



Intermec



Technical
Documentation

**6910 Integrated
and 6910 Telnet
Gateway/Access
Points
Menu System**

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Contents

Before You Begin

This introduces you to standard warranty provisions, safety precautions, warnings and cautions, document formatting conventions, and sources of additional product information. A documentation roadmap is also provided to guide you in finding the appropriate information.

Warranty Information

To receive a copy of the standard warranty provision for this product, contact your local Intermec support services organization. In the U.S. call 1-800-755-5505, and in Canada call 1-800-668-7043. If you live outside of the U.S. or Canada, you can find your local Intermec support services organization on the Intermec Web site at www.intermec.com.



Note: Opening this product may void the warranty. The internal workings of this product can only be accessed by Intermec service personnel. Radio replacements and upgrades require Intermec service personnel.

Safety Summary

Your safety is extremely important. Follow these guidelines:

- Read and follow all warnings and cautions in this book before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.
- Do not repair or adjust energized equipment alone under any circumstances. Someone capable of providing first aid must always be present for your safety.
- Always obtain first aid or medical attention immediately after an injury. Never neglect an injury, no matter how slight it seems.
- Begin resuscitation immediately if someone is injured and stops breathing. Any delay could result in death. To work on or near high voltage, you should be familiar with approved industrial first aid methods.
- Never work on energized equipment unless authorized by a responsible authority. Energized electrical equipment is dangerous. Electrical shock from energized equipment can cause death. If you must perform authorized emergency work on energized equipment, be sure that you comply strictly with approved safety regulations.

Warnings, Cautions, and Notes

The warnings, cautions, and notes in this manual use this format:



A warning alerts you of an operating procedure, practice, condition, or statement that must be strictly observed to avoid death or serious injury to the persons working on the equipment.

Attention Danger: Un avertissement vous avertit d'une procédure de fonctionnement, d'une méthode, d'un état ou d'un rapport qui doit être strictement respecté pour éviter l'occurrence de mort ou de blessures graves aux personnes manipulant l'équipement.



A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

Attention: Une précaution vous avertit d'une procédure de fonctionnement, d'une méthode, d'un état ou d'un rapport qui doit être strictement respecté pour empêcher l'endommagement ou la destruction de l'équipement, ou l'altération ou la perte de données.



Note: Notes are statements that either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.

About this Technical Documentation

The *6910 Integrated and 6910 Telnet Gateway/Access Points Menu System Technical Documentation* is designed for Intermec Technologies Corporation Field Service Team Members. It is a supplemental troubleshooting tool for internal Intermec use only.

This document will walk you through accessing the menu system of the 6910 Integrated Gateway/Access Point (IGAP) or the 6910 Telnet Gateway/Access Point (TGAP). The current User Guides do not include conclusive instructions on communications with the 6910 IGAP or 6910 TGAP. You must be familiar with your host PC, your network, your other Intermec equipment, and your data collection network.

Terminology

You should be aware of how these terms are being used in this document.

Terminology

Term	Description
access point	These terms describe any of the MobileLAN access 21XX products, including the 2100, the 2101, the 2102, the 2102S, and the 2106 unless specifically stated otherwise.
WAP	This term refers specifically to a MobileLAN access 21XX that is configured as a wireless repeater.
end device	Any wireless end device configured to transmit data to and receive data from a MobileLAN access 21XX.

Format Conventions for Input From a Keyboard or Keypad

This table describes the formatting conventions for input from PC or host computer keyboards and device keypads.

Format Conventions

Convention	Description
Special text	Shows the command as you should enter it into the device.
<i>Italic text</i>	Indicates a variable that you must replace the parameter with a value.
Bold text	Indicates the keys you must press on a PC or host computer keyboard. For example, “press Enter ” means you press the key labeled “Enter” on the PC or host computer keyboard.
where	This word introduces a list of parameters and explains the values you can specify for them.

Related Publications

The following publications are available. They include information about hardware and software products related to or used with the gateway/access points and the networks on which they operate.

To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor. Following are related Intermec manuals and part numbers (P/N):

- *6710 Access Point User's Guide*
(P/N: 961-047-081)
- *6710 Mobile Bridge User's Guide*
(P/N: 961-028-098)
- *6910 Integrated and 6910 Telnet Gateway/Access Points User's Guide*
(P/N: 961-047-122)
- *Norand Management Information Bases Reference Manual*
(P/N: 977-051-002)

Diagnostic Port Cable

The part number for the diagnostic port cable is P/N: 070268. This cable is needed for the configuration of the 6910 IGAP or the 6910 TGAP.

Global Services and Support

- **Factory Repair and On-site Repair**
To request a return authorization number for one of our authorized service centers, or to request an on-site repair technician, call 1-800-755-5505, then select option 1.
- **Technical Support**
For technical support on your Intermec product, call 1-800-755-5505, then select option 2.
- **Service Contract Status**
To inquire about an existing contract, or to renew a contract, call 1-800-755-5505, then select option 3.
- **Schedule Site Surveys or Installations**
To schedule a site survey, or to request a product or system installation, call 1-800-755-5505, then select option 4.

Web Support

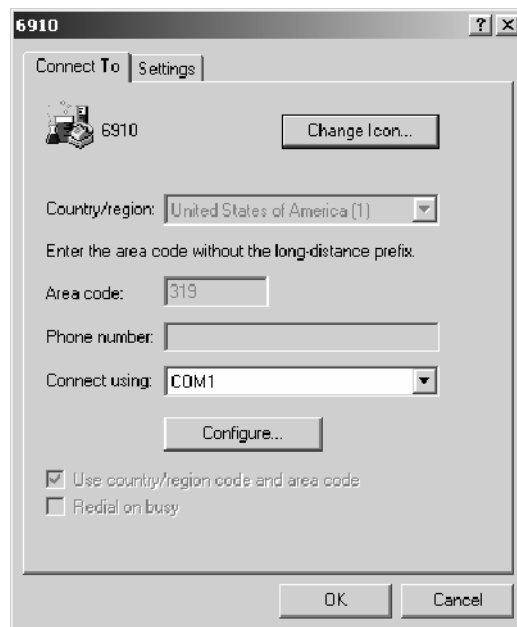
Visit our Web site at <http://www.intermec.com> to download many of our current manuals in PDF format.

Visit our technical knowledge base (Knowledge Central) at <http://intermec.custhelp.com> to review technical information or to request technical help for all Intermec products.

HyperTerminal Settings to Access 6910 Menu

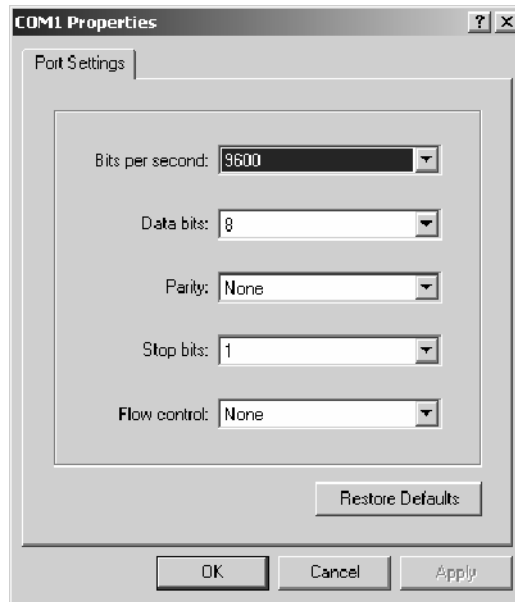
Do the following to configure the HyperTerminal settings to view the 6910 Integrated Gateway/Access Point (IGAP) or 6910 Telnet Gateway/Access Point (TGAP) initial boot-up screen:

- 1 From the desktop, select **Start** → **Programs** → **Accessories** → **Communications** → **HyperTerminal** to access the HyperTerminal application.
- 2 Select **Call** → **Disconnect** or click the **Disconnect** icon to disconnect the call and access the Configuration menu.
- 3 Select **File** → **Properties**, then click **Configure . . .**

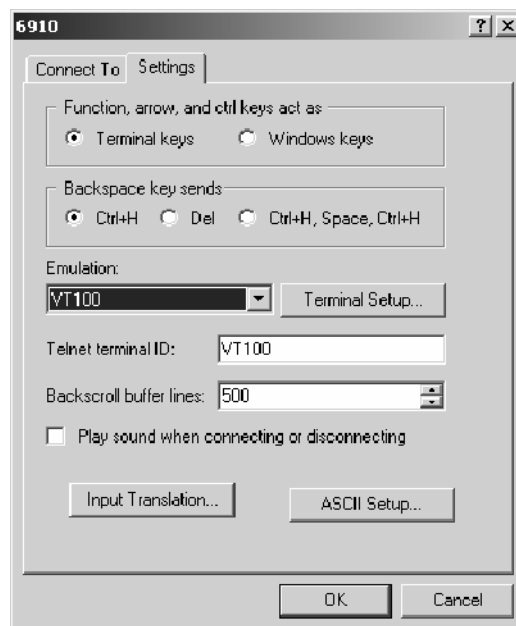


4 Set the properties to the following, then click **OK** to exit.

- Baud Rate: 9600
- Data Bits: 8
- Parity: None
- Stop Bits: 1
- Flow Control: None (no hardware)



