



*INNOVATIVE PC Data Acquisition and Collection Solutions*

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# **LANpoint/LANpoint PRO Terminal Emulation Software QuickStart Guide**

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## INSTRUCTIONS

Getting your terminal emulation software running on your terminal is as easy as 1-2-3. Just follow these setup steps for configuring the terminal and setting your IP addresses.

Before you start, you may want to note the terminal's hardware address (MAC) address and contact [www.support@instrument.com](mailto:www.support@instrument.com), or call Intelligent Instrumentation Application Engineering for an authorization code. See FAQ#1 below for more information.

### Step 1 – Setup the hardware

- A) instructions are in the terminal installation manual. You'll need at least:
  - 1) a LANpoint, TIMEpoint, FACTORYpoint, LANpoint PRO, or FACTORYpoint PRO data collection terminal with power supply
  - 2) A PCMCIA SRAM card for the terminal and type of emulation (VT, 5250, 3270)
  - 3) your network with 10Base-T connections and a host computer

### Step 2 – Hardware Setup Menu

- A) power-on the terminal and at the first display, you'll see "[Enter for Setup] in the bottom left or right side of the LCD display, depending on model
- B) hit the Enter key and make sure that the display tracking is enabled and set to 2x40 FIXED position with the row and column coordinates both set to 0 (you can change this later if your application needs the LCD display positioned elsewhere).
- C) exit the hardware setup menu and let the terminal boot until you see a screen that has "PowerNet TN xx. This is the initial terminal emulation screen.

### Step 3 – Terminal Emulation Configuration – assign IP addresses

- A) at the PowerNet TN screen, press shift-C on the LANpoint PRO, FACTORYpoint PRO, LANpoint, or FACTORYpoint. You can also use the UDK3 key on a LANpoint, TIMEpoint, or FACTORYpoint. This takes you into the emulator's "Edit Functions" configuration menu.
- B) with the up and down arrow keys (2<sup>nd</sup>-2 and 2<sup>nd</sup>-8 keys on a FACTORYpoint or TIMEpoint), scroll to the "Edit IP" menu selection and hit enter.
- C) you will now be prompted for 3 values; type them in and hit return after each: 1) IP - this is the terminal's IP address (Use 0.0.0.1 for DHCP – See FAQ#14 for full instructions). 2) SN - this is the subnet mask. 3) RT - this is the IP address for the router or gateway if you need it to get to a different subnet or the internet. Hit F3 to save the IP address information. You will be returned to the menu.
- D) arrow down to the "Edit Host List" selection and hit enter. You will see a host name and the cursor will be positioned for you to enter the host computer's IP address (if using DNS, see FAQ#14). Enter this value and hit enter. At the prompt for Port (number), enter the port number (usually 23 for telnet sessions) and press F3 to save the changes. Note that you can enter another host address (up to 4) if you wish, in case you have a secondary host to connect to.
- E) arrow down to the "Edit Authorization" selection and hit enter. You will see a MAC address like 00C052xxxxxx. You must contact Intelligent Instrumentation for this authorization code – see introduction above. Enter the code assigned, and press F3 to save. The code has to be entered exactly as given, with capitalization and dashes.
- F) arrow down to the "Run Emulator" selection and hit enter to attach to your host and begin your terminal emulation session.
- G) reboot the terminal for the IP addresses and other menu configuration items to take effect.

## FREQUENTLY ASKED QUESTIONS

**Q1:** My terminal shows a “Recoverable error” message upon startup of the terminal emulation software, and also exits the emulation functions every 30 minutes. What’s going on?

**A1:** For demonstration and evaluation purposes, the terminal emulation software has the capability to run in an “unlicensed” mode. The symptoms described are what is seen when there is no valid “authorization code” known to the emulation software. Contact Intelligent Instrumentation (see the second paragraph of this document) for the assignment of an authorization code. Then follow the instructions given in step 3E above to enter this authorization code.

