

# Wi-Fi Range Extender Dualband AC750



**WLX-5100** 

### Introduction

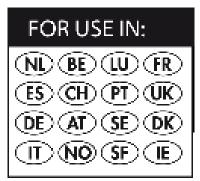
Thank you for purchasing the Sitecom WLX-5100 Wi-Fi range extender Dualband AC750. With this product you can easily double the signal coverage of your Wi-Fi network for better Wi-Fi quality in homes with many rooms or multiple floors. With both a Wi-Fi extender and a power adapter in a compact design, the WLX-5100 can be plugged directly into an electrical outlet for convenient placement. The smart signal strength LEDs makes it easy for you to set it up where your Wi-Fi signal needs enhancement. Additionally, it complies with wireless 802.11b/g/n/ac standards and can create an extended Wi-Fi network on both 2.4GHz and 5GHz with data transmission rates of up to 433Mbps (on 5GHz). With the WLX-5100, you can enjoy high-speed wireless networking throughout your home without additional cabling.

The WLX-5100 features OPS buttons which allow you to set up the extender quick and easy. Alternatively, the software wizard automatically detects the available Wi-Fi networks nearby and helps you establish a connection within seconds. The OPS button also allows you to connect the extender to the root access point with a simple click of a button. Additionally, the WLX-5100 is designed with signal strength LEDs, which help you find the best setup location for optimal Wi-Fi coverage.

Not only is the WLX-5100 very compact, it is designed with a built-in power adapter. This design allows you to plug it directly into an electrical outlet, eliminating the need for an additional power cable. You can easily install it where your Wi-Fi signal needs enhancement and enjoy high-speed wireless performance without any hassles.

The latest 802.11ac technology is built into the WLX-5100 to broaden its wireless coverage and to eliminate dead spots within the wireless range. The WLX-5100 complies with wireless 802.11b/g/n/ac standards and can reach data transmission rates of up to 433Mbps when connected to wireless 5GHz devices. It provides faster and more reliable wireless connections than standard 802.11b/g/n wireless networks.

This product can be used safely in the countries listed below:



This product complies with the following European Union regulations:



# **Table of Contents**

2 Package Contents	7
3 Cautions	8
4 Product Layout	9
5 Network and System Requirements	11
6 WLX-5100 Placement	11
7 Bringing up the WLX-5100	12
8 Connecting to the WLX-5100	13
9 Setting up the WLX-5100	15
10 Configuration Wizard	16
11 WiFi Settings	19
13 Toolbox	28

### Sitecom Europe BV

# EC Declaration of Conformity

We Sitecom Europe BV Linatebaan 101 3045 AH Rotterdam The Netherlands

Hereby declare under our sole responsibility that the Sitecom product:

Product number: WLX-5100 v1 001

Product description: Wi-Fi Range Extender Dualband AC750

To which this declaration relates is in conformity with the requirements of the following standards:

#### CE/LVD

EN 60950-1: 2006+A11 (2009)

#### CE/EMC

EN 301 489-1 V1.8.1
 EN 301 489-17 V2.1.1

#### RADIO SPECTRUM

EN 300 328 V1.7.1 2006-10
 EN 50385 2002

This certifies that the following designated Sitecom product:

Product description: Wi-Fi Range Extender Dualband AC750

Product No.: WLX-5100 v1 001

Complies with the requirements of the following directives and carries the CE marking accordingly: R&TTE Directive 99/5/EC, EMC directive 2004/95/EC and Low Voltage Directive 2006/95/EC. This declaration is the responsibility of the manufacturer / importer:

Sitecom Europe B.V. Rotterdam, 28 March 2014

M. Bergwerff,

coo

#### UK CE COMPLIANCE

Hereby Sitecom Europe BV declares that this product is in accordance with essential requirements and other relevant terms of the European regulation 1999/5/EC.

#### FR CONFORMITE CE

Par la présente Sitecom Europe BV, déclare que l'appareil est conforme aux exigences essentielles et aux dispositions pertinentes de la Directive Européenne 1999/5/EC.

