DG-WR3001NE

DIGISOL 300MBPS WALL MOUNT WIRELESS REPEATER

User Manual

V1.0

2018-04-17

As our products undergo continuous development the specifications are subject to change without prior notice

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Trademarks:

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

Index

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1. Product Information

1-1 Product Introduction

Thank you for purchasing this 802.11N wireless repeater!
The ultra-compact design with in-built power allows you to install this repeater everywhere, yet providing excellent network performance to extend the Wi-Fi signal and wireless coverage.

Other features of this wireless repeater include:

- Extended wireless signal inside your home or office.
- Ultra-compact design while maintaining excellent network performance.
- LED signal indicator to easily realize the best location placement to extend Wi-Fi signal and secure better wireless performance.
- The device can support AP mode, Repeater mode .
- WPS (Wi-Fi Protected Setup) hardware button for easy installation and secure wireless security.

1-2 Safety Information

In order to keep the safety of users and your properties, please follow the safety instructions mentioned below:

1. This wireless repeater is designed for indoor use only. **DO NOT** expose this device to direct sun light, rain, or snow.

2. **DO NOT** put this at or near hot or humid places, like kitchen or bathroom. Also, **DO NOT** leave this Wireless repeater in the car in summer.

3. **DO NOT** allow kids to put any small parts of this wireless repeater in their mouth, it could cause serious injury or could be fatal. If they throw this wireless repeater, it will get damaged. **PLEASE KEEP THIS WIRELESS REPEATER OUT OF REACH OF CHILDREN!**

4. This Wireless repeater will get heated up when used for a long time (This is normal and is not a malfunction). **DO NOT** put the Wireless repeater on a paper, cloth, or other flammable objects after the Wireless repeater has been used for a long time.

5. There' s no user-serviceable part inside the Wireless repeater. If you find that the Wireless repeater is not working properly, please contact your dealer of purchase and ask for help. **DO NOT** disassemble the Wireless repeater yourself, warranty will be void.

1-3 System Requirements

- Wireless network card which is compatible with 802.11N wireless network standard.
- Windows 2000, 2003, XP, Vista, 7 , 10 operating system
- An available AC power socket (100-240V, 50/60Hz)
- At least 200MB of available disk space

1-4 Package Contents

Before you start using this wireless repeater, please check if there's anything missing in the package, and contact your dealer of purchase to claim for missing items:

- Wireless Repeater
- Quick Installation Guide
- Installation Guide CD (includes User Manual and QIG)
- Patch cord (1 No.)

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1-5 Get familiar with your new Wireless Repeater

Interface Description

Name	Description
Power Connector	For power supply
Reset button	Press for 10 seconds to factory reset the configuration
WPS button	Press for 2 seconds to start WPS connection
WIFI LED	(Only 1 Bar Glow) weak signal
	(Only 2 Bar Glow) good signal
	(All 3 Bars Glow) strong signal
Power (WPS) LED	ON: power is on
	OFF: power is off
	Blinking: WPS connection is initiated
Ethernet LED	ON: Ethernet connected
	OFF: Ethernet disconnected
USB port	For Charging Devices , Output Upto 5V-0.5A
Ethernet port	For connecting Ethernet Enabled Devices

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2. Extender mode

Extender mode is your Wi-Fi range extender. It can extend your wireless signal and coverage and help you to solve wireless dead zone problem.
This section will show you how to quickly install this device by using quick setup and also shows you each detailed setting on the web page of repeater mode.

2-1 Extender mode Quick Installation Guide

For the first time setup and easy installation, you can move this device close to the Wireless Broadband Router or Access point you wish to connect, after the installation is done and wireless connection is built, you can move the Extender to the place you wish to use.

Insert this device into the power outlet on the wall. You should see 'Power' LED light up in few seconds , If not, please check if the power the outlet you're using is working.

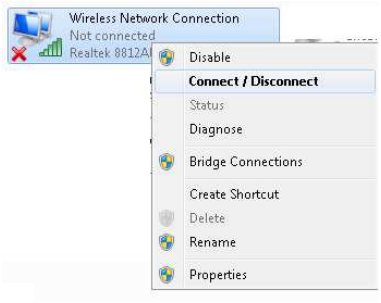
You can build wireless connection via '**Hardware WPS button**' or '**Software web browser**'.If your broadband router or access point also supports 'WPS button', we recommend you to use WPS button to establish connection, it is the fast and secure way without the need of a computer.

2-1-1 Step by Step Guide to connect and configure AP/Repeater using Windows System.

Connect to AP/Extender using Wireless :

Please make sure your computer has configure wireless adapter. Then please follow the below steps to connect to the AP/Repeater, wirelessly.

1. Click Start > Control Panel > Network and Sharing Center, click Change adapter settings, right-click Wireless Network Connection, select Connect/Disconnect.