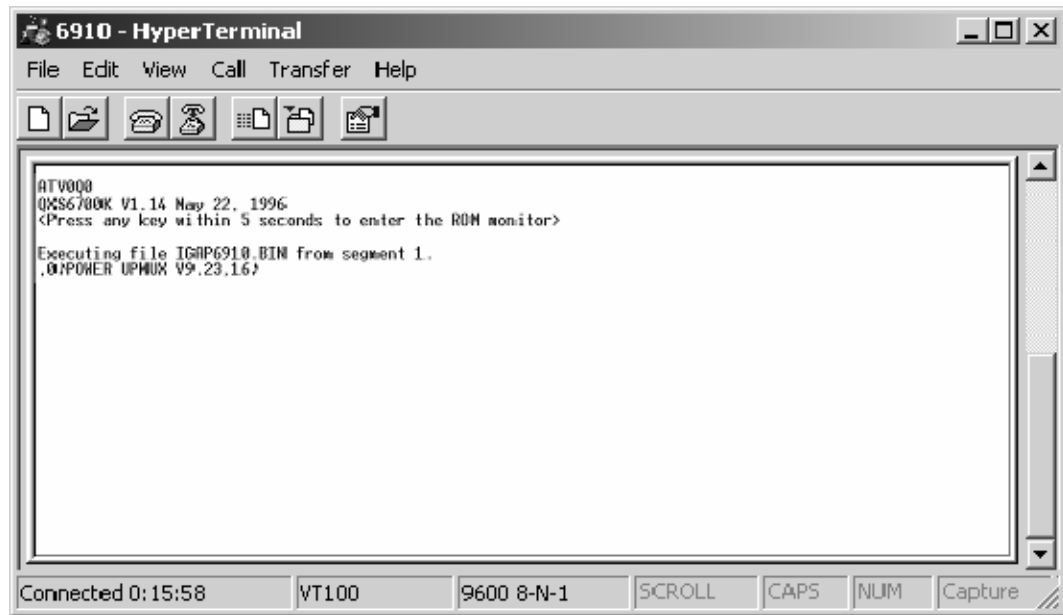
5 Tap the **Settings** tab, then select “VT100” from the **Emulation** drop-down list. Click **OK** to exit the 6910 Settings.





6 Select **Call** → **Call** or click the **Call** icon to initiate communications with the 6910 IGAP or 6910 TGAP.

7 Connect the diagnostic port cable (P/N: 070268) from your desktop PC to the Diagnostic Port on the 6910 IGAP or 6910 TGAP. Plug in the power cord to the 6910. The boot-up process begins.



This illustration shows what should appear on your desktop PC within your HyperTerminal application. Disregard any garbage characters that may appear, such as musical notes.

Accessing the ROM Monitor Menu

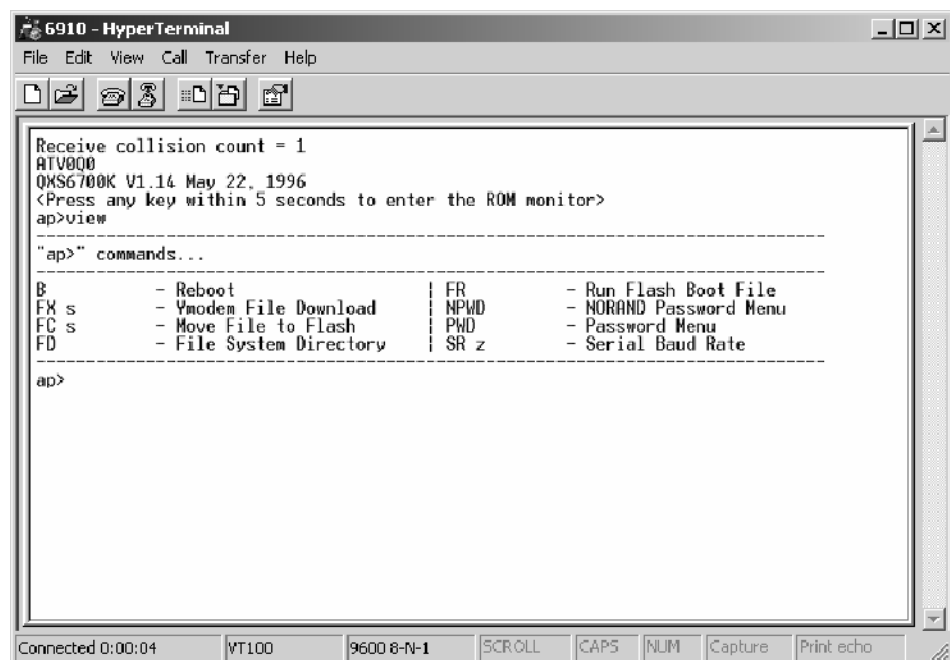
Do the following to to access the ROM Monitor menu:

- 1 Be sure the HyperTerminal application is set for 9600, 8, N, 1, None (no hardware). See the steps starting on page 1 on setting it up.
- 2 Plug in the power cord and watch the HyperTerminal application on your desktop PC. When you see the following message onscreen, press any key on your keyboard within five seconds to access the ROM monitor menu.

<Press any key within 5 seconds to enter the ROM monitor>

- 3 At the “ap>” prompt, type “view,” in all lowercase letters, then press [Enter], to access the AP commands. When the commands appear, you can perform what functions are needed.

ap>view_



The screenshot shows a HyperTerminal window titled "6910 - HyperTerminal". The window contains the following text:

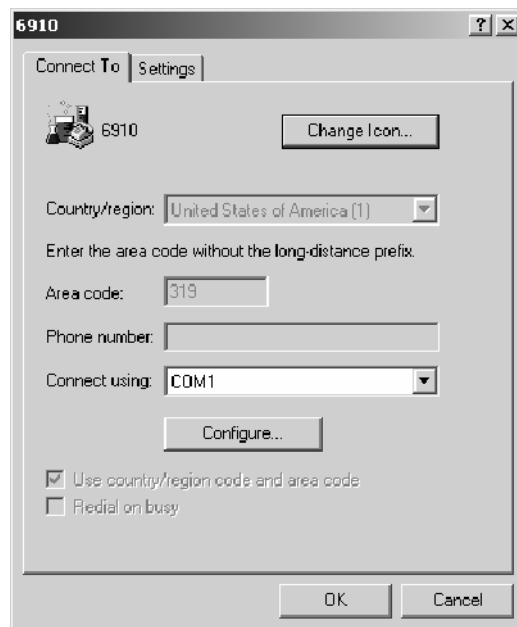
```
Receive collision count = 1
ATV000
QXS6700K V1.14 May 22, 1996
<Press any key within 5 seconds to enter the ROM monitor>
ap>view
-----
"ap" commands...
-----
B          - Reboot                | FR          - Run Flash Boot File
FX s      - Vmodem File Download   | NPWD       - NORAND Password Menu
FC s      - Move File to Flash     | PWD        - Password Menu
FD        - File System Directory  | SR z       - Serial Baud Rate
-----
ap>
```

The window also shows a menu bar (File, Edit, View, Call, Transfer, Help) and a status bar at the bottom with the following information: Connected 0:00:04, VT100, 9600 8-N-1, SCROLL, CAPS, NUM, Capture, Print echo.

Accessing the 6910 Configuration Menu

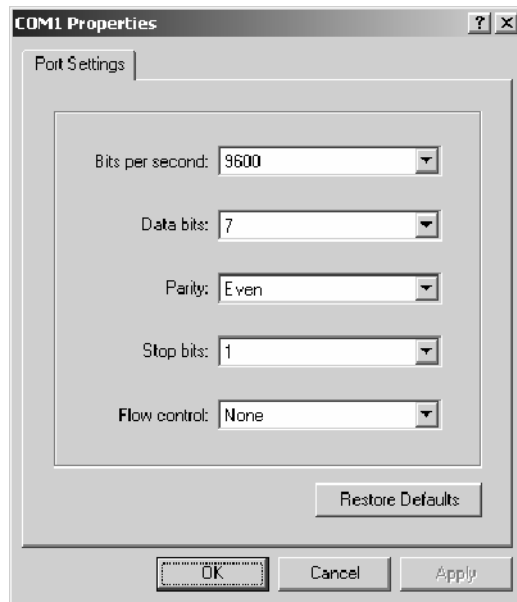
To access the configuration menus, you will need to change the configuration of the HyperTerminal application. Do the following to change the configuration:

- 1 From the desktop, select **Start** → **Programs** → **Accessories** → **Communications** → **HyperTerminal** to access the HyperTerminal application.
- 2 Select **Call** → **Disconnect** or click the **Disconnect** icon to disconnect the call.
- 3 Select **File** → **Properties**, then click **Configure . . .**



