

Alpha-X Supplemental Manual

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Overview

Thank you for purchasing the Alpha-X ethernet ready keypad terminal for controlling copiers and printers.

The Alpha-X terminal is identical to the Copicode Alpha terminal, except that is pollable over the local area network (LAN), *or* the internet. Included in this download is the Copicode Alpha operational manual.

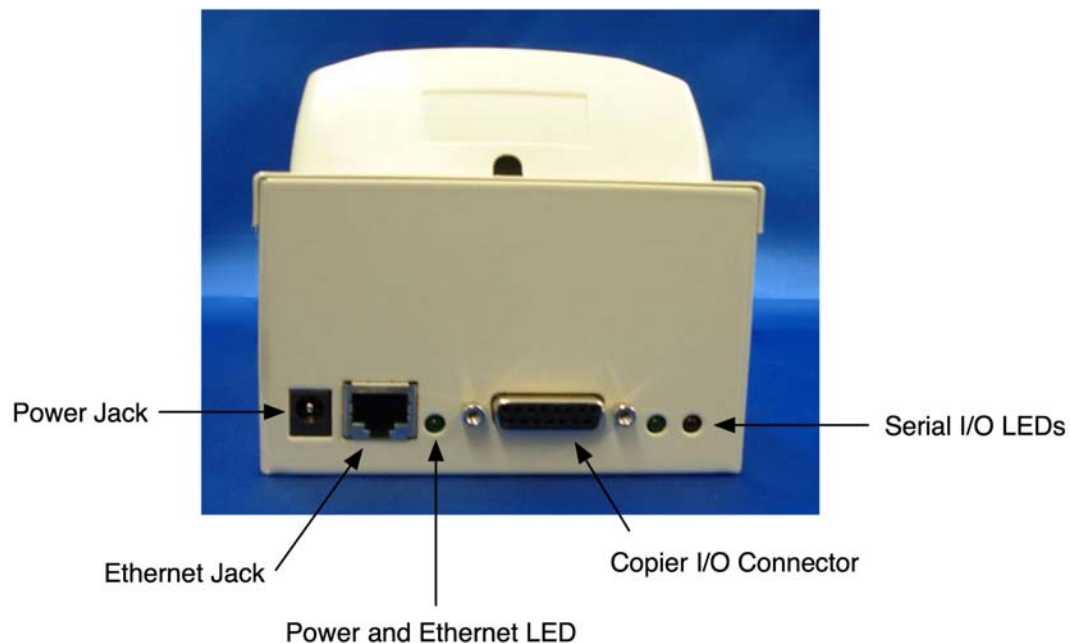
When you purchase an Alpha-X terminal, it is most probably already set up for you with an IP address and a port. Nevertheless, in the following pages, we explain how to use the "device server" setup software (called **Tibbo DS Manager**, downloadable from the Alpha-X web page as "Alpha-X Software") to configure your Alpha-X the way you want it to work.

The Copicode Alpha terminal per se is a serial device: to make it work on the LAN, it must be connected first to a serial to ethernet convertor, and then to the LAN via a hub. Inside the Alpha-X is a chip called the Tibbo chip which performs precisely this dual connection.

Note that the board internal to the Alpha-X contains not only the Tibbo chip, but also a unified power supply, the copier I/O connector (in DB15F form), a remote reset circuit, and three LED indicators.

Connections, Indicators and Reset

On the back of the Alpha-X are various connections and indicators. Here is a picture of the back of the Alpha-X:



The power jack takes an ordinary 24 VDC center plus 2.5 mm power supply (supplied by TekVend).

The green LED between the RJ45 ethernet jack and the copier DB15F output connector shows "power on" and ethernet activity.

The copier I/O connector supplies all the connections necessary to control any copier, including those supporting multiple pricing schemes. The cable that attaches to this connector (the sprig) is supplied by TekVend.

The red and green pair of LEDs on the right side are the serial status indicators. An explanation of their various uses can be found in the Tibbo EMS-100 online documentation (<http://www.tibbo.com/em100.php>).

On the bottom of the Alpha-X is a small access hole to the Alpha-X reset button. This reset button resets an Alpha-X terminal to its default settings. It should not be pressed unless you want to reset your terminal to default settings.

Installing the Tibbo Software

As mentioned above, the Tibbo device server software is downloadable from the Alpha-X web page as "Alpha-X Software". You can also check for later versions of the software by going directly to the Tibbo website, www.tibbo.com, and downloading the latest version of the "Device Server Toolkit".

When you are finished installing the Tibbo software, create a shortcut for the application tool called **DS Manager** and place it on your desktop or in your system tray for quick clicking.

