

**xtramus**

**LES-5160P  
Cat-5e Simulator**

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## Revision History

Date	Version	History
2022/05/06	1.0	First version.



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## 1. LES-5160P Overview

### 1.1. General Descriptions of LES-5160P

LES-5160P is a 16-slot Ethernet cable Cat-5e simulator. Upon different commands, it can simulate different network cable lengths, including 3 modes: Bypass, Short and 100m. It can be used independently or jointly with other devices.



Combined with XLE series modules, LES-5160P cable length simulator provides RJ45 interfaces, which can support the protocols such as 10Base-T, 100BASE-TX, and 1000BASE-T, thus making your network verification system more complete.

All XLE series modules are equipped with real-time LEDs which display the status of the system and the simulating cable length, thus allowing users to view network status easily.

LES-5160P cable length simulator provides an easy-to-access Management Webpage, allowing users to view system status, set the simulating length for the XLE series modules and upgrade firmware.

Moreover, XLE-CASC modules allow you to cascade multiple LES-5160P chassis for managing these chassis simultaneously.



## 1.2. Features, Key Advantages, and Main Applications of LES-5160P

### Features

- Simulate Ethernet cable Cat-5e in different lengths
- Supports Jumbo Frame
- Simulate power attenuation for POE test
- Support easy-to-access Management Webpage, allowing users to view system status, set the simulating length and upgrade firmware/FPGA
- Multiple LES-5160P chassis can be cascaded for system management
- Replaceable redundancy power modules for AC & DC power
- Support optional fan tray

### Key Advantages

- Provide the network environments under various cable lengths, saving the cable deploying work in practical
- Provide reliable long-distance connection
- Provide cable simulation function of a very long distance, saving plenty of space for placing the real cables
- Web management

### Main Applications

- Test for different cable length simulations in laboratories
- Test for multiple DUTs with long cables simultaneously in production
- Provide simple and convenient mass production software by Xtramus technologies.
- Provide the API & Library files for development of other applications.



### 1.3. LES-5160P Functions Overview

#### 1.3.1. LES-5160P Chassis



**LES-5160P Front Part**



**LES-5160P Back Part**

LES-5160P's chassis consists two parts: **Front Part** and **Back Part**.

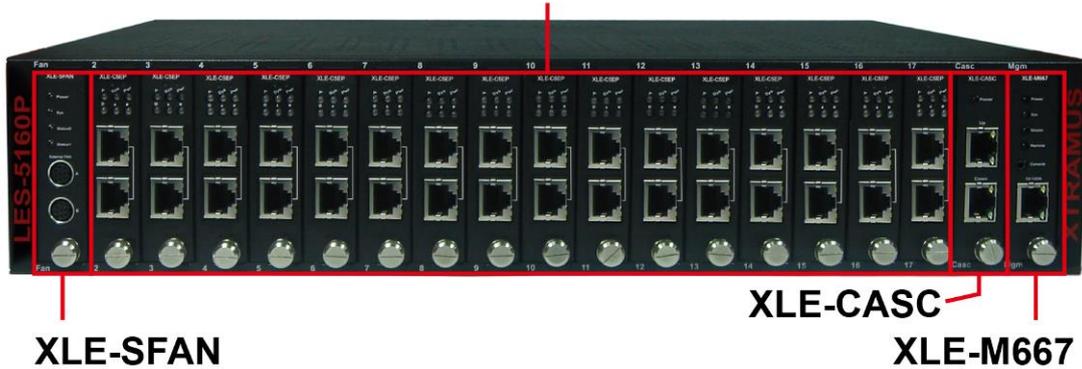
LES-5160P Chassis Overview	
<b>Front Part</b>	LES-5160P has 16 slots for installation of modules. Each module card provides the simulation of one cable Cat-5e line. Besides, the Front Part provides 3 slots for installing the fan module, CASC module and management module. Please see “ <b>1.3.2. LES-5160P Front Part</b> ” for more information.
<b>Back Part</b>	LES-5160P's back part includes 3 different slots. Please see “ <b>1.3.4. LES-5160P Back Part</b> ” for more detailed information.



### 1.3.2. LES-5160P Front Part

As mentioned in “1.3.1. LES-5160P Chassis”, LES-5160P has 16 slots for installing cable Cat-5e simulation modules and 3 slots for installing the Fan, CASC and management module. Please see the sections down below for more detailed information/specification for LES-5160P and the modules.

#### Cat-5e Simulation Module Slot 2-17



LES-5160P Front Part	
<b>XLE-SFAN</b>	It is a fan module pre-installed in the front part of LES-5160P chassis.
<b>XLE-M667</b>	It is a module card pre-installed in LES-5160P chassis with 1 management port for accessing the Management Webpage and 1 console port for accessing the terminal settings.
<b>XLE-CASC</b>	It is a module pre-installed in LES-5160P with 2 ports where each port can connect another LES-5160P, providing simultaneous access to the Management Webpage.
<b>Cable Cat-5e simulation module</b>	Cable Cat-5e simulation modules can be inserted in slot 2-17.

**WARNING1: XLE-SFAN, XLE-M667 and XLE-CASC do not support hot swap. Please do not pull out the XLE-SFAN, XLE-M667 and XLE-CASC modules when the system is power on.**

**\*WARNING2: Do not insert the XLE-M667, XLE-CASC or XLE-SFAN module to the wrong slot.**



### 1.3.3. Modules

LES-5160P's modules can be divided into two categories: **System Modules** and **Cat-5e Simulation Modules**.

