

# 6224 Session Manager Reference Guide

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E-SW-6224RG-F-ARC

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### **FCC Information:**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Caution: Changes or modifications to this device not expressly approved by LXE Inc., could void the user's authority to operate the equipment.

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### **Industry Canada:**

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouiller du Canada. Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe A prescrites dans le Règlement sur le brouillage radioélectrique édictés par le ministère des Communications du Canada.

---

### **EMC Directive:**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



## Lithium Battery Safety Statement



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**Caution:**

Lithium battery inside. Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by battery manufacturer. (US)

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**Attention:**

Contient une pile de lithium. Risque d'explosion dans le cas où la pile ne serait pas correctement remplacée. Remplacer uniquement avec une pile semblable ou équivalente au type de pile recommandé par le fabricant. (FR)

---

**Forsigtig:**

Indeholder lithiumbatterier. Risiko for eksplosion, hvis batteriet udskiftes forkert. Må kun udskiftes med samme eller tilsvarende type, som anbefalet af fabrikanten. (DK)

---

**Varoitus:**

Tämä tuote käyttää laservaloa. Skannerissa on jokin seuraavista tarroista. Lue Huomio-kohta. (FI)

---

**Vorsicht:**

Enthält Lithium-Batterie. Bei unsachgemäßem Ersatz besteht Explosionsgefahr. Nur durch gleichen oder vom Hersteller empfohlenen Typ ersetzen. (DE)

---

**Attenzione:**

Batteria al litio. Pericolo di esplosione qualora la batteria venga sostituita in maniera scorretta. Sostituire solo con lo stesso tipo o equivalente consigliato per il fabbricante. (IT)

---

**Atenção:**

Contém pilha de lítio. Há perigo de explosão no caso de uma substituição incorreta. Substitua somente pelo mesmo tipo, ou equivalente, recomendado pelo fabricante. (PT)

---

**Varning:**

Innehåller litiumbatteri. Fara för explosion om batteriet är felaktigt placerat eller av fel typ. Använd endast samma eller motsvarande typ batterier rekommenderade av tillverkaren. (SE)

---

**Advarsel:**

Innmontert Lithium batteri. Eksplosjonsfare ved feil montering av batteri. Benytt kun batteri anbefalt av produsent. (NO)

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**Cuidado:**

Pila de litio adentro. Peligro de explosión si la pila se reemplaza incorrectamente. Reemplace solamente con el mismo tipo o equivalente recomendado por el fabricante. (ES)

---

**Oppassen:**

Bevat Lithium-batterij. Incorrecte plaatsing van batterij kan leiden tot explosiegevaar. Alleen vervangen door hetzelfde of door fabrikant aanbevolen gelijkwaardig type. (NL)



## Lithium Battery Safety Statement



<p><b>Προσοχή:</b></p> <p>Υπάρχει μπαταρία από λίθιο εσωτερικά.</p> <p>Υπάρχει κίνδυνος έκρηξης εάν η μπαταρία αντικατασταθεί με λανθασμένο τρόπο.</p> <p>Αντικαταστήστε μόνο με τον ίδιο ή ισοδύναμο τύπο που συνιστάται από τον κατασκευαστή.</p> <p>(GR)</p>	<p><b>주의:</b></p> <p>리튬 배터리 내부. 배터리가 잘못 설치되었을 경우 폭발의 위험이 있습니다. 동일한 배터리, 또는 배터리 제조업체가 권장하는 배터리로 교체하십시오.</p> <p>(KR)</p>
<p><b>注意:</b></p> <p>リチウム電池が入っています。間違った種類の電池を使用すると、破裂する恐れがあります。同じ電池、または電池製造元が推奨する同等の電池を使用してください。</p> <p>(JP)</p>	<p><b>小心:</b></p> <p>内装锂电池。如电池更换不当，则有发生爆炸的危险。只能用电池制造商推荐的相同或同等电池进行更换。</p> <p>(CN)</p>
<p><b>Dikkat:</b></p> <p>İçinde lityum bataryası bulunur.</p> <p>Bataryanın yanlış değiştirilmesi patlama tehlikesi yaratır.</p> <p>Aynısıyla veya üreticinin önerdiği eşdeğer tipte değiştirin.</p> <p>(TR)</p>	

Legend:

Chinese	CN	Italian	IT
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English	US	Norwegian	NO
Finnish	FI	Portuguese	PT
French	FR	Spanish	ES
German	DE	Swedish	SE
Greek	GR	Turkish	TR

## Revision Notice

### 6224 Session Manager Reference Guide Upgrades From Revision C to Revision F

Rev	Section	Explanation
C	Regulatory Notices	Replace Lithium warning statement with Lithium Battery Safety Sheet.
C	Chapter 1 – Introduction	Replace Contacting LXE with updated version. Add new LXE computer reference guides to the Accessories listing. Remove unused manuals. Remove Figure 1-1 and 1-2 "Flow Charts".
C	Entire Manual	Separate non-generic 6224 information into two sections – one section for 6224 devices in an ANSI system and another for a 6224 device in an IBM system. Add information/explanation relating to LDS 6224. Remove Index section.
D	Chapter 1 - Introduction	Remove "Contacting LXE" section. The information is available on the LXE Manuals CD, in the file titled "Contacting LXE" and on the LXE website <a href="http://www.lxe.com">www.lxe.com</a> . Add LXE order number for the LXE Manuals CD to the section titled "Manuals." Update the manuals listing.
D	Chapter 4 – Opening a Remote Session	Add corrections to section titled "TELNET Commands": Remove Figure 4-1 "TELNET Commands - Help Screen." Add sentence under Display: "Please see "Set" and "Toggle" commands later in this section." Remove reference to FTP manual "User's Guide – OnNet Kernel for Windows 2.0 and PC/TCP Network Software Kernel for DOS 4.0".
D	Entire Manual	Separate non-generic 6224 information into sections – IBM, ANSI and LDS.
E	Entire Manual	Update page footer to include new LXE DocID number and remove revision letter. Format document for on-line viewing. Remove DocID numbers from manual listings.
E	Chapter 1 – Introduction	Add a note – The lithium backup battery in the 6224 should be tested periodically and replaced when necessary.
F	Entire Manual	Archived. 6224 EOL May 31, 2004. Updated document structure to 2005 guidelines. Added new LXE logo. Updated Regulatory Notices. Added "Getting Help".

March 2005



## Table of Contents

<b>CHAPTER 1 INTRODUCTION</b>	<b>1</b>
<b>System Overview</b>	<b>1</b>
Session Managers	1
<b>Features</b>	<b>2</b>
ANSI Only	2
<b>In This Guide</b>	<b>3</b>
Document Conventions	3
<b>Quick Start</b>	<b>4</b>
<b>Synopsis of Setup Procedure</b>	<b>5</b>
<b>Sequence of Events</b>	<b>7</b>
With Telnet Security	7
<b>Getting Help</b>	<b>8</b>
Manuals	8
Accessories	8
<b>CHAPTER 2 HARDWARE CONFIGURATION</b>	<b>9</b>
<b>Introduction</b>	<b>9</b>
<b>Front Panel</b>	<b>10</b>
<b>Back Panel</b>	<b>11</b>
<b>Cable Connections</b>	<b>12</b>
Connect 6224 to PC	12
Connect Ethernet Cable	13
Guidelines	13
Use the LXE Facility Analysis Report	13
Thinnet	14
Attachment Unit Interface (AUI)	14
Twisted Pair Ethernet (TPE)	14
Connect Power Cable	15
<b>CHAPTER 3 SOFTWARE CONFIGURATION</b>	<b>17</b>
<b>Introduction</b>	<b>17</b>
<b>Initial Setup</b>	<b>17</b>
PC Comm Port Setup	18
Boot Parameters	18

Boot Text .....	19
Details of the Boot Text .....	20
Initial 6224 Setup Procedure .....	22
Power Cycle the 6224 .....	22
Stop Auto-boot Process .....	22
Begin Change/Edit Process .....	23
inet on ethernet (IP Address and Subnet Mask) .....	24
gateway inet (Gateway / Router IP Address) .....	25
Flags .....	25
Exit Change/Edit Procedure .....	26
Local (Dumb Terminal) Configuration Method .....	27
Remote Telnet Configuration Method .....	27
<b>Commands and Functions .....</b>	<b>28</b>
Quick List .....	28
Commands .....	30
bootParms .....	30
closeAllTerms .....	30
closeTerm .....	31
clrAllAlogin .....	31
clrAlogin .....	32
clrHostNames .....	32
ldshelp .....	32
removeAllTerms .....	33
removeTerm .....	33
saveSetup .....	34
setAlogin .....	34
setAutologinTimeout .....	36
setDefaultHost .....	36
setDefaultSess .....	37
setDefaultWdog .....	37
setHostIP .....	38
setHostMode .....	38
setHostName .....	39
setHostPort .....	39
setHostTBR .....	40
setMultSess .....	40
setSessmgrPort .....	41
setTermHost .....	41
setTermPort .....	42
setTermSess .....	42
setTermWdog .....	43
setWdogDelay .....	43
setWdogEnable .....	44
setWdogInterval .....	44
setWdogRetries .....	44
showHosts .....	44



showHostSetup .....	45
showSetup .....	45
showTerm .....	45
showTermByIP .....	46
showTermByTID .....	46
showUsers .....	46
smHelp .....	47
IBM Autologin .....	48
LDS Autologin .....	48
<b>Telnet Security .....</b>	<b>49</b>
Quick List .....	49
addLoginUser( ) .....	49
loginUserDelete .....	50
EnableLoginSecurity .....	50
DisableLoginSecurity .....	50
Script Sending Tool – ANSI Only .....	51

---

## **CHAPTER 4 OPENING A REMOTE SESSION 53**

---

<b>Introduction .....</b>	<b>53</b>
<b>The Host Connection .....</b>	<b>53</b>
Unsuccessful Host Connection .....	54
Using 2.4GHz Radio .....	54
<b>Telnet Commands .....</b>	<b>55</b>
Abbreviated Commands .....	55
Close .....	55
Display .....	55
Mode .....	56
Open .....	56
Send .....	56
Set .....	57
Status .....	57
Toggle .....	58
? .....	58

---

## **CHAPTER 5 TECHNICAL SPECIFICATIONS 59**

---

<b>Session Manager .....</b>	<b>59</b>
Thinnet Connector .....	59
RJ45 (10BaseT) Connector .....	60
Thick Ethernet (10Base5) AUI Pinout .....	61
Null Modem Cable Pinout .....	62

---

## **INDEX 5-1**

---

---

**Illustrations**

Figure 2-1 Indicators on Front Panel of 6224 .....	10
Figure 2-2 6224 Connectors on Back of 6224 .....	11
Figure 2-3 Connect using Null Modem Cable .....	12
Figure 2-4 Thinnet Connector.....	14
Figure 2-5 AUI Connector .....	14
Figure 2-6 TPE Connector .....	14
Figure 2-7 Connect Power Cable to 6224.....	15
Figure 5-1 Ethernet ThinNet 10Base2 Connector.....	59
Figure 5-2 Ethernet RJ45 Connector Pin Configuration.....	60
Figure 5-3 15-pin Thick Ethernet (10Base5) AUI Connector .....	61
Figure 5-4 Null Modem Cable Pinout.....	62

# Chapter 1 Introduction

## System Overview

This manual is designed to familiarize the user with the LXE 6224 Session Manager device and the software resident in the 6224 – the commands that are specific to a 6224 running in an ANSI or LDS system are presented separately from those commands used with a 6224 running in an IBM system. All other information, if not noted as belonging to one system or the other, is common to all three host systems.

The LXE 6224 Session Manager provides host session management for the 2.4 Giga Hertz (2.4 GHz) RF data collection systems. It can be programmed to either maintain or sever a session between single or multiple hosts and LXE DOS computers (PCs or RF PCs) that use 2.4GHz Spread Spectrum radio transceivers for wireless communication.

LXE offers three separate 6224 host configurations: one for use with an ANSI, LDS or IBM host.

The differences between the systems are:

- Autologin is carried out from a mobile or desktop computer in the IBM and LDS versions; it is carried out in the 6224 Session Manager for ANSI applications.
- The ANSI or LDS 6224 uses secondary terminal IDs, the IBM version 6224 Session Manager uses the terminal's IP address.

The 6224 Session Manager parameters can be setup using:

- A local method (required for initial setups) -- a dumb terminal, which is a personal computer (PC) running a terminal emulation program e.g. Procomm or HyperTerminal, connected to the 6224 via null modem cable (or equivalent).
- A remote method -- after a valid IP address is assigned to the 6224, most setup commands can be entered using Telnet and the 6224 Session Manager shell.

---

## Session Managers

Session Managers -- ANSI and IBM are session oriented – LDS is not.

Session oriented protocols are usually ANSI/Telnet and SNA (IBM). An LDS session only lasts for as long as it takes a message to originate from a remote terminal, pass to the host, and receive the host's response. While LDS RF PCs communicate with the LDS host using a common socket between the controller and the host, other RF PCs (e.g. ANSI, IBM) communicate with their hosts using individual socket connections with their hosts through the 6224.

The purpose of the ANSI/IBM session manager is to maintain these individual socket connections even if the RF PC to session manager's connection is broken to the host for all RF PCs. These individual socket connections are broken only on command. Since LDS uses a common socket connection for all RF PCs, the host to controller socket connection is normally never broken, no matter the state of the RF PC's connection with the controller.

