

ROUTER

2727

11N Multi-Function AP/Repeater



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Package List

Open the box carefully, check the contents listed below:

- Wireless Broadband Router
- Power adapter
- CD
- Quick Installation Guide
- UTP cable

Note: If any of the listed contents are damaged or missing, please contact the retailer from whom you purchased the wireless router for assistance.

Introduction

Thank you for purchasing TOTOLINK Wireless-N Broadband Router! It is a hybrid design product which combines Ethernet technology and wireless access into a single stand-alone unit. The device allows you to take advantages of both mobility and fast connection.

TOTOLINK not only complies with all the mainstream features of a wireless broadband router, but also allows you to surf on the Internet more secure and stable. It complies with IEEE 802.11n (Draft 2.0) standards, supports up to 150Mbps / 300Mbps (1Tx-1Rx / 2Tx-2Rx) wireless transmission speed, adopting MIMO technology to ensure a good performance, stability and coverage to bring you an enjoyable new experience.

TOTOLINK wireless router provides multiple security protection, which can protect the wireless access security effectively. It supports SSID broadcasting, 64/128 bits WEP encryption and built-in firewall function.

TOTOLINK wireless router is easy to install and configure with user friendly interface. For better use of the router functions, please read this user manual carefully.

Section 1: Product Overview

1.1 Product Features

- . Complies with IEEE 802.11n; 802.11g; 802.11b standard for 2.4GHz Wireless LAN.
- . Supports PPPoE, Dynamic IP, and static IP broadband connection.
- . Supports UPnP, DDNS, static routing, VPN Pass-through.
- . Wi-Fi protected security(WPS), set your security at a push button.
- . Supports virtual server, special application and DMZ host.
- . Supports SSID broadcast control and MAC access control list.
- . Supports 64/128bit WEP, 128bit WPA standard (TKIP/AES), supports MIC, IV

Expansion, Shared Key Authentication and IEEE 802.1X.

- . Built-in fire wall, supports IP, MAC and URL filtering.
- . Built-in DHCP server with automatic dynamic IP address distribution.
- . Supports configuration file backup and restore.
- . Supports VPN Server (PPTP) & QoS bandwidth control.
- . Supports Remote and Web management.

1.2 Specifications

Standards	IEEE802.11n current draft, IEEE 802.11g, IEEE 802.11b, IEEE 802.3, IEEE 802.3u, IEEE 802.3x
Protocol	CSMA/CA, CSMA/CD, TCP/IP, ICMP, NAT, PPPoE, DHCP, PPTP, UDP, NAT, DN, DDNS, VPN
Port LAN	4*100M/1000M BaseTX (Auto MDI/MDIX)
Port WAN	1*100M/1000M BaseTX (Auto MDI/MDIX)
Wireless parameter RF Frequency	2.4~2.4835GHz

Data Rate	11n: 300/270/243/216/162/108/81/54/27Mbps 135/121.5/108/81/54/40.5/27/13.5Mbps 130/117/104/78/52/39/26/13Mbps 72/65/58.5/52/39/26/19.5/13/6.5Mbps 11g: 54/48/36/24/18/12/9/6M (auto-negotiation) 11b: 11/5.5/2/1M (auto-negotiation)
------------------	---

Wireless Transmit Power	20dBm(MAX)
Receiver Sensitivity	270M: -65dBm@10% PER 135M: -65dBm@10% PER 54M: -68dBm@10% PER 11M: -85dBm@8% PER 6M: -88dBm@10% PER 1M: -90dBm@8% PER
Channels	1-11 (North America); 1-13 (General Europe)
WLAN Modulation Scheme	BPSK, QPSK, CCK and OFDM (BPSK/QPSK/16-QAM/ 64-QAM)
Antenna Type	2.4GHz omni antenna
Wireless Operation Mode	Wireless Bridge /Client/ WAN /WDS
Wireless Security	WEP 64/128 bit; MAC based Association; SSID broadcast disable; Wi-Fi Protection Access (TBD), WPA, WPA2, WPS
LED	1*Power, 1*CPU Status, 1*Wireless, 1*WAN, 4*LAN
Media	100BASE-TX: UTP/STP
Management type	Local/Remote Web-based configuration
Operating Temperature	0 ~ 55°C
Storage	-20 ~ 65°C
Humidity	5 ~ 95% non-condensing
Power External	Input 110V/240V Output DC: 5V, 2.5A (N300RG); 5V, 1A (N150RA, N150RT,N300RT); 9V, 0.8A (N300R).

Section 2: Hardware installation

2.1 Panel layout

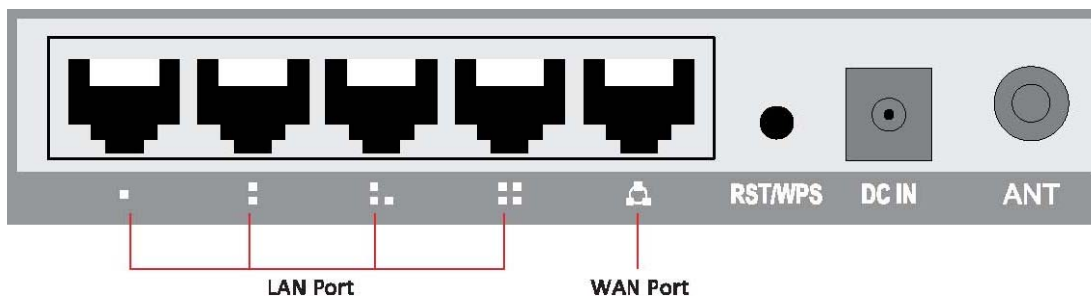
2.1.1 Front panel



LED indicators:

Led Name	Action	Description
Power	Off	Power off
	On	power on
CPU	Off	the router has a hardware error
	Flashing	the router is working properly
WLAN	Off	wireless function is disabled
	Flashing	wireless function is enabled
WAN / LAN 1, 2, 3, 4	Off	there is no device connected to the corresponding port
	On	there is a device connected to the corresponding port
	Flashing	there is an active device connected to the corresponding port

2.1.2 Back panel



DC IN	Plug in the DC power jack. Note: Please use the original power adapter to prevent the unsuitable power adapter damage to your router.
WAN port	WAN port (RJ-45). Connect xDSL Modem / Cable Modem or Ethernet
LAN port	4 RJ-45 ports. PC and hub / switch connect to LAN port through cable