Module Card Type	Module Card	Description
<b>System Modules</b>	XLE-SFAN	Provide ventilation for the LES-5160P chassis
	XLE-M667	Allow users to view counters/perform system maintenance
	XLE-CASC	Cascade multiple LES-5160P chassis
<b>Cat-5e Simulation Modules</b>	XLE-C5EP	Modules for Cat-5e simulation. These Cat-5e simulation modules can be installed in slot 2~17 and support hot-swap.

Please see the sections down below for more detailed information regarding to LES-5160P modules.



### 1.3.3.1. System Module– XLE-SFAN



The **XLE-SFAN** is delivered with the LES-5160P chassis, and shall be installed on the **Fan** slot located on the far left side of LES-5160P chassis. This module provides ventilation for the LES-5160P chassis.

Interface Ports		
<b>CTRL + PWR</b>	Reserved for future use	
<b>PWR</b>	Reserved for future use	
LED		
<b>Power</b>	<b>Green ON</b>	XLE-SFAN is power on.
	<b>Green OFF</b>	XLE-SFAN is power off.
<b>Sys</b>	<b>Green ON</b>	XLE-SFAN is powering up properly.
	<b>Green OFF</b>	XLE-SFAN is power off.
<b>Status 0</b>	Reserved for future use	
<b>Status 1</b>	Reserved for future use	

**\*Note: XLE-SFAN does not support hot-swap. Please do not draw the XLE-SFAN module out of the LES-5160P chassis when the system is power on.**



### 1.3.3.2. System Module– XLE-M667



The **XLE-M667** is delivered with the LES-5160P chassis, and shall be installed on the **Mgm** slot located on the far right side of LES-5160P chassis. This module allows you to manage LES-5160P chassis via the Management Webpage.

To access the Management Web Page of LES-5160P, please connect a RJ45 cable between the management port of LES-5160P and your PC.

To configure LES-5160P on your PC through the serial port, please connect a 2.5mm Phone Jack to RS232 cable between your PC and the Console Port of LES-5160P.

Interface Ports		
<b>Console Port</b>	One 2.5mm Phone Jack Port for managing LES-5160P via serial port	
<b>Management Port</b>	One 10/100M RJ45 Port for managing LES-5160P via management webpage	
LED		
<b>Power</b>	<b>Green ON</b>	XLE-M667 is power on.
	<b>Green OFF</b>	XLE-M667 is power off.
<b>Sys</b>	<b>Yellow ON</b>	XLE-M667 is booting and preparing for test.
	<b>Green ON (Blinking)</b>	XLE-M667 is booting properly and is ready for test.
	<b>Green OFF</b>	XLE-M667 is power off.
<b>Master</b>	Reserved for future use.	
<b>Remote</b>	Reserved for future use.	

**\*Note: XLE-M667 does not support hot-swap. Please do not pull out the XLE-M667 module from LES-5160P chassis when the system is power on.**



### 1.3.3.3. System Module Card – XLE-CASC



The **XLE-CASC** is delivered with the LES-5160P chassis, and shall be installed on the **CASC** slot located on the right side of LES-5160P chassis (next to **XLE-M667** module card). This module allows you to cascade multiple LES-5160P chassis.

To cascade the LES-5160P, please inter-connect the **Up** port or **Down** port of the chassis with the RJ45 cables. For the cascaded chassis, you can manage all the chassis through one integrated web page.

Interface Ports		
Port (Up)		One 10/100M RJ45 Port for cascading another LES-5160P chassis
Port (Down)		One 10/100M RJ45 Port for cascading another LES-5160P chassis
LED		
Power	Green ON	LES-5160P is powered on
	Green OFF	LES-5160P is powered off

**\*Note: XLE-CASC does not support hot-swap. Please do not draw the XLE-CASC module card from LES-5160P chassis when the system is power on.**



### 1.3.3.4. Cat-5e Simulation Module – XLE-C5EP



XLE-C5EP Front Panel Specification		
Interface	Port A	RJ45
	Port B	RJ45
Data Transfer Rate	1000 Mbps	
Ethernet Mode	10Base-T, 100BASE-TX, and 1000BASE-T	
LED Status		
Pwr	Green ON	XLE-C5EP is powered on.
	Green OFF	XLE-C5EP is powered off.
1m	Green ON	XLE-C5EP is booting properly and is ready for tests.
	Yellow ON	Error occurred when booting XLE-7S81.
100m	Green ON	Port A/B is connected.
	Green Blinking	Port A/B is transmitting/receiving data.
■	Reserved for future use.	
▲	Reserved for future use.	
<b>Note: All LEDs will be off when upgrading FPGA/Firmware</b>		



### 1.3.4. LES-5160P Back Part

As mentioned in “1.3.1. LES-5160P Chassis”, LES-5160P’s back part includes 3 different slots for installing the DC module, AC module and Fan module.

