

yImportant Router Information

Dear Valued Customer:

This packet includes **important information about your equipment** which should be reviewed by you prior to speaking with our Installations Group.

It is not a replacement for our Technical Support but is designed to help us help you get your internet connection up and running as quickly as possible.

Our Installations Group will work with you via one hour appointments. **Please review this packet and follow the setup flowchart prior to your initial appointment with your Installations Representative**

Thank you very much and welcome to the Internet.

Technical Support: (888) 774-4206

Enclosed are the following documents regarding your Internet equipment:

- **Router Setup Flowchart**
- **Connectivity Flowchart**
- **Configuration Print Out**
- **Configuration Instructions**

Additional documents for Leased Line Customers:

- **Astrocom CSU/DSU Diagram**
- **Important Circuit Information**

Setup: Ascend Pipeline 130 – Leased Line

Instructions for connecting your Ascend Pipeline 130 Router for your leased line account:

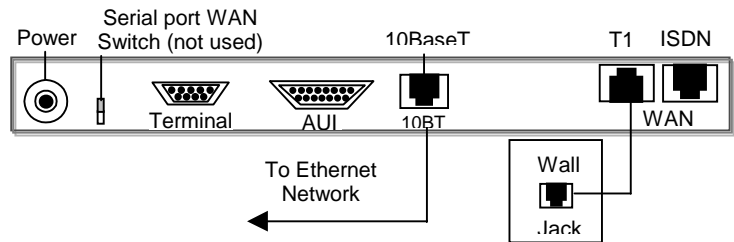
Prerequisites: Please run through the following flowchart to connect your equipment prior to scheduling your initial appointment with our Installations Group.

- Local Area Network (LAN) already setup
- TCP/IP configured on the individual workstations
- Circuit installed and tested - you will receive a message from us asking you to call for your installation appointment. Equipment should not be connected until this message is received.

Your router has been shipped to you preconfigured. Please check the configuration print out to verify that your Serial IP address and the DLCI number for your connection has been included. Also, when the connection is up and running, don't forget to change the router password.

Start Setup Flow

Connect the RJ45 cable from the 10BaseT port directly to the telco demarc. This unit has an internal CSU/DSU.



Is your LAN connected to a hub?

No

Connect a cross over RJ45 cable from the Ethernet 10BaseT port directly to your Ethernet card.

Yes

Connect the straight through Ethernet (RJ45) cable from the Ethernet 10BaseT port on the back of the router to your 10BaseT Hub.

Turn on the router. Wait about 90 seconds. The router should have a good connection. The WAN light on the front of the router should be on.

Is the WAN light on the front of the router on?

No

Power down the router. Try each of the following and then power up the router:

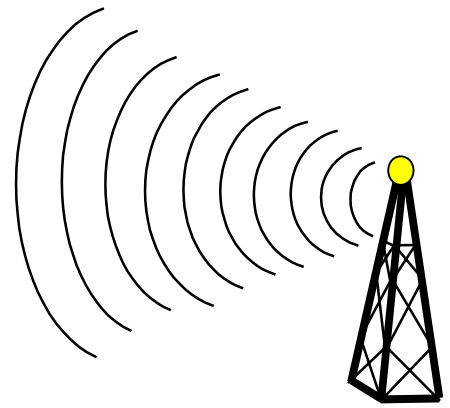
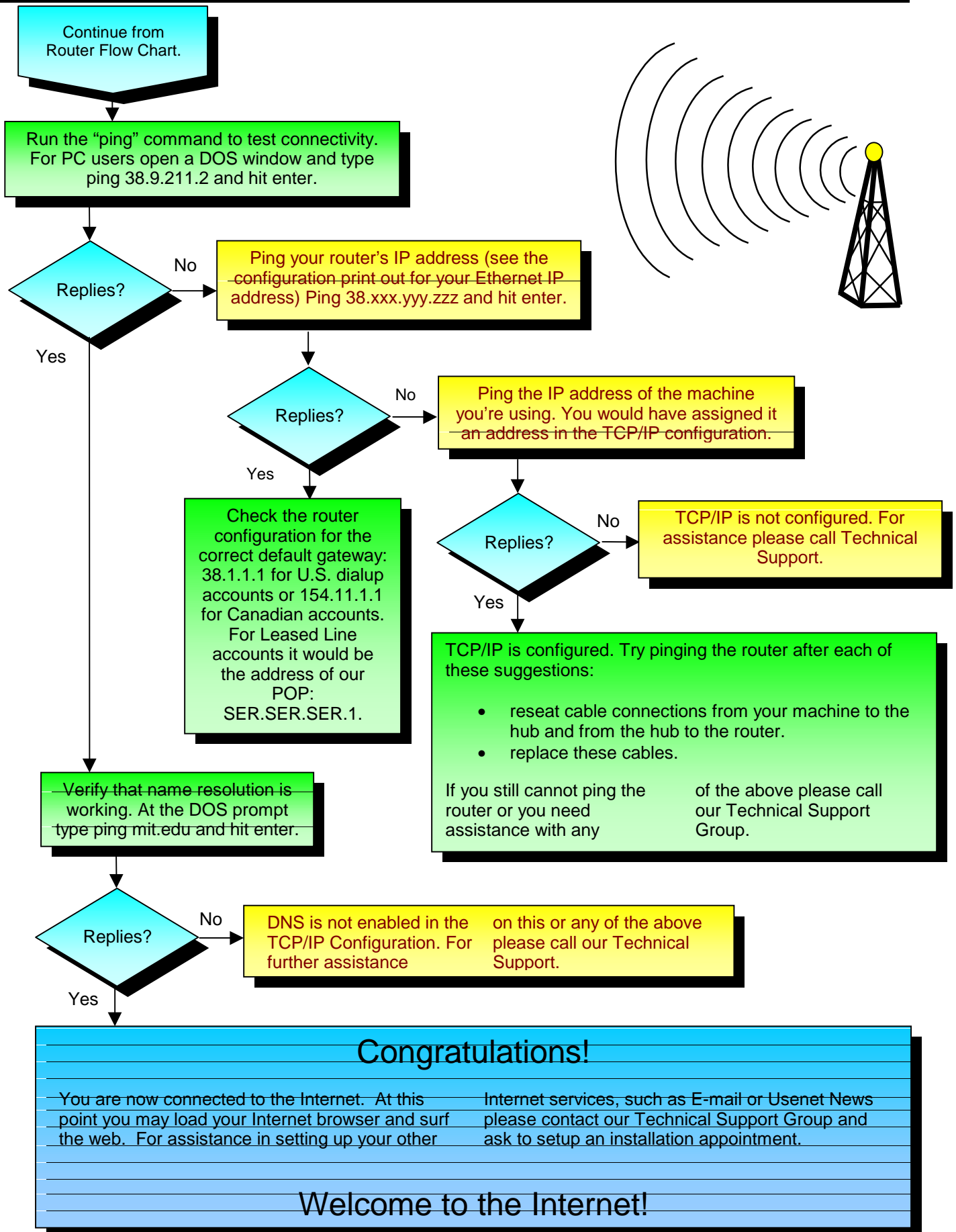
- Be sure the Pwr light is on-if not, check for a good power supply.
- Verify the cables are connected and seated properly (see above diagram).
- Swap cable with a different straight through RJ45 cable to the wall jack.

If the wan light is still not on, troubleshooting will need to be completed by our

Technical Support Group with you and/or the Telephone Company.

Check Connectivity. See Connectivity Flow Chart.

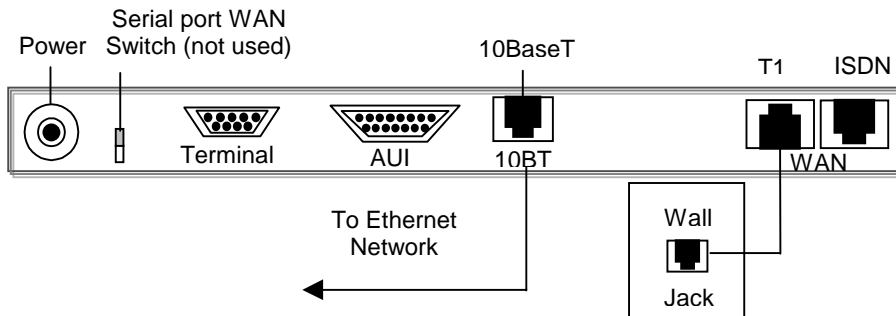
Connectivity:



Configuring the Ascend Pipeline 130 for Leased Line

To configure the Ascend connect a console to the console port of the router. If the router was preconfigured by us a console session is unnecessary, just telnet into the router.

