MSI RG54SE

Wireless 11g Broadband Router

User Manual



Hiermit erklärt Micro Star International CO., LTD dass sich dieses Produkt in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet. Die Konformitätserklärung kann auf folgender website eingesehen werden: http://www.msi-technology.de/support/dl_man.php?Prod_Typ=9

Hereby, Micro Star International CO., LTD declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The respective Declaration of conformity can be found online:

http://www.msi-technology.de/support/dl_man.php?Prod_Typ=9

IEEE 802.11b/g 2.4 GHz operation

Europe: Frequencies: 2.400 - 2.4835 GHz

France: Frequencies: 2.4465-2.4835 GHz, channels 10, 11, 12, 13 BANDE DE FREQUENCES DES 2.4GHZ La décision N° 02-1008 en date du 31 octobre 2002 autorise l'utilisation d'une partie de la bande de fréquences 2400-2483,5 MHz pour les réseaux locaux radioéléctriques (RLAN) comme suit : L'utilisation de la bande 2400-2446,5 MHz est autorisée à l'intérieur des bâtiments avec une puissance isotrope rayonnée équivalente (PIRE) limitée à 10 mW et que l'utilisation de la bande 2446,5-2483,5 MHz est autorisée à l'intérieur des bâtiments avec une PIRE limitée à 100 mW. L'utilisation en extérieur est soumise à demande d'autorisation sur la bande de fréquences de 2446,5-2483,5 MHz avec une puissance limitée à 100mW.

Notified Countries

Germany, UK, Netherlands, Belgium, Norway, Sweden, Denmark, Finland, France, Italy, Spain, Austria, Iceland, Ireland, Portugal, Greece, Luxemburg and Switzerland

Bestimmungsgemäße Verwendung:

Dieses Produkt integriert als Teil der Produktausstattung eine WLAN-Komponente. Die WLAN-Komponente verbindet Computer über eine Funkverbindung . Es kann auch eine Funkverbindung zu anderen geeigneten WLAN-Geräten hergestellt werden.

Prescribed use:

This product integrates a WLAN-device.

The WLAN-device sets up a radio link between to computer. In addition it is possible to link the WLAN device to any other WLAN device which stick to the IEEE 802.11b/g requirements.

Hinweise zur Reichweite:

Der Abstand zwischen Sender und Empfänger (von einem WLAN-Gerät zu einem anderen WLAN-Gerät) hängt stark von der Einsatzumgebung ab. Wände, Betonboden (Eisen), beschichtete Fensterscheiben, Fahrzeug-Karosserie, etc.. Weitere Beeinflussungen:

- Hochfrequenzaussendungen jeder Art
- Gebäude, Bäume, etc.
- Heizkörper, Stahlbeton, etc.
- offen betriebene Computer, etc.
- Mikrowellenherde, etc,

Die Kommunikation zwischen unterschiedlichen WLAN-Geräten ist von der jeweiligen Software und dem entsprechenden Versionsstand abhängig

Operating range:

The transmission range between different WLAN devices varies depending the specific environment. Walls, concrete floor (iron), laminated windows, vehicle-body, etc..

More electromagnetic interferences: - high frequency emission of any kind,

- Buildings, trees, etc.
- Heaters, ferroconcrete, etc. - open computer systems, etc.

- Microwave oven, etc,

Communication (exchange data) is dependent on the software of the WLAN devices.

FCC Caution

- The device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
 - (1) This device may not cause harmful interference, and
 - (2) This device must accept any interference received, including interference that may cause undesired operation.

- 2. FCC RF Radiation Exposure Statement: The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
- 3. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- 4. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

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Important Safety Precautions

Always read and follow these basic safety precautions carefully when handling any piece of electronic component.

- 1. Keep this User Manual for future reference.
- 2. Keep this equipment away from humidity.
- 3. Lay this equipment on a reliable flat surface before setting it up.
- 4. The openings on the enclosure are for air convection hence protects the equipment from overheating.
- 5. All cautions and warnings on the equipment should be noted.
- 6. Never pour any liquid into the opening that could damage or cause electrical shock.
- 7. If any of the following situations arises, get the equipment checked by a service personnel: Liquid has penetrated into the equipment

The equipment has been exposed to moisture

- The equipment has not work well or you can not get it work according to User Manual
- The equipment has dropped and damaged
- If the equipment has obvious sign of breakage

8. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60°C OR BELOW -20°C, IT MAY DAMAGE THE EQUIPMENT.

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Revision History

DATE	REVISION OF USER'S MANUAL	FIRMWARE
2005/12/30	First release (Version 1.0)	V1.2.7.G

USER MANUAL OF RG54SE WIRELESS 11g BROADBAND ROUTER

Terminology

AES	Advanced Encryption Standard
ANSI	American National Standards Institute
AP	Access Point
ССК	Complementary Code Keying
CSMA/CA	Carrier Sense Multiple Access/ Collision Avoidance
CSMA/CD	Carrier Sense Multiple Access/ Collision Detection
DDNS	Dynamic Domain Name Server
DH	Diffie-Hellman Algorithm
DHCP	Dynamic Host Configuration Protocol
DSSS	Direct Sequence Spread Spectrum
EAP	Extensible Authentication Protocol
ESP	Encapsulating Security Payload
FCC	Federal Communications Commission
FTP	File Transfer Protocol
IEEE	Institute of Electrical and Electronic Engineers
IP	Internet Protocol
ISM	Industrial, Scientific and Medical
LAN	Local Area Network
MAC	Media Access Control
NAT	Network Address Translation
NT	Network Termination
NTP	Network Time Protocol
PPTP	Point to Point Tunneling Protocol
PSD	Power Spectral Density
RF	Radio Frequency
SNR	Signal to Noise Ratio
SSID	Service Set Identification
ТСР	Transmission Control Protocol
TFTP	Trivial File Transfer Protocol
TKIP	Temporal Key Integrity Protocol
UPNP	Universal Plug and Play
VPN	Virtual Private Network
WDS	Wireless Distribution System

WEP	Wired Equivalent Privacy
WLAN	Wireless Local Area Network
WPA	Wi-Fi Protected Access

Version: 1.0

1 Introduction

The Wireless 11g Broadband Router is an affordable IEEE 802.11b/g wireless LAN broadband router solution; setting SOHO and enterprise standard for high performance, secure, manageable and reliable WLAN.

This document describes the steps required for the initial IP address assign and other WLAN router configuration. The description includes the implementation of the above steps.

1.1 Package contents

The package of the Wireless 11g Broadband Router includes the following items,

- ✓ The Wireless 11g Broadband Router
- \checkmark The AC to DC power adapter
- \checkmark The Documentation CD
- ✓ 1.8M RJ-45 Cable Line

Product Name RG54SE Wireless 11g Broadband Router Standard 802.11b/g(Wireless), 802.3(10BaseT), 802.3u(100BaseT) Data Transfer Rate 54Mbps(Wireless), 100Mbps(Ethernet) Modulation Method CCK(802.11b), OFDM(802.11g) Frequency Band 2.4GHz – 2.497GJz ISM Band, DSSS CCK< 17 dBm, OFDM< 13.5 dBm **RF** Output Power **Receiver Sensitivity** 802.11b -80 dBm@8%, 802.11g -68 dBm@5% **Operation Range** 30 to 280 meters (depend on surrounding) **SMA** Detachable Antenna Antenna LED Power, Active (WLAN), Act/Link (Ethernet) 64 bit/ 128 bit WEP, WPA, WPA2, port filtering, IP filtering, Security MAC filtering, port forwarding and DMZ hosting LAN interface One 10/100BaseT with RJ45 connector (WAN) Four 10/100BaseT with RJ45 connectors (LAN) Power Consumption 7.5V DC Power Adapter Operating Temperature $0 \sim 50^{\circ}$ C ambient temperature Storage Temperature $-20 \sim 70^{\circ}$ C ambient temperature Humidity 5 to 90 % maximum (non-condensing) Dimension 137 x 96 x 35 mm

1.2 Product Specifications

- 1.3 Product Features
 - Complies with IEEE 802.11b/g standard for 2.4GHz Wireless LAN.
 - Supports 64-bit and 128-bit WEP, WPA, WPA2 encryption/decryption function to protect the wireless data transmission.
 - Supports IEEE 802.1x Authentication.
 - Support Wi-Fi Protected Access Authentication with Radius and Pre-Shared Key mode.
 - Supports Inter-Access Point Protocol (IAPP).
 - Supports Wireless Distribution System (WDS).
 - Supports IEEE 802.3x full duplex flow control on 10/100M Ethernet interface.
 - Supports DHCP server to provide clients auto IP addresses assignment.
 - Supports DHCP client for Ethernet WAN interface auto IP address assignment.
 - Supports PPPoE on Ethernet WAN interface.
 - Supports clone MAC address function.
 - Supports firewall security with port filtering, IP filtering, MAC filtering, port forwarding, trigger port and DMZ hosting functions.
 - Supports WEB based management and configuration.
 - Supports PPTP Client on Ethernet WAN interface.
 - Supports UPNP for automatic Internet access.
 - Supports Dynamic DNS service.
 - Supports NTP client service.
 - Supports Log table and remote Log service.
 - Support Setup Wizard mode.

