

AXEL Platine Terminal

AX3000 Models 65, 70, 75, 80 & 85

ADDENDUM for Firmware revision 0922a

The reproduction of this material, in part or whole, is strictly prohibited. For additional information, please contact:

AXEL

14 Avenue du Québec
Bât. K2 EVOLIC - BP 728
91962 Courtabœuf cedex - FRANCE
Tel.: 33 1.69.28.27.27
Fax: 33 1.69.28.82.04
Email: info@axel.com

The information related to firmware 0922a in this document is subject to change without notice. AXEL assumes no responsibility for any errors that may appear in this document.

All trademarks and registered trademarks are the property of their respective holders.

© - 2009-2010 - AXEL - All Rights Reserved.

TABLE OF CONTENT

INTRODUCTION	1
1 - INTRODUCTION TO THE AX3000.....	3
1.1 - TERMINAL MODELS	4
1.2 - MAIN FUNCTIONS.....	5
1.2.1 - Network Functions.....	5
1.2.2 - Terminal Function.....	5
1.2.3 - Print and Terminal Server	5
1.2.4 - Tools and Statistics	6
2 - SETTING-UP THE TERMINAL	7
2.1 - FIRST POWER-ON	8
2.1.1 - First Screen	10
2.1.2 - Interface Selection.....	11
2.1.3 - Network Connection	12
2.1.4 - Devices.....	13
2.1.5 - Citrix Published Application Desktop	14
2.1.6 - Citrix (Published Application or Published Server)	14
2.1.7 - Serial Connection	15
2.1.8 - Set-Up Summary.....	16
2.2 - SETTING-UP ETHERNET OR WIRELESS INTERFACE	17
2.2.1 - General Parameters	17
2.2.2 - Ethernet Interface.....	18
2.2.3 - Wireless Interface.....	18
a) Selecting the SSID.....	19
b) Configuring the SSID	20
c) Advanced Settings	23
2.3 - SETTING-UP CITRIX DESKTOP	24
2.3.1 - Configuration Principles	26
2.3.2 - Citrix Destop Activation	26
2.3.2 - Browser Settings	28
2.3.4 - Desktop Parameters.....	29
3 - USING THE AX3000	31
3.1 - SWITCHING ON THE AX3000.....	32
3.1.1 - Session Manager: Classic Mode.....	33

3.1.2 - <i>Session Manager: Desktop Mode</i>	34
3.2 - USING MULTIPLE SESSIONS.....	35
3.3.1 - <i>Opening and Switching Sessions</i>	36
3.3.2 - <i>Disconnecting Sessions</i>	36
3.3 - CITRIX DESKTOP	37
3.3.1 - <i>Authentication</i>	37
3.3.2 - <i>Using the Desktop</i>	38
3.3.3 - <i>Closing the Desktop</i>	39
3.4 - LOCKING THE SCREEN.....	39
3.5 - "COPY/PASTE" FUNCTION.....	40
a) Copy.....	40
b) Paste	41
3.6 - TURNING OFF THE AX3000.....	41
3.7 - AX3000 HOT-KEYS.....	43
4 - TOOLS AND STATISTICS.....	45
4.1 - THE PING COMMAND	46
4.2 - CONNECTION MANAGEMENT.....	46
4.2.1 - <i>Global Connection List</i>	47
4.2.2 - <i>"TCP Server" and "TCP Client" Connection Information</i>	48
4.3 - INTERFACE INFORMATION	50
4.3.1 - <i>Ethernet Interface</i>	50
a) State.....	50
b) DHCP/DNS	51
c) Statistic.....	52
4.3.2 - <i>Wireless Interface</i>	53
a) State.....	53
b) DHCP/DNS	54
c) Statistic.....	54
4.4 - USB STATISTICS.....	54

INTRODUCTION

This manual is an addendum to the AX3000 User's Manual. Only configuration and use of the network interface (Ethernet or wireless) and the Citrix Desktop (similar to Citrix Web interface) are described.

We assume the reader is familiar with the wireless interface management and the AX3000 configuration.

The manual is organized into the following chapters:

Chapter 1: Introduction to the AX3000

Introduction to the AX3000's main features.

Chapter 2: Setting-up the terminal

Quick set-up and interactive set-up procedures (network interface and Citrix Desktop).

Chapter 3: Using the AX3000

How to use the multi-session feature and shutdown the AX3000.

Chapter 4: Tools and Statistics

Description of the embedded AX3000 tools (ping, statistics, etc).

CHAPTER 1

INTRODUCTION TO THE AX3000

This chapter introduces the main features of AXEL terminals.

1.1 - TERMINAL MODELS

This manual covers configuration and use of all Axel terminals. The following table lists the main differences between models:

M85	M80F	M75D	M75C	M70F	M70W	M75, M75E, M75B	M65C
-----	------	------	------	------	------	-----------------------	------

Connection

Ethernet (TCP/IP)	10/100 BaseT	10/100 BaseT	10/100 BaseT	10/100 BaseT	10/100 BaseT	10/100 BaseT	10/100 BaseT	10/100 BaseT
Wireless (802.11)	option	---	option	---	---	---	---	---
Serial (RS232)	yes	USB	yes	yes	---	---	yes	yes

Sessions

Text Emulations	yes	yes	yes	yes	yes	---	yes	yes
RDP / ICA	yes	yes	yes	yes	yes	yes	yes	---
Virtual Desktop	yes	yes	---	---	---	---	---	---
VNC Client	yes	yes	yes	yes	yes	---	yes	---
Nbr de colors	32bpp	32bpp	16bpp	16bpp	16bpp	16bpp	16bpp	---

Connectors

Parallel Port	1	---	1	1	---	---	1	1
Serial port	2	---	2	2	---	---	2	2
USB Port	2	4	2	2	2	2	---	---

Other

USB Driver	yes	yes	Firmware Option MSC				---	---
Smartcard	yes	yes	Firmware Option SCA				---	---
Audio	USB	USB	---	---	---	---	---	---

1.2 - MAIN FUNCTIONS

1.2.1 - Network Functions

The Axel terminal supports the following network functions:

- DHCP: obtaining an IP address and other parameters
- DNS: publishing the terminal name and resolving server names
- Routing: WAN connection

In addition for the AX3000 M75D & M85 there is a choice of the active interface, either Ethernet or Wireless. Only one interface can be active but each provides its own IP settings (DHCP, DNS, routers).

1.2.2 - Terminal Function

Each TCP/IP AXEL terminal can support up to **six concurrent and independent sessions.**

This multi-session capability provides multiple connections across a network. Each session can:

- Connect to any TCP/IP networked server,
- Use different protocols (ica, vnc, rdp, telnet, ssh and tty),
- Have independent parameters (resolution, emulation, etc.)

Programmable keystrokes are used to open or hotkey between sessions.

The maximum number of sessions is 6 but this can be limited to fewer sessions. (Minimum 1)

Note: the AX3000 can also act as a RS232 serial terminal.

1.2.3 - Print and Terminal Server

The AX3000 auxiliary ports can be managed either:

- By a network service: LPD or PRT5250 for printers, TELNET CLIENT for serial terminals or TTY for other peripherals.
- By escape sequences: compatible with serial terminals. (Slave mode)

1.2.4 - Tools and Statistics

Embedded AX3000 tools provide the following features:

- Ping,
- Remote set-up,
- Network Statistics,
- Firmware downloading.

CHAPTER 2

SETTING-UP THE TERMINAL

This chapter describes quick set-up and interactive set-up features

Two configuration methods are available:

- When the AX3000 is powered up for the first time (Quick Set-Up wizard)
- Or at any time through the interactive set-up.

2.1 - FIRST POWER-ON

When the terminal is switched on up for the very first time two configuration methods are available:

- **Quick Set-Up:** a wizard allows the terminal to be set-up in few seconds for typical use.
- **Auto-Configuration:** used in conjunction with AxRM, this function allows the terminal to automatically receive new firmware and/or a configuration.
IMPORTANT: the auto-configuration must use the Ethernet interface.