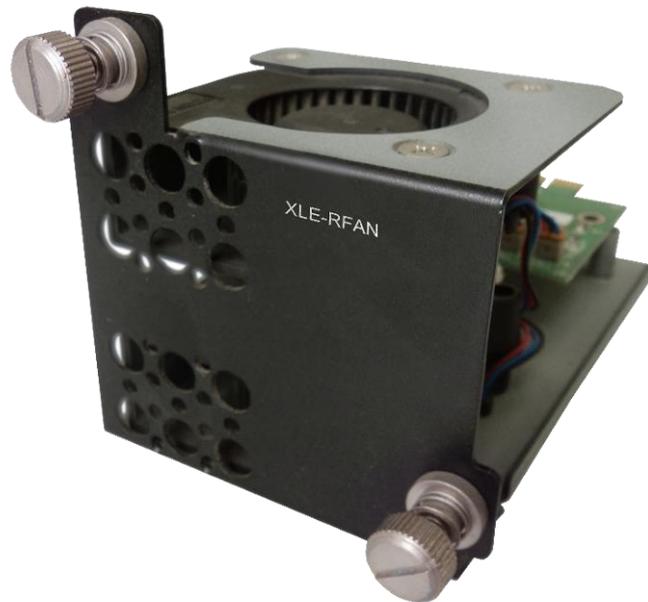


LES-5160P Back Part Description	
<b>XLE-RFAN</b>	It is a fan module pre-installed in the back part of LES-5160P chassis.
<b>XCP-A1W-300</b>	It is a power module based on AC power source.



#### 1.3.4.1. XLE-RFAN

The XLE-RFAN consists of two fans as shown in the picture below. After installing XLE-RFAN, the Management Web Page will show the operation of XLE-RFAN, please see the **3.1.4. LES-5160P Management Webpage – Management** for more information.





### 1.3.4.2. XCP-A1W-300

XCP-A1W-300 is a power module providing power source of 300W AC Redundant SPS (Vin 90~240VAC).



The Power Jack of XCP-A1W-300 is a Male IEC 320 Receptacle. To activate XCP-A1W-300 & XLEP-AC-100, just turn on/off the O/I button after connecting a power source cable in Male IEC 320 Receptacle.



## **2. LES-5160P Installation**

LES-5160P is a chassis with 16 slots for installation of Cat-5e simulation modules. Installing LES-5160P is very easy and simple: all you have to do is to plug the proper UTP cables into the LES-5160P ports like a general Ethernet switch without any extra configurations. However, selecting the proper physical media and applications in your network environment is crucial when installing LES-5160P. Besides, using the proper method for installing Cat-5e simulation modules into LES-5160P' slots is also crucial. Please see the sections down below for detailed information regarding to physical media types, LES-5160P application and the proper method for installing a Cat-5e simulation module.

### **2.1. Choices of UTP Cable**

For better performances of LES-5160P, please try to use the Cat 5e cable when connecting it to the DUT.



## 2.2. Hardware Installation

Please follow the steps shown below for a better understanding on how to install the hardware of LES-5160P.

### 2.2.1. Bracket installation

#### Steps for installing a Bracket in LES-5160P



First of all, you must have an Empty Slot for the Installation of a Bracket.



Attach the Bracket's Latch on the internal face of Chassis' Latch.



## Steps for installing a Bracket in LES-5160P



After attaching the Bracket's Latch on the internal face of Chassis' Latch, let this point be a fix central rotation point and push the bottom part of Bracket into LES-5160P.

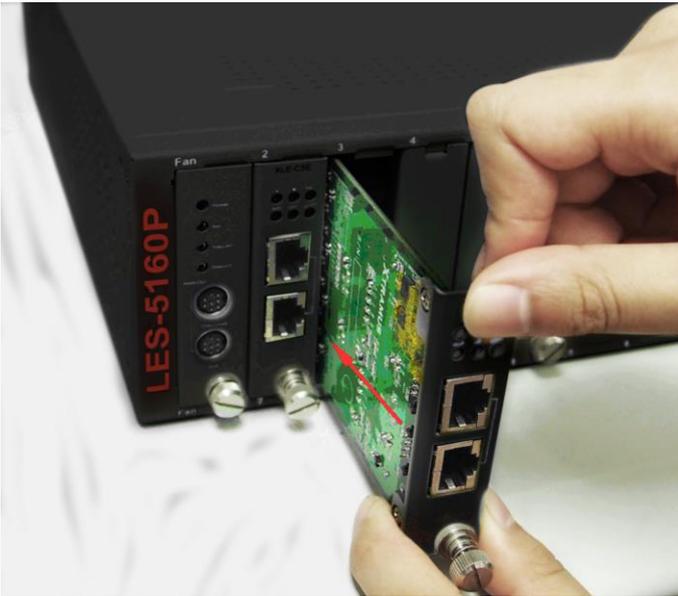


Lock the Captive Screw into the LES-5160P to fix the Bracket into LES-5160P.



## 2.2.2. Modules Installation

### Steps for installing a XLE-C5EP module in LES-5160P



Aim the border side of a Cat-5e simulation module with the LES-5160P internal slide road, and push this module into LES-5160P.



Please, make sure if the XLE-C5EP module is well fixed into LES-5160P by pushing the bracket of the module into LES-5160P.