#### DE CE-KONFORMITÄT

Hiermit erklärt Sitecom Europe BV, dass dieses Produkt die erforderlichen Voraussetzungen und andere relevante Konditionen der europäischen Richtlinie 1999/5/EC erfüllt.

### IT CONFORMITA ALLE NORME CE

Con la presente Sitecom Europe BV dichiara che questo prodotto è conforme ai requisiti essenziali e agli altri termini rilevanti della Direttiva Europea 1999/5/EC.

### **NL** CE GOEDKEURING

Hierbij verklaart Sitecom Europe BV dat dit product in overeenstemming is met de essentiële eisen en andere relevante bepalingen van Europese Richtlijn 1999/5/EC.

#### ES CONFORMIDAD CON LA CE

Por la presente Sitecom Europe BV declara que este producto cumple con los requisitos esenciales y las otras provisiones relevantes de la Directiva Europea 1999/5/EC.

### PT CONFORMIDADE CE

Pela presente a Sitecom Europe BV declara que este produto está em conformidade com os requisitos essenciais e outras condições relevantes da regulamentação Europeia 1999/5/EC.

### SE CE-FÖRSÄKRAN

Härmed försäkrar Sitecom Europe BV att denna produkt uppfyller de nödvändiga kraven och andra relevanta villkor EU-direktivet 1999/5/EC.

### **DK** OVERENSSTEMMELSESERKLÆRING

Sitecom Europe BV bekræfter hermed, at dette produkt er i overensstemmelse med væsentlige krav og andre betingelser i henhold til Rådets direktiv 1999/5/EC.

### NO CE-OVERENSSTEMMELSE

Sitecom Europe BV erklærer herved at dette produktet er i overensstemmelse med de avgjørende kravene og andre relevante vilkår i den europeiske forskriften 1999/5/EC.

### FI CE-HYVÄKSYNTÄ

Täten Sitecom Europe BV ilmoittaa, että tämä tuote on yhdenmukainen direktiivin 1999/5/EC olennaisten vaatimusten ja muiden asiaankuuluvien sopimusehtojen kanssa.

### **RU** СООТВЕТСТВИЕ ТРЕБОВАНИЯМ СЕ

Настоящим компания Sitecom Europe BV заявляет, что ее продукция соответствует основным требованиям и условиям Европейской

### PL CERTYFIKAT ZGODNOŚCI CE

Sitecom Europe BV niniejszym oświadcza, że ten produkt spełnia wszelkie niezbędne wymogi, a także inne istotne warunki dyrektywy europejskiej 1999/5/WE

### **GR** ΣΥΜΜΟΡΦΩΣΗ ΜΕ CE

Η Sitecom Europe BV δηλώνει, διά του παρόντος, ότι αυτό το προϊόν συμμορφώνεται με τις ουσιώδεις απαπήσεις και τους λοιπούς άρους του ευρωπαϊκού κανονισμού 1999/5/ΕС.











THE SECTION OF THE SE THE PROPERTY OF THE PROPERTY O

# 1 Key Features

Features	Advantages
Incredible Data Rate up to 433Mbps*	Heavy data payloads such as MPEG video streaming
IEEE 802.11n Compliant and backwards compatible with 802.11b/g/n	Fully Interoperable with IEEE 802.11b / IEEE802.11g compliant devices with legacy protection
Support 802.1x authenticator, 802.11i (WPA/WPA2, AES)	Provide mutual authentication (Client and dynamic encryption keys to enhance security
Easy to use web-based GUI	Graphical User Interface for network configuration and management purposes.
OPS Buttons	Easily connect the device to your existing network and your clients with just the push of a button.

<sup>\*</sup> Theoretical wireless signal rate based on IEEE standard of 802.11b, g, n, ac chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate. All specifications are subject to change without notice.

# 2 Package Contents

Open the package carefully, and make sure that none of the items listed below are missing. Do not discard the packing materials, in case of return; the unit must be shipped back in its original package.

- The WLX-5100 Wall Mount Range Extender AC750
  A Quick Install Guide

### 3 Cautions

This device's design and manufacturer has your safety in mind. In order to safely and effectively use this device, please read the following before usage.