1. Connect the DB-9 to DB25 adapter to the console port of the router.
2. Connect the DB25 end of the adapter to an RS-232 cable (this is not provided).
3. Connect the RS-232 to a PC, or Mac with proper cables, with VT100 emulation software set to 9600 baud, 8 data bits, no parity, and 1 stop bit.
4. Connect the router to the LAN (see wiring diagram below).
5. Connect the WAN2 interface to the telco demarc (see wiring diagram below).
6. Make sure the router is turned on.
7. Press control – L to refresh the screen.



After hitting Ctrl-L you should see the main edit window:

First you need to create an FR connection profile.

- From the main edit menu, select Ethernet.
- Select Connections.
- Choose profile 20-102.
- Configure the parameters as described below.

Main Edit Menu --

```

+- 20-000 Ethernet +-
+- 20-100 Connections +-
+- 20-102
+----- DOMAIN EDIT -----+
| 20-102 FR                    | 10-100 1  T1/CSU          | 00-200 00:00:05          |
| >Station=FR                  | Link X  CARRIER        | >M31 Line  Ch          |
| Active=Yes                   | B1 .                    | Ethernet Up           |
| Encaps=FR                    | B2 .                    |                        |
| Dial #=N/A                   |                          |                        |
| Route IP=Yes                 | 20-100 Sessions        | 20-500 DYN Stat       |
| Route IPX=No                 | > 1 Active              | Qual N/A  00:00:00    |
| Bridge=N/A                   | 0                        | OK      0 channels    |
| Dial Broadcast=N/A          |                          | CLU   0%  ALU   0%   |
| Encaps Options...           | 20-300 WAN Stat        | 20-400 Ether Stat     |
| IP Options...                | >Rx Pkt: 0^             | >Rx Pkt: 0             |
| Ipx Options...               | Tx Pkt: 0              | Tx Pkt: 1             |
| Session Options...           | CRC: 0v                | Col: 0                |
| Telco Options...             |                          |                        |
|                               | 00-100 Sys Option      | 00-300 HW Config      |
|                               | >Security Prof: 3 ^     | >BRI U Interface ^    |
|                               | Software +4.5A+        | Adrs: 00c07b520036    |
|                               | S/N: 5366006 v        | Enet I/F: AUI v       |

```

Press Ctrl-n to move cursor to the next menu item. Press return to select it.
Press Tab to move to another window --- thick border indicates active window.

Configuring the Ascend Pipeline 130 (cont'd)

Set the Station=FR
 Set Active=Yes
 Set Encaps=FR

Go to the Encaps Options... menu:

```

Main Edit Menu --+
                +- 20-000 Ethernet --+
                                +- 20-100 Connections --+
                                                +- 20-102 FR
                                                    Encaps Options...
+----- DOMAIN EDIT -----+ +-----+ +-----+
| 20-102 * FR                  | | 10-100 1  T1/CSU   | | 00-200 00:00:05 |
| Encaps options...           | | Link X  CARRIER  | | >M31 Line   Ch  |
| >FR Prof= FR                | | B1   .                | | Ethernet Up   |
| DLCI= DLCI                   | | B2   .                | |               |
+-----+ +-----+ +-----+
| 20-100 Sessions              | | 20-500 DYN Stat  |
| > 1 Active                    | | Qual N/A  00:00:00 |
| 0                              | | OK      0 channels |
|                               | | CLU   0% ALU  0%  |
+-----+ +-----+ +-----+
| 20-300 WAN Stat              | | 20-400 Ether Stat |
| >Rx Pkt: 0^                   | | >Rx Pkt: 0         |
| Tx Pkt: 0                     | | Tx Pkt: 1         |
| CRC: 0v                       | | Col: 0           |
+-----+ +-----+ +-----+
| 00-100 Sys Option            | | 00-300 HW Config  |
| >Security Prof: 3 ^          | | >BRI U Interface  ^ |
| Software +4.5A+              | | Adrs: 00c07b520036 |
| S/N: 5366006 v              | | Enet I/F: AUI     v |
+-----+ +-----+ +-----+
  
```

Press Ctrl-n to move cursor to the next menu item. Press return to select it.
 Press Tab to move to another window --- thick border indicates active window.

FR Prof should be set to FR.
 Set the DLCI=the DLCI provided by us.

