LAN-520 AESP Ethernet Communication Module

Installation Guide

Table of Contents

LAN-520 AESP Installation Guide

1.0   Basic LAN Device Setup

The following are basic setup steps for the LAN-520 AESP. Some settings may not apply to every application.

NOTE: **The LAN-520 AESP is an updated version of Keri's LAN-520X device. If you are using the new NC-485X Network Converter with the LAN-520, you must use the LAN-520 AESP module (or the existing LAN-520X module). The original NC-485 Network Converter is NOT compatible with the new LAN-520 AESP (or the existing LAN-520X module).**

NOTE: **To set up the LAN-520, you MUST have technical knowledge of general networking in a PC environment. Please have a network administrator on site to resolve any special networking issues that might occur during device programming. Network topologies and strategies will vary.**
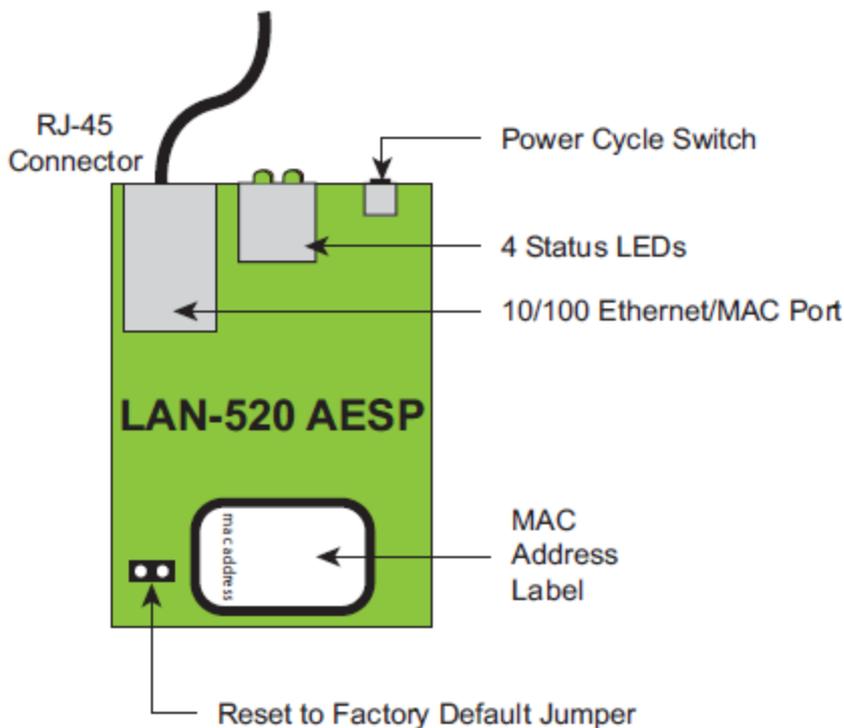
Figure 1: The LAN-520 AESP Unit.

2.0　Installing the LAN-520 AESP to a PXL-500

1. Power down the PXL-500 master controller.
2. On the master PXL-500 remove jumpers from JP6 and JP7.
3. Insert the LAN-520 AESP into the TB13 port of the PXL-500. Orient the unit as shown in Figure 3.

   NOTE: Mounting screws are supplied to secure the LAN-520 AESP to the PXL. The PXL will have to be removed from its enclosure to do this.
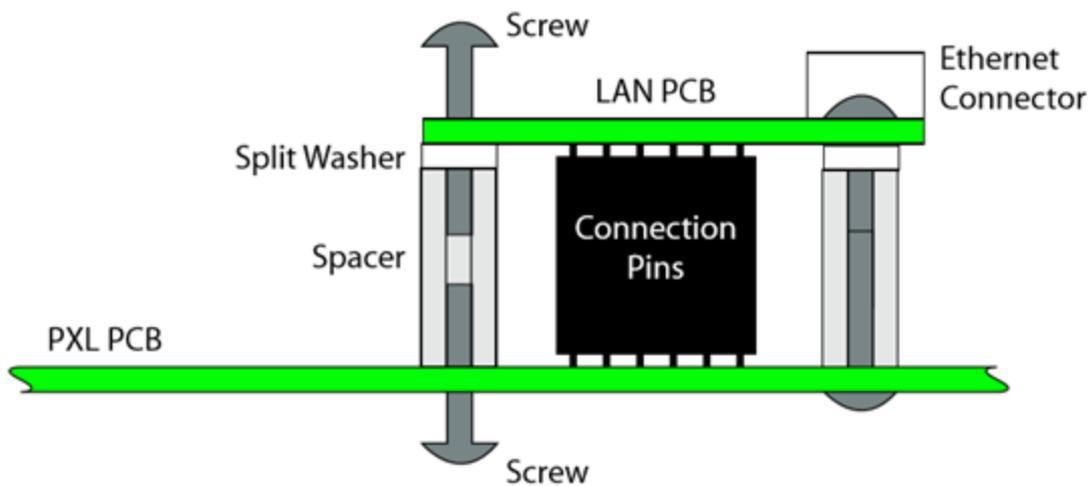
Figure 2: LAN-520 Anchoring to PXL PCB

4. Connect the RJ-45 port on the LAN-520 AESP to the network via a patch cable, or directly to the PC using a cross-over cable.
5. Power-up the PXL-500 (if this is a new PXL controller, a ram reset is required).

