

Leoxsys11N Wireless 3G Router
LEO-300N-3G
User Manual

Contents

I. Introduction	3
1.1 Package Contents	3
1.2 Description	3
1.3 Key Features	4
1.4 Specification	4
II. Hardware installation	5
2.1 The Front Panel	5
2.2 The Rear Panel	6
2.3 Hardware installation	6
2.3.1 Network configuration	7
2.3.2 Computer configuration	7
2.3.2.1 Configure PC's IP addresses	7
III. Wireless Router configuration	9
3.1 Setup Wizard.....	
3.2 Wireless Settings	10
3.2.1 Basic Settings	10
3.2.2 Advance	12
3.2.3 Security	14
3.2.4 Access Control.....	
3.2.5 WDS.....	15
3.2.6 WPS	15
3.2.7 Site Survey.....	15
3.3 WAN Setting	16
3.3.1 WAN Basic	16
3.3.2 WAN Advanced	19
3.4 LAN Setting	19
3.4.1 LAN Interface	19
3.4.2 DHCP Setting	20
3.4.3 DHCP Client	20
3.5 Security	21
3.5.1 Port Filtering	21

3.5.2 MAC Filtering.....	21
3.5.3 IP Filtering	22
3.5.4 URL Filtering.....	21
3.5.5 Firewall.....	21
3.6 Service.....	23
3.6.1 DMZ	23
3.6.2 Virtual Server	23
3.6.3 DDNS	25
3.6.4 NTP Setting	25
3.7 Management	26
3.7.1 System Mode	26
3.7.2 Save/Reload setting	27
3.7.3 Upgrade Firmware.....	27
3.7.4 Password	28
3.7.5 Reboot	29
3.7.6 System Log.....	29
3.8 Status	31
3.8.1 Status	31
3.8.2 Statistics	32
Appendix 1	33
Appendix 2	35
Appendix 3	35

I. Introduction

1.1 Package Contents

1. One Wireless 3G Router
2. One Power Adapter
3. One User Manual CD
4. One Quick Installation Guide
5. Warranty Card

1.2 Description

The 802.11n Wireless Router is compatible with IEEE802.11n standard, which supports data rate up to 300 Mbps in 2.4 GHz band, which is also compatible with IEEE 802.11g/b wireless devices. The Wireless router allows multiple users to share one broadband connection over wire and over USB Modem, as well as secures your private network. With its built-in 4-port switch and wireless AP, LAN users can share files, and playing network games all at a high speed. With its built-in USB 2.0 port user can share USB 3G/GSM/CDMA modem.

To provide a secure wireless network, this Wireless router supports wireless data encryption with 64/128-bit WEP, WPA and WPA2. Network Address Translation (NAT) Firewall is also support to shield your communications and network from hackers and wireless eavesdroppers. The Wireless Router built-in with 4-port 10/100Mbps Fast Ethernet Switch is the latest generation of Wireless router product for Home/Office and SOHO users. This full-feature and self-contained compact Wireless Router will be fully for broadband access in both of LAN and Wireless environment. This device has been specifically designed to provide LAN and Wireless users the most cost-effective method with multiple accesses to the Internet at the cost of a single public IP address (IP Sharing) and enjoy the true Plug-and-Play installation. Moreover, the built-in 4-port

10/100Mbps switch lets users plug the network cable into the device without buying additional switch.

This device is also an Access Point. It has a built-in wireless LAN. Users can connect to Internet using wireless network interfaces anywhere within the range of its radio transmission. It's ideal for SOHO users who require instant and convenient access to Internet without the restriction of connecting cables

1.3 Key Features

- Complies with 2.4GHz IEEE802.11n Draft v2.0 and backward compatible with IEEE 802.11b/g standards
- Supports NAT/NAPT IP sharing
- WAN Protocols: PPPoE/Static IP/PPTP/DHCP
- Supports advanced 1T2R MIMO technology to enhance the throughput and coverage range significantly
- High speed data rate - up to 300Mbps.
- Supports Virtual Server and DMZ
- Supports Wi-Fi Protected Setup (WPS) with reset button
- Supports 64/128-bit WEP encryption and WPA-PSK, WPA2-PSK security
- Supports WMM function to meet the multimedia transmission requirement
- Supports WDS mode
- Supports Special Applications (Port Triggers)
- Supports DDNS (DynDNS, TZO), and QoS
- Supports MAC/IP filtering and URL blocking
- Supports DHCP server and Anti-Dos firewall
- Web user interface (remote configuration)
- System status and security log
- Firmware upgradeable

1.4 Specification

Standards	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, IEEE 802.3, IEEE 802.3u, CSMA/CA, CSMA/CD, TCP/IP, DHCP, ICMP, NAT, PPPoE
Interface Type	4 x 10/100M RJ45 Port(Auto MDI/MDIX)
	1 x 10/100M RJ45Port(Auto MDI/MDIX)
Frequency range	2.4~2.4835GHz
Radio Data Rate	11n: Radio Data Rate 270/243/216/162/108/81/54/27Mbps 135/121.5/108/81/54/40.5/27/13.5Mbps 130/117/104/78/52/39/26/13Mbps; 65/58.5/52/39/26/19.5/13/6.5Mbps
	11g: 54/48/36/24/18/12/9/6M
	11b: 11/5.5/2/1M
Channel	13
Sensitivity @PER	270M: -68dBm@10% PER; 130M: -68dBm@10% PER; 108M: -68dBm@10% PER; 54M: -68dBm@10% PER 11M: -85dBm@8% PER; 6M: -88dBm@10% PER 1M: -90dBm@8% PER
RF Power	20dBm(Max)
Antenna Type	2*External antennas
Cabling Type	P category 3, 4, 5 cable (maximum 100m) EIA/TIA-568 100Ω STP (maximum 100m) 100BASE-TX: UTP category 5, 5e cable (maximum 100m)
LEDs	Power, M1, WAN,WLAN, 1,2,3,4
Dimensions	186.2mm x 119.7mm x 26.5mm
Power Supply	DC 12V 500mA

Environmental and Physical

Operating Temp	0°C~40°C (32°F~104°F)
Operating Humidity	10% - 95% RH, Non-condensing

I. Hardware installation

2.1 The Front Panel

The front panel of the 802.11n Wireless 3G Router consists of several LED indicators, which is designed to indicate connections. The table describes the LEDs on the front panel of the router.

Name	Action	Description
Power	OFF	No Power
	ON	Power on
SYS	ON	The router is initializing
	Flashing	The router is working properly
	OFF	The router has a hardware error
WLAN	OFF	The Wireless Radio function is enabled
	ON	The Wireless Radio function is transmitting data.
WPS	ON	Security Protect On
WAN	ON	There is a device linked to the corresponding port but no activity
	Flashing	There is an active device linked to the corresponding port
	OFF	There is no WAN linked to the corresponding port
LAN 1/2/3/4	ON	There is a device linked to the corresponding port but no activity
	Flashing	There is an active device linked to the corresponding port
	OFF	There is no device linked to the corresponding port

2.2 The Rear Panel



Rear Panel

1. Wireless antenna, two fix antennas.
2. WAN RJ45 port for connecting the router to a cable, DSL modem or Ethernet
3. Four LAN 10/100Mbps RJ45 ports for connecting the router to the local PCs or switches.
4. DC power jack: For the power adapter
 5. Factory Default Reset button
 6. USB 2.0 port to connect GSM/CDMA/3G modem and USB printer

Factory defaults:

1. Turn on the router's power.
2. Press and hold the default reset button until the system LED lights up(about 5 seconds).
3. Release the reset button and wait for the router to reboot.

System Requirements

- Broadband Internet Access Service (DSL/Cable/Ethernet)
- One DSL/Cable modem that has an RJ45 connector (you do not need it if you connect the router to Ethernet)
- Each PC on the LAN needs a working Ethernet Adapter and an Ethernet cable with RJ45 connectors
- TCP/IP protocol must be installed on each PC
- Web browser, such as Microsoft Internet Explorer 5.0 or later, Netscape Navigator 6.0 or later

2.3 Hardware installation

This Chapter provides a step-by-step guide to the installation and configuration of the Wireless Router. It is strongly suggested to go over the whole chapter before installation.

2.3.1 Network configuration

1. Connect the ADSL or Cable modem to the Ethernet WAN port on the back of the Wireless Router by using the UTP cable.
2. Connect the phone line from the wall socket to the line-in port on the ADSL modem, or the coaxial cable to the line-in port on the Cable modem.
- 3 . Plug-in the power adapter to the modem and turn on the power. Install the Ethernet card into the computer by referring to the User Guide that came with the card.

4. Connect the computer to the Wireless Router by using standard twisted-pair Ethernet cable from the computer's Ethernet card to an 10/100Mbps Ethernet port on the back of the Wireless Router.
5. Plug-in the power adapter to the Router and the other side to the wall outlet.

2.3.2 Computer configuration

In order to communicate with this Wireless Router, you have to configure the IP addresses of your computer to be compatible with the device. The router supports DHCP server and it is enabled as default. Users that configure your IP address as “Obtain an IP address automatically” may skip the following IP configuration instruction.