1.4 Front Panel Description

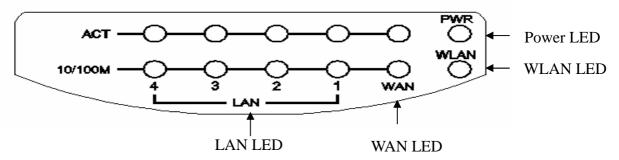


Figure 1 – Wireless Broadband Router Front Panel

LED Indicator	State	Description	
1. Power LED	On	The Wireless Broadband Router is powered on.	
	Off	The Wireless Broadband Router is powered off.	
2. WLAN LED	Flashing	Data is transmitting or receiving on the antenna.	
	Off	·····	
	OII	No data is transmitting or receiving on the antenna.	
3. WAN LED			
ACT	Flashing	Data is transmitting or receiving on the WAN	
		interface.	
	Off	No data is transmitting or receiving on the	
		WAN interface.	
10/100M	On	Connection speed is 100Mbps on WAN	
		interface.	
	Off	Connection speed is 10Mbps on WAN	
		interface.	
4. LAN LED			
ACT	Flashing	Data is transmitting or receiving on the LAN	
		interface.	
	Off	No data is transmitting or receiving on the LAN	
		interface.	
10/100M	On	Connection speed is 100Mbps on LAN	
		interface.	
	Off	Connection speed is 10Mbps on LAN interface.	

1.5 Rear Panel Description

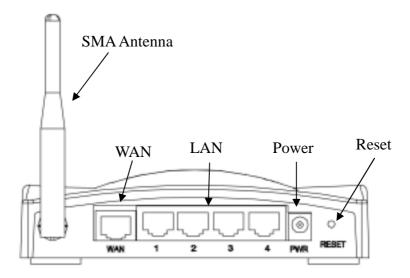


Figure 2 – Wireless Broadband Router Rear Panel (SMA Antenna)

Interfaces	Description
1. Antenna	The Wireless LAN Antenna.(Figure 2)
2. Reset	Push continually the reset button $5 \sim 10$ seconds to reset the
	configuration parameters to factory defaults.
3. WAN	The RJ-45 socket allows WAN connection through a Category
	5 cable. Support auto-sensing on 10/100M speed and half/ full
	duplex; comply with IEEE 802.3/ 802.3u respectively.
4. LAN	The RJ-45 sockets allow LAN connection through Category 5
	cables. Support auto-sensing on 10/100M speed and half/ full
	duplex; comply with IEEE 802.3/ 802.3u respectively.
5. Power	The power jack allows an external DC +7.5 V power supply
	connection.
	The external AC to DC adaptor provide adaptive power
	requirement to the Wireless Broadband Router.

2 Installation

2.1 Hardware Installation

- Step 1: Place the Wireless Broadband Router to the best optimum transmission location. The best transmission location for your Wireless Broadband Router is usually at the geographic center of your wireless network, with line of sign to all of your mobile stations.
- Step 2: Connect the Wireless Broadband Router to your wired network. Connect the Ethernet WAN interface of Wireless Broadband Router by category 5 Ethernet cable to your switch/ hub/ xDSL modem or cable modem. A straight-through Ethernet cable with appropriate cable length is needed.
- Step 3: Supply DC power to the Wireless Broadband Router. Use only the AC/DC power adapter supplied with the Wireless Broadband Router; it may occur damage by using a different type of power adapter.

The hardware installation finished.

2.2 Software Installation

There are no software drivers, patches or utilities installation needed, but only the configuration setting. Please refer to chapter 3 for software configuration.

Notice: It will take about 50 seconds to complete the boot up sequence after powered on the Wireless Broadband Router; Power LED will be active, and after that the WLAN Activity LED will be flashing to show the WLAN interface is enabled and working now.

3 Software configuration

There are web based management and configuration functions allowing you to have the jobs done easily.

The Wireless Broadband Router is delivered with the following factory default parameters on the Ethernet LAN interfaces.

Default IP Address: *192.168.1.254* Default IP subnet mask: *255.255.255.0* WEB login User Name: *admin* WEB login Password: *admin*

3.1 Prepare your PC to configure the Wireless Broadband Router For OS of Microsoft Windows 95/ 98/ Me:

Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.

Note: Windows Me users may not see the Network control panel. If so, *select* **View all Control Panel options** on the left side of the window

- 2. Move mouse and double-click the right button on *Network* icon. The *Network* window will appear.
- 3. Check the installed list of *Network Components*. If TCP/IP is not installed, click the *Add* button to install it; otherwise go to step 6.
- 4. Select *Protocol* in the *Network Component Type* dialog box and click *Add* button.
- 5. Select *TCP/IP* in *Microsoft* of *Select Network Protocol* dialog box then click OK button to install the TCP/IP protocol, it may need the Microsoft Windows CD to complete the installation. Close and go back to *Network* dialog box after the TCP/IP installation.
- 6. Select *TCP/IP* and click the *properties* button on the *Network* dialog box.
- 7. Select *Specify an IP address* and type in values as following example.
 - ✓ IP Address: 192.168.1.1, any IP address within 192.168.1.1 to 192.168.1.253 is good to connect the Wireless LAN Access Point.
 - ✓ IP Subnet Mask: 255.255.255.0
- 8. Click OK and reboot your PC after completes the IP parameters setting.

For OS of Microsoft Windows 2000, XP:

1. Click the Start button and select Settings, then click Control Panel. The Control

Panel window will appear.

- Move mouse and double-click the right button on *Network and Dial-up Connections* icon. Move mouse and double-click the *Local Area Connection* icon. The *Local Area Connection* window will appear. Click *Properties* button in the *Local Area Connection* window.
- 3. Check the installed list of *Network Components*. If TCP/IP is not installed, click the *Add* button to install it; otherwise go to step 6.
- 4. Select *Protocol* in the *Network Component Type* dialog box and click *Add* button.
- 5. Select *TCP/IP* in *Microsoft* of *Select Network Protocol* dialog box then click OK button to install the TCP/IP protocol, it may need the Microsoft Windows CD to complete the installation. Close and go back to *Network* dialog box after the TCP/IP installation.
- 6. Select *TCP/IP* and click the *properties* button on the *Network* dialog box.
- 7. Select *Specify an IP address* and type in values as following example.
 - ✓ IP Address: 192.168.1.1, any IP address within 192.168.1.1 to 192.168.1.253 is good to connect the Wireless LAN Access Point.
 - ✓ IP Subnet Mask: 255.255.255.0
- 8. Click OK to completes the IP parameters setting.

For OS of Microsoft Windows NT:

- Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.
- 2. Move mouse and double-click the right button on *Network* icon. The *Network* window will appear. Click *Protocol* tab from the *Network* window.
- 3. Check the installed list of *Network Protocol* window. If TCP/IP is not installed, click the *Add* button to install it; otherwise go to step 6.
- 4. Select *Protocol* in the *Network Component Type* dialog box and click *Add* button.
- 5. Select *TCP/IP* in *Microsoft* of *Select Network Protocol* dialog box then click OK button to install the TCP/IP protocol, it may need the Microsoft Windows CD to complete the installation. Close and go back to *Network* dialog box after the TCP/IP installation.
- 6. Select *TCP/IP* and click the *properties* button on the *Network* dialog box.
- 7. Select *Specify an IP address* and type in values as following example.
 - ✓ IP Address: 192.168.1.1, any IP address within 192.168.1.1 to 192.168.1.253 is good to connect the Wireless LAN Access Point.
 - ✓ IP Subnet Mask: 255.255.255.0
- 8. Click OK to complete the IP parameters setting.

3.2 Connect to the Wireless Broadband Router

Open a WEB browser, i.e. Microsoft Internet Explorer, enter 192.168.1.254 on the URL to connect the Wireless Broadband Router.

3.3 Management and configuration on the Welcome Page

3.3.1 Login

User input User name/Password to login web configuration page.

Connect to 192.1	68.1.254 🛛 🛛 🔁
	GA
RG545E	
User name:	🖸 admin 💌
Password:	•••••
	Remember my password
	OK Cancel

Screen snapshot - Login

Item	Description
User name	admin
Password	admin

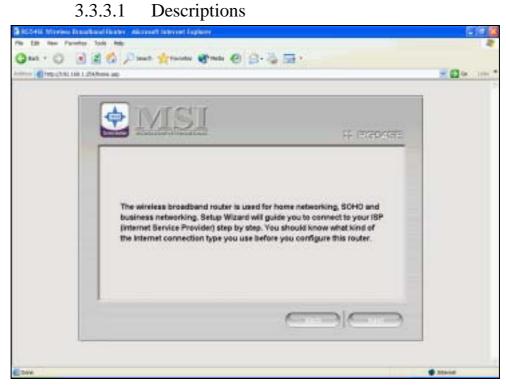
3.3.2 Welcome Page

This page guides you to configure wireless broadband router via **Setup Wizard** or **Customized Configuration**.



Screen snapshot – Welcome

3.3.3 Setup Wizard



Screen snapshot - Descriptions of Setup Wizard

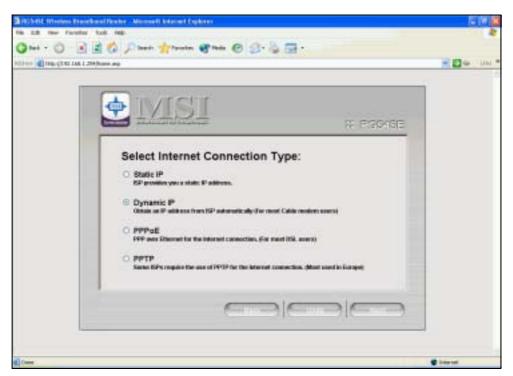
Item

Description

Next	Go to next step.
Back	Back to previous step.

3.3.3.2 Internet Connection

This page is to choose internet connection of you ISP provided.



<u>Screen snapshot – Internet Connection</u>

Item	Description
Internet Connection	There are Static IP, Dynamic IP, PPPoE and PPTP
	connections
Next	Go to next step.
Undo	Select previous setting.
Back	Back to previous step.

	WAN/LAN/DNS configura	ation.
O and - O - R	tan lak La Sk Pank Antonio State O St S S	
	Dynamic IP Setup: + LAN Subnet Mask BiLink Jaka	
Ine		Intervet

3.3.3.3 Dynamic IP Setup Step1 - This page is used to change WAN/LAN/DNS configuration.

Screen snapshot – Dynamic IP Setup

Item	Description
LAN IP Address	Default is 192.168.1.254. User can change it.
LAN Subnet Mask	Default is 255.255.255.0. User can change it.
Next	Go to next step.
Undo	Select previous setting.
Back	Back to previous step.