NOTE: These jumpers **MUST** be removed or the LAN connection will fail.
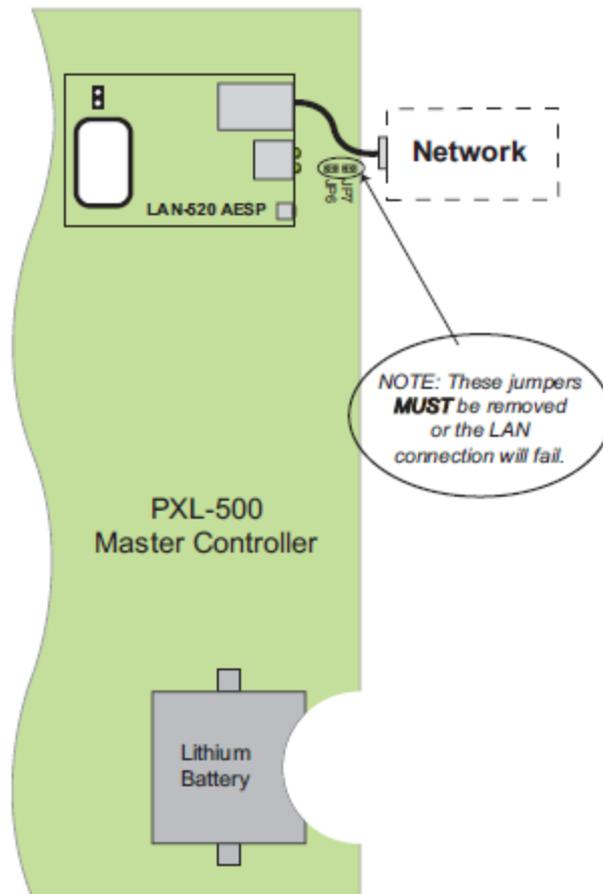
Figure 3: Installing the LAN-520 AESP on a PXL-500 Controller

3.0   Installing the LAN-520 to an EntraGuard Unit

Support for the LAN-520 unit on the Entraguard begins with PCB 23217-001 Rev. E. Earlier units cannot support a LAN-520 unit.

1. Power down the Entraguard master controller.
2. On the Entraguard PCB, remove jumpers from J11, J19, and J20.
3. Insert the LAN-520X into J7 on the Entraguard. Orient the LAN unit as shown in Figure 2.

   NOTE: Mounting screws are supplied to secure the LAN-520 to the Entraguard unit. The Entraguard PCB will have to be removed from its enclosure to do this.

4. Connect the RJ-45 port on the LAN-520 to the network or directly to the host PC via a cross-over cable.
5. Power up the Entraguard unit (if this is a new Entraguard panel, or a master controller from a Doors32 conversion then a RAM reset is required).
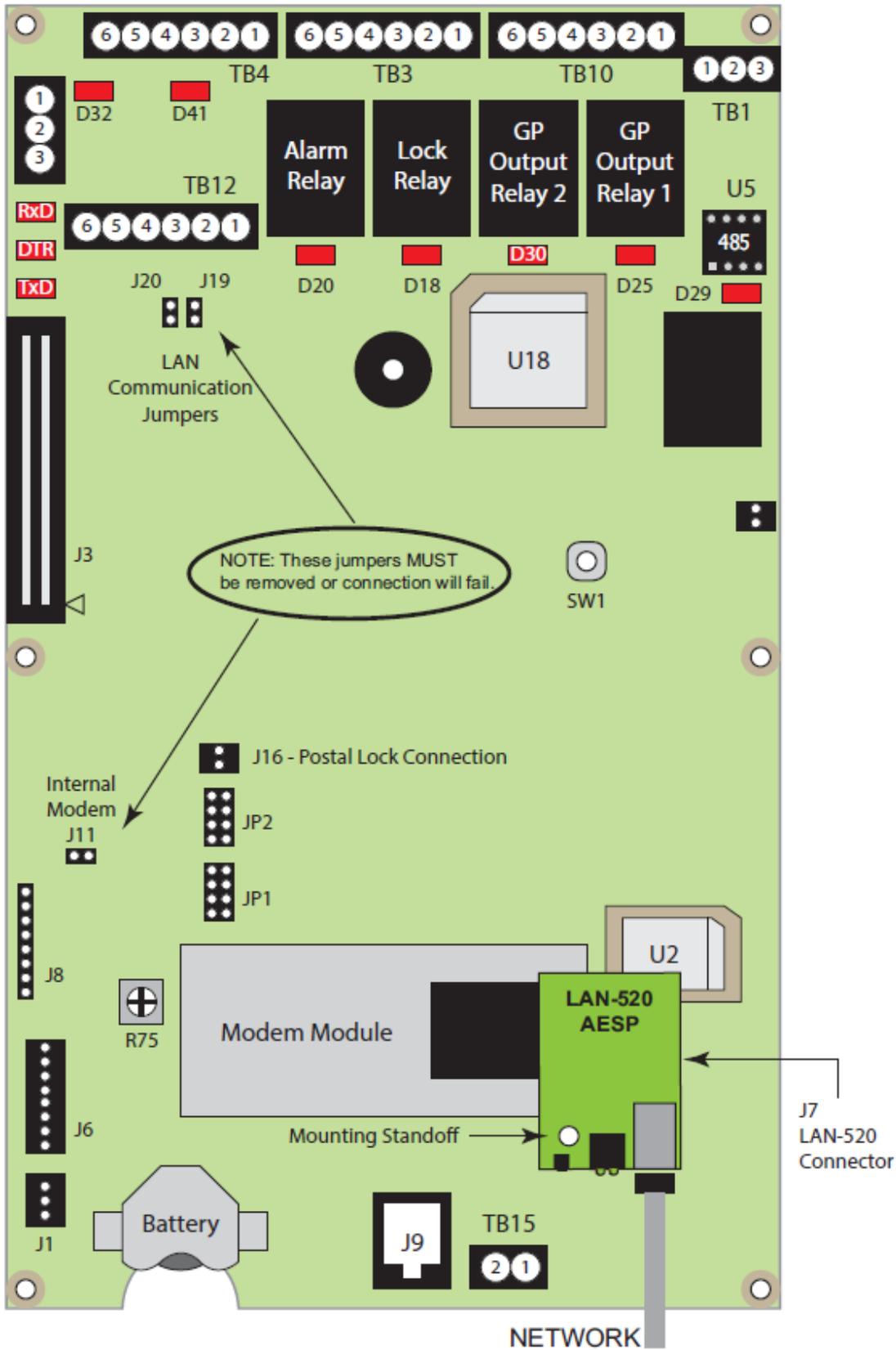
Figure 4: Installing the LAN-520 AESP on an Entraguard