## Features

*Note: The 6224 Session Manager does not have an antenna. It is connected to the RF network (i.e. access points) by Ethernet cables.*

The main features of the LXE 6224 Session Manager product are:

- **ANSI/IBM only -- Establishes initial sessions between individual hosts and/or a single default host and individual RF PCs (radio frequency personal computers) and/or a group of RF PCs.**

The session manager can be set up to initially establish a session between individual hosts and/or a single default host and individual RF PCs and/or a group of terminals. If desired and programmed accordingly, a particular PC-host session will be maintained even if RF contact with the PC is interrupted. Note that for LDS 6224, the 6224 to host link, once made, is rarely severed.

- **ANSI/IBM only -- Maintains current session during PC absence and reconnection.**

The session manager can maintain the current session while the RF PC is absent and reconnects the returning PC's connection to the maintained host session. If the 6224 is set up to maintain a session, the RF PC resumes host communication when RF contact is reestablished as though it had not been interrupted. The 6224 Session Manager is capable of establishing and maintaining up to 128 PC-host connections. 128 sockets are available for up to 128 RF PC/host connections. Note that in LDS 6224 the link to the host always remains even when the RF PC is absent. The presence of RF PCs is not required for the establishment of the LDS 6224 to host link.

- **Remote Telnet access security feature.**

Also included is a security feature which can be programmed to restrict remote Telnet access to the 6224 setup parameters. This feature allows remote access to the setup routines only to privileged individuals with the correct User Name and Password.

---

## ANSI Only

- **Login script utility.**

In addition to managing sessions, utilities are included for programming Login scripts for automatically logging-in the RF PC(s) to the host(s). The scripts can be programmed to connect a group of PCs to one single host or individual PCs to their own individual host or a mixture of the choices.

## In This Guide

The purpose of this guide is to provide information and procedures on installing and using the 6224 Session Manager.

**Chapter 1 “Introduction”** describes the functionality of the LXE 6224 Session Manager system and includes the quick-start instructions in “Getting Started.” Also included are manuals and accessories for the 6224, available from LXE.

**Chapter 2 “Hardware Configuration”** contains the 6224 hardware description and installation instructions for Ethernet and power cabling requirements.

**Chapter 3 “Software Configuration”** describes the Session Manager software and commands and includes instructions on using the software.



**Chapter 4 “Opening a Remote Session”** describes the ANSI, LDS Telnet login and the IBM login process. It also includes the list of, and explains, login commands.

**Chapter 5 “Technical Specifications”** provides physical dimensions and performance information of the 6224 Session Manager.

---

## Document Conventions

This Reference Guide uses the following document conventions:

ALL CAPS	All caps are used to represent disk directories, file names, and application names.
“Quotes”	Indicates the title of a chapter or a section, subject, topic, element or point within a chapter, for example, “Document Conventions”.
[Brackets]	Indicates a key on the keyboard, for example, [Ctrl].
	Indicates a reference to another book, chapter or section.
<i>Note:</i>	Keyword that indicates immediately relevant information.
<b>Warning:</b> 	Keyword and icon that indicates a warning message to follow.
<b>Attention:</b>	Keyword that indicates vital or pivotal information to follow.

---

## Quick Start

These instructions are abbreviated and give a general outline of the steps to be performed when setting up a new 6224. Detailed procedures are provided in Chapter 3 “Software Configuration.”

*Note: Program a valid IP Address in the 6224 **before** connecting it to the network.*

Connect a “dumb terminal” (a personal computer running a terminal emulation program e.g. Procomm or HyperLink) to the Console port.

1. Connect the power cord to a reliable electric power source and then to the 6224 power outlet.
2. Turn the 6224 on. Press the Enter key on the PC before the autoboot countdown reaches zero.
3. Assign an IP address to the 6224. Assign, if needed, subnet mask, gateway address and flag values. Press [Ctrl] [x] to continue the autoboot process.
4. When autoboot process is complete, connect the 6224 to the network. Continue setting or viewing programming parameters.
5. Save the setup information.
6. Disconnect the PC from the 6224 when the 6224 Session Manager programming is complete.

*Note: The lithium backup battery in the 6224 should be tested periodically and replaced when necessary.*

### Remember:

In order to communicate with the LXE 6224, the LXE RF Computers must have access to the Ethernet network. The LXE Access Point provides that access.

Currently LXE offers several families of access points; the 6400, 6500 and 6700 series. Your reference is directed to the specific manual(s) for the family of access points used in your RF Data Collection System. The manual for the 6500 Access Point is “6520 Access Point Reference Guide.” Contact your LXE representative for availability of the 6400 Access Point manuals and those delivered with the Access Point.

*Note: Manuals are included on the LXE Manuals CD (9000A426LXEMANUALS) and on the LXE website, [www.lxe.com](http://www.lxe.com).*

## Synopsis of Setup Procedure

*Note: When working with a 6224 in an ANSI or LDS system, the on-screen text displayed for each terminal's address is "secondary ID". When working with a 6224 in an IBM system, the on-screen text displayed for each terminal's address is "IP address".*



See Chapter 2 “Hardware Configuration” section titled “Connect 6224 to PC” for instructions on local PC connection, via null modem cable (or equivalent), to a 6224.

### Performed at LXE Prompt:

1. The setup is begun by assigning and programming a unique IP address for the 6224 session manager and the inputting of a subnet mask, and gateway address if required. The flags value can also be checked and set, if necessary.

*Note: If this is a "first time" setup of the 6224, the IP address, gateway, and net mask must be entered at the LXE prompt using a serial terminal connected to the console port of the 6224. Once the 6224 has been set up for a given network and can communicate over the network, it can be remotely administered using Telnet.*

### Performed at 6224 Prompt:

A default “listen” port number of four thousand (4000) is assigned by the firmware but, it can be changed (either dumb terminal or Telnet) if required. The listen port is the port that the 6224 “listens” on for incoming traffic from the PCs. If you assign a different number to the listen port, do not select the number of a “well known” port (e.g., 23).

*Note: If the system is ANSI or IBM, continue to the following section titled "ANSI and IBM" – if LDS, continue to the following section titled "LDS Only". The following commands are conducted at the 6224 prompt.*

### ANSI and IBM:

2. Program the default host IP address and port number. The default host is the host that a PC will be connected to if an individual (different) host has not been pre-programmed for that particular PC(s).
3. At this point, you will program whether ANSI or IBM sessions should remain connected if RF communication has been interrupted. When you elect to retain connections, if a host connection already exists for a PC that is attempting to reconnect, that PC will be reconnected to the **existing** host connection. A new connection is not established if the 6224 currently has a host connection active for a given RF PC ID.

When you elect to not retain a connection, a currently active host connection for that RF PC is “closed” any time a given PC attempts to connect. This action forces a new connection to be established each time the RF PC attempts to connect.

4. You might desire to have certain PCs connect to a host other than the “default” host (ANSI and IBM). You must add the identity of PC's to the individual terminal table indicating the desired host, IP address and port. You must indicate to the 6224 the addresses of those PCs plus the IP addresses and port numbers of the desired host for those PCs.
5. In step 3. above, you indicated whether sessions should remain connected if RF

communication is interrupted. In this portion of the setup you can indicate the terminal address of certain PCs that you wish to handle differently.

Each entry in the individual terminal table can specify whether the terminal shall remain connected or not.

6. **ANSI Only:** In this step, you will compose the individual auto login scripts for each of the RF PCs. These scripts must contain the “prompts” that the host sends for each PC and the “responses” that the 6224 must return to the host on behalf of the PC. A set of login scripts must be programmed for each RF PC.
7. Set the watchdog parameters if desired.

**LDS Only:**

2. Set the 6224 host connection mode. The 6224 LDS allows the choice of having the host act as the client and initiating the connection, or having the 6224 LDS act as the client and initiating the connection.
3. If the 6224 is acting as client (i.e. the 6224 will contact the host), the host's IP address must be set.
4. Set the host port number (if a value other than the default 5000 is wanted).
5. Set the RF PC listen port (if a value other than the default 4000 is wanted).
6. Set the watchdog parameters.



## Sequence of Events

### ANSI, IBM, LDS:

The PC session management process is started when the PC “opens” a session with the 6224 Session Manager using its IP address and its “listen port”.

### ANSI and IBM Only:

The 6224 checks for an existing host connection for this PC. If session management is enabled and a connection to the host already exists, the incoming connection is joined to the existing host connection. If session management is disabled or a host connection does not already exist for the PC’s address, the 6224 opens a session with the host and routes traffic from the incoming connection to this host socket. Sessions may be taken down at the host's request or on command at the 6224 console. In some cases, a session may also be terminated from the PC.

### LDS Only:

The 6224's connection to the host is independent of the state of the RF PC connection.

---

## With Telnet Security

When the Telnet Security feature is properly configured and enabled, a Telnet session is performed as follows:

1. From a Telnet capable computer, the user issues the “open” command to the IP address of the 6224 (port 23).
2. The 6224 responds with a prompt requesting the entry of a login user name. At this point, the operator must enter the correct pre-programmed user name.
3. The 6224 then prompts for entry of the pre-programmed password. The operator must enter the correct password.
4. If either the user name or password is incorrect, access is denied.
5. When the correct user name and password have been entered, the 6224 responds with the operating system shell prompt:

->

With the shell prompt available, most of the setup parameters of the 6224 can be observed and/or modified.

*Note: The IP address of the 6224, subnet mask, gateway address or the flags value cannot be viewed or modified via Telnet. Those four parameters can only be accessed by the “local” configuration method where a PC is directly connected to the Console connector at the rear panel of the 6224.*

6. To break (close) the Telnet connection with the 6224, type the following command at the operating system shell prompt:

->logout

## Getting Help

All LXE manuals are now available on one CD and they can also be viewed/downloaded from the LXE ServicePass website. Contact your LXE representative to obtain the LXE Manuals CD.

You can also get help from LXE by calling the telephone numbers listed on the LXE Manuals CD, in the file titled "Contacting LXE". This information is also available on the LXE website's ServicePass page.

Explanations of terms and acronyms used in this manual are located in the file titled "LXE Technical Glossary" on the LXE Manuals CD.

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## Manuals

*Note: The manuals are located on the LXE Manuals CD and on the LXE ServicePass website.*

1380 Reference Guide (DOS Computer)  
 1390 Reference Guide (DOS Computer)  
 2325 Reference Guide (DOS Computer)  
 6200 Network Management Guide (Legacy)  
 ANSI Plus Programmer's Guide (TE Software)  
 LDS Plus Programmer's Guide (TE Software)  
 MX1 Reference Guide (DOS Computer)  
 MX2 Reference Guide (DOS Computer)  
 MX3 Reference Guide (DOS Computer)  
 TN3270 Terminal Reference Guide (TE Software)  
 TN5250 Terminal Reference Guide (TE Software)  
 VX1 Reference Guide (DOS Computer)  
 VX2 Reference Guide (DOS Computer)  
 VX4 Reference Guide (DOS Computer)

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## Accessories

Cable, Null Modem DA-9F to DB-25, 6 ft	9000A052CBL6D9D25
PCMCIA SRAM Card, 1MB	9000A101PCC1SRAM
Software, 6224 Session Manager	Contact LXE

## Chapter 2 Hardware Configuration

### Introduction

Place the 6224 Session Manager (and the personal computer (PC) that will function as the “dumb terminal”) in a location where a steady, reliable electric power source is available. A functional Ethernet network is required.

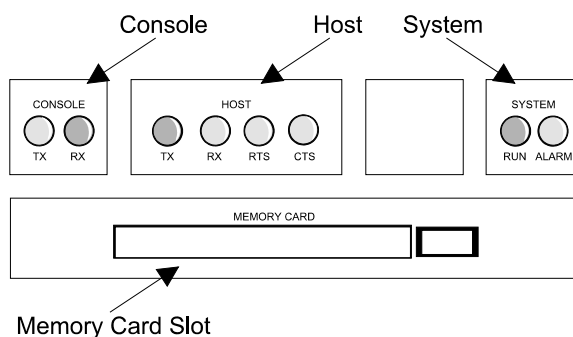
Materials needed for hardware configuration:

- 6224 to PC -- null modem cable or equivalent
- Ethernet cables and connectors



<b>Warning:</b>	The 6224 must be connected to earth ground. (US)
<b>Mise en garde:</b>	Cet appareil doit être relié à la terre. (FR)
<b>Warnung:</b>	Diese Gerät muß geerdet sein. (DE)
<b>Attenzione:</b>	Questa apparecchiatura deve essere collegata a terra. (IT)
<b>Aviso:</b>	Este equipamento deve ter uma ligação à terra. (PT)
<b>Advertencia:</b>	Este equipo se debe conectar a tierra física. (ES)
<b>Varning:</b>	Denna utrustning måste jordas. (SE)

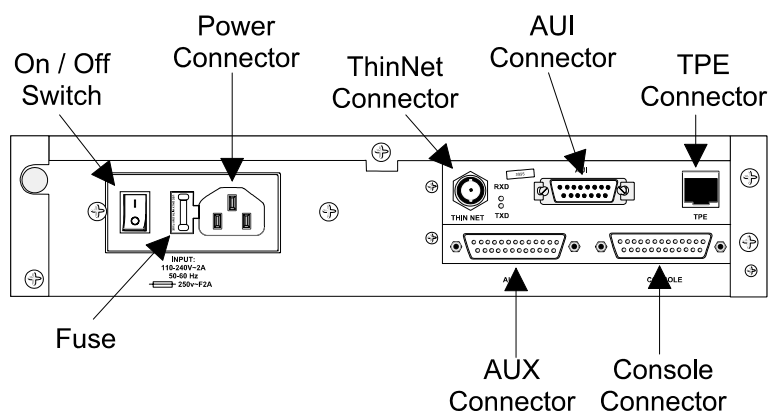
## Front Panel



**Figure 2-1 Indicators on Front Panel of 6224**

MEMORY CARD	The MEMORY CARD slot accepts a Personal Computer Memory Card Industrial Association (PCMCIA) memory card to download software into Flash RAM.
CONSOLE TX	The CONSOLE TX LED lights when the 6224 transmits data to the PC being used for configuration (set-up).
CONSOLE RX	The CONSOLE RX LED lights when the 6224 receives data from the PC being used for configuration (set-up)..
HOST TX	The HOST TX LED has no function.
HOST RX	The HOST RX LED has no function.
HOST RTS	The HOST RTS LED has no function.
HOST CTS	The HOST CTS LED has no function.
SYSTEM RUN	The SYSTEM RUN LED blinks on and off when the 6224 is operating.
SYSTEM ALARM	The SYSTEM ALARM LED lights when an alarm (fault) condition is detected.

