ASTRO 25 ANALOG MODEM II

ASTRO 25 IP MODEM II

&

GTR 8000 PORT EXPANDER

Installation Guide

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Sacramento, California 95842
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REGULATORY INFORMATION

FCC Requirements

This equipment complies with FCC rules Part 68. Located on the equipment is the FCC Registration Number and Ringer Equivalence Number (REN). You must provide this information to the telephone company, if requested.

The Registration Number and REN are inscribed on the printed circuit board on insert cards, or on a label attached to either the chassis bottom or metal end-plate on standalone or rack models. The FCC requires that these numbers be prominently displayed on an outside surface of the equipment.

The REN is used to determine the number of devices you may legally connect to your telephone line. In most areas, the sum of the REN of all devices connected to one line must not exceed five (5.0). Contact your telephone company to determine the maximum REN for your calling area.

A variety of Universal Service Ordering Code (USOC) telephone wall jacks are available for different types of devices or services. The USOC jack required for this unit is RJ11/RJ41S/JM8.

The telephone company may change technical operations or procedures affecting your equipment. You will be notified of changes in advance to give you ample time to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact:

Raymar Information Technology, Inc.
7325 Roseville Road
Sacramento, CA 95842
1-800-747-1522

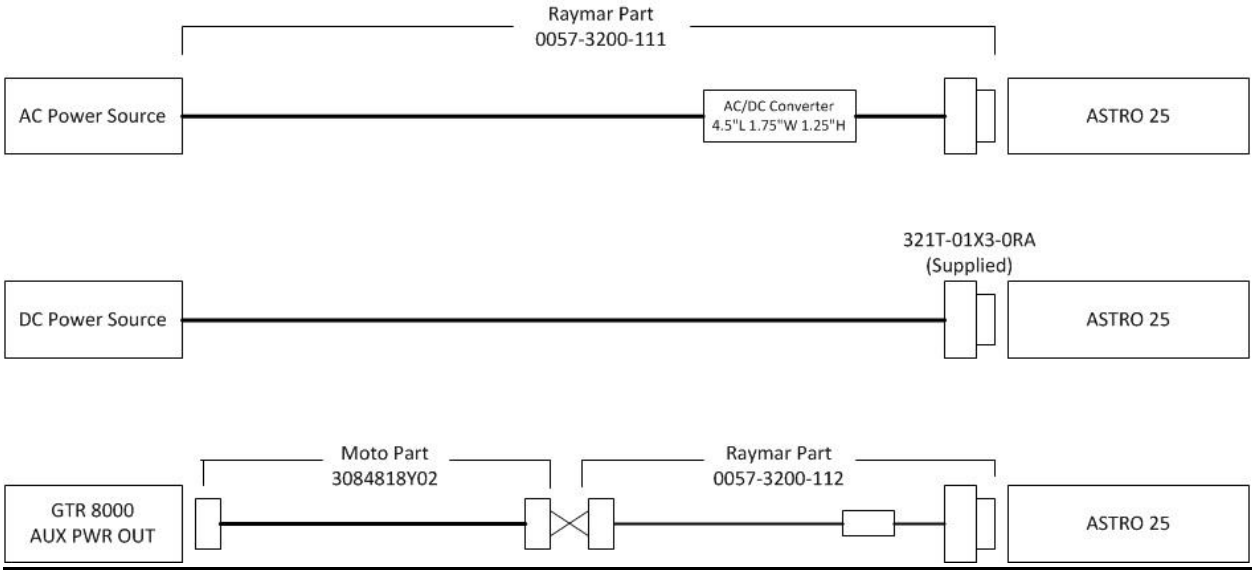
The telephone company may ask that you disconnect this equipment from the network until the problem has been resolved. If your equipment continues to disrupt the network, the telephone company may temporarily disconnect service. If this occurs you will be informed of your right to file a complaint with the FCC. This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

An FCC compliant telephone cord and modular plug are provided with this equipment, which is designed to connect to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. See installation instructions in Chapter 2, Installation, for details.

SPECIFICATIONS

Dimensions:	17.5W x 17L x 1.75H		
	1U Chassis		
Weight:	1 lbs	GTR 8000 Port Expander	
	2 lbs	ASTRO 25 Analog Modem II, ASTRO 25 IP Modem II	
Environmental	Operating Temperature	32° to 98° F	(0° to 40° C)
	Storage Temperature	-40° to 158° F	(-40° to 70° C)
	Relative Humidity	5% to 90%	(Non-condensing)
Power Requirements:	Input voltage:	18 – 36VDC	
		90 – 265 VAC/VDC	(when using 0057-3200-110)
	Input Current:		

POWER OPTIONS



ORDERING INFORMATION

Part Number	Description	Motorola Numbers
0100-3200-100	ASTRO 25 Analog Modem II, DC Powered System bundle includes Full Modem functionality, DC Power cord, External Interconnect bundle*, SCSI interconnect cable.	DS01003200100
0100-3200-105	ASTRO 25 IP Modem II, DC Powered System bundle includes Full IP functionality, DC Power cord, External Interconnect bundle*, SCSI interconnect cable.	DS01003200105
0100-3200-110	GTR 8000 Port Expander, DC Powered System bundle includes DC Power cord, External Interconnect bundle*, SCSI interconnect cable.	DS01003200110
Optional / Spare Parts		
Modem		
TEL-6209548100010	V.3600, RM, UI, MODEM, Spare part only used with the ASTRO 25 Analog Modem II Bundle (0100-3200-100 Only)	DQTEL6209548100010
Cables		
0057-3200-1EB	CABLES, EXTERNAL INTERCONNECT BUNDLE (Replacement Bundle includes V.24, MIC, Spkr & 8 Wire interconnect cables)	DS005732001EB
0057-3200-100	CABLE, SCSI INTERCONNECT, 2' (Replacement Item)	DS00573200100
0057-3200-110	CABLE, DC POWER, LUGS (Replacement Item)	DS00573200110
0057-3200-111	CABLE, AC POWER, EXTERNAL BRICK, 110/240VAC, Optional item not included with base units. Allows unit to be powered by External AC power source, include US power cord	DS00573200111
0057-3200-112	CABLE, POWER ADAPTER, MOTOROLA 3084818Y02 - GAIM, 8", Optional Item not included with base systems, allows the unit to be powered using the AUX power interface on the GTR 8000.	DS00573200112
62680-02	CABLE, 7ft CTP Configuration cable, F/DB25	

Contact Information

For more information about Raymar-Telenetics ASTRO 25 Analog Modem II, ASTRO 25 IP Modem II & GTR 8000 Port Expander, or other Raymar-Telenetics solutions, contact us using any of the following methods.

Voice Calls
We welcome your calls at **(800) 747-1522** Monday through Friday, from 7:00 am to 5:00 pm Pacific Time.

Fax Number
You can also send your requests for information to our 24-hour fax number: **(916) 783-1952**.

E-mail
If you prefer, you can send information requests to our 24-hour e-mail address: **support@Raymarinc.com**.

Website
Our website contains valuable information about our products. We encourage you to visit us online at **www.Raymarinc.com**.

Table of Contents

Section 1.01 INTRODUCTION

The Raymar-Telenetics ASTRO 25 Analog Modem II, the ASTRO 25 IP Modem II &GTR 8000 Port Expander is a 1U chassis. It measures 17.5 inches wide by 1.75 inches high by 17 inches deep, and mounts in a standard 19" rack. They are available with either DC or AC input power. This guide covers all versions.

ASTRO 25 Analog Modem II

ASTRO 25 IP Modem II & GTR 8000 Port Expander

Compatibilities

Note: Product is not compatible with the following:

- ORIGINAL ASTRO Modem
- MDC1200 feature
- TRC feature.

Section 1.02 APPLICATIONS

The ASTRO 25 Analog Modem II, the ASTRO 25 IP Modem II & GTR 8000 Port Expander fulfills 3 roles:

- Point to Point connectivity between the GTR 8000 and Astrotac / Quantar base stations over a 4wire analog leased line network (***V.34, 28.8Kbps***)
- Point to Point connectivity between the GTR 8000 and Astrotac / Quantar base stations over an IP network
- Port Duplication for GTR 8000

Section 1.03 OVERVIEW

The ASTRO 25 Analog Modem II, the ASTRO 25 IP Modem II & GTR 8000 Port Expander provide port connectivity for the following interfaces:

- Front Panel
  - Microphone
  - Speaker
  - Headset
- Rear Panel
  - 4 Wire Leased Line
  - 8 Wire Interface
  - DB25 Telco Interface
  - 50 Pin Telco
  - Aux Port
  - Ethernet Port

Section 2.01 INSTALLATION

This section describes how to install the ASTRO 25 Analog Modem II, the ASTRO 25 IP Modem II & GTR 8000 Port Expander.

Section 2.02 UNPACKING AND INSPECTING EQUIPMENT

Unpack the equipment and inspect it for any damage that may have occurred in shipment. If you see any damage or if items are missing, contact Raymar-Telenetics. Keep the shipping container and packing material for future shipment.

- In The Box:
  - Chassis
  - DC Power Cord
  - Programing Cable
  - Inter-Connect Cable assembly
  - CD Rom

Section 2.03 SITE PREPARATION

When selecting a location to install the ASTRO 25 Analog Modem II, the ASTRO 25 IP Modem II & GTR 8000 Port Expander, choose a site that:

- ❖ Is clean, well lit, and free from extremes of temperature, humidity, appreciable shock, and vibration.
- ❖ Is within seven feet of a power source that can furnish 90-265 VAC/DC* or 24-48 ±4 VDC at 3.5 amps.
- ❖ Provides at least 36 inches of clearance at the front for operating and maintenance accessibility.
- ❖ Provides at least 4 inches at the back of the enclosure for interface cable clearance and unobstructed airflow.
- ❖ Side and top clearances for rack-mounted equipment are dictated by the rack-cabinet provisions, but should allow a free flow of cooling air.

After the unit is running, check the ambient air temperature. Make sure it does not exceed the operating temperature limit specified in Appendix A.

*External Power

Section 2.04 REQUIRED TOOLS AND TEST EQUIPMENT

Special tools or test equipment are not required for installation.

Section 2.05 INSTALLATION PROCEDURES

Service personnel should be familiar with the complete installation procedure before installing the unit.

Section 3.01 ASTRO 25 Analog Modem II and GTR 8000 Port Expander Applications

Figure A.

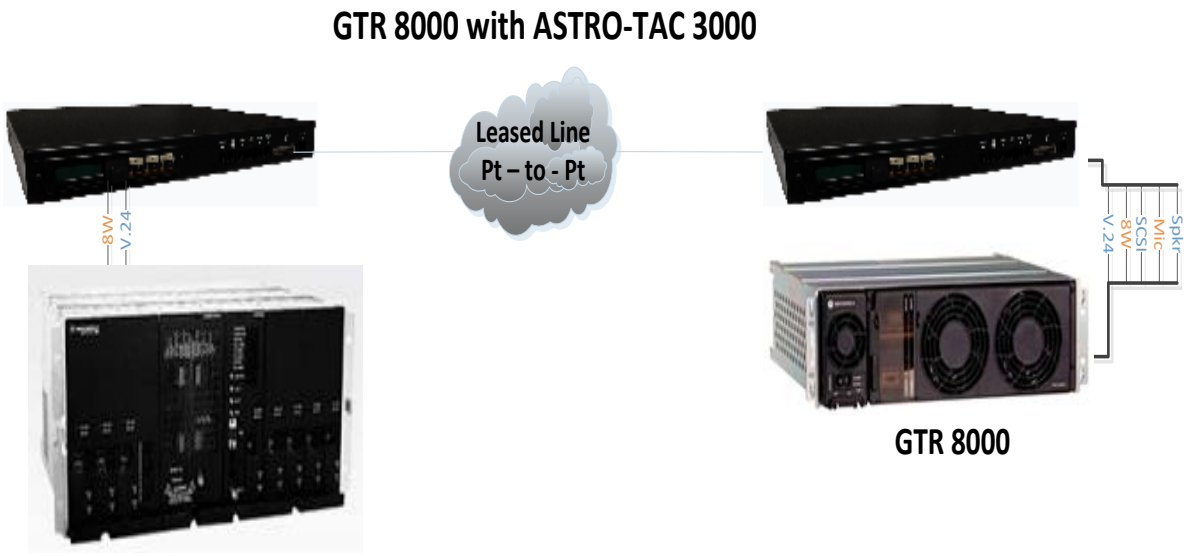


Figure B.

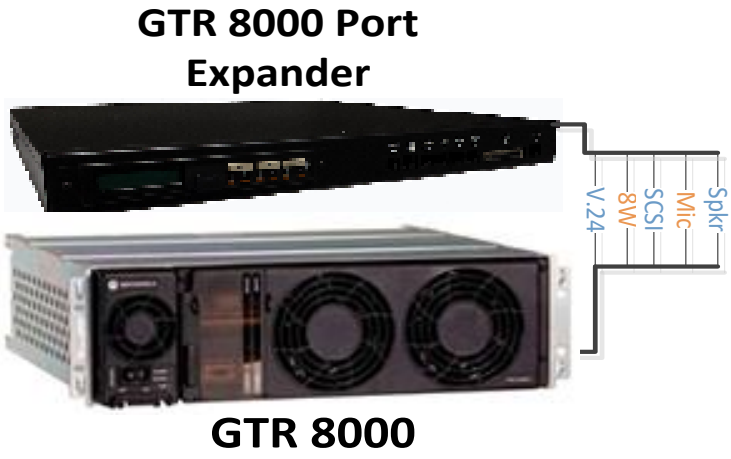
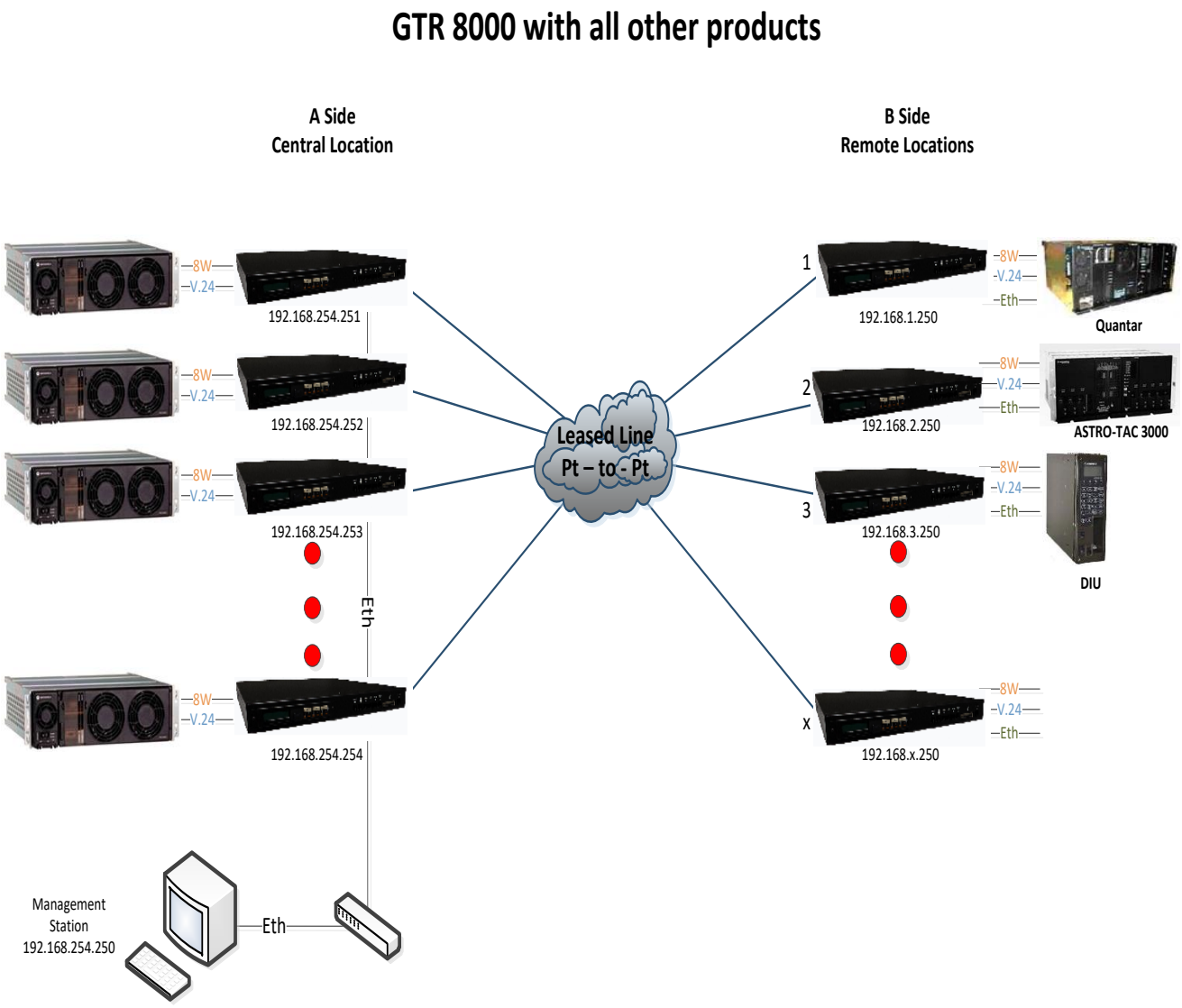


Figure C.



