The MOSCAD RTU may communicate RTU-to-central or RTU-to-RTU on wirelines when desired. A family of modem accessories is available for direct installation within the MOSCAD NEMA or RackMount RTU. Operating power for the modems is derived from the MOSCAD power source, including the backup battery.

**Mechanical**

Each modem consists of two assemblies: the modem electronics installs within the CPU module of a no-radio MOSCAD RTU; the line interface unit installs in the space normally occupied by the radio.

- **The MOSCAD RackMount configuration provides additional places to install the line interface unit, so that simultaneous radio and wireline (modem) communications may be provided if needed.**

**Electronics**

Two versions of the modem electronics are available. Both provide low-speed (600 and 1200 bps) data communications, whereas one also provides mid-speed (2400 bps) data communications.

- **The modem electronics plugs into the CPU module in the space normally occupied by the radio interface electronics for an efficient connection to the microprocessor. The modem also operates from the MOSCAD backup battery power source.**

**Connections**

RJ-11 connectors or standard screw terminals may be used for 2-wire connections.

- **The RJ-11 connectors provide an easy method of connecting the modem to the telephone lines. Screw terminals are available if needed.**

**Line Interface**

Three versions of the line interface units are available. These permit wireline communication systems that involve dial/answer operation through the Public Switched Telephone Network (PSTN), dedicated 2-wire or 4-wire point-to-point operation, or 2-wire point-to-multipoint (multidrop) operation.

- **The system manager may use the dial/answer (PSTN) capability to dial into the system for maintenance purposes. RTUs may also use this dial-in connection for their communication requirements. Three or more RTUs may be interconnected into a communications (sub)system by using point-to-multipoint (multidrop) modems.**
Specifications

<table>
<thead>
<tr>
<th>Order</th>
<th>See chart below</th>
</tr>
</thead>
</table>
| Signal Levels | Wireline to Modem: -3 dBm to -47 dBm (-35 dBm for multidrop) into 600 ohms  
Modem to Wireline: -10 dBm into 600 ohms |
| Power | 5 Vdc: 0 ma  
12 Vdc: 6 ma |
| Environment | Humidity: 0 to 90% @ +50°C  
Temperature: -30 to +60°C |

<table>
<thead>
<tr>
<th>Plant Installed</th>
<th>Field Installed</th>
<th>Modem Type</th>
<th>Data Speed/ Modulation</th>
<th>Standard</th>
<th>Interface</th>
</tr>
</thead>
</table>
| V104            | FRN5669 Plug-in board  
FRN1985 Line interface | Dial/Answer (PSTN) | 600 DPSK  
1200 DPSK | CCITT V.22/Bell 212  
CCITT V.22/Bell 212 | Asynchronous  
Asynchronous |
| V226            | FRN5639 Plug-in board  
FRN1985 Line interface | Dial/Answer (PSTN) | 600 DPSK  
1200 DPSK  
2400 QAM | CCITT V.22  
CCITT V.22/Bell 212  
CCITT V.22bis | Asynchronous  
Asynchronous  
Asynchronous |
| V219            | FRN5669 Plug-in board  
FRN1986 Line interface | Multidrop (point-to-multipoint) half-duplex | 600 DPSK  
1200 DPSK | Proprietary (MDLC)  
Proprietary (MDLC) | Synchronous  
Synchronous |
| V285            | FRN5669 Plug-in board  
FRN1987 Line interface | Leased wireline (point-to-point) full duplex | 300 FSK  
600 DPSK  
1200 DPSK | CCITT V.21/Bell 103  
CCITT V.22  
CCITT V.22/Bell 212 | Sync/Asynchronous  
Sync/Asynchronous  
Sync/Asynchronous |
| V404            | FRN5639 Plug-in board  
FRN1987 Line interface | Leased wireline (point-to-point) full duplex | 300 FSK  
600 DPSK  
1200 DPSK  
2400 QAM | CCITT V.21/Bell 103  
CCITT V.22  
CCITT V.22/Bell 212  
CCITT V.22bis | Sync/Asynchronous  
Sync/Asynchronous  
Sync/Asynchronous  
Sync/Asynchronous |