



# **Ethernet over Coax (EoC) Local Craft Interface (LCI) Installation and Operation Guide**

## Notices

---

### Trademark Acknowledgments

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks).

*Third party trademarks mentioned are the property of their respective owners.*

The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1009R)

### Publication Disclaimer

Cisco Systems, Inc. assumes no responsibility for errors or omissions that may appear in this publication. We reserve the right to change this publication at any time without notice. This document is not to be construed as conferring by implication, estoppel, or otherwise any license or right under any copyright or patent, whether or not the use of any information in this document employs an invention claimed in any existing or later issued patent.

### Copyright

© 2010 Cisco Systems, Inc. All rights reserved.

Information in this publication is subject to change without notice. No part of this publication may be reproduced or transmitted in any form, by photocopy, microfilm, xerography, or any other means, or incorporated into any information retrieval system, electronic or mechanical, for any purpose, without the express permission of Cisco Systems, Inc.

---

# Table of Contents

---

Preface.....	iv
Chapter 1. Installation.....	1-1
Overview .....	1-1
System Requirements .....	1-2
Installing WinPcap.....	1-3
Installing LCI .....	1-6
Device Connection Diagram .....	1-8
Chapter 2. Operation.....	2-1
Overview .....	2-1
License Management .....	2-2
Checking Device Versions .....	2-6
Upgrading Device Firmware.....	2-7
EP Settings.....	2-9
Performance Test.....	2-12
Basic Test .....	2-14
Noise Test.....	2-16
Chapter 3. Customer Support Information.....	3-1
Overview .....	3-1
Support Telephone Numbers .....	3-2

---

# Preface

## Overview

---

### About This Guide

This guide provides information on how to install and use the Local Craft Interface (LCI), as well as check the status of local end and terminal network through the LCI. This guide is subject to LCI v0.5.4.

This guide consists of the following chapters:

**Chapter 1 Installation** - This chapter describes system requirements for installation, steps for installing WinPcap, steps for installing LCI and shows the device connection diagram.

**Chapter 2 Operation** - This chapter describes how to launch LCI, how to check device versions, how to upgrade device firmware, EP Settings, performance test, basic test, and noise test.

**Chapter 3 Customer Technical Support Information** - This chapter provides information on technical support.

### Additional Documentation

If you have a Product Support Agreement (PSA), you can access/download the most current documentation which provides additional information at the knowledgebase web site at:

[http://www.sciatldev.com/TNSDocs/DT/DigiStar\(EoC\)/digistar\\_io\\_cisco.htm](http://www.sciatldev.com/TNSDocs/DT/DigiStar(EoC)/digistar_io_cisco.htm)

**Note:** You can download these guides separately, or find them on the CD that comes packaged with the master and end-point devices.

### Important Notice

Please read the following notice before performing instructions in this guide.



**NOTICE:**

**Although DigiStar EoC Aggregation Point (AP) contains various types of offerings, the DigiStar EoC E220 IP54 can be considered as a typical DigiStar EoC AP. All instructions in this guide are based on the DigiStar EoC E220 IP54 and apply to all types of DigiStar EoC offerings.**

# Chapter 1 Installation

## Overview

---

### Introduction

This chapter describes how to install WinPcap software, and how to install the LCI. It also provides system requirements.

### In This Chapter

This chapter consists of the following topics:

Topic	Page No.
System Requirements	1-2
Installing WinPcap	1-3
Installing LCI	1-6
EoC Device Connection Diagram	1-8

---

# System Requirements

---

## System Requirements

The following table includes minimum system requirements for installing LCI.

	<b>System Requirements</b>
Operation System	Windows Server 2003/ Windows XP Service Pack 2/ Windows 7 (with Microsoft .NET Framework 2.0 installed)
Hard Drive Requirement	At least 200 MB hard drive space
Screen Resolution	Minimum resolution of 1024 x 768, 16-bit color quality

---

## Installing WinPcap

---

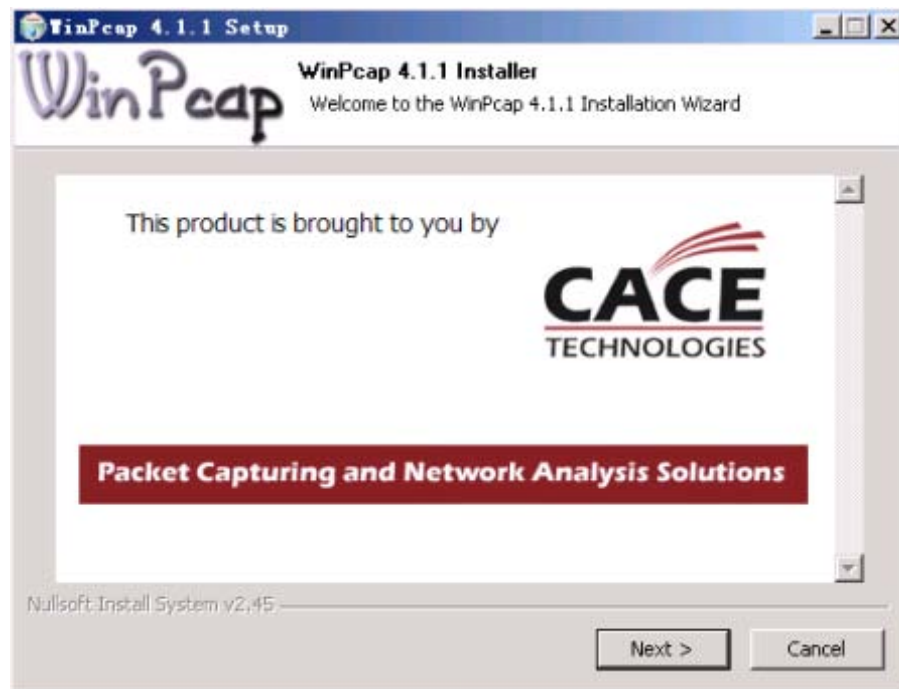
This section describes how to install WinPcap.

### Installation

Follow steps below to install WinPcap:

1. Browse for the location of the installation files.
2. Double click **WinPcap4.1.1 installer** to run the installation.

**Result:** The following screen appears.



---

*Continued on next page*

## Installing WinPcap, Continued

---

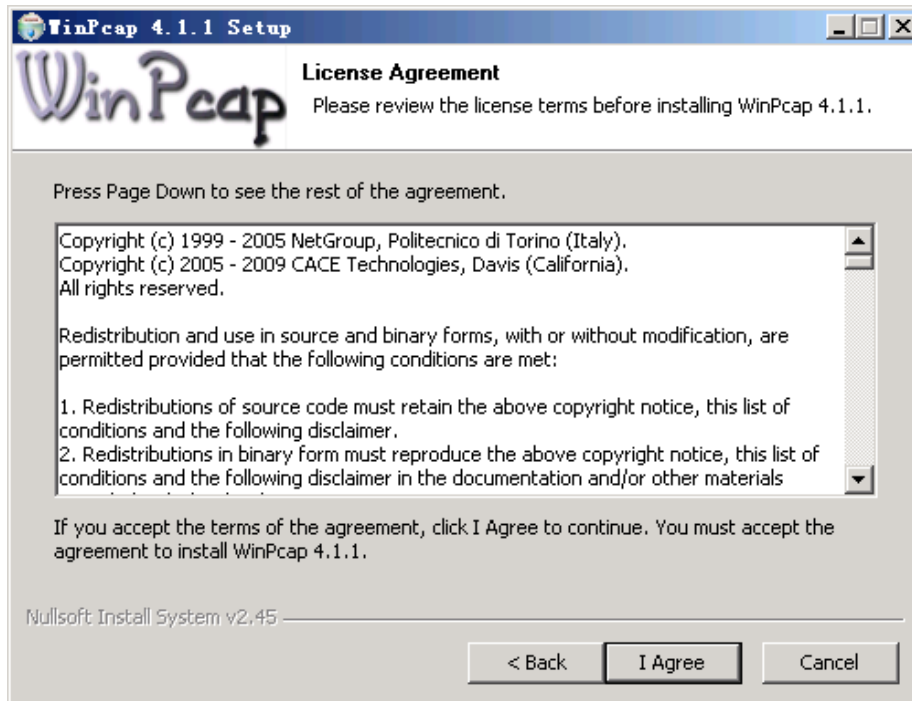
3. Click the **Next** button.

**Result:** The following screen appears.



4. Please read the information carefully, then click the **Next** button.

**Result:** The following screen appears. Please read through the End User License Agreement carefully.



*Continued on next page*



## Installing WinPcap, Continued

---

5. Click the **I Agree** button.  
**Result:** WinPcap begins to install.
6. Click the **Finish** button to complete the installation.