## Back Panel

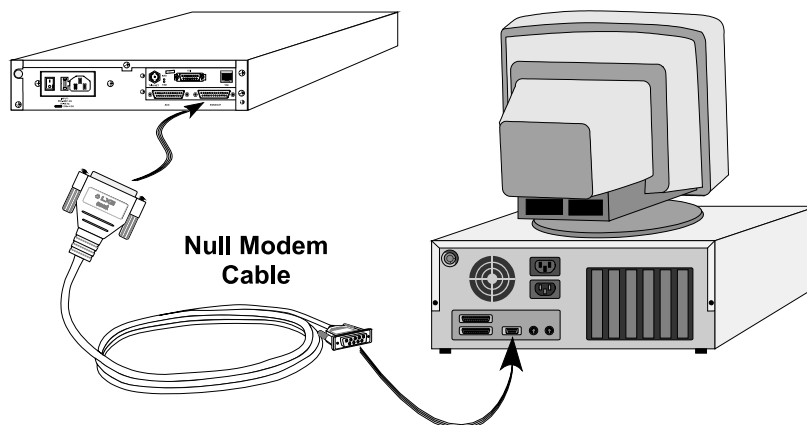


**Figure 2-2 6224 Connectors on Back of 6224**

Power Panel	Connects an AC power source at the Power Connector and switches power to the 6224 using the On/Off Switch.
Ethernet Ports	The Ethernet ports (THINNET, AUI, and TPE) require different types of cable to connect the 6224 to the Ethernet:
THINNET	The THINNET port connects to Thinnet cable, as defined by the IEEE 802.3 10Base2 specification. Thinnet is RG 58A/U coaxial cable.
AUI	The Attachment Unit Interface (AUI) port connects to a transceiver that connects to the IEEE 802.3 standard 10Base5 backbone coaxial cable, also known as thick Ethernet.
TPE	The Twisted Pair Ethernet (TPE) port is a RJ-45 modular telephone connector that connects to IEEE 802.3 standard 10BaseT twisted pair cable.
RXD	The RXD (Receive Data) LED lights when the 6224 series device receives data from the Ethernet.
TXD	The TXD (Transmit Data) LED lights when the 6224 series device transmits data to the Ethernet.
AUX Port	Has no function.
Console Port	Connects the 6224 to a dumb terminal or standalone computer for configuration (set-up).

## Cable Connections

### Connect 6224 to PC



**Figure 2-3 Connect using Null Modem Cable**

#### How To

*Note: Use a reliable AC power source while programming the 6224.*

1. Place the power switches in the OFF (0) position on the 6224 and the “dumb terminal” (a personal computer running a terminal emulation program e.g. Procomm) before attaching the null modem cable.
2. Connect the 9-pin end of the null modem cable to the 9 pin serial port of the PC and fasten securely.
3. Connect the 25-pin end of the null modem cable to the 25 pin Console port of the 6224 and fasten securely.
4. Connect the power cable to the 6224 and plug into a grounded, electrical supply receptacle.
5. Connect a power cable to the PC and a grounded, electrical supply receptacle.
6. Turn the 6224, PC and PC’s monitor on.
7. You are now ready to begin programming the 6224.

---

## Connect Ethernet Cable

Place the 6224 power switch in the OFF position (0) before connecting Ethernet cables to the 6224.

*Note: Only one type of Ethernet connection is used at a time -- either Thinnet, AUI or UTP.*

---

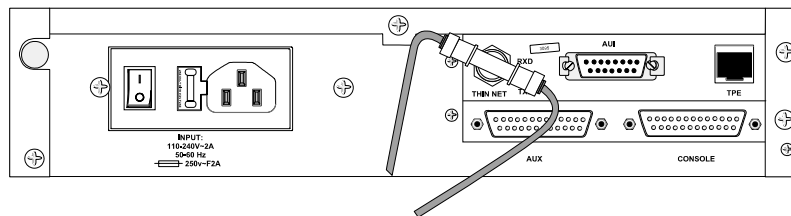
### Guidelines

- Check your local building/electrical code; it may require that the cable be enclosed in metal conduit.
- Install junction boxes at transceiver locations if the cable is installed in conduit.
- Support the cable at least every 3 feet by cable clamps or similar means if the cable is not to be enclosed in conduit.
- Do not route the cable in close proximity (for example, within a 4 ft. radius) to any high voltage or high current-carrying electrical lines.
- Route the cable so that it is out of sight or reach of curious personnel.
- Do not exceed 30 T-connector taps on a Thinnet (10Base2) line. Keep a minimum distance between taps of 0.5 meters.
- Do not exceed 100 transceiver taps on a thick Ethernet (10Base5) line.
- Keep a distance between taps of a multiple of 2.5 meters.
- Do not use an AUI cable longer than 50 meters for (10Base5) Ethernet.

### Use the LXE Facility Analysis Report

If an LXE Facility Analysis report is available, it will indicate the recommended cable type, routing path, and cable length. Ensure that your equipment is Ethernet LAN compliant.

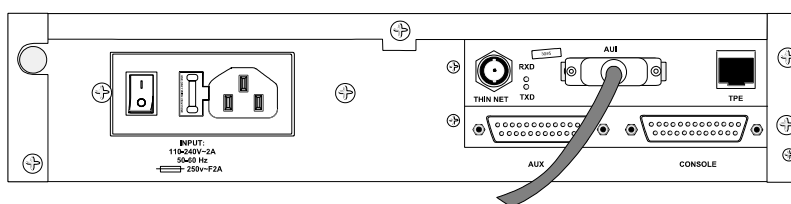
## Thinnet



**Figure 2-4 Thinnet Connector**

Both the connector on the cable and the connector on the 6224 are keyed and cannot be connected incorrectly. Push in and twist the housing on the Ethernet connection clockwise until tight.

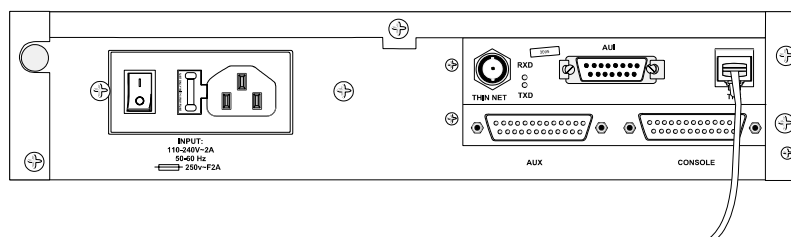
## Attachment Unit Interface (AUI)



**Figure 2-5 AUI Connector**

Seat the 15-pin AUI Ethernet cable connection on the pins of the 15-pin AUI connector on the 6224. Do not bend the pins. Push the slide-lock sideways to lock the connection when the face of the AUI Ethernet connector is flush with the face of the AUI connector on the 6224.

## Twisted Pair Ethernet (TPE)

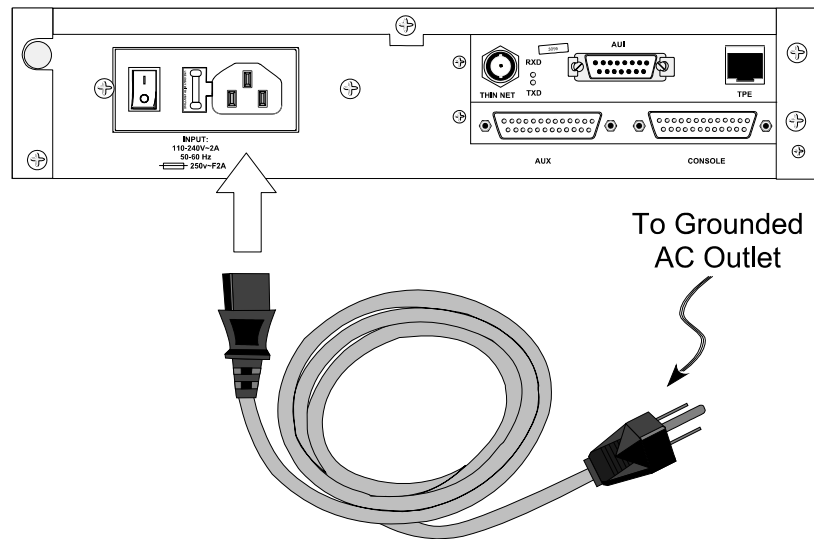


**Figure 2-6 TPE Connector**

Gently push the TPE Ethernet RJ-45 connector into the TPE connector on the 6224 until the tab clicks into place and the connection is secure.



## Connect Power Cable



**Figure 2-7 Connect Power Cable to 6224**

### *How To*

1. Turn the 6224 off (0).
2. Plug the three prong end of the cordset, provided by LXE, into an appropriate, grounded, electrical supply receptacle.
3. Connect the female end of the cordset to the power connector on the 6224 and push firmly to fasten securely.
4. Turn the 6224 on (1).
5. The System Run LED begins to blink indicating that the 6224 is receiving electrical power.



## Chapter 3 Software Configuration

### Introduction

There are two different configuration methods available: local and remote. A complete setup can be performed using the local method. Most (not all) of the setup parameters can be configured using the remote (Telnet) method.

The local method requires the use of a “dumb terminal” (a personal computer running a terminal emulation program e.g. Procomm) physically connected to the 6224 console connector. The remote method requires the use of a Telnet capable PC connected to the wired network.

You must use the local method when changing the 6224 IP address, subnet mask, gateway address and flags as these values **cannot** be set remotely using a Telnet connection unless the 6224 can communicate over the user's network.

*Note: When working with a 6224 in an ANSI or LDS system, the on-screen text displayed for each terminal's network connection is "secondary ID". When working with a 6224 in an IBM system, the on-screen text displayed for each terminal's network connection is "IP address".*

### Initial Setup



See Chapter 2 “Hardware Configuration” section titled “Connect 6224 to PC” for instructions on local PC connection, via null modem cable (or equivalent), to a 6224.

The initial setup of the 6224 entails the setting of certain “boot” parameters. The boot parameters can only be programmed using the “local” configuration method. These boot parameters are:

- IP address of the 6224 session manager.
- Subnet mask.
- Gateway (router) address.
- “Flags” value.

The remainder of the setup parameters can be programmed using either the local or remote method.

---

## PC Comm Port Setup

New or initial setup 6224 hardware does not contain a **valid IP address**. Thus, the initial setup must be performed using the local method via connection to a PC running a terminal emulation program (“dumb terminal”).

During the initial setup the IP address, subnet mask, and gateway address can be set. Also, the flags value can be viewed and adjusted if necessary.

The “dumb terminal” function can be provided by a PC running a terminal emulation program like Procomm, or Hilgrave’s Hyper Terminal (included with Windows 95) or any similar program.

The terminal emulation program should be setup with:

```
9600 baud
8 data bits
No parity
1 stop bit
```

Use a null modem cable (or equivalent) to connect the Console connector of the 6224 to the Com port of the PC that is running the terminal emulation program.

---

## Boot Parameters

The following table reflects the boot default values used when the NVRAM has been cleared.

Parameter	Default Value
boot device	nce
processor number	0
host name	nc
file name	flash
inet on ethernet (e)	0.0.0.0
inet on backplane (b)	
host inet (h)	
gateway inet (g)	
user (u)	vxworks
ftp password (pw) (blank = use rsh)	lxe302
flags (f)	0x840
target name (tn)	
startup script (s)	
other (o)	

## Boot Text

During boot, the 6224 sends data regarding the boot process out through its console port. The boot data can be monitored on a dumb terminal that is connected to the 6224 console connector. Following is an example of the text that a 6224 outputs during boot. An explanation of each line of text is presented on the following pages.

Line #	Actual boot text for ANSI 6224
1	~~~+++~~~
2	Detected 1MB of Flash memory.
3	HARDWARE CONFIGURATION
4	CPU: Motorola MC68302
5	Memory Size (hexadecimal): 0x80000.
6	Made on Tue Nov 4 13:22:11 EST 1997.
7	Starting auto-boot process for hardware and network components.
8	Press the Enter key before the countdown reaches 0 to stop auto-boot...
9	3 - 2 - 1 - 0
10	auto-booting...
11	Executing application starting at address 0x840000...
12	HARDWARE CONFIGURATION
13	CPU: Motorola MC68302
14	Memory Size (hexadecimal): 0x100000.
15	Made on NO DATE STAMP.
16	Attaching ethernet network interface ...
17	passed
18	passed
19	NICE receive and transmit loopback tests passed
20	done.
21	Installing network module
22	Installing Telnet module
23	Installing ftpserver module
24	Installing monitoring utility netShow
25	Delaying 3 seconds to allow the route table to be filled.
26	Press any key before countdown reaches 0 to stop application auto-boot...
27	3 - 2 - 1 - 0
28	Application Software started: Session Manager
29	Version: No version defined
30	001:Host Module: SessMgr -- supports 128 terminals -
31	002:ALL PRINTFs disabled (including PM_ABNORM)
32	003: smdebug: Disable ALL PRINTFs
33	004: smdebug 1: Enable debug PRINTFs
34	005: smdebug 2: Enable only non-verbose PM_ABNORM
35	006: smr: Enable all PM_ABNORM
36	Session mgr NVRAM key is not VALID
37	008:
38	SessMgr hostModInit(): SUCCESSFUL

---

## Details of the Boot Text

The “line numbers” in the preceding example of the boot text have been included to simplify the explanation of the individual lines. When observing the text on the dumb terminal the line numbers will not be included with the text. Following are details of the lines of the boot text:

Line 1    ~~~+++~~~

The three tilde, three plus, three tilde indicate the start of the boot. This line is included to initialize a modem if a modem link is being used to connect a remote device to the console connector of the 6224.