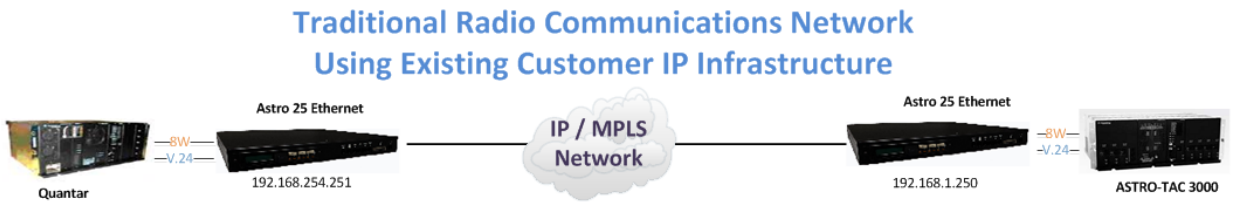
When multiple QUANTAR and GTR base stations are voted on the same ASTRO-TAC comparator, the ASTRO 25 Analog Modem II will be required for each leased link to the comparator. Mixing the traditional QUANTAR / ASTRO-TAC interfaces with the ASTRO 25 Analog Modem II on the same voted ASTRO-TAC channel may cause problems with audio quality.

Section 3.02 ASTRO 25 IP Modem II Applications

Traditional Radio networks rely on low speed analog leased lines for site to site connectivity.

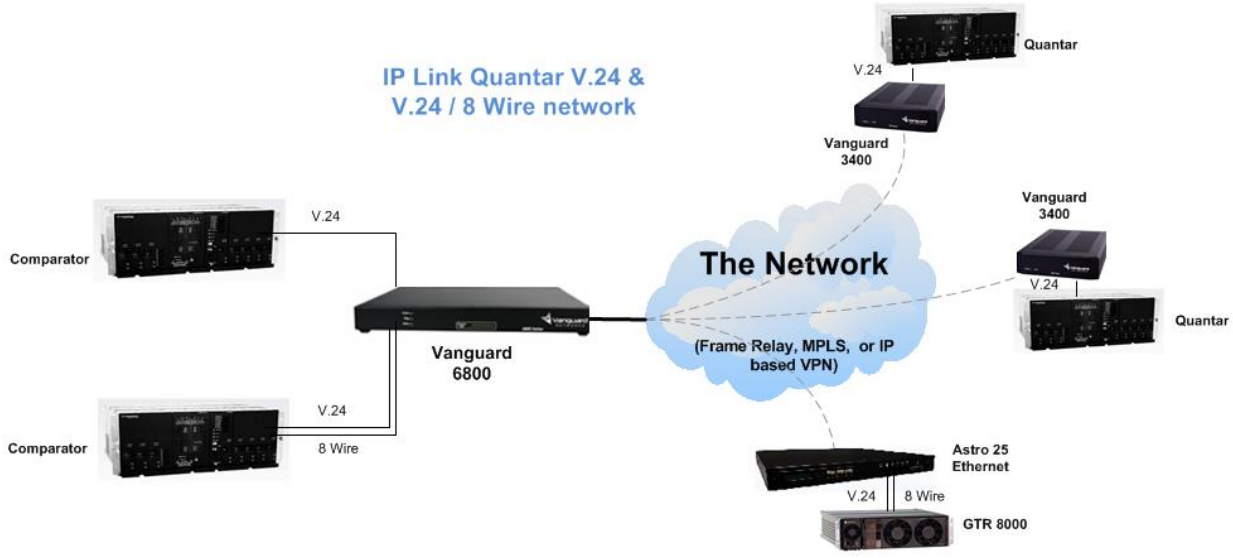
The Raymar ASTRO 25 IP Modem II offers network solutions to bridge older network requirements with current network infrastructure. Our unique product solutions offer a wide range of solutions to meet any network requirements.

By utilizing existing IP infrastructure customers can eliminate monthly leased lines fees and improving the ROI on the new equipment investments. Our ASTRO 25 IP Modem II solution provides easy access to traditional QUANTAR / ASTRO-TAC interfaces while providing connectivity for either V.24 or Hybrid connections between locations utilizing existing IP networks.



Expanding the Radio network to newer technology is easy with support for the GTR 8000 products.

Large networks with complex layouts and multiple locations are easily supported using our Vanguard products, offering network backup and failover.



Section 4.01 CABLING

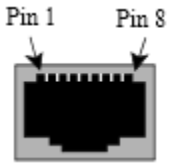
Rear Panel Ports

Power:

+ Ve	GND	-Ve

Prgm Port:

This port has an RJ45 connector. Use the Prgm port for communicating with, configuring, monitoring, and coldloading the node.



Pin Number	Console Port	
	Signal	**DCE**
1	RTS	Input
2	DTR	Input
3	RXD	Output
4	DCD	Output
5	GND	--------
6	TXD	Input
7	DSR	Output
8	CTS	Output

V.24

Pin	Signal
1	RCLK
2	CD
3	TCLK
4	GND
5	RXD
6	TXD
7	CTS
8	RTS

4 Wire:

Tx	Tx	Rx	Rx

Rear 8 Wire Screw Connectors Left to Right:

Pin	Signal
1	Line 3+
2	Line 3 -
3	Line 4+
4	Line 4 -
1	Line 1 -
2	Line 1+
3	Line 2+
4	Line 2 -

Ethernet Port:

Pin	**Signal**
1	Transmit Positive
2	Transmit Negative
3	Receive Data Positive
4	Not Used
5	Not Used
6	Receive Data Negative
7	Not Used
8	Not Used

DB25 Phone Patch/6809 Controller Interface:

5	Phone Patch - PL -Strip
4	Phone Patch - Monitor
23	Trunking - Mute
15	Phone Patch -RX Carrier Detect
12	Trunking - TSTAT
7 22	Phone Patch - Rx Audio Trunking - Wideband Receive Audio
13	Trunking - Tdata +
2	Phone Patch - PTT
24	trunking - Control Channel Indicate
16	Ground
8	Phone Patch - Inhibit
17	Ground
18	Ground
25	Trunking - RSTAT
19	Ground
20	Ground

50 Pin Telco:

12	Auxiliary Input 2	Input	Pull To Ground To Activate
14	Auxiliary Input 4	Input	Pull To Ground To Activate
16	Auxiliary Input 6	Input	Pull To Ground To Activate
42	Auxiliary Input 8	Input	Pull To Ground To Activate
47	Auxiliary Input 9	Input	Opto-Isolated Input - Current flow to Activate
48	Auxiliary Input 10 -	Input	Opto-Isolated Input - Current flow to Activate
49	Auxiliary Input 11 -	Input	Opto-Isolated Input - Current flow to Activate
50	Auxiliary Input 12 -	Input	Opto-Isolated Input - Current flow to Activate
n/a	Auxiliary Input 13	Input	Pull To Ground To Activate
n/a	Auxiliary Output 12	Output	Low Impedance to Ground When Active
37	Auxiliary Output 2	Output	Low Impedance to Ground When Active
39	Auxiliary Output 4	Output	Low Impedance to Ground When Active
41	Auxiliary Output 6	Output	Low Impedance to Ground When Active
18	Auxiliary Output Relay 7 Com	Output	Form Relay A Closed When Active
19	Auxiliary Output Relay 8 Com	Output	Form Relay A Closed When Active
20	Auxiliary Output Relay 9 Com	Output	Form Relay A Closed When Active
21	Auxiliary Output Relay 10 Com	Output	Form Relay A Closed When Active
n/a	Auxiliary Output 11	Output	Low Impedance to Ground When Active
n/a	External_Reset	Input	Buffered Input Pull To Ground To Activate
n/a	TSTAT	Output	0 Volts When Inactive / +5 Volts when Active
30	AUX RX	Output	Analog Signal - 600 ohm Unbalanced
n/a	TX DATA-	Input	Analog Signal - Future Use
5	AUX TX	Input/	Analog Signal - 600 ohm Unbalanced
35	PL-	Input	Analog Signal - 600 ohm Unbalanced
9	Gen TX-	Input	Analog Signal - 600 ohm Unbalanced
11	Auxiliary Input 1	Input	Pull To Ground To Activate
13	Auxiliary Input 3	Input	Pull To Ground To Activate
15	Auxiliary Input 5	Input	Pull To Ground To Activate
17	Auxiliary Input 7	Input	Pull To Ground To Activate
22	Auxiliary Input 9 +	Input	Opto-Isolated Input - Current flow to Activate
23	Auxiliary Input 10 +	Input	Opto-Isolated Input- Current flow to Activate
24	Auxiliary Input 11 +	Input	Opto-Isolated Input - Current flow to Activate
25	Auxiliary Input 12 +	Input	Opto-Isolated Input - Current flow to Activate
7	GND		
n/a	Auxiliary Input 14	Input	Pull To Ground To Activate
36	Auxiliary Output 1	Output	Low Impedance to Ground When Active
38	Auxiliary Output 3	Output	Low Impedance to Ground When Active

40	Auxiliary Output 5	Output	Low Impedance to Ground When Active
43	Auxiliary Output Relay 7 N.O.	Output	Form Relay A Closed When Active
44	Auxiliary Output Relay 8 N.O.	Output	Form Relay A Closed When Active
45	Auxiliary Output Relay 9 N.O.	Output	Form Relay A Closed When Active
46	Auxiliary Output Relay 10 N.O.	Output	Form Relay A Closed When Active
32	GND		
n/a	GND		
n/a	RSTAT	Output	0 Volts When Inactive / +5 Volts when Active
n/a	GND		
n/a	TX DATA+	Input	Analog Signal - Future Use
n/a	GND		
10	PL+	Input	Analog Signal
34	Gen TX+	Input	Analog Signal
1	Line 1 +		
2	Line 2 +		
3	Line 3 +		
4	Line 4 +		
8	8 VDC		8 VDC UNLOADED, 5.5 VDC LOADED
26	Line 1 -		
27	Line 2 -		
28	Line 3 -		
29	Line 4 -		
33	14.2 VDC		
6			
31			

Section 4.02 PHYSICAL LAYOUT

Front Panel:

Output Connectors:

MIC

Signal Name	Pin #
Reserved	1
Reserved	2
AUX IN15 (Mic_PTT*)	3
MIC	4
GND	5
Reserved	6
Reserved	7
Reserved	8

Speaker

Signal Name	Pin #
GND	1
12VDC	2
GND	3
External Spkr	4

Handset

Signal Name	Pin #
SPKR	2
MIC	3
GND	4

*The handset port is compatible with Motorola FHN7290

Front 8 Wire In RJ45

Signal Name	RJ45 Pin #
Line 2+	1
Line 2-	2
Line 3+	3
Line 1-	4
Line 1+	5
Line 3-	6
Line 4+	7
Line 4-	8

Section 5.01 INSTALLATION PROCESS

Powering Up Your ASTRO 25 Analog Modem II, ASTRO 25 IP Modem II & GTR 8000 Port Expander

Front Panel Operation.

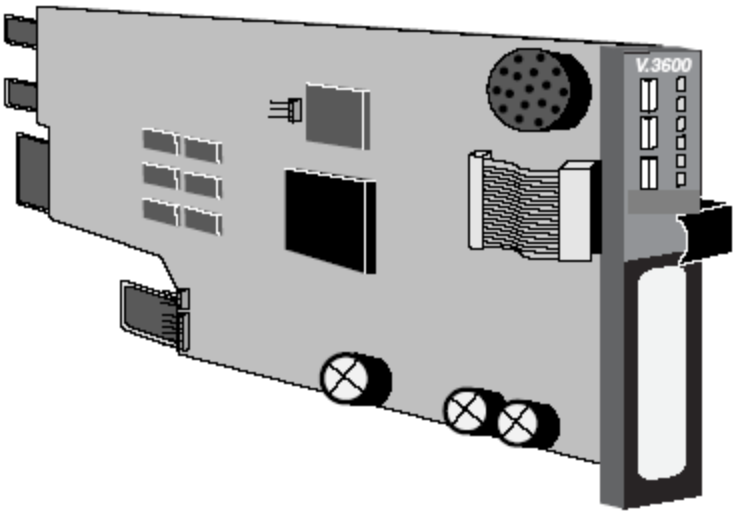
In the ASTRO 25 Analog Modem II model, the configuration for the modem is performed using the front panel display.

The liquid-crystal display (LCD) front panel provides easy real-time access to modem configuration and status. You can use the LCD at any time to modify modem options or to get information about modem operation and status. Operation of the LCD can be secured using a password protection feature. A remote modem can even be configured using the local LCD, through the use of the front panel remote configuration feature.

LED Descriptions

The V.3600 LED indicator functions are as follows:

- TR (Terminal Ready). TR lights when the DTE asserts Data Terminal Ready. This signal is input on pin 20 (CCITT V.24/108.2).
- CS (Clear to Send). CS lights when the modem is ready to send data to the DTE. This signal is output on pin 5 (CCITT V.24/106).
- RS (Request to Send). RS lights when the DTE is ready to send data to the modem. This signal is input on pin 4 (CCITT V.24/105).
- CD (Carrier Detect). CD lights when the received audio carrier signal is detected or, if enabled, when error control protocol negotiation is complete. This signal is output on pin 8 (CCITT V.24/109).
- RD (Received Data). RD lights for a data space condition at the receive data output, indicating receive data output activity. This signal is output on pin 3 (CCITT V.24/104).
- TD (Transmit Data). TD lights for a data space condition at the transmit data input, indicating transmit data input activity. This signal is input on pin 2 (CCITT V.24/103).



RM16M Version of the V.3600

Detailed configuration options are detailed in the section for the V.3600 Modem.

For the ASTRO 25 Analog Modem II model, the units operate in an “A” and “B” configuration. The “A” unit installed at the master location and the “B” unit installed at the remote location.

Configure the Modem

Step 1

The “MASTER” Modem:

Initial Power on Mode:

The LCD will display = “V.3400 33600 Idle”

Follow these steps to complete the Modem configuration.

Press “No” 4 Times, Display = “Modify Configuration?”

Press “Yes” Once

Press “Talk/Data” Once, Display = “Load or Store Option Set?”

Press “Yes” twice, Display = “Load Factory Option Set #1?”

Press “No” 3 times, Display = “Load Factory Option Set #4?”

Press “Yes” Twice, Display = “Store Present Options?”

Press “No” 3 times, Display = “Modify Configuration?”

Press “Yes” Twice

Press “No” 3 times, Display = “DCE MAX RATE IS 33600. CHANGE?”

Press “Yes”

Press “No”, Display = “CHANGE MAX RATE TO 28800 BPS?”

Press “YES”

Press “Talk/Data” Twice, Display = “Load or Store Option Set?”

Press “YES”

Press “No” Twice, Display = “STORE PRESENT OPTIONS?”

Press “YES” 3 times

Press “Talk/Data” 3 times, Display = “V.34 28800 TRAINING”

Step 2

The “REMOTE” Modem:

Initial Power on Mode:

The LCD will display = “V.3400 33600 Idle”

Follow these steps to complete the Modem configuration.

Press “No” 4 Times, Display = “Modify Configuration?”

Press “Yes” Once

Press “Talk/Data” Once, Display = “Load or Store Option Set?”

Press “Yes” twice, Display = “Load Factory Option Set #1?”

Press “No” 3 times, Display = “Load Factory Option Set #4?”

Press “Yes” Twice, Display = “Store Present Options?”

Press “No” 3 times, Display = “Modify Configuration?”

Press “Yes” Twice

Press “No” 3 times, Display = “DCE MAX RATE IS 33600. CHANGE?”

Press “Yes”

Press “No”, Display = “CHANGE MAX RATE TO 28800 BPS?”

Press “YES”

Press “No” 4 times, Display = “NORMAL ORIGINATE FORCED ANSWER?”

Press “YES”

Press “Talk/Data” Twice, Display = “Load or Store Option Set?”

Press “YES”

Press “No” Twice, Display = “STORE PRESENT OPTIONS?”

Press “YES” 3 times

Press “Talk/Data” 3 times, Display = “V.34 28800 TRAINING”

*After connecting the ASTRO 25 Analog MODEM II 4W Interface to the leased line, the modems will negotiate a connection and once the modems are Online the display will show “**V.34 28800 ONLINE”,** and the 109/CD LED will be lit. After the next step is completed, “CONFIGURING THE ROUTER”, all of the LED’s should be illuminated.*

CONFIGURING THE ROUTER IN ASTRO 25 Analog Modem II Models

Configuration templates are included on the CD.

Install the TeraTerm application included on the CD or use another Terminal emulator that supports …….

Select the configuration files applicable to the units. Use the MODEM_A.MEM and MODEM_B.MEM files for ASTRO 25 Modem II units. Use the ETH_A.MEM and ETH_B.MEM files for ASTRO 25 IP Modem II units. After the files have been uploaded, it is recommended to perform a soft boot of the units. This is done by entering 7.4.y from the Main menu of the router.

Ensure Serial connection to Prgm port

The process assumes the serial connection to the Prgm port and TeraTerm settings have already been verified. Please refer to the document “Serial Port Access” if needed.

Step 3

Verify CTP access and proper credentials

To login into the router at the “OK” prompt enter “**ATDS**”, or an asterisks prompt “*****” enter “**.ctp**”.

Enter a password if required, if a password hasn’t been set, simply hit the enter key.

If option “15. Configuration Save/Restore” is unavailable, the proper password needs to be entered. To do this, enter “**1**” (option “1. Logout”), and then log back in and enter the correct password when prompted.