4 Set the properties to the following, then click **OK** to exit.

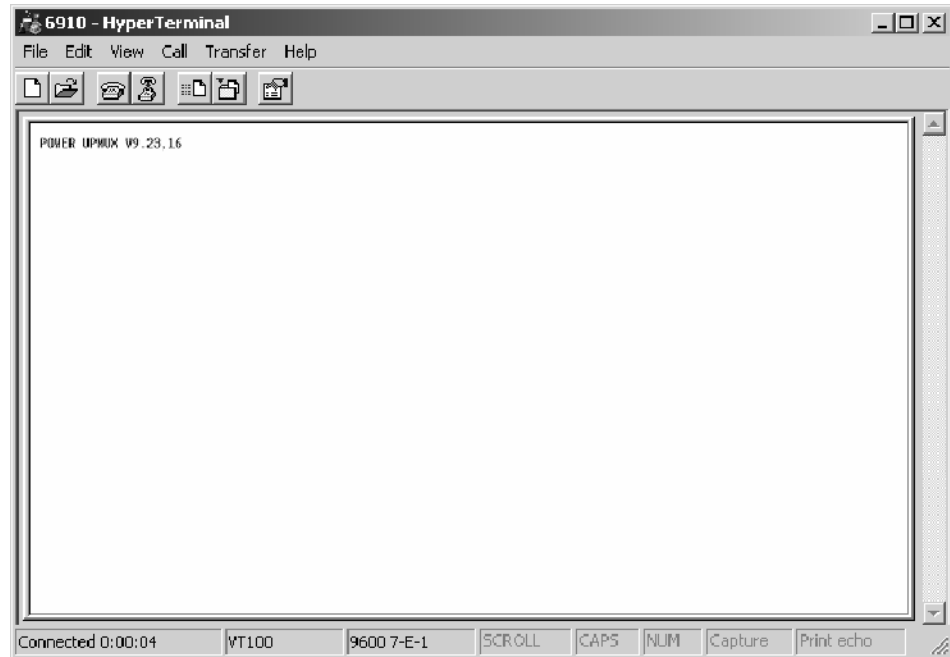
- Baud Rate: 9600
- Data Bits: 7
- Parity: Even
- Stop Bits: 1
- Flow Control: None (no hardware)





- 5 Select **Call** → **Call** or click the **Call** icon to put the HyperTerminal application into call mode. Wait a few moments for the following message to appear. *Note this screen is different due to the change in the baud rate.*

POWER UPMUX V9.23.16



- 6 Put your PC keyboard in CAPS lock mode, type the following, then press [Enter]. There is no prompt and your entry will not be visible.

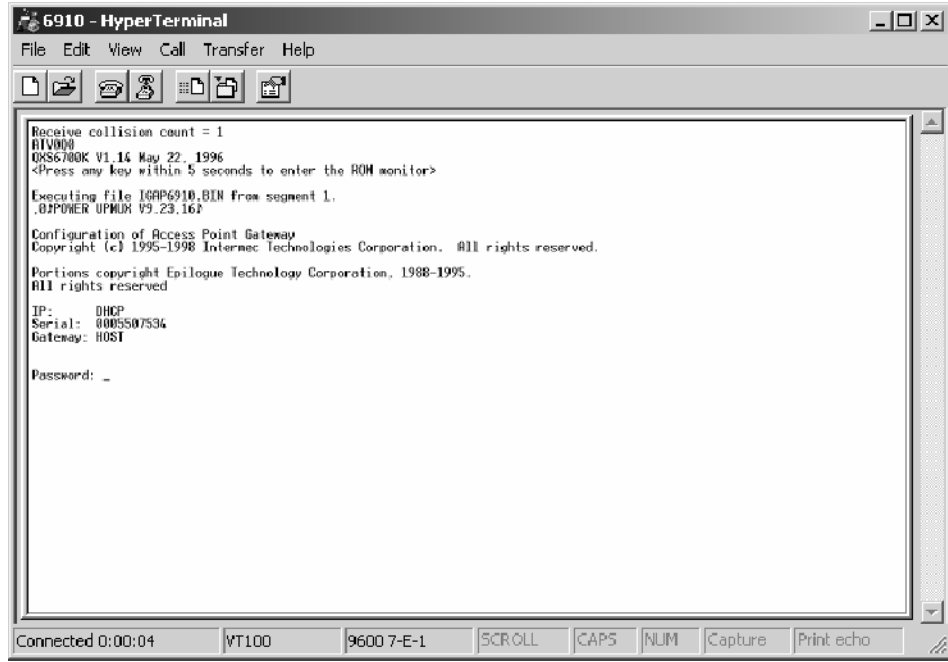
CMT27,2



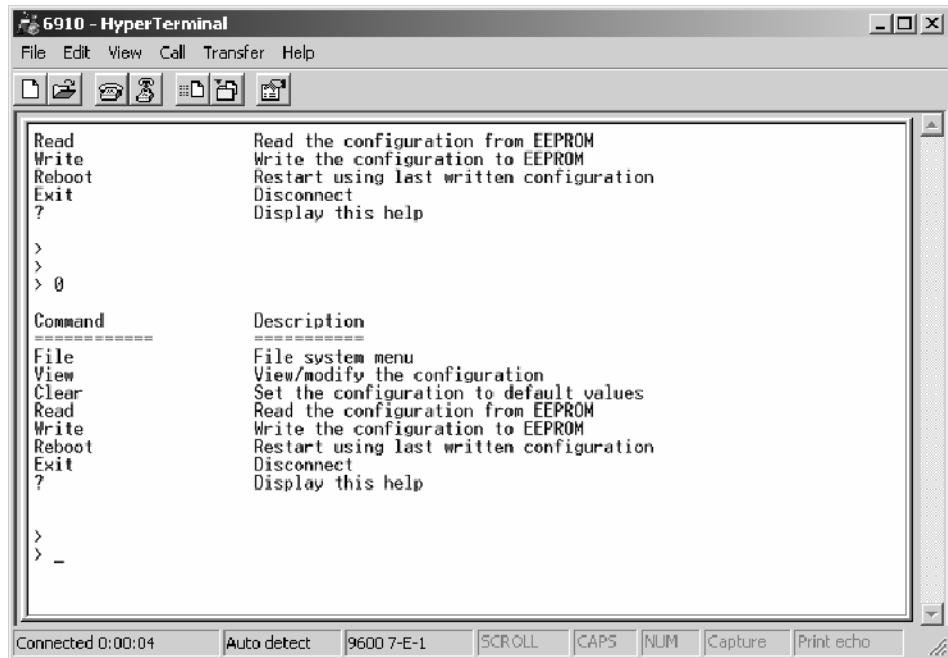
Note: This is case-sensitive, do not enter spaces between characters. There is a one-second timeout period between characters. If you wait more than one second to type the next character, the 6910 IGAP or 6910 TGAP will not recognize the command. If you type the wrong character, you cannot use the backspace key to correct it. You must either wait one second or press [Enter] before trying again.

7 Leave your keyboard in CAPS lock mode. Enter the following password at the "Password:" prompt. Press [Enter] to access the configuration menu. *Note that your entry will not be visible.*

CR52401



You can do any of the command functions shown in the following screen:



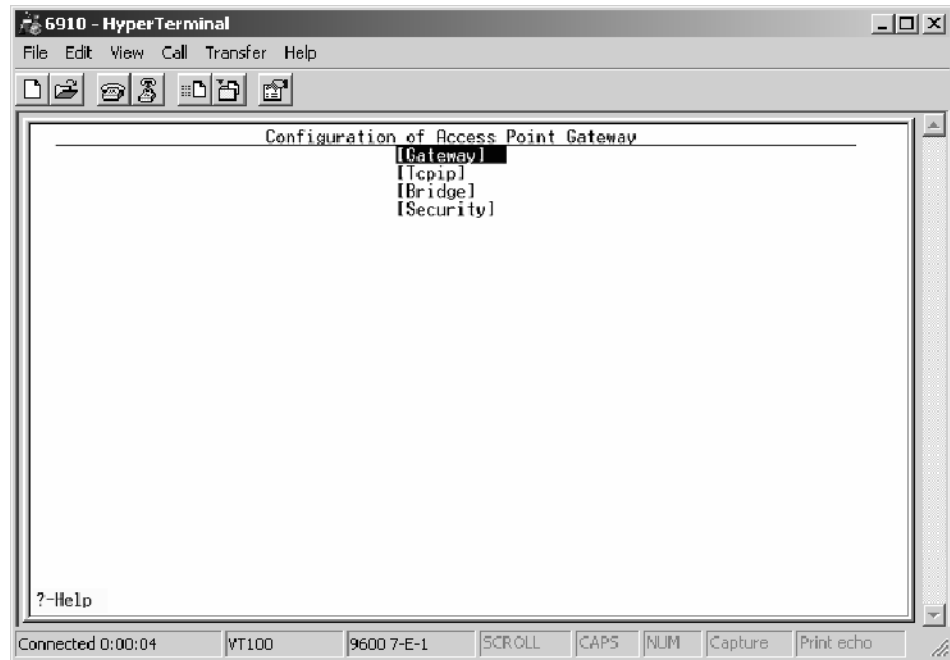
6910 Configuration Menus



Note: Use the [Esc] key to back out of menus.

