

LAN-520 AESP

Installation Guide

1.0 Basic LAN Device Setup

The following are basic setup instructions 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 AESP, 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.

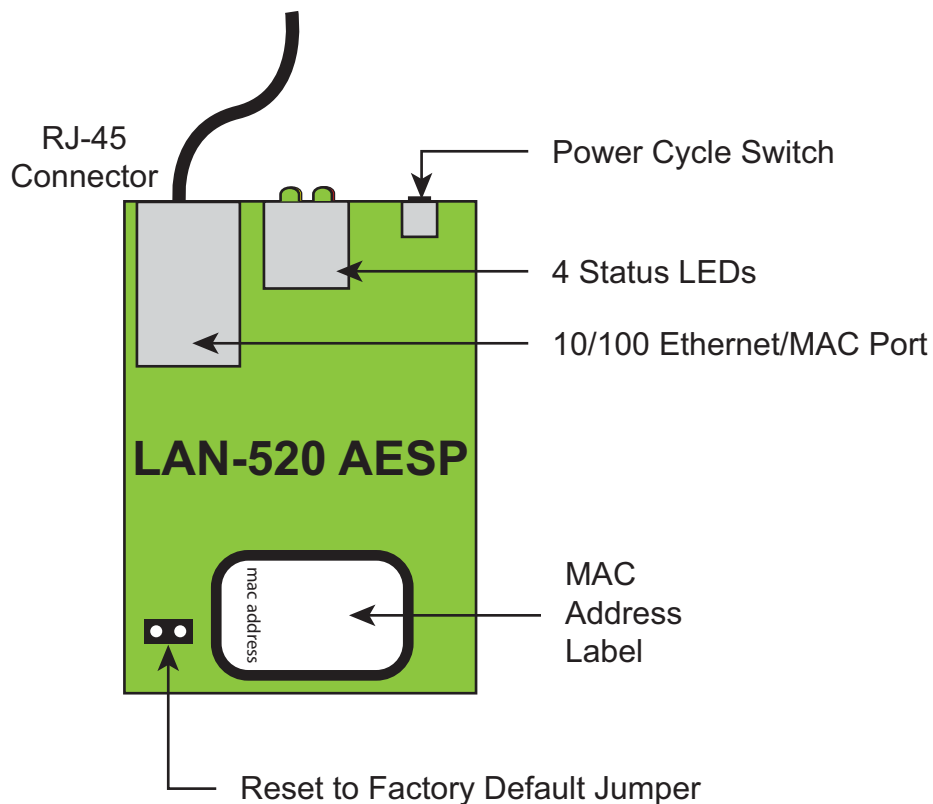


Figure 1: The LAN-520 AESP Unit

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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 controller, remove jumpers from JP6 and JP7.
3. Insert the LAN-520 AESP into TB13 on the PXL-500. Orient the unit as shown in Figure 1.

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.

