Callsign String

This string can be a maximum of **10** characters long. All characters are either numbers or letters. The prefix “DE” (from) is added to the beginning of the transmitted call sign.

RADIO PARAMETERS

Radio Parameters:	
Sync Delay:	22
Remote Txon:	13
Active Channel:	1
OK	Cancel

Sync Delay

Important: ***This parameter should not be changed from its factory setting without a clear understanding of the timing of the radio protocol.***

Sync Delay specifies the delay between the time of the base station transmission and the first response window, measured in character times. The value assigned to this parameter must be compatible with other base stations and terminals in the system. The TRX7370 radio is available in either two level or four level modulation, providing baud rates of 4800 bps and 9600 bps, or 9600 bps and 19200 bps, respectively.

The default setting for a two level modulation narrow band radio, operating at 9600 baud, is **23**.

The default setting for a four level modulation narrow band radio, operating at 19200 baud, is **31**.

Remote Txon

Remote Txon accommodates the turn on time of the radio in terminals (remotes). It specifies the number of fill characters sent to the radio before real data is output. Since this parameter is based on character times, the number is dependent on the radio link baud rate.

The value assigned to the *Remote Txon* parameter must be consistent across all terminals and base station equipment. The allowable value range is **3** to **60**.

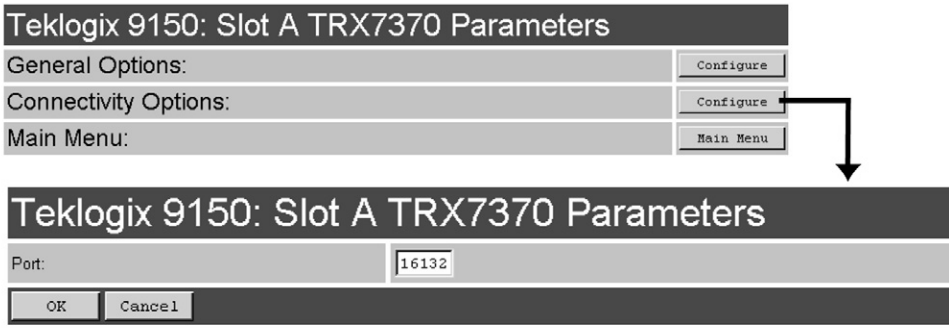
Important: ***This parameter should not be changed from its factory setting without an understanding of the timing of the radio protocol.***

Active Channel

This parameter determines the operating radio channel of the 9150. This makes the channel available for channel searching by the terminals. The channel selected must be one of those that have been configured with frequencies, as indicated on the TRX7370 Radio Card Parameters page. See page 110 for the list of associated channels and frequencies.

5.2.2.4 Connectivity Options: RRM Mode

When you enter the *Connectivity Options* sub-menu for the 9150 set in RRM operating mode, the 9150 displays the RRM parameters.



Port

This parameter allows you to enter the port number of the 9150. The port number can range from **1024** to **32767**.

Important: ***The port number entered here must match the port number entered for this 9150 in the network controller's RRM configuration.***

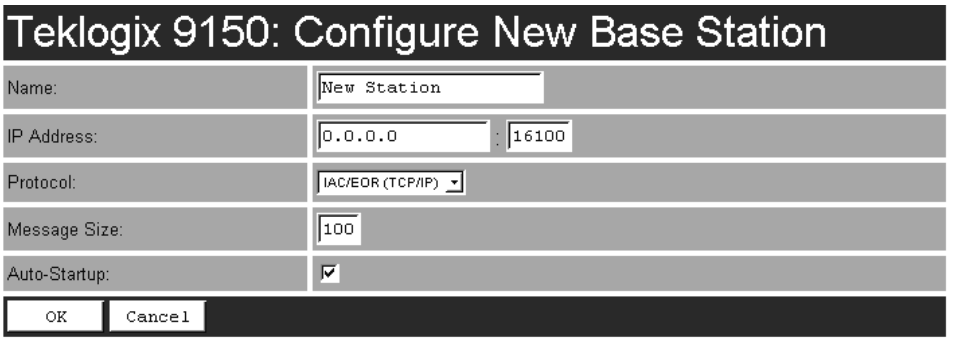
5.3 Base Station Configuration Menu Options

The 9150 Wireless Gateway can operate as a base station or remote radio module (RRM), facilitating the communications between terminals and wireless base stations and a network controller (Teklogix 9400 Network Controller or 9150 Wireless Gateway), using a range of host platforms. Alternatively, the network controller can be a host running a Teklogix SDK (handler). The 9150 can also act as a slave base station to a 9150 on the network.

5.3.1 Base Stations

Base stations communicate over the radio link using Psion Teklogix proprietary protocols. They can optionally carry IP data over these protocols. Base stations can be connected to network controllers using TCP/IP over Ethernet networks. As a base station communicating with terminals through a radio link, the 9150 uses the Wireless LAN (Wlan) or Adaptive Polling/Contention RF protocols (see page 7 for details on the protocols). The 9150 controls the radio link's operation and timing. Each base station uses a different radio channel, and terminals use cellular switching to roam between stations.

The options and parameters on the following pages allow you to configure the 9150 as a master base station connected to up to 32 slave 9150 base stations over an Ethernet network. The master 9150 is connected to a 9400 Network Controller, or up to six hosts running TSDK (Teklogix Software Development Kit). From the *Base Stations* option under *Base Station Configuration* (see Figure 5.2 on page 101), entering "Configure" will open the "Configure New Base Station" page, which will enable you to add a new slave base station to the system or change the parameters on an existing slave base station.



Name

The name entered in this parameter is used as an alternate way of identifying the IP address of a slave base station.

IP Address

This parameter provides the corresponding IP address for the slave base station. The *IP Address* **must be a unique value** so that each slave base station can be identified on the network.

The acceptable value ranges from **0.0.0.0** to **239.255.255.255**.

The default value for the IP port is **16100**.

Protocol

IAC/EOR (TCP/IP) is the default protocol for the Ethernet connection.

Message Size

Message Size determines the largest single message that can be passed to a terminal. The range of this parameter is between **32** and **380** characters. (Longer messages are broken into several packets.)

For polling protocol base stations, the upper limit is **116**.

Auto-Startup

When this parameter is **enabled** (√), the slave base stations will start polling when the **master 9150** boots up. When *Auto-Startup* is **disabled**, the base stations will not start polling until they receive a *start polling* command from the **host**.

5.3.2 RRM Groups

While the 9150 can operate as a Remote Radio Module (RRM, see “Connectivity Options: RRM Mode” on page 117), it can also control other RRMs. For a 9150 to control RRMs, RRM groups must be configured. Once an RRM group has been defined, from one to four RRMs can be members of a group (see “RRM Group Menu” on page 126).

All RRMs in a group operate on the same radio channel. The 9150 coordinates the transmissions of all the RRMs in a group (for this reason, the controlling 9150 is sometimes referred to as the “Timeplexing Master”).

5.3.2.1 Configure New RRM Group

In this screen, shown on the next page, the user can set options for a new RRM group. Each RRM must be a member of an RRM group; there may be more than one RRM group configured in the 9150. An RRM group may contain from one to four RRMs.

This screen is very similar to the one in “Connectivity Options: Base Station Mode” on page 112, the difference being that the parameters configured in those radio menus apply to the TRX7370 radio resident in the 9150, while the parameters configured here apply to the other, remote 9150s (the RRMs).

Teklogix 9150: Configure New RRM Group	
Name:	Unnamed RRM Group
Communication Protocol:	TCP/IP
Enabled:	☑
Auto-Startup:	☑
Shared Channel:	☐
Polling Protocol Parameters:	
Number of Poll Windows:	3
Size of Poll Windows:	8
Maximum Message Segment Size:	100
Number of Retries:	3
Collision Size:	6
Free Window Factor:	0
Message Mode Limit:	4
Callsign Period:	0
Callsign String:	Teklogix
Radio Parameters:	
Sync Delay:	28
Remote Txon:	13
Active Channel:	1
Group Parameters:	
Combination 1:	
Combination 2:	
OK Cancel Delete	

Name

This textbox allows the user to enter a name for the new RRM group. The value is any text string. The default is **Unnamed RRM Group**.

Communication Protocol

This listbox allows you to select the protocol to be used for the connection to this RRM group. The default is the **TCP/IP** protocol.

Enabled

The *Enabled* option must be turned on (√) for the 9150 to function as an RRM group controller. If this option is **disabled**, the 9150 automatically goes into base station mode.

Auto-Startup

When this parameter is **enabled** (√), the 9150 establishes communication with the RRMs in this RRM group when it boots, and starts polling automatically.

When *Auto-Startup* is **disabled**, the 9150 establishes communication with the RRMs in this group when it boots, but does not start polling in this RRM group until a start polling command is received from the host.

Polling starts if at least one of the RRMs in the RRM group is operating when the 9150 boots.

Shared Channel

If this parameter is **enabled** (√), the 9150 checks for other traffic on the radio channel used by this RRM group, before polling.

If this parameter is **disabled**, the 9150 assumes that it has exclusive use of the radio channel for this RRM group, and polls without checking for radio traffic.

This parameter is required for systems installed in the Netherlands.

POLLING PROTOCOL PARAMETERS

Warning: ***These parameters are pre-configured for your system, and should not be changed without a proper understanding of how they affect the radio link.***

Number of Poll Windows

This textbox allows the user to specify the number of poll windows in which the RRM listens for terminal responses after sending a poll. The allowable values range from **2 to 4**. The default value is **3**.

Size of Poll Windows

This textbox allows the user to specify the size of the poll windows in which the RRMs of this RRM group listen for terminal replies. The allowable values range from **5 to 32**. The default value is **8**.

Maximum Message Segment Size

This textbox allows the user to specify the size of the largest message segment, in bytes, that will be sent over the Teklogix radio network. Larger messages are broken into parts. The allowable values range from **32 to 116**. The default value is **100**.

Number of Retries

This textbox allows the user to specify the number of times the RRM retransmits a message to a terminal, after receiving no acknowledgement from the terminal, before it declares the terminal offline. The allowable values range from **1 to 7**. The default value is **3**.

Collision Size

This textbox allows the user to specify the smallest number of characters of noise received by the RRM, that will be interpreted as interfering transmissions from Teklogix equipment. When this threshold is exceeded, the RRM starts collision resolution. The allowable values range from **3 to 10**. The default value is **6**.

Free Window Factor

This textbox allows the user to specify the probability that the RRM will include a free window in its poll, during which any terminal may transmit. The allowable values range from **0 to 7**. The default value is **0**.

Message Mode Limit

This textbox allows the user to specify the probability of including a message-mode poll in its poll transmission. The allowable values range from **3 to 7**. The default value is **4**.

Callsign Period

This textbox allows the user to specify the amount of time between transmissions of the callsign. This parameter is in minutes. A value of 0 (zero) indicates that no callsign is transmitted. The allowable values range from **0 to 60**. The default value is **0**.

Callsign String

This textbox allows the user to specify the text to be transmitted as the RRM's callsign. The text is transmitted as Morse code. The default value is **Teklogix**.

RADIO PARAMETERS

Because some of the radio parameters are identical for a given group of timeplexed RRMs, they may be configured by the user once on the 9150; the 9150 then passes them to the RRMs in the group. These parameters include the synchronization delay (*Sync Delay*), the remote transmit on-time (*Remote Txon*), and the channel number to be used (*Active Channel*).

Although the TRX7370 narrow band radio in each RRM in the group is configured separately, the 9150 assumes they will be configured identically. To ensure this, the 9150 looks at certain parameters returned by each of the RRMs. These parameters include the radio baud rate and the transmit-on time.

These parameters are compared against the values returned by other RRMs within the same group. Error messages are displayed should these values not match, but the worst case value is chosen for use.

Warning: ***These parameters are pre-configured for your system, and should not be changed without a proper understanding of how they affect the radio link.***

Sync Delay

This textbox allows the user to specify the number of delay characters inserted between the RRM's transmission and the first response window. The allowable values range from **3 to 45**. The default value is **28**.

Remote Txon

This textbox allows the user to specify the number of fill characters sent by the terminal radios before the terminals send message data. The allowable values range from **3 to 32**. The default value is **13**.

Active Channel

This textbox allows the user to specify the radio channel to be used by all the RRMs in the RRM group. The allowable values range from **1 to 20**. The default value is **1**.

GROUP PARAMETERS

Combination

These textboxes allow the user to specify RRM subgroups called *combinations*.

If the coverage areas of two or more of the RRMs in this RRM group do not overlap, the non-overlapping RRMs may poll at the same time. This improves system response time and reduces the amount of signalling on the network.

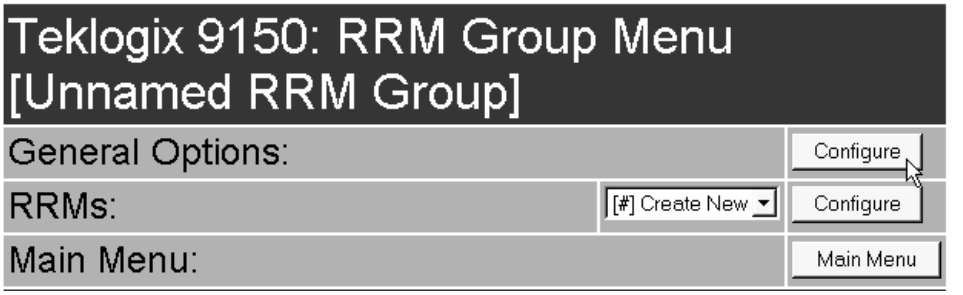
As an example, if the RRM group has 3 RRMs, and RRMs 1 and 3 don't overlap, RRMs 1 and 3 may be placed in one subgroup (*Combination 1*). They will then poll simultaneously. RRM 2 may be placed in another subgroup (*Combination 2*). Polling alternates between the two subgroups.

To configure a combination, place the numbers of the RRMs in the textbox for that combination. The numbers correspond to the numbers of the RRMs named in the RRM list on the *RRM Group Menu* (see page 126). For instance, “13” in the textbox for *Combination 1* places RRMs 1 and 3 in that subgroup.

Note: *When configuring RRM combinations, make sure the configured RRMs are sequential, and are not missing numbers, which can happen when RRMs are deleted and added. The combinations use the RRMs in the order that they appear in the list, not how they are numbered in the list.*

RRMs that are not assigned to combinations poll individually, after the combinations poll.

5.3.2.2 RRM Group Menu



When the user chooses an existing RRM group from the *RRM Groups* listbox in the *Configuration Main Menu* page, pressing the *Configure* button displays the *RRM Group Menu*.

The *RRM Group Menu* has two sub-menus:

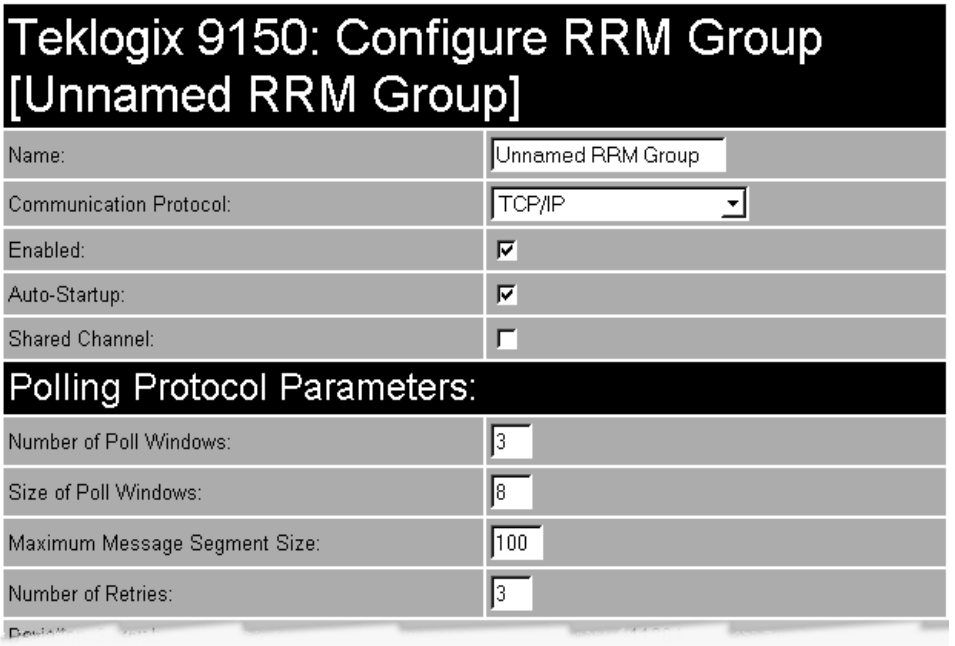
General Options
: When the user presses this *Configure* button, the 9150 displays the *Configure Existing RRM Group* screen.

RRMs
: When the user selects the name of an existing RRM from the listbox, then presses this Configure button, the 9150 displays the RRM Options screen for that RRM.

There is also a selection in the listbox, *Create New*, for adding a new RRM.

The *RRM Group Menu* also has a *Main Menu* button to return to the *Configuration Main Menu* page.

GENERAL OPTIONS: CONFIGURE RRM GROUP



In this screen, the user can select general options for this RRM group. The options in this screen are the same as the options in the *Configure New RRM Group* screen (see page 120). The *Delete* button at the bottom of the screen allows you to delete the currently-displayed RRM Group from the RRM Groups list.

When choosing to delete an RRM Group, you will be prompted for confirmation of the deletion, which will give you the opportunity to cancel the action.

5.3.3 Radio Link Features

From the *Radio Link Features* option under *Base Station Configuration* (see Figure 5.2 on page 101), entering “Configure” will open the “Radio Link Features” page for the polling and cellular parameters.

Teklogix 9150: Radio Link Features

Operate in Cellular Mode:	☑
Automatic Radio Address assignment range:	1024 ... 2084
Automatic Terminal Number assignment range:	0 ... 0
Poll ID:	35
Polling Protocol Terminal Timeout:	60
Percent Polling Protocol Terminal Timeout:	75
Direct TCP Connections for TekTerm:	☐

OK Cancel

Operate in Cellular Mode

To operate as a Wlan base station, this parameter should be **enabled** (√). For further information see “Wlan Protocol” on page 11.

Note: *The 9400 Network Controller must also be set to cellular mode.*

Automatic Radio Address Assignment Range

Each Teklogix terminal using the radio link has a unique radio address number, which can be assigned automatically by the 9150 by enabling this parameter. Currently this feature is only supported through the 802.IQ protocol (for information on 802.IQ configuration, see pages 64 and 192).

To **enable** this parameter, the values for the first and last radio address numbers must lie between **1** and **3840**. The default values for the range are **1024 ... 2084**. To **disable** the parameter, set the values to **0**.

Notes: *When enabling this parameter:*

1. Direct TCP Connections for TekTerm *must be disabled (see page 130).*
2. *The* Auto ID *parameter in the terminal must be enabled in order for the radio address to be automatically assigned.*

3. *Do not enable* Auto Startup *(see page 65) on any of the 9150 base stations running 802.IQ with sessions using* Automatic Radio Address Assignment Range *and* Automatic Terminal Number Assignment Range.

Automatic Terminal Number Assignment Range

A terminal number is assigned for every TESS and ANSI application session created in a terminal. This number defines the terminal number for each session and uniquely identifies all transmissions to and from that session.

To **enable** this parameter, the values for the first and last terminal numbers must lie between **1** and **3840**. The default values for the range are **0 ... 0**. To **disable** the parameter, set the values to default.

Notes: *When enabling this parameter:*

1. Direct TCP Connections for TekTerm *must be disabled (see page 130).*
2. *The* Auto Session *parameter in the terminal must be enabled in order for the terminal session number to be automatically assigned.*
3. *Do not enable* Auto Startup *(see page 65) on any of the 9150 base stations running 802.IQ with sessions using* Automatic Radio Address Assignment Range *and* Automatic Terminal Number Assignment Range.

Poll ID

In Wlan protocol, this is a unique identifying number set only in a 9150 master base station, 9150 mini-controller or a network controller, which is used in the poll header when polling terminals. *Poll ID* is set by Psion Teklogix personnel.

In Adaptive Polling/Contention protocol for narrow band radios, *Poll ID* is used to assign a unique address to each base station. As the terminals move from one base station to another, this address is transmitted by the base stations to the terminals, identifying each 9150 in a multiple base station system.

Polling Protocol Terminal Timeout

This parameter determines the time in minutes that a terminal can be inactive before the 9150 declares it offline. Before this happens, the terminal will be declared offline by the *Percent Polling Protocol Terminal Timeout* parameter (see below).

After the terminal is removed from the system, it will need to re-initialize in order to communicate with the 9150. This parameter reduces the overhead on the radio link caused when terminals which are not communicating are supported.

The allowable values range from **1** to **240**.

Note: *This parameter is not relevant for Wlan.*

Percent Polling Protocol Terminal Timeout

This parameter determines the time that a terminal is allowed to be inactive before the 9150 declares it offline. This time is expressed as a percentage of the *Polling Protocol Terminal Timeout* parameter (see above). For example, if the *Polling Protocol Terminal Timeout* is 60, and this parameter is set to 75%, then the timeout would be 60 min x 75% = 45 minutes.

An offline terminal is still considered part of the system. Messages to offline terminals are queued at the 9150. The terminal remains offline until it transmits an online message.

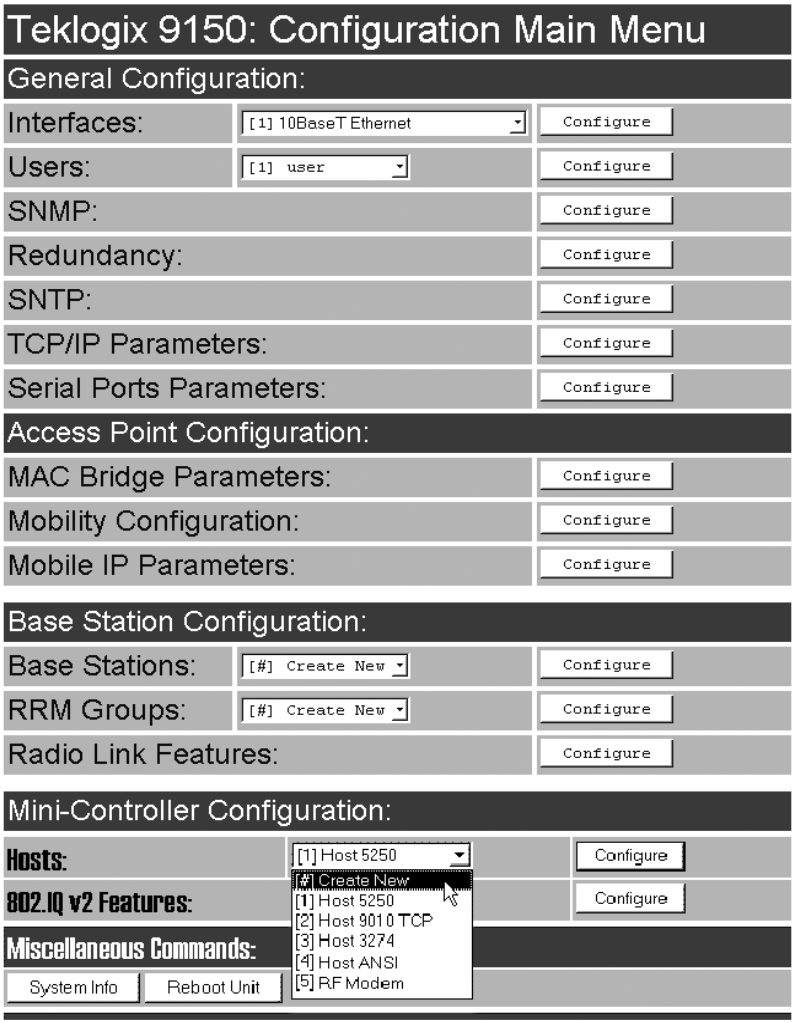
Values for this parameter range from **50** to **90**.