At the “ap>” prompt, type “view,” in all lowercase letters, to access the AP commands, then press [Enter]. Use your up and down cursor keys to move between menu options, then press [Enter] to go to that menu.

```
>view_
```



See the following pages for each of the menu options:

- Gateway (page 10)
- TCP/IP (page 14)
- Bridge (page 18)
- Security (page 27)

Gateway Main Menu

Select [**Gateway**] to access the Gateway Main Menu for the 6910 IGAP. Use your up and down cursor keys to move between fields. Use your left and right cursor keys to scroll through the options for each field. Use the [Esc] key to go back to the Main Menu on page 9.



- **Name:**

This is an arbitrary name that identifies the 6910 IGAP or 6910 TGAP. Wireless stations use this name to connect to this gateway/access point. Note that this name is *not* your application's host server name.

The setting for **Name** must match the host name specified for each wireless station communicating with the host through this gateway/access point. The names must match so that the wireless stations can communicate with the host. Refer to the wireless station's user manuals for more information about specifying host names.

Note that the setting for **Name** is case-sensitive and is limited to 16 characters. The application will include quotation marks around your entry.
- **Gateway.Compression:**

Select "Enabled" to compress most outbound data from the gateway/access point to the wireless stations. Inbound data sent from the station is not compressed. Compression takes place on a client-to-client basis as allowed per client. *Default is Disabled.*

On most systems, compression reduces the radio frequency (RF) load by compressing most of the outbound data from the host to the wireless station. Thus, "Enabled" is recommended.

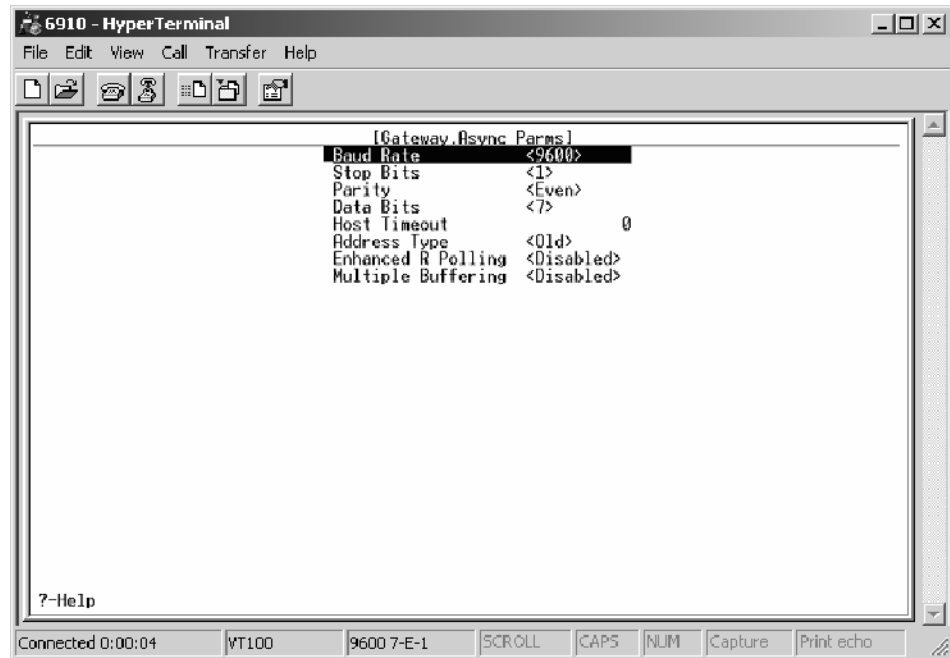
Compression does not significantly increase wireless station counts or supported transaction rates. It does improve response time consistency in applications where the same data or screens are frequently repeated. The effectiveness of compression varies with the size and number of unique screens.

While compression may reduce the amount of data being sent through the RF system, it increases the gateway/access point's processing load. Therefore, it may be beneficial to disabled compression for some systems.

- **Host Type:**
Select "Async" to indicate that one host connects through RS-232 and uses a proprietary protocol to multiplex all wireless stations.
Select "None" to disable the gateway/access point functionality. The device functions only as a 6710 Access Point.
- **[Async Params]**
Select this option to go to the Gateway Asynchronous Parameters menu. Information on this menu starts on the next page.

Gateway Asynchronous Parameters Menu

Select [Async Parms] from the [Gateway] menu to configure RS-232 parameters and the asynchronous multiplexing protocol for the 6910 IGAP. Use your up and down cursor keys to move between fields. Use your left and right cursor keys to scroll through the options for each field. Use the [Esc] key to go back to the Gateway Main Menu on page 10.



- **Baud Rate:**
This sets the serial communication speed in bits per second. This must match the serial baud rate setting for the ROM command monitor. However, different baud rate settings do not affect gateway/access point operation. Settings include: 300, 1200, 2400, 4800, 9600 (*default*), 19200, and 38400.
- **Stop Bits:**
This sets the number of stop bits to be sent with each character. Settings include: 1 (*default*) or 2.
- **Parity:**
This sets the data parity. Settings include: None, Even (*default*), or Odd.
- **Data Bits:**
This sets the number of data bits per character. Settings include: 7 (*default*) or 8.

- **Host Timeout:**

This indicates the number of seconds of host inactivity before the host is considered down. *The range is 0–255, with 0 as the default.*

The default of zero means the gateway/access point never times out the host. *Ten or more seconds is recommended.* Do not set this to zero if the wireless station is configured to communicate with up to three hosts through the wireless station's Advanced Setup firmware option.

After the host timeout value has been exceeded, the wireless station displays "Host is Down." You can then reboot the wireless station. The gateway/access point tries to connect with the next host defined for the wireless station.

- **Address Type:**

For each frame sent to the host, the originating station can be fixed at one or three characters. Settings include: Normal or Old (*default*).

- Select "Normal" have the wireless station address contain three octets.
- Select "Old" to ensure the gateway/access point is backward-compatible to the RM2216 series of multiplexers. Wireless station addresses consist of one octet instead of three, and gateway/access point responses are in the MUX response format.

- **Enhanced R Polling:**

This determines how the gateway/access point responds to host commands with data (if available). Settings include: Enabled or Disabled (*default*).

- Select "Enabled" to have the gateway/access point respond to host commands with data without sending acknowledgments (*the wireless station response is the acknowledgment*). This reduces the number of polls necessary to be generated from the host.
- Select "Disabled" to have the gateway/access point respond to host commands with data by sending acknowledgments.

- **Multiple Buffering:**

This determines how the gateway/access point stores messages. Settings include: Enabled or Disabled (*default*).

- Select "Enabled" to have the gateway/access point store more than one wireless station message from the host while it sends previous messages to the wireless station.
- Select "Disabled" to have the gateway/access point store only one wireless station message from the host.

TCP/IP Main Menu

Select [Tcpi] to access the TCP/IP Main Menu, which configures the 6710 Mobile Bridge and the 6710 Access Point. Use your up and down cursor keys to move between fields. Use your left and right cursor keys to scroll through the options for each field. Use the [Esc] key to go back to the Main Menu on page 9.



- **IP Address:**

This indicates the unique address locally assigned to this 6710 Mobile Bridge or 6710 Access Point. *The prompt is 0–255 for each number, with 0.0.0.0 as the default.*

0.0.0.0 disables the ability to use TCP/IP. Following are suggestions for setting the address:

- If you are installing this 6710 Mobile Bridge or 6710 Access Point on an existing Ethernet segment, you should allocate the IP address from the same pool as the existing computers on the segment.
- If you are installing this 6710 Mobile Bridge or 6710 Access Point on a new Ethernet segment that is not going to connect to the Internet, try using this Class B address: 172.16.h.h

The host number is “h.h.” This Class B network address is reserved by the numbering authority for a company’s internal use. If the Class B address appears on the Internet, routers drop the data. See the *6710 Mobile Bridge User’s Guide* or the *6710 Access Point User’s Guide* for more information about DHCP.



Note: If the IP address is 0.0.0.0 and DHCP is enabled, this IP address is obtained through DHCP. If the IP address is 0.0.0.0 and DHCP is disabled, TCP/IP access to this 6710 Mobile Bridge is disabled.

- **IP Subnet Mask:**

IP subnets partition traffic and are connected by routers. The subnet mask indicates how many bits of the IP address represent a network number and how many indicate a host number. *The prompt is 0–255 for each number, with 255.255.255.0 as the default.*

Following are suggestions for setting the subnet mask:

- If you are installing this 6710 Mobile Bridge or 6710 Access Point on an existing Ethernet segment, the subnet mask should match the other computers on the segment.
- If you are using the 172.16.h.h address suggested for IP Address, you may want to use a subnet mask of 255.255.248.0. This mask provides the network 172.16 with 30 subnets of 2046 computers each.

The IP address breakdown is:

- 16 bits of network address.
- 5 bits of subnet address. Do not use all 0's or all 1's.
- 11 bits of host address. Do not use all 0's or all 1's.