Step2 - This page is to finish Dynamic IP setup wizard and wait for settings successful message.

Version: 1.0 2 Mittel S. Monime President Reality - Altready Informat Explore the ED feet Facultar Solt Hep-Gant - O - 2 2 6 Plant Arnein Stein @ O - 3 -110-010 LBL 1.214 Sum and - 🛛 👄 🛛 Hit VISI RF REEKSE Configuration is Completed. Please click Finish to write settings to the router. 1 · John and

Screen snapshot – Finish Dynamic IP setup

Item	Description
Finish	Go to next step.
Back	Back to previous step.

Static IP Setup 3.3.3.4 Step1- This page is used to choose which type connection type you applied.

USER MANUAL OF RG54SE WIRELESS 11g BROADBAND ROUTER

anna 🐔 sab-fuar ta	LL2HMan ap	- 0 - Ini
	Select Internet Connection Type:	
	O Dynamic IP Otrain as P address tree SP adamatically for most Cable readom events	
	PPP pc PPP cell PPP cell PPP cell PPP cell PP cell	

Screen snapshot - Choose Static IP Connection

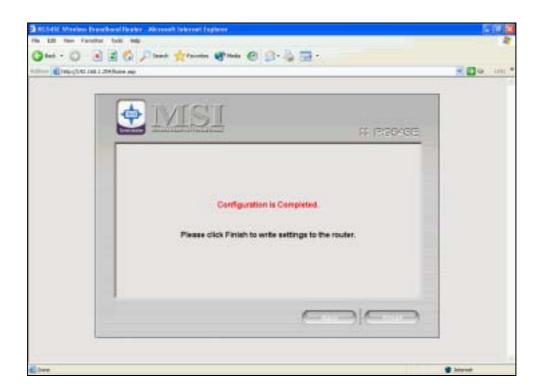
Step2 - This page is used to change WAN/LAN/DNS configuration.

C 100-1102 100			• 0 •
	MISI [R PG	MBE
	Static IP Setup:		
	LANIP Address	192.198.1254	
	LAN Submet Mask	265,295,255.0	
	Internet IP Address	0.040	
	Subnet Mask	255,255,255,9	
	ISP Gateway Address	0.04.0	
	> DNS		
	2		
	6		_
	C	and the second time of	-2

<u>Screen snapshot – Static IP Setup</u>

Item	Description
LAN IP Address	Default is 192.168.1.254. User can change it.
LAN Subnet Mask	Default is 255.255.255.0. User can change it.
Internet IP Address	User input the IP address that ISP provided.
Subnet Mask	User input the subnet mask that ISP provided.
ISP Gateway Address	User input the gateway that ISP provided.
DNS	User input DNS info that ISP provided.
Next	Go to next step.
Undo	Select previous setting.
Back	Back to previous step.

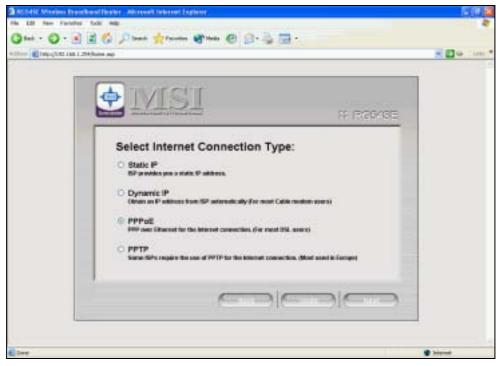
Step3 - This page is to finish Static IP setup wizard and wait for settings successful message.



Screen snapshot – Finish Static IP setup

3.3.3.5 PPPoE Setup

Step1- This page is used to choose which type connection type you applied.



Screen snapshot – Choose PPPoE Connection

Step2 - This page is used to change WAN/LAN/DNS configuration.

USER MANUAL OF RG54SE WIRELESS 11g BROADBAND ROUTER

1			
		1 Frepas	
	PPPoE Setup: LAN P Address	W2.160.1254 295.295.295.0	
	User Name Password DNS Mode:	Carlo	
		CHARME	

Screen snapshot - PPPoE Setup

Item	Description
LAN IP Address	Default is 192.168.1.254. User can change it.
LAN Subnet Mask	Default is 255.255.255.0. User can change it.
User Name	User input the user name that ISP provided.
Password	User input the password ISP provided.
DNS Mode	User chooses DNS mode that ISP provided.
	■ Auto
	■ Manual – Input the DNS server IP address.
Next	Go to next step.
Undo	Select previous setting.
Back	Back to previous step.

Step3 - This page is to finish PPPoE setup wizard and wait for settings successful message.

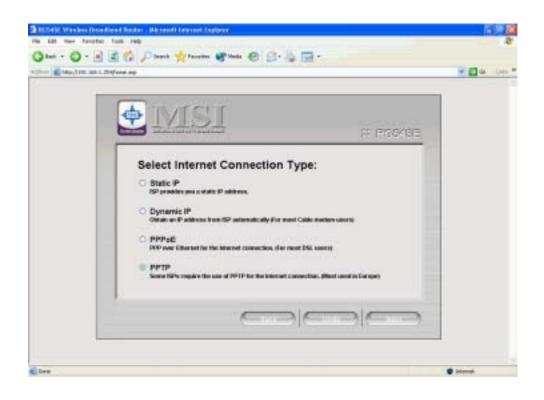
USER MANUAL OF RG54SE WIRELESS 11g BROADBAND ROUTER

 🚳 Danis Atunin Chain @ 31-	4 B.	- 0 - m
• MISI		
Sector Statistical State	FF FEGS40E	
Configuration is C	ampleted.	
Please click Finish to write a		

Screen snapshot – Finish PPPoE setup

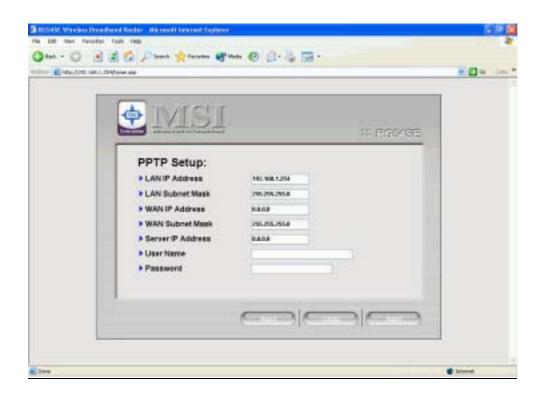
3.3.3.6 PPTP Setup

Step1- This page is used to choose which type connection type you applied.



Screen snapshot - Choose PPTP Connection

Step2 - This page is used to change WAN/LAN/DNS configuration.

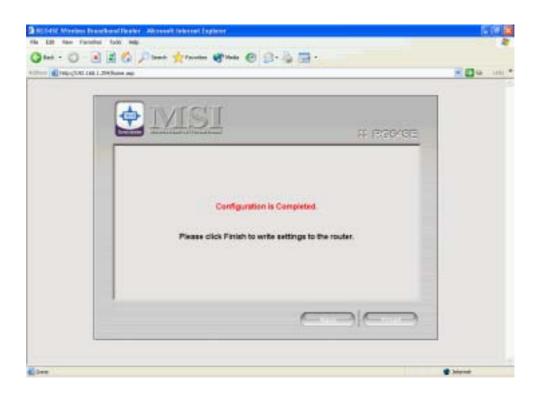


Screen snapshot – PPTP Setup

Item	Description
LAN IP Address	Default is 192.168.1.254. User can change it.
LAN Subnet Mask	Default is 255.255.255.0. User can change it.
WAN IP Address	User input WAN ip address that ISP provided.
WAN Subnet Mask	User input WAN subnet mask that ISP provided.
Server IP Address	User input PPTP server ip address that ISP provided.
User Name	User input the user name that ISP provided.
Password	User input the password ISP provided.
Next	Go to next step.
Undo	Select previous setting.
Back	Back to previous step.

Screen snapshot – PPTP Setup

Step3 - This page is to finish PPTP setup wizard and wait for settings successful message.



Screen snapshot - Finish PPTP setup

3.3.4 Customized Configuration

3.3.4.1 Setup Main Page

This page is used to show the descriptions of each feature in Setup group.

USER MANUAL OF RG54SE WIRELESS 11g BROADBAND ROUTER

Peter (2002) 158 () .254 (main a		
MSI	Advanced Advenistration Status	
	Setup	
	P Setting This page is used to configure the parameters for local area network which connects to the LAN part of your	
inting	Access Park and change WAR type. Here promise change the setting for IP address, subset musik etc.	
vola	Window - You can canfigure the parameters for windows LAH sheets which may connect to your Access Paul and aning the vendors accurty.	
INCOME	• WDS	
Server.	 WES passies weeks pare to pare brigging, and pare to excliping to depayment aver large wee. 	
hogo	Dynamic DHS Endlos por lo nar your damain sear a changing IP, you have found dynamic domain name servers (CDMS).	
	+ DHCP Server	

Screen snapshot - Setup Main Page

Bein	Setting	
LAN P Address	192,160.1,254	
LAN Subnet Mask:	255 255 255 0	
VIAN Type	Dynamic Charge	
Clone MAC Address Seve (Unda) Help	0000000000	

Screen snapshot - IP Setting

Item	Description
LAN IP Address	Fill in the IP address of LAN interfaces.
LAN Subnet Mask	Fill in the subnet mask of LAN interfaces.
WAN Type	Display current WAN connection type and support

be
tion
he
ng.