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

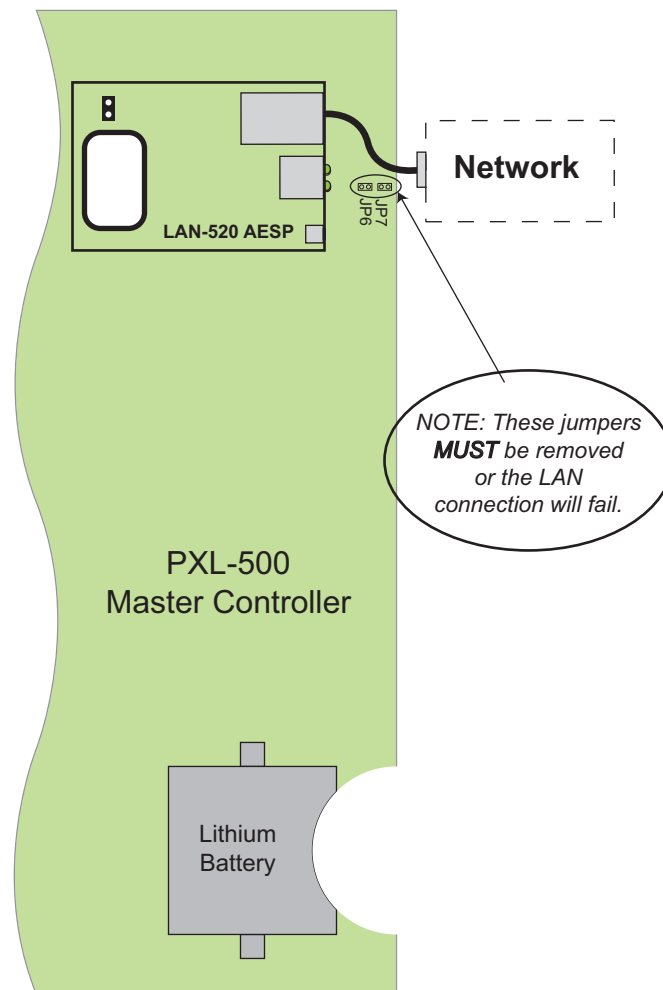


Figure 2: Installing the LAN-520 AESP

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3.0 Installing the LAN-520 AESP on an Entraguard Unit

Support for the LAN unit on Entraguard begin with PCB 23217-001 Rev. E. Earlier units cannot support a LAN 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-520X 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 AESP to the network via a patch cable or directly to the host PC via a cross-over cable.
5. Power up the Entraguard unit (if this is a new Entraguard panel, a RAM reset is required).