Note:

1. The default network setting of the device:

IP address: **192.168.7.1**

Subnet Mask: **255.255.255.0**

DHCP Server: **enabled**

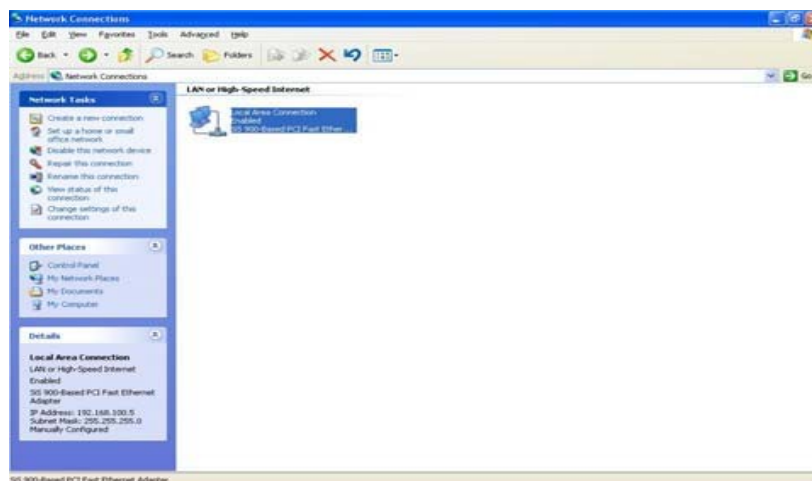
2. In the following TCP/IP configuration guide, the IP address “192.168.7.1” is assumed to be your IP address if you want to specify IP addresses manually. Please DO NOT choose “192.168.7.1” for the IP address (192.168.7.1) has been set as the default IP for this device.

3. The following TCP/IP configuration guide uses windows XP as the presumed operation system.

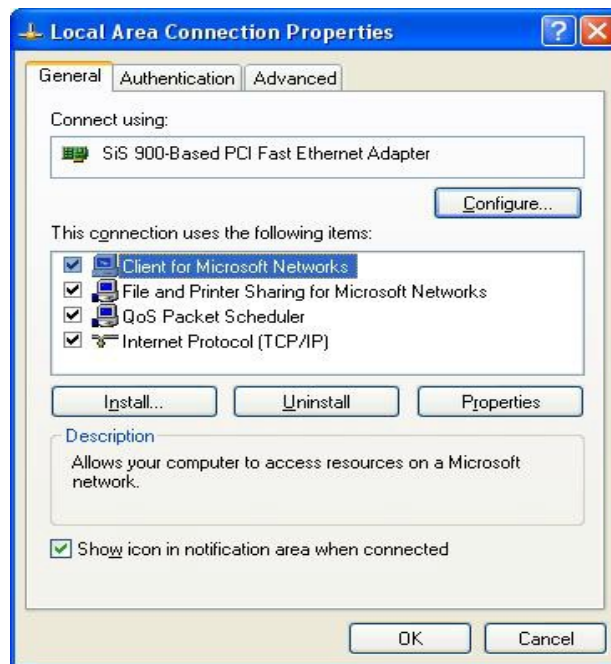
2.3.2.1 Configure PC's IP addresses

- 1.If you are in Classic Start menu view, click **Start > Settings > Control Panel > Network Connections**.

- 2.If you are in Start menu view, click **Start > Control Panel > Network Connections**.



2. **Double click Local Area Connection.**
3. **Choose Internet Protocol (TCP/IP) and click Properties.**

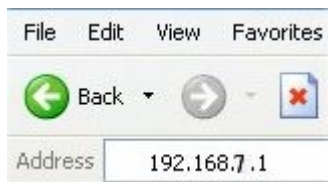


4. **You may choose “Obtain an IP address automatically”(recommend) to get IP address automatically or choose “Use the following IP address” to specify IP addresses manually. Please click the OK button after your configuration.**

II. Wireless Router configuration

This product provides Web based configuration scheme, which is configured by Netscape Communicator or Internet Explorer. Take example for Microsoft Internet Explorer.

1. Activate your browser, select Tools, point to Internet option, click connect, select dial-up network never, affirm inspect setting automatically, configure scrip automatically and use agency server on LAN setting not to be selected.
2. Type <http://192.168.7.1> in Address field and press Enter. Key in the user name and password (if you use it first, you can type the factory default setting .User name is admin and password is admin), click on the OK button.



After login successfully, web-configuration will be displayed.

The screenshot shows the Leoxsys LEO-300N-3G web configuration interface. The top header features the 'leoxsys' logo on the left and 'LEO-300N-3G' on the right. A 'Menu' sidebar on the left contains links to 'Setup Wizard', 'Wireless', 'WAN Setting', 'LAN', 'QOS Setting', 'Security', 'Service', 'Management', and 'Status' (which is highlighted). Below the sidebar, the main content area displays the 'Current System Status' page. A breadcrumb trail at the top of the content area reads: 'You current location: LEO-300N-3G 802.11N Wireless Router >> Status >> Current System Status'. A message box states: 'This page shows the current status and some basic settings of the device.' The status is organized into three sections: 'System', 'Wireless Status', and 'LAN Status'. Each section contains a table of device information.

System	
Uptime:	0day:0h:21m:19s
Firmware Version:	LEO-300N-3G.1.0.0.1
Build Time:	Tue Dec 29 23:59:57 CST 2009

Wireless Status	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	leoxsys
Channel Number	6
Encryption	Disabled
BSSID	00:e0:4c:fc:dd:70
Associated Clients	0

LAN Status	
Attain IP Protocol:	Fixed IP
IP Address:	192.168.7.1
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.7.1
DHCP Server:	Enabled
MAC Address:	00:e0:4c:fc:dd:70

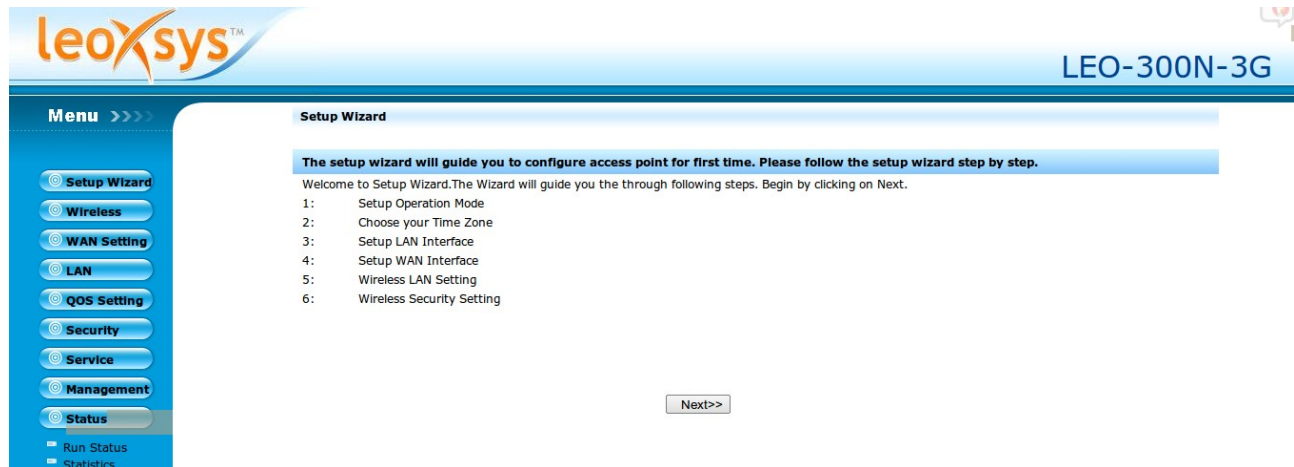
WAN Configuration	
Attain IP Protocol:	Fixed IP Disconnected
IP Address:	0.0.0.0
Subnet Mask:	0.0.0.0
Default Gateway:	0.0.0.0
MAC Address:	00:e0:4c:fc:dd:75

At the bottom left of the interface, the URL 'http://192.168.7.1/status.asp' is visible.