## Steps for installing a XLE-C5EP module in LES-5160P

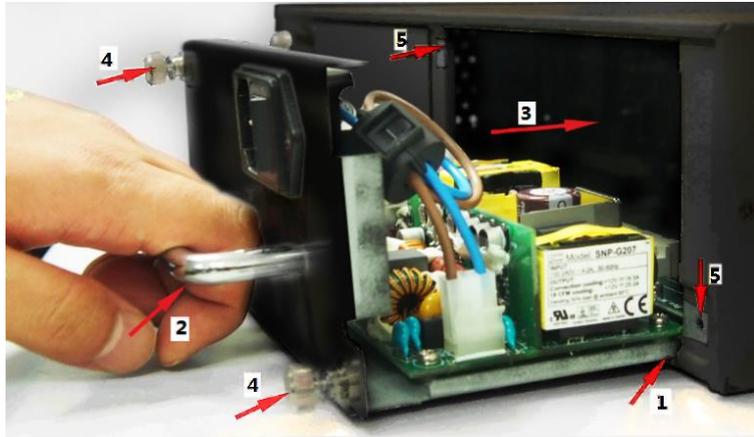


Lock the Captive Screw into the LES-5160P to fix the module into LES-5160P.



### 2.2.3. Power Module

#### Steps for installing a XCP-A1W-300



Installing a XCP-A1W-300 into LES-5160P is quite simple. First of all, attach the Power Module into the respective slot of LES-5160P and push the handle of the Power Module into the slot. After the Bracket of the Power Module reaches the LES-5160P, lock the captive screw into LES-5160P as shown by arrows 4 and 5.

**Note: The XCP-A1W-300 doesn't support hot swap. Please don't remove Power Module during System operation.**



## 2.2.4. Fan Module

### Steps for installing the XLE-SFAN



The XLE-SFAN comes with your LES-5160P chassis, and shall be installed on the Fan slot located on the far left side of LES-5160P chassis. This module card provides ventilation for the LES-5160P chassis.

**Warning: The CTRL + PWR port and PWR port are preserved for future use. Please do not conduct any cable connections, or LES-5160P may be seriously damaged.**

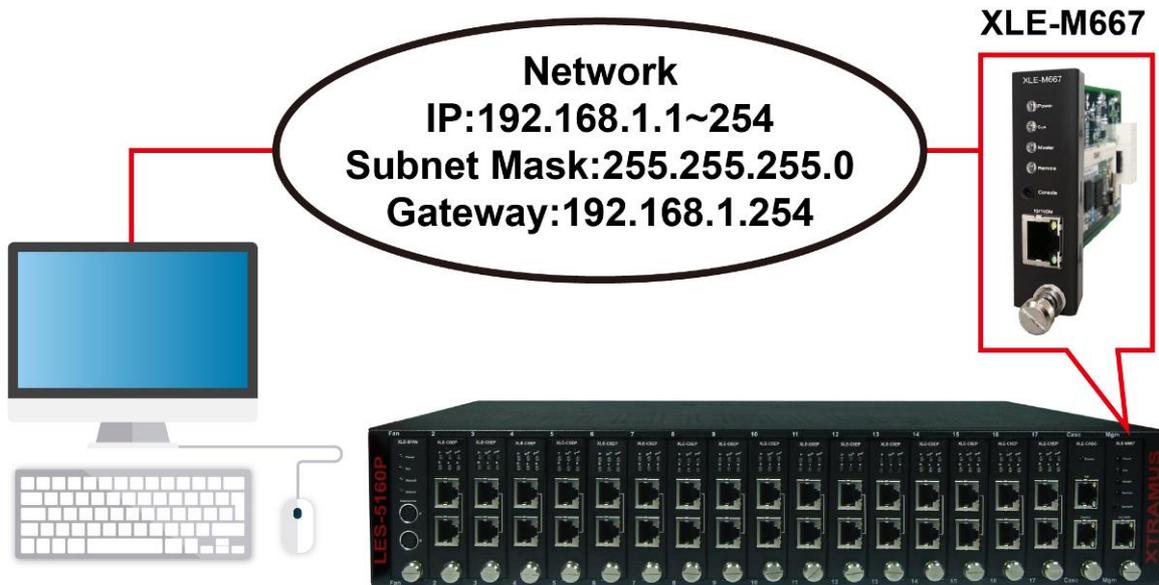


### 3. LES-5160P Management

You can configure the settings and check the running status of LES-5160P on the web browser.

#### 3.1. Managing LES-5160P with Management Webpage

Before accessing to LES-5160P's management webpage, please connect the network interfaces between the PC and the manage card "XLE-M667" and configure the IP address for LES-5160P. Please refer to the picture down below to configure the IP address. The default IP address is **192.168.1.8**.