■ IP Setting – WAN Setting – DHCP Client

Item	Setting	
WAN Access Type	DHCP Clevel 🐱	
DNS Mode	Aute OManual	
DNS 1		
CMS 2		
CNIS 3		
Clone MAC Address	000000000000	
UPNP	C Enable @ Disable	
Web Sever Access on WAN:	CEnable @Disable	
WAN Echo Reply	O Enable (B Disable	

Screen snapshot - DHCP client

Item	Description
WAN Access Type	Click to select DHCP Client support on WAN Setting for
	IP address assigned automatically from a DHCP server.
DNS Mode	Click Auto/Manual. If choose Manual, input at least DNS
	info in DNS1/2/3.
DNS 1	Fill in the IP address of Domain Name Server 1.
DNS 2	Fill in the IP address of Domain Name Server 2.
DNS 3	Fill in the IP address of Domain Name Server 3.
Clone MAC Address	Fill in the MAC address that is the MAC address to be
	cloned.
UPNP	Click to Enable/Disable UPNP function.

Web Server Access on	Click to Enable/Disable web configuration from WAN
WAN	side.
WAN Echo Reply	Click to Enable/Disable WAN ICMP response.
Save	Click the <i>Save</i> button to complete the new configuration
	setting.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.
Close	Back to IP Setting page.
Help	Click <i>Help</i> button to redirect to help page of WAN
	Connection Setting.

■ IP Setting –WAN Setting – Static IP

Rem	Setting
WAN Access Type	Shite P
PAttest	0.00
Babeet Mack:	255 255 255 0
Detault Gateway:	0.0.0
DNS 1	
DNS 2	
DNS 3	
Clone MAC Address:	00000000000
UPNP:	CEnable @Dinable
Web Server Access on WAN	CEnable BDmable
WAN Echo Reply:	CEnable (Disable

Screen snapshot - Static IP

Item	Description
WAN Access Type	Click to select Static IP support on WAN interface. There
	is IP address, subnet mask and default gateway settings
	need to be done.
IP Address	If you select the Static IP support on WAN interface, fill
	in the IP address for it.
Subnet Mask	If you select the Static IP support on WAN interface, fill
	in the subnet mask for it.
Default Gateway	If you select the Static IP support on WAN interface, fill

	in the default gateway for WAN interface out going data
	packets.
DNS 1	Fill in the IP address of Domain Name Server 1.
DNS 2	Fill in the IP address of Domain Name Server 2.
DNS 3	Fill in the IP address of Domain Name Server 3.
Clone MAC Address	Fill in the MAC address that is the MAC address to be
	cloned.
PNP	Click to Enable/Disable UPNP function.
Web Server Access on	Click to Enable/Disable web configuration from WAN
WAN	side.
WAN Echo Reply	Click to Enable/Disable WAN ICMP response.
Save	Click the Save button to complete the new configuration
	setting.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.
Close	Back to IP Setting page.
Help	Click <i>Help</i> button to redirect to help page of WAN
	Connection Setting.

■ IP Setting – WAN Setting – PPPoE

Barn.	Setting
WAN Access Type:	PPPbE 💌
User Name	
Passwort	
Connection Type:	Continuous Connect Deserver
Ide Time:	5 (5-1000 minutes)
MTU Size	1400 (1400-1492 bytes)
DNS Mode	C Auto S Manual
DNS 1	
DNS 2	
DNS 2	
Cione MAC Address:	00000000000
UPNP	C Enable @ Dicable

Screen snapshot – PPPoE-1

Item Description

Version: 1.0

WAN Access Type	Click to select PPPoE support on WAN interface. There are user name, password, connection type and idle time settings need to be done.
User Name	If you select the PPPoE support on WAN interface, fill in
	the user name and password to login the PPPoE server.
Password	If you select the PPPoE support on WAN interface, fill in
	the user name and password to login the PPPoE server.
Connection Type	Select the connection type from pull-down menu. There
	are <i>Continuous</i> , <i>Connect on Demand</i> and <i>Manual</i> three
	types to select.
	Continuous connection type means to setup the
	connection through PPPoE protocol whenever this
	Wireless Broadband Router is powered on.
	Connect on Demand connection type means to setup the
	connection through PPPoE protocol whenever you send
	the data packets out through the WAN interface; there are
	a watchdog implemented to close the PPPoE connection
	while there are no data sent out longer than the idle time
	set.
	Manual connection type means to setup the connection
	through the PPPoE protocol by clicking the Connect
	button manually, and clicking the <i>Disconnect</i> button manually.
Idle Time	If you select the PPPoE and Connect on Demand
	connection type, fill in the idle time for auto-disconnect
	function. Value can be between 1 and 1000 minutes.
MTU Size	Fill in the mtu size of MTU Size. The default value is
	1400. Refer to 4.23 What is Maximum Transmission Unit
	(MTU) Size?
DNS Mode	Click Auto/Manual. If choose Manual, input at least DNS
	info in DNS1/2/3.
DNS 1	Fill in the IP address of Domain Name Server 1.
DNS 2	Fill in the IP address of Domain Name Server 2.
DNS 3	Fill in the IP address of Domain Name Server 3.
Clone MAC Address	Fill in the MAC address that is the MAC address to be cloned.

Version: 1.0

UPNP	Click to Enable/Disable UPNP function.
Web Server Access on	Click to Enable/Disable web configuration from WAN
WAN	side.
WAN Echo Reply	Click to Enable/Disable WAN ICMP response.
Save	Click the <i>Save</i> button to complete the new configuration
	setting.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Close	Back to IP Setting page.
Help	Click <i>Help</i> button to redirect to help page of WAN
	Connection Setting.

■ IP Setting – WAN Setting – PPTP

WAN Setting		
Rom	Setting	
WAN Access Type	• पापन	
P Address	0.0.0.0	
Satnet Mask	255 255 255 0	
Server IP Address:	0.0.00	
User Name:		
Password.		
MTU Size:	1400 (1400-1492 bytes)	
DNS Mode	C Acto Manual	
DNS 1		
DNS 2		
DNS 3		
Clone MAC Address	00000000000	

Screen snapshot – PPTP-1

Version: 1.0

P Addiess:	0000
Subset Mask	255 255 255 0
Server IP Address	0000
Uner Name:	
Passwert	
MTU Size	1400 (1400-1492 hytes)
DNS Mode	O Auto
DNS 1	
DNS 2	
DNS 3	
Clone MAC Address	00000000000
▶ UPNP	CEnable @Disable
Web Server Access on WAN:	O Evable @Disable
WWW Echo Reply	O Exable O Disable
Save Unds Close Help	

Screen snapshot – PPTP-2

Item	Description
WAN Access Type	Allow user to make a tunnel with remote site directly to
	secure the data transmission among the connection. User
	can use embedded PPTP client supported by this router a
	VPN connection.
IP Address	If you select the PPTP support on WAN interface, fill in
	the IP address for it.
Subnet Mask	If you select the PPTP support on WAN interface, fill in
	the subnet mask for it.
Server IP Address	Enter the IP address of the PPTP Server.
User Name	If you select the PPTP support on WAN interface, fill in
	the user name and password to login the PPTP server.
Password	If you select the PPTP support on WAN interface, fill in
	the user name and password to login the PPTP server.
MTU Size	Fill in the mtu size of MTU Size. The default value is
	1400.
DNS Mode	Click Auto/Manual. If choose Manual, input at least DNS
	info in DNS1/2/3.
DNS 1	Fill in the IP address of Domain Name Server 1.
DNS 2	Fill in the IP address of Domain Name Server 2.
DNS 3	Fill in the IP address of Domain Name Server 3.

Clone MAC Address	Fill in the MAC address that is the MAC address to be
	cloned. Refer to 4.24 What is Clone MAC Address?
UPNP	Click to Enable/Disable UPNP function.
Web Server Access on	Click to Enable/Disable web configuration from WAN
WAN	side.
WAN Echo Reply	Click to Enable/Disable WAN ICMP response.
Save	Click the <i>Save</i> button to complete the new configuration
	setting.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Close	Back to IP Setting page.
Help	Click <i>Help</i> button to redirect to help page of WAN
	Connection Setting.

Wireless

Band	8+G	
Mode:	AP 🖬	
550	MS	
Channel Number	7 🐱	
Security	Name Change	
Associated Clients	Show Active Clients	
Save Unda Help		

Screen snapshot – Wireless

Item	Description
Band	Display current band setting.
Mode	Click to select the AP / WDS / AP+WDS wireless mode.
SSID	It is the wireless network name. The SSID can be 32
	bytes long.
Channel Number	Select the wireless communication channel from

Version: 1.0

	pull-down menu.
Security	Display current WLAN security status and support
	Change button to redirect to WLAN Security page.
Associated Clients	Click the Show Active Clients button to open Active
	Wireless Client Table that shows the MAC address,
	transmit-packet, receive-packet and transmission-rate for
	each associated wireless client.
Save	Click the Save button to complete the new configuration
	setting.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of Wireless.

■ Wireless – WLAN Security

Real	Setting
Encryption	None w Est HEI Key
Use 802.1x Authentication	WEP 64bits WEP 128bits
WPA Authentication Mide	Enterprise (RADIUS) Personal (Pre-Shared Key)
Pre-Shared Key Fernal:	Partylenia
Pre-Shared Key	
Pre-Authentication	Enable Disable
Authentication RADIUS Server	Port Paddress Password
Note: When encyption WEP is selected, yo Save: Undo: Clase: Help	na musit ant WEP kny value

Screen snapshot - WLAN Security

Item	Description
Encryption	Select the encryption supported over wireless access. The
	encryption method can be None, WEP, WPA(TKIP),
	WPA2 or WPA2 Mixed
Use 802.1x	Click checkbox to use 802.1x via RADIUS Sever
Authentication	authentication.