Line 2    Detected 1MB of Flash memory.

This just indicates that one Meg of flash memory has been detected. One Meg of flash memory is normal.

Line 3    HARDWARE CONFIGURATION

Line 4    CPU: Motorola MC68302

Line 5    Memory Size (hexadecimal): 0x80000.

Indicates details of the hardware configuration of the 6224. The Motorola MC68302 processor has been detected. It is the only CPU used in the 6224. The memory size refers to the RAM size in hex. Only one half Meg can be detected at this point. Actually, one Meg of RAM is installed. The full one Meg will be detected later in the boot process (see line14).

Line 6    Made on Tue Nov 4 13:22:11 EST 1997.

The date the software was created.

Line 7    Starting auto-boot process for hardware and network components.

Line 8    Press the Enter key before the countdown reaches 0 to stop auto-boot...

The boot process for hardware and network components is about to begin.

A “count-down” from three down to zero will commence. If the [Enter] key on the dumb terminal is pressed before the count-down reaches zero the boot process will be halted. The boot process can be stopped -- which allows access to the operating system shell for special set-up procedures.

Line 9    3 - 2 - 1 - 0

Here the count-down is displayed. This count-down is referred to as the “first countdown.”

The second countdown occurs later in the boot process (see line 27). The boot process can be stopped during the first count-down to configure certain set-up parameters of the 6224.

Line 10   auto-booting...

Since the [Enter] key was not pressed, during the count-down, the boot is proceeding.

Line 11   Executing application starting at address 0x840000...

The code is being executed at memory location 0x840000 hex. That is the first location in flash memory.

Line 12   HARDWARE CONFIGURATION

Line 13   CPU: Motorola MC68302

Line 14   Memory Size (hexadecimal): 0x100000.

This is a repeat of the information on lines 3, 4, and 5. The only difference is that here the full one Meg of RAM is now detected.

Line 15   Made on NO DATE STAMP.

The date the software was created.

```
Line 16   Attaching ethernet network interface ...
Line 17   passed
Line 18   passed
Line 19   NICE receive and transmit loopback tests passed
Line 20   done.
Line 21   Installing network module
Line 22   Installing Telnet module
Line 23   Installing ftpserver module
Line 24   Installing monitoring utility netShow
```

The Ethernet hardware components of the 6224 are being tested and certain network software modules are being loaded.

```
Line 25   Delaying 3 seconds to allow the route table to be
          filled.
```

The boot process is being delayed to allow the 6224 to receive route (RIP) information about the network to which it is connected.

```
Line 26   Press any key before countdown reaches 0 to stop
          application auto-boot...
Line 27   3 - 2 - 1 - 0
```

This is the second count-down. Stopping the boot at this count-down is for very detailed in-depth troubleshooting and debugging procedures which are reserved for LXE technical personnel.

```
Line 28   Application Software started:  Session Manager
Line 29   Version: No version defined
```

The application software is being executed and its version might be indicated.

```
Line 30   001:Host Module: SessMgr -- supports 128 terminals -
```

Indicates the number of PCs the 6224 will support.

```
Line 31   002:ALL PRINTFs disabled (including PM_ABNORM)
Line 32   003:  smdebug:   Disable ALL PRINTFs
Line 33   004:  smdebug 1: Enable debug PRINTFs
Line 34   005:  smdebug 2: Enable only non-verbose PM_ABNORM
Line 35   006:  smr:       Enable all PM_ABNORM
```

This is information provided for LXE Engineering personnel and displayed for ANSI and IBM only.

```
Line 36   Session mgr NVRAM key is not VALID
```

If this data is displayed it does **not** indicate a problem. Once the 6224 is programmed with a default host or a host for an RF PC, this message will not be displayed.

```
Line 37   008:
```

There is no data on this line.

```
Line 38   SessMgr hostModInit(): SUCCESSFUL
```

This indicates that the 6224 completed its boot successfully.

## Initial 6224 Setup Procedure

Turn the 6224 on and allow it to complete its boot.

Turn the PC and monitor on and run the terminal emulation program (e.g. Procomm).

Press the [Enter] key of the PC and you should observe, on its display, the 6224 operating system prompt:

`-> (hyphen greater than)`

Setup commands listed in “Commands and Functions” later in this chapter are entered at this prompt.

Setup commands **not** entered at this prompt are:

- setting/changing the IP address of the 6224,
- the subnet mask,
- a gateway address
- and the flags value.

---

## Power Cycle the 6224

The process is begun by power cycling the 6224 and stopping the auto-boot at a particular point during the auto-boot. The PC remains powered on during the 6224 power cycle.

During auto-boot, the 6224 writes data to the display of the PC.

The auto-boot process is halted by pressing the [Enter] key of the PC at the proper stage of the auto-boot.

---

## Stop Auto-boot Process

At an early point of the auto-boot the following words appear on the PC display

```
Press the Enter key before the countdown  
reaches 0 to stop auto-boot
```

You have approximately three seconds to press the [Enter] key. If you miss this opportunity, you will have to cycle 6224 power again for another try.

After successfully pressing the [Enter] key before the timeout expired, the auto-boot process stops and the LXE shell prompt:

`LXE-> (LXE hyphen greater than)`

should appear on the PC display.



---

## Begin Change/Edit Process

At the LXE shell prompt, type a lower case letter "c":

```
LXE->c
```

then press the [Enter] key.

The following should appear on the PC display.

```
\.' = clear field;  \_' = go to previous field;  ^D = quit  
boot device          : nce _
```

The `boot device` is the first of fourteen (14) boot parameters. At this point, press the [Enter] key. The second boot parameter will be added to the display.

Each time [Enter] is pressed, another parameter line is added to the display.

The only boot parameters that are applicable to the Session Manager are:

```
inet on ethernet (including a subnet mask, if required. Default is 255.255.0.0  
or 0xFFFF0000)  
gateway inet, if required  
flags
```

All of the other parameters should be left unchanged.

---

## inet on ethernet (IP Address and Subnet Mask)

At this point, repeatedly press the [Enter] key until the line `inet on ethernet` is added and the display appears as follows.

```
\.' = clear field;  \_' = go to previous field;  ^D = quit

boot device          : nce
processor number     : 0 _
host name            : nc _
file name            : flash
inet on ethernet (e) : 141.186.50.10 (or 0.0.0.0) _
```

The IP address that is currently displayed is the one that was previously programmed into the 6224. The address that appears might be all zeros (0.0.0.0). In either case, enter the IP address that you wish to assign to the 6224 and a subnet mask, if required.

Note that a cursor is displayed following the last character of the current IP address. At the cursor location, enter the value of the IP address and subnet mask (if required) for the 6224.

As the new IP address is entered, it is displayed to the right of the current IP address so that both the old and new addresses are displayed.

If your network is composed of subnets, enter the subnet mask on the same line with the IP address.

For example, assuming your IP address is 150.22.14.31, and your subnet mask is fffffff0, the boot parameters should look similar to the following:

```
\.' = clear field;  \_' = go to previous field;  ^D = quit

boot device          : nce
processor number     : 0 _
host name            : nc _
file name            : flash
inet on ethernet (e) : 141.186.50.10 150.22.14.31:0xffffffff00 _
```

Where

141.186.50.10 (or 0.0.0.0) is the original (old) IP address

150.22.14.31 is the new IP address and

ffffff00 is the subnet mask in hexadecimal notation.

The colon (:) is a required delimiter that separates the IP address from the subnet mask.

The 0x indicates that the subnet mask is in hexadecimal notation. The fffffff0 hex value represents the decimal value 255.255.255.0. The subnet mask must be entered in hexadecimal format.

When you have finished entering the address and subnet mask (if required), press the [Enter] key which will cause the next line of the boot parameters to be added to the display.

---

### gateway inet (Gateway / Router IP Address)

At this point, repeatedly press the [Enter] key until the line `gateway inet` is added to the display. The display should look similar to the following:

```
\.' = clear field;  \_' = go to previous field;  ^D = quit

boot device          : nce
processor number     : 0
host name            : nc
file name            : flash
inet on ethernet (e) : 141.186.50.10  150.22.14.31:0xffffffff00
inet on backplane (b) :
host inet (h)        :
gateway inet (g)      : _
```

#### When your network has subnets:

If your network is subneted **and** if there is a router between the 6224 and the host computer(s) that it is to communicate with, enter the IP address of that router at the `gateway inet` line.

Type the IP address of the router at the current cursor position on that line.

#### When your network does not use subnets:

If your network is not subneted **or** if there is not a router that the 6224 must go through to get to the host(s) (they are on the same subnet) do not enter anything at the `gateway inet` line.

---

### Flags

Repeatedly press the [Enter] key until the line `flags` appears on the PC display. A screen similar to the following should appear:

```
\.' = clear field;  \_' = go to previous field;  ^D = quit

boot device          : nce
processor number     : 0
host name            : nc
file name            : flash
inet on ethernet (e) : 141.186.50.10  150.22.14.31:0xffffffff00
inet on backplane (b) :
host inet (h)        :
gateway inet (g)      :
user (u)
ftp password (pw)    (blank = use rsh): 1xe302
flags (f)            : 0x840  _
```

If the flags value is not 0x1800 type that value at the cursor position. This is the last boot parameter that might require modification.

---

## Exit Change/Edit Procedure

Repeatedly press the [Enter] key until the LXE-> shell prompt is once again displayed. The PC display should look similar to the following:

```

\.' = clear field;  \_' = go to previous field;  ^D = quit

boot device          : nce
processor number     : 0
host name            : nc
file name            : flash
inet on ethernet (e) : 141.186.50.10  150.22.14.31:0xffffffff00
inet on backplane (b) :
host inet (h)        :
gateway inet (g)      :
user (u)
ftp password (pw)    (blank = use rsh): lxe302
flags (f)            : 0x800
target name (tn)     :
startup script (s)   :
other (o)            :
LXE-> _

```

The line labeled `other` might contain additional data. If so, just leave it as is.

At this point, with the LXE-> shell prompt displayed enter 'u' (without the quote marks).

When the LXE prompt returns, enter 'v' (without the quote marks).

When the LXE prompt returns press the [CTRL] and [X] keys simultaneously. The LXE shell closes and the 6224 Session Manager boot process continues, using the values you entered at the prompts. The parameter values are automatically saved to battery backed RAM.

As the different boot routines are being run, lines of text appear on the PC display indicating the successful or unsuccessful execution of each. When the boot process is finished, the PC display should contain the following:

```

SessMgr hostModInit ( ): SUCCESSFUL
->_

```

All other setup procedures are conducted at the 6224 operating system shell prompt -> (see “Commands and Functions”). All of the remaining setup parameters can be configured using either the “local” method or the remote Telnet method.

---

## Local (Dumb Terminal) Configuration Method

The “local” configuration method can be used to configure any/all setup parameters for the 6224. This method is conducted using a dumb terminal connected to the “console” connector at the rear panel of the 6224 via a null modem cable (or equivalent). It is the **only** method that can be used to configure the IP address, subnet mask, gateway (router) address, and flags value for the 6224. All other parameters are set/modified at the operating system prompt (->) using either the local or remote Telnet configuration method. Regardless of the method used, if the operating system prompt is not displayed on the configuration PC the [Enter] key should be pressed.

For setup commands, see “Commands and Functions” on following pages.

---

## Remote Telnet Configuration Method



See Chapter 4 “Opening a Telnet Session” for Telnet login instruction.

*Note: New or initial setup 6224 hardware does not contain a **valid IP address**. Telnet connection to an LXE 6224 requires a valid IP address. Thus, the **initial** setup must be performed using the local method (PC connection). Refer to “Initial Setup Procedure” earlier in this guide.*

When setup is performed remotely using Telnet, use the Telnet open command to open a session to the IP address of the 6224 Session Manager.

When accessing the set-up parameters via Telnet, it is not necessary to specify a port number in the open command since the “well known” port (23, the Telnet “listen” port) is used by default.

When a Telnet session is successfully opened the 6224 operating system prompt

-> **(hyphen greater than)**

appears on the display of the Telnet computer. The following commands are entered at that prompt.

*Note: When you are finished configuring the 6224 via Telnet, make certain that you close (disconnect) the Telnet connection. The connection can be closed by typing the following command at the operating system shell prompt:*

**logout**

For setup commands, see “Commands and Functions” on the following pages.