2. Select the SSID or Wireless name "DIGISOL" then click Connect.

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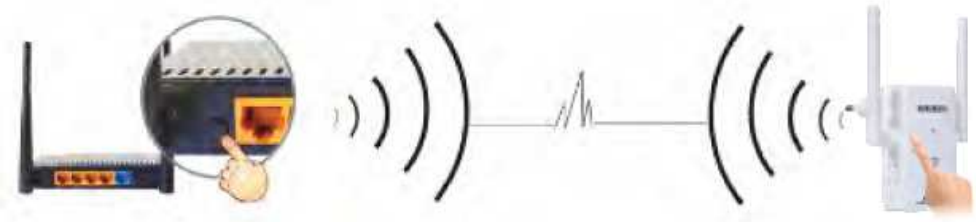
2-1-2 :Extender mode : Configuration

Method-1 : Just Press the WPS button on the Main router or Root AP and immediately press the WPS button on the DIGISOL extender (DG-WR3001NE) for 2 to 3 seconds, then a wireless connection will be established automatically between both Main Router and Extender



Note : The WPS connection will be invalid if it is already connected to any other router successfully, then you must reset it to the factory default setting first, then start the WPS connection again.

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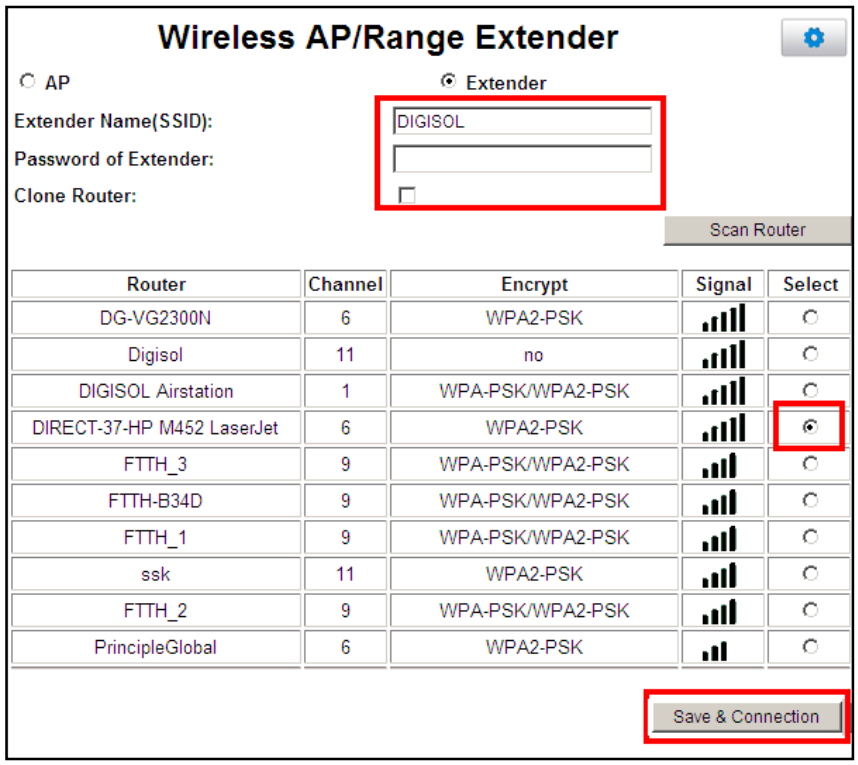
Method-2 : Type website address, http://192.168.2.1 in Internet explorer or Browser address column, then input the username as **"admin"** and Password as **"1234"** to login , you can see the Home Page as shown below. If you select **"Clone Router"** then Extender's SSID and password will be same as Main router / Root AP (recommended).



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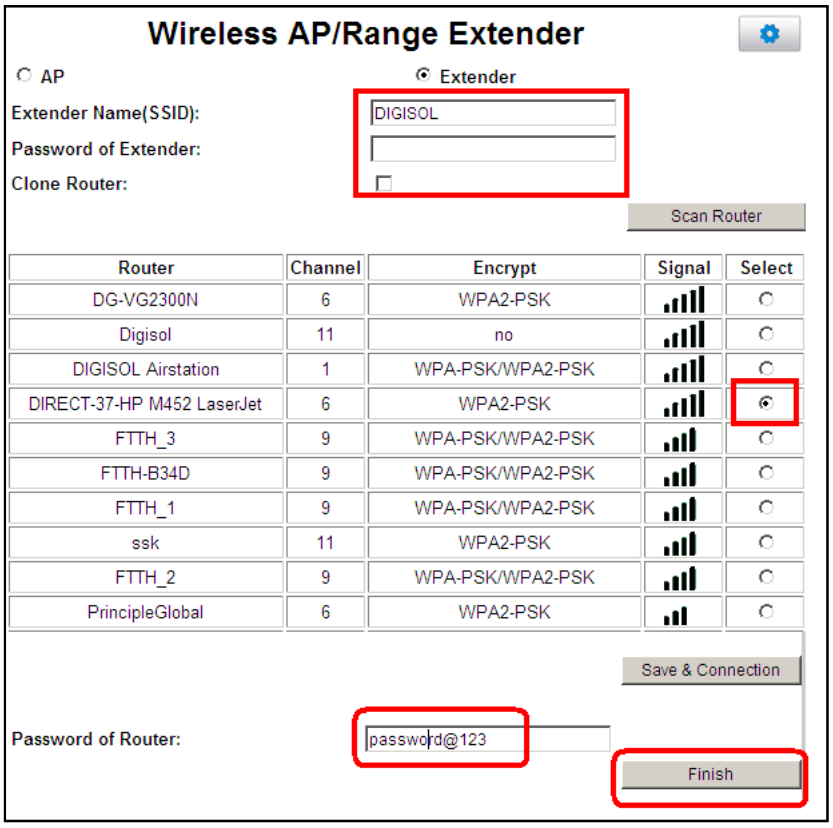
Input the password of Main Router / Root AP and click "Finish".