4.0   Assigning the IP Address

The LAN-520 AESP has DHCP enabled by default. So when the LAN-520 AESP module is connected to a DHCP network it will automatically be assigned an IP address. The quickest way to find out the assigned IP address is to install and run a third-party utility called Lantronix Device Installer.

NOTE: If the LAN-520 AESP is NOT assigned a DHCP address it will instead be set to a default IP address. (This address will display as long as the host PC and the LAN-520 device are on the same physical network).

4.1   Downloading Lantronix Device Installer

If you do not have an installation DVD you can download the device installer program from the Lantronix website:

1. In a web browser address bar, enter www.lantronix.com.
2. From the home page, click on **Products and Services** >> **Management Software.**

3. Next Click on **Utilities.**
4. Then click on **Device Installer.**
5. Click on the link to '**Download the latest version of Device Installer**'.

6. Select the 1.3MB file if there WILL be an internet connection at the host PC where it will be installed.
7. Select the 123MB file if there is NOT an internet connection on the host PC.

Latest version of DeviceInstaller

Published 01/22/2002 12:59 PM | Updated 06/07/2017 04:16 PM

What is the latest version of DeviceInstaller?

The current version of DeviceInstaller is **4.4.0.4**. Click on the FTP or HTTP link in the table below to download the **Setup** application and **Release Notes**.

Product	Comment
Web Setup application for Windows (1.3 MB) - ZIP Archive	Requires internet access to install
Release Notes	

(Requirements see below)

If you need a stand-alone DeviceInstaller setup application for a host with no internet access, you can download it here:

Product	Comment
Stand-alone DeviceInstaller Setup application for Windows (123 MB) - ZIP Archive	No internet access required to install

8. You will need to unzip the downloaded file.

NOTE: The above information is correct at the time of writing. If the Lantronix website has subsequently changed, go to a search engine and type in the text string: 'Lantronix Device Installer' and you should see a link to the download page.

Device Installer | Lantronix
https://www.lantronix.com › Products ▼
The Lantronix DeviceInstaller is a Windows-based GUI application that provides an easy way to install and configure specific Lantronix device server products.