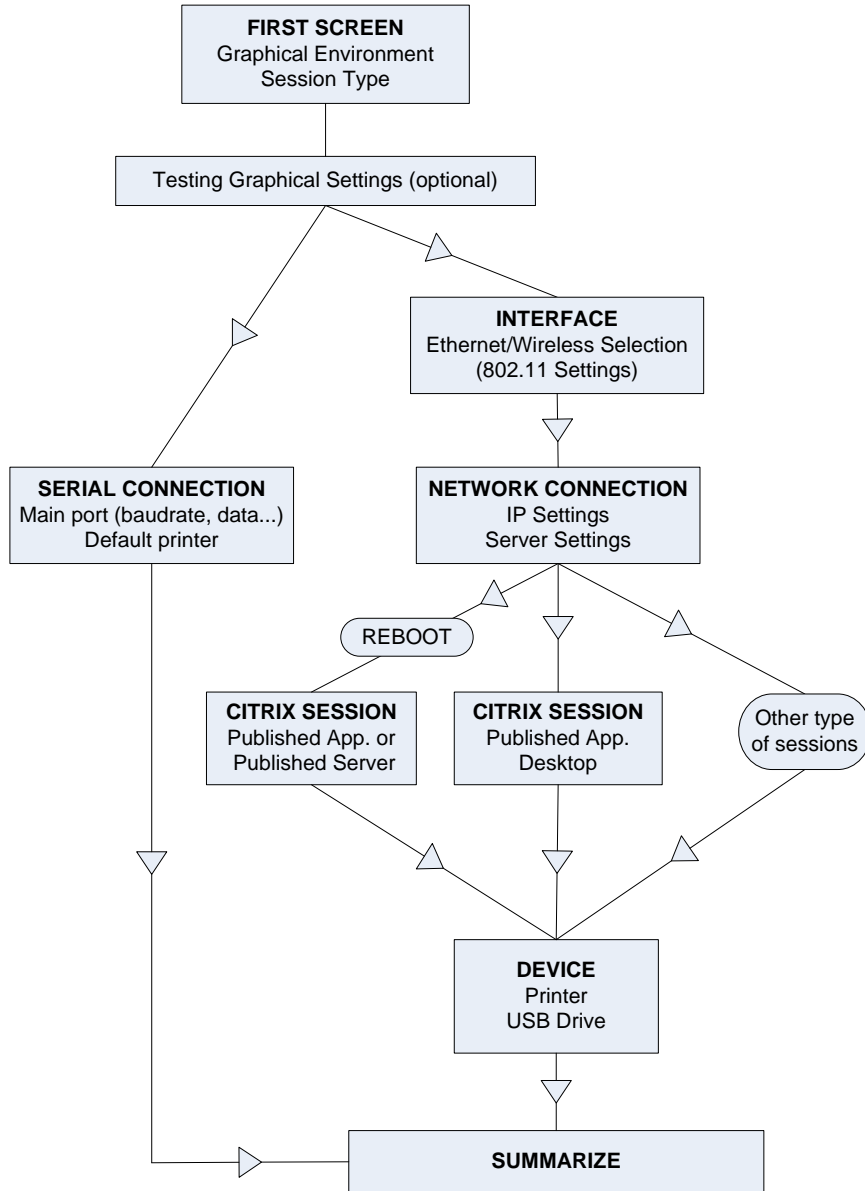
The quick set-up is designed for a typical simple environment of:

- One server
- An optional router
- All sessions set identically
- An optional printer.

Note: After the 'Quick set-up' is run all other parameters within the terminal are reset to their factory default values.

The 'quick set-up' guides the user through a setup menu in an intuitive manner.

The dialog box structure (referred to as a Wizard) is shown below:

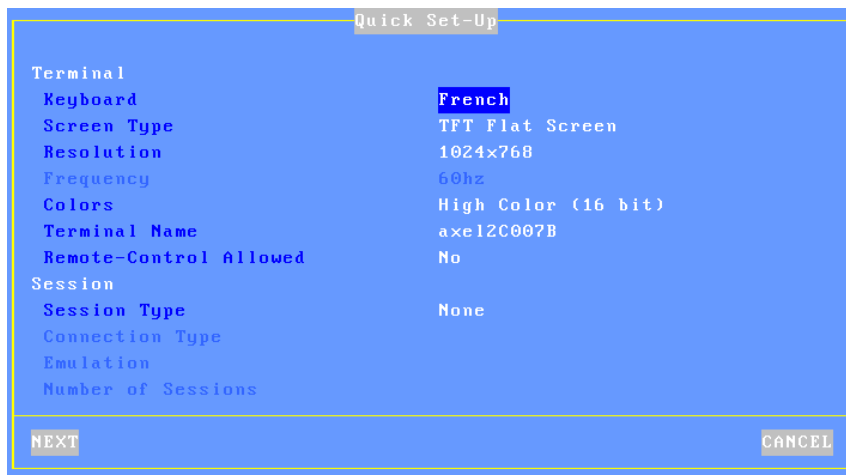


Note: the following keystrokes are available in the set-up:

- <Arrows>: moving selection within menus or dialog boxes
- <Enter>: validating a value or a button
- <Esc>: cancels current field (same as using 'cancel' button)
- <Space>: lists of options
- <Tab>: shortcut to buttons on the bottom of the dialog box

2.1.1 - First Screen

This first screen allows the session type to be selected:



These parameters are:

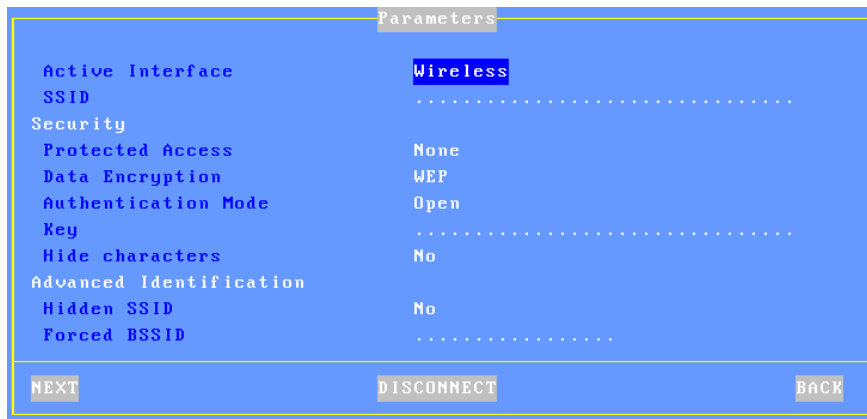
- **Keyboard:** keyboard nationality.
- **Screen Type:** options are CRT Monitor or TFT Flat Screen.
- **Resolution:** available values depend on the terminal model.
- **Frequency** (only for CRT monitors): 60Hz or 75Hz.
- **Colors:** 24bpp, 16bpp or 8bpp according to the terminal model.
- **Terminal Name**
- **Remote control Allowed**
- **Session Type:** available values are "TSE (rdp)", "Citrix (ica)", "Virtual Desktop", "VNC", "5250", "3270" and "Text Emulation".

- **Connection Type:** available only for the following Session Types:
 - **Citrix (ica):** "Server (local list)", "Published Application", "Published Server" or "Published App. Desktop".
 - **Text Emulation:** "telnet", "aux1" or "ssh".
 - **Virtual Desktop:** "Citrix XEN Desktop" or "VMWARE VDM".
- **Emulation:** only available if "Text Emulations" is selected.
- **Number of sessions:** only available for Text Sessions. For graphical sessions this number is 1.

Note: when exiting the dialog box the graphical settings (resolution and frequency) may be tested.

2.1.2 - Interface Selection

The Interface Selection box is shown below:

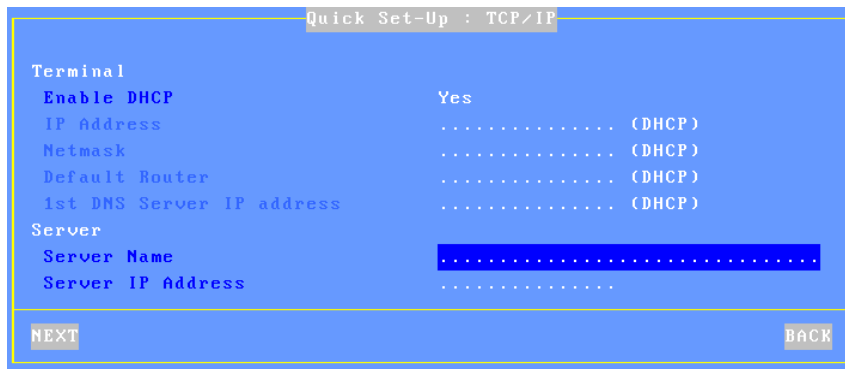


The parameters are:

- **Active Interface:** Two possible values:
 - **Ethernet:** The rest of the parameters are disabled
 - **Wireless:** Connection and security settings are requested.
- **Other parameters:** See Chapter 2.2.3 for more information.

2.1.3 - Network Connection

The Network dialog box is shown below:



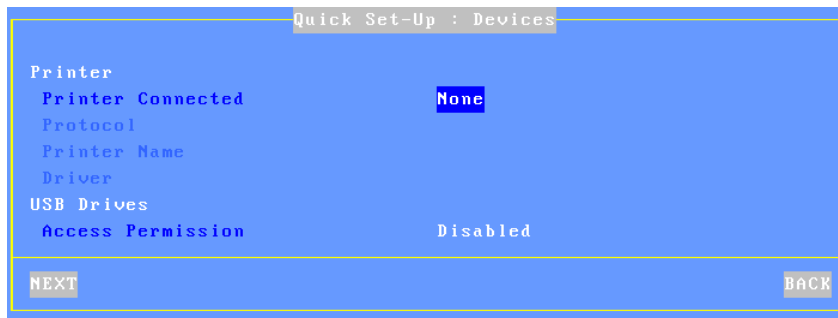
The parameters are:

- **Enable DHCP:** two options:
 - **Yes:** the DHCP protocol is run when the set-up is exited and the terminal automatically obtains an IP address and various other DHCP options (netmask, default router, etc).
 - **No:** a Static IP address is required
- **IP address:** mandatory if DHCP is disabled.
- **Default router:** optional router IP address.
- **1st DNS Server IP Address:** optional DNS server IP address
- **Server Name** (not available for Citrix): DNS name (if the DNS server is known) or a simple mnemonic name. (A name must be entered)
- **Server IP address** (not available for Citrix): if this field is left blank, DNS will be used to resolve the hostname.
- **TCP Port** (only for VNC): VNC session number

Note: for a "Virtual Desktop" session, the server is the "Connection Broker"

2.1.4 - Devices

This box is displayed for the all networked session types:



These parameters are:

- **Printer Connected:** auxiliary port where printer is attached (none, aux1, aux2, parallel, USB1).
- **Protocol:** LPD, TSE, Prt5250 or Prt3270. The next parameters are protocol-dependent:
 - LPD: **Queue Name** (name given to the auxiliary port)
 - TSE: **Printer Name** and **Windows TSE Driver**
 - Prt5250: **Printer Name** and **Driver** (printer type and model)
 - Prt3270: **Printer Name**
- **Access Permission:** only for TSE and Citrix sessions where USB Mass Storage is supported.

