

AX3000 Thin Client

Ethernet TCP/IP

Model 95

Installation Guide



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Model AX3000/M95

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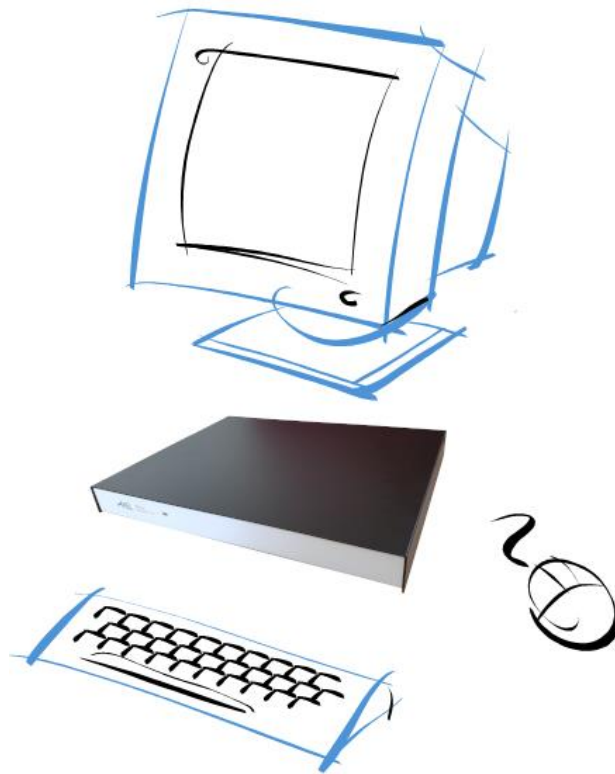
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The AXEL AX3000 Thin Client is based on a modular concept.



The AXEL AX3000 Thin Client is designed and manufactured by Axel. The terminal's electronics is contained within a slim base unit which provides connections for a VGA or SVGA monitor, keyboard, system printer, serial devices and Ethernet network.

1 - NOTICES

1.1 - SAFETY NOTICES

- **Do not attempt to fix a AX3000 M95 Thin Client component failure by opening the terminal case.** In case of hardware failure, contact your service representative.
- Ensure that the supply voltage of the wall outlet is in accordance with the indications on the AX3000 M95 nameplate.
- The wall power outlets used must be reached easily and as nearest as possible to the AX3000 M95 Thin Client to connect or disconnect the power cords.
- Make sure to power off the thin client before connecting or disconnecting any device (monitors, keyboard, mouse and serial or parallel cables).
- To install and connect any peripherals, refer to the respective supplier installation manuals.

1.2 - ELECTROMAGNETIC COMPATIBILITY (EMC)

- In order to ensure compliance with European EMC regulations and FCC Part 15 rules, it is required that shielded cables be used when interfacing with other devices (peripherals or computers).
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off

and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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



This device does not contain a battery or accumulator. It should not be disposed of with household waste. Contact a qualified recycling company.

1.3 - PHYSICAL SPECIFICATIONS

- Operating temperature: 5 to 35 °C
- Humidity: 80° non condensing
- Power supply:
 - 100 - 240 V
 - 0,2 - 0,01 A
 - 50 - 60 Hz
- Dimensions: 216x270x31 mm
- Weight: 1,35 Kg

2 - INSTALLATION

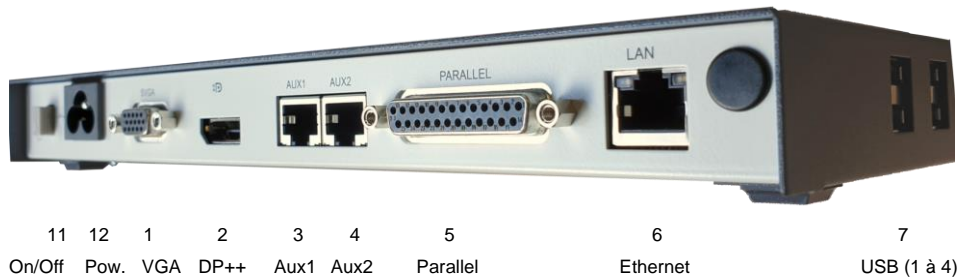
2.1 - DESCRIPTION

A green LED on the front face indicates when the AX3000 Thin Client is powered on.

The AX3000 Thin Client has the following connectors and switches on the rear panel:

- Power switch,
- Power connector,
- VGA or SVGA connector,
- Display Port ++ connector,
- Two auxiliary serial ports: RJ45 (AUX1 and AUX2),
- Auxiliary parallel port: female 25-pin (PARALLEL),
- Ethernet port: RJ45 (LAN).