The following chart lists IP addresses when the submask is 255.255.248.0. If you are using DHCP to obtain an IP subnet mask for this 6710 Mobile Bridge or 6710 Access Point, the subnet mask obtained from DHCP overrides the setting for the IP Subnet Mask option.

Subnet	First Address	Last Address
1	172.16.8.1	172.16.15.254
2	172.16.16.1	172.16.23.254
3	172.16.24.1	172.16.31.254
.		
.		
.		
30	172.16.240.1	127.16.247.254



Note: The IP address of the router is required only if this 6710 Mobile Bridge or 6710 Access Point will communicate with devices on the other side of the router.

- **IP Router:**

This identifies the default router used to forward data frames to addresses on another subnet. *The prompt is 0–255 for each number, with 0.0.0.0 as the default.*

0.0.0.0 disables the ability to exchange TCP/IP traffic with another subnet or network.

A router that connects subnet 1 to subnet 2 might have the address 172.16.8.1 on subnet 1 and 172.16.16.1 on subnet 2. A host with IP address 172.16.16.5 would specify an IP router address of 172.16.16.1 to reach host 172.16.8.10.

IP routers are usually configured so a computer only needs to know one router's address. This is true even if several routers on the segment connect to several other segments.

If you are using DHCP to obtain an IP router address, and the DHCP server specifies a default IP router, the DHCP server specification overrides the setting for IP Router.

- **IP Frame Type:**

This sets the type of frame containing IP traffic. Settings include: DIX (*default*) or 802.3.

- Select “DIX” to set the Ethernet type to DIX (Ethernet 2.0) for IP frames.
- Select “802.3” to set the Ethernet type to 802.3 with a SNAP header for IP frames. Select 802.3 if other network computers use SNAP encapsulation for IP frames.

- **DHCP:**

This allows this 6710 Mobile Bridge or 6710 Access Point (the client) to obtain IP addresses from a DHCP server on the network. Settings include: Enabled, Enabled, if IP address is zero (*default*), or Disabled.

- Select “Enabled” to always use DHCP to obtain the IP address, subnet mask, and (*optional*) default IP router when the 6710 Mobile Bridge or 6710 Access Point reboots.
- Select “Enabled, if IP address is zero” to retrieve IP addresses for the 6710 Mobile Bridge or 6710 Access Point, subnet mask, and default router, and the lease expiration time, from the DHCP server. The 6710 Mobile Bridge ignores other configuration options. *Note that if you enable DHCP, you must set IP Address to 0.0.0.0.*
- Select “Disabled” to disable DHCP. You must manually set the IP addresses before the TCP/IP stack is enabled.

The 6710 Mobile Bridge or the 6710 Access Point responds only to address offers from DHCP or Bootp servers. In either case the server is specified in the DHCP server name field.

- **DHCP Server Name:**

The range prompt for the DHCP server name is 31 characters. The 6710 Mobile Bridge or 6710 Access Point responds only to the named server. *The default server name is “Norand DHCP Server.”* This name prevents the 6710 Mobile Bridge or 6710 Access Point from inadvertently obtaining an IP configuration from existing servers on the network.

If the DHCP server name is configured with a null string (“”), the 6710 Mobile Bridge or the 6710 Access Point responds to offers from any server.

The class identifier string for the 6710 Mobile Bridge or 6710 Access Point is “Norand Access Point.” Servers use this string to identify the 6710 Mobile Bridge or 6710 Access Point.

See the *6710 Mobile Bridge User’s Guide* or the *6710 Access Point User’s Guide* for more information about DHCP servers.

- **Auto ARP Minutes:**

The 6710 Mobile Bridge or 6710 Access Point periodically sends an unsolicited ARP response so routers can update their routing tables. The response enables a network management platform to learn about the 6710 Mobile Bridge or 6710 Access Point on the network by querying routers.

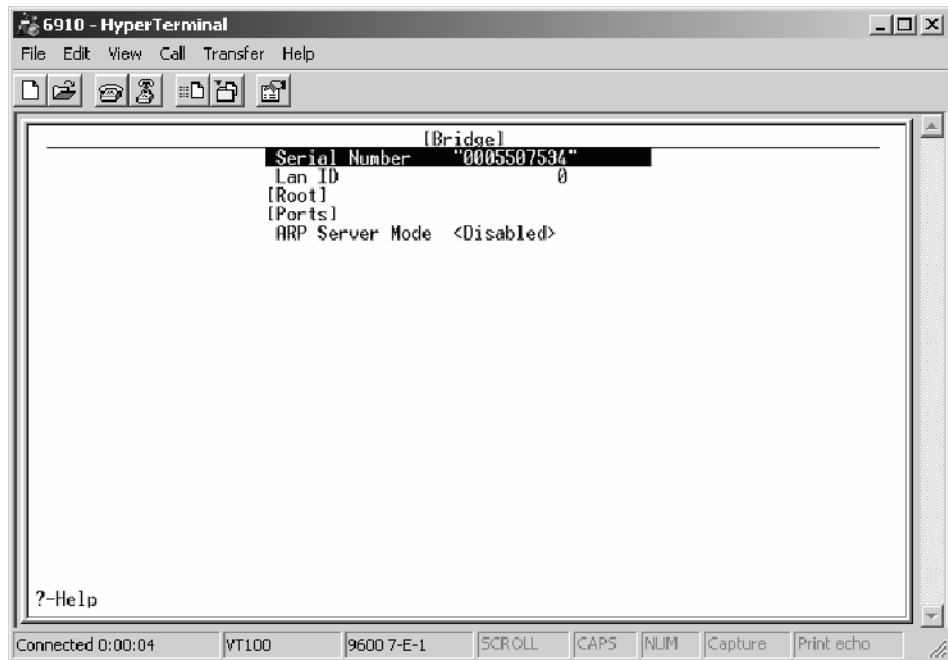
This setting is the number of minutes between periodic ARP requests. *The range prompt is 0–120 minutes, with the default being 5 minutes.* A setting of 0 disables Auto ARP Minutes.

If the default router’s address is 0, the ARP request is sent to the IP address of this 6710 Mobile Bridge or 6710 Access Point. Without the Auto ARP Minutes option, a 6710 Mobile Bridge or 6710 Access Point might not use its IP address for extended periods of time and expire from the router’s ARP table.

Auto ARP Minutes enhances the discovery of the network architecture by network management tools, such as OpenView by Hewlett-Packard. The network management tool queries IP router ARP tables to locate the active IP addresses for the subnet IP addresses for 6710 Mobile Bridges or 6710 Access Points should not be allowed to expire. The network management program would then need to ping all potential addresses on a subnet to locate active IP addresses, or require the user to enter a list.

Bridge Main Menu

Select **[Bridge]** to access the Bridge Main Menu, which configures options that define the bridging topology of the RS-485 – Ethernet LAN for the 6710 Mobile Bridge or 6710 Access Point. Use your up and down cursor keys to move between fields. Use your left and right cursor keys to scroll through the options for each field. Use the **[Esc]** key to go back to the Main Menu on page 9.



- **Serial Number:**
This is a read-only setting that displays the unique 10-digit serial number for this 6710 Mobile Bridge or 6710 Access Point, which identifies the device on the network.
- **Lan ID:**
The LAN ID (*also called domain*) is a number that logically isolates adjacent but independent open wireless LANs. *The range prompt is 0–254, with 0 as the default.*

You should never need to change the default. All 6710 Mobile Bridges and 6710 Access Points on the same Ethernet LAN segment should have the same LAN ID.
- **[Roots]**
Select this option to go to the Bridge Root menu. Information on this menu starts on page 20.
- **[Ports]**
Select this option to go to the Bridge Ports menu. Information on this menu starts on page 25.

- **ARP Server Mode:**

This converts multicast ARP requests to unicast ARP requests for RS-485 stations in the forwarding database. ARP Server Mode can significantly improve RS-485 network performance in busy IP networks. Settings include: Disabled, No Flooding (*default*), Delay Flooding, and Normal Flooding.

When this option is enabled, the IP addresses of the RS-485 stations are included in the forwarding database. The ARP server learns the IP addresses of RS-485 stations by monitoring IP traffic to those stations. Additionally, some stations may have the capability of explicitly registering IP addresses with the ARP server. This is done with the OWL_ATTACH protocol included in certain RS-485 drivers supplied by Intermec.

- Select “Disabled” to take no special action when an ARP is received. Multicast ARP requests are subject to the frame filters and the setting for MultiFloodLevel.

Disabled is the preferred option when a system has no IP RS-485 traffic or has stations that do not register IP addresses.

- Select “No Flooding” to have the ARP server convert ARPs from multicast destination addresses to the unicast address of the destination station. This option is the most efficient configuration, since multicast ARPs are never forwarded. Use of this setting requires stations to register IP addresses with the 6710 Mobile Bridge or 6710 Access Point.

This option is preferred when RS-485 stations should respond to ARPs, and are capable of registering their IP addresses with the 6710 Mobile Bridge or 6710 Access Point. This registration can be accomplished either through regular periodic traffic from the RS-485 station or use of the OWL_ATTACH protocol included in some RS-485 drivers supplied by Intermec Technologies.

