# Technical Support Procedures 1

Telebit Corporation has made every effort to ensure that the product you have purchased is of excellent quality in all respects. Telebit products are rigorously tested and subjected to strict quality control procedures. However, if you experience difficulty in the use of this product, or it does not appear to operate correctly, we suggest doing the following:

- Read this manual. It has been provided to help you configure and use your system.
- Contact your dealer. Telebit authorized dealers are familiar with Telebit's products and should be able to help you resolve any problems that you may encounter while setting up and using the system.
- Finally, call Telebit's Technical Support at (408) 734-5200 or 1-800-TELEBIT. Before calling, please have all the following information about your unit available:

  Product Name

  Serial Number

  Date of Purchase

  Place of Purchase

If your product should require service, we will repair or replace it under the terms of our 90 Day Limited Warranty. Please read the warranty statement included in this chapter, and return the Warranty Registration Card provided with this product.

When the 90 Day Limited Warranty period expires, Telebit will continue to service your product for the current applicable service fee.

## Return for Repair Procedure

The following procedure describes how to return the unit to Telebit for repair. This procedure is applicable to both in or out of warranty repairs.

1. Call Telebit's Technical Support Department at (408) 734-5200 or 1-800-TELEBIT and describe the problem. Tell the technical support representative if your unit is or is not covered by warranty. They will issue you a RMA number.

   If the unit is covered by a warranty but not registered, you must submit proof of purchase.

If you do not have proof of purchase or your unit is not covered by the warranty, you must send the current repair fee with your unit.

The technical support representative will provide you with that information and any further instructions if necessary.

2. Pack the unit in its original container or in a sturdy corrugated box using non-static material such as newspaper as a cushion. Do not use highly static prone material such plastic wrap or Styrofoam packing material (beads or peanuts) as they may further damage the unit in transit.

3. Ship the unit only. Do not ship manuals, power supply or phone cord unless your technical support representative instructs you to do so.

4. Include the following information with your unit:

   Name
   Address
   City, State, Zip Code
   Telephone Number

   RMA Number
   Description of the problem
   Current Repair Fee (if applicable)

5. Ship the unit (for repair) freight prepaid to:

   Telebit Corporation
   1315 Chesapeake Terrace
   Sunnyvale, CA 94089
   Attention: Technical Support RMA #

   We recommend that you insure the unit when shipped. *Telebit will not accept units shipped* ***C.O.D***.

6. Telebit will ship the repaired or replacement product at no cost to you to any destination in the U.S.A. Telebit will choose the carrier and method of shipment. If you desire some other specific form of conveyance or you are located outside the U.S.A., you must bear the cost of return shipment and other incidental costs.

## 90 Day Limited Warranty

Telebit Corporation (“Telebit”) warrants the hardware products and all components thereof against defects in materials and/or workmanship for 90 days from the date of your original retail purchase.

If you discover a malfunction or defect in materials or workmanship, Telebit, at its option, will repair or replace the product or component at no charge to you, provided you return it, as set forth below, during the warranty period. Telebit will furnish repair parts and replacement products on an exchange basis; all returned parts and products become Telebit's property. Repairs and replacements may be either reconditioned or new. Telebit will make the final determination as to the existence and cause of any alleged defect. If a returned product shows "no trouble found," Telebit may assess a repair charge.

Telebit does not warrant that any product will operate uninterrupted or without error. The warranty is contingent upon proper use of the product in the application for which it is intended. The warranty will be void on products which have been subjected to abuse, misuse, accident, alteration, neglect, unauthorized repair or installation; modified without Telebit's approval; subjected to unusual physical or electrical stress; or used with a power supply other than the one provided with the product. Expendable items (such as lamps and fuses) are not warranted. This limited warranty is extended only to the original purchaser and is not assignable.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, ORAL OR WRITTEN, EXPRESS OR IMPLIED. TELEBIT MAKES NO EXPRESS OR IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EXCEPT AS EXPRESSLY SET FORTH IN THIS LIMITED WARRANTY. SOFTWARE AND DOCUMENTATION IS PROVIDED ON AN 'AS IS' BASIS. IN NO EVENT SHALL TELEBIT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, COSTS OR EXPENSES ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF ANY PRODUCT DELIVERED HEREUNDER.

NOTE: Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages for consumer products, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Please see *Return for Repair Procedure* in this chapter for specific instructions on returning products for service.

# Joining the Global IP Internet

**by Steven Bjork, Telebit Corporation** **1**

## Overview

With the availability of easily configured IP routers that can use the Public Switched Telephone System, the network of IP internets is growing phenomenally. One of the major advantages to IP networks is the global IP Internet.