### 3.1.1. Accessing LES-5160P Management Webpage

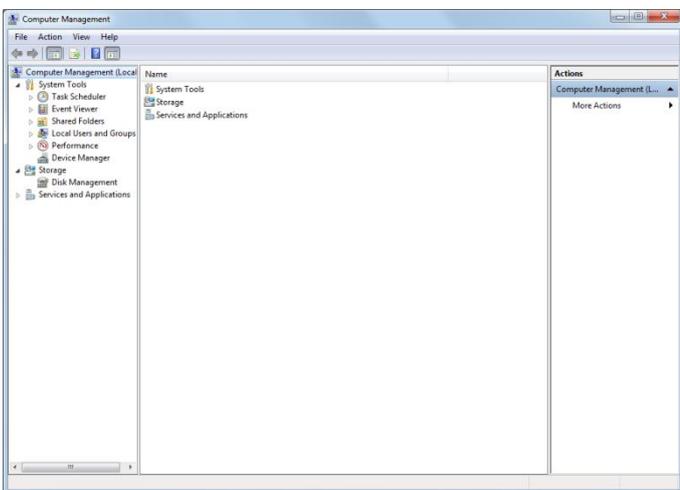
#### 3.1.1.1. Access with IP address

To access LES-5160P's management webpage, please open your web browser, and type in LES-5160P's default IP address (**192.168.1.8**) in the web browser's URL field. **If you've changed LES-5160P's IP address, please input the IP address you've changed to.**

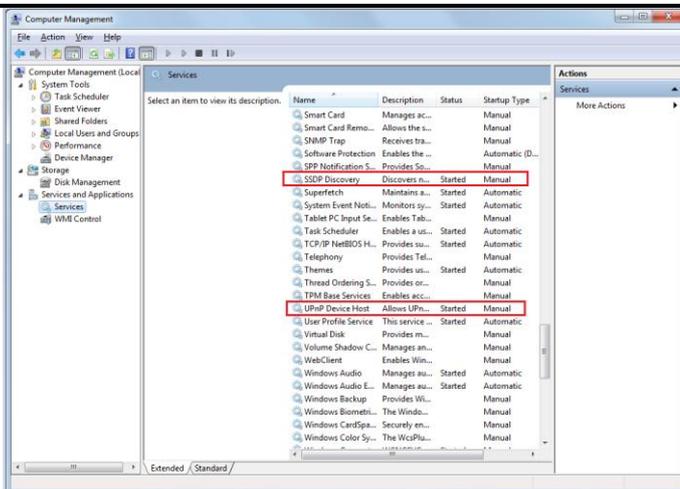
#### 3.1.1.2. Access with UPnP service

You can access the LES-5160P's management webpage through the UPnP service provided by windows (Windows7 or versions above). It is very convenient if you forget the IP address you've set or under the condition of not connecting to the console.

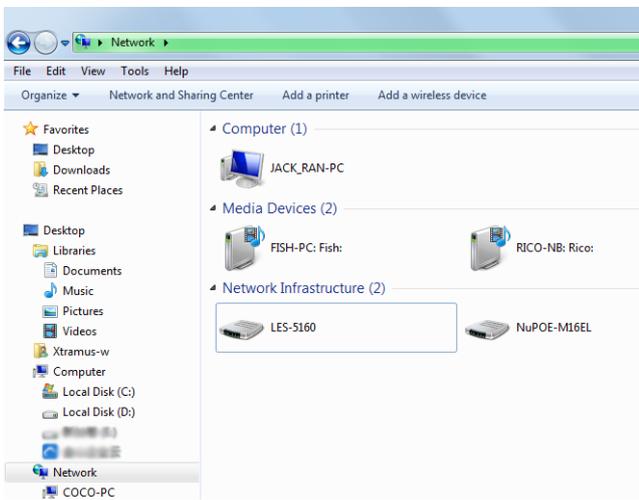
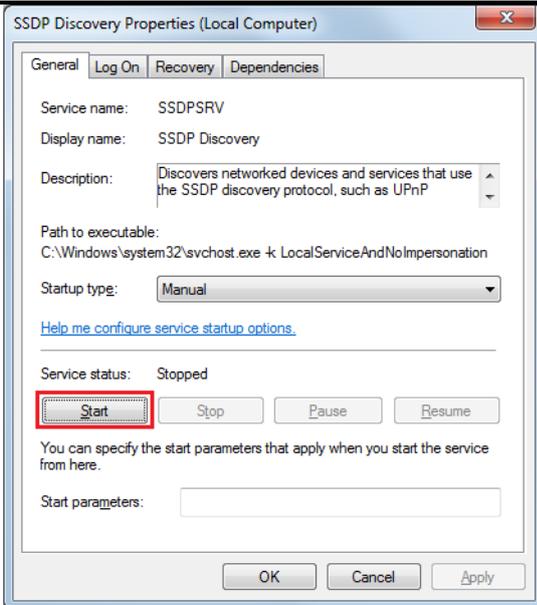
### Access the LES-5160P's management webpage through the UPnP service



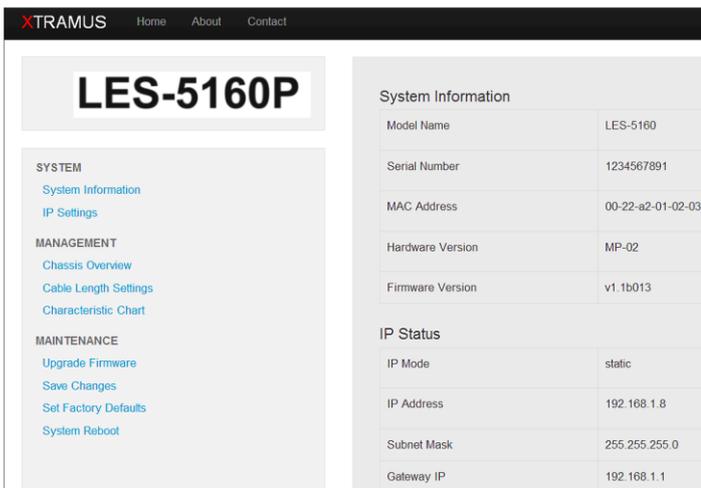
Click **Computer**→**manage** to enter the **Computer Management** interface.