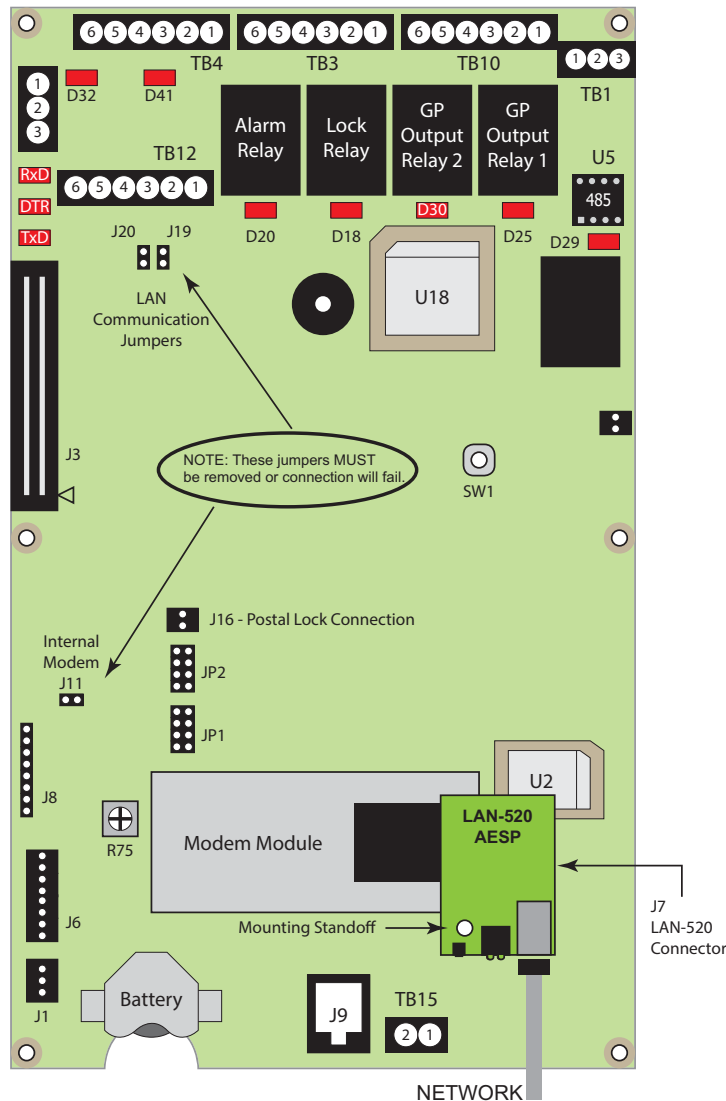


Figure 3: Installing the LAN-520 AESP on an Entraguard

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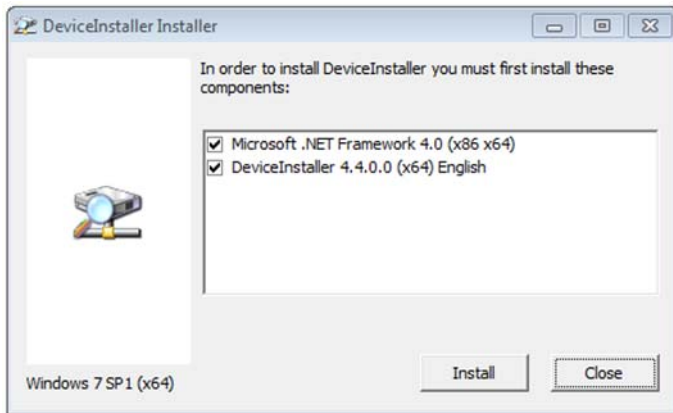
4.0 DHCP Setting

The new LAN-520 AESP has DHCP enabled by default. When the LAN-520 AESP module is connected to a DHCP enabled router it automatically receives an IP address. The quickest way to find out what DHCP address has been assigned to the module is to install and run Lantronix Device Installer.

4.1 Installing the Lantronix Device Installer

The Lantronix Device Installer program is found on the software disc. You will not need an active internet connection as all the required components are included in the installation program.

1. Explore the contents of the installation disk and locate a folder named 'Lantronix Device Installer'.
2. Double-click the 'Installer_KeriSystems' executable.
3. If you are using the Doors.NET software you will see the same 'Lantronix Device Installer' folder on the disk but inside there will also be a subfolder named 'Updated_Lantronix'. Go into that folder and double-click the 'Device_Installer_v4' executable.
4. You should see a notification window informing you that .NET Framework and Device installer are both required along with their version numbers. The .NET call out will not appear if the .NET Framework 4.0 is already installed.
5. Click Install to proceed.