Note : Device will reboot and then both devices will connect successfully. If connection fails, then please check Main Router's password or if any network signal strength problem due to distance or interference.Try adjusting the antenna direction or by reducing the distance.

Congratulations ! You have setup the Extender Mode successfully.

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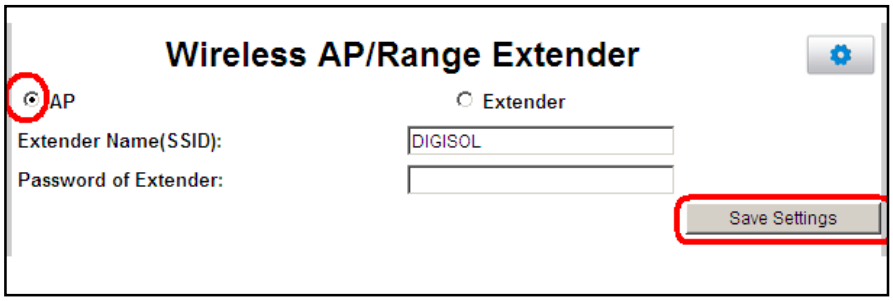
2-2 AP Mode : Wireless Access Point configuration

1. Input the website http://192.168.2.1 in Internet explorer address column, then input the username **"admin"** and password with **"1234"**.when enter the main page select the "AP" and click "Save Setting"

(You can type Password (minimum 8 characters) to secure the wireless network , which is Optional)



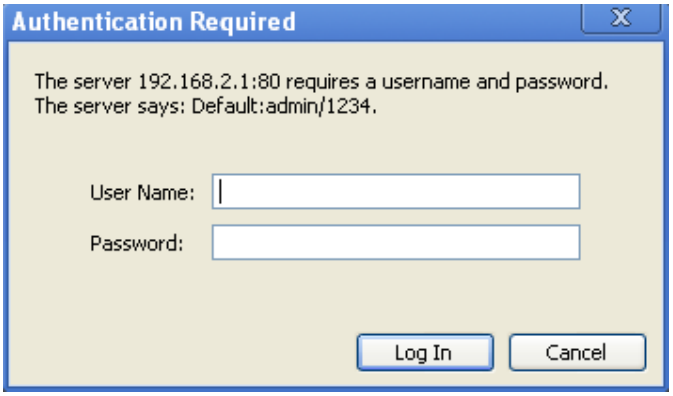
Note : If you want to setup the Extender Mode again, then you must reset it to factory default setting by pressing reset button upto 10 seconds).
For further help ,Please call on 1800 209 3444 for toll free support or write to helpdesk@digisol.com

2-2-1 :Extender Mode Advance Settings

Connect to Web Configuration menu

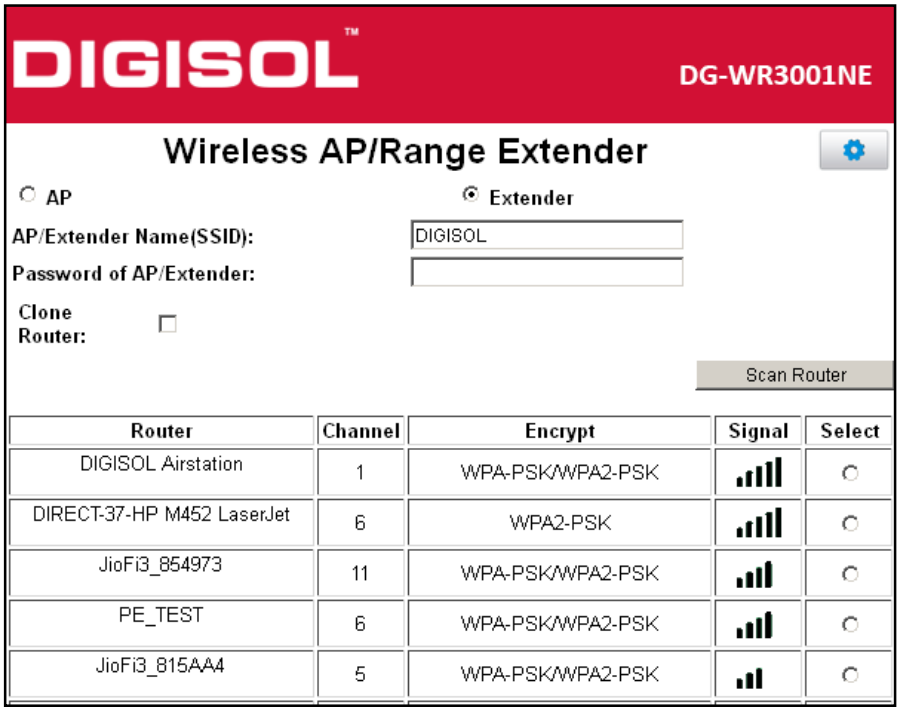
Please open web browser (IE, Firefox, chrome etc.) and input the IP address (given by the DHCP server of the router) in the address bar then press ENTER key. If you don't know repeater IP address then type '**http://192.168.2.1** to access the web.