Step 4

Restoring the configuration memory

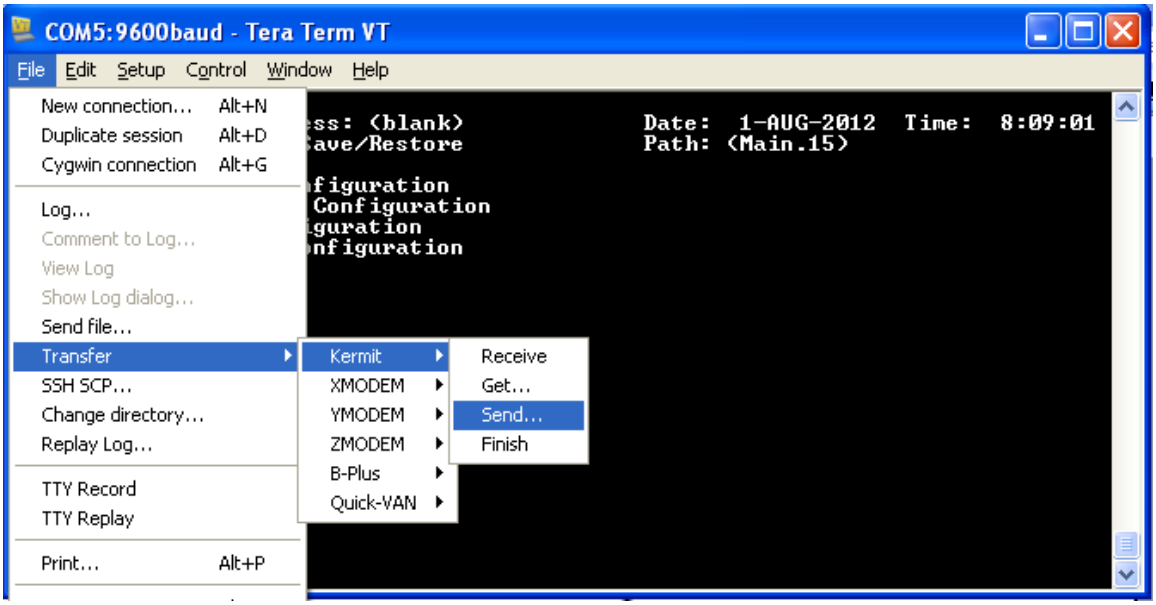
Configure router to receive appropriate MEM file from laptop\PC

From the main menu, ether “**15**” for “Configuration Save/Restore”. Then enter “**2**” for KERMIT Restore Configuration.

Note: No need to wait for any further prompt. Random characters may appear on the TeraTerm Window which should be ignored.

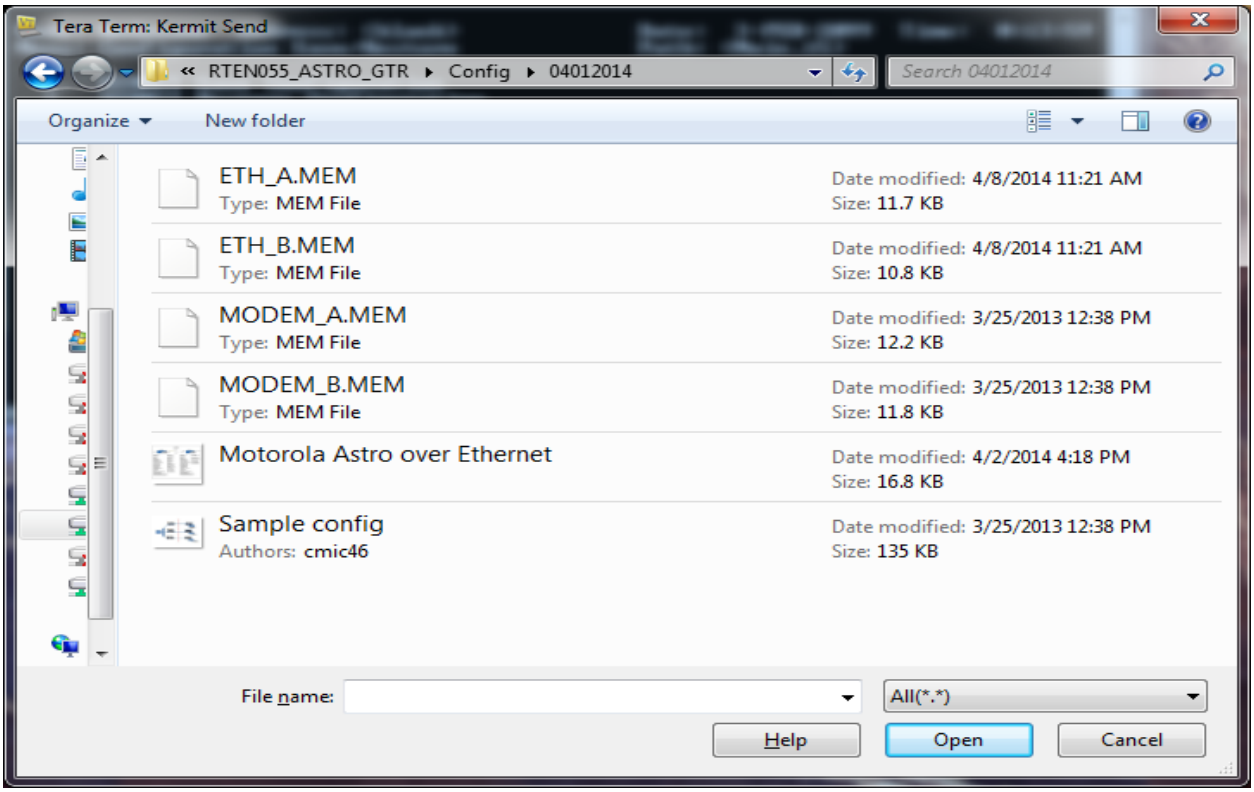
Configure TeraTerm application to send file using Kermit.

From the TeraTerm “File” pulldown, move the cursor over “transfer”, then “Kermit” and then click on “Send”:

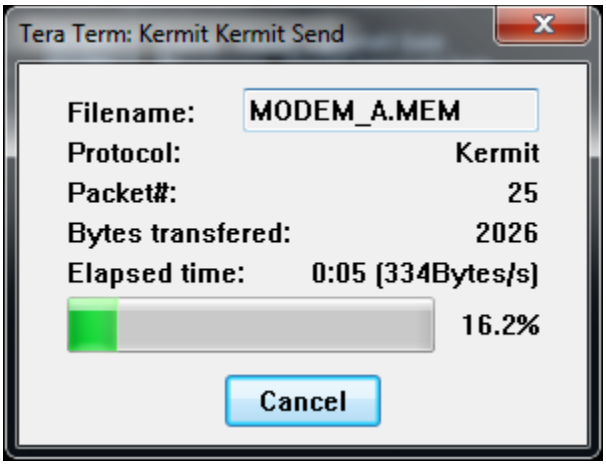


Note: Do not select the “Send File” under the main “File” pull down

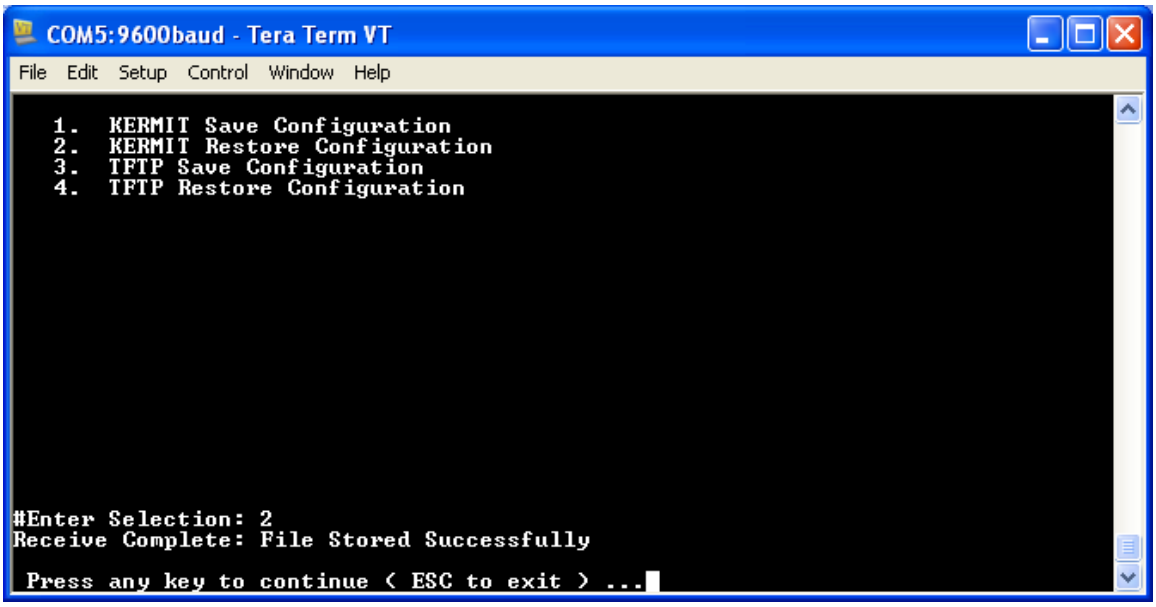
A new window will appear to select which file to send. Browse to the CDROM Config folder and open the MODEM_A.MEM or MODEM_B.MEM for the unit location (Local/Remote).



After opening the file, a progress bar should pop up:



After the file is sent successfully the “Receive Complete: File Stored Successfully” complete message should be displayed on the TeraTerm window:



Notes:

If there is a failure, it is often due to the Kermit protocol timing out before TeraTerm is ready. To recover, restart the process.

Step 5

Boot new configuration online

The configuration has only been loaded; to activate the new configuration, the router must be booted.

From the main menu enter "**7**" for "Boot:", then "**4**" for "Node (warm)" and then "**y**" to initiate. Like all commands, this can be strung together by entering "**7.4.y**".

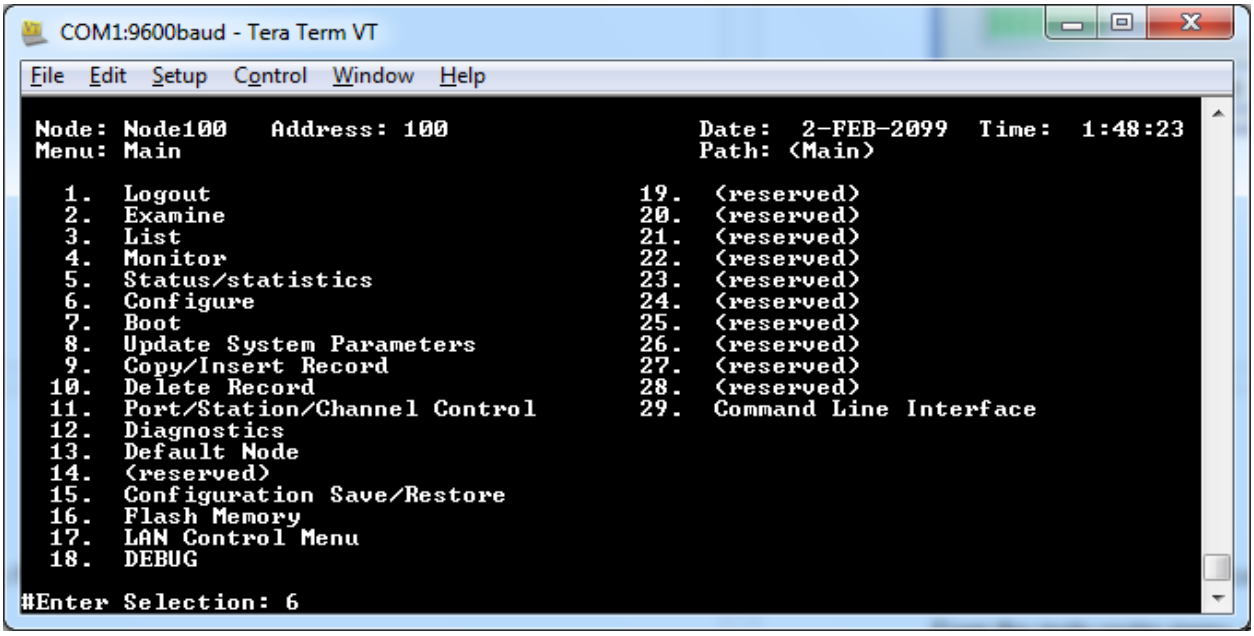
The ASTRO 25 Analog Modem II model configuration is now complete.

CONFIGURING THE ROUTER IN ASTRO 25 IP Modem II Models

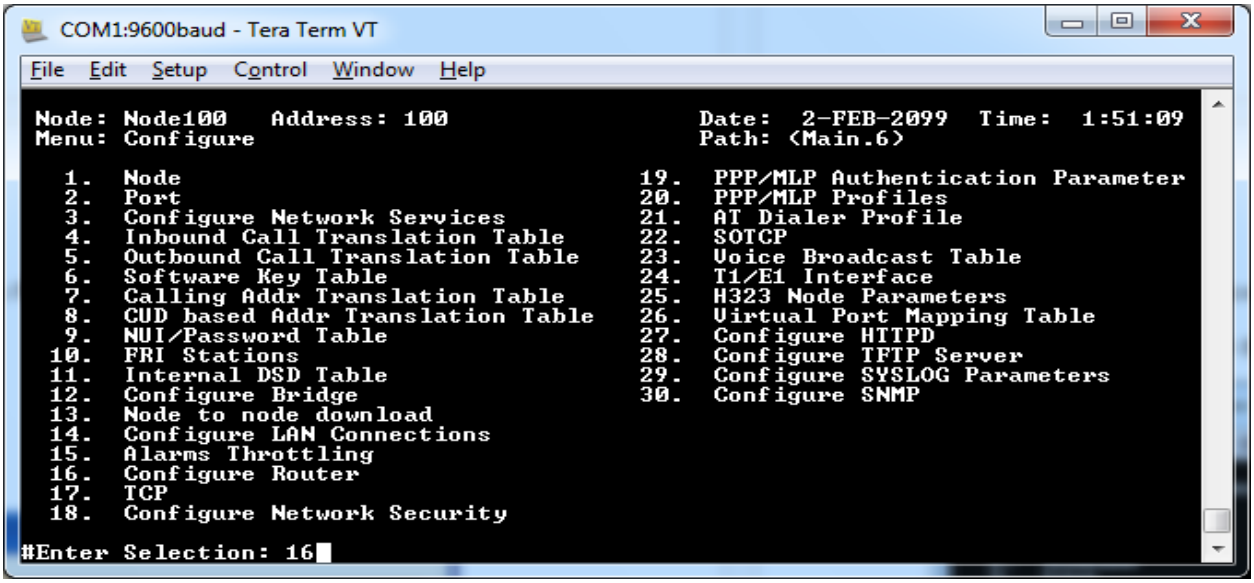
Download configuration files to the ASTRO 25 IP Modem II units in the same manner as were outlined in the ASTRO 25 Analog Modem II units. The ASTRO 25 IP Modem II configuration files are ETH_A.MEM and ETH_B.MEM depending on the unit location (Local/Remote). After the warm boot has been completed, additional router settings will need to be made to complete the configuration.

Setting address and static route for ASTRO 25 IP Modem II models:

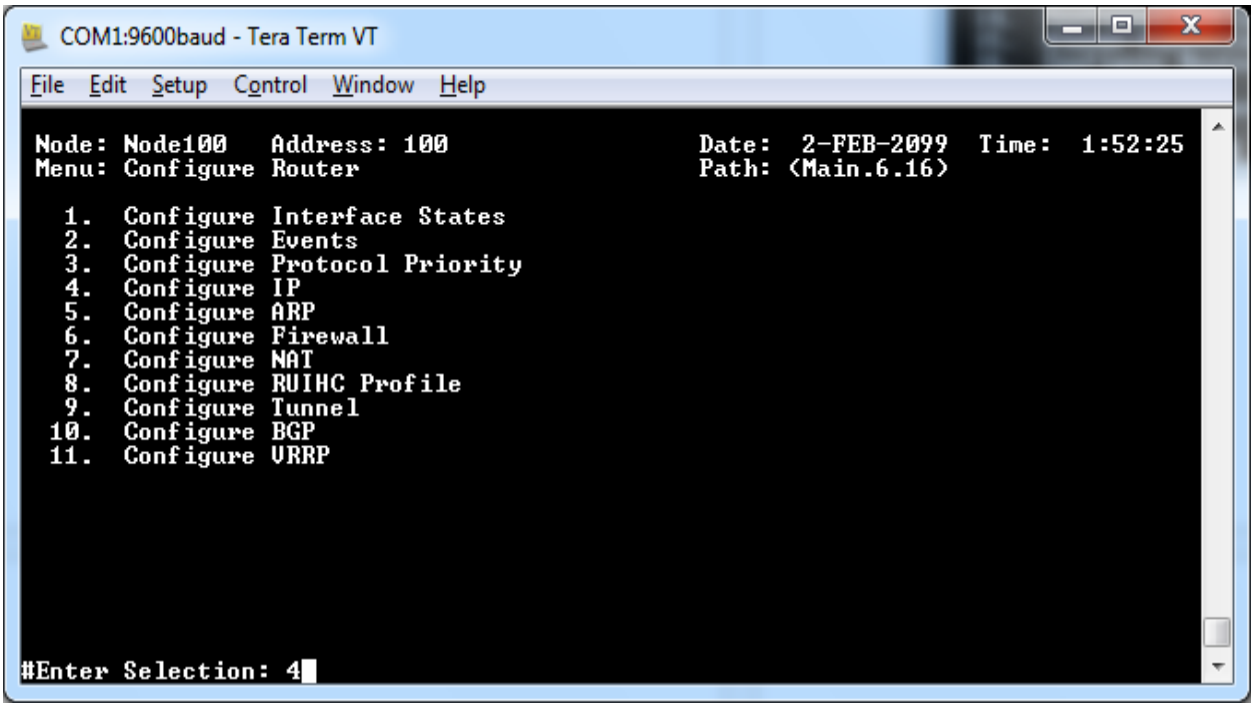
From the Main router menu, enter “6”, Configure.