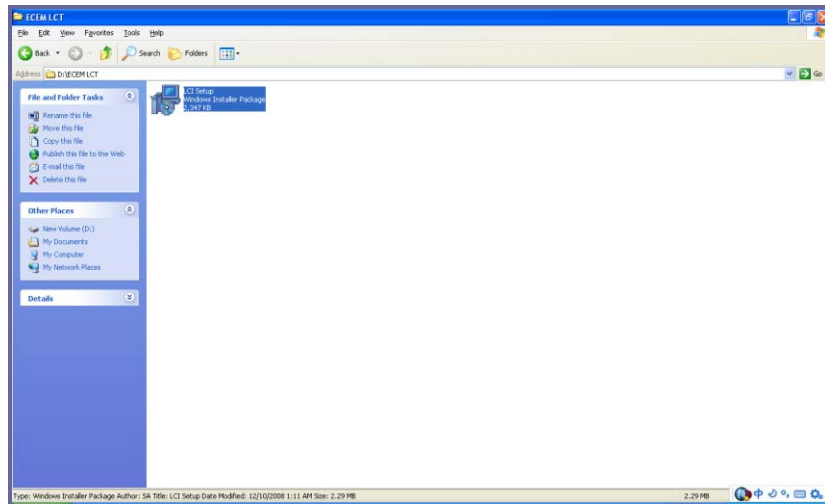
# Installing LCI

---

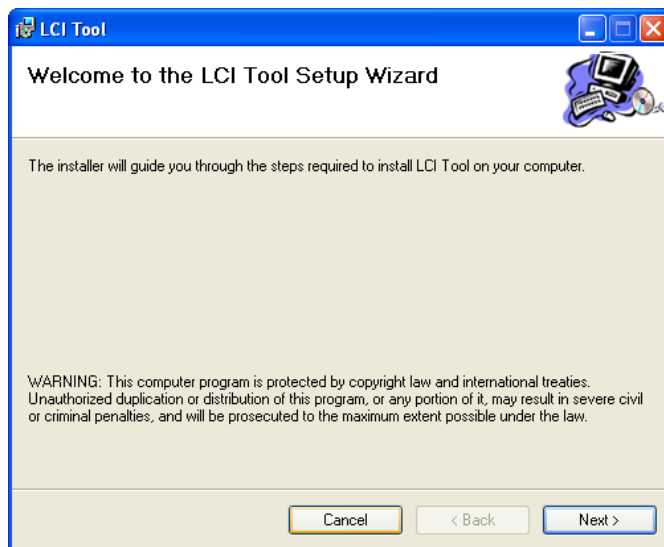
## Installation

Follow the steps below to install LCI:

1. Locate the installation files and double click **LCI Setup Installer**.



**Result:** You will enter the LCI software installation start screen. Please read the information carefully.

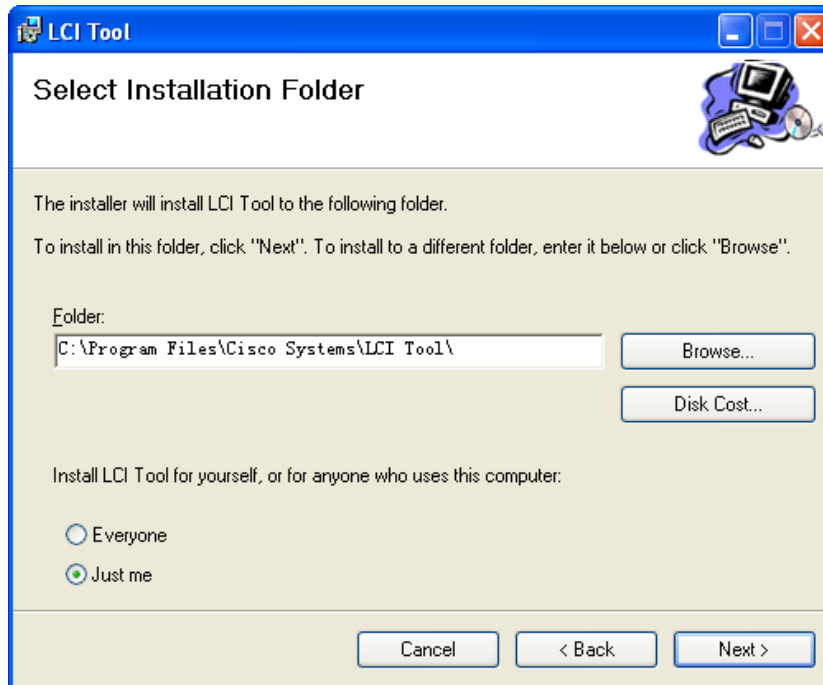


2. Click the **Next** button
-

## Installing LCI, Continued

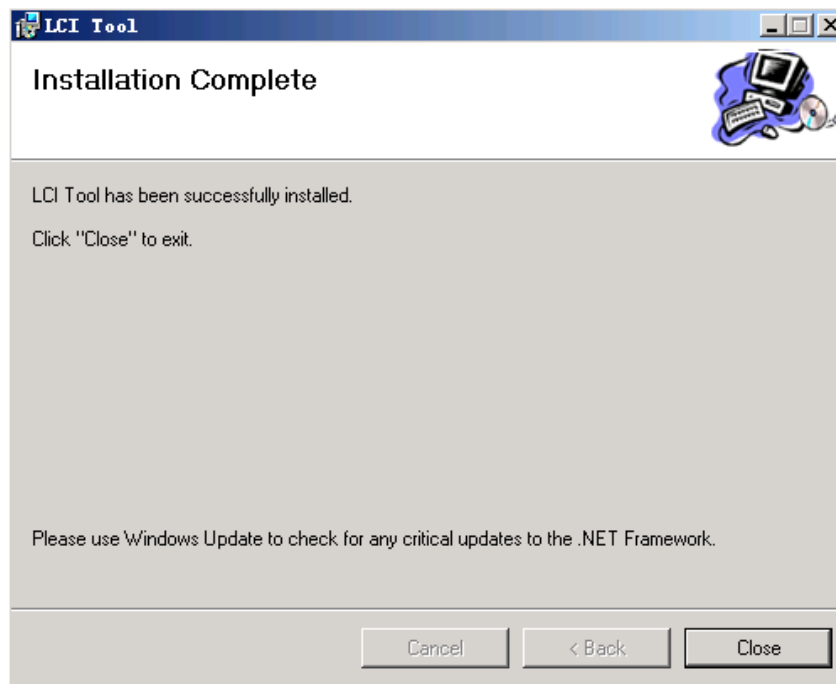
---

**Result:** The following screen appears.



3. Click the **Browse** button and select the path for installation.
4. Click the **Next** button to begin installation.

**Result:** After the LCI software installation is completed, the following screen appears.



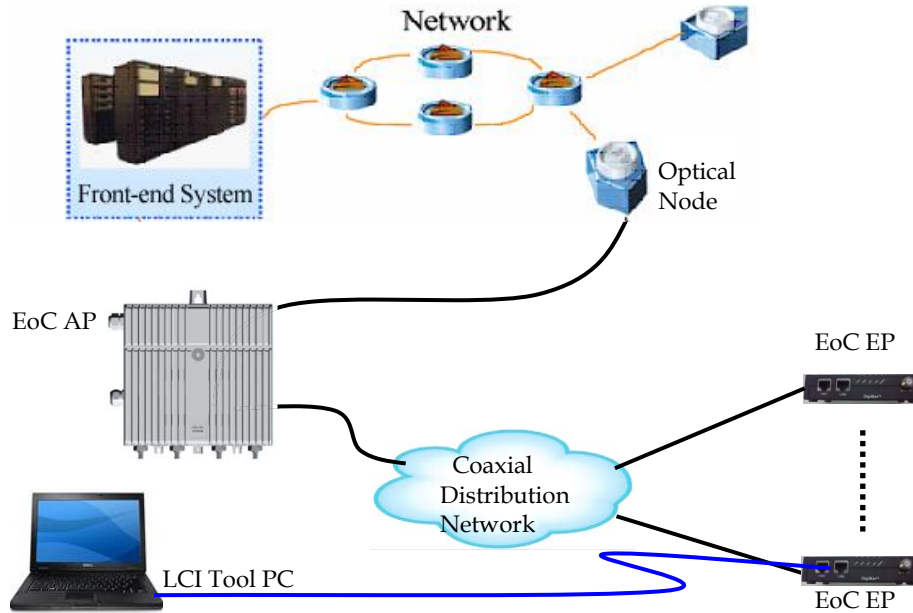
5. Click Close to exit the installation process.
-

# Device Connection Diagram

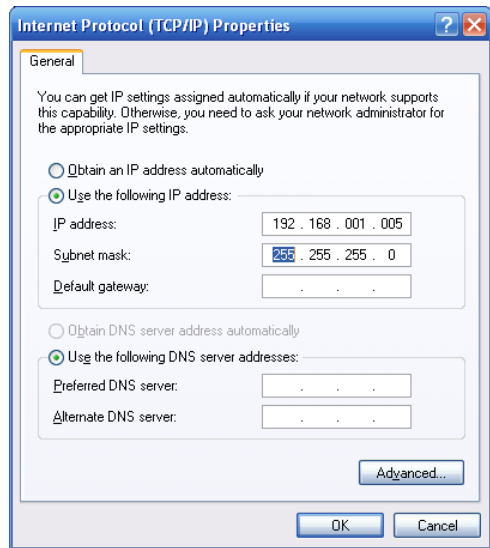
This section describes how to connect EoC devices.

