at temperatures over -25° to +50°C.