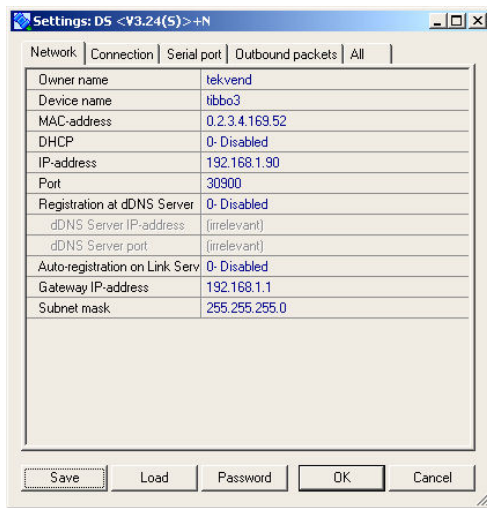
Plugging in Your Alpha-X

At this point, you can power up your Alpha-X and plug it into a nearby hub. A standard ethernet cable is provided for that purpose.

Most of the time, an Alpha-X terminal is delivered preconfigured for a specific IP address and port. If there is no pre-existing device using that assigned IP address and creating a conflict, Tibbo's **DS Manager** will both be able to a) find the Alpha-X terminal and b) communicate with it for the purpose of editing its settings.

To see this communication, open the **DS Manager**. It should display the discovered Alpha-X terminal, and show its IP address:

(see next page)



Select the device server you want to manage, and click on [Buzz](#). You will see the LEDs on the back of the Alpha-X rapidly blink in a zig-zag fashion.

Now click on [Settings](#). By default, you will be asked for a password. That password is 8464. Click Retry and you should see the full menu of settings for the Tibbo chip.

There are five tabs in the [Tibbo menu](#). We will use the first three. (The last is a single tab of the other four tabs.)

The Network Tab

The first tab is the [Network Tab](#). For the most part, just imitate what you see.

The first two fields are names for the Tibbo chip (equivalently known as a device server, hence the software name [DS Manager](#)). You can change these two fields to anything you like.

In our example, we used a fixed LAN IP address for the Tibbo, rather than DHCP. [We recommend using fixed LAN IP addresses](#). Here we used 192.168.1.90. We chose a high port number (30900) for outside (or internet) communication. This unusual port number in no way interferes with local (i.e., trusted) communication, and you can set it to any port number you want (see "port forwarding" later in this document).

In order for communication to come in from the LAN or the internet, you will need to put in your LAN's gateway IP and subnet mask on this tab. The gateway is typically the router's IP. Ask your IT professional what these numbers are.

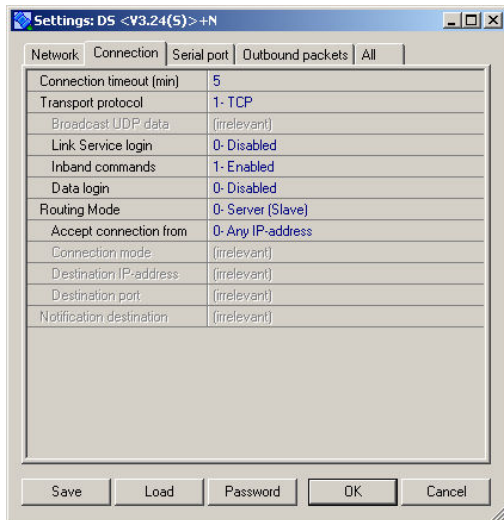
If you want to change your password, now is a good time to do that. Press the [Password Button](#) at the bottom of the screen to enter and confirm your new password.

Since we are staying in the DS Manager's Settings, press [Save](#) rather than [OK](#). [OK](#) is used to exit [Settings](#).

Note: a label has been provided with your Alpha-X terminal to write down the terminal's assigned LAN IP address and port. This label can be found between the velcro strips on the bottom of the Alpha-X terminal. On this label you will also find the internal serial number of the Alpha-X terminal.

The Connection Tab

Again, on this tab, imitate what you see in the following picture:

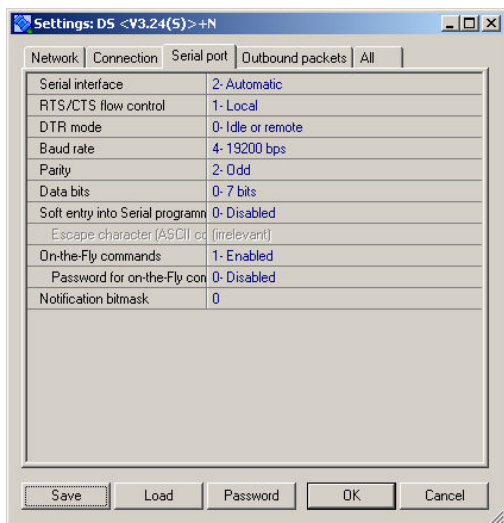


It's important that the transport protocol be set to TCP, inband commands be set to Enabled, and the Routing Mode be set to "0 - Server (Slave)".