Four USB ports are located on the left side of the terminal case.



Power Inlet:

100 - 240 V~
 0.2 - 0.1 A
 50 - 60Hz

Safety

Low Voltages (SELV)

- 1 - VGA
- 2 - DP ++
- 3 - Serial1
- 4 - Serial2
- 5 - Parallel
- 6 - LAN
- 7 - USB (4 ports)

Connectors

maximum length

- 3 m shielded
- 3 m shielded
- 3 m shielded
- 3 m shielded
- 3 m shielded
- 100 m shielded (CAT 6 S/FTP)
- 3 m shielded

2.2 - INSTALLATION

For safety reasons and to prevent component damage do not apply power to the AXEL thin client before connecting or disconnecting any cables. Do not plug in the AXEL thin client power cord until all other connectors have been plugged in.

Make sure the AXEL thin client and monitor power switches are in the OFF (0) position before connecting cables to the rear panel.



2.2.1 – Monitors, mouse and keyboard

For safety reasons and to prevent component damage please connect all cables before applying the power cord.

a) The Monitor(s)

Two video ports are available on the rear panel:

- VGA or SVGA (SVGA)
- DisplayPort++, dual mode (DP).

Single or dual monitor is supported - any combination of VGA and Displayport.

DisplayPort can easily be converted to DVI or HDMI.

Note 1: only the DisplayPort/VGA adaptor should be an 'active' adaptor. Displayport to DVI or HDMI should be 'passive'.

b) The Keyboard and Mouse

Connect the USB keyboard and mouse via any two of the USB ports.

Note: Wireless Keyboard/Mouse are supported.

2.2.2 - Ethernet Connection

Plug the network cable into the network socket (LAN) on the rear panel.

The network operating mode is indicated by two LEDs located on each side of the network socket:

- **The green LED on the left** indicates a good connection to the Ethernet network (good link). The LED blinks to indicate a network traffic. If the LED does not light, check the Ethernet connector and cable.
- **The LED on the right** indicates the actual network speed:
 - 10Mb when the light is off.
 - 100Mb when the light is green.
 - 1Gb when the light is orange.

2.2.3 - Auxiliary Ports

AX3000 Models 95 have three auxiliary ports as a standard feature:

- AUX1: bi-directional serial port, RJ45 connector,
- AUX2: bi-directional serial port, RJ45 connector,
- PARALLEL: parallel port, female 25-pin connector.

Cable pin assignments are listed in chapter 4.

To comply with EMC regulations, the serial and parallel cables must be shielded.

2.2.4 - USB Ports

AX3000 Model 95 has four USB ports as a standard feature. These ports are located on the left side of the terminal case.

The USB cables must be shielded and cable length must not exceed 3 meters.

For more information (USB technical specifications, electric consumption...), see Chapter 4.7.

2.2.5 - Power On

Connect the AX3000 Thin Client and the VGA power cords to earthed main power sockets.



The green LED on the front of the terminal should light, and a single audible beep should be heard, to indicate that the AX3000 Thin Client is powered up and operating correctly.

The green LED of the RJ45 connector on the rear panel remains lit, to indicate a satisfactory Ethernet connection.

If the terminal does not function as described above (for example if it emits a continuous tone sound, or two beeps, or if an error message is displayed on the screen) refer to chapter 5. If the terminal still does not operate properly, call your service representative.

3 - QUICK INSTALLATION

This chapter describes the initial power-on procedure for the M95 terminal.

When the terminal is switched on 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 the AxRM software, this function allows the terminal to automatically receive new firmware and/or a configuration

At any time pressing **<Ctrl><Alt><Esc>** will enter Terminal Set-Up.

For more information about set-up, please read the AX3000 M95 User's Manual.