Direct TCP Connections for TekTerm

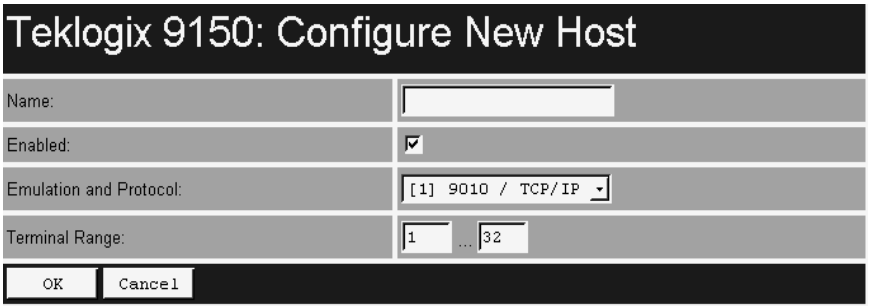
Enabling this parameter allows the *TekTerm* program resident in Teklogix terminals to connect directly to the 9150, when it is acting as a base station to a host via TCP/IP.

5.4 Hosts Menu

When the 9150 acts as a base station, it must communicate with a “host” - a 9400 Network Controller, or a host computer using a Teklogix Software Development Kit (TSDK). The drop-down menu in the *Mini-Controller Configuration: Hosts* option in the *Configuration Main Menu* page shows the host names present on the system. Up to six hosts can be supported. A “host” must be configured for each master network controller, TSDK host, or master base station that communicates with the 9150.



Opening the “Configure” dialog box for a selected host lists the parameters that can be modified or deleted for that host. New hosts can be added by selecting “[#] Create New” in the drop-down menu before entering the “Configure” dialog box.



Name

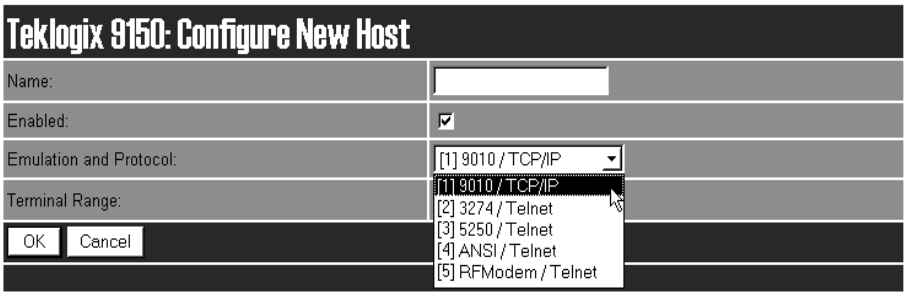
This parameter indicates the assigned host name. The host name also appears on the RF terminal when switching between hosts in a multiple-host environment.

Note: *The name must not contain space characters.*

Enabled

The *Enabled* option must be turned on (√) for terminals to communicate with this host.

Emulation and Protocol



This drop-down menu provides a list of host emulations and communication protocols supported by the 9150. Protocols are the methods by which terminals communicate with host computers over various physical media such as Ethernet and radio-link connections.

The supported emulations with their respective protocols are:

- 9010/ TCP/IP (See page 135 for configuration parameters).
- 3274/Telnet (See pages 149 to 164 for Configuration Parameters).
- 5250/Telnet (See pages 165 to 179 for Configuration Parameters).
- ANSI/Telnet (See pages 180 to 190 for Configuration Parameters).
- RF Modem (See page 191 for Configuration Parameters).

When the 9150 functions as a base station, it communicates with a **9010/ TCP/IP** host. The 9010 protocol is a proprietary asynchronous protocol developed by Psion Teklogix which uses TESS (Teklogix Screen Subsystem) or ANSI data streams to communicate with terminals. For detailed information, please refer to the appropriate *Teklogix User Manual* for: *9400 Network Controller, TSDK, TESS* or *ANSI*.

However, when the 9150 acts as a mini-controller, it uses the 3274 and 5250 emulation protocols to communicate with IBM hosts, or the ANSI emulation protocol to communicate with ANSI hosts. For detailed information on configuring the 9150 as a mini-controller, please refer to Chapter 6: “Mini-Controller Configuration”.

Terminal Range

The values entered in this parameter designate the first and last terminals in the range of terminals that will communicate with the host. These terminal numbers are mapped to this particular host.

5.5 Host Menu Options

When you choose an existing host from the *Hosts* listbox and then select the Configure button, the 9150 displays the *Host Menu*.

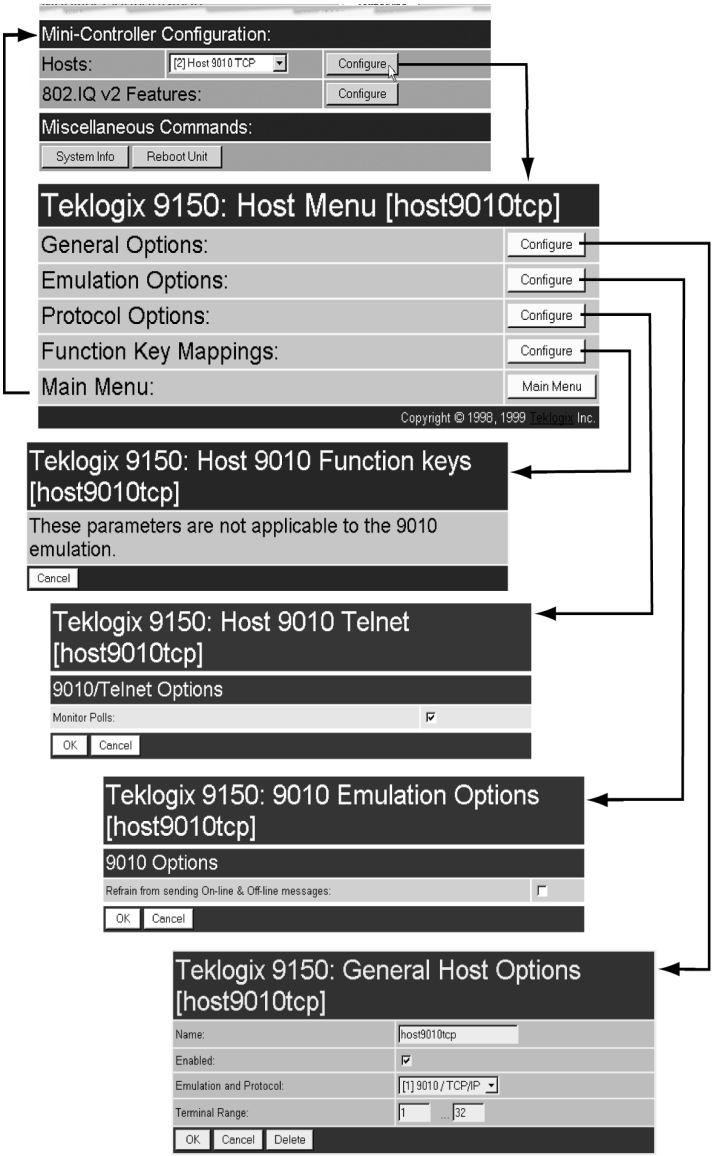


Figure 5.5 Overview Of Host Menus For 9010 / TCP/IP

The *Host Menu* has four configuration sub-menus:

"General Host Options"
When you select this sub-menu, the 9150 displays the General Options page for the host.

"Emulation Options"
When you select this sub-menu, the 9150 displays the Emulation Options page for the host. This page may vary depending on the type of emulation and protocol selected for the host.

"Protocol Options"
When you select this sub-menu, the 9150 displays the Protocol Options page for the host. This page may vary depending on the type of emulation and protocol selected for the host.

"Function Key Mappings" (3274, 5250, ANSI emulations only)
When you select this sub-menu, the 9150 displays the Function Key Mapping page for the host. This page may vary depending on the type of emulation and protocol selected for the host.

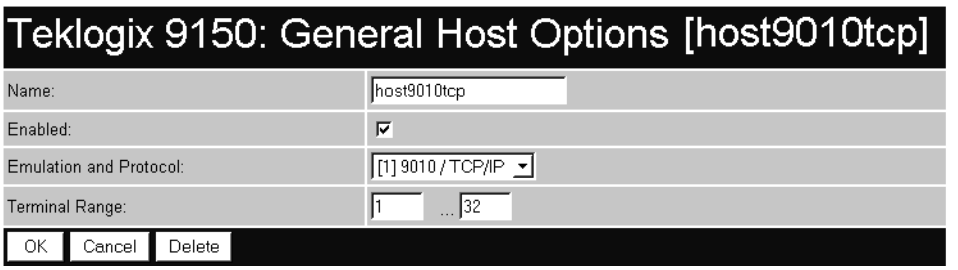
There is also a *Main Menu* button. When you select this button, the 9150 displays the *Configuration Main Menu (see page 101)*.

5.5.1 9010 / TCP/IP

For an overview of Host menus for 9010/TCP/IP, refer to Figure 5.5 on page 134.

5.5.1.1 General Host Options

In this screen, you can select general options for the host connection. The host connection may also be deleted. When choosing to delete a host from the Hosts list, you will be prompted for confirmation of the deletion, which will give you the opportunity to cancel the action.



Name

This parameter allows you to enter a name for the new host.

Enabled

The *Enabled* option must be turned on (√) for terminals to communicate with this host.

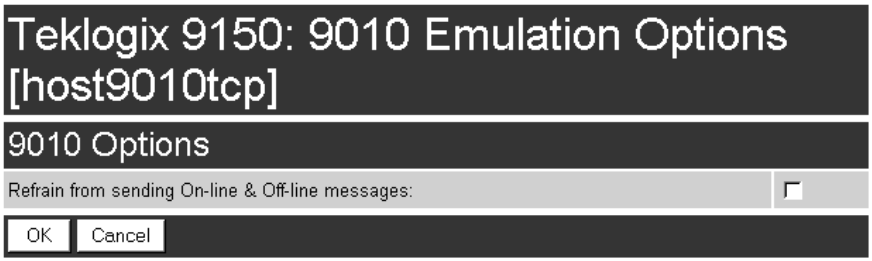
Emulation and Protocol

This parameter allows you to select the emulation and protocol to be used for the connection to this host. For a network connection, use **9010/ TCP/IP**.

Terminal Range

This parameter allows you to specify the range of terminals which will communicate with this host. The left-hand textbox contains the lowest terminal number which is allowed to communicate with the host; the right-hand textbox contains the highest terminal number. Terminal numbers may range from **1** to **3840**.

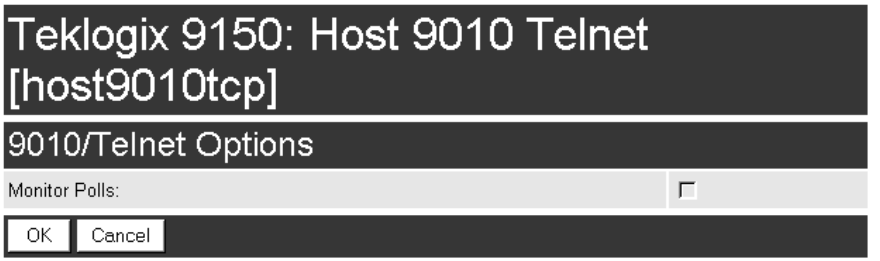
5.5.1.2 Emulation Options



Refrain from sending On-line & Off-line messages

If this parameter is **enabled** (√), the 9150 base station **does not** notify the host if the status of a terminal changes between offline and online. If this parameter is **disabled**, the 9150 **does** notify the host regarding any terminal status changes. The default for this parameter is **disabled**.

5.5.1.3 Protocol Options



9010/Telnet Options: Monitor Polls

Hosts usually send messages or null polls to the 9150 within a period of approximately 40 seconds. If the parameter is **enabled** (√), the 9150 base station monitors messages and polls from this host; if it does not receive a message or poll within 40 seconds, it closes the connection. The default for this parameter is **disabled**.

5.5.1.4 Function Key Mappings

These parameters are not applicable to the 9010 / TCP/IP emulation.

MINI-CONTROLLER CONFIGURATION 6

6.1 Overview 141
6.2 Mini-Controller Configuration Menu 143
6.3 Hosts Menu 144
6.4 Host Menu Options 146
6.4.1 General Options 148
6.4.2 9010 Emulations 149
6.4.3 3274/Telnet. 149
6.4.3.1 Emulation Options. 149
6.4.3.2 Protocol Options. 161
6.4.3.3 Function Key Mappings 164
6.4.4 5250/Telnet. 165
6.4.4.1 Emulation Options. 165
6.4.4.2 Protocol Options. 176
6.4.4.3 Function Key Mappings 179
6.4.5 ANSI/Telnet 180
6.4.5.1 Emulation Options. 180
6.4.5.2 Protocol Options. 183
6.4.5.3 Function Key Mappings 190
6.4.6 RF Modem/Telnet 191
6.4.6.1 Emulation Options. 191
6.4.6.2 ANSI Telnet Protocol Options (RF Modem) 191
6.4.6.3 Function Key Mappings 192
6.5 802.IQ V2 Features Menu 192
6.5.1 802.IQVersion 2 Configuration 192
6.5.1.1 802.IQ v1/v2 Common Features 193
6.5.1.2 802.IQ v2 Configuration Submenu 194

6.1 Overview

The network controller in a Teklogix system performs a number of important tasks. One of these tasks is *emulation*: the translation of data between the protocol of the host computer and the protocol used by Teklogix terminals.

The data which is sent from a host computer to a terminal to provide its display, and returned to the host as a result of operations at the terminal, is called a data stream. Host computers can provide data streams of various types to their terminals.

Teklogix terminals can directly accept only two types of data stream: *TESS* and *ANSI*. TESS (Teklogix Screen Subsystem) is the proprietary data stream used by Teklogix terminals. ANSI data streams are a standard type of data stream used by wired ANSI terminals. Other types of data stream provided by the host must be converted into TESS or ANSI before Teklogix terminals can work with them. This translation is done by emulation software in a network controller.

The 9150 is equipped with emulation capabilities, allowing it to act as a mini-controller. When a 9150 is configured as a mini-controller, Teklogix terminals can emulate an ANSI, 5250 or 3274 terminal via a 9150 rather than through a 9400 Network Controller. Using the RF Modem/Telnet emulation, the 9150 can also communicate with a Teklogix 6040 RF Modem.

Important: ***9150s acting as mini-controllers are designed for small, low-transaction sites. A 9400 Network Controller is required for systems that support more than 50 terminals.***

Acting as a mini-controller, the 9150 can support up to 32 additional networked base stations and up to 50 terminals. A 9150 mini-controller can also manage wireless LAN configurations.

A 9150 configured as a mini-controller can support the following emulations:

- 5250 emulation using TCP/IP over an Ethernet LAN.
- 3274 emulation using TCP/IP over an Ethernet LAN.
- ANSI emulation using TCP/IP over an Ethernet LAN.
- RF Modem emulation using TCP/IP over an Ethernet LAN.

Note: *The 9150 main parameters should first be set up as described in Chapter 3: "9150 Main Configuration".*

The 9150 can also be integrated into a mapRF system, using 802.IQv2 protocol (for details, please refer to the "802.IQ V2 Features Menu" on page192).

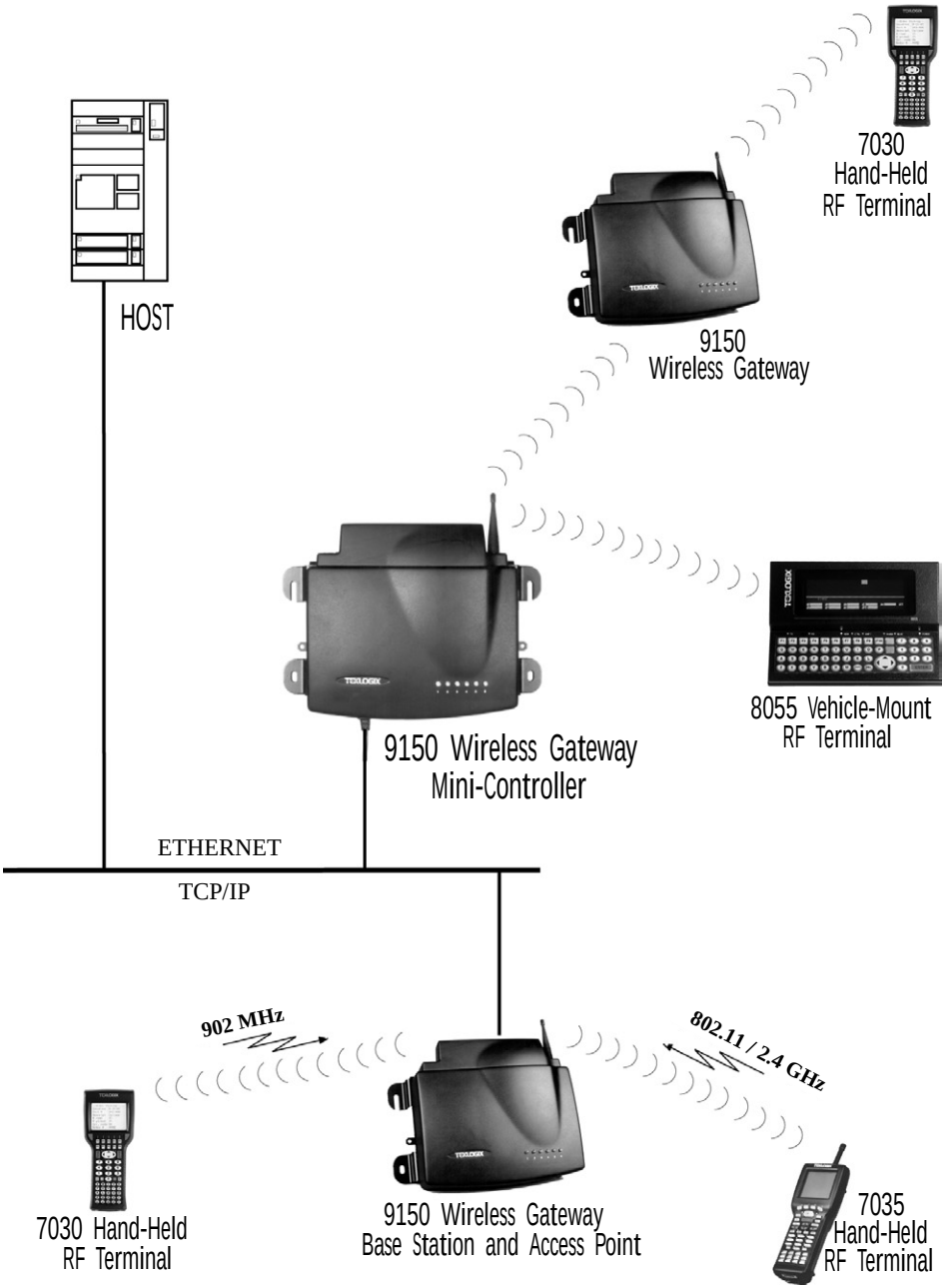
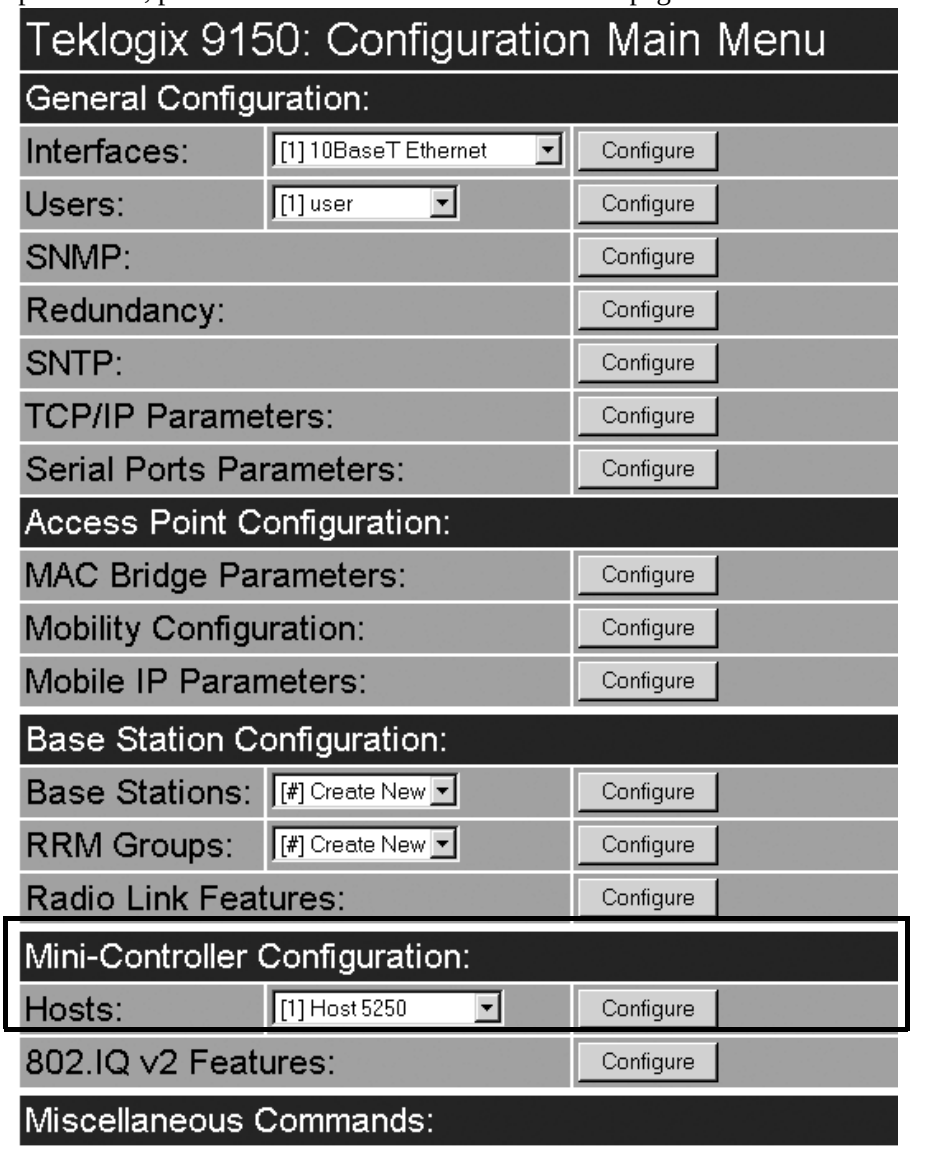


Figure 6.1 9150 Mini-Controller Configuration

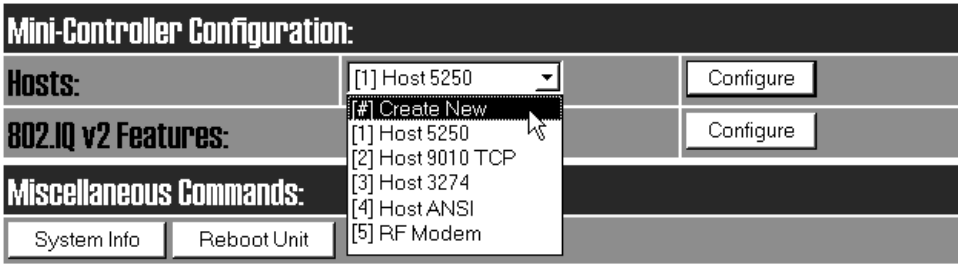
6.2 Mini-Controller Configuration Menu

For operation as a mini-controller, the parameters in the *Hosts* pages under *Mini-Controller Configuration* should be set appropriately. The *Hosts* options are found on the *Configuration Main Menu* page. For information on configuring radio protocol parameters, please refer to “Radio Link Features” on page 128.