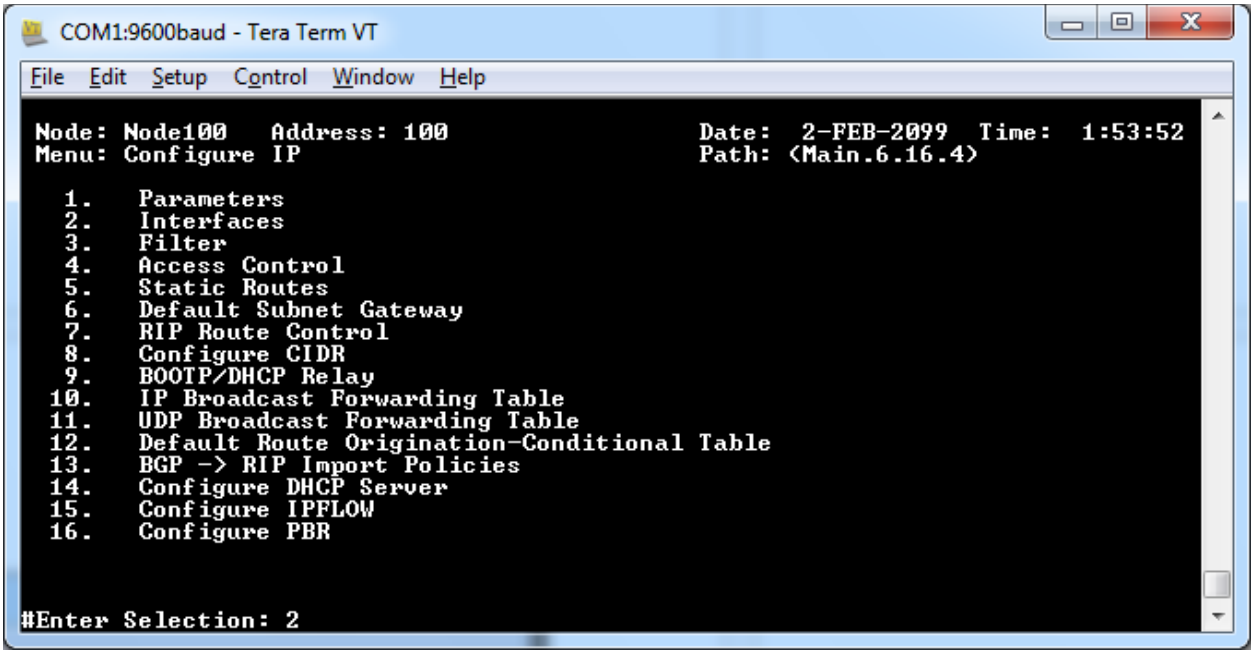
From the Configure menu, enter “16”, Configure Router.



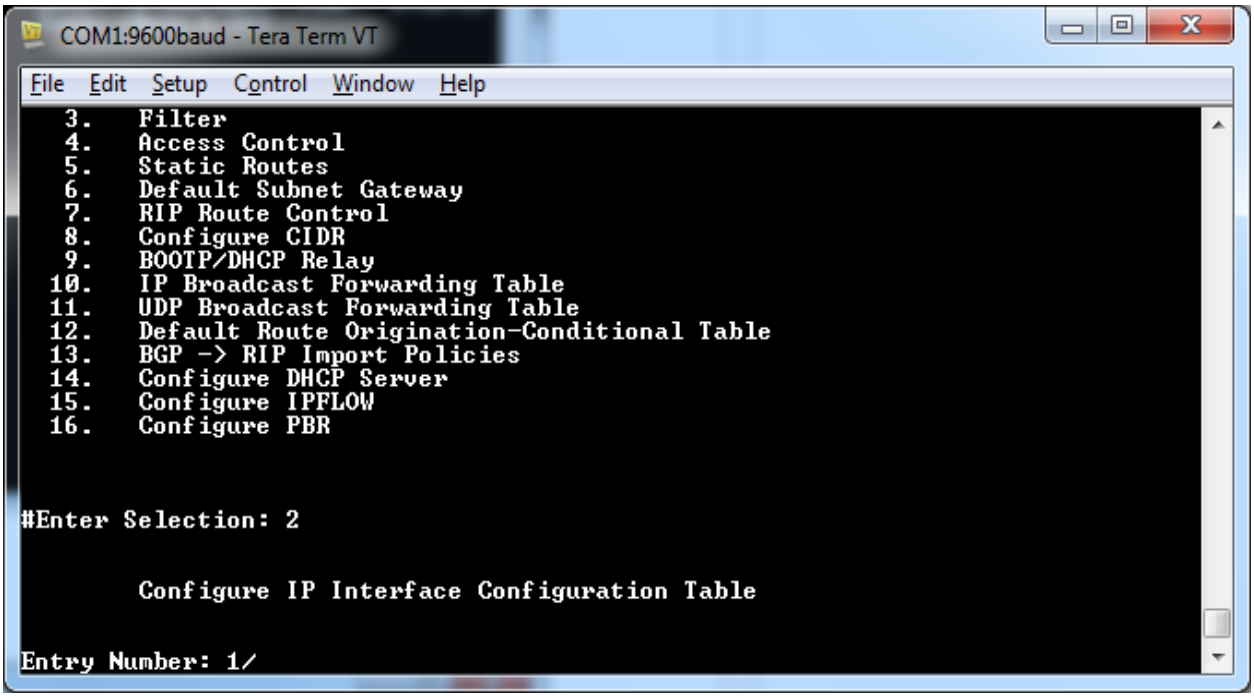
From the Configure Router menu, enter “4”, Configure IP.



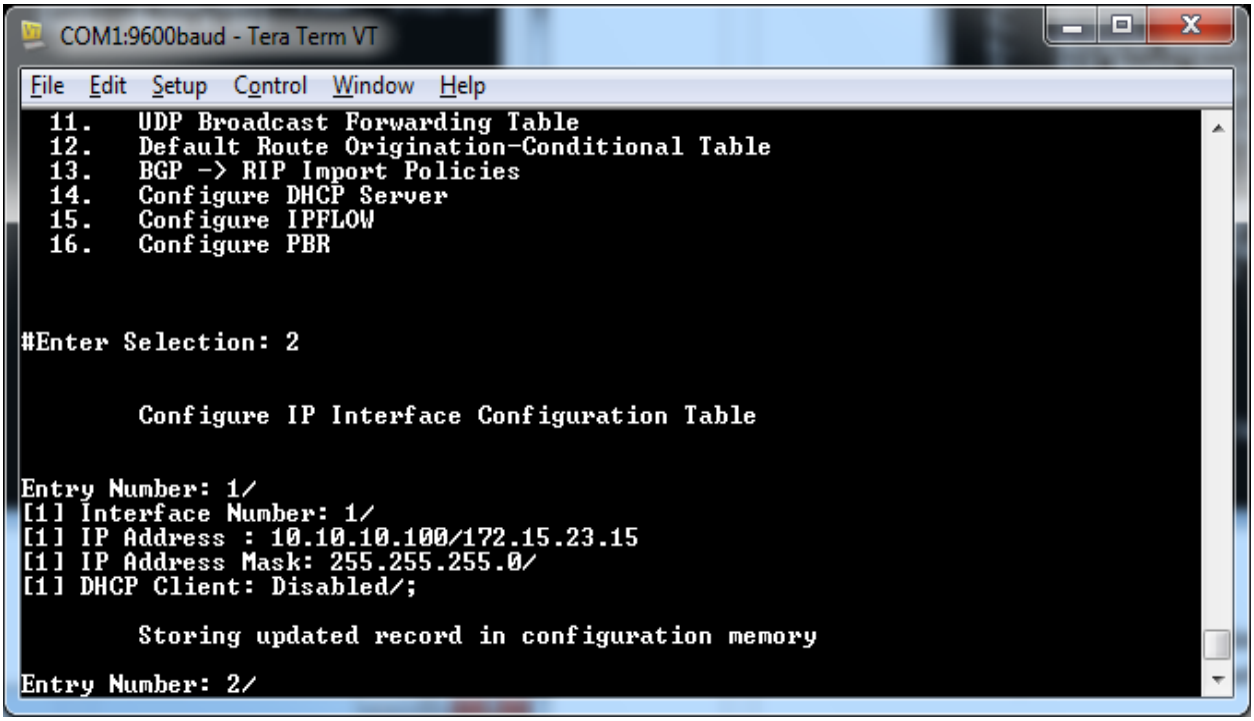
From the Configure IP menu, enter “2”, Interfaces.



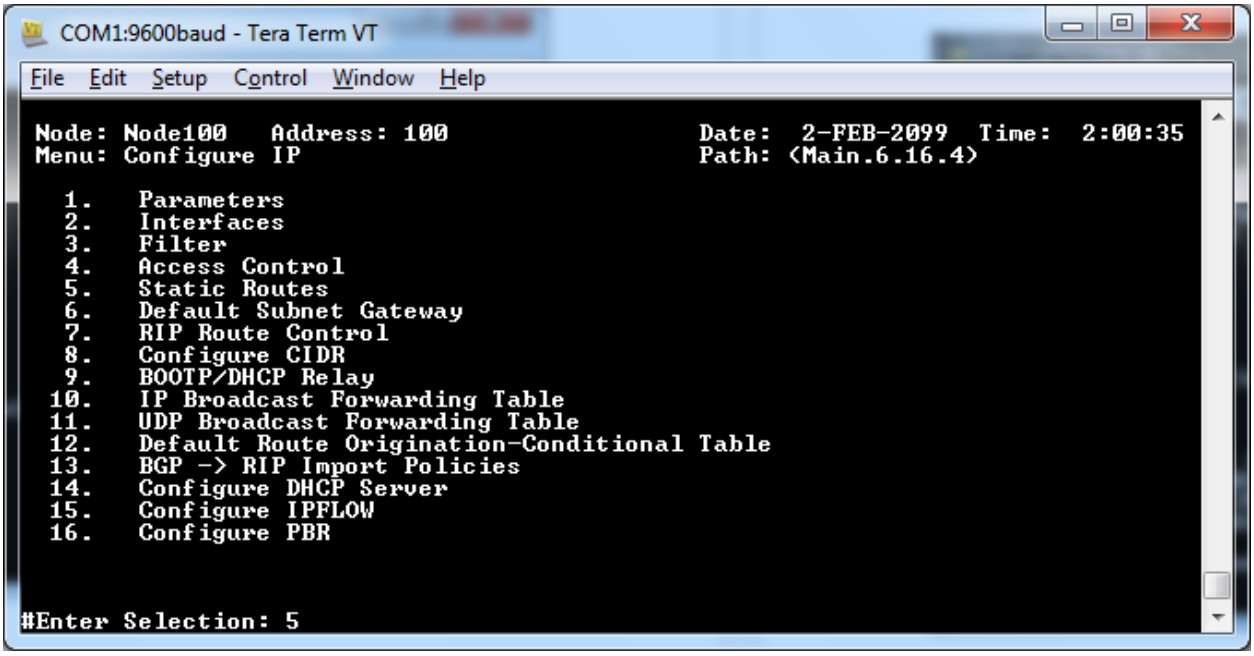
Hit the Enter/Return key to configure Interface 1.



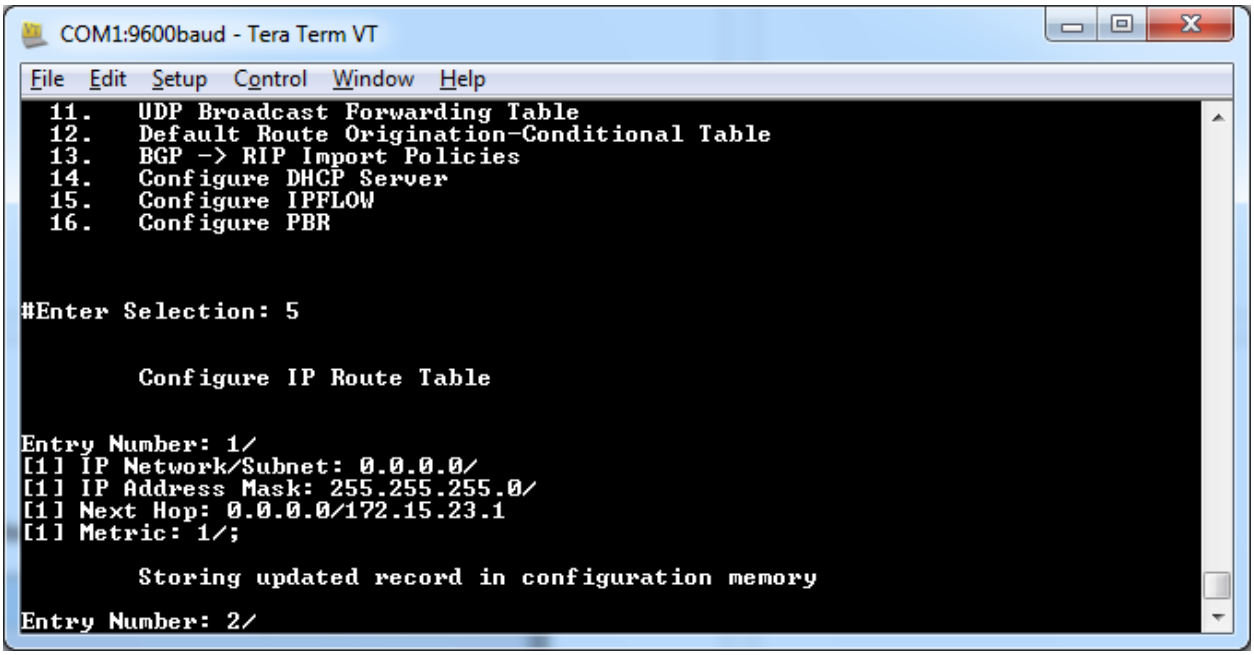
Enter the IP Address and IP Address Mask for the unit as assigned by your IP administrator. Enter a semi-colon in the entry after the mask to write the changes to the configuration memory.



Hit the escape key to return to the Configure IP menu, enter “5”, Static Routes.

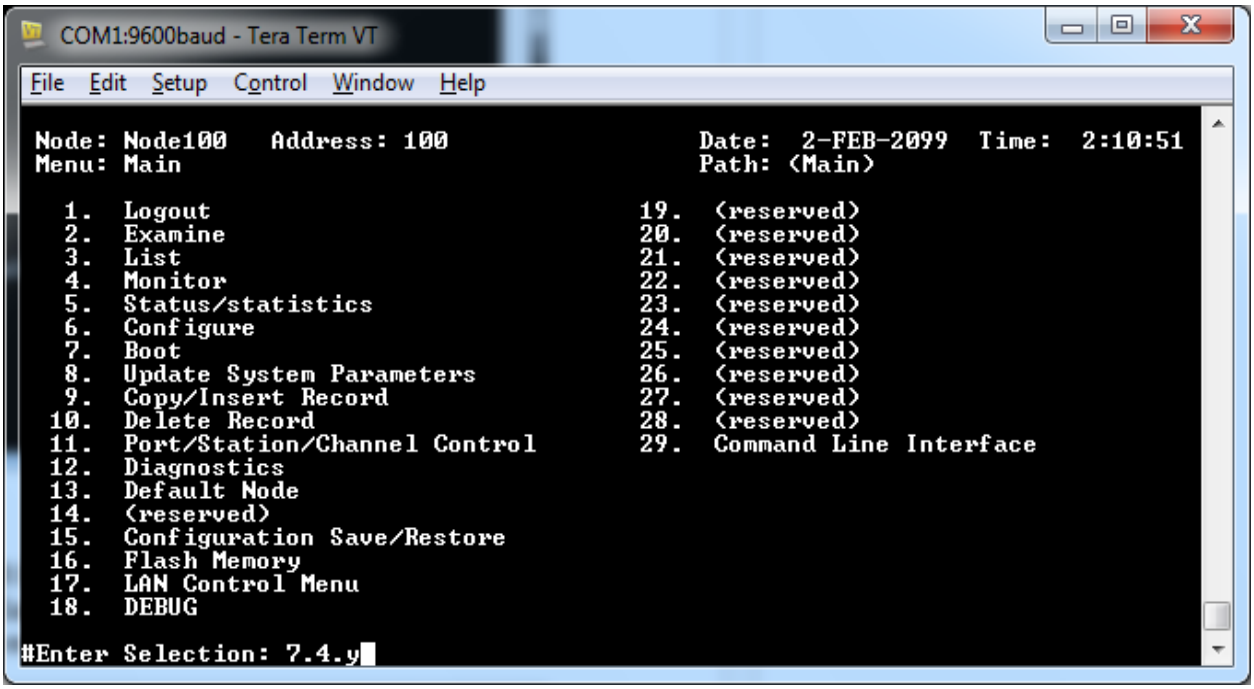


For a default route, leave the IP Network/Subnet as 0.0.0.0 Enter the correct IP Address Mask and Next Hop parameters. The next hop will be the Gateway Router IP address. Enter a semi-colon after the Next Hop entry to write the changes to configuration memory.