- Select “Delay Flooding” to have the ARP server convert ARPs from multicast to the unicast address of the destination station. If the destination address is unknown, the initial ARP request is not forwarded. If the requesting device retries the ARP request, second and subsequent ARP requests are forwarded.

This option is preferred when RS-485 stations should respond to ARPs, but are not capable of registering their IP addresses with the 6710 Mobile Bridge or 6710 Access Point.

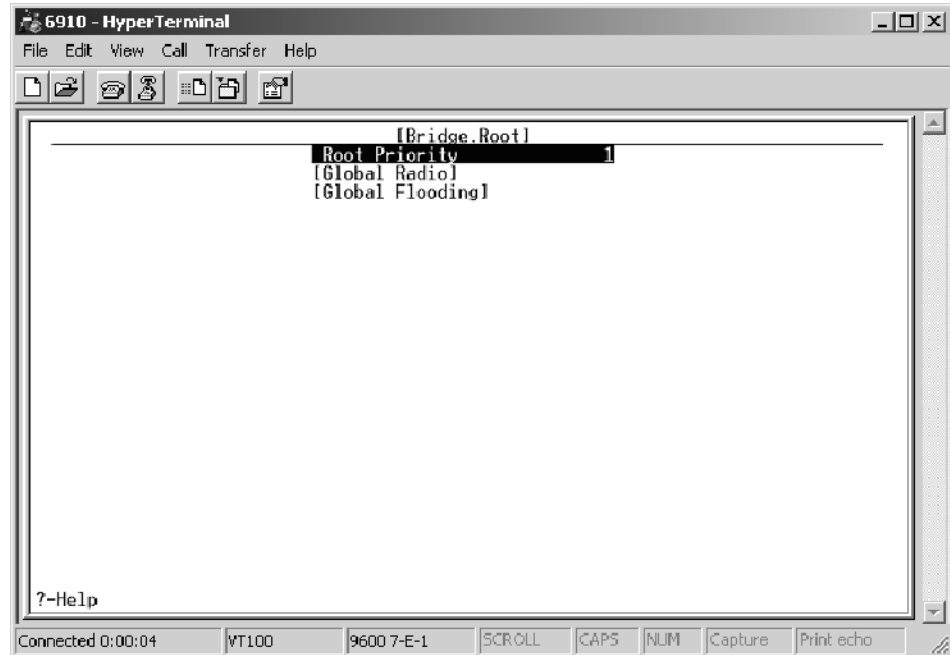
- Select “Normal Flooding” to have the ARP server convert ARPs from multicast destination addresses to the unicast address of the destination station. If the destination address is unknown, the ARP request is flooded according to the multicast flood level settings.

This option is useful when RS-485 stations need to respond to ARP requests, but are not capable of registering IP addresses with the 6710 Mobile Bridge or 6710 Access Point. This sends more unnecessary ARPs over RS-485 links than delay flooding and does not introduce delays in ARP responses as does the Delay Flooding option.

Bridge Roots Menu

Select [Roots] from the [Bridge] menu to set the root priority for 6710 Mobile Bridges or 6710 Access Points configured to operate as super roots. These super roots should be set to the same settings in all 6710 Mobile Bridges and 6710 Access Points with a nonzero root priority configured.

Use your up and down cursor keys to move between fields. Use your left and right cursor keys to scroll through the options for each field. Use the [Esc] key to go back to the Bridge Main Menu on page 18.



- **Root Priority:**
This determines which of the 6710 Mobile Bridges and 6710 Access Points are candidates to become the super root node on the distribution LAN (also called primary LAN). *The range prompt is 0–7 with 1 as the default root priority.* See the *6710 Mobile Bridge User's Guide* or the *6710 Access Point User's Guide* for more information about the super root.
- **[Global Radio]**
Select this option to go to the Bridge Root Global Radio menu. Information on this menu starts on page 21.
- **[Global Flooding]**
Select this option to go to the Bridge Root Global Flooding menu. Information on this menu starts on page 23.

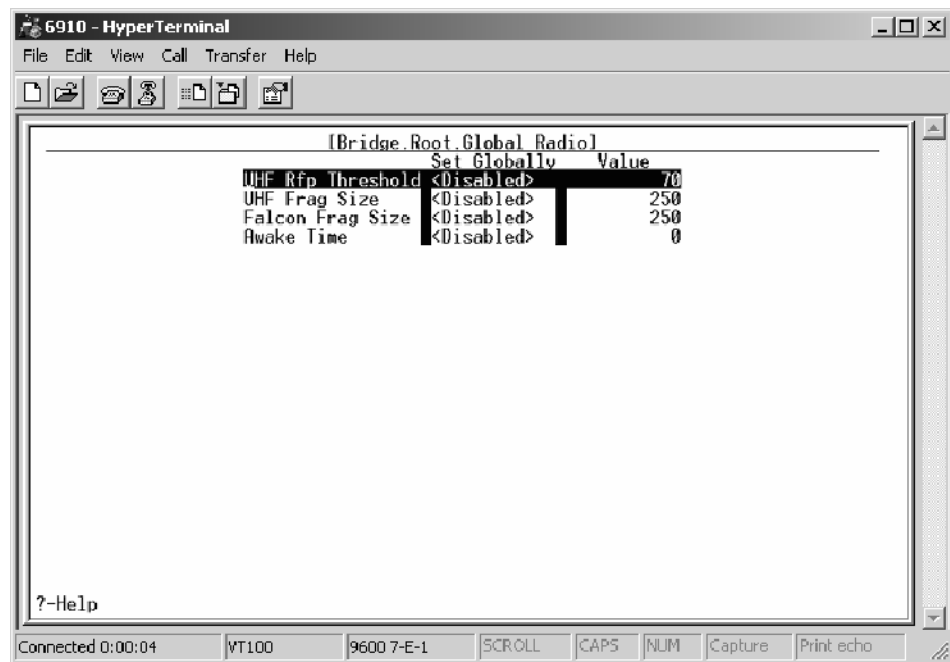


Bridge Roots Global Radio Menu

Note: Use the same [Global Radio] settings in all super root candidates.

Select [**Global Radio**] from the Bridge Root menu to distribute network-wide configuration parameters. Settings in the super root are distributed throughout the network.

Use your up and down cursor keys to move between fields. Use your left and right cursor keys to scroll through the options for each field. Use the [Esc] key to go back to the Bridge Root main menu on page 20.



- **UHF Rfp Threshold;**
This adjusts the S-UHF protocol characteristics for smaller data frames. The recommended setting in most cases is Disabled (*default*). For installations that primarily send very small frames, *Enabled at the default value of 70 may improve network response time.*
- **UHF Frag Size:**
For reliable transmission, large frames may be fragmented or split into several smaller frames. The receiver reassembles the fragments into a complete frame. *Default is 250.*
- **Falcon Frag Size:**
For reliable transmission, large frames may be fragmented or split into several smaller frames. The receiver reassembles the fragments into a complete frame. *Default is 250.*

- **Awake Time** (*Does not apply to WLIF radio*):

This option establishes an awake time after a station transmits. Portable stations do not enter a power-managed state for this time period. The 6710 Access Point may deliver a response without using the pending message delivery mechanism during the awake time.

The time is specified in tenths of seconds. When awake time is Disabled (*default*), each station uses its own default (2 seconds for 900 MHz or S-UHF stations). Longer awake times may reduce station battery life.

Each [Global Radio] option has the following settings:

- **Set Globally:**

The value for all radios in the system is specified according to how Set Globally is configured. Settings include: Enabled or Disabled (*default*).

- If this 6710 Access Point is the super root, select “Enabled” to set the value for all stations and access points in the network. This setting has no effect in access points other than the super root.
- Select “Disabled” have the super root not distribute global parameters. All radios in the network use local settings or defaults.
- **Value:**

Following are ranges and defaults for this option:

Value	Range	Default
UHF Rfp Threshold	0–250 octets	70
UHF Frag Size	0–250 octets	250
Falcon Frag Size	0–250 octets	250
Awake Time	0–255 (tenths of seconds)	0

Bridge Roots Global Flooding Menu



Note: Use the same [Global Flooding] settings in all super root candidates.

Select [**Global Flooding**] from the Bridge Root menu to set system-wide flooding options. The settings are sent throughout the network when and if this 6710 Mobile Bridge or 6710 Access Point becomes the super root.

A 6710 Mobile Bridge or 6710 Access Point normally forwards frames only to destination addresses it has learned and stored in the forwarding database. Frames are forwarded only on the port that provides the shortest path to the destination address. The 6710 Mobile Bridge or 6710 Access Point can be configured to flood frames on one or more ports when the destination address is unknown.

Global flooding options allow for different flooding configurations to optimize performance. Settings in the super root are distributed to all other 6710 Mobile Bridges and 6710 Access Points.



Note: See the *6710 Mobile Bridge User's Guide* or *6710 Access Point User's Guide* for information about the flooding level checklist.