RST RST/WPS WPS	Press this button for five seconds, the system will be restored to the factory default settings. When your wireless LAN adapter connected with the wireless router, press this button in the router, and press the “WPS” button in your wireless LAN adapter within two minutes, it will generate a secret key automatically between your LAN adapter and router, on the premise that the LAN adapter with WPS function.
Antenna Interface	Fixed or detachable omni antenna adjust to different models

2.2 System Requirements

- Broadband Internet access service (DSL/Cable/Ethernet)
- One DSL/Cable modem that has an RJ-45 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 Installation Environment

- Not in direct sunlight or near a heater or heating vent
- Not cluttered or crowded. There should be at least 2 inches (5cm) of clear space on all sides of the router
- Well ventilated (especially if it is in a closet)
- Operating temperature: 0°C~40°C
- Operating Humidity: 5%~90%RH, Non-condensing

2.4 Hardware Installation Steps

Before you install the router, you should connect your PC to the Internet through your broadband service successfully. If there is any problem, please contact your ISP. After that, please install the router according to the following steps. Don't forget to pull out the power plug and keep your hands dry.

1. Power off your PC(s), Cable/DSL modem, and the router.
2. Locate an optimum location for the router. The best place is usually near the center of the area in which your PC(s) will wirelessly connect. The place must comply with the
3. Installation Environment Requirements.
4. Adjust the direction of the antenna. Normally, upright is a good direction.
5. Connect the PC(s) and each Switch/Hub on your LAN to the LAN Ports in the router.
6. Connect the DSL/Cable Modem to the WAN port on the router.

7. Connect the DC power adapter to the power port (DC IN) in the router, and plug the power plug in the electrical outlet. The router will begin to work automatically.
8. Power on your PC(s) and Cable/DSL modem.

Section 3: Quick Installation Guide

After connecting the wireless router into your network, you should configure it. This chapter describes how to configure the basic functions of your wireless router. These procedures only take you a few minutes. You can access the Internet via the router immediately after successfully configured.

3.1 TCP/IP configuration

The default IP address of the wireless router is **192.168.1.1**, and the default Subnet Mask is **255.255.255.0**. These values can be seen from the LAN. They can be changed as you desire, as an example we use the default values for description in this guide.

Connect the local PC to the LAN ports in the router. There are two methods to configure the IP address for your PC.

Configure the IP address manually

- 1) Set up the TCP/IP Protocol for your PC(s).
- 2) Configure the network parameters. The IP address is 192.168.1.xxx ("xxx" is from 2 to 254), Subnet Mask is 255.255.255.0, and Gateway is 192.168.1.1 (The router's default IP address)

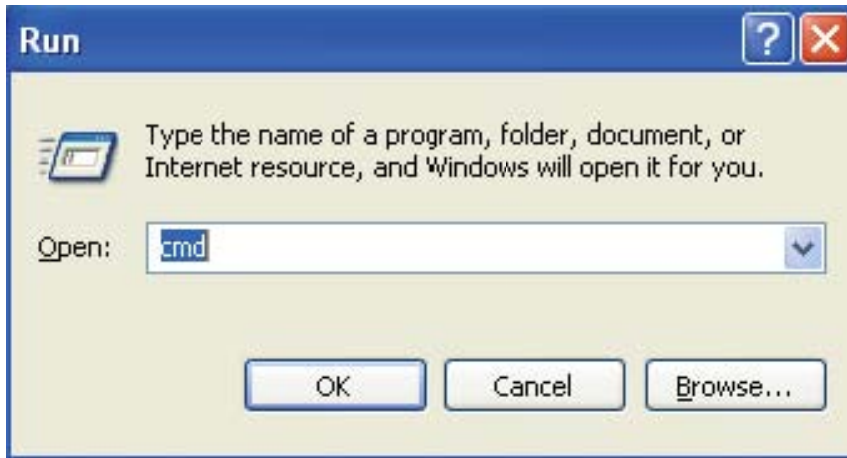
Obtain an IP address automatically

- 1) Set up the TCP/IP Protocol in "Obtain an IP address automatically" mode on your PC(s).
- 2) Power off the router and PC(s). Then turn on the router, and restart the PC(s). The built-in DHCP server will assign IP address for the PC(s).

Now, you can run the Ping command in the command prompt to verify the network connection between your PC(s) and the router. Open a command prompt, and type *ping 192.168.1.1*, and then press "enter".

A. Click "Start" -> "Run"

B. Type the command "cmd", and then click "OK"



C. Type "ipconfig" and press "enter"



D. If the result displayed is similar to that shown in the below figure, the connection between your PC and the router has been established, or else please repeat the above steps and restart the PC.

IP address from 192.168.1.2 to 192.168.1.254

Subnet mask is 255.255.255.0 ;

Default gateway is 192.168.1.1 ;