## Commands and Functions

*Note: When working with a 6224 in an ANSI or LDS system, the on-screen text displayed for each terminal's address is "secondary ID". When working with a 6224 in an IBM system, the on-screen text displayed for each terminal's address is "IP address".*

### Quick List

*Note: In the Commands and Functions that follow the word "Terminal", abbreviated "Term", is used when referring to the RF Personal Computers (PC's).*

<b>A = ANSI I = IBM L = LDS</b>	<b>Command</b>	<b>Process</b>
<b>A / I / L</b>	bootParms	Part of the 6224 Operating System command set.
<b>A / I</b>	closeAllTerms	Delete all RF PCs from the PC list and close their sessions
<b>A / I</b>	closeTerm	Remove a PC from the PC list and close its session
<b>A</b>	clrAllAlogin	Clear all auto login scripts for all PCs
<b>A</b>	clrAlogin	Clear an auto login script for a PC
<b>A / I</b>	clrHostNames	Clear entire host name table
<b>L</b>	ldshelp	ldshelp displays help list (parameters 5 or 6)
<b>A / I</b>	removeAllTerms	Remove all PCs from the list of specific PCs (does not close session)
<b>A / I</b>	removeTerm	Remove a PC from the list of specific PCs
<b>A / I / L</b>	saveSetup	Save the 6224 setup parameter values
<b>A</b>	setAlogin	Setting auto login scripts for RF PCs
<b>A</b>	setAutologinTimeout	Set auto login timeout
<b>A / I</b>	setDefaultHost	Set the default host IP address and port number
<b>A / I</b>	setDefaultSess	Set the default sessions
<b>A / I</b>	setDefaultWdog	Turn On/Off watchdog feature
<b>L</b>	setHostIP	Host IP address in dot notation inside quotes
<b>L</b>	setHostMode	Set host as the server or the client.
<b>A / I</b>	setHostName	Set host name (alias) vs. IP address
<b>L</b>	setHostPort	Port number for connecting to the LDS host.
<b>L</b>	setHostTBR	Time between retries in seconds.
<b>A</b>	setMultSess	Allow multiple sessions from the same physical PC
<b>A / I</b>	setSessmgrPort	Set the session manager "listen" port number
<b>A / I</b>	setTermHost	Set a specific PC - host
<b>L</b>	setTermPort	Sets the TCP port number for LDS connection from

<b>A = ANSI I = IBM L = LDS</b>	<b>Command</b>	<b>Process</b>
		computers.
<b>A / I</b>	setTermSess	Set a specific PC session management
<b>A / I</b>	setTermWdog	Turn On/Off watchdog on individual basis
<b>A / I / L</b>	setWdogDelay	Specify initial delay time to first watchdog ping
<b>L</b>	setWdogEnable	Set the watchdog on or off.
<b>A / I / L</b>	setWdogInterval	Specify the watchdog interval in seconds
<b>A / I / L</b>	setWdogRetries	Number of retries to connection before socket close and session termination
<b>A / I</b>	showHosts	Display current entries in host table
<b>L</b>	showHostSetup	Display current LDS host parameter values
<b>A / I / L</b>	showSetup	Display all 6224 setup parameter values
<b>A / I</b>	showTerm	Display information about a particular PC
<b>L</b>	showTermByIP	Display information about a particular LDS PC
<b>L</b>	showTermByTID	Display information about a particular LDS PC
<b>A / I / L</b>	showUsers	Display information about all PCs known to the 6224
<b>A / I</b>	smHelp	Display a help screen listing all session manager shell commands

## Commands

---

### bootParms

#### 6224 Operating System Command

This OS command is described in the on-screen help that is displayed when the command is entered without parameters. This command can be used to remotely administer the 6224 after a Telnet connection to the 6224 has been made.

Use this command to cause a reboot of the 6224 when access to the 6224's power switch is unavailable. This command is part of the 6200/6224 remote configuration command set.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The syntax for this command is as follows:

```
bootParms 3 (3 causes a reboot without reloading the OS)
```

*Note: This command is usually coupled with the saveSetup command -- which stores parameter changes in non-volatile memory-- and after a reboot or power cycle, the changes are then in effect.*

---

### closeAllTerms

#### Both ANSI and IBM

This command will delete all RF PCs from the system and send closes to all open sockets.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. There are no spaces in this command. The syntax for this command is as follows (there are no arguments with this command):

```
closeAllTerms
```

#### IBM Specific

In the IBM applications, closeAllTerms causes the connection to the host to be severed. It also causes the PC to shut down its current IBM session. If all terminals are still powered on and not at the DOS prompt, each terminal will reestablish a new connection with the host without operator intervention. If all terminals are powered down or at the DOS prompt, terminal reconnection is not possible without operator intervention.



---

## closeTerm

### Both ANSI and IBM

This command is similar to closeUser above except that it takes the RF PC IP address as a parameter. The PC's IP address is often more readily known than the RF PC's tty number (user ID).

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The syntax for this command is as follows (note the space following the word Term):

ANSI: `closeTerm 0xnnnn`

IBM: `closeTerm "xxx.xxx.xxx.xxx"`

Where

ANSI : **0xnnnn** is replaced by the secondary ID in hex notation.

IBM : **xxx.xxx.xxx.xxx** is replaced by the IP address in quotes of the PC you wish to "wipe."

Following is an example which wipes RF PC 141.186.28.84 (or 0009) from the system:

ANSI: `closeTerm 0x0009`

IBM: `closeTerm "141.186.28.84"`

### IBM Specific

In the IBM applications, closeTerm causes the connection to the host to be severed. It also causes the PC to shut down its current IBM session. If the terminal is still powered on and is not at the DOS prompt, it will reestablish a new connection with the host without operator intervention. If the terminal is powered down or at the DOS prompt, reconnection is not possible without operator intervention.

---

## clrAllAlogin

### ANSI only

This function allows the removal of all auto login scripts for **all** RF PCs.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The syntax for this command is as follows (there are no arguments):

`clrAllAlogin`

---

## clrAlogin

### ANSI only

This function allows the removal of the auto login scripts for a particular RF PC.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The syntax for this command is as follows (note the space after the word Alogin):

```
clrAlogin xxxxxx
```

Where **xxxxxx** is replaced with the secondary ID in hexadecimal notation (i.e., 0x0045) of the desired RF PC.

---

## clrHostNames

### Both ANSI and IBM

Use of this parameter clears (removes) all entries in the host name table.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
clrHostNames
```

There are no arguments for use with this command. There are no spaces in this command.

---

## ldshelp

### LDS Only (See smHelp for ANSI and IBM help)

Typing the following at the shell prompt displays a list of LDS manager shell commands:

```
--> ldshelp      press [Enter]
```

Typing `ldshelp 6` (note the space before 6) at the shell prompt displays a list of the LDS manager shell commands and their command parameter help. Typing `ldshelp 5` (note the space before 5) at the shell prompt displays a list of the LDS manager shell commands and their descriptions:

```
--> ldshelp 5      press [Enter]
```

After pressing [Enter] the help information scrolls on the screen display. The help listing can be redirected to a file with a greater than symbol (>), for example:

```
--> ldshelp 5 > lds5help.txt press [Enter]
```

---

## removeAllTerms

### Both ANSI and IBM

This function removes all RF PCs from the list of specific PCs. It also removes the host IP addresses that were associated with each of the PCs in the list and the individual session management flags. Any existing sessions are not closed.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows (there are no arguments (parameters) and no spaces):

```
removeAllTerms
```

---

## removeTerm

### Both ANSI and IBM

This function is used to remove a particular RF PC from the list of specific PCs. This action results in that PC reverting to the default host. Any existing sessions are not closed.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows (note the space following the word Term):

ANSI: `removeTerm 0xnnnn`

IBM: `removeTerm "xxx.xxx.xxx.xxx"`

Where:

ANSI : **0xnnnn** is replaced with the secondary ID of the specific RF PC in hex notation.

IBM : **xxx.xxx.xxx.xxx** is replaced with the IP address of the specific RF PC in quotes.

Following is an example of this command:

ANSI: `removeTerm 0x0012`

IBM: `removeTerm "141.186.24.81"`

---

## saveSetup

### IBM, ANSI and LDS

*Note: Changes to several parameters can be handled with one call to saveSetup followed by a reboot. The lithium backup battery in the 6224 should be tested periodically and replaced when necessary.*

This function saves all setup parameter values to battery backed RAM. This ensures that parameter values are not lost through a power cycle.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. There are no spaces in this command. The syntax for this command is as follows:

```
saveSetup
```

---

## setAlogin

### ANSI only

Each RF PC can have a set of auto login scripts programmed into the 6224. These scripts enable the 6224 to automatically login each PC to their respective host. One process of connecting a PC to a host entails the PC logging into the 6224 and the 6224 logging that PC onto a host. Up to three lines of script can be programmed into the 6224 for each PC. If an auto login script is not programmed into the 6224 for any given PC, the 6224 will pass the host prompts to the RF PC. In that case, the RF PC operator must type and send the required responses back to the host.

In the 6224, each line of the login script is composed of a prompt that a host normally sends to a PC and the response that is normally returned by the PC operator to the host. When the login script is programmed in the 6224 Session Manager, it is the 6224 that receives the prompts from the host and returns the pre-programmed responses back to the host on the PC's behalf.

The syntax for each line of login script must contain the secondary ID of the RF PC. Each line of the script (0, 1, or 2) must contain the prompt expected from the host, and the response the 6224 must return in answer to the prompt.

These commands must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The syntax for the first line of an auto login script is as follows (note the quotation marks and commas also note the space after the word Alogin):

```
setAlogin xxxxxx,0,"yyyyy","zzzzz"
```

Where:

The **xxxxxx** is replaced with the secondary ID of the RF PC in hexadecimal notation (i.e., 0x0045).

The **0** (zero) indicates this is the first line of the script

The **yyyyy** is replaced with the first prompt that is expected from the host.

The **zzzzz** is replaced with the response that the 6224 must return to the host in answer to the prompt that was received.

The syntax for the second line of an auto login script is as follows (note the quotation marks and commas also note the space after the word Alogin):

```
setAlogin xxxxxx,1,"yyyyy","zzzzz"
```

Where:

The **xxxxxx** is replaced with the secondary ID of the RF PC in hexadecimal notation (i.e., 0x0045).

The **1** indicates this is the second line of the script

The **yyyyy** is replaced with the second prompt that is expected from the host.

The **zzzzz** is replaced with the response that the 6224 must return to the host in answer to the prompt that was received.

The syntax for the third line of an auto login script is as follows (note the quotation marks and commas also note the space after the word Alogin):

```
setAlogin xxxxxx,2,"yyyyy","zzzzz"
```

Where:

**xxxxxx** is replaced with the secondary ID of the RF PC in hexadecimal notation (i.e., 0x0045).

The **2** indicates this is the third line of the script

The **yyyyy** is replaced with the third prompt that is expected from the host.

The **zzzzz** is replaced with the response that the 6224 must return to the host in answer to the prompt that was received.

---

## setAutologinTimeout

### ANSI only

This parameter is used by the process monitoring autologin activity. During autologin something could go wrong (dropped or faulty exchange with the host, wrong autologin, etc.) and the autologin process could be suspended. This could result in a blocked session. A process in the 6224 monitors the time it takes for an autologin to take place. If this time is greater than the time specified by setAutologinTimeout, the process automatically closes the terminal and host sockets.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The syntax for this command is as follows (note the space after the word Timeout):

```
setAutologinTimeout xxx
```

Where xxx is replaced with a numeric value indicating the desired number of seconds for the timeout.

---

## setDefaultHost

### Both ANSI and IBM

The “default host” is the host computer to which any PC will be connected if you have not programmed a specific host for that specific PC. See the parameter *setTermHost* later in this section for setting a host other than a default host.

The command syntax for setting the default host and port number is as follows:

```
setDefaultHost
```

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The IP address of the default host and the port number on that host must follow the command as indicated in the following example:

```
setDefaultHost "xxx.xxx.xxx.xxx",yyy
```

Where:

xxx.xxx.xxx.xxx is replaced with the IP address of the default host and

yyy is replaced with the port number (in decimal notation) on that host. A port number must be entered even if the “well known” (23) Telnet port is desired.

Note the IP address is enclosed in quotation marks and the IP address and port fields are separated by a comma. The data must be entered in that format.

---

## setDefaultSess

### Both ANSI and IBM

The default sessions parameter sets the default host management flag. The value of this parameter indicates whether sessions (connections) with the default host should be maintained if RF communication with the RF PC is interrupted. A value of zero (0) at this parameter disables session management. A value of one (1) enables session management. This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated.

#### Disable

The command syntax to disable default host session management is as follows (note the space before the zero):

```
setDefaultSess 0
```

When session management is disabled, a new session (connection) is created any time a RF PC attempts to connect to the default host. If a connection had already existed for a given RF PC, the 6224 would sever the existing connection then establish a new connection for that RF PC.

#### Enable

The command syntax to enable default host session management is as follows (note the space before the one):

```
setDefaultSess 1
```

When session management is enabled, an existing connection is maintained when a RF PC attempts to connect to the default host. In this case, the PC that has been absent from its session (out of RF range or powered off, etc.) will be reconnected to its existing session, when it returns.

---

## setDefaultWdog

### Both ANSI and IBM

Sets the default orphan session management flag, indicating whether sessions are to be cancelled after a specified inactivity period or not. This value is used if the terminal is not found in the list of specific terminals. Note that if the terminal is in the list, the value set by setTermWdog takes precedence over the value set by setDefaultWdog.

```
setDefaultWdog 0  Disables orphan session management
setDefaultWdog 1  Enables orphan session management
```

---

## setHostIP

### LDS Only

This parameter provides the capability of specifying a host IP address. When the 6224 is initiating the host connection, this is the IP address with which it will try to make the connection using the specified port. Specification of this parameter is not necessary if the host is initiating the connection.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
setHostIP "yyy.yyy.yyy.yyy"
```

Where yyy.yyy.yyy.yyy is replaced by the IP address of that host. The quotation marks are required.