Use your up and down cursor keys to move between fields. Use your left and right cursor keys to scroll through the options for each field. Use the [Esc] key to go back to the Bridge Root main menu on page 20.

```
[Bridge.Root.Global Flooding]
-----
Inbound      Multicast    Unicast
-----
Inbound      <Primary>    <Disabled>
Outbound to  <Registered> <Disabled>
Outbound to  <Disabled>   <Disabled>
Stations

?-Help

Connected 0:00:04  VT100  9600 7-E-1  SCROLL  CAPS  NUM  Capture  Print echo
```

- **Inbound:**

An inbound frame is flooded towards the distribution LAN (the Ethernet LAN segment containing the super root).

Flooding may be configured separately for unicast (single physical address) and multicast (group address) frame types. Many network protocols use multicast messages for establishing and maintaining connections, and use unicast messages for data exchange.

Inbound options are Multicast and Unicast and have the following settings: Enabled, Primary (*multicast default*), and Disabled (*unicast default*).

- Select “Enabled” to have 6710 Mobile Bridge or 6710 Access Point flood to all ports, similar to a conventional bridge.
- Select “Primary” to have frames flooded inbound only. This setting is useful in many RS-485 — Ethernet LAN installations where the super root, servers, or gateways for RS-485 stations are on the same Ethernet segment.
- Select “Disabled” to have frames not be flooded. *Use this setting only if the **Outbound to Secondaries** option is also set to “Disabled.”*

- **Outbound to Secondaries:**

An outbound frame is flooded away from the distribution LAN. This frame floods frames with unknown destinations to secondary (RS-485) LANs. Settings include: Enabled and Disabled (*multicast and unicast default*).

- Select “Enabled” to have all designated 6710 Mobile Bridges and 6710 Access Points flood to secondary (RS-485) LANs. This setting allows the super root to control flooding for all 6710 Mobile Bridges and 6710 Access Points serving as designated devices for secondary (RS-485) LANs.
- Select “Disabled” to have flooding disabled in all designated 6710 Mobile Bridges and 6710 Access Points. This setting allows the super root to control flooding for all 6710 Mobile Bridges and 6710 Access Points serving as designated devices for secondary (RS-485) LANs. *This setting should be used only if **Inbound flooding** is set to “Disabled.”*

- **Outbound to Stations:**

Outbound to Stations frames apply only to 6710 Access Points with the WLIF radio option. Settings include: Enabled or Disabled (*multicast and unicast default*).

- Select “Enabled” to have all designated 6710 Access Points flood to secondary (RS-485) LANs. This setting allows the super root to control flooding for all 6710 Access Points serving as designated devices for secondary (RS-485) LANs.
- Select “Disabled” to have flooding disabled in all designated 6710 Access Points. This setting allows the super root to control flooding for all 6710 Access Points serving as designated devices for secondary (RS-485) LANs. *This setting should be used only if **Inbound flooding** is set to “Disabled.”*

Bridge Ports Menu

Select [Ports] from the [Bridge] menu to define options for the 6710 Mobile Bridge or 6710 Access Point Ethernet port and RS-485 port.

Use your up and down cursor keys to move between ports, then select a port to display its options. Use your left and right cursor keys to scroll through the options for each field. Use the [Esc] key to go back to the Bridge Main Menu on page 18.

```

(Bridge.Ports)
-----
Name      MAC Address      Status      Hello Period
-----
1 "omde"   00:c0:b2:81:c0:8e <Enabled>   <2 Seconds>
2 "omdfca" 00:c0:b2:81:b6:ee <Enabled>   <1 Second>
3 ""       00:00:00:00:00:00 <Disabled>  <2 Seconds>
4 "omdip"  00:00:00:00:00:00 <Enabled>   <2 Seconds>
  
```



Note: If no RS-485 PC card is installed internally in slot A or B, "" is in the Name column and <Disabled> is shown in the Status column.

- **Name:**

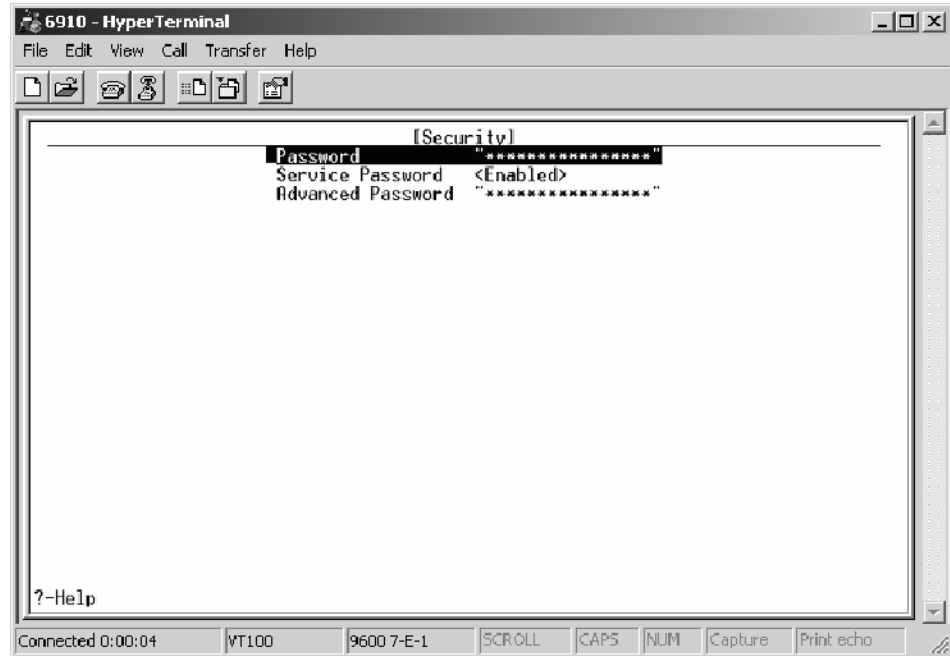
The following chart defines options in this column. This read-only setting displays the driver name for the type of device occupying this communication port. The name is for internal system use.

Option	Description
omde	Ethernet port
omdpdma (or omdpxmb)	WLIF (Proxim 2.4 GHz) radio port
omdfca (or omdflcb)	Falcon (900 MHz) radio port
omduhfb	S-UHF radio port
omdip	OWL/IP port (IP tunneling)

- **MAC Address:**
This is a read-only option that displays the network address of the Ethernet port or RS-485 port. The 6710 Mobile Bridge or 6710 Access Point automatically identifies the addresses of devices installed in or attached to its communication ports. The MAC address for each RS-485 port is the MAC address of the Ethernet port.
- **Status:**
This option sets the condition of the port. Settings include: Enabled (*default*) or Disabled.
 - Select “Enabled” to render the port available for usage.
 - Select “Disabled” to render the port unavailable.
- **Hello Period:**
This option determines how frequently the 6710 Mobile Bridge or 6710 Access Point broadcasts hello messages on the network. On Ethernet links, hello messages are used to maintain the spanning tree. *Settings include: 1 Second, 2 Seconds, and 3 Seconds, with the default at 2 Seconds.*
You should never have to change this default.
- **[Ethernet]**
This only appears if you had selected “omde” as a port. See the *6710 Mobile Bridge User’s Guide* or the *6710 Access Point User’s Guide* for more information about using this option to set the Ethernet port.
- **[WLIF]**
This only appears if you selected “omdpxma” (or “omdpxmb”) and a WLIF radio is installed in either PC card slot. See the *6710 Access Point User’s Guide* for more information.
- **[Falcon]**
This only appears if you selected “omdfca” (or “omdfcb”) and a 900 MHz radio is installed in either PC card slot. See the *6710 Access Point User’s Guide* for more information.
- **[UHF]**
This only appears if you selected “omduhfb” and a S-UHF radio is installed in its PC card slot. See the *6710 Access Point User’s Guide* for more information.
- **[OWL/IP]**
This only appears if you selected “omdip.” See the *6710 Mobile Bridge User’s Guide* or the *6710 Access Point User’s Guide* for more information.

Security Main Menu

Select [Security] to access the Security Main Menu, which configures passwords for the 6710 Mobile Bridge or the 6710 Access Point. Use your up and down cursor keys to move between fields. Use your left and right cursor keys to scroll through the options for each field. Use the [Esc] key to go back to the Main Menu on page 9.



- **Password:**
This option is the top-level password you need to access the configuration menus. The range prompt is 16 characters. Enter 16 or fewer alphanumeric characters for this password. It is case insensitive and can be any combination of letters, numbers, and symbols. For security, the password appears as asterisks on the screen.
- **Service Password:**
Intermec Technologies maintains a service password so its Customer Support Center can configure this 6710 Mobile Bridge or 6710 Access Point if necessary. For example, if you forget what the configuration menus' top-level password is, a Customer Support personnel can access the menus through the service password.

By default, **Service Password** is enabled. If setting a service password violates your security guidelines, you can disable it. If it is already disabled and you forget the configuration menus' password, you may need to send this 6710 Mobile Bridge or 6710 Access Point to a Service Center to be reconfigured.

Contact the Customer Support Center for more information about the service password. See the "*Before You Begin*" chapter for contact information.