Wireless repeater will prompt you to input username and password. Default username is '**admin**' and password is '**1234**'. Click '**Log In**' button to continue.



After login , we can see the Home page as landing page as shown below

2-2-2 Home Page :

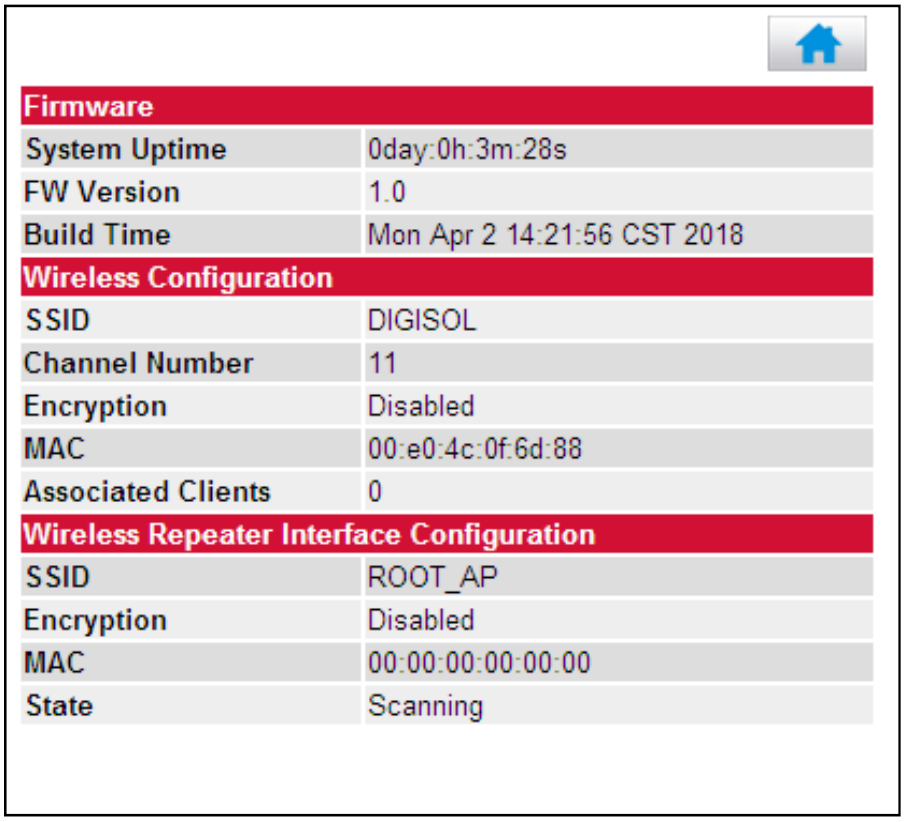


Now click on this icon  on the top right corner of the page to open the advance settings page .

2-2-3 Status Page :

This page that is displayed shows the current status and some basic settings of the device, such as firmware version, Wireless SSID ,Encryption , MAC address, Associated clients , connection state, etc.

Note : The Firmware version / details shown here may vary on User Manual as compared to the customer device.



Firmware	
System Uptime	0day:0h:3m:28s
FW Version	1.0
Build Time	Mon Apr 2 14:21:56 CST 2018
Wireless Configuration	
SSID	DIGISOL
Channel Number	11
Encryption	Disabled
MAC	00:e0:4c:0f:6d:88
Associated Clients	0
Wireless Repeater Interface Configuration	
SSID	ROOT_AP
Encryption	Disabled
MAC	00:00:00:00:00:00
State	Scanning

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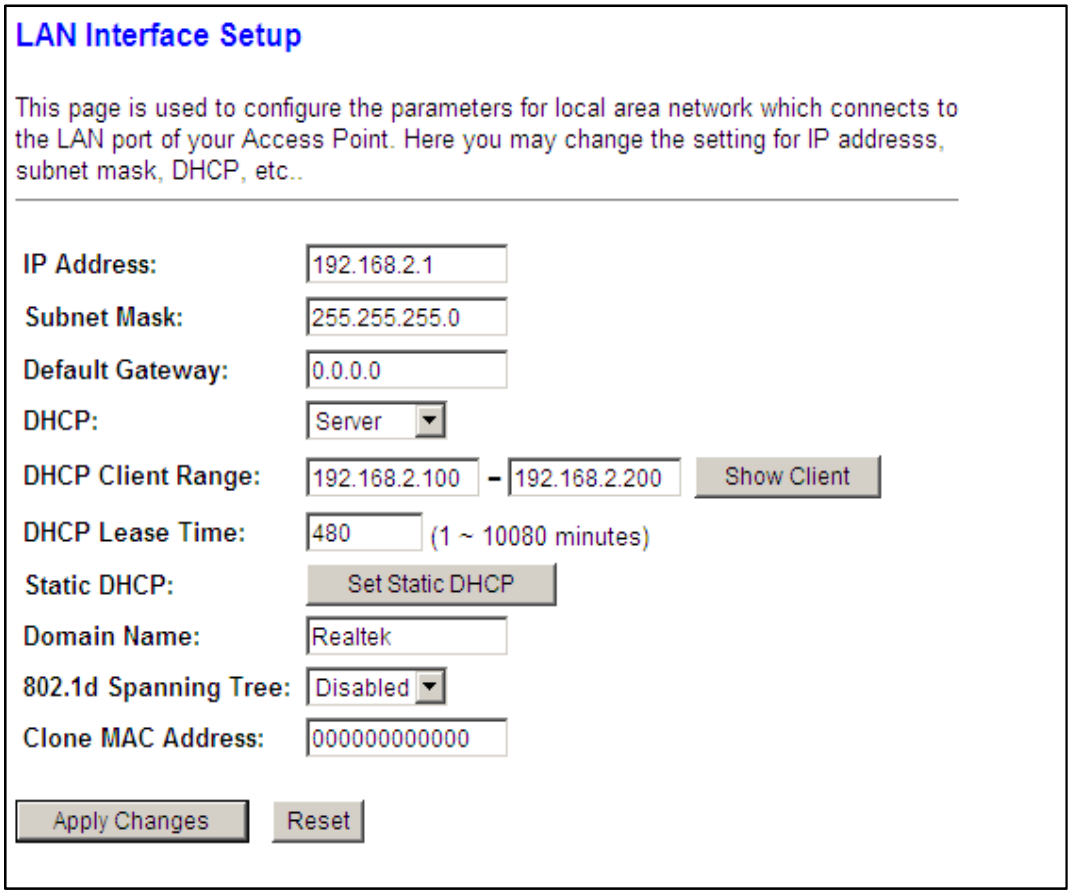
2-2-4 Lan Interface Setup :