Version: 1.0

While Encryption is selected to be WPA.
Click to select the WPA Authentication Mode with
Enterprise (RADIUS) or Personal (Pre-Shared Key).
While Encryption is selected to be WPA.
Select the Pre-shared key format from the pull-down
menu. The format can be Passphrase or Hex (64
characters). [WPA, Personal(Pre-Shared Key) only]
Fill in the key value. [WPA, Personal(Pre-Shared Key)
only]
Click to Enable/Disable Pre-Authentication.
[WPA2/WPA2 Mixed only, Enterprise only]
Set the IP address, port and login password information
of authentication RADIUS sever.
Click the <i>Save</i> button to complete the new configuration
setting.
Click the <i>Undo</i> button to abort change and recover the
previous configuration setting.
Back to Wireless page.
Click <i>Help</i> button to redirect to help page of WLAN

■ WLAN Security - WEP

ltem	Soting	
Hey Length:	64-bit 🖛	
Key Format:	Hes (10 characters) 😹	
Default Tx Key:	Kay 1 🖮	
Encryption Kity 1		
Encryption Kity 2:		
Cocryption Key 3		
Cocyption Key 4		
Swe Close Undo		

Screen snapshot - Wireless WEP Key Setup

Version: 1.0

Item	Description
Key Length	Select the WEP shared secret key length from pull-down
	menu. The length can be chose between 64-bit and
	128-bit (known as "WEP2") keys.
	The WEP key is composed of initialization vector (24
	bits) and secret key (40-bit or 104-bit).
Key Format	Select the WEP shared secret key format from pull-down
	menu. The format can be chose between plant text
	(ASCII) and hexadecimal (HEX) code.
Default Tx Key	Set the default secret key for WEP security function.
	Value can be chose between 1 and 4.
Encryption Key 1	Secret key 1 of WEP security encryption function.
Encryption Key 2	Secret key 2 of WEP security encryption function.
Encryption Key 3	Secret key 3 of WEP security encryption function.
Encryption Key 4	Secret key 4 of WEP security encryption function.
Save	Click the <i>Save</i> button to complete the new configuration
	setting.
Close	Click to back to Wireless page.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.

■ WDS

liers	Setting	
ADS	Enable Disable	
Add WDS AP Wei Undo Set Security	NAC Address Show Statistics	Convert
MAC Address	Comm	ent Salect
00:02:72:01:01:01 00:02:72:01:01:02	WDS-1 WDS-2	
Wate Selected Delete AL	(Undo	

Screen snapshot - WDS

Version: 1.0

Item	Description
Enable WDS	Click the Enable/Disable wireless distribution system.
MAC Address	Fill in the MAC address of AP to register the wireless
	distribution system access capability.
Comment	Fill in the comment tag for the registered AP.
Save	Click the Save button to register the AP to new
	configuration setting.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Set Security	Click button to configure wireless security like
	WEP(64bits), WEP(128bits), WPA(TKIP), WPA2(AES)
	or <i>None</i>
Show Statistics	It shows the TX, RX packets, rate statistics
Delete Selected	Click to Delete Selected clients that will be removed
	from the wireless distribution system.
Delete All	Click to Delete All the registered APs from the wireless
	distribution system allowed list.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of WDS.

Dynamic DNS

Screen snapshot – Dynamic DNS

Item	Description
DDNS	Click Enable/Disable DDNS service.
Service Provider	Click the drop down menu to pickup the service provider.
Domain Name	To configure the Domain Name.
User Name/Email	Configure User Name, Email.
Password/Key	Configure Password, Key.
Save	Click the <i>Save</i> button to save the enable DDNS service.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of Dynamic
	DNS.

DHCP Server

lten	Setting
DHCP.	@Enabled ODisabled
DHCP Client Ranger	192.168.1.100 . 192.168.1.200 Show Client
Save Undo Help	

Screen snapshot – DHCP Server

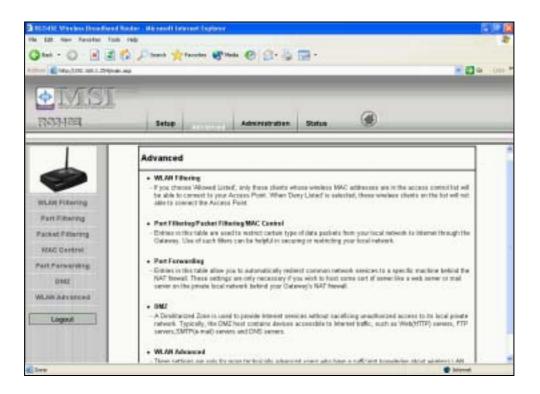
Description
Click to Enable/Disable DHCP Server.
Fill in the start IP address and end IP address to allocate a
range of IP addresses; client with DHCP function set will
be assigned an IP address from the range.
Click to open the Active DHCP Client Table window that
shows the active clients with their assigned IP address,
MAC address and time expired information. [Server

Version: 1.0

	mode only]
Save	Click the <i>Save</i> button to complete the new configuration
	setting.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of DHCP
	server.

3.3.4.2 Advanced Main Page

This page is used to show the descriptions of each feature in Advanced group.



Screen snapshot - Advanced Main Page

WLAN Filtering

Version: 1.0

Hern	Setting		
Wireless Access Cantrol Mode	Allow Listed 😽		
Add Rule:	MAC Address	Comm	int:
IIAC Address 00.02.72:01:02:01		Canonant ST-1	Select
00.02/72/01 02:02		ST-2	
Delete Selected Delete Al F	Recet Help		
neramonites an	second , Nanatal		

Screen snapshot - WLAN Filtering

Item	Description
Wireless Access	Click the Disabled, Allow Listed or Deny Listed of drop
Control Mode	down menu choose wireless access control mode.
	This is a security control function; only those clients
	registered in the access control list can link to this
	Wireless Broadband Router.
MAC Address	Fill in the MAC address of client to register this Wireless
	Broadband Router access capability.
Comment	Fill in the comment tag for the registered client.
Save	Click the <i>Save</i> button to register the client to new
	configuration setting.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Current Access Control	It shows the registered clients that are allowed to link to
List	this Wireless Broadband Router.
Delete Selected	Click to delete the selected clients that will be access
	right removed from this Wireless Broadband Router.
Delete All	Click to delete all the registered clients from the access
	allowed list.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.

Help

Click *Help* button to redirect to help page of WLAN Filtering.

Port Filtering

hern	Setting		
Part Filtering	Enable O Decable		
Add Rule:	Part Range	Protocal Bith 💌 Comment:	
eve Unde			
Poet Range	Protacol	Connext	Select
21	TOP	qT9	1.1
an a card the second		1007	
an a card da segura	Inter All Undo Holp	1.1	L.
an a card a barrante			
an a card the second		110	1
an a card the second		110	1

Screen snapshot - Port Filtering

Item	Description
Port Filtering	Click to Enable/Disable the port filtering security
	function.
Port Range	To restrict data transmission from the local network on
Protocol	certain ports, fill in the range of start-port and end-port,
Comments	and the protocol, also put your comments on it.
	The <i>Protocol</i> can be TCP, UDP or Both.
	Comments let you know about whys to restrict data from
	the ports.
Save	Click the Save button to register the ports to port filtering
	list.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Delete Selected	Click to delete the selected port range that will be
	removed from the port-filtering list.
Delete All	Click to delete all the registered entries from the
	port-filtering list.
Undo	Click the <i>Undo</i> button to abort change and recover the
Delete All	removed from the port-filtering list. Click to delete all the registered entries from the port-filtering list.

	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of Port
	Filtering.

Packet Filtering

have	Setting		
Packet Fittering	@Enshie O Double		
Add Rule:	Load IP Address	Protocol Both 🖉 Comment	
Local IP Advices 192, 198, 1, 100	Protocol	Comment ST-1	Select
192.168.1.100	TCP+UOP	ST-1	
	70.0	ST-2	5
192.168.1.101	TCP	01-2	<u> </u>

Screen snapshot - Packet Filtering

Item	Description
Packet Filtering	Click to Enable/Disable the Packer filtering security
	function.
Local IP Address	To restrict data transmission from local network on
Protocol	certain IP addresses, fill in the IP address and the
Comments	protocol, also put your comments on it.
	The <i>Protocol</i> can be TCP, UDP or Both.
	Comments let you know about whys to restrict data from
	the IP address.
Save	Click the <i>Save</i> button to register the IP address to Packet
	filtering list.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.
Delete Selected	Click to delete the selected IP address that will be
	removed from the IP-filtering list.

Delete All	Click to delete all the registered entries from the
	IP-filtering list.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of Packet
	Filtering.

MAC Control

here		Setting		
SAC Control Add Rule: We Unds		BEnable ODIsable MAC Address	Comment	3
	BAC Address 00 02 71:01 01:01 00 02 72:01:01 02		ST-1 ST-2	Select

Screen snapshot - MAC Control

Item	Description
MAC Control	Click Enable/Disable the MAC Control security function.
MAC Address	To restrict data transmission from local network on
Comments	certain MAC addresses, fill in the MAC address and your
	comments on it.
	Comments let you know about whys to restrict data from
	the MAC address.
Save	Click the Save button to register the MAC address to
	MAC Control list.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Delete Selected	Click to delete the selected MAC address that will be
	removed from the MAC-filtering list.

Delete All	Click to delete all the registered entries from the
	MAC-filtering list.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of MAC
	Control.

Port Forwarding

hen	Setting			
Add Rule:	Brable O Disable P Address Pro Convesent	tacal 🗄 🖬 Post Range		
Local IP Adde	ess Protocol	Port Range	Comment	Select
and here and the construction				
192.168.1.100	TOPHUDP	20-21	FTP	
	TCP+UDP TCP	20-21 23	FTP TELNET	0

Screen snapshot - Port Forwarding

Item	Description
Port Forwarding	Click to Enable/Disable the Port Forwarding security
	function.
IP Address	To forward data packets coming from WAN to a specific
Protocol	IP address that hosted in local network behind the NAT
Port Range	firewall, fill in the IP address, protocol, port range and
Comment	your comments.
	The <i>Protocol</i> can be TCP, UDP or Both.
	The <i>Port Range</i> for data transmission.
	Comments let you know about whys to allow data
	packets forward to the IP address and port number.
Save	Click the <i>Save Changes</i> button to register the IP address

Version: 1.0

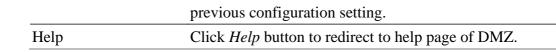
	and port number to Port forwarding list.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.
Delete Selected	Click to delete the selected IP address and port number
	that will be removed from the port-forwarding list.
Delete All	Click to delete all the registered entries from the
	port-forwarding list.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of Port
	Forwarding.