#### 3.1 Usage Cautions

The user should not modify this device. The environmental temperature should be within  $+5 \sim +35$  degrees Celsius.

#### 3.2 Power

The device's power voltage is AC 230v. When plugging in the device, make sure it cannot get damaged or be subject to pressure. To reduce the risk of electric shock, unplug the device first before cleaning it. Never connect the device to the power in a humid or dusty area.

### 3.3 Repair

If the device has a problem, you should take it to an appointed repair center and let the specialists do the repair. Never repair the device yourself, you might damage the device or endanger yourself.

#### 3.4 Disposing of the device

When you dispose of the device, be sure to dispose of it appropriately. Some countries may regulate disposal of an electrical device, please consult with your local authority.

#### 3.5 Others

When using this device, please do not let it come into contact with water or other liquids. If water is accidentally spilled on the device, please use a dry cloth to absorb the spillage. Electronic products are vulnerable, when using please avoid shaking or hitting the device, and do not press the buttons too hard.

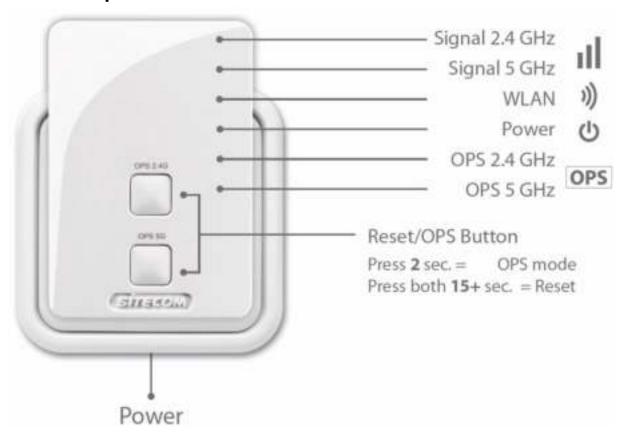
- Do not let the device come into contact with water or other liquid.
- Do not disassemble, repair or change the design of the device, any damage done will not be included in the repair policy.
- Avoid hitting the device with a hard object, avoid shaking the device and stay away from magnetic fields.
- If during electrostatic discharge or a strong electromagnetic field the device will malfunction, unplug the power cable. The product will return to normal performance the next time it is powered on.

# **4 Product Layout**



	Description
OPS Button	You can use this button to connect using OPS.
	OPS Button functions:
	Press 0-5 seconds: WPS enrollee
	Press 5-10 seconds: WPS registrar
	Press both buttons for 15+ seconds: reset to factory defaults.

# **LED Description**



### From top to bottom:

LED	Color	Description
Signal	Blue	This LED shows the quality of the signal it receives from your
		Router/Access Point.
		0-25%: 250 milliseconds ON – 250 millisecond OFF
		25-50%: 1000 milliseconds ON – 1000 milliseconds OFF
		50-100%: Continuous ON
WLAN	Green	Lights up when a WiFi signal is being transmitted/received.
Power	Red	Lights up when powered ON. Blinks on TEST/RESET.
OPS	White	Blinks when OPS mode is on.

### **5 Network and System Requirements**

To begin using the WLX-5100, make sure you meet the following as minimum requirements:

- PC/Notebook.
- WiFi card/USB dongle (802.11 b/g/n/ac) optional.
- PC with a Web-Browser (for instance Internet Explorer, Safari, Firefox, Opera)
- Router or Access Point

### 6 WLX-5100 Placement

You can place the WLX-5100 directly in a wall socket. For optimal performance, place your Range Extender in a location that is away from any potential source of interference, such as a metal wall or microwave oven. This location must be within a good signal range from your existing router or access point, preferably above 50% signal strength.



# 7 Bringing up the WLX-5100

You can plug the WLX-5100 directly into a wall outlet. Switch the device on with the power switch located on the bottom of the device. The WLX-5100 automatically enters the self-test phase. During self-test phase, the Power LED will be lit continuously to indicate that this product is in normal operation.



