EMnet Network Requirements- Two Way Systems (Via Sat)

System Description

EMnet allows users to send messages to individual stations, groups of stations, or all stations on the EMnet network, and it provides confirmation of delivery in the form of a receipt. For two-way systems, messages can be transmitted and received to our EMnet server through a satellite connection. This method allows for the simultaneous, almost instant, delivery of a message to multiple stations. Message receipts and acknowledgements, if required by the sending station, are sent by the same means. Redundancy is provided through the Internet or private network to the EMnet server.

System Components

- 1.2 meter satellite dish, non penetrating roof mount
- Dish mounting hardware and up to 200ft of RG 6 or RG 11 non-plenum cable
- Linkstar RCST, the external satellite receiver
- EMnet Software
- Desktop or Rack mount computer including mouse, keyboard and monitor. (If provided by Comlabs)

Pre Installation Information

Location of the Computer and Satellite Transceiver
The computer should be placed in a location that is monitored 24 hours and is equipped with backup power and telephone access. The receiver is a small component that can be placed with the computer or at a location convenient to the cable run.

Ethernet Connections
The EMnet computer uses the requested Ethernet connection from your network to communicate with Comlabs servers **only using outbound** TCIP connections on ports 25 and 110. At your request there is an alternate set of ports available if your staff does not prefer 25 and 110. The system will open a socket directly with our servers to send a message, a receipt, an acknowledgement, or to report system problems. Our current server list includes the following IP addresses: **66.195.201.17**, **64.132.151.216** and **64.132.151.217.**

Port 110 is used to provide redundancy to the satellite link. Should the computer lose contact with the satellite stream it will begin to operate in its first level of redundancy using this port for communication until the satellite stream is restored.

Sometimes access to these ports will be blocked at your firewall. This can be determined by running the Communications test found on Installations page of the Comlabs website. Access to our servers will need to be provided prior to the system installation. There are several methods to accomplish this. Most administrators port map access to the IP of the EMnet computer to allow connection to our servers. In some situations proxy servers have been used successfully. IF you chose to use a proxy server you will need to set that up independently.

Linkstar RCST Transceiver
The satellite receiver uses its Ethernet connection to deliver the data stream from the satellite. The data stream is a multicast stream with an IP destination address of 224.7.7.7. The external satellite receiver will have a pre-assigned IP address. You will need to assign one private (static) IP address for the computer. **Please determine and assign this address prior to your installation date**. Unfortunately a DHCP addressing system will not work with the EMnet software.

It is often recommended that computers for use with a ViaSat system have two Network Interface Cards (NIC's). One NIC will be configured to listen to the LAN. The second will be set up to listen to the satellite receiver. You can also configure one NIC to listen to both gateways; however this is a more complex setup. Please decide in

advance which way you will be setting your system up and our tech support department can assist you. If your grant agency purchased you a PC with your system the computer will come with two NICs.

Cable Runs

It is the responsibility of the site, and not the installer, to determine where the RCST (satellite receiver) and Computer will be located for Via Sat systems and run Cat 5 (Ethernet) crossover cable between those locations. The site will also need to run CAT 5 Ethernet cable from the network to the location the PC will be installed. These cables need to be run before the date of installation. The RCST and computer should be in an areas that have battery backup.

Network Utilization

The data stream from the satellite requires very little in the way of network utilization with typical total throughput of around 8 MB of data on a daily basis (this includes our NOAA weather data stream). Throughput is minimized by the requirement that our users only use the system for emergency communications. The data rate of the multicast stream being transmitted over the satellite is currently 128 Kbps.

THE EMnet COMPUTER

The EMnet computer is generally purchased by the state and supplied to the EMnet user at no cost. In many cases an MOU is signed whereby the computer becomes the property of the EMnet user. If your state did not purchase the computer directly from Comlabs use the following system requirements.
The minimum remote station computer configuration should be:

- Pentium III-500 or higher central processing unit (CPU). Pentium IV 2.0G or Athlon 1800 recommended.
- Minimum 128 megabytes of RAM. 256 megabytes of RAM (or more) recommended.
- Minimum 200 MB of unused disk space. 1 GB (or more) recommended.
- Ethernet port to provide a network connection
- Local printer or access to a LAN-based printer for hard copy output of messages
- Audio card and speakers to support activation of incoming message alerts
- Windows 2000 Pro/Server/Advanced Server, or Windows XP Home/Pro operating system

Computers should be running on operating systems that are based on the Windows 2000 Common Code Base. Windows CCB operating systems include: Windows 2000 Pro/Server/Advanced Server, and Windows XP Home/Pro. It is also advisable, if possible, to install faster computers with 256 MB of RAM and more available disk space to support the launching and viewing of attachments, and weather graphics when they become available.

Maintenance of the computer and protection of the computer from attack by viruses is the responsibility of the user. You should consider the EMnet computer as part of your network and protect it from attack in the same manner that you protect other machines on your network. **It is the responsibility of the site to provide and maintain anti-virus protection and operating system updates for the computer.** It is highly recommended that the computer be located behind your firewall if possible. Network permissions and policies are at the discretion of the network administrator. You should be aware however; that an EMnet computer is used for emergency communications and as such should be online 24/7.

The EMnet computer will be configured to automatically boot to a fully operational condition when powered up, or as a result of a power failure. The “AC Power Recovery” option should be enabled in the computer BIOS, and the computer MUST be connected to either a UPS or an emergency power supply.

Maintenance of the integrity and security of computer networks has become a very daunting task in today’s environment. Comlabs wants to assure you that we are doing our best to maintain the security of both our network, as well as, those of our customers. Our system is limited to access only to known hosts, we verify and log each connection prior to accepting any traffic, all of our traffic is encrypted prior to transmission, and we scan every file that is delivered by our servers.

Please feel free to contact customer support at any time if you have any questions at 321-409-9898 option 1.