DMZ

	DMZ	
lten	Setting	
DMZ	O Exable @ Disable	
DMZ Host IP Address:		
Save Undo Help		

Screen snapshot – DMZ

Item	Description
DMZ	Click to Enable/Disable the DMZ function.
DMZ Host IP Address	To support DMZ in your firewall design, fill in the IP
	address of DMZ host that can be access from the WAN
	interface.
Save	Click the <i>Save</i> button to register the IP address of DMZ
	host.
Undo	Click the <i>Undo</i> button to abort change and recover the



WLAN Advanced

Barn	Sating
Authentication Type	O Open System O Shared Key @ Auto
Fragment Thraubuild	2346 (286-2346)
RTS Threahald	(2347 (0-2347)
Beacon Interval	100 (20-1024 mil)
Data Rate:	Auta 🐱
Preareble Type:	@ Long Preamble
Broadcast SSID	@Enable ODisable
IAPP.	@Enable ODisabled
Save Unda (Help	

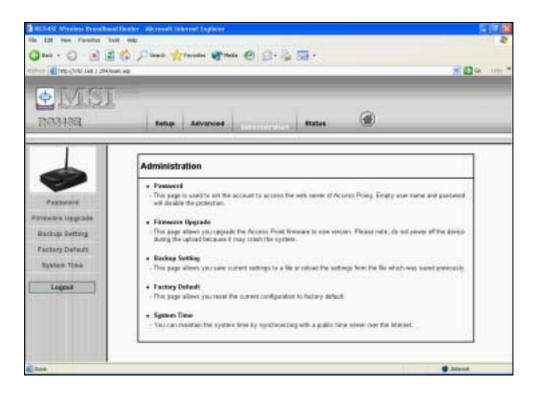
Screen snapshot - WLAN Advanced

Item	Description
Authentication Type	Click to select the authentication type in <i>Open System</i> ,
	Shared Key or Auto selection.
Fragment Threshold	Set the data packet fragmentation threshold, value can be
	written between 256 and 2346 bytes.
RTS Threshold	Set the RTS Threshold, value can be written between 0
	and 2347 bytes.
Beacon Interval	Set the Beacon Interval, value can be written between 20
	and 1024 ms.
Data Rate	Select the transmission data rate from pull-down menu.
	Data rate can be auto-select, 11M, 5.5M, 2M or
	1Mbps(11b) 6M, 9M, 12M, 18M, 24M, 36M, 48M, 54M
	(11g).
Preamble Type	Click to select the <i>Long Preamble</i> or <i>Short Preamble</i>
	support on the wireless data packet transmission.
Broadcast SSID	Click to enable or disable the SSID broadcast function.

IAPP	Click to enable or disable the IAPP function.
	Refer to 4.20 What is Inter-Access Point Protocol(IAPP)?
Save	Click the <i>Save</i> button to complete the new configuration
	setting.
Undo	Click the <i>Undo</i> button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of WLAN
	Advanced.

3.3.4.3 Administration Main Page

This page is used to show the descriptions of each feature in Administration group.



Screen snapshot - Administration Main Page

Password

Version: 1.0

Password		
Ben	Setting	
User Nores:		
New Password		
Confirmat Password	1	

Screen snapshot - Password

Item	Description
User Name	Fill in the user name for web management login control.
New Password	Fill in the password for web management login control.
Confirmed Password	Because the password input is invisible, so please fill in
	the password again for confirmation purpose.
Save	Clear the User Name and Password fields to empty,
	means to apply no web management login control.
	Click the Save button to complete the new configuration
	setting.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Help	Click <i>Help</i> button to redirect to help page of Password.
Help	

■ Firmware Upgrade

Bern	Setting	
Solect File	Uptoad Unda Help	

Screen snapshot – Firmware Upgrade

Item	Description
Select File	Click the <i>Browse</i> button to select the new version of web
	firmware image file.(It accepts kernel or web image)
Upload	Click the <i>Upload</i> button to update the selected web
	firmware image to the Wireless Broadband Router.
Undo	Click the Undo button to abort change and recover the
	previous configuration setting.
Help	Click Help button to redirect to help page of Firmware
	Upgrade.

Backup Setting

Version: 1.0

Rest.	Setting	
Save Settings to File	Save	
Load Settings from File	Browse	
	Uplead Help	

Screen snapshot - Backup Setting

Item	Description
Save Settings to File	Click the <i>Save</i> button to download the configuration
	parameters to your personal computer.
Load Settings from File Click the Browse button to select the configuration file	
	then click the Upload button to update the selected
	configuration to the Wireless Broadband Router.
Help	Click <i>Help</i> button to redirect to help page of Backup
	Setting.

File Dov	vnload 🛛 🔀
?	Some files can harm your computer. If the file information below looks suspicious, or you do not fully trust the source, do not open or save this file.
	File name: config.dat
	File type:
	From: 192.168.1.254
	Would you like to open the file or save it to your computer?
	Open Save Cancel More Info
	Always ask before opening this type of file

Screen snapshot - Save Settings to File

■ Factory Default

Factory Default		
liem	Sating	
Reset Settings to Default	Reset Help	

Screen snapshot - Factory Default

Item	Description
Reset Settings to	Click the <i>Reset</i> button to reset the configuration
Default	parameter to factory defaults.
Help	Click Help button to redirect to help page of Factory
	Default.

■ System Time

Version: 1.0

hem	Soting
Current Time :	Yr 2000 Mae 1 Day 1 Hr 17 Me 31 Sec 39
Time Zone Select	(GMT+0B:00)(Twipe)
NTP client update	O Enable @ Disable
NTP servet	(B) 1933 At Al - Math Arterica
	O (Messat P Setting)
Save Undo Retech	Pida

<u>Screen snapshot – System Time</u>

n attalation and a
It can edit the current time stamp.
Click the time zone in your country.
Click to Enable/Disable NTP client update
Click select default or input NTP server IP address.
Click the <i>Save</i> button to save and enable NTP client
service.
Click the <i>Undo</i> button to abort change and recover the
previous configuration setting.
Click the refresh the current time shown on the screen.
Click <i>Help</i> button to redirect to help page of System
Time.

3.3.4.4 Status Main Page

This page is used to show the descriptions of each feature in Status group.

Version: 1.0

USER MANUAL OF RG54SE WIRELESS 11g BROADBAND ROUTER

MIST. 184	Retup Advanced Advancedration
L	Status
ten	Statute This page shows the parent status, and same limble settings of the choice Statistics
mine mine	This page shows the packet counters for transmission and reception regarding to wholess and Ethernet networks System Lag
<u>eut</u>	- This page can be used to bet estrate top server and show the system log

Screen snapshot - Status Main Page

Status System Uptime Oday: 17h: 36m: 40a Firmware Version v1.27.G Wireless Configuration Mode AP 2.4 GHz (B+G) Band 5510 MEI **Channel Number** 7 Disabled Encryption 8550 00.02/22/06:08 08 Associated Clients 0 TCP/IP Configuration Attain IP Protocol Fixed IP

Screen snapshot - Status-1

Status

Version: 1.0

	TCPAP Canfiguration	
Attain IP Protocol	Fixed IP	
P Address	192.168.1.254	
Subnet Mask	265 255 255 0	
Default Gateway	192.160.1.254	
DHCP Server	Evabled	
MAC Address	00.02.72.08.08:08	
	WAN Configuration	
Attain IP Protocol	Getting IP from DHCP server	
P Address	0000	
Subnet Mask	0000	
Default Gateway	0.0.0.0	
MAC Address	00.02.72.08.08.09	
	Help	

<u>Screen snapshot – Status-2</u>

Item	Description
System	
Uptime	It shows the duration since Wireless Broadband Router is
	powered on.
Firmware version	It shows the firmware version of Wireless Broadband
	Router.
Wireless configuration	
Mode	It shows wireless operation mode
Band	It shows the current wireless operating frequency.
SSID	It shows the SSID of this Wireless Broadband Router.
	The SSID is the unique name of Wireless Broadband
	Router and shared among its service area, so all devices
	attempts to join the same wireless network can identify it.
Channel Number	It shows the wireless channel connected currently.
Encryption	It shows the status of encryption function.
BSSID	It shows the BSSID address of the Wireless Broadband
	Router. BSSID is a six-byte address.
Associated Clients	It shows the number of connected clients (or stations,
	PCs).
TCP/IP configuration	
Attain IP Protocol	It shows the status of LAN IP address.

Version: 1.0

IP Address	It shows the IP address of LAN interfaces of Wireless
IP Address	
	Broadband Router.
Subnet Mask	It shows the IP subnet mask of LAN interfaces of
	Wireless Broadband Router.
Default Gateway	It shows the default gateway setting for LAN interfaces
	outgoing data packets.
DHCP Server	It shows the DHCP server is enabled or not.
MAC Address	It shows the MAC address of LAN interfaces of Wireless
	Broadband Router.
WAN configuration	
Attain IP Protocol	It shows how the Wireless Broadband Router gets the IP
	address. The IP address can be set manually to a fixed
	one or set dynamically by DHCP server or attain IP by
	PPPoE / PPTP connection.
IP Address	It shows the IP address of WAN interface of Wireless
	Broadband Router.
Subnet Mask	It shows the IP subnet mask of WAN interface of
	Wireless Broadband Router.
Default Gateway	It shows the default gateway setting for WAN interface
	outgoing data packets.
MAC Address	It shows the MAC address of WAN interface of Wireless
	Broadband Router.
Help	Click <i>Help</i> button to redirect to help page of Status.