4.2 Installing Lantronix Device Installer

1. Explore the contents of the installation disk and locate the folder named 'Lantronix Device Installer'. If the program was downloaded, explore the contents of the unzipped file'.
2. Double-click the setup file.
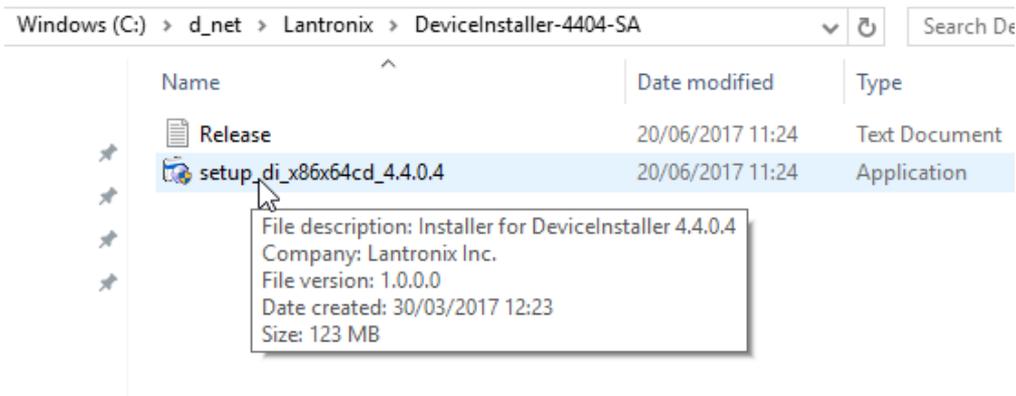
3. You should see a notification window informing you that .NET Framework and Device installer are both required - along with the respective version numbers.
4. Click **Install** to proceed.
5. Place check marks in each of the options displayed below:
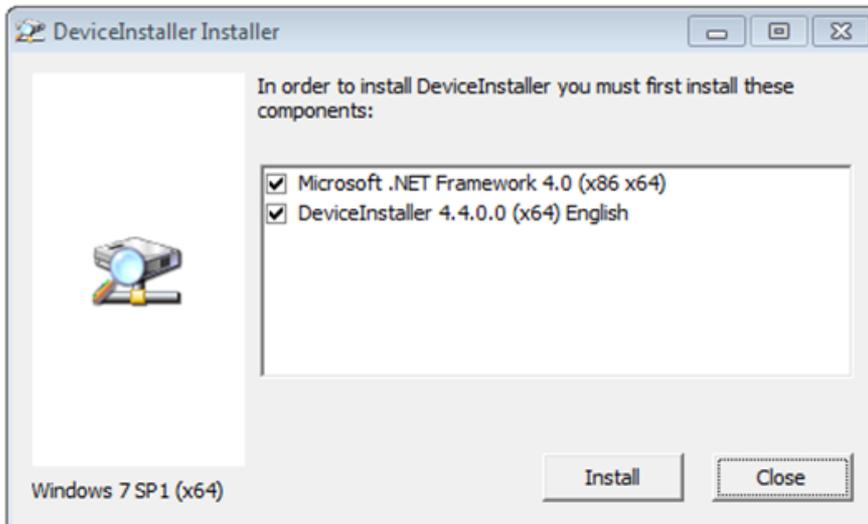
6. Click the install button and the .NET Framework 4 Client Profile will install.
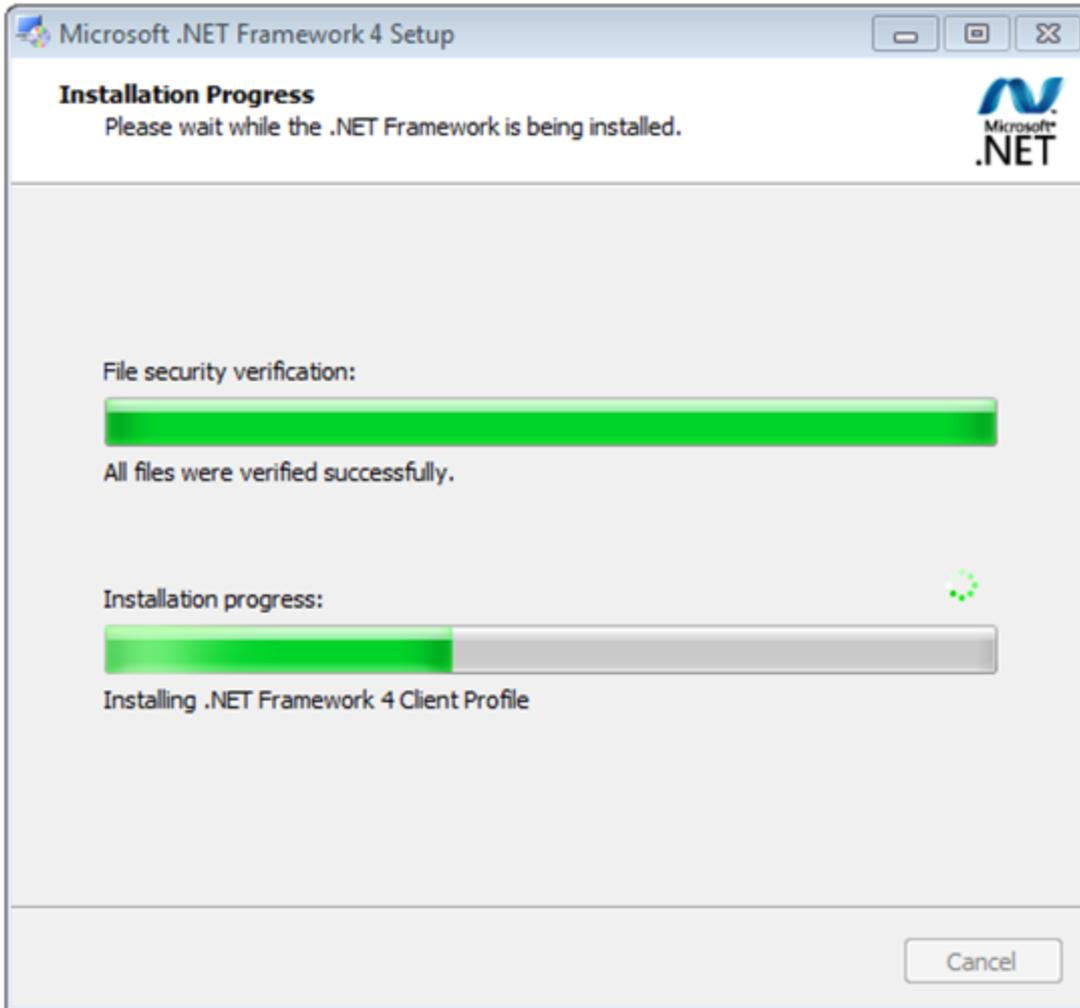
7. Click **Finish** once installation is complete.
8. The Lantronix Device Installer Setup Wizard will start automatically.
9. Click **Next** on the Welcome page.
10. The Installation Folder page displays the default location where the program will be installed. You can click Browse to locate and select a different location.
11. Click **Next**, then **Next** again to start installing Device Installer. Installation of this program should take no longer than a minute.
12. Once installation is complete you can locate the application via; Start >> All Programs >> Lantronix >> Device Installer 4.4 >> Device Installer.
13. Right-click the Device Installer application file and select Send to – Desktop (create shortcut).
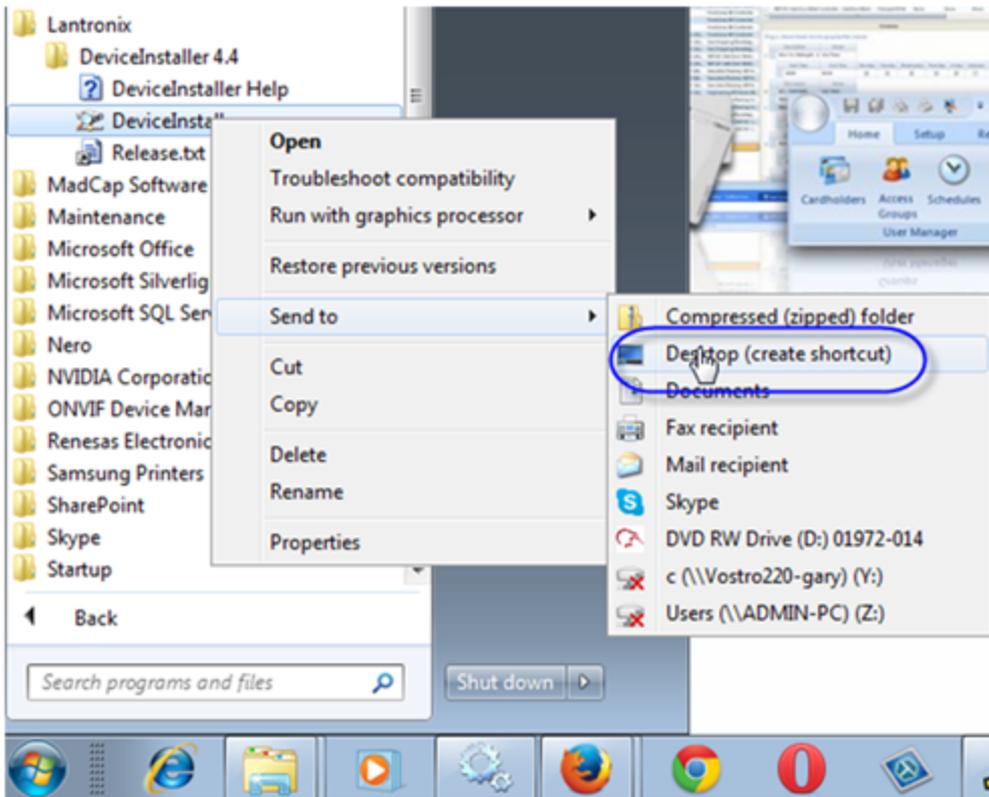
4.3   Starting the Device Installer Program