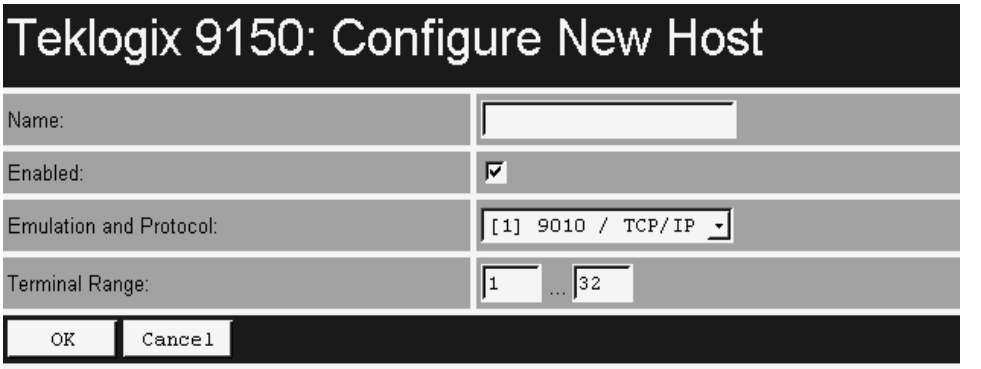


6.3 Hosts Menu

The drop-down menu in this option shows the host names present on the system. Up to six hosts can be supported. A “host” must be configured for each host that communicates with the 9150 mini-controller. Opening the *Configure* dialog box for a selected host lists the parameters that can be modified or deleted for that host.



New hosts can be added by selecting “[#] Create New” in the drop-down menu before entering the *Configure* dialog box.



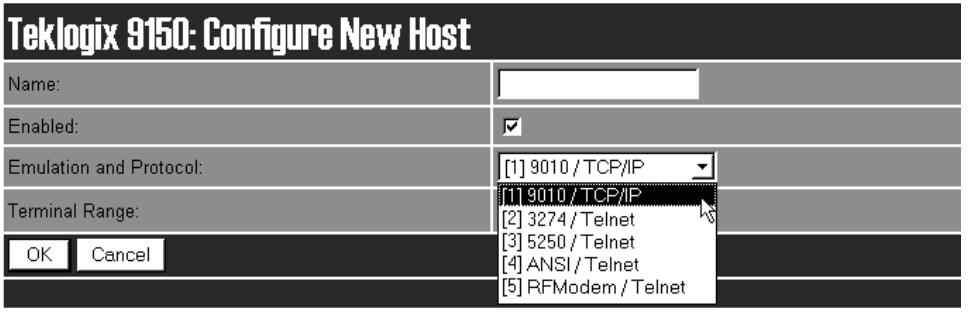
Name

This parameter indicates the assigned host name. The host name also appears on the RF terminal when switching between hosts in a multiple-host environment.

Enabled

The *Enabled* option must be turned on (√) for terminals to communicate with this host.

Emulation and Protocol



This drop-down menu provides a list of host emulations and communication protocols supported by the 9150. Working with Teklogix terminals and base stations, the 9150 can emulate IBM 3278-2, 5251-11, and 5555-B01 terminals, as well as ANSI terminals and RF Modems.

Protocols are the methods by which terminals communicate with host computers over various media such as Ethernet and radio-link connections. The 9150 supports the TCP/IP protocol. The supported emulations with their respective protocols are:

- 9010/ TCP/IP (See page 149 for Configuration Parameters).
- 3274/Telnet (See pages 149 to 164 for Configuration Parameters).
- 5250/Telnet (See pages 165 to 179 for Configuration Parameters).
- ANSI/Telnet (See pages 180 to 190 for Configuration Parameters).
- RF Modem/Telnet (See page 191 for Configuration Parameters).

When the 9150 acts as a base station, it uses the 9010 emulation (a proprietary asynchronous protocol developed by Psion Teklogix) to communicate with a 9400 Network Controller or a host using a Teklogix Software Development Kit (TSDK). For detailed information on configuring the 9150 as a base station, please refer to Chapter 5: “Base Station Configuration”.

When the 9150 acts as a mini-controller, it uses the 3274 and 5250 emulation protocols to communicate with IBM hosts, or the ANSI emulation protocol to communicate with ANSI terminals. To communicate with a Teklogix 6040 RF Modem, the 9150 uses the RF Modem/Telnet emulation protocol.

Terminal Range

The values entered in this parameter designate the first and last terminals in the range of terminals that will communicate with the host. These terminal numbers are mapped to this particular host. Terminal numbers may range from **1** to **50**.

6.4 Host Menu Options

When you choose an existing host name from the *Hosts* listbox and then select the *Configure* button, the 9150 displays the *Host Menu*. The *Host Menu* presents the options for four sub-menus: *General Host Options*, *Emulation Options*, *Protocol Options*, and *Function Key Mappings*. There is also a *Main Menu* button. When you select this button, the 9150 displays the *Configuration Main Menu* page (see page 143 for an enlarged illustration).

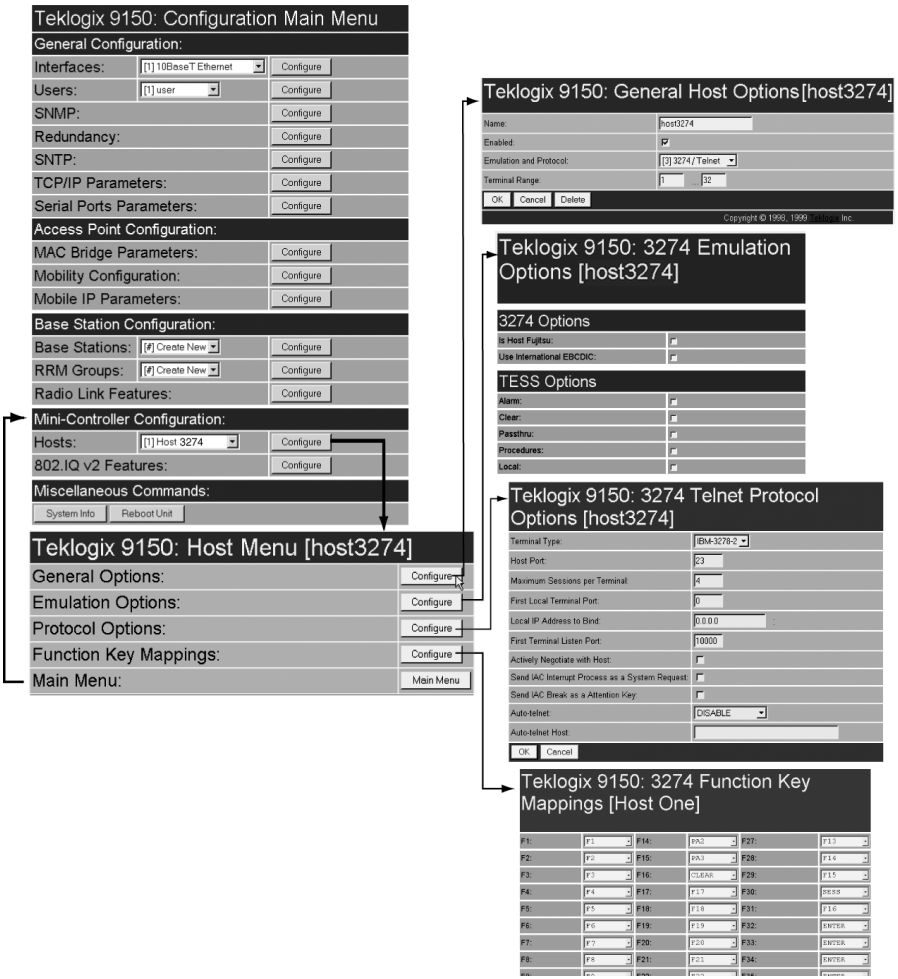


Figure 6.2 Overview Of Host Menu and Sub-Menus

As illustrated in Figure 6.2 on page 146, the four configuration sub-menus display the following options:

"General Options"

When you select this sub-menu, the 9150 displays the *General Options* page for the host.

"Emulation Options"

When you select this sub-menu, the 9150 displays the *Emulation Options* page for the host. This page may vary depending on the type of emulation and protocol selected for the host.

"Protocol Options"

When you select this sub-menu, the 9150 displays the *Protocol Options* page for the host. This page may vary depending on the type of emulation and protocol selected for the host.

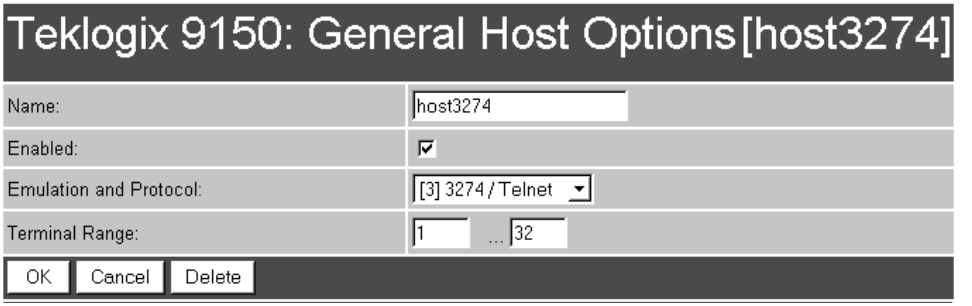
"Function Key Mappings"

When you select this sub-menu, the 9150 displays the *Function Key Mappings* page for the host. This page may vary depending on the type of emulation and protocol selected for the host.

Note: *The* Function Key Mappings *parameters are not applicable to either of the 9010 emulations.*

6.4.1 General Options

In this screen, you can select general options for the host connection. The host connection may also be deleted (see “Delete” on page 149).



Name

This parameter allows you to enter a name for the new host.

Enabled

The *Enabled* option must be turned on (√) for terminals to communicate with this host.

Emulation and Protocol

This parameter allows you to select the emulation and protocol to be used for the connection to this host. Available combinations of emulation and protocol are: **3274/Telnet**, **5250/Telnet**, **ANSI/Telnet, RF Modem/Telnet**.

Terminal Range

This parameter allows you to specify the range of terminals which will communicate with this host. The left-hand textbox contains the lowest terminal number which is allowed to communicate with the host; the right-hand textbox contains the highest terminal number. Terminal numbers may range from **1** to **50**.

Delete

When choosing to delete a host from the Hosts list, you will be prompted for confirmation of the deletion, which will give you the opportunity to cancel the action.

6.4.2 9010 Emulations

When the 9150 acts as a base station, it uses the 9010 protocol (a proprietary asynchronous protocol developed by Psion Teklogix) to communicate with a 9400 Network Controller, or a host using a Teklogix Software Development Kit (TSDK). For detailed information on configuring the 9150 as a base station, please refer to Chapter 5: “Base Station Configuration”.

6.4.3 3274/Telnet

6.4.3.1 Emulation Options

When in the *Host Menu* for a 3274/Telnet host, selecting the Configure button for the *Emulation Options* page will open the 9150 mini-controller’s 3274/Telnet version of that page.

With IBM 3274, or IBM 5250 emulation, the 9150 mini-controller converts the application data stream from the host to TESS (Teklogix Screen Subsystem) commands. Some of the parameters in this page govern the conversion of the host screens to TESS.

Teklogix 9150: 3274 Emulation Options [host3274]

3274 Options

Is Host Fujitsu:	☐
Use International EBCDIC:	☐

TESS Options

Alarm:	☐
Clear:	☐
Passthru:	☐
Procedures:	☐
Local:	☐
Host Print:	☐
Remote Print:	☐
Pages:	8
Transmit Line:	0
AIAG:	0
Visible Match Character:	0
Hidden Match Character:	0
Serial I/O:	0
Print Line:	0
Print Form Length:	0
Barcode:	0
Entry Line:	0
Field Overhead:	5
Command Region:	0 , 0 - 0 , 0

OK Cancel

Is Host Fujitsu

If this parameter is **enabled**, the 9150 mini-controller expects the data from the host to contain commands, etc., native to a Fujitsu host. Enabling this parameter causes the standard IBM formatting codes (for start of field, setting buffers, etc.) to be replaced by the codes used by Fujitsu host computers.

Use International EBCDIC

If this parameter is **enabled**, the 9150 mini-controller uses the International EBCDIC character set, swapping the positions of the **!** and **]** characters.

Alarm

When this parameter is **enabled**, terminals beep when the word "ALARM" appears on the application screen in the location specified by the *Command Region* parameter (see page 160). The word "ALARM" should be a *display-only* field.

Note: *The* Command Region *parameter must be enabled for this parameter to work.*

Clear

If this parameter is **enabled**, the 9150 mini-controller creates an *empty* entry field for an entry field that is filled with spaces.

Some host applications rely on the video attributes of displayed characters to highlight fields, particularly entry fields. For example, the application screen may define all entry fields with reverse video and fill the field with spaces. This is effective on terminals that support reverse video, but on terminals that do not, it can make the field invisible since it is made up entirely of spaces.

By default, all empty entry fields displayed at the Teklogix terminal are highlighted by the "entry character" chosen in the terminal's configuration (not all Teklogix terminals support video attributes).

Note: *This operation is only performed on screens received* ***from the host.*** *Data sent* ***to the host*** *remains unaffected.*

Passthru

If this parameter is **enabled**, the 9150 allows the host to send data directly to the RF terminal's serial port. This is most commonly used for printing.

Preparing Host Screens for Pass-Through

On the screen to be sent through the terminal serial port, the word ***PASSTHRU*** (in capital letters) must appear on the first line, starting on the second column. The actual data to be sent to the terminal may start anywhere below the first line.

With 5250 or 3274 emulations, attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word "PASSTHRU" will 'push' all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word "PASSTHRU").

Example:

```
column: 1 2 3 4 5 6 7 8 9
line 1: @ P A S S T H R U @
line 2: @ P A R T :   1 2 3 4 5
```

where @ is an attribute.

When the 9150 is finished sending the data to the terminal's printer, it will send an *ENTER* key to the host. The host must wait for the *ENTER* key before sending any more screens (including other PASSTHRU screens) to this terminal.

Note: *Refer to the Terminals User Manual for information about setting parameters on the terminal for pass-through.*

Procedures

If this parameter is **enabled**, the host may send TESS procedures through the 9150 to the terminals. A TESS procedure is a group of TESS commands that can be executed by the TESS *execute procedure* command.

Local

If this parameter is **enabled**, the 9150 allows the host to provide pages to be loaded as local TESS procedures in the terminals.

The local procedures are selected from a menu at the terminal. The terminals can perform these procedures when they are offline. Later when the terminals are online, they send the results of these functions to the host.

Note: *The* Procedures *parameter must also be* ***enabled*** *for* Local *to work.*

Host Print

When this parameter is **enabled**, the host can send extra data to the terminal's screens, and instruct the terminal to print it. This is in contrast to the *Local Print* feature, where the terminal makes the initial print request.

The text that is passed to the printer is formatted into the 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The 9150 identifies the additional text as a print page by the presence of the word "PRINT" (in capital letters) beginning in the 2nd column of line 13 on the 24 x 80 screen. The word "PRINT" should be defined as *display-only* text.

The print page is positioned below the terminal's display page (see the following figure). The size of the print page is always the same as the terminal's display page (assuming that in the terminal's configuration, the page length is less than 12 lines).

When *Host Print* is **enabled**, the 9150 passes the print page to the terminal after receiving the application screen from the host.

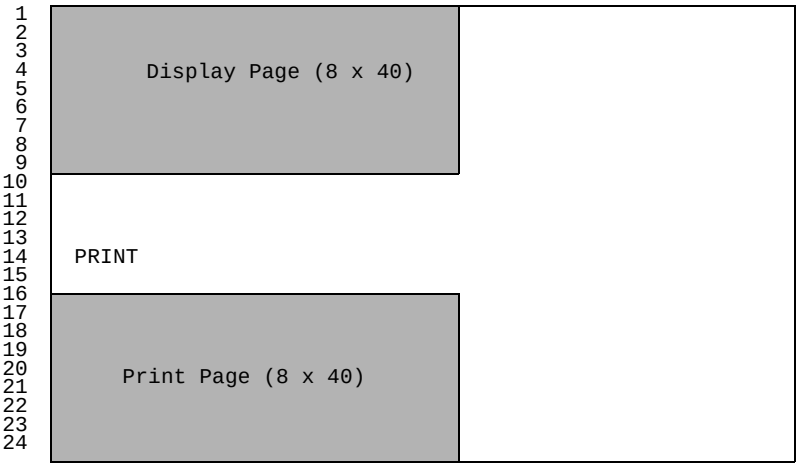


Figure 6.3 Application Screen With Print Page

Notes:

1. *Unlike the* Passthru *option, when using* Host Print *no escape commands can be sent to the printer.*
2. *Support for printing must be enabled at the terminal in its* Printer *command under the TESS Features menu; refer to the appropriate Terminals User Manual for more information.*

Remote Print

When this parameter is **enabled**, the 9150 sends the print page to a terminal whenever the terminal requests it (by sending the "F17" function key from the terminal, or the "PRINT" key on older terminals). The 9150 sends the function response back to the host.

This is in contrast to *Host Print*, where the host makes the initial print request.

Note: *Support for printing must be enabled at the terminal. Refer to the Terminals User Manual or the Parameter Guide for more information.*

Pages

This parameter determines the number of host screens (or pages) stored at the terminal, to a maximum of **16**.

The 9150 reduces data transmitted to the terminals by using the terminal's capability to store a page of data for each screen it displays. The 9150 maintains an image of each page stored at the terminal. After receiving an application screen, the 9150 tries to match the screen with a stored page. If a similar page is already in the terminal's memory, the 9150 instructs the terminal to redisplay its copy of the page; only the necessary changes are sent from the controller. If no match is found, the complete page is sent to the terminal over the radio link.

Note: *There is a corresponding parameter on the terminal itself, and the* ***actual*** *number of saved pages will be the* ***smaller*** *of the two values.*

Transmit Line

When this feature is **enabled**, all modified data at the terminal is automatically transmitted when the operator enters data into a *transmit-upon-entry* field.

The value in this textbox specifies the line on the screen which is designated the *transmit line*. The last entry field above or on the transmit line on the screen will be identified as the *transmit-upon-entry* field. If any entry fields exist on lines below the transmit line, no entry field will be designated as the *transmit-upon-entry* field.

A value of **0** (zero) disables this feature. A value of **24** designates the *last* entry field on each application screen as *transmit-upon-entry.*

AIAG

This parameter provides auto-locate and fill for input coming from bar code readers. When bar code data is entered at a terminal, the terminal searches for “AIAG” fields on the current page that can accept the bar code data. The data preloaded into the “AIAG” field by the application program determines whether or not the bar code data is accepted.

At the 9150 mini-controller, a decimal value of an ASCII character from **0** to **127** is set to match the“AIAG Field Identifier” set at the host. A value of **0** disables this feature.

The format of the preloaded data is as follows:

```
<mode> <AIAG prefix(data)>
```

The mode character used with the command allows for different operating modes to suit various application operations. The automatic locate and fill operation applies only to data received from a bar code reader. Descriptions of the modes and AIAG prefix are listed in Table 6.1 on page 156. **These modes are set at the host.**

Mode	Function
0	Display prefix, send prefix to host.
1	Do not display prefix, send prefix to host.
2	Display prefix, do not send prefix to host.
3	Do not display prefix, do not send prefix to host.
+4	Add 4 to above values to cause transmit to host when all AIAG fields with 4 set are filled. Function 0 is “pressed” if there are any fields with this bit set, and all fields with this bit set have been filled by operator input.
+8	Add 8 to above values to allow overwrite of previously entered data.
+16	Add 16 to above values to indicate cursor position priority for search and fill.
AIAG Prefix (data)	The text to be matched in the AIAG field.

Table 6.1 Mode Functions And AIAG Prefix Description

Example:

The information in the sample screen below is defined at and sent ***from*** the host. It includes the “AIAG Identifier” – the tag identifying this as an AIAG field – followed by the mode, in this case Mode 0, and finally, the “AIAG Prefix” – I.

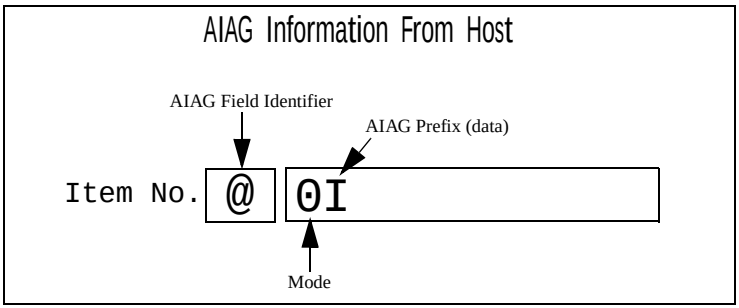


Figure 6.4 AIAG Field Sent From The Host

When the information arrives at the terminal screen, the appropriate AIAG field for the scanned information is located using the“AIAG Identifier”. Because Mode 0 was set at the host, the “AIAG Prefix” – I – is displayed on the terminal screen, and when this screen is completed, the prefix will be sent back to the host.