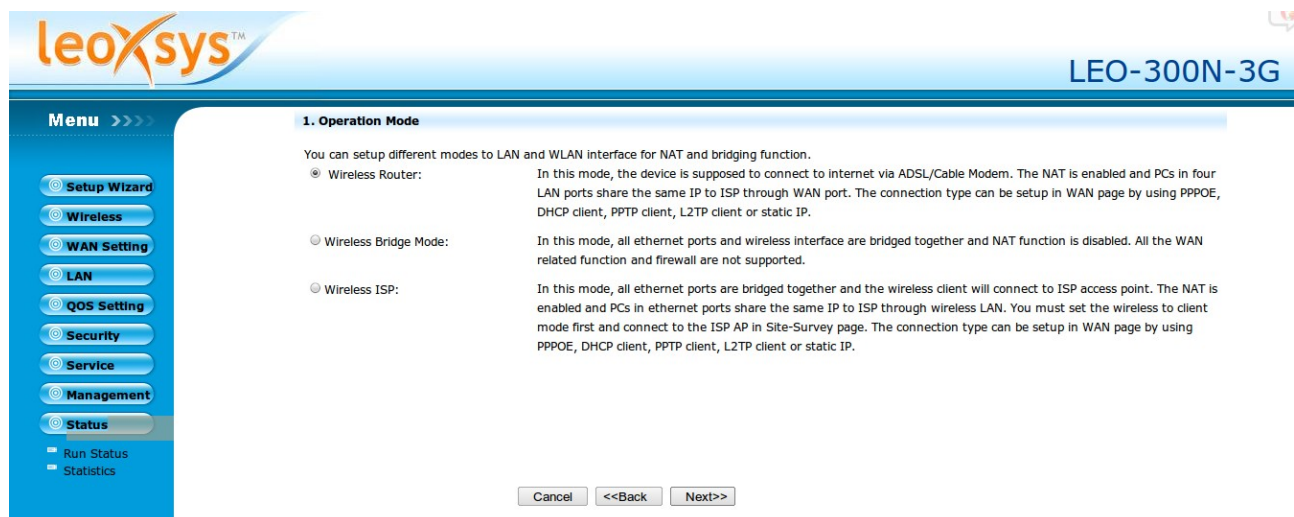
3.2 Wireless Settings

3.2.1 Basic Settings

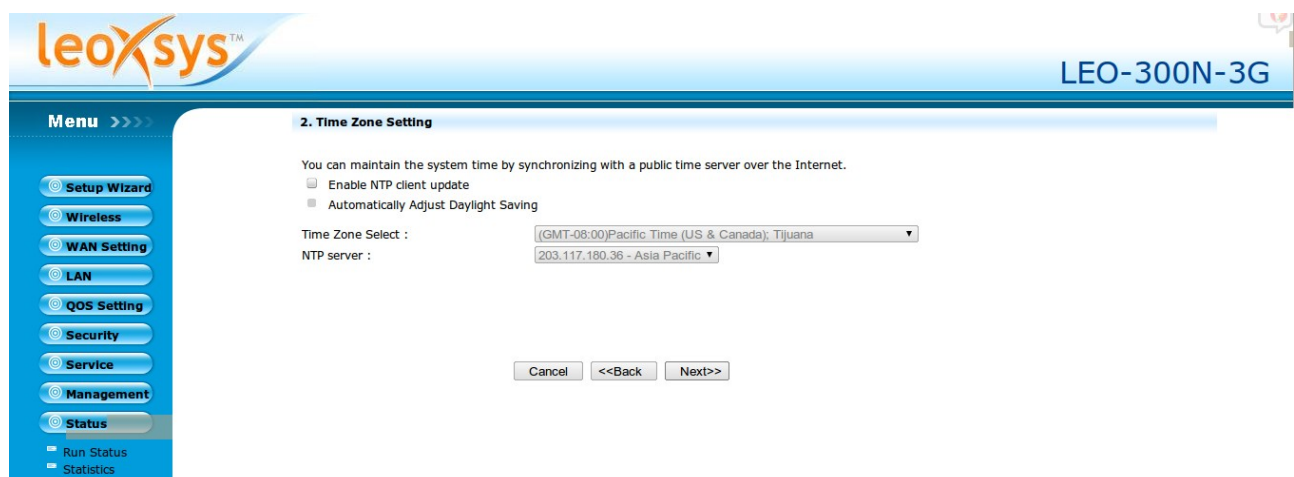
You can set up the configuration of your Wireless and monitor the Wireless Clients associate with your AP.



click Next>>



Which One You Want Select than one and click Next >>



Click Next>>

The screenshot shows the LEO-300N-3G web interface. The top header features the 'leoxsys' logo and the model name 'LEO-300N-3G'. A left sidebar contains a 'Menu' with options: Setup Wizard, Wireless, WAN Setting, LAN, QOS Setting, Security, Service, Management, Status, Run Status, and Statistics. The main content area is titled '3. LAN Interface Setup'. It includes a description: '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 address, subnet mask, DHCP, etc..'. Below this, there are input fields for 'IP Address' (containing '192.168.7.1') and 'Subnet Mask' (containing '255.255.255.0'). At the bottom of the form are three buttons: 'Cancel', '<<Back', and 'Next>>'.

Don't Change any Thing click Next >>

The screenshot shows the LEO-300N-3G web interface at the '4. WAN Interface Setup' page. The sidebar menu is the same as in the previous screenshot. The main content area is titled '4. WAN Interface Setup'. It includes a description: 'This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.' Below this, there is a dropdown menu for 'WAN Access Type' set to 'USB MODEM'. A section titled '3G modem' contains the following fields: 'Modem Status' (USB 3G Modem is not available!), 'Operator Name' (BSNL 3G), 'APN Name' (with a note '(Required for 3G/HSDPA/HSUPA/GSM modem)'), 'Phone Number' (with a note '(Required)(#777 for CDMA and *99# for 3G/HSDPA/GSM)'), 'User Name' (with a note '(Required)'), 'Password' (with a note '(Required)'), and 'Connection Status' (Connected). At the bottom are three buttons: 'Cancel', '<<Back', and 'Next>>'.

You need to provide below settings to setup USB GSM/CDMA/3G modem .

APN NAME : for bsnl 3G ,its bsnlnet for other provider,kindly get GPRS settings.

Phone Number: *99# for GSM/GPRS and #777 for CDMA

User Name: Your 10 digit Mobile Number

Password : Your 10 digit Mobile Number

3.2.2 Advance

You can set advanced wireless LAN parameters of this router. We recommend not changing these parameters unless you know what changes will be there on this router.





LEO-300N-3G

Menu >>>

Setup Wizard

Wireless

Basic

Advanced

Security

Access Control

WDS

WPS

Site Survey

WAN Setting

LAN

QOS Setting

Security

Service

Management

Status

You current location:LEO-300N-3G 802.11N Wireless Router >>Wireless Setting >>Advanced Setting

This page provides the wireless high-level set of parameters, under normal circumstances do not need to make these changes to maintain the system's default settings. If you know the parameters of wireless, you can set these settings as per requirement.

Wireless Advanced Setting

Fragment Threshold:	2346	(256-2346)
RTS Threshold:	2347	(0-2347)
Beacon Interval:	100	(20-1024 ms)
Preamble Type:	☒ Long Preamble ☐ Short Preamble	
IAPP:	☒ Enabled ☐ Disabled	
Protection:	☒ Enabled ☐ Disabled	
Aggregation:	☒ Enabled ☐ Disabled	
Short GI:	☒ Enabled ☐ Disabled	
WLAN Partition:	☐ Enabled ☒ Disabled	
RF Output Power:	☒ 100% ☐ 70% ☐ 50% ☐ 35% ☐ 15%	

Save

Reset

1. Fragment Threshold: The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting.

2. RTS Threshold: This value should remain at its default setting of 2432. If inconsistent data flow is a problem, only a minor modification should be made.

3.Beacon Interval: Beacons are packets sent by an Access Point to synchronize a wireless network. Specify a value. 100 is the default setting and is recommended.

4.The Preamble type in [802.11](#) based wireless communication defines the length of the [CRC](#) (Cyclic Redundancy Check) block for communication between the Access Point and roaming wireless adapters. You can choose long or short one.

3.2.3 Security

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

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Menu >>>

- Setup Wizard
- Wireless
 - Basic
 - Advanced
 - Security
 - Access Control
 - WDS
 - WPS
 - Site Survey
- WAN Setting
- LAN
- QOS Setting
- Security
- Service
- Management
- Status

You current location: LEO-300N-3G 802.11N Wireless Router >>> Wireless Setting >> Security Setting

This page carries the wireless network encryption settings, different SSID may choose the different encryption way and different security rank of encryption key.

SSID

SSID :

Encryption:

802.1x Authentication: ☐

1 SSID choice: select the SSID which you want to set its Security Mode.

2 Encryption: set the security mode at the SSID which you select. There are nine modes for you select. Whatever you select, the page will show you what parameters you configuration, Refer to **page 60** for more information regarding wireless security.

3.2.4 Access Control

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Menu >>>

- Setup Wizard
- Wireless
 - Basic
 - Advanced
 - Security
 - Access Control
 - WDS
 - WPS
 - Site Survey
- WAN Setting
- LAN
- QOS Setting
- Security
- Service
- Management
- Status

You current location: LEO-300N-3G 802.11N Wireless Router >>> Wireless Setting >> Access Control

If you choose 'Allowed Listed', only those wireless clients can access router whose wireless MAC is listed.

Wireless access control rule

Wireless Access Control Mode:

MAC Address

Comment

Current Access Control List

	MAC Address	Comment	Select
Delete Selected	Delete All	Reset	

3.2.5 WDS



LEO-300N-3G

Menu >>>

Setup Wizard

Wireless

- Basic
- Advanced
- Security
- Access Control
- WDS
- WPS
- Site Survey

WAN Setting

LAN

QOS Setting

Security

Service

Management

Status

You current location:LEO-300N-3G 802.11N Wireless Router >>Wireless Setting >>WDS

Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.