2.1.5 - Citrix Published Application Desktop

For session type 'Citrix (ica)' and connection type 'Published App. Desktop', the following box is displayed:

```

Quick Set-Up : Citrix Published App. Desktop

Logon Authentication
Username
Password          <Space>
Domain            .....

Browser Settings
IP Address or DNS Name    ica
TCP Port                 80

NEXT                                BACK

```

These parameters are:

- **Username:** default value for logon authentication (optional).
- **Password:** press <Space> to enter the logon password.
- **Domain:** default value for logon authentication.
- **IP Address or DNS Name:** location of a farm's server
- **Port TCP:** used by the exploration (browser) protocol

2.1.6 - Citrix (Published Application or Published Server)

For the session type 'Citrix (ica)' with the connection type 'Published Application' or 'Published Server', the following box is displayed (after the terminal reboots):

```

Quick Set-Up : Citrix

Citrix
Connection Type      Published Application
Exploration Protocol  TCP/IP + HTTP
IP Address or DNS Name    ica
TCP Port              80
Published Application (F2=List) .....

NEXT                                CANCEL

```

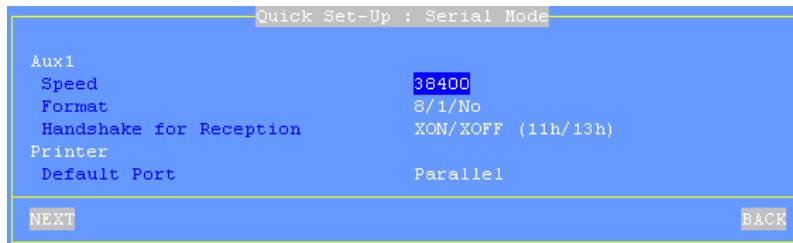
These parameters are:

- **Connection Type:** Selected in previous dialog box.
- **Exploration Protocol:** possible values are:
 - TCP/IP + HTTP: XML-based exploration
 - TCP/IP: UDP-based exploration
- **TCP Port:** used by the exploration protocol
- **IP Address or DNS Name:** location of a server farm, overwrite default of 'ica' if necessary
- **Published Application or Published Server:** press <F2> to show the list from the Citrix farm.

2.1.7 - Serial Connection

Note: Depending on model, if an AUX1 port is available on the terminal rear panel this is the main port, if not a third party USB-COM adaptor is requested. (Note, this component is not supplied by Axel)

Where the session type is 'Text Emulation' and connection type is 'aux1' the following box is displayed:

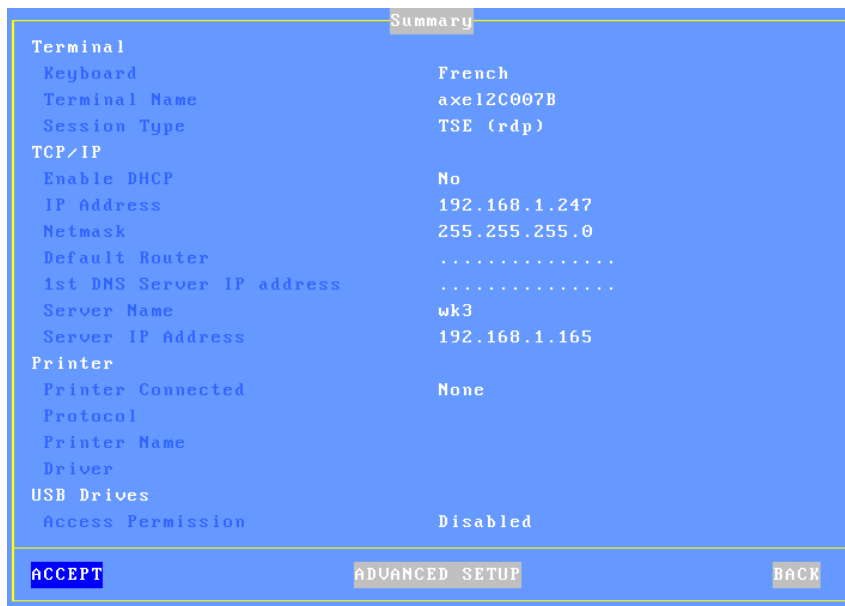


These parameters are:

- **Speed:** press <Space> to select the baud rate
- **Format:** press <Space> to select the data format
- **Handshake for reception:** press <Space> to select the handshake
- **Default Port:** auxiliary port used for local printings.

2.1.8 - Set-Up Summary

At the end of the wizard process, a summary of the selected settings is displayed. For example:



Press the [ACCEPT] button to use these settings. After an automatic reboot the terminal is ready to be used.

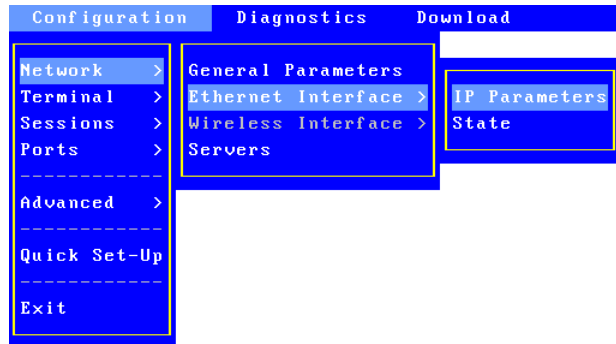
The [Advanced] button enters the interactive setup where further configuring is possible. For example adding different session types.

The [BACK] button allows these settings to be changed.

2.2 - SETTING-UP ETHERNET OR WIRELESS INTERFACE

The following can be used to enter the AX3000 interactive set-up:

The network settings are available through the terminal set-up (<Ctrl><Alt><Esc>). Select **[Configuration]-[Network]** menu:

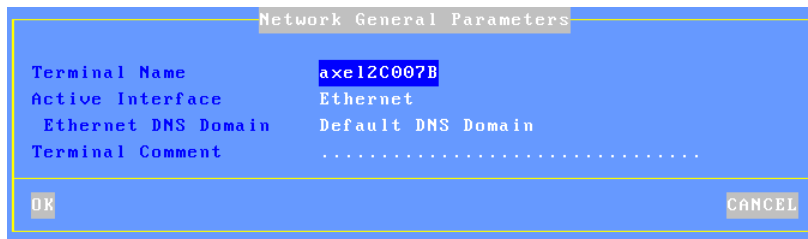


The key points of the AX3000 network configuration are:

- **General Parameters:** terminal identification and interface activation
- **Interface** (Ethernet or Wireless): static or dynamic IP address, DNS protocol and router management

2.2.1 - General Parameters

To set the AX3000 interface and the terminal identification select the **[Configuration]-[Network]-[General Parameters]** menu. The dialog box below is displayed:



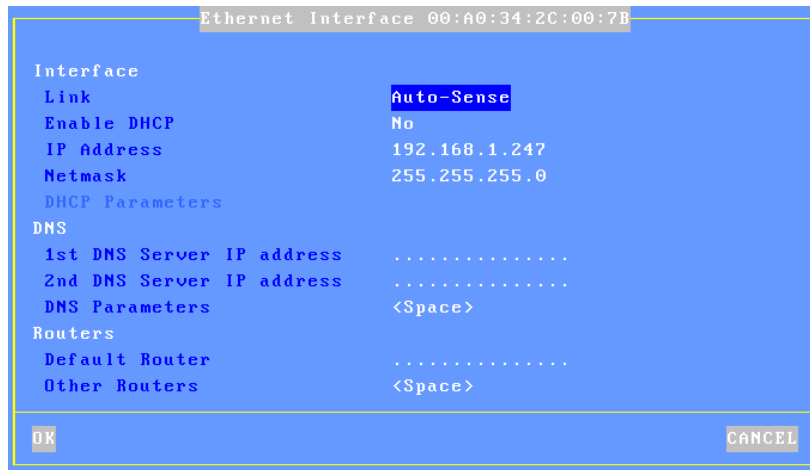
The **'Active Interface'** parameter selects which interface to be used. Possible

values are:

- **Ethernet**
- **Wireless**
- **None (serial mode)**

2.2.2 - Ethernet Interface

To set the Ethernet interface properties select the **[Configuration]-[Network]-[Ethernet Interface]-[IP Parameters]** menu. The dialog box below is displayed:



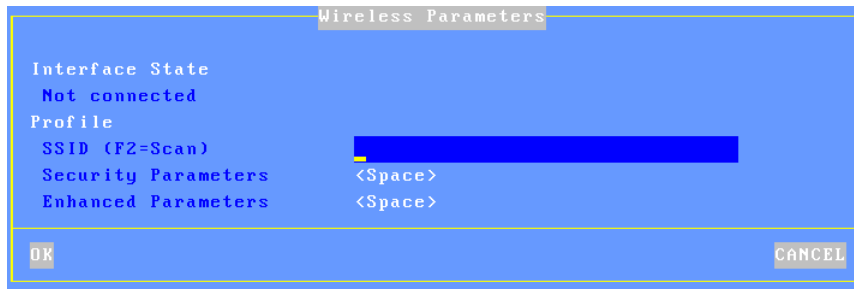
Note: the Ethernet address is displayed as the title box

2.2.3 - Wireless Interface

To set the Wireless interface properties select the **[Configuration]-[Network]-[Wireless Interface]** menu. The two sub-menus are:

- **[Wireless Parameters]**: see next page.
- **[IP Parameters]**: same dialog box as Ethernet interface (minus the 'Link' parameter)

The **[Wireless Parameters]** box is the following:



This box allows the wireless profile to be set-up (only one profile)

Note: when the wireless interface is connected a [DISCONNECT] button is available.

a) Selecting the SSID

The first step is to enter the access point SSID. This can be done manually or by a scan operation (available only if the wireless interface is not currently connected).