E. Enter the command "ping 192.168.1.1", and then press "enter"

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Documents and Settings\Administrator>
```

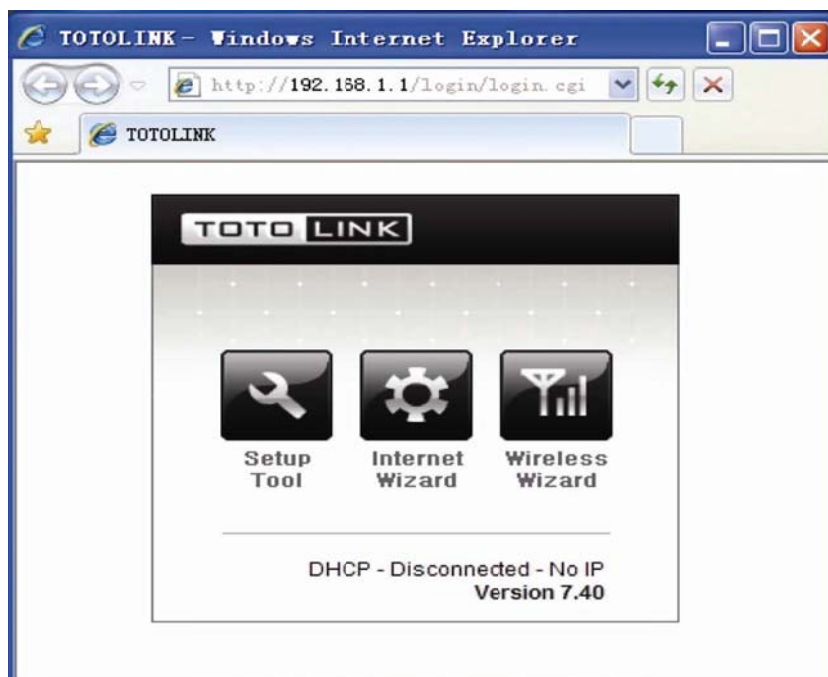
If you can see similar result displayed “Reply from 192.168.1.1 : bytes=32 time<1ms TTL=255”, it means the user's PC has been connected with the router.

3.2 Quick Installation Guide

With a Web-based (Internet Explorer or Netscape® Navigator) utility, the wireless router is easy to configure and manage. The Web-based utility can be used on any Windows, Macintosh or UNIX OS with a web browser.



- 1) Run Internet Explorer (
- 2) Input <http://192.168.1.1> in Internet Explorer's address bar, you will see the homepage.




192.168.1.1 is the default router LAN IP address

“Setup Tool” enables you enter into the configuration interface;

“Internet Wizard” enables you to configure the router WAN port connection quickly and conveniently.

“Wireless Wizard” enables you to configure the wireless setting.

3) Click , you will see the following login page, Enter “**admin**” for the User name and Password, both in lower case letters. Then click the “**OK**” or press “**Enter**”.



4) You will enter into the wireless router configuration interface.

TOTO LINK

 Refresh
 Save

Config Explorer

- Basic Setup
- Status Summary
- Internet Setup**
- Wireless Setup
- Firmware Upgrade
- Advanced Setup

Status Summary

Internet Status

Internet(WAN) Port Status	WAN port is disconnected	
Internet Connection Type	DHCP User(Dynamic IP)	WAN IP
Internet connection time	0 Hour 0 Min 0 Sec	

LAN Configuration

LAN IP	192.168.1.1
DHCP Server Status	Running
DHCP IP Pool	192.168.1.2 - 192.168.1.254

Wireless Status

Wireless Mode	Running - AP Mode - No Encryption
SSID(Network Name)	TOTOLINK
Wireless Multibridge	Stopped

Miscellaneous

Firmware Version	7.40
Remote Mgmt Infomaton	Remote Management is not configured. You can set up this at [Mgmt AccessList] page
System run time	4 Hour 9 Min 39 Sec

3.2.1 Internet setup

This page is used to configure the parameters for Internet network which connects to your wireless router WAN port. WAN access mode: you can choose DHCP, PPPoE or Static IP. 1). **DHCP User setup** Click “Internet setup”, you will see following interface, dynamic IP address can be obtained from the ISP operator 2). **PPPoE User (ADSL) setup** This connection method is suitable for virtual dial-up Internet access. Input the User ID and Password provided by your Internet service provider, then click “Apply”.

Config Explorer

- Basic Setup
- Status Summary
- Internet Setup**
- Wireless Setup
- Firmware Upgrade
- Advanced Setup

Internet Setup

☒ **DHCP User** (FTTH, Optic LAN, Cable Modem, VDSL, LAN, IP ADSL)
☐ **PPPoE User** (ADSL)
☐ **Static IP User**

☐ MAC Address Clone

Search MAC address

☒ Allow private IP.
☐ Restart DHCP client if the physical WAN link is reconnected.

☐ MTU

☐ Set DNS server manually

Primary DNS

Secondary DNS

Internet Setup

☐ DHCP User (FTTH, Optic LAN, Cable Modem, VDSL, LAN, IP ADSL)
☒ PPPoE User(ADSL)
☐ Static IP User

User ID:
 Password:
 Select ISP: ☒ Normal ☐ Racer ☐ Chinanet
☐ MAC Address Clone

☐ MTU:
☒ LCP option Interval: Sec Count:
☐ Disconnect PPP session if idle time is longer than Min
☒ Connect On Demand ☐ Connect Manually
☐ Set DNS server manually

Primary DNS:
 Secondary DNS:

Apply

PPPoE Scheduler: ☐ Start ☒ Stop **Apply**

System Time: Trying to get system time from time server.

Add ON Schedule: : - : **Add**

Start Time	End Time	Status
PPPoE ON always		

3) Static IP User setup

Input the IP address that provided by your ISP (Internet Service Provider). If you are not clear about this, please consult with your local ISP.

Internet Setup

☐ DHCP User (FTTH, Optic LAN, Cable Modem, VDSL, LAN, IP ADSL)
☐ PPPoE User(ADSL)
☒ Static IP User

WAN IP Address:
 Subnet Mask:
 Default Gateway:
 Primary DNS:
 Secondary DNS:

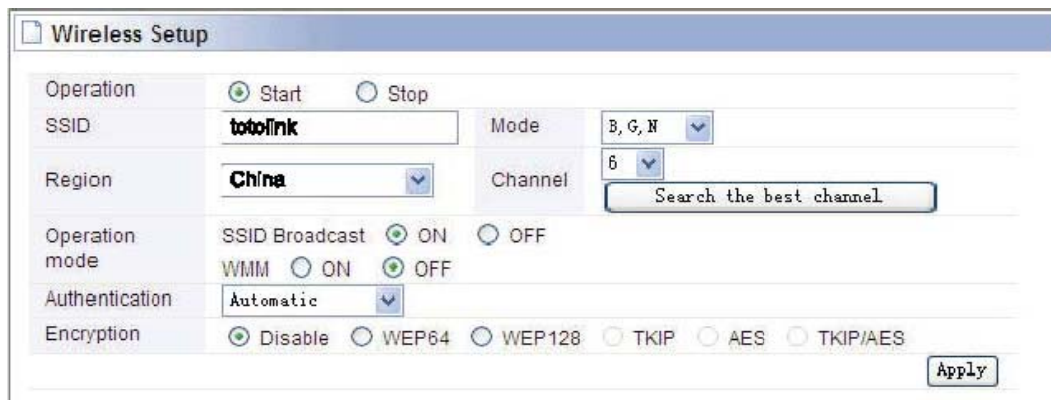
☐ MTU:
☐ MAC Address Clone

Apply

3.2.2 Wireless setup

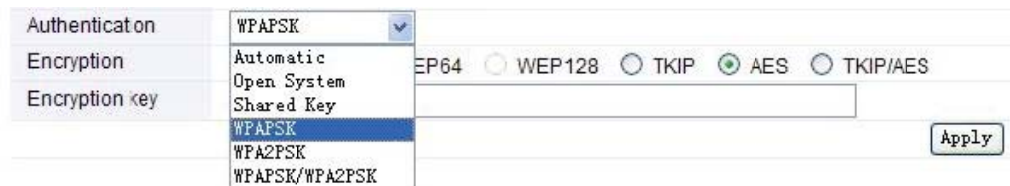
Click “**Basic Setup**”->“**Wireless Setup**”, you will see below interface:

This webpage show the basic wireless parameters and wireless authentication way.



The image shows the 'Wireless Setup' configuration page. It includes fields for Operation (Start/Stop), SSID (totolink), Mode (B, G, N), Region (China), Channel (6), and a 'Search the best channel' button. There are also checkboxes for SSID Broadcast, WMM, and Authentication (Automatic). Encryption options include Disable, WEP64, WEP128, TKIP, AES, and TKIP/AES. An 'Apply' button is at the bottom right.

You can set up encryption key at here.



The image shows a dropdown menu for the 'Encryption key' field. The menu is open, showing options: Automatic, Open System, Shared Key, WPAPSK (highlighted), WPA2PSK, and WPAPSK/WPA2PSK. The 'Authentication' field is set to WPAPSK, and the 'Encryption' field is set to AES. An 'Apply' button is at the bottom right.

3.2.3 Firmware upgrade

Click “**Base Setup**” ->“**Firmware Upgrade**”, you will see firmware upgrade webpage as below, you can choose “Auto Upgrade” or “Manual Upgrade”

Firmware Upgrade