WDS Setting

Enable WDS : ☐
MAC Address :
Data Rate:

Auto

Comment :

Current WDS AP List				
	Tx Rate (Mbps)	Tx Rate (Mbps)	Comment	Select
Delete Selected	Reset			

3.2.6 WPS



LEO-300N-3G

Menu >>>

Setup Wizard

Wireless

- Basic
- Advanced
- Security
- Access Control
- WDS
- WPS
- Site Survey

WAN Setting

LAN

QOS Setting

Security

Service

Management

Status

You current location:LEO-300N-3G 802.11N Wireless Router >>Wireless Setting >>WPS Setting

This page allows you to change the setting for WPS (Wi-Fi Protected Setup). Using this feature you could let your wireless client automatically synchronize its setting and connect to the Access Point in a minute without any hassle.

WPS Setting

Disabled WPS : ☒
WPS Status :

☒ Configured
☐ UnConfigured

Self-PIN Number: 93816779

Push Button Configuration(PBC):

Current Key Info		
Authentication	Encryption	Key
Open	None	N/A

Client PIN Number

Client PIN Number:

1.WPS: Enable – select if you want to make the WPS enable unmark the check box. If you don't need mark enable The follow display the setting and status of WPS.

2. WPS mode: the mode of WPS, if you select PIN button, you need a PIN, or else, you select the PBC button. And then click Save button.

3.2.7 Site Survey


LEO-300N-3G

Menu >>>

- Setup Wizard
- Wireless
 - Basic
 - Advanced
 - Security
 - Access Control
 - WDS
 - WPS
 - Site Survey
- WAN Setting
- LAN
- QoS Setting
- Security
- Service
- Management
- Status

You current location:LEO-300N-3G 802.11N Wireless Router >>Wireless Setting >>Site Survey

This page provides tool to scan the wireless network. If any Access Point or IBSS is found, you could choose to connect it manually when client mode is enabled.

SSID	BSSID	Channel	Type	Encrypt	Signal	None
Refresh Connect						

3.3 WAN Setting

3.3.1 WAN Basic


LEO-300N-3G

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
 - Basic
 - Advanced
- LAN
- QoS Setting
- Security
- Service
- Management
- Status

You current location:802.11N Wireless Router (1Tx/2Rx)>>WAN >>Basic Setting

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Setting

WAN Access Type: Static IP ▼

Static ip mode

IP Address:

Subnet Mask:

Default Gateway:

MTU: (1400-1500)

DNS 1:

DNS 2:

DNS 3:

Clone MAC Address

MAC Address: Use PC MAC Reset (Do not include '-' or ':' or '0' show disable the MAC address clone)

Save
Reset

1. WAN Connection Type: the connection mode of WAN port. There are four choice you can select.

If you select **DHCP (Auto Config)**, the information is obtained from your ISP automatically. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for Cable modem services. **Host Name (optional):** The Host Name is optional but may be required by some ISPs.

WAN Setting

WAN Connection Type: DHCP (Auto Config) ▼

DHCP Mode

Host Name (optional)

Choose **PPPoE** (Point to Point Protocol over Ethernet), if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

User Name: Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password in the next box. **MTU:** Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

MRU: Maximum Receive Unit - you may need to change the MRU for optimal performance with your specific ISP. 1492 is the default MTU.

WAN Setting	
WAN Connection Type:	PPPOE (ADSL) ▼
PPPoE Mode	
User Name	jxms5402
Password	●●●●●●●●
Verify Password	●●●●●●●●
MTU :	1492
MRU :	1492

Choose **PPTP** (Point-to-Point-Tunneling Protocol), if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

PPTP Server IP Address: Enter the Server IP provided by your ISP (optional)..

User Name: Enter your PPTP username. **Password:** Enter your PPTP password and then retype the password in the next box.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Address Mode: Select Static if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select

Dynamic. **IP Address:** Enter the IP address (Static PPTP only). **Subnet Mask:** Enter the Primary and Secondary DNS Server Addresses (Static PPTP only). **Default Gateway:** Enter the Gateway IP Address provided by your ISP.

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Menu >>>

4. WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Access Type: **USB MODEM**

3G modem

Modem Status: USB 3G Modem is not available!

Operator Name: **BSNL 3G**

APN Name: (Required for 3G/HSDPA/HSUPA/GSM modem)

Phone Number: (Required)(#777 for CDMA and *99# for 3G/HSDPA/GSM)

User Name: (Required)

Password: (Required)

Connection Status: Connected

You need to provide below settings to setup USB GSM/CDMA/3G modem .

APN NAME : for bsnl 3G ,its bsnlnet for other provider,kindly get GPRS settings.

Phone Number: *99# for GSM/GPRS and #777 for CDMA

User Name: Your 10 digit Mobile Number

Password : Your 10 digit Mobile Number

Select Static IP Address if all the Internet port's IP information is provided to you by your ISP.

You will need to enter in the IP address, subnet mask, gateway address, and DNS address (es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.

IP Address: Enter the IP address assigned by your ISP.

Subnet Mask: Enter the Subnet Mask assigned by your ISP. **Default Gateway:** Enter the Gateway assigned by your ISP.

Primary DNS Server: The DNS server information will be supplied by your ISP (Internet Service Provider.).

Secondary DNS Server: The DNS server information will be supplied by your ISP (Internet Service Provider.).

WAN Setting	
WAN Connection Type:	Static Mode(fixed IP) ▼
Static Mode	
IP Address:	192.168.10.188
Subnet Mask	255.255.255.0
Default Gateway	192.168.10.1
Primary DNS Server	202.103.24.68
Secondary DNS Server	202.103.0.117

2. Enabled: Enable – select if you want to clone the wan port MAC Address.

3. MAC Address: fill the MAC Address you want to clone. Also you can click Fill my MAC button to fill you PC's MAC Address automally.

3.3.2 WAN Advanced

leoXsys™ LEO-300N-3G

Menu >>>

You current location:LEO-300N-3G 802.11N Wireless Router>>WAN >>Advanced Setting

This page is used to configure the VPN,upnp etc..

Advanced setting

Enable uPNP:	☐	Show UPNP situation
Enable Ping Access on WAN:	☐	(For safety, do not enable non-essential.)
Enable Web Server Access on WAN:	☐	(For safety, do not enable non-essential.)
Enable IGMP Proxy:	☒	
Enable IPsec pass through on VPN connection:	☐	
Enable PPTP pass through on VPN connection:	☐	
Enable L2TP pass through on VPN connection:	☐	
Port loopback:	☐	
NAT Fast Forward:	☐	

[Apply](#) [Cancel](#)

3.4 LAN Setting

3.4.1 LAN Interface



LEO-300N-3G

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
- LAN**
 - LAN Interface
 - DHCP Setting
 - DHCP Client
 - QOS Setting
- Security
- Service
- Management
- Status

You current location: LEO-300N-3G 802.11N Wireless Router >> LAN >> LAN Setting

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 address, subnet mask, DHCP, etc...*Note that your LAN IP address can not be WAN port IP address in the same network segment, otherwise it will cause the system to an exception.*

LAN Setting

IP Address:

Subnet Mask:

Default Gateway:

DHCP: Server

DHCP Client Range: - Show Client

Domain Name:

802.1d Spanning Tree: Disabled

Clone MAC Address:

Save
Reset

1 IP Address: the IP of Lan.

2 Subnet Mask: the subnet mask of Lan.

3 Default Gateway: Default gateway of Lan

4 DHCP Type: Enable – select if you want to use the Wireless Router as a DHCP server. And then Enter the starting and ending IP addresses for the DHCP server's IP assignment.

5 DHCP Client Range:

6 Domain name: Enter your Domain name of Lan

7 802.1d Spanning Tree: The 802.1D Spanning Tree was designed at a time when the recovery of connectivity after an outage within a minute or so was considered adequate performance.

Enable – select if you want this function.

8 Clone Mac Address:

3.4.2 DHCP Setting



LEO-300N-3G

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
- LAN**
 - LAN Interface
 - DHCP Setting
 - DHCP Client
 - QOS Setting
- Security
- Service
- Management
- Status

You current location: LEO-300N-3G 802.11N Wireless Router >> LAN >> Static dhcp

This page allows you reserve IP addresses, and assign the same IP address to the network device with the specified MAC address any time it requests an IP address. This is almost the same as when a device has a static IP address except that the device must still request an IP address from the DHCP server.

Static dhcp setting

Enable Static DHCP ☐

IP Address:

MAC Address:

Comment:

Save
Reset

Static DHCP List

	IP Address	MAC Address	Comment	Select
Delete Selected	Delete All	Reset		

IP Address:Enter your configured client ip address

MAC Address: Enter your configured system MAC address.

Comment: you can assign system name

Click **Save>>** It will add static DHCP list

The screenshot shows the leoxsys LEO-300N-3G router web interface. The left sidebar contains a menu with options: Setup Wizard, Wireless, WAN Setting, LAN, LAN Interface, DHCP Setting, DHCP Client, QOS Setting, Security, Service, Management, and Status. The main content area displays the 'You current location: LEO-300N-3G 802.11N Wireless Router >> LAN >> dhcp client list'. Below this, a message states: 'This table shows the assigned IP address, MAC address and time expired for each DHCP leased client.' A table titled 'DHCP CLIENT' contains the following data:

IP Address	MAC Address	Time Expired(s)
192.168.7.100	00:23:5a:d1:30:ba	862173

Below the table is a 'Refresh' button.