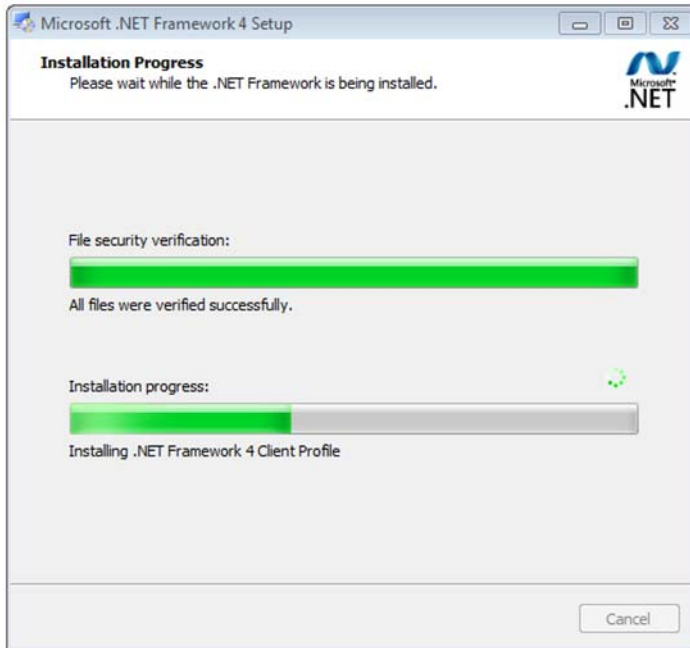


6. Place a tick in the checkbox to confirm you have read the Microsoft Terms and Agreements.

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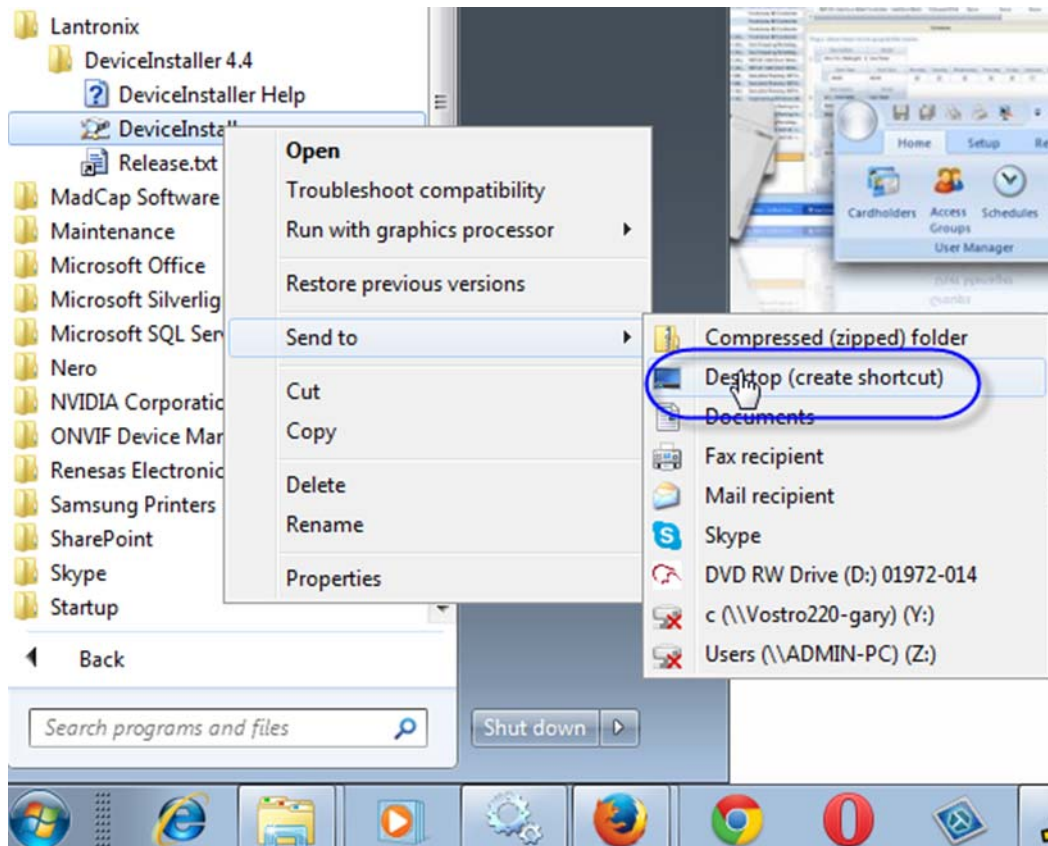
- Click install and the .NET Framework 4 Client Profile will install.



- Click Finish once installation is complete.
- The Lantronix Device Installer Setup Wizard will then start automatically.
- Click **Next** on the Welcome page.
- 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.
- Click **Next**, then **Next** again to start installing Device Installer. Installation of this program should take no longer than a minute.
- Once installation is complete you can locate the application via; Start >> All Programs >> Lantronix >> Device Installer 4.4 >> Device Installer.

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14. Right-click the Device Installer application file and select Send to - Desktop (create shortcut).



4.2 Starting the Device Installer Program

NOTE: Contact your IT Administrator if the LAN-520 device is being installed on a different subnet than 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 of any concern so select 'Do not prompt me about this'. Then click OK.
3. Click No to the prompt asking if you want 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 automatically 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 a LAN-520 AESP.

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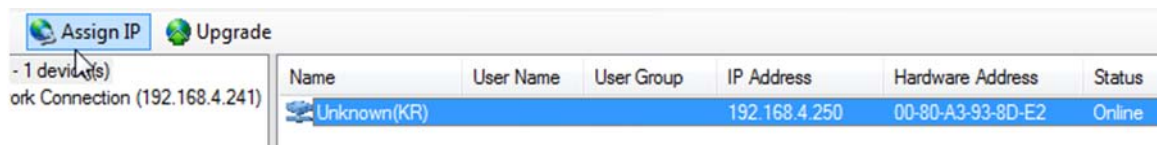
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6. Even if the address assigned by DHCP is an acceptable IP address it is still a dynamic address and therefore can still change. We therefore recommend assigning the IP which will make the assigned address static.



4.3 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 to complete the static IP address assignment
5. Click Finish when you see assignment has successfully completed

4.4 Setting a Static IP Address Using Telnet (if the Device Installer software is unavailable)

Setting up the LAN-520 AESP via a command prompt in Windows is an easy process without the need of 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.