Firmware Version	7.40
Build Date	Wed Jan 5 14:50:02 KST 2011

☒ Auto Upgrade ☐ Manual Upgrade

You can easily upgrade the latest version of firmware by automatic upgrade.

1. Click [Auto Upgrade]
2. Click [Run] button in a popup window.

Auto Upgrade

Note.

- Automatic upgrade is only available on Microsoft Windows OS.
- Internet should be ready for automatic upgrade.
- Internet will be unavailable for upgrading firmware.
- Power down for updating firmware can be the cause of system halt.

Firmware Upgrade

Firmware Version	7.40
Build Date	Wed Jan 5 14:50:02 KST 2011

☐ Auto Upgrade ☒ Manual Upgrade

To upgrade manually

1. Download a firmware at [Zioncom Homepage].
2. Click [Browse] and choose a downloaded firmware
3. Click [Upgrade] button.

Note.

- Internet will be unavailable for upgrading firmware.
- Power down for updating firmware can be the cause of system halt.

This page allows you to upgrade the wireless router firmware to the latest version. Please note, do not power off the device during the uploading because it may damage the system.

Section 4: Advanced Setup

The advanced setup includes Network, Wireless, NAT, Firewall, Utility, Traffic and System. These settings are only for more technically advanced users who have sufficient knowledge about wireless LAN. These settings should not be changed unless you know what effect the changes will have on your wireless router.

4.1 Network

Click “Network” menu, you will see:



Click “LAN/DHCP Server”, you will see:

LAN/DHCP Server

LAN IP Setup

LAN IP	192	168	1	1
Subnet Mask	255	255	255	0
<input type="checkbox"/> LAN Gateway				
<input type="checkbox"/> LAN DNS				

Apply & Restart

DHCP Server Setup

DHCP Server	<input checked="" type="radio"/> Start <input type="radio"/> Stop	DNS Suffix	
DHCP IP Pool	192 . 168 . 1 . 2 ~ 192 . 168 . 1 . 254		
Lease Time	864000 Sec		
<input type="checkbox"/> DHCP server protection			
<input type="checkbox"/> Enable internet access only for PCs allocated by DHCP Server			

Apply

DHCP Static Lease Setup

☐ Block MAC address on the list with wrong IP address

☐ Block MAC address not on the list

Apply

Del	Static Lease(IP/MAC Address)	Add	IP/MAC Address in local network
<input type="checkbox"/>		<input type="checkbox"/>	192 . 168 . 1 . / - - - - - 192.168.1.2/00-16-D3-13-B4-57

LAN port basic parameter and DHCP server parameter can be setup in this page.



Notes:

- 1 In order to use DHCP function of the IP Router, TCP/IP protocol of PCs in LAN must be configured as "Obtain an IP address automatically".
- 2 After configured please click "Apply" to make the configuration valid. Please save the configuration, otherwise configuration will be lost when IP Router is power off or restarts.

4.2 Wireless

Click "Wireless" menu, and you will see:



4.2.1 Wireless Status

Click "**Wireless Status**" menu, you will see your wireless router configuration and station status.

Wireless Status				
Wireless Configuration				
Status	AP Mode - Running			
SSID(Network Name)	TOTOLINK N300RG			
Mode	B,G,N			
Region	China			
Channel	Channel 11 (2.462 GHz,Upper,40 MHz)			
SSID broadcasting	Running			
Authentication	Automatic			
Encryption	Disable			
MAC Authentication	Accept MAC address registered			
Wireless MAC Address	00-08-9F-AC-87-3C			
Wireless Station Status				
<div>Clear</div>				
MAC Address	Link Rate	Rx Packets	Tx Packets	Association Time

4.2.2 Wireless setup Click “Wireless Setup”, you will see

The screenshot shows a 'Wireless Setup' window with the following configuration options:

- Operation:** ☒ Start ☐ Stop
- SSID:** TOTOLINK N300RG **Mode:** B, G, N
- Region:** China
- Channel:** 11 [2.462 GHz, Upper]
- Operation mode:** SSID Broadcast ☒ ON ☐ OFF; WMM ☐ ON ☒ OFF
- Authentication:** Automatic
- Encryption:** ☒ Disable ☐ WEP64 ☐ WEP128 ☐ TKIP ☐ AES ☐ TKIP/AES
-

The interface will show the basic wireless parameter and wireless certification way configuration.

- **Wireless Status:** Show current **Wireless Configuration and** wireless station status.
- **Operation:** You can choose **Start** or **Stop** the wireless function
- **SSID:** You can change the SSID for your wireless router
- **Mode:** If wireless connection conforms to 11G and 11B and 11N standard ,
- **Region:** Area where you are using the wireless router
- **Channel:** Choose the wireless channel in AP mode; if in client mode, channel option is disabling.
- **Encryption:** You can choose Disable, WEP64, WEP128, TKIP, AES and TKIP/AES
- **WEP:** Wired Equivalent Protocol
- **WPA:** WI-FI Protected Access Wi-Fi, WPA is an intermediate solution for the security issues. It uses Temporal Key Integrity Protocol (TKIP) to replace WEP.
- **TKIP:** TKIP is a compromise on strong security and possibility to use existing hardware. It still uses RC4 for the encryption like WEP, but with per-packet RC4 keys. In addition, it implements replay protection, keyed packet authentication mechanism (Michael MIC).