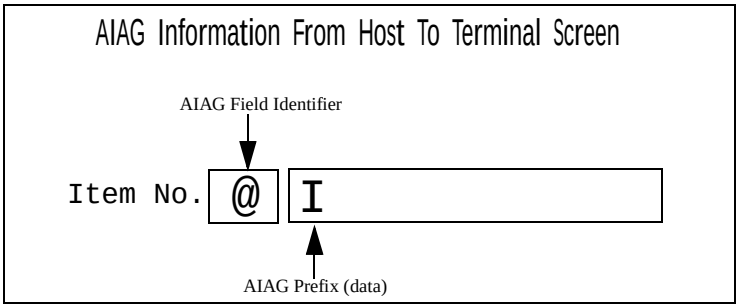


Figure 6.5 AIAG Field Sent To The Terminal

Visible Match Character

By inserting a special ASCII character directly before an entry field, the application program distinguishes a “match field” from an entry field. For example, suppose an angle bracket “**>**” is defined for visible match fields. Inserting “**>**” immediately preceding the entry field identifies it as a match field, as illustrated below.

```
Part #> ___________
```

The range for this parameter – **0** to **127** – represents the decimal values of ASCII characters. A value of **0** disables this feature. The ASCII decimal value entered at the 9150 must coincide with the value set by the application program.

To use the *Visible Match* feature, the host computer preloads data into a match entry field; the data is visible on the terminal screen. The preloaded data sent to a terminal can consist of exact characters, special match characters or a combination of the two. Refer to Table 6.2 on page 158 for match characters recognized by Teklogix terminals.

If an entry does not match the preloaded data, the entry is displayed, the terminal beeps, and the cursor moves to the first position in the match field. The operator can either make another entry in the match field, or move the cursor to a new field.

When an entry (even one that doesn't match the preloaded data) is made in a match field, the entry is sent to the host as part of the terminal's modified data during the next transmission.

Character	Description
#	Match a number.
&	Match a letter (either case).
^	Match an uppercase letter.
_	Match a lowercase letter.
|	Match an alphanumeric character.
"	Match a letter, number or space.
?	Match a punctuation character.
'	Match any character.
:	Match all character positions in the field with the preceding character.
,	Match any remaining characters, but not necessarily the remainder of the field, with the preceding character.

Table 6.2 Match Characters

Example:

Suppose you want to preload an entry field with a part number. If the part number is known, you can preload the field with that part number. If more flexibility is needed, and the part number always begins with two alphabetic characters followed by a hyphen and four digits, the match string for the field would be: **&&–####** .

Hidden Match Character

Unlike data in a "visible match" field, the preloaded data in a "hidden match" field is *not* displayed at the terminal.

Note: *Refer to "Visible Match Character" on page 157 for detailed information about field matching.*

The range for this parameter – **0** to **127** – represents the decimal values of ASCII characters. A value of **0** disables this feature. The ASCII decimal value entered at the 9150 must coincide with the value set by the application program.

Serial I/O

Serial I/O fields are special entry and fixed fields that accept input from and output to a serial port. The application program distinguishes this field as *Serial I/O* by preceding the field with a special character.

If this character precedes a fixed field, the data will be sent to the terminal's serial port. If it precedes an entry field, the field accepts data from the terminal's serial port.

The range for this parameter – **0** to **127** – represents the decimal values of ASCII characters. A value of **0** (zero) disables this feature.

Print Line

This parameter allows you to enter the starting line number of the print page in the application screen. A value of **1** causes the display page to be printed; a value of **0** (zero) disables this feature.

Print Form Length

This parameter sets the printer's form length in lines. The range is **0** to **24**.

Barcode

Barcode-input-only fields are special entry fields that only accept input from a bar code reader. The application program distinguishes an entry field as *barcode-input-only* by preceding the field with a special character.

The range for this parameter – **0** to **127** – represents the decimal values of ASCII characters. A value of **0** (zero) disables this feature.

Entry Line

This parameter contains the number of the first line displayed if there is no entry field in the upper-left portion of the screen, and if an entry field is at or below this line.

The *Entry Line* parameter allows an automatic offset within the host screen, so that the area displayed by the terminal includes an entry field that would normally be out of bounds. Normally, Teklogix terminals only display the upper-left corner of the application screen because of their smaller display size.

Field Overhead

This parameter contains the maximum number of characters allowed between two *fixed* fields which still allows the 9150 to join them into one field.

Sometimes the 9150 will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link.

For example, if two fields were 4 characters apart and this parameter was ‘5’, then these fields would be joined into one.

Command Region

This parameter defines a region of the host screen which the 9150 will examine for the presence of reserved commands.

The four numbers in the *Command Region* textboxes represent the row and column addresses of the upper left corner and the lower right corner of the command region. The first textbox of each pair contains the row number; the second contains the column number. The range of row values is **0** to **24**; column values are **0** to **80**.

To define the last two lines of the host screen as the command region, for example, enter the values *23, 1* and *24, 80*.

Currently, the only command supported is *ALARM* (refer to page 151 for details on this command). When the word “ALARM” is placed anywhere within the command region, the 9150 will send a TESS *beep* command to the terminal.

6.4.3.2 Protocol Options

This page differs depending on the type of emulation and protocol selected in the *General Host Options* page (see page 148). The 9150 displays this version of the *Protocol Options* page when you select the emulation/protocol combination of *3274/Telnet* for this host.

Teklogix 9150: 3274 Telnet Protocol Options [host3274]

Terminal Type:	IBM-3278-2
Host Port:	23
Maximum Sessions per Terminal:	4
First Local Terminal Port:	0
Local IP Address to Bind:	0.0.0.0
First Terminal Listen Port:	0
Actively Negotiate with Host:	☐
Send IAC Interrupt Process as a System Request:	☐
Send IAC Break as a Attention Key:	☐
Auto-telnet:	DISABLE
Auto-telnet Host:	

OK Cancel

Terminal Type

This parameter allows you to choose the type of terminal to be emulated by the 9150 for this host. At present there is only one choice of terminal for *3274/Telnet*: the **IBM 3278-2**.

Host Port

This parameter allows you to enter a host port value for the selected *3274/Telnet* host connection. The default value is **23**.

Maximum Sessions per Terminal

This parameter contains the maximum number of telnet sessions which are allowed to originate from each terminal. The range is **0** to **127**, with a default value of **4**.

First Local Terminal Port

This parameter contains the local port number from which the first terminal will connect on outbound telnet sessions. The default value is **0**.

Local IP Address to Bind

This parameter contains the IP address of the network adaptor in the 9150 from which the first terminal will connect on outbound telnet sessions.

First Terminal Listen Port

This parameter specifies the first port number at which the 9150 will listen for telnet connection requests to the terminals. To **enable** this parameter, the value must be a minimum of **1024**. To **disable** the listen port, the value must be **0**.

The default value is **0** (disabled).

Actively Negotiate with Host

If this parameter is enabled, the 9150 starts negotiations with the host during setup of the telnet connection. Not recommended for most hosts.

Send IAC Interrupt Process as a System Request

If this parameter is enabled, the 9150 sends the IAC Interrupt Process request to the host as a 3274 System Request.

Send IAC Break as an Attention Key

If this parameter is enabled, the 9150 sends the IAC Break request to the host as a 3274 Attention key.

Auto-telnet

This parameter enables you to disable or enable automatic connection of telnet sessions from terminals to this host.

The choices provided are: **Disable** and **Auto-telnet**. The default value is **Disable**.

When *Auto-telnet* is **disabled**, telnet sessions from the terminals to the host must be initiated manually from the terminals.

When *Auto-telnet* is **enabled**, the 9150 initiates one telnet session from each terminal whose terminal number is mapped to this host. Additional telnet sessions may be initiated from each terminal to the host, but they must be initiated manually.

When *Auto-telnet* is **enabled**, the 9150 will automatically telnet to the host, both on startup and when the session is closed.

Note: *Auto-telnet sessions are only initiated for terminals which are "online" (turned on and operating properly on the Teklogix RF network).*

Auto-telnet Host

This parameter contains the host name or IP address for the host to which the 9150 connects Auto-telnet sessions.

Note: *A host name placed in this textbox must be "resolvable" by the 9150: the 9150 must be able to obtain an IP address for it. For example, the host name may correspond to an entry in the 9150's host table, or the 9150 may be able to query a domain-name server.*

Any host name which can be used at the terminal's TCP> prompt may be used here.

6.4.3.3 Function Key Mappings

This page differs depending on the type of emulation selected in the *General Host Options* page. The 9150 displays this version of the *Function Key Mapping* page when you select *3274* emulation for this host.

Teklogix 9150: 3274 Function Key Mappings [host3274]

F1:	F1	**F14:**	PA2	**F27:**	F13
F2:	F2	**F15:**	PA3	**F28:**	F14
F3:	F3	**F16:**	CLEAR	**F29:**	F15
F4:	F4	**F17:**	F17	**F30:**	SESS
F5:	F5	**F18:**	F18	**F31:**	F16
F6:	F6	**F19:**	F19	**F32:**	ENTER
F7:	F7	**F20:**	F20	**F33:**	ENTER
F8:	F8	**F21:**	F21	**F34:**	ENTER
F9:	F9	**F22:**	F22	**F35:**	ENTER
F10:	F10	**F23:**	F23	**F36:**	ENTER
F11:	F11	**F24:**	F24	**F37:**	ENTER
F12:	F12	**F25:**	SYSREQ	**F38:**	ENTER
F13:	PA1	**F26:**	ATTN	**F39:**	ENTER

OK Cancel

Function key n

The *Function Key* parameter allows you to select a code that will be sent to the host when you press a function key on the terminal. Each function key may be chosen from the same range of possible codes; however, each function key has a different default code. The default values are shown on this page.

6.4.4 5250/Telnet

6.4.4.1 Emulation Options

Teklogix 9150: 5250 Emulation Options [host5250]

5250 Options

Write Error Code:	Advisory text
Use International EBCDIC:	☐

TESS Options

Alarm:	☐
Clear:	☐
Passthru:	☐
Procedures:	☐
Local:	☐
Host Print:	☐
Remote Print:	☐
Pages:	8
Transmit Line:	0
AIAG:	0
Visible Match Character:	0
Hidden Match Character:	0
Serial I/O:	0
Print Line:	0
Print Form Length:	0
Barcode:	0
Entry Line:	0
Field Overhead:	5
Command Region:	0 , 0 - 0 , 0

OK Cancel

The 9150 displays this version of the *Emulation Options* page after you have selected the *5250/Telnet* emulation/protocol combination for this host connection.

With IBM 5250, or IBM 3274 emulation, the 9150 mini-controller converts the application data stream from the host to TESS (Teklogix Screen Subsystem) commands. Some of the parameters in this page govern the conversion of the host screens to TESS.

Write Error Code

If *advisory text* is selected here, the 9150 sends error codes to the terminal screen as advisory text, which is written at the bottom of the screen. If *screen text* is chosen, the 9150 sends the error codes as regular screen text.

Use International EBCDIC

If this parameter is **enabled**, the 9150 will swap the positions of the **!** and **]** characters in the EBCDIC character table.

Alarm

If this parameter is **enabled**, terminals will beep when the word “ALARM” (in capital letters) appears on the application screen, in the location specified by the *Command Region* parameter (see page 175). The word “ALARM” should be a *display-only* field.

Note: *The* Command Region *parameter must be* ***enabled*** *for this parameter to work.*

Clear

If this parameter is **enabled**, the 9150 mini-controller creates an *empty* entry field for an entry field that is filled with spaces.

Some host applications rely on the video attributes of displayed characters to highlight fields, particularly entry fields. For example, the application screen may define all entry fields with reverse video and fill the field with spaces. This is effective on terminals that support reverse video, but on terminals that do not, it can make the field invisible since it is made up entirely of spaces.

By default, all empty entry fields displayed at the Teklogix terminal are highlighted by the "entry character" chosen in the terminal's configuration (not all Teklogix terminals support video attributes). The *Clear* feature creates an empty entry field in place of an entry field filled with spaces.

Note: *This operation is only performed on screens received* ***from the host.*** *Data sent* ***to the host*** *remains unaffected.*

Passthru

If this parameter is **enabled**, the 9150 allows the host to send data directly to the RF terminal's serial port. This is most commonly used for printing.

Preparing Host Screens for Pass-Through

On the screen to be sent through the terminal serial port, the word "PASSTHRU" (in capital letters) must appear on the first line, starting on the second column. The actual data to be sent to the terminal may start anywhere below the first line.

With 5250 or 3274 emulations, attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word "PASSTHRU" will push all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word "PASSTHRU").

Example:

```
column: 1 2 3 4 5 6 7 8 9
line 1: @ P A S S T H R U @
line 2: @ P A R T :   1 2 3 4 5
```

where @ is an attribute.

When the 9150 is finished sending the data to the terminal's printer, it will send an "ENTER" key to the host. The host must wait for the "ENTER" key before sending any more screens (including other "PASSTHRU" screens) to this terminal.

Note: *Refer to the appropriate Terminals User Manual for information about setting parameters on the terminal for pass-through.*

Procedures

If this parameter is **enabled**, the host may send TESS procedures through the 9150 to the terminals. A TESS procedure is a group of TESS commands that can be executed by the TESS *execute procedure* command.

Local

If this parameter is **enabled**, the 9150 allows the host to provide pages to be loaded as local TESS procedures in the terminals.

The local procedures are selected from a menu at the terminal. The terminals can perform these procedures when they are offline. Later when the terminals are online, they send the results of these functions to the host.

Note: *The* Procedures *parameter must also be* ***enabled*** *for* Local *to work.*

Host Print

When this parameter is **enabled**, the host can send extra data to the terminal's screens, and instruct the terminal to print it. This is in contrast to the Local Print feature, where the terminal makes the initial print request.

The text that is passed to the printer is formatted into the 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The 9150 identifies the additional text as a print page by the presence of the word "PRINT" (in capital letters) beginning in the 2nd column of line 13 on the 24 x 80 screen. The word "PRINT" should be defined as *display-only text.*

The print page is positioned below the terminal's display page (see Figure 6.6 on page 169). The size of the print page is always the same as the terminal's display page (assuming that in the terminal's configuration, the page length is less than 12 lines).

When *Host Print* is **enabled**, the 9150 passes the print page to the terminal after receiving the application screen from the host.

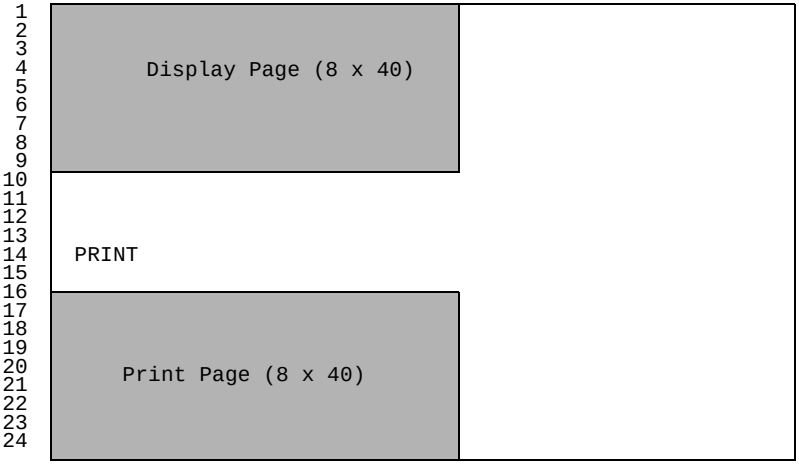


Figure 6.6 Application Screen With Print Page

Notes:

1. *Unlike the* Passthru *option, when using* Host Print *no escape commands can be sent to the printer.*
2. *Support for printing must be enabled at the terminal in its* Printer *command under the TESS Features menu; refer to the appropriate Terminals User Manual for more information.*

Remote Print

When this parameter is **enabled**, the 9150 sends the print page to a terminal whenever the terminal requests it (by sending the “F17” function key from the terminal, or the “PRINT” key on older terminals). The 9150 sends the function response back to the host.

This is in contrast to *Host Print*, where the host makes the initial print request.

Note: *Support for printing must be enabled at the terminal level. Refer to the appropriate Terminals User Manual for more information.*

Pages

This parameter determines the number of host screens (or pages) stored at the terminal, to a maximum of **16**.

The 9150 reduces data transmitted to the terminals by using the terminal's capability to store a page of data for each screen it displays. The 9150 maintains an image of each page stored at the terminal. After receiving an application screen, the 9150 tries to match the screen with a stored page.

If a similar page is already in the terminal's memory, the 9150 instructs the terminal to re-display its copy of the page; only the necessary changes are sent from the controller. If no match is found, the complete page is sent to the terminal over the radio link.

Note: *There is a corresponding parameter on the terminal itself, and the* ***actual*** *number of saved pages will be the* ***smaller*** *of the two values.*

Transmit Line

When this feature is **enabled**, all modified data at the terminal will be automatically transmitted when the operator enters data into a *transmit-upon-entry* field.

The value in this textbox specifies the line on the screen which is designated the *transmit line*. The last entry field above or on the transmit line on the screen will be identified as the *transmit-upon-entry* field. If any entry fields exist on lines below the transmit line, no entry field will be designated as the *transmit-upon-entry* field.

A value of **0** (zero) disables this feature. A value of **24** will cause the *last* entry field on each application screen to be defined as *transmit-upon-entry.*

AIAG

This parameter provides auto-locate and fill for input coming from bar code readers. When bar code data is entered at a terminal, the terminal searches for "AIAG" fields on the current page that can accept the bar code data. The data preloaded into the "AIAG" field by the application program determines whether or not the bar code data is accepted.

At the 9150 mini-controller, a decimal value of an ASCII character from **0** to **127** is set to match the"AIAG Field Identifier" set at the host. A value of **0** disables this feature.

The format of the preloaded data is as follows:

`<mode> <AIAG prefix(data)>`

The mode character used with the command allows for different operating modes to suit various application operations. The automatic locate and fill operation applies only to data received from a bar code reader. Descriptions of the modes and AIAG prefix are listed in the table below. **These modes are set at the host.**

Mode	Function
0	Display prefix, send prefix to host.
1	Do not display prefix, send prefix to host.
2	Display prefix, do not send prefix to host.
3	Do not display prefix, do not send prefix to host.
+4	Add 4 to above values to cause transmit to host when all AIAG fields with 4 set are filled. Function 0 is “pressed” if there are any fields with this bit set, and all fields with this bit set have been filled by operator input.
+8	Add 8 to above values to allow overwrite of previously entered data.
+16	Add 16 to above values to indicate cursor position priority for search and fill.
AIAG Prefix (data)	The text to be matched in the AIAG field.

Table 6.3 Mode Functions And AIAG Prefix Description

Example:

The information in the sample screen below is defined at and sent ***from*** the host. It includes the “AIAG Identifier” – the tag identifying this as an AIAG field – followed by the mode, in this case Mode 0, and finally, the “AIAG Prefix” – I.

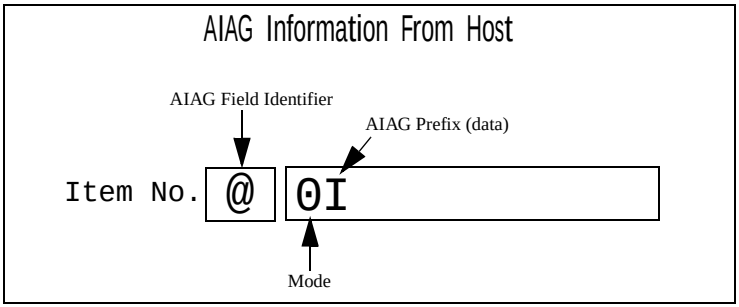


Figure 6.7 AIAG Field Sent From The Host

When the information arrives at the terminal screen, the appropriate AIAG field for the scanned information is located using the“AIAG Identifier”. Because Mode 0 was set at the host, the “AIAG Prefix” – I – is displayed on the terminal screen, and when this screen is completed, the prefix will be sent back to the host.

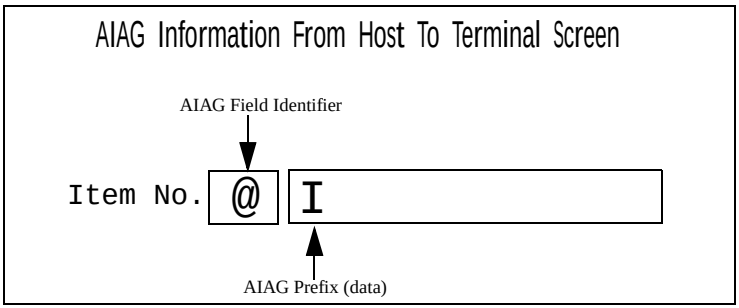


Figure 6.8 AIAG Field Sent To The Terminal

Visible Match Character

By inserting a special ASCII character directly before an entry field, the application program distinguishes a “match field” from an entry field. For example, suppose an angle bracket “**>**” is defined for visible match fields. Inserting “**>**” immediately preceding the entry field identifies it as a match field, as illustrated below.

```
Part #> ____________
```

The range for this parameter – **0** to **127** – represents the decimal values of ASCII characters. A value of **0** disables this feature. The ASCII decimal value entered at the 9150 must coincide with the value set by the application program.

To use the *Visible Match* feature, the host computer preloads data into a match entry field; the data is visible on the terminal screen. The preloaded data sent to a terminal can consist of exact characters, special match characters or a combination of the two. Refer to the table below for match characters recognized by Teklogix terminals.

If an entry does not match the preloaded data, the entry is displayed, the terminal beeps, and the cursor moves to the first position in the match field. The operator can either make another entry in the match field, or move the cursor to a new field. When an entry (even one that doesn't match the preloaded data) is made in a match field, the entry is sent to the host as part of the terminal's modified data during the next transmission.

Character	Description
#	Match a number.
&	Match a letter (either case).
^	Match an uppercase letter.
_	Match a lowercase letter.
|	Match an alphanumeric character.
"	Match a letter, number or space.
?	Match a punctuation character.
'	Match any character.
:	Match all character positions in the field with the preceding character.
,	Match any remaining characters, but not necessarily the remainder of the field, with the preceding character.

Table 6.4 Match Characters

Example:

Suppose you want to preload an entry field with a part number. If the part number is known, you can preload the field with that part number. If more flexibility is needed, and the part number always begins with two alphabetic characters followed by a hyphen and four digits, the match string for the field would be: **&&–####** .

Hidden Match Character

Unlike data in a "visible match" field, the preloaded data in a "hidden match" field is *not* displayed at the terminal.

Note: *Refer to "Visible Match Character" on page 172 for detailed information about field matching.*

The range for this parameter – **0** to **127** – represents the decimal values of ASCII characters. A value of **0** disables this feature. The ASCII decimal value entered at the 9150 must coincide with the value set by the application program.

Serial I/O

Serial I/O fields are special entry and fixed fields that accept input from and output to a serial port. The application program distinguishes this field as *Serial I/O* by preceding the field with a special character.