## Connecting EoC Devices

Connection of related devices is shown in the diagram below.



**Note:** The IP address of the local network administrator's PC should be set as the same network segment as that of the EoC local port. See the screenshot below.



# Chapter 2

## Operation

### Overview

---

#### Introduction

This chapter describes how to launch the LCI, check device version, upgrade device firmware, EP Setting, and perform tests such as performance test, basic test, and noise test.

#### In This Chapter

This chapter consists of the following topics:

Topic	Page No.
License Management	2-2
Checking Device Versions	2-6
Upgrading Device Firmware	2-7
EP Settings	2-9
Performance Test	2-12
Basic Test	2-14
Noise Test	2-16

---

# License Management

---

## Introduction

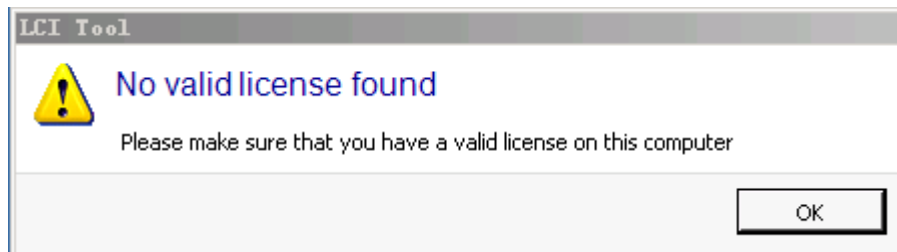
LCI needs a license to activate the function modules. After installation, LCI has no license installed, and therefore, no function modules are activated.

The license is bonded to the host's network adapter MAC address. To obtain a license, you should provide the host's MAC address to the sales representative. Cisco Systems will then provide the correct license file in accordance with your actual requirements.

## To Launch LCI

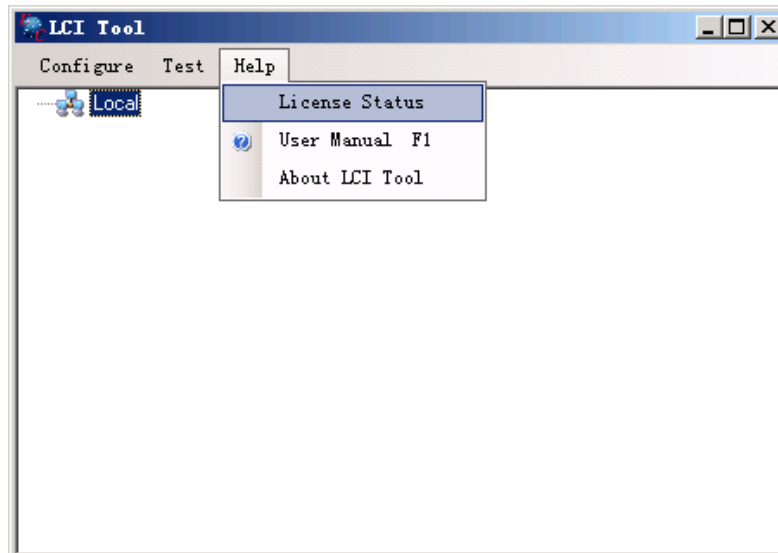
Follow these procedures to launch LCI.

1. Click **Start** menu, and then point to **Programs**.
2. Click **LCI** to start up this program.
3. When you launch LCI for the first time, it notifies you that no valid license file is found.



## To Obtain a License

1. To apply for a license, click **License Status** option from the **Help** menu.



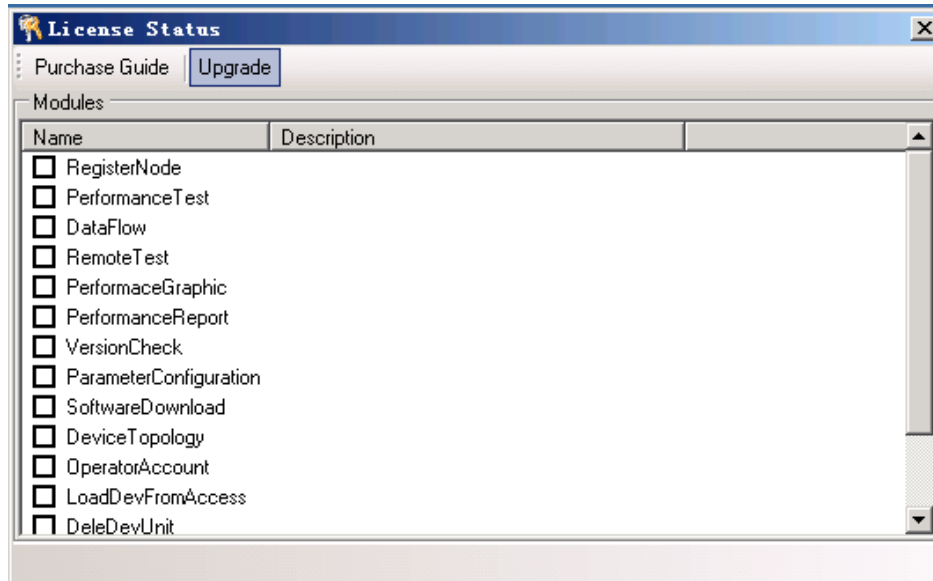
---

*Continued on next page*

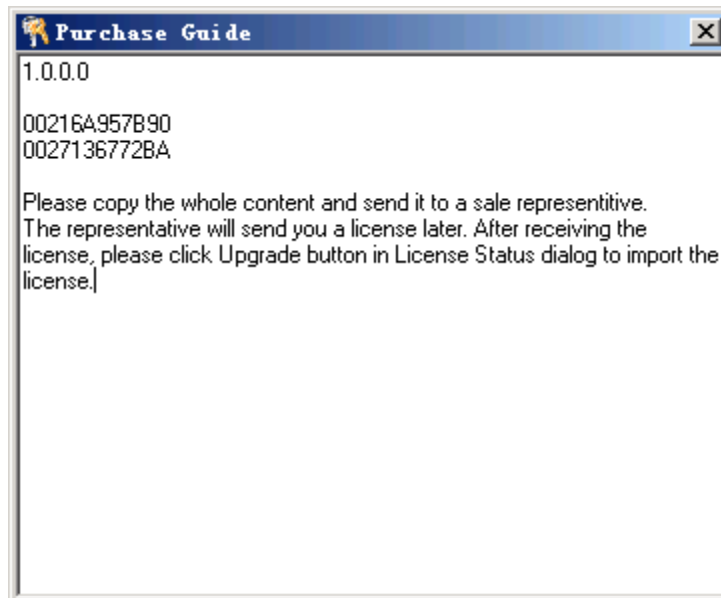
## License Management, Continued

---

1. Click **License Status**. The license status dialog box appears.



2. In the module list, all modules are invalid. Click **Purchase Guide** to get the host's MAC address.



Provide all contents in the text box to the sales representative. The representative needs this information to apply for a license from Cisco Systems. In the example shown above, the number "00216A957B90" is the host's MAC address.