# 8 Connecting to the WLX-5100

### **Windows**

• Click on the icon for wireless connectivity. This is usually located in the System Tray, next to the clock.



• Select the network name of the Range Extender. The correct network name can be found in the Network Details Folder.



• Wait for the icon to display that it's connected to the network.



### **Mac OSX**

• Click on the icon for wireless connectivity. This is usually located in the System Tray, next to the clock.



• Select the network name of the Range Extender. The correct network name can be found in the Network Details Folder.



• Wait for the icon to display that it's connected to the network.



## 9 Setting up the WLX-5100

### **LOGIN** procedure

1. OPEN your browser (e.g. Internet Explorer).









2. Type http://sitecom.ext in the address bar and press [Enter]



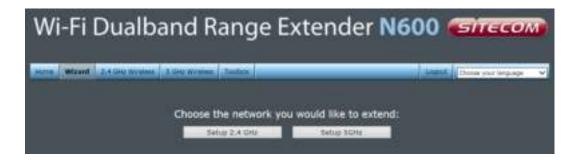
- 3. Type the password (default is admin) and Click Login.
- 4. You will see the home page of the WLX-5100.



The System status section allows you to monitor the current status of your device, the UP time, hardware information, serial number as well as firmware version information is displayed here.

### 10 Configuration Wizard

With the wizard you can configure the Range Extender to connect to your existing network. Click Wizard to start configuring the WLX-5100. The Setup wizard will now be displayed.

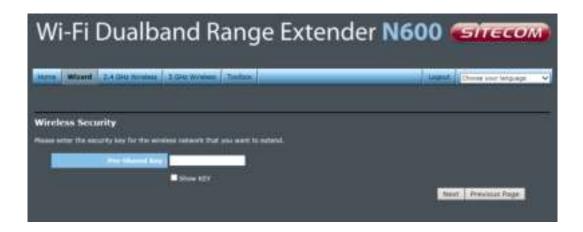


On the first page you need to select which frequency of your home router you want to extend. If your router only supports 2.4GHz (single band), select "Setup 2.4GHz".

Select the network that the Range Extender needs to connect to. You can also see the signal strength, the channel and the encryption type used on the networks surrounding the Range Extender.



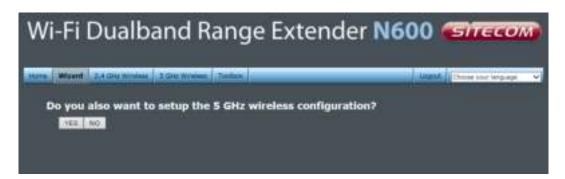
Select your network from the list. Click Next.



Fill in the security key from your existing network. Please refer to the manual of your router or access point on how to retrieve this key. Click Next.



Next, the settings are being verified. If the settings have been entered correctly the next screen will be automatically shown.



If your home router also supports 5GHz (dual band) and you want to connect the Range Extender to this network, you can follow the same steps again for the 5GHz network by clicking "YES". If you click "NO", the next screen will be automatically shown.

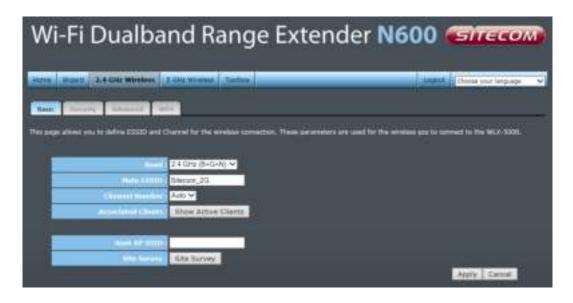


Click Appy to save all settings and reboot the WLX-5100.

### 11 WiFi Settings

You can manually configure the WiFi settings of the Range Extender. The 2.4GHz and 5GHz network can both be configured separately. The settings for both frequencies are similar, so only the 2.4GHz settings are shown here.

#### **Basic**



**Band** Please select the wireless band you wish to use. By selecting a

different band setting, you'll be able to allow or deny the wireless

clients on a certain band.