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

Two basic commands are used in this method, ARP, & Telnet. Information to be typed is in **bold**.

1. Open a command prompt
 - Click on the Windows Start and select "Run."
 - The Run window will appear. In the Open field, type "cmd" and click on the OK button.
 - This will open up a Command Prompt (DOS) window.

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2. 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 successfully. 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 default.

NOTE: This will not reset the IP and subnet setting 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

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

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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 4.6 for a description of how to calculate the number of bits.

9 Save and exit <enter>

4.5 Verify Communication By Performing a Telnet Session to Port 10001

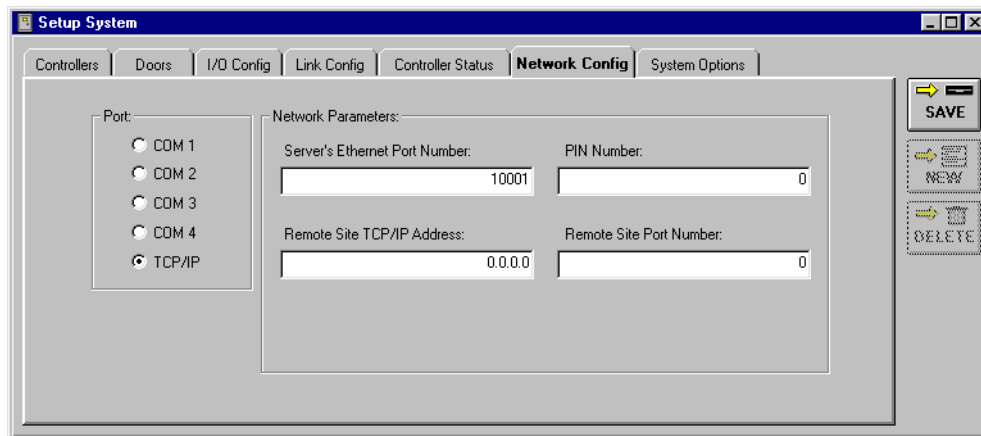
This will test the port used by *Doors32/Doors.NET* to communicate to the LAN device.

4.5.1 Set the Doors32 Remote Site Port Number

This section applies only to Doors32 systems at version 5.20 or earlier.

In these software installations the default Remote Site Port Number default is 0. This value needs to be changed to 10001 for proper operation.

1. In Doors32, navigate to the Setup > System window.
2. Click the Network Config tab.
3. Click the TCP/IP Port radio button.
4. Enter 10001 in the Server's Ethernet Port Number.



5. Click Save.
6. Close Doors32 to ensure the program applies the new value.

4.5.2 Verify Communication

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 (i.e. if there is a duplicate address on the net the Ping may still get a reply).

1. In the command prompt window type in, **telnet [IP Address] 10001 <enter>**.
 - If telnet connects, a blank screen and a blinking cursor will appear. The link LED on the LAN-520 AESP will blink on and off indicating that port 10001 is open. Close the command prompt window and the LED should stop blinking.

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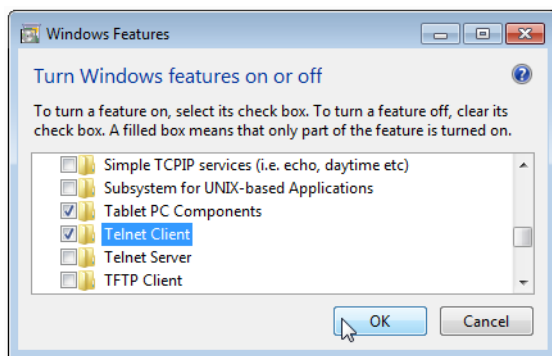
- If telnet is unable to connect, then review the settings. If the settings are correct then contact a network administrator to verify the needed ports are available. Some operating systems and hardware, such as routers and firewalls are set to block ports. Ensure these firewalls have ports 10001, 10021, 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 are blocked and will require that a Network Administrator address the issue so a successful telnet session to port 10001 may take place.

4.5.3 Enabling the Telnet Client in Windows 7

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

1. From the start menu go to Control Panel >> Programs and Features.
2. On the left of the program list click Turn Windows Features on or off.
3. From the Windows features list locate Telnet Client.
4. Place a tick against Telnet Client.