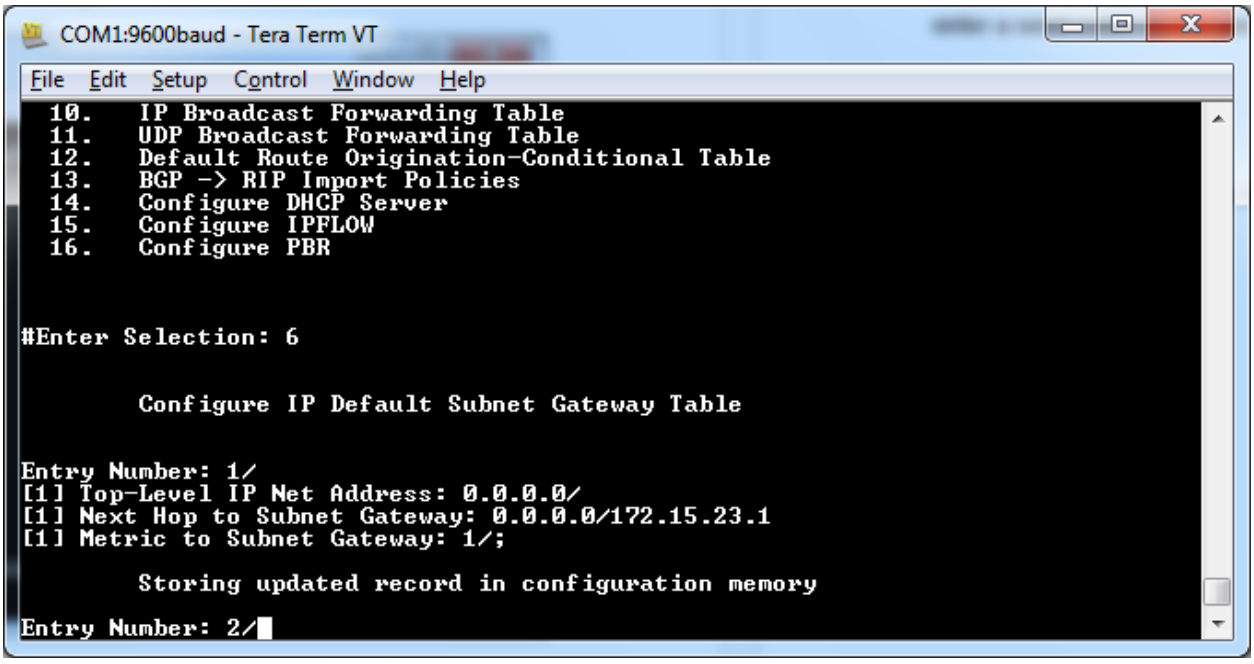


*Note – If the default setting of any parameter is the desired setting, simply pressing Enter/Return will leave that setting as shown and go on to the next parameter.

Hit the Escape key 4 times to return to the Main menu and perform a warm restart by entering 7.4.y.



If preferred, simply adding a default gateway into the router configuration will eliminate the necessity of configuring a static route. This is accomplished by going into the Default Subnet Gateway, “6”, from the Configure IP menu. The Top Level IP Net Address can be left at default 0.0.0.0, enter the Gateway IP address and enter a semi-colon on the next entry to write to configuration memory.



Configure the remote unit in the same fashion with the assigned IP addresses from your IP administrator.

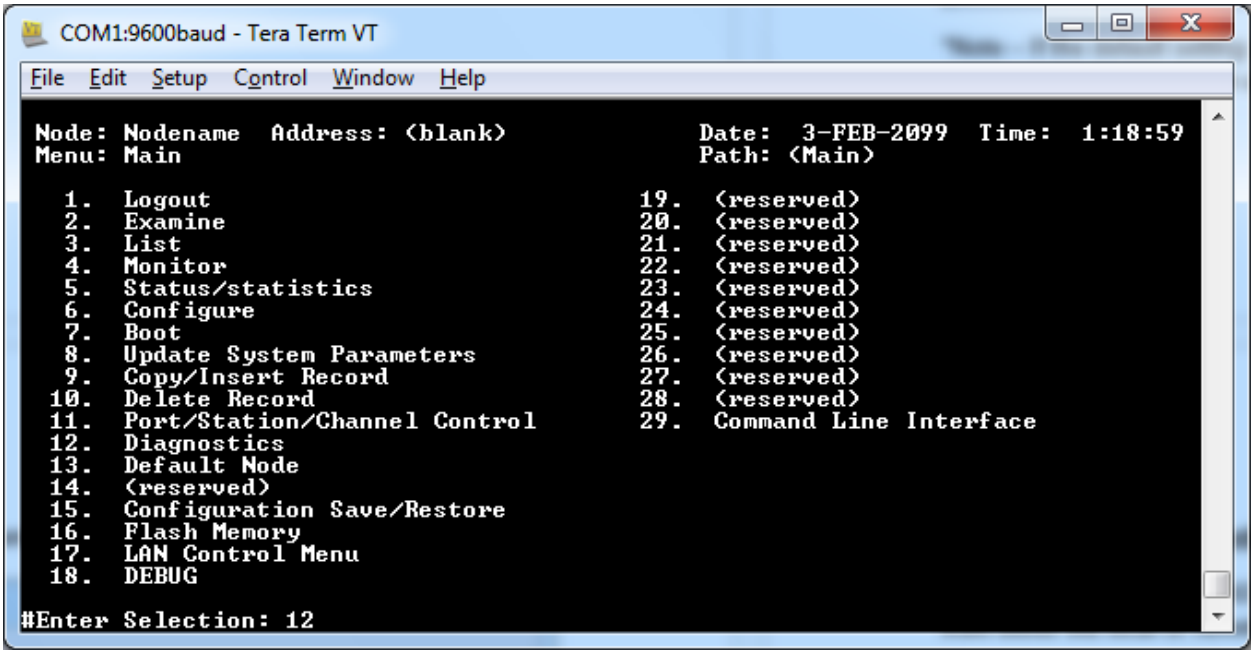
The ASTRO 25 IP Modem II model configuration is now complete.

Section 5.02 DIAGNOSTICS

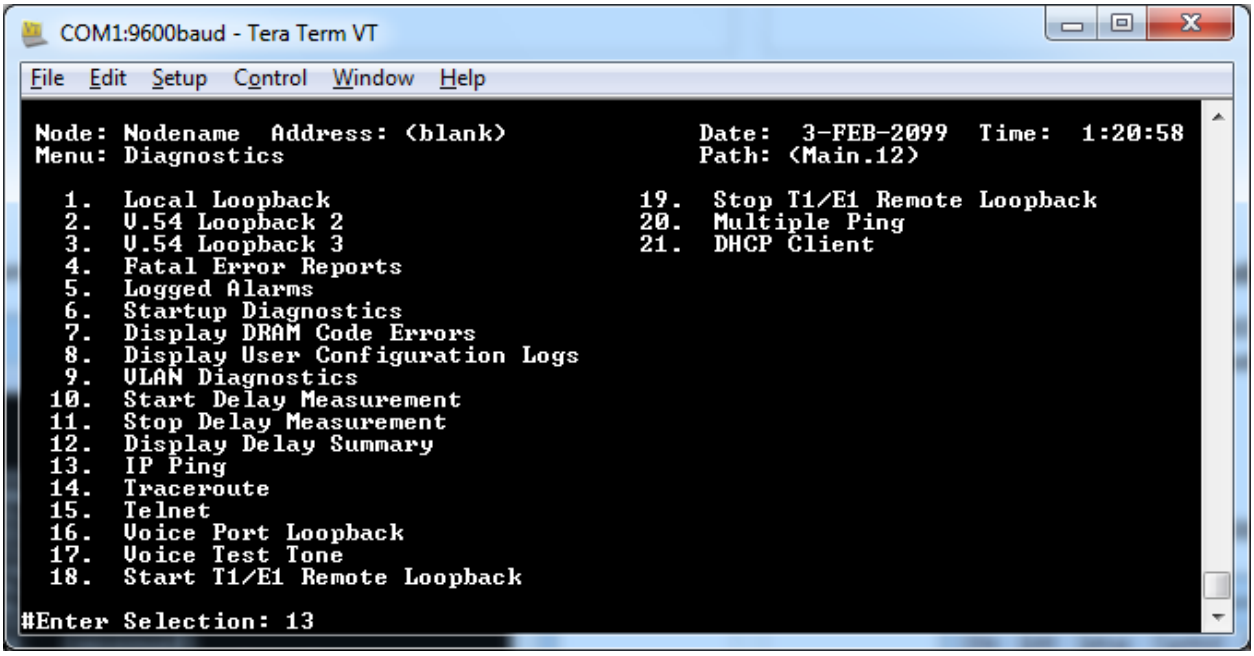
To verify and/or test your ASTRO 25 IP Modem II connectivity, the following tests can be run from either the local or remote unit.

IP Ping

From the ASTRO 25 IP Modem II Main menu, select “12”, Diagnostics.



From the Diagnostics menu, select “13”, IP Ping

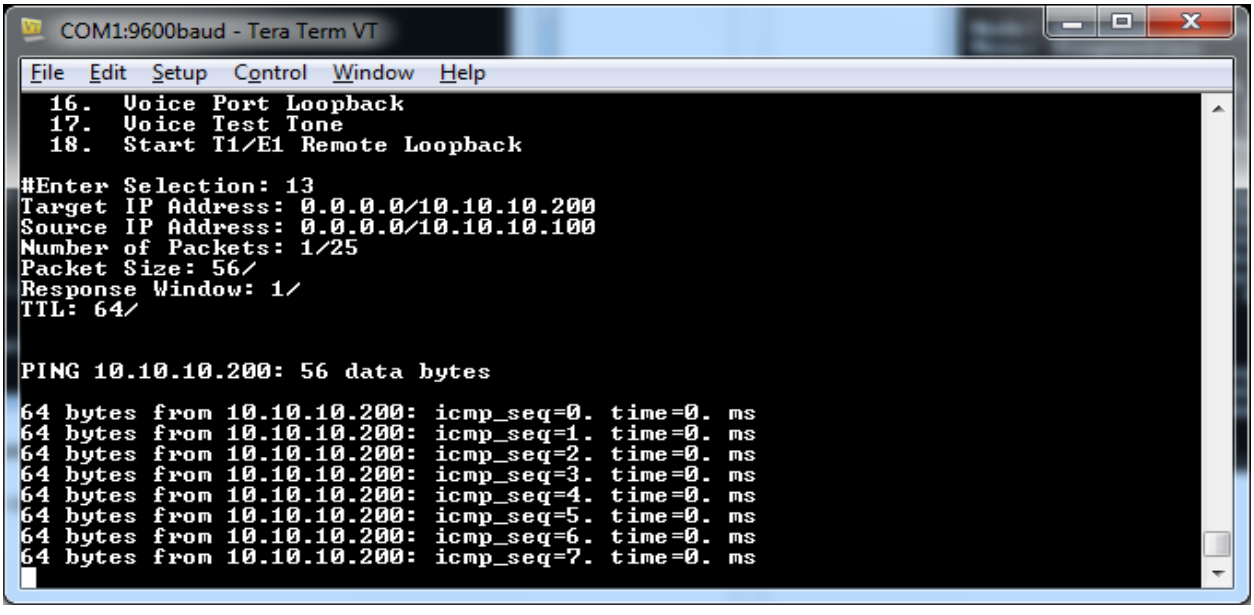


The Target IP will be the IP Address of the remote ASTRO 25 IP Modem II unit.

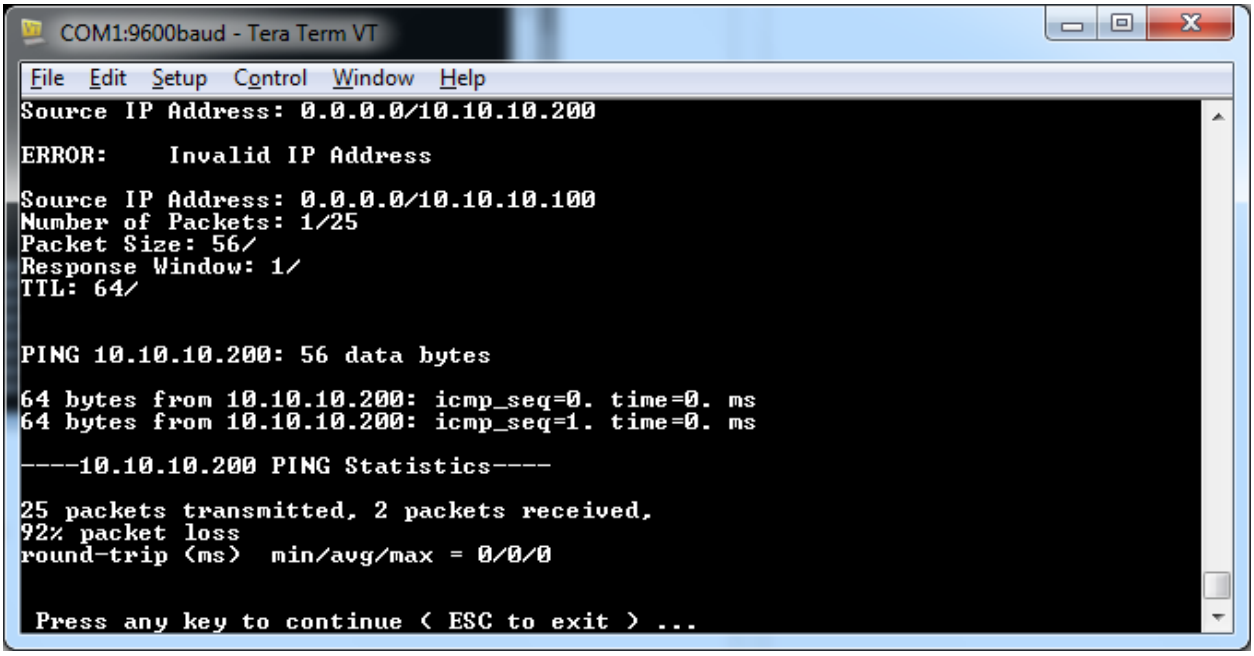
The Source IP will be the IP Address of the local ASTRO 25 IP Modem II unit, the unit currently logged onto and performing the diagnostic test.

Enter the number of packets to be transmitted.

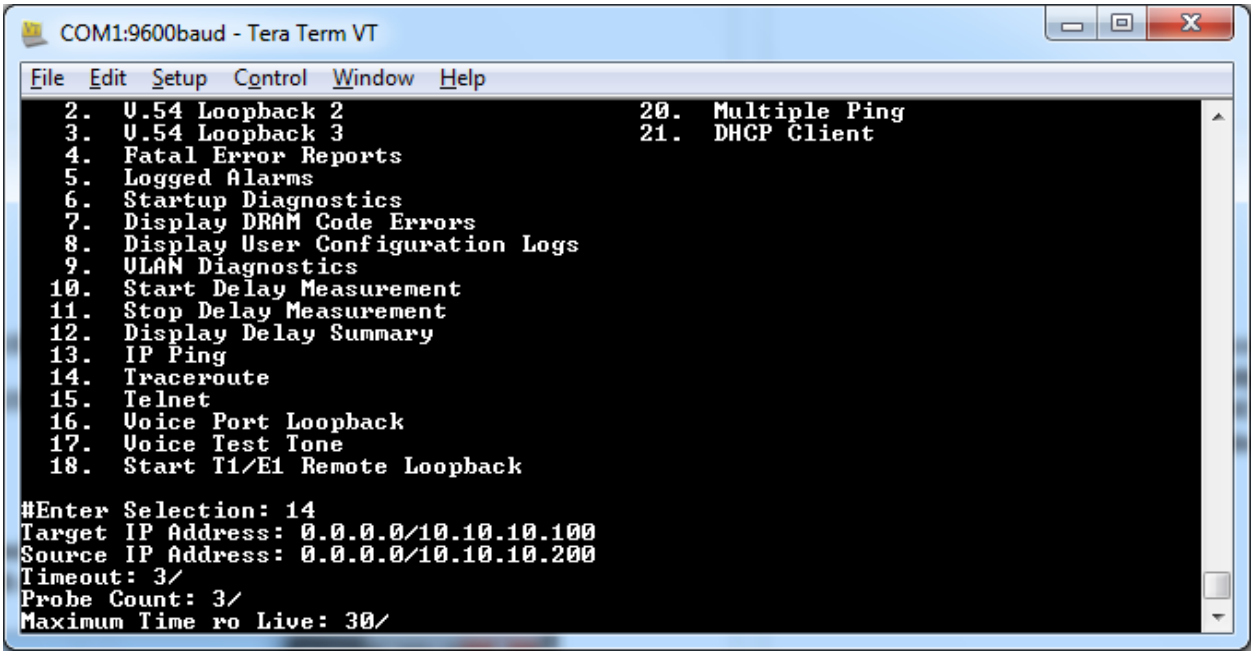
The remainder of the parameters can be left as default. After the last parameter is entered, the ping test will commence. A successful ping test will show ICMP packets returned from the remote ASTRO 25 IP Modem II.



An unsuccessful ping test will not show ICMP packets returned, instead ICMP packet loss.

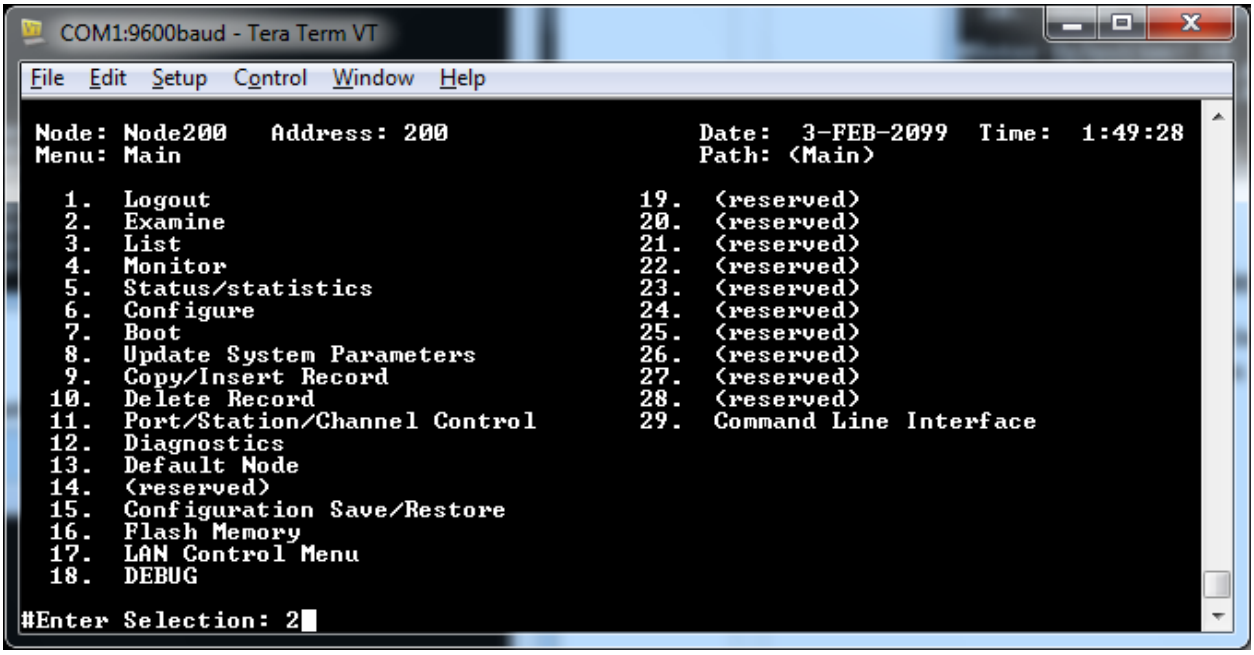


If an IP Ping test is unsuccessful, running the Trace Route Diagnostic test, “14” in the Diagnostics menu, can assist in identifying where the routing or continuity is broken. Enter the IP Addresses for the remote and local ASTRO 25 IP Modem II units and leave the remaining parameters defaulted. The last IP address reported in the trace result is where the connection is failing.