3.1 - QUICK SET-UP

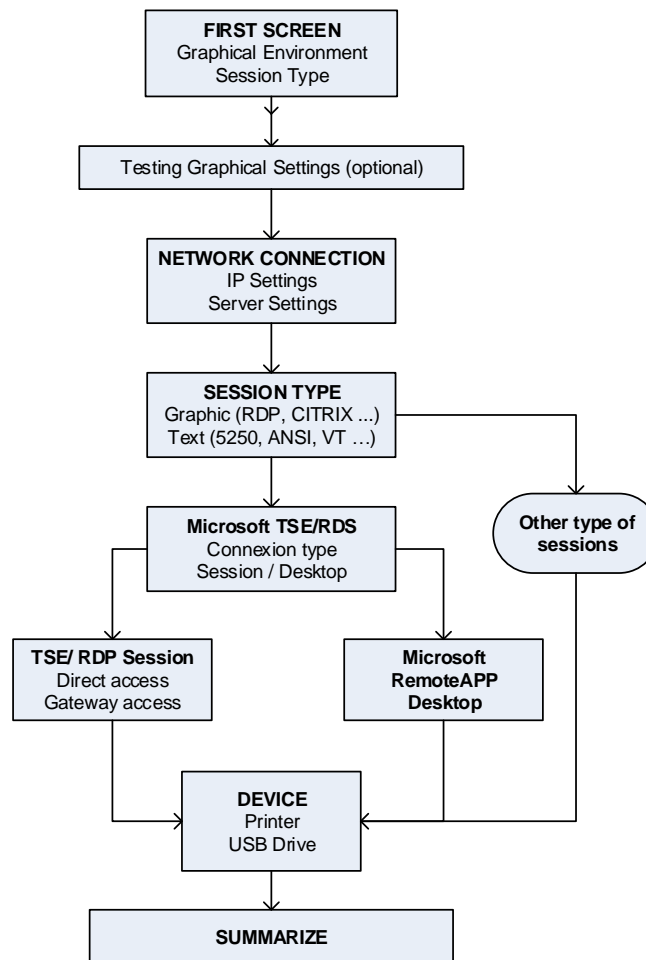
The quick set-up is designed for a typical simple environment of:

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

☺ : This basic configuration may be modified at the end of the Quick Set-Up procedure.

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

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



After exiting the set-up the terminal is automatically restarted and ready to be used.

3.2 - AUTO-CONFIGURATION

The Auto-Configuration feature allows a brand new 'out of the box' terminal to be sent a specific firmware and/or configuration file without any human intervention. There are also options to specify various terminal specific parameters, for example an IP address and terminal name etc.

Note: the auto-configuration mechanism requires AxRM software (available free from www.axel.com).

For more information on AxRM's action in the auto-configuration process, see the manual "Axel Remote Management".

The auto-configuration process is automatically initiated when power is applied to a brand new terminal or if the terminal is reset to factory defaults. This process may be aborted by pressing any key.

Note: the auto-configuration may also be started at each terminal boot time.

The stages are:

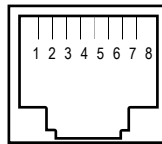
- Checking the network (link),
- DHCP request sent to obtain an IP address and other parameters (optional),
- Terminal contacts the AxRM server,
- Firmware file sent (if required), followed by a reboot,
- Configuration file sent, followed by a reboot.

4 - CONNECTOR PIN ASSIGNMENTS

This chapter describes the connector pin assignments for the different ports of the AX3000 Models 95.

4.1 - ETHERNET PORT RJ45 (LAN)

Recommended wiring is a **shielded** twisted-pair cable (S/FTP), category 5 minimum (category 6 recommended)



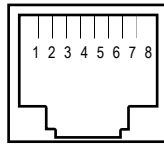
RJ45 connector (Models 95 rear panel)

Note: the maximum length of a 10/100/1000BaseT cable is 100 meters (330 feet).

Pin	Signal Name	Direction
1	TX+ (Transmitted Data)	Input
2	TX- (Transmitted Data)	Input
3	RX+ (Received Data)	Output
4	---	---
5	---	---
6	RX- (Received Data)	Output
7	---	---
8	---	---

4.2 - SERIAL PORTS AUX1 AND AUX2 (RJ45)

These serial ports are bi-directional ports (for printers, bar-code readers, touch screens, etc):



AUX1 and AUX2 connectors
(Models 95 rear panel)

Pin	Signal Name	Direction
1	RTS (Request To Send)	Output
2	DTR (Data Terminal Ready)	Output
3	RD (Received Data)	Input
4	SG (Signal Ground)	---
5	CTS (Clear to Send)	Input
6	TD (Transmitted Data)	Output
7	---	---
8	DCD (Data Carrier Detected)	Input

4.2.1 - RJ45-DB9 and RJ45-DB25 adaptors

Pin assignment for an adaptor between the peripheral cable and the AX3000 RJ45 connector:

AX3000 - RJ45	Adaptor - male 9-pin
DTR 2	> 4 DTR
RD 3	< 2 RD
SG 4	5 SG
CTS 5	< 8 CTS
TD 6	> 3 TD

AX3000 - RJ45		Adaptor - DTE female 25-pin
DTR	2	> 20 DTR
RD	3	< 3 RD
SG	4	7 SG
CTS	5	< 5 CTS
TD	6	> 2 TD