This network is composed of Government networks, Research and Educational networks, and recently, commercial networks as well. All of these networks are joined by gateways, allowing the full range of IP services (such as FTP, Telnet, and applications such as X windows) to be exchanged.

The availability of sophisticated software such as compilers, X window system, and numerous other utilities makes access to the IP Internet a distinct advantage in today's internetworking environment.

This document describes the procedure for obtaining a fully supported connection to the IP Internet.

## Basic Walkthrough

The elements necessary to support the internet connection are overviewed in the following items. It is assumed that you have obtained one or more of the reference materials listed at the end of this document, and understand the need for the various items as described in this note.

Additionally, you will need to consult the Network Information Center (NIC) for Network number assignment and domain registration. (The contact information for the NIC is provided in the list of Network Service Providers at the end of this document.)

### 1. Obtaining an IP Network Number

An officially registered network number must be obtained from the NIC. This number uniquely identifies the IP network. The NIC assigns the network number based upon the needs of your organization. The various classes of network numbers are described in the TCP/IP references listed at the end of this document.

Once the network address is obtained, individual host numbers are assigned to entities on your IP network. Each network entity must have a unique host number. Of these, one of the most important addresses that you must assign is that of your Domain Name System (DNS) server. However, you must have a network number to assign host addresses for your DNS server before you can complete the Domain Application form from the NIC (see next section).

## 2. Registering a Domain

A Domain Name is also registered at the NIC. The domain name uniquely identifies your organization in the Internet community. It is used in electronic mail addresses, and many other IP services. See the list of Network Reference Information at the end of this document for further information on the Domain Name System (DNS).

The NIC will not register a domain unless there are two domain servers: a primary and a secondary. Two servers are required for reliability, and it is strongly recommended that the servers be physically separated. Most often, an organization runs its own primary server, while the secondary is off-site. The off-site server can be arbitrary, and often is simply a "network neighbor." The commercial IP network providers can also act as DNS servers for smaller sites.

## 3. Physical Interconnection Issues

The physical connection must be supported with an IP router. The router (i.e., a Telebit *NetBlazer*) can use a telephone company (telco) leased line for high speed, or regular Public Switched Telephone System for low cost.

The router directs network traffic outside of your local organization, to and from the Internet. The flexibility of the IP protocols is especially apparent here, with numerous options available for transport and interconnection of various IP network segments. Options include optical fiber, satellite relay, microwave transmission, or common telco lines.

## 4. Network Service Providers

There are several organizations that can provide interconnection to the Internet. Military users generally are attached to the Defense Data Network (DDN). Research and Educational institutions often connect through the National Science Foundation network (NSFnet). Recently, commercial IP networks have been placed into operation. These networks generally have fewer restrictions on the traffic they carry as compared to Military and Research networks. A list of contacts for some of these transport agencies is provided at the end of this document.

### 5. Tying It All Together

Once you have obtained a network address and registered your domain, you can begin building the network connection. Coordinate with your network service provider for the appropriate access method, for instance a dialup IP link using the SLIP or PPP protocols.

Your telephone company may need to install circuits if a high speed leased line is required. Once the leased line (or other access method) is in place, you can test the LAN access. Consult your router vendor's documentation (i.e., the *NetBlazer Reference Manual*) for the appropriate configuration commands.

Once your IP routers are configured for your network topology, the packets should flow.

Congratulations, you're now a member of the IP Internet community.

## Network Service Providers

This section lists providers of IP network backbone transport facilities. Agents for Military, Government, Research and Education, and Commercial users are listed. The Network Information Center (NIC) is listed as well.

**Government Systems, Inc.**
**Attn: Network Information Center**
14200 Meadow Park Drive Suite 200
Chantilly, VA 22021

+1-703-802-4535
(800) 365-3642

The Network Information Center provides assignment of IP network addresses, registers domains, and operates the root name server for the Domain Name System (DNS).

**Defense Information Systems Agency (DISA) Headquarters**
8th and South Courthouse Road
Washington, DC 20390

Military and Government communications services are provided by DISA, formerly known as Defense Communications Agency (DCA).

**National Science Foundation Network**
1800 G Street, NW
Washington, DC 20550

+1-202-357-9717

The NSFnet backbone provides supercomputer access for research and educational facilities across the planet. In addition, NSFnet provides network access for government agencies.

**UUNET Communications Services**
3110 Farview Park Drive, Suite 570
Falls Church, VA 22042

+1-703-876-5050

UUNET offers many services, including Domain MX records and commercial Internet access.

**California Education and Research Foundation (CERFnet)**
10100 John Jay Hopkins Drive
La Jolla, CA 92093

+1-619-534-5056

CERFnet provides commercial IP network access.