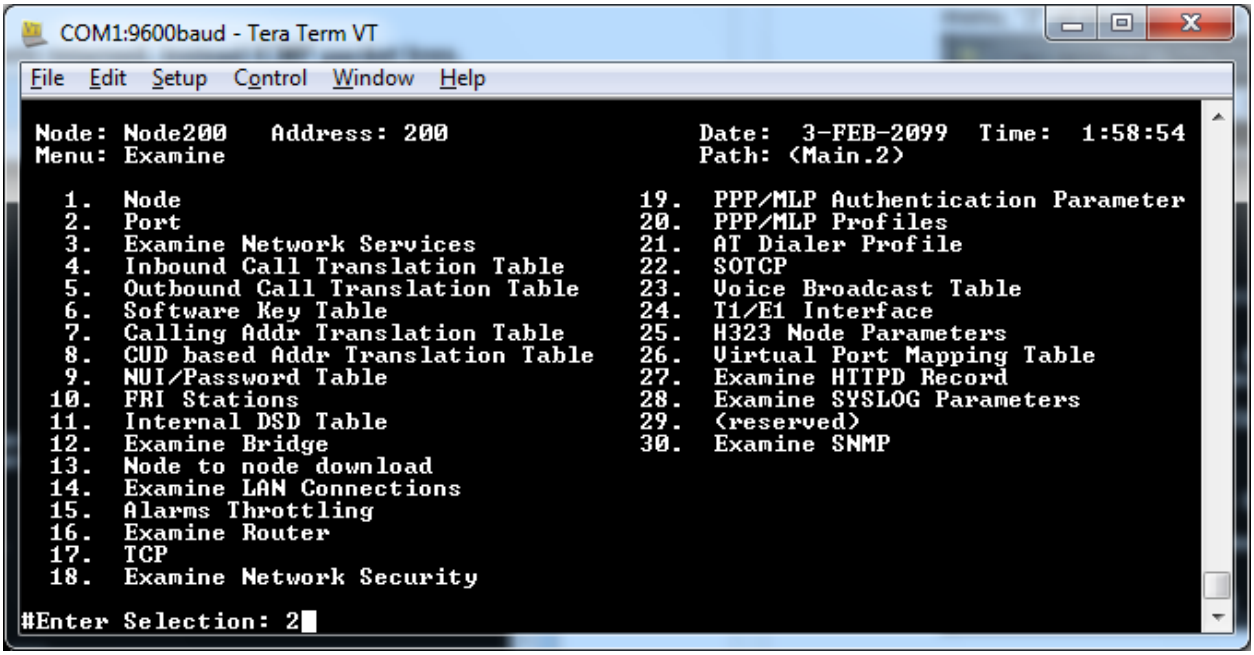


Examine Port, Network Services, Router

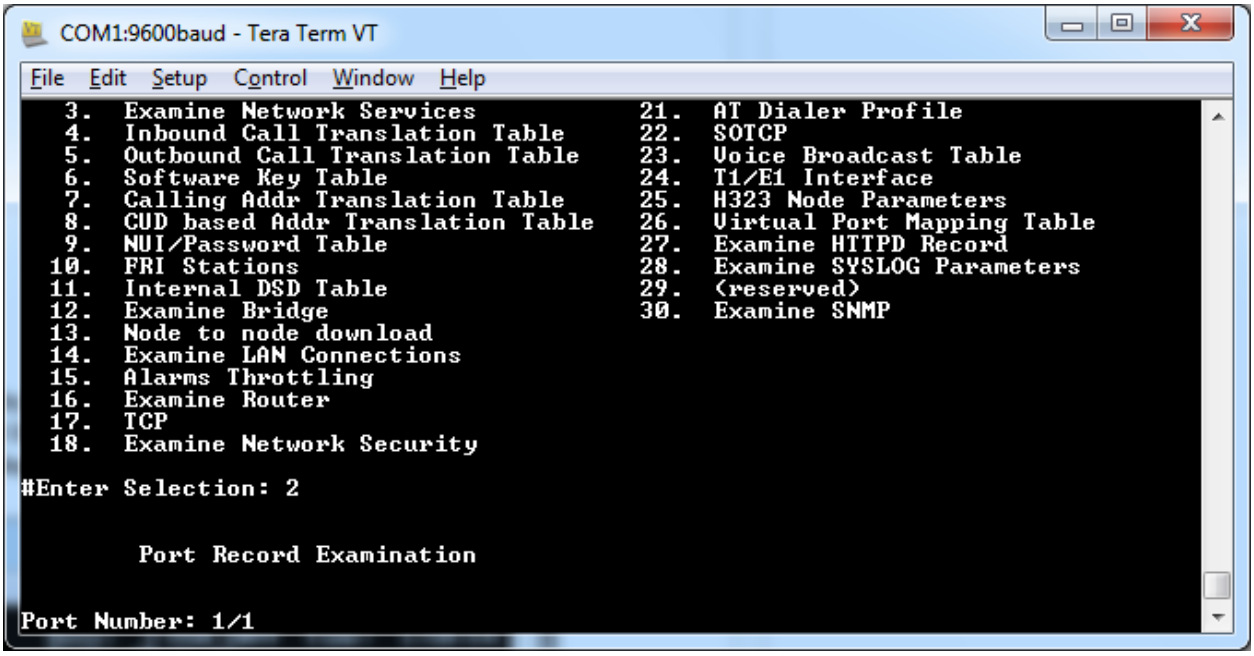
Configuration settings can be verified on the ASTRO 25 Analog Modem II, ASTRO 25 IP Modem II models in the Examine menu, “2” of the Main menu.



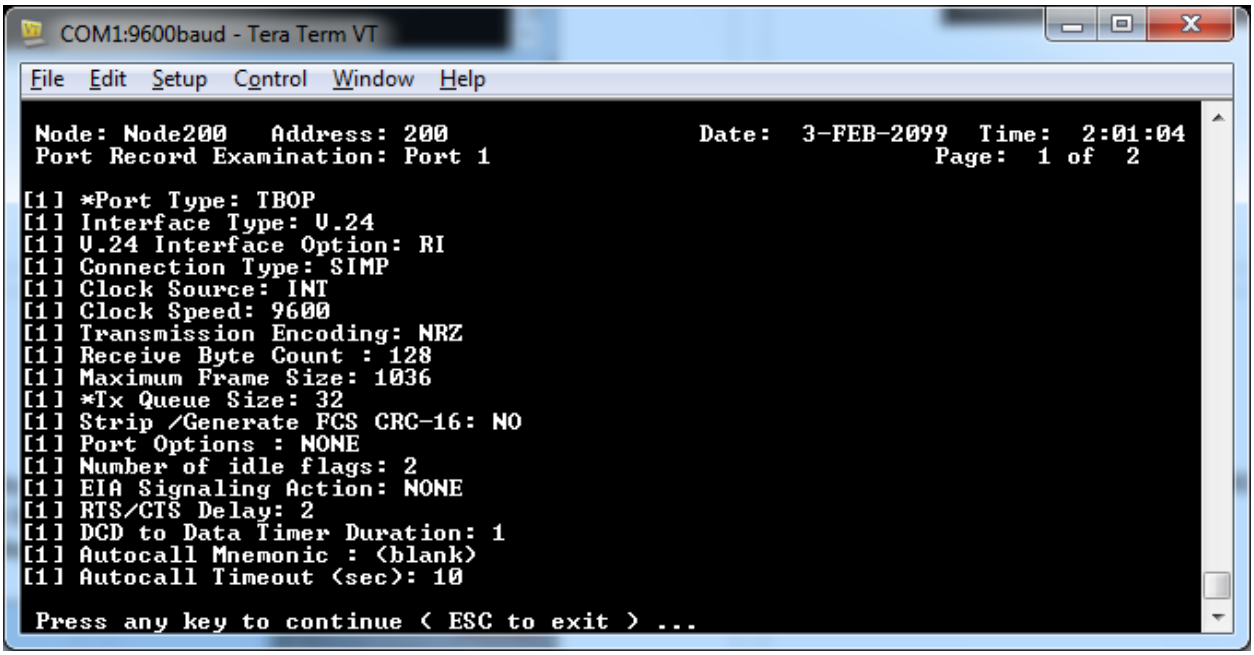
The Port and Network Services have been configured by the MEM files previously uploaded to the units. They will differ slightly between the ASTRO 25 Analog Modem II and the ASTRO 25 IP Modem II models. Both models utilize Port 1 and Port 7. To verify these settings, from the Examine menu, enter “2” for Port.



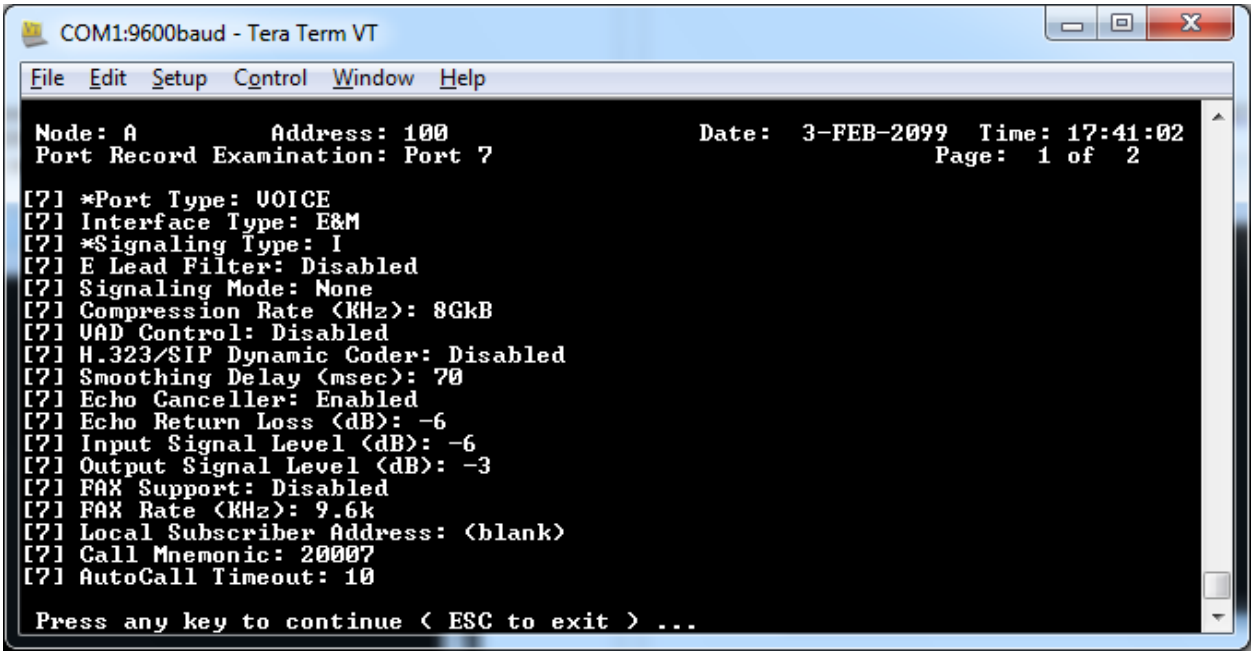
Enter “1” for Port 1.



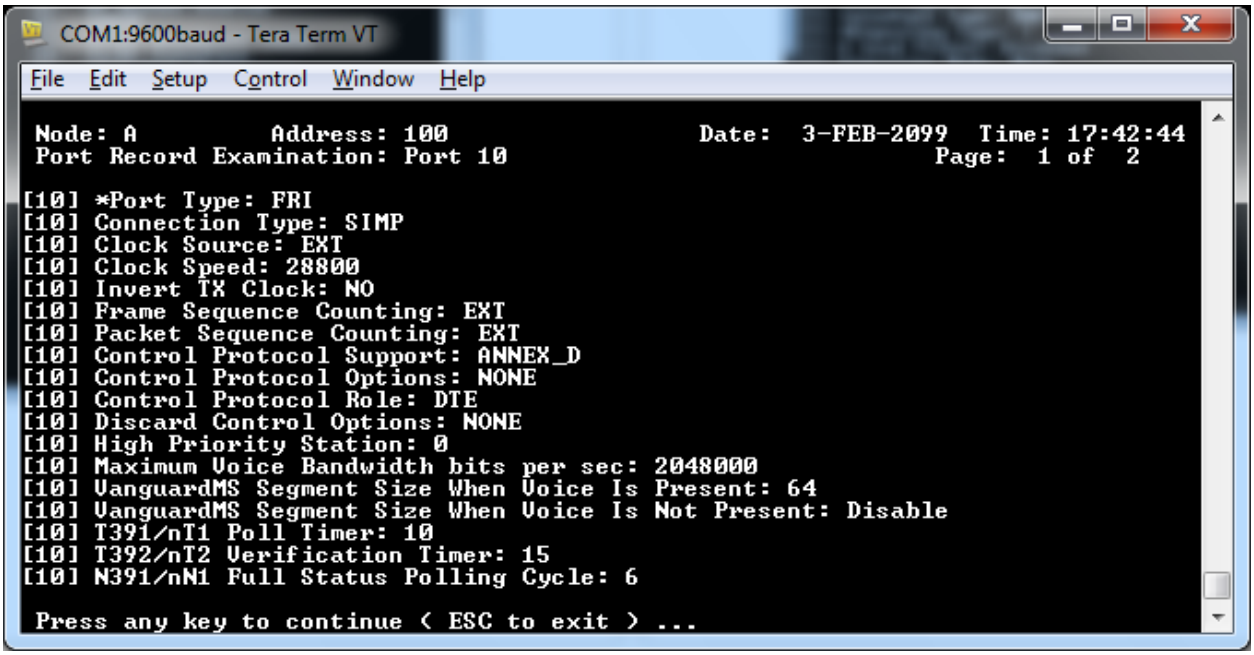
Port 1 settings for ASTRO 25 Analog Modem II and ASTRO 25 IP Modem II models. Note the Port Type is TBOP and the Interface Type is V.24.



Port 7 settings for ASTRO 25 Analog Modem II and ASTRO 25 IP Modem II models.

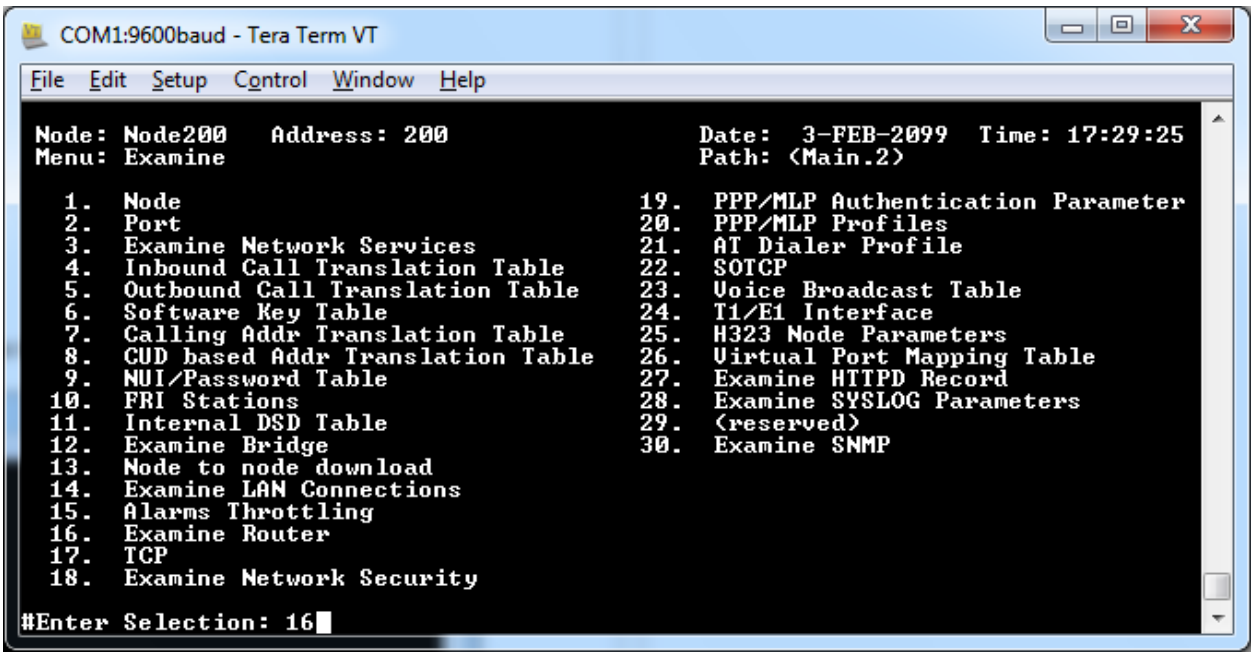


Port 10 settings for an ASTRO 25 Analog Modem II model. Note the Port Type is FRI, Clock Speed is 28800 and the Control Protocol Support is Annex_D.