Statistics

Version: 1.0

Wireless LAN Sert Packets	127
Received Packs	ets 7067
Ethemet LAN Sent Packets	1634
Received Packs	ets 1773
Ethernet WAN Sere Packets	2908
Received Packs	
Refrect. [Help]	

Screen snapshot - Statistics

Item	Description
Wireless LAN	It shows the statistic count of sent packets on the wireless
Sent Packets	LAN interface.
Wireless LAN	It shows the statistic count of received packets on the
Received Packets	wireless LAN interface.
Ethernet LAN	It shows the statistic count of sent packets on the
Sent Packets	Ethernet LAN interface.
Ethernet LAN	It shows the statistic count of received packets on the
Received Packets	Ethernet LAN interface.
Ethernet WAN	It shows the statistic count of sent packets on the
Sent Packets	Ethernet WAN interface.
Ethernet WAN	It shows the statistic count of received packets on the
Received Packets	Ethernet WAN interface.
Refresh	Click the refresh the statistic counters on the screen.
Help	Click <i>Help</i> button to redirect to help page of Statistics.

System Log

Version: 1.0

System Log		
Ren	Setting	
Enuble Log	le visitaza only O system all	
Enable Remote Log Save	Log Sever P Address	
		1

<u>Screen snapshot – System Log</u>

Item	Description
Enable Log	Click the checkbox to enable log.
Wireless only	Only show wireless log
System all	Show all log of wireless broadband router
Enable Remote Log	Click the checkbox to enable remote log service.
Log Server IP Address	Input the remote log IP address
Save	Click the <i>Save</i> button to save above settings.
Refresh	Click the refresh the log shown on the screen.
Clear	Clear log display screen
Help	Click <i>Help</i> button to redirect to help page of System Log.

Version: 1.0

3.3.4.5	Logout	
	Logout	
	Lagout	2
Do you want to legant ?		

Screen snapshot - Logout

Item	Description
ОК	Click logout web configuration page.

4 Frequently Asked Questions (FAQ)

4.1 What and how to find my PC's IP and MAC address?

IP address is the identifier for a computer or device on a TCP/IP network. Networks using the TCP/IP protocol route messages based on the IP address of the destination. The format of an IP address is a 32-bit numeric address written as four numbers separated by periods. Each number can be zero to 255. For example, 191.168.1.254 could be an IP address.

The MAC (Media Access Control) address is your computer's unique hardware number. (On an Ethernet LAN, it's the same as your Ethernet address.) When you're connected to the Internet from your computer (or host as the Internet protocol thinks of it), a correspondence table relates your IP address to your computer's physical (MAC) address on the LAN.

To find your PC's IP and MAC address,

- \checkmark Open the Command program in the Microsoft Windows.
- ✓ Yype in *ipconfig /all* then press the *Enter* button.
- Your PC's IP address is the one entitled IP Address and your PC's MAC address is the one entitled Physical Address.

4.2 What is Wireless LAN?

A wireless LAN (WLAN) is a network that allows access to Internet without the need for any wired connections to the user's machine.

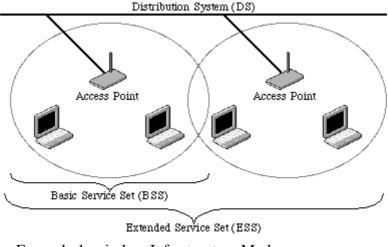
4.3 What are ISM bands?

ISM stands for Industrial, Scientific and Medical; radio frequency bands that the Federal Communications Commission (FCC) authorized for wireless LANs. The ISM bands are located at 915 +/- 13 MHz, 2450 +/- 50 MHz and 5800 +/- 75 MHz.

4.4 How does wireless networking work?

The 802.11 standard define two modes: infrastructure mode and ad hoc mode. In infrastructure mode, the wireless network consists of at least one access point connected to the wired network infrastructure and a set of wireless end stations. This configuration is called a Basic Service Set (BSS). An Extended Service Set (ESS) is a set of two or more BSSs forming a single subnetwork. Since most corporate WLANs require access

to the wired LAN for services (file servers, printers, Internet links) they will operate in infrastructure mode.



Example 1: wireless Infrastructure Mode

Ad hoc mode (also called peer-to-peer mode or an Independent Basic Service Set, or IBSS) is simply a set of 802.11 wireless stations that communicate directly with one another without using an access point or any connection to a wired network. This mode is useful for quickly and easily setting up a wireless network anywhere that a wireless infrastructure does not exist or is not required for services, such as a hotel room, convention center, or airport, or where access to the wired network is barred (such as for consultants at a client site).



Example 2: wireless Ad Hoc Mode

4.5 What is BSSID?

A six-byte address that distinguishes a particular a particular access point from others. Also know as just SSID. Serves as a network ID or name.

4.6 What is ESSID?

The Extended Service Set ID (ESSID) is the name of the network you want to access. It is used to identify different wireless networks.

- 4.7 What are potential factors that may causes interference? Factors of interference:
 - > Obstacles: walls, ceilings, furniture... etc.
 - > Building Materials: metal door, aluminum studs.
 - > Electrical devices: microwaves, monitors and electrical motors.

Solutions to overcome the interferences:

- \checkmark Minimizing the number of walls and ceilings.
- \checkmark Position the WLAN antenna for best reception.
- ✓ Keep WLAN devices away from other electrical devices, eg: microwaves, monitors, electric motors, ... etc.
- ✓ Add additional WLAN Access Points if necessary.

4.8 What are the Open System and Shared Key authentications?

IEEE 802.11 supports two subtypes of network authentication services: open system and shared key. Under open system authentication, any wireless station can request authentication. The station that needs to authenticate with another wireless station sends an authentication management frame that contains the identity of the sending station. The receiving station then returns a frame that indicates whether it recognizes the sending station. Under shared key authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11 wireless network communications channel.

4.9 What is WEP?

An optional IEEE 802.11 function that offers frame transmission privacy similar to a wired network. The Wired Equivalent Privacy generates secret shared encryption keys that both source and destination stations can use to alert frame bits to avoid disclosure to eavesdroppers.

WEP relies on a secret key that is shared between a mobile station (e.g. a laptop with a wireless Ethernet card) and an access point (i.e. a base station). The secret key is used to encrypt packets before they are transmitted, and an integrity check is used to ensure that packets are not modified in transit.

4.10 What is Fragment Threshold?

The proposed protocol uses the frame fragmentation mechanism defined in IEEE 802.11 to achieve parallel transmissions. A large data frame is fragmented into several

fragments each of size equal to fragment threshold. By tuning the fragment threshold value, we can get varying fragment sizes. The determination of an efficient fragment threshold is an important issue in this scheme. If the fragment threshold is small, the overlap part of the master and parallel transmissions is large. This means the spatial reuse ratio of parallel transmissions is high. In contrast, with a large fragment threshold, the overlap is small and the spatial reuse ratio is low. However high fragment threshold leads to low fragment overhead. Hence there is a trade-off between spatial re-use and fragment overhead.

Fragment threshold is the maximum packet size used for fragmentation. Packets larger than the size programmed in this field will be fragmented.

If you find that your corrupted packets or asymmetric packet reception (all send packets, for example). You may want to try lowering your fragmentation threshold. This will cause packets to be broken into smaller fragments. These small fragments, if corrupted, can be resent faster than a larger fragment. Fragmentation increases overhead, so you'll want to keep this value as close to the maximum value as possible.

4.11 What is RTS (Request To Send) Threshold?

The RTS threshold is the packet size at which packet transmission is governed by the RTS/CTS transaction. The IEEE 802.11-1997 standard allows for short packets to be transmitted without RTS/CTS transactions. Each station can have a different RTS threshold. RTS/CTS is used when the data packet size exceeds the defined RTS threshold. With the CSMA/CA transmission mechanism, the transmitting station sends out an RTS packet to the receiving station, and waits for the receiving station to send back a CTS (Clear to Send) packet before sending the actual packet data.

This setting is useful for networks with many clients. With many clients, and a high network load, there will be many more collisions. By lowering the RTS threshold, there may be fewer collisions, and performance should improve. Basically, with a faster RTS threshold, the system can recover from problems faster. RTS packets consume valuable bandwidth, however, so setting this value too low will limit performance.

4.12 What is Beacon Interval?

In addition to data frames that carry information from higher layers, 802.11 includes management and control frames that support data transfer. The beacon frame, which is a type of management frame, provides the "heartbeat" of a wireless LAN, enabling

stations to establish and maintain communications in an orderly fashion.

Beacon Interval represents the amount of time between beacon transmissions. Before a station enters power save mode, the station needs the beacon interval to know when to wake up to receive the beacon (and learn whether there are buffered frames at the access point).

4.13 What is Preamble Type?

There are two preamble types defined in IEEE 802.11 specification. A long preamble basically gives the decoder more time to process the preamble. All 802.11 devices support a long preamble. The short preamble is designed to improve efficiency (for example, for VoIP systems). The difference between the two is in the Synchronization field. The long preamble is 128 bits, and the short is 56 bits.

4.14 What is SSID Broadcast?

Broadcast of SSID is done in access points by the beacon. This announces your access point (including various bits of information about it) to the wireless world around it. By disabling that feature, the SSID configured in the client must match the SSID of the access point.

Some wireless devices don't work properly if SSID isn't broadcast (for example the D-link DWL-120 USB 802.11b adapter). Generally if your client hardware supports operation with SSID disabled, it's not a bad idea to run that way to enhance network security. However it's no replacement for WEP, MAC filtering or other protections.

4.15 What is Wi-Fi Protected Access (WPA)?

Wi-Fi's original security mechanism, Wired Equivalent Privacy (WEP), has been viewed as insufficient for securing confidential business communications. A longer-term solution, the IEEE 802.11i standard, is under development. However, since the IEEE 802.11i standard is not expected to be published until the end of 2003, several members of the WI-Fi Alliance teamed up with members of the IEEE 802.11i task group to develop a significant near-term enhancement to Wi-Fi security. Together, this team developed Wi-Fi Protected Access.