Following is an example:

```
setHostIP "141.186.24.103"
```

*Note: Use saveSetup to save any changes in non-volatile memory. After a physical power cycle or a remote bootParams 3 reboot, the changes are then in effect.*

---

## setHostMode

### LDS Only

See also : setHostPort

This parameter provides the capability to configure the 6224 as either a "client" or a "server". As a server, the 6224 listens for a connection request from the host. As a server the 6224 need only know what port to "listen" on. **Note that this command describes what the host configuration will be, not the LDS controller's modes.**

As a client, the 6224 requests a connection from the host and it must be setup with the IP address of the host and what port to use to contact the host with its connection request.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated.

### Parameters

```
"client", "server"
```

The command syntax is as follows:

```
setHostMode "xxxxxx"
```

Where xxxxxx is replaced by either parameter value. The quotation marks are required.

Following is an example:

```
setHostMode "client" (causes the 6224 to accept the connection from the host
on the 6224 host port)
```

```
setHostMode "server" (the host will listen for the connection request from the
6224)
```



*Note: Use saveSetup to save any changes in non-volatile memory. After a physical power cycle or a remote bootParms 3 reboot, the changes are then in effect.*

---

## setHostName

### Both ANSI and IBM

This parameter provides the capability of creating a cross reference table in the 6224 to relate the names of hosts to their IP addresses. Once entered into the table, the host may be referred to by its name (alias) in subsequent open commands.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
setHostName "xxxxxxx", "yyy.yyy.yyy.yyy"
```

Where xxxxxxx is replaced by the name of the host and yyy.yyy.yyy.yyy is replaced by the IP address of that host. The quotation marks and the comma are required.

Following is an example:

```
setHostName "as400", "141.186.24.103"
```

---

## setHostPort

### LDS Only

*See also :* setHostMode

This parameter is used to set the host port number – the port number on the host the 6224 will use to make a connection to the host if the 6224 is initiating the host connection – and the port number the 6224 will listen on for the connection request coming from the host if the host is initiating the host connection.

The host port number may be any "legal" port number and should not be any "well-known" port number. The default is 5000.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
setHostPort value
```

Where value is replaced by a "legal" port number in decimal notation.

Following is an example:

```
setHostPort 4500
```

*Note: Use saveSetup to save any changes in non-volatile memory. After a physical power cycle or a remote bootParms 3 reboot, the changes are then in effect.*

---

## setHostTBR

### LDS Only

This parameter is used to set the time delay for connection retries. When the 6224 is initiating the connection with the host and the connection is not established, the interval set with this parameter must elapse before an attempt to connect is performed again.

The 6224 will continue indefinitely, waiting the specified parameter between retries, until either the user intervenes or the connection is made.

*Note: If the host is initiating the connection, the setHostTBR parameter is ignored.*

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
setHostTBR value
```

Where value is replaced by a number representing seconds.

Following is an example:

```
setHostTBR 30 (a timed interval of 30 seconds will elapse between connection  
retries)
```

*Note: Use saveSetup to save any changes in non-volatile memory. After a physical power cycle or a remote bootParms 3 reboot, the changes are then in effect.*

---

## setMultSess

### ANSI only

This command allows an RF PC user to start multiple sessions with a host (or different hosts) from the same physical terminal. It is accomplished by changing the terminal's secondary ID. Suppose that entries for RF PC IDs 0010 and 0011 have been programmed into the 6224. Further, suppose the autologin script and host are different for each of the RF PC IDs. The RF PC user can switch between each session, once established, by changing the secondary ID at the PC. It is the user's responsibility to close **each** session since closing one will not automatically close the other(s).

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
setMultSess 0
```

OR

```
setMultSess 1
```

The zero (0) argument disables multiple sessions. The one (1) argument enables multiple sessions. Note the space following the word Sess.

---

## setSessmgrPort

### Both ANSI and IBM

This parameter allows you to change the setting of the “listen” port. The listen port is the port number that the 6224 Session Manager monitors (listens on ) for PC requests for a host connection. By default, a value of 4000 is assigned for this purpose. If you must (or just want to) you can change this setting. If you do modify this parameter, insure that you do not assign a value of one of the “well-known” ports. For a successful connection, the terminal must “open” a connection to the IP address of the 6224 including the value of the listen port in the command.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax for modifying this parameter is as follows:

```
setSessmgrPort value
```

Where value is replaced by the new port number in decimal notation. Note the space before the value. An example follows:

```
setSessmgrPort 3500
```

---

## setTermHost

### Both ANSI and IBM

This parameter provides the capability of programming a specific RF PC to connect to a host other than the default host. It enters the RF PC’s IP address in the list of specific PCs. If this PC was not already in the list, its session management flag is automatically set to 1 (enabled). Setting the flag to 1 results in maintaining any current connection whenever this PC attempts to connect.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows (note the space after the word Host in the command):

```
ANSI: setTermHost 0xn timer, "yyy.yyy.yyy.yyy", xxx
```

```
IBM: setTermHost "zzz.zzz.zzz.zzz", "yyy.yyy.yyy.yyy", xxx
```

Where:

ANSI : **0xn timer** is replaced with the secondary ID in hex notation

IBM : **zzz.zzz.zzz.zzz** is replaced with the IP address of the RF PC in quotes.

BOTH : **yyy.yyy.yyy.yyy** is replaced with the IP address or host name of the host computer.

BOTH : **xxx** is replaced with the port number (in decimal notation) on that host.

Note the quotation marks around the IP address (or name) of the host computer and the commas between each of the three fields.

Following is an example of the command:

```
ANSI: setTermHost 0x0014, "141.186.24.35", 23
```

```
IBM: setTermHost "141.186.24.81", "141.186.24.35", 23
```

*Note: If setHostName had been used to set 141.186.24.35 to "as400", the following command could be used:*

```
ANSI: setTermHost 0x0014, "as400", 23
```

IBM: `setTermHost "141.186.24.81","as400",23`

*See also setDefaultHost.*

---

## setTermPort

### LDS Only

This parameter is used to set the TCP port number in the 6224 for incoming connections from LDS terminals.

The host port number may be any "legal" port number and should not be any "well-known" port number. The default is 4000.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
setTermPort value
```

Where value is replaced by a "legal" port number in decimal notation.

Following is an example:

```
setTermPort 3500
```

*Note: Use saveSetup to save any changes in non-volatile memory. After a physical power cycle or a remote bootParms 3 reboot, the changes are then in effect.*

---

## setTermSess

### Both ANSI and IBM

This parameter provides the capability of programming the session management flag for a specific RF PC. It allows setting the session management to a value that is specific for a particular RF PC.

#### Disable

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax to disable session management for a specific RF PC is as follows (note the comma before the zero also note the space after the word Sess):

ANSI: `setTermSess 0xn timer,0`

IBM: `setTermSess "xxx.xxx.xxx.xxx",0`

Where

ANSI : **0xn timer** is replaced with the secondary ID in hex notation

IBM : **xxx.xxx.xxx.xxx** is replaced with the IP address of the specific RF PC in quotes.

Following is an example of this command:

ANSI: `setTermSess 0x0014,0`

IBM: `setTermSess "141.186.24.81",0`

#### Enable

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax to enable session management for a specific RF PC is as follows (note the space following the word Sess and the comma separating the two input fields):

```
ANSI: setTermSess 0xn timer, 1
```

```
IBM: setTermSess "xxx.xxx.xxx.xxx", 1
```

Where

ANSI : **0xn timer** is replaced with the secondary ID in hex notation

IBM : **xxx.xxx.xxx.xxx** is replaced with the IP address of the specific RF PC in quotes.

If a PC is not in the list of specific PCs, setting its session to enabled will result in that PC reverting to the default host and port.

Following is an example of this command:

```
ANSI: setTermSess 0x0014, 1
```

```
IBM: setTermSess "141.186.24.81", 1
```

---

## setTermWdog

### Both ANSI and IBM

Use this option to allow the watchdog feature to control on a terminal by terminal basis rather than using the global option, setDefaultWdog n. In cases where both are being used, the individual terminal's setting overrides the global setting.

```
ANSI: setTermWdog <secondary ID>, n
```

```
IBM: setTermWdog <terminal IP>, n
```

Where

ANSI : **<secondary ID>** is in hexadecimal notation

IBM : **<terminal IP>** is the terminal's IP address in quotes

and **n** is either 1 to enable the feature, or 0 to disable the feature.

---

## setWdogDelay

### IBM, ANSI and LDS

This parameter sets the length of time in seconds to wait before sending the first ping.

Range is 0 to 36000 seconds. The default is 3600 seconds.

```
setWdogDelay <length of interval in seconds>
```

---

## setWdogEnable

### LDS Only

This parameter sets the variable that indicates whether the LDS watchdog feature is On or Off. The command syntax is as follows:

```
set WdogEnable value
```

The valid values are: 1 (or ON) or 0 (or OFF)

For example:

```
set WdogEnable 0 (turns the watchdog feature off)
```

*Note: Use saveSetup to save any changes in non-volatile memory. After a physical power cycle or a remote bootParms 3 reboot, the changes are then in effect.*

---

## setWdogInterval

### IBM, ANSI and LDS

Set the time interval for the 6224 to wait, following a ping, for a response to the ping.

Range is 0 to 3600 seconds. The default is 60 seconds.

```
setWdogInterval <length of delay in seconds>
```

---

## setWdogRetries

### IBM, ANSI and LDS

After waiting the WdogInterval to send a ping, then waiting WdogDelay for a response, the terminal is considered inactive. The 6224 will try the wait-and-ping WdogRetries times before sending a close to the socket and terminating the session.

Range is 0 through 100. The default is 8.

```
setWdogRetries <retries>
```

---

## showHosts

### Both ANSI and IBM

This diagnostic command displays the current entries in the host name table. There are no arguments for use with this command.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. There are no spaces in this command. The command syntax is as follows:

```
showHosts
```

---

## showHostSetup

### LDS Only

This diagnostic variable displays current LDS host setup. There are no parameters.

```
showHostSetup
```

---

## showSetup

### IBM, ANSI and LDS

This diagnostic command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. There are no spaces in this command. The syntax for this command is as follows:

```
showSetup
```

After pressing [Enter] the setup information scrolls on the screen display.

The setup information obtained by the showSetup command can be redirected to a file with the greater than ( > ) symbol, for example:

```
--> showSetup > mysetup.txt  press [Enter]
```

---

## showTerm

### Both ANSI and IBM

This diagnostic command will result in the display of information about a particular RF PC. This information includes connection and state as well as autologin data.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

ANSI: `showTerm 0xn timer`

IBM: `showTerm "xxx.xxx.xxx.xxx"`

Where:

ANSI : **0xn timer** is replaced with the secondary ID of the specific RF PC in hex notation.

IBM : **xxx.xxx.xxx.xxx** is replaced with the IP address of the specific RF PC in quotes.

The following is an example of this command (note the space following the word Term).

ANSI: `showTerm 0x0009`

IBM: `showTerm "141.186.24.81"`

---

## showTermByIP

### LDS Only

This diagnostic command will result in the display of information about a particular RF PC. This information includes connection and state data.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
showTermByIP "xxx.xxx.xxx.xxx"
```

Where xxx.xxx.xxx.xxx is replaced with the IP address of the specific RF PC in quotes.

The following is an example of this command (note the space following the word showTermByIP).

```
showTermByIP "141.186.24.81"
```

---

## showTermByTID

### LDS Only

This diagnostic command will result in the display of information about a particular RF PC. This information includes connection and state data.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The command syntax is as follows:

```
showTermByTID value
```

Where value is replaced with the hexadecimal address of the specific RF PC. Quotes are not required.

The following is an example of this command (note the space following the word TermByTID).

```
showTermbyTID 0x1a
```

---

## showUsers

### IBM, ANSI and LDS

This diagnostic function displays information about all RF PCs known to the 6224.

This command must be typed at the operating system shell prompt with the upper and lower case letters as indicated. The syntax for this command is as follows (there are no arguments for this command):

```
showUsers
```



---

## smHelp

### Both ANSI and IBM

Typing the following at the shell prompt displays a list of all session manager shell commands:

```
--> smHelp press [Enter]
```

Typing `smHelp 1` (note the space before 1) at the shell prompt displays a list of the session manager shell commands as well as their syntax and parameters:

```
--> smHelp 1 press [Enter]
```

After pressing [Enter] the help information scrolls on the screen display. The help listing can be redirected to a file with a greater than symbol ( > ), for example:

```
--> smHelp 1 > allhelp.txt press [Enter]
```

## IBM Autologin

Autologin for an IBM Session Manager is carried out in the terminal rather than in the 6224 device.

In the Config Utility in an IBM terminal:

1. Select Protocol / Auto Login.
2. Select Enabled for AutoLoginOn.

The autologin scripts for the IBM terminal mimic what the user enters at the signon screen and consists of one response in the format:

```
<username><TAB><password><ENTER>
```

**Example 1:** If the username is S5 and the password is T5, the Prompt1 line would be User and the Reply 1 line entered in the terminal would be

```
s5{tab}t5{enter}
```

**Example 2:** To reach the IBM signon screen on the AS400, enable autologin, and make sure all the prompt and reply fields are blank.

When a connection already exists and is registered in the 6224's connection list, there is no need to rerun autologin. However, as the terminal controls whether the autologin sequence runs, the IBM Session Manager must signal the connecting terminal of an existing connection at the time the terminal attempts to reconnect.