If this character precedes a fixed field, the data will be sent to the terminal's serial port. If it precedes an entry field, the field accepts data from the terminal's serial port.

The range for this parameter – **0** to **127** – represents the decimal values of ASCII characters. A value of **0** (zero) disables this feature.

Print Line

This parameter allows you to enter the starting line number of the print page in the application screen. A value of **1** causes the display page to be printed; a value of **0** (zero) disables this feature.

Print Form Length

This parameter sets the printer's form length in lines. The range is **0** to **24**.

Barcode

Barcode-input-only fields are special entry fields that only accept input from a bar code reader. The application program distinguishes an entry field as *barcode-input-only* by preceding the field with a special character.

The range for this parameter – **0** to **127** – represents the decimal values of ASCII characters. A value of **0** (zero) disables this feature.

Entry Line

This parameter contains the number of the first line displayed if there is no entry field in the upper-left portion of the screen, and if an entry field is at or below this line.

The *Entry Line* parameter allows an automatic offset within the host screen, so that the area displayed by the terminal includes an entry field that would normally be out of bounds. Normally, Teklogix terminals only display the upper-left corner of the application screen because of their smaller display size.

Field Overhead

This parameter contains the maximum number of characters allowed between two *fixed* fields which still allows the 9150 to join them into one field.

Sometimes the 9150 will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link.

For example, if two fields were 4 characters apart and this parameter was ‘5’, then these fields would be joined into one.

Command Region

This parameter defines a region of the host screen which the 9150 will examine for the presence of reserved commands.

The four numbers in the *Command Region* textboxes represent the row and column addresses of the upper left corner and the lower right corner of the command region. The first textbox of each pair contains the row number; the second contains the column number. The range of row values is **0** to **24**; column values are **0** to **80**.

To define the last two lines of the host screen as the command region, for example, enter the values *23, 1* and *24, 80*.

Currently, the only command supported is *ALARM* (refer to page 166 for details on this command). When the word "ALARM" is placed anywhere within the command region, the 9150 will send a TESS *beep* command to the terminal.

6.4.4.2 Protocol Options

This page differs depending on the type of emulation and protocol selected in the *General Host Options* page (see page 148). The 9150 displays this version of the *Protocol Options* page when you select the emulation/protocol combination of *5250/Telnet* for this host.

Teklogix 9150: 5250 Telnet Protocol Options [host5250]

Terminal Type:	IBM-5251-11
Host Port:	23
Maximum Sessions per Terminal:	4
First Local Terminal Port:	0
Local IP Address to Bind:	0.0.0.0
First Terminal Listen Port:	0
Actively Negotiate with Host:	☐
Negotiate Virtual Device Name with host (provide prefix below):	☐
Virtual Device Name prefix:	
Auto-telnet:	DISABLE
Auto-telnet Host:	

OK Cancel

Terminal Type

This parameter allows you to choose the type of terminal to be emulated by the 9150 for this host. At present there are two choices of terminal for *5250/Telnet*: the **IBM 5251-11** and **IBM 5555-B01**.

Host Port

This parameter allows you to enter a host port value for the selected *5250/Telnet* host connection. The default value is **23**.

Maximum Sessions per Terminal

This parameter contains the maximum number of telnet sessions which are allowed to originate from each terminal. The range is **0** to **127**, with a default value of **4**.

First Local Terminal Port

This parameter contains the local port number from which the first terminal will connect on outbound telnet sessions. The default value is **0**.

Local IP Address to Bind

This parameter contains the IP address of the network adaptor from which the first terminal will connect on outbound telnet sessions.

First Terminal Listen Port

This parameter specifies the first port number at which the 9150 will listen for telnet connection requests to the terminals. To **enable** this parameter, the value must be a minimum of **1024**. To **disable** the listen port, the value must be **0**.

The default value is **0** (disabled).

Actively Negotiate with Host

If this parameter is enabled, the 9150 starts negotiations with the host during setup of the telnet connection. Not recommended for most hosts.

Negotiate Virtual Device Name with Host

If this parameter is enabled, the 9150 negotiates with the host to obtain a virtual device name for the telnet connection.

Virtual Device Name prefix

This parameter specifies a prefix for the automatically-generated virtual device name. The device name on the host starts with the prefix, specifies the terminal (as a number), and specifies a session number (as a letter). For example, if the virtual device name prefix is TLX, the first session on terminal number 2 receives a virtual device name of TLX0002A.

The prefix must use the *SNA Type A* character set, which includes uppercase letters A-Z, numbers 0-9, and the special characters $, #, and @. Lowercase letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number.

Auto-telnet

This parameter enables you to disable or enable automatic connection of telnet sessions from terminals to this host.

The choices provided are: **Disable** and **Auto-telnet**. The default value is **Disable**.

When *Auto-telnet* is **disabled**, telnet sessions from the terminals to the host must be initiated manually from the terminals.

When *Auto-telnet* is **enabled**, the 9150 initiates one telnet session from each terminal whose terminal number is mapped to this host. Additional telnet sessions may be initiated from each terminal to the host, but they must be initiated manually.

When *Auto-telnet* is **enabled**, the 9150 will automatically telnet to the host, both on startup and when the session is closed.

Note: *Auto-telnet sessions are only initiated for terminals which are "online" (turned on and operating properly on the Teklogix RF network).*

Auto-telnet Host

This parameter contains the host name or IP address for the host to which the 9150 connects Auto-telnet sessions.

Note: *A host name placed in this textbox must be "resolvable" by the 9150: the 9150 must be able to obtain an IP address for it. For example, the host name may correspond to an entry in the 9150's host table, or the 9150 may be able to query a domain-name server. Any host name which can be used at the terminal's TCP> prompt may be used here.*

6.4.4.3 Function Key Mappings

This page differs depending on the type of emulation selected in the *General Host Options* page. The 9150 displays this version of the *Function Key Mapping* page when you select *5250* emulation for this host.

Teklogix 9150: 5250 Function Key Mappings [host 5250]

F1:	F1	F14:	F14	F27:	F17
F2:	F2	F15:	F15	F28:	F18
F3:	F3	F16:	CLEAR	F29:	UP
F4:	F4	F17:	PRINT	F30:	SESS
F5:	F5	F18:	HELP	F31:	ENTER
F6:	F6	F19:	F19	F32:	ENTER
F7:	F7	F20:	F20	F33:	ENTER
F8:	F8	F21:	F21	F34:	ENTER
F9:	F9	F22:	F22	F35:	ENTER
F10:	F10	F23:	F23	F36:	ENTER
F11:	F11	F24:	F24	F37:	ENTER
F12:	F12	F25:	DOWN	F38:	SELECTOR
F13:	F13	F26:	F16	F39:	ENTER

OK Cancel

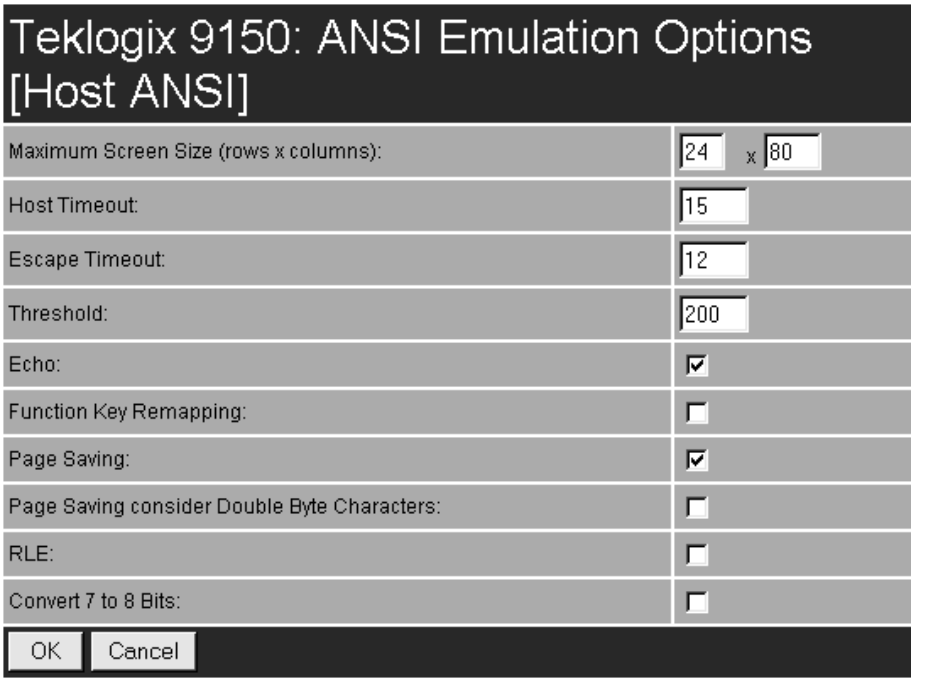
Function key n

The *Function Key* parameter allows you to select a code that will be sent to the host when you press a function key on the terminal. Each function key may be chosen from the same range of possible codes; however, each function key has a different default code. The default values are shown on this page.

6.4.5 ANSI/Telnet

6.4.5.1 Emulation Options

The 9150 displays this version of the *Emulation Options* page after you have selected the *ANSI/Telnet* emulation/protocol combination for this host connection.



Maximum Screen Size

The *Maximum Screen Size* allows you to set the maximum required screen size in terminals, by rows and columns. This feature ensures the optimal use of memory when using the page saving option (see “Page Saving” on page 182).

The range is a minimum setting of **24 x 80** to a maximum setting of **60 x 132.** The default setting is **24 x 80**.

Host Timeout

The *Host Timeout* is the interval (in *ticks*, or 60ths of a second) between bursts of data received from the host. The range is **0** to **255**, with a default value of **15**.

If the 9150 does not receive any characters from the host after this timeout has elapsed, it assumes that the host has finished sending data and is waiting for user input (in other words, it assumes that a screen of data has been completed).

Important: ***The* Page Saving *parameter (page 182) must be enabled in order to change the value in the* Host Timeout *parameter.***

Escape Timeout

The *Escape Timeout* is the length of time (in *ticks*, or 60ths of a second) that the 9150 will hold an "ESC" received from the host, and consider the next received byte to be part of an escape sequence. The range is **0** to **255**, with a default value of **12**.

When this timeout has elapsed, the host will have to send another "ESC" character to start an escape sequence.

Note: *This is especially important when an ESC is at the end of a data packet.*

Threshold

The *Threshold* is the minimum number of bytes of update data for the terminal screen which must be received from the host before the 9150 will store the screen as a new "saved page". The range is **0** to **999**, with a default value of **200**.

Important: ***The* Page Saving *parameter (page 182) must be enabled in order to change the value in the* Threshold *parameter.***

Echo

If this parameter is **enabled**, the 9150 uses *"Smart" Echo*. This mode reduces the amount of data sent to the terminal by decreasing the number of radio transmissions.

Ordinarily, when a character mode application is being used, each keystroke is sent to the host in one transmission, and the character is echoed by the host in another transmission. When *"Smart" Echo* is **enabled**, the 9150 will not send the host echo to the terminals if it matches the data sent from the terminal. Thus, the number of radio transmissions is reduced.

This mode also reduces or eliminates the delay between typing a character on the keyboard and displaying the character echoed by the host. The maximum number of characters waiting for echo is **25**. Any additional characters will be sent to the host but not displayed.

Notes:

1. *This parameter also determines whether an ANSI parameter query is sent to the terminal.*
2. "Smart" Echo *also needs to be enabled at the terminal (refer to the appropriate Terminals User Manual).*

Function Key Remapping

If this parameter is **enabled**, the 9150 remaps the function keys for this host connection as defined in the Function Key Remapping page (page 190).

Page Saving

If this parameter is **enabled**, the 9150 uses page saving**,** reducing data transmitted to the terminals.

The 9150 maintains an image of each page stored at the terminal. After receiving an application screen, the 9150 tries to match the screen with a stored page. If the page is already in the terminal, the 9150 instructs the terminal to redisplay its stored copy of the page; no data need be sent across the radio link for that page. If the 9150 finds no match for the page, the complete page is sent to the terminal.

The default value is **enabled**.

Notes: *When page saving is enabled, the number of saved pages is that which is set on the terminal. Refer to the appropriate Terminals User Manual for details.*

If using double byte character sets, such as Chinese or Korean, please refer to the Page Saving Consider Double Byte Character *parameter, below.*

Page Saving Consider Double Byte Character

When using double byte character sets such as Chinese or Korean, *Page Saving* (see above) will allow a double byte character to be partially overwritten, which can lead to a single byte of unprintable screen data or a new unintended character made up of two halves of different characters. Also, the terminal may shift data on the screen to truncate the bad data.

When *Page Saving Consider Double Byte Character* is **enabled**, *Page Saving* will replace any orphaned double byte character half with a space to prevent modified characters and truncated data from being displayed on the terminal.

The default value is **disabled**.

Note: *This option should only be used when using double byte character sets.*

RLE

If this parameter is **enabled**, the 9150 uses run-length encoding (RLE) on the data it sends across the radio link. *RLE* compresses repeated characters going from the host to the terminal. If repeated characters are found in the data stream, the first one is sent, followed by a short escape sequence (3 or 4 characters) which tells the terminal how many times to repeat this character. In this way RLE compresses the data and decreases the total amount of radio-link traffic.

Convert 7 to 8 Bits

If this parameter is **enabled**, the 9150 converts 7-bit control sequences to their 8-bit equivalents in ANSI data streams going to the terminals. This replaces two-character escape sequences with a single equivalent character, compressing the data.

6.4.5.2 Protocol Options

This page differs depending on the type of emulation and protocol selected in the *General Host Options* page. When you select the emulation/protocol combination of *ANSI/Telnet* for this host the 9150 displays the version of the *Protocol Options* screen shown on page 184.

Teklogix 9150: ANSI Telnet Protocol Options [Host ANSI]

Terminal Type:	termVT100
Host Port:	23
Maximum Sessions per Terminal:	4
Close Host sessions on Terminal reset:	☐
First Local Terminal Port:	10000
Local IP Address to Bind:	0.0.0.0 :
First Terminal Listen Port:	0
TCP Session Request Key:	1
Session Cycle Key:	2
Last Active Session Key:	5
Auto-telnet/login Enable:	DISABLE
Auto-telnet Host:	
Auto-telnet Terminal Prompt:	Press ENTER to login.
Auto-login User ID:	
Auto-login Password:	
Auto-login User ID prompt:	gin:
Auto-login Password prompt:	word:
Auto-login failed login:	incorrect
Allow TCP Sessions:	☑

OK Cancel

Terminal Type

This parameter specifies the type of terminal to be emulated by the 9150. The characters entered in the textbox can be any ASCII string acceptable to the host, with a **maximum of 32** characters. The default value is **VT100**.

Host Port

This parameter specifies the value for the host port for the selected ANSI host connection. The default value is **23**.

Maximum Sessions per Terminal

This parameter contains the maximum number of telnet sessions which are allowed to originate from each terminal. The range is **0** to **127**, with a default value of **4**.

Close Host Sessions on Terminal Reset

When this parameter is **enabled**, and a terminal reset message is received, the Host session for that terminal number will be closed. The default value is **disabled**.

First Local Terminal Port

This parameter specifies the port number from which the 9150 attempts a telnet connection for the first terminal. The default value is **0**.

Additional telnet sessions are assigned higher port numbers.

Local IP Address to Bind

This parameter specifies the IP address of the 9150 interface that connects to this host. It is used along with the local port numbers to create a unique socket for each terminal session.

First Terminal Listen Port

This parameter specifies the first port number at which the 9150 will listen for telnet connection requests to the terminals. To **enable** this parameter, the value must be a minimum of **1024**. To **disable** the listen port, the value must be **0**.

The default value is **0** (disabled).

TCP Session Request Key

This parameter contains the decimal ASCII character code of the character which will prompt the terminal to request a new ANSI terminal session. The range is **0** to **255**, with a default value of **1**.

Session Cycle Key

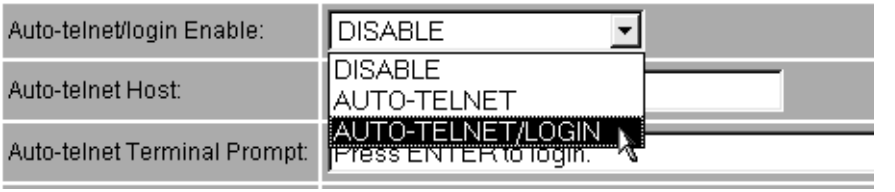
This parameter contains the decimal ASCII character code of the character which will prompt the terminal to display the next ANSI terminal session. The range is **0** to **255**, with a default value of **2**.

Last Active Session Key

This parameter contains the decimal ASCII character code of the character which will prompt the terminal to display the last ANSI terminal session. The range is **0** to **255**, with a default value of **5**.

Auto-telnet/login Enable

This parameter enables you to disable or enable automatic connection of telnet sessions from terminals to this host. The choices provided are: **DISABLE**; **AUTO-TELNET**; **AUTO-TELNET/LOGIN**.



The default value is **DISABLE**.

When *Auto-telnet* is **disabled**, telnet sessions from the terminals to the host must be initiated manually from the terminals.

When *Auto-telnet* is **enabled**, the 9150 initiates one telnet session from each terminal whose terminal number is mapped to this host. Additional telnet sessions may be initiated from each terminal to the host, but they must be initiated manually.

Note: *Auto-telnet sessions are only initiated for terminals which are "online" (turned on and operating properly on the Teklogix RF network).*

When *Auto-telnet* and *Auto-login* are **enabled**, the 9150 initiates one telnet session from each terminal whose terminal number is mapped to this host. It then logs each session in to the host using the User ID and Password provided in this page.

Note: *The User ID and Password is identical for all Auto-telnet sessions automatically logged in to this host.*

Auto-telnet Host

This parameter contains the host name or IP address for the host to which the 9150 connects Auto-telnet sessions.

Note: *A host name placed in this textbox must be "resolvable" by the 9150: the 9150 must be able to obtain an IP address for it. For example, the host name may correspond to an entry in the 9150's host table, or the 9150 may be able to query a domain-name server.*

Any host name which can be used at the terminal's TCP> prompt may be used here.

Auto-telnet Terminal Prompt

This parameter contains the text presented to the user to request a login. The characters can be any ASCII string, or a numeric escape sequence presented in octal or hexadecimal digits.

An octal escape sequence takes one of the forms: \0d, \0dd, or \0ddd, where each 'd' can be any digit from 0-7. If 'ddd' is greater than decimal 256, the code value of the represented character will be the remainder of the decimal ddd/256.

A hexadecimal escape sequence takes one of the forms: \xh or xhh, where each 'h' can be any digit from 0-9, or any alpha value from a-f or A-F.

Note: **\0** *is considered a character, with a code value of 0.*

The allowable value is a **maximum of 60** characters in the line. The default is no text, just press <ENTER> to login.

Auto-login User ID

This parameter contains the user ID presented by the 9150 to the host for the Auto-login sessions. The characters can be any ASCII string acceptable to the host, with a **maximum of 32** characters.

Auto-login Password

This parameter contains the password presented by the 9150 to the host for the Auto-login sessions. The characters can be any ASCII string acceptable to the host, with a **maximum of 32** characters.

Auto-login User ID prompt

The 9150 compares the text in this textbox to the text presented to it by the host. When they match, the 9150 assumes that the host has just sent its request for a user name, and it sends the user ID specified in the *Auto-Login User ID* parameter to the host. The characters can be any ASCII string, with a **maximum of 32** characters. The default text is **gin:**.

Note: *The match string should be as short as possible, yet long enough to uniquely identify the user-ID prompt. Do not include multi-part words separated by space characters, since some hosts send out characters other than space characters to present a space on the screen.*

Auto-login Password prompt

The 9150 compares the text in this textbox to the text presented to it by the host. When they match, the 9150 assumes that the host has just sent its request for a password, and it sends the password specified in the *Auto-Login Password* parameter to the host. The characters can be any ASCII string, with a **maximum of 32** characters. The default text is **word:**.

Note: *The match string should be as short as possible, yet long enough to uniquely identify the password prompt. Do not include multi-part words separated by space characters, since some hosts send out characters other than space characters to present a space on the screen.*

Auto-login failed login

The 9150 compares the text in this textbox to the text presented to it by the host. When they match, the 9150 assumes that the host has just sent a string informing the terminal of a failed login attempt. The 9150 then presents the *Auto-telnet Terminal Prompt* on the terminal's screen to request the user to login manually. The characters can be any ASCII string, with a **maximum of 32** characters. The default text is **incorrect**.

Note: *The match string should be as short as possible, yet long enough to uniquely identify the failed-login prompt. Do not include multi-part words separated by space characters, since some hosts send out characters other than space characters to present a space on the screen.*

Allow TCP Sessions

When this parameter is **enabled**, the 9150 allows a terminal user to switch prompts or sessions while at the prompt (either Auto-login or TCP). If *Allow TCP Sessions* is **disabled**, all new sessions will open as Auto-login sessions.

Requesting sessions (normally <CTRL> *a* on the terminal) can be used at the prompt level to change the type of prompt (if the other type of prompt is available).

Switching sessions at the prompt level is also available (on the terminal as <CTRL> *b* [next session], or <CTRL> *e* [last session]). When switching sessions at the prompt, the terminal state (not logged in) will be correctly adjusted to match that of the switching in session.

The default value is **enabled**.

6.4.5.3 Function Key Mappings

This page differs depending on the type of emulation selected in the *General Host Options* page. The 9150 displays this version (page 191) of the *Function Key Mapping* page after you have selected the *ANSI/Telnet* emulation/protocol combination for the host connection.

Teklogix 9150: ANSI Function Key Mappings [hostansi]

F1:	1b,4f,50,00,00,00,00,00
F2:	1b,4f,51,00,00,00,00,00
F3:	1b,4f,52,00,00,00,00,00
F4:	1b,4f,53,00,00,00,00,00
F5:	1b,5b,31,36,7e,00,00,00
F6:	1b,5b,31,37,7e,00,00,00
F7:	1b,5b,31,38,7e,00,00,00
F8:	1b,5b,31,39,7e,00,00,00
F9:	1b,5b,32,30,7e,00,00,00
F10:	1b,5b,32,31,7e,00,00,00
F11:	1b,5b,32,33,7e,00,00,00
F12:	1b,5b,32,34,7e,00,00,00
F13:	1b,5b,32,35,7e,00,00,00
F14:	1b,5b,32,36,7e,00,00,00
F15:	1b,5b,32,38,7e,00,00,00
F16:	1b,5b,32,39,7e,00,00,00
F17:	1b,5b,33,31,7e,00,00,00
F18:	1b,5b,33,32,7e,00,00,00
F19:	1b,5b,33,33,7e,00,00,00
F20:	1b,5b,33,34,7e,00,00,00
F21:	1b,5b,31,7e,00,00,00,00
F22:	1b,5b,32,7e,00,00,00,00
F23:	1b,5b,33,7e,00,00,00,00
F24:	1b,5b,34,7e,00,00,00,00
F25:	1b,5b,35,7e,00,00,00,00
F26:	1b,5b,36,7e,00,00,00,00
F27:	1b,5b,34,31,7e,00,00,00
F28:	1b,5b,34,32,7e,00,00,00
F29:	1b,5b,34,33,7e,00,00,00
F30:	1b,5b,34,34,7e,00,00,00

OK Cancel

Function key n

The *Function Key* parameter allows you to select a code that will be sent to the host when you press a function key on the terminal. Each function key may be chosen from the same range of possible codes; however, each function key has a different default code. The default values are shown on the screen above.