To upgrade a WLAN network to support WPA, Access Points will require a WPA software upgrade. Clients will require a software upgrade for the network interface card, and possibly a software update for the operating system. For enterprise networks, an

authentication server, typically one that supports RADIUS and the selected EAP authentication protocol, will be added to the network.

4.16 What is WPA2?

It is the second generation of WPA. WPA2 is based on the final IEEE 802.11i amendment to the 802.11 standard.

4.17 What is 802.1x Authentication?

802.1x is a framework for authenticated MAC-level access control, defines Extensible Authentication Protocol (EAP) over LANs (WAPOL). The standard encapsulates and leverages much of EAP, which was defined for dial-up authentication with Point-to-Point Protocol in RFC 2284.

Beyond encapsulating EAP packets, the 802.1x standard also defines EAPOL messages that convey the shared key information critical for wireless security.

4.18 What is Temporal Key Integrity Protocol (TKIP)?

The Temporal Key Integrity Protocol, pronounced tee-kip, is part of the IEEE 802.11i encryption standard for wireless LANs. TKIP is the next generation of WEP, the Wired Equivalency Protocol, which is used to secure 802.11 wireless LANs. TKIP provides per-packet key mixing, a message integrity check and a re-keying mechanism, thus fixing the flaws of WEP.

4.19 What is Advanced Encryption Standard (AES)?

Security issues are a major concern for wireless LANs, AES is the U.S. government's next-generation cryptography algorithm, which will replace DES and 3DES.

4.20 What is Inter-Access Point Protocol (IAPP)?

The IEEE 802.11f Inter-Access Point Protocol (IAPP) supports Access Point Vendor interoperability, enabling roaming of 802.11 Stations within IP subnet.

IAPP defines messages and data to be exchanged between Access Points and between the IAPP and high layer management entities to support roaming. The IAPP protocol uses TCP for inter-Access Point communication and UDP for RADIUS request/response exchanges. It also uses Layer 2 frames to update the forwarding tables of Layer 2 devices.

4.21 What is Wireless Distribution System (WDS)?

The Wireless Distribution System feature allows WLAN AP to talk directly to other APs via wireless channel, like the wireless bridge or repeater service.

4.22 What is Universal Plug and Play (UPNP)?

UPnP is an open networking architecture that consists of services, devices, and control points. The ultimate goal is to allow data communication among all UPnP devices regardless of media, operating system, programming language, and wired/wireless connection.

4.23 What is Maximum Transmission Unit (MTU) Size?

Maximum Transmission Unit (MTU) indicates the network stack of any packet is larger than this value will be fragmented before the transmission. During the PPP negotiation, the peer of the PPP connection will indicate its MRU and will be accepted. The actual MTU of the PPP connection will be set to the smaller one of MTU and the peer's MRU. The default is value 1400.

4.24 What is Clone MAC Address?

Clone MAC address is designed for your special application that request the clients to register to a server machine with one identified MAC address. Since that all the clients will communicate outside world through the Wireless Broadband Router, so have the cloned MAC address set on the Wireless Broadband Router will solve the issue.

4.25 What is DDNS?

DDNS is the abbreviation of Dynamic Domain Name Server. It is designed for user own the DNS server with dynamic WAN IP address.

4.26 What is NTP Client?

NTP client is designed for fetching the current timestamp from internet via Network Time protocol. User can specify time zone, NTP server IP address.

5 Configuration Examples

5.1 Example One – PPPoE on the WAN

Sales division of Company ABC likes to establish a WLAN network to support mobile communication on sales' Notebook PCs. MIS engineer collects information and plans the Wireless Broadband Router implementation by the following configuration.

LAN	V configuration	
	IP Address	192.168.1.254
	Subnet Mask	255.255.255.0
WA	N configuration:	
	PPPoE	
	User Name	H890123456
	Password	PW192867543210
WL	AN configuration	
	SSID	MSI
	Channel Number	7
DH	CP Server configuration	on
	DHCP Client Range	192.168.1.100 – 192.168.1.200

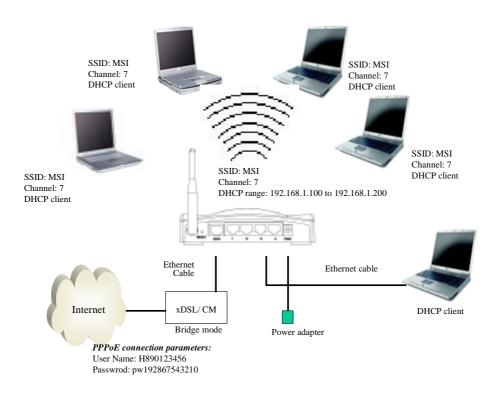


Figure 3 - Configuration Example One - PPPoE on the WAN

Configure the LAN interface:

	IP Setting	
Here	Setting	
LAM IP Address LAM Subset Mask.	192, 908 1, 294 296 298 298 8	
WAN Type Close MAC Address	Dynamic Director	
Seet Units Herp		
	 LAM IP Address LAM Subset Mask. WAN Type Close MAC Address 	News Setting P LAM IP Address VPC VIS 1.254 P LAM Gabeet Mask 256 255 256 8 P WAH Type Dynamic Charge P Close MAC Address 000000000000000000000000000000000000

Press Save

button to confirm the configuration setting.

Configure the WAN interface:

Г

Click "Change" button in "IP		WAN Setting
Setting" page,	len	Setting
select PPPoE under	 WAN Access Type 	PPPhE M
WAN Access Type	 User Name: Passwerd 	+680123466
and enter the User Name	Connection Type	Continuous Consert Discussor:
"H890123456" and	MTU Size	1400 (1400-1492 bytes)
Password	CIVIS Mede	GAats O Menual
PW192867543210",	DIVIS T.	
the password is	• CWS 2	
encrypted to display on the screen.	Chris 3 Chrise MAC Address	
	(PNP	CEsable @Cisable

Press Save button to confirm the configuration setting.

Configure the WLAN interface:

Open Wireless page,		Wireless	
enter the SSID	Ann	Setting	
" MSI ", Channel	 Dant Main 	8+6 42 ¥	
Number "7".	 500 Channel Number Security Associated Clients Steel Undo (Indo) 	MGI T Ress Charty Shaw Active Charty	

Press

Save button to confirm the configuration setting.

Configure the DHCP Server

Open DHCP Server page, enable DHCP server..

Shew Line

Press

Save button to confirm the configuration setting.

5.2 Example Two – Fixed IP on the WAN

Company ABC likes to establish a WLAN network to support mobile communication on all employees' Notebook PCs. MIS engineer collects information and plans the Wireless Broadband Router implementation by the following configuration.

LAN configuration

Lanveonjiguranon		
IP Address	192.168.1.254	
Subnet Mask	255.255.255.0	
WAN configuration:		
Fixed IP		
IP Address	192.168.2.254	
Subnet Mask	255.255.255.0	
Default Gateway	192.168.2.10	
DNS Address	168.95.1.1	

Version: 1.0

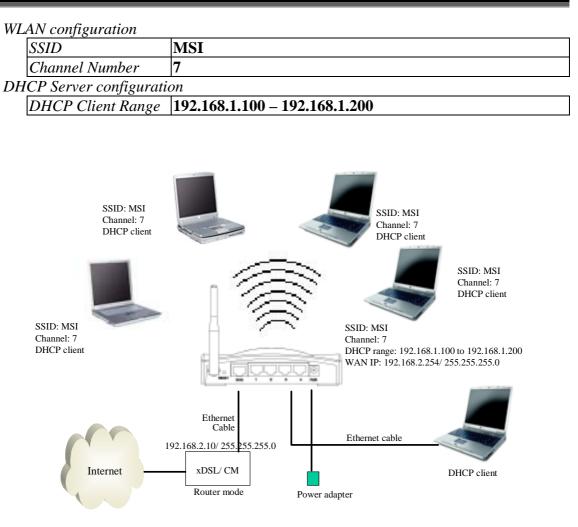


Figure 4 - Configuration Example Two - Fixed IP on the WAN

Open IP Setting page,		IP Setting	
enter the IP Address	Bree	Setting	
"192.168.1.254",	LAN IF Address LAN Subnet Mask	192,169,1,254	
Subnet Mask	WWM Tape Come MAC Address Dave Unato Thinks	Dysonic Owne	
"255.255.255.0"			

Configure the LAN interface:

Press

Save button to confirm the configuration setting.

Configure the WAN interface:

Click "Change" button in "IP Setting" page, select "Static IP" under WAN Access Type, enter IP Address "**192.168.2.254**", subnet mask "**255.255.255.0**",

NAM Access Type EXTENDED IN A P Address Mark 255 255 0 Indeet Mark 255 255 0 Indeet Charge B
P Addition Radionet Marchi Related Charlowspic
lalanet Mark: 255.255.0 Melast Claranege B10.0
Mail Galaxy 2100
PHS 1.
H5 2
esi a
Sone MAC Address
PIP Obselv BDooke
Nya Server Access of WAN: O Enable @ Disable
NALEcto Prety O Ender Structure

Press Save button to confirm the configuration setting.

Configure the WLAN interface:

anton the CCID "MCI"		Wireless	
enter the SSID "MSI",	The second se	Setting	
Channel Number "7".	 Band Marine Band Band<	ard Ada May 2 Marce Company 2 Marce Aylow David	

Press

Save

button to confirm the configuration setting.

Version: 1.0

Configure the DHCP Server

Open DHCP Server		DHCP Server
page, enable DHCP	lanes:	Satting
server	► DHCP ► DHCP Cleat Range Save (Linda) (THQ)	G Poetled C Doutlet

Press Save button to confirm the configuration setting.