**Performance Systems International (PSInet)**
P.O. Box 3850
Reston, VA 22091

+1-703-620-6651

PSInet provides commercial IP network access.

**Advanced Network & Services, Inc. (ANS)**
100 Clearbrook Road
Elmsford, NY 10523

Phone: 1-914-789-5300

ANS provides commercial IP network access.

**SRI International**
Network Information Systems Center
Room EJ291 333 Ravenswood Avenue
Menlo Park CA 94025

415-859-3695

SRI International provides anonymous FTP of on-line RFC's as well as having a complete hard copy collection of all RFC's ever published. Use `ftp.nisc.sri.com` for access to the RFC collection.

## Networking Reference Information

The following list of books and other reference material provides information on networking issues, with emphasis on TCP/IP Internets.

**Internetworking With TCP/IP, Second Edition**
**Douglas Comer**
**Prentice Hall**

An excellent reference for most TCP/IP internet questions. Covers such issues as network classes, domains, and routing. Considered by many as the industry “bible”.

**The Simple Book**
**Marshall Rose**
**Prentice Hall**

The Internet Standard Simple Network Management Protocol (SNMP) is given a thorough treatment by the author. Because of the nature of managing a network with SNMP, the internet protocols are given a wring out in the text.

**Computer Networks, Second Edition**
**Andrew Tannenbaum**
**Prentice Hall**

A comprehensive overview of various networking implementations including TCP/IP, DECnet, SNA, x.25, and various transport agents such as ethernet, token ring, packet radio, and others.

**DDN Protocol Handbook**
**SRI International**

This four volume set contains sufficient information to code a functional TCP/IP protocol implementation. A number of Request For Comments (RFC's) are listed in the handbook.

**Request For Comments**
**(various authors)**

The Request For Comment (RFC) is the mechanism used by the Internet Community to define protocol standards. Several sites make the RFC's available for copying from the network free of charge. Hard copy service is provided by SRI International.

## Other Service Providers

SRI International provides anonymous FTP of online RFC's as well as having a complete hard copy collection of all RFC's ever published. Use ftp.nisc.sri.com for access to the RFC collection.

**SRI International**
Network Information Systems Center
Room EJ291
333 Ravenswood Avenue
Menlo Park CA 94025

+1-415-859-3695

# Synchronous Modem Brief

**by Steven Bjork, Telebit Corporation** **1**

A brief introduction to synchronous modems and leased line usage as they apply to the NetBlazer follows. No attempt is made to describe NetBlazer operations here.

A leased line is used in a situation where a permanent link to the remote location is desired. The Internet technology is designed with the assumption that all sites are connected over leased lines, and thus have permanent, quick access to facilities attached to various places on the Internet.

A modem intended for a Telephone Company (telco) leased line is generally referred to as a DSU/CSU. This acronym stands for Data Service Unit/-Channel Service Unit. This type of modem will allow the NetBlazer synchronous interface to connect with the telephone company's Digital Data Service (DDS) leased line connection.

Many DSU's allow front panel checks of the line continuity, usually in the form of a "remote loopback" check, where the local modem commands the remote modem to echo its input to its output. The local modem then transmits a data stream over the link, and checks for any errors that may occur. Often a visible indicator allows the operator to get a quick "line ok" check this way.

A leased line usually consists of four wires. These wires must be correctly attached to the DSU before data can be carried. The DSU with a remote loopback test allows checking of the line wiring with no further tools. This is a valuable feature. If the modems cannot put each other into remote loopback, then the line may not be correctly wired to the DSU, or the line itself has a problem somewhere in the telephone company's plant. This could mean a backhoe has dug up a cable somewhere. If your previously working link fails, then the remote loopback test is a quick check of the telephone company's line.

The DSU itself often has a number of jumpers for various options. The NetBlazer can have the data connection in V.35, RS422, or RS232 signaling from the DSU – V.35 signaling is most common. Using RS232 is possible with very short cables, but is often "not supported" by a particular DSU. Your first choice should be V.35, and then RS422, or if there is no other choice, RS232 for your DSU/NetBlazer data link.

Another form of DSU is a fractional T1 interface. This interface splits off a portion of a high bandwidth channel, allowing flexibility of bandwidth allocation. The NetBlazer synchronous card will accept 56k baud's worth of a fractional T1 channel. In this case, the DSU jumpers should be set for a V.35 interface, 56k baud connection to the host.

# Telebit NetBlazer Training

Telebit provides technical training and education for the NetBlazer.

For details, contact the Training and Education department at:

1-800-TELEBIT.