NOTE: You should contact your IT administrator if the LAN-520 AESP device is being installed on a different subnet to the host PC.

1. The Device Installer icon will be found on the desktop so double-click this to open up the application.

2. When you first open the program you may see a notification that no serial port has been detected, this is not applicable, so select 'Do not prompt me about this'. Then click OK.
3. Select No to the prompt to check for updates.

4. If the LAN-520 AESP module has been connected to a DHCP router which is on the same physical subnet as the host PC then the device should appear. It should also show as online. The software searches for the device via its MAC address.

5. The device should display along with its assigned IP address. The MAC address will begin 00-80 if it is the AESP module. The older LAN-520 modules will have a MAC address beginning 00-20.

6. Even if you wish to use the IP address that has been assigned via DHCP, the LAN-520 AESP will still need to be assigned a static IP address (otherwise the address can still dynamically change).

4.4 Assigning a Static IP Address

1. Highlight the LAN-520 entry and click the **Assign IP** button.
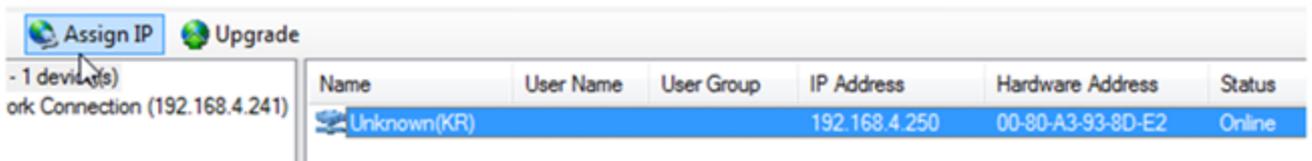
2. The Assignment Method page defaults to 'Assign a specific IP address' so click Next.