- **802.1X:** The original security mechanism of IEEE 802.11 standard was not designed to be strong and has proven to be insufficient for most networks that require some kind of security. Task group I (Security) of IEEE 802.11 working group has worked to address the flaws of the base standard and in practice completed its work in May 2004. The IEEE 802.11i amendment to the IEEE 802.11 standard was approved in June 2004 and published in July 2004.

Authentication	Automatic	
Encryption	<input type="radio"/> Disable <input type="radio"/> WEP64 <input checked="" type="radio"/> WEP128 <input type="radio"/> TKIP <input type="radio"/> AES <input type="radio"/> TKIP/AES	
Encryption key	Key Input Method	<input checked="" type="radio"/> ASCII <input type="radio"/> Hex-Decimal
	Basic KEY	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
	Fill the values of Key (Key length = 13)	
	1:	<input type="text"/>
	2:	<input type="text"/>
	3:	<input type="text"/>
	4:	<input type="text"/>
<input type="button" value="Apply"/>		


- **WEP Setup:** Configure Certification way and WEP key.
- **Authentication Type:** Choose authentication type (automatic/open system/share Key).
- **Encryption Strength:** Choose Key length (64/128bits).
- **Key Input Method:** Choose ASII, HEX or Pass phrase.
- **Basic Key:** Fill in Key value

After finished configuration, click “Apply”.



Notes:



After setup, please click , save IP router configuration, otherwise, configuration will be lost when power off or router is restarted.

4.2.3 MAC Authentication

You can control the PC to connect the wireless router through MAC authentication.

MAC Authentication

Select wireless network TOTOLINK N300RG

- ☐ Accept All
☒ Accept MAC address registered
☐ Reject MAC address registered

Apply

Del

Registered MAC address list



Add

MAC address List in wireless



- - - - -

Description

☒ 00-08-9F-16-59-E1

☒ 00-19-E3-E0-F6-15

☒ 00-1A-73-51-EE-3A

☐ 00-00-00-00-00-00

4.2.4 WDS Setup

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 Setup

AP's BSSID

- - - - -

Search AP

Description

Max number of AP is 4.

Add

AP's BSSID

Description

Del

4.2.5 WPS Setup

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

WPS Setup

WPS Setup Status Not configured

AP's PIN CODE 13068127

Add wireless device

☒ Advanced option

☐ PIN CODE

☒ Allow wireless configuration to be changed.

WPS Log

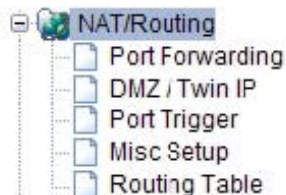
4.2.6 Advanced Setup

Advanced Setup is for advanced parameter settings; keep the default configuration for common users.

Advanced Setup	
The following functions are settings for wireless expert.	
Channel Bandwidth	<input checked="" type="radio"/> 20/40 MHz <input type="radio"/> 20 MHz Channel bonding option according to 802.11n Draft.
Reverse Direct Grant	<input checked="" type="radio"/> ON <input type="radio"/> OFF RDG can increase the wireless throughput.
Tx Power	<input type="text" value="100"/> % (1 ~ 100) The wireless coverage is adjusted by increasing or decreasing the Tx Power. The range of value is 1 ~ 100. The higher power means the longer wireless coverage.
Tx Burst	<input checked="" type="radio"/> Start <input type="radio"/> Stop Tx Burst may increase the performance. But, in the environment of many simultaneous wireless connections, Disabling this feature can be better solution.
Frame Aggregation	<input checked="" type="radio"/> Start <input type="radio"/> Stop Frame Aggregation may increase the performance. It only works with the wireless lan cards which support this feature.
Short Slot	<input checked="" type="radio"/> Start <input type="radio"/> Stop This feature increase the performance of 11g wireless connection slightly.
Preamble Length	<input checked="" type="radio"/> Long Preamble <input type="radio"/> Short Preamble Short Preamble may increase the performance slightly. But for compatibility with old 802.11 lan card, use Long Preamble.
RTS Threshold	<input type="text" value="2347"/> bytes The frames which have more length than RTS threshold are transmitted using RTS/CTS method. The less RTS threshold make wireless communication be more stable, but have less maximum throughput. The valid range is 1 ~ 2347.
	<input type="text" value="2346"/> bytes

4.3 NAT/Routing

Click "NAT/Routing" menu, you can see following interface:



4.3.1 Port Forwarding

Entered into this interface, you can redirect common network services automatically to a specific device behind the NAT firewall. This setting is only necessary when you want to host some sort of servers like a Web server or mail server on the private local network behind your Gateway's NAT firewall.

Port Forwarding

Rule Type: Rule Name:

LAN IP:
☐ Set connected PC's IP address(192.168.1.2)

Protocol: External Port: ~
Internal Port: ~

Max number of rule is 60.

The lower number, the higher priority.
To modify a rule, click the name of rule.

☐

Rule Name	Forwarding IP	Proto	External Port	Internal Port	<input type="button" value="Del"/>
<input type="checkbox"/>					<input type="checkbox"/>

4.3.2 DMZ Host

The DMZ (Demilitarized Zone) host feature allows one local host to be exposed to the Internet for a special-purpose service such as Online Game and video conferencing. DMZ host forwards all the ports at the same time. Any PCs which port is being forwarded must have its DHCP client function disabled and should have a new static IP Address assigned to it, because its IP Address may be changed when using the DHCP function.