Please input the ESSID (the name used to identify this wireless **MAIN ESSID** 

access point) here. You can input up to 32 alphanumerical

characters. PLEASE NOTE THAT THE ESSID IS CASE SENSITIVE.

**Channel Number** Please select a channel number you wish to use. The channel

number must be same as the wireless access point you wish to

connect.

Associated Clients Click 'Show Active Clients' button and a new popup window will appear which contains the information about all wireless clients connected to this access point.



You can click the 'Refresh' button in the popup window to keep the information up-to-date

### **Root AP SSID**

In 'Universal Repeater' mode, this device can act as a station to connect to a Root AP. You should assign the SSID of the Root AP here or click 'Select Site Survey' button to choose a Root AP.

### **Site Survey**

Click 'Site Survey' button, then a "Wireless Site Survey Table" will pop up. It will list all available access points nearby. You can select one access point in the table and the access point will join wireless LAN through this access point.



### **Security**

This device provides many types of wireless security (wireless data encryption). When you use data encryption, data transferred by radio signals in the air will become unreadable for those people who don't know the correct encryption key (encryption password).

There are three types of security level you can select: Disable (no security - data encryption disabled), WEP and WPA Pre-shared Key. Please refer to the following sections for detailed instructions.

#### **Disabled**



When you select 'Disabled', wireless encryption for the network is disabled. This is not recommended.

Click <Apply> at the bottom of the screen to save the above configuration. You can now configure other sections by choosing Continue, or choose Apply to apply the settings and reboot the device.

#### **WEP**



- **Key Length** You can select the WEP key length for encryption, 64-bit or 128-bit. The larger the key will be the higher level of security is used, but the throughput will be lower.
- **Key Format** You may select ASCII Characters (alphanumeric format) or Hexadecimal Digits (in the "A-F", "a-f" and "0-9" range) to be the WEP Key.
- **Key1 Key4**The WEP keys are used to encrypt data transmitted in the wireless network. Use the following rules to setup a WEP key on the device.64-bit WEP: input 10-digits Hex values (in the "A-F", "a-f" and "0-9" range) or5-digit ASCII character as the encryption keys. 128-bit WEP: input 26-digitHex values (in the "A-F", "a-f" and "0-9" range) or 13-digit ASCII characters as the encryption keys.

Click <Apply> at the bottom of the screen to save the above configuration. You can now configure other sections by choosing Continue, or choose Apply to apply the settings and reboot the device.

### **WPA**



WPA Unicast Cipher Suite Available options are: WPA (TKIP), WPA2 (AES), and

WPA2 Mixed. You can select one of them, but you have to make sure your wireless client supports the

cipher you selected.

**Pre-shared Key Format** Please select the format of pre-shared key here,

available options are 'Passphrase' (8 to 63

alphanumerical characters) and 'Hex (64 hexadecimal

characters - 0 to 9 and a to f).

**Pre-shared Key** Please input pre-shared key according to the key

format you selected here. For security reason, don't

use simple words.

### **Advanced**

This tab allows you to set the advanced wireless options. The options included are Channel Bandwidth, Fragment Threshold, RTS Threshold, Beacon Interval, and Preamble Type. You should not change these parameters unless you know what effect the changes will have on the router.



**Fragment Threshold** Set the Fragment threshold of wireless radio. The default

value is 2346.

**RTS Threshold** Set the RTS threshold of wireless radio. The default value is

2347.

**Beacon Interval** Set the beacon interval of wireless radio. The default value is

100.

**DTIM Period** Set the DTIM period of wireless radio. The default value is 3.

**Data Rate**Set the wireless data transfer rate to a certain value. Since most wireless devices will negotiate with each other and pick

a proper data transfer rate automatically, it's not necessary to change this value unless you know what will happen after

modification.

**N Data Rate** Set the data rate of 802.11 N clients, available options are

MCS 0 to MCS 15. It's safe to set this option to 'Auto' and it's not necessary to change this value unless you know what will

happen after modification.

**Channel Width** Select wireless channel width (bandwidth taken by wireless

signals of this access point). It's suggested to select 'Auto 20/40MHz'. Do not change to '20 MHz' unless you know what

it is.