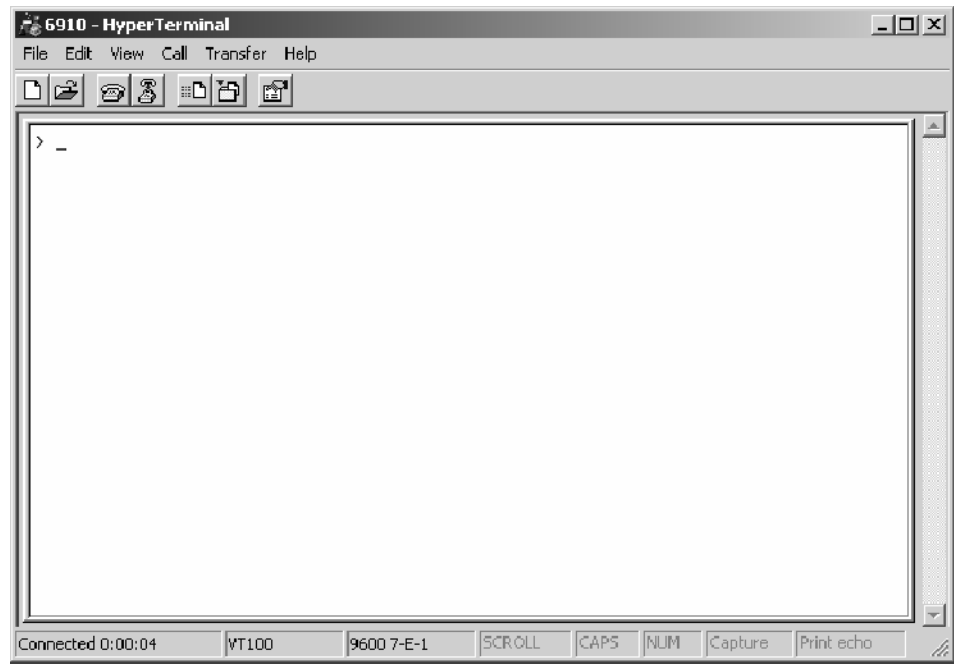
- **Advanced Password:**

When you set an advanced password for the 6710 Access Point, it is required to configure the following. *The range prompt is 16 characters.* Enter 16 or fewer alphanumeric characters for this password. It is case insensitive and can be any combination of letters, numbers, and symbols. For security, the password appears as asterisks on the screen.

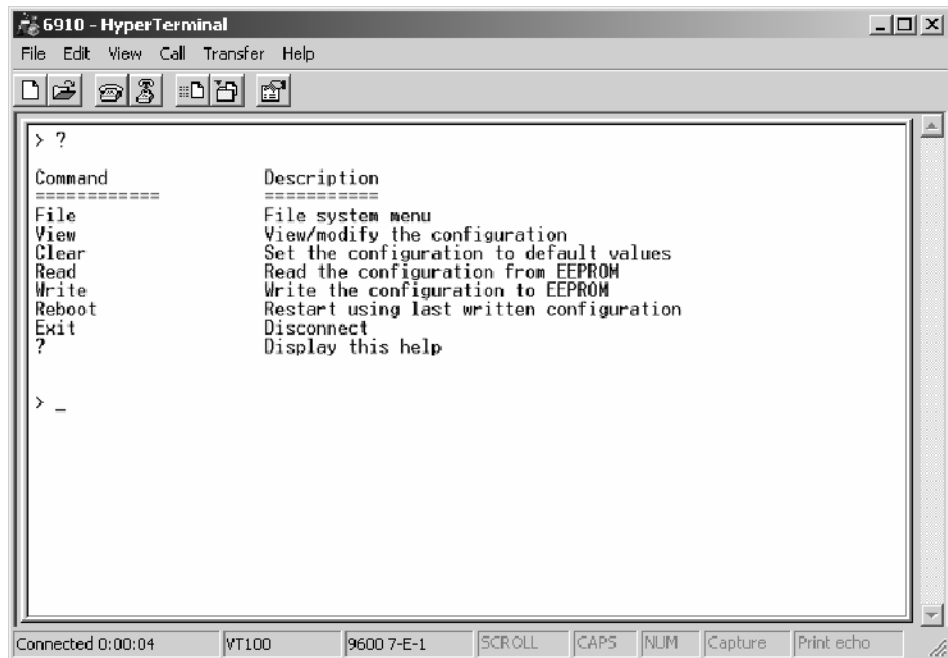
- Security/Advanced Password *and* Bridge/Ports/omdip

Exiting the View Menu

To exit the View Configuration Menu System, press [Esc] on your keyboard until you see the following screen:



To see the following Configuration Command screen, type any letter, then press [Enter] on your keyboard:



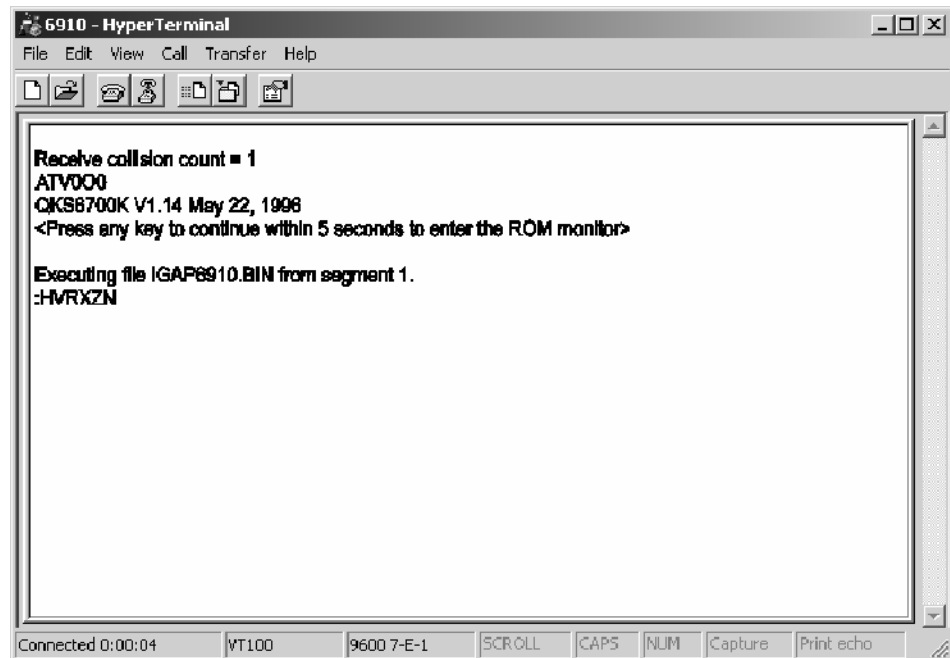
Troubleshooting

Help Screens

Tip: In every View Configuration screen, press the [Tab] key to move to a topic, then press the [?] (Question Mark) key to get HELP topics, just like other access points and controllers.

Refashing

Tip: If your initial boot up sequence produces all garbage characters, then the unit needs to be reflashed.

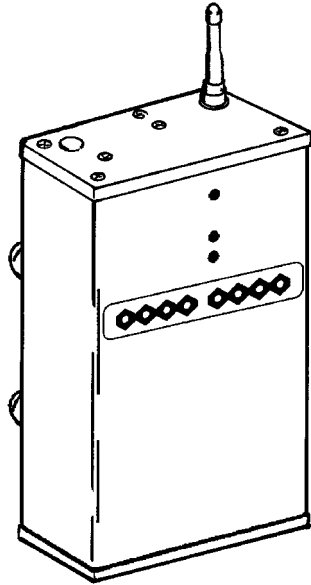


```
6910 - HyperTerminal
File Edit View Call Transfer Help
[Icons]
Receive collision count = 1
ATV000
OKS6700K V1.14 May 22, 1998
<Press any key to continue within 5 seconds to enter the ROM monitor>

Executing file IGAP6910.BIN from segment 1.
:HVRXZN
Connected 0:00:04  VT100  9600 7-E-1  SCROLL  ICAPS  NUM  Capture  Print echo
```

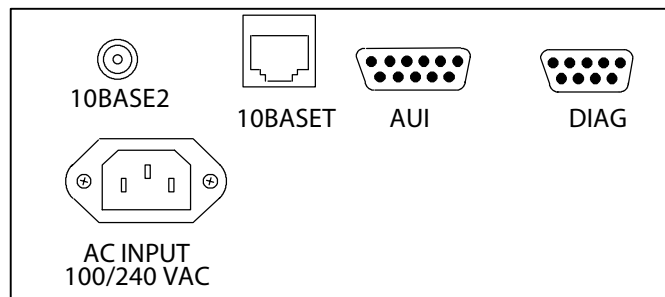
6910 IGAP or 6910 TGAP

This is an illustration of a 6910 IGAP or a 6910 TGAP:



Ports

This is an illustration of the ports on the end of a 6910 IGAP or a 6910 TGAP:





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6910 Integrated and 6910 Telnet Gateway/Access Points Menu System Technical Documentation - March 2003



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