The following shows a typical scan box (press <F2>):

Available Access Points						
SSID	BSSID	Ch	Signal	Security		
AX_NETGEAR 1	00:1b:2f:71:f4:fa	13	90%	WPA2-EAP-CCMP		
AX_NETGEAR 2	06:1b:2f:71:f4:fa	13	90%	WPA-EAP-TKIP		
AX_NETGEAR 3	0a:1b:2f:71:f4:fa	13	90%	WPA-EAP-TKIP+		
AX_NETGEAR 4	0e:1b:2f:71:f4:fa	13	90%	WPA2-PSK-CCMP		
AX_NETGEAR 5	12:1b:2f:71:f4:fa	13	90%	WPA-PSK-TKIP		
AX_NETGEAR 6	16:1b:2f:71:f4:fa	13	90%	WPA-PSK-TKIP+		
AX_NETGEAR 7	1a:1b:2f:71:f4:fa	13	90%	WEP		
IXNOUE	00:19:7d:1f:4c:bb	7	30%	WPA-PSK-TKIP		
LU3	00:19:5b:80:81:9b	6	10%	WPA-PSK-TKIP+		
Livebox-6208	00:1e:4c:42:ac:31	1	40%	WPA-PSK-TKIP		
WANAD00-18C3	00:14:a4:4f:2a:1f	1	10%	WPA-PSK-TKIP		
frontier-france	00:1e:37:12:28:4f	3	50%	WEP		
sec.tfs.wireless	00:16:9d:7c:ca:40	1	10%	WPA-EAP-TKIP		

REFRESH <F2> EXIT

Note about hidden SSIDs: they are listed as <hidden>. If a hidden SSID is selected the actual SSID name must be manually entered.

If the selected SSID is listed multiple times, a dialog box allows the connection to be forced or not to this SSID (Forced BSSID - see Sub-Chapter c).

b) Configuring the SSID

After the SSID selection, press <Space> on "Parameters" to display the SSID settings box:

SSID AXEL_TST	
Security	
Protected Access	None
Data Encryption	WEP
Authentication Mode	Open
Key
Hide characters	Yes
Key Index	1

OK CANCEL

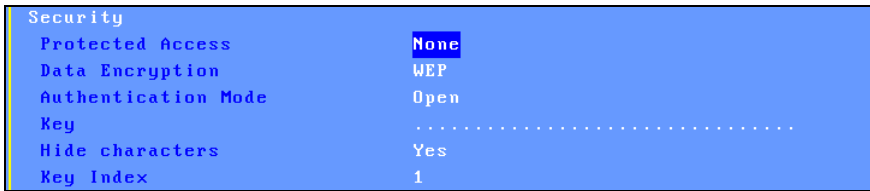
Note: if the SSID had been selected through a scan, SSID security parameters are set.

The dialog box may change depending of the 'Protected Access' value (associated parameters depend of the access type). The possible values of 'Protected Access' are:

- **None:** encrypted (WEP) or non-encrypted connection
- **Personal (PSK):** encrypted connection (WPA/WPA2)
- **Enterprise (EAP):** authenticated (LEAP/PEAP) and encrypted (WPA/WPA2) connection
- **802.1X:** authenticated (LEAP/PEAP) and encrypted (WEP) connection

The following describes each protected access type.

"Protected Access" is "None"



Data Encryption	Authentication Mode	WEP Key requested
WEP	Open	yes
	Shared	yes
None	---	---

Note 1: a WEP key is a character string. The key encoding is ASCII (length: 5 or 13 characters) or hexadecimal (length: 10 or 26 characters). For example the ASCII key value 12345 is 3132333435 in hexadecimal encoding.

Note 1: only one WEB key is managed. If needed use the "Key Index" option.

"Protected Access" is "Personal (PSK)"

```

Security
Protected Access      Personal (PSK)
Data Encryption       AES (CCMP)
Passphrase            *****
    
```

Data Encryption	Passphrase requested
AES (CCMP)	yes
TKIP	yes

Note: the "Personal (PSK)" protected access is known as WPA or WPA2. The Axcel terminal is able to dynamically select one of these two protocols. If needed, a specific protocol (WPA or WPA2) can be forced via the **"Wireless PSK/EAP version"** in **[Configuration]-[Advanced]-[Tunings]**.

"Protected Access" is "Enterprise (EAP)"

```

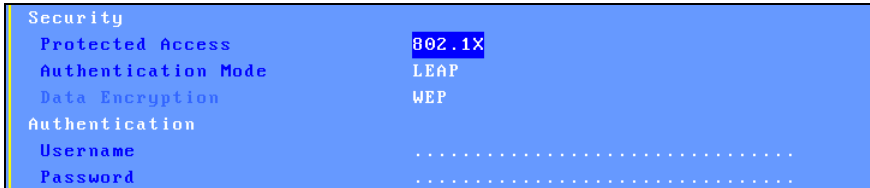
Security
Protected Access      Enterprise (EAP)
Authentication Mode    LEAP
Data Encryption       AES (CCMP)
Authentication
Username              .....
Password              .....
    
```

Authentication Mode	Data Encryption	Authentication requested
LEAP	AES (CCMP)	yes
	TKIP	yes
PEAP (MS-CHAP v2)	AES (CCMP)	yes
	TKIP	yes

Notes:

- See previous protected access mode for WPA / WPA2 protocols
- Both username and password must be entered

"Protected Access" is "802.1X"

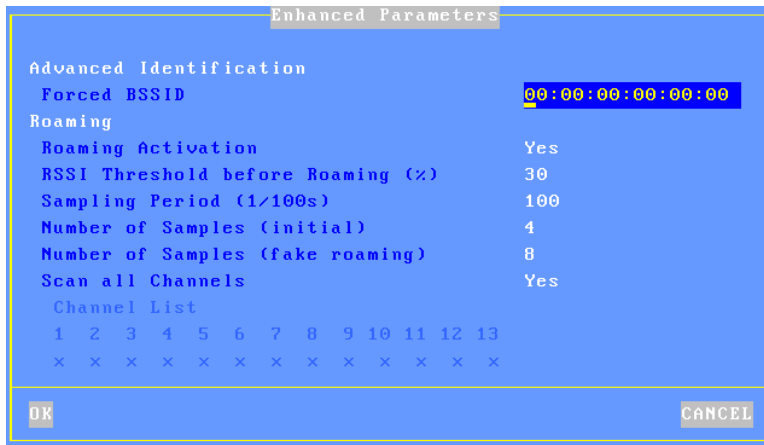


Authentication Mode	Data Encryption	Authentication requested
LEAP	WEP	yes
PEAP (MS-CHAP v2)	WEP	yes

Note: Both username and password must be entered.

c) Advanced Settings

Within the "Wireless Parameters" dialog box, select "Enhanced Settings" and press <Space>:



Forced BSSID: in event of multiple access points with the same SSID, this option allows one to be selected via its MAC address (BSSID).