**Preamble Type** Set the type of preamble of wireless radio. The default

setting is 'Short Preamble'.

**Broadcast ESSID** Decide if the wireless access point will broadcast its own

ESSID or not. You can hide the ESSID of your wireless access point (set the option to 'Disable'), so only people who know the ESSID of your wireless access point can get connected.

**WMM** WMM (Wi-Fi Multimedia) technology, which can improve the

performance of certain network applications, like audio/video streaming, network telephony (VoIP), and others. When you enable WMM, the access point will define the priority of different kinds of data, to give higher priority to applications which require instant response. Therefore you can improve

the performance of such network applications.

CTS Protect Enabling this setting will reduce the chance of radio signal

collisions between 802.11b and 802.11g wireless access points. It's recommended to set this option to 'Auto'.

**TX Power** You can set the output power of wireless radio. Unless you're

using this wireless access point in a really big space, you may not have to set output power to 100%. This will enhance security (malicious / unknown users on a distance will not be

able to reach your wireless access point).

#### **WPS**

Wi-Fi Protected Setup (WPS) is the simplest way to establish a connection between the wireless clients and the wireless router. You don't have to select the encryption mode and fill in a long encryption passphrase every time when you try to setup a wireless connection. You only need to press a button on both wireless client and wireless router, and WPS will do the rest for you.

The Push button on the WLX-5100 has 2 functions:

Client mode: If you push the button for 0-5 seconds the device acts as a WPS enrollee. In this mode it's set to connect to your existing Wireless network. You have to push the button on your router within 2 minutes.

AP mode: If you push the button for 5-10 seconds the device acts as a WPS registrar. In this mode it's set to connect client devices to the WLX-5100. You have to push the button on the wireless client or in the utility of the wireless client within 2 minutes.

If you want to use the PIN code, you have to know the PIN code of the wireless client and switch it to WPS mode, then fill-in the PIN code of the wireless client through the web configuration interface of the wireless router.



Check the box to enable the WPS function and uncheck it to disable the WPS function.

**WPS Current Status** If the wireless security (encryption) function of this wireless

router is properly set, you'll see a 'Configured' message here.

Otherwise, you'll see 'UnConfigured'.

**Self Pin Code** This is the WPS PIN code of the wireless router. You may

need this information when connecting to other WPS-enabled

wireless devices.

**SSID** This is the network broadcast name (SSID) of the router.

**Authentication Mode** It shows the active authentication mode for the wireless

connection.

**Passphrase Key** It shows the passphrase key that is randomly generated by

the wireless router during the WPS process. You may need this information when using a device which doesn't support

WPS.

Mode In Client mode the device is set to connect to your existing

network. In Registrar mode the device is set to connect to

your clients.

**WPS via Push Button** Press the button to start the WPS process. The device will

wait for the WPS request from the wireless devices within 2

minutes.

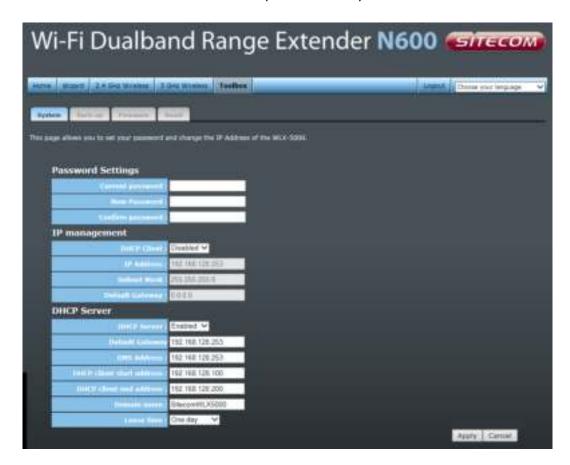
**WPS via PIN** You can fill-in the PIN code of the wireless device and press

the button to start the WPS process. The router will wait for the WPS request from the wireless device within 2 minutes.

### 13 Toolbox

### **System**

This device provides some control functions including password, IP address management, and DHCP server function. Please go to Toolbox, and open the 'System' tab, to access these functions. Below are detailed descriptions of every control function.