If you need to make any changes, remember to press [Save](#).

The Serial Port Tab

Again, on this tab imitate what you see in the following picture:



The serial settings shown are specific to the Alpha terminal, and if you vary from those settings shown, you will not be able to communicate with the Alpha-X terminal once you query it via the [Copy-Track](#) software.

When you are finished, press [Save](#) and then press [OK](#) (to exit settings).

Testing the Alpha-X with Copy-Track Software

You should now be able to test communicating with your Alpha-X via the [Copy-Track](#) software. It's as simple as selecting IP Address from the [Alpha Select Scroll Box](#), pressing [Read Alpha](#), and typing in the LAN IP address and port number (in our example 192.168.1.90, 30900).

Follow the steps outlined in section 13.0 of the [Copy-Track Help Manual](#).

Communicating with an Alpha-X Terminal via the Internet

In most cases, a LAN is set up to not allow direct communication between a serial device and an outside internet connection, unless the serial device initiates the connection (firewall blocking).

This "serial device out" communication (what we facetiously call "ET call home") can be done with the Tibbo chip. Typically, the Tibbo (in the Alpha-X) calls out to a so-called link server, and then an outside PC queries the link server, which relays the PC connection to the serial device (the Alpha terminal per se).

This approach seems unnecessary when serial devices have fixed IP addresses as suggested earlier, plus it does not simultaneously allow LAN communication. You can still theoretically have DHCP for PCs on the LAN with little possibility of internet sourced corruption if the serial devices' fixed IPs are on a totally different band of LAN addresses than the PCs. For example, all the PCs would gain an address via DHCP in the LAN band 192.168.3.xxx, whereas serial devices would be assigned fixed IP addresses in the LAN band 192.168.1.xxx.

If your IT professional accepts this hybrid solution, then he can "forward" certain ports of the main (ISP) IP address. Here we are referring to the usually fixed (but sometimes dynamic though seldom varying) IP address that identifies your LAN to the world wide web.

(If you don't know this "external" IP address, download a dynamic DNS program that checks it for you. Even where your ISP refuses to assign a fixed IP address, the assigned IP address almost never changes: you basically have to change the first encountered device, and its MAC number, for your so-called dynamic IP address from your ISP to change.)

What does port forwarding mean? It means that any inquiry to your external IP address directed to the forwarded port is automatically connected to a specific, assigned, internal LAN IP address.

For example, suppose that your external (ISP) IP address is 67.162.60.132. You can "forward the port" 30900 to the (normally inaccessible) LAN address 192.168.1.90. Now if you choose IP Address from the [Alpha Select Scrollbox](#),

press [Read Alpha](#), and type in 67.162.60.132, port 30900, you will be directly connected to the Alpha-X terminal at 192.168.1.90, port 30900, from the "outside" (the internet).

[Port forwarding is a great way of circumventing normal router firewall blocking without seriously compromising any computers on the LAN. Port forwarding allows a user of Copy-Track to poll local and remote \(internet connected\) Alpha-X terminals at will.](#)

Communicating with an Alpha-X Terminal Using a Null Modem Cable

In the unlikely event that the LAN network "crashes" on a day that you need to collect data from one or more Alpha-X terminals, you can still collect that data using a laptop and a null modem cable (which can be purchased from TekVend).

Simply plug the null modem cable into both the Alpha-X terminal and the ethernet port of your laptop, and start **Copy-Track**. Choose IP Address from the [Alpha Select Scrollbox](#), press [Read Alpha](#), and type in the local IP address and port of the Alpha-X (in our example, 192.168.1.90, 30900, which you wrote on the label on the bottom of the terminal). You will now be able to take a reading as if you were connected to a hub on the LAN.

Automatic Polling

The **Copy-Track** Install disk includes a utility called [Automated Polling](#). What this utility does is allow a scheduled task to run outside of **Copy-Track** to poll (i.e. collect data, update users, etc.) Alpha-X terminals at a particular time each day.

Built into [Automated Polling](#) is a function that automatically tries to reset an Alpha-X terminal should there be a problem with communication. This reset function, which is present within **Copy-Track**, can be run manually as well, at any time.

Polls that are unsuccessful after a fixed number of tries are shown in a report viewable within **Copy-Track**. Please note that Alpha-X polling should be done only at times when users are *not* expected to be at the polled terminals. This is because a reset may inadvertently terminate a user's copying session.

A separate [help file](#) comes with the [Automated Polling](#) utility.