Click **Services and Applications**→**Services**, then the available services will be listed in the middle pane. Ensure that the “SSDP Discovery” and “UPnP device Host” are started. If the service is not started, double click it and a window will pop up. Then click **start** to activate the service. The picture just takes the **SSDP Discovery Properties** window for an example.



Go to **Network**. You can see the “LES-5160” device is listed.  
If you cannot see the “LES-5160”, please turn off your firewall and then try again.



Double click the icon of “LES-5160P” to enter the management webpage.





### 3.1.2. LES-5160P Management Webpage – Overview



LES-5160P Management Webpage Overview		
<b>A</b>	<b>Menu Bar</b>	<ul style="list-style-type: none"> <li>• <b>Home:</b> Link to the home page.</li> <li>• <b>About:</b> Brief introduction of LES-5160P.</li> <li>• <b>Contact:</b> Contact information of Xtramus Co.Ltd.</li> </ul>
<b>B</b>	<b>Model Name</b>	This field displays the model name “LES-5160P”.
<b>C</b>	<b>Setting Options</b>	<p>The <b>Setting Options</b> contains options for LES-5160P settings, information, and statistics, which can be divided into:</p> <ul style="list-style-type: none"> <li>• <b>System:</b> You can view system information here in this field.</li> <li>• <b>Management:</b> This option allows you to view the chassis status, characteristic curves and set the cable length.</li> <li>• <b>Maintenance:</b> This option allows you to upgrade the firmware, save the settings and reset to factory defaults.</li> </ul>
<b>D</b>	<b>Main Display Screen</b>	The <b>Main Display Screen</b> displays the detailed information of the above setting options.



### 3.1.3. LES-5160P Management Webpage – System

The management page provides two information interfaces: System Information and Module Information. You can access to the two interfaces by click the links at the upper left corner.

The screenshot shows a management webpage with two main sections: 'System Information' and 'IP Status'. The 'System Information' section contains a table with the following data:

Model Name	LES-5160P
Serial Number	
MAC Address	00-22-a2-01-80-81
Hardware Version	MP-03
Firmware Version	v2.0b005

The 'IP Status' section contains a table with the following data:

IP Mode	static
IP Address	192.168.0.8
Subnet Mask	255.255.255.0
Gateway IP	192.168.0.1

In the top right corner, there are two links: 'System information' and 'Module information', with 'System information' highlighted by a red box.

#### 3.1.3.1. System Information

This block shows a detailed view of the 'System Information' and 'IP Status' sections. The 'System Information' table is as follows:

Model Name	LES-5160P
Serial Number	
MAC Address	00-22-a2-01-80-81
Hardware Version	MP-03
Firmware Version	v2.0b005

The 'IP Status' table is as follows:

IP Mode	static
IP Address	192.168.0.8
Subnet Mask	255.255.255.0
Gateway IP	192.168.0.1

**System Information** displays LES-5160P' system information including:

System Information	
<b>Model Name</b>	The model of the device "LES-5160P"
<b>Serial Number</b>	LES-5160P's serial number.
<b>MAC Address</b>	LES-5160P's MAC address.
<b>Hardware version</b>	PCB Version of XLE-M667.
<b>Firmware Version</b>	LES-5160P's current firmware version.
IP Status	
<b>IP Mode</b>	This field displays how LES-5160P acquires its IP address. <ul style="list-style-type: none"> <li><b>Static:</b> LES-5160P's IP, subnet mask, and gateway addresses are assigned manually.</li> <li><b>DHCP:</b> LES-5160P's IP, subnet mask, and gateway addresses are assigned automatically by a DHCP server.</li> </ul>
<b>IP Address</b>	LES-5160P's IP address.
<b>Subnet Mask</b>	LES-5160P's subnet mask.
<b>Gateway IP</b>	LES-5160P's gateway address.



### 3.1.3.2. Module Information

Module Information							
Slot No.	Name	PROM Ver.	Hardware Ver.	Firmware Ver.	Firmware Date	Serial No.	MAC Address
Slot.2	XLE-C5EP	v0.1b003	MP-04	v1.3b006	2022-4-22	0PXC5E003248	00-22-a2-3a-80-31
Slot.3	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slot.4	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slot.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slot.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slot.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slot.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slot.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slot.10	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slot.11	n/a	n/a	n/a	n/a	n/a	n/a	n/a

This screen displays the detailed information of the module, including the slot number, module name, firmware version, firmware date, serial number and MAC address.

### 3.1.3.3. IP settings

**IP Settings:** Allows you to set how LES-5160P will acquire its IP, subnet mask, and gateway addresses. Also, you could input these addresses manually here.

Click **IP Settings**, the following screen appears.