6.4.6 RF Modem/Telnet

RF Modem/Telnet is intended for a controller communicating with a Teklogix Model 6040 RF Modem. The 6040 acts as a terminal on the Psion Teklogix network to allow serial devices to communicate over that network (see the *6040 RF Modem User Manual* for details). Since the 6040 simply passes serial data through to connected serial devices, there are no emulation or function key options. The 9150 displays this version of the *Host Menu* page after you have selected the *RF Modem/Telnet* emulation/protocol combination for this host connection.

6.4.6.1 Emulation Options

These parameters are not applicable to the RF Modem emulation.

6.4.6.2 ANSI Telnet Protocol Options (RF Modem)

This page differs depending on the type of emulation and protocol selected in the *General Host Options* page. The 9150 displays this version of the *Protocol Options* page for the emulation/protocol combination *RF Modem/Telnet* for this host.

First Terminal Listen Port

This parameter specifies the first port number at which the 9150 will listen for telnet connection requests to the terminals. To **enable** this parameter, the value must be a minimum of **1024**. To **disable** the listen port, the value must be **10000**. The default value is **10000** (disabled).

6.4.6.3 Function Key Mappings

These parameters are not applicable to the RF Modem emulation.

6.5 802.IQ V2 Features Menu

This parameter accesses the 802.IQv2 sub-menu that enables the Psion Teklogix proprietary 802.11b enhanced protocol, as described in “Psion Teklogix’ 802.IQ Protocol” on page9. For detailed configuration information on 802.IQv1, please refer to “802.IQ Version 1 Configuration Menu” on page64.

6.5.1 802.IQ Version 2 Configuration

802.IQ is a Psion Teklogix proprietary optimized protocol that enables terminals to operate on a wireless LAN in a network that supports both TCP/IP and 802.IQ protocol simultaneously. 802.IQ protocol is available in two versions: 802.IQv1 and 802.IQv2. The 9150 can support both versions of the protocol at the same time (terminals must use only one).

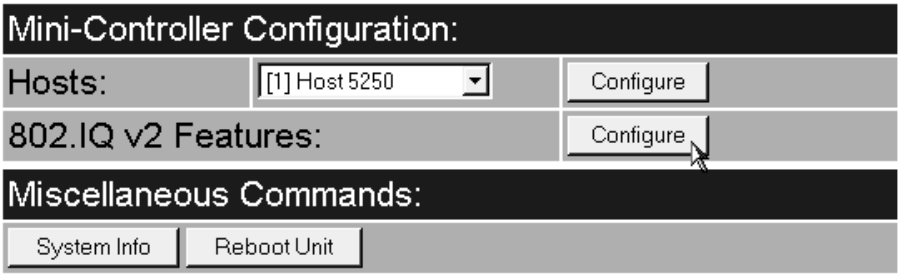
802.IQv1 protocol is a wireless LAN protocol that provides greater performance in an 802.11b wireless network than is possible with TCP/IP. The 9150 bridges the 802.IQv1 wireless and TCP/IP wired networks.

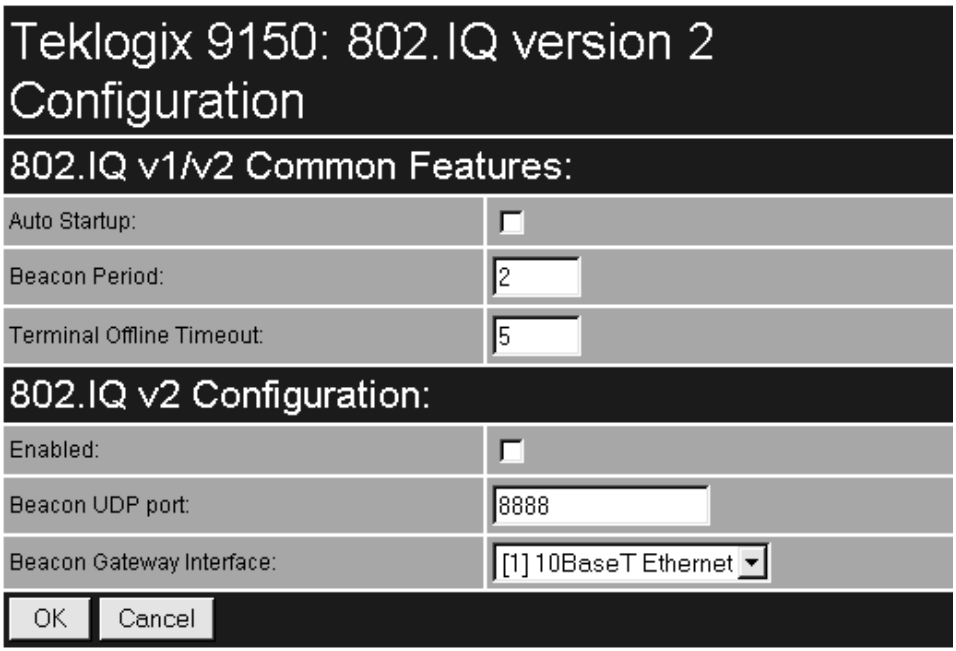
802.IQv2 protocol is an enhanced version of the 802.IQv1 protocol that transports packets over the UDP layer. It provides all the 802.IQv1 functionality, with the added features of software upgrade capability over RF, the ability to add third-party access points between controllers and terminals, and integration into the mapRF system, if desired.

Important: ***802.IQ should only be enabled on wired 9150s.***

Do not configure 802.IQ on wired 9150s bridging networks, since 802.IQ beacons would be sent through the WDS link from one network to the other (see “Wireless Distribution System (WDS) Configuration” on page72).

The *802.IQ Version 2 Configuration* page is entered from the *802.IQ v2 Features* menu on the main web page, under Mini-Controller Configuration.





6.5.1.1 802.IQ v1/v2 Common Features

Auto Startup

This parameter **enables** (√) 802.IQ immediately when the 9150 is rebooted. When the 9150 is operating as a base station under a network controller or a 9150 mini-controller, this parameter must be **disabled**. The default value is **disabled**.

Important: ***If* Auto Startup *is set incorrectly, terminals may not operate correctly.***

Beacon Period

An 802.IQ beacon is a broadcast sent out to all 802.IQ-enabled terminals. The beacon allows terminals to determine when they have roamed between base stations. It enables a terminal to determine whether or not the base station or controller was rebooted and, if so, how to recover. If the controller was rebooted, the terminal closes all sessions and fully re-initializes. If the base station was rebooted, or if the terminal moved to a different 9150, a warm initialize is done (no data will be lost).

The *Beacon Period* parameter acceptable value ranges from **1** to **20** seconds. The default value is **2**.

Terminal Offline Timeout

This parameter sets the time (in minutes) before the 802.IQ task on the 9150 will send an offline message to the cellular master declaring the terminal offline.

The acceptable value ranges from **1** to **240**. The default value is **5**.

6.5.1.2 802.IQ v2 Configuration Submenu

Enabled

This parameter enables (√) or disables the 802.IQv2 protocol.

The default value is **disabled**.

Beacon UDP Port

This parameter identifies the UDP port for beacon broadcasts. If more than one 802.IQv2 controller is on the network, the parameter must be changed to separate the systems. The parameter must also match the corresponding parameter on the terminal. The range of values is **5001** to **65535**. The default value is **8888**.

Beacon Gateway Interface

This is the interface on which the beacons are sent out.

The default is **[1] 10BaseT Ethernet**.

9100 MONITORING/DIAGNOSTICS 7

7.1 Fault Monitoring 197
7.1.1 Low Current Detection. 197
7.1.2 High Current Detection 197
7.1.3 Power Monitoring 198
7.2 Diagnostics and Status Reporting 198

7.1 Fault Monitoring

Once power to a port is applied, the microcontroller enters a fault monitoring mode. The diagnostic functions are:

- Low current condition
- High current condition
- Power Monitoring (conducted regardless of port state)

7.1.1 Low Current Detection

The microcontroller continuously checks ports in the “ON” state to determine if each/any is in an under-current condition (this will typically happen when the Ethernet cable is disconnected or some other fault occurs). This ensures that a powered cable, when disconnected from a powered device, cannot be reconnected into some other device, possibly causing damage to a non-compliant device.

If a Low Current condition is detected, then the power to the port is turned off. This process is carried out for each of the four ports during fault monitoring. Following a Low Current detection, the 9100 starts the discovery process again after a two-second delay.

This fault is indicated by a slowly flashing yellow LED. After a two-second delay, the 9100 will start the resistor detection again.

7.1.2 High Current Detection

Once a port is enabled, a sense voltage is measured periodically by the microcontroller to ensure that it remains less than the maximum allowed voltage, otherwise an over-current fault occurs. A maximum continuous current of up to 350 mA is allowed. To allow for inrush currents, which may occur when a powered device is first connected (or the presence of a short or surge on the line), a hardware current-limiting circuit ensures fail-safe output power control during the first 100mS following port power-ON. Subsequently, the microcontroller will turn the port power OFF immediately upon detection of an overcurrent condition.

Note: *There is a five-second safety period before the 9100 begins resistor detection on a port that has triggered the overcurrent detection.*

7.1.3 Power Monitoring

The 9100 power monitoring circuit constantly checks the operating condition of the internal power supply. If the power goes out of range, all ports are turned off, and all LEDs will be in Fast blink mode.

7.2 Diagnostics and Status Reporting

The 9100 PowerBaseT console port consists of a UART port on the microcontroller, RS232 transceiver (U7) and a DB9 connector. Detailed information and the DB9 connector pinout is given on page B-4. The DB9 connector is used for the following functions:

- Report Status — Using a PC and HyperTerminal.
- Programming/Download — Supports code updates by Field Service personnel.

The microcontroller is required to provide the following functions:

- Maintain port status — Port off, Port on, fault
- Maintain port control — Port enabled, Port disabled
- Report power consumption — Monitor current flow using the current sensing circuit.

The information in Figure 7.1 on page 199 is output on the console port every second. The frequency at which this information is updated is adjustable via a console command input. It can be set anywhere from never to 65,535 seconds, in one-second increments. Serial port settings are 19,200 baud, no parity, 8 data bits, 1 stop bit.

Note: *High and Low Current Detection:*

A fault condition will be indicated by the LEDs and on the console until the fault is cleared, either by the resistor detection for that port succeeding and the port being switched ON, or disabling and re-enabling the port from the console.

```
9100 PowerBaseT – Build[1]: D161o
Main supply: Good[2]
Port 1: Disabled current: 0 mA
Port 2: Off current: 0 mA
Port 3: On current[3]: 78 mA
Port 4: High Current[4]: current 0 mA
>[5]
```

[1] Firmware build date.

[2] Could also read “Bad”.

[3] Current consumed by an active port.

[4] Possible states: **Disabled**
Off
On
Low Current
High Current

[5] Input prompt.

Figure 7.1 Annotated Console Information Screen

The possible states for any one port, as listed in Figure 7.1, are described below:

Disabled

Disabled in software via the console port. The port is inactive and will remain in this state until it is enabled via the console, or the 9100 is reset. When the port is activated, it transitions to the **OFF** state.

OFF

In this state the 9100 is constantly performing the auto-detect algorithm, looking for 9150DCs connected to the port. When a 9150DC is found, the port will transition to the **ON** state.

ON

A 9150DC has been found, and DC power is switched on. The port is constantly monitored for fault conditions. If everything remains within operating specification, the port will remain in the **ON** state. Fault conditions may transition the port to the **Low Current fault** or **High Current fault** state.

Low Current fault

A 9150DC that was previously being powered on this port has either been disconnected, or is not operating correctly. The 9100 will remove power from the port and remain in this state for a minimum of two seconds before transitioning to the **OFF** state. The port will continue to indicate the Low Current fault until it either transitions to the ON state, or is disabled via the console.

High Current fault

A 9150DC that was previously being powered on this port is drawing too much current from the 9100, or there is a short in the connecting cabling. The 9100 will remove power from the port and remain in this state for a minimum of five seconds before transitioning to the **OFF** state. The port will continue to indicate the High Current fault until it either transitions to the ON state, or is disabled via the console.

SPECIFICATIONS 8

8.1 Specifications For The 9150 Wireless Gateway 203
8.1.1 Physical Description 203
8.1.2 9150T Power Requirements 203
8.1.3 9150DC Power Requirements 203
8.1.4 Processor And Memory 203
8.1.5 Environmental Requirements 204
8.1.6 Network Interfaces 204
8.1.7 PC Card Radios 204
8.1.8 Approvals 205
8.2 Specifications For The 9100 PowerBaseT 206
8.2.1 Physical Description 206
8.2.2 Power Requirements 206
8.2.3 Network Interface 206
8.2.4 Electrical Safety Approvals 206
8.3 USI WaveLAN PC Card Regulatory Information 207

Note: *Performance specifications are nominal and subject to change without notice.*

8.1 Specifications For The 9150 Wireless Gateway

8.1.1 Physical Description

Enclosure		Bayer Makroblend EL-700 (PC/PET blend), jet black in colour, texture to MT-11030 or equivalent
Dimensions	Nominal	36.3 x 26.2 x 7.4 cm (14.3 x 10.3 x 2.9 in.)
	Maximum	36.8 x 26.7 x 7.6 cm (14.5 x 10.5 x 3.0 in.)
Weight	Nominal	2.9 kg (6.5 lbs.)
	Maximum	3.2 kg (7.0 lbs.)

8.1.2 9150T Power Requirements

Input voltage	100 - 240 V
Frequency	50/60 Hz
Current	1.0 A

Warning: ***To avoid electric shock, the power cord protective grounding conductor must always be connected to ground.***

8.1.3 9150DC Power Requirements

Input voltage	48 VDC nominal
Current	250 mA maximum

Warning: ***A ground wire, not exceeding 3 m in length, must be connected between the ground screw (adjacent to the Auz.48V jack) and a suitable earth ground bonding point.***

8.1.4 Processor And Memory

9150T Wireless Gateway: Power PC 860T, 50 MHz Processor
9150DC Wireless Gateway: Power PC 860T, 50-60 MHz Processor
16 MB DRAM
2 MB Flash ROM

8.1.5 Environmental Requirements

Operating Temperature	0°C to 50°C (32°F to 122°F)
Operating Rel. Humidity	10% to 90% (Non-condensing)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Dust and Rain	IEC 529 IP42

8.1.6 Network Interfaces

9150DC Wireless Gateway

On-Board Ethernet	10BaseT/100BaseT (10/100Mb/s) card Data rate is auto-sensed.

9150T Wireless Gateway

On-Board Ethernet	10BaseT/100BaseT (10/100Mb/s) card Data rate is auto-sensed.

8.1.7 PC Card Radios

Important: ***For sites in Canada, USI WaveLAN 802.11 radios require a radio licence, unless they are installed totally within a building. (The user shall obtain this licence from Industry Canada.)***

USI WaveLAN IEEE 802.11 2.4 DSSS GHz (RA2020)*

Transmitter Power	36 mW
Frequency Range	2.4 to 2.4835 GHz
Data Rate	1, 2, 5.5, 11Mb/s
No. of Channels	11 (FCC)
	4 (FR)
	2 (SP)
	13 (ETSI)

* For regulatory information concerning the USI WaveLAN PC Card, please see page 207.

8.1.8 Approvals

FCC Part 15, subpart B, Class B
Electrical Safety: CSA/NRTL, TÜV, CB Scheme

ETS 300 086	ETS 300 328
CE Mark:	EN 55022: 1998
	EN 55024: 1998

8.2 Specifications For The 9100 PowerBaseT

8.2.1 Physical Description

Enclosure	12, 16, and 18 gauge steel with baked enamel finish
Dimensions	48.3 x 18.1 x 4.3 cm (19 x 7.1 x 1.7 in.)
Weight	2.45 kg (5.4 1bs)

8.2.2 Power Requirements

Universal AC/DC power supply:

Input Voltage:	100 - 240 VAC 50-60Hz
Input Current	1.4 A - 0.6A
Output Voltage:	48 VDC +/- 2%
Output Power:	60 Watts

This power supply delivers 13 Watts per port for a total of 52 Watts. Power supplied to each port is protected by over-voltage and current-limiting within the power supply.

Warning: ***To avoid electric shock, the power cord protective grounding conductor must always be connected to ground.***

8.2.3 Network Interface

For each of Ports 1, 2, 3, and 4:

On-Board Ethernet	The “Data” connector is patched to the Ethernet backbone or switch/hub. The “Data + 48V” connector is wired directly to the 9150DC.

Note: *The 9100 has no effect on the data passed through it. 48VDC is inserted on the spare pins/conductors of the cable to the 9150DC.*

8.2.4 Electrical Safety Approvals

CSA/NRTL/C and CB certificate

Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Psion Teklogix Inc. is not responsible for any radio or television interference caused by unauthorized modification.

The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

For country-specific approvals, please consult the flyer “Radio Certification Information” that is included with the 9150 Wireless Gateway.

APPENDIX A

SUPPORT SERVICES AND WORLDWIDE OFFICES

A.1 Support Services

Psion Teklogix provides a complete range of product support services to its customers worldwide. These services include post-installation technical support and product repairs.

A.1.1 Canada and U.S.A: Technical Support and Repair Services

In Canada and the U.S.A. these services can be accessed through the Psion Teklogix Helpdesk. The Helpdesk coordinates repairs, helps you troubleshoot problems over the phone, and arranges for technicians or engineers to come to your site.

Canadian and U.S. customers may receive access to technical support services, ranging from phone support to emergency on-site system support, by calling the toll-free number below, or via our secure web site.

Note: *Customers calling the toll-free number should have their Psion Teklogix customer number or trouble ticket number available.*

Voice: 1 800 387-8898

Fax: 1 905 812-6304

Web Site: http://service.psionteklogix.com

A.1.2 International Support

For technical support outside of Canada or the U.S.A., please contact your local Psion Teklogix office. See page A-3 for a listing of worldwide offices.

A.2 WORLDWIDE OFFICES

COMPANY HEADQUARTERS AND CANADIAN SERVICE CENTRE

Psion Teklogix Inc.
2100 Meadowvale Boulevard
Mississauga
Ontario
Canada L5N 7J9
Tel: +1 905 813 9900
Fax: +1 905 812 6300
E-mail: salescdn@psion.com

NORTH AMERICAN HEADQUARTERS AND U.S. SERVICE CENTRE

Psion Teklogix Corp.
1810 Airport Exchange Boulevard
Suite 500
Erlanger, Kentucky
USA 41018
Tel: +1 859 371 6006
Fax: +1 859 371 6422
E-mail: salesusa@psion.com

INTERNATIONAL SUBSIDIARIES

Psion Teklogix GmbH
Jakob Kaiser Straße 3
D-47877 Willich Münchheide
Deutschland
Tel: +49 2154 9282 0
Fax: +49 2154 9282 59
E-mail: info@teklogix.de

Psion Teklogix S.A.
La Duranne
135 Rue Rene Descartes
BP 421000
13591 Aix-En-Provence
Cedex 3; France
Tel: +33 (0) 4.42.908.809
Fax: +33 (0) 4.42.908.888
E-mail: tekeuro@psion.com

Psion Teklogix LTD.
3, Lancaster Court
Coronation Road High Wycombe
Bucks HP123TD, England
Tel: +44 1494 450666
Fax: +44 1494 450155
WWW: www.teklogix.co.uk
E-mail: tekuk@psion.com

Psion Teklogix AB
Stora Badhusgatan 18-20
411 21 Göthenburg, Sweden
Tel: +46 31 13 15 50
Fax: +46 31 13 57 80
E-mail: info@teklogix.se

Psion Teklogix Finland
Metsänneidonkuja 8
02130 Espoo
Finland
Tel: +358 9 4307 8390
Fax: +358 9 4307 8395
E-mail: tekeuro@psion.com

Psion Teklogix Danmark
Vesterballevej 4-6
7000 Fredericia
Danmark
Tel: +45 76 24 0133
Fax: +45 75 94 4679
E-mail: tedk@psion.com

Psion Teklogix Italia S.r.l
Via Galilei, 47
20092 Cinisello Balsamo
Milan, Italy
Tel: +39 2 6604 5410
Fax: +39 2 6604 5412
E-mail: tkxitalia@psion.com

Psion Teklogix Inc. (Singapore)
583 Orchard Road
15-01 Forum
Singapore 238884
Tel: +65 735 8108
Fax: +65 733 5990
E-mail: intl@psion.com

Psion Teklogix de Mexico, S.A. de C.V.
Sierra Mojada 626, 2º Piso
Col. Lomas Barrilaco, C.P. 11010
Mexico, D.F., Mexico
Tel: +52 5 327 1124
Fax: +52 5 327 1123
E-mail: salesusa@psion.com

Psion Teklogix do Brasil, Ltda.
Al. Casa Branca, 851 - conj. 101 e 102
São Paulo - SP - 01408-001
Brasil
Tel: +55 11 3064 0868
Fax: +55 11 3068 8198
WWW: www.teklogixbrasil.com.br
E-mail: tekbr@psion.com

Chile Psion Teklogix International Inc.
Avenida Vitacura 2909, Oficina 703
Las Condes
Santiago, Chile
Tel: +56 2 334 9344
Fax: +56 2 233 3868
E-mail: ventas@psion.com

Psion Teklogix de Argentina, S.A.
Avenida Moreau de Justo 1180
Piso 1, Oficina C-105
Buenos Aires 1107
Argentina
Tel: +54 11 4343 0193
Fax: +54 11 4343 6310
E-mail: tekar@psion.com

Psion Teklogix España, S.L.
Cityparc Ronda de Dalt
Ctra. Hospitalet 147-149
Edificio Atenas 2° 3ª
08940 Cornellà de Llobregat (Barcelona)
España
Tel: +34 9 3475 0220
Fax: +34 9 3475 0230
E-mail: teklogix@apdo.com

Psion Teklogix Systems India Pvt. Ltd.
M-74, 1st Floor, "M" Block Market
Greater Kailash-II
New Delhi - 110048
India
Tel: +91 11 621 9257
Fax: +91 11 621 9076
E-mail: tekind@psion.com

Psion Teklogix Taiwan Co., Ltd.
15FL-5, No. 366 Boai 2nd Road,
Tzuo Ying District, KAOHSIUNG 813
Taiwan, R.O.C.
Tel: +886 7 558 2028
Fax: +886 7 558 3328
E-mail: jerry.chen@teklogix.com

