1.   Operation

Your Multi Channel Modem System is easy to use, versatile, and dependable. When configured properly, all 4 channels can be combined to provide an aggregate Internet connection equivalent to a 28 Kbps modem. If two, three or 4 units are available and configured for cascaded operations you can achieve an aggregate Internet connection equivalent to a 112 Kbps modem. Internet access is available in all Globalstar™ network data services coverage areas except those for China and Nicaragua.

> **WARNING - The transmitted RF field intensity at the surface of the transmitting antenna is fairly high. Do not use when someone is within 29 inches (0.74 meters) of the antenna.**

1.1.   Basic Satellite Information

 Globalstar satellites operate in an inclined orbit of 52 degrees. They come up over a point on the western horizon, move across the sky, and then drop behind the eastern horizon. The average user cannot predict the path of the satellites. Each satellite will pass from horizon to horizon in about 10-15 minutes. When the MCM-4M is located in moderate latitudes (22-52 degrees) it will communicate with at least TWO satellites passing over your geographic location.

This system uses high frequency microwave signals. Unlike television and AM or FM radio signals, or even cellular phone signals, microwave radio signals do not bend and are strictly line of sight. This means that these signals do not go through, or around, dense objects including the platform's own superstructure, wings or masts. It can not go through, or around, other objects adjacent to the platform either (trees, buildings, overhangs, cranes, tall hills or mountains). If something gets between the satellite and the antenna the data connection won't work until another satellite (which is not blocked) is received or the platform moves to a location where your antenna will no longer be blocked by the object. If the antenna is no longer pointed up toward the overhead location of the satellites, the data connection won't work until the antenna has a clear view of the sky above again.

If the MCM-4M antenna's view of the sky above 10° elevation is restricted, the unit will suffer temporary data rate reductions. If the antenna is completely blocked, the signal to/from the satellite will be lost until the signal path is unobstructed.

1.2.   Key Points About Your Equipment

 The MCM-4M provides you with data access over the Globalstar satellite network. In some geographic areas setup, configuration and usage may be slightly different. Subject to certain constraints, the MCM-4M is capable of dial up packet or asynchronous operation in any Globalstar service area. These constraints, and the service limitations, are described in Section 2.

The MCM-4M provides the ability to establish up to four concurrent satellite connections each providing 7.2 Kbps of raw symmetrical bandwidth. The MCM-4M provides the combined bandwidth to the user via a single standard Ethernet connection. The MCM-4M is a full duplex device and can be configured to allow other data terminals to initiate a data communications connection. For this purpose, any of the four SDMs may be configured to receive an incoming asynchronous data call from a PSTN modem. The MCM-4M unit can be connected to up to 3 additional MCM-4M units to provide the combined bandwidth of up to sixteen concurrent satellite connections.
The MCM-4M requires connection to an Antenna Assembly to be mounted on an external surface.
The MCM-4M contains an Multi-Channel Processor board and four QUALCOMM GSP-1620 Satellite Data Modems (SDM). The MCM-4M also includes an Ethernet 10 Base-T port, power supplies, converters, and management functions.

The 10/100 BaseT Ethernet port can be connected to multiple remote client terminals through a suitable hub or switch. It provides the path through the Globalstar network for your remote client terminal(s) to communicate. Your connection may be to a public server site or you may be connected to a private site such as a Virtual Private Network (VPN).

In normal operation the MCM-4M provides you with a PATH to and from the Internet, which allows your mobile platform to be connected without having wires attached to it. You operate the remote client terminal exactly the same way you would if it were connected to any other Ethernet LAN. When the MCM-4M is operating normally, it provides the path to and from the Internet and will be transparent to you. Refer to figure 2-1 for an overview of the satellite connection.
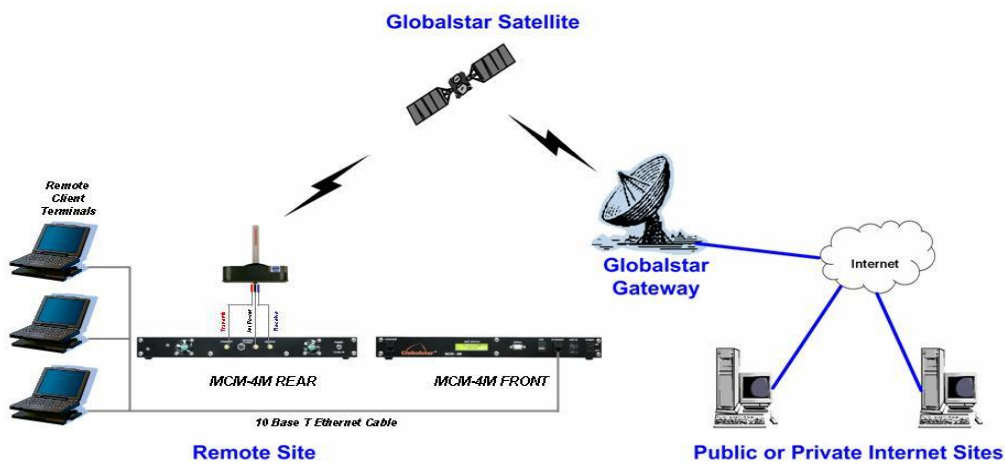

Figure 1-1 MCM-4M being used to connect to the Internet

1.3.   System Start-Up From the Multi Channel Modem (MCM-4M)

Figure 1-2 MCM-4M Multi Channel Modem – Front Panel

1.4.   Using Internet Data Services

To set up the PC computer for data service use, refer to section 4.

1.   To use the Internet Data services for Internet browsing, email and file transfers, open your Internet browser, email or other data program and proceed by operating that program as you normally would to browse, email or efax. Please refer to the accompanying Software and User Documentation for instructions on how to operate the MCM-4M and to turn the tunnel on.