Roaming: this feature is only for 'mobile' terminals. When a terminal moves

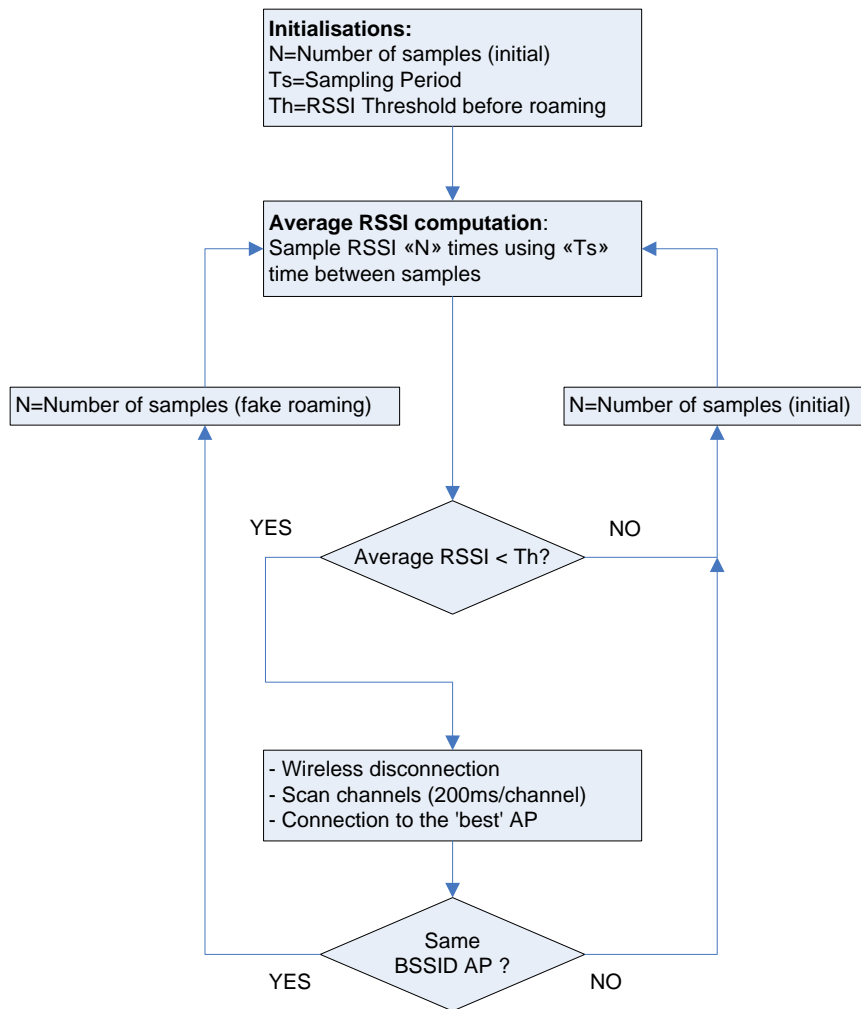
from its current access point (and the signal quality becomes too weak), the terminal automatically disconnects its wireless link and attempts to reconnect to the nearest access point (with the same SSID and same security settings). This should be 'invisible' for TCP connections (telnet, RDP, ICA...). The roaming options are:

- **RSSI Threshold before Roaming:** if the signal quality average is below this value the wireless link is disconnected.
- The three new parameters are used to compute this signal quality average. For more information see the flow chart on the next page.
- **Scan all Channels:** after a roaming disconnection, available access points are detected by a scanning operation. Scanning all channels takes 3 or 4 seconds (200ms per channel). To reduce this time and to be quickly reconnected, a subset of channels can be specified. Set this parameter to "No" and select/unselect each channel.

Note for Windows servers: to prevent TCP disconnections (RDP or ICA) when roaming, a registry value can be tuned:

- **Parameter:** HKEY_LOCAL_MACHINE-SYSTEM-CurrentControlSet-
Services-Tcpip-parameters-TcpMaxDataRetransmissions
- **Default value:** 5
- **Advised value:** 20

The following flow chart describes how the terminal computes the current 'Average RSSI'. This value computation is critical because a wireless disconnection will be done if the Average RSSI is lower than the terminal RSSI Threshold:



2.3 - SETTING-UP CITRIX DESKTOP

The Citrix Published App. Desktop session is comparable in functionality to the Citrix product Nfuse, WEB Interface or Program Neighborhood.

This feature allows a user, after authentication, to get icons of his published application to be displayed on the terminal local desktop.

Launching a published application is simply done by clicking the associated icon. For managing this application, an ICA session is automatically established.

2.3.1 - Configuration Principles

Configuration Principles:

- In opposite to the former implementation, the Citrix Desktop is not a terminal "session" (i.e. the original 6 sessions are still available for the terminal use).
- Terminal sessions are reserved for the use of Citrix Desktop (one terminal session per running published application).
- The number of published applications (sessions) can be set to between 1 and 6.
- The Citrix published application sessions are always set up descending from session number 6. For example if three sessions are reserved they will be sessions 6, 5 and 4.

To illustrate this principle below are two examples of session setup

Example 1: terminal dedicated to "Citrix Desktop"

Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
----------	----------	----------	----------	----------	----------

Example 2: "Citrix Desktop", VNC and ANSI sessions

VNC	ANSI	Reserved	Reserved	Reserved	Reserved
-----	------	----------	----------	----------	----------

2.3.2 - Citrix Destop Activation

Enter the terminal set-up (<Ctrl><Alt><Esc>) and go to: **[Configuration]-**

[Citrix Desktop] menu:



After setting 'Activation' to 'Yes' the Citrix Desktop options are available:

- **Browser Settings:** press the spacebar to select browser settings. (See Chapter 2.3.2.)
- **Connection Properties:** press the spacebar to display the 'Enhanced Parameters' dialog box.
- **Logon Authentication:** press spacebar to show a dialog box permitting the user's name, password and domain to be entered. This removes the need to enter these details for every logon.
- **Desktop Parameters:** press spacebar to show a tuning box. See Chapter 2.3.4.
- **Number of Sessions:** this sets the number of sessions reserved for published applications.

The following parameters are used dynamically by ICA to set up the published applications.

- **Additional Parameters:** press spacebar to show dialog box to set further settings.
- **Redirected Resources:** press <Space> to set redirected resources (printers, COM ports, etc.).
- **Bandwidth:** press spacebar to show dialog box for bandwidth management settings.

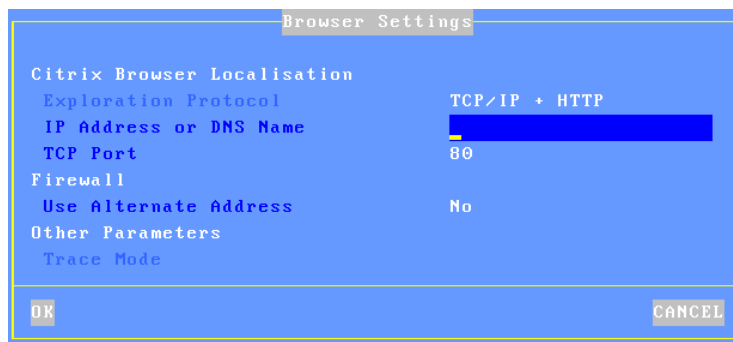
Notes:

- After changing setup parameters it is necessary to reboot the terminal to ensure the new values are used.
- Once "Citrix Desktop" is setup the reserved sessions are inaccessible from the setup menus.
- The setting up of a "Citrix Desktop" activates the status line allowing sessions to be changed with the mouse.

2.3.2 - Browser Settings

The Browser Settings are used for connection to the Citrix farm. This allows the user to be authenticated and the published application icons to be displayed.

Within the 'Citrix Desktop' box, select 'Browser Settings' and press <Space>. The following box is displayed:



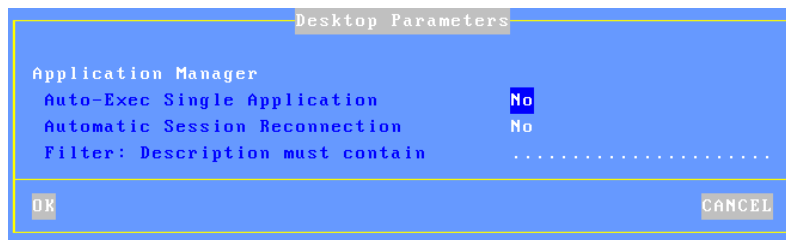
```
Citrix Browser Localisation
Exploration Protocol      TCP/IP + HTTP
IP Address or DNS Name    [REDACTED]
TCP Port                  80
Firewall
Use Alternate Address     No
Other Parameters
Trace Mode
```

These parameters are:

- **Exploration Protocol:** always TCP/IP + HTTP.
- **IP Address or DNS Name:** when this parameter is left blank, the ICA request is sent to the DNS name 'ica'. Otherwise it is sent to the entered DNS name or IP address.
- **TCP Port:** the default value is 80 and can be modified.
- **Use Alternate Address:** set it to 'Yes' when a firewall is present.
- **Trace Mode:** not applicable.

2.3.4 - Desktop Parameters

Within the 'Citrix Desktop' box, select 'Desktop Parameters' and press <Space>. The following box is displayed:



These parameters are:

- **Auto-Exec Single Application:** in event of only one application is published, this parameters allows to run it automatically.
- **Automatic Session Reconnection:** this parameters, also known as "smooth roaming", allows a user to retrieve his former sessions when reconnection from another workstation. The reconnected session type can be "**disconnected**" or "**disconnected and actives**".
- **Filter: Description must contain:** this allows displaying only published applications with a description field including the entered character string.

CHAPTER 3

USING THE AX3000

This chapter covers use of the AX3000.

3.1 - SWITCHING ON THE AX3000

The following operations are performed when the terminal is turned-on:

- **Boot:** initialization...
 - **Network interface:** link established, access point discovered etc
 - **TCP/IP:** if DHCP enabled, IP address and other parameters are obtained.
 - **Auto-configuration** (optional): checks over the network if a new firmware/configuration is available. If yes the terminal reboots again for the new firmware/configuration to take effect.
 - **Auto-Connection:** some connections may be opened automatically:
 - Screen sessions (if the 'auto-connection' parameter is set to 'yes'),
 - Auxiliary port sessions: if the associated service is a client service (tty, telnet or prt5250) and if the 'auto-connection' parameter is set to 'yes'.
- If multiple screen sessions are auto-connected, the first active screen session is displayed.
- **Session Manager:** if no screen session is connected, the Session Manager is displayed. Two modes are available:
 - Classic mode
 - Desktop mode

The following chapter covers the session manager modes.