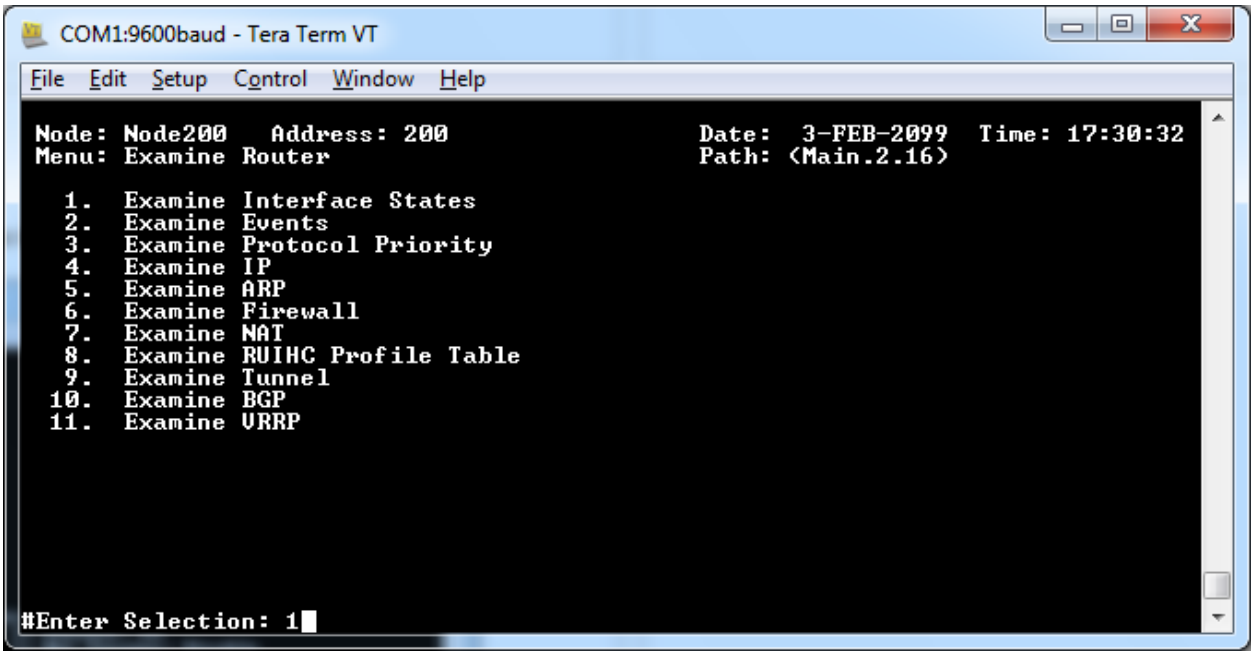


Verify Router

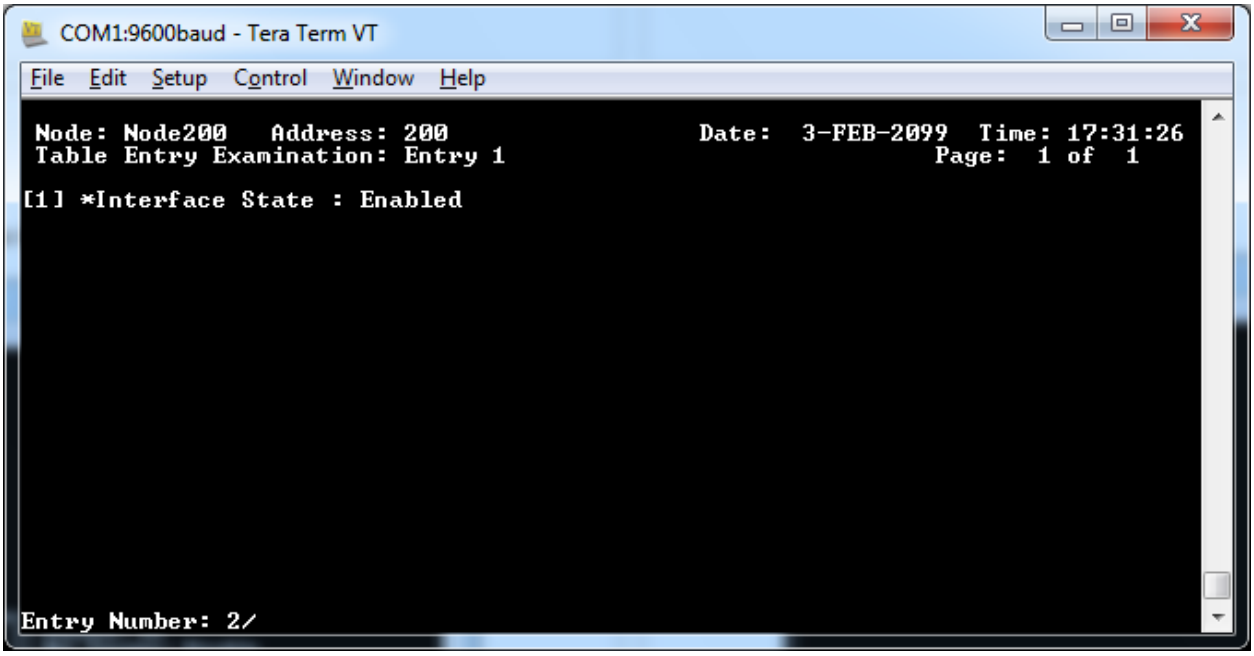
The router IP configuration of the ASTRO 25 IP Modem II model can be verified by examining the IP Interface States, IP Address, Static Route Table and/or the Default Subnet Gateway. From the Examine Menu, enter “16”, Examine Router.



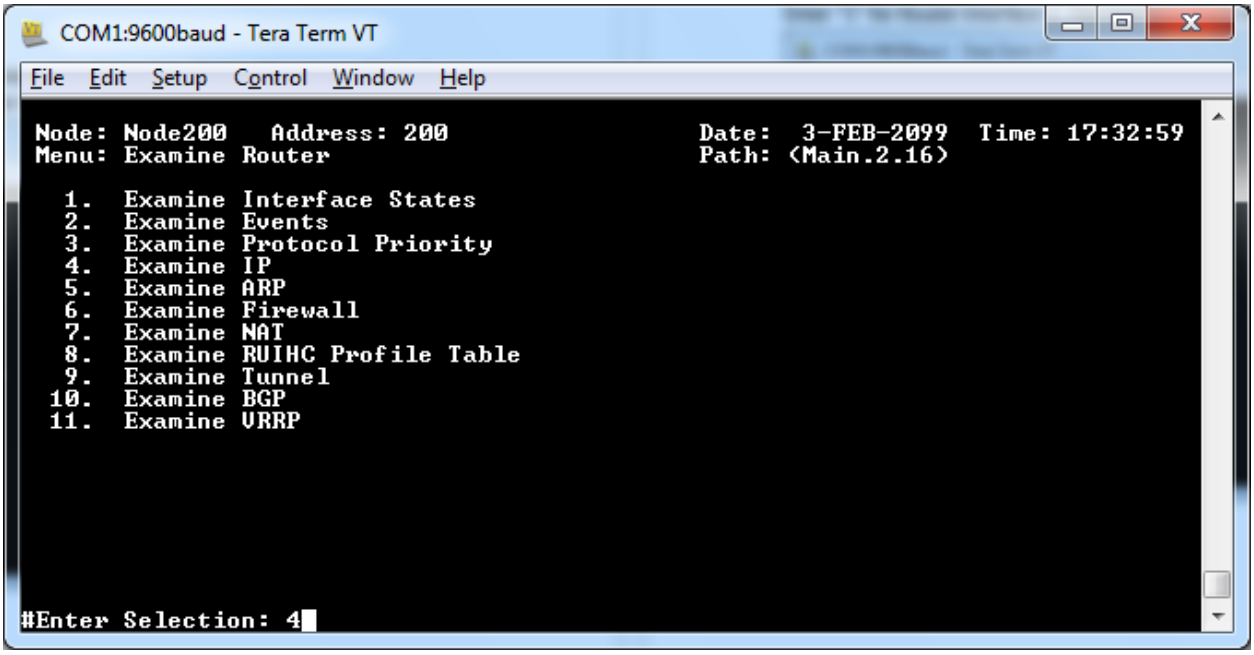
From the Examine Router menu, enter “1”, Examine Interface States.



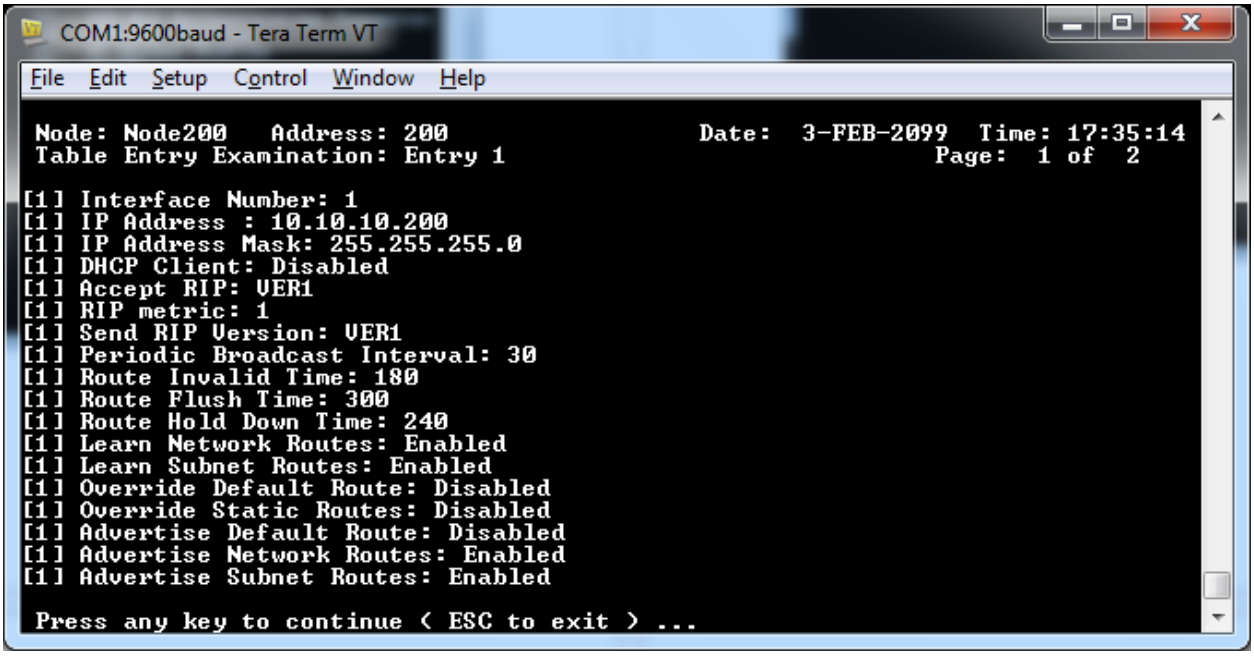
Enter “1” for Router Interface 1. The Interface State should be Enabled.



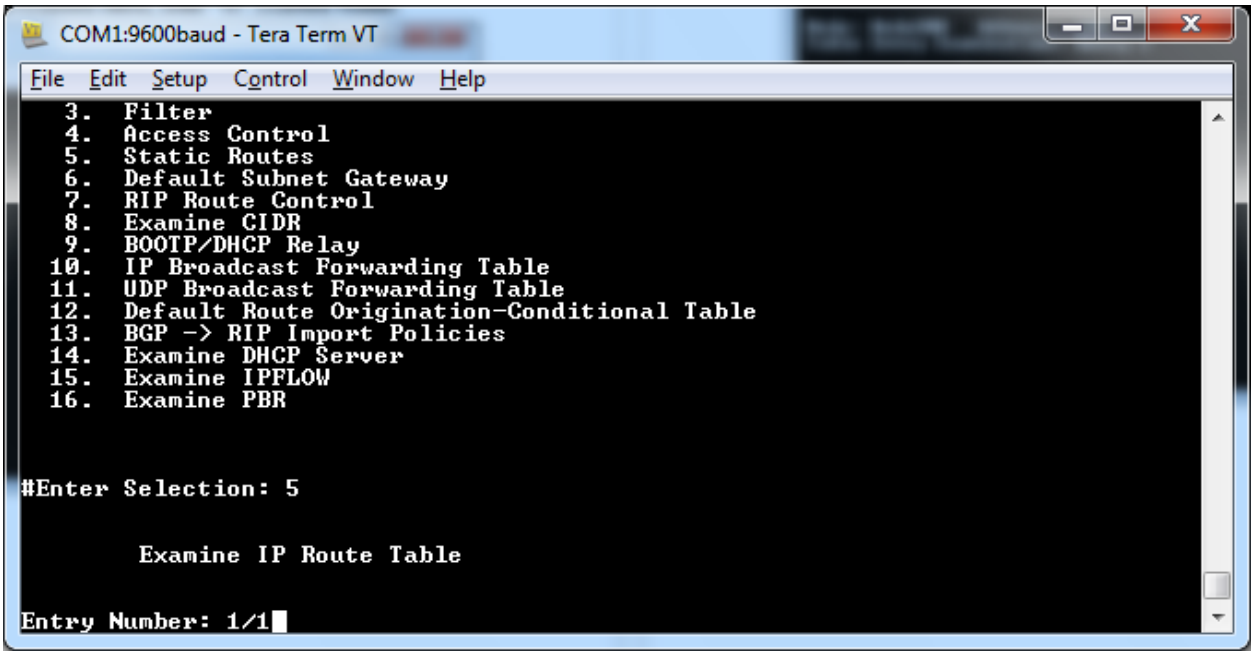
Hit the Escape Key to back out to the Examine Router menu. Enter “4”, Examine IP.



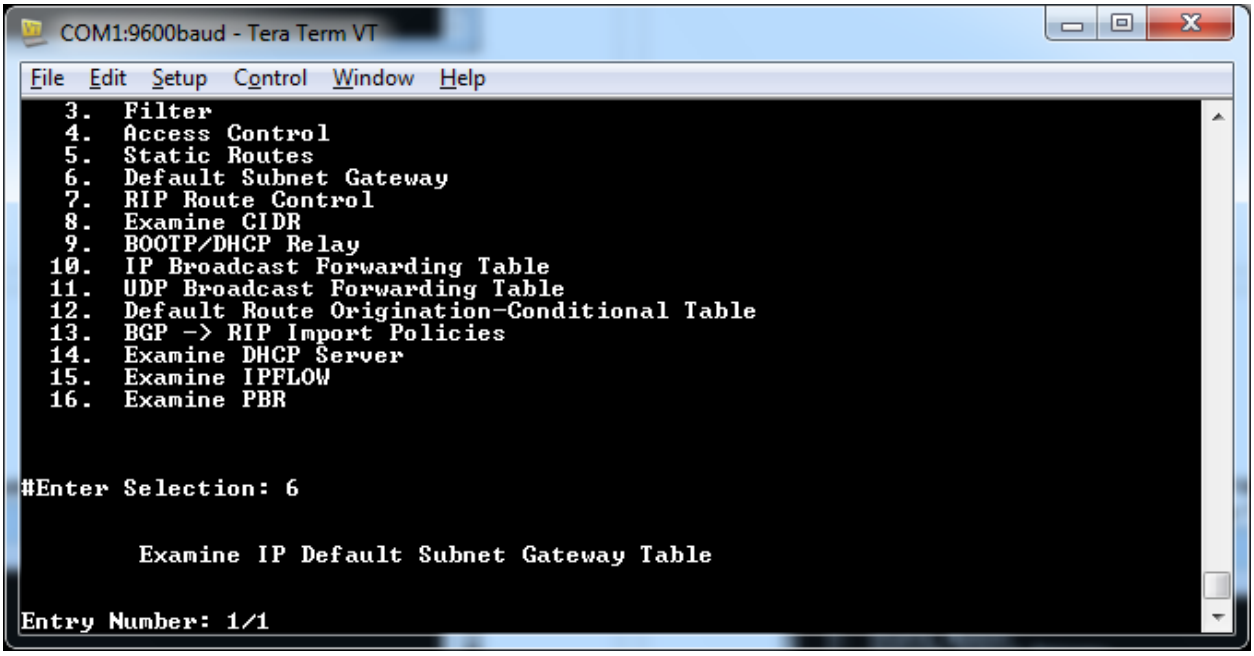
Enter “2” for Interfaces and then “1” for Interface 1. Ensure the IP Address and IP Address Mask are configured correctly for the unit location (Local/Remote) provided by your IP Administrator.



Hit the Escape key twice to return to the Examine IP Menu. To verify Static Route configuration if one was entered previously, Enter “5”, Static Routes and then “1” for Table Entry 1. Verify configuration is correct.