This is report of configured Client device using DHCP

3.5 Security

3.5.1 Port Filtering

The screenshot shows the leoxsys LEO-300N-3G router web interface. The left sidebar contains a menu with options: Setup Wizard, Wireless, WAN Setting, LAN, QOS Setting, Security, Port filter, MAC filter, IP filter, URL filter, Firewall, Service, Management, and Status. The main content area displays the 'You current location: LEO-300N-3G 802.11N Wireless Router >> Security >> Port Filtering'. Below this, a message states: 'Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.' A section titled 'Basic Setting' contains the following fields:

- Enable Port Filtering: ☐
- Port Range: -
- Protocol:
- Comment:

Below these fields are 'Save' and 'Reset' buttons. A section titled 'Current Filter Table' contains the following table:

Port Range	Protocol	Comment	Select
Delete Selected	Delete All	Reset	

MAC Filtering: click the check box to enable. filter a LAN system Mac Address filtering facility.

3.5.2 MAC Filtering



LEO-300N-3G

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
- LAN
- QOS Setting
- Security**
 - Port filter
 - MAC filter
 - IP filter
 - URL filter
 - Firewall
- Service
- Management
- Status

You current location:LEO-300N-3G 802.11N Wireless Router>>Security>>MAC Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Basic Setting
 Enable MAC Filtering ☐
 MAC Address:
 Comment:

Current Filter Table

	MAC Address	Comment	Select
Delete Selected	Delete All	Reset	

MAC Filtering: click the check box to enable. filter a LAN system Mac Address filtering facility.

3.5.3 IP Filtering



LEO-300N-3G

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
- LAN
- QOS Setting
- Security**
 - Port filter
 - MAC filter
 - IP filter
 - URL filter
 - Firewall
- Service
- Management
- Status

You current location:LEO-300N-3G 802.11N Wireless Router>>Security>>IP Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

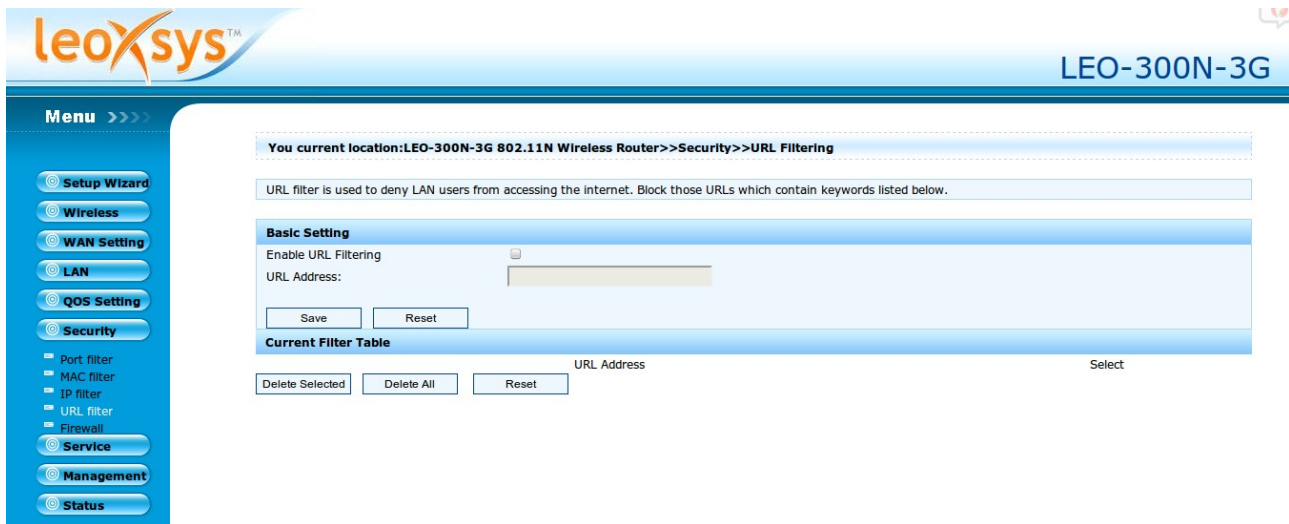
Basic Setting
 Enable IP Filtering ☐
 Local IP Address:
 Protocol:
 Comment:

Current Filter Table:

	Local IP Address	Protocol	Comment	Select
Delete Selected	Delete All	Reset		

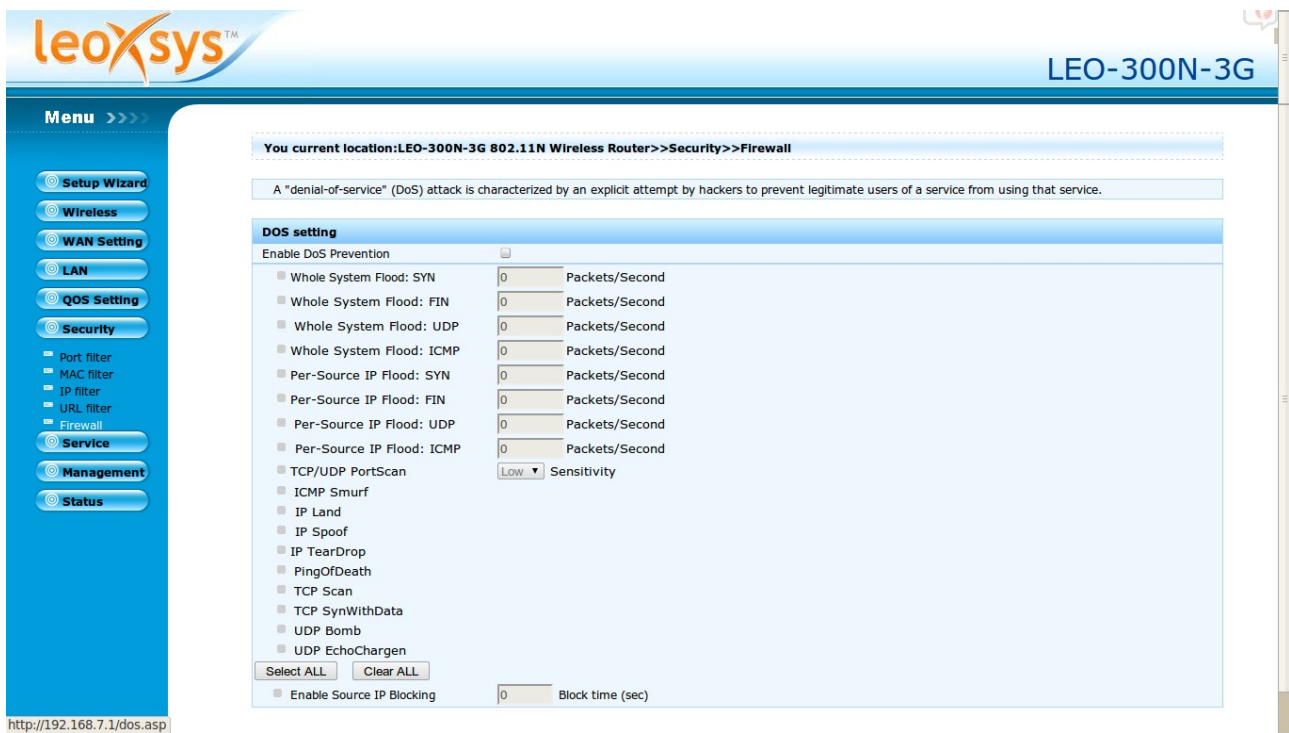
IP Filtering: click the check box to enable. filter a LAN Ip with appropriate protocol filtering facility

3.5.4URL Filtering:



URL Filtering: click the check box to enable. Block the URL what ever you want and click save button.

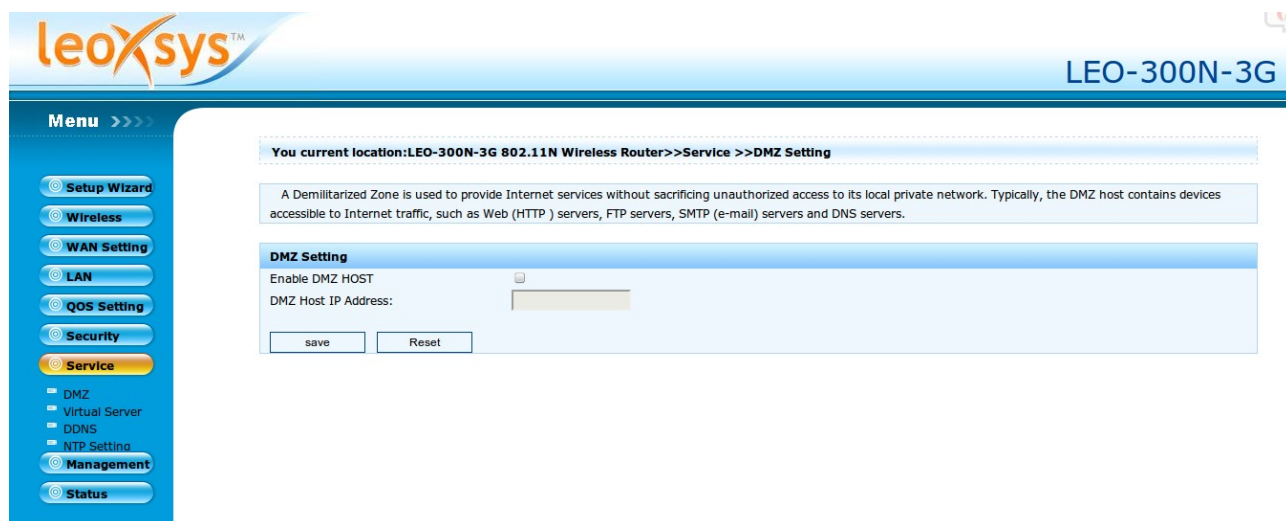
3.5.5 Firewall



Firewall: firewall feature filters out unrecognized packets to protect your LAN network and prevent cyber attacks. so all computers networked with the Wireless Router are invisible to the outside world. The Wireless Router offers firewall type functionality. Enable – firewall function is enable. And then click Apply button.