3.1.1 - Session Manager: Classic Mode

This is the appearance of the classic mode:

```
-- AXEL Ultra Thin Client --  
www.axel.com  
  
Session Manager  
  
<Alt F1> -> session 1 TSE      w2k3  
<Alt F2> -> session 2 5250    as400  
<Alt F3> -> session 3 5250    as400  
<Alt F4> -> session 4 5250    as400  
  
Copyright AXEL  
  
00:40:34:20:10:03  
FK19.BV31b/TCP/FR/0632a:STD
```

The following information is displayed for each session:

- The associated keystroke. For example <Alt F1>
- The session label. For example "1 TSE" or "2 5250".
- The server.

To open a session the user presses the associated keystrokes.

3.1.2 - Session Manager: Desktop Mode

This is the appearance of the Desktop Mode:



The following information is displayed for each session:

- An icon
- The indicator and the session label. For example "1 TSE" or "2 5250".

Note: whether enabled or disabled for individual sessions, the status line is always displayed for the session manager.

Possible actions:

- Click the icon to open a session. (The associated keystroke is also available.) See Table 1.
- Click a status line icon. See Table 2.

Table 1 - session type icons





















				
TSE	Citrix Published App. Published Svr.	Citrix Published App. Desktop	Virtual Desktop (XEN)	Virtual Desktop (VMWARE)
				
VNC	5250	3270	Text Emulation	

Table 2 - status line icons

-  Turning off - See Chapter 3.6
-  Getting terminal information (Firmware/Hardware)
-  The network status is shown by one of the following icons:
 -  : Wireless interface available
 -  : Wireless interface not connected
 -  : Ethernet cable available
 -  : Ethernet cable not connected
-  Disconnecting the current session. See Chapter 3.2.2.
-  USB drive status. Only displayed if a USB drive is attached
-  Set Portrait/Landscape mode - See Appendix A.10.2
-  Displaying the terminal Local Desktop

3.2 - USING MULTIPLE SESSIONS

AXEL terminals provide **multiple and concurrent connections**. This feature allows simultaneous access to multiple hosts and applications.

3.3.1 - Opening and Switching Sessions

Opening or switching sessions can be done through:

- **The keyboard:** press <Alt><Fx>. These default keystrokes can be changed.
- **The mouse:** click left:
 - With the session manager (desktop mode): click onto a session icon.
 - With the status line: click the session label. (The status line must be enabled).

Note: if the session is 'host free', a dialog box is displayed. The following parameters are required:

- **Connection Type:** read only information.
- **Host:** press <Space> to select the host
- **TCP Port:** the default value is protocol dependent

3.3.2 - Disconnecting Sessions

A session can be disconnected by one of three ways:

- A system command (i.e. logging off the server)
Example: under Unix, exit (or <Ctrl><D>),
- **<Ctrl><Alt><D>**. This keystroke is locally processed by the AX3000 and works regardless the operating system.
- The status line 'Key' icon

If the user closes the current session (<Ctrl><D> in UNIX) the behavior of the terminal depends on how the '**auto-reconnection**' parameter is set for the current session.

If this parameter is set to '**yes**', a new connection is immediately and automatically established within the current session.

If this parameter is set to '**no**', the AX3000 displays the first of the remaining active sessions. If there are no remaining active sessions (for example, because the last active view has been disconnected), the session manager is displayed.

3.3 - CITRIX DESKTOP

To open the Citrix Desktop, click the associated icon on the terminal Local Desktop. See Chapter 3.1.2.

3.3.1 - Authentication

On establishing the Citrix Desktop, authentication is requested. (Username, password and domain.) A local dialog box requests this information as below:

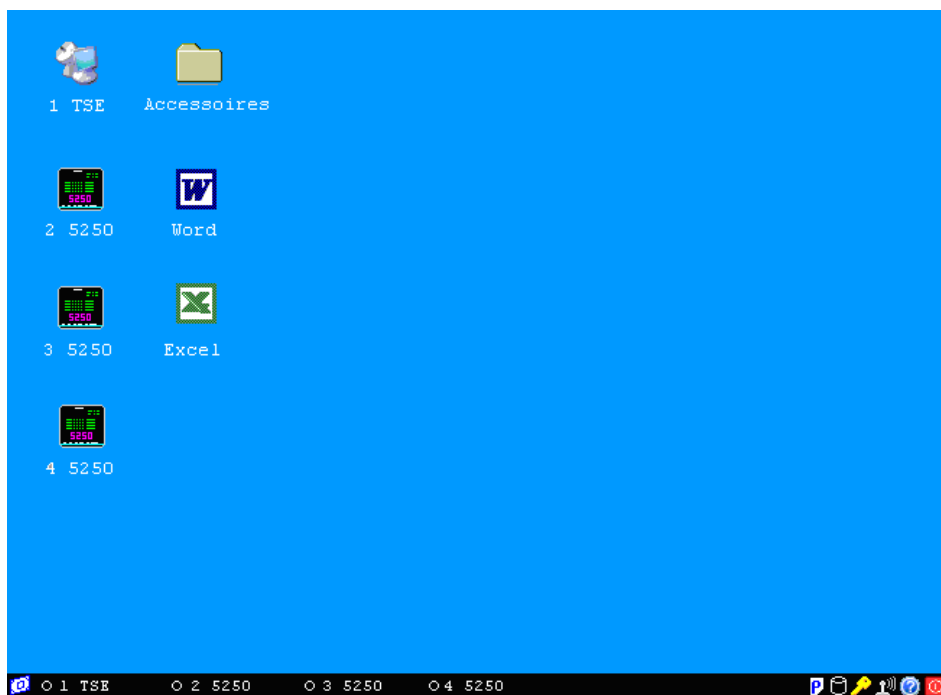


```
Logon Authentication
Username      [REDACTED]
Password     .....
Domain       .....
CONNECT      QUIT
```

These authentication parameters are sent to the Citrix servers which permit or deny the user access. The user name (and password) can be entered in the terminal's setup to remove the need to re-enter on every login.

3.3.2 - Using the Desktop

On successful authorization the application list and characteristics (name, icons...) is sent to the terminal. The desktop is created locally using this information (the original Citrix Desktop is removed).

**Notes:**

- The 'Folder' icon is a standard Citrix offering and can be used to contain and organize application icons. Sub-folders are supported
- The 'Desktop' icon (bottom left) allows the terminal Local Desktop to be redisplayed at any time for launching next published applications.

When the user clicks on an application icon the terminal uses the first free reserved session to launch an ICA connection. If all the reserved sessions are already in use the terminal will beep.

General ICA Session Information:

- A new ICA connection becomes the current session.
- The Citrix server hosting this session is localized with the browser parameters.
- The ICA session uses the general operational parameters specified in the set-up (encoding, bandwidth...).
- The screen resolution and number of colors for all published applications is set by the Citrix server for that application. If the resolution is not available or is incorrect the desktop resolution is used.

3.3.3 - Closing the Desktop

The 'Key' icon is used to shutdown the desktop. All applications must first be closed before the Desktop can be shutdown. If any applications are still open when shutdown is attempted the terminal will emit a beep and not shutdown.

3.4 - LOCKING THE SCREEN

For security reasons, it might be useful for the AX3000 operator to lock the screen rather than logging out.

Note: the lock screen means the AX3000 screen is blanked but the current sessions are still connected and active. There is no way to enter the AX3000 Set-Up or to switch the session. The only way to regain control is to enter the proper password.

The lock screen feature is associated with the screen saver function and must be enabled through the AX3000 Set-Up.

Two methods are available to lock a screen:

- **Automatically:** when the terminal is idle (keyboard or screen) for a certain time, the AX300 blacks out the monitor display. The display is automatically restored as soon as a key is pressed. A dialog box allowing the screen to be unlocked after password is entered is displayed.
- **Manually:** the <Ctrl><Alt><S> keystroke allows the screen to be locked immediately.

An unlock-screen dialog box is displayed. Two operations are possible:

- Entering the password to unlock the screen. Two passwords can be used: the screen saver password and the set-up password.
- Resetting the AX3000. If the password is forgotten, the only way is selecting the [Shutdown] button. After power-cycling it, the AX3000 administrator will be able to modify or remove the screen saver password.

Note: For the highest level of security we recommend setting the terminals 'Set-Up' password. (See Chapter 3.2.5)

3.5 - "COPY/PASTE" FUNCTION

The terminal offers a "Copy/Paste" function which operates either in the current session or between different sessions.

For example, text can be copied from a 5250 session and pasted to a Windows session.

a) Copy

From a Windows Session (RDP or ICA):

Use the standard 'Copy' function. For example <Ctrl><C>

From a VNC Session:

The 'vnconfig' tool must be run. The copy is simply done by selecting a text zone.

From a Text Session (5250, 3270, ANSI, VT...):

Press <Ctrl><C> (with 5250 and 3270 emulations) or <Ctrl><Alt><C> (with other emulations) to enter the Copy mode. Use the mouse to select the copy data. Pressing <Enter> validates the selection and the text is copied into a local clipboard. (<Esc> cancels Copy Mode).

Note: the Copy function is available only if the mouse is supported by the current session.

Note: We are unable to use the "standard" of cont c as this is already used for

another function within Unix/Linux

b) Paste

To Windows Session (RDP or ICA):

Use the standard 'Paste' function. For example <Ctrl><V>

To a VNC Session:

The 'vncconfig' tool must be run. Select 'Paste' in the contextual menu of the Linux software.

To a Text Session (5250, 3270, ANSI, VT, WYSE...):

Press <Ctrl><V> (with 5250 and 3270 emulations) or <Ctrl><Alt><V> (with other emulations) to paste the contents of the local clipboard.