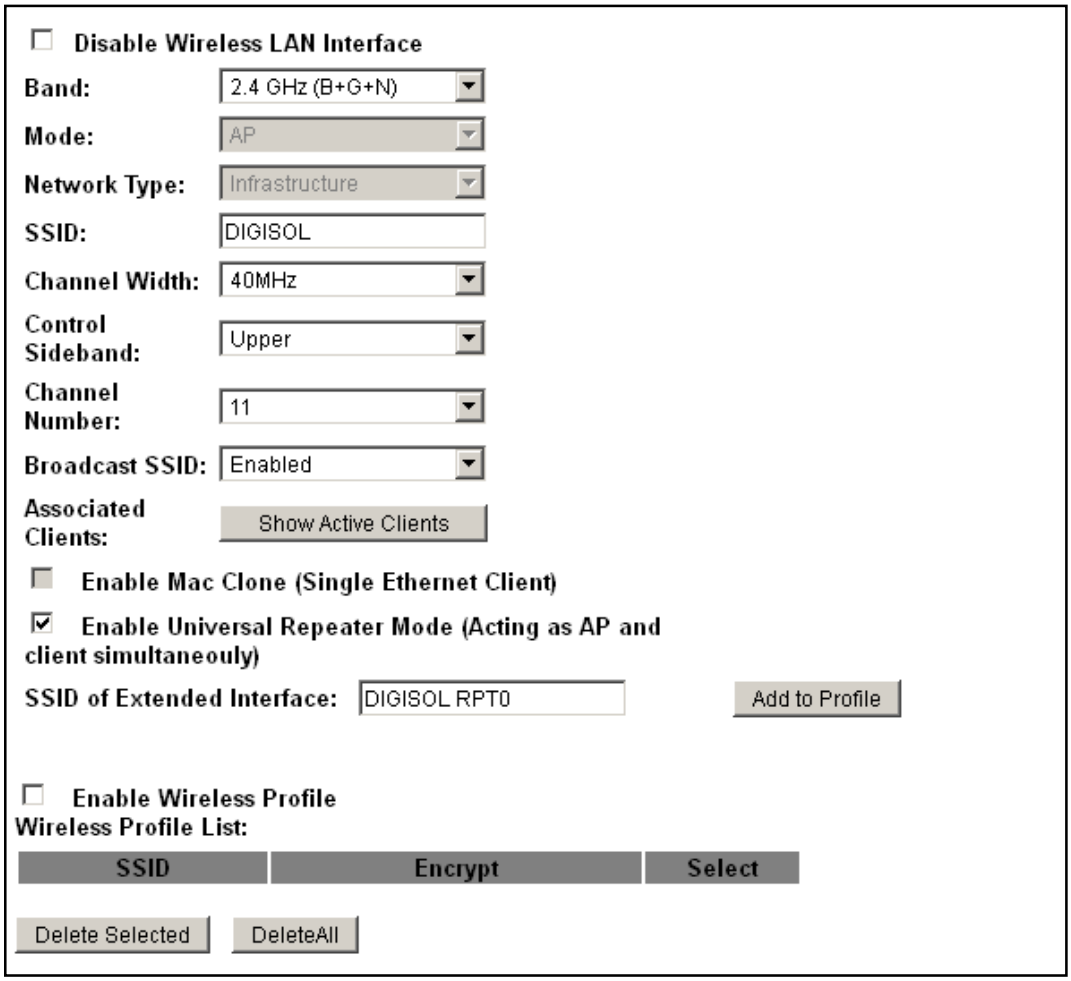
This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP addresss, subnet mask, DHCP, etc..