3. Enter a new static IP address or leave as is (if you are happy with the address that was assigned by DHCP). On this page you can optionally add a gateway IP address as well. A gateway address is not required if the PC running Doors32/Doors.NET is on the same subnet. Click Next again.

4. Click the Assign button when you see IP assignment is successful.

5. Click Finish when you see IP assignment has successfully completed.

4.5 Setting a Static IP Address Using Telnet (if Device Installer Software is Unavailable)

Setting up the LAN-520 AESP via command prompt in Windows is an easy process without the need for installing any extra software. To use this method the person configuring the LAN-520 AESP must have administrative rights in order to run the required commands and Telnet must be available in the operating system (enabling Telnet is described in section 5.0).

NOTE: *This method may also be used to recover a LAN-520 which has been previously configured but now has an IP address which is unknown.*

The information to be typed is typical, but as applications may vary, so may the procedure.

Two basic commands are used in this method: ARP and Telnet. Information to be typed is displayed in **bold.**

1. Open a command prompt:
   - (Enter CMD in the Windows search field)
   - Press Enter.
   - This will open up a Command Prompt (DOS) window.
2. At the prompt, At the prompt, type the following to make a Telnet connection to the LAN-520 AESP1:

NOTE: Address Resolution Protocol (ARP) is the standard method for finding a host's hardware address when only its network layer address is known. For more info on the usage of arp type ARP/? at the command prompt and press ENTER.

arp -s <LAN-520 IP address> <LAN-520 MAC address> <Enter>
   Example: C:\>arp -s 174.120.9.115 00-20-4A-24-89-67

arp –a <Enter>

telnet <LAN-520 IP address> 1 <Enter>
   Example: C:\>telnet 174.120.9.115 1 <Enter>

NOTE: A Telnet "Connection Failed" screen appears. This is normal.

telnet <LAN-520 IP address> 9999 <Enter><Enter>
   (The Enter button must be pressed twice within 5 seconds).
   Example: C:\>telnet 192.168.100.250 9999 <Enter><Enter>

NOTE: The ARP command does not report when this command is completed suc-
cessfully. However, if it has been

done incorrectly, an error will occur. To verify the contents of the ARP table type arp -a
and press ENTER. The MAC

address should be paired with the IP address to be assigned.

The following menu appears:

Change Setup:

0 Server

1 Channel 1

2 Channel 2

5 Expert

6 Security

7 Defaults

8 Exit without save

9 Save and exit Your choice?

Select option #7:

7 Defaults <enter> This will set communications settings to the defaults which are the
recommended channel 1 settings.

NOTE: This will not reset the IP or subnet settings in the unit.

0 Server <enter>

IP Address: Enter the IP address in segments then press enter.

This will replace the numbers in parenthesis
Example: 192.168.100.103 would be entered as:

192<enter>**168**<enter>**100**<enter>**103**<enter>

Set Gateway: Gateway will only be needed if you intend to communicate with another subnet.

Enter "Y" then enter address if needed as done with IP ADDRESS in the prior step, otherwise type "N" and

proceed to next step.

NetMask: Number of Bits for Host Part: This number is a calculation of the subnet mask.
Most common are: 255.255.255.0 = 8 & 255.255.0.0 = 16

NOTE: See Section 7.0 for a description of how to calculate the number of bits.

9 - (Press 9 to save and exit) <enter>

5.0   Enabling Telnet Client in Windows 7 or 10

If you try to make a telnet connection to the LAN-520 but you see the following message: 'telnet is not recognized as an internal or external command, operable program or batch file' then Telnet will need to be enabled. Telnet Client is disabled by default on a Windows 7 operating system.

Perform the following steps to enable Telnet in Windows 7 or 10:

- From the Windows start menu go to Control Panel >> Programs and Features.
- From the program list, select **Turn Windows Features on or off.**
- From the Windows features list locate Telnet Client.
- Place a check-mark against Telnet Client.
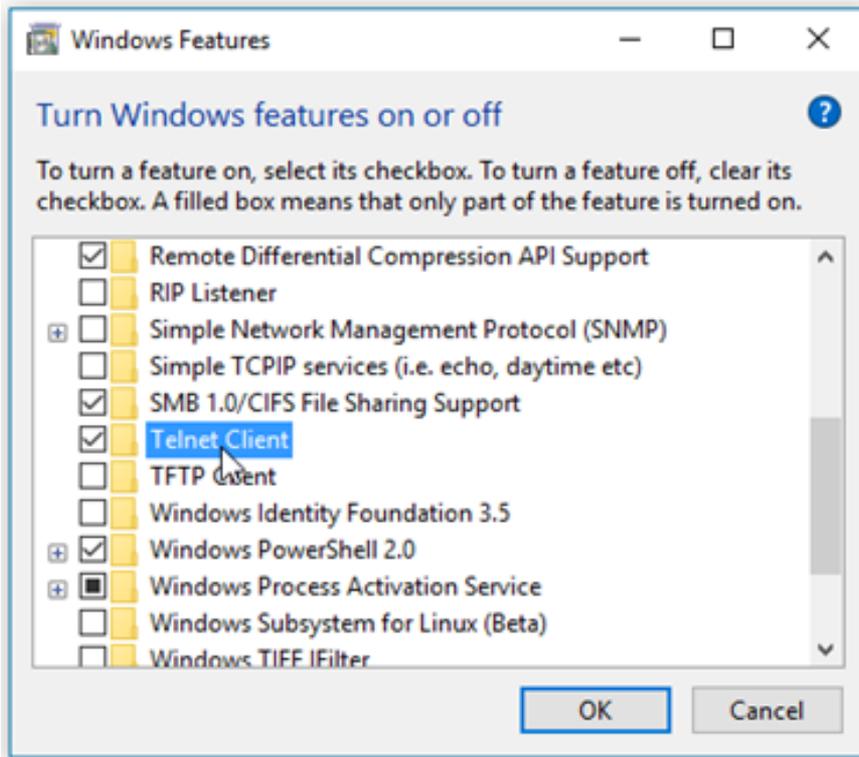
6.0 Set the Doors.NET IP Settings