Press ESC and select IP options...

```

Main Edit Menu --+
                +- 20-000 Ethernet --+
                                +- 20-100 Connections --+
                                                +- 20-102 FR
                                                    Ip options...
+----- DOMAIN EDIT -----+ +-----+ +-----+
| 20-102 * FR                  | | 10-100 1  T1/CSU   | | 00-200 00:00:05 |
| Ip options...               | | Link X  CARRIER  | | >M31 Line   Ch  |
| >LAN Addr=SER.SER.SER.1/24  | | B1   .                | | Ethernet Up   |
| WAN Alias=0.0.0.0           | | B2   .                | |               |
| IF Addr=SER.SER.SER.SER/24 | |                               | |               |
| Metric=1                     | | 20-100 Sessions  |
| Preference=10                 | | > 1 Active          |
| Private=No                     | | 0                    |
| RIP=Both-v1                   | |                               |
+-----+ +-----+ +-----+
| 20-300 WAN Stat              | | 20-500 DYN Stat  |
| >Rx Pkt: 0^                   | | Qual N/A  00:00:00 |
| Tx Pkt: 0                     | | OK      0 channels |
| CRC: 0v                       | | CLU   0% ALU  0%  |
+-----+ +-----+ +-----+
| 00-100 Sys Option            | | 20-400 Ether Stat |
| >Security Prof: 3 ^          | | >Rx Pkt: 0         |
| Software +4.5A+              | | Tx Pkt: 1         |
| S/N: 5366006 v              | | Col: 0           |
+-----+ +-----+ +-----+
| 00-300 HW Config            | | 00-300 HW Config  |
| >BRI U Interface ^          | | >BRI U Interface  ^ |
| Adrs: 00c07b520036          | | Adrs: 00c07b520036 |
| Enet I/F: AUI v            | | Enet I/F: AUI     v |
+-----+ +-----+ +-----+
  
```

Press Ctrl-n to move cursor to the next menu item. Press return to select it.
 Press Tab to move to another window --- thick border indicates active window.

Configuring the Ascend Pipeline 130 (cont'd)

SER.SER.SER.1/24 is the IP address of our router. It is the first 3 octets of the Serial IP with a .1 as the fourth octet.

SER.SER.SER.SER/24 is the Serial IP address of the router.

Press ESC until you are back at the Main Edit Menu.

Select Ethernet then Static Rtes then Default.

```

Main Edit Menu +-
                +- 20-000 Ethernet +-
                                +- 20-300 Static Rtes +-
                                                +- 20-3** Default
+----- DOMAIN EDIT -----+ +-----+ +-----+
| 20-3** Default              | | 10-100 1  T1/CSU          | | 00-200 00:00:05          |
| >Name=Default               | | Link X  CARRIER         | | >M31 Line  Ch          |
| Active=Yes                  | | B1  .                   | | Ethernet Up          |
| Dest=0.0.0.0/0              | | B2  .                   | |                       |
| Gateway=SER.SER.SER.1       | |-----+-----+-----+ |
| Metric=1                    | | 20-100 Sessions         | | 20-500 DYN Stat       |
| Preference=100              | | > 1 Active              | | Qual N/A  00:00:00   |
| Private=No                  | | 0                       | | 0K        0 channels  |
|                              | |-----+-----+-----+ | | CLU  0%  ALU  0%     |
|                              | | 20-300 WAN Stat        | | 20-400 Ether Stat    |
|                              | | >Rx Pkt: 0^             | | >Rx Pkt: 0            |
|                              | | Tx Pkt: 0              | | Tx Pkt: 1            |
|                              | | CRC: 0v                | | Col: 0               |
|                              | |-----+-----+-----+ | |
|                              | | 00-100 Sys Option      | | 00-300 HW Config     |
|                              | | >Security Prof: 3 ^       | | >BRI U Interface ^    |
|                              | | Software +4.5A+          | | Adrs: 00c07b520036   |
|                              | | S/N: 5366006 v          | | Enet I/F: AUI v     |
+-----+-----+-----+ +-----+ +-----+

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Press Ctrl-n to move cursor to the next menu item. Press return to select it.
Press Tab to move to another window --- thick border indicates active window.

Press ESC to get to the Static Rtes menu, then Press ESC again to get to the Ethernet
Select Mod Config, then Ether options...