DMZ / Twin IP

☐ OFF
☒ **DMZ** (All connections from internet will be forwarded to DMZ PC)
☐ **Twin IP** (The TwinIP PC will have a public IP address.)

LAN IP:
☐ Set connected PC's IP address(192.168.1.2)

DMZ / Twin IP

☐ OFF
☐ **DMZ** (All connections from internet will be forwarded to DMZ PC)
☒ **Twin IP** (The TwinIP PC will have a public IP address.)

MAC Address: ☒ Set connected PC's MAC address

IP renew period: Sec

4.3.3 Port Trigger

You can achieve some special purposes by this setting.

Port Trigger

Rule Name:

Port Trigger Protocol: TCP

Port Range: -

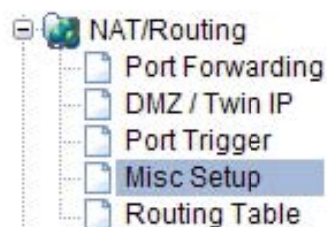
Port Forward Protocol: TCP

Port Range:

Max number of rule is 10.

Rule Name	Trigger Condition	Forward Condition	<input type="checkbox"/>	<input type="button" value="Next"/>
1 ZION	[tcp] 00 - 00	[tcp] 00	<input type="checkbox"/>	

4.3.4 Misc Setup



Misc setup provides FTP Private Port, Multicast Forward and NAT on/off setup.

Misc Setup

FTP Private Port: Port

☐ 1C3 ☐ 80 ☐ 21 ☐ 0 ☐ 0

Multicast Forward: ☐ Start ☒ Stop
To receive/send a Multicast data

NAT On/Off Setup: ☒ Start ☐ Stop

If NAT is stopped, this router will act as just pure router.

4.3.5 Routing Table

You can add or delete the static routing rules at here.

Type	Target	Mask	Gateway
Net	<input type="text"/>	<input type="text"/>	<input type="text"/>

Max number of routing table is 20

Add Del

4.4 Firewall

Click "Firewall" menu, you will see:



Click the sub-items, you can set up the corresponding function.

4.4.1 Internet Access Control

Internet Access Control provides multiple security protection. It can achieve MAC/Port/IP filtering, Internet access time control, URL filtering functions, etc. facilitating the user to control Internet access.

Input Type: Basic Setup Rule Name:

Source IP Address: 192.168.1.1 ~ 192.168.1.1 ☐ ALL IP

Source MAC Address: Search MAC address

Accept/Drop: Drop Priority: 0

☐ Rule Scheduling

Max number of setting is 200.

Add Cancel

The lower number, the higher priority.
To modify a rule, click the name of rule.

Run	Rule Name	Schedule	Filtering Rule	Accept/Drop
<input type="checkbox"/>				<input type="checkbox"/>

Del

4.4.2 Net Detector

Net Detector provides some basic virus protection function; enable the user to have a safer network communication.

Net Detector

Net Detector Setup

Operation

☐ Start
☒ Stop

Detection Port

☒ Well-known Worm Virus Ports
☐ All Ports

Detection Level

☒ Mid
☐ 0
connections/sec

Burst Drop

☒ No
☐ Only drop worm virus port

E-mail Policy

Please, set the email address of administrator & SMTP mail server.

Apply

Net Detector Log

Send E-Mail immediately

Clear All Events

Detection Time	IP	Protocol	Frequency	Comment [Red:User Warning OFF]
----------------	----	----------	-----------	-----------------------------------

4.4.3 Mgmt Access List

Mgmt Access List

Remote Accesslist

☒ Remote Mgmt port #
80

☐ Use Remote Accesslist
Apply

IP allowed

Description

Add

Max number of IP is 10

IP

Description

Del

Internal Accesslist

☒ Use Internal Accesslist
Apply

IP allowed

192
168
1

Description

Add

Max number of IP is 10

IP

Description

Del



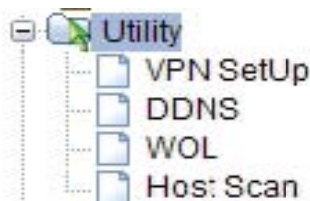
Notes:

If you want to login through the 80-port router, you must use "IP address (for the router WAN port IP address) port" approach to log router implementation of WEB interface control. (For example, <http://220.135.211.56:80>)

4.4.4 Misc Setup Misc Setup: Generally maintain the default.

Misc Setup	
SYN Flood	<input checked="" type="radio"/> Start <input type="radio"/> Stop The SYN flood is a form of denial-of-service attack in which an attacker sends a succession of SYN requests to a target's system.
Smurf	<input checked="" type="radio"/> Start <input type="radio"/> Stop The smurf attack, named after its exploit program, is a denial-of-service attack that uses spoofed broadcast ping messages to flood a target system.
IP source routing	<input checked="" type="radio"/> Start <input type="radio"/> Stop The source routing allows a sender of a packet to specify the route the packet takes through the network, so if cracker can generate a source routing packet then cracker can deceive a target host as a trusted host.
IP Spoofing	<input checked="" type="radio"/> Start <input type="radio"/> Stop The IP address spoofing is the creation of IP packets with a forged (spoofed) source IP address with the purpose to conceal the identity of the sender or impersonating another computing system.
ARP Virus Protection	<input type="radio"/> Start <input checked="" type="radio"/> Stop Send <input type="text" value="10"/> ARP packets per 1 second to <input type="text" value="Wired Network"/> ARP Virus Protection prevents from ARP snoofing attack
Blocking ICMP(ping) from internet	<input type="radio"/> Start <input checked="" type="radio"/> Stop
Blocking ICMP(ping) from LAN to internet	<input type="radio"/> Start <input checked="" type="radio"/> Stop
<input type="button" value="Apply"/>	

4.5 Utility



4.5.1 VPN Setup

The wireless router provides PPTP protocol VPN connection, and it supports 5 VPN users at most.