Following are the steps required to add a new PXL-500 master controller to the system and then assigning the LAN-520 AESP IP address to the controller. It assumes you already have the PXL gateway added and online.

1. Log into Doors.NET.
2. Go to Setup >> Hardware Setup >> All.
3. Click the PXL gateway, then click on the Add PXL icon.

4. Enter a description for the new controller.
5. Select the specific model from the drop-down list.
6. Click Accept and the new PXL master controller will appear in the hardware tree.
7. Next, select Communication Channels.
8. From the ribbon bar, click on 'Network' communication channel.
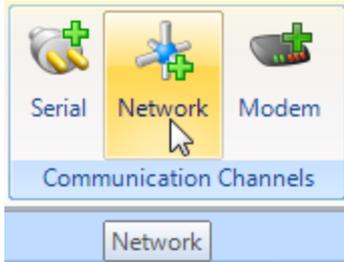
9. Select the new channel from the hardware tree.
10. Enable the channel via its properties on the right (set it from **False** to **True**).
11. Enter a new description for the channel, then save.
12. Select the new PXL from the hardware tree.
13. Assign the new communication channel via its properties on the right.
14. Once you have selected the network communication channel you will be able to enter the IP address (the IP address which has been set to the LAN-520 AESP).

15. Save your controller settings and within 10-20 seconds the new controller should come online.

7.0 Verify Communication By Performing a Telnet Session to Port 10001

This will test the default port used by Doors.NET to communicate to the device.

The telnet command is preferred over the ping command in testing communications because the telnet command will give a specific response from the device, whereas the ping command may give a response from a different device (if there is a duplicate IP address on the network).

- In a command prompt window type in, telnet [IP address] 10001 then enter.
- If successful a blank screen and a blinking cursor will appear. The link LED (bottom green LED) will blink on and off on the LAN-520 AESP indicating that port 10001 is open. Close the command prompt window and the link LED should stop blinking.
- If telnet is unable to connect, then review the settings. If the settings are correct then contact a network administrator to verify the needed ports are available. Some operating systems and hardware, such as routers and firewalls are set to block ports. Ensure these firewalls have ports 10001, 10021, and 9999, open for communication with the Doors32 or Doors.NET software.

NOTE: If you are able to telnet into port 9999 in the command prompt but not to 10001, it is very likely that the ports required by Doors.NET are blocked and will require that a Network Administrator address the issue so a successful telnet session to port 10001 may take place.

8.0   Calculating Netmask: Number of Bits for Host Part

During the configuration of the LAN-520 AESP's TCP/IP address it will be necessary to add the subnet mask in number of host bits. The following is one way of calculating the host bits in a subnet.

A Decimal to Binary conversion of 255 will be all 1's (11111111) and a 0 will equal 8 0's (00000000).

If there are two 0's in the subnet (255.255.0.0) there will be 16 0s so the host part will be 16.

- To calculate a subnet like 255.255.255.248, open the Windows Calculator
- Click on View > Scientific
- Dec (Decimal) will already be selected
- Type in the last segment (248) of the IP address.
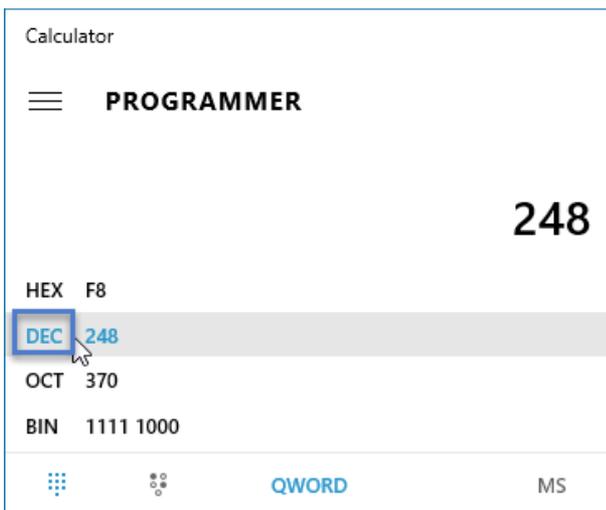
Figure 5: Windows Calculator - Decimal