Parameter	Description
IP address	Enter the LAN IP address.
Subnet Mask	Enter the subnet mask
Default Gateway	Enter the IP address of Gateway
DHCP	1) Enable the DHCP server if you are using this device as DHCP server. This page lists the IP address pools available to host on your LAN. The device distributes numbers in the pool to host on your network as they request internet access. 2) Enable the DHCP Client if you are using the other DHCP server to assign IP address to your host on the LAN. You can set the DHCP server IP address. 3) If you choose “Disabled”, then AP will do nothing when the host requests an IP address.
DHCP Client Range	Select the IP Address Pool Range for clients
DHCP Lease Time	Set the Lease time for allocating DHCP clients
Static DHCP	Map the DHCP IP address to MAC Address
Domain Name	set the Domain name (optional)
802.1d Spanning Tree	Enable or Disable the Spanning Tree Protocol
Clone MAC Address	Type the MAC Address here to clone

2-2-5 WiFi Setting :

This page is used to configure the Wireless LAN Parameters which may connect to your access point . Here you may change wireless encryption settings as well as wireless network parameters.



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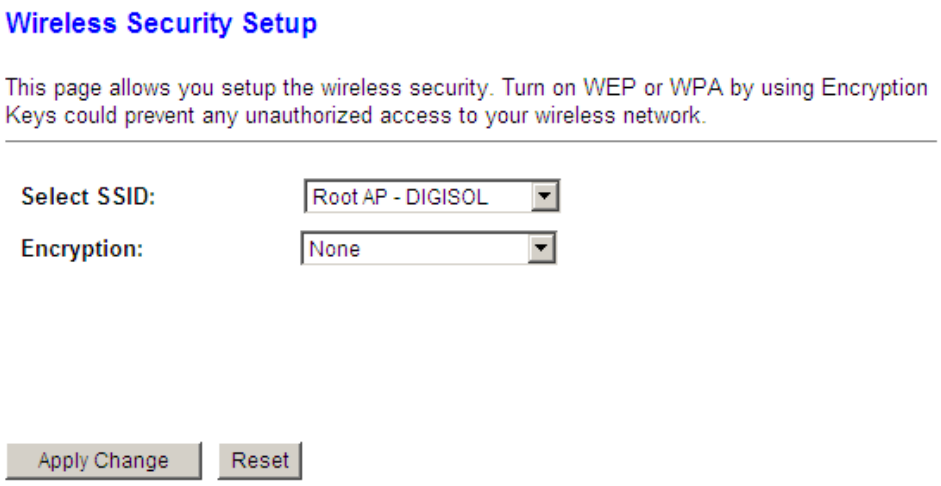
Parameter	Description
Disable Wireless LAN Interface	Select to Disable the Wireless Function
Band	Select the Bands from the drop down list
Mode	Select the Mode (bydefault AP is selected)
Network Type	Select the Network type (By default Infrastruture is selected)
SSID	Type the SSID or Wireless Network name here
Channel Width	Select 40MHz or 20MHz
Control Side band	Select Upper or Lower
Channel Number	Select Auto , 1 ,2,3,4,5,6,7,8,9,10,11,12,13
Broadcast SSID	Enable : To Unhide the network name and Disable :To hide it.
Associated Clients	Click to view the Active wireless clients connected to AP
Enable Universal Repeater Mode	Selected by default in Extender Mode.
SSID of Extended Interface	Create Multiple profiles of Root AP's
Enable Wireless Profile	If enabled ,Device will connect to any Root AP profiles which are added in the list

2-2-6 Security Setting :

This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.



Parameter	Description
Select SSID	Select the SSID from the dropdown list
Encryption	Select the Encryption type
Key Length	Select 64bit or 128bit
Key Format	Select Hex / ASCII / Character
Password	Type the Password or Preshared key for the selected SSID

2-2-7 MAC Control:

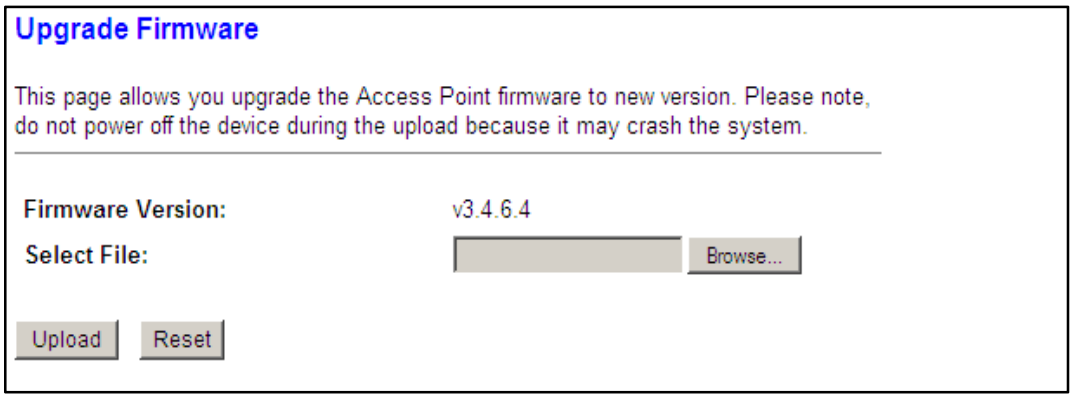
If you choose 'Allowed Listed', only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Access Point. When 'Deny Listed' is selected, these wireless clients on the list will not be able to connect the Access Point.