#### IP Settings

Mode Static

Address 192.168.1.8

Subnet Mask 255.255.255.0

Gateway 192.168.1.1

Apply

IP Settings	
<b>Mode</b>	<p>You can choose how LES-5160P acquires its IP, subnet mask, and gateway addresses. There are two modes available:</p> <ul style="list-style-type: none"> <li><b>Static:</b> You have to input LES-5160P's IP, subnet mask, and gateway addresses manually in the fields down below.</li> <li><b>DHCP:</b> LES-5160P acquires its IP, subnet mask, and gateway addresses automatically from network's DHCP server.</li> </ul>
<b>Address</b>	You can input LES-5160P's IP address here in this field.
<b>Subnet Mask</b>	You can input LES-5160P's subnet mask here in this field.
<b>Gateway</b>	You can input LES-5160P's gateway address here in this field.
<b>Apply</b>	Apply the changes you've made here.

**\*Note1:** The default IP address for LES-5160P is 192.168.1.8.

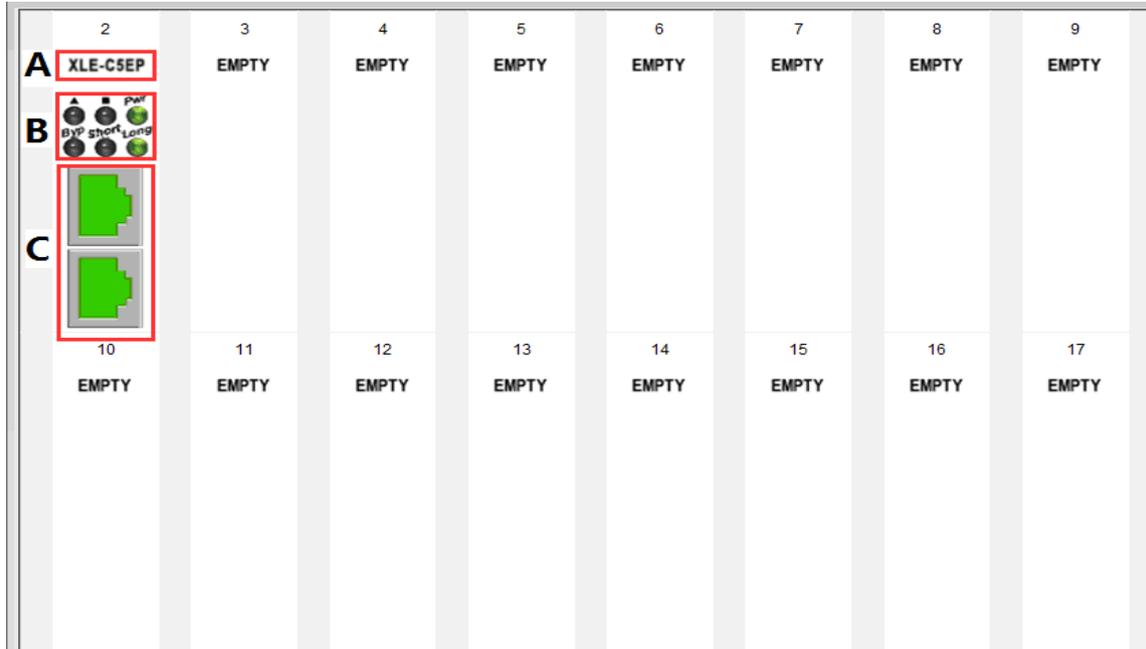


### 3.1.4. LES-5160P Management Webpage – Management

There are 3 options available for **Management**, including **Chassis Overview**, **Cable Length Settings**, and **Characteristic Chart**.

#### 3.1.4.1 Chassis Overview

This page can display the status of the modules installed in the LES-5160P chassis and the cable length settings. The page is shown as follows.



Chassis Overview	
<b>A</b>	Name of the module
<b>B</b>	Display the operation status of each module and cable length settings
<b>C</b>	Display the communication status of the modules: when the module is initiating, the RJ45 ports are brown  , indicating the module is establishing communication with the management card and after that the RJ45 ports will be green  . Now the module is ready. <b>*Note: if the module cannot be started normally, the RJ45 ports will not turn to green.</b>



### 3.1.4.2. Chassis Monitor

This page is used to display fan rotate speed, include side fan, rear fan, and the fans on fan tray.

Fan Information					
Location \ Number	#1	#2			
Side Fan (RPM)	2816	2796			
Rear Fan (RPM)	2906	2617			
Location \ Number	#1	#2	#3	#4	#5
Fan Tray (RPM)	n/a	n/a	n/a	n/a	n/a
Location \ Number	#6	#7	#8	#9	#10
Fan Tray (RPM)	n/a	n/a	n/a	n/a	n/a



### 3.1.4.3. Reserve/Release Setting

This page is used to reserve or release the XLE-C5EP modules. Before set cable length or upgrade, user must reserve the module first. XLE-C5EP module can be reserved by only 1 user at the same time.

#### Reserve/Release Settings

Reserve/Release

Status/Slot	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Holder	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Reserve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Release	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>												



### 3.1.4.4. Cable Length Settings

This page is used to individually set the simulation cable length for each module. There are three modes to choose, which are Bypass, Short and 100m, respectively regarding to short by relay, 1~3 meters and 100 meters. The page is shown as follows.

Cable Length

Choose cards cable length...

L/S	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Bypass	<input checked="" type="radio"/>	<input type="radio"/>														
Short	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
100M	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Apply

Click **Apply** to make your settings here effective.

### 3.1.4.5. Characteristic Chart

This page is used to view the characteristic chart of a certain module. The page is shown as follows.



