RTMS is a multi-tasking software package that supports automated, real-time data acquisition, graphical monitoring, and control of Campbell Scientific CR10T datalogger networks.
System Hardware

Real-Time Monitoring Software (RTMS) manages data acquisition and control of CR10T datalogger networks.

Field Sites

Sensor measurement, data processing/storage, and on-site control functions are performed by a CR10T datalogger. The CR10T features the same measurement and control hardware as the CR10, but contains table-oriented final data storage, which provides more efficient data transfer through modems to the RTMS computer.

Communication Links

- UHF/VHF Radio
- Telephone
- Coaxial cable
- 2 twisted-pair wire
- RS-232 cable

Interrogation rates and maximum number of sites per serial port are listed on page 4.

Computer Running RTMS

RTMS runs on a personal computer with an OS/2 operating system. Computer requirements are listed on page 4.

Optional Link to Mainframe

Where system requirements dictate routing data to a separate computer—such as a VAX, HP, IBM—RTMS optionally supports communication via a TCP/IP link.
System Software

RTMS uses OS/2's multi-tasking capability to collect, display, analyze, route, and archive data simultaneously.

**RTM**

Supports real-time display of raw or processed data

- Displays data in bar charts, X-Y charts, strip charts, and numeric windows; displays real-time data from multiple sites on the same screen.
- Shows high and low threshold alarms. Can log events to a file and require user acknowledgment of alarms.
- Plots scalable strip charts, each with up to twelve parameters.
- Creates, saves, and runs individual RTM screens on demand.
- Displays status of devices under datalogger control; provides override capability.

**NetAdmin**

Provides software functions needed to set up and maintain the datalogger network

- Maintains 12-hour display of network communication status.
- Displays and optionally logs status, warning, or fault conditions.
- Checks and sets datalogger clocks manually or automatically; downloads datalogger programs.
- Provides access to datalogger functions via telecommunications; runs RF link tests.
- Displays and allows editing of network hierarchy and communication parameters.
- Optionally maintains COM port activity log.

**DBSelect**

Specifies and manages collection of datalogger data; provides several options to access the data

- Routes data to ASCII files or an Acknowledged Named Pipe.
- Simplifies creation of user-written programs that route data to modelling programs or commercial databases.
- Optionally available TCP/IP example programs demonstrate routing of collected data to remote computers.
## Specifications

<table>
<thead>
<tr>
<th>Communication Link</th>
<th>Sites Supported 250 maximum</th>
<th>Baud Rate</th>
<th>Data Points/Second</th>
<th>Switching Time Between Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio(RF)</td>
<td>150 per RF232T base; additional bases require separate serial ports and radio frequencies</td>
<td>9600</td>
<td>~100</td>
<td>1 second; add 5 seconds per repeater</td>
</tr>
<tr>
<td>Coaxial cable MD9 to MD9s</td>
<td>~200 depending on coax cable length</td>
<td>9600</td>
<td>~440</td>
<td>1 second</td>
</tr>
<tr>
<td>Phone</td>
<td>Up to 250</td>
<td>1200</td>
<td>~55</td>
<td>10-20 seconds depending on phone dialing</td>
</tr>
<tr>
<td>Phone-to-RF</td>
<td>Same as RF networks</td>
<td>1200</td>
<td>~55</td>
<td>Phone dialing plus RF switching</td>
</tr>
<tr>
<td>Phone-to-MD9</td>
<td>Same as MD9 networks</td>
<td>1200</td>
<td>~55</td>
<td>Phone dialing plus MD9 switching time</td>
</tr>
<tr>
<td>Direct</td>
<td>One per serial port, limited by number of serial ports</td>
<td>9600</td>
<td>~440</td>
<td>None; COM ports can be used simultaneously</td>
</tr>
</tbody>
</table>

### Computer Requirements

<table>
<thead>
<tr>
<th>Computer Hardware</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>386</td>
<td>486</td>
</tr>
<tr>
<td>Memory</td>
<td>8 Megabytes</td>
<td>16 Megabytes depending on requirements of network support, other programs</td>
</tr>
<tr>
<td>Hard Disk</td>
<td>40 Megabytes of free space</td>
<td>40+ Megabytes of free space depending on data storage needs</td>
</tr>
<tr>
<td>Mouse</td>
<td>OS/2-Compatible</td>
<td></td>
</tr>
<tr>
<td>Serial port(s)</td>
<td>Use of more than 2 serial ports requires a special card with OS/2 drivers</td>
<td></td>
</tr>
<tr>
<td>Operating System</td>
<td>OS/2 2.1</td>
<td></td>
</tr>
<tr>
<td>Monitor</td>
<td>VGA color</td>
<td></td>
</tr>
</tbody>
</table>