Parameter	Description
Wireless Access Control Mode:	Disable : All Wireless Clients can connect to AP
	Allow Listed : Only the listed MAC address will be able to connect to AP
	Deny Listed : Only the listed MAC address will be Not be able to connect to AP
MAC Address	Type the MAC Address of Wireless Client
Comment	Type any Name or Value here

3. MANAGEMENT :

3-1 Upgrade Firmware

This page allows you upgrade the Access Point firmware to new version. Please note, do not power off the device during the upload because it may crash the system.



Parameter	Description
Select File	Click Browse to select Firmware file and click Upload to upgrade the software

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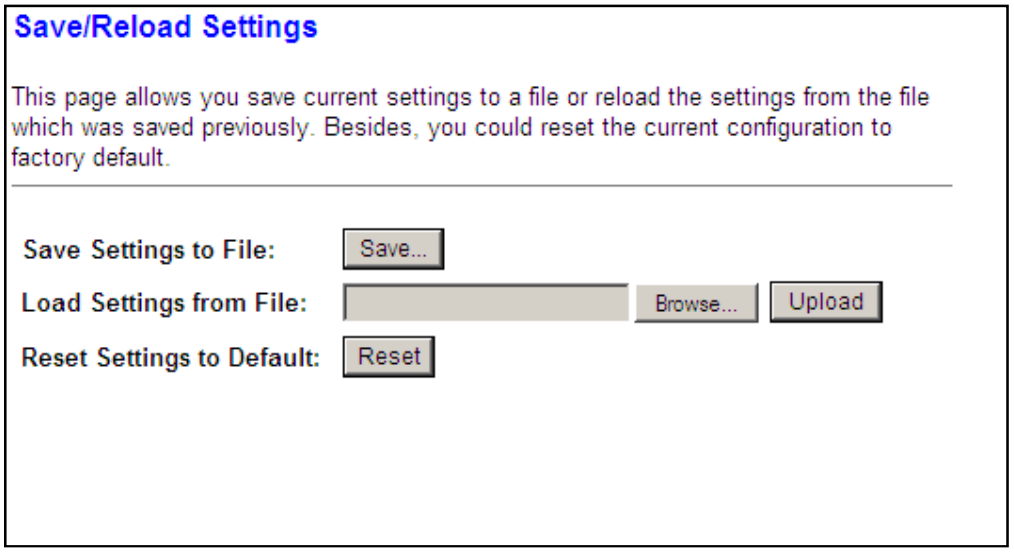
3-2 Save and Load Settings :

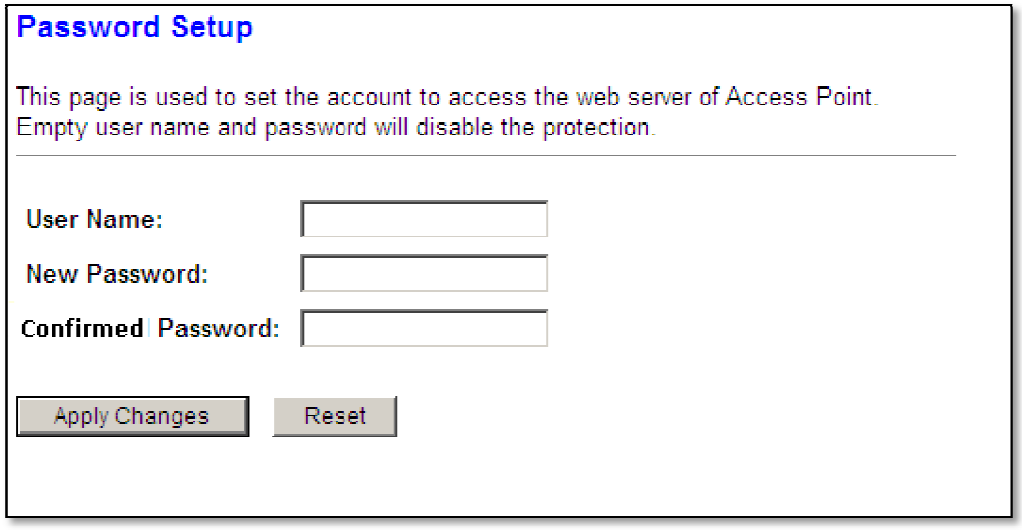
This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.



Parameter	Description
Save Settings to File:	Export or backup the configuration file
Load Settings from File:	Import or load the saved configuration file.
Reset Settings to Default:	Will reset the configuration to factory default.

3-3 Password Setup :

This page is used to set the account to access the web server of Access Point. Empty user name and password will disable the protection.