---

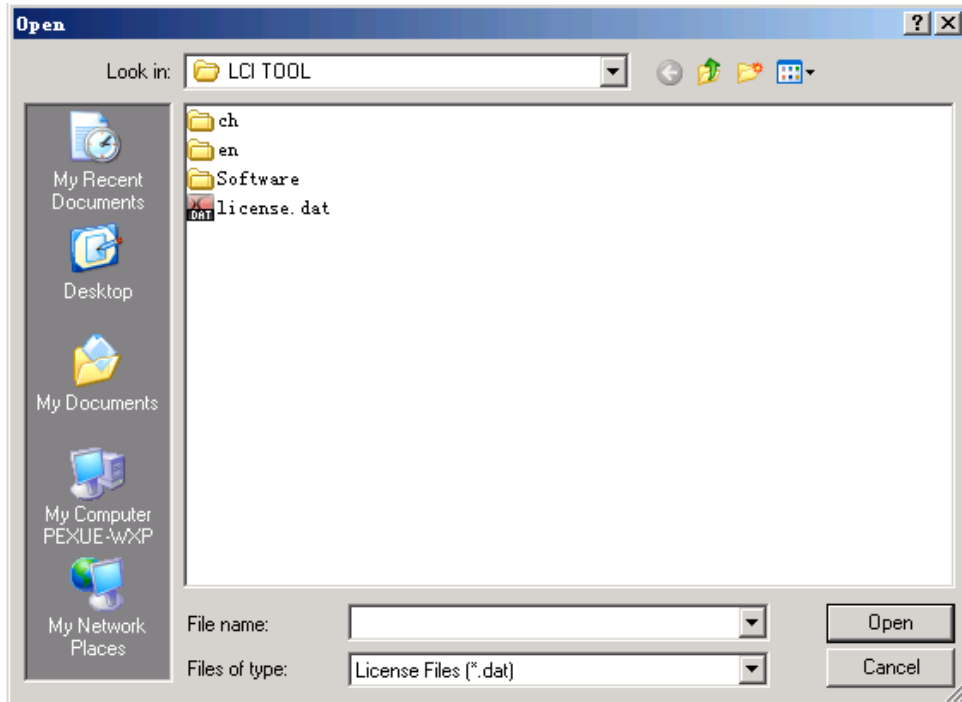
*Continued on next page*

# License Management, Continued

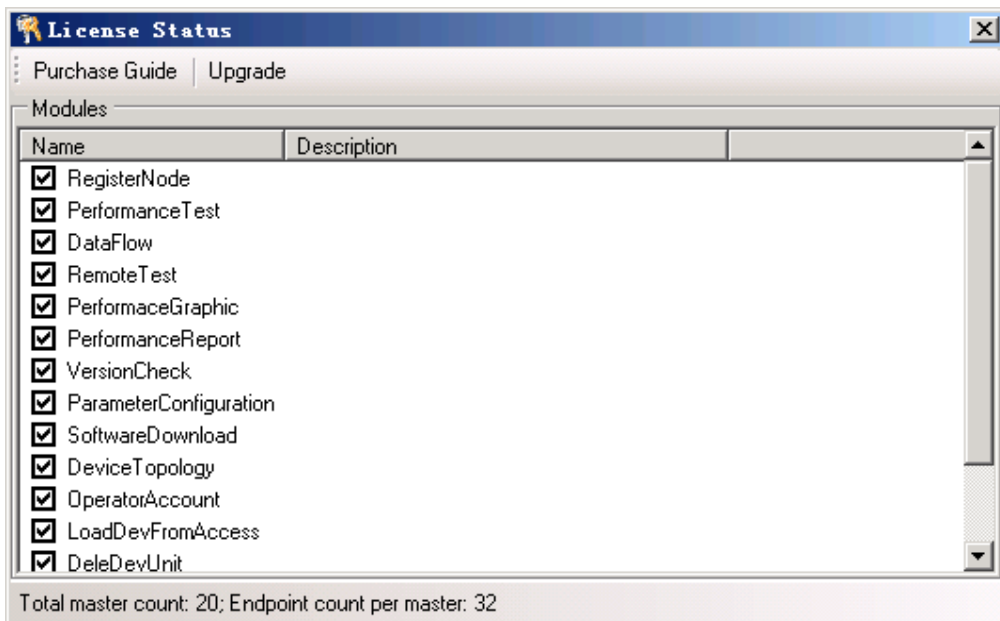
---

## To Load the License

1. If you received the license file, click **Upgrade** to load the license.
2. Click **Browse**, and then select the valid license file from your computer.



3. Click **Ok** to load the license file. When the file loads successfully, the relevant function modules are activated.



The license will show the maximum number of managed master and end-point devices.

---



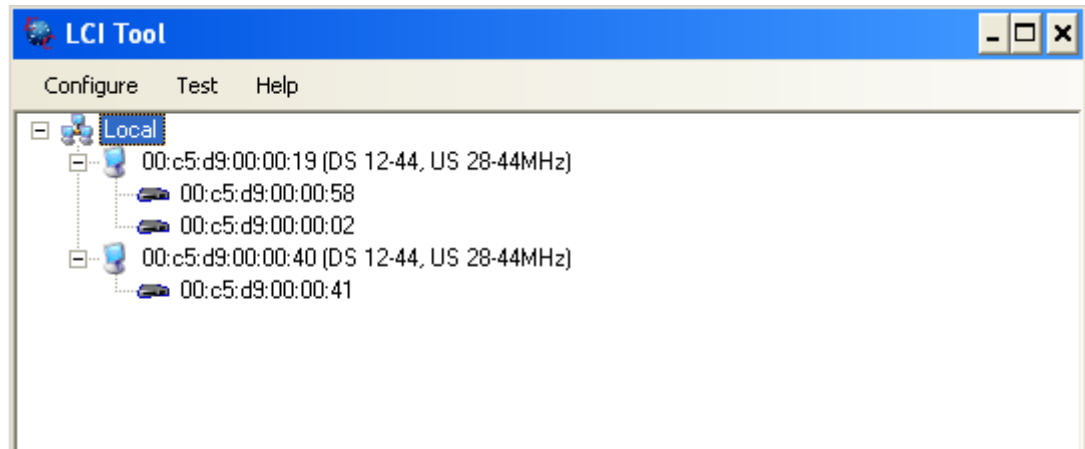
## License Management, Continued

---

### To Refresh Devices

1. Right click on the **Local** icon, and click **Refresh Devices** on the pop-up menu.

As shown in the screen below: 00:C5:D9:00:00:19 and 00:C5:D9:00:00:40 are local AP devices; 00:C5:D9:00:00:48, 00:C5:D9:00:00:02 and 00:C5:D9:00:00:41 are EP devices.



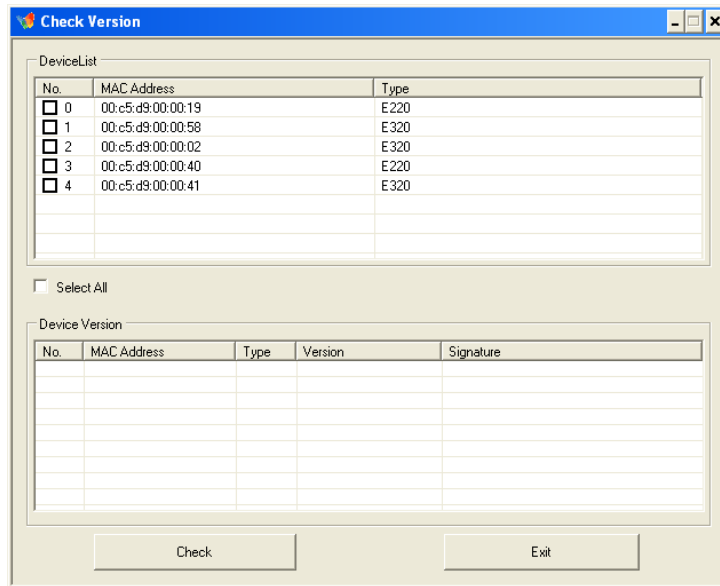
# Checking Device Versions

This section describes how to check device versions.

## Checking Device Versions

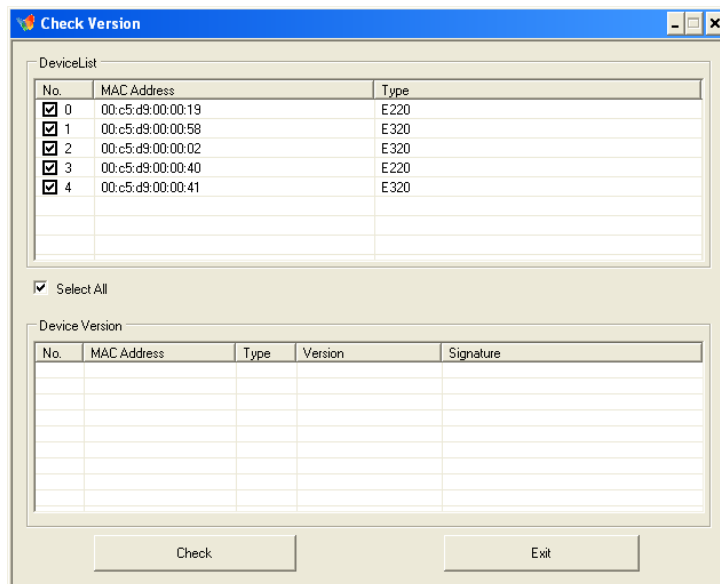
1. Click **Check Version** from the Configure menu.