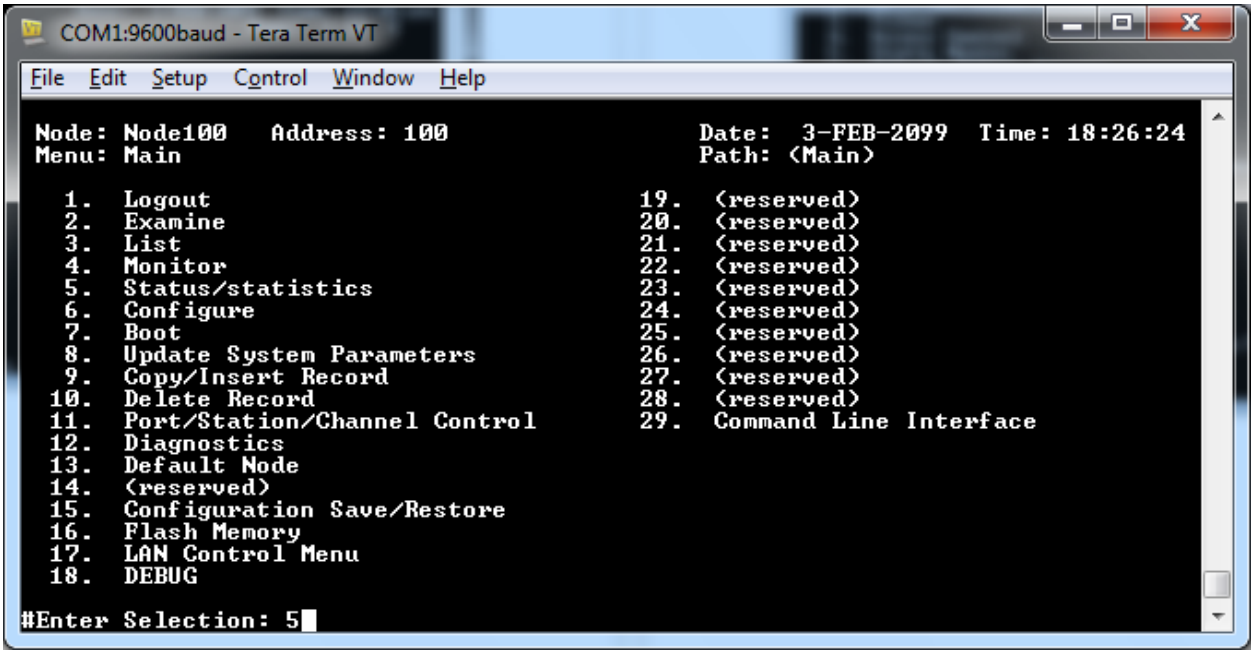


To Examine Default Subnet Gateway settings, if one was entered previously, enter “6” from the Examine IP Menu and then “1” for Table Entry 1. Verify configuration is correct.

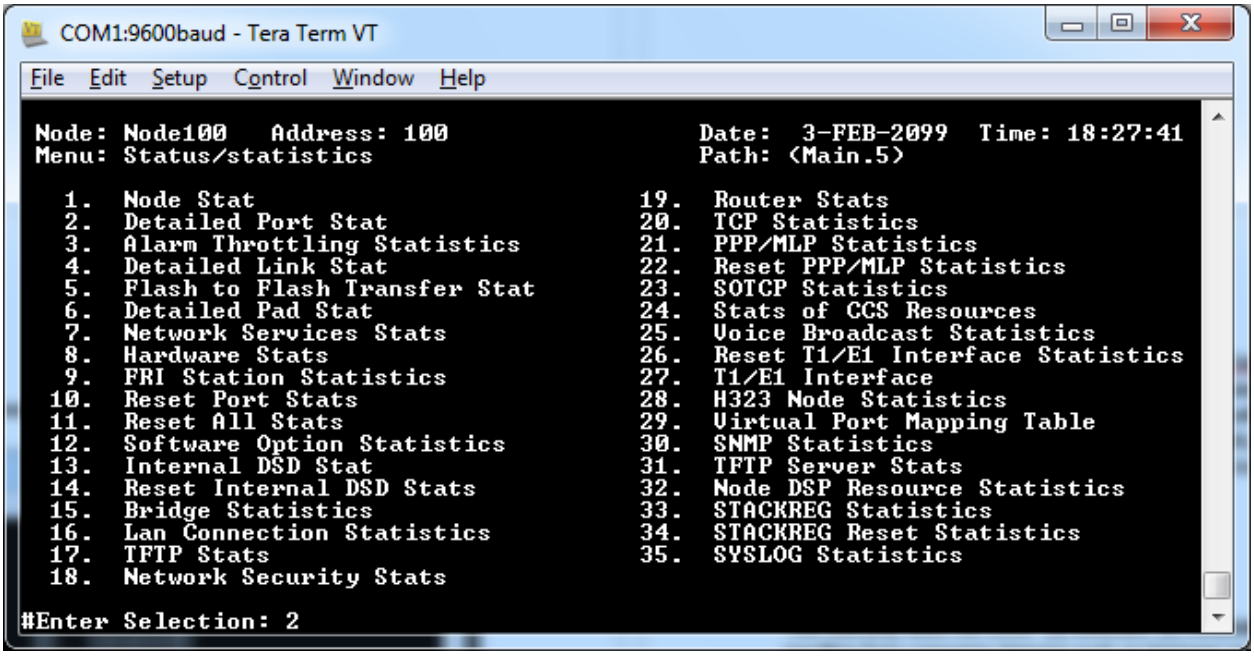


Port Status/Statistics

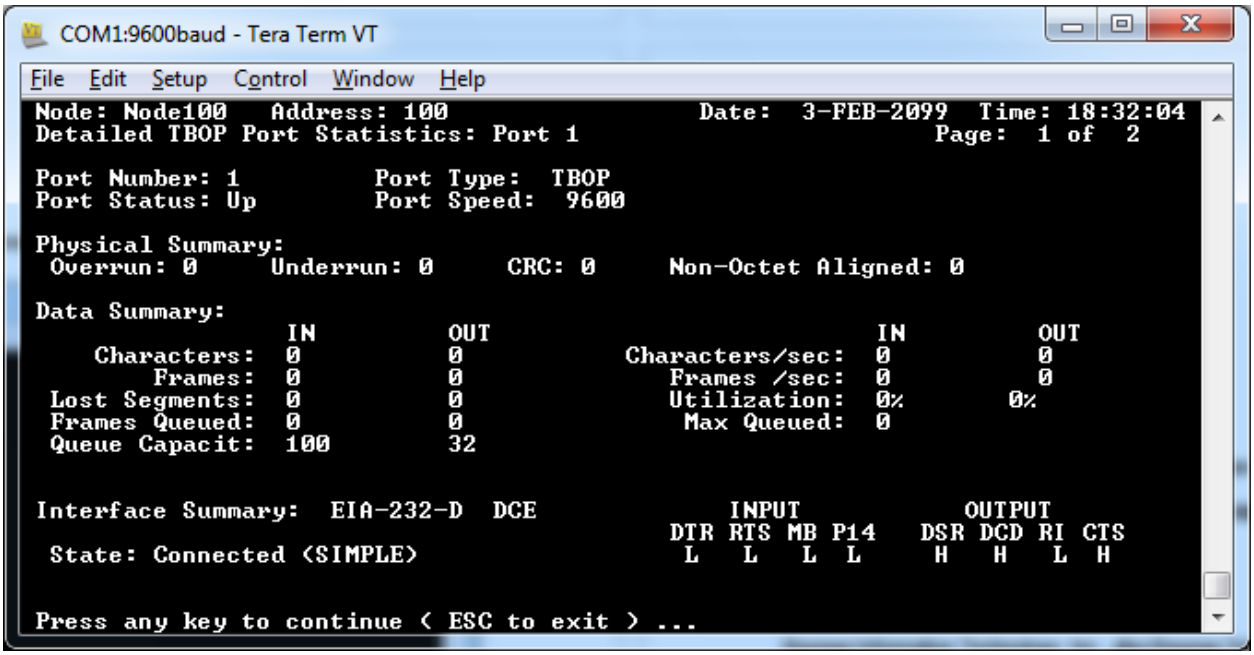
To check the operational status of configured/connected ASTRO 25 Analog Modem II, ASTRO 25 IP Gateway models, Enter “5”, Status/statistics from the Main Menu.



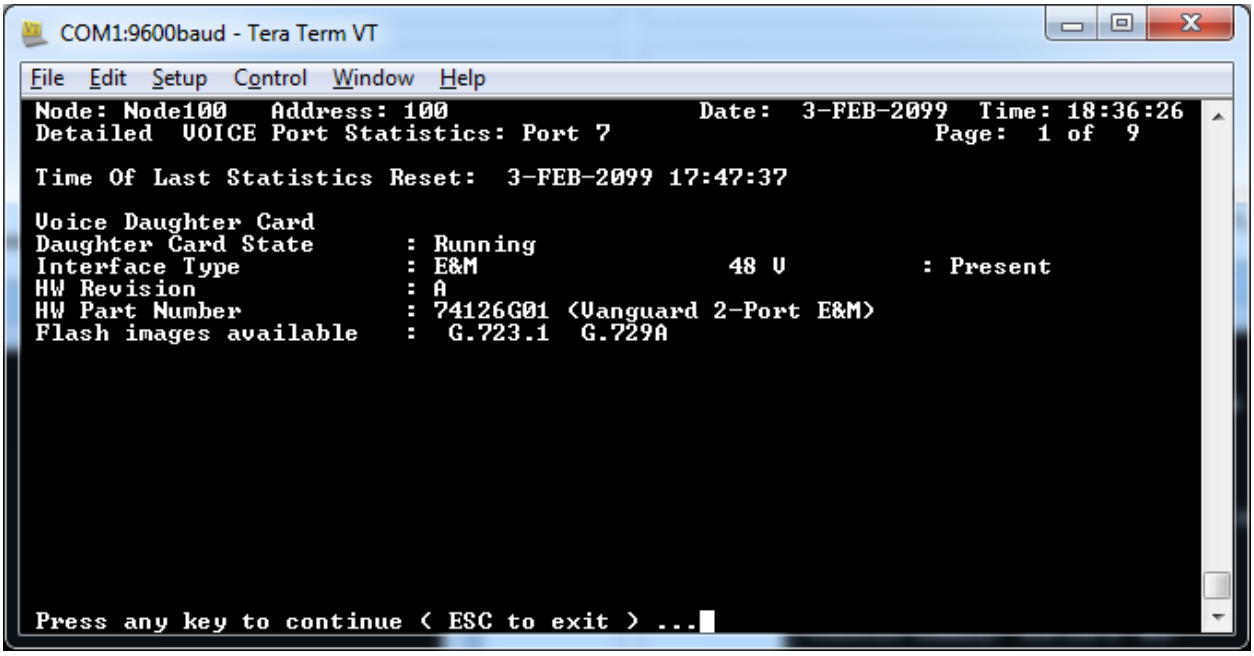
From the Status/statistics menu, enter “2”, Detailed Port Stat.



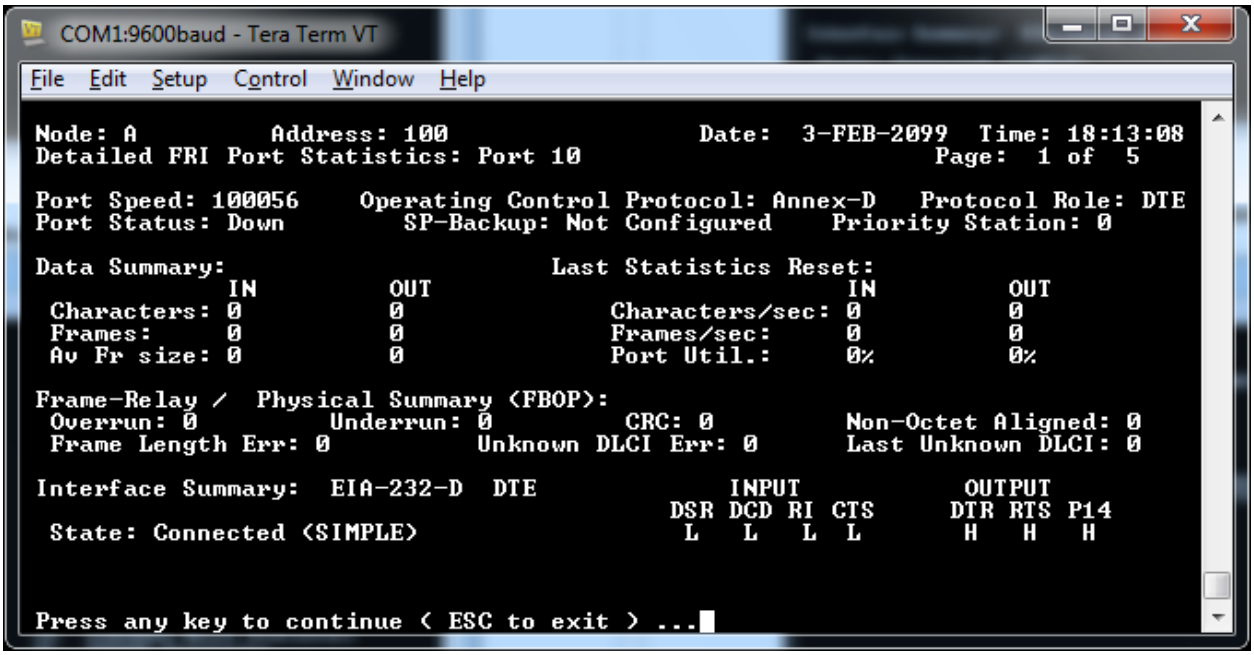
Enter “1” to check the Status of Port 1. Verify the Port Type is TBOP, Port Status is Up and Port Speed is 9600. By continually re-examining Port 1, you should observe Characters In/Out and Frames In/Out increment.



Hit the Escape key and Enter “7” to check the Status of the Voice Port. It should be in the Running state.



On ASTRO 25 Analog Modem II models, Port 10 Status should also be verified. The Port Status should Up.



Section 6.01 APPENDIX

RAYMAR INFORMATION TECHNOLOGY, INC.

Section 6.02 LIMITED WARRANTY

(a) One Year Limited Hardware Warranty

Raymar Information Technology, Inc., dba Raymar-Telenetics, warrants their products against defects in hardware, material and workmanship under normal use for one (1) year from the date of purchase. Raymar will, at no charge, either repair the product (with new or reconditioned parts), or replace it (with a new or reconditioned product). Repaired replacement products are warranted for either 90 days or the remainder of the original warranty period, whichever is longer. This warranty extends to the original end-user only.

(b) What This Warranty Does Not Cover

This warranty does not cover: (a) software; (b) installation or service of the product; (c) conditions resulting from consumer damage such as improper maintenance or misuse, abuse, accident or alteration; (d) all plastic surfaces (including display screens) and all other exposed parts that are scratched or damaged due to normal use; (e) operation of our products with equipment not supplied by Raymar (f) products which have had the serial number removed or made illegible; or (g) products rented to others. This warranty applies only to hardware products manufactured by or for Raymar Information Technology, Inc. and identified by the Raymar-Telenetics trademark, trade name or product identification logo affixed to them. Refer to the Service and Support section of the User's

Guide for service after the warranty expires. No warranty is made as to coverage availability or grade of service provided by the carrier

(c) General Provisions

This warranty sets forth Raymar's entire hardware responsibilities regarding this product. Repair, replacement or refund of the purchase price is at Raymar's discretion. THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES, IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. IN NO EVENT SHALL RAYMAR BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, FOR ANY LOSS OF USE, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, LOST PROFITS OR SAVINGS, OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THIS RAYMAR PRODUCT, TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW. WITHOUT LIMITING THE FOREGOING, RAYMAR SHALL HAVE NO LIABILITY FOR ANY DATA STORED IN OR USED WITH THE PRODUCT, INCLUDING THE RECOVERY COSTS OF SUCH DATA OR PROGRAMS.

(d) State Law Rights

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS. 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.

(e) Provincial Law Rights

SOME PROVINCIAL LAWS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF IMPLIED WARRANTIES, THE EXCLUSION OR LIMITATION OF WARRANTY COVERAGE IN CERTAIN SITUATIONS. SOME OF THE ABOVE LIMITATIONS OR EXCLUSIONS CONTAINED IN THIS LIMITED WARRANTY MAY NOT APPLY TO YOU. This warranty gives you specific rights, and you may have other rights which vary from province to province.

Section 6.03 HOW TO USE LIMITED WARRANTY SERVICE

To take advantage of this warranty, you must do the following:

• If you are having trouble with your product, contact Raymar service using the appropriate number from the Service and Support section of the User's Guide. If it is determined that your product requires service, you will be issued a Return Materials Authorization (RMA) form.

• Pack the defective product securely for shipping. Include only the units pre-approved by service on your RMA form.

• This warranty is void if the product is damaged in transit, you must insure your shipment.

• Ship the defective product, proof of date of purchase, and the RMA form to the address specified.

• Display your RMA number prominently on the outside of the shipping box. Customer is responsible for freight in, door to door. Raymar is responsible for return shipping costs.

• To ensure prompt service, please write on the RMA form a brief description of the problem you are experiencing with the product.

Raymar Information Technology, Inc.

7325 Roseville Road

Sacramento, CA 95842

Service Hotline (800) 747-1522

http://raymarinc.com or e-mail techsupport@raymarinc.com

Section 6.04 RETURN MERCHANDISE AUTHORIZATION (RMA) PROCEDURE

Before returning any Raymar-Telenetics product, an RMA number must be obtained.

The most convenient way to obtain an RMA number for a product purchased from Raymar-Telenetics is to call **1-800-747-1522**. When doing so, please have the following information ready:

- Company name
- Full billing address, as well as the address for the location where the product should be returned once repaired or replaced
- Telephone & Fax numbers
- Email address
- Product model number and serial number

For each item being returned, please include the product model number, the serial number, a description of the problem being encountered, and the cause of the problem (if known).

Please note that prior to authorizing a return, a product support specialist may call to verify that the product is properly installed or may ask you to perform tests to insure that the product has actually failed.

The product must be properly packed and returned to:

Raymar-Telenetics

7325 Roseville Road

Sacramento, CA 95842

The RMA number must be legibly displayed on the shipping carton. Raymar-Telenetics will not be responsible for any product returned without an RMA number.

If the product is out of warranty, estimates for repair rates and any applicable shipping costs will be communicated by a customer service representative. Currently, Raymar-Telenetics accepts purchase orders or credit cards as payment methods.

Repairs currently require 5 – 10 business days and are returned via UPS Ground.