**Q2:** I’ve got the emulation software running on a TIMEpoint. It doesn’t have all the keys that I need to enter the configuration menu, or to enter the authorization code. What can I do?

**A2:** Instead of using the Shift-C keystroke combination to enter the configuration menu, you can use the UDK3 key on the TIMEpoint (press and release the “2<sup>nd</sup>” key, then press F7). The up arrows and down arrows to navigate the menu items are the 2<sup>nd</sup>-2 and 2<sup>nd</sup>-8 keys respectively. For entering the authorization code letters A through F, use the shift-1 through shift-6 keys respectively.

A second method of entering the information that the terminal needs is to edit the text files manually with a text editor. See Appendix A of this document for instructions.

**Q3:** I’ve got an application for which I want the tab character to be mapped to the F4 key. Can this be done easily?

**A3:** Yes, keyboard remapping functionality is supported by the emulation software. It is beyond the scope of this QuickStart Guide. See the documentation.

**Q4:** I don’t want to stop work if my host is down. Is there a way to attach to a secondary host if the primary one is down?

**A4:** Yes, you can define up to 4 different hosts. In the configuration menu (see step 3D above), you can define multiple hosts. When the emulation software begins to run and there are multiple hosts defined, you will be asked which host to connect to.

**Q5:** When I’m using my emulator, I don’t see my regular logon prompt – the screen is blank or only shows portions of some logon messages. How do I log onto my host?

**A5:** If you see a familiar part of your logon screen, you may be able to solve this as described in question 6 below. If you are not seeing a connection to your host, check to see if you can see a session starting on port 23 (or whatever telnet port you specify in the power.net file or configuration utility – step 3D above); AS400 hosts must have a “5291” device defined (usual AS400 default has this – yours may be disabled). This and other tech notes can be found on the product diskette, our web site [www.lanpoint.com](http://www.lanpoint.com), or by contacting Tech Support.

**Q6:** I see only part of a user prompt on my terminal’s LCD screen. It looks like the screen has shifted to the right, showing only the last part of the prompt. What’s going on?

**A6:** This is due to special functionality built into the terminal, called “display tracking”. Basically, the display tracker can be set to a mode called “cursor following (CF)” that “moves” the LCD screen around the entire full-screen area, depending on where the cursor is positioned. As such, it may shift the LCD display somewhere you do not wish it to be. Go into setup (see the hardware manual for the terminal), and set it to 2x40 Fixed or 4x40

Fixed. Usually, it is “fixed” to the top-left corner of the full-screen display, at x (or column) = 0 and y (or row) = 0.

This functionality also exists within the emulation software. If the above does not solve the problem, make sure that the file called `tnvt.cf` has the line “quad=off” within it (this is an ASCII file; use NOTEPAD or some other PC utility to view it on a laptop).

**Q7:** You have mentioned manuals several times, but I don’t find some of the manuals in the product package I received, and I don’t see them on the price list. Where can I get these manuals?

**A7:** The documentation for the Twin Client software is downloadable at [www.connectrf.com](http://www.connectrf.com).

**Q8:** I am not planning on using the integral Ethernet connector on my LANpoint PRO. Instead I’m going to use an RF Ethernet PCMCIA card and access points for wireless connectivity to my network. Can this be done with the terminal emulation software?

**A8:** Absolutely! Every major RF Ethernet PCMCIA card supplier has DOS drivers for their PCMCIA card. Once that is loaded and configured properly, the fact that the terminal is wired or wireless becomes invisible to the terminal emulation application.

**Q9:** You have mentioned the internet for downloads several times. What if I can’t download for some reason?

**A9:** Just contact our technical support people by phone, email, or FAX and we will be glad to get you whatever you need in a format that you can easily use.

**Q10:** I do not have a LANpoint or LANpoint PRO or any of those other terminals you mention. My terminal is from Symbol, a FMTxxxx. What do I do?