**Result:** The following screen appears.



2. Click **Select All** check box in the screen above, then click **Check** button.

For the selected devices, the MAC Address, Type, Version, and digital Signature of the devices will be displayed in the Device Version window.



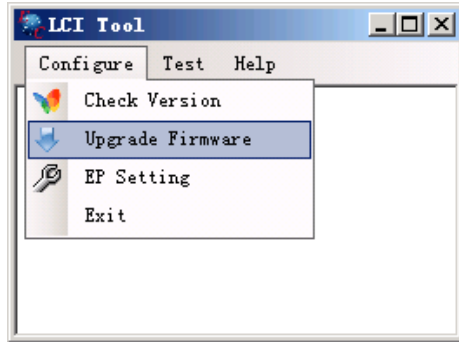
# Upgrading Device Firmware

---

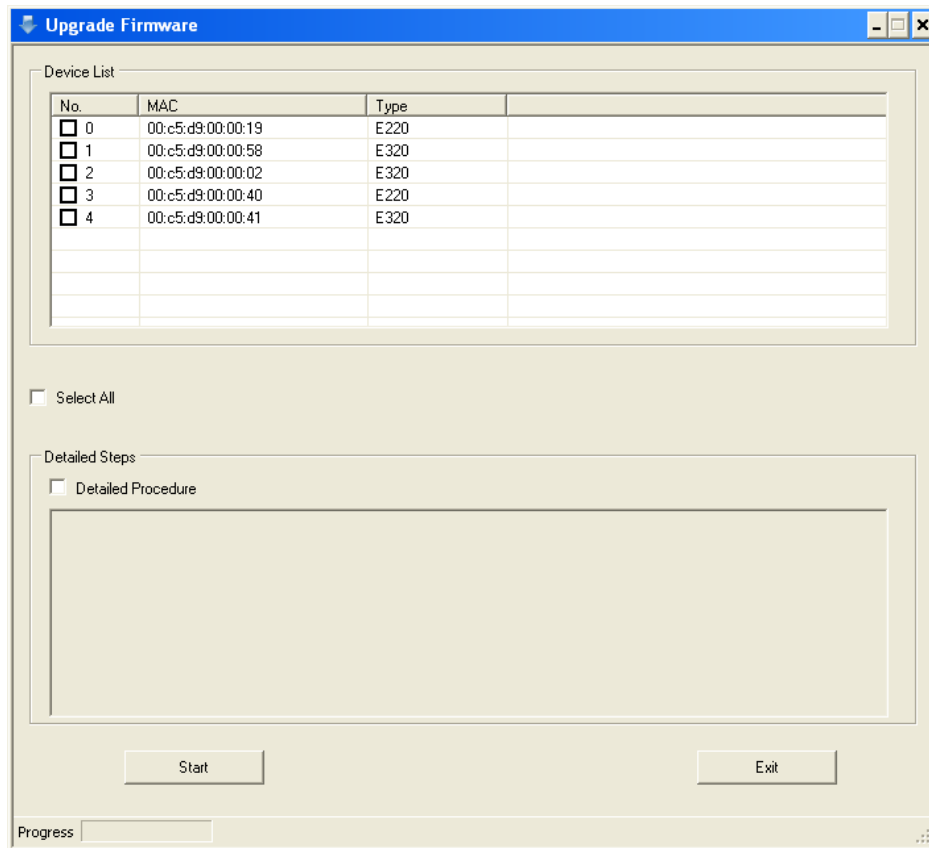
This section describes how to upgrade the device firmware.

## Upgrading Device Firmware

1. Click **Upgrade Firmware** from the **Configure** menu.



**Result:** The following screen appears.



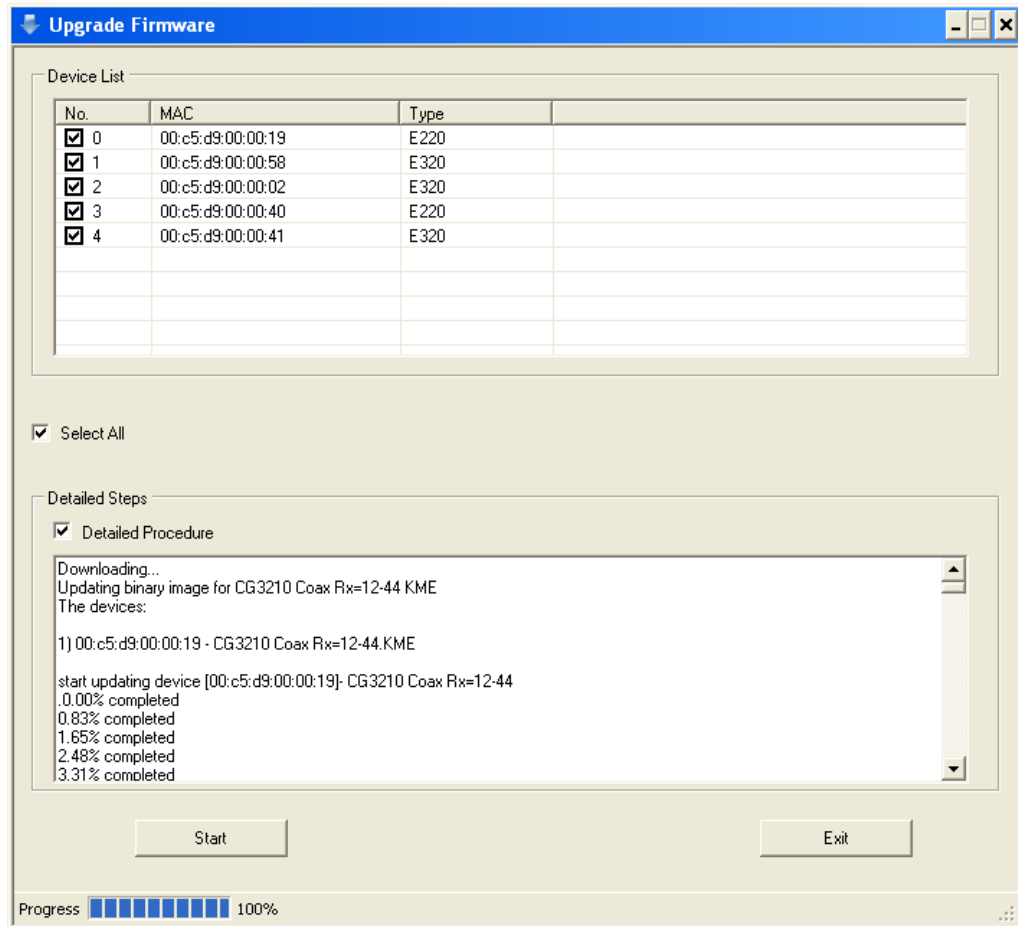
2. Select the devices to be upgraded or click the **Select All**, and the **Detailed Procedure** boxes if needed. Click the **Start** button.