Note: for the 5250 and 3270 sessions, a <Field Exit> function is sent at the end of each line contained in the clipboard.

3.6 - TURNING OFF THE AX3000

A careful check should be made before turning off the TCP/IP AX3000 if TCP/IP connections are active. The operating system cannot detect if a TCP/IP device is turned-off, so the current TCP/IP connections remain active as far as the server is concerned - resulting in various potential issues.

Under UNIX it is advisable not to turn off the TCP/IP AX3000 when a login prompt is displayed (something which is commonly done with serial UNIX terminals). This is because a telnet connection has been opened and will then become an orphan process. The following examples illustrate how the TCP/IP AX3000 differs from a conventional dumb terminal:

- If the 'auto-reconnect' parameter is set to 'yes', a stable stage cannot be reached on the AX3000. New telnet connections will repeatedly be opened.
- Under OS/400, it is impossible to exit the login stage, because there is no way to close the current telnet session.

To allow graceful shutdown, an AX3000 shutdown function is available. Press **<Ctrl><Alt>**.

A dialog box allows the next step to be selected:

- [SHUTDOWN] button
- [REBOOT] button

After selection, all active connections (screen and auxiliary port) are closed.

For the "Shutdown" choice, a few seconds later, the user is informed that the AX3000 may be turned off.

3.7 - AX3000 HOT-KEYS

The AX3000 hot-keys are listed in the following table.

PC-Keyboard	5250-Keyboard	Action
<Ctrl><Alt><Esc>	<Rest><Alt><Esc>	Enters the AX3000 Set-Up
<Alt><Fx>	<Alt><Fx>	Switches session (these hot-key can be modified)
<Alt><+>	<Alt><+>	Switches to next session
<Alt><->	<Alt><->	Switches to previous session
<Ctrl><Alt><S>	<Rest><Alt><S>	Locks the screen.
<Ctrl><Alt><Pause>	<Rest><Alt><Pause>	Sends a break code. Note: only for telnet protocol.
<Ctrl><Alt><Prt Scr>	<Rest><Alt><Prt Scr>	Performs a screen dump to the default auxiliary port.
<Ctrl><Alt><D>	<Rest><Alt><D>	Closes the current session
<Ctrl><Alt><K>	<Rest><Alt><K>	Changes the keyboard type (PC↔AS/400)
<Ctrl><Alt>	<Rest><Alt>	Shuts down the AX3000.
<Ctrl><Alt><I>		Information about the RDP, ICA or VNC current session.
<Ctrl><Alt><X>	<Rest><Alt><X>	Opens the connection box
<Ctrl><Alt><E>	<Rest><Alt><X>	Displays Ethernet status box
<Ctrl><Alt><W>	<Rest><Alt><X>	Displays Wireless status box
<Ctrl><Alt><BackTab>	<Rest><Alt><BackTab>	Set 'text mode' set-up
<Ctrl><C> or <Ctrl><Alt><C>	<Rest><C>	Selects and copies a screen zone (mouse is requested)
<Ctrl><V> or <Ctrl><Alt><V>	<Rest><V>	Paste the text

Note: keystrokes written in bold can be disabled.

CHAPTER 4

TOOLS AND STATISTICS

This chapter describes the embedded AX3000 tools.

The AX3000 interactive set-up provides the following administration features:

- Ping command
- Connection management
- Interface information
- USB device list

4.1 - THE PING COMMAND

The ping command is used to check for the presence of a live TPC/IP device. Select the **[Diagnostics]-[Ping]** dialog from the AX3000 set-up, then enter the IP address or the name of the TCP/IP peripheral.

4.2 - CONNECTION MANAGEMENT

Connection failures are often caused by incorrect settings.

4.2.1 - Global Connection List.

Select the **[Diagnostics]-[Connections]** dialog to check the status of all defined connections:

```

Connections
SESSIONS
#  Type      State  Server      Host IP Addr.  Port  Miscellaneous
1  TSE       Connected w  192.168.1.165  3389
2  telnet    Closed  h           192.168.1.150  23   ANSI

AUXILIARY PORTS
Port Service State      Other Information
Aux1 None      Closed
Aux2 None      Closed
PARA None      Closed
Net1 None      Closed
Net2 None      Closed

REFRESH          CLOSE CONNECTIONS          EXIT

```

Note: 'outside' the set-up, use <Ctrl><Alt><X> displays this box.

For each session, the following information is displayed:

- **No:** session number.
- **Type:** main values are TSE, ica, telnet, tty, vnc...
- **State:** the possible values are:
 - Established: the session is connected,
 - Closed: the session has ended,
 - Syn sent: connection request in progress,
 - Time Wait: connection close in progress.
- **Server** and **IP Addr Host:** the associated host.
- **Port:** the TCP port used for the session (this is usually 23 for telnet, 2048 for tty and 59xx for vnc).
- **Configuration:** the associated pre-defined configuration.

For each auxiliary port, the following information is displayed:

- **Port**: the name of the port: Aux1, Aux2, PARA (parallel), Usb1, ..., Usb4, Net1 and Net2
- **Service** and **Other**: information about the associated network service:
 - lpd: printer port name and optional filter,
 - rcmd: printer port name,
 - telnet: associated host, TCP port, TERM and connection flags,
 - tty: associated host, TCP port and connection flag,
 - prt5250: associated host, TCP port, printer name and AS/400 connection status,
 - printd or rtty: TCP port and optional filter.
- **State**: see above for the possible values.

A connection can be manually closed by selecting the [CLOSE CONNECTION] button.

Note: to refresh the information displayed, select the [REFRESH] button.

9.2.2 - "TCP Server" and "TCP Client" Connection Information

To go further with connection information, two additional statistics dialog boxes are available:

- **TCP server**: contains information about connections where the AX3000 is acting as a server (lpd, rty and rcmd).
- **TCP client**: contains information about connections where the AX3000 is acting as a client (telnet, tty, rdp, ica and vnc).

These statistics show the following:

- Information about connections
- Values of counters

These dialog boxes are accessed by the [Diagnostics]-[Statistics]-[TCP xxx]-[yyy] menu.

Example of a Connection box:

TCP/Client Statistics						
CONNECTIONS STATE						
Who	Type	State	Local Socket	Remote Socket	Rcv-Q	Snd-Q
S1	Telnet	Connected	192.168.1.220:1286	192.168.1.150:23	0	0

REFRESH EXIT

Description of the information given within this box:

- **Who:** AX3000 resource involved in the connection: S1 (session 1), ..., S8 (session 8), Aux1, Aux2, PARA (parallel), Usb1, ..., Usb4, Net1 and Net2.
- **Type:** network service being used (telnet, tty, etc).
- **State:** the possible values are:
 - Established: the session is connected,
 - Closed: the session has ended,
 - Syn sent: connection request in progress,
 - Time Wait: connection close in progress.
- **Local Socket:** IP address and TCP port for the AX3000.
- **Remote Socket:** IP address and TCP port for the host.
- **Rcv-Q:** number of bytes received by the AX3000 and not yet processed
- **Snd-Q:** number of bytes not yet sent to the host

Example of a Counter box:

TCP/Client Statistics			
GENERAL		ERRORS	
Sent Connection Requests	1	Bad CRC	0
Sent Reset Frames	1	Bad Length	0
Received Broadcasts	0		
REFRESH		EXIT	

4.3 - INTERFACE INFORMATION

4.3.1 - Ethernet Interface

a) State

The following information is displayed when selecting the **[Configuration]-[Network]-[Ethernet Interface]-[State]** menu:

Ethernet Interface	
Connection	
State	Connected
Link	100BT HalfDuplex
IP Parameters	
IP Address	192.168.1.234
Netmask	255.255.255.0
Default Router	-
Other Information	
FQDN	axe1000013
DHCP and DNS	<Space>
Statistics	<Space>
REFRESH	
EXIT	

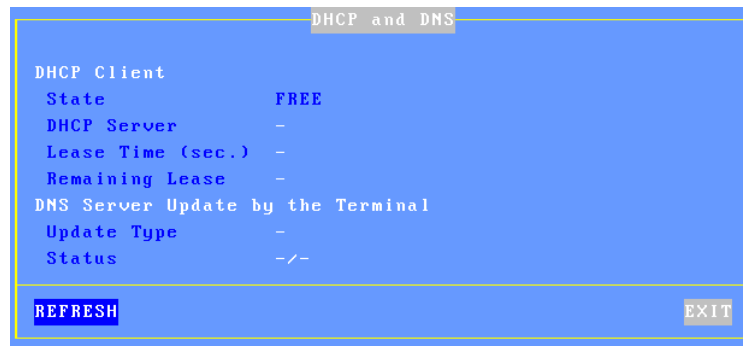
Note: this box information is automatically updated every 5 seconds. To force an update use the [REFRESH] button.