VPN SetUp

VPN(PPTP) Setup

Mode ☐ Start ☒ Stop

Encryption(MPPE) ☒ MPPE encryption ☐ No encryption

Apply

VPN(PPTP) Account

VPN Account

VPN Password

Assigned IP

Maximum number of VPN User is 5.

Add

VPN Account	Assigned IP	Status	Disconnect	Del

4.5.2 DDNS

DDNS (Dynamic Domain Name Server), its main function is to achieve a fixed domain name to dynamic IP resolution, for the use of dynamic IP address users, Internet access in each new IP, the installation on the host software on the dynamics of the domain name to IP address will be sent to the DDNS service provider from the dynamic analysis server (3322, dyndns.org and to update the DNS database. When other users on the Internet want to access this domain name, the dynamic DNS server will return the correct IP address. In this way, most users do not use fixed IP, can also name the fixed network system.

DDNS

DDNS Service Provider

Host Name

User ID

Password

Add

Host Name	DDNS Status	Refresh	Update	Del

In order to set up DDNS, please comply with following steps:

- 1 Choose your **service provider**.
- 2 Type the **User Name** for your DDNS account.
- 3 Type the **Password** for your DDNS account.
- 4 **Host Name** -the domain names are displayed here. Click **Add** to apply the modification.

4.5.3 WOL

Users can use this Wake On Line function to start the PC remotely.

	MAC Address	PC Name	Wake Up	Del
1	00-16-D3-13-B4-57	TOTOLINK	<input type="checkbox"/>	<input type="checkbox"/>

4.5.4 Host Scan

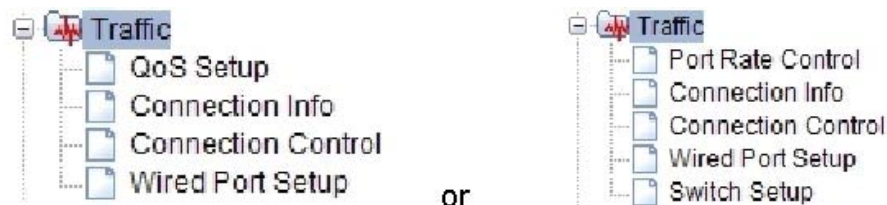
It facilitates the user to view the working status of the PC, including status of ICMP, ARP package sending and receiving, and TCP port communication information.

ICMP PING IP:192.168.1.1 Count:3times Time Out:1Sec Data Size:100bytes

PING 192.168.1.1 (192.168.1.1): 100 data bytes
 Unexpected ICMP code : 8
 Reply from 192.168.1.1: bytes=108 TTL=64 time<10.0ms ICMP_seq=0
 Unexpected ICMP code : 8
 Reply from 192.168.1.1: bytes=108 TTL=64 time<10.0ms ICMP_seq=1
 Unexpected ICMP code : 8
 =====> Ping statistics for 192.168.1.1: =====
 Packets: Sent = 3, Received = 2 Lost = 1 <33316ss>
 Approximate round trip times in milli-seconds:
 Minimum = 0.0ms, Maximum = 0.0ms, Average = 0.0ms

4.6 Traffic

Click "Traffic" menu, you will see:



4.6.1 QoS Setup

QoS Setup

QoS Basic Setup

Operation

☒ Start
 ☐ Stop

Internet Type

ADSL Pro

Download

3

Mbps

Upload

512

Kbps

Apply

Not allow to use a radix point. ex) 2.5Mbps -> 2500Kbps

QoS Rule Setup

☐ Smart QoS

Apply

☒ User defined Rule
 ☐ Predefined Rule

Mode

Max. Limit

Download

0

Kbps

Upload

0

Kbps

IP

☒ 192.168.1.100 ~ 192.168.1.200
 ☐ Twin IP

☒ Bandwidth Per IP (BPI)

Protocol

TCP

External Port

~

Max number of rule is 127.

Apply

The lower number, the higher priority.

Priority of 'Min. Guarantee' mode is higher than priority of 'Max. Limit' mode

☒ Max. Limit
 ☐ Min. Guarantee

IP	Condition	Mode	Download	Upload	Del
					<input type="checkbox"/>

Do not allow to use radix point, ex: 2.5Mbps -25000kbps.

You can choose this as user defined rule or predefined rule

IP addresses can be a single IP address; also can be set to an IP address segment.

4.6.2 Connection Info

It indicates the present connection information of the wireless router in graphic and digital, data package sending and receiving status of each PC in connection.

Connection Info

TCP

UDP

ICMP

Unknown

Total Connection Info

Connection Info per IP

IP	Connection Info	Rx Packets	Rx Bytes
		Tx Packets	Tx Bytes

4.6.3 Connection Control

Connection Control shows the Max connection, Max UDP connection, Max ICMP connection, and Max connection per PC. These settings are only for advanced users, common users are not recommended to change them.

Connection Control

Max connection

8192

(0 : No limit, 512 ~)

Max UDP connection

4096

(0 : No limit ,10 ~ Max connection)

Max ICMP connection

1024

(0 : No limit ,1 ~ Max connection)

Max connection rate per 1 PC

0

% (0 : No limit ,1 ~ 100)

Initial Values

Apply

* Warning.

1. This page is only for network expert.

2. Max connection rate per 1 PC option works only when internal network is C class.

Control Connection Timeout

TCP SYN SENT TIMEOUT	20	TCP SYN RECV TIMEOUT	60
	Sec		Sec
TCP ESTABLISHED TIMEOUT	86400	TCP FIN WAIT TIMEOUT	120
	Sec		Sec
TCP CLOSE WAIT TIMEOUT	60	TCP LAST ACK TIMEOUT	30
	Sec		Sec
TCP TIME WAIT TIMEOUT	10	TCP CLOSE TIMEOUT	10
	Sec		Sec
UDP TIMEOUT	30	UDP STREAM TIMEOUT	180
	Sec		Sec
ICMP TIMEOUT	30	GENERIC TIMEOUT	600
	Sec		Sec

Initial Values

Apply

4.6.4 Wired Port Setup 4.6.5 Port Rate Control

Wired Port Setup

Wired Port Link Status

Port	WAN	1	2	3	4
Link	Off	Off	On	Off	Off
Speed	-	-	100 Mbps	-	-
Duplex	-	-	Full	-	-

Wired Port Link Setup

Port	Mode	Speed	Duplex	
WAN	Auto	100Mbps	FULL	Apply
1	Auto	100Mbps	FULL	Apply
2	Auto	100Mbps	FULL	Apply
3	Auto	100Mbps	FULL	Apply
4	Auto mode only			

Wired Port Statistics

Port	WAN	1	2	3	4
Rx-Packets	0	0	15230	0	0
Rx-Bytes	0	0	3754160	0	0
Rx-Broadcast	0	0	460	0	0
Rx-Multicast	0	0	0	0	0
Rx-Error(CRC)	0	0	0	0	0
Rx-Error(Drop)	0	0	0	0	0
Tx-Packets	0	0	89852	0	0
Tx-Bytes	0	0	108860144	0	0