- Select Bin (Binary) and the binary conversion will take place.
- The 0s will represent the number of available bits. This number is the Number of Bits for Host Part (248 =11111000 = 3). Number of Bits for Host Part is 3.
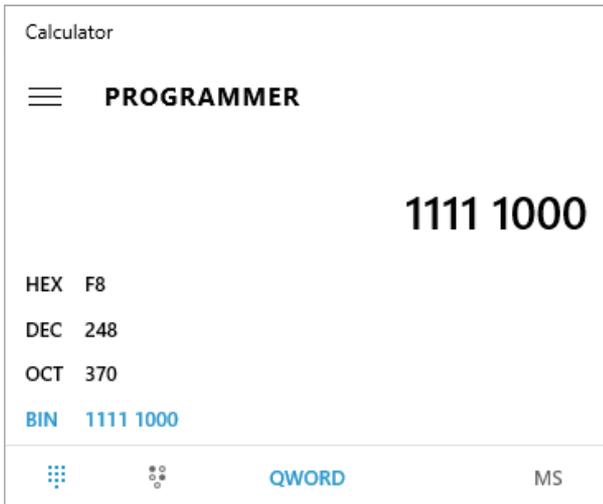
Figure 6: Windows Calculator - Binary

9.0   LAN-520 AESP Factory Reset Procedure

Perform the following steps to reset the LAN unit to its factory default settings:

- Power the unit OFF
- Place a jumper across the Factory Default Jumper pins
- Power the the unit ON – this resets the LAN unit
- Power the unit OFF
- Remove the jumper from the Factory Default Jumper pins

10.0 Set the Doors32 IP Settings

IMPORTANT NOTE: Doors32 is now an obsolete Keri Systems product and is also not compatible with any Windows operating system beyond Windows 7.

NOTE: Entering the Remote Site Port Number only applies to Doors32 systems at version 5.20 or earlier. In these older versions of the Doors32 software the Remote Site Port Number had a default value of 0. This value needs to be changed to 10001 for proper communication with the LAN-520.

1. In Doors32 navigate to the Setup > System window.
2. Click the Network Config tab.
3. Click the TCP/IP Port radio button.
4. In the Remote Site TCP/IP Address: text field, enter the LAN-520 AESP assigned IP address. (1)
5. Enter 10001 in the Server's Ethernet Port Number. (2)

6. Click Save.
7. Close and re-open Doors32 to apply the new setting.

11.0   Enabling AES Encryption in Doors32

NOTE: The encryption feature is currently NOT supported in the Doors.NET software.

1. Log into the Doors32 software and go to Setup >> System or click the closed grey door icon from the toolbar.
2. Go to the Network Configuration tab and select TCP/IP as the communication method.
3. Enter the LAN-520 AESP IP address in the 'Remote Site TCP/IP Address' field.
4. Place a checkmark against 'TCP/IP Encryption On'.
5. The TCP/IP Encryption key will automatically be generated and displayed.
6. Click save to commit the settings.
7. After saving changes to the Network Config page, the application needs to be restarted for the communication changes to completely take effect.

NOTES:

- The new LAN-520 AESP units start with the MAC address of 00-80.
- Keri recommends setting a static IP address to the module using Device Installer. If the DHCP address changes then Doors32 or Doors.NET will no longer be able to connect to the LAN-520 AESP.
- The original NC-485 module is NOT compatible with the LAN-520 AESP or the LAN-520X. Only the NC-485X is compatible with these modules.
- To setup a LAN-520 AESP module you must have technical knowledge of general networking in a PC environment. Please have a network administrator on site to resolve any special networking issues that might be encountered during device setup and programming. Network topologies and strategies will vary.
- If the LAN-520 AESP is connected to a network that isn't DHCP enabled, the module will set itself to an IP address in the range of 169.254.XX.XX with a netmask of 255.255.0.0
- Keep in mind that although the Device Installer is capable of finding LAN-520 devices on a local LAN even if they are on different subnets, routers and firewall settings can prevent the application from finding them.
- If you are able to telnet into port 9999 in the command prompt but not to 10001, it is very likely that the ports required by Doors32/Doors.NET are blocked and will require that a Network Administrator address the issue so a successful telnet session to port 10001 may take place.
- To support AESP Encryption you must first have Doors32 version 5.20 (or greater) installed and the PXL master controller firmware must at least be at version 8.4.43 (or greater).
- The LAN-520 AESP port device must be installed on the master PXL (controller #1 in the network).
- If you are using Doors32 v5.42 the Remote Site Port Number will be set to the correct value of 10001, by default. Other versions of Doors32 will require you to enter this value (see section 5 - Set the Doors32 IP Settings)

12.0   Contact Keri Systems

Keri USA	Keri UK, Ireland, Europe
2305 Bering Drive. San Jose, CA. 95131	Unit 17, Park Farm Industrial Estate, Ermine Street, Buntingford, Herts, SG9 9AZ UK
Telephone: (800) 260-5265 (408) 435-8400	Telephone: + 44 (0) 1763 273 243
Fax: (408) 577-1792	Fax: + 44 (0) 1763 274 106
Web: www.kerisys.com	Web: www.kerisystems.co.uk
E-mail: sales@kerisys.com tech-support@kerisys.com	E-mail: sales@kerisystems.co.uk tech-support@kerisystems.co.uk

end of document