**A10:** The Symbol FMT1xxx and FMT3xxx terminals ARE the same terminals. Use this handy translation guide for your terminal:

**SYMBOL Nomenclature**

FMT1020-xx

FMT1040-xx

FMT1060-xx

FMT3000-xx

**INTELLIGENT INSTRUMENTATION Part**

LANpoint

FACTORYpoint

TIMEpoint

LANpoint PRO

Contact Symbol or Intelligent Instrumentation for information about products mentioned that you do not find on Symbol’s EPOG

**Q11:** I changed the terminal’s IP address, subnet mask and gateway address in the setup menu, but it doesn’t seem to work. What’s going on?

**A11:** Make sure you reboot the unit after changing anything to do with the unit’s IP address. This has to be done for the changes to take effect.

**Q12:** I purchased VT220 emulation, but what would really work better is HP700 emulation (or VT100 emulation). Do I have to purchase something different?

**A12:** No, you do not have to purchase something different. Use a standard text editor to edit the file called “TNVT.CF”. Find a line that says “emul=vt220;” and change it to “emul=hp700;” (or “emul=vt100;”). That’s all there is to it.

**Q13:** I’m getting an “NCU packet error” message, and the terminal does not seem to connect to my host. Why doesn’t it work?

**A13:** In the emulator's "Edit Functions" configuration menu (see step 3A above), arrow down to the "Switch Modes" menu selection item and hit enter. This will change the mode message to "Switched to TNClient Mode" instead of "Switched to Server Based Mode". The TNClient mode connects directly to your host rather than through some pre-processor.

**Q14:** Can I use DNS and/or DHCP rather than having to hard-code IP addresses?

**A14:** Yes. For DNS, simply use IP address 0.0.0.0 when configuring the host IP address. Be sure to specify the host name! You may have to do this by editing the Power.net file in the `\storage card\twinclien\` folder, changing the host name from "Primary Host" to your host's name. If using DHCP, simply set the terminal's IP address to 0.0.0.1.

**Q15:** I see a DNS error message and I don't want to use DNS. How can I fix this?

**A15:** See the preceding question. You have at least one of the host IP addresses set to 0.0.0.0. Change this to the correct host IP address.

## APPENDICES

### Appendix A – Manually Editing Configuration Variables

The terminal emulation software supplied by Intelligent Instrumentation for the LANpoint, TIMEpoint, FACTORYpoint, LANpoint PRO, and FACTORYpoint PRO data collection terminals communicate to the host system via TCP/IP. The client terminal IP address is stored and retrieved from an ASCII file, as is the host IP address.

For full operation, the software requires an Authorization Code that is assigned based on the terminal's MAC address. This eliminates an initial "nuisance" message and removes a 30-minute time-out limitation. This code is unique and is keyed to the MAC address of the unit's integral Ethernet MAC address or the PCMCIA RF Ethernet card's MAC address if one is installed. The authorization code is stored in an ASCII file, called CRFAUTH (no extension).

These ASCII files are modified by the configuration menu within the terminal emulation software, or may be edited with any standard file editor such as Microsoft Notepad or other standard file editor. Usually a laptop computer is used for this, since laptops generally have PCMCIA slots installed.

The client terminal's IP address is stored in a file called SOCKET.CFG on the PCMCIA SRAM card in the /NET subdirectory. The host IP address is stored in a file called POWER.NET in the root directory on the SRAM card. Both these IP address files may be edited.

### **SOCKET.CFG**

The IP stack used with the terminal emulation software is from Datalight. It uses an ASCII file called SOCKET.CFG to specify IP parameters. The contents of the SOCKET.CFG file look something like the following. The '#' characters denote remarks. Line numbers have been

added to the beginning of the file for reference to the notes below. They are not stored in the file.