Port Rate Control

LAN port rate control

Port	Download (Transmit)
1	0 .000 Mbps
2	0 .000 Mbps
3	0 .000 Mbps
4	0 .000 Mbps

(0.0 Mbps : QoS OFF)

Initial Values Apply

Internet/WAN port rate control

Port	Upload(Transmit)
Internet/WAN Port	0 .000 Mbps

(0.0 Mbps : QoS OFF)

Initial Values Apply

4.6.6 Switch Setup

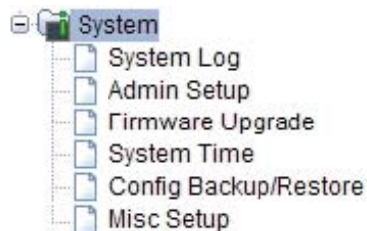
You can send a copy of network packets seen on one LAN port to a network monitoring connection on another LAN port. At the same time, the send port can not transmit data. This is commonly used for network appliances that require monitoring of network traffic, such as an intrusion-detection system.



The screenshot shows a web interface titled "Switch Setup". Under the "Port Mirror" section, there is a checkbox labeled "All packets via" which is checked. To its right is a dropdown menu showing "LAN Port 1". This is followed by the text "transmit to" and another dropdown menu also showing "LAN Port 1". Below this, a note states "Port receiving a packet is NOT used as a normal port." In the bottom right corner of the form is an "Apply" button.

4.7 System

Click "System" menu, you will see:



4.7.1 System Log

System Log shows the working status of the wireless router, the user can check the running status information at here.

System Log

System Log Setup

Operation	<input checked="" type="radio"/> Start <input type="radio"/> Stop	Apply
Status	Log Count(Max Count) : 22(400)	Clear
E-mail Report	Please, set the email address of administrator & SMTP mail server.	

System Log View

Timestamp	System Log Contents
*****	IP : 192.168.1.2 LOGIN Success
*****	IP : 192.168.1.2 LOGIN Success
*****	IP : 192.168.1.2 LOGIN Success
*****	IP : 192.168.1.2 LOGIN Success
*****	Allocated IP address to the PC in DHCP server: 192.168.1.7
*****	Allocated IP address to the PC in DHCP server: 192.168.1.6
*****	Allocated IP address to the PC in DHCP server: 192.168.1.5
*****	Allocated IP address to the PC in DHCP server: 192.168.1.4
*****	Allocated IP address to the PC in DHCP server: 192.168.1.6
*****	IP : 192.168.1.2 LOGIN Success
*****	Allocated IP address to the PC in DHCP server: 192.168.1.5
*****	Allocated IP address to the PC in DHCP server: 192.168.1.5
*****	Allocated IP address to the PC in DHCP server: 192.168.1.4
*****	Allocated IP address to the PC in DHCP server: 192.168.1.2
*****	No response from DHCP Server in WAN (wan1)
*****	System restarted (Version: 7.40)
*****	Administrator changed the WAN configuration: DHCP -> DHCP
*****	Allocated IP address to the PC in DHCP server: 192.168.1.3

4.7.2 Admin Setup

Here you can change login account name and password, and administrator email information.

Admin Setup	
Login Account Setup	
Current ID & password	ID - admin Password - Configured
New Login ID	TOTOLINK
New Password	••••••••
Re-type New Password	••••••••
Apply	
Admin E-mail Setup	
Admin E-mail	
Mail Server(SMTP)	
E-mail of sender	
Use Authentication	<input type="radio"/> Use <input checked="" type="radio"/> Not Use
SMTP Account	
SMTP Password	
Apply	

Firstly please input your old ID and password, and then input your expected new ones. If you input your old ID and password correctly, then click “**Apply**” to change it.

Admin E-Mail Setup: If you want to receive IP routing log, set up Email address and SMTP server to receive it.

4.7.3 System Time

You can set the time server and time zone for your wireless router system time.

System Time	
System Time	Trying to get system time from time server.
Time Server	time.windows.com <input type="text" value="time.windows.com"/>
	<input type="checkbox"/> Summer Time
Standard Time Zone	(GMT+08:00) Beijing, Hongkong, Ulan-Bator, Kuala Lumpur, Singapore
Apply	

4.7.4 Config Backup/Restore

This webpage allows you to 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.

Config Backup/Restore	
Config Backup	Download configuration file on your PC
<input type="button" value="Browse..."/>	
Config Restore	Restore configuration by using Downloaded configuration
Factory Default	To restore the factory default configuration, click this button.

4.7.5 Misc Setup

Misc setup provides Hostname, Auto Saving, Auto Redirection, Login page setup, UPNP setup and Restart System functions.

Misc Setup		
Hostname	<input type="text"/>	<input type="button" value="Apply"/>
Auto Saving	<input checked="" type="radio"/> Start <input type="radio"/> Stop	<input type="button" value="Apply"/>
Auto Redirection	<input type="radio"/> Start <input checked="" type="radio"/> Stop Redirect web connection to the router's setup page, when internet is disconnected	<input type="button" value="Apply"/>
Login Page Setup	<input checked="" type="radio"/> The login page would be displayed <input type="radio"/> The login page would not be displayed	<input type="button" value="Apply"/>
How to run Setup Window	<input checked="" type="radio"/> Use Popup <input type="radio"/> Use current window	<input type="button" value="Apply"/>
UPNP Setup	<input checked="" type="radio"/> Start <input type="radio"/> Stop <input type="button" value="UPNP Port Forwarding List"/>	<input type="button" value="Apply"/>
Restart System		<input type="button" value="Apply"/>