In the above dialog box, the following information is given:

- **Link:** speed and type the network interface (useful when set in auto-sense mode).
- **IP parameters:** IP address, netmask and default router
- **FQDN:** terminal full name

b) DHCP/DNS

The DHCP/DNS box is the following:



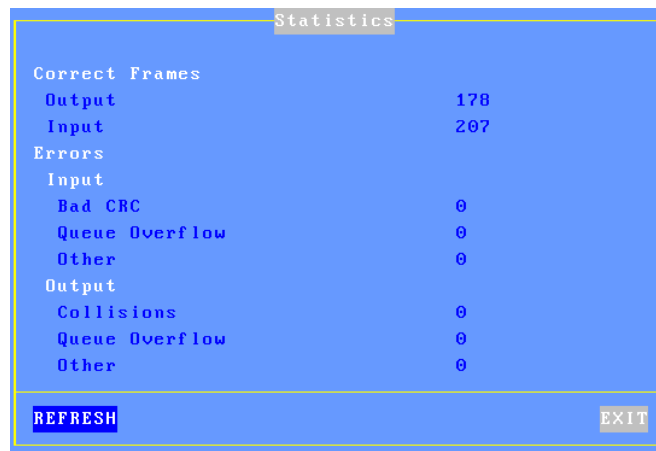
In the above dialog box, the following information is given:

- **State:** the current DHCP state. The possible states are:
 - **selecting:** searching a DHCP server (broadcast)
 - **requesting:** requesting an IP address from the DHCP server which answered 'selecting'
 - **bound:** search has been successfully completed (IP address has been set)
 - **free:** DHCP protocol is not enabled or DHCP protocol failed
 - **renewing:** renewing the leased IP address to the DHCP server which answered 'selecting'
 - **rebinding:** renewing the leased IP address to any DHCP server (broadcast)
- **DHCP Server:** IP address of the DHCP server.
- **Lease Time (seconds):** amount of time of the leased IP address. For BOOTP protocol, the value is 'infinity'.
- **Remaining Lease:** remaining time before lease expires. For BOOTP protocol, the value is 'infinity'.

- **Update Type:** information about the DNS server update when updated by the terminal. Main values are:
 - **None:** no update
 - **Direct / Reverse:** both types are done by the terminal.
 - **Direct / Reverse (by DHCP):** direct update done by the terminal and reverse update done by the DHCP server
- **Status:** the possible update values are:
 - **None:** no update (not requested)
 - **Done:** update succeeded
 - **Failed:** update failed
 - **Pending:** update in progress
 - **Dhcp:** update done by the DHCP server (the terminal had been informed to forgive the update)

c) *Statistic*

The statistics box is the following:



Statistics	
Correct Frames	
Output	178
Input	207
Errors	
Input	
Bad CRC	0
Queue Overflow	0
Other	0
Output	
Collisions	0
Queue Overflow	0
Other	0
REFRESH	EXIT

Correct Frames: "Output" and "Input" are the number of correct frames (transmitted and received)

Errors: this section gives the type and the number of errors. No errors should be shown in a good working environment/healthy network.

4.3.2 - Wireless Interface

a) State

The following information is displayed when selecting the **[Configuration]-[Network]-[Wireless Interface]-[State]** menu:

```
SSID AXNETGEAR0
Connection
State                Connected
BSSID                00:1B:2F:71:F4:FA
Link                 11g/54Mbps
Signal Power (RSSI)  82%
Channel              11 (2.462GHz)
IP Parameters
IP Address           192.168.1.234
Netmask              255.255.255.0
Default Router       -
Other Information
FQDN                 axe1000013
DHCP and DNS         <Space>
Statistics           <Space>
REFRESH             DISCONNECT             EXIT
```

Note: this box information is automatically updated every 5 seconds. To force an update use the **[REFRESH]** button.

When the wireless interface is connected, the 802.11 information available is:

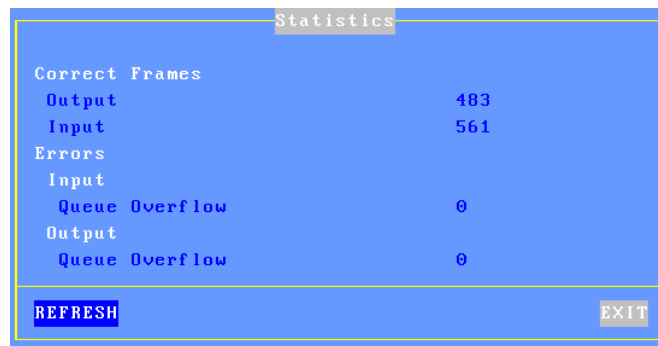
- **BSSID:** access point MAC address.
- **Link:** protocol and current speed.
- **Signal power** (reception)
- **Channel:** channel number and frequency

b) DHCP/DNS

The DHCP/DNS box is similar than Ethernet one.

c) Statistic

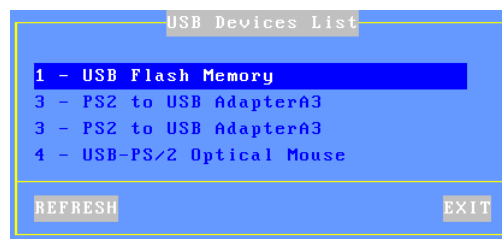
The statistics box is the following:



Statistics	
Correct Frames	
Output	483
Input	561
Errors	
Input	
Queue Overflow	0
Output	
Queue Overflow	0
REFRESH	EXIT

4.4 - USB STATISTICS

The **[Diagnostics]-[USB]** menu lists the connected USB devices. For example

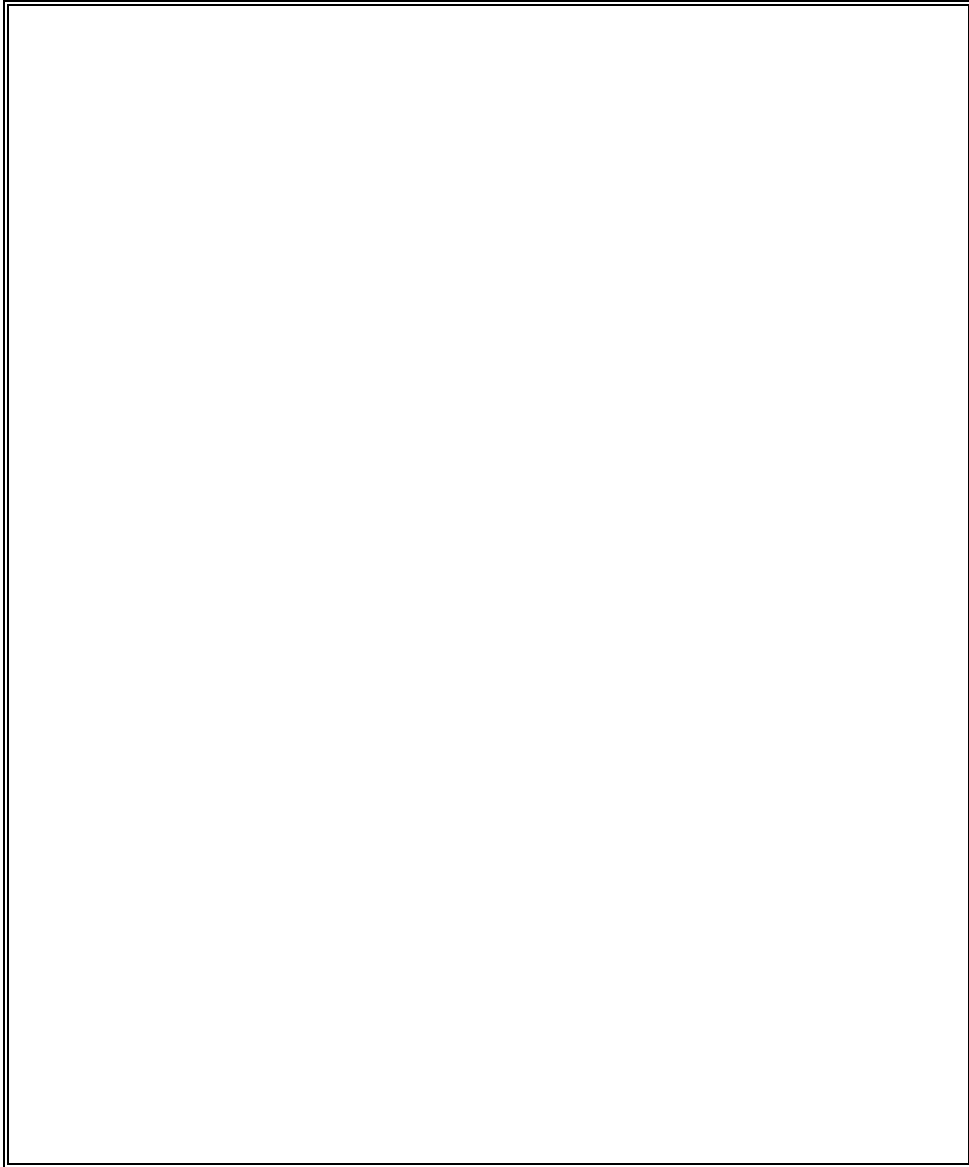


USB Devices List	
1 - USB Flash Memory	
3 - PS2 to USB AdapterA3	
3 - PS2 to USB AdapterA3	
4 - USB-PS/2 Optical Mouse	
REFRESH	EXIT

For each line the number is the USB physical port number. The associated label is given by the USB product itself.

If the USB product is supported, more information can be obtained by pressing <Enter>. If a beep is sounded the product is not supported.

PERSONAL NOTES

A large, empty rectangular box with a thin black border, intended for writing personal notes. The box is centered on the page and occupies most of the lower half of the document.

AXEL

14 Avenue du Québec
Bât. K2 EVOLIC - BP 728
91962 Courtabœuf cedex - FRANCE
Tel.: 33 1.69.28.27.27 - Fax: 33 1.69.28.82.04 - Email: info@axel.com