1. # beginning of SOCKET.CFG
2. # SOCKET.CFG is the default configuration file to be executed by SOCKETP.EXE
- 3.
4. # (You should edit the file HOSTS to contain all your IP addresses
5. # linked to suitable host names. See also the SETHOST utility
6. # that can link IP addresses to MAC/Ether addresses.)
7. # In the next line, "XXX.XXX.XXX.XXX" should be replaced with this machine's
8. # host name, decimal IP address or variable containing the name.
9. # the /0 parameter specifies subnet mask significant bits
10. # for example /24=255.255.255.0, /25=255.255.255.128, /0=no subnet mask req'd
11. ip address 198.182.119.196/24
- 12.
13. # Interface sets the physical interfaces used. (Packet driver, serial ports)
14. # replace "ZZ" with the interrupt vector of your packet driver
15. interface pdr if0 dix 1500 10 0x60
- 16.
17. # When using a gateway (IP router) to the rest of the world,
18. # replace "XXX.XXX.XXX.XXX" with your gateway ip.
19. route add default if0 198.182.119.1
- 20.
21. # When using a dns to resolve name lookups, replace "XXX.XXX.XXX.XXX"
22. # with your gateway ip.
23. # domain server XXX.XXX.XXX.XXX
  
24. # The following line will just display the info for easy verification:
25. # ip address
- 26.
27. # The following lines set TCP/IP parameters:
28. ip ttl 15
29. tcp mss 1460
30. tcp window 2920
31. #end of SOCKET.CFG

#### NOTES:

The IP address and subnet mask is specified on line 11. If a gateway to the Internet is required, that IP address is specified in line 19. Both of these are standard IP address formats. You may edit either or both of these lines. You can edit line 23 by removing the '#' and providing the IP address of a domain name server if that is required. Editing any other line is possible, but unnecessary in most instances.

Specify the client terminal's IP address on line 11. It is standard IP address format up to the "/". If the client terminal and the host are on the same network with no gateway involved, the IP address is all that is needed. If another network is involved, you will also need to specify the subnet mask on line 11. It is specified with a "/" followed by 1 or two digits. This is NOT in standard IP address format. It is a count of "Significant bits" in the mask. Some of the more common are listed below. Others can be found in the downloaded manual specified below. When editing the subnet mask portion of the IP address, use no spaces before or after the "/".

255.255.255.0 = /24

255.0.0.0 = /8  
255.255.255.128 = /25

Ignore the comments about hosts on lines 4 through 6. This HOST does not apply to the terminal emulation application.

Further information can be found at <http://www.datalight.com/manual.htm>, where the manual for the IP stack (the product is called "SOCKETS") can be downloaded in either a PDF format or WIN HELP format. A copy in PDF format (sockets.pdf) can be found on the product diskette.

## **POWER.NET**

The contents of the POWER.NET file look something like the following (only one line).

198.182.119.169,23,Primary Host;

### **NOTES:**

In this file, there are 3 fields, comma-delimited. There are no spaces except perhaps in computer name. Computer name is ignored, unless you use DNS (in which case the IP address should be 0.0.0.0).

The first field is the IP address of the host where the client terminal will attach. The second field is a valid host port number - 23 is standard for a Telnet session. The third field is the host computer name that you make up to easily identify the host. It has no effect on the program execution. A semicolon terminates the line.

## **CRFAUTH**

The terminal authorization code may be edited manually.

Contact Intelligent Instrumentation at [www.support@instrument.com](http://www.support@instrument.com) or call 1-800-685-9911 for a valid code. The codes are related directly to the MAC address for proper activation, so e-mail is the preferred method to reduce errors. For hard-wired Ethernet, you will find the MAC address on labels inside the unit or on the back of the case (the last 6 hex characters; the first 6 are always 00C052). The MAC address is also displayed for a short period of time during initial booting of the terminal. Most RF Ethernet cards, if used, have a label with their MAC address on it, usually 6 groupings of 2 hex characters separated by dashes.

A unique authorization code will be provided for each MAC address you provide. It must be edited into CRFAUTH exactly as specified – capitalization and dashes included. CRFAUTH should reside at the root of the SRAM card directory, where TAPxxx.EXE, the terminal emulation program, resides.