4.2.2 - Peripheral RJ45 cables

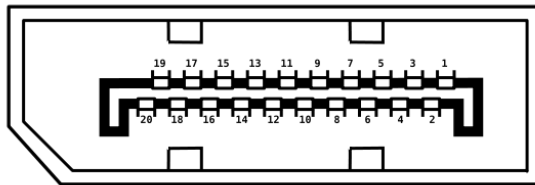
Pin assignment for a **direct** connection of a peripheral to the AX3000 RJ45 connector:

AX3000 - RJ45		Peripheral - female 9-pin
DTR	2	> 6 DSR
RD	3	< 3 TD
SG	4	5 SG
CTS	5	< 4 DTR
TD	6	> 2 RD

AX3000 - RJ45		Peripheral - DTE male 25-pin
DTR	2	> 6 DSR
RD	3	< 2 TD
SG	4	7 SG
CTS	5	< 20 DTR
TD	6	> 3 RD

4.3 - VIDEO INTERFACES

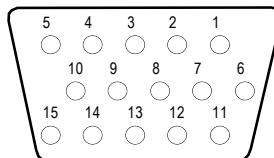
The AX3000 **Display Port ++** video interface:



Adapters can be connected to the DisplayPort ++ port for other connectivity: VGA, HDMI and DVI.

Note 1 : Only the DisplayPort / VGA adapter must be 'active' type. DisplayPort / HDMI and DisplayPort / DVI adapters must be 'passive'.

The AX3000 **VGA** video interface (and SVGA compatible):

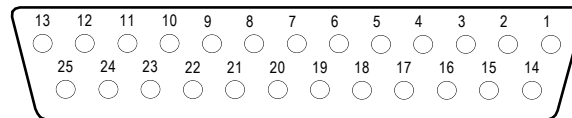


VGA/SVGA connector
(Models 95 rear panel)

Pin	Signal name
1	Red
2	Green
3	Blue
4	Not Connected
5	Ground
6	Ground
7	Ground
8	Ground
9	Not Connected
10	Ground
11	Not Connected
12	CRT SDA
13	Horizontal sync.
14	Vertical sync.
15	CRT SCL

4.4 - PARALLEL INTERFACE

The AX3000 Models 95 are equipped with a parallel port.



Parallel connector
(Models 95 rear panel)

Pin	Signal Name
1	Strobe
2	Data 0
3	Data 1
4	Data 2
5	Data 3
6	Data 4
7	Data 5
8	Data 6
9	Data 7
10	ACK (Acknowledge)
11	Busy
12	PE (Paper End)
13	SLCT (Select)
14	Auto Feed XT
15	Error
16	Init
17	SLCT IN
18	Ground
19	Ground
20	Ground
21	Ground
22	Ground
23	Ground
24	Ground
25	Ground

4.5 - USB PORTS

AX3000 Model 95 are equipped with four USB ports located on the left side of the terminal case.

Technical specifications:

- Supported speeds:
 - Low-speed (1,5 Mbits),
 - Full-speed (12 Mbits),
 - High-speed (480 Mbits).
- Maximal consumption: 500 mA (for the all USB ports)

Note: Due to potentially excessive power consumption, "non-IT" devices (such as fans, lamps, etc) are strictly prohibited.

5 - PROBLEM SOLVING

This chapter describes some of the problems, that may occur during installation of the AX3000 Models 95, and offers possible solutions.

Safety Warning! Under no circumstances should you attempt to fix a terminal by opening the terminal case. High voltages may be present even when the terminal is switched off. Only qualified technicians should open the AX3000 Thin Client case.

- ✓ - **GREEN FRONT INDICATOR DOESN'T LIGHT, OR NO BEEP WHEN YOU POWERED ON**

Check there is power at the wall outlet and power cord connections.

- ✓ - **CONTINUOUS TONE SOUNDS AFTER THE TERMINAL HAS BEEN SWITCHED ON**

This indicates a hardware failure. Report the problem to your service representative.

- ✓ - **ETHERNET CONNECTION INDICATOR DOES NOT LIGHT**

This indicator is the green LED of the network connector on the terminal rear panel.

Failure to light when the terminal is switched on may be due to any of the following:

- the Ethernet cable is disconnected at the far end,
- the device (host or hub), to which the network cable is connected, is not switched on,
- there is a fault on the Ethernet cable or the cable is wired with incorrect pin assignments.

✓ - THE 'CONNECTED' MESSAGE IS NOT DISPLAYED AFTER THE 'CONNECTING...' MESSAGE

Check the Ethernet cables are correctly connected and networked devices (hubs or servers) are switched on.

No connection (and no login) can also be due to a wrong terminal setting during the TCP/IP set-up (for example a wrong IP address).

✓ - THE CONNECTED PRINTER DOES NOT WORK

Check that the cable pin assignment is correct and test the printer in local mode by selecting the [TEST] button within the auxiliary port dialog box.

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