3.6 Service

3.6.1 DMZ Setting



leoXsys™ LEO-300N-3G

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
- LAN
- QOS Setting
- Security
- Service**
 - DMZ
 - Virtual Server
 - DDNS
 - NTP Setting
- Management
- Status

You current location:LEO-300N-3G 802.11N Wireless Router>>Service >>DMZ Setting

A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.

DMZ Setting

Enable DMZ HOST ☐

DMZ Host IP Address:

1. DMZ Setting: If an application has trouble working from behind the router, you can expose one computer to the Internet and run the application on that computer.

Note: Placing a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.

2. DMZ Host IP Address: Specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication. If this computer obtains it's IP address automatically using DHCP, be sure to make a static reservation on the Basic > DHCP page so that the IP address of the DMZ machine does not change.

3.6.2 Virtual Server

The Wireless Router can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The Wireless Router is also capable of port-redirection meaning incoming traffic to a particular port may be redirected to a different port on the server computer. Each virtual service that is created will be listed at the bottom of the screen in the Virtual Servers List.

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
- LAN
- QOS Setting
- Security
- Service
 - DMZ
 - Virtual Server
 - DDNS
 - NTP Setting
 - Management
- Status

You current location: LEO-300N-3G 802.11N Wireless Router >> Services >> virtual server

Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Gateway's NAT firewall.

Visual Server setting

Enable Visual Server setting: ☒

IP Address:

Protocol:

Port Range:

Comment:

Current visual server table

Local IP Address	Protocol	Port Range	Comment	Select
192.168.1.100	TCP+UDP	8080-8080		☐

1. Virtual Server Settings: Check Enabled to activate entry.
2. IP Address: enter the IP Address of the computer on your local network that you want to allow the incoming service to.
3. Protocol: TCP, UDP, or both. If you are not sure, select both.
4. Port Range: enter the port range of the computer on your local network that you want to allow the incoming service to.
5. Comment: Enter a name for your virtual server entry.

In the below of the page, you will see the current current virtual servers in system you just set. You can delete some rules if you want on clicking Delete selected button when you have selecte.

3.6.3 DDNS

The DDNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter in your domain name to connect to your server no matter what your IP address is.

DDNS (Dynamic Domain Name System) keeps dynamic IP addresses (e.g., IP addresses assigned by a DHCP capable router or server) linked to a domain name. Users who have a Dynamic DNS account may use this feature on the Wireless Router.

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
- LAN
- QOS Setting
- Security
- Service
 - DMZ
 - Virtual Server
 - DDNS
 - NTP Setting
 - Management
- Status

You current location: LEO-300N-3G 802.11N Wireless Router >> Service >> DDNS

Dynamic DNS is a service, that provides you with a valid, unchanging, internet domain name (an URL) to go with that (possibly everchanging) IP-address.

DDNS Status

DDNS status: DDNS service Disable!

DDNS Setting

Enable DDNS Service: ☒

DDNS Server:

Account: (Must be filled when enable this function.)

Password: (Must be filled when enable this function.)

DDNS: (Must be filled when enable this function.)

1. **DDNS status:** the status of DDNS you set.
2. **Enable DDNS Service:** When an IP address is automatically assigned by a DHCP server, DDNS automatically updates the DNS server. Check the box to enable DDNS.
3. **DDNS Server:** Choose your DDNS provider from the drop down menu.
4. **Account:** Enter the Username for your DDNS account.
5. **Password:** Enter the Password for your DDNS account.
6. **DDNS:** Enter the Host Name that you registered with your DDNS service provider.

3.6.4 NTP Setting

leoXsys™ LEO-300N-3G

Menu >>>

- Setup Wizard
- Wireless
- WAN Setting
- LAN
- QoS Setting
- Security
- Service
 - DMZ
 - Virtual Server
 - DDNS
 - NTP Setting
 - Management
- Status

You current location:LEO-300N-3G 802.11N Wireless Router>>Service>>NTP

You can maintain the system time by synchronizing with a public time server over the Internet.

NTP Setting

Current Time : Y 2009 Mon 12 Day 30 Hr 0 Mn 36 Sec 8

Time Zone Select : (GMT-08:00)Pacific Time (US & Canada); Tijuana

☐ Enable NTP client update

☐ Automatically Adjust Daylight Saving

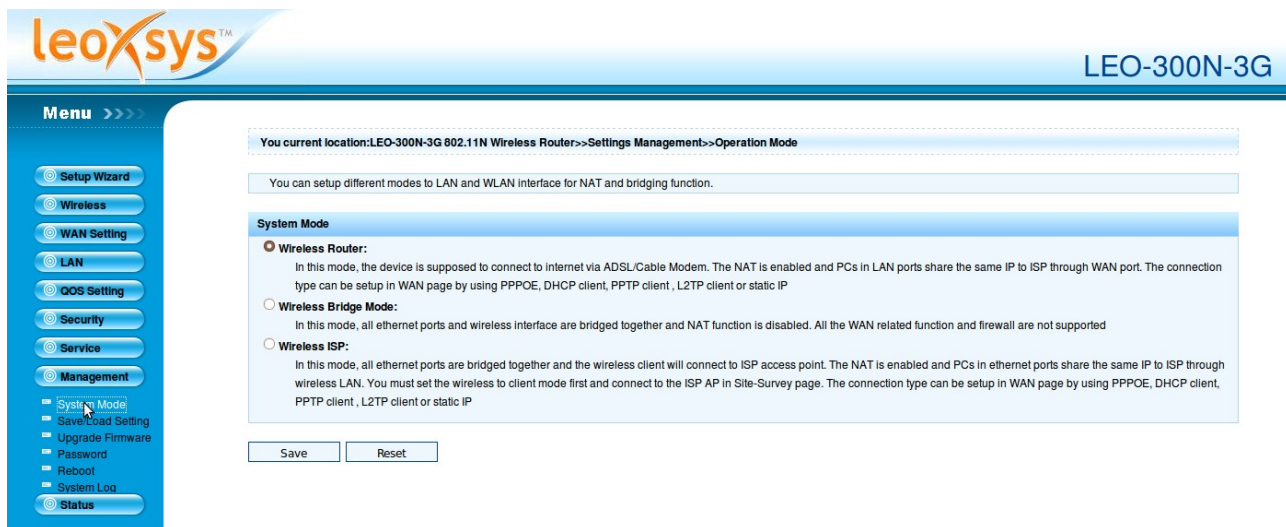
NTP Server: ☒ 203.117.180.36 - Asia Pacific ☐ (Manual IP Setting)

Save Reset Refresh

1. **Time Zone:** Select the Time Zone from the drop-down menu.
2. **NTP Server:** NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. Check this box to use a NTP server. This will only connect to a server on the Internet, not a local server.
3. **NTP synchronization:** synchronize NTP

3.7 Management

3.7.1 Operation Mode



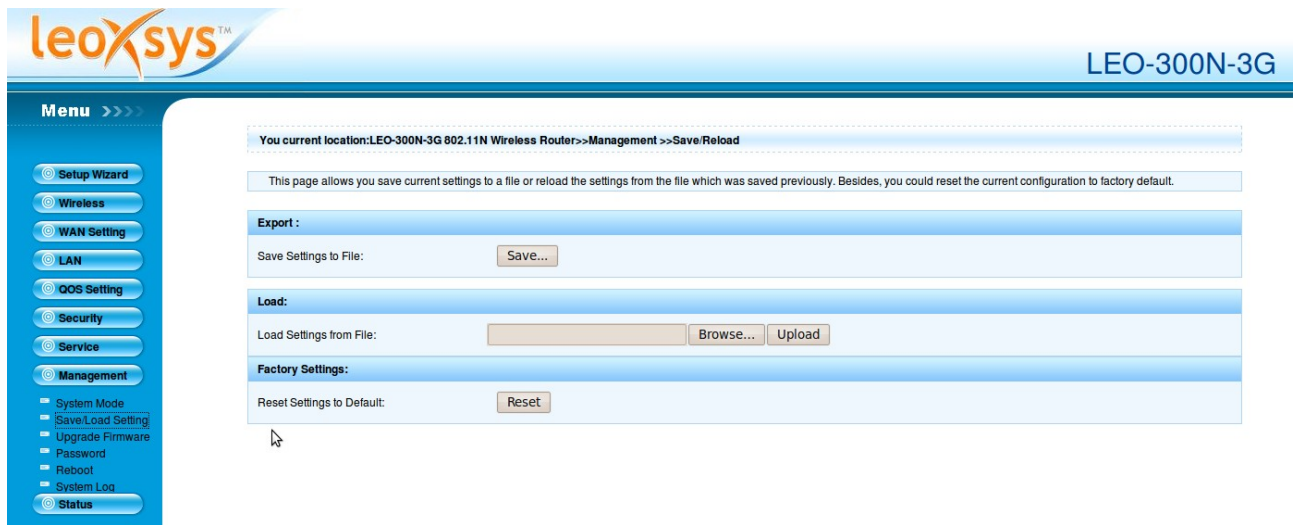
1. Wireless Bridge: if you select Gateway, The first ethernet port is treated as WAN port. The other ethernet ports and the wireless interface are bridged together and are treated as LAN ports. if you select wireless Router, bridge interface.