---

*Continued on next page*

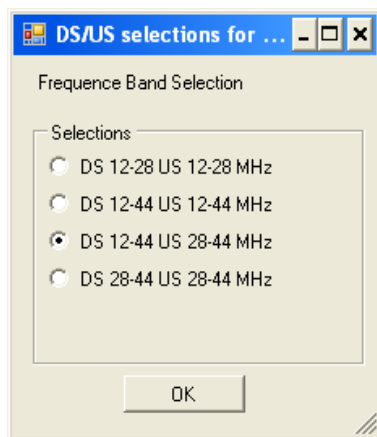
## Upgrading Device Firmware, Continued

**Result:** After the firmware is upgraded, the following screen is displayed.



**Note:** If the PC that runs the LCI is connected to the EP, no Upgrade Firmware operations can be done to the AP.

3. If the EP is E220, select the corresponding Frequency Band shown in the dialog box below. Click **OK**.



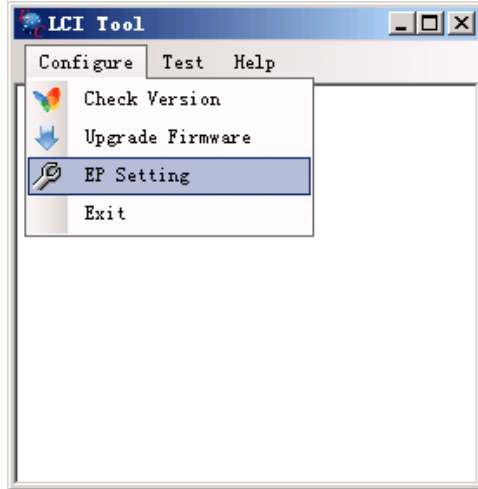
# EP Settings

---

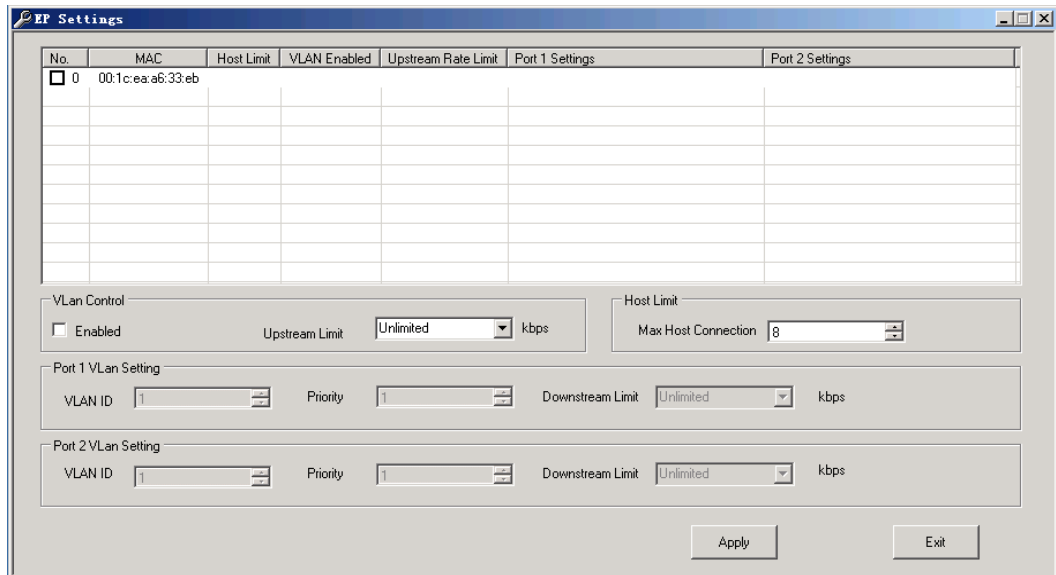
This section describes how to set EP settings.

## To Enable VLAN Settings

1. Click **EP Setting** from the **Configure** menu.



**Result:** The following screen is displayed.



2. Select the devices to allocate VLAN ID from the device list.
3. Check **Enabled** in the VLAN Control panel.
4. Set Upstream Limit to the desired value from the **Upstream Limit** dropdown menu.
5. Set Max Host Connection to the desired value in the **Host Limit** panel.

---

*Continued on next page*

## EP Settings, Continued

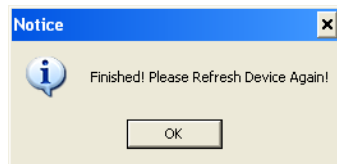
- Set **VLAN ID**, **Priority** and **Downstream Limit** for Port 1 and Port 2 respectively. See the following screen as an example.

The screenshot shows the 'EP Settings' dialog box. At the top is a table with columns: No., MAC, Host Limit, VLAN Enabled, Upstream Rate Limit, Port 1 Settings, and Port 2 Settings. The first row is selected with a checkmark in the 'No.' column. Below the table are three sections: 'VLAN Control' with 'Enabled' checked and 'Upstream Limit' set to 2048 kbps; 'Port 1 Vlan Setting' with 'VLAN ID' 1, 'Priority' 1, and 'Downstream Limit' 1024 kbps; and 'Port 2 Vlan Setting' with 'VLAN ID' 2, 'Priority' 2, and 'Downstream Limit' 2048 kbps. 'Host Limit' is set to 2. 'Apply' and 'Exit' buttons are at the bottom.

No.	MAC	Host Limit	VLAN Enabled	Upstream Rate Limit	Port 1 Settings	Port 2 Settings
<input checked="" type="checkbox"/> 0	00:1c:ea:a6:33:eb	8	Disabled	unlimited	ID: 0, Priority:0, Downstream Rate:unlimited	ID: 0, Priority:0, Downstream Rate:unlimited

- Click **Apply** to apply the setting.

**Result:** After VLAN ID is configured successfully, the following dialog box appears.



- Click the **OK** button to exit the configuration
- Click **EP Setting** from the **Configure** menu again to verify the setting.

The screenshot shows the 'EP Settings' dialog box after the changes. The table now has 'VLAN Enabled' set to 'Enabled', 'Upstream Rate Limit' set to 2048, 'Port 1 Settings' set to 'ID: 1, Priority:1, Downstream Rate:1024', and 'Port 2 Settings' set to 'ID: 2, Priority:2, Downstream Rate:2048'. The 'Host Limit' is now 8. 'VLAN Control' is now 'Disabled' and 'Upstream Limit' is 'Unlimited'. 'Port 1 Vlan Setting' and 'Port 2 Vlan Setting' both have 'VLAN ID' 1, 'Priority' 1, and 'Downstream Limit' 'Unlimited'. 'Apply' and 'Exit' buttons are at the bottom.

No.	MAC	Host Limit	VLAN Enabled	Upstream Rate Limit	Port 1 Settings	Port 2 Settings
<input type="checkbox"/> 0	00:1c:ea:a6:33:eb	2	Enabled	2048	ID: 1, Priority:1, Downstream Rate:1024	ID: 2, Priority:2, Downstream Rate:2048

*Continued on next page*

## EP Settings, Continued

### To Disable VLAN Settings

Follow the steps below to disable VLAN.

1. Select the devices from the device list
2. Leave the **Enabled** checkbox unchecked in the VLAN Control bar
3. Click the **Apply** button.

The screenshot shows the 'EP Settings' dialog box. At the top is a table with columns: No., MAC, Host Limit, VLAN Enabled, Upstream Rate Limit, Port 1 Settings, and Port 2 Settings. The first row is selected (checkbox checked) and contains: 0, 00:1c:ea:a6:33:eb, 2, Enabled, 2048, ID: 1, Priority:1, Downstream Rate:1024, ID: 2, Priority:2, Downstream Rate:2048. Below the table are several control panels: 'VLAN Control' with an unchecked 'Enabled' checkbox and 'Upstream Limit' set to 'Unlimited' kbps; 'Host Limit' with 'Max Host Connection' set to 8; 'Port 1 VLAN Setting' with 'VLAN ID' 1, 'Priority' 1, and 'Downstream Limit' 'Unlimited' kbps; and 'Port 2 VLAN Setting' with 'VLAN ID' 1, 'Priority' 1, and 'Downstream Limit' 'Unlimited' kbps. 'Apply' and 'Exit' buttons are at the bottom right.

4. Click **EP Setting** from the **Configure** menu again.

**Result:** The device restores to the status of VLAN disabled, as shown in the screen below.

The screenshot shows the 'EP Settings' dialog box after the settings have been applied. The table now shows: 0, 00:1c:ea:a6:33:eb, 8, Disabled, unlimited, ID: 0, Priority:0, Downstream Rate:unlimited, ID: 0, Priority:0, Downstream Rate:unlimited. The 'VLAN Control' panel now has the 'Enabled' checkbox unchecked. The 'Host Limit' panel remains the same. The 'Port 1 VLAN Setting' and 'Port 2 VLAN Setting' panels remain the same. 'Apply' and 'Exit' buttons are at the bottom right.

**Note:** Values in the EP Setting dialog box always keeps the default setting. The current setting is displayed in the device list only.