4.6 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 0's thus the host part will be 16.

1. To calculate a subnet like 255.255.255.248, open the Windows Calculator.
2. Click on View > Scientific.
3. Dec (Decimal) will already be selected.

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4. Type in the last segment (248).

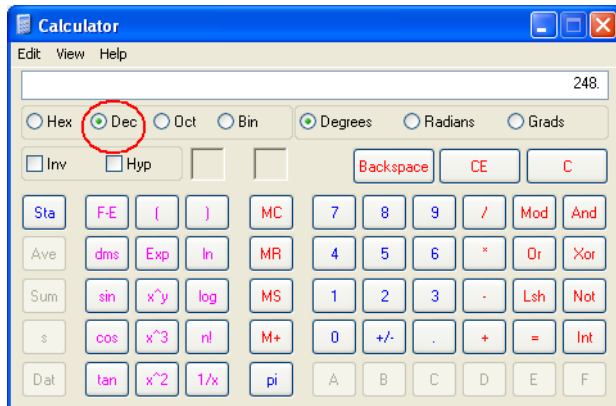


Figure 4: Windows Calculator - Decimal

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

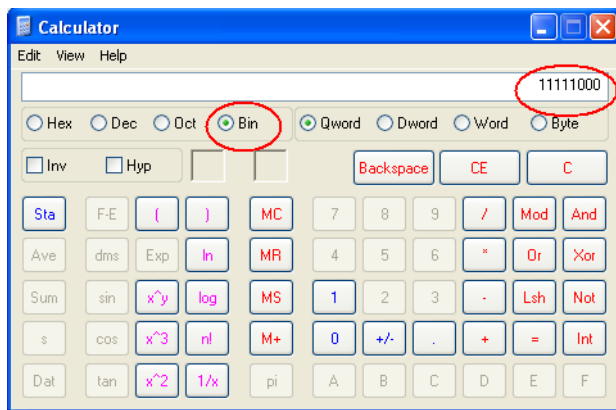


Figure 5: Windows Calculator - Binary

5.0 Enabling AES Encryption in Doors32

Perform the following steps to set the encryption key in the Doors32 software:

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 within 'Remote Site TCP/IP Address:.'
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.

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- After saving changes to the Network Config. page, the application needs to be restarted for the communication changes to completely take effect.

Port:

- COM 1
- COM 2
- COM 3
- COM 4
- TCP/IP

Network Parameters:

Server's Ethernet Port Number: 10021 PIN Number: 0

Remote Site TCP/IP Address: 192.168.4.250 Remote Site Port Number: 10001

TCP/IP Encryption On

TCP/IP Encryption Key:
15C6 524A F1B4 4FEE B97A FD21 38BE 2702

6.0 Reset to Factory Default Settings

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

NOTE: This will erase a programmed IP address and restore the factory default.

- Power the unit OFF
- Place a jumper across the Factory Default Jumper pins (see Figure 2)
- Power the unit ON – this resets the LAN unit
- Power the unit OFF
- Remove the jumper from the Factory Default Jumper pins

7.0 Notes

- The new LAN-520 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 LAN520 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 have *Doors32* version 5.20 or greater installed and the PXL firmware must be at v8.4.43 (or greater).
- The LAN-520 AESP port device must be installed on the master PXL controller.
- If you are using *Doors32* v5.42 The Remote Site Port Number will by default be set to 10001 when you select TCP/IP as the communication method. Other versions of *Doors32* this value will need to be changed from the default value of 0.

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8.0 Updating Doors32 to Doors.NET

Keri's Doors.NET program now supports the PXL-500 hardware family. Doors32 will only be compatible with Microsoft operating systems through Windows 7 and not beyond. Keri recommends you upgrade your system to Doors.NET, which not only extends the life of your PXL-500 system, but brings you a host of new features.

Send us an email at sales@kerisys.com or give us a call at +1 408 435 8400.
In the UK, contact sales@kerisystems.co.uk or call +44 (0) 1763 273 243.

Or browse to the following web link: <http://www.kerisys.com/doors-net-pxl-upgrade-sheet/>

9.0 Contact Keri Systems

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