```

Main Edit Menu +-
                +- 20-000 Ethernet +-
                                +- 20-B00 Mod Config +-
                                                Ether options...
+----- DOMAIN EDIT -----+ +-----+ +-----+
| Ether options...           | | 10-100 1  T1/CSU          | | 00-200 00:00:05          |
| >IP Adrs=LAN.LAN.LAN.LAN/24 | | Link X  CARRIER         | | >M31 Line  Ch          |
| 2nd Adrs=0.0.0.0/0         | | B1  .                   | | Ethernet Up          |
| RIP=Off                    | | B2  .                   | |                       |
| Ignore Def Rt=Yes          | |-----+-----+-----+ | |
| Proxy Mode=Off             | | 20-100 Sessions         | | 20-500 DYN Stat       |
| Filter=Off                 | | > 1 Active              | | Qual N/A  00:00:00   |
| IPX Frame=None            | | 0                       | | 0K        0 channels  |
| IPX Enet#=N/A             | |-----+-----+-----+ | | CLU  0%  ALU  0%     |
| IPX Pool#=N/A             | | 20-300 WAN Stat        | | 20-400 Ether Stat    |
| IPX SAP Filter=N/A        | | >Rx Pkt: 0^             | | >Rx Pkt: 0            |
| IPX SAP Proxy=N/A         | | Tx Pkt: 0              | | Tx Pkt: 1            |
| IPX SAP Proxy Net#=N/A    | | CRC: 0v                | | Col: 0               |
| Handle IPX Type20=N/A     | |-----+-----+-----+ | |
|                              | | 00-100 Sys Option      | | 00-300 HW Config     |
|                              | | >Security Prof: 3 ^       | | >BRI U Interface ^    |
|                              | | Software +4.5A+          | | Adrs: 00c07b520036   |
|                              | | S/N: 5366006 v          | | Enet I/F: AUI v     |
+-----+-----+-----+ +-----+ +-----+

```

Press Ctrl-n to move cursor to the next menu item. Press return to select it.
Press Tab to move to another window --- thick border indicates active window.

Configuring the Ascend Pipeline 130 (cont'd)

Press ESC to go to the Mod Config menu, then press ESC again to get to the Ethernet menu
Select the Frame Relay menu.

```

Main Edit Menu --+
                +- 20-000 Ethernet --+
                                +- 20-500 Frame Relay --+
                                                +- 20-501 * FR
+----- DOMAIN EDIT -----+ +-----+ +-----+
| 20-501 * FR                  | | 10-100 1  T1/CSU  | | 00-200 00:00:05 |
| >Name=FR                    | | Link X  CARRIER | | >M31 Line  Ch  |
| Active=Yes                  | | B1  .                | | Ethernet Up   |
| Call Type=Nailed           | | B2  .                | |               |
| FR Type=DTE                 | +-----+ +-----+
| LinkUp=Yes                  | | 20-100 Sessions | | 20-500 DYN Stat |
| Nailed Grp=3                | | > 1 Active       | | Qual N/A 00:00:00 |
| Data Svc=64K                | | 0                | | OK 0 channels   |
| Dial #=N/A                  | +-----+ +-----+
| Link Mgmt=T1.617D           | | 20-300 WAN Stat | | 20-400 Ether Stat |
| N391=6                       | | >Rx Pkt: 0^      | | >Rx Pkt: 0        |
| DTE N392=3                   | | Tx Pkt: 0       | | Tx Pkt: 1        |
| DTE N393=4                   | | CRC: 00v       | | Col: 0          |
| DTE N392=N/A                | +-----+ +-----+
| DTE N393=N/A                | | 00-100 Sys Option | | 00-300 HW Config |
| T391=10                      | | >Security Prof: 3 ^ | | >BRI U Interface ^ |
| T392=N/A                     | | Software +4.5A+  | | Adrs: 00c07b520036 |
| MTU=1532                     | | S/N: 5366006    v | | Enet I/F: AUI     v |
+-----+ +-----+ +-----+

```

Press Ctrl-n to move cursor to the next menu item. Press return to select it.
Press Tab to move to another window --- thick border indicates active window.

Set Nailed Grp=3
Set Data Svc=64K

Press ESC until you return to the Main Edit Menu
From the Main Edit Menu, select Nailed T1, then Mod Config.