Psion Teklogix Africa
Postnet Suite 39, Private Bag x11
Halfwayhouse, 1685 Ground Floor East
Waterfall Edge Phase 2, Waterfall Park
Bekker Road MIDRAND 1685
South Africa
Tel: +27 11 805 7440/1/2
Fax: +27 11 805 7444

Psion Teklogix B.V.
Venrayseweg 57,
5928 NZ Venlo
Nederlands
Tel: +31 77 32400 44
Fax: +31 77 32400 53

A.3 WORLDWIDE WEB

www.psionteklogix.com

APPENDIX B

PORT PINOUTS AND CABLE DIAGRAMS

B.1 Console Port

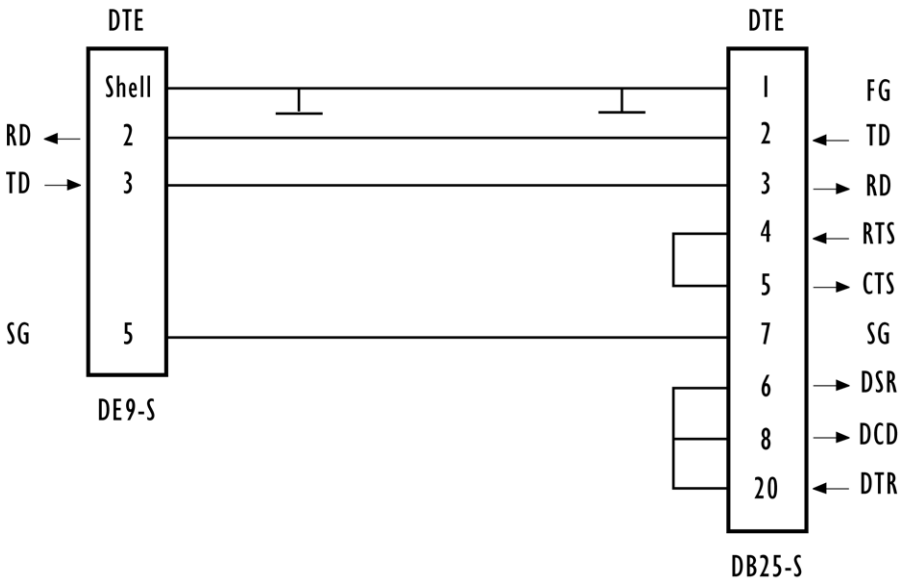
Pin No.	Name	Function	Direction
3	TD	Transmit Data	Out
2	RD	Receive Data	In
5	SG	Signal Ground	–
4*	DTR	Data Terminal Ready	Out
7*	RTS	Request to Send	Out

* always pulled high

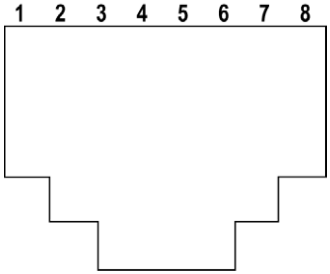
B.2 Serial Cable Descriptions

Cable No.	Function	Connection	Standard Length
19387	9150 to Console	Direct	6 feet

Console Port Cable No. 19387



B.3 RJ-45 Connector Pinouts (10BaseT/100BaseT Ethernet)



9150T		9150DC*		9100 PowerBaseT	
Contact	Signal	Contact	Signal	Contact	Signal
1	TD+	1	TD+	1	TD+
2	TD−	2	TD−	2	TD−
3	RD+	3	RD+	3	RD+
4	Not used	4	+48 VDC In	4	+48 VDC Out
5	Not used	5	+48 VDC In	5	+48 VDC Out
6	RD−	6	RD−	6	RD−
7	Not used	7	48 VDC Return In	7	48 VDC Return Out
8	Not used	8	48 VDC Return In	8	48 VDC Return Out
		** The 9150DC can also accept 48 VDC power bias on the data line pairs (1,2) and (3,6) from such systems providing power over Ethernet.*			

Note: *Usually, a straight-through connection is needed to connect Twisted-Pair (10BaseT or 100BaseT) to the hub.*

Important: ***For Main Logic Board (MLB) P/N 30183-301 Rev F only: When connecting the RJ-45 Ethernet cable to the 9150T (AC power version), ensure that the snap-on ferrite for cables (P/N 97776) is placed on the cable as closely as possible to the RJ-45 jack. To determine which version of the MLB is resident in your 9150, please contact Psion Teklogix Support Services (see page A-1).***

B.4 9100 PowerBaseT Console Port Pinout

The 9100 PowerBaseT console port consists of a UART port on the microcontroller, RS232 transceiver (U7) and a DB9 connector (J16) pins 2 (RXD), 3 (TXD) and 5 (GND). The same connector (J16) is used to connect the Programmer to the 9100 PowerBaseT.

Note: *Programming equipment for Field Service use:*
Programmer (P/N 21297)
Cable, Programmer to 9100 (P/N 98109)
Cable, Programmer to PC (P/N 19687)

The DB9 connector pins 1, 4, 5, 6, and 9 are used during the programming/download phase. The DB9 connector pinout is given in the table on page B-5, with the Function field describing the function performed by each pin (Programming/Download or Console).

The DB9 connector is used for the following functions:

- Report Status — Using a PC and HyperTerminal.
- Programming/Download — Supports code updates by Field Service personnel.

The microcontroller features a full duplex (separate receive and transmit registers) UART with baud generator, 8 or 9 data bits, noise filtering, overrun detection, framing error detection, and interrupts. The transceiver is 5 V powered with two drivers and two receivers with extra protection against ESD.

9100 PowerBaseT Console Port Pinout Table

PIN#	Signal Name	Function	Description
1	PROGRAM_DATA_IN	Programming/ Download	Data Input from the programmer
2	RXD	Console	Serial Data Input
3	TXD	Console	Serial Data Output
4	PROGRAM_DATA_OUT	Programming/ Download	Data Output to the programmer
5	GND	Console and Programming/ Download	Ground
6	PROGRAM_CLOCK	Programming/ Download	Clock Input from the programmer
7	NC		
8	NC		
9	PROGRAM_EN	Programming/ Download	Programming enable

APPENDIX C

MAC BRIDGE PROTOCOL FILTERS AND OUIS

C.1 Ethernet II Types (RFC 1700)

C.1.1 Listing by Description

DESCRIPTION	TYPE (HEX VALUES)
3Com Corporation	0x6010-0x6014
3Com(Bridge) loop detect	0x9003
3Com(Bridge) TCP-IP Sys	0x9002
3Com(Bridge) XNS Sys Mgmt	0x9001
Advanced Encryption System	0x823E-0x8240
Aeonic Systems	0x8036
Allen-Bradley	0x80E0-0x80E3
Alpha Micro	0x814A
Apollo Computer	0x80F7
Apollo Computers	0x8019
Appletalk	0x809B
AppleTalk AARP (Kinetics)	0x80F3
Applitek Corporation	0x80C7
Apricot Computers	0x81CC-0x81D5
ARAI Bunkichi	0x81A4
ARP	0x0806
Artisoft	0x81D6-0x81DD
Ascom Banking Systems	0x8221-0x8222

Ethernet II Types (RFC 1700)

DESCRIPTION	TYPE (HEX VALUES)
AT&T	0x8008
AT&T	0x8046
AT&T	0x8047
AT&T	0x8069
Athena Programming	0x827F-0x8282
ATOMIC	0x86DF
Autophon	0x806A
Banyan Systems	0x0BAD
Banyan Systems	0x80C4
Banyan Systems	0x80C5
BBN Simnet	0x5208
BBN VITAL-LanBridge cache	0xFF00
Berkeley Trailer encap/IP	0x1001-0x100F
Berkeley Trailer nego	0x1000
BIIN	0x814D
BIIN	0x814E
Bridge Communications	0x8132-0x8136
Cabletron	0x7034
Chaosnet	0x0804
Charles River Data System	0x8164-0x8166
Charles River Data System	0x8263-0x826A
ComDesign	0x806C
Computer Network Tech	0x869E-0x86A1
Computer Protocol Pty Ltd.	0x815C-0x815E
Computgraphic Corp.	0x806D
Comsat Labs	0x81F0-0x81F2

DESCRIPTION	TYPE (HEX VALUES)
Counterpoint Computers	0x8062
Counterpoint Computers	0x8081-0x8083
Cronus Direct	0x8004
Cronus VLN	0x8003
Dansk Data Elektronik	0x807B
Datability	0x809C-0x809E
Datability	0x80E4-0x80F0
DCA Data Exchange Cluster	0x80C0-0x80C3
DEC Customer Protocol	0x6006
DEC DECNET Phase IV Route	0x6003
DEC Diagnostic Protocol	0x6005
DEC Ethernet Encryption	0x803D
DEC LAN Traffic Monitor	0x803F
DEC LANBridge	0x8038
DEC LAT	0x6004
DEC LAVC, SCA	0x6007
DEC MOP Dump/Load	0x6001
DEC MOP Remote Console	0x6002
DEC Unassigned	0x6008-0x6009
DEC Unassigned	0x8039-0x803C
DEC Unassigned	0x803E
DEC Unassigned	0x8040-0x8042
DEC Unassigned (Exp.)	0x6000
Delta Controls	0x86DE
DLOG	0x0660
DLOG	0x0661

Ethernet II Types (RFC 1700)

DESCRIPTION	TYPE (HEX VALUES)
ECMA Internet	0x0803
Evans & Sutherland	0x805D
Excelan	0x8010
ExperData	0x8049
Gateway Communications	0x86A3-0x86AC
General Dynamics	0x8068
Harris Corporation	0x80CD-0x80CE
Hayes Microcomputers	0x8130
HP Probe	0x8005
IBM SNA Service on Ether	0x80D5
Idea Courier	0x8694-0x869D
Inst Ind Info Tech	0x829A-0x829B
Integrated Solutions TRFS	0x80DE-0x80DF
Intergraph Corporation	0x80C8-0x80CC
Internet IP (IPv4)	0x0800
Invisible Software	0x8A96-0x8A97
ISC Bunker Ramo	0xFF00-0xFF0F
Kinetics	0x80F4-0x80F5
KTI	0x8139-0x813D
Landis & Gyr Powers	0x86E0-0x86EF
Landmark Graphics Corp.	0x806E-0x8077
Little Machines	0x8060
Logicraft	0x8148
Loopback	0x9000
LRT	0x7020-0x7029
Matra	0x807A

DESCRIPTION	TYPE (HEX VALUES)
Merit Internodal	0x807C
Motorola	0x8700-0x8710
Motorola Computer	0x818D
NBS Internet	0x0802
Nestar	0x8006
Network Computing Devices	0x8149
Nixdorf Computers	0x80A3
Novell, Inc.	0x8137-0x8138
Pacer Software	0x80C6
PCS Basic Block Protocol	0x4242
Planning Research Corp.	0x8044
Polygon	0x81E6-0x81EF
Proteon	0x7030
Protocol Engines	0x817D-0x818C
PUP Addr Trans	0x0A01
Qualcomm	0x8151-0x8153
Qualcomm	0x819A-0x81A3
Quantum Software	0x8203-0x8205
RAD Network Devices	0x81A5-0x81AE
Rational Corp	0x8150
Retix	0x80F2
Reverse ARP	0x8035
Rosemount Corporation	0x80D3-0x80D4
SAIC	0x81F3-0x81F5
SECTRA	0x86DB
SGI bounce server	0x8016

Ethernet II Types (RFC 1700)

DESCRIPTION	TYPE (HEX VALUES)
SGI diagnostics	0x8013
SGI network games	0x8014
SGI reserved	0x8015
Siemens Gammasonics Inc.	0x80A4-0x80B3
SNMP	0x814C
Spider Systems Ltd.	0x809F
Stanford V Kernel exp.	0x805B
Stanford V Kernel prod.	0x805C
Symbolics Private	0x081C
Symbolics Private	0x8107-0x8109
Taurus Controls	0x829C-0x82AB
Taylor Instrument	0x80CF-0x80D2
Technically Elite Concept	0x814F
Tigan, Inc.	0x802F
Tymshare	0x802E
Ungermann-Bass dia/loop	0x7002
Ungermann-Bass download	0x7000
Ungermann-Bass net debugr	0x0900
Univ. of Mass. @ Amherst	0x8065
Univ. of Mass. @ Amherst	0x8066
Valid Systems	0x1600
Varian Associates	0x80DD
Veeco Integrated Auto.	0x8067
VG Analytical	0x81F6-0x81F8
VG Laboratory Systems	0x8131
Vitalink Communications	0x807D-0x807F

DESCRIPTION	TYPE (HEX VALUES)
Vitalink TransLAN III	0x8080
Walker Richer & Quinn	0x82AC-0x8693
Wellfleet Communications	0x80FF-0x8103
X.25 Level 3	0x0805
X.75 Internet	0x0801
Xerox IEEE802.3 PUP	0x0A00
XEROX NS IDP	0x0600
XNS Compatibility	0x0807
Xyplex	0x0888-0x088A
Xyplex	0x81B7-0x81B9

C.1.2 Listing By Type (Hexadecimal)

TYPE (HEX VALUES)	DESCRIPTION
0x0600	XEROX NS IDP
0x0660	DLOG
0x0661	DLOG
0x0800	Internet IP (IPv4)
0x0801	X.75 Internet
0x0802	NBS Internet
0x0803	ECMA Internet
0x0804	Chaosnet
0x0805	X.25 Level 3
0x0806	ARP
0x0807	XNS Compatibility
0x081C	Symbolics Private
0x0888-0x088A	Xyplex
0x0900	Ungermann-Bass net debugr
0x0A00	Xerox IEEE802.3 PUP
0x0A01	PUP Addr Trans
0x0BAD	Banyan Systems
0x1000	Berkeley Trailer nego
0x1001-0x100F	Berkeley Trailer encap/IP
0x1600	Valid Systems
0x4242	PCS Basic Block Protocol
0x5208	BBN Simnet
0x6000	DEC Unassigned (Exp.)
0x6001	DEC MOP Dump/Load
0x6002	DEC MOP Remote Console

TYPE (HEX VALUES)	DESCRIPTION
0x6003	DEC DECNET Phase IV Route
0x6004	DEC LAT
0x6005	DEC Diagnostic Protocol
0x6006	DEC Customer Protocol
0x6007	DEC LAVC, SCA
0x6008-	DEC Unassigned
0x6009	DEC Unassigned
0x6010-0x6014	3Com Corporation
0x7000	Ungermann-Bass download
0x7002	Ungermann-Bass dia/loop
0x7020-0x7029	LRT
0x7030	Proteon
0x7034	Cabletron
0x8003	Cronus VLN
0x8004	Cronus Direct
0x8005	HP Probe
0x8006	Nestar
0x8008	AT&T
0x8010	Excelan
0x8013	SGI diagnostics
0x8014	SGI network games
0x8015	SGI reserved
0x8016	SGI bounce server
0x8019	Apollo Computers
0x802E	Tymshare
0x802F	Tigan, Inc.

Ethernet II Types (RFC 1700)

TYPE (HEX VALUES)	DESCRIPTION
0x8035	Reverse ARP
0x8036	Aeonic Systems
0x8038	DEC LANBridge
0x8039-0x803C	DEC Unassigned
0x803D	DEC Ethernet Encryption
0x803E	DEC Unassigned
0x803F	DEC LAN Traffic Monitor
0x8040-0x8042	DEC Unassigned
0x8044	Planning Research Corp.
0x8046	AT&T
0x8047	AT&T
0x8049	ExperData
0x805B	Stanford V Kernel exp.
0x805C	Stanford V Kernel prod.
0x805D	Evans & Sutherland
0x8060	Little Machines
0x8062	Counterpoint Computers
0x8065	Univ. of Mass. @ Amherst
0x8066	Univ. of Mass. @ Amherst
0x8067	Veeco Integrated Auto.
0x8068	General Dynamics
0x8069	AT&T
0x806A	Autophon
0x806C	ComDesign
0x806D	Computgraphic Corp.
0x806E-0x8077	Landmark Graphics Corp.

TYPE (HEX VALUES)	DESCRIPTION
0x807A	Matra
0x807B	Dansk Data Elektronik
0x807C	Merit Internodal
0x807D-0x807F	Vitalink Communications
0x8080	Vitalink TransLAN III
0x8081-0x8083	Counterpoint Computers
0x809B	Appletalk
0x809C-0x809E	Datability
0x809F	Spider Systems Ltd.
0x80A3	Nixdorf Computers
0x80A4-0x80B3	Siemens Gammasonics Inc.
0x80C0-0x80C3	DCA Data Exchange Cluster
0x80C4	Banyan Systems
0x80C5	Banyan Systems
0x80C6	Pacer Software
0x80C7	Applitek Corporation
0x80C8-0x80CC	Intergraph Corporation
0x80CD-0x80CE	Harris Corporation
0x80CF-0x80D2	Taylor Instrument
0x80D3-0x80D4	Rosemount Corporation
0x80D5	IBM SNA Service on Ether
0x80DD	Varian Associates
0x80DE-0x80DF	Integrated Solutions TRFS
0x80E0-0x80E3	Allen-Bradley
0x80E4-0x80F0	Datability
0x80F2	Retix

Ethernet II Types (RFC 1700)

TYPE (HEX VALUES)	DESCRIPTION
0x80F3	AppleTalk AARP (Kinetics)
0x80F4-0x80F5	Kinetics
0x80F7	Apollo Computer
0x80FF-0x8103	Wellfleet Communications
0x8107-0x8109	Symbolics Private
0x8130	Hayes Microcomputers
0x8131	VG Laboratory Systems
0x8132-0x8136	Bridge Communications
0x8137-0x8138	Novell, Inc.
0x8139-0x813D	KTI
0x8148	Logicraft
0x8149	Network Computing Devices
0x814A	Alpha Micro
0x814C	SNMP
0x814D	BIIN
0x814E	BIIN
0x814F	Technically Elite Concept
0x8150	Rational Corp
0x8151-0x8153	Qualcomm
0x815C-0x815E	Computer Protocol Pty Ltd
0x8164-0x8166	Charles River Data System
0x817D-0x818C	Protocol Engines
0x818D	Motorola Computer
0x819A-0x81A3	Qualcomm
0x81A4	ARAI Bunkichi
0x81A5-0x81AE	RAD Network Devices

TYPE (HEX VALUES)	DESCRIPTION
0x81B7-0x81B9	Xyplex
0x81CC-0x81D5	Apricot Computers
0x81D6-0x81DD	Artisoft
0x81E6-0x81EF	Polygon
0x81F0-0x81F2	Comsat Labs
0x81F3-0x81F5	SAIC
0x81F6-0x81F8	VG Analytical
0x8203-0x8205	Quantum Software
0x8221-0x8222	Ascom Banking Systems
0x823E-0x8240	Advanced Encryption System
0x827F-0x8282	Athena Programming
0x8263-0x826A	Charles River Data System
0x829A-0x829B	Inst Ind Info Tech
0x829C-0x82AB	Taurus Controls
0x82AC-0x8693	Walker Richer & Quinn
0x8694-0x869D	Idea Courier
0x869E-0x86A1	Computer Network Tech
0x86A3-0x86AC	Gateway Communications
0x86DB	SECTRA
0x86DE	Delta Controls
0x86DF	ATOMIC
0x86E0-0x86EF	Landis & Gyr Powers
0x8700-0x8710	Motorola
0x8A96-0x8A97	Invisible Software
0x9000	Loopback
0x9001	3Com(Bridge) XNS Sys Mgmt

TYPE (HEX VALUES)	DESCRIPTION
0x9002	3Com(Bridge) TCP-IP Sys
0x9003	3Com(Bridge) loop detect
0xFF00	BBN VITAL-LanBridge cache
0xFF00-0xFF0F	ISC Bunker Ramo

C.2 DSAP/SSAP Types

DSAP/SSAP (HEX VALUES)	DESCRIPTION
0x0404	SNA Path Control
0x0505	SNA
0x0606	reserved (DOD IP)
0x0808	SNA
0x0C0C	SNA
0x0E0E	PROWAY-LAN network management and initialization (ISA-S72)
0x4242	MAC Bridge Spanning Tree Protocol (IEEE 802.1D-1993)
0x4E4E	MAP messaging service (EIA RS-511)
0x5E5E	ISI IP
0x8E8E	PROWAY-LAN active station list maintenance (ISA-S72)
0xAAAA	Subnetwork Access Protocol (SNAP)
0xE0E0	Novell Netware
0xF0F0	NetBIOS
0xFEFE	ISO network layer protocol (ISO CLNS DIS 8473)

C.3 OUI Values

A few important OUI values:

OUI (HEX VALUES)	DESCRIPTION
0x000000	RFC 1042 encapsulation
0x0000F8	Bridge-Tunnel encapsulation
0x0020A6	Proxim Inc.
0x00601D	USI
0x00022D	USI
0x00C0AF	Teklogix Inc.