On reconnections, the 6224 reads the IP address of the connecting terminal and checks the existing connections table. If a match is found, a Don't Autologin negotiation is sent by the IBM Session Manager to the terminal. The terminal, after recognizing this message, sets a flag that is examined by the autologin sequencer in the terminal before the autologin sequence runs. When the flag indicates Don't Autologin, the autologin sequence is bypassed.

---

## LDS Autologin

Autologin must be used for the LDS 6224. In the TE Configuration Utility in an LDS terminal with a 2.4 GHz radio:

1. Select Protocol / Autologin / TCPIP Autologin.
2. Autologin is enabled by default and for LDS, this parameter should be enabled.
3. At the Host: line enter the IP address of the LDS 6224.
4. Set the listen port number to the desired value (or keep the default value of 4000).
5. Set the StationID to the desired LDS terminal ID. Do not choose an existing terminal ID, select a new one.

## Telnet Security

By default, the 6224 Session Manager allows any person with a network Telnet device to open a Telnet session. While in a Telnet session, a person can perform potentially harmful operations on the 6224. The 6224 provides the capability to restrict Telnet access to only authorized individuals. This section describes operation and setup procedures for this security function.

*Note: There can be only one user name/password combination for each 6224.*

---

### Quick List

Command	Process
addLoginUser()	Add User Login Data
loginUserDelete	Delete User Login Data
EnableLoginSecurity	Enable Login Security
DisableLoginSecurity	Disable Login Security

---

### addLoginUser( )

Using either Telnet remote or the local method with a PC, access the 6224 operating system prompt (->).

Enter the following command at the 6224 shell prompt(->):

```
addLoginUser("xxxxxxx", "yyyyyyy")
```

Where:

**xxxxxxx** is replaced with the user name of no more than twenty (20) characters.

**yyyyyyy** is replaced with the password of at least eight (8) but no more than forty (40) characters.

Note the quotation marks around the user name field and the password field and the comma separating the fields. Note also the parentheses surrounding both strings.

The L in Login and the U in User must be upper case. Also there are no spaces allowed in the command.

---

## loginUserDelete

*Note: Only one user name/password can be configured. If a new user name/password is desired, the old user name/password must be deleted before a new one can be programmed.*

Using either Telnet remote or the local method with a PC, access the 6224 operating system prompt (->).

At the shell prompt (->), enter the following command:

```
loginUserDelete
```

Note the U and D are upper case. There are no spaces allowed in the command.

To program a new user name/password use the *addLoginUser()* command.

---

## EnableLoginSecurity

Using either Telnet remote or the local method with a PC, access the 6224 operating system prompt (->).

At the shell prompt (->), enter the following command:

```
EnableLoginSecurity
```

Note the upper case E, L, and S in the command.

Note also there are no spaces between the three words of the command.

---

## DisableLoginSecurity

Using either Telnet remote or the local method with a PC, access the 6224 operating system prompt (->).

At the shell prompt (->), enter the following command:

```
DisableLoginSecurity
```

Note the upper case D, L, and S in the command.

Note also there are no spaces between the three words of the command.

---

## Script Sending Tool – ANSI Only

The 6224 setup (programming) is performed using “calls” to operating system “shell” commands. Being able to manually perform the setup is handy when only a few commands are needed to administer the 6224. When many commands are required, the configuration can be very burdensome. For this reason, LXE has developed a tool that sends prepared text setup scripts to a 6224.

The tool is actually a modified Telnet client, running on a computer, that takes a file as its input rather than keyboard entries. The tool, in effect, telnets to the 6224 and runs the pre-composed specified script.

The script can be created using a text editor with all its powerful copying abilities. The script will consist of 6224 shell commands and parameters. The script sending tool cannot be used to configure the IP address and subnet mask or the “gateway” and “flags” values for the 6224. Those four parameters can only be configured using a dumb terminal directly connected to the 6224.

The source code for the script sending tool is supplied by LXE at no additional cost to you. It will require compiling on one of your UNIX machines. Also, the compiled program must be run on a UNIX platform. The name of the program is: smsetup.

The script sending tool is invoked by entering the following on the command line of the UNIX machine:

```
smsetup "XXX"<YYY>results.log
```

Where

**XXX** is replaced with the IP address of the 6224 in quotes.

**YYY** is replaced with the file name and extension of the text file to be sent to the 6224.

The Less than (<) and Greater than (>) characters are required.

The file RESULTS.LOG is an ASCII text log file that is created as SMSETUP executes.

Note that you can add commentary to your script file by using the # (number symbol) in the first column of each line of commentary.



## Chapter 4 Opening a Remote Session

### Introduction

Telnet is a remote access terminal protocol that allows network users to log on and use a remote computer system as though they are directly connected to that system. The following procedure outlines opening a Telnet session with a host computer.

### The Host Connection

Once the Telnet prompt appears, the PC is in command mode. The PC accepts and executes the commands while in command mode. In order to communicate with a Telnet host, you must open a connection between the PC and the host. To open a connection:

1. Type the Open command and the Internet address (or name) of the host computer and press the [Enter] key.

```
telnet>open 111.25.18.100
      or
telnet>open [hostname]
```

The host computer sends a log on and password screen to the PC.

2. Type your log-on and/or password at the host prompt and press the [Enter] key.

The Telnet protocol enters the input mode and the host prompt is displayed at the PC.

*Note: If your system is configured to suppress the Telnet prompt, the prompt will never be displayed. In that case, any reference to the Telnet prompt and commands in this guide do not apply.*

Press [CTRL]+[4] (the Telnet escape key sequence) to return the PC to the Telnet prompt.

To return to your host application when you are through communicating with Telnet, press the [Enter] key twice and the PC displays the host prompt.

---

## Unsuccessful Host Connection

If the PC cannot connect with the host (or the address is invalid), error messages are displayed and control returns to the PC.

---

### Using 2.4GHz Radio

When the PC is unable to connect to the host after an OPEN command, an error message is displayed on the screen explaining the inability to connect.

**For Example:**

*Opening with a specific host name*

```
telnet > open my_host
Resolving hostname ...
Couldn't resolve host my_host
telnet >
```

*Opening with a specific IP address*

```
telnet > open 120.120.120.120
Resolving .....
Couldn't resolve. FTP Error #999
telnet >
```



---

## Telnet Commands

A list of available Telnet commands may be displayed at the Telnet prompt. The following is a description of each Telnet command along with their syntax.

To display a list of Telnet commands:

1. Press [?] when the cursor is at the Telnet prompt.
2. Press [Enter].

---

## Abbreviated Commands

The following Telnet commands can be activated by typing enough of the command to separate it from other like commands:

<u>Command</u>	<u>Abbreviation</u>
Close	cl
Display	d
Mode	m
Open	o
Send	sen
Set	set
Status	st
Toggle	t

---

### Close

Closes a Telnet session and returns the PC to command mode.

**Syntax:**      `close`

---

### Display

Displays **set** and **toggle** values.

**Syntax:**      `display [argument]`

Please see "Set" and "Toggle" commands later in this section.

---

## Mode

Enables you to specify Line or Character mode. Type **Mode** at the Telnet prompt, then type the desired mode (**Line** or **Character**). If the host is capable of entering that mode, Line or Character mode is enabled. Line mode uses the RF link more effectively than Character mode.

```
Syntax:      mode line
             mode character
```

---

## Open

Opens a connection to the host that you specify. The host is specified by its Internet address that you enter using dot notation or by the host name.

```
Syntax:      open [internet address]
             open [host name]
```

---

## Send

Sends a special character sequence to the host.

```
Syntax:      send [arguments]
```

The following arguments may be specified.

escape	Sends the current Telnet Escape character.
synch	Sends the Telnet Synch sequence. This sequence causes the host to discard all previously typed (but not yet read) input. This sequence is sent as TCP urgent data. (It may not work if the host is a 4.2 BSD system. If synch doesn't work, lower case "r" may be echoed on the terminal.)
brk	Sends the Telnet Break sequence to the host.
ip	Sends the Telnet Interrupt Process sequence, which causes the host to abort the currently running process.
ao	Sends the Telnet Abort Output sequence, which causes the host to flush all output from the host to the user's terminal.
ayt	Sends the Telnet Are You There sequence to the host.
ec	Sends the Telnet Erase Character sequence, which causes the host to erase the last character entered.
el	Sends the Telnet Erase Line sequence, which causes the host to erase the line currently being entered.
ga	Sends the Telnet Go Ahead sequence to the host.
nop	Sends the Telnet No Operation sequence.
?	Prints out help information for the send command.

---

---

## Set

Sets any one of a number of Telnet variables to a specific value. The special value *off* turns off the function associated with the variable. The values of variables may be interrogated with the Display command, e.g. `display echo`.

Syntax:        `set [argument]`

The arguments which may be specified are:

echo	When in Line mode, this variable toggles between implementing local echo of entered characters (for normal processing) and suppressing the echo of entered characters (for privacy).
escape	Causes entry into Telnet command mode.
interrupt	If you type the interrupt variable while Telnet is in localchars mode, a Telnet IP sequence (send ip) is sent to the host. The initial value for the interrupt variable is interpreted as the terminal's interrupt character.
quit	If you type the quit variable and Telnet is in localchars mode, a Telnet BRK sequence (send brk) is sent to the host. The initial value for the quit variable is interpreted as the terminal's quit character.
erase	If you type the erase variable while Telnet is in localchars mode and if Telnet is operating in Character mode, a Telnet EC sequence (send ec) is sent to the host. The initial value for the erase variable is interpreted as the terminal's erase character.
kill	If you type the kill variable while Telnet is in localchars mode and if Telnet is operating in Character mode, a Telnet EL sequence (send el) is sent to the host. The initial value for the kill variable is interpreted as the terminal's kill character.

---

---

## Status

Shows the current status of Telnet. This status includes the peer to which the PC is connected, the Telnet escape character, and the current input mode.

Syntax:        `status`

---

## Toggle

Toggles various flags that control how Telnet responds between true and false.

**Syntax:**        `toggle [arguments]`

Valid arguments are:

Valid Toggle arguments for 2.4GHz radios:

localchars	If True, then the interrupt, quit, erase, and kill characters are recognized locally and transformed into appropriate Telnet control sequences ( ip, brk, ec, and el; see Send). The initial value for this toggle is True in Line mode and False in Character mode.
crmod	Toggle carriage return mode. When this mode is enabled, most carriage return characters received from the host are mapped into a carriage return followed by a line feed. This mode does not affect those characters typed by the user, only those received from the host. This mode is not very useful unless the remote host only sends carriage return but never line feed. The initial value for this toggle is False.
?	Displays the legal toggle commands.

---

---

## ?

Telnet command help. With no arguments, Telnet prints a help summary. If you specify a command with ?, Telnet prints the help information for that command, e.g. ? set echo.

**Syntax:**        `? [command]`

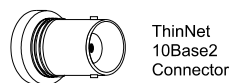
## Chapter 5 Technical Specifications

### Session Manager

Universal Input Power	110 – 240 VAC, 50 – 60 Hz (nominal) 2 Ampere Max
RF Power Output	None
Temperature	0°C – 50°C (32°F – 122°F)
Humidity	0–95%, non-condensing
Height	2.5"; 6.35cm
Width	11.7"; 29.72cm
Depth	14.5"; 36.83cm
Weight	5.6 lb; 2.54kg

---

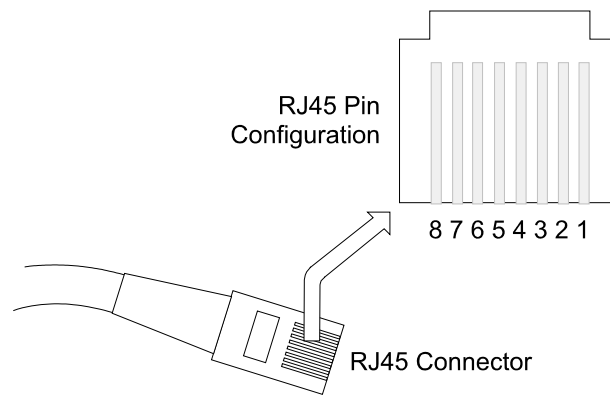
### Thinnet Connector



**Figure 5-1 Ethernet ThinNet 10Base2 Connector**

---

## RJ45 (10BaseT) Connector



**Figure 5-2 Ethernet RJ45 Connector Pin Configuration**

Pin	Function	Pin	Function
1	Tx+	5	Not Used
2	Tx-	6	Rx-
3	Rx+	7	Not Used
4	Not Used	8	Not Used

Thick Ethernet (10Base5) AUI Pinout

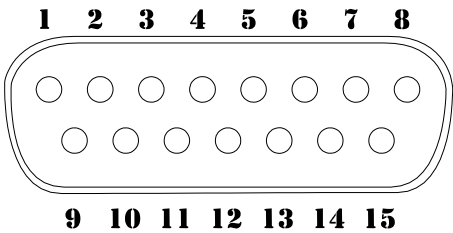


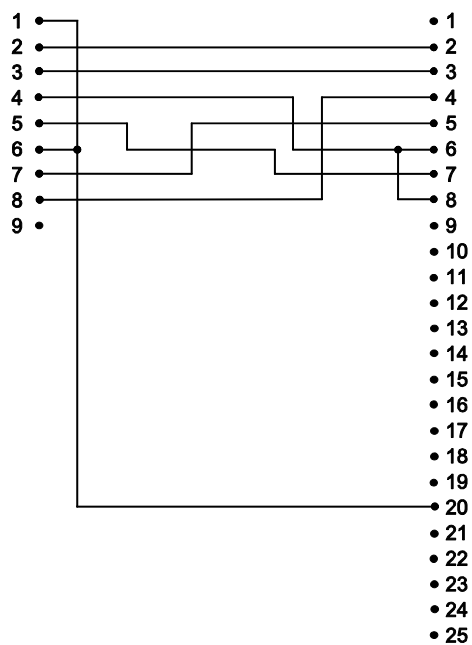
Figure 5-3 15-pin Thick Ethernet (10Base5) AUI Connector