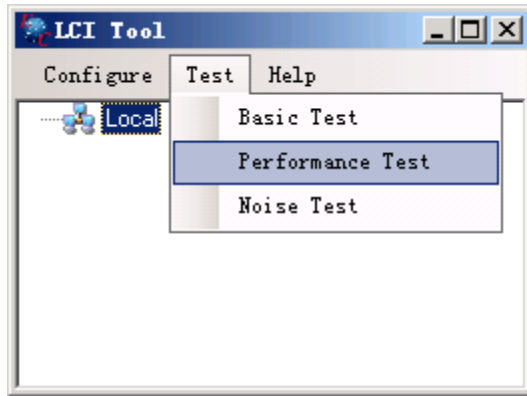
# Performance Test

---

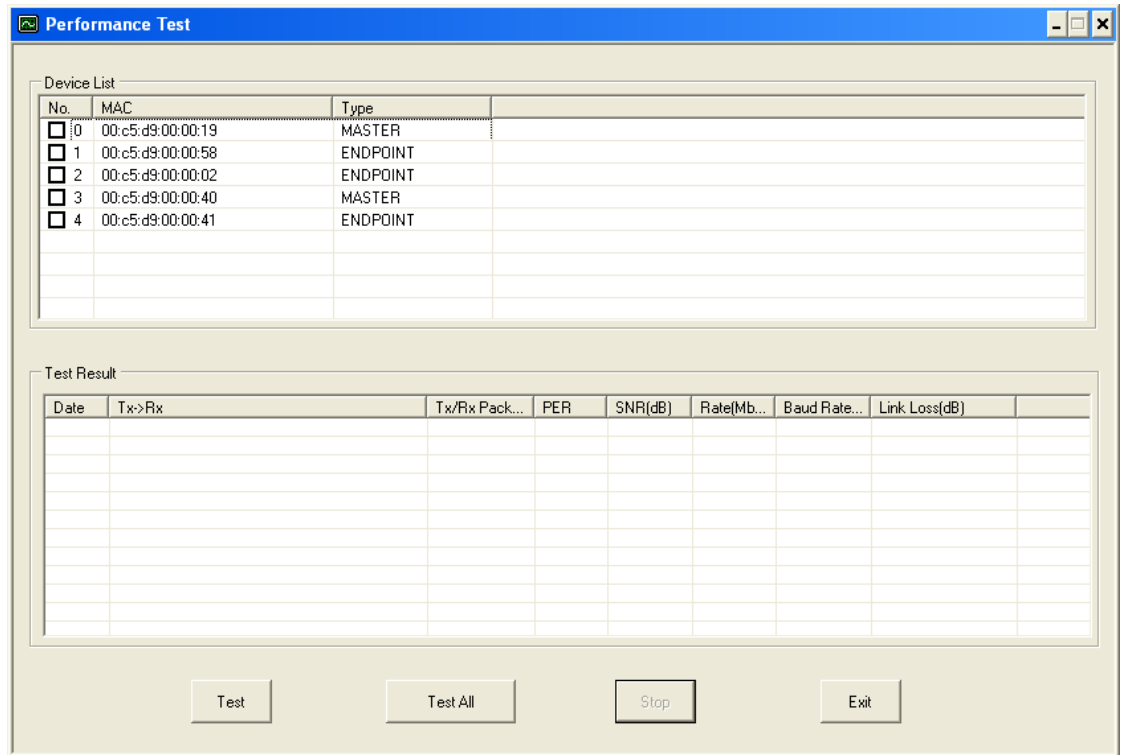
This section describes how to conduct performance testing.

## Performance Test

1. Click Performance Test from the Test menu.



**Result:** The following screen is displayed.



---

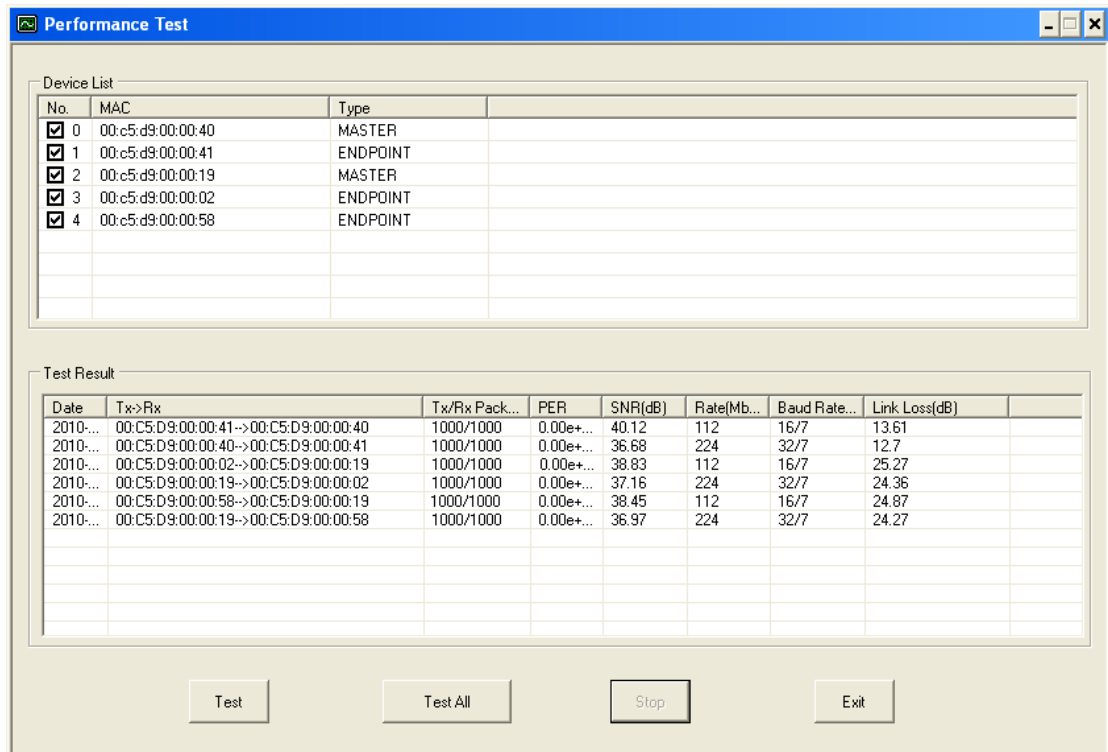
*Continued on next page*



## Performance Test, Continued

2. Select the devices to be tested from the device list, and click the **Test** button. If you want to test all devices, click **Test All**. Test indexes include: packet loss ratio, signal to noise ratio, physical layer speed, baud rate/modulating index, and link loss.

**Result:** After the test is completed, the following screen is displayed.



**Note:** When a performance test is running, the operation data transmission of the EoC system will be interrupted. If service interruption is not wanted, the basic test could be adopted instead.

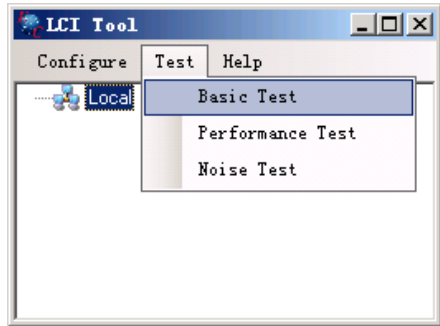
# Basic Test

---

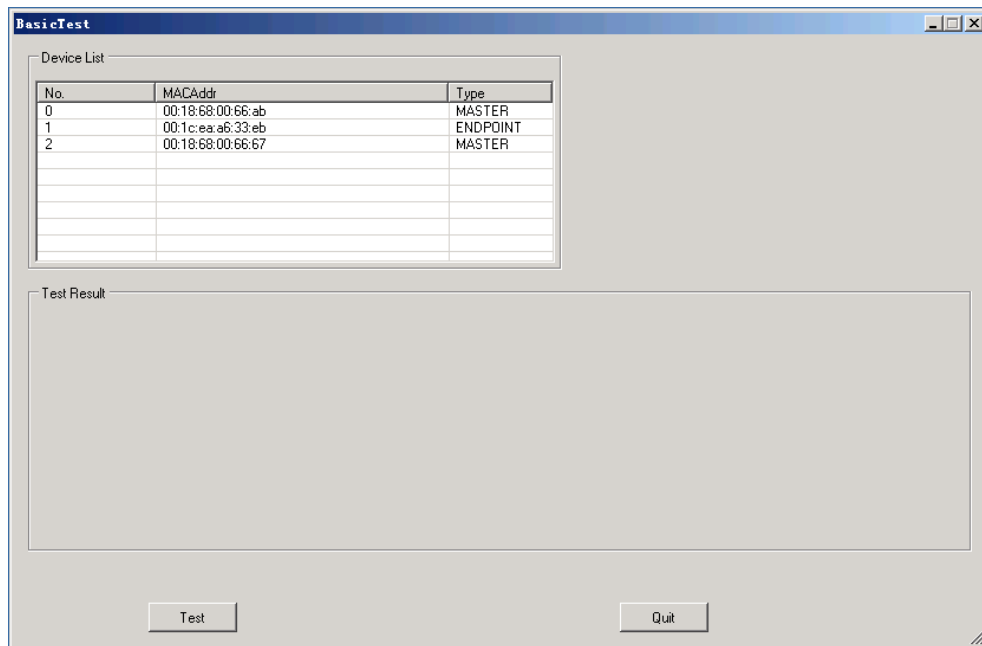
This section describes how to run the basic test.