2. Wireless Bridge: All ethernet and wireless interfaces are bridged into a single

3. Wireless ISP: if you select Ethernet Converter, The wireless interface is treated as WAN port, and the ethernet ports are LAN ports.

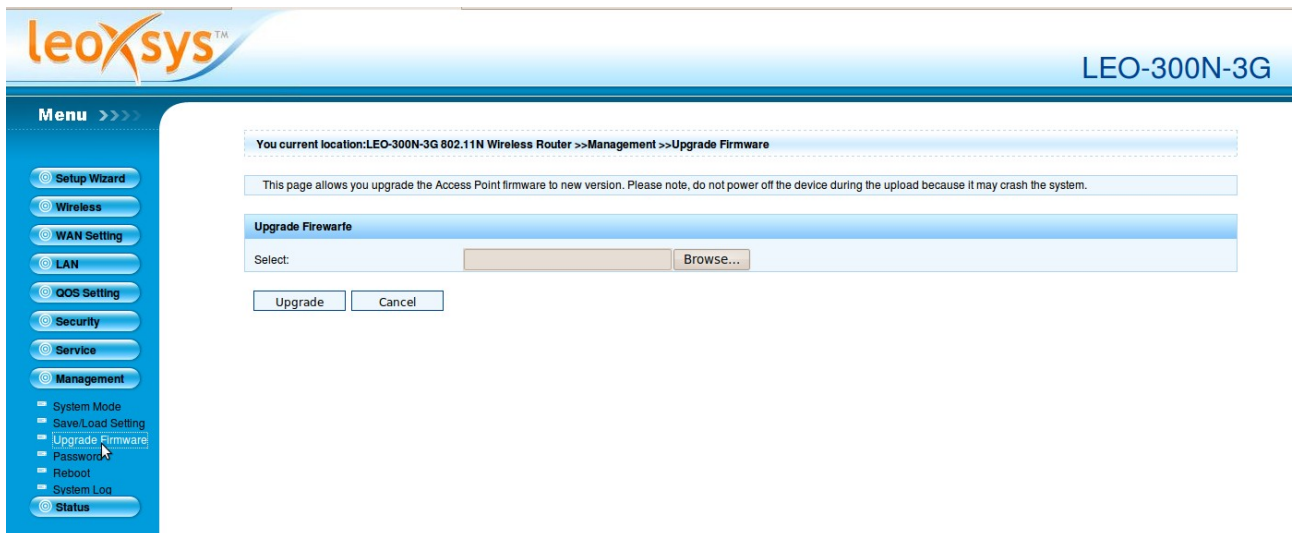
3.7.2 Save/Reload

The current system settings can be saved as a file onto the local hard drive only clicking Export button. The saved file or any other saved setting file created by the Wireless Router can be uploaded into the unit. To reload a system settings file, click on “Browse” to search the local hard drive for the file to be used, then click Import button when finished.



3.7.3 Upgrade

You can upgrade the firmware or bootloader of the device using this tool. Make sure that the firmware or bootloader you want to use is saved on the local hard drive of the computer. Click on “Browse” to search the local hard drive for the firmware or bootloader to be used for the update. Upgrading the firmware or bootloader will not change any of your system settings but it is recommended that you save your system settings before doing a firmware upgrade. Please contact your distributor or dealer for details.



Browse: After you have downloaded the new firmware, click Browse in this window to locate the firmware update on your hard drive. Click Apply to complete the firmware upgrade.

Note: Do not power off the unit when it is being upgraded. When the upgrade is complete, the unit will be restarted automatically.

3.7.4 Password

This page allows you to change the factory default user name and password of the router. It is strongly recommended that you change the factory default username and password of the router.

All users who try to access the router's web-based utility will be prompted for the router's user name and password.

Note: The new user name and password must not exceed 14 characters in length and must not include any spaces. Enter the new password twice to confirm it. And click Apply button when finished.

The screenshot shows the LEO-300N-3G web interface. The top header features the 'leoxsys' logo on the left and 'LEO-300N-3G' on the right. A 'Menu' sidebar on the left contains buttons for Setup Wizard, Wireless, WAN Setting, LAN, QOS Setting, Security, Service, Management, and Status. The 'Management' button is highlighted. The main content area has a breadcrumb trail: 'You current location: LEO-300N-3G 802.11N Wireless Router >> Management >> Password'. Below this is a warning message: '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. Empty user name and password will disable the protection.' The 'Password Setting' section contains three input fields: 'User Name:', 'New Password:', and 'Confirmed Password:'. At the bottom of this section are 'Save' and 'Reset' buttons.

3.7.5 Reboot

The screenshot shows the LEO-300N-3G web interface. The top header features the 'leoxsys' logo on the left and 'LEO-300N-3G' on the right. A 'Menu' sidebar on the left contains buttons for Setup Wizard, Wireless, WAN Setting, LAN, QOS Setting, Security, Service, Management, and Status. The 'Management' button is highlighted. The main content area has a breadcrumb trail: 'You current location: LEO-300N-3G 802.11N Wireless Router >> Management >> Reboot'. Below this is a message: 'Reboot the system. It takes about 1 minute to reboot, please wait patiently.' The 'Reboot System' section contains a 'Reboot button:' label and a 'Reboot' button.

Click Reboot button to restart the unit.

3.5.6 System Log

The router automatically logs (records) events of possible interest in its internal memory. If there isn't enough internal memory for all events, logs of older events are deleted but logs of the latest events are retained. The **System Log** allows you to view the router logs. You can also click **Clear** button to the current log.

The screenshot shows the 'System Log' configuration page for the LEO-300N-3G router. The left sidebar contains a 'Menu' with options: Setup Wizard, Wireless, WAN Setting, LAN, QOS Setting, Security, Service, Management, System Mode, Save/Load Setting, Upgrade Firmware, Password, Reboot, System Log (highlighted), and Status. The main content area has a breadcrumb trail: 'You current location: LEO-300N-3G 802.11N Wireless Router >> Management >> system log'. Below this is a description: 'This page can be used to set remote log server and show the system log.' The 'log setting' section includes: 'Enable Log' (checked), 'system all' (checked), 'Wireless' (unchecked), 'DoS' (unchecked), and '11s' (unchecked). There is an 'Enable Remote Log' checkbox and a 'Log Server IP Address' input field. A 'Save' button is at the bottom of the settings. Below the settings is a log viewer showing two entries: 'Jun 1 10:40:31 klogd started: BusyBox v1.00-pre8 (2005.09.16-02:17+0000)' and 'Jun 1 10:40:31 RTL8192SE driver version 1.21 (2010-04-02)'. At the bottom are 'Refresh' and 'Clear' buttons.

3.8 Status

3.8.1 Status

The Status page displays the router's current status and configuration. All information is read-only

The screenshot shows the 'Status' page for the LEO-300N-3G router. The left sidebar is the same as in the previous screenshot, with 'Status' highlighted. The main content area has a breadcrumb trail: 'You current location: LEO-300N-3G 802.11N Wireless Router >> Status >> Current System Status'. Below this is a description: 'This page shows the current status and some basic settings of the device.' The status is displayed in a table-like format with sections: 'System' (Uptime: 0day:0h:21m:19s, Firmware Version: LEO-300N-3G.1.0.0.1, Build Time: Tue Dec 29 23:59:57 CST 2009), 'Wireless Status' (Mode: AP, Band: 2.4 GHz (B+G+N), SSID: leoxsys, Channel Number: 6, Encryption: Disabled, BSSID: 00:e0:4c:fc:dd:70, Associated Clients: 0), 'LAN Status' (Attain IP Protocol: Fixed IP, IP Address: 192.168.7.1, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.7.1, DHCP Server: Enabled, MAC Address: 00:e0:4c:fc:dd:70), and 'WAN Configuration' (Attain IP Protocol: Fixed IP Disconnected, IP Address: 0.0.0.0, Subnet Mask: 0.0.0.0, Default Gateway: 0.0.0.0, MAC Address: 00:e0:4c:fc:dd:75). At the bottom left, the URL 'http://192.168.7.1/status.asp' is visible.