Pin	Function	Pin	Function
1	Logic Reference	9	Collision -
2	Collision +	10	Transmit -
3	Transmit +	11	Logic Reference
4	Logic Reference	12	Receive -
5	Receive +	13	Power
6	Power Return	14	Logic Reference
7	N/C	15	N/C
8	Logic Reference		

---

## Null Modem Cable Pinout

### RS-232 Pinout 9-pin Female to 25-pin Female (Null Modem)



**Figure 5-4 Null Modem Cable Pinout**



## Index

?	
(Help).....	58
6224 Setup.....	28

---

### A

Abbreviations	
Telnet Commands.....	55
addLoginUser()	
Telnet Security.....	49
Alarm Condition Indicator.....	10
Antenna	
6224 Session Manager.....	2
Arguments	
Send.....	56
Set.....	57
Toggle.....	58
Attachment Unit Interface (AUI) .....	11, 14
AUI (Attachment Unit Interface) .....	14
Autologin	
clrAllAlogin.....	31
clrAlogin.....	32
Scripts.....	6
setAlogin .....	34
setAutologinTimeout .....	36
AUX Port.....	11

---

### B

backup battery .....	5, 4, 34
Blocked Session.....	36
Boot Process	
Explanation.....	20
Sample .....	19
bootParms .....	30
Break key sequence	
logout.....	7

---

### C

Cable Clamps.....	13
Cable Connection	
AUI.....	14
Thinnet.....	14
TPE.....	14
Cable Length	

AUI Recommendation .....	13
cl (Close) .....	55
Close (cl) .....	55
Close Telnet Session.....	55
closeAllUsers.....	30
Closed Host Connection .....	5
closeTerm .....	31
closeTerm vs closeUser .....	31
clrAllAlogin.....	31
clrAlogin.....	32
clrHostNames .....	32
Commands	
6224 Setup.....	28
Telnet.....	55
Configuration	
Hardware .....	9
Software.....	17
Connecting to the Host	
Failure to.....	54
Connectors	
Back Panel.....	11
Console	
RX Indicator .....	10
TX Indicator .....	10
Console Port .....	11
Contacting LXE.....	8
Cross-reference Table.....	39
Ctrl-X and u and v .....	26

---

### D

d (Display).....	55
Default	
setDefaultHost .....	36
Defaults, Quick List	
Boot Parameters.....	18
Delete	
closeAllUsers.....	30
closeTerm .....	31
clrAllAlogin.....	31
clrAlogin.....	32
clrHostNames .....	32
loginUserDelete.....	50
removeTerm .....	33
DisableLoginSecurity	
Telnet Security.....	50
Display	
Telnet Set values.....	57

Telnet Toggle values .....	58
Display (d).....	55
Distance Between Taps .....	13
Document Conventions .....	3
Dumb Terminal Configuration .....	27

## E

echo .....	57
Edit Parameters.....	23
EnableLoginSecurity	
Telnet Security.....	50
Error Messages .....	54
Escape Key Sequence	
Session Manager Shell .....	26
Telnet.....	53
Ethernet Cable	
Connection.....	13
Ethernet Cabling	
Cable Clamps.....	13
Junction Boxes.....	13
Metal Conduit.....	13
Tap Maximum .....	13
Ethernet LAN Compliant Equipment	
Requirement .....	13
Ethernet Ports	
Thinnet, AUI, TPE .....	11

## F

Facility Analysis Report .....	13
Features .....	2
First Time Setup Process .....	22
Flag	
Host Management.....	37
Session Management .....	42
Flags	
Boot Parameter .....	25
Flash RAM .....	10

## G

Gateway / Router IP Address .....	25
Gateway Inet.....	25
Glossary .....	8
Guidelines	
Cabling .....	13

## H

Hardware Configuration .....	9
------------------------------	---

Help .....	8
Telnet Command .....	58
Host	
Alias.....	39
clrHostNames .....	32
CTS Indicator .....	10
HostModInit().....	26
RTS Indicator .....	10
RX Indicator .....	10
setDefaultHost .....	36
setDefaultSess.....	37
setHostIP .....	38
setHostMode.....	38
setHostName.....	39
setHostPort .....	39
setHostTBR .....	40
setMultSess.....	40
setTermHost .....	41
showHosts .....	44
showSetup .....	45
TX Indicator .....	10
Host Connection	
Failed .....	54
Log on and password.....	53
Suppressed Telnet Prompt.....	53
Telnet.....	53
Telnet IP Address .....	53
Host Management Flag.....	37
HostModInit().....	26
How To	
AUI Cable Connection .....	14
Clear a terminal's Auto login script.....	32
Clear all Auto login scripts.....	31
Close all open sockets .....	30
Connect 6224 to PC.....	12
Connect to the Host with Telnet commands.....	53
Delete Terminals, IP Addresses and Flags .....	33
Display a Telnet value .....	55
Display Host Name Table.....	44
Edit Parameters.....	23
Initial Setup .....	22
Null Modem Cable .....	12
Open a Telnet session.....	53
Power Cable Connection .....	15
Quick Start.....	4
Save parameter changes.....	34
Send prepared text setup scripts to a 6224 .....	51
Show all terminals known to the 6224 .....	46
Show terminal data .....	45
Start multiple sessions with host(s) .....	40
Stop Autoboot Process .....	22
Thinnet Connection .....	14
TPE Cable Connection .....	14

**I**

IEEE 802.3 .....	11
Indicators	
Front Panel .....	10
Inet on Ethernet .....	24
Initial Sessions	
Overview .....	2
Initial Setup .....	17
IP Address	
Using in Telnet Open command .....	53
IP Address and Subnet Mask .....	24

**J**

Junction Boxes .....	13
----------------------	----

**K**

Key Sequence	
Escape Shell .....	26
Escape Telnet .....	53

**L**

ldshelp .....	32
Local Configuration .....	27
Local Method vs Remote Method .....	7, 17
Login	
DisableLoginSecurity .....	50
EnableLoginSecurity .....	50
Login Script	
Overview .....	2
LoginUserDelete	
Telnet Security .....	50
LXE Shell Prompt .....	22

**M**

m (Mode) .....	56
Memory Card .....	10
Metal Conduit .....	13
Mode	
Character .....	56
Line .....	56
Mode (m) .....	56

**N**

Null modem cable .....	12
------------------------	----

Null Modem Cable .....	18
------------------------	----

**O**

o (Open) .....	56
Open (o) .....	56
OPEN Command Unsuccessful	
2.4GHz Example .....	54
Operating System Prompt .....	22

**P**

Parameter	
boot device .....	18
file name .....	18
flags (f) .....	18
ftp password (pw) .....	18
gateway inet (g) .....	18
host inet (h) .....	18
host name .....	18
inet on backplane (b) .....	18
inet on ethernet (e) .....	18
other (o) .....	18
processor number .....	18
startup script (s) .....	18
target name (tn) .....	18
user (u) .....	18
Parameter Edit .....	23
Password	
and User Name .....	49
PC Communications Port Setup .....	18
PCMCIA Card .....	10
Pinout	
10BaseT .....	60
AUI Connector .....	61
Null Modem .....	62
Thick Ethernet .....	61
Port	
setSessmgrPort .....	41
Port 23 and the Open command .....	7
Port, Listen .....	5
Power Cable Connection .....	15
Power Panel	
Ethernet .....	11
Procedure	
First Time Setup .....	22
Prompt	
Operating System .....	22
Purpose	
This Guide .....	3

**Q**

Quick List	
Commands and Functions .....	28
Quick Start.....	4

**R**

Reconnection	
Overview .....	2
Remote Setup.....	27
Remote Telnet Access	
Overview .....	2
removeAllTerms.....	33
removeTerm .....	33
RESULTS.LOG.....	51
RF PC (radio frequency personal computer).....	1
RG 58A/U Coaxial Cable .....	11
RJ-45 Connector.....	14
RJ-45 Connector Pinout .....	60
RJ-45 Modular Telephone Connector .....	11
RXD (Receive Data).....	11

**S**

Save	
saveSetup.....	34
saveSetup.....	34
Script	
Auto login.....	34
Script Sending Tool.....	51
Secondary ID .....	5, 41
Security	
addLoginUser() .....	49
DisableLoginSecurity .....	50
EnableLoginSecurity .....	50
LoginUserDelete.....	50
Telnet access.....	49
sen (Send).....	56
Send	
ao (Abort Output) .....	56
ayt (Are You There) .....	56
brk (Break) .....	56
ec (Erase Character) .....	56
el (Erase Line) .....	56
escape .....	56
ga (Go Ahead) .....	56
Help info for Send command.....	56
ip (Interrupt Process).....	56
nop (No Operation) .....	56
synch.....	56
synch error .....	56
Send (sen).....	56

Send Arguments .....	56
Sequence of Events.....	7
Session Manager	
Hardware Configuration.....	9
HostModInit().....	26
ldshelp .....	32
Requirements .....	9
saveSetup.....	34
setAutologinTimeout .....	36
setDefaultSess.....	37
setSessmgrPort .....	41
showSetup .....	45
smHelp .....	47
Set.....	57
echo .....	57
erase.....	57
escape .....	57
interrupt .....	57
kill.....	57
quit.....	57
Set Argument Function OFF .....	57
Set Arguments .....	57
setAlogin .....	34
setAutologinTimeout.....	36
setDefaultHost .....	36
setDefaultSess.....	37
setHostIP .....	38
setHostMode.....	38
setHostName.....	39
setHostPort .....	39
setHostTBR .....	40
setMultSess.....	40
setSessmgrPort .....	41
setTermHost .....	41
setTermPort .....	42
setTermSess.....	42
Setup Procedure.....	22
showHosts .....	44
showSetup .....	45
showTerm .....	45
showTermByIP.....	46
showTermByTID.....	46
showUsers .....	46
Slide-Lock .....	14
smHelp.....	47
SMSETUP	
Add comments to script file.....	51
and the Number Symbol.....	51
Script Sending Tool.....	51
Sockets, 128 Total .....	2
Software Configuration .....	17
Specifications .....	59
st (Status).....	57
Status (st).....	57
Subnets .....	25

Suppressed	
Telnet Prompt .....	53
System Alarm Indicator .....	10
System Overview .....	1
System Run Indicator .....	10

---

## T

t (Toggle) .....	58
T-Connector Tap	
Maximum Allowed .....	13
Technical Specifications .....	59
Telnet	
Definition .....	53
Escape .....	56
Escape Key Sequence .....	53
Host Connection .....	53
Telnet BRK sequence (send brk) .....	57
Telnet Commands .....	55
? (Help) .....	58
Abbreviations .....	55
Close .....	55
Display .....	55
Displaying .....	55
Mode .....	56
Open .....	56
Send .....	56
Set .....	57
Status .....	57
Toggle .....	58
Telnet EC sequence (send ec) .....	57
Telnet EL sequence (send el) .....	57
Telnet IP sequence (send ip) .....	57
Telnet Prompt	
Suppressed .....	53
Telnet Send	
Abort Output .....	56
Are You There .....	56
Break .....	56
Erase Character .....	56
Erase Line .....	56
Go Ahead .....	56
Help .....	56
Interrupt Process .....	56
No Operation .....	56
Synch .....	56
Telnet Session	
Begin .....	53
Security Enabled .....	7
Term	
setTermPort .....	42
Terminal	
Auto login scripts .....	34
Autologin Data .....	45

closeTerm .....	31
clrAllAlogin .....	31
clrAlogin .....	32
Connection Data .....	45, 46
removeTerm .....	33
Secondary ID .....	40
Session Management Flag .....	42
setAutologinTimeout .....	36
setMultSess .....	40
setTermHost .....	41
setTermSess .....	42
showSetup .....	45
State .....	45, 46
Terminal Emulation	
Baud, Data Bits, Parity, Stop Bits .....	18
Terminal Secondary ID .....	41
closeTerm .....	31
Terminal TID	
Connection Data .....	46
Terminal TTY .....	31
Terminal-Host Connections, 128 Total .....	2
Terminals	
removeAllTerms .....	33
showTerm .....	45
showTermByIP .....	46
showTermByTID .....	46
Text Setup Script .....	51
Thick Ethernet Pinout .....	61
Thinnet .....	11
ThinNet 10Base2 Connector .....	59
Thinnet Connection .....	14
Timeout, Autologin .....	36
Toggle	
? 58	
crmod .....	58
localchars .....	58
True or False .....	58
Toggle (t) .....	58
TPE (Twisted Pair Ethernet) .....	14
Twisted Pair Ethernet (TPE) .....	11, 14
TXD (Transmit Data) .....	11

---

## U

UNIX Platform	
and SMSETUP .....	51
Unsuccessful Host Connection .....	54
Using 2.4GHz Radio .....	54
User	
addLoginUser() .....	49
LoginUserDelete .....	50
User Name	
and Password .....	49
User Name and Password .....	2

Users

closeAllUsers.....	30
showUsers .....	46

---

*V*

Valid IP Address .....	18
------------------------	----

Valid Set arguments .....	57
Valid Toggle arguments for 2.4GHz .....	58

---

*W*

Warning

Grounding electrical connection.....	9
--------------------------------------	---