**Slot ID:** select the slot ID of the module to see its characteristic chart.

**Line:** select the wire pairs. There are four pairs (Pair-12, Pair-36, Pair-45, and Pair-78) and you can also choose to display all the four pairs (All-Pair).

In the chart, the x-axis denotes frequencies (64 points in total but 32 points for IE8) while the Y-axis denotes the decibel values.



### 3.1.5. LES-5160P Management Webpage – Maintenance

Four options are available in the **Maintenance** configuration webpage: **Upgrade Firmware, Save Changes, Set Factory Defaults** and **System Reboot**.

#### 3.1.5.1. Update Firmware

This function is used to upgrade the firmware of the management card and the Cat-5e cable simulation modules. There are three modes for this function, including **Management Card, Single Subcard, and Multi Subcards**.

##### a. Management Card

This mode is to upgrade the firmware of management card.

Management Card	
<b>Browse...</b>	Click the <b>Browse...</b> button to choose the firmware file you would like to upgrade. LES-5160P's firmware files are in the format of <b>"*.bin"</b> .
<b>Apply</b>	Click this button to start upgrading LES-5160P's firmware.

##### b. Single Subcard

This mode is to upgrade the firmware of a single XLE-C5EP module.

Single Subcard	
<b>Slot ID</b>	Click the scroll down menu to select the module you want to upgrade firmware on.
<b>Browse...</b>	Click the <b>Browse...</b> button to choose the firmware file you would like to upgrade. LES-5160P's firmware files are in the format of <b>"*.bin"</b> .
<b>Apply</b>	Click this button to start upgrading LES-5160P's firmware.

##### c. Multi Subcard

This mode is to upgrade multiple XLE-C5EP modules at the same time. The system will upgrade the firmware of the selected modules in sequence.



**Multi-Upgrade**

Choose cards and files for upgrade...

2	3	4	5	6	7	8	9
<input type="checkbox"/>							
10	11	12	13	14	15	16	17
<input type="checkbox"/>							

Management Card

Single Subcard

<b>Multi Subcard</b>													
<b>Module list</b>	<p>Select the available modules according to their slot IDs, as shown in the picture down below.</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <tr> <td>2</td><td>3</td><td>4</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td> </tr> <tr> <td>10</td><td>11</td><td>12</td> </tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table>	2	3	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10	11	12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	3	4											
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>											
10	11	12											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<b>Browse...</b>	<p>Click the <b>Browse...</b> button to choose the firmware file you would like to upgrade. LES-5160P's firmware files are in the format of <b>"*.bin"</b>.</p>												
<b>Apply</b>	<p>Click this button to start upgrading LES-5160P's firmware. And then the firmware of the selected modules will be upgraded in sequence.</p>												

### 3.1.5.2. Save Changes

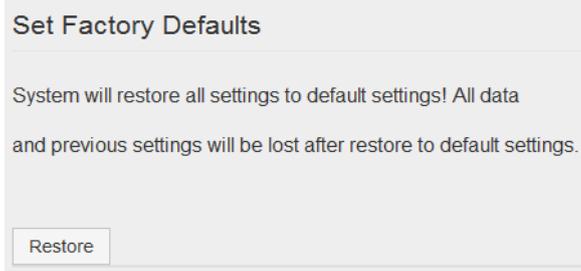
**Save Changes**

The device configuration will be saved to Non-volatile RAM !

<b>Save Changes</b>	
<b>Save</b>	<p>If you don't save the settings you've made via LES-5160P's management webpage, all settings will be erased after rebooting LES-5160P. Click the <b>"Save"</b> button to save the settings to LES-5160P.</p>

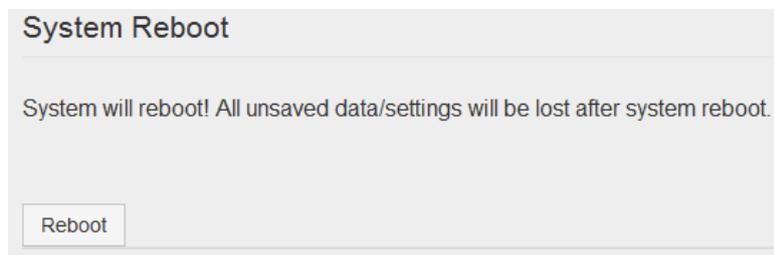


### 3.1.5.3. Factory Defaults



Factory Defaults	
<b>Restore</b>	You can set all LES-5160P's settings to default by clicking the " <b>Restore</b> " button.

### 3.1.5.4. System Reboot



System Reboot	
<b>Reboot</b>	You can reboot LES-5160P by clicking the " <b>Reboot</b> " button. Please note that all unsaved settings will be lost after system reboot.



## 4. LES-5160P General Specifications

Model	LES-5160P
Slot	16 Slots for Installing XLE-C5EP Modules
Dimension	441 mm x 310 mm x 88 mm
Temperature	> Operating: 0°C ~ 40°C (32°F ~ 104°F) > Storage: 0°C ~ 50°C (32°F ~ 122°F)
Humidity (non-condensing)	> Operating: 0% ~ 85% RH > Storage: 0% ~ 85% RH
Built-in Sensors	Detecting system temperatures, rotation speed of fans, and system voltage