## Basic Test

1. Click **Basic Test** from the **Test** menu.



**Result:** The following screen is displayed.



---

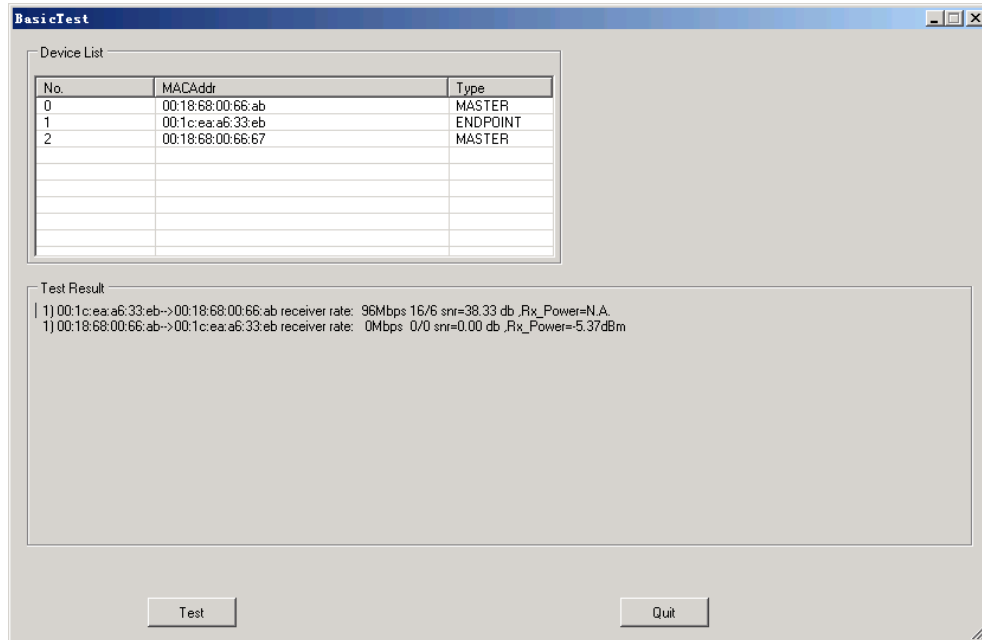
*Continued on next page*

## Basic Test, Continued

---

2. Click the **Test** button.

**Result:** After the test is completed, the following screen is displayed.



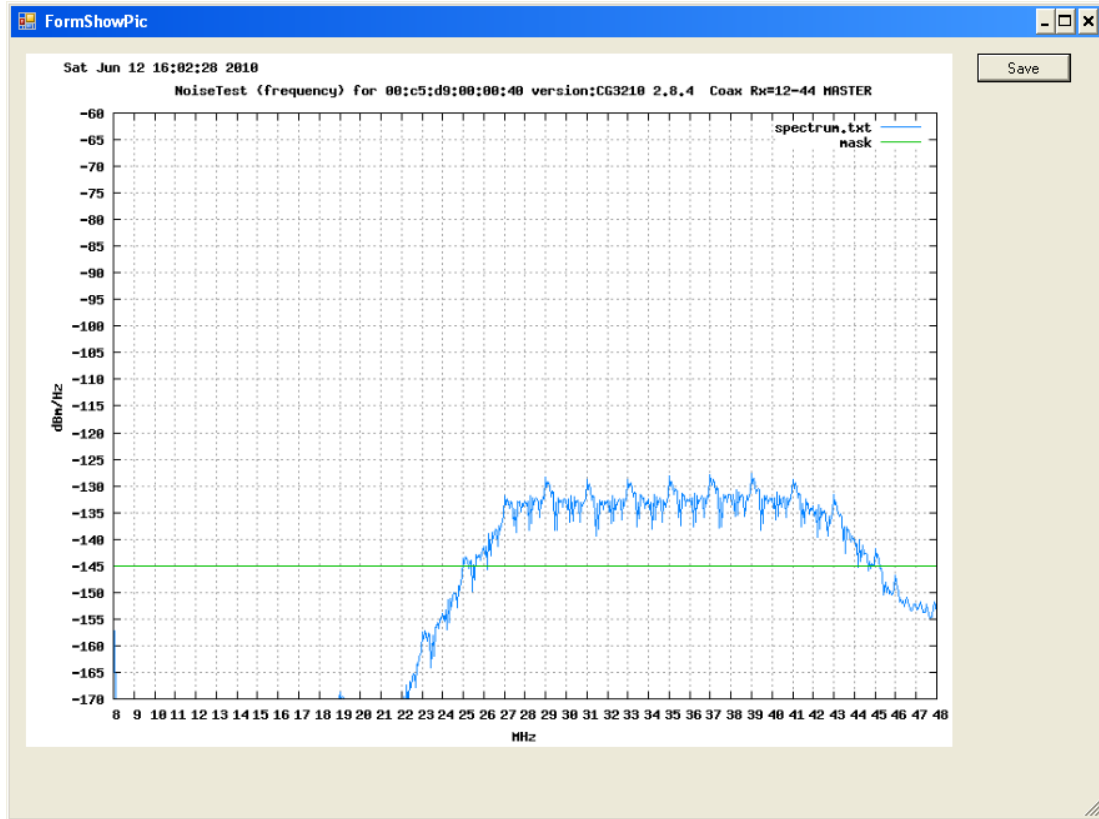
**Note:** For the initial startup and reboot of the EP, user data traffic is necessary to perform a Basic Test. Otherwise, the statistics are invalid ("0"). On any other occasion, user data traffic is not needed.

---



# Noise Test, Continued

**Result:** After the test is completed, a graphic displayed result (power spectral density of noise) appears automatically. See the screen below.





# Chapter 3

## Customer Support Information

### Overview

---

#### Introduction

This chapter contains information on obtaining technical supports.

#### Obtaining Product Support

IF...	THEN...
you have general questions about this product	contact your distributor or sales agent for product information or refer to product data sheets on <a href="http://www.cisco.com">www.cisco.com</a> .
you have technical questions about this product	call the nearest Technical Service center.
you have customer service questions about this product	call the nearest Customer Service Center.

#### In This Chapter

This chapter contains the following topics

Topic	See Page
Support Telephone Numbers	3-2

---

## Support Telephone Numbers

This table lists the Technical Support and Customer Service numbers for your area.

Region	Centers	Telephone and Fax Numbers
North America	Cisco Services Atlanta, Georgia United States	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Toll-free: 1-800-722-2009</li> <li>■ Local: 678-277-1120 (Press 2 at the prompt)</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Toll-free: 1-800-722-2009</li> <li>■ Local: 678-277-1000 (Press 3 at the prompt)</li> <li>■ Fax: 770-236-5477</li> <li>■ E-mail: customer-service@cisco.com</li> </ul>
Europe, Middle East, Africa	Belgium	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 32-56-445-197 or 32-56-445-155</li> <li>■ Fax: 32-56-445-061</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 32-56-445-444</li> <li>■ Fax: 32-56-445-051</li> <li>■ E-mail: service-elc@cisco.com</li> </ul>
Japan	Japan	<ul style="list-style-type: none"> <li>■ Telephone: 81-3-5908-2153 or +81-3-5908-2154</li> <li>■ Fax: 81-3-5908-2155</li> </ul>
Korea	Korea	<ul style="list-style-type: none"> <li>■ Telephone: 82-2-3429-8800</li> <li>■ Fax: 82-2-3452-9748</li> <li>■ E-mail: songk@cisco.com</li> </ul>
China (mainland)	China	<ul style="list-style-type: none"> <li>■ Telephone: 86-21-2401-4433</li> <li>■ Fax: 86-21-2401-4455</li> <li>■ E-mail: eoc-support@cisco.com</li> </ul>
All other Asia-Pacific countries & Australia	Hong Kong	<ul style="list-style-type: none"> <li>■ Telephone: 852-2588-4746</li> <li>■ Fax: 852-2588-3139</li> <li>■ E-mail: support.apr@sciatl.com</li> </ul>
Brazil	Brazil	<ul style="list-style-type: none"> <li>■ Telephone: 11-55-08-9999</li> <li>■ Fax: 11-55-08-9998</li> <li>■ E-mail: fattinl@cisco.com or ecavalhe@cisco.com</li> </ul>

*Continued on next page*



## Support Telephone Numbers, Continued

---

Mexico, Central America, Caribbean	Mexico	For <i>Technical Support</i> , call: <ul style="list-style-type: none"><li>■ Telephone: 52-3515152599</li><li>■ Fax: 52-3515152599</li></ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"><li>■ Telephone: 52-55-50-81-8425</li><li>■ Fax: 52-55-52-61-0893</li></ul>
All other Latin America countries	Argentina	For <i>Technical Support</i> , call: <ul style="list-style-type: none"><li>■ Telephone: 54-23-20-403340 ext 109</li><li>■ Fax: 54-23-20-403340 ext 103</li></ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"><li>■ Telephone: 770-236-5662</li><li>■ Fax: 770-236-5888</li><li>■ E-mail: keillov@cisco.com</li></ul>



Cisco Systems, Inc.  
5030 Sugarloaf Parkway, Box 465447  
Lawrenceville, GA 30042

678.277.1120  
800 722.2009  
[www.cisco.com](http://www.cisco.com)

This document includes various trademarks of Cisco Systems, Inc. Please see the Notices section of this document for a list of Cisco Systems Inc. trademarks used in this document.

Product and service availability are subject to change without notice.

© 2010 Cisco and/or its affiliates. All rights reserved.

November 2010

Part Number 4020020 Rev C