#### **Password Settings**

You can change the password used to enter the web configuration menu of this device. Please input the current password in the 'Current Password' field, then input a new password in both the 'New Password' and the 'Re-Enter Password' field. After you finish, please go to the bottom of the page and click 'Apply'.

### **IP Management**

You can change the IP address of this device, so it can become a part of your local network. Please remember this address or you will not be able to connect the configuration menu of device. The default IP address is: 192.168.128.253 / Subnet Mask 255.255.255.0.

#### **DHCP Server**

If you want to activate the DHCP server function of this device, please select 'Enabled' in the 'DHCP Server' option, and see the next Section for detailed instructions. If you don't want to use the DHCP server function of this device, or there's another DHCP server on the network this device connects to, please select 'Disable'. After you finish, please go to the bottom of this page and click 'Apply'.

**DHCP Server** This device is capable to act as a DHCP server for your

network.

**Default Gateway** Please input the IP address of default gateway of your

network here.

**DNS Address** Please input the IP address of domain name server

(DNS) here.

**DHCP Client Start Address** 

**DHCP Client End Address** 

**Domain Name** 

Please input the start  $\ensuremath{\mathsf{IP}}$  address of the  $\ensuremath{\mathsf{IP}}$  range.

Please input the end IP address of the IP range.

If you wish, you can also optionally input the domain

name for your network. This is optional.

**Lease Time** Please choose a lease time (the duration that every

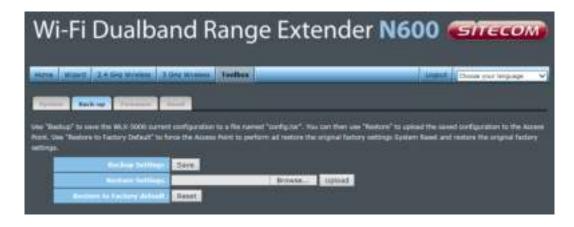
computer can keep a specific IP address) of every IP address assigned by this access point from dropdown

menu.

After you finish, please click 'Apply'.

### **Backup**

You can back up all configurations of this device to a file, so you can make several copies of access point configuration for security reasons.



**Backup Settings** Press 'Save...' button, and you'll be prompted to

download the configuration as a file. The default filename is 'config.bin'. You can save it as another filename for different versions, and keep it in a safe

place.

**Restore Settings** Press 'Browse...' to pick a previously-saved

configuration file from your computer, and then click 'Upload' to transfer the configuration file to the device. After the configuration is uploaded, the configuration

will be replaced by the file you just uploaded.

**Restore to Factory Default**Click this button to remove all settings you made and

restore the configuration of this device back to factory

default settings.

### **Firmware**

If there is a new firmware available, you can upload the firmware to the device to get extra functions or problem fixes.



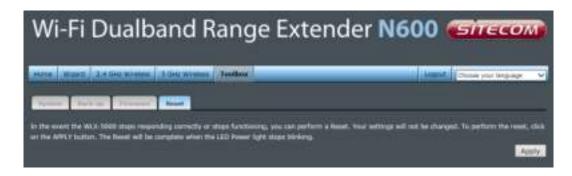
Click the 'Browse' button. You'll be prompted to provide the filename of the firmware upgrade file. Please download the latest firmware file from our website, and use it to upgrade your device.

After a firmware file is selected, click the 'Apply' button, and the device will start the firmware upgrade procedure automatically. The procedure may take several minutes, so please be patient.

NOTE: Never interrupt the upgrade procedure by closing the web browser or physically disconnecting your computer from the device.

### Reset

When you think the device is not working properly, you can use this function to restart the device; this may help and solve the problem.



This function is useful when the device is far from you or unreachable. However, if the device is not responding, you may have to switch it off by unplugging the power plug and plugging it back again after 10 seconds.

Revision 1.1 © Sitecom Europe BV 2015

Note: All the information contained in this manual was correct at the time of publication.

However, as our engineers are always updating and improving the product, your device's software may have a slightly different appearance or modified functionality than presented in this manual.