1. System

This field displays the uptime, firmware version and Build Time.

2. Wireless status

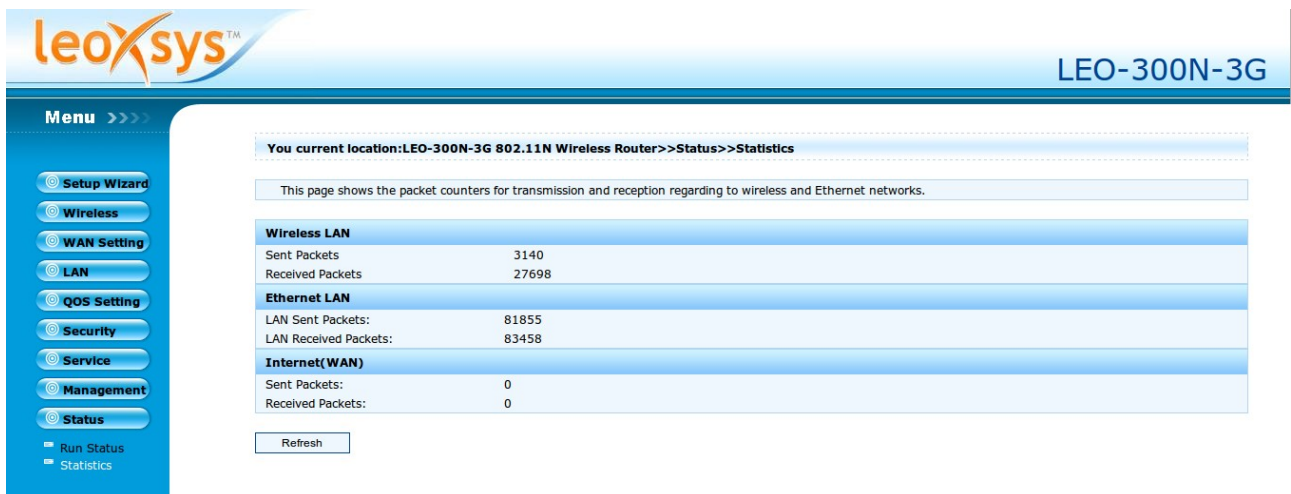
This field displays the wireless mode, operating Band, router SSID, Channel Number, Encryption status, BSSID, No of connected clients

3. LAN Status This field displays the LAN Status for the connected types, ip Type, LAN IP address, Subnet Mask, Default Gateway, DHCP Server and Mac Address.

4. WAN Status This field displays the WAN Status for the connected types, ip Type, WAN IP address, Subnet Mask, Default Gateway, DHCP Server and Mac Address.

3.8.2 Statistics

The Status page displays the router's current status and message. All information is read-only \



The screenshot shows the web interface of a LEO-300N-3G router. The top header includes the 'leoxsys' logo and the model name 'LEO-300N-3G'. A left-hand menu contains various configuration options like Setup Wizard, Wireless, WAN Setting, LAN, QoS Setting, Security, Service, Management, and Status. The 'Status' page is active, displaying a breadcrumb trail: 'You current location: LEO-300N-3G 802.11N Wireless Router >> Status >> Statistics'. A message states: 'This page shows the packet counters for transmission and reception regarding to wireless and Ethernet networks.' Below this, there are three tables of statistics:

Wireless LAN	
Sent Packets	3140
Received Packets	27698

Ethernet LAN	
LAN Sent Packets:	81855
LAN Received Packets:	83458

Internet (WAN)	
Sent Packets:	0
Received Packets:	0

At the bottom of the statistics section is a 'Refresh' button.

1 Memory This field displays the current system Memory for the total memory, left memory.

2 WAN/LAN This field displays the current WAN port and LAN port packet message for the WAN Rx packets, WAN Rx bytes, WAN Tx packets, WAN Tx bytes, LAN Rx packets, LAN Rx bytes, LAN Tx packets, LAN Tx bytes,

Appendix 1: Wireless Basics

Wireless product is based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards. Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

What is Wireless?

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

How does wireless work?

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer.

There are two different types of wireless networks Wireless Local Area Network (WLAN), and

- **Wireless Personal Area Network (WPAN).**
- **Wireless Local Area Network (WLAN)**

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data

back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

Wireless Personal Area Network (WPAN)

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

Who uses wireless?

Wireless technology has become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

Home

- Gives everyone at home broadband access
- Surf the web, check email, instant message, and etc
- Gets rid of the cables around the house
- Simple and easy to use

Small Office and Home Office

- Stay on top of everything at home as you would at office
- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

Where is wireless used?

Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

Tips

Here are a few things to keep in mind, when you install a wireless network. Centralize your router or Access Point Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range. Eliminate Interference Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA security feature on the router. Refer to product manual for detail information on how to set it up.

Wireless Security This section will show you the different levels of security you can use to protect your data from intruders. The DIR-635 offers the following types of security: • WPA2 (Wi-Fi Protected Access 2) • WPA2-PSK (Pre-Shared Key) • WPA (Wi-Fi Protected Access) • WPA-PSK (Pre-Shared Key)

Appendix 2:

Wireless Modes, There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

Appendix 3: FAQ

This chapter provides solutions to problems that can occur during the installation and operation of the Wireless Router. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

1. Why can't I access the web-based configuration utility?

When entering the IP address of the router (192.168.1.1 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
- Internet Explorer 6.0 or higher
- Netscape 8 or higher
- Mozilla 1.7.12 (5.0) or higher
- Opera 8.5 or higher
- Safari 1.2 or higher (with Java 1.3.1 or higher)
- Camino 0.8.4 or higher
- Firefox 1.5 or higher

Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.

- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm; Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:

- Go to **Start > Settings > Control Panel**. Double-click the Internet Options Icon. From the Security tab, click the button to restore the settings to their defaults.

- Click the **Connection tab** and set the **dial-up option to Never Dial** a Connection. Click the **LAN Settings** button. Make sure nothing is checked. **Click OK**.

- Go to the advanced tab and click the button to restore these settings to their defaults. Click OK three times.

- Close your web browser (if open) and open it.

- Access the web management. Open your web browser and enter the IP address of your D-Link router in the address bar. This should open the login page for your web management.

- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

2. What can I do if I forgot my password?

If you forgot your password, you must reset your router. Unfortunately this process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process. Wait about 30 seconds to access the router. The default IP address is 192.168.1.1. When logging in, the username is admin and the password is admin.

3. Why can't I connect to certain sites or send and receive emails when connecting through my router?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

Note: AOL DSL+ users must use MTU of 1400.

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.

- Click on **Start** and then click **Run**.
- Windows® 95, 98, and Me users type in command (Windows® NT, 2000, and XP users type in cmd) and press Enter (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

ping [url] [-f] [-l] [MTU value]

example: **ping www.baidu.com -f -l 1424**

and ping **www.baidu.com -f -l 1425**

```

C:\Documents and Settings\test>ping www.baidu.com -f -l 1424

Pinging www.a.shifen.com [220.181.37.55] with 1424 bytes of data:

Reply from 220.181.37.55: bytes=1424 time=91ms TTL=51
Reply from 220.181.37.55: bytes=1424 time=91ms TTL=51
Reply from 220.181.37.55: bytes=1424 time=323ms TTL=51
Reply from 220.181.37.55: bytes=1424 time=90ms TTL=51

Ping statistics for 220.181.37.55:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 90ms, Maximum = 323ms, Average = 148ms

C:\Documents and Settings\test>

C:\Documents and Settings\test>ping www.baidu.com -f -l 1425

Pinging www.a.shifen.com [220.181.37.55] with 1425 bytes of data:

Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.

```

You should start at 1424 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet. Take that value and add 28 to the value to account for the various TCP/IP headers. For example, let's say that 1402 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with ($1402+28=1430$).

Once you find your MTU, you can now configure your router with the proper MTU size.

To change the MTU rate on your router follow the steps below:

- Open your browser, enter the IP address of your router (192.168.1.1) and click OK.
- Enter your username (admin) and password (admin). Click OK to enter the web configuration page for the device.
- Click on WAN Setting and then click WAN Interface.
- To change the MTU enter the number in the MTU field and click Apply to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

3. What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the **Temporal Key Integrity Protocol (TKIP)**. TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures

that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.

- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). **WEP** regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. This key must be the exact same key entered on your wireless router or access point.

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on a more secure public key encryption system to ensure that only authorized network users can access the network.

4. What is NAT?

NAT stands for Network Address Translator. It is proposed and described in RFC- 1631 and is used for solving the IP Address depletion problem. Each NAT box has a table consisting of pairs of local IP Addresses and globally unique addresses, by which the box can "translate" the local IP Addresses to global address and vice versa. Simply put, it is a method of connecting multiple computers to the Internet (or any other IP network) using one IP Address. The broadband routers (i.e.: Wireless Router) support NAT. With proper configuration, multiple users can access the Internet using a single account via the NAT device.