```

Main Edit Menu --+
                +- 30-000 Nailed T1 --+
                                +- 30-100 Mod Config --+
+----- DOMAIN EDIT -----+ +-----+ +-----+
| 30-100 Mod Config           | | 10-100 1  T1/CSU  | | 00-200 00:00:05 |
| >Nailed T1 Group=3          | | Link X  CARRIER | | >M31 Line  Ch  |
| Activation=Enabled          | | B1  .                | | Ethernet Up   |
| Framing Mode=ESF            | | B2  .                | |               |
| Encoding=B8ZS               | +-----+ +-----+
| Build Out=0 dB              | | 20-100 Sessions | | 20-500 DYN Stat |
| Number of DS0 channels=24   | | > 1 Active       | | Qual N/A 00:00:00 |
| Loop Back=Normal            | | 0                | | OK 0 channels   |
|                             | +-----+ +-----+
|                             | | 20-300 WAN Stat | | 20-400 Ether Stat |
|                             | | >Rx Pkt: 0^      | | >Rx Pkt: 0        |
|                             | | Tx Pkt: 0       | | Tx Pkt: 1        |
|                             | | CRC: 00v       | | Col: 0          |
|                             | +-----+ +-----+
|                             | | 00-100 Sys Option | | 00-300 HW Config |
|                             | | >Security Prof: 3 ^ | | >BRI U Interface ^ |
|                             | | Software +4.5A+  | | Adrs: 00c07b520036 |
|                             | | S/N: 5366006    v | | Enet I/F: AUI     v |
+-----+ +-----+ +-----+

```

Press Ctrl-n to move cursor to the next menu item. Press return to select it.
Press Tab to move to another window --- thick border indicates active window.

Set the Number of DS0 channels to be your line speed divided by 64K. If you have a 256k connection then the number of DS0 channels is 4.

Configuring the Ascend Pipeline 130 (cont'd)

The router should now be configured for Frame Relay.

Press ESC until you are at the Main Edit Menu.

Select System.

Select Sys Diag.

Select System Reset.

This will reset the router.

The Frame Relay connection should come up.

Important Circuit Information

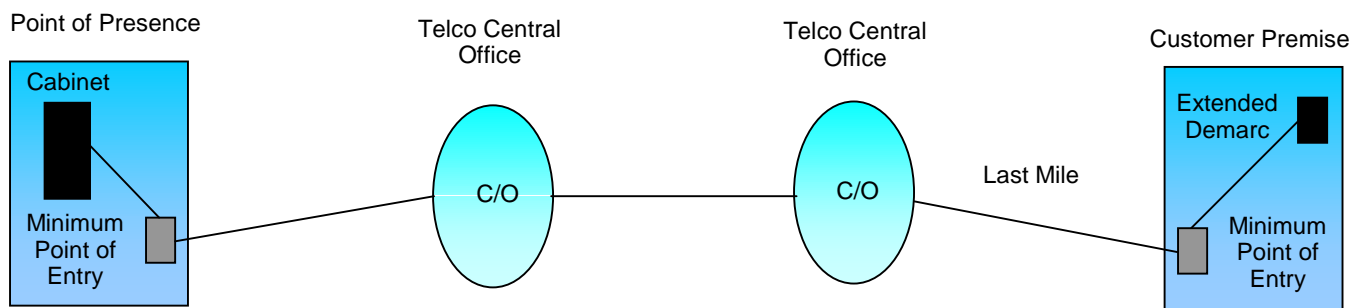
This document is designed to give you a general idea of what is involved in building a circuit for your Internet use.

You will be receiving weekly status updates which include the following dates concerning your Leased Line Circuit:

- Date the circuit was ordered by us.
- Estimated date of circuit installation (unconfirmed)
- Scheduled date of circuit installation (if provided by the telco)
- Date circuit turn up was accepted by our Network Operations Group

Once the circuit has been accepted by NOPs you will receive an “available” message indicating that the circuit is ready and to call our Corporate Installations Group to setup your initial appointment.

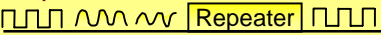
Please be aware that the circuit is not ready until you receive this message. It is often thought that when the circuit is installed at your site that all is ready to go. Sometimes it is, sometimes it is not. The following is a simple diagram of a circuit:



General Process:

1. The circuit is ordered by us with the telco. The telco “designs” the circuit from our Point of Presence (POP) to your site’s Minimum Point of Entry (MPOE).
2. The telco completes the circuit from our POP, through the Central Office(s), to your MPOE. An extended demarc needs to be run from the MPOE to your equipment room which is usually handled by the telco.
3. When the telco is done they will contact us to test the line. When test is complete and satisfactory you will be sent a message asking you to setup your initial appointment.

Some Pitfalls:

1. Due to timing, design changes may be required at one or more Telco Central Office.
2. Facilities problems occur, usually in the “Last Mile.” For example, construction requirements, repeaters required to “clean up” the signal. 
3. All looks ready to go but you still cannot get a good connection. It may be that a loop has been left at one of the Telco Central Offices not allowing the signal to reach your site. We have no way of knowing this at the time of testing but our Operations Group will work with the Telco to resolve.