Parameter	Description
Username	Type Login name
New Password	Type Password
Confirmed Password	Type password again

4 Appendix

4-1 Hardware Specifications

Antenna: External Antenna x 2 (2T2R)

LAN Port: 10/100M UTP Port x 1

USB Port x 1 : Charging (Output 5V : 0.5A)

Frequency Band: 2.4000~2.4835GHz (Industrial Scientific Medical Band)

Power: 5VDC, 1A Switching Power Module (In-Built)

Dimensions: 59(W) x 91(H) x 40(D) mm excluding power plug

Net Weight: 96.5gms

Gross Weight: 290gms

Data Rate: 11a: up to 54Mbps
11b: up to 11Mbps
11g: up to 54Mbps
11n (20MHz): up to 144Mbps
11n (40MHz): up to 300Mbps

Transmit Power:

- 2.4GHz:
  11b(11M): 17±1.5 dBm
  11g(54M): 14±1.5 dBm
  11n(20MHz, MCS7): 13±1.5 dBm
  11n(40MHz, MCS7): 13±1.5 dBm

Operating Temperature: 0°C ~ 40°C

Storage temperature: -20°C~60°C

Operating Humidity: 10%-90% (Non-Condensing)

Storage Humidity: Max. 95% (Non-Condensing)

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4-2 Glossary

IEEE 802.11g standard: 802.11g is the new IEEE standard for high-speed wireless LAN communications that provide speed up to 54 Mbps in the 2.4 GHz band. 802.11g is quickly becoming the next mainstream wireless LAN technology for the home, office and public networks.
802.11g defines the use of the same OFDM modulation technique specified in IEEE applies it in the same 2.4 GHz frequency band as IEEE 802.11b. The 802.11g standard requires backward compatibility with 802.11b.

The standard specifically calls for:

A. A new physical layer for the 802.11 Medium Access Control (MAC) in the 2.4 GHz frequency band, known as the extended rate PHY (ERP). The ERP adds OFDM as a mandatory new coding scheme for 6, 12 and 24 Mbps (mandatory speeds) and 18, 36, 48 and 54 Mbps (optional speeds). The ERP includes the modulation schemes found in 802.11b including CCK for 11 and 5.5 Mbps and Barker code modulation for 2 and 1 Mbps.

B. A protection mechanism called RTS/CTS that governs how 802.11g devices and 802.11b devices interoperate.

IEEE 802.11b standard: The IEEE 802.11b Wireless LAN standard subcommittee, which formulates the standard for the industry. The objective is to enable wireless LAN hardware from different manufactures to communicate.

IEEE 802.11 feature support: The product supports the following IEEE 802.11 functions:

- CSMA/CA plus Acknowledge Protocol
- Multi-Channel Roaming
- Automatic Rate Selection
- RTS/CTS Feature
- Fragmentation
- Power Management

Ad-hoc: An Ad-hoc integrated wireless LAN is a group of computers, each has a wireless LAN card, connected as an independent wireless LAN. Ad hoc wireless LAN is applicable at a departmental scale for a branch or SOHO operation.

Infrastructure: An integrated wireless and wired LAN is called an Infrastructure configuration. Infrastructure is applicable to enterprise scale for wireless access to

central database, or wireless application for mobile workers.

BSSID: A specific Ad hoc LAN is called a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSS ID.

WEP: WEP is Wired Equivalent Privacy, a data privacy mechanism based on a 40 bit shared key algorithm, as described in the IEEE 802 .11 standard.

TKIP: TKIP is a quick-fix method to quickly overcome the inherent weaknesses in WEP security, especially the reuse of encryption keys. TKIP is involved in the IEEE 802.11i WLAN security standard, and the specification might be officially released by early 2003.

AES: AES (Advanced Encryption Standard), a chip-based security, has been developed to ensure the highest degree of security and authenticity for digital information, wherever and however communicated or stored, while making more efficient use of hardware and/or software than previous encryption standards. It is also included in IEEE 802.11i standard. Compared to AES, TKIP is a temporary protocol for replacing WEP security until manufacturers implement AES at the hardware level.

DSSS: Direct-sequence spread-spectrum (DSSS) generates a redundant bit pattern for each bit to be transmitted. This bit pattern is called a chip (or chipping code). The longer the chip is, the greater the probability that the original data can be recovered. Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the radio can recover the original data without-the need for retransmission. To an unintended receiver, DSSS appears as low power wideband noise and is rejected (ignored) by most narrowband receivers.

FHSS: Frequency-hopping spread-spectrum (FHSS) uses a narrowband carrier that changes frequency in a pattern that is known to both transmitter and receiver. Properly synchronized, the net effect is to maintain a single logical channel. To an unintended receiver, FHSS appears to be short-duration impulse noise.

Spread Spectrum: Spread Spectrum technology is a wideband radio frequency technique developed by the military for use in reliable, secure, mission-critical communication systems. It is designed to trade off bandwidth efficiency for reliability, integrity, and security. In other words, more bandwidth is consumed than in the case of narrowband transmission, but the trade off produces a signal that is, in effect, louder and thus easier to detect, provided that the receiver knows the parameters of the spread-spectrum signal being broadcast. If a receiver is not tuned to the right frequency, a spread –spectrum signal looks like background noise. There are two main alternatives, Direct Sequence Spread Spectrum (DSSS) and Frequency Hopping Spread Spectrum (FHSS).

WPS: WPS stands for Wi-Fi Protected Setup. It provides a simple way to establish unencrypted or encrypted connections between wireless clients and access point automatically. User can press a software or hardware button to activate WPS function, and WPS-compatible wireless clients and access point will establish connection by themselves.

* This product comes with Limited Life time warranty. For further details about warranty policy and Product Registration, please visit support section of www.digisol.com

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