INDEX

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

A

ACCESS POINT CONFIGURATION
- **MAC Bridge Parameters** *75–89*
  - **Address Filters** *81*
  - **General Configuration** *77*
  - **Protocol Filters** *83*
- **Mobile IP Configuration** *93–96*
- **Mobility Configuration** *90–91*

access point configuration *8, 56, 61–96*
Access Point Mode Enabled *77*
Action
- Ethernet II filters *82, 86*
- LLC filters *87*
- SNAP filters *88*

Active Channel
- RRM Group *125*
- TekLAN *104*
- TRX7370 parameters *117*

Actively Negotiate with Host
- *3274 Telnet Protocol 162*
- *5250 Telnet Protocol 177*

Adaptive polling/contention protocol *11*
Address, Address filters *82*
addresses, network *48–51*
Address Filters *81*
- **Default Action** *77*
- **Enabled** *77*

Address filters *82*
Address Type *82*
Advertisement Lifetime *93*
AIAG
- *3274 Emulation 155*
- *5250 Emulation 170*

Alarm
- *3274 Emulation 151*
- *5250 Emulation 166*

Alias IP Address *46*
Allow
- **Broadcast ESSID** *71*
- **Simultaneous Binding** *95*
- **TCP Sessions**, ANSI Telnet *189*

Announce (IAPP message) *91*
Announce Period *91*
ANSI, connecting terminals *26*
ANSI/Telnet *180–183*
ANSI Telnet Protocol Options (RF Modem) *191*
antenna requirements *17, 18*
approvals *205*
AP Radio Name *68*
Arbiter 1 IP Address, Redundancy *46*
Arbiter 2 IP Address, Redundancy *46*
Auto-login, ANSI Telnet
- Auto-telnet/login Enable *186*
- failed login *188*
- Password *187*
- User ID *188*

Automatic Radio Address Assignment Range *128*
Automatic Terminal Number Assignment Range *129*
Auto-Startup *119*
- Narrow Band, TRX7370 *113*
- RRM group *122*
- TekLAN *104*
- 802.IQ *65*
- 802.IQv2 *193*

Auto-telnet
- *3274 Telnet Protocol 162*
- *5250 Telnet Protocol 178*

Auto-telnet, ANSI Telnet
- Auto-telnet/login Enable *186*
- Host *187*
- Terminal Prompt *187*

Auto-telnet Host
- *3274 Telnet Protocol 163*
- *5250 Telnet Protocol 178*

B

Backup IP Address, Redundancy *45*
Barcode
- *3274 Emulation 159*
- *5250 Emulation 175*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

Base
- **Number**, Wlan *105*
- **Priority**, Wlan *106*

base station
- **Base Stations** *118*
- configuration *56, 97–106*
- **IP Address** *119*
- **Name** *119*
- wireless *99*

BASE STATION CONFIGURATION *118*

BASIC SERVICE SET (BSS) CONFIGURATION, 802.11 parameters *71*

Baudrate
- console port *55*
- serial port *55*

baud rate *See Data Rate*

Beacon
- **Gateway Interface**, 802.IQv2 *194*
- **Period**
  - 802.IQv1 *65*
  - 802.IQv2 *194*
- **UDP Port**, 802.IQv2 *194*

Bootp *53*

bootptab file *53*

Bootstrap Protocol (BOOTP) *53*

Bridge
- **Forward Delay**, Bridge Spanning Tree Algorithm *80*
- **Hello Time**, Bridge Spanning Tree Algorithm *80*
- **Max Age**, Bridge Spanning Tree Algorithm *80*
- **Priority**, Bridge Spanning Tree Algorithm *79*

BRIDGE SPANNING TREE ALGORITHM, MAC Bridge parameters *79*

broadcast storm *89*

C

cables
- coaxial *18*
- console port No. 19387 *B-2*
- serial descriptions *B-2*

Callsign
- **Period** *124*
- **Period**, narrow band radio *115*
- **String** *124*
- **String**, narrow band radio *116*

cellular
- base *11, 128*
- switching *99*

Channel, IEEE 802.11 DS *71*

Channel n Enabled, TekLAN *104*

Clear
- *3274 Emulation 151*
- *5250 Emulation 166*

Close Host Sessions on Terminal Reset
- *ANSI Telnet Protocol 185*

cold start trap *43*

Collision
- **Size** *123*
- **Size**, narrow band radio *115*

Command Region
- *3274 Emulation 160*
- *5250 Emulation 175*

configuration
- access point *8, 56, 61–96*
- base station *56, 97–106*
- general options *33*
- IEEE 802.11
  - DS *38, 62*
- main menu *29*
- mini-controller *56, 139–194*

CONFIGURATION MAIN MENU *29*

Configure
- **New RRM Group** *120*
- **RRM Group** *127*

connecting
- ANSI compatible terminals *26*
- Ethernet *20*
- video display terminal *26*

connectors
- RJ-45 *B-3*

console
- commands (IP) *29*
- connecting *26*
- port
  - **Baudrate** *55*
  - cable No. 19387 *B-2*
  - pinouts *B-1*

Convert 7 to 8 Bits
- *ANSI Emulation 183*

D

Data Rate
- IEEE 802.11 DS *72*
- TekLAN radio *103*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

data rate *29*
serial *26, 29*
TekLAN
2.4 GHz *103*
902 MHz *103*
DC-powered 9150 *20*
DEC VT220, connecting *26*
Default Gateway Address, bootp *53*
Delay
Between Gratuitous ARPs *95*
Double *91*
DHCP *52*
Lease Time *53*
directional antenna *17*
Direct Sequence (DS) radios
all *38*
IEEE 802.11 *8, 62*
specifications
IEEE 802.11 *205*
TekLAN *205*
TekLAN
2.4 GHz *104*
902 MHz *25, 103, 104*
Direct TCP Connections for TekTerm *130*
DNS *54*
Default Domain *54*
Name Server *54*
Resolver Enabled *54*
Domain Name System *See DNS*
DRAM *203*
DSAP/SSAP *87*
DSAP/SSAP types (table) *C-14*

E

Echo, *ANSI Emulation* *181*
electrical safety approvals *205*
Emulation and Protocol *132*
General Host menu *148*
General Host menu, 9010 emulation *136*
mini-controller configuration *145*
emulations
ANSI/Telnet *180–183*
overview *141*
3274/Telnet *149–160*
5250/Telnet *160–176*
9010/TCP/IP *136*
Enable Card
Narrow Band, General Options menu *108*
TekLAN *104*
encryption, radio traffic *69*
Entry Line
3274 Emulation *159*
5250 Emulation *175*
environmental requirements *15*
operating relative humidity *204*
operating temperature *204*
overview *15*
storage temperature *204*
Escape Timeout, *ANSI Emulation* *181*
ESSID, IEEE 802.11 DS *71*
Ethernet
adaptor cards
9150DC *204*
9150T *204*
base station *118*
cable lengths *21*
connections *20*
ferrite, snap-on for 9150T *21, 3*
Frame Types (diagram) *84*
packet size *20, 35, 37*
status indicator LED *25*
10BaseT *20*
IP Parameters *35*
Physical Address *34*
pinouts *B-3*
100BaseT
IP Parameters *37*
Media Speed and Operating Mode *38*
Physical Address *36*
pinouts *B-3*
9150DC *20*
9150T *20*
9100 PowerBaseT *206*
Ethernet II
header *83*
types (tables) *C-1–C-14*
Ethernet II Filters *86*
external devices *19*

F

ferrite, for 9150T Ethernet cable *21, 3*
Field Overhead
3274 Emulation *160*
5250 Emulation *175*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

Filter Action Including Broadcast And Multicast Frames
Address filters *82*
filters *77, 78, 81*
broadcast storm *89*
Ethernet II *86*
LLC *87*
MAC bridge *83*
PROTOCOL FILTERS *83*
SNAP *88*
First Local Terminal Port
ANSI Telnet Protocol 185
3274 Telnet Protocol 162
5250 Telnet Protocol 177
First Terminal Listen Port
ANSI Telnet Protocol 185
RF Modem/Telnet Protocol 192
3274 Telnet Protocol 162
5250 Telnet Protocol 177
Fixed Multicast Rate, IEEE 802.11 DS *69*
flash image upgrade
bootp *53*
TFTP *53*
Forward 802.IQ Packets Only, 802.IQ *67*
Free
Window Factor *123*
Window Factor, narrow band radio *115*
Frequencies, narrow band radio *110*
frequency *See Range*
Function Key n
Function Key Mapping screens
ANSI *191*
3274 *164*
5250 *179*
Function Key Remapping, *ANSI Emulation 182*

G

General
Host Options
base stations *135*
mini-controller *148*
Parameters, narrow band radio *110*
Give Higher Priority To 802.IQ Data, 802.IQv1 *67*
Gratuitous ARP Configuration *95*
Group Parameters, RRM Group *125*

H

Handover
Retries *91*
Timeout *91*
Handover (IAPP message) *91*
header types
Ethernet II *83*
LLC *83*
SNAP *84*
helpdesk *3, A-1*
Hidden Match Character
3274 Emulation 158
5250 Emulation 174
Host
Port
ANSI Telnet Protocol 185
3274 Telnet Protocol 161
5250 Telnet Protocol 177
Print
3274 Emulation 153
5250 Emulation 168
Table *50*
Entries *51*
Entry Maximum Age *51*
Timeout, *ANSI Emulation 180*
HOST MENU
base station *134–137*
mini-controller *146*
HOSTS
base station configuration *131*
mini-controller configuration *144*

I

IAPP *9, 90*
message type, Announce *91*
message type, Handover *91*
IAPP PARAMETERS
Announce Period *91*
Delay Double *91*
Handover Retries *91*
Handover Timeout *91*
IEEE 802.11
Channel *71*
configurations *38, 62*
Data Rate *72*
Fixed Multicast Rate *69*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

IEEE 802.11 DIRECT SEQUENCE RADIO PARAMETERS *62–73*
MAC Address Of Remote AP *73*
protocol description *8*
radios
USI WaveLAN IEEE *62, 205*
USI WaveLAN IEEE radio card general parameters *68*
WEP
Enable *70*
Encryption Key 1 to 4 *70*
Hide WEP Keys *70*
Implemented on the card *69*
Tx Key *70*
802.IQv1 *64–67*
802.IQv2 *192–194*
802.11 RADIO INFORMATION *68*
Initial RTT, 802.IQv1 *66*
input voltage (power requirements) *17, 203*
installation
environmental requirements *15, 204*
LAN *19*
safety *xi*
Inter-Access Point Protocol *See IAPP*
INTERFACES
Ethernet *34–37*
IEEE 802.11 *62*
main menu *34*
narrow band *106–111*
TekLAN *102–106*
interfaces, network *204*
Internet Explorer *26, 29*
IP Address
base station *119*
Ethernet *35*
100BaseT *37*
Host Table *51*
IP address
configuring with console *29*
9150 *19*
IP Parameters
10BaseT Ethernet *35*
100BaseT Ethernet *37*
Is Host Fujitsu
3274 Emulation 151

L

LAN installations *19*
Last Active Session Key
ANSI Telnet Protocol 186
LEDs
Ethernet *25*
PC card status *25*
SLIM card *25*
TekLAN *25*
TRX7370 *25*
9150DC *25*
9150T *25*
LLC FILTERS *87*
LLC header *83*
Local
3274 Emulation 152
5250 Emulation 168
Local IP Address to Bind
ANSI Telnet Protocol 185
3274 Telnet Protocol 162
5250 Telnet Protocol 177
LSB (Least Significant Byte) *34, 36*
USI WaveLan
PC card regulatory information *207*
USI WaveLAN
IEEE 802.11 DSSS 2.4 GHz *62, 205*

M

MAC
address *68*
Bridge Configuration menus (chart) *76*
bridge parameters *75–89*
layer *8*
MAC Address *81*
Of Remote AP, IEEE 802.11 DS *73*
MAC BRIDGE PARAMETERS *75–89*
maintenance requirements *16*
mapRF
management software *40, 43*
802.IQv2 *9, 192*
Maximum
Advertisement Interval *93*
Message Segment Size *123*
Message Segment Size, narrow band radio *114*
Number Of Bindings Per Mobile Node *94*
Number Of Registered Mobile Nodes *94*
Number Of Visiting Mobile Nodes *94*
Screen Size, *ANSI Emulation 180*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

Sessions per Terminal
ANSI Telnet Protocol *185*
3274 Telnet Protocol *162*
5250 Telnet Protocol *177*
Max Priority, Wlan *105, 106*
Media Speed and Operating Mode, 100BaseT *38*
Medium Access Control *See MAC*
memory *203*
menus, accessing *31*
Message
Duration, Wlan *106*
Mode Limit *124*
Mode Limit, narrow band radio *115*
Size *119*
Microsoft Internet Explorer *26, 29*
mid-span power supply *22*
mini-controller
configuration *56, 139–194*
emulations *141*
networks *141*
Minimum Advertisement Interval *93*
MISCELLANEOUS COMMANDS *57–58*
Mobile
Agent Parameters *93*
Node Parameters *94*
MOBILE IP
CONFIGURATION *93–96*
PARAMETERS *92*
MOBILITY CONFIGURATION *90–91*
modulation levels, narrow band radio *116*
MSB (Most Significant Byte) *34, 36*
multicast storm *89*

N

Name *39*
Address filters *82*
Ethernet II filters *86*
General Host menu
base stations *136*
mini-controller *148*
Host Table *51*
LLC filters *87*
SNAP filters *88*
narrow band radio *7*
Active Channel parameter *117*
configuration *38*
overview of menus *107*
parameters *106–111*
POLLING PROTOCOL PARAMETERS *113*
Port parameter *117*
RADIO PARAMETERS *116*
specifications *204*
TRX7370 *106–111*
2 level modulation *116*
4 level modulation *116*
Negotiate Virtual Device Name with Host, *5250 Telnet Protocol* *177*
Netscape Navigator *26, 29*
network
addresses *48–51*
interfaces *204*
NETWORK INTERFACE CONFIGURATION PROTOCOL *52*
New Routing Table Entry *49*
Number of
Poll Windows *123*
Poll Windows, narrow band radio *113*
Retries *95, 123*
Retries, narrow band radio *114*

O

offices list *3, A-3*
Offline Timeout, Wlan *106*
omnidirectional antenna *17*
Onboard Ethernet Parameters, 10BaseT *34*
Onboard Fast Ethernet Parameters, 100BaseT *36*
online/offline messages *136*
Operate in Cellular Mode *128*
operating
relative humidity *204*
temperature *204*
Operating Mode, Narrow Band general options menu *108*
OUI *88*
OUI values (table) *C-15*

P

packet size, Ethernet *20, 35, 37*
Pages
3274 Emulation *154*
5250 Emulation *170*
Page Saving
ANSI Emulation *182*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

Page Saving Consider Double Byte Character, *ANSI Emulation 182*
parameters
changing configurations *29*
changing with a web browser *26*
MAC Bridge *75–89*
radio *62–73*
System Parameters *41*
Passthru
3274 Emulation 151
5250 Emulation 167
Password *39*
password, default *31*
PCMCIA cards
radio configurations *38*
specifications *204–205*
status indicator LEDs *25*
802.11 DS *62*
Percent Polling Protocol Terminal Timeout *130*
PHY layer *8*
physical
description *203*
specifications *203*
Physical Address
radio card *68*
10BaseT Ethernet *34*
100BaseT Ethernet *36*
pinouts *See port pinouts*
Poll ID *129*
POLLING PROTOCOL PARAMETERS
RRM Group *122*
TRX7370 parameters *113*
Polling Protocol Terminal Timeout *130*
Poll Interval, Redundancy *45*
Poll Timeout, Redundancy *45*
Poll Tries, Redundancy *45*
port
location *19*
pinouts
console port *B-1*
RJ-45 connector (10BaseT) *B-3*
Port, TRX7370 parameters *117*
power requirements *17, 203*
Preferred Primary, Redundancy *44*
Print Form Length
3274 Emulation 159
5250 Emulation 174
Print Line
3274 Emulation 159
5250 Emulation 174
Procedures
3274 Emulation 152
5250 Emulation 168
processor *203*
Protocol
Default Action, MAC Bridge parameters *78*
Filters Enabled, MAC Bridge parameters *78*
Type ID, 802.IQv1 *67*
protocol
adaptive polling/contention *11*
BOOTP *53*
Communication Protocol, RRM group *122*
Protocol, base station Ethernet connection *119*
radio
adaptive polling/contention *11*
cellular switching *99*
IEEE 802.11 *8*
timeplexing *99*
Wireless LAN (Wlan) *11*
PROTOCOL FILTERS *83*
Ethernet II *86*
LLC *87*
SNAP *88*
Storm Detection *89*
PROTOCOL OPTIONS
9010/Telnet *137*

R

Radio
Parameters, RRM Group *124*
Type, TekLAN *103*
radio
Automatic Radio Address Assignment Range *128*
Automatic Terminal Number Assignment Range *129*
encryption of traffic *69*
USI WaveLAN IEEE 802.11 DSSS *7, 205*
options *7*
parameters *62–73*
PCMCIA cards *7, 204*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

Percent Polling Protocol Terminal Timeout *130*
Poll ID *129*
Polling Protocol Terminal Timeout *130*
protocols (Wlan, adaptive polling, IEEE 802.11b) *7*
Range, TekLAN *104*
specifications *204*
IEEE 802.11 *204*
TekLAN, 902 MHz *205*
spread spectrum *62*
TekLAN *204*
2.4 GHz *7*
902 MHz *7, 103*
TRX7370 *7, 204*
TRX7410 *205*
TRX7431 *205*
RADIO LINK FEATURES *128–130*
RADIO PARAMETERS, TRX7370 *116*
RAM *203*
Range, TekLAN *104*
Reboot Unit, Miscellaneous Commands *58*
REDUNDANCY
Alias IP Address *46*
Arbiter 1 IP Address *46*
Arbiter 2 IP Address *46*
Backup IP Address *45*
Enabled *44*
menu *43*
Poll Interval *45*
Poll Timeout *45*
Poll Tries *45*
Preferred Primary *44*
Redundancy *46*
Refrain from sending On-line & Off-line messages, 9010/TCP/IP emulation *136*
Refresh Rate, SNTP *47*
Registration Lifetime *94*
Regulatory Domain, IEEE 802.11 DS *69*
Remote Print
3274 Emulation 154
5250 Emulation 169
Remote Txon *125*
Narrow Band radio *116*
Replay Protection *95*
Timing Slack *96*
Restart, Storm Detection *89*
Retries, Number of *114*
RF Modem *191*
ANSI Telnet Protocol Options *191*
First Terminal Listen Port *192*
RJ-45 connector pinouts (10BaseT Ethernet) *B-3*
RLE, *ANSI Emulation 183*
ROM *203*
Root Port Priority, Bridge Spanning Tree Algorithm *81*
Router IP Address *49*
ROUTE TABLE *49*
Routing Table *49*
RRM
Group Menu *126*
Groups *120*
RRM mode *117*

S

safety
approvals *205*
instructions *xi*
Security
Configuration *96*
Key (MD5) *96*
Parameter Index (SPI) *96*
Send IAC Break as an Attention Key, *3274 Telnet Protocol 162*
Send IAC Interrupt Process as a System Request *162*
serial
port
Baudrate *55*
data rate *29*
Serial I/O
3274 Emulation 159
5250 Emulation 174
SERIAL PORTS PARAMETERS *55*
status indicator LED *25*
Server Address, SNTP *47*
service information *3, A-1*
Session Cycle Key, *ANSI Telnet Protocol 186*
Set Port Priority, Bridge Spanning Tree Algorithm *81*
Shared Channel
Narrow Band, TRX7370 *113*
RRM group *122*
Size of Poll Windows *123*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

Narrow Band radio *114*
Slot n, PC card *38*
SNAP, header *84*
SNAP Filters *88*
SNMP
Enable Proxy for non-IP terminals *42*
menu *40*
Proxy throttling *42*
SNMP Communities and Trap Receivers *42*
System Parameters *41*
SNTP
Enabled *47*
menu *47*
Refresh Rate *47*
Server Address *47*
Time Zone Offset *47*
software upgrade
flash *53*
802.IQv2 *9, 192*
specifications
PCMCIA card radios *204–205*
physical *203*
9100 PowerBaseT *206*
spread spectrum radios
IEEE 802.11 (2.4 GHz) *62, 205*
TekLAN *205*
status indicators (LEDs)
9100 PowerBase T *24*
9150T and 9150DC *25*
Storm Detection *89*
Subnet Mask
10BaseT Ethernet *35*
100BaseT Ethernet *37*
Supported Features *95*
support services *3, A-1*
Sync Delay *124*
Narrow Band radio *116*
System
Info, Miscellaneous Commands *57*
Parameters, SNMP *41*

T

TCP/IP PARAMETERS *48*
DNS menu 54
Host Table menu 50
Network Interface Configuration Protocol 52
Route Table menu 49
TCP Session Request Key, *ANSI Telnet Protocol 185*
TekLAN
card *38*
overview of menus *102*
parameters *102–106*
radio parameters *103–104*
Radio Type *103*
specifications *205*
Wlan parameters *105–106*
902 MHz DS Spread Spectrum *7, 103*
TekTerm *130*
Terminal
Offline Timeout
802.IQv1 *66*
802.IQv2 *194*
Range *133*
General Host menu 148
9010 emulation *136*
mini-controller configuration *145*
Type
ANSI Telnet Protocol 184
3274 Telnet Protocol 161
5250 Telnet Protocol 176
terminal
associating with 9150 *90*
connecting a video display *26*
text conventions *4*
Threshold
ANSI Emulation 181
Storm Detection *89*
Timeout, Wlan *105*
timeplexing *99*
Time Zone Offset, SNTP *47*
Transmit Line
3274 Emulation 155
5250 Emulation 170
Trap Receivers, SNMP *42*
TRX7370 Narrow Band DSP radio *See also narrow band radio 7, 204*
TRX7370 RADIO CARD PARAMETERS *108*
TRX7410 TekLAN radio *7, 205*
TRX7431 WaveLAN radio *205*
Tuning Values, narrow band radio *111*
Type
Ethernet II filters *86*
SNAP filters *88*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

U

Use International EBCDIC
3274 Emulation 151
5250 Emulation 166
user name, default *31*
USERS *39*

V

video display terminal, connecting *26*
Virtual Device Name prefix
5250 Telnet Protocol 178
Visible Match Character
3274 Emulation 157
5250 Emulation 172
voltage, input *17, 203*

W

warranty *3*
web browser *26, 29*
website address *A-4*
WEP
Enable, IEEE 802.11 DS *70*
Encryption Key 1 to 4, IEEE 802.11 DS *70*
Hide WEP Keys, IEEE 802.11 DS *70*
Implemented on the card, IEEE 802.11 DS *69*
Tx Key, IEEE 802.11 DS *70*
Wired Network Connection, TekLAN *105*
WIRELESS DISTRIBUTION SYSTEM (WDS) CONFIGURATION, 802.11 parameters *72*
WIRELESS LAN (Wlan) PARAMETERS *105–106*
Wireless LAN (Wlan) protocol
cellular base considerations *128*
description *11*
worldwide offices *A-3*
Write Error Code, *5250 Emulation 166*

10BaseT Ethernet *20, B-3*
10BaseT Ethernet, parameters *34–35*
100BaseT Ethernet *20, B-3*
100BaseT Ethernet, parameters *36–38*
3274/Telnet *149–160*
Protocol 162
5250/Telnet *160–176*
6040 RF Modem *141, 145*
802.IQ
Auto-Startup *65*
protocol overview *9*
802.IQv1
Beacon Period *65*
CONFIGURATION Menu *64–67*
Configuration Submenu *66*
description *9, 192*
Forward 802.IQ Packets Only *67*
Give Higher Priority To 802.IQ Data *67*
Initial RTT *66*
Protocol Type ID *67*
Terminal Offline Timeout *66*
802.IQ v1/v2 Common Features Submenu *65, 193*
802.IQv2
Auto-Startup *193*
Beacon Gateway Interface *194*
Beacon Period *194*
Beacon UDP Port *194*
Configuration Submenu *194*
description *9, 192*
FEATURES Menu *192–194*
Terminal Offline Timeout *194*
802.11 *See IEEE 802.11*
9010 / TCP/IP *135*
9010/Telnet Options
Monitor Polls *137*
9010 Emulation
Options, TCP/IP *136*
Parameters *149*
902 MHz radio *205*
9100 PowerBase T
functions *24*
status indicators *24*
9100 PowerBaseT *22, 197*
console port pinout *B-4*
network interface *206*
physical description *206*
power requirements *206*
specifications *206*
9150DC
Ethernet connections *20*
LEDs *25*
processor and memory *203*
9150T
Ethernet connections *20*

BOLDFACE indicates a menu or sub-menu name; **Boldface** indicates a parameter name.

LEDs *25*
processor and memory *203